RICOH

D223/D224/D225

SERVICE MANUAL

LANIER RICOH savin

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LEGEND

PRODUCT CODE	COMPANY		
	LANIER	RICOH	SAVIN
D223	MP 6503SP	MP 6503SP	MP 6503SP
D224	MP 7503SP	MP 7503SP	MP 7503SP
D225	MP 9003SP	MP 9003SP	MP 9003SP

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READ THIS FIRST

Important Safety Notices

Warnings, Cautions, Notes

In this manual, the following important symbols and notations are used.

⚠WARNING

- Indicates a potentially hazardous situation. Failure to obey a Warning could result in death or serious injury.

⚠CAUTION

- Indicates a potentially hazardous situation. Failure to obey a Caution could result in minor or moderate injury or damage to the machine or other property.

Important

- Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine.

Note

- This information provides tips and advice about how to best service the machine.

General Safety Instructions

For your safety, please read this manual carefully before you use this product. Keep this manual handy for future reference.

Safety Information

Always obey the following safety precautions when using this product.

Switches and Symbols

Where symbols are used on or near switches on machines for Europe and other areas, the meaning of each symbol conforms with IEC60417.

Responsibilities of the Customer Engineer

Customer Engineer

Maintenance shall be done only by trained customer engineers who have completed service training for the machine and all optional devices designed for use with the machine.

Reference Material for Maintenance

- Maintenance shall be done using the special tools and procedures prescribed for maintenance of the machine described in the reference materials (service manuals, technical bulletins, operating instructions, and safety guidelines for customer engineers).
- In regard to other safety issues not described in this document, all customer engineers shall strictly obey procedures and recommendations described in the "CE Safety Guide".
- Use only consumable supplies and replacement parts designed for use with the machine.

Before Installation, Maintenance

Warning Label

The following symbols are used in warning labels attached inside the machine. Understand the symbols on these labels, and obey their instructions.

Label			
Description	Use Caution!	High temperature!	Do not touch!

Shipping and Moving the Machine

⚠CAUTION

- Work carefully when lifting or moving the machine.
- If the machine is heavy, two or more customer engineers may be required to prevent injuries (muscle strains, spinal injuries, etc.) or damage to the machine if it is dropped or tipped over.
- Personnel moving or working around the machine should always wear proper clothing and footwear.
- Never wear loose fitting clothing or accessories (neckties, loose sweaters, bracelets, etc.) or casual footwear (slippers, sandals, etc.) when lifting or moving the machine.
- Always unplug the power cord from the power source before you move the machine.
- Before you move the machine, or one of its peripheral units, stow the power cord so it will not fall under the machine.

Power

⚠WARNING

- Always disconnect the power plug before doing any maintenance procedure. After switching off the machine, power is still supplied to the main machine and other devices.
- To prevent electrical shock, switch the machine off, wait for a few seconds, then unplug the machine from the power source.
- Before you do any checks or adjustments after turning the machine off, work carefully to avoid injury.
- After removing covers or opening the machine to do checks or adjustments, never touch electrical components or moving parts (gears, timing belts, etc.).
- After turning the machine on with any cover removed, keep your hands away from electrical components and moving parts. Never touch the cover of the fusing unit, gears, timing belts, etc.

Important

- The work area where the machine is installed must have the required breaker switch for the power line. (North America: Listed circuit breaker, rating 240V 20A, double pole)

Installation, Disassembly, and Adjustments

⚠CAUTION

- After installation, maintenance, or adjustment, always check the operation of the machine to make sure that it is operating normally. This ensures that all shipping materials, protective materials, wires and tags, metal brackets, etc., removed for installation, have been removed and that no tools remain inside the machine. This also ensures that all release interlock switches have been restored to normal operation.
- Never use your fingers to check moving parts causing spurious noise. Never use your fingers to lubricate moving parts while the machine is operating.

Special Tools

⚠CAUTION

- Use only standard tools approved for machine maintenance.
- For special adjustments, use only the special tools and lubricants described in the service manual. Using tools incorrectly, or using tools that could damage parts, could damage the machine or cause injuries.

During Maintenance

General

⚠CAUTION

- Before you begin a maintenance procedure: 1) Switch the machine off, 2) Disconnect the power plug from the power source, 3) Allow the machine to cool for at least 10 minutes.
- Avoid touching the components inside the machine that are labeled as hot surfaces.

Safety Devices

⚠WARNING

- Never remove any safety device unless it requires replacement. Always replace safety devices immediately.
- Never do any procedure that defeats the function of any safety device. Modification or removal of a safety device (fuses, switches, etc.) could lead to a fire and personal injury. Always test the operation of the machine to ensure that it is operating normally and safely after removal and replacement of any safety device.
- For replacements use only the correct fuses or circuit breakers rated for use with the machine. Using replacement devices not designed for use with the machine could lead to a fire and personal injuries.

Organic Cleaners

⚠CAUTION

- During preventive maintenance, never use any organic cleaners (alcohol, etc.) other than those described in the service manual.
- Make sure the room is well ventilated before using any organic cleaner. Use organic solvents in small amounts to avoid breathing the fumes and becoming nauseous.
- Switch the machine off, unplug it, and allow it to cool before doing preventive maintenance. To avoid fire or explosion, never use an organic cleaner near any part that generates heat.
- Wash your hands thoroughly after cleaning parts with an organic cleaner to prevent contamination of food, drinks, etc. which could cause illness.
- Clean the floor completely after accidental spillage of silicone oil or other materials to prevent slippery surfaces that could cause accidents leading to hand or leg injuries. Use "My Ace" Silicone Oil Remover (or dry rags) to soak up spills.

Lithium Batteries

⚠WARNING

- Always replace a lithium battery on a PCB with the same type of battery prescribed for use on that board. Replacing a lithium battery with any type other than the one prescribed for use on the board could lead to an explosion or damage to the PCB.
- Never discard used batteries by mixing them with other trash. Remove them from the work site and dispose of them in accordance with local laws and regulations regarding the disposal of such items.

Ozone Filters

⚠CAUTION

- Always replace ozone filters as soon as their service life expires (as described in the service manual).
- An excessive amount of ozone can build up around machines that use ozone filters if they are not replaced at the prescribed time. Excessive ozone could cause personnel working around the machine to feel unwell.
- To avoid possible accumulation of ozone in the work area, locate the machine in a large well ventilated room that has an air turnover rate of more than 50 m^3/hr/person.

Power Plug and Power Cord

⚠WARNING

- Before servicing the machine (especially when responding to a service call), always make sure that the power plug has been inserted completely into the power source. A partially inserted plug could lead to heat generation (due to a power surge caused by high resistance) and cause a fire or other problems.
- Always check the power plug and make sure that it is free of dust and lint. Clean it if necessary. A dirty plug can generate heat which could cause a fire.
- Inspect the length of the power cord for cuts or other damage. Replace the power cord if necessary. A frayed or otherwise damaged power cord can cause a short circuit which could lead to a fire or personal injury from electrical shock.
- Check the length of the power cord between the machine and power supply. Make sure the power cord is not coiled or wrapped around any object such as a table leg. Coiling the power cord can cause excessive heat to build up and could cause a fire.
- Make sure that the area around the power source is free of obstacles so the power cord can be removed quickly in case of an emergency.
- Make sure that the power cord is grounded (earthed) at the power source with the ground wire on the plug.
- Connect the power cord directly into the power source. Never use an extension cord.

- When you disconnect the power plug from the power source, always pull on the plug, not the cable.

After Installation, Servicing

Disposal of Used Items

⚠WARNING

- Never incinerate used toner, toner cartridges, or toner bottles.
- Toner, toner cartridges, or toner bottles thrown into a fire can ignite or explode and cause serious injury. At the work site always carefully wrap used toner and toner cartridges with plastic bags to avoid spillage before disposal or removal.

⚠CAUTION

- Always dispose of used items (developer, toner, toner cartridges, OPC drums, etc.) in accordance with the local laws and regulations regarding the disposal of such items.
- To protect the environment, never dispose of this product or any kind of waste from consumables at a household waste collection point. Dispose of these items at one of our dealers or at an authorized collection site.
- Return used selenium drums to the service center for handling in accordance with company policy regarding the recycling or disposal of such items.

Points to Confirm with Operators

At the end of installation or a service call, instruct the user about use of the machine. Emphasize the following points.

- Show operators how to remove jammed paper and troubleshoot other minor problems by following the procedures described in the operating instructions.
- Point out the parts inside the machine that they should never touch or attempt to remove.
- Confirm that operators know how to store and dispose of consumables.
- Make sure that all operators have access to an operating instruction manual for the machine.
- Confirm that operators have read and understand all the safety instructions described in the operating instructions.
- Demonstrate how to turn the machine off with the power button on the left front corner of the machine. A message alerts the operator that there will be a slight delay until the machine shuts down. This gives the hard disk time to stop rotating and shut down normally before the machine loses power.
- Demonstrate how to disconnect the power plug quickly (by pulling the plug, not the cord) if any of the following events occur: 1) something has spilled into the product, 2) service or repair of the product is necessary, 3) the product cover has been damaged.
- Caution operators about removing paper fasteners around the machine. They should never allow paper clips, staples, or any other small metallic objects to fall into the machine.

Special Safety Instructions for Toner

Accidental Physical Exposure

⚠CAUTION

- Work carefully when removing paper jams or replacing toner bottles or cartridges to avoid spilling toner on clothing or the hands.
- If toner is inhaled, immediately gargle with large amounts of cold water and move to a well ventilated location. If there are signs of irritation or other problems, seek medical attention.
- If toner gets on the skin, wash immediately with soap and cold running water.
- If toner gets into the eyes, flush the eyes with cold running water or eye wash. If there are signs of irritation or other problems, seek medical attention.
- If toner is swallowed, drink a large amount of cold water to dilute the ingested toner. If there are signs of any problem, seek medical attention.
- If toner spills on clothing, wash the affected area immediately with soap and cold water. Never use hot water! Hot water can cause toner to set and permanently stain fabric.

Handling and Storing Toner

⚠WARNING

- Toner, used toner, and developer are extremely flammable.
- Never store toner, developer, toner cartridges, or toner bottles (including empty toner bottles or cartridges) in a location where they will be exposed to high temperature or an open flame.

⚠CAUTION

- Always store toner and developer supplies such as toner and developer packages, cartridges, and bottles (including used toner and empty bottles and cartridges) out of the reach of children.
- Always store fresh toner supplies or empty bottles or cartridges in a cool, dry location that is not exposed to direct sunlight.

Toner Disposal

⚠WARNING

- Never attempt to incinerate toner, used toner, or empty toner containers (bottles or cartridges). Burning toner can explode and scatter, causing serious burns.
- Always wrap used toner and empty toner bottles and cartridges in plastic bags to avoid spillage. Follow the local laws and regulations regarding the disposal of such items.
- Dispose of used toner and toner cartridges at one of our dealers or at an authorized collection site. Always dispose of used toner cartridges and toner bottles in accordance with the local laws and regulations regarding the disposal of such items.

Safety Instructions for this Machine

Prevention of Physical Injury

1. Before disassembling or assembling parts of the machine and peripherals, make sure that the machine and peripheral power cords are unplugged.
2. The power outlet should be near the machine and easily accessible.
3. Note that some components of the machine and the paper tray unit are supplied with electrical voltage even if the main power switch is turned off.
4. If any adjustment or operation check has to be made with exterior covers off or open while the main switch is turned on, keep hands away from electrified or mechanically driven components.
5. If the [Start] key is pressed before the machine completes the warm-up period (the [Start] key starts blinking red and green), keep hands away from the mechanical and the electrical components as the machine starts making copies as soon as the warm-up period is completed.
6. The inside and the metal parts of the fusing unit become extremely hot while the machine is operating. Be careful to avoid touching those components with your bare hands.
7. To avoid the danger of fire or explosion, keep the machine away from flammable liquids, gases, and aerosols.

Health Safety Conditions

⚠CAUTION

- Never operate the machine without the ozone filters installed.

1. Always replace the ozone filters with the specified types at the proper intervals.
2. Toner and developer are non-toxic, but if you get either of them in your eyes by accident, it may cause temporary eye discomfort. Try to remove with eye drops or flush with water as first aid. If unsuccessful, get medical attention.
3. To avoid possible accumulation of ozone in the work area, locate the machine in a large well ventilated room that has an air turnover rate of more than 50 m^3/hr/person.

Observance of Electrical Safety Standards

1. The machine and its peripherals must be installed and maintained by a customer service representative who has completed the training course on those models.
2. The NVRAM on the system control board has a lithium battery which can explode if replaced incorrectly. Replace the NVRAM only with an identical one. The manufacturer recommends replacing the entire NVRAM. Do not recharge or burn this battery. Used NVRAM must be handled in accordance with local regulations.
3. Test the breaker switches on the main machine and all peripheral devices at least once a year.

Safety and Ecological Notes for Disposal

1. Never incinerate toner bottles or used toner. Toner dust may ignite suddenly when exposed to an open flame.
2. Dispose of used toner, developer, and organic photoconductors in accordance with local regulations. (These are non-toxic supplies.)
3. Dispose of replaced parts in accordance with local regulations.
4. When keeping used lithium batteries in order to dispose of them later, do not put more than 100 batteries per sealed box. Storing larger numbers or not sealing them apart may lead to chemical reactions and heat build-up.

⚠CAUTION

- The danger of explosion exists if a battery of this type is incorrectly replaced.
- Replace only with the same or an equivalent type recommended by the manufacturer. Discard used batteries in accordance with the manufacturer's instructions.

Laser Safety

d223c0002

1. Laser safety labels are attached to the top of the laser unit.
   Note: The Center for Devices and Radiological Health (CDRH) prohibits the repair of laser-based optical units in the field.
2. The optical housing unit can only be repaired in a factory or at a location with the requisite equipment.
3. The laser subsystem is replaceable in the field by a qualified Customer Engineer.
4. The laser chassis is not repairable in the field.
5. Customer engineers are therefore directed to return all chassis and laser subsystems to the factory or service depot when replacement of the optical subsystem is required.

⚠WARNING

- Use of controls, or adjustment, or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.
- Turn off the main switch before attempting any of the procedures in the Laser Unit section. Laser beams can seriously damage your eyes.

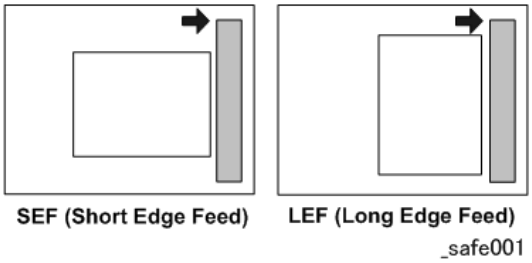
SYMBOLS AND TRADEMARKS

Symbols Used in Text

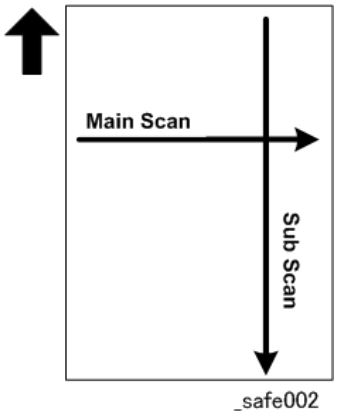
Symbol	What it means
	Bushing
	C-ring
	Clip
	Connector
	E-ring
	FFC (Flat Film Connector)
	FFC (Flat Film Connector)
	FFC (Flat Film Connector)
	Gear
	Harness clamp
	Harness clamp: metal: fusing unit
	Hook (sensors)
	Screw: binding screw (round flathead)
	Screw: binding screw (shoulder, hex head)
	Screw: black screw (TCRU, fusing unit)
	Screw: blue
	Screw: common silver screw
	Screw: pivot screw

Symbol	What it means
	Screw: tapping, for plastic
	Screw: shoulder screw
	Spring
	Standoff
	Stud screw
	Timing belt
	Washer

The notations "SEF" and "LEF" describe the direction of paper feed. The arrows indicate the direction of paper feed.



In this manual "Main Scan" means "Horizontal" and "Sub Scan" means "Vertical", both relative to the direction of paper feed.



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- Windows® Internet Explorer® 8
- Windows® Internet Explorer® 9
- Internet Explorer® 10
- Internet Explorer® 11

The proper names of the Windows operating systems are as follows:

- The product names of Windows XP are as follows:
  Microsoft® Windows® XP Professional
  Microsoft® Windows® XP Home Edition
  Microsoft® Windows® XP Professional x64 Edition
- The product names of Windows Vista are as follows:
  Microsoft® Windows Vista® Ultimate
  Microsoft® Windows Vista® Business
  Microsoft® Windows Vista® Home Premium
  Microsoft® Windows Vista® Home Basic
  Microsoft® Windows Vista® Enterprise
- The product names of Windows 7 are as follows:
  Microsoft® Windows® 7 Home Premium
  Microsoft® Windows® 7 Professional
  Microsoft® Windows® 7 Ultimate
  Microsoft® Windows® 7 Enterprise
- The product names of Windows 8 are as follows:
  Microsoft® Windows® 8
  Microsoft® Windows® 8 Pro
  Microsoft® Windows® 8 Enterprise
- The product names of Windows 8.1 are as follows:
  Microsoft® Windows® 8.1
  Microsoft® Windows® 8.1 Pro
  Microsoft® Windows® 8.1 Enterprise
- The product names of Windows Server 2003 are as follows:
  Microsoft® Windows Server® 2003 Standard Edition
  Microsoft® Windows Server® 2003 Enterprise Edition
- The product names of Windows Server 2003 R2 are as follows:
  Microsoft® Windows Server® 2003 R2 Standard Edition
  Microsoft® Windows Server® 2003 R2 Enterprise Edition
- The product names of Windows Server 2008 are as follows:
  Microsoft® Windows Server® 2008 Standard
  Microsoft® Windows Server® 2008 Enterprise
- The product names of Windows Server 2008 R2 are as follows:
  Microsoft® Windows Server® 2008 R2 Standard
  Microsoft® Windows Server® 2008 R2 Enterprise
- The product names of Windows Server 2012 are as follows:
  Microsoft® Windows Server® 2012 Foundation
  Microsoft® Windows Server® 2012 Essentials

Microsoft® Windows Server® 2012 Standard

- The product names of Windows Server 2012 R2 are as follows:
  Microsoft® Windows Server® 2012 R2 Foundation
  Microsoft® Windows Server® 2012 R2 Essentials
  Microsoft® Windows Server® 2012 R2 Standard

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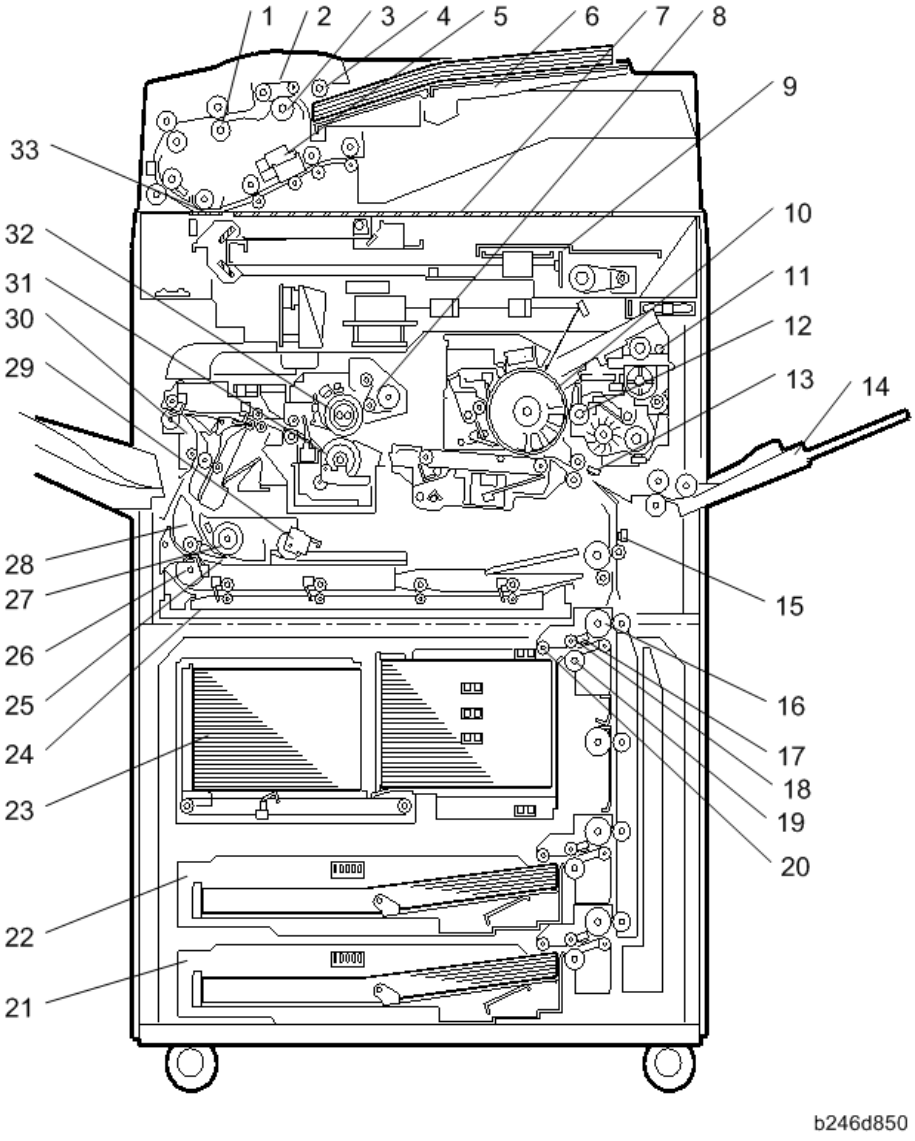
PRODUCT INFORMATION

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

1. PRODUCT INFORMATION

1.1 MACHINE CONFIGURATION

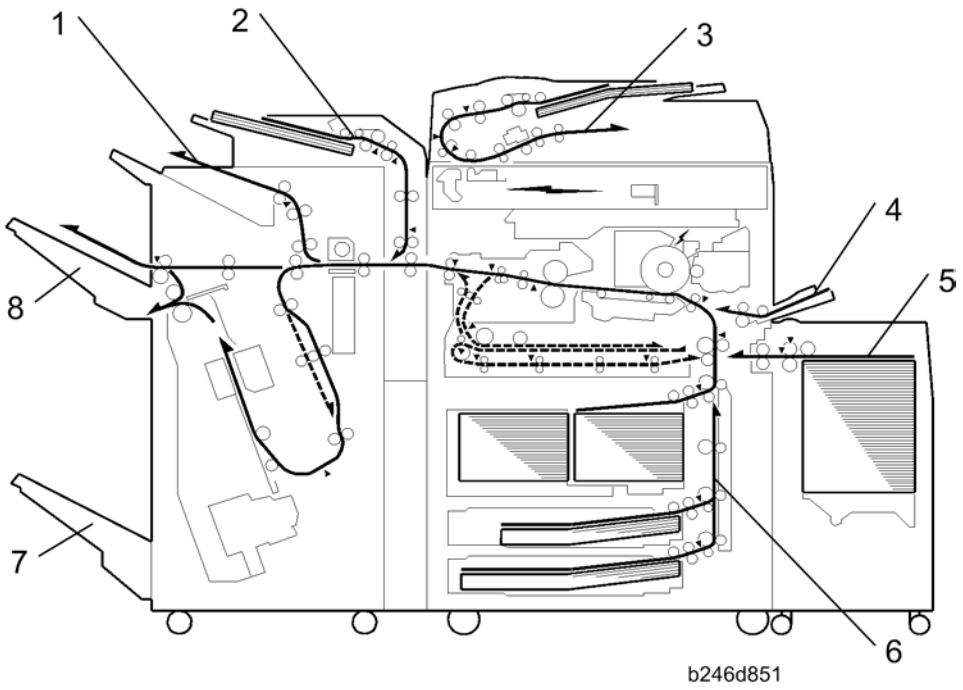
1.1.1 COMPONENT LAYOUT



No.	Part	No.	Part
1	Entrance Roller (ADF)	18	Feed Roller (Paper Tray)
2	Feed Belt (ADF)	19	Separation Roller (Paper Tray)
3	Separation Roller (ADF)	20	Pick-up Roller (Paper Tray)
4	Pick-up Roller (ADF)	21	Universal Tray (Tray 3)

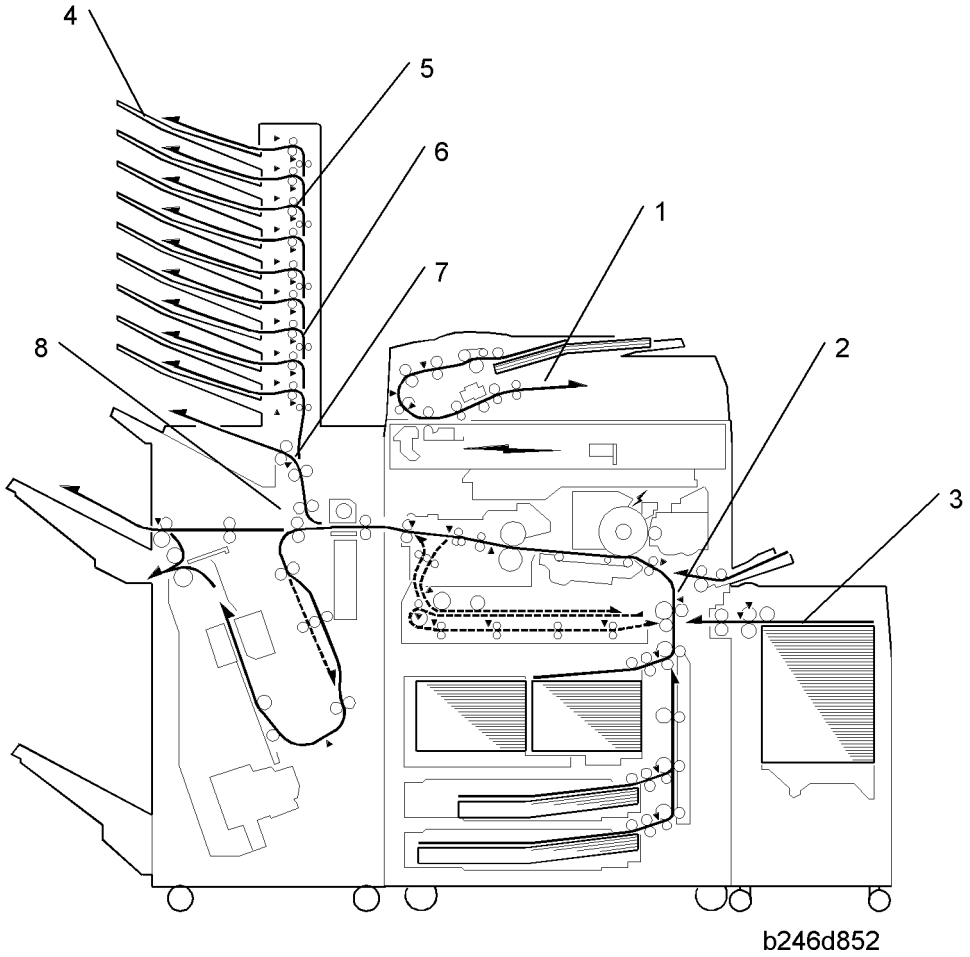
No.	Part	No.	Part
5	CIS (Contact Image Sensor)	22	Universal Tray (Tray 2)
6	Original Feed-in Tray	23	Tandem Tray (Tray 1)
7	Exposure Glass	24	Duplex Unit
8	Fusing Unit	25	Inverter
9	Lens Block	26	Inverter Exit Roller
10	OPC Drum	27	Inverter Entrance Roller
11	Development Unit	28	Duplex Junction Gate
12	Development Roller	29	Reverse Trigger Roller
13	Registration Sensor	30	Exit Unit
14	By-pass Tray	31	Pressure Roller
15	Relay Sensor	32	Hot Roller
16	Grip Roller	33	Contact Glass (ADF)
17	Feed Sensor (Paper Tray)		

1.1.2 PAPER PATH (WITH COVER INTERPOSER TRAY)



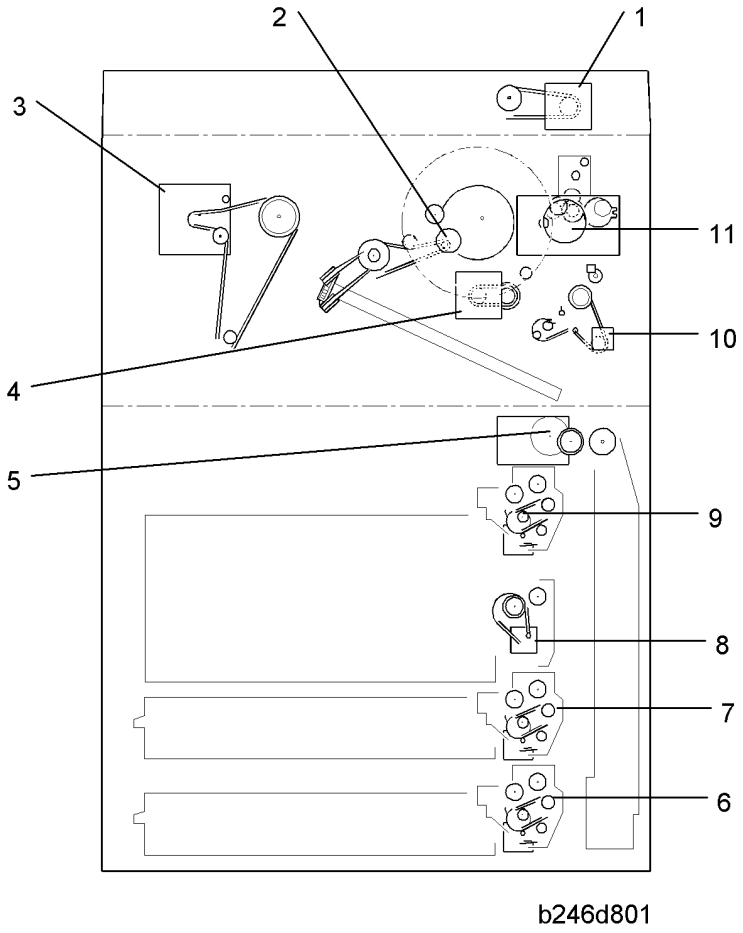
No.	Part
1	Proof Exit Tray
2	Cover Sheet Path
3	Original Path
4	By-pass Tray
5	LCT Feed
6	Vertical Transport Path
7	Finisher Exit Tray 2
8	Finisher Exit Tray 1

1.1.3 PAPER PATH (WITH 9-BIN MAILBOX)



No.	Part
1	Original Paper Path
2	Vertical Transport Path
3	LCT Feed
4	Selected Trays
5	Turn Gates
6	Mailbox Paper Path
7	Junction Gate
8	Junction Gates

1.1.4 DRIVE LAYOUT



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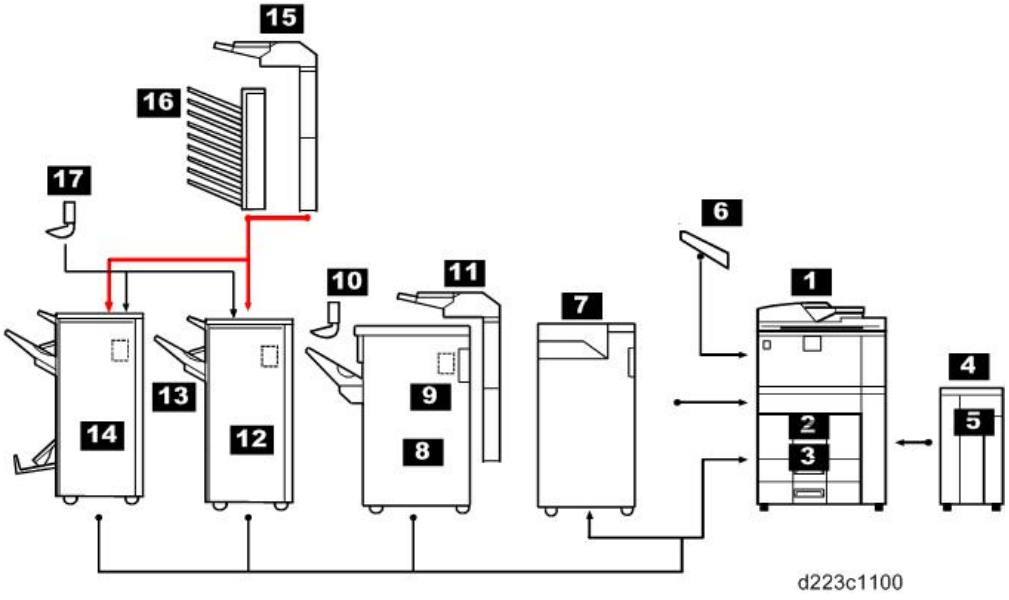
No.	Part
1	Scanner Motor
2	Drum Motor
3	Fusing/Exit Motor
4	Registration Motor
5	Toner Collection Motor
6	Tray 3 Paper Feed Motor
7	Tray 2 Paper Feed Motor
8	Lower Relay Motor
9	Tray 1 Paper Feed Motor
10	By-pass Motor
11	Development Motor

1.2 MACHINE CODES AND PERIPHERALS

1.2.1 PERIPHERAL UNITS



	Unit	No.
1	Mainframe	D223/D224/D225
2	A3/11" x 17" Tray Type 9001*[1]	D482
3	Tab Sheet Holder 9002*[1]	B499
4	LCIT 4040	D3D6
5	81/2" x 11" Paper Size Tray Type 9002	B474
6	Copy Tray 9002	B756
7	Multi-Folding Unit FD4000	D615
8	Finisher SR4080	D610
9	Punch Unit Type 850 S4*[2]	A812
	Punch Unit Type 1075 NA 3/2*[2]	B531
	Punch Unit Type 1075 EU 2/4*[2]	B531
10	Output Jogger Unit Type 9002B	B513

	Unit	No.
11	Cover Interposer Tray CI4030	D3D7
12	Finisher SR4120	D3CG
13	Punch Unit PU3060 SC*2	D706
	Punch Unit PU3060 EU*2	D706
	Punch Unit PU3060 NA*2	D706
14	Booklet Finisher SR4130	D3CH
15	Cover Interposer Tray CI4040	DC3N
16	Mail Box CS4010	D708
17	Output Jogger Unit Type M25	D3CJ

*1: Installed inside the main machine

*2: Installed inside the finishers (only one can be installed)

1.2.2 OTHER OPTIONS

Mainframe Options: External

Unit	No.	Connection
ADF Handle Type C	D593	On mainframe
Card Reader Bracket Type 3352	D593	On mainframe
External Keyboard Bracket Type M25	D3DH	On mainframe
Key Counter Bracket 1027	B452	On mainframe
NFC Card Reader Type M19	D3BS	On mainframe

Mainframe Options: Internal

Unit	No	Connection
Optional Counter Interface Unit Type M12	B870	Main machine

Controller Options: I/F Slots

Unit	No	Connection
Copy Connector Type M25	D3D3	Controller Box I/F Slot
Extended USB Board Type M19	D3BS	Controller Box I/F Slot
File Format Converter Type M19	D3BR	Controller Box I/F Slot
IEEE 1284 Interface Board Type M19	D3C0	Controller Box I/F Slot
IEEE 802.11 a/g/n Interface Unit M19	B3BR	Controller Box I/F Slot
Extended USB Board Type M19	D3BS	Controller Box I/F Slot
USB Device Server Option Type M19	D3BC	Controller Box I/F Slot

Controller Options

Unit	No	Connection
Data Overwrite Security Unit Type M19	D3BS	SD Card
Enhanced Security HDD Option Type M10	D792	HDD
IPDS Unit Type M25	D3D4	SD Card
OCR Unit Type M13	D3AC	SD Card
PostScript3 Type M25	D3D4	SD Card
SD Card for Fonts Type D	D641	SD Card
Unicode Font Package for SAP(R)	B869	SD Card
XPS Direct Print Option Type M25	D3D4	SD Card

Fax Options

Unit	No	Connection
Fax Option Type M25	D3D5	Controller Board
G3 Interface Unit Type M25	D3D5	Controller Board
Fax Connection Type M25	D3D4	SD Card
Fax Memory Unit Type M25 64MB	D3D5	Fax Board

1.3 GUIDANCE FOR THOSE FAMILIAR WITH PREDECESSOR PRODUCTS

The D223/D224/D225 succeeds the D131/D132/D133 series. If you have experience with the previous products, the following information will be of help when you read this manual.

1.3.1 DIFFERENCES FROM PREDECESSOR PRODUCTS

General

	D131/D132/D133	D223/D224/D225
Developer	Same	
Toner	Same	
SD Slot	2	2
I/F Slot	2	2
Model Line Up	**Three Models**	
	D131 60 ppm	D223 65 ppm
	D132 75 ppm	D224 75 ppm
	D133 90 ppm	D225 90 ppm
Approx. Service Life	9,000K	9,000K

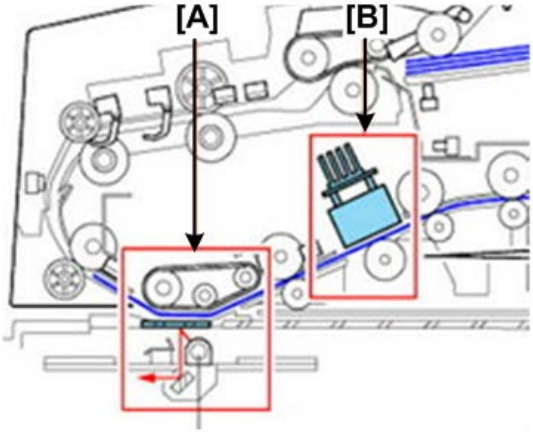
Basic Specifications

	Previous Machine	**This Machine**	**Comment**
1st copy time	30/30/300 sec.	10/20/300 sec.	Faster
Sleep mode recover	30 s	20 s	Faster
Single side scanning	90 ipm	120 ipm	Faster
Duplex scanning	178 ipm	220 ipm	Faster
Paper thickness			
Bank	52 to 169 g/m^2	52 to 256 g/m^2	Heavier paper
Duplex	64 to 169 g/m^2	52 to 256 g/m^2	Heavier paper
Bypass	52 to 216 g/m^2	52 to 300 to g/m^2	Heavier paper
Sleep mode	7W	1.1 W	Less power
Jam location indicator (LEDs)	---	Cover LEDs	Indicate jam location

1.3.2 IMPORTANT CHANGES

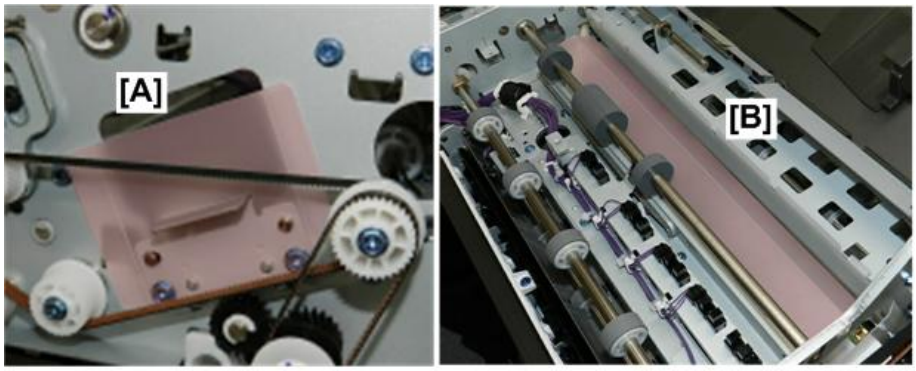
ADF

The ADF adopts a CIS unit that scans the reverse side of a page as the front side is scanned below. During one straight-through feed, both sides of the original are scanned. There is no need to reverse feed the original in order to scan the other side. There is no bending the original in the straight-through paper path, so this means this machine can handle thicker original sheets, up to 256 g/m^2. In one pass, the CIS [A] below the original feed path scans the front side, and then the CIS [B] above the path scans the back side.



d223c0060

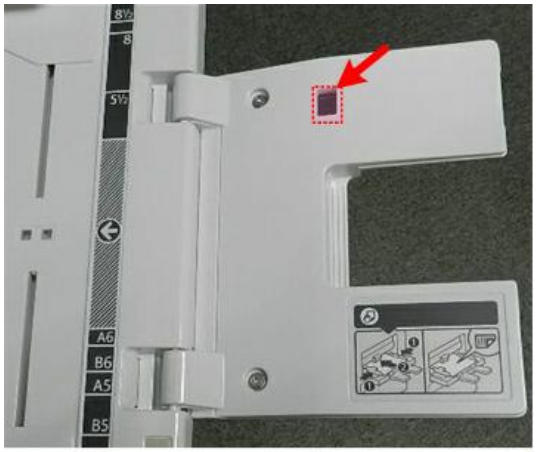
A vinyl plate covers the front end of the CIS. A stiff mylar inside the ADF covers the length of the CIS.



d223c0059

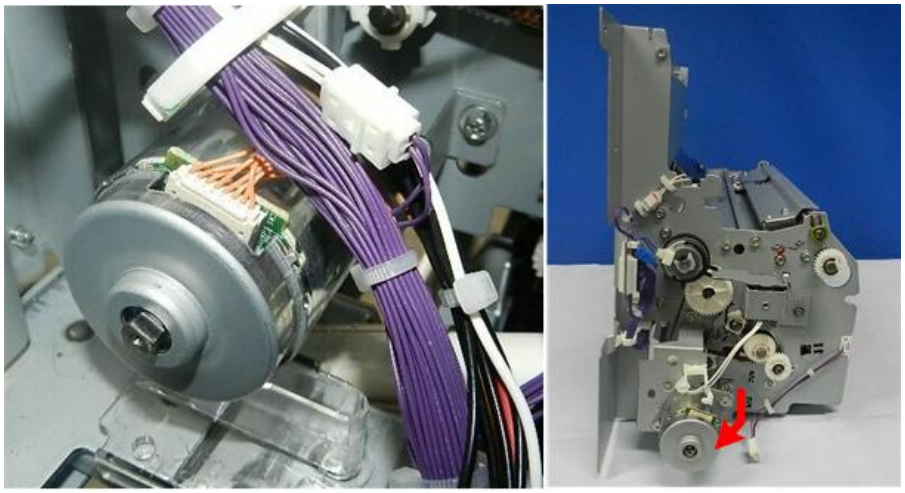
Bypass

The bypass tray has a new paper length sensor used to detect the length of the paper loaded in the bypass tray.



d223c0076

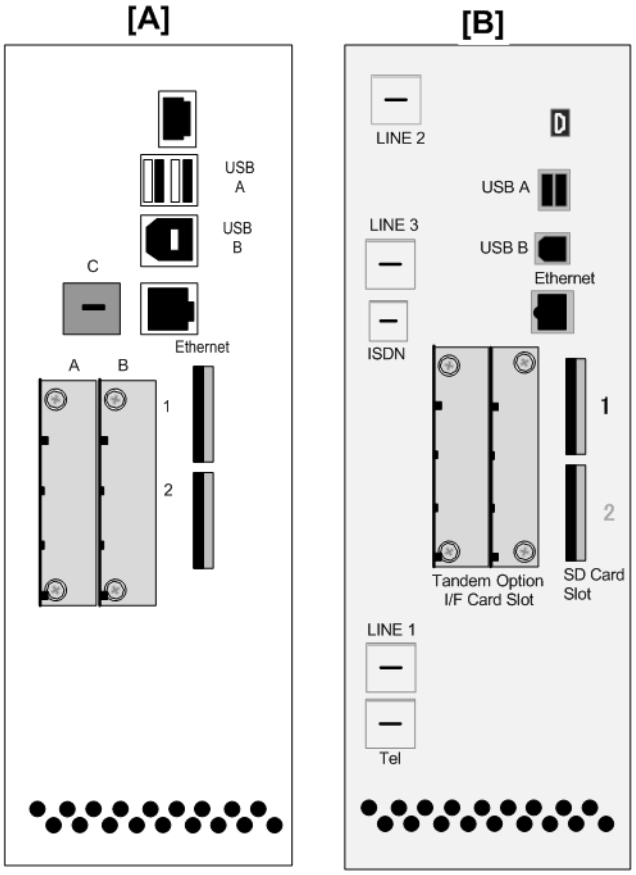
The bypass motor (a stepper motor in the previous machine) has been replaced with a DC motor. Also, the motor can no longer be serviced from the back of the machine. The bypass unit must be removed to service this motor.



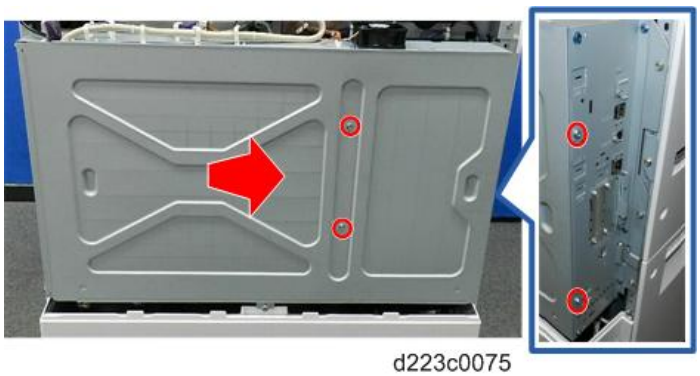
d223c0077

Controller

The controller is new. The faceplate of the previous machine [A] is on the right, the faceplate of this machine [B] is on the left. Both machines have the same number of SD cards slots (2) and I/F slots (2). The I/F slots of this machine are clearly labeled "Tandem" and "Option". SD card Slot 2 is the service slot for both machines.



The controller box has a cover like the previous model, but there are fewer screws to take off in order to remove the controller box cover. There are only two screws on the face and two on the side. The controller box cover is much easier to remove.



Cover Interposer Trays.

The Cover Interposer Tray CI4030 (D3D7) is new and designed for the Finisher 4080 (D610). The other tray, Cover Interposer Tray CI4040 (DC3N) can be used with either the Finisher SR4120 (D3CG) or Booklet Finisher SR4130 (D3CH). With the previous machine there was only one cover interposer tray available for all three finishers. The installation procedures for both new Cover Interposer Trays is almost the same.

d223c0078

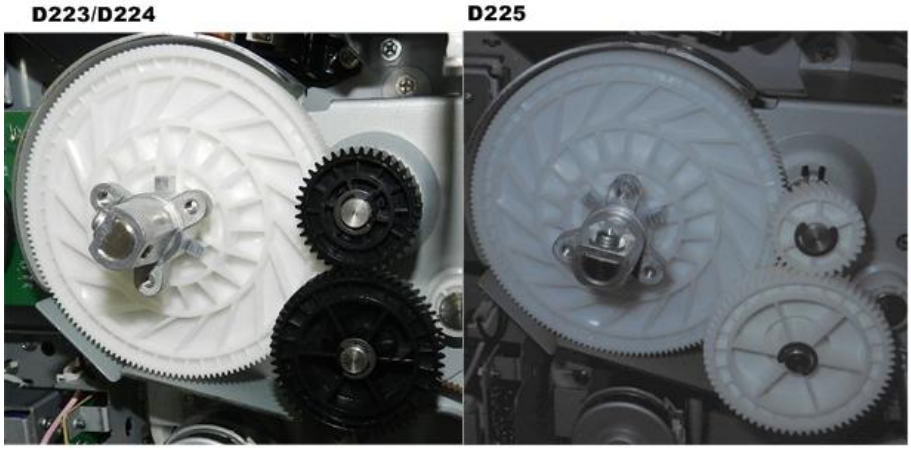
Drum heater.

The drum heater was provided as standard for the previous machine. However, the drum heater for this machine is an option and requires installation.

d223c1148

Drum unit

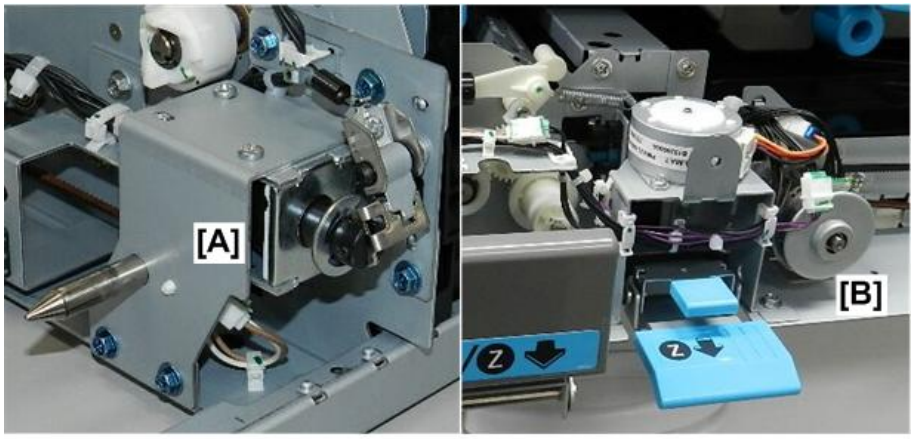
The gear train of the D223/D224 has two black gears. These same gears in the D225 are white.



d223c0071

Duplex unit.

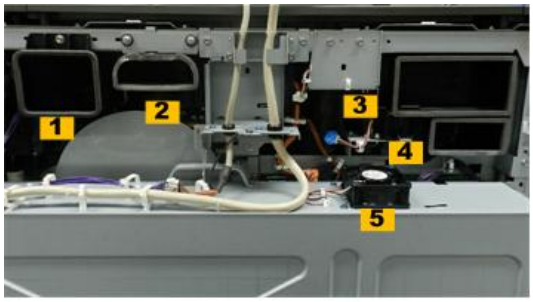
The junction gate solenoid [A] has been reinforced to reduce junction gate chatter that can occur when heavy paper is being used. Also, the transport motor, a stepper motor in the previous machine, has been replaced with a DC motor [B].



d223c0080

Fans

About 10 fans have been added to lower the internal temperature of the machine. The arrangement of fans on the back of the machine has changed.



d223c0063

[1]	Drum fan. This was the main intake fan on the previous machine.
[2]	Main intake fan. This was the drum fan on the previous machine.
[3]	Main exhaust fan. This fan and duct are new.
[4]	Main heat exhaust fan. This fan and duct are new.
[5]	Controller fan. This is a new exhaust fan, mounted on top of the controller box to draw heated air up from the controller box.

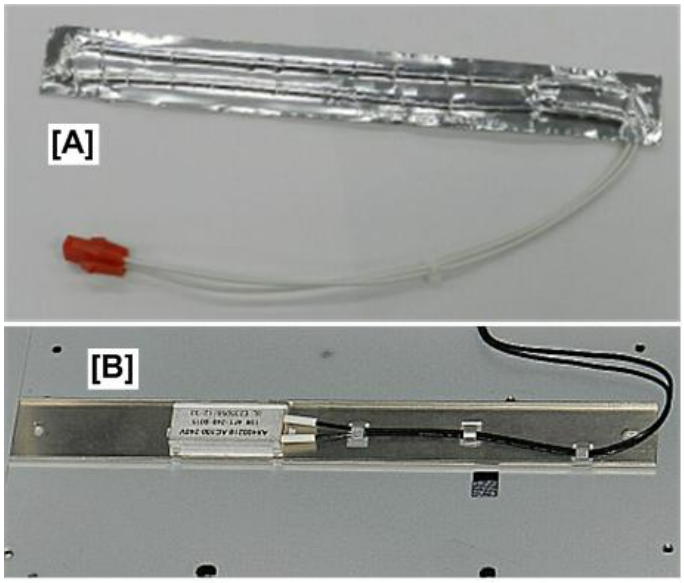
Human detection (proximity) sensor

This is a new sensor that detects the presence of the operator. It is installed at the upper left corner of the machine above the power switch. As soon as this sensor detects the operator within 1.8 meters from the front of the main machine, the machine will prepare the machine to recover more rapidly from Energy Save mode.

d223c0072

LCIT heater (option)

The previous LCIT heater [A] was held in place by an adhesive strip. The new heater [B] is held in place with two screws. The installation procedure for the new heater is different.



d223c0068

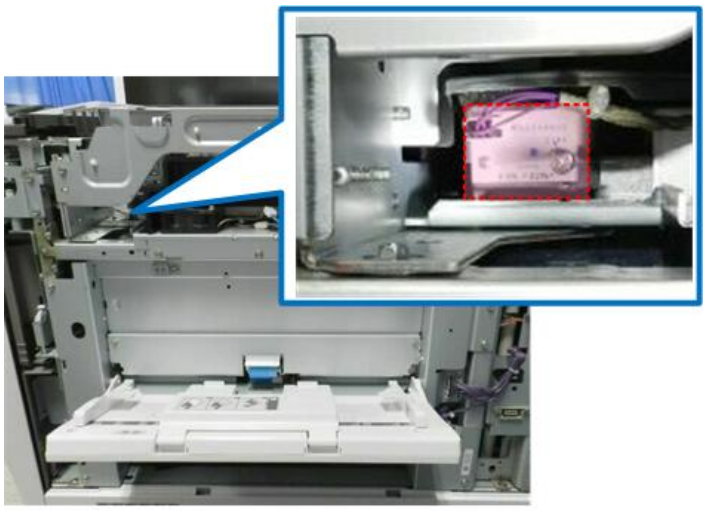
LD unit

With the previous machine, a label was attached to the new LD unit with SP settings (**SP2115-001 to 005**) that had to be entered manually from the operation panel. However, with this machine, you need only execute **SP2110-005** once to automatically download all the settings from the machine for the new LD unit.

d223c0042

Laser synchronization detector

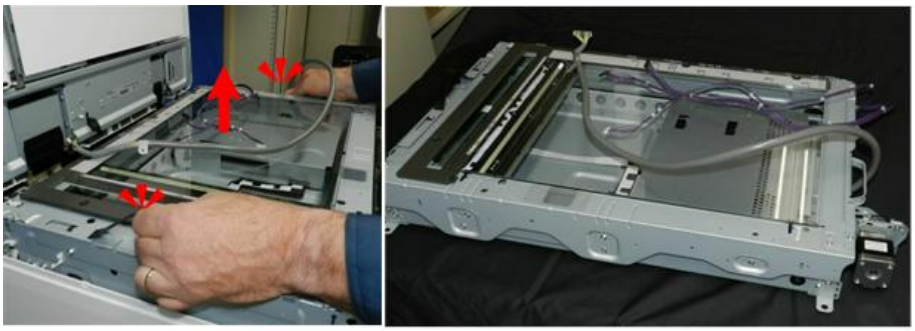
Removing the laser synchronization detector is much easier because there is nothing blocking it. With the previous machine, the development unit cooling fan bracket had to be removed in order to reach the detector.



d223c1114

Laser unit

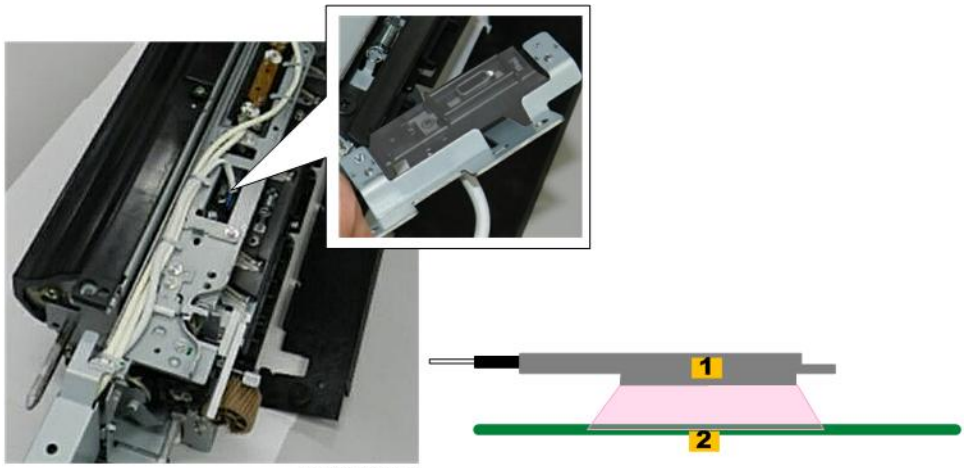
The scanner unit must be removed in order to service the laser unit below it.



d223c0034

NC sensor

The fusing unit has a new NC sensor. The NC sensor [1] is mounted above the heating roller [2] to monitor the temperature of the roller. The sensor employs two precision thermistors with infrared technology. Unlike a metal thermistor, an NC sensor is remote (it does not touch the component that it is monitoring).



d223c0057

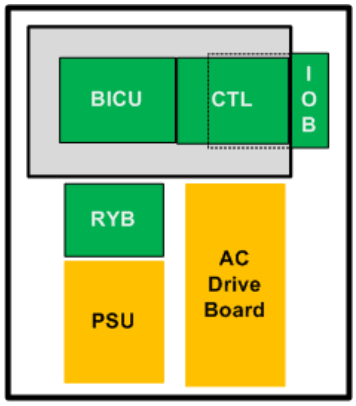
Operation panel

This machine has adopted the new Smart Operation Panel.

d223c0069

PCB layout.

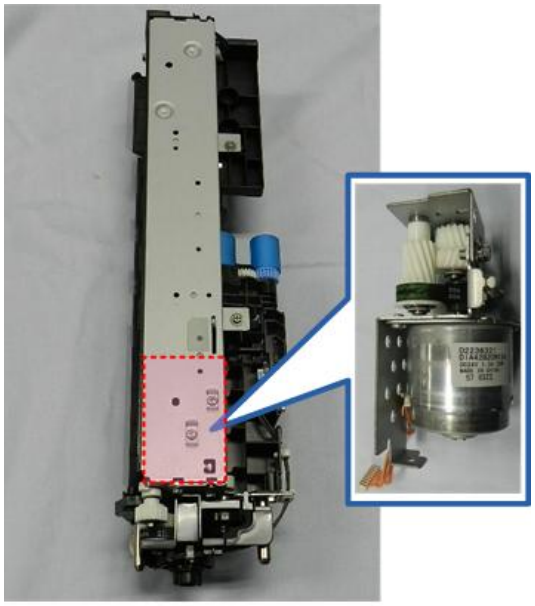
The layout of the main boards on the back of the machine has changed. In this machine the BICU (formerly BCU) and IOB have swapped positions. The BICU is in the controller box next to the controller board. The IOB is behind the controller box. The RYB and AC drive board are new boards. Several boards of the previous machine have been discarded (IPU, CTL-PSU, CNB, and DRB). The IPU functions have been taken over by the BICU.



d223c0061

PFU motors

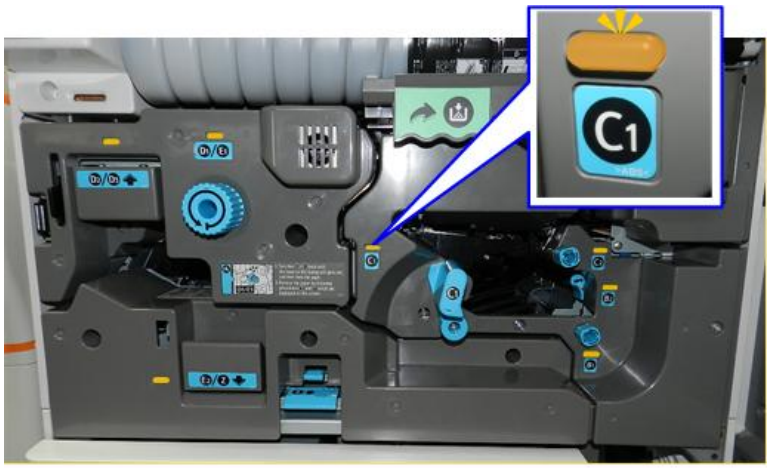
The paper feed motor of the D225 is no longer an external motor. It is encased in the PFU unit, just like the D223/D224. Also, the STM (stepper motor) has been replaced with a DCM (DC motor).



d223c0074

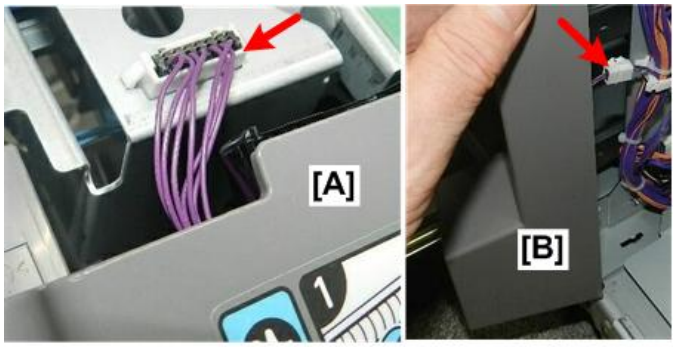
Paper jam handling

New LEDs are provided on the inner covers on the paper path. An LED will light when a jam occurs at its location. This makes it much easier to locate and remove jammed sheets. You must pay attention to these LED harnesses when removing a cover. The LED must be disconnected before a cover can be completely removed.



d223c1112

Every inner cover over the paper path, like the fusing unit cover [A] and vertical inner cover [B], has an LED harness that must be carefully disconnected before the cover can be removed. Inner covers must be removed with care in order to prevent damage to these connectors and harnesses.



d223c0073

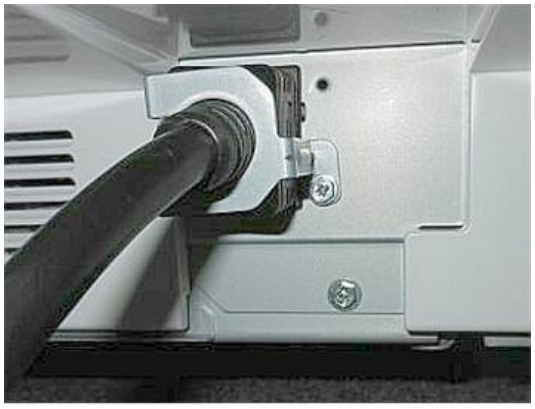
Potential sensor.

The new potential sensor is encased in a shield casing and is fastened over the top of the drum where it can read the drum potential, potential control gradation patterns, and ID sensor patterns between sheets immediately after the drum has been charged and the patterns have been written on the drum before they are developed with toner. The potential sensor [1] and the potential sensor power pack [2] are attached to the same bracket mounted above the surface of the drum.

d223c0058

Power cord.

The power cord is new. It is not permanently attached to the machine, so it must be connected and locked in place with a bracket held by one screw.



d223c1115

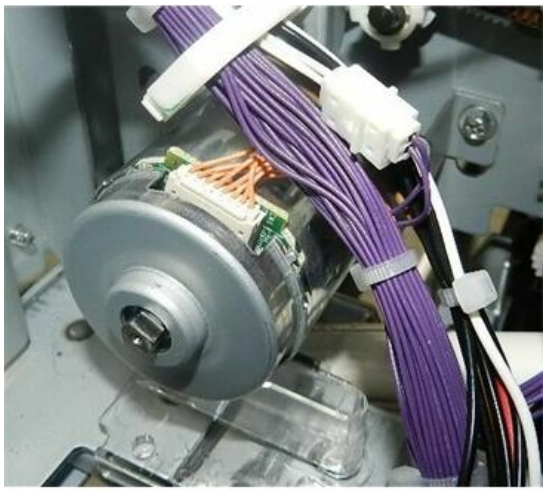
Rotation count sensor

A knob rotation count sensor has been added at the front left corner of the fusing unit. When a jam occurs in the fusing unit, the operator rotates the **D1/E1** knob until the LED goes out. Once the LED goes out the operator knows the jam can be removed at **D1** or **E1**. (The operator no longer has to count the number of knob rotations before trying to remove the jam.) A decal on the front of the fusing unit cover describes how to use this new feature.

d223c0067

STM to DCM

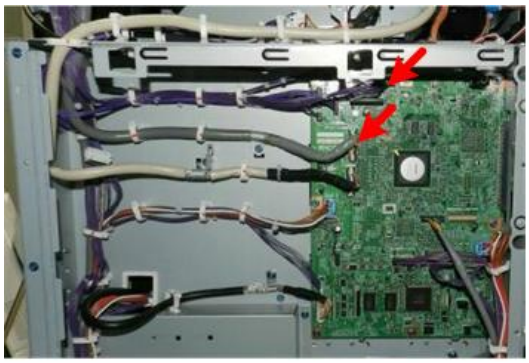
Most of the STM motors (Stepper Motors) of the previous machine have been replaced with DCM motors (DC Motors).



d223c0079

Scanner SIOB

There is no SIOB (Scanner Interface Board) in the scanner unit, the driver that controlled the sensors and scanner motor in the previous machine. These functions are controlled directly by the BICU. Both harnesses from the scanner unit connect directly to the BICU inside the controller box on the back of the machine.



d223c3103

Scanner unit

The exposure lamp has been replaced with a pair of exposure LEDs [1] and [2]. The 2nd LED doubles the intensity of the light so the CMOS element can pick up and produce a better image.

d223c0064

TD sensor

A new 24V TD sensor in the development unit is mounted on a longer bracket provided with bracket clamps for the sensor harness.

d223c3274

Temperature sensor

A temperature sensor near the drum unit monitors the internal temperature of the machine to ensure cool and efficient operation.

d223c0070

1.3.3 UNIT AND OPTION NAME AND NUMBER CHANGES

The main peripherals and other options are essentially the same as the same items for the predecessor machines. However, some of the item names and codes have changed due to changes in the shapes of external covers, cover colors, etc.

Main Machine and Peripheral Units

Note

- Changes are marked in **bold** in the right column.
- Make sure that you use the correct names and numbers when ordering peripheral units and options for this machine.

D131/D132/D133	D223/D224/D225
Mainframe (D131/D132/D133)	Mainframe (**D223/D224/D225**)
8 1/2"x14" Paper Size Tray Type 9002 (B474)	81/2" x 11" Paper Size Tray **M25** (B474)
A3/11" x 17" Tray Type 9001 (D482)	A3/11" x 17" Tray Type **M25** (**D615**)
Copy Tray Type 9002 (B756)	
Cover Interposer Tray CI4000 (D614)	Cover Interposer Tray **CI4040** (**DC3N**)
---	**Cover Interposer Tray CI4030 (D3D7)**
Finisher SR4060 (D611)	Finisher **SR4120** (**D3CG**)
Finisher SR4070 (D612)	Booklet Finisher **SR4130** (**D3CH**)
Finisher SR4080 (D610)	Finisher SR4080 (D610)
LCIT RT4010 (D613)	LCIT **4040** (**D3A6**)
Mailbox CS4000 (D616)	Mail Box **CS4010** (**D708**)
Multi Folding Unit FD4000 (D615)	Multi-Folding Unit FD4000 (D615)
Output Jogger Unit Type 9002A (B703)	Output Jogger Unit Type **M25** (**D3CJ**)
Output Jogger Unit Type 9002B (B513)	Output Jogger Unit Type **9002B** (B513)
Punch Unit Type 1075 3/2 (B531)	Punch Unit Type 1075 NA 3/2 (B531)
Punch Unit Type 1075 EU 2/4 (B531)	Punch Unit Type 1075 EU 2/4 (B531)

D131/D132/D133	D223/D224/D225
Punch Unit Type 3260 2/4 EU (B702)	Punch Unit **PU3060** EU (**D706**)
Punch Unit Type 3260 NA 3/2 (B702)	Punch Unit **PU3060** NA (**D706**)
Punch Unit Type 3260 SC (B702)	Punch Unit **PU3060** SC (**D706**)
Punch Unit Type 850 SC (A812)	Punch Unit Type 850 SC (A812)
Tab Sheet Holder **9002** (B499)	

Mainframe Options: External

D131/D132/D133	D223/D224/D225
---	**ADF Handle (D593)**
Card Reader Bracket (B498)	
Key Counter Bracket Type 1027 (B452)	Key Counter Bracket 1027 (B452)
---	NFC Card Reader Type M19 (D3BS)
USB2.0/SD Slot Type C (D464)	**Discontinued***1
*1 USB slot built into new operation panel	

Mainframe Options: Internal

D131/D132/D133	D223/D224/D225
Copy Connector Type 3260 (B328)	Copy Connector Type **M25** (**D3D3**)
Copy Data Security Unit Type F (B829)	---
Gigabit Ethernet Type B (D377)	---
Opt. Counter Interface Unit Type A (B879)	Opt. Counter Interface Unit Type M12 (**B870**)

Controller Options

Note

- Changes are marked in **bold** in the right column.

Controller Options: I/F Slots

Note

- Changes are marked in **bold** in the right column.
- These options are boards inserted into I/F slots on the faceplate of the controller board.

D131/D132/D133	**D223/D224/D225**
File Format Converter Type E (D377)	File Format Converter Type **M19** (**D3BR**)
IEEE1284 Interface Board Type A (B679)	IEEE 1284 Interface Board Type **M19** (**D3C0**)
IEEE802.11a/g Interface Unit Type J (D377)	IEEE 802.11 **a/g/n Interface Unit M19 (B3BR)**
IEEE802.11g Interface Unit Type K (D377)	---
---	Extended USB Board Type M19 (D3BS)

Controller Options: SD Cards, Built-in

Note

- Changes are marked in **bold** in the right column.
- These options are on SD cards inserted into the SD card slot on the faceplate of the controller board.
- The SD cards have been discontinued for some options, but the option has been built into the machine firmware (the SD card is no longer required).

SD Cards

D131/D132/D133	D223/D224/D225
Data Overwrite Security Unit Type H (D377)	Data Overwrite Security Unit Type M19 (D3BS)
PostScript3 Unit Type 9002 (D620)	PostScript3 Type M25
HDD Encryption Unit Type A (D377)	Built-in
Printer/Scanner Unit Type 9002 (D620)	Built-in
VM Card Type U (D640)	Built-in
---	IPDS Unit Type M25
---	OCR Unit Type M13 (D3AC)
---	SD Card for Fonts Type D (D641)
---	USB Device Server Option Type M19 (D3BC)
---	XPS Direct Print Option Type M25 (D3D4)

HDD

The Enhanced Security HDD Option Type M10 (D792) is an HDD.

Fax Options

Note

- Changes are marked in **bold** in the right column.

Fax Options

D131/D132/D133	D223/D224/D225
Fax Option Type 9002 (D619)	Fax Option Type **M25** (**D3D5**)
G3 Interface Unit Type 9002 (D619)	G3 Interface Unit Type **M25** (**D3D5**)
Fax Connection Unit Type E (D621)	Fax Connection Type **M25**
---	**SAF Memory Option (D3D5)**

INSTALLATION

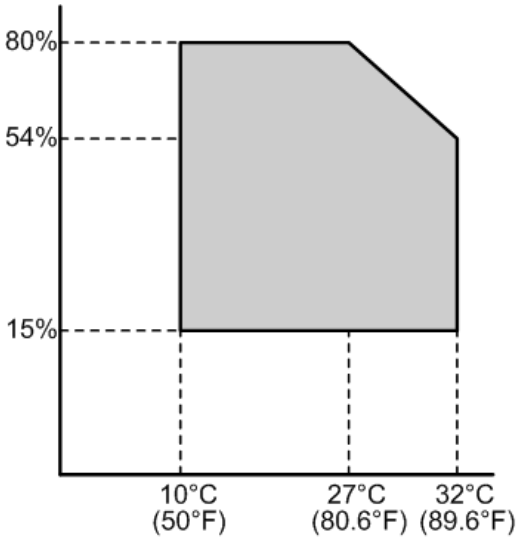
REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
210 ~ 211	10/26/2016	Removed step 7 from *Forced Start-up With No Encryption*
276	08/09/2016	Removed *Notes for Energy Mode Setting*.

2. INSTALLATION

2.1 INSTALLATION REQUIREMENTS

2.1.1 OPERATING ENVIRONMENT

1. Temperature Range
   - Recommended: 15°C to 25°C (59°F to 77°F)
   - Possible: 10°C to 32°C (50°F to 90°F)
2. Humidity Range:
   - Recommended: 30% to 70 %RH
   - Possible: 15% to 80% RH (27 °C 80%, 32 °C 54%)
3. Ambient Illumination: Less than 1,500 lux (do not expose to direct sunlight or strong light.)
4. Ventilation: Room air should turn over at least 3 times per hour
5. Ambient Dust: Less than 0.10 mg/m^3
6. The optimum operation range is shown in the shaded area of the illustration below. Performance of the machine outside this range cannot be guaranteed.



d223c1001

7. If the work site is air-conditioned or heated, do not place the machine where it will be:
   - Subjected to sudden temperature changes
   - Directly exposed to cool air from an air-conditioner
   - Directly exposed to heat from a heater
8. Do not place the machine where it will be exposed to corrosive gases.
9. Do not install the machine at any location over 2,000 m (6,500 feet) above sea level.
10. Place the copier on a strong and level base with the front and back of the machine within ±5 mm (0.2") of level.

11. Do not place the machine where it may be subjected to strong vibrations.
12. Do not connect the machine to a power source shared with another electrical appliance.
13. The machine can generate an electromagnetic field which could interfere with radio or television reception.

2.1.2 MACHINE LEVEL

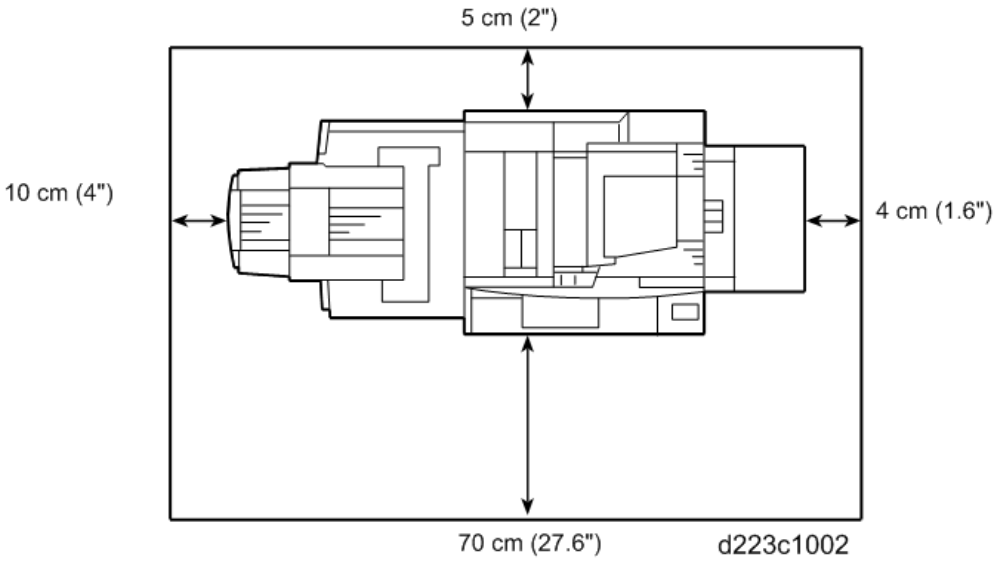
Front to back: Within ±5 mm (0.2") of level

Right to left: Within ±5 mm (0.2") of level

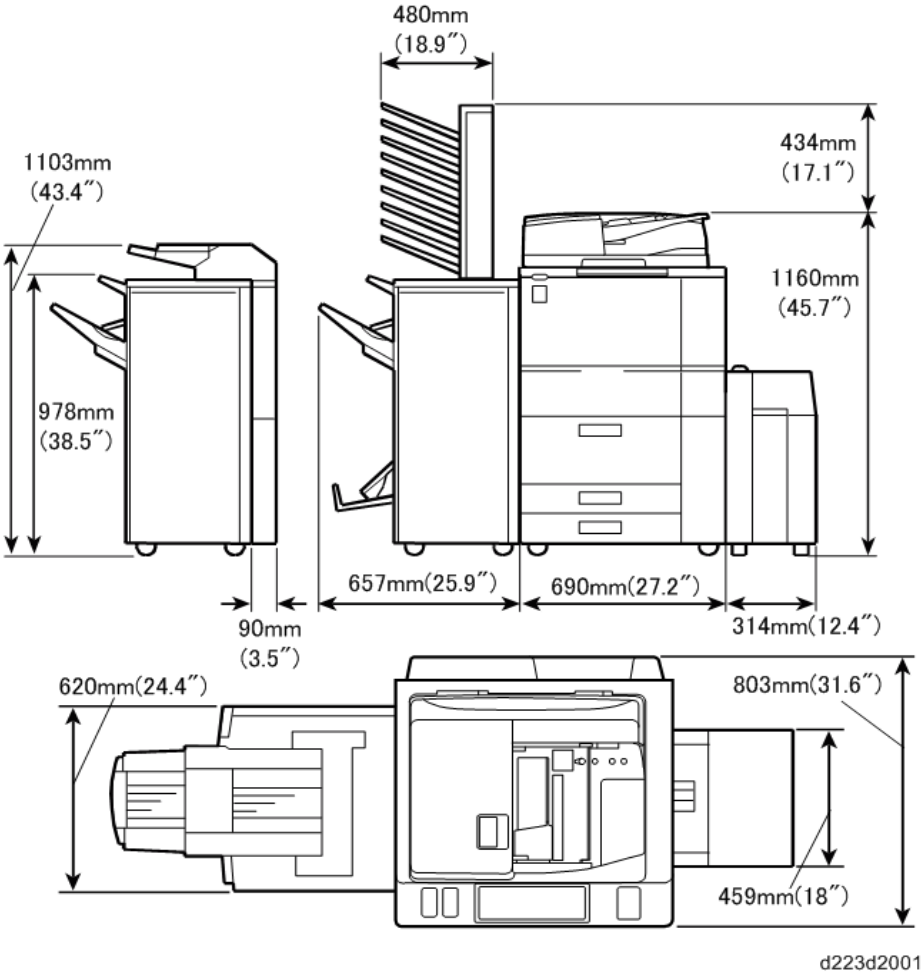
The machine legs may be screwed up or down in order to level the machine. Set a carpenter’s level on the exposure glass.

2.1.3 MINIMUM SPACE REQUIREMENTS

Place the machine near the power source with minimum clearance as shown below. The same amount of clearance is necessary when optional peripheral devices are installed.



2.1.4 DIMENSIONS



2.1.5 POWER REQUIREMENTS

⚠CAUTION

- Make sure that the wall outlet is near the main machine and easily accessible so it can be unplugged in an emergency.
- Make sure the plug is firmly inserted in the outlet.
- Avoid multi-wiring.
- Be sure to ground the machine.
- Never place anything on the power cord.

Input voltage level	North America 120 V, 60 Hz: 20 A or more
	Europe/Asia 220 V to 240 V, 50 Hz/60 Hz: 10 A or more
	Taiwan 110V, 60 Hz, 20A or more
Permissible voltage fluctuation	±10%

⚠CAUTION

- Never turn off the power switch when the power LED on the operation panel is lit or flashing.

The Main Power LED lights or flashes:

- While the platen cover or ADF is open
- While the main machine is communicating with the network server
- While the machine is accessing the hard disk or memory when reading or writing data.
- There is only one power switch at the upper left corner of the machine. There is no power switch on the operation panel.
- When you turn the machine off, a message will appear and tell you that it may take as long as 2 minutes for the machine to switch off. Wait for this message to go off.
- Never unplug the machine from its power source until the message power off screen on the operation panel goes off.

2.2 MAIN MACHINE

2.2.1 ACCESSORY CHECK

Check the accessories and their quantities against this list:

No.	Description	Q'ty
1.	Model Name Decal (-29 Only)	1
2.	Operation Instructions (-17, -19, -21, -29, -57 Only)	2
3.	Leveling Shoes (Front)	2
4.	Decal – Paper Size	1
5.	Decal: Caution Chart: Paper Set: Direction	1
6.	Leveling Shoe	2
7.	Decal – Cleaning - Multiple	1
8.	Cloth – Exposure Glass	1
9.	Cloth Holder	1
10.	Decal – Toner Supply - Multiple	1
11.	Decal: Power Source: Off	1
12.	Decal Exposure Glass: Multiple	1
13.	Decal – D1/E1 Multiple	1
14.	EU Safety Sheet (-27, -67 only)	1
15.	Ferrite Core (GRFC-13)	1
16.	EULA Sheet: 18 languages (-28, -57, -67 only)	1
17.	Decal: License Agreement 18 Languages (-28, -57, -67 only)	1
18.	TEL Name Sheet (-21 only)	1

2.2.2 INSTALLATION FLOW

No.	Step
	Before Power On
1	Remove Tapes and Shipping Materials
2	Attach Power Cord to Machine
3	Remove Development Unit
4	Load Developer
5	Re-install Development Unit
6	Set Toner Bottle
7	Set Tandem Tray for A4 or LT Paper
8	Level the Machine
9	Attach Cleaning Cloth Holder
10	Connect Drum Heater, Tray Heater (Optional)
11	Load Paper, Attach Decals
12	Attach Nameplate
	After Power On
13	Initialize Toner and Process Control Settings
14	Check Image Quality and Settings
15	Important Notice on Security Issues
16	Auto Remote Firmware Update Settings
17	@Remote Settings
18	Security Settings

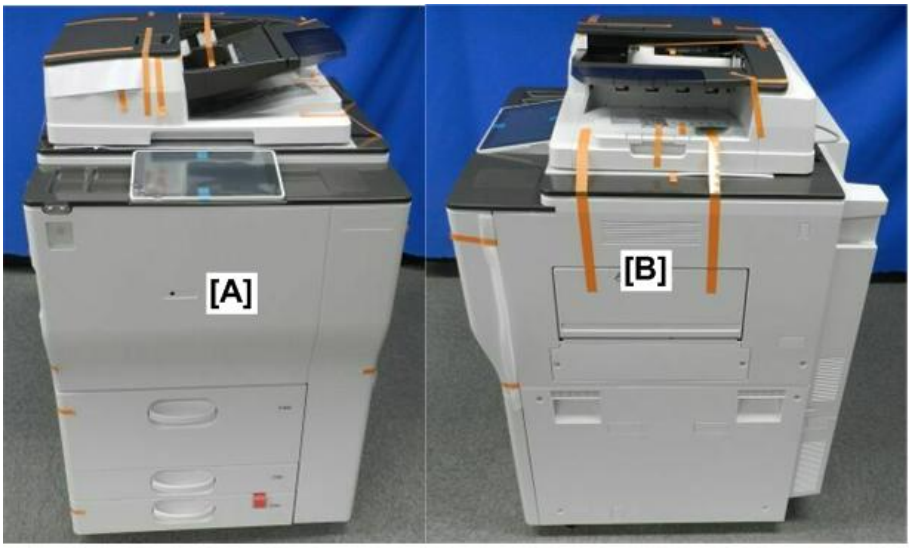
2.2.3 INSTALLATION PROCEDURE

Remove Tapes and Shipping Materials

1. Remove the cover [A].
2. With four people, one person at each corner of the machine, lift the machine slightly while a 5th person slides the pallet [B] from under the machine.

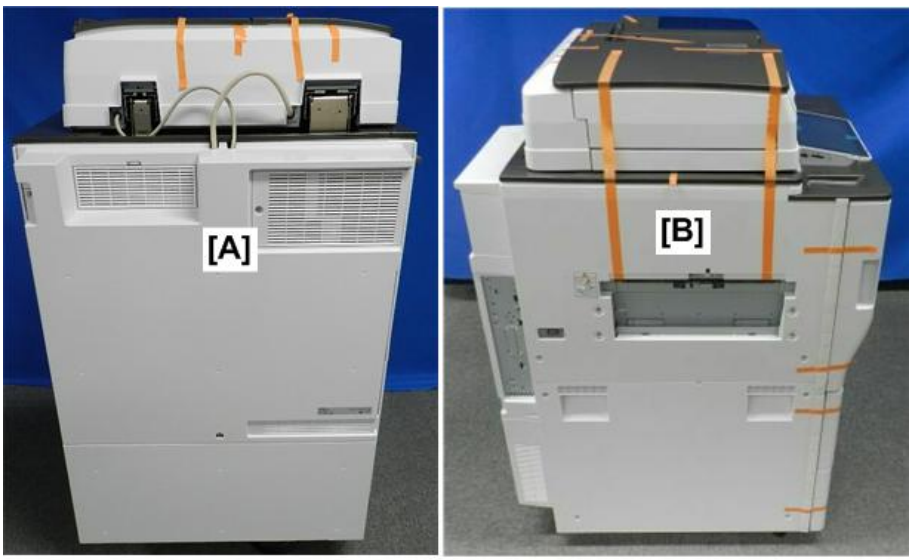
d223c1004

3. Remove visible orange tape and cardboard strips from the front [A] and right side [B] of the main machine.



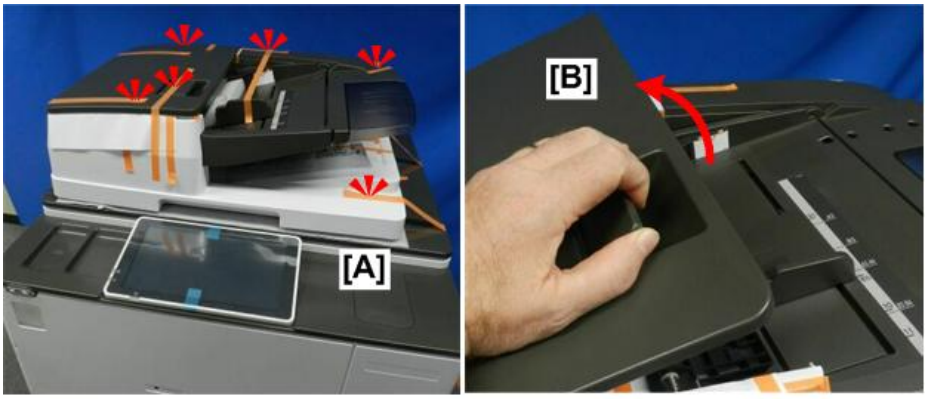
d223c1005

4. Remove tape and cardboard strips from rear [A] and left side [B].



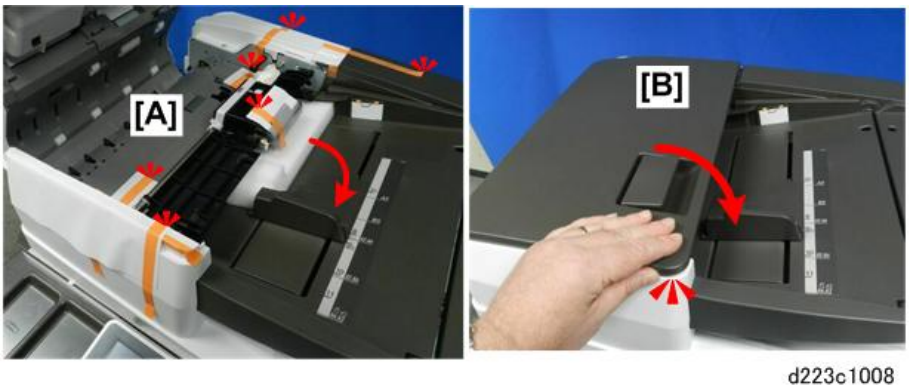
d223c1006

5. Remove tapes from the surface of ADF [A].
6. Open ADF [B].



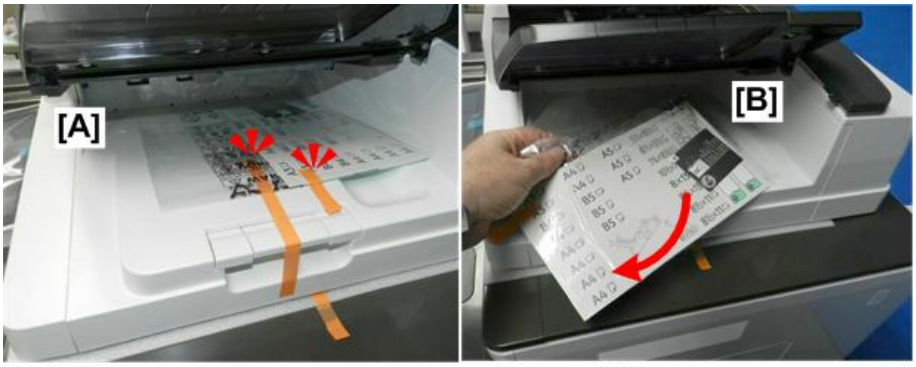
d223c1007

7. Remove all tape and packing material inside the ADF [A].
8. Close ADF [B].



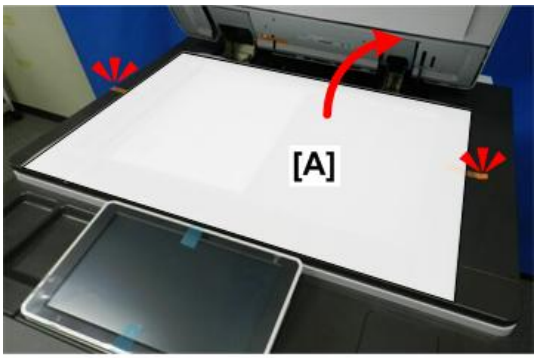
d223c1008

9. Remove tapes under original output tray [A].
10. Remove accessory decals [B].



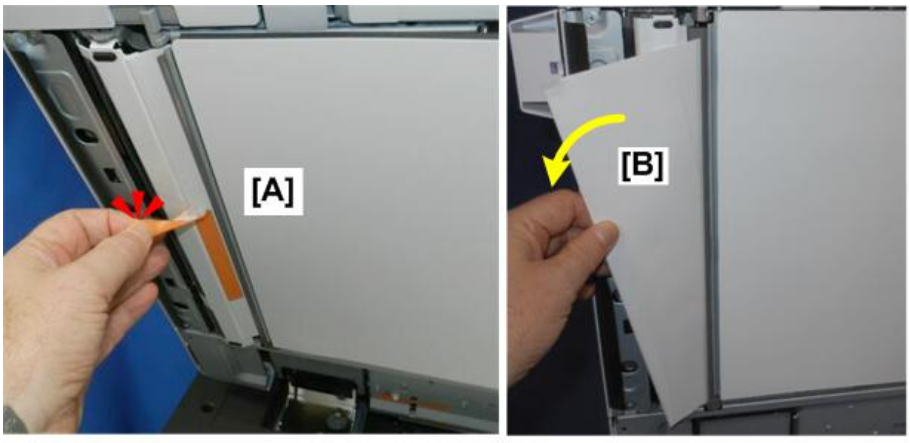
d223c1009

11. Raise the ADF, and then remove cover sheet [A].



d223c1010

12. Raise the ADF and remove tape [A].
13. Pull the sheet [B] out from behind the white plate. The sheet is white and difficult to see. The tape is a reminder to pull this sheet.



d223c1013

14. Remove tape [A] above rear scale.

d223c1102

15. Remove tape [A] from left scale of the exposure glass.

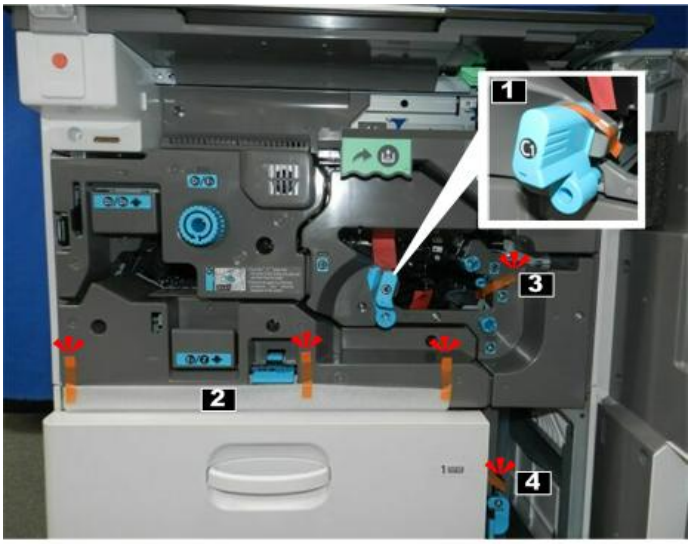
d223c1014

16. Remove protective sheet from operation panel display.

d223c1015

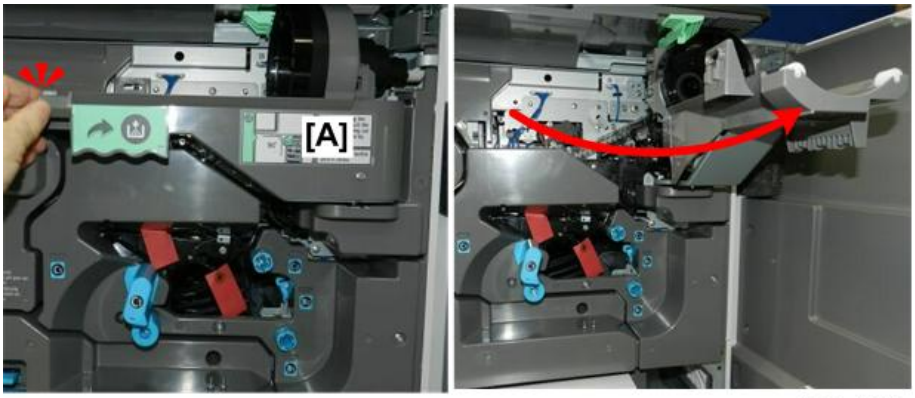
17. Open the front door.

18. Remove tape and sheets at [1], [2], [3], [4].



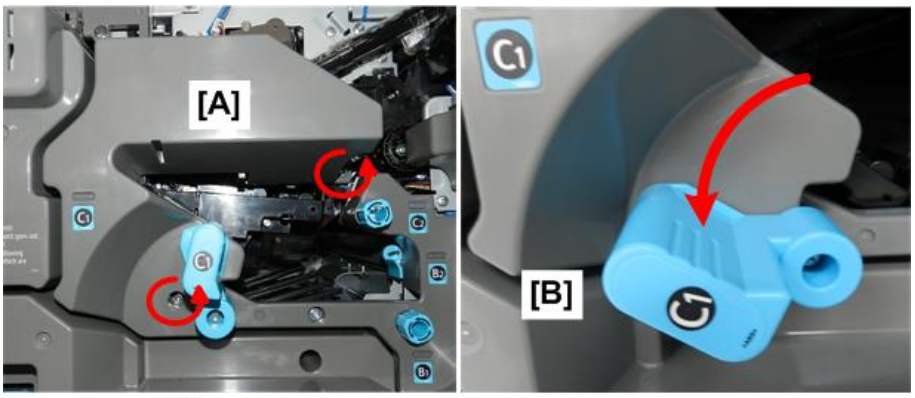
d223c1016

19. Swing open the toner bottle holder [A].



d223c1018

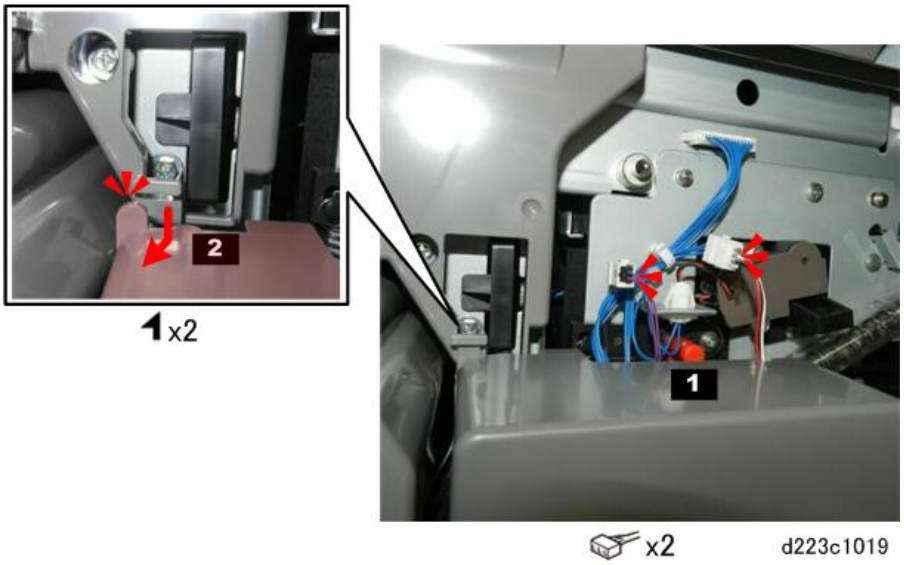
20. Disconnect PCU inner cover [A].
21. Rotate lever C1 [B] down. The lowers the transfer belt unit.



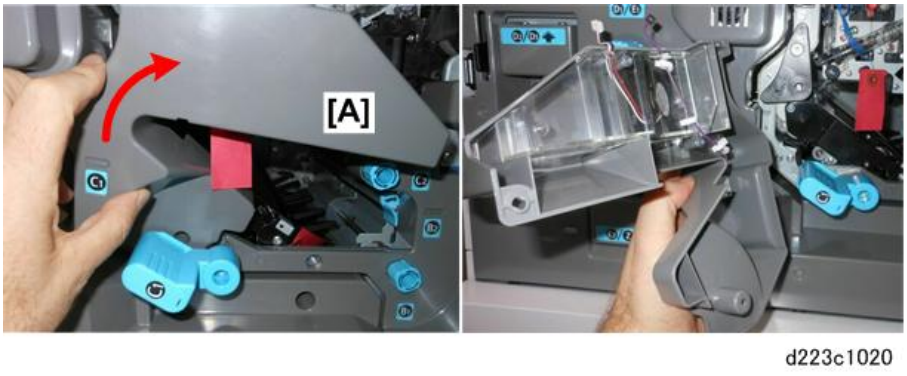
x2

d223c1017

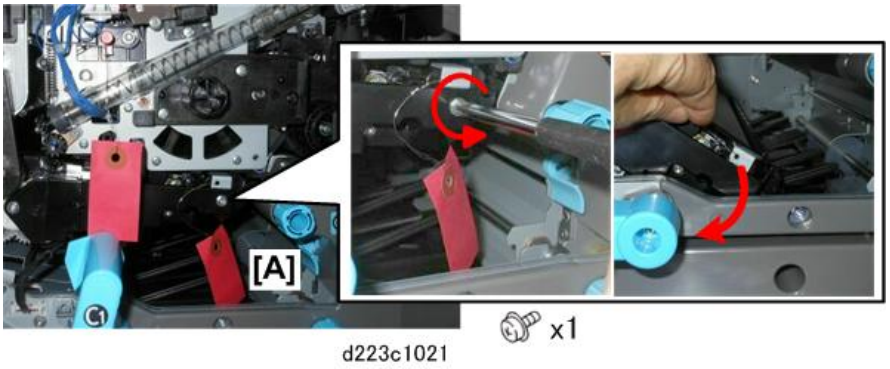
22. Disconnect PCU inner cover at [1], and then disengage its corner tab at [2].



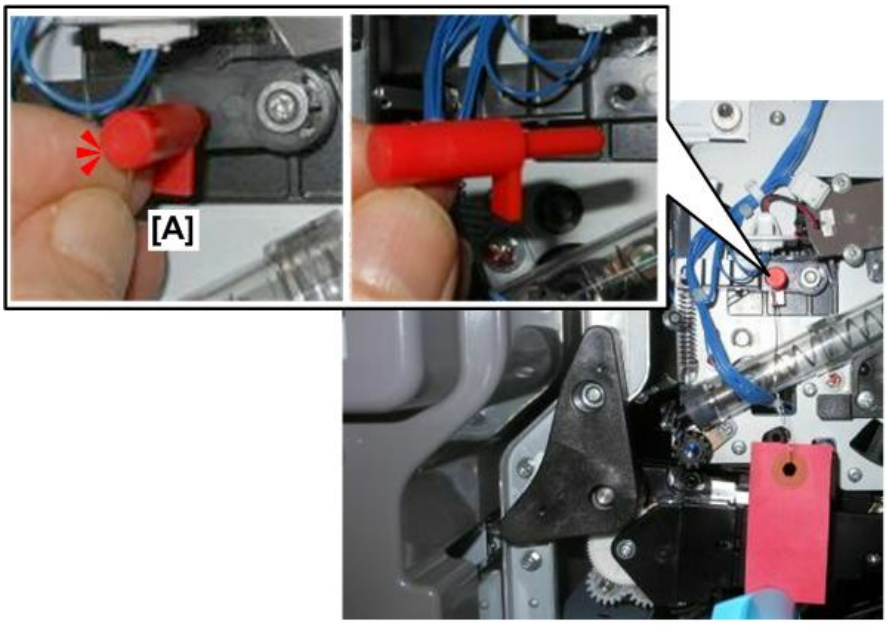
23. Raise PCU inner cover [A] and then remove it.



24. Remove bracket, wire, red tag [A].



25. Remove plug, wire, red tag [A].



d223c1022

26. Open the bottom tray.

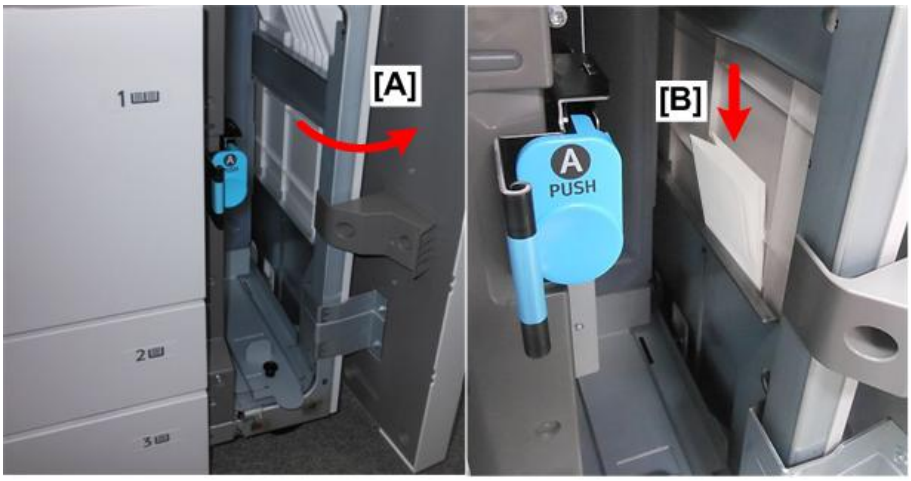
d223c1023

27. Remove factory data sheet from the right side of the bottom tray. This is a list of the default settings of important SP codes.

d223c1011

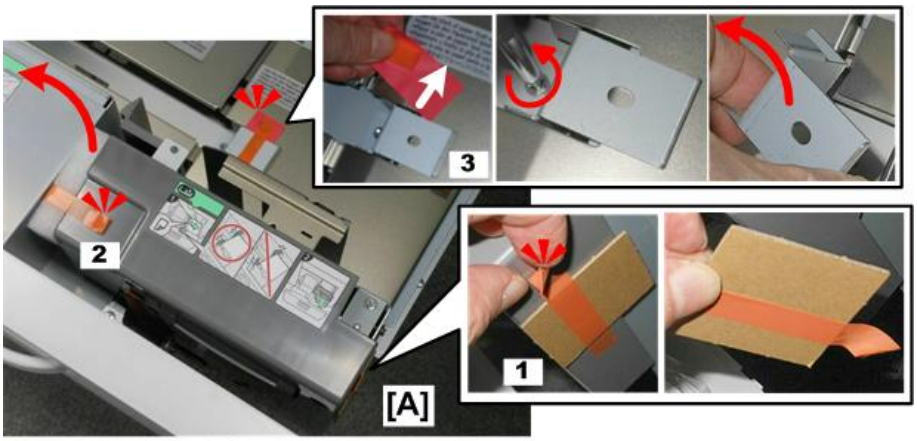
28. Open the front door [A].

29. Fold the data sheet [B] and store it as shown for future reference.



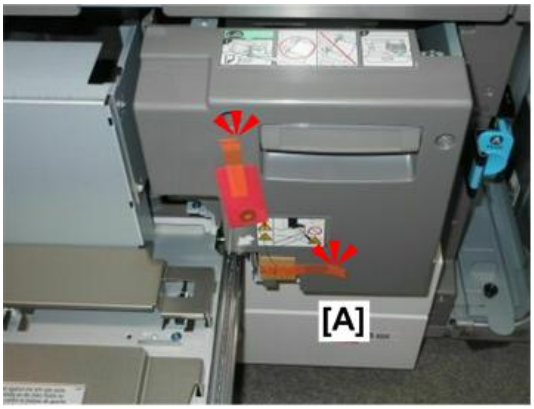
d223c1091

30. Inside the tandem tray [A], remove tape and spacer [1].
31. Remove tape and cushion [2].
32. Remove red tag, wire, and bracket [3].



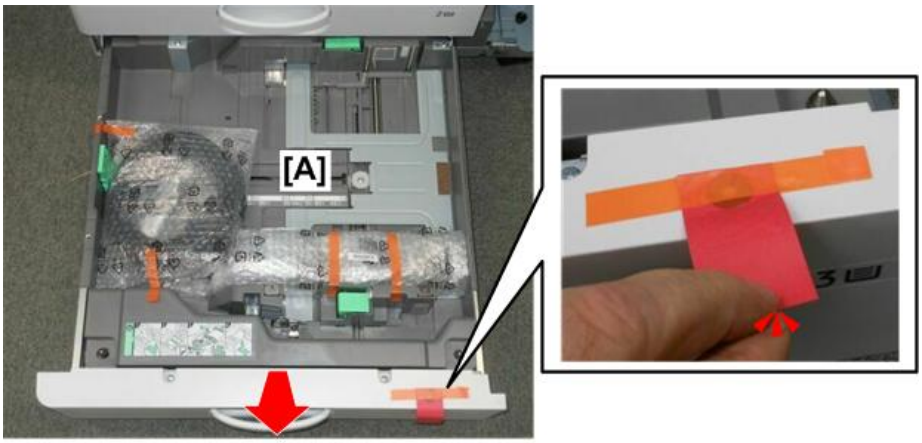
x1 d223c1024

33. Remove tape and packing from the face of right tray [A].



d223c1025

34. Open Tray 2 [A], and then remove tape and red tag on the corner.



d223c1026

35. Remove packing on the right, and then unpack it. This is the power cord, bracket, and bracket screw.

d223c1027

36. Remove packing on the left, and then unpack it. These are [1] Front leveling shoes, [2] rear leveling shoes, [3] glass cleaning cloth and cloth holder.

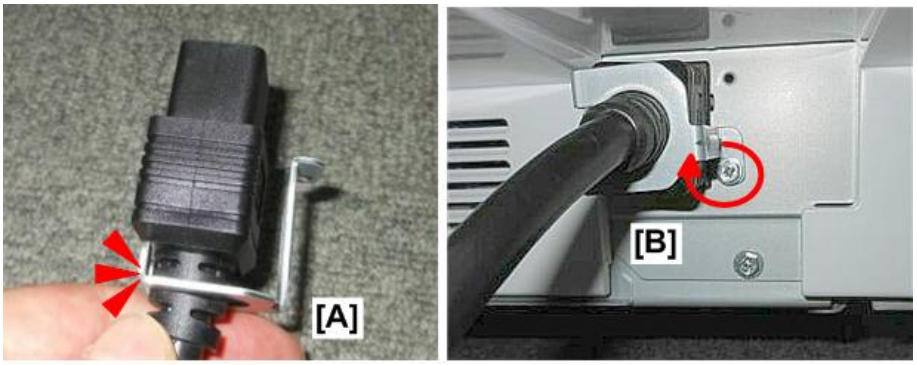
d223c1028

Attach Power Cord to Machine

1. Locate the power connection point [A] on the left rear corner of the main machine.
2. Attach the safety bracket [B] near the end of the power plug.

d223c1029

3. Set bracket [A] into the slot.
4. Plug the cord [B] into the machine, and then fasten the bracket.



x1

d223c1030

⚠WARNING

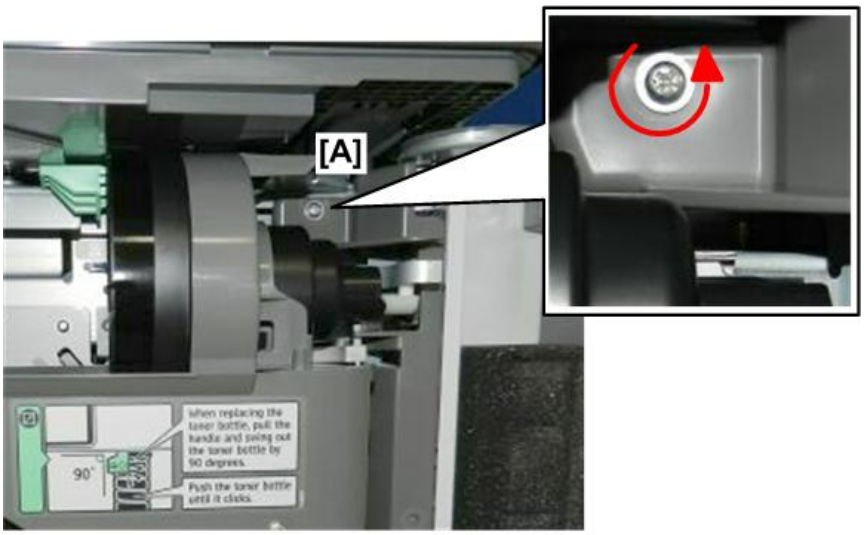
- Do not connect the power cord until you are instructed to do so.

Remove Development Unit

1. If the LCIT is connected to the right side of the machine, disconnect it and pull it away.
2. Prepare a clean, flat surface for the development unit.
3. Open the developer kit box and take out the protective sheet [A] and developer pack [B].
4. Unwrap the sheet and spread it on a flat clean surface [C].

d223c1103

5. Disconnect shuttle cover [A].

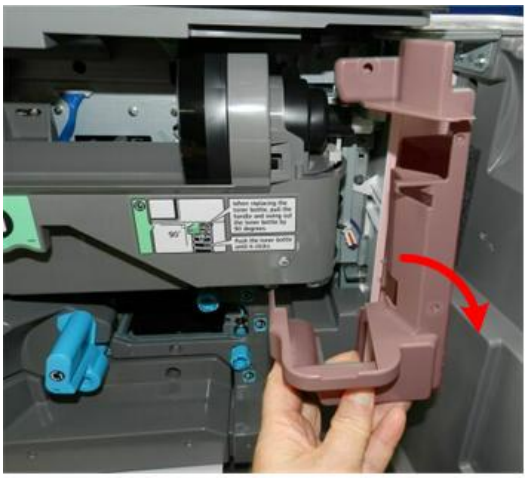


x1 d223c1031

Important

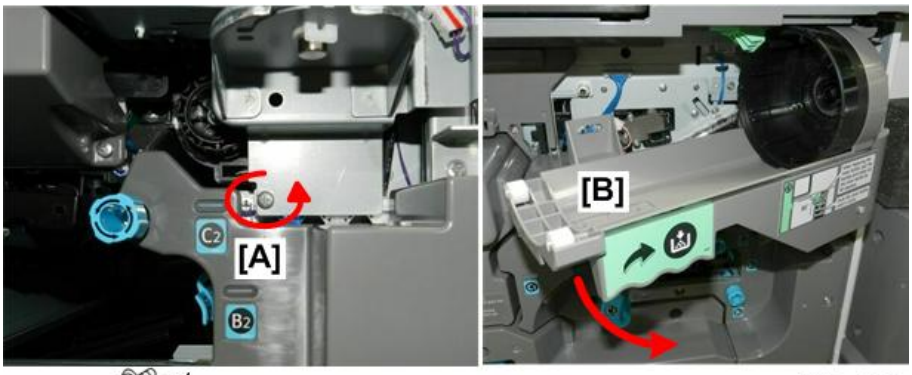
- A washer is attached to the shuttle cover screw in order to prevent the screw from falling into the machine. Turn the screw counter-clockwise only enough turns to remove it. If you loosen the screw too much the washer will fall into the machine.

1. Remove shuttle cover.



d223c1032

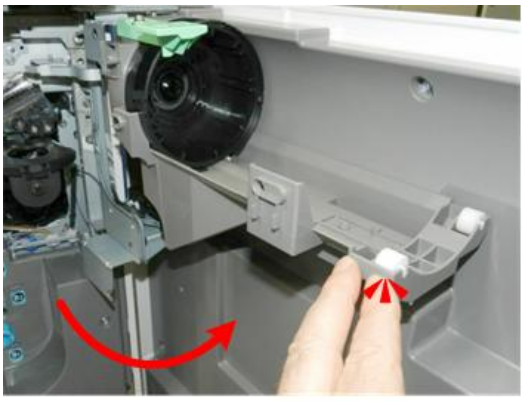
2. Remove lock screw [A].
3. The toner bottle holder [B] springs open slightly as soon as the screw is removed.



x1

d223c1033

4. Push the front door slightly to the right, and then swing the holder out as far as it will go.

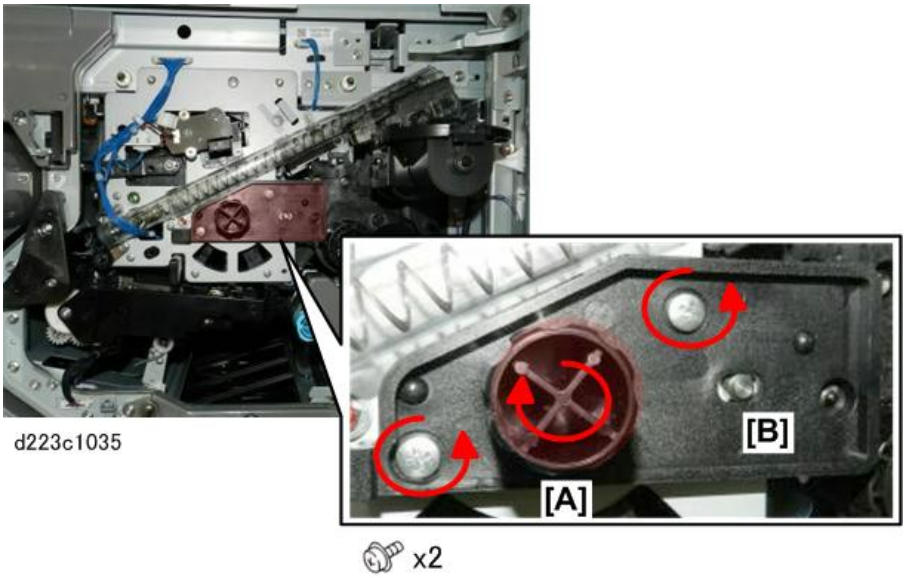


d223c1034

Important

- The door must be completely open. If it is not, then it will block removal of the development unit.
- The LCIT must be disconnected from the right side of the machine to allow the front door to open completely.

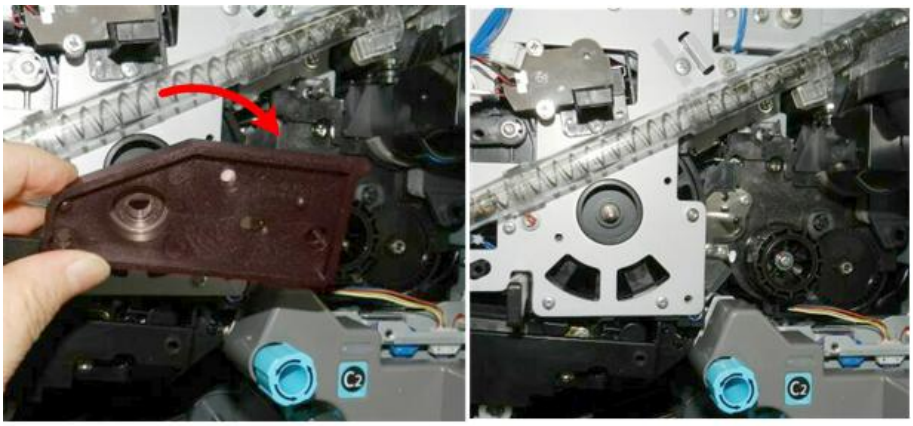
5. Remove knob [A]. (This is a reverse thread. Turn it **clockwise** to remove it).
6. Disconnect development unit faceplate [B].



d223c1035

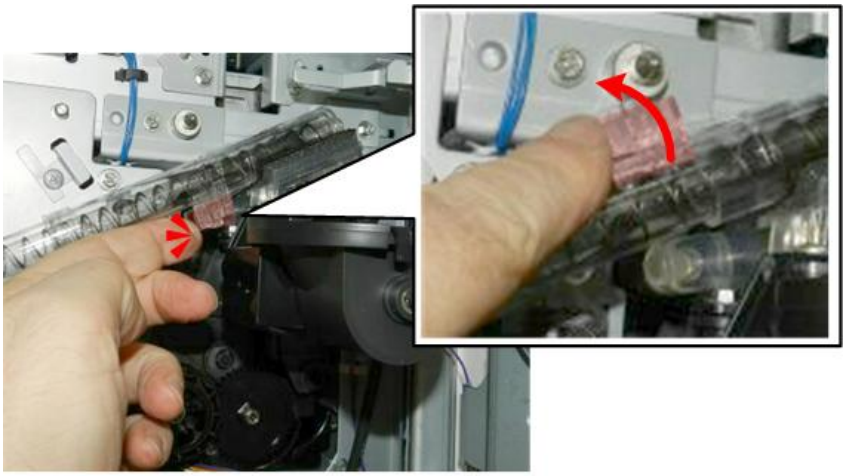
x2

7. Remove development unit faceplate.



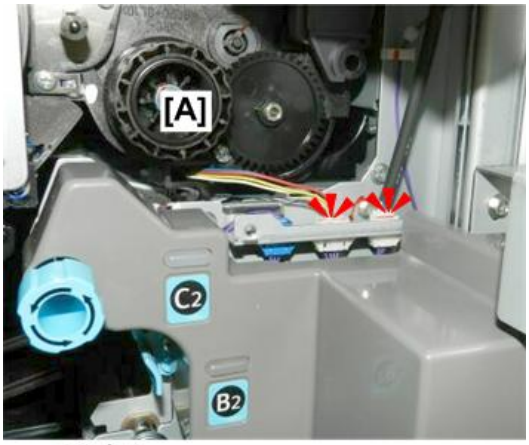
d223c1036

8. Raise the toner supply pipe shutter to close the pipe.



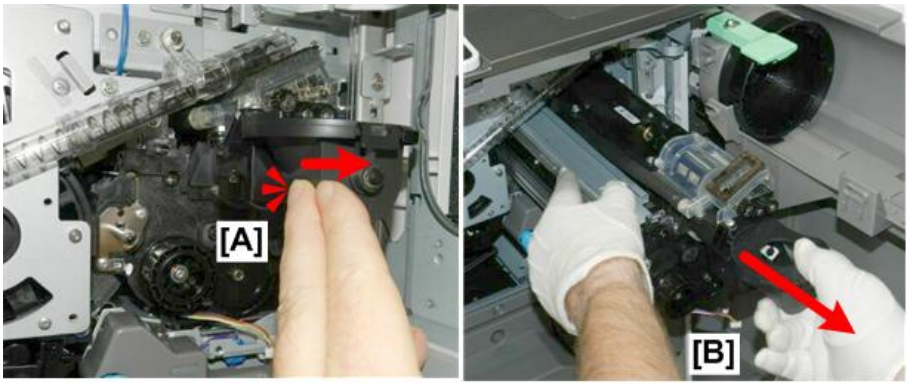
d223c1037

9. On the right [A] disconnect the development unit.



x2 d223c1038

10. Slip the development unit [A] to the right.
11. Push the development unit [A] slightly to the right, and then pull the unit [B] straight out of the machine.



d223c1039

12. Lay the development unit on the prepared surface.

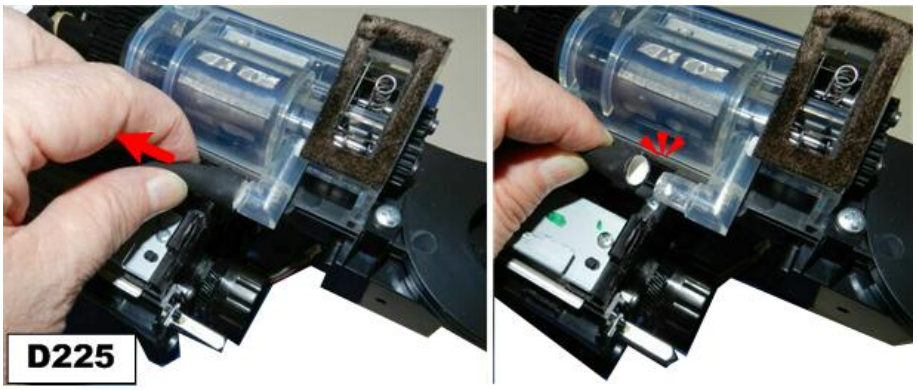
d223c1104

Load Developer

1. At the front end of the unit, disconnect the pressure release tube.

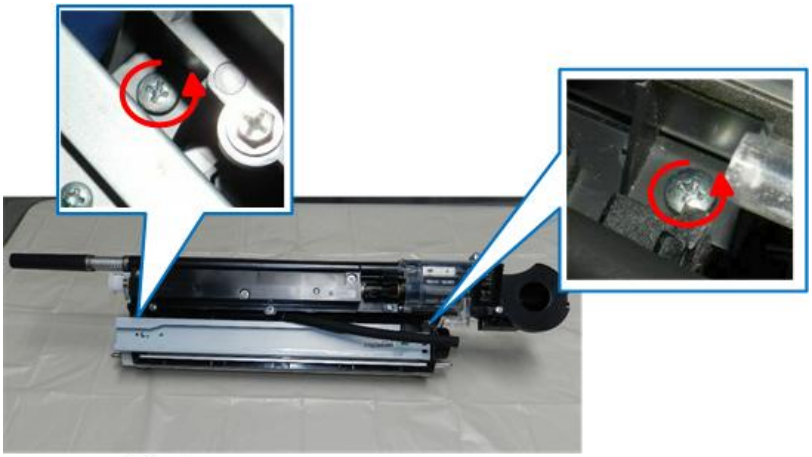
   Important

   - Only the D225 Model has this pressure release tube. This step is not required for the D223/D224 models.



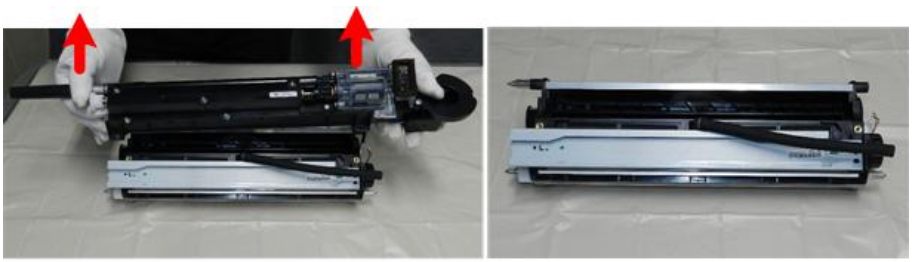
d223c1041

2. Disconnect the toner hopper.



x2 d223c1042

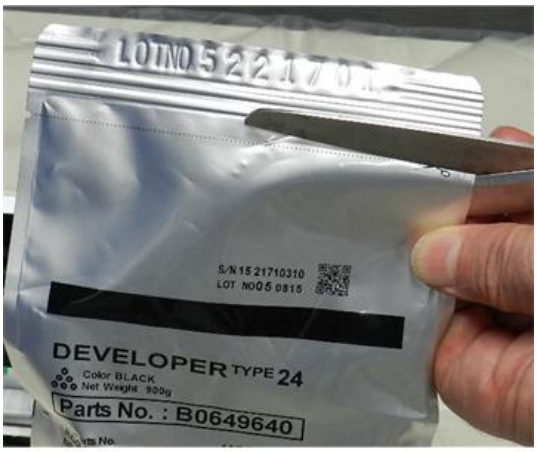
3. Rotate the toner hopper slightly as you lift it.
4. Remove the toner hopper and set it aside.



d223c1043

5. Shake the developer pack to loosen the developer inside.

6. Cut off the top of the pack.

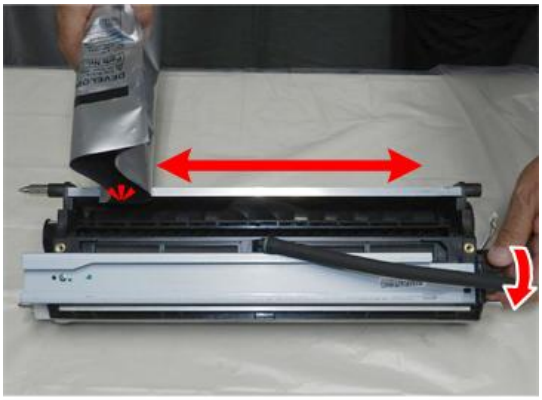


d223c1105

7. Save the top with the lot number embossed on it. You will need to enter this number later with **SP2963-002**.

d223c1106

8. While turning the knob slowly in the direction of the arrow as shown below, move the open end of the pack side to side as you continuously pour developer into the open slot of the development unit.

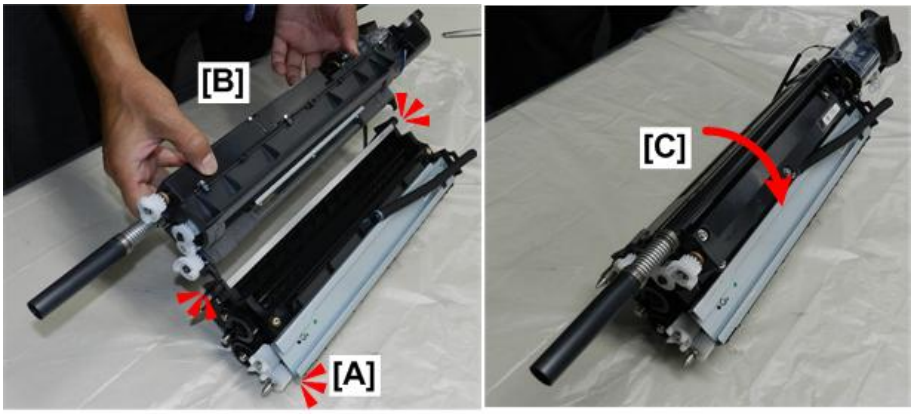


d223c1044

Re-install Development Unit

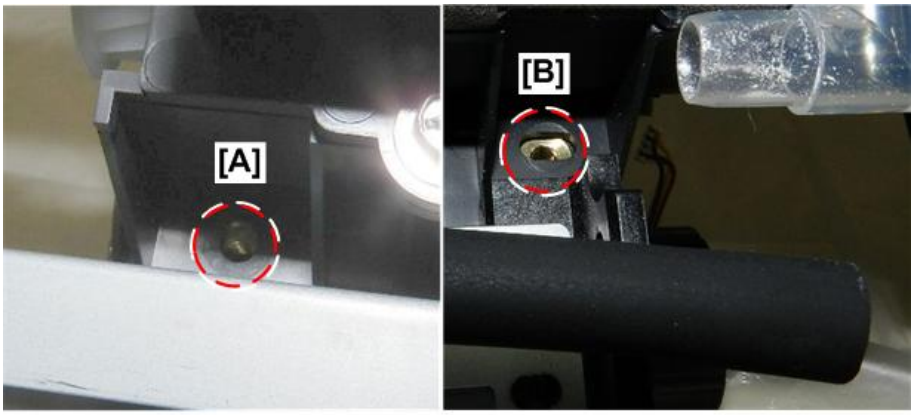
Pay attention to these important points as you re-install the development unit.

- To re-assemble the top and bottom half of the development unit, first allow the bottom half [A] to tip slightly forward.
- Hold the top half [B] (toner hopper) over the bottom half, set the cutouts on the ends of the shaft below, and then slowly rock the top half forward [C] so the holes are aligned.



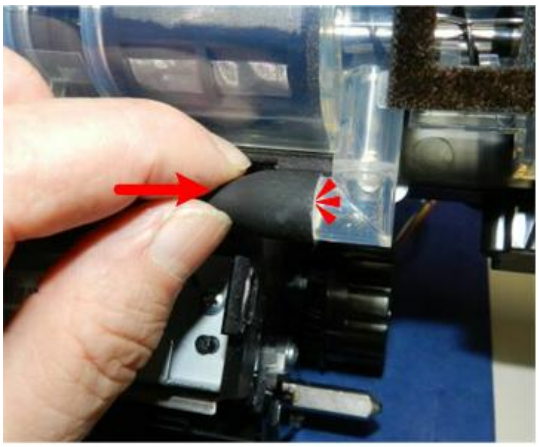
d223c1107

- Make sure that the holes are aligned at the rear [A] and front [B], and then fasten the screws.



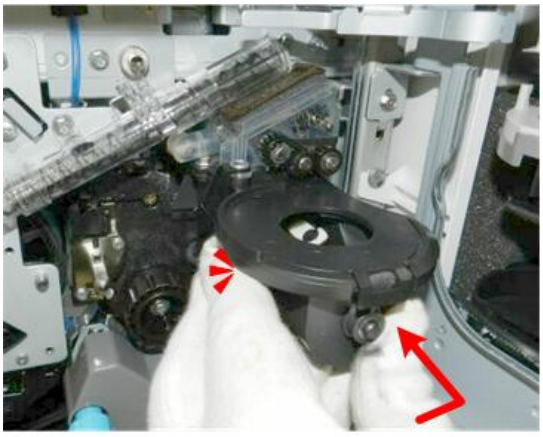
d223c1108

- If you are installing a D225, be sure to re-connect the pressure release tube at the front of the development unit.



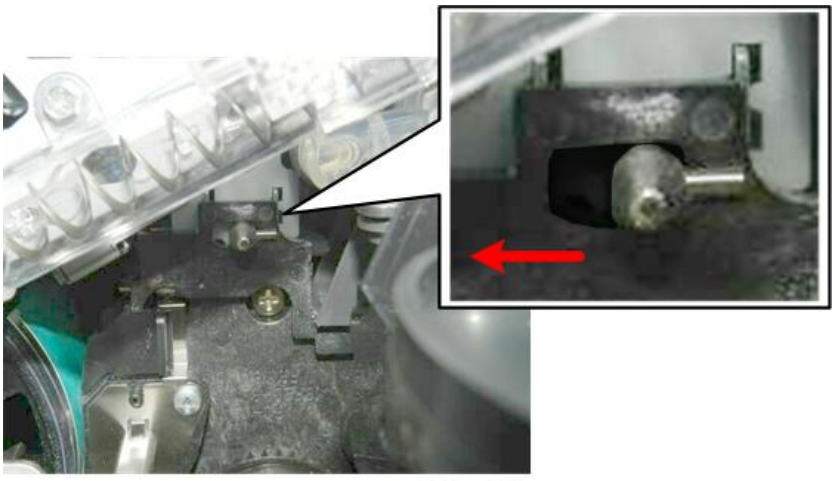
d223c1045

- Slip slightly to the right as you push it slowly back into the machine.



d223c1047

- Push the development unit in until it stops, and then push it to the left.
- You should see the pin through the oval hole as shown below. This means the unit is locked in the correct position.



d223c1049

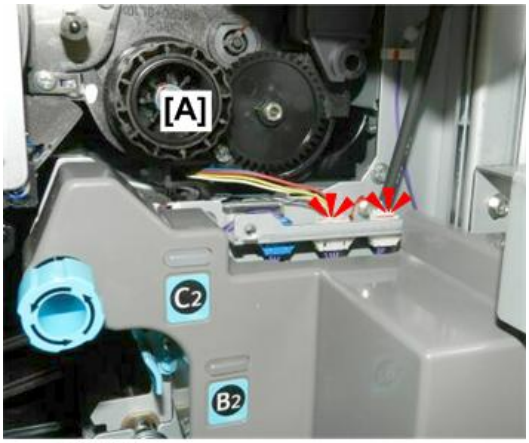
- The horizontal pin must be through the hole and overlapping the plate as shown below on the left.

d223c1050

Note

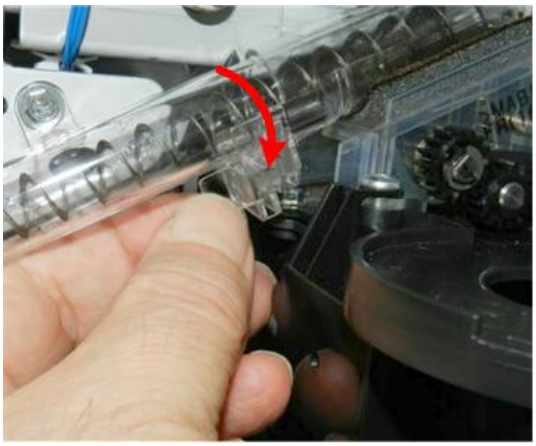
- If the pin does not slide over the plate as shown above, turn the front gear of the development unit counter-clockwise and try again.

- Be sure to re-connect the development unit [A].



x2 d223c1038

- You must remember to lower the supply pipe shutter so the pipe is open.

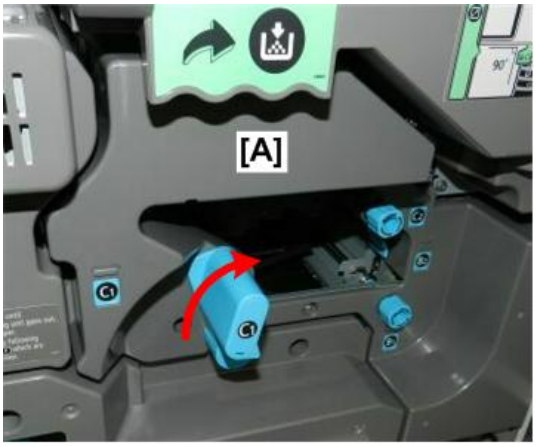


d223c1052

Important

- The shutter must be down. If it remains up, you will not be able to close the toner bottle holder and the front door.

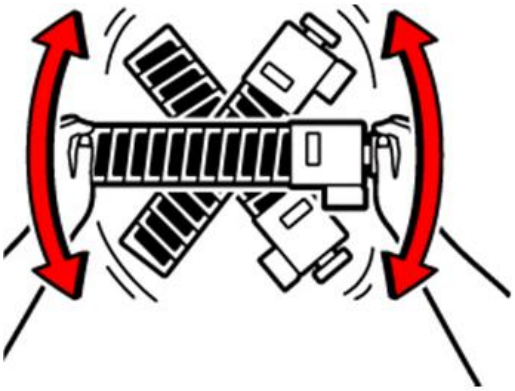
- Be sure to raise lever C1 before you close the door. (The front door will not close if C1 is down.)



d223c1053

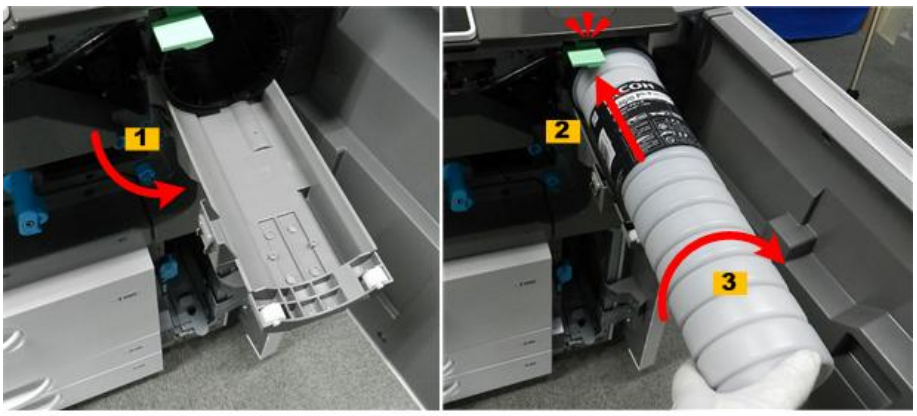
Set Toner Bottle

1. Rotate the bottle at least 10 times to make sure that the toner inside is loose.



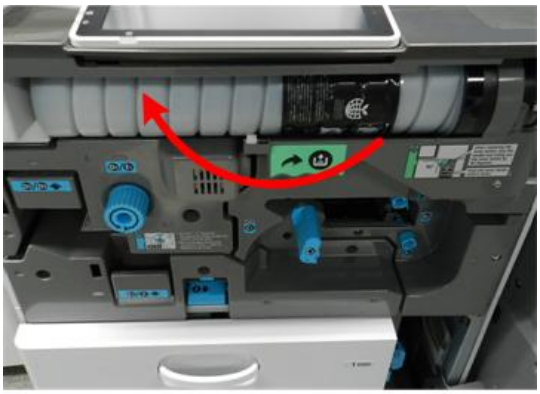
d223c1116

2. Remove toner bottle cap.
3. Swing out the toner bottle holder as shown [1]
4. Set the toner bottle in the holder [2], push it in until you hear a click, and then turn it clockwise [3] to lock it in place.



d223c1109

5. Swing the toner bottle and holder to the left against the front of the machine.



d223c1110

Set Tandem Tray for LT or A4 Paper

Before You Begin

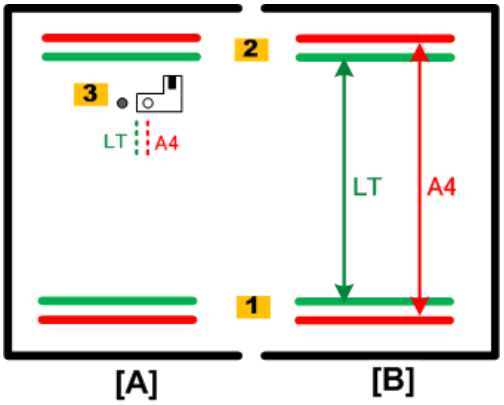
The tandem tray (Tray 1) can accommodate either letter (LT) or A4-size paper, depending on how the side fences are set. The tray is set for either LT or A4 paper before the machine leaves the factory, depending on the destination of the machine.

1. Open Tray 1 and pull it out completely.
2. Check the position of the screw on the upper right corner of the left tray. The position of the screw tells you how the tandem tray is set (LT or A4).
3. In the illustration:
   [1] Tray is set for LT (letter-size) paper.
   [2] Tray is set for A4-size paper.

d223c1055

There are two trays in the tandem tray, a left tray [A] and a right tray [B]. If you want to change the setting to LT or A4, you need to do five adjustments.

- Change the positions of the front side fences [1] in both the left and right tray.
- Change the positions of the rear side fences [2] in both the left and right tray.
- Change the position of the left tray sensor [3] in the left tray.



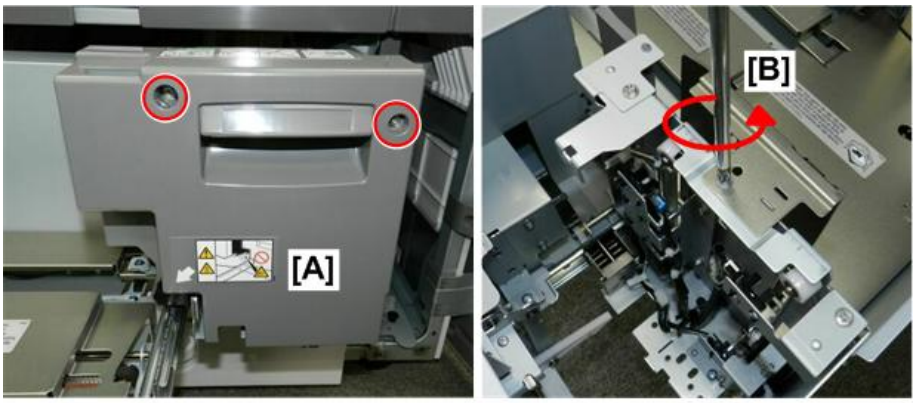
d223c1056

Important

- The following procedures show you how to switch the tandem tray from LT to A4 size paper.

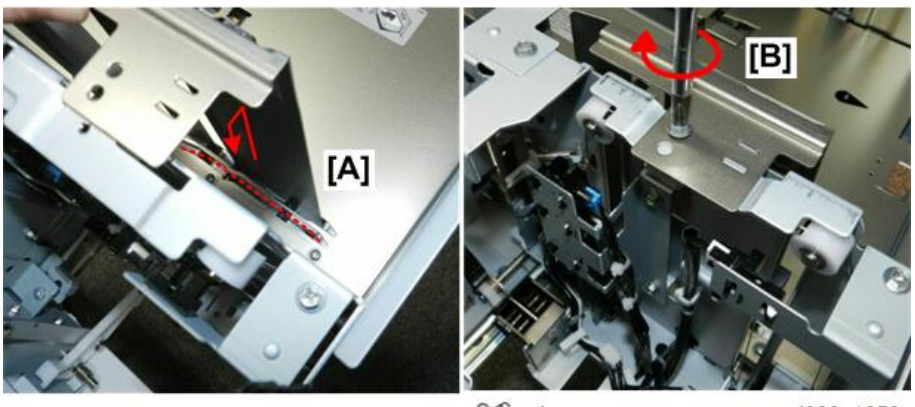
Right Tray Side Fences

1. Push right tray to the rear.
2. Remove the right tray faceplate [A] (x2).
3. Remove the screw of the right tray front fence [B].



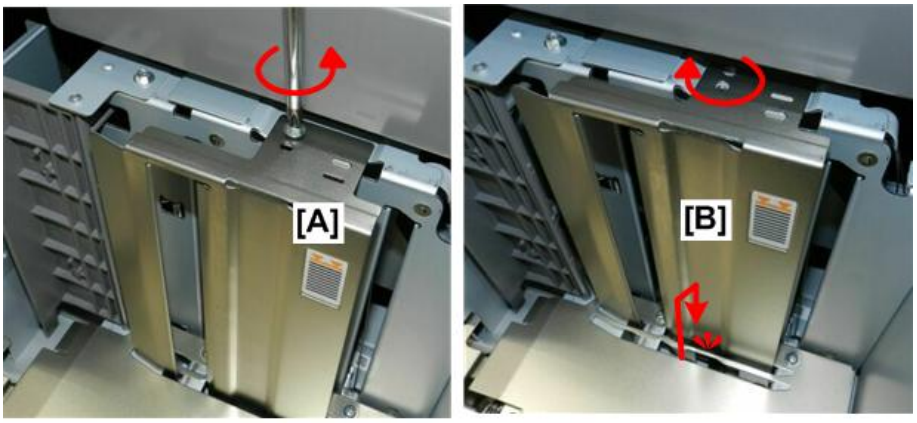
x2 d223c1057

4. Lift the front fence [A] out of the rear slot (LT) and then insert it in the front slot (A4).
5. Fasten the front fence[B].



x1 d223c1058

6. Remove the screw of the right tray rear fence [A].
7. Lift the rear fence [B] out of the front slot (LT) and then insert it in the rear slot (A4).
8. Fasten the rear fence.



x1 d223c1059

9. Re-attach the faceplate of the right tray.

x1 d223c1060

Left Tray Side Fences

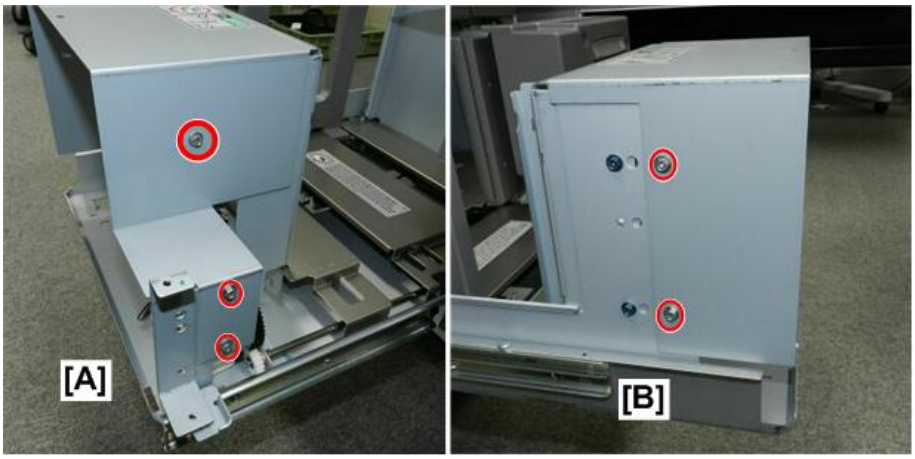
1. Disconnect Tray 1 faceplate [A].

x3 d223c1061

2. Remove the Tray 1 faceplate.

d223c1062

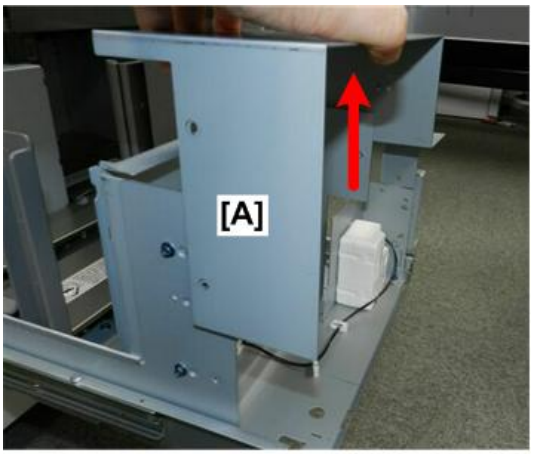
3. Disconnect the motor cover:
   - Right [A].
   - Left [B]



x5

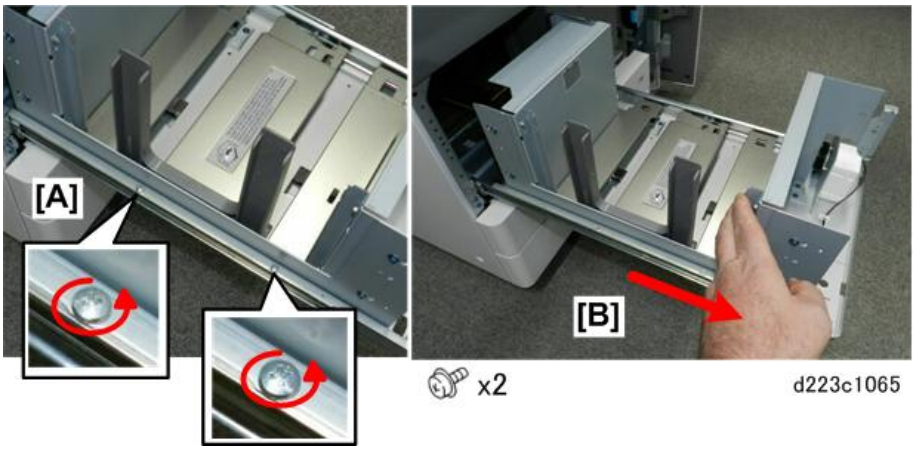
d223c1063

4. Remove motor cover [A].

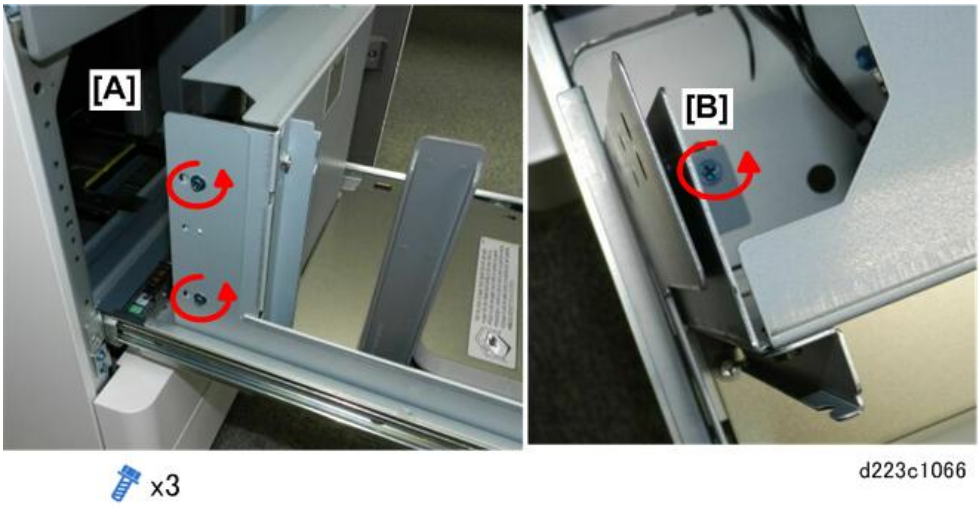


d223c1064

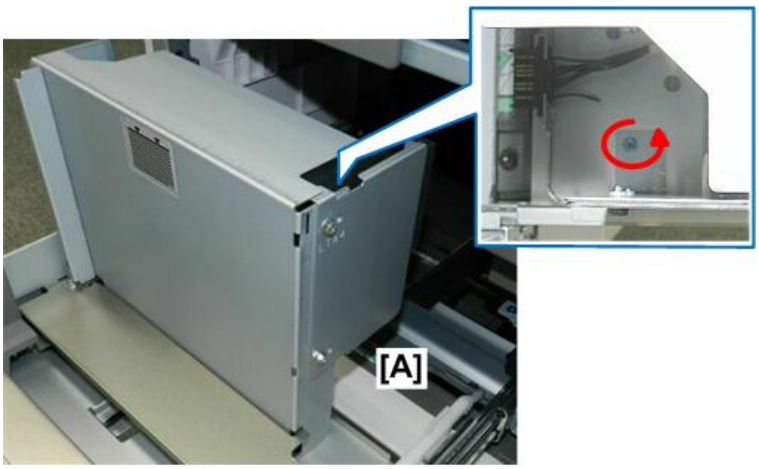
5. Pull the left tray out until it stops.
6. Disconnect the left tray from the left rail [A].
7. Pull left tray [B] slightly more until it stops.



8. Disconnect
   - Left [A] of rear side fence.
   - Left [B] of rear side fence.

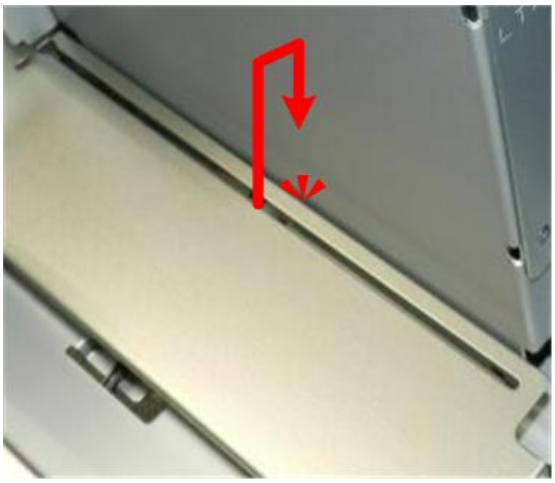


9. Disconnect right end [A] of rear side fence.



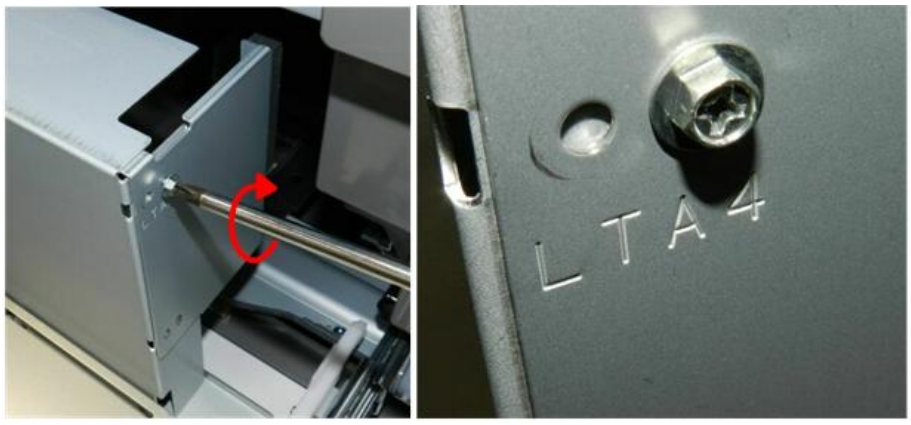
x1 d223c1067

10. Lift the rear side fence out of the front slot (LT), and then set it in the rear slot (A4).



d223c1068

11. Re-attach the screw at the left end of the side fence, and then re-attach the screws at the right end of the side fence (x4).
12. Disconnect the marker plate at LT, and then reset the screw at A4. This serves as a reminder for the paper setting of the tandem tray.

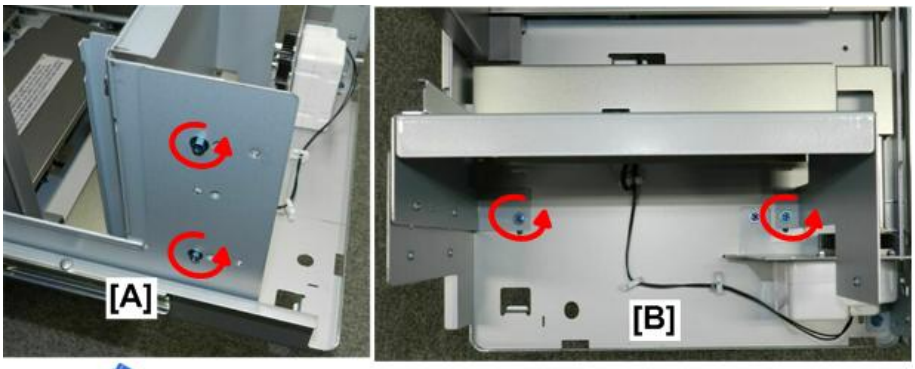


d223c1069

13. Re-attach the left side of the tray to the left rail.

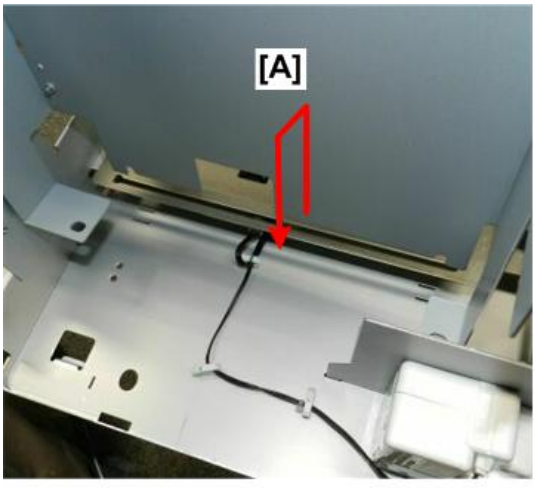
x2 d223c1070

14. Disconnect left side [A] of the left tray front fence.
15. Disconnect the base of the front fence from the base of the tray [B].



x4 d223c1071

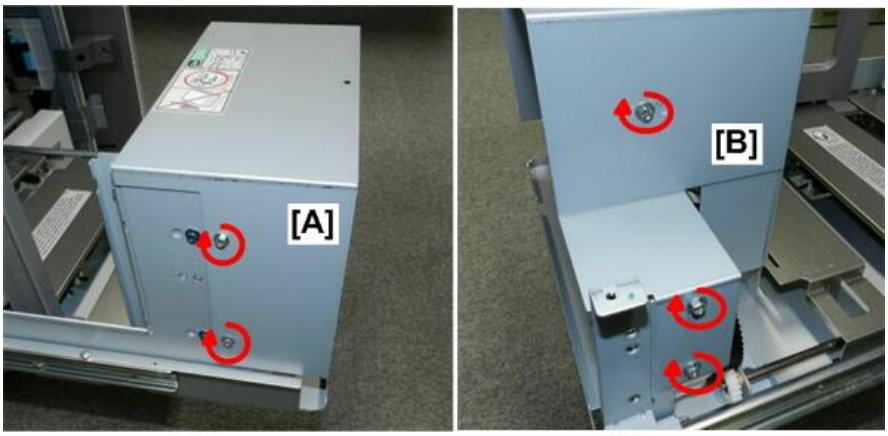
16. Lift the front side fence out of the rear slot (LT), and then set it in the front slot (A4).



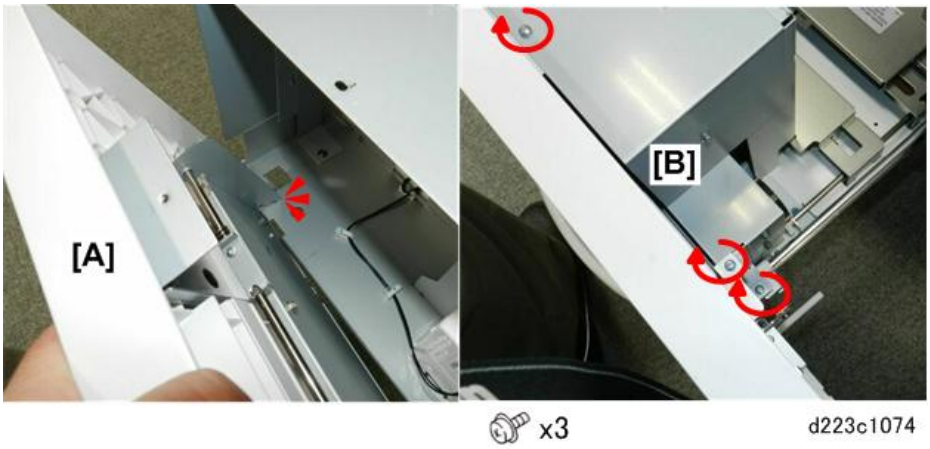
d223c1072

17. Re-fasten the front fence (x4).
18. Set the motor cover over the front side fence, and then re-attach the left side [A] of the cover.

19. Re-attach right side of the cover [B].

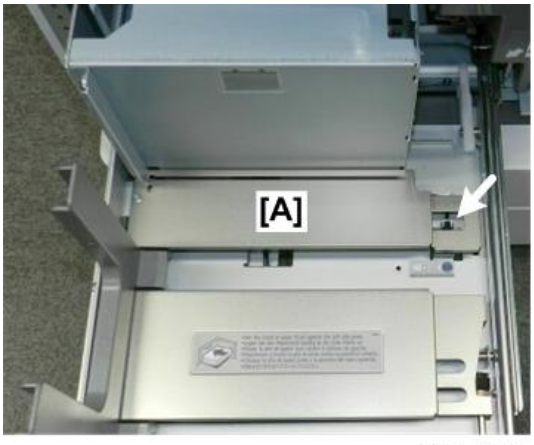


20. Set the base of Tray 1 faceplate [A], and then re-attach it to the tray [B] (x3).

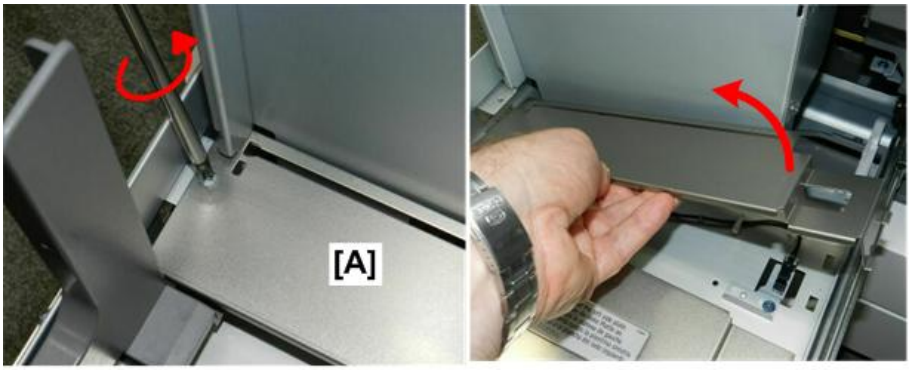


Adjust Left Tray Paper Position for LT/A4

1. The left tray paper sensor is below the rear plate [A] in the left tray.



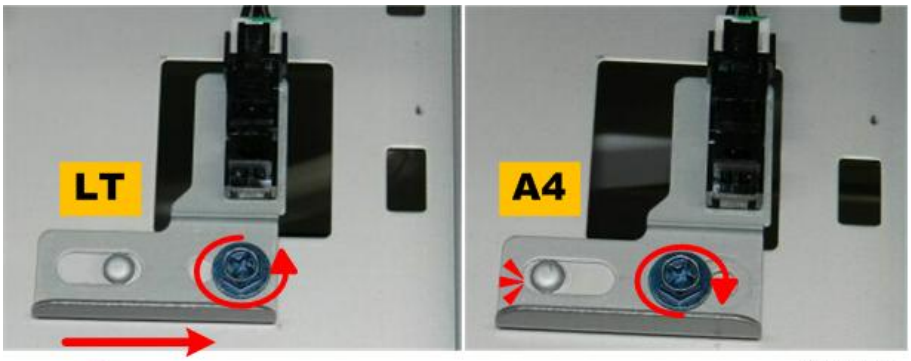
2. Remove rear plate [A].



x1

d223c1076

3. Remove the screw of the sensor bracket, and then slide the bracket from the left (LT) to the right (A4).
4. Re-attach and tighten the screw.

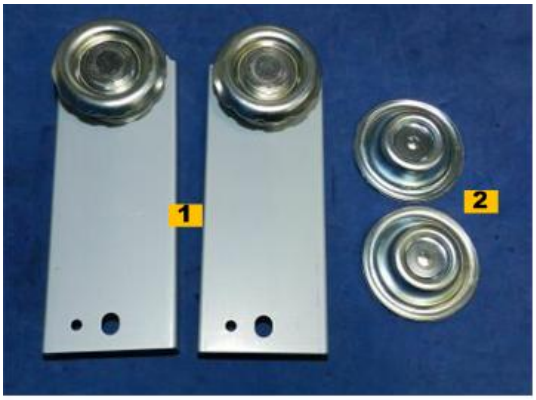


x1

d223c1077

Level the Machine

1. There are two pairs of shoes for leveling the machine, the front shoes [1] (attached brackets) and rear shoes [2].



d223c1078

2. Open the bottom drawer and remove the paper cassette.

d223c1079

3. Position the front shoes (with the brackets) under the front of the machine.
4. Run the brackets down with your fingers, and then tighten with the accessory wrench.

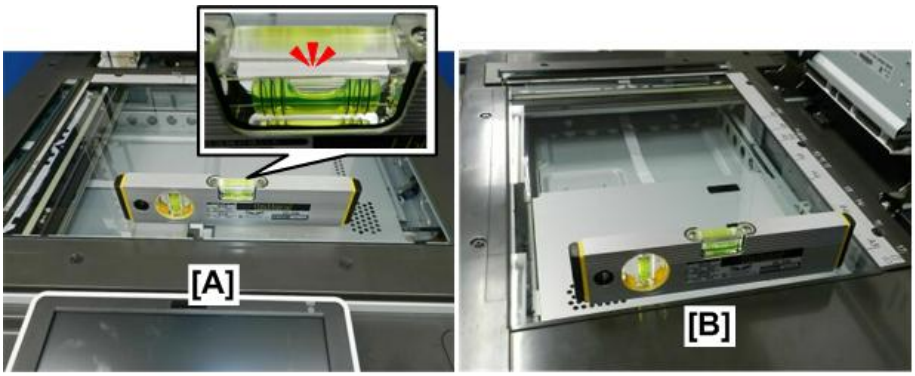
d223c1080

5. At each rear corner, run the hex screw down with your fingers, and then slide a shoe under the screw.
6. Tighten the screw with the accessory wrench.

d223c1081

7. Raise the ADF.

8. Place a level on the front edge of the exposure glass [A], and then on the right edge of the exposure glass [B].

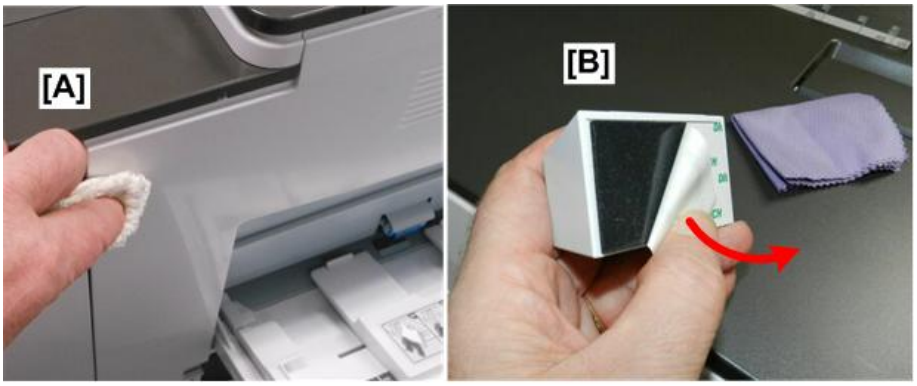


d223c1082

9. The machine should be level:
   - Front to back: Within ±5 mm (0.2") of level
   - Right to left: Within ±5 mm (0.2") of level
10. If necessary, use the accessory wrench to adjust the height of the machine at each corner.

Attach Cleaning Cloth Holder

1. Clean the upper, right front corner of the machine [A] above the bypass tray with a clean damp cloth.
2. Peel the tape from the back of the cleaning cloth holder [B]



d223c1089

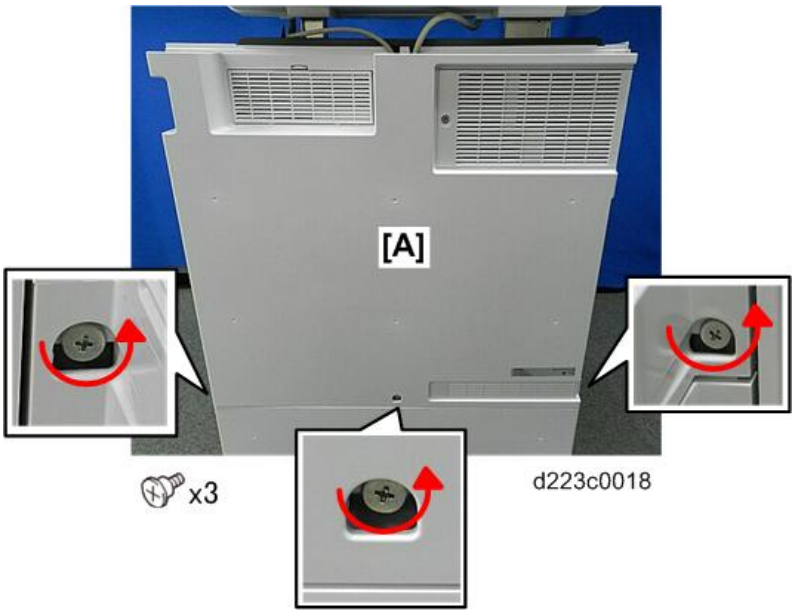
3. Attach the holder at the upper right corner of the machine, and then put the cleaning cloth in the holder.

d223c1090

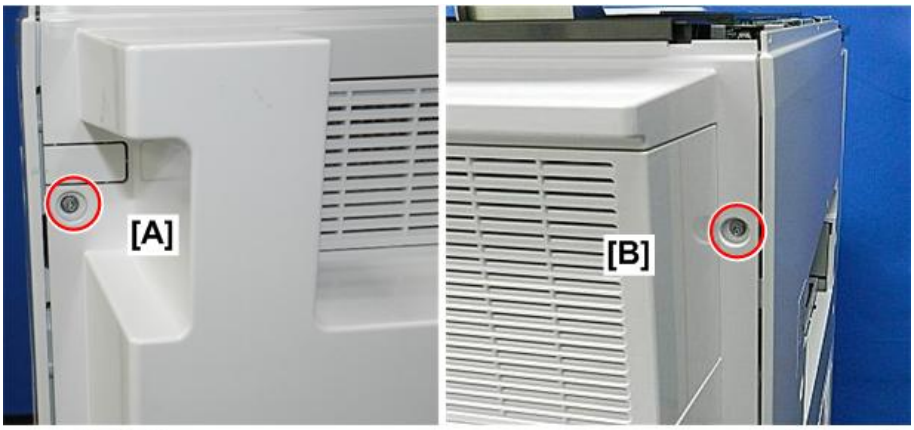
Connect Drum Heater, Tray Heater (Optional)

The drum heater and tray heater prevent moisture from gathering on the surface of the drum and in the paper feed trays. Connect these heaters where humidity is extremely high or where there are wide and rapid changes in temperature that could form condensation inside the machine.

1. Loosen (do not remove!) the bottom screws of the rear upper cover [A].



2. Disconnect the rear upper cover at the right rear corner [A] and left rear corner [B].



x2

d223c0019

3. Remove rear upper cover

d223c0020

4. Now, remove the rear lower cover.

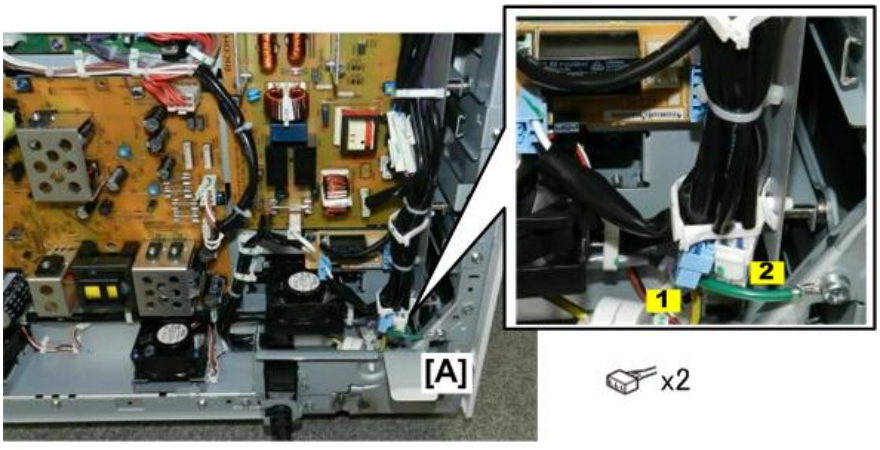
d223c1083

5. At the right, lower corner [A]:
   - Loosen shoulder screw [1].
   - Remove screw [2].

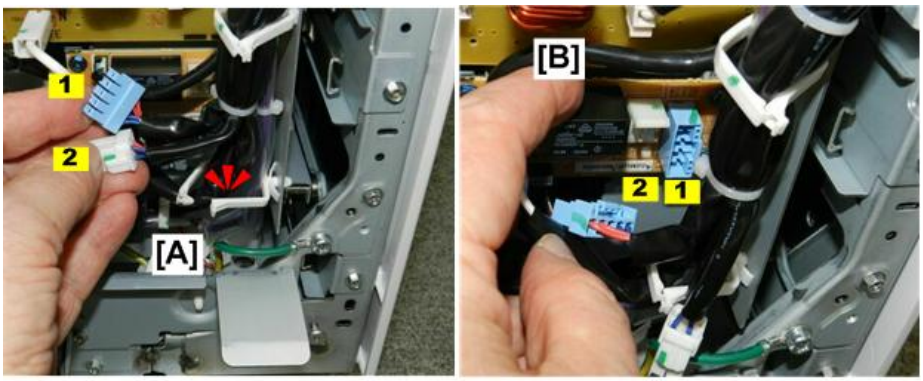
6. At the left, lower corner [B]:
   - Loosen shoulder screw [3].
   - Remove screw [4].

7. Remove the rear lower tray.

8. At the left lower corner [A], locate the heater connectors [1] and [2].

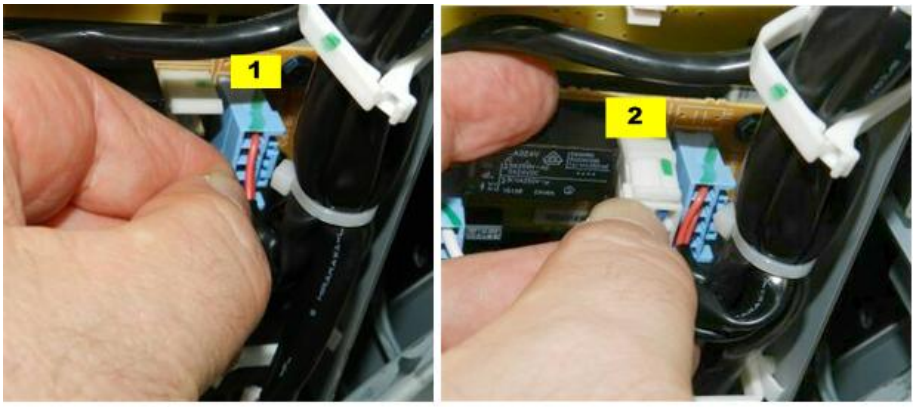


9. Free the heater connectors [1] and [2] [A], and then locate their connection points on the corner of PSU [B].



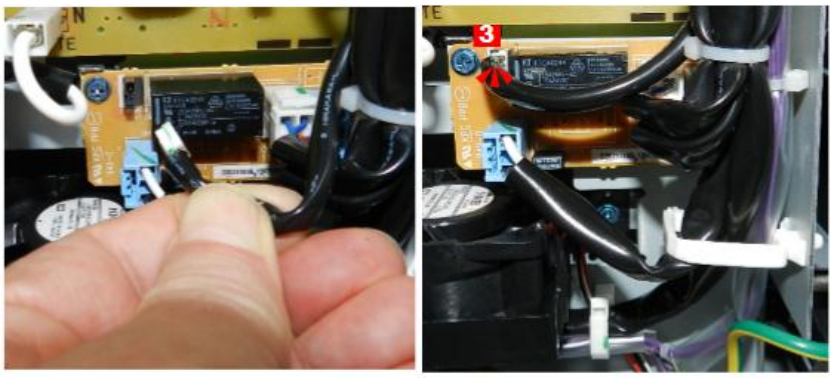
x2 d223c1087

10. Connect both harnesses.



x2 d223c1088

11. If you want the anti-condensation heaters to remain on at all times, detach the third harness from the bundle, then connect to the same PCB at **CN930**.

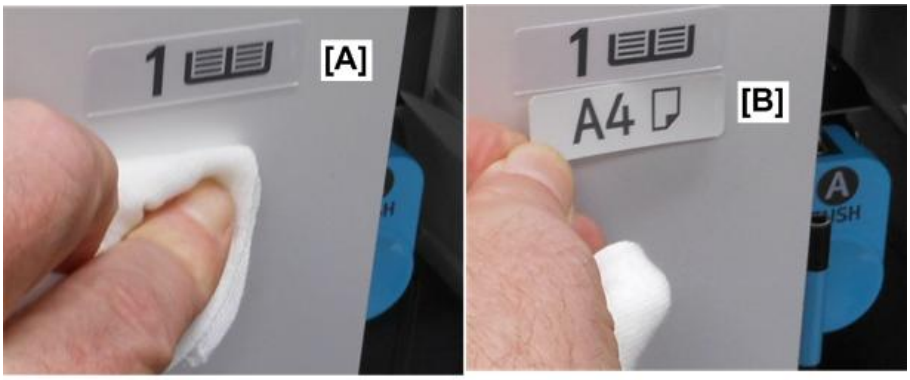


x1 d223c1117

Load Paper, Attach Decals

Paper Size Decals

1. Load the paper trays.
2. At the upper right corner of each tray [A], clean the area below the tray number.
3. Peel the appropriate decal [B] from the accessory sheet and attach it to the tray.



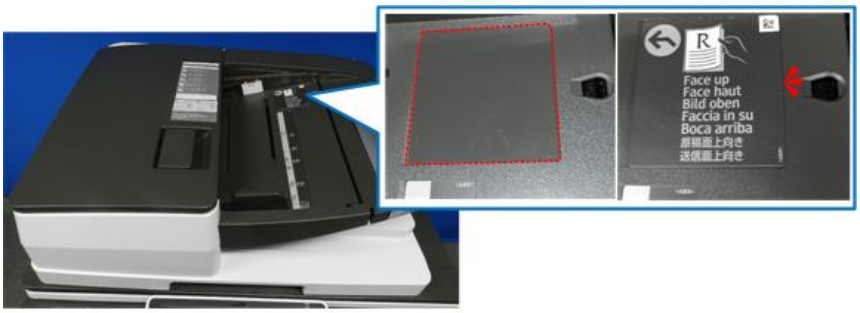
d223c1092

Original Decals

1. Use a damp clean cloth to wipe clean the surface of the original feeder.
2. Attach the precautions decal to the feeder cover

d223c2009

3. Attach the ‘load originals face-up’ reminder to the original output tray.



d223c2010

Attach Name Plate

1. Attach the nameplate to the center of the front door.

d223c1093

Initialize Toner and Process Control Settings

1. Make sure that the power cord is attached to the right lower corner of the main machine.
2. Plug the power cord into the power source.

Note

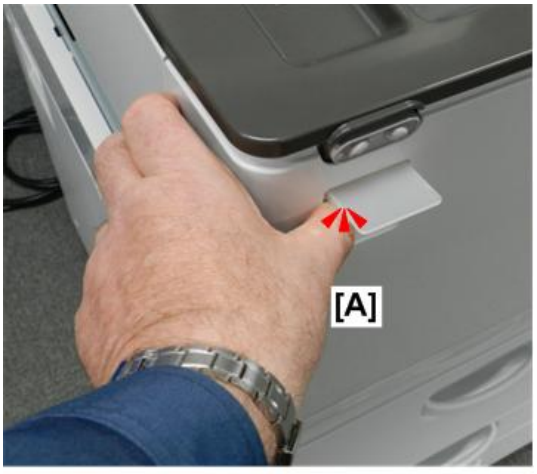
- There is no power switch on the operation panel of this machine.

3. Open the front door.

Important

- The front door must remain open until you are instructed to close it.
- The open front door prevents the machine from doing automatic process control normally executed every time the machine is turned on.

4. Make sure that the front door is open.
5. Press the power switch [A] on the front left corner of the machine to turn the machine on.



d223c1096

You will see “Please Wait” until the Program/Change Administrator screen appears.

d223c1097

- The machine is waiting for entry of the Supervisor and Administrator passwords.
- It is the responsibility of the site supervisor and system administrator to set these passwords.
- The Home menu will not display until these passwords have been set. However, you can bypass this screen to complete the installation.

6. Enter the SP mode.
7. Close the front door.
8. Do **SP5755-002**. This cancels the password request screen and allows you to continue with the machine installation as long as the machine remains on.

Note

- For more information about setting the passwords, see "Important Notice on Security Issues" in this section.

9. While still in the SP mode, open **SP2963-002**
10. Enter the lot number of the developer. (This is the number embossed on the edge of the developer pack.)
11. Open **SP2963-001** and then touch [Execute]. This initializes toner supply and sets up the auto process control settings. This will require about 4 min.
12. When you see the "Completed" message, touch [Exit].
13. Press [Exit] twice to exit the SP mode.

2.2.4 CHECK IMAGE QUALITY AND SETTINGS

Checking the copy image with the test chart

Check the copy image with the test chart.

Date/Time Setting and Other SP Settings

1. On the operation panel press > > User Tools
2. Touch [Machine Features].
3. On the operation panel, press the User Tools.
4. On the touch-panel, press “System Settings”.
5. Press the “Timer Setting” tab.
6. Press “Set Date” to enter the date.
7. Press “Set Time” to enter the time.
8. You may also need to do the following SP code settings.

SP5812-001	Service Telephone Number Settings. Enter the contact number of the customer engineer. This is the number displayed when a service call is issued.
SP5841-001	Supply Name Setting – Toner Name Setting:

2.2.5 IMPORTANT NOTICE ON SECURITY ISSUES

In order to increase the security of the MFP, and to ensure that the customer sets the administrator password, an administrator set/change prompt display appears the first time the machine is turned on.

Overview

The Program/Change Administrator screen appears when the machine is turned on if the passwords have not been set. This is a new security feature.

d223c1097

- After the customers set the administrator/supervisor login password, the Home display every time the machine is turned on.
- However, setting these passwords is not mandatory. The customer disable the Program/Change Administrator screen if they choose not to set passwords

Canceling Password Setup

1. On the Program/Change Administrator screen, press [Change] next to Supervisor and then touch [OK] without inputting any password.
2. Touch [OK] again when the Confirm password display shows up.
3. For Administrator 1, do the same procedure as steps 1 and 2.
4. Press the [OK] button. The Home display appears.
    - SP5-755-002 allows the service technician to skip this screen temporarily and continue the installation procedure without setting an administrator password.
    - However, the Program/Change Administrator screen appears every time the machine is cycles off/on if the password has not been set.

Password Setting Procedure

Follow this procedure to set the passwords.

- If the Supervisor/Administrator passwords (up to four passwords) are set up through the network, the "Change Supervisor login password" window will not appear.
- The passwords for Supervisor or Administrator can be set with “System Settings”, but the Program/Change Administrator screen appears every time the power switch is turned on if the passwords are set up this way.
- Therefore, we recommend that customers set passwords through the network or with the Program/Change Administrator screen.

1. Install the main machine.
2. Turn the main power switch on
3. Change the Supervisor login password.

d223c1098

4. Input the password.
5. Press [OK].
6. Confirm the Password.
7. Press [OK].
8. Change the Administrator 1 login password.

d223c1099

1. Input the password.
2. Press [OK].
3. Confirm the password.
4. Press [OK].
5. Cycle the machine off/on.

Auto Remote Firmware Update Settings

Specify ARFU settings as required.

Operating Conditions:

- Use the machine in an environment where it can be connected to the Internet.

Note

- Auto Remote Firmware Update (ARFU) requires connection to an external network. Be sure to get permission from the customer before setting ARFU up.
- The connection is one-way, so the user's data will not be accessed from the global server.

Pre-Operation Set Up and Checks

1. **Check the network settings (IP address, Subnetmask, Gateway, and DNS).**
2. **Check the proxy settings.**
3. **In the environment to execute ARFU, check that the machine's main power is always turned on and it is always connected to the Internet.**
4. **This condition is required for downloading the firmware package in the background and also for updating the firmware by ARFU when the machine is turned ON for the first time at machine installation.**
5. **Check the time (day of the week and time) to prohibit the execution of ARFU.**

Important

- If the access to the external server is restricted, request the network administrator (customer) to permit the following FQDN name for communication:
- - **FQDN: p-rfu-ds2.support.ricoh.com**

Configuration Procedure

1. **In User Tools > Machine Features > System Settings > Interface Settings, specify the IP address, Subnet, Gateway, and DNS settings according to the user's network environment.**

Important

- Make sure to specify the DNS settings. To acquire the firmware data, it is necessary to have the host name resolved so that access to the global server is possible using the host name.

1. **Check the user's network environment and, as required, specify the proxy server settings in the following SPs:**

- SP5-819-062 (Use Proxy DFU(SSP))
- 1: Use / 0: Not use
- SP5-816-063 (Use Proxy DFU(SSP))
- SP5-816-064 (Proxy Port Number)
- SP5-816-065 (Proxy User Name)
- SP5-816-066 (Proxy Password)

Note

- They can be specified also via Web Image Monitor, from Device Management>Configuration>Device Setting>Auto Firmware Update. (However, "Auto Firmware Update" appears on Web Image Monitor only if the ARFU function is set to "ON".)

1. **Set SP5-886-111(AutoUpdateSetting) to "1(ON)"**

Note

- To download the firmware only using SFU, and not by ARFU, specify the settings as follows:
  - SP5-886-111(AutoUpdateSetting) to "0 (OFF)"
  - Set SP5-886-115 (SfuAutoDownloadSetting) to "1 (ON)"

1. **When setting the prohibited day, time and so on of the auto firmware update, set them with following SPs, or Web Image Monitor.**

- SP5-886-112 (AutoUpdateProhibitTermSetting)
- 0: OFF, 1: ON (Default)
- SP5-886-113 (AutoUpdateProhibitStartHour)
- Default: 9
- SP5-886-114 (AutoUpdateProhibitEndHour)
- Default: 17
- SP5-886-120 (AutoUpdateProhibitDayOfWeekSetting)

Default: 0x00

Set the bits for the days of the week to prohibit updating.

Prohibited (Monday - Sunday): Bit 7

Monday: bit 6

Tuesday: bit 5

Wednesday: bit 4

Thursday: bit 3

Friday: bit 2

Saturday: bit 1

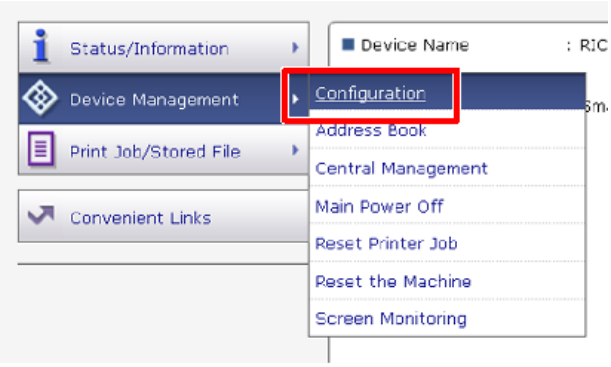
Sunday: bit 0

e.g.) Prohibited on Mon., Fri., Sat., and Sun.: 0x47 (01000111)

1. **Use the machine with its main power on and connected to the Internet.**

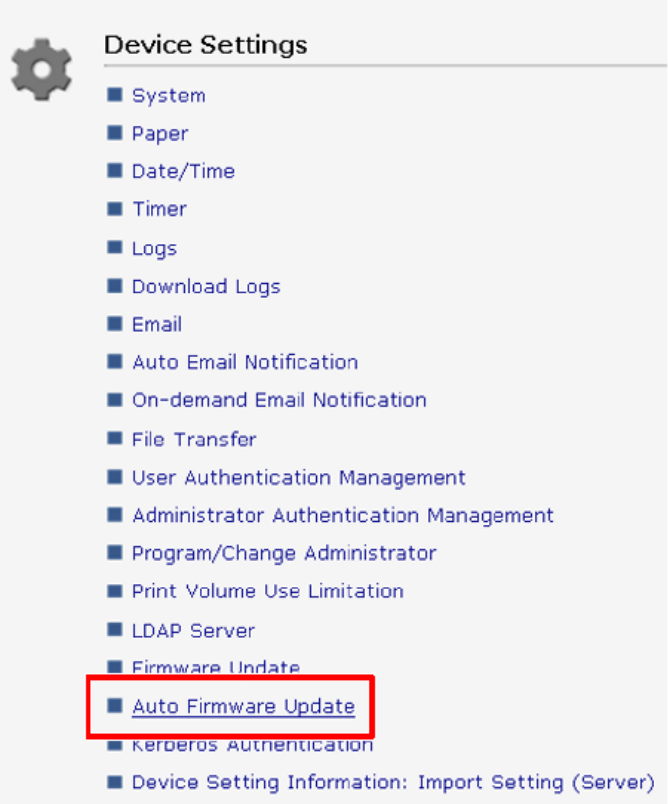
Specifying the Times, Days of the Week to Prohibit Updating by Web Image Monitor

1. **Start the Web Image Monitor.**
2. **Log in as the machine administrator.**
3. **Point to [Device Management], and then click [Configuration].**



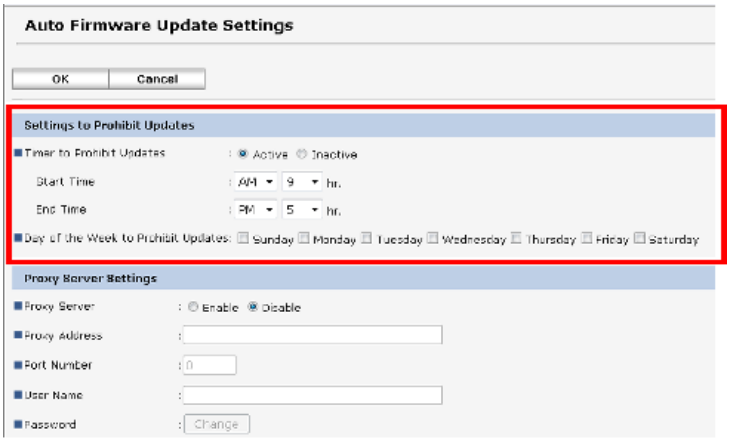
d238m0983e

4. **Click "Auto Firmware Update".**



d238m0984j

5. **In the applicable items, specify the times and days of the week to prohibit updating. Select the check boxes of the applicable days of the week to prohibit updating on that day**



d238m0985e

Checking the ARFU Connection

1. **Enter the SP mode.**
2. **Press [Firmware update].**
3. **Press [Update].**
4. **Press [Execute update].**

d238m0986e

- ”Execute update” appears even if @Remote connection has not been established.
- If an error code appears when you click “Execute update”, the machine is in the following status.

Error code	Status
E51	The machine in operation for printing, etc.
E71	Network connection error

1. **Check if one of the following messages appears: "Will you download the latest package Ver *** and update?" or "The installed package is the latest version.".**

- If the message appears, it is possible to execute ARFU: Press “No” and close SP mode to complete the configuration.
- If the message does not appear, it is not possible to execute ARFU: Check the network settings again.

Note

- SP5-886-116 (Auto Update Prohibit Term Setting) displays the scheduled date and time of the next ARFU.
- If the scheduled date and time of the next ARFU coincides with a time and day of the week when ARFU is prohibited, the machine sends an inquiry to the server to check if there is a new firmware package at this time. If there is a new firmware package, it is downloaded in the background, but the package updating is cancelled and executed on the next occasion, 76 hours later, to update the package.

Checking the Result from the Firmware Update Setting

1. **Enter the SP mode.**
2. **Press [Firmware update].**
3. **Press [Update].**
4. **Press [Update Package Information].**
5. **If the firmware package is the same as the one on the global server, the update was completed successfully. Otherwise, check the result using the logging data.**

Note

- In SP7-520-041 to -045 (Update Log: Auto:Version), you can check the versions of the packages updated by ARFU. (-041 displays the latest result. It is also printed on the SMC sheet.)

Checking the Result Using the Logging Data

1. **Enter the SP mode.**
2. **Press [System/Copy].**
3. **Check the results for ARFU by SP7-520-051 to 060 (Update Log: Auto:Result) "-051" is the latest update result.**

2.2.6 SECURITY SETTINGS

The machine has two security functions built into the controller board: Data Overwrite Security and HDD Encryption. However, these features must be activated at completion of installation if the client wants to use them. page 2-304

2.2.7 MOVING THE MACHINE

Important

- When moving the machine, never push on the ADF.
- Pushing on the ADF could damage it or throw it out of alignment, causing problems with scanning and copying.

Do the procedure below before moving the machine from one floor to another. See "Transporting the Machine" in the next section if you have to pack the machine and move it to a distant location.

1. Turn the main power OFF and disconnect the power plug.
2. Close all the covers and trays.
3. Disconnect peripheral units connected to the main machine: LCIT, Finishers, etc.
4. Keep the machine horizontal and move it slowly.
5. To avoid damage to the machine, avoid tipping and excess vibrations.

2.2.8 TRANSPORTING THE MACHINE

Important

- When moving the machine, never push on the ADF.
- Pushing on the ADF could damage it or throw it out of alignment, causing problems with scanning and copying.

1. Do SP4-806-001 to move the scanner carriage from the home position. This prevents dust from falling into the machine during transportation.
2. Remove the toner cartridge. This prevents toner leakage caused by vibration during transport.
3. Remove all paper from the paper trays.
4. Attach a sheet of paper to the bottom plates of the tray to hold them in place during transport.
5. Take out the scanner stay from inside the front cover and install the scanner stay.
6. Fasten the front door and covers with shipping tape, and then shrink-wrap the machine tightly.

2.2.9 IMPORTANT SP CODES: INSTALLATION

Here is a summary of important SP codes that you will need for installation of the main machine.

Item	SP No.	Function
Data Overwrite Security	5878-1	Enables/disables the Data Overwrite Security feature. Check this setting to confirm whether this feature is turned on or off. Cycle the machine off/on after changing this setting.
Developer lot number	2963-2	Enter the lot number embossed at the top edge of the developer package. Enter the lot number with SP2963-2 before you initialize developer with SP2963-1
HDD Encryption	5878-2	Enables/disables data encryption. Cycle the machine off/on after changing this setting.
Initialize developer	2963-1	Initializes fresh developer at installation. Enter the lot number with SP2963-2 before you initialize developer with SP2963-1
Password request cancel	5755-2	Cancels the password request screen and allows you to continue with the machine installation as long as the machine remains on
Service tel. number	5812-1	Enter the contact number of the customer engineer. This is the number displayed when a service call is issued.
Supply name setting	5841-1	This name appears when the user presses the Inquiry on the User Tools screen.
Transport	4806-1	Move the scanner carriage from the home position. This prevents dust from falling into the machine during transportation.

2.3 DRUM HEATER (OPTION)

2.3.1 ACCESSORIES

The drum heater is an option for the main machine. Check the accessories and their quantities against this list.

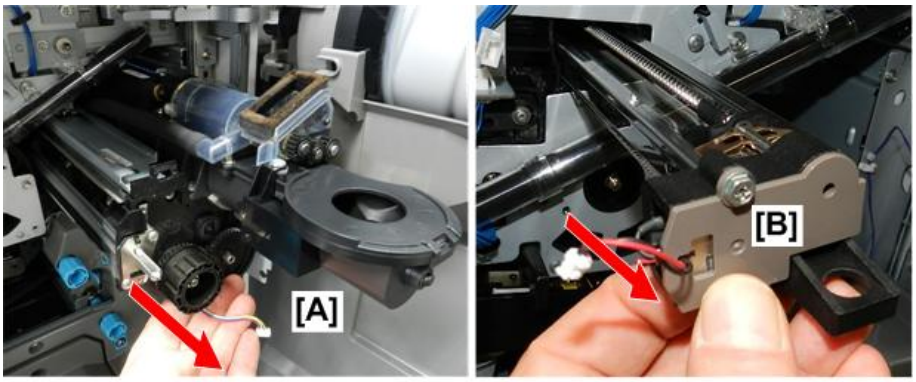
No.	Description	Q"ty
1.	Drum Heater	1
2.	Screws M3x6	2

d223c1131

2.3.2 INSTALLATION

Install Drum Heater

1. Open the front door, and then swing the toner bottle holder to the right.
2. Remove development unit [A]. page 4-149
3. Remove charge corona unit [B]. page 4-105

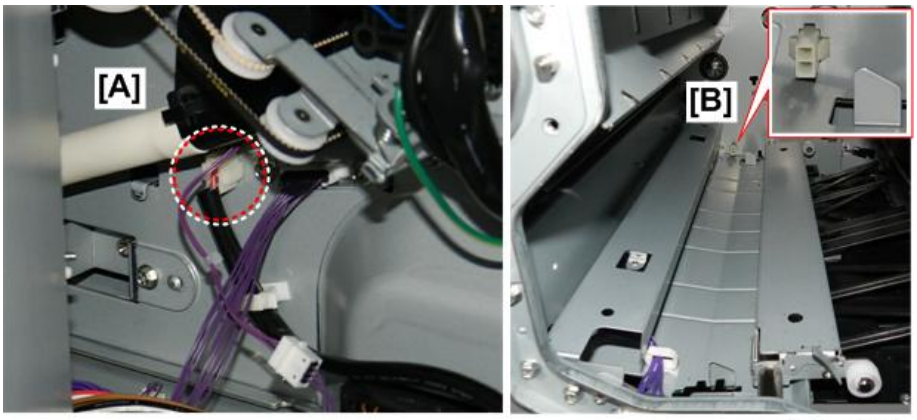


d223c1132

4. Remove drum unit [A]. page 4-114
5. Remove transfer belt unit [B]. page 4-197

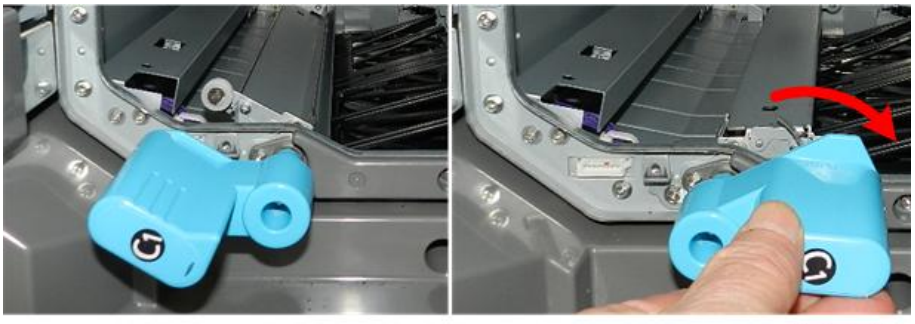
d223c1133

6. The drum heater harness [A], shown here on the back of the machine behind the IOB, is pre-installed at the factory before shipping.
7. At the front, drum heater harness connector [B] at the back of the machine can be seen where the transfer belt unit was removed.



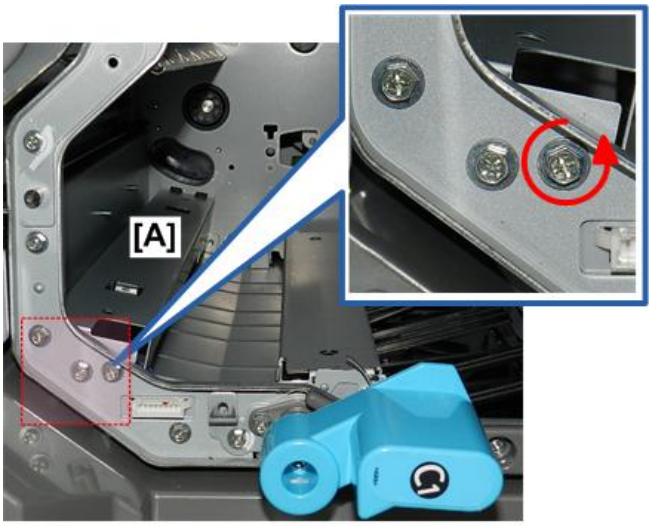
d223c1134

8. If lever **C1** is down to the left, turn it to the right.



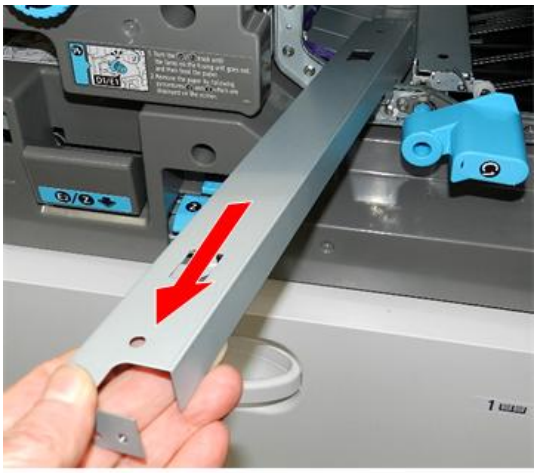
d223c1135

9. Unfasten stay [A].



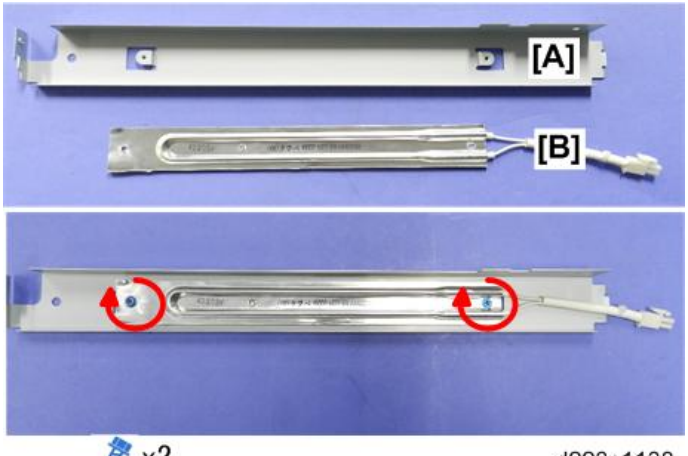
x1 d223c1136

10. Remove the stay. **Keep this screw**.



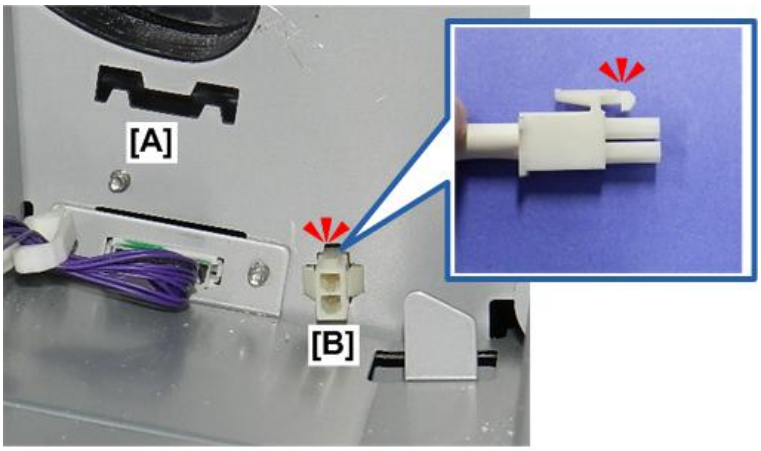
d223c1137

11. Lay the stay on a flat, clean surface as shown with rear end [A] to the right.
12. Set the drum heater next to the stay with the connector [B] to the right.
13. Set the heater on the stay, and fasten it with screws.



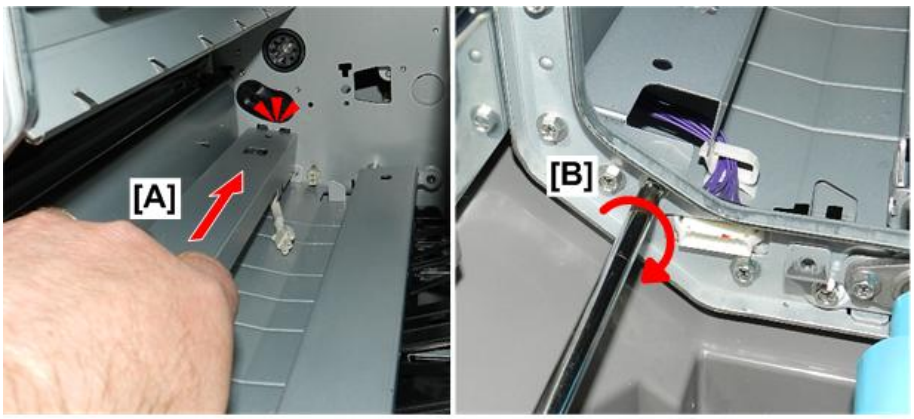
x2 d223c1138

14. Inside the machine, locate the cutout [A] where the rear end of the stay with the connector will be inserted.
15. The heater will be connected at [B] with the hook lever up.



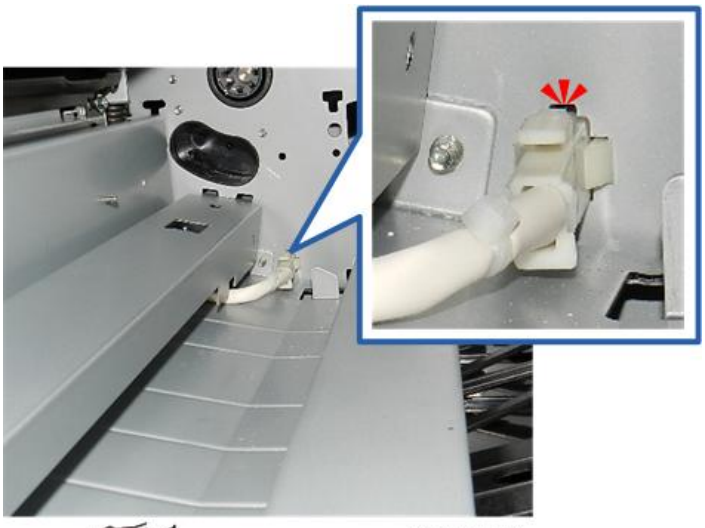
d223c1141

16. Insert the rear end of stay [A] into the cutout inside the machine.
17. At the front [B] fasten the stay.



x1 d223c1142

18. Connect the heater at the rear



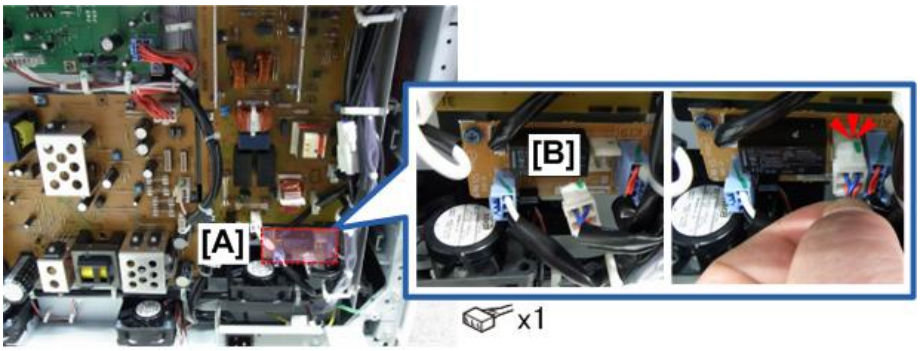
x1 d223c1143

19. Re-install:
    - Transfer belt unit
    - Drum unit
    - Charge corona unit
    - Development unit

Connect the Drum Heater

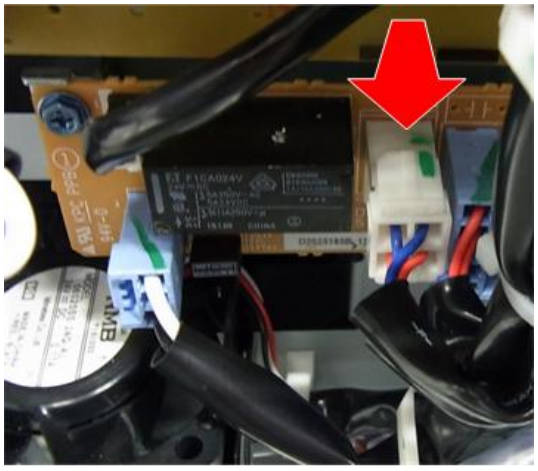
The harness for the drum heater is installed at the factory before shipping.

1. Remove the rear lower cover. page 4-20
2. At the left rear corner of the machine, locate the DHB [A] below the AC control board.
3. Plug connector [B] into the open connector of the DHB.



d223c1149

If the connector is already plugged into the DHB as shown below, you are finished.



d223c1150

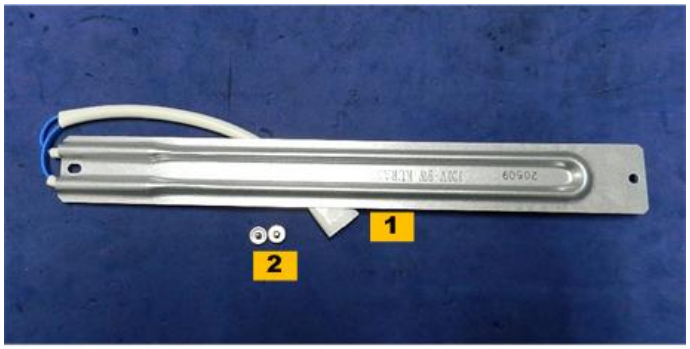
- This dual connector shared by both the drum heater harness and scanner harness.
- If the scanner heater has been installed, this connector will already be connected to the DHB.
- When the single connector is plugged in, both the drum heater and scanner heater are connected.

2.4 SCANNER HEATER (OPTION)

2.4.1 ACCESSORIES

The scanner heater is an option for the main machine. Check the accessories and their quantities against this list.

No.	Description	Q"ty
1.	Scanner Heater	1
2.	Screws M3x6	2



d223c1120

2.4.2 INSTALLATION

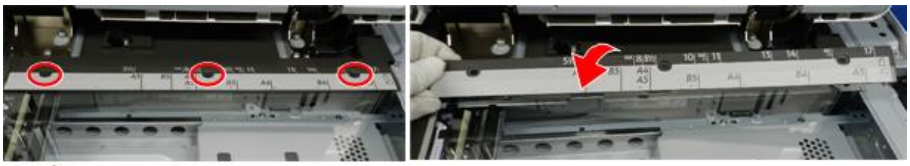
Install Scanner Heater

1. Raise the ADF.
2. Disconnect the rear end of the right edge cover [1].
3. Slide the cover to the rear [2].
4. Remove the cover [3].

x1

d223c1121

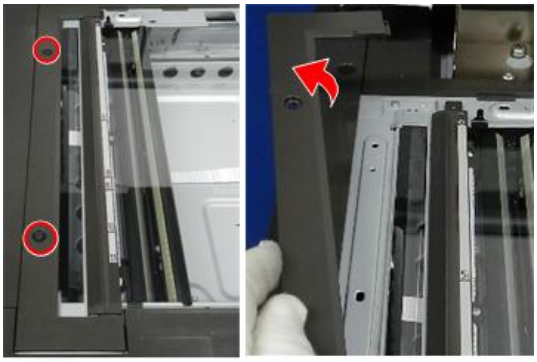
5. Remove the rear scale.



x3

d223c1122

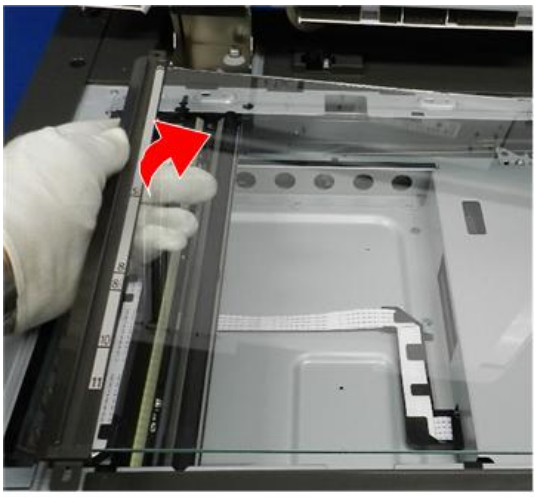
6. Remove the left exposure glass edge cover.



x2

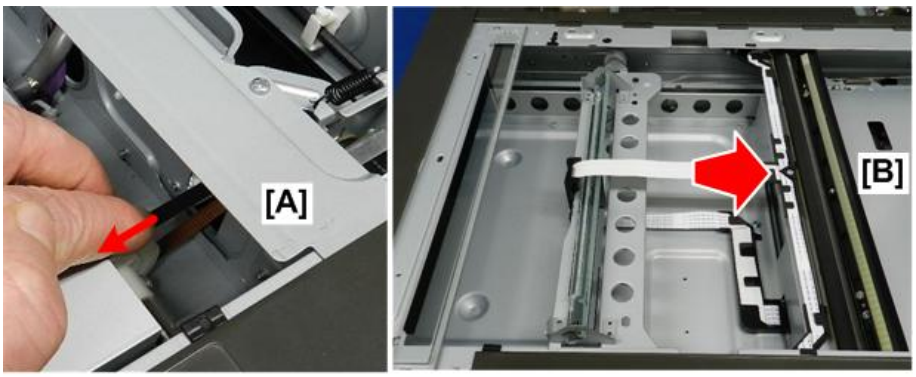
d223c1123

7. Remove the exposure glass.



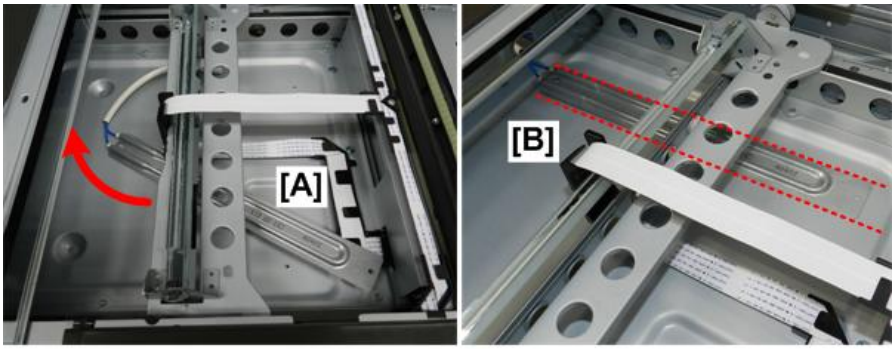
d223c1124

8. At the right front corner of the machine [A] turn the scanner motor belt and move the 1st scanner unit to the left edge of lens cover [B].



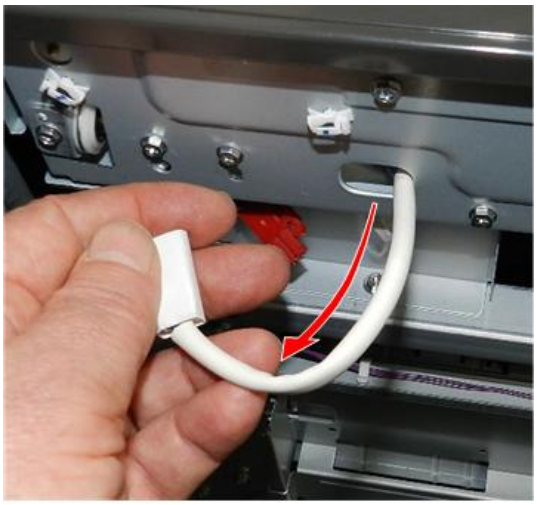
d223c1125

9. With the harness on the left, slide scanner heater [A] under the 2nd carriage, and then arrange it parallel to the back of the scanner unit [B].



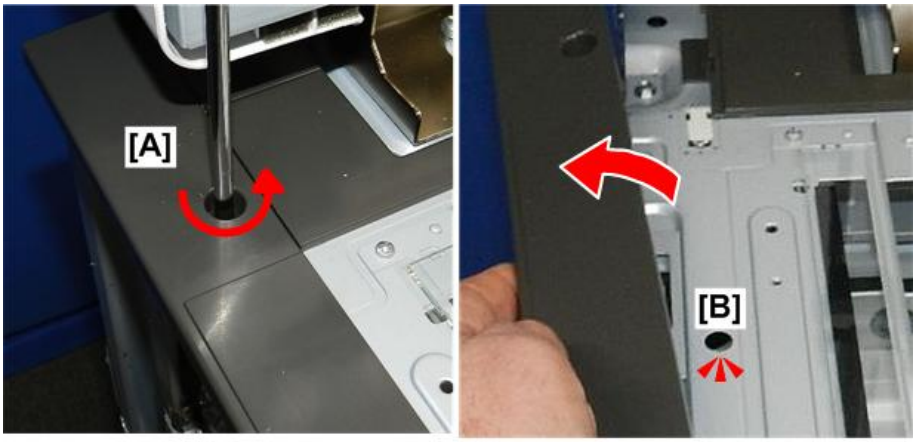
d223c1126

10. Pull the heater harness through the left side of the scanner unit.



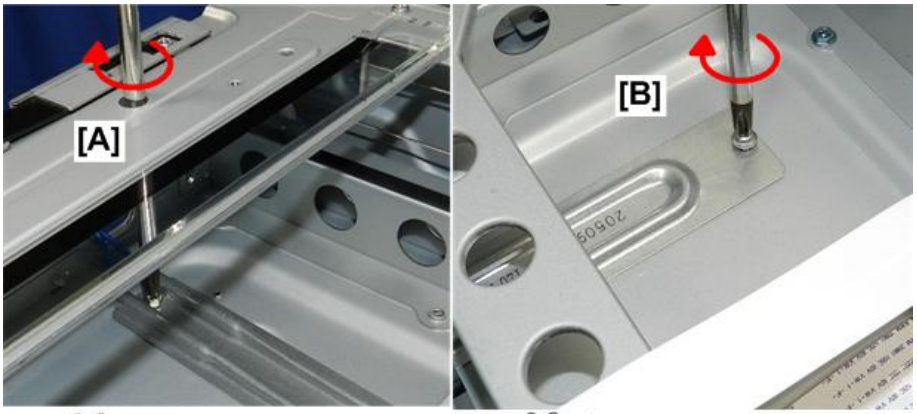
d223c1127

11. Disconnect the left edge cover [A], and then remove it, so you can see cut-out [B].



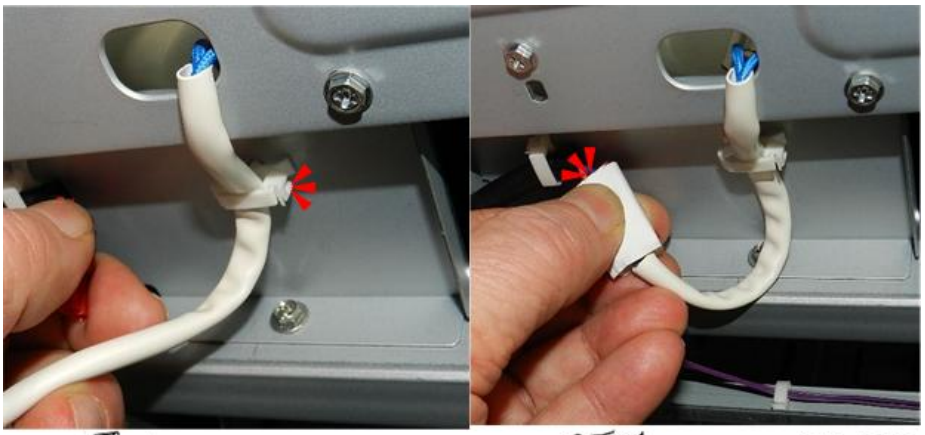
d223c1128

12. Insert a screwdriver into the cut-out [A], and then **loosely** fasten the left end of the heater.
13. Attach the right end of the heater [B].
14. Tighten both screws.



x1 x1 d223c1129

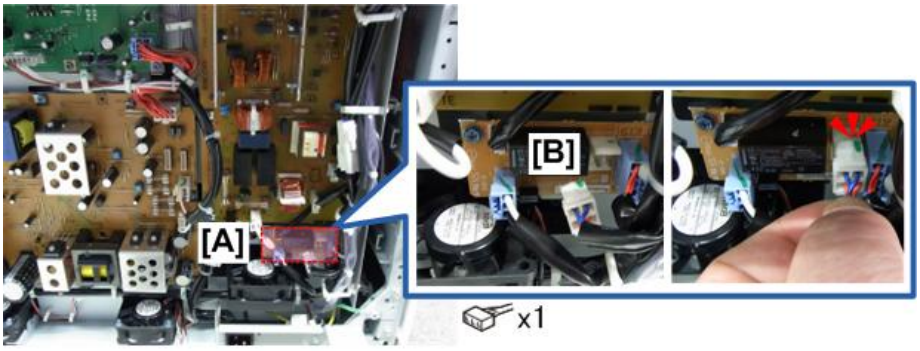
15. On the left side of the scanner unit, clamp the heater harness, and then connect it to the harness pre-installed on the side of the machine.



x1 x1 d223c1130

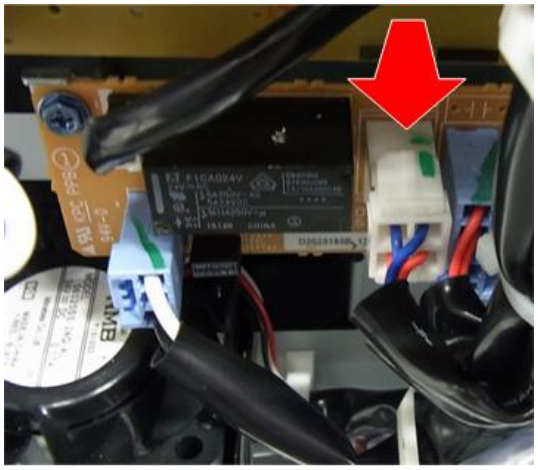
Connect the Scanner Heater

1. Remove the rear lower cover. page 4-20
2. At the left rear corner of the machine, locate the DHB [A] below the AC control board.
3. Plug connector [B] into the open connector of the DHB.



d223c1149

If the connector is already plugged into the DHB as shown below, you are finished.



d223c1150

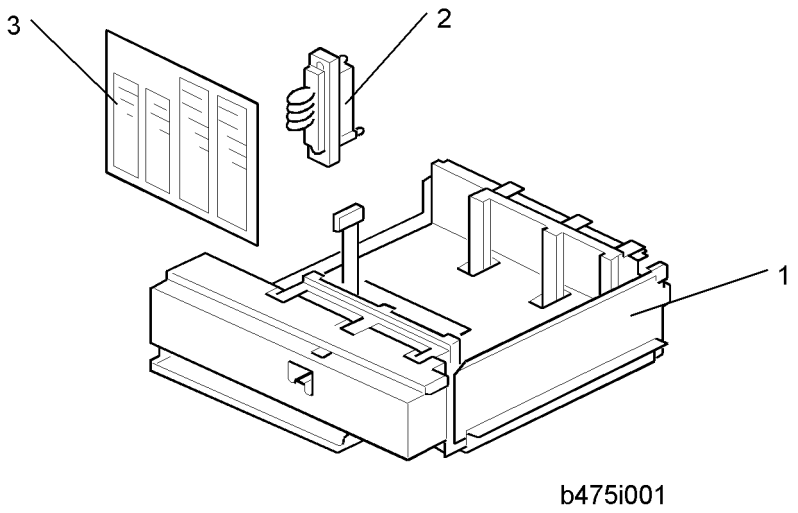
- This dual connector shared by both the drum heater harness and scanner harness.
- If the drum heater has been installed, this connector will already be connected to the DHB.
- When the single connector is plugged in, both the drum heater and scanner heater are connected.

2.5 A3/11"X17" TRAY TYPE 9001 (D482)

2.5.1 ACCESSORY CHECK

Check the accessories and their quantities against this list:

No.	Description	Q'ty
1.	A3/DLT Tray	1
2.	Short connector	1
3.	Page size decals	1



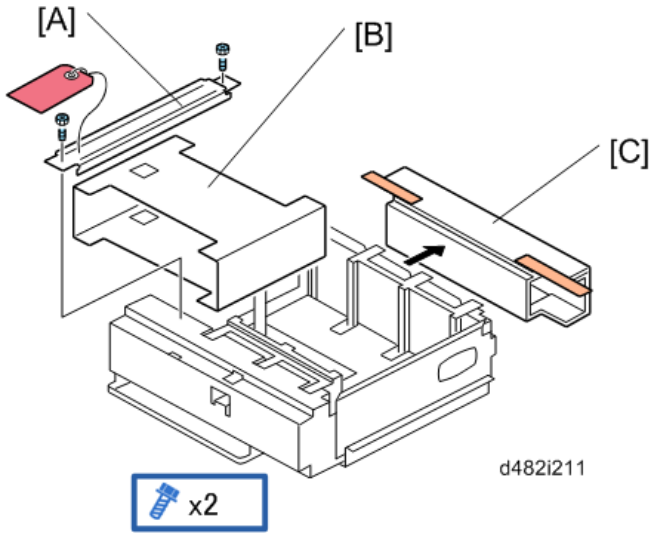
b475i001

2.5.2 INSTALLATION PROCEDURE

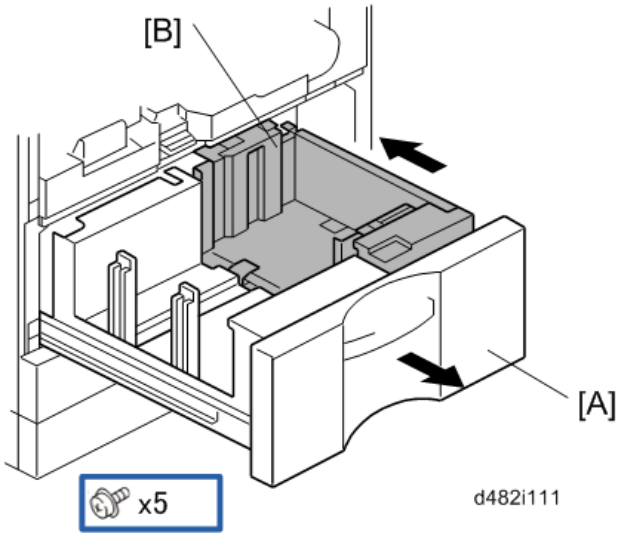
⚠CAUTION

- Switch the machine off and unplug the machine before starting the following procedure.

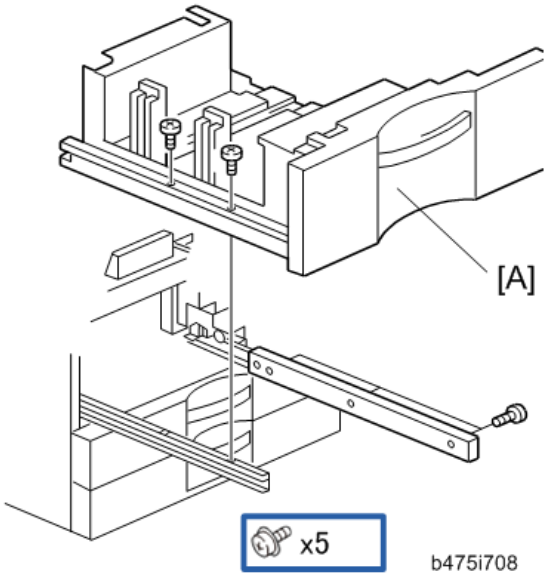
1. Remove the stay [A] (x 2).
2. Remove the retainers [B] [C].



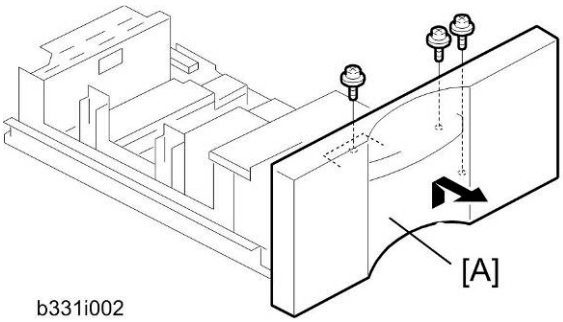
3. Draw out the tandem tray [A] completely to separate the left and right sides of the tray.
4. Push in the right tandem tray [B].



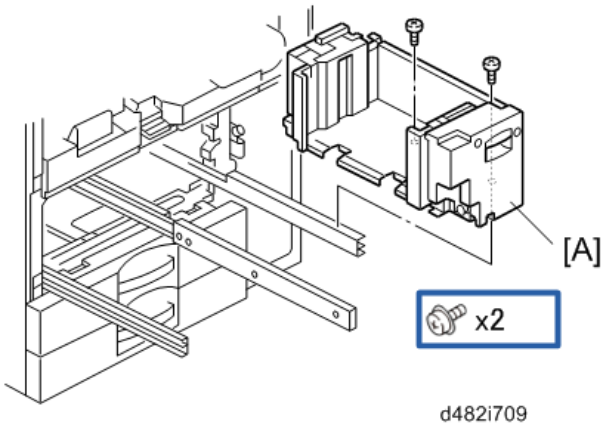
5. Remove the left tandem tray [A]. **Keep these screws**.



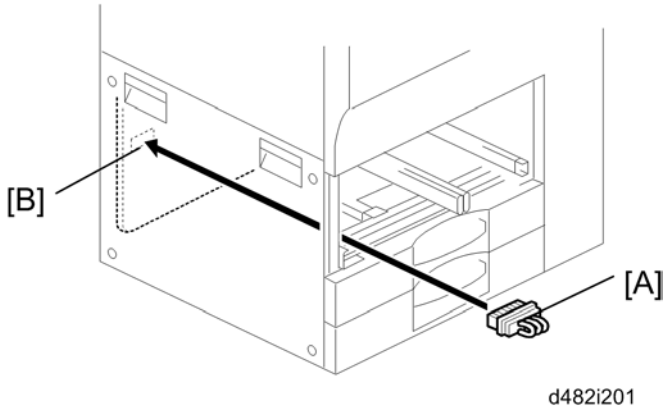
6. Remove the front cover [A]..



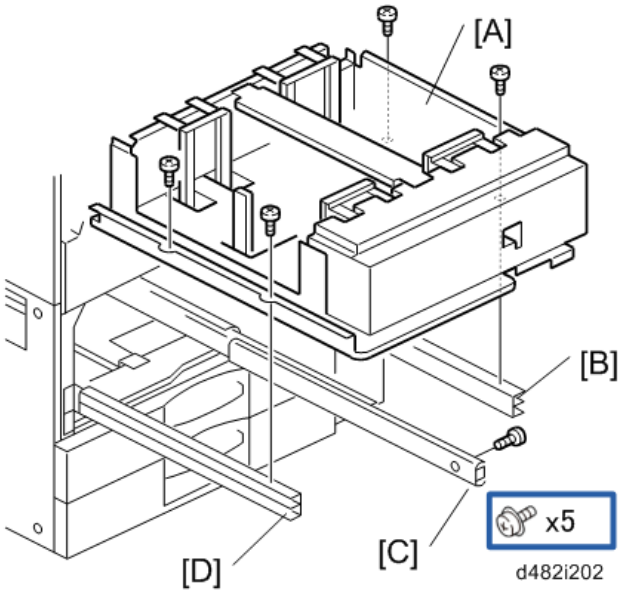
7. Remove the right tandem tray [A] (x 2). **Keep these screws**.



8. Connect the short connector [A] to the left tandem tray terminal [B].



9. Install the A3/DLT tray [A] on the right rail [B], center rail [C], and left rail [D]. Use the screws that you removed earlier.



Note

- You must use the short, silver screws on the left and right rails. If you use one of the longer screws, it will stop the movement of the tray on the rails.

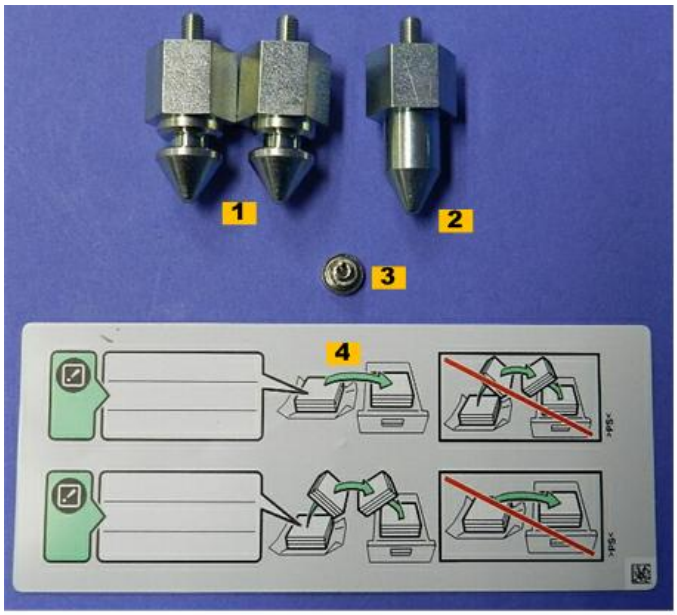
10. .Re-install the front cover.
11. Switch the machine on, enter the SP mode and select the paper size for Tray 1 with **SP5959-001** (Paper Size – Tray 1). For details, see SP5959 in “Service Tables”.
12. Attach the appropriate decal for the selected paper size.

2.6 LCIT RT4040 (D3D6)

2.6.1 ACCESSORY CHECK

Check the accessories and their quantities against this list:

No.	Description	Q'ty
1.	Upper docking pins (grooved)	2
2.	Lower docking pin (not grooved)	1
3.	Flat-head shoulder screw - M4 x 6	1
4.	Paper Set Decal	1
-	Installation Instructions	1



d3a6c1001

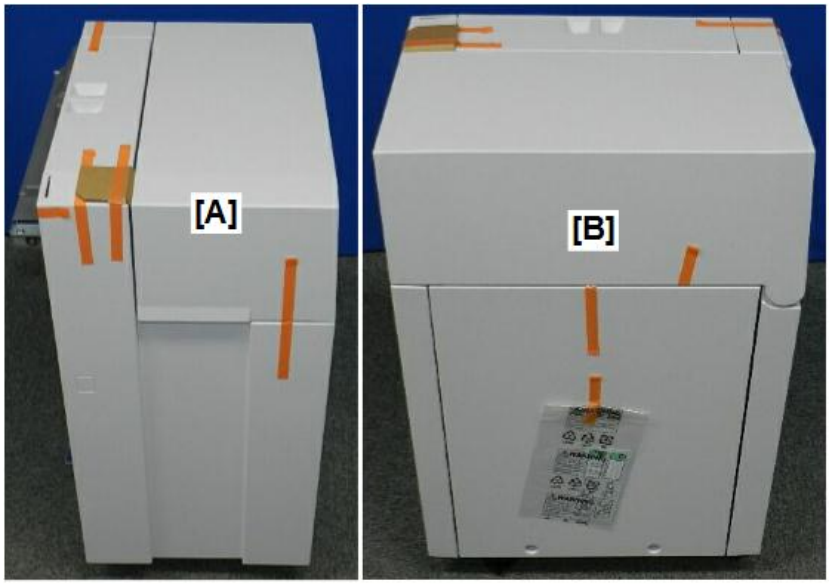
Important

- Handle the LCIT unit carefully, especially when you are pushing it around the floor. The LCIT is unbalanced and tips easily because it has only three wheels.
- Never attempt to move the machine with the LCIT attached to the right side of the machine. Separate the main machine and LCIT before moving to a new location.

2.6.2 INSTALLATION

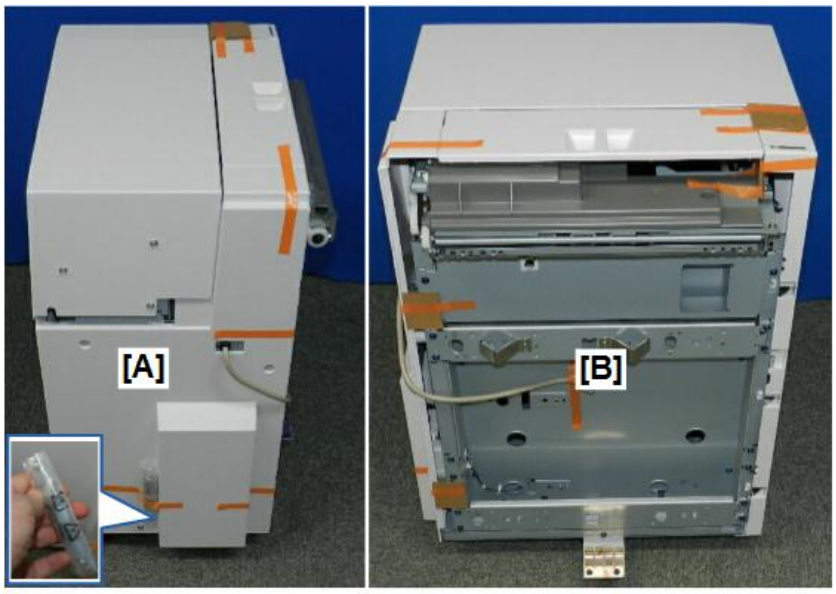
Removing Tape

1. Remove all tape and packing material on front [A] and right side [B].



d3a6c1002

2. Remove tape and cardboard from [A] and right side [B]. Be sure to retrieve the accessories packed in the plastic bag taped to the rear panel.



d3a6c1003

3. Open the unit.
4. Remove tape from around the lift plate [A] and under the top cover [B].

d3a6c1004

5. Inspect the unit outside, inside [A], and under the cover [B] to confirm that there is no tape, cardboard, or scraps remaining in the LCIT.

d3a6c1005

Preparing the Main Machine

⚠CAUTION

- Switch the machine off and unplug the machine before starting the following procedure.

1. On the right side of the main machine, remove the LCIT installation cover.

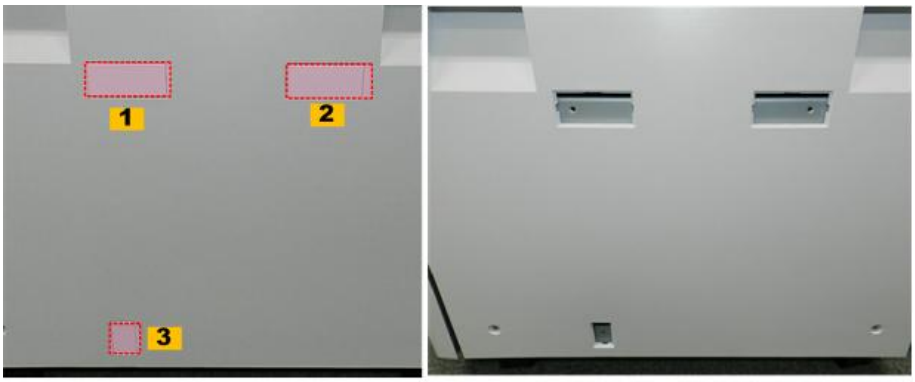
x2

d3a6c1006

2. Remove the LCIT connector cover.

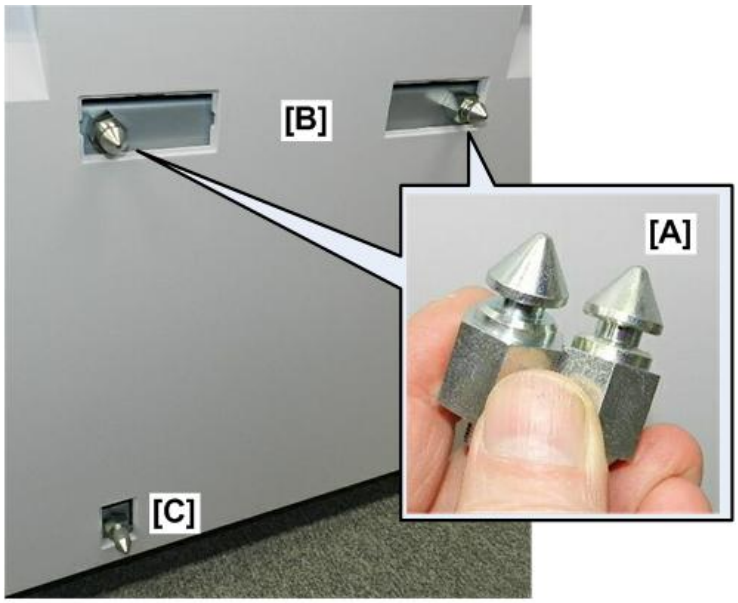
d3a6c1007

3. On the same side of the machine, remove the three docking pin hole covers[1], [2], [3].



d3a6c1008

4. Select the two grooved docking pins [A], and then attach them at [B].
5. Attach the remaining docking pin at [C].



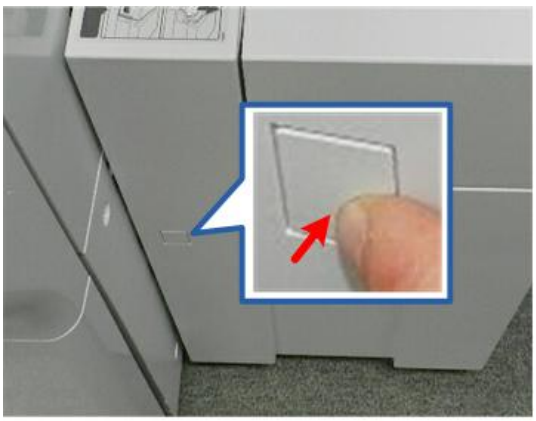
d3a6c1009

Docking the LCIT

1. Slowly, push the left side of the LCIT against the side of the main machine.

d3a6c1010

2. If you need to release the LCIT and try again, push the release button and then pull the LCIT away from the side of the main machine.

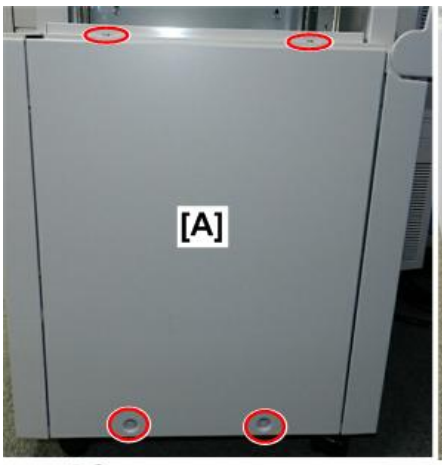


d3a6c1011

3. Open the top cover of the LCIT.

d3a6c1012

4. Remove the right panel [A].



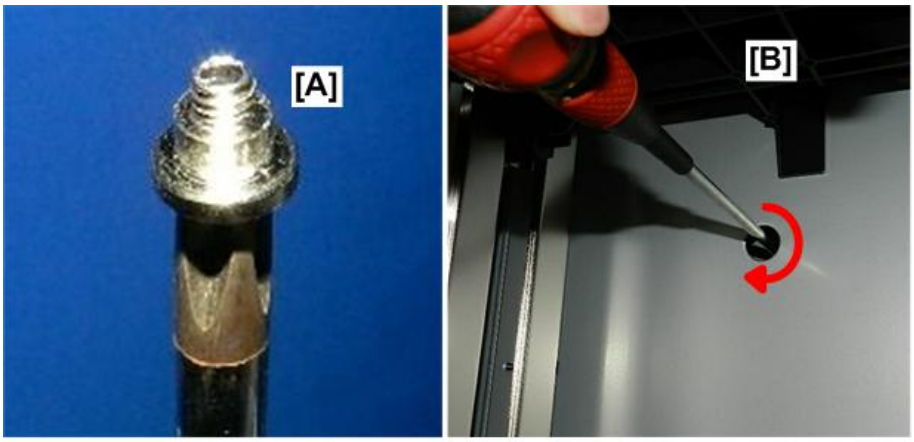
x4

d3a6c1013

5. Look inside the LCIT and locate the hole for the shoulder screw.

d3a6c1014

6. Set the flat-head shoulder screw [A] on the tip of a screwdriver, and then fasten in the hole behind panel [B].



x1

d3a6c1015

Important

- This screw locks the release button on the front of the LCIT.
- In order to separate the LCIT from the main machine, you will need to first remove this screw.
- After you have removed the screw you can press the release button, and then pull the LCIT away from the main machine.

-

7. If the screw falls, press the release button [A] of the front of the LCIT. Pull the LCIT away from the main machine. You should see the screw at [B] near the ground plate.

d3a6c1016

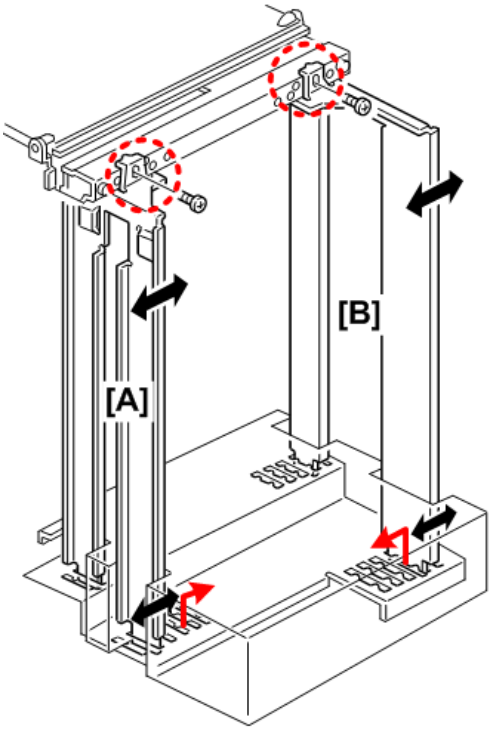
8. Plug the LCIT power cord into the connector.

d3a6c1017

Paper Size Adjust and Setting

The side fences [A] and [B] can be adjusted for different paper sizes:

- A4 LEF
- B5 LEF
- LT LEF

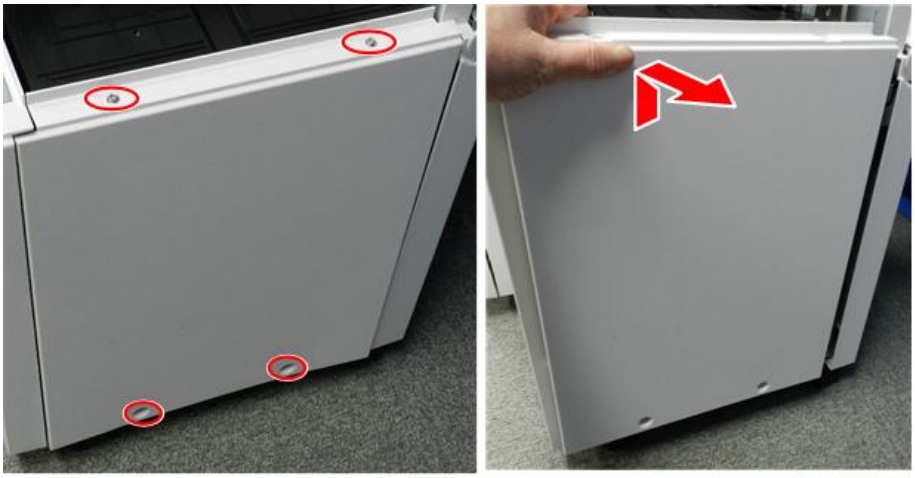


d3a6c3009

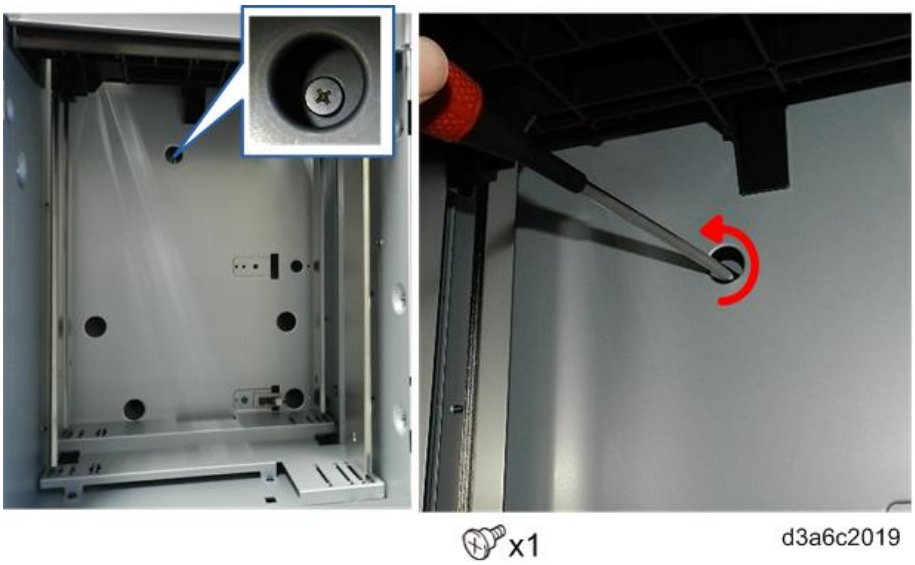
1. Open the top cover of the LCIT.

d3a6c2017

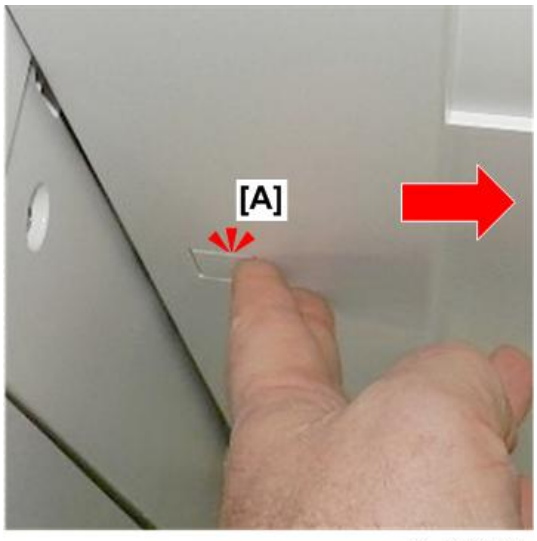
2. Remove the right panel of the LCIT.



3. If the LCIT is connected to the main machine, remove the lock screw.



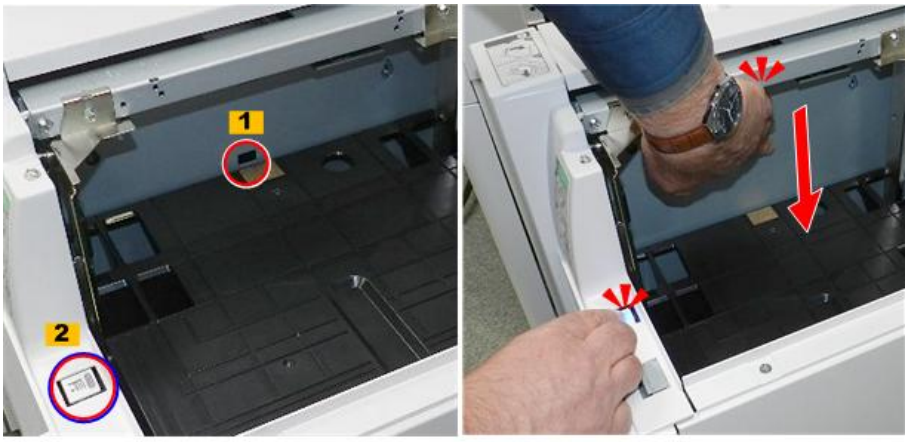
4. Press the release button on the front of the LCIT [A], and then pull the LCIT slightly away from the side of the main machine, but do not disconnect the LCIT I/F cable.



5. If the LCIT is disconnected, connect the I/F cable to the main machine [A], and then turn the machine on.
6. You must disconnect front fence [1] and rear fence [2], but these fences cannot be removed with tray plate [B] in the up position.

d3a6c2041

7. Confirm that the main machine is on, and that the LCIT is connected to the main machine.
8. To lower the tray plate, cover photosensor [1] with your left hand, and then press and hold down button [2].

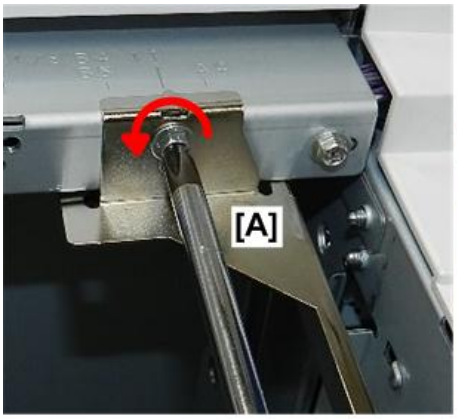


d3a6c2042

9. Keep the sensor covered and the button depressed until the tray plate reaches bottom and the motor switches off. You can now remove the fences.

d3a6c2043

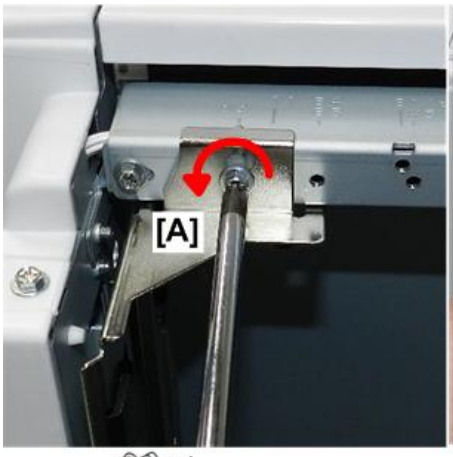
10. Unfasten and remove rear fence [A].



x1

d3a6c2044

11. Unfasten and remove front fence [A].



x1

d3a6c2045

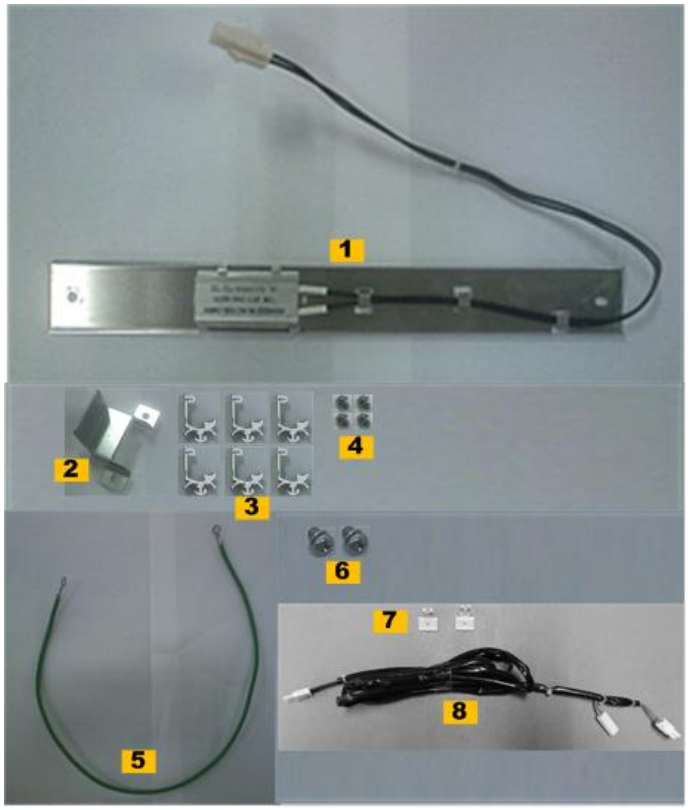
12. Set the bottom edge of each side fence into the slot for the paper size that you want you load into the LCIT
13. Set the notches at the top of each side fence at the name of the paper size.
14. Fasten the side fences at the top, and then re-assemble the LCIT.
15. Load some paper in the LCIT.
16. Turn the machine on.
17. Open **SP5959-005** (Paper Type - Tray 4), and then select the paper size you have selected with the side fences.

2.6.3 LCIT HEATER (OPTION)

Accessories

Check the accessories and their quantities against this list:

No.	Description	Q'ty
1.	LCIT Heater	1
2.	Bracket	1
3.	Clamps	6
4.	Screws M3x6	4
5.	Ground Wire	1
6.	Ground Screws – Pan Head	2
7.	Flat Clamps	2
8.	LCIT Heater Harness	1



d3a6c2001

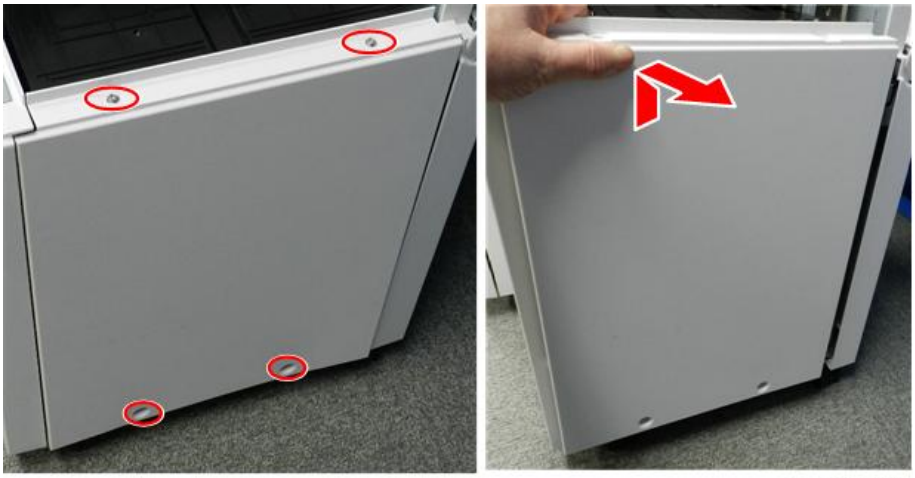
Installation

LCIT Side

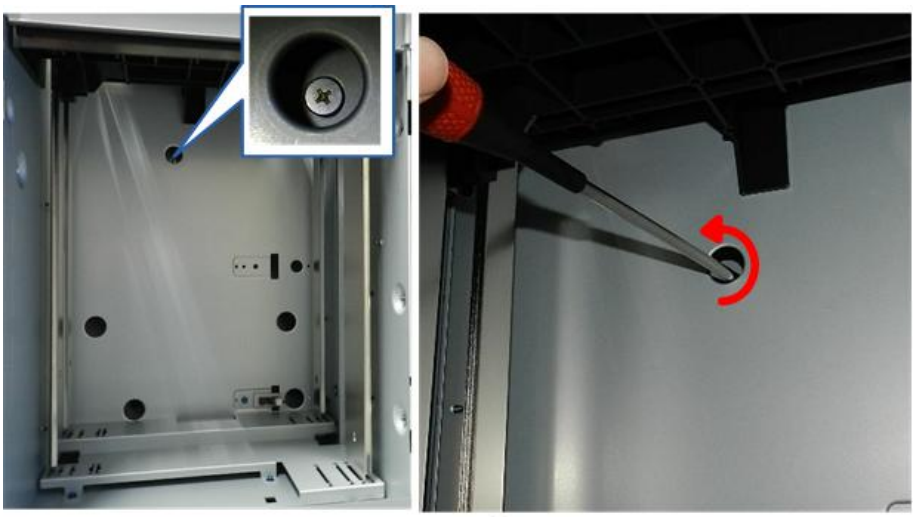
1. Turn the machine off.
2. Open the top cover of the LCIT.

d3a6c2017

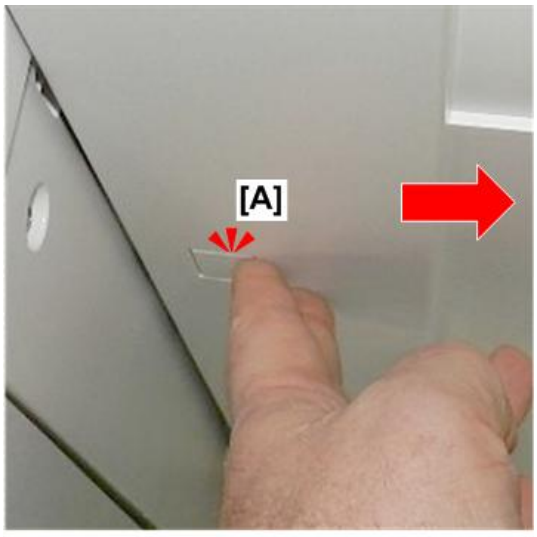
3. Remove the right panel of the LCIT.



4. If the LCIT is connected to the main machine, remove the lock screw.



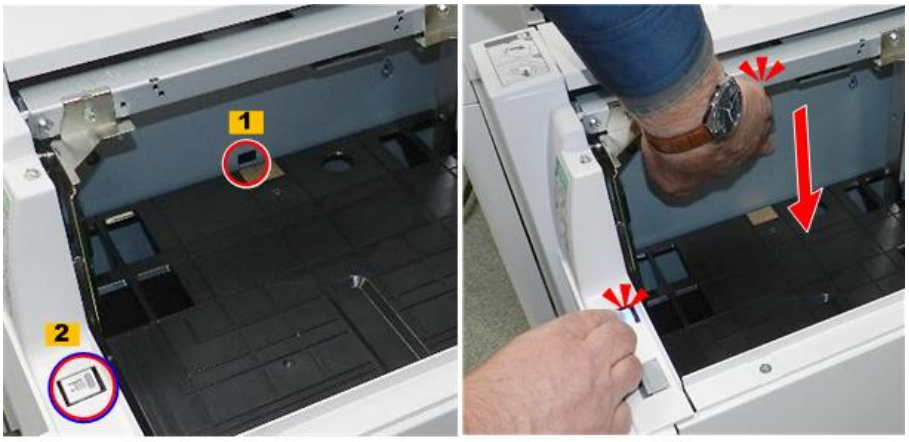
5. Press the release button on the front of the LCIT [A], then then pull the LCIT slightly away from the side of the main machine, but do not disconnect the LCIT I/F cable.



6. If the LCIT is disconnected, connect the I/F cable to the main machine [A], and then turn the machine on.
7. You must remove front fence [1] and rear fence [2], but these fences cannot be removed with tray plate [B] in the up position.

d3a6c2041

8. Turn the machine on, and confirm that the LCIT is connected to the main machine.
9. To lower the tray plate, cover photosensor [1] with your left hand, and then press and hold down button [2].

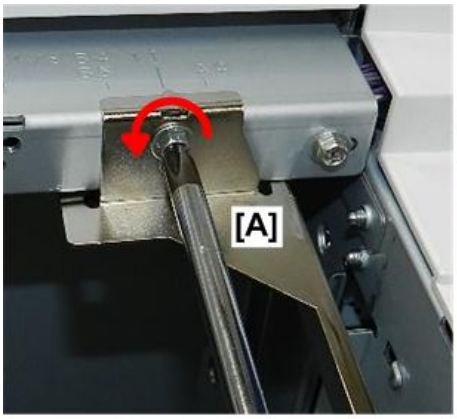


d3a6c2042

10. Keep the sensor covered and the button depressed until the tray plate reaches bottom and the motor switches off. You can now remove the fences.

d3a6c2043

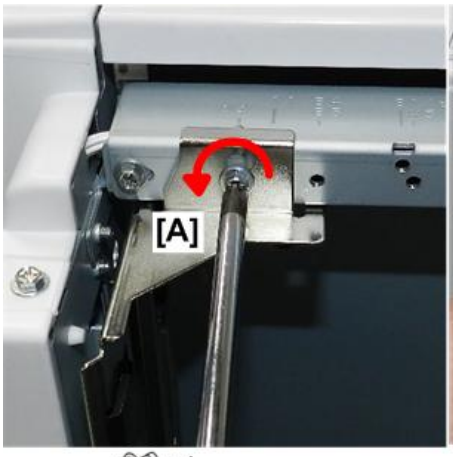
11. Unfasten and remove rear fence [A].



x1

d3a6c2044

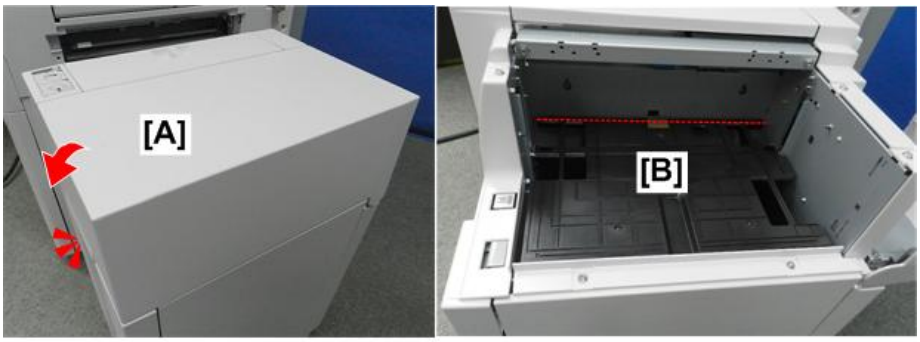
12. Unfasten and remove front fence [A].



x1

d3a6c2045

13. After both fences have been removed, close the top cover [A].
14. The lift motor will switch on and raise the tray plate to the up position [B]. This will take about 30 sec.



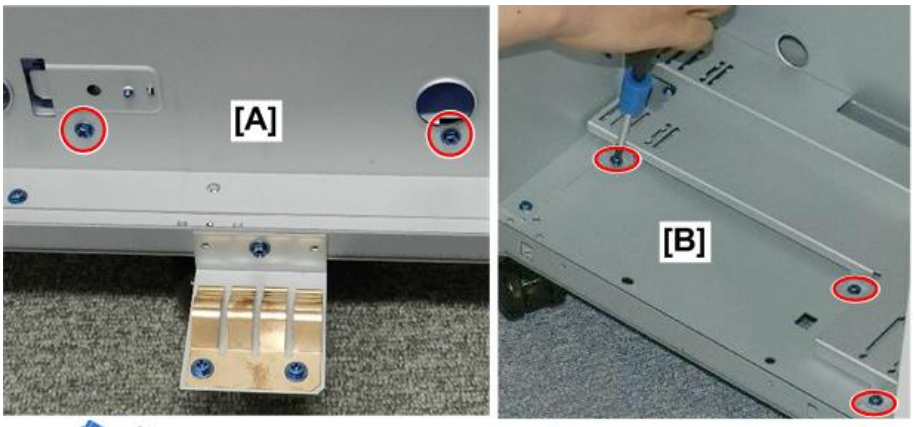
d3a6c2046

15. At the left bottom edge of the LCIT, remove the stay.

x4

d3a6c2021

16. Remove left screws [A] of the positioning plate inside the LCIT.
17. Inside the LCIT [B] unfasten the positioning plate.

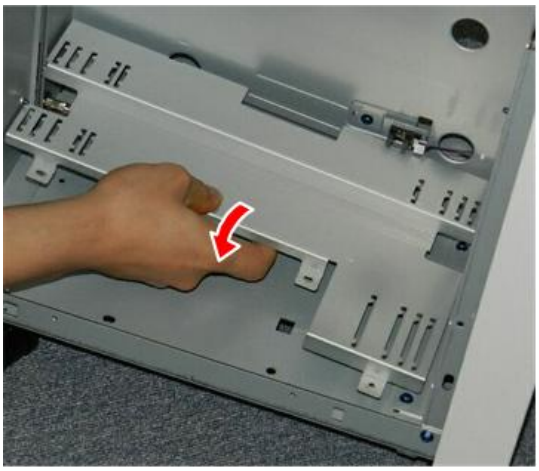


x2

x3

d3a6c2022

18. Remove the positioning plate.

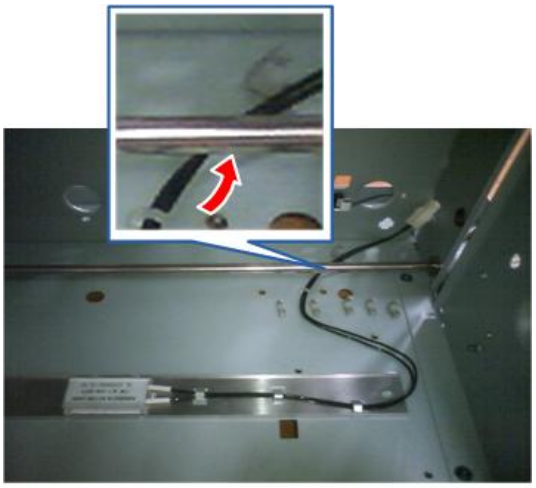


d3a6c2023

19. Attach the clamps to the bottom of the LCIT.

d3a6c2003

20. Set the LCIT heater, and then pass the heater harness under the rear side of the shaft.



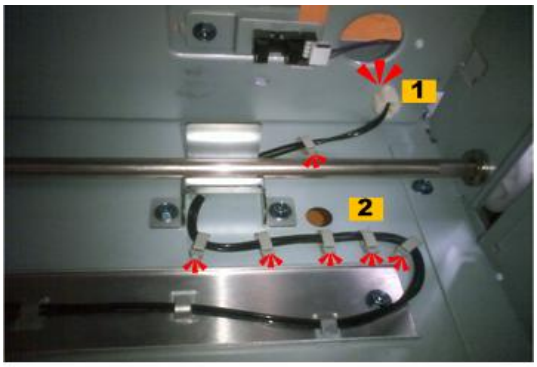
d3a6c2004

21. Set accessory bracket [A], position the bracket [B] over the harness, and then fasten it.

22. Fasten the heater with the accessory screws.

x2 d3a6c2006

23. Insert the bayonet connector [1] into the cut-out in the frame.
24. Lay the harness in the open clamps [2] and then close the clamps.



x6 d3a6c2007

25. Re-assemble the LCIT in reverse order. This completes preparation on the LCIT side.

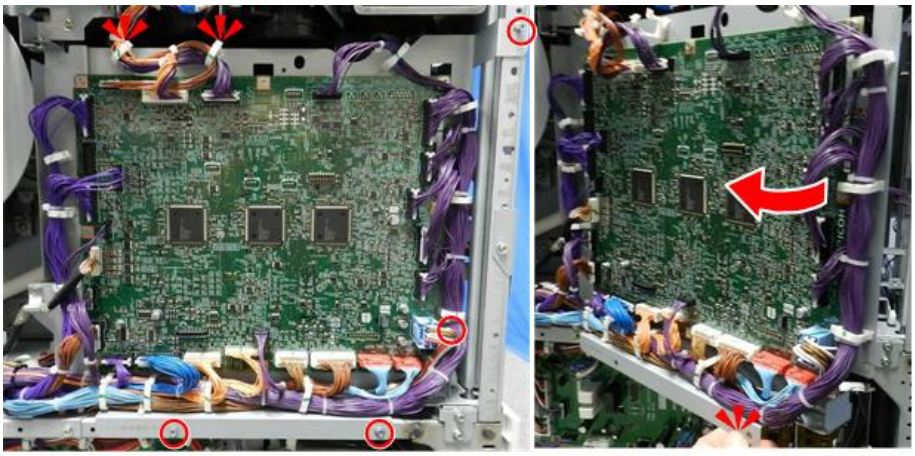
d3a6c2008

Main Machine Side

Note

- The machine is shipped from the factory with main machine upper and lower paper bank heaters (standard) disconnected.
- These heaters are pre-installed but may or may not be connected in your machine. However, the procedure below starts with the main machine tray heaters connected.

1. Remove the rear covers. page 4-19
2. Unfasten the IOB mounting bracket, and then swing it open.



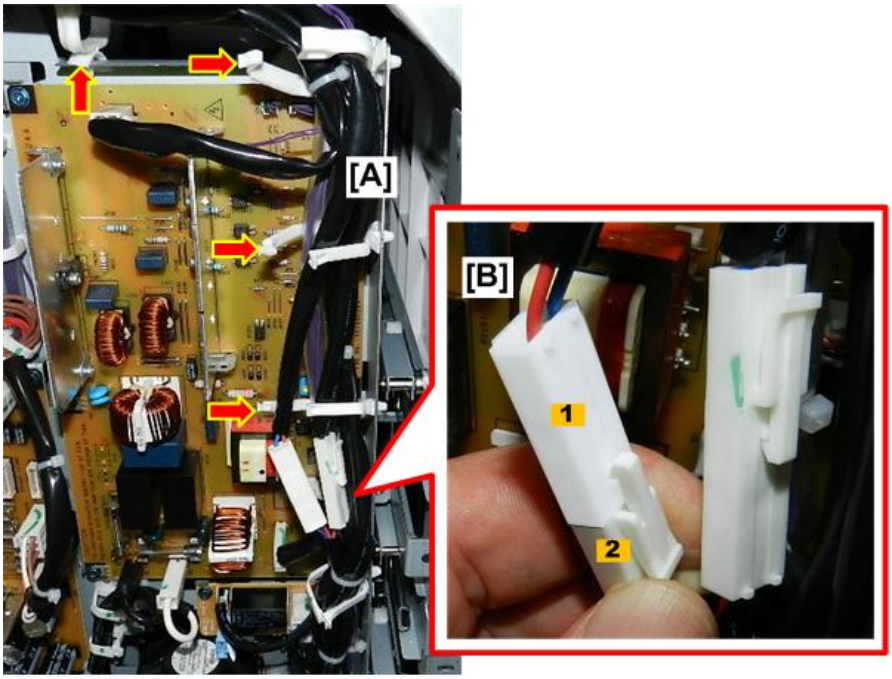
x2 x4

d3a6c2031

3. Open the clamps at the top and right edge of the AC drive board [A].
4. Pull out the upper heater harness [B] of the main machine.

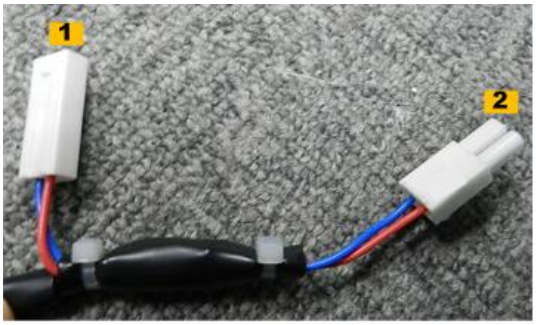
Note

- The upper heater harness has the box receptacle [1] at the top and bayonet connector [2] at the bottom.



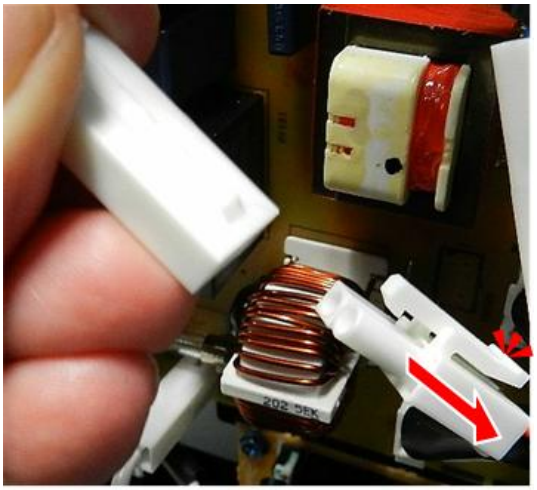
x4 d3a6c2024

5. One end of the LCIT harness has two connectors: box receptacle [1] and bayonet connector [2].



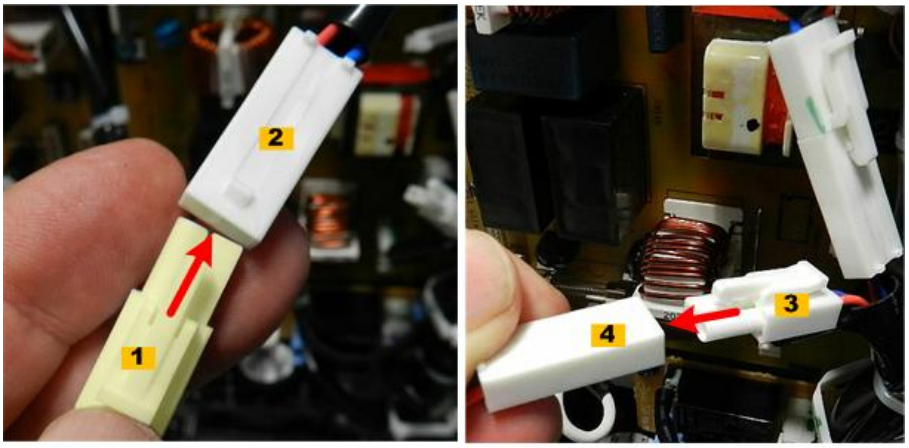
d3a6c2025

6. Disconnect the main machine upper heater harness.



d3a6c2026

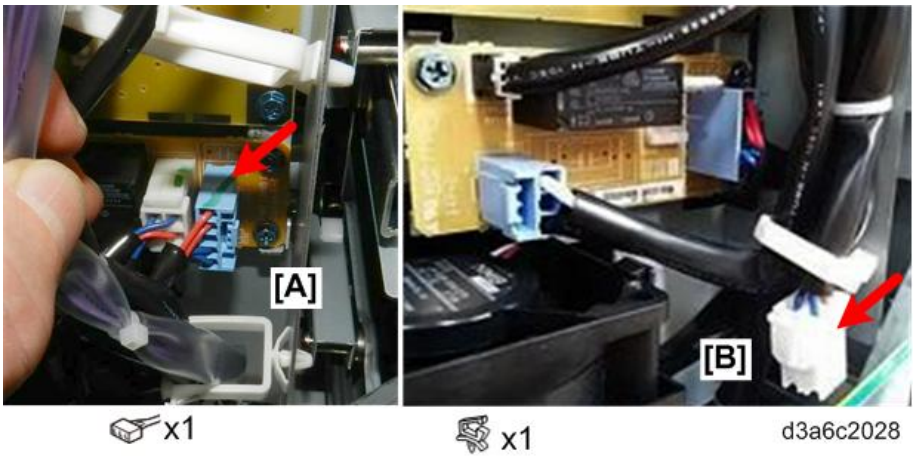
7. Insert the bayonet connector [1] of the connector pair on the end of the LCIT heater harness to the box receptacle [2] of the upper heater harness.
8. Insert the bayonet connector [3] of the upper heater harness into the box receptacle [4] of the LCIT heater harness pair.



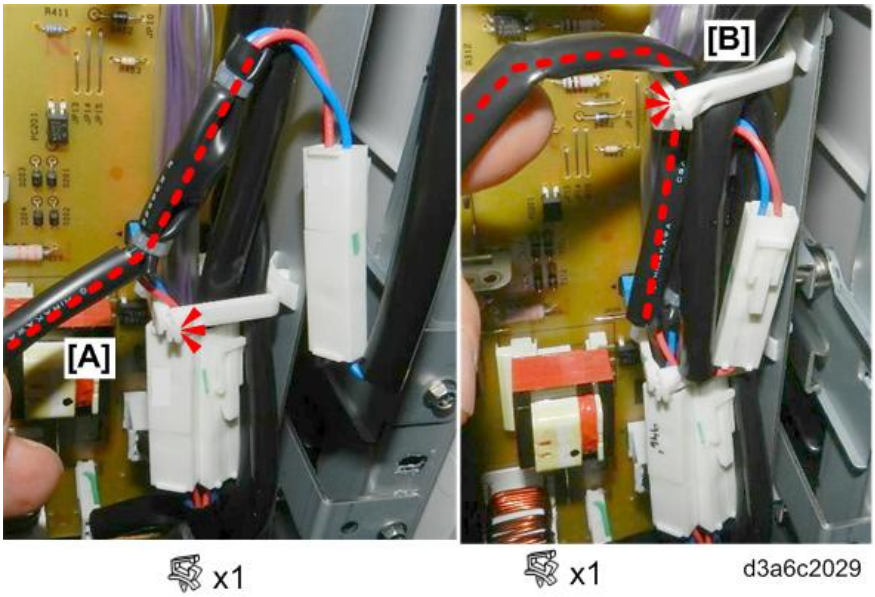
d3a6c2027

9. At the bottom right corner of the AC drive board [A], confirm that the heater harness (Blue) is connected to the DHB (Drum Heater Board).

10. If the other connector (White) for the drum/scanner heater harness is disconnected (not being used), clamp this harness at [B].

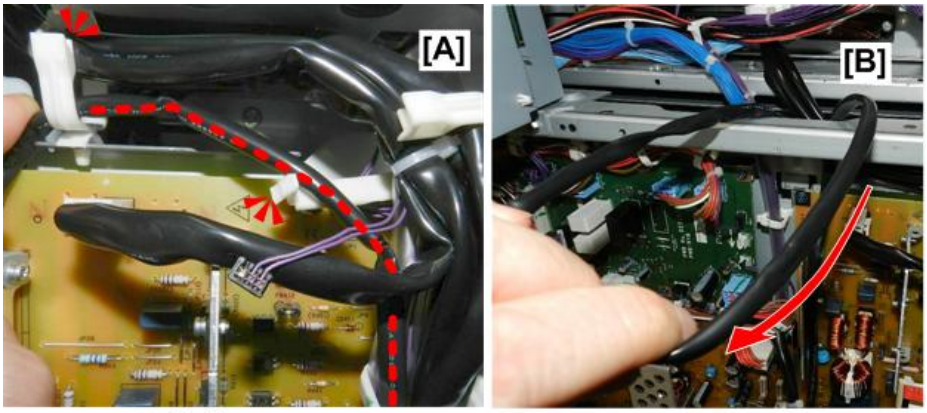


11. Clamp the connectors [A] as shown.
12. Raise the heater harness and clamp it [B].

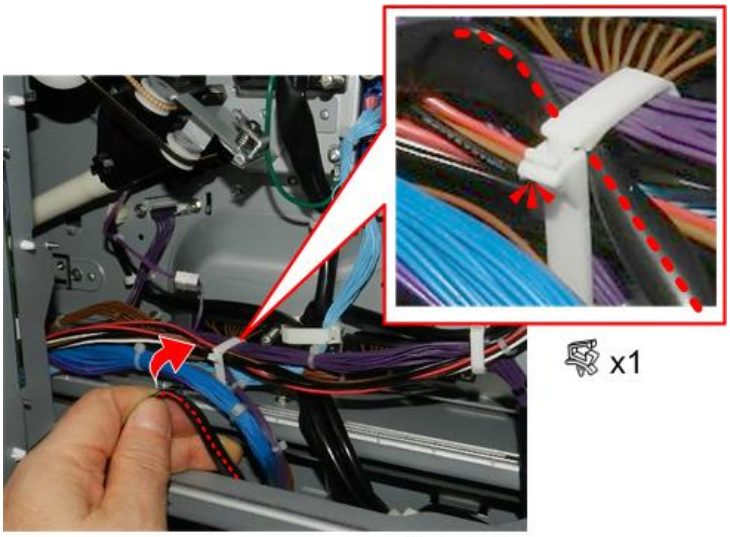


13. Raise the LCIT heater harness, and clamp it at the top edge of the AC drive board [A].

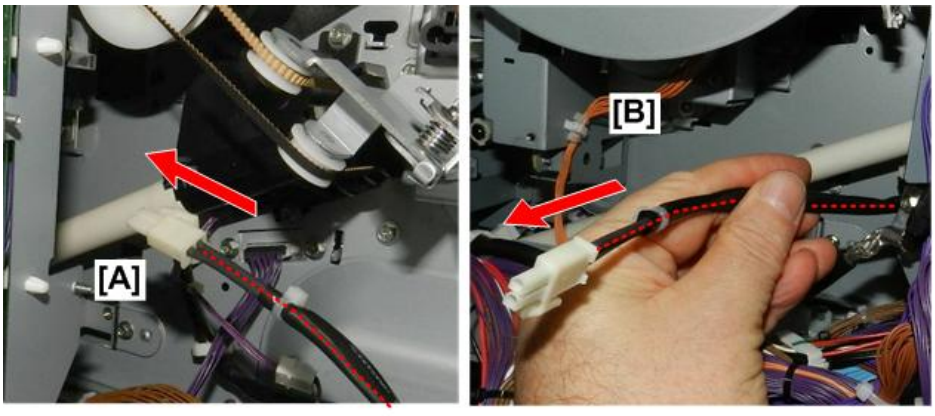
14. Raise the LCIT heater harness through the hole in the frame [B].



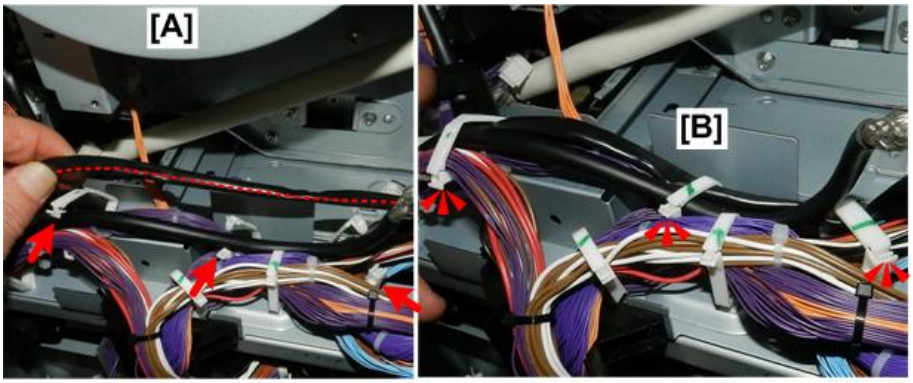
15. Clamp the LCIT heater harness behind the IOB.



16. Behind the IOB, push the LCIT heater harness behind the stay [A], and then pull it out under flywheel [B].



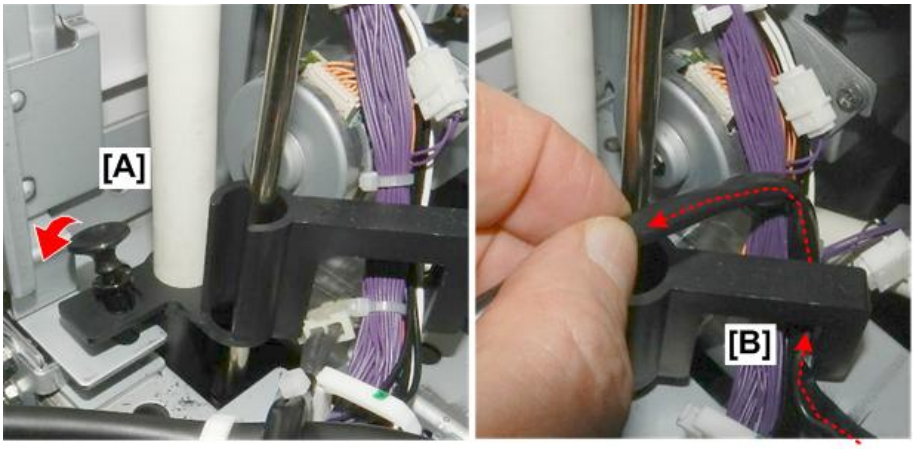
17. Pull the LCIT harness below the flywheel [A] and then clamp it [B].



x3

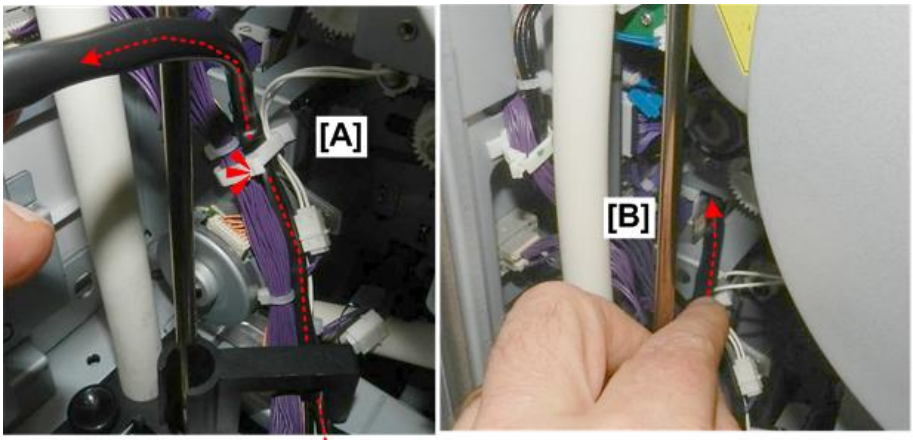
d3a6c2034

18. Disconnect stopper [A] on the base of the toner collection pump.
19. Pass the harness under arm [B] of the base, and then re-fasten the stopper.



d3a6c2035

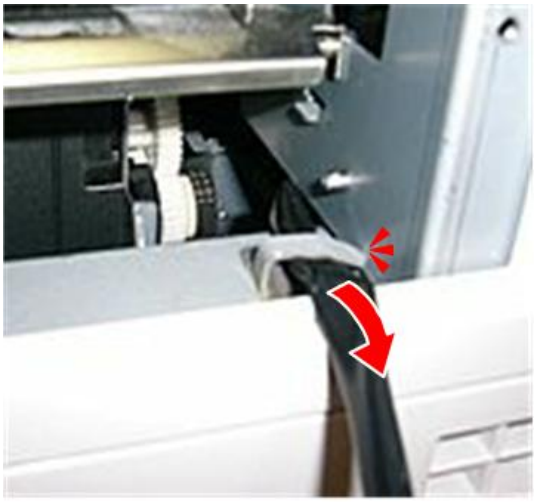
20. Clamp the harness at [A], and then push it out the right side of the main machine [B].



x1

d3a6c2036

21. Pull the harness out of the main machine, and then clamp it.

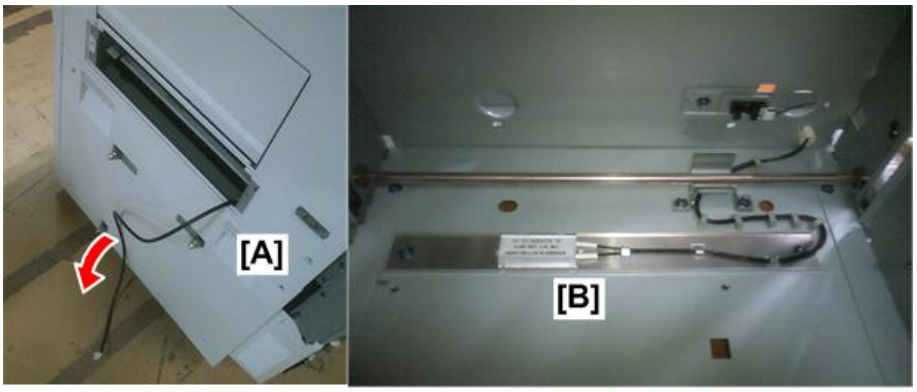


d3a6c2037

This completes preparation on the main machine side.

Docking

1. Before you dock the LCIT to the main machine, make sure that you have completed the procedures above to prepare the main machine side [A] and LCIT side [B].

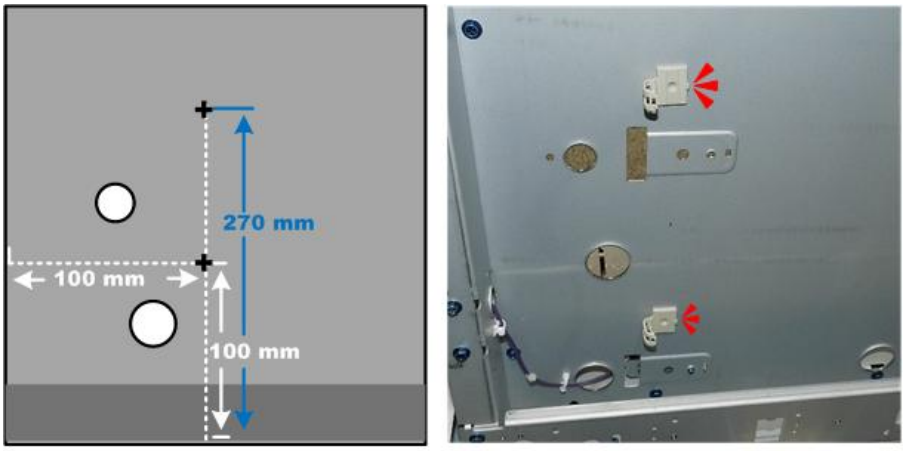


d3a6c2009

2. Hold the ground wire straight up, and then fasten it tightly.

d3a6c2010

3. Measure the positions for the flat clamps on the left side of the LCIT.
4. Attach the flat clamps to the left face of the LCIT.

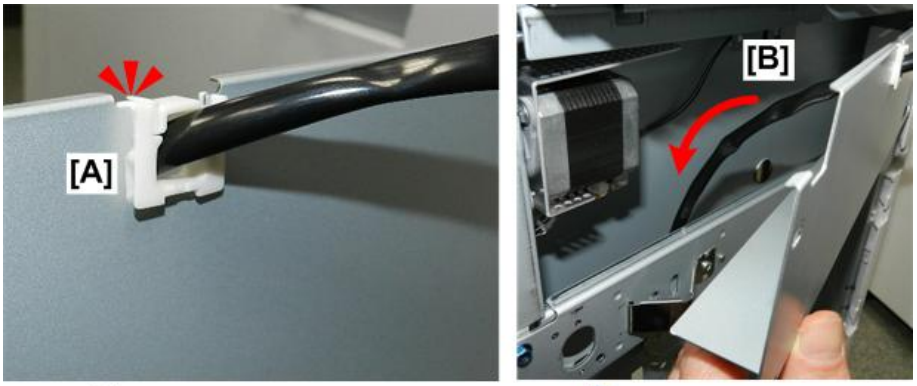


d3a6c2039

5. Remove the left upper plate from the LCIT.

x2 d3a6c2038

6. Pass the end of the harness through saddle clamp [A] and then clamp it.
7. Re-attach the left upper plate [B].

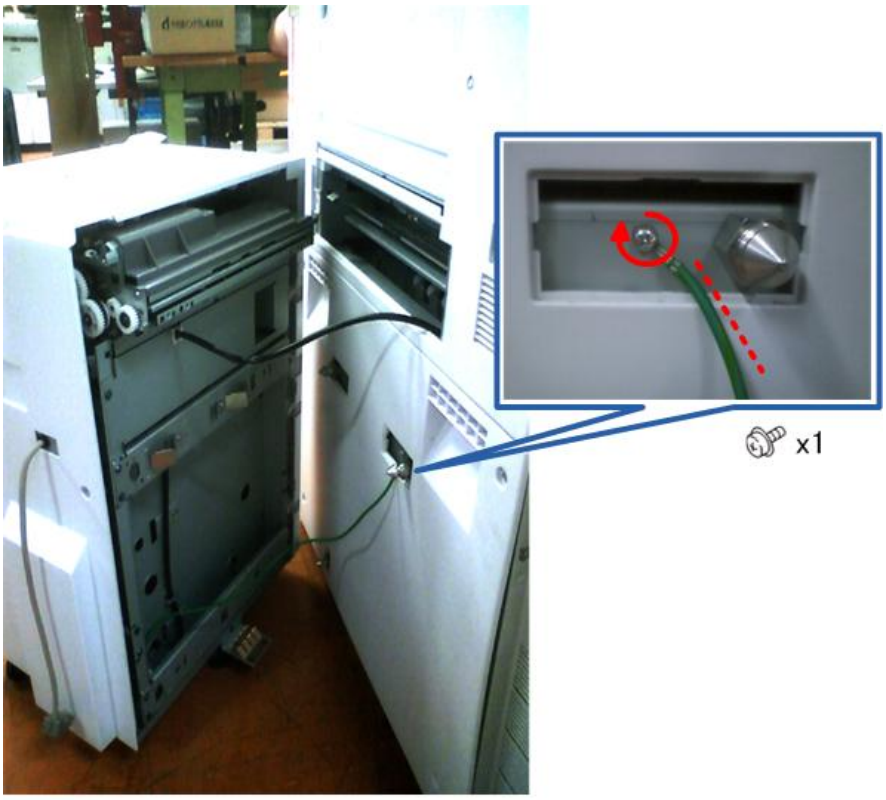


x1 x2 d3a6c2040

8. Connect the harness from the main machine to LCIT heater.
9. Clamp the harness to the left side of the LCIT.

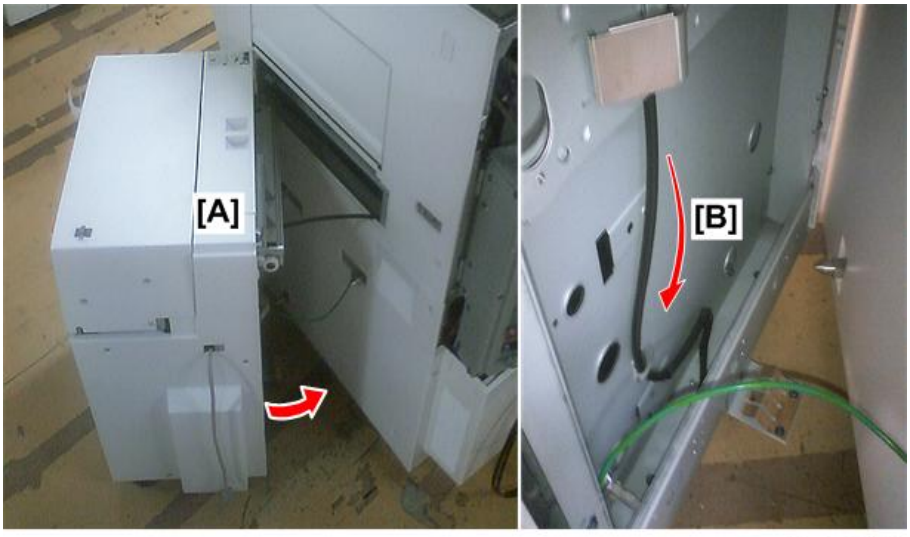
x2 x1 d3a6c2012

10. Connect the ground wire to the side of the main machine near the joint connector, at about a 45 degree angle as shown.



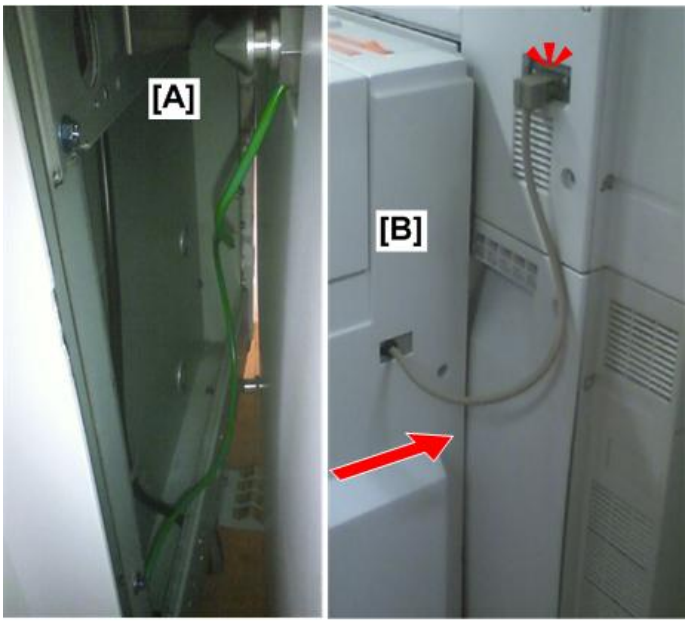
d3a6c2013

11. Push the LCIT [A] close to the side of the main machine.
12. If there is any slack in the harness pull it down [B].



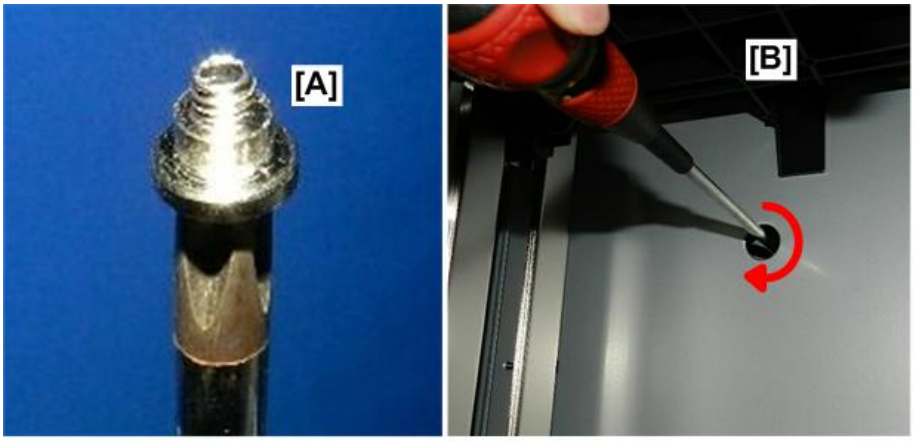
d3a6c2014

13. Push the LCIT [A] onto the joint pins on the side of the main machine.
14. Connect the LCIT [B] to the main machine.



d3a6c2015

15. Set the flat-head shoulder screw [A] on the tip of a screwdriver, and then fasten in the hole behind panel [B] to lock the LCIT against the side of the main machine.



x1

d3a6c1015

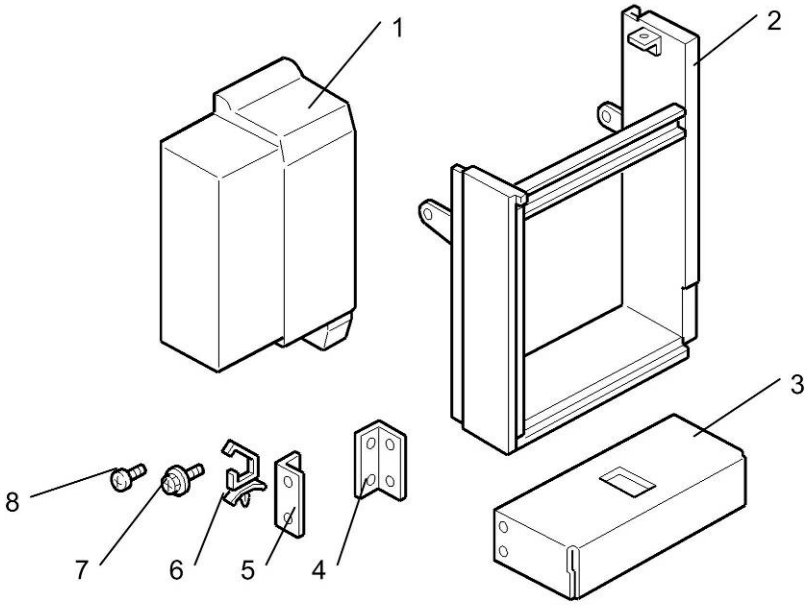
16. Re-attach the right panel of the LCIT.
    This completes installation of the LCIT heater.

2.7 8 1/2"X14" PAPER SIZE TRAY TYPE 9002 (B474)

2.7.1 ACCESSORY CHECK

Check the accessories and their quantities against this list:

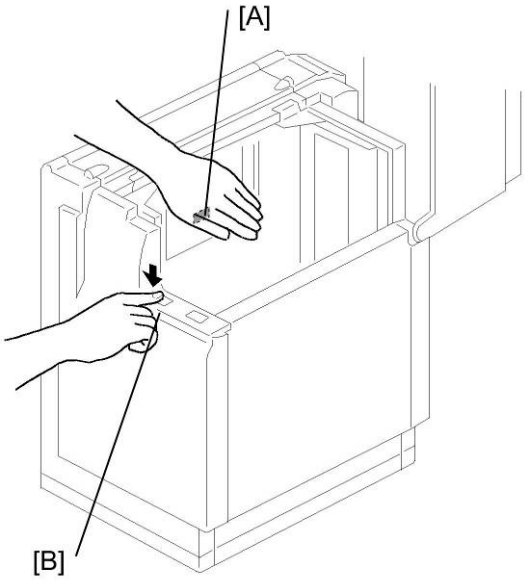
No.	Description	Q"ty
1.	Cover	1
2.	B4/LG frame	1
3.	Bottom plate extension	1
4.	Rear bracket	1
5.	Front bracket	1
6.	Harness clamp	1
7.	Tapping hex screws - M4 x 8	6
8.	Tapping screws - M4 x 8	4



b474i001a

2.7.2 INSTALLATION PROCEDURE

1. If the LCT is connected to the machine, open the cover and remove the paper.
2. To lower the LCT tray, cover the near end sensor [A] with one hand, and then press the tray down button [B].

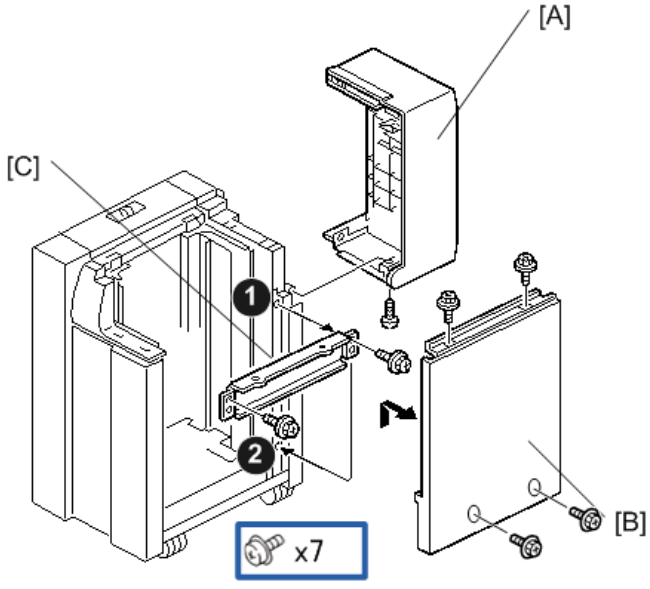


b474i507

⚠CAUTION

- Switch the machine off and unplug the machine before starting the following procedure.

3. Disconnect the LCT from the machine.
4. Remove the LCT cover [A].
5. Remove the right cover [B].
6. Remove the right stay [C] at ❶ and re-attach it below at ❷.



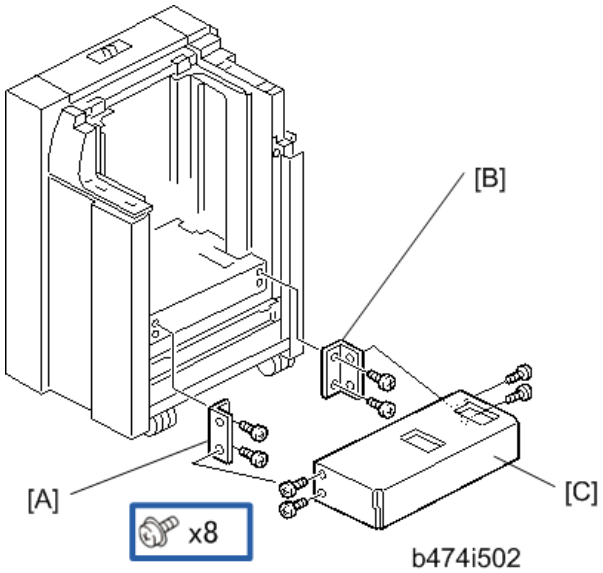
b474i001

7. Attach the front bracket [A] with the beveled corner down.

Note

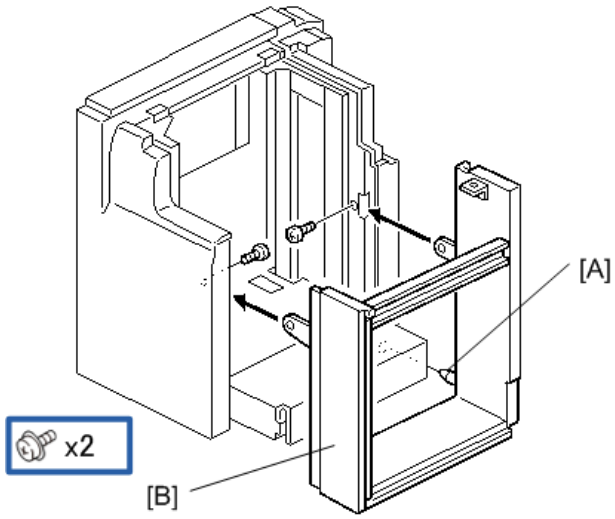
- If the brackets are difficult to install, raise the bottom plate with your hand.

8. Attach the rear bracket [B] with the beveled corner down.
9. Attach the bottom plate extension [C] with the hex nuts.



b474i502

10. Align the positioning pin [A].
11. Attach the B4/LG frame [B] with the hex nuts.

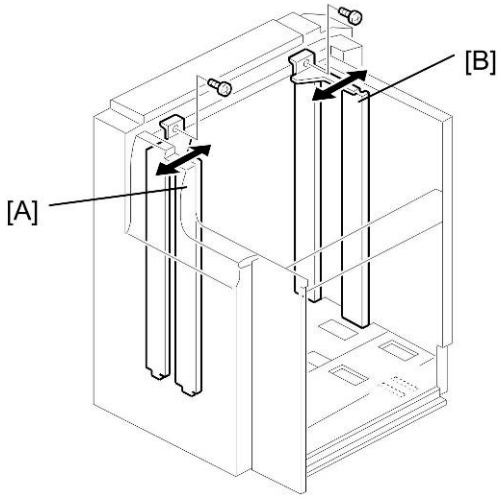


b474i553

Important

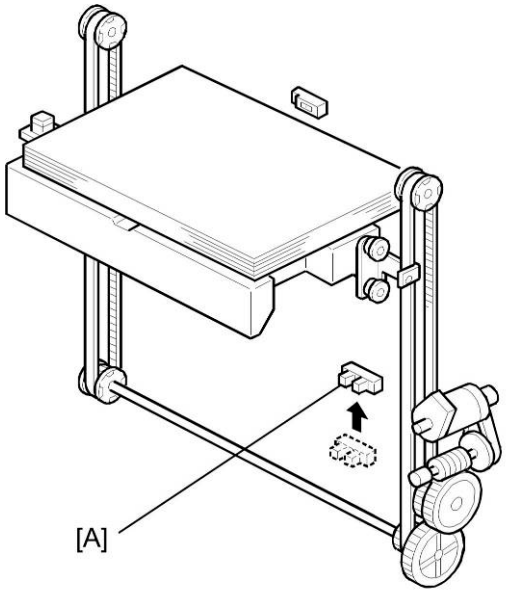
- The kit is set for B4. If you need to change the paper size to LG, do the following steps.

12. Move the front side fence [A] to the LG position and fasten.
13. Move the rear side fence [B] to the LG position and fasten.



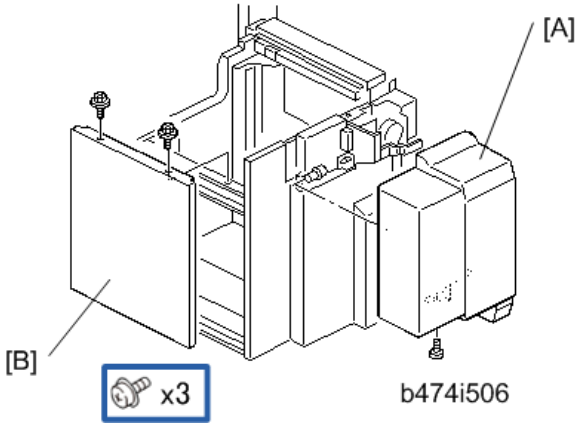
b474i555

14. Change the position of the lower limit sensor [A].



b474i508

15. Attach the harness (not shown) to the back of the plate and secure the sensor connector wire.
16. Attach the LCT cover [A] provided with the kit.
17. Re-attach the right cover [B].

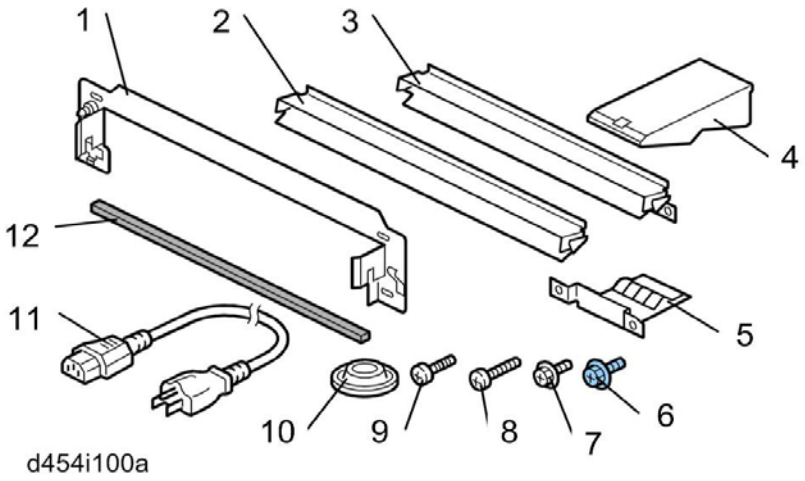


18. Connect the LCT to the machine.
19. Switch the machine on, enter the SP mode, then use **SP5959 005** (Paper Size – Tray 4 (LCT) to select the new paper size. For details, see **SP5959** in "Service Tables".

2.8 MULTI-FOLDING UNIT FD4000 (D615)

2.8.1 ACCESSORIES

Check the quantity and condition of the accessories in the box against the following illustration and list.



No.	Description	Q'ty
1.	Joint Bracket	1
2.	Paper Guide – Long	1
3.	Paper Guide – Short (D131/D132/D133)	1
4.	Proof Tray Auxiliary Plate - Bottom	1
5.	Ground Plate	1
6.	Screws M3x6	2
7.	Screws M3x6	2
8.	Screws M4x20	4
9.	Screws M4x14	4
10.	Leveling Shoes	5
11.	Power Cord ***(Note: In China, do not use the power cord provided with this unit. Contact your supervisor and use the power cord specified for use in China.)***	1
12.	Sponge Strip	1

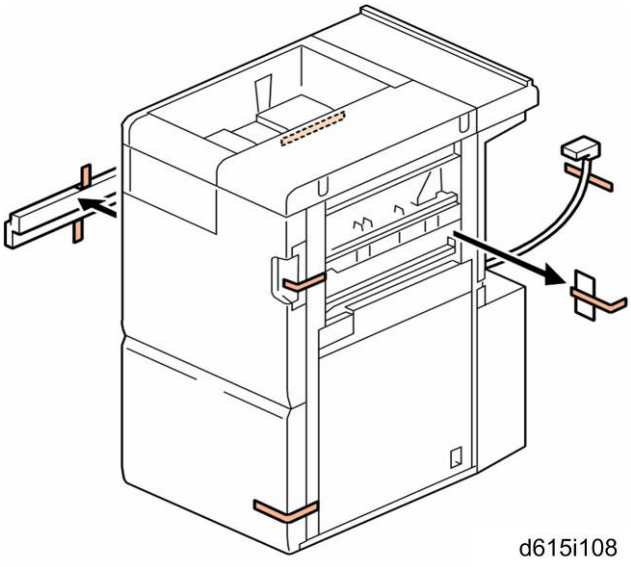
2.8.2 INSTALLATION

⚠CAUTION

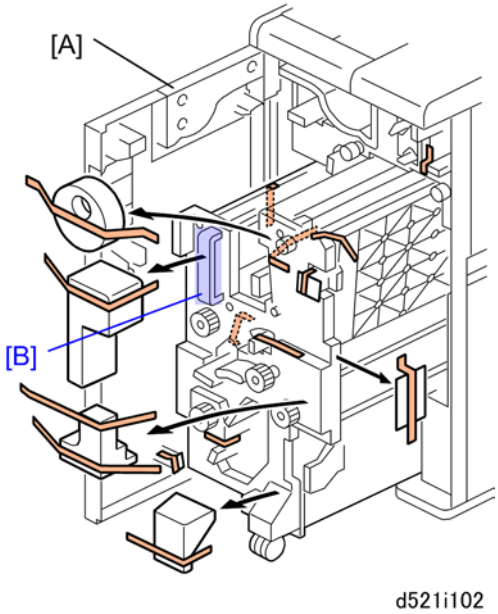
- The unit must be connected to a power source that is close to the unit and easily accessible.
- Make sure that the main machine is switched off and that its power cord is disconnected before doing the following procedures.

Tapes

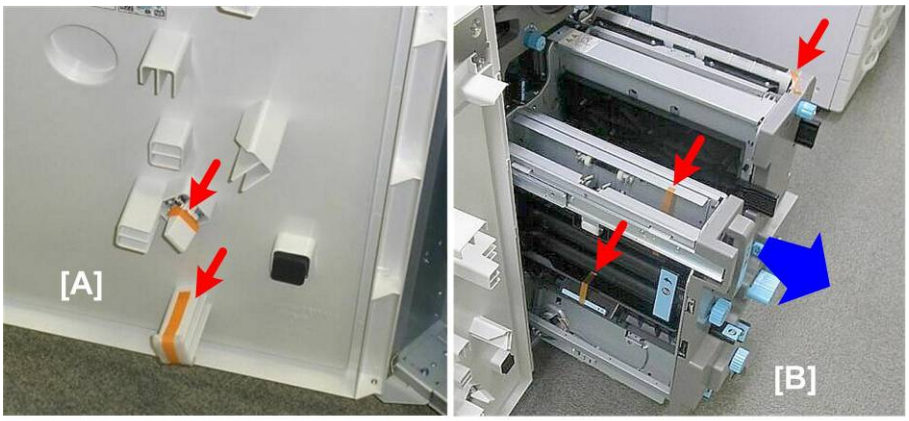
1. Remove all tape and packing material from the front, left, rear, and right sides.



2. Open the front door [A].
3. Grip handle [B] and slowly pull the fold unit out of the machine.



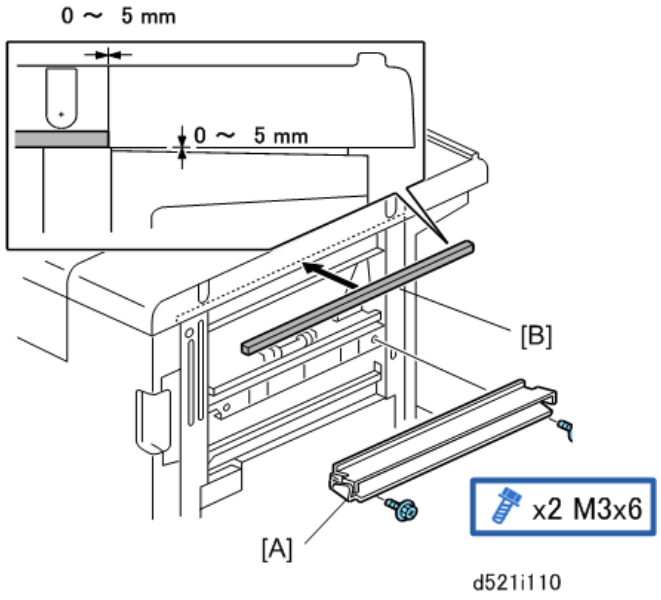
4. Remove all tape and packing material from inside.
5. Remove the tape from the bottom of the door [A].
6. Pull out the folding unit [B] and remove the tapes.



d521i103

Paper Guide, Sponge Strips

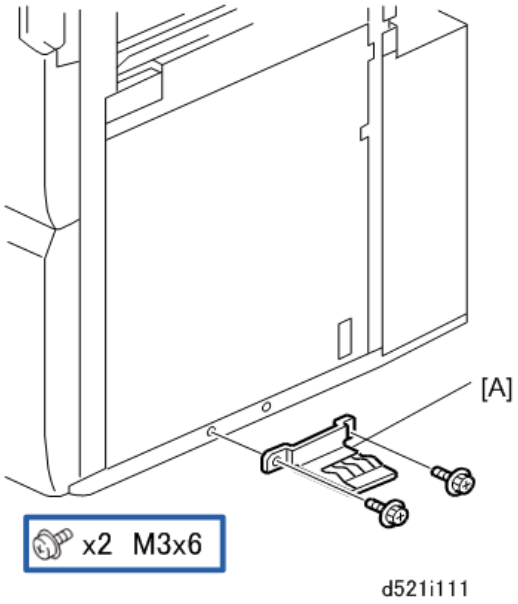
1. Select the short paper guide [A] and attach it.
2. Peel the tape from the sponge strip [B] and attach the strip to the top right edge of the unit.



d521i110

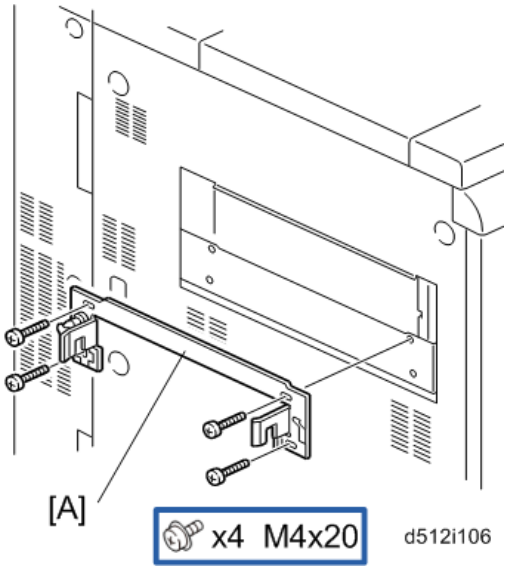
Ground Plate

1. Attach the ground plate [A] to the lower right edge of the unit.



Docking

1. Fasten the joint bracket [A] to the left side of the upstream unit.



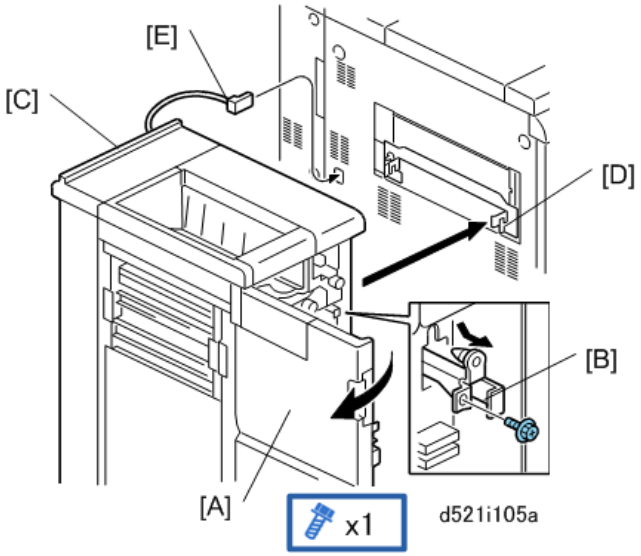
2. Open the front door [A].
3. At the front right corner, remove the screw of the lock bar [B]. **Keep this screw.**
4. Pull out the lock bar.

Note

- If you are docking to the main machine, you must first remove the plastic cap at the I/F cable connection point.

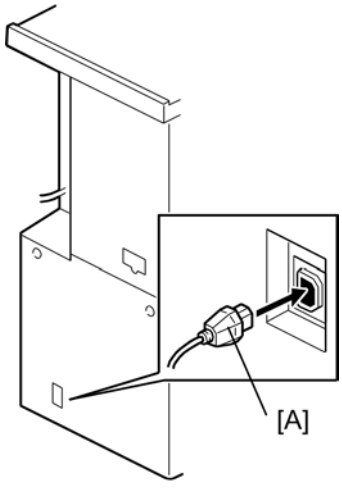
5. Slowly push the unit [C] against the left side of the upstream unit (or main machine) so that the lock bar is directly and squarely under the arms of the joint bracket.

6. Push in the lock bar so it slides up into the notches in the arms on both ends of the joint bracket [D].
7. Fasten the lock bar by re-attaching the screw removed in **Step 3**.
8. Connect I/F cable [E] to the upstream unit (or main machine).



Power Cord

1. Insert the power cord socket [A] into the power connection point.



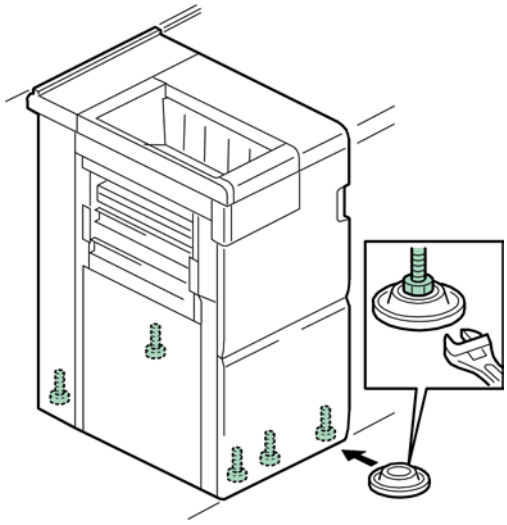
Important

- In China, do not use this power cord provided with this unit. Contact your supervisor and use the power cord specified for use in China.

2. Connect the power supply cord plug to a power outlet.

Finishing the Installation

1. Set the leveling shoes and adjust the height of the unit.

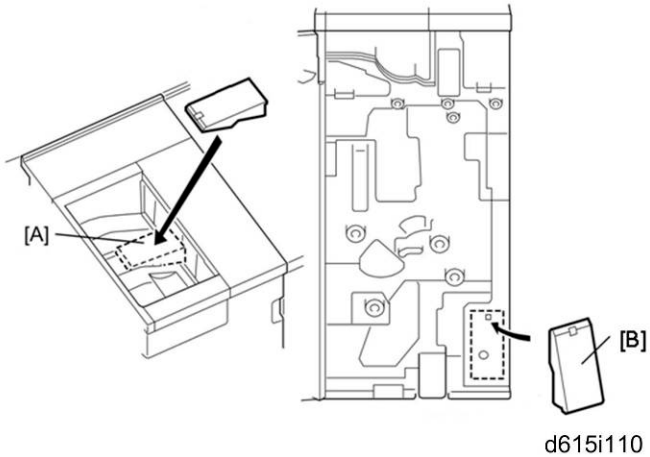


d521i208

2. Load some B4 paper in the 2nd tray of the main machine, and make several copies.
3. Check paper skew and side-to-side registration and correct if necessary.

Proof Tray Auxiliary Plate

1. Install the proof tray auxiliary plate.
   - Set the plate [A] in the center aligned with the diagonal groove.
   - The back should be flat against the end fence.
2. When the plate is not being used, open the front door and store the plate at [B] inside the inner cover.



d615i110

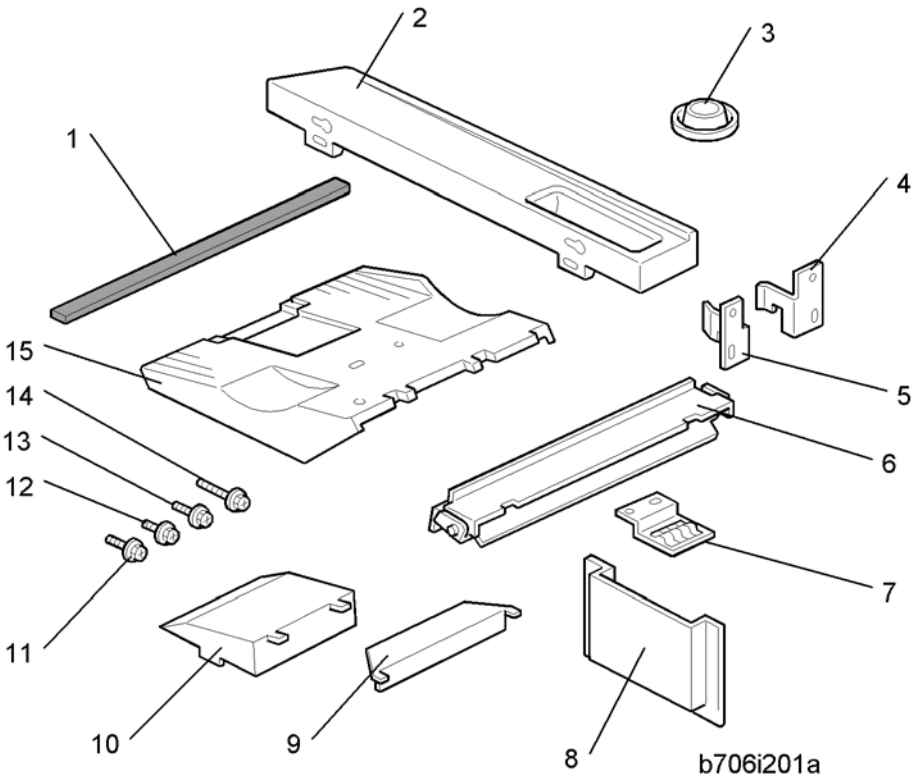
   - The plate should be used when Z-folded paper (all sizes) is output to the proof tray.
   - If the plate is not used with Z-folded output, the pages could mix and overlap.

2.9 FINISHER SR4080 (D610)

2.9.1 ACCESSORY CHECK

Check the accessories and their quantities against this list:

No.	Description	Q"ty
1.	Cushion	1
2.	Table Extension	1
3.	Leveling Shoes	1
4.	Rear Joint Bracket	1
5.	Front Joint Bracket	1
6.	Entrance Guide Plate	1
7.	Grounding Plate	1
8.	Auxiliary Tray Holder	2
9.	Auxiliary Tray - Proof	2
10.	Auxiliary Tray - Shift	2
11.	Tapping Screws - M4 x 8	2
12.	Tapping Screws - M3 x 6	4
13.	Tapping Screws - M3 x 8	4
14.	Phillips Screws with washer - M4 x 14	4
15.	Shift Tray	4

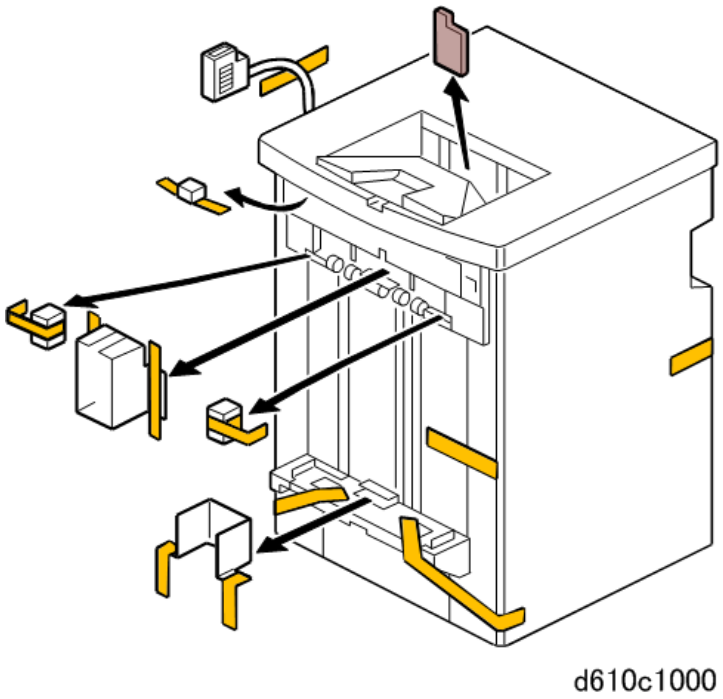


2.9.2 INSTALLATION

⚠CAUTION

- Turn the machine off and unplug the power cord.

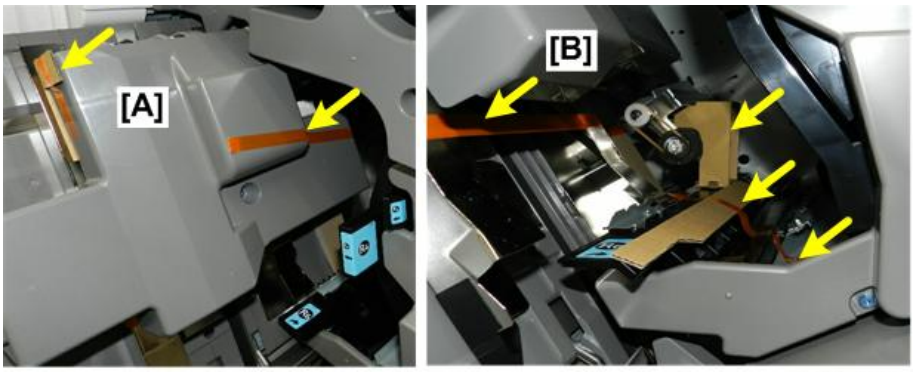
1. Unpack the finisher and remove all tapes and shipping retainers from the exterior of the finisher.



2. Open the front door and remove all visible tapes and shipping materials (cardboard strips, packing cushions, etc.

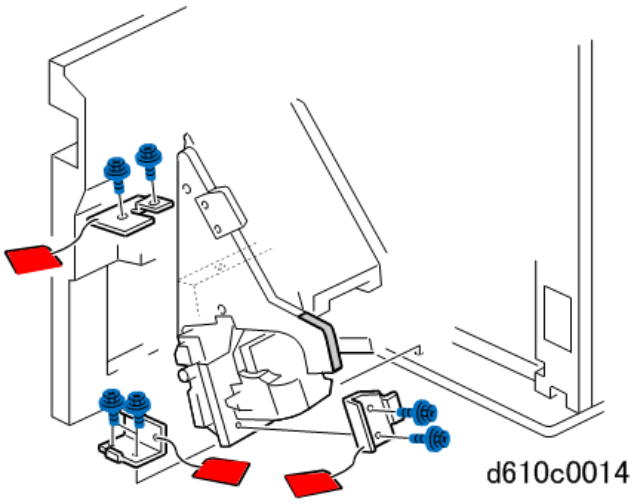
d610c1001

3. Remove tape and cardboard from behind and on the stacker unit [A].
4. Remove tape and shipping material [B] below the stacker unit.

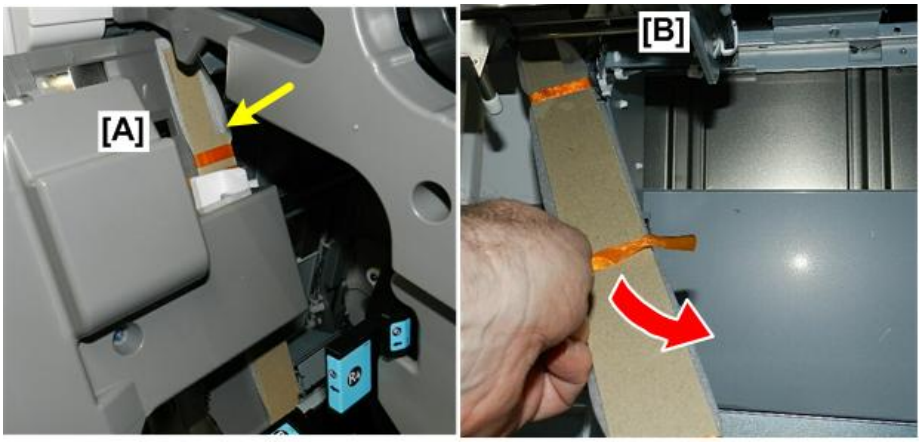


d610c1002

5. Remove the three shipping brackets marked with wired red tags (x6).



6. Pull the stacker unit out as far as it will go, and then remove the tape and cardboard from behind the stacker unit [A].
7. If the material [B] is difficult to remove from the front, on the right side of the finisher pull it down to remove it.

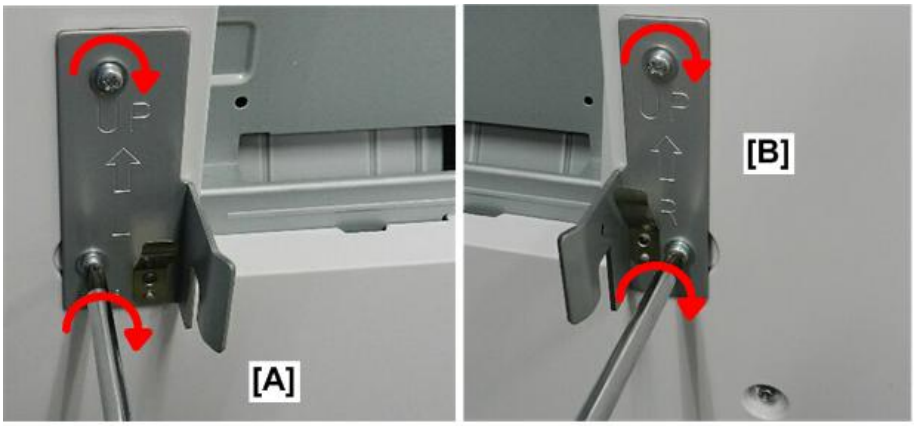


d610c1003

8. Check the exterior of finisher for remaining tape, and then remove it.

d610c1004

9. On the left side of the main machine, use the long screws to attach the joint brackets [A],[B] (x4) (M4 x 14).

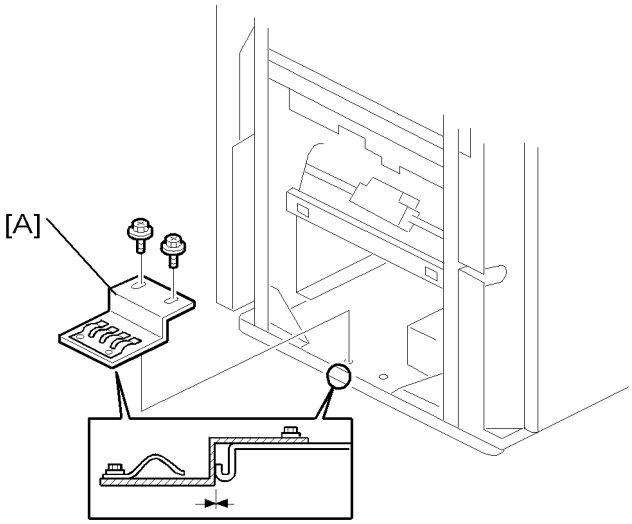


d610c1005

10. Remove the connector cover on the left side of the main machine.

d610c1006

11. Skip this step if you are going to install the Cover Interposer Tray. (You will attach the ground plate later at another location during the Cover Interposer installation.)
    -or-
    If you are not going to install the Cover Interposer Tray, install the grounding plate [A] now (x 2) (M3 x 6).

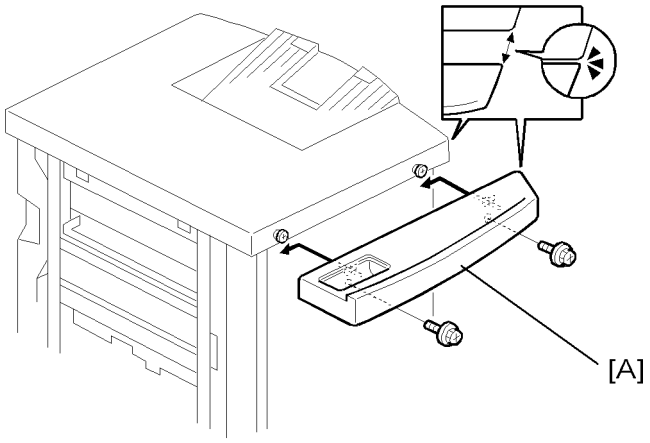


b478i004

12. Set the screws and then push against the plate [A] so it is completely flat against the frame [B], and then tighten the screws. This ensures full contact for the ground.

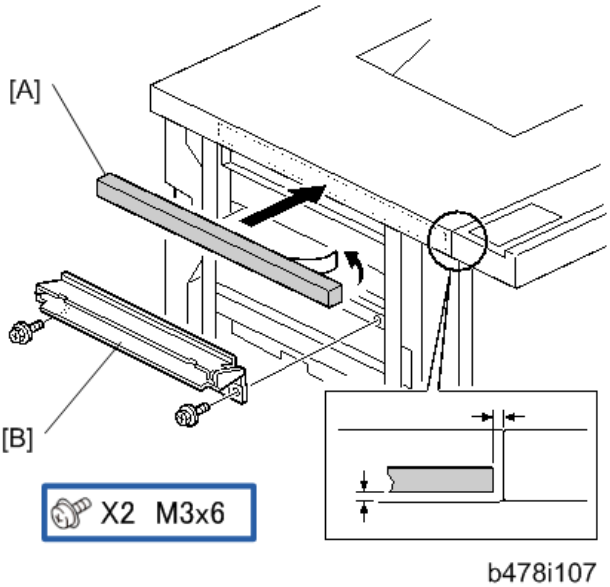
d610c1007

13. Set the screws in the side of the tray, and then set the keyholes of the table extension [A] over the screws (x 2) (M4 x 8).



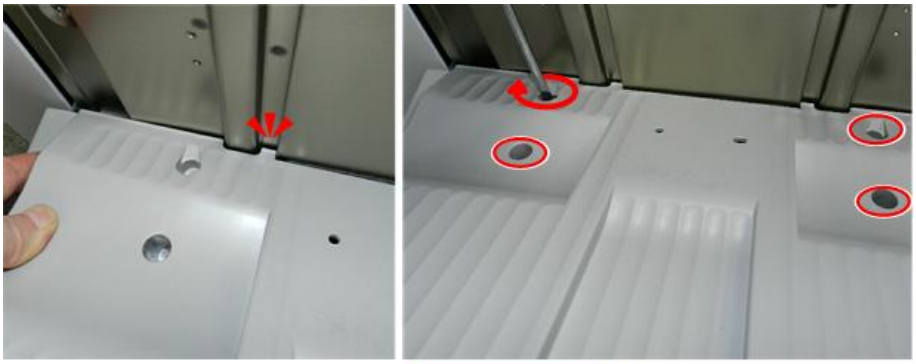
b478i005

14. With the extension slightly loose against the edge of the tray, align the end of the table extension with the edge of the finisher.
15. Tighten the screws.
16. Skip this step if you are going to install the Cover Interposer Tray. (You will attach the cushion later at another location during the Cover Interposer installation.)
    -or-
    If you are not going to install the Cover Interposer Tray, attach the cushion [A] to the right side of the upper cover.
17. Skip this step if you are going to install the Cover Interposer Tray. (You will attach the entrance guide plate later at another location during the Cover Interposer installation.)
    -or-
    If you are not going to install the Cover Interposer Tray, attach the entrance guide plate [B].



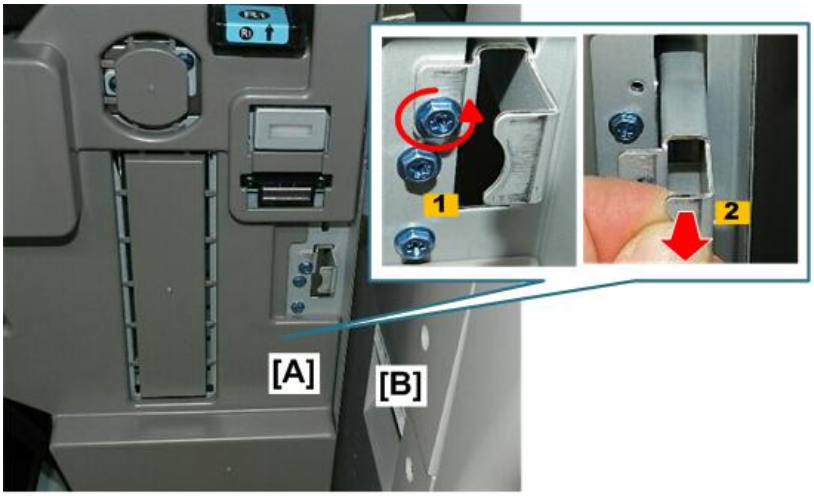
b478i107

18. Attach the shift tray.



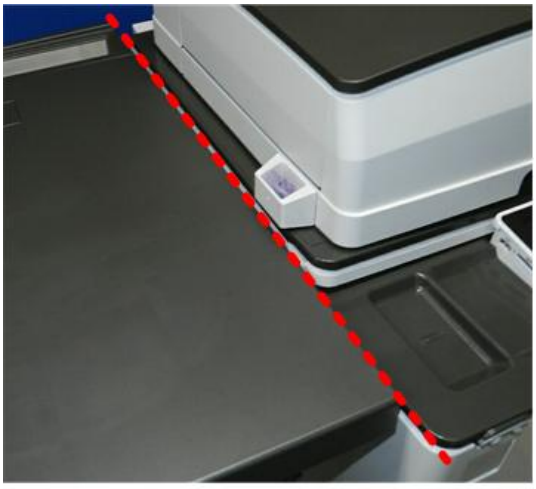
d610c1008

19. Open the front door of the finisher.
20. Push the finisher [A] close to the left side of the main machine [B].
21. Remove the lock lever screw [1], and then pull out the lock lever [2]. **Keep this screw**.



d610c1009

22. Align the finisher with the joint brackets on the left side of the main machine, and then push the finisher slowly against the main machine.
23. Make sure that the top right edge of the finisher is parallel to the top left edge of the main machine.

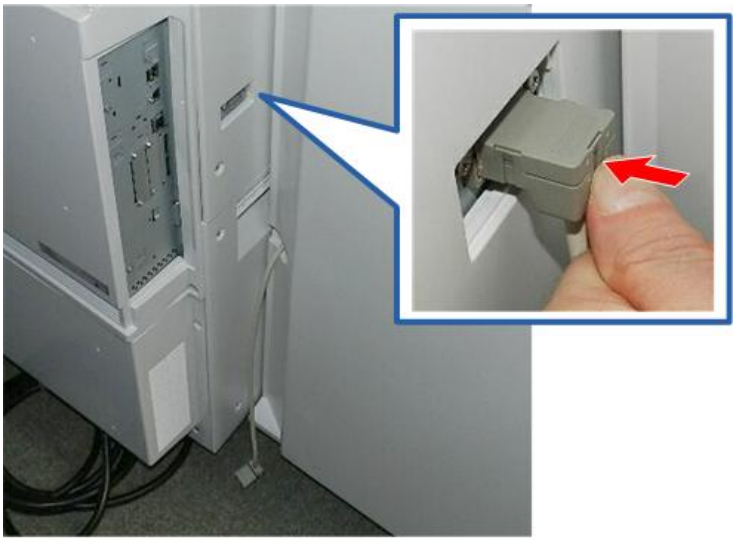


d610c1010

24. Push in the lock lever [1] until it stops, and then re-attach the screw [2].

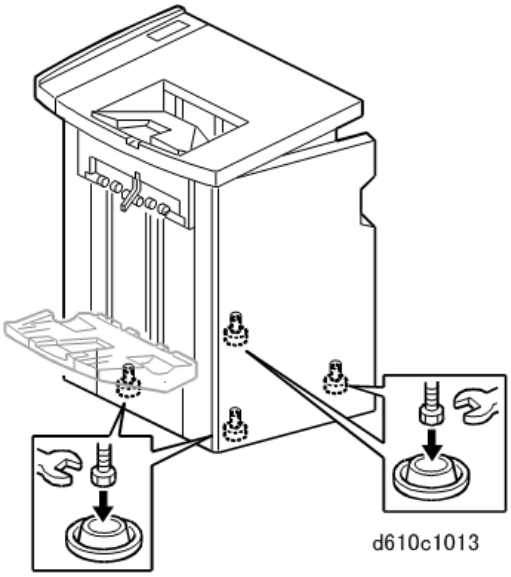
d610c1009

25. Close the front door.
26. Connect the finisher I/F cable to the main machine.



d610c1012

27. Set the leveling shoes under the feet and level the finisher.



d610c1013

2.9.3 AUXILIARY TRAYS

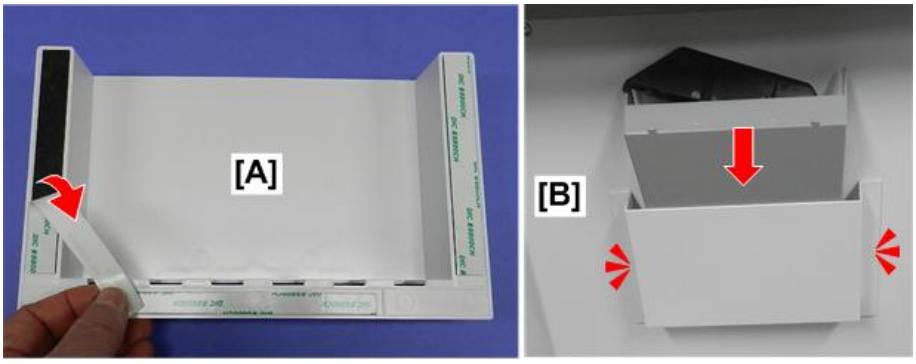
1. Set the shift auxiliary tray [A] on the shift tray when you expect folded paper from the Multi Folding unit to be output to the shift tray.

d610c1014

2. Set the proof auxiliary tray in the proof tray when you expect Z-folded paper from the Multi Folding unit to be output to the proof tray.

d610c1015

3. Peel the tape from the tray holder [A].
4. Attach the tray holder to the back of the finisher [B].



d610c1016

5. Store the auxiliary trays in the holder if they are not needed.

2.10 PUNCH UNITS (B531/A812)

This procedure describes installation of these punch units in the Finisher SR4080.:

- Punch Unit Type 1075 3/2 (B531)
- Punch Unit Type 1075 EU 2/4 (B531)
- Punch Unit Type 850 SC (A812)

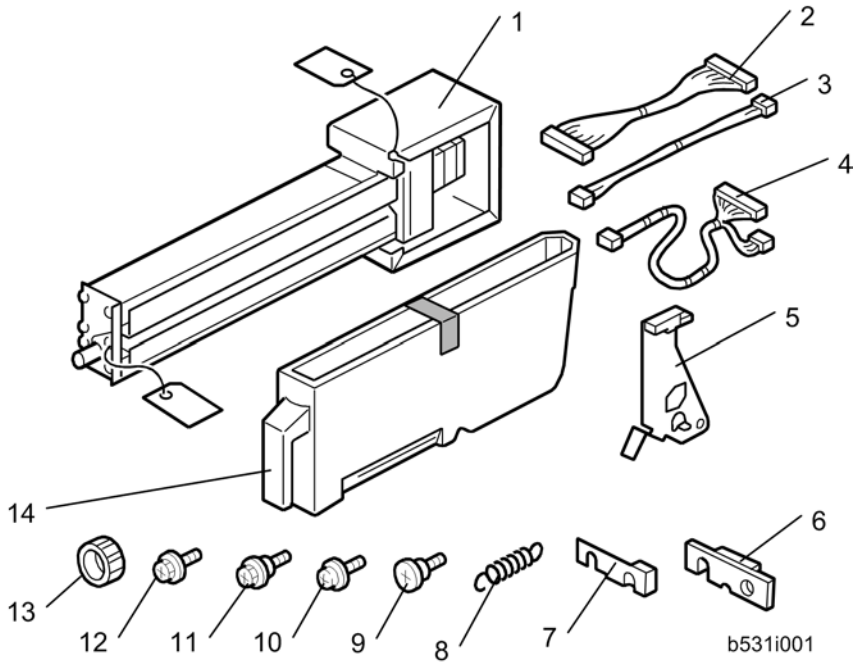
Important

- These punch units can be installed and used with the Finisher SR4080 only.

2.10.1 ACCESSORY CHECK

Check the accessories and their quantities against this list:

No.	Description	Q"ty
1.	Punch unit	1
2.	Harness Connector Cable - PCB	1
3.	Harness Connector Cable - HP Sensor 2	1
4.	Harness Connector Cable - HP Sensor 1, Hopper Full	1
5.	Sensor Arm and Sensor	1
6.	Spacer (2 mm)	1
7.	Spacer (1 mm)	2
8.	Spring	1
9.	Step Screw (large) (M4 x 11)	1
10.	Tapping Screw (M4 x 10)	2
11.	Step Screw (small) (M3 x 4)	1
12.	Machine Screw, Washer (M4 x 6)	1
13.	Knob	1
14.	Punch Waste Hopper	1

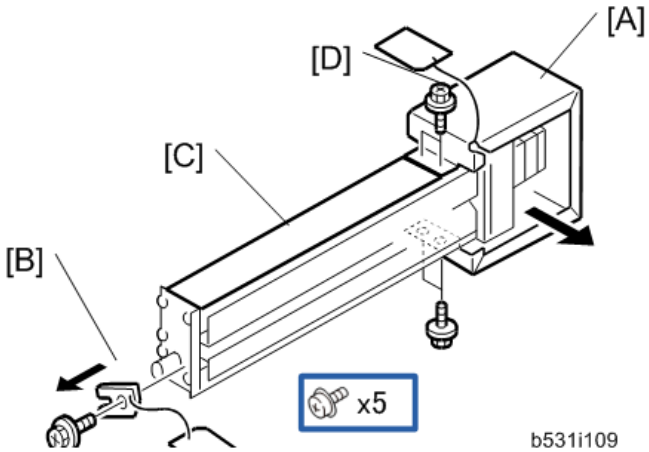


2.10.2 INSTALLATION

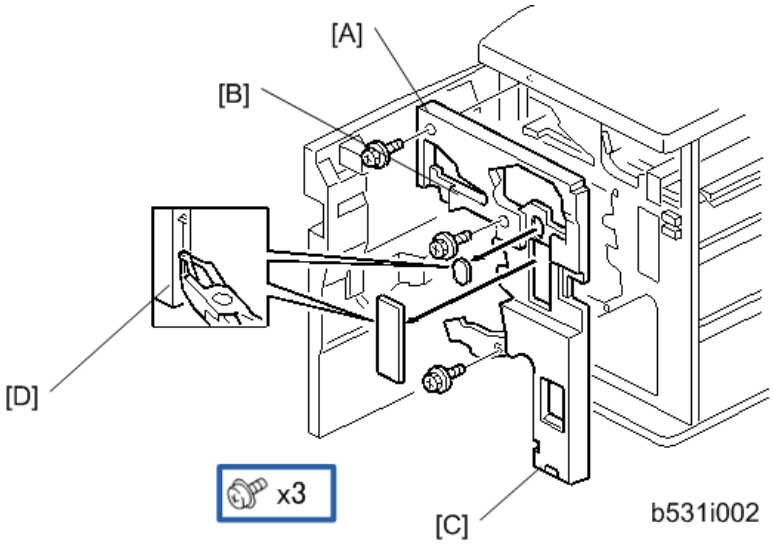
⚠CAUTION

- Switch the machine off and unplug the machine before starting the following procedure.

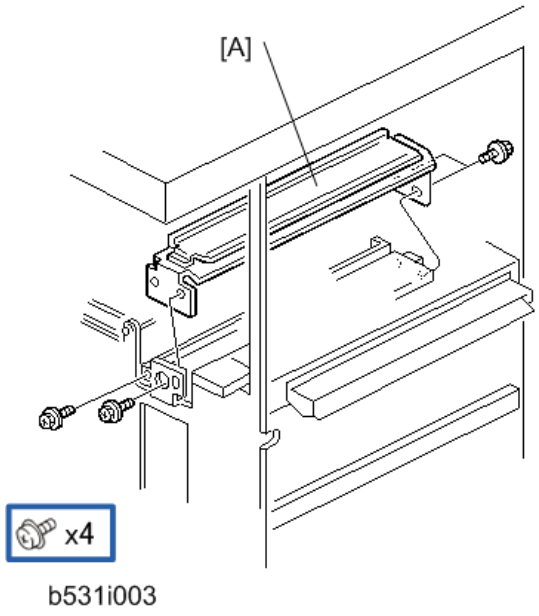
1. If the finisher is connected to the machine, disconnect it.
2. Open the front door and remove the rear cover.
3. Unpack the punch unit and remove the motor protector plate [A] and the cam lock plate [B].
4. Reattach the cover bracket [C] and [D]).



5. Remove the inner cover [A].
6. Behind the inner cover at [B] and [C], press the lock tab to the right to release the inner cover from the frame.
7. Remove the plastic knockouts [D].



8. Remove the paper guide [A].

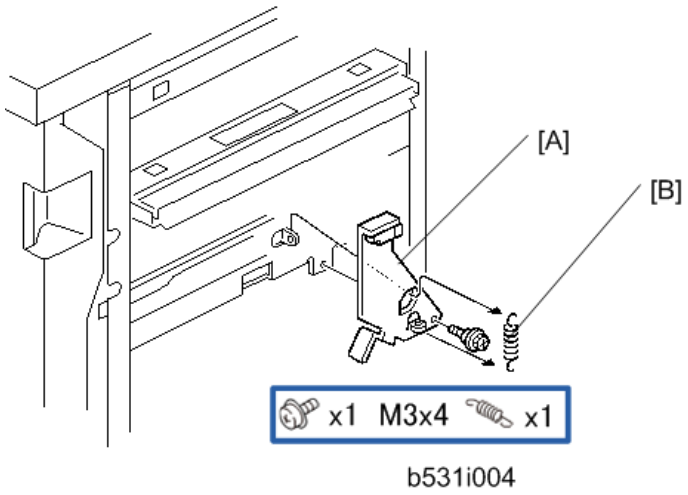


9. Install the sensor arm [A].

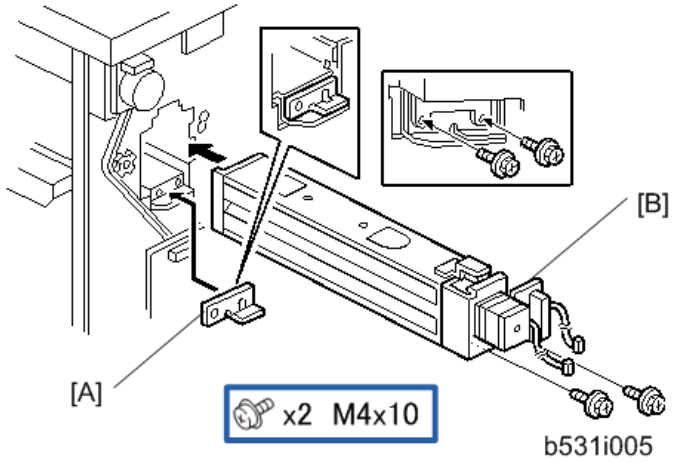
Note

- Make sure that the sensor arm swings freely on the step screw.

10. Attach the spring [B].



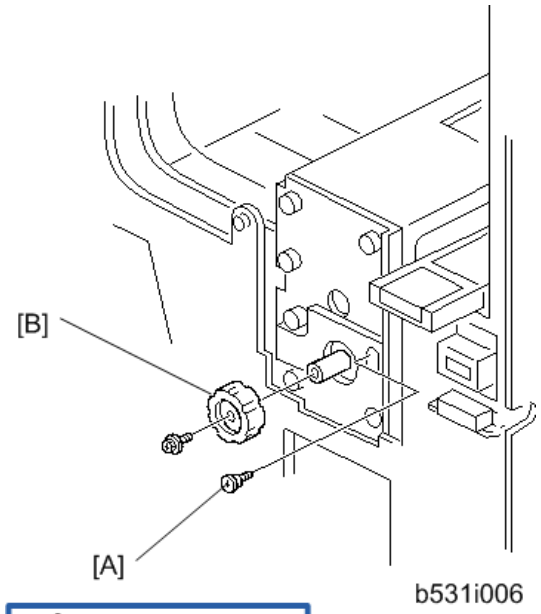
11. At the rear, position the 2 mm spacer [A] and attach the punch unit [B].



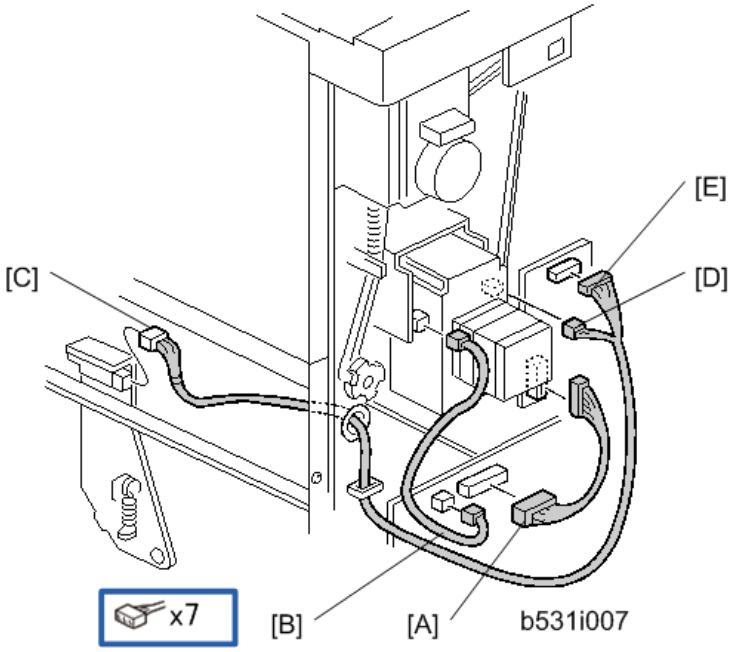
Important

- At the hole just above the lock lever, use one of the screws from the paper guide removed above to fasten the remaining two spacers to the frame.
- These extra spacers are used to adjust the horizontal position of the punch holes.

12. At the front, secure the punch unit [A] with the large step screw.
13. Attach the punch unit knob [B].



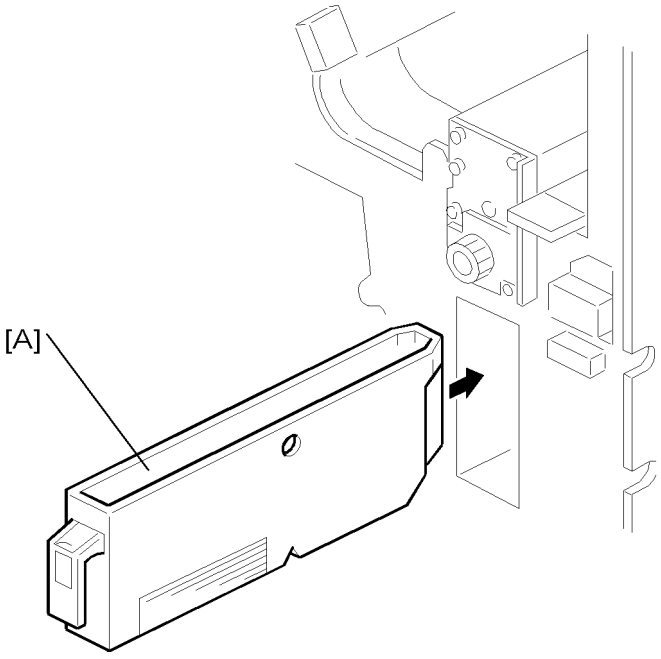
14. Connect the PCB harness connector [A] to CN129 of the finisher PCB and to CN600 of the punch unit PCB.
15. Connect the HP Sensor 2 harness connector [B] to CN130 of the finisher PCB and to HP Sensor 2.
16. Connect the single end of the hopper full sensor connector cable [C] to the hopper full sensor on the arm, and then connect the other two connectors to HP Sensor 1 [D] and CN620 [E] of the punch PCB.



Note

- No special DIP switch settings are required for this punch unit. The punch unit sends an identification signal to the machine, so it knows what type of punch unit has been installed.

17. Slide the hopper [A] into the finisher.



b531i008

18. Re-attach the inner cover and rear cover.
19. Close the front door and re-connect the finisher to the machine.

2.11 OUTPUT JOGGER UNIT TYPE 9002B (B513)

2.11.1 ACCESSORY CHECK

Check the accessories and their quantities against this list:

No.	Description	Q'ty
1.	Jogger Unit B513	1
2.	Tapping Screws - M3 x 6	2
3.	Installation Procedure	1

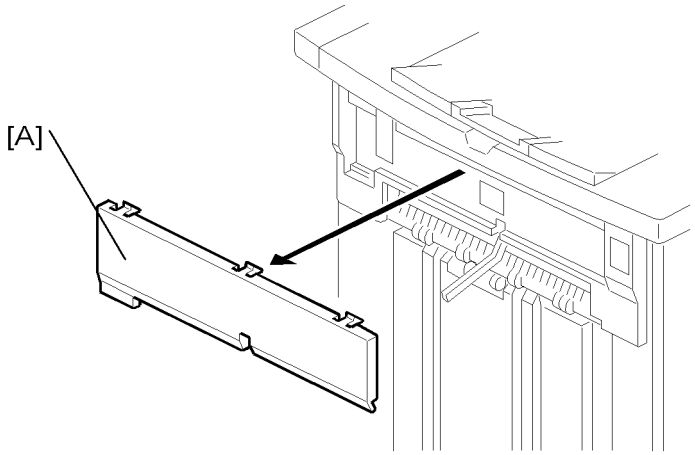
b513c1001

2.11.2 INSTALLATION PROCEDURE

Important

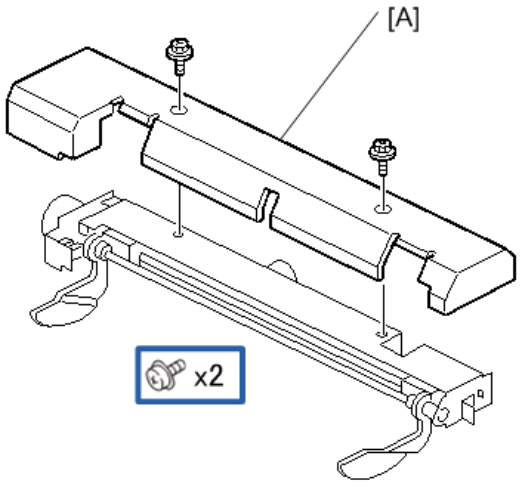
- This jogger unit for the Finisher SR4080 only.

1. Turn the main machine switch off and disconnect the finisher from the main frame.
2. Use the flat head of a screwdriver to remove the left upper cover [A] from the finisher and then discard it.
3.



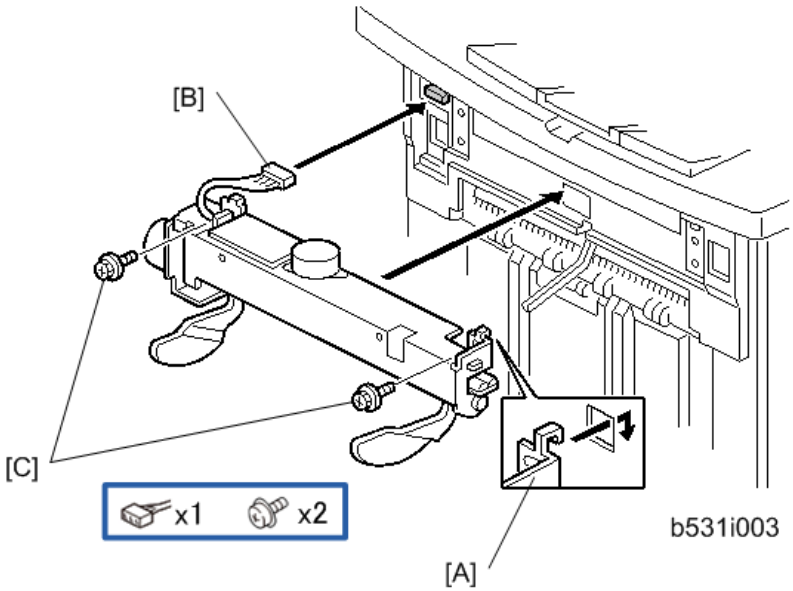
b513i001

4. Remove the cover plate [A] from the jogger unit. **Keep these screws**.



b531i002

5. With the jogger unit harness and connector on the left, hook the frame of the jogger unit [A] into the holes on the left and right side of the finisher frame.
6. On the left, fasten the connector [B] to the socket.
7. On the left and right, attach the jogger unit frame to the side of the finisher with the accessory screws [C] (short screws).



8. Re-attach the jogger unit cover to its frame with the screws removed in Step 3.

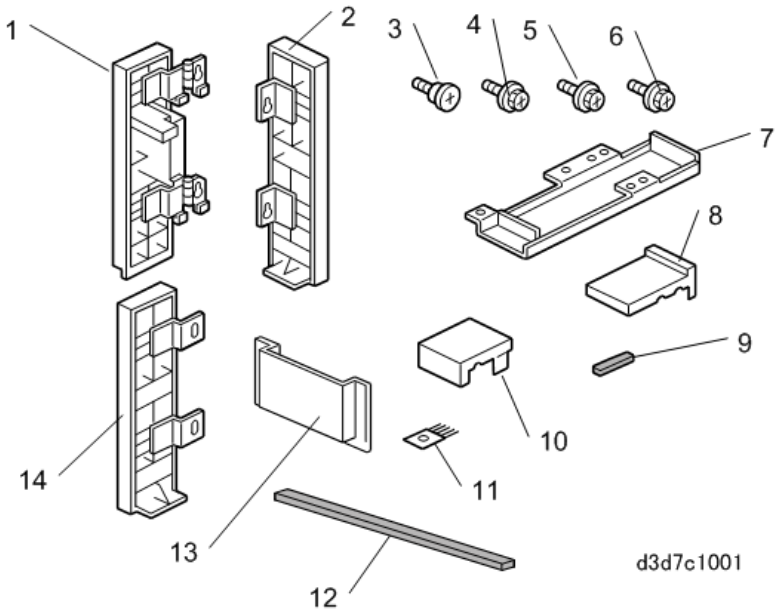
2.12 COVER INTERPOSER TRAY CI4030 (D3D7)

This Cover Interposer Tray is designed to be installed and used with Finisher SR4070.

2.12.1 ACCESSORIES

Check the quantity and condition of the accessories in the box against the following list.

No.	Description	Q'ty
1.	Front door extension (top) *1	1
2.	Rear cover extension (bottom)*1	1
3.	Shoulder screws	3
4.	Tapping screws – M4 x 8	9
5.	Tapping screws – M3 x 8	2
6.	Machine screws – M3 x 6	5
7.	Plate Extension (bottom)	1
8.	Right Rear Cover Plate	1
9.	Gasket Seals	2
10.	Right front corner plate	2
11.	Anti-Static Brush	1
12.	Sponge Strip	1
13.	Auxiliary Tray Holder	1
14.	Front door extension (bottom) *1	1

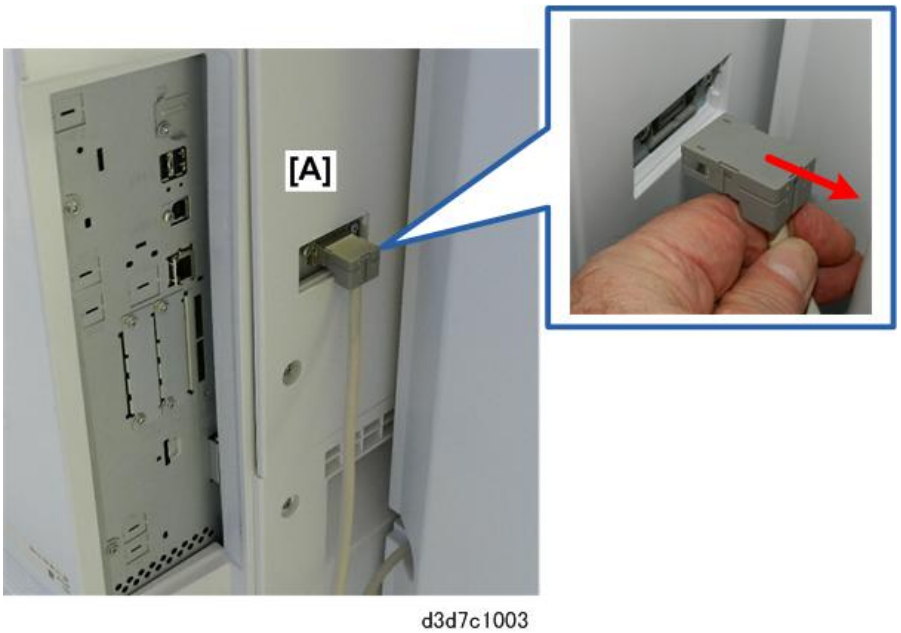


2.12.2 INSTALLATION

Finisher SR4080 Already Installed?

Do these procedures if the finisher is already installed on the main machine.

1. Turn the main machine off, and then disconnect it from the power source.
2. Unplug the finisher I/F cable at the rear right corner of the main machine [A].



3. Open the finisher door.

4. Remove screw [1], and then pull out the lock bar [2].

d3d7c1002

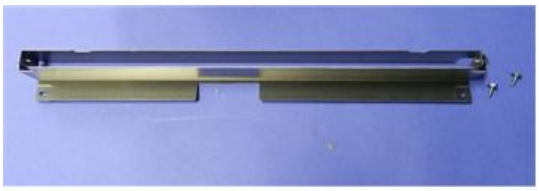
5. Pull the finisher away from the side of the main machine.

d3d7c1004

6. Remove the paper entrance guide from the right side of the finisher.

d3d7c1009

7. Set the paper entrance guide aside. You will install it at another location later.

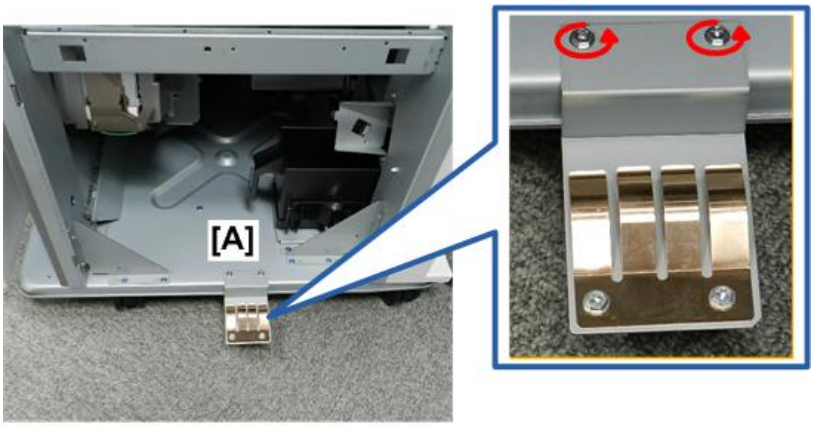


d3d7c1010

8. Remove the sponge strip from the top right edge of the finisher, and then attach it to the top left edge of the main machine.

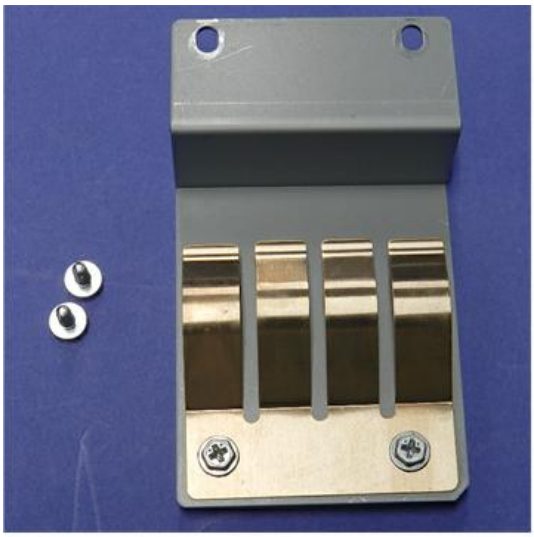
d3d7c1031

9. Remove the ground plate from the bottom right edge of the finisher [A], and keep the screws.



x2 d3d7c1012

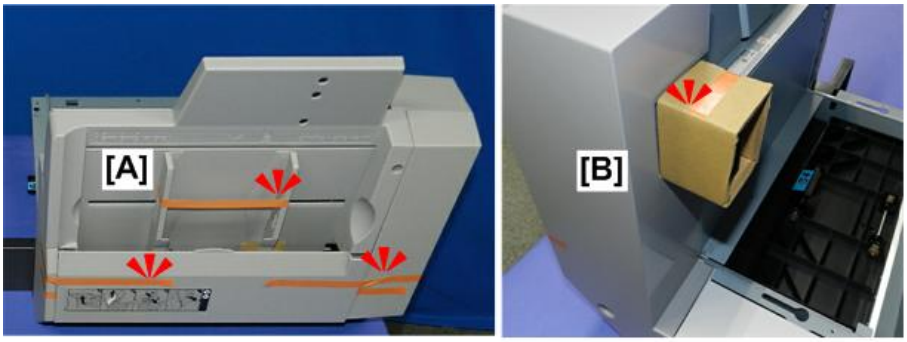
10. Set the ground plate and screws aside. You will install them at another location later.



d3d7c1013

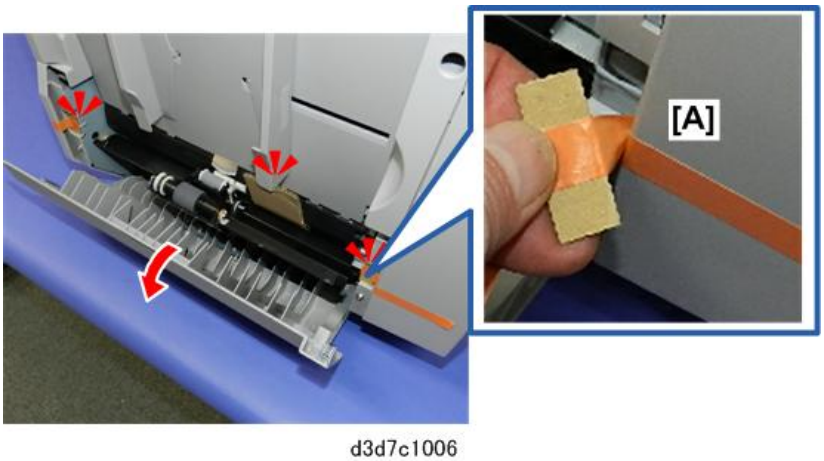
Remove Tapes and Retainers

1. Remove all tapes and retainers from the exterior of the tray [A].
2. Remove tape and cardboard from the collar of connector [B].



d3d7c1005

3. Open the cover.
4. Remove all shipping material from inside.
5. Be sure to remove the small pieces of cardboard [A] at both ends of the cover.

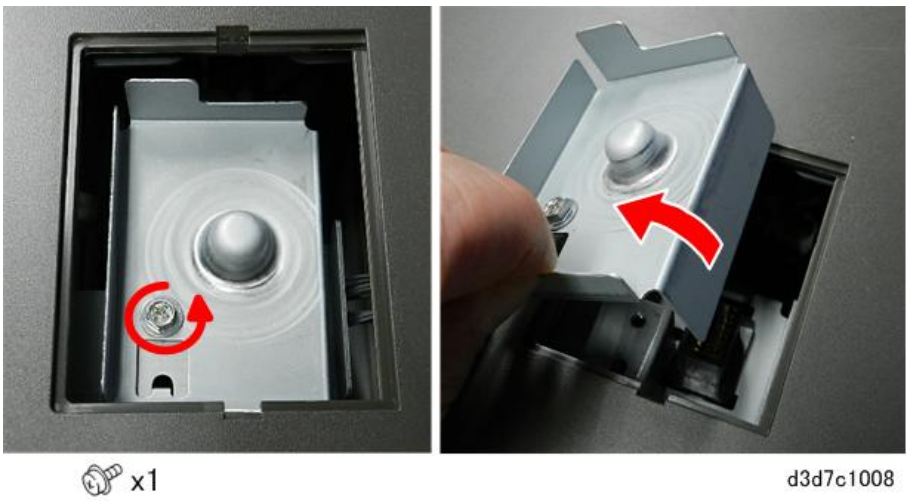


d3d7c1006

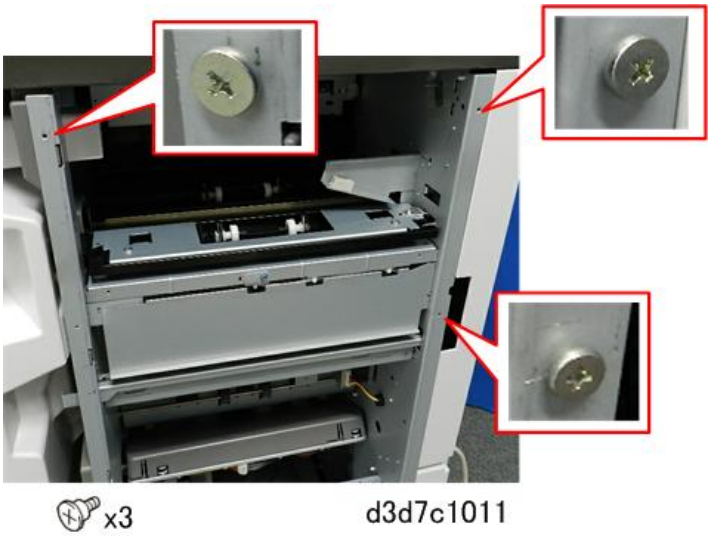
Prepare the Finisher

1. On top of the finisher, remove the cover of the relay connector.

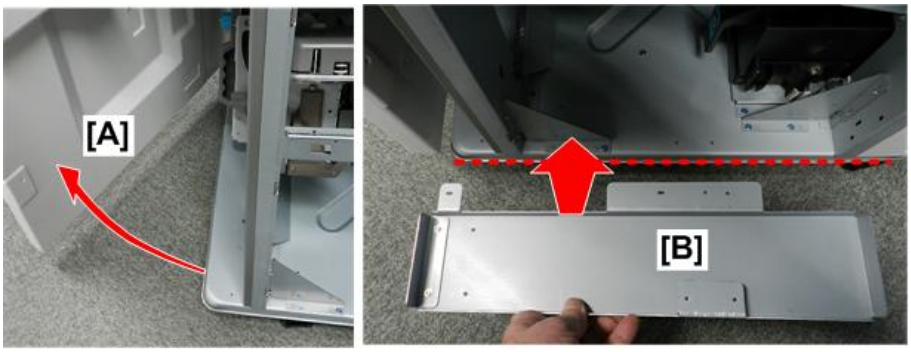
2. Remove the connector bracket.



3. Attach the shoulder screws to the frame on the right side of the finisher.

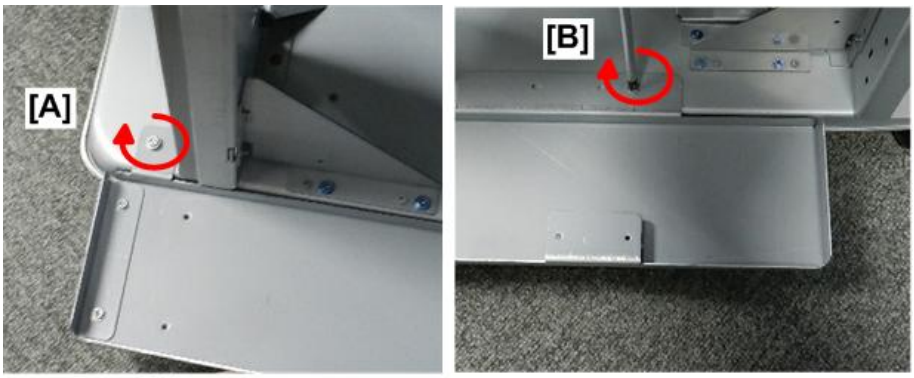


4. Open the finisher door [A].
5. Set the bottom plate [B].



d3d7c1014

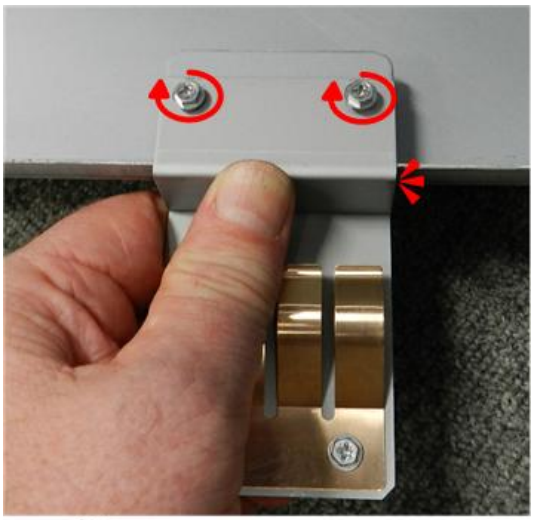
6. Attach the bottom plate at the front [A] and rear [B].



x2 M3x6

d3d7c1015

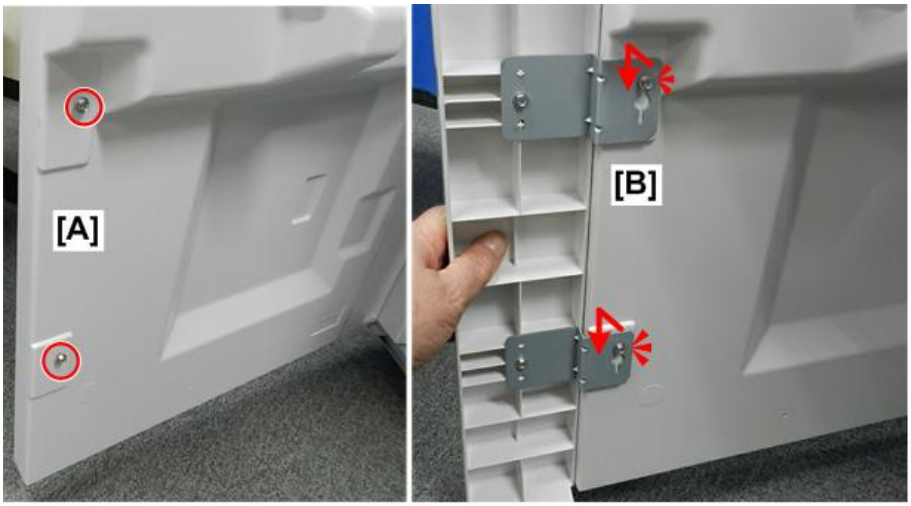
7. Attach the ground plate (a finisher accessory) to the right edge of the bottom plate.



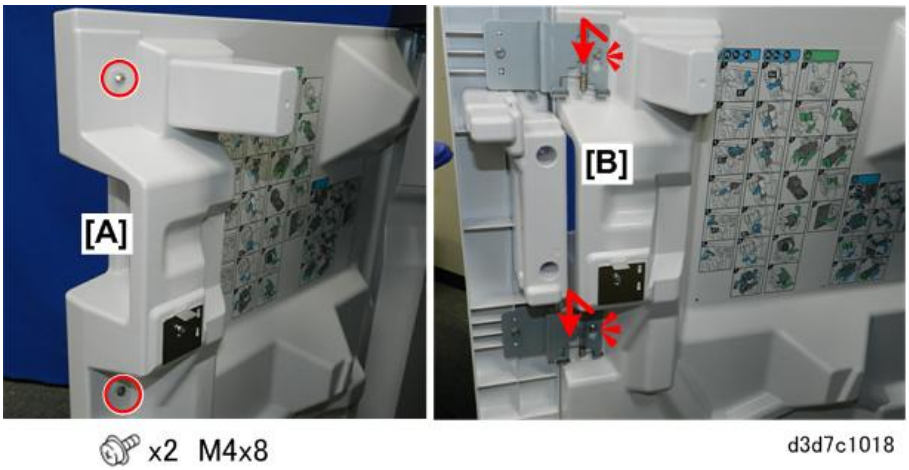
x2

d3d7c1016

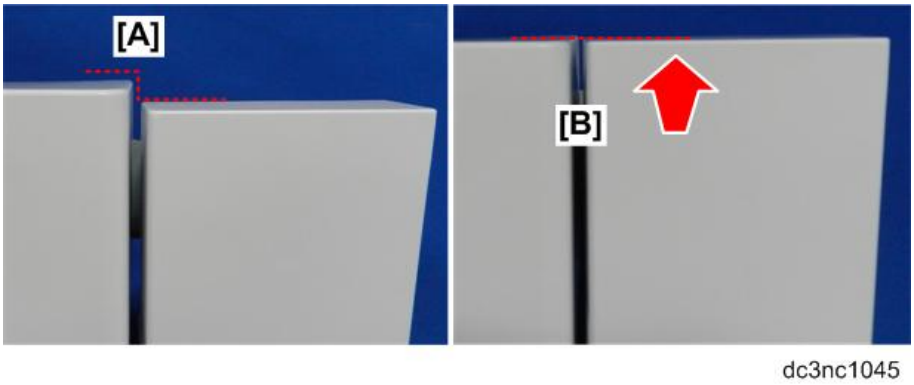
8. Set two screws in the holes provided on the bottom half of the finisher front door [A]. Do not tighten these screws yet.
9. Set the keyholes of the hinges [B] on the bottom extension over the set screws, and then slide the extension down.



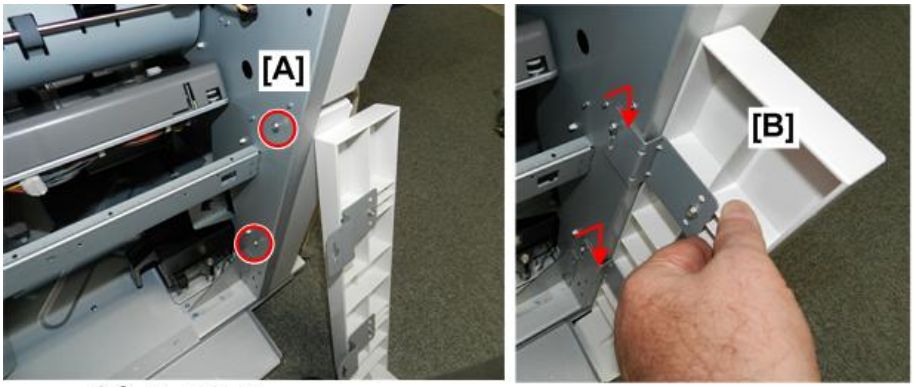
10. Tighten both screws.
11. Set two screws in the holes provided on the top half of the finisher front door [A]. Do not tighten these screws yet.
12. Set the keyholes of the hinges [B] on the top extension over the set screws, and then slide the extension down.



13. Check the top of the door and extension.
    - If the top the door and extension are not even [A], slide the extension up slightly [B].
    - Tighten the screws.



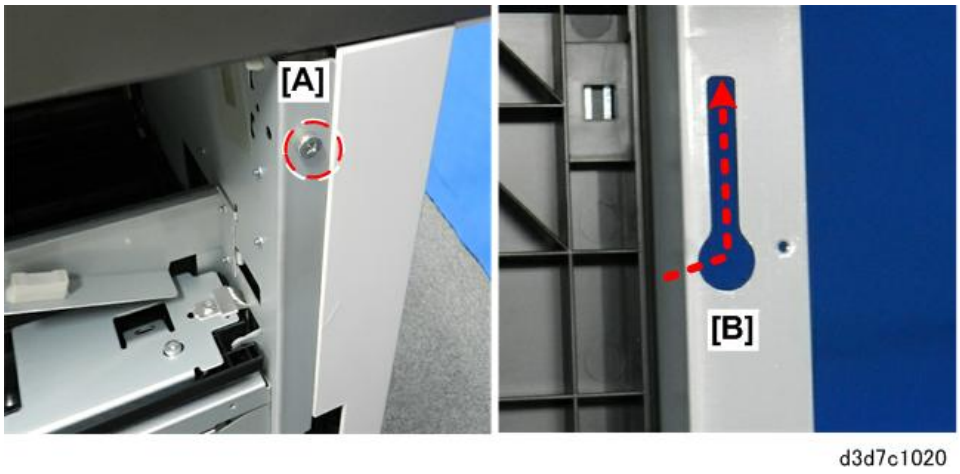
14. Set two screws in the holes provided on the rear metal frame [A]. Do not tighten these screws yet.
15. Set the keyholes of the hinges [B] on the rear extension over the set screws, and then slide the extension down.



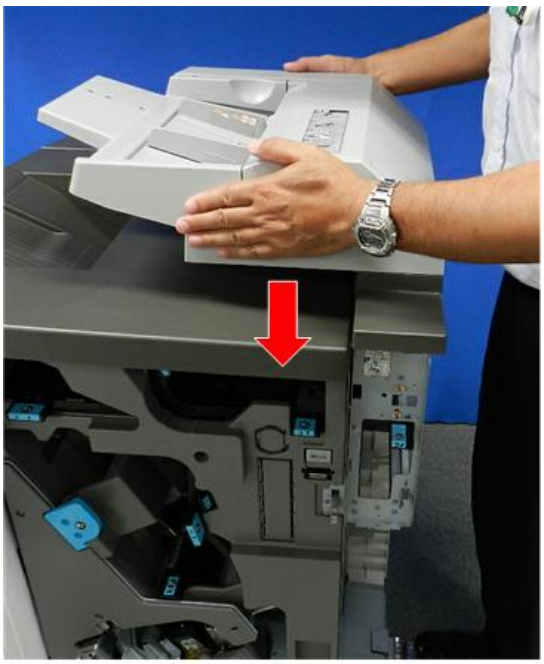
Install Tray

Note

- The shoulder screws [A] (attached in a previous step) slide into the cutouts [B] in the frame of the cover interposer tray and fasten to the side of the finisher.

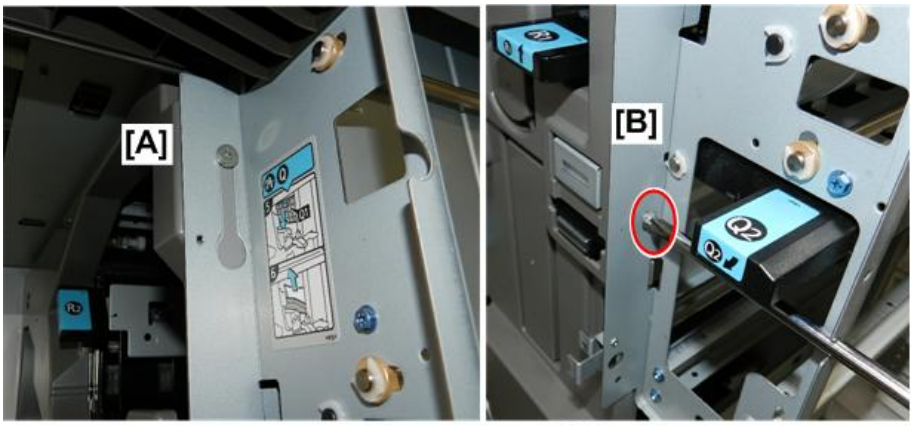


1. Pick up the cover interposer tray, align the keyholes with the shoulder screws, and then slide the cover interposer down onto the screws.



d3d7c1021

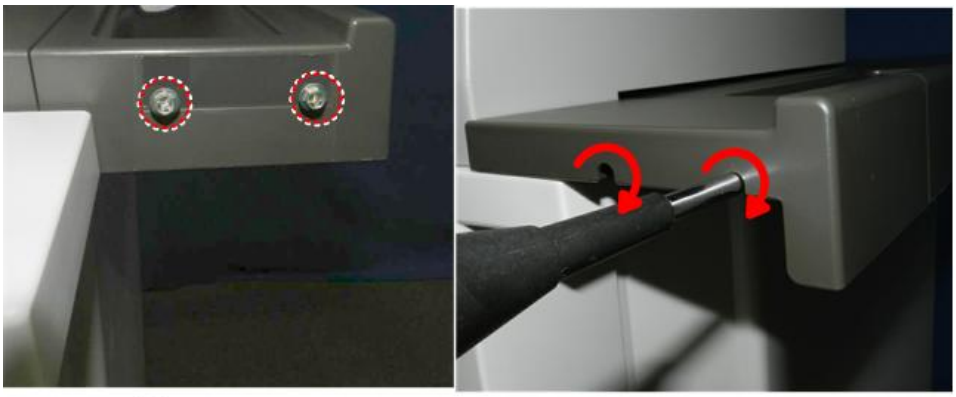
2. Check under the finisher and confirm that the shoulder screws [A] are engaged correctly with the cutouts.
3. At the front, fasten screw [B] to lock the cover interposer tray to the finisher frame.



d3d7c1022

Attach Corner Plates and Gaskets

1. At the right rear corner of the finisher, temporarily attach two screws with about two turns.
2. The holes are not visible because they are covered with tape. Just punch the screws through the holes.
3. Attach the plate by sliding the cutouts over the heads of the screws, and then tighten the screws with a long screwdriver.

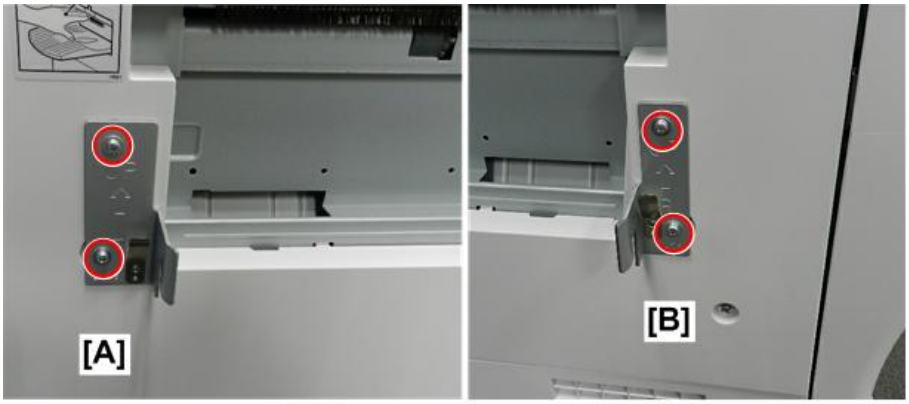


x1 M4x8 d3d7c1023

4. At the right front corner [A], temporarily attach one screw with about two turns.
5. The hole is not visible because it is covered with tape. Just punch the screw through the hole.
6. Snap the plate into position while sliding the cutout over the head of the screw, and then tighten the screw with a long screwdriver [B].

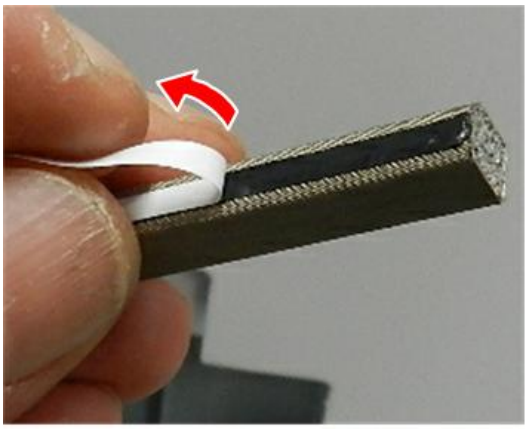
x1 d3d7c1024

7. On the left side of the main machine, attach the joint brackets at the rear [A] and front [B]. (If the finisher was installed previously, the brackets are already attached.)



d3d7c1025

8. Remove the tape from both gasket seals. (These are Cover Interposer Tray accessories.)



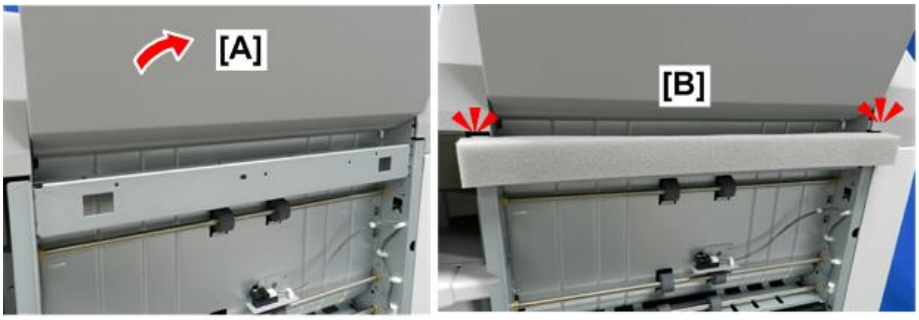
d3d7c1026

9. Attach one gasket on the rear joint bracket [A] and one gasket on the front joint bracket [B].

d3d7c1026

Attach Sponge Strips

1. Raise the cover [A] of the Cover Interposer Tray on top of the finisher.
2. Attach the wide sponge strip [B] supplied with the Cover Interposer Tray.
3. Make sure that the strip is not sticking to the cover, and then close the cover.



d3d7c1028

4. Attach the finisher sponge strip to the top right edge of the main machine. (This is a finisher accessory, or you may have already removed it from the previously installed finisher and attached it already.)

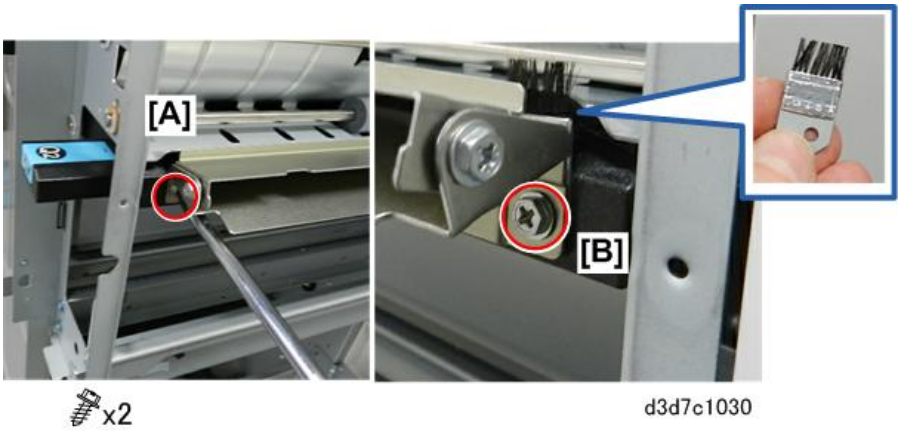
d3d7c1031

Re-attach Paper Entrance Guide

1. Discard the machine screws you removed with the paper entrance guide.
2. Replace them with the small tapping screws provided with the interposer tray.

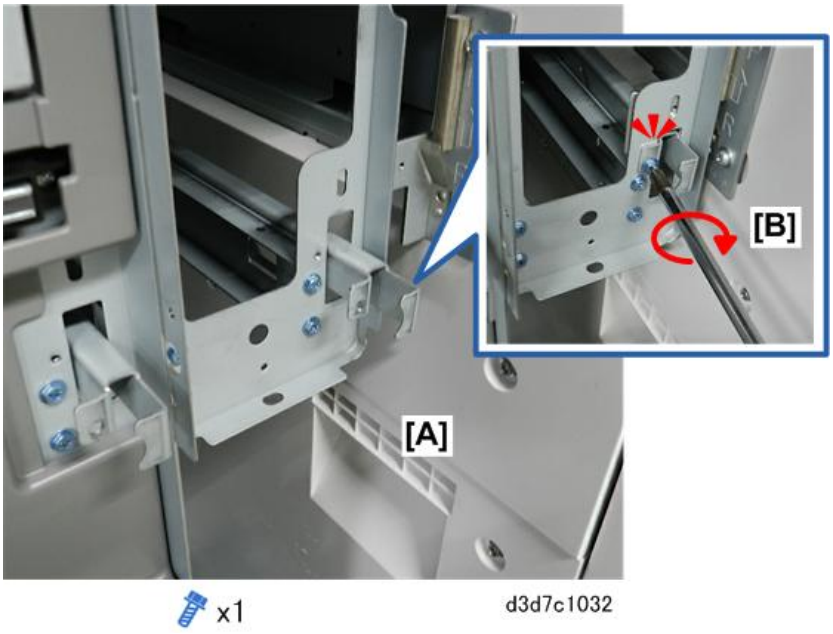
d3d7c1029

3. Attach the paper entrance guide at the front right corner of the finisher [A].
4. Attach the paper guide with the small anti-static brush at the right rear corner of the finisher [B].

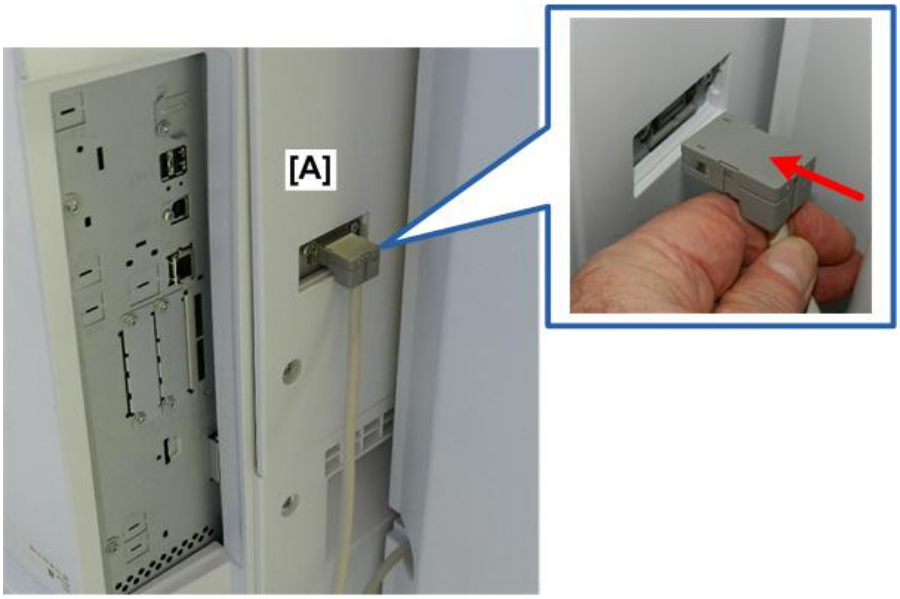


Dock the Finisher

1. With the finisher door open, push the finisher against the side of the main machine [A].
2. Push the lock bar [B] in completely, and then fasten it with the screw.



3. Connect the finisher I/F cable at the left rear corner of the main machine [A].



d3d7c1033

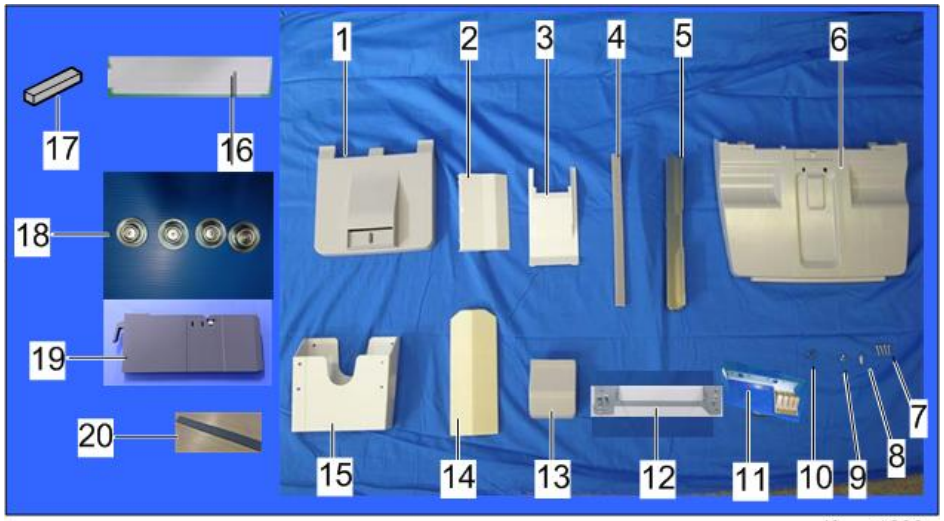
2.13 FINISHERS SR4120/SR4130 (D3CG/D3CH)

2.13.1 ACCESSORY CHECK

Check the quantity and condition of the accessories against the following list.

No	Description	Q'ty	
		SR4120	SR4130
1	Lower Output Tray	-	1
2	Shift Auxiliary Tray	1	1
3	Proof Auxiliary Tray	1	1
4	Sponge Strip	1	1
5	Docking Bracket	1	1
6	Upper Output Tray	1	1
7	Screws M3 x 6	6	6
8	Tapping Screws	2	2
9	Screws M4 x 20	4	4
10	Screws M3 x 8	1	1
11	Ground Plate	1	1
12	Joint Bracket	1	1
13	End Fence	-	1
14	Proof Support Tray	1	1
15	Tray Holder	-	1
16	Right Upper Cover	1	1
17	Coupling Seal	1	1
18	Shoes	4	4
19	Hopper	1	1

No	Description	Q'ty	
		SR4120	SR4130
20	Cushion	1	1



d3cgc1000

2.13.2 INSTALLATION PROCEDURE

⚠CAUTION

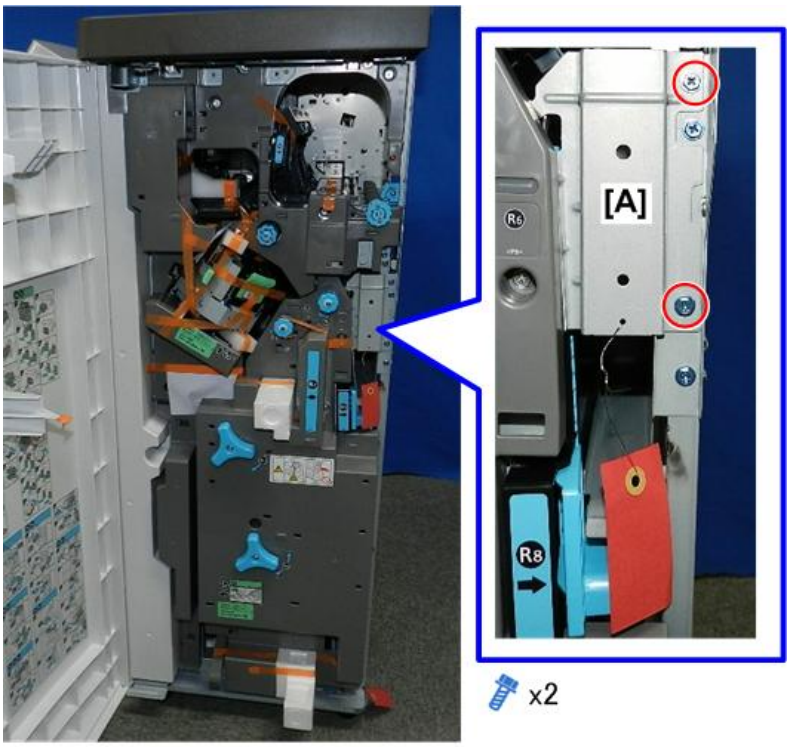
- Always switch the machine off and unplug the machine before doing the following procedure.

Tapes and Retainers

1. Unpack the finisher and remove all tapes and packing materials from the finisher.

d1351186

2. Open the front door and remove all visible tapes and retainers.
3. Remove the upper bracket with the red tag attached [A].



d3cgc3129

4. Pull out the jogger unit, and then remove all remaining tapes and retainers.

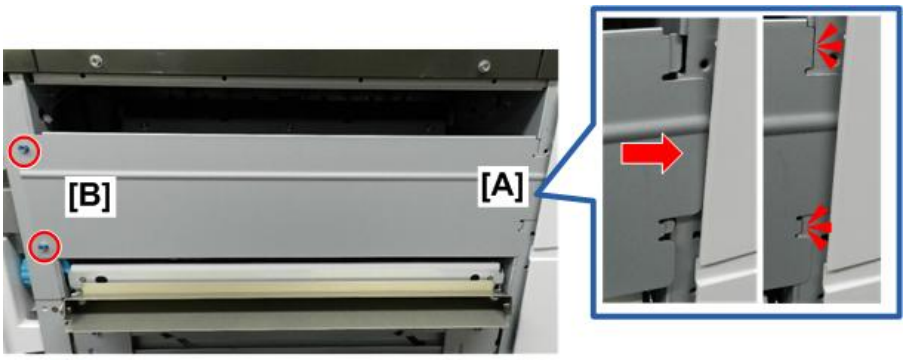
d3cgc1187

5. Remove the lower bracket with the red tag attached [A].

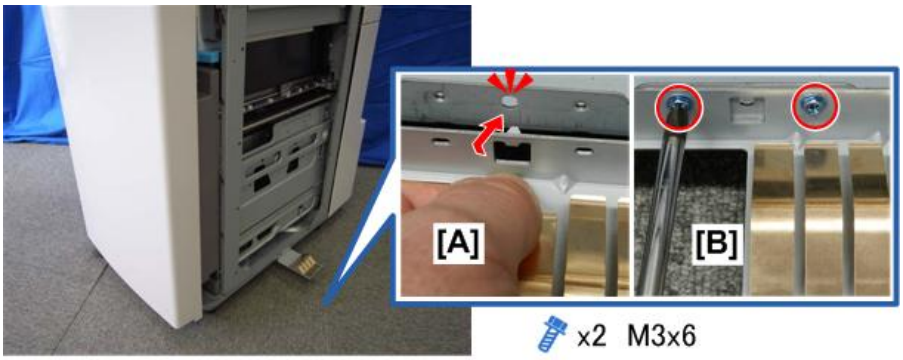
Preparing the Finisher

1. Install the paper entrance guide [A] on the right side of the finisher.

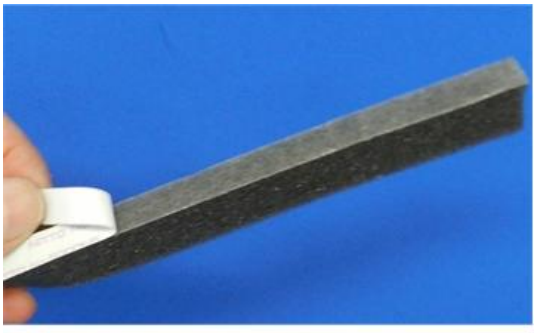
2. Do not attach the right upper cover if you are going to install Cover Interposer Tray CI4040 (DC3N).
   -or-
   Set the tabs of the right upper cover [A] at the right rear corner of the finisher, and then attach the cover at the front [B].



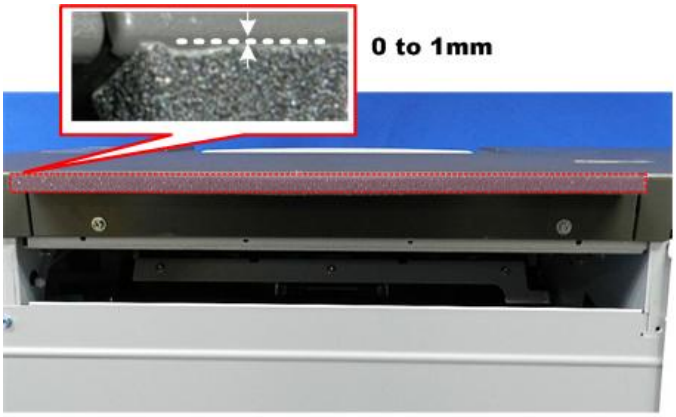
3. Hook the ground plate [A] onto the right bottom edge of the finisher, and then attach it [B] with the screws.



4. Peel the tape from the large sponge strip.



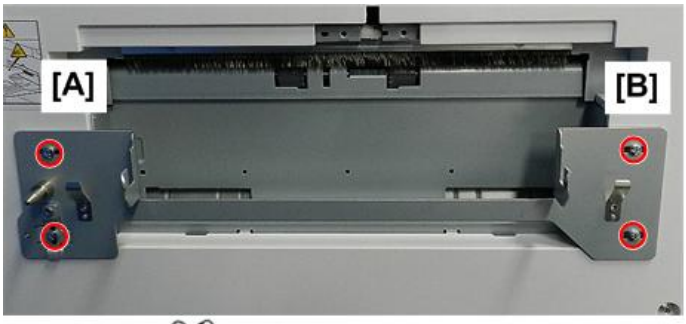
5. Attach the strip to the right top edge of the finisher so it is 0 to 1 mm from the top edge.



d3cgc1190

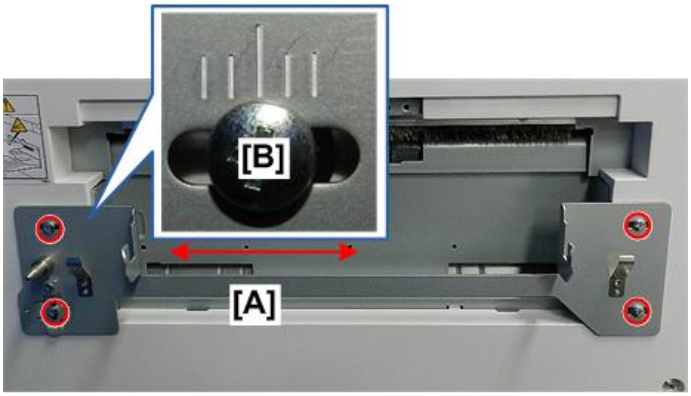
Preparing the Main Machine

1. Use the long screws to **loosely** attach the rear end [A] and front end [B] of the joint bracket to the left side of the main machine. Do not tighten these screws.



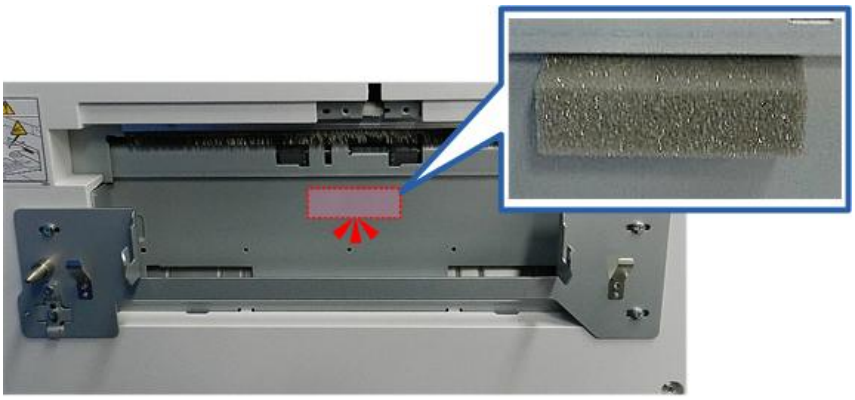
x4 M4x20 d3cgc0108

2. With the joint bracket [A] floating freely on the loose screws, move the bracket to position screw [B] so it is centered exactly below the long line on the scale, and then tighten the four screws.



d3cgc0109

3. Peel the tape from coupling seal, and then attach it to the left side of the main machine between the exit rollers.

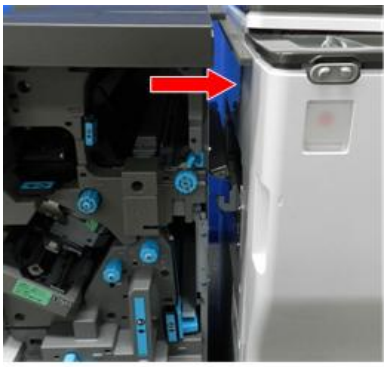


d3cgc4041

4. Remove the connector cover on the rear left side of the main machine.

d3cgc1192

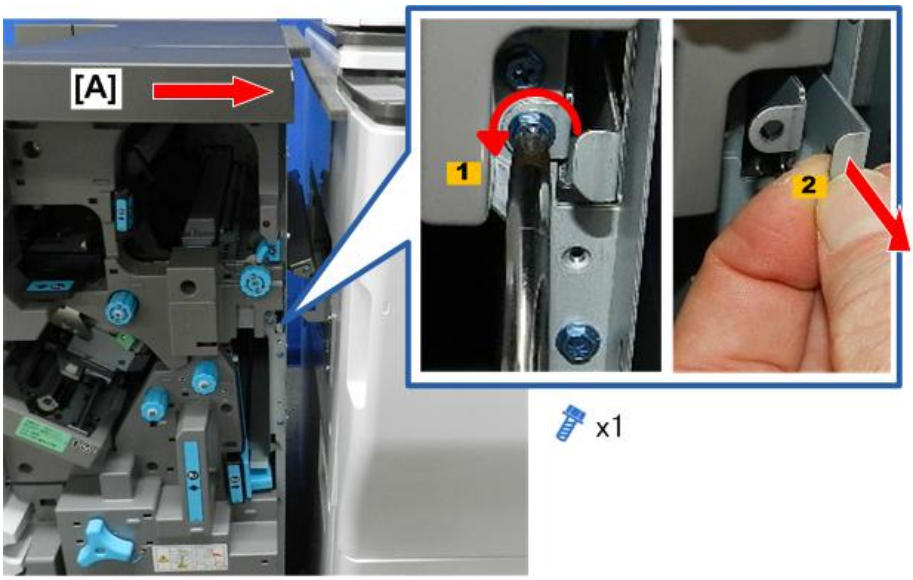
5. Push the finisher close to the left side of the main machine.



d3cgc1651

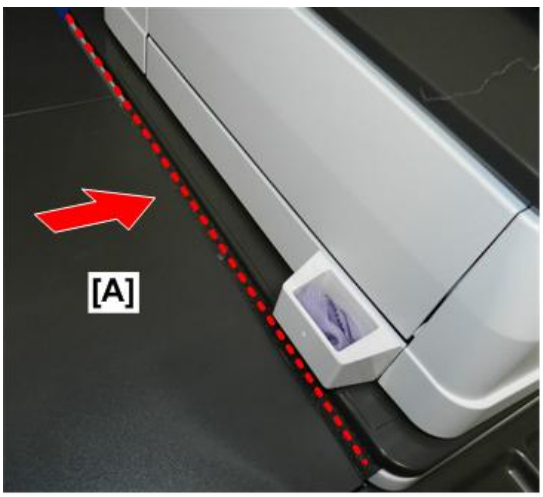
Docking the Finisher

1. Disconnect the lock bar by removing the screw [1], and then pull the lock bar [2] out until it stops.



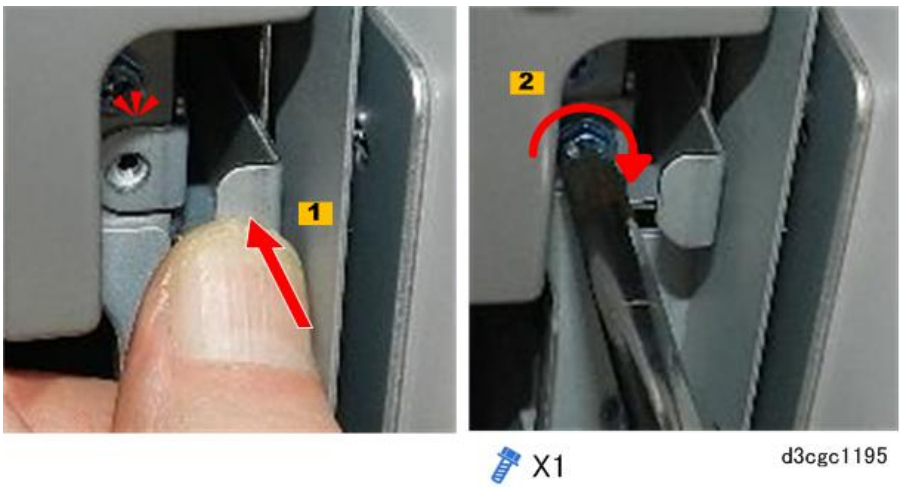
d3cgc1193

2. Push the finisher [A] against the side of the main machine.
3. Confirm that the gap between finisher and main machine is tight and perfectly even.



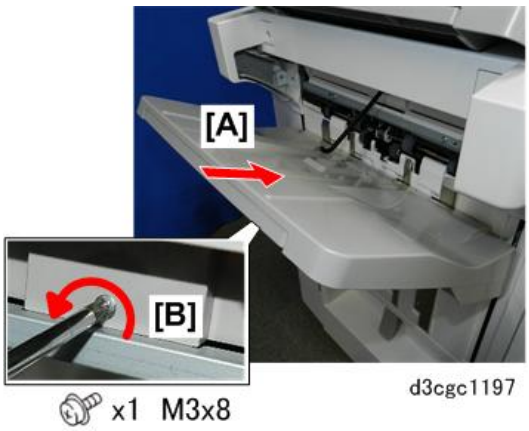
d3cgc1194

4. Firmly, push the lock bar [1] in until it stops, and then fasten screw [2].

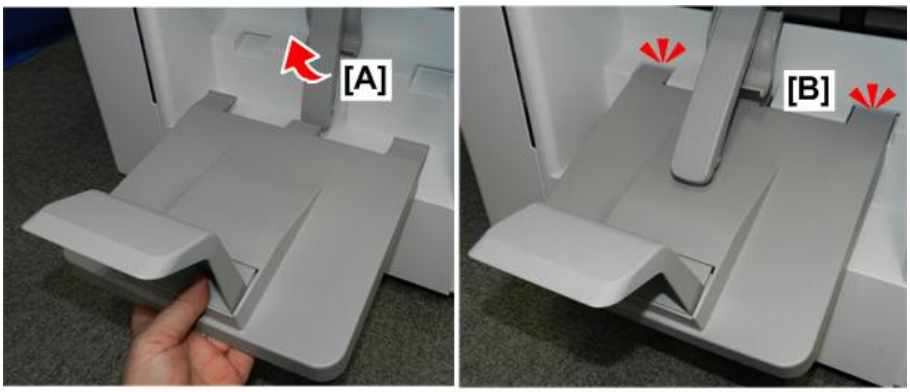


5. Connect the finisher connector to the machine.

6. Close the front door of the finisher.
7. Set the upper output tray [A], and then attach screw [B] under the tray.

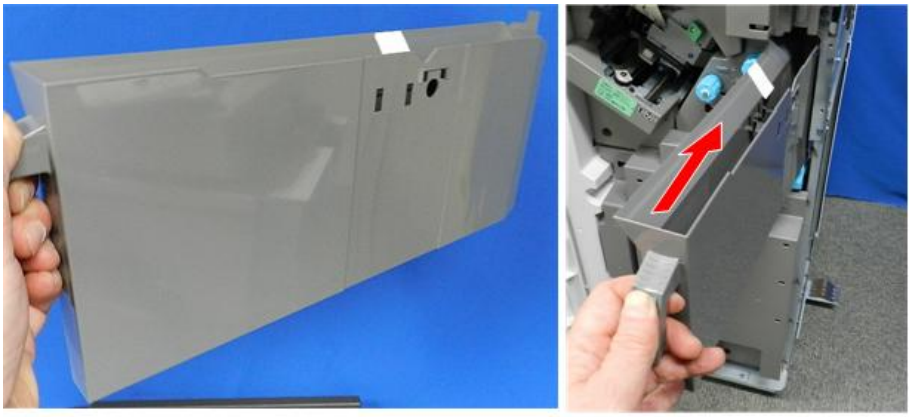


8. If you are installing Booklet Finisher CI4040, raise feeler arm [A], and then set the back edge of the tray [B] into the slots. (No screws.)



d3cgc1198

9. Install the hopper.



d3cgc1006

10. If the floor is uneven, you may want to use the four accessory shoes to level the machine with the four bolts and locknuts under the finisher.

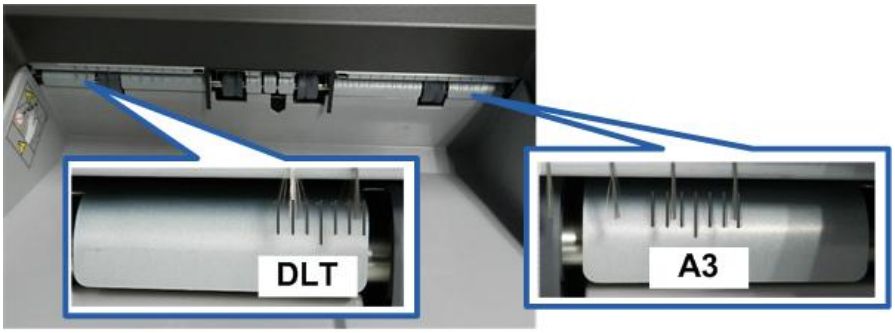
d3cgc1007

Checking the Installation

1. Turn on the main machine.
2. Print out five A3 **or** DLT sheets to the proof tray and check the side-to-side registration.
3. For **DLT** paper watch the scale above the rear exit roller.

   -or-

   For **A3** paper watch the scale above the front exit roller.

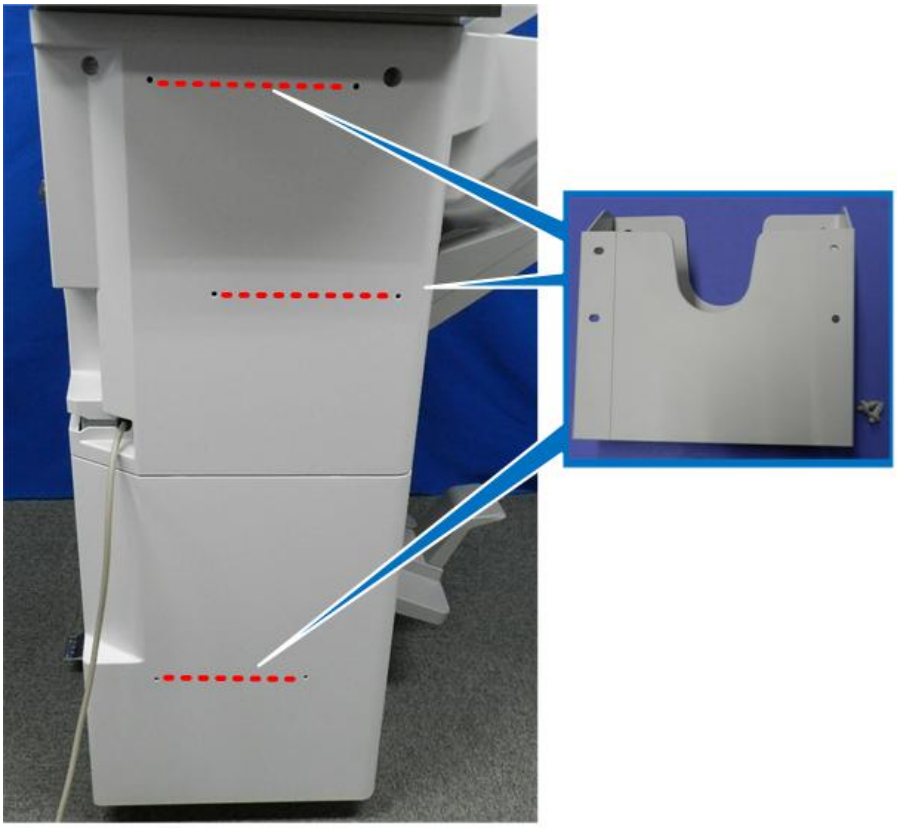


d3cgc3121

   - If you see the edge of the paper at the center mark on the scale, the paper is aligned correctly.
   - If you see the edge of the paper at any mark to the right of center, the paper is shifting toward the front of the machine..
   - If you see the paper at a mark to the left of center, the paper is shifting toward the rear of the machine.
4. If side-to-side registration is still shifting to either the rear of front of the machine, correct it. page 7-282
5. Print out some sheets with center-folding and make sure that the sheets are folded evenly into equal halves.
6. If the center folding not aligned, correct it. page 7-289

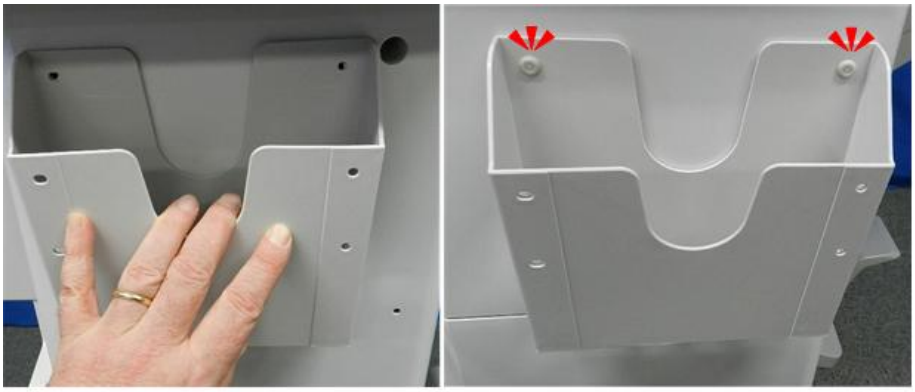
Auxiliary Trays

1. Choose one of the three pairs of holes on the back of the finisher for installation of the auxiliary tray holder.



d3cgc1002

2. Position the holder at the selected holes, and then push in the plastic rivets.



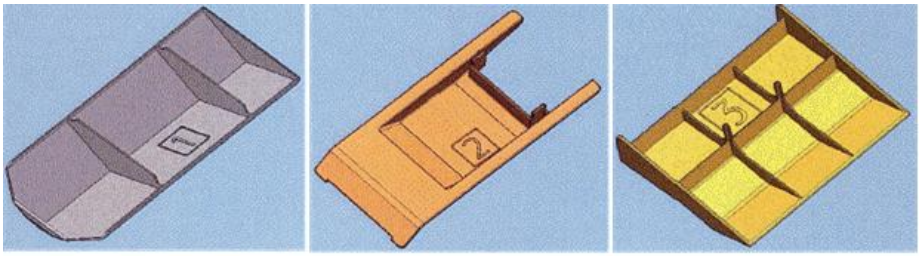
d3cgc1003

3. Set the trays in the holder.

d3cgc1004

Using Auxiliary Trays

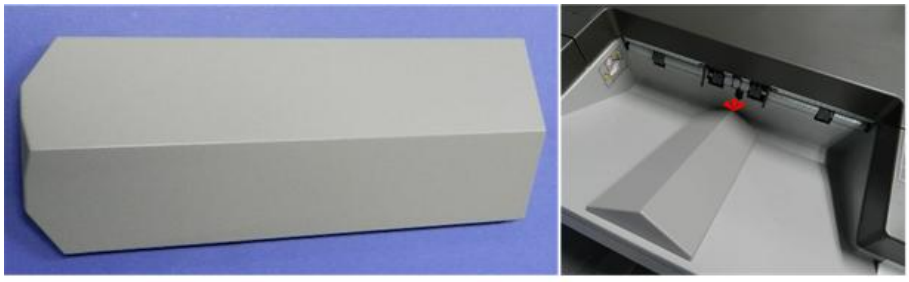
The trailing edges of excessively curled or Z-folded paper can activate the tray full sensors before the tray is actually full. Once this occurs and the "Exit Tray Full" message appears, the job stops and cannot continue until some sheets are removed from the tray which is only partially full. The auxiliary trays, number [1], [2], and [3] on their undersides are designed to prevent this problem.



d3cgc1005

Proof Support Tray (No. 1)

Set auxiliary Tray 1 on the proof tray when using thin or soft paper that may not exit completely and interfere with the tray full sensor.



d3cgc1199

Proof Auxiliary Tray (No. 2)

Z-folded paper or paper with curled edges can interfere with the tray full sensor by signaling tray full before the tray is actually full.

d223c8210

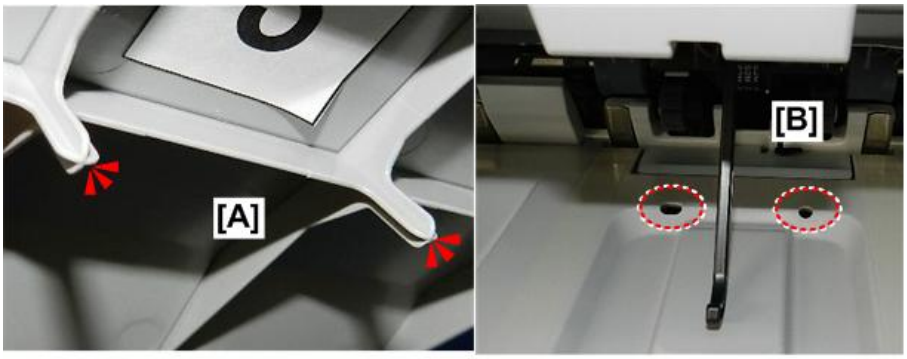
Set auxiliary Tray 2 on the proof tray when Z-folding paper or excessively curled is output.

d3cgc1650

Shift Auxiliary Tray (No. 3)

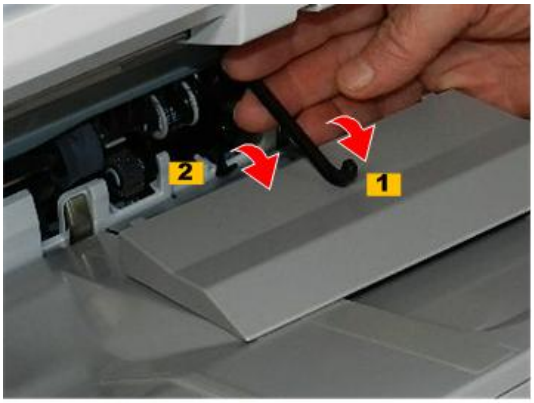
Set auxiliary Tray 3 only when the Multi-Folding Unit is installed, especially when working with Z-folded paper.

1. The pegs [A] on the bottom of this tray fit into the holes on the shift tray [B].



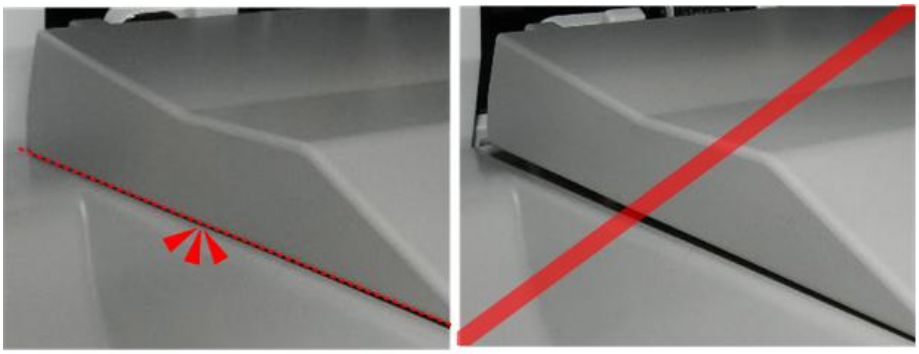
d223c8207

2. When you set the tray, position feeler [1] and [2] on top of the tray.



d223c8208

3. Confirm that the tray is perfectly flat on the shift tray below. There should be no gap between the trays.



d223c8209

2.14 PUNCH UNITS (D706)

These instructions describe installation of the following punch units for the Finisher SR4060/SR4070:

- Punch Unit PU3060 SC (D706)
- Punch Unit PU3060 2/4 EU (D706)
- Punch Unit PU3060 NA 3/2 (D706)

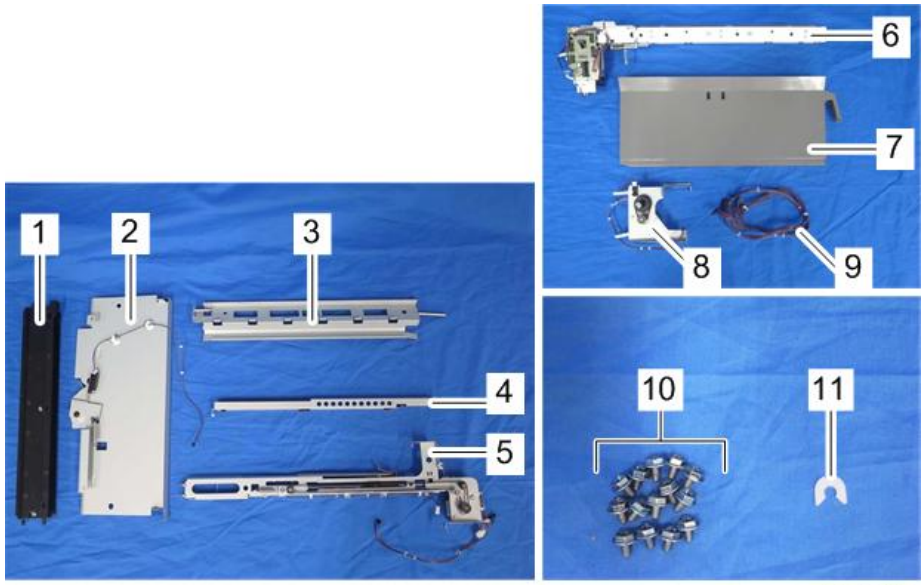
Important

- These punch units can be installed and used with the Finishers SR4120 and SR4130 only.

2.14.1 ACCESSORY CHECK

Check the quantity and condition of the accessories against the following list.

No	Description	Qty
1	Chad Guide	1
2	Hopper Bracket	1
3	Punch Unit Slide Stay	1
4	Registration Guide Plate	1
5	Registration Sensor Bracket	1
6	Punch Unit	1
7	Punch Waste Hopper	1
8	Stepper Motor Bracket	1
9	Harness Connector Cable-PCB	1
10	Tapping Screw (M3 x 6)	14
11	E-ring	1



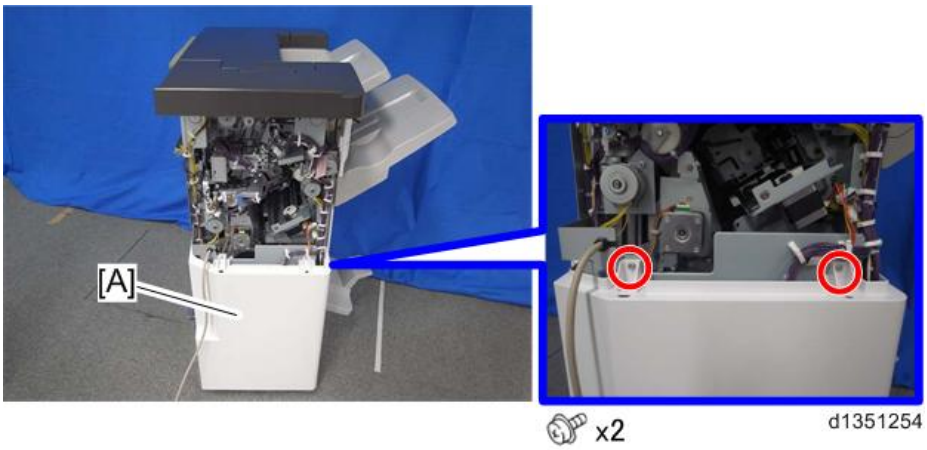
2.14.2 INSTALLATION PROCEDURE

⚠CAUTION

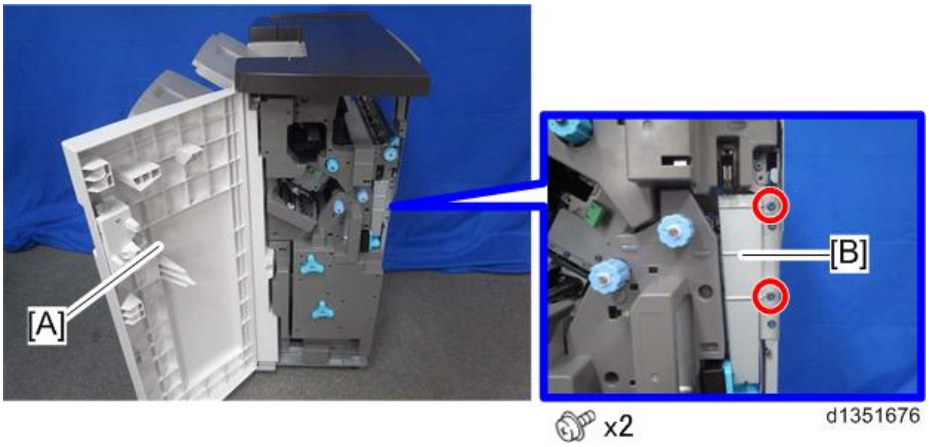
- Always switch the machine off and unplug the machine before doing the following procedure.

1. If the finisher is installed, disconnect it and pull it out of the line.
2. Remove the rear upper cover [A] of the finisher.

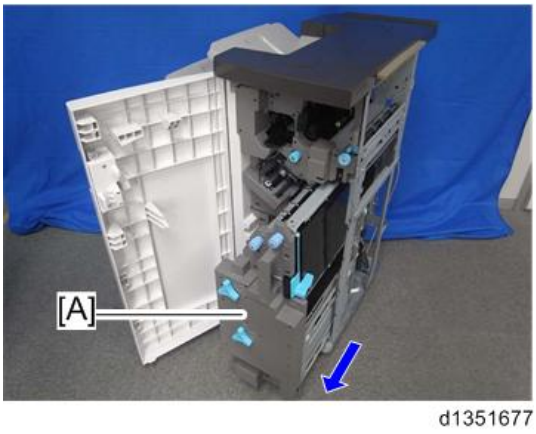
3. Remove the rear lower cover [A] of the finisher.



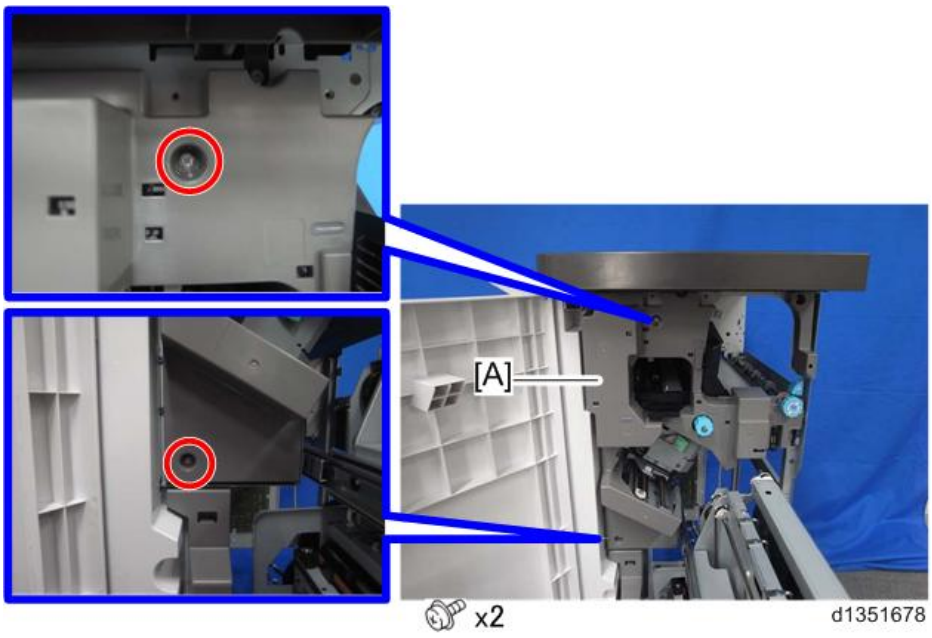
4. Open the front door [A], and then remove the punch hopper bracket [B].



5. Pull out the stapling unit [A]. (Booklet Finisher only)



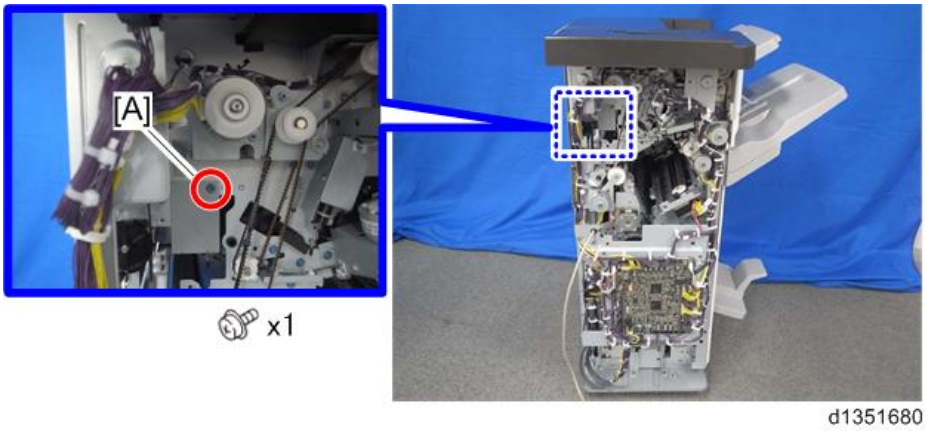
6. Remove the inner upper cover [A] from the Front of the finisher.



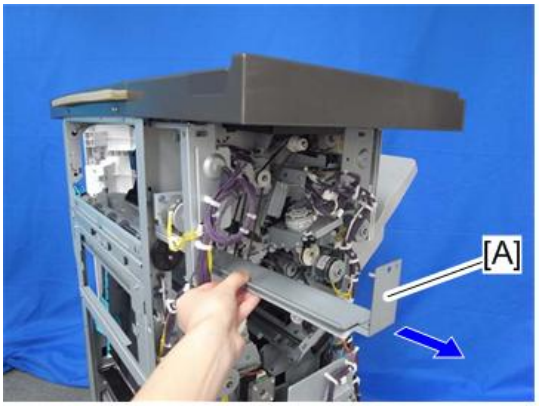
Note

- Disconnect the harness from the back side of the inner upper cover when you remove the inner upper cover.

7. Remove screw [A] of the transport guide plate from the rear of the finisher.

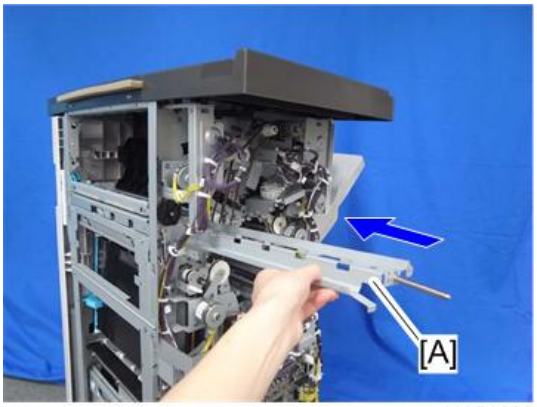


8. Remove the transport guide plate [A].



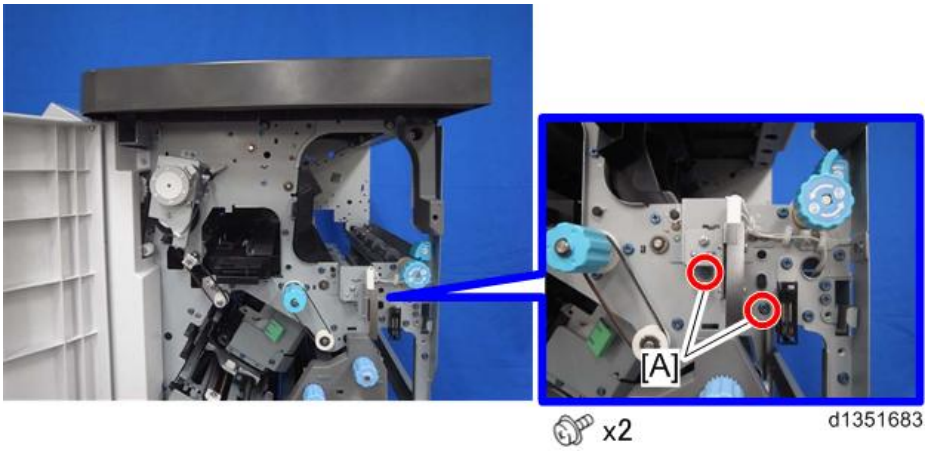
d1351681

9. Install the punch unit slide stay [A] from the rear of the finisher.



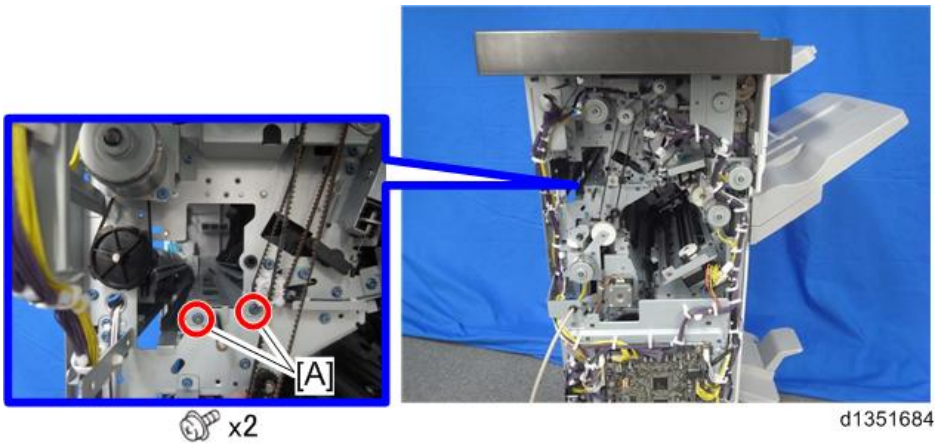
d1351682

10. Fasten the punch unit slide stay at the front [A]

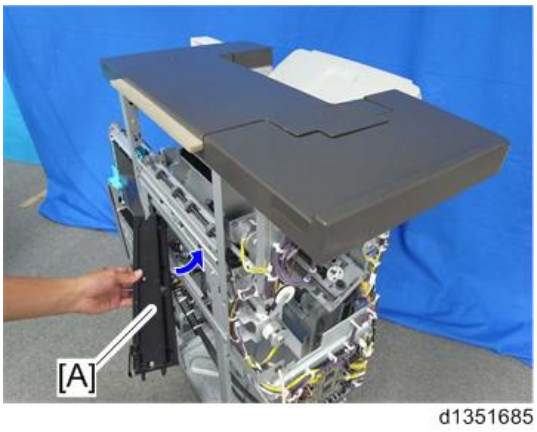


d1351683

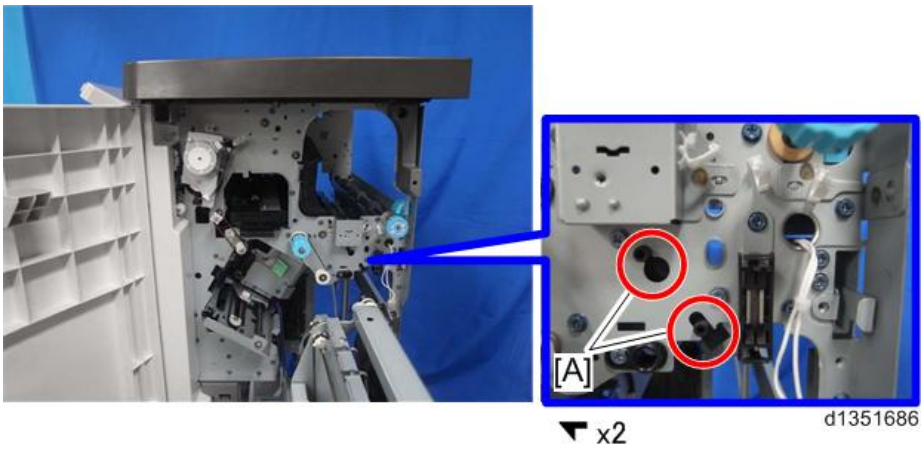
11. Fasten the punch unit slide stay at the rear [A]



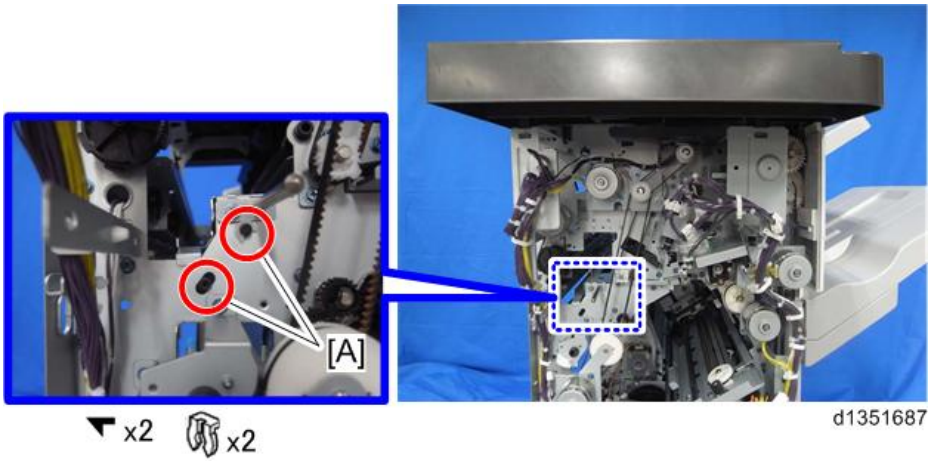
12. Insert the paper chad guide [A] into the finisher as shown below.



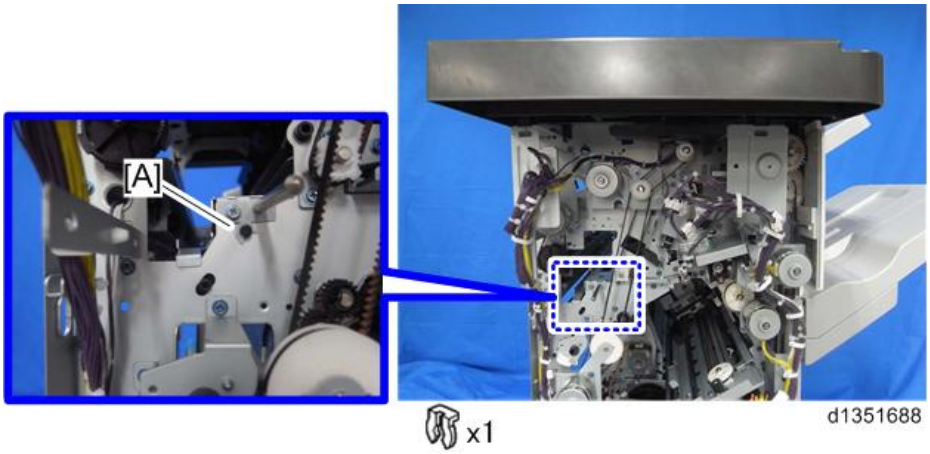
13. First, hook the chad guide to the front [A]



14. Second, hook the chad guide to the rear [A]

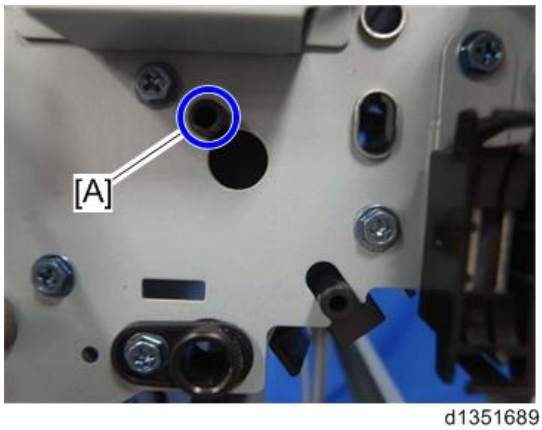


15. At the rear, fasten the paper chad guide.

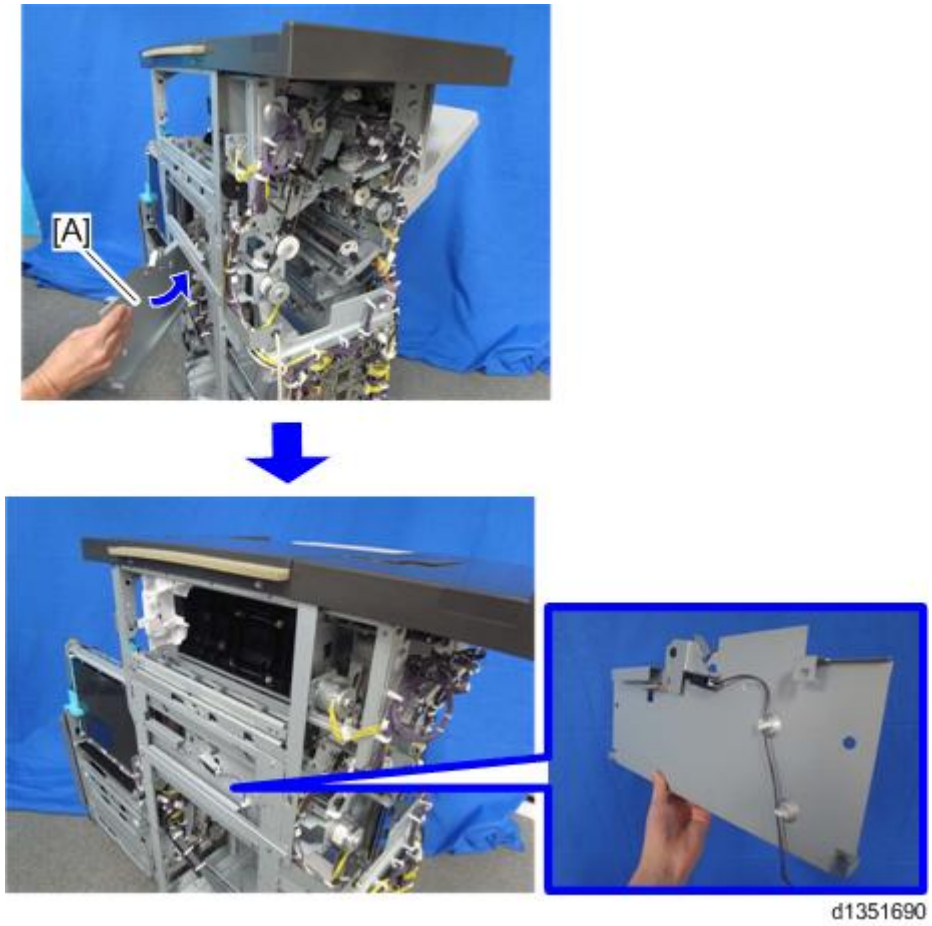


Note

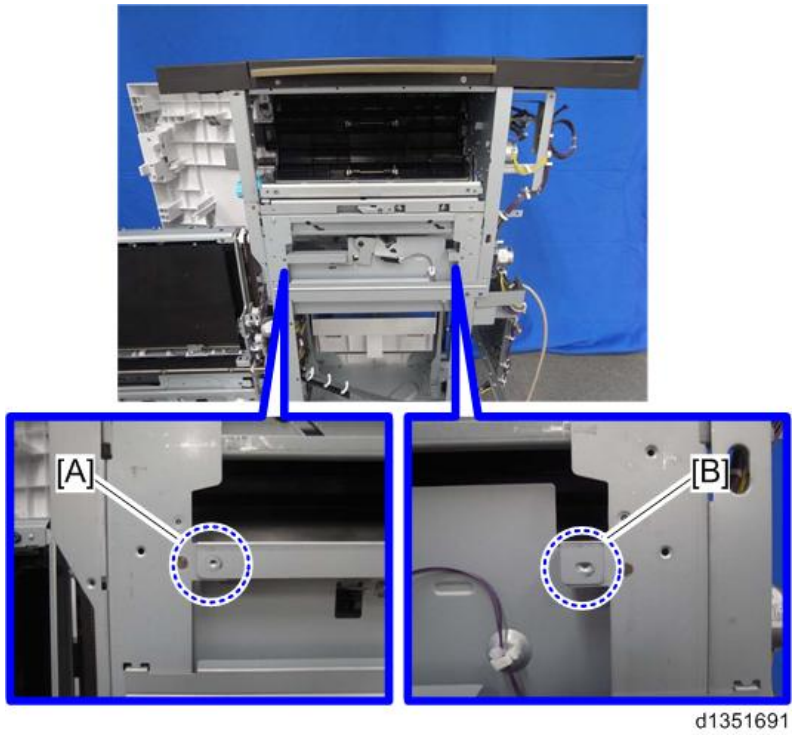
- When fastening the paper chad guide with the snap ring, make sure the Front of the paper chad guide is hooked onto the small-diameter slot [A].



16. Insert the hopper bracket [A] into the finisher as shown below.

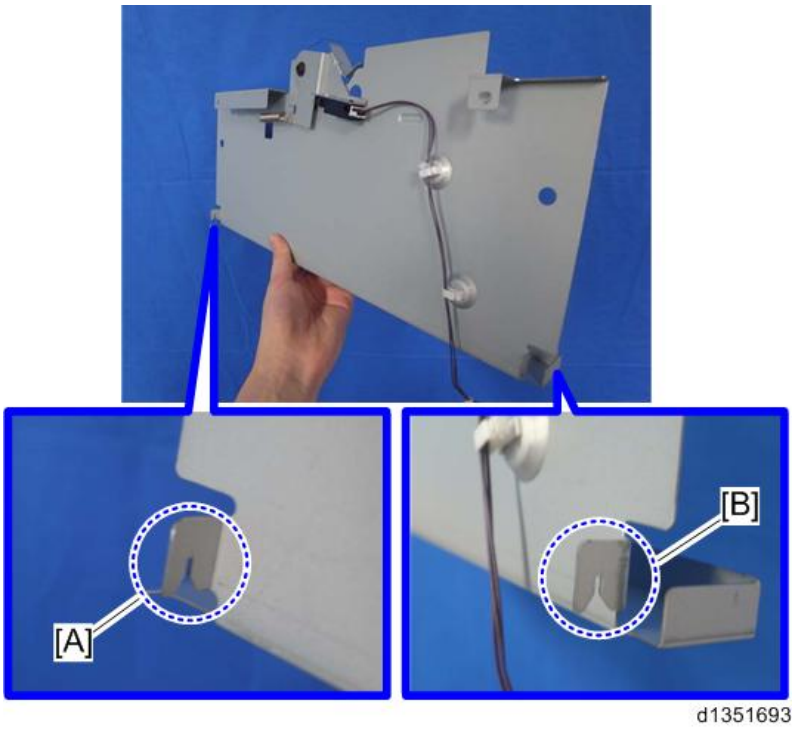


17. Hook the hopper bracket onto the frame [A] [B] of the finisher.

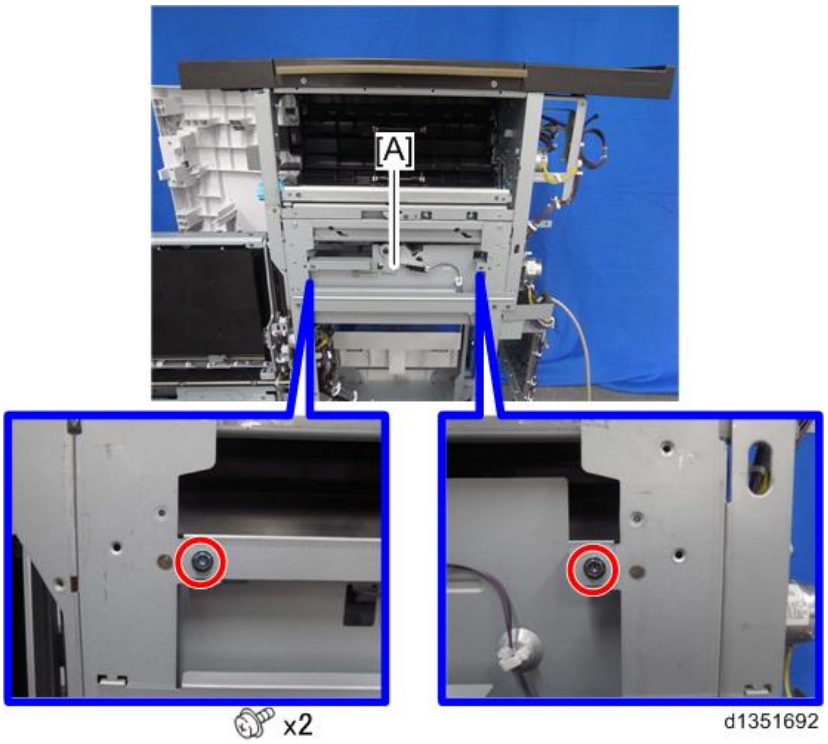


Note

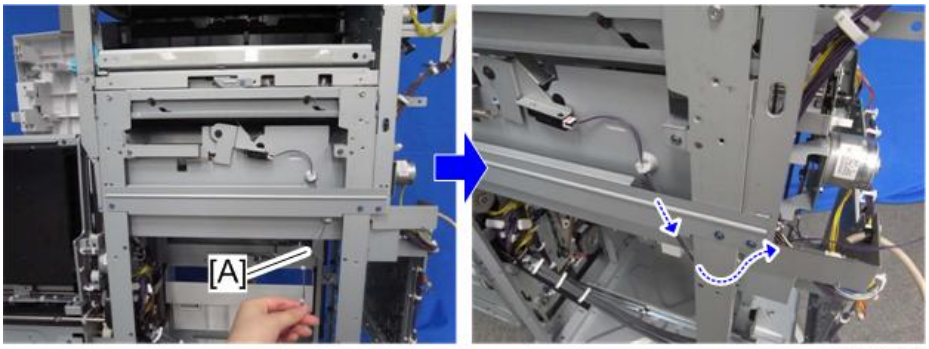
- Make sure the hooks [A] and [B] of the hopper bracket are also hooked onto the finisher.



18. Fasten the hopper bracket [A].

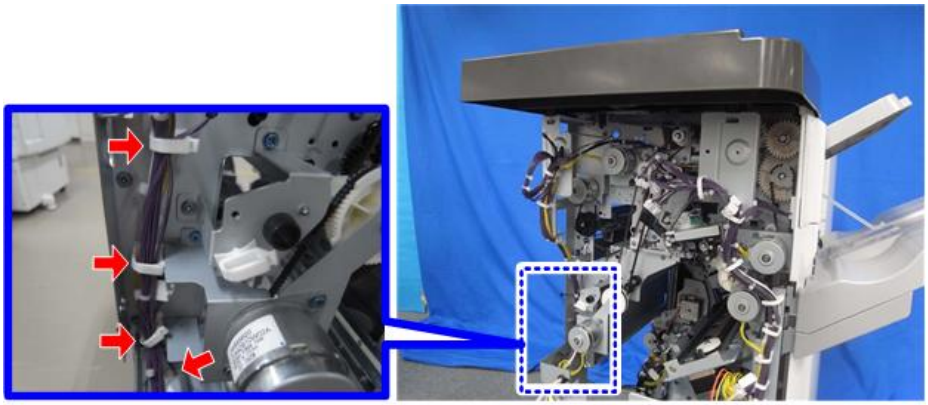


19. Route the harness of the hopper bracket [A] inside the finisher as shown.



d1351694

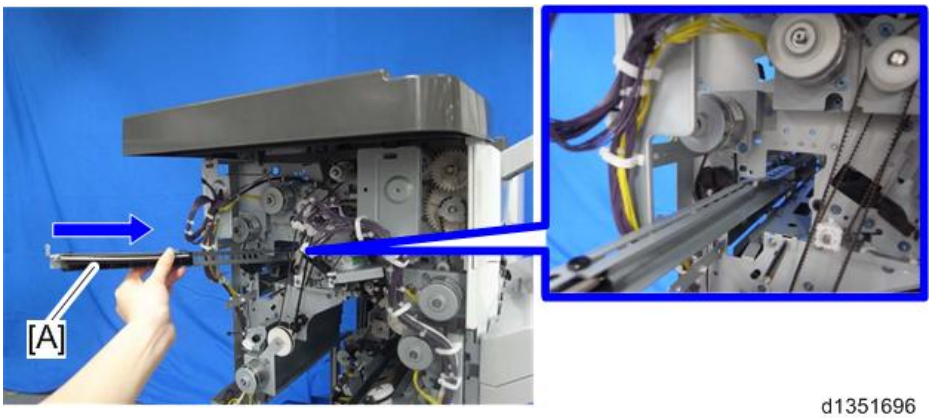
20. Route the harness of the hopper bracket to the rear of the finisher.



x4

d1351695

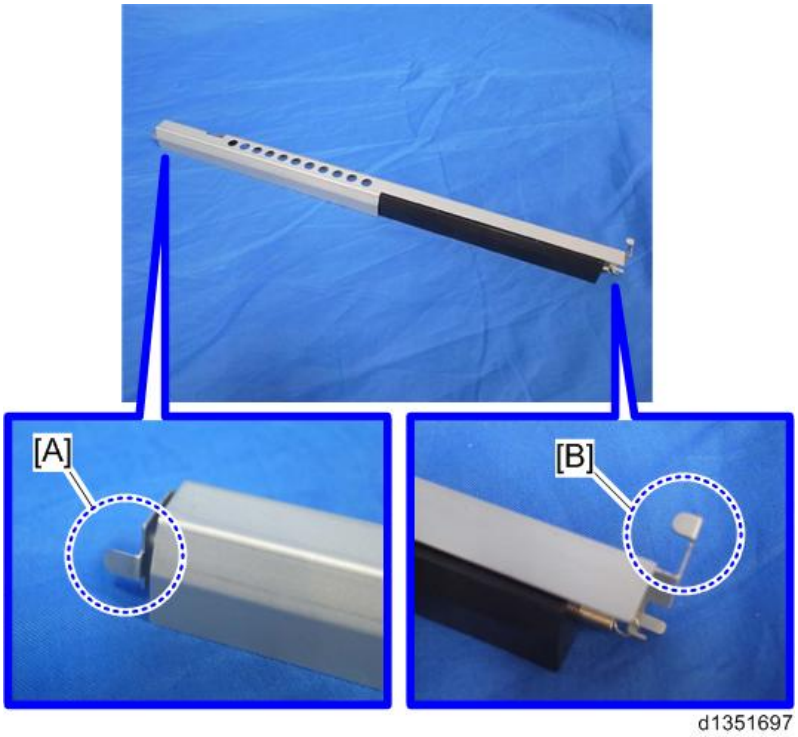
21. Insert the registration guide plate [A] from the rear of the finisher.



d1351696

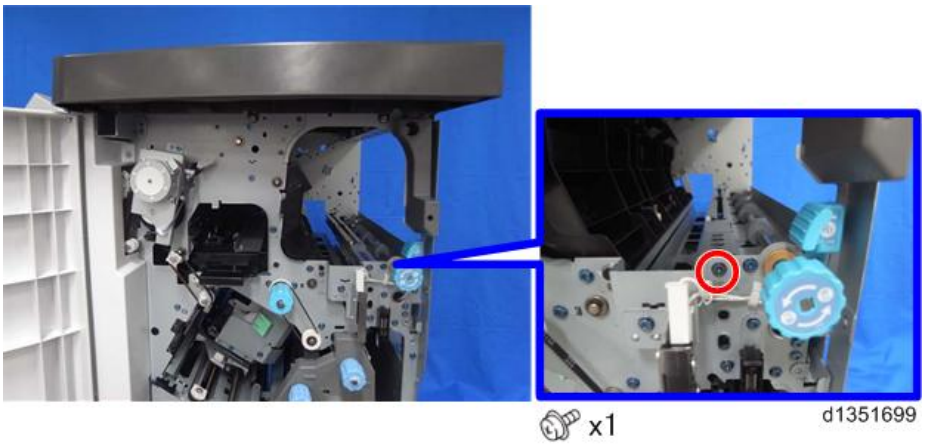
Note

- Hook [A] and [B] of the registration guide plate onto the slotted holes of the finisher.

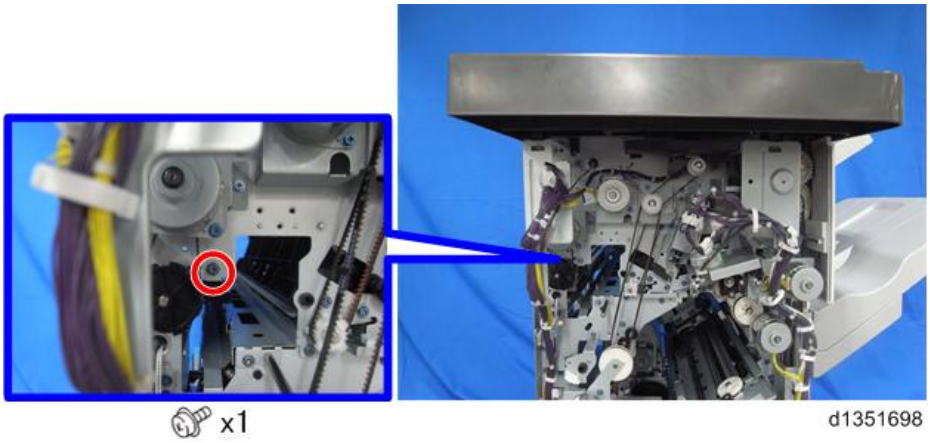


22. Fasten the registration guide plate.

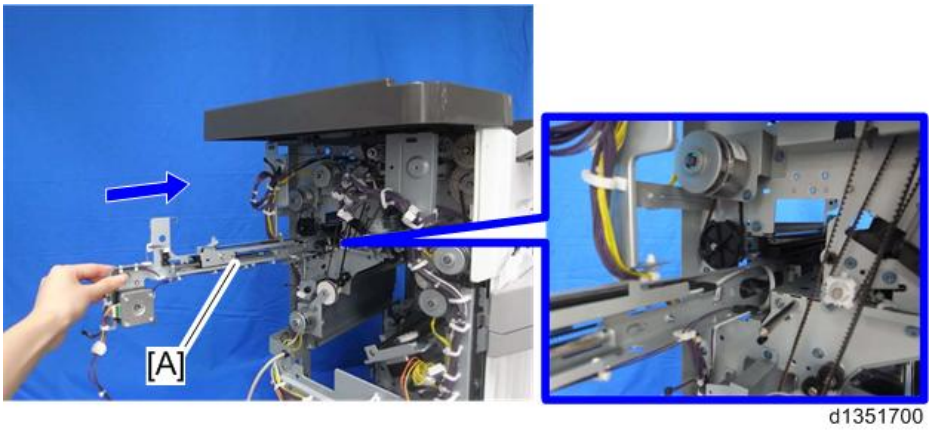
Front



Rear

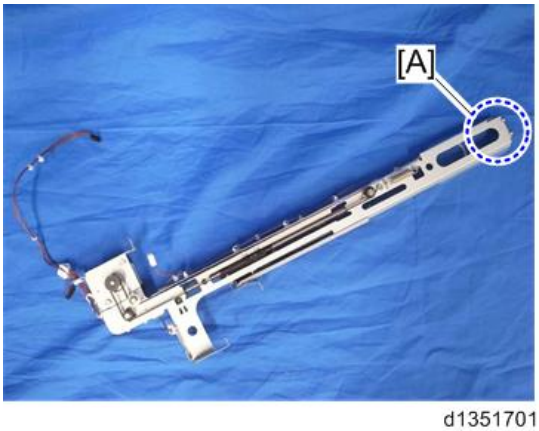


23. Insert the registration sensor bracket [A] from the rear of the finisher.

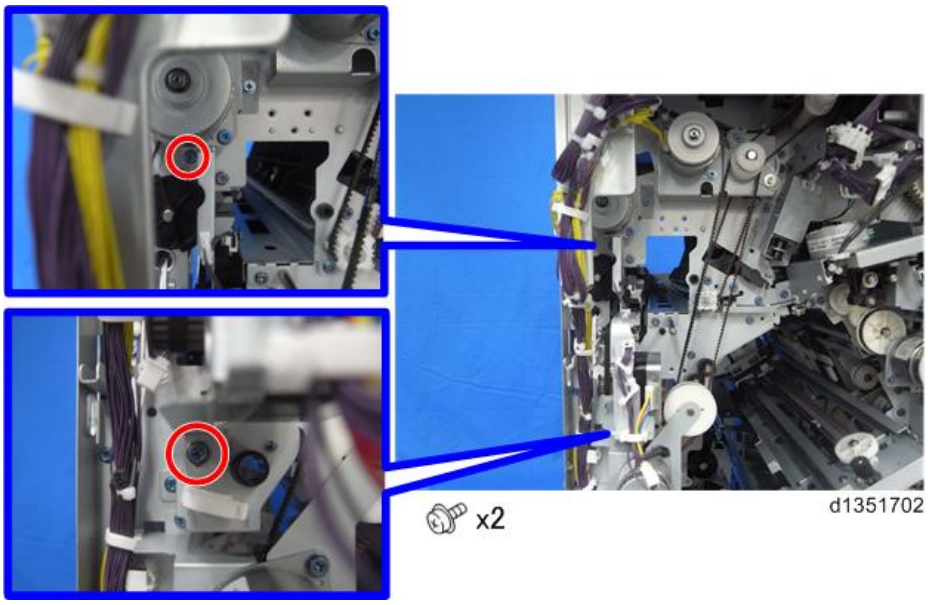


Note

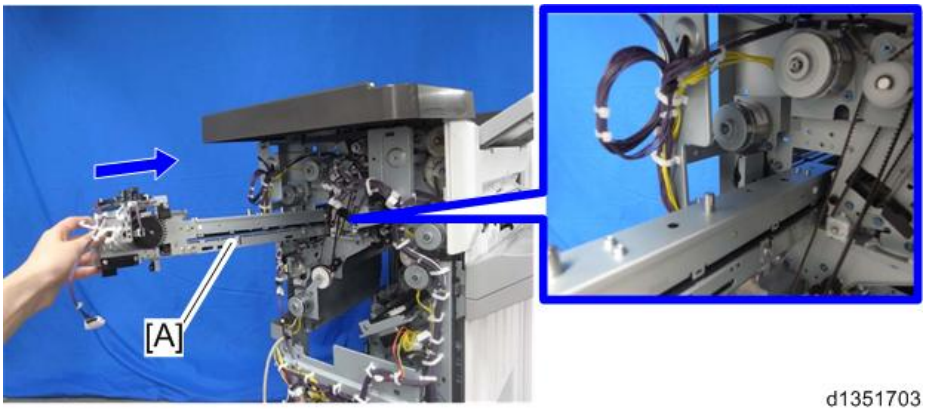
- Hook [A] of the registration sensor bracket into the slotted holes of the finisher.



24. Fasten the registration sensor bracket.

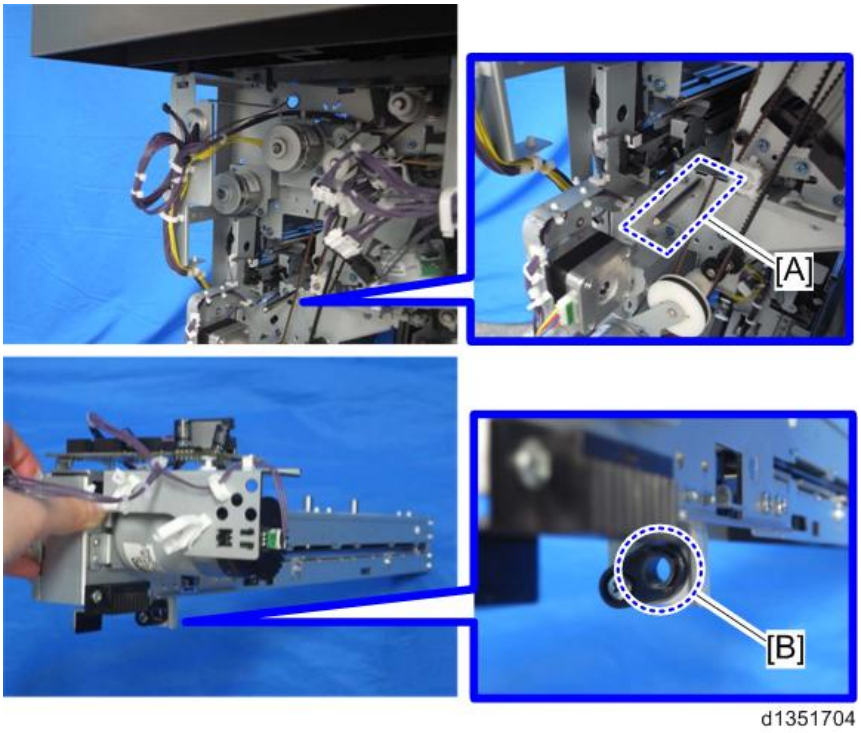


25. Insert the punch unit [A] from the rear of the finisher.



Note

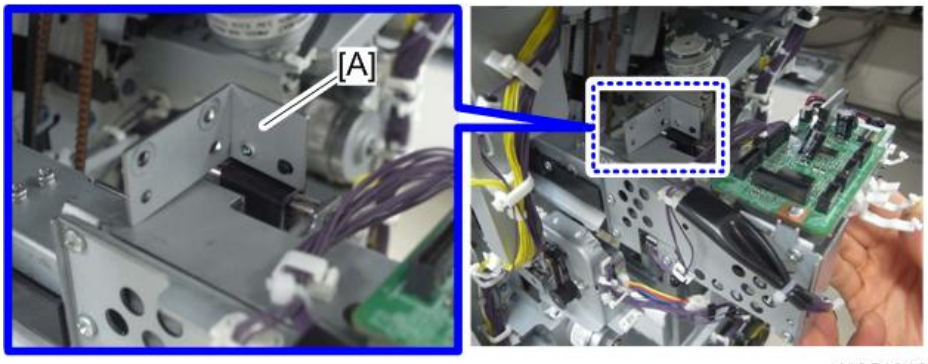
- Make sure the shaft [A] on the finisher is inserted into the punch unit [B].



d1351704

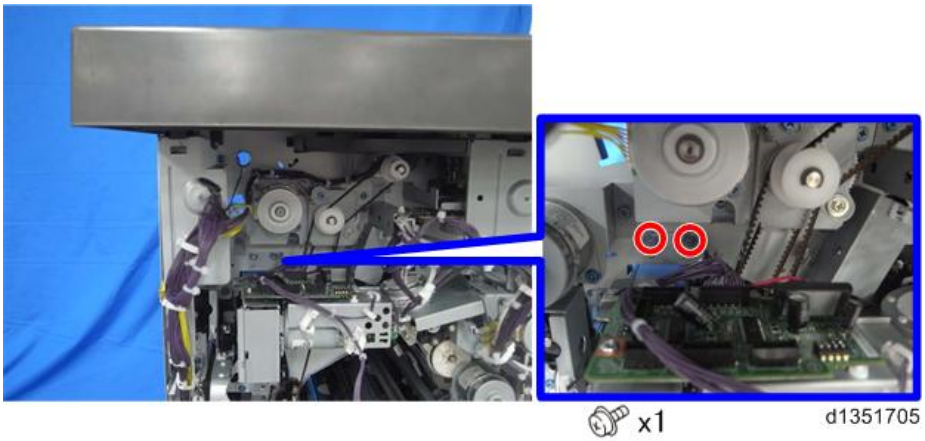
Note

- When inserting the punch unit, make sure the bracket [A] of the punch unit is in the right position as shown below.



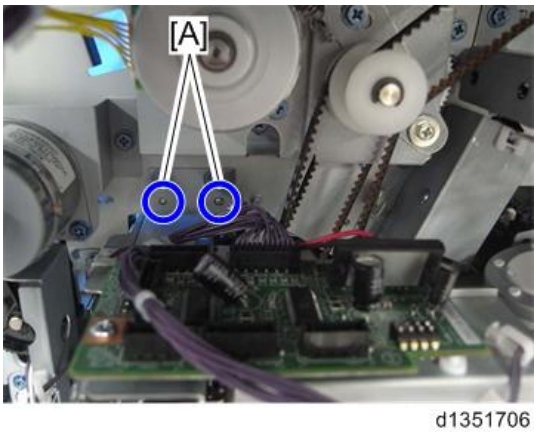
d1351916

26. Fasten the punch unit.

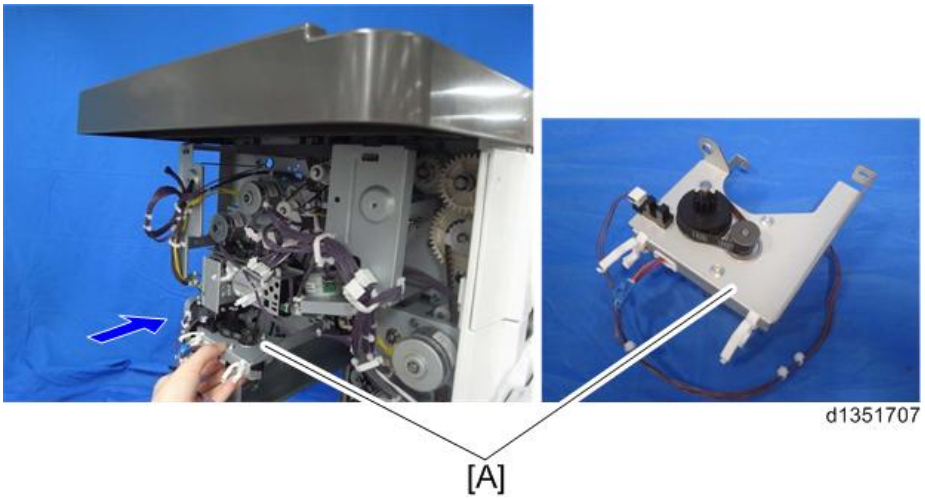


Note

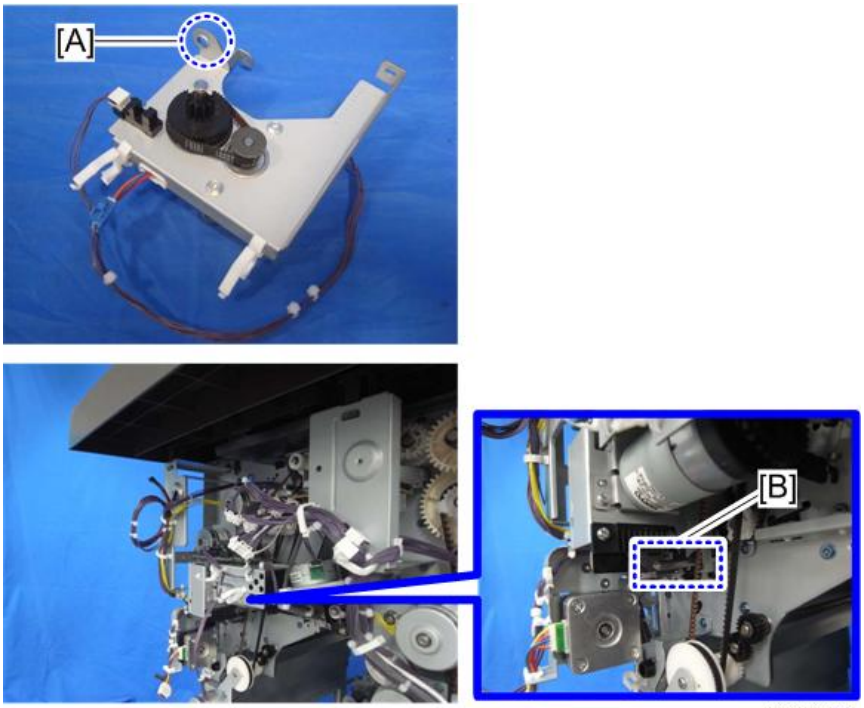
- Make sure the bracket of the punch unit fits the embossed parts [A] on the finisher.



27. Install the stepper motor bracket [A] from the rear of the finisher.

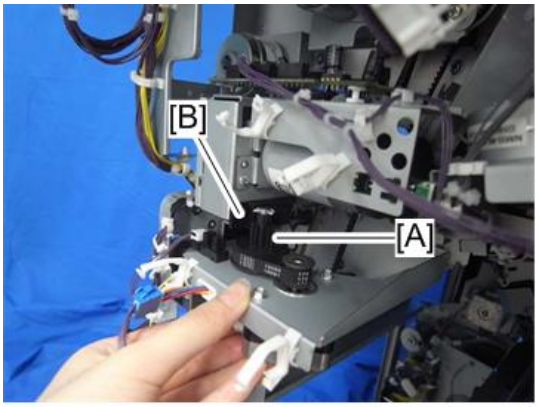


28. Insert the hole [A] in the stepper motor bracket over the shaft [B] on the rear of the finisher.



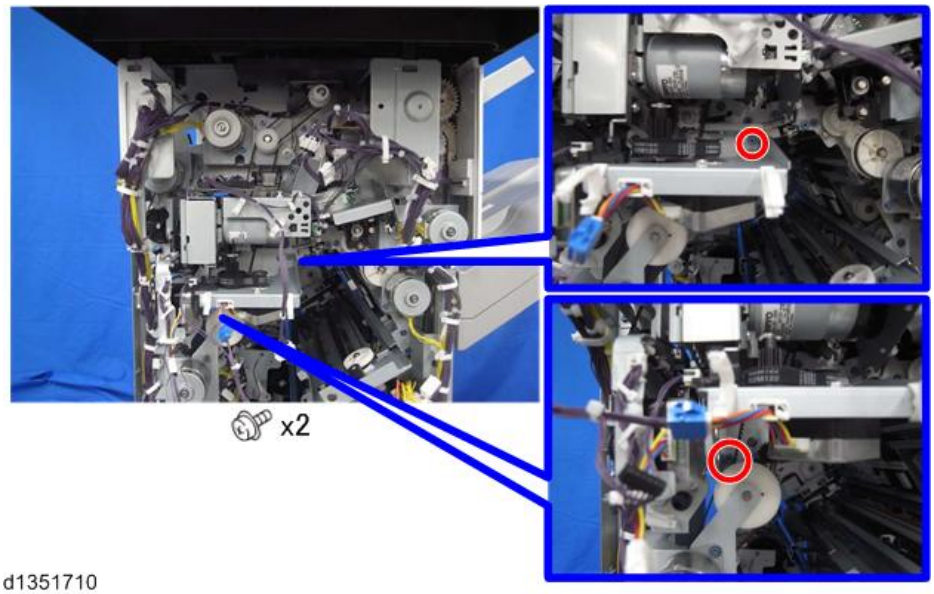
d1351708

29. Make sure the rack [A] of the punch unit is engaging with the pinion [B] of the stepper motor bracket when you insert the stepper motor bracket.



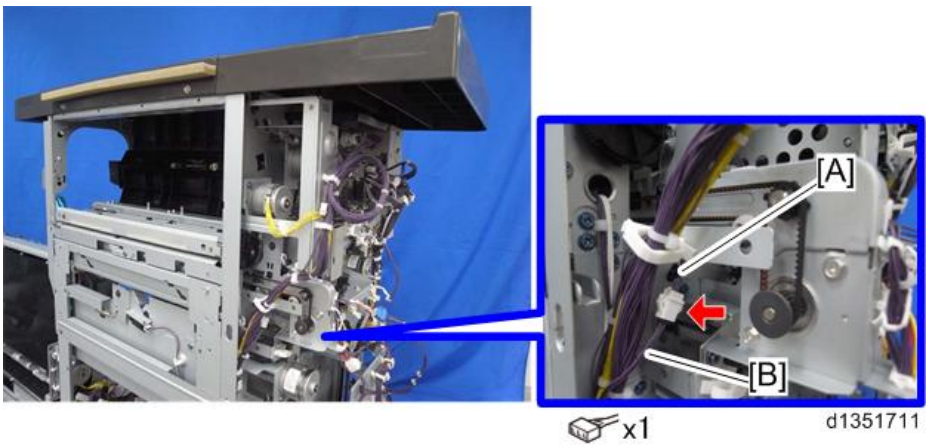
d1351709

30. Fasten the stepper motor bracket.



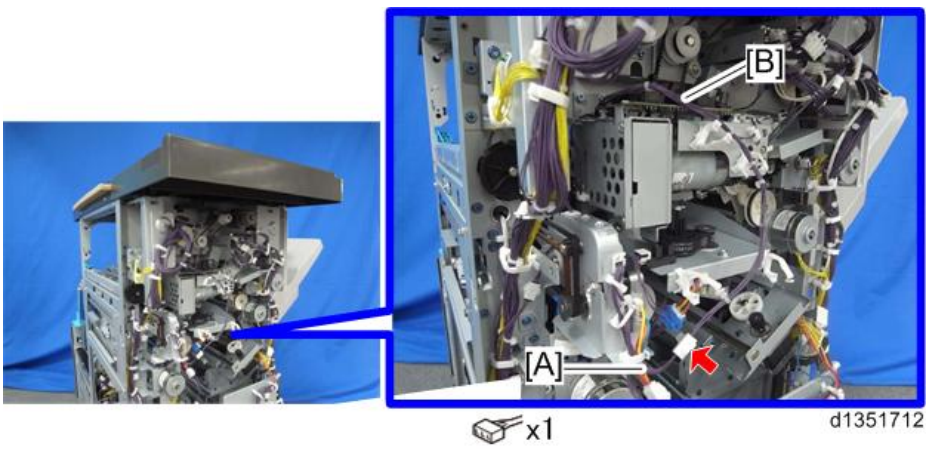
d1351710

31. Connect the harness [A] of the registration sensor bracket to the harness [B] from the hopper bracket.



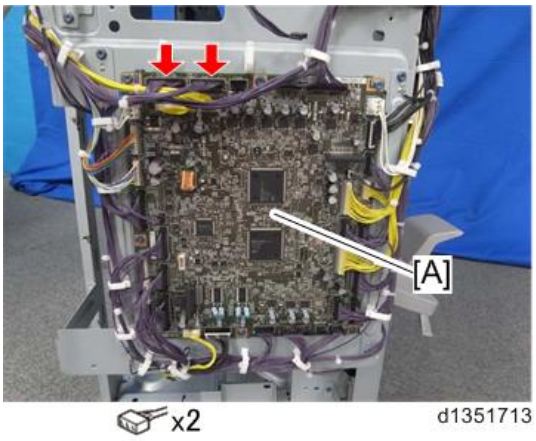
d1351711

32. Connect the harness [A] of the registration sensor bracket to the harness [B] from the punch unit.



d1351712

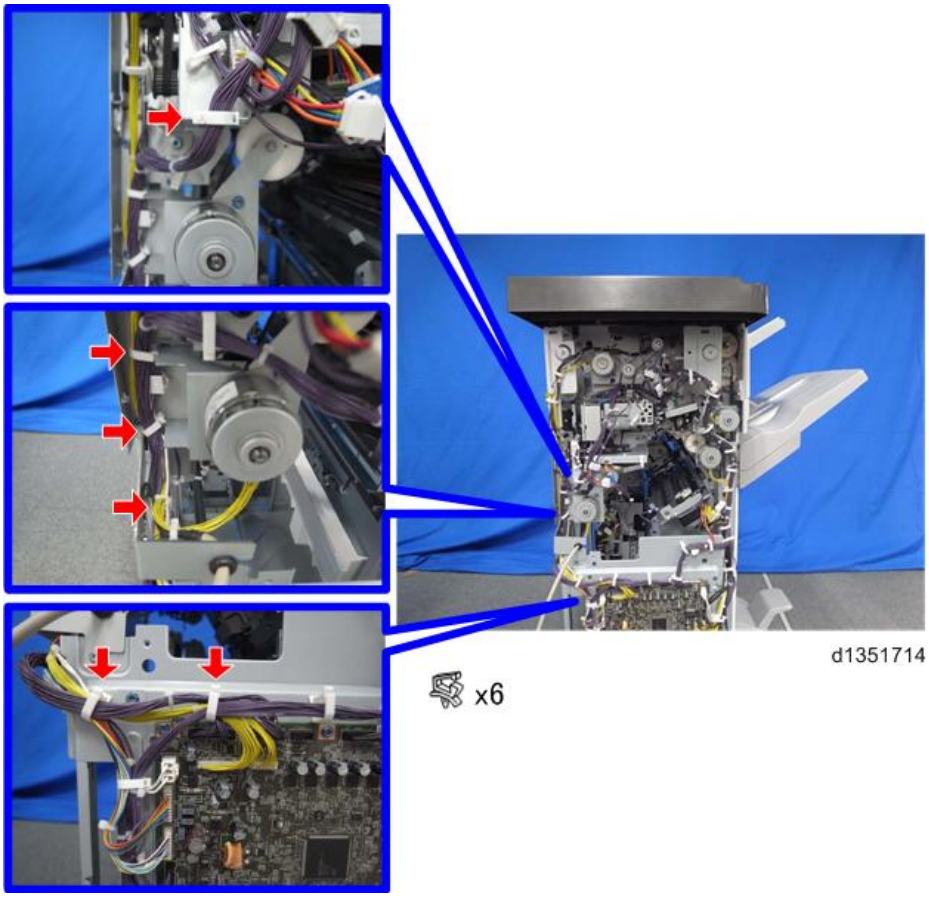
33. Connect the harness connector cable provided with the punch unit to the main board [A] of the finisher.



Note

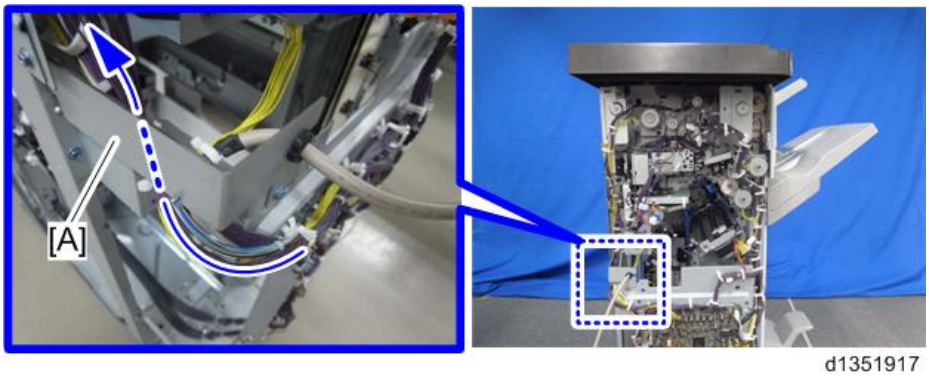
- The end that is split into two connectors must be connected to the main board.

34. Route the harness connector cable as shown below.



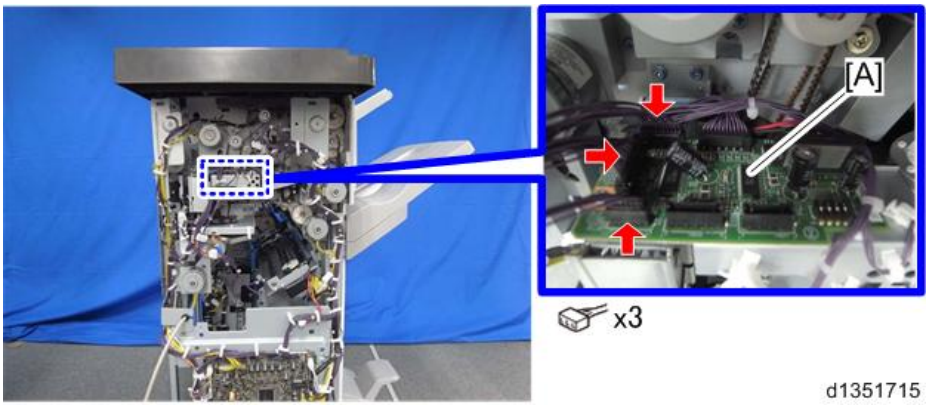
Note

- Route the harness inside the I/F bracket [A] as shown below.



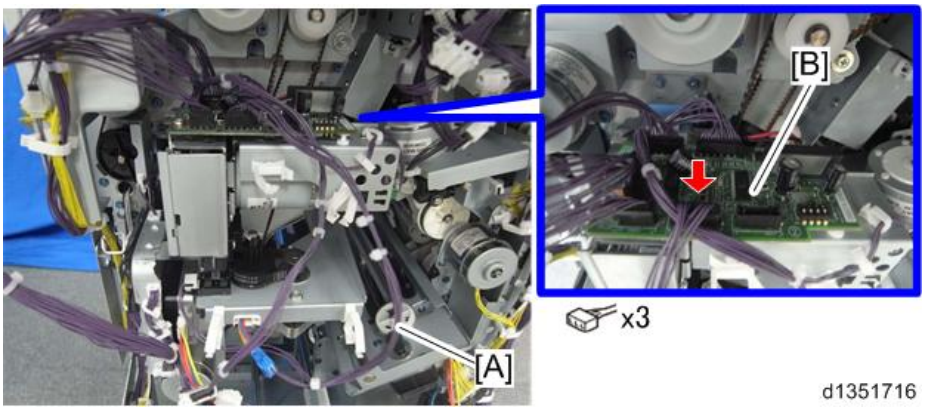
d1351917

35. Connect the harness connector cable to the PCB [A] on the punch unit.



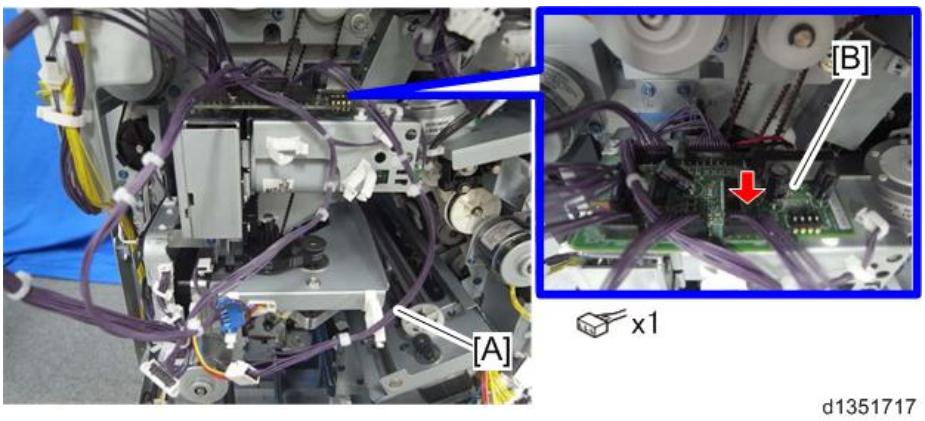
d1351715

36. Connect the harness [A] of the stepper motor bracket to the PCB [B] in the punch unit.

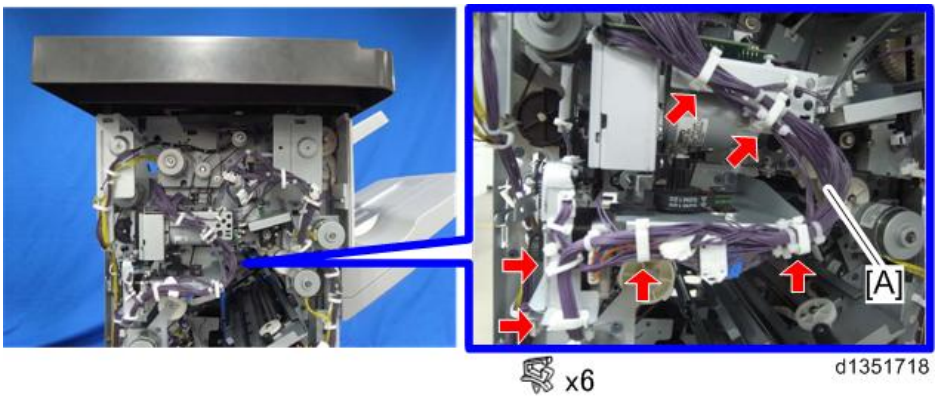


d1351716

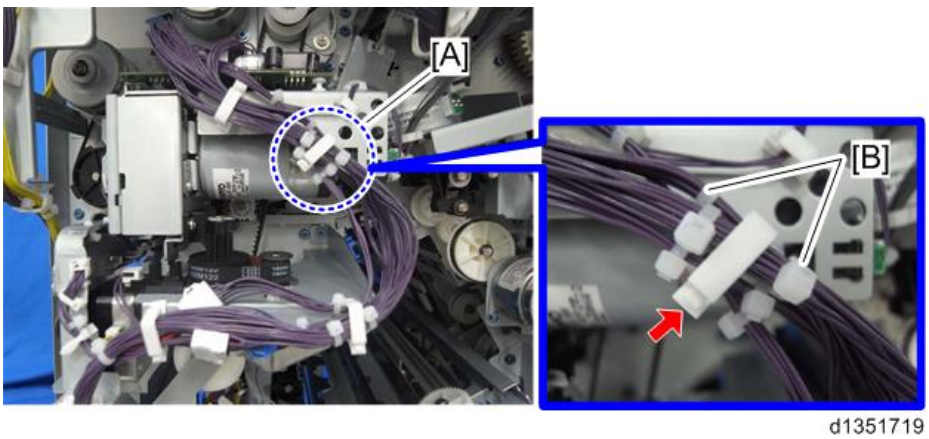
37. Connect the harness [A] of the registration sensor bracket to the PCB [B] in the punch unit.



38. Gather the harnesses of steps 32-34 [A] with your hands, and then fasten them with the clamps as shown below.

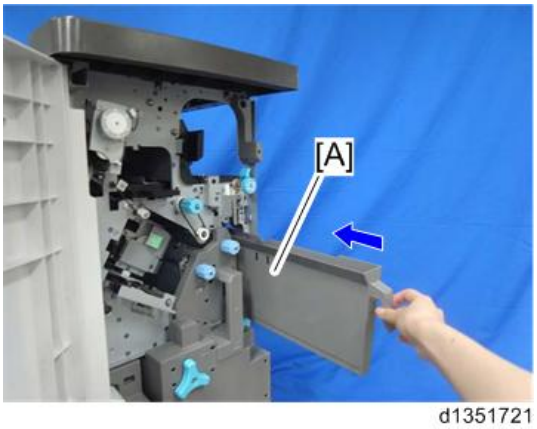


39. When you clamp the harness in clamp [A], clamp the harness between the two binds [B].



40. Route the harness [A] of the punch unit over the PCB as shown below.

41. Slide the punch waste hopper [A] into the finisher from the rear.



42. Pull back the stapling unit.
43. Re-attach the covers, and then re-install the finisher on the main machine.
44. Connect the finisher connector to the main machine.
45. Turn on the main power switch of the machine.
46. Check the finisher operation.

2.15 OUTPUT JOGGER UNIT TYPE M25 (D3CJ)

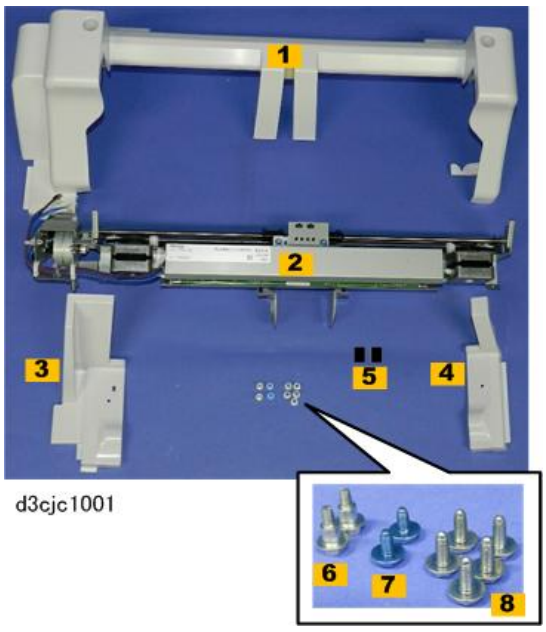
Important

- This jogger unit is installed and used with the Finishers SR4120/SR4130 only

2.15.1 ACCESSORIES

Check the quantity and condition of the accessories against the following list.

No	Description	Qty
1	Jogger Unit Cover	1
2	Jogger Unit	1
3	Rear End Cover	1
4	Front End Cover	1
5	Cushions	5
6	Shoulder Screws	2
7	Screws (Blue) M3x6	2
8	Screws (Silver) M3x8	5



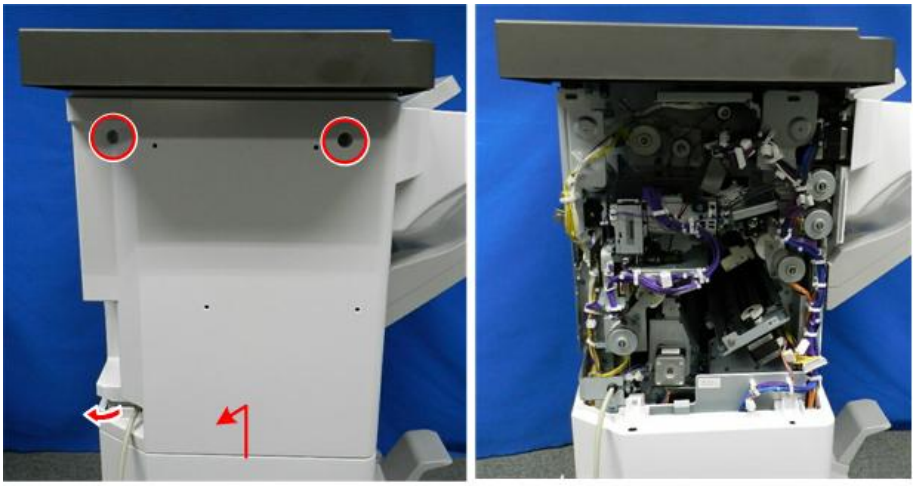
d3cjc1001

2.15.2 INSTALLATION

⚠CAUTION

- Always switch the machine off and unplug the machine before doing the following procedure.

1. Disconnect the finisher from the main frame.
2. Remove the rear cover.



x2

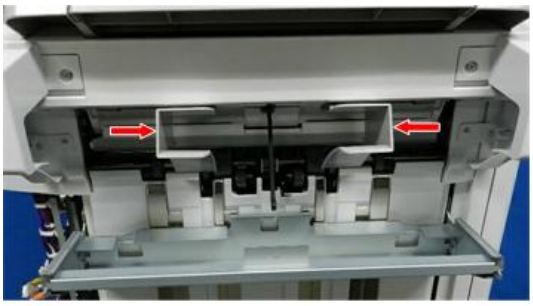
d3cjc1002

3. Remove the shift tray.

x1

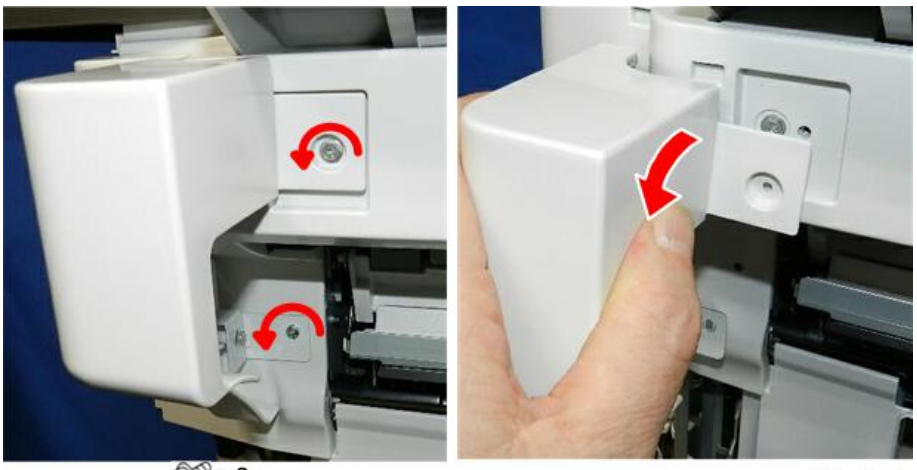
d3cjc1003

4. Push the paper guides to the center.



d3cjc1004

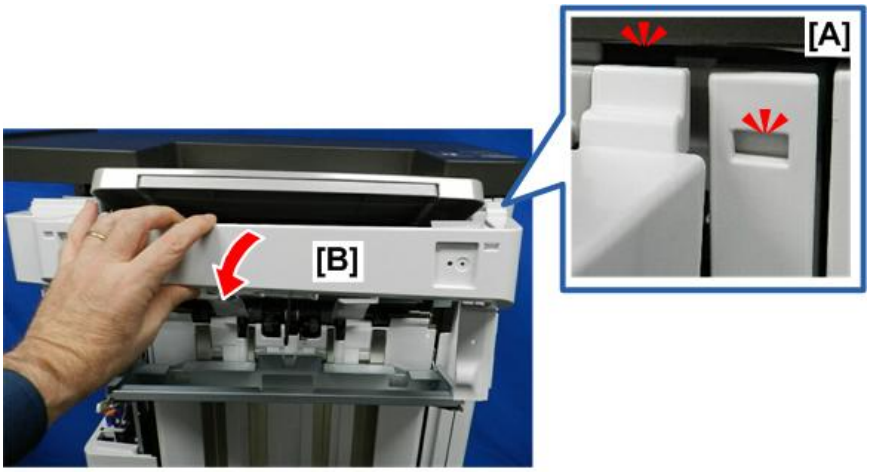
5. Remove the rear paper guide cover.



6. Remove the front paper guide cover.

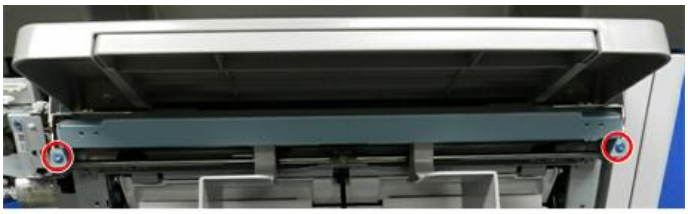
7. Disconnect the main paper guide cover.

8. Carefully, separate the front tabs at [A], and then remove the main paper guide cover [B].



d3cjc1008

9. Disconnect the cover installation bracket.



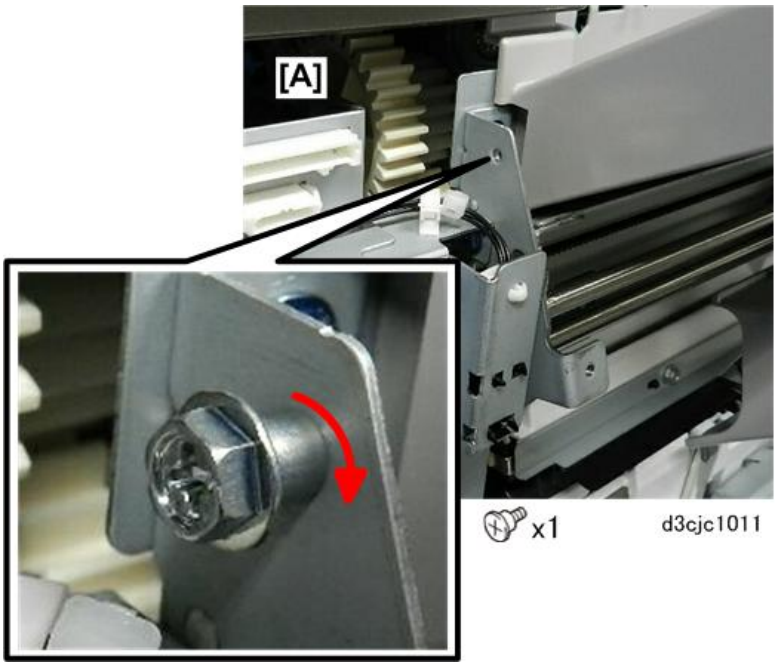
x2

d3cjc1009

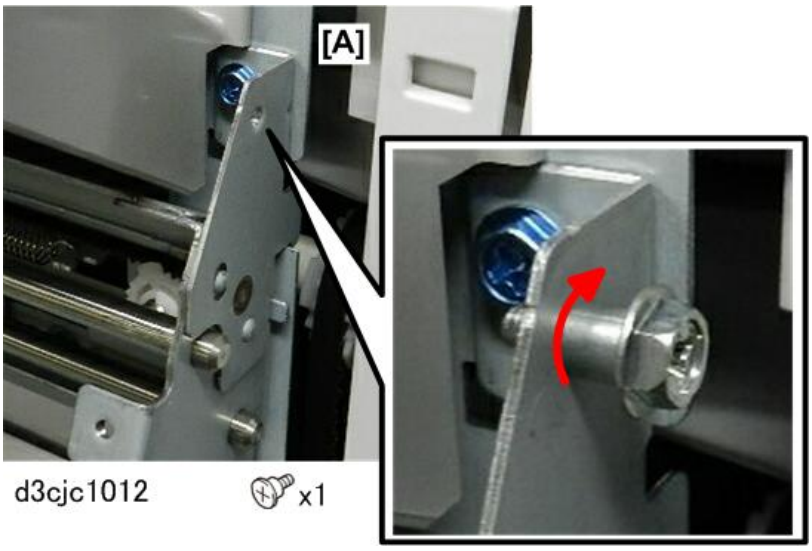
10. Slowly, disconnect the bracket from the rail above, and then remove it.

d3cjc1010

11. At the rear [A], set one shoulder screw.

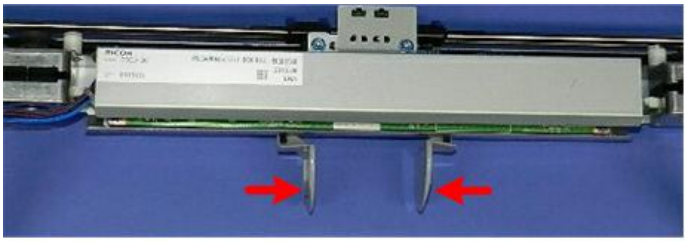


12. At the front [A], set the other shoulder screw.



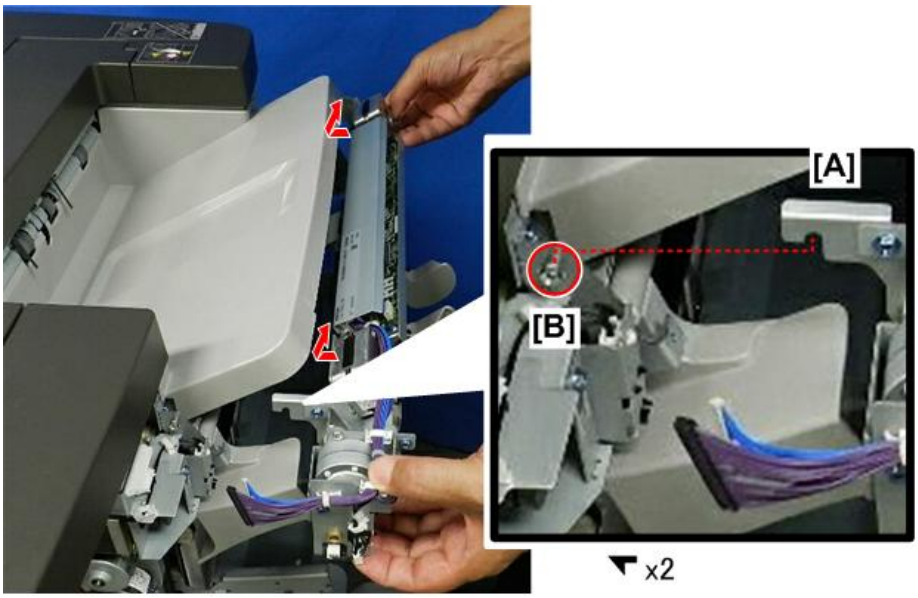
13. Spread the paper guides to the maximum width.

14. Move the jogger arms on the jogger unit to the center.



d3cjc1014

15. Hold the jogger unit so the hooks [A] on both ends of the unit are in line with the installed shoulder screws [B].
16. Rotate the jogger unit slightly up under the output tray so the motors on both ends of the unit go under the tray, and then hang the hooks on the shoulder screws at the front and rear.

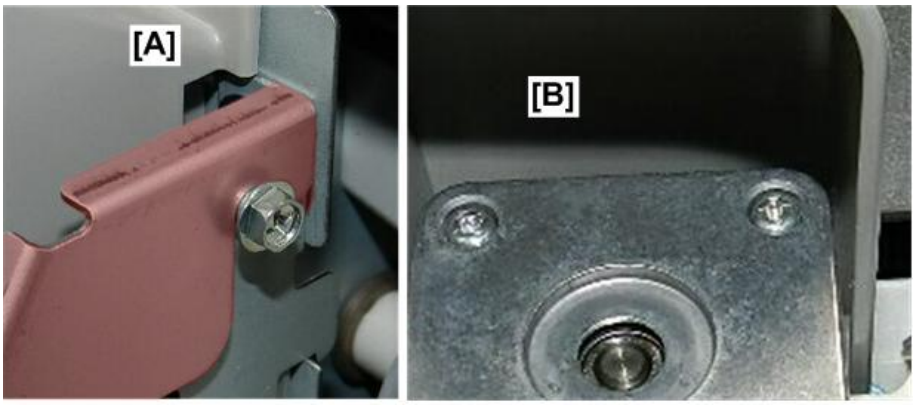


d3cjc1015

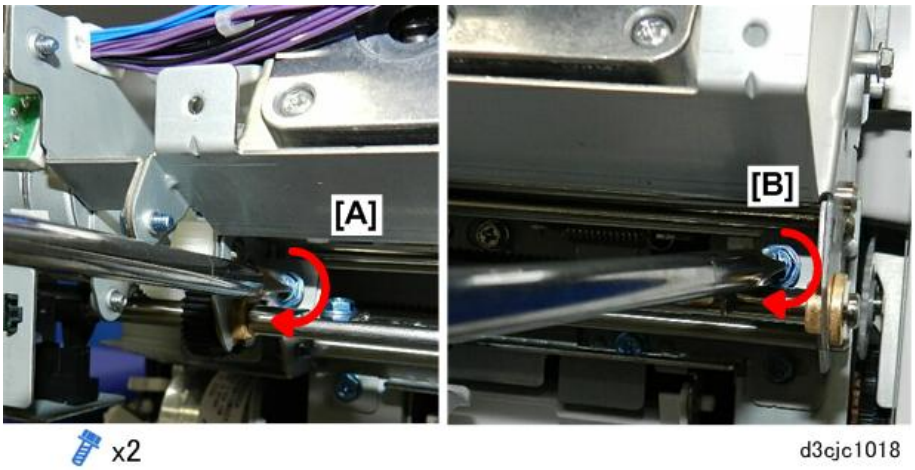
17. Confirm that the rear bracket [A] is on the shoulder screw.
18. Confirm that the rear motor [B] is up under the tray.

d3cjc1016

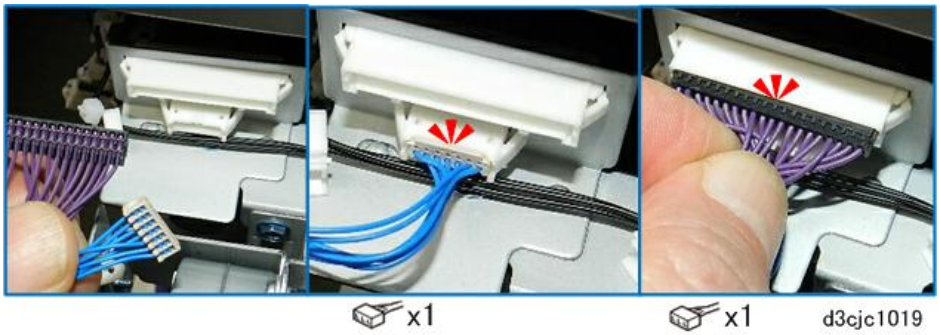
19. Confirm that the front bracket [A] is on the shoulder screw.
20. Confirm that the front motor [B] is up under the tray.



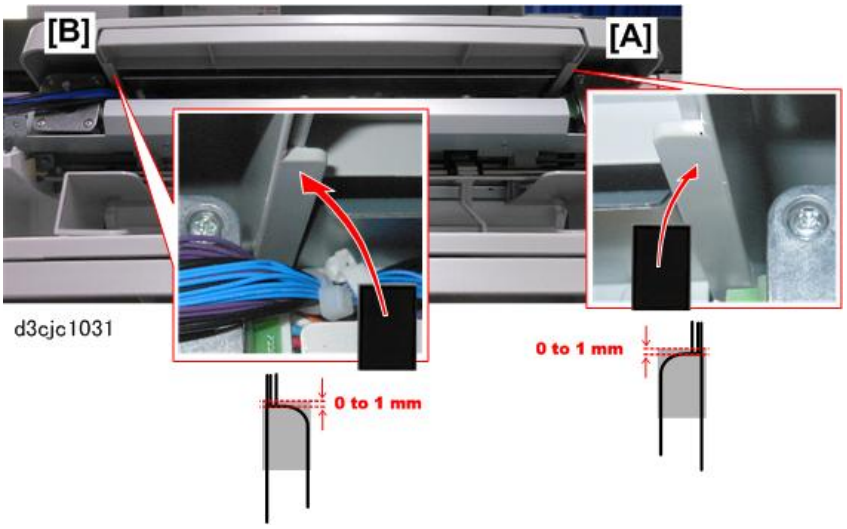
21. Fasten the jogger unit at the rear [A] and front [B].



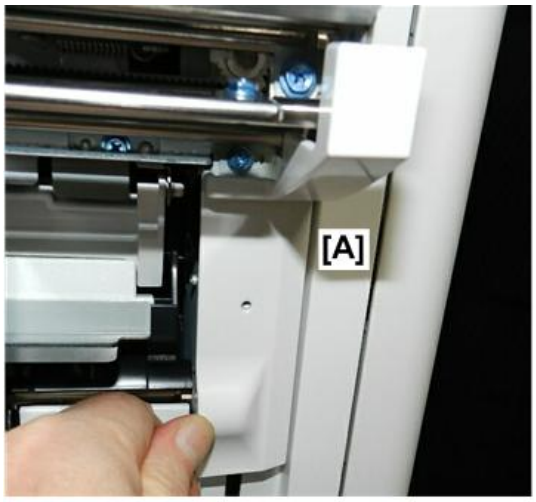
22. Connect the jogger unit at the rear.



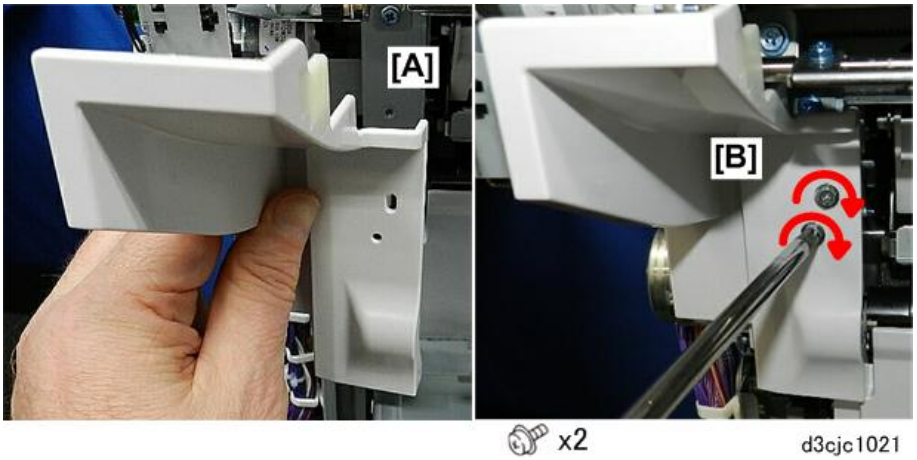
23. Peel the back off the two accessory cushions.
24. Attach the cushions to the front [A] and rear [B] of the lower arms of the output tray.



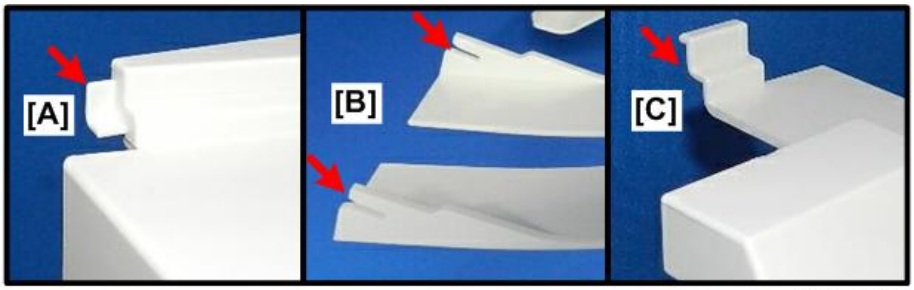
25. Set the front end cover [A]. Do not attach the screw yet.



26. Set the rear end cover [A], and then fasten it [B].

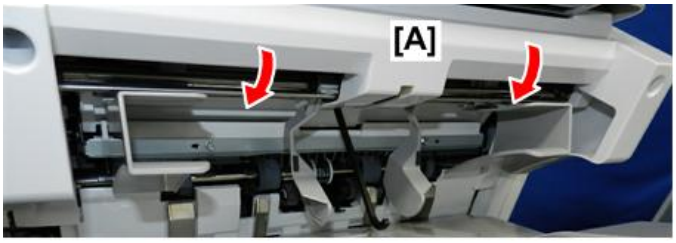


27. Look at the jogger cover. Note the tabs and slots on the rear end [A], center arm covers [B], and front end [C].



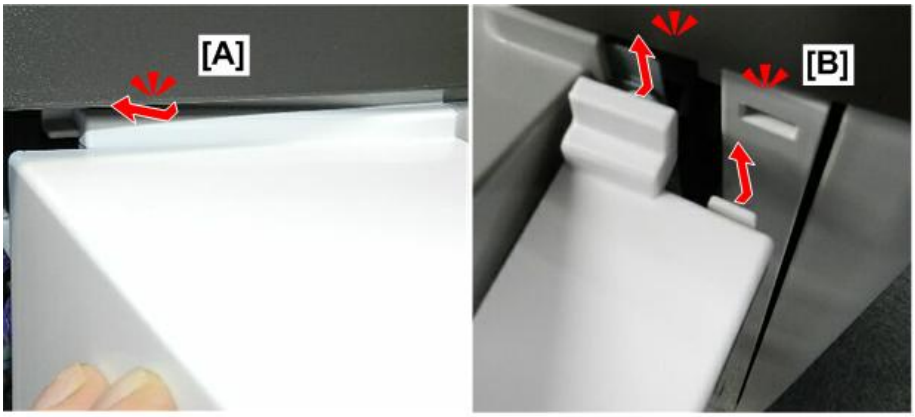
d3cjc1022

28. Slowly, set the jogger cover [A] on the jogger unit.



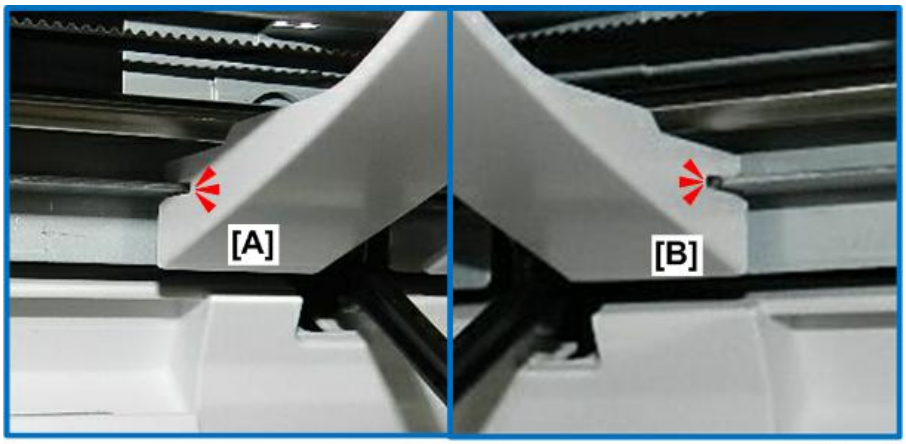
d3cjc1023

29. At the rear [A] confirm that the tab inserts correctly.
30. At the front [B] confirm that both tabs set correctly.



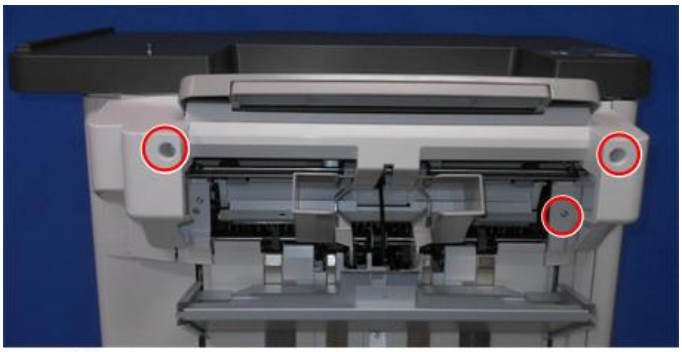
d3cjc1024

31. In the center under the jogger unit, make sure the rear arm cover [A] and front arm cover [B] fit over the edge of the plate as shown.



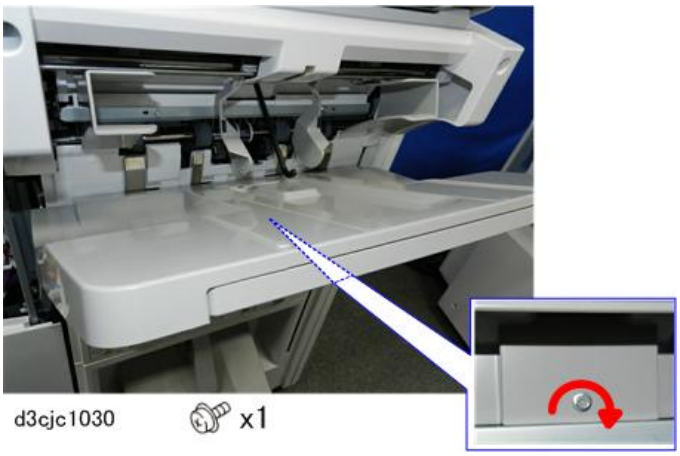
d3cjc1025

32. After making sure that all tabs are set correctly, fasten the cover to the jogger unit.



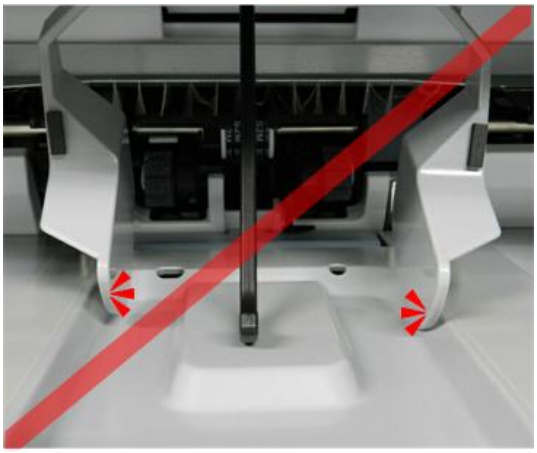
x3 d3cjc1026

33. Re-install the shift tray.



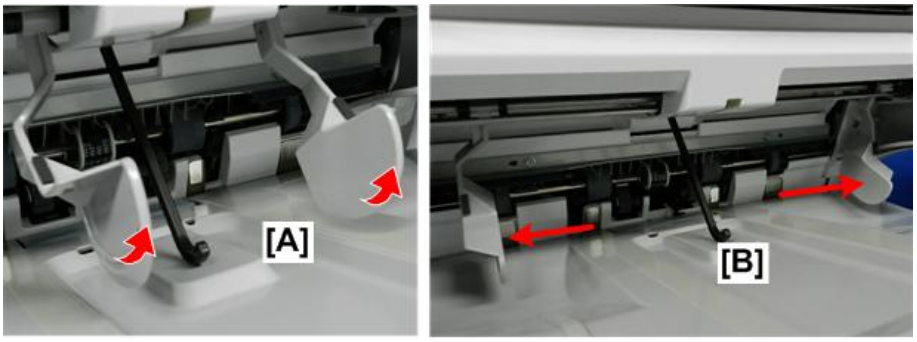
d3cjc1030 x1

34. Check the center of the shift tray.
    If the jogger arms are touching the surface of the shift tray as shown, this will cause a jam when the machine is turned on because the arms will move and hit the tray.



d3cjc1027

35. To avoid a jam at power on, before you turn the machine on you can:
    Raise the jogger arms [A] slightly so they are not touching the shift tray below.
    -or-
    You can spread the jogger arms [B] away from the center so they are not touching the surface of the tray.



d3cjc1028

2.16 COVER INTERPOSER TRAY CI4040 (DC3N)

2.16.1 ACCESSORIES

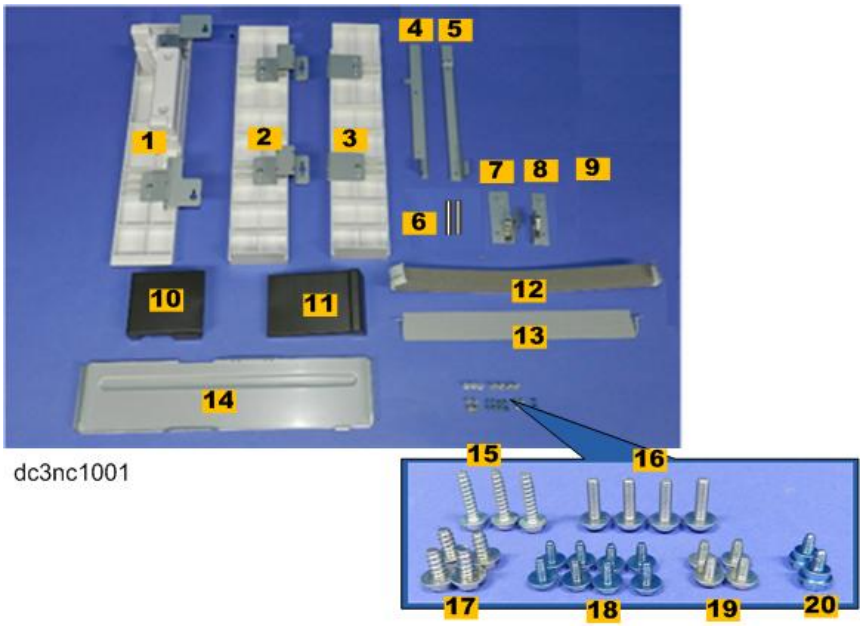
Important

- This Cover Interposer Tray is designed for use with the Finisher SR4120 and Booklet Finisher SR4130 only.

Check the accessories and their quantities against this list.

No.	Description	Q'ty
1	Front Door Top Extension	1
2	Front Door Bottom Extension	1
3	Rear Cover Extension	1
4	Tray Mounting Bracket: Rear	1
5	Tray Mounting Bracket: Front	1
6	Gaskets	2
7	Rear Joint Bracket	1
8	Front Joint Bracket	1
9	Decals	2
10	Right Front Corner Plate	1
11	Right Rear Corner Plate	1
12	Sponge Strip	1
13	Paper Guide (Not used for this machine)	1
14	Ground Plate Extension	1
15	Tapping Screws M4x16	3
16	Screws M4x14	4
17	Tapping Screw M4x8	4
18	Screws (Blue) M3x6	6

No.	Description	Q'ty
19	Screws (Silver) M3x6	4
20	Shoulder Screws (Blue)	2



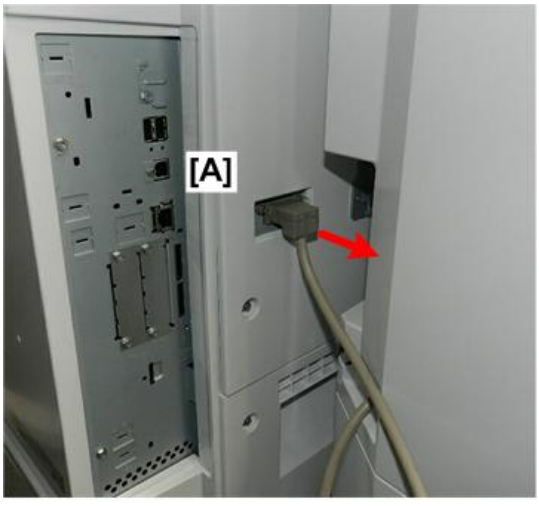
dc3nc1001

2.16.2 INSTALLATION

Finisher Already Installed?

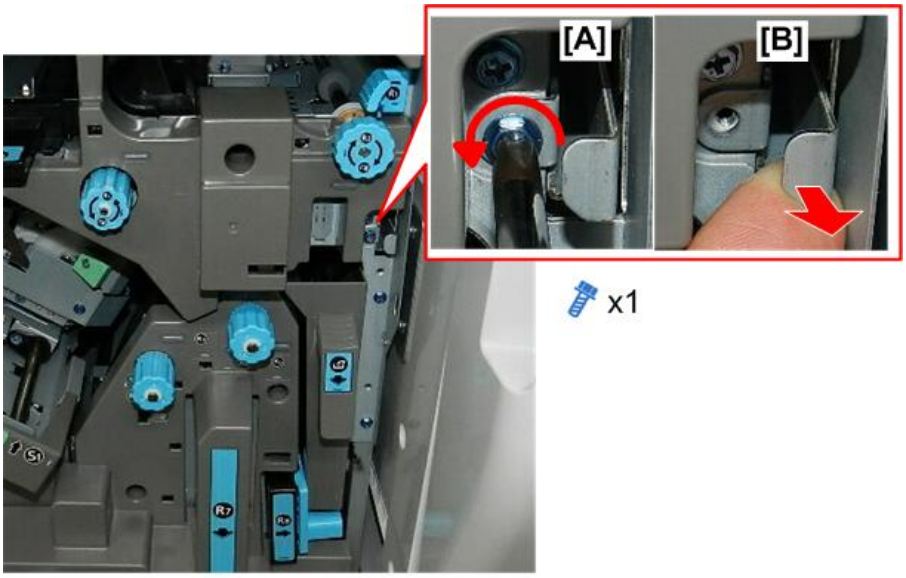
If the finisher is installed, it must be separated from the main machine.

1. At the left rear corner of the machine [A], disconnect the finisher cable.



dc3nc1002

2. Open the finisher door.
3. Remove screw [A] from the lock bar. Keep this screw.
4. Pull out lock bar [B] completely.



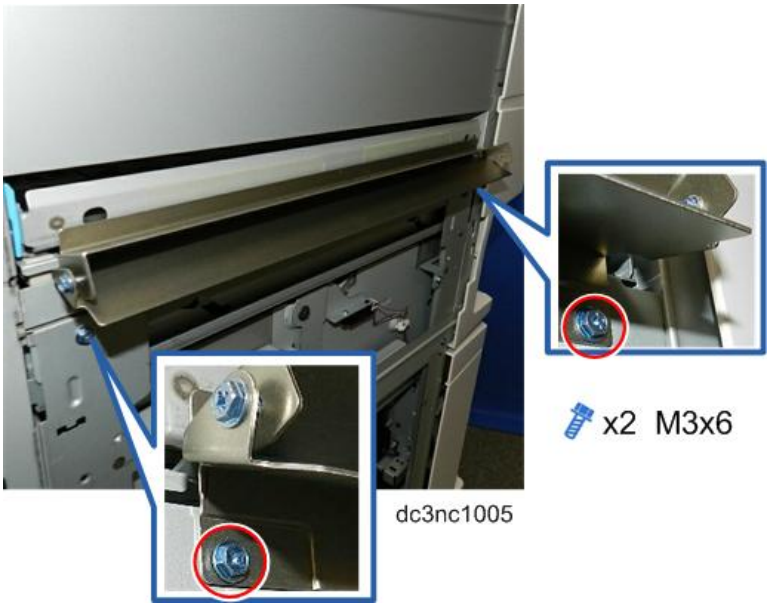
dc3nc1003

5. Pull the finisher away from the side of the machine.

dc3nc1004

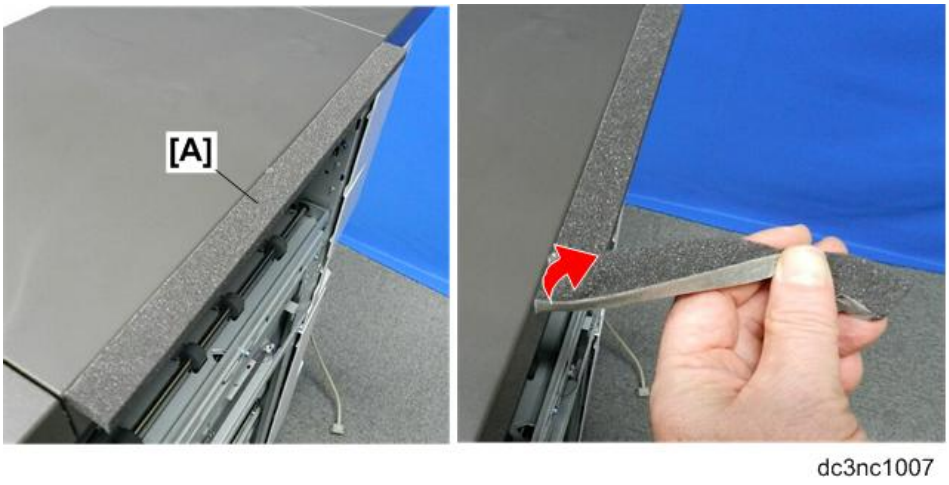
Prepare the Finisher

1. Remove the paper guide on the right side of the finisher.



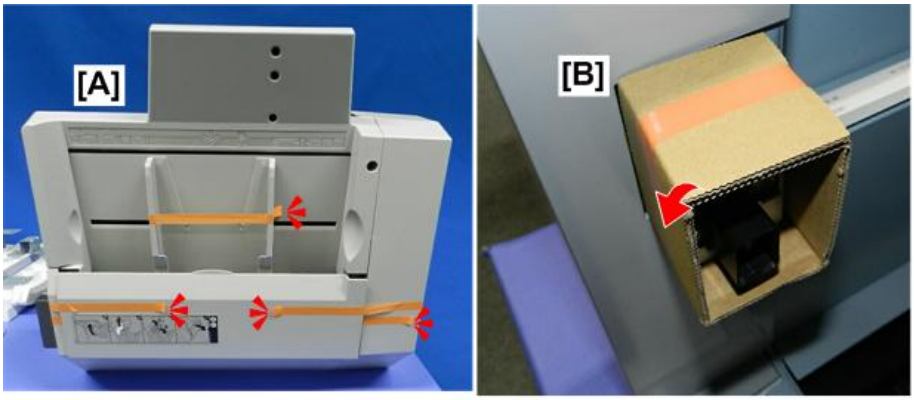
2. If the finisher is the Booklet Finisher SR4130, remove the upper right plate [A]. (The Finisher SR4120 does not have this plate.)

3. Remove the sponge strip [A] from the upper right edge of the finisher.



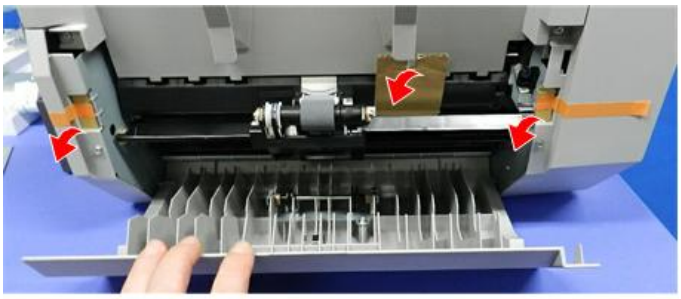
Shipping Tapes and Retainers

1. Remove tape from the top [A] of the tray.
2. Under the tray, remove the tape and cardboard on connector [B].



dc3nc1008

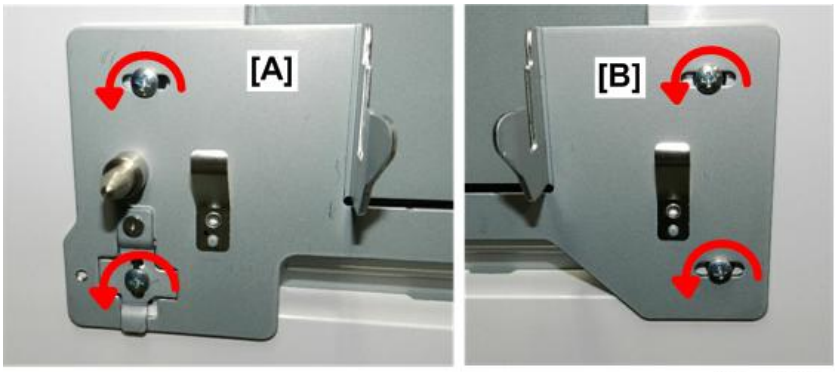
3. Open the tray and remove all tape and pieces of cardboard.



dc3nc1009

Prepare the Main Machine

1. On the left side of the main machine, unfasten rear end [A] and front end [B] of the joint bracket.



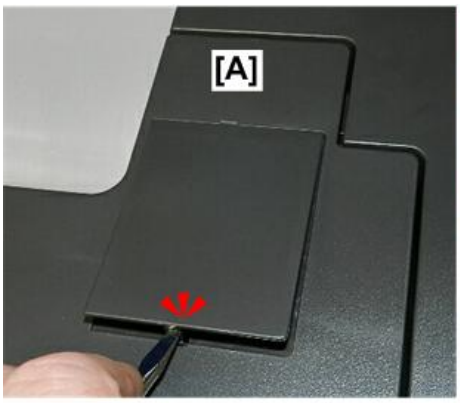
dc3nc1010

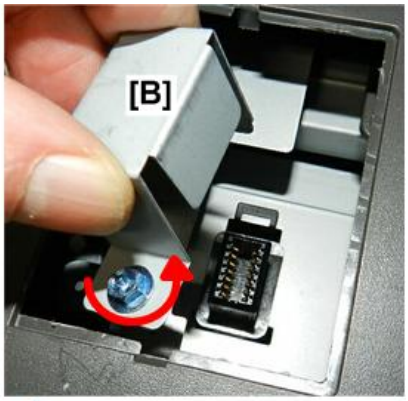
2. Remove the bracket.

dc3nc1011

Cover Interposer Tray

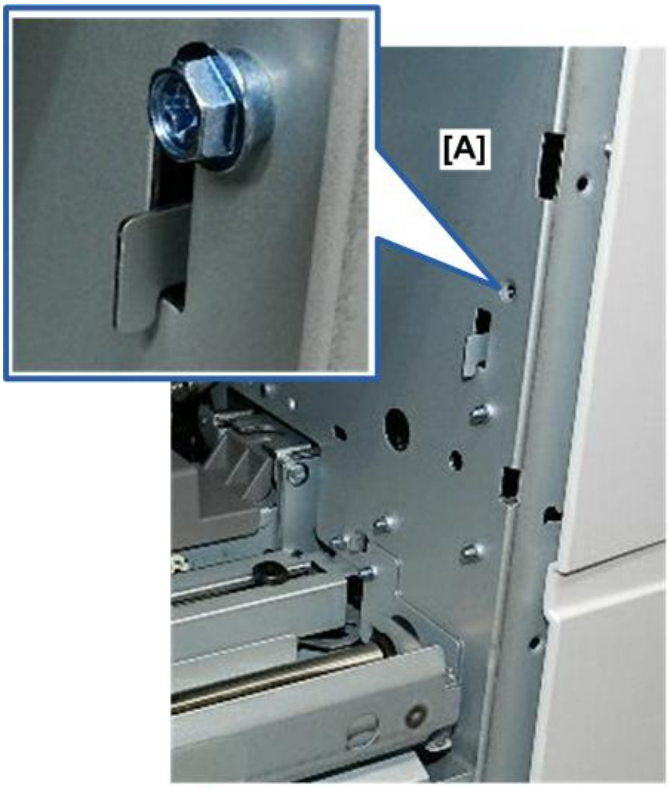
1. On top of the finisher, remove the connector cover [A].
2. Remove metal cover [B].



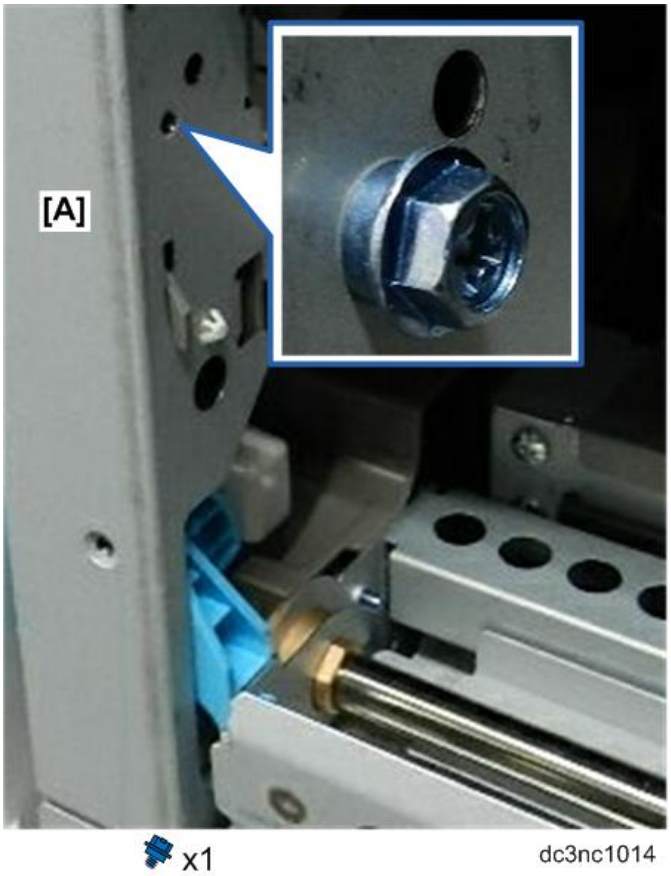


x1 dc3nc1012

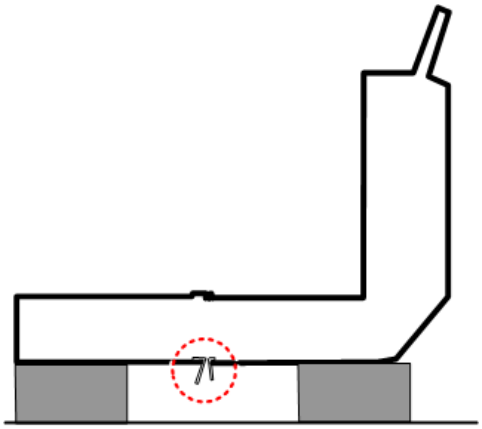
3. On the right rear inside panel of the finisher [A], fasten one shoulder screw.



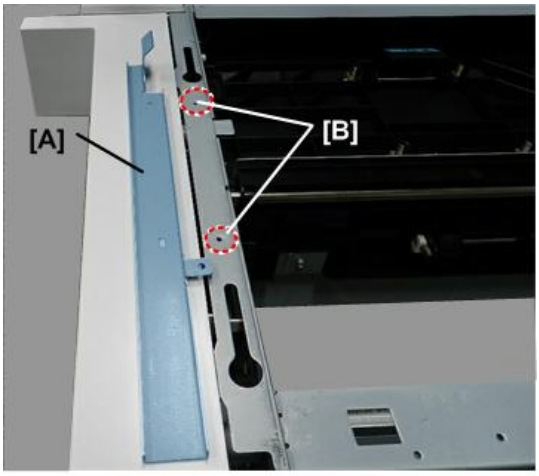
4. On the right front post of the finisher [A], fasten the other shoulder screw.



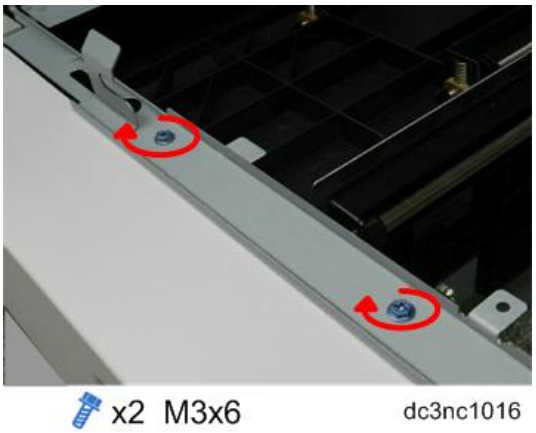
5. To avoid damaging the guides on the right side of the unit, elevate the unit with some blocks, boxes, etc. so it is not flat on the floor.



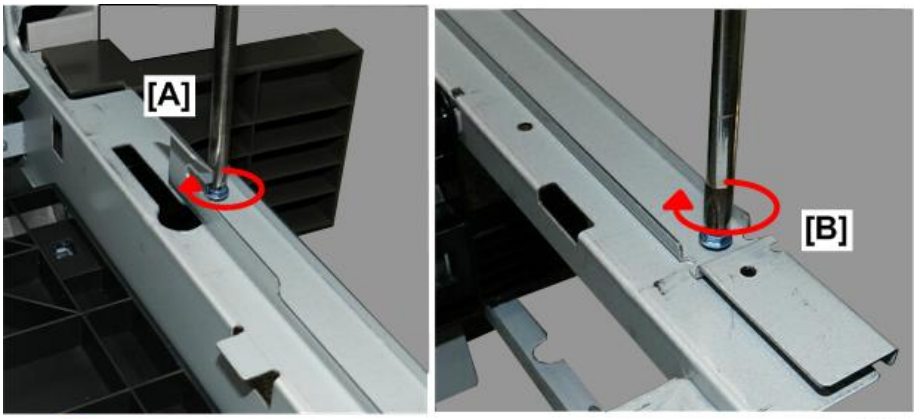
6. Select the rear tray mounting bracket [A], and then locate its screw holes between the keyholes on the rear frame.



7. Align the holes, and then fasten the tray mounting bracket to the frame.



8. Fasten the other mounting bracket to the front frame at [A] and [B].



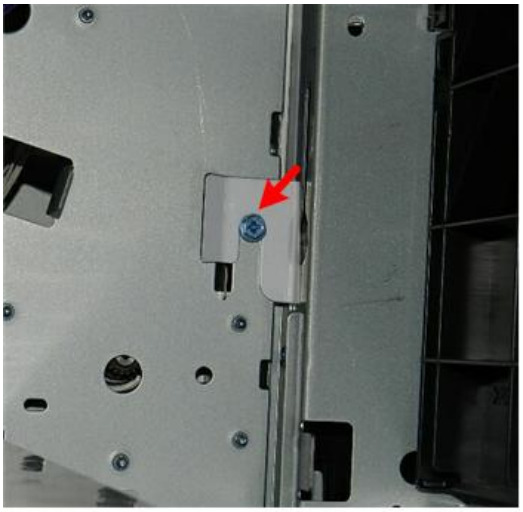
x2 M3x6

dc3nc1017

9. On the right side of the finisher, hold the tray unit over the finisher, and then align the hooks of the mounting brackets with the installed shoulder screws in the finisher.
10. Slowly, lower the tray unit hooks onto the shoulder screws inside the finisher.

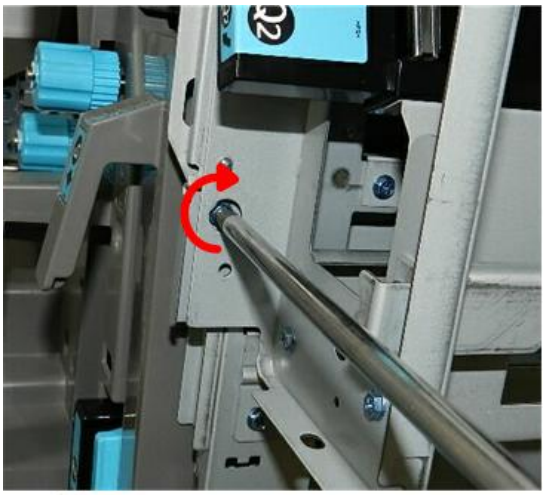
dc3nc1018

11. Look inside the finisher to confirm that the hook of the rear bracket is seated correctly on the shoulder screw.



dc3nc1019

12. Fasten one screw below the **Q2** lever to fasten the tray to the frame.



x1 M3x6 dc3nc1020

13. Raise **Q2**.

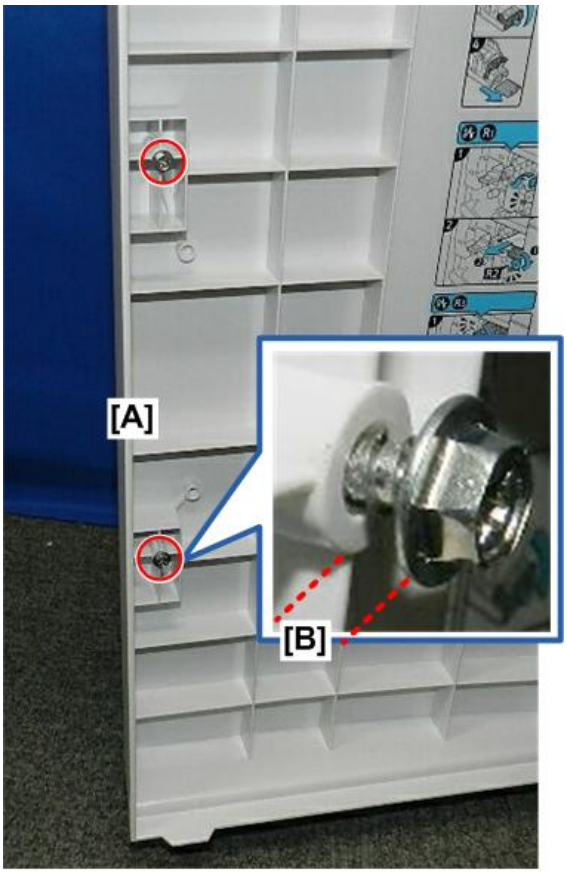
dc3nc1021

14. Fasten one screw to fasten the tray to the frame at the rear.

x1 M3x6 dc3nc1022

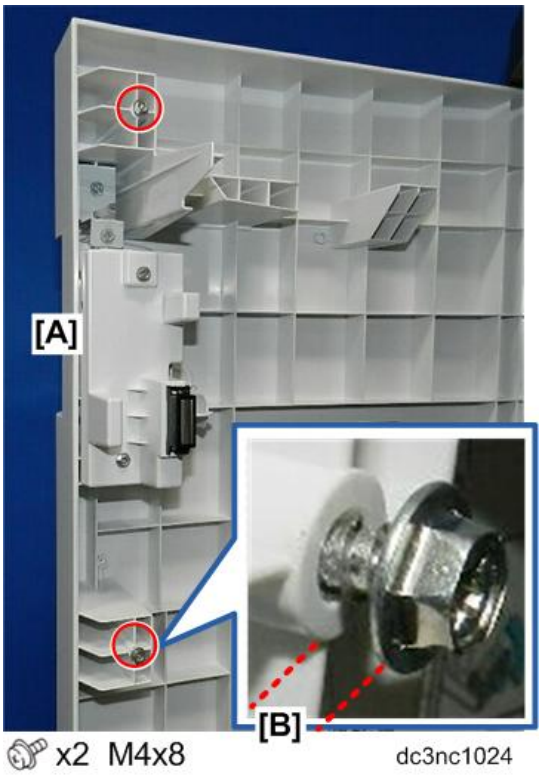
Extensions

1. Set two screws in the bottom half of the finisher front door [A].
2. Do not tighten these screws [B].

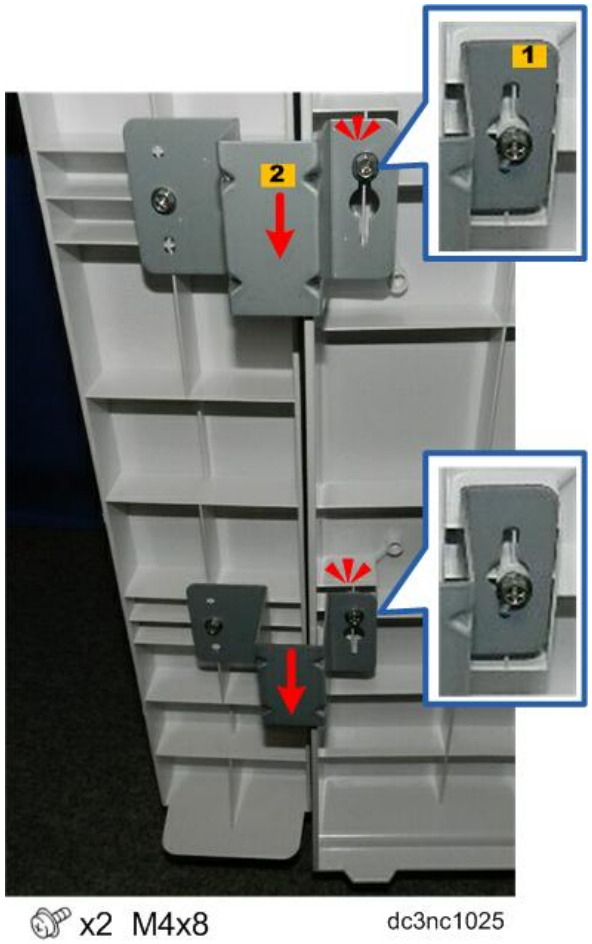


x2 M4x8 dc3nc1023

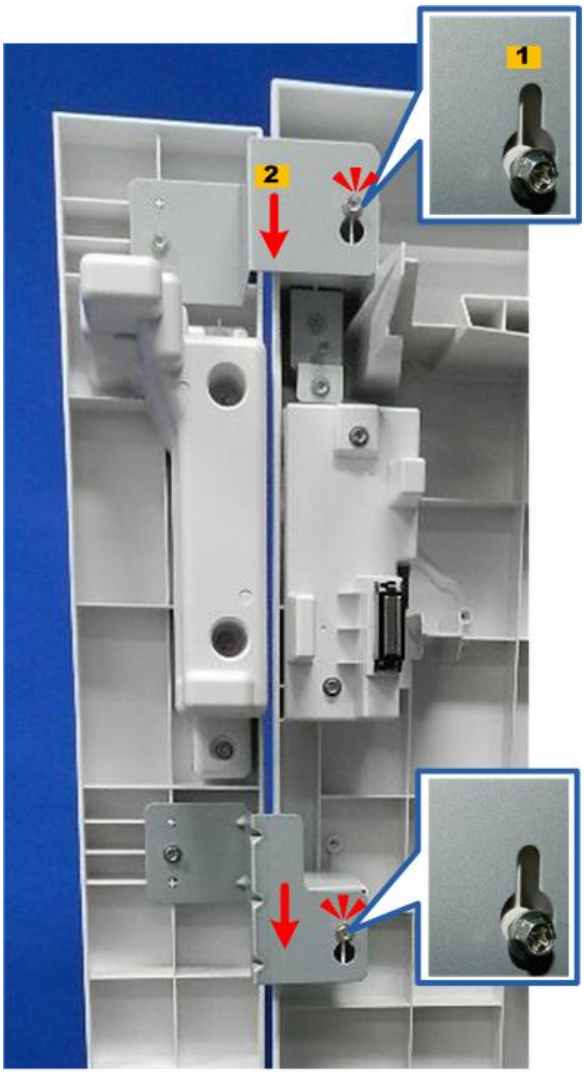
3. Set two screws in the top half of the finisher front door [A].
4. Do not tighten these screws [B].



5. Select the front door bottom extension.
6. Set the keyholes of the hinges [1] over the heads of the screws, and then slide the extension [2] down so the heads of the screws slide into the cutouts.
7. Tighten both screws.

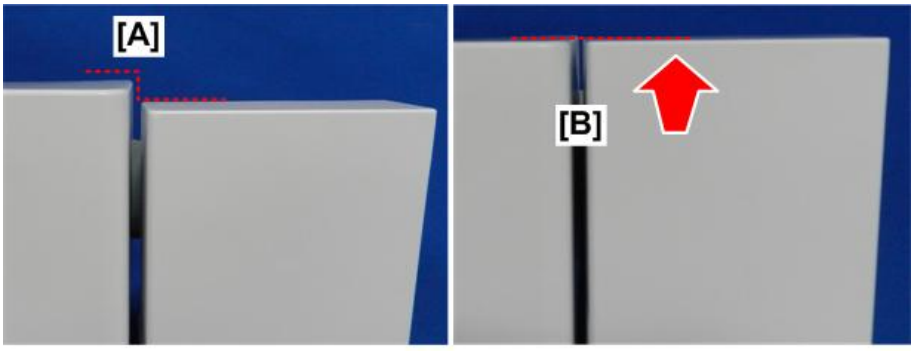


8. Select the front door top extension.
9. Set the keyholes of the hinges [1] over the heads of the screws, and then slide the extension [2] down so the heads of the screws slide into the cutouts.



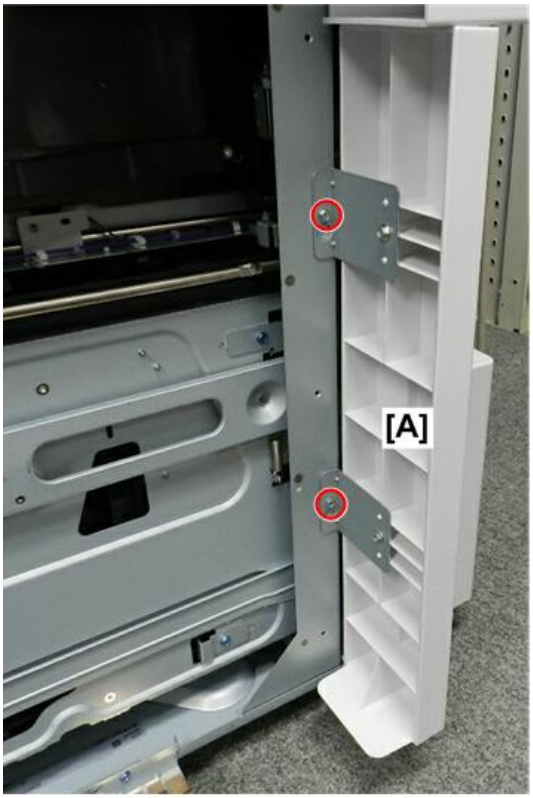
dc3nc1026

10. Check the top of the door and extension.
    - If the top the door and extension are not even [A], slide the extension up slightly [B].
    - Tighten the screws.



dc3nc1045

11. Attach the rear cover extension [A].

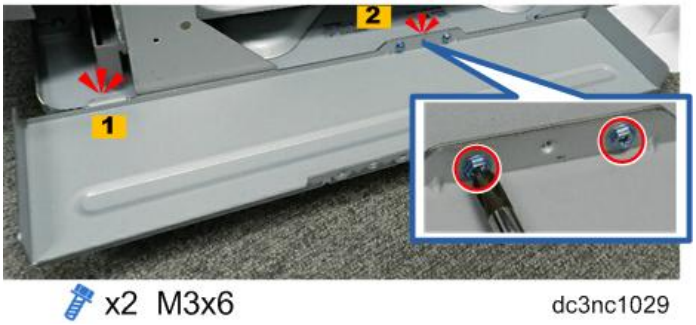


x0 dc3nc1027

12. Remove ground plate [A] from the bottom right edge of the finisher.

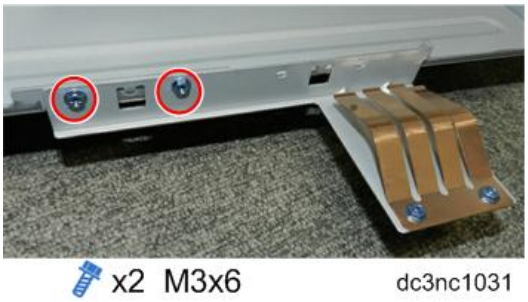
x2 M3x6 dc3nc1028

13. Set the tab [1] and boss [2] of the ground plate extension on the bottom edge, and then fasten it with the screws.



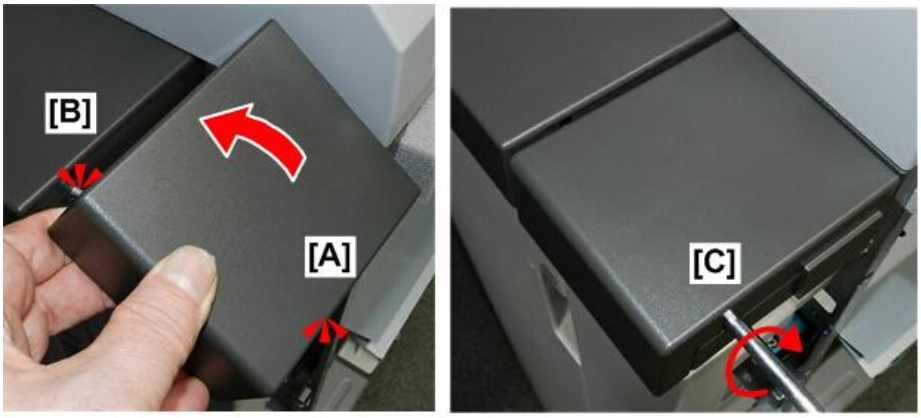
14. Hook the ground plate to the right edge of the extension.

15. Fasten the ground plate to the extension.

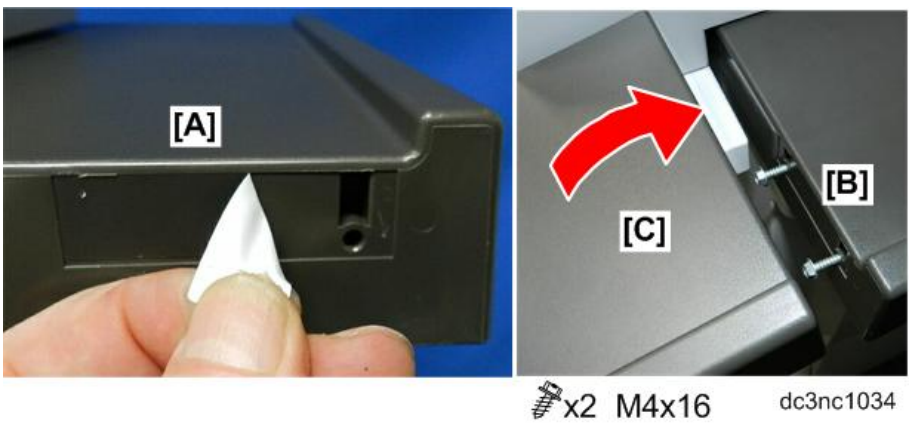


16. At the right front corner of the finisher [A], peel off the tape.
17. Set one screw [B]. Do not tighten it.

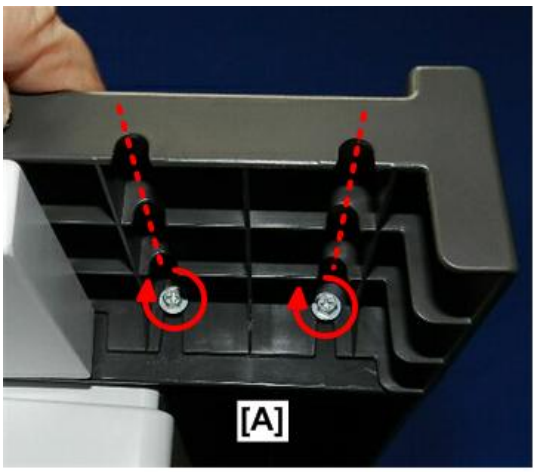
18. Select the right front corner plate (the smaller plate).
19. Attach to the right edge [A], and then lower its cutout over the gap of the set screw [B].
20. Use a long screwdriver inserted through the hole at [C] to tighten the screw and fasten the plate.



21. At the right rear corner of the finisher [A], peel off the tape.
22. Set two screws [B]. Do not tighten them.
23. When you attach the plate [C], lower the cutouts under the plate over the set screws.



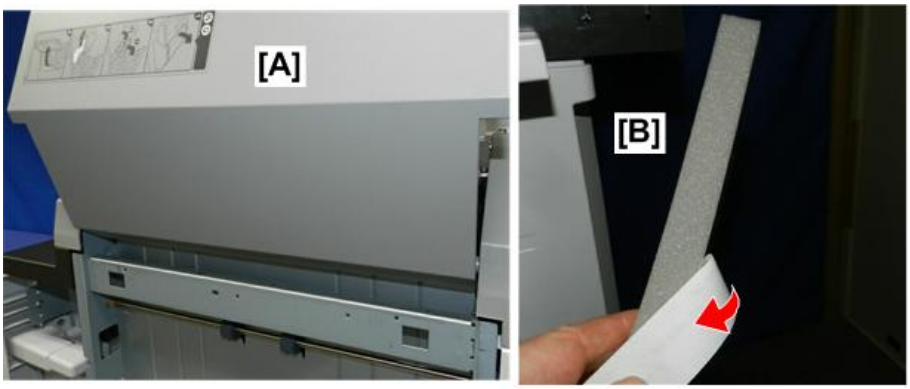
24. Use a long screwdriver inserted through the cutouts under the plate [A] to tighten the screws and fasten the plate.



dc3nc1035

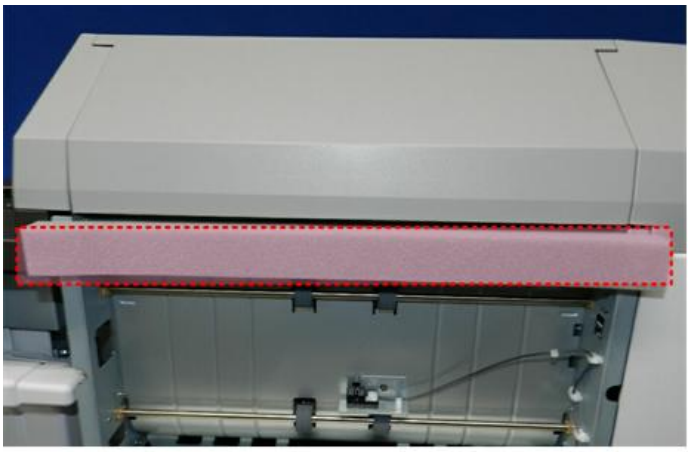
Sponge Strip

1. Open the tray [A].
2. Peel the cover]B] from the tape on the sponge.



dc3nc1036

3. Attach the sponge to the bare plate.

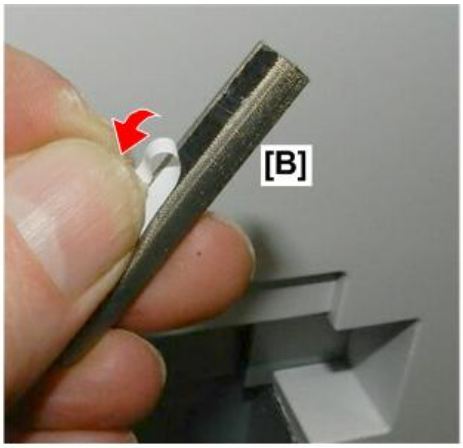


dc3nc1037

4. Raise and lower the tray a few times to make sure that the strip is not sticking to the tray.

Main Machine

1. On the left side of the main machine, attach the front joint bracket (marked "**R**") on the right side of the paper exit [A].
2. Remove the tape [B] from one gasket.

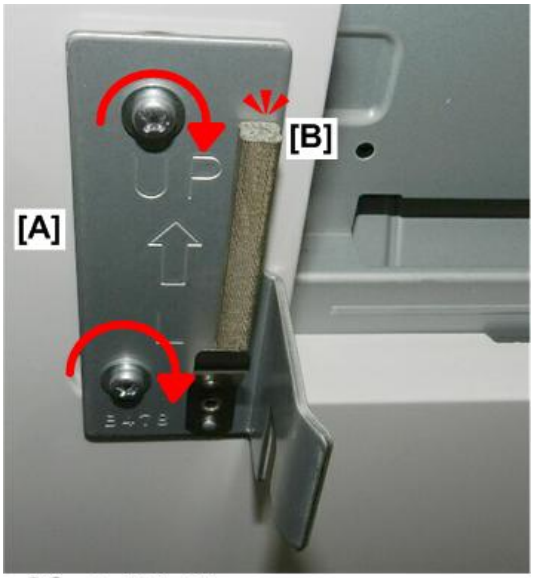


x2 M4x14 dc3nc1038

Attach gasket [A] to the front joint bracket.

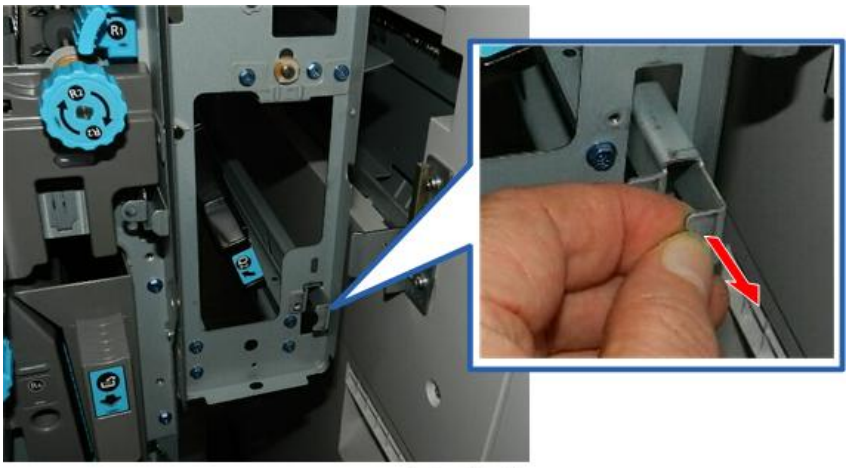
x2 M4x14 dc3nc1044

3. Attach the rear joint bracket (marked "**L**") on the left side of the paper exit [A], and then attach the other gasket [B] to this bracket.

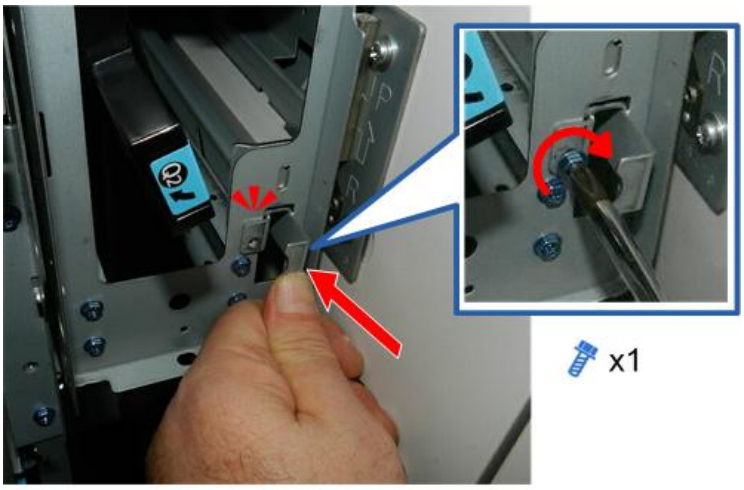


Docking the Finisher

1. Push the finisher close to the left side of the main machine.
2. Confirm that the lock bar is pulled out completely.



3. Push in the lock bar, and then fasten it with its screw.

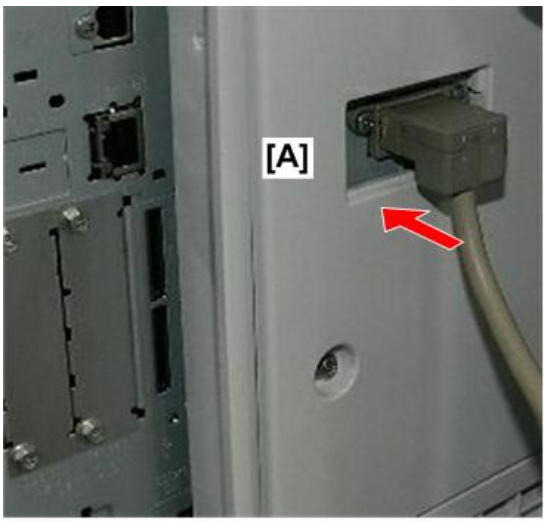


dc3nc1042

Important

- After docking the finisher, lower and raise guide **Q2** to confirm that it opens and closes smoothly.
- If it does not operate smoothly, make sure that the right side of the finisher is straight against the left side of the machine (or upstream unit).
- Also, check the guide **Q2** and the paper guide above to see if either is bent or loose.

4. Connect the finisher cable at the right rear corner of the machine [A].



dc3nc1043

Finish the Installation

1. Plug in the machine and switch the machine on.
2. Enter the [System Settings].
3. Select Cover Sheet Tray > Front Cover Sheet Tray > Back Cover Sheet Tray > Tray Paper Settings > Designation Sheet 2 Tray.

2.17 MAILBOX CS4010 (D708)

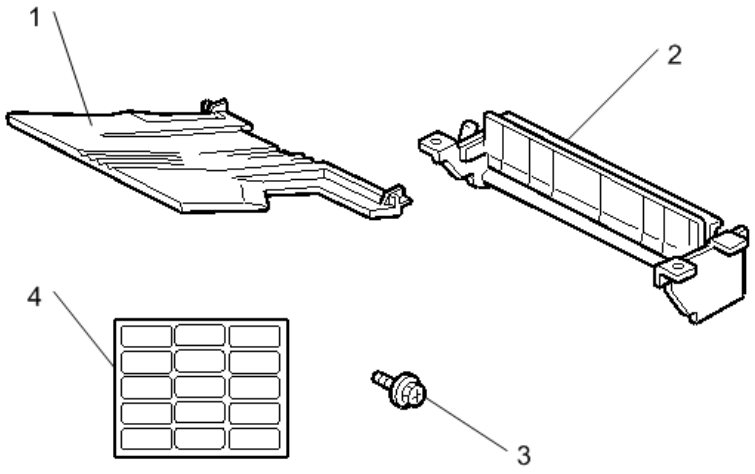
Important

- The Mail Box can be installed on the SR4120/SR4130 only. The Mail Box cannot be installed on the SR4080.
- The Mail Box and Cover Interposer tray cannot be installed together. (Only one will fit on top of the finisher.)

2.17.1 ACCESSORIES

Check the accessories and their quantities against this list.

No.	Description	Qty
1.	Trays	9
2.	Guide plate	1
3.	Screws - M3x8	6
4.	Decals (bin display)	1



d708c1001

2.17.2 INSTALLATION

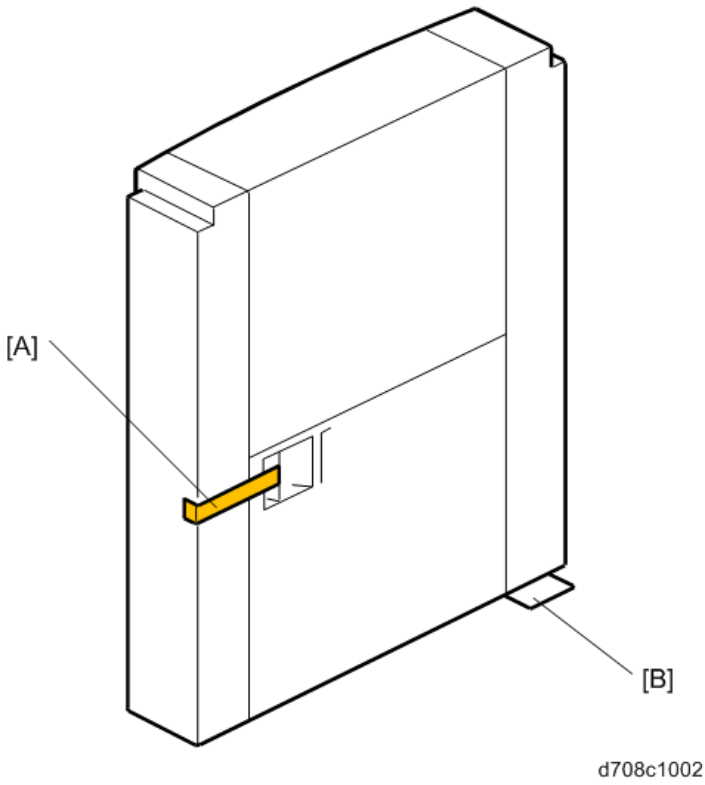
⚠WARNING

- Turn the machine off and disconnect the machine power cord before you start this procedure.

1. Remove the filament tape [A].

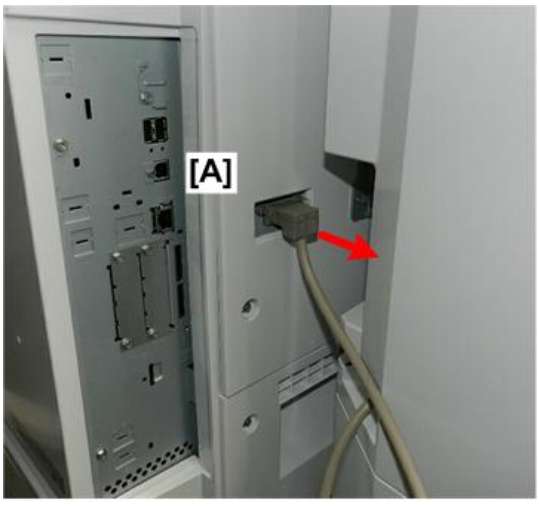
Important

- Move the mailbox carefully. The soft corner leaf [B] can be damaged easily.



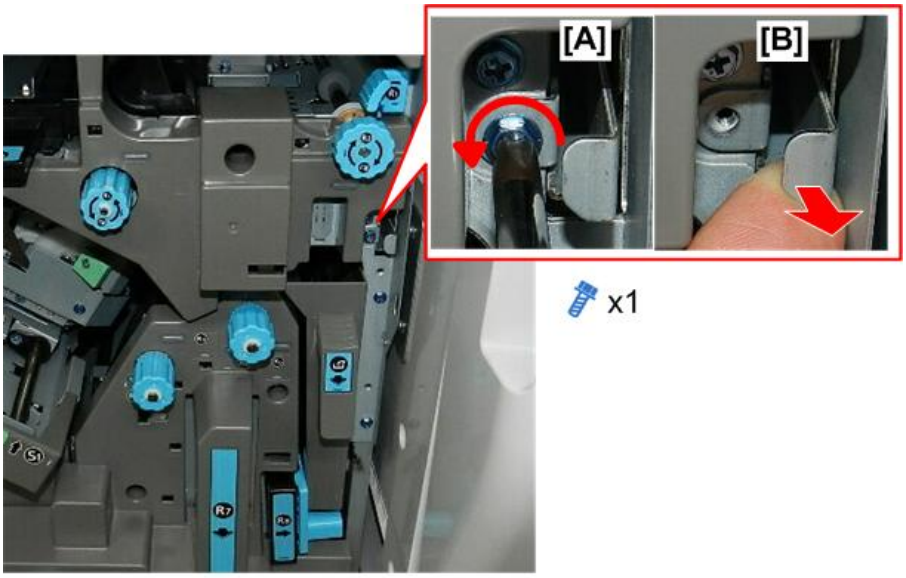
d708c1002

2. At the rear left corner of the main machine, disconnect the finisher cable [A].



d708c1003

3. Open the front door of the finisher.
4. Remove lock screw [A]. Keep this screw.
5. Pull out lock bar [B] until it stops.



d708c1004

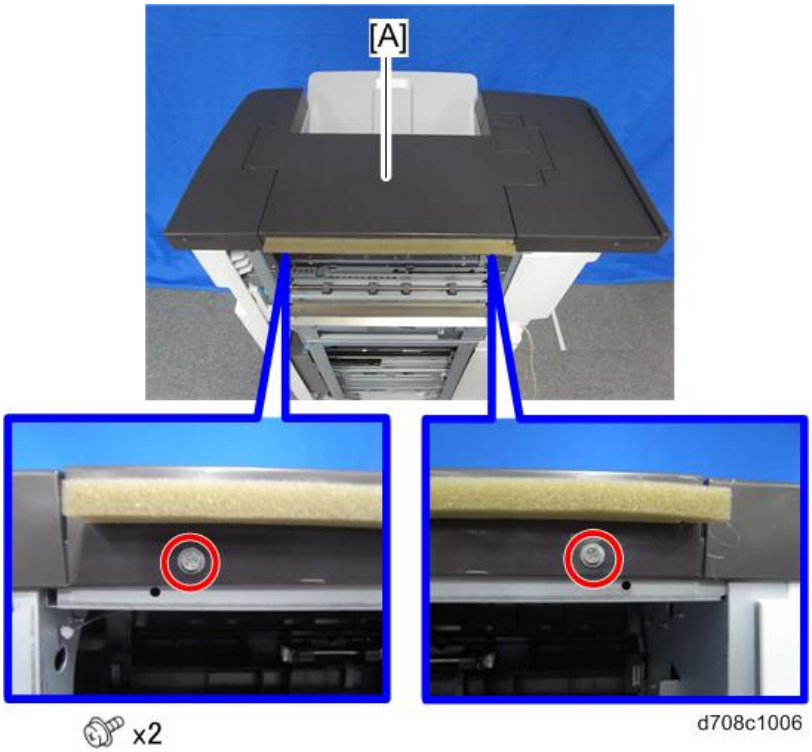
6. Pull the finisher away from the machine.

d708c1005

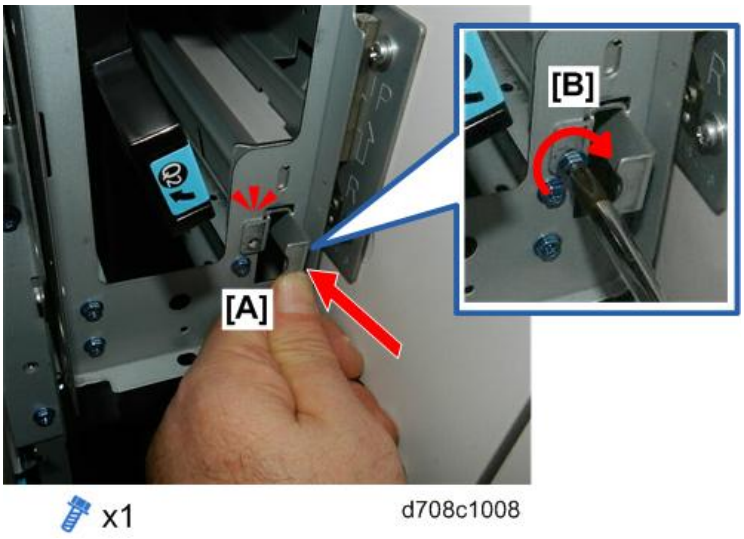
Important

- If the Cover Interposer Tray is installed on the Finisher, it must be removed. Do this now.

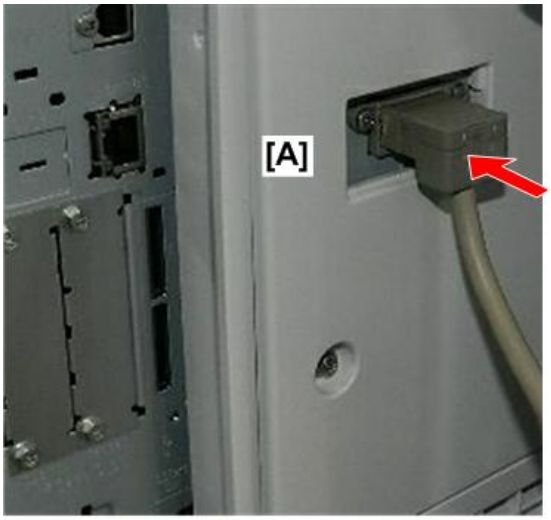
7. Remove top cover [A] of the finisher.



8. Open the finisher door, and make sure that the lock bar is pulled out completely.
9. With the finisher door open, slowly, push the finisher against the left side of the machine.
10. Push the lock lever [A] into the finisher, and then fasten it with the screw [B].

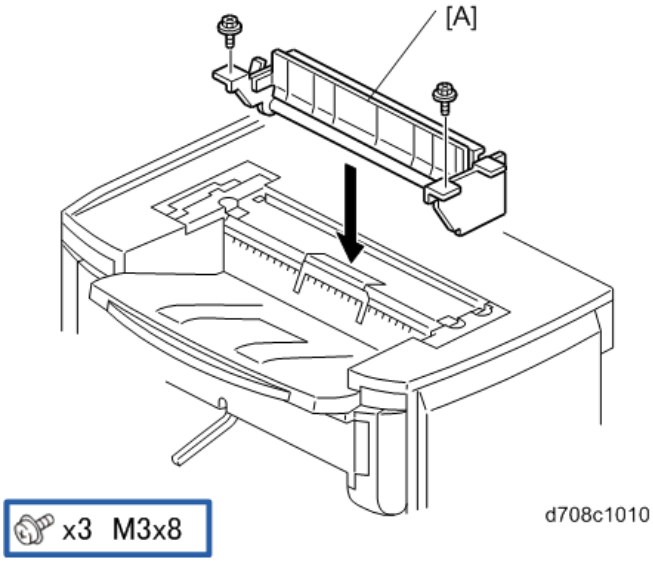


11. At the left rear corner of the main machine, connect finisher cable [A].



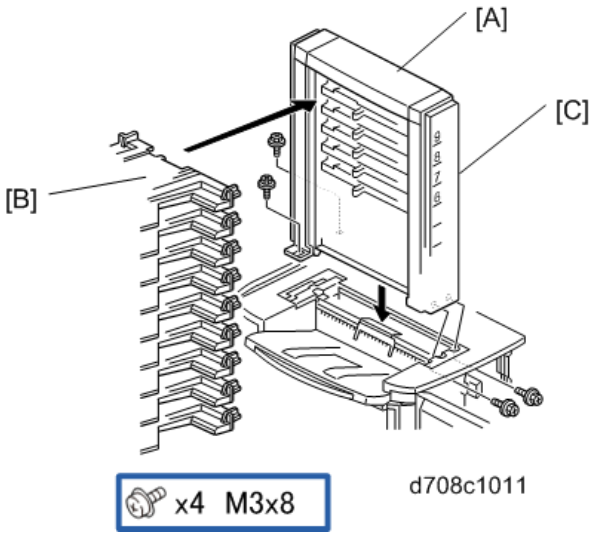
d708c1009

12. Attach guide plate [A] to the top of the finisher.



d708c1010

13. Attach the mailbox [A] to the top of the finisher.
14. Attach the 9 trays [B] to the mailbox.
15. Give the decals [C] to the customer. The operator will fill out the decals and attach them at the desired locations.



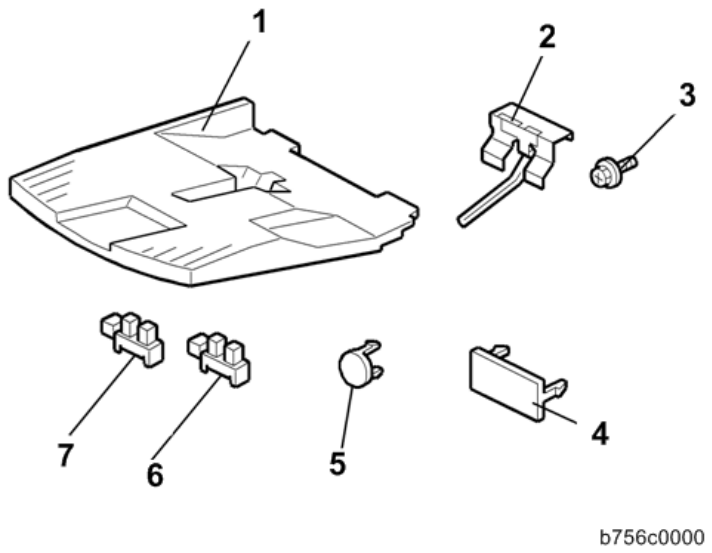
16. Turn the machine on.
17. Check the finisher operation.

2.18 COPY TRAY TYPE 9002 (B756)

2.18.1 ACCESSORIES

Check the accessories and their quantities against the following list.

No.	Description	Q'ty
1.	Copy Tray	1
2.	Actuator Arm and Bracket (not used)	1
3.	Tapping Screw (not used)	2
4.	Large Cap	1
5.	Small Cap	4
6.	Paper Height Sensor (Black Connector)	1
7.	Paper Height Sensor (White Connector) **Not Used**	1

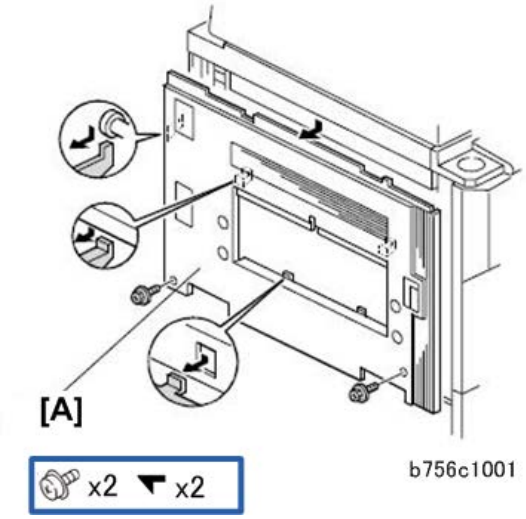


2.18.2 INSTALLATION

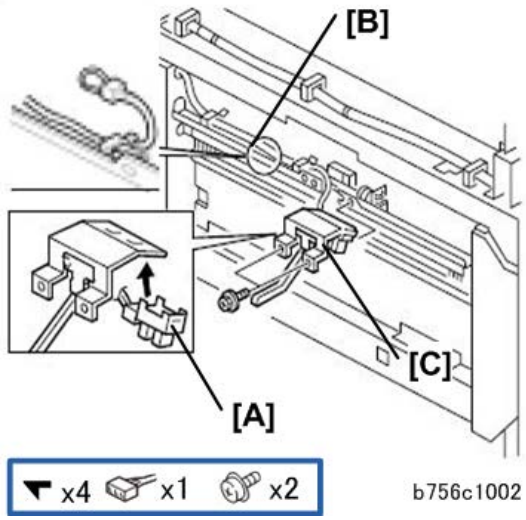
⚠CAUTION

- To avoid the hazard of electrical shock, before doing this procedure turn the machine off and unplug the machine from the power source.

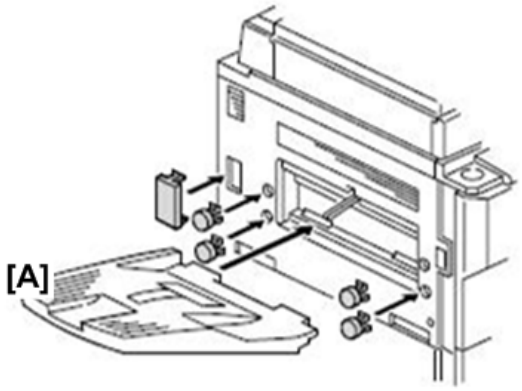
1. Remove the left upper cover [A].



2. Select the paper height sensor with the **black** connector. (The sensor with the white connector is not used for this machine.)
3. Attach the paper height sensor [A] to the actuator.
4. Free the harness [B] in the machine, and then connect it to the sensor.
5. Attach the actuator [C] with connected sensor to the machine.



6. Reattach the left upper cover to the machine.
7. Attach the tray [A].
8. Insert the small caps into the small holes.
9. Fasten the square cap as shown.



b756c1003

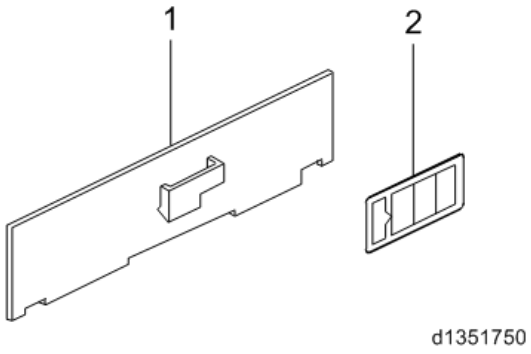
2.19 TAB SHEET HOLDER TYPE 9002 (B499)

The tab sheet holder can installed in trays 2 and 3, and allows the user to load tab stock.

2.19.1 ACCESSORIES

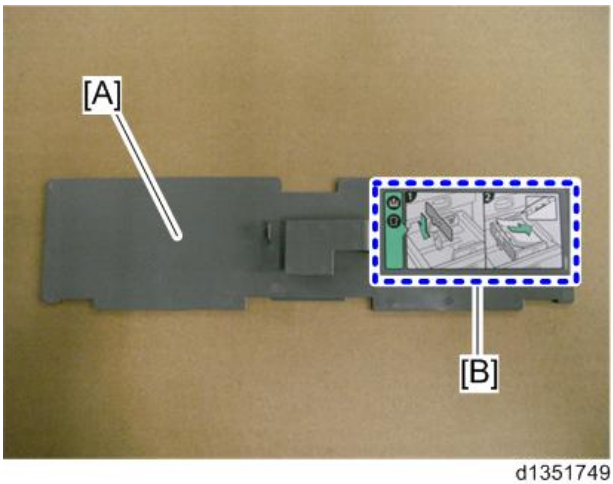
Check the quantity and condition of the accessories in the box against the following list.

No.	Description	Q'ty
1	Tab Sheet Holder	1
2	Decal	1



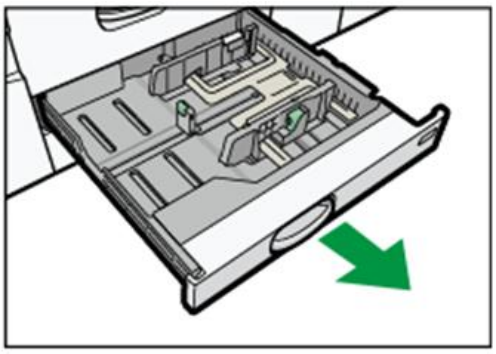
2.19.2 INSTALLATION

1. Attach the decal [B] to the tab sheet holder [A].

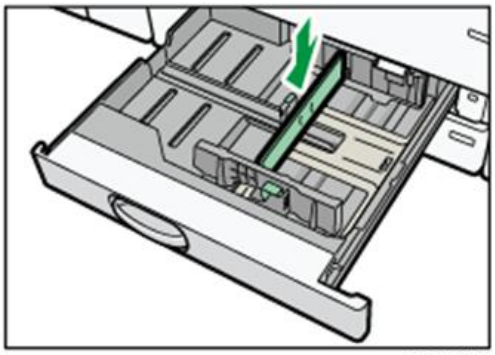


d1351749

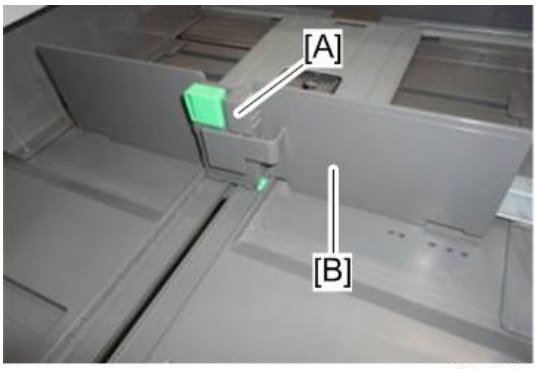
2. Check that the paper tray is not being used, and then pull the tray carefully out until it stops.


d1351733

3. Install the tab sheet holder on the end fence of the paper tray.

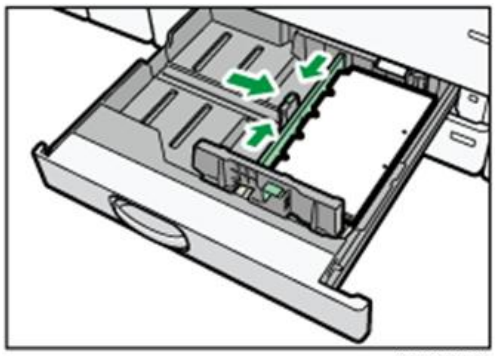

d1351734

4. When the tab sheet holder is installed correctly, you can hear a clicking noise.
   [A]: End fence
   [B]: Tab sheet holder

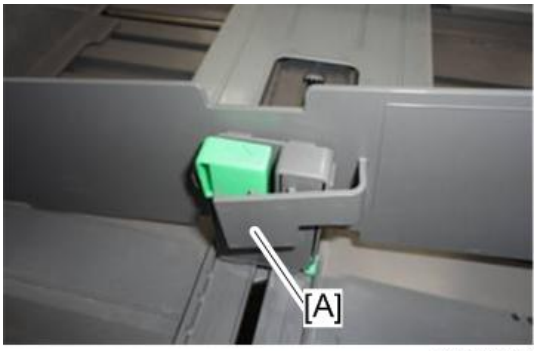


d1351731

5. Load tab stock in the paper tray so the side with the tab faces the tab sheet holder.
6. Adjust the end fence position so that the tab sheet holder will fit the tab stock.


d1351735

7. Carefully slide the paper tray fully in.
8. When removing the tab stock holder, spread the hook [A] of the tab sheet holder and then remove it as shown below.



d1351732

2.20 NFC CARD READER TYPE M19 (D3BS)

2.20.1 ACCESSORIES

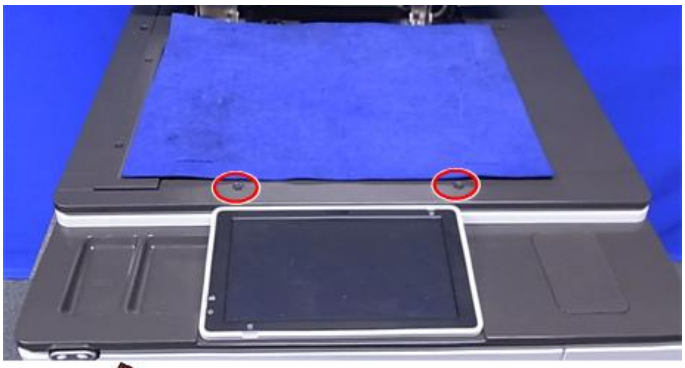
Check the quantity and condition of the accessories in the box against the following list and diagram.

No.	Description	Q'ty
1	Corner Cover (Not used)	1
2	Reader Bracket	1
3	Reader Cover	1
4	Reader	1
5	Sponge Cushions	2
6	Ferrite Core (Black)	1
7	Interface Cable	1

d3bsc1001

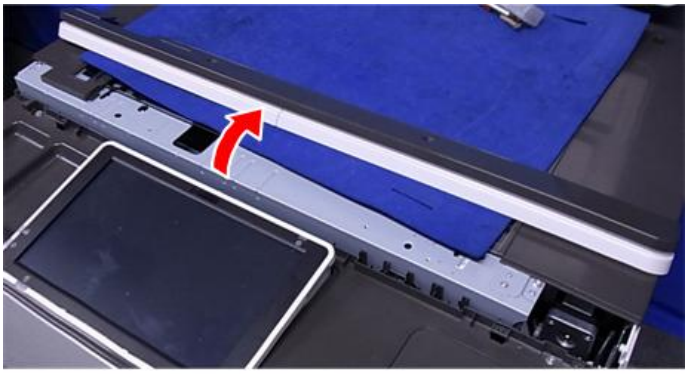
2.20.2 INSTALLATION

1. Turn the machine off.
2. Disconnect the machine from its power source.
3. Open the ADF.
4. Cover the exposure glass.
5. Disconnect the front edge cover of the scanner unit.



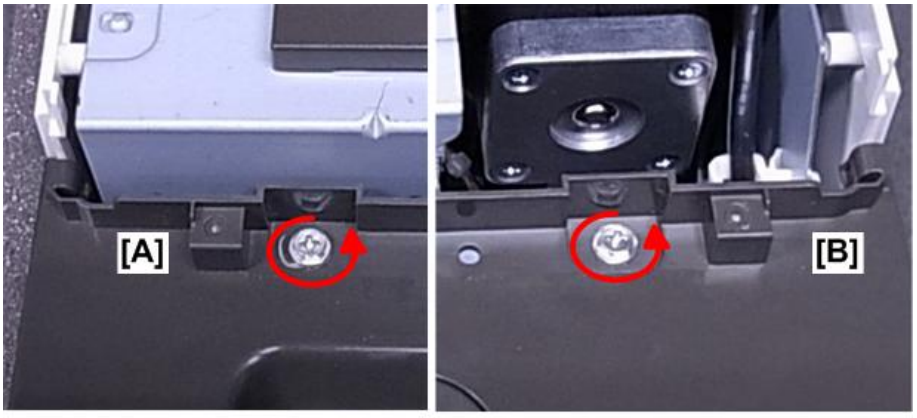
x2 d3bsc1002

6. Remove the front edge cover.



d3bsc1003

7. Disconnect the upper left corner [A] and upper right corner [B] of the operation panel.

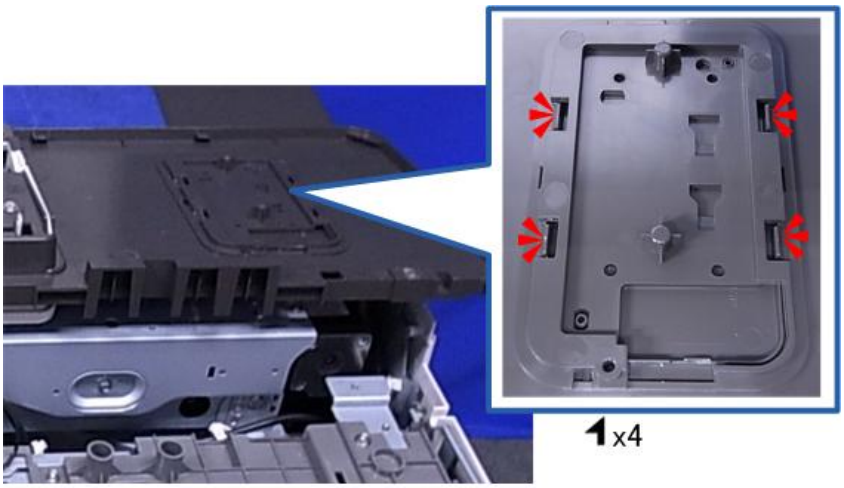


x2 d3bsc1004

8. Raise the operation panel [A] and then lay it face down on the exposure glass.

d3bsc1005

9. On the right, disconnect the blank cover.

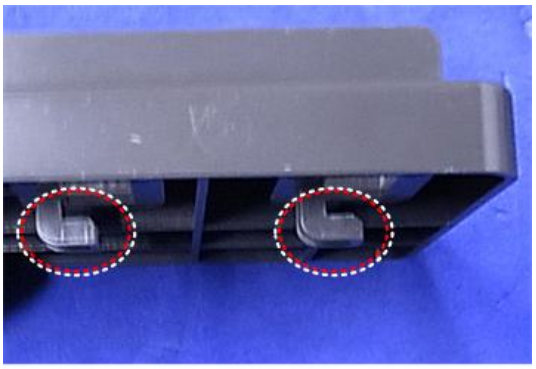


d3bsc1006

10. Turn the operation panel face up.
11. Remove the cover so you can see the panel bracket below.

d3bsc1007

12. The reader bracket has two large tabs under it.



d3bsc1008

13. Set these tabs into the holes in the panel bracket, and then slide the reader bracket toward the rear to lock the reader bracket in place.

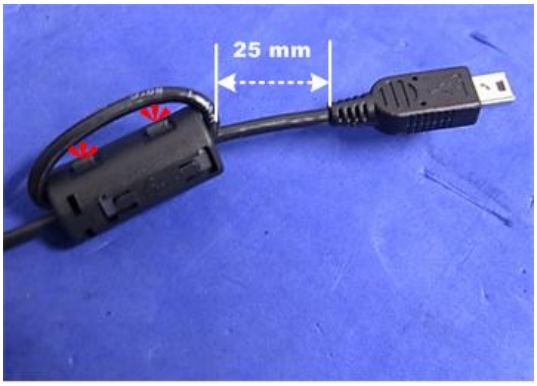
x2

d3bsc1009

14. Attach the black ferrite core to the accessory interface cable so the core is about 25 mm (1”) from the base of the connector.

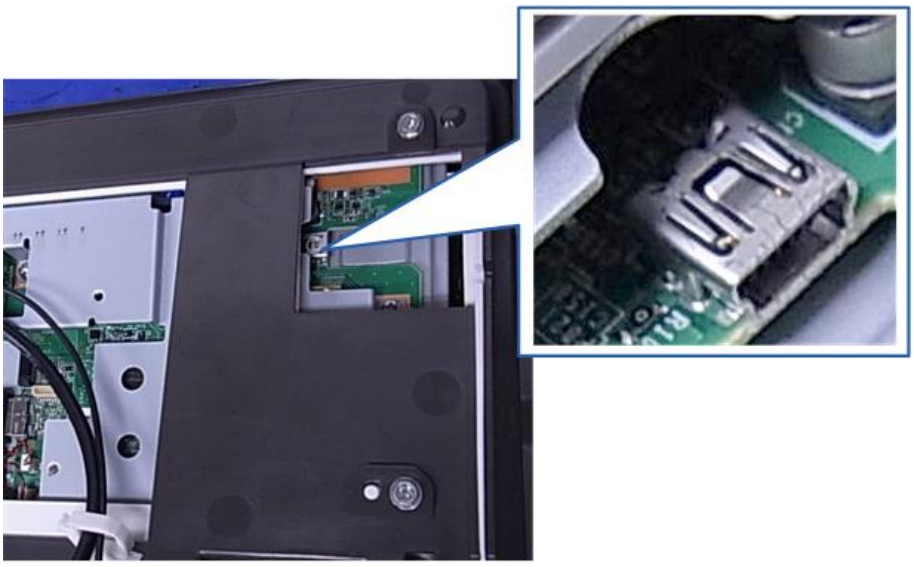
Note

- Attach the ferrite core to either end of the interface cable. The connectors are identical.



d3bsc1010

15. Lift the operation panel and lay it face down.
16. Locate the connection point for the interface cable.

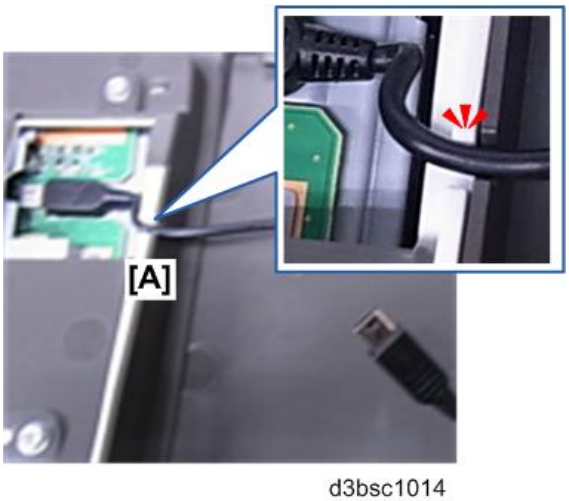


d3bsc1011

17. Connect the free end (no ferrite core) of the interface cable to the PCB.

x1 d3bsc1012

18. Set the cable in the notch of the frame [A].



d3bsc1014

19. Lift the operation panel and turn it face up.
20. Raise the end of the cable with the ferrite core through the hole.

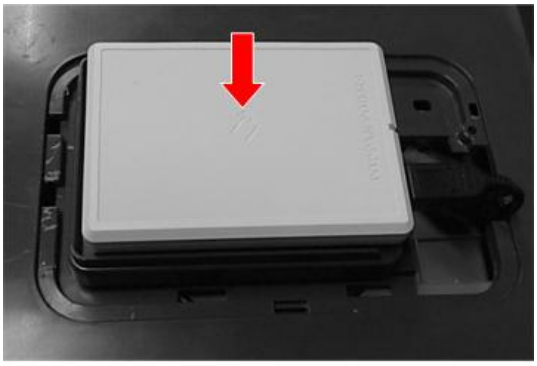
d3bsc1015

21. Peel the tape from each side of the sponge cushions, and attach the cushions to the frame bracket.

d3bsc1016

22. Connect the card reader and the cable.

23. Set the card reader on the sponge cushions attached to the reader bracket.



24. Hold the card reader cover with both tabs down.

25. Set both tabs at the front edge of the reader bracket [A], and then lower the rear edge.
26. Press down until the rear edge [B] snaps into place.

27. This completes the installation. Re-attach the operation panel.

d3bsc1021

2.21 CARD READER BRACKET TYPE 3352 (D593)

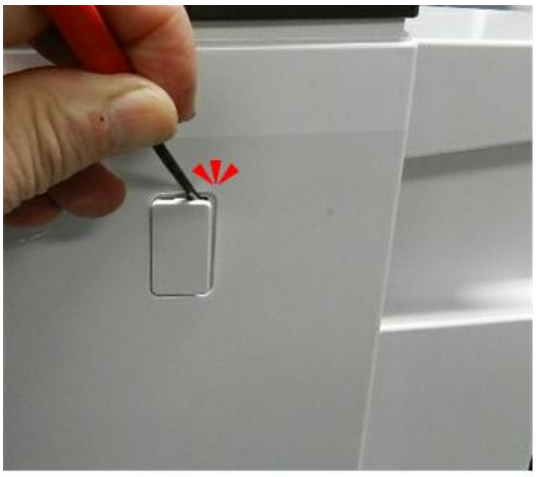
2.21.1 ACCESSORIES

Check the accessories and their quantities against this list.

No.	Description	Qty
1.	Table Top	1
2.	Table Frame	1
3.	Table Bottom	1
4.	Screw M4x35	2
5.	Screw M3x6	2
6.	Screw M3x8	2

2.21.2 INSTALLATION

1. At the right rear corner, remove the I/F harness connector cover.

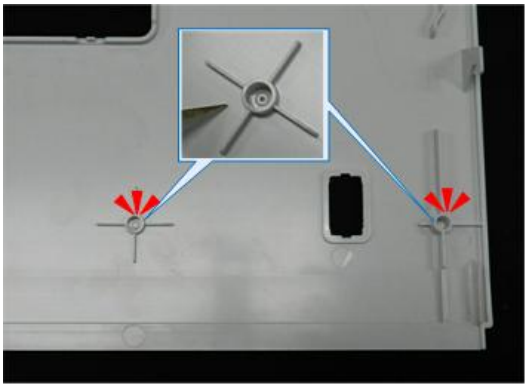


b498c0002

2. On the right side of the machine, lower bypass tray [1], remove screw [2], and then remove right upper cover [3].

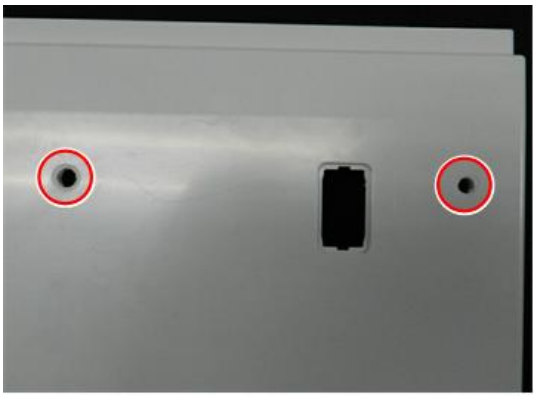
x1 b498c0003

3. Lay the cover down with the inner surface of the rear upper corner facing up.
4. Use a punch or the tip of a screw driver, to punch out the knockouts.



b498c0004

5. Clean the holes so they are smooth.

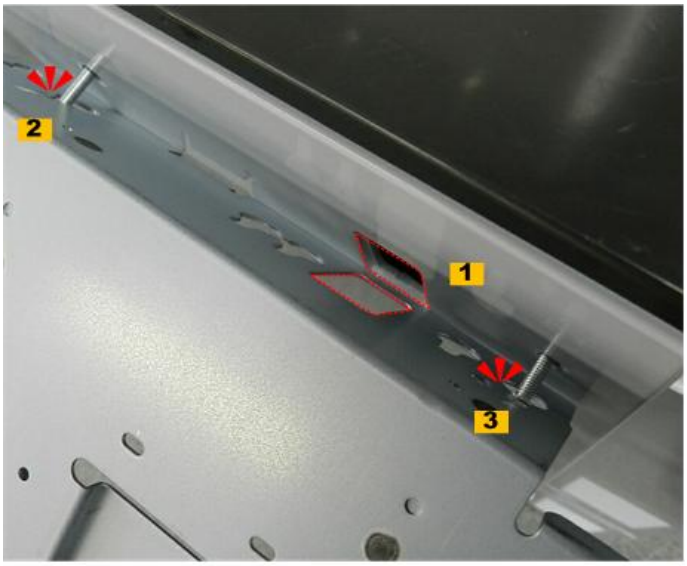


b498c0005

6. Reattach the right upper cover to the machine (x1).
7. Fasten the long accessory screws in the holes and leave about 2.5 cm (1”) of the screw heads protruding.

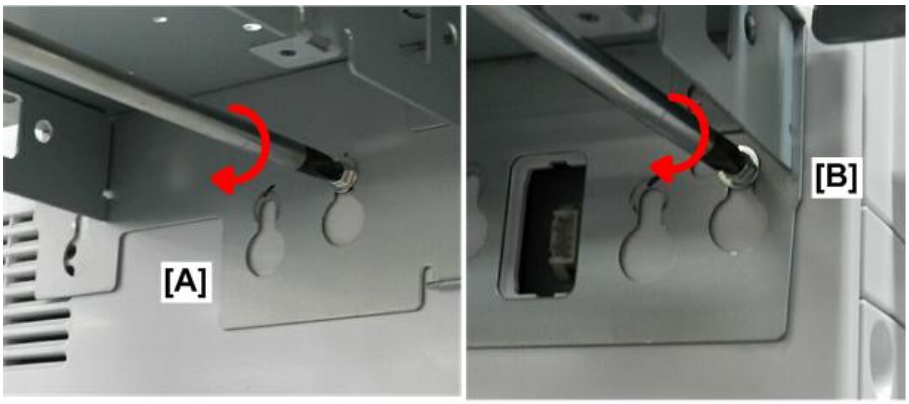
x2 b498c0006

8. Bring the flat side of the table frame to the side of the machine.
9. Align the knockout in the side of the frame with the harness connector port [1], and then hang the keyholes on the side of the frame over the heads of the screws [2] and [3].



b498c0007

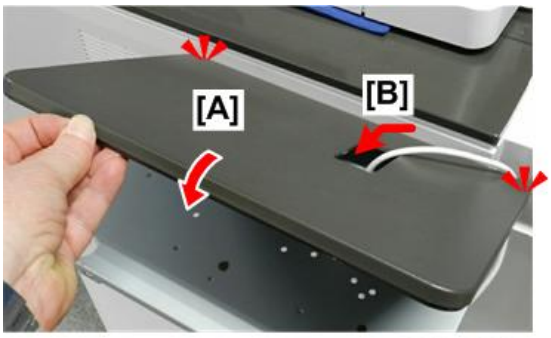
10. Fasten the left front corner of the table [A].
11. Fasten the left rear corner of the table [B].



x2

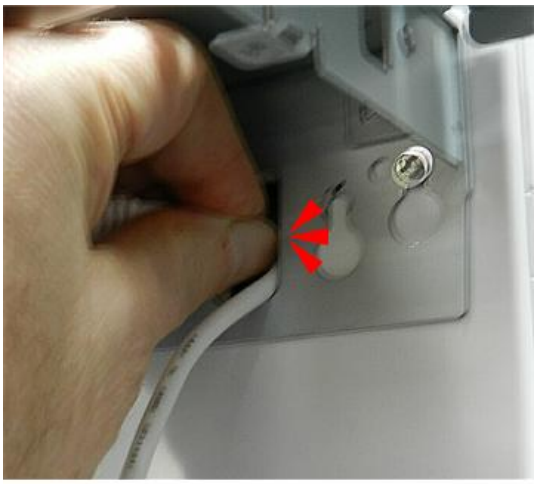
b498c0008

12. Set the hooks on the left edge of the table top [A] into the holes in the table frame, and then lower the top onto the frame.
13. Run the card reader I/F harness [B] through the center of the table.



x2 b498c0010

14. Below the table, connect the card reader harness.

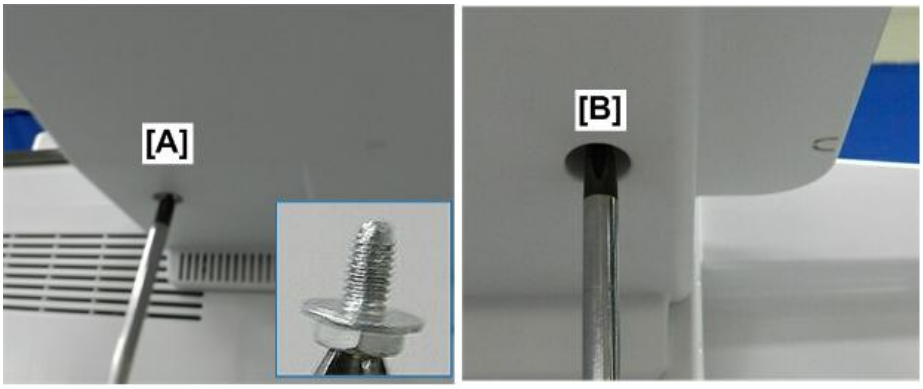


x1 b498c0009

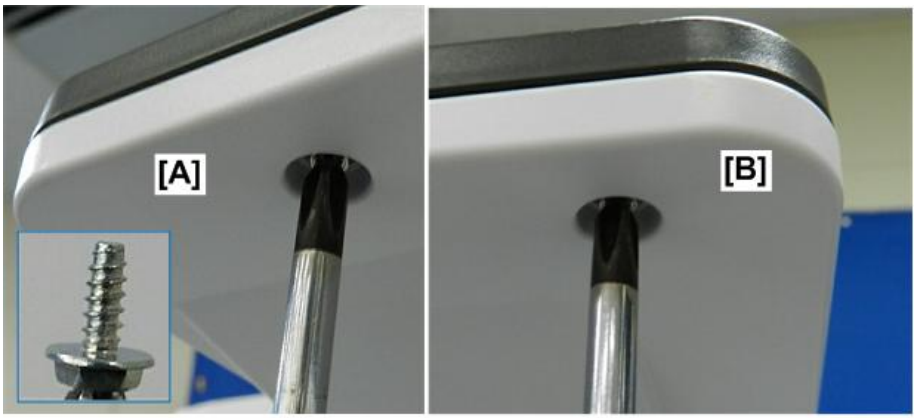
15. Attach the table bottom under the table frame.

b498c0011

16. Fasten the front left corner of the table [A].
17. Fasten the rear left corner of the table [B].



18. Fasten the front right corner of the table [A].
19. Fasten the rear right corner of the table [B].



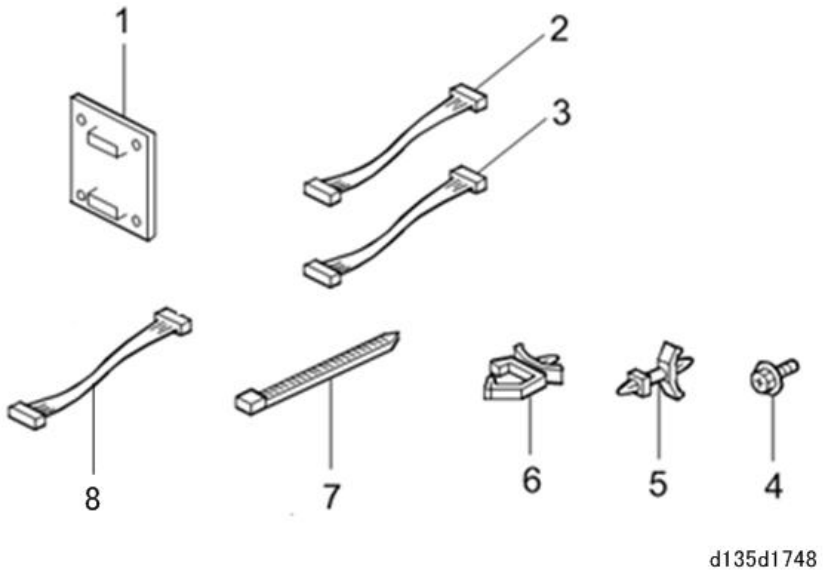
20. This completes installation of the card reader table.

2.22 OPTIONAL COUNTER INTERFACE TYPE M12 (B870)

2.22.1 ACCESSORIES

Check the accessories and their quantities against this list.

No.	Description	Qty
1.	PCB: MKB	1
2.	Harness (MKB to IOB) Not Used	1
3.	Harness (MB to MKB) Not Used	1
4.	Screws M3x6	4
5.	Standoffs	4
6.	Clam	1
7.	Lock Band	1
8.	Relay Harness Not Used	1

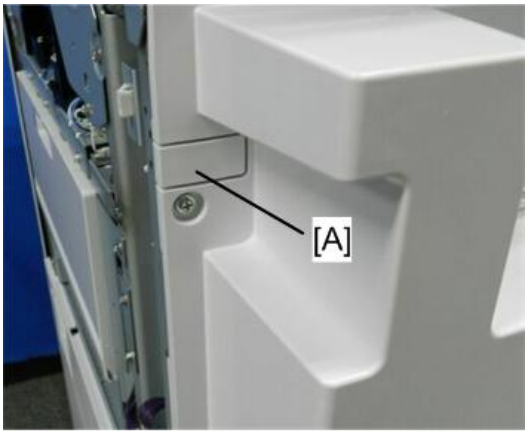


2.22.2 INSTALLATION

⚠CAUTION

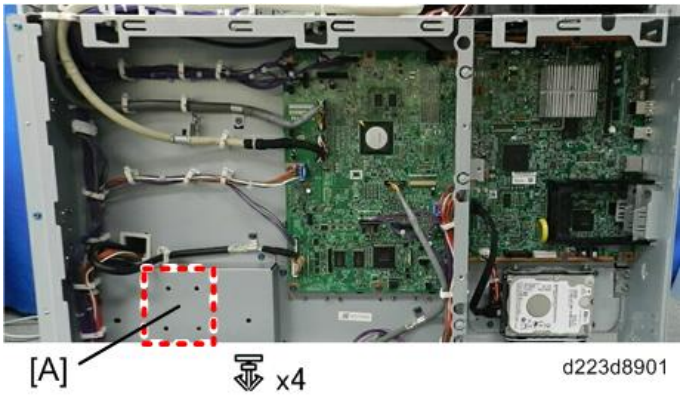
- Before doing this procedure, to prevent electrical shock always switch the machine off and then disconnect it from the power source.

1. Switch the machine off.
2. Disconnect the machine from the power source.
3. Remove the rear upper cover. page 4-19
4. Use a pair of nippers to remove knockout [A].



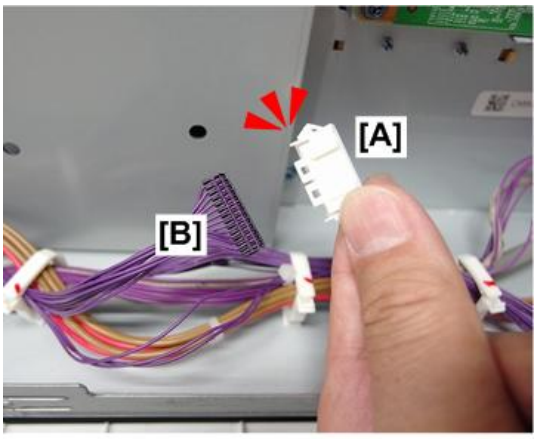
d223d8902

5. Open the controller box cover. page 4-26
6. Attach the standoffs to four holes [A].



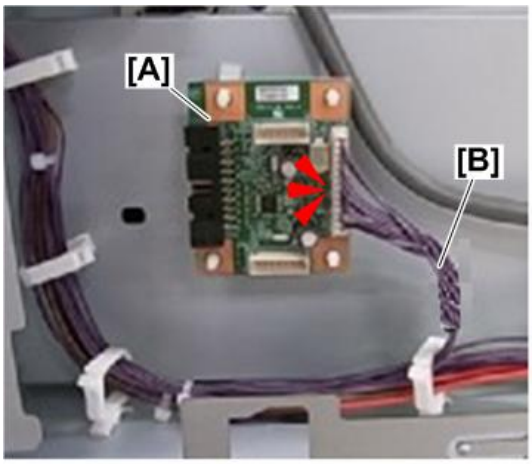
d223d8901

7. Locate the free harness in front of the frame where you just attached to standoffs.
8. Remove relay cap [A] from the end of the harness [B].



d223d8926

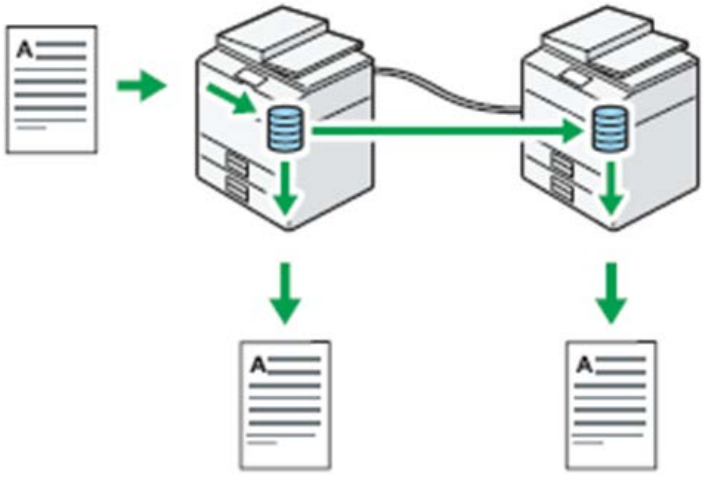
9. Attach the PCB [A] to the standoffs on the frame.
10. Connect harness [B] to the PCB.



x1 d223d8903a

2.23 COPY CONNECTOR TYPE M25(D3D3)

With this option you can connect two machines to perform simultaneous copying for the same job.



d223d8708

2.23.1 ACCESSORIES

Check the accessories and their quantities against this list:

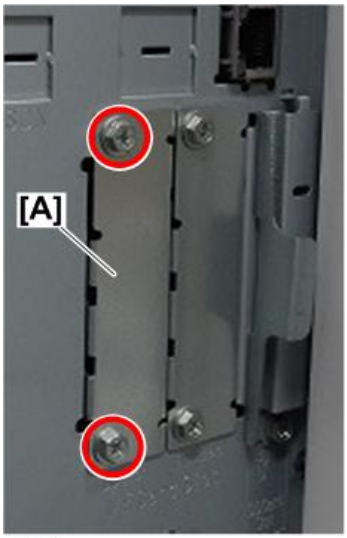
No.	Description	Q'ty
1.	PCB D3D3	2
2.	LAN Cable	1

2.23.2 INSTALLATION

⚠CAUTION

- Before doing this procedure, turn the machine off and disconnect its power cord from the power source.
- Before you handle the boards, touch a metal surface to discharge accumulated static charge from your hands. A static discharge could damage the boards.
- Handle the boards carefully to avoid damaging them.

1. Remove the cover [A] from the right I/F slot (marked “Tandem”).



2. Insert one of the boards in the slot.
3. Tighten the knob screws with your fingers.

Important

- To avoid damage to the board, never tighten these knob screws with a screwdriver.

4. In the same way, install the other board in the right slot of the other machine.
5. Connect the provided LAN cable to both boards.

2.24 EXTERNAL KEYBOARD BRACKET TYPE M3 (D3DH)

2.24.1 ACCESSORIES

No.	Description	Q'ty
1	Cover (for card reader)	1
2	Cover (no card reader)	1
3	Keyboard Holder	1
4	Screws	2

d3dhc1001

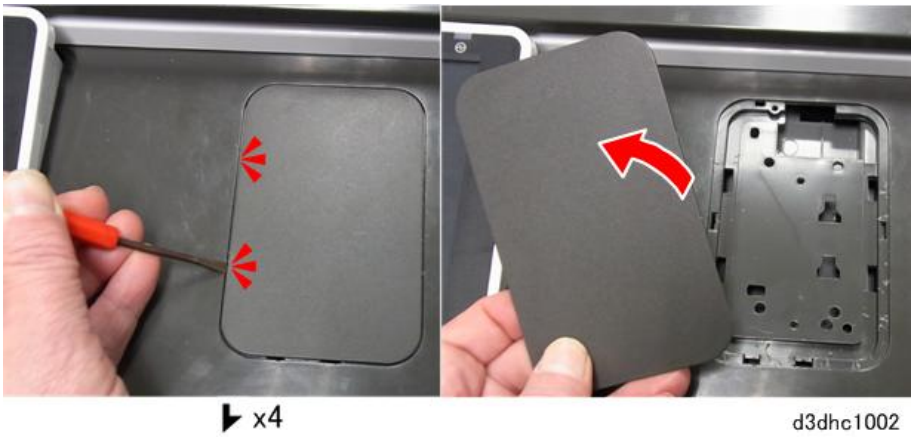
2.24.2 INSTALLATION

The external keyboard can be installed with or without a card reader. Do the first procedure below to install only the keyboard. Do the second procedure to install the keyboard with the card reader.

External Keyboard Only

Do this procedure to install the external keyboard without a card reader.

1. Turn the machine off.
2. Disconnect the machine from its power source.
3. Open the ADF.
4. Remove the square cover on the right side of the operation panel.

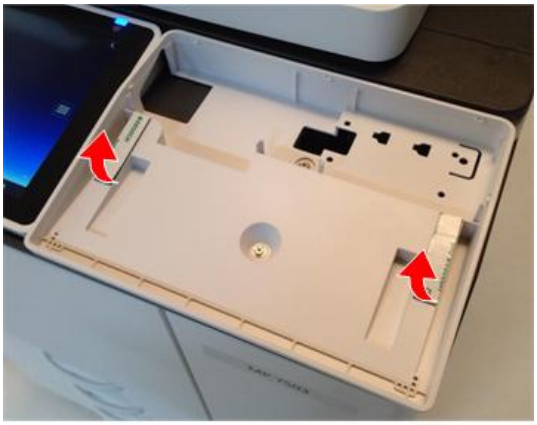


5. Remove a USB port cover on the right edge of the operation panel.

6. Set and fasten the keyboard holder

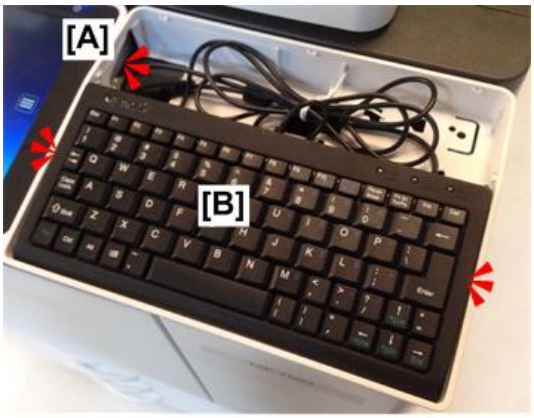
x2 d3dhc1004

7. Remove the tape from the holder.



d3dhc1005

8. Connect the USB cable to the right edge of the operation panel [A] and then set the keyboard [B] in the holder.



x1 d3dhc1006

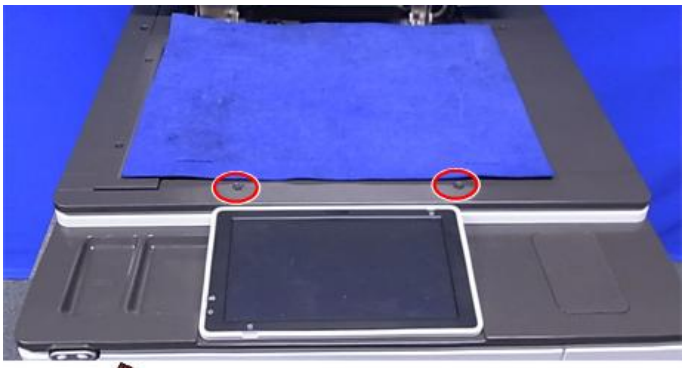
9. Attach the cover without the cut-out.

d3dhc1007

External Keyboard with Card Reader

Do this procedure to install the external keyboard together with a card reader.

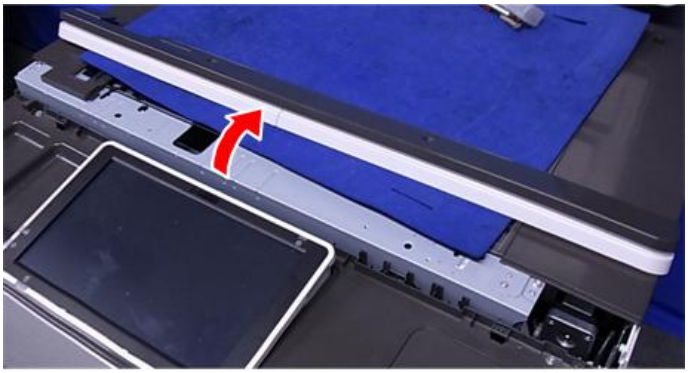
1. Turn the machine off.
2. Disconnect the machine from its power source.
3. Open the ADF.
4. Cover the exposure glass.
5. Disconnect the front edge cover of the scanner unit.



x2

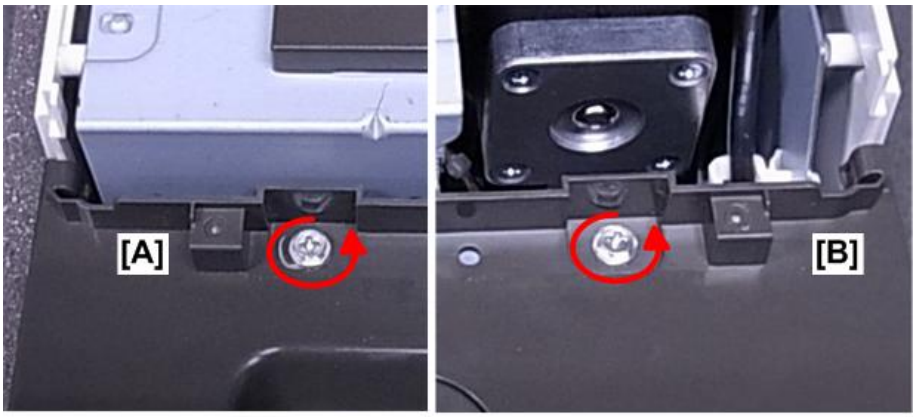
d3bsc1002

6. Remove the front edge cover.



d3bsc1003

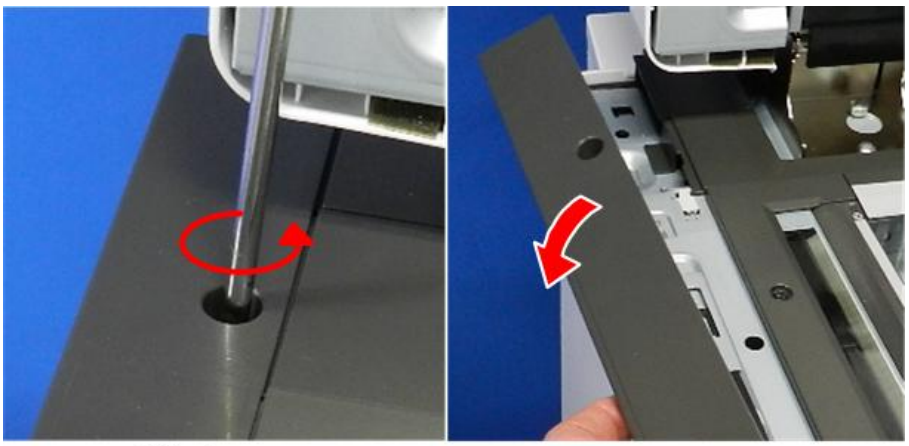
7. Disconnect the upper left corner [A] and upper right corner [B] of the operation panel.



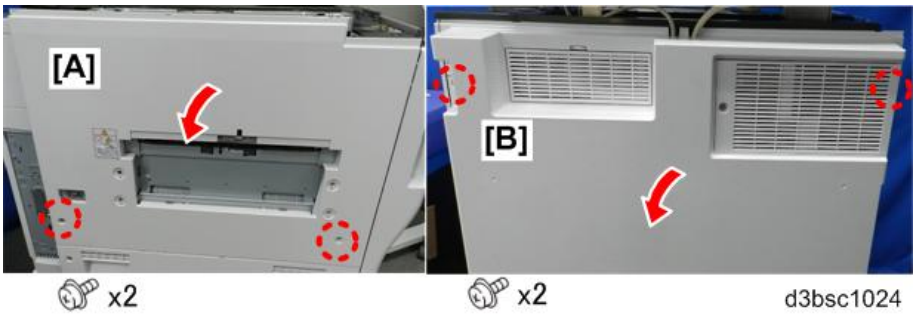
8. Remove a USB port cover on the right edge of the operation panel.

9. Raise the operation panel [A] and then lay it face down on the exposure glass.

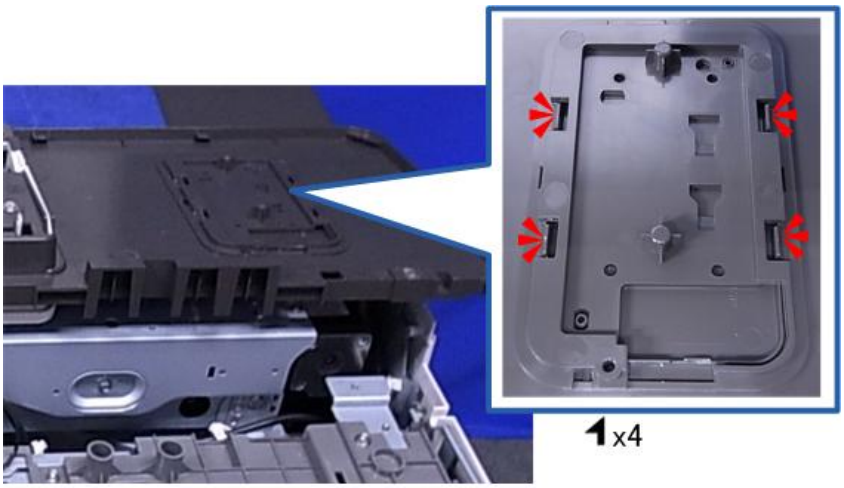
10. Remove the left edge cover.



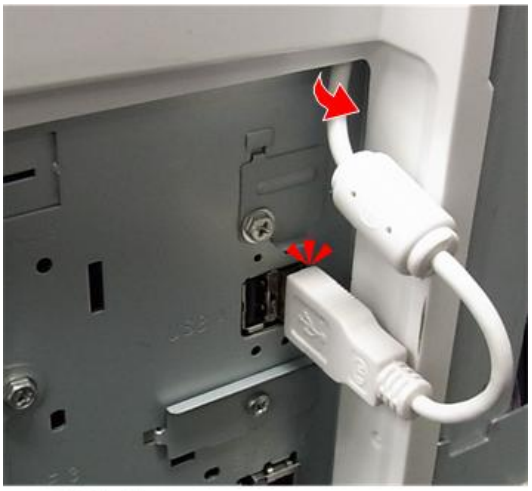
11. Remove left upper cover [A] and rear upper cover [B].



12. With the operation panel turned face down, disconnect the blank cover and remove it.

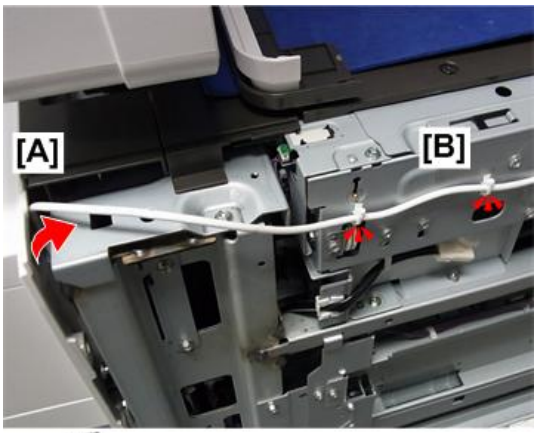


13. Turn the operation panel face up.
14. Set the rear upper cover.
15. Pass the card reader cable through the cover cut-out, and then connect the cable to one of the USB ports.



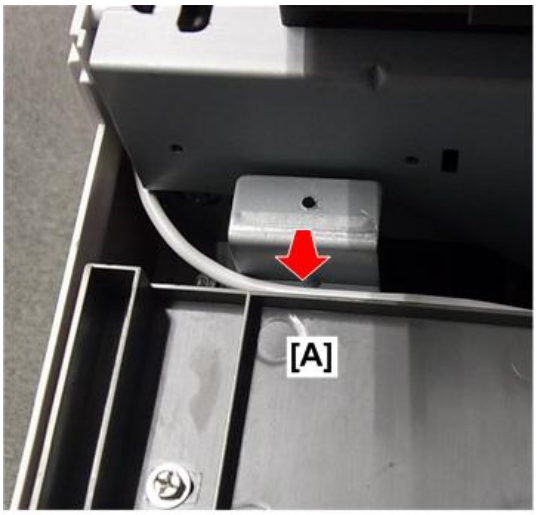
x1 d3dhc1008

16. Pass the cable over the left, rear corner [A], and then clamp it to the left side of the frame [B].



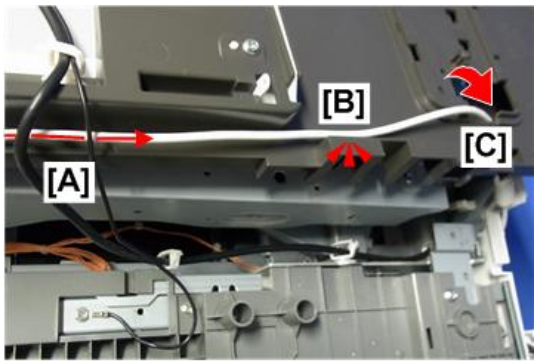
x2 d3dhc1009

17. Fasten the rear upper cover. (x2)
18. Re-attach the left upper cover (x2).
19. At the left front corner [A], set the cable in the groove



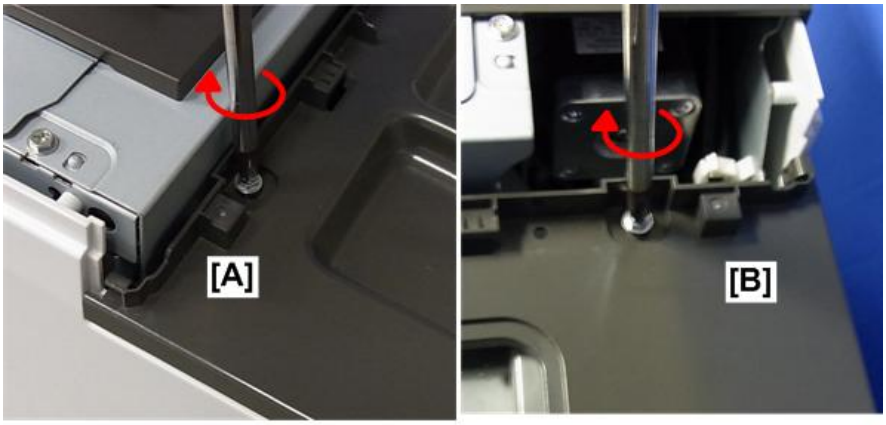
d3dhc1010

20. Pass the cable behind the I/F cable and ground wire [A]
21. Set the cable on support [B].
22. Pass the end of the cable through the cover [C].



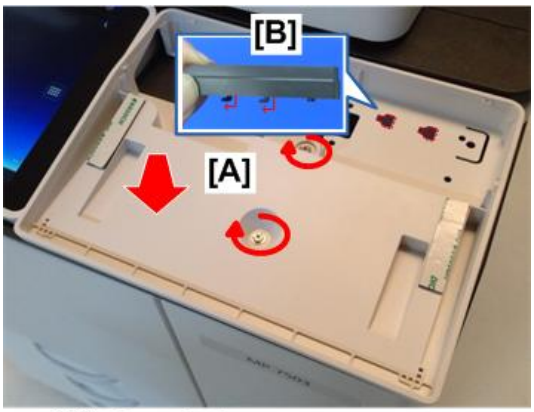
d3dhc1011

23. Turn the cover face up, set it, and then fasten left side [A] and right side [B].



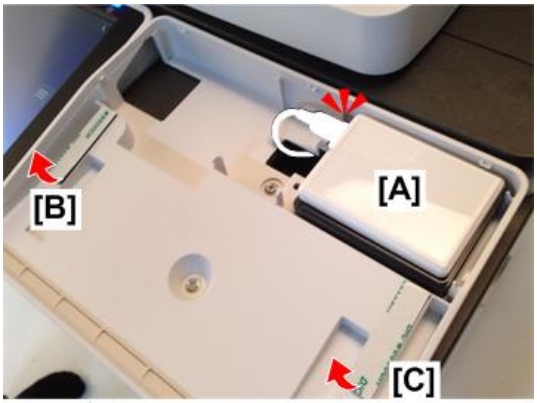
d3dhc1012

24. Set the keyboard holder [A] and then fasten it.
25. Set the tabs [B] on the bottom of the card reader bracket (provided with card reader accessories) into the holes on the keyboard holder, and then slide it to the left to lock it.



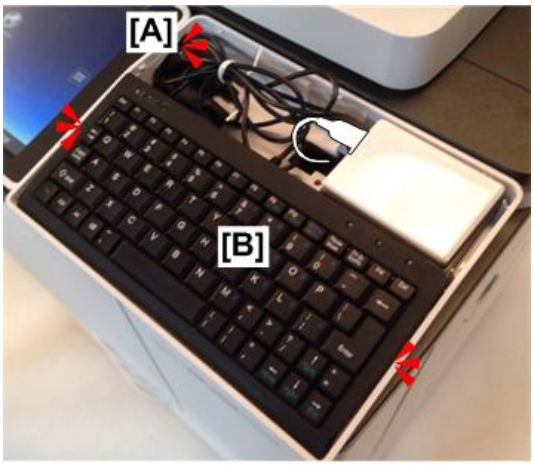
x2 x2 d3dhc1013

26. Connect the cable to the card reader [A], and then set the card on its bracket.
27. Remove the tape at [B] and [C].



x1 d3dhc1014

28. Connect the keyboard USB cable to the right edge of the operation panel [A] and then set the keyboard [B] in the holder.



d3dhc1015

29. Attach the cover with the cut-out for the card reader

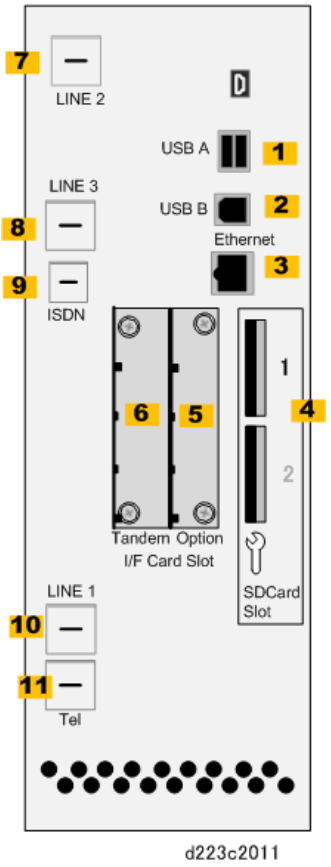
d3dhc1016

2.25 INTERNAL OPTIONS

2.25.1 LIST OF SLOTS

The internal options are the options that are available on I/F cards inserted into the controller board.

- **Tandem I/F Card**. The left slot is used exclusively for the I/F card used to slave one machine to another.
- **Option Slot**. The right slot is used for other options. As the I/F must reside in the slot, this means only one option can be used at a time. For example, you will not be able to use the File Format Converter if you have installed a wireless LAN.



No.	Name	Item
1	USB A	Standard
2	USB B	USB Device Server Option Type M19
3	Ethernet	Standard
4	SD Card Slots	Slot 1 Controller options on SD cards Slot 2 Service slot (firmware updates, etc.)

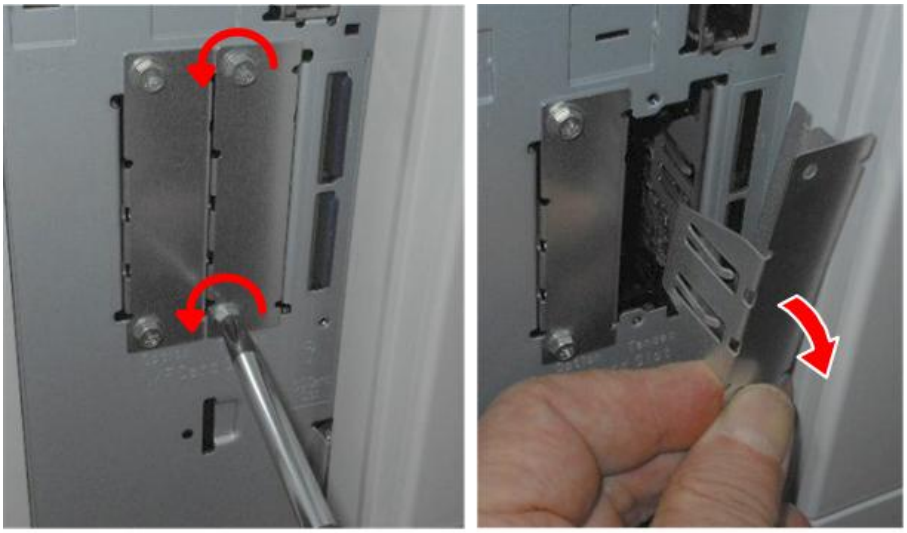
No.	Name	Item
5	Option (I/F Slot)	File Format Converter Type M19 IEEE 1284 Interface Board Type M19 IEEE 802.11 a/g/n Interface Unit M19 Extended USB Board Type M19 USB Device Server Option Type M19
6	Tandem (I/F Slot)	Copy Connector Type M25
7	LINE 2	G3 Interface Unit Type M25 (1 Channel)
8	LINE 3	G3 Interface Unit Type M25 (2 Channel)
9	ISDN	G3 Interface Unit Type M25 (3 Channel)
10	LINE	Fax Connection Type M25
11	TEL	

Note

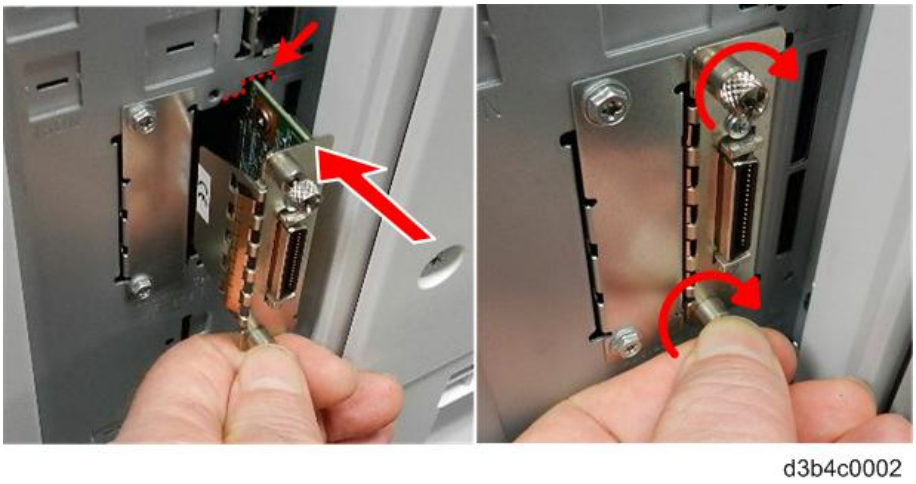
- Only one board can be installed for No. 5 because only one slot is available.

2.25.2 INSERTING CARDS

1. Remove the cover on the controller board faceplate.



2. Insert the edge of the board into the groove at the top and bottom of the right side of the slot.
3. Slowly push the board into the slot until you feel it connect with the controller board.
4. Fasten the board by tightening the knob screws with your fingers.



Important

- Tighten these knob screws with your fingers.
- Never use a screwdriver to tighten these screws.
- If a screw is tightened with too much pressure, this could damage the I/F board or the edged connectors between the I/F card and the controller board.

2.26 IEEE 1284 INTERFACE BOARD TYPE M19

2.26.1 ACCESSORIES

No.	Description	Q'ty
1.	IEEE 1284 Centronics Board	1

d3c0c1001

Only one I/F slot (labeled "Option") is available for one of these options:

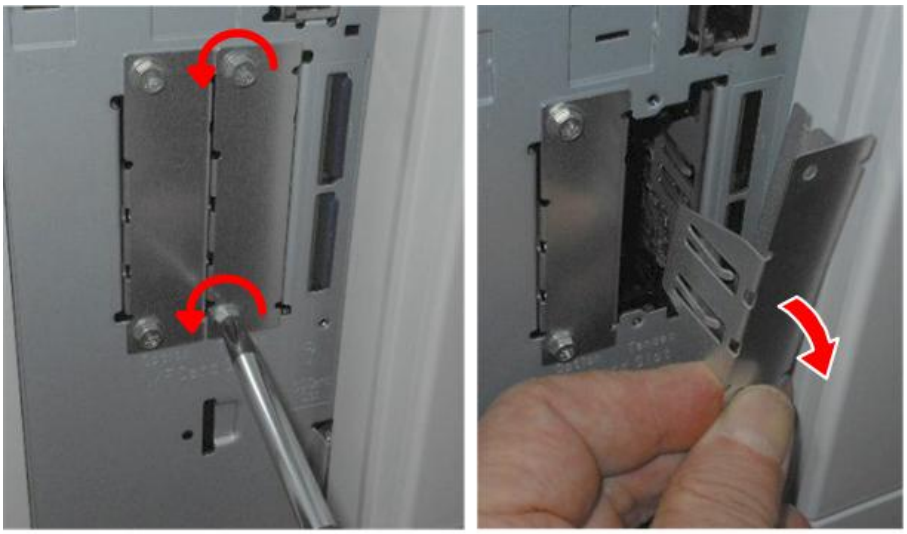
- Centronics 1284
- IEEE 802.11a/g/n (Wireless LAN)
- File Format Converter

Important

- If another card is installed in the "Option" slot on the right, you must remove it before installing this card.

2.26.2 INSTALLATION

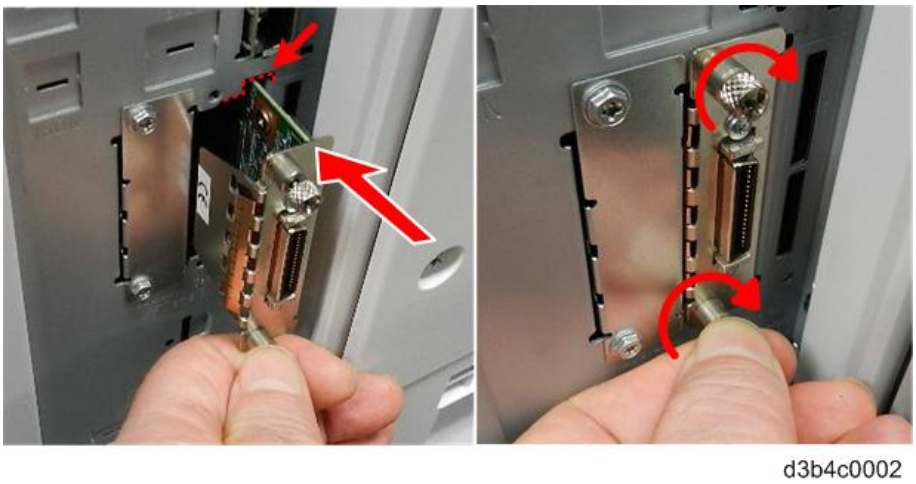
1. Switch the machine off.
2. Remove the cover of the "Option Slot" on the right.



3. Insert the board [A] into the slot.
4. Tighten the knob screws [B] with your fingers.

Important

- To avoid damage to the board, never tighten these knob screws with a screwdriver.

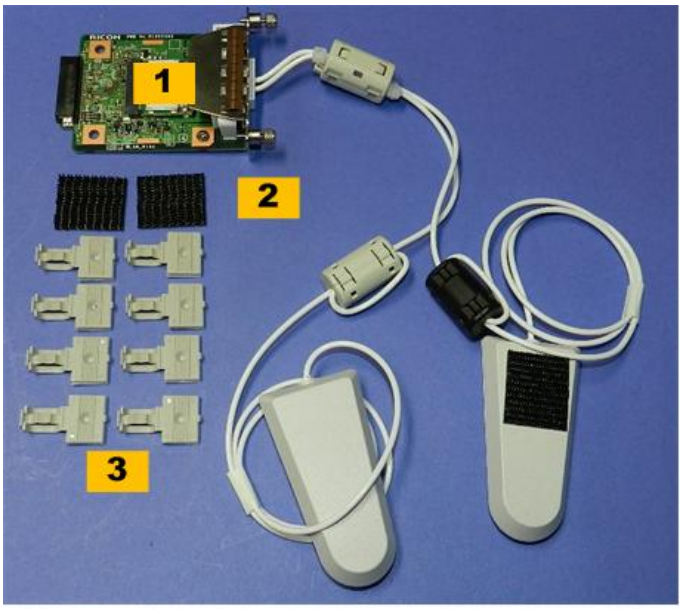


2.27 IEEE 802.11 A/G/N INTERFACE UNIT M19

2.27.1 ACCESSORIES

Check the quantity and condition of the accessories in the box against the following list and diagram.

No.	Description	Q'ty
1.	IEEE802.11 a/g/n	1
2.	Velcro Fasteners	2
3.	Clamps	8



d3brc1020

Before You Begin

Observe the following points when installing and using this unit:

- Never attempt to disassemble the IEEE802.11a/g/n Unit.
- If you need to replace any part, replace the entire unit.
- Give the Cautions chart to the customer.
- It is illegal to disassemble or modify this product. If illegal modifications are done to this product, we shall not assume any responsibility.
- Depending where you use this product, or the access point you select, restrictions may be imposed on the use of some channels. If wireless LAN communications are not possible, check the environment or access point.

Important

- You cannot use this option if you use Ethernet.

Check the markings on the antenna brackets and the ferrite cores of the antenna cables.

- **ANT1**. The ferrite core on the Antenna 1 cable is **black**. Antenna 1 transmits and receives. It must be installed in the middle of the rear edge of the main machine.
- **ANT2**. The ferrite core on Antenna 2 cable is **white.** Antenna 2 only receives. It is installed on the rear right corner of the machine. .

The illustration below shows both antennas installed on the back of the machine with Antenna 1 (black ferrite core) on the rear cover and antenna 2 (white ferrite core) on the controller box cover.

d3brc1029

- The PCB is installed in the controller box.
- Both antennas are held in place by easily installed and removed Velcro fasteners. (The antennas and cables will need to be removed before the covers can be removed to service the machine.)
- The seven clamps are fastened to the machine by double-sided tapes.
- The clamps can be easily opened to free the cables and then closed to once again clamp the cables.

2.27.2 INSTALLATION

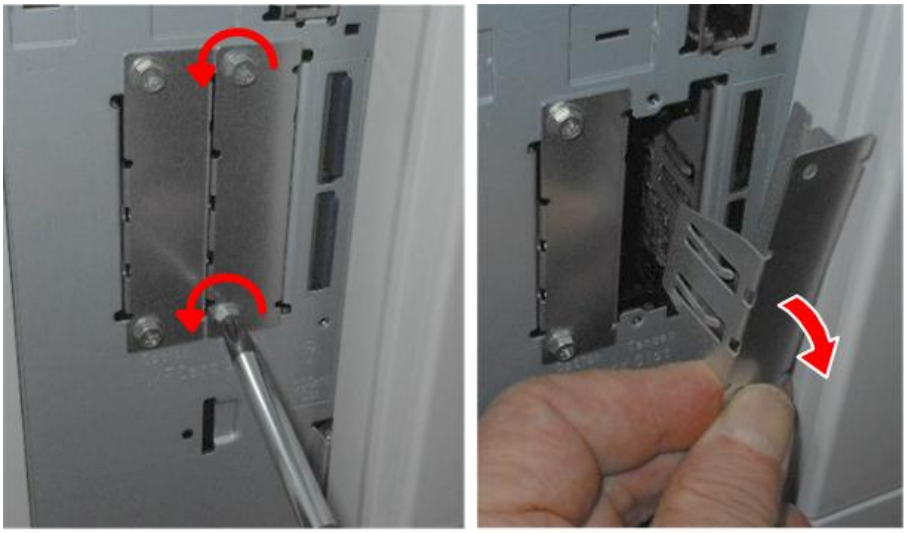
⚠WARNING

- Unplug the main machine power cord before you do the following procedure.

⚠CAUTION

- To prevent damage to the controller box, always work carefully.
- Never put your hand or a tool into the box when you remove the controller box or install an option.
- To prevent damage to the circuits on the boards, always touch a metal surface to discharge static charge from your hands before you handle a board.
- The usable frequency range of this product may be used by products (industrial, scientific, or medical devices) of other companies.
- Outdoor use of wireless devices may be restricted. Pay attention to where you use this product.

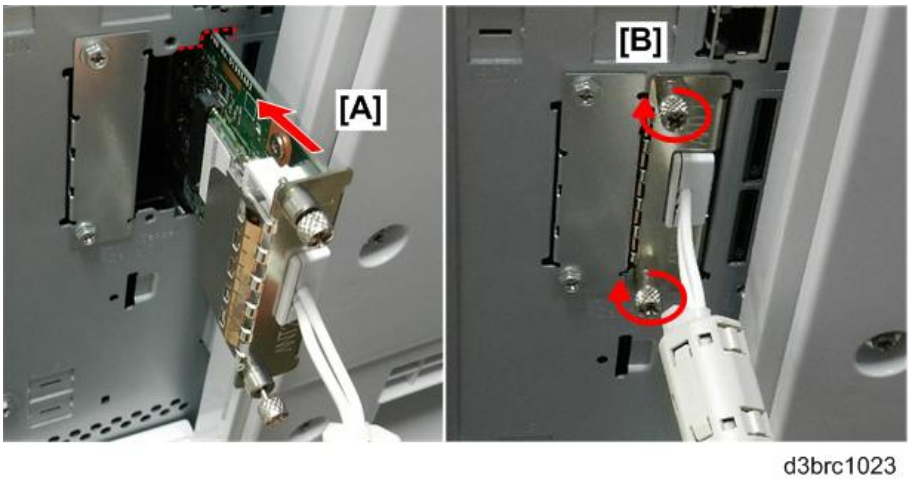
1. Find the best location of the machine.
   - Make sure that the machine is not located near an appliance or any type of equipment that generates strong magnetic fields.
   - Put the machine as close as possible to the access point.
2. Switch the machine off.
3. Remove the cover of the "Option Slot".



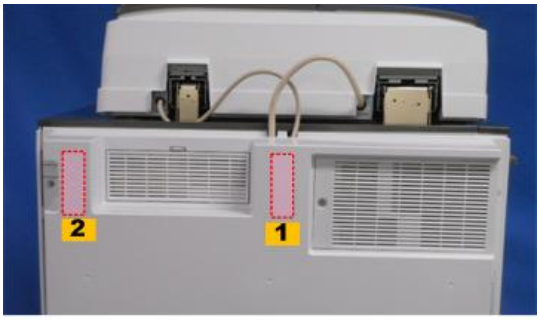
4. Touch a metal surface to discharge any static electricity from your hands.
5. Insert the board [A] into the slot.
6. Tighten the knob screws [B] with your fingers.

Important

- To avoid damage to the board, never tighten these knob screws with a screwdriver.



7. Pull the antennas away from machine and make sure that they are not tangled.
8. Look at the markings on the antenna bracket.
   - **ANT1**. Antenna 1 transmits and receives. The ferrite core on the Antenna 1 cable is **black**. It must be installed at the top center of the rear cover [1].
   - **ANT2**. Antenna 2 only receives. The ferrite core on the Antenna 2 cable is **white**. It is installed on the right rear corner of the machine [2].



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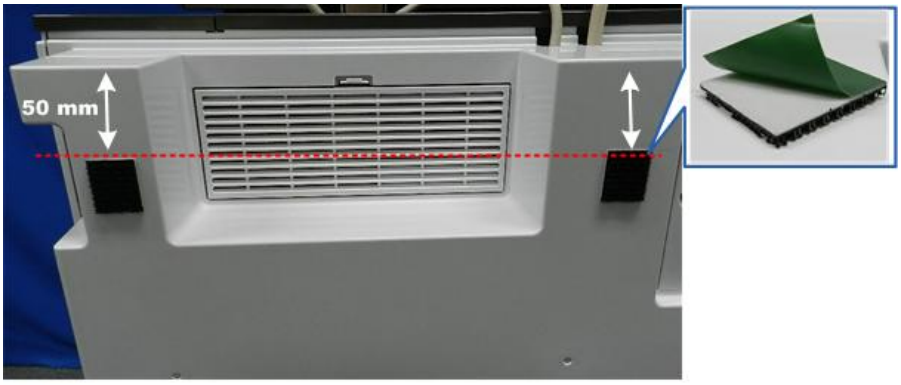
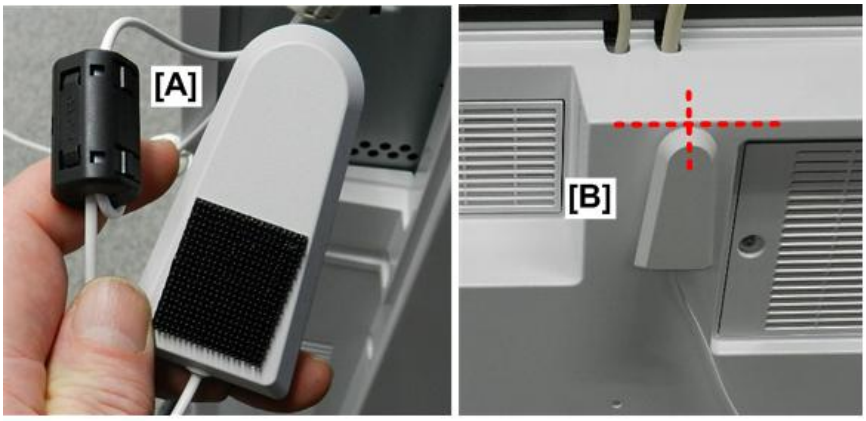
9. Peel the tapes from the backs of the two Velcro fasteners, and then attach them to the rear cover of the main machine.



d3brc1022

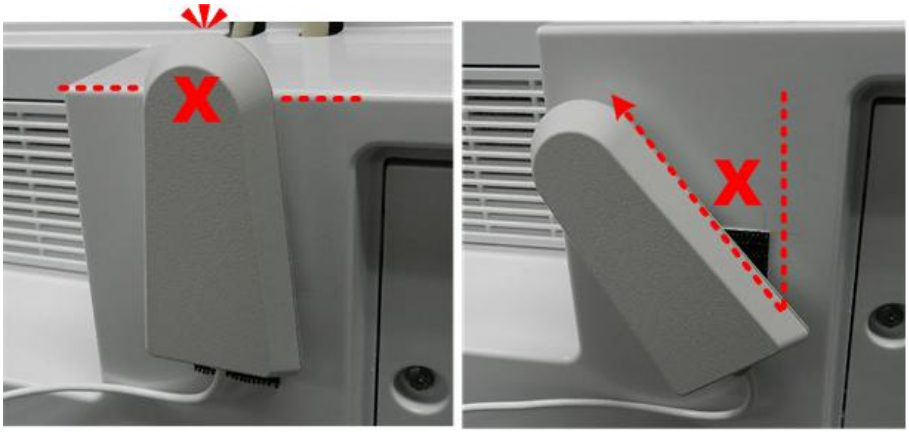
10. Select Antenna 1, with the black ferrite core [A] on its cable, and then attach it to the center [B].



d3brc1024

Important

- The tips of the antennas should not be above the edge of the rear cover.
- They must be straight and not slanted to one side.

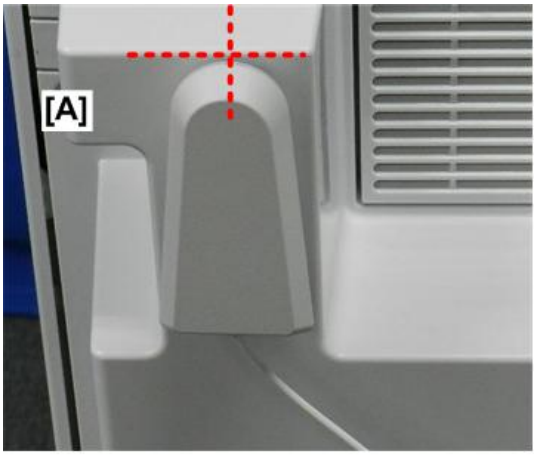


d3brc1025

11. Attach the other antenna [A] behind the right rear corner of the machine.

Important

- Like the other antenna, the tip of this antenna should be perfectly vertical and not above the rear edge of the cover.

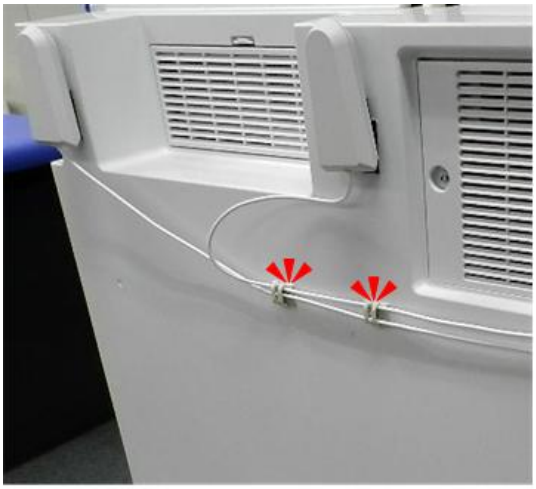


d3brc1026

12. Attach two clamps to the left of the controller box faceplate, set both harnesses in the clamps, and then close the clamps.

d3brc1027

13. Attach two clamps to the rear cover as shown, set both harnesses in the clamps, and then close the clamps.



d3brc1028

14. Keep the unused clamps, or you can attach additional clamps to the harnesses.

d3brc1029

15. Turn on the main machine.
16. Confirm that the machine can recognize the unit:
    > >User Tools > Printer Features > List/Test Print > Configuration Page
17. If reception is poor, you may need to move the machine.

User Tool Settings for Wireless LAN

Do the procedure below to perform the initial interface settings for IEEE 802.11 a/g.

Note

- You cannot use the wireless LAN if you use Ethernet.
- The Bluetooth interface unit and the Wireless LAN interface unit can not be used simultaneously.

1. > > User Tools> Machine Features
2. On the touch panel, press "System Settings".

   Note

   - The Network I/F (default: Ethernet) must be set for either Ethernet or wireless LAN.
3. Select "Interface Settings".
4. Press "Wireless LAN". Only the wireless LAN options show.
5. Communication Mode. Select either "802.11 Ad hoc" or "Infrastructure".
6. SSID Setting. Enter the SSID setting. (The setting is case sensitive.)
7. Channel. You need this setting when Ad Hoc Mode is selected.

   Region A (mainly Europe and Asia)

   Range: 1-13, 36, 40, 44 and 48 channels (default: 11)

   Region B (mainly North America)

   Range: 1-11, 36, 40, 44 and 48 channels (default: 11)

   - Range: 1-11 channels (default: 11)
   - In some countries, only the following channels are available:

   Note

   - The allowed range for the channel settings may vary for different countries.
8. WEP (Encryption) Setting. The WEP (Wired Equivalent Privacy) setting is designed to protect wireless data transmission. The same WEP key is required on the receiving side in order to unlock encoded data. There are 64 bit and 128 bit WEP keys.

   WEP:

   Selects "Active" or "Inactive" ("Inactive" is default.).

   Range of Allowed Settings:

   - 64 bit: 10 characters
   - 128 bit: 26 characters

9. Press "Return to Default" to initialize the wireless LAN settings.
   Press "Yes" to initialize the following settings:
   - Transmission mode
   - Channel
   - Transmission Speed
   - WEP
   - SSID
   - WEP Key

SP Mode and UP Mode Settings for IEEE 802.11 a/g Wireless LAN

The following SP commands and UP modes can be set for IEEE 802.11 a/g.

SP No.	Name	Function
5840-008	Transmission speed	Sets the transmission speed Auto, 54 Mbps, 48 Mbps, 36 Mbps, 24 Mbps, 18 Mbps, 12 Mbps, 9 Mbps, 6 Mbps, 11 Mbps, 5.5 Mbps, 2 Mbps, 1 Mbps (default: Auto)
5840-011	WEP Key Select	Used to select the WEP key (Default: 00).
UP mode	Name	Function
	SSID	Used to confirm the current SSID setting.
	WEP Key	Used to confirm the current WEP key setting.
	WEP Mode	Used to show the maximum length of the string that can be used for the WEP Key entry.

2.28 FILE FORMAT CONVERTER TYPE M19

2.28.1 ACCESSORY CHECK

Check the accessories and their quantities against this list:

No.	Description	Q'ty
1.	File Format Converter (MLB: Media Link Board)	1

d3brc1001

2.28.2 INSTALLATION

1. Switch the machine off.
2. Remove the cover of the "Option Slot" on the right.

x2

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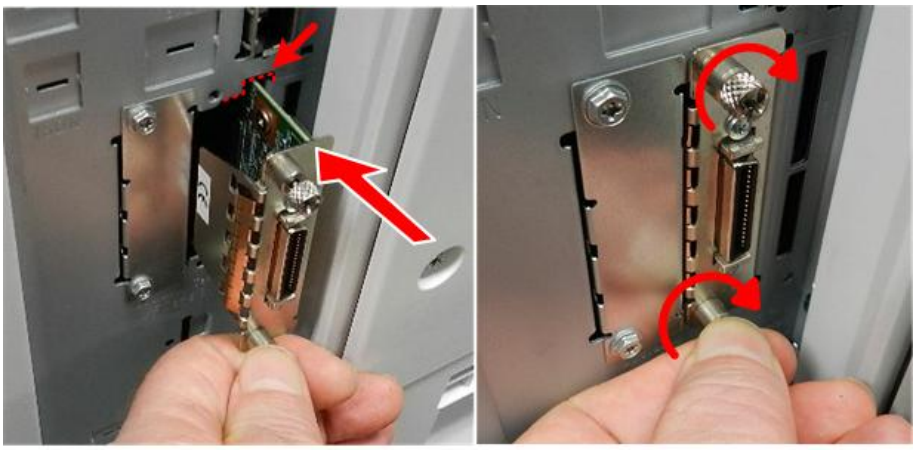
3. Insert the board into the slot.
4. Tighten the knob screws with your fingers.

Important

- To avoid damage to the board, never tighten these knob screws with a screwdriver.



d3b4c0002

5. Switch the machine on.
6. Set **SP5836-3** to "1" to enable the print backup feature.
7. Confirm or set the following SP codes with the values in the table listed below.

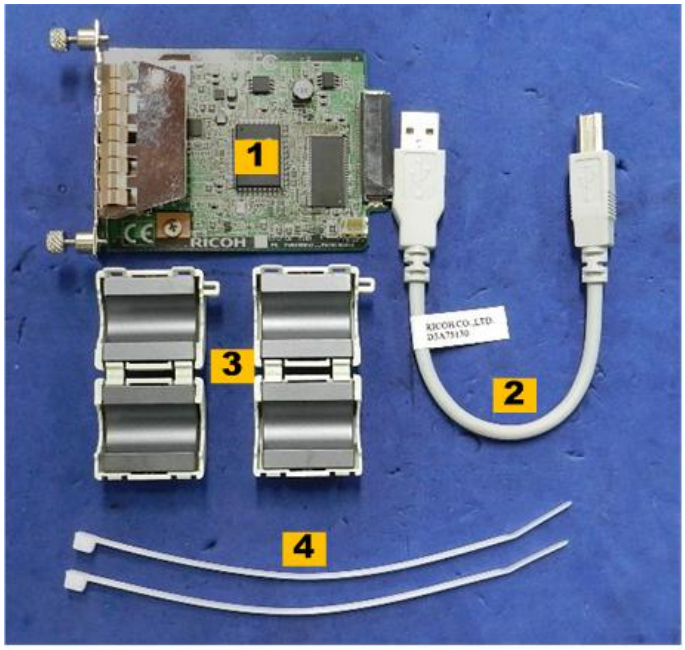
SP No.	Setting	SP No.	Setting
5-836-1	1	5-836-73	0
5-836-2	0	5-836-85	1
5-836-3	1	5-836-86	2
5-836-72	0	5-836-91	50

8. Set the following SP codes according to the customer's needs.

SP No.	Setting	Comment
SP5-836-94	2	Selects JPEG2000 file format for documents copied from the document server to Palm2. **Note:** Files backed up to Palm2 in J2K format cannot be edited by other software applications.
	0	Selects the TIFF file format for documents copied from the document server to Palm2. **Note:** Select this so the backed up files can be used with other software applications (editing, OCR, etc.) with only slight loss in image quality.
SP-5836-98	1	Applies dot correction and eliminates ghost images transferred from the back sides of double-sided originals when files are copied to Palm2. This selection also reduces the size of the file. **Note:** This function is applied to both J2K and TIFF files and is particularly useful for copying large J2K documents quickly with only a slight loss in image quality.
	0	Does not apply the features of the "1" setting when files are copied to Palm2. **Note:** This setting preserves the quality of the original image, especially with J2K files, but also requires more time for copying and requires more disk space to store the larger files.

2.29 USB DEVICE SERVER OPTION TYPE M19

2.29.1 ACCESSORIES



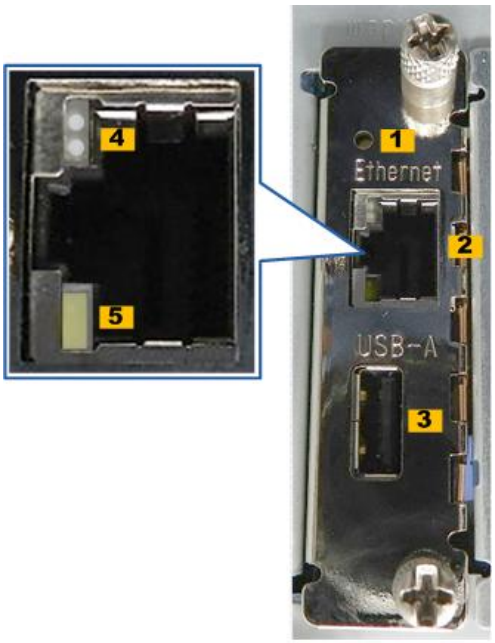
d3bc1001

No	Items	Q'ty
1	Interface Board	1
2	USB Cable	1
3	Ferrite Core	2
4	Bands (Not Used)	2

Note

- An Ethernet cable is not provided with this option.

Interface Board



d3bcc1002

Note

- Take moment to see what is on the interface board faceplate before you install it because after installation it may be upside down.

No.	Item	Description
1	Switch	Pressure switch used to reset to the factory settings.
2	Ethernet port	Used to connect the network Ethernet cable.
3	USB port	Flat USB connector for the accessory USB used to connect the interface board to the main machine. Never use this port for any other purpose.
4	Upper LEDs	LEDs (2)
5	Lower LEDs	LED (1)

2.29.2 INSTALLATION

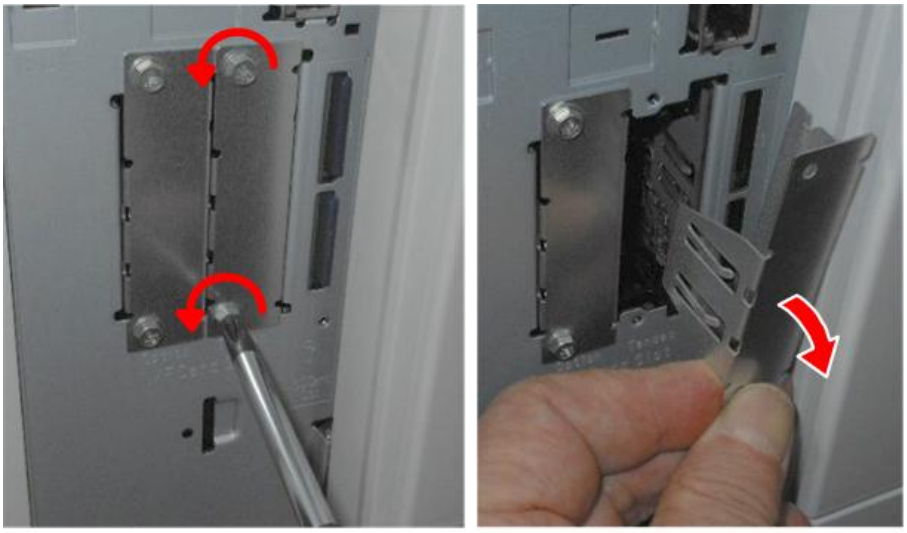
⚠CAUTION

- Turn off the main power and disconnect the power supply cord.

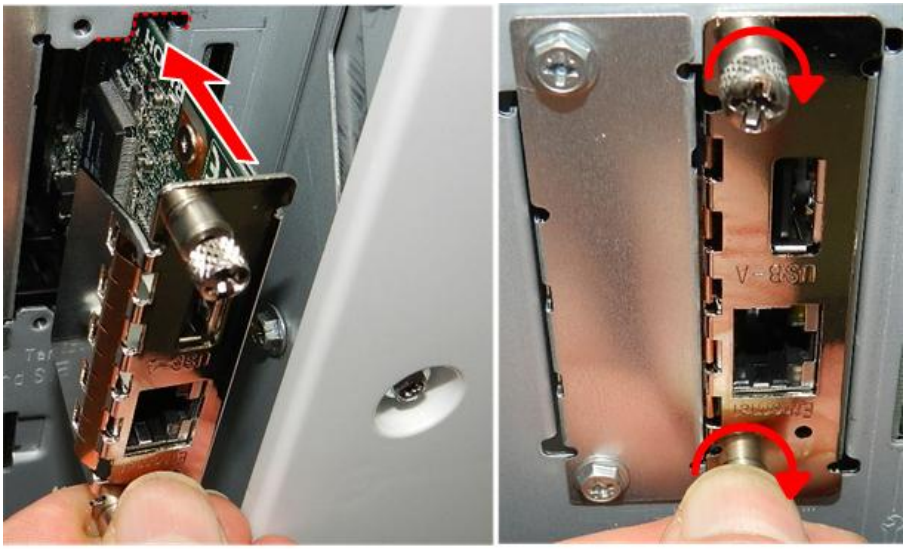
Important

- When you install this option on the main machine for the first time, the interface board must be connected directly to your PC to set up the IP address and other network settings.

1. Turn off the main power of the machine, and unplug the power cord from the wall socket.
2. Remove the slot cover.



3. Install the interface board in the interface slot.
4. Tighten the knob screws with your fingers.



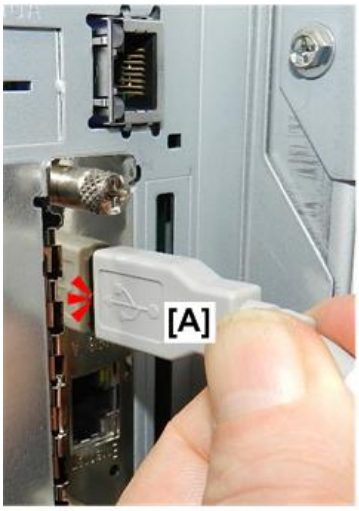
Important

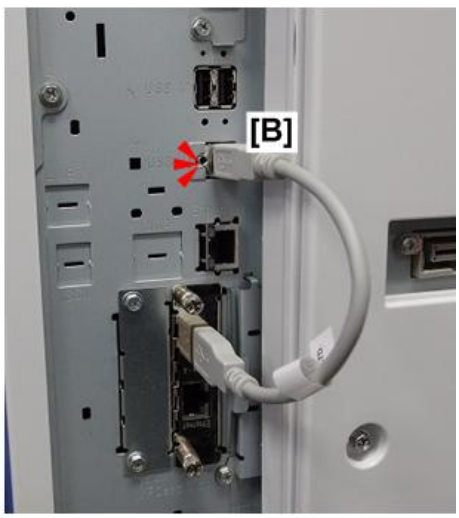
- Tighten these knob screws with your fingers.
- Never use a screwdriver to tighten these screws.
- If a screw is tightened with too much pressure, this could damage the I/F board or the edged connectors between the I/F card and the controller board.

5. Remove the cover over USB-B slot [A].

x1 d223d8709

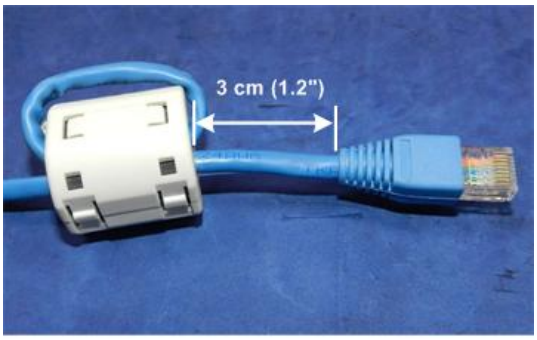
6. Insert the flat connector of the accessory USB cable [A] into the **USB-A** connector on the interface board.
7. Insert the D-connector [B] into the **USB-B** port.





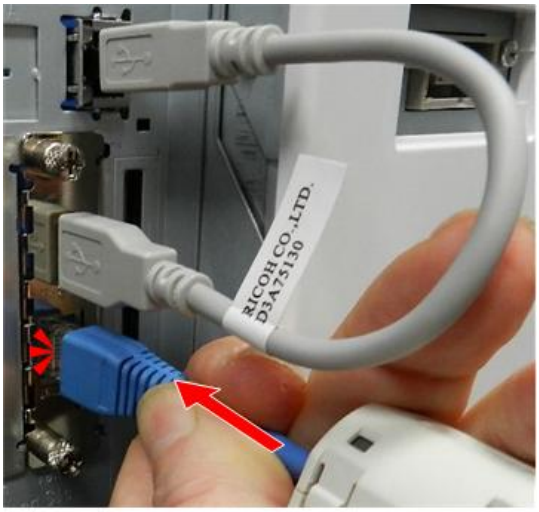
x2 d223d8710

8. Attach a ferrite core to each end of the network Ethernet cable so there is about 3 cm (1.2”) between the core and head of the connector.



d3bcc1005

9. Insert one end of the Ethernet cable into the **Ethernet** connector of the interface board.



x1 d3bcc1006

10. Insert the other end of the Ethernet cable to a PC for the network setup.
11. Plug the power cord into the wall socket and turn on the main power of the machine.

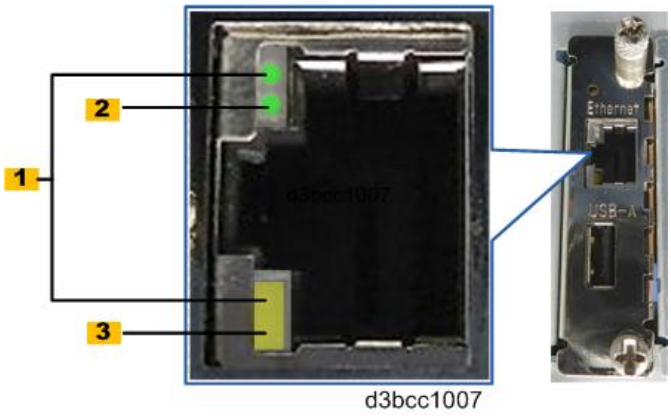
Note

- Do not unplug the USB cable while the machine is initializing this option (this may take 30-60 sec.)
- The LEDs on the Ethernet port of the interface board will light after initialization is complete.
- If the machine is accidentally unplugged, connect the cable again.

12. Print out the “Configuration Page”.
13. Confirm that the machine has recognized this option: > >User Tools > Printer Features > List/Test Page > Configuration Page
14. Enter the SP mode.
15. Open SP5985-002 (On Board USB) and set "0" to "1".

Ethernet Port LEDs

After this option is installed and initialized by the main machine, the LED indicators light up under the following conditions.



No.	LED Color	Indicates:
1	Green and Yellow	1000BASE-T
2	Green	10BASE-T
3	Yellow	100BASE-TX

⇒

2.29.3 IP ADDRESS SETTING

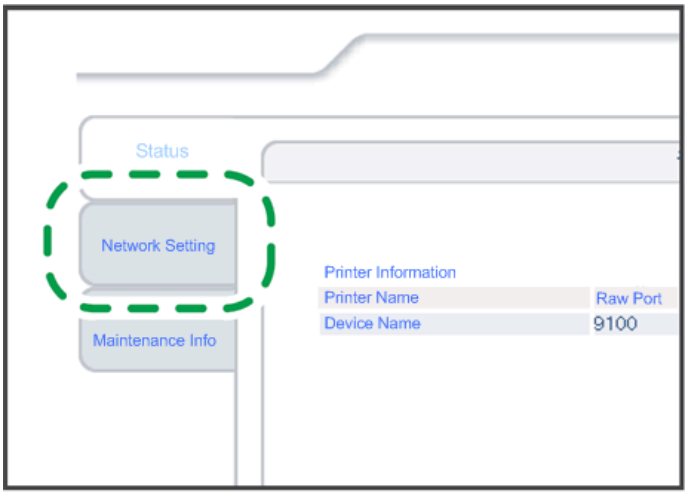
This section describes how to set an IP address for this option manually.

You can set an IP address which is not only on the same network segment, but also on a different network segment to share a single printer with devices in multiple networks.

Important

- You cannot change the IP address for this option from the operation panel of the main machine. The setting must be done from a web browser on your PC.
- The network setting of this option is initially assigned as follows:
  IP address: 192.168.100.100 / Subnet mask: 255.255.255.0
- The network setting of your PC must be in the same network segment to change the network setting of this option.

1. Make a note of the current network settings of your PC.
2. Change the IP address on your PC to [192.168.100.xxx (0 - 255)].
3. Change the subnet mask on your PC to [255.255.255.0].
4. Open a Web Browser.
5. Input **http://192.168.100.100/** in the address bar, and then press [Enter]. The setting screen for this option appears.
6. Click [Network Setting].



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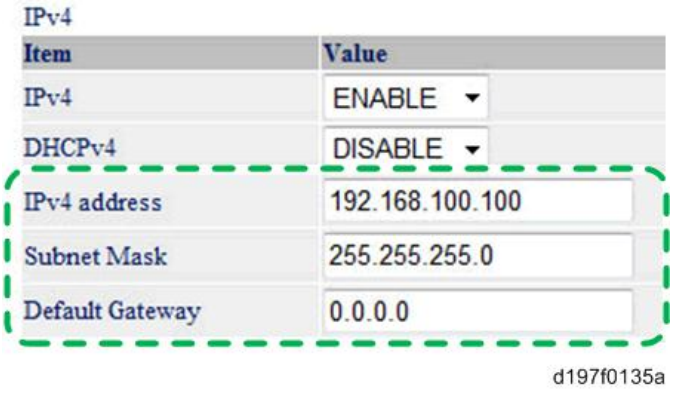
7. Type [root] in the user name textbox and click [OK].
8. Input [IP Address], [Subnet Mask] and [Default Gateway].



9. Set other items if required.
10. Press [Set]
11. Close the Web Browser.
12. Disconnect the Ethernet cable from the PC.
13. Connect the Ethernet cable to a network device (e.g. switching hub).
14. Set the IP address of this option in the printer driver which you use.

2.30 EXTENDED USB BOARD TYPE M19

2.30.1 ACCESSORIES

No.	Description	Q'ty
1.	Extended USB Board M19	1

d223c1145

Only one I/F slot (labeled "Option") is available for one of these options:

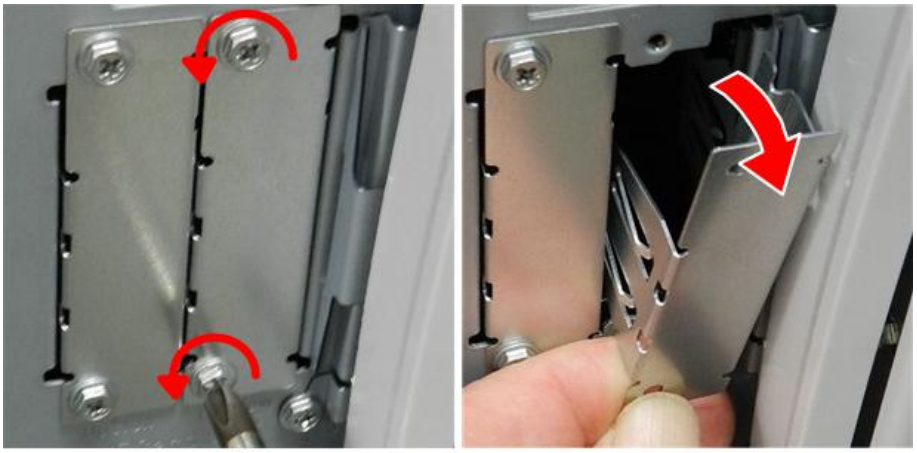
- Centronics 1284
- IEEE 802.11a/g/n (Wireless LAN)
- File Format Converter
- Extended USB Board Type M19

Important

- If another card is installed in the "Option" slot on the right, you must remove it before installing this option.

2.30.2 INSTALLATION

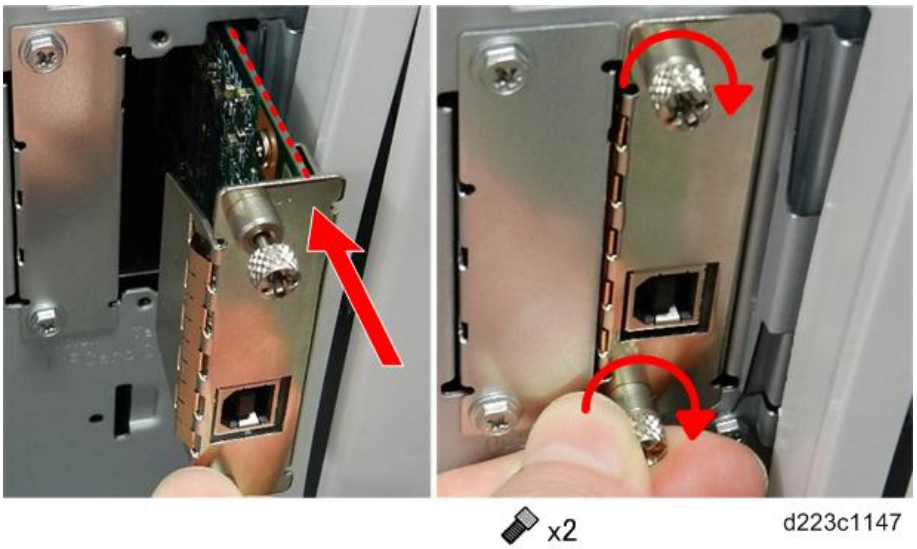
1. Switch the machine off.
2. Remove the cover of the "Option Slot" on the right.



3. Insert the board into the slot.
4. Tighten the knob screws with your fingers.

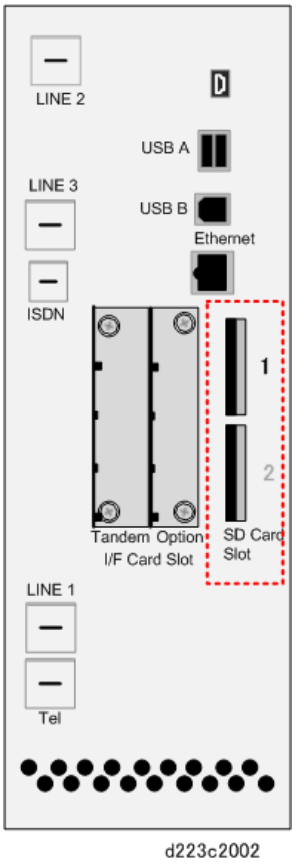
Important

- To avoid damage to the board, never tighten these knob screws with a screwdriver.



2.31 SD CARD OPTIONS

2.31.1 OVERVIEW



Two SD card slots are provided on the controller box.

- **Slot** 1. Slot 1 is where most SD cards with applications on them are inserted for either use or downloading. When merging (copying) applications from one SD card to another, Slot 1 holds the target SD card (the application is moved to this card from the SD card in Slot 2.)
- **Slot 2**. Slot 2 is the service slot. This is where the SD card with the new firmware is inserted for the firmware update procedure. When merging (moving) applications from one SD card to another, Slot 2 holds the source SD card (the application is moved from this card to the SD card in Slot 1.)

2.31.2 OPTIONS AVAILABLE ON SD CARDS

Here is a list the available options for this machine provided on SD cards.

- IPDS Unit Type M25 (D3D4)
- OCR Unit Type M13 (D3AC)
- PostScript3 Type M25 (D3D4-05)
- SD Card for Fonts Type D (D641)
- XPS Direct Print Option Type M25 (D3D4)

Note

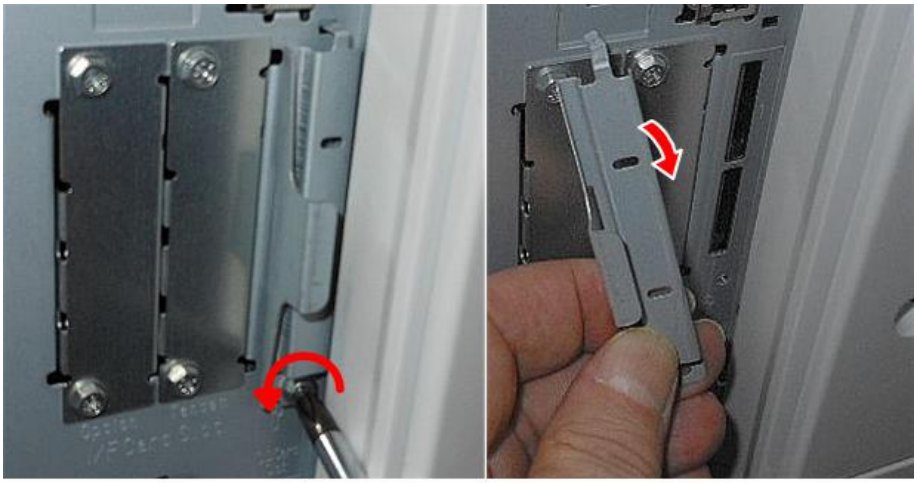
- If the customer wants to use more than one application on SD cards, applications must be merged on the same SD card.

Important

- The data necessary for authentication is transferred with the application program to the target SD card. This is described below.
- Do not use an SD card if it has previously been used with a computer. Correct operation is not guaranteed if this type of SD card is used.
- The SD card is the only evidence that the customer is licensed to use the application program. The service technician may also occasionally need to check the SD card and its data to solve problems. For these reasons SD cards must be stored with the machine. The storage location is described at the end of this section.
- After an SD card has been used to move other applications onto that card, that SD card cannot be used for a different function.
- Before copying and application to an SD card, always make sure that the write-protect switch is OFF. It is very easy to accidentally turn on the write-protect switch when inserting or removing an SD card.

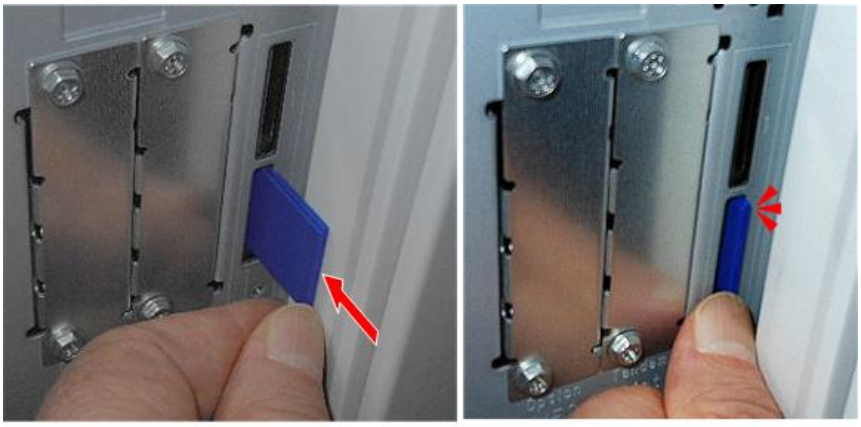
2.31.3 INSERTING SD CARDS

1. Turn the machine off.
2. Remove the SD card slot cover.



x1 sdcc0001

3. With its corner notch down and label facing the front of the machine, insert the SD card into Slot 2.
4. Push the SD card in until it clicks and locks in place.



sdcc0003

Note

- Pushing in the SD Card also releases it for removal.
- Make sure the SD Card is inserted and locked in place. If it is partially out of the slot, push it in gently until it locks in place.

5. Turn the machine on, and then proceed with the installation of the option.

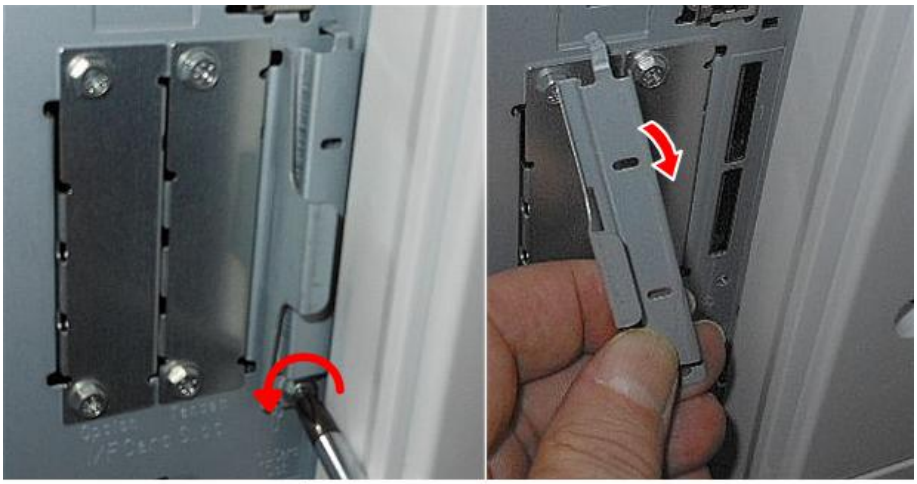
2.31.4 MOVE EXEC: MERGING APPLICATIONS

Do this procedure to put more than one application on one SD card.

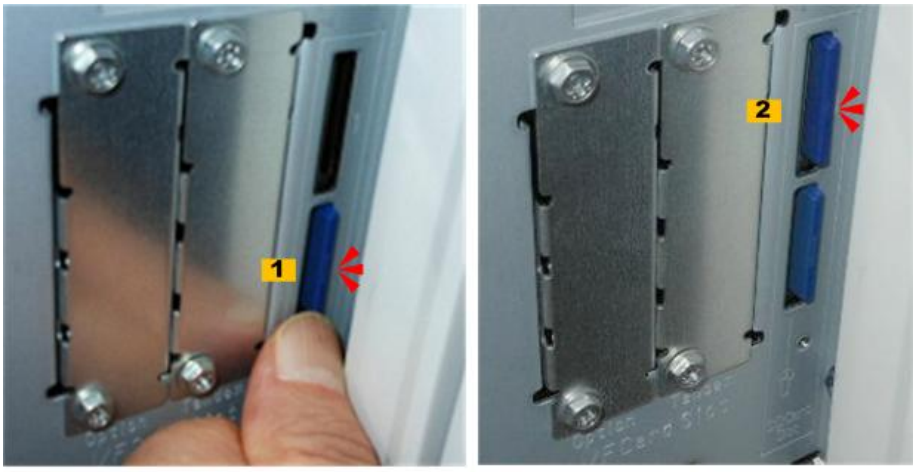
Important

- Due to copyright restrictions, some applications may not allow you to copy the application to another SD card with Move Exec.
- In this case, just use the SD with the restricted application as the target SD card for Move Exec.

1. Turn the main machine off.
2. Remove the SD card slot cover.



3. Insert the Source SD card [1] in Slot 2 (Service slot). This card contains the application that you want to move.
4. Check the target SD card and confirm that its write-protect switch is OFF.
5. Insert the Target SD card [2] into the SD card Slot 1.



6. Open the front door.
7. Turn the main machine on.
8. Do **SP5873-001**.

9. Touch "Execute".
10. Follow the instructions on the display to complete the procedure.
11. Turn the machine off.
12. Remove the Source SD card from Slot 2. Leave the target SD card in Slot 1.
13. Turn the main machine on.
14. Go into the User Tools mode and confirm that all the applications on the SD card in Slot 1 are enabled:

    > >**User Tools> System Settings> Administrator Tools> Firmware Version**
15. Turn the main machine off again.
16. Remove the SD card in Slot 1.
17. Reattach the SD card slot cover.
18. Store the copied SD cards in the machine. (See below.)

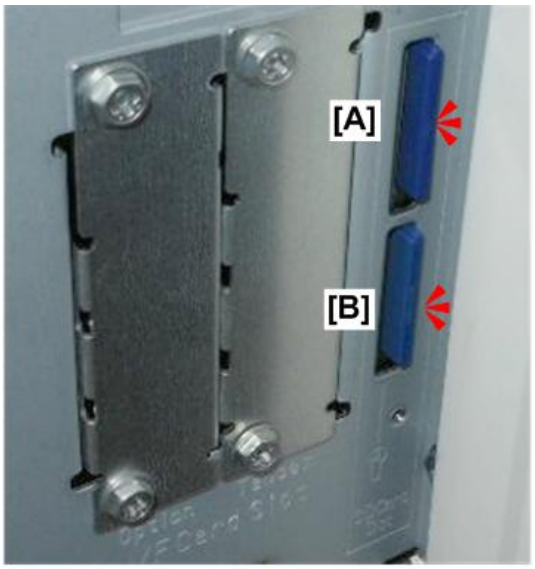
Important

- Never remove copied SD cards from the machine site. The copied original SD cards are the only proof that the customer has purchased the options.
- After an SD card has been copied, it can no longer be used. However, it must be stored in the machine to serve as proof of purchase by the customer.
- The original SD card can also be restored to its original condition with the Undo Exec procedure (**SP5873-002**) described below.
- Before you store an SD card, label it carefully so it can be identified easily if you need to do the Undo Exec procedure.

2.31.5 UNDO EXEC: UNMERGING APPLICATIONS

Do this procedure if you moved an option from the original SD card to another card by mistake and you need to restore the original SD card.

1. Turn the machine off.
2. Insert the SD card holding the merged applications in SD Card Slot 1 [A].
3. Put the original destination SD card (the one removed from storage) into Slot 2 [B].



d223c2006

Note

- The SD card in Slot 2 must be the original SD card of the application you want to move from Slot 1 to Slot 2. You cannot use any blank SD card in Slot 1.

4. Turn the main switch ON.
5. Do **SP5873-002** (Undo Exec).
6. Follow the instructions on the operation panel to complete the procedure..
7. Turn the machine off.
8. Remove the SD cards from the slots.
9. Replace the SD card slot cover (x1).
10. Turn the main switch ON.

2.31.6 STORING ORIGINAL SD CARDS

SD cards must be stored at the site to server as proof of purchase by the customer. Do not remove copied SD cards from the machine site. Store the SD cards inside the machine for safekeeping.

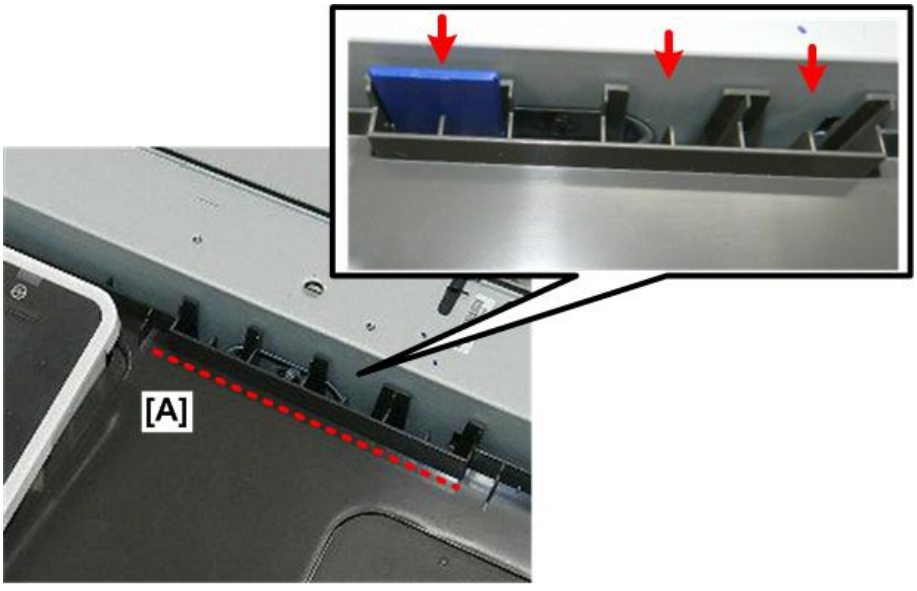
1. Turn off the machine and disconnect the power cord.
2. Raise the platen.
3. Disconnect the front edge cover (x2).

d223c3001

4. Bend the ends of the cover toward you slightly to disengage the tabs on the ends, and then remove the front edge cover.

d223c3002

5. Locate the slots at the upper right corner of the operation panel display [A].



d223c2001

6. Up to three SD cards can be stored here.

2.32 OCR TYPE M13

2.32.1 WHAT IS SEARCHABLE PDF?

- Searchable PDF embeds the text information in the scanned document without processing the data on a computer.
- If this option is installed:
  1. You can search the text in the scanned document.
  2. You can add extra text to the file name.
  3. The orientation of the originals is detected, and the document is automatically rotated.
- The OCR unit is provided on an SD card. By installing the SD card on the main machine, a function key is added to the operation panel. The OCR application does not need to be installed on the computer.
- After OCR installation, you can specify the settings of the searchable PDF function.
- The machine embeds the text information of the scanned document after scanning the originals (after the originals are ejected from the ADF). Therefore, you can remove the originals from the exposure glass or ADF.
- You can use other applications such as copy and printer while the machine embeds the text information of the scanned document.

2.32.2 ACCESSORIES

Check the quantity and condition of the accessories in the box against the following list.

No.	Description	Q'ty
1.	SD Card	1

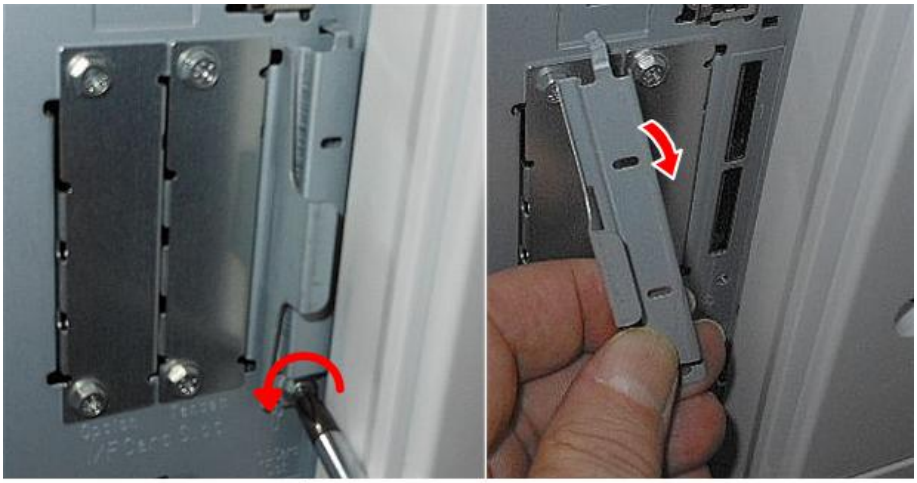
d1791230

Installation

⚠WARNING

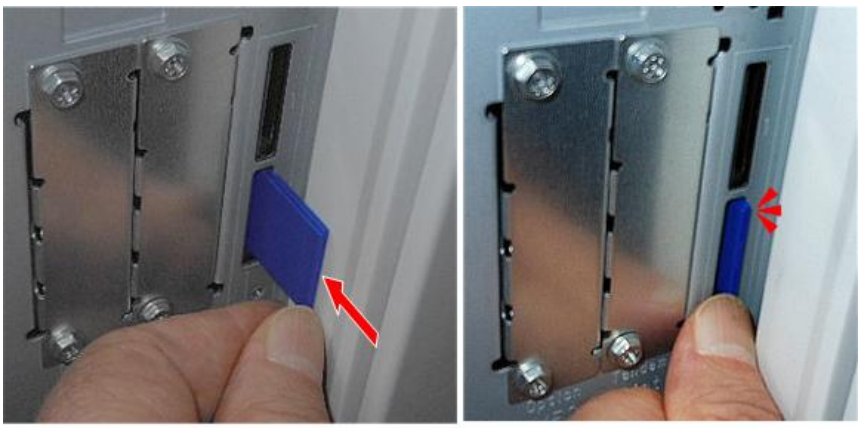
- Unplug the main machine power cord before you do the following procedure.

1. Remove the SD card slot cover.



x1 sdcc0001

2. Insert the OCR SD card in Slot 2 with its label facing the front of the machine.

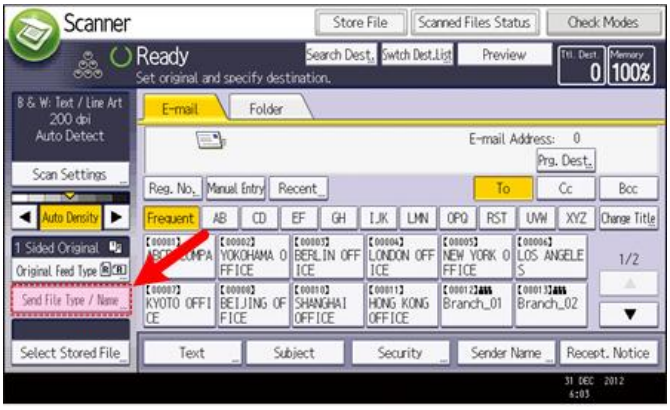


sdcc0003

3. Turn on the machine.
4. Go into the SP mode and do **SP5-878-004**.
   - This records the content of the SD card in NVRAM
   - The machine ID of the main machine is recorded on the SD card.
5. When the display tells you that the execution is completed, touch [Exit].
   - If the machine returns the “Failed” alert, check if the SD card to determine if it has already been used.
   - Turn off the machine and then steps 1 to 5 again.
6. Cycle the machine off/on.

7. Go in the SP mode and do **SP5-878-004** (Option Setup: OCR) and then press [EXECUTE].
   The OCR dictionary is copied to the HDD from the SD card.
   - In the first execution, the SD card and the machine are linked.
   - In the second execution, the OCR dictionary is copied onto the HDD.
8. Turn off the machine, and then remove the SD card.

   Important
   - Store the SD card in a safe location.
   - You will need the original SD card in case the HDD unit ever fails.
9. Turn on the main power switch.
10. On the “Scanner” screen touch [Send File Type / Name].



d1791220

11. Check to see if [OCR Settings] is displayed on the [Send File Type / Name] screen.

d1791221

   - The searchable PDF function can be switched on/off on the [OCR Settings] screen after installing the OCR unit.
   - If you want to use the searchable PDF function, select [On] for [OCR Settings]. (Default: [Off])

Restoration

After installation of the OCR Unit:

- The searchable PDF function is saved on the HDD and the SD card ID is saved in NVRAM.
- After replacement of either the HDD unit or the NVRAM, OCR Unit Type M2 must be installed again.

When the original SD card exists

- **If you replace the HDD**.
  Re-install the OCR Unit Type M2 from the original SD card.
- **If you replace the NVRAM**.
  If you upload / download the NVRAM data, re-install the OCR Unit Type M2 from the original SD card. If you don't upload / download the NVRAM data, order a new SD card (service part) of the OCR Unit Type M2. Then re-install the OCR Unit Type M2 from the new SD card.
- **When you replace the HDD and NVRAM at the same time**.
  Re-install the OCR Unit Type M2 from the original SD card.

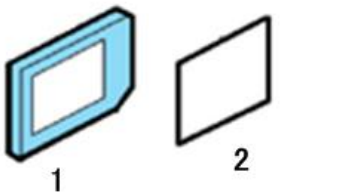
If Original SD Card is Lost

- Order a new SD card (service part) of the OCR Unit Type M2, and then re-install from the new SD card.
- When you re-install the OCR Unit Type M2, do the same procedure as the original installation procedure.

2.33 POSTSCRIPT3 UNIT TYPE M25

2.33.1 ACCESSORIES

No.	Description	Q'ty
1.	PostScript3 Emulation SD Card	1
2.	Decal	1

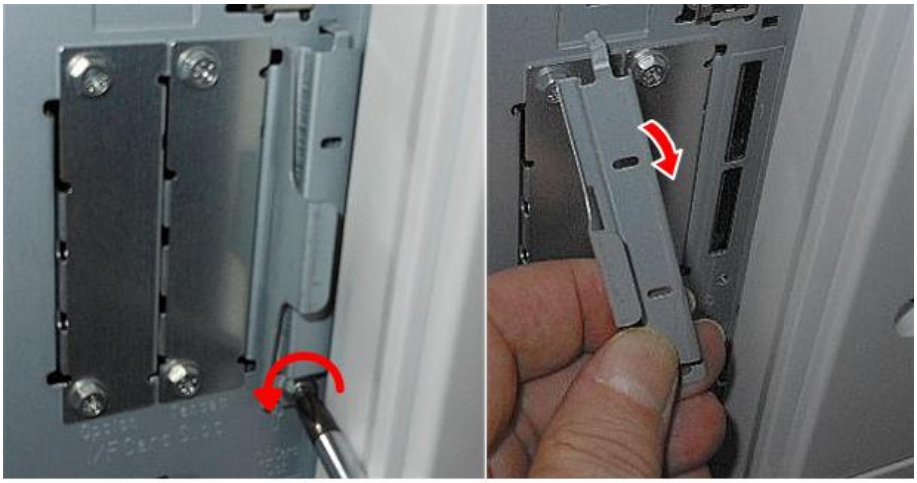


Important

- Only Slot 1 is available for applications on SD cards. If more than one application will be used, the applications must be merged onto one SD card with SP5873 -1.

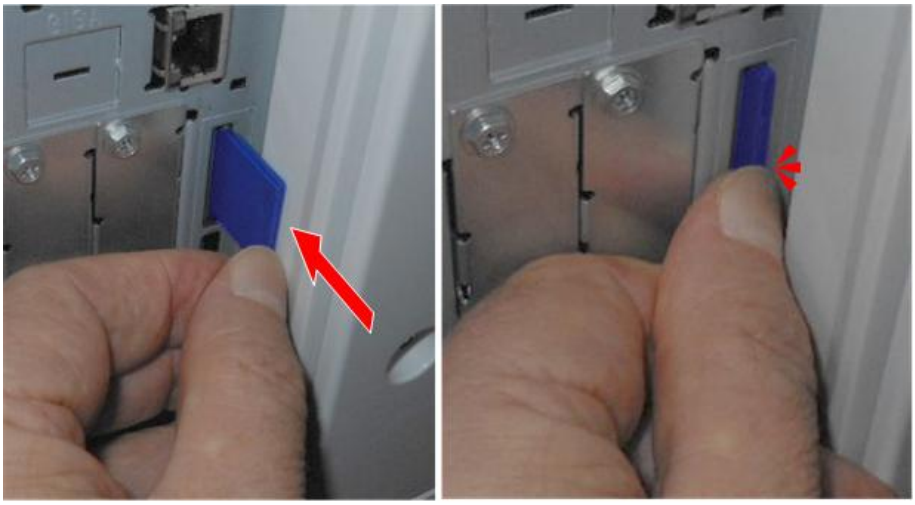
2.33.2 INSTALLATION

1. Switch the machine off.
2. Remove the SD card slot cover.



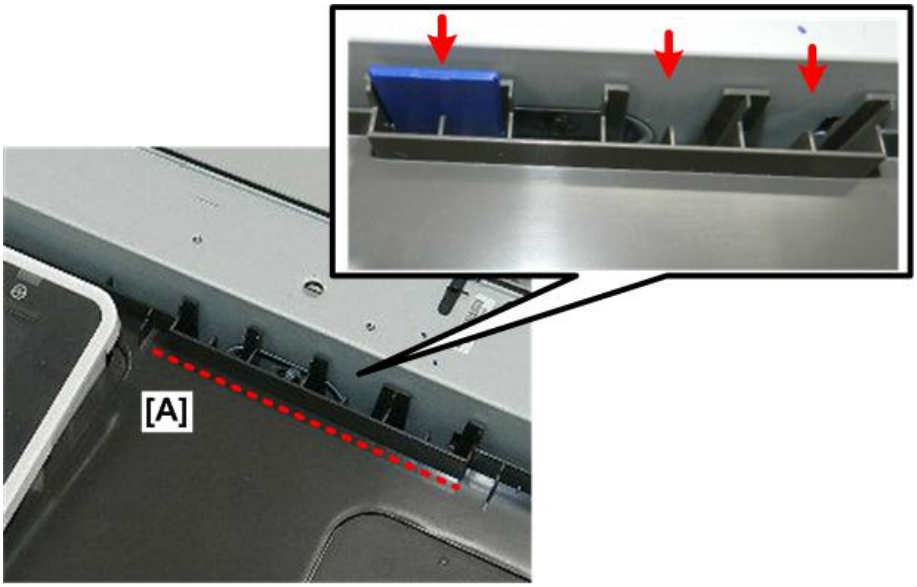
x1 sdcc0001

3. Set the SD card with it is label facing the front of the machine, and then push it in until it clicks.



sdcc0002

4. Switch the machine on.
5. Print an SMC report to confirm that the machine recognizes the option.
6. Re-attach the SD card slot cover.
7. Attach the Adobe PostScript3 decal to the front of the machine.
8. If application has been moved to another SD card, store the original card under the operation panel at [A]. (The original SD card is the client's only proof of purchase.) page 2-287



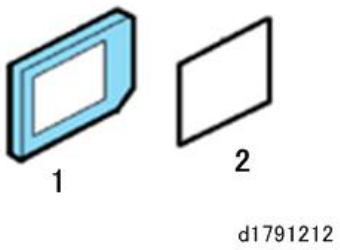
d223c2001

2.34 IPDS UNIT TYPE M25

Check the quantity and condition of the accessories in the box against the following list and diagram.

2.34.1 ACCESSORIES

No	Description	Q'ty
1	IPDS Emulation SD Card	1
2	Decal	1

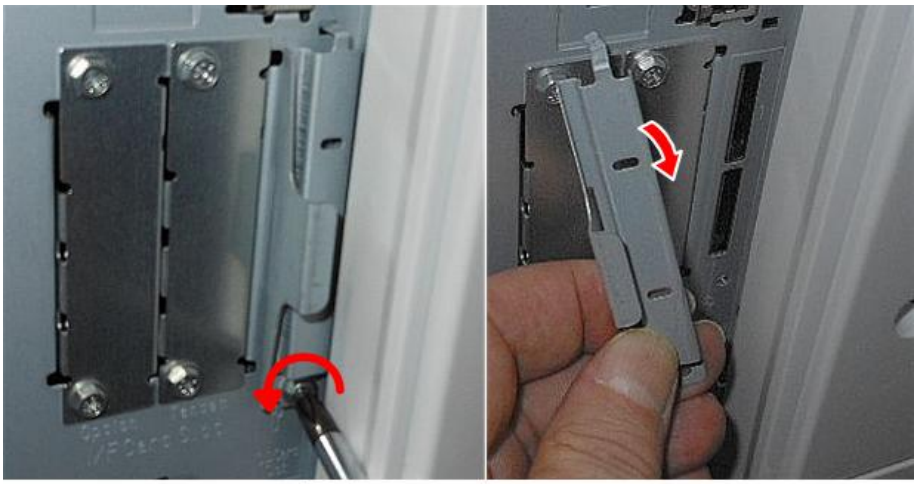


2.34.2 INSTALLATION

⚠WARNING

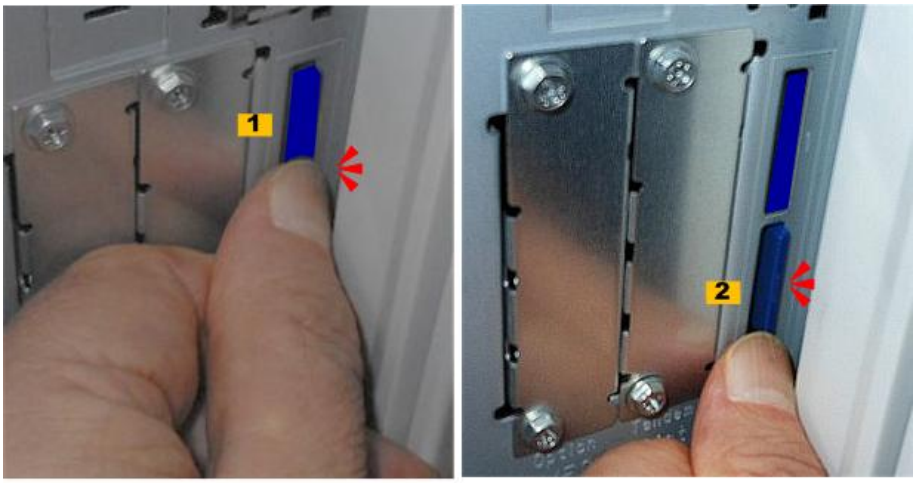
- Unplug the main machine power cord before you do the following procedure.

1. Remove the SD card slot cover.



x1 sdcc0001

2. Insert the target SD card into Slot 1 [1] with its label facing the front of the machine.
3. Insert the IPDS SD card into Slot 2 [2] with its label facing the front of the machine.



sdcc0006

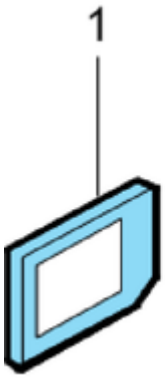
4. Perform the SD Card Appli Move with **SP5873-001**.
5. After the application move is finished, remove the SD card from Slot 2
6. Turn on the machine.
7. Make sure that the machine recognizes the option:
   [User Tools] > Printer Features > List/Test Print > Configuration Page
8. Attach the decal to the left side of the Adobe PDF decal on the right door.

2.35 XPS DIRECT PRINT OPTION TYPE M25 D3D4

Check the quantity and condition of the accessories in the box against the following list and diagram.

2.35.1 ACCESSORIES

No	Description	Q'ty
1	SD Card	1



d595i900b

2.35.2 INSTALLATION

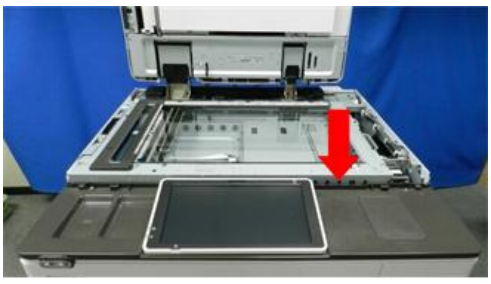
1. Remove SD card slot cover [A].

2. Insert the XPS card in Slot 1.

Note

- If another card is in Slot 1, do Move Execute to move the content of the XPS card to the card in Slot 1. page 2-284

3. After doing the merge, remove the SD card from Slot 2 and store it. page 2-287



4. The card in Slot 1 must remain in Slot 1.

2.36 DATA OVERWRITE SECURITY UNIT TYPE M19 (D3BS)

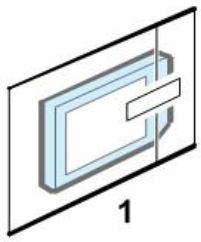
2.36.1 OVERVIEW

This option should be installed only for the customer who requires the CC certified Data Overwrite Security function. The function of this option is completely the same as the Data Overwrite Security in Security Functions, which is standard on this machine.

2.36.2 COMPONENT LIST

Check the quantity and condition of the accessories in the box against the following list.

No.	Description	Q'ty
1.	SD Card	1



d1791217

2.36.3 BEFORE YOU BEGIN THE PROCEDURE

1. Confirm that the Data Overwrite Security unit SD card is the correct type for the machine. The correct type for this machine is "**Type M19"**.

   Important

   - If you install any version other than "**Type M19"**, you have to replace the NVRAM and do this installation procedure again.

2. Make sure that the following settings are not at their factory default values:
   - Supervisor login password
   - Administrator login name
   - Administrator login password

   If any of these settings is at a factory default value, tell the customer these settings must be changed before you do the installation procedure.

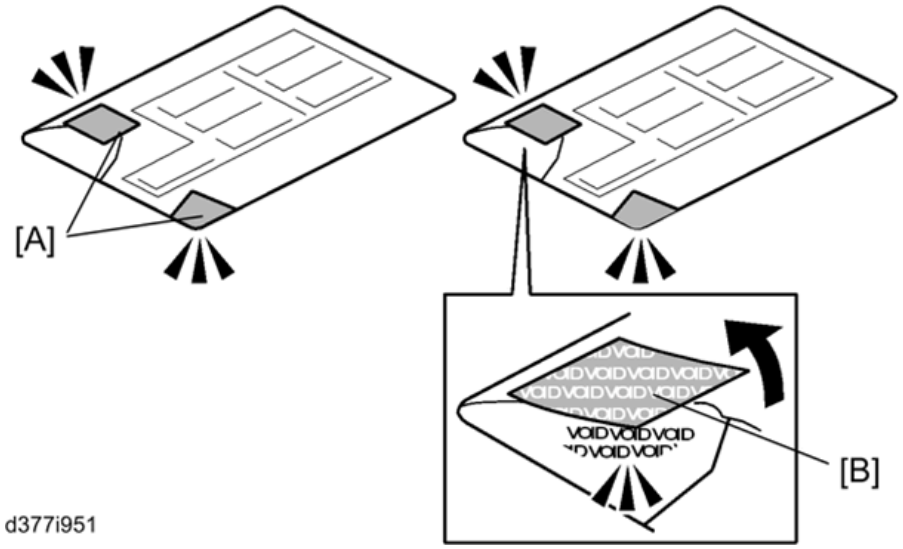
3. Make sure that “Admin. Authentication” is ON.
   [System Settings] > [Administrator Tools] > [Administrator Authentication Management] > [Admin. Authentication]
   If this setting is OFF, tell the customer this setting must be ON before you do the installation procedure.
4. Make sure that “Administrator Tools” is enabled (selected).
   [System Settings] > [Administrator Tools] > [Administrator Authentication Management] > [Available Settings]
   If this setting is disabled (not selected), tell the customer this setting must be enabled (selected) before you do the installation procedure.

Seal Check and Removal

⚠CAUTION

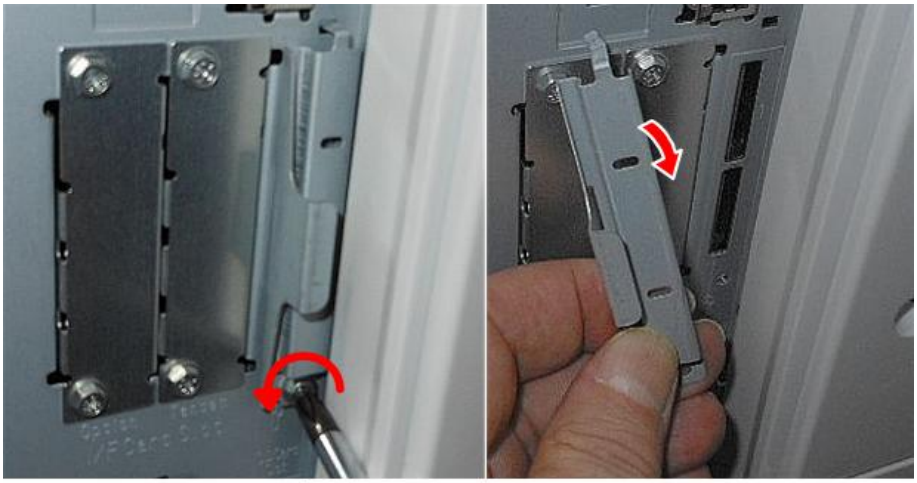
- Before doing the installation, you must check the box seals to make sure that they have not been removed after the items were sealed in the box at the factory.

1. Check the box seals [A] on each corner of the box.
   - Make sure that a tape is attached to each corner.
   - The surfaces of the tapes must be blank.
   - If you see “VOID” on the tapes, do not install the components in the box.
2. If the surfaces of the tapes do not show “VOID”, remove them from the corners of the box.
3. You can see the “VOID” marks [B] when you remove each seal. After removal they cannot be attached to the box again.



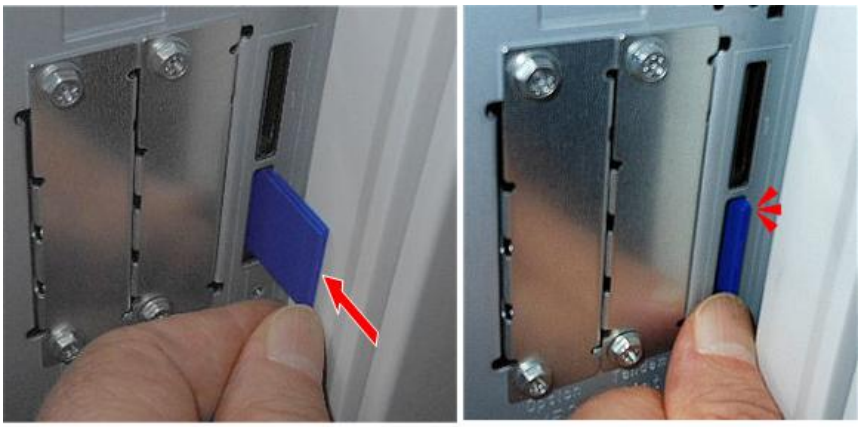
2.36.4 INSTALLATION PROCEDURE

1. Turn the main power OFF.
2. Remove the SD card slot cover (×1)



x1 sdcc0001

3. Insert the SD card into SD Slot 1 with its label facing the front of the machine.
4. Push it slowly until you hear a click.



sdcc0003

5. Do **SP5-878-001** to install the application.

2.37 AFTER INSTALLATION CHECK

2.37.1 SAFETY CHECK

Check the following points after installing the machine, or after moving or transporting it to a new location. Consult with the operator before making or scheduling any changes. Determine which changes should be done by the client and those that should be done by the service technician.

2.37.2 CHECK LIST

The answer should be “Yes” for each item in the table. As each task is accomplished initial the “Client” or “CE” for whoever confirmed the point.

No.	Item	Done by:	
		Client	CE
	Excessive Vibration		
1	Floor strong enough to prevent vibration?		
2	Machine located away from vibrating floors, machinery?		
	Power		
3	Power supply point dedicated for the machine and not shared with other devices?		
4	Cable and connection point capacity rated correctly for the requirements of the machine?		
5	Power cable connection point stable and not loose?		
6	Power connection point clean, free of dust?		
7	Power cord connection point close to the machine so it can be reached quickly in an emergency?		
8	Power cord away from foot traffic, not bundled or under other equipment?		
9	Power cord slack and free (not taut or bundled) and free of damage?		

No.	Item	Done by:	
		Client	CE
10	Power source rated correctly for machine specifications, and initial display does not flicker after power on?		
11	Is machine grounded properly?		
	Setup Location		
12	Machine located away from space heaters, heating ducts, humidifiers?		
13	Ambient temperature stable and not subject to wide range of low/high temperatures which could cause condensation in the machine?		
14	Machine located away from direct sunlight and open windows (protected from dust, rain)?		
15	No televisions, radios near the machine which could cause noise interference?		
16	Area around machine and power point free of dust?		
17	Bulk of machine located away from heavy foot traffic at the work site?		
	Ventilation		
18	Is the machine in a well-ventilated area?		
19	Is there sufficient space behind the machine for ventilation, away from personnel?		
	Other		
20	Are the exposure glass and contact glass free of nicks and scratches?		
21	Are the areas around moving parts of finishers (shift trays, etc.) free of obstacles that could interfere with their operation?		

2.38 SECURITY SETTING

2.38.1 SECURITY FUNCTION INSTALLATION

The machine contains two security functions: Data Overwrite Security and HDD Encryption. Both are built-into the firmware on the controller board.

- If you are installing a new machine, and the user wants to use these security functions, you must log in as the System Administrator and activate Data Overwrite Security and HDD Encryption by selecting "**Format All Data**" from “System Settings” on the operation panel. Formatting the HDD is recommended because there is no user data on the hard drive yet (Address Book data, image data, etc.).
- If the customer needs to activate the Data Overwrite Security and HDD Encryption unit on a machine that is already running (valuable data is already on the HDD), activate the unit by selecting "**All Data**" from “System Settings” on the operation panel. Selecting "**All Data**" will preserve the data that has already been saved to the HDD. If there is data on the HDD and "**Format All Data**" is selected, all user data saved to the HDD up to that point will be erased.

Please keep these points in mind when setting up these security featuers:

- Encryption setup will take several minutes to complete.
- If encryption is enabled after data has been stored on the HDD, or of the encryption key is changed, this process can take up to three and a half hours or more.
- The machine cannot be operated while data is being encrypted.
- Once the encryption process begins, it cannot be stopped.
- Never allow the machine to shut down while the encryption setup is in progress.
- If the machine loses power while the encryption setup is in progress, the HDD will be damaged and all data on it will be unusable.

Important

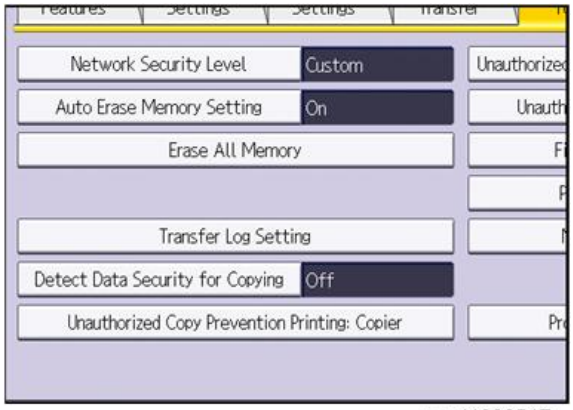
- Print the encryption key and then store it in a safe place. If the encryption key is lost, the controller board, HDD and NVRAM on the controller board must all be replaced at the same time.

2.38.2 DATA OVERWRITE SECURITY

Using Auto Erase Memory

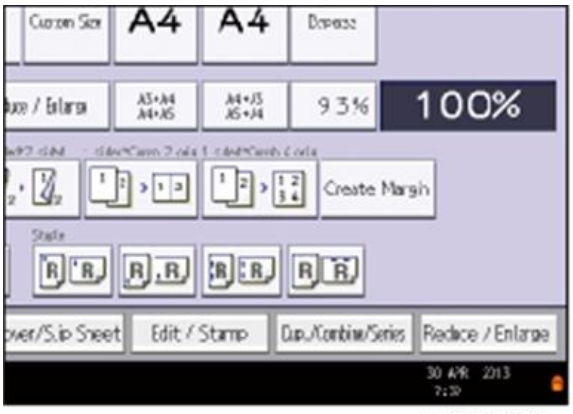
The Auto Erase Memory function can be enabled by the following procedure.

1. Log in as the machine administrator from the control panel.
2. Press [System Settings].
3. Press [Administrator Tools].
4. Press [Next] three times.
5. Press [Auto Erase Memory Setting].



w_d1822517

6. Press [On].
7. Select the method of overwriting.
   - If you select [NSA] or [DoD], proceed to step 10.
   - If you select [Random Numbers], proceed to step 8.
8. Press [Change].
9. Enter the number of times that you want to overwrite using the number keys, and then press [#].
10. Press [OK]. Auto Erase Memory is set.
11. Log out.
12. Check the display and make sure that the overwrite erase icon appears.
13. Check the overwrite erase icon at the bottom right corner of the screen.



w_d1822516

	Icon 1	This icon is lit when there is temporary data to be overwritten, and blinks during overwriting.
	Icon 2	This icon is lit when there is no temporary data to be overwritten.

2.38.3 HDD ENCRYPTION

Before You Begin the Procedure:

1. Make sure that the following settings (1) to (3) are not at the factory default settings.
   (1) Supervisor login password
   (2) Administrator login name
   (3) Administrator login password
   If any of these settings is at a factory default value, tell the customer these settings must be changed before you do the installation procedure.
2. Confirm that "Admin. Authentication" is on: > > User Tools> Machine Features> System Settings> Administrator Tools > Administrator Authentication Management > Admin. Authentication > On
   If this setting is off, tell the customer that this setting must be on before you can do the installation procedure.
3. Confirm that "Administrator Tools" is selected and enabled.
   > > User Tools> Machine Features> System Settings> Administrator Tools> Administrator Authentication Management> Available Settings
   "Available Settings" is not displayed until step 2 is done.
   If this setting is not selected, tell the customer that this setting must be selected before you can do the installation procedure.

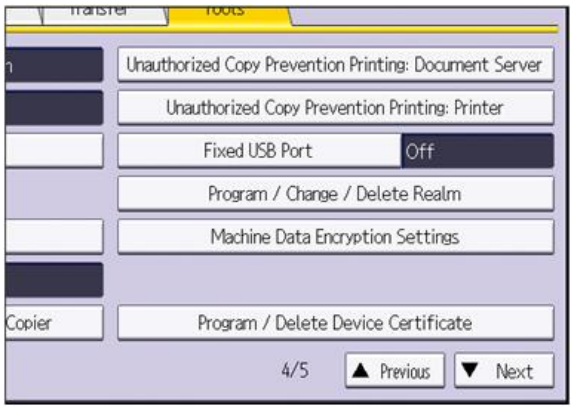
Enable Encryption Setting

Machine Data Encryption Settings can be enabled by the following procedure.

Important

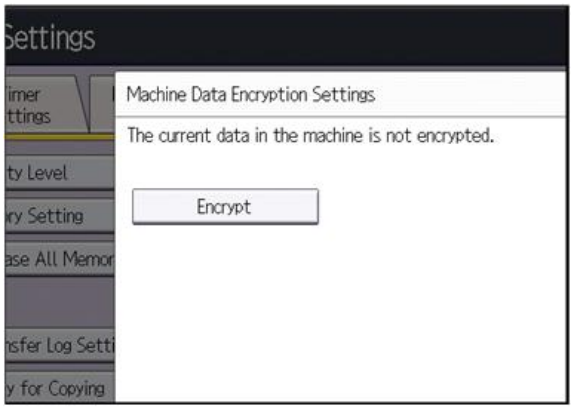
- When setting up encryption, specify whether to start encryption after deleting data (initialize) or encrypt and retain existing data. If data is retained, it may take some time to encrypt it.

1. Turn on the main power.
2. Log in as the machine administrator from the control panel.
3. Press [System Settings].
4. Press [Administrator Tools].
5. Press [Next] three times.
6. Press [Machine Data Encryption Settings].



w_d1822518

7. Press [Encrypt].



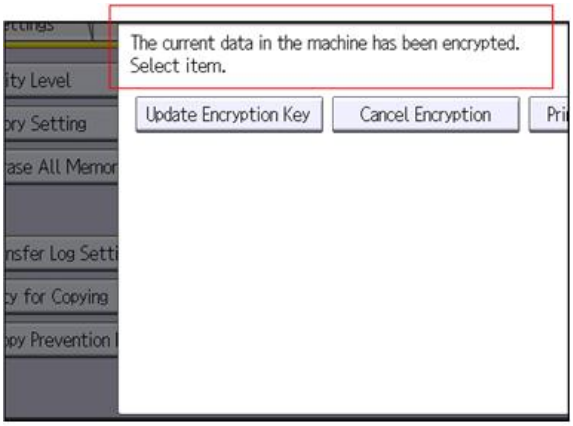
w_d1822519

8. Select the data to be carried over to the HDD and not be reset.
   To carry all of the data over to the HDD, select [All Data].
   To carry over only the machine settings data, select [File System Data Only].
   To reset all of the data, select [Format All Data].

9. Select the backup method.
   If you have selected [Save to SD Card], load an SD card into the media slot on the side of the control panel and press [OK] to back up the machine's data encryption key.
   If you have selected [Print on Paper], press the [Start] key. Print out the machine's data encryption key.
10. Press [OK].
11. Press [Exit].
12. Press [Exit].
13. Log out.
14. Turn off the main power, and then turn the main power back on.
    The machine will start to convert the data on the memory after you turn on the machine. Wait until the message "Memory conversion complete. Turn the main power switch off." appears, and then turn the main power off again.

Check the Encryption Settings

1. > > User Tools> Machine Features
2. Press [System Settings].
3. Press [Administrator Tools].
4. Press [Machine Data Encryption Settings].
5. Confirm whether the encryption has been completed or not on this display.



w_d1822520

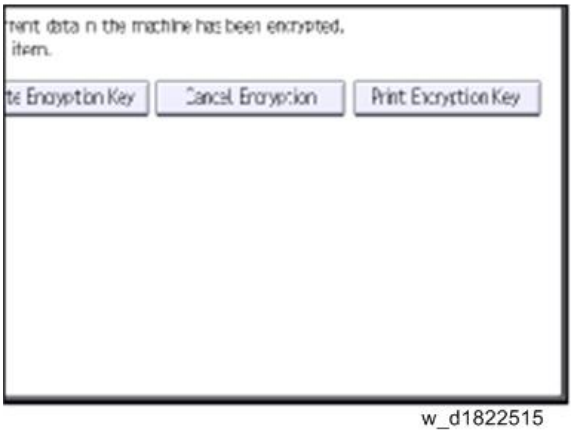
Backing Up the Encryption Key

The encryption key can be backed up. Select whether to save it to an SD card or to print it.

Important

- The encryption key is required for data recovery if the machine malfunctions. Be sure to store the encryption key safely for retrieving backup data.

1. Log in as the machine administrator from the control panel.
2. Press [System Settings].
3. Press [Administrator Tools].
4. Press [Next] three times.
5. Press [Machine Data Encryption Settings].
6. Press [Print Encryption Key].



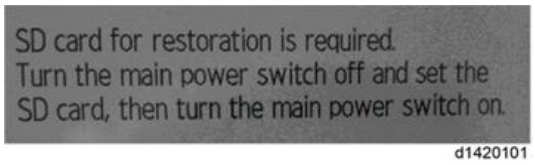
w_d1822515

7. Select the backup method.
   If you have selected [Save to SD Card], load an SD card into the media slot on the side of the control panel and press [OK]; once the machine's data encryption key is backed up, press [Exit].
   If you have selected [Print on Paper], press the [Start] key. Print out the machine's data encryption key.
8. Press [Exit].
9. Log out.

Encryption Key Restoration

How to restore the old encryption key to the machine

The following message appears after the controller board is replaced. In such a case, it is necessary to restore the encryption key to the new controller board.



To do this, follow the procedure below.

1. Prepare an SD card that has been initialized in FAT16 format.
2. Using a PC, create a folder in the SD card and name it "restore_key".
3. Create a folder in the “restore_key” folder and name it the same as machine’s serial number, “xxxxxxxxxx” (11 digits).
4. Create a text file called "key_xxxxxxxxxxx.txt" and save it in the "xxxxxxxxxxx“ folder. Write the encryption key in the text file.
   /restore_key/xxxxxxxxxxx/key_xxxxxxxxxxx.txt

   Note

   - Ask an Administrator to enter the encryption key. The key has already been printed out by the user and may have been saved in the "key_xxxxxxxxxxx.txt" file. (The function of back-up the encryption key to the SD card directly is provided 11A products or later.)
5. Turn ON the machine’s main power.
6. Confirm that a message is displayed on the LCD telling to insert the SD card that contains the encryption key.
7. Turn OFF the main power.
8. Insert the SD card that contains the encryption key into SD card slot 2 (the lower slot).
9. Turn ON the main power.

   Note

   - The machine will automatically restore the encryption key to the flash memory on the controller board.
10. Turn OFF the main power when the machine has returned to normal status.
11. Remove the SD card from SD card slot 2.

How to do a forced start up with no encryption key

If the encryption key back-up has been lost, follow the procedure below to do a forced start-up.

Important

- The HDD will be formatted after the forced start-up.
- Encrypted data will be deleted.
- User settings will be cleared.

1. Prepare an SD card.
2. Create a directory named “restore_key” inside the root directory of the SD card. Then, save the “nvram_key.txt” file using the following name:
   /restore_key/nvram_key.txt
3. Create a text file and write "nvclear".

   Important

   - Write this string at the head of the file.
   - Use all lower-case letters.
   - Do not use quotation marks or blank spaces.
   - It is judged that a forced start has been selected when the content of "nvclear" is executed and the machine shifts to the alternate system (forced start).
4. Confirm that a message is displayed on the LCD telling to insert the SD card that contains the encryption key.
5. Turn OFF the main power.
6. Insert the SD card that contains the encryption key into SD card slot 2 (the lower slot).
7. Turn ON the main power switch, the machine automatically clear the HDD encryption.
8. Turn OFF the main power when the machine has returned to normal status.
9. Remove the SD card from SD card Slot 2.
10. Turn ON the main power.
11. Memory clear SP5-801-xx (Exclude SP-5-801-001: All Clear and SP-5-801-002: Engine), and clear SP5-846-046: address book.
12. Set necessary user settings in User Tools menus.

2.39 @REMOTE SETTINGS

Note

- Prepare and check the following check points before you visit the customer site. For details, ask the @Remote key person.

Check points before making @Remote settings

1. The setting of SP5816-201 in the mainframe must be "0".
2. Print the SMC with SP5990-002 and then check if a device ID2 (SP5811-003) must be correctly programmed.
   - 6 spaces must be put between the 3-digit prefix and the following 8-digit number (e.g. xxx_____xxxxxxxx).
   - ID2 (SP5811-003) and the serial number (SP5811-001) must be the same (e.g. ID2: A01_____23456789 = serial No. A0123456789)
3. The following settings must be correctly programmed.
   - Proxy server IP address (SP5816-063)
   - Proxy server Port number (SP5816-064)
   - Proxy User ID (SP5816-065)
   - Proxy Password (SP5816-066)
4. Get a Request Number

Execute the @Remote Settings

1. Enter the SP mode.
2. Input the Request number which you have obtained from @Remote Center GUI, and then enter [OK] with SP5816-202.
3. Confirm the Request number, and then click [EXECUTE] with SP5816-203.
4. Check the confirmation result with SP5816-204.

Value	Meaning	Solution/ Workaround
0	Succeeded	-
3	Communication error (proxy enabled)	Check the network condition.
4	Communication error (proxy disabled)	Check the network condition.
5	Proxy error (authentication error)	Check Proxy user name and password.
6	Communication error	Check the network condition.

Value	Meaning	Solution/ Workaround
8	Other error	See "SP5816-208 Error Codes" below this.
9	Request number confirmation executing	Processing… Please wait.
11	Already registered	-
12	Parameter error	-
20	Dial-up authentication error	These errors occur only in the modems that support @Remote.
21	Answer tone detection error	
22	Carrier detection error	
23	Invalid setting value (modem)	
24	Low power supply current	
25	unplugged modem	
26	Busy line	

5. Make sure that the screen displays the Location Information with SP5816-205 only when it has been input at the Center GUI.
6. Click [EXECUTE] to execute the registration with SP5816-206.

7. Check the registration result with SP5816-207.

Value	Meaning	Solution/ Workaround
0	Succeeded	-
1	Request number error	Check the request number again.
2	Already registered	Check the registration status.
3	Communication error (proxy enabled)	Check the network condition.
4	Communication error (proxy disabled)	Check the network condition.
5	Proxy error (Authentication error)	Check Proxy user name and password.
8	Other error	See "SP5816-208 Error Codes" below this.
9	Request number confirmation executing	Processing… Please wait.
11	Already registered	-
12	Parameter error	-
20	Dial-up authentication error	These errors occur only in the modems that support @Remote.
21	Answer tone detection error	
22	Carrier detection error	
23	Invalid setting value (modem)	
24	Low power supply current	
25	unplugged modem	
26	Busy line	

8. Exit the SP mode.

SP5816-208 Error Codes: Caused by Operation Error, Incorrect Setting

Code	Meaning	Solution/ Workaround
-12002	Inquiry, registration attempted without acquiring Request No.	Obtain a Request Number before attempting the Inquiry or Registration.
-12003	Attempted registration without execution of a confirmation and no previous registration.	Perform Confirmation before attempting the Registration.
-12004	Attempted setting with illegal entries for certification and ID2.	Check ID2 of the mainframe.
-12005	@Remote communication is prohibited. The device has an Embedded RC gate-related problem.	Make sure that "Remote Service" in User Tools is set to "Do not prohibit".
-12006	A confirmation request was made after the confirmation had been already completed.	Execute registration.
-12007	The request number used at registration was different from the one used at confirmation.	Check Request No.
-12008	Update certification failed because mainframe was in use.	Check the mainframe condition. If the mainframe is in use, try again later.
-12009	The ID2 in the NVRAM does not match the ID2 in the individual certification.	Check ID2 of the mainframe.
-12010	The certification area is not initialized.	Initialize the certification area.

Error Caused by Response from GW URL

Code	Meaning	Solution/ Workaround
-2385	Other error	
-2387	Not supported at the Service Center	
-2389	Database out of service	
-2390	Program out of service	
-2391	Two registrations for the same mainframe	Check the registration condition of the mainframe
-2392	Parameter error	
-2393	External RCG not managed	
-2394	Mainframe not managed	
-2395	Box ID for external RCG is illegal.	
-2396	Mainframe ID for external RCG is illegal.	
-2397	Incorrect ID2 format	Check the ID2 of the mainframe.
-2398	Incorrect request number format	Check the Request No.

2.40 USER INSTRUCTIONS

2.40.1 OPERATION GUIDANCE FOR USERS

Function/Operation	Instruction to provide
Basic machine functions, operations	▪ How to load the toner bottle ▪ How to load paper and other consumables/supplies ▪ How to turn the main power switch ON/OFF ▪ How to clear paper jams ▪ How to program, modify, and delete Address Book entries ▪ How to customize the UI and home screen ▪ Overview of machine options/peripherals ▪ How to take the proper action for SC errors (clearing the error, contacting service and support, etc.), how to interpret @Remote notifications ▪ Setting up ARFU (Auto Remote Firmware Update). ▪ Important notes to keep in mind whenever moving the machine ▪ Product limitations
Copier	▪ Basic Copier operations ▪ How to load an original in the ARDF or place it on the exposure glass for scanning ▪ How to use thick paper and other specialized paper/media ▪ How to configure the Copier main screen (duplex/simplex, auto color selection, User Codes, etc.) ▪ Basic Document Server operations
Fax (when installed)	▪ How to send a fax (Memory Transmission, Direct Transmission)
Printer (when installed)	▪ How to install printer drivers (using the recommended method) ▪ How to connect to a PC (performing the port settings) ▪ How to print out a test page ▪ Overview of various settings inside each tab in the printer driver (e.g. duplex printing)
Scanner (when installed)	▪ How to install printer drivers (using the recommended method) ▪ How to connect to a PC and perform a test scan

PREVENTIVE MAINTENANCE

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

3. PREVENTIVE MAINTENANCE

3.1 PM TABLES

The amounts mentioned (K=1,000) as the PM interval indicate the number of prints or copies unless stated otherwise. These numbers are based on the PM counter.

Symbol Key

Letter	Meaning
AN	As Necessary, or at scheduled maintenance
C	Clean
EM	Emergency Maintenance
Exp	Expected service life
I	Inspect
L	Lubricate
R	Replace

⚠WARNING

- Turn off the power switch and unplug the power cord before performing any procedure in this section. Laser beams can seriously damage the eyes.

3.1.1 MAIN MACHINE

Scanner Optics

Item	300K	AN	Note
1st, 2nd, 3rd Mirror		C	Optics cloth
Contact Glass	C	C	Damp cloth
Dust Filters		C	Blower brush
Exposure Glass	C	C	Damp cloth
Reflectors		C	Optics cloth
Scanner Guide Rails (both sides)		CL	After cleaning with alcohol, lubricate with Launa Oil.
Toner Shield Glass		C	Optics cloth

Around the Drum

Item	300K	450K	AN	Exp.	Note
Charge Corona Casing	C		C		Damp cloth
Charge Corona Grid	R			450K	Blower brush
Charge Corona Wire	R	R	C	450K	Alcohol cloth
Charge Wire Cleaning Pad	R	R		450K	
Cleaning Filter	R				Blower brush
Drum				1200K	Dirty background, distorted images. Always apply setting powder to new drum.
Dust Filter (intake)			C		Blower brush
ID Sensor	C		C		Blower brush. Do SP 3001-2 after cleaning.

Item	300K	450K	AN	Exp.	Note
Ozone Filter				450K	Blower brush
PTL	C		C		Dry cloth, PTL case
Pick-off Pawl Brackets	IC		IC		Dry cloth
Pick-off Pawls	IC		IC		Replace if damaged.
Potential Sensor	C		C		Blower brush
Quenching Lamp	C		C		Dry cloth
Transfer Entrance Stay	C		C		Damp cloth

Drum Cleaning

Item	300K	AN	Exp.	Note
Cleaning Blade	R		500K	Dry cloth
Cleaning Brush	R			Poor blade cleaning causes distorted images.
Cleaning Entrance Seal		IC		Inspect for cracks, fissures. Dry cloth
Cleaning Unit Casing	C	C		Dry cloth
Internal Dust Filter		C		Blower brush
Side Seals		C		Dry cloth
Toner Collection Bottle		C	1500K	Empty at bottle full prompt or at 1500K
Toner Pan	C	C		Dry cloth

Development Unit

Item	300K	AN	Note
Developer	R		Initialize new developer with SP2801-1 PM cycle is 350K.
Development Filter	R	I	Inspect the gaps between filter and casing after cleaning or replacement and confirm that they are tight.
Development Roller	C		Dry cloth on roller, and sleeve when developer is replaced.
Development Roller Drive Shaft	C	C	Clean with blower brush and dry cloth every time the developer is replaced.
Development Unit Casing	C	C	Dry cloth
Entrance Seal	C	C	Blower brush, dry cloth
Paddle Roller Shaft*1	C	C	Blower brush, dry cloth.
Pressure Release Duct	IC		Remove toner collected inside duct
Side Seals	C	C	Blower brush, dry cloth
Toner Bottle Gear	C	C	Blower brush
Toner Bottle Holder	C	C	Dry cloth
Toner Hopper	C	C	Dry cloth
Toner Trap	C	C	Dry cloth
Used Toner Separation Unit	I		

*1	Remove front knob and rear gear of development unit and inspect the shaft. After 3000K inspect every 300K. Replace shaft if toner is leaking.

Paper Feed: Main Paper Path

Item	300K	AN	Note
Registration Rollers	C		Alcohol damp cloth
Relay Rollers	C		Alcohol damp cloth
Paper Dust Mylar	C	C	Dry cloth
Registration Sensor	C		Blower brush
Relay Sensor	C		Blower brush
Bypass Paper End Sensor	C		Blower brush
Bypass Paper End Sensor	C		Blower brush
Bypass Paper Length Sensor	C		Blower brush

Paper Feed: Paper Trays

Item	300K	600K	AN	Note
Feed Rollers 1, 2, 3				See **Notes** below this table.
Grip Drive Rollers, Idle Rollers	C			Dry cloth, blower brush
Paper End Sensors 1, 2, 3	C	C		Blower brush
Paper Feed Guide Plate	C			Dry cloth
Paper Feed Sensors 1, 2, 3	C			Blower brush
Pick-up Rollers 1, 2, 3			R	See **Notes** below this table.
Separation Rollers			R	
Vertical Guide Plate	C			Dry cloth
Vertical Path Relay Sensor	C			Blower brush
Vertical Transport Rollers	C	C		Alcohol

Notes:

- Always replace pick-up, feed and separation rollers as a set.
- Increasing frequency of paper jams and double-feeds indicates that the rollers need to be replaced.

Transfer Belt Unit

	300K	450K	Exp.	Note
Discharge Plate*1	R			Dry cloth
Slide Rail Bracket*2	C			Dry cloth
Transfer Belt Unit Casing*2	C			Dry cloth
Transfer Belt*2		R	750K	Dry cloth
Transfer Bias Roller	C			Dry cloth
Transfer Cleaning Roller	R			Dry cloth
Transfer Drive Roller	C			Dry cloth
Transfer Entrance Guide Plate	C			Dry cloth
Transfer Exit Guide Plate	C			Dry cloth
Transfer Idle Roller	C			Dry cloth
Transfer Roller Cleaning Blade		R	750K	Dry cloth

*1	Always clean the transfer belt unit casing before replacing the discharge plate.
*2	Dirty backside printing and poor paper separation from the drum are signs that the transfer belt and transfer roller cleaning blade need replacement. Always replace transfer belt and transfer roller cleaning blade together.

Fusing Unit and Paper Exit

Item	By	360K	AN	Exp.	Note
Cleaning Web	S	R	R		Replace at near-end alert.
Cleaning Web Pressure Roller Bearings*[1]	S	R			Replace if fissures, deformations evident
Cleaning Web Pressure Roller*[1]	S	R			Replace roller and bushings together.
Fusing Entrance Guide Plate		C	C		Dry cloth
Fusing Exit Guide Plate		C			Dry cloth
Fusing Lamps		I			Inspect wires, connections carefully
Hot Roller		R		450K	
Hot Roller Bearings	S	R		450K	
Hot Roller Strippers*[2]	S	R		IC	
Pressure Cleaning Roller Bearings*[3]	S	R		450K	
Pressure Roller		R		450K	
Pressure Roller Bearings				450K	
Pressure Roller Cleaning Roller*[3]	S	R			
Thermistors x2*[4]		R			Inspect and clean with blower brush every 200K.

*[1]	Always replace cleaning web pressure roller and roller bearings together.
*[2]	Frequent fusing unit jams, excessive toner on prints, and pawl tracks on paper edges indicate the strippers should be replaced.

*3	Always replace pressure roller bearings when pressure roller cleaning roller is replaced.
*4	Always replace thermistors when hot roller is replaced.

Fusing Unit Paper Exit

Item	300K	AN	Note
De-Curler Rollers	C		Alcohol damp cloth
Exit Static Discharge Brush	C	R	Replace if deformed, broken
Exit Rollers	C		Alcohol damp cloth
Transport Rollers	C		Alcohol damp cloth

Duplex

Item	300K	AN	Note
Entrance Sensor	C	C	Blower brush
Inverter Exit Rollers	C		Alcohol
Reverse Trigger Rollers	C		Dry cloth
Transport Rollers	C		Dry cloth
Inverter Entrance Roller	C		Dry cloth
Entrance Anti-Static Brush	C		Dry cloth
Reverse Junction Gate	C		Dry cloth

ADF

The PM interval is for the number of originals that have been fed.

Item	120K	AN	Note
CIS exit roller		C	Alcohol damp cloth, then water damp cloth
CIS glass		C	Wipe with clean cloth and Ricoh contact glass cleaner (A1939310).
Driver rollers		C	Alcohol damp cloth, then water damp cloth
Exit roller		C	Alcohol damp cloth, then water damp cloth
Exit sensor		C	Blower brush
Feed belt*[1]	R	C	Damp cloth, water or alcohol
Interval sensor		C	Blower brush
Original size sensors		C	Blower brush
Paper drive gear		C	Blower brush
Pick-up roller*[1]	R	C	Damp cloth
Platen		C	Blower brush
Registration sensor		C	Blower brush
Relay roller		C	Lubricate with EM-50L grease for resin base material.
Scan entrance roller		C	Alcohol damp cloth, then water damp cloth
Scan exit roller		C	Alcohol damp cloth, then water damp cloth
Scan reverse side roller		C	Alcohol damp cloth, then water damp cloth
Separation roller*[1]	R	C	Damp cloth

Item	120K	AN	Note
Separation sensor		C	Blower brush
Skew correction sensor		C	Blower brush
Transport roller		C	Alcohol damp cloth, then water damp cloth
White guide plate		C	Alcohol damp cloth, then water damp cloth

*1	Pick-up roller, feed roller, and separation roller should always be replaced together as a set.

3.1.2 OPTIONAL PERIPHERAL DEVICES

LCIT 4040 (D3A6-17, -27)

	300K	450K	1000K	Exp.	Note
Pick-up Roller			R	1000	Always replace these rollers as a set. The target service life of the feed, pick-up, and separation rollers is 1000 K. However, they should be replaced sooner if the machine begins to jam or double-feed
Feed Roller			R	1000	
Separation Roller			R	1000	

Cover Interposer Tray CI4040 (DC3N) (for 2K/3K Finishers)

The cover interposer tray can be used with the Finisher SR4120 (D3CG), or Booklet Finisher SR4130 (D3CH). The interposer tray is installed between the main machine and the finisher.

Note: The PM interval is for the number of sheets that have been fed.

	60K	120K	180K	Exp.	Note
Feed Belt	R	R	R		Replace as a set.
Pick-up Roller	R	R	R		
Separation Roller	R	R	R		
Driver Rollers	C	C	C		Damp clean cloth.
Idle Rollers	C	C	C		Damp clean cloth.
Discharge Brush	C	C	C		Damp clean cloth.
Sensors	C	C	C		Blower brush.

Cover Interposer Tray CI4030 (D3D7)

The cover interposer tray is used with the Finisher SR4080 (D610). The interposer tray is installed between the main machine and the finisher.

Note: The PM interval is for the number of sheets that have been fed.

	60K	120K	180K	Exp.	Note
Feed Belt	R	R	R		Replace as a set.
Pick-up Roller	R	R	R		
Separation Roller	R	R	R		
Driver Rollers	C	C	C		Damp clean cloth.
Idle Rollers	C	C	C		Damp clean cloth.
Discharge Brush	C	C	C		Damp clean cloth.
Sensors	C	C	C		Blower brush.

Finisher SR4080 (D610)

	350K	700K	1050K	Exp.	Note
Drive rollers	I	I	I		Alcohol
Idle rollers	I	I	I		
Discharge brush	I	I	I		
Bushings	I	I	I		Lubricate with silicone oil if noisy.
Sensors	I	I	I		Blow brush.
Jogger fences	I	I	I		Make sure screws are tight.
Staple waste hopper	C	C	C		Empty staple waste.

Finisher SR4120 (D3CG), Booklet Finisher SR4130 (D3CH)

	300K	500K	1000K	3000K	Exp.	Note
Drive Rollers		C				Damp cloth, dry cloth
Idle Rollers		C				Damp cloth, dry cloth
Anti-Static Brush		C				Dry cloth
Roller Shafts		C				Lubricate bushings with silicone oil, other bushings with Launa oil.
Sensors		C				Blower brush
Corner Stapler				R	3000K	Print an SMC report with SP5990. Replace the unit if the staple count is 500K.
Booklet Stapler			R		1000K	Print an SMC report with SP5990. Replace the unit if the staple count is 200K.
Positioning Roller				R	3000K	This is a sponge roller.

Punch Unit Type PU3060 (D706)

This punch unit is installed in the Finisher SR4120 (D3CG), Booklet Finisher SR4130 (D3CH).

	2400K	3000K	4000K	EM	Note
Punch Waste Hopper	I	I	I	I	Remove and empty
Punch Unit				C	Replace after 1000k punches.

Multi Folding Unit FD4000 (D615)

Part	PM Visit	Notes
Rollers (drive, idle rollers)	I/C	Alcohol, clean cloth
Anti-static brush	I/C	
Shafts	I/C	Lubricate with silicone oil if noisy.
Sensors	I/C	Blower brush
Positioning roller	I/C	Inspect for scratches or nicks
Fold rollers (1st, 2nd, 3rd)	I/C	Alcohol, clean cloth
Crease rollers (drive, idle roller)	I/C	

Related SP Codes

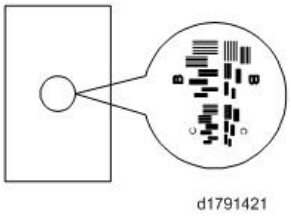
This is a list of the PM related SP codes.

SP7803	PM Counter Display	Displays the PM count since the last PM.
SP7804	PM Counter Reset	Resets the PM count.

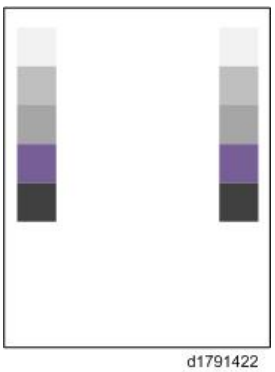
3.2 IMAGE QUALITY TABLES

3.2.1 CHECKING IMAGE QUALITY

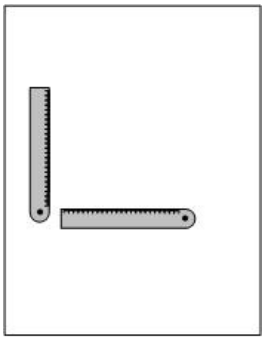
Resolution

Standard	1:1/Enlargement:	4.5 lines/mm or more
	Reduction:	4.5 x M or more mag.
What You Need	S-2-1 Chart	
Method	 d1791421 Resolution measured after copying in Text Mode at AE5 notch with Normal Paper	

Even Density

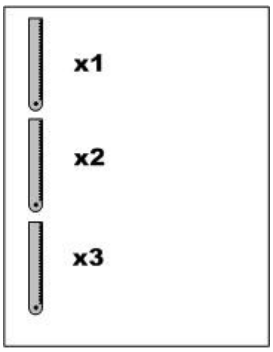
Standard	Left, right grayscale within 0.1 at 0.2 to 0.6
What You Need	S-2-1 Chart
Method	 d1791422 Right, left density measured after copying in Text Mode at AE5 notch with Normal Paper.

Magnification Errors

Standards	1:1	Main scan: <±0.5%, Sub scan: <±0.8%
	Magnification	Main scan: <±1.0%, Sub scan: <±1.0%
What You Need	150 mm scale	
Method	 d1791423 1. Set two scales on the exposure glass, and then copy them. 2. Wait at least 10 min. after the paper exits. 3. Measure 100 mm on the copied images with the actual scale.	

Magnification Error Variation

Standard	1:1/Mag.: Sub scan (horizontal, vertical) less than 1.0%
What You Need	150 mm scale

Method	 d1791424 1. Place three 150 mm scales on the exposure glass, and then copy them. 2. Wait at least 3 min. after the paper exits. 3. Use a scale to measure 100 mm against each scale image (x1, x2, x3) on the paper. 4. Determine the maximum and minimum deviation (%) from the standard. 5. Calculate the difference between the maximum and minimum deviation. Notes ▪ For example, if the three measurements of the scales are 100.4 mm, 99.5 mm, 100.2 mm, then the difference between the maximum and minimum values is 0.9 mm (100.4 – 99.5). ▪ Set the scales in the main scan direction (horizontal), copy them, and then use the same method to determine the variation ▪ For best results, using at least three scales is recommended. ▪ If you have only one scale, then you can make three copies with the scale at different positions. ▪ Please remember that line speed may vary slightly depending on the number of copies in a job.

3.3 PAPER TRANSFER QUALITY STANDARDS

3.3.1 REGISTRATION

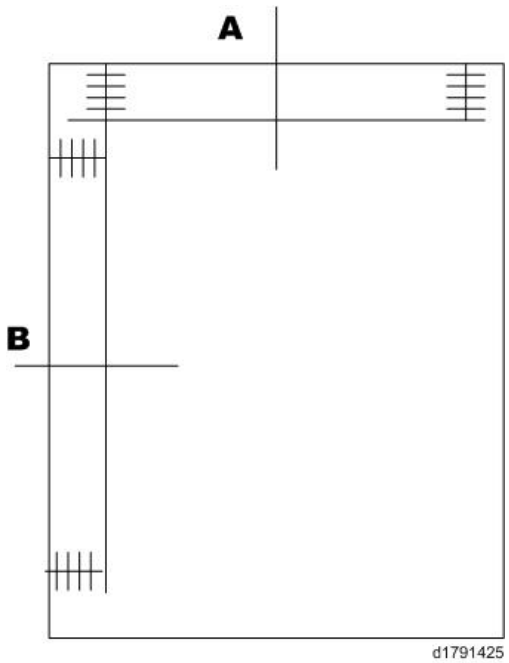
Standard: Main Machine

Simplex	Engine	Sub scan 0±0.5 mm
	Copy	Sub scan 0±1.5 mm
Duplex	Engine	Sub scan 0±0.5 mm
	Copy	Sub scan 0±1.5 mm

Standard: Main Machine + ADF

		Copy Paper (40 to 128 g/m^2)	
		Front Side	**Reverse Side**
Plotter		0±0.5 mm	0±0.5 mm
With ADF			
Front A3 to A5	Main scan 0±1.0 mm	0±2.5 mm	0±2.5 mm
	Sub scan 0±2.0 mm	0±1.5 mm	0±1.5 mm
Reverse A3 to A5	Main scan 0±3.0 mm	0±3.5 mm	0±3.5 mm
	Sub scan 0±1.0 mm	0±1.5 mm	0±1.5 mm

What You Need	S-2-1 Chart, 150 mm scale

Method	 1. Make a 1:1 copy of the S-2-1 chart with normal paper. 2. Use the scale to measure the registration marks at the leading edge. 3. The range is vertical registration A: 5 mm, and horizontal registration B: 4 mm for the front side.

3.3.2 SKEW

Standard: Main Machine

	Function	Specification	Feed Length
Simplex	Engine	Less than 0±0.5 mm/200 mm	More than 270 mm
		Less than 0±0.5 mm/100 mm	Up to 279 mm
	Copy	Less than 0±1.0 mm/200 mm	More than 270 mm
		Less than 0±1.0 mm/100 mm	Up to 279 mm
Duplex	Engine	Less than 0±0.5 mm/200 mm	More than 270 mm
		Less than 0±0.5 mm/100 mm	Up to 279 mm
	Copy	Less than 0±1.0 mm/200 mm	More than 270 mm
		Less than 0±1.0 mm/100 mm	Up to 279 mm

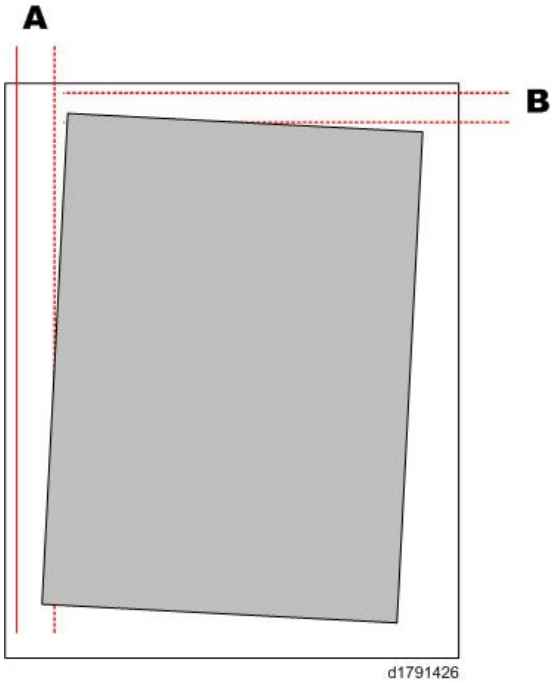
Standard: Main Machine + ADF

Plotter Copy Paper (40 to 128 g/m^2)

Front Side (mm)		Reverse Side (mm)	
More than 279	**Up to 279**	**More than 279**	**Up to 279**
±0.5 mm/200	±0.5 mm/100	±0.5 mm/200	±0.5 mm/100

ADF: Copy Paper (40 to 128 g/m^2)

	Front Side (mm)			Reverse Side (mm)	
Front	Main scan: ±1.5 mm/200 mm	±2.0/200	±2.5/200	±2.0/200	±2.5/200
	Sub scan: ±1.0 mm/200 mm	±1.5/200	±2.0/200	±1.5/200	±2.0/200
Reverse	Main scan: ±2.0 mm/200 mm	2.5/200	3.0/200	2.5/200	3.0/200

What You Need	S-2-1 Chart, 150 mm scale
Method	 1. Make a 1:1 copy of the S-2-1 chart with normal paper. 2. Use the scale to measure the left and right registration marks at the leading edge.

3.3.3 LCIT

Registration	Leading edge registration	0±2 mm (±1 mm variation per job)
	Horizontal registration	0±2 mm
Skew	A4 SEF, LT SEF and larger	0±1/200 mm
	B5 SEF and smaller	0±1/100 mm

3.3.4 COVER INTERPOSER TRAY

Horizontal registration	0±2 mm	
Skew	A4 LEF, B5 LEF	0±0.63/100 mm
	A3, B4	0±0.83/100 mm

3.4 PM PARTS SETTINGS

3.4.1 BEFORE REMOVING OLD PM PARTS

1. Enter the SP mode.
2. Output the SMC logging data with **SP5990-004**.
3. Press the PM parts counter reset button in the PM Parts display before you turn the power off.
4. Exit the SP mode.

Important

- After the PM count for the fusing cleaning web and the drum lubricant bar expire, the machine stops automatically.
- After replacing developer, the count is cleared by executing **SP3024-001** (Developer Filling), so there is no need to perform a counter clear.

3.4.2 AFTER INSTALLING NEW PM PARTS

1. Turn on the main power switch. The machine will reset the PM counts automatically and initialize default SP code settings.
2. Check the "Initial Adjustment SP Lists". Refer to this list if any SP must be set manually after a part replacement.
3. Output the SMC logging data with **SP5990-004** and check the counter values.
4. Make sure that the PM counters for the replaced parts are "0" in the PM parts display. If the PM counter for a unit has not been reset to zero, reset that counter again.

REPLACEMENT AND ADJUSTMENT

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

4. REPLACEMENT AND ADJUSTMENT

4.1 POWER SWITCH

4.1.1 PUSH SWITCH

The power button of this machine has been changed to a push-button switch from the conventional rocker switch. The push switch has characteristics and specifications different from the rocker switch. Care must be taken when replacing and adjusting parts.

Characteristics of the Push Switch (DC Switch)

1. **Power is supplied to the machine even when the main power switch is turned OFF.**
   The push switch in this machine uses DC (direct current). Therefore, if the AC power cord is connected to an electrical outlet, power is supplied to the controller board, the operation unit and other modules even when the main power is turned OFF. When replacing the controller board and the operation unit in this state, not only these boards, it will damage other electrical components.
   In 100V models, only one of the AC lines for the fusing unit is shut off when you turn off the main power; the other line carries current even when you turn off the main power switch.
   So, when performing maintenance work such as replacing parts, in addition to turning off the main power with the push switch, always unplug the AC power cord.
2. **When you disconnect the power cord from the AC wall outlet, inside the machine there is still residual charge.**
   When you disconnect the power cord from the AC wall outlet, inside the machine for a while there is still residual charge. Therefore, if you remove boards in this state, it can cause a blown fuse or memory failure.
   In order to discharge this residual charge inside the machine after you unplug the power cord from the AC wall outlet, press the main power switch. The residual charge in the machine is discharged, so it is safe to remove the boards.
3. **When you reconnect the AC power cord into an AC wall outlet, the machine will start automatically.**
   In order to remove the residual charge, push the main power switch while you disconnect the AC power cord. At that time, the power ON flag inside the machine is set. Therefore, after you finish work on the machine and reconnect the power cord to the AC, even if you do not press the main power switch, the machine will start automatically and the moving parts will begin to move.

⚠CAUTION

- When working on moving parts, be careful that fingers or clothes do not get caught.

Note

- Automatic restart deals with cases when you accidentally unplugged the AC power cord or unexpected power outages. By keeping the power flag ON, after the resumption of power, the machine will start up automatically.

In rare cases, when you reconnect the AC power cord to a power outlet, the machine does not start automatically. In this case, the machine has not failed. The cause is due to the timing of releasing the residual charge. If you press the main power switch while the residual charge was already released, the power ON flag will not be set. At this time, start the machine manually by pressing the main power switch.

Shutdown Method

1. Press the main power switch [A] on the front of the machine.

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2. Take out the power cord
3. Wait 3 minutes (this is the time required if you will remove the rear cover and access the interior of the machine, to take out the controller board for example).
4. After you remove the rear covers, if you see any PCB LEDs flashing, this means there is residual current on the boards, wait until the LEDs go off.

   When the shutdown is complete:

   Main power LED: Off

   Operation panel LED: Off

Important

- How to start from shutdown
- To start the machine, press the main power switch. However, if you press the main power switch between the beginning and the end of a shutdown, the machine will not start.

Forced Shutdown

In case normal shutdown does not complete for some reason, the machine has a forced shutdown function.

To execute a forced shutdown, press and hold the main power switch for 6 seconds.

Important

- Forced shutdown may damage the hard disk and memory, and can cause damage to the machine.
- Do forced shutdown only if it is unavoidable.

4.2 BEFORE YOU BEGIN

⚠WARNING

- Before servicing the machine, always turn the machine off and disconnect the power cord.
- After replacing parts, make sure that all removed harnesses are connected again and secured in their clamps.

⚠CAUTION

- Never turn off the machine while the machine is operating.
- If the machine is switched off during operation, the transfer belt, drum, or development unit could be damaged when it is removed or reinstalled.

4.2.1 GENERAL PRECAUTIONS

Drum

An organic photoconductor (OPC) drum is more sensitive to light and ammonia gas than a selenium drum. Follow the cautions below when handling an OPC drum.

1. Never expose the drum to direct sunlight.
2. Never expose the drum to direct light of more than 1,000 Lux for more than a minute.
3. Never touch the drum surface with bare hands. When the drum surface is touched with a finger or becomes dirty, wipe it with a dry cloth or clean it with wet cotton. Wipe with a dry cloth after cleaning with wet cotton.
4. Never use alcohol to clean the drum; alcohol dissolves the drum surface.
5. Store the drum in a cool, dry place away from heat.
6. Take care not to scratch the drum as the drum layer is thin and is easily damaged.
7. Never expose the drum to corrosive gases such as ammonia gas.
8. Always keep the drum in the protective sheet when keeping the drum unit, or the drum itself, out of the machine. Doing so avoids exposing it to bright light or direct sunlight, and will protect it from light fatigue.
9. Dispose of used drums in accordance with local regulations.
10. When installing a new drum, execute SP2962 (Adjustment of Drum Conditions).

Drum Unit

1. Before pulling out the drum unit, place a sheet of paper under the drum unit to catch any spilt toner.
2. Make sure that the drum unit is set in position and the drum stay is secured with the screw before the main switch is turned on.
3. If the drum unit is loose, poor contact of the drum connectors may cause electrical noise, resulting in unexpected malfunctions (RAM data change is the worst case).

4. To avoid scratching the drum, always remove the development unit before removing the drum unit.

Transfer Belt Unit

1. Never touch the transfer belt surface with bare hands.
2. Take care not to scratch the transfer belt, as the surface is easily damaged.
3. Before installing the new transfer belt, clean all the rollers and the inner part of the transfer belt with a dry cloth to prevent the belt from slipping.

Scanner Unit

1. When installing the exposure glass, make sure that the white dot is at the rear upper left corner.
2. Clean the exposure glass with alcohol or glass cleaner to reduce the amount of static electricity on the glass surface.
3. Use a cotton pad with water or a blower brush to clean the mirrors and lens.
4. Never bend or crease an exposure lamp cable.
5. Never disassemble the lens unit. Doing so will throw the lens and the copy image out of focus.
6. Never adjust any of the CCD positioning screws. These screws are paint-locked and should never be removed.

Laser Unit

1. Never loosen the screws that secure the LD drive board to the laser diode casing. Doing so would throw the LD unit out of adjustment.
2. Never adjust the variable resistors on the LD unit, as they are adjusted in the factory.
3. Never open the optical housing unit. The polygon mirror and F-theta lenses are very sensitive to dust
4. Never touch the glass surface of the polygon mirror motor unit with bare hands.
5. After replacing the LD unit, do the laser beam pitch adjustment. Otherwise, an SC condition will be generated.

Charge Corona

1. Clean the corona wires with a dry cloth. Never use sandpaper or an organic solvent.
2. Clean the charge corona casing with water first to remove NOx based compounds. Then clean it with alcohol if any toner still remains on the casing.
3. Clean the end block with a blower brush first to remove toner and paper dust. Then clean with alcohol if any toner still remains.
4. Never touch the corona wires with bare hands. Oil stains from fingers can cause uneven image density on copies.

5. Confirm that the wires are correctly installed between the cleaner pads and that there is no foreign material (iron filings, etc.) on the casing.
6. When installing new corona wires, never bend or scratch the wire surface. Doing so may cause uneven charge. Also be sure that the corona wires are correctly positioned in the end blocks.
7. Clean the grid plate with a blower brush (not with a dry cloth).
8. Never touch the charge grid plate with bare hands. Also, do not bend the charge grid plate or make any dent in it. Doing so may cause uneven charge.

Development

1. Work carefully to avoid nicking or scratching the development roller.
2. Place the development unit on a sheet of paper after removing it from the machine.
3. Never disassemble the development roller assembly. The position of the doctor plate is set with special tools and instruments at the factory to ensure the proper gap between the doctor blade and the development roller.
4. Clean the drive gears after removing used developer.
5. Dispose of used developer in accordance with local environmental laws and regulations.
6. Never load types of developer and toner into the development unit other than specified for this model. Doing so will cause poor copy quality and toner scatter.
7. Immediately after **installing new developer**, the TD sensor initial setting procedure should be done with **SP2801** (TD Sensor Initialization) to avoid damage to the machine.
8. Never do the TD sensor initial setting with used developer. Do not make any copies before doing the TD sensor initial setting.
9. When using a vacuum cleaner to clean the development unit casing, always ground the casing with your fingers to avoid damaging the toner density sensor with static electricity.
10. When replacing the TD sensor, replace the developer, then execute **SP2801** (TD Sensor Initialization) and **SP2962** (Adjustment of Drum Conditions).

Cleaning

1. When servicing the cleaning section, be careful not to damage the edge of the cleaning blade.
2. Do not touch the cleaning blade with bare hands.
3. Before disassembling the cleaning section, place a sheet of paper under it to catch any toner falling from it.

Fusing Unit

1. After installing the end thermistor, make sure that it is in contact with the hot roller.
2. Be careful not to damage the edges of the hot roller strippers or their tension springs.
3. Never touch a fusing lamp or fusing roller with bare hands.
4. Make sure that the fusing lamp is positioned correctly and that it does not touch the inner surface of the hot roller.

Paper Feed

1. Avoid touching the surfaces of the pick-up, feed, and separation rollers when replacing them.
2. To avoid paper misfeeds, the side fences and end fence of the paper tray must be positioned correctly to align with the actual paper size.

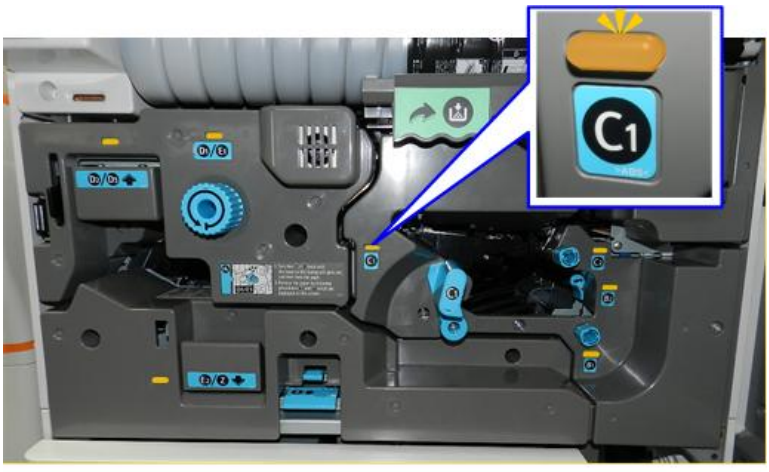
Used Toner

1. We recommend checking the amount of used toner at every EM.
2. Always dispose of used toner in accordance with local environmental lawys and regulations.
3. Used toner is flammable. Never incinerate used toner.

4.2.2 PRECAUTIONS FOR THIS MACHINE

Inner Covers

1. Each inner cover has one or more LEDs at critical locations in the paper path. An LED lights when a paper jam occurs at that location.



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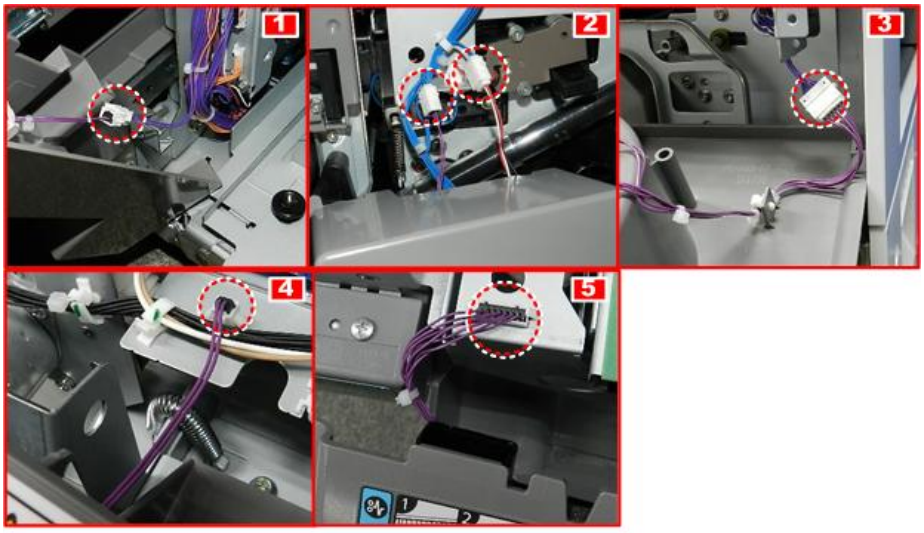
2. To avoid breaking LED connectors or harnesses, be careful about inner cover removal.
3. After the screws are removed, the cover should be pulled away partially so the LED can be disconnected before the cover is pulled away completely.



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Proximity Sensor

1. As soon as the new proximity sensor detects the presence of the operator in front of the machine, it will prepare the machine to accelerate the recovery from low power mode..

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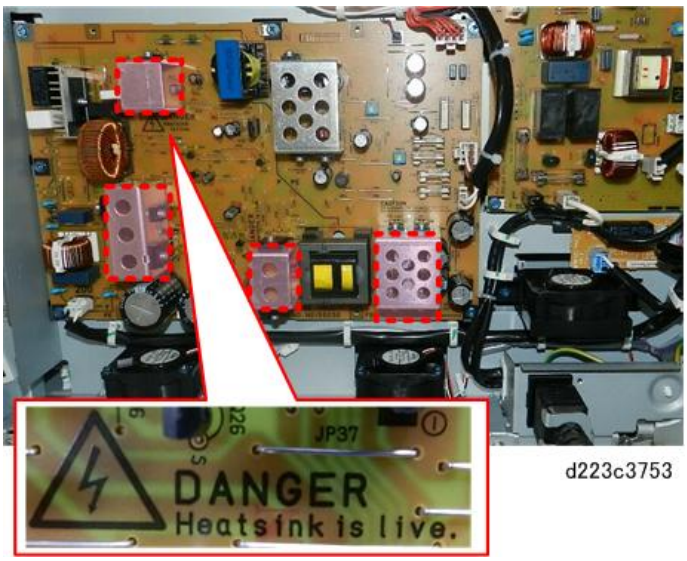
2. This sensor works on the principle of detection of body heat. The sensitivity of the detection device is affected by both ambient temperature and the amount and type of clothing worn by the operator.

PSU Precautions

1. The heat sinks and condensers on the PSU are live and labeled with warnings on the PCB not to touch them.
2. A heat sink can retain a considerable electrical charge for hours, even after the machine has been turned off.



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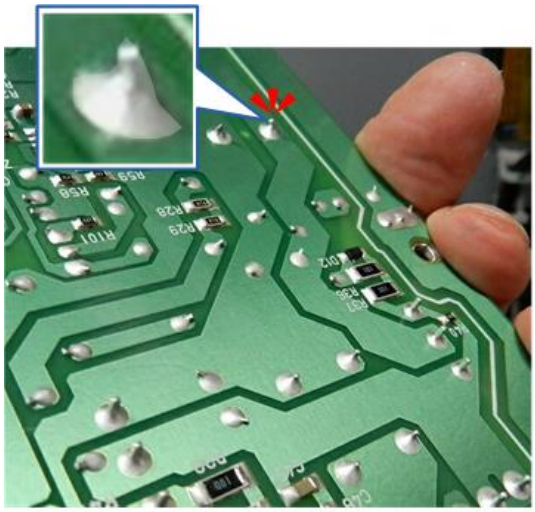
⚠DANGER

- To avoid electrical shocks, never touch **any** component on the PSU with your bare hand or a tool, especially one of the heat sinks or capacitors.
- Always keep the rear covers on the machine.
- Never leave the covers off during machine testing, or while the machine is idle during servicing.

⚠CAUTION

- To avoid personal injury, always handle the PSU by its edges.
- Never touch the back of the board.
- Some of the soldered contacts are extremely sharp and can cut or puncture your fingers if you grip the back of the board.



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Here is a summary of the amount of residual voltage on the PSU condensers after the machine is switched off and unplugged from the power source. The residual charge is designed to make the machine recover faster from the Energy Save Mode.

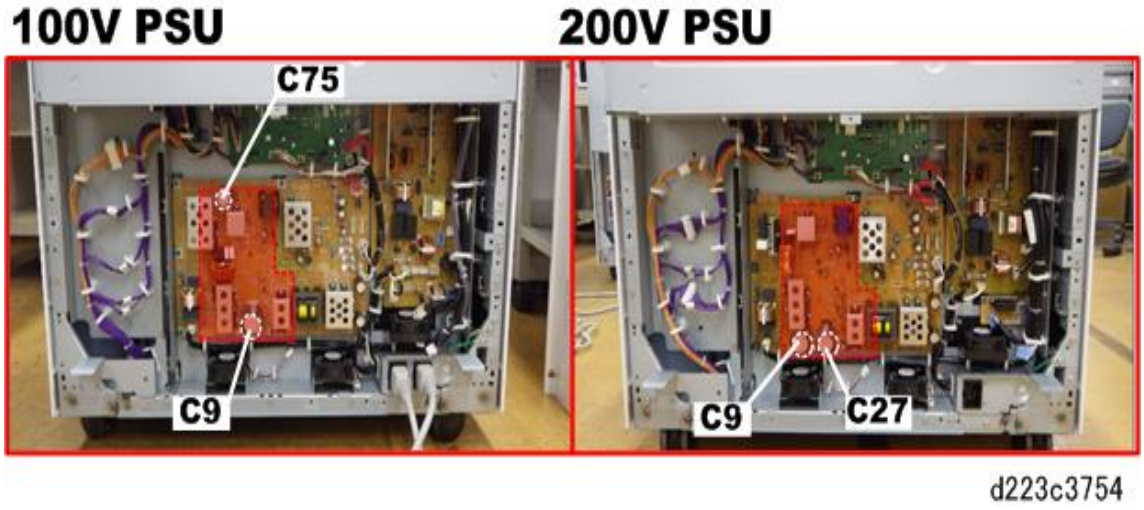
100V PSU

Address	Power Off	5 min.	10 min.	1 hr.
C9	308V	307V	307V	304V
C75	146V	146V	145V	144V

200V PSU

Address	Power Off	5 min.	10 min.	1 hr.
C9	287V	285V	284V	280V
C27	287V	285V	284V	280V

The photo below shows the danger zone, and the location and address of each condenser where residual charge remains.



4.2.3 IMPORTANT SP CODES: MACHINE INFORMATION, SERVICING

Here are quick summaries of SP codes that give you useful information about the machine, and some common SP codes you will need during maintenance.

Machine Information

Item	SP No.	Function
Auto process control	3901	Displays whether auto process control is switched on or off (Default: On)
CIS ID	4700	Reads and displays the ID of the CIS board at power on.
Drum potential after quenching (Vql)	3902-7	Displays the drum potential after quenching.
Firmware version	7801	Displays ROM number and firmware information for main machine and all other connected devices.
Fusing temperature display	1106	Displays the fusing temperature at the center and end of the hot roller, and temperature of the pressure roller.
ID sensor pattern potential	3902-6	Displays Vid, the latest drum surface voltage measured on the ID sensor pattern.
LD level	3902-5	Displays the LD power correction value as a result of the latest Vh adjustment.
Machine serial number	5811	Use this SP to display the serial number for the machine and BICU.
ROM number	7801	Displays ROM number and firmware information for main machine and all other connected devices.
SC history	7403	Displays the following information about the most recently issued SC code: Source file name, SC number, Result

Item	SP No.	Function
SMC report, print	5990	The SMC report can display all the current settings in the machine, as well as logged SC codes that do not show on the operation panel.
SMC report, text file	5992	Writes the SMC report to an SD card inserted into the SD card slot on the side of the operation panel.
Self-diagnostic	7832	Displays a list of error codes, if errors have occurred. Otherwise, nothing is displayed.
Temperature, fusing	1106	Displays the hot roller temperature at center and ends, and pressure roller temperature.
Temperature, machine	2913	Displays the internal temperature of the machine.
Vd	3902-2	Displays drum dark potential, the standard potential, electrical potential of the black areas after exposure.
Vg	3902-4	Displays the charge grid voltage resulting from the latest Vd adjustment.
Vh	3902-3	Displays standard halftone drum potential, used for laser power adjustment. Creation of the Vh pattern is turned on/off with SP2950.
Vl	3902-7	Shows the standard electrical potential of white areas on the drum after exposure.

Commonly Used During Servicing

Item	SP No.	Function
Forced toner supply	2207	Rotates the toner bottle to supply toner to the toner supply unit. Use to determine if toner supply is operating correctly. If forcing toner supply with this SP does not darken the image, then toner supply is not operating correctly.
Free run	5802	Forces the base engine to run in free run mode for testing.
Fusing SC clear	5810	Fusing unit SC errors disable the machine until the problem is corrected. Do this SP to release the machine interface for servicing.
Input check	5803	Displays the signals received from sensors and switches.
Output check	5804	Switches electrical components on/off one by one for testing.
Scanner free run	4802	Executes a scanner free run with and without the LEDs on
Test pattern printing	2902	Produces the printer test patterns.

4.3 SPECIAL TOOLS AND LUBRICANTS

4.3.1 SPECIAL TOOLS

Part No.	Description
A0069104	Scanner Positioning Pin (4 pcs./set)
A2929500	Test Chart – S5S (10 pcs./set)
A0299387	Digital Multi-meter – FLUKE 87
VSST9500	Test Chart – S5S – DF (10 Sheets/Set)
G0219350	Loop Back Connector
B6455010	SD (Secure Digital) Card – 64 MB

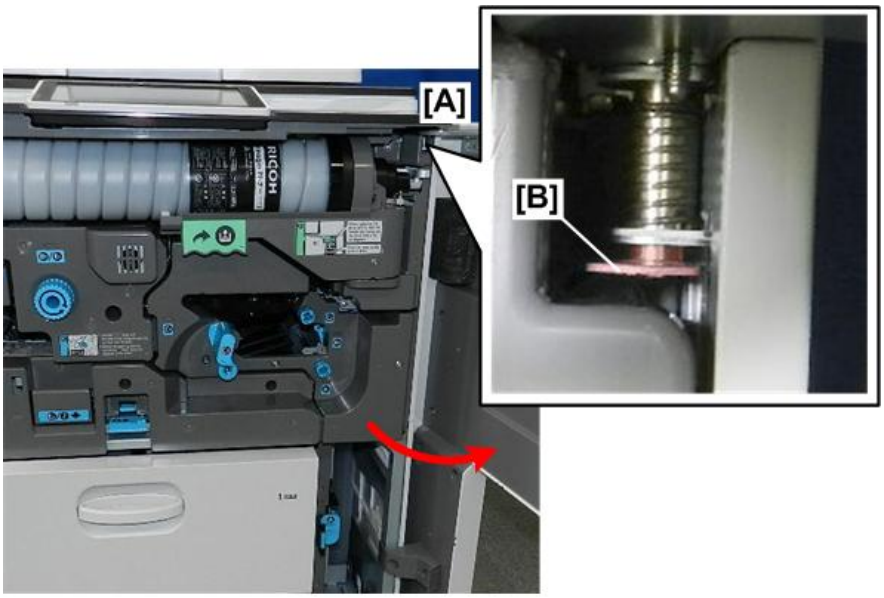
4.3.2 LUBRICANTS

Part No.	Description
A2579300	Grease Barrierta – JFE 5 5/2
52039502	Silicon Grease G-501
54429101	Setting Powder

4.4 COVERS

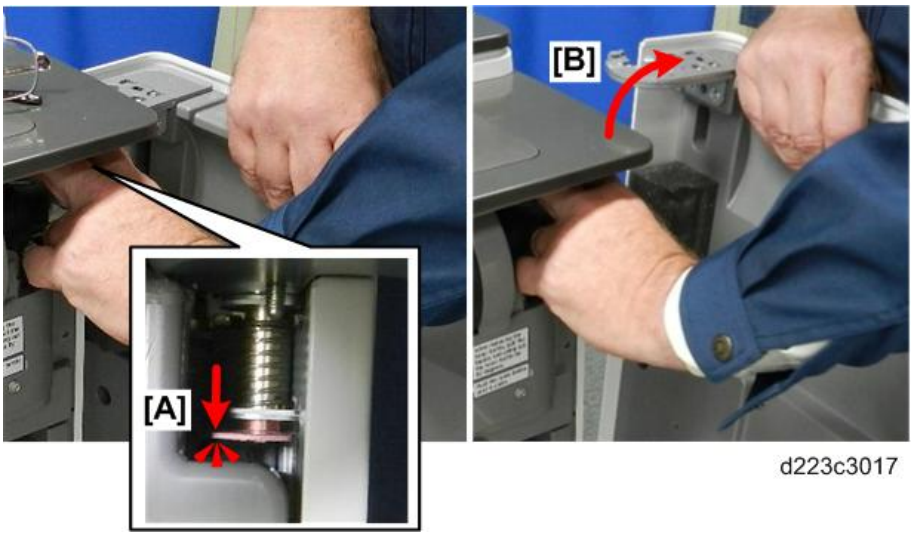
4.4.1 FRONT DOOR

1. Open the front door.
2. At [A] locate the hinge bracket plunger [B].



d223c3016

3. While supporting the door with one hand, press the hinge plunger [A] down to release the door, and then pull the door [B] slightly away from the corner of the machine.



d223c3017

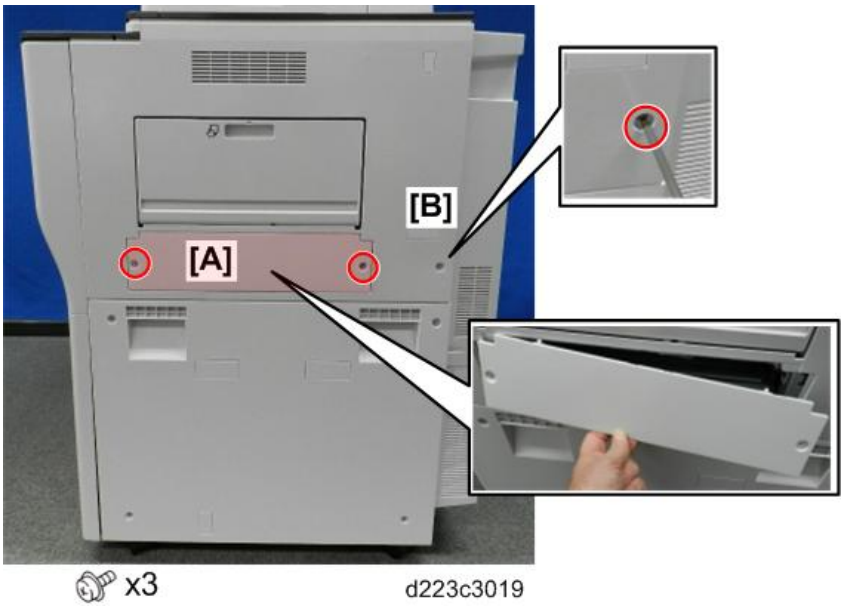
4. Disconnect the brackets at the bottom of the door and pull it away from the machine.

d223c3018

4.4.2 RIGHT COVERS

Right Upper Cover

1. Remove the LCIT entrance guide cover [A].
2. Disconnect the right upper cover [B].



d223c3019

3. Open bypass tray [A].
4. Pull the right upper cover [B] down and away from the machine.

d223c3020

5. Close the bypass tray.

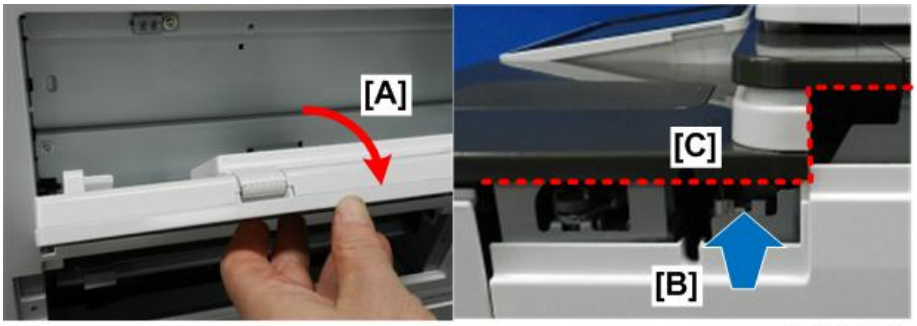
d223c3021

To re-attach right upper cover

1. First, insert the tabs at the front edge [A] and rear edge [B] of the tray into the slots of the frame.

d223c3022

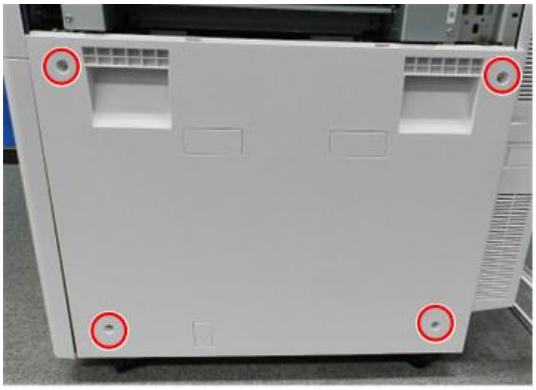
2. Open the bypass tray [A].
3. Position the cover over the bypass tray.
4. Slide the top edge of the cover [B] under the edges of the covers [C] above.



d223c3023

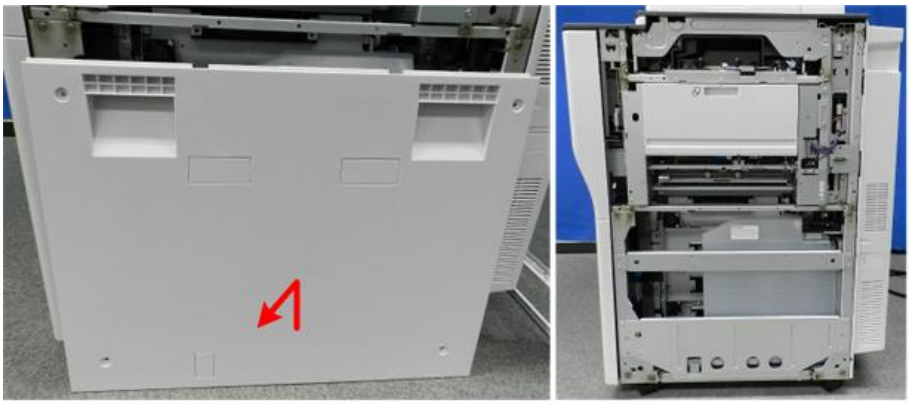
Right Lower Cover

1. Disconnect the cover.



x4 d223c3024

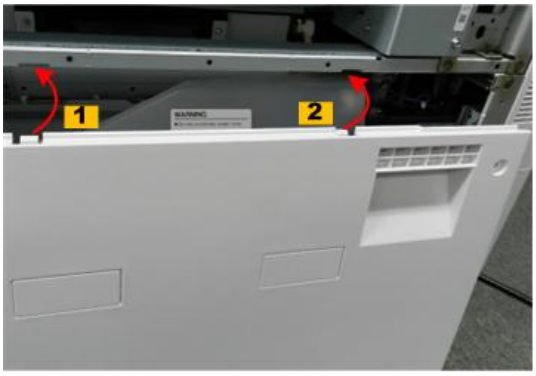
2. Lift the cover slightly and pull it away.



d223c3025

To re-attach the right lower cover

1. Insert the front tab [1] and rear tab [2] into the holes of the cross-stay, and then set the cover.



d223c3026

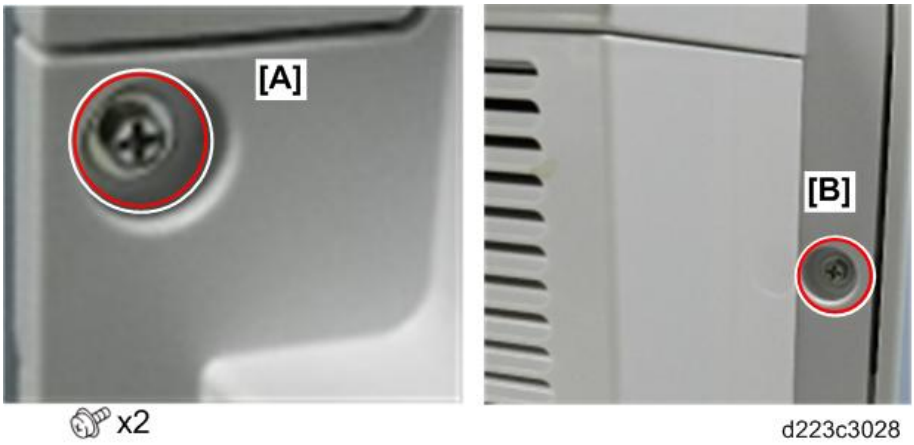
4.4.3 REAR COVERS

Rear Upper Cover

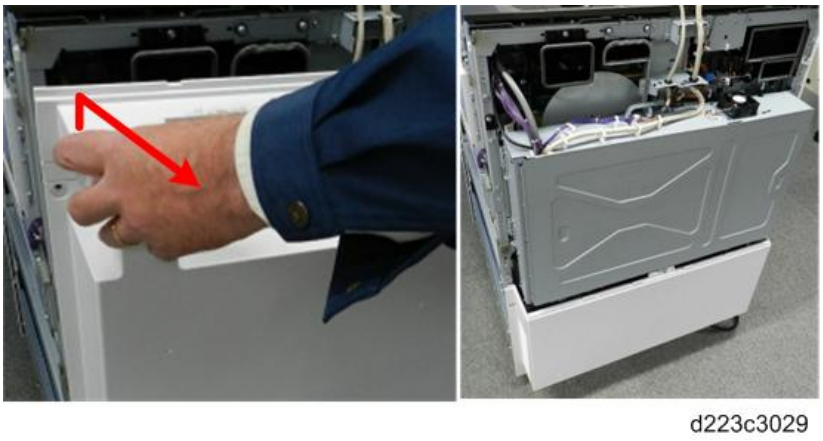
1. Locate the three shoulder screws at the bottom edge of the cover.
2. Loosen these screws slightly. Do not remove them.

x3 d223c3027

1. Disconnect the cover at the right upper corner [A] and left upper corner [B]. Remove these screws.

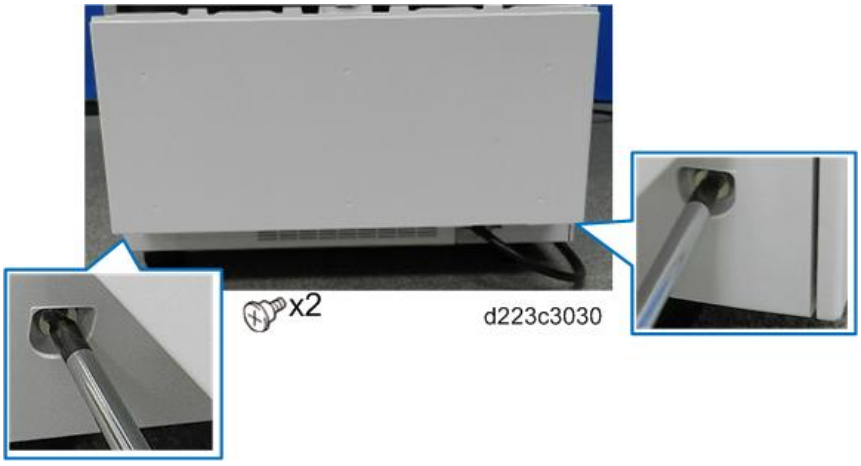


2. Pull the cover up slightly and pull it away.

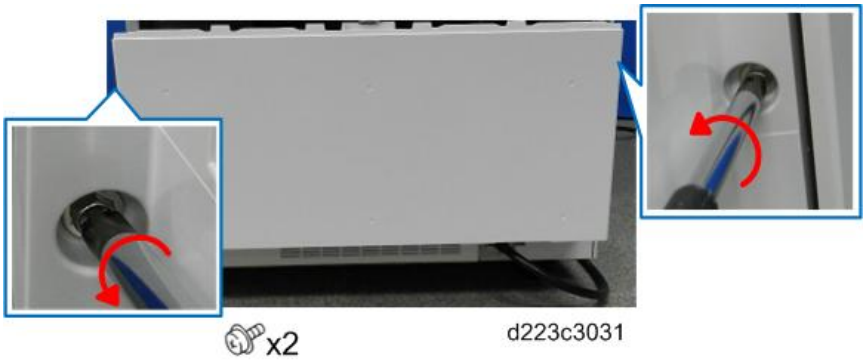


Rear Lower Cover

1. Locate the two shoulder screws at the bottom edge of the cover.
2. Loosen these screws slightly. Do not remove them.



3. Remove the screws at each upper corner of the cover.



4. Remove the cover.

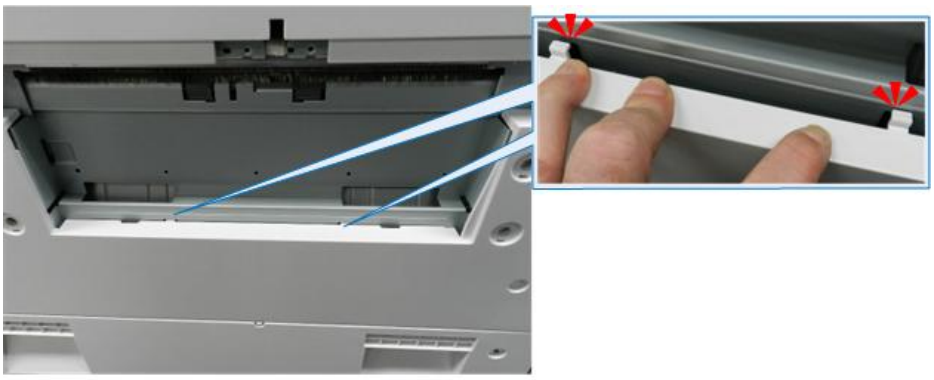
4.4.4 LEFT COVERS

Left Upper Cover

1. Remove the cover.

2. On the rear edge of the cover [A] disconnect the tab from its post.

3. Disconnect the tabs on the side.



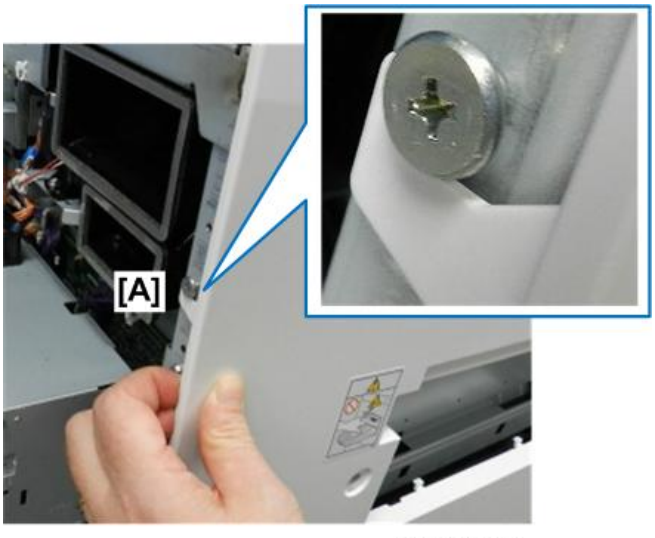
d223c3034

4. Remove the cover.

d223c3036

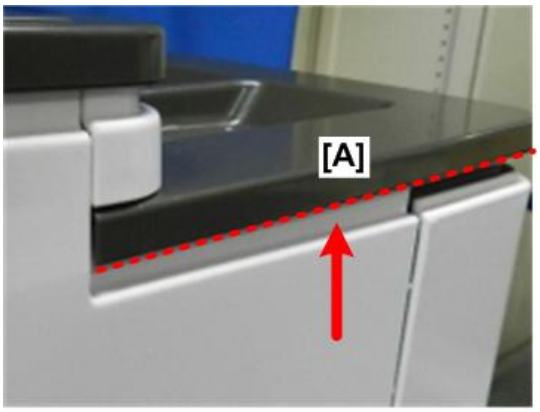
To re-attach the left upper cover:

1. First, engage the tab and post [A] at the rear edge of the cover.



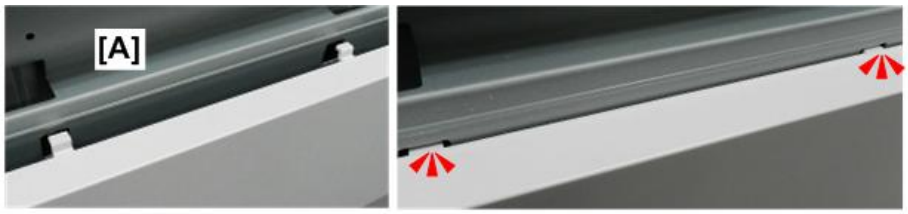
d223c3037

2. At the front, set the cover so it will slide up under the edge [A] of the covers above.



d223c3038

3. Set the tabs into knockouts on the cross-stay [A].

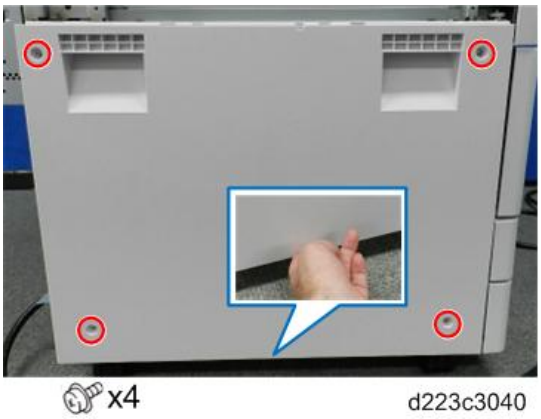


d223c3039

4. Re-attach the screws.

Left Lower Cover

1. Disconnect the cover.
2. Lift the bottom edge slightly.

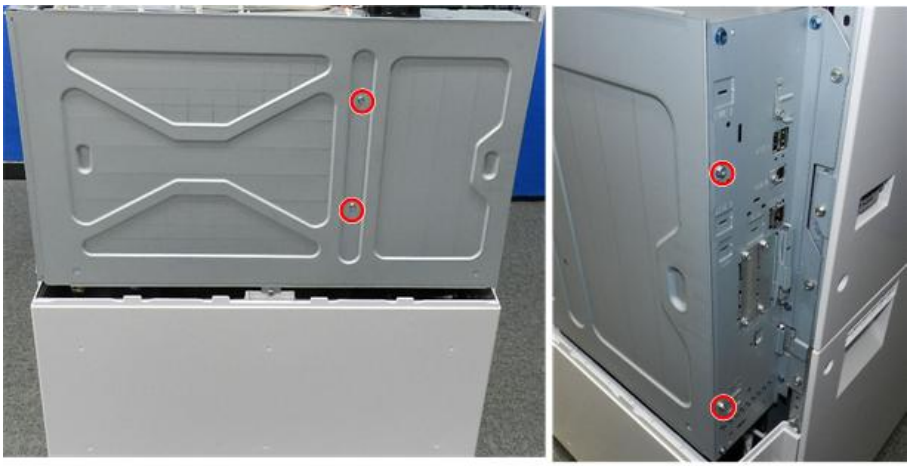


3. Pull the cover away.

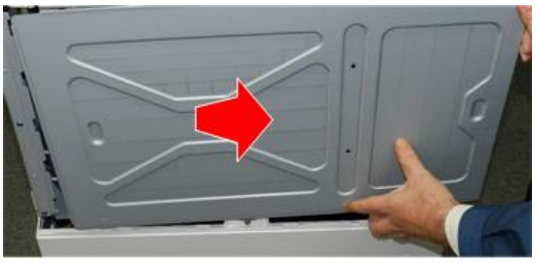
4.4.5 CONTROLLER BOX COVER PLATE

Many procedures require that you open the controller box plate so you can access the BICU, controller board, and HDD.

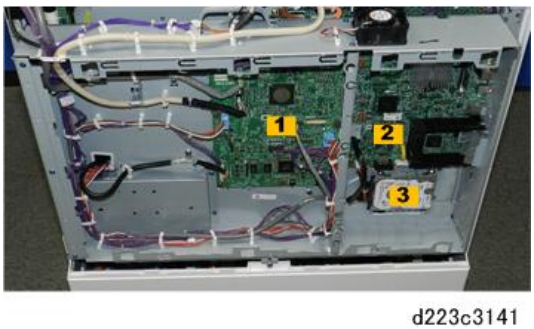
1. Remove the rear upper cover. page 4-19
2. Disconnect the controller box plate.



3. Slide the cover to the right to remove it.

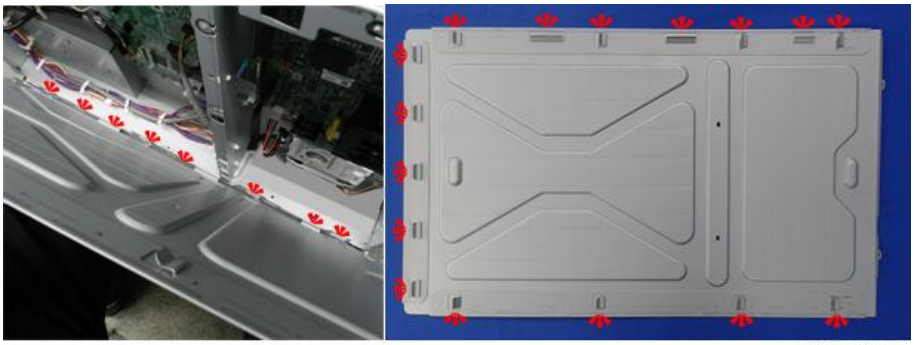


4. With the plate removed, you can see [1] BICU, [2] controller board, and [3] HDD.



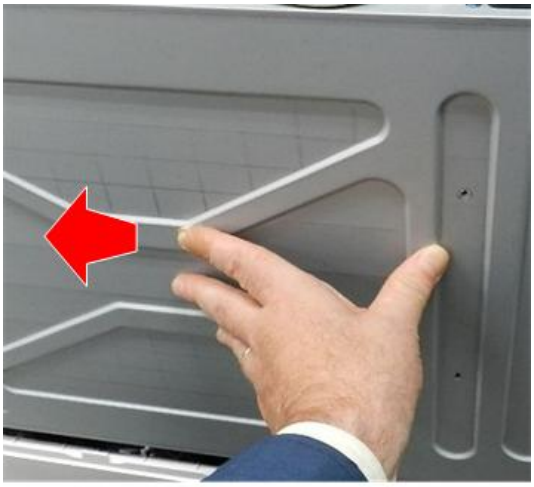
Re-assembly

1. Set the bottom edge of the cover plate on the front bottom edge of the controller box.
2. Make sure that all the metal tabs line up with their holes on the frame.



d223c3142

3. Press the plate against the box, and then slide it to the left.



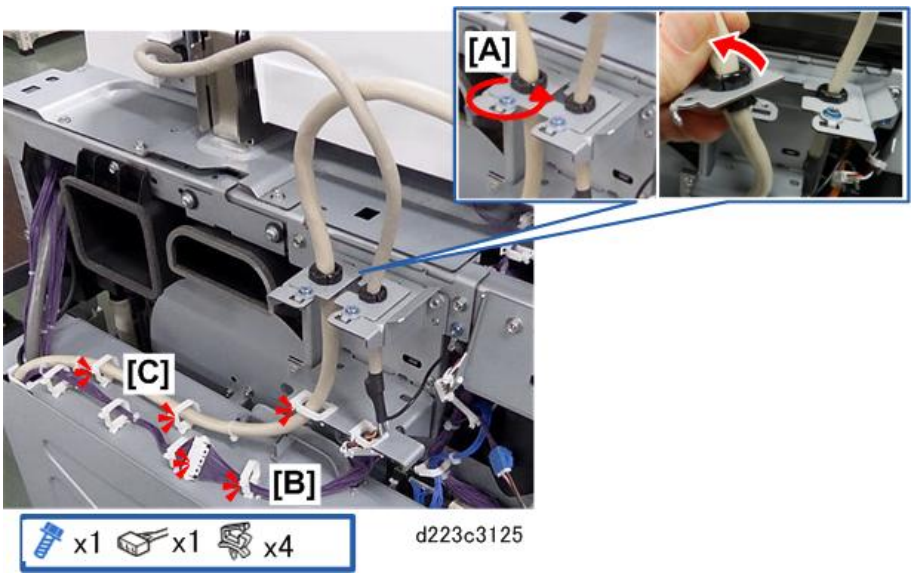
d224c3142

4. Check the tabs and make sure that they are inserted in their holes.

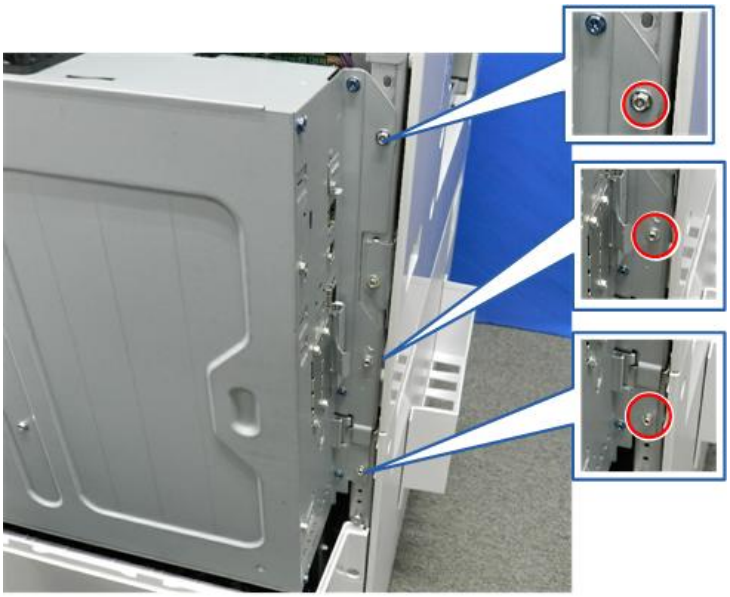
4.4.6 CONTROLLER BOX

Many procedures require that you open the controller box so you can access the back of the machine.

1. Remove the rear upper covers. page 4-19
2. Disconnect left bracket [A], and then remove bracket with I/F cable attached.
3. Disconnect harness [B] connector and clamp.
4. Free harness [C] from its clamps.



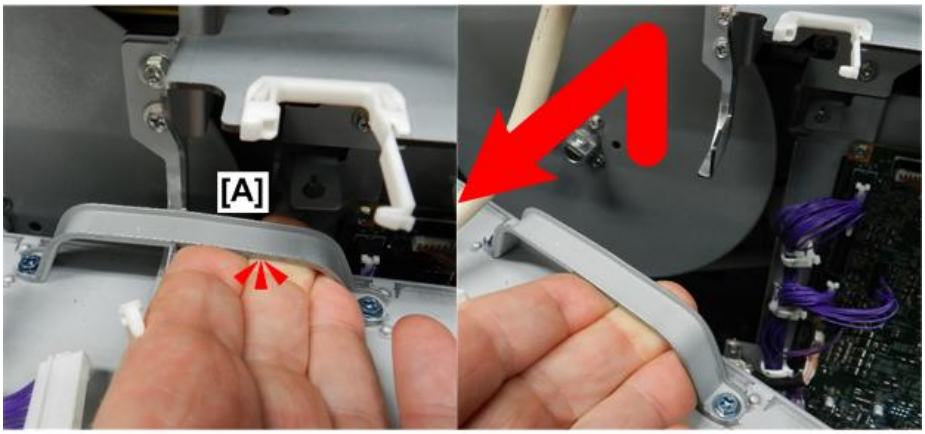
5. Disconnect the edge of the controller box.



d223c3129

x3

6. Lift the handle [A] off of its hook on top of the box, and then pull it toward you.



d223c3130

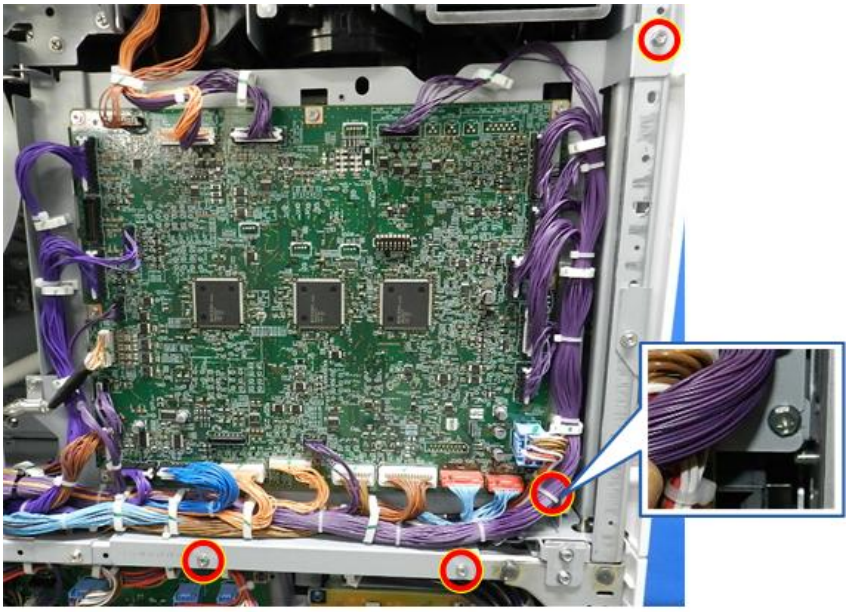
7. Swing the controller box open.

d223c3131

4.4.7 IOB BRACKET

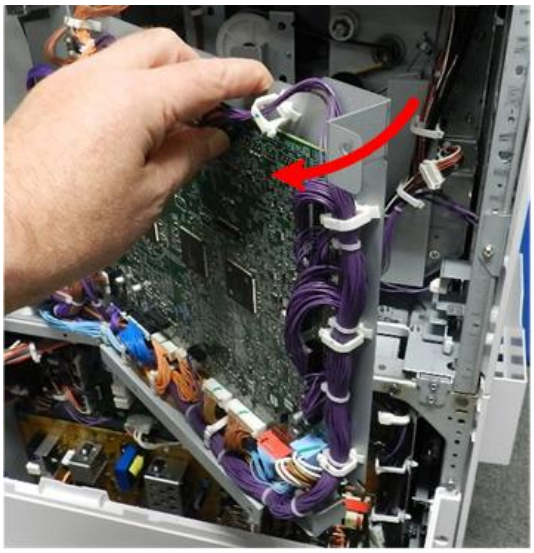
Some procedures require that you access the components behind the IOB. You do not have to remove the IOB. The IOB support bracket is set on hinges so it can swing open to the left.

1. Remove the rear upper covers. page 4-19
2. Disconnect the IOB bracket.



x4 d223c3132

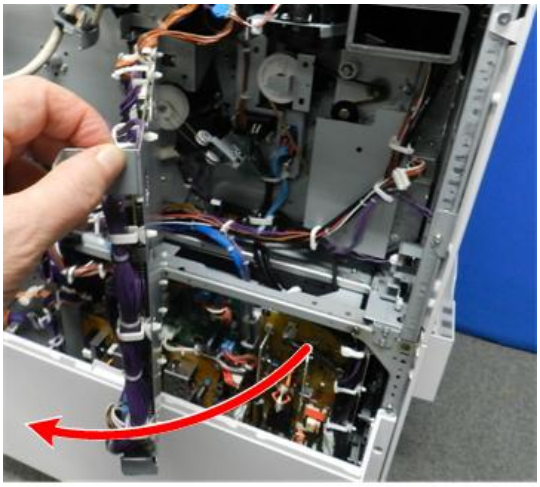
3. Swing the bracket open.



d223c3133

4. If you need more space to work, disconnect the left upper corner of the IOB.

5. The bracket can swing open farther.



6. If you need still more space to work, lift the IOB bracket off its hinges at the top [1] and bottom [2].
7. Check the bottom corner and confirm that the bottom hinge [2] is out of the hole.

Important

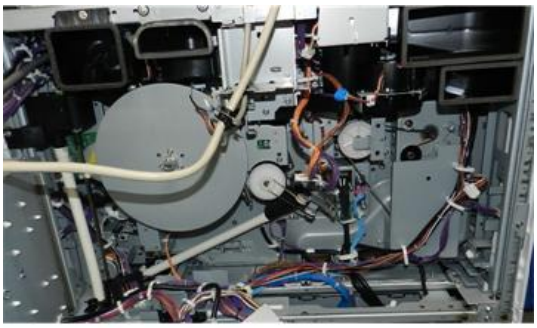
- The metal of the IOB bracket is soft. If the bracket is lowered with the bottom peg still in its hole, the metal will bend.

d223c3136

8. Slowly, lower the IOB bracket and allow it to hang free.

d223c3137

9. With the controller box open and the IOB bracket lowered, you now have full access to all the components on the back of the machine.



d223c3138

4.5 OPERATION PANEL

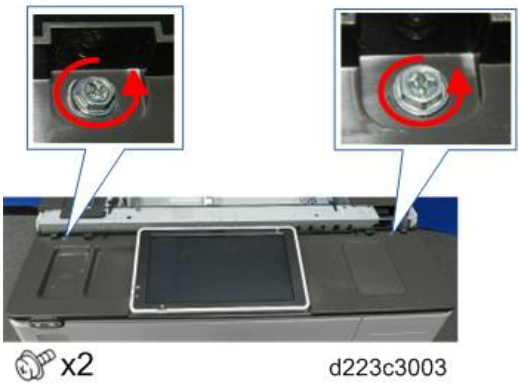
4.5.1 OPERATION PANEL REMOVAL

Follow this procedure to replace the operation panel unit.

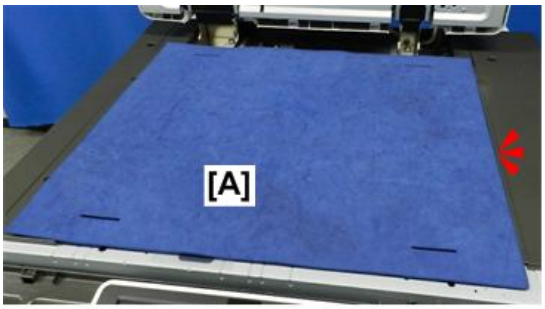
1. Turn off the machine and disconnect the power cord.
2. Disconnect the front edge cover.

3. Bend the ends of the cover toward you slightly to disengage the tabs on the ends, and then remove the cover.

4. Disconnect the operation panel.



5. Cover the exposure glass [A] to protect it.



d223c3004

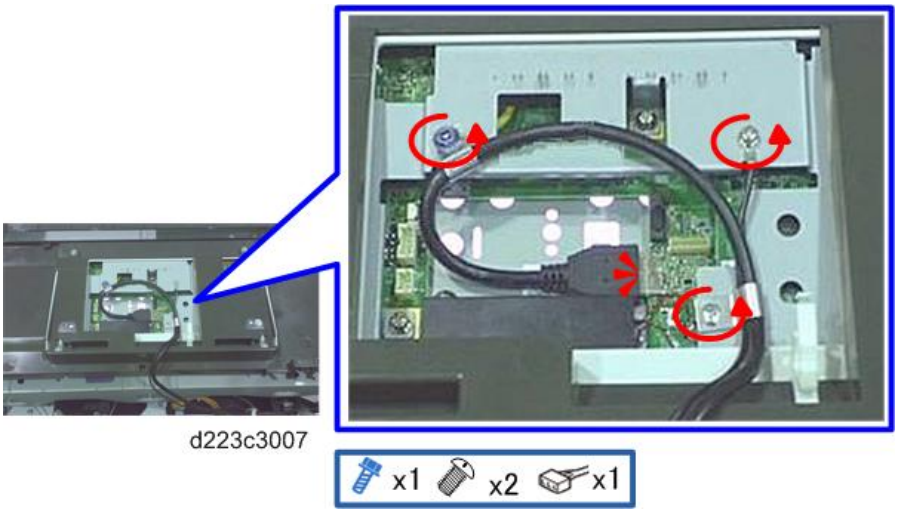
6. Lift the disconnected operation panel.

d223c3005

7. Lay the operation panel on the machine upside down.

d223c3006

8. Disconnect the cable and ground wire.



d223c3007

9. Disconnect operation panel cover.

d223c3009

10. Lift the operation panel cover up and remove it.

d223c3010

11. Before you replace the operation panel unit, first look in the window of the old unit and check the DIP SW settings.

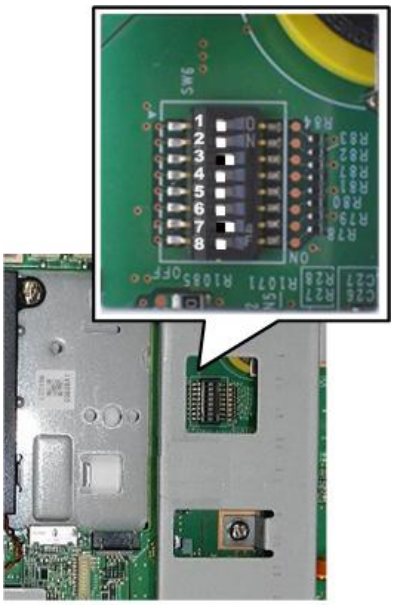
d223c3015

12. Turn the unit so you can read the numbers of the DIP SW.

Important

- The DIP SW settings are different, depending on the machine.
- The DIP SW settings of the new unit must match the settings of the old unit.
- If the settings do not match, the machine will issue SC672.

For example, the photo below shows DIP SW 3 and 7 set to ON. This is the default setting.



d223c3014

13. If the settings the unit you are replacing are different, use a sharp instrument to set the DIP SW on the new unit so the.

Important

- The DIP SW settings must be identical before the new unit is installed.If the DIP SW settings of the new unit are not the same as the old unit, the machine will issue SC672.

14. Before handling the new operation panel, touch a metal surface with your bare hands and your screwdriver to discharge any static electrical charge.

Important

- Keep the screwdriver and any other metal tools away from the boards of the new operation panel unit.

15. After replacing the operation panel, make sure that the latest version of the Smart Operation Panel firmware has been installed. For details, refer to "Updating the Smart Operation Panel" in the Smart Operation Panel manual.

4.5.2 LCD, TOUCH PANEL REPLACEMENT

Follow this procedure to replace the touch panel, LCD, or both. In order to replace the LCD, you must first remove the operation panel (described in the previous section), and then you must:

- Remove CPU Board
- Remove Microcomputer Board
- Disconnect LCD
- Separate LCD and Touch Panel

CPU Board

1. Remove the operation panel unit. page 4-34

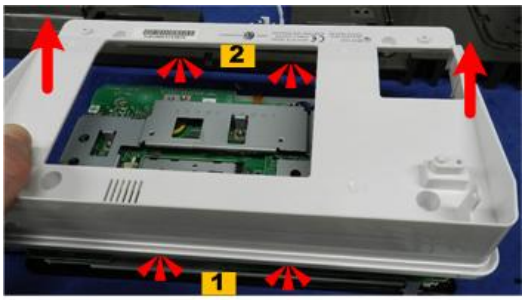
   ⚠CAUTION

   - The machine must be turned off and the power cord disconnected from the power source before doing this procedure.

2. Disconnect bottom cover.

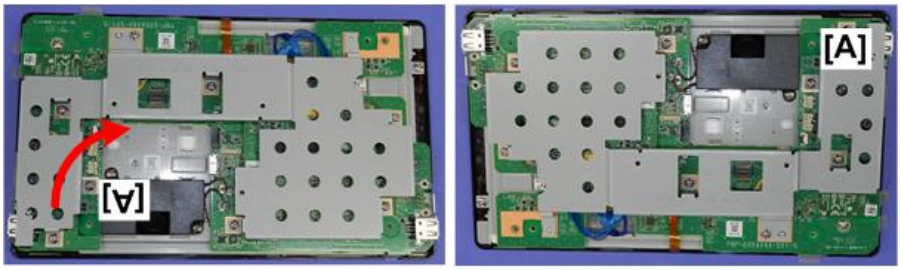
d223c3011

3. There are small tabs on the cover at [1] and [2]. Separate the cover and remove it,



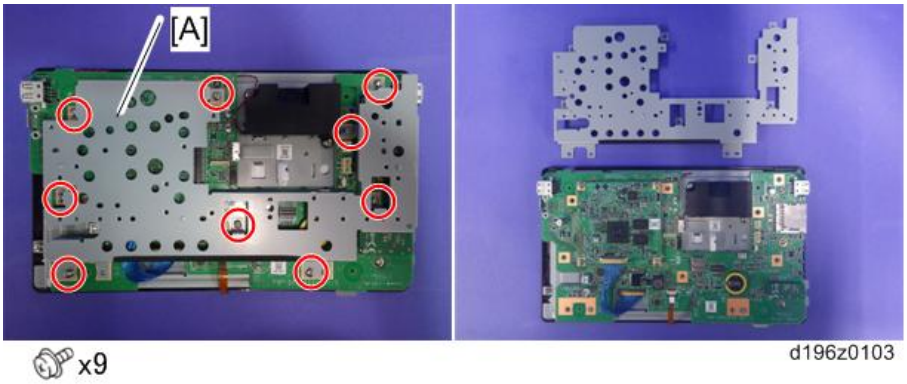
d223c3012

4. Rotate the operation panel [A] as shown. This orients the unit for the remainder of the procedure.

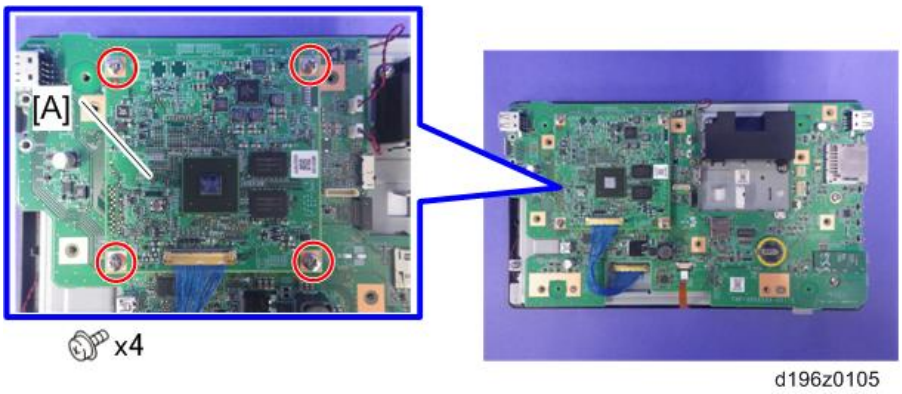


d223c3013

5. Remove base bracket [A] .

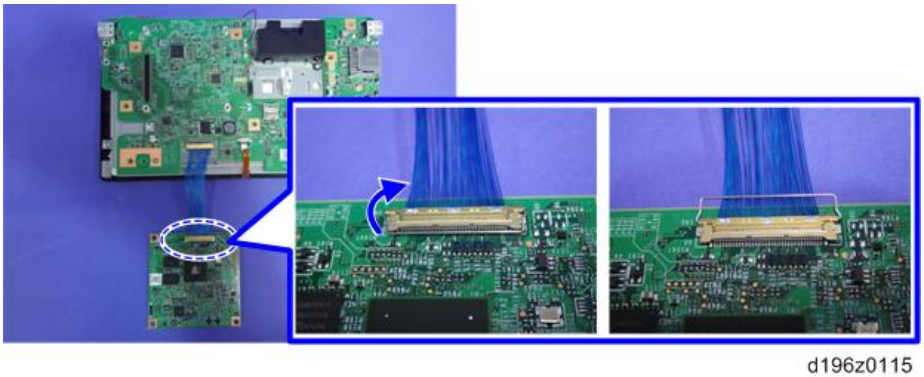


6. Disconnect the CPU.

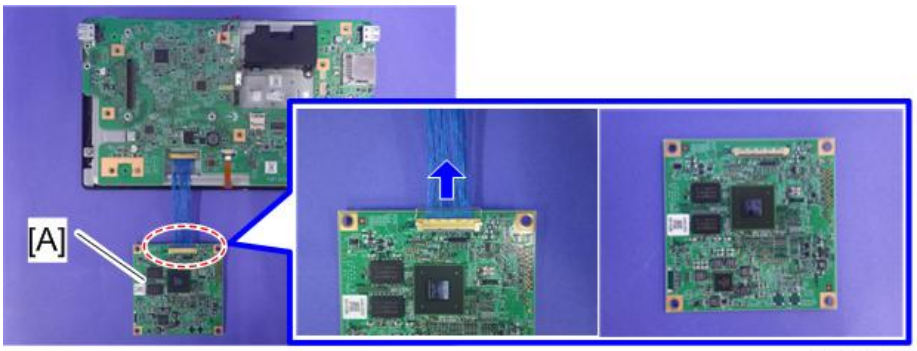


7. Remove CPU board from microcomputer board.

8. Raise the fastener on the connector at the CPU.

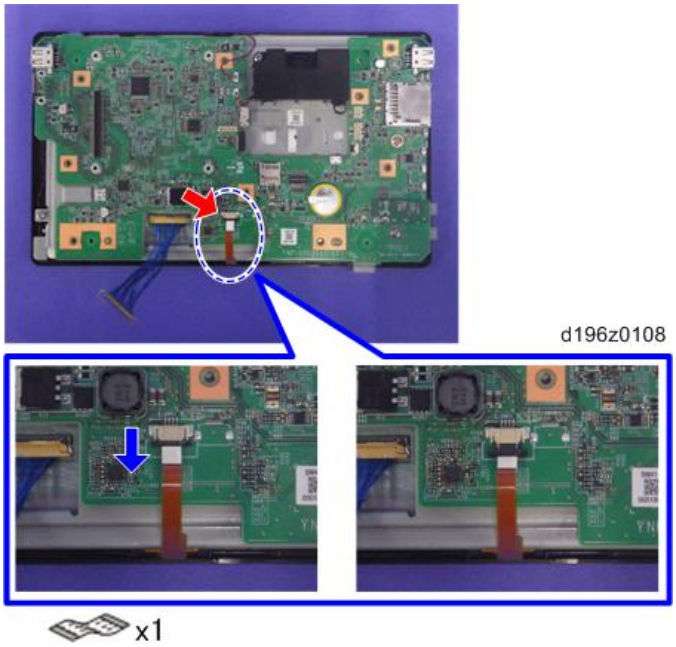


9. Disconnect CPU board [A].

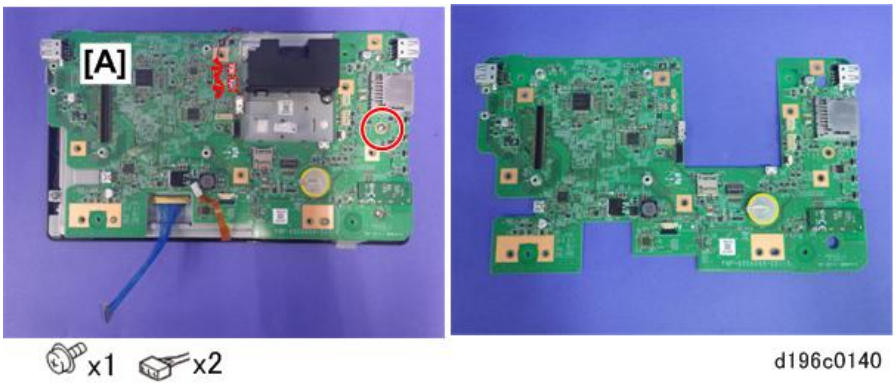


Microcomputer Board

1. Slide out the black collar to unlock the flat connector, and then disconnect the FFC.

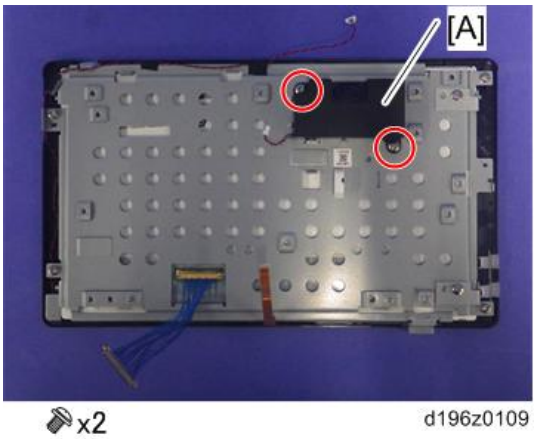


2. Remove microcomputer board [A].

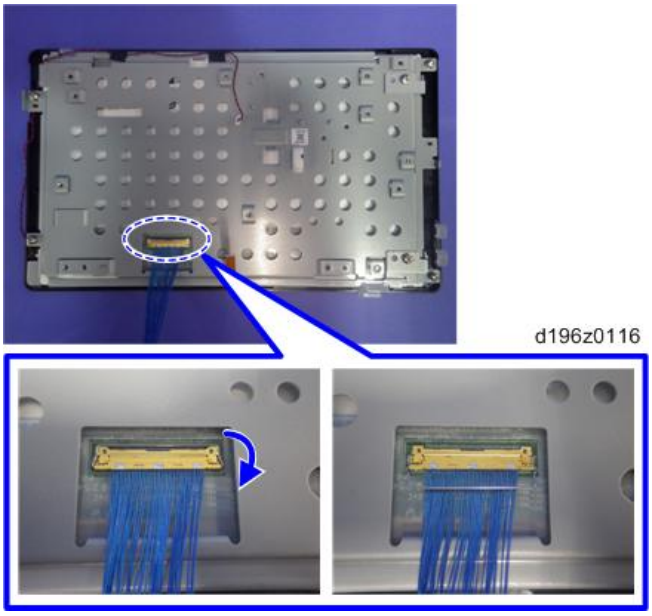


LCD and Touch Panel

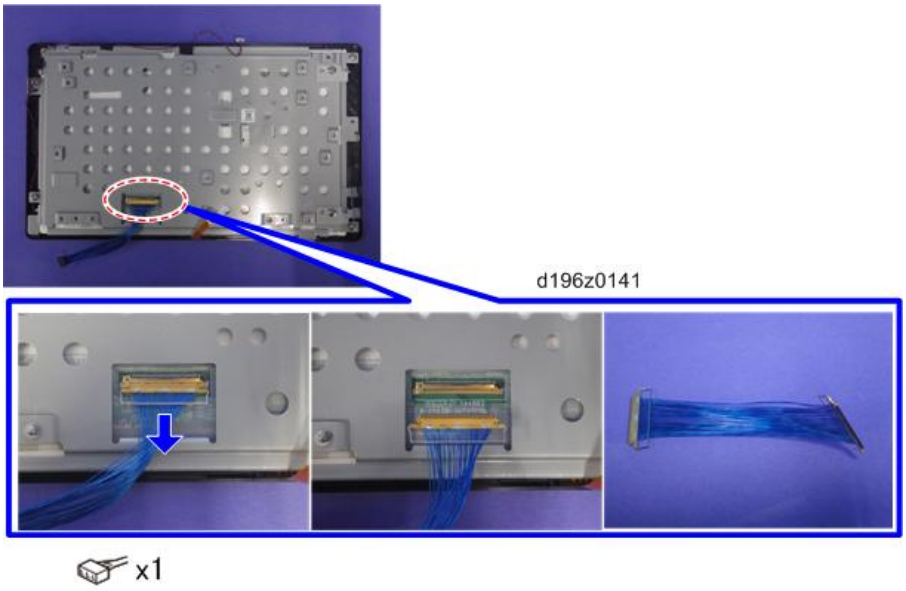
1. Remove speaker [A] (x2).



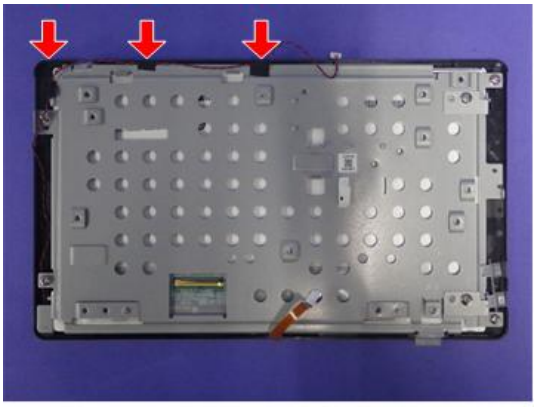
2. Raise the fastener of the LCD I/F cable



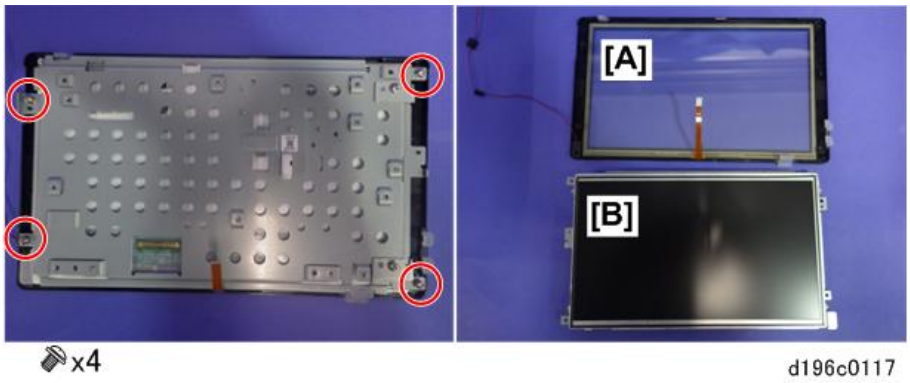
3. Disconnect the LCD I/F cable.



4. Undo the tapes holding the microphone harness.



5. Disconnect the LCD.
6. Separate the touch panel [A] and LCD [B].

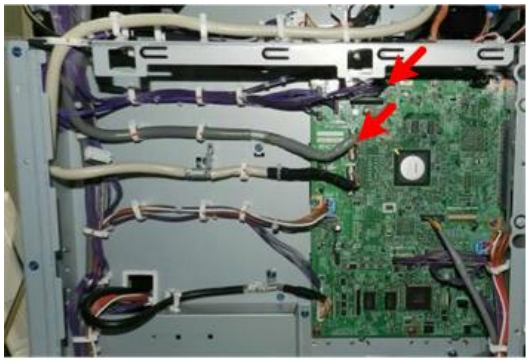


7. After reassembly, do the LCD panel check and calibration procedures. LCD, Touch Screen Check and Calibration

4.6 SCANNER UNIT

4.6.1 BEFORE YOU BEGIN

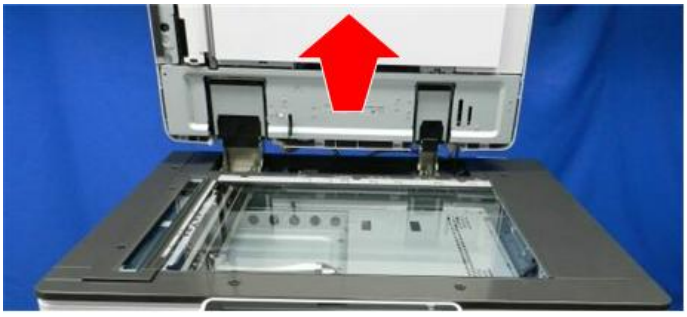
There is no SIOB (Scanner Interface Board) in this machine. The functions of the SIOB of the previous machine are controlled by the BICU. Both harnesses of the scanner unit connect directly to the BICU in the controller box on the back of the machine.



d223c3103

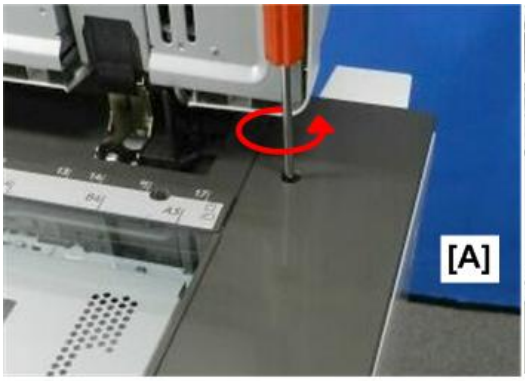
4.6.2 SCANNER UNIT REMOVAL

1. Prepare a clean, flat location to lay the scanner unit.
2. Raise the ADF.



d223c0003

3. At the right side [A] remove the right edge plate.



x1

d223c0004

4. At the left side [A] remove the left edge plate.

x1

d223c0010

5. At the back of the scanner unit, remove the rear edge plate (no screws).

d223c0011

6. At the front, remove the front edge plate.

x2

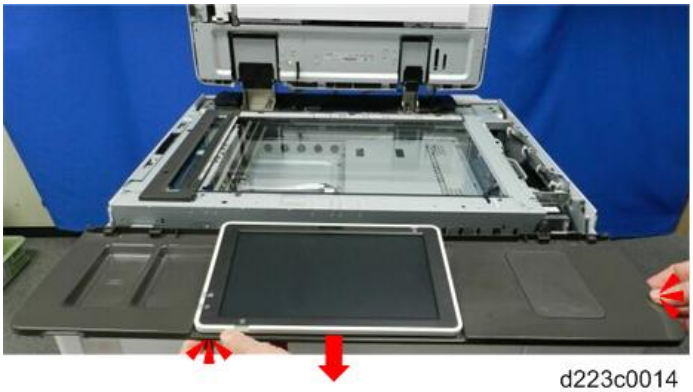
d223c0012

7. Disconnect the operation panel cover but do not remove it.

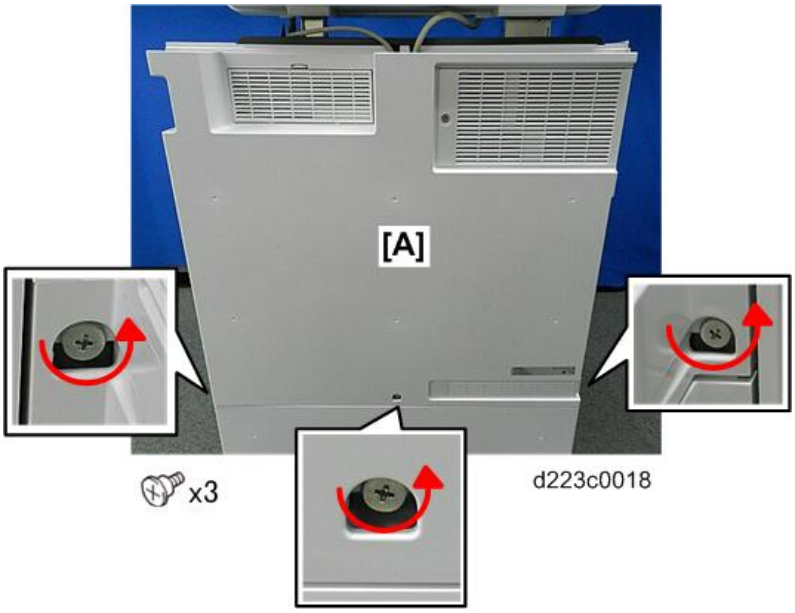
x2

d223c0013

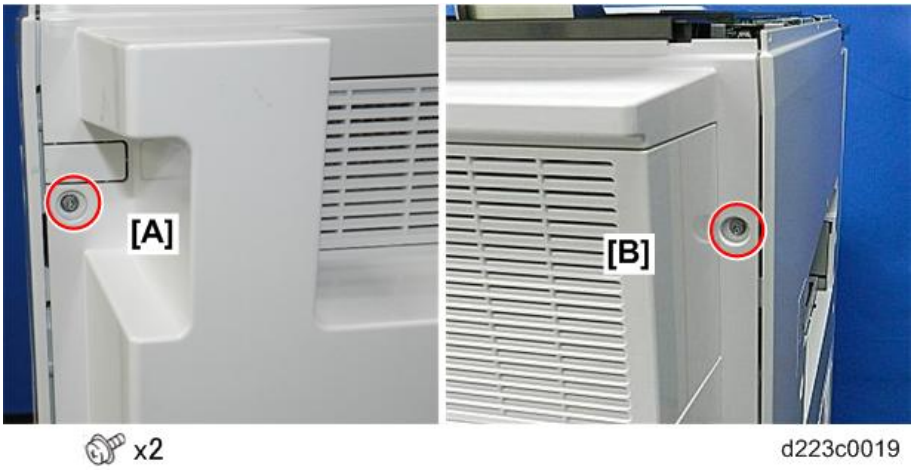
8. Slide the panel forward slightly and then stop.



9. Loosen (do not remove!) the bottom screws of the rear upper cover [A].



10. Disconnect the rear upper cover at the right rear corner [A] and left rear corner [B].



11. Remove rear upper cover

d223c0020

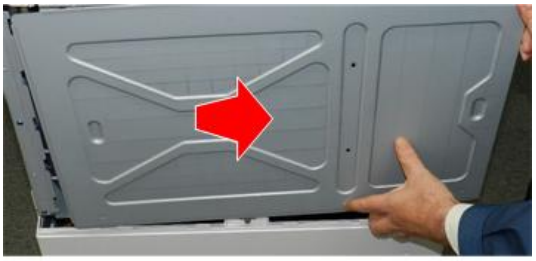
12. Disconnect the rear cover plate.

x2

x2

d223c3139

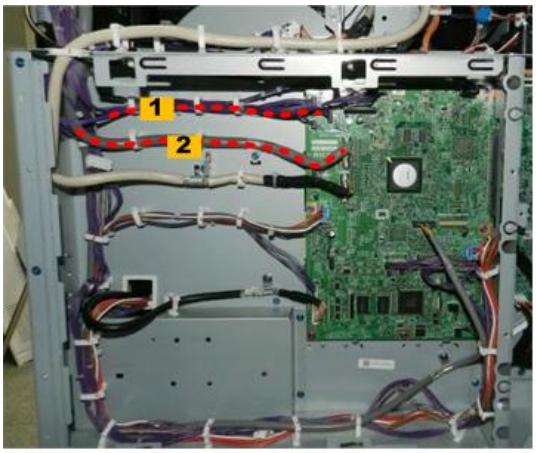
13. Slide the cover off in the direction of the arrow.



d223c3140

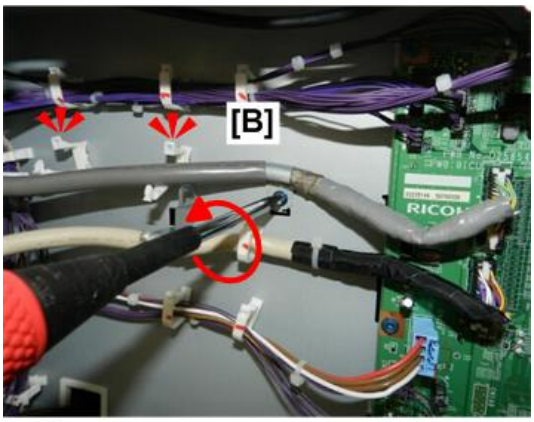
14. Disconnect the base of the scanner unit at each corner.

15. At the back of the machine, you must disconnect the triple-harness cable [1] and the I/F cable [2].



d223c0024

16. Disconnect the I/F cable [B] from the rear panel.

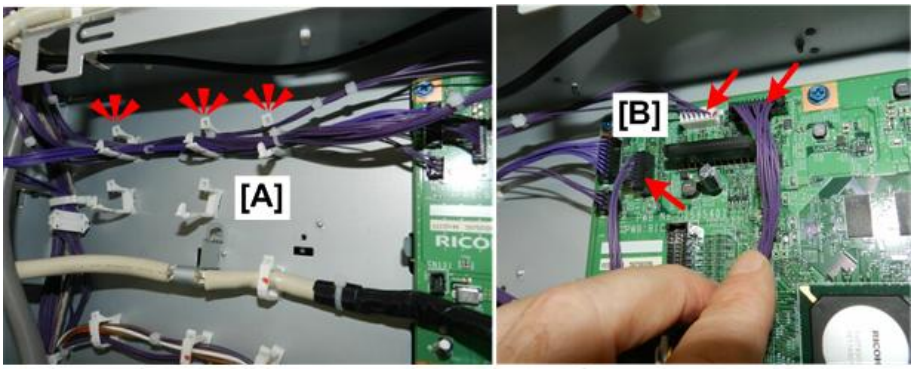


x2 x1 d223c0025

17. Disconnect the I/F cable.

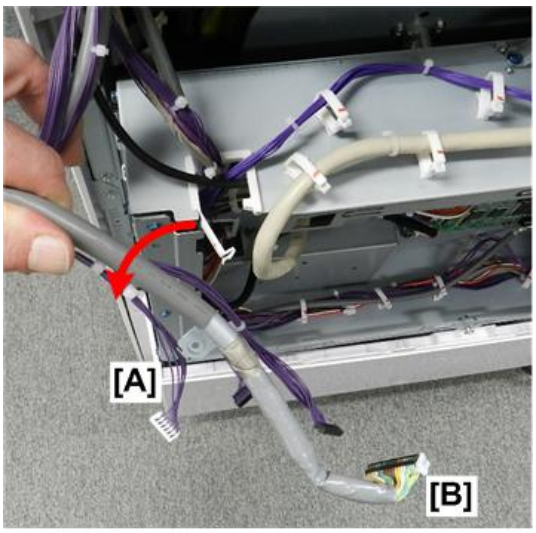
x1 d223c0026

18. Disconnect the triple harness [A] from the frame.
19. Disconnect the three harnesses [B].



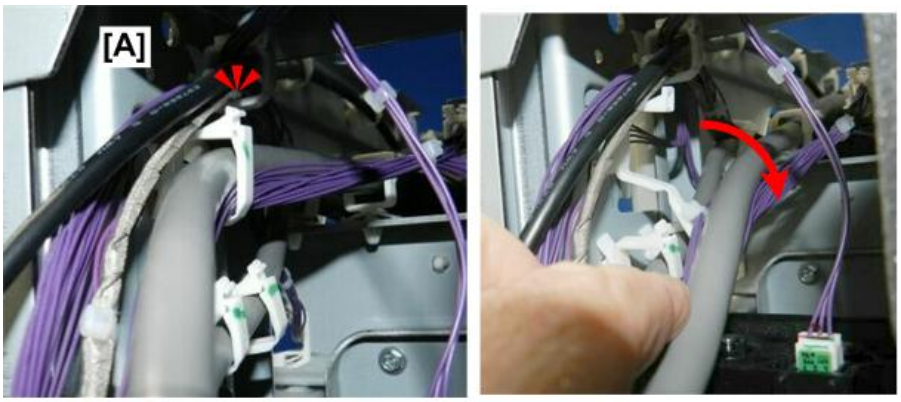
x3 x3 d223c0027

20. At the right rear upper corner, free the triple-harness [A] and I/F cable [B].



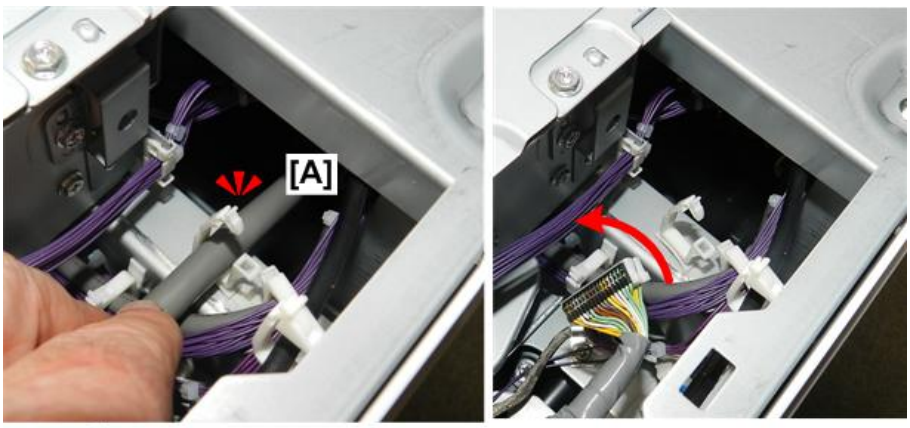
x1 d223c0028

21. Below rear right corner [A], open the clamp, and then pull out the I/F cable.



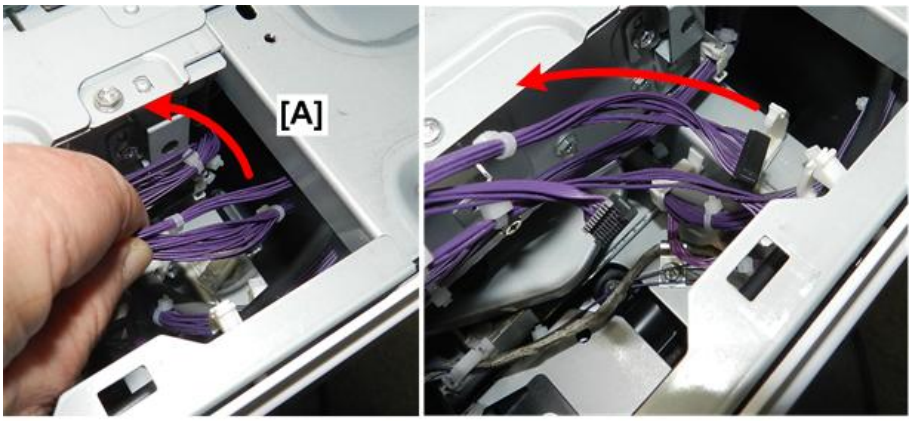
x1 d223c0029

22. Next, free the I/F cable above rear right corner [A].



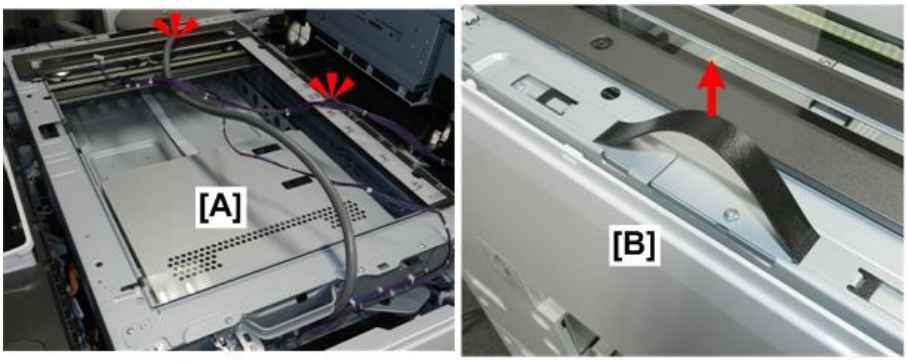
x1 d223c0030

23. Pull the triple harness out through the corner [A].



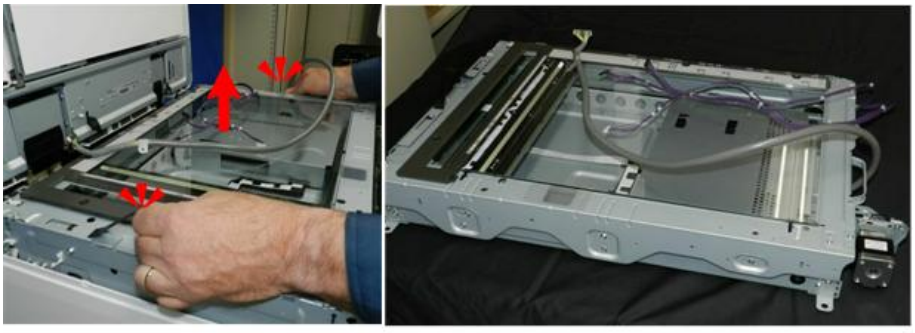
d223c0032

24. Lay the triple harness and I/F cable across the exposure glass [A].
25. On the left edge of the scanner unit [B], raise the elastic handle.



d223c0033

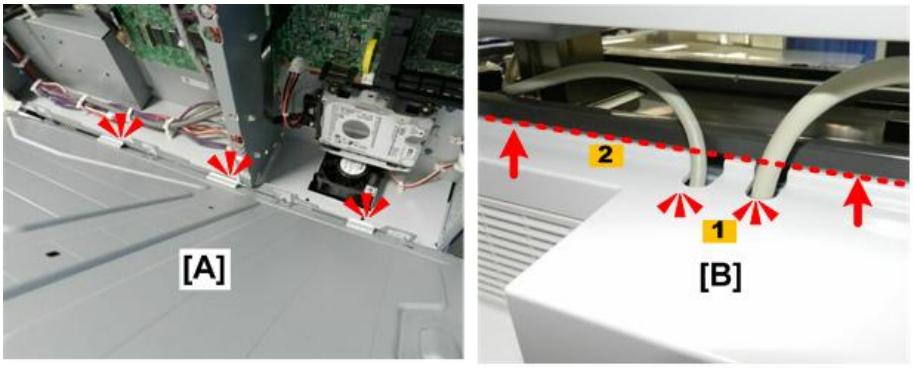
26. Grip the scanner unit by the handle on each side, and then lift it out and remove it.
27. Lay the scanner unit on a flat, clean surface.



d223c0034

Reassembly

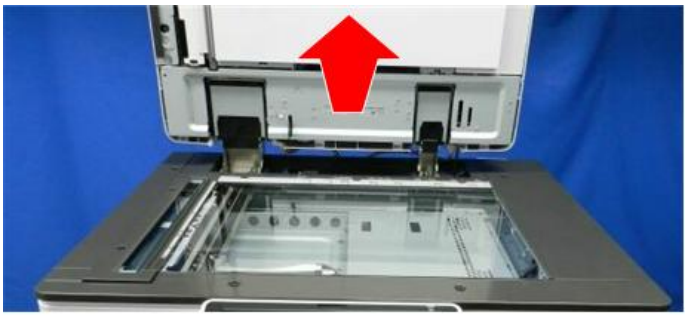
1. When you re-attach the PCB cover plate [A], first set the tabs on the rail below. Make sure each tab is engaged with the rail.
2. When you re-attach the rear, upper cover [B], make sure the I/F cables are in the knockouts [1] and that the top edge of the cover is **under** the rear edge [2].



d223c0052

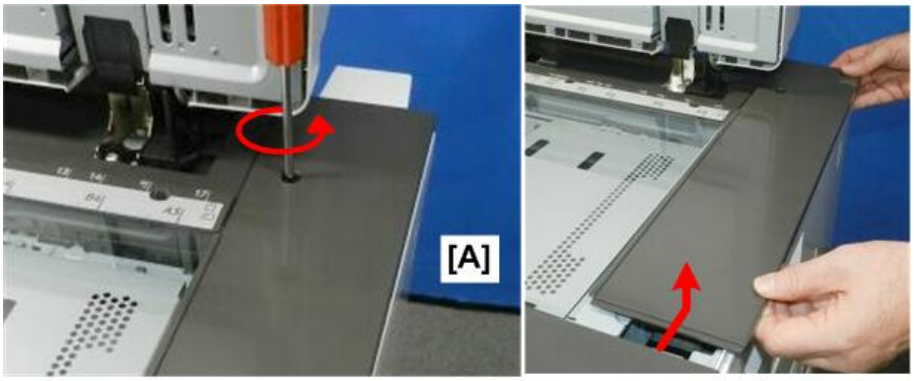
4.6.3 EXPOSURE GLASS

1. Prepare a clean, flat location to lay the exposure glass.
2. Raise the ADF.



d223c0003

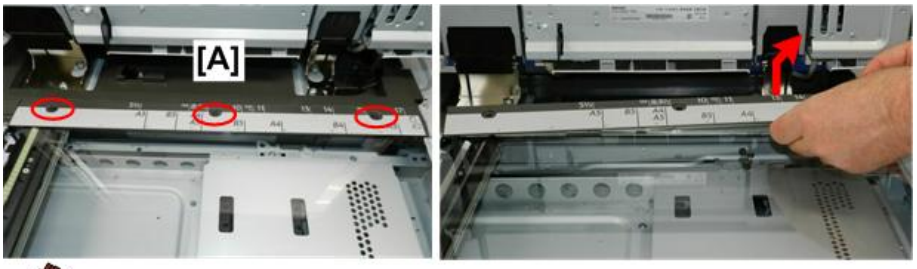
3. On the right [A], remove the right edge plate.



x1

d223c0004

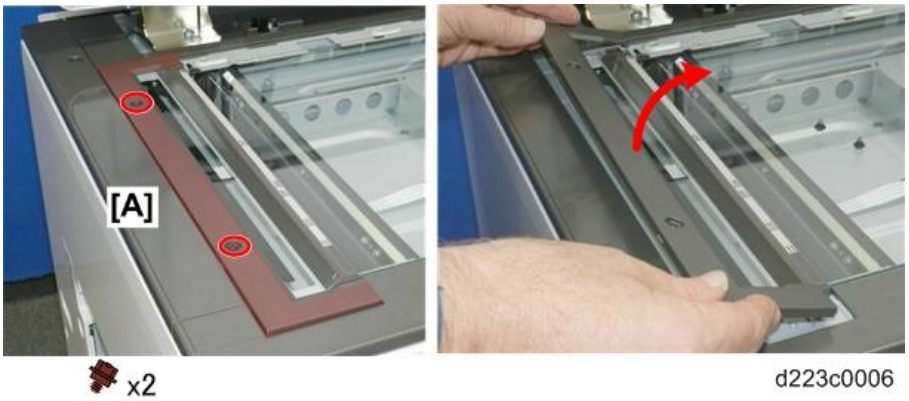
4. At [A] near the rear edge of the exposure glass, remove rear scale.



x3

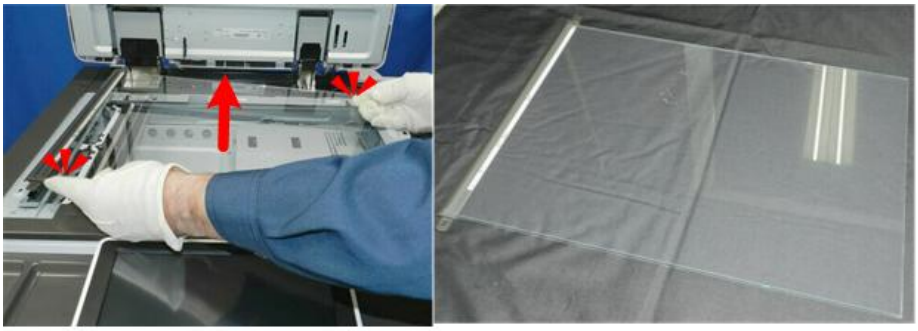
d223c0005

5. At the top left side of the machine [A] remove the u-bracket.



d223c0006

6. Remove the exposure glass, and then lay it on a flat, clean surface.
7. Lift out the exposure glass and left scale together.

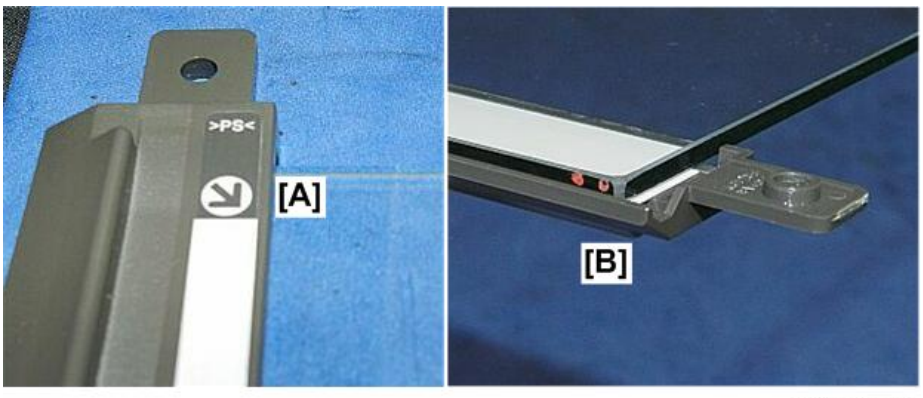


d223c0007

Note

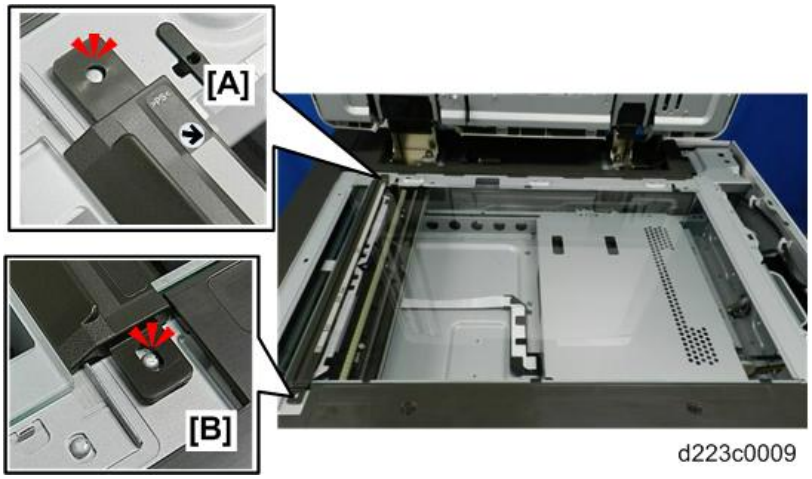
- The left scale is attached to the exposure glass with double-sided tape. Do not separate the left scale and the exposure glass unless you are going to replace a broken glass.

8. The **>PS<** notation and arrow [A] of the left scale mark the upper left corner of the exposure glass.
9. If you are replacing the exposure glass, the left scale [A] must be attached to the corner of the new class so that the corner marked with two dots [B] is under the **>PS<** notation and the down arrow.



d223c0008

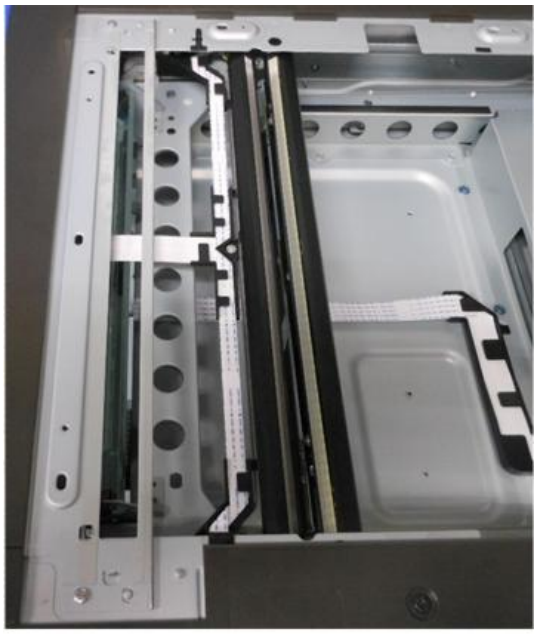
10. Hold the exposure glass so the **>PS<** notation is at the upper left corner, and then set the glass in the machine.
11. Make sure the **>PS<** notation [A] is at the upper left corner, and that the hole on the end is snug over the boss.
12. At the lower left corner of the glass [B], make sure that the hole is snug over the boss.



4.6.4 CONTACT GLASS

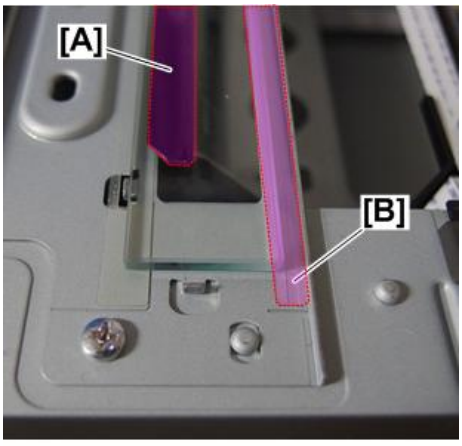
Contact Glass Removal and Reinstallation

1. Remove the exposure glass. page 4-52



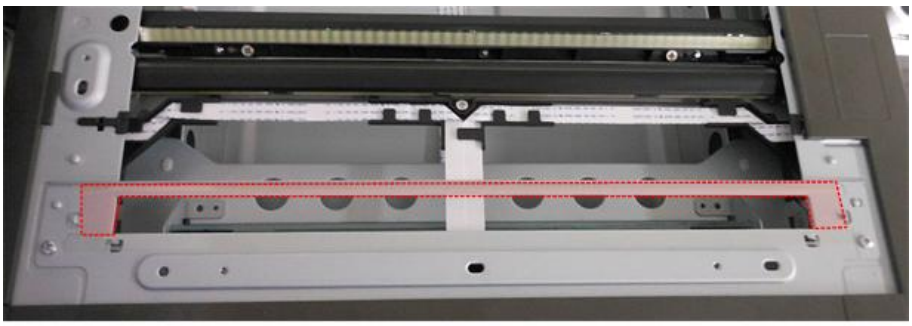
d223c3778

2. Remove the contact glass.
   - Step strip [A] is attached to the top of the contact glass.
   - The right side of the contact glass [B] is fastened by double-sided tape below its right edge.



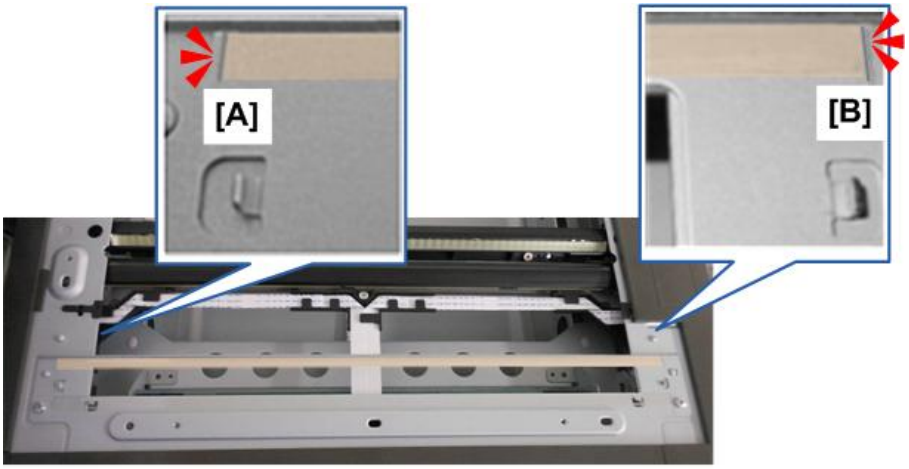
d223d4125

3. Use a clean cloth dampened with alcohol to clean the area where the double-sided tape will be attached.



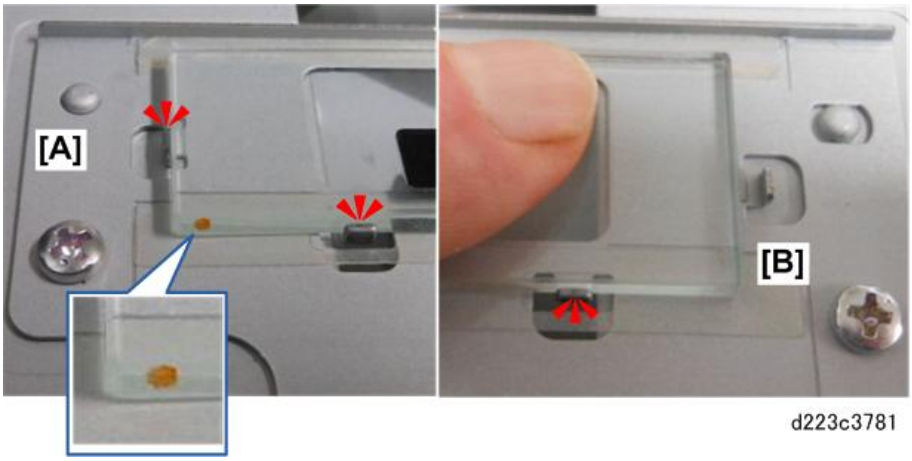
d223c3779

4. Peel the back from the double-sided tape strip.
5. Set the one end of the tape at the rear [A] aligned with the line marker, and then set the other end of the tape at the front [B] at its line marker.

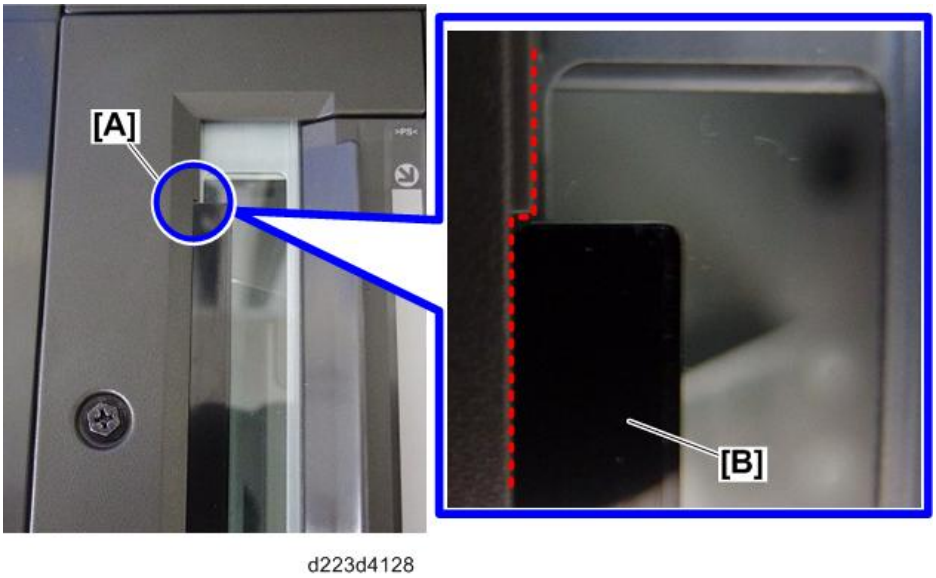


d223c3780

6. Press the tape down so it is perfectly smooth along its length, and then peel off the remaining strip from the tape.
7. Identify the corner of the contact glass with the orange dot.
8. With the dotted corner pointing to the left, set this end of the contact glass at the rear [A] against the rear and right stud.
9. Set the other end of the glass at the front [B] against the left stud.



10. Press down gently on the right edge of the glass onto the tape below it.
11. Re-install the exposure glass, rear scale, and left edge cover.
12. Locate the notch [A] on the rear end of the right edge cover.
13. Peel the tape from the back of the step strip.
14. Align the rear corner of the strip [B] with notch [A], and then align the left edge of the step strip against the right edge of the cover.

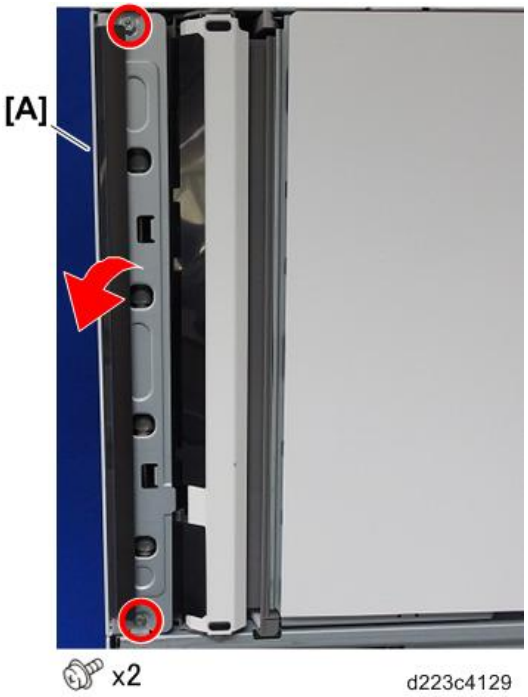


15. Press down on the step strip so it is perfectly flat and parallel with the right edge of the edge cover.

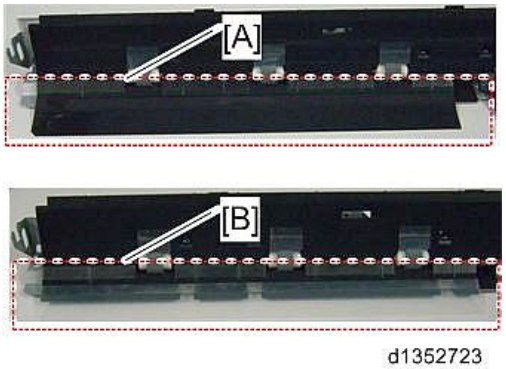
Convert from Non-Contact to Contact Scanning Configuration

The step strip mounted to the left of the contact glass keeps the surface of the original out of contact from the glass. This is the standard configuration. However, with the replacement of two parts this configuration can be modified to revert to the old method with the surface of the original in contact with the glass as it passes.

1. Raise the ADF.
2. Remove entrance guide unit [A].

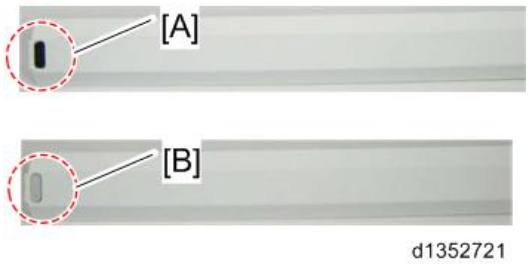


1. Note that the lower part of the non-contact guide unit [A] (just removed) is black, and the same part of the contact-type [B] (replacement) is colorless, and transparent.

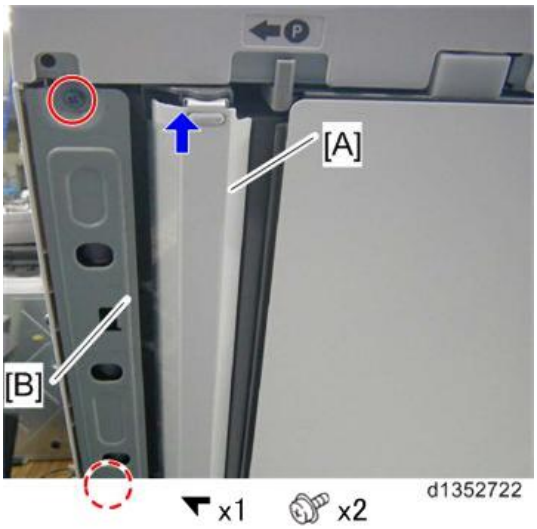


2. Remove scanning guide [A]

3. Note that the tabs [A] on the ends of the non-contact scanning guide plate (just removed) are black, and the tabs [B] (replacement) of the contact-type are white.



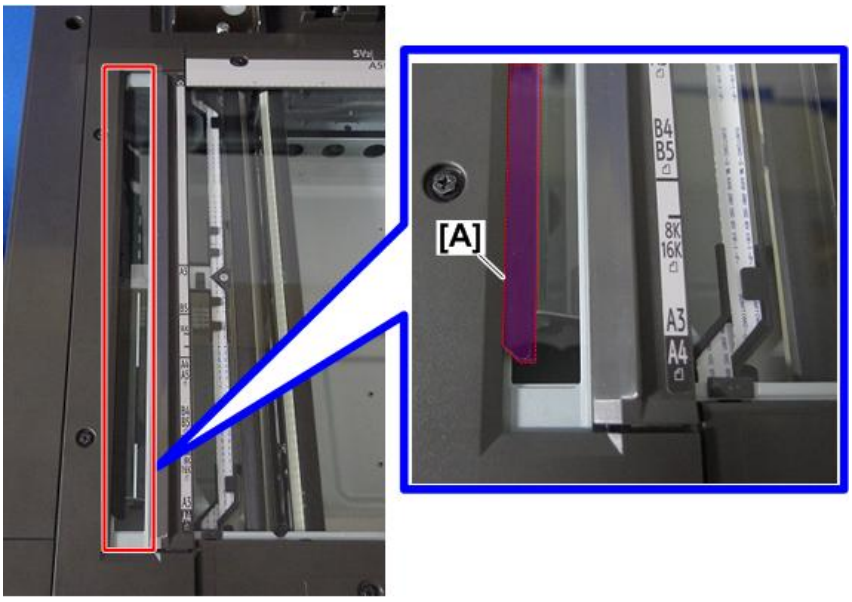
4. Attach the contact-type scanning guide plate [A] (white tabs).
5. Attach contact-type guide unit [B] (colorless, transparent strip).



6. Enter the SP mode, open SP4688-002 (Scan Image Density Adjustment – 1-Pass DF), and then enter “96” as the setting.

Contact Glass Cleaning

1. Carefully, peel the black step strip [A] away from the contact glass.

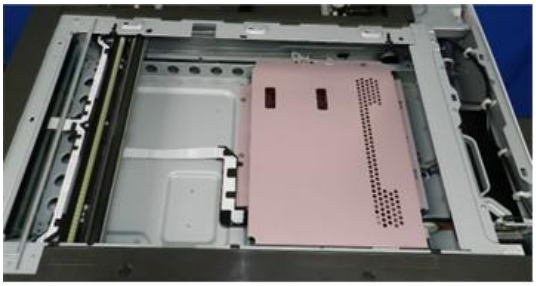


d223d4131

2. Dampen a clean cloth with alcohol and clean the contact glass.

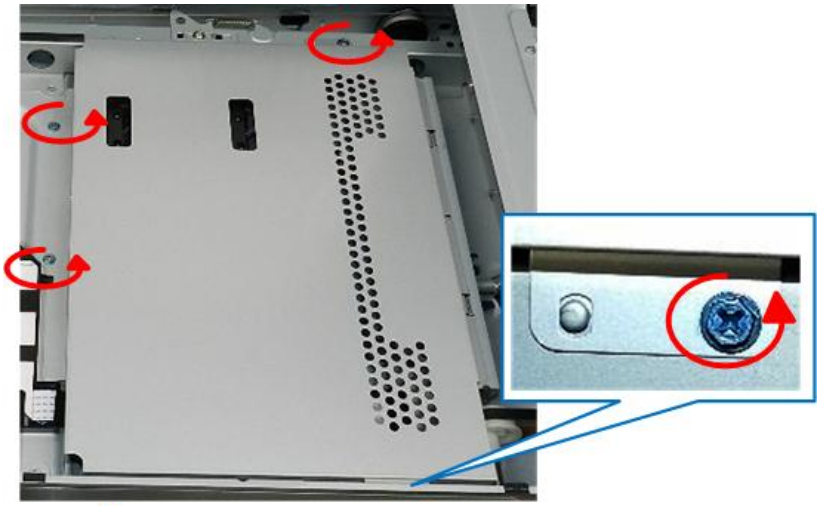
4.6.5 LENS BLOCK COVER

1. Remove exposure glass. page 4-52
2. The lens block cover is on the right side of the scanner unit.



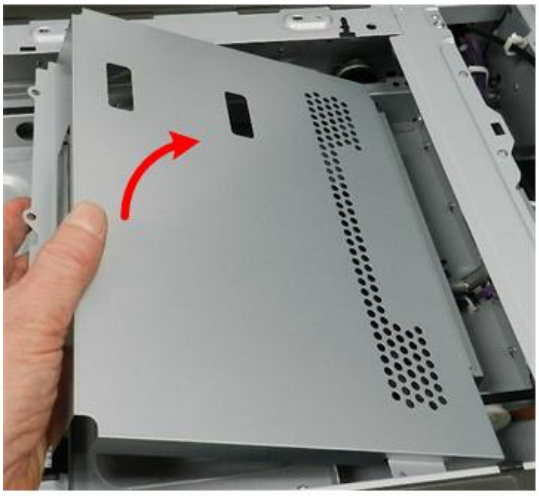
d223c3042

3. Disconnect the lens block cover.



d223c3043

4. Raise the lens block cover and remove it.



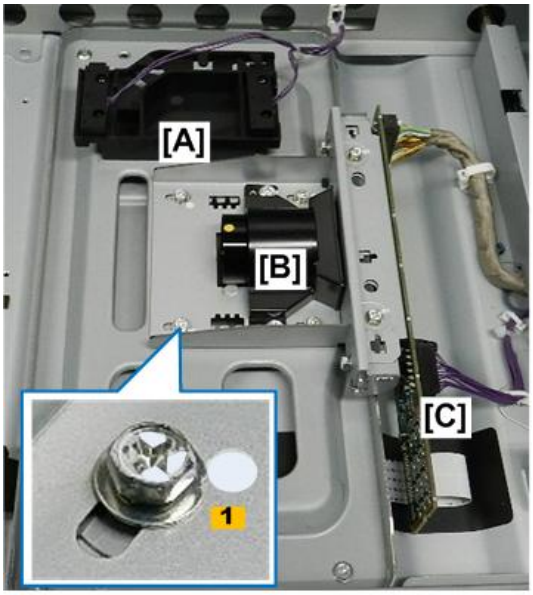
d223c3044

Under the lens block cover:

[A]	Original Width Sensors
[B]	Lens
[C]	SBU

Important

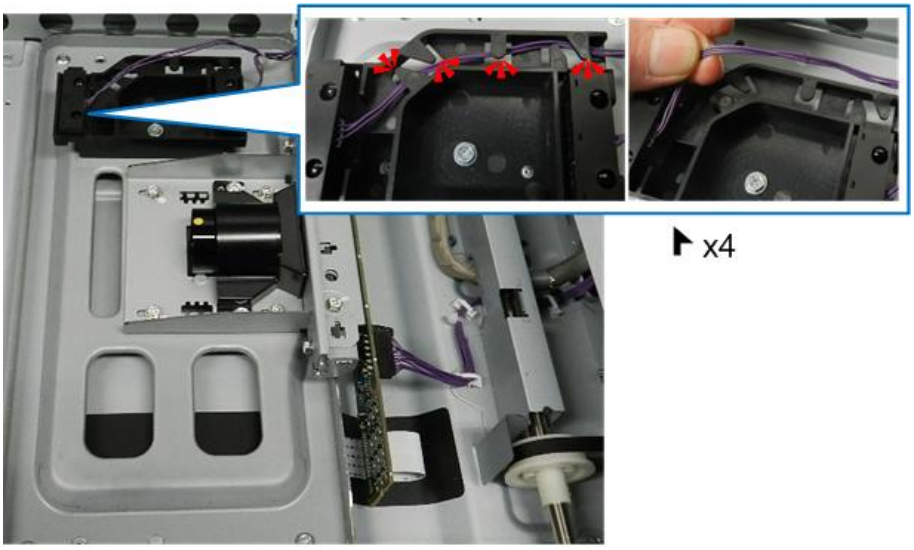
- Never remove a paint-locked screw [1] on the lens block.



d223c3045

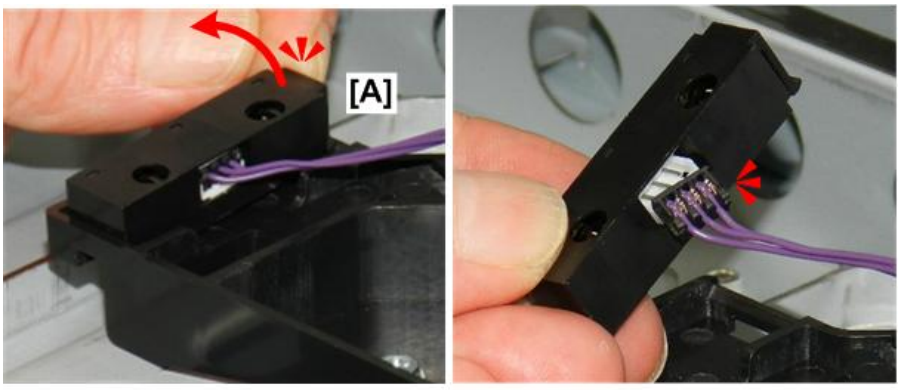
4.6.6 ORIGINAL WIDTH SENSORS

1. Remove the exposure glass. page 4-52
2. Remove the lens block cover. page 4-61
3. Free the harness of the left sensor.



d223c3046

4. Press the back of left sensor [A] to release it, and then disconnect it.

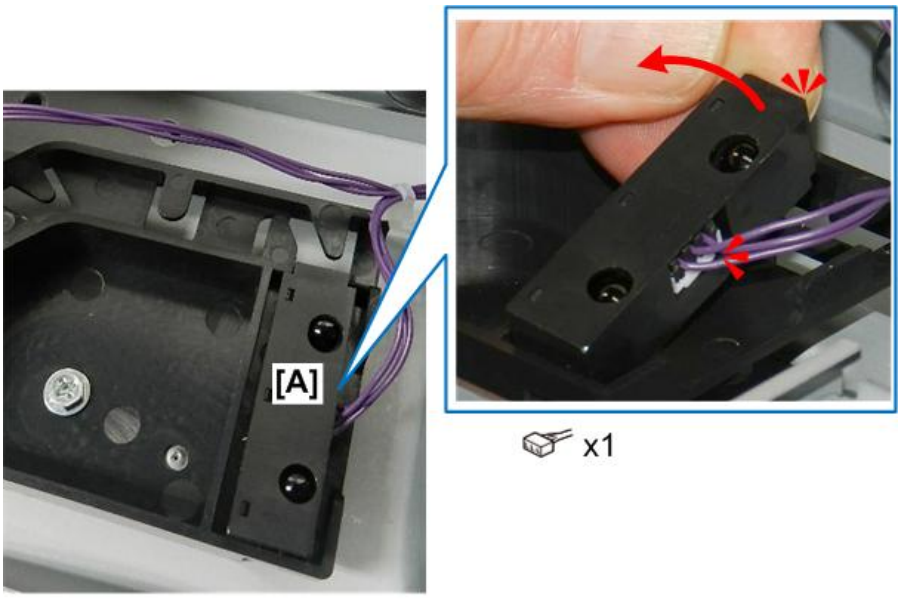


d223c3047

5. Lay the sensor on a flat, clean surface.

d223c3048

6. Press the back right sensor [A] to release it, and then disconnect it.



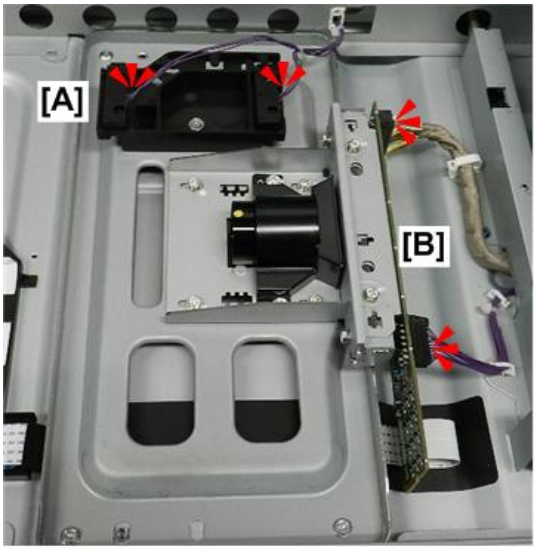
d223c3049

7. The original width sensors are identical and interchangeable.

d223c3050

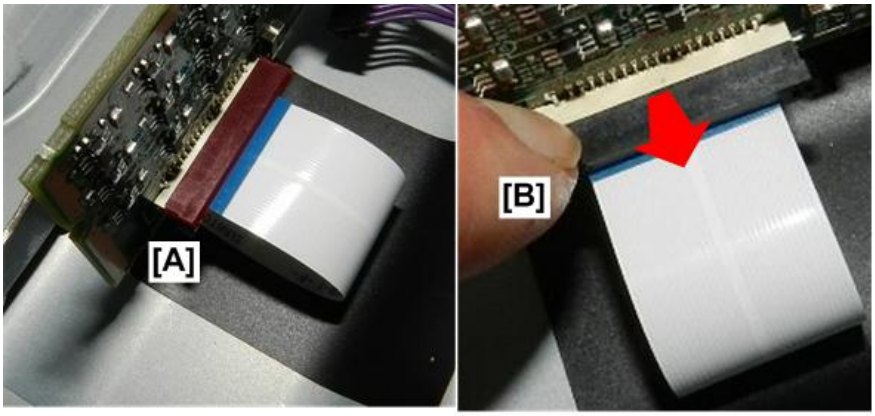
4.6.7 LENS BLOCK

1. Remove the exposure glass. page 4-52
2. Remove the lens block cover. page 4-61
3. Disconnect original sensors [A].
4. Disconnect SBU [B].



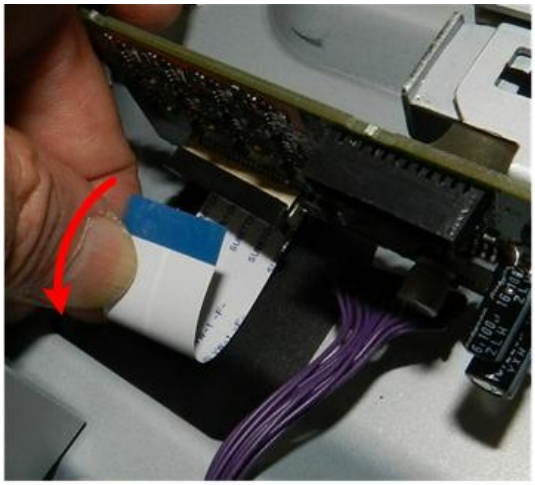
x4 d223c3051

5. The FFC at the front edge of the SBU is locked in place by a sliding collar [A].
6. Slide the collar [B] out to release the FFC.



d223c3052

7. Disconnect the FFC.



x1

d223c3053

8. Disconnect the lens block.

x4 d223c3054

Important

- Never loosen or attempt to remove a paint-locked screw on the lens block.

d223c3056

9. Remove the lens block, and then lay it on a flat, clean surface.

d223c3057

Important

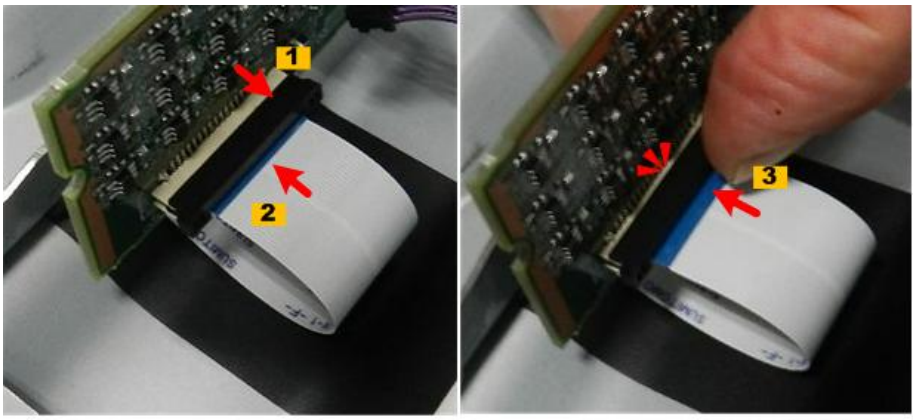
- The lens block is replaced as a set. Do not remove the SBU.

Re-installation

Note

- Reattach the FFC to the SBU before you re-install the lens block.

1. First, slide the collar lock [1] away from the SBU.
2. Insert the edge of the FFC [2].
3. Push the collar in [3] to lock the FFC in place.



d223c3081

4. Confirm that the FFC is locked and straight.
5. After reassembly, do the scanner and printer adjustments. page 4-479

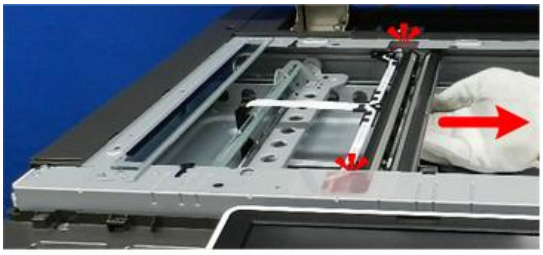
4.6.8 EXPOSURE LEDS (EXPOSURE LAMP)

Note

- The Exposure LEDs (exposure lamps) are comprised of a pair of LED arrays mounted on separate brackets. Either bracket can be removed separately.

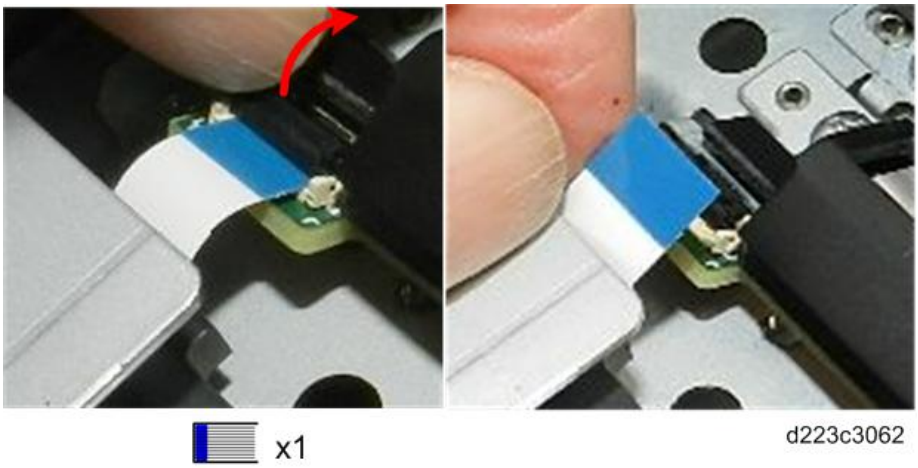
1. Remove the exposure glass. page 4-52
2. Remove the front edge plate.

3. Slowly, pull the Exposure LED pair toward the center of the scanner unit until both ends are even with the cutouts in the frame at the front and back.



Left Exposure LED

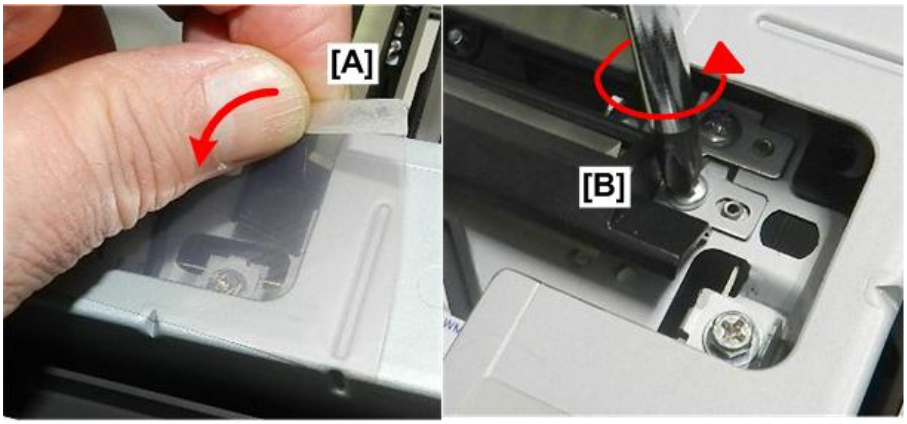
1. You may need to move the Exposure LED bracket slightly so you can see the FFC of the left bracket at the rear.
2. Disconnect FFC at the rear end of the left Exposure LED.



3. Disconnect the rear end of the left FFC bracket.

x1 d223c3063

4. At the front, push the mylar [A] aside so you can see the front end of the left FFC bracket.
5. Detach mylar sheet [A], and then disconnect the front end of the left Exposure LED bracket [B].

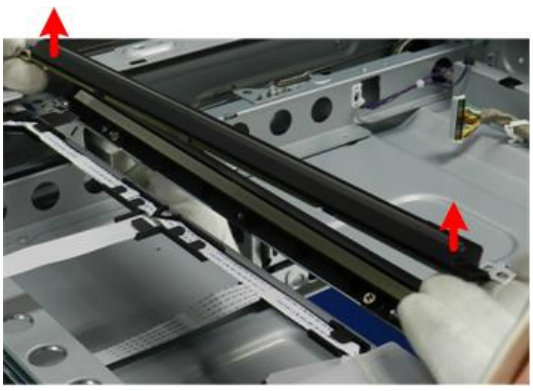


x1 d223c3064

Note

- Never touch the window surface of the Exposure LED with bare fingers.

6. Remove the left Exposure LED bracket with LED attached.



d223c3065

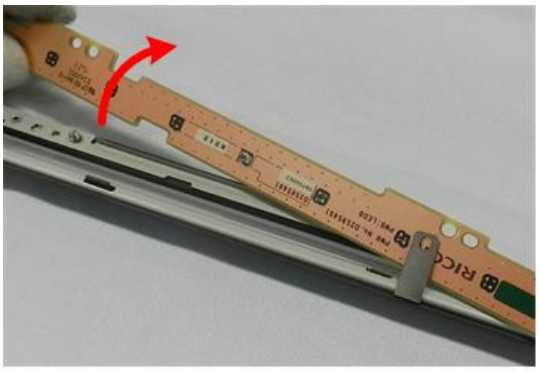
7. Lay the left Exposure LED bracket on a flat, clean surface.

d223c3066

8. Turn the bracket over, and disconnect the LED PCB.

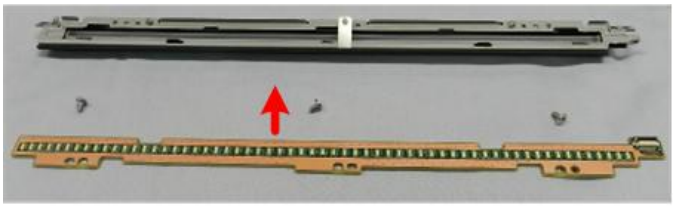
d223c3067

9. Separate the LED PCB and bracket.



d223c3068

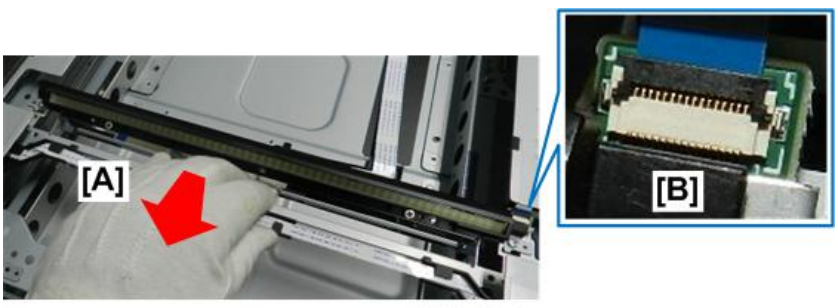
10. Lay the LED PCB flat with the LEDs facing up.



d223c3069

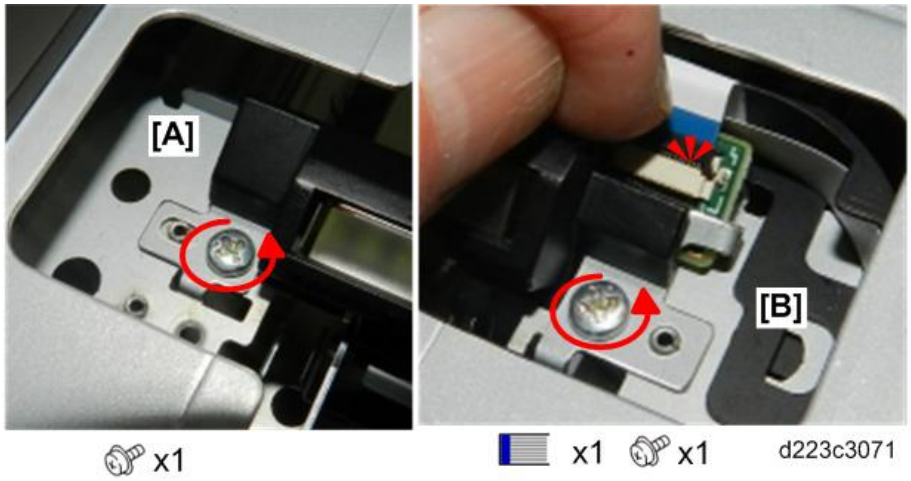
Right Exposure LED

1. You may need to move the Exposure LED bracket [A] slightly so you can see the FFC of the right bracket at the front [B].



d223c3070

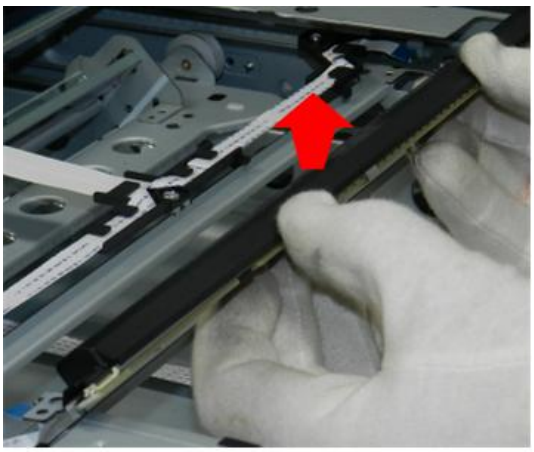
2. Disconnect the rear end [A] of the right Exposure LED bracket.
3. Disconnect the front end [B] of the right Exposure LED bracket.



Note

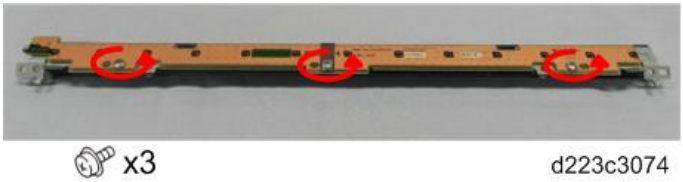
- Never touch the window surface of the Exposure LED with bare fingers.

4. Remove the right Exposure LED bracket with LED attached.

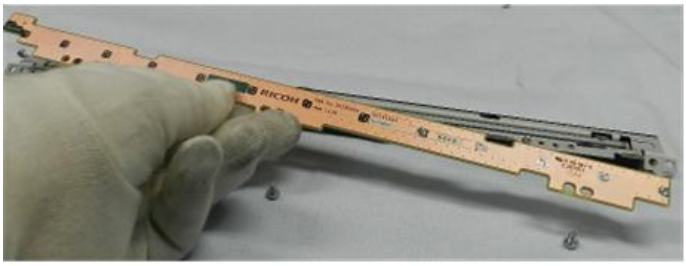


5. Lay the right Exposure LED on a flat, clean surface.

6. Turn the bracket over, and disconnect the LED PCB.



7. Separate the bracket and LED PCB.



d223c3075

8. Lay the LED PCB flat with the LEDs facing up.

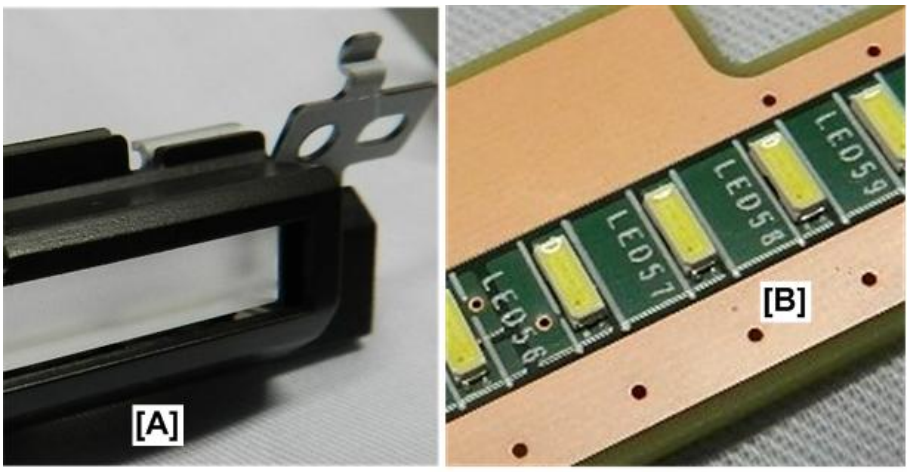
d223c3076

Reassembly

1. Inspect replacement Exposure LEDs for dust or other particles and clean with a blower brush before installation.

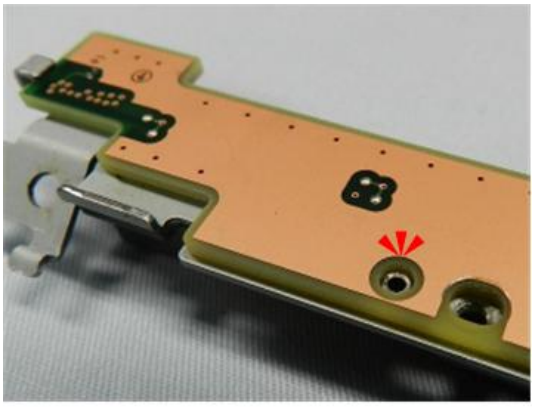
Important

- Handle Exposure LEDs with care. Never touch the LED window [A] or LEDs [B] with bare hands.



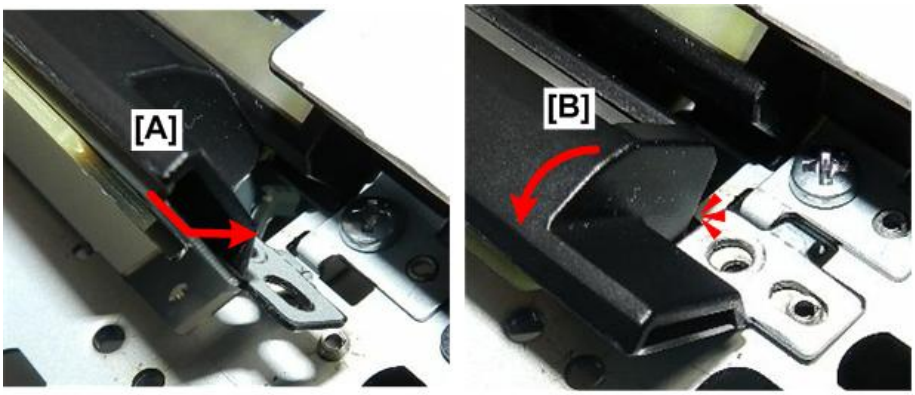
d223c3077

2. Before installation, make sure the LED PCB is perfectly flat against the bracket.



d223c3078

3. To install the bracket, hold the bracket up at a slight angle [A] and then lower it [B] so it locks against the frame..



d223c3079

4. Be sure to re-attach the mylar completely over the cutout if you detached it.

d223c3080

4.6.9 SCANNER MOTOR

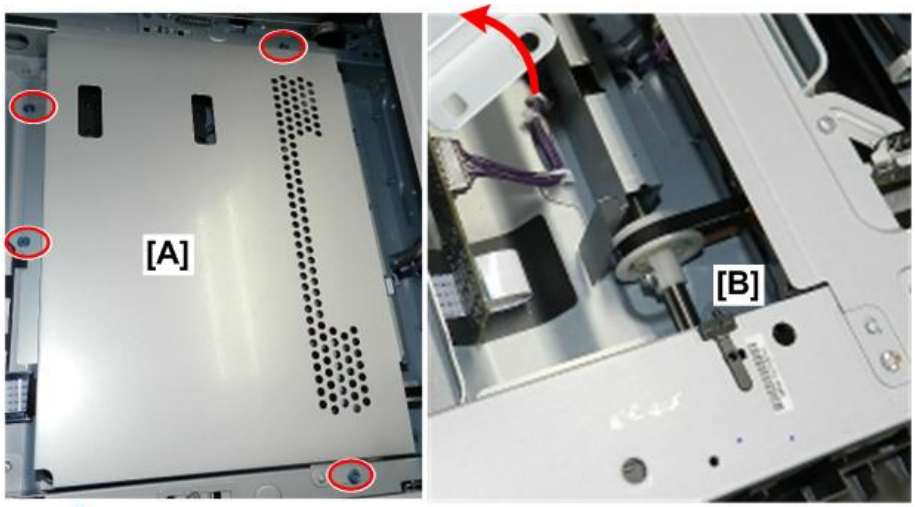
1. Remove the exposure glass. page 4-52
2. The scanner motor is at the right front corner of the scanner unit.

d223c3082

3. Remove the front edge plate.

d223c3083

4. Remove the lens block cover [A] so you can reach the timing belt and scanner drive gear [B]

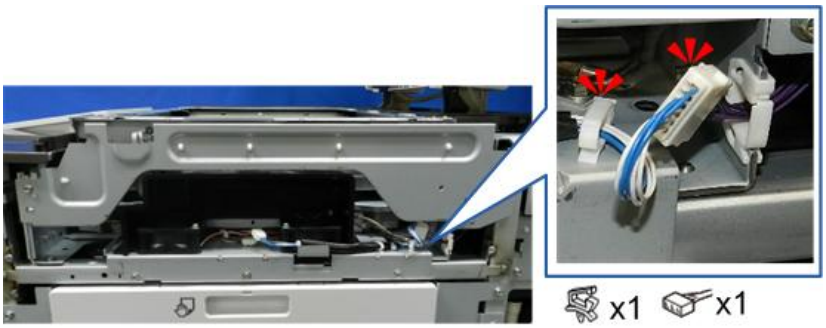


d223c3084

5. Remove the right upper cover.

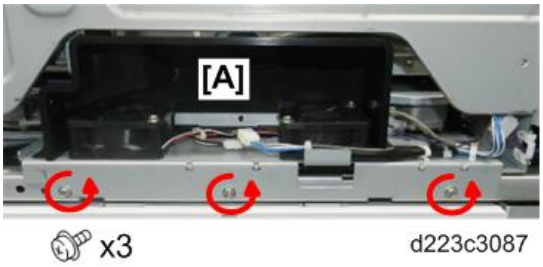
d223c3085

6. On the right side of the machine, disconnect the development unit fans.



d223c3086

7. Disconnect the development unit fan bracket [A].



d223c3087

8. Remove the development unit fan bracket with fans attached.

d223c3088

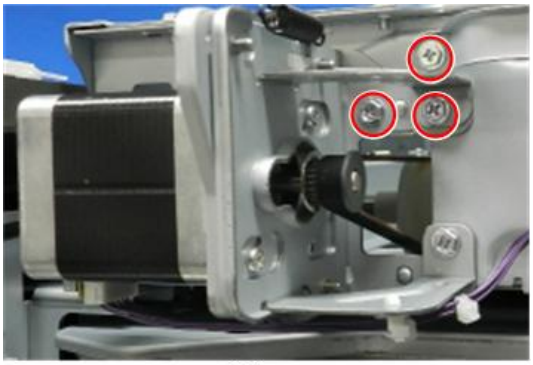
9. Disconnect the cross-stay.

d223c3089

10. Lower the cross-stay and let it hang. It is not necessary to remove it.

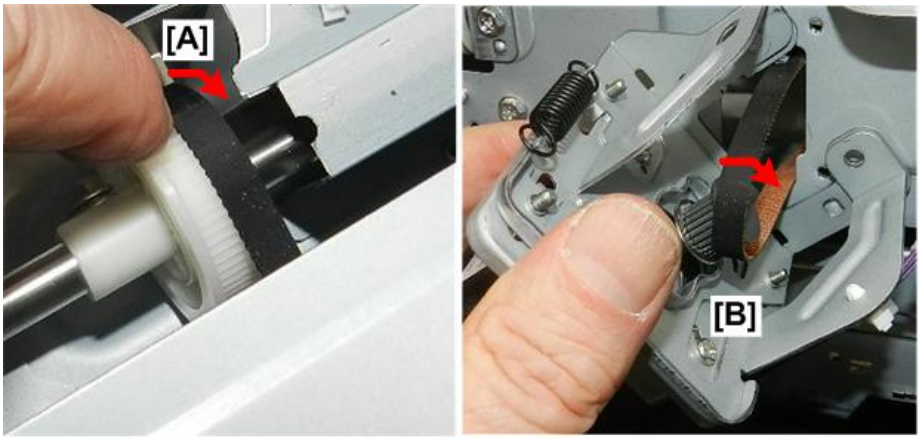
d223c3090

11. Disconnect the scanner motor bracket.



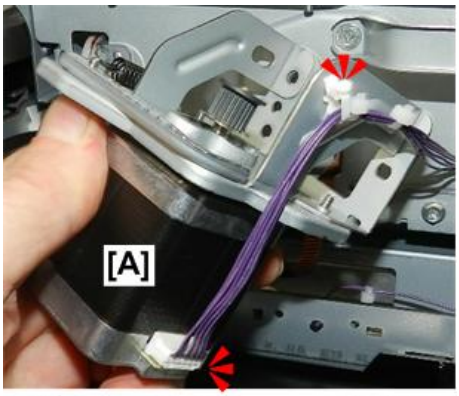
x3 d223c3091

12. Inside the scanner unit, disconnect the left end [A] of the drive belt.
13. Disconnect the right end [B] of the drive belt from the motor.



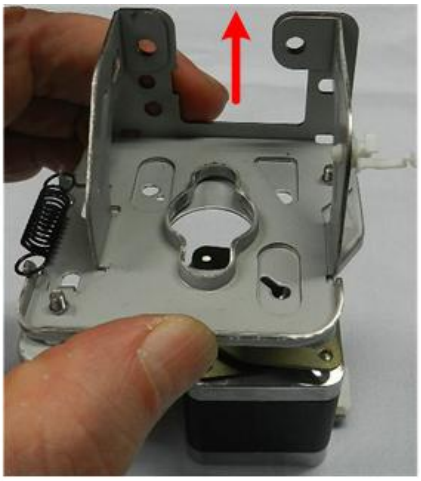
x1 d223c3092

14. Disconnect motor [A] and then remove the bracket with motor attached.



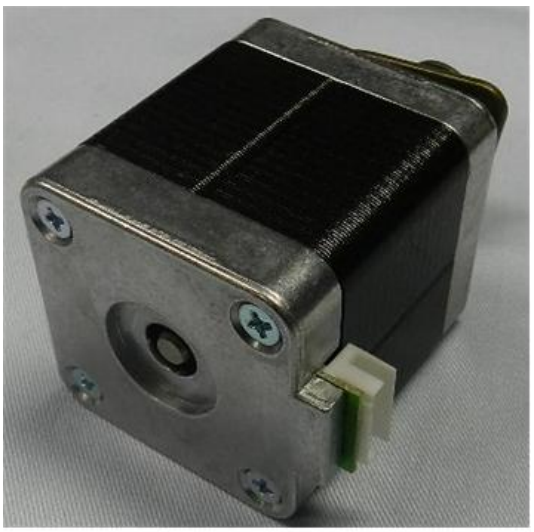
x1 x1 d223c3093

15. Disconnect motor bracket.



x2 d223c3094

16. Separate motor and bracket.



d223c3095

To re-attach the cross-stay

1. Set the front hook [A] and rear hook [B] into the holes provided so the stay is perfectly straight.

d223c3096

4.6.10 SCANNER HP SENSOR

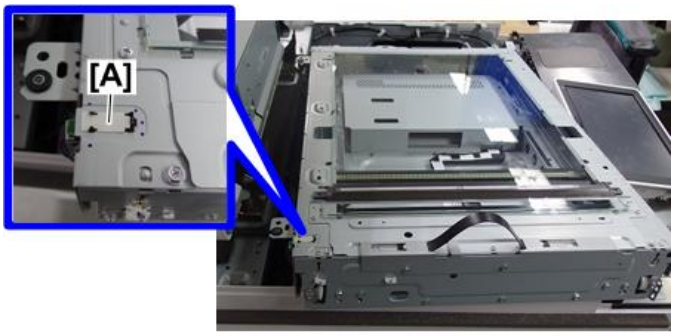
1. Remove the scanner unit and set it on the frame of the machine. page 4-43

d223d4121

Important

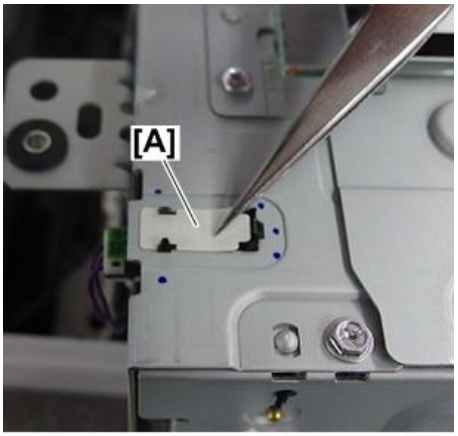
- It is not necessary to disconnect the ADF I/F cables at the back of the machine.
- Just remove the exposure glass and the four base screws that secure the scanner unit, raise the scanner out of the well, and then set on the frame of the machine.

2. The scanner HP sensor [A] is at the left rear corner of the scanner unit.



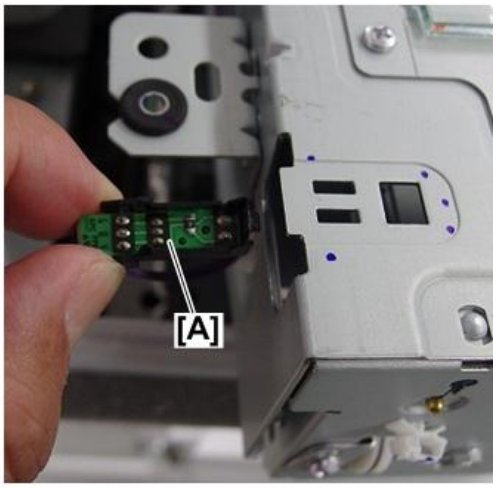
d223d4121a

3. Remove the sensor hook plate stopper [A].



d223d4122

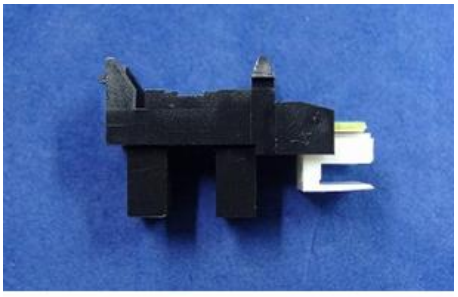
4. Disconnect the sensor [A] from the frame.



x3

d223d4123

5. Lay the sensor on a flat, clean surface.



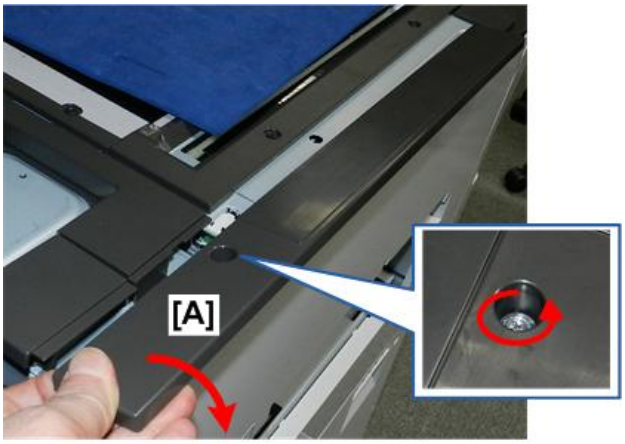
d223d4124

4.6.11 ADF OPEN SENSOR

1. Remove the ADF. page 4-396
2. Disconnect rear flat plate.

x2 d223c3097

3. Remove left edge plate [A].



x1 d223c3098

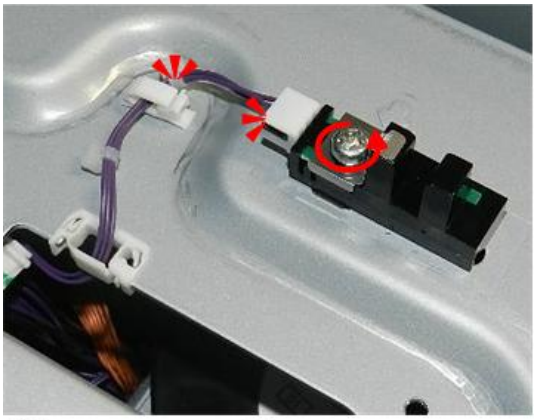
4. Remove right top plate.

x1 d223c3099

5. Remove rear flat plate.

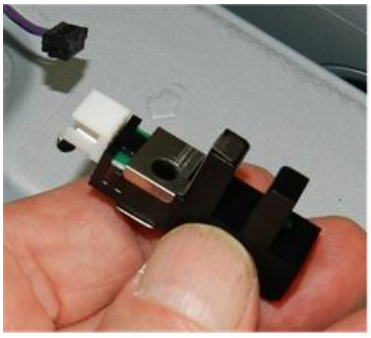
d223c3100

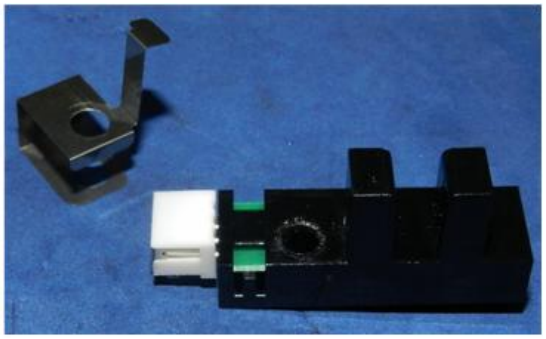
6. Disconnect scanner HP sensor.



x1 x1 x1 d223c3101

7. Remove the sensor.



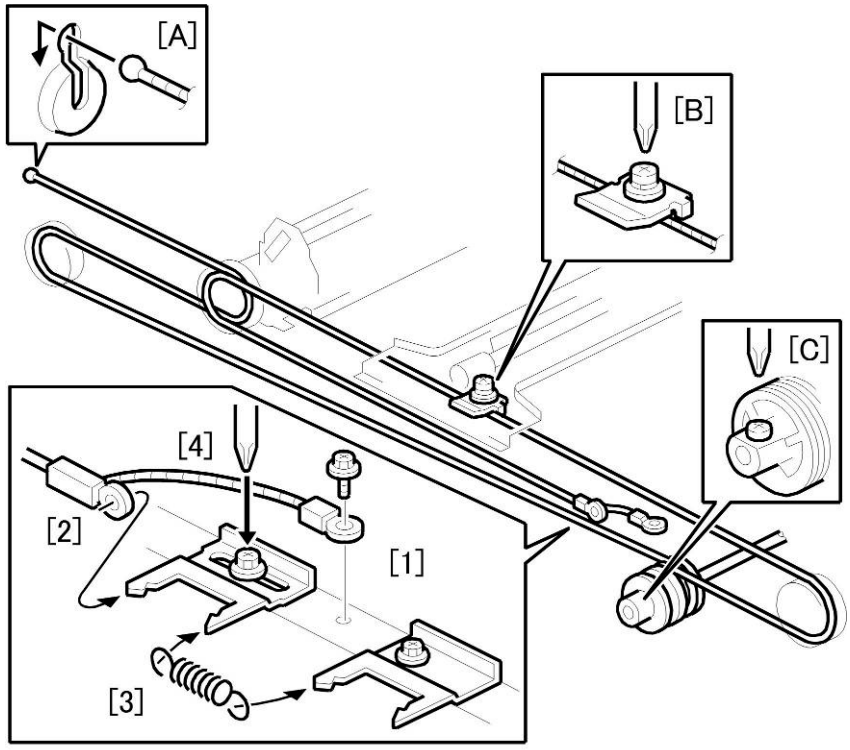


d223c3102

4.6.12 SCANNER WIRE

Scanner Wire Removal

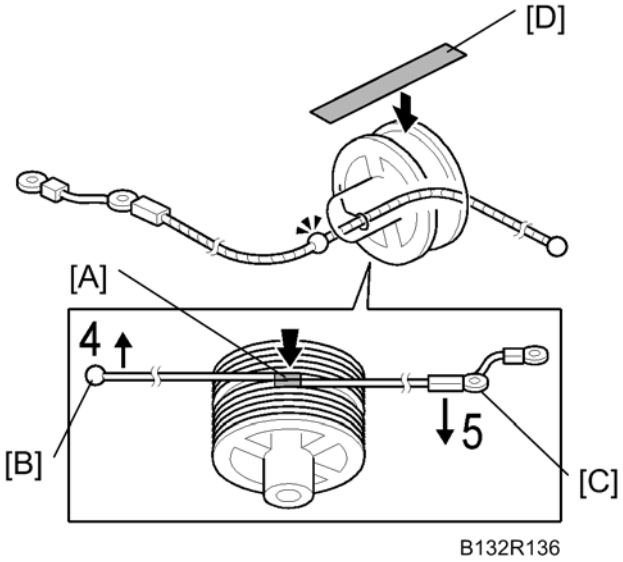
1. Remove the scanner unit. page 4-43
2. Disconnect ground wire [1] (x1)
3. Disconnect the head of the wire [2] from tension bracket 1.
4. Remove spring [3].
5. Loosen the screw [4] of tension bracket 1.
6. Disconnect the end of the wire at [A].
7. Remove lock bracket [B] of the 1st scanner (x1).
8. Disconnect the wire from the pulley [C] (x1).
9. Remove the wire from the scanner.



B132R137.WMF

Scanner Wire Reinstallation and Scanner Position Adjustment

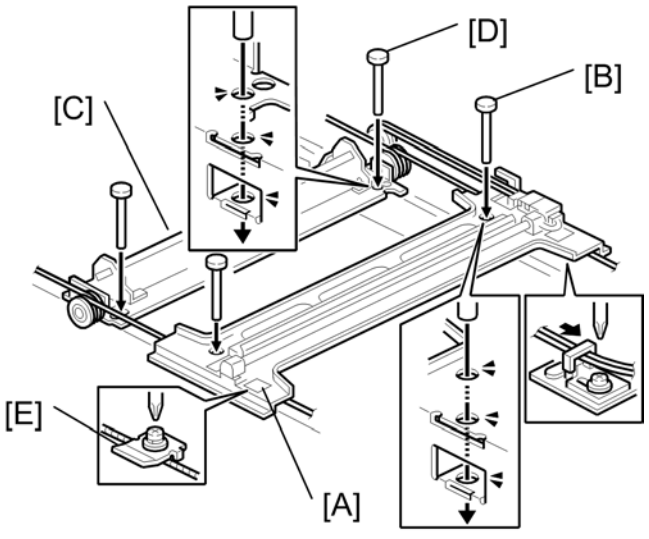
1. Place the beads [A] on the middle of the wire in the openings in the pulley.
2. Wind the ball end of the wire [B] 4 times.
3. Wind the other end of the wire [C] 5 times.
4. Attach tape [D] across the pulley to temporarily hold the wires in place.



B132R136

5. Position the 1st scanner [A] so that the holes are aligned, and insert the positioning pins [B] (x4).
6. Position the 2nd scanner [C] so that its holes are aligned, and insert the positioning pins [D].
7. Attach the lock bracket [E] to fasten the wire to the 1st scanner.

8. Tighten the screw of the tension bracket.
9. Attach the pulley and tighten its lock screw.
10. Remove the positioning pins (x4).
11. Remove the tape from the pulley.
12. Slowly push the scanner left and right to confirm that the wires are engaged correctly. The 1st and 2nd scanners should move smoothly.



B132R138

4.6.13 IMPORTANT SP CODES: SCANNER UNIT

Here is a list of SP codes related to testing and servicing the scanner unit.

Item	SP No.	Function
APS size detection	4305	Adjusts APS size detection for SEF/LEF in order to detect 8K/16K paper.
CIS ID	4700	Displays the ID of the CIS board at power on.
Magnification, sub scan	4008	Fine adjusts the magnification in the sub scan direction for scanning by changing the speed of the scanner motor.
Registration, main scan	4011	Adjusts the side-to-side registration for scanning in the main scan direction across the page.
Registration, sub scan	4010	Adjusts the registration of the leading edge for scanning in the sub scan direction.
Scan NVRAM version	1001	**This is a Scanner SP Code**. Displays the scanner firmware version stored in NVRAM in a 9-digit format: Func. Name_Model Name_History No.
Scanner free run	4013	Executes a free run for testing with the LEDs either on or off.

4.7 LASER UNIT

⚠WARNING

- Turn off the machine and unplug its power cord before performing any procedure in this section. Laser beams can seriously damage the eyes.
- This laser unit uses four laser beams produced by a Class IIIb LDA with a wavelength of 653 to 665 nm and intensity of 15 mW. Direct exposure to the eyes could cause permanent blindness.
- Before performing any replacement or adjustment of the laser unit, push the machine power switch to switch the machine off. Then unplug the machine from the power source.
- Do not touch the machine for 10 minutes. This allows enough time for the fusing unit to cool and for the polygon motor to stop rotating.
- Never power on the machine with any of these components removed: LD unit, polygon motor cover, synchronization detector.
- To avoid serious eye injury, always confirm that the machine has been completely re-assembled before you turn the machine on.

4.7.1 WARNING DECAL LOCATIONS

Two caution decals are attached to the top of the laser unit.

d223c0002

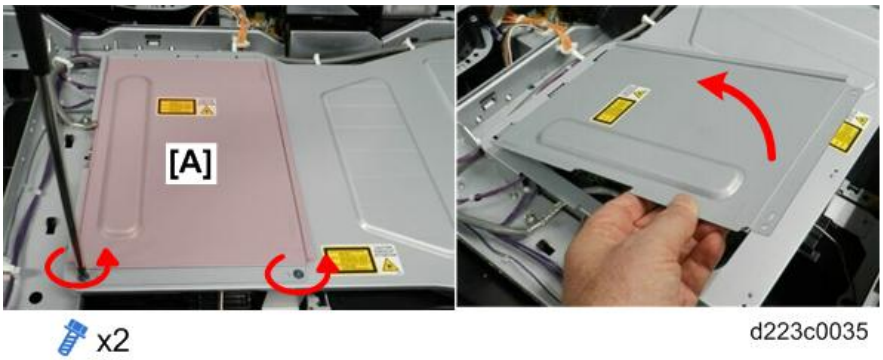
4.7.2 POLYGON MOTOR, POLYGON MOTOR DRIVE BOARD, LD UNIT

Polygon Motor Cover

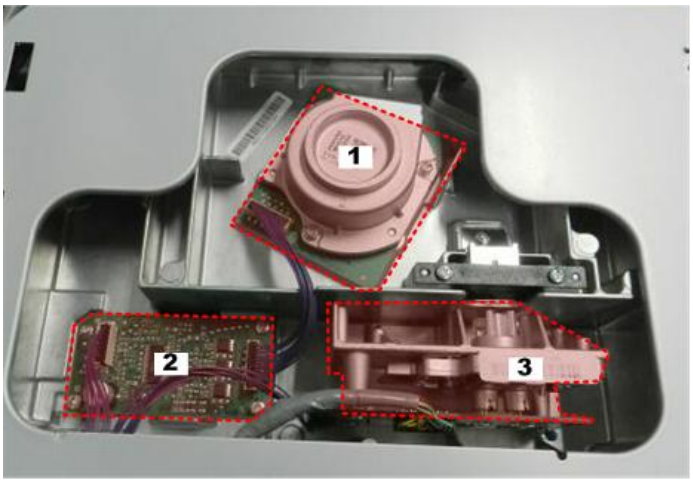
Important

- An accidental static discharge could damage the LDB (Laser Diode Board) in the LD unit.
- Touch a metal surface to discharge any static electricity from your hands.
- The polygon motor rotates at extremely high speed and continues to rotate after switching the machine off.
- To avoid damaging the motor, never remove the polygon motor within three minutes of switching off the machine and disconnecting its power plug.

1. Remove the scanner unit. page 4-43
2. Remove polygon motor cover [A].



3. There are three components in the well under the cover.



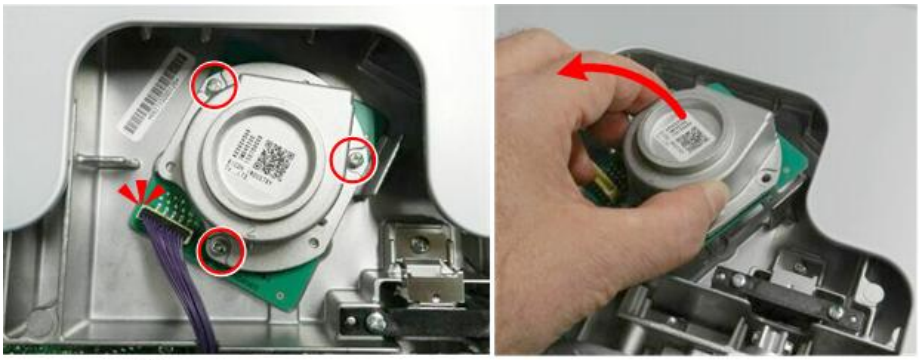
1	Polygon motor
2	Polygon motor drive board
3	Laser diode (LD) unit

⚠CAUTION

- An accidental static discharge could damage the laser diode board or other boards under the polygon motor cover.
- To prevent damage to a PCB, always touch a metal surface to discharge any static electricity from your hands before you remove a component.

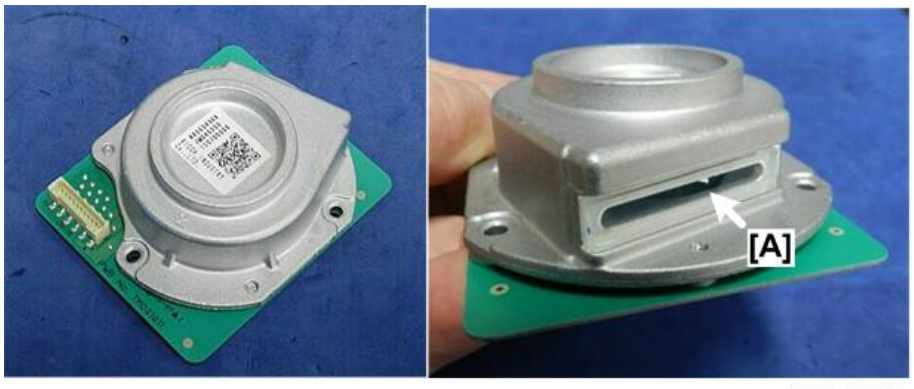
Polygon Motor

1. Remove scanner unit. page 4-43
2. Remove polygon motor cover. page 4-87
3. Touch a metal surface to discharge any static charge from your hands.
4. Remove the polygon motor.



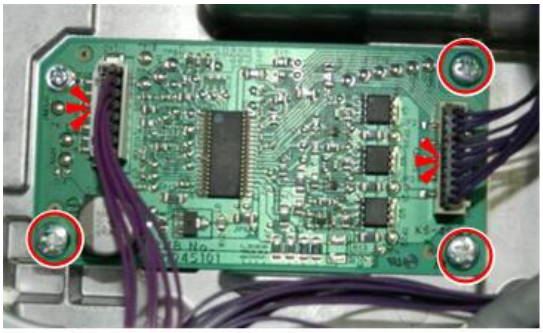
Important

- Handle the motor carefully.
- Keep tools and your fingers away from the mirror port [A] on the side of the motor.



Polygon Motor Drive Board

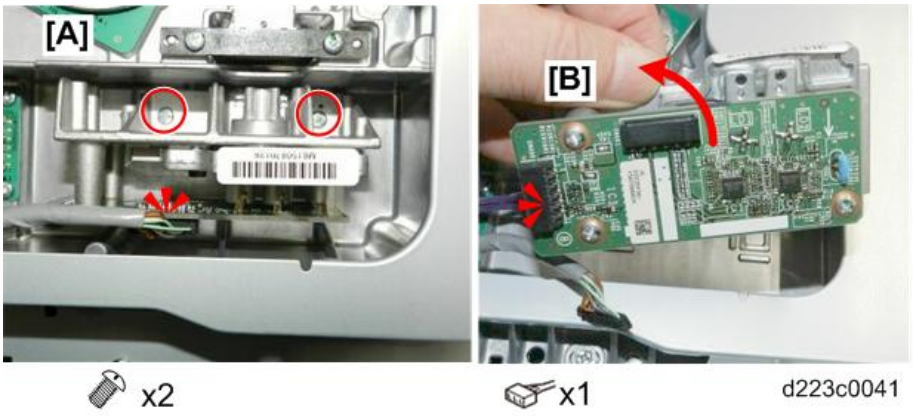
1. Remove scanner unit. page 4-43
2. Remove polygon motor cover. page 4-87
3. Disconnect the polygon motor drive board.



4. Touch a metal surface to discharge any static charge from your hands.
5. Remove the drive board.

Laser Diode Unit

1. Remove scanner unit. page 4-43
2. Remove polygon motor cover. page 4-87
3. Disconnect the LD unit [A].
4. Touch a metal surface to discharge any static charge from your hands.
5. Pull the unit out partially [B], and then disconnect the harness on the left edge.



6. Remove the LD unit.

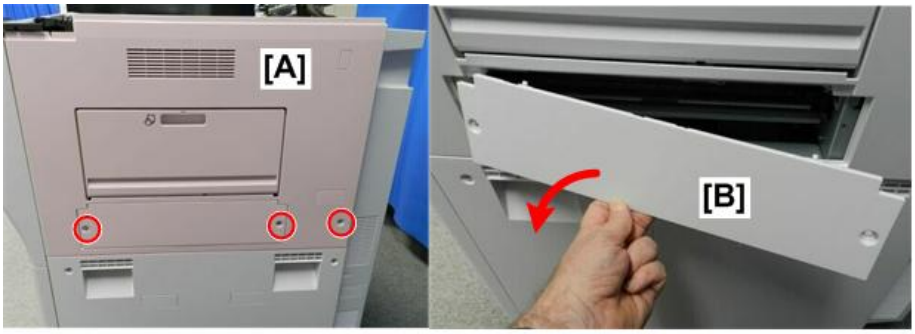
After Reassembly

Do this procedure if you replaced the LD unit.

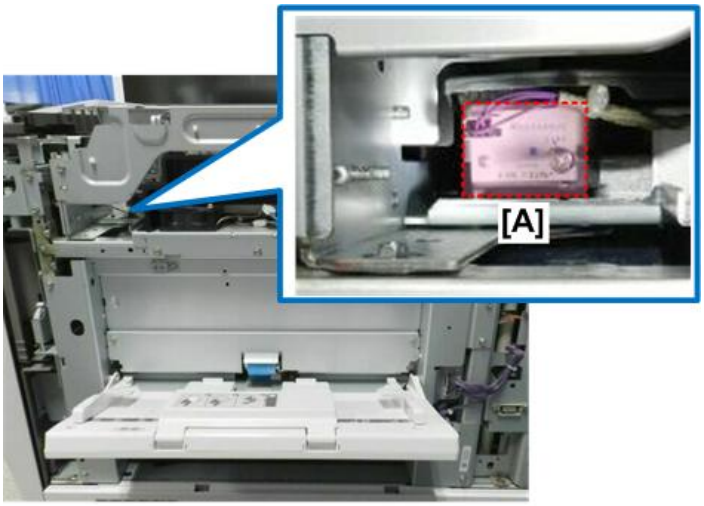
1. Reconnect the machine.
2. Make sure the front door is closed, and then turn the machine on.
3. Go into the SP mode and execute **SP2110-005**. This automatically downloads the settings to the machine for the new LD unit.
4. If execution of **SP2110-005** fails on the first attempt, just do it again.
5. Perform the printer adjustments. Copy Image Adjustment: Printer/Scanner

4.7.3 LASER SYNCHRONIZATION DETECTOR

1. If the LCIT is installed, disconnect it and pull it away from the right side of the main machine.
2. Disconnect the right upper cover [A].
3. Remove cover plate [B], and then remove the right upper cover.



4. The laser synchronization detector [A] is inside the right front corner of the machine.

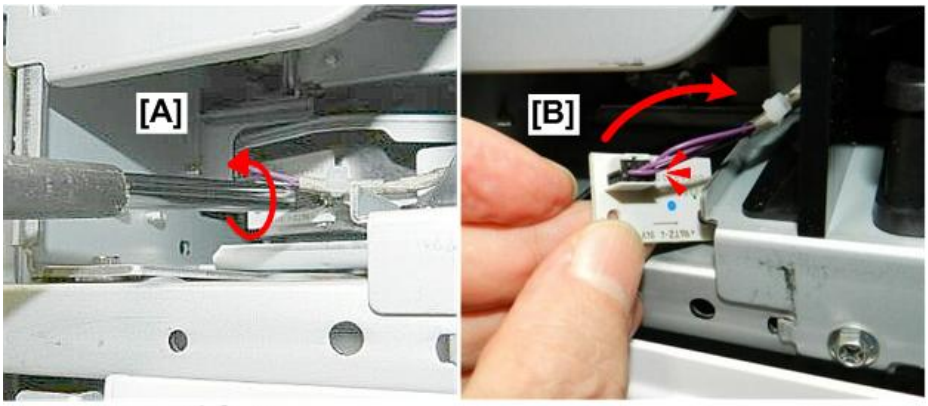


Note

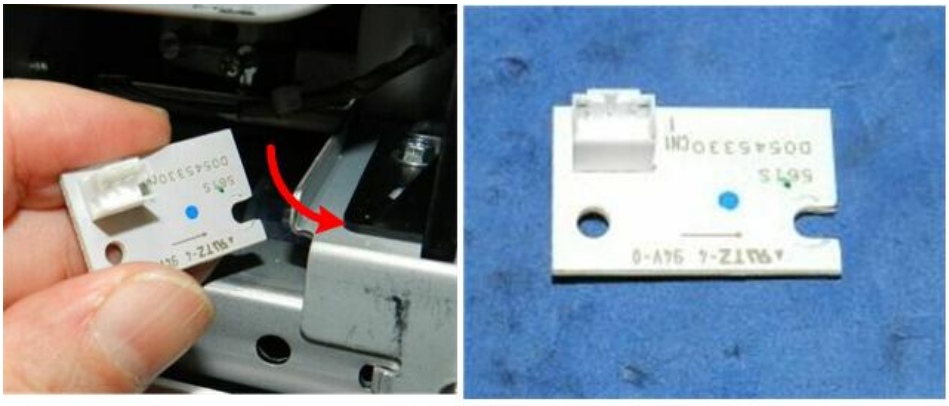
- You do not need to remove the development unit fans next to the laser synchronization detector.

5. Loosen the single screw of the laser synchronization detector [A] (do not remove it!).

6. Pull the detector out partially and disconnect it [B].

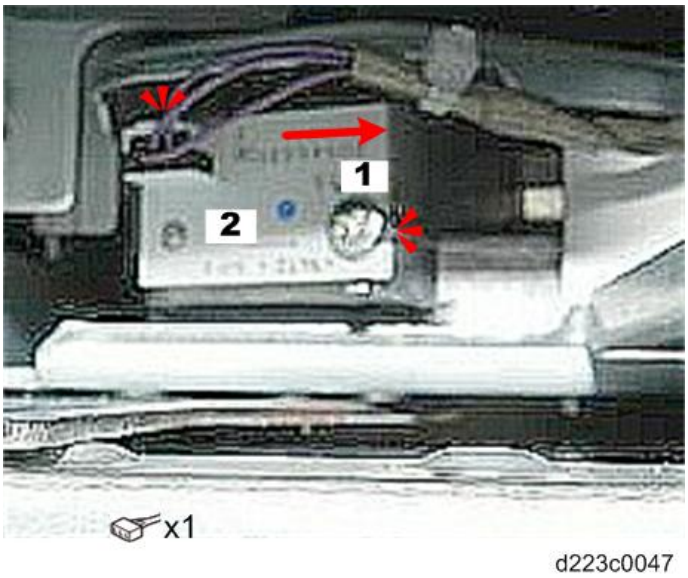


7. Remove the detector.



Re-installation

1. Connect the harness to the detector.
2. Slide the cutout on the right edge of the detector behind the screw head [1].
3. Set the hole [2] onto the point of the boss on the left, and then tighten the screw.

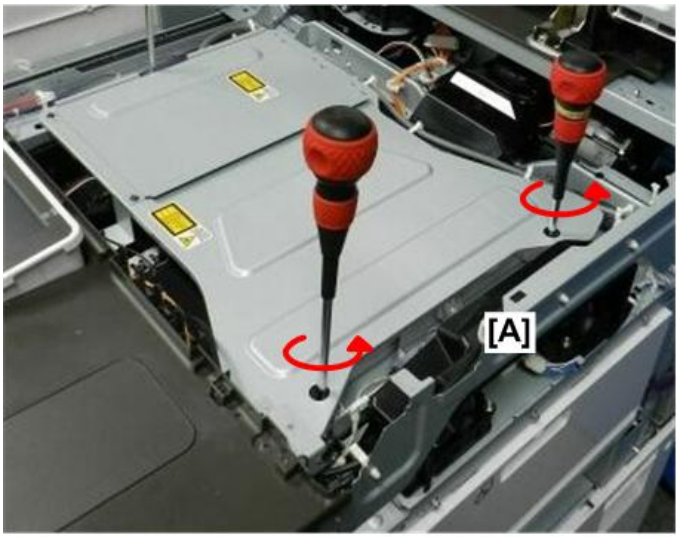


4. After replacement of the laser synchronization detector, set **SP1002-1** to **-7** (Side-to-Side Registration) to their default settings.

4.7.4 LASER UNIT ALIGNMENT

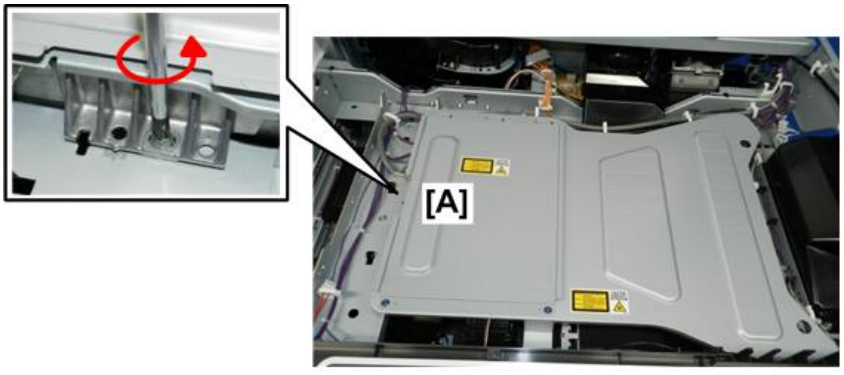
This adjustment corrects the parallelogram pattern to the desired rectangular pattern for printing. It does not correct the skew of scanned images.

1. Execute **SP2902-3** (Test Pattern - Printing Test Pattern #18) to print the A4 LEF pattern.
2. Check the printed patterns and estimate the angle of adjustment required.
3. Remove the scanner unit. Scanner Unit Removal
4. Loosen both screws on the right side of the laser unit [A].



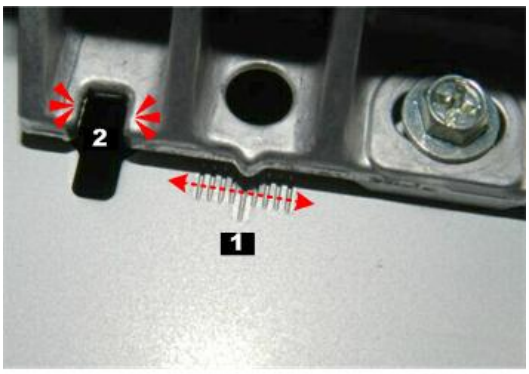
d223c0048

5. On the left [A], loosen the adjustment screw.



d223c0049

6. While watching at the scale [1], use a flathead screwdriver at [2] to move the laser exposure unit left or right on the scale until it is centered on the scale.

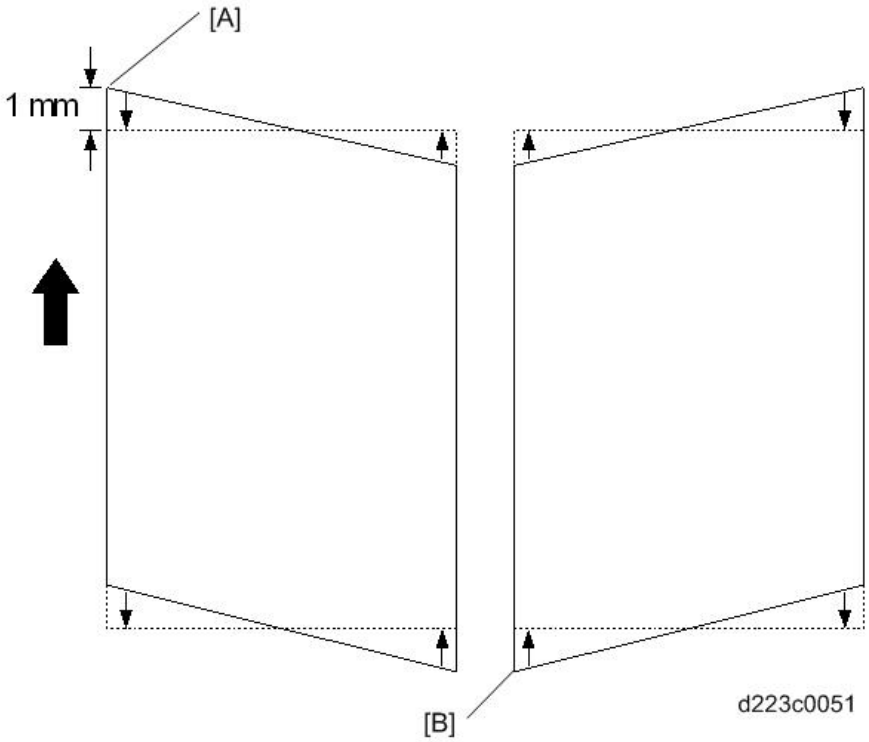


d223c0050

Note

- The scale is set for increments of 1 mm.

7. Refer to the illustration below:
   - If the pattern is skewed at the corner of the leading edge [A], move the unit so it moves the pointer on the scale toward the **rear** of the machine.
   - If the pattern is skewed at the trailing edge [B], move the unit so it moves the pointer on the scale toward the **front** of the machine.



d223c0051

1. After adjustment, tighten the screws on the laser unit (x3).
2. Re-assemble the machine.
3. Print the pattern again with **SP2902-3** Pattern #18.
4. Check the pattern. Repeat the procedure if more adjustment is required.

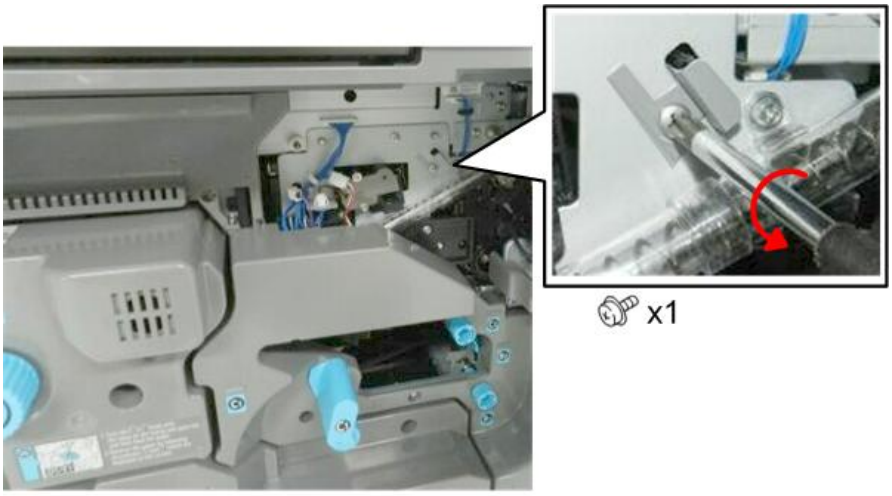
4.7.5 TONER SHIELD GLASS

The toner shield glass must be inspected and cleaned at regular intervals.

1. Prepare a clean, flat location to lay the toner shield glass.
2. Open front door [1], and then swing out toner bottle [2].

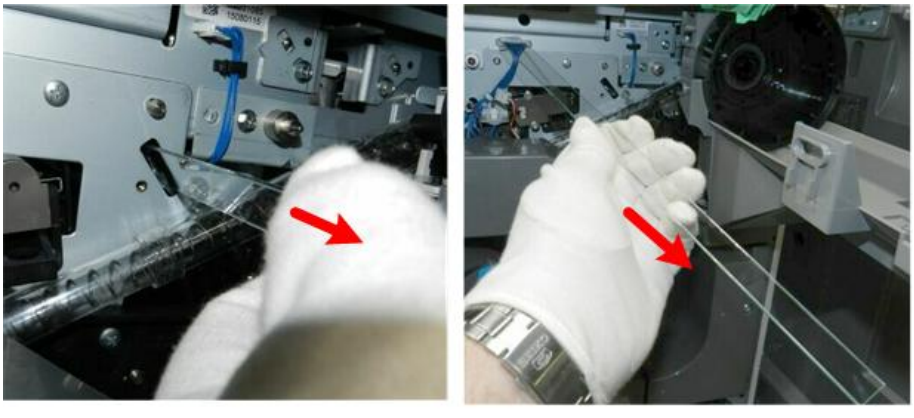
d223c0053

3. Locate and remove the metal bracket.



d223c0054

4. Slowly, pull the toner shield glass straight out to remove it.



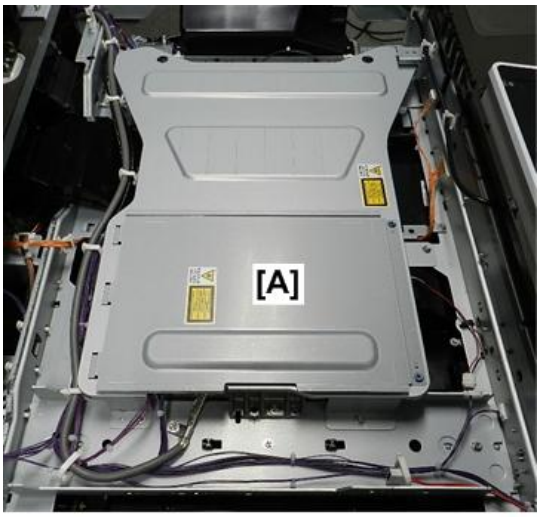
d223c0055

5. Lay the glass on a flat, clean surface.

d223c0056

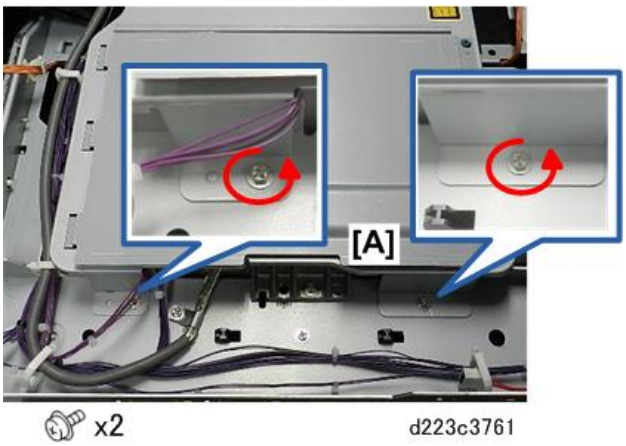
4.7.6 LASER UNIT REMOVAL

1. Remove the toner shield glass. page 4-95
2. Remove the scanner unit. page 4-43
3. First, you must remove top cover [A],



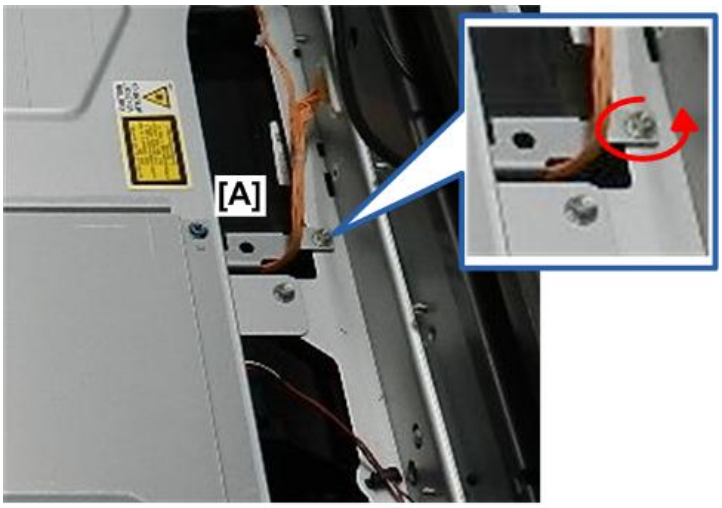
d223c3760

4. Disconnect the left side [A] of the top cover.



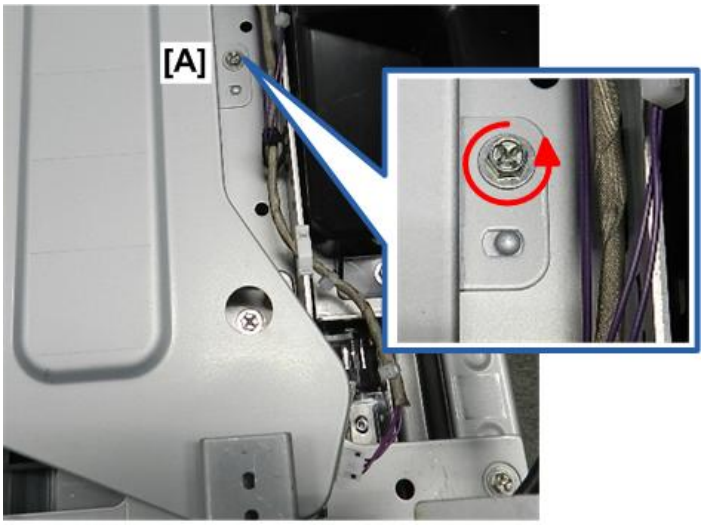
d223c3761

5. Disconnect the front edge [A] of the top cover.



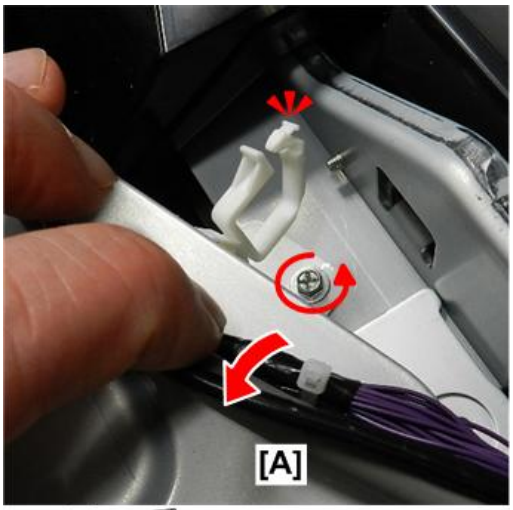
x1 d223c3762

6. Disconnect right side [A] of the top cover.



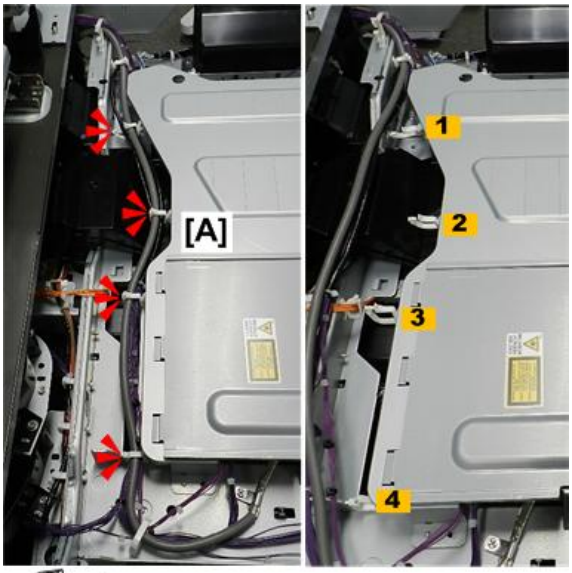
x1 d223c3763

7. Disconnect right rear corner [A] of top cover.

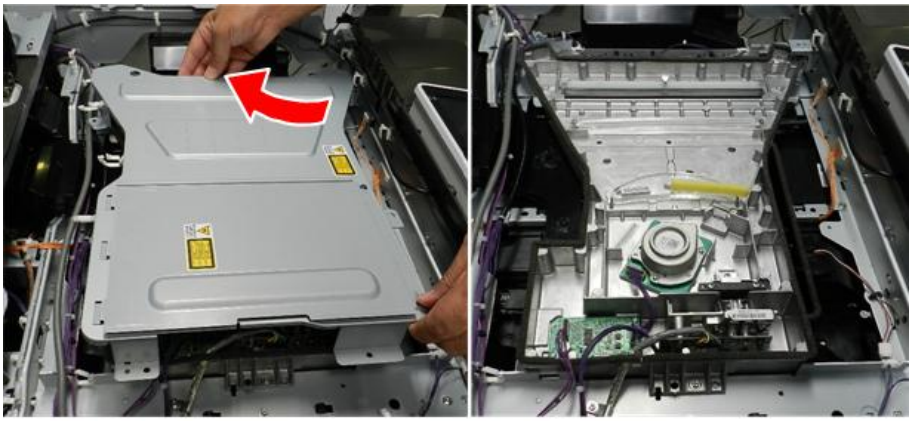


x1 x1 d223c3764

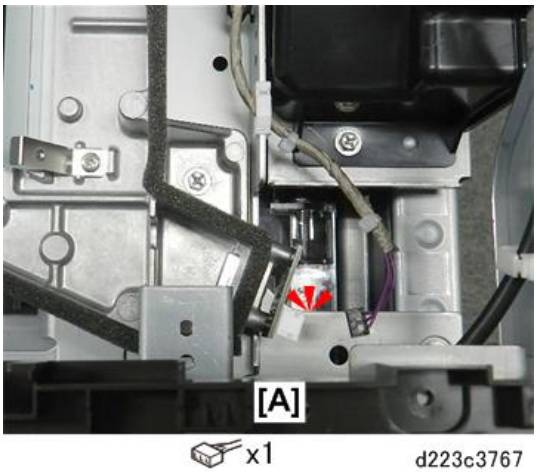
8. Release the harnesses attached to the back of the cover [A].



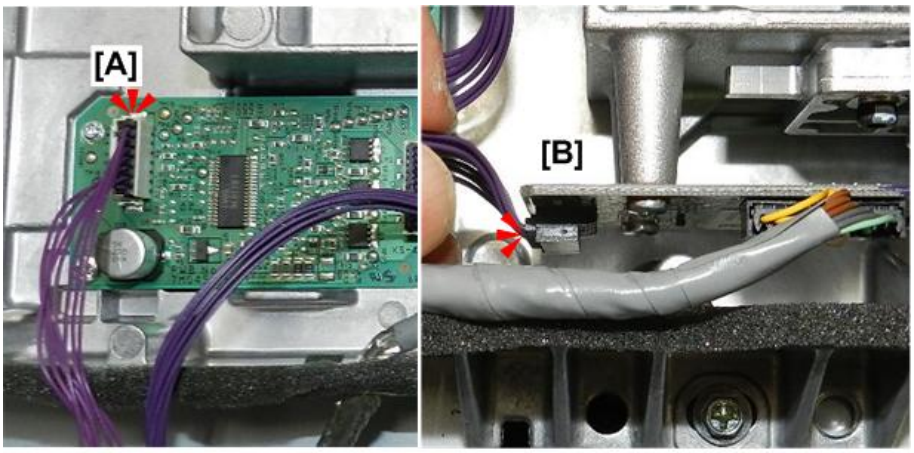
9. Remove the top cover.



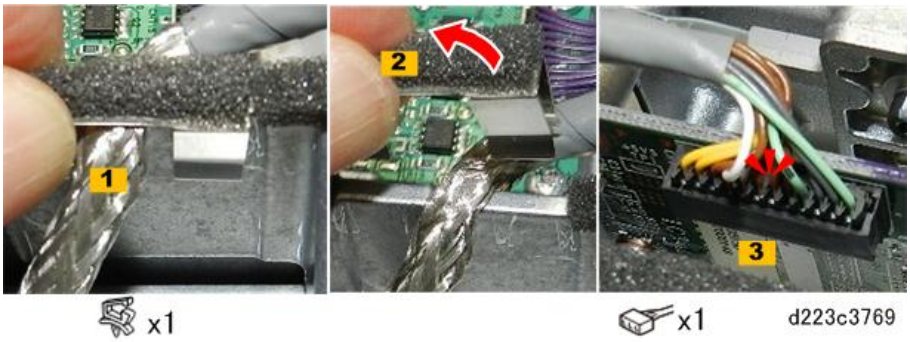
10. At the front, right corner [A] of the laser unit disconnect the laser synchronization unit.



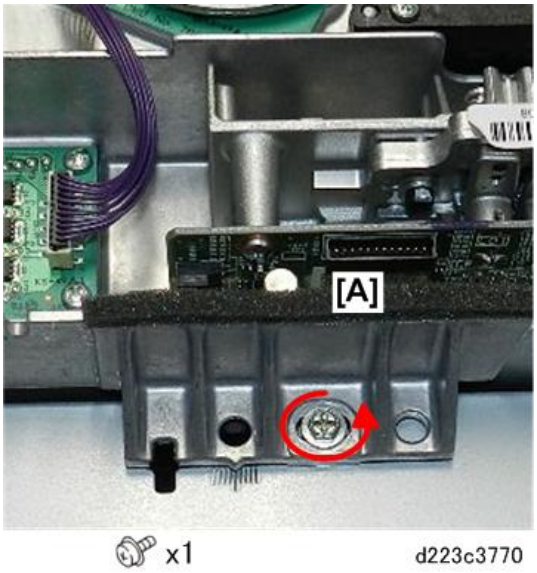
11. Disconnect the left side of the unit at [A] and [B].



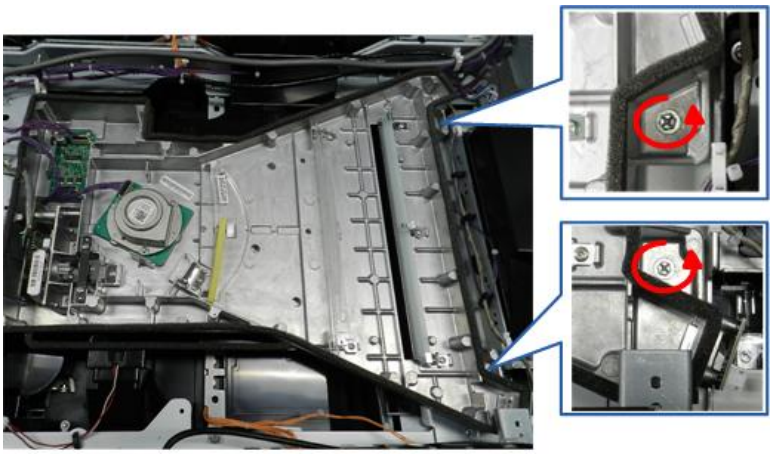
12. The shielded cable is fastened to the unit frame with a metal clamp [1].
13. Remove the clamp [2] and free the shielded cable.
14. Disconnect the LD unit [3].



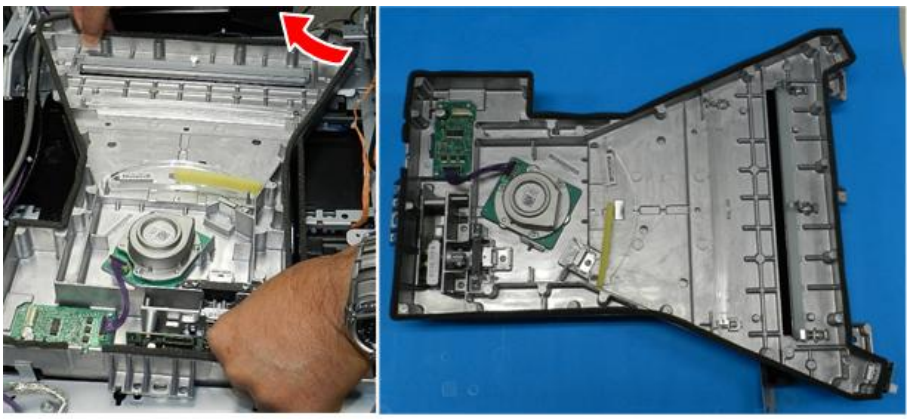
15. Disconnect the left side of the laser unit [A].



16. Disconnect the right side of the laser unit.

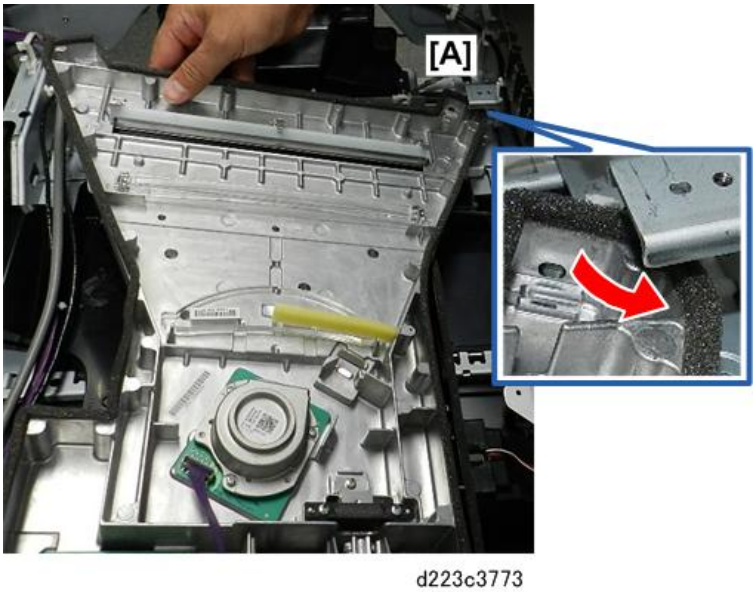


17. Remove the laser unit and lay it on a flat, clean surface.

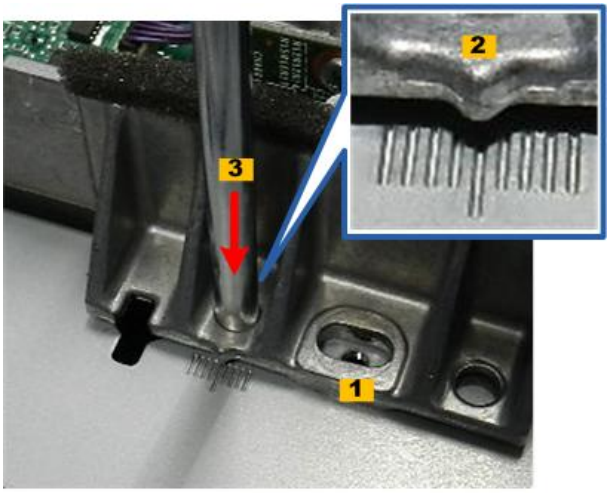


Reinstallation

1. When you install the laser unit in the machine, first set the front right corner under support [A].

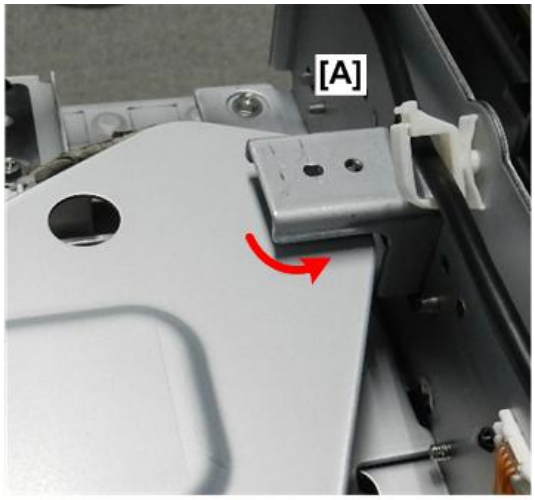


2. On the left, before you re-attach the screw at [1], shift the notch on the left side of the unit [2] so it is aligned with the middle line of the scale below.
3. Insert a screwdriver [3] into the plate to hold the unit in place as you re-attach the screws.



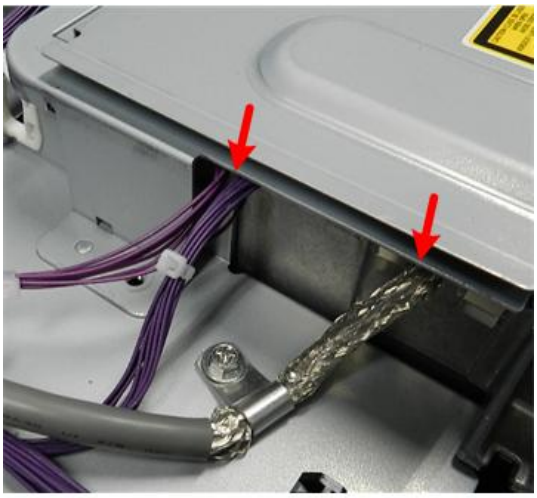
d223c3774

4. Set the right front corner of the plate under the support [A] and then lay the plate on top of the laser unit.



d223c3776

5. After you set the top plate on the unit, make sure that the harnesses on the left are not pinched under the plate.



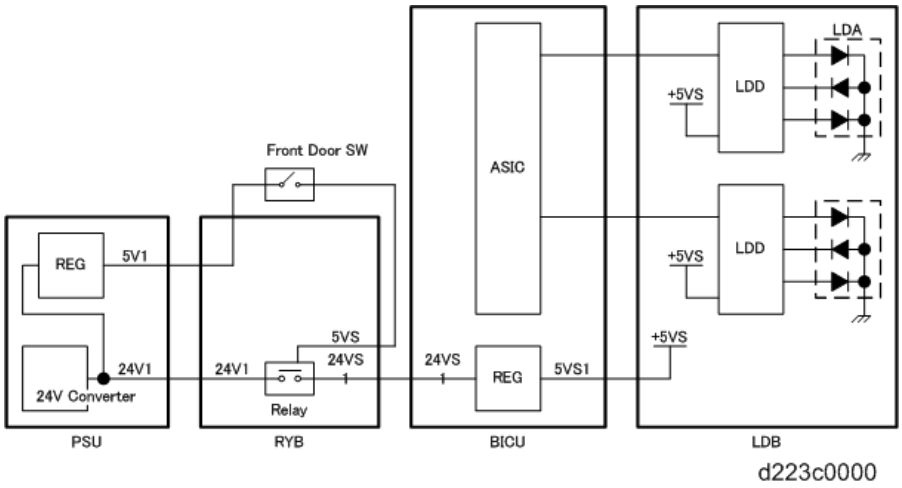
d223c3775

6. Reconnect the machine.
7. Make sure the front door is closed, and then turn the machine on.
8. If you have replaced the laser unit, go into the SP mode and execute **SP2110-005**. This automatically downloads the settings to the machine for the new LD unit.
9. If execution of **SP2110-005** fails on the first attempt, just do it again.
10. Print the alignment pattern with **SP2902-3** Pattern #18 and check the alignment of the pattern.
11. If there is a problem, you will need to realign the laser unit. page 4-93

4.7.7 LD SAFETY SWITCHES

In this machine the mechanism that makes the laser unit operational is a 24V1 line interrupted using a 5VS relay and then 24VS is dropped to +5VS1 using a regulator.

To ensure the safety of the machine operators and service technicians, one switch prevents the laser beams from switching on accidentally. When the front door is opened, the +5VS1 line connecting the LD driver on the LD control board is disconnected to disable the laser units.



4.7.8 IMPORTANT SP CODES: LASER UNIT

Here is a list of SP codes related to testing and servicing the laser unit.

Item	SP No.	Function
Download LD settings	2110-5	Automatically downloads the settings to the machine for the new LD unit after replacement. It is no longer necessary to read the settings from a label and enter them manually.
Laser synchronization detector	1002	After replacement of the laser synchronization detector, set 001 to 007 (Side-to-Side Registration) to their default settings.
Test pattern	2902-3	Use this pattern for testing after LD unit replacement.

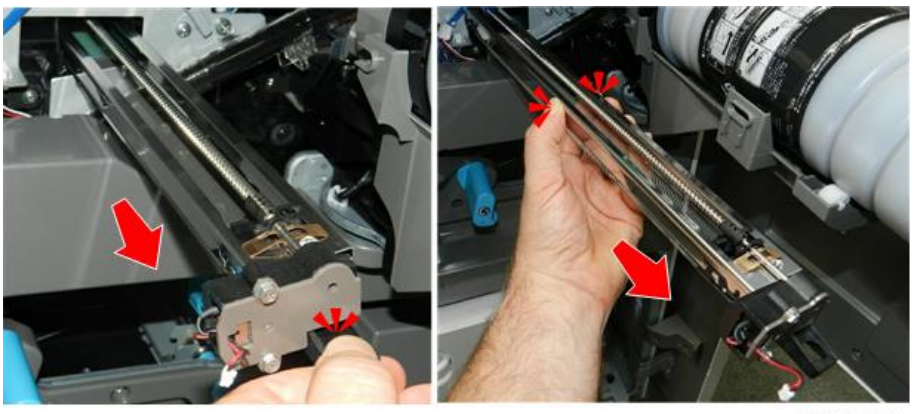
4.8 DRUM UNIT

4.8.1 CORONA UNIT

Corona Grid

1. Open the front door.
2. Pull the toner bottle holder out and swing the bottle to the right.
3. Disconnect the charge corona unit.

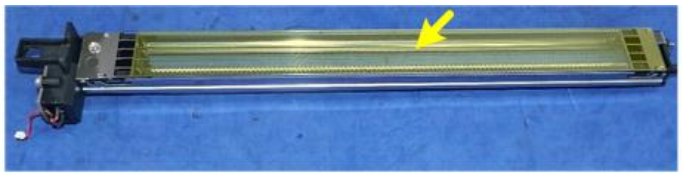
4. Without touching the wire mesh on top of the unit, pull the charge corona unit out of the machine.



5. Lay the unit on a flat, clean surface.

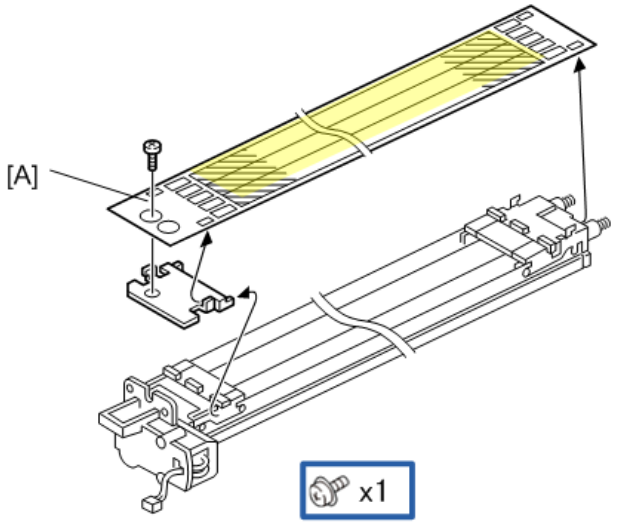
Important

- Always lay the unit down with the wire grid facing up.
- Never lay the unit down with the grid facing down.



d223c3145

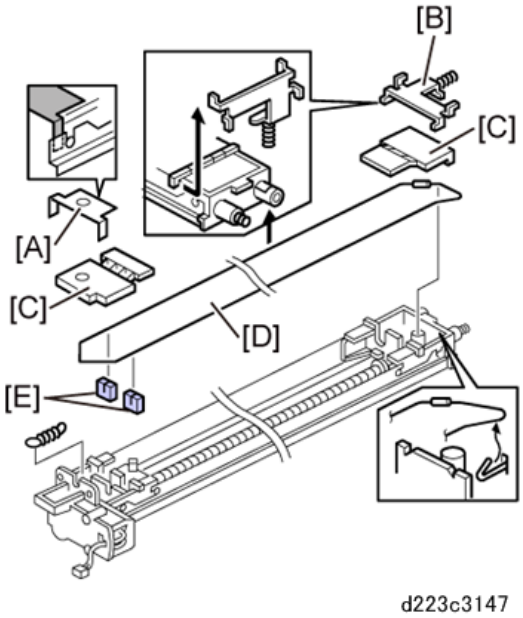
6. Remove grid [A].



d224c3146

Charge Wire

1. Remove the corona grid. (See procedure above.)
2. Remove terminal plate [A].
3. Rear grid fastening bracket [B].
4. Remove front and back end covers [C].
5. Remove charge wire [D].
6. Remove wire cushions [E].



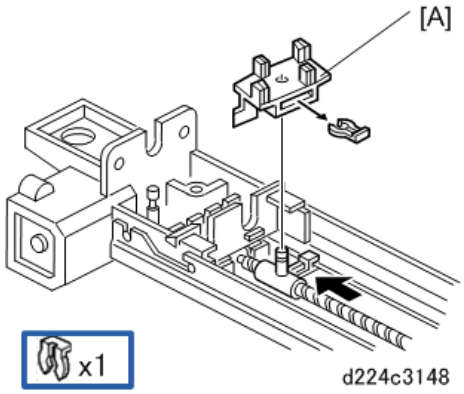
d223c3147

Important

- Never touch the charge corona wire with bare hands. Always protect it from dust, oil, etc.
- Never bend or knot the wire. Charge will not distribute evenly on a bent wire.

Cleaning Pad

1. Remove the charge wire. page 4-105
2. Remove cleaning pad [A].

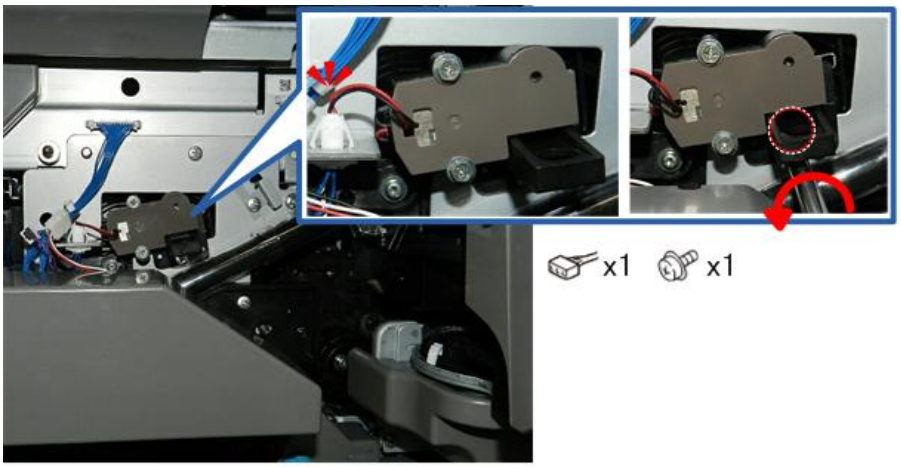


Re-assembly

1. At the front and back, make sure that the wire is threaded correctly into the grooves in the end blocks.
2. After replacing the charge corona wire, make sure that the wire cleaner pads are engaged correctly with the wires.

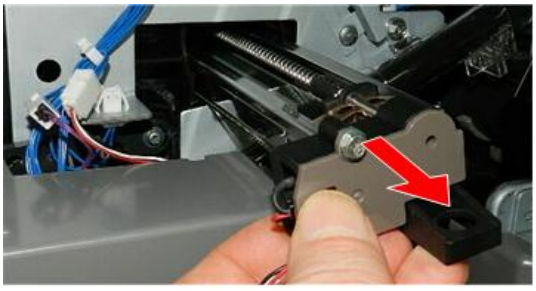
Corona Wire Cleaning Motor

1. Open the front door.
2. Swing the toner bottle holder to the right.
3. Disconnect the charge corona unit.



d223c3673

4. Remove the charge corona unit from the machine.



d223c3674

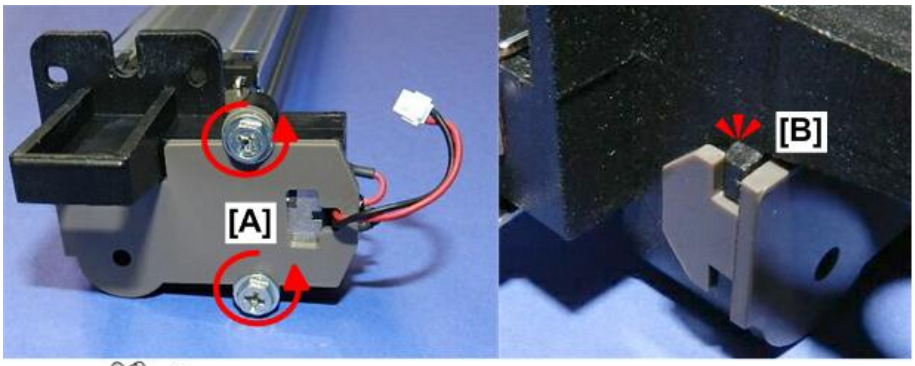
5. Lay the unit on a flat, clean surface with the grid side facing up.
6. The wire cleaning motor [A] is enclosed in the front end of the unit.

d223c3675

Important

- Always lay the unit down with the wire grid facing up.
- Never lay the unit down with the grid facing down.

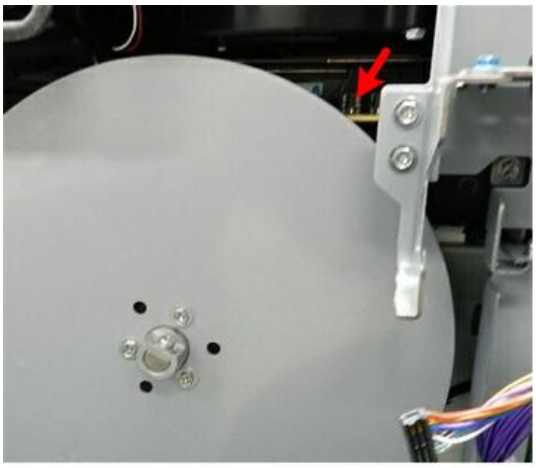
7. Disconnect the front plate [A].
8. Free the snap plate [B].



9. Remove the motor.
10. If the motor is being replaced, apply a small amount of grease to the worm gear of the motor before you install it.

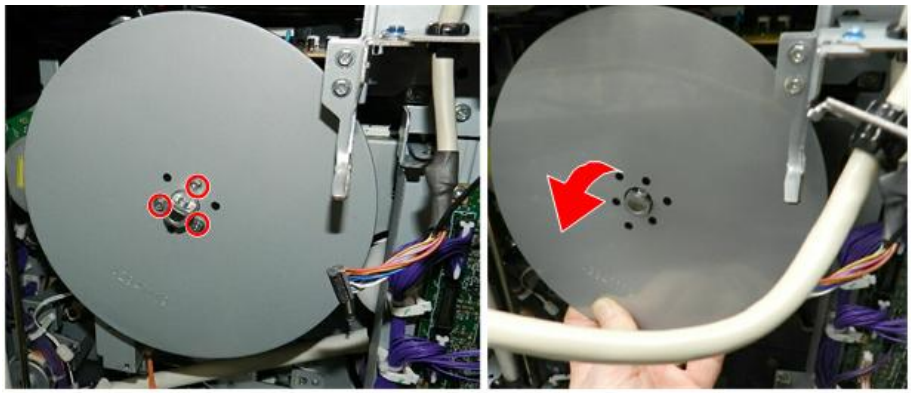
Corona Power Pack

1. Remove the rear upper and rear lower cover. page 4-19
2. Open the controller box. page 4-28
3. The corona power pack is located behind the flywheel.



d223c3678

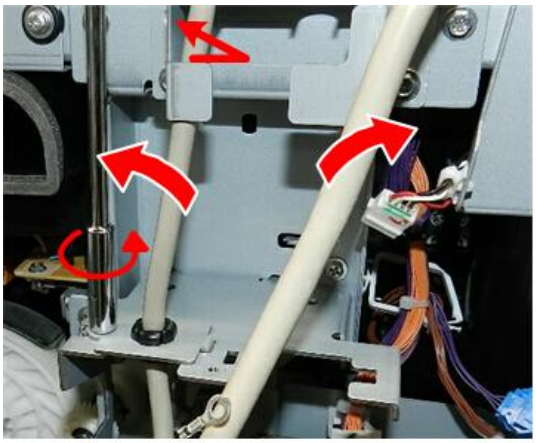
4. Remove the flywheel and rear center stay.



x3

d223c3679

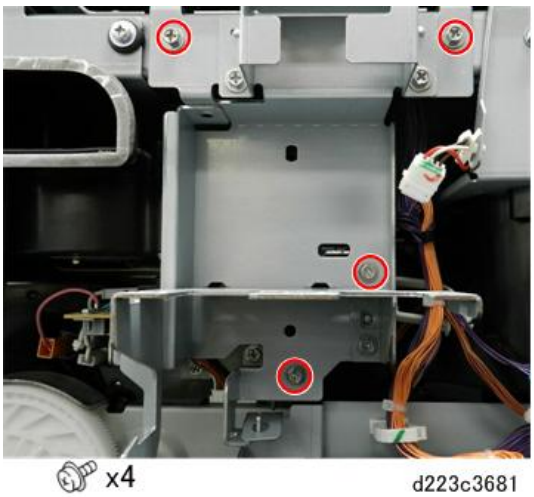
5. Clear the ADF cables away from the center stay.



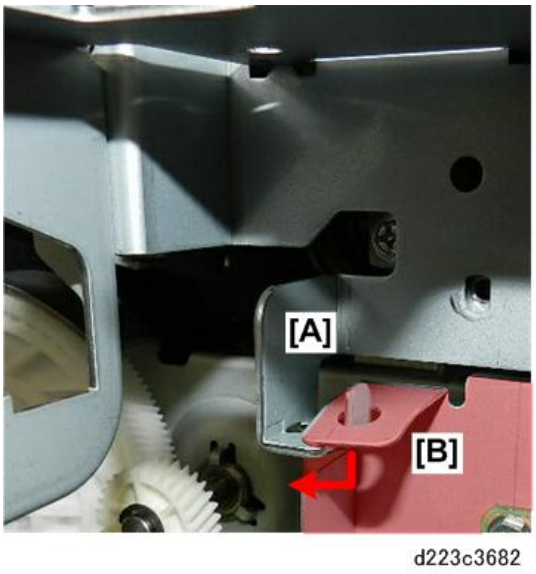
x1

d223c3680

6. Disconnect the center stay.



7. Slowly and carefully, lower the center stay [A] away from the corner plate [B] of the IOB bracket below.

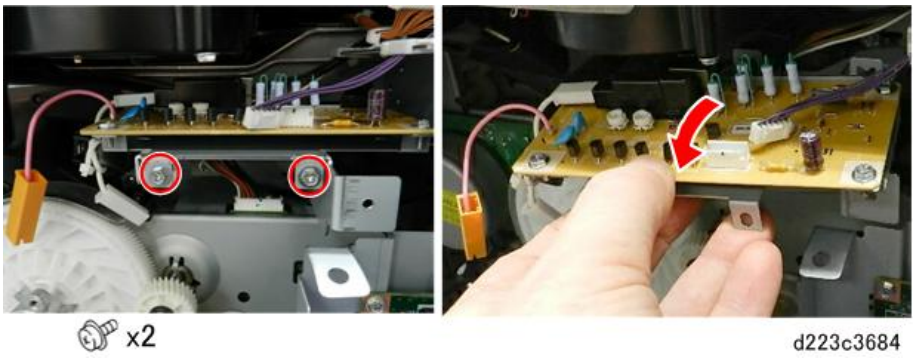


Important

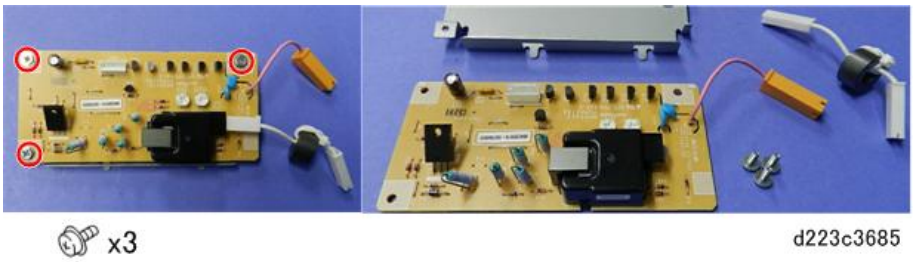
- The bracket on the bottom of the center stay provides the pivot point for the hinge at the upper left corner of the IOB bracket. The arm of the IOB bracket is soft and bends easily.

8. Disconnect the power pack.

9. Disconnect the power pack bracket, and then remove it with the power pack attached.



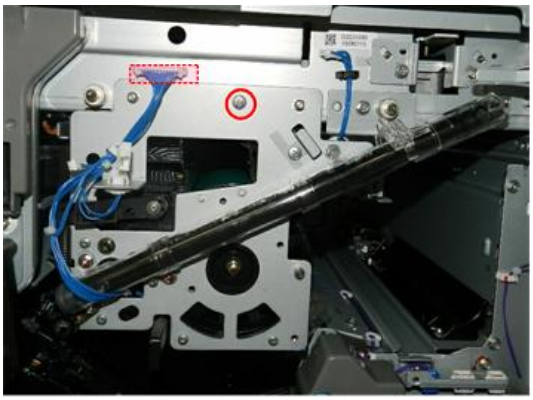
10. Separate the power pack from the bracket.



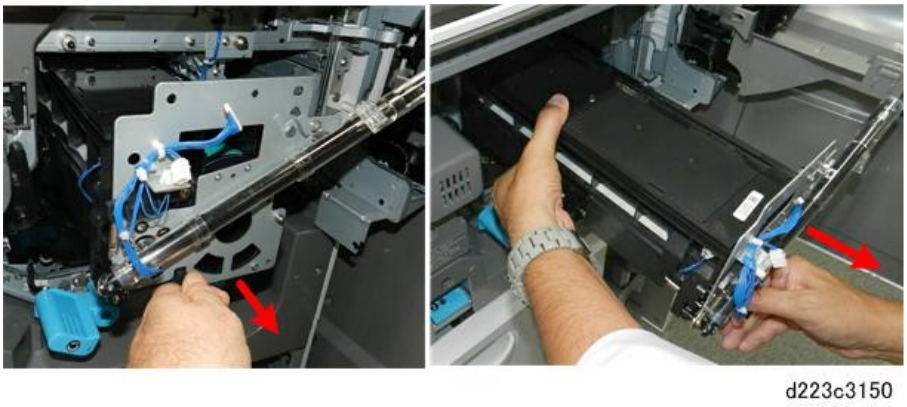
4.8.2 DRUM

Drum Unit Removal

1. Remove the development unit. page 4-149
2. Remove the corona unit. page 4-105



3. Grasp the front of the drum unit by the small handle, and then pull the drum unit out of the machine.



4. Lay the drum unit on a flat, clean surface.

Drum Removal

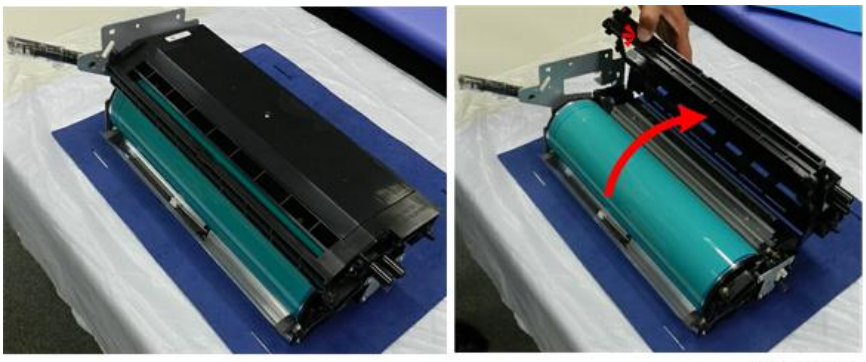
1. Remove the drum unit. page 4-149
2. Remove front screw and bracket.

x1 d223c3152

3. Remove rear screw.

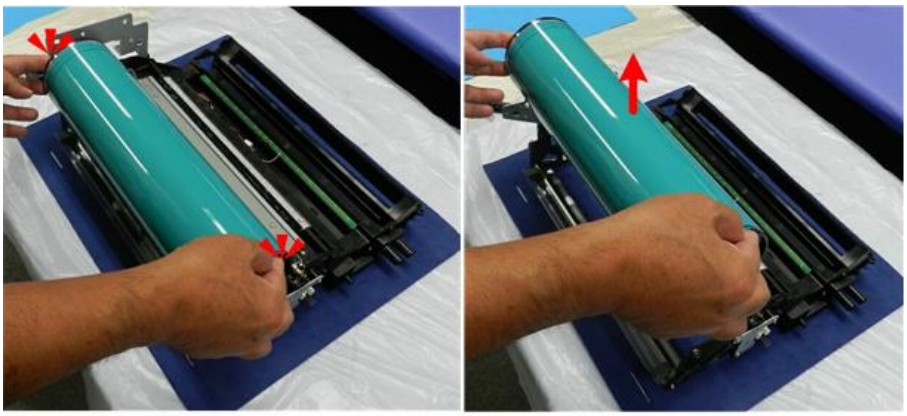
x1 d223c3153

4. Open the drum unit.



d223c3154

5. Without touching the surface of the drum, grasp the drum by each end and lift it out of the unit.

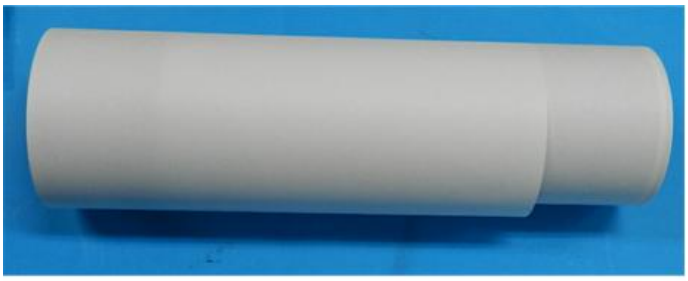


d223c3155

6. For reassembly, note the shape of the rear end of the drum.

d223c3156

7. Cover the drum with some paper to protect its surface from strong light.



d223c3157

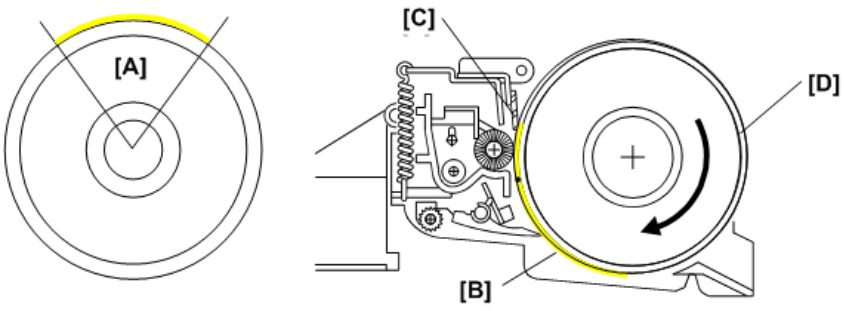
Important

- Never touch the surface of the drum.
- Never attempt to clean the surface of the drum with alcohol or any other type of organic solvent.
- Never place the drum where it would be exposed to strong light, or sunlight.

8. Before installing a new drum, dust the surface of the OPC drum carefully with setting powder.
   - The surface of a new drum is dry, so you must apply Drum Setting Powder (P/N: 54429101) to the drum surface before installation.
   - Without the drum powder which acts as a lubricant, the drum cleaning blade could scour the drum surface.
   - If setting powder is not available, use some used toner. However, this could cause dirty backgrounds on the first several copies.
9. Apply the setting powder by tapping the powder bag across the surface of the drum.

d223c3158

10. Cover the entire length of the drum over a 45-90 degree portion [A] (about 1/4 of the total drum surface). Apply enough powder so the area turns white.
11. Install the new drum in the OPC unit so that the forward edge of the powdered surface [B] faces the cleaning blade [C].
12. Manually rotate the drum once clockwise [D] until it stops again at the position where you started.

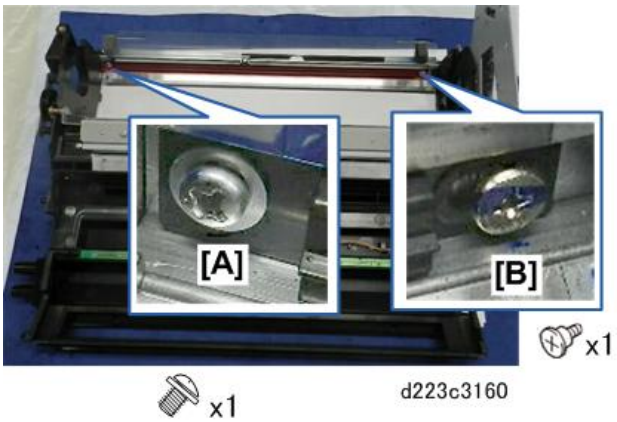


d224c3159

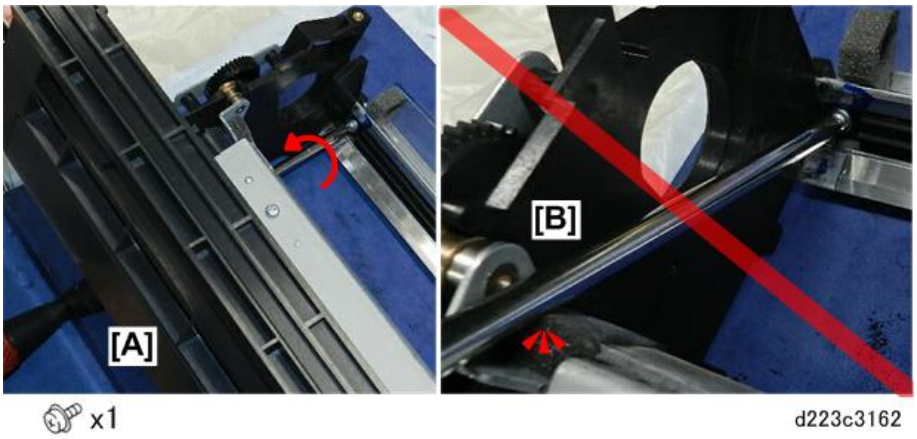
13. After replacing the drum, do **SP2962** (Adjustment of Drum Conditions).

4.8.3 PTL (PRE-TRANSFER LAMP)

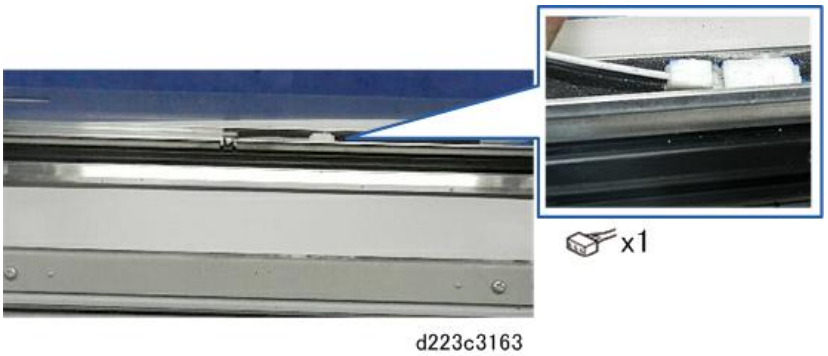
1. Remove the drum unit and drum. page 4-114
2. The PTL bracket is held in place by two screws [A] and [B]. Screw [B] is a shoulder screw. This screw must be installed at the same position.



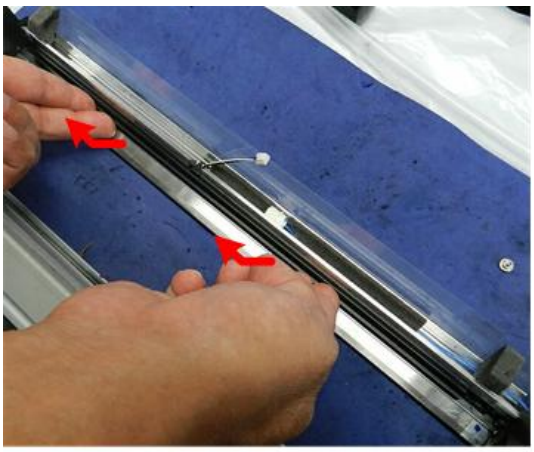
3. At the front [A] pass the end of the screwdriver under the shaft arm to remove the screw.
4. Do not place the screwdriver on top of the arm [B] to remove the screw.
5. At the rear [A] pass the screwdriver under the unit to remove the screw.
6. Do not place the screwdriver on top of the plate [B] to remove the screw.



7. At the center, disconnect the PTL.



8. Roll the PTL bracket out from under the edge of the frame.



d223c3164

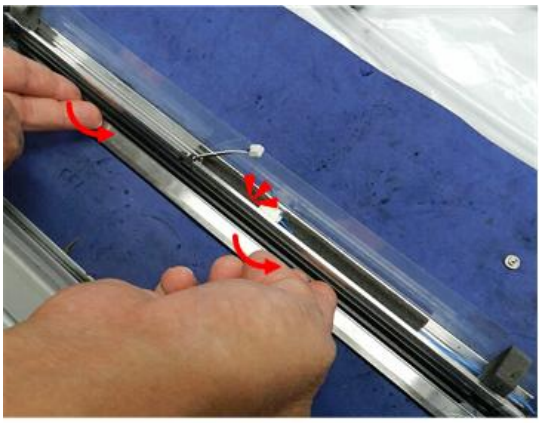
9. Separate the PTL from its bracket.

d223c3165

10. Lay the PTL on a flat, clean surface.

Re-assembly

1. Set the PTL in its bracket.
2. Rock the edge of the bracket up under the edge of the frame.



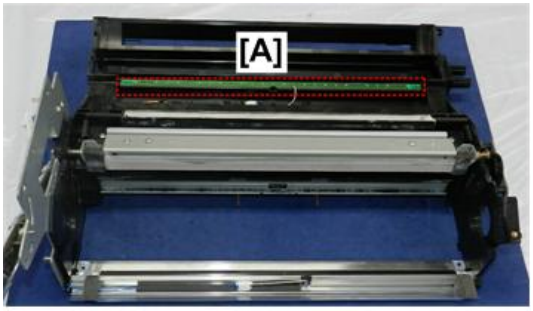
d223c3168

Important

- If the edge of the bracket is not under the edge of the frame, the PTL and its bracket will not be perfectly flat against the frame, and you will not be able to re-attach the screws and the connector.

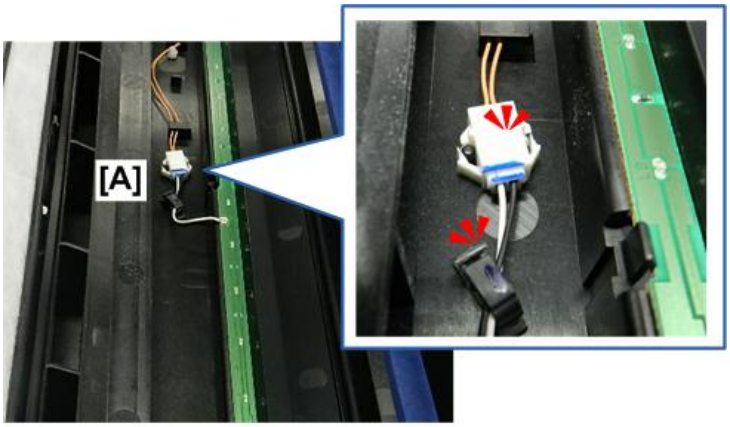
4.8.4 QL (QUENCHING LAMP)

1. Remove the drum unit and drum. page 4-114
2. With the drum removed, you can see the green QL [A].



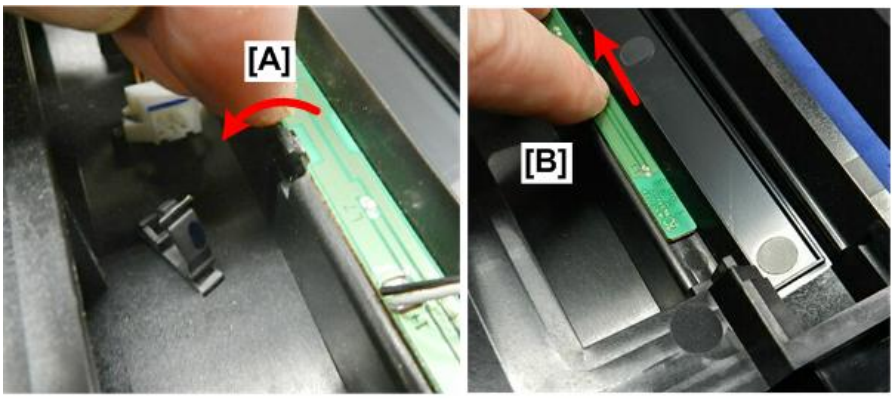
d223c3169

3. At the center, disconnect the QL [A].



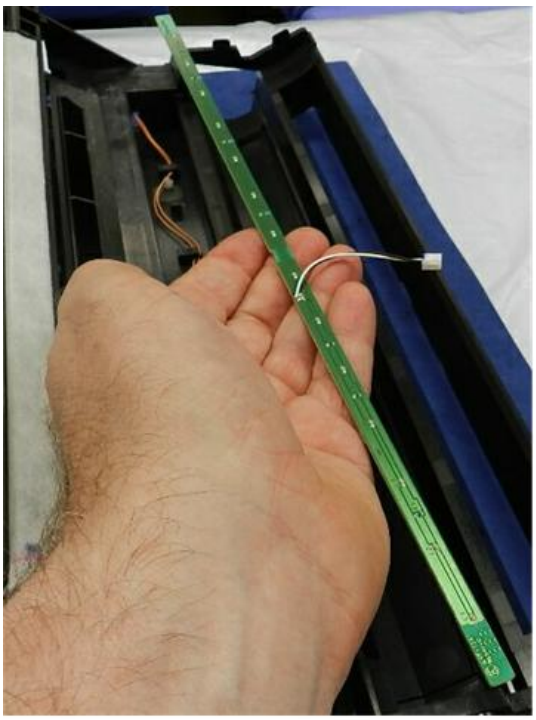
x1 x1 d223c3170

4. At the center, push back the hook [A] to release the quenching lamp, and then slide out the end of the QL [B].



d223c3171

5. Lift out the QL.

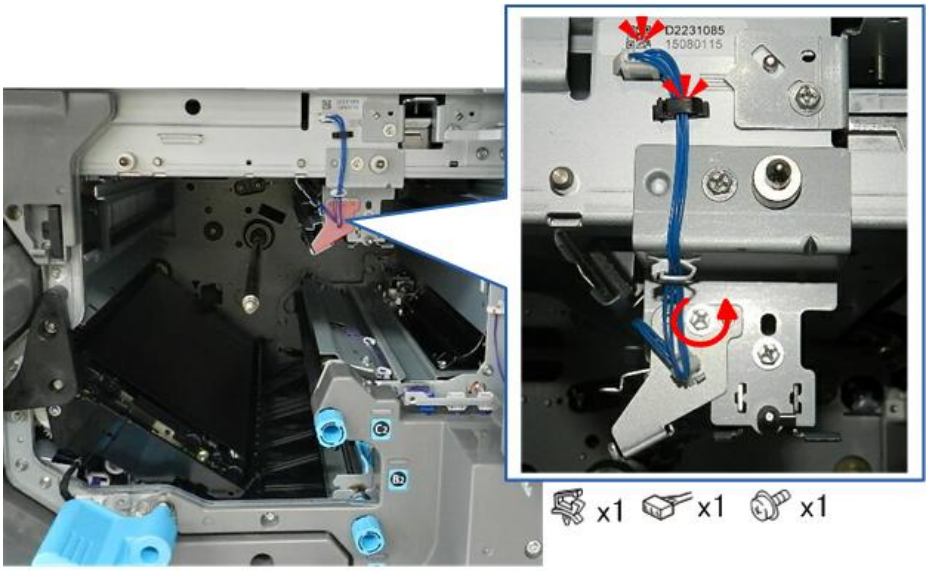


d223c3172

6. Use only a blower brush to clean the quenching lamp.

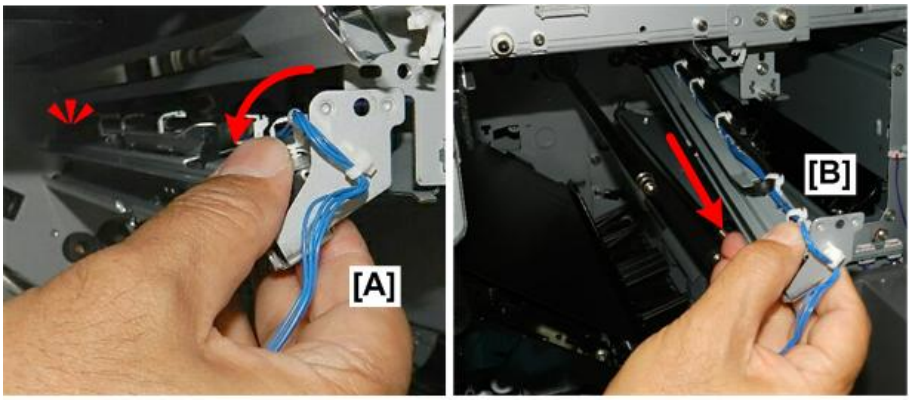
4.8.5 POTENTIAL SENSOR

1. Remove the drum unit. page 4-114
2. Disconnect the potential sensor bracket.



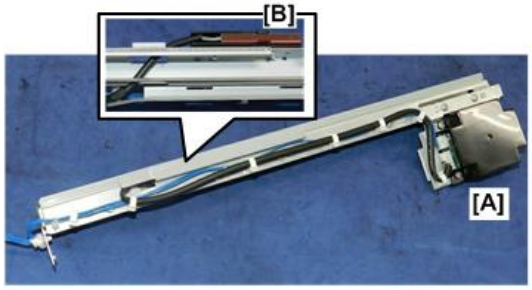
d223c3173

3. Pull the bracket forward [A] to detach the rear end of the bracket from the machine, and then pull it out [B].



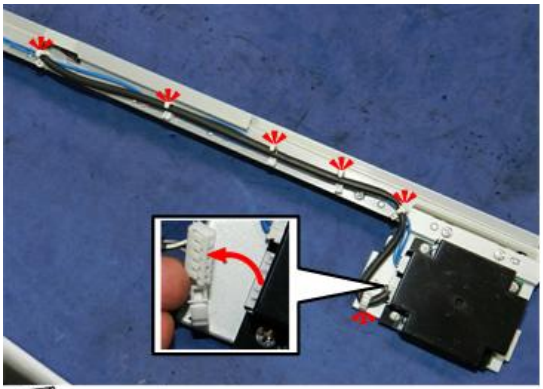
d223c3174

4. Lay the potential sensor bracket on a flat, clean surface.
5. The potential sensor power pack [A] is on the end of the bracket, and the potential sensor [B] is on the opposite side.



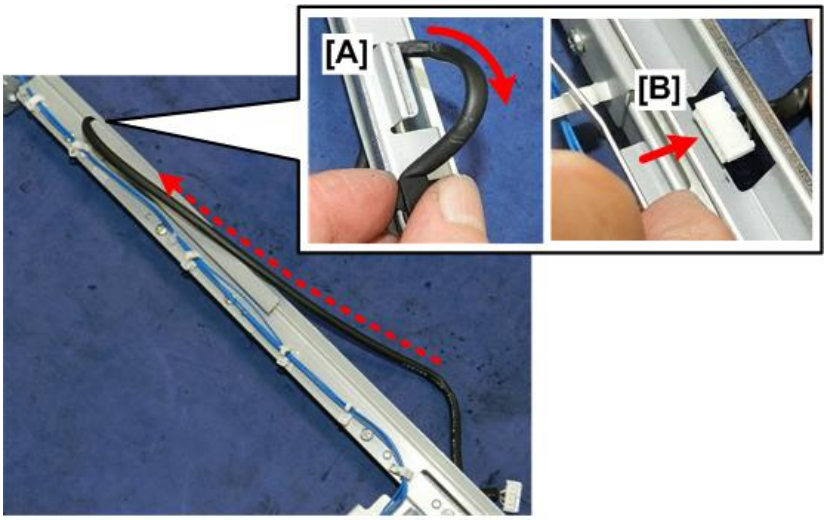
d223c3175

6. Free the black harness.



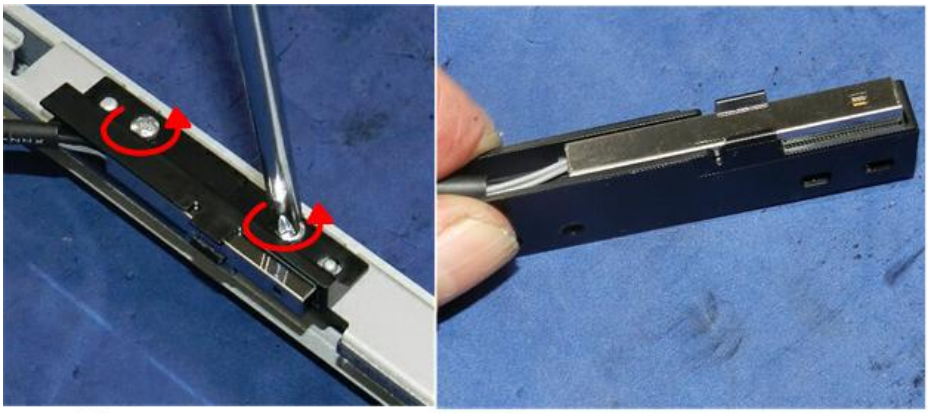
x6 x1 d223c3176

7. Push the harness [A] through the bracket, and then pull the connector [B] through the hole.



d223c3177

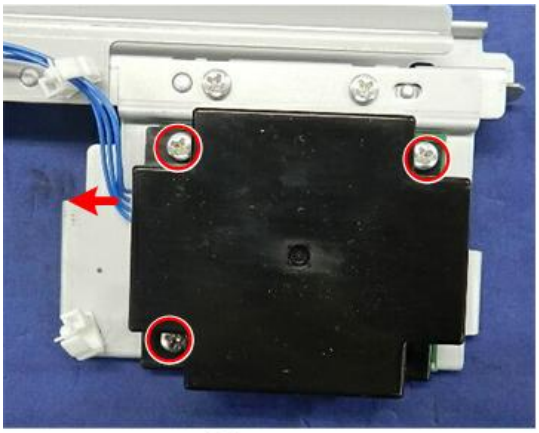
8. Disconnect the potential sensor.



x2

d223c3178

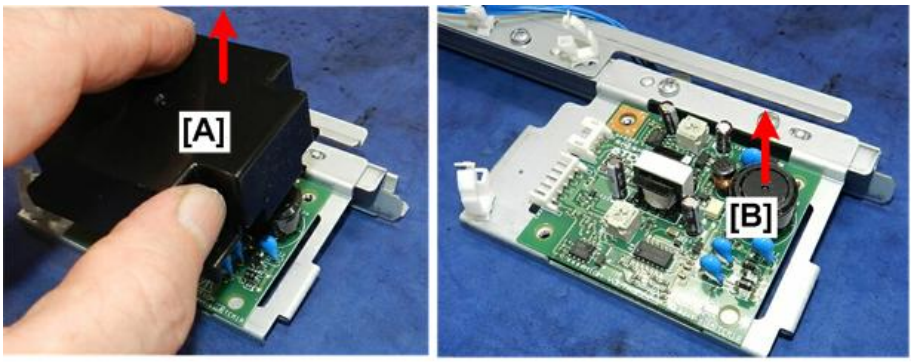
9. On the other end of the bracket, disconnect the power pack cover.



x1 x3

d223c3179

10. Remove cover [A] and power pack [B].



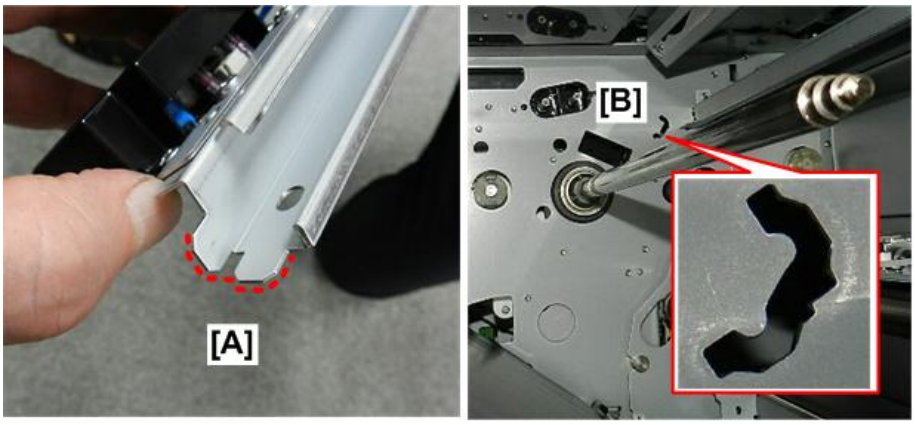
d223c3180

11. The potential sensor and power pack are always replaced together.

d223c3181

Re-assembly

1. The end of the potential sensor bracket [A] is inserted into the cut-out [B] on the rear panel.

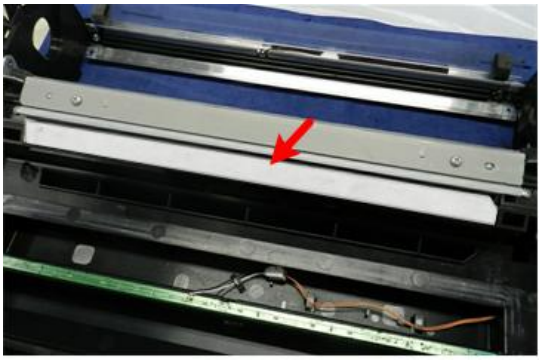


d223c3182

2. After replacing the drum potential sensor, go into the SP mode and make sure that **SP3901** is on, and then do **SP2962** (Adjustment of Drum Conditions).

4.8.6 CLEANING FILTER

1. Remove the drum unit and drum. page 4-114
2. You can easily see the cleaning filter with the drum removed.



d223c3183

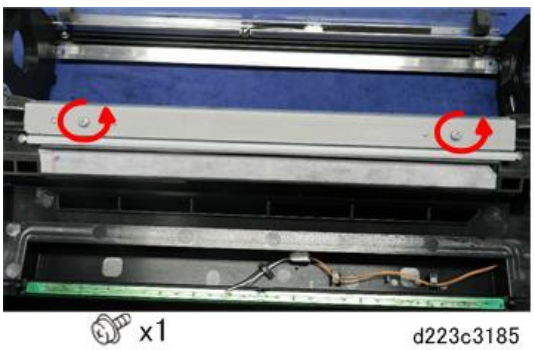
3. Lift out the filter.

d223c3184

4. After replacing the filter, make sure that its edges are perfectly flat against the unit.

4.8.7 DRUM CLEANING BLADE

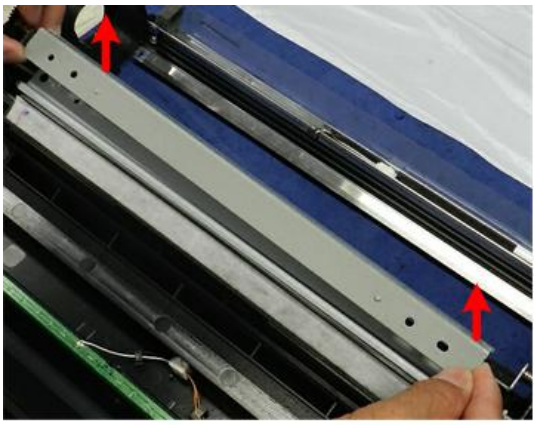
1. Remove the drum unit and drum. page 4-114
2. Disconnect the blade.



x1

d223c3185

3. Remove the blade.



d223c3186

4. Clean the blade edge carefully with only a soft, clean cloth.

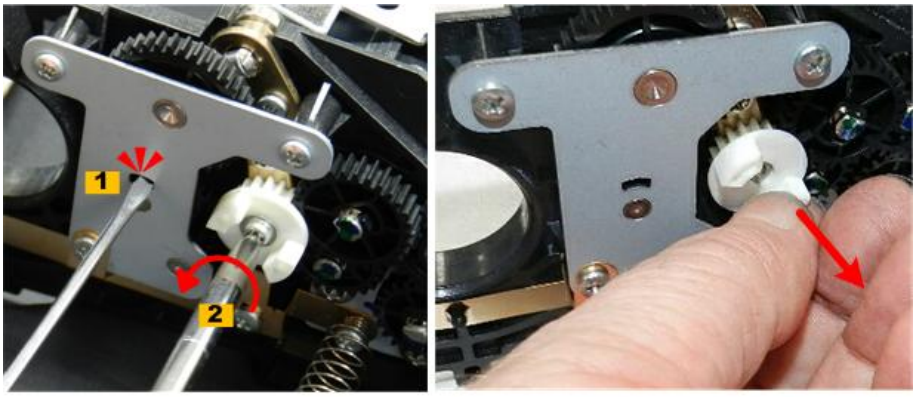
Important

- Handle the blade carefully to avoid nicking its edge.
- New blades are treated with special setting powder, so avoid touching the edge of a new cleaning blade. If the edge of a new blade is accidentally wiped clean, dust it lightly with some toner before installing it.

5. Before installing a new blade:
   - Clean the entrance seal, side seals, and cleaning brush.
   - Make sure that the blade side seals are not pinched by the blade.

4.8.8 CLEANING BRUSH

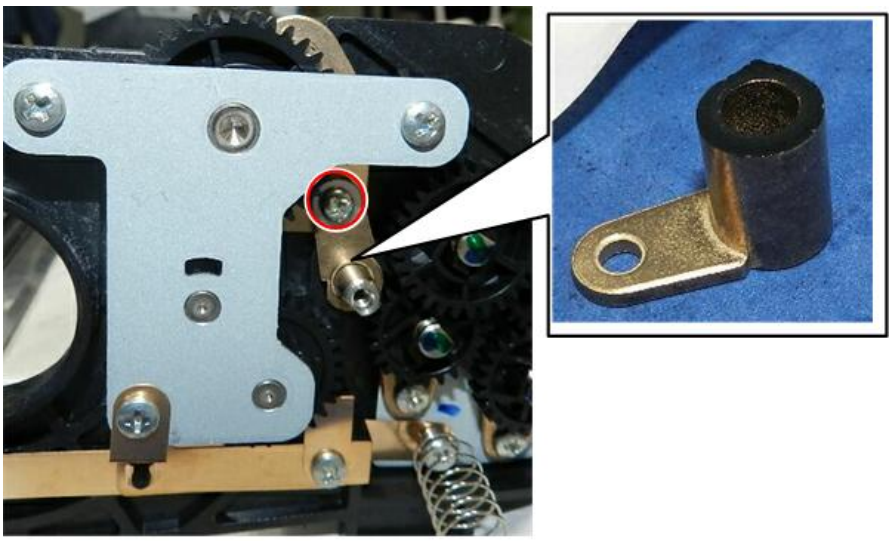
1. Remove the drum unit and drum. page 4-114
2. Remove the drum cleaning blade. page 4-125
3. Insert the tip of a small screwdriver into cutout [1] (this keeps the gears from turning), and then remove the coupling [2].



x1

d223c3187

4. Remove the inner bushing.



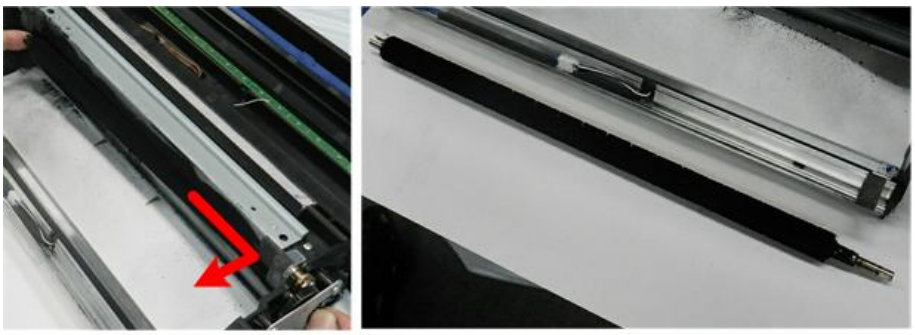
x1

d223c3188

5. Pull the shaft of the cleaning brush toward the rear to disengage the coupling on the end of the shaft from its pin, and then pull the brush out.

Important

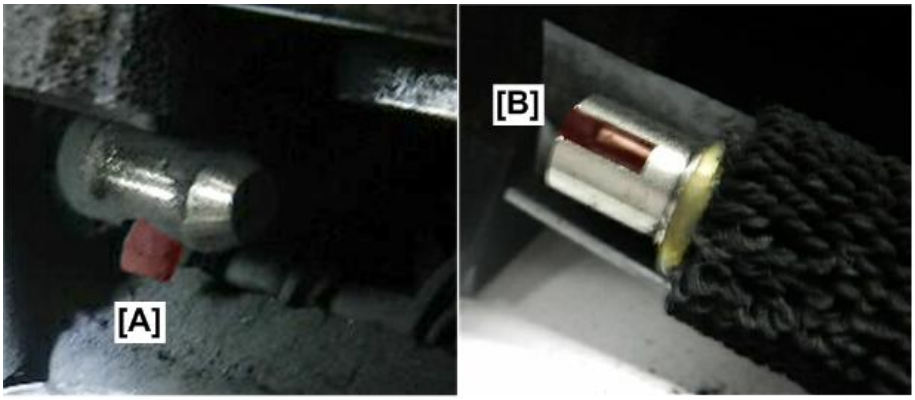
- Avoid touching the cleaning brush with bare hands.



d223c3189

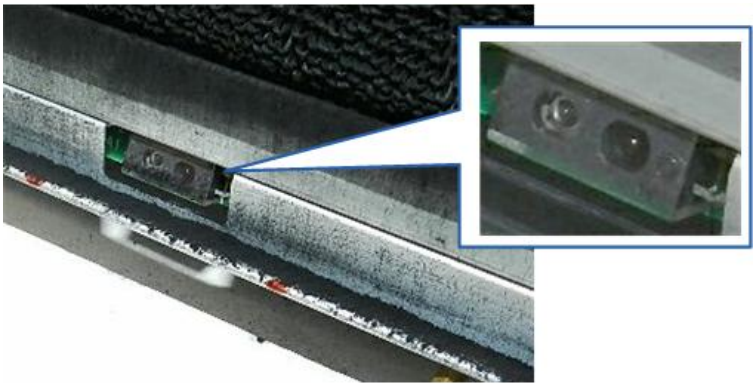
Re-assembly

1. The pin [A] fits into the slot of the coupling [B] on the end of the cleaning brush.



d223c3190

2. After replacing the cleaning brush, use a blower brush and clean the ID sensor to make sure that it is free of toner.

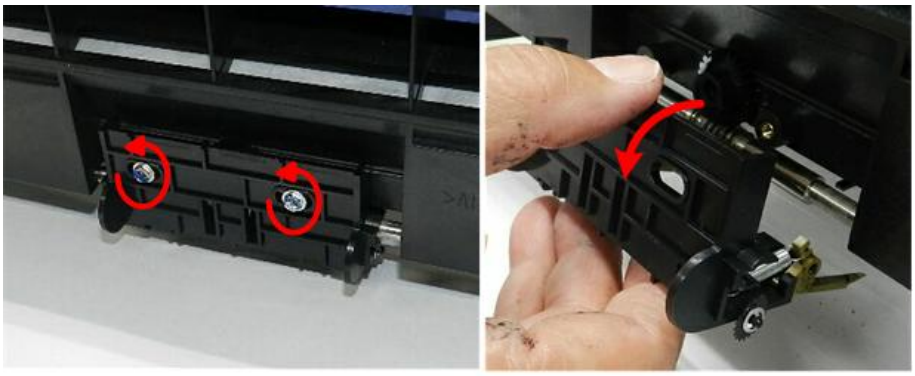


d223c3191a

3. Check the entrance seals and confirm that they are not bent.

4.8.9 PICK-OFF PAWLS

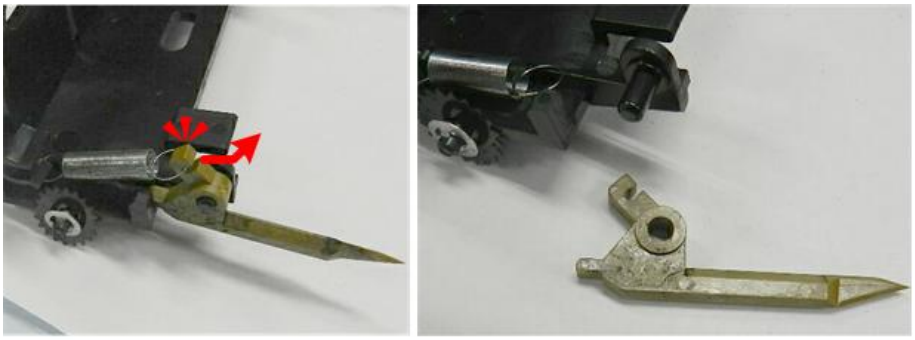
1. Remove the drum unit and drum. page 4-114
2. Remove the pick-off pawl bracket with the pawls attached.



x2

d223c3192

3. Disconnect the pick-off pawls.

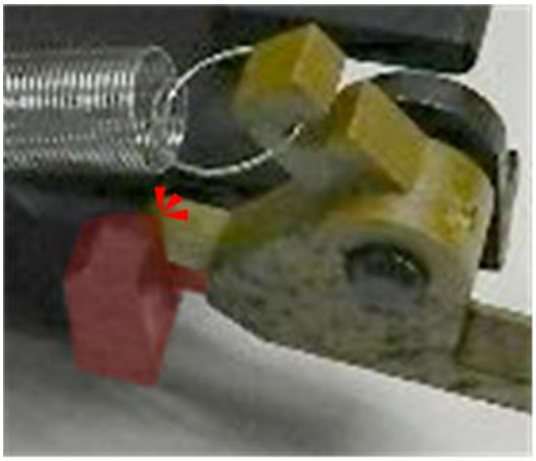


x1

d223c3193

Re-assembly

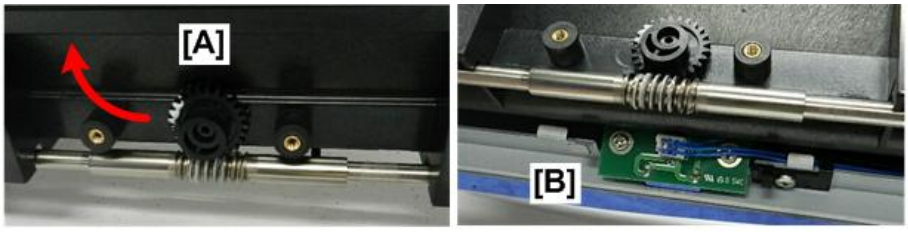
1. Each pawl must be positioned as shown.



d223c3194

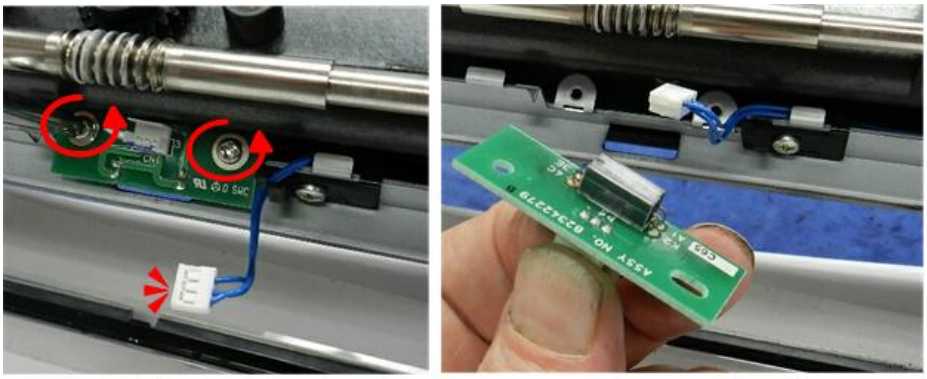
4.8.10 ID SENSOR

1. Remove the drum unit and drum. page 4-114
2. Remove the pick-off pawl bracket.
3. Raise the drum unit [A] slightly so you can see the sensor [B].



d223c3195

4. Disconnect the sensor.



x1 x2

d223c3196

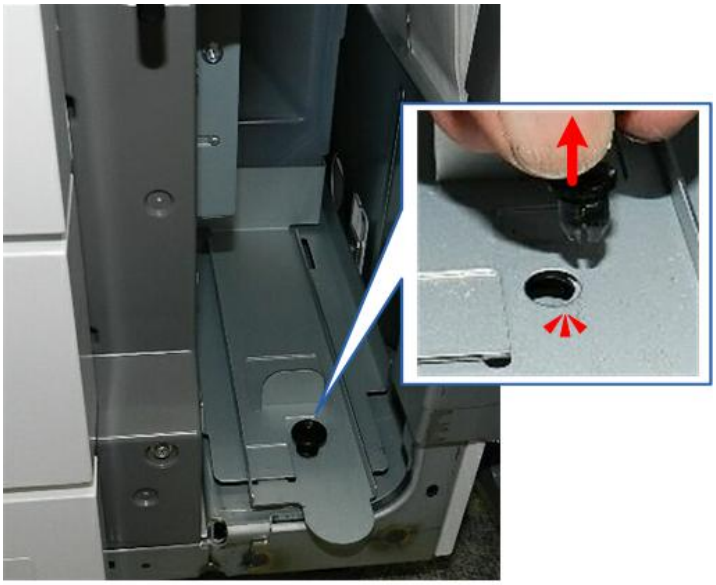
5. Remove the sensor.

d223c3197

6. Re-assemble the machine.
7. Connect the machine, turn it on, and go into the SP mode.
8. Do **SP3901** and make sure that it is on (default), and then do **SP2962** (Adjustment of Drum Conditions).
9. Do **SP3001-002** (ID Sensor Initialization Setting).

4.8.11 TONER COLLECTION BOTTLE

1. Open the front door.
2. Remove the lock pin

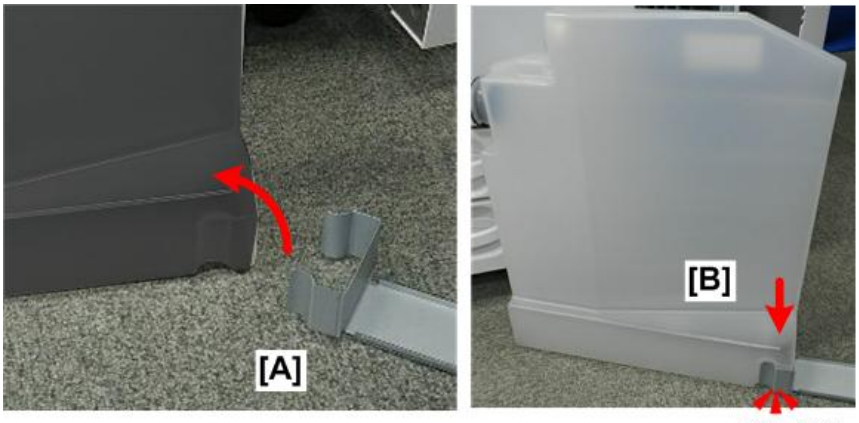


d223c3198

3. Pull out the toner collection bottle on its base.

d223c3199

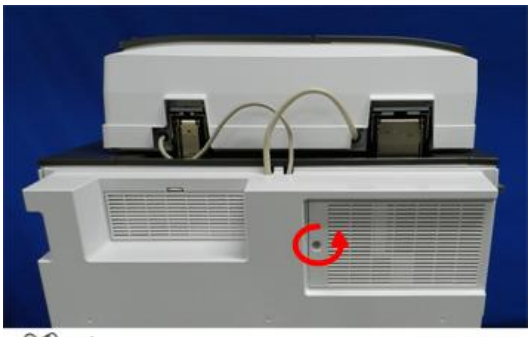
4. Detach the bottle from the base clamp and replace it with an empty bottle.



d223c3200

4.8.12 OZONE FILTERS

1. On the back of the machine, remove the cover of the ozone filter box.

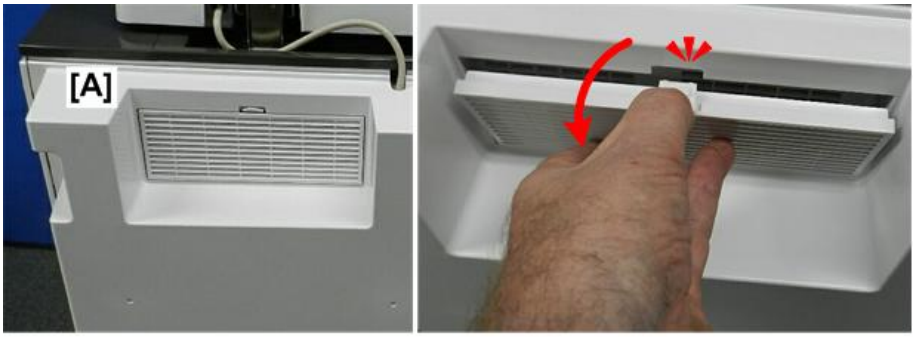


2. Slide the cover off.

3. Remove the ozone filters and replace them with new ones.

4.8.13 OPTICS DUST FILTER

1. At the right rear corner of the machine [A] remove the cover bracket with filter attached.



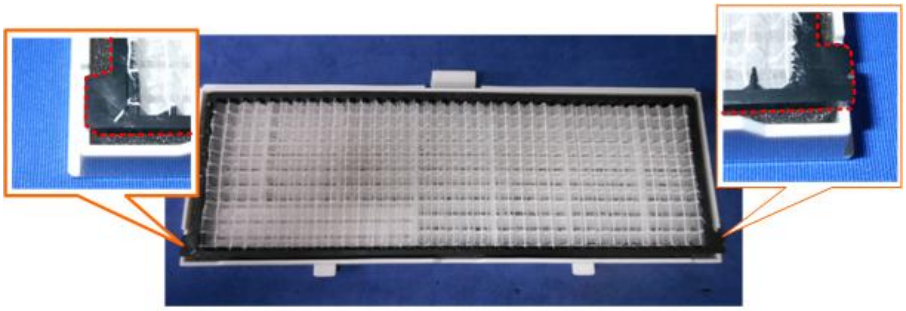
d223c3209

2. Separate the filter and cover bracket.

d223c3210

Reinstallation

1. Set the tabs on the bottom edge of the filter into the notches provided on the bottom of the filter frame.

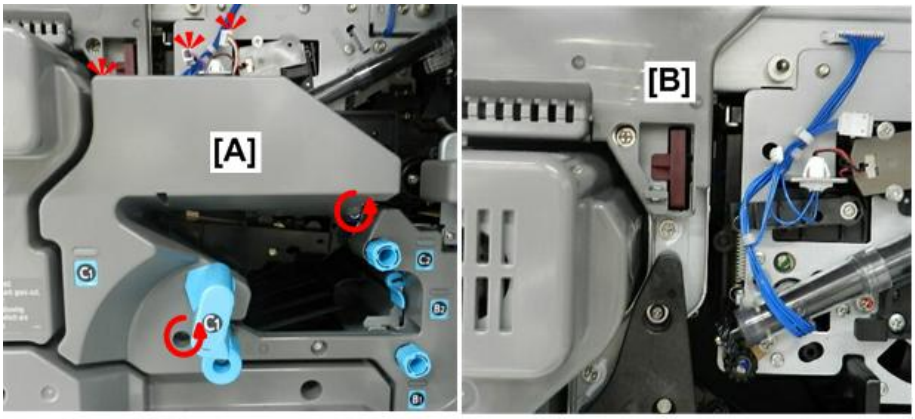


d223c3782

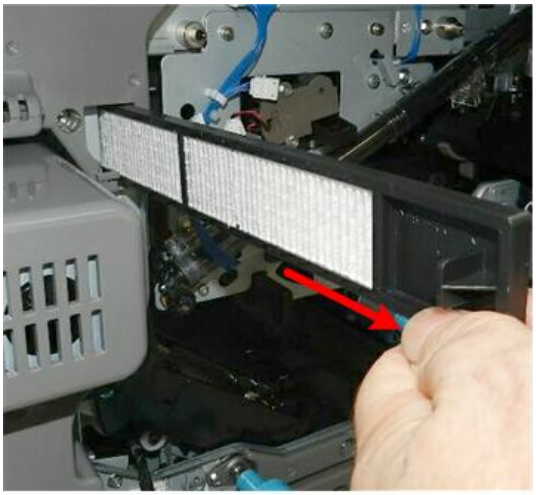
2. Make sure that the edges of the filter are flat and even with the edges of the frame.

4.8.14 INTERNAL DUST FILTER

1. Open the front door.
2. Pull the toner bottle holder out and swing the toner bottle holder to the right.
3. Remove the PCU inner cover [A] do you can see the dust filter [B].



4. Remove the filter.

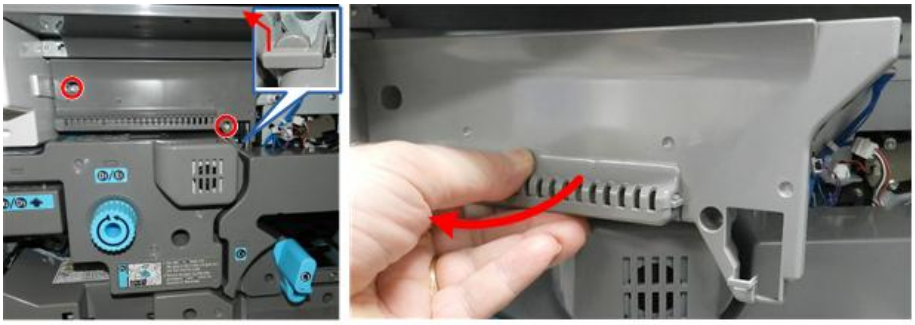


5. Lay the filter on a clean, flat surface.

6. Clean the filter with a vacuum cleaner.

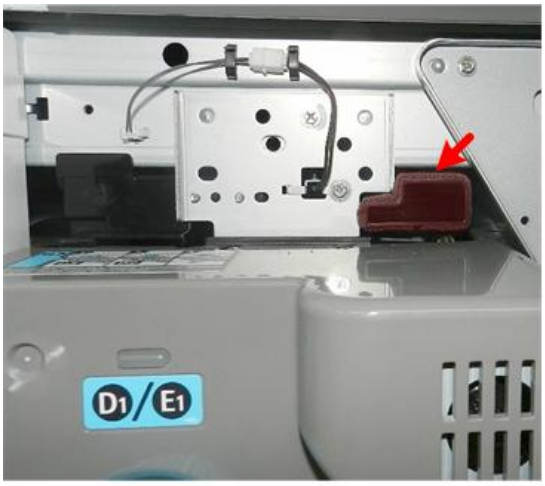
4.8.15 TONER BOTTLE FAN

1. Open the front door.
2. Remove the left upper inner cover.



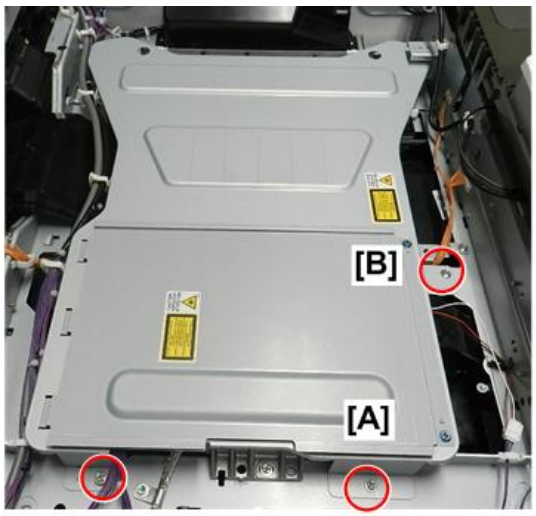
x2 x1 d223c3214

3. With the cover removed you can see the duct of the toner bottle fan.



d223c3215

4. Remove the scanner unit. page 4-43
5. Disconnect the left edge [A] of the laser unit cover.
6. Disconnect the front edge [B] of the laser unit cover.

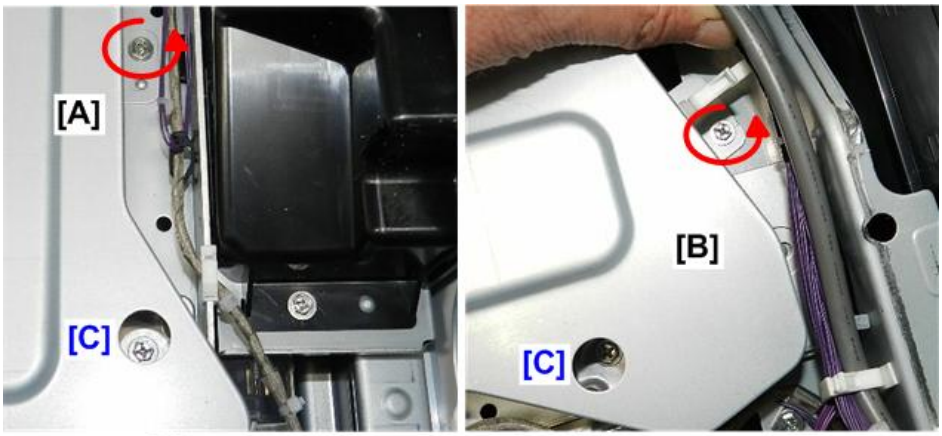


x3 d223c3216

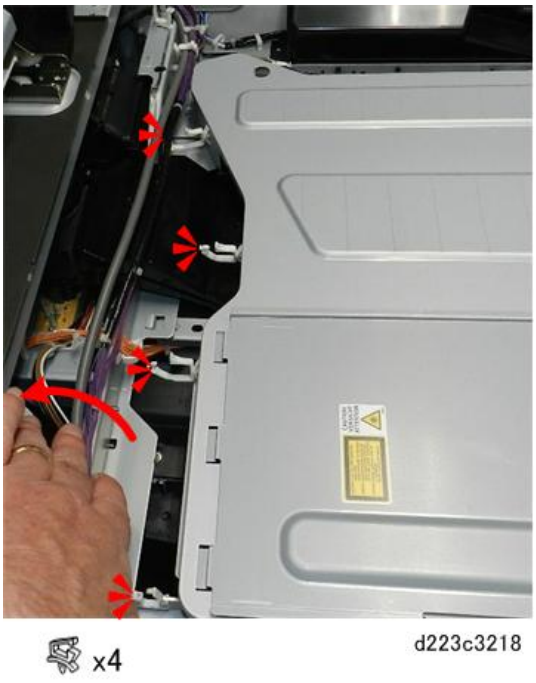
7. Disconnect the right edge [A] of the cover.
8. Disconnect the right rear corner [B] of the cover.

Important

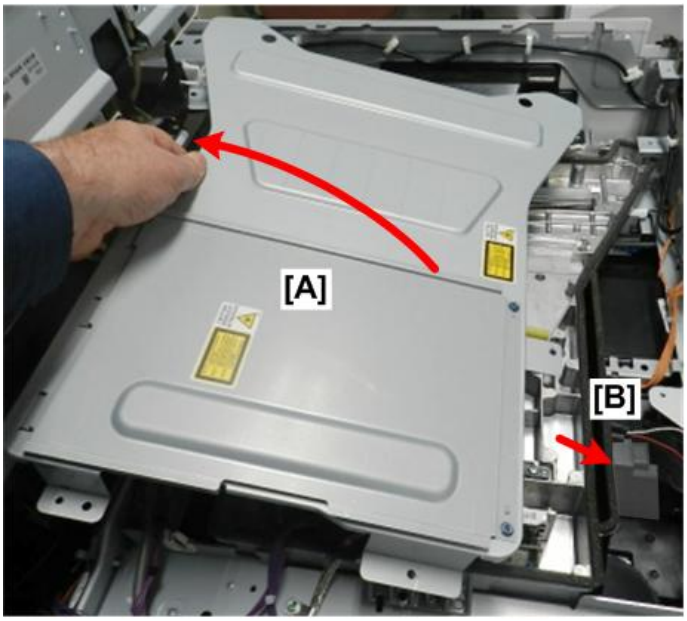
- Do not loosen either screw [C] below. These screws are used to adjust the position of the scanner unit.



9. Free the harness along the rear edge of the cover.

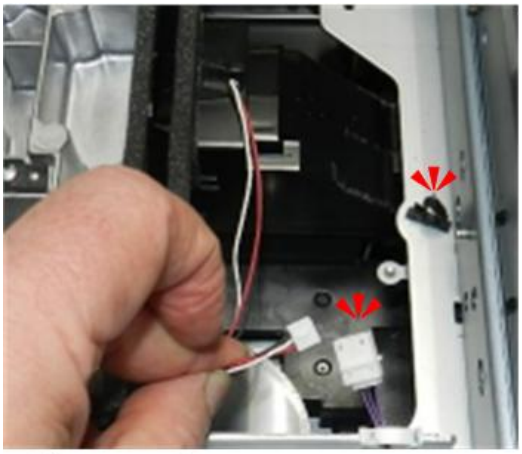


10. Pull the cover [A] away from the front edge of the machine [B] . (You do not need to remove.)



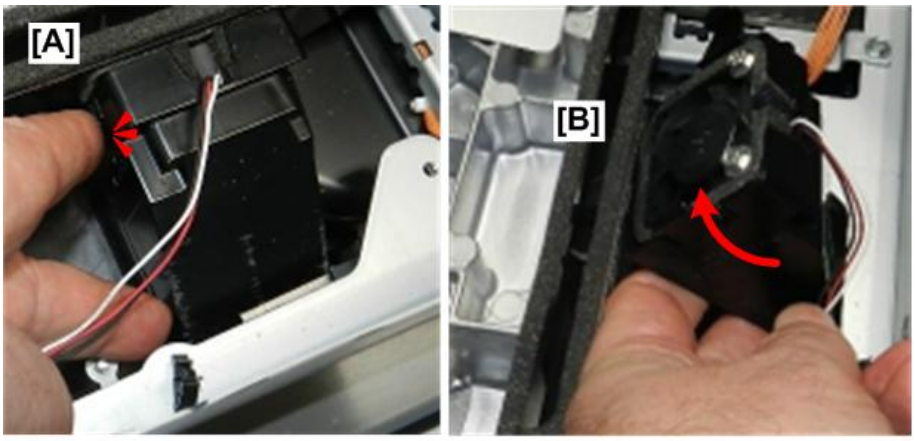
d223c3219

11. Disconnect the toner bottle motor.

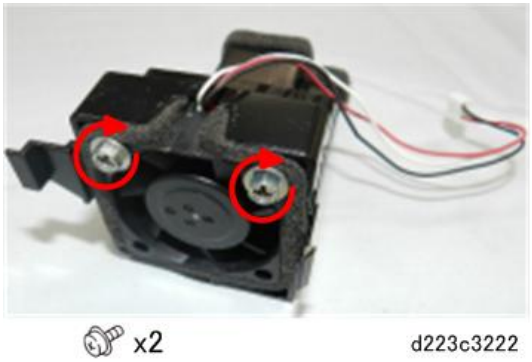


x1 x1 d223c3220

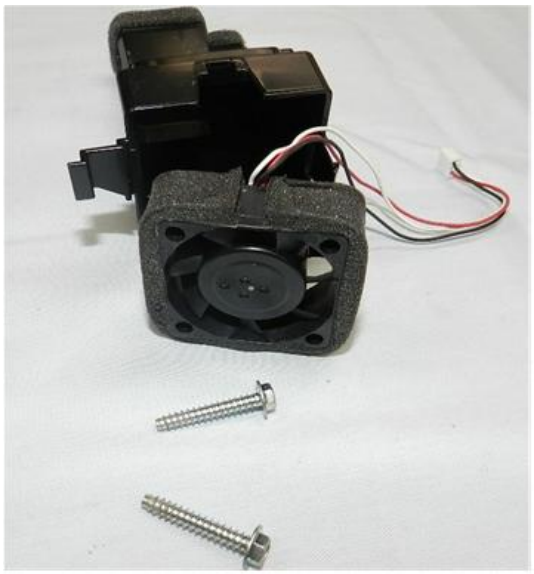
12. Push in the tab release [A] on the right side of the motor bracket.
13. Rotate the motor [B] straight up, and then remove the motor bracket.



14. Disconnect the motor bracket.

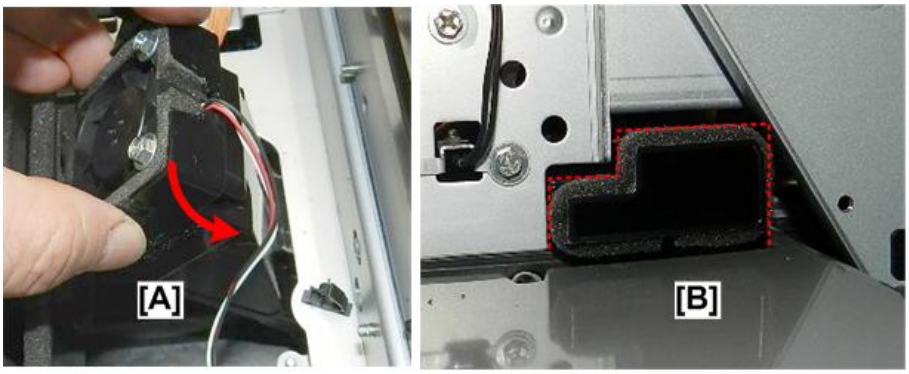


15. Separate the motor and bracket.



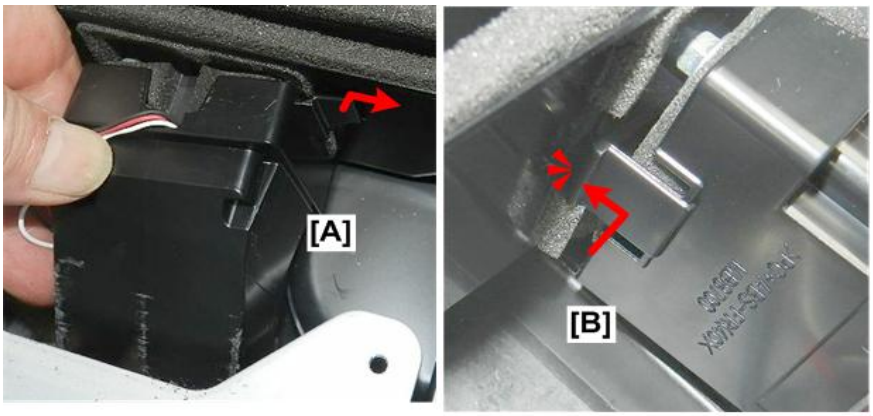
Re-assembly

1. Hold the motor [A] over the position where you removed it, and then rotate it straight down.
2. Check the front of the machine under the operation panel, and confirm that the duct [B] is aligned straight with its cutout.



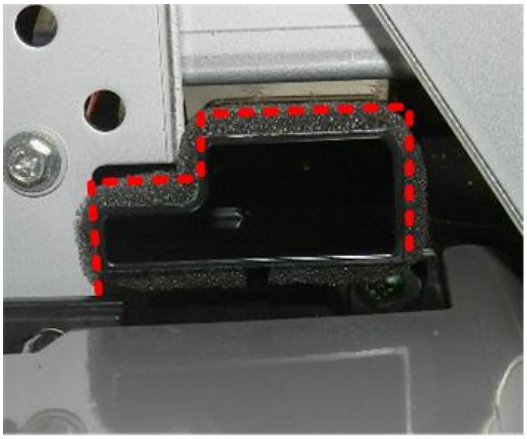
d223c3224

3. On the right side of the motor [A], insert the lap into its slot to position the motor.
4. Press the tab release [B] on the left side of the bracket to lock bracket and motor in place.



d223c3225

5. Once again, check the alignment of the duct at the front of the machine and confirm that it is straight.

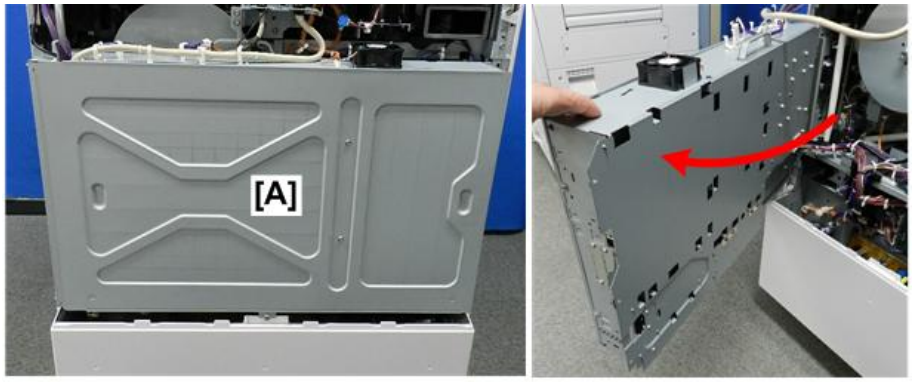


d223c3226

6. Reassemble the machine.

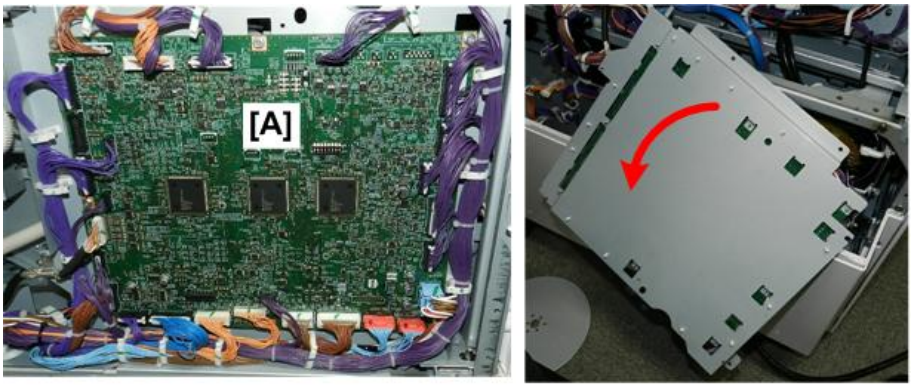
4.8.16 DRUM MOTOR

1. Remove rear covers. page 4-16
2. Open the controller box [A]. page 4-28



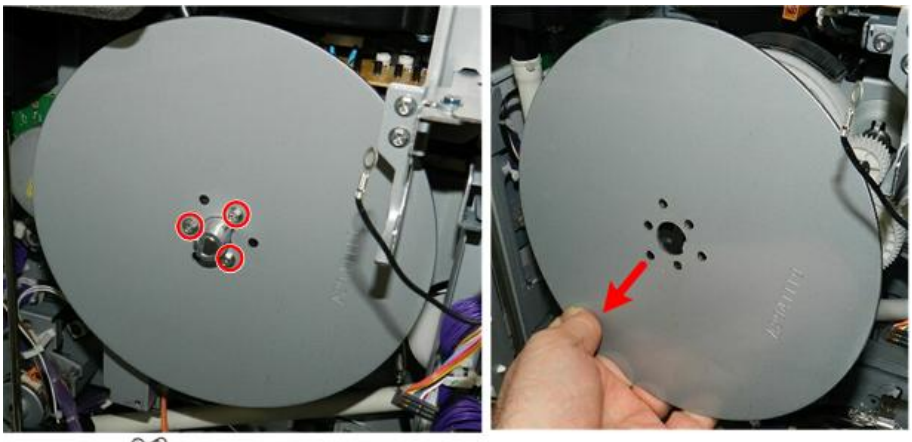
d223c3227

3. Disconnect the IOB bracket [A]. page 4-30



d223c3228

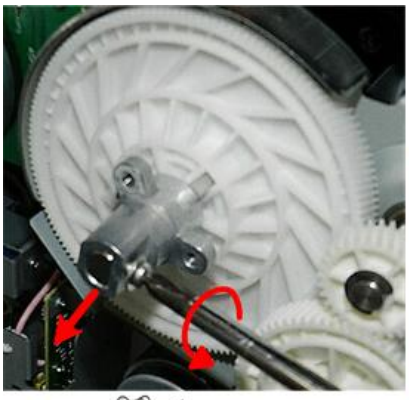
4. Remove the flywheel.



x3

d223c3229

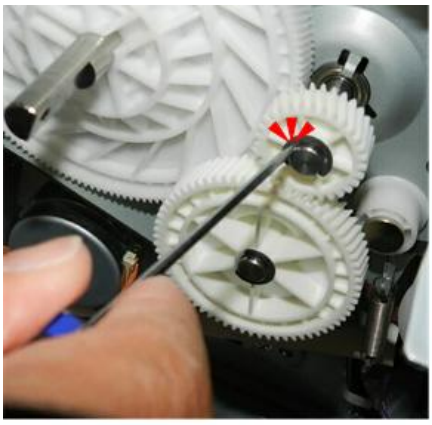
5. Remove the flywheel sprocket.



x1

d223c3230

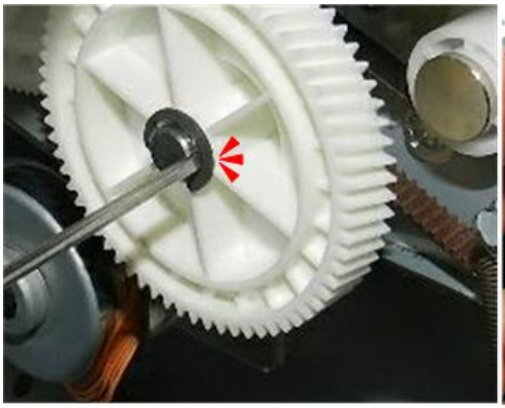
6. Remove the small gear. (This gear is black in the D223/D224, and white in the D225.)



x1

d223c3231

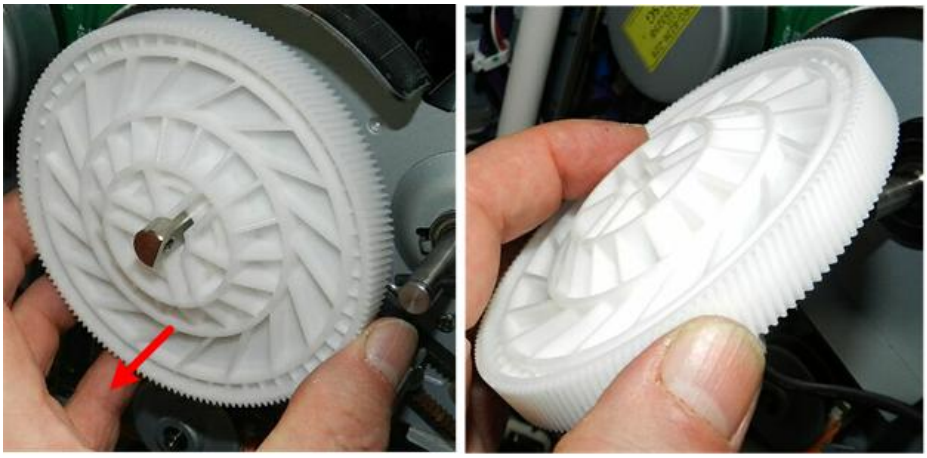
7. Remove the lower gear (This gear is black in the D223/D224 and white in the D225.)



x1

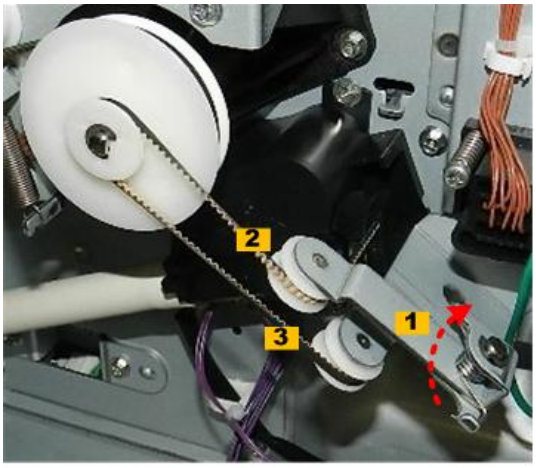
d223c3232

8. Remove the large gear.



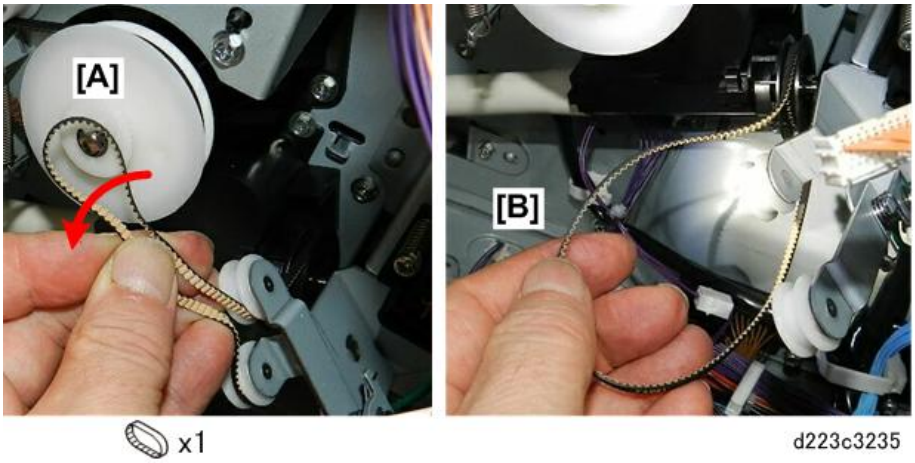
d223c3233

9. Note the configuration of the 2-direction timing belt.
   - Swinging pulley arm [1] is up.
   - Tan side of the belt is facing out at [2].
   - Back side of the belt is facing out at [3].



d223c3234

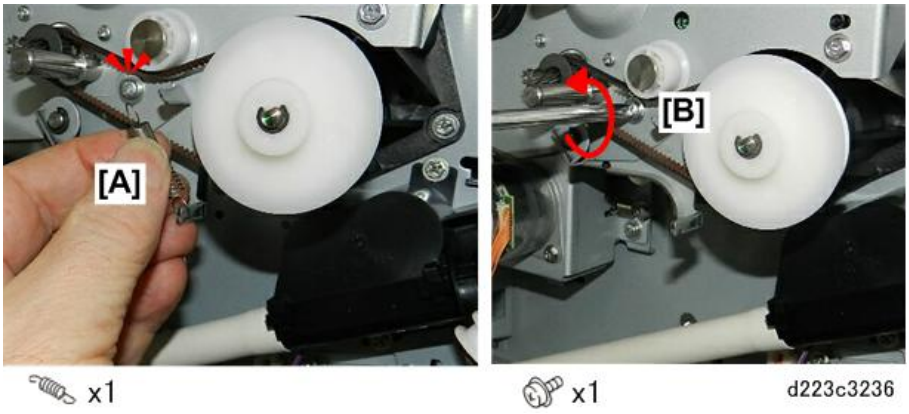
10. Remove the drive belt [A].
11. Leave the belt hanging free and straight [B]. (You do not need to remove it.)



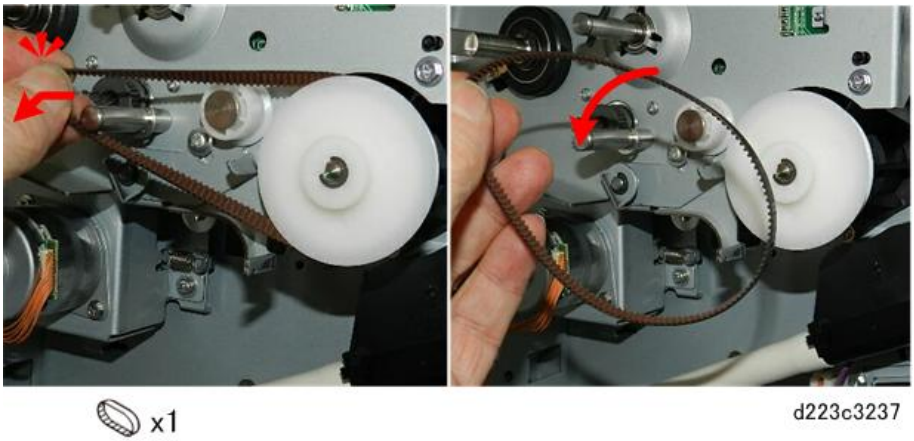
x1

d223c3235

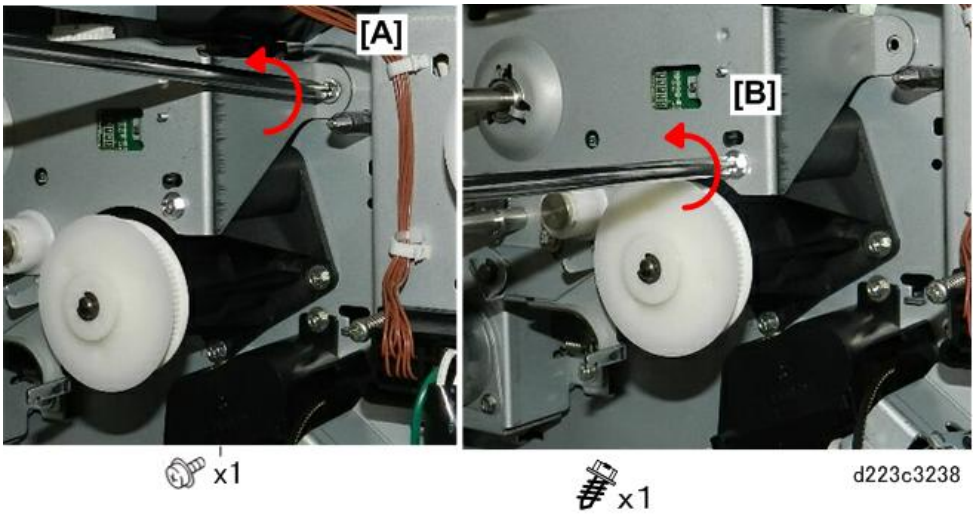
12. On the face of the motor bracket, remove spring [A].
13. Loose screw [B] to release tension on the drive belt.



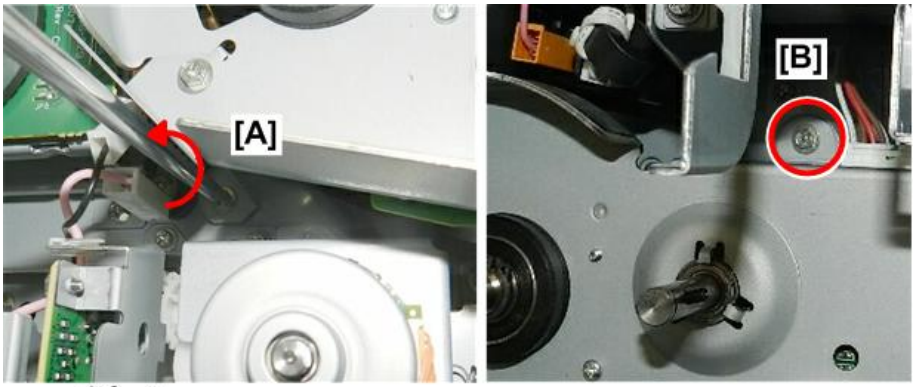
14. Remove drive belt.



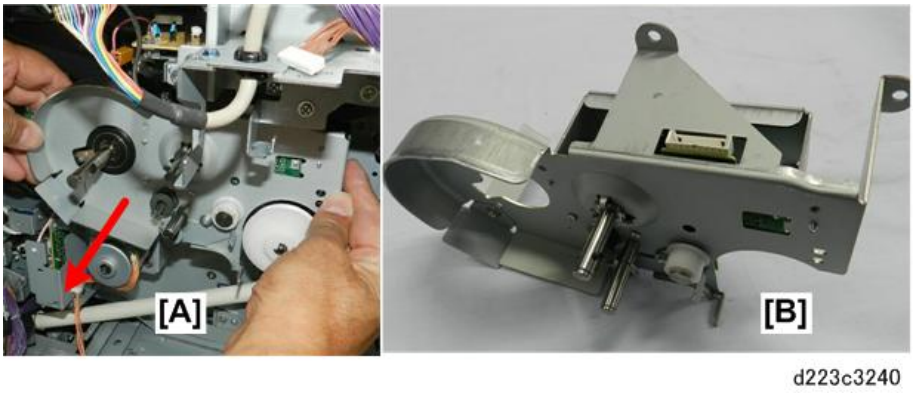
15. Disconnect right upper arm [A] of the motor bracket.
16. Disconnect right edge [B] of the bracket.



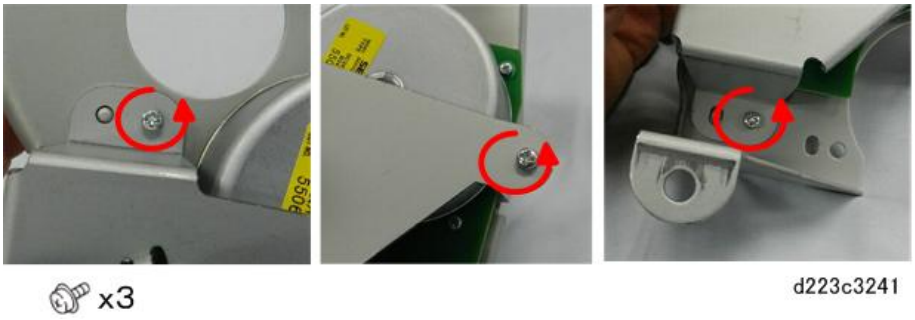
17. Disconnect lower left arm [A] of the motor bracket.
18. Disconnect top edge [B] of the bracket.



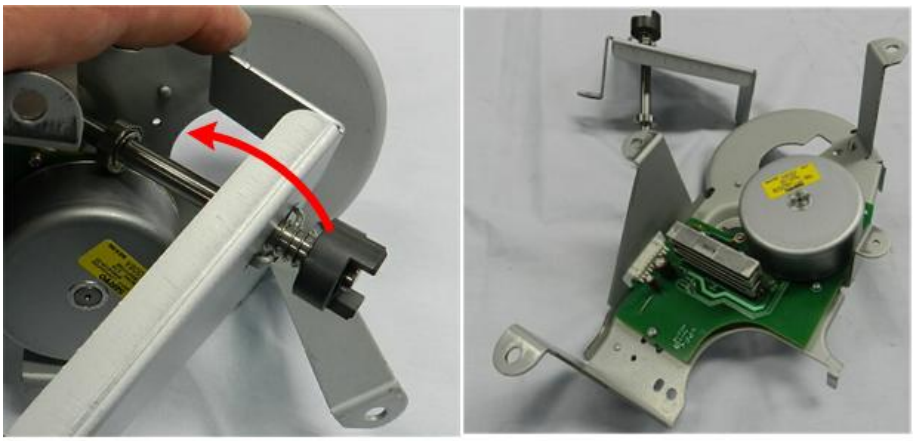
19. Remove bracket [A] with motor attached.
20. Lay the bracket and motor [B] on a flat, clean surface.



21. Disconnect the support bracket.

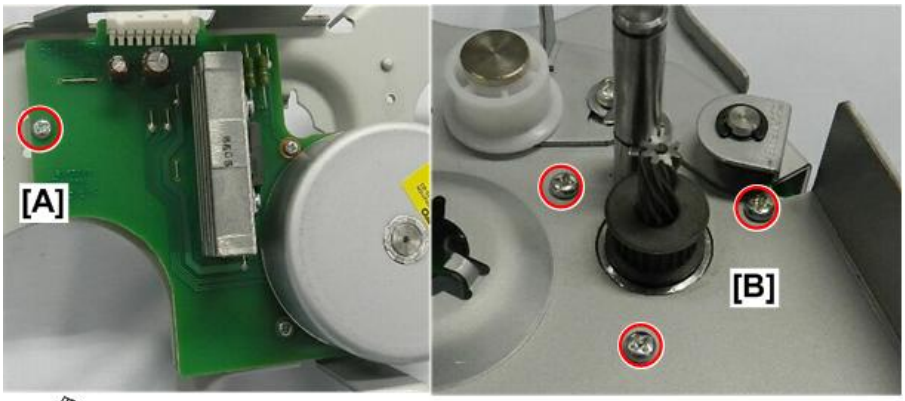


22. Pull shaft and coupling through the bracket.



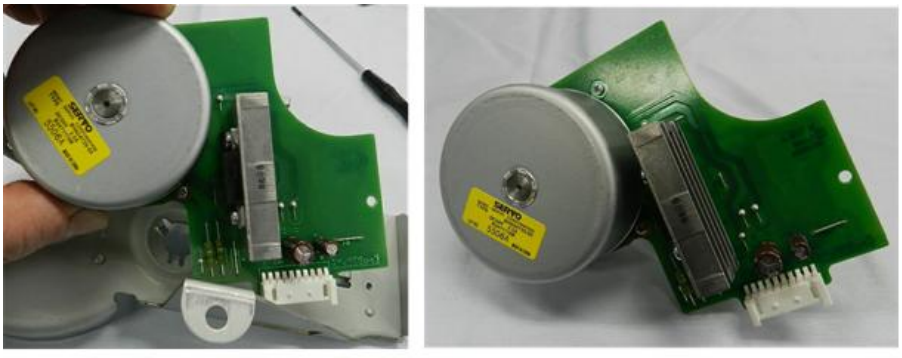
d223c3242

23. Disconnect motor at [A] and [B].



x1 x3 d223c3243

24. Separate the motor and base motor bracket.



d223c3244

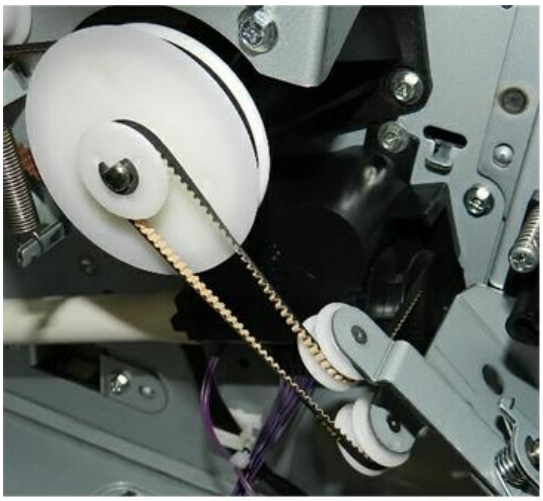
Re-assembly

Follow this procedure to re-set the 2-direction drive belt.

1. Pick up the hanging belt [1] and pull it straight out.
2. Push swinging pulley [2] up.
3. Thread the black side of the upper half of the belt [3] to the raised pulley

d223c3245

4. Check the configuration of the belt and pulleys.



d223c3246

4.8.17 IMPORTANT SP CODES: DRUM UNIT

Here is a list of SP codes related to testing and servicing the drum and components around the drum.

Item	SP No.	Function
Drum condition display (LD level)	3902-5	Displays the LD power correction value as a result of the latest Vh adjustment.
Drum condition display (Vd)	3902-2	Displays drum dark potential, the standard potential, electrical potential of the black areas after exposure.
Drum condition display (Vg)	3902-4	Displays the charge grid voltage resulting from the latest Vd adjustment.
Drum condition display (Vh)	3902-3	Displays standard halftone drum potential, used for laser power adjustment.
Drum condition display (Vid)	3902-6	Displays ID sensor pattern potential, the latest drum surface voltage measured on the ID sensor pattern.
Drum condition display (Vql)	3902-7	Displays the drum potential after quenching.
Drum replacement	3901	After replacement, check this SP code and confirm that auto process control is on and operating.
Drum replacement	2962	After replacement, do SP3901 to confirm that auto process control is on and operating, and then do SP2962 to execute process control manually for the new drum. This SP2962 executes only if SP3901 is on (enabled).

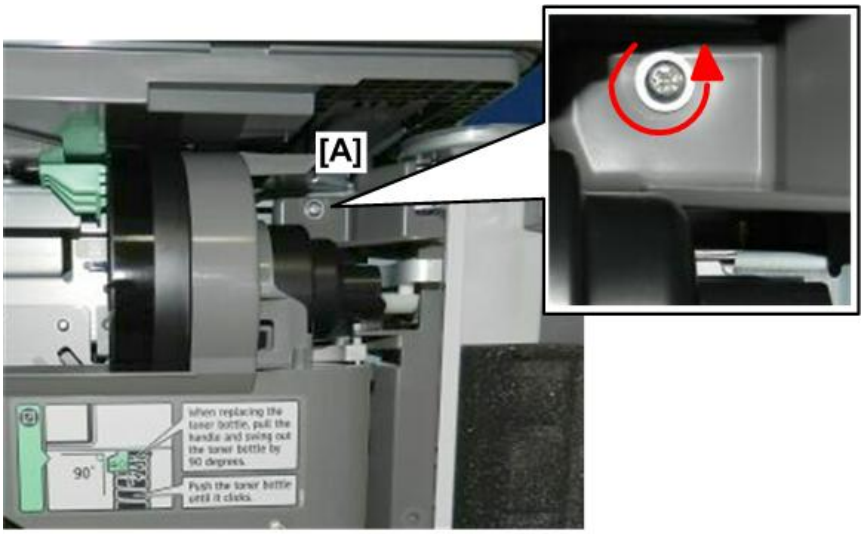
Item	SP No.	Function
Forced toner supply	2207	Rotates the toner bottle to supply toner to the toner supply unit. Use to determine if toner supply is operating correctly. If forcing toner supply with this SP does not darken the image, then toner supply is not operating correctly.
ID sensor replacement	2962	After replacement, do SP3901 to confirm that auto process control is on and operating, and then do SP2962 to execute process control manually for the new sensor. SP2962 executes only if SP3901 is on (enabled).
ID sensor replacement	3901	After replacement, check this SP code and confirm auto process control is on and operating.
Potential sensor replacement	2962	After replacement, do SP3901 to confirm that auto process control is on and operating, and then do SP2962 to execute process control manually for the new sensor. This SP2962 executes only if SP3901 is on (enabled).
Potential sensor replacement	3901	After replacement, check this SP code and confirm auto process control is on and operating.
Print margins	2101	Do this SP to adjust the margins (erase, blank space) at the top, bottom, and sides of the paper.

4.9 DEVELOPMENT UNIT

4.9.1 DEVELOPMENT UNIT REMOVAL AND RE-INSTALLATION

Removing the Development Unit

1. If the LCIT is connected to the right side of the machine, disconnect it and pull it away.
2. Prepare a clean, flat surface for the development unit.
3. Disconnect shuttle cover [A].

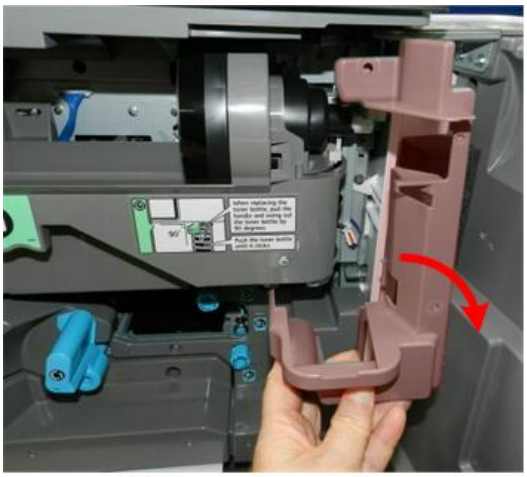


x1 d223c1031

Important

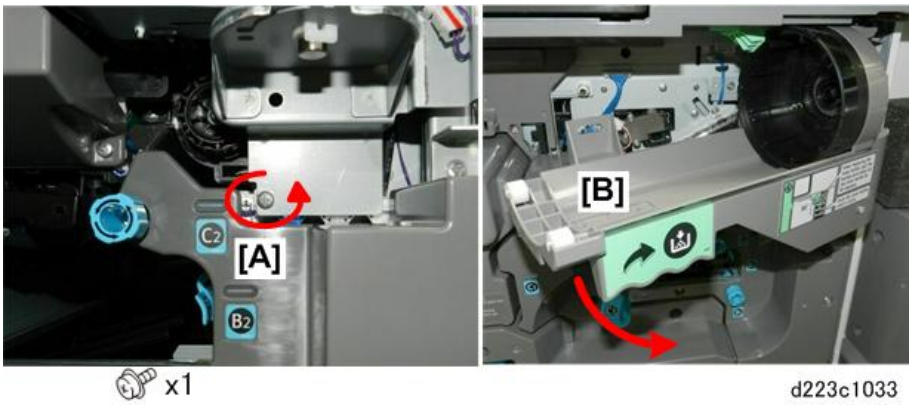
- A washer is attached to the shuttle cover screw in order to prevent the screw from falling into the machine. Turn the screw counter-clockwise only enough turns to remove it. If you loosen the screw too much the washer will fall into the machine.

4. Remove shuttle cover.

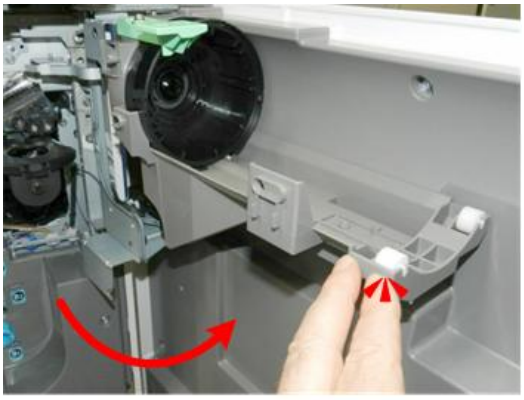


d223c1032

5. Remove lock screw [A].
6. The toner bottle holder [B] springs open slightly as soon as the screw is removed.



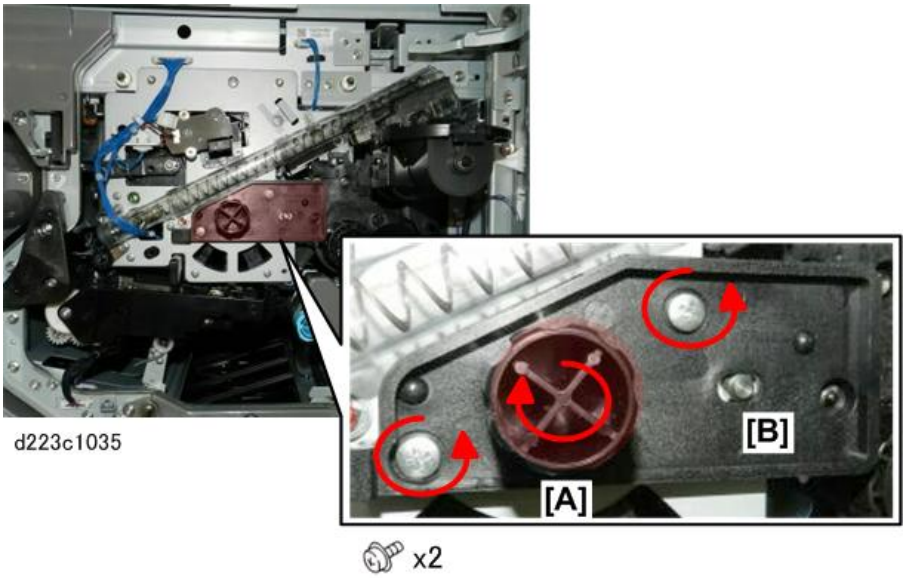
7. Push the front door slightly to the right, and then swing the holder out as far as it will go.



Important

- The door must be completely open. If it is not, then it will block removal of the development unit.
- The LCIT must be disconnected from the right side of the machine to allow the front door to open completely.

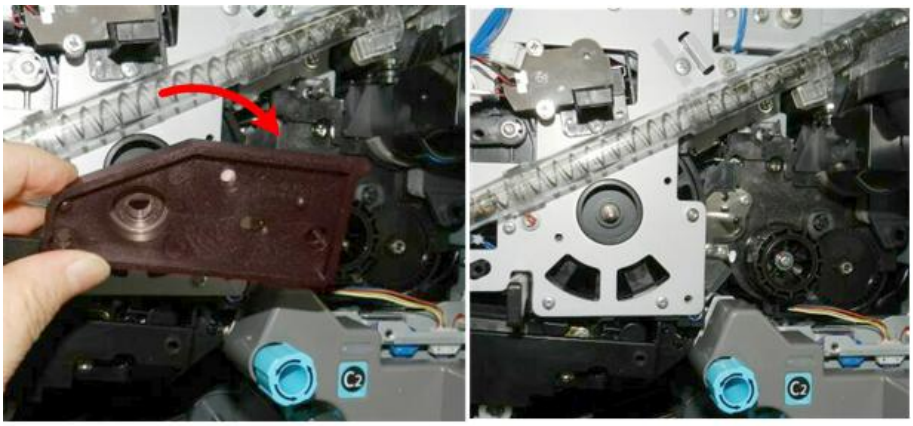
8. Remove knob [A]. (This is a reverse thread. Turn it **clockwise** to remove it).
9. Disconnect development unit faceplate [B].



d223c1035

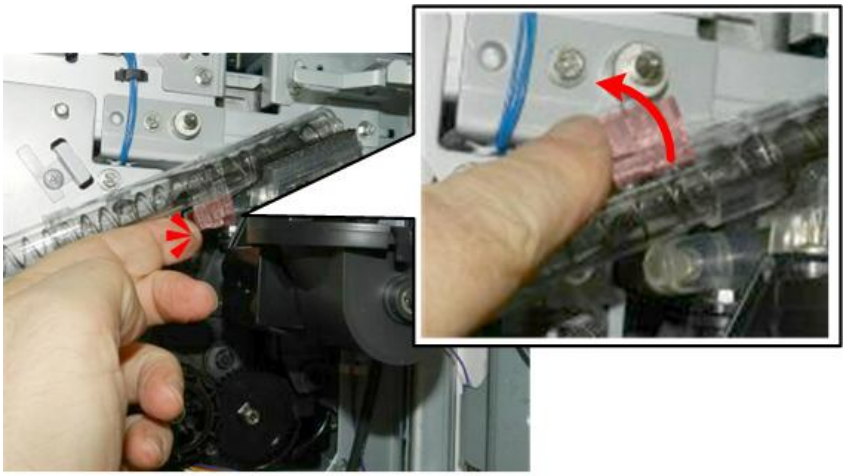
x2

10. Remove development unit faceplate.



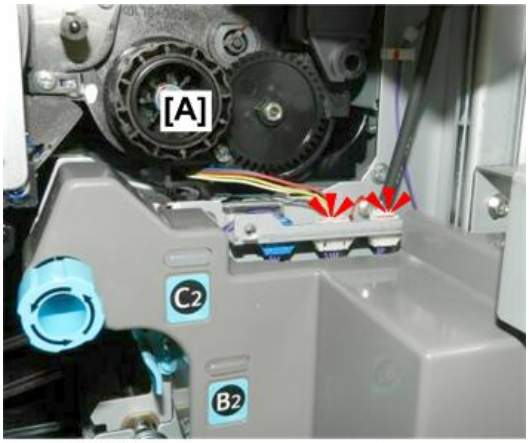
d223c1036

11. Raise the toner supply pipe shutter to close the pipe.

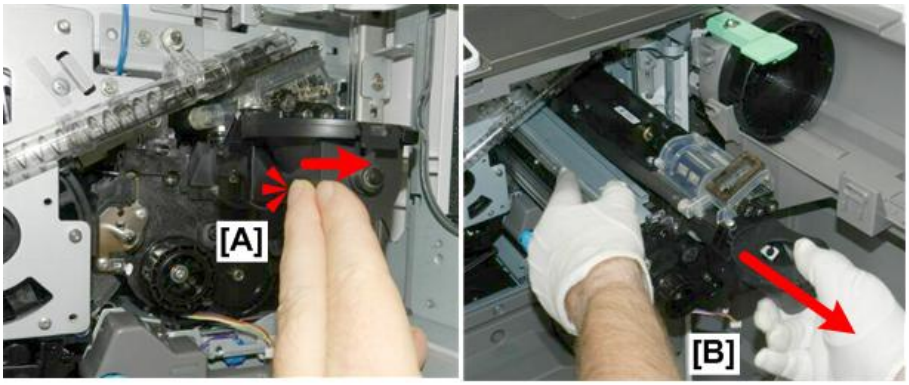


d223c1037

12. On the right [A] disconnect the development unit [A].



13. Slip the development unit [A] to the right.
14. Push the development unit [A] slightly to the right, and then pull the unit [B] straight out of the machine.



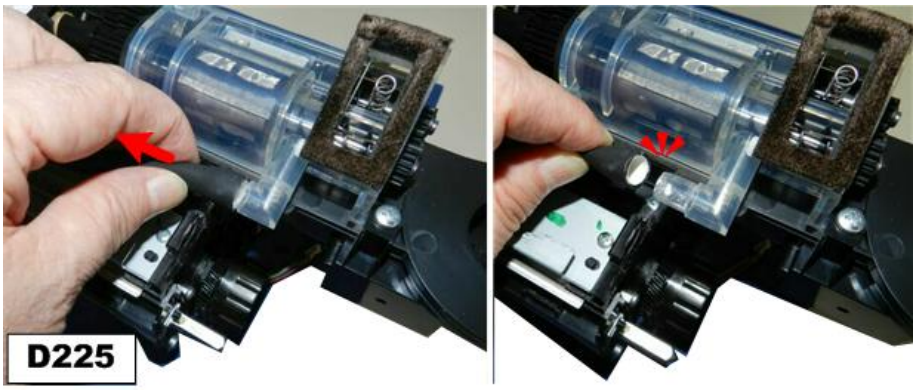
15. Lay the development unit on the prepared surface.

Separating the Development Unit and Toner Hopper

1. At the front end of the unit, disconnect the pressure release tube.

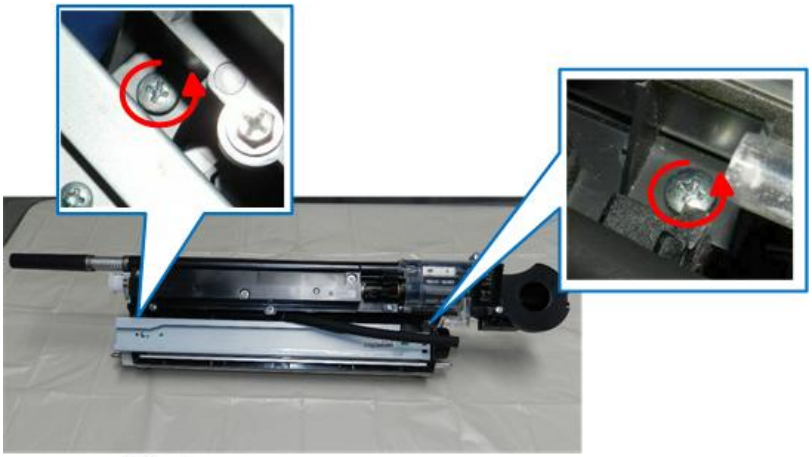
   Important

   - Only the D225 Model has this pressure release tube. This step is not required for the D223/D224 models.



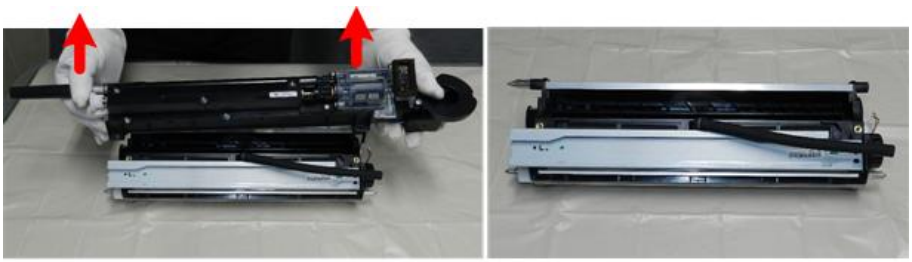
d223c1041

2. Disconnect the toner hopper.



x2 d223c1042

3. Rotate the toner hopper slightly as you lift it.
4. Remove the toner hopper and set it aside.

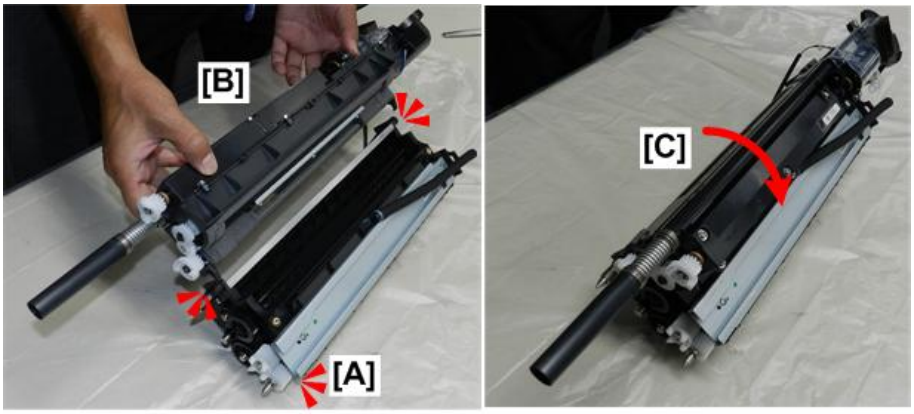


d223c1043

Re-installing the Development Unit

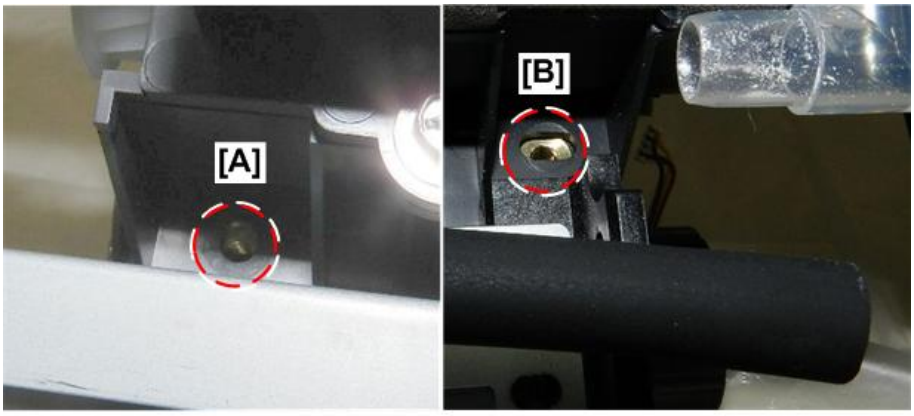
Pay attention to these important points as you re-install the development unit.

1. Hold the hopper perfectly level when re-attaching it, to prevent toner from entering the rails of the development filter.
2. To re-assemble the top and bottom half of the development unit, first allow the bottom half [A] to tip slightly forward.
3. Hold the top half [B] (toner hopper) over the bottom half, set the cutouts on the ends of the shaft below, and then slowly rock the top half forward [C] so the holes are aligned.



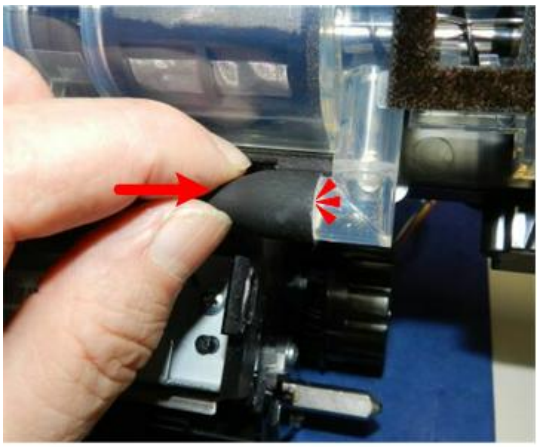
d223c1107

4. Make sure that the holes are aligned at the rear [A] and front [B], and then fasten the screws.



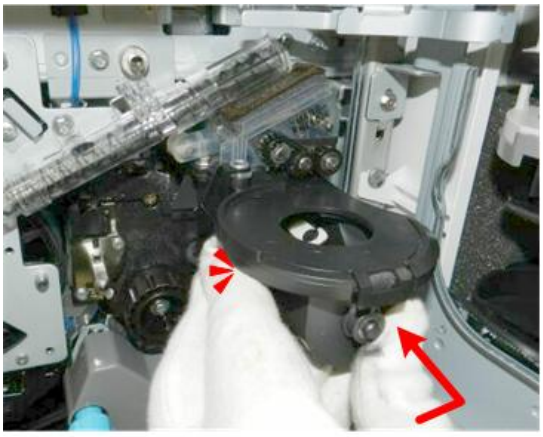
d223c1108

5. If you are installing a D225, be sure to re-connect the pressure release tube at the front of the development unit.



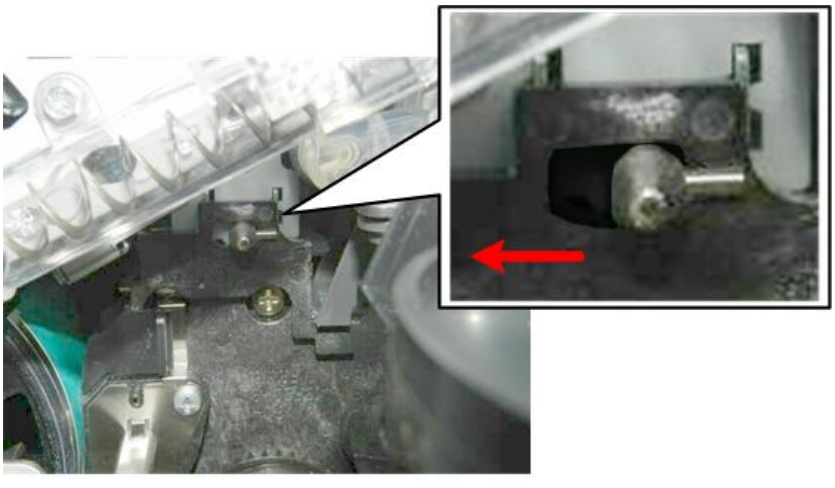
d223c1045

6. Slip the unit slightly to the right as you push it slowly back into the machine.



d223c1047

7. Push the development unit in until it stops, and then push it to the left.
8. You should see the pin through the oval hole as shown below. This means the unit is locked in the correct position.



d223c1049

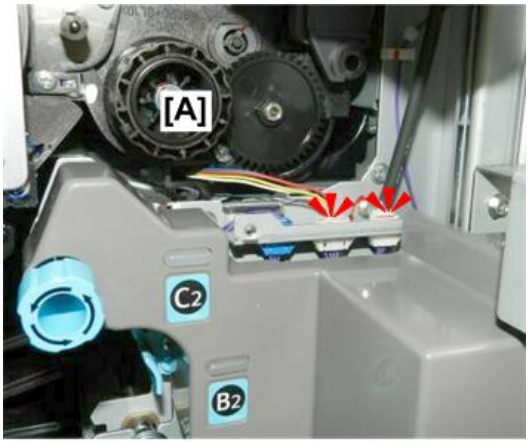
9. The horizontal pin must be through the hole and lapped over the plate as shown below on the left.

d223c1050

Note

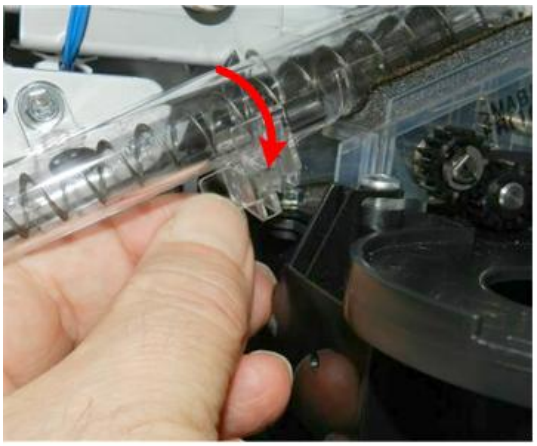
- If the pin does not slide over the plate as shown above on the left, turn the front gear of the development unit counter-clockwise and try again.

10. Be sure to re-connect the development unit [A].



x2 d223c1038

11. You must remember to **lower** the supply pipe shutter so the pipe is open.

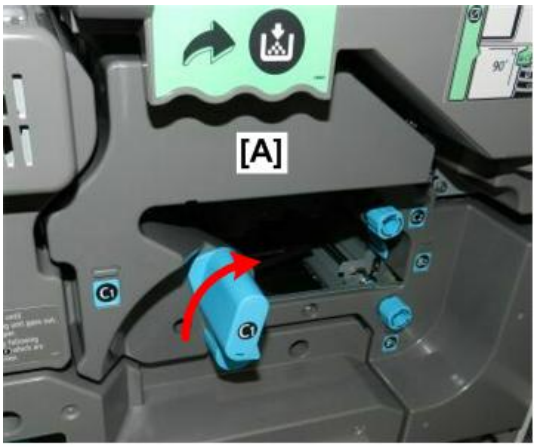


d223c1052

Important

- The shutter must be down. If it remains up, you will not be able to close the toner bottle holder and the front door.

12. Re-install the PCU inner cover [A].
13. Be sure to raise lever **C1**. (The front door will not close if **C1** is down.)



d223c1053

Just Replaced Developer?

If you have just replaced the developer, you must initialize the developer immediately after re-installing the development unit. See "Initializing Developer" below.

Replacement with a Used Development Unit

Do the following procedure if you need to replace the development unit with a unit from another machine for testing.

1. Do **SP2220** (Vref Manual Setting) and **SP2906** (TD Sensor Control Voltage) on the loan machine and note the settings.
2. Remove the development unit from the loan machine and then install it in the other machine.
3. Do **SP2220** and **SP2906** on the machine where you just installed the loan development unit and enter the values from the loan machine.
4. After the test, reinstall the old development unit and restore the original settings of both SP codes.

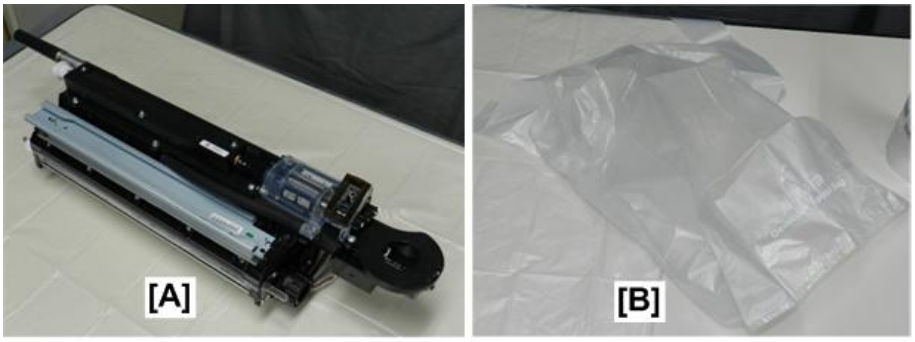
4.9.2 DEVELOPER REPLACEMENT

Replacing the Developer

1. Gather what you need.
   - One developer packet
   - Plastic disposal bag [A]
   - Plastic cover sheet [B]

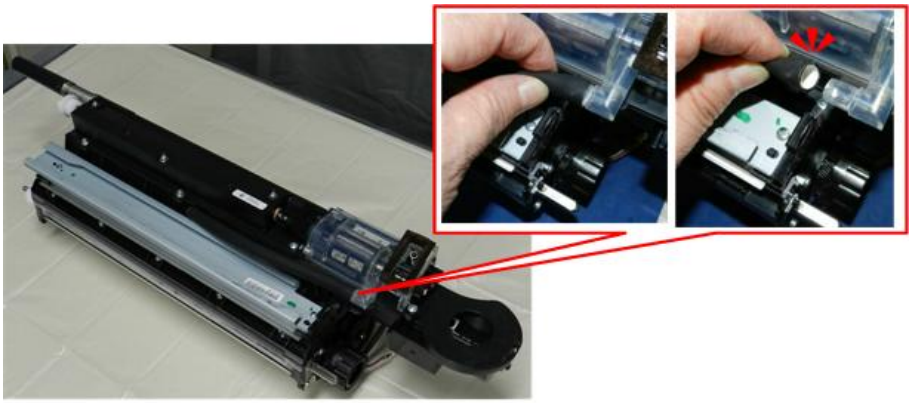
d223c3247

2. Place the development unit [A] on the plastic sheet.
3. Have the disposal bag [B] for the old developer close at hand.



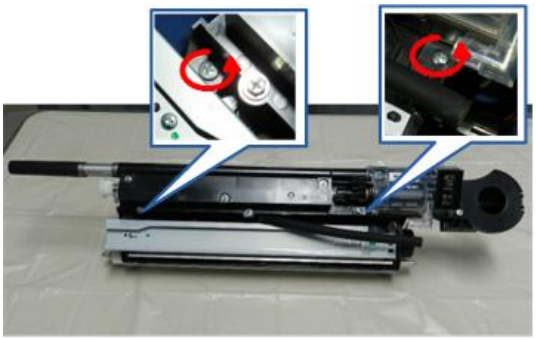
d223c3248

4. Disconnect the hose. (This is necessary only for the D225.)



D225 d223c3249

5. Disconnect the toner hopper.

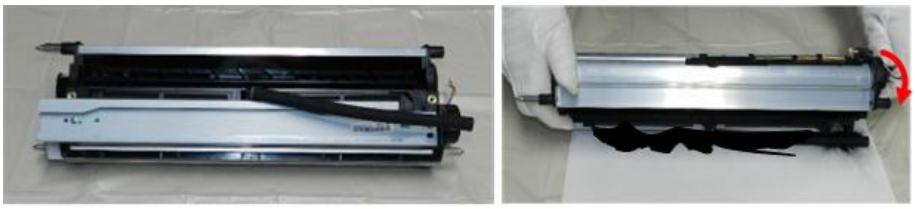


x2 d223c3250

6. While holding the hopper perfectly level as you remove it to prevent toner spill, rotate the toner hopper very slightly (10° to 20°) and remove it.

d223c3251

7. Set the toner hopper aside.
8. Spread a sheet of paper on the table.
9. Slowly, turn the development unit upside down onto the paper.
10. Turn the knob through several complete rotations to empty all the developer in the development unit.



d223c3252

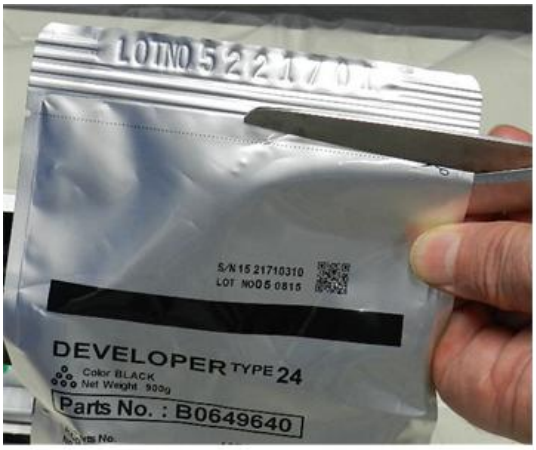
11. Set the development unit aside, and then gather the dumped toner and paper.
12. Dump them in the disposal bag and seal it.

d223c3253

13. Vacuum clean these areas:
    - Rear side seal [A]
    - Front side seal [B]
    - Development roller sleeve and shaft [C] with clean, dry cloth and blower brush

d223c3254

14. Shake the developer packet several times to loosen the developer.
15. Cut off the top edge of the packet.

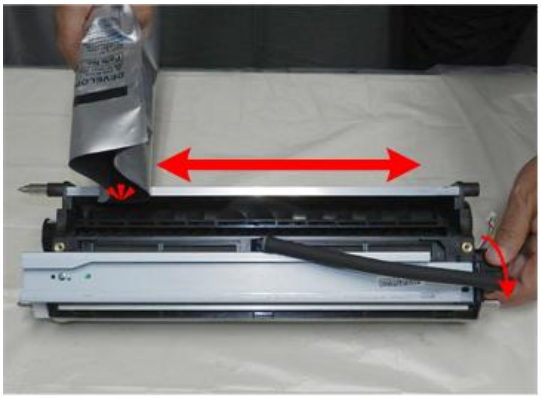


d223c3255

16. Keep the cut edge with the lot number embossed on it. You will need this number to register the developer lot number on the machine.

d223c3256

17. While turning the knob slowly, pour in one pack of developer from one end of the development unit to the other.



d223c3257

18. Make sure that the developer is evenly distributed across the length of the roller.
19. Continue to turn the knob several times to prevent clumping in the developer.

Re-installing the Development Unit

Re-assemble the developer unit and toner hopper, and then re-install the unit in the machine.
page 4-149

Initializing the Developer

Follow the procedure below precisely to enter the developer lot number, and to initialize the new developer.

Important

- You must open the door and leave it open before you switch the machine on. This prevents the machine from executing automatic process control. (It does this every time the machine is turned on.)
- The TD sensor must be initialized with the new developer **SP2801-001** before automatic process control executes for the first time with the new developer.

1. Connect the power cord to the power source.
2. Open the front door.
3. Turn the machine on.
4. Enter the SP mode.
5. Close the front door
6. Do **SP2801-002** and enter the Lot No. (This is the number written on the edge of the packet you cut from the developer packet.)
7. Do **SP2801-001** to initialize the TD sensor.
8. Exit the SP mode and resume normal operation.

4.9.3 ENTRANCE SEAL, SIDE SEALS

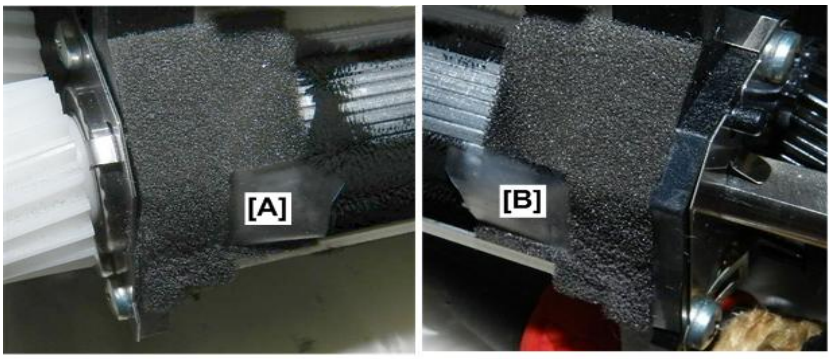
1. Remove the development unit. page 4-149
2. Separate the development unit and toner hopper. See "Separating the Development Unit and Toner Hopper" in this section.

d223c3258

3. Press in the catches on either end to release the entrance seal bracket, then remove it.

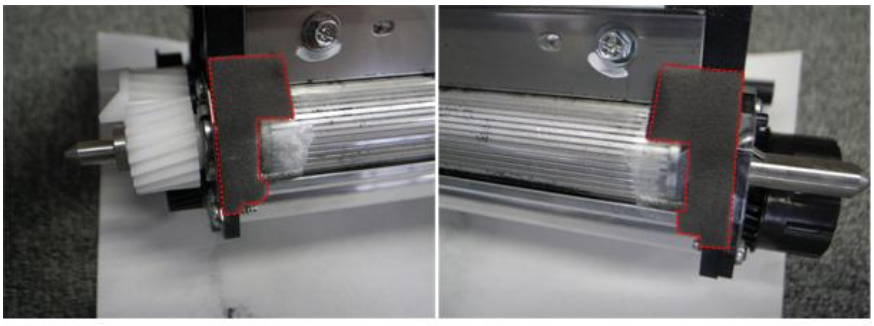
d223c3259

4. Remove the side seals from both ends [A] and [B].



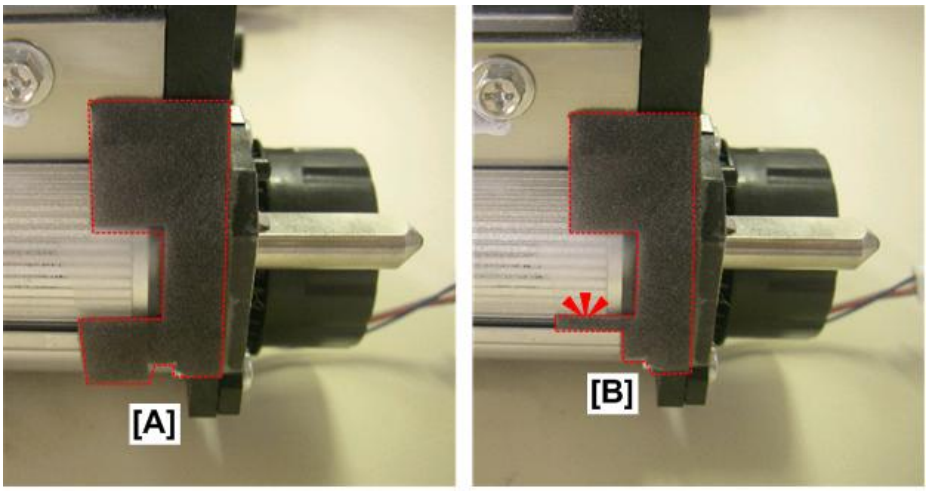
d223c3260

5. Vacuum clean the area, and then attach new seals as shown below.



d223c3263

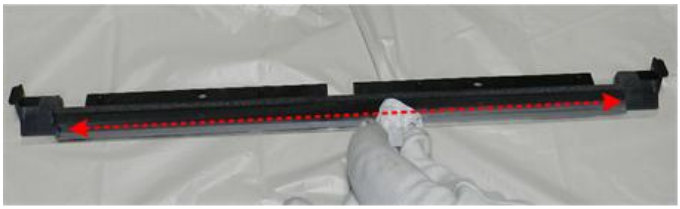
6. Make sure that the seals are attached correctly.
   - The bottoms of the seals [A] should be fully visible.
   - The bottom of a seal [B] **should not** be in the slit.



d223c3264

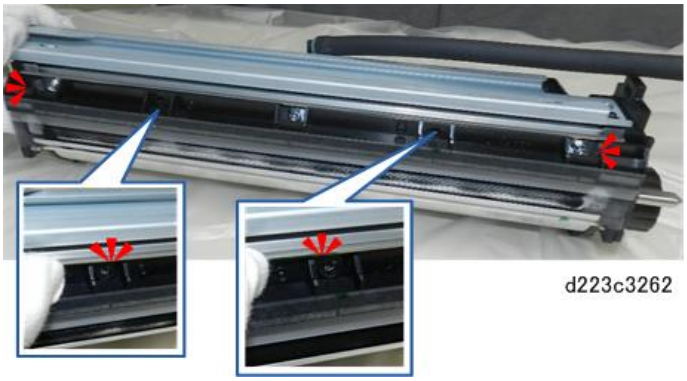
Re-assembly

1. Clean the entrance seal bracket before re-installing it.



d223c3261

2. When you re-install the entrance seal bracket, make sure the tabs and bosses are engaged at four locations (both end tabs, and two bosses on the bracket).



d223c3262

4.9.4 DEVELOPMENT FILTER

1. Remove the development unit. page 4-149
2. Separate the development unit and toner hopper. See "Separating the Development Unit and Toner Hopper" in this section.
3. Lift out the filter bracket base.

Note

- There are some minor differences in the shape and size of the development filters for the D223/D224 and D225. The procedure below shows filter replacement for the D225.

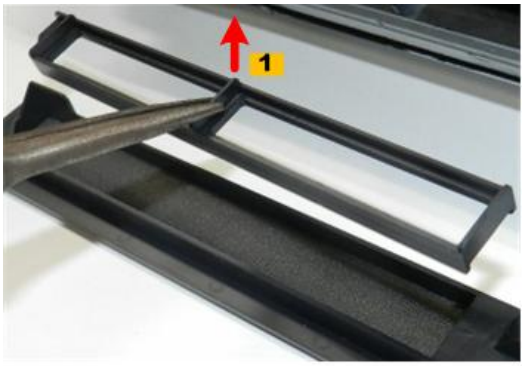
d223c3265

D223/D224

There is no hose attached to the filter bracket.

d223c3304

4. Remove first filter bracket [1].



d223c3266

5. Remove second filter bracket [2].

d223c3267

6. Remove rear filter [1].

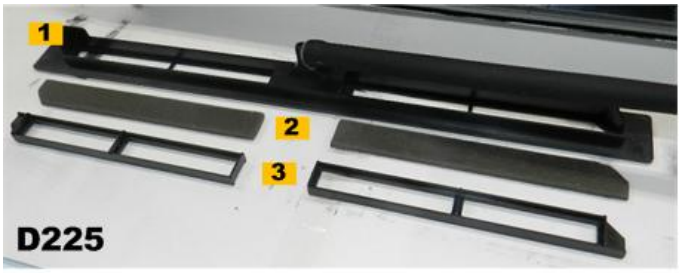
d223c3268

D223/D224

The filter bracket is one piece.

d223c3305 D225.

7. This photo shows the filter bracket base [1], filters [2], and filter brackets [3] removed from the



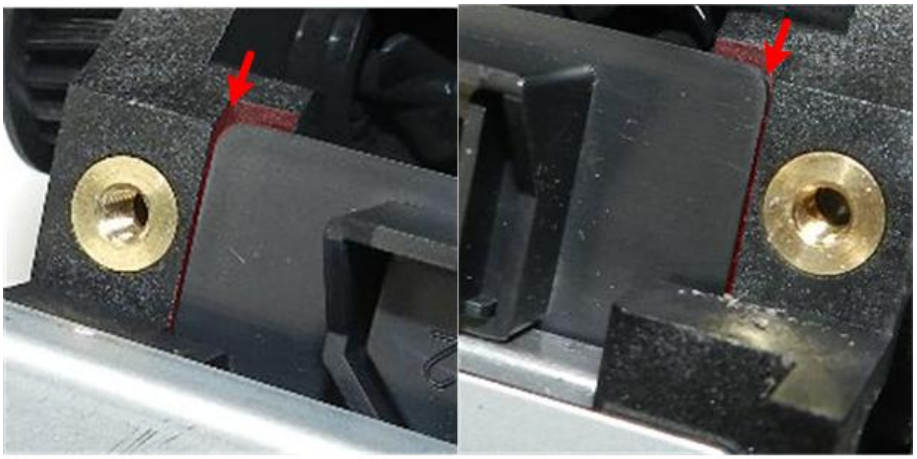
d223c3269

This photo shows the [1] filter bracket base, [2] filters, and [3] filter brackets removed from the D223/D224.

d223c3306

Re-assembly

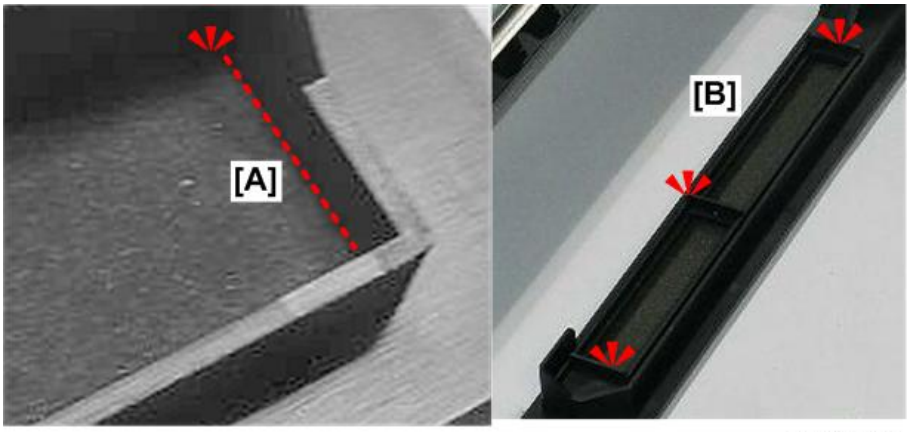
1. Inspect the rails on both ends of the bracket case and make sure they are clean.



d223c3307

2. If there is any toner in the rails, wipe them clean before re-installing the bracket case.
3. When installing a new filter, set the filter [A] snug inside the filter case, and then place the

case [B] over the top of the filter bracket.

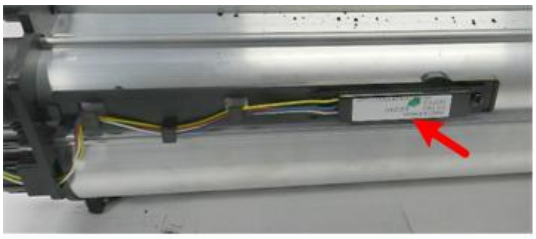


d223c3270

4. Vacuum clean, and then check the gaps at the ends of the filters to make sure that they are flat and sealed.

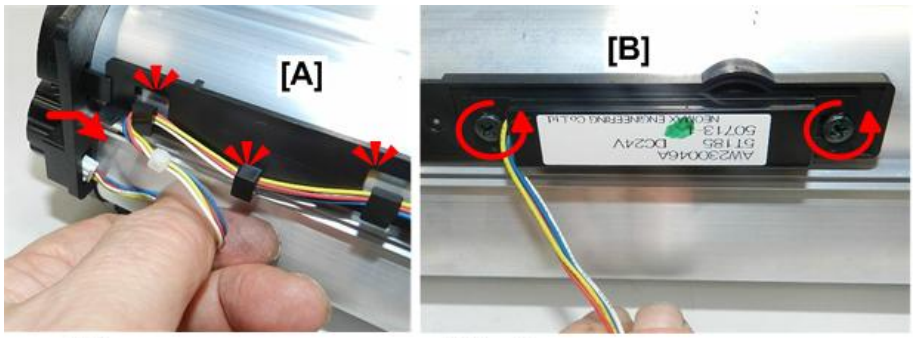
4.9.5 TD SENSOR

1. Remove the development unit. page 4-149
2. You can see the TD sensor on the side of the development unit.



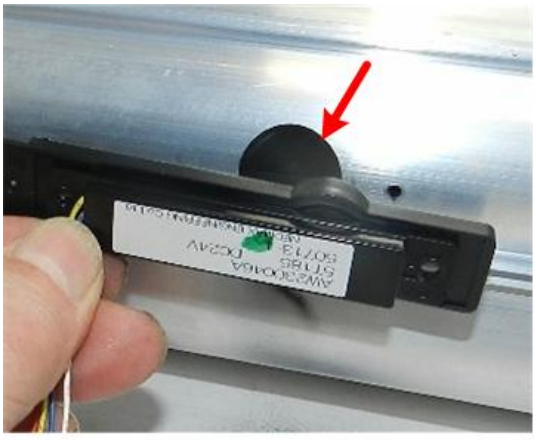
d223c3271

3. First, free the harness [A].
4. Disconnect TD sensor [B].



x3 x2 d223c3272

1. Remove the TD sensor.
2. Clean the port now before you re-attach the TD sensor.



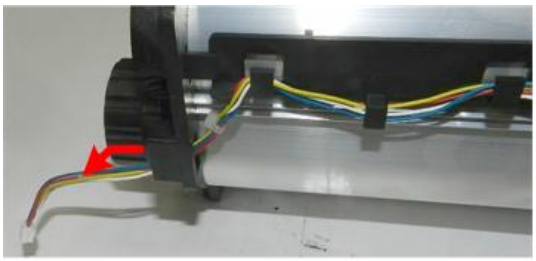
d223c3273

3. Lay the sensor on a flat, clean surface.

d223c3274

Re-assembly

1. Be sure to run the harness through the frame as it was originally.

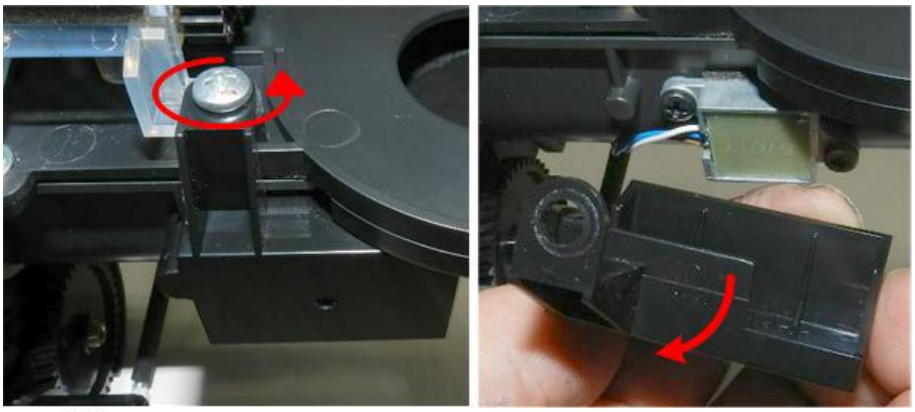


d223c3275

2. If you have just replaced the TD sensor, go into the SP mode.
3. Do S**P3901** (Auto Process Control) and make sure that it is on (default).
4. Do **SP2801** (TD Sensor Initial Setting)
5. Do **SP2962** (Auto Process Control) to execute auto process control.

4.9.6 TONER END SENSOR

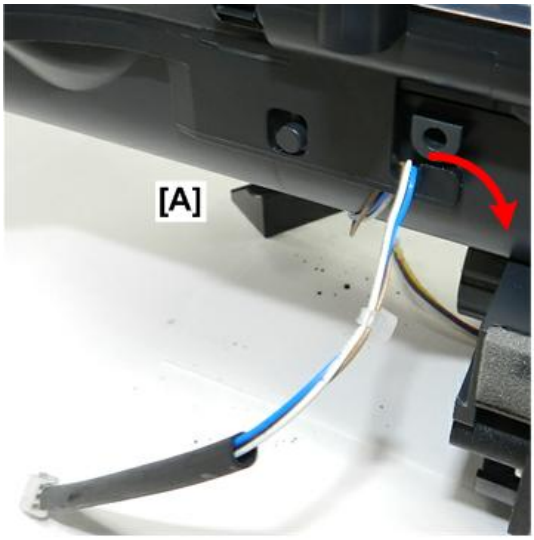
1. Remove the development unit. page 4-149
2. Disconnect and remove the toner end sensor cover.



x1

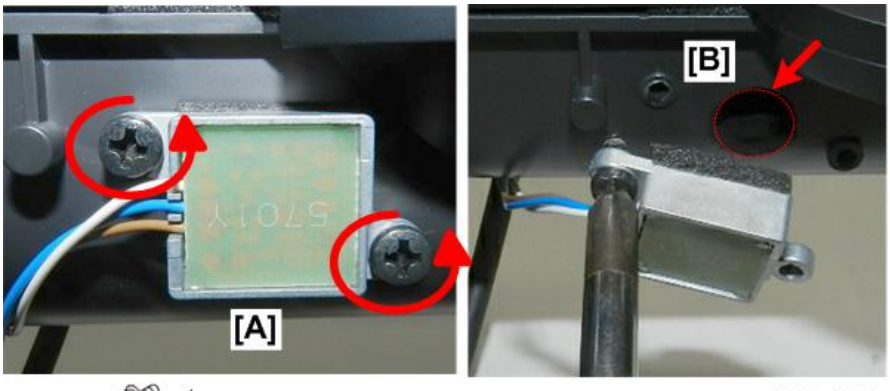
d223c3277

3. On the other side of the toner hopper, free the harness.



d223c3278

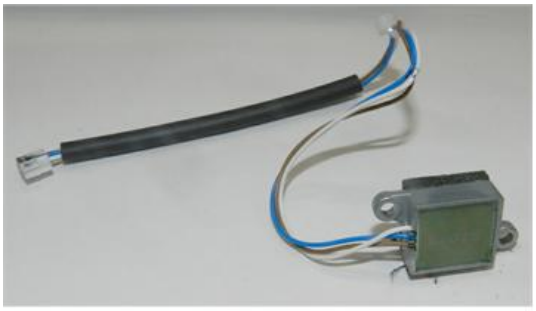
4. While removing the screws carefully to avoid stripping the holes, disconnect the toner end sensor [A].
5. Clean the port now before you re-attach the sensor [B].



x1

d223c3279

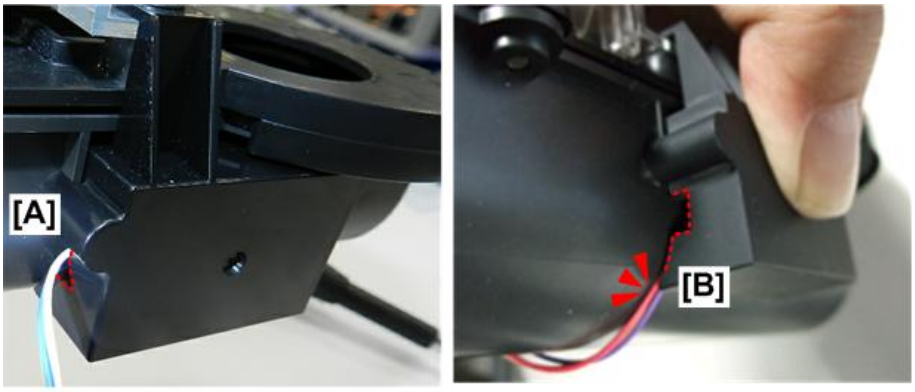
6. Lay the sensor on a flat, clean surface.



d223c3280

Re-assembly

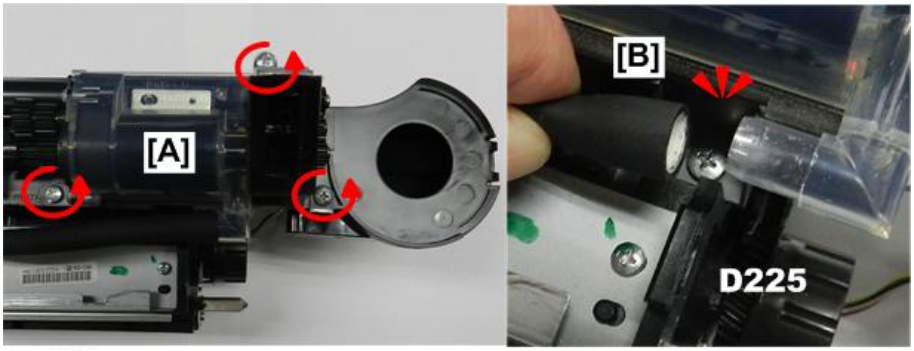
1. Pass the harness through the cutout [A] on the edge of the cover.
2. Make sure the harness **is not** pinched between the side of the toner hopper and the edge of the cover as shown [B].



d223c3281

4.9.7 TONER SEPARATION UNIT

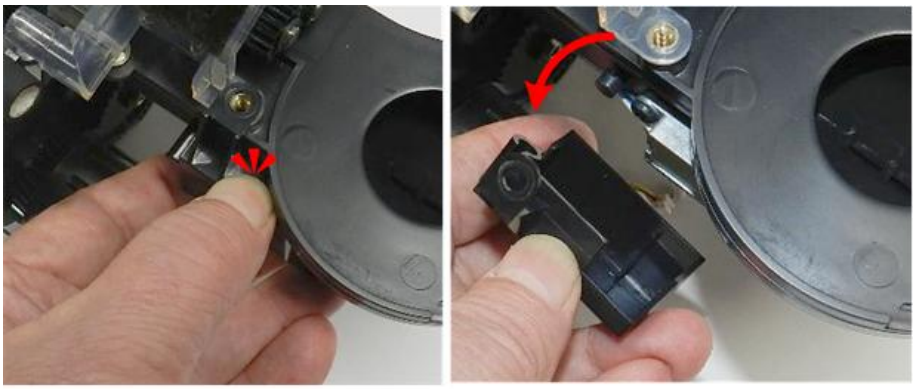
1. Remove the development unit. page 4-149
2. Disconnect toner separation unit [A].
3. Disconnect hose [B] (D225 development unit only)



x3

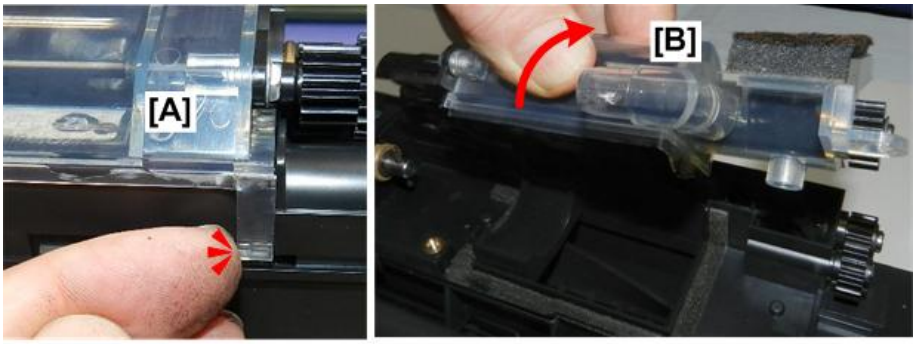
d223c3201

4. Remove the toner end sensor cover.



d223c3202

5. On the back of the toner hopper, release the long tab of the toner separation unit cover [A], and then remove the toner separation unit [B].



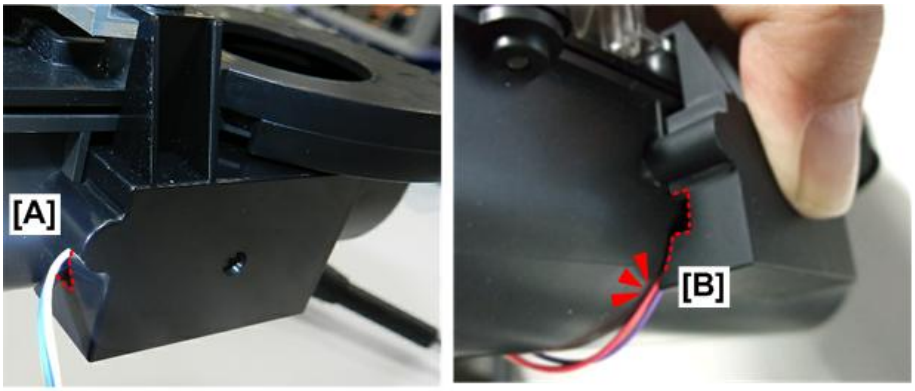
d223c3203

6. Lay the toner separation unit on a flat, clean surface.

d223c3204

Reassembly

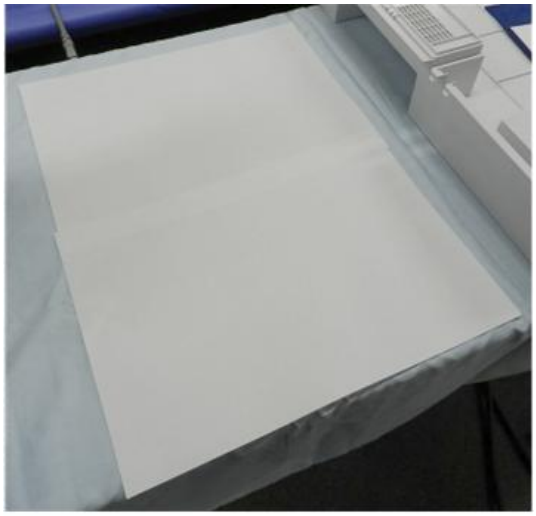
1. Pass the harness through the cutout [A] on the edge of the toner end sensor cover.
2. Make sure the harness is not pinched between the side of the toner hopper and the edge of the cover as shown [B].



d223c3281

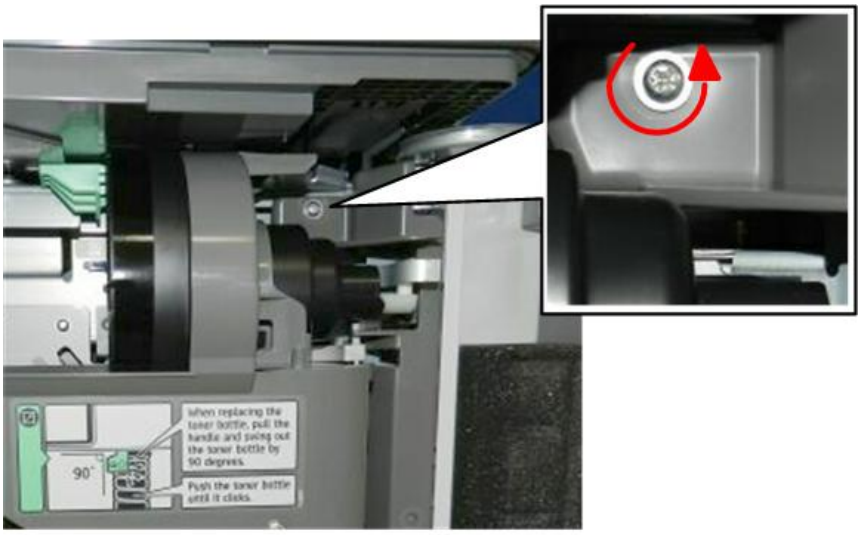
4.9.8 TONER BOTTLE MOTOR

1. Spread some paper on a flat, clean surface.



d223c3282

2. Open the front door, and then remove the toner bottle.
3. Disconnect the shuttle cover.

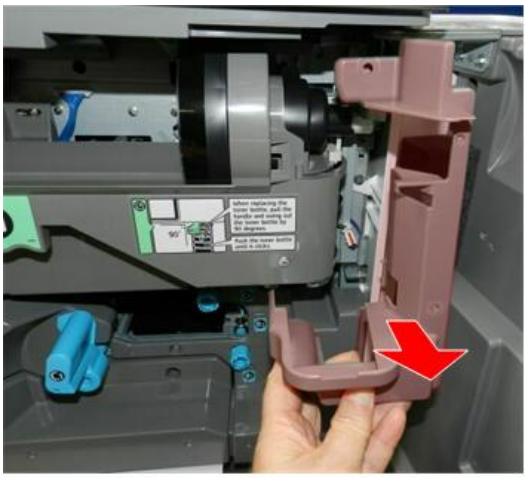


x1 d223c3283

Important

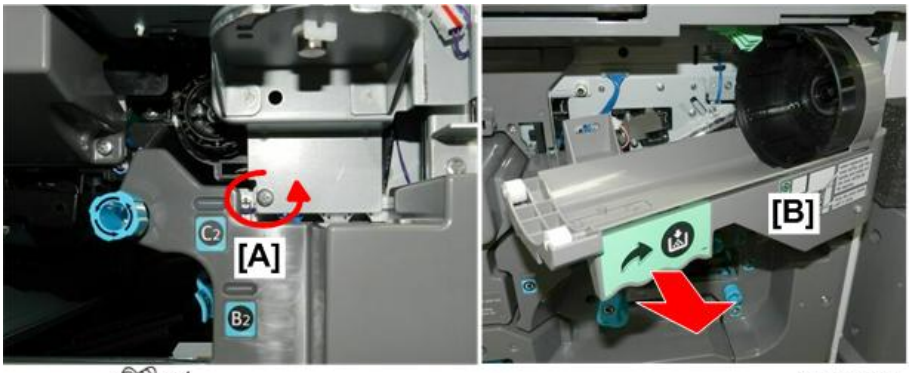
- A washer is attached to the shuttle cover screw in order to prevent the screw from falling into the machine. Turn the screw counter-clockwise only enough turns to remove it. If you loosen the screw too much the washer will fall into the machine.

4. Remove the shuttle cover.



d223c3284

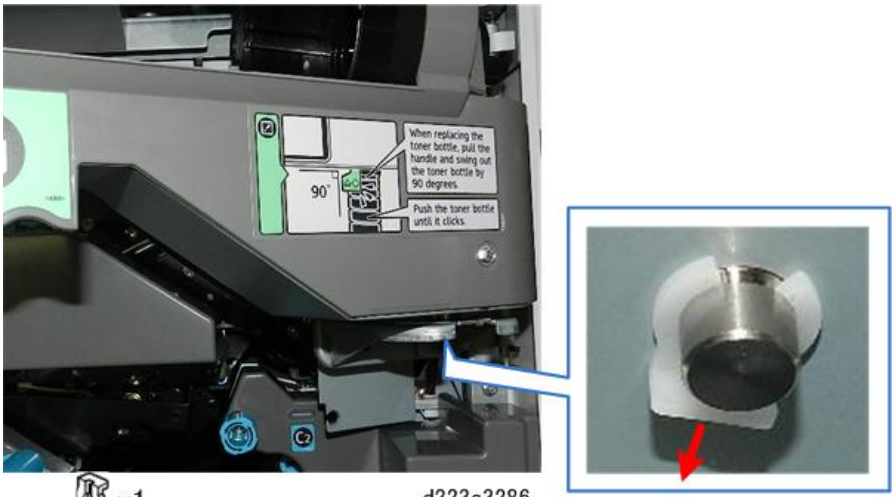
5. Remove lock screw [A] so the toner bottle holder [B] can swing freely.



x1

d223c3285

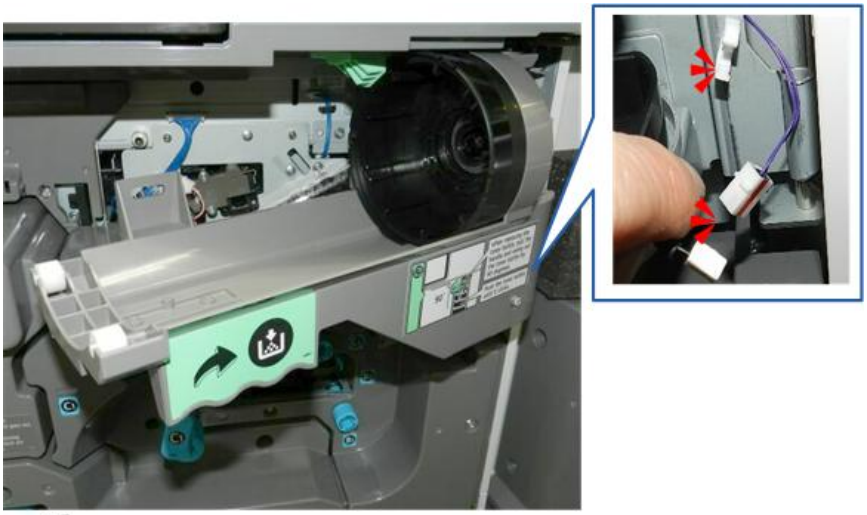
6. Locate the C-clamp under the base of the toner bottle holder, and then remove it.



x1

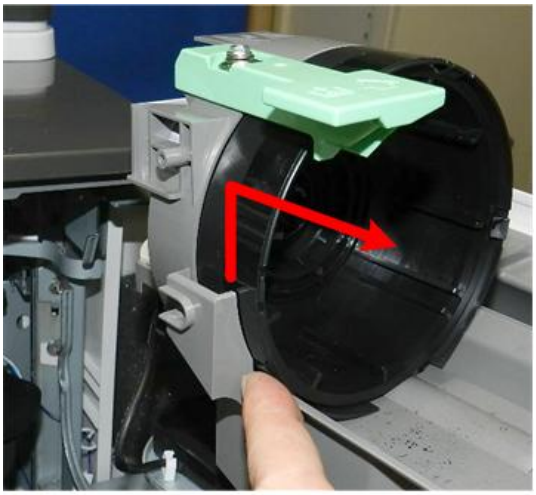
d223c3286

7. Locate the small motor harness between the door and toner bottle holder on the right, and then disconnect it.



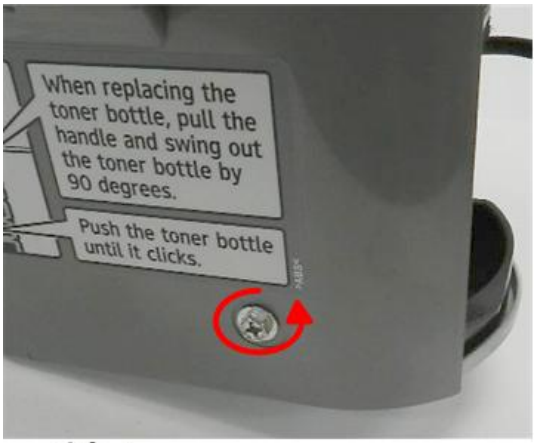
x1 x1 d223c3287

8. Lift the toner bottle unit off its hinges and lay it on the paper to catch toner spill.



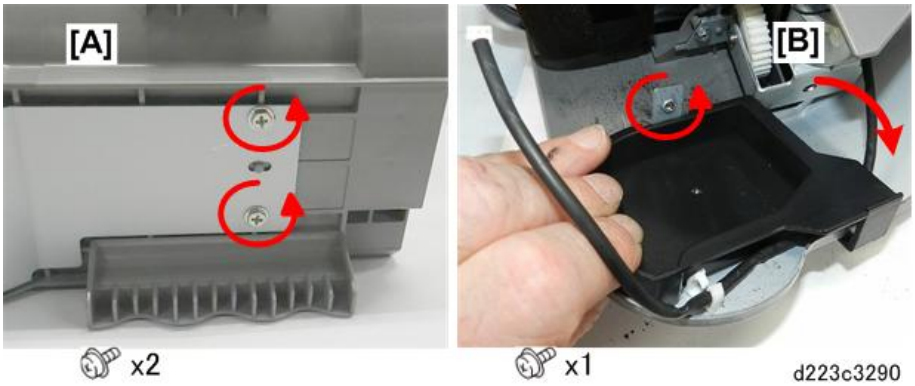
d223c3288

9. Disconnect the cover.



x1 d223c3289

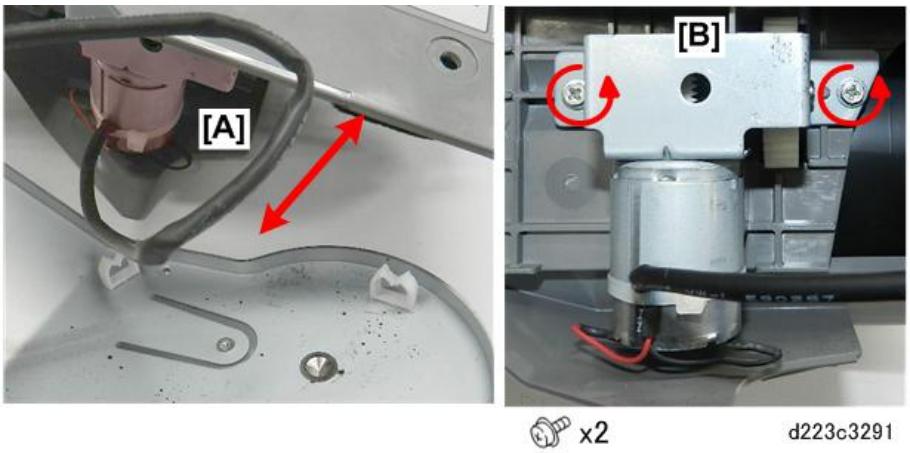
10. Disconnect bottom plate [A].
11. Disconnect toner pan [B], and then remove it.



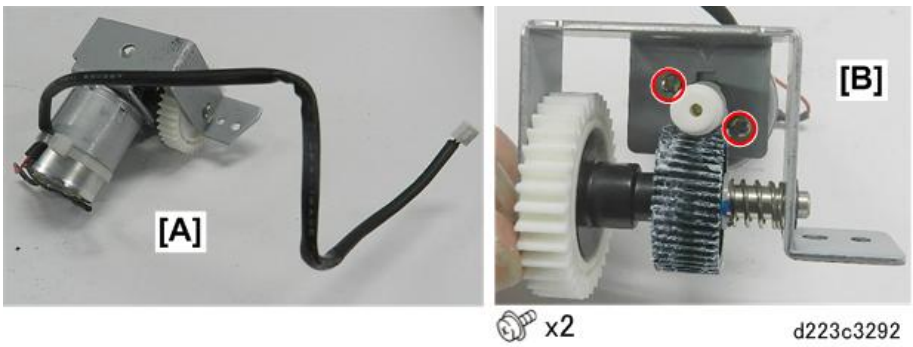
Note

- The toner pan must be cleaned at every PM interval (300 K).

12. Separate the bottom plate so you can see the motor [A].
13. Disconnect motor bracket [B]



14. Remove the motor bracket with motor attached [A], and then lay it on a flat, clean surface.
15. Disconnect motor bracket [B].



16. Separate the motor and bracket.

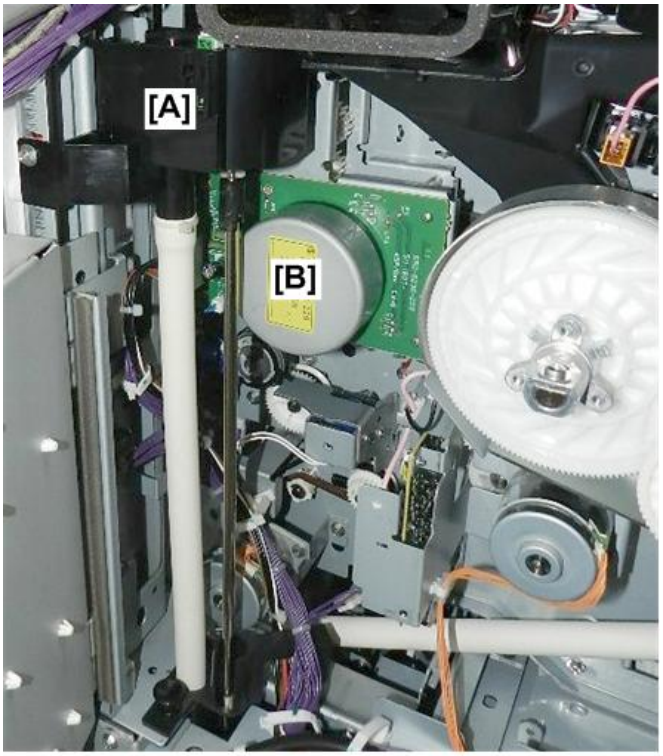
d223c3293

4.9.9 DEVELOPMENT MOTOR

1. Remove the rear covers. page 4-19
2. Open the controller box. page 4-28

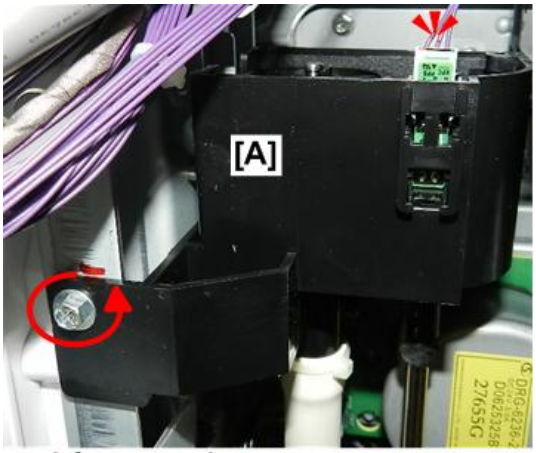
x1 d223c3294

3. The used toner pump tube assembly and drive rod [A] block the removal of the motor [B].



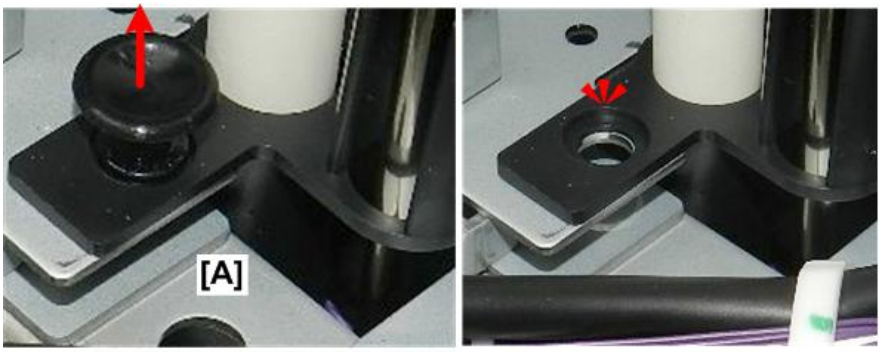
d223c3295

4. Disconnect top of used toner pump assembly [A].



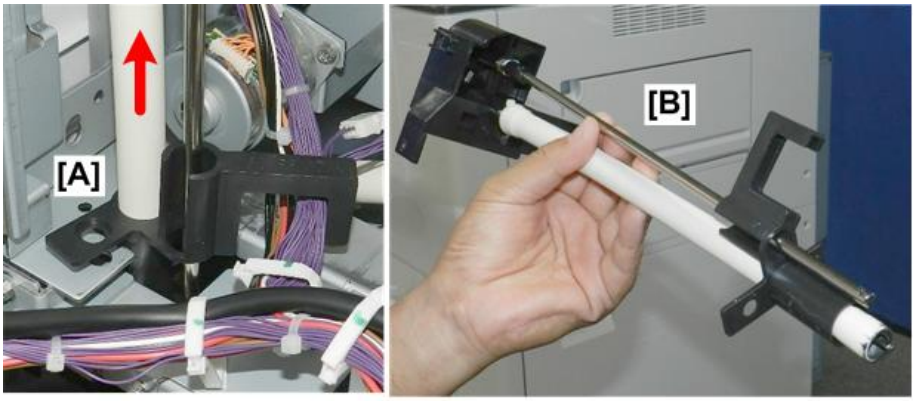
d223c3296

5. Pull out the stopper on the tube base [A].



d223c3297

6. Pull the bottom of the tube [A] up, and then remove the tube pump assembly [B].



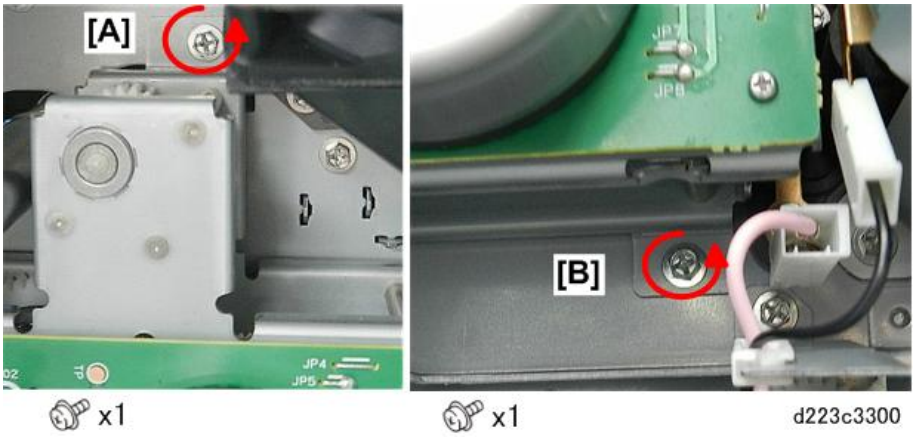
d223c3298

7. Disconnect the motor drive board.

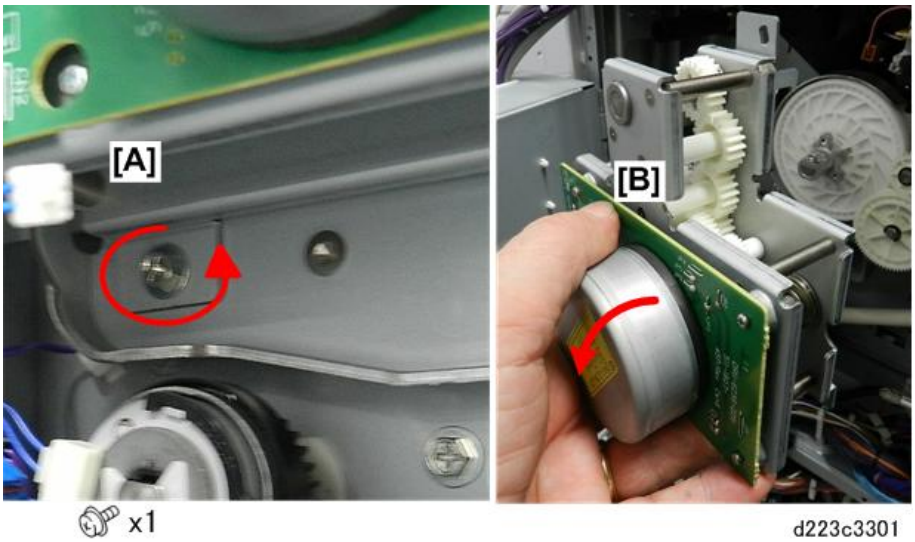
x1

d223c3299

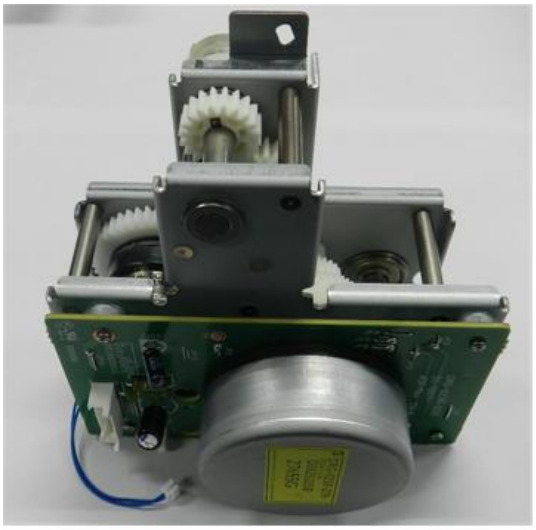
8. Disconnect motor bracket top [A].
9. Disconnect lower right corner of bracket [B].



10. Disconnect lower right corner of bracket [A].
11. Pull out the motor bracket [B] with the motor attached.

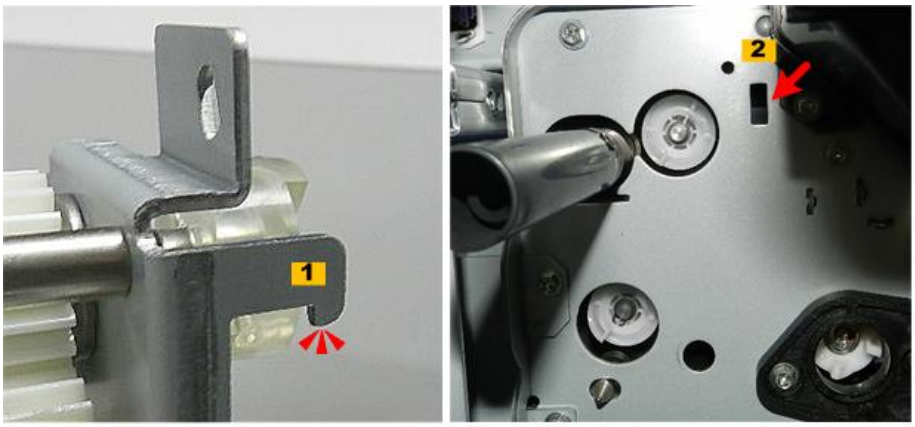


12. Lay the motor on a flat, clean surface.



Re-assembly

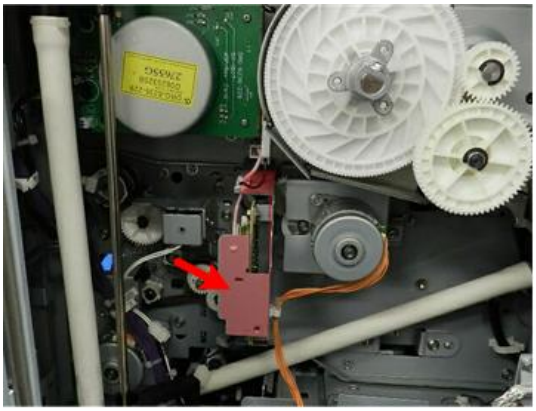
1. To hang the motor correctly, insert the hook [1] on the motor bracket into the hole [2] in the frame inside the machine.



d223c3303

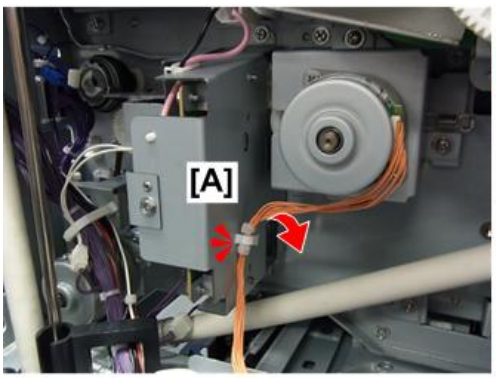
4.9.10 DEVELOPMENT UNIT POWER PACK

1. Remove the rear upper and lower covers. page 4-19
2. Open the controller box. page 4-28
3. Remove the flywheel.
4. The development unit power back is located next to the registration motor.

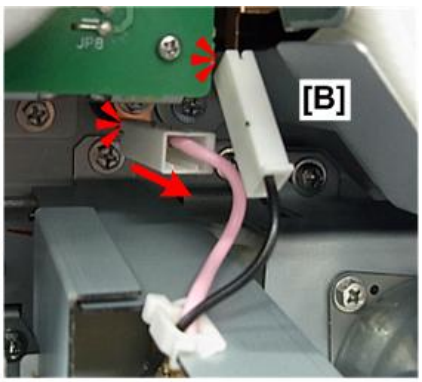


d223c3687

5. Free harness [A].
6. Disconnect bayonet connectors [B].



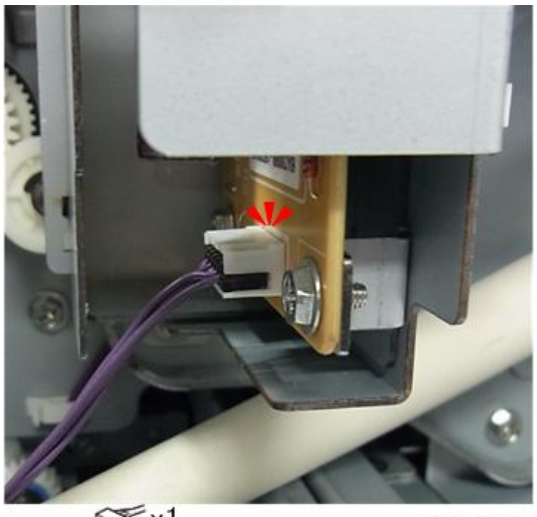
x1



x2

d223c3688

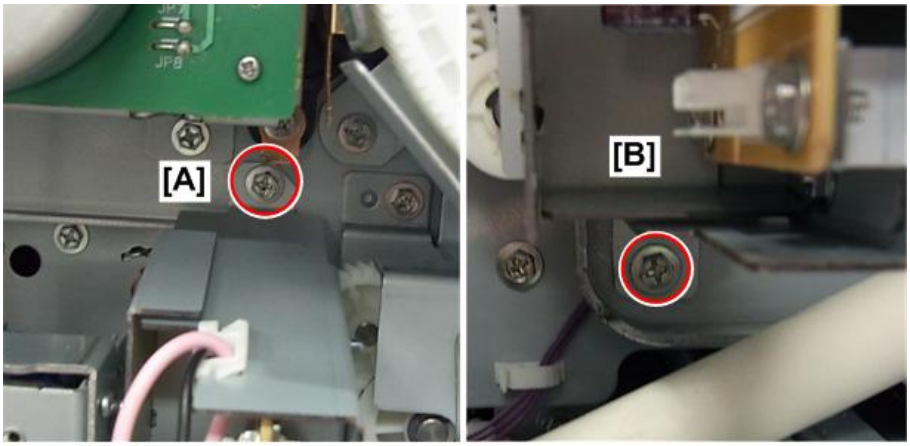
7. Disconnect the bottom edge of the power pack.



x1

d223c3791

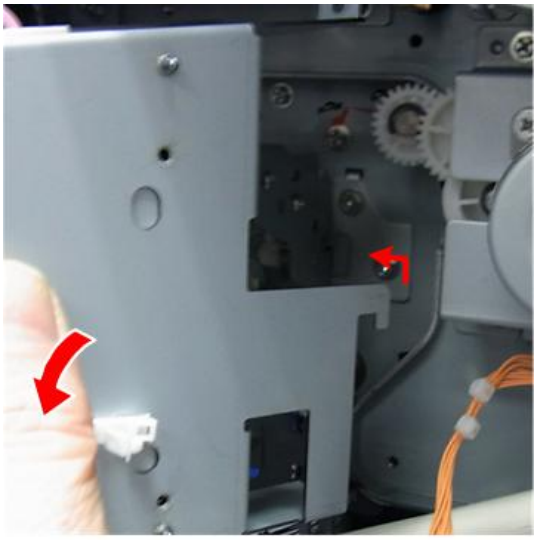
8. Disconnect the top [A] and bottom [B] of the bracket.



x2

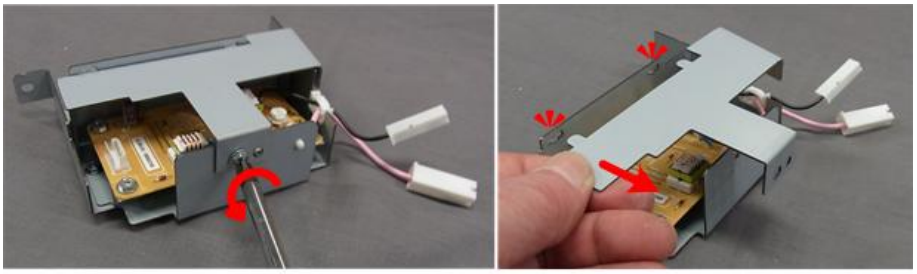
d223c3689

9. Unhook the bracket with the power pack attached and remove it.



d223c3690

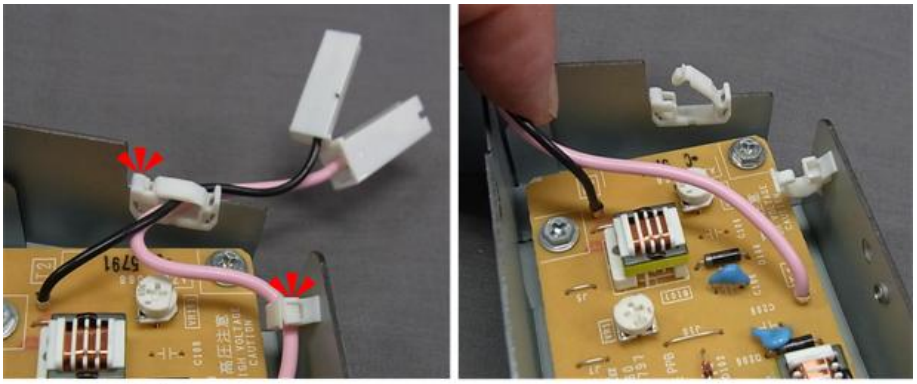
10. Lay the bracket on a flat, clean surface.
11. Remove the cover bracket.



x1

d223c3792

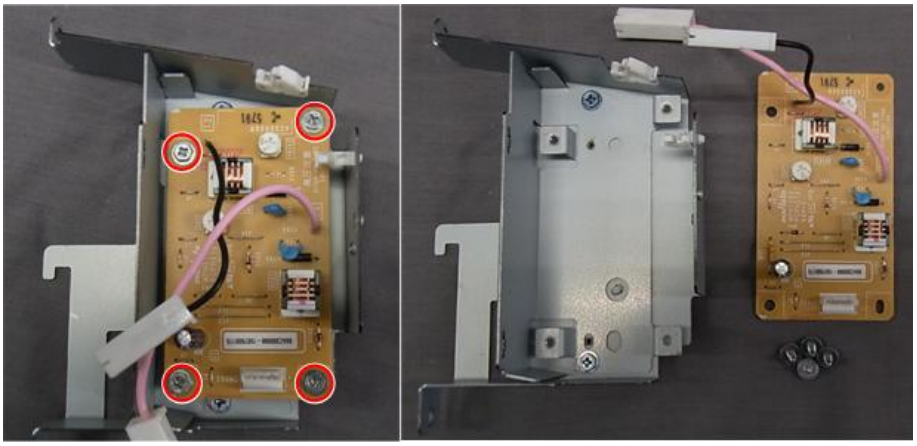
12. Free the connector harnesses.



x2

d223c3793

13. Separate the power pack and bracket.



x4

d223c3691

4.9.11 USED TONER COLLECTION UNIT

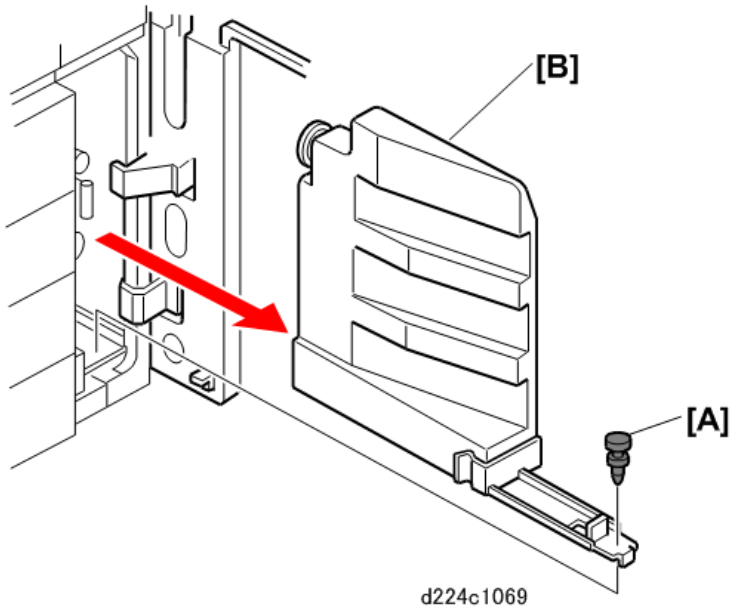
Used Toner Collection Unit Removal

1. Remove the rear upper and rear lower covers. page 4-19
2. Open the controller box. page 4-28
3. The used toner collection unit [A] is located at the right, rear edge of the main machine. The unit contains three components.

d223c3692

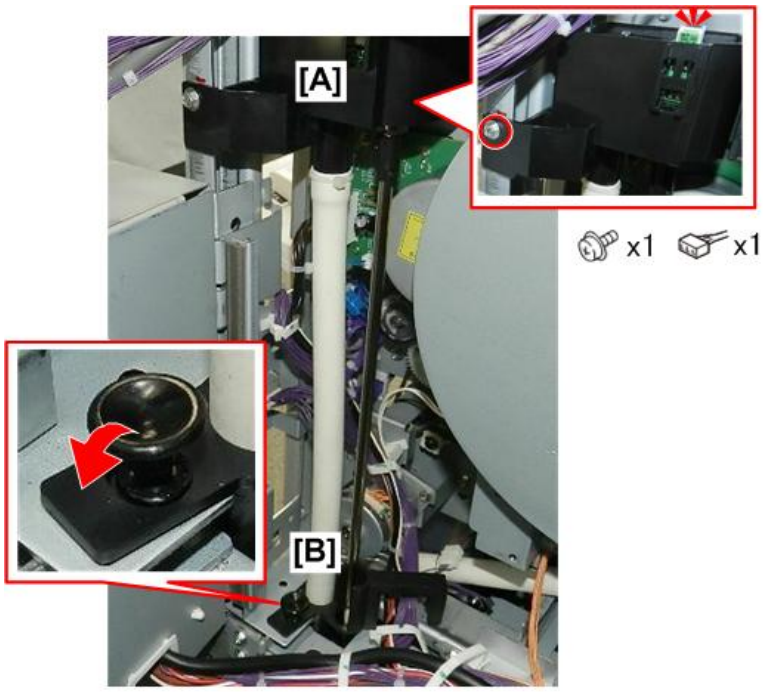
1	Used Toner Collection Motor
2	Bottle Set Sensor
3	Bottle Full Sensor

4. Open the front door, and then remove the used toner bottle [B].



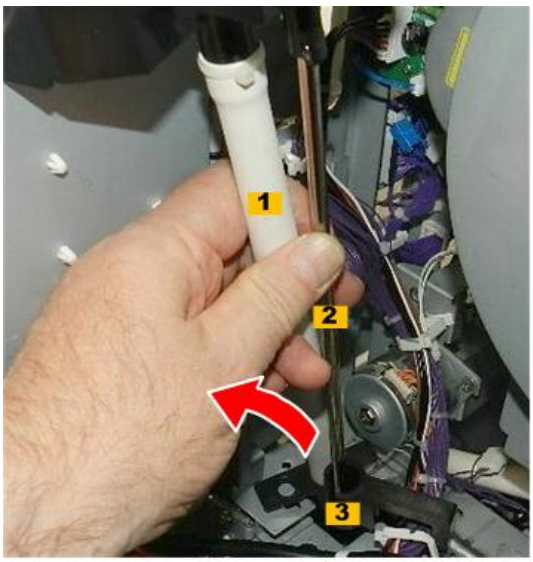
d224c1069

5. Spread a drop cloth or some paper on a flat clean surface to hold the unit after it is removed from the machine.
6. Disconnect the top [A] and bottom [B] of the toner pump assembly.



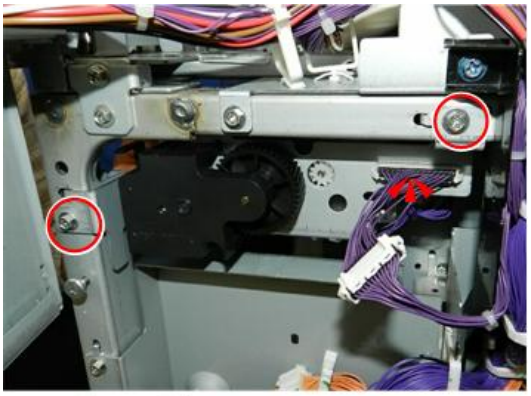
d223c3693

1. Grasp the tube [1], drive shaft [2], and base bracket [3] and then remove them together.



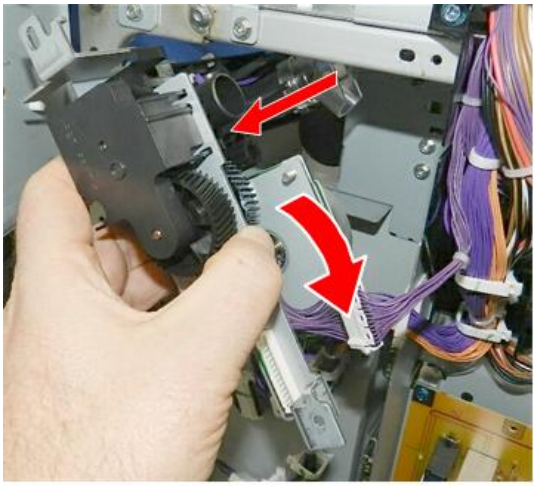
d223c3694

2. Lay the tube on a flat, clean surface that has been covered with a drop cloth or paper to catch loose toner from the coils.
3. Disconnect the bracket.



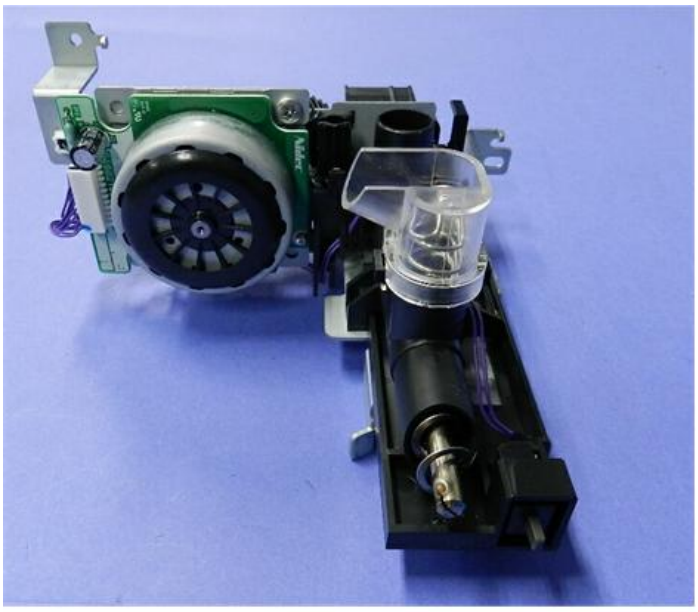
x1 x2 d223c3695

4. Pull the unit straight out the back of the machine, and then twist it down and to the right to remove it.



d223c3696

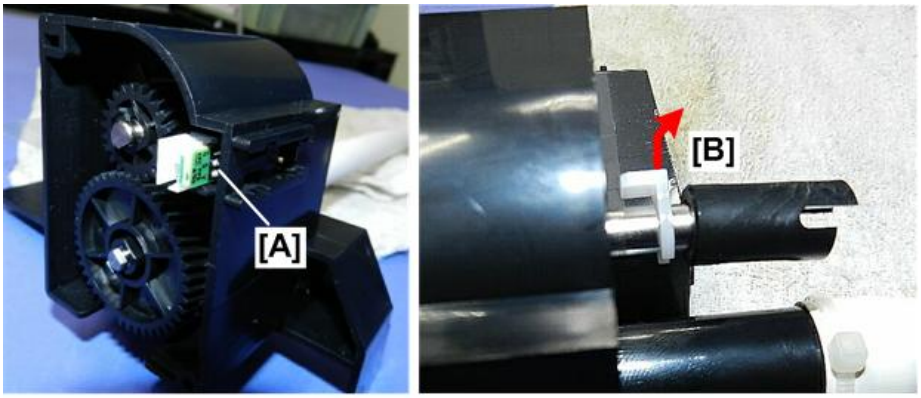
5. Set the unit on a flat, clean surface.



d223c3697

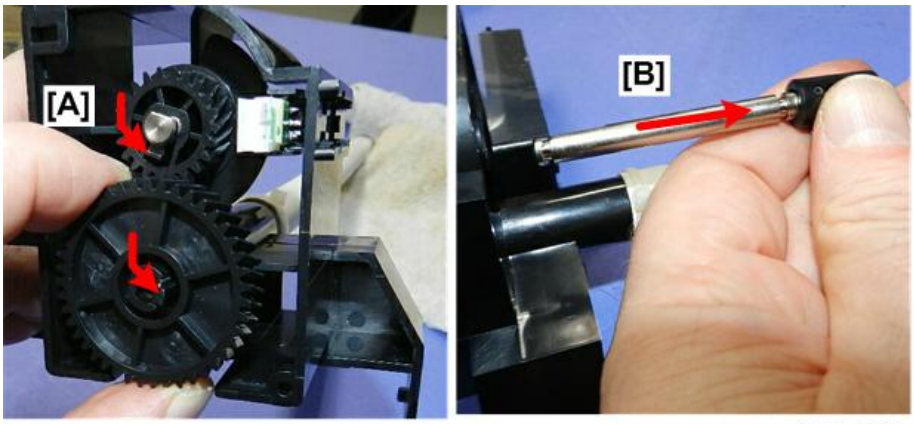
Toner Collection Motor Sensor

1. Remove the used toner collection unit. page 4-187
2. The toner collection motor sensor [A] is on top of the toner pump assembly.
3. Disconnect gear shaft [B].



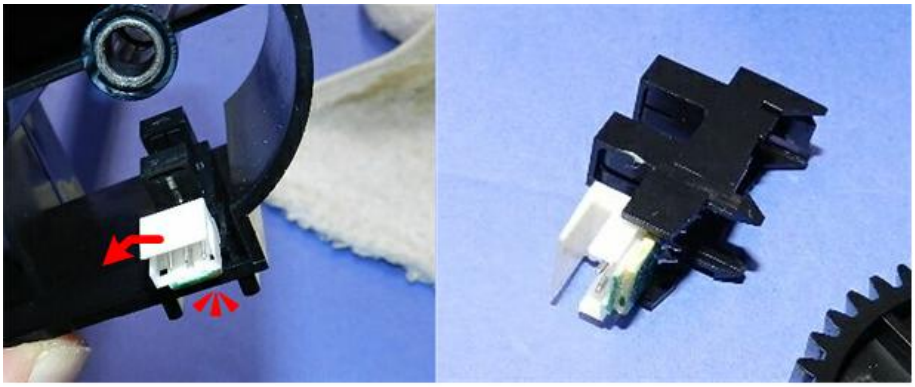
d223c3698

4. Open the release tabs on the face of both gears [A], then remove them.
5. Remove shaft [B].



X2 d223c3699

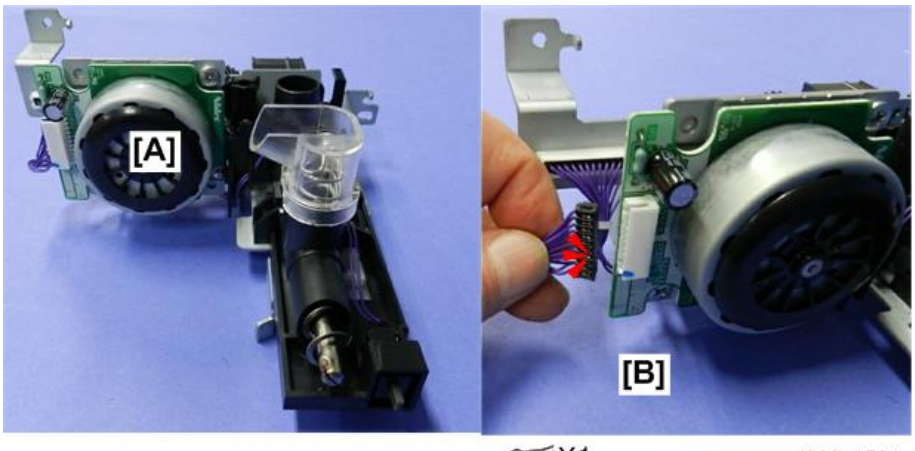
6. Disconnect the sensor, and then remove it.



X4 d223c3700

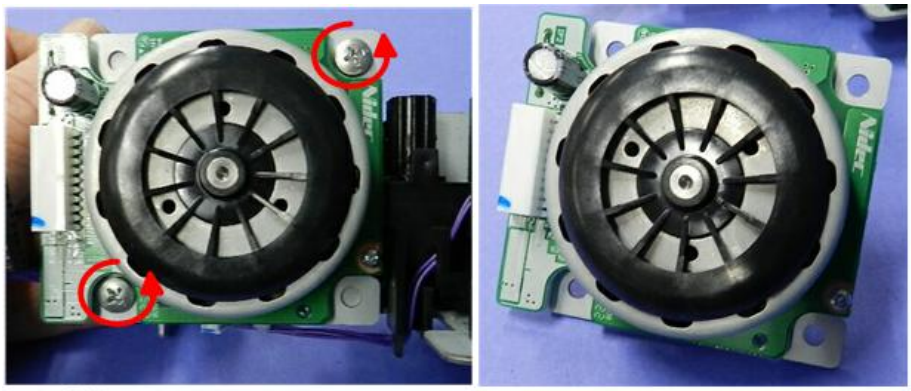
Used Toner Collection Motor

1. Remove the used toner collection unit. page 4-187
2. The used toner collection motor [A] is at the rear of the used toner collection unit.
3. Disconnect the motor [B].



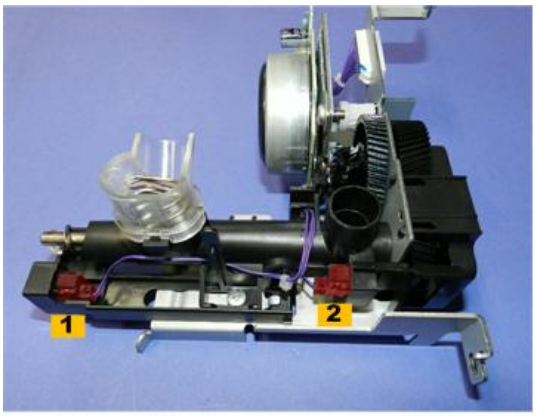
X1 d223c3701

4. Disconnect the motor from the bracket, and then remove it.



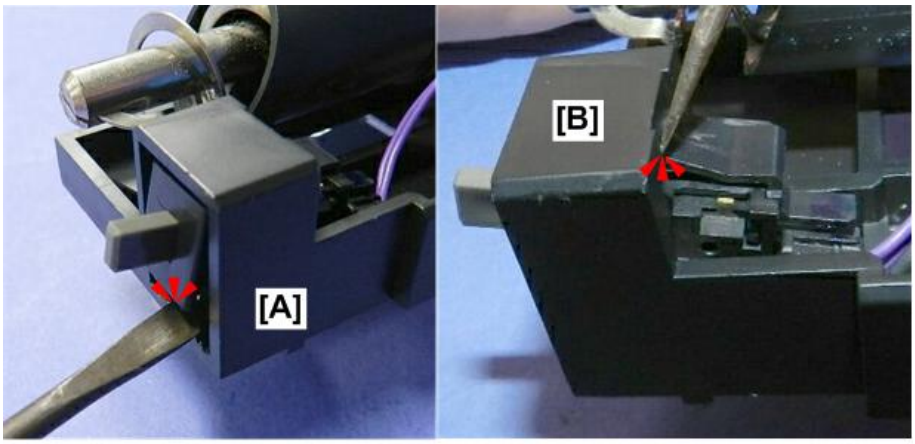
Toner Bottle Set Switch, Toner Bottle Full Switch

1. Remove the used toner collection unit. page 4-187
2. The bottle set sensor [1] is at the front of the unit, and the bottle full sensor [2] is at the rear. Both are press switches.

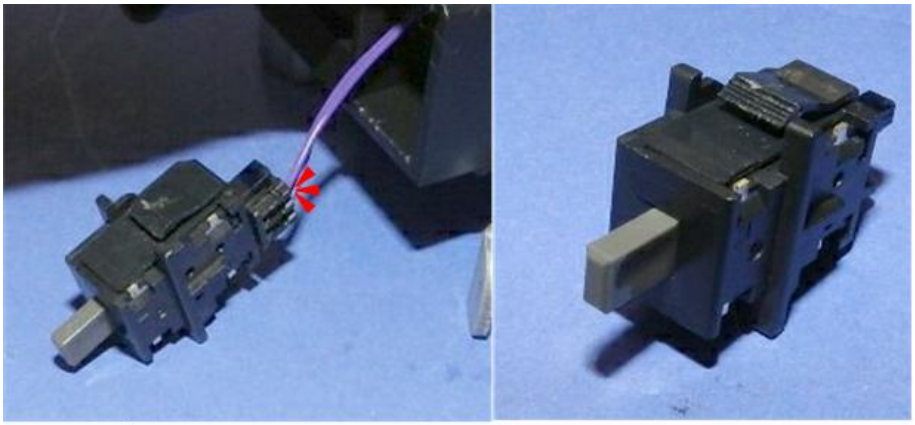


Toner Bottle Set Switch

1. Use the tip of a very small screw driver to release the tab at the front bottom edge [A].
2. Release the tab at the rear top edge [B].

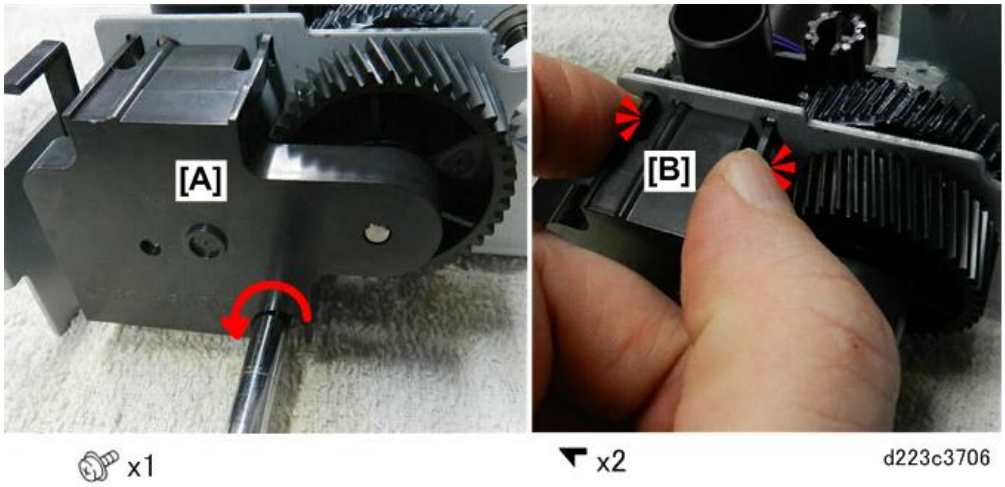


3. Pull out the switch and disconnect it.

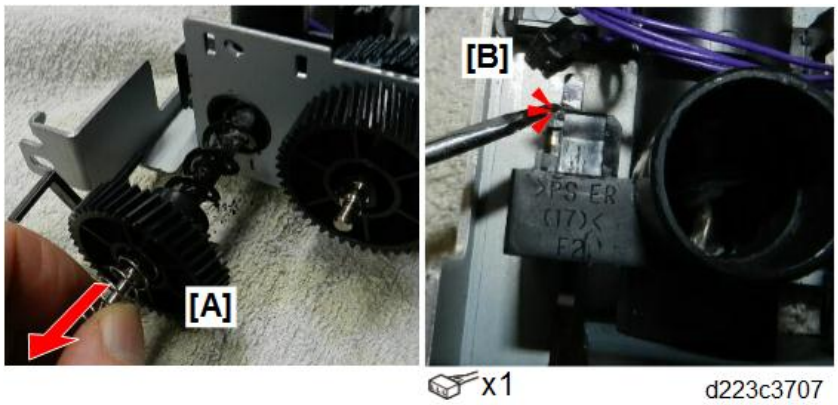


Toner Bottle Full Sensor

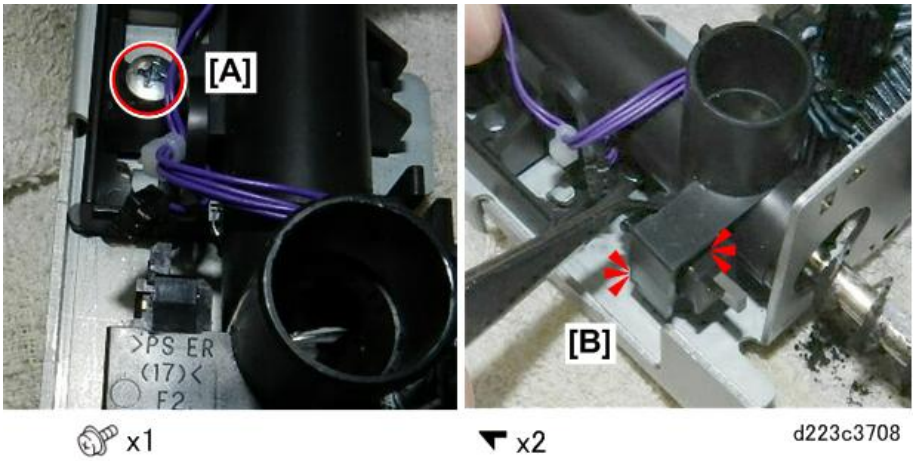
1. Remove the top of the unit [A].
2. Pinch together the side tabs [B] to release the top, and then remove it.



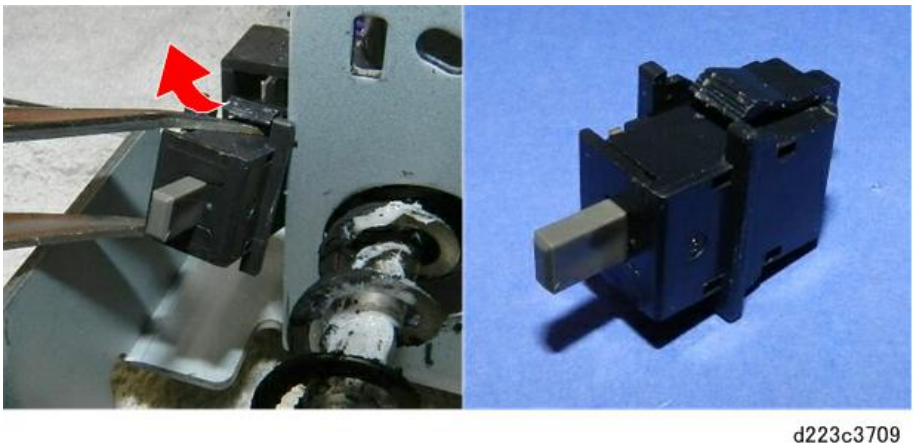
1. Pull the gear and coil [A] out partially. Do not try to remove it.
2. Use the tip of a small screwdriver to disconnect the sensor [B].



3. Remove screw [A].
4. Use the tip of a small screwdriver to release the tabs on sensor [B].



5. Use a pair of small radio pliers to remove the switch.



4.9.12 IMPORTANT SP CODES: DEVELOPMENT UNIT

Here is a list of SP codes related to testing and servicing the development unit.

Item	SP No.	Function
Developer adjustment mode	2967	Determines whether the amount of toner is checked during auto process control with only the TD sensor. With this feature on, the machine uses the TD sensor only. During auto process control execution after the main switch is turned on, the toner amount in the development unit is normally checked and adjusted using the ID sensor. However, in some environments, such as where there could be traces ammonia in the air, copies could appear dirty or too dark because the ID sensor reading is not reliable. In such a case, SP2967 should be enabled so only the TD sensor is used.
New developer, TD sensor	2801-1	In this order: Enter the lot number (SP2801-2), initialize the new toner (SP2801-21.
New developer, initialize	2801-1	Enter the lot number with SP2801-2 before you initialize developer with SP2801-1.
New developer, lot number	2801-2	Enter the lot number embossed at the top edge of the developer package. Enter the lot number with SP2801-2 before you initialize developer with SP2801-1
TD sensor replacement	2801-1	After replacement, do SP3901 to confirm that process control is on and operating, do 2801-1 to initialize the TD sensor, and then do SP2962 to execute auto process control manually.

Item	SP No.	Function
Toner supply mode	2208	Selects the toner supply mode: Sensor Control or Image Pixel Count. Select Image Pixel Count only if the TD sensor has failed and cannot be replaced immediately, so that the customer can use the machine. Return the setting to Sensor Control after replacing the sensor.

4.10 TRANSFER BELT UNIT

4.10.1 TRANSFER BELT UNIT REMOVAL

1. Prepare a place to lay the unit by spreading some clean paper or a drop cloth on a flat, clean surface.
2. Remove the drum unit. page 4-114

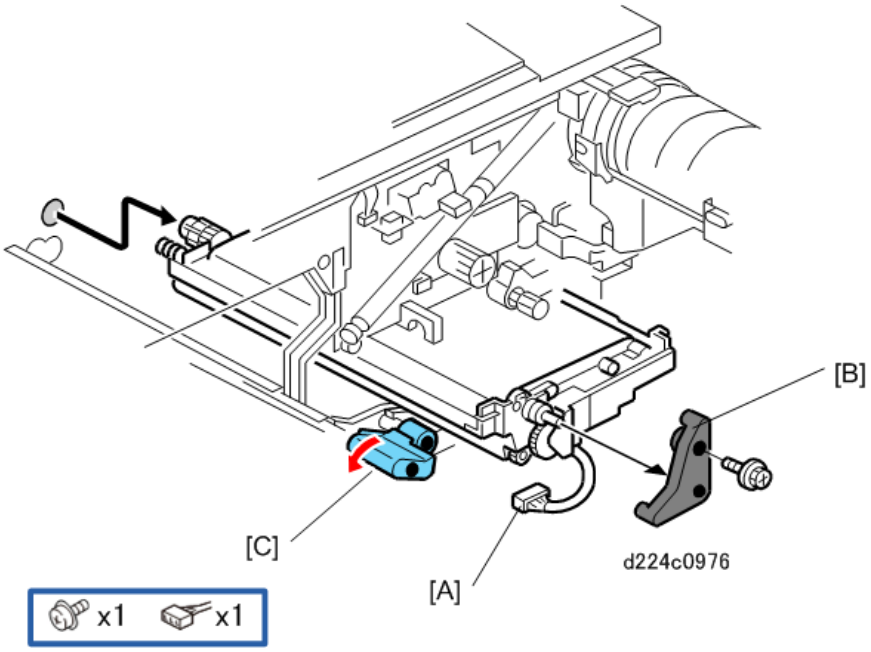
Important

- Removal of the drum unit is recommended to prevent scratching the surface of the belt on the as it is removed.

3. Disconnect transfer belt unit [A].
4. Remove transfer belt unit stay [B].
5. Lower C1 [C] and then pull the transfer belt unit out of the machine.

Important

- Avoid touching the surface of the belt with bare hands.



4.10.2 TRANSFER BELT, TRANSFER ROLLER CLEANING BLADE

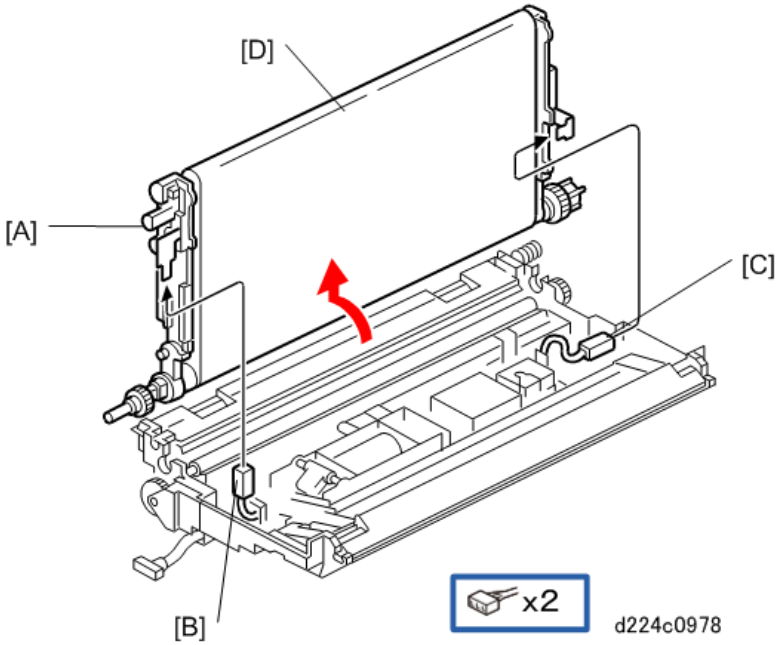
Transfer Belt Assembly Removal

1. Remove the transfer belt unit. page 4-197
2. Raise the transfer belt partially by its knob [A].
3. At the front, disconnect terminal [B].
4. At the rear, disconnect terminal [C].
5. Raise the belt until it is perpendicular, and then remove it.

Note

- To avoid scratching the belt on the guide, never rotate the belt unit up more than 90 degrees.

6. Raise and stand the belt perpendicular to the unit and remove it.



7. Lay the belt assembly on a flat, clean surface.
8. Replace the transfer roller cleaning blade before you replace the belt.

Important

- The transfer belt and transfer roller cleaning blade should be replaced together. (See next section.)

Transfer Roller Cleaning Blade

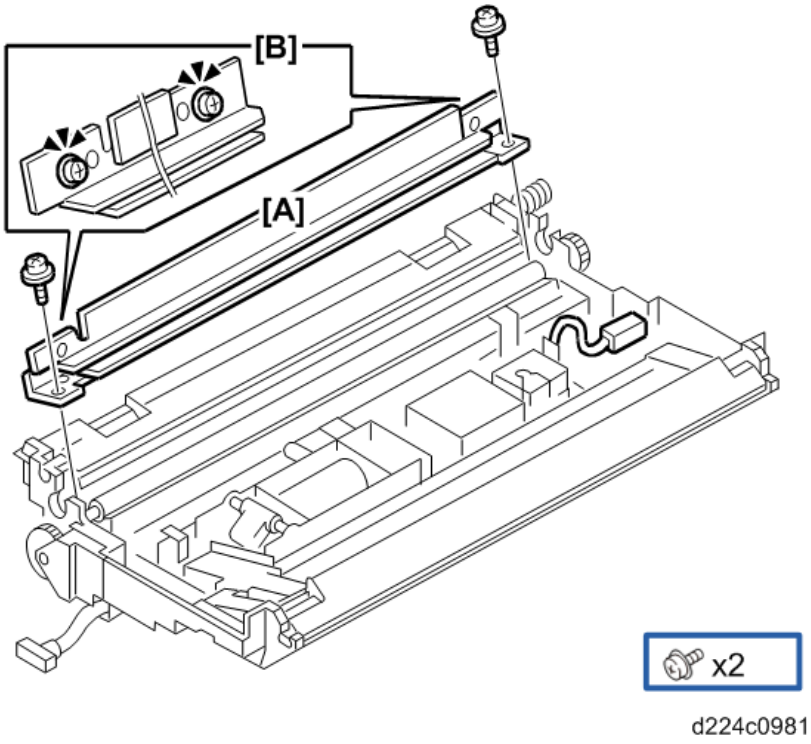
Important

- Never touch the edge of a new transfer roller cleaning blade.
- The edge of the blade is dusted with setting powder.
- If the setting powder is removed accidentally, dust the edge of the blade with some toner.
- To avoid damage from static electricity, always work carefully around the exposed transfer power pack, especially when cleaning with a vacuum cleaner.

1. Remove the transfer belt assembly. (See previous section.)
2. Remove transfer roller cleaning blade [A].

   Important

   - Never remove or loosen the paint locked screws on the blade [B].



d224c0981

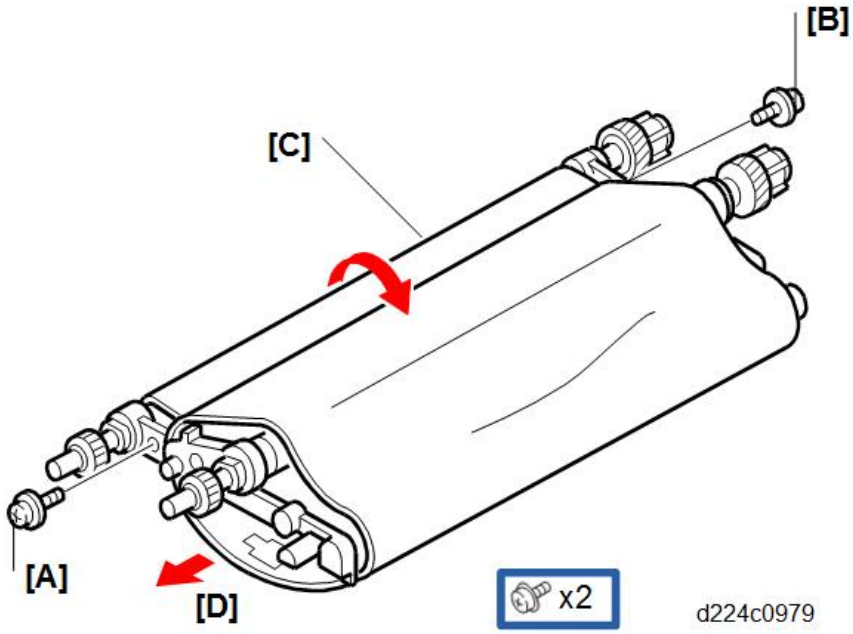
3. After replacing the blade, clean the area around the rollers thoroughly before you attach the new belt.

Transfer Belt Replacement

1. Replace the transfer roller cleaning blade. (See previous section.)
2. Remove the screws from the ends of the driver roller bracket at the front [A] and rear [B].
3. While holding the belt assembly level, raise the drive roller [C] to collapse the unit and release tension on the belt.
4. Slowly remove the belt [D] and then replace it with a new one.

Important

- Avoid touching the surface of the new belt with your bare hands.



Re-assembly

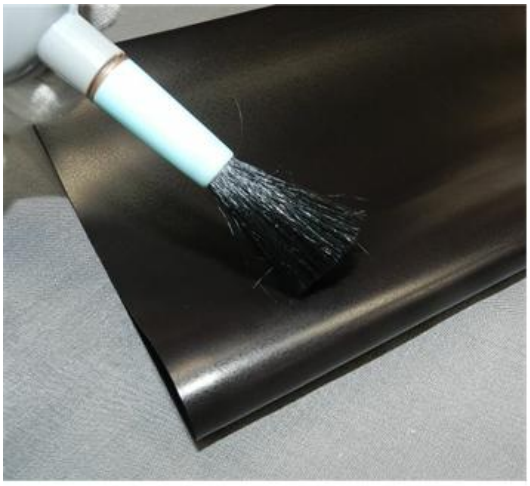
Important

- Never touch the surface of the belt with bare hands and never apply alcohol to the surface of the belt.

1. Before re-assembling the transfer belt unit, use a clean cloth and alcohol to clean the surfaces the [1] drive roller, [2] transfer roller, and idle [3] idle roller. Make sure these areas are clean and free from toner, paper dust, etc.

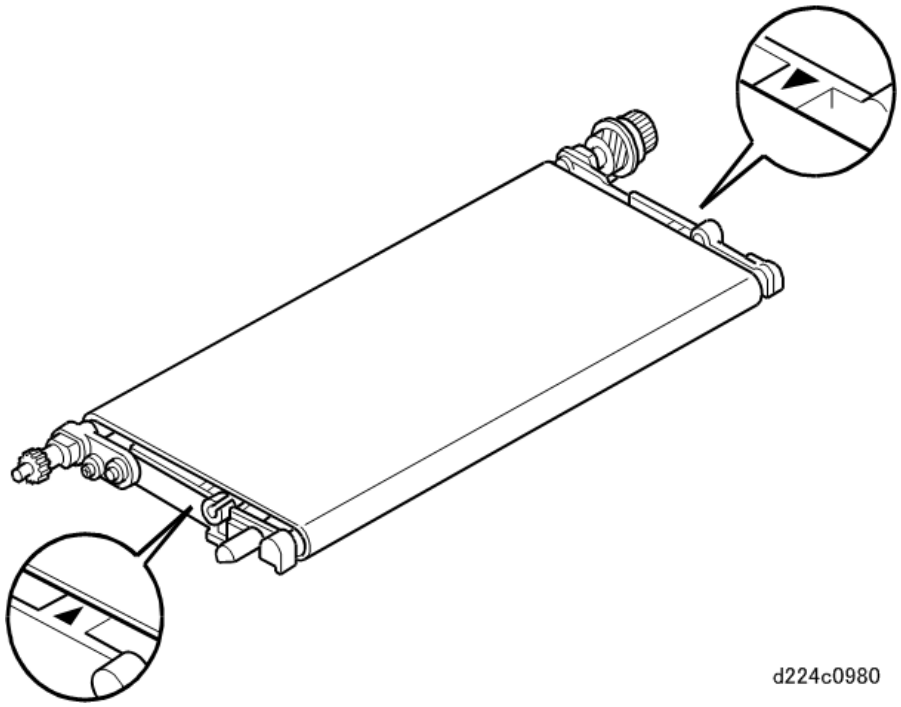
d223c3308

2. Clean the surface and underside of the transfer belt with a blower brush.

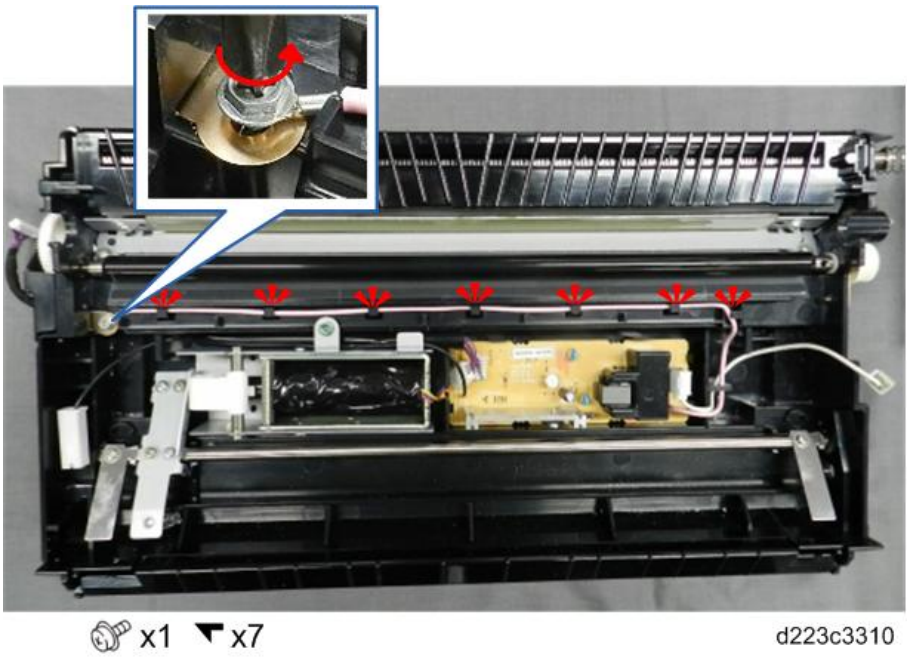


d223c3309

3. When you position the new the transfer belt unit over the rollers, make sure that the belt is centered between the triangular marks on front and rear side of the unit.



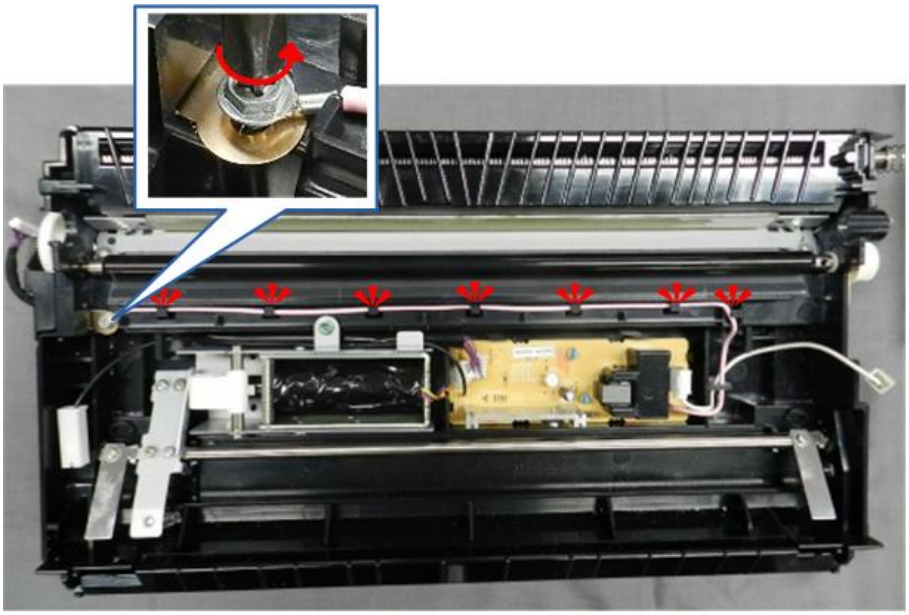
4. Confirm that all harnesses are connected and securely fastened in their hook clamps.



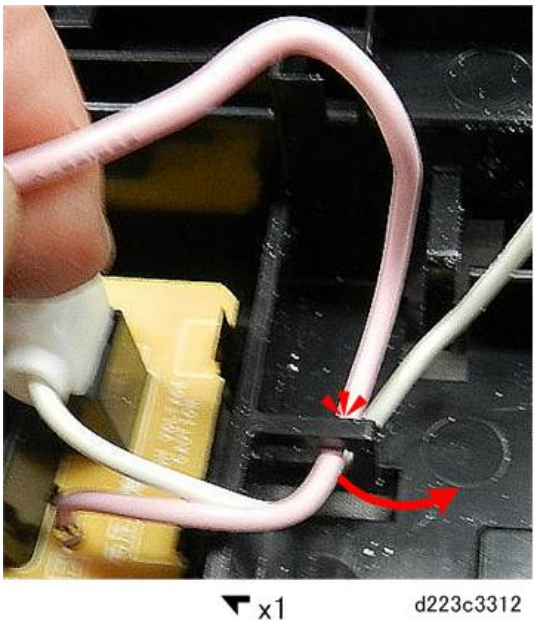
5. After re-installing the transfer belt unit, turn the belt and confirm that the toner collection coil turns.
6. Raise and lower the belt with lever **C1** to make sure that the belt raises and lowers smoothly.

4.10.3 TRANSFER POWER PACK

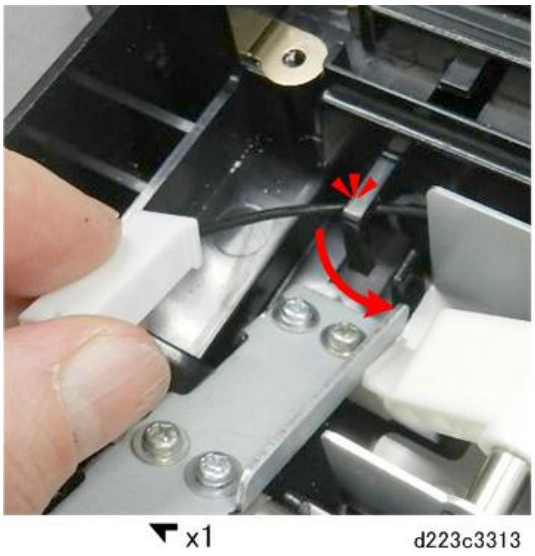
1. Remove the transfer belt unit. page 4-197
2. Remove the transfer belt assembly. page 4-198
3. Disconnect ground wire and free its harness across the width of the unit.



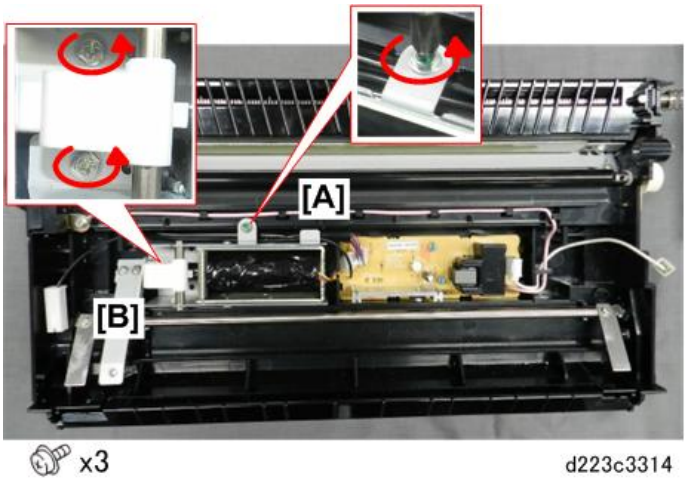
4. Free the ground harness at the rear



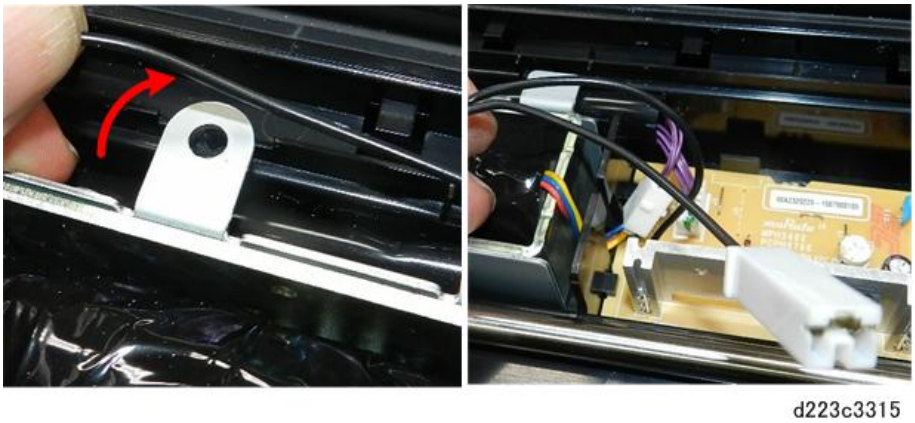
5. Free the terminal wire at the front.



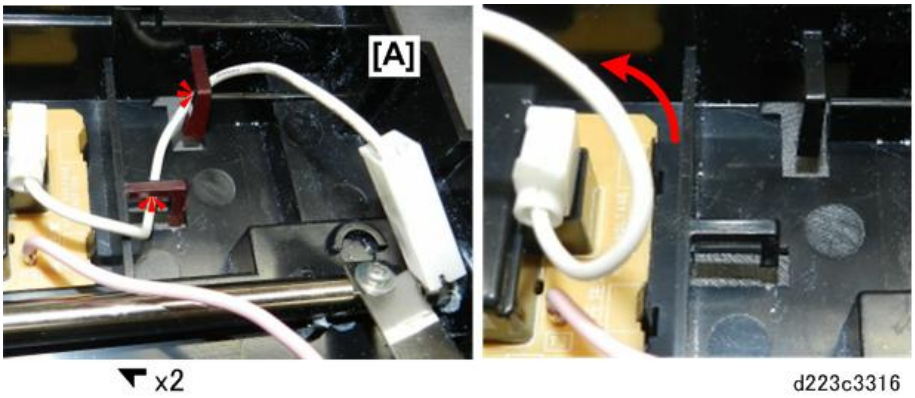
6. Remove the top screw [A] of the solenoid bracket, and then loosen the two left screws [B]. (This allows you to free the front terminal harness below the bracket at [A].)



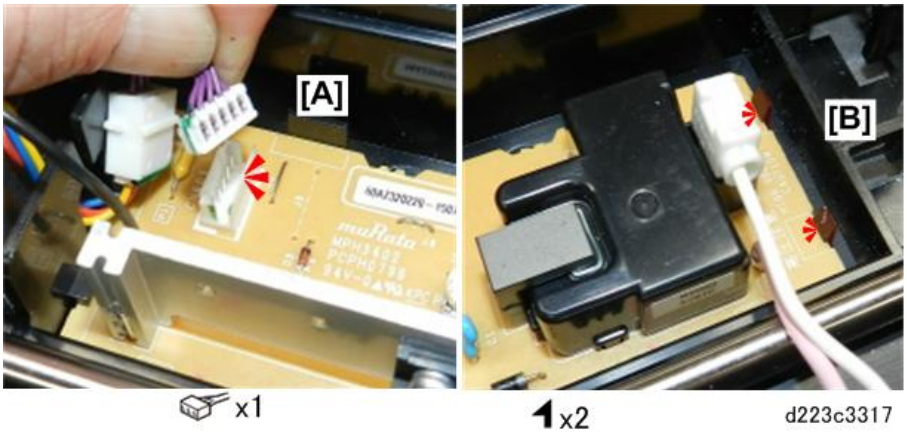
7. Free the front terminal wire from under the loosened solenoid bracket.



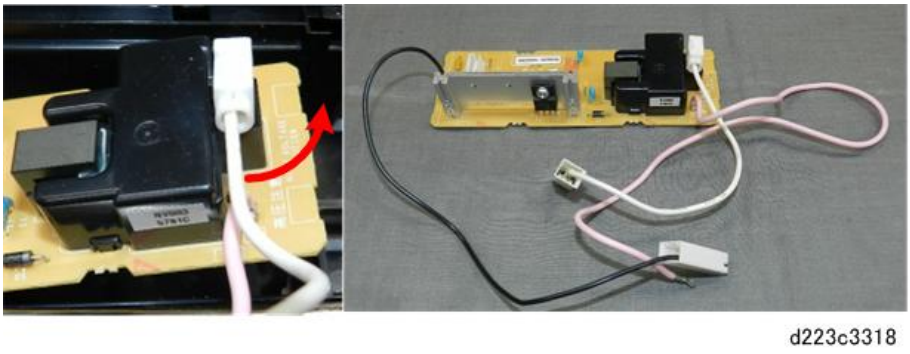
8. Free the rear current terminal wire [A] at the rear.



9. Disconnect the power pack [A], and then unfasten the right edge of the power pack [B].



10. Lift the right edge of the power, remove it, and then lay it on a flat, clean surface.



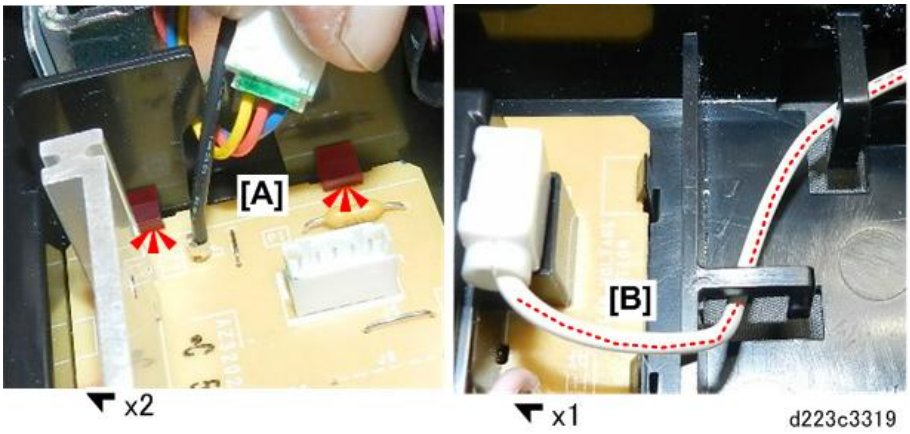
Re-installation

Important

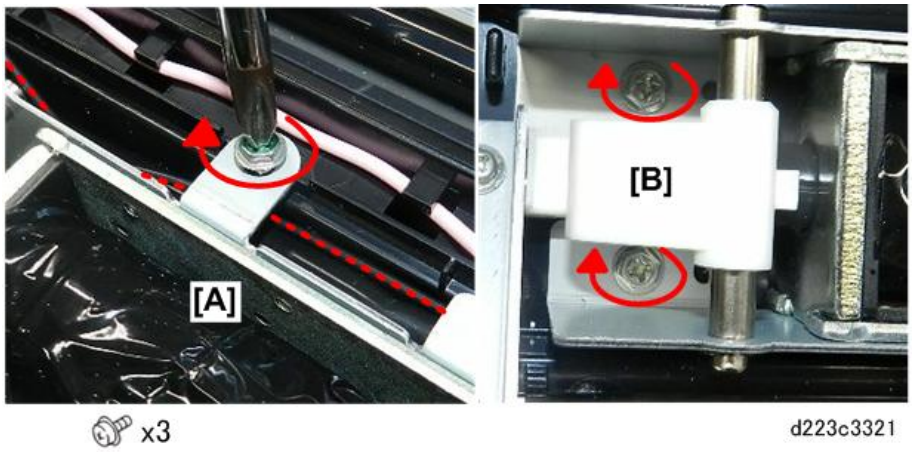
- The power pack must be locked correctly in place, and all the harnesses must be secured in their clamps. A loose harness could interfere with the rotation of the transfer belt.

Do these checks before you re-install the transfer belt assembly.

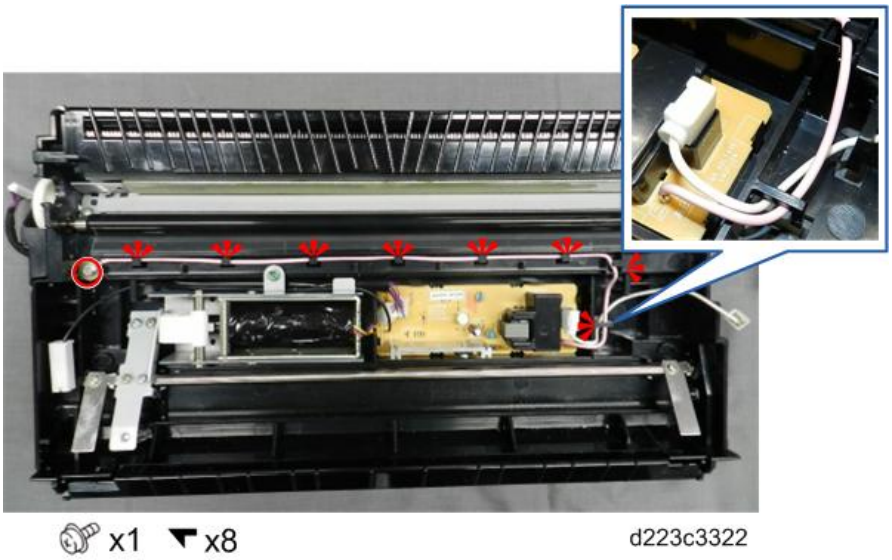
1. Before you re-connect the power pack, confirm that the left edge [A] of the power pack is below the tabs on the left.
2. Confirm that the transfer current terminal wire [B] is below the wire guides on the right.



3. Pass the ground terminal wire under the top arm of the solenoid bracket [A] and then tighten the bracket screws [B] on the left.



4. After you connect the ground wire, make sure the wire is below all the wire guides at the top.



4.10.4 DISCHARGE PLATE

1. Remove the transfer belt unit Transfer page 4-197

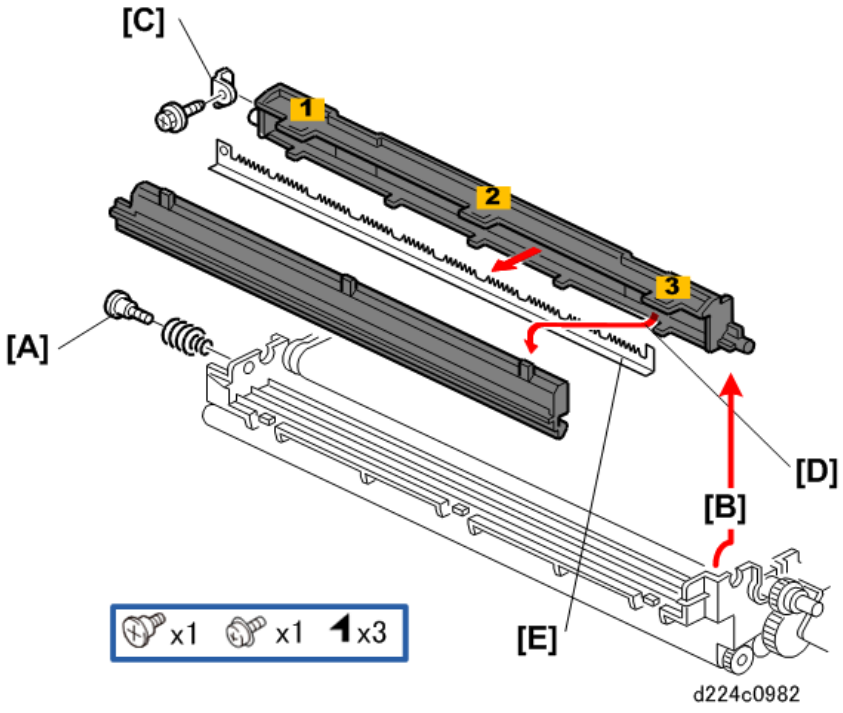
Note

- It is not necessary to remove the transfer belt assembly. However, work carefully to avoid scratching the surface of the belt.

2. Remove the shoulder screw and spring [A].
3. Rotate the discharge unit [B] up, and then raise it off.
4. Disconnect three tabs [1], [2], [3].
5. Remove small bracket [C].
6. Open the case [D].
7. Remove discharge plate [E].

Important

- At re-installation make sure that the discharge plate is perfectly flat before you re-assemble the case.



4.10.5 IMPORTANT SP CODES: TRANSFER BELT UNIT

Here is a list of SP codes related to testing and servicing the development unit.

Item	SP No.	Function
Transfer belt, resistance	2970	Displays the resistance of the surface of the transfer belt.
Transfer current timing, LCIT	2931	These SP codes adjust the on/off timing for copying on paper from the LCIT.
Transfer current timing, Tray 1	2932	These SP codes adjust the on/off timing for copying on paper from Tray 1.
Transfer current timing, Tray 2	2933	These SP codes adjust the on/off timing for copying on paper from Tray 1.
Transfer current timing, Tray 3	2934	These SP codes adjust the on/off timing for copying on paper from Tray 3.
Transfer current timing, bypass tray	2936	These SP codes adjust the on/off timing for copying on paper from the bypass tray.
Transfer current, adjusting	2301	Adjusts the current applied to the transfer belt during copying. Many selections are available for both the area of the belt where the current is applied, and the type of paper in used.

4.11 FUSING UNIT

⚠CAUTION

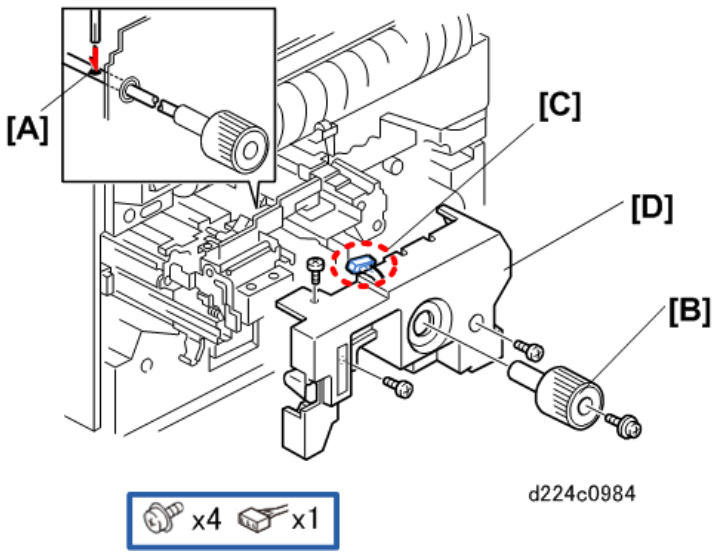
- Switch off the machine, disconnect the plug from the power source, and then wait a few minutes to allow the fusing unit to cool before you remove it from the machine.

4.11.1 FUSING UNIT REMOVAL

Note

- Before you begin, spread a mat or some clean paper on the floor or a table where you intend to set the fusing unit.

1. Open the front door.
2. Pull out the transfer unit.
3. Open **D2** and **D3** until you can see the hole [A] in the shaft where the knob is attached
4. Insert the tip of a screwdriver into the hole so the shaft cannot move when you turn the knob screw.
5. Remove knob [B].
6. Disconnect the other cover screws.
7. Slowly, pull the cover away partially, and then disconnect the LED [C].
8. Remove the inner cover [D].

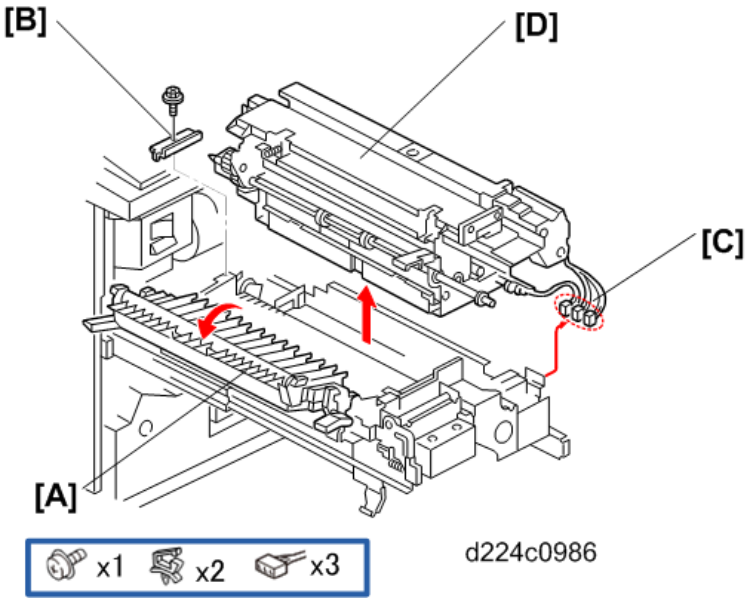


9. Open **D3** [A].
10. Remove stopper bracket [B].
11. Close **D3**.
12. Disconnect the unit at [C].

Important

- At [C] the D223/D224 has one clamp and two connectors (x1, x2), and the D225 has two clamps and three connectors (x2, x3).

13. Remove fusing unit [D].



Important

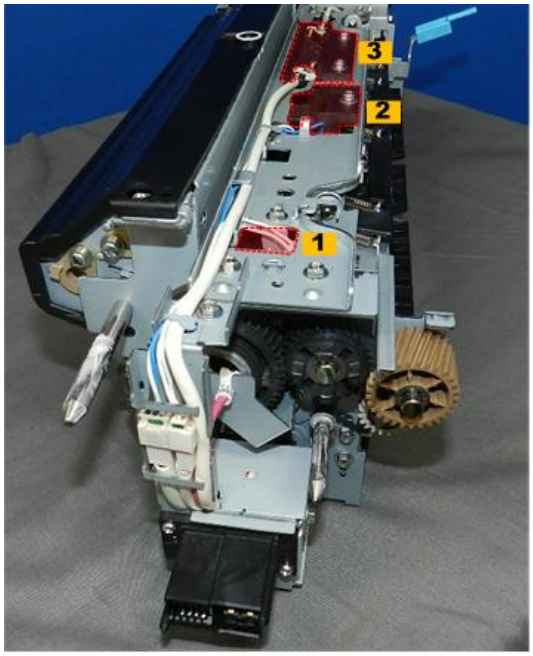
- Support the bottom of the fusing unit with your hand as you remove it.

Note

- At reassembly, make sure that the two harnesses of the web unit are not pinched between the inner cover and frame of the fusing unit.

4.11.2 THERMOSTATS, THERMISTOR, NC SENSOR

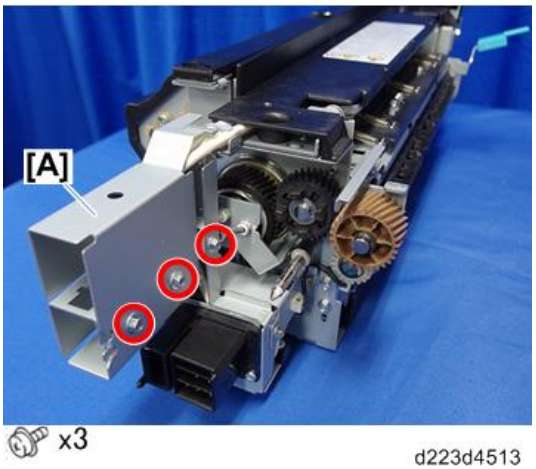
The end thermistor [1], center thermistor (NC Sensor) [2], and thermostats [3] are arrayed across the top of the fusing unit and protected by the fusing unit upper cover.



d223c3329

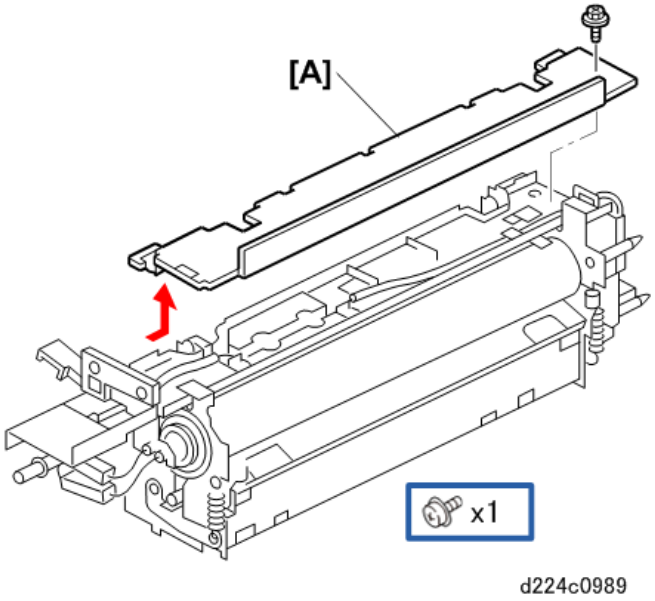
End Thermistor (D223/D224)

1. Remove the fusing unit. page 4-209
2. Remove harness cover [A].

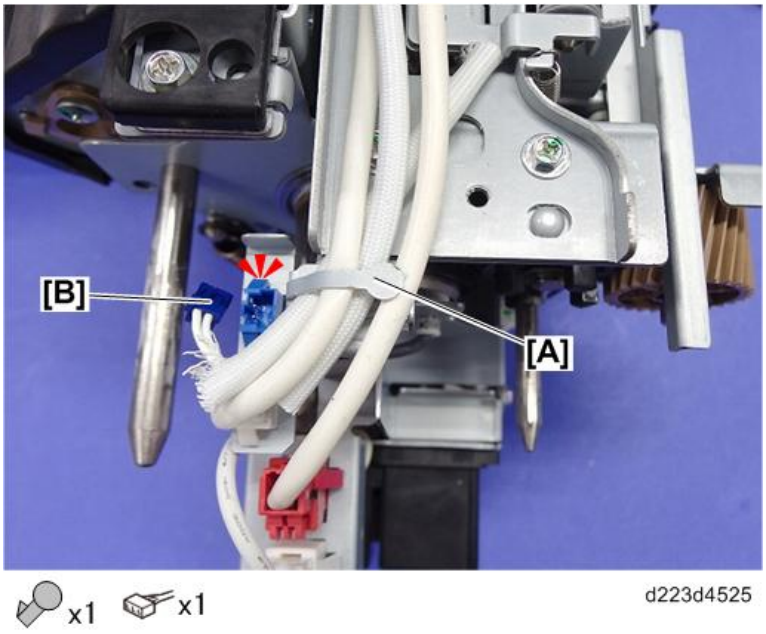


d223d4513

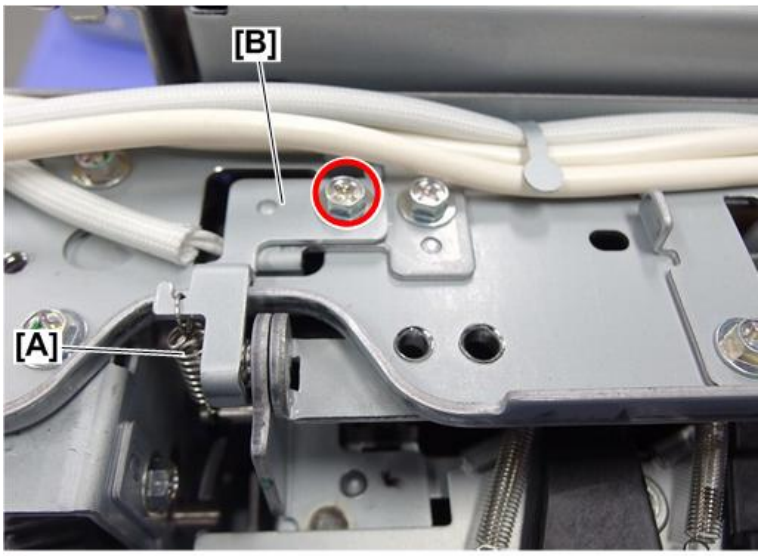
3. Remove upper cover [A].



1. Raise metal harness clamp [A].
2. Disconnect thermistor harness [B].

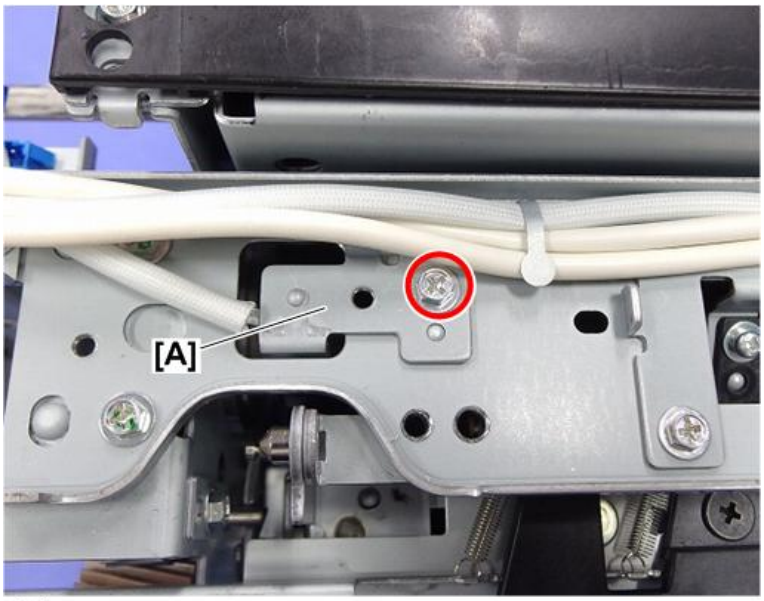


3. Disconnect spring [A], and then disconnect first bracket [B].



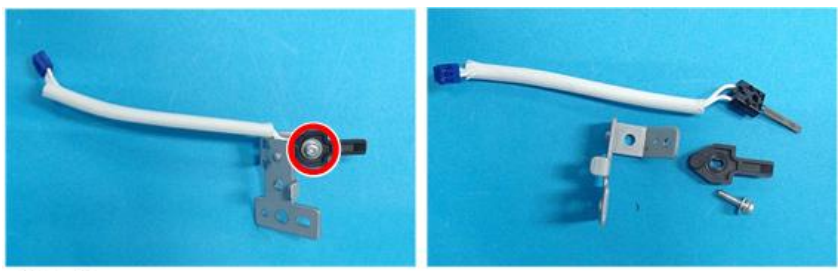
x1 x1 d223d4526

4. Disconnect second bracket [A].



x1 d223d4527

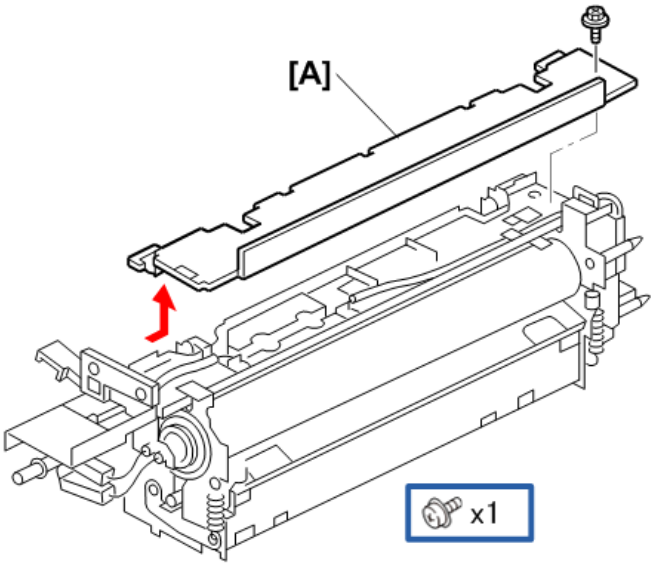
5. Remove the bracket with thermistor attached.
6. Separate the thermistor and bracket.



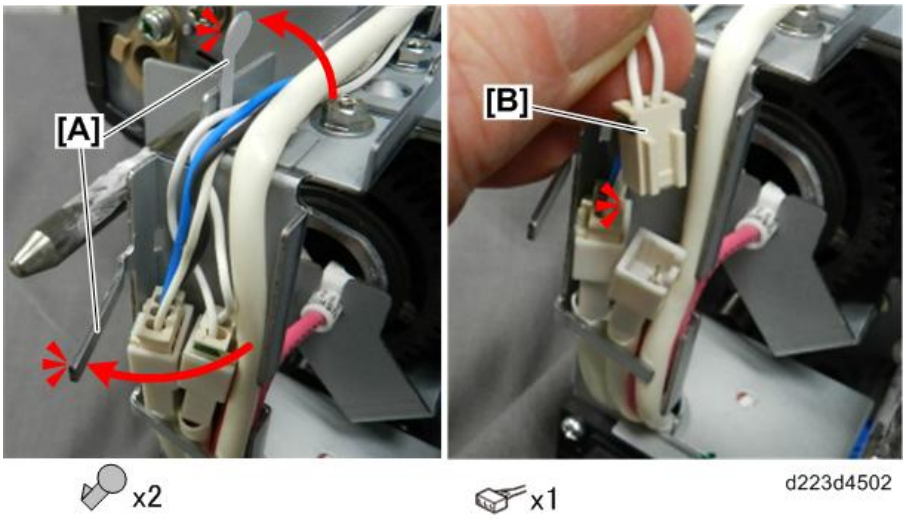
x1 d223d4528

End Thermistor (D225)

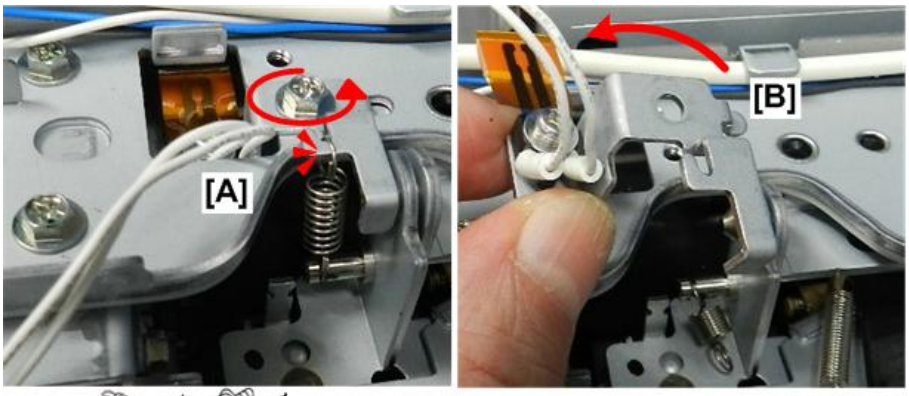
1. Open the front door.
2. Pull out the fusing unit until it stops.
3. Remove upper cover [A].



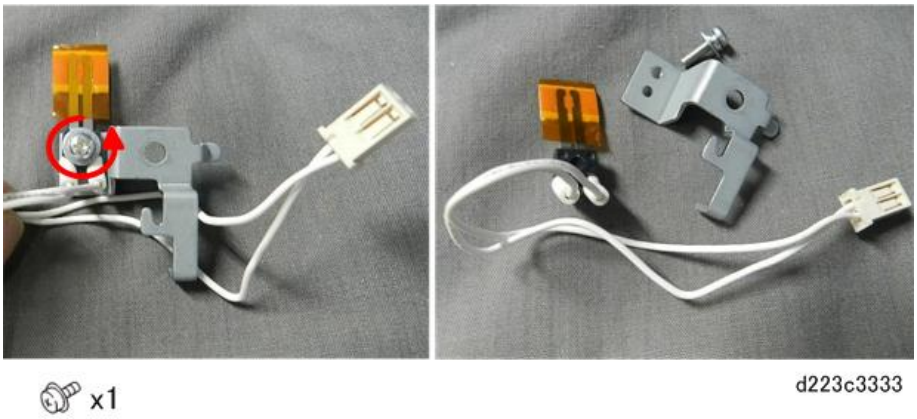
4. At the rear, open metal clamp [A], and then disconnect end thermistor harness [B].



5. Disconnect spring [A].
6. Remove bracket [B] with thermistor and harness attached.

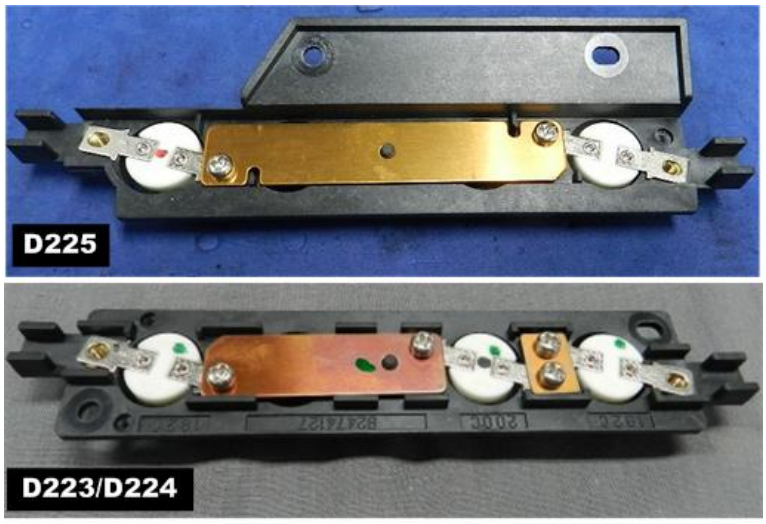


7. Separate thermistor and bracket.



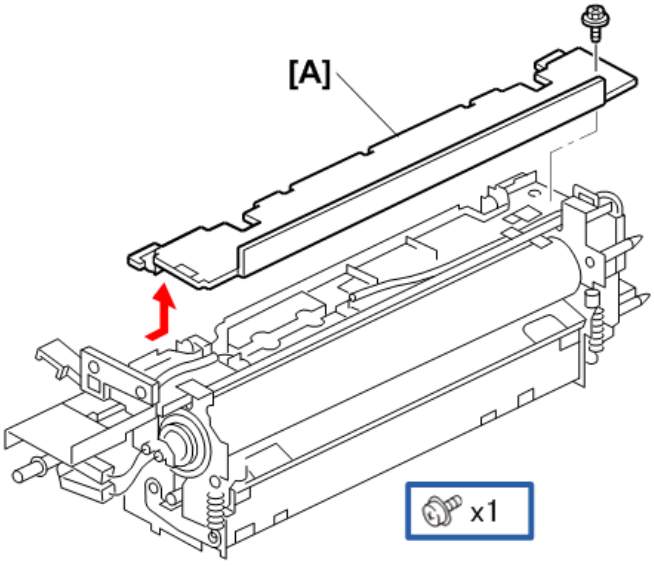
Thermostats

The D223/D224 has three thermostats, the D225 has only two thermostats.



d223c3335

1. Open the front door.
2. Pull out the fusing unit until it stops.
3. Remove upper cover [A].



d224c0989

D223/D224

1. Disconnect the thermostat bracket.

x4 d223d4504

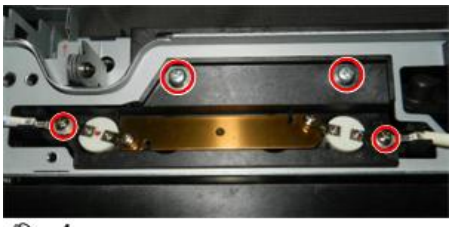
2. Lay the bracket on a flat, clean surface.
3. Separate the thermostats from the bracket.

x4

d223d4506

D225

1. Disconnect the thermostat bracket.



x4 d223d4505

2. Lay the bracket on a flat, clean surface.
3. Separate the thermostats from the bracket.

x2

d223d4507

⚠CAUTION

- To prevent a fire, never attempt to reset a blown thermostat by manipulating the exposed edges of the black cover with a screwdriver, or by hitting it on a table.
- A thermostat that has been reset manually could fail and cause a fire.
- Always replace a blown thermostat with a new one.

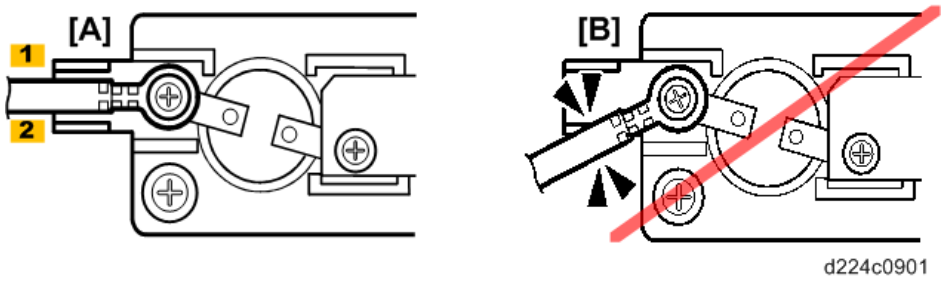
d223c3745

Reinstallation

Important

- To prevent damage to a thermostat, never touch its detection surface.

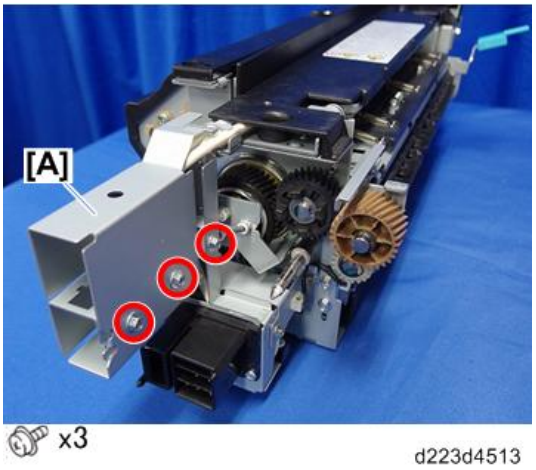
1. Place the end of the thermostat harness that has the round lead [A] in between the two ribs [1], [2] in the bracket.
2. Tighten the screw for the round lead [A] as tight as possible without damaging the screw or screw hole.



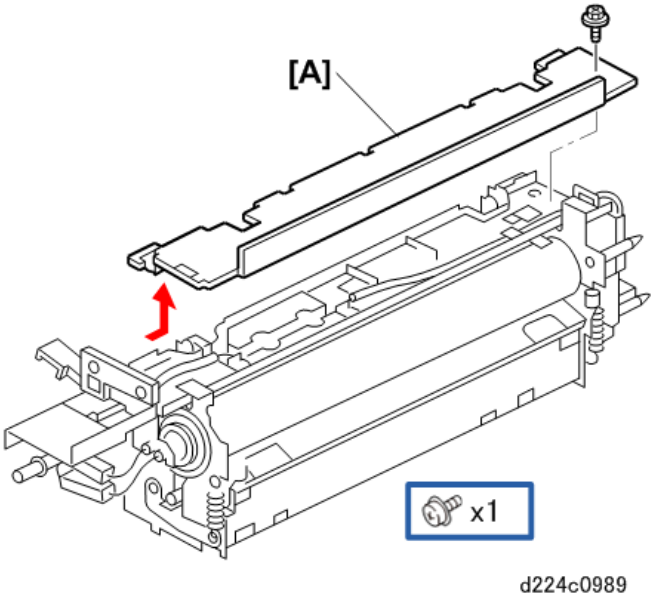
3. Check the harness.
   - The harness should be straight [A]. This is correct.
   - If the harness is not straight between [1], [2] as [B], this is incorrect. This could cause error SC542 or SC545.

Center Thermistor (NC Sensor) (D223/D224)

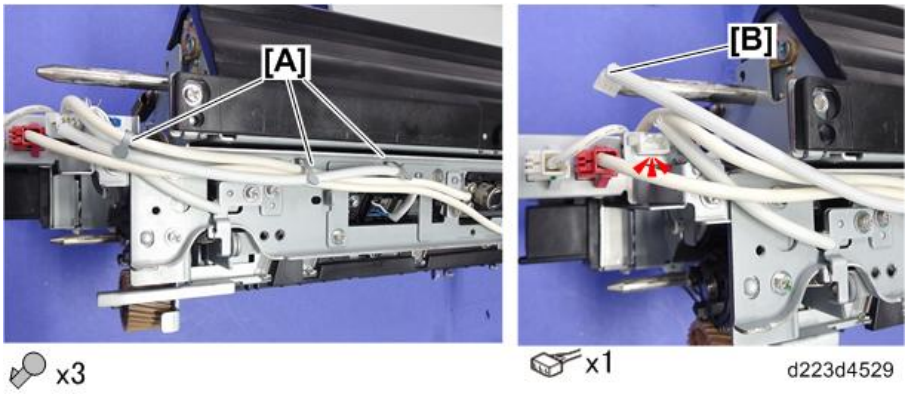
1. Remove the fusing unit. page 4-209
2. Remove harness cover [A].



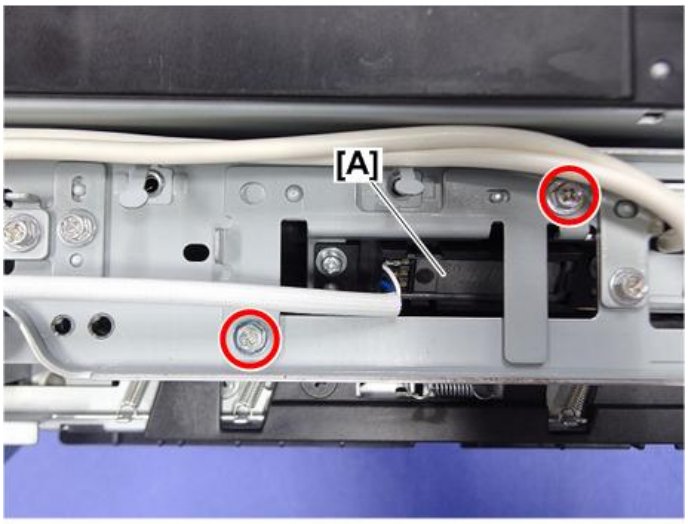
3. Remove top cover [A].



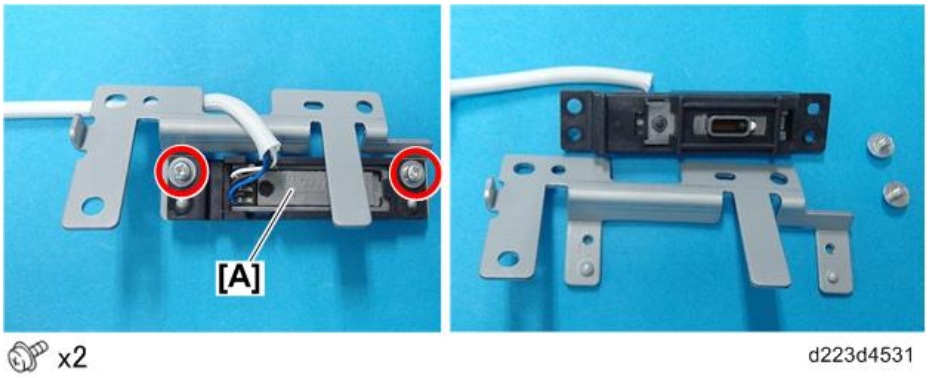
4. At the front, raise metal harness clamps [A].
5. Disconnect thermistor harness [B].



6. Disconnect center thermistor harness bracket [A].

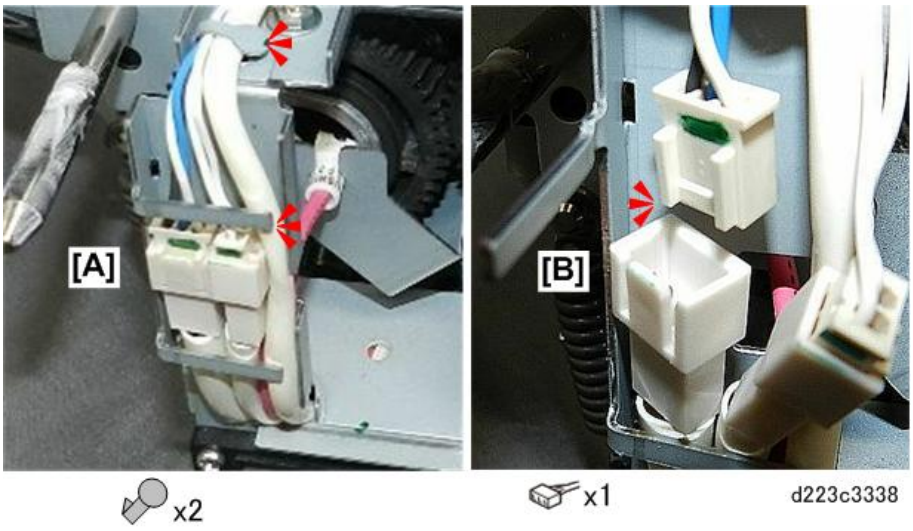


7. Remove the bracket with thermistor attached, and then separate bracket and thermistor [A].

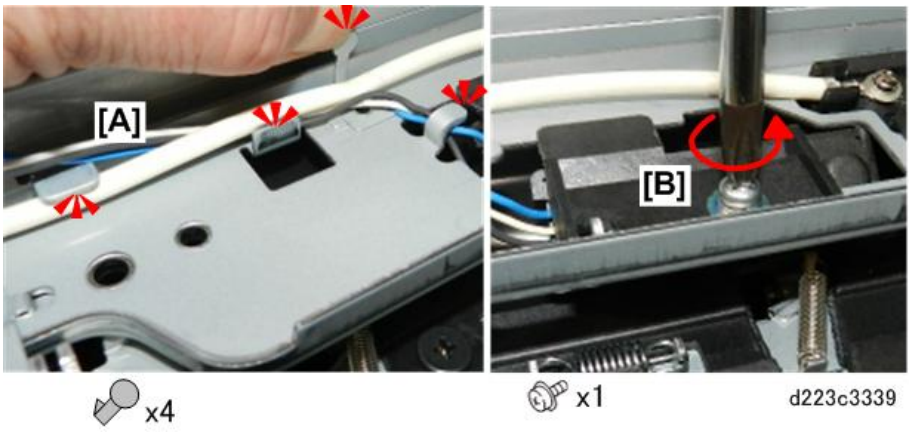


Center Thermistor (NC Sensor) (D225)

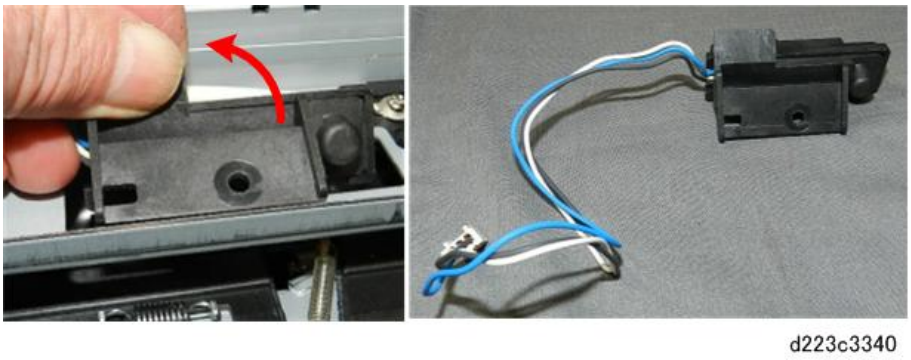
1. Remove fusing unit upper cover.
2. At the rear [A], free the NC sensor harness.
3. Disconnect harness [B].



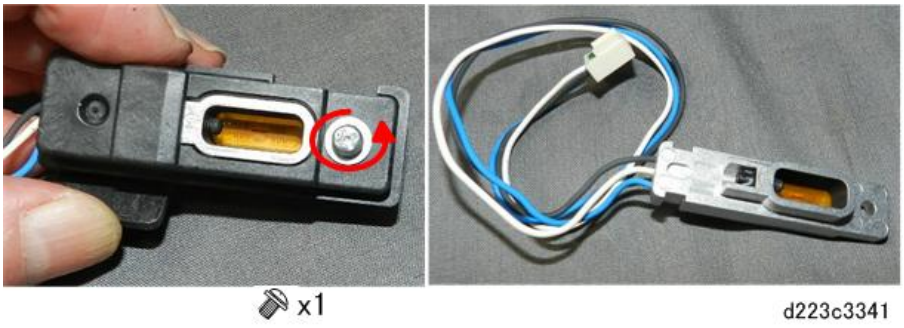
4. Free harness [A] on top of the fusing unit.
5. Disconnect NC sensor bracket [B].



6. Remove bracket with NC sensor and harness attached.



7. Separate bracket and harness.



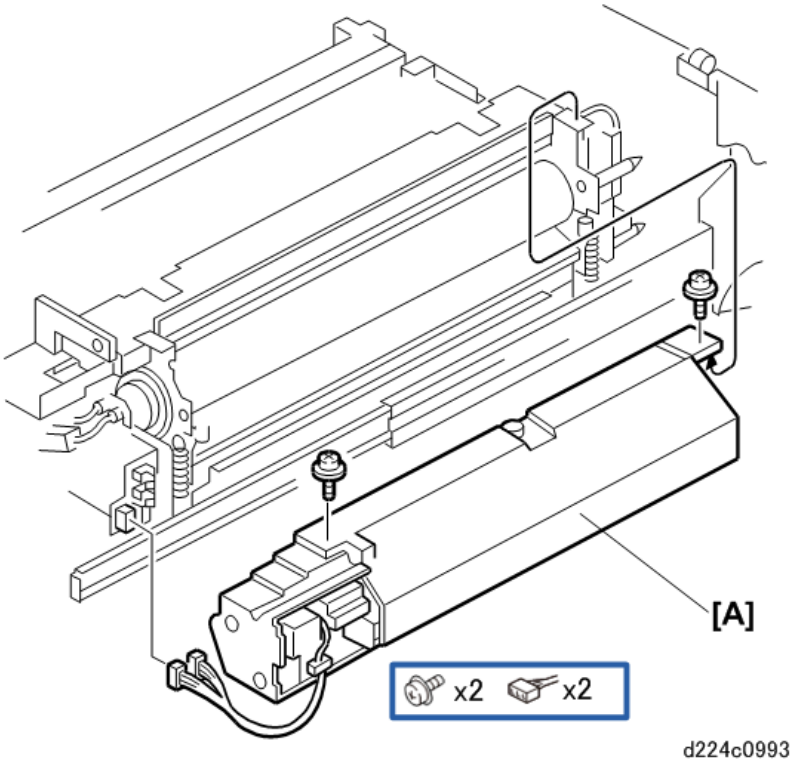
4.11.3 WEB CLEANING ROLLER

Web Unit Disassembly

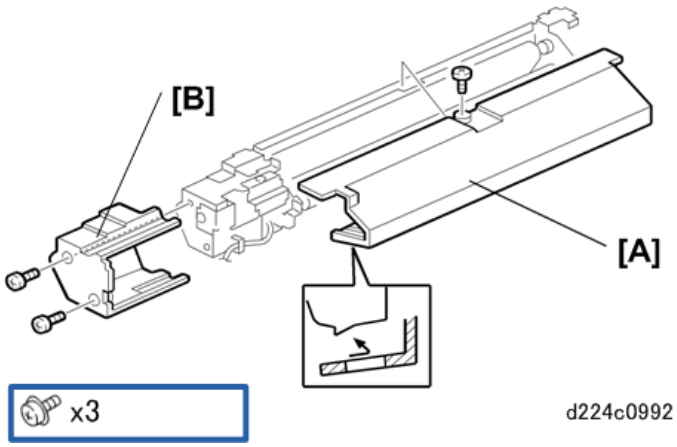
Note

- The web unit can be removed without removing the fusing unit from the machine.

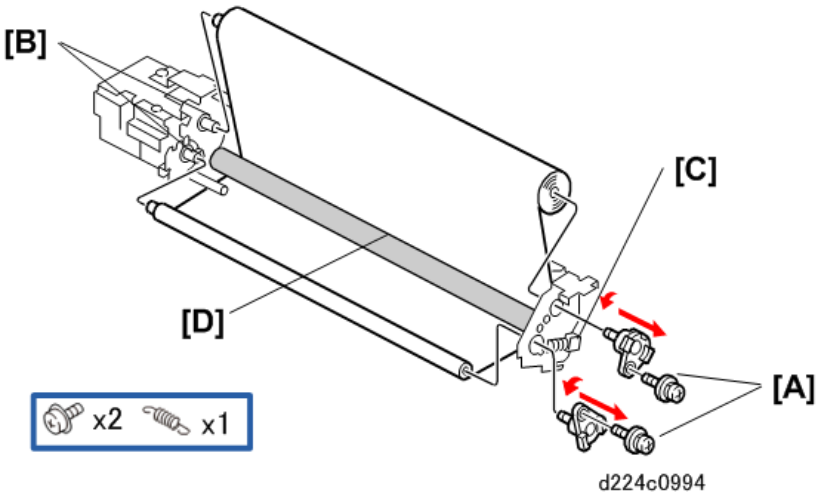
1. Open the front door and pull out the fusing unit on its support rails.
2. Remove web unit [A].



1. Rotate the upper cover [A], down slightly, and then remove it. Also remove the end cover [B]



2. Remove web shafts [A].
3. Remove the web cleaning rollers from shaft driver pins [B].
4. Remove web bushing [C].
5. Remove cleaning roller [D].

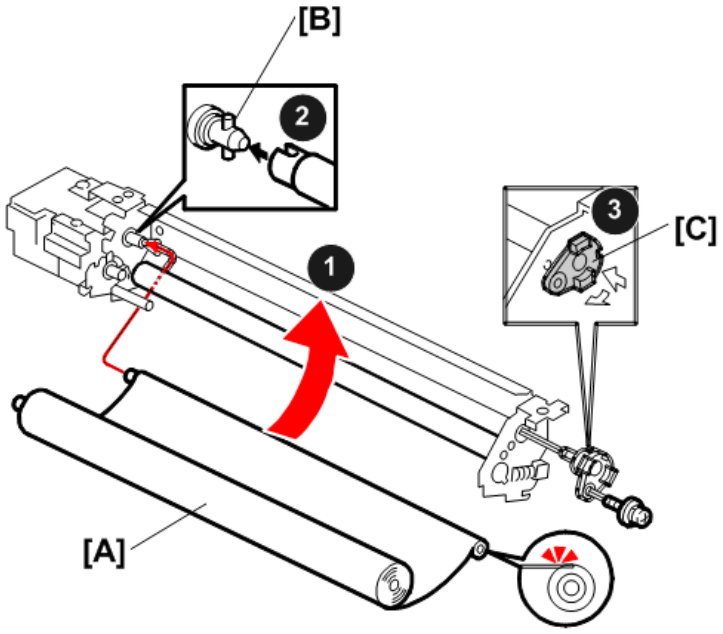


Re-assembly

1. After replacing the web, you must execute **SP1902-001** (Fusing Web Used Area Display/Setting) to reset the web consumption count to zero. This SP code must be executed to release **SC550**.
2. Be sure to print an SMC report before executing Memory All Clear (**SP5801**).
3. After executing **SP5801**, be sure to re-enter the value recorded for **SP1902-001** in the SMC report.

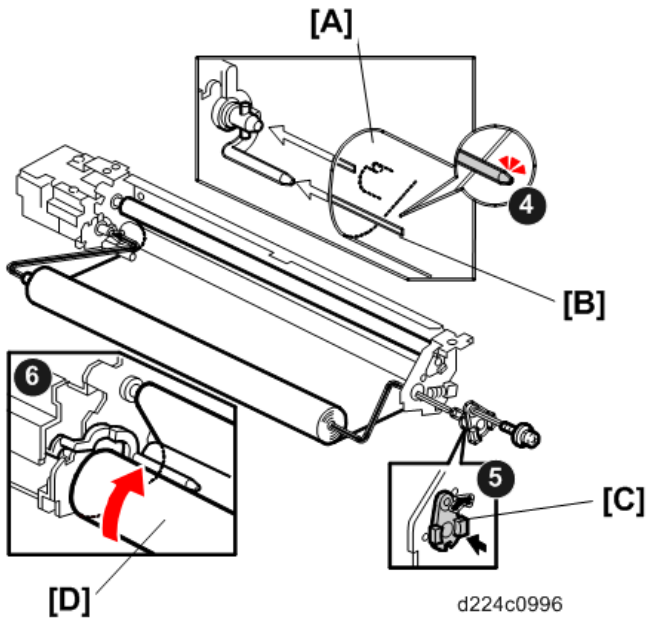
Web Unit Re-assembly

1. Insert the end of the web into the slot ❶, and attach the cleaning roller [A]
2. Insert the drive pins [B] into the web shaft ❷.
3. After installing bushing [C], rotate the shaft right to lock it, then attach the lock screw ❸.



d224c0995

4. Set the web [A] under the feeler [B] of the web end sensor ❹.
5. Attach bushing 2 [C] ❺.
6. Attach the new web roll [D] and wind it tight ❻.



d224c0996

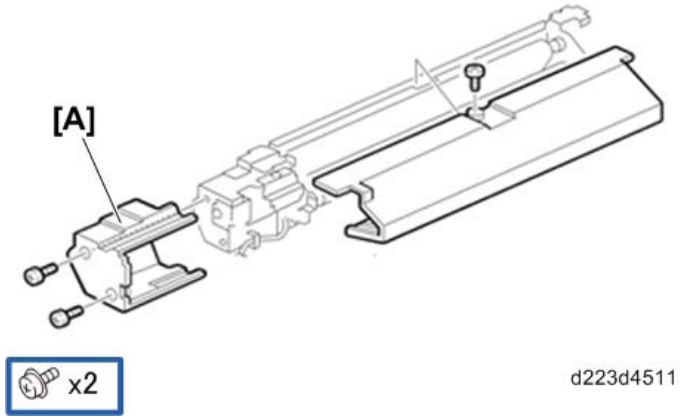
Important

- Before you re-assemble the machine, make sure there is no slack in the web roll, and confirm that the web is **below** the feeler of the web end sensor.

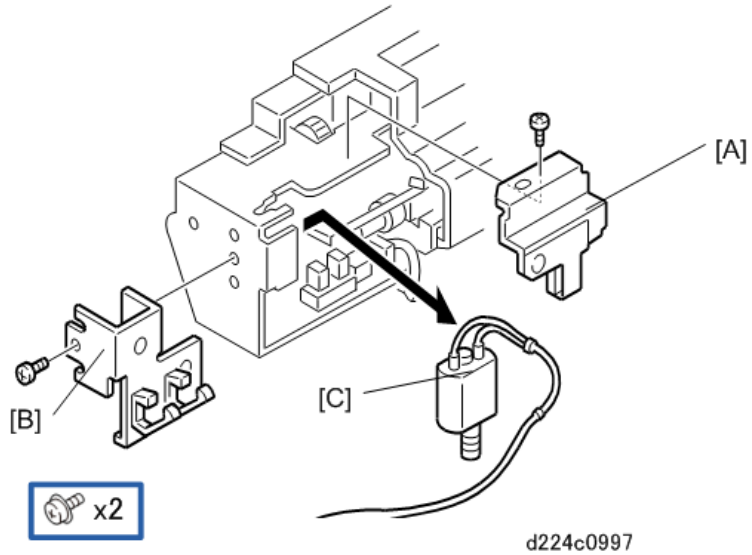
7. Attach the upper cover.
8. After installing a new web roll, do SP1902-001 to reset the web count to zero.

4.11.4 WEB MOTOR, WEB END SENSOR

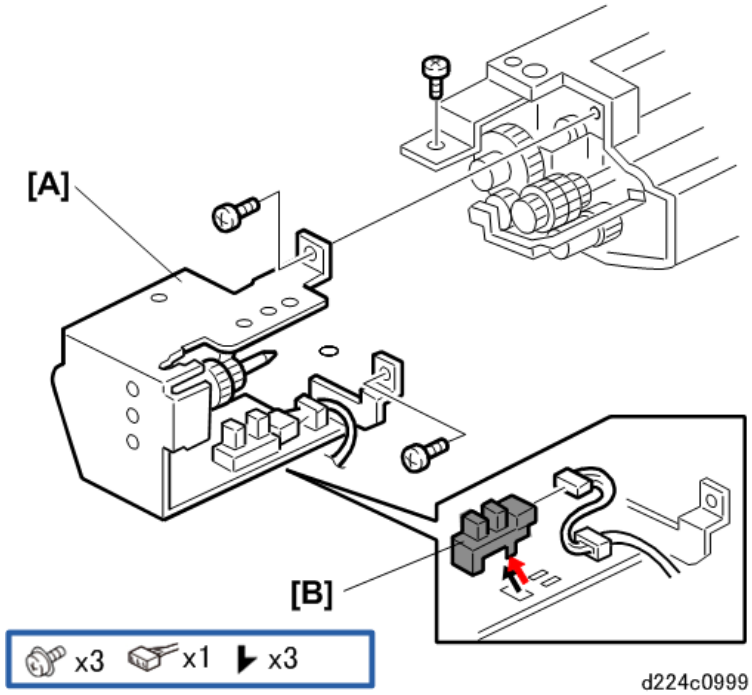
1. Remove the web unit and end cover [A]. Web Unit Disassembly



2. Remove bracket [A] and web motor positioning bracket [B]
3. Remove web motor [C]

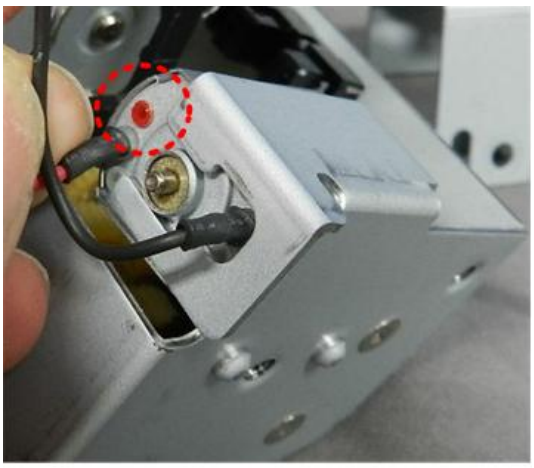


4. Remove web motor/sensor mount [A].
5. Disconnect web end sensor [B].



Reinstallation

1. Set the motor in its bracket with the red dot facing toward the front end of the fusing unit.

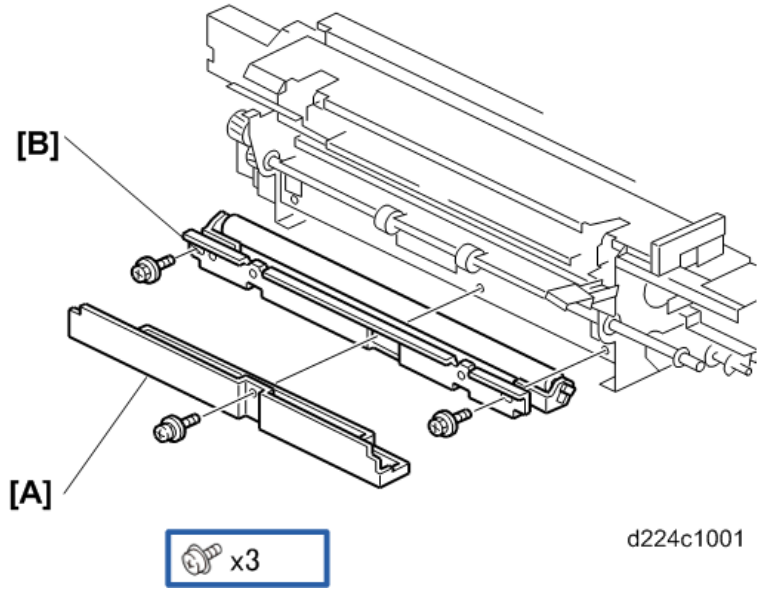


2. Make sure that the harness of the web driver motor is not pinched by the fusing inner cover

4.11.5 PRESSURE ROLLER CLEANING UNIT, CLEANING ROLLERS

Pressure Roller Cleaning Unit

1. Remove the fusing unit. Fusing Unit Removal
2. Remove cover [A] (x 1)
3. Cleaning roller assembly [B] (x 1)



Pressure Roller Cleaning Roller (D223/D224)

1. Remove the pressure roller cleaning unit. page 4-228
2. Disconnect the springs [A] on each end of the roller shaft [B].

3. Separate the roller and bracket.

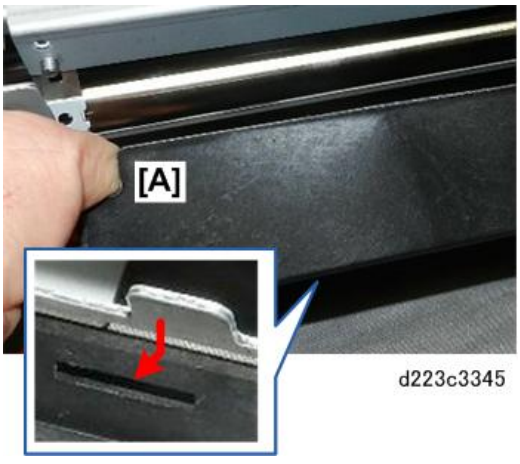
Pressure Roller Cleaning Roller (D225)

1. Remove the pressure roller cleaning unit. page 4-228
2. Remove a screw on one end of the roller.

3. Disconnect roller from its bracket.

Re-assembly

1. When attaching the lower cover of the pressure roller cleaning roller, make sure that the tab engages with the groove.



2. If the bushings are noisy after replacement, lubricate them on both ends and the holes where the bushings are attached with Barrierta Grease S522R.

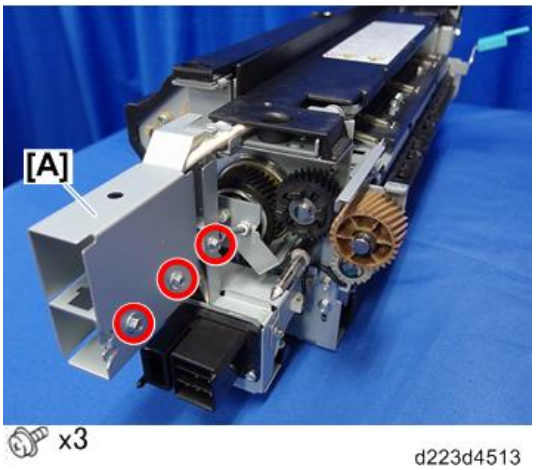
4.11.6 FUSING LAMPS, HOT ROLLER, AND PRESSURE ROLLER

Note

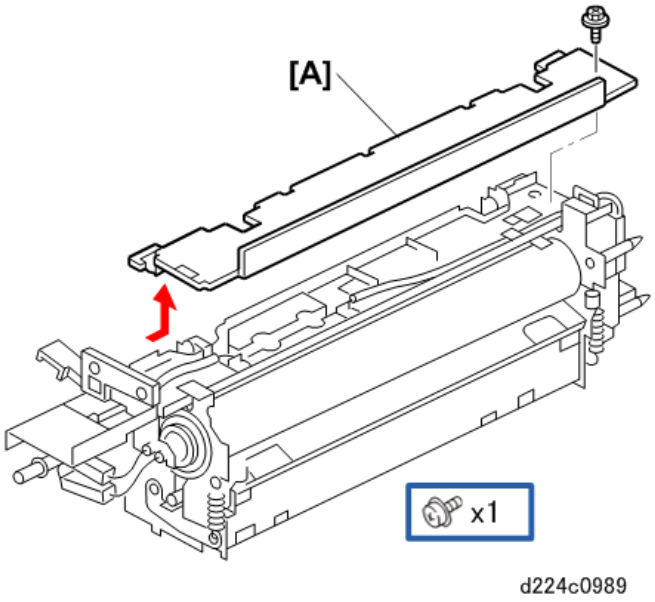
- If you wish to remove the pressure roller only, without removing the hot roller and fusing lamps, please do not use this procedure. Use the procedure in the next section.

Fusing Lamps (x3) D223, D224

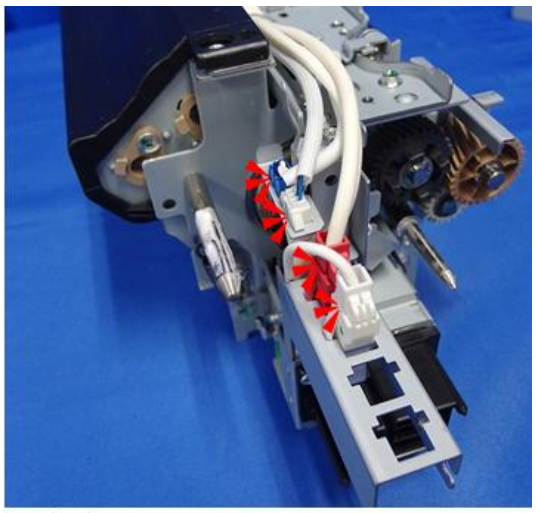
1. Remove the fusing unit. page 4-209
2. Remove harness cover [A].



3. Remove top cover [A].

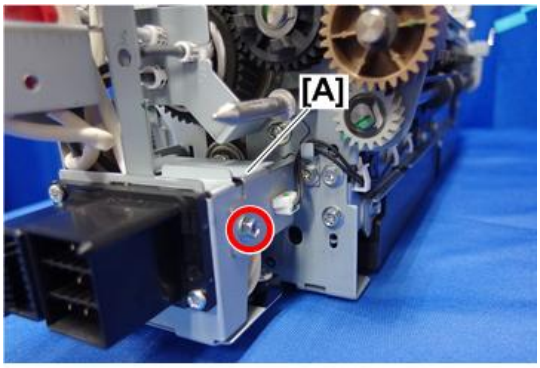


1. At the rear, open the metal clamp, and then disconnect the harnesses.



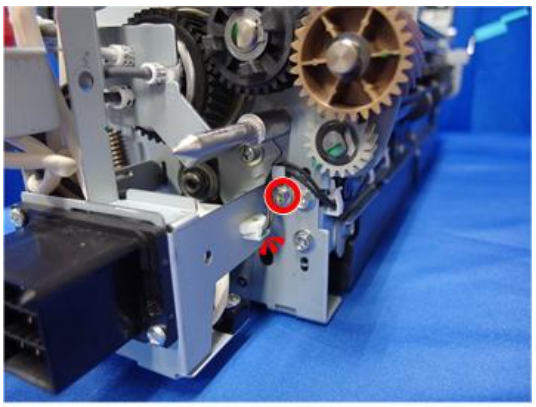
x4 d223d4514

2. Remove top cover plate [A] of the drawer connector.



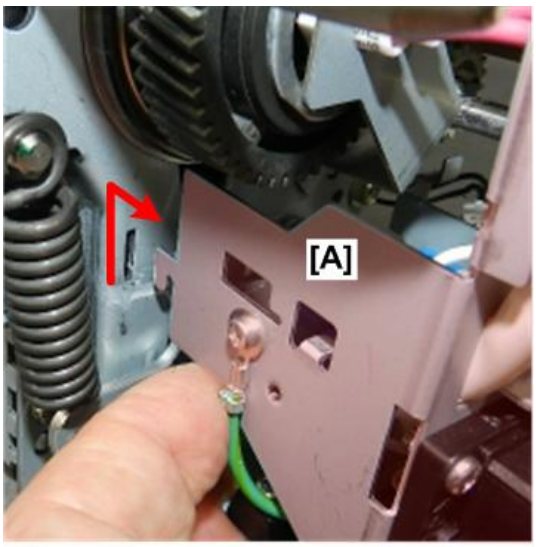
x1 d223d4515

3. Disconnect bracket connector, and then remove screw.



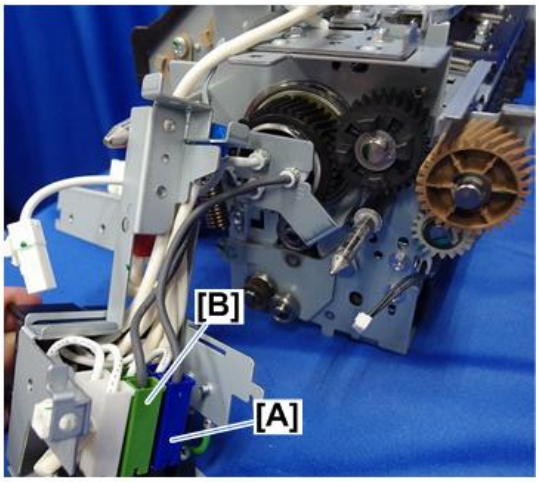
x1 x1 d223d4516

4. Unhook and then remove bracket [A].



d223c3351

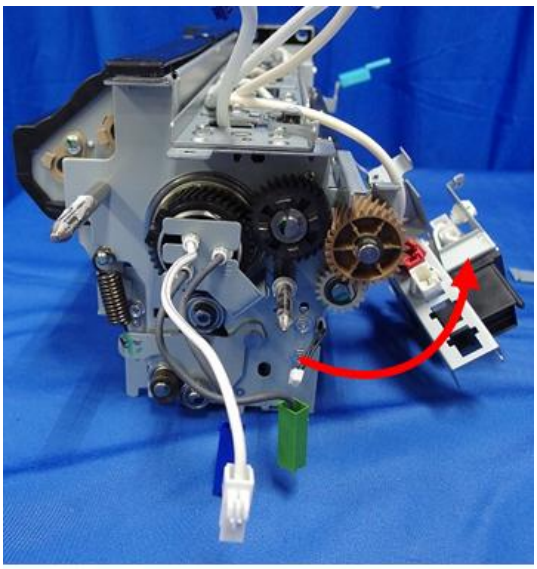
5. Disconnect lamp harnesses [A] (Blue) and [B] (Green) from the back of the drawer connector.



x2

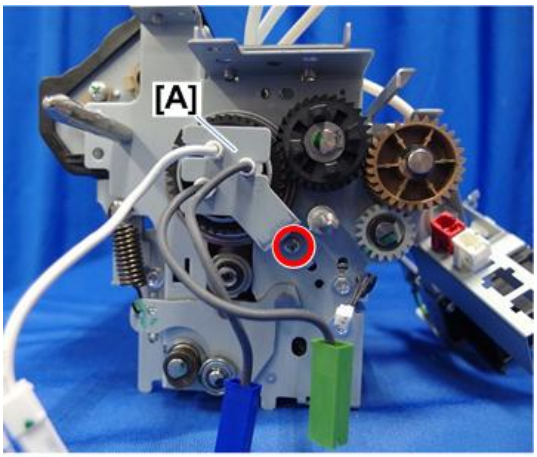
d223d4517

6. Open the bracket and then pull it away from the fusing unit.



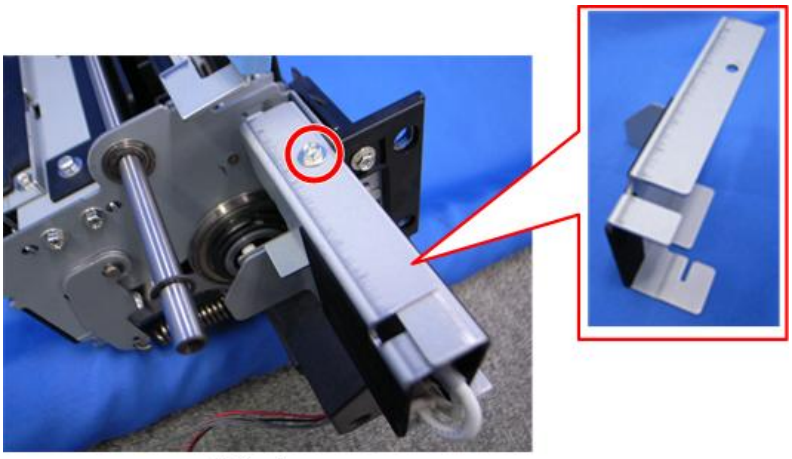
d223d4518

7. Remove lamp holder [A], and then slowly pull the lamps out of the fusing unit.



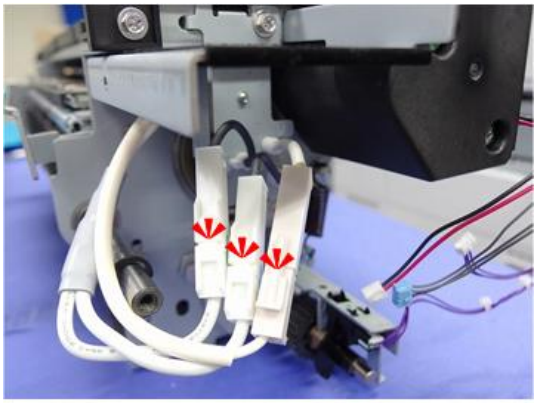
x1 d223d4519

8. Disconnect the connector cover at the front.



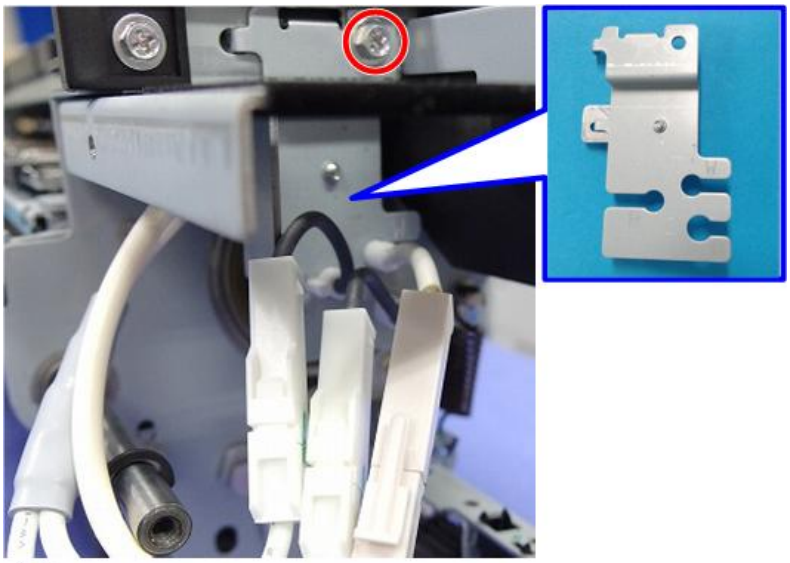
x1 d223c3325

9. Disconnect the fusing lamps at the front.



x3 d223d4534

10. Remove the fusing lamp holder from the front.



x1 d223d4535

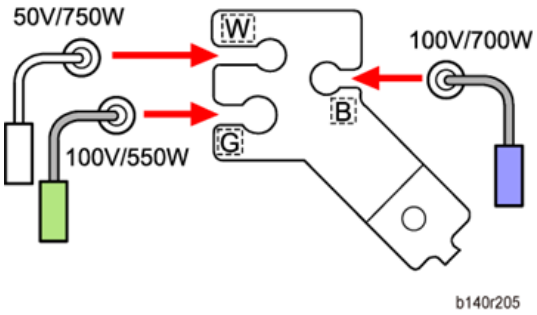
11. Slowly, remove the fusing lamps.

d223d4536

Re-assembly

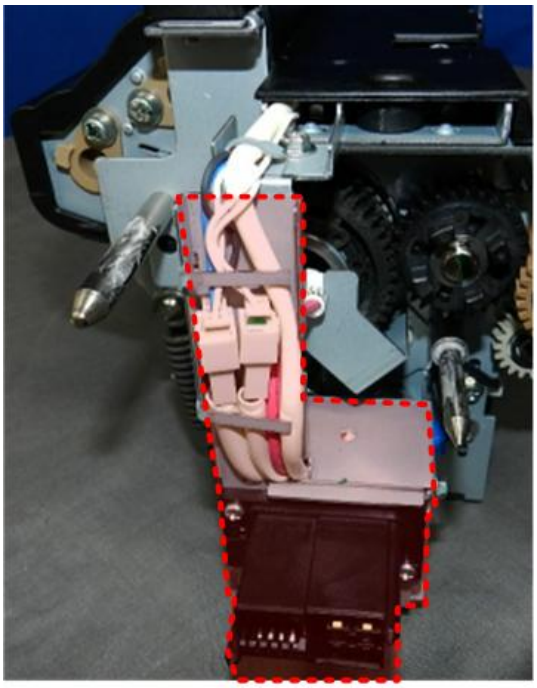
Each fusing lamp is rated for a different voltage and must be re-installed at its original location.

- The rear lamp connectors are color coded (White, Green, Blue).
- The rear lamp bracket is embossed with the letters W, G, B show your where each lamp with its White, Green, or Blue connector should be installed.
- The front lamp bracket is also embossed with these letters, but the front connectors are all white.
- Use the rear lamp bracket as a guide for re-installing the lamps correctly.

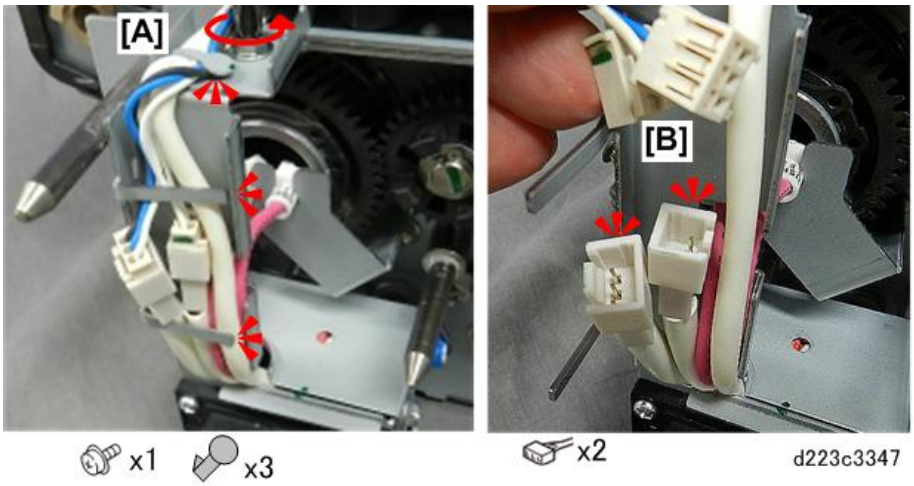


Fusing Lamps (x2) D225

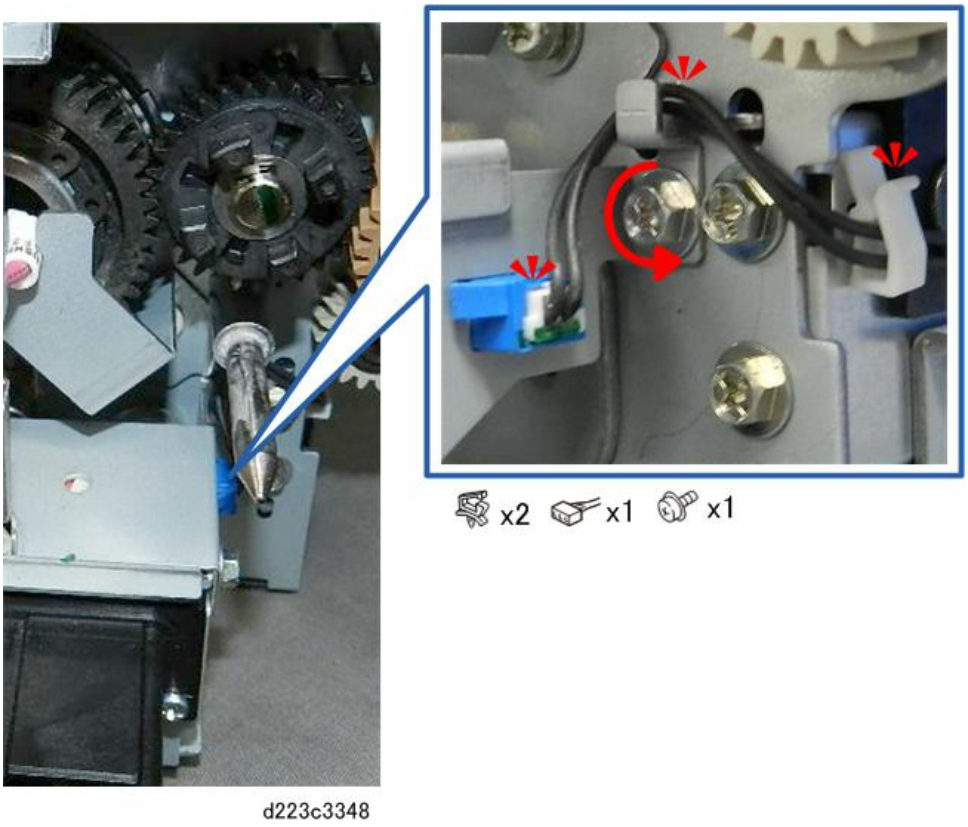
1. Remove the fusing unit Fusing Unit Removal
2. In order to disconnect the fusing lamps, you must first remove the terminal plate on the rear end of the fusing unit.



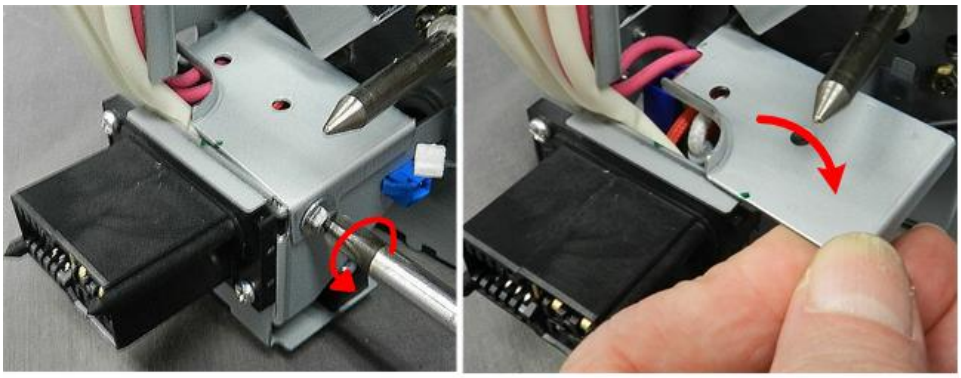
3. At the rear [A] open the metal clamps to free the harnesses and then remove the screw at the top of the bracket.
4. Disconnect both harnesses [B].



5. At the lower rear corner, disconnect the harness, and then remove the bracket screw.



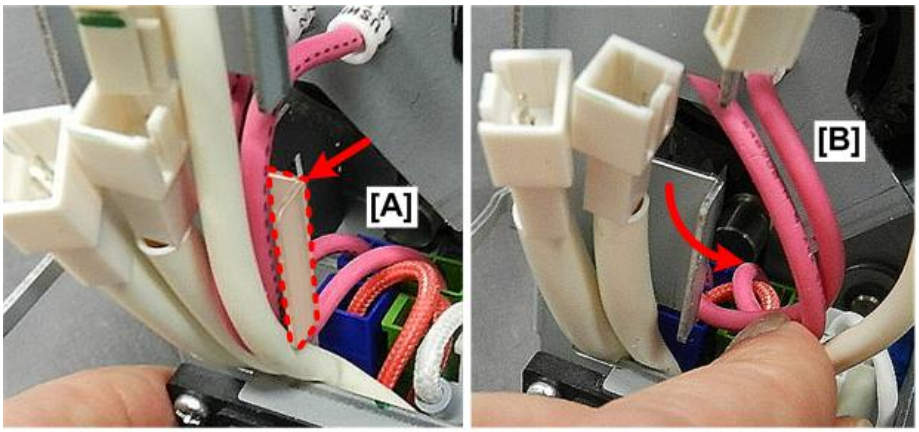
6. Remove the cover plate.



x1

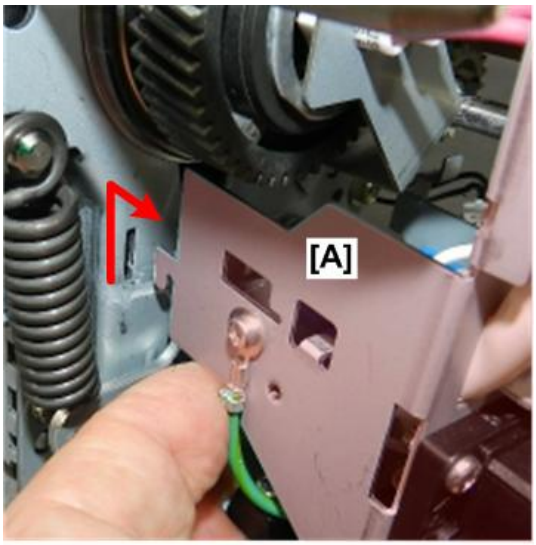
d223c3349

7. Fusing lamp harnesses are blocking removal of bracket [A] so push them aside [B].



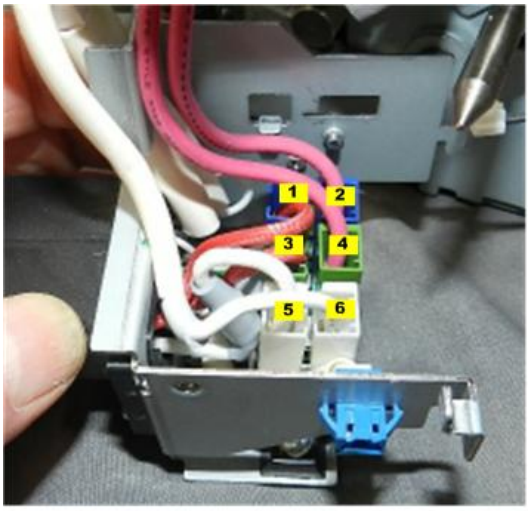
d223c3350

8. At the lower left, lift the bracket [A] and pull it away from the rear of the fusing unit.



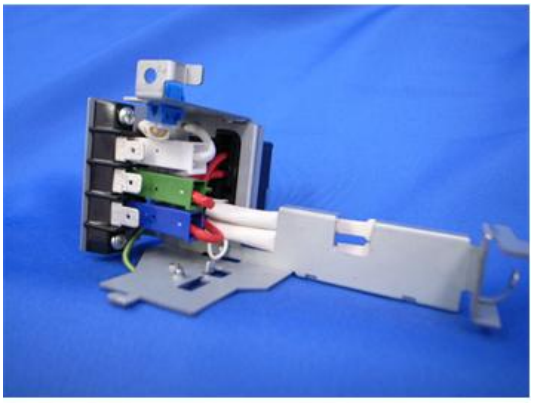
d223c3351

9. Disconnect the fusing lamps.



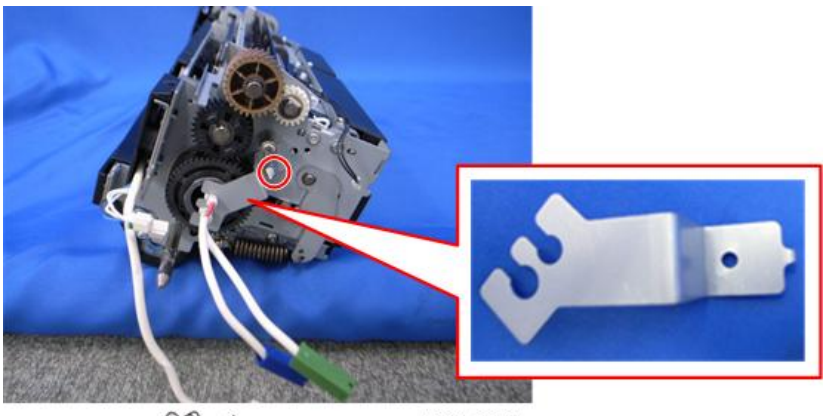
x6 d223c3352

10. Lay the terminal bracket aside on a flat, clean surface.



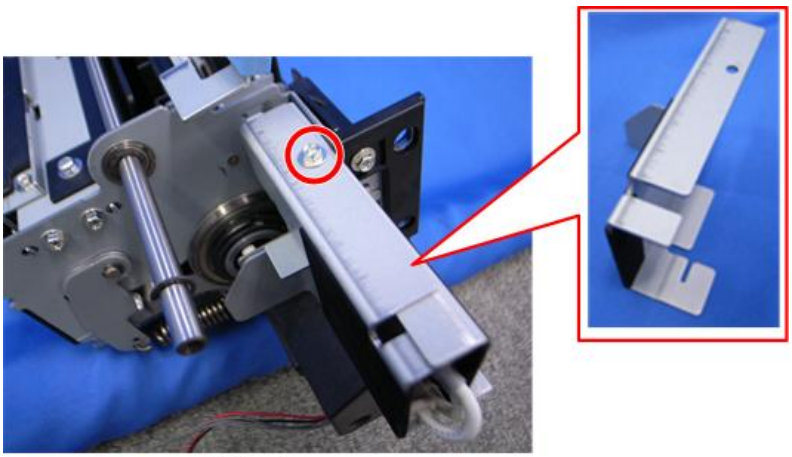
d223c3353

11. Remove the rear fusing lamp holder.



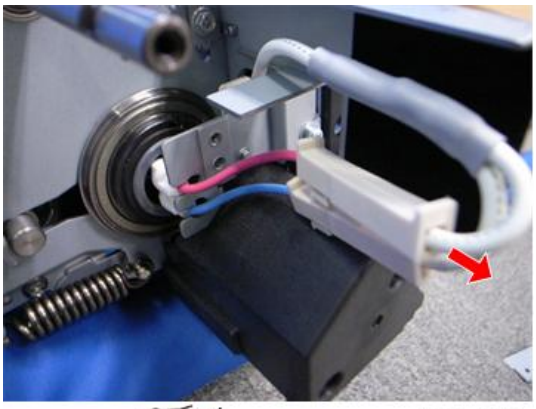
x1 d223c3324

12. At the front, remove the plate.



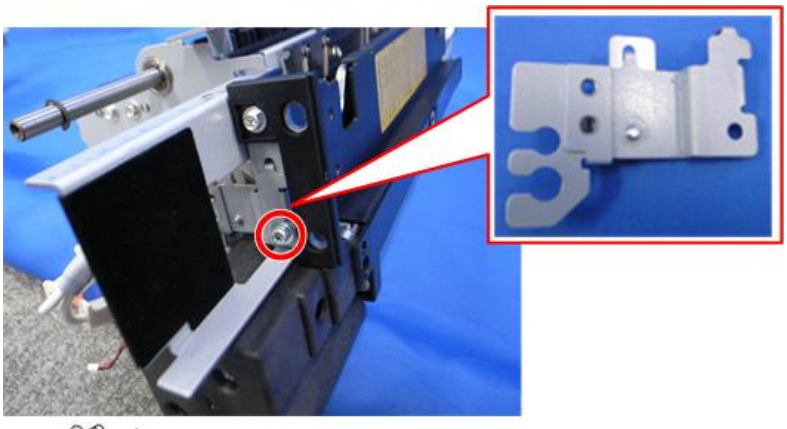
x1 d223c3325

13. Disconnect two harnesses.



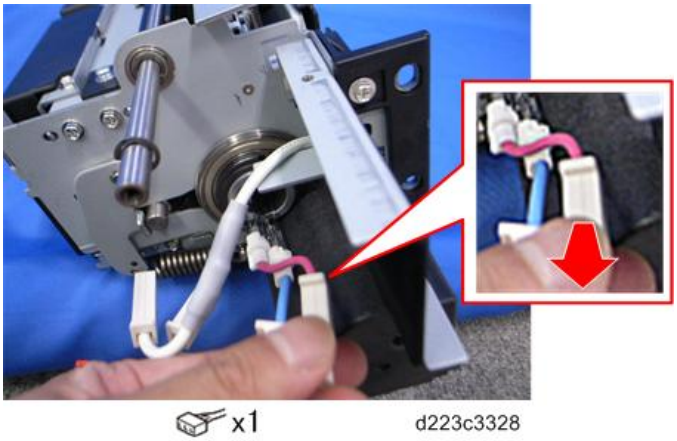
x1 d223c3326

14. Remove front fusing holder.



x1 d223c3327

15. Remove the two fusing lamps.



Note

- Never touch the surface of a fusing lamp with bare hands.
- The fusing lamps are fragile so handle them with care.

Re-assembly

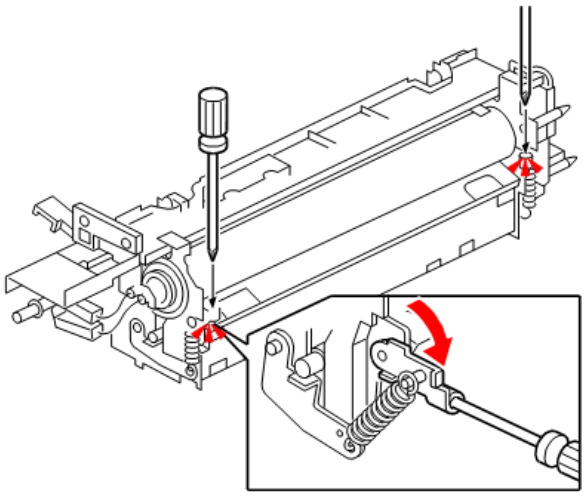
Each fusing lamp is rated for a different voltage and must be re-installed at its original location.

- The rear lamp connectors are color coded.
- The rear lamp bracket is embossed with the letters G, B show your where each lamp with its Green, or Blue connector should be installed.
- The front lamp bracket is also embossed with these letters, but the front connectors are all white.
- Use the rear lamp bracket as a guide for re-installing the lamps correctly.

Hot Roller, Pressure Roller

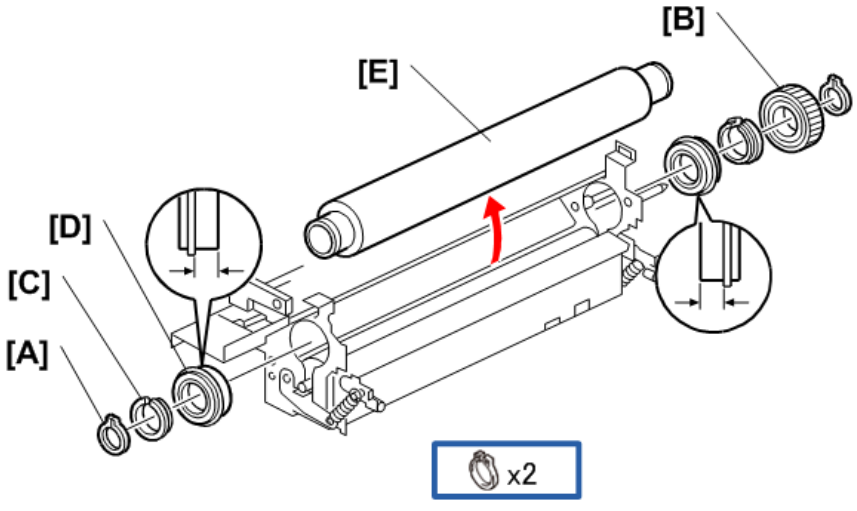
Do this procedure when you want to remove both rollers.

1. Remove the web unit Web Cleaning Roller
2. Insert the tips of two screwdrivers and press down to release the pressure arm.



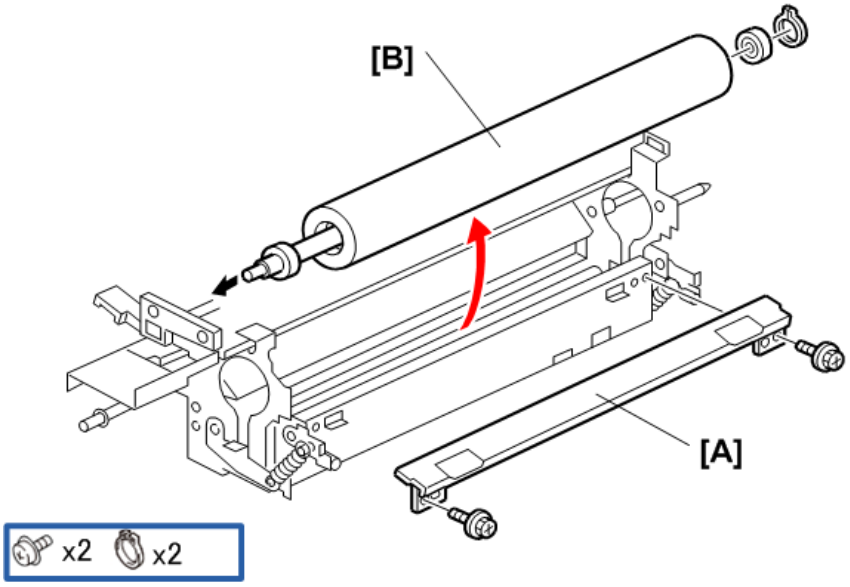
d224c1008

3. Disassemble:
   [A] C-clamps (both ends)
   [B] Drive gear
   [C] Bushings front and rear
   [D] Bearings front and rear
4. Remove hot roller [E]



d224c1009

5. Disconnect entrance guide plate [A].
6. Remove pressure roller [B].

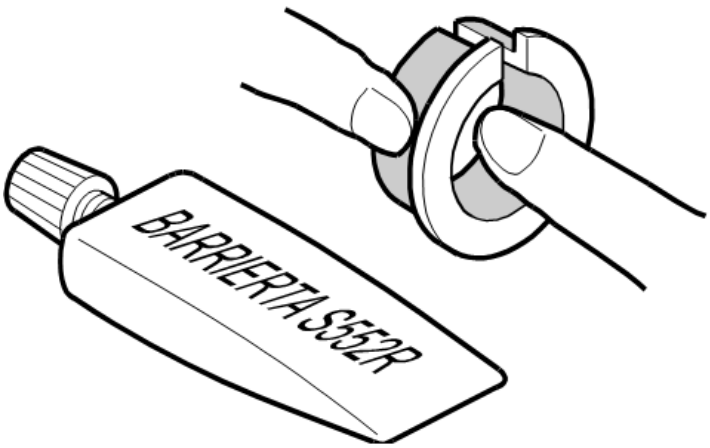


d224c1010

Note

- The pressure roller and pressure roller bearing should always be replaced together.

7. Lubricate the inner and outer surfaces of the bushings with Barrierta S552R.



d224c1011

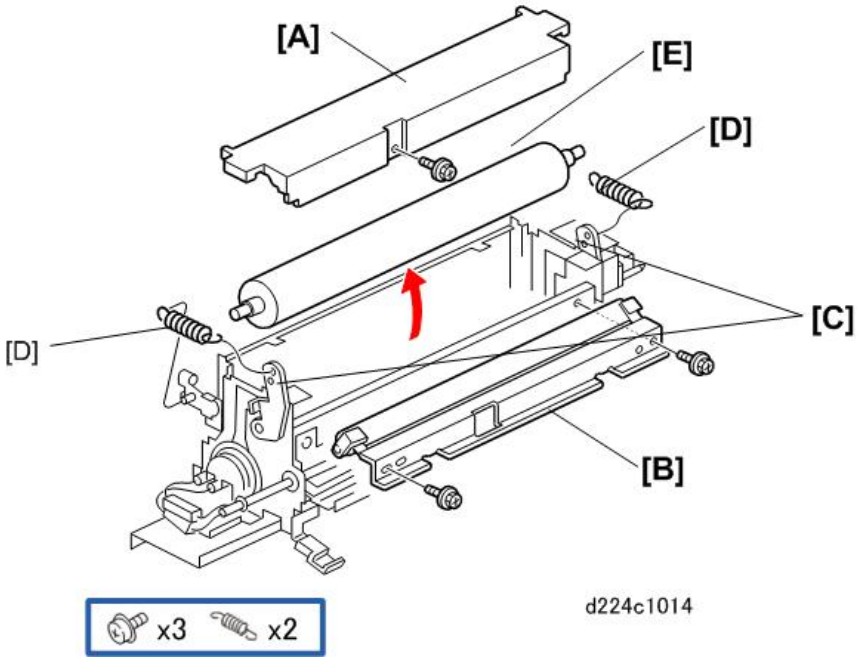
Note

- If the bushings are warm, allow them to cool before applying the Barrierta grease. Applying the grease while the bushings are hot could generate gas.

Pressure Roller Only

Do this procedure if you need to remove only the pressure roller.

1. Remove the fusing unit. Fusing Unit Removal
2. Turn the fusing unit upside down.
3. Remove lower cover [A].
4. Remove pressure roller cleaning unit [B].
5. Release the pressure arms [C]
6. Use two screwdrivers to lower the pressure arms on both ends of the pressure roller.
7. Remove pressure roller springs [D]
8. Finally, remove pressure roller [E]



Important

- The fusing lamps are fragile. Work carefully to avoid breaking them.
- During assembly, handle the roller carefully to avoid scratching it on the bracket.
- Make sure the tabs and grooves of the lower cover are engaged correctly before tightening the screw.

Checking the Fusing Nip

There are two ways to check the width of the nip between the pressure roller and hot roller.

Method 1

1. Open SP1109-001, set it to “1”.
2. Click the button in the upper right corner of the screen to switch from the SP Screen to the Copy Screen.
3. Make a copy. The sheet of paper will stop in the nip of the pressure roller and hot roller for the prescribed time, and then exit.
4. Measure the width of the nip.

Method 1

1. Open SP1109-01 and set it to “1”.
2. Open SP2902 and select the Black Band Test Pattern.
3. Click the button in the upper right corner of the screen to switch from the SP Screen to the Copy Screen.
4. Make a copy and then measure the width of the nip.

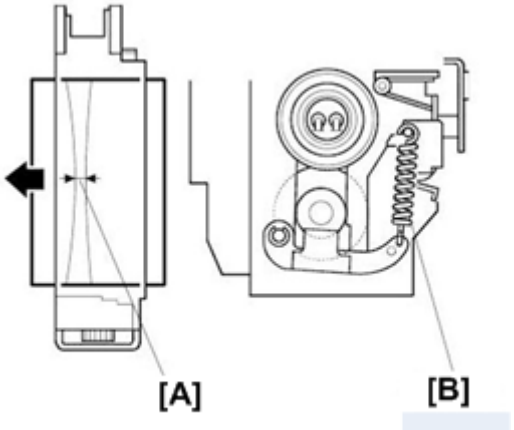
Note

- The optimum width for the D223/D224 is 5.5±05 mm
- The optimum width for the D225 is 7.5±0.5 mm.

Manual Nip Adjustment

The size of the nip is adjusted by increasing or decreasing the amount of pressure exerted by the pressure roller on the hot roller.

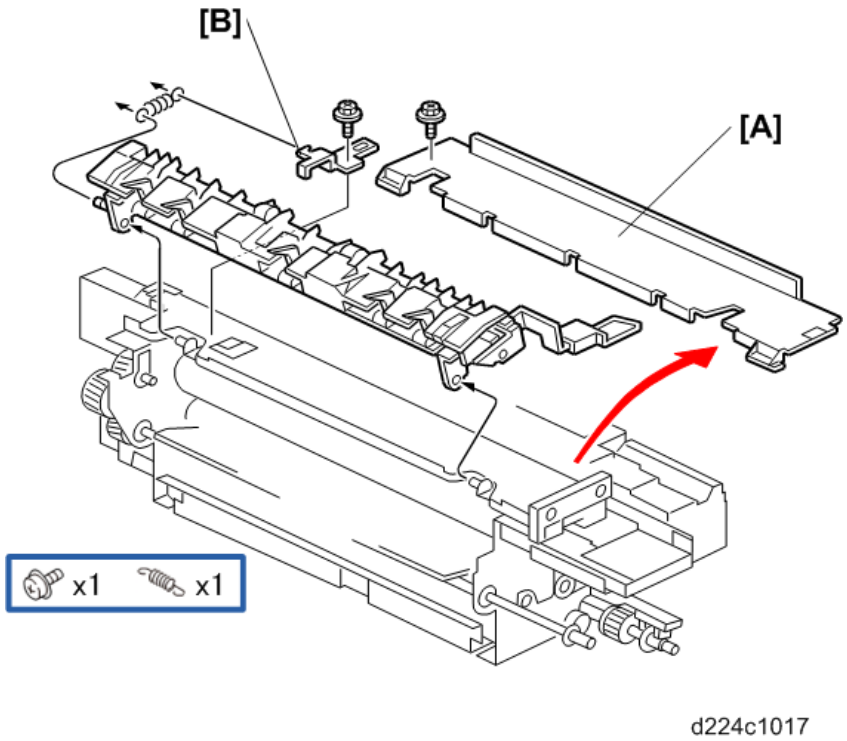
- When fusing is performed poorly, you can adjust the nip width [A].
- Two holes are provided on each pressure arm for the springs [B]. Normally the springs should be attached to the lower holes.
- Attaching the springs to the upper holes exerts less pressure on the hot roller. Attach the springs to the upper holes only for especially thin paper, or when fusing is performing poorly (wrinkling, excessive curl, etc.)



a229r615

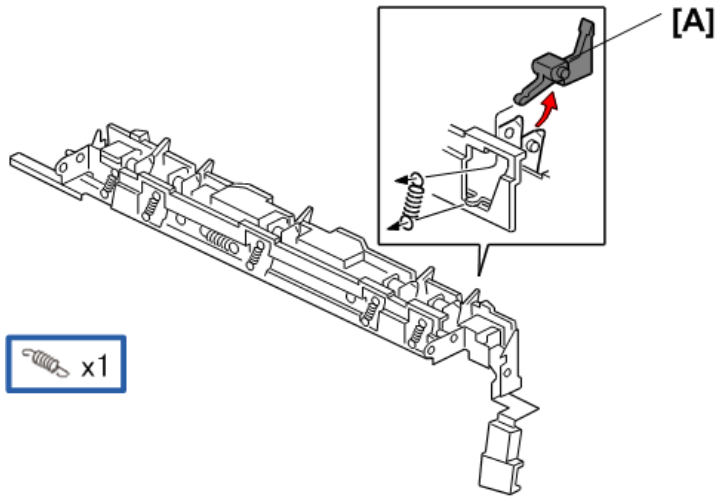
4.11.7 STRIPPER PAWLS

1. Remove the fusing unit. Fusing Unit Removal
2. Remove top cover [A].
3. Remove bracket [B].



d224c1017

4. Stripper pawl [A].



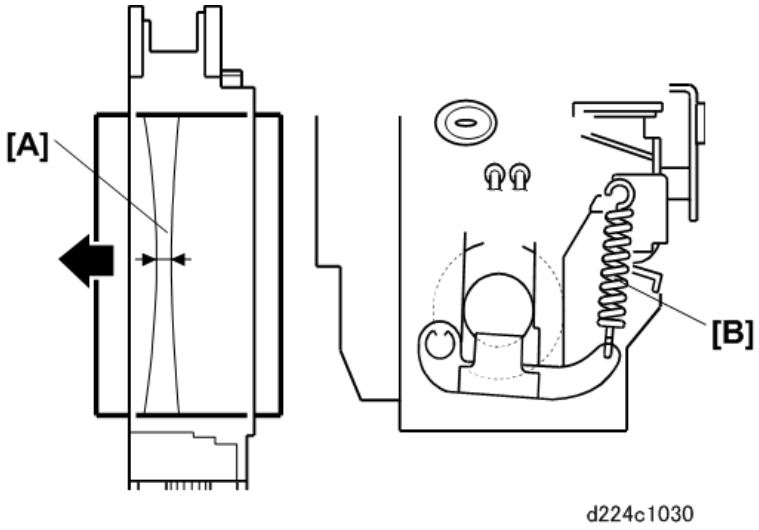
d224c1019

4.11.8 NIP BAND WIDTH ADJUSTMENT

1. After the machine is turned on, make an A4/LT LEF copy, then stop the machine while the paper is still in the fusing unit by switching the machine off.

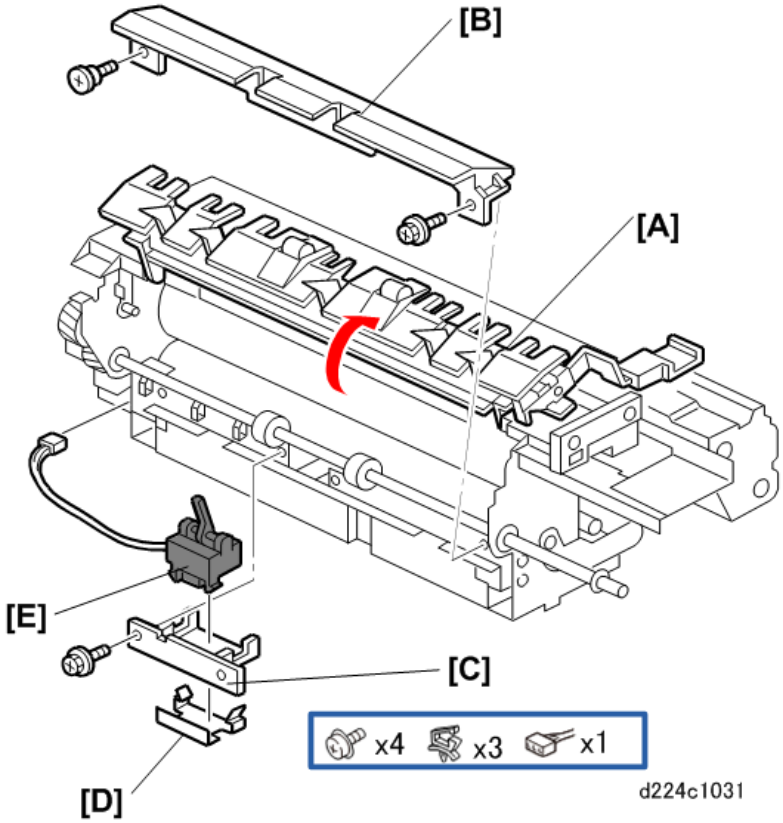
   Note

   - This is easier with an OHP sheet. Use an OHP sheet if you have one available.
2. Open the front door, then turn the fusing knob to feed out the copy.
3. Measure the width of the band on the part of the image where it is particularly black. The band, called the nip band [A], should be 9.0 ± 0.7 mm at the center.
   - When the fusing is incorrect (wrinkles, offset, curl), measure the nip band width.
   - The nip band width can be adjusted by changing the position of the springs [B] on the ends of the pressure roller.
   - The fusing temperature can also be adjusted with SP1105 (Fusing Temperature Adjustment) for Normal, OHP, and Thick Paper.



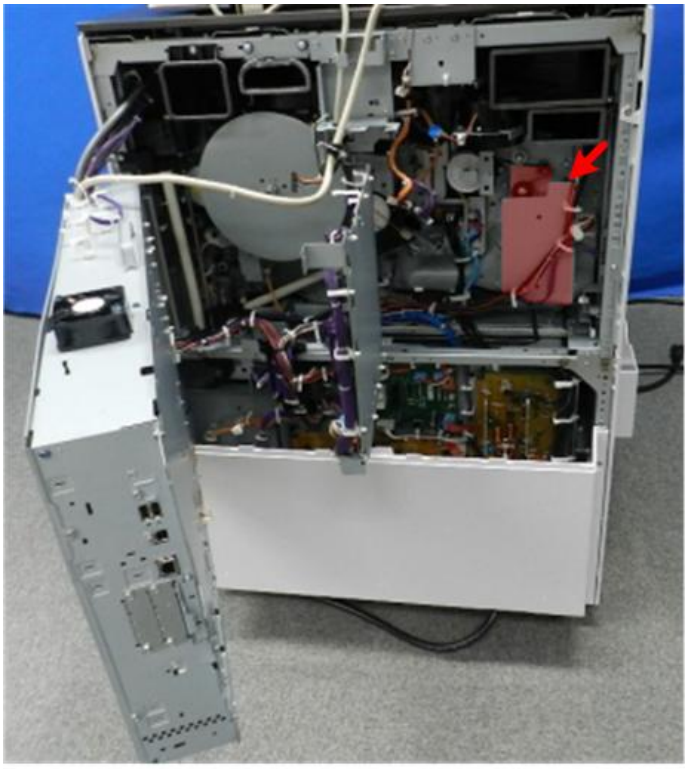
4.11.9 FUSING UNIT EXIT SENSOR

1. Remove the fusing unit. Fusing Unit Removal
2. Open the hot roller stripper pawl unit [A]
3. Remove:
   [B] Exit guide plate
   [C] Fusing exit sensor holder
   [D] Plate spring
   [E] Fusing exit sensor



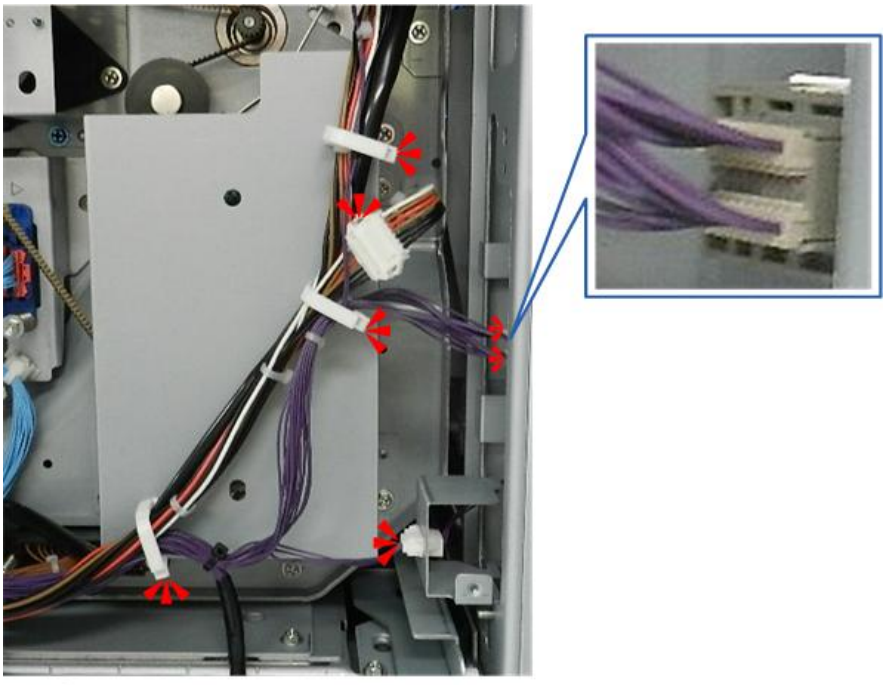
4.11.10 FUSING/EXIT MOTOR

1. Remove rear upper cover Rear Upper Cover
2. Open the IOB Bracket
3. The fusing/exit motor is behind the fusing/exit motor bracket.



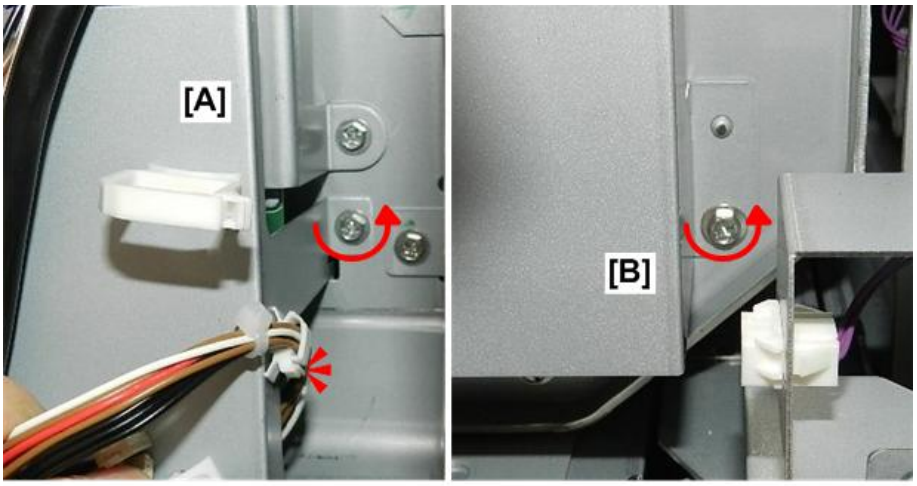
d223c3354

4. Disconnect the harnesses in front of the fusing/exit motor bracket.



X3 X4 d223c3355

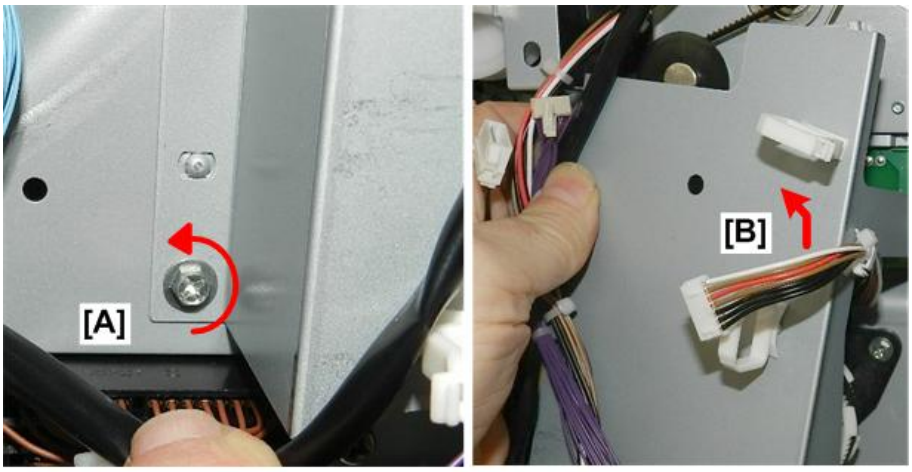
5. Disconnect the bracket screws at the upper right [A] and lower right [B].



X2 X1

d223c3356

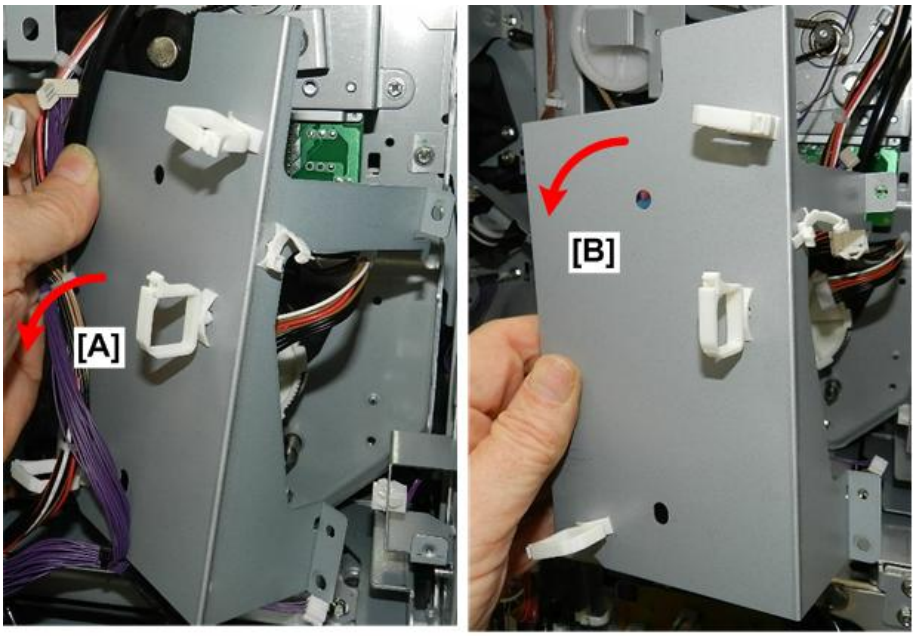
6. Disconnect bracket screw at lower left [A], and then pull the bracket [B] away from the frame.



X1

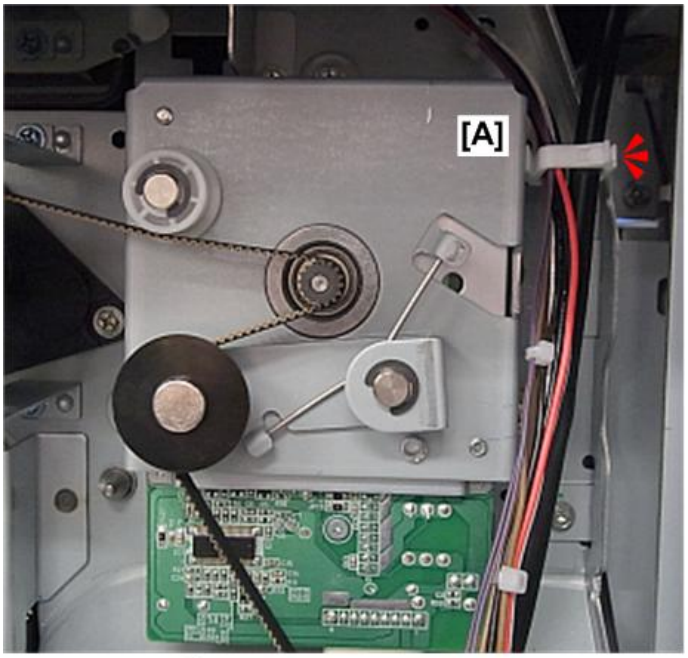
d223c3357

7. Move the frame out from behind harnesses [A].
8. Remove the freed frame [B].



d223c3358

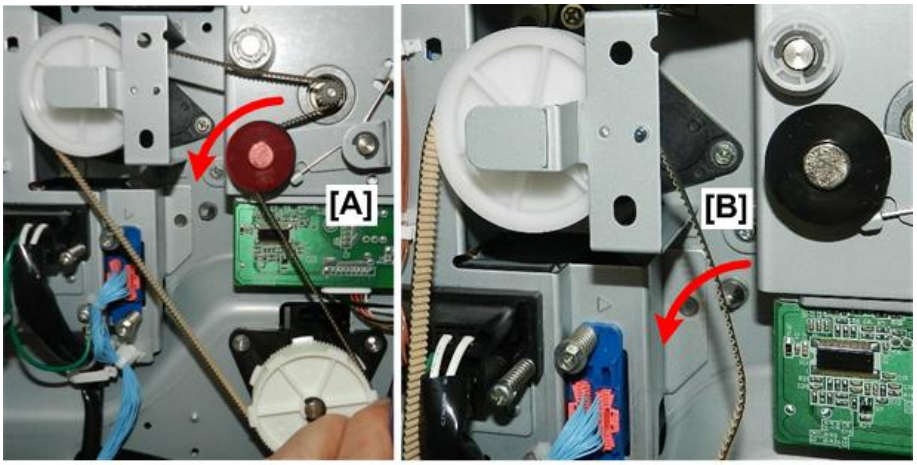
9. Free the harness at the upper right corner of the motor bracket [A].



x1

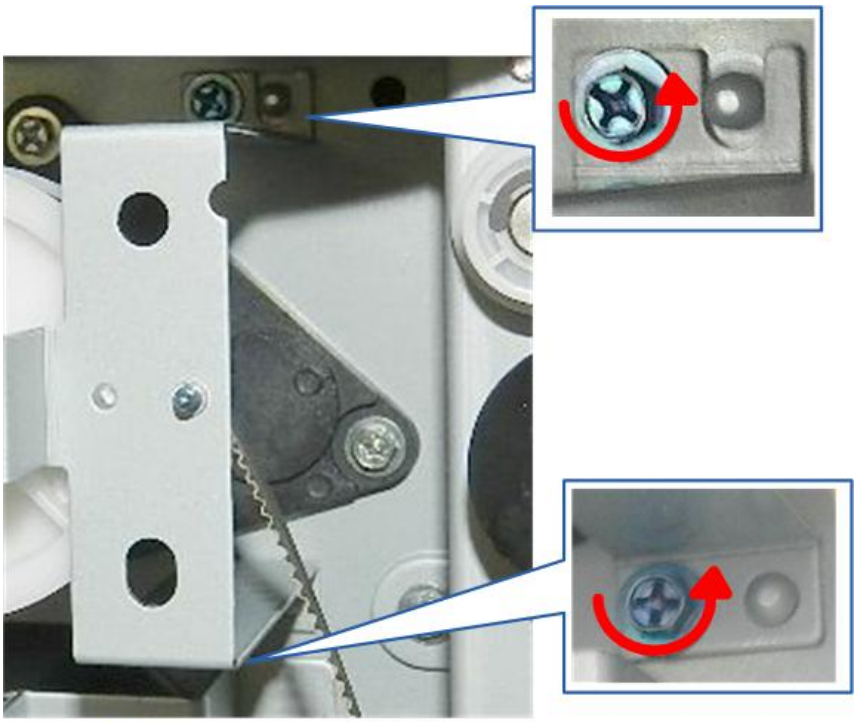
d223c3790

10. Press down pulley arm [A] to release tension on the belt.
11. Disconnect drive belt [B] from pulleys.



X1 d223c3359

12. Disconnect ground plate at top and bottom.



X2 d223c3361

13. Remove ground plate and drive belt.

Note

- The top arm of the ground plate bracket has the "U" cutout.

d223c3362

14. Disconnect motor:

[A] Top

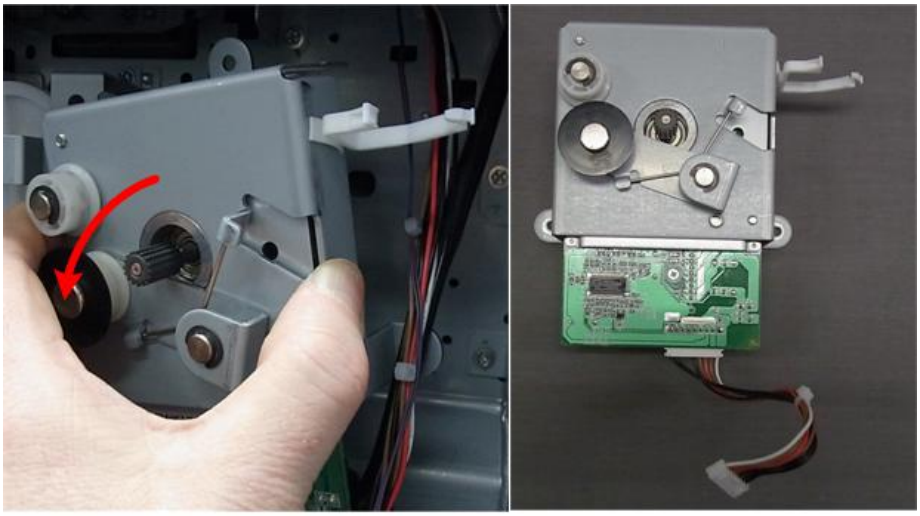
[B] Lower right

[C] Lower left

X3

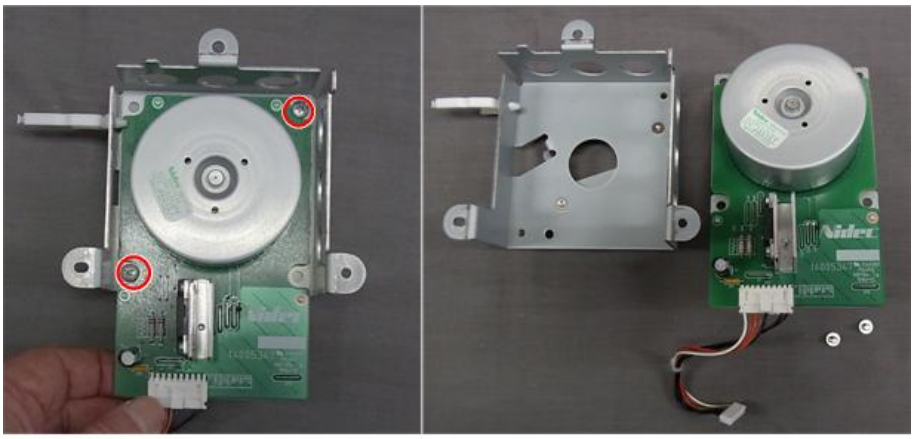
d223c3363

15. Remove the bracket with motor attached.
16. Lay the bracket and motor on a flat, clean surface.



d223c3364

17. Turn the bracket over.
18. Remove the screws, and then separate the bracket and motor.

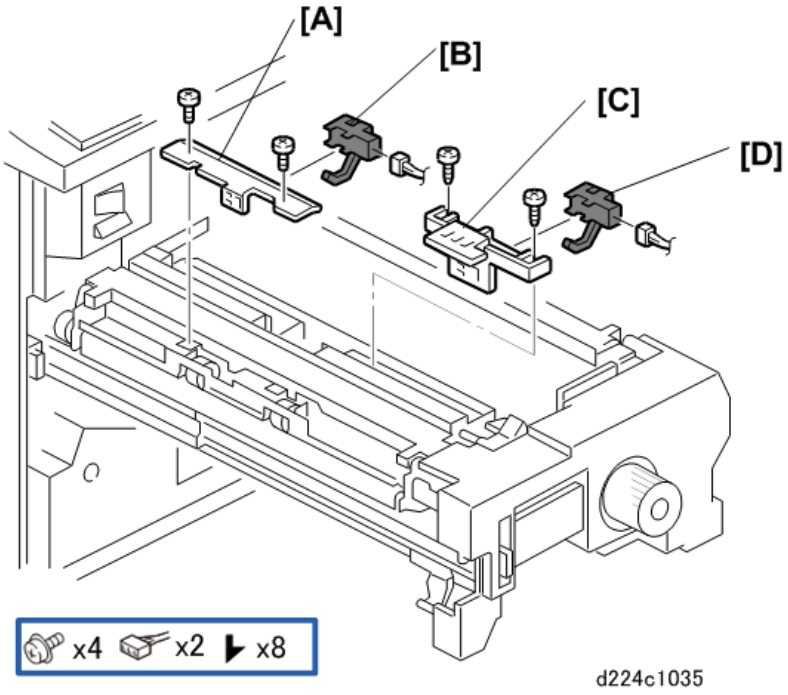


x2

d223c3365

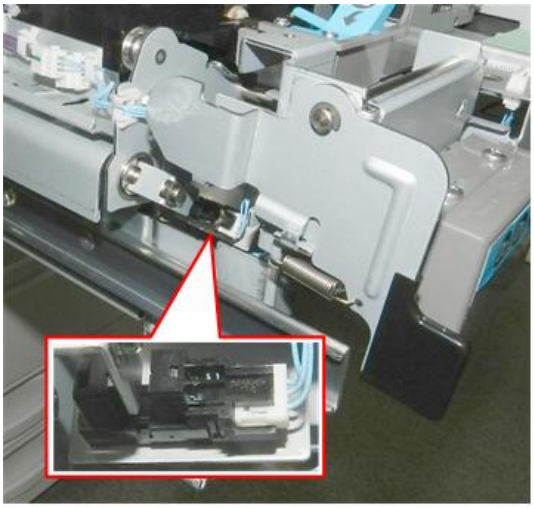
4.11.11 FUSING EXIT SENSOR, EXIT UNIT ENTRANCE SENSORS

1. Open the front door and pull out the exit/inverter unit.
2. Disconnect fusing exit sensor bracket [A].
3. Remove fusing exit sensor [B].
4. Disconnect exit unit entrance sensor bracket [C].
5. Remove exit unit entrance sensor [D].



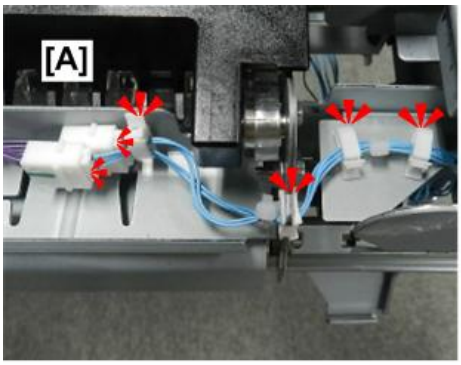
4.11.12 TURN SENSOR

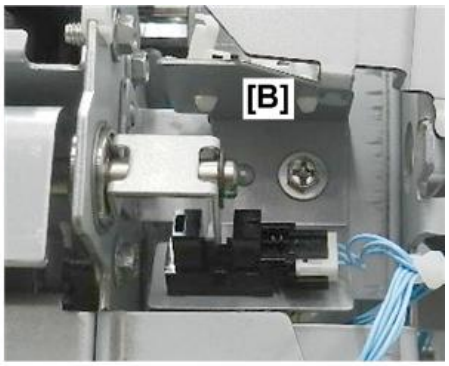
1. Remove the fusing unit cover. page 4-209
2. The sensor is on the left front corner of the fusing unit tray.



d223c3366

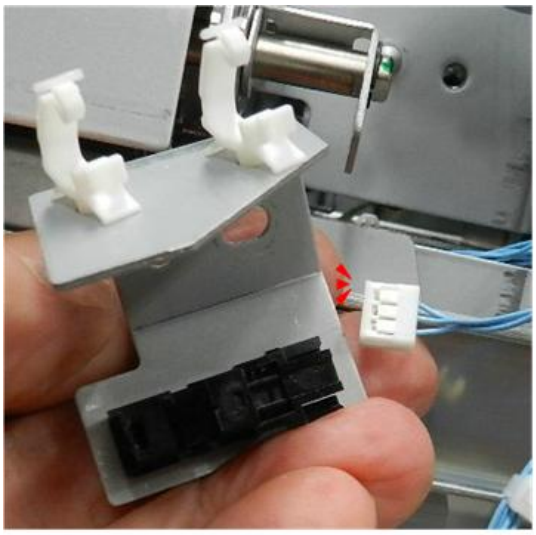
3. Disconnect and free harnesses [A].
4. Disconnect sensor bracket [B].





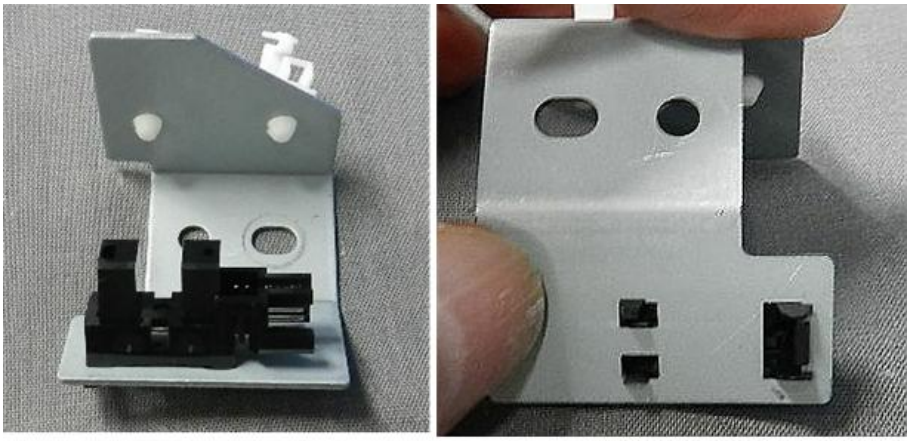
x4 x2 x1 d223c3367

5. Remove bracket with sensor attached, and then disconnect sensor.



x1 d223c3368

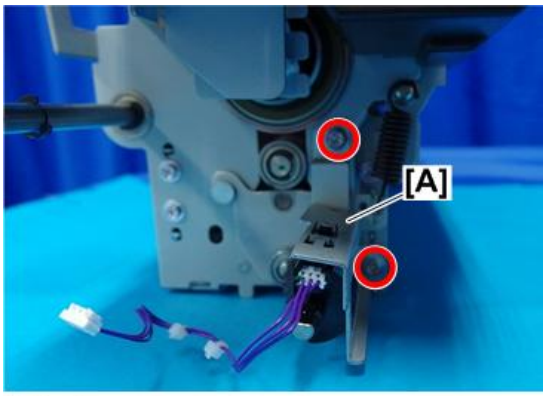
6. Separate sensor from bracket.



x4 d223c3369

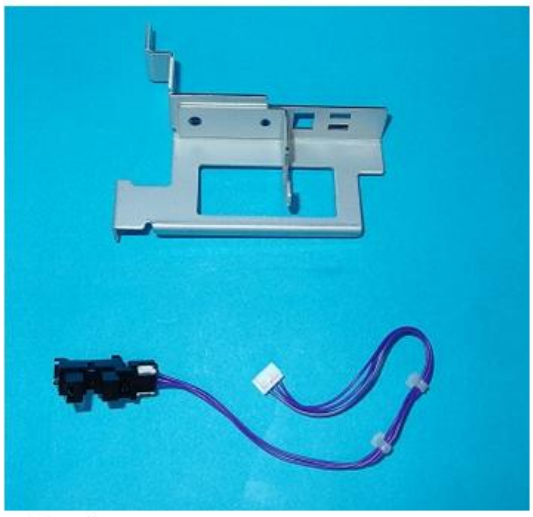
4.11.13 FUSING PRESSURE RELEASE SENSOR

1. Remove the fusing unit. page 4-209
2. Remove fusing pressure release sensor bracket [A]



x2 d223d4520

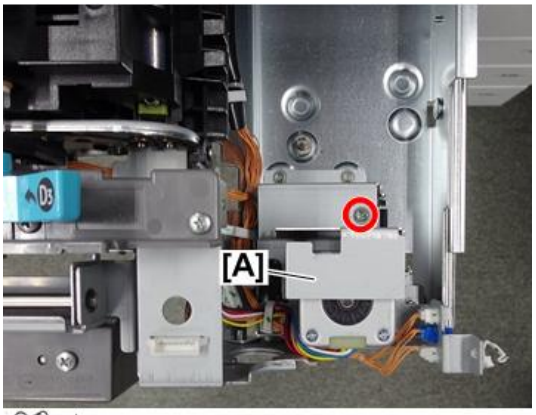
3. Separate bracket and sensor.



x4 d223d4521

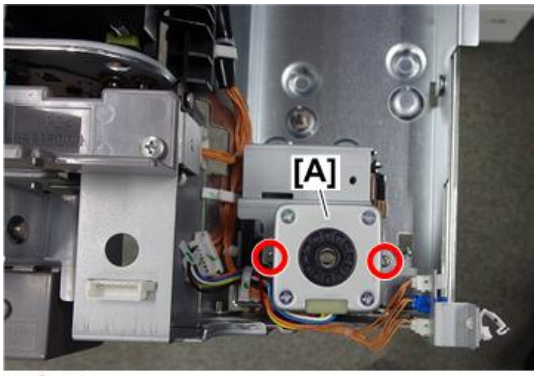
4.11.14 FUSING PRESSURE MOTOR

1. Remove the fusing unit. page 4-209
2. Remove fusing pressure motor cover [A].



x1 d223d4522

3. Remove fusing pressure motor [A].



x2 d223d4523

4. Lay the motor on a flat, clean surface.

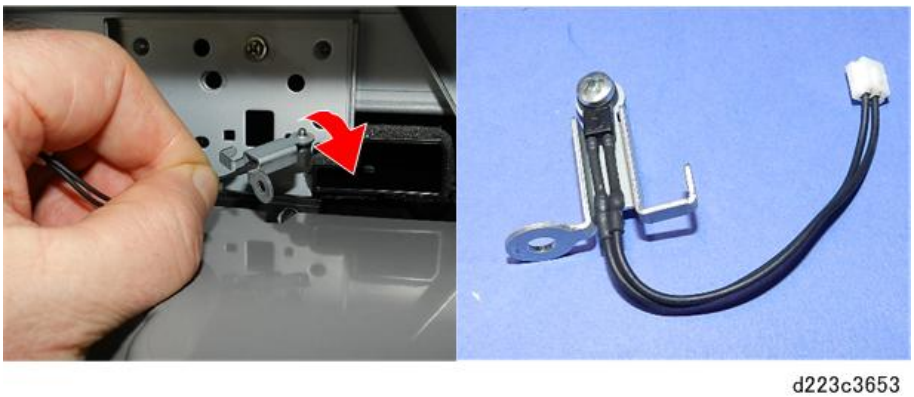
d223d4524

4.11.15 TEMPERATURE SENSOR

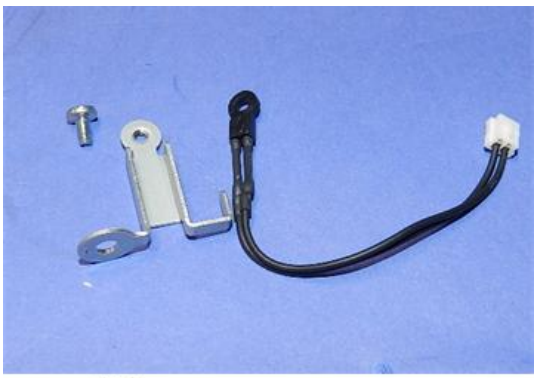
1. Open the front door.
2. Move the toner bottle holder to the right.
3. Remove the inner cover next to the power switch.

4. Disconnect the sensor harness and sensor bracket.

5. Remove the sensor bracket with sensor attached.



6. Separate the sensor and bracket.



x1 d223c3654

4.11.16 IMPORTANT SP CODES: FUSING UNIT

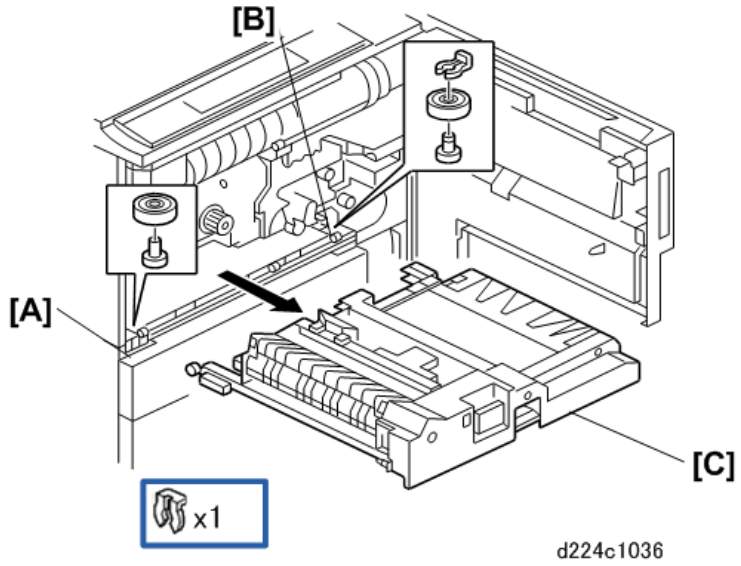
Here is a list of SP codes related to testing and servicing the fusing unit.

Item	SP No.	Function
Fusing idling on/off	1907	This SP switches pre-fusing idling on/off. Pre-fusing idling can be switched on and adjusted for heavier, thick paper to improve fusing.
Fusing idling time	1103	Adjusts the length of time the hot roller is allowed to idle in order to raise the fusing temperature.
Fusing jam SC settings	1159	This SP determines what the machine does when paper jams occur three consecutive times in the fusing unit. (A jam alert is shown on the screen, and the operator can remove the jam, the machine issues SC559, the machine stops and cannot be used until the CE corrects the problem.
Fusing temperature adjustment	1105	Adjust temperature for Normal, OHP, Thick Paper
Fusing temperature display	1106	Displays the fusing temperature at the center and end of the hot roller, and temperature of the pressure roller.
Nip band measuring	1109-001	Open SP1109-001, set it to “1”. Click the button in the upper right corner of the screen to switch from the SP Screen to the Copy Screen. Make a copy. The sheet of paper will stop in the nip of the pressure roller and hot roller for the prescribed time, and then exit. Measure the width of the nip.
Web count	1902-001	After the web has been replaced, this SP code must be reset to zero.

4.12 DUPLEX UNIT

4.12.1 DUPLEX UNIT REMOVAL

1. Open the front door and pull out the duplex unit.
2. Remove the slide rail roller on the left [A] and on the right [B].
3. Lift out the duplex unit [C].



Re-installation

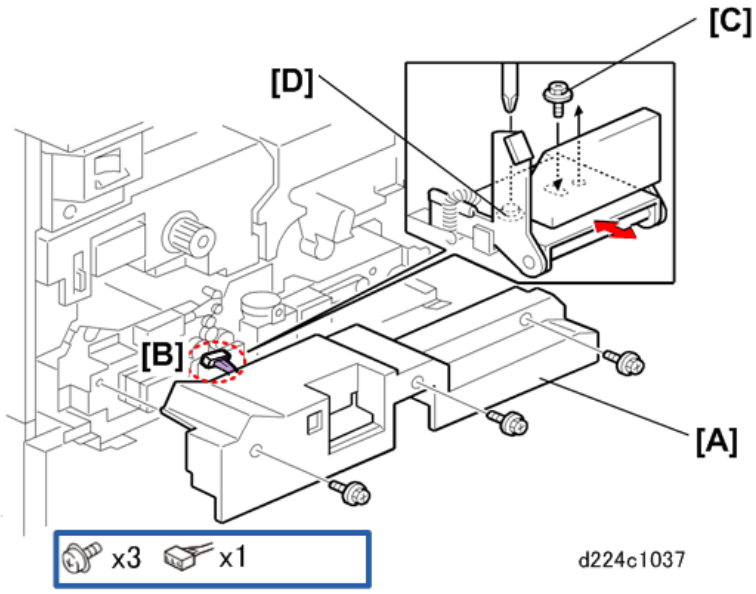
To re-install the duplex unit'

1. Insert the duplex unit partially, only until it enters the black guide rail, and then re-attach each slide rail roller.
2. Next, push the duplex unit into the machine completely. This method prevents interference from the guide plate.

4.12.2 ADJUSTMENTS

Duplex Unit Side-to-Side Adjustment

1. Remove the duplex unit front cover screws [A].
2. Pull the cover away partially, disconnect the LED sensor connector [B], and then remove the cover.
3. Move the handle lock screw [C] from the right to the center.
4. Loosen the left lock screw [D], then adjust the position of the duplex unit.



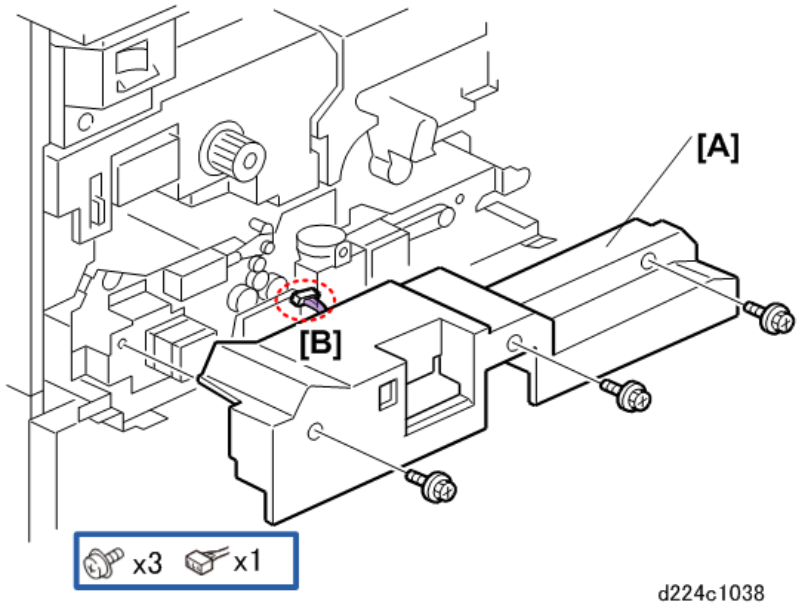
Jogger Fence Adjustment

SP1008	Duplex Fence Adjustment
	Execute this SP to adjust the distance between the jogger fences. A smaller value shortens the distance. If the fences are too far apart, skewing may occur in the duplex tray. If the fences are too close, the paper may be creased in the duplex unit.

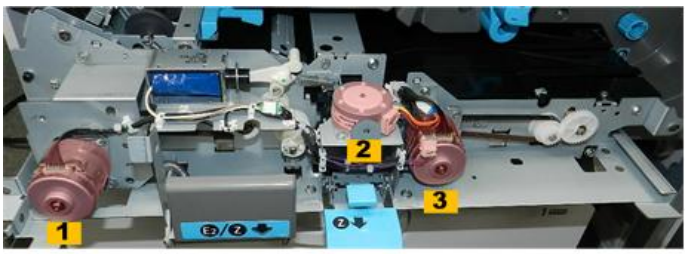
4.12.3 DUPLEX MOTORS

Duplex Unit Front Cover

1. Remove the duplex unit front cover screws [A].
2. Pull the cover away partially, disconnect the LED sensor connector [B], and then remove the cover.



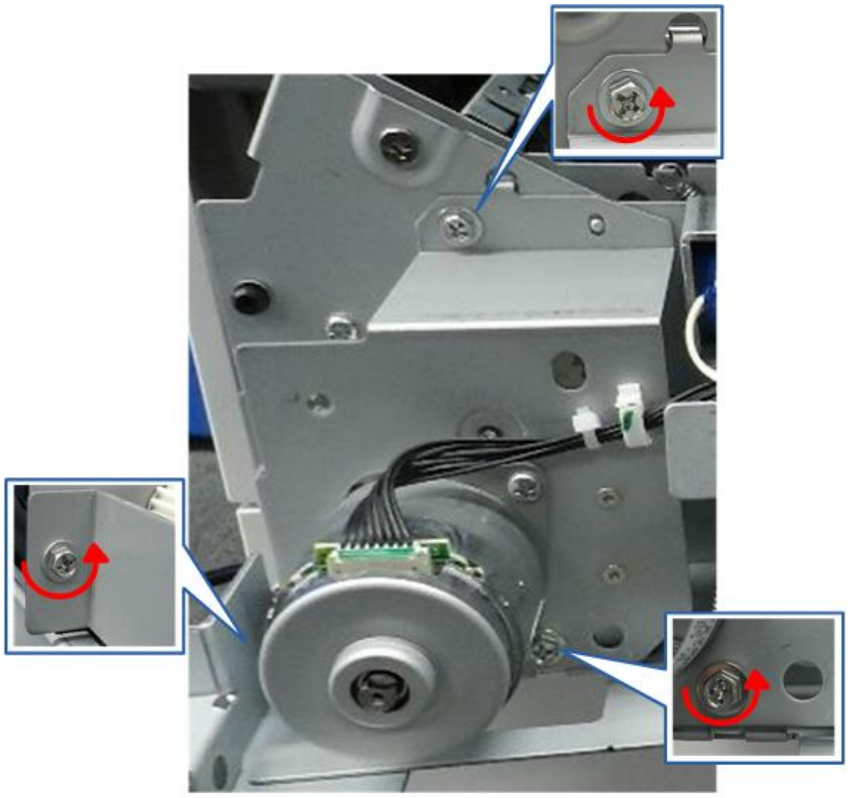
There are three motors in the duplex unit.



1	Duplex inverter motor
2	Duplex Jogger motor
3	Duplex Transport motor

Duplex Inverter Motor

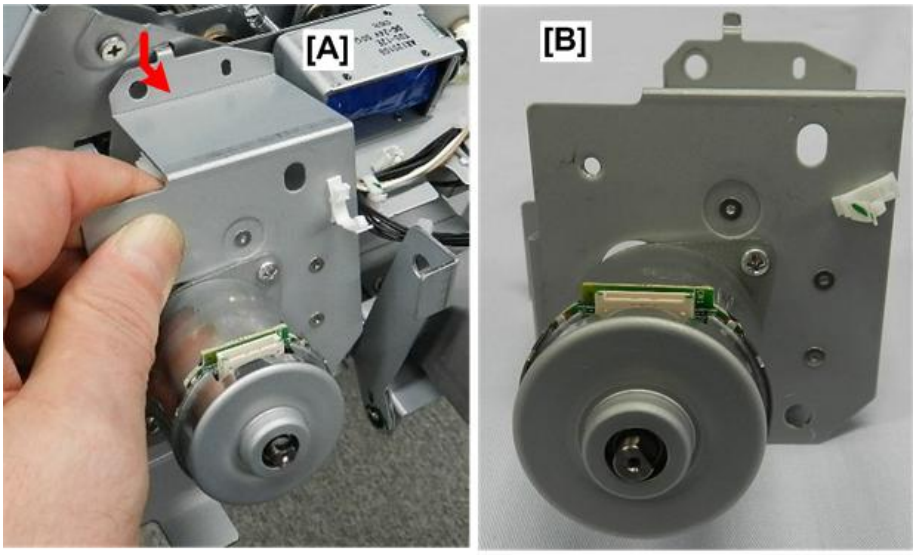
1. Open the front door, and then pull out the duplex unit.
2. Remove the duplex unit front cover. page 4-264
3. Disconnect the duplex inverter motor bracket.



x3

d223c3372

4. Unhook the motor bracket [A], and then remove the bracket with motor attached [B].

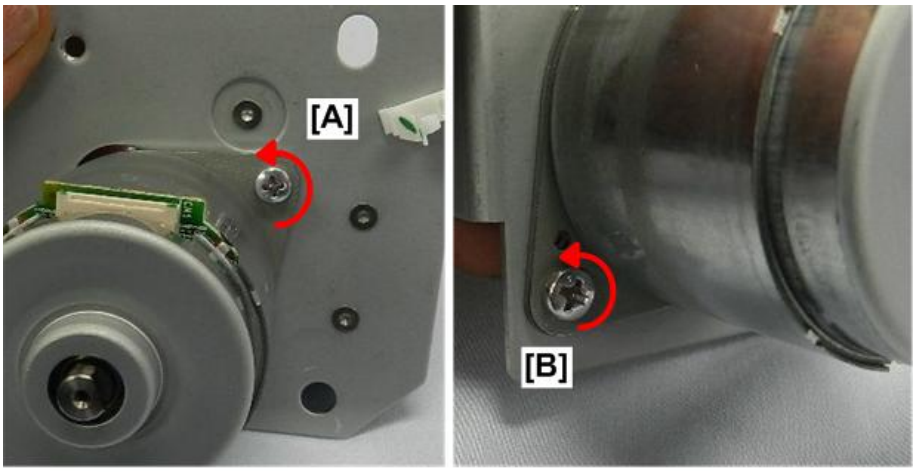


x1

d223c3373

5. Remove screws at [A] and [B].

6.



d223c3374

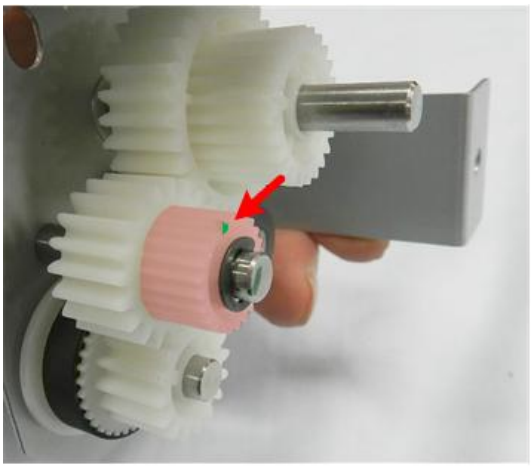
X2

7. Separate motor and bracket.

d223c3375

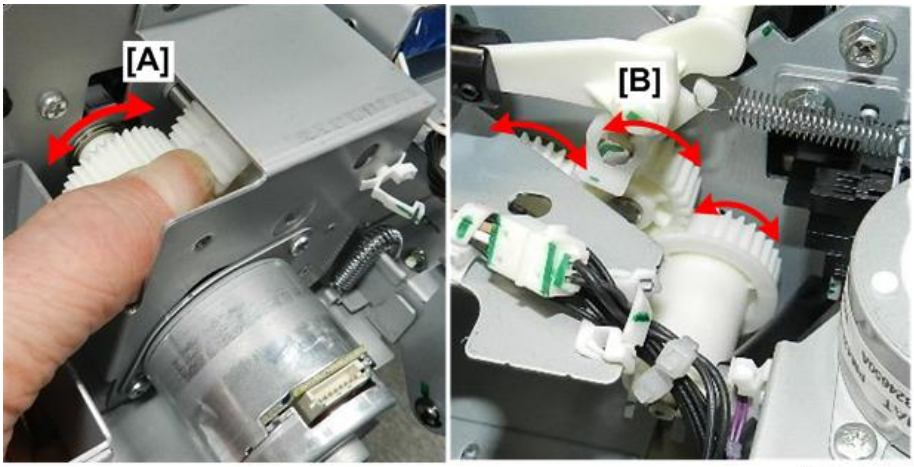
Re-assembly

1. Reattach the timing belt to the smaller gear marked with the green dot.



d223c3376

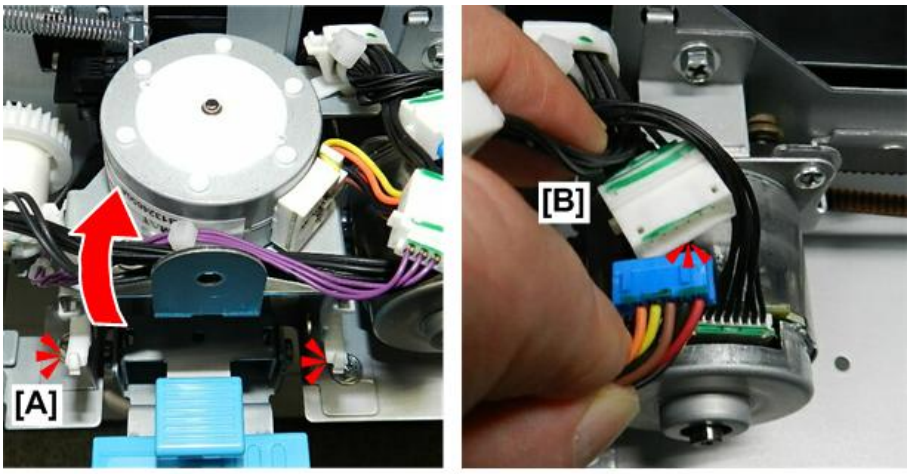
2. After re-attaching the motor, turn the motor gears [A] manually, and confirm that all the gears on the right [B] are turning.



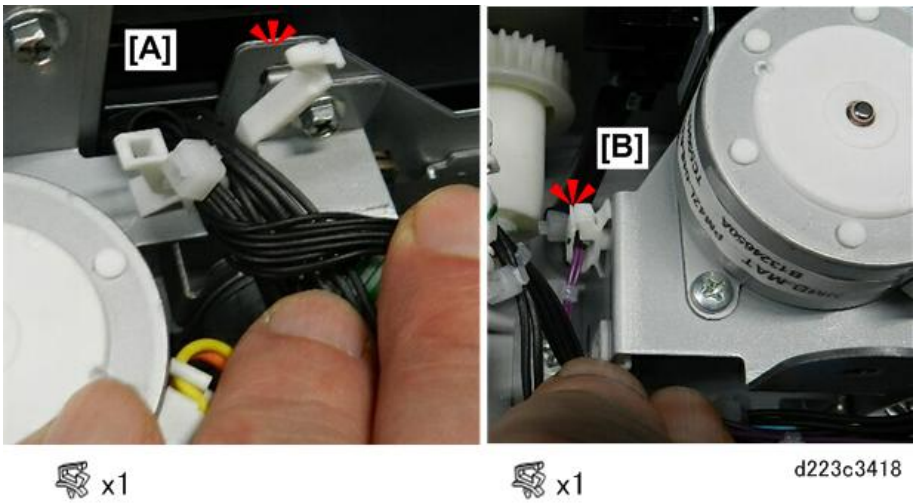
d223c3377

Duplex Jogger Motor

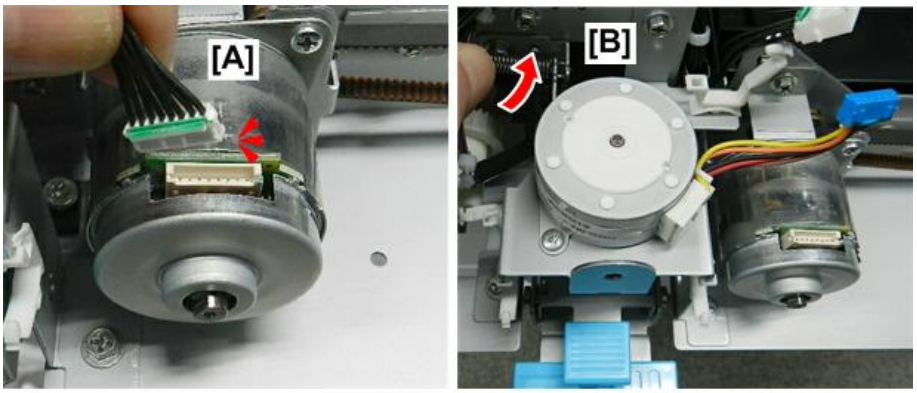
1. Open the front door, and then pull out the duplex unit.
2. Remove the duplex unit front cover. page 4-264
3. Free and raise harness [A] in front of the motor bracket.
4. Disconnect jogger motor [B].



5. Open clamp [A] at right rear of bracket.
6. Open clamp [B] on left side of bracket.



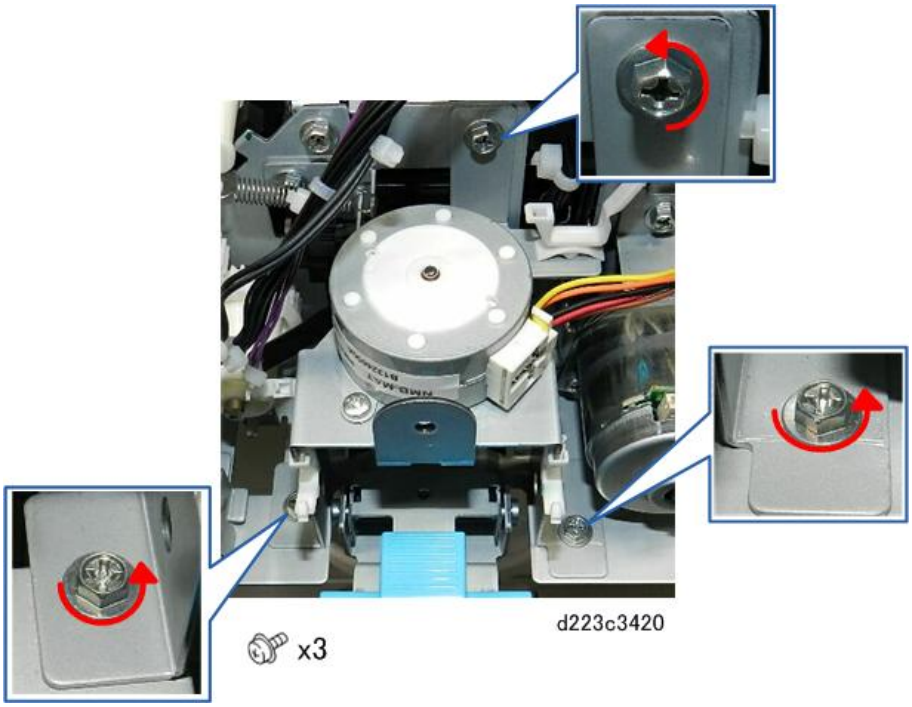
7. Disconnect transport motor [A] on the right.
8. Clear freed harnesses around jogger motor [B].



d223c3419

x1

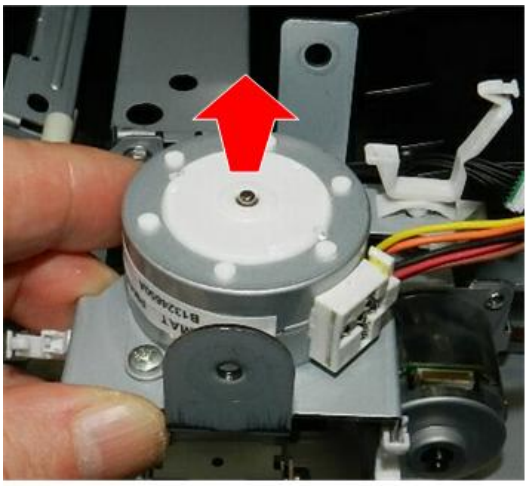
9. Disconnect jogger motor bracket.



d223c3420

x3

10. Remove bracket with motor attached.



d223c3421

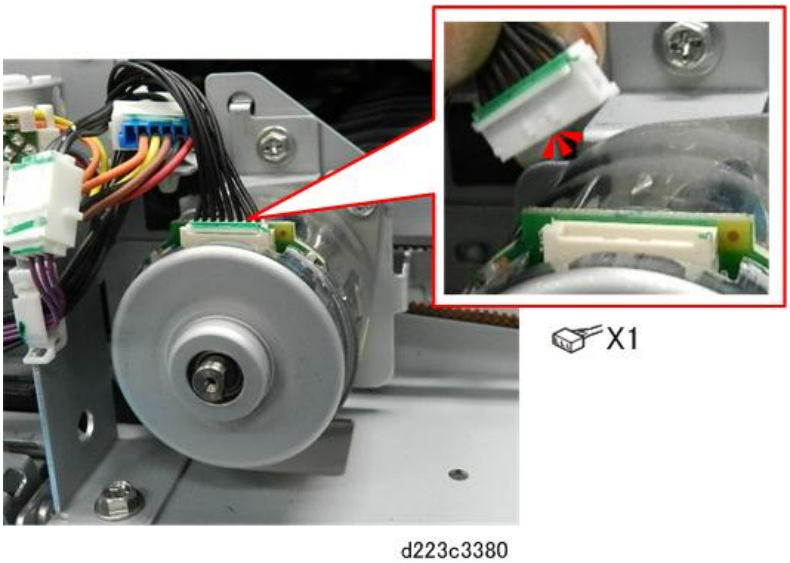
11. Separate motor and bracket.

x2

d223c3422

Duplex Transport Motor

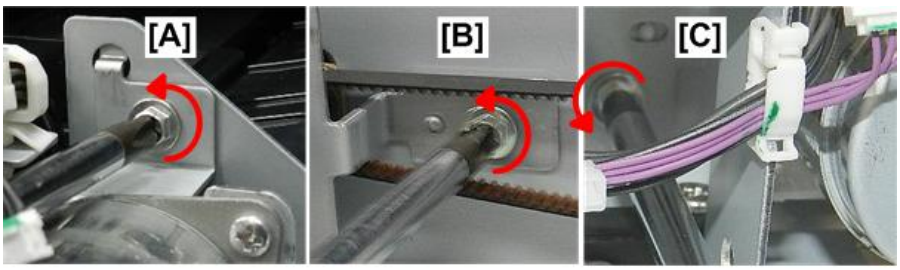
1. Open the front door, and then pull out the duplex unit.
2. Remove the duplex unit front cover. page 4-264
3. Disconnect motor.



X1

d223c3380

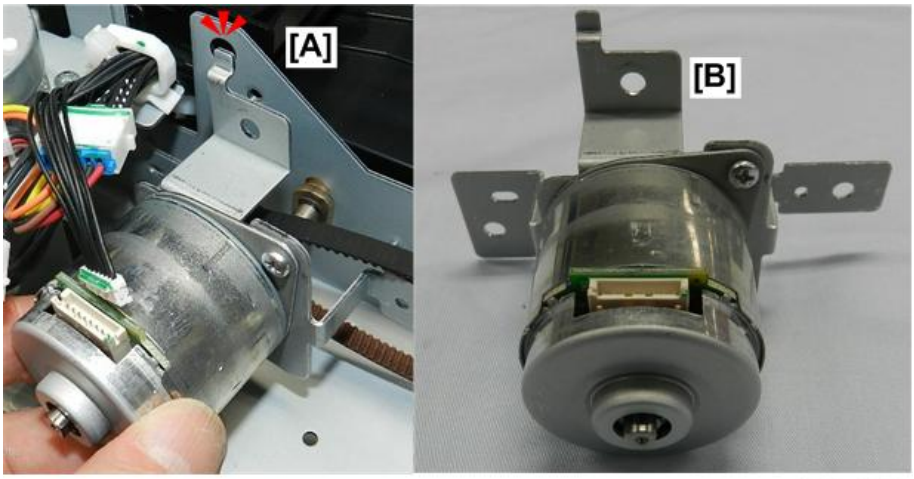
4. Disconnect motor bracket: [A] top, [B] lower right, [C] lower left.



X3

d223c3381

5. Remove bracket [A] with motor attached.
6. Lay the bracket and motor [B] on a flat, clean surface.



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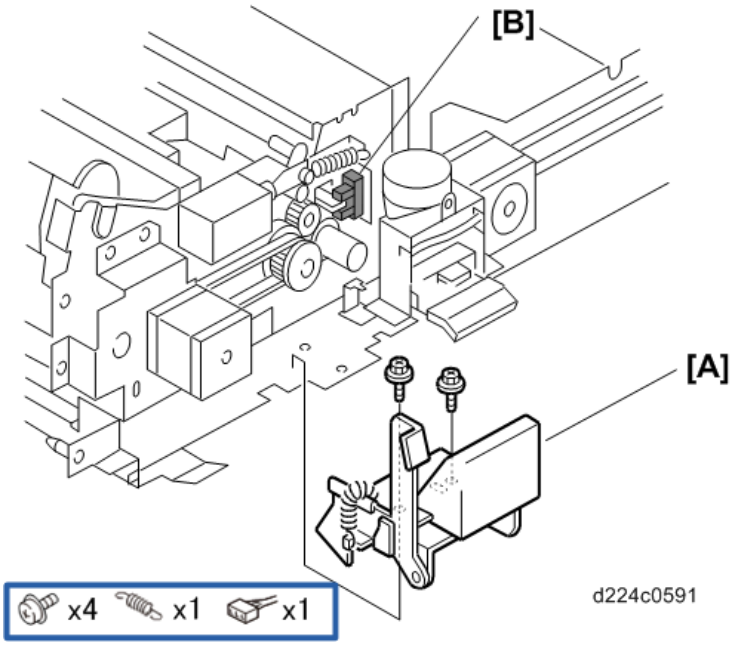
7. Re-install and remove the motor with bracket attached. There is no need to separate motor and bracket.

4.12.4 DUPLEX SENSORS

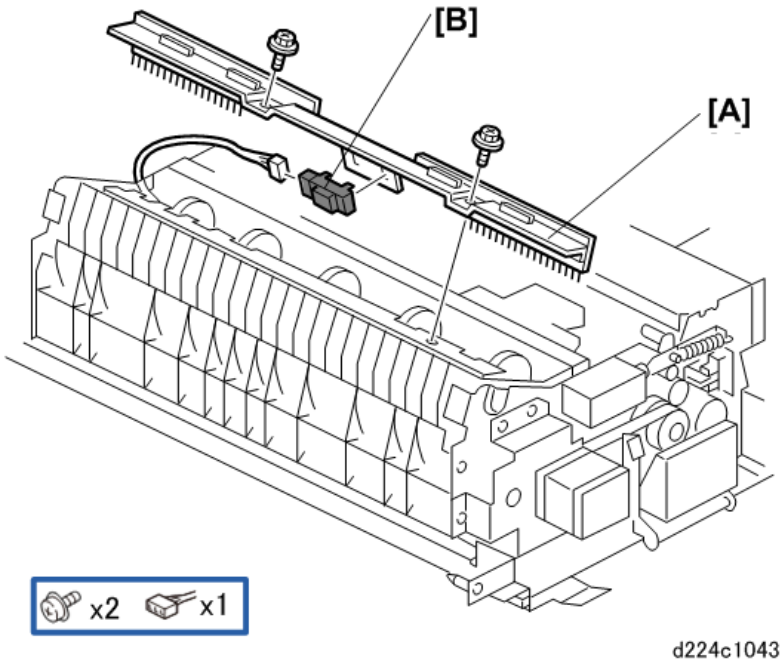
Jogger Fence HP Sensor

1. Disconnect duplex unit release lever [A].
2. Remove jogger HP sensor [B].



Duplex Entrance Sensor

1. Disconnect bracket [A]
2. Remove duplex entrance sensor [B].



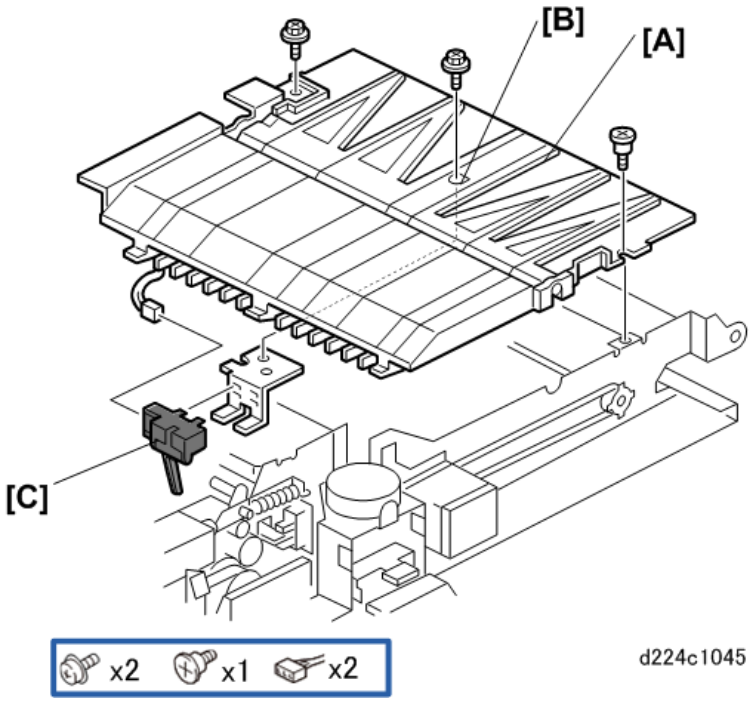
Duplex Transport Sensor 3

1. Disassemble right half of table [A].

Important

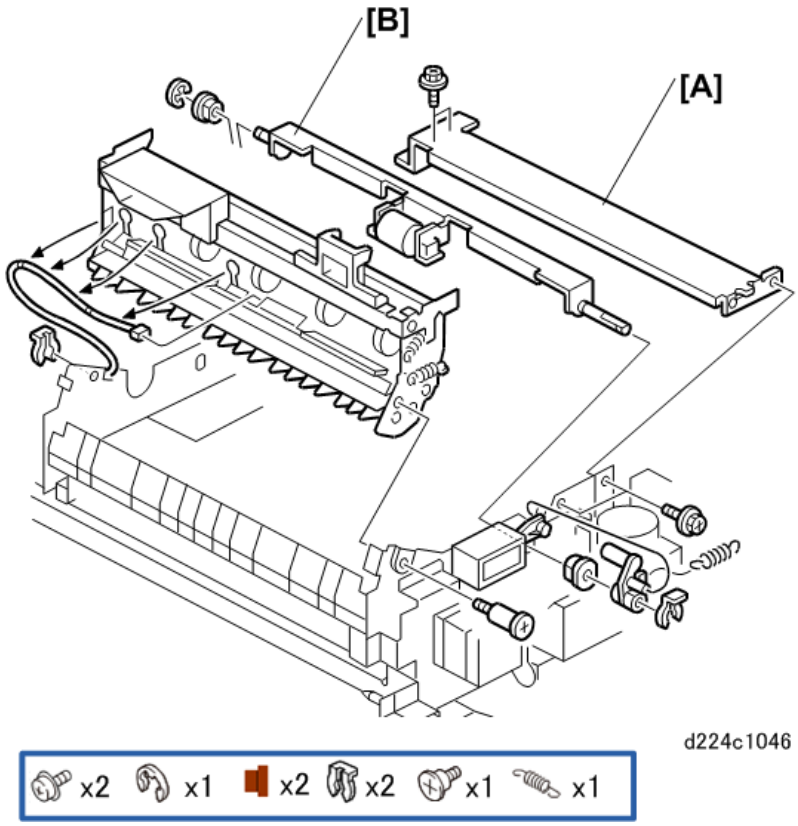
- The front screw is a shoulder screw.

2. Remove screw [B] to release the sensor bracket below.
3. Remove transport sensor 3 [C].



Inverter Exit Sensor, Transport Sensors 1, 2

1. Remove cross-stay [A].
2. Remove reverse trigger roller shaft [B].

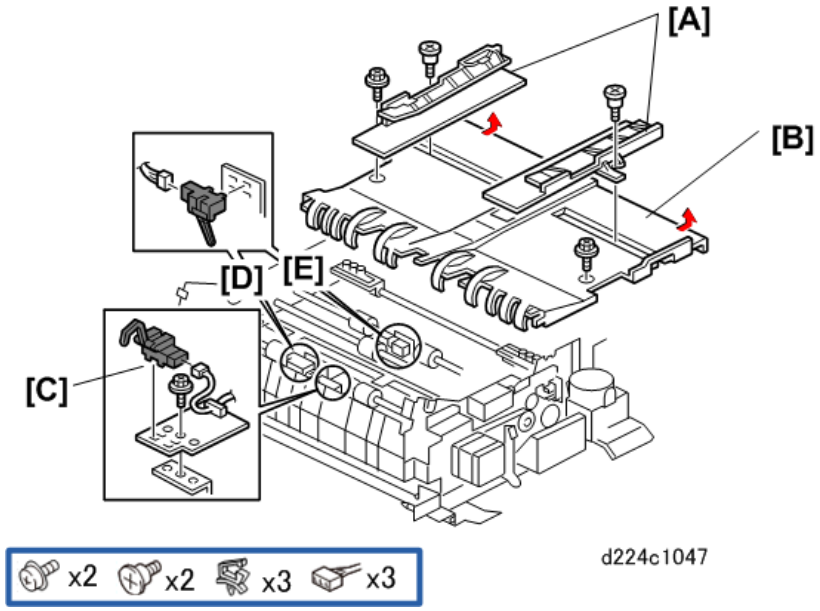


3. Disconnect jogger fences [A].
4. Disassemble left half of table [B].

Important

- The front screw is a shoulder screw.
- To avoid breaking the tabs under the left edge of the table, pull the table to the right to disengage the tabs before you remove it.

5. Remove:
   [C] Inverter exit sensor
   [D] Transport sensor 1
   [E] Transport sensor 2

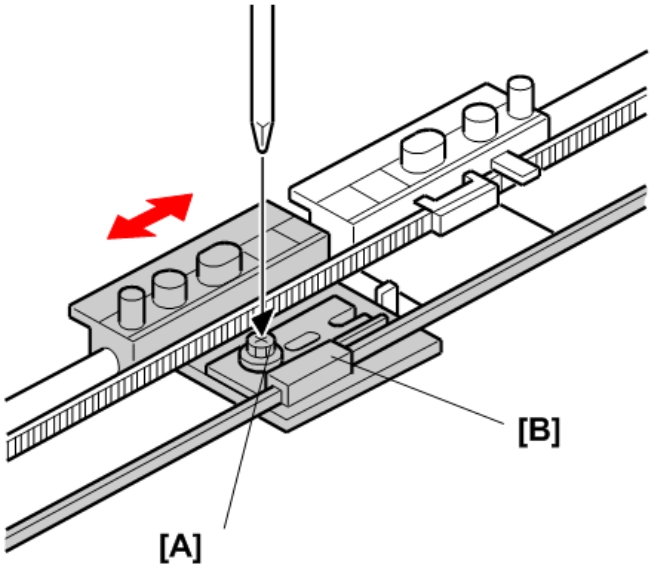


4.12.5 DUPLEX JOGGER BELT ADJUSTMENT

1. Remove cross stay Inverter. (See previous section.)
2. Remove reverse trigger roller shaft Inverter. (See previous section.)
3. Remove the left half of the table and the jogger motor bracket.
   - Slip the one end of the belt around the gear below the jogger motor.
   - Slip the other end of the belt around the gear at the other side of the duplex unit.
4. If you are replacing the belt, set both jogger fence brackets at the center of the belt and tighten the screw [A].

   -or-

   If you are adjusting the belt, loosen the screw and slide the plastic piece [B] on the belt to the left or right to adjust the position of the front fence, then tighten the screw.



4.12.6 IMPORTANT SP CODES: DUPLEX UNIT

Here is a list of SP codes related to testing and servicing the duplex unit.

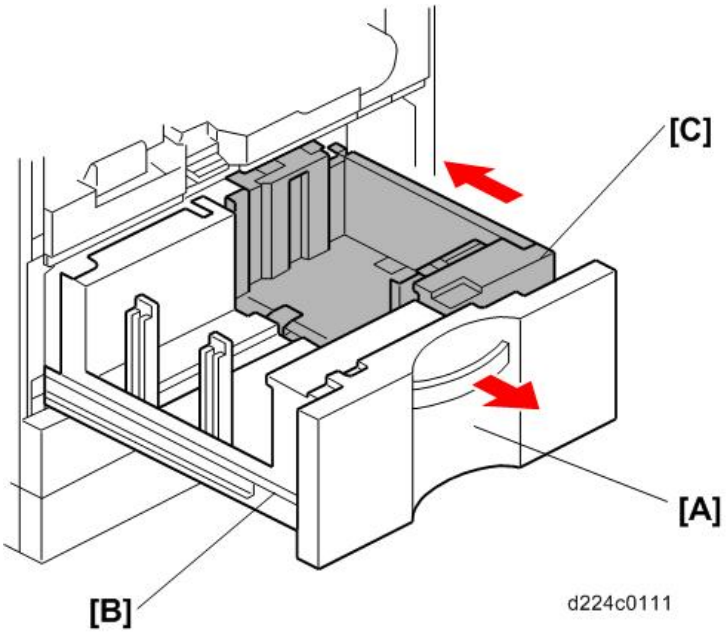
Item	SP No.	Function
Duplex fence adjustment	1008	Adjusts the distance between the jogger fences in the duplexer. A smaller value shortens the distance. If the fences are too far apart, skewing may occur in the duplex tray. If the fences are too close, the paper may be creased in the duplex unit.
Page numbering	5212	Positions horizontally and vertically the page numbers printed on both sides during duplexing.

4.13 PAPER FEED UNITS

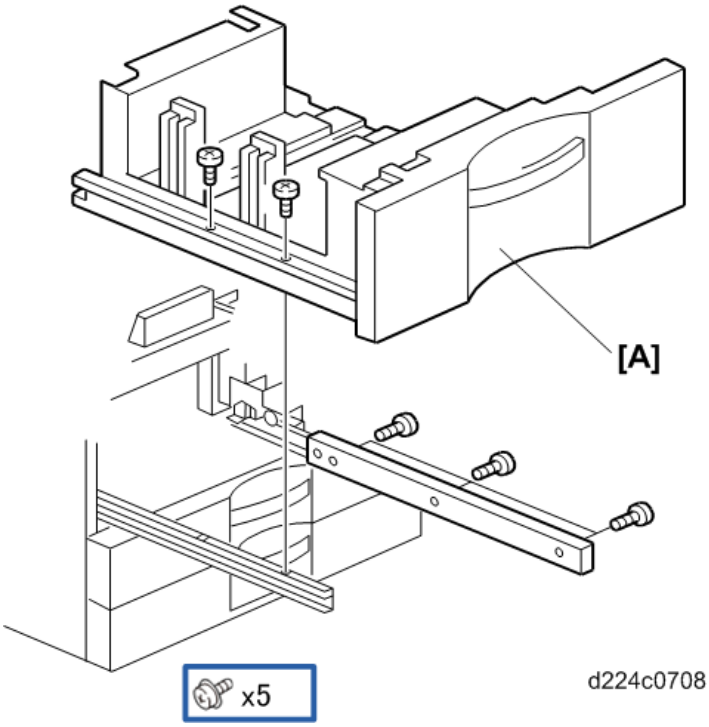
4.13.1 PAPER TRAYS

Tandem Tray

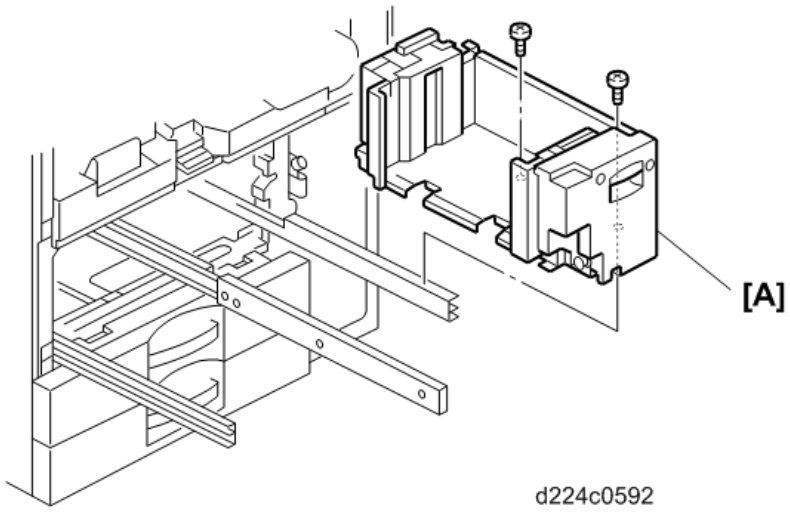
1. Open the front door.
2. Pull out the Tray 1 [A] completely to separate the left [B] and right [C] sides of the tandem tray.



3. Remove the left tandem tray [A] (x 5).



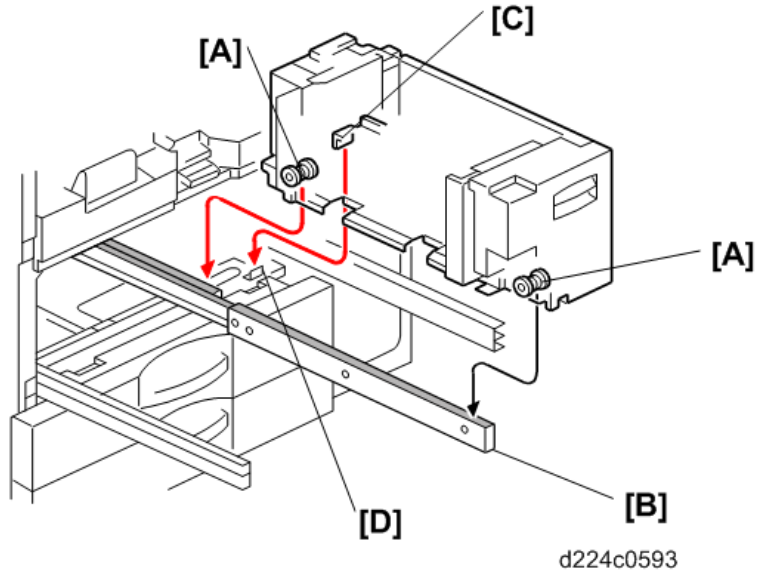
4. Right tandem tray [A].



Re-assembly

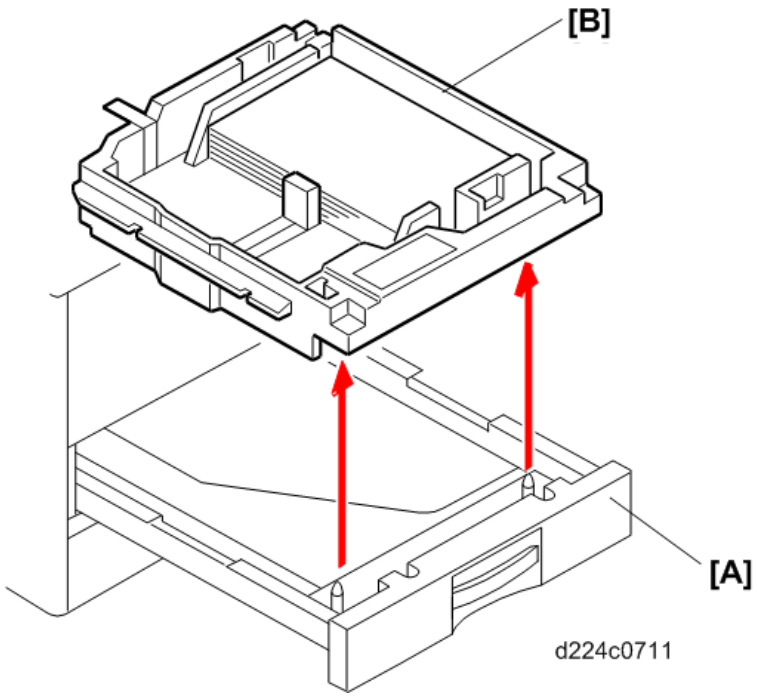
When re-installing the right tandem tray:

1. Make sure that the wheels [A] ride on the slide rail [B].
2. Make sure that the tandem tray stopper [C] is set behind the stopper [D] on the frame.



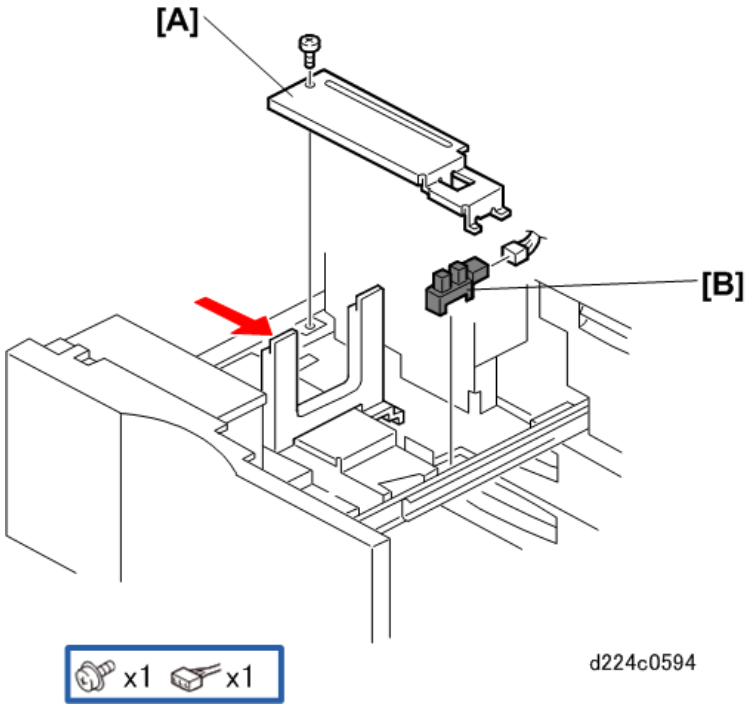
Universal Trays

1. Pull out Tray 2 or Tray 3 [A].
2. Lift the tray [B] out of the drawer.



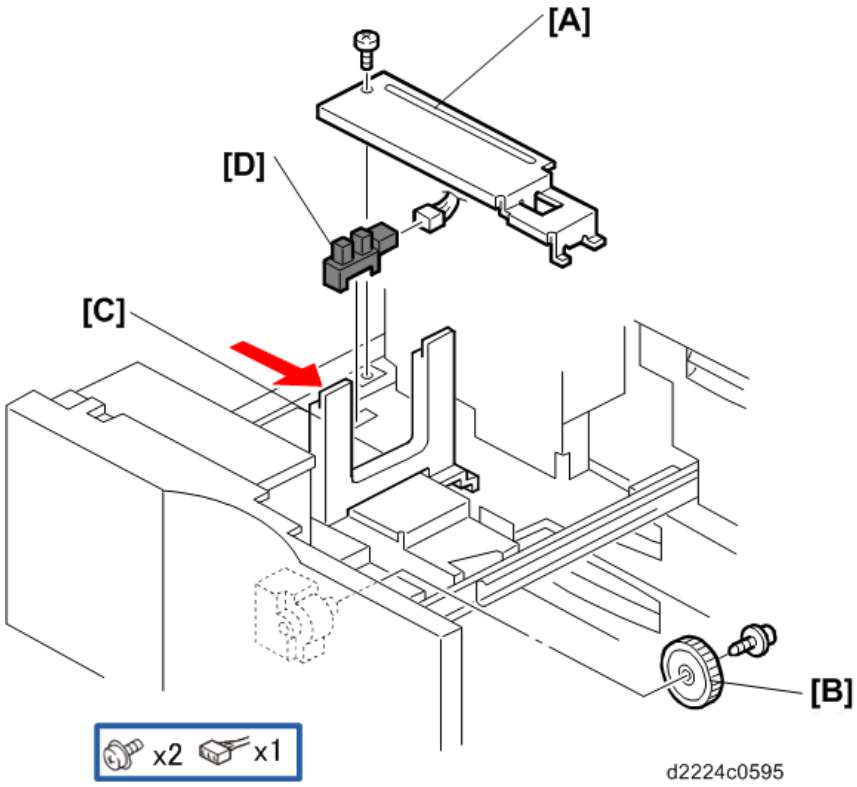
4.13.2 REAR FENCE RETURN SENSOR

1. Turn off the machine.
2. Pull out Tray 1, the tandem feed tray.
3. Remove rear bottom plate [A].
4. Remove return sensor [B].



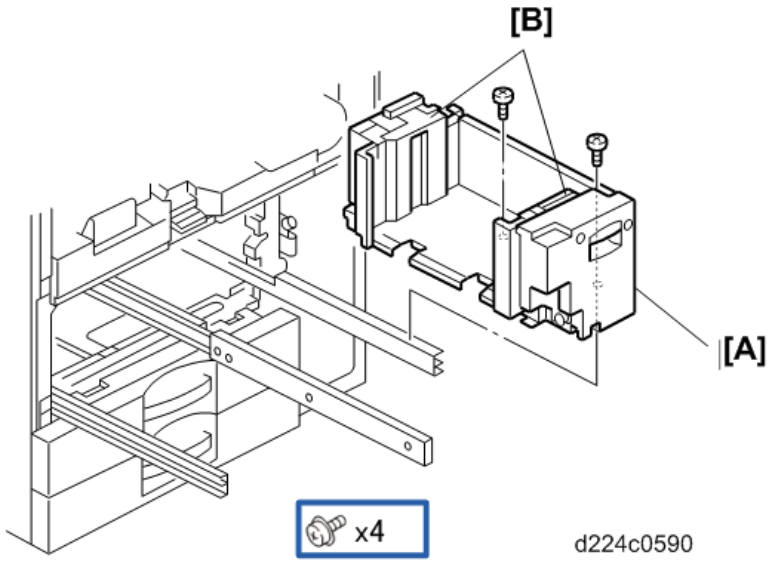
4.13.3 REAR FENCE HP SENSOR

1. Turn the machine off.
2. Pull out Tray 1, the tandem feed tray.
3. Remove rear bottom plate [A].
4. Remove back fence transport gear [B].
5. Push the back fence [C] to the right.
6. Remove rear HP sensor [D].

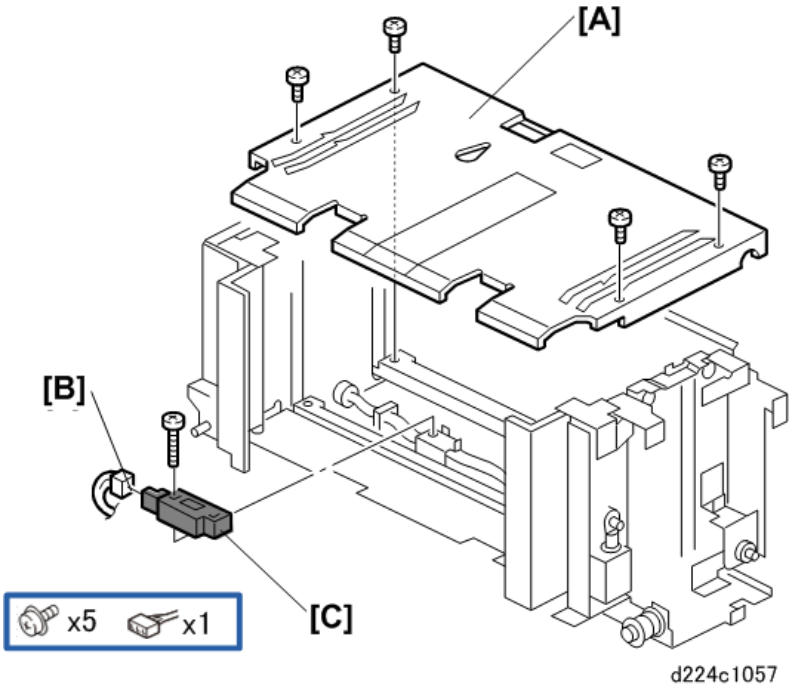


4.13.4 TANDEM RIGHT TRAY PAPER SENSOR

1. Turn off the machine.
2. Remove the right tandem tray page 4-278
3. Remove cover [A].
4. Side fences [B].



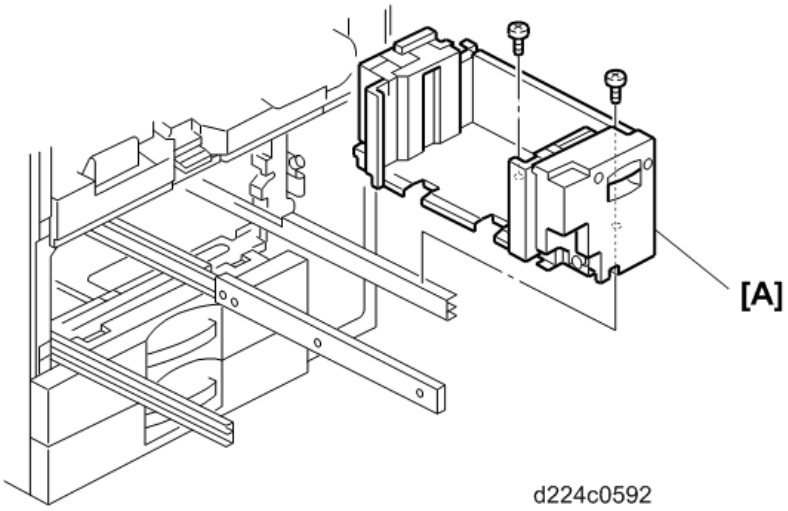
5. Remove bottom plate [A]
6. Disconnect sensor [B].
7. Remove sensor [C].



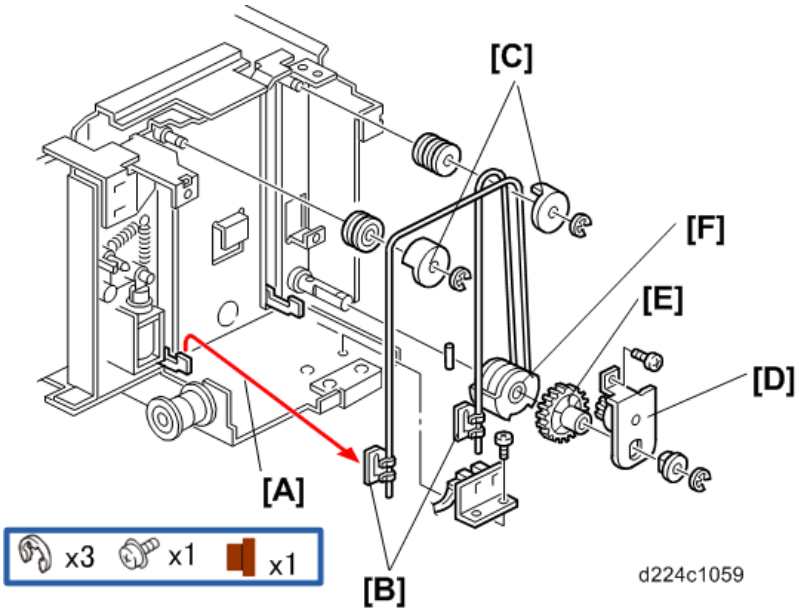
4.13.5 BOTTOM PLATE LIFT WIRE

Before replacing the rear bottom plate lift wire, remove the front bottom plate lift wire. The shaft must be removed to replace the lift wire of the bottom plate.

1. Remove Tray 1, tandem tray. page 4-278
2. Remove the inner cover [A].



3. Remove the left stay [A].
4. Lift the front bottom plate slightly, and then unhook the wire stoppers [B]
5. Remove:
   [C] Wire covers
   [D] Bracket
   [E] Gear
   [F] Bottom plate lift wire

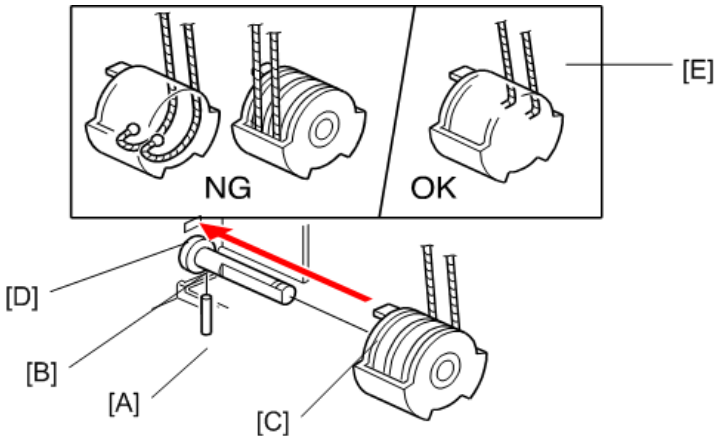


Re-assembly

1. Set positioning pin [A] in hole [B].
2. Set projection [C] in hole [D].
3. Position wire [E] as shown.

Important

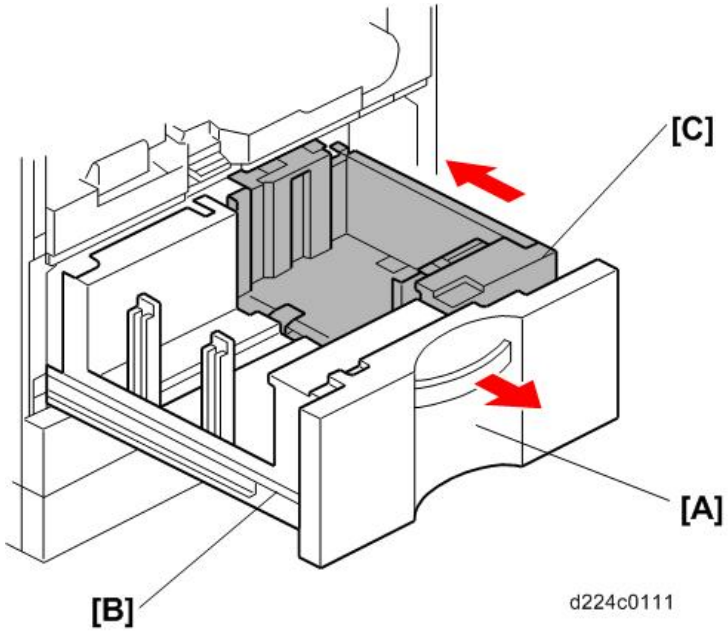
- Do not cross the wires.



4.13.6 TANDEM TRAY PAPER SIZE CHANGE

At the factory, this tray is set up for A4 or LT LEF. Only A4 or LT LEF paper can be used for tandem feed.

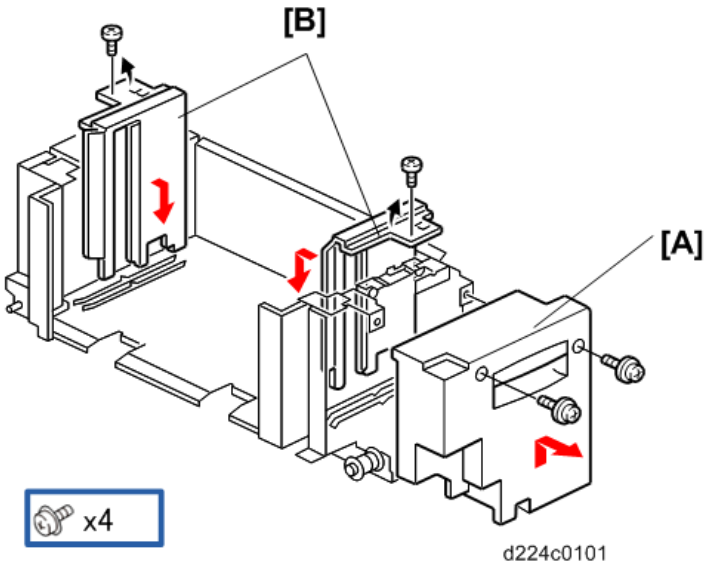
1. Open the front cover.
2. Pull out the Tray 1 [A] completely to separate the left [B] and right [C] sides of the tandem tray.



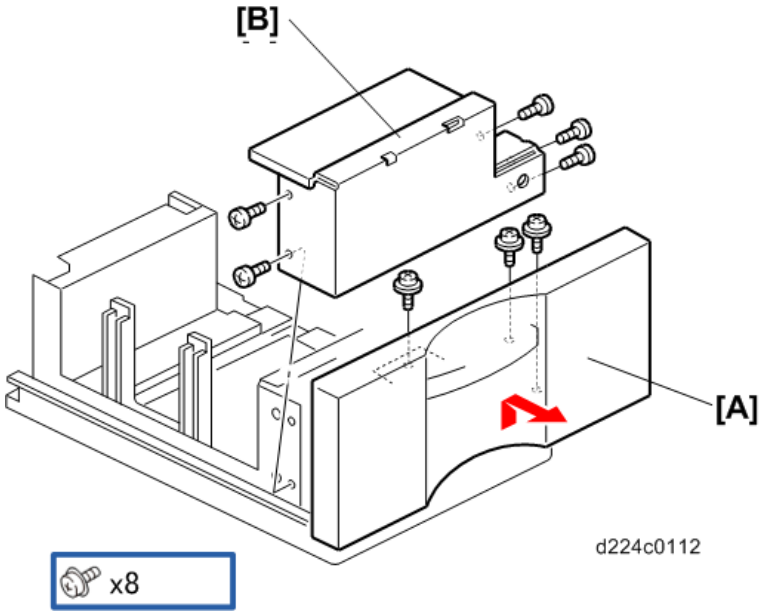
3. Remove the right tandem cover [A].
4. Re-position the side fences [B].

Note

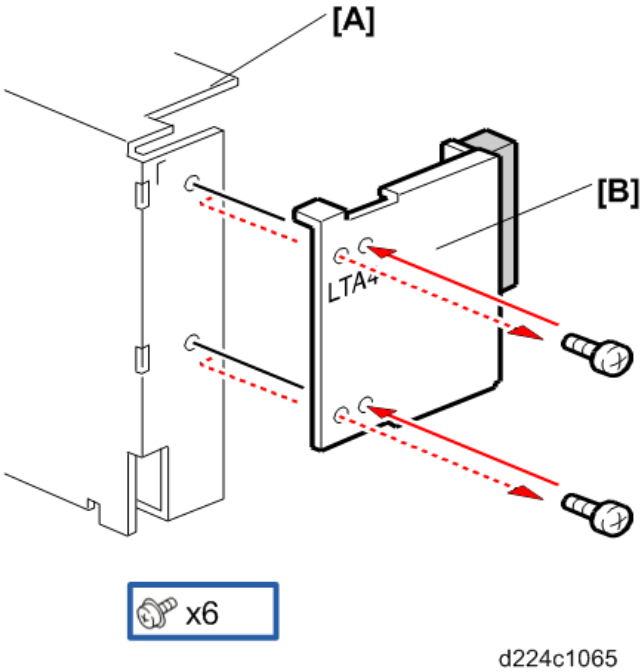
- The outer slots for A4, the inner slots for LT.



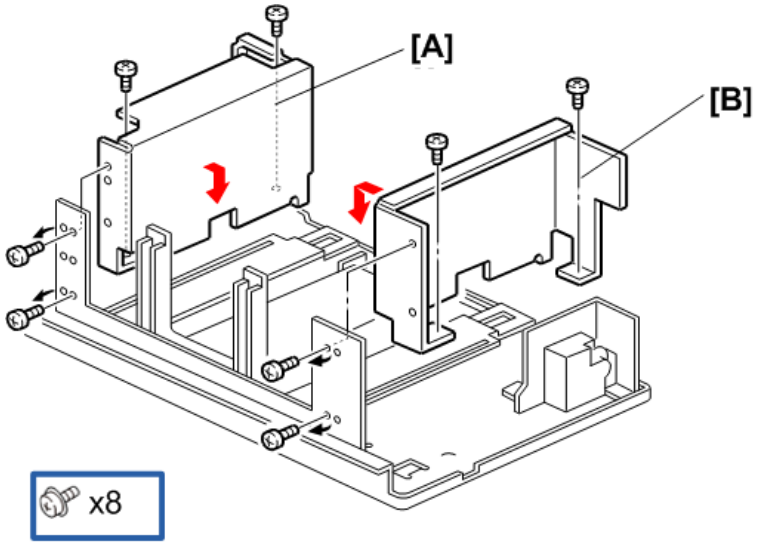
5. Re-install the right tandem inner cover.
6. Remove tray cover [A].
7. Remove the DC motor cover [B].



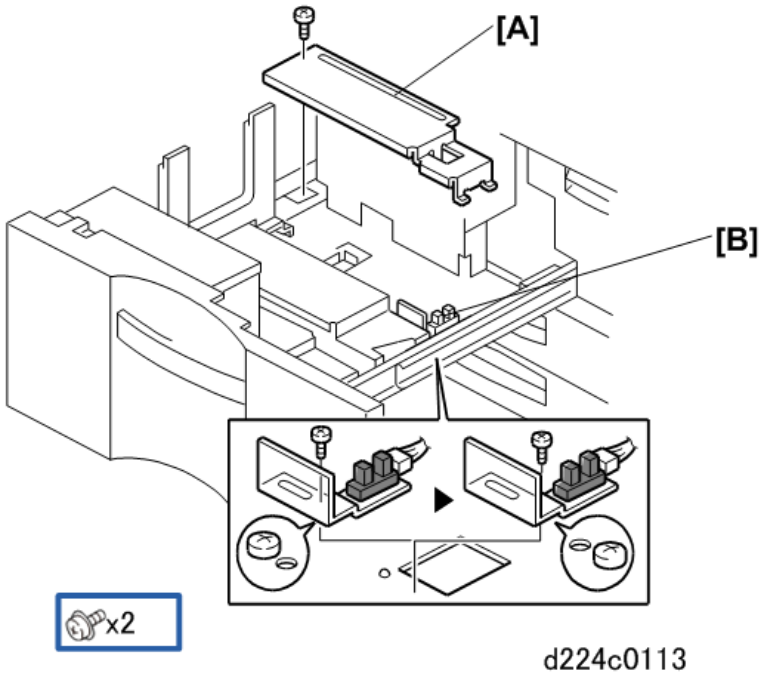
8. Remove the rear side fence [A].
9. Re-position rear cover [B].



10. Re-position the side fences [A], [B].
    - A4: Outer slot position
    - LT: Inner slot position



11. Re-install the DC motor cover and tray cover.
12. Remove the rear bottom plate [A].
13. Re-position the return position sensor bracket [B].
    - To use the paper tray for A4 size, set the screw in the left hole as shown.
    - For LT size, the screw should be placed on the right.



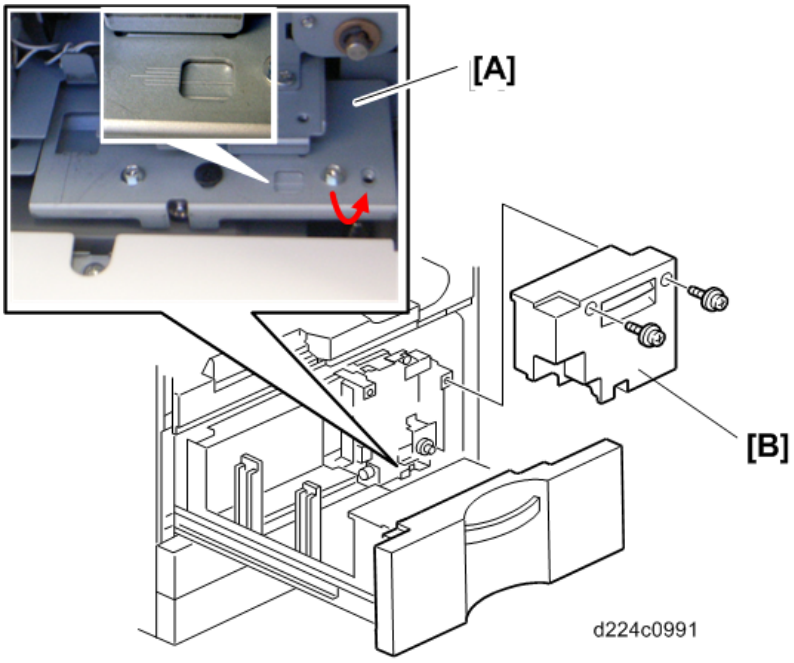
14. Reinstall the rear bottom plate.
15. Enter the new paper size with **SP5959-001** (Paper Size – Tray 1).
16. Do the printer adjustments. page 4-479

4.13.7 TANDEM TRAY SIDE REGISTRATION

Normally the side registration of the image can be adjusted in the SP mode.

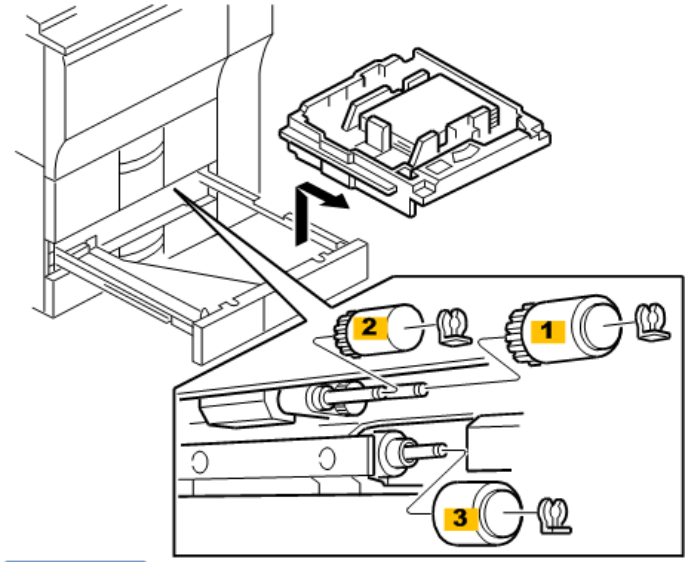
- If the punch hole positions are not aligned from a particular feed station, however, you can manually adjust the side registration by changing the tray cover position for that tray.
- Next, you can adjust the side registration of the image. page 4-479

1. Pull out the tray and remove the right inner cover [A] (x 2).
2. Loosen the screws and adjust the position of the plate [B].
   - Adjustment range: 0 ± 2.0 mm adjustment step: 1.0 mm/step



4.13.8 PICK-UP, FEED, SEPARATION ROLLER

1. Remove the tray.
2. Remove the clip for each roller to replace it.
   [1] Feed roller
   [2] Pick-up roller
   [3] Separation roller



d224c0114

x3

Note

- The same FRR mechanism is used in all the trays, so the rollers are interchangeable between the trays.
- Avoid touching the surface of new rollers during replacement.

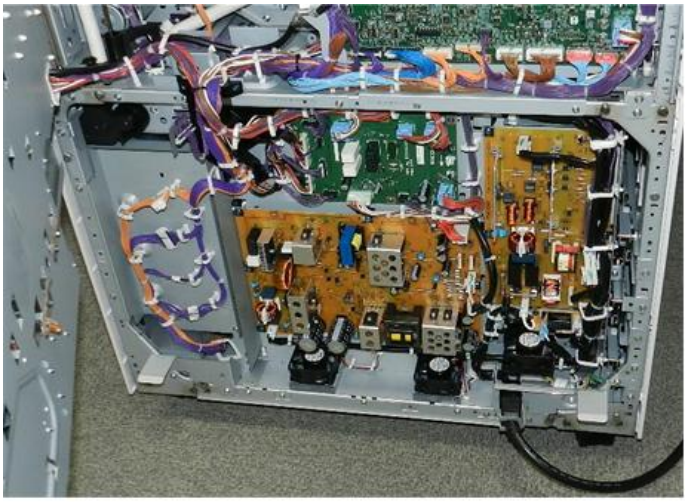
4.13.9 PAPER TRAY LIFT MOTORS, TRAY 1 LOCK SOLENOIDS

Tray Motor, Solenoid Access

1. Turn the machine off and disconnect it from its power source.
2. Remove the rear upper and lower covers. page 4-19
3. Open the controller box. page 4-28

Note

- The tray motors and solenoids are located behind the plate where the RYB, PSU, and AC drive board are mounted.

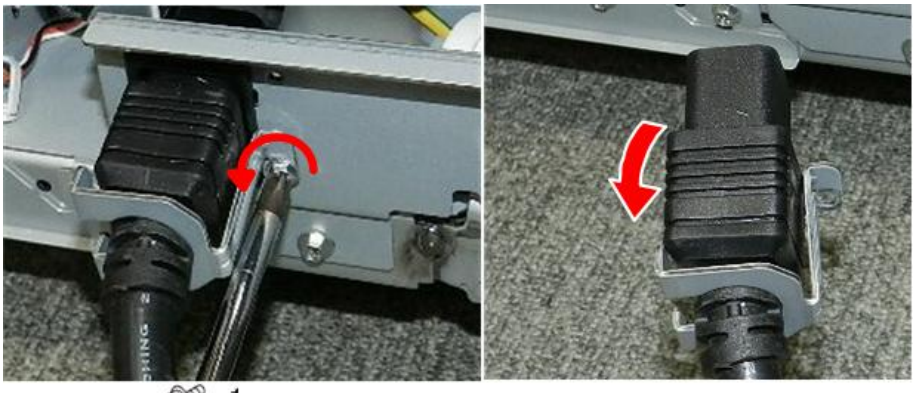


d223c3716

⚠CAUTION

- While you are doing the procedures below, never touch any component on the PSU, especially a heat sink.
- These heat sinks are live and labeled with warnings not to touch them.
- These heat sinks can retain a considerable electrical charge for hours after the machine has been turned off and unplugged.

4. As a safety precaution, disconnect the power cord from the main machine.

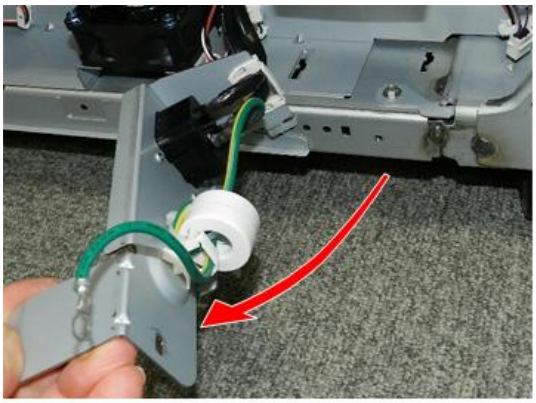


x1

d223c3717

5. Disconnect the left rear corner plate.

6. Pull the plate away from the corner of the machine. Do not remove it.

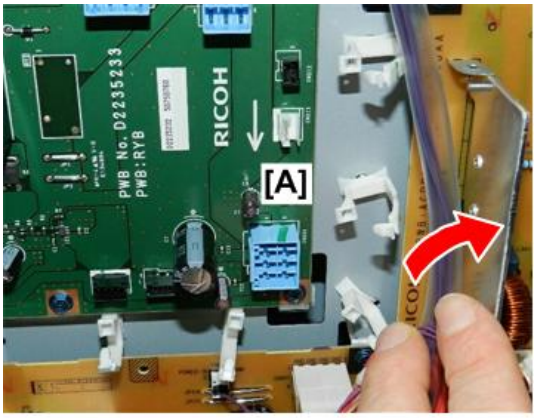


d223c3719

7. Disconnect all harnesses from the RYB, and then open the clamps above the RYB to free the harnesses.

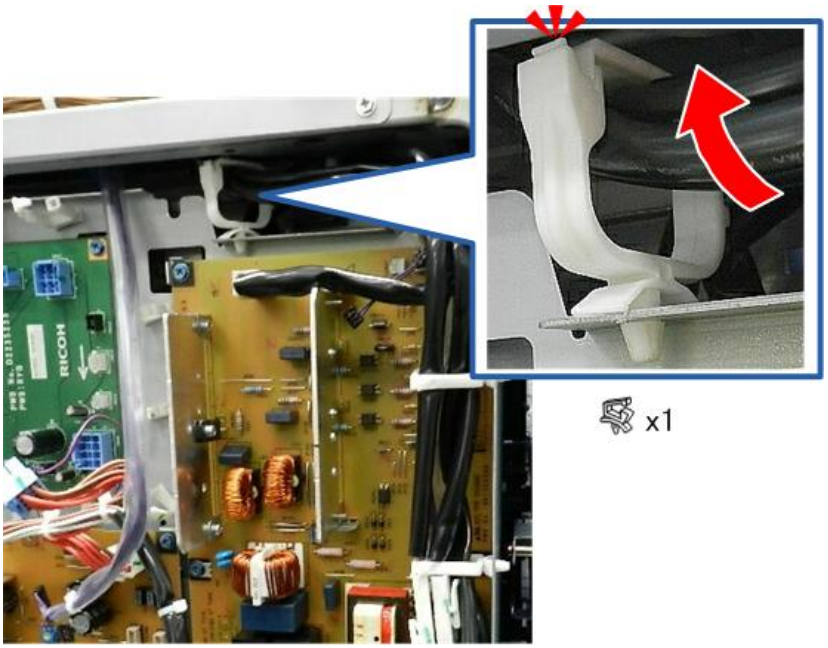
d223c3720

8. Check the insulated harness on the right side of the RYB [A] and confirm that it is disconnected and free.



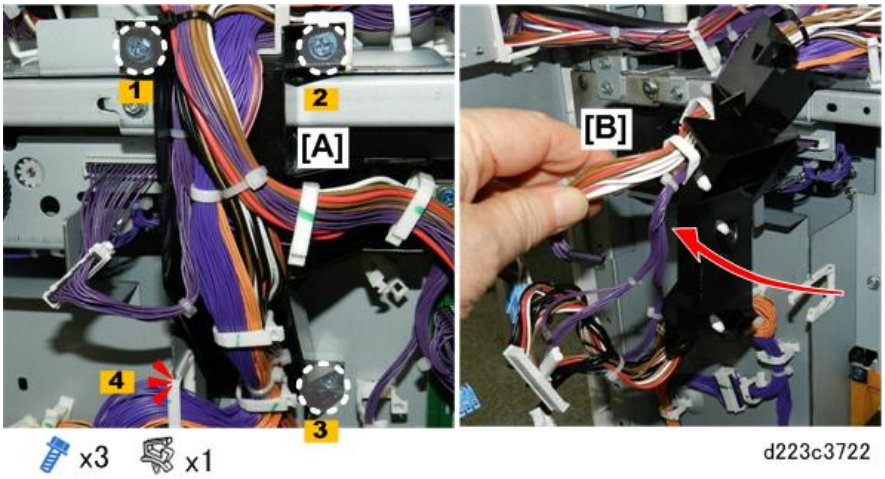
d223c3721

9. At the top of the AC drive board, open the clamp and free the large harnesses.



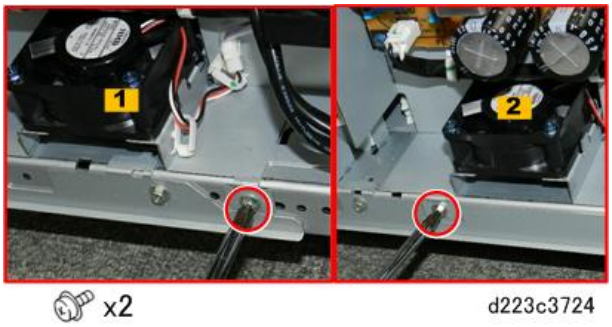
d223c3744

10. Near the left edge of the RYB, disconnect the harness guide bracket [A] by removing screws [1], [2], [3], and edge clamp [4].
11. Push the guide bracket and harnesses [B] to the left away from the board.

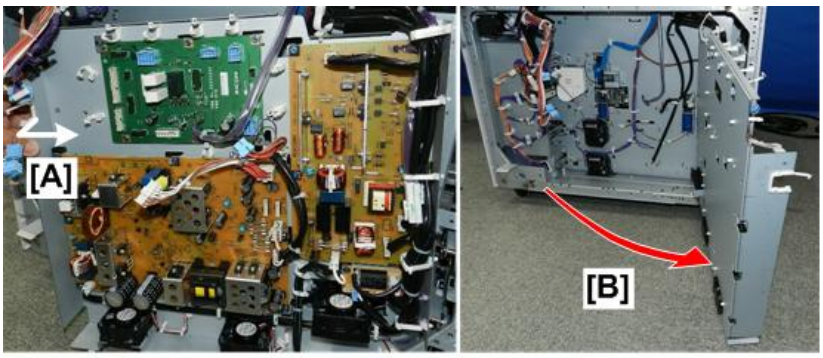


12. Disconnect the mounting plate at on the left side of the RYB [1], on the right side of the RYB [2], and near the lower right corner of the AC drive board [3].

13. Continue to disconnect the mounting plate near fan [1] and then fan [2].

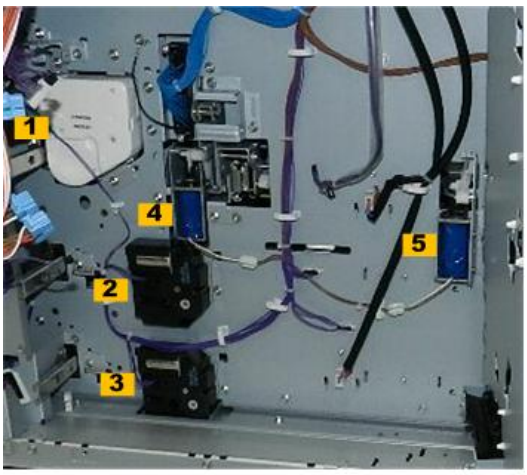


14. Slowly, disconnect the left edge of the mounting plate [A], and then swing it open [B].



d223c3725

15. With the mounting plate open, you can see the hidden components.



d223c3726

1	Tray 1 Lift Motor
2	Tray 2 Lift Motor
3	Tray 3 Lift Motor
4	Right Tray Lock Solenoid (in Tray 1)
5	Left Tray Lock Solenoid (in Tray 1()

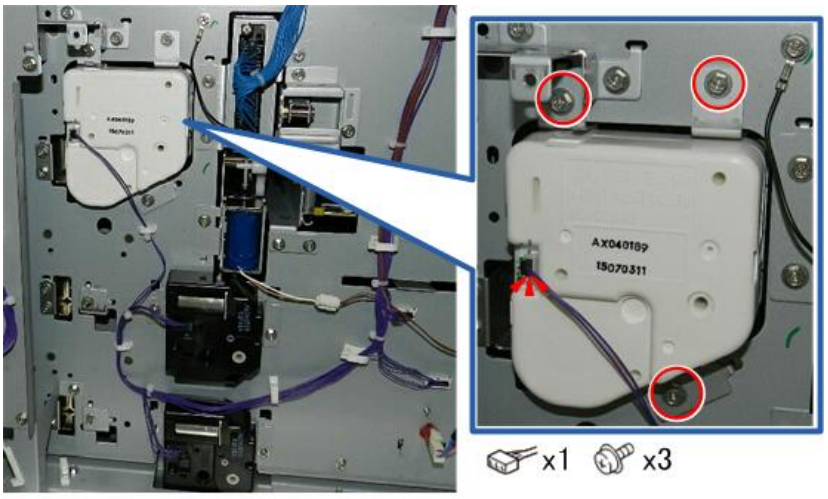
Note

- Before you service any of these components, be sure to open the trays at the front so the motor drives and solenoid arms are disengaged.

d223c3727

Tray 1 Lift Motor

1. Open the board mounting plate. page 4-291
2. Disconnect the motor bracket.



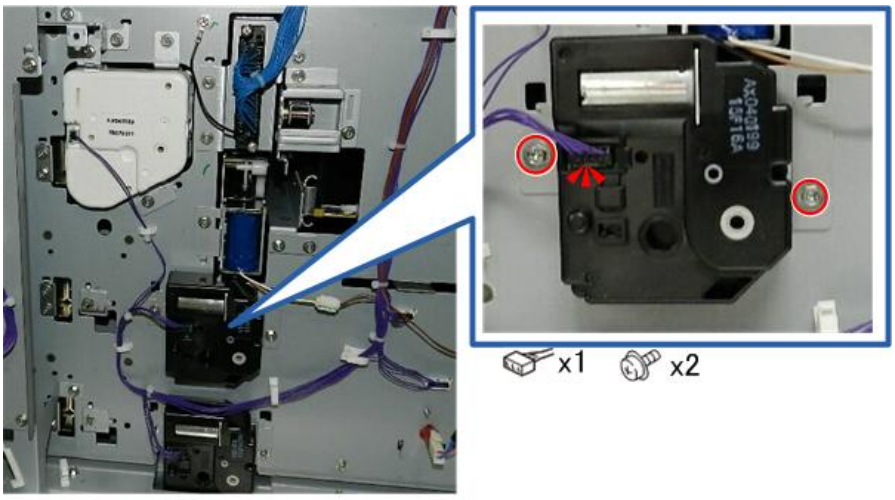
d223c3728

3. Unhook the motor and remove it.

d223c3729

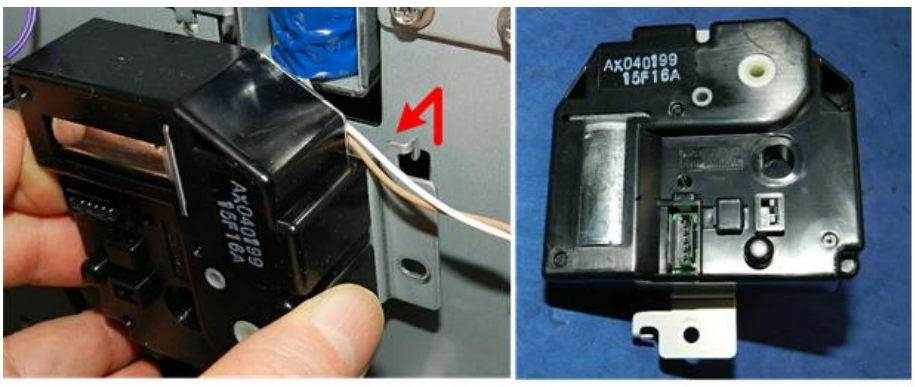
Tray 2 Lift Motor

1. Open the board mounting plate. page 4-291
2. Disconnect the motor bracket.



d223c3730

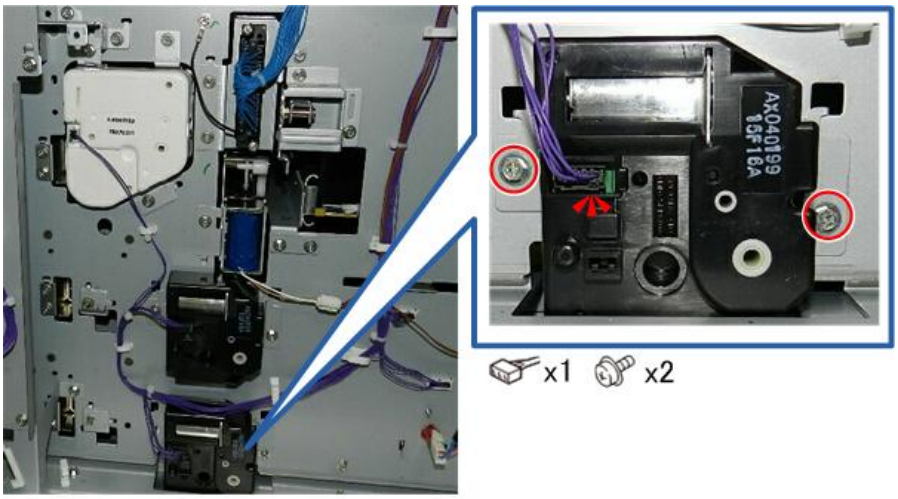
3. Unhook the motor and remove it.



d223c3731

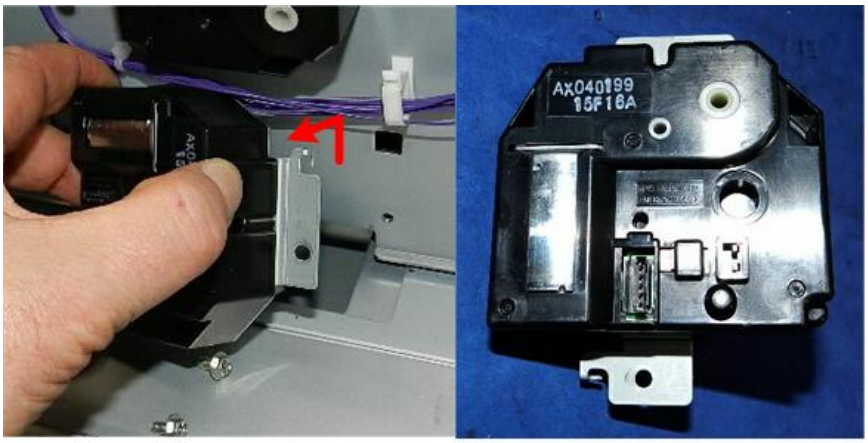
Tray 3 Lift Motor

1. Open the board mounting plate. page 4-291
2. Disconnect the motor bracket.



d223c3732

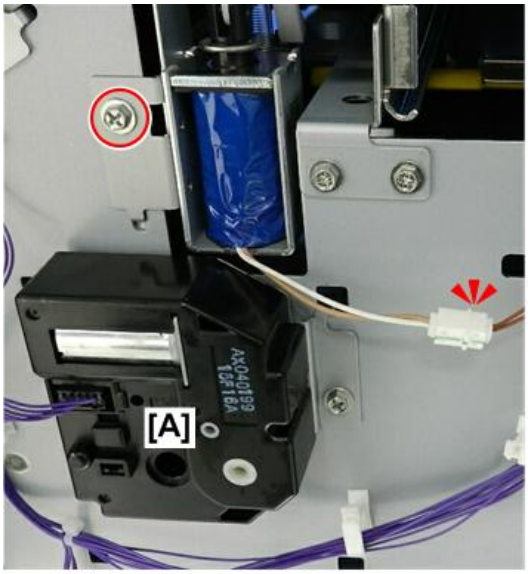
3. Unhook the motor and remove it.



d223c3733

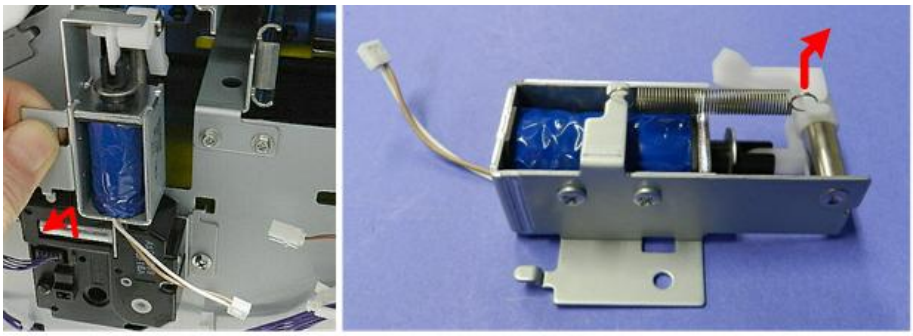
Right Tray Lock Solenoid

1. Open the board mounting plate. page 4-291
2. The right tray lock solenoid locks the right half of the tandem tray (Tray 1) during machine operation. It is located above Tray 2 lift motor [A].
3. Disconnect the solenoid.



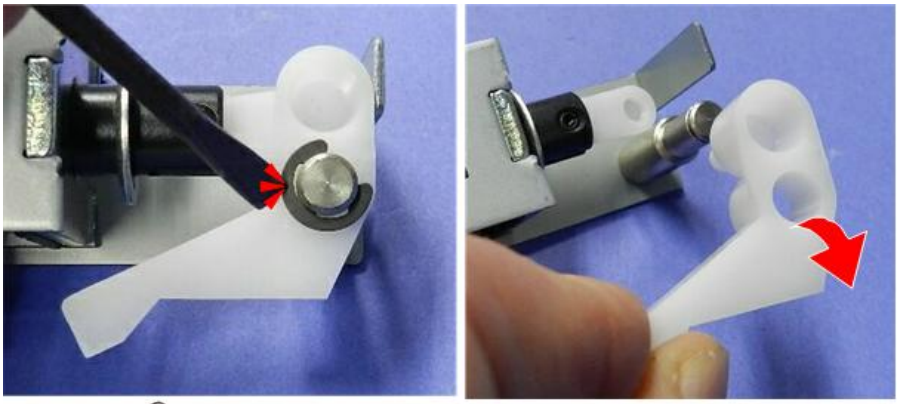
x1 x1 d223c3734

4. Unhook the solenoid from the frame, and then lay it on a flat, clean surface.
5. Disconnect the spring.



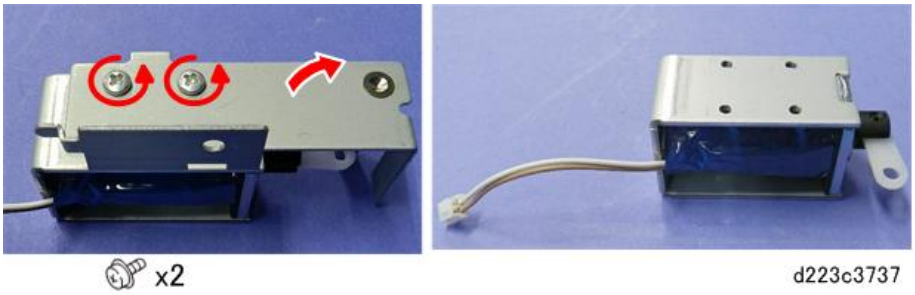
x1 d223c3735

6. Disconnect the extension arm.



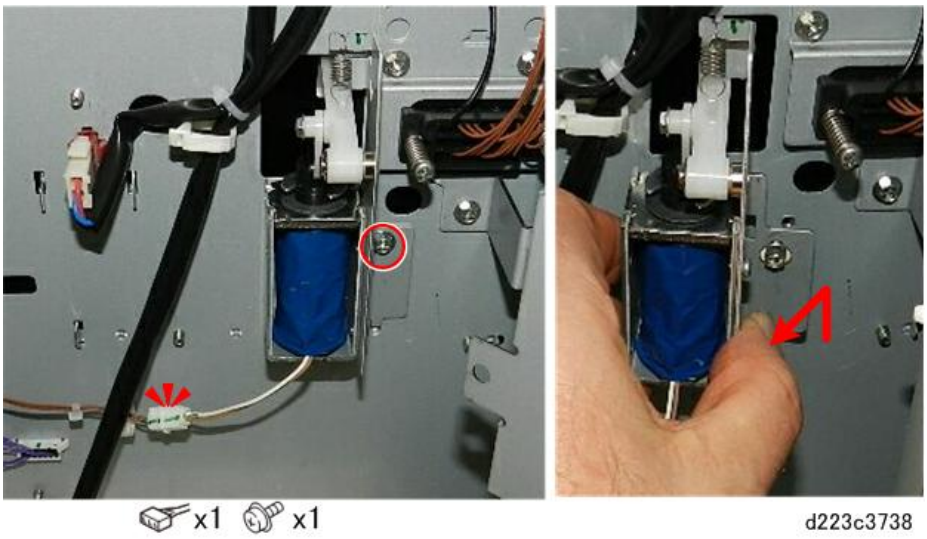
x1 d223c3736

7. Disconnect and then remove the mounting plate.



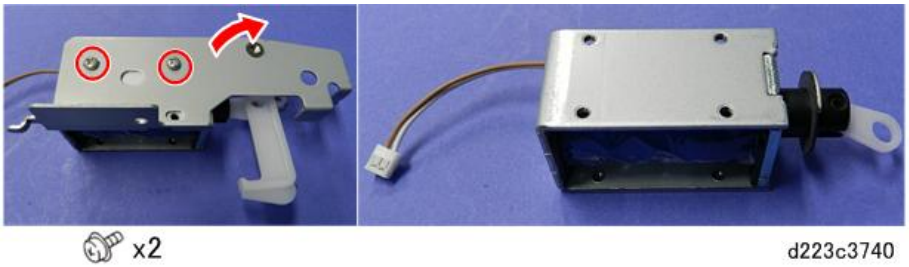
Left Tray Lock Solenoid

1. Open the board mounting plate. page 4-291
2. The left tray lock solenoid locks the left half of the tandem tray (Tray 1) during machine operation. It is located to the right of the right tray lock solenoid.
3. Disconnect the solenoid.



4. Lay the solenoid on a flat, clean surface, and then remove the extension arm.

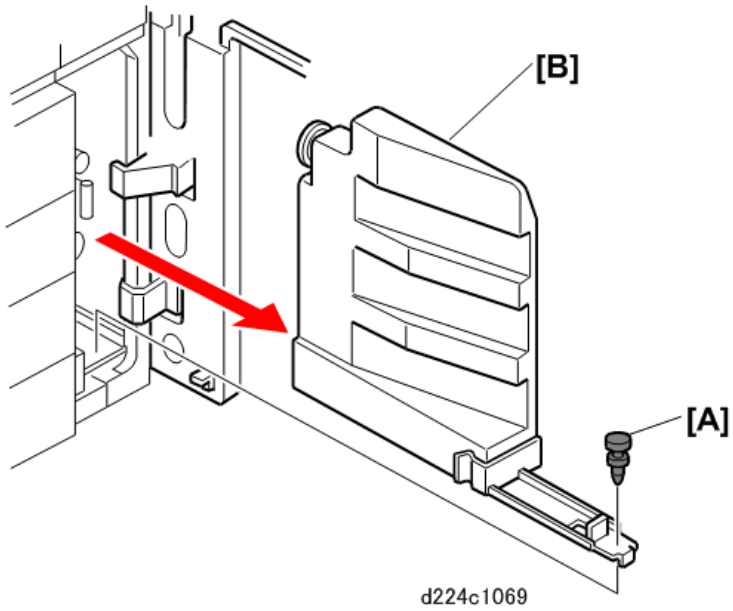
5. Disconnect and then remove the mounting plate.



4.13.10 PAPER FEED UNIT REMOVAL

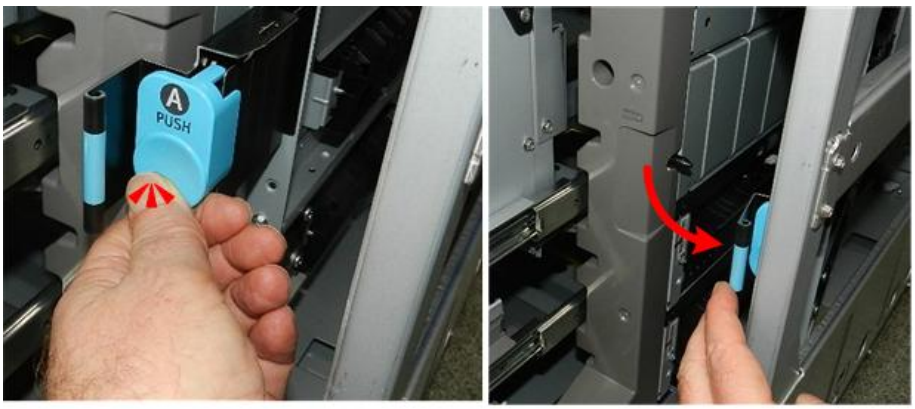
There are three paper feed units, one for each tray.

1. Take off the front door. page 4-15
2. Remove the right covers. page 4-16
3. If the LCIT is connected, disconnect it and pull it away from the machine.
4. Pull out all three trays completely but do not remove them.
5. Pull peg [A] and remove toner bottle [B] with its base.



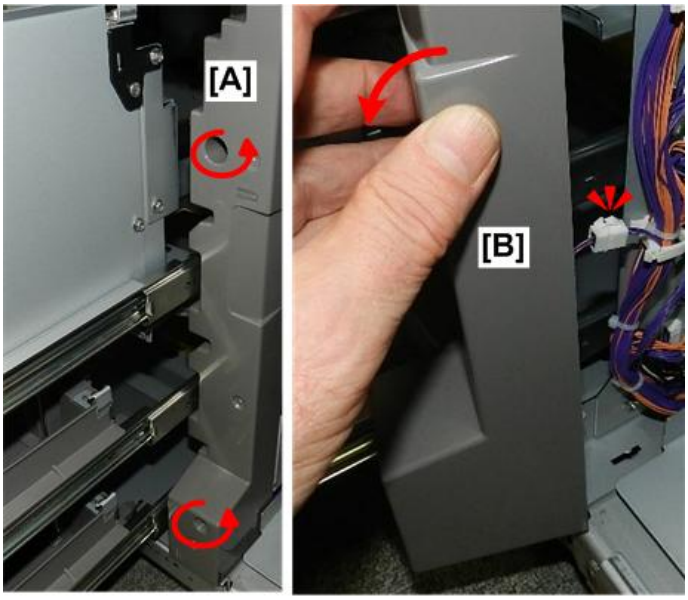
d224c1069

6. Open the vertical transport guide.



d223c3385

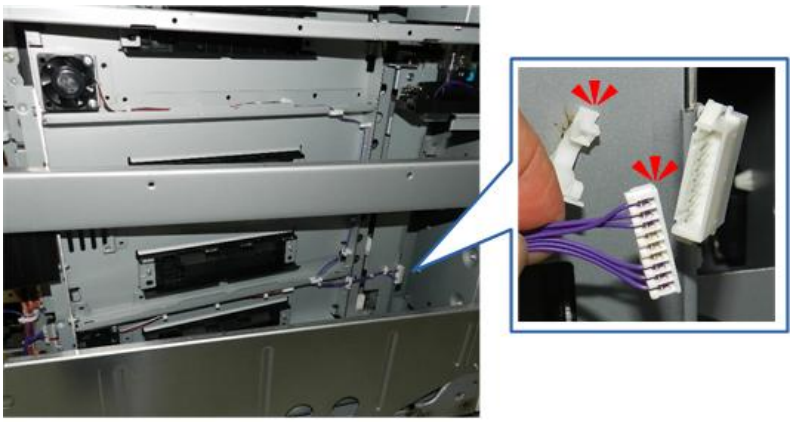
7. Disconnect vertical cover [A].
8. Pull it away slightly, and then disconnect the LED harness [B].



x2 x1

d223c3386

9. At the rear, disconnect the fan harness at the rear right corner of the vertical transport guide plate.



x1

d223c3387

10. Lift the vertical guide to disconnect it, and then pull it out of the machine.

d223c3388

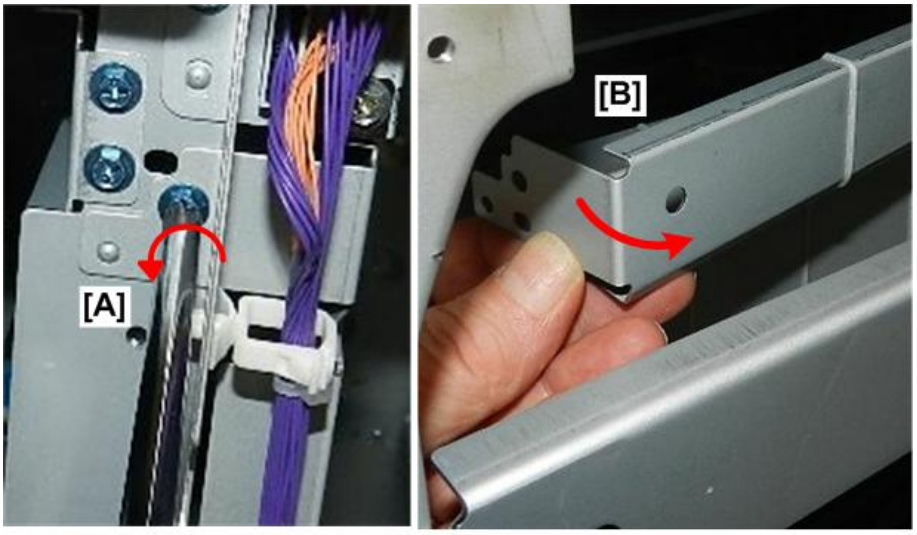
Tray 1 PFU

Note

- This procedure is for Tray 1 only. If you are servicing Tray 2 or Tray 3, just go to the next section below.

There is a guide plate above the PFU of Tray 1 that must be removed before you can remove the Tray 1 PFU.

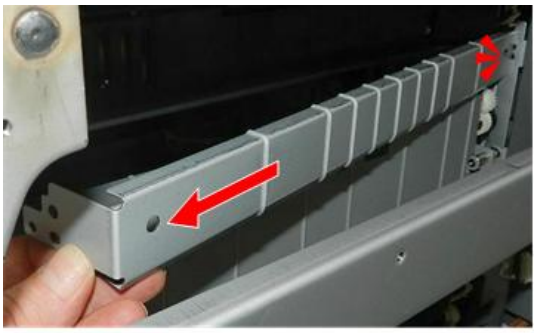
1. At the front [A] remove the guide plate screw.
2. Swing the front of the plate [B] slightly to the right.



x1

d223c3389

3. Disconnect the rear end of the machine, and then pull it out.

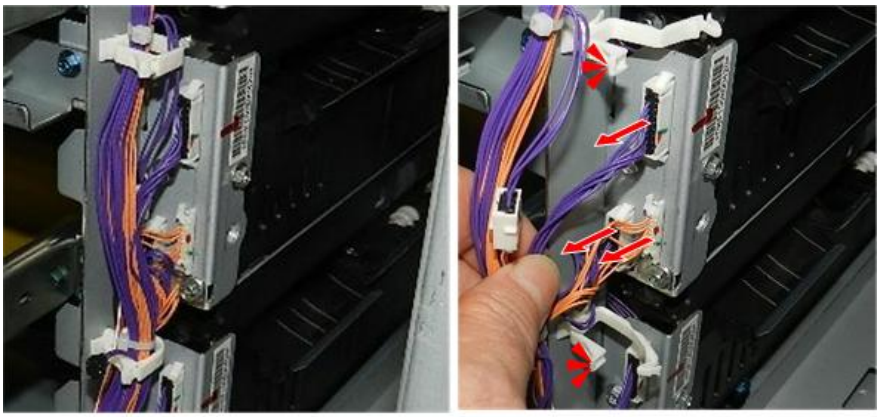


d223c3390

Tray 1, 2, 3 PFU

The remaining steps for PFU removal are basically the same for all PFUs. Each PFU has three connectors and one lock screw at the front.

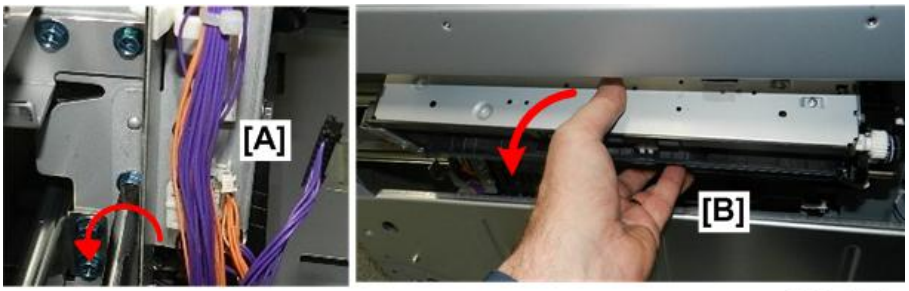
1. Free the harnesses in front of the PFU that you want to remove.
2. Disconnect the PFU.



d223c3391

x2 x2

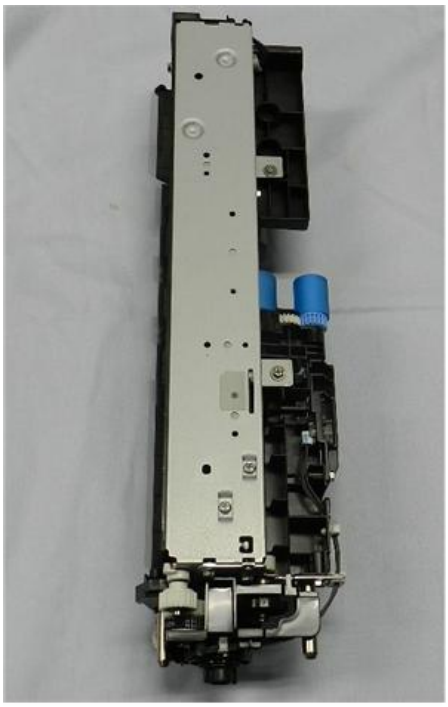
3. Remove the lock screw.
4. Remove the PFU through the side of the machine.



d223c3392

x1

5. Lay the PFU on a flat, clean surface.

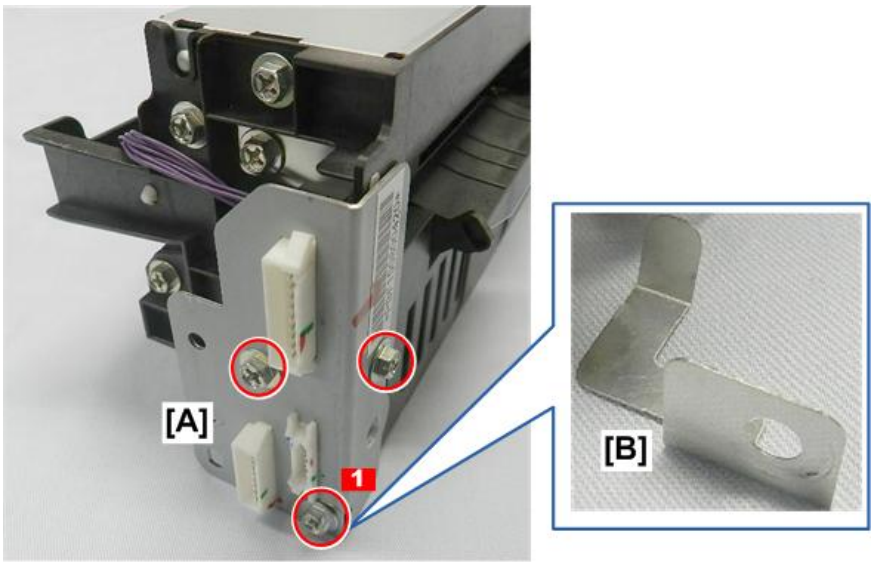


d223c3393

4.13.11 PAPER FEED MOTORS

One paper feed motor is encased in each PFU unit.

1. Remove the feed unit, and then lay it on a flat, clean surface. Feed Unit Removal
2. Disconnect the corner bracket [A].
3. Remove the ground plate [B].

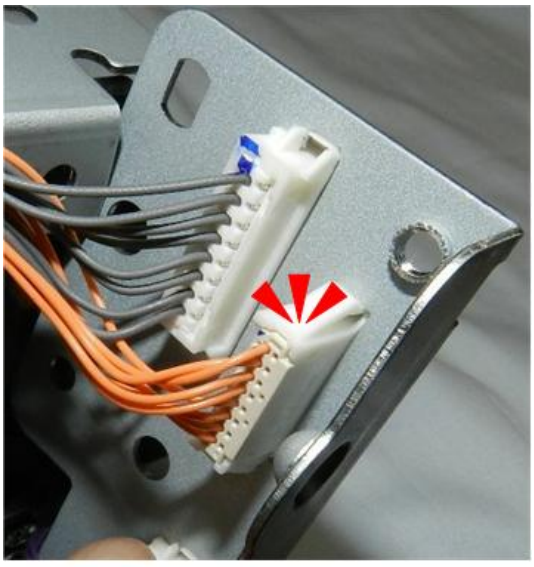


x1 x2 d223c3394

Important

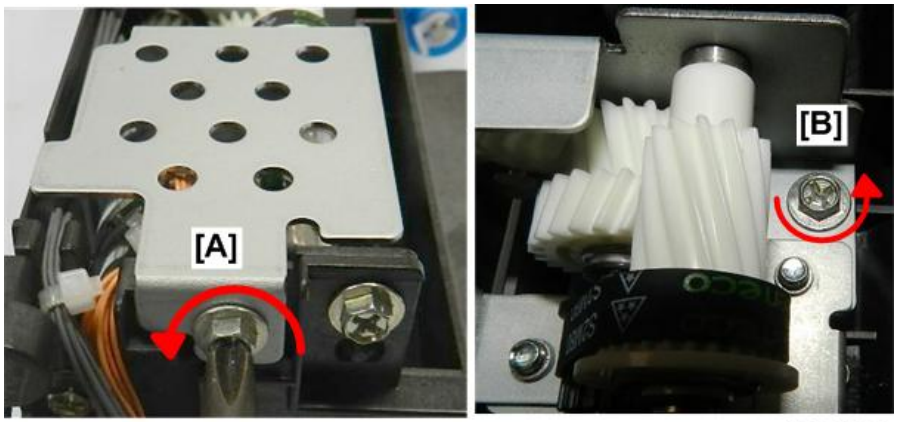
- The lowest screw [1] is a machine screw. The other two screws are tapping screws.

4. Disconnect the motor.



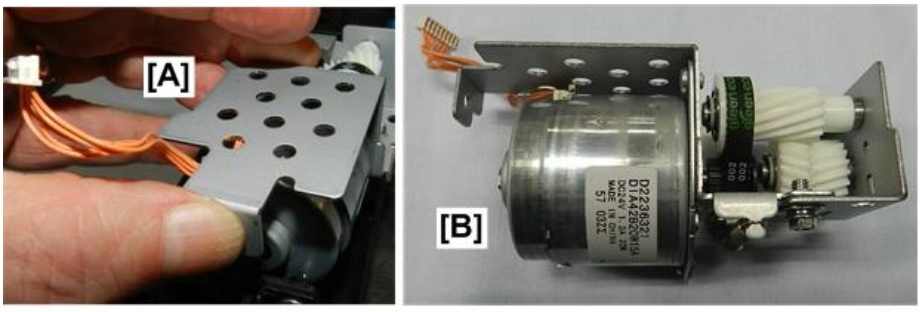
x1 d223c3395

5. Disconnect the motor cover plate at the front [A] and at the rear [B].



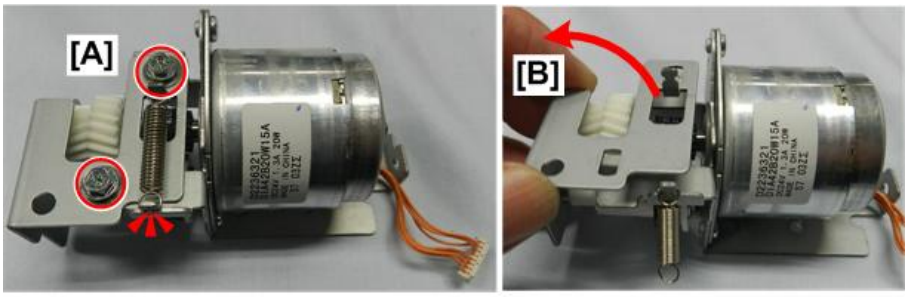
x1 x1 d223c3396

1. Remove the motor bracket [A] with motor attached.
2. Lay the motor and bracket [B] on a clean, flat surface.



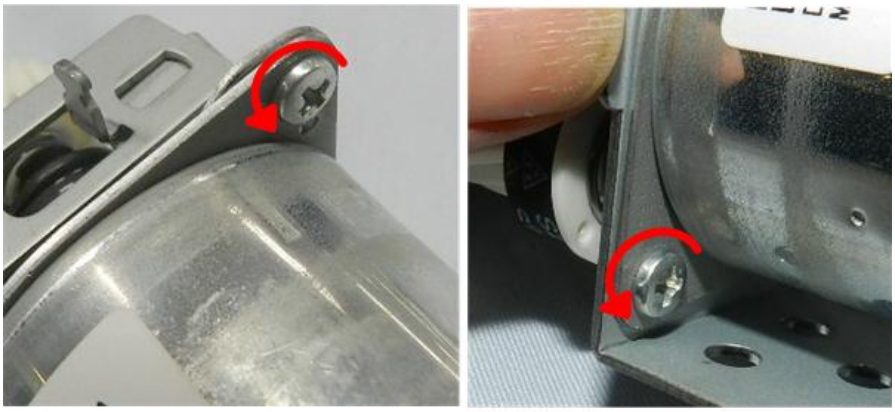
d223c3397

3. Disconnect the bracket [A], and then separate motor and bracket [B].



x2 x1 d223c3398

4. Disconnect the motor from the second bracket.



x2

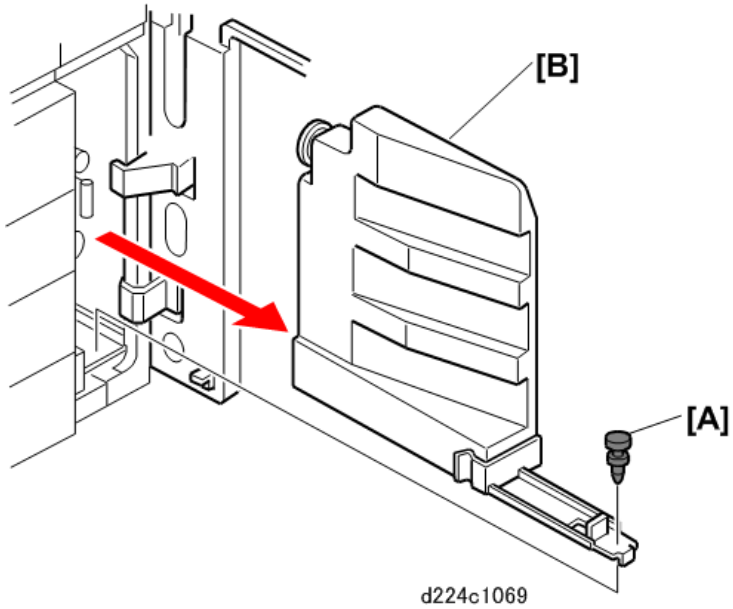
d223c3399

5. Remove the motor.

d223c3400

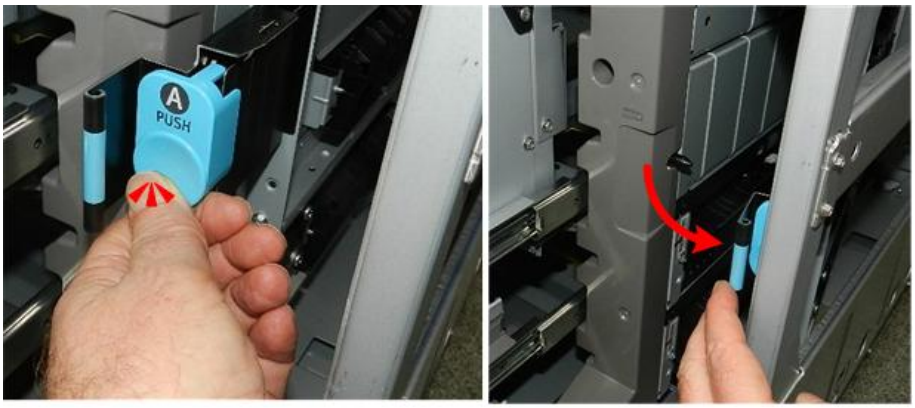
4.13.12 RELAY MOTOR

1. Take off the front door. page 4-15
2. Remove the right covers. page 4-16
3. If the LCIT is connected, disconnect it and pull it away from the machine.
4. Pull out all three trays completely but do not remove them.
5. Pull peg [A] and remove toner bottle [B] with its base.



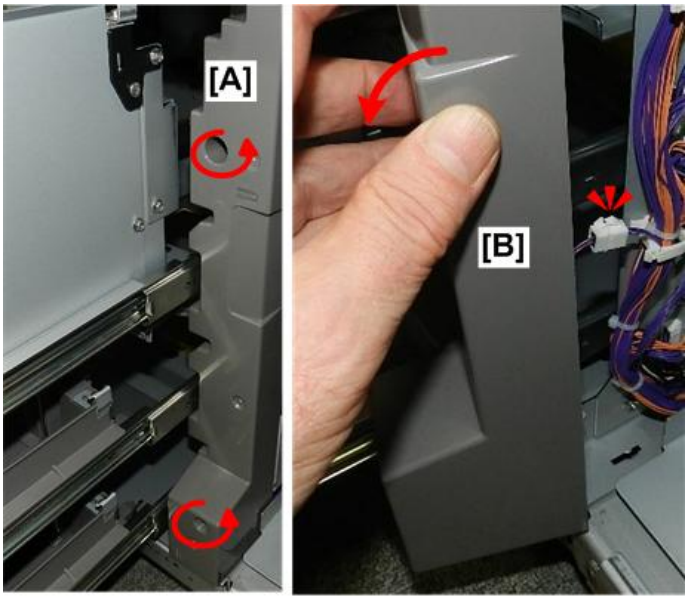
d224c1069

6. Open the vertical transport guide.



d223c3385

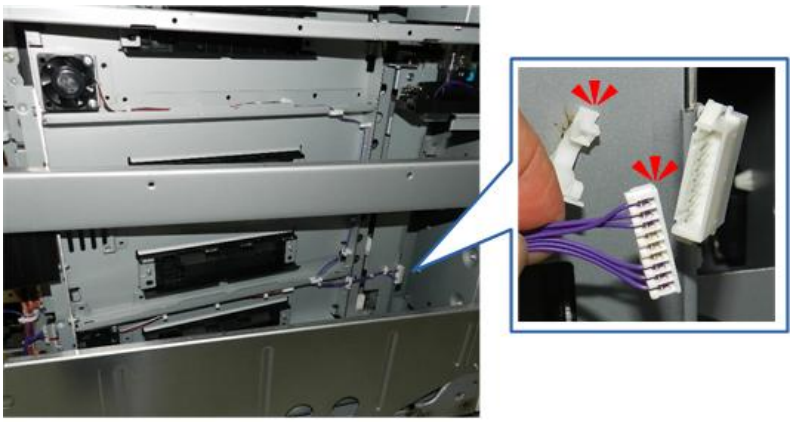
7. Disconnect vertical cover [A].
8. Pull it away slightly, and then disconnect the LED harness [B].



x2 x1

d223c3386

9. At the rear, disconnect the fan harness at the rear right corner of the vertical transport guide plate.



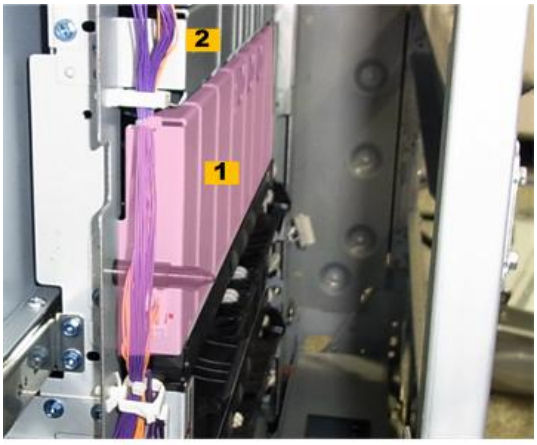
x1

d223c3387

10. Lift the vertical guide to disconnect it, and then pull it out of the machine.

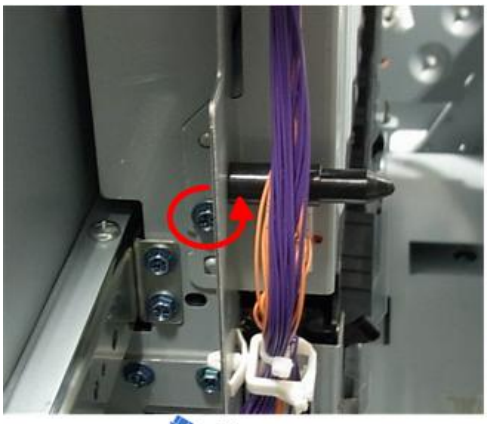
d223c3388

11. Locate the relay motor unit [1] directly below PFU 1 [2].



d223c3785

12. Disconnect the front end of the relay motor unit plate.

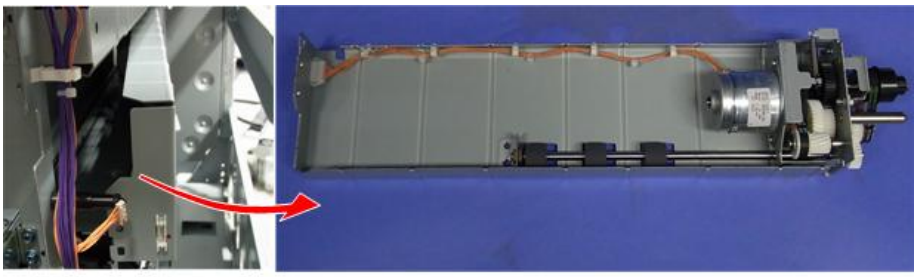


x1

x1

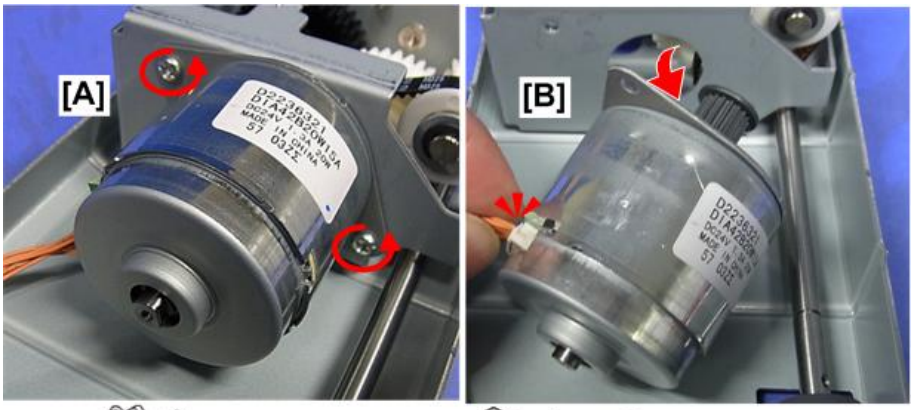
d223c3786

13. Remove the unit and lay it on a flat, clean surface.



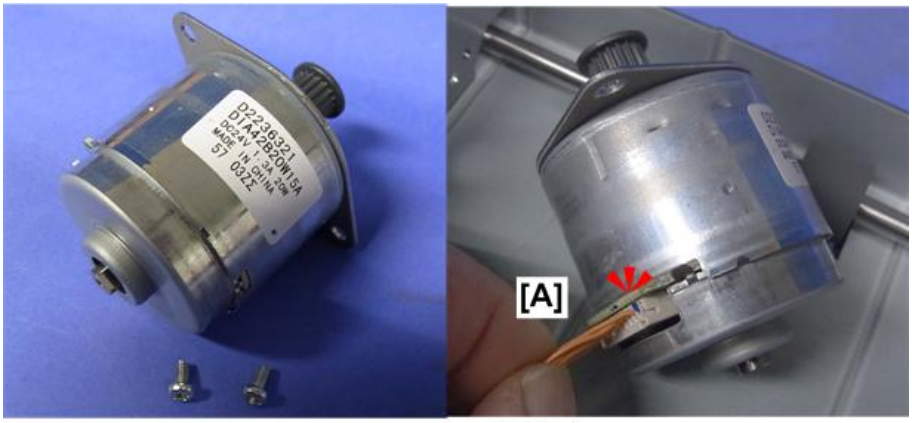
d223c3787

14. Disconnect the motor from bracket [A].
15. Disconnect motor [B].



x2 x1 x1 d223c3788

16. Connect the motor [A] before your re-attach it to the bracket with screws.



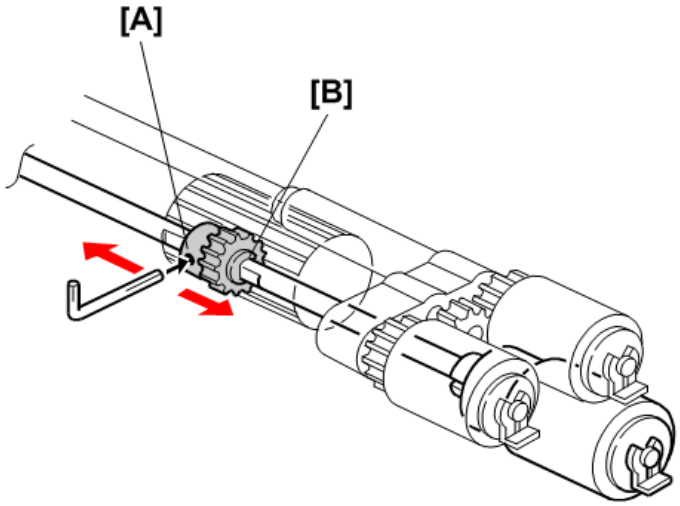
x1 d223c3789

4.13.13 SEPARATION ROLLER PRESSURE ADJUSTMENT

The position of the drive gear for the separation roller can be changed to adjust the amount of pressure exerted by the separation roller. This adjustment can be done:

- When feeding special paper (thick paper)
- When the customer is experiencing feed problems

1. Remove the feed unit where you want to do the adjustment. page 4-302
2. Loosen the hex screw [A].
3. The separation roller gear [B] is positioned at the groove before shipping.

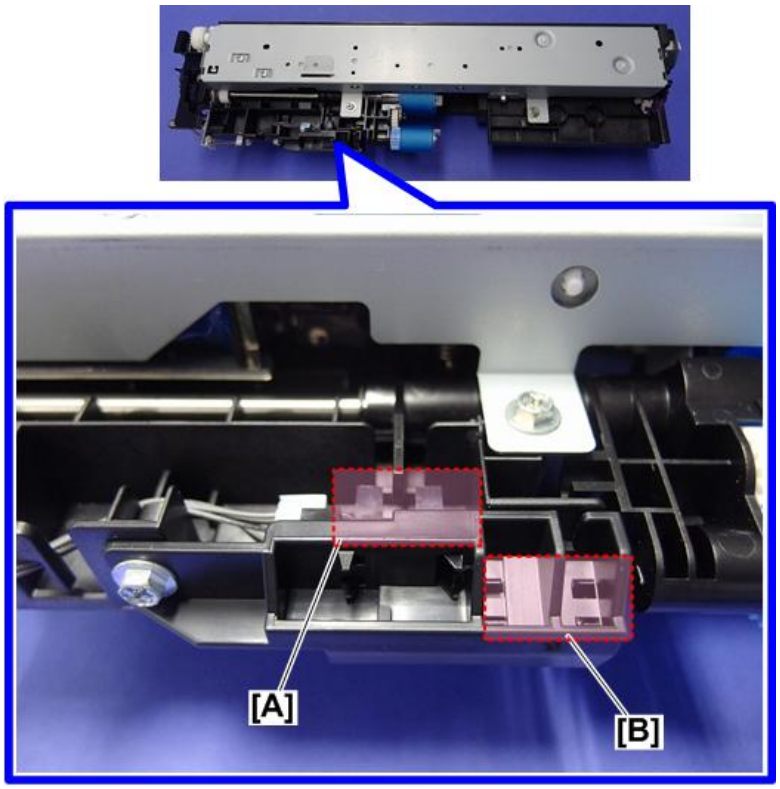


d224c1079

4. To adjust for thick paper, move the separation roller gear to the left to decrease the pressure.
   -or-
   To correct misfeeds, move the separation roller gear to the right to increase the pressure.

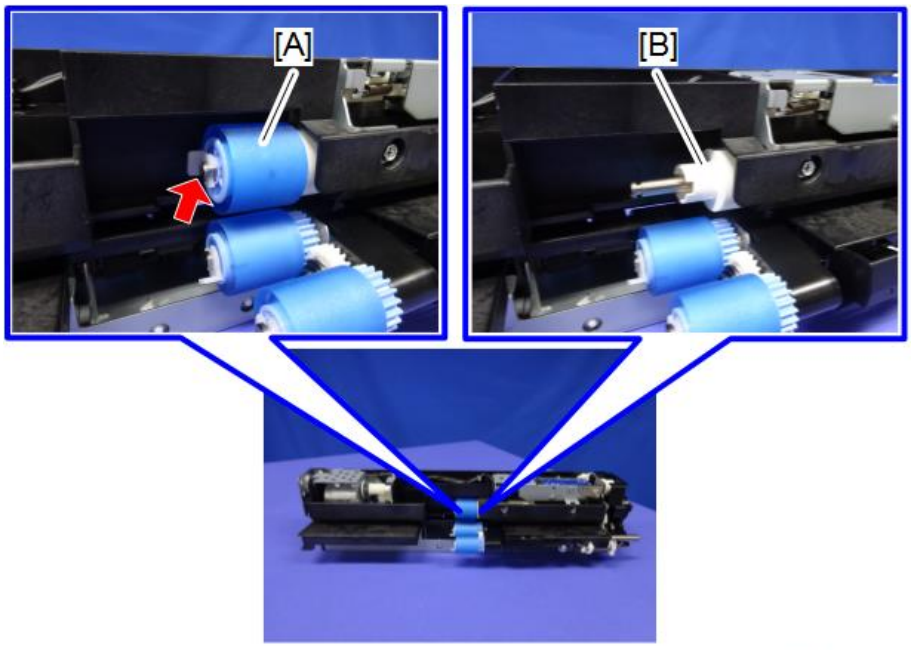
4.13.14 LIFT SENSOR, PAPER END SENSOR

1. Remove the PFU. page 4-302
2. Locate the lift sensor [A] and paper end sensor [B].



d223d4701

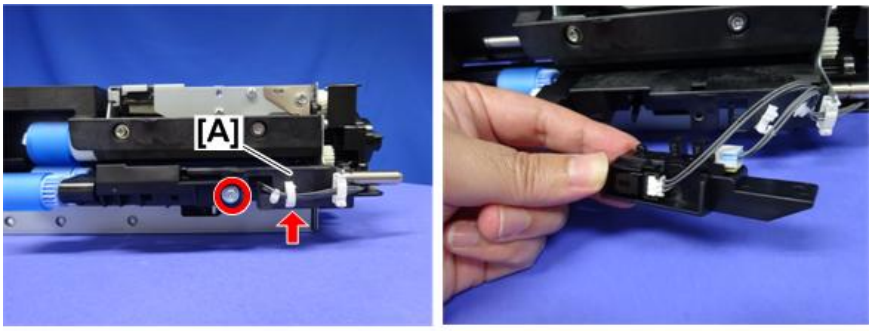
3. Remove separation roller [A].
4. Remove torque limiter [B].



×1

d623z0001

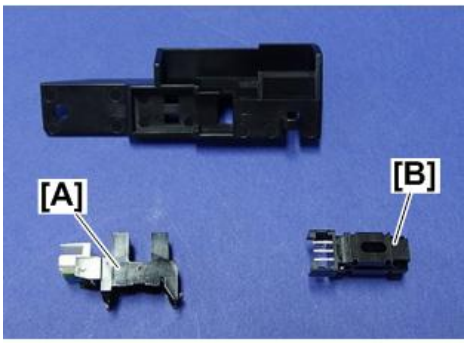
5. Remove lift sensor, paper end sensor bracket [A] with sensors attached.



x1 x1 x2

d623z0002a

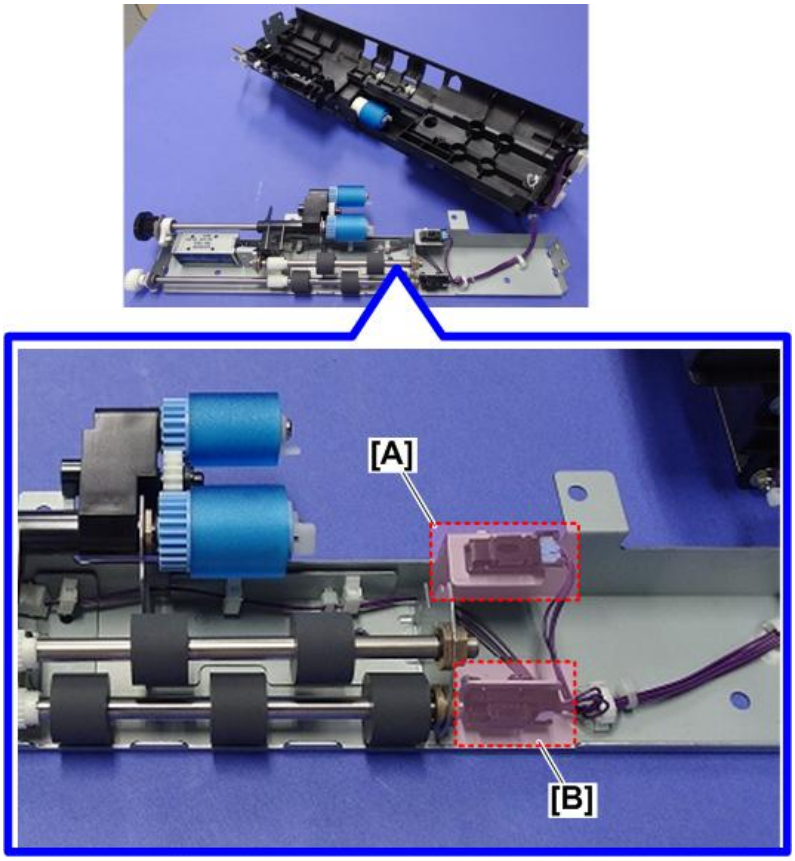
6. Remove lift sensor [A], paper end sensor [B] from the bracket.



d223d4702

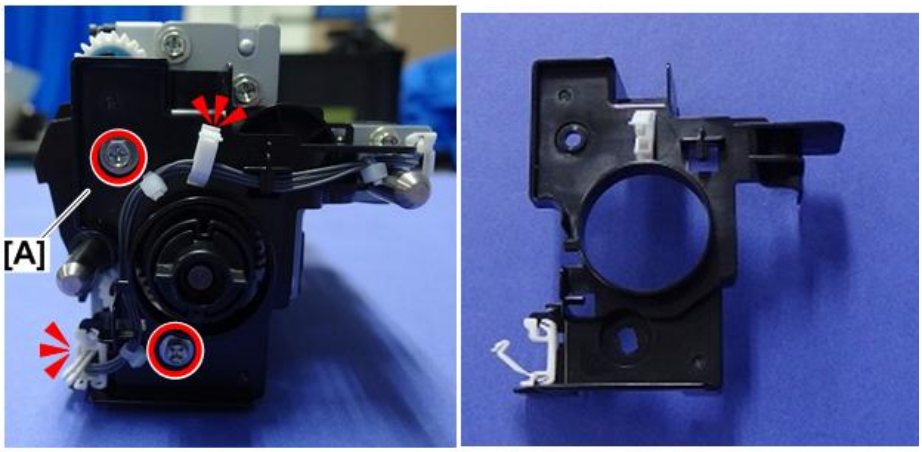
4.13.15 FEED SENSOR, VERTICAL TRANSPORT SENSOR

1. Remove the PFU. page 4-302
2. Locate the feed sensor [A] and vertical transport sensor [B].



d223d4703

1. Open the two clamps on the back of the feed unit, free the harness, and then remove gear cover [A].



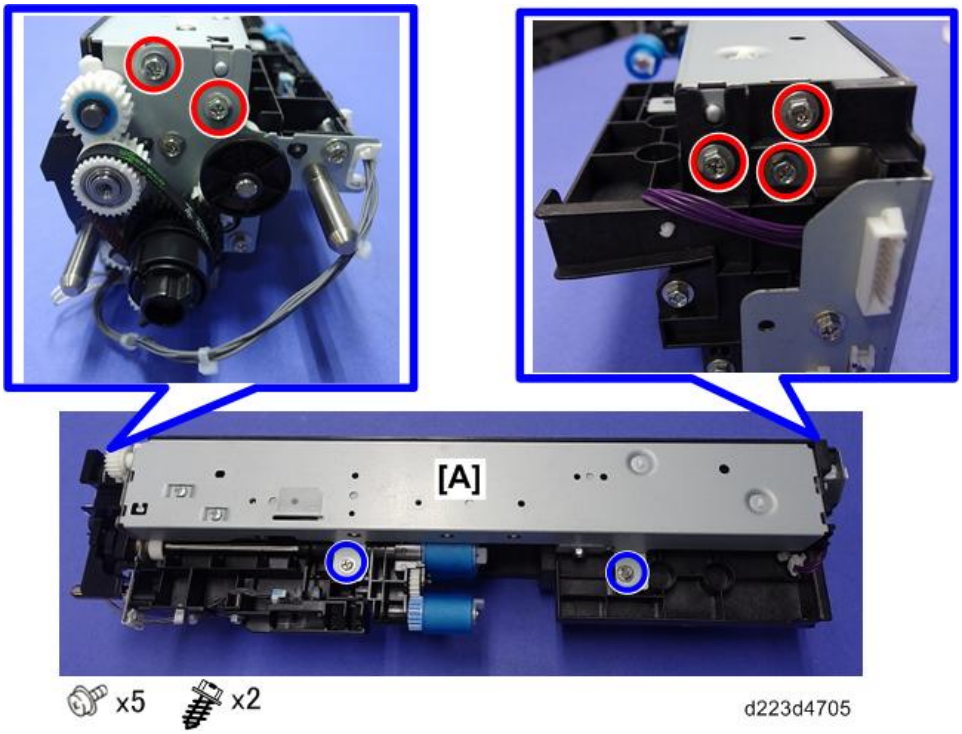
x2 x2

d223d4704

2. Remove top cover [A] from the PFU.

Note

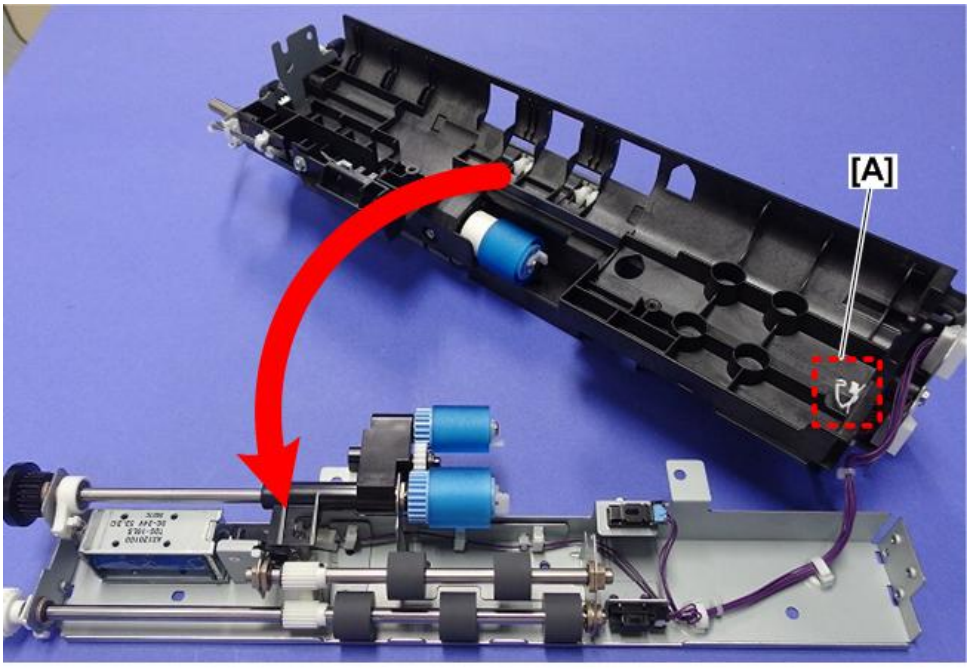
- The blue-circled screws in the photo are tapping screws.



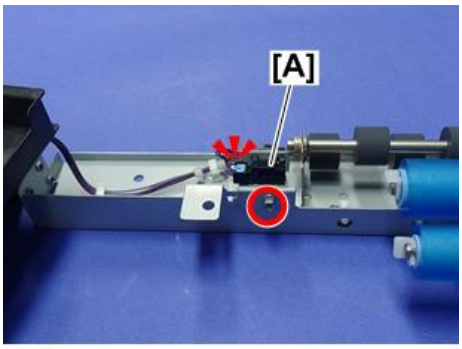
3. Open clamp [A], free the harness, separate the top of the PFU, and then lay the separated parts on a flat, clean surface.

Note

- You do not need to disconnect the harness.



4. Remove feed sensor bracket [A].

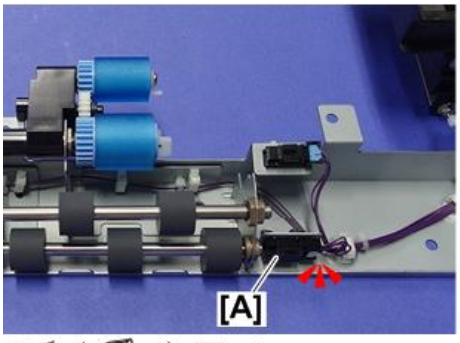


x1 x1 d223d4707

5. Remove feed sensor from the bracket.

x4 d223d4708

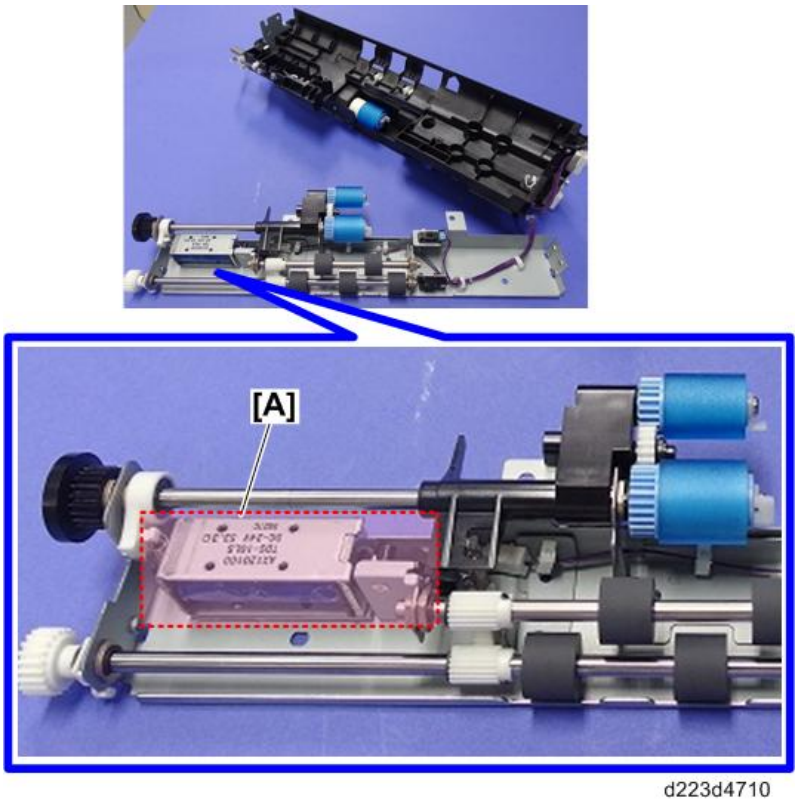
6. Remove vertical transport sensor [A].



x1 x1 x4 d223d4709

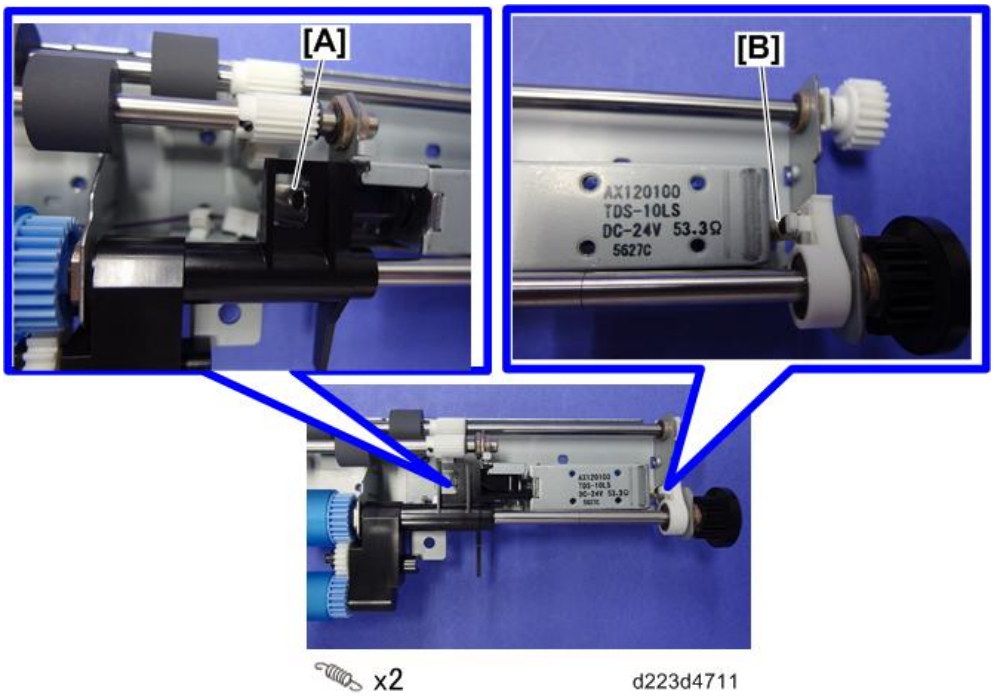
4.13.16 PICK-UP SOLENOID

1. Remove the PFU. page 4-302
2. Remove the top cover of the PFU.
3. Locate the pick-up solenoid [A].



d223d4710

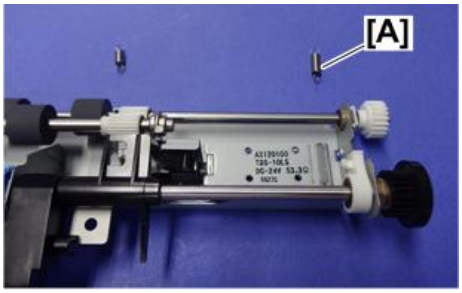
1. Disconnect springs [A], [B].



d223d4711

Note

- The longer spring [A] is the rear spring and must be re-attached at the same location.

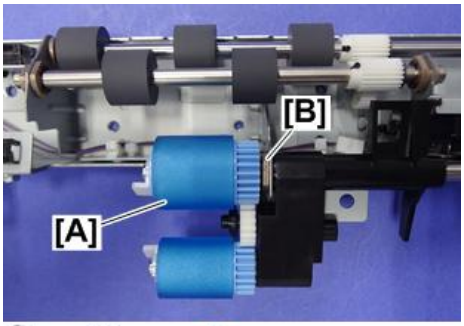


d223d4712

2. At the rear end of the PFU, remove gear [A] and gear shaft [B].

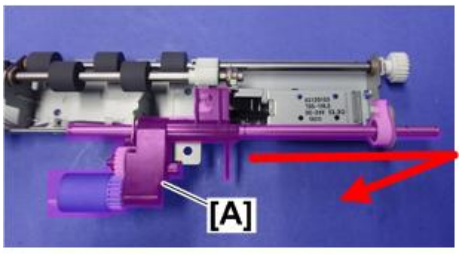
x2 x1 d223d4713

3. Remove feed roller [A] and feed roller collar [B].

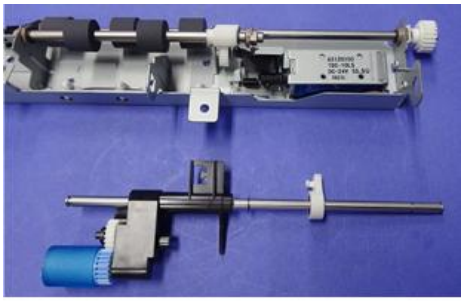


x1 x1 x1 d223d4714

4. Remove feed roller shaft assembly [A].



d223d4715

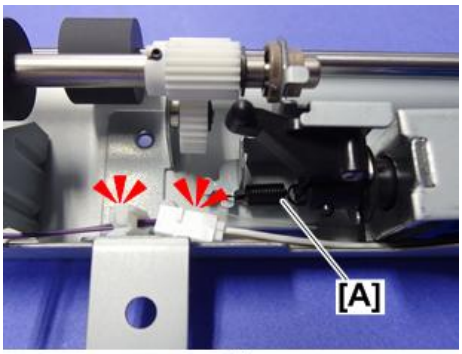


d223d4716

5. Turn the PFU 90 degrees, and then remove solenoid screws at the back.

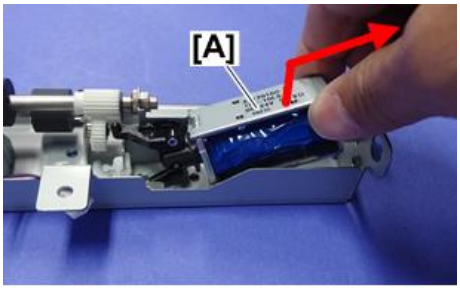
x2 d223d4717

6. Remove spring [A], and then disconnect the harness.



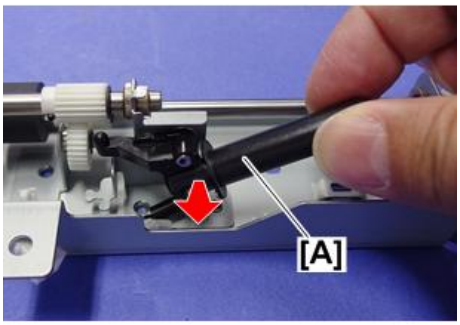
x1 x1 x1 d223d4719

7. Remove pick-up solenoid [A] at its back end, pull out the plunger, and then remove the solenoid.



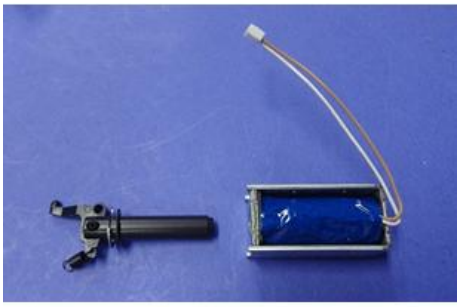
d223d4718

8. Disconnect the plunger at each arm [A].



d223d4720

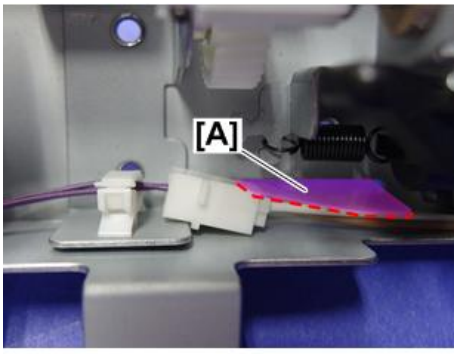
9. Lay the parts on a flat, clean surface.



d223d4721

Re-assembly

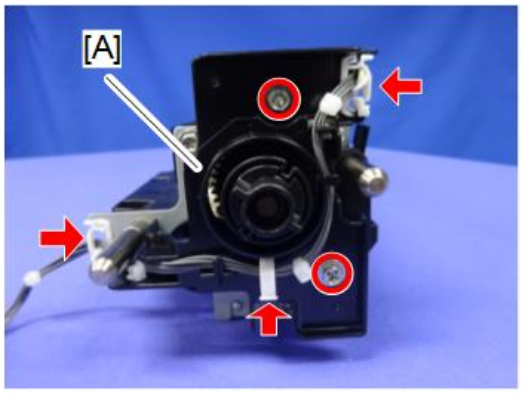
1. Make sure that the connector is inside sheet [A] so it cannot interfere with other parts.



d223d4722

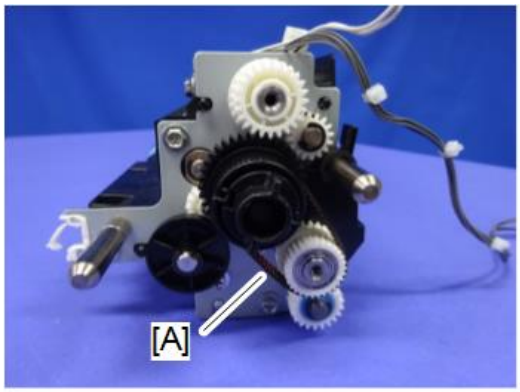
4.13.17 REVERSE RELEASE SOLENOID

1. Remove the PFU. page 4-302
2. Remove the top cover of the PFU.
3. Locate the reverse release solenoid [A].
4. Remove lift sensor, paper end sensor bracket.
1. Remove gear cover [A] from the rear end of the PFU.



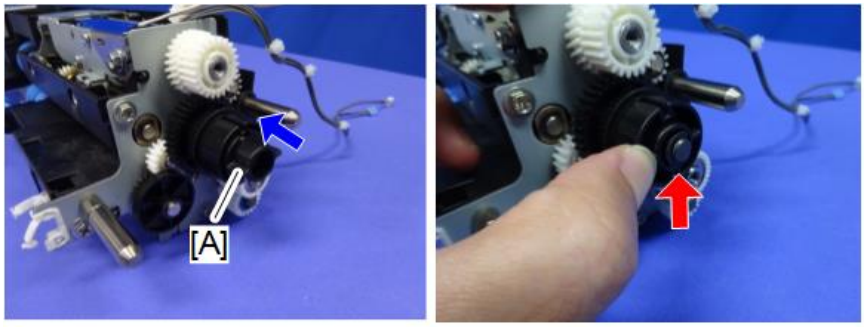
x2 x3 d623z0003

2. Remove timing belt [A].



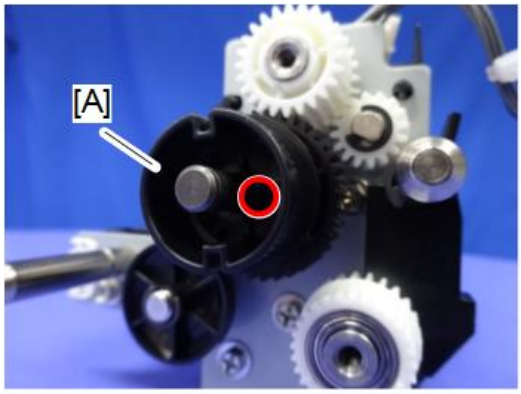
x1 d623z0007

3. Push in coupling [A] to detach the e-ring, and then remove the coupling.



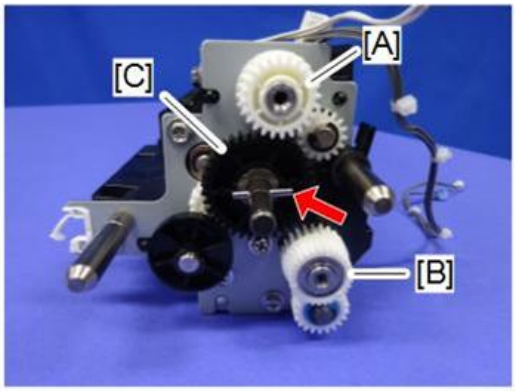
x1 d623z0004

4. Use a small, precision screwdriver to release the tab, and then remove coupling [A] to the outside.



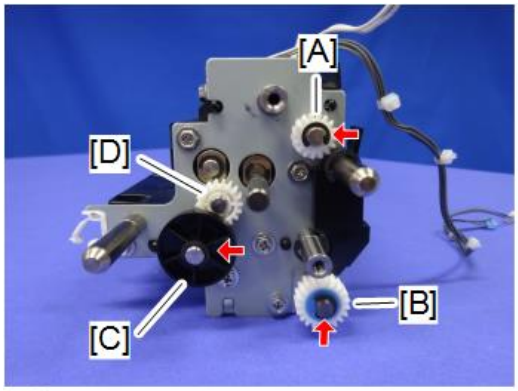
x1 d623z0005

5. Remove gears [A], [B], [C].



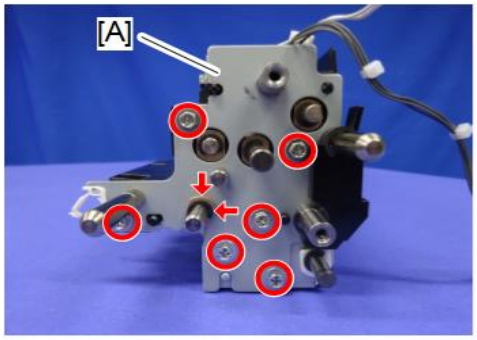
x1 d623z0006

6. Remove gears [A], [B], [C], [D].

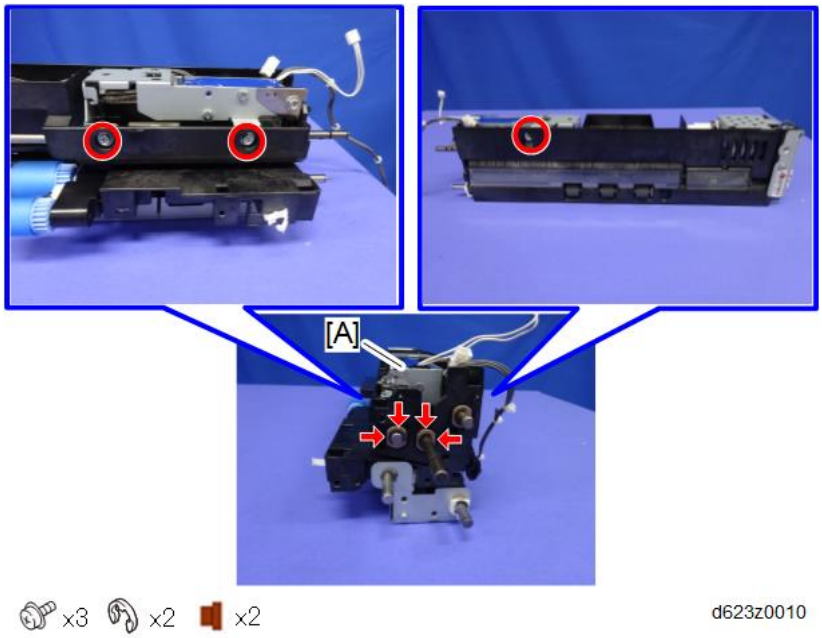


x3 d623z0008

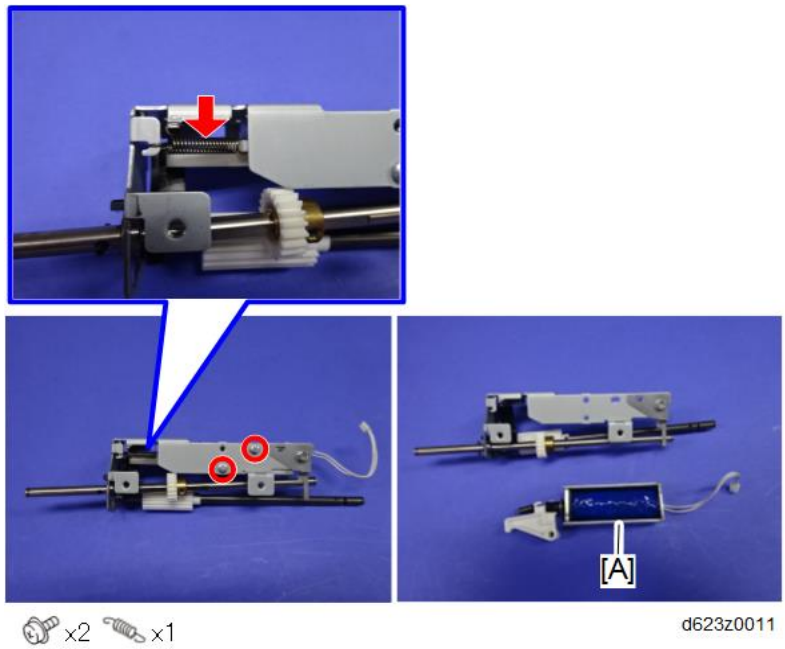
7. Remove bracket [A].



8. Disconnect reverse release solenoid bracket [A] and then remove it with solenoid attached.

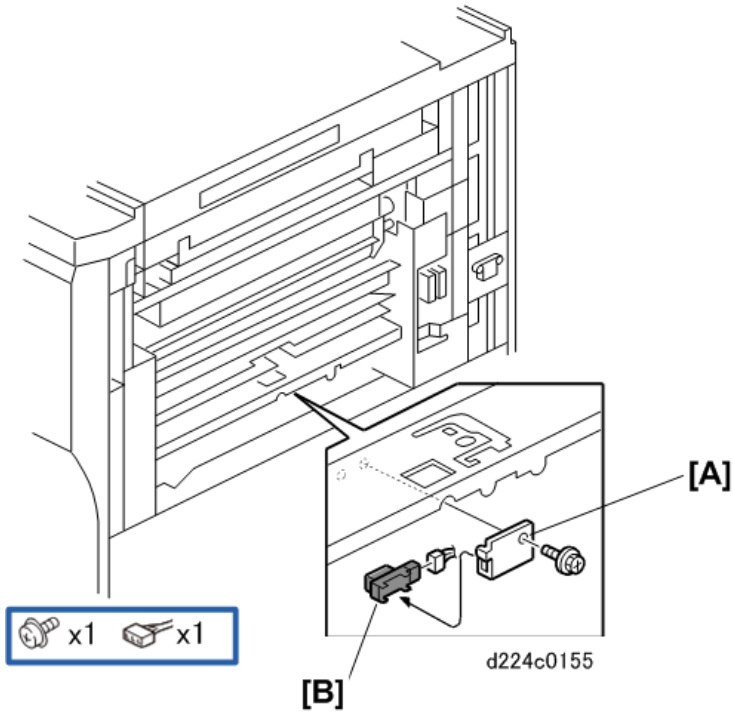


9. Remove reverse release solenoid [A] from the bracket.



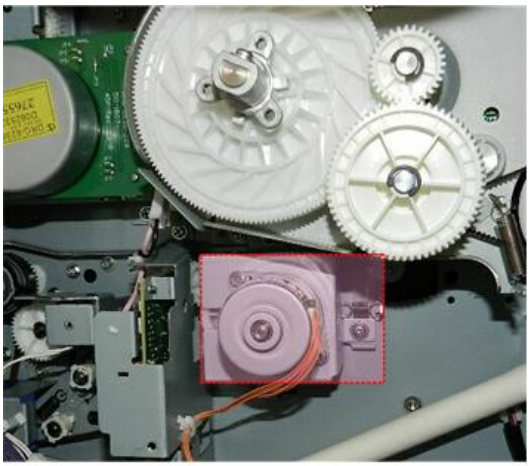
4.13.18 RELAY SENSOR

1. Remove the right upper cover. Right Upper Cover.
2. Disconnect relay sensor bracket [A].
3. Remove relay sensor [B].



4.13.19 REGISTRATION MOTOR

1. Remove the rear upper and lower covers. page 4-19
2. Remove the controller box. page 4-28
3. Remove the flywheel.

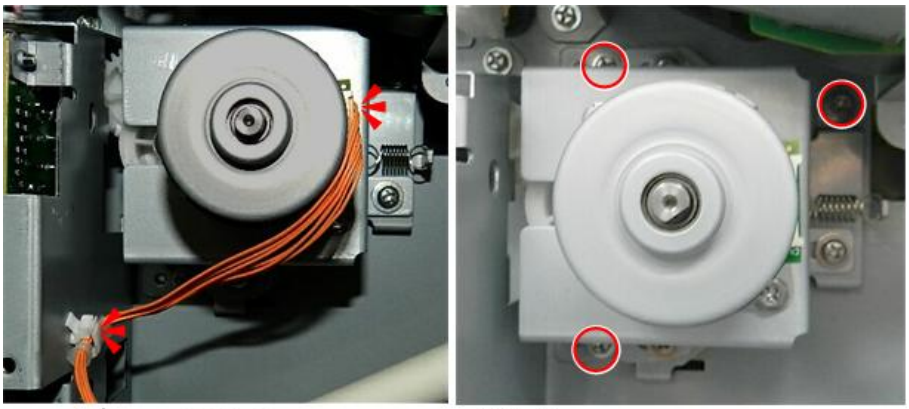


d223c3710

4. Disconnect the motor and motor bracket.

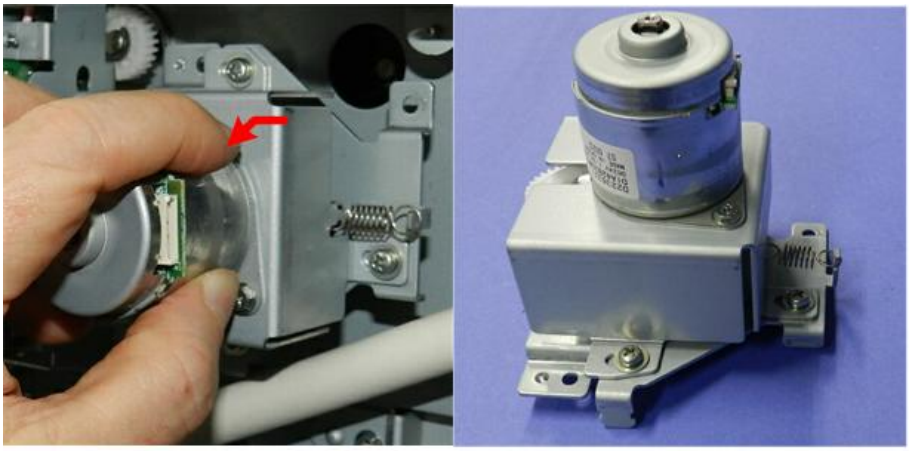
Note

- The bracket screws to be removed have hex-heads, not round heads.



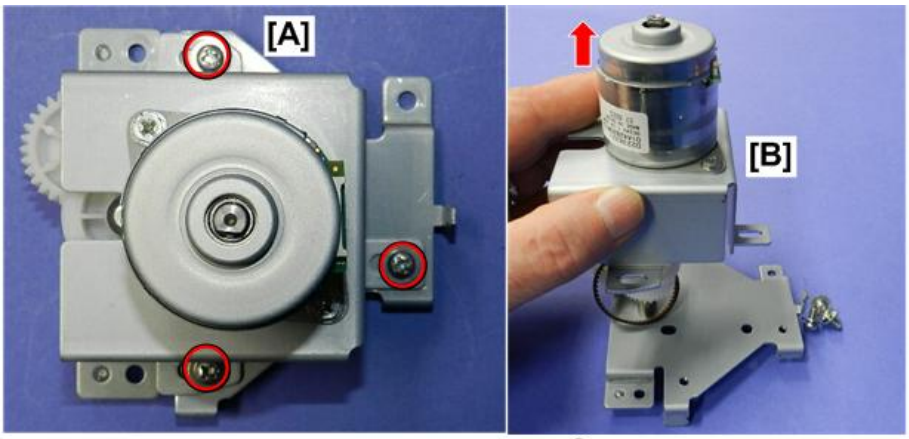
d223c3711

5. Unhook the bracket with motor attached, and then lay it on a flat, clean surface.



d223c3712

6. Disconnect motor bracket [A].
7. Raise the bracket and motor [B], and then disconnect the drive belt.



x3 x1 d223c3713

8. Disconnect the motor.

d223c3714

9. Separate motor and bracket.

d223c3715

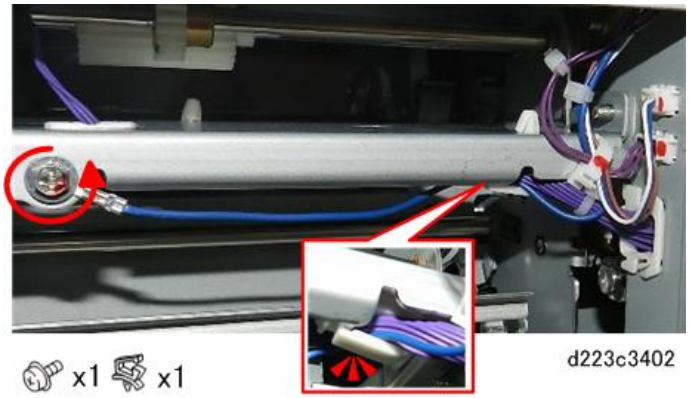
4.13.20 BY-PASS TRAY

By-Pass Tray Removal

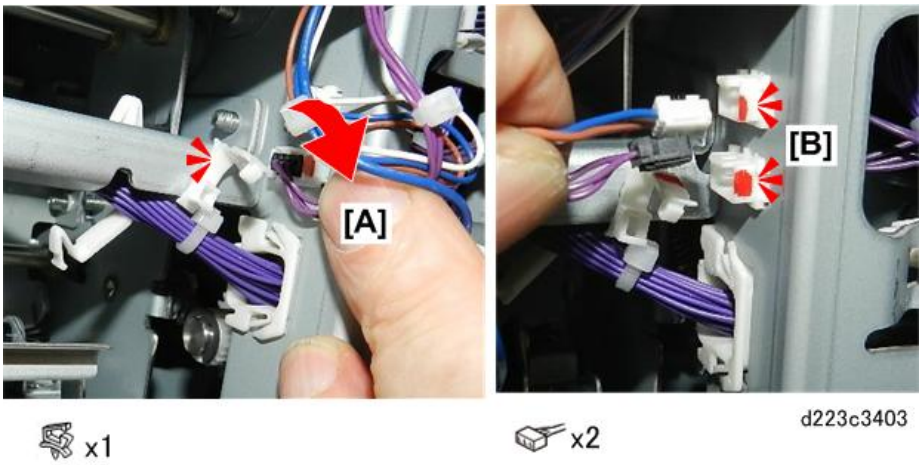
The by-pass paper size detection board and paper length sensor (photosensor) are inside the by-pass tray.

1. Remove the bypass tray cover.

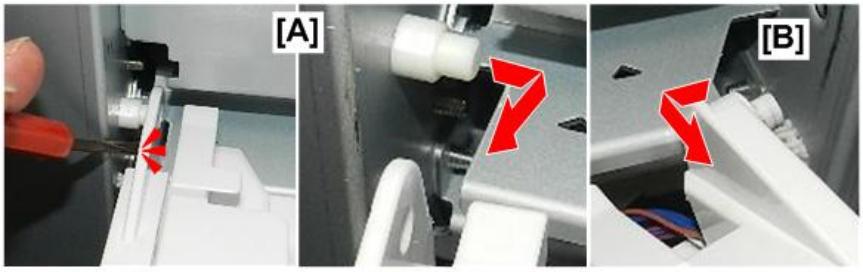
2. Disconnect the ground wire.



3. Free the harnesses at [A] and [B].



4. Disconnect the bypass tray on the front side [A].
5. Disconnect the tray on the rear side [B], and then remove the tray.

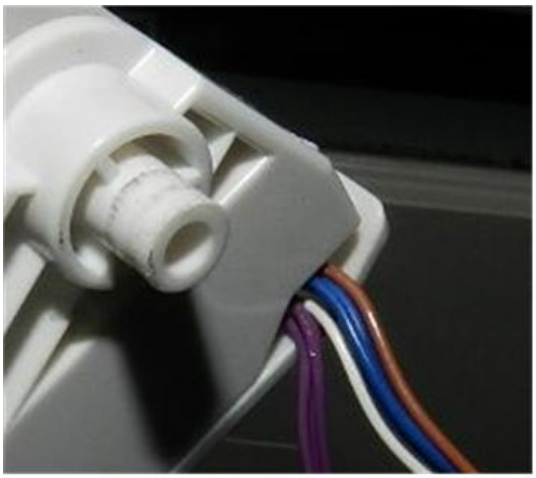


d223c3404

6. Lay the removed tray on a flat, clean surface.

d223c3405

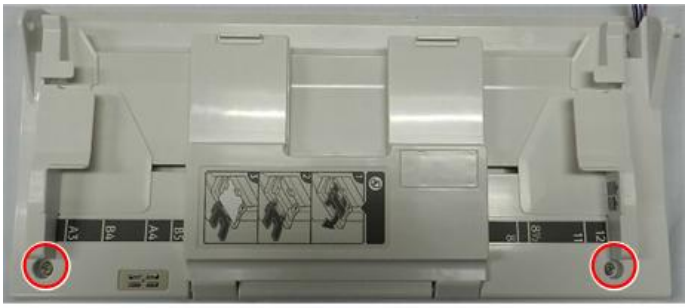
7. When you re-install the tray, tuck the harnesses into the corner slot of the bypass tray before you re-install it.



d223c3406

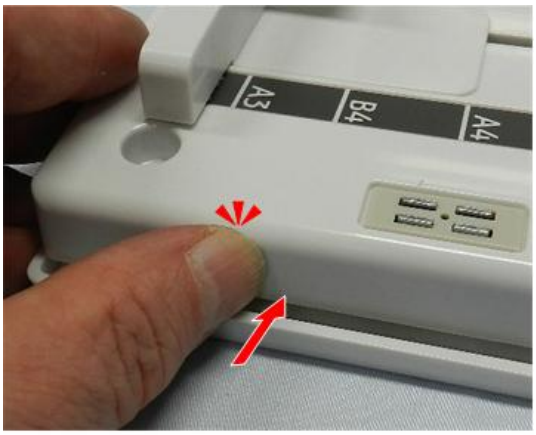
By-Pass Tray Disassembly

1. Remove the By-Pass Tray. By-Pass Tray Removal
2. Disconnect the two halves of the tray.



x2 d223c3407

3. Push the top away from the bottom to separate the two halves of the tray.



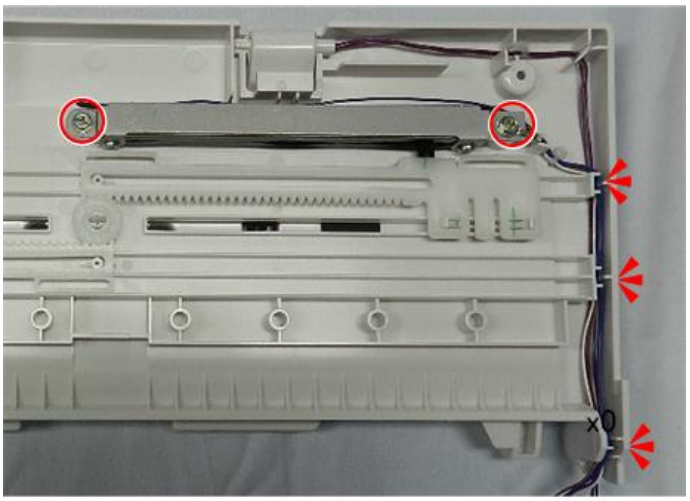
d223c3408

4. Separate the top and bottom of the tray.

d223c3409

4.13.21 BY-PASS PAPER SIZE DETECTION BOARD

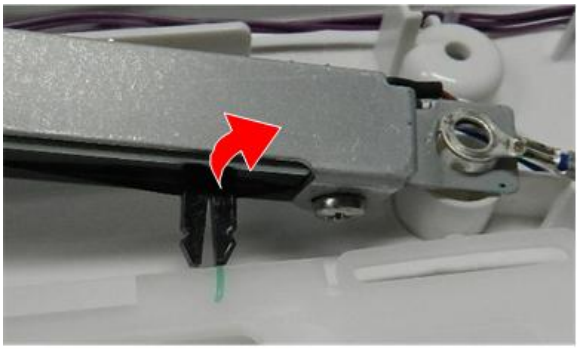
1. Remove the By-Pass Tray. page 4-331
2. Disassemble the By-Pass Tray. page 4-333
3. Disconnect the two halves of the tray.
4. Disconnect the paper size detection board



x1

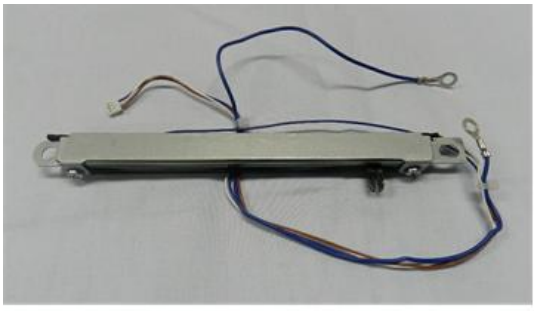
d223c3410

5. Carefully, detach the board from the tray.



d223c3411

6. Lay the board on a flat, clean surface.



d223c3412

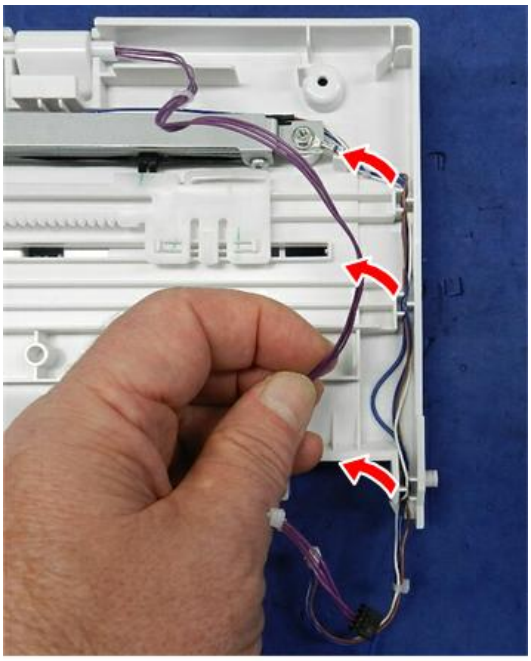
Re-assembly

Go into the SP mode and do SP1904 to calibrate the maximum and minimum paper sizes for the side fences:

1. **SP1904-001** By-pass Tray Paper Size Detection – Minimum Size: Move the side fences to the minimum size, then execute this SP.
2. **SP1904-002** By-pass Tray Paper Size Detection – Maximum Size: Move the side fences to the maximum size, then execute this SP.

By-Pass Paper Length Sensor

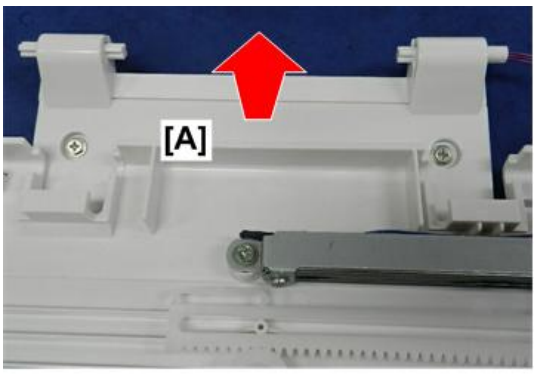
1. Remove the By-Pass Tray. page 4-331
2. Disassemble the By-Pass Tray. page 4-333
3. Free the sensor harness.



d223c3423

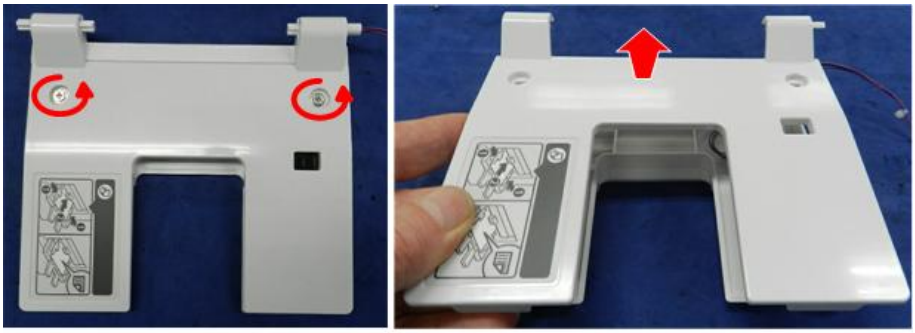
x3

4. Remove the tray extension [A] from the by-pass tray.



d223c3424

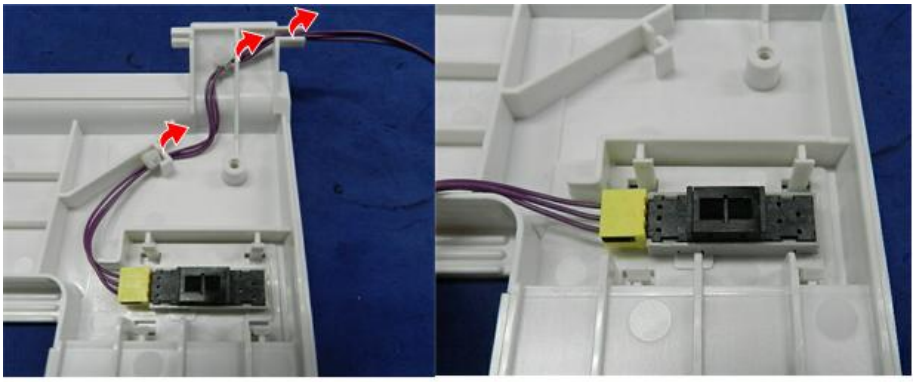
5. Disassemble the tray extension.



x2

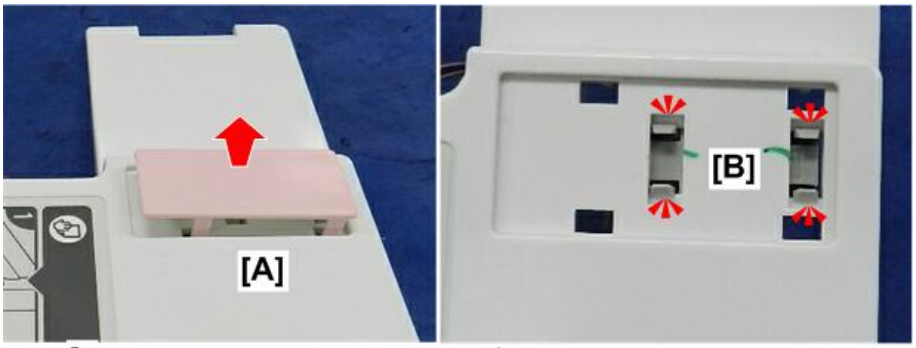
d223c3425

6. Free the sensor harness.



d223c3426

7. Turn the tray over, and then remove sensor cover [A].
8. Disconnect the sensor hooks [B].

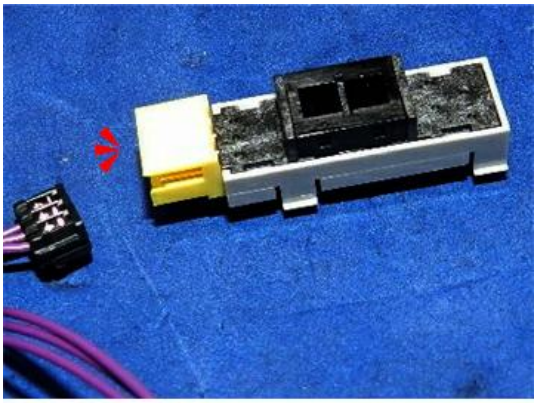


x4

x4

d223c3427

9. Disconnect sensor.

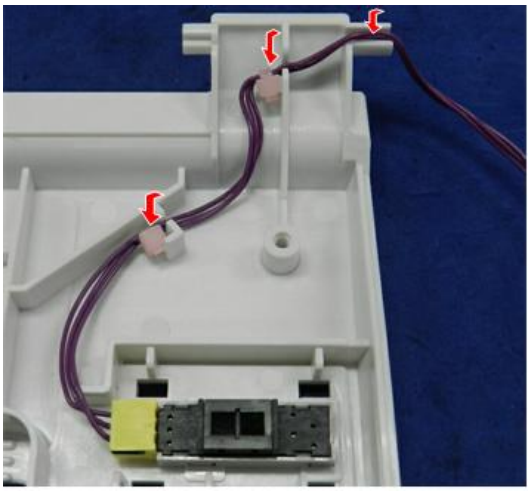


x1

d223c3428

Re-assembly

1. Before you re-assemble the tray extension, make sure that he sensor harness is fixed securely at the notches.



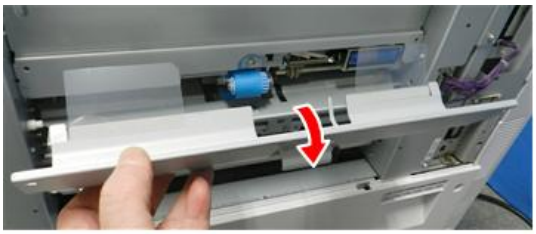
d223c3429

4.13.22 BY-PASS TRAY ROLLERS

1. Remove right covers. page 4-16
2. Remove the By-Pass Tray page 4-331
3. Disconnect the by-pass cover [A]

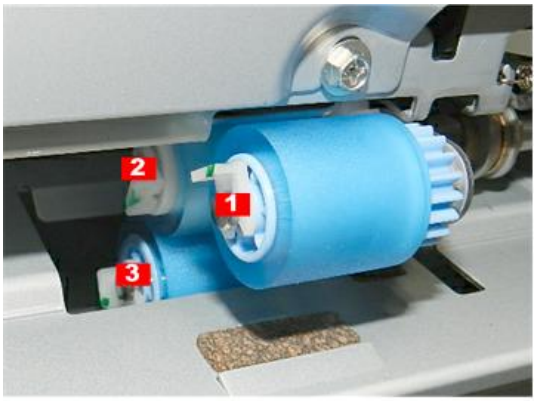
x2 d223c3413

4. Remove the by-pass cover.



d223c3414

5. With the cover removed, you can access the rollers.



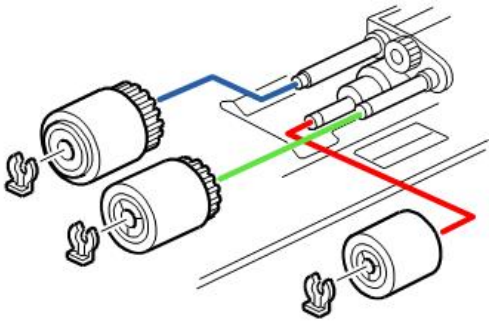
d223c3415

[1]	Pick-up roller
[2]	Feed roller
[3]	Separation (reverse) roller

6. Remove each roller and replace it.

Important

- During replacement, try to avoid touching the surfaces of the rollers with bare hands.



d223c3416

Note

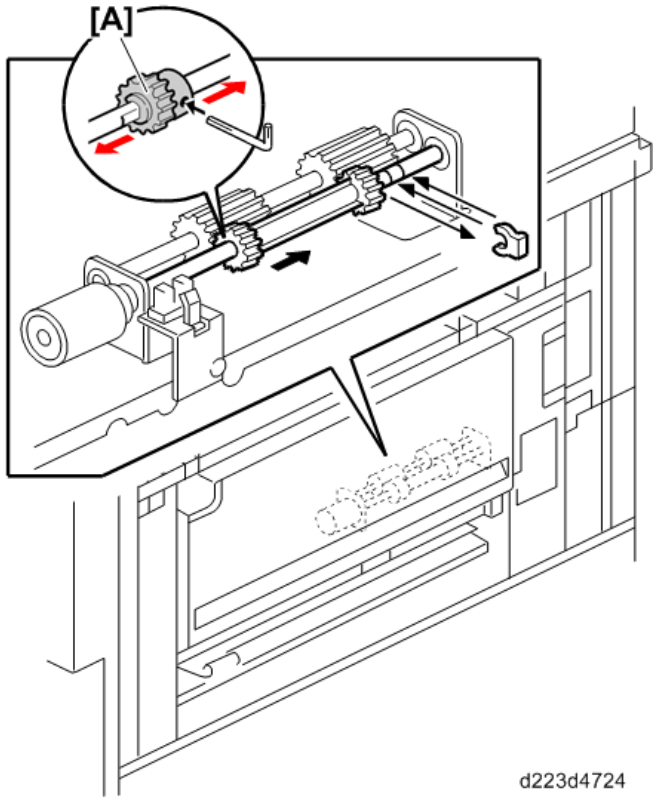
- The FRR mechanisms for Tray 1 (tandem tray), Tray 2, Tray 3 (universal trays), By-Pass Tray, and ADF are similar, but the rollers are interchangeable only between Trays 1,2,3 (not By-Pass, ADF).

4.13.23 BY-PASS SEPARATION ROLLER PRESSURE ADJUSTMENT

The position of the drive gear of the separation roller can be changed to adjust the amount of pressure exerted by the separation roller. This adjustment can be done:

- When feeding special paper, especially thick paper
- When the customer experiences feed problems

1. Use an Allen key to loosen the separation roller gear [A].



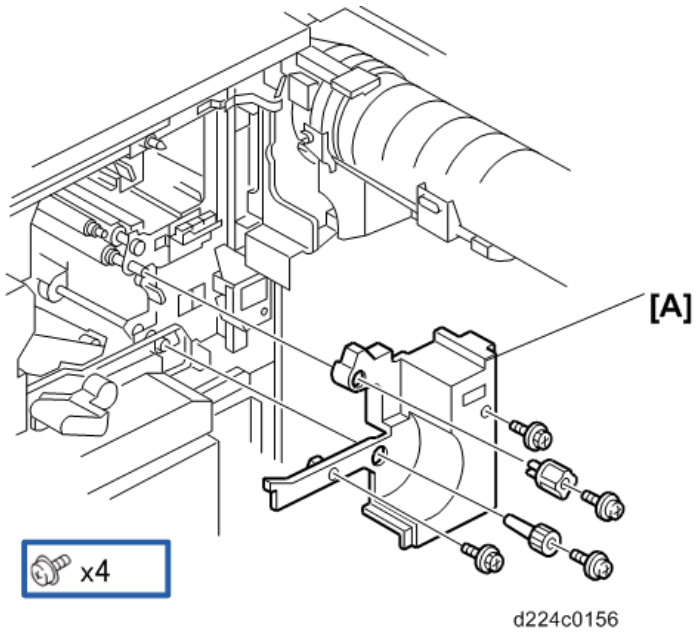
Note

- The separation roller gear is positioned at the groove before shipping.

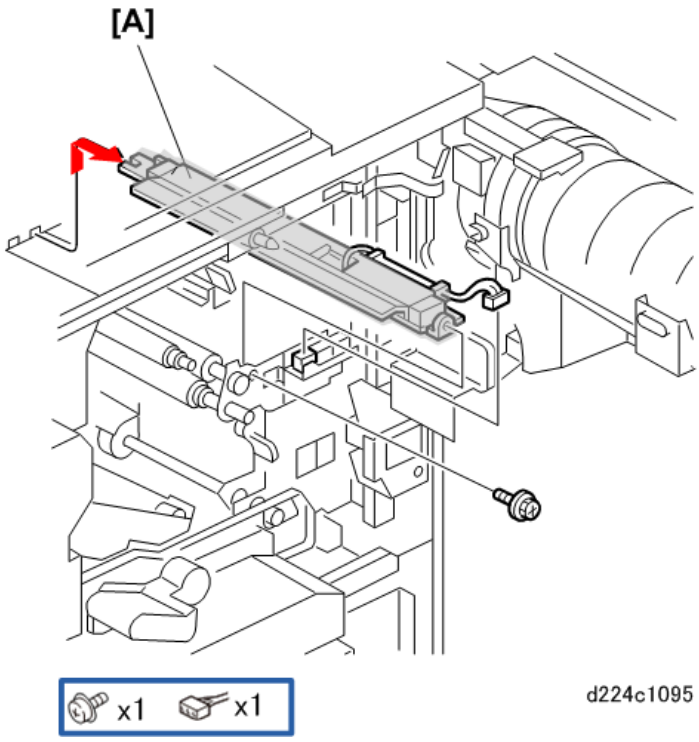
2. Loosen and move the separation roller gear to adjust pressure.
   - Move left to lessen pressure and correct double feeding.
   - Move right to increase pressure and correct failure to feed.

4.13.24 REGISTRATION SENSOR

1. Remove cover [A] (x 4)



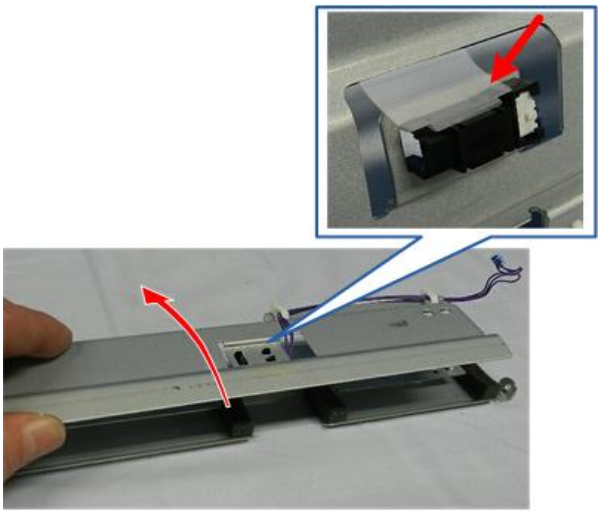
2. Remove these components'
   - Development unit page 4-149
   - Charge corona unit page 4-105
   - OPC drum unit page 4-114
3. Remove paper dust collection unit [A] (x 1, x 1)



4. Separate the unit.

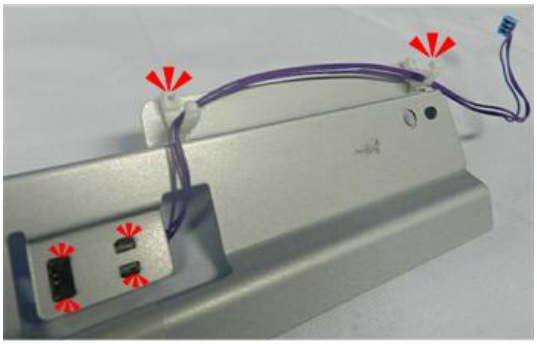
x2 d223c3500

5. Turn the top over and note the position of the mylar over the registration sensor. The mylar must remain on top of the sensor as shown.



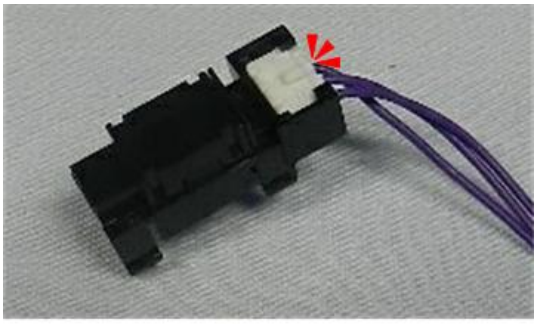
d223c3501

6. Disconnect sensor and harness from the unit.



x2 x4 d223c3502

7. Disconnect sensor.



x1 d223c3503

4.13.25 BY-PASS UNIT

By-Pass Unit Removal

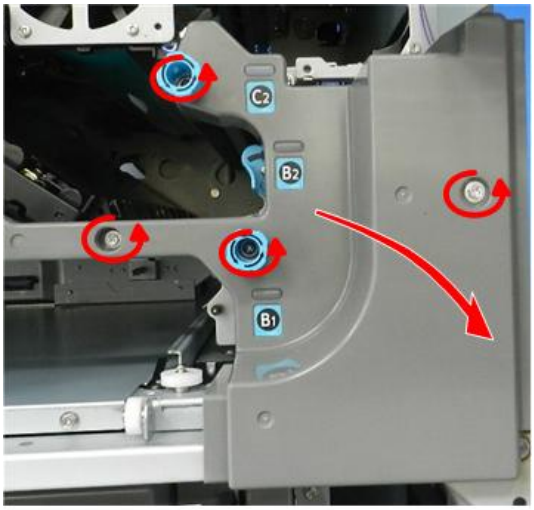
Important

- Work carefully to avoid catching any harnesses on the unit while removing and re-installing it.

Preparation

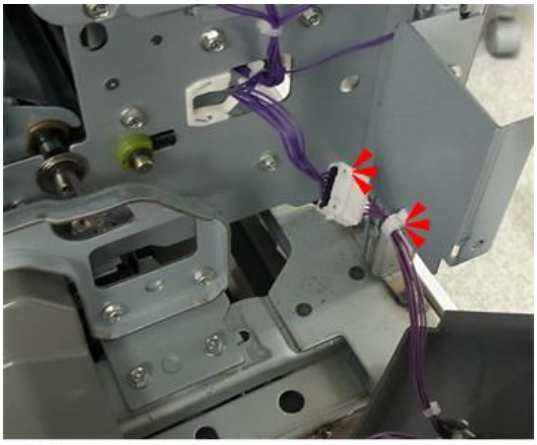
- Remove the front door. page 4-15
- Remove the development unit. page 4-149
- Remove by-pass tray. page 4-331
- Remove right upper cover. page 4-16
- Remove rear covers. page 4-19
- Open the controller box. page 4-28

1. Remove inner cover **C2**.



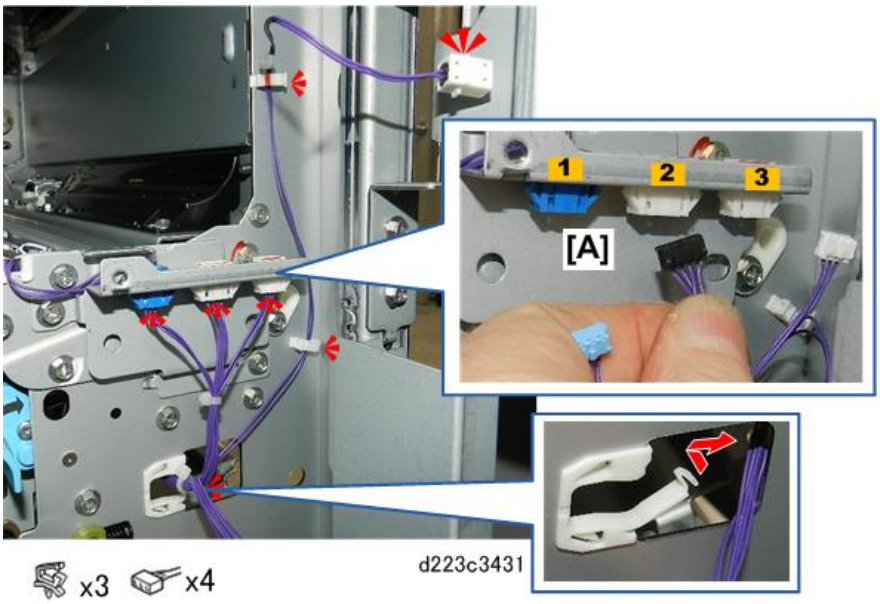
x4 x1 d223c3430

2. Disconnect the cover LED.



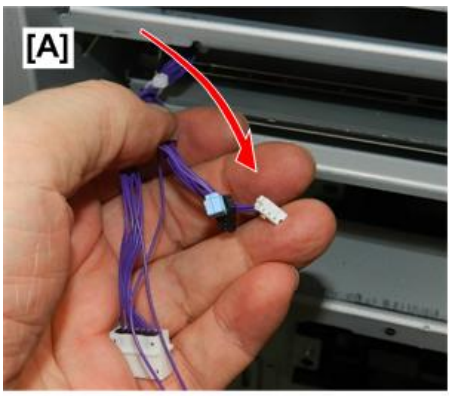
x1 x1 d223c3783

3. Disconnect the harnesses at the front right corner.
4. Note the color sequence of the connectors at [A] ([1] Blue, [2] Black, [3] White).



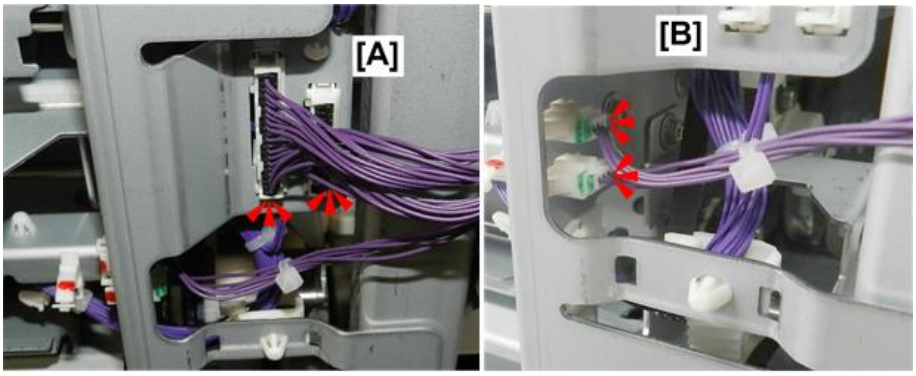
x3 x4 d223c3431

5. At the right front corner, pull the harnesses [A] through the frame so they will not block removal of the bypass unit.



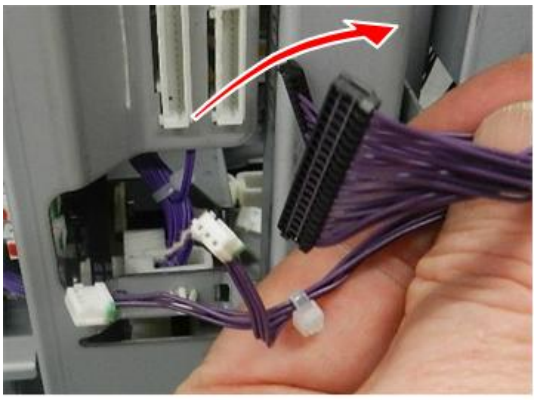
d223c3432

6. At the right rear corner [A], disconnect the large connectors.
7. Below the position where you just removed the large connectors, remove the two harnesses with the small connectors [B].



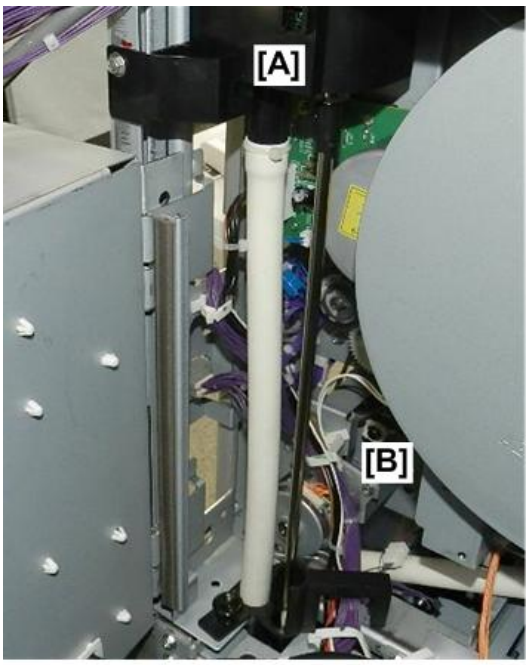
d223c3433

8. Pull the loose harnesses away from rear corner of the machine so they cannot interfere with removal of the bypass unit.



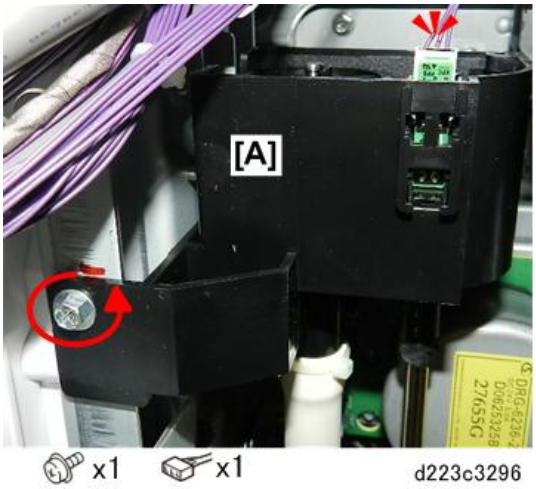
d223c3434

9. The used toner pump tube assembly and drive rod [A] block the access to the bypass unit motor and sensor connectors [B].

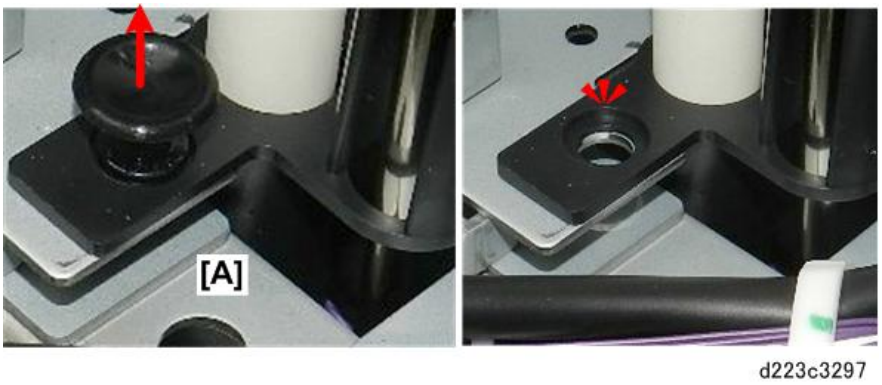


d223c3435

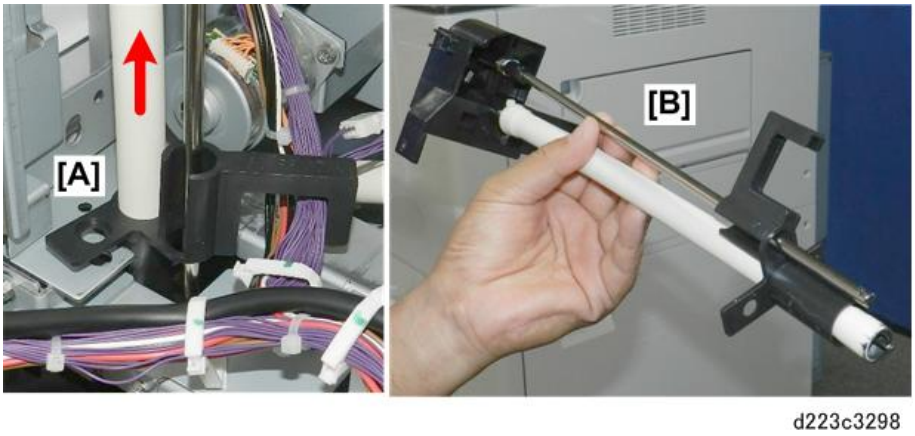
10. Disconnect top of used toner pump assembly [A].



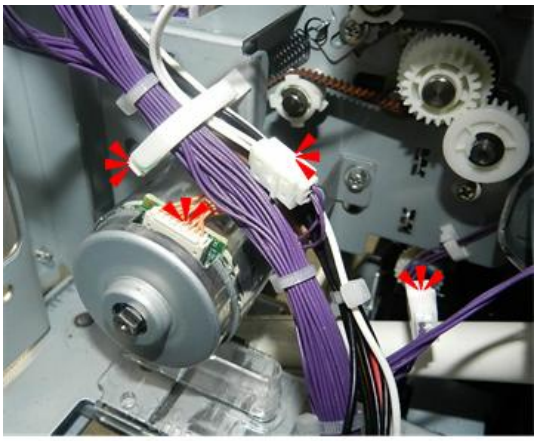
11. Pull out the stopper on the tube base [A].



12. Pull the bottom of the tube [A] up, and then remove the tube pump assembly [B].



13. Disconnect the bypass motor and sensors.

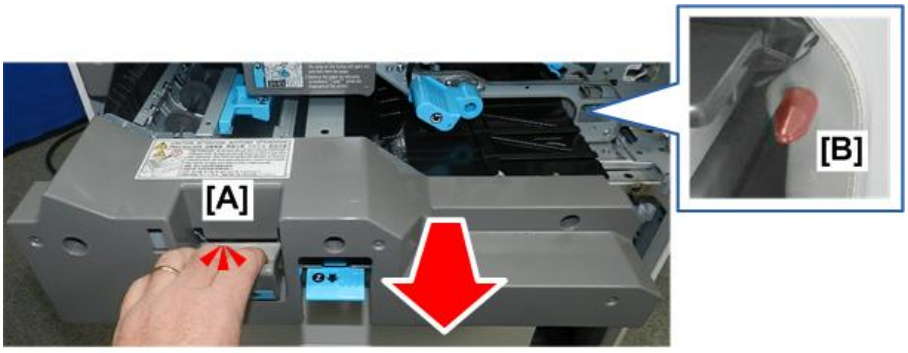


x1 x3 d223c3436

14. On the right side of the machine, disconnect the frame of the bypass unit.

x4 d223c3437

15. Pull the duplex unit [A] out of the machine far enough so you can see the pin [B] disengage from the frame of the duplex unit (about 10 cm or 4 in.)

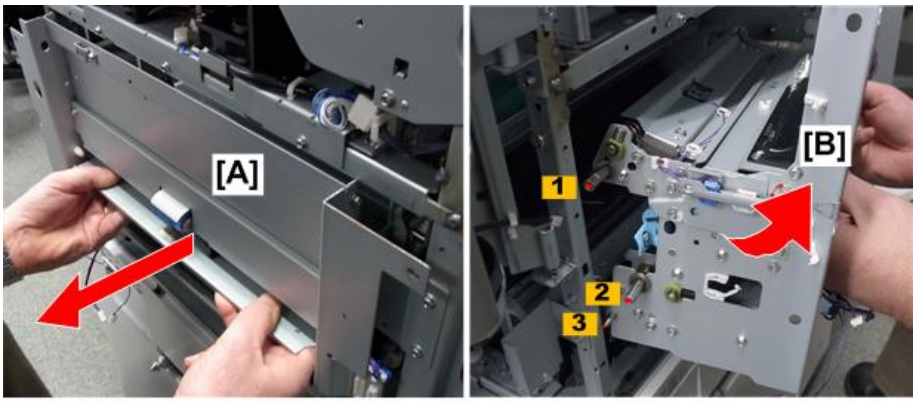


d223c3438

Important

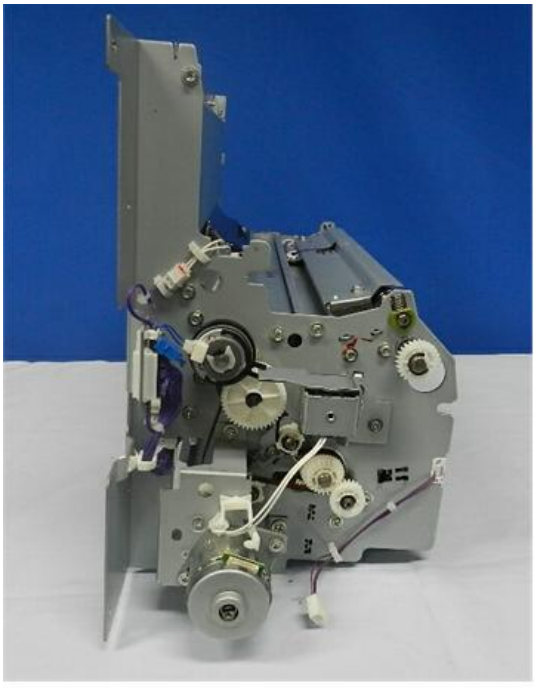
- If the duplex unit remains closed, you cannot remove or re-install the bypass unit. The duplex unit must be pulled out so the pin is free before you can remove the unit or re-install it.

16. Slowly, pull the bypass unit [A] straight out until it stops.
17. Lift and twist the left side of the unit [B] until the three shafts clear the post, and then remove the unit.



d223c3784

18. Set the unit on a flat, clean surface.



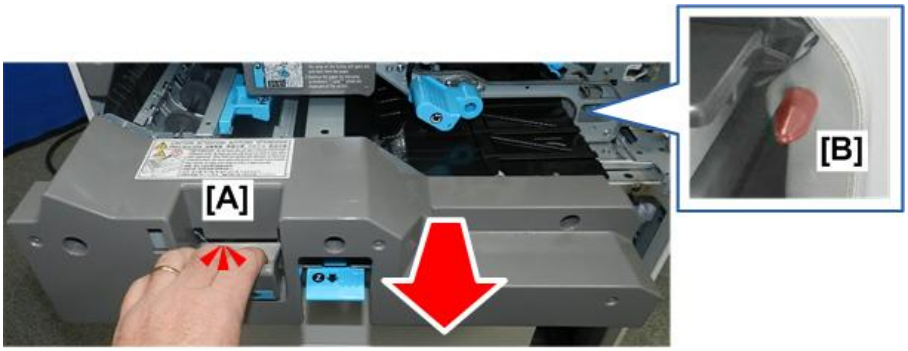
d223c3504

Re-installation

1. Pull out the duplex unit [A] before you re-install the bypass unit, and then confirm that pin [B] is out of its hole.

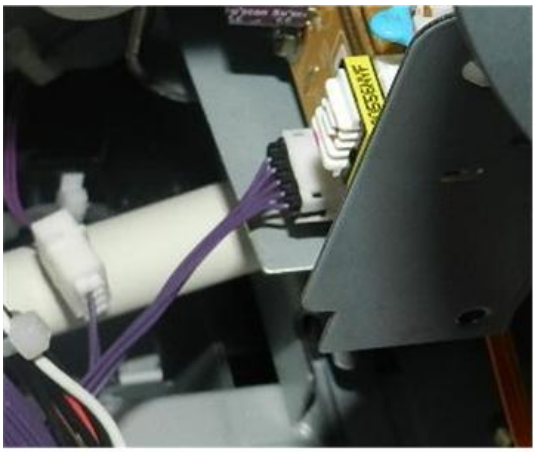
   Important

   - If the duplex unit is in the machine, you will not be able to re-install the bypass unit. Make sure the duplex unit is pulled out completely.



d223c3438

2. After you have re-installed the bypass unit and re-connected the motor and sensors, check this sensor to the right and make sure that it is securely connected.



d223c3440

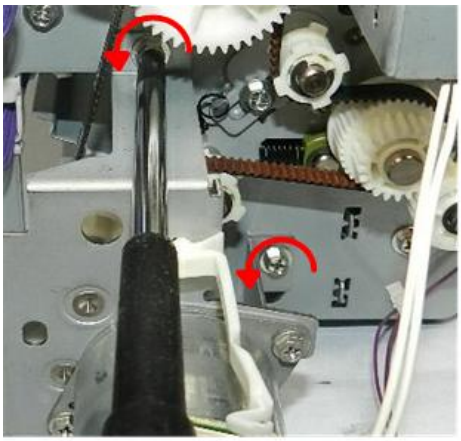
3. Work carefully to avoid catching any harnesses on the unit while moving it.
4. After re-installing the bypass unit, make sure no harnesses are pinched between the bypass unit and the frame.

By-Pass Motor

1. Remove the by-pass unit. By-pass Unit Removal
2. The by-pass motor is on the back of the by-pass unit.

d223c3505

3. Unfasten the motor bracket.

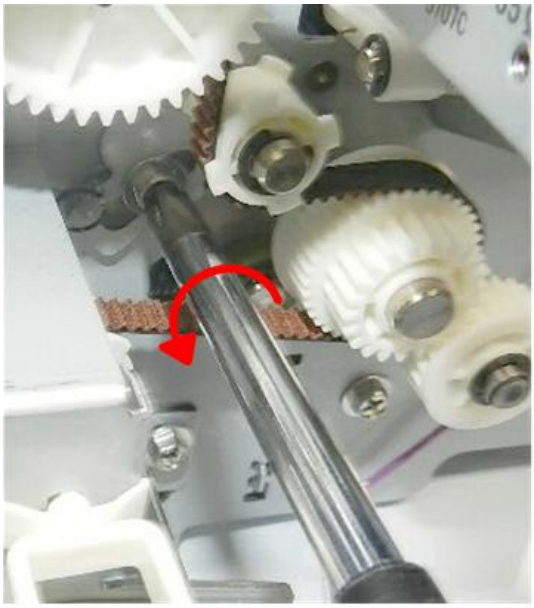


x2

x1

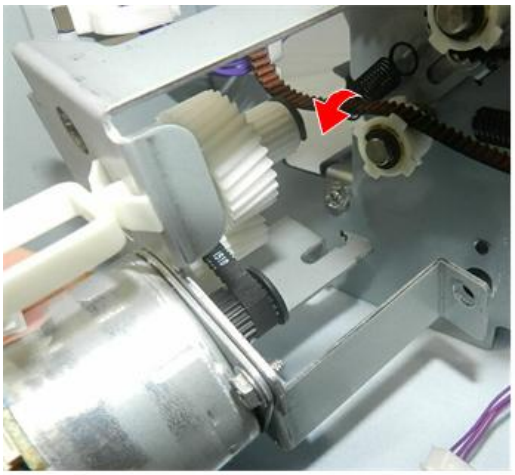
d223c3506

4. Loosen the tension screw to create some slack in the drive belt.

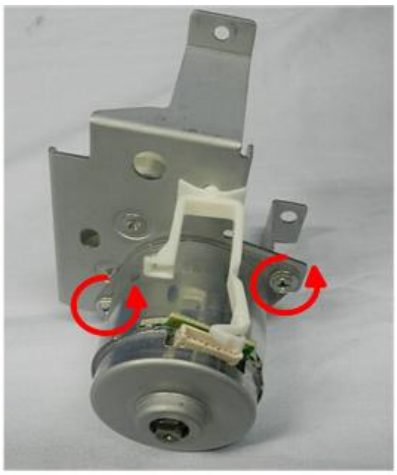


d223c3507

5. Remove the bracket with motor attached, and then disconnect the motor from the bracket.



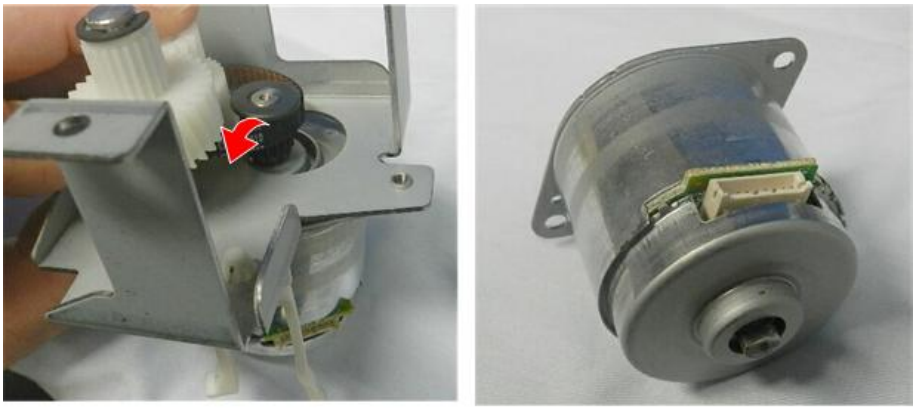
x1



x2

d223c3508

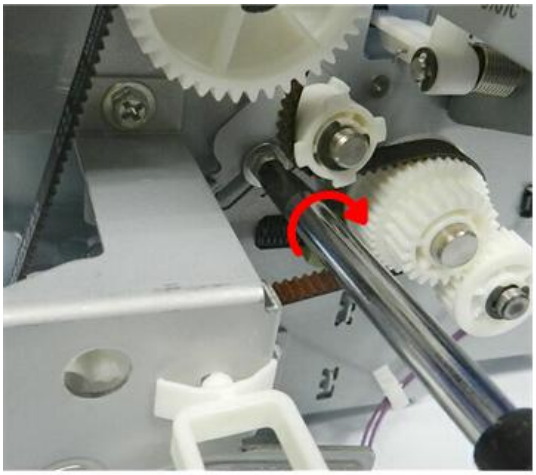
6. Separate the motor and drive belt.



d223c3509

x1

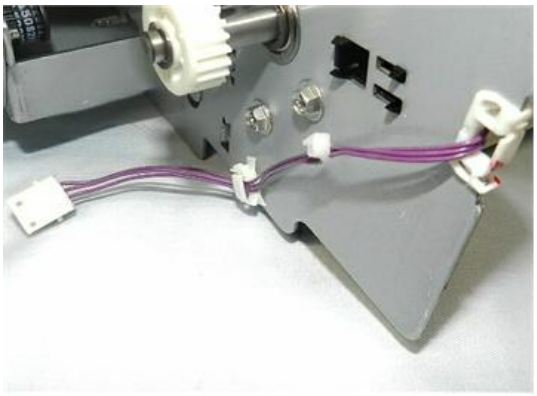
7. After you re-install the motor, move the tension screw to put more tension on the belt, and then tighten the screw.



d223c3510

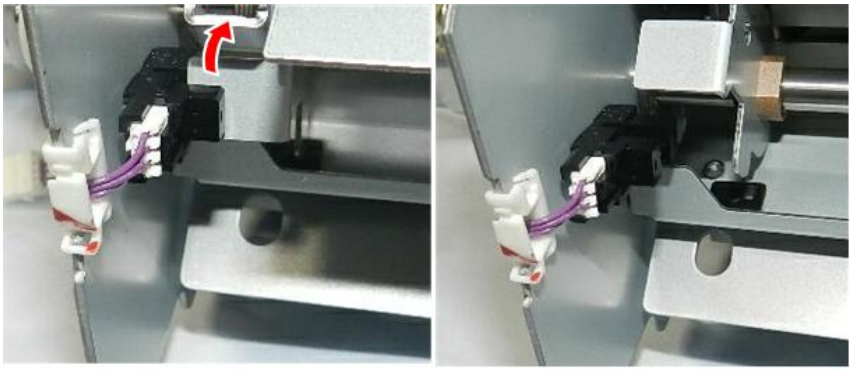
Guide Plate Sensor

1. Remove the by-pass unit. By-pass Unit Removal
2. The guide plate sensor is on the inside of the rear plate.



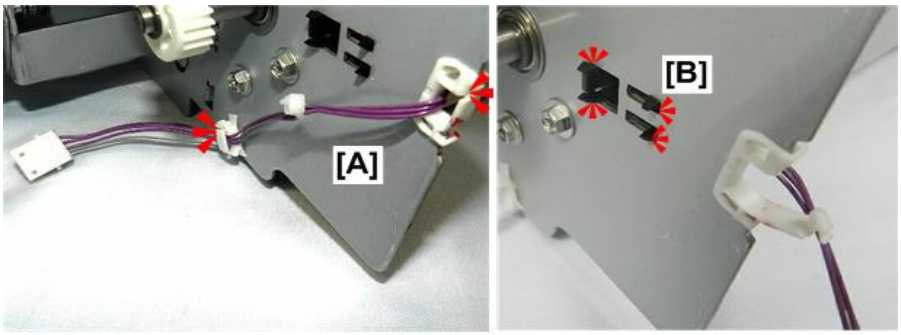
d223c3511

3. On the other side of the plate, raise the guide plate away from the sensor.



d223c3512

4. Free the harness [A].
5. Unfasten the sensor [B].



x2 x4 d223c3513

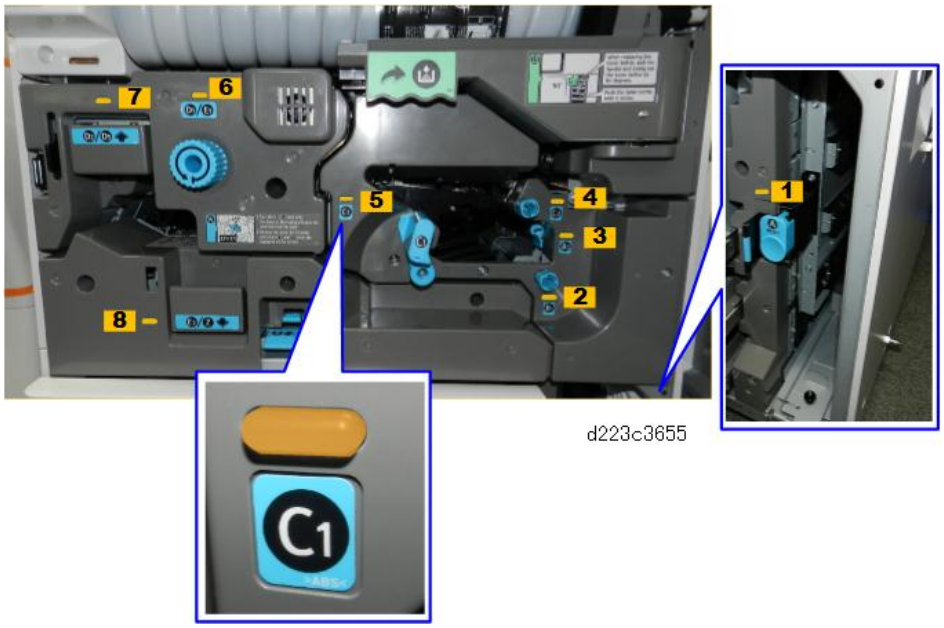
6. Disconnect sensor and harness.

x1 d223c3514

4.13.26 PAPER PATH LEDS

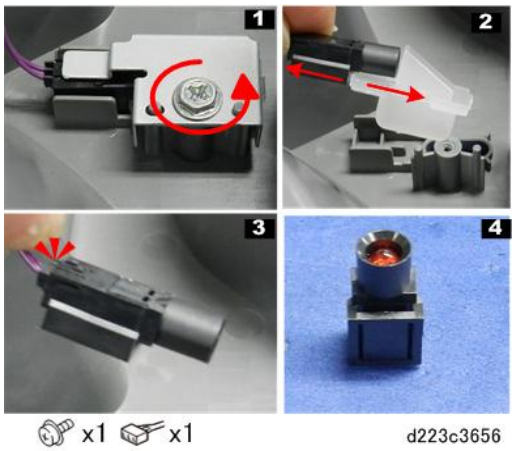
LED Locations

The paper feed path LEDs are mounted inside the inner covers on the front of the main machine. An LED lights when a paper jam occurs at that location.



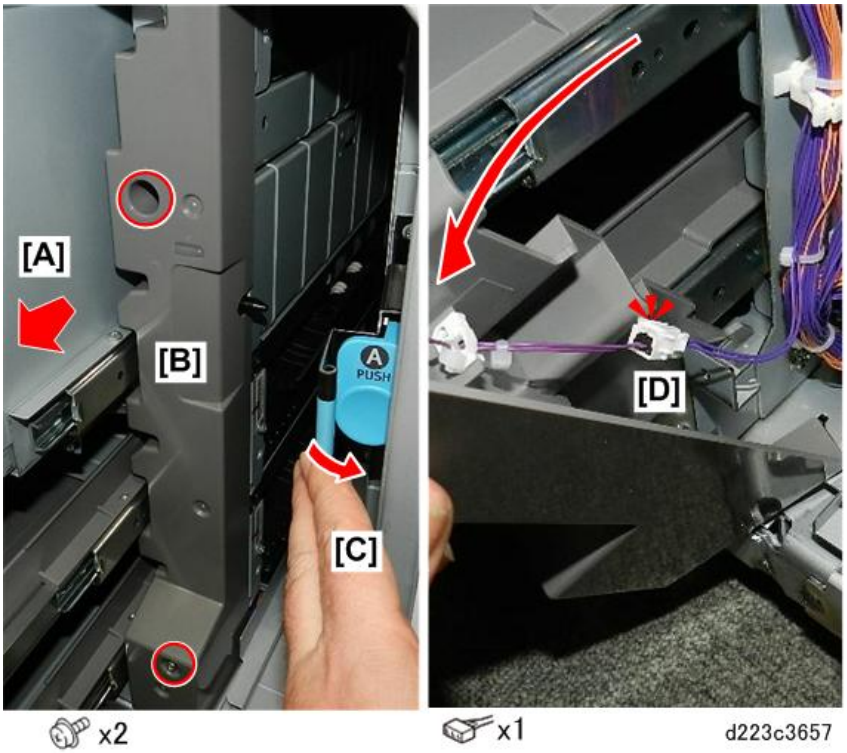
No.	Name	No.	Name
1	Jam LED A	5	Jam LED C1
2	Jam LED B1	6	Jam LED D1/E1
3	Jam LED B2	7	Jam LED D2/D3
4	Jam LED C2	8	Jam LED E2/Z

Each LED assembly is comprised of a plate held by one screw [1], an easily detachable lens [2], a small harness and connector [3] and the LED [4].

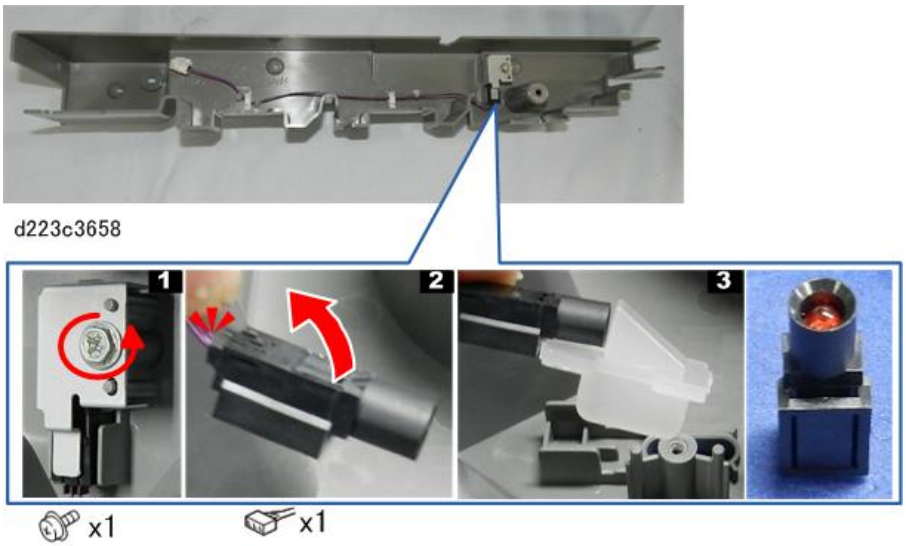


Jam LED A: Vertical Inner Cover

1. Open the front door.
2. Pull out the trays [A] (do not remove them.)
3. Disconnect the vertical inner cover [B].
4. Pull the cover away slightly [C], and then disconnect harness [D].

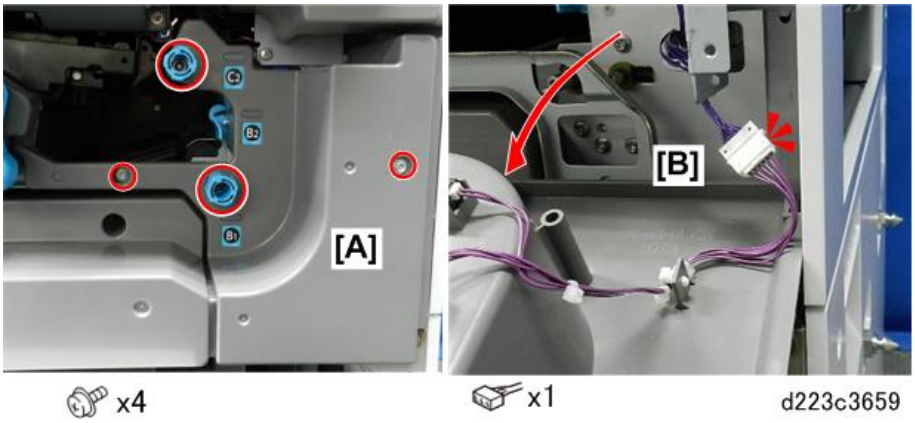


5. Lay the inner cover on a flat, clean surface.
6. Remove plate [1], remove LED and lens, and then disconnect the LED [2].
7. Separate the LED and lens [3].

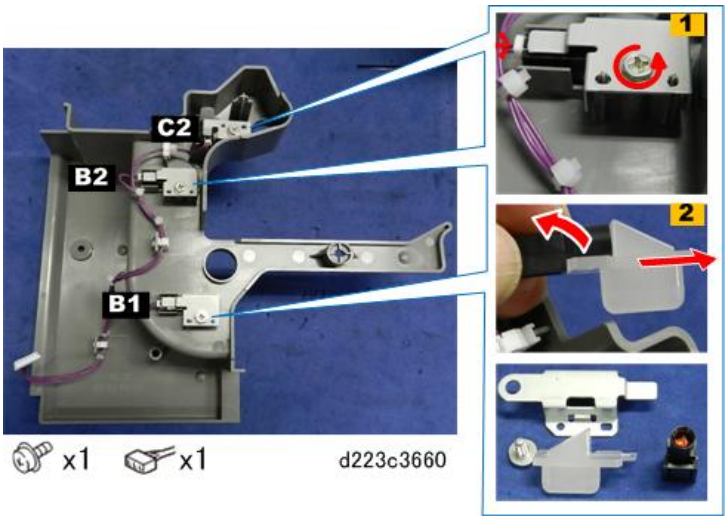


Jam LEDs C2, B2, B1

1. Open the front door.
2. Disconnect the inner cover [A].
3. Pull the cover away slightly, and then disconnect harness [B].

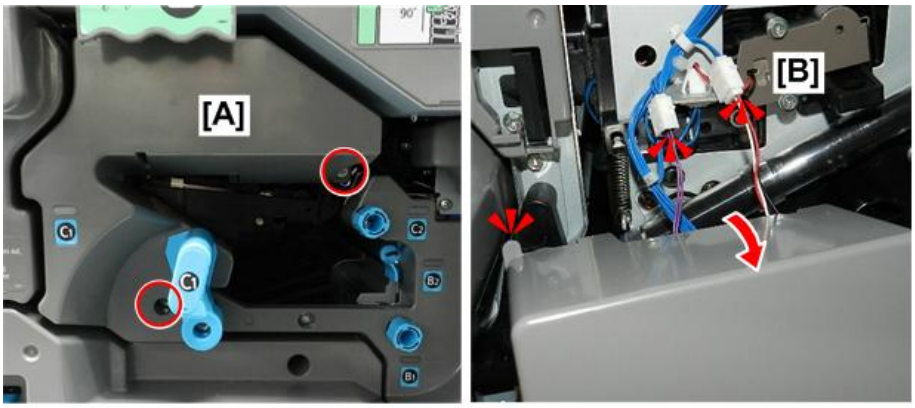


4. Lay the inner cover on a flat, clean surface.
5. Remove plate, and then disconnect the LED [1].
6. Separate the LED and lens [2].

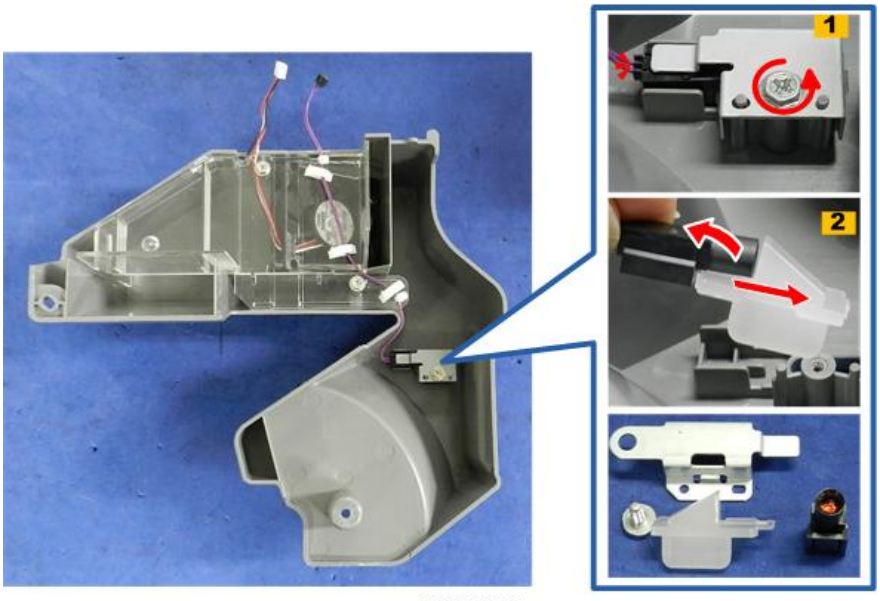


Jam LED C1 Inner Cover

1. Open the front door.
2. Disconnect the inner cover [A].
3. Pull the cover away slightly, and then disconnect harness [B].

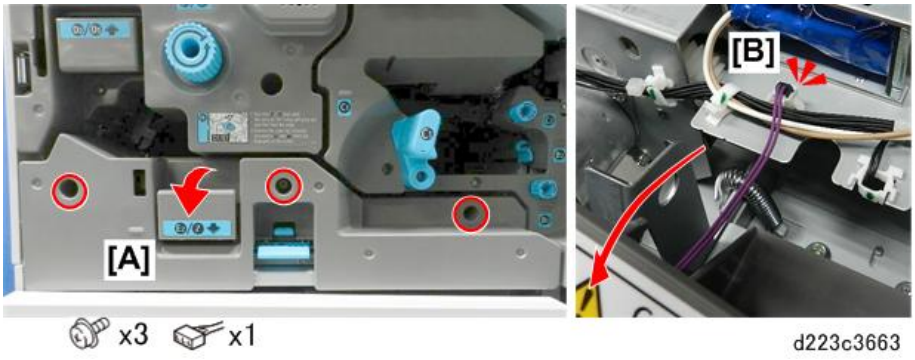


4. Lay the inner cover on a flat, clean surface.
5. Remove plate, and then disconnect the LED [1].
6. Separate the LED and lens [2].

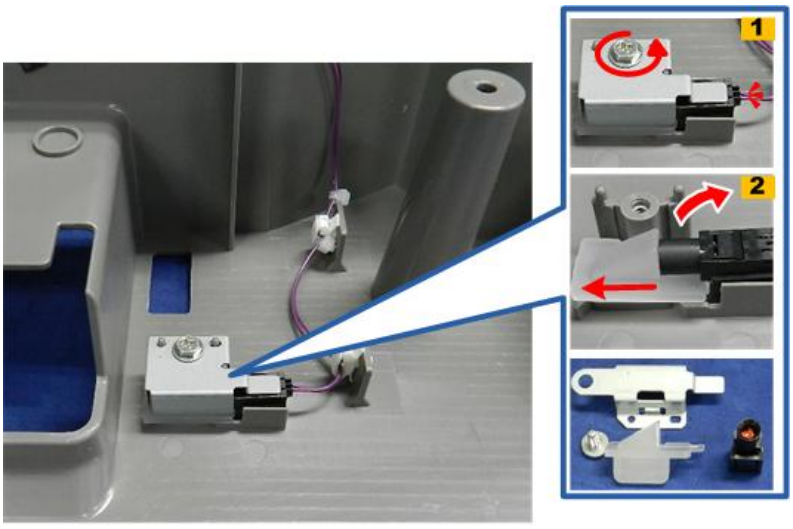


Jam LED E3/Z: Inverter Duplex Inner Cover

1. Open the front door.
2. Pull out the duplex unit.
3. Disconnect the duplex unit front cover [A].
4. Pull the cover away slightly, and then disconnect harness [B].



5. Lay the duplex unit front cover on a flat, clean surface.
6. Remove plate, and then disconnect the LED [1].
7. Separate the LED and lens [2].

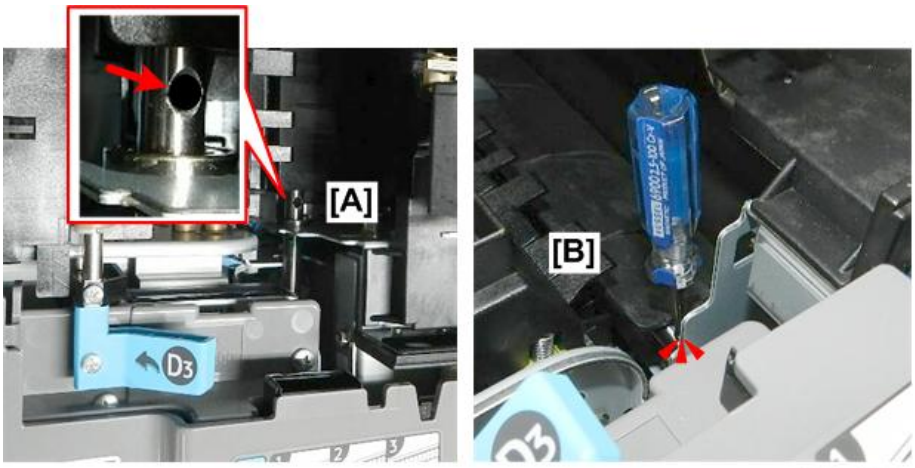


Jam LED D1/E1: Fusing Unit Inner Cover

1. Open the front door.
2. Pull out the fusing unit [A].
3. Open the top of the fusing unit [B].

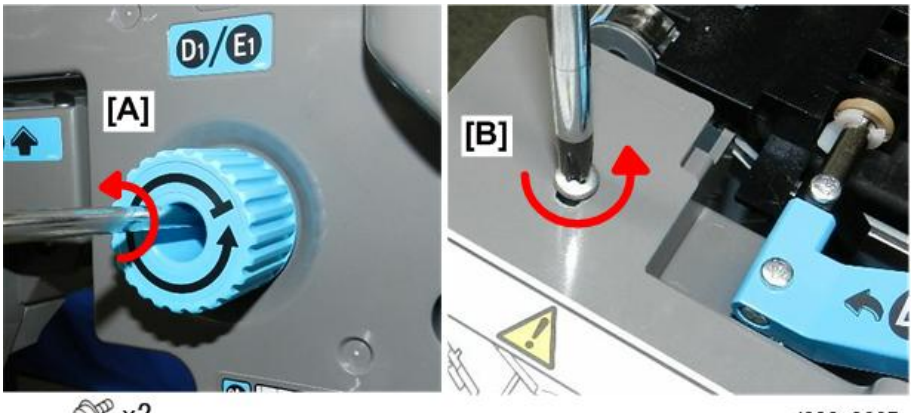
d223c3665

4. Locate the hole [A] in the shaft of the large knob on the front of the fusing unit.
5. If you cannot see the hole, turn the knob until the hole is visible.
6. Insert a small screwdriver [B] into hole to keep the shaft from turning when you remove the large knob.



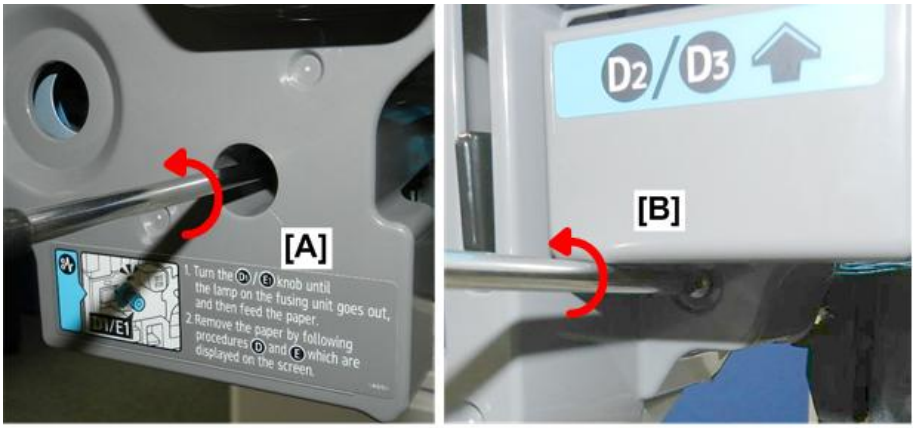
d223c3666

7. Remove large knob [A].
8. Disconnect top left corner [B] of the cover.



d223c3667

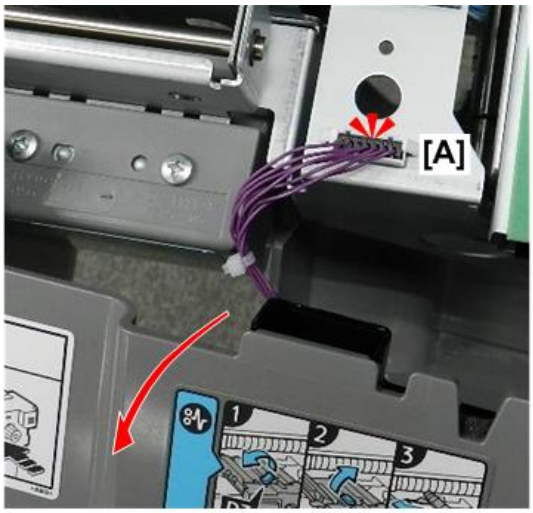
9. Disconnect right side [A] and left side [B] of the cover.



x2

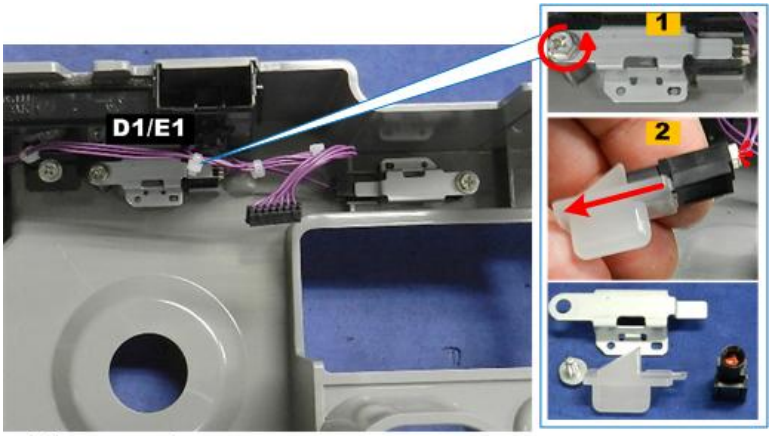
d223c3668

10. Pull the cover away slightly, and then disconnect harness [A].



d223c3669

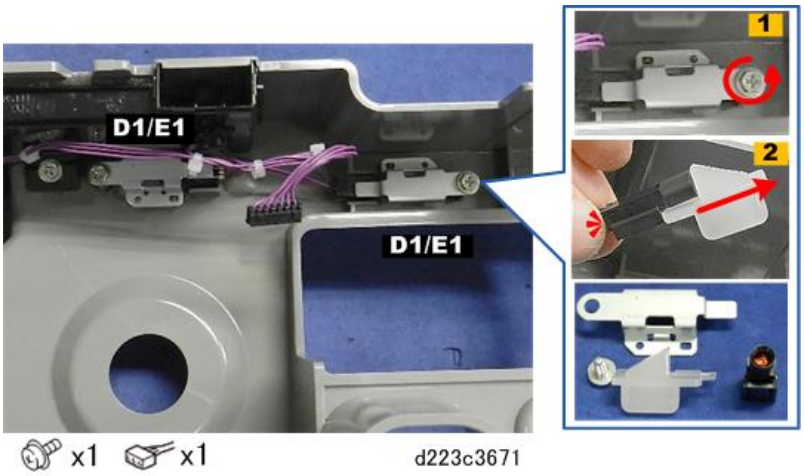
11. Lay the cover on a flat, clean surface.
12. Remove plate [1].
13. Disconnect the LED, and then separate the LED and lens [2].



x1 x1

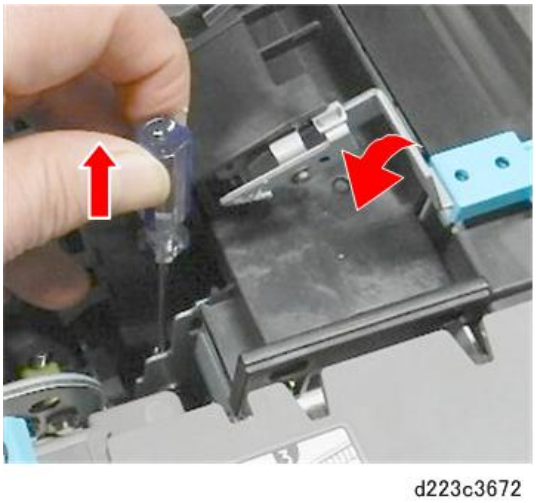
d223c3670

14. Remove plate [1].
15. Disconnect the LED, and then separate the LED and lens [2].



Re-assembly

1. Be sure to remove the screwdriver and close the top of the fusing unit before you push the fusing unit into the machine.



4.13.27 PAPER FEED ADJUSTMENTS

Paper Registration

The position of image on paper can be adjusted with SP codes in the main scan and sub scan directions. Before doing any of these adjustments you should always first check the alignment of the laser unit. page 4-93

Main Scan (Side-to-Side) Registration

- **SP1002-001 to 007** (Side-to-Side Registration). Use this SP code to correct paper registration problems for each paper feed station (Tray 1, Tray 2, Tray 3, Bypass Tray, LCIT, and Duplex Tray (during duplex printing). These settings correct printing position.
- **SP4011** (Main Scan Registration Adj). This SP adjusts the side-to-side registration for scanning in the main scan direction across the page. [–2.5 to 2.5/0.1mm]. Setting a negative value shifts the image toward the left edge, and setting a positive value shifts the image toward the right edge.

Sub Scan (Vertical) Registration

This SP codes are used for sub scan adjustments.

- SP1001 (Printer Sub Scan Registration – Main Tray Feed, LCIT Duplex)
- SP1002 (Printer Sub Scan Registration – Thick Paper Main Tray, LCIT Duplex)
- SP1003 (Printer Sub Scan Registration – Bypass)
- SP1004 (Printer Sub Scan Registration – Thick Paper Bypass)
- SP4010 (Scanner Sub Scan Registration)

Buckle Adjustment

During paper feed, the registration roller stops but the paper keeps moving for a very short time so its leading edge can buckle against the roller to correct paper skew. The amount of buckle at the registration roller can be adjusted for special paper.

- Too much buckle can cause the paper to wrinkle, crease, or jam when feeding Z-folded paper because the interval between the sheets is too small.
- Too little buckle can cause lag jams and lead to more skew in the paper path.

SP1003 adjusts the amount of buckled by adjusting the timing of the registration motor (a higher setting creates more buckle).

1. Enter the SP mode.
2. Open SP1003. [0 to 9/**0**/1 mm]
    - Enter a smaller setting to correct paper wrinkling, creasing, or jams with Z-folded sheets.
    - Enter a larger setting to correct lag jams and skew.

1003	Registration Buckle Adjustment
	Adjusts the registration motor timing. This timing determines the amount of paper buckle at registration. (A higher setting causes more buckling.) [–9 to +9/**0**/1 mm]
1	Tray LCIT
2	Duplex Tray
3	By-pass Tray
4	Thick Paper Tray
5	Thick Paper Duplex Tray

4.13.28 IMPORTANT SP CODES: PAPER FEED

Here is a list of SP codes related to testing and servicing paper feed components.

Item	SP No.	Function
Image registration: Main scan	4011	Adjusts the side-to-side registration for scanning in the main scan direction across the page. Setting a negative value shifts the image toward the left edge, and setting a positive value shifts the image toward the right edge.
Leading edge registration	1001	Adjusts the printing leading edge registration using the trimming area pattern.
Paper registration	1003	Adjusts the registration motor timing. This timing determines the amount of paper buckle at registration. (A higher setting causes more buckling.) The buckling straightens the paper in the paper path.
Paper registration: Printing	1002-1 to 7	Use this SP to adjust printing side-to-side paper registration for each feed station. These SP's should be adjusted after replacing the laser synchronization detector or the laser optical unit.
Paper size set	5959	The paper sizes must be selected with this SP code for Tray 1 (tandem tray), the LCIT, and Cover Interposer Tray. Tray 2 and Tray 3 can detect their paper sizes automatically with switches.
Registration, sub scan	4010	Adjusts the registration of the leading edge for scanning in the sub scan direction.

4.14 PCBS, HDD

4.14.1 BEFORE YOU BEGIN

Board Locations

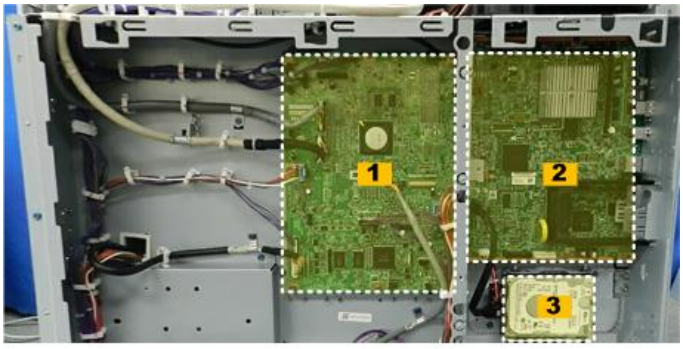
The number of boards has been reduced for the machines of this series. These boards have been eliminated:

- IPU (Functions moved to the BICU)
- CTL PSU (Controller PSU)
- CNB
- DRB
- PFB

These boards were not in the previous machines:

- RYB (Relay Board)
- AC drive board
- DHB

Inside the Controller Box

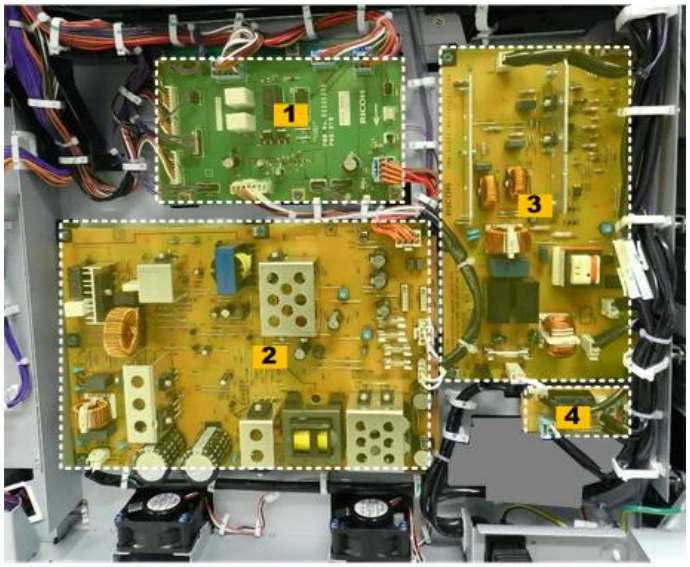


d223c3441

[1]	BICU
[2]	Controller board
[3]	HDD

- The BCU of the previous machines has been renamed "BICU" for these machines.
- In the previous machines the BCU was behind the controller box.

Below the Controller Box

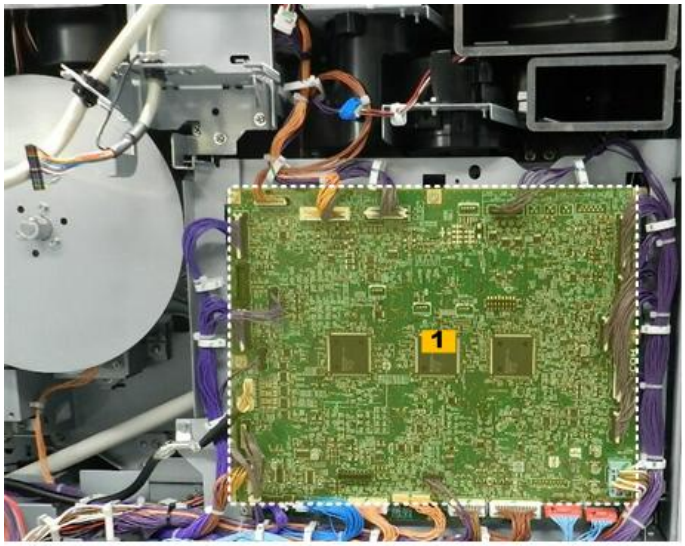


d223c3442

[1]	RYB
[2]	PSU
[3]	AC drive board
[4]	DHB

Behind the Controller Box

The controller box must be opened to access this board.



d223c3443

[1]	IOB

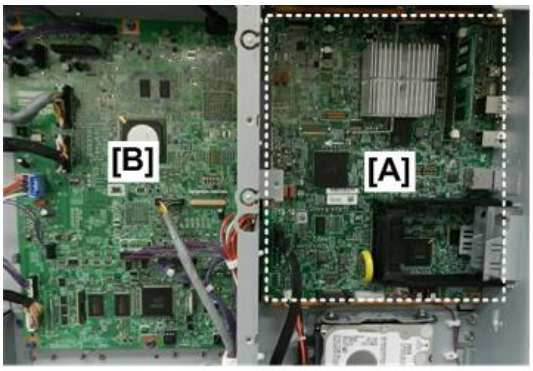
⚠CAUTION

- Before you touch a board, touch a metal surface to discharge accumulated static from your hands.
- Remove screws carefully so the tip of the screwdriver does not touch any part of the board.
- Handle boards carefully by their edges to avoid sharp edges and points on the backs of the boards.
- To avoid electrical shock, never touch a component on the PSU or AC drive board. Some of these parts retain an electric charge long after the machine has been turned off.

4.14.2 CONTROLLER BOARD REPLACEMENT

Before You Begin

- The photo below shows rear of the machine with the controller box cover removed.
- The controller board [A] is on the right, connected to the BICU [B] on the left.
- Each model in this series (D223, D224, D225) has a different controller board.
- If you install the wrong controller board, the machine will return SC955-03. The machine will not operate until the correct controller board has been installed.



d223c3444

Controller Board

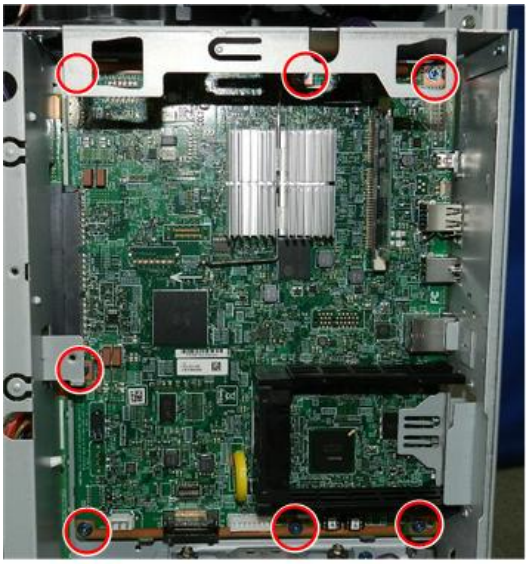
1. Remove the rear upper cover. page 4-19
2. Remove controller box cover plate. page 4-26
3. If there are any option I/F boards in the controller box remove them.

d223c3446

4. Disconnect the bottom of the controller board.

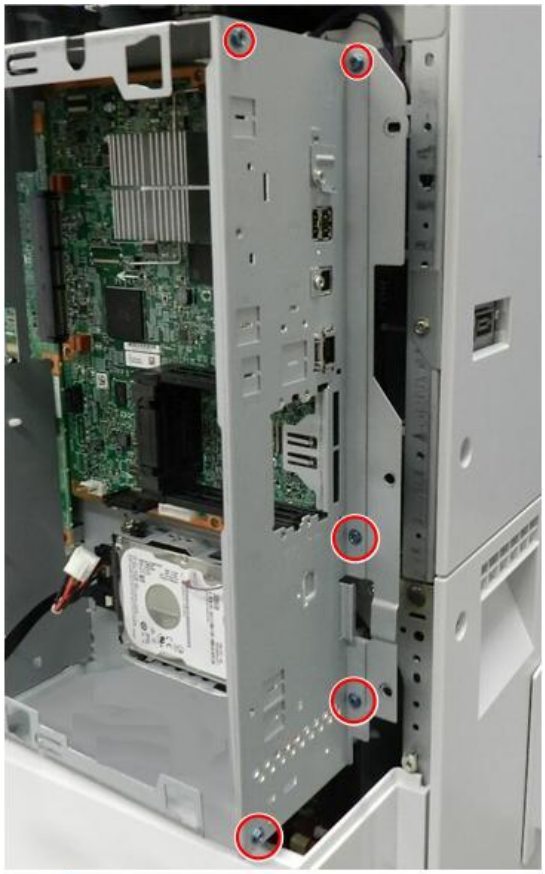
x2 d223c3447

5. Unfasten board from the machine.

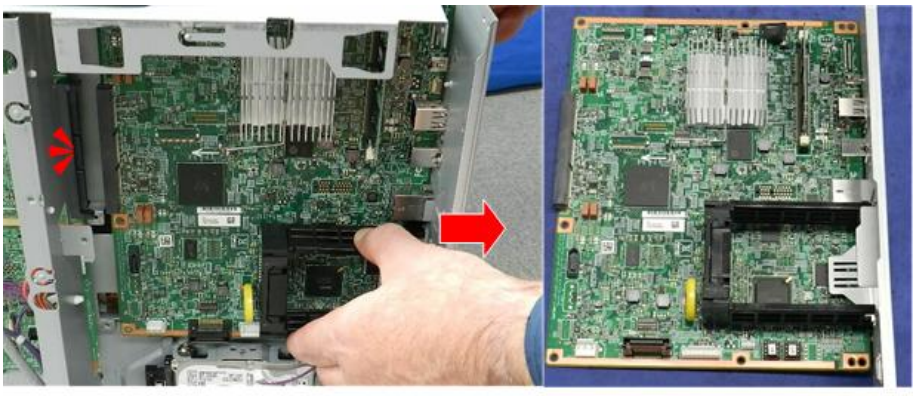


x7 d223c3448

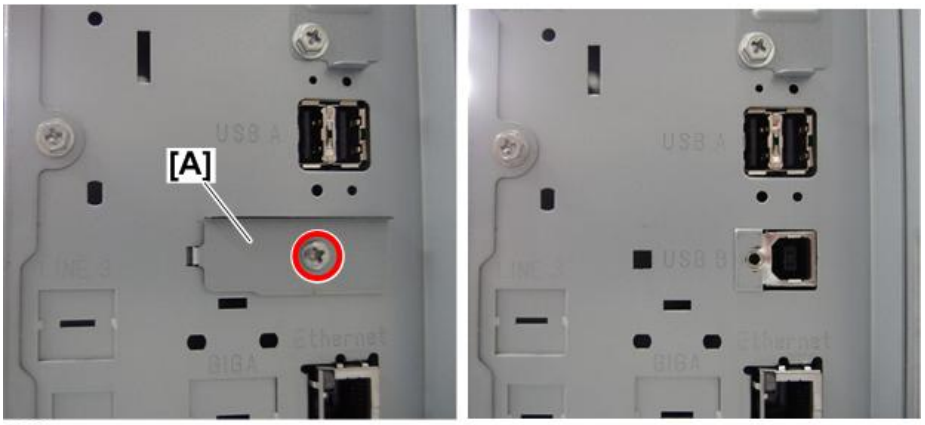
6. Unfasten the controller faceplate.



7. Slowly, with one hand on the board and one hand on the faceplate, disconnect the edge connector on the left, remove the board and faceplate together, and then lay them on a flat, clean surface.



8. Remove the port cover [A] of the USB-B port from the controller board guide plate.



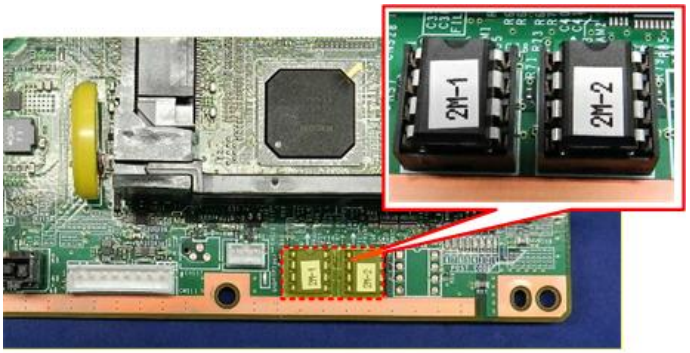
x1

d223d4819

9. Separate the controller board and controller board guide plate.

d223d4820

10. Remove both NVRAMs from the old controller board and install them on the new controller board.



d223c3452

Important

- The controller board has two NVRAMs, **2M-1** and **2M-2.**
- These NVRAMs are always replaced as a set.
- Each NVRAM must be installed at the correct location as shown above.
- If their positions are reversed, this will cause a short circuit and damage the board and NVRAMs.

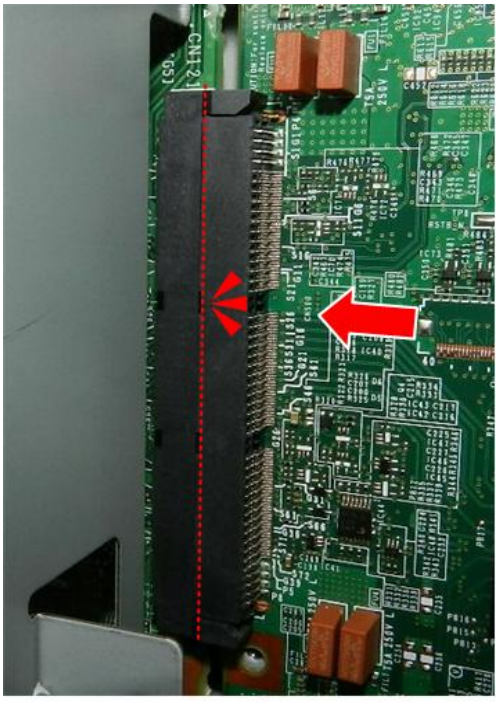
11. Fasten the controller board guide plate to the controller board.

Important

- The plate is soft metal so install it carefully to prevent bending it out of shape.

d223d4821

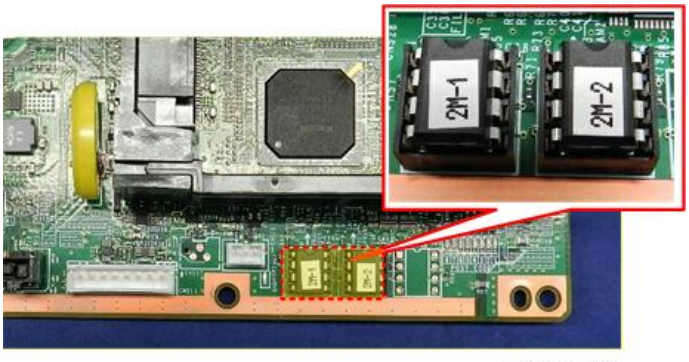
12. Connect the left edge of the controller board to the right edge of the BICU on the other side of the partition.



d223c3454

4.14.3 CONTROLLER BOARD NVRAM

1. Locate the SMC printout from the factory provided with the main machine.
2. Do **SP5990-001** (All – Data List) to print out all the current machine settings.
3. Turn the machine off.
4. Remove the SD slot cover, insert an SD card into Slot 2 (the lower slot), and then turn the machine on.
5. Do **SP5824** (NVRAM Data Upload) to copy the NVRAM data onto the SD card.
6. Turn the machine off and unplug the machine from the power source.
7. Remove the SD card from SD Card Slot 2.
8. Insert another SD card into SD Card Slot 2, reconnect the machine to the power source, and then turn the machine on.
9. Do **SP5846-051** (UCS Settings) to copy all address book data from NVRAM to the SD card.
10. If the fax option is installed, go into the User Tools and make a note of the following settings:
    - F Code Box List: Fax Initial Setting > Main Setting > F Code Box Setting: List Print > Print
    - Special Destination List: Fax Initial Setting > Receive Setting > Special Destination Setting: List Print > Print
    - Fax Initial Setting >Receive Settings > Onscreen items and settings
    - Fax Initial Setting > Send Settings > Onscreen items and settings
11. Turn the machine off and then disconnect it from its power source.
12. Remove the SD card with the Address Book data from SD Card Slot 2.
13. Remove the controller board and lay it on a flat clean surface.
14. Remove both NVRAMs from the old controller board and replace them with the new NVRAMs.



d223c3452

Important

- The controller board has two NVRAMs, **2M-1** and **2M-2.**
- These NVRAMs are always replaced as a set.
- Each NVRAM must be installed at the correct location as shown above.
- If their positions are reversed, this will cause a short circuit and damage the board and NVRAMs.

15. Reinstall the controller board in the machine.
16. Reconnect the machine, confirm that there are no SD cards in the machine, and then turn the machine on.

Note

- If the machine issues SC995-02 (CPM Setting Error 2), do not turn the machine off. Ignore this message and continue this procedure.

17. Insert into SD Card Slot 2 the SD card with the NVRAM data that you copied earlier with **SP5824**.
18. Do **SP5825** (NVRAM Data Download) to copy the data from the SD card to the new NVRAM on the controller board.

Note

- The download will take about 2 or 3 min.
- Wait for the message that tells you the download has finished and to cycle the machine off/on, but do not turn the machine off. Touch the Close button.
- If the machine issues SC870-11 (Address Book Data Error), just ignore this message and continue with this procedure.

19. Turn the machine off, and then remove the SD card from SD Card Slot 2.
20. Turn the machine on.
21. Insert into SD Card Slot 2 the SD card with the Address Book data you copied earlier.
22. Do **SP5846-052** (UCS Settings – Restore Directory Info.) to restore the address data.
23. Turn the machine off, and then remove the SD card from SD Card Slot 2.
24. Turn the machine on.
25. If the Fax unit is installed, do the same settings you performed earlier to confirm that the settings have not changed:
    - F Code Box List: Fax Initial Setting > Main Setting > F Code Box Setting: List Print > Print
    - Special Destination List: Fax Initial Setting > Receive Setting > Special Destination Setting: List Print > Print
    - Fax Initial Setting >Receive Settings > Onscreen items and settings
    - Fax Initial Setting > Send Settings > Onscreen items and settings
26. Do **SP5990-001** to print another SMC report, compare this printout with the earlier printout to confirm that the settings are the same, and then correct any settings that are different. After NVRAM has been replaced the following counts are reset

Item	Count
Total Count	0
Other Counts	0

27. Cycle the machine off/on.

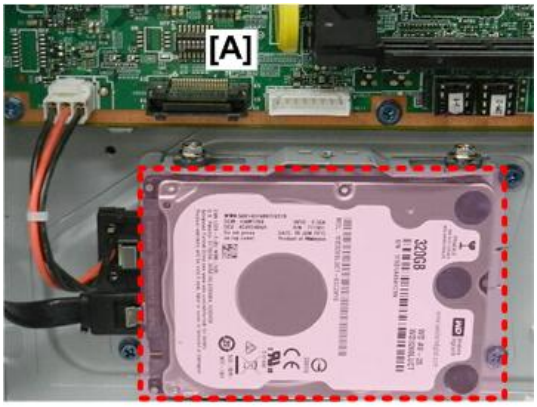
Important

- If either **SP5824** (NVRAM Data Upload) or **SP5825** (NVRAM Data Download) fails to execute, you will have to restore the settings manually with the data on the SMC report provided with the machine.
- Re-install the Data Overwrite Security function and HDD Encryption feature.
- If the machine displays “SD cards for restoration required” after the NVRAM has been replaced, then restoration of the Data Encryption key is required.

4.14.4 HDD

HDD Removal

1. Remove the rear upper cover. Rear Upper Cover
2. Remove controller box cover plate. Controller Box Cover Plate
3. The single HDD (320 MB) is located below the controller board [A] on the right.



d223c3455

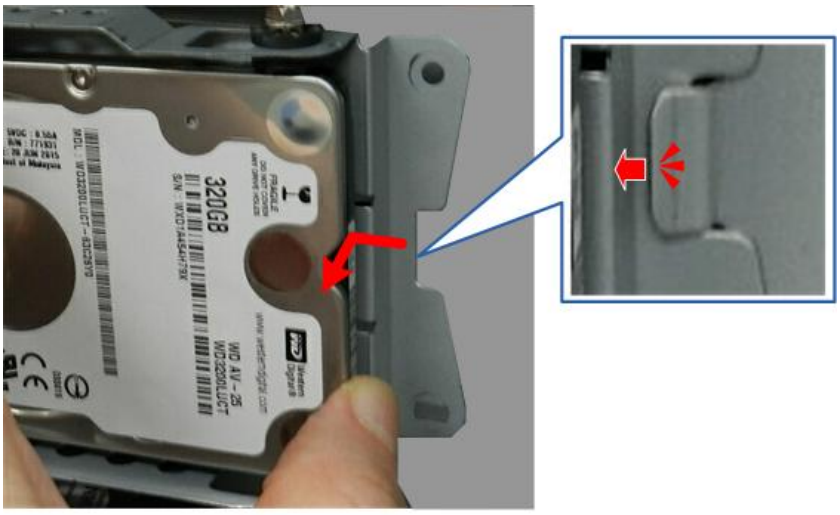
4. Disconnect the HDD from the controller board.

x2 d223c3456

5. Unfasten the HDD bracket.

x3 d223c3457

6. Unhook the HDD bracket from the machine frame.

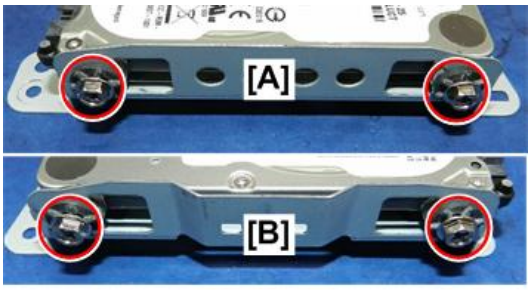


d223c3458

7. Lay the bracket with HDD attached on a flat, clean surface.

x2 d223c3459

8. Remove the screws from the bracket front [A] and rear [B].



d223c3460

x4

9. Separate the HDD from the bracket.

d223c3461

Re-installation

1. Hook the HDD bracket to the frame on the right so the bracket is flat against the frame.

Important

- If the bracket is not flat against the frame you will not be able to re-attach the screws.

d223c3462

2. After restoring the machine for normal operation, execute **SP5832-011** (HDD Format – All) to format the hard disk.

After HDD Replacement

Explain to the operator that after a faulty HDD has been replaced the following data is lost and cannot be recovered'

- Document server documents
- Custom-made stamps
- Document server address book.

The address book and document server documents must be input again.

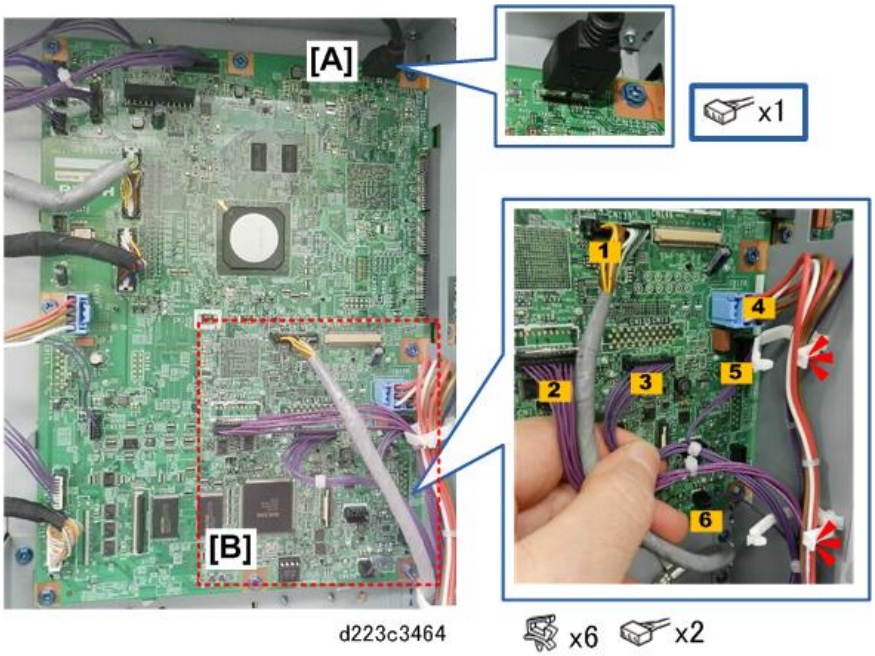
If the customer is using the Data Overwrite Security feature, the DOS function must be set enabled again with **SP5878-001**.

4.14.5 BICU

The BICU is connected to the controller board on the right.

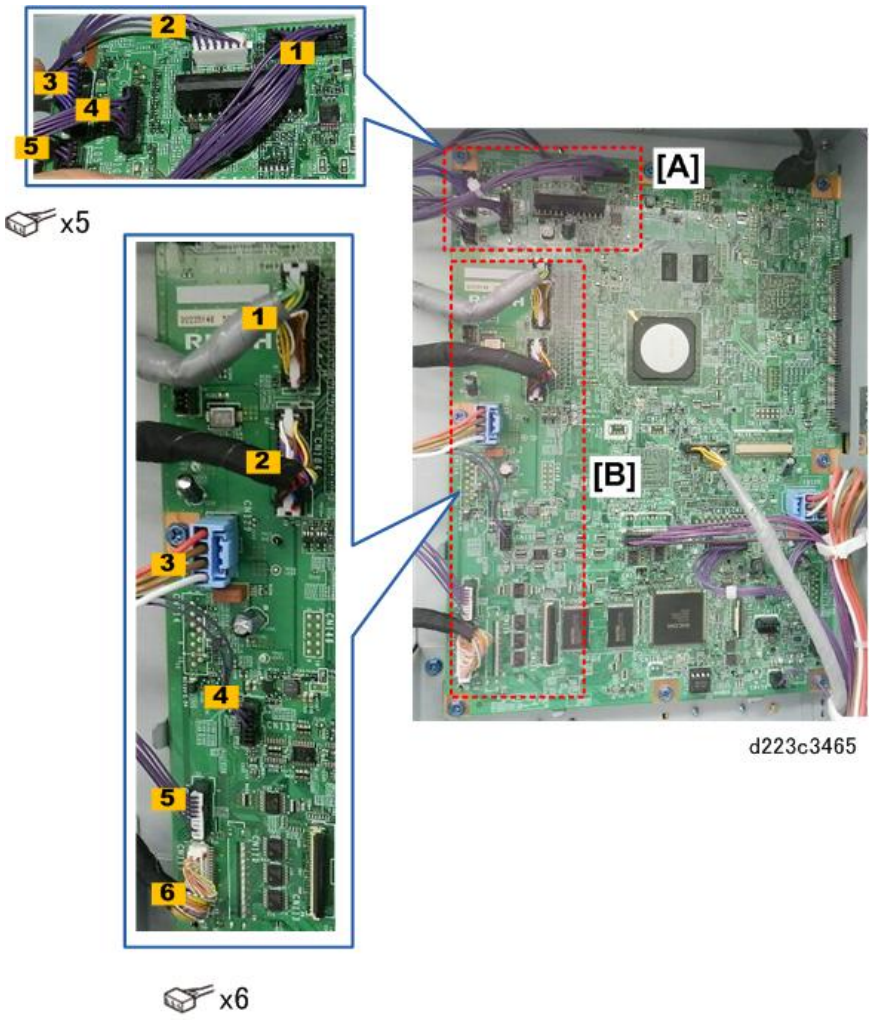
d223c3463

1. Remove the rear upper cover. page 4-19
2. Remove controller box cover plate. page 4-26
3. Disconnect the top right corner [A] and bottom right corner [B] of the BICU.

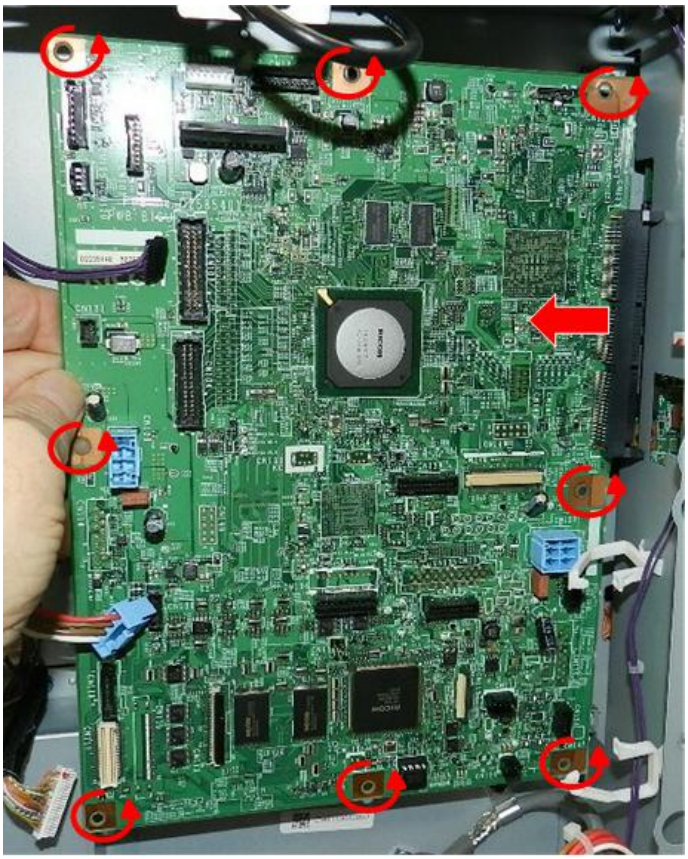


d223c3464

4. Disconnect the top right corner [A] and left side [B] of the BICU.



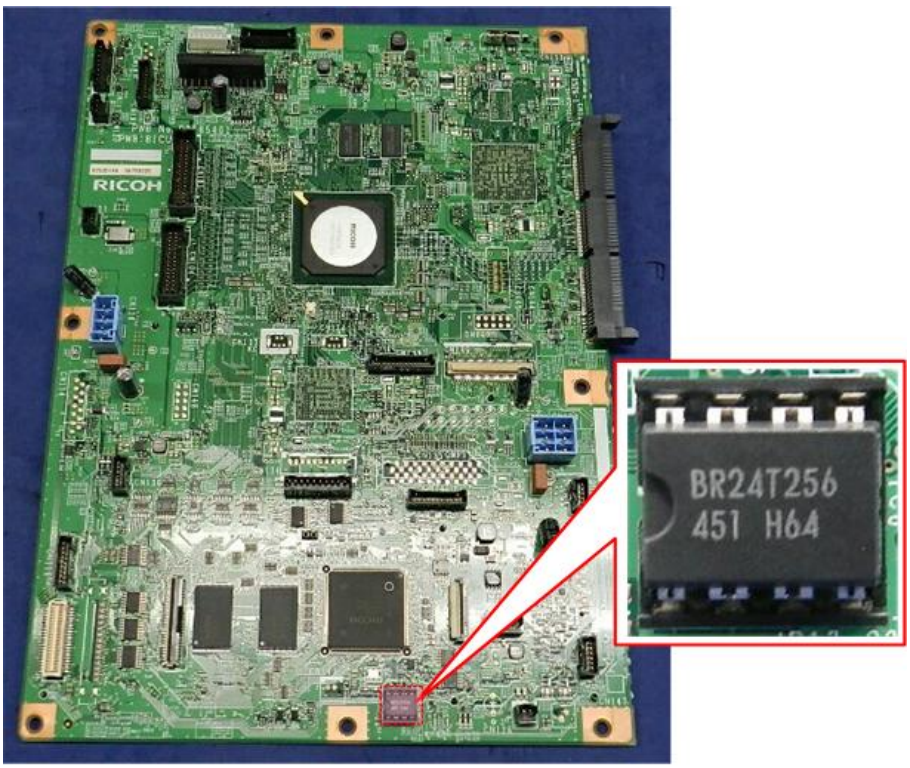
5. Unfasten the board from the machine frame, and the slowly pull the board to the left to remove it.



x8

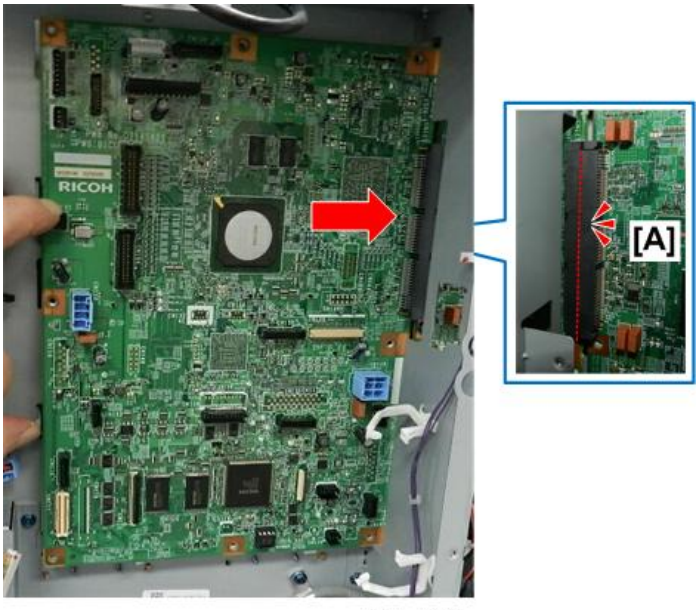
d223c3466

6. Remove the NVRAM from the old BICU and install it on the new BICU.



d223c3467

7. Connect the right edge of the BICU to the left edge of the controller board [A].

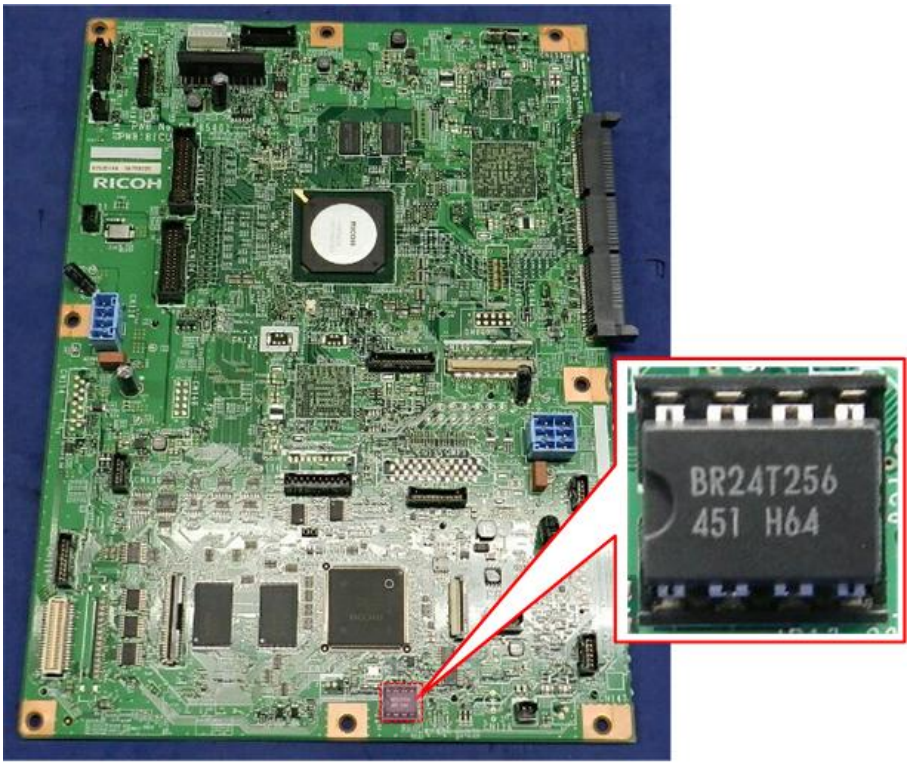


d223c3468

8. Re-install the rear covers, and then turn the machine on.
9. Open SP5811-004, and then enter the BICU number (displayed at SP5811-005).
10. Cycle the machine off/on.
11. Do the SP/UP settings as needed.
12. Cycle the machine off/on again to execute the initial process control cycle.

4.14.6 BICU NVRAM

1. Refer to the SMC report provided with the machine at installation.
2. Do **SP5990-001** to print out a complete, current SMC report.
3. Turn the machine off.
4. Remove the SD card slot cover, insert an SD card in SD Card Slot 2, and then turn the machine on.
5. Do **SP5824-001** (NVRAM Data Upload) to copy the data from NVRAM onto the SD card.
6. Turn the machine off, and then unplug the machine from its power source.
7. Remove the upper rear cover and controller box cover. page 4-26
8. Remove the BICU. page 4-377
9. Replace the old NVRAM on the BICU with the new NVRAM.



d223c3467

10. Connect the machine to its power source, and then turn the machine on.
11. Open **SP5131**, and then select your location.
12. Enter the ID number for the new NVRAM.

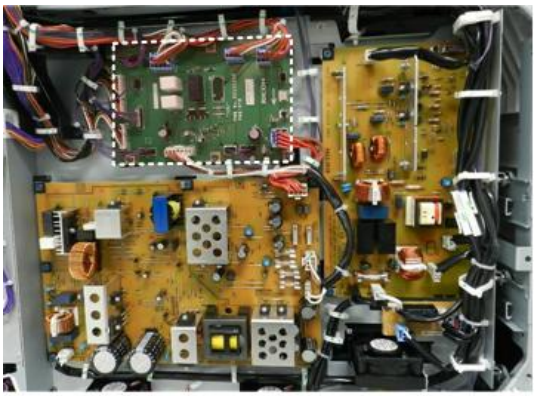
Note

- This is not the same number entered for the NVRAM with SP5811-04 (Machine Serial Number Set – Set BCU).
- Contact your supervisor for instructions on how to procure and enter this number. If this number is not entered correctly, the machine will return SC195-00 or display "Fusing Unit Setting Error."

13. Cycle the machine off/on.
14. Insert into SD Card Slot 2 the SD card with the data you copied earlier with **SP5824**, and then do **SP5825** (NVRAM Download) to download (copy) the data to the new NVRAM.
15. Turn the machine off and remove the SD card from SD Card Slot 2.
16. Turn the machine on.
17. Do the User Tools and SP code settings as needed.
18. Cycle the machine off/on to enable the settings.

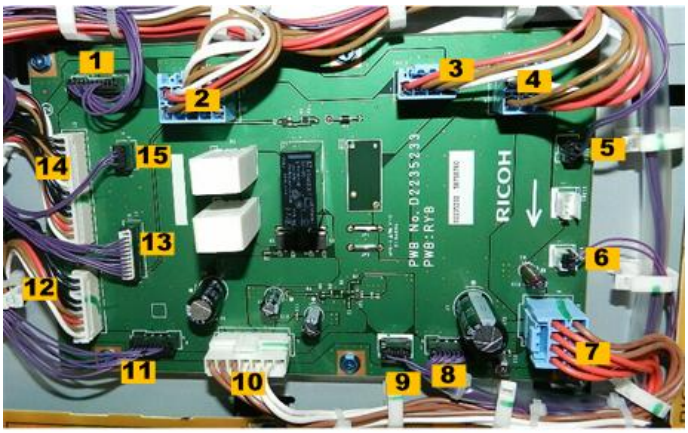
4.14.7 RYB (RELAY BOARD)

1. Remove both rear covers. page 4-19
2. Open the controller box. page 4-28
3. The RYB (Relay Board) is below the controller box.



d223c3469

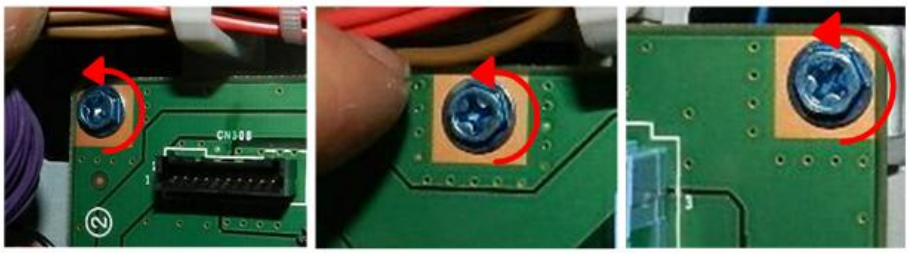
4. Disconnect the board.



x15

d223c3470

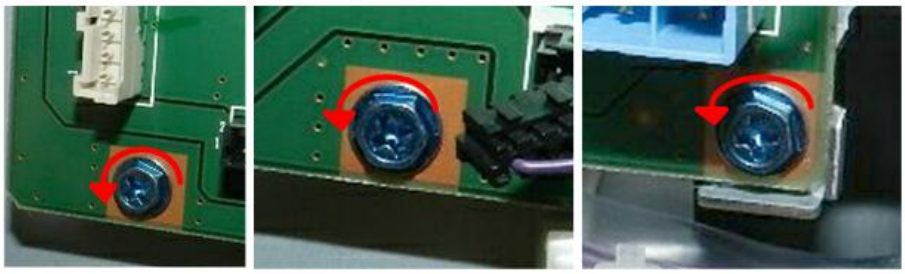
5. Unfasten the top edge of the board.



x3

d223c3471

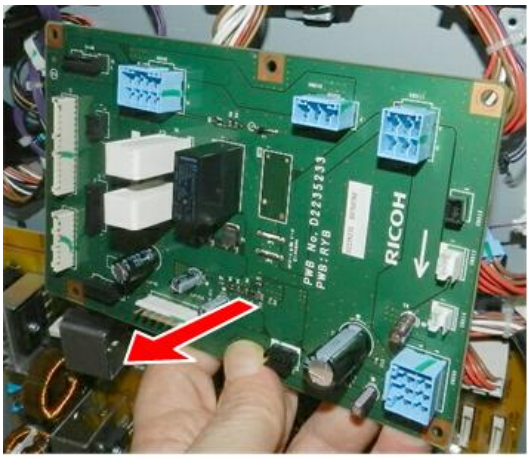
6. Unfasten the bottom edge of the board.



x3

d223c3472

7. Remove the board.



d223c3473

8. Lay the board on a flat, clean surface.

d223c3474

9. When you re-install the board, carefully check around the edges to make sure that there are no connectors or harnesses caught below the board.

d223c3475

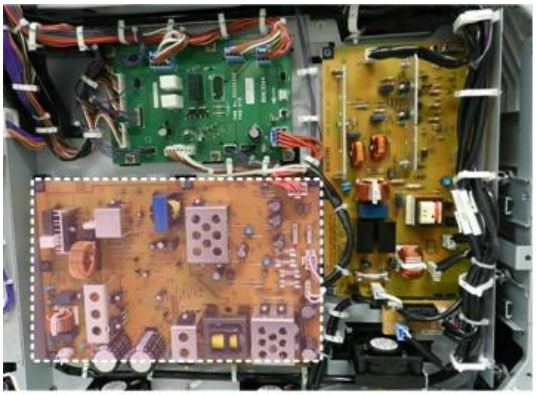
4.14.8 PSU

⚠CAUTION

- Work carefully around the PSU.
- Never touch any component on the PSU with your hand or a tool, especially one of the heat sinks.
- The heat sinks [A] are live and labeled with warnings not to touch them.
- A heat sink can retain a considerable electrical charge for hours, even after the machine has been turned off.

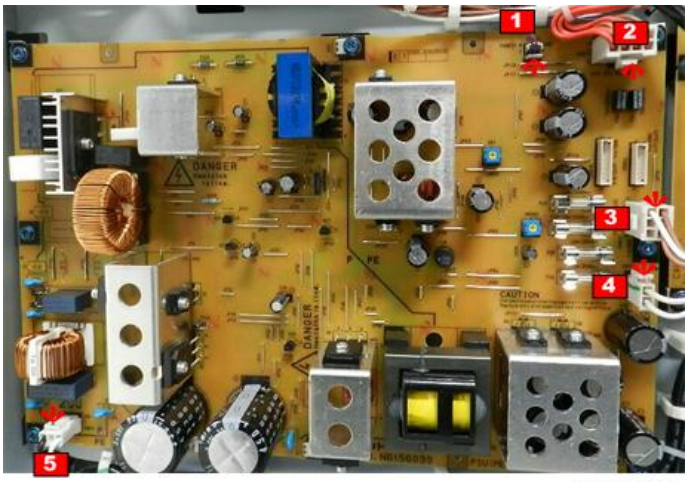
d223c3479

1. Remove both rear covers. Rear covers.
2. Open the controller box. Controller Box
3. The PSU is below the green RYB and to the left of the vertical AC drive board.



d223c3476

4. Disconnect the PSU.



x5 d223c3477

5. Unfasten the left side and right side of the PSU.

x3

x5 d223c3478

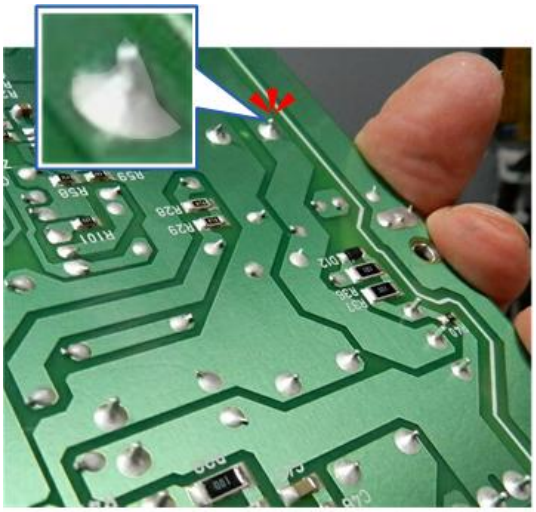
⚠CAUTION

- Handle the PSU carefully by its edges.
- Never touch any component on the PSU with your hand or a tool, especially one of the heat sinks.
- The heat sinks are live and labeled with warnings not to touch them.
- A heat sink can retain a considerable electrical charge for hours, even after the machine has been turned off.

d223c3479

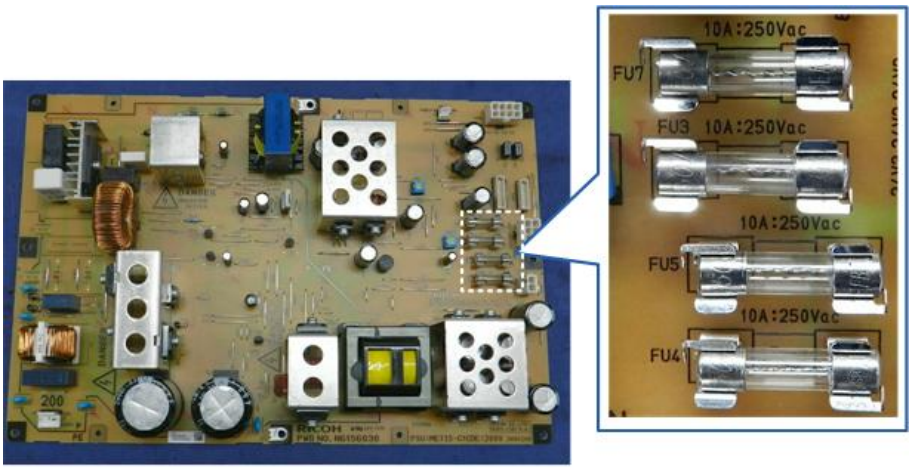
⚠CAUTION

- To avoid personal injury, never touch the back of the board.
- Some of the soldered contacts are extremely sharp and can cut or puncture your fingers if you grip the back of the board.



d223c3480

6. While carefully handling the board by its edges, lay the PSU on a flat clean surface.
7. Note the location of glass fuses FU3, FU4, FU5 and FU7.



d223c3481

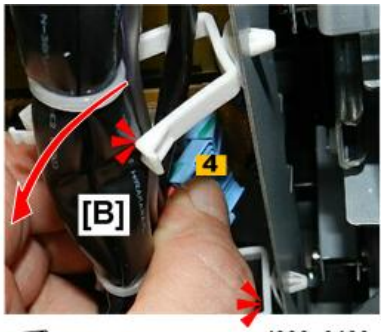
4.14.9 DHB

1. Remove both rear covers. Rear covers.
2. Open the controller box. Controller Box
3. The DHB is the small board below the vertical AC drive board on the right.

d223c3482

4. Disconnect the three visible connectors [A].
5. Free the large harnesses on the right so you can disconnect the connector [B] behind them.

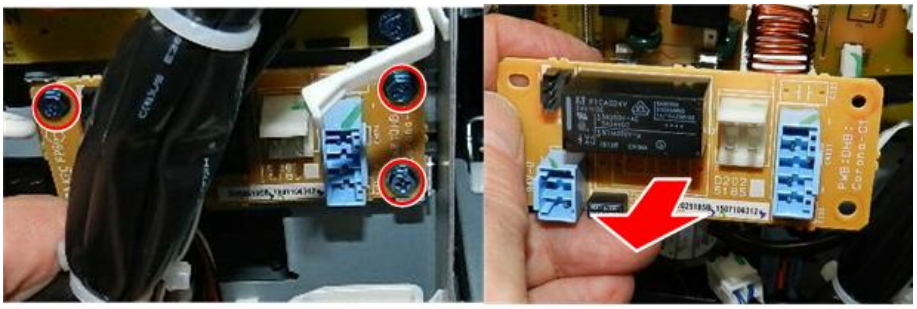
x3



x2 x1

d223c3483

6. Unfasten the board, and then remove it.



x3

d223c3484

7. Lay the DHB on a flat, clean surface.

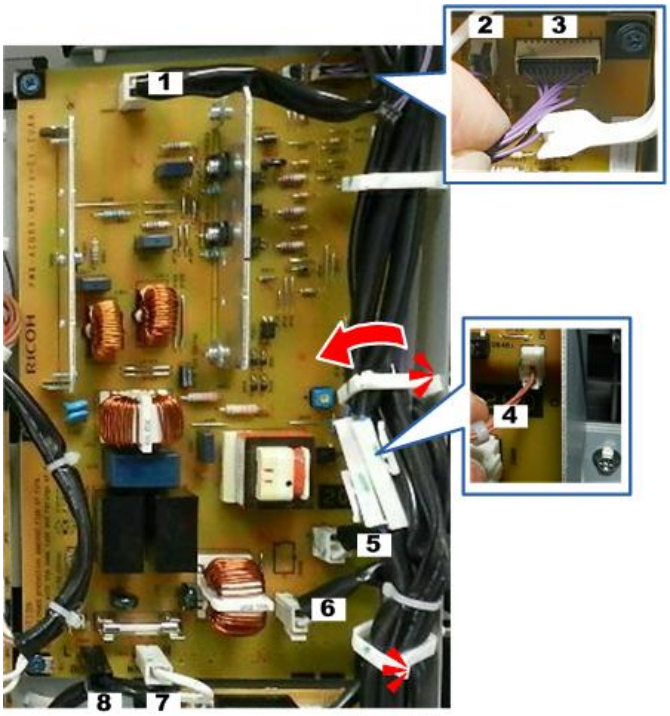
d223c3485

4.14.10 AC DRIVE BOARD

1. Remove both rear covers. Rear covers.
2. Open the controller box. Controller Box
3. The AC drive board is the large vertical board on the right.

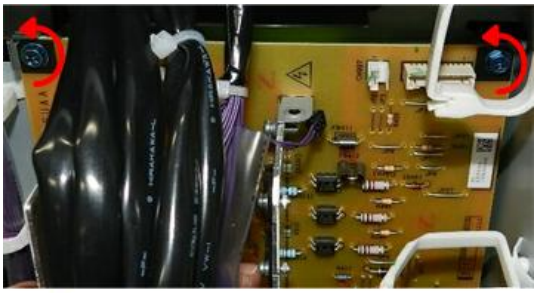
d223c3486

4. Disconnect the board.



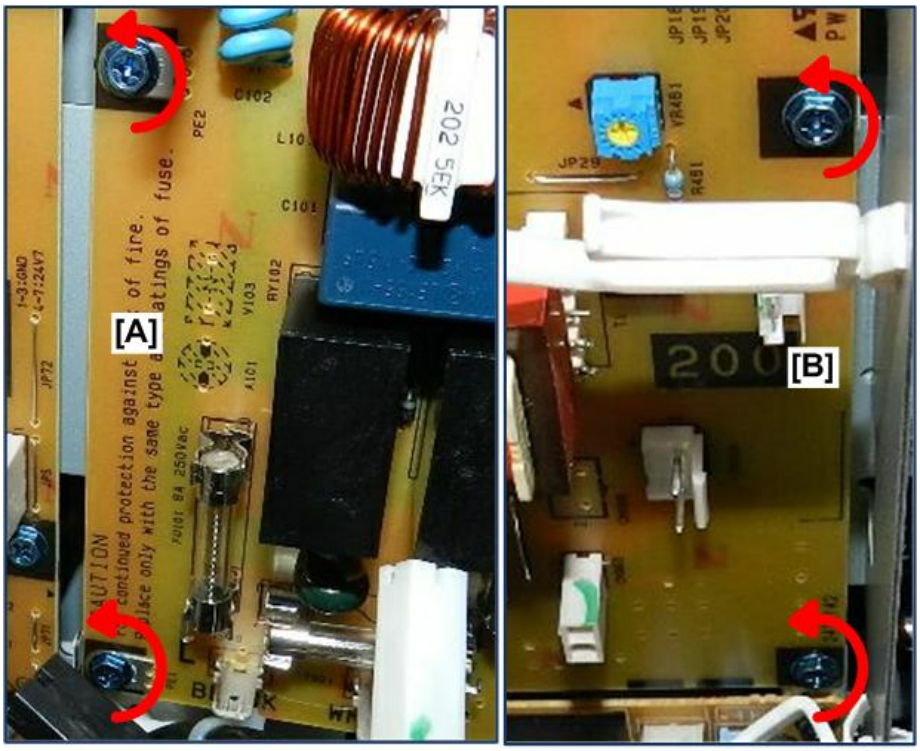
x8 x2 d223c3487

5. Unfasten the top of the board.



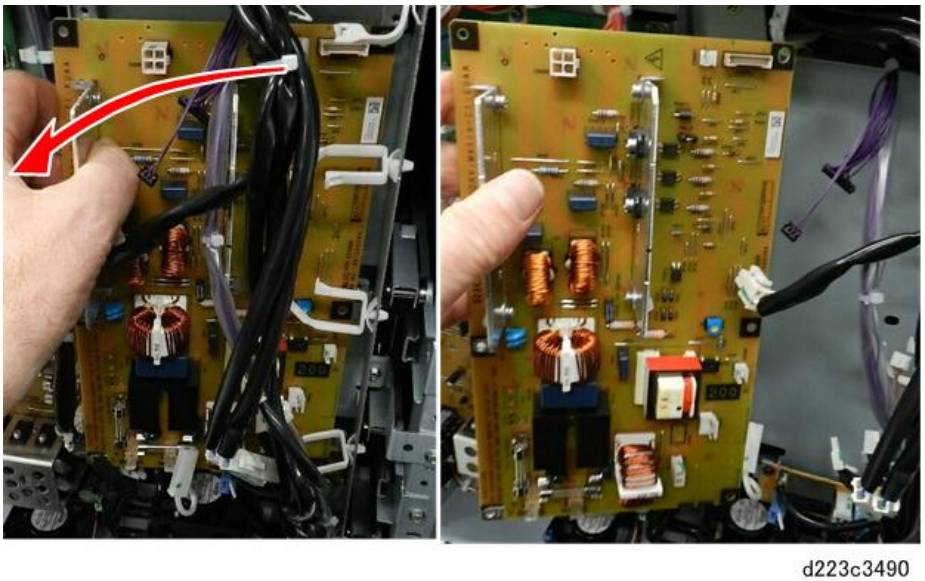
x2 d223c3488

6. Unfasten the left side of the board [A] and the right side of the board [B].

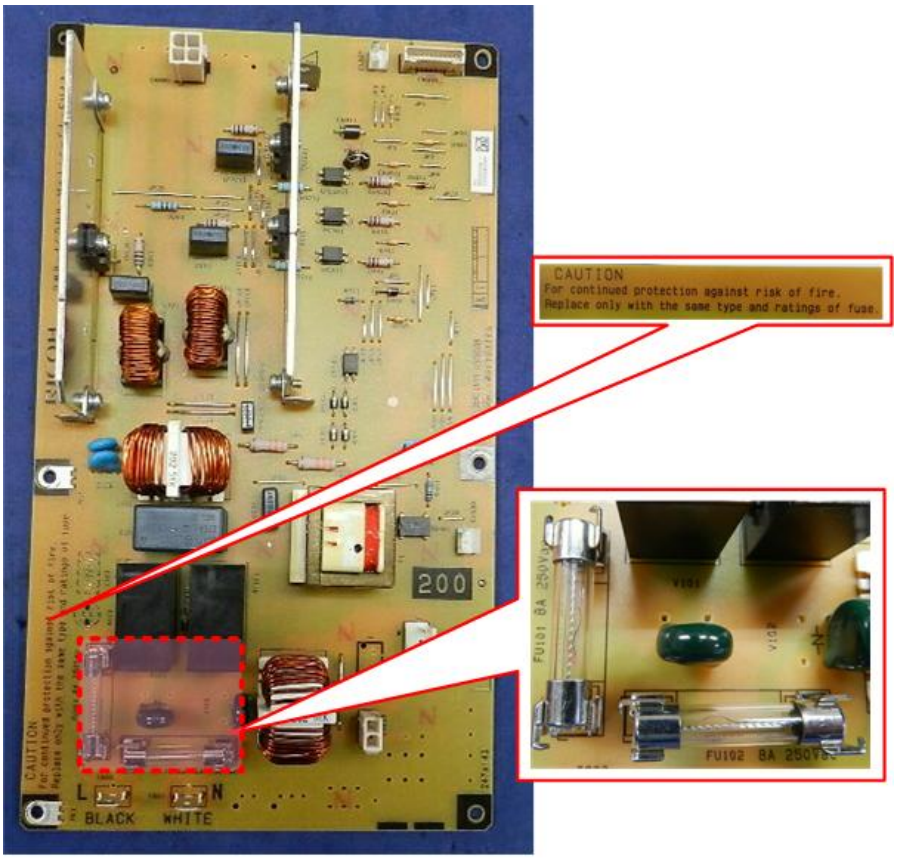


x2 x2

7. Slowly, work the board out from behind the large harnesses, and then remove it.

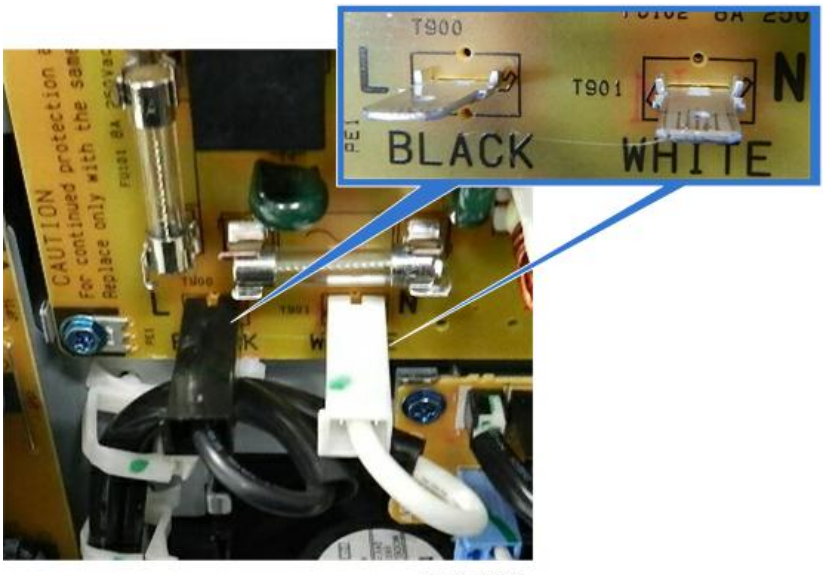


8. Lay the board on a flat, clean surface.
9. Note the position of fuses FU101, FU102.
10. Obey the warning to replace these fuses with fuses of the same type and rating.



d223c3491

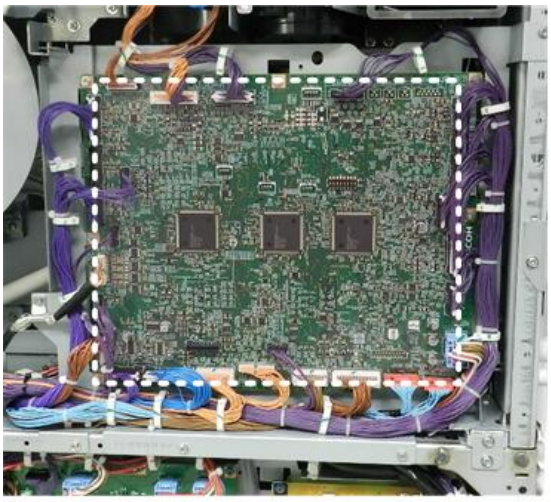
11. The bayonet connectors at the lower left corner of the board must be installed with the black connector on the left and white connector on the right.
12. The connector blades are clearly marked "BLACK" and "WHITE" to indicate the correct connection point.



d223c3492

4.14.11 IOB

1. Remove the rear upper cover. Rear upper cover
2. Open the controller box. Controller Box
3. The IOB is on the back of the main machine.

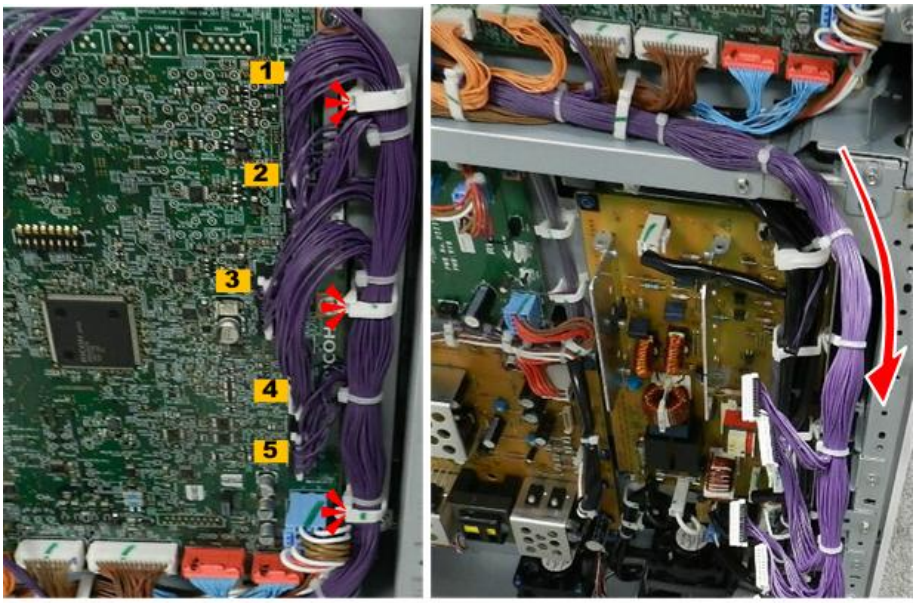


d223c3493

4. Disconnect the top edge of the board.

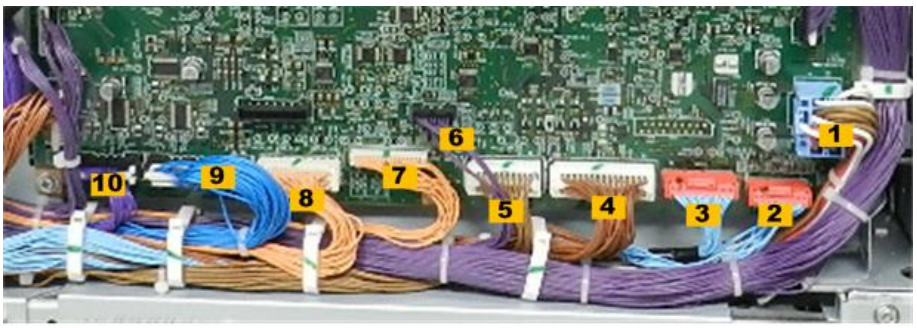
x3 x3 d223c3494

5. Disconnect the right edge of the board.
6. Allow the harness bundle to hang down as shown.



x3 x5 d223c3495

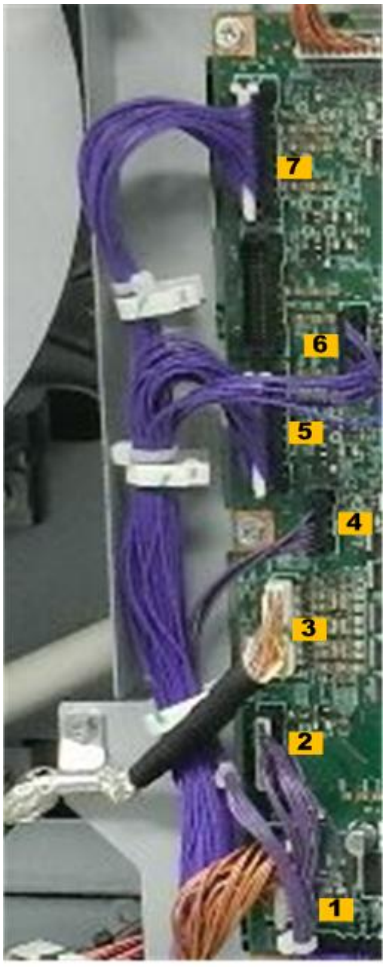
7. Disconnect the bottom edge of the board.



x10

d223c3496

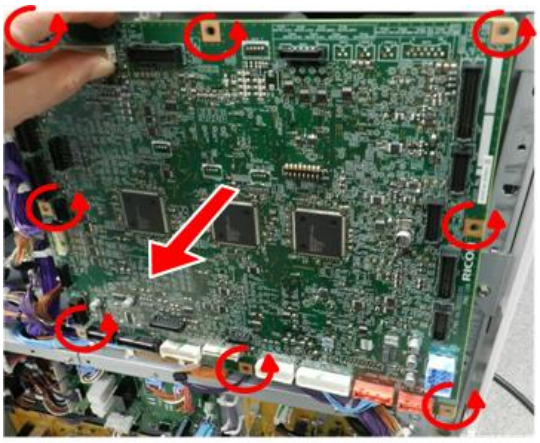
8. Disconnect the left edge of the board.



d223c3497

x7

9. Unfasten the board from the frame, and then remove it.



x8

d223c3498

10. Lay the board on a flat clean surface.

d223c3499

4.14.12 IMPORTANT SP CODES: PCBS, HDD

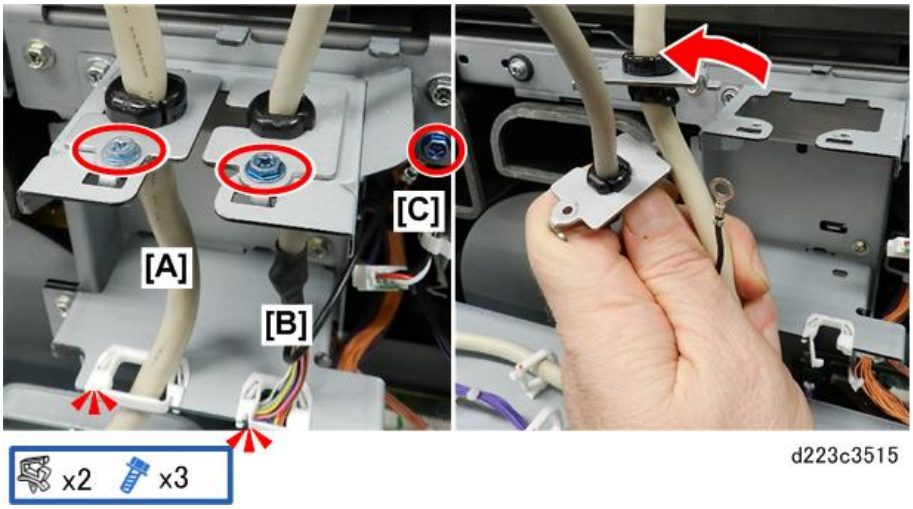
Here is a list of SP codes related to testing and servicing the main boards and the HDD.

Item	SP No.	Function
Data Overwrite Security: Enable	5878-1	Enables the Data Overwrite Security feature.
Format HDD	5832-1	Formats the entire HDD. The HDD can also be formatted by selecting the partition to format. A new HDD should always be formatted after it has been installed.
HDD encryption	5878-2	Enables the HDD encryption feature.
NVRAM data download	5825	Downloads data from an SD card to the NVRAM in the machine. After downloading is completed, remove the SD card and cycle the machine off/on.
NVRAM data upload	5824	Uploads the UP and SP mode data (except for counters and the serial number) from NVRAM on the control board to an SD card. While using this SP mode, always keep the front cover open. This prevents a software module accessing the NVRAM during the upload.
SMC Report, print all	5990-1	Prints a complete SMC report with all the current machine settings.
SMC report, text file	5992	Writes the SMC report to an SD card inserted into the SD card slot on the side of the operation panel.
UCS settings	5846	Provides all the options for the UCS settings.

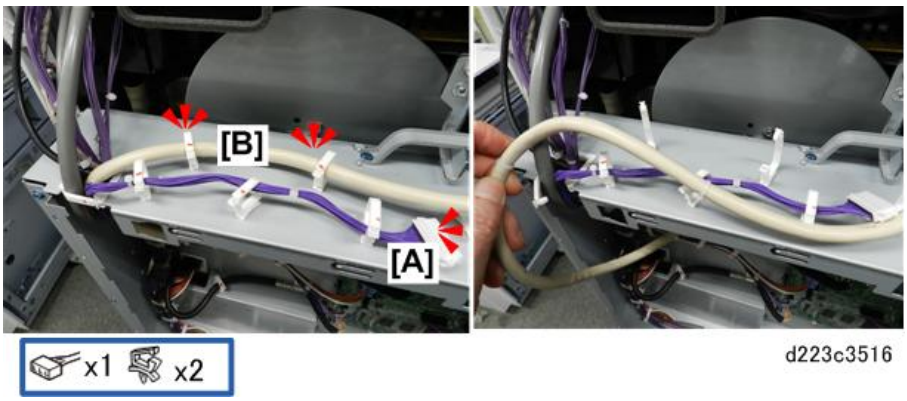
4.15 ADF

4.15.1 ADF REMOVAL

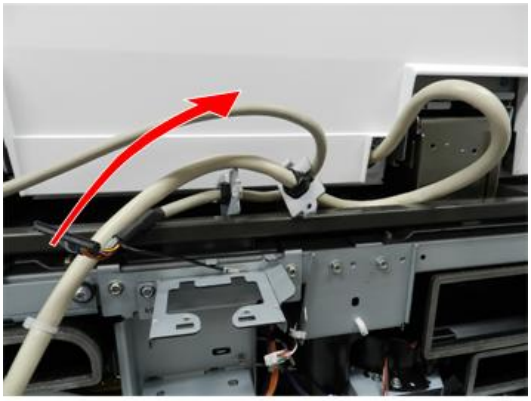
1. Remove the rear upper cover. page 4-19
2. Remove the controller box cover. page 4-26
3. Disconnect cable brackets [A] and [B].
4. Disconnect ground wire [C].
5. Pull away both brackets with harnesses connected.



6. Free harnesses [A] and [B] on top of the controller box.

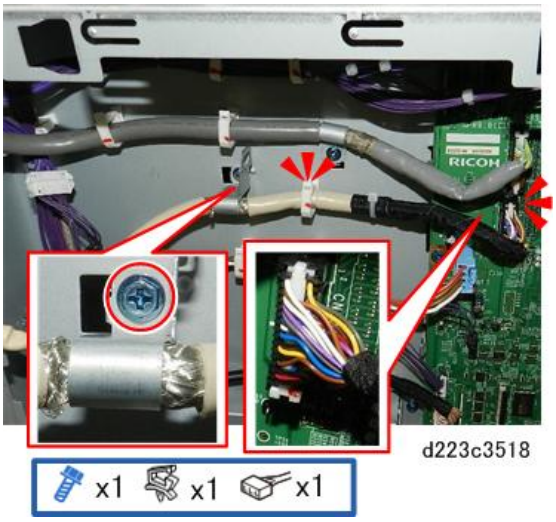


7. Set the cables up behind the ADF.



d223c3517

8. Disconnect the cable inside the controller box.

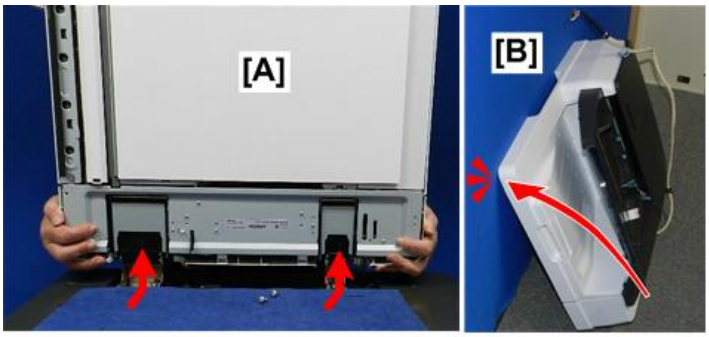


d223c3518

9. Remove the screws on the ADF base on the left and right.

d223c3519

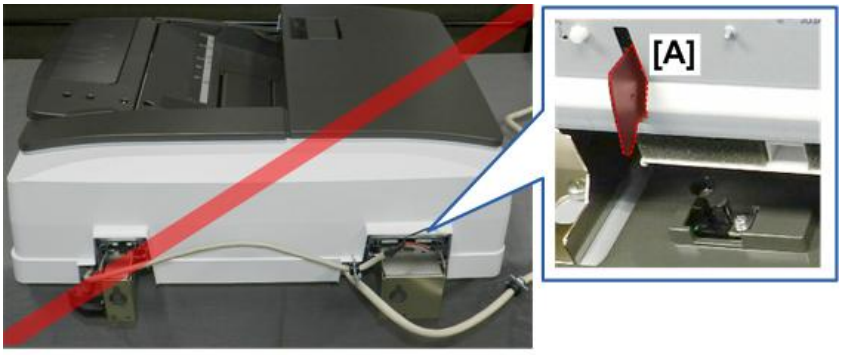
10. Slowly and carefully (the ADF is heavy) lift the ADF [A] off the machine.
11. Set the ADF on its edge on the floor, and then lean it against a wall [B].



d223c3520

Important

- To prevent damage to the fragile feelers [A] of the ADF position sensor, never lay the ADF on a flat surface as shown below.



d223c3521

Important

- If the ADF is being replaced, do SP4-730-002 after the new ADF has been installed.

4.15.2 AFTER ADF REPLACEMENT

CIS RGB Adjustment

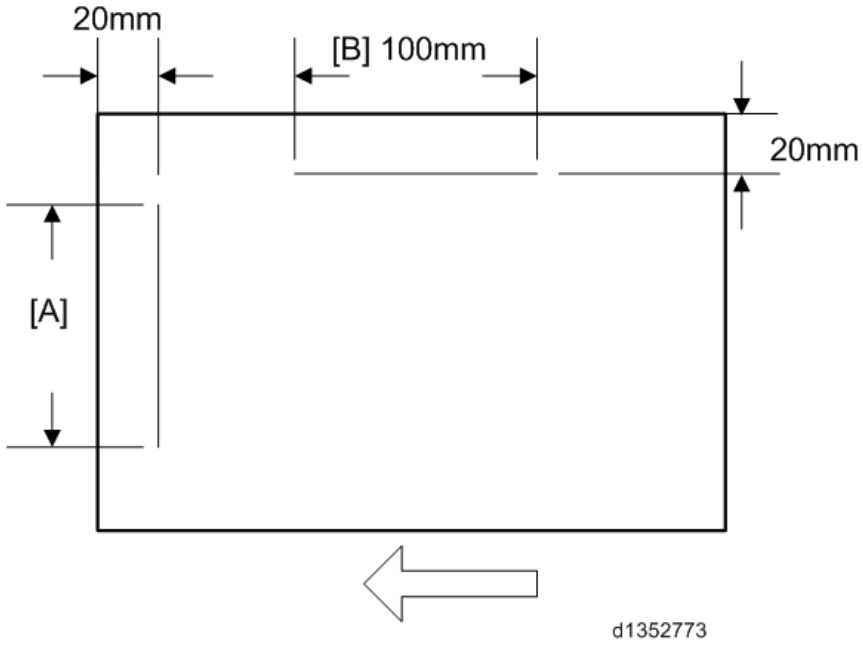
1. The correct RGB settings for the ADF are listed in the specifications sheet that comes with the machine.
2. Enter the settings with these SP codes:
   R: SP4-712-001 (CIS GB Adj Value: R)
   G: SP4-713-001 (CIS GB Adj Value: G)
   B: SP4-714-001 (CIS GB Adj Value: B)

Checking the vertical registration

SP6-006-001 (ADF Adjustment Side-to-Side Regist: Front)

SP6-006-002 (ADF Adjustment Side-to-Side Regist: Rear)

1. Create an original as shown in the following picture.



   The large arrow indicates the direction of feed.

2. Copy the original and make sure that the position of the line [A] is within 0±1mm
3. If not within the standard, adjust with the SP modes.

Checking the horizontal registration

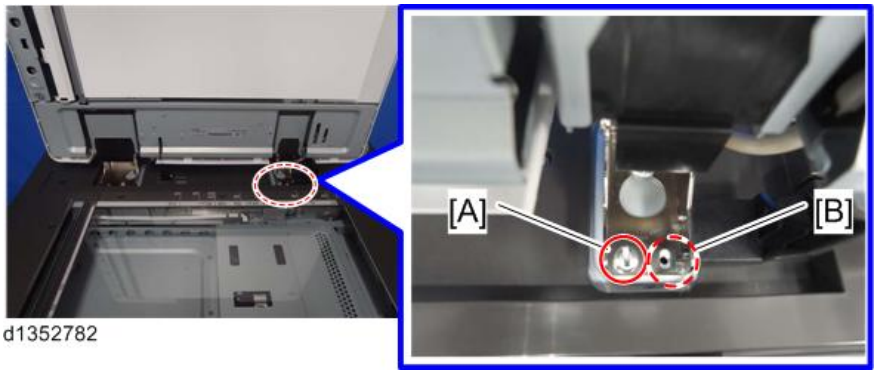
SP6-006-010 (ADF Adjustment L-Edge Regist (1-Pass): Front)

SP6-006-011 (ADF Adjustment L-Edge Regist (1-Pass): Rear)

1. Copy the original and make sure that the position of the line [B] is within 0±2mm.
2. If not within the standard, adjust with the SP modes.

Checking skew

1. Make sure that the difference between both end positions of the line [A] is within 0±2mm.
2. If not within the standard, change the position of the fixing screw [A] to the long hole [B] at the right hinge.



d1352782

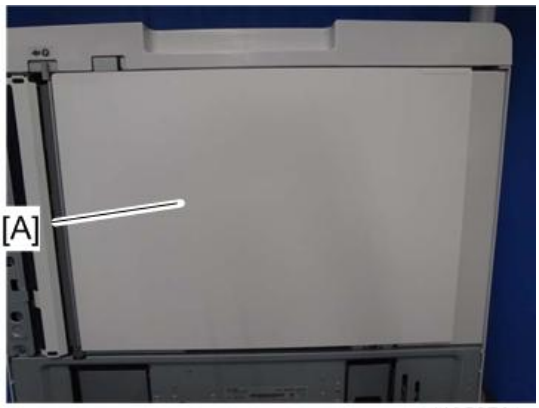
Checking magnification

SP6-017-001 (DF Magnification Adj.)

1. Copy the original and make sure that the length of the line [B] is within 100±1mm.
2. If not within the standard, adjust with the SP mode.

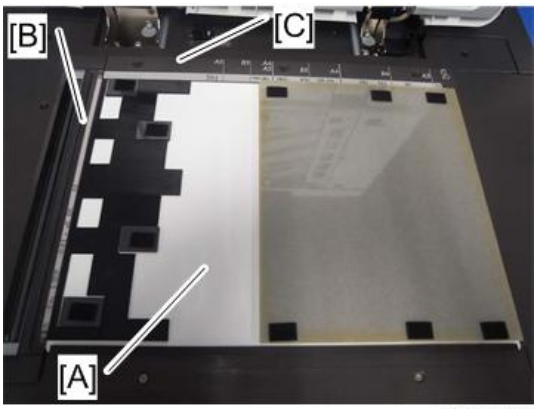
Platen Adjustment

1. Open the ADF and remove the white cover [A].



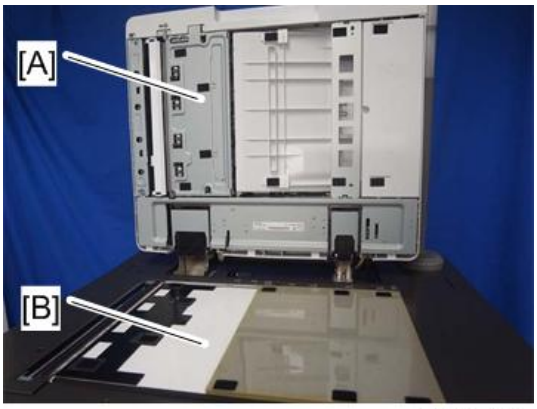
d1352781

2. Put the white cover [A] in the correct position on the exposure glass, aligning it with the glass cover [B] and the rear scale [C].



d1352783

3. Close the ADF [A] slowly and paste the ADF and the white cover [B] with the magic tapes.

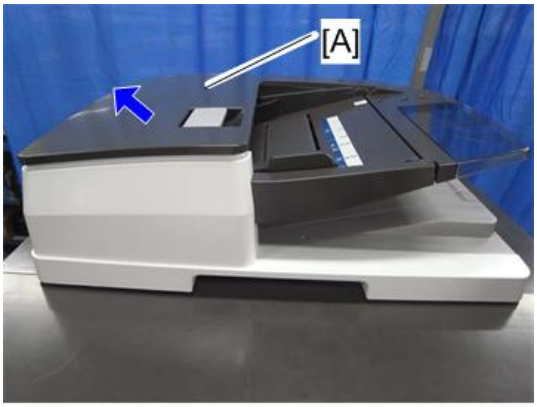


d1352784

4.15.3 ADF COVERS

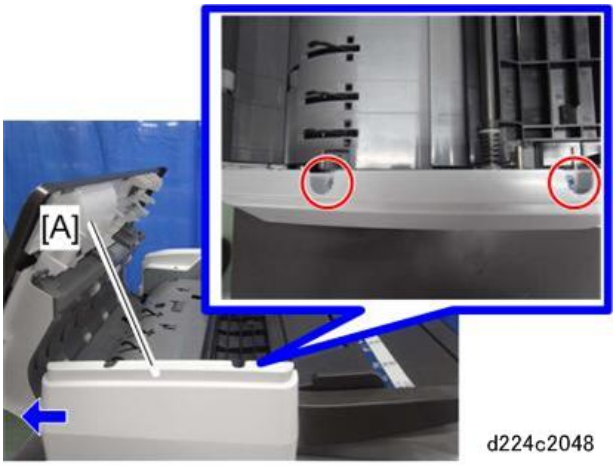
ADF Front Cover page 4-402

1. Open the feed cover [A].



d1352047

2. Slide the ADF front cover [A] to the left.



d224c2048

x2 x2

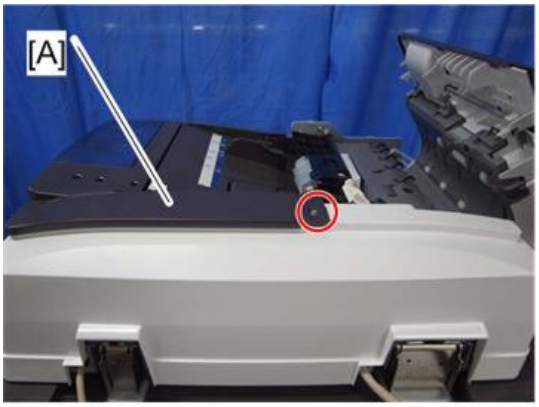
Note

- Check the position of the hooks in the photo below before removing.

d1352049

ADF Rear Cover

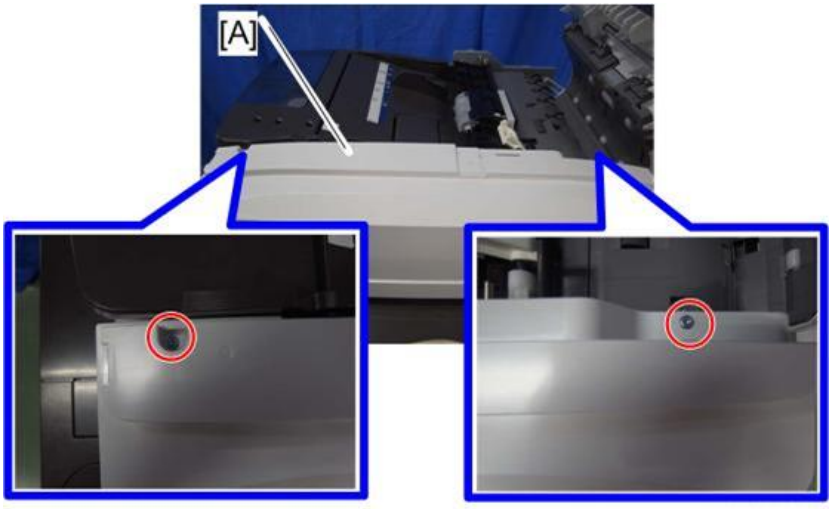
1. Open the feed cover [A].
2. Cover [A].



d224c2050

x1

3. Lift off the rear cover [A].

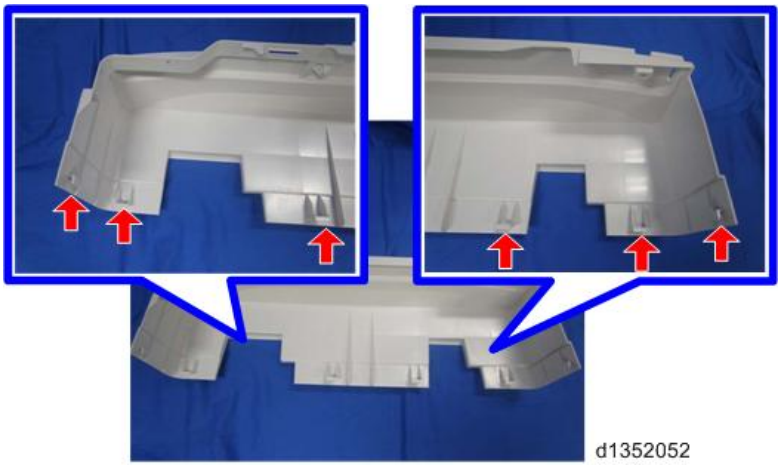


x2 x4

d224c2051

Note

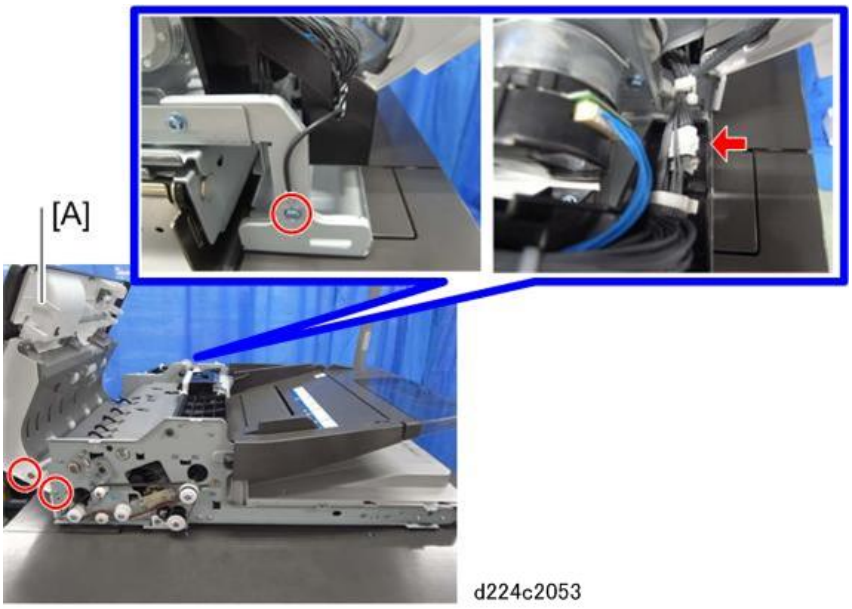
- Check the position of the hooks before removing.



d1352052

Feed Cover

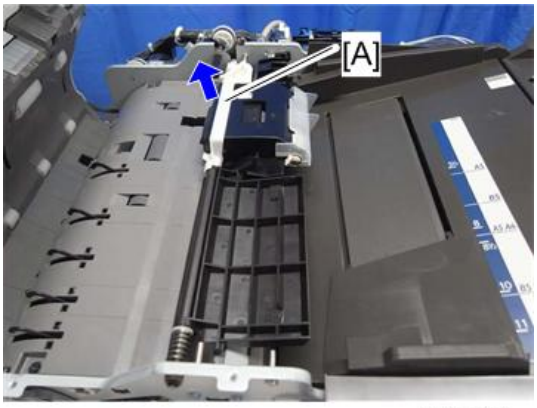
1. ADF front cover ADF page 4-402
2. ADF rear cover ADF page 4-403
3. Feed cover [A].



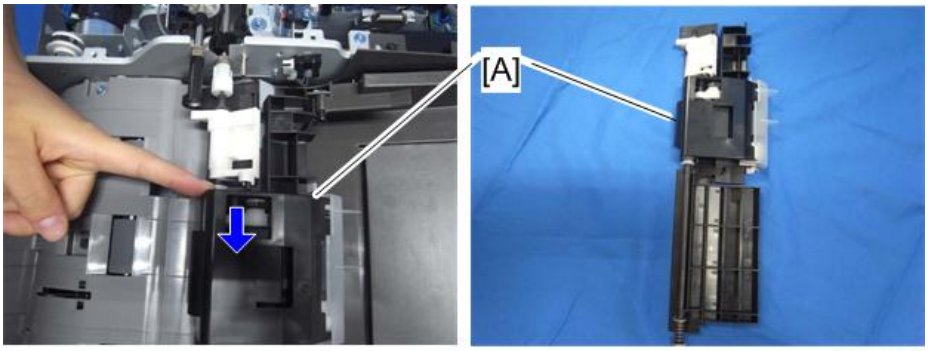
x3 x1

4.15.4 ORIGINAL FEED UNIT

1. Open the feed cover.
2. Remove the snap-fit [A].



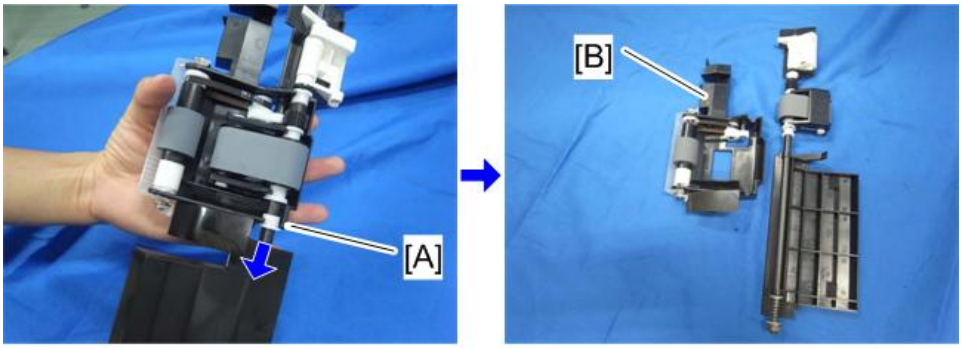
3. Original feed unit [A] (Pull the original feed unit, remove the back side of the shaft. Then, remove the bushing in the foreground.)



d1352055

4.15.5 PICK-UP ROLLER, TRANSPORT BELT

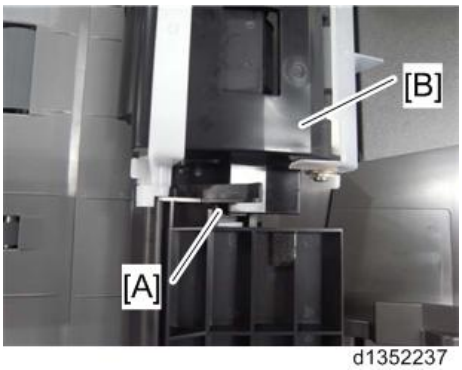
1. Remove original feed unit. page 4-404
2. Slide bushing [A], and then remove the pick-up roller unit [B].



d1352058

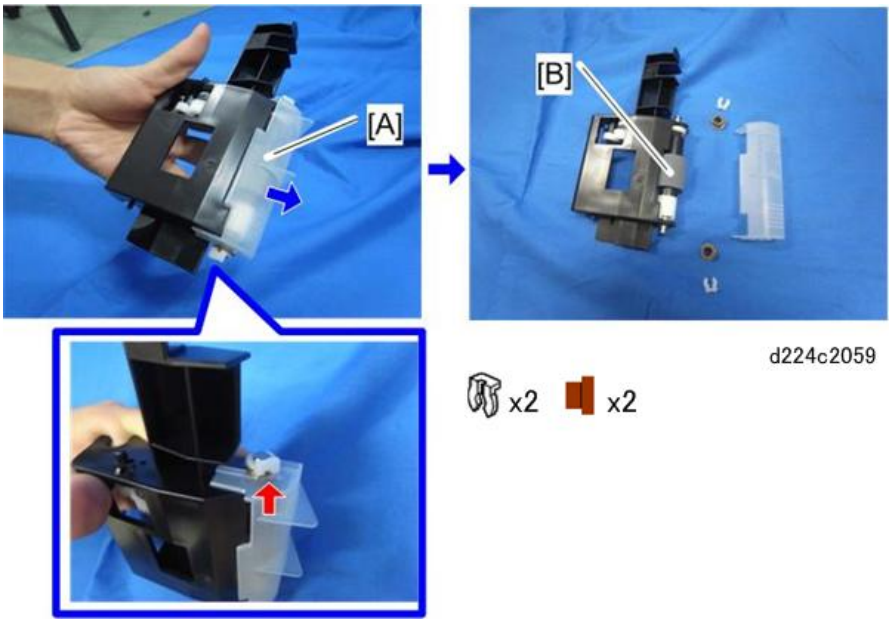
Note

- At re-assembly, make sure that the tab on the front guide plate [A] is above the pick-up roller [B].

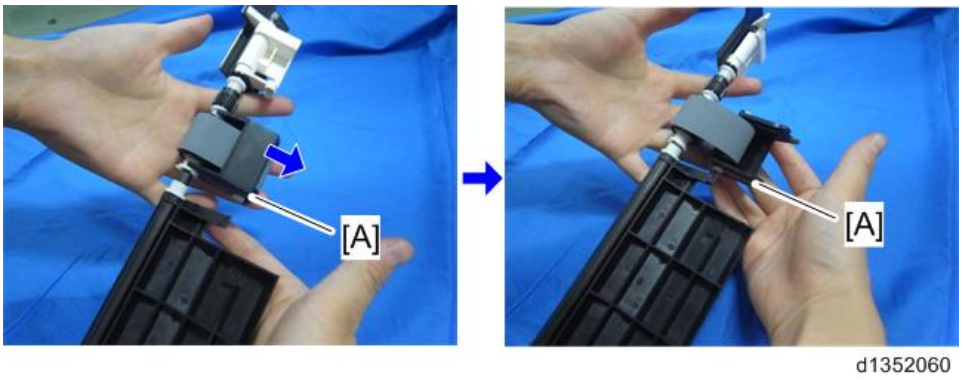


d1352237

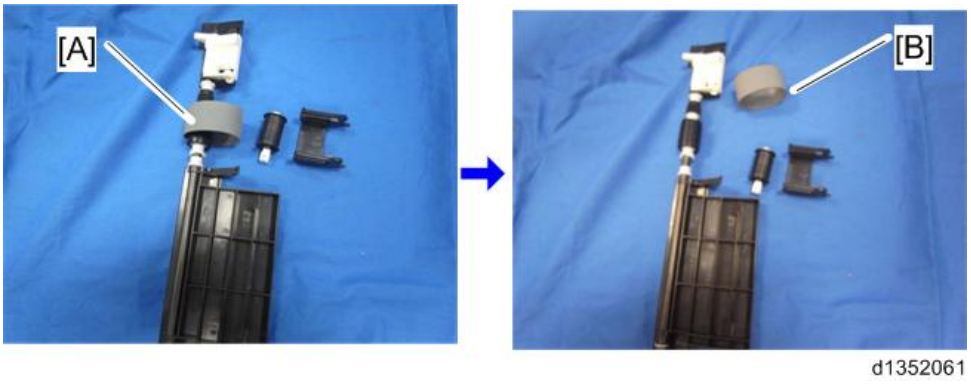
3. Pick-up roller cover [A] and pick-up roller [B].



4. Lift the left and right sides of the feed belt holder [A], then remove it.

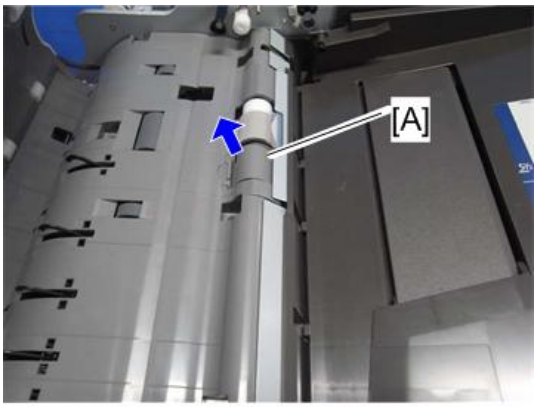


5. Remove the feed belt [B] from the feed belt holder [A].



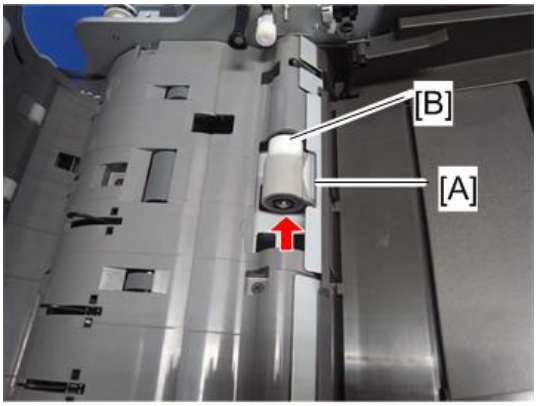
4.15.6 ADF SEPARATION ROLLER

1. Open the feed cover.
2. Original feed unit page 4-404
3. ADF separation roller cover [A].



d1352056

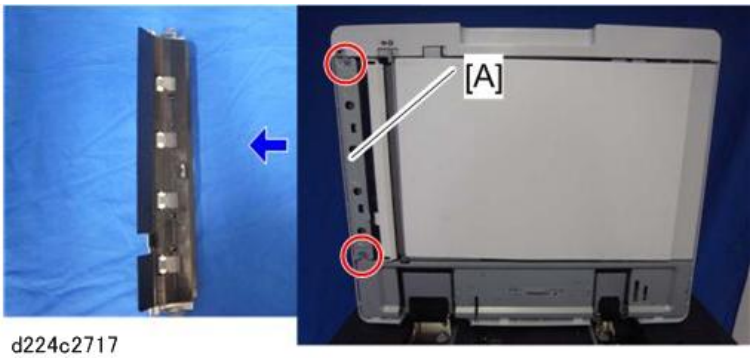
4. ADF separation roller [A] and torque limiter clutch [B] (snaps off)



d1352057

4.15.7 ORIGINAL REGISTRATION SENSOR

1. Entrance lower guide [A].



d224c2717

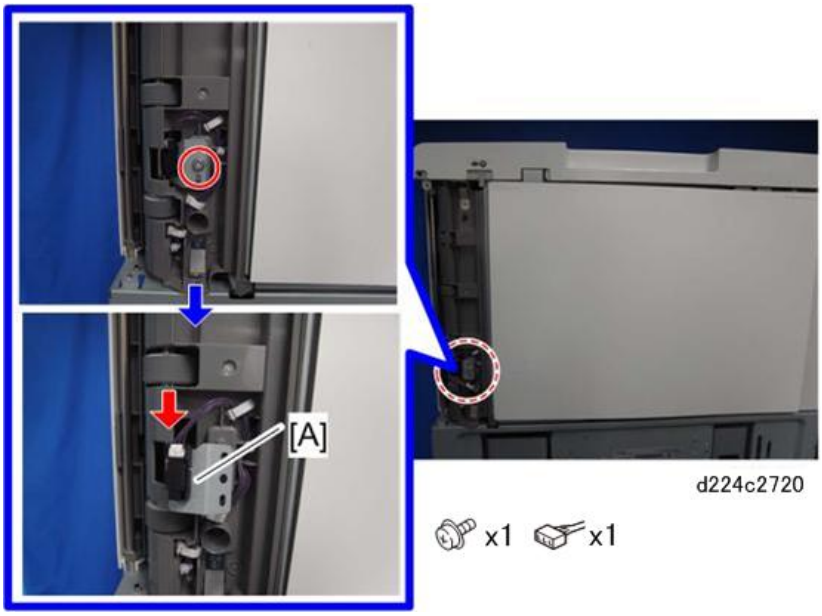
x2

2. Scanning guide plate [A].

x1

d224c2718

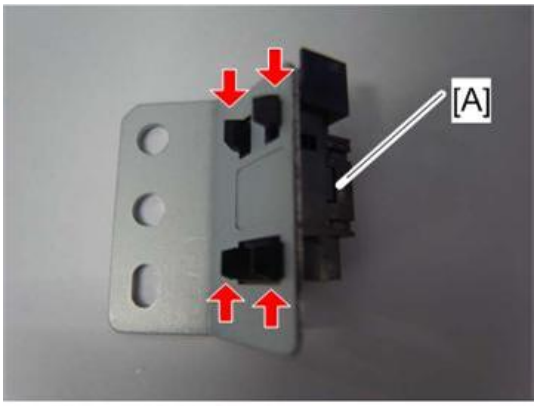
3. Original registration sensor [A] along with the bracket.



d224c2720

x1 x1

4. Original Registration Sensor [A].

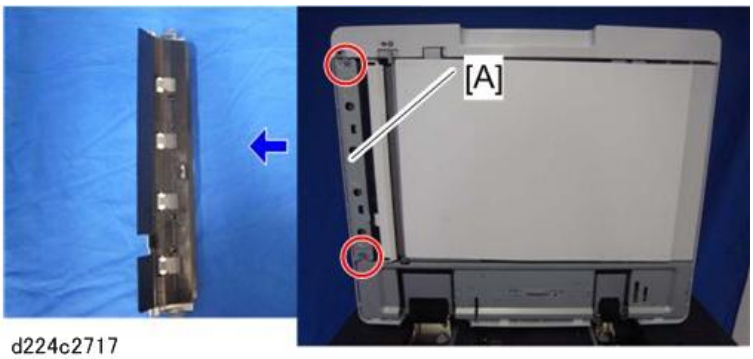


x4

d224c2064

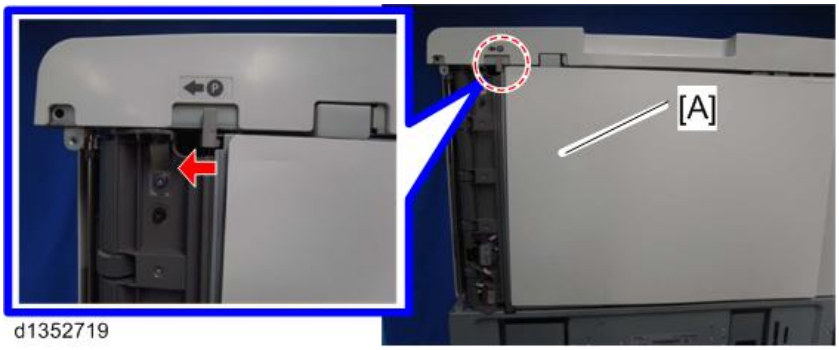
4.15.8 ORIGINAL EXIT SENSOR

1. Entrance lower guide [A].

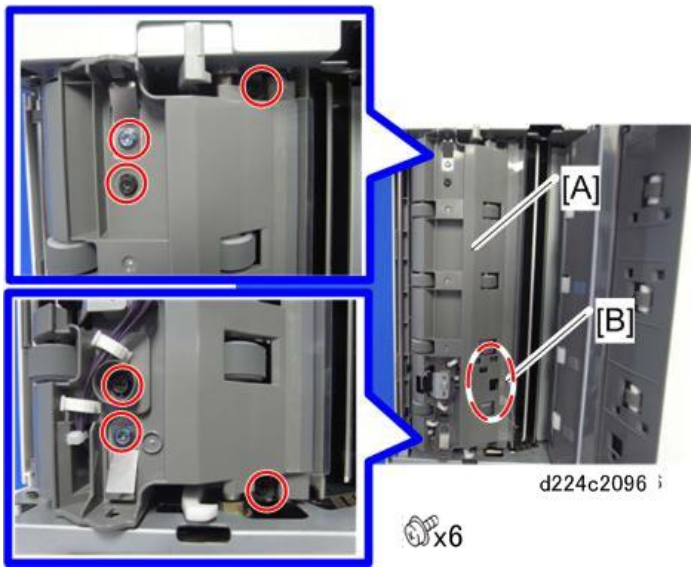


2. Scanning guide plate [A].

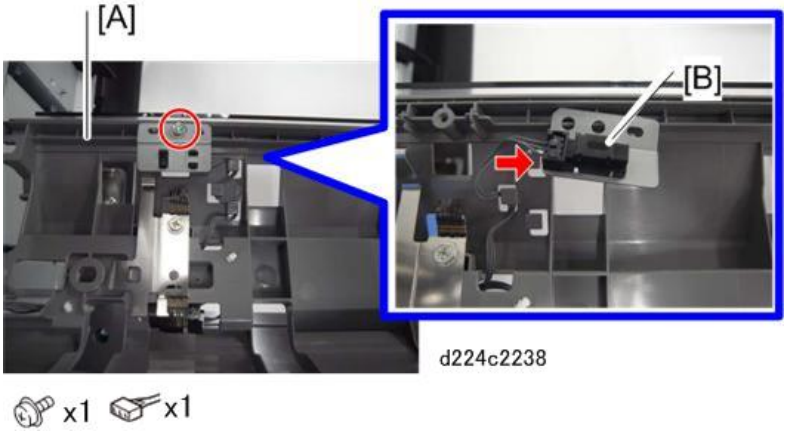
3. Open the white cover [A].



4. Remove the original exit sensor [B], which is mounted on the upper guide [A].

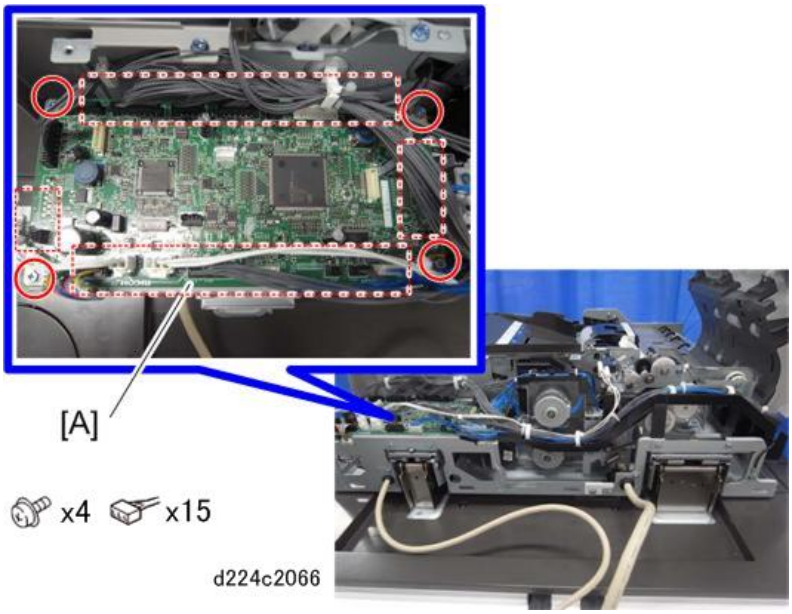


5. Remove the original exit sensor [B] from the upper guide [A].



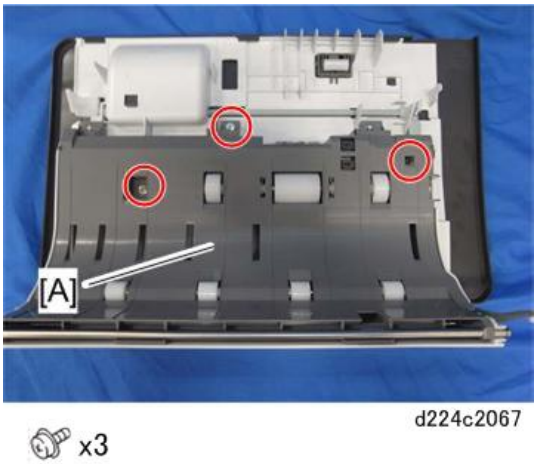
4.15.9 ADF CONTROL BOARD

1. ADF rear cover ADF page 4-403
2. ADF control board [A].

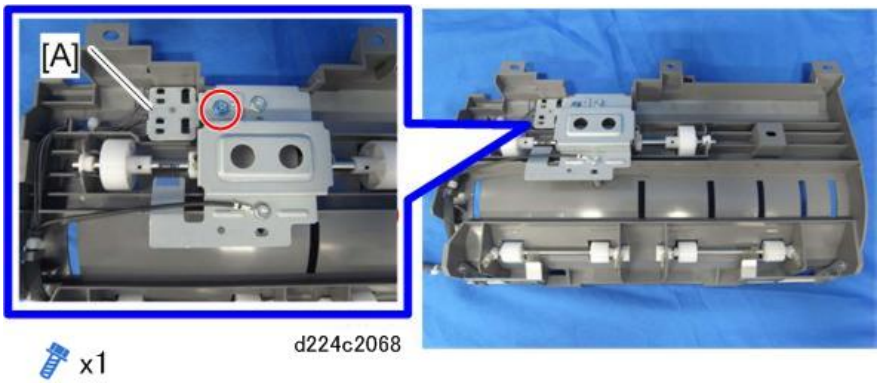


4.15.10 SEPARATION SENSOR, SKEW CORRECTION SENSOR

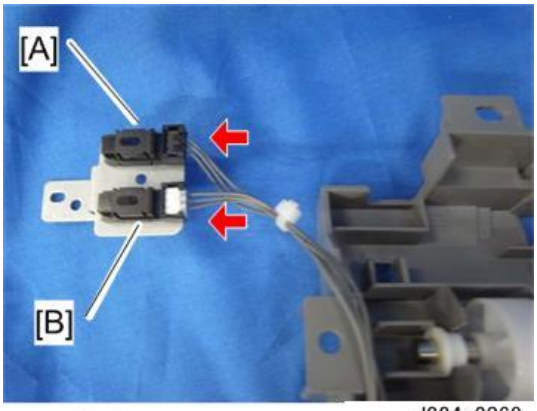
1. Feed upper guide [A] in the feed cover.



2. Remove the sensors along with the bracket [A].

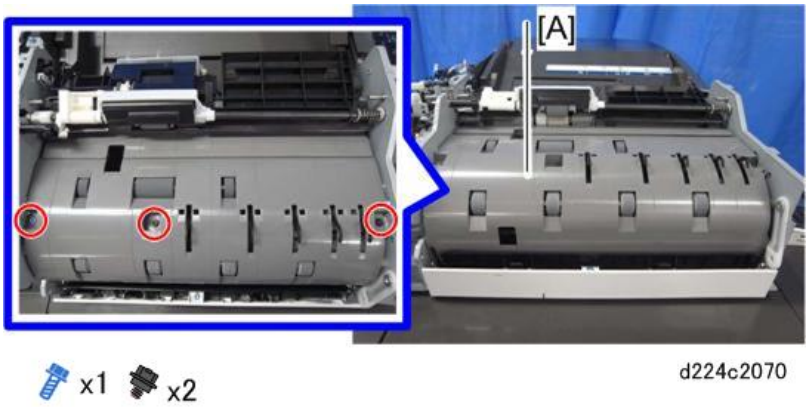


3. Separation Sensor [A] and Skew Correction Sensor [B].

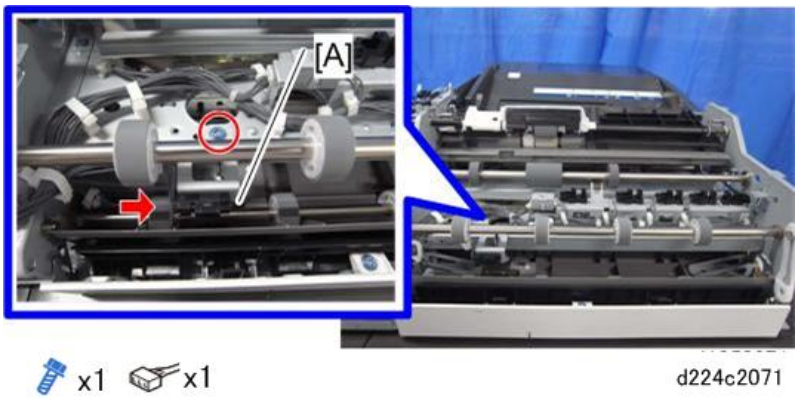


4.15.11 ORIGINAL WIDTH SENSOR, INTERVAL SENSOR

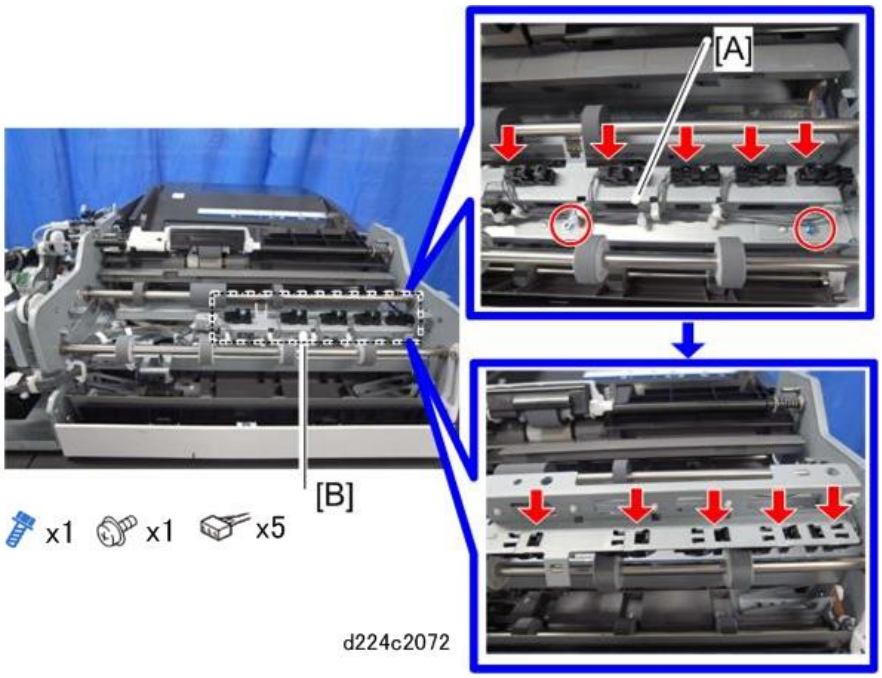
1. Feed cover Feed Cover
2. Guide plate [A].



3. Interval sensor [A].

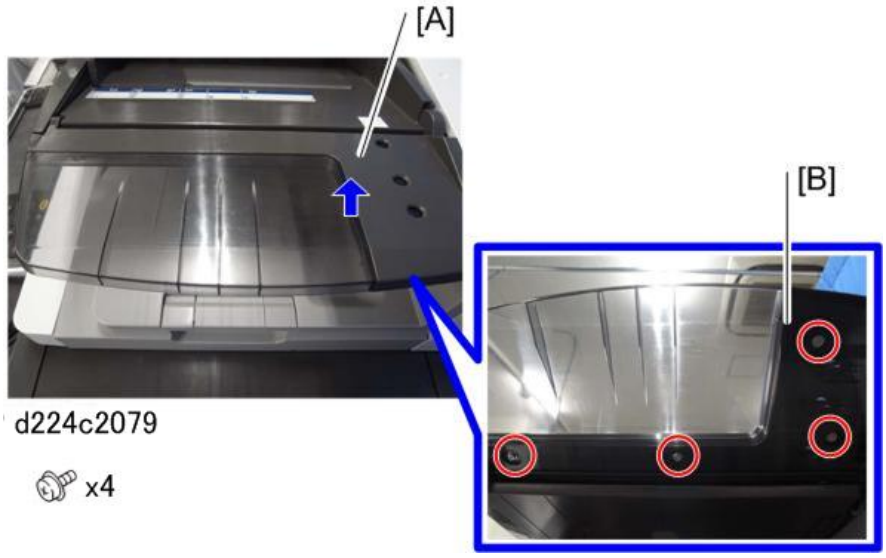


4. Remove the original width sensor guide plate [A].
5. Remove the five original width sensors [B].

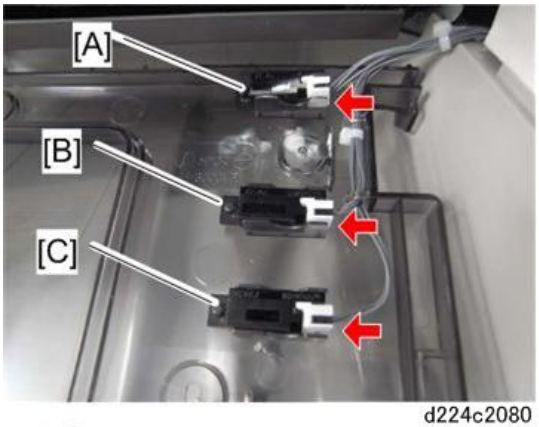


4.15.12 ORIGINAL LENGTH SENSORS

1. Raise the document tray [A], then remove the lower cover [B].

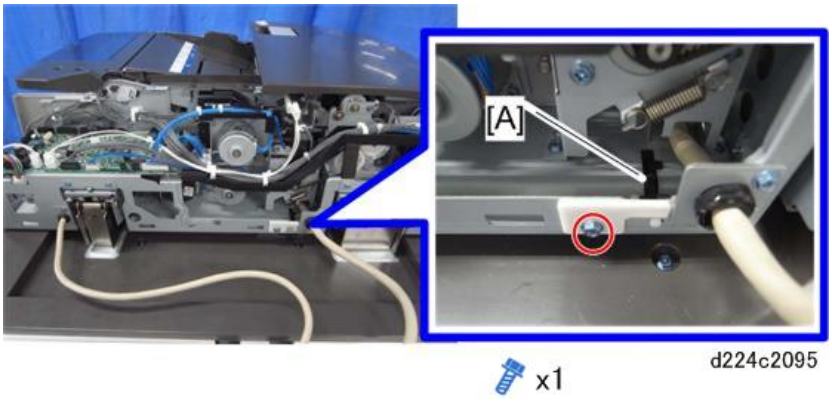


2. Original Length Sensors
   [A] B5
   [B] A4
   [C] LG



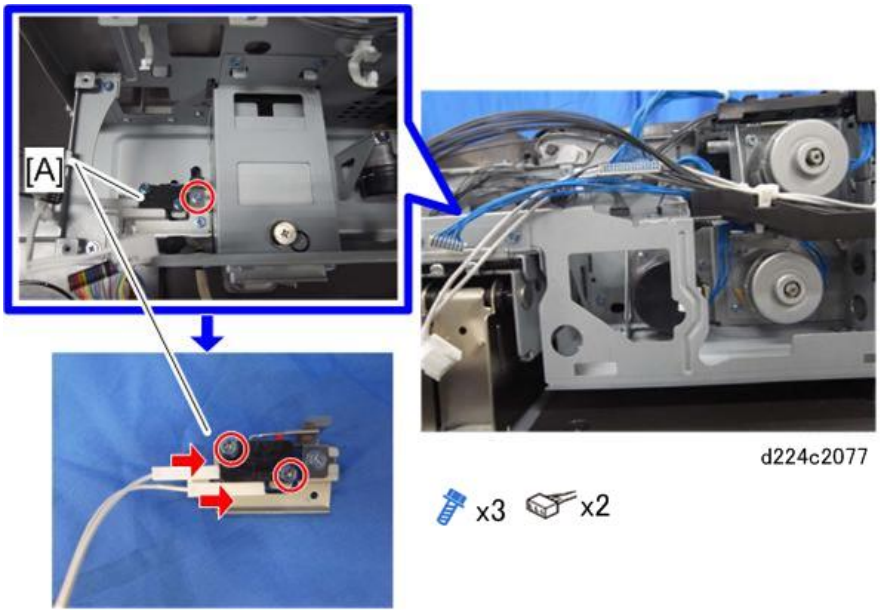
4.15.13 APS FEELER

1. ADF rear cover ADF page 4-403
2. APS Feeler [A].

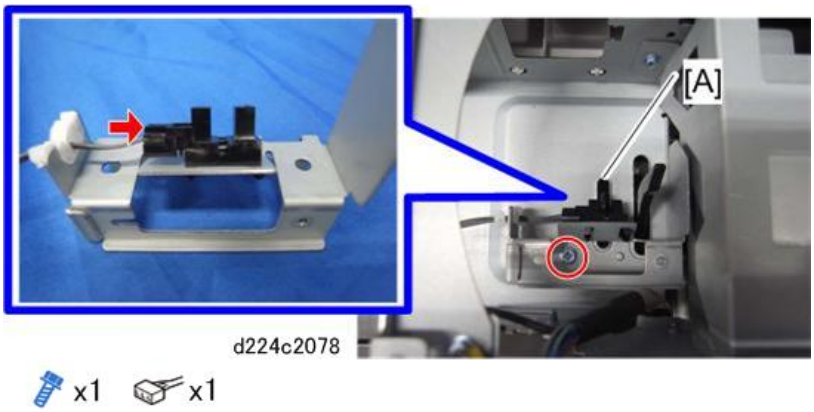


4.15.14 ADF LIFT INTERLOCK SWITCH, LIFT SENSOR

1. ADF Control Board page 4-411
2. ADF lift-up interlock SW [A] along with the bracket (x 3, x 2)

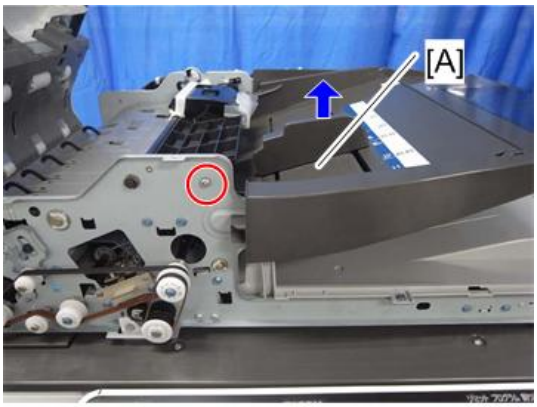


3. Lift-Up Sensor [A] along with the bracket.



4.15.15 ORIGINAL SET SENSOR

1. ADF front cover page 4-402
2. Remove the screw and raise the original tray [A].



d1352073

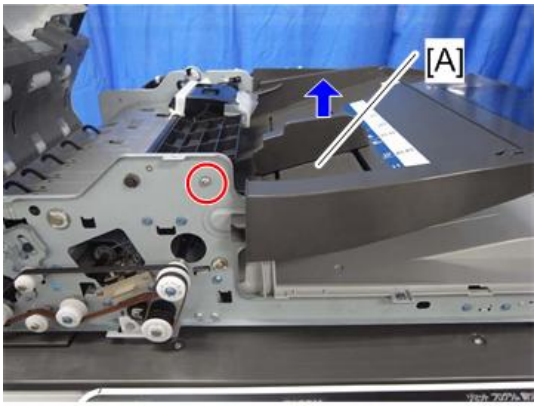
3. Original set sensor [A].

d224c2074

x1 x1

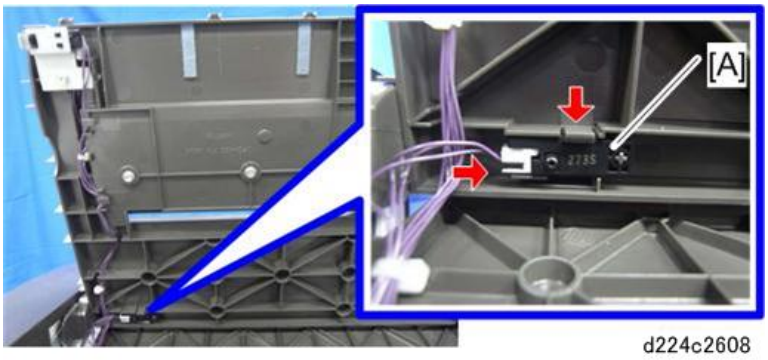
4.15.16 A4 LEF, LT LEF SENSOR

1. ADF front cover page 4-402
2. Remove the screw and raise the original tray [A].



d1352073

3. A4 LEF/LT LEF Sensor [A].

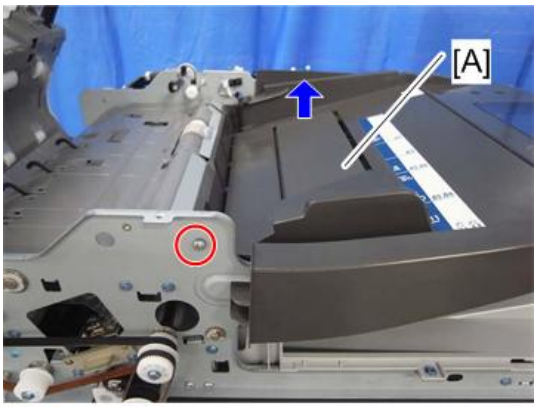


d224c2608

x1 x1

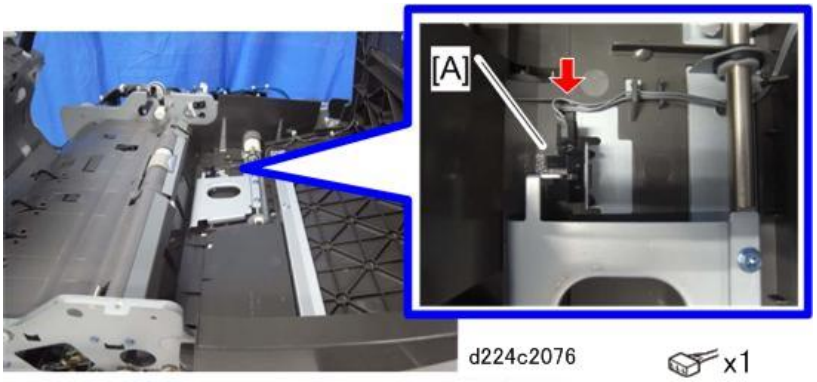
4.15.17 BOTTOM PLATE HP SENSOR

1. Original feed unit page 4-404
2. ADF front cover page 4-402
3. Remove the screw and raise the original tray [A].



d1352075

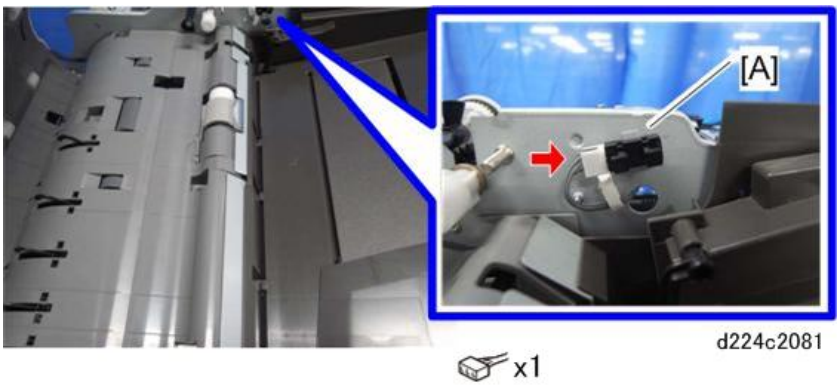
4. Bottom plate HP sensor [A].



d224c2076 x1

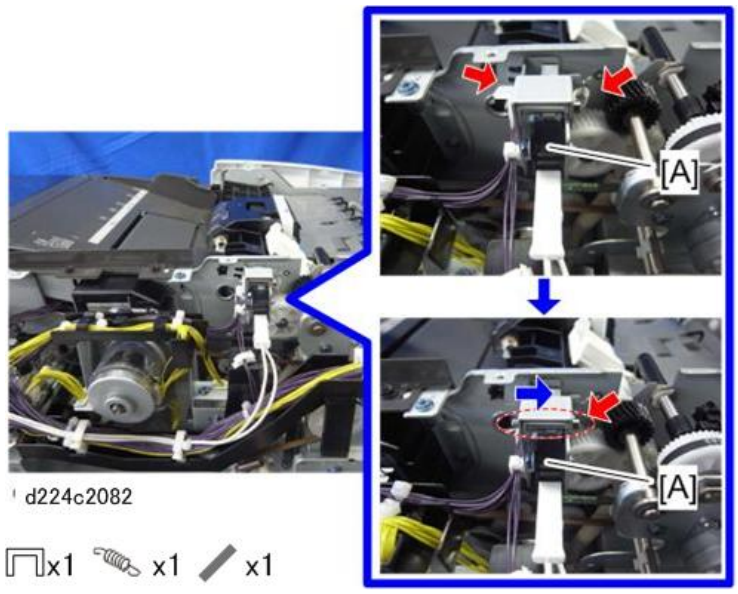
4.15.18 BOTTOM PLATE POSITION SENSOR

1. ADF rear cover page 4-403
2. Original feed unit page 4-404
3. Bottom plate position sensor [A].

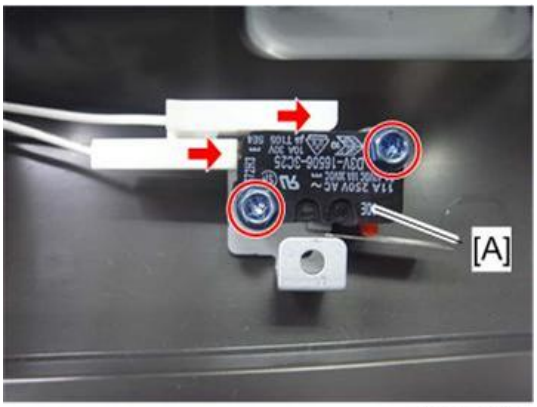


4.15.19 ADF FEED COVER INTERLOCK SW, PICK-UP ROLLER HP SENSOR

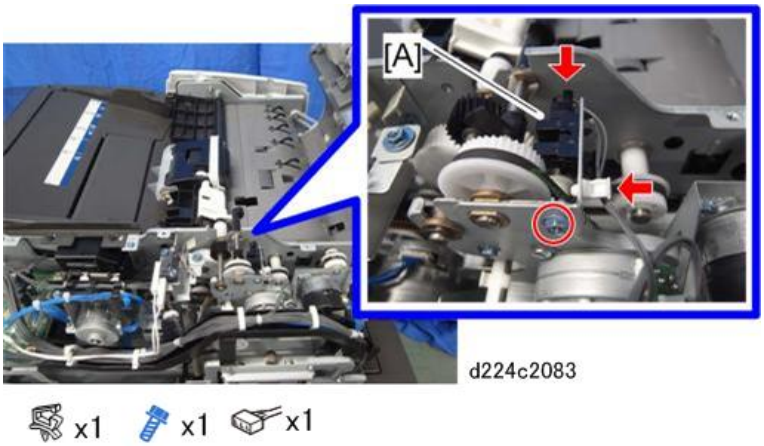
1. ADF rear cover page 4-403
2. Remove the ADF feed cover interlock SW [A] from the retaining bracket.



3. ADF feed cover interlock SW [A].

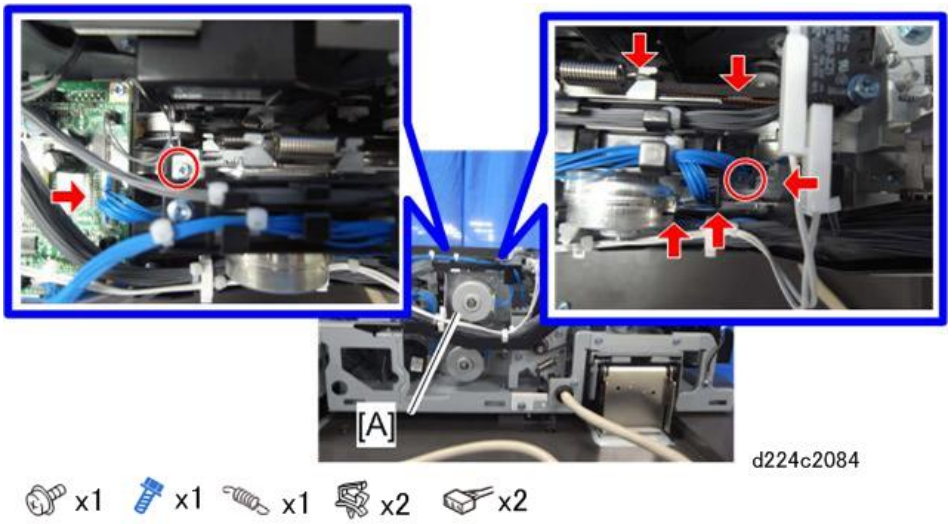


4. Pick-up roller HP sensor [A] along with the bracket.

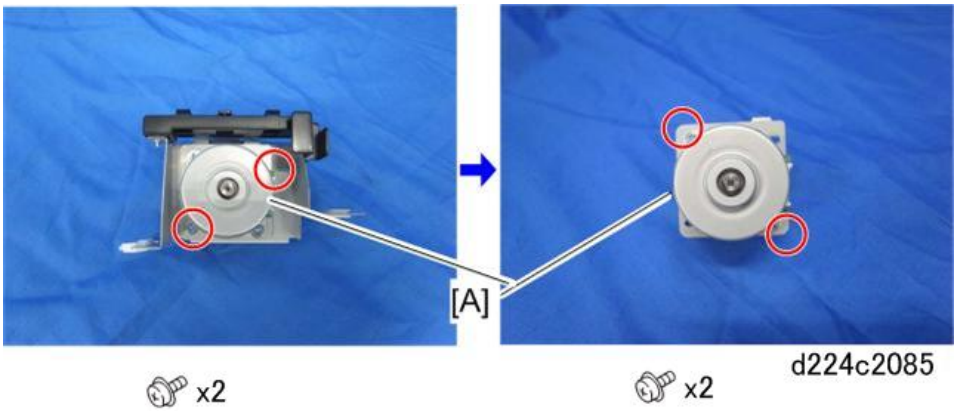


4.15.20 ADF ENTRANCE MOTOR

1. ADF rear cover page 4-403
2. ADF entrance motor [A] along with the frame.

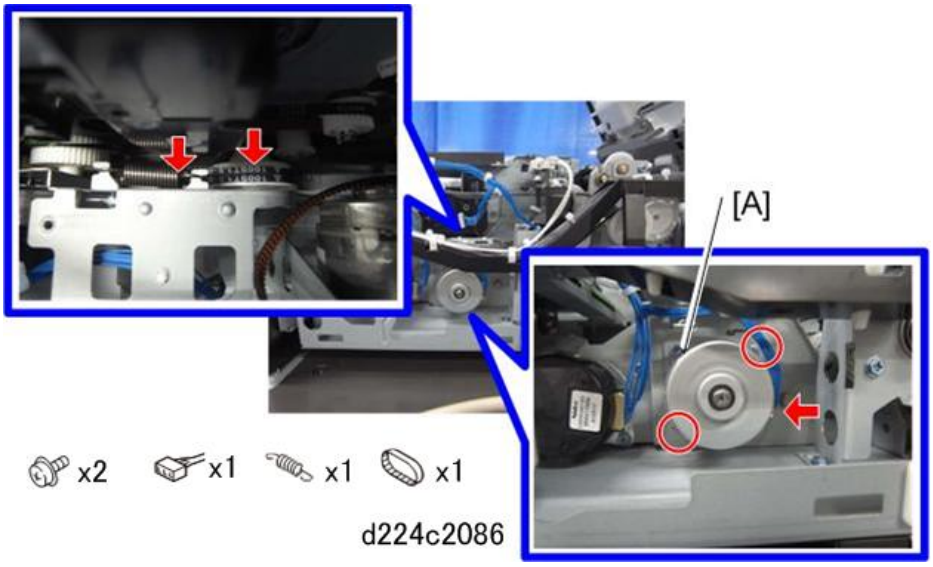


3. ADF entrance motor [A].

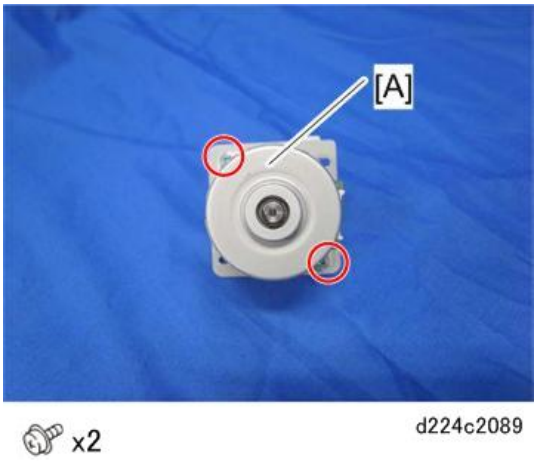


4.15.21 ADF SCANNING MOTOR

1. ADF entrance motor along with the frame page 4-421
2. ADF scanning motor [A] along with the bracket.

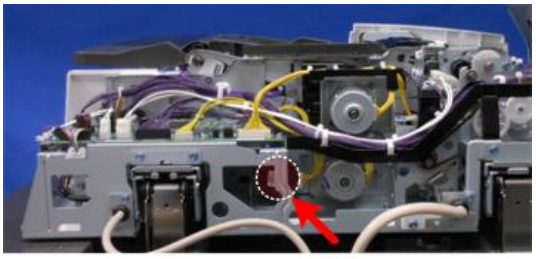


3. ADF scanning motor [A].



4.15.22 ADF EXIT MOTOR

1. Remove the rear cover. page 4-403
2. The exit motor is on the back of the machine behind the vertical stay.



d223c3746

3. Remove the ADF control board.

x1 x15 x4

d223c3747

4. Remove the anti-static plate.

x4

d223c3748

5. Unfasten the motor.

x2

d223c3749

6. Disconnect the drive belt.

x1 d223c3750

7. Disconnect the motor and remove it.

x1 d223c3751

4.15.23 ADF BOTTOM PLATE LIFT MOTOR

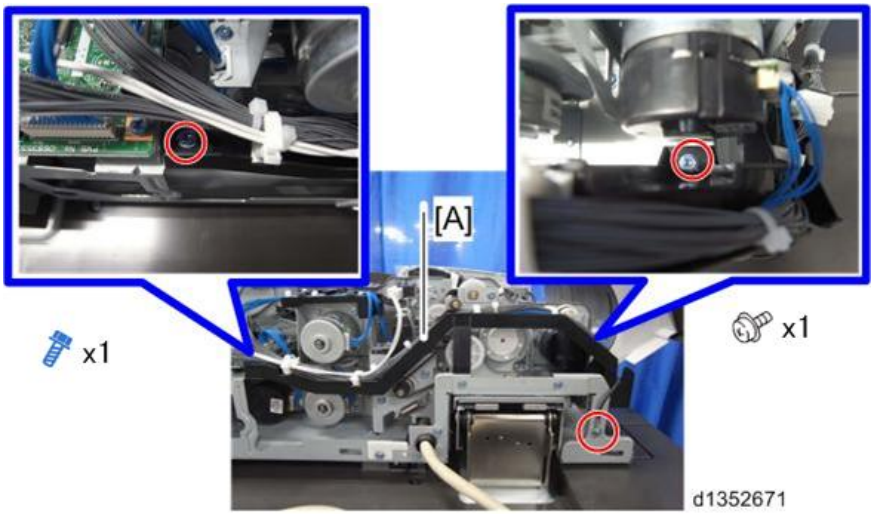
1. ADF entrance motor along with the frame page 4-421
2. ADF bottom plate lift motor [A].

d224c2090

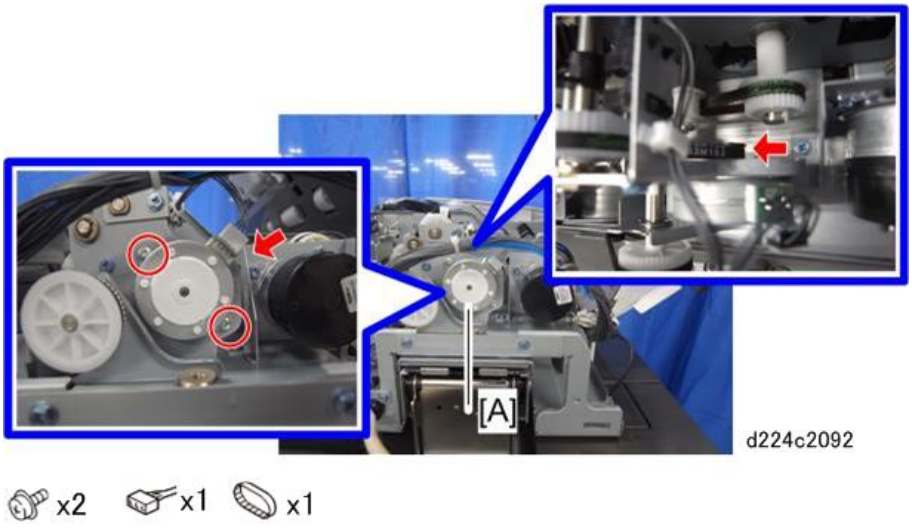
x2 x1

4.15.24 ADF PICK-UP ROLLER LIFT MOTOR, ADF TRANSPORT MOTOR

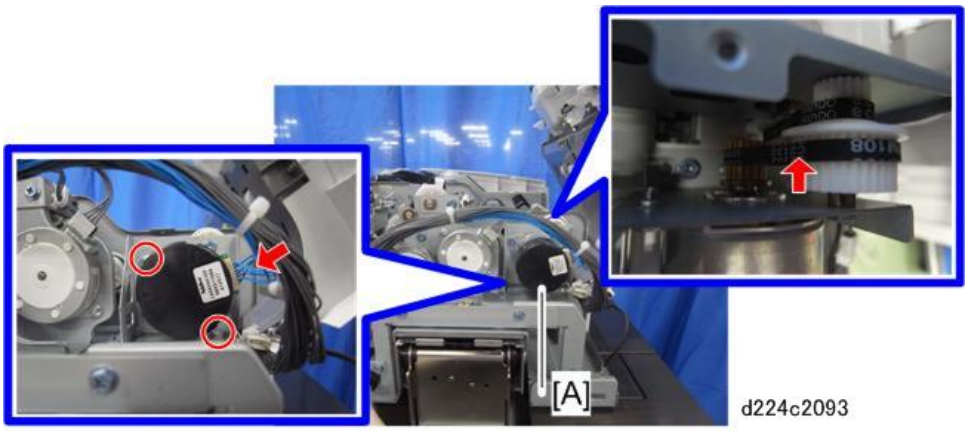
1. ADF rear cover page 4-402
2. Frame (black) [A].



3. ADF pick-up roller lift motor [A].

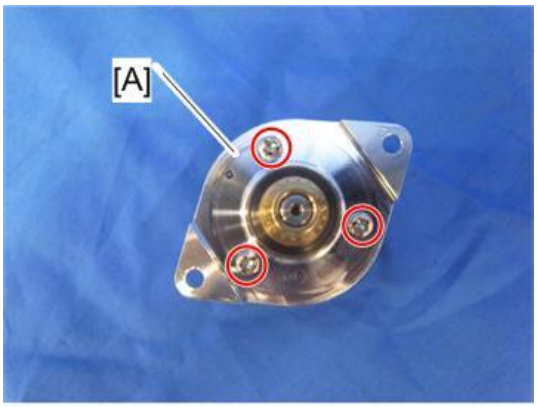


4. ADF transport motor [A] along with the bracket.



x2 x1 x1

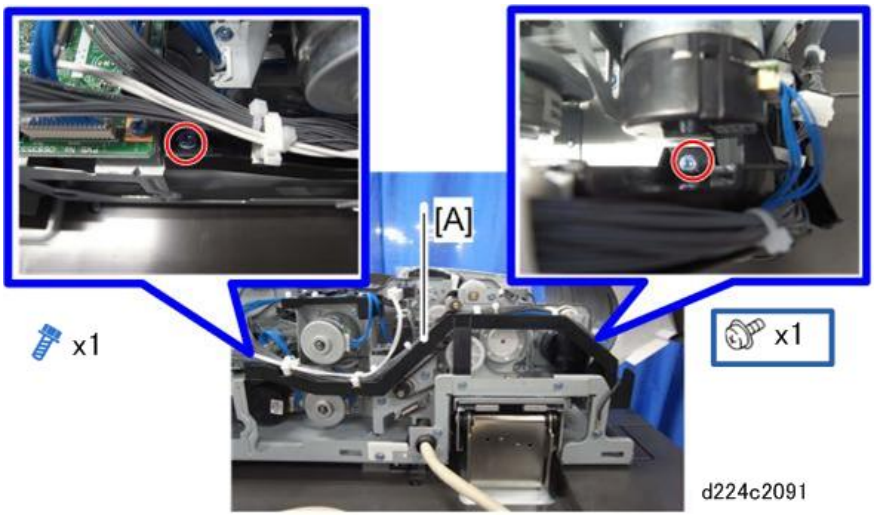
5. ADF transport motor [A].



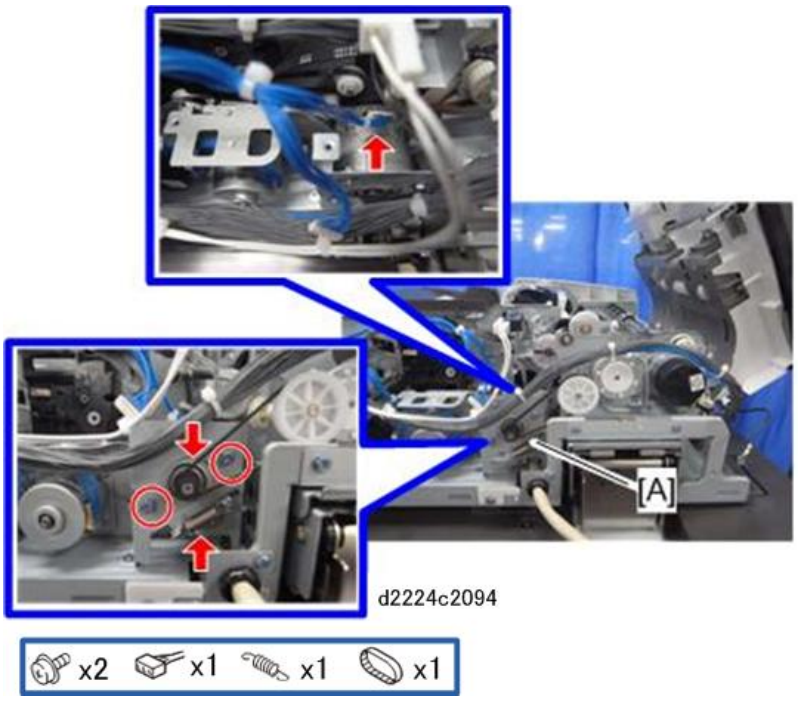
x2

4.15.25 ADF FEED MOTOR

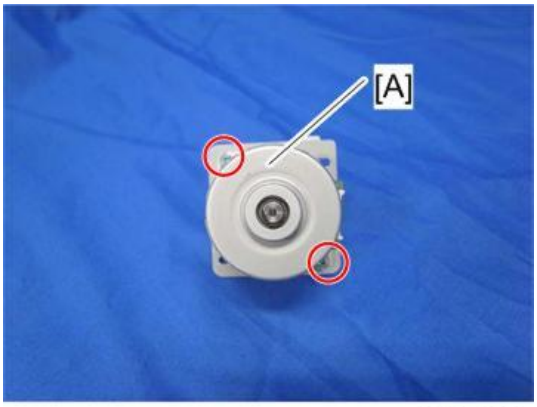
1. ADF rear cover page 4-403
2. Remove the fixing screws of the frame (black) [A].



3. ADF entrance motor along with the frame ADF Entrance Motor
4. ADF feed motor [A] along with the bracket.



5. ADF feed motor [A].

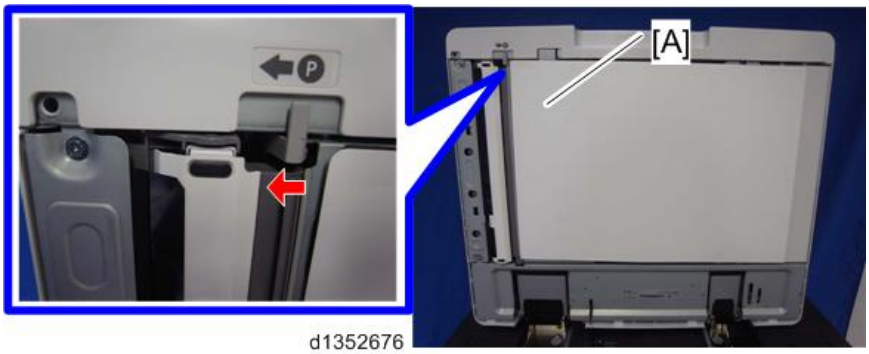


x2

d224c2089

4.15.26 CIS UNIT

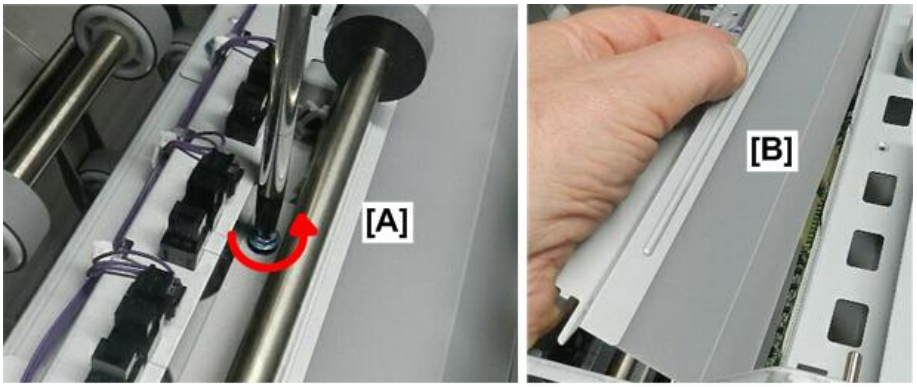
1. Original Feed Unit page 4-404
2. ADF Separation Roller page 4-407
3. ADF front cover page 4-402
4. Raise the ADF.
5. Push the P release to the left to release white plate [A]. This will prevent scratching the CIS glass when the unit is removed.



6. Guide plate (large) [A]

7. Guide plate (small) [A].

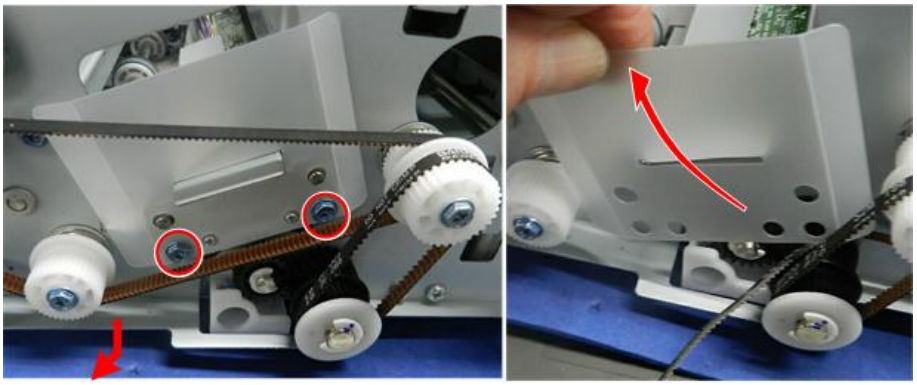
8. Unfasten guide plate [A].
9. Remove guide plate with mylar [B] attached.



x1

d223c3522

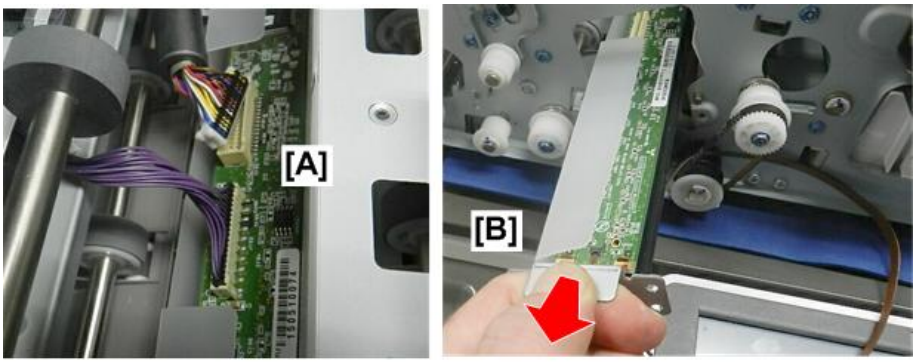
10. At the front, disconnect timing belt.
11. Unfasten mylar plate and then remove it.



x1 x2

d223c3523

12. Disconnect CIS unit [A].
13. Slowly, pull the CIS unit [B] out of the ADF.



x2

d223c3524

14. Lay the CIS unit on a flat, clean surface, with the glass side facing up.

d223c3525

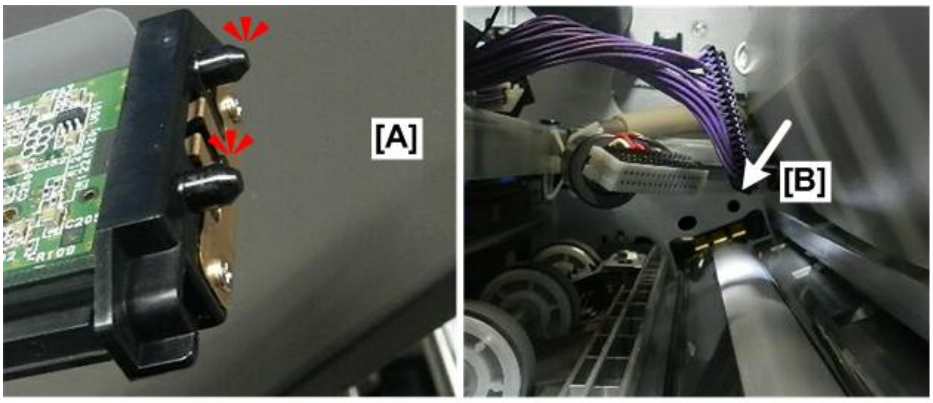
Reinstallation

1. Before reinstallation, clean the surface of the CIS lens with a lens cloth.

Important

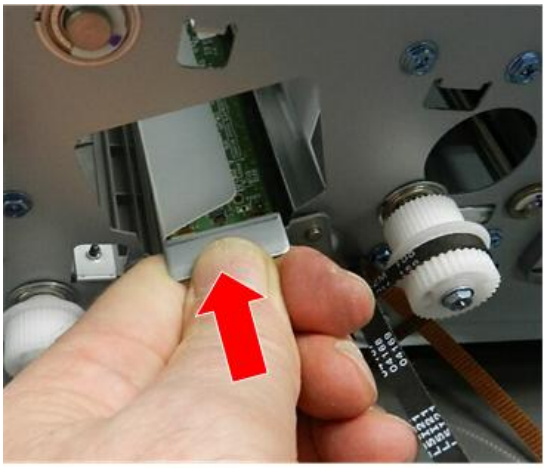
- Never clean the surface of the CIS with tissue or any type of organic solvent.

2. Two pegs on the rear end of the CIS [A] fit into two holes [B] at the back of the ADF unit.



d223c3526

3. To re-install the CIS, set the CIS in its channel so it is perfectly flat.
4. Slowly, push it to the rear until the pegs slide into the holes.



d223c3528

5. Follow the correct arrangement of the drive belt when you re-attach it.

d223c3527

6. If you have replaced the CIS unit, do these SP three codes in the following order:
   - SP4-730-001
   - SP4-730-004
   - SP4-730-002

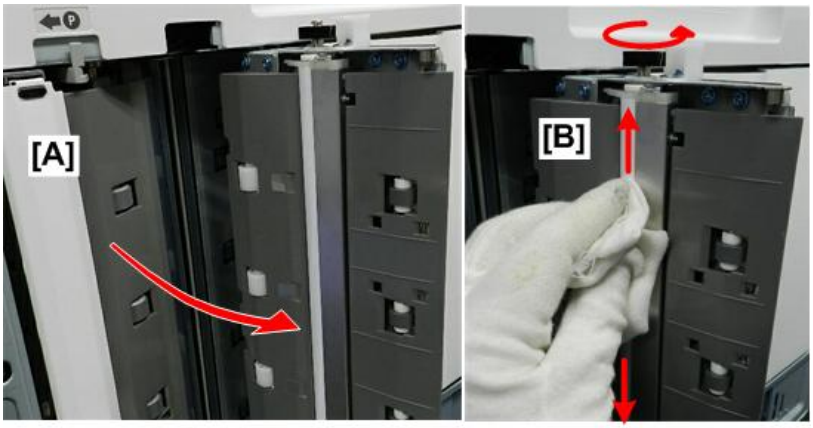
4.15.27 CIS WHITE ROLLER CLEANING

Frequently inspect the CIS white roller. A dirty or incorrectly installed white roller will cause the machine to issue SC152-00 (White Level Error: Back Side).

1. Open the ADF.
2. At the upper left corner, release the white plate.

d223c3741

3. Swing the roller assembly away from the ADF [A].
4. White rotating the white roller [B] by its gear, use a dry, clean cloth to wipe the surface of the roller clean.



4.15.28 IMPORTANT SP CODES: ADF

Here is a list of SP codes related to testing and servicing the ADF. For more details about procedures to be done after ADF replacement, see "Adjustment after ADF Replacement" at the beginning of this section.

After ADF Replacement

Item	SP No.	Function
Leading edge registration: Front	6006-10	After ADF replacement, copy the original and make sure that the position of the line is within 0±2mm. If not within the standard, adjust with the SP modes.
Leading edge registration: Rear	6006-11	After ADF replacement, copy the original and make sure that the position of the line is within 0±2mm. If not within the standard, adjust with the SP modes.
Magnification	6017-1	After ADF replacement, copy the original and make sure that the length of the line [B] is within 100±1mm. If not within the standard, adjust with the SP mode.

Item	SP No.	Function
RGB adjustment	4712 4713 4714	Adjust RGB settings after ADF replacement. The correct RGB settings for the ADF are listed in the specifications sheet that comes with the machine. Enter the RGB settings with these SP codes: ▪ SP4-712-001 (CIS GB Adj Value: R) ▪ SP4-713-001 (CIS GB Adj Value: G) ▪ SP4-714-001 (CIS GB Adj Value: B)
Vertical registration, front	6006-1	After ADF replacement, lines on the original should be within 0±1mm, else adjustment is required.
Vertical registration, rear	6006-2	After ADF replacement, lines on the original should be within 0±1mm, else adjustment is required.

After CIS Replacement

After CIS replacement, you must do these SP codes in the following order:

- SP4-730-001
- SP4-730-004
- SP4-730-002

4.16 FANS, SWITCHES

4.16.1 FANS

Quick Reference

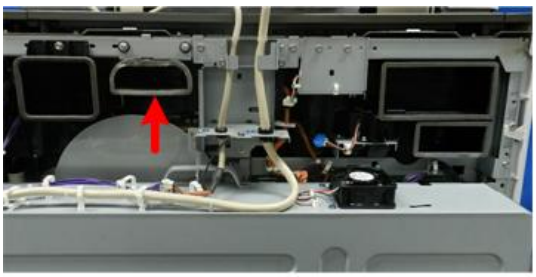
Here is a list of the fans described in this section and the corresponding SC code issued by the machine in case of a failure.

SC Code	Fan
SC530-01	Drum Fan*[1]
SC530-02	Development Unit Fan 1
SC530-02	Development Unit Fan 2
SC530-04	Duplex Fan
SC530-04	PCU Fan
SC530-06	Toner Bottle Fan*[2]
SC530-07	Fusing Inner Cover Fan*[2]
SC530-08	PSU Fan 1
SC530-09	PSU Fan 2
SC530-10	AC Drive Board Fan*[2]
SC530-11	Controller Fan*[2]
SC530-13	PFU Fan 1*[2]
SC530-15	PFU Fan 3*[2]
SC530-16	PFU Fan 4*[2]
SC531-01	Main Intake Fan*[3]
SC531-02	Main Exhaust Fan*[2]
SC531-03	Heat Exhaust Fan*[2]

*[1]	"Main intake fan" in previous machine.
*[2]	New fan for this machine.
*[3]	"Drum fan" in previous machine.

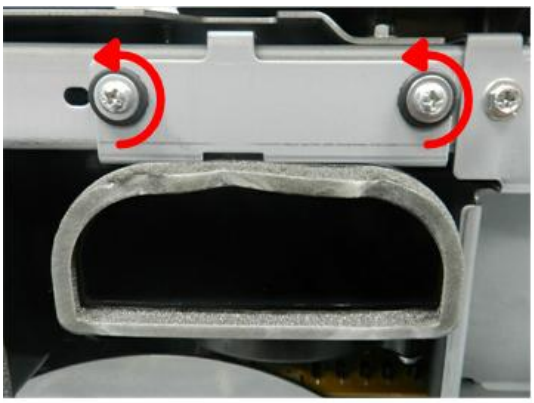
Drum Fan

1. Remove rear upper cover. page 4-19
2. The drum fan is at the rear right corner of the machine above the flywheel.



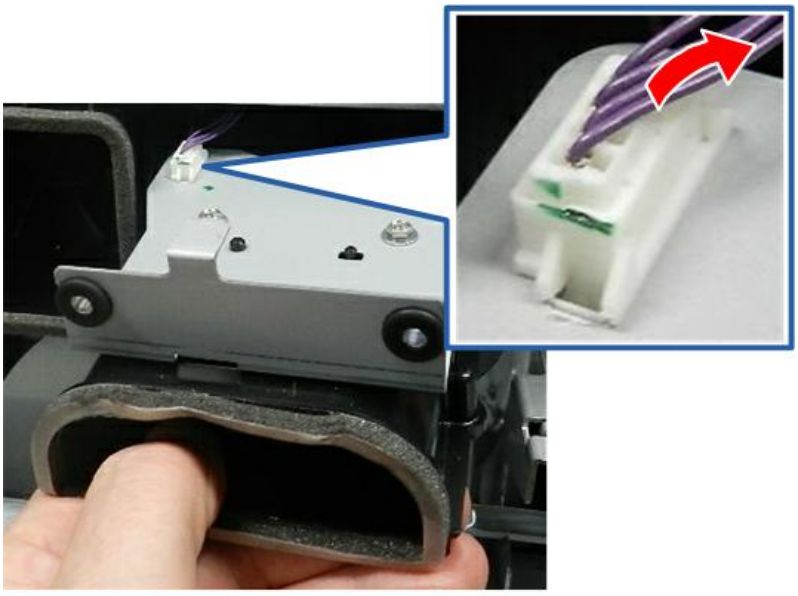
d223c3529

3. Disconnect the duct bracket.



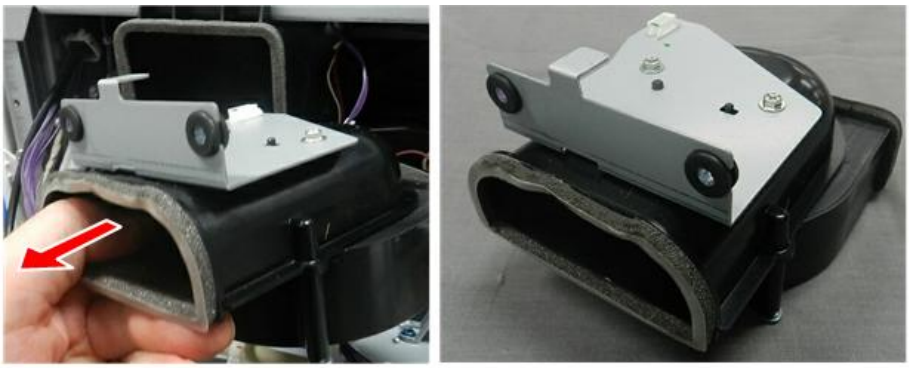
x2 d223c3530

4. Pull the duct and fan out slightly, and then disconnect the fan.



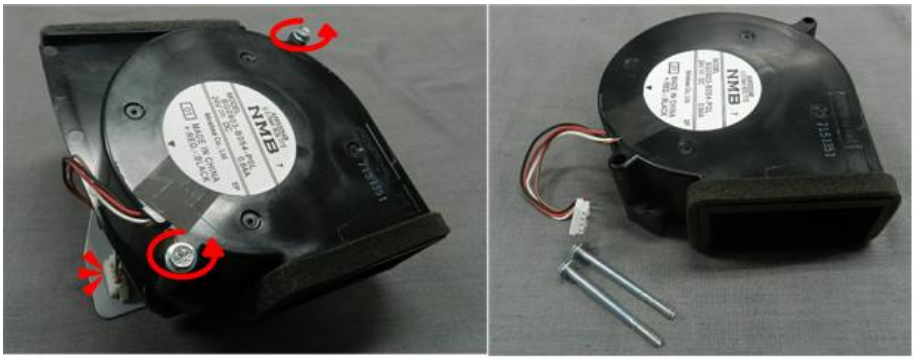
x1 d223c3531

5. Pull the duct with fan attached out of the machine.



d223c3532

6. Unfasten the fan, and then separate it from the duct bracket.

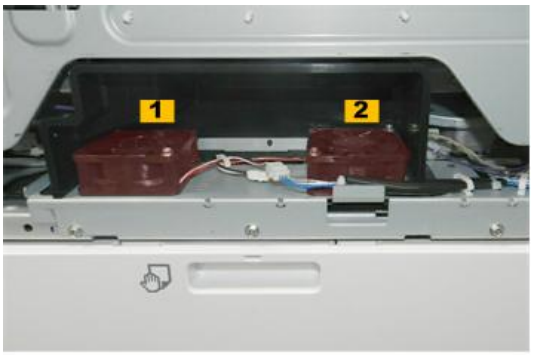


x2 x1

d223c3533

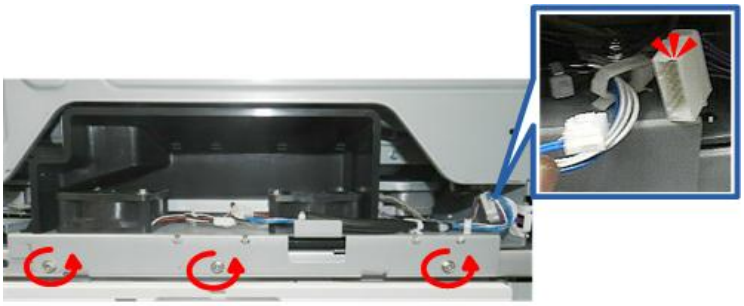
Development Unit Fan 1, 2

1. Remove the right upper cover. page 4-16
2. There are two development unit fans, Fan 1 [1] and Fan 2 [2].



d223c3534

3. Disconnect the fan bracket.



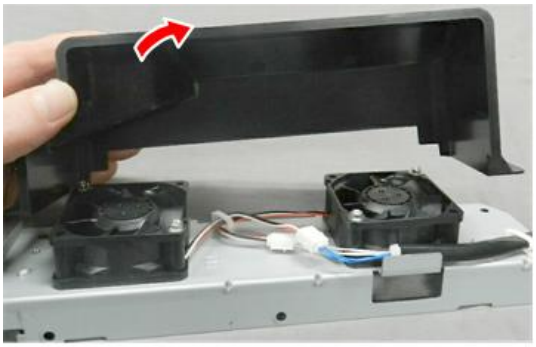
x1 x3 d223c3535

4. Pull the bracket with fans attached out of the machine, and then lay it on a flat, clean surface.

d223c3536

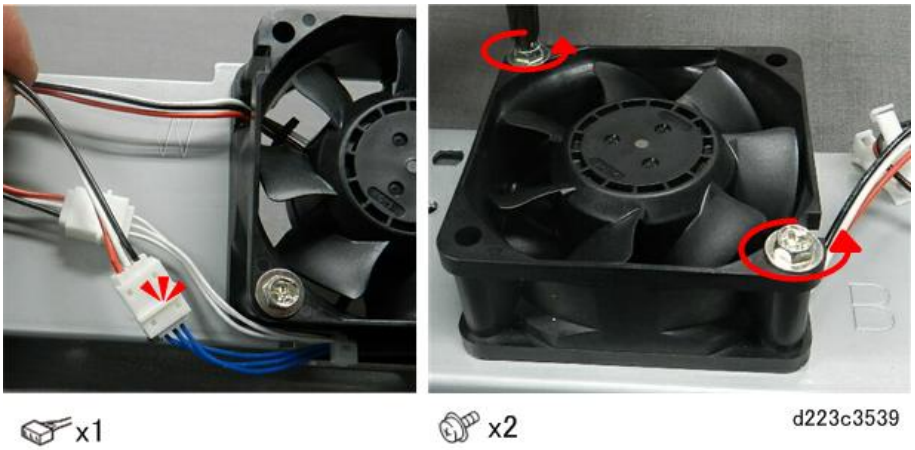
5. Disconnect the front of the fan cover [A] and rear of the fan cover [B].

6. Remove the fan cover.

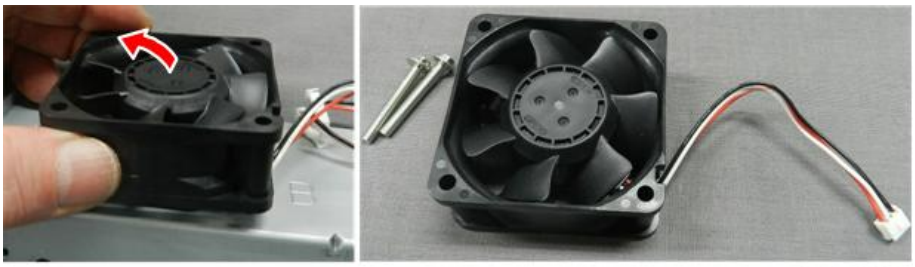


Fan 1

1. Disconnect Fan 1 from the bracket.



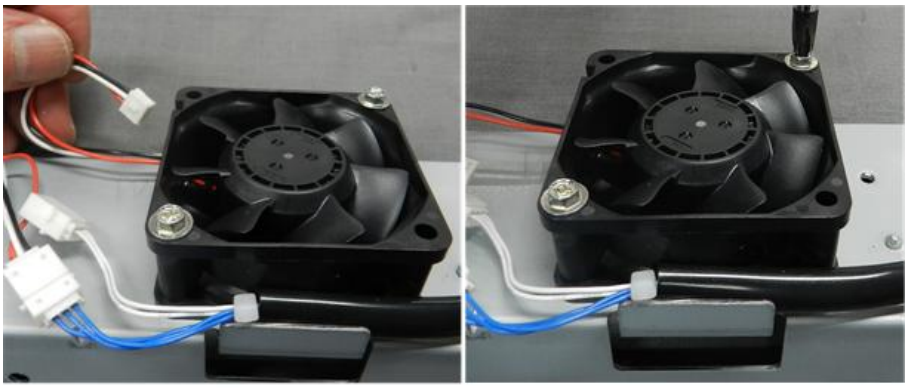
2. Remove the fan from the bracket.



d223c3540

Fan 2

1. Disconnect Fan 2 from bracket.



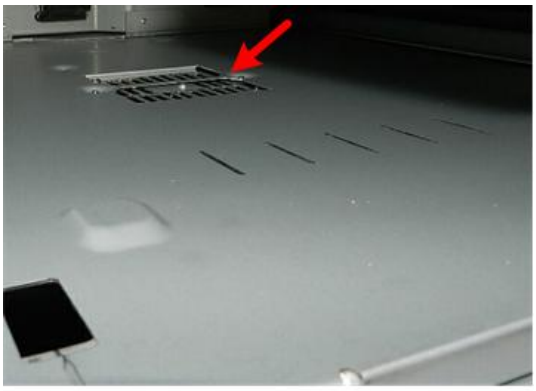
x1 x2 d223c3632

2. Remove the fan from the bracket.

d223c3633

Duplex Fan

1. Remove front door. page 4-15
2. Remove Tray 1. page 4-278
3. Remove duplex unit. page 4-262
4. Remove left lower cover. page 4-25
5. Pull out fusing unit.
6. The duplex fan is in the center of the machine, below the duplex unit.

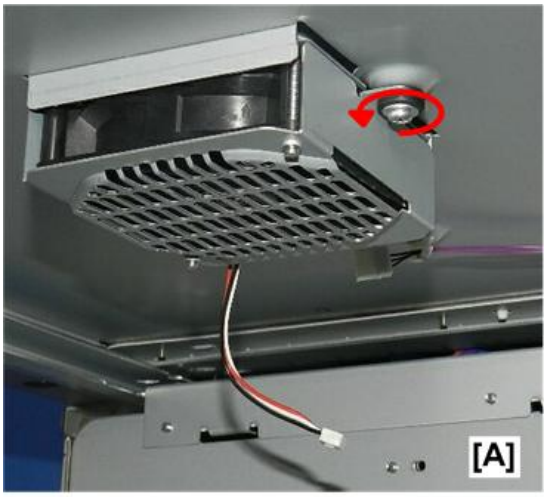


d223c3541

7. From the left side of the machine, disconnect the fan.

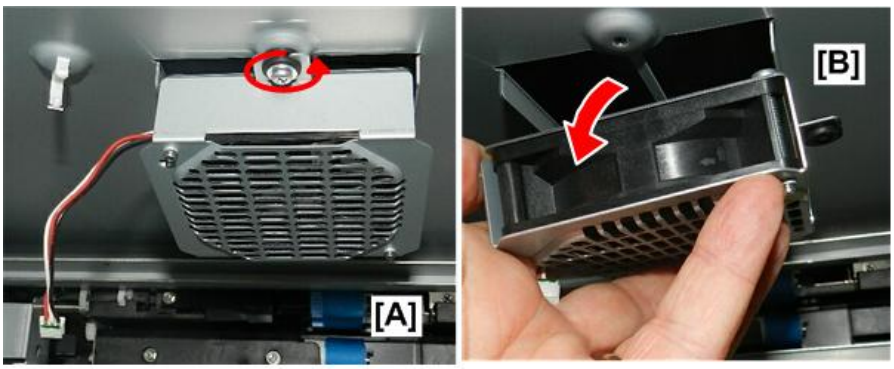
d223c3542

8. From the front of the machine [A], disconnect the fan bracket.



d223c3543

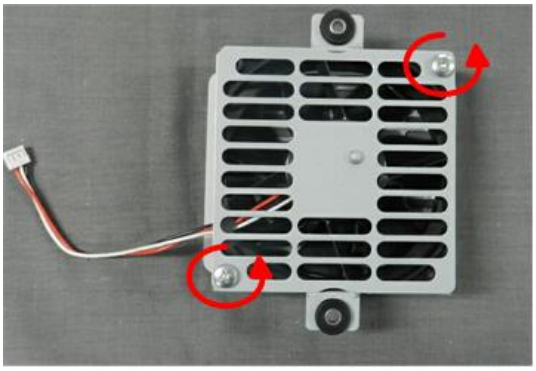
9. From the left side of the machine, disconnect the fan bracket [A], and then remove the bracket with fan attached from the machine [B].



x1

d223c3544

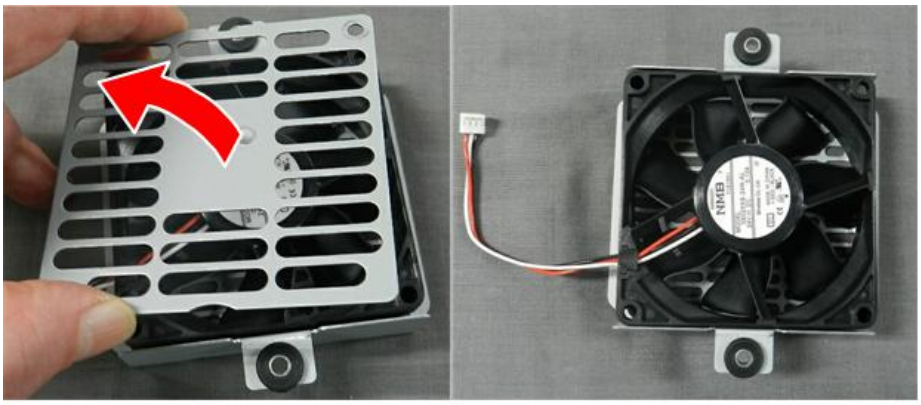
10. Disconnect the plate.



x2

d223c3545

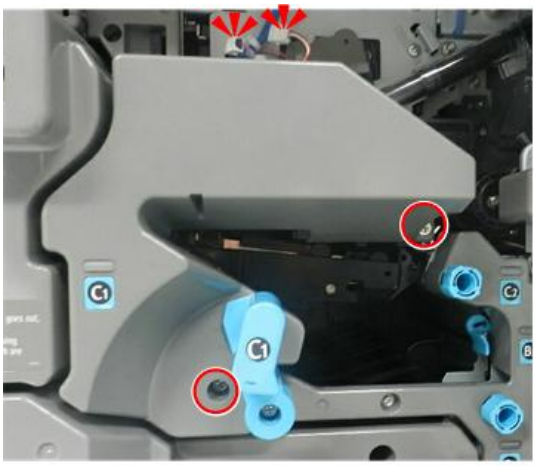
11. Separate plate and fan.



d223c3546

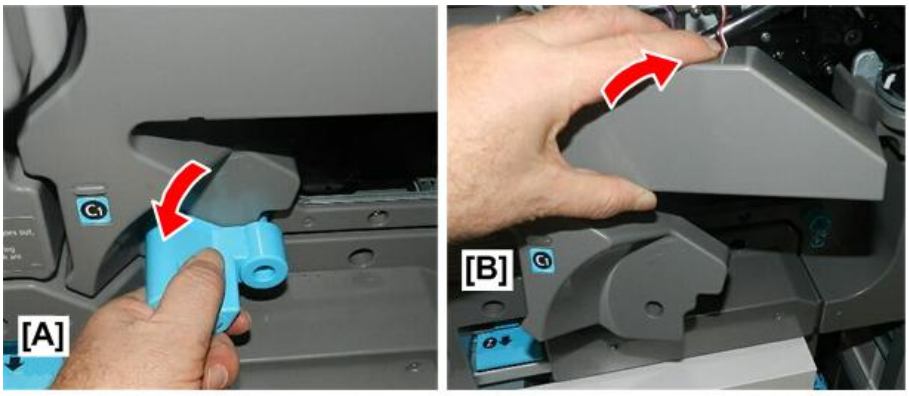
PCU Fan

1. Open the front door.
2. Swing open the toner bottle holder.
3. Disconnect inner cover **C1**.



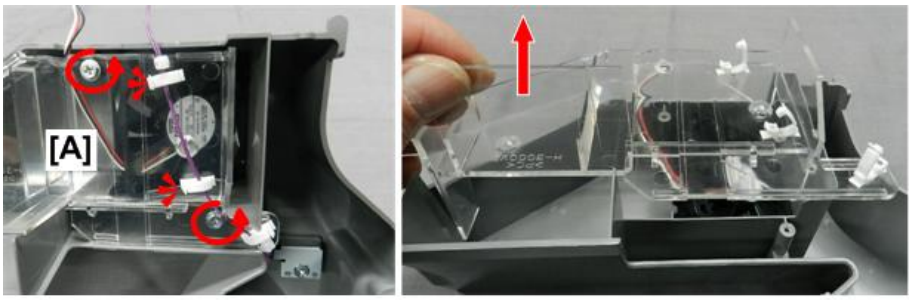
x2 x2 d223c3547

4. Lower handle C1 [A].
5. Remove cover [B], and then lay it on a flat, clean surface.



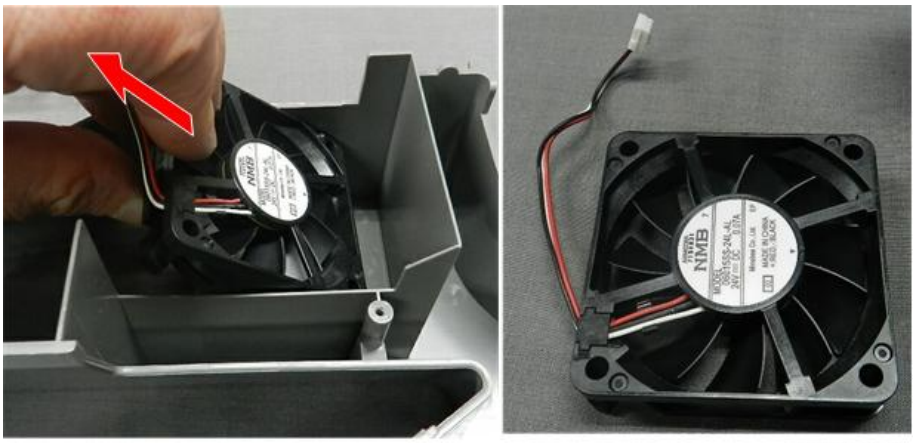
d223c3548

6. Disconnect and remove plastic cover [A].



x2 x2 d223c3549

7. Slide the fan out of its bracket. There are no screws.



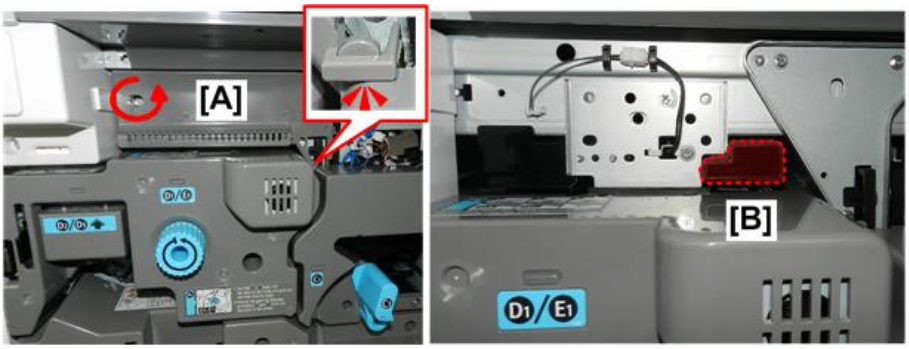
d223c3550

Important

- The fan must be re-installed with the label side up.

Toner Bottle Fan

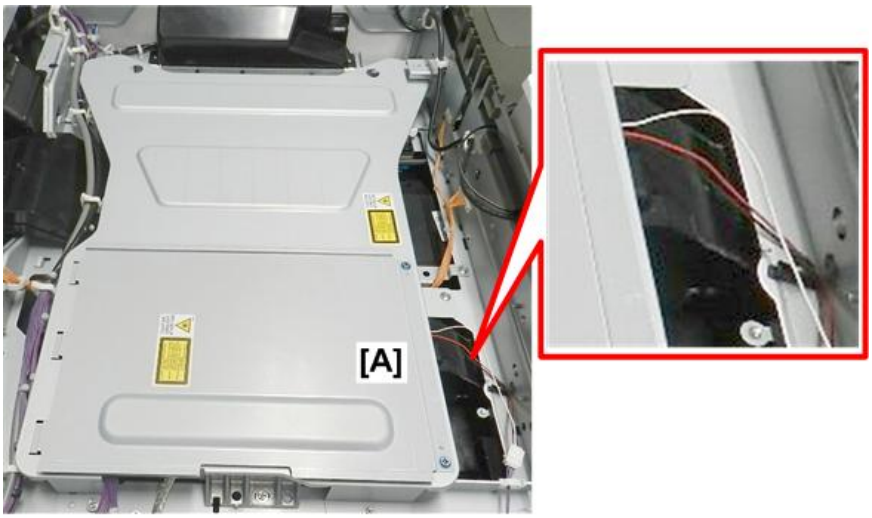
1. Open the front door.
2. Remove inner cover [A].
3. Duct [B] is the duct of the toner bottle fan inside the machine.



x1 x1

d223c3551

4. Remove the scanner unit. Scanner Unit Removal
5. The toner bottle fan is below the front edge of the laser unit [A].



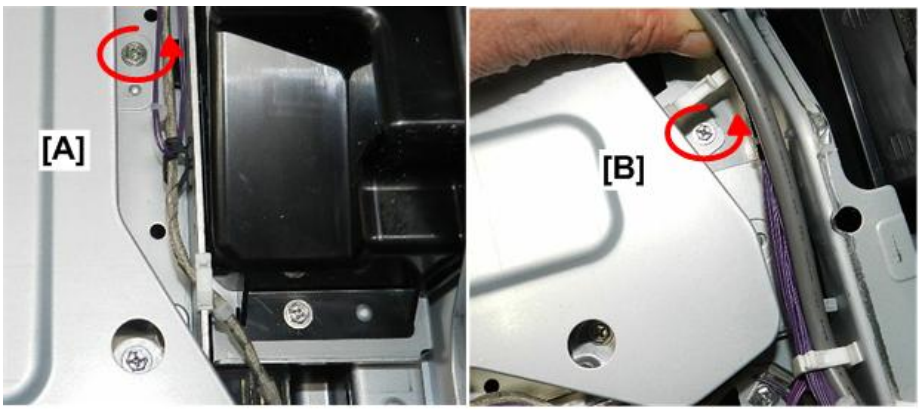
d223c3552

6. Disconnect left side [A] of the laser unit cover.
7. Disconnect center of the cover [B].

x2 x1

d223c3553

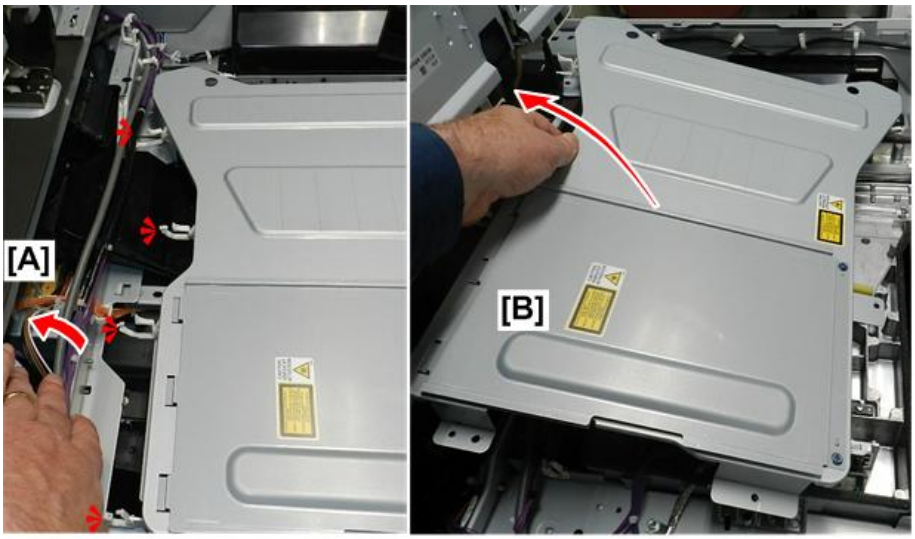
8. Disconnect front right corner of cover [A].
9. Disconnect rear right corner of cover [B].



x1 x1

d223c3554

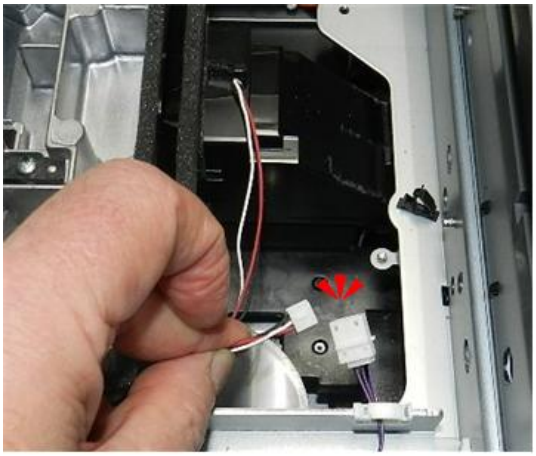
10. Free harness [A] behind cover.
11. Pull cover [B] slightly to the rear. You do not need to remove the cover.



x4

d223c3555

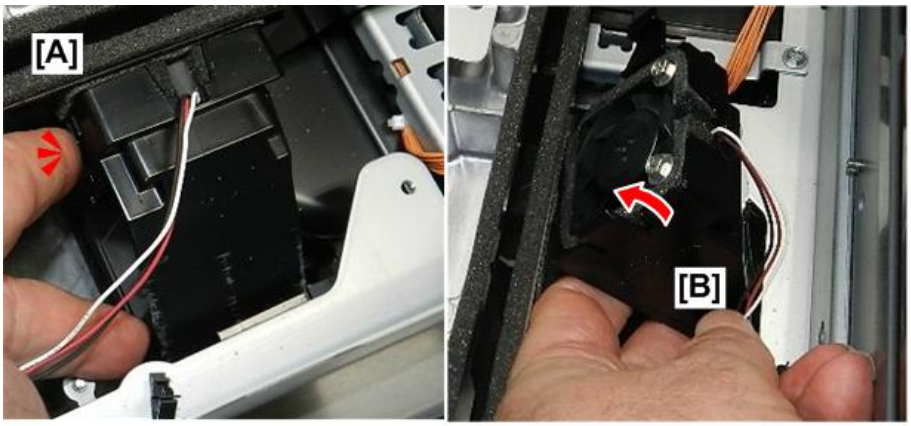
12. Disconnect the fan.



x1

d223c3556

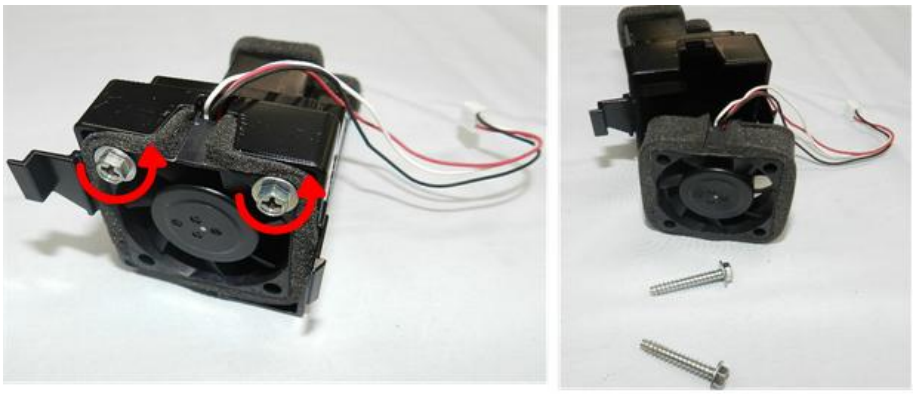
13. Release tab [A] on the left side of the duct.
14. Pull duct with fan attached [B] out of the machine.



x1

d223c3557

15. Separate the fan and duct.

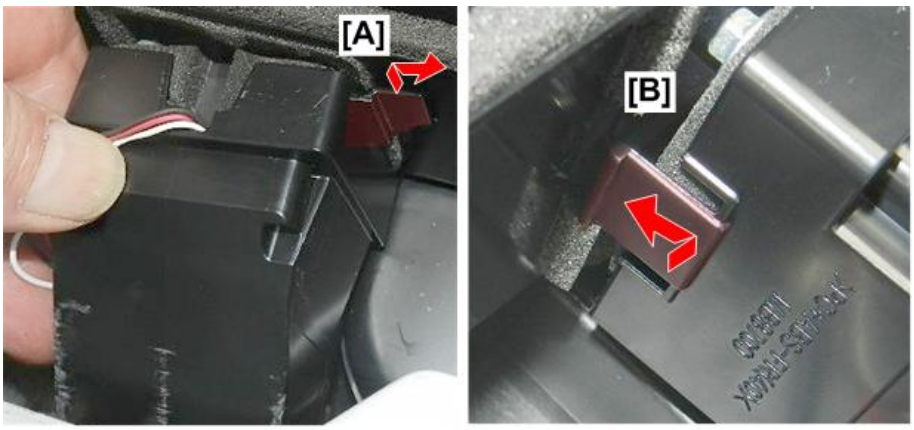


x2

d223c3558

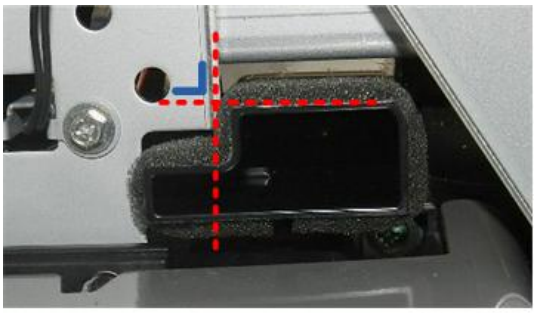
Re-installation

1. When you re-install the fan, first, set tab [A] into the slot on the right.
2. Next, set and lock tab [B] on the left.



d223c3559

3. Check the front of the machine.
4. Confirm that the fan duct is flat and parallel to the frame as shown.



d223c3560

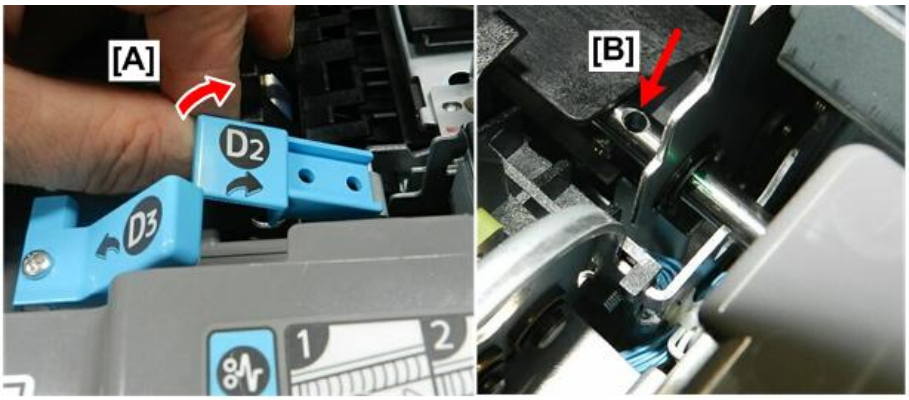
5. If the duct is not straight, set the fan again.

Fusing Inner Cover Fan

1. Open the front door, and then pull out the fusing unit.
2. The fan is inside the cover at the upper right corner.

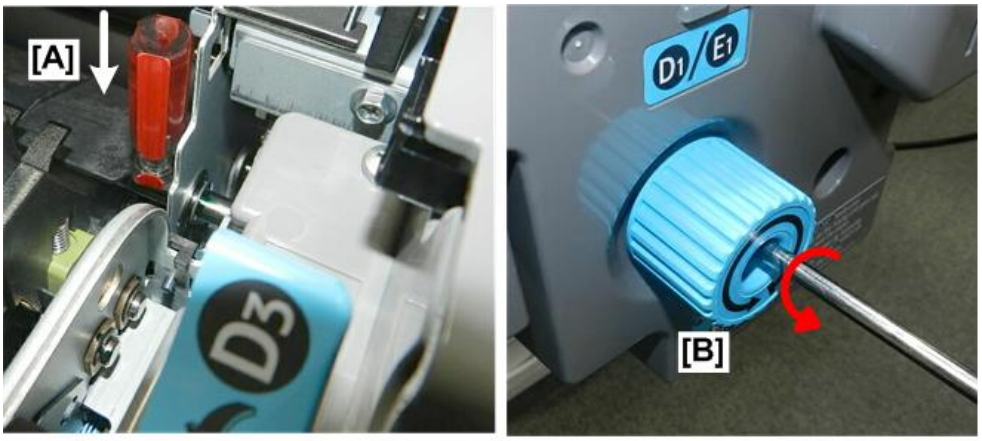
d223c3561

3. Raise D2 [A].
4. Locate the hole in the shaft [B]. If you cannot see the hole, turn the large knob until you can see it.



d223c3562

5. Insert a small screwdriver [A] into the hole to prevent the shaft from rotating.
6. Remove the large knob [B].

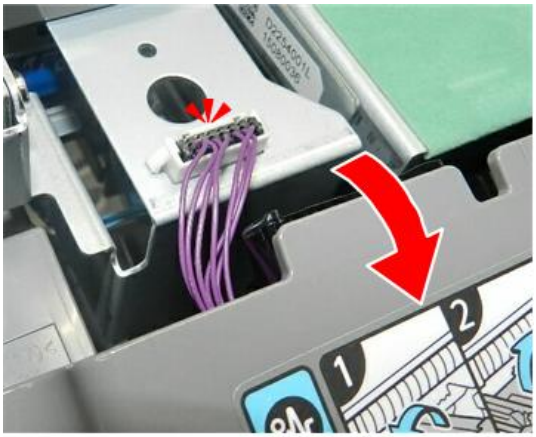


x1 d223c3563

7. Disconnect the fusing unit cover.

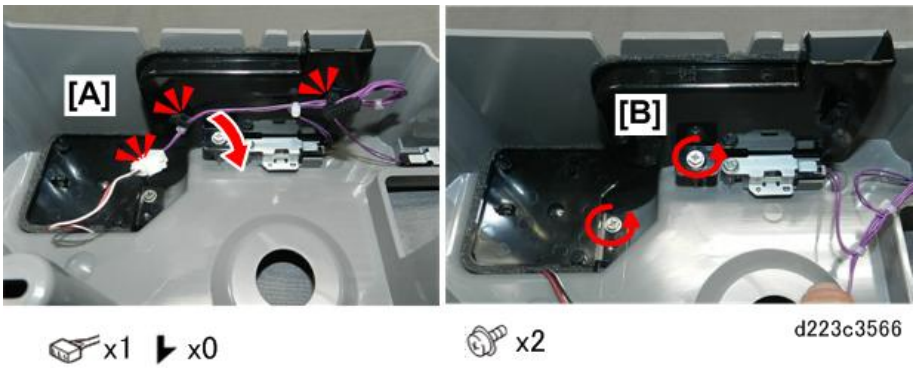
x1 x1 x1 d223c3564

8. Pull the cover slightly away, and then disconnect the LED harness.



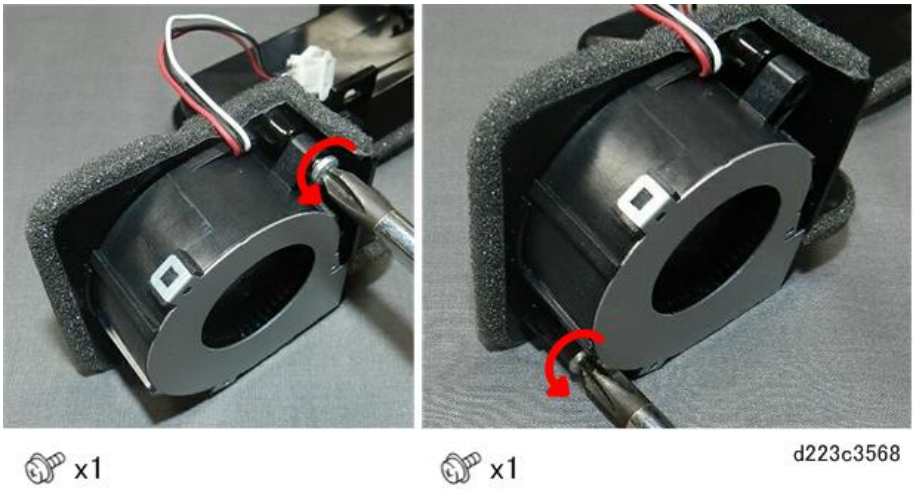
d223c3565

9. Remove the cover and lay it on a flat, clean surface.
10. At [A] disconnect the fan and free the LED harness.
11. Unfasten the duct cover [B].

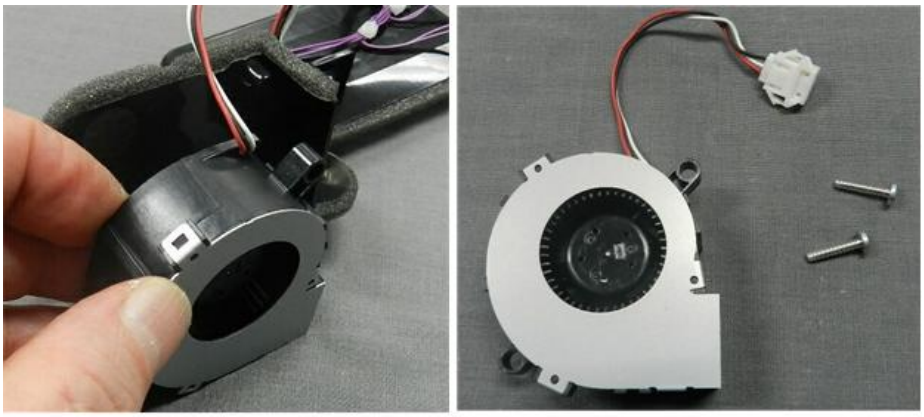


12. Remove the duct with fan attached.

13. Unfasten the fan from the duct.



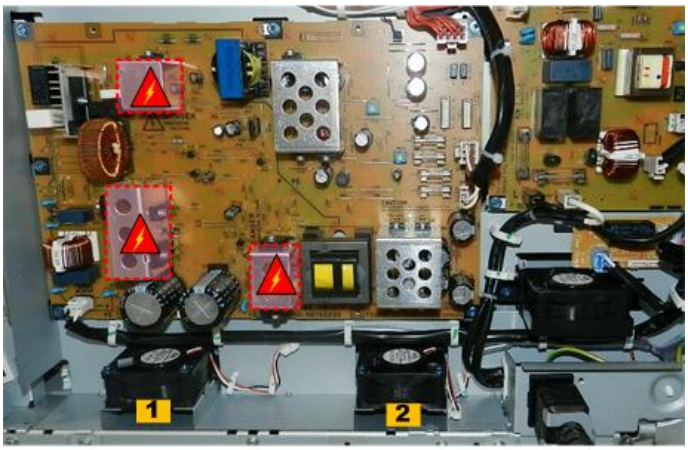
14. Separate the fan from the duct.



d223c3569

PSU Fan 1, 2

1. Remove the rear covers. page 4-19
2. Open the controller box. page 4-28
3. The PSU fans [1] and [2] are located directly below the PSU.

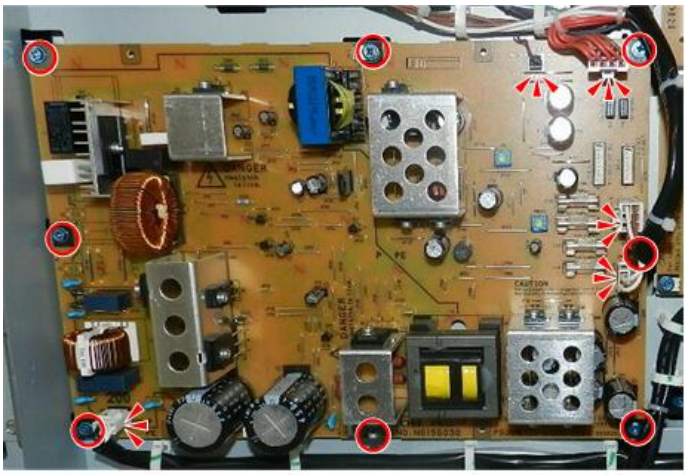


d223c3570

⚠DANGER

- Never attempt to remove either fan without first removing the PSU.
- There are three heat sinks on the board that can hold an electrical charge after the machine has been turned off and disconnected from the power supply.
- Never touch any component on the front of the PSU and do not touch the soldering points on the back of the PSU.
- Always handle the PSU by its edges.

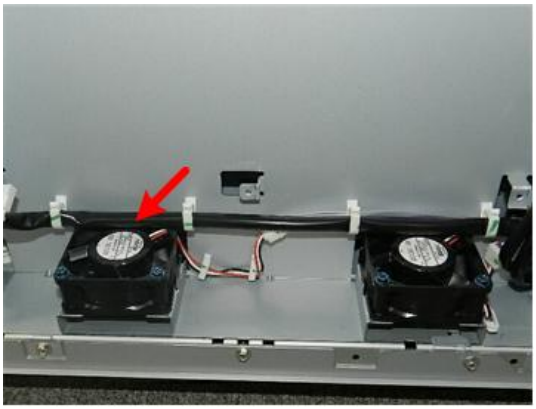
4. Remove the PSU.



x5 x8 d223c3571

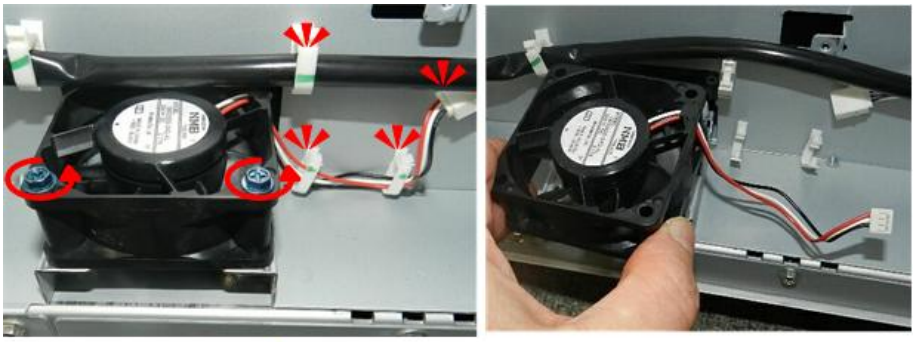
PSU Fan 1

1. PSU Fan 1 is on the left.



d223c3572

2. Disconnect and unfasten the fan, and then remove it.



d223c3573

3. There is no fan bracket.

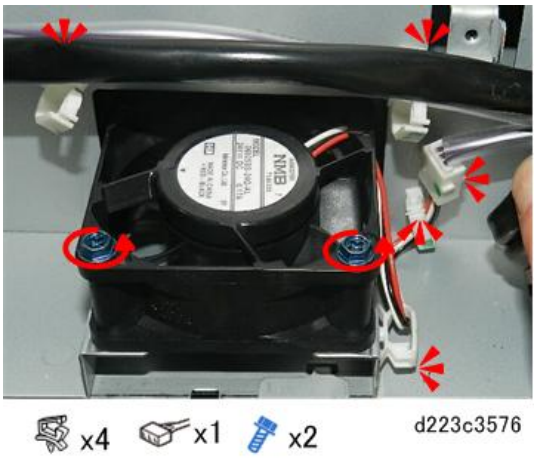
d223c3574

PSU Fan 2

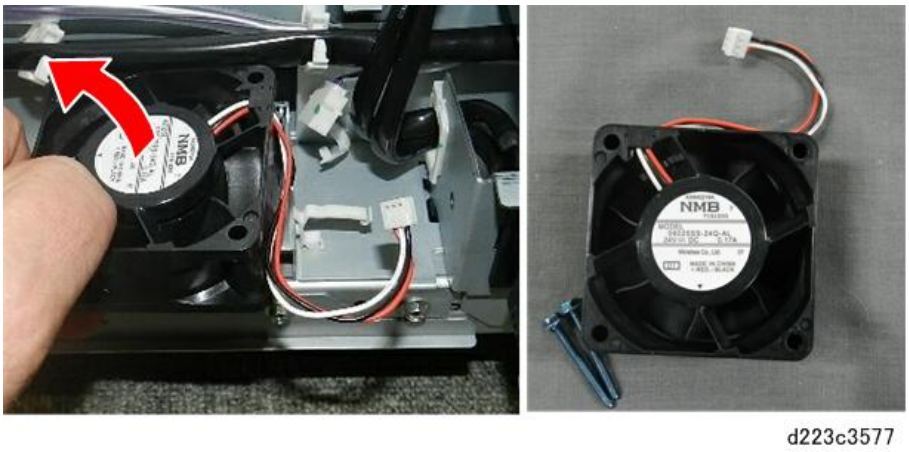
1. PSU Fan 2 is on the right.

d223c3575

2. Disconnect and unfasten the fan.

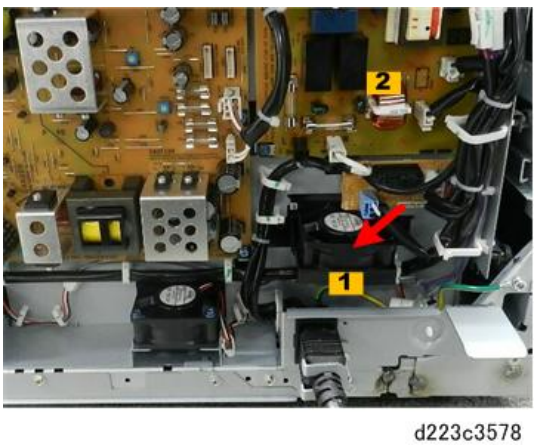


3. Remove the fan. There is no bracket.

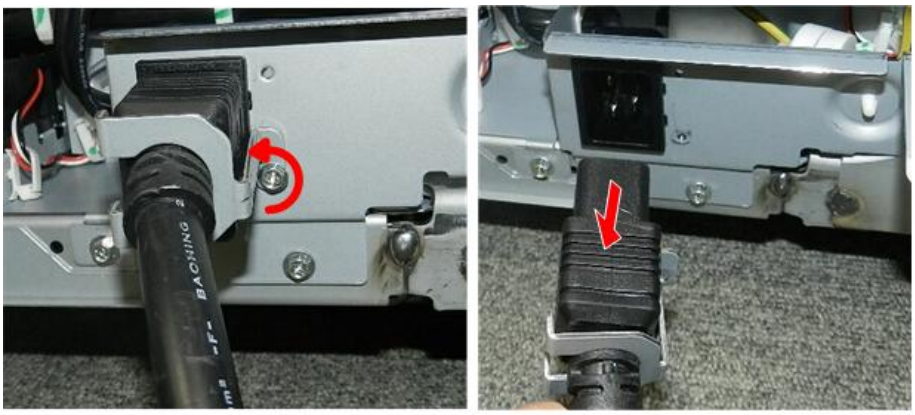


AC Drive Board Fan

1. Remove the rear covers. page 4-19
2. Open the controller box. page 4-28
3. The fan [1] is directly below the AC drive board [2].



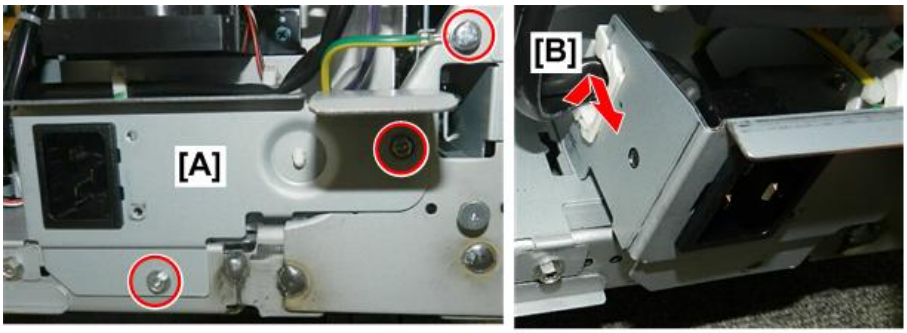
4. Disconnect the power cord.



x1

d223c3579

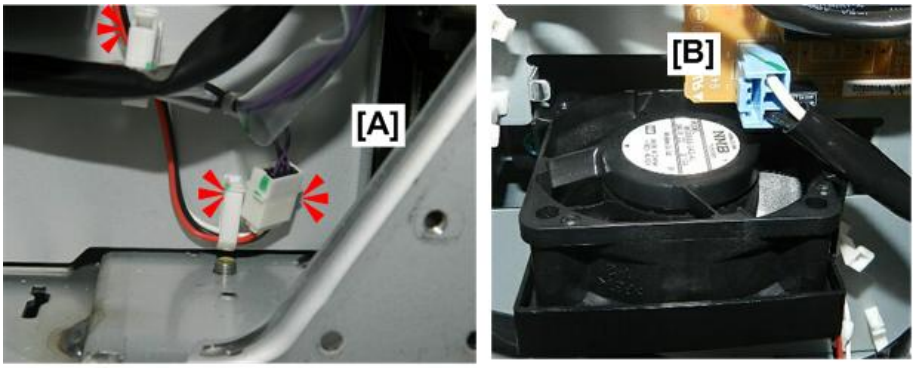
5. Unfasten the corner plate [A] and ground wire.
6. Unhook the corner plate at [B].



x3

d223c3580

7. Disconnect the fan harness [A] in the corner of the machine.
8. Disconnect harness [B] above the fan.



x2 x1

x1

d223c3581

9. Release the tabs at the left rear corner and front right corner of the fan.

x2

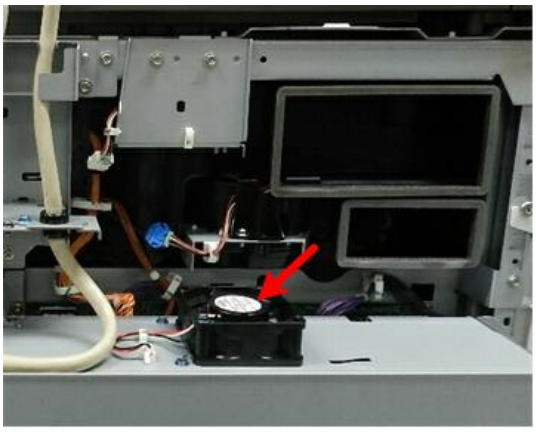
d223c3582

10. Remove the fan. There is no bracket.

d223c3583

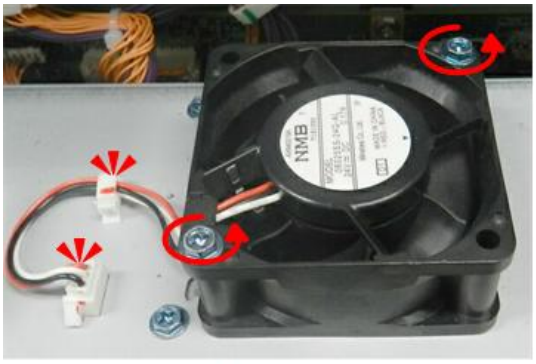
Controller Fan

1. Remove the rear upper cover. page 4-19
2. The controller fan is on top of the controller box.



d223c3584

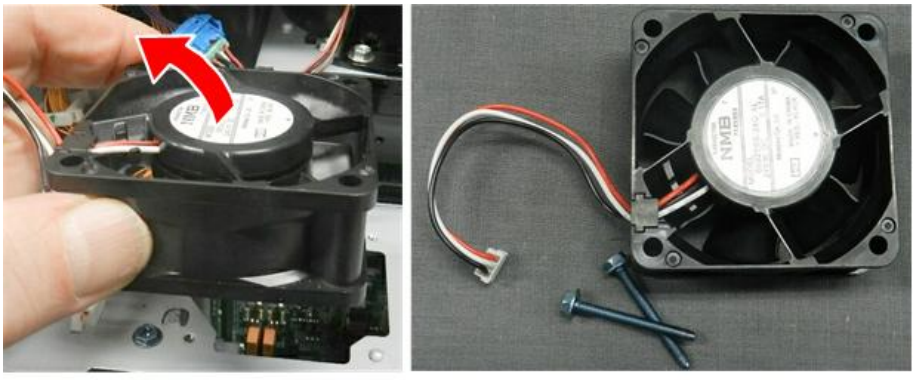
3. Disconnect and unfasten the fan.



x1 x1 x2

d223c3585

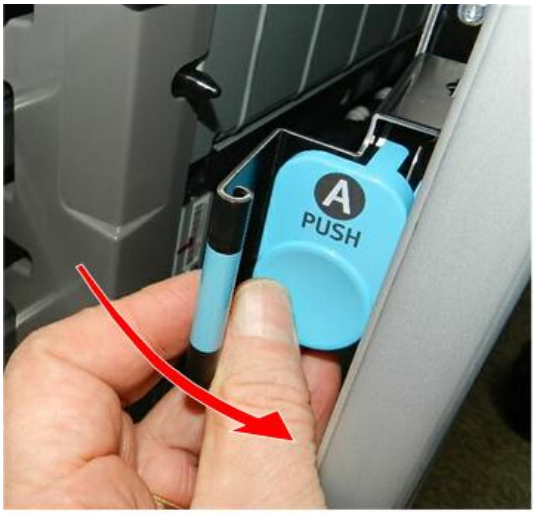
4. Remove the fan. There is no bracket.



d223c3586

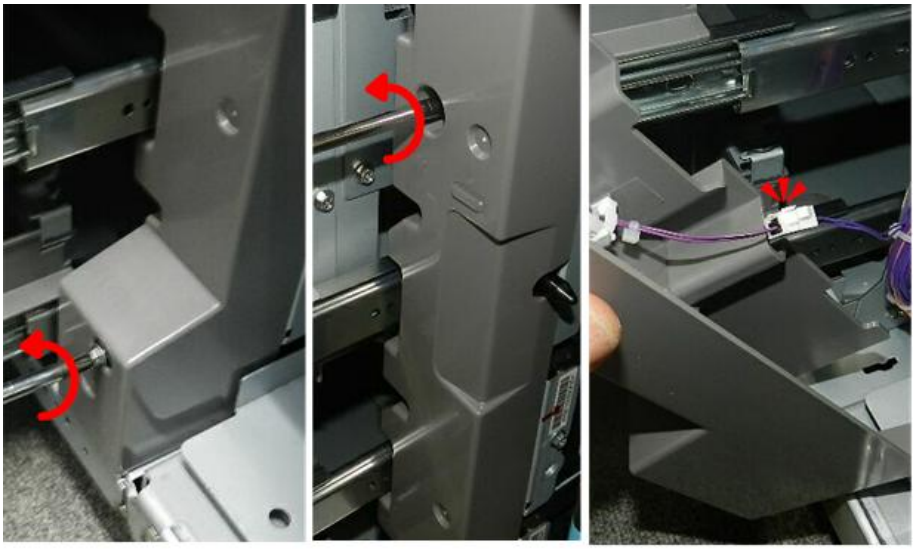
PFU Fan 1, 3, 4

1. Remove the right lower cover. page 4-18
2. Open the front door.
3. Remove the used toner bottle.
4. Push button **A** to open the vertical plate.



d223c3591

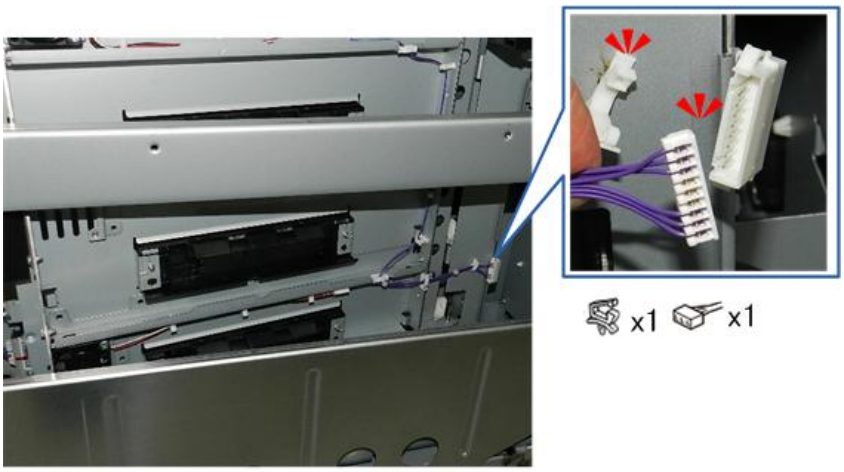
5. Remove the vertical inner cover.



x2 x1

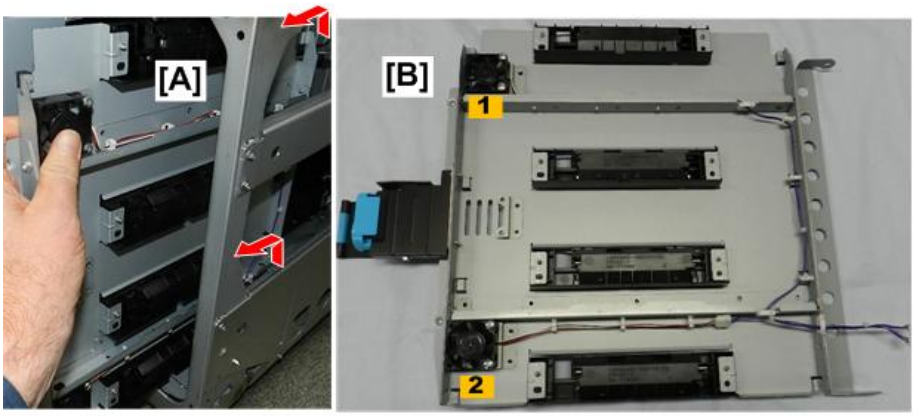
d223c3592

6. Disconnect the harness at the back of the vertical plate.



d223c3593

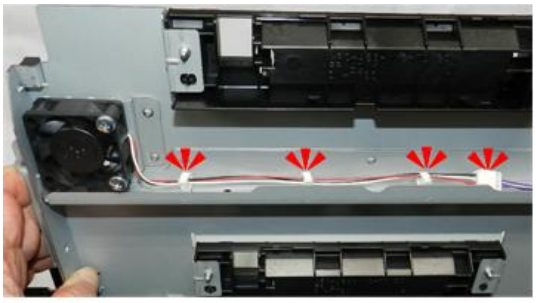
7. Lift the vertical plate [A] off its hinge pegs, and then remove it.
8. Lay the vertical plate [B] on a flat clean surface.
9. The upper fan [1] is the PFU fan 1, and the lower fan [2] is PFU fan 3.



d223c3594

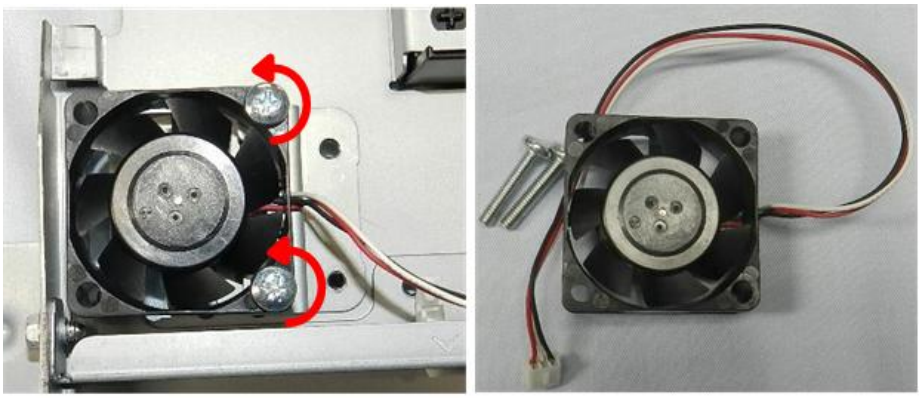
PFU Fan 1

1. Free the fan harness and disconnect it.



d223c3595

2. Remove the fan.

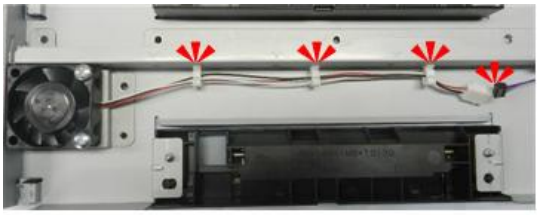


d223c3596

x2

PFU Fan 3

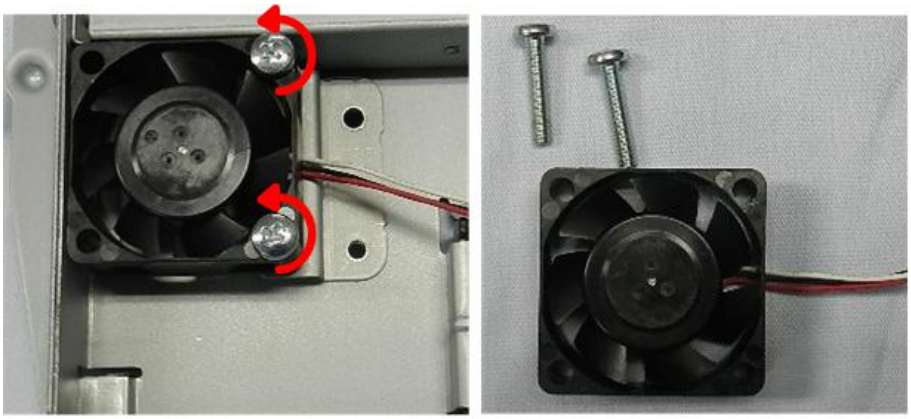
1. Free the fan harness and disconnect it.



d223c3597

x3 x1

2. Remove the fan.

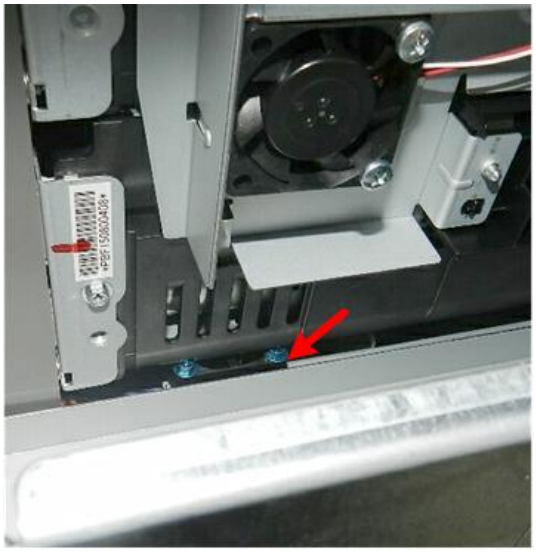


d223c3598

x2

PFU Fan 4

1. PFU Fan 4 is below the bottom paper feed unit.

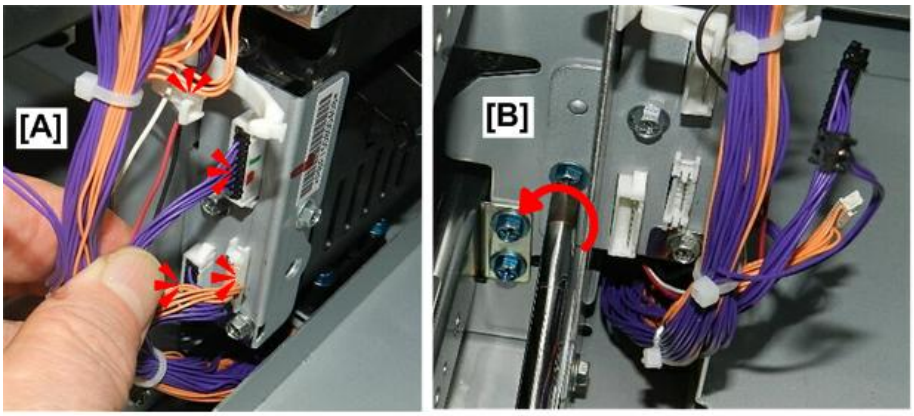


d223c3599

Important

- The right lower cover, used toner bottle, vertical inner cover, and vertical plate must first be removed, the same as in the procedure to remove Fan 1 and Fan 3.

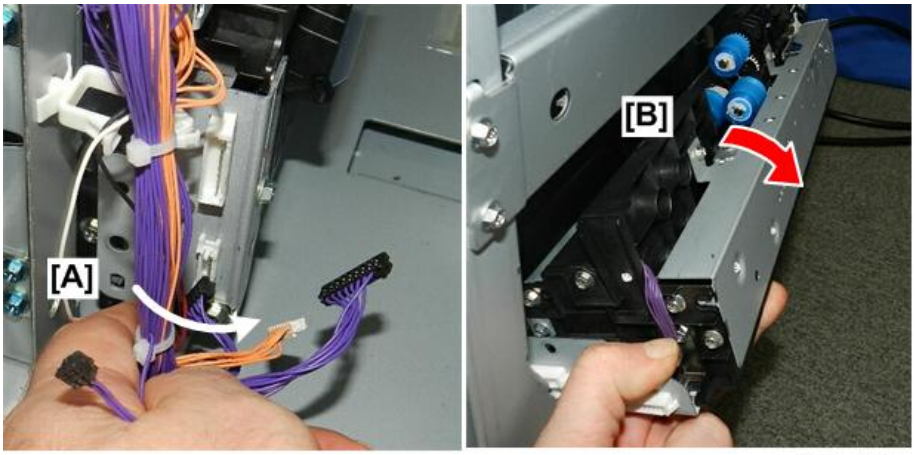
2. Disconnect the front of PFU 3 [A].
3. Remove bracket lock screw [B].



x1 x3 x1

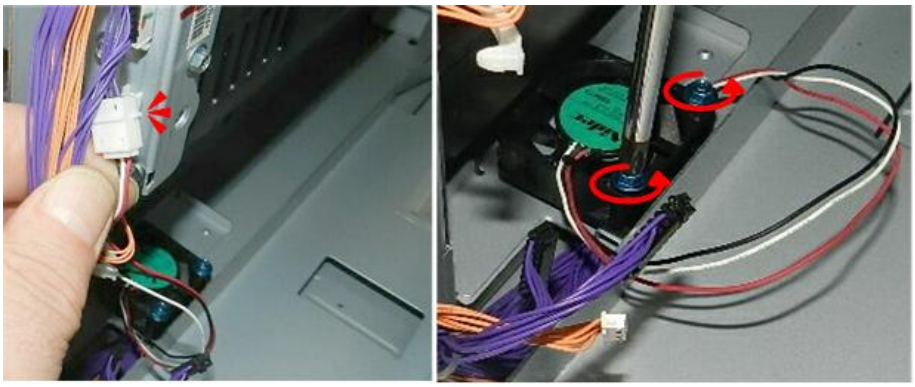
d223c3600

4. Push the front of the PFU [A] to the right to disconnect it.
5. Remove the PFU [B] through the side of the machine.



d223c3601

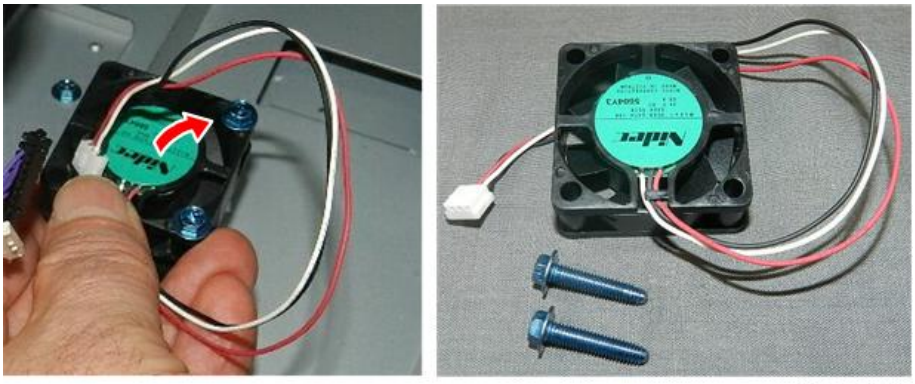
6. Disconnect the fan harness and then unfasten the fan.



x1 x2

d223c3602

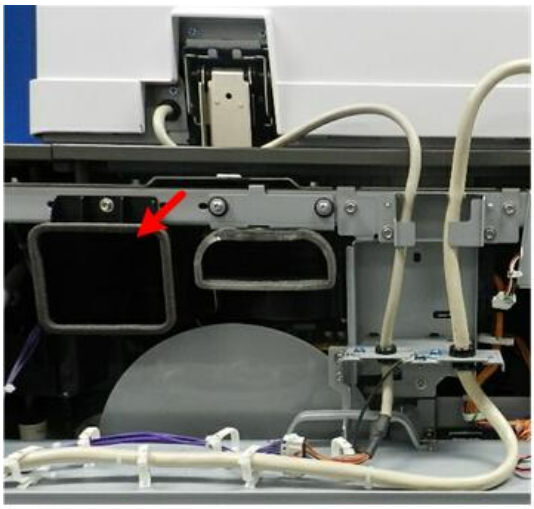
7. Remove the fan.



d223c3603

Main Intake Fan

1. Remove the rear upper cover. page 4-19
2. The main intake fan is at the rear right corner of the machine.

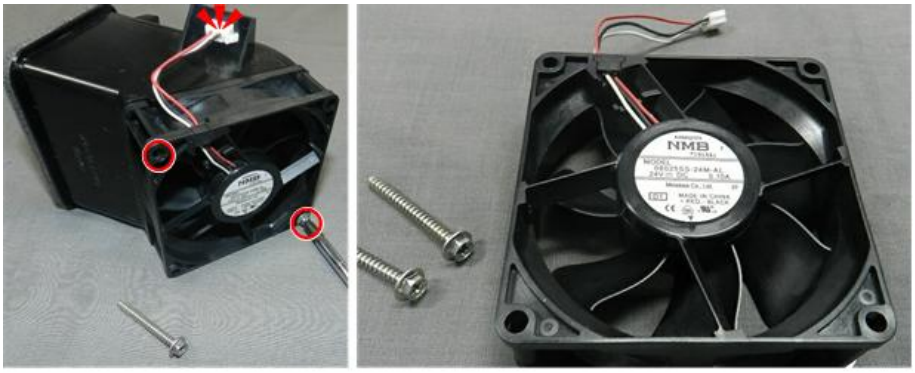


d223c3604

3. Disconnect fan duct [A].
4. Slowly, pull the duct partially out of the machine so you can see connector [B], and then disconnect it.

x1 x1 d223c3605

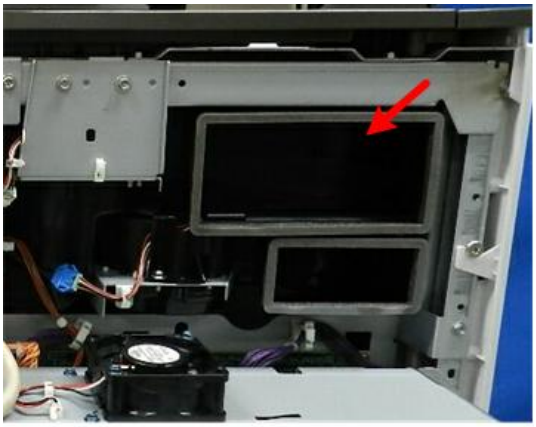
5. Separate the fan and duct.



x2 x1 d223c3606

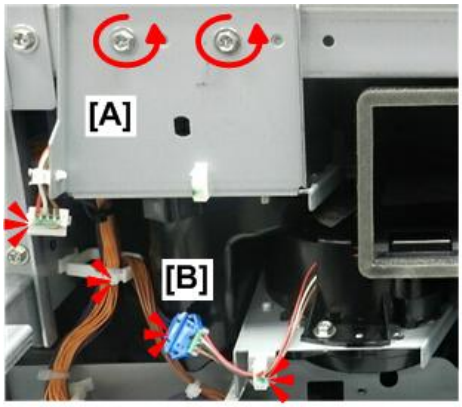
Main Exhaust Fan

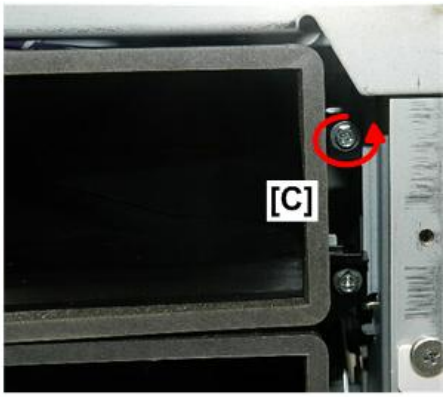
1. Remove the rear upper cover. page 4-19
2. The main exhaust fan is at the rear left corner of the machine.



d223c3607

3. Disconnect fan bracket [A] on the left.
4. Disconnect the clamps and harness at [B] so they do not block removal of the fan bracket and duct.
5. Disconnect the duct [C] on the right.





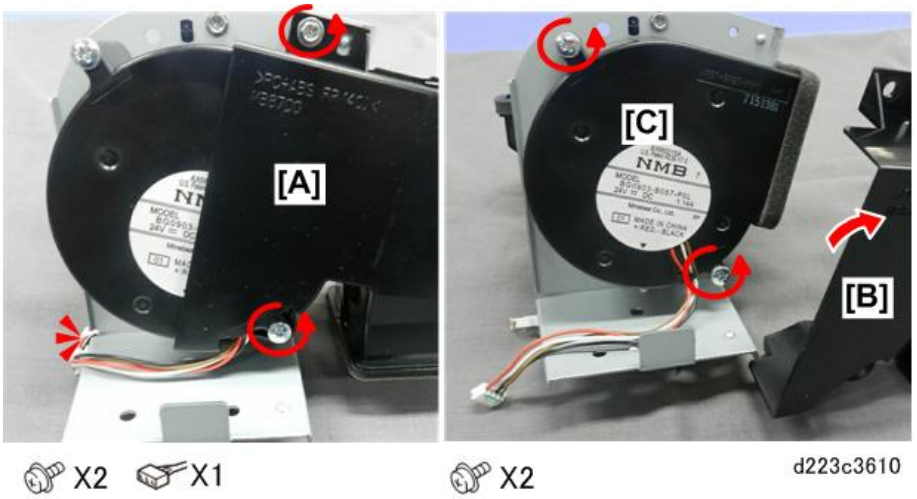
d223c3608

X2 x2 x2 X1

6. Remove the bracket and duct with fan attached.

d223c3609

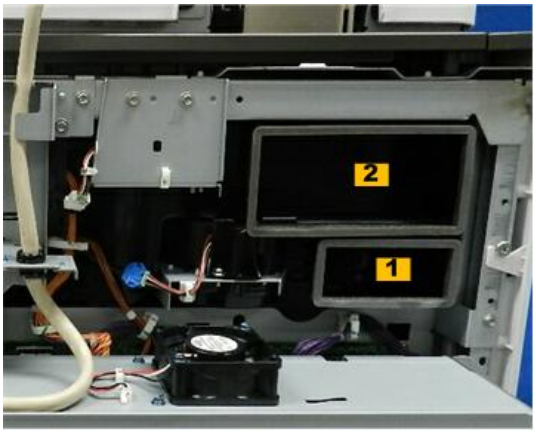
7. Disconnect the duct [A].
8. Separate the duct [B] from the fan.
9. Unfasten fan [C].



10. Separate fan and bracket.

Heat Exhaust Fan

1. Remove the rear upper cover. page 4-19
2. The heat exhaust fan [1] is located below the main exhaust fan [2].

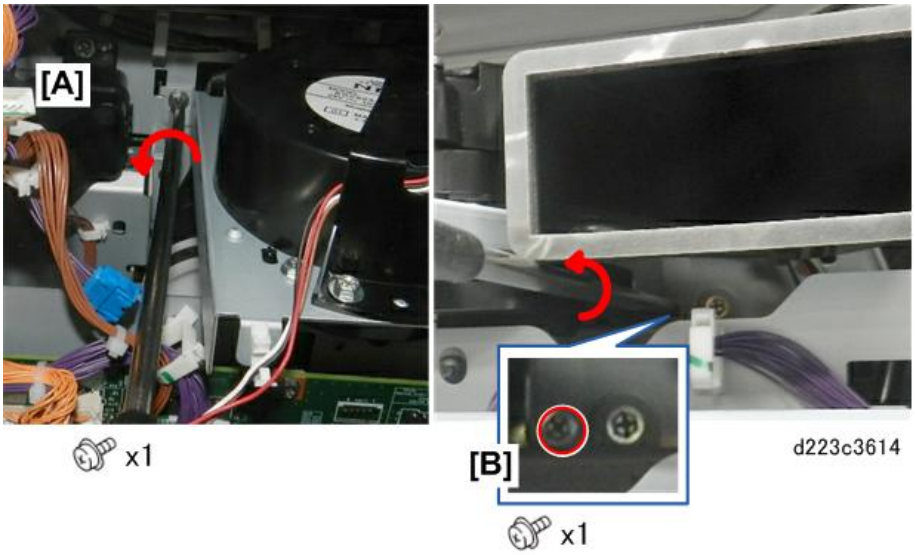


d223c3612

3. Remove main exhaust fan. (See procedure above. The main exhaust fan must be removed before the heat exhaust fan can be removed.)
4. Disconnect the duct at [A].

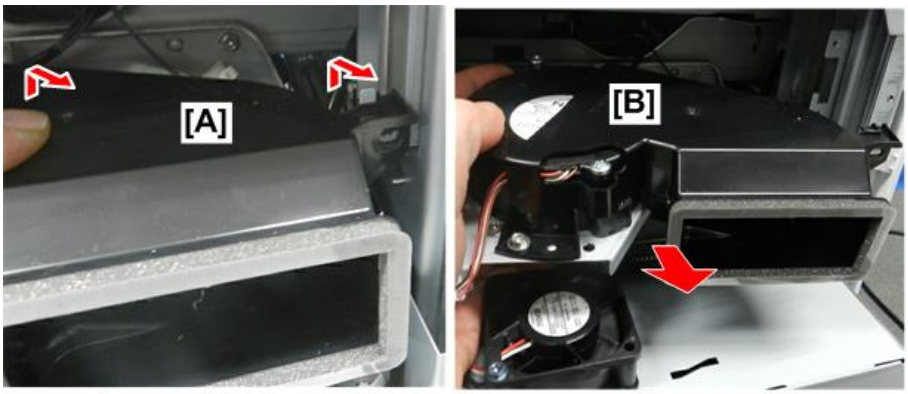
x1 d223c3613

5. Disconnect bracket at [A].
6. Disconnect bracket at [B] (left screw).



x1 d223c3614 x1

7. Lift the duct and bracket [A] to unhook the front and rear.
8. Remove the bracket and duct [B] with fan attached.

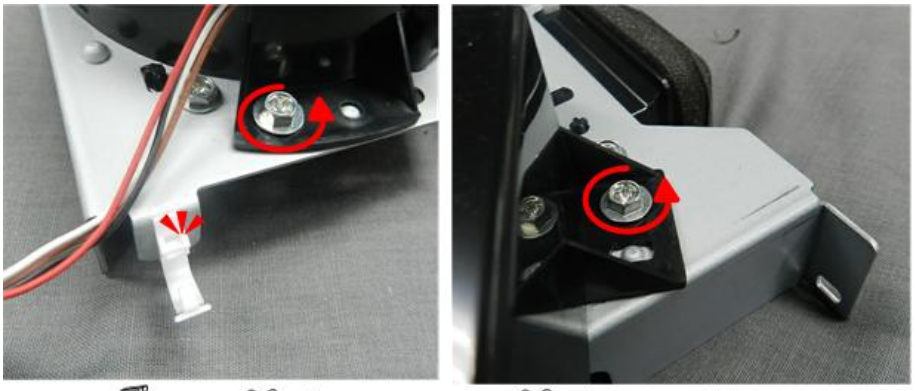


d223c3615

9. Lay the unit on a flat, clean surface.

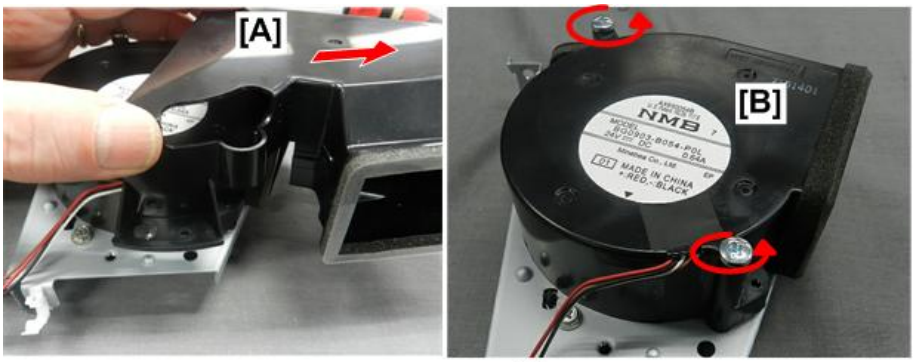
d223c3616

10. Disconnect the duct.

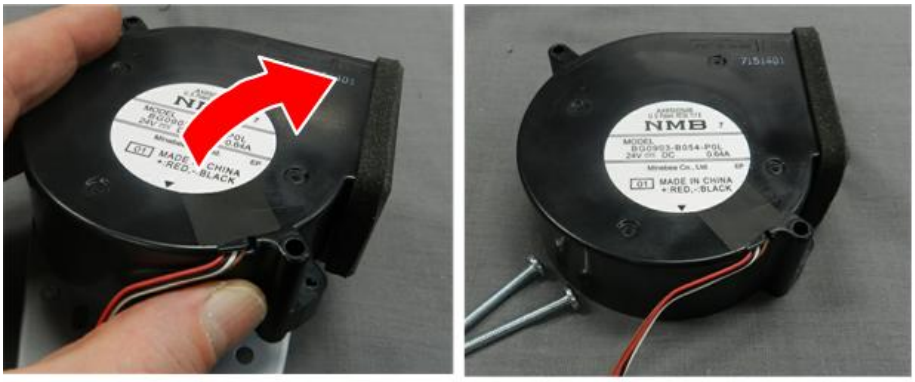


d223c3617

11. Separate duct [A] from the fan.
12. Unfasten fan [B].



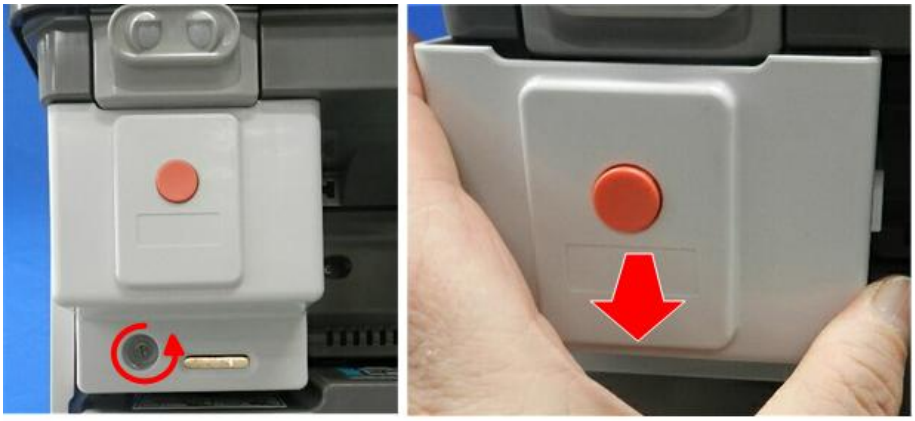
13. Separate fan from bracket.



4.16.2 SWITCHES

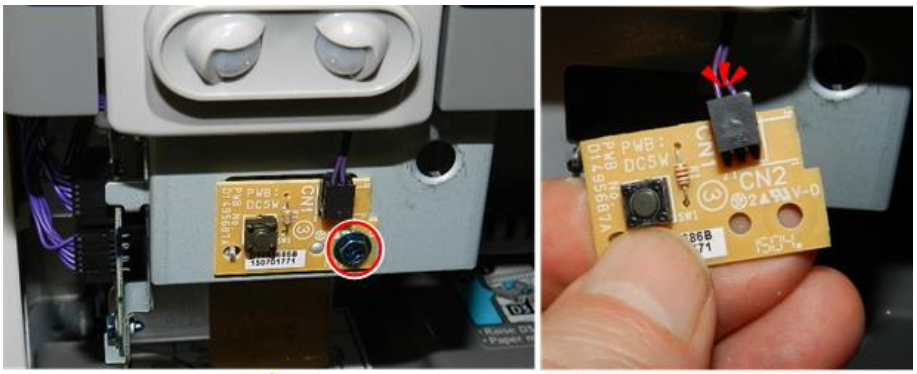
Power Switch

1. Open the front door.
2. Remove the power switch cover.



x1 d223c3620

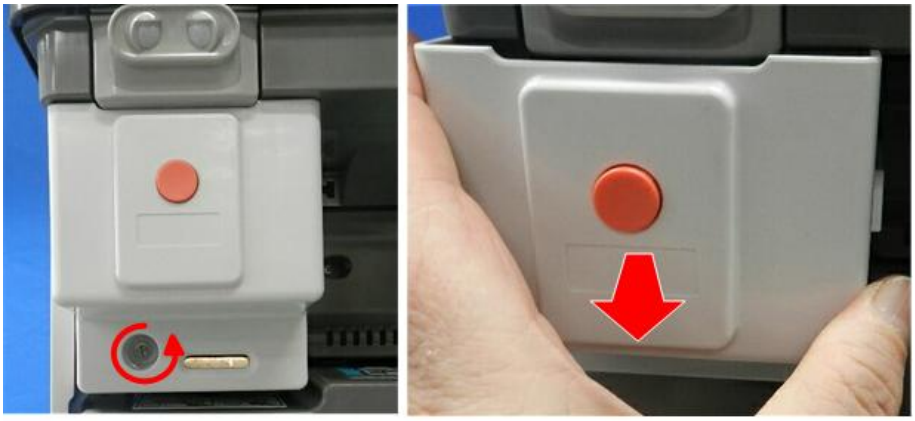
3. Disconnect and remove the power switch board.



x1 x1 d223c3648

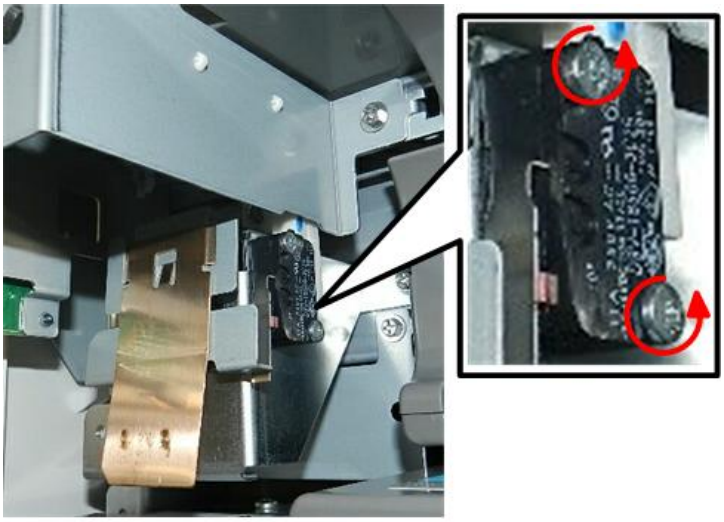
Front Door Safety Switch

1. Open the front door.
2. Remove the power switch cover.



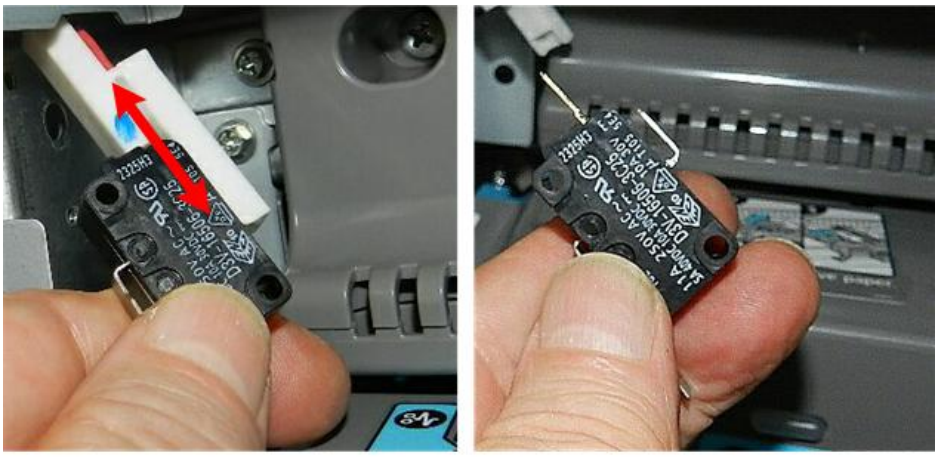
x1 d223c3620

3. Unfasten the door switch.



x2 d223c3621

4. Disconnect the door switch bayonet connector.



x1 d223c3622

5. Remove the switch.

d223c3623

Human Detection (Proximity) Sensor Switch

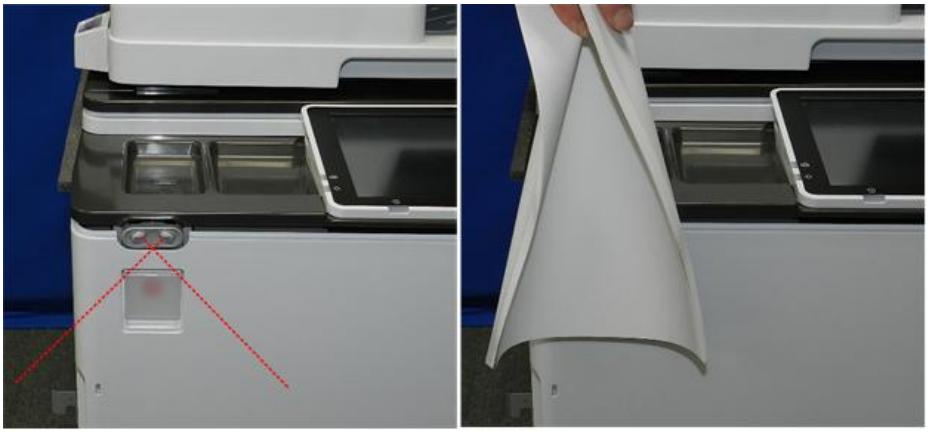
This sensor, mounted in the front, detects the presence of the operator as soon as he or she approaches within 1.8 meters of the front of the machine.

- The sensor uses infrared so the maximum distance at which the operator's presence can be detected may vary with ambient temperature.
- The standard is for the sensor to detect the operator at 1.8 meters away from the front of the machine at ambient 28C (82F). However, this can vary with changes in ambient temperature.
- At lower ambient temperature, this distance may increase and the operator can be detected farther away. At higher ambient temperature, the distance may decrease and the operator will have to be closer to the front of the machine for the sensor to detect.
- The sensor monitors the space from the floor to the approximate height of the operator's knees. The sensitivity of the sensor detection can also be affected by the operator’s clothing.
- If the sensor fails to switch off, this will cause SC869-01. If the sensor fails to switch on, this will cause SC869-02.

Test the Switch

Do this procedure in order to identify the problem with the sensor.

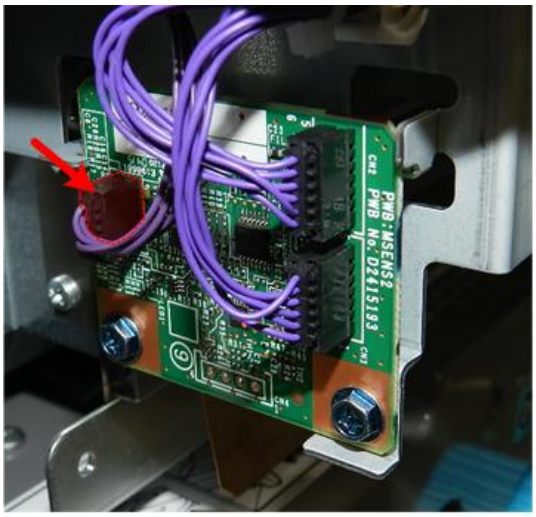
1. Go into the SP mode.
2. Open **SP5-102** (this is the sensor input check).
3. While keeping your hand away from the sensor, cover the sensor at the front of the machine with a stack of about 10 sheets of paper, and then see if the value on the display resets to "0" (no detection).



d223c3650

4. Take the paper away from the sensor to see if the value resets to "1" (detect).
    - If the value resets to "0" and "1", this means the sensor is functioning but a heating source or a failed fan in the machine could be causing a rise in temperature that is interfering with operation of the sensor.
    - If the values fail to reset to "0" and "1" correctly, switch off the machine, and then replace the three PCBs (MSENS1 x2, MSENS2 x1). This is described below.
5. Turn the machine on, and then do Steps 1, 2, 3 to test the operation of the sensor.

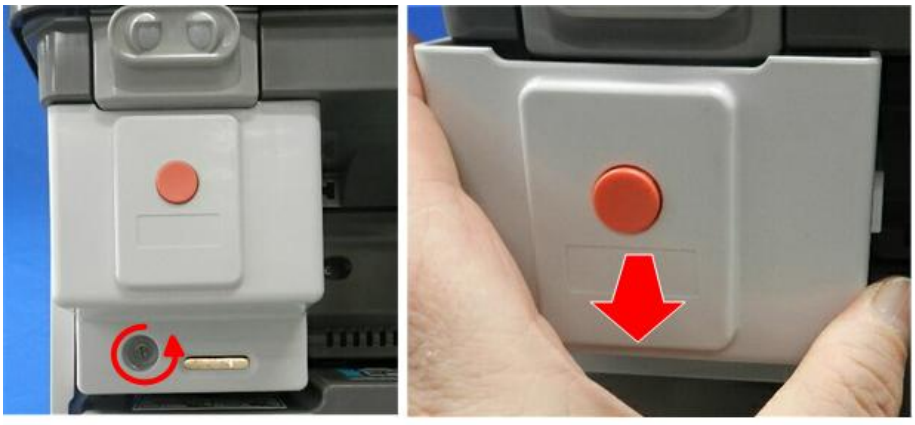
6. If the test fails again, turn the machine off, and then replace the harness between MENS1 and MENS2.
7. Turn the machine on, and then do Steps 1, 2, 3 again.
8. If the sensor fails the test again, the harness between MSENS-2 and the BiCU, or the controller board may need replacement.



d223c3649

Switch Disassembly

1. Open the front door.
2. Remove the power switch cover.



x1

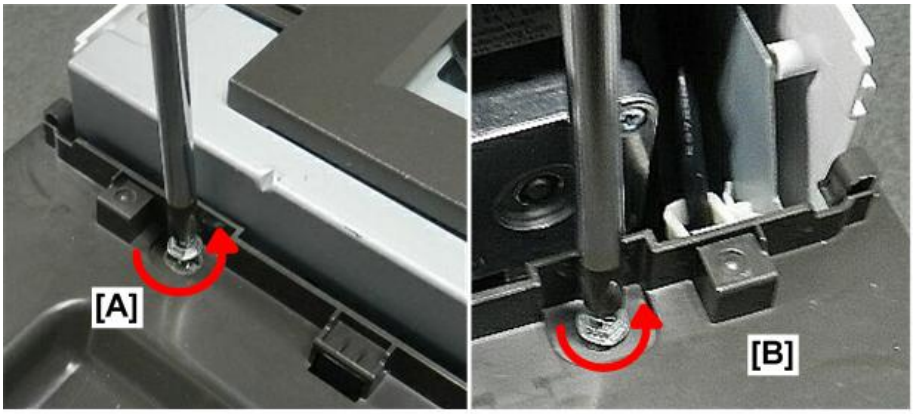
d223c3620

3. Open the ADF.
4. Remove the front edge plate of the scanner unit.

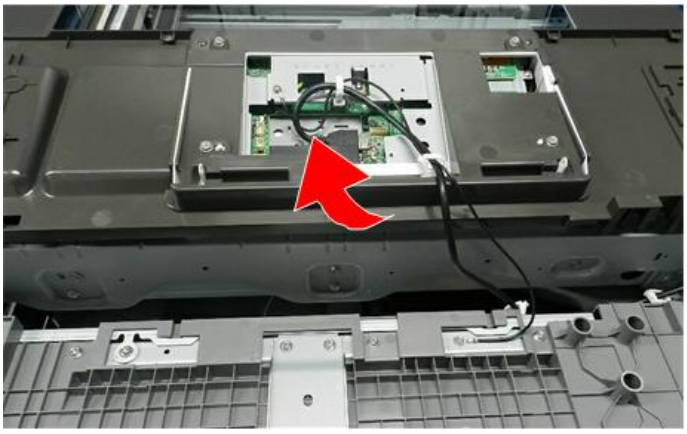
x2

d223c3624

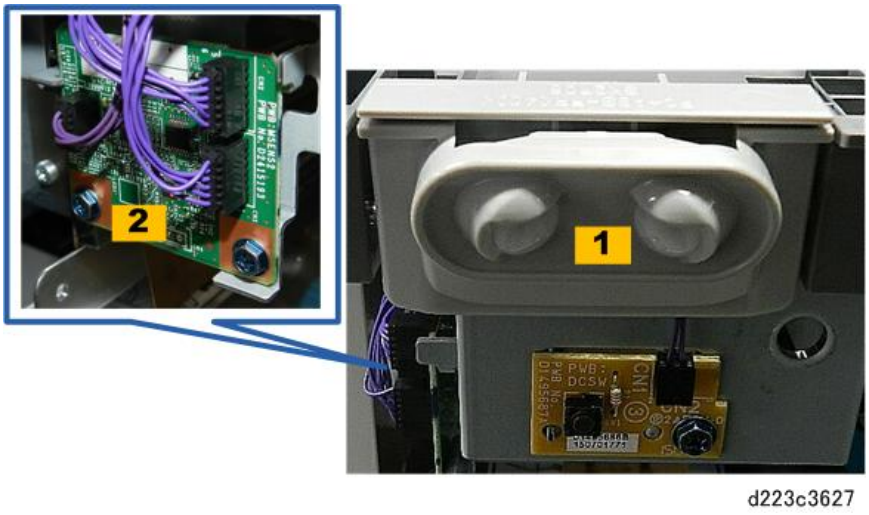
5. Disconnect the operation panel on the left [A] and on the right [B].



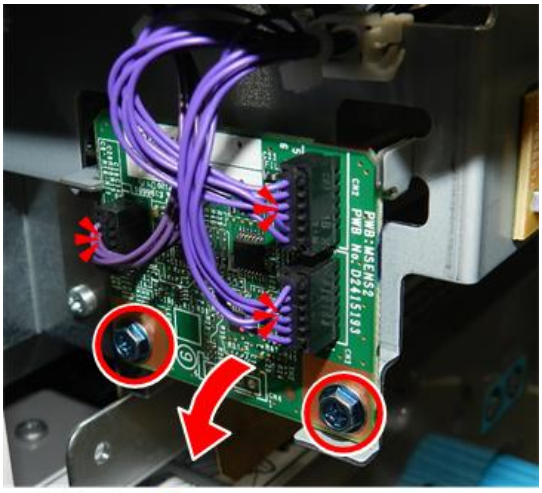
6. Slowly, turn the operation panel upside down, and then lay it on the scanner unit.



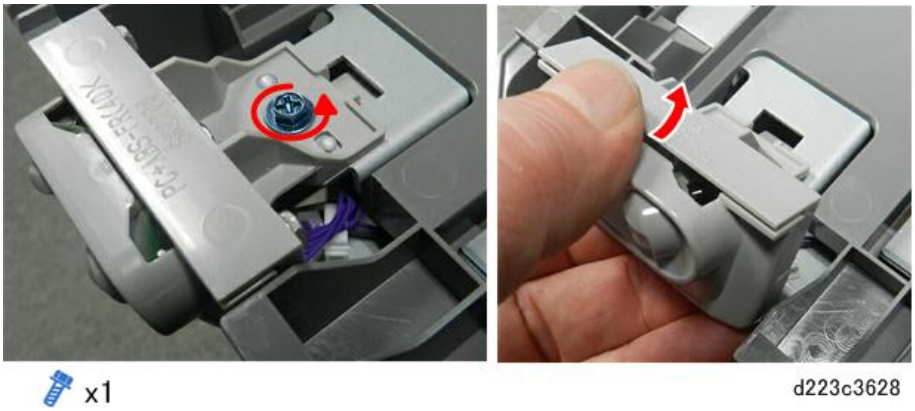
7. This detection device [1] and PCB [2] comprise the sensor.



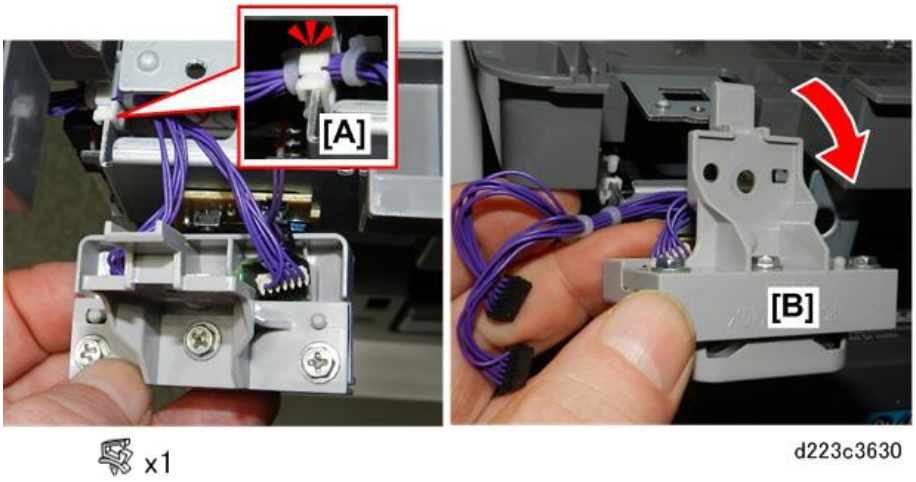
8. Remove the PCB (MSENS2).



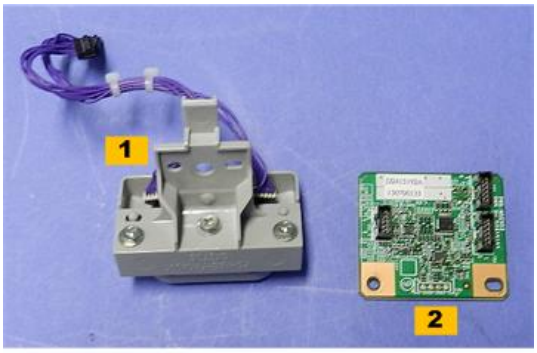
9. Unfasten the detection device bracket, and then pull it out partially.



10. Open clamp [A] to free the harness, and then remove the bracket with harness attached [B].

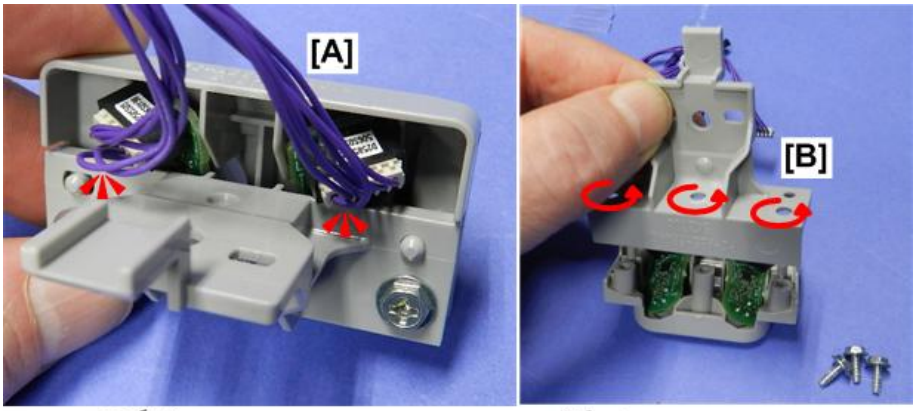


11. The MENS1 PCBs are in the bracket [1]. The PCB [2] is MENS2.



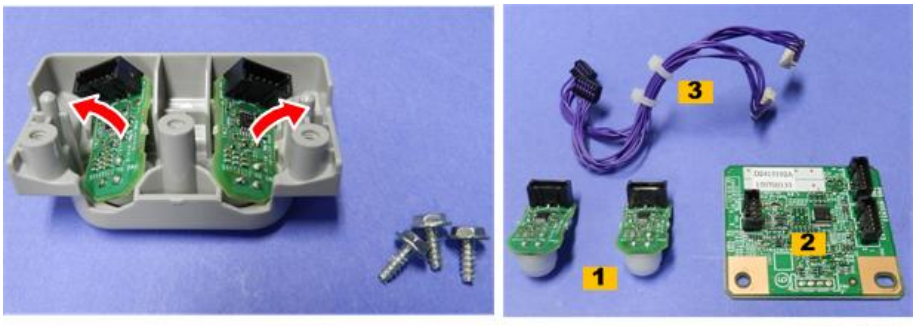
d223c3631

12. Disconnect the MENS1 PCBs [A], and then remove the top half of the bracket [B].



d223c3644

13. Remove both MENS1 PCBs from the bracket.

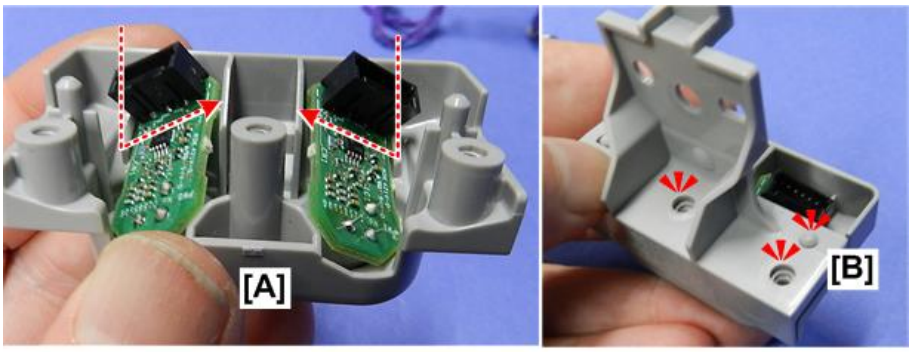


d223c3645

[1]	MENS1 PCB pair
[2]	MENS2 PCB
[3]	Harness

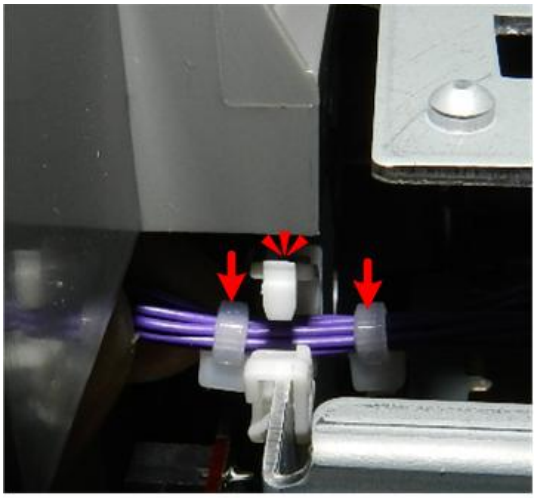
Re-assembly

1. Set the MENS1 PCB pair in the bracket at the correct angle [A].
2. The boss and screw holes will align correctly [B] only when the PCBs are set at the correct angle.



d223c3646

3. Clamp the harness between the two permanent binders on the harness.



x1 d223c3647

4.16.3 IMPORTANT SP CODES: FANS, SWITCHES

Here is a list of SP codes related to testing and servicing the large number of fans and switches.

Item	SP No.	Function
Input check	5803	Displays the signals received from fans.
Output check	5804	Switches fans on/off one by one for testing.
Proximity sensor check	5102	This SP returns a "1" if the sensor on the front of the machine detects the presence of the operator.

4.17 COPY IMAGE ADJUSTMENTS: PRINTING/SCANNING

These adjustments must be performed after replacing any of the following parts:

- Scanner wires
- Lens block
- Scanner motor
- Polygon motor
- Tandem tray side fences
- Memory All Clear

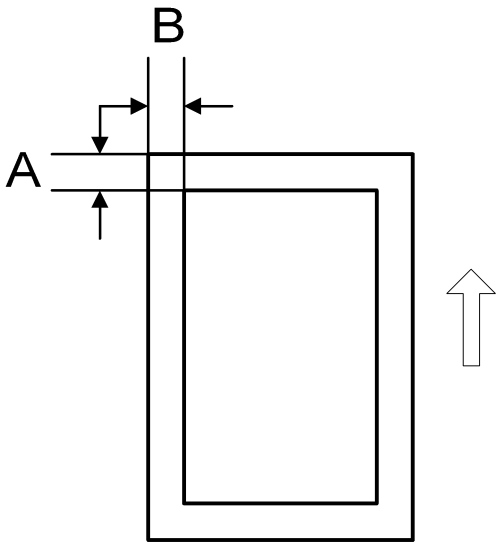
4.17.1 IMAGE ADJUSTMENTS: PRINTING

Preparation

1. Make sure paper is installed correctly in each paper tray before you start these adjustments.
2. Use the Trimming Area Pattern (SP2-902-3, No. 18 to print the test pattern for the following procedures.
3. After completing these printing adjustments, be sure to set SP 2-902-3 to 0 again.

Registration - Leading Edge/Side-to-Side

1. Check the leading edge registration, and adjust it using SP1-001.
   Specification: 4±2mm.
2. Check side-to-side registration for each paper feed station, and adjust with the following SP modes.



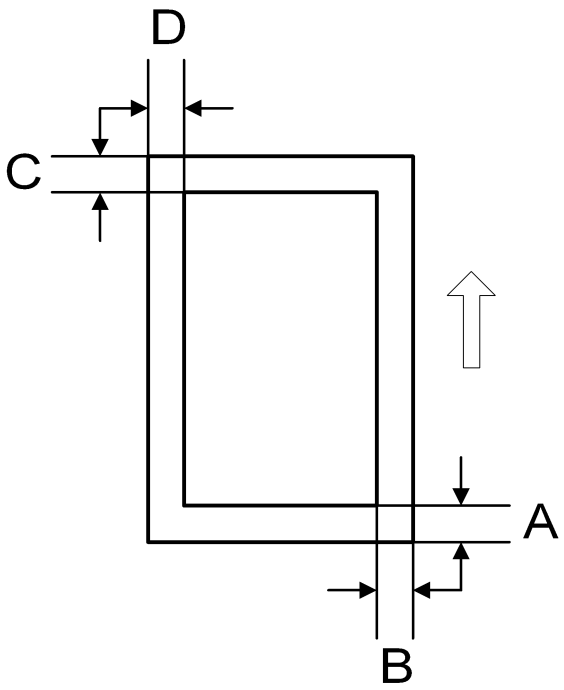
B140r887

	SP mode	Specification
Tray 1 (Tandem Tray)	SP1002-001	0 ±1.5
Tray 2 (Universal Tray)	SP1002-002	
Tray 3 (Universal Tray)	SP1002-003	
Tray 4	SP1002-004	Japan Only
LCT	SP1002-006	0±1.5
Duplex Tray	SP1002-007	0±1.5

Blank Margin

If the leading edge/side-to-side registration cannot be adjusted within specifications, adjust the leading/left side edge blank margin.

1. Check the trailing edge and right edge blank margins, and adjust them with the following SP modes.



B140R888

Letter	What It Means
A	Trailing edge blank margin
B	Right edge blank margin
C	Leading edge blank margin
D	Left edge blank margin

SP2101 Print Erase Margin

	SP mode	Specification
Leading Edge	SP2101-001	2.5±2 mm
Trailing Edge	SP2101-002	
Left edge	SP2101-003	2±1.5 mm
Right edge	SP2101-004	

Registration Buckle Adjustment

When the customer is using special paper, buckle adjustment may be required if paper feed problems arise.

- If the buckle is too large, this can cause wrinkling, creasing, or jams caused by sheets overtaking the sheets ahead of them in the paper path.
- If the buckle is too small, this can cause jams at the registration roller or skew during paper feed.

1. Enter the SP mode.
2. Open SP1003.
    - To prevent wrinkling, creasing, or jams, set a smaller value.
    - To prevent jams at the registration roller or to eliminate skew, set a larger value.

SP1003-001	Registration Buckle Adjustment – Tray, LCT
SP1003-002	Registration Buckle Adjustment – Duplex Tray
SP1003-003	Registration Buckle Adjustment – Bypass Tray
Adjustment range	-9 mm -> +9 mm (small -> large buckle)
Initial value	0 mm (Buckle = 10 mm)

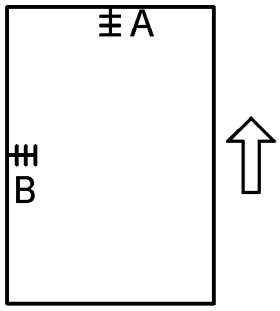
4.17.2 IMAGE ADJUSTMENTS: SCANNING

Before doing the following scanner adjustments, perform or check the printing registration/side-to-side adjustment and the blank margin adjustment.

Note

- Use an S-5-S test chart to perform the following adjustments.

Registration: Platen Mode



b140r889

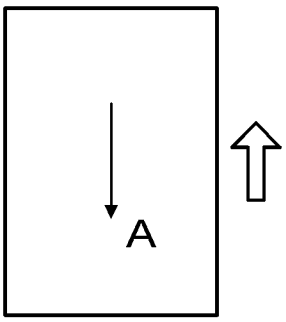
1. Place the test chart on the exposure glass and make a copy from one of the feed stations.
2. Check the leading edge and side-to-side registration, and adjust them with the following SP modes if necessary.

SP No.	Name	Initial	Comment
SP4010	Scanner Leading Edge Registration	0	A positive value shifts the image away from the leading edge, a negative value shifts it toward the leading edge.
SP4011	Scanner Side-to-Side Registration	0	A positive value shifts the image toward the right edge, a negative value shifts it toward the left edge.

Magnification

Use an S-5-S test chart to perform the following adjustment.

Main Scan Magnification



b140r890

1. Place the test chart on the exposure glass and make a copy from one of the feed stations.
2. Check magnification, and then SP2909-001 (Main Scan Magnification - Copy) to adjust magnification if required. Specification: ±2%.

Sub Scan Magnification

1. Place the test chart on the exposure glass and make a copy from one of the feed stations.
2. Check the magnification ratio. Use SP4008 (Scanner Sub Scan Magnification) to adjust if necessary. Specification: ±0.9%.

4.17.3 ADF SCANNING ADJUSTMENTS

Vertical Black Lines

Vertical black lines in scanned images may be caused by dust or scratches on the ADF exposure glass. If the problem cannot be solved by cleaning the ADF exposure glass, do SP4020 (Dust Check).

1. Open SP4020-001 and then select "1" (On).
2. Make a test copy.
3. If vertical lines still appear, set the detection level higher with SP4020-002.

Note

- The correction level is set with SP4020-003 (0:Off, 1: Lowest, 4: Highest.

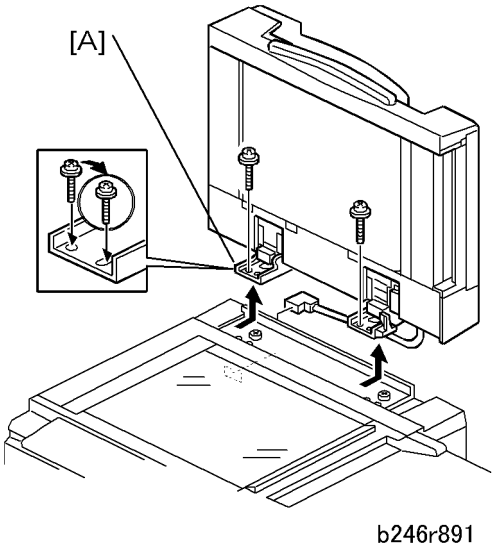
DIP Switch Settings (ADF Main Board)

SW 101				Operation Mode
1	2	3	4	
OFF	OFF	OFF	OFF	I/F Operation
ON	OFF	OFF	OFF	Free run (Simplex: each sheet stopped for registration)
OFF	ON	OFF	OFF	Free run (Simplex: continuous scanning)
ON	ON	OFF	OFF	Free run (Duplex: no registration) SP6009 (ADF Free Run)
ON	OFF	ON	OFF	Not used.
OFF	ON	ON	OFF	
ON	ON	ON	OFF	
OFF	OFF	OFF	ON	
ON	OFF	OFF	ON	Free run (Entrance mode *1, simplex, no registration)
OFF	ON	OFF	ON	Free run (Entrance mode, simplex, continuous scanning)
OFF	ON	ON	ON	Motor test (feed, transport, exit motors)

*1: The entrance mode disregards paper size. Skew correction is performed at the scanning roller.

ADF Skew Correction

If the skew with A4 SEF paper is more than 0.5/200 mm in the main scan direction, you can adjust the position of the ADF hinge [A] or adjust the appropriate SP codes below.



6006*	ADF Registration Adjustment
001	ADF Horizontal Registration (Front) Adjusts the side-to-side registration for the front in ADF mode. [–3 to +3/0.1 mm]
002	ADF Horizontal Registration (Back) Adjusts the side-to-side registration for the back in ADF mode. [–3 to +3/0.1 mm]
003	ADF Vertical Registration (Front) Adjusts the vertical registration for the front in ADF mode. [–30 to +24/1 mm] -30 = -5.1 mm +24 = +4.1 mm
004	ADF Vertical Registration (Back) Adjusts the vertical registration for the back in ADF mode. [–30 to +30/1 mm] -30 = -5.1 mm +30 = +5.1 mm

005	ADF Buckle Adjustment 1 Adjusts the roller timing at the skew correction sensor/entrance roller. A larger setting causes more buckling. [–12.0 to +12/1 mm] -12 = -3.0 mm +12 = +3.0 mm
006	ADF Buckle Adjustment 2 Adjusts the roller timing at the interval sensor/scanning roller. A larger setting causes more buckling. [–8.0 to +8/1 mm] -8 = -2 mm +8 = +2 mm
007	ADF Trailing Edge Erase Margin (Front) These settings adjust the erase margin for the trailing edges for the front. [–20 to +20/1 mm] -20 = -10 mm +20 = +10 mm
008	ADF Trailing Edge Erase Margin (Back) These settings adjust the erase margin for the trailing edges for the back. [–20 to +20/1 mm] -20 = -10 mm +20 = +10 mm

Note

- Normally, the interval sensor detects the leading edge of small originals (B6, A5, HLT), or originals for duplex copying, and delays the start of the scanning roller for the prescribed number of pulses to buckle the paper and correct skew. This feature can be switched on for all paper sizes with SP6020 (ADF Contact Mode In/Out). However, switching this feature on for all sizes reduces scanning speed slightly.

4.18 LCD, TOUCH SCREEN CHECK AND CALIBRATION

4.18.1 SMART PANEL MAINTENANCE MODE

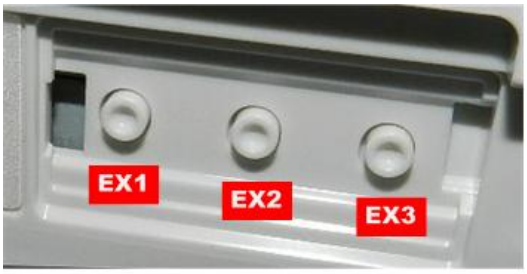
You should perform the following checks and calibrations:

- After replacing the operation panel or operation panel touch screen.
- After clearing the memory
- If the touch screen detection function is not working correctly

1. First, remove the cover plate on the left side of the operation panel so you can see the EX buttons.

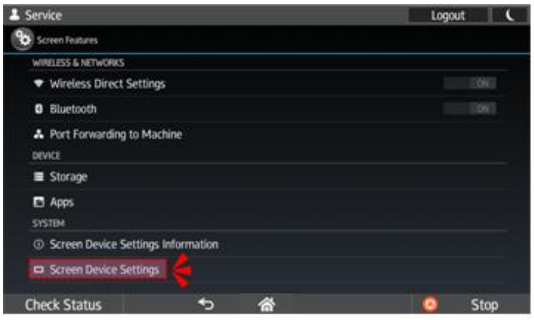
d223c3104

2. These buttons are not labeled but reading from left to right, they are EX1, EX2, and EX3.



01 EX Keys

3. Next, enter the numbers to enter the Smart Panel maintenance mode, and display the Service Screen. (Contact your supervisor if you do not know how to do this.)



d223c3106

4. On the Service Screen, touch "System Device Settings" at the bottom of the menu. The Self Check screen opens.

d223c3108

5. There are two checks and two calibrations you will need to execute:

1	LCD Check
2	Touch Panel Check
3	Touch Panel Calibration
4	Multi Touch Calibration

6. Follow the procedures below to do each check and calibration.
7. To continue with the next check, touch to return to the Self Check menu, and then select the next check or calibration.
8. When you are finished, touch to return to the Service Screen.
9. Touch "Logout" in the upper right corner of the Service Screen to log out and return to normal operation.

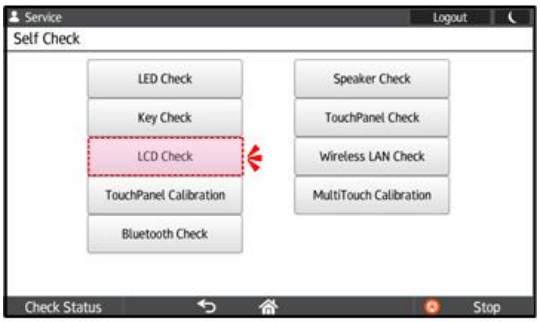
4.18.2 CHECKS AND CALIBRATIONS

LCD Check

The LCD Check allows you to visually check the color reproduction of the LCD.

The colors are displayed on screens in sequence: White > Back > Red > Green > Blue (RGB).

1. Touch "LCD Check" on the Self Check menu.

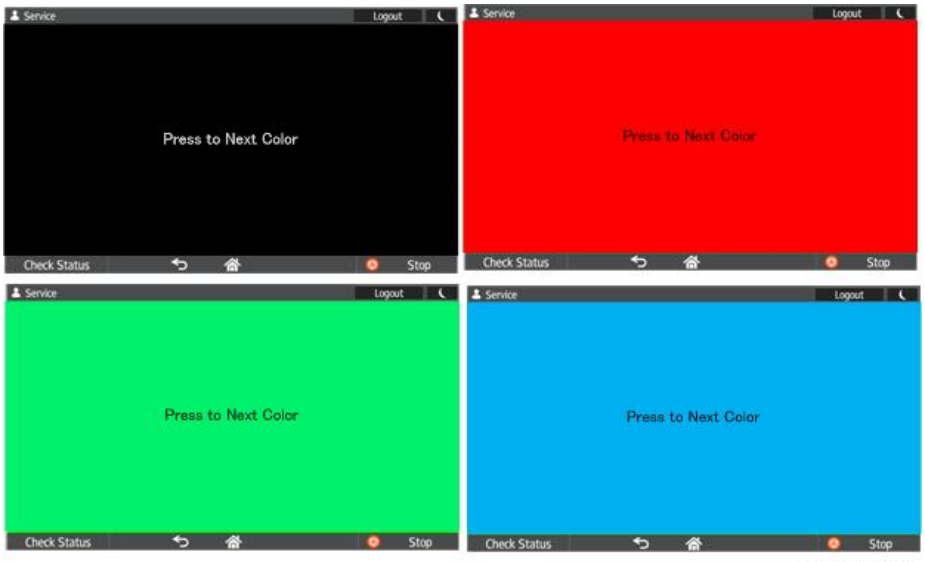


d223c3109

White is the first color displayed.

d223c3110

2. Touch "Press to Next Color" in the center of the screen to display each color.



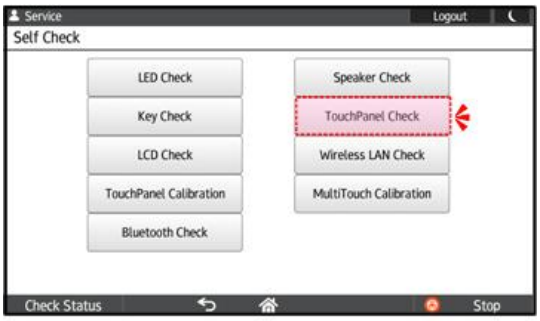
d223c3111

After the last color (blue) is displayed, the Self Check menu opens again.

Touch Panel Check

This simple check opens one screen.

1. Touch "Touch Panel Check" on the Self Check menu.



d196a2029

The detected position and nearest reference point is displayed for each of nine reference points on LCD screen.

d223c3113

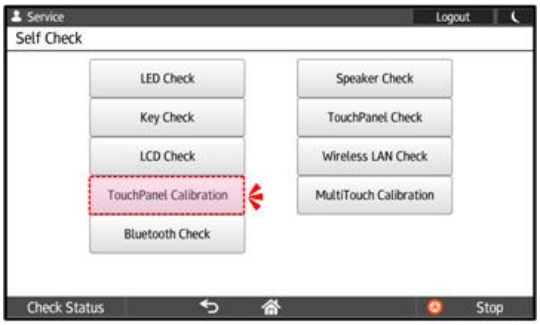
The detected position and nearest reference point is displayed for each of nine reference points on LCD screen.

2. Touch to return to the Self Check menu.

Touch Panel Calibration

Calibrate the touch panel by touching the center of each plus sign (+) as it appears on the LCD screen.

1. Touch "Touch Panel Calibration" on the Self Check menu.



d223c3114

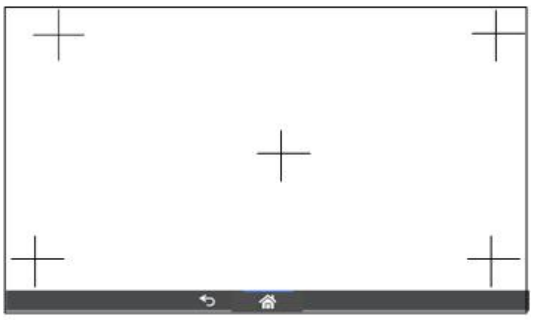
The first plus sign appears at the top left corner of the screen.

d223c3115

2. After you touch the plus sign in the upper left corner, the next sign appears at the bottom right.

d223c3116

3. As you touch each plus sign, the next appears and waits for you to touch it.



d223c3117

After you touch the last sign (upper right), the message in the center of the screen prompts you to confirm the correct completion of the calibration, or to try again.

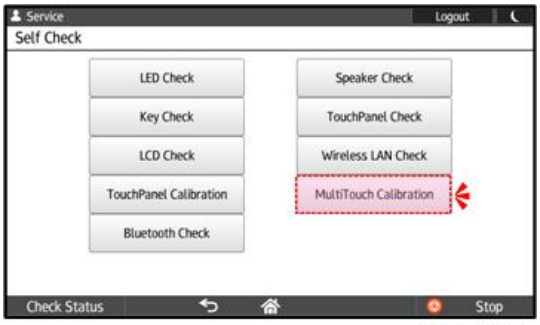
4. Press EX3 on the side of the operation panel to confirm and return to the Self Check menu.
   -or-
   Press EX1 to do the 5-point calibration again.

d223c3118

Multi Touch Calibration

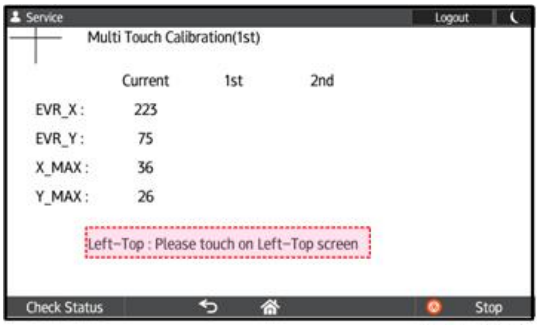
Calibrate the touch panel for multiple tap entry such as "pinch-in" and "pinch-out".

1. Touch "Multi Touch Calibration" on the Self Check menu.



d223c3119

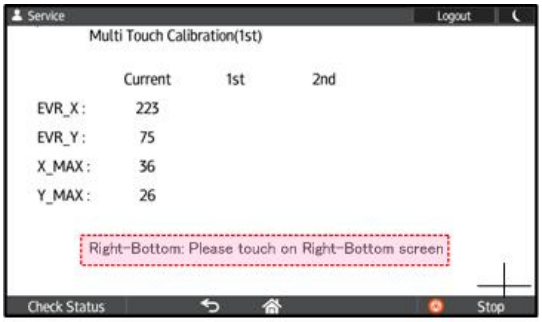
2. Touch the plus sign at the top left corner.



d223c3120

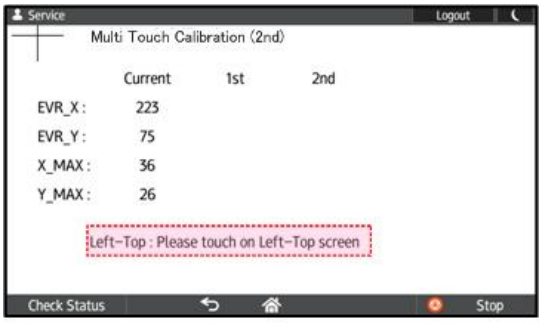
- The values of EVR_X, EVR_Y, X_MAX, and Y_MAX are for internal processing.
- These values do not indicate any positions or distances between touched points.
- There is no problem unless there is a large difference between the values of the first calibration pair and the second calibration pair.

1. Touch the plus sign at the bottom right corner.



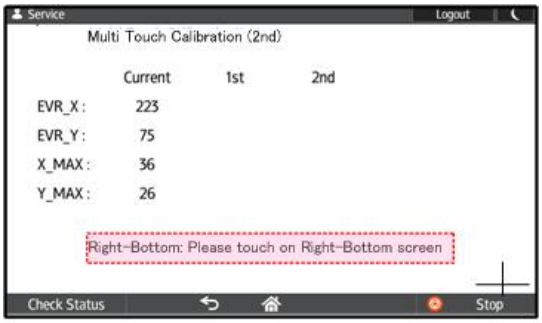
d223c3121

2. Next, touch the plus sign at the top right corner again.



d223c3122

3. Now touch the plus sign at the bottom left corner again.



d223c3123

After you touch the last sign (lower right), a message at the bottom of the screen prompts you to confirm the correct completion of the calibration, or to try again.

Note

- In the displayed prompt, the **Back** key is **EX1**, and the **Menu** key is **EX3**.

4. Press EX3 on the side of the operation panel to confirm and return to the Self Check menu.

   -or-

   Press EX1 to do the calibration again.

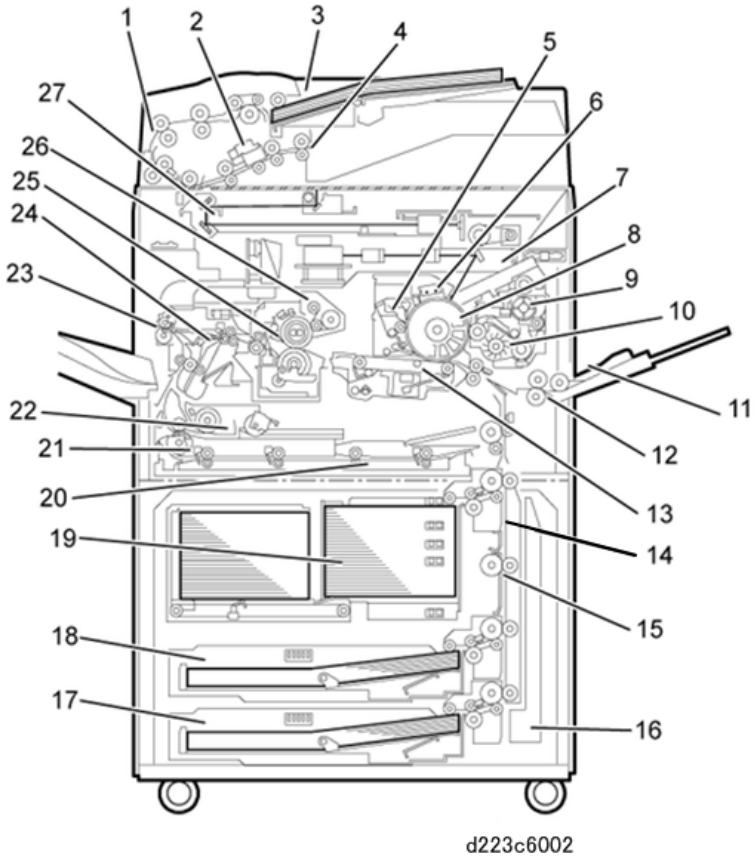
DETAILED DESCRIPTIONS

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

5. DETAILED DESCRIPTIONS

5.1 OVERVIEW

5.1.1 GENERAL LAYOUT

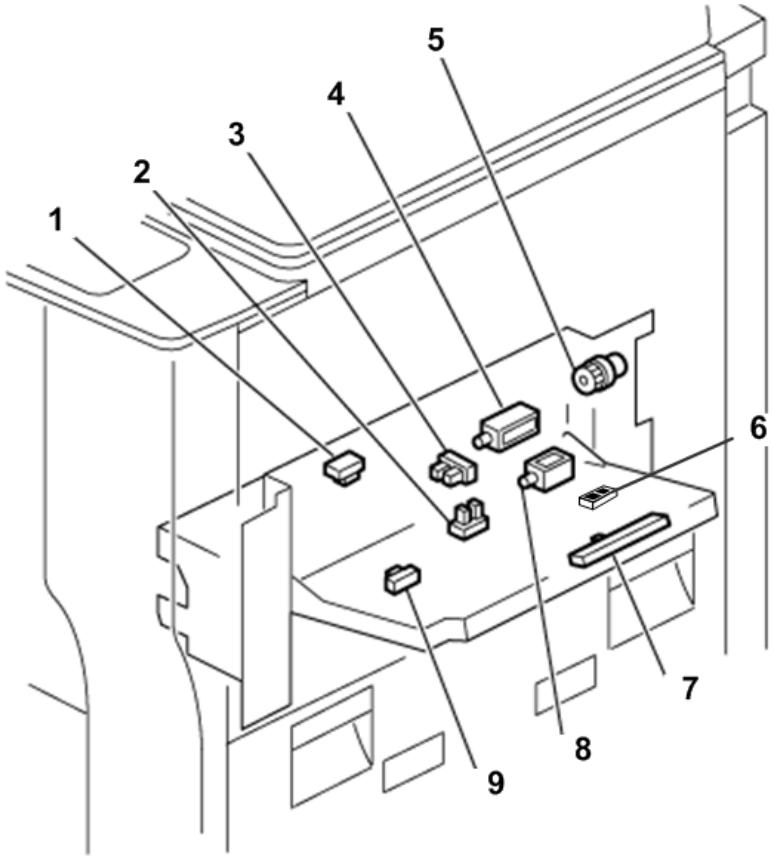


No.	Part Name	No.	Part Name
1	Original Transport Unit	15	Relay Transport Unit
2	CIS Unit	16	Used Toner Unit
3	Original Feed Unit	17	Tray 3 PFU
4	Original Exit Unit	18	Tray 2 PFU
5	Drum Cleaning Unit	19	Tray 1 Unit (Tandem Tray)
6	Charge Corona Unit	20	Duplex Transport Unit
7	Laser Unit	21	Duplex Unit

No.	Part Name	No.	Part Name
8	Drum Unit	22	Inverter Unit
9	Toner Supply Unit	23	Exit Unit
10	Development Unit	24	Invert/Exit, Duplex/Transport Unit
11	Bypass Unit	25	Fusing Unit
12	Bypass Separation Roller	26	Fusing Cleaning Unit
13	Separation/Transport Unit	27	Scanner Unit
14	Vertical Paper Path		

5.1.2 COMPONENT LAYOUT

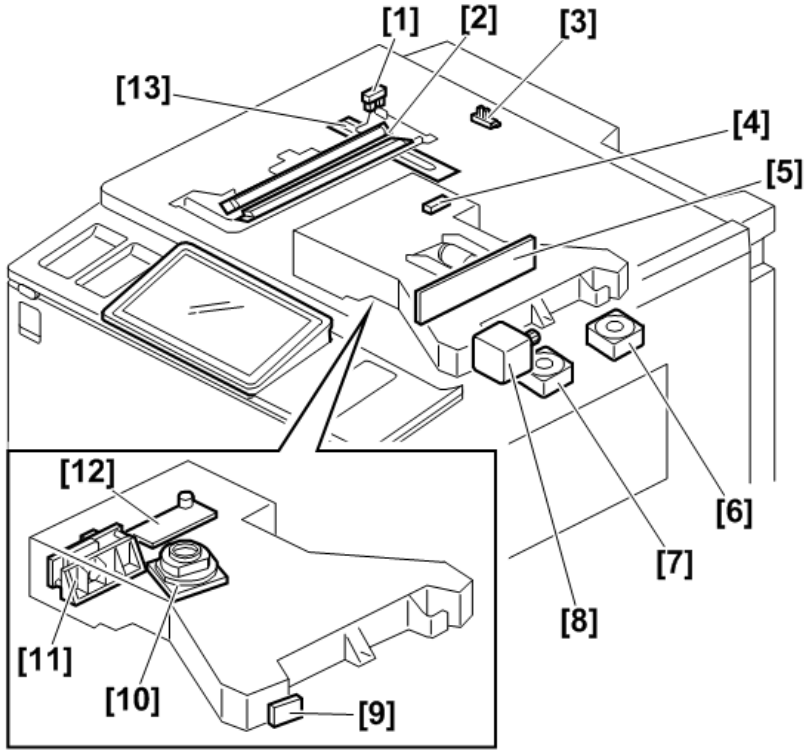
Bypass Unit



d223d7000

No.	Part Name	No.	Part Name
1	Registration Sensor	6	Paper Length Sensor
2	Bypass Paper End Sensor	7	Bypass Size Sensor
3	Guide Plate Release Sensor	8	Guide Plate Release Solenoid
4	Bypass Pick-up Solenoid	9	Relay Sensor
5	Bypass Feed Clutch		

Optics

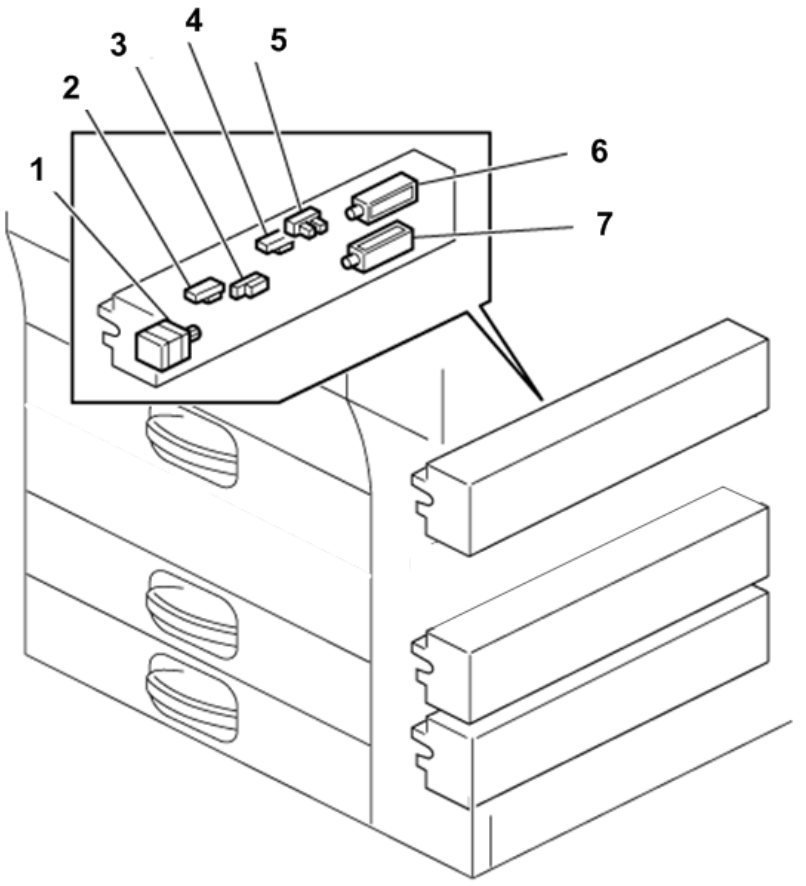


d223d7006

No.	Part Name	No.	Part Name
1	Scanner HP Sensor	8	Scanner Motor
2	Scanner LED (x2)	9	Synchronization Detection Board
3	ADF Open Sensor	10	Polygon Motor
4	Original Size Sensor (Length)	11	LD Unit
5	SBU	12	Polygon Motor Control Board
6	Development Unit Fan 2	13	Anti-Condensation Heater (Option)
7	Development Unit Fan 1		

Paper Feed Unit (PFU)

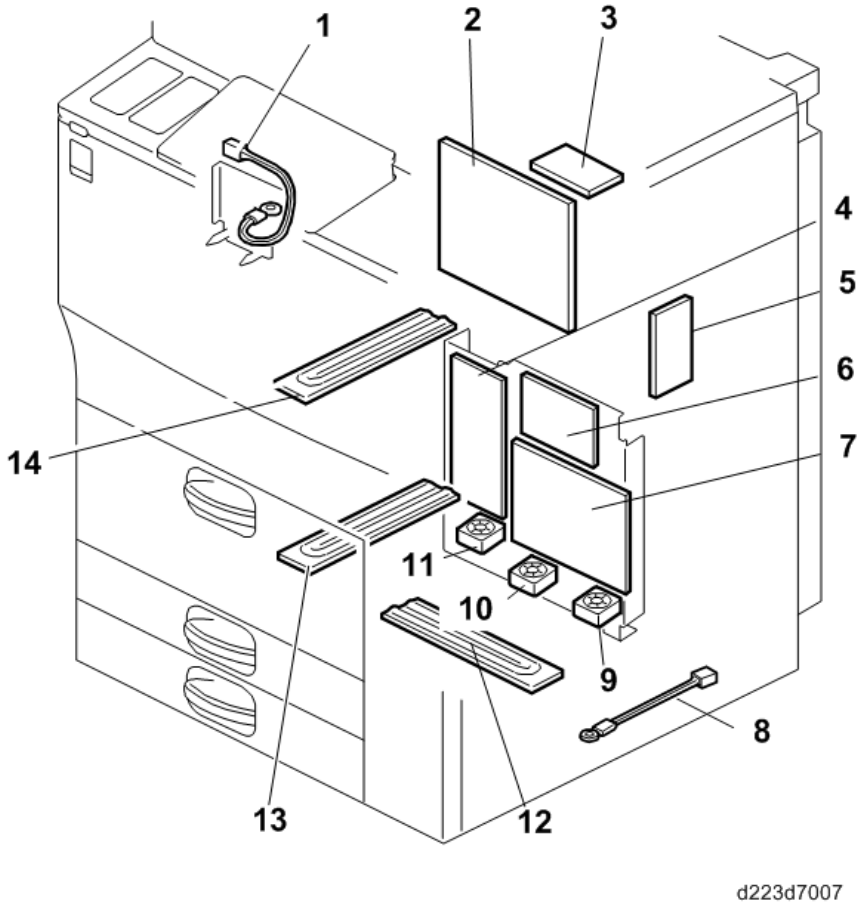
Each tray in the paper bank (Tray 1, 2, and 3) has an identical paper feed unit.



d223c6125

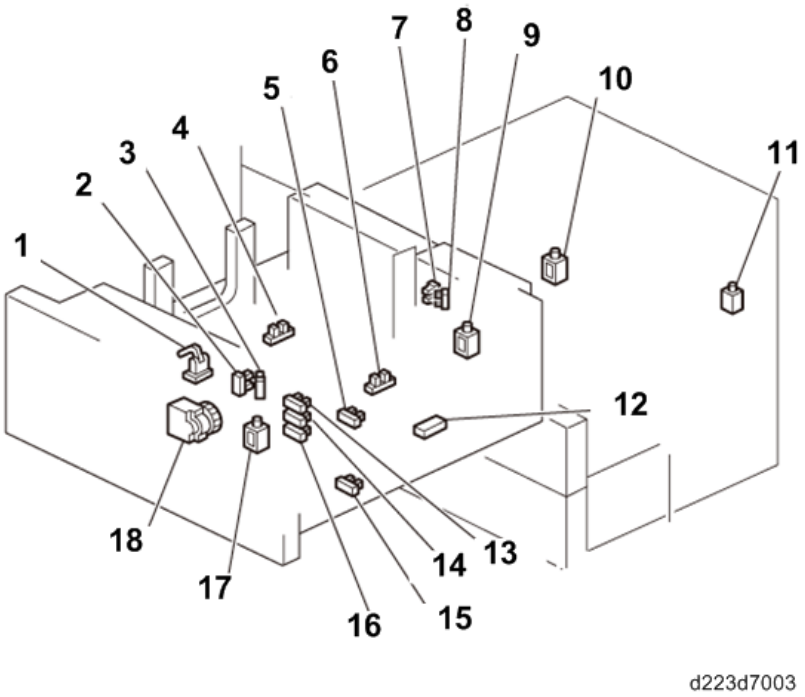
No.	Part Name	No.	Part Name
1	Feed Motor	5	Lift Sensor
2	Feed Sensor	6	Pick-up Solenoid
3	Vertical Transport Sensor	7	Reverse Release Solenoid
4	Paper End Sensor		

Electrical Components



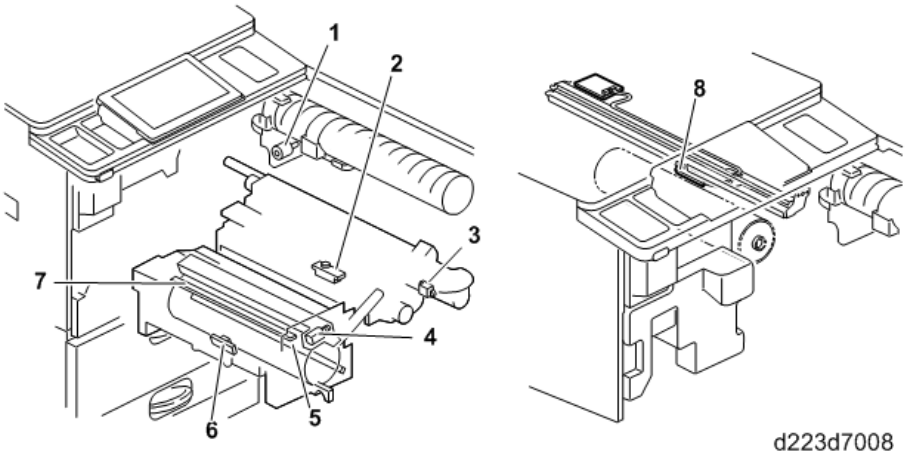
No.	Part Name	No.	Part Name
1	Internal Temperature Sensor	8	Humidity Sensor
2	IOB	9	PSU Fan 1
3	Charge Power Pack	10	PSU Fan 2
4	AC Control Drive Board	11	AC Control Drive Board Fan
5	Development Power Pack	12	Paper Bank Lower Heater (Standard)
6	RYB (Relay Board)	13	Paper Bank Upper Heater (Standard)
7	PSU	14	Drum Heater (Option)

Tandem Tray



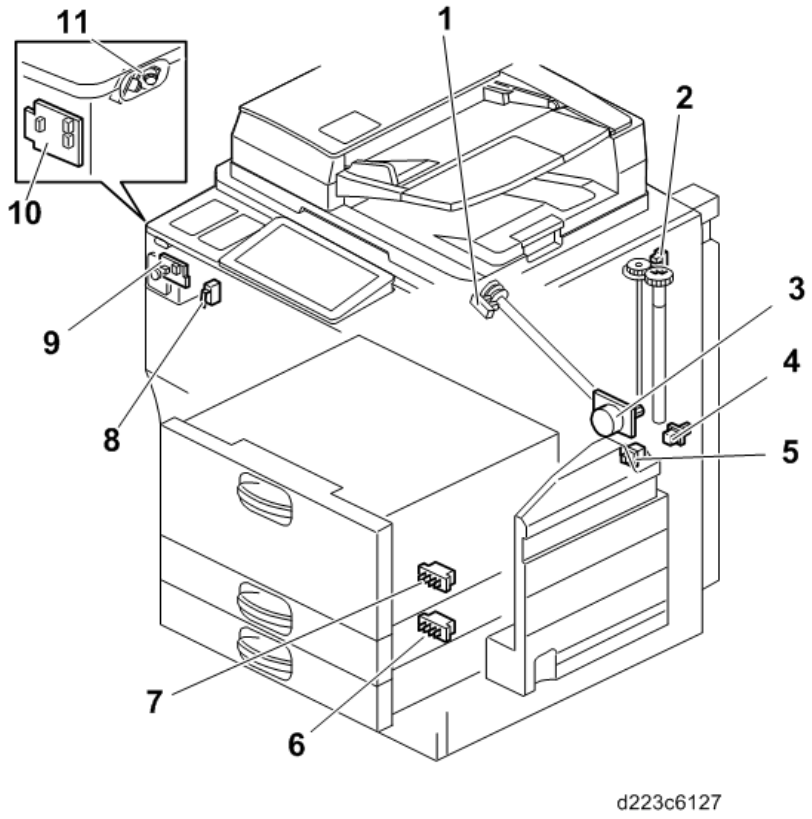
No.	Part Name	No.	Part Name
1	Left Tray Paper End Sensor	10	Tandem Left Tray Lock Solenoid
2	Front/Back Fence Release Sensor	11	Tandem Right Tray Lock Solenoid
3	Front/Back Fence Open Sensor	12	Left Tray Paper Sensor
4	Side Fence HP Sensor	13	Tray 1 Paper Height Sensor 1
5	Tray 1 Near End Sensor	14	Tray 1 Paper Height Sensor 2
6	Pressure Sensor	15	Tandem Tray Down Sensor
7	Side Fence Close Sensor	16	Tray 1 Paper Height Sensor 3
8	Side Fence Open Sensor	17	Front/Back Fence Open Solenoid
9	Side Fence Open Solenoid	18	Side Fence Motor

Around the Drum



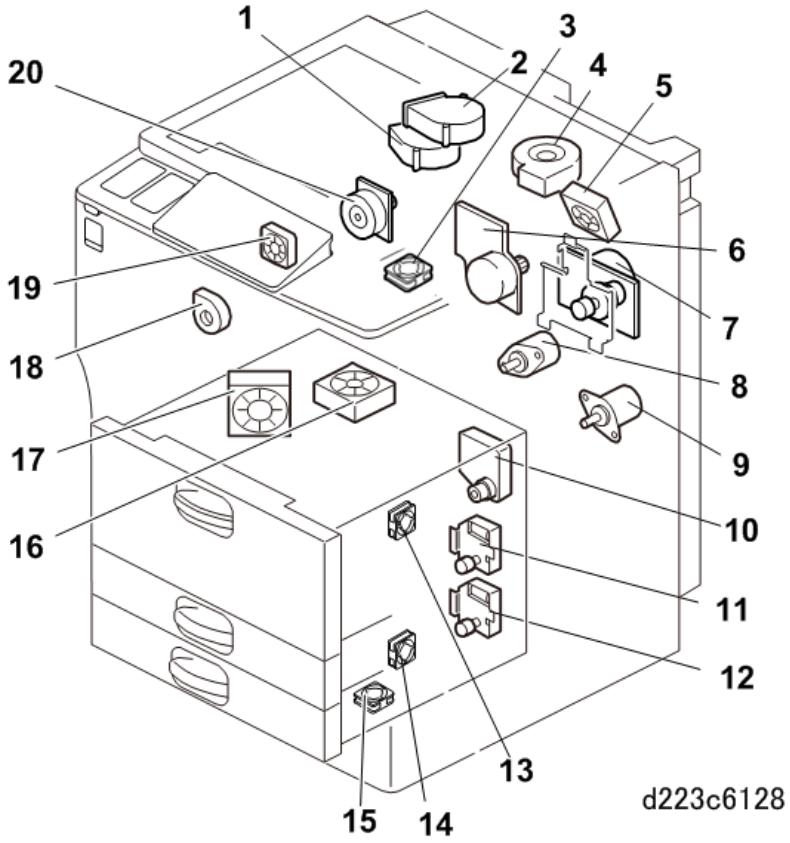
No.	Part Name:	No.	Part Name:
1	Toner Bottle Motor	5	PTL (Pre-Transfer Lamp)
2	TD Sensor (Toner Density)	6	ID sensor
3	Toner End Sensor	7	QL (Quenching Lamp)
4	Charge Cleaning Motor	8	Potential Sensor

Sensors, Switches



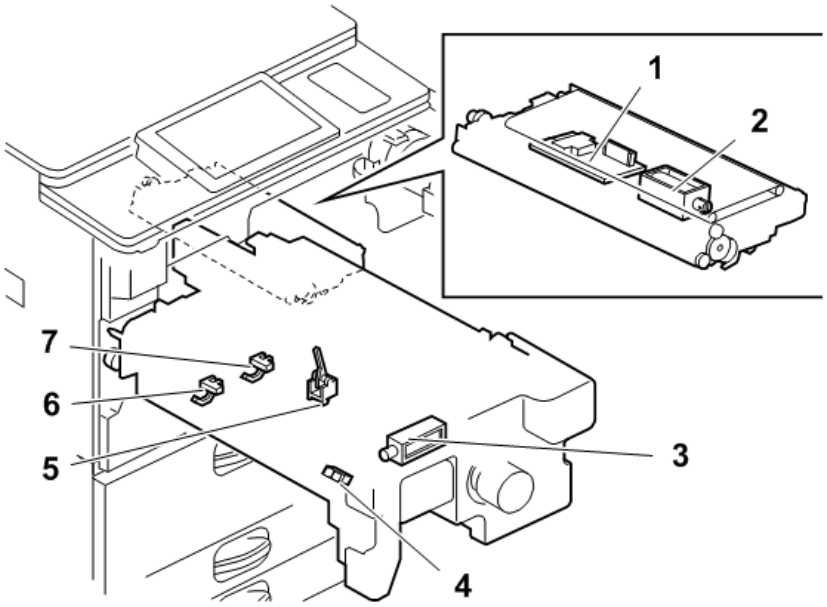
No.	Part Name	No.	Part Name
1	Used Toner Lock Sensor	7	Tray 2 Paper Size Detection Switch
2	Used Toner Motor Sensor	8	Front Door Switch
3	Used Toner Motor	9	DC Switch
4	Used Toner Bottle Full Sensor	10	Proximity Sensor Control Board
5	Used Toner Bottle Set Sensor	11	Proximity Sensor
6	Tray 3 Paper Size Switch		

Motors, Fans

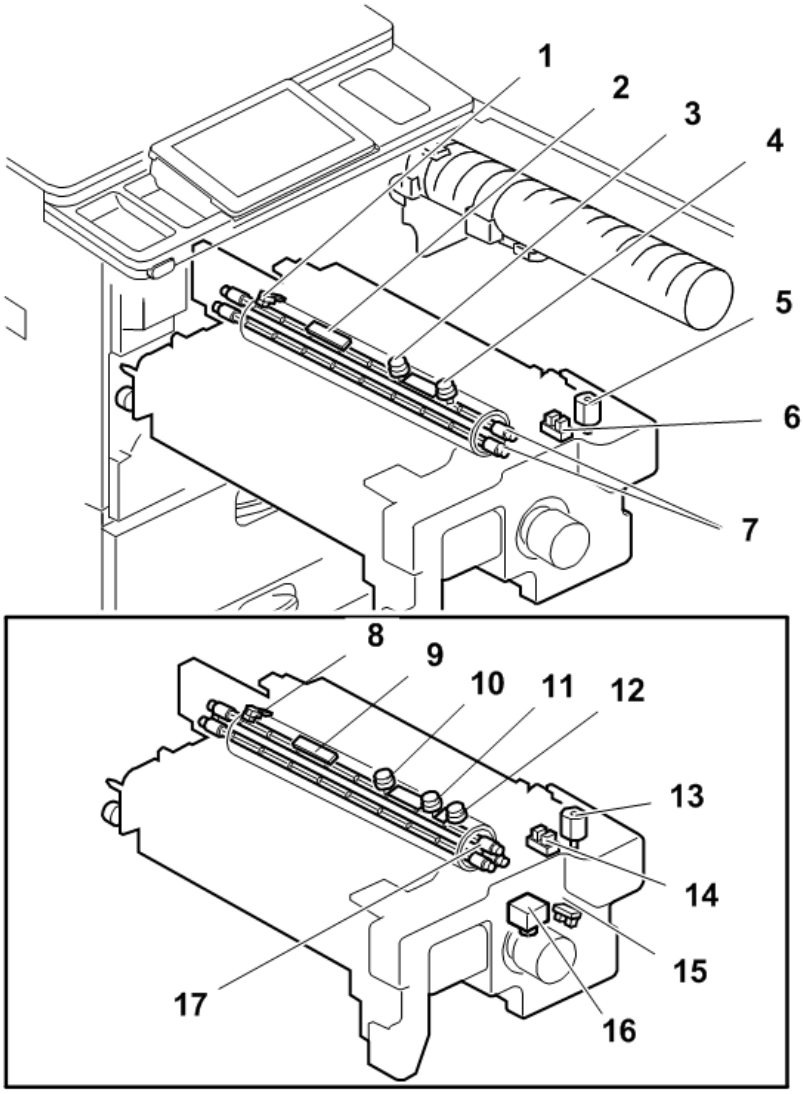


No.	Part Name	No.	Part Name
1	Heat Exhaust Fan	11	Tray 2 Lift Motor
2	Main Exhaust Fan	12	Tray 3 Lift Motor
3	Controller Fan	13	PFU Fan 1
4	Main Intake Fan	14	PFU Fan 3
5	Drum Fan	15	PFU Fan 4
6	Drum Motor	16	Duplex Fan
7	Development Motor	17	PCU fan
8	Registration Motor	18	Fusing Inner Cover Fan
9	Bypass Motor	19	Toner Bottle Fan
10	Tray 1 Lift Motor	20	Fusing Exit Motor

Transfer, Fusing, Exit Units



No.	Part Name	No.	Part Name
1	Transfer Power Pack	5	Fusing Exit Sensor
2	Transfer Separation Solenoid	6	Paper Exit Sensor
3	Paper Exit Junction Gate Solenoid	7	Exit Unit Entrance Sensor
4	Fusing Exit Knob Turn Sensor	-	-



d223d7012

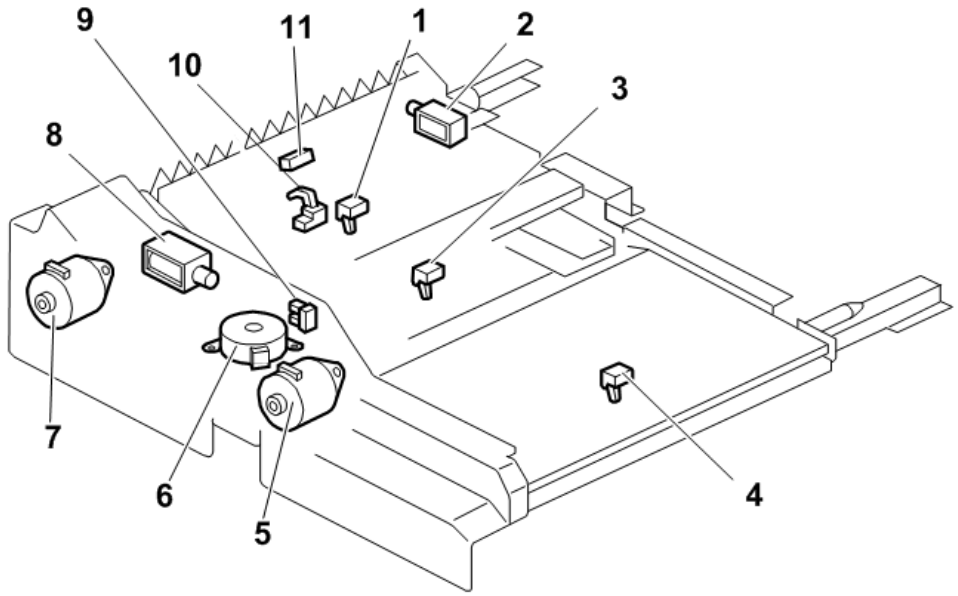
D225

No.	Part Name	No.	Part Name
1	Fusing Thermistor – End (Contact Type)	5	Web Motor
2	Fusing Thermistor - Center (NC Sensor)	6	Web End Sensor
3	Fusing Thermostat (193°C)	7	Fusing Lamps (x2)
4	Fusing Thermostat (190°C)	-	-

D223/D224

No.	Part Name:	No.	Part Name:
8	Fusing Thermistor - End (Contact)	13	Web Motor
9	Fusing Thermistor - Center (NC Sensor)	14	Web End Sensor
10	Fusing Thermostat (192°C)	15	Fusing Pressure Release Sensor
11	Fusing Thermostat (200°C)	16	Fusing Pressure Release Motor
12	Fusing Thermostat (192°C)	17	Fusing Lamps (x3)

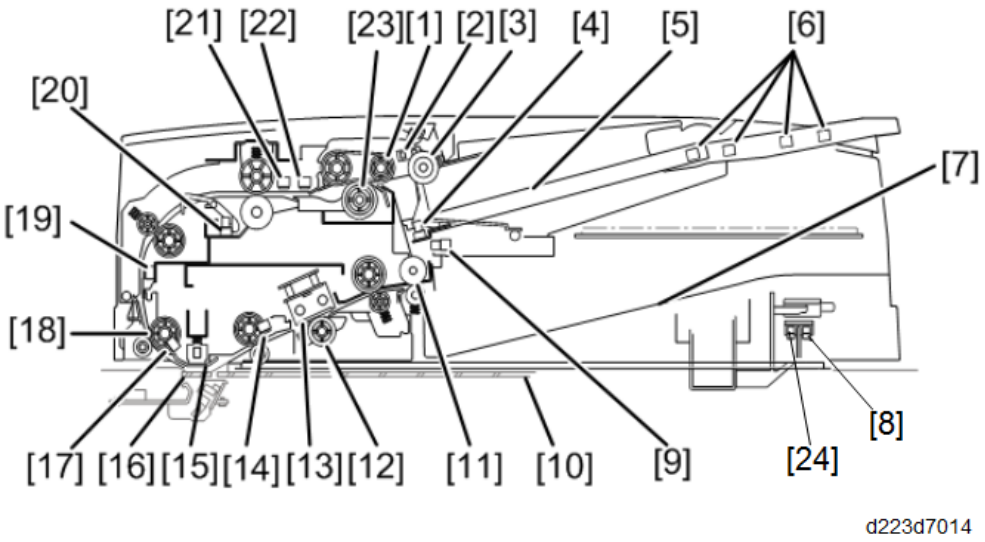
Duplex Unit



d223d7013

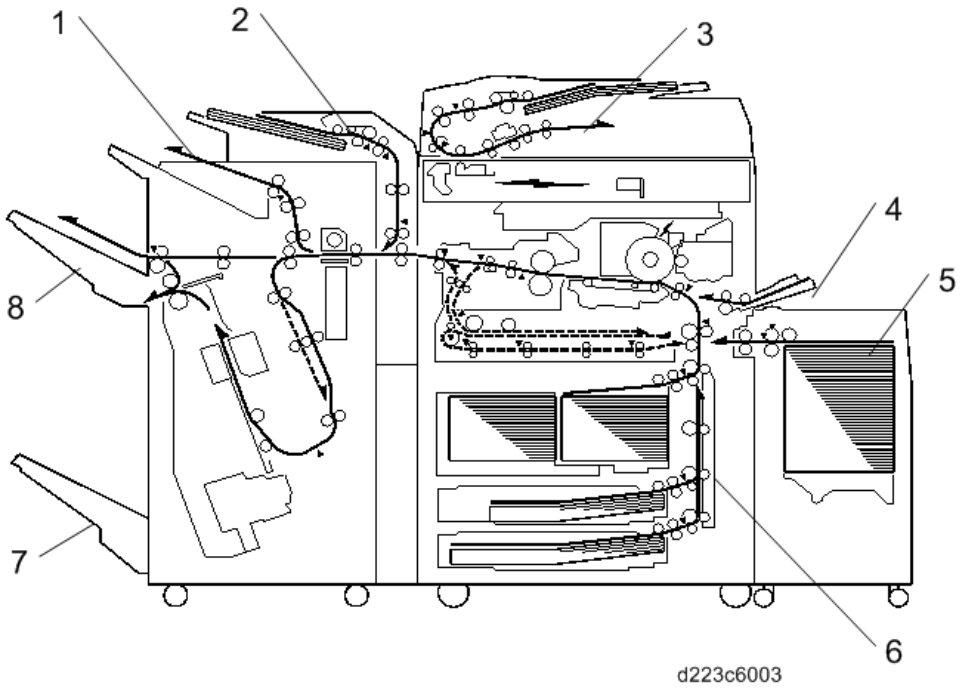
No.	Part Name	No.	Part Name
1	Duplex Transport Sensor 1	7	Duplex Invert Motor
2	Duplex Junction Gate Solenoid	8	Duplex Invert Solenoid
3	Duplex Transport Sensor 2	9	Duplex Jogger HP Sensor
4	Duplex Transport Sensor 3	10	Duplex Invert Exit Sensor
5	Duplex Horizontal Transport Motor	11	Duplex Entrance Sensor
6	Duplex Jogger Motor	-	-

ADF Unit

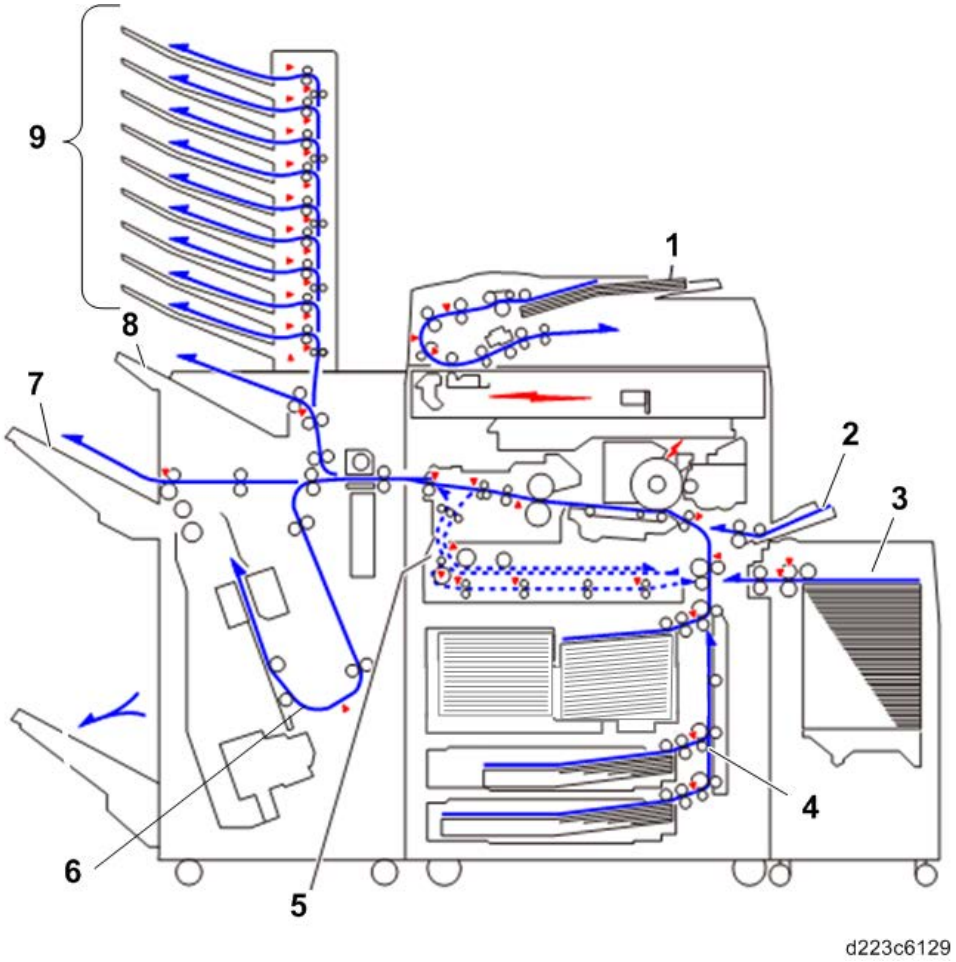


No.	Part Name	No.	Part Name
1	Feed Belt	13	CIS
2	Bottom Plate Position Sensor	14	Exit Sensor
3	Pick-up Roller	15	White Plate
4	Original Set Sensor	16	CIS Glass
5	Original Tray Lower Plate	17	Registration Sensor
6	Original Size Sensor	18	Scanning Entrance Roller
7	Output Tray	19	Interval Sensor
8	Lift Sensor	20	Original Width Sensor
9	Bottom Plate HP Sensor	21	Skew Correction Sensor
10	Exposure Glass	22	Separation Sensor
11	Exit Roller	23	Separation Roller
12	White Roller	24	Lift Interlock Switch

5.1.3 PAPER PATH

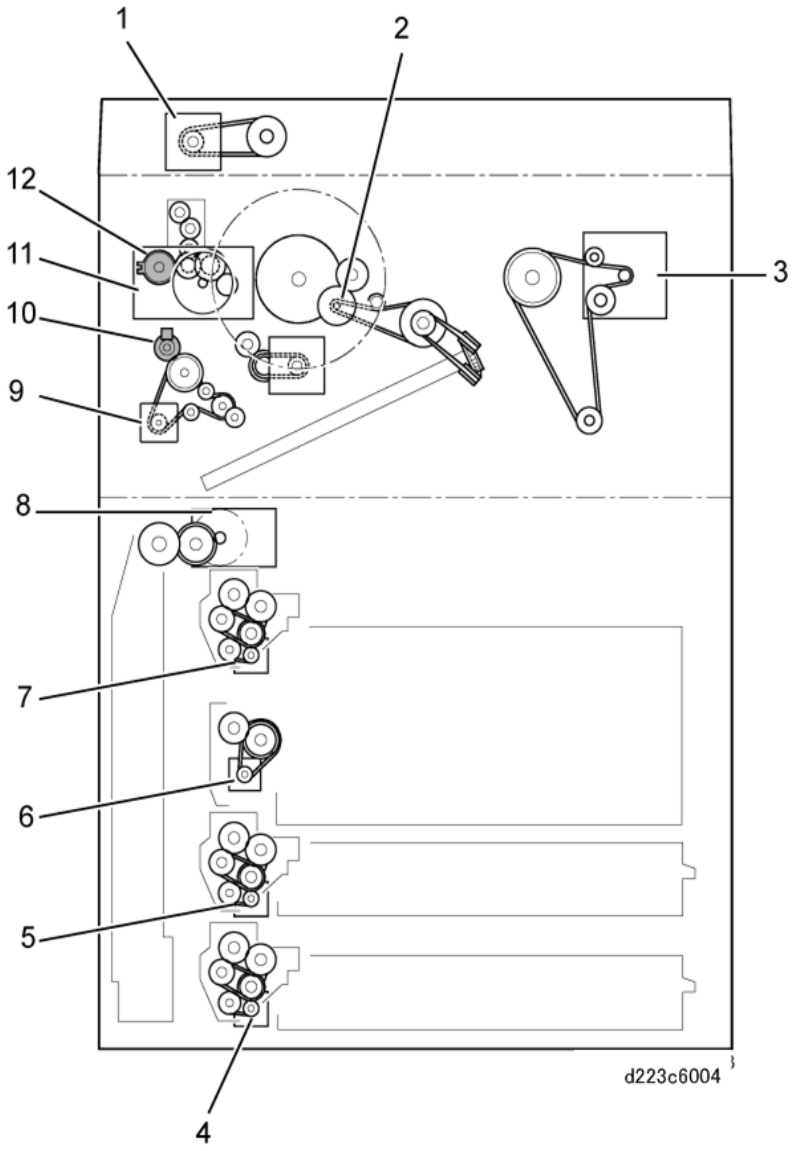


No.	Name	No.	Name
1	Proof Tray Exit	5	LCIT Paper Path
2	Cover Tray Path	6	Main Feed Path
3	Original Path (1 Pass Duplex)	7	Booklet Tray
4	Bypass Paper Path	8	Shift Tray



No.	Name	No.	Name
1	Original Path (1 Pass Duplex)	6	Booklet Tray Path
2	Bypass Paper Path	7	Shift Tray Exit
3	LCIT Paper Path	8	Proof Tray Exit
4	Main Feed Path	9	Mailbox Exit
5	Invert Exit Path	-	-

5.1.4 MOTORS

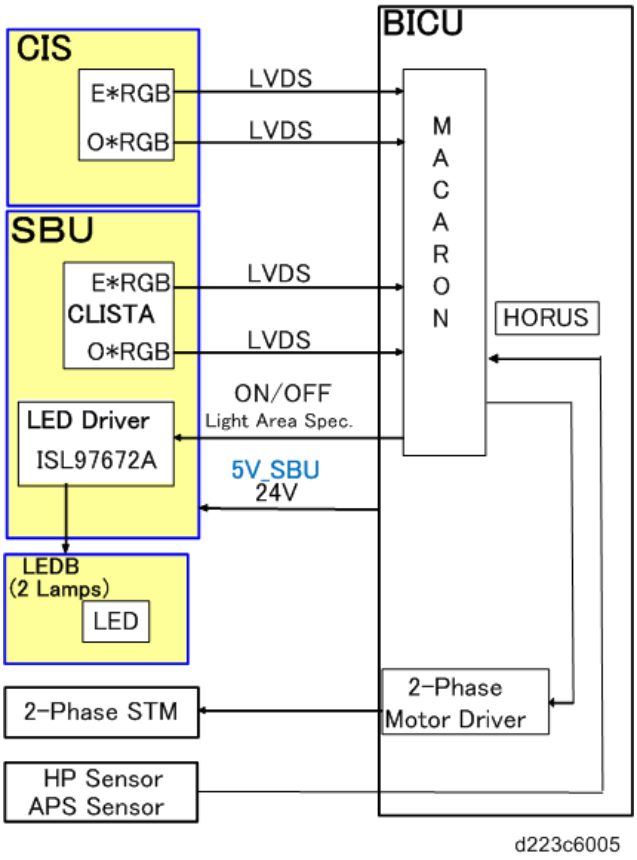


No.	Part Name	No.	Part Name
1	Scanner Motor	7	Tray 1 Feed Motor
2	Drum Motor	8	Used Toner Motor
3	Fusing/Exit Motor	9	Bypass Motor
4	Tray 3 Feed Motor	10	Bypass Feed Clutch
5	Tray 2 Feed Motor	11	Development Motor
6	Relay Transport Motor	12	Toner Supply Clutch

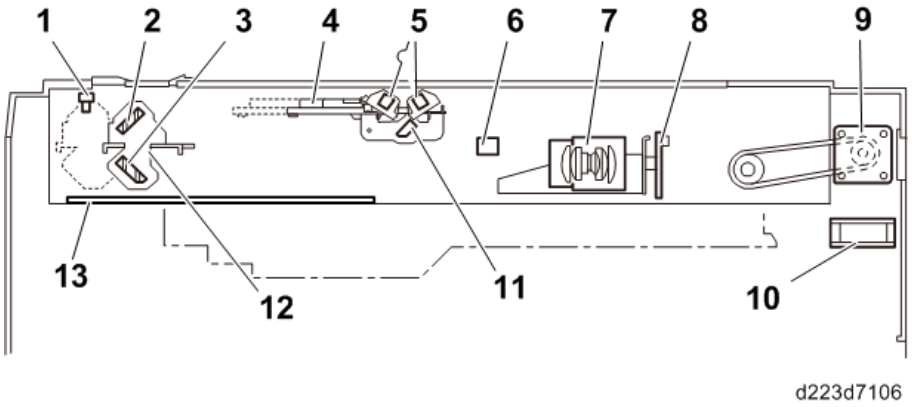
5.2 SCANNER

5.2.1 OVERVIEW

Block Diagram



Cross Section



No.	Part Name	No.	Part Name
1	Scanner HP Sensor	8	SBU
2	2nd Mirror	9	Scanner Motor
3	3rd Mirror	10	Development Unit Fan 1
4	1st Carriage	11	1st Mirror
5	Scanner LED	12	2nd Carriage
6	Original Size Sensor (Length)	13	Anti-Condensation Heater (Option)
7	Lens Block		

Configuration

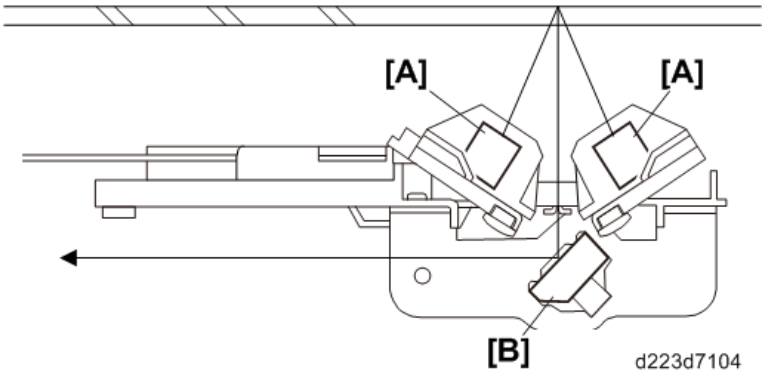
Scanner	Light source: LED (x2)
Scanner drive	SBU (3-line C-MOS image sensor, 600 dpi)
	Scanner motor (2-phase STM)
Original size detection	Length: One original size sensor Width: Line sensor (C-MOS image sensor)
	APS (Length sensor x1, Width sensors x2)
Other	Anti-condensation heater (option)

5.2.2 MECHANISM

Scanner

The scanner unit uses LEDs as the light source. The lower power scanner LEDs [A] produce little heat, making them a cost effective, superior light source. Two LEDs are used to ensure there is enough stable light for the C-MOS image sensor to scan images. The LEDs illuminate the original, and then the light is reflected from the original to the 1st mirror [B] > 2nd mirror > 3rd mirror > scanner lens > C-MOS image sensor.

1st Mirror > 2nd Mirror > 3rd Mirror > Scanner Lens > C-MOS Image Sensor



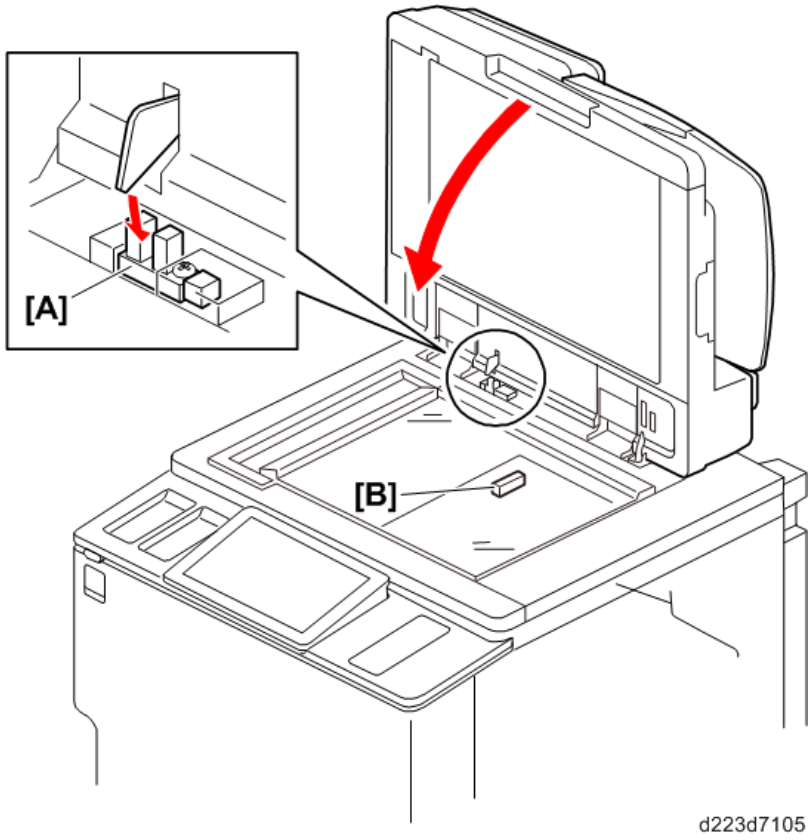
- **Scanner LED**
  The unit employs two high-intensity LEDs as the exposure lamp.
- **C-MOS Image Sensor**
  The C-MOS image sensor converts the contrast of the light and shade of the original to three colors (RGB). This produces a high-resolution 600-dpi C-MOS image.
- **Shading Correction**
  At power on, the exposure LED moves to the white plate for shading correction located behind the rear scale, switches on, and then determines the white peak level for the job. Regardless of whether the original image is monochrome or color, with this machine shading correction is done for every page during scanning. However, for continuous copy jobs the machine switches to shading correction at intervals (not every page) in order to maintain high production speed.

Scanner drive

A single scanner motor drives the timing belt, gears, pulleys, and wires that drive the scanner unit.

Original Size Detection

- Original size detection is triggered by the APS [A] when lowering the ADF switches the sensor from off to on.
- Original length is detected using one original size sensor [B].
- At the same time, pre-scanning is done so the C-MOS image sensor can detect the original width. At this time the scanner LED lights only one-third of the detection area near the front.
- If the Start key is pressed with the ADF (platen) is up (APS: OFF), the size of the previous original is used.



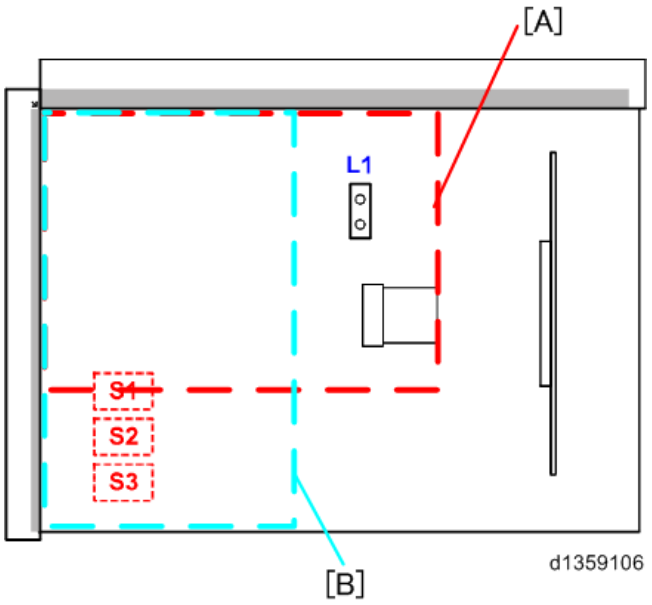
Sensor States

The combinations of the sensor states are used to determine the original size, and this data can be confirmed with **SP4-301-001**. The data for each detected size is displayed by **SP4-301-001** as shown below. Due to the layout of the sensors, paper sizes smaller than B5 cannot be detected, so in this case all zeroes are displayed (0000 0000).

Original Size Detection

[A] A4 SEF

[B] A4 LEF



A: A4 SEF

B: A4 LEF

Size	L1	SP4-301-001 Display
A3	On	00000001
B4	On	00000001
A4 SEF	On	00000001
A4 LEF	Off	00000000
B5 SEF	On	00000001
B5 LEF	Off	00000000
A5 SEF	Off	00000000
A5 LEF	Off	00000000

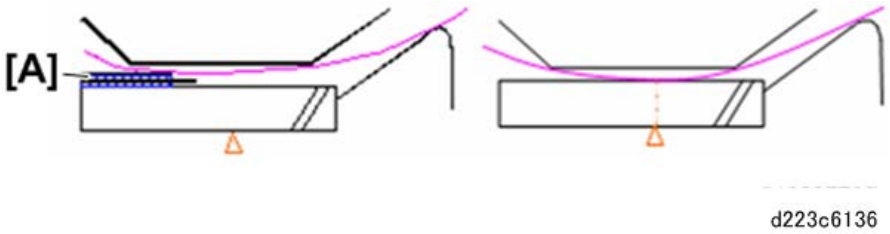
If the value detected by the C-MOS image sensor is more than "18" in the width direction as displayed by **SP4-310-001** to **009**, then the machine determines that an original is on the exposure glass. However, the value displayed is the result of the most recent reading.

SP4-310-001: Scanned value of **R** at **S1** during original size detection.	Even if only one reading is more than **18**, it is judged that an original is at **S1**.
SP4-310-002: Scanned value of **G** at **S1** during original size detection.	
SP4-310-003: Scanned value of **B** at **S1** during original size detection.	
SP4-310-004: Scanned value of **R** at **S2** during original size detection.	Even if only one reading is more than **18**, it is judged that an original is at **S2**.
SP4-310-005: Scanned value of **G** at **S2** during original size detection.	
SP4-310-006: Scanned value of **B** at **S2** during original size detection.	
SP4-310-007: Scanned value of **R** at **S3** during original size detection.	Even if only one reading is more than **18**, it is judged that an original is at **S3**.
SP4-310-008: Scanned value of **G** at **S3** during original size detection.	
SP4-310-009: Scanned value of **B** at **S3** during original size detection.	

Size	Feed	Size (LxW)	S1	S2	S3
A3	SEF	297x420	ON	ON	ON
B4	SEF	257x364	ON	ON	OFF
A4	SEF	210x297	ON	OFF	OFF
A4	LEF	297x210	ON	ON	ON
B5	SEF	182x257	OFF	OFF	OFF
B5	LEF	257x182	ON	ON	OFF
A5	SEF	148x210	OFF	OFF	OFF
A5	LEF	210x148	ON	OFF	OFF
B6	SEF	128x182	OFF	OFF	OFF
B6	LEF	182x128	OFF	OFF	OFF

5.2.3 ORIGINAL FEED FROM ADF

With this new machine, there are some changes in the configuration of the original feed path from the ADF.



d223c6136

On this machine a step at [A] keeps the original separated from the contact glass as it feeds, while in the previous machine, shown on the right, the original touched the surface of the glass.

- In the new configuration because the original passes over the glass without touching it, there is less transfer of paper dust and other material from the original to the glass. This makes it more difficult for streaking due to transfer to appear in copies.
- In the previous configuration, because the original touched the surface of the glass as it passed, this cleaned material from the surface of the glass and prevented free-floating dust from collecting on the glass. This makes it more difficult for streaking due to free-floating dust to appear in copies.
- The incidence of streaking caused by transfer of dust from original to glass was thought to be greater in the old configuration than any streaking caused by free-floating dust in the new configuration, so the new configuration was adopted as standard for the new machine.

There are some important points to keep in mind about this new configuration:

- This new step strip which keeps the original above the glass must be attached correctly when the contact glass is replaced.
- When the step strip is installed, it must be aligned perfectly parallel with and attached to the left scale on the left side of the exposure glass.
- The new step strip can be removed to discard the non-contact feature if the operator prefers the older configuration with the original touch and sweeping the contact glass as it passes.

5.2.4 DUST DETECTION

Overview

Setting an original in the ADF and pressing the Start key triggers Dust Detection processing at the ADF scanning position.

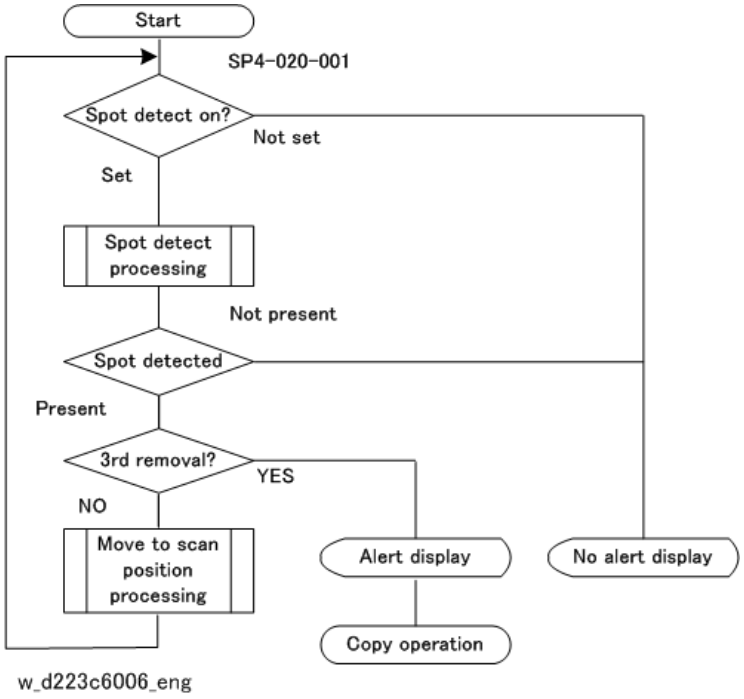
Dust detection processing starts when the first page of the original starts to scan, and the scanned data is processed by the MACARON module where it is determined whether there is spotting or streaking in the image.

The operational flow is different depending on how the SP codes are set.

However, this is not done when in the large original mode, or when originals are feed into the ADF without pause while a long scanning job is in progress..

Related SP Codes

SP	Name
4-020-001	Dust Detect: On/Off: Front
4-020-002	Detection Level: Front
4-020-003	Correction Level: Front
4-020-001	Detect Level: Rear
4-020-012	Correction Level: Rear
7-852-001	DF Glass Dust Check: Dust Detection Counter
7-852-002	DF Glass Dust Check: Dust Counter Clear Counter
7-852-003	DF Glass Dust Check: Dust Detection Counter: Back

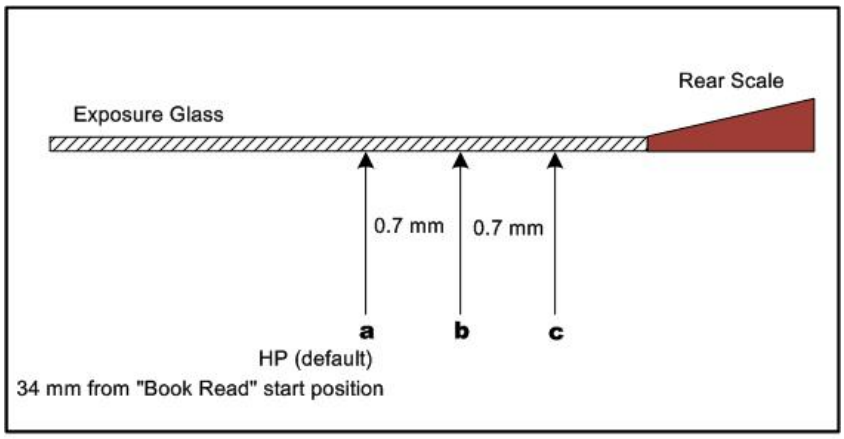


w_d223c6006_eng

Shifting the Scanning Position

The scanning position can be shifted toward the front from the home position (default) at 0.7 mm, and then 1.4 mm (a total of three positions counting the home position). In the illustration below, the direction of shift is:

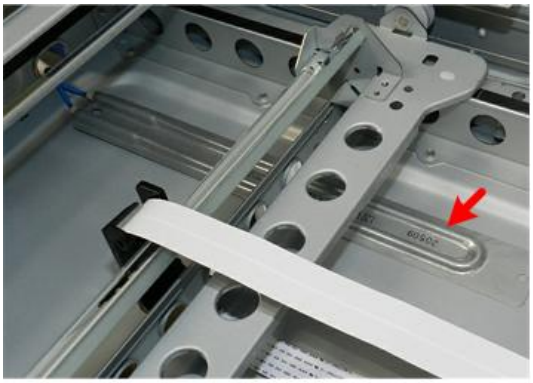
a > b > c > a > b.



w_d223c6007_eng

Scanner Anti-Condensation Heater

Condensation on the optics inside the scanner unit (specially the mirrors) caused by a rapid rise in temperature when the scanner unit is cold can cause images to blur, or turn black or gray. The scanner unit heater (option) is designed to eliminate these problems.

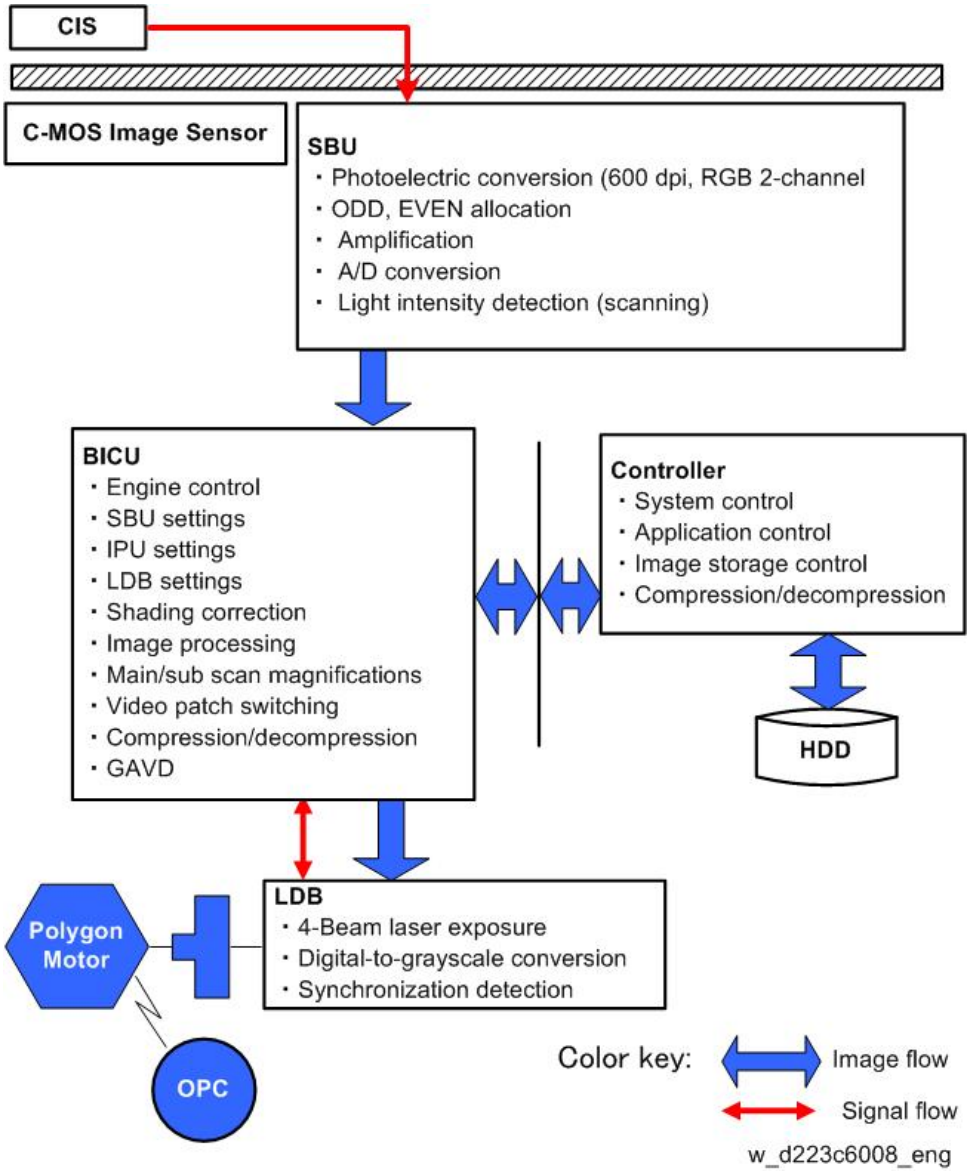


d223c6130

Every time the main machine is switched off, the scanner heater switches on.

5.3 IMAGE PROCESSING

5.3.1 IMAGE DATA FLOW



5.3.2 IMAGE PROCESSING

Image Processing Flow

Image processing is done on the BICU and follows the direction of flow described below. However, unlike previous machines the image processing in this machine has been changed slightly so it is more suited for the content of the image. This greatly improves the quality of the image:

- Selective filter processing, based on the amount of image edge, results in sharper text characters and less moire in fill areas.
- There is also smoother texture with less granulation in flat areas of images.

Shading Correction	Corrects the dispersion of the scanning lens and C-MOS
↓	
Gamma Correction	Background erase
↓	
Auto Select	Determines if an image is text or raster image data and processes the data accordingly.
↓	Selects the best methods for Filtering, Density Control, and Grayscale Processing.
Filtering	MTF and smoothing. Either of two filters is selected by Auto Select above.
↓	
Independent Dot Erase	Removes isolated pixels.
↓	
Line Width Correction	
↓	
Main Scan Magnification	
↓	
Video Path	**Application (printer)**

↓	
Density Control	Employs one of two gamma tables, selected by Auto Select above
↓	
Grayscale Processing	Error diffusion, dithering, or binary picture processing. Black-and-white digitization or dithering is selected by Auto Select above.
↓	
LD Unit	

Manual Gamma Adjustment

Two adjustment settings are provided for each of these four IDmax categories:

- Text
- Gamma curves with independent highlights (H)
- Middle (M)
- Shadow (S).

Offset (H). Adjusts the density of bright areas of the original (highlights). A lower setting lowers density to create lighter image, a larger setting increases density to create darker image.

Offset (M). Adjusts the density in the middle of the original (middle). A lower setting lowers density to create lighter image, a larger setting increases density to create darker image.

Offset (S). Adjusts the density of dark areas of the original (shadows). A lower setting lowers density to create lighter image, and a larger setting raises density to create darker image.

Offset: IDmax . Adjusts the development density for the entire image. Adjusts density. A lower setting lowers density to create lighter image, and a larger setting raises density to create darker image.

Option (H). Adjusts the texture of image background. A lower setting subdues the background, and a larger setting enhances the background.

Option (M). Adjusts the contrast of the original. A lower setting reduces the contrast, and a larger setting increases contrast.

Option (S). Not Used.

Option (IDmax). Not Used.

SP Codes Related to Gamma Adjustments

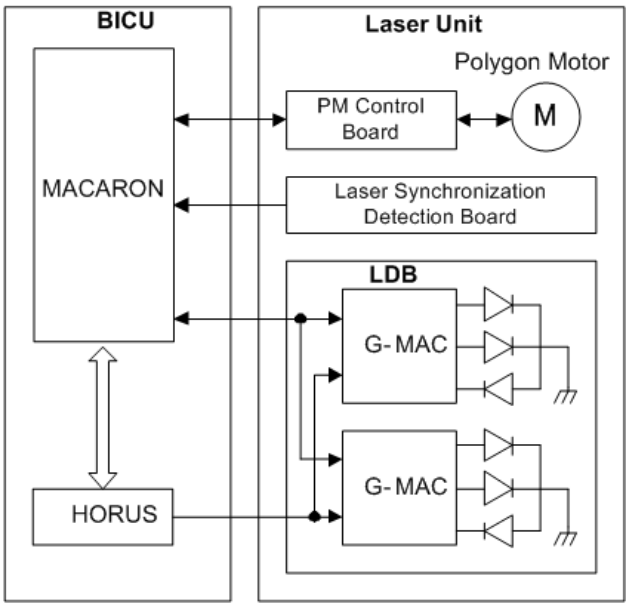
The table below summarizes the settings of **SP4-918-009** (Manual Gamma Adjustment).

Item	Range/Default/Step
Copy: Photo 1-Color K Offset (Highlight)	0 to 30/15/1
Copy: Photo 1-Color K Offset (Middle)	0 to 30/15/1
Copy: Photo 1-Color K Offset (Shadow)	0 to 30/15/1
Copy: Photo 1-Color K Offset (IDmax)	0 to 30/15/1
Copy: Photo 1-Color K Option (Highlight)	0 to 255/0/1
Copy: Photo 1-Color K Option (MIddle)	0 to 12/0/1
Copy: Photo 1-Color K Option (Shadow)	0 to 255/01/1
Copy: Photo 1-Color K Option (IDmax)	0 to 255/0/1
Copy: Text 1-Color K Offset (Highlight)	0 to 30/15/1
Copy: Text 1-Color K Offset (Middle)	0 to 30/15/1
Copy: Text 1-Color K Offset (Shadow)	0 to 30/15/1
Copy: Text 1-Color K Offset (IDmax)	0 to 30/15/1
Copy: Text 1-Color K Option (Highlight)	0 to 255/0/1
Copy: Text 1-Color K Option (Middle)	0 to 12/0/
Copy: Text 1-Color K Option (Shadow)	0 to 255/0/1
Copy: Text 1-Color K Option (IDmax)	0 to 255/0/1

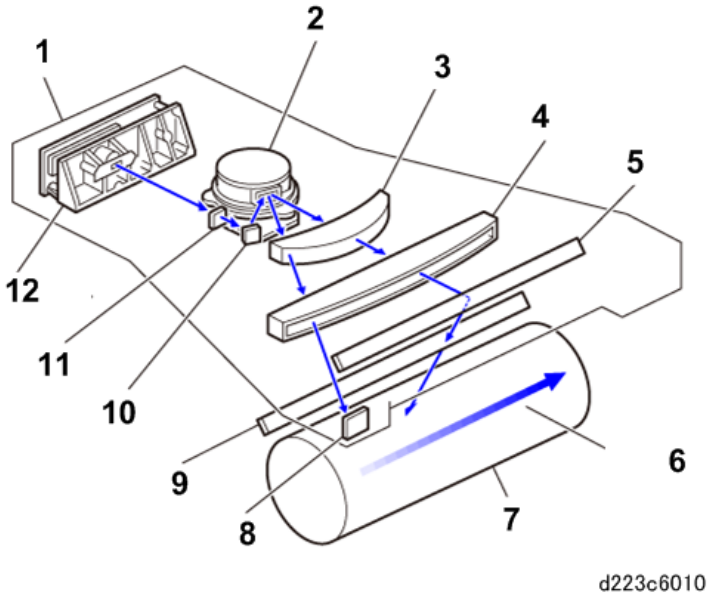
5.4 PRINT PROCESS (MAIN ENGINE COMPONENTS)

5.4.1 LASER UNIT

Block Diagram of Laser Unit



Laser Unit Components



No.	Name
1	Laser Unit
2	Polygon Motor
3	L1 Lens
4	L2 Lens
5	2nd Mirror
6	Main Scan Line
7	Drum (OPC)
8	Laser Synchronization Detector
9	Dust Prevention Glass
10	1st Mirror
11	L0 Lens
12	LD Unit

The laser unit is comprised of the LD unit and the line scan mechanism.

LD Unit

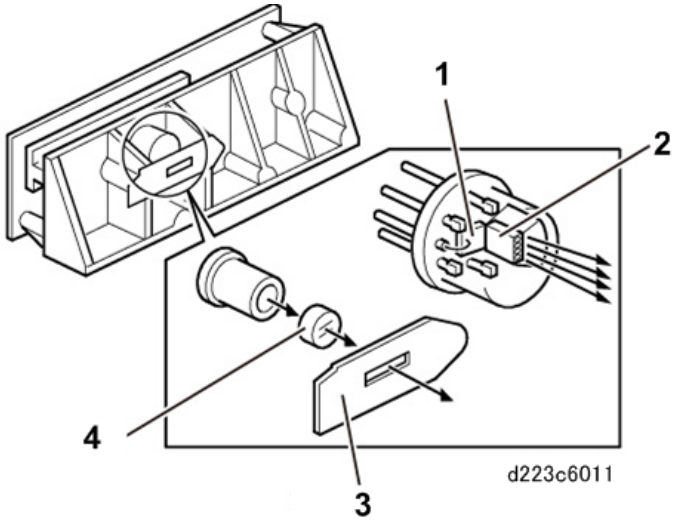
- Aluminum die-cast bracket.
- Semi-conductor laser.
- Wavelength: 659 nm output, 15 mW/ch
- Image writes with multi-beam (4 beam) laser.
- APC (Auto Power Control)
- Digital control.

Line scan mechanism

- Aluminum die-cast housing
- Line scanning by polygon mirror in Main Scan (horizontal) direction.
- Dot position enhancement by L1 lens.
- Laser beam angle adjustment by WTL

Laser Unit

The laser unit uses two 2-beam laser diodes that write four lines simultaneously.
The diodes are fixed at 1200 dpi so beam pitch adjustment is not required.



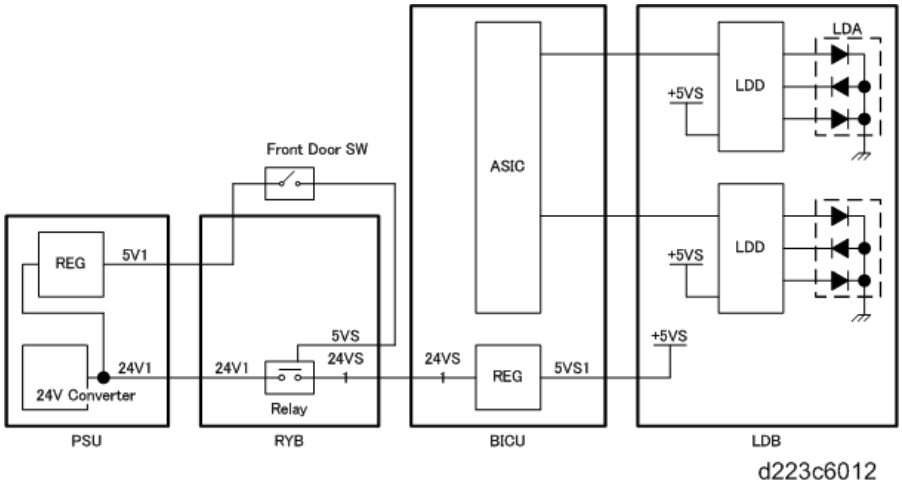
No.	Name
1	Photo Diode
2	LD Array
3	Aperture
4	Collimating Lens

APC (Auto Power Control)

A built-in PD (Photo Diode) detects the light emitted by the LD (Laser Diode). When the PD detects the light emitted from the LD, the PD sends an output signal to the LD control board, and then the feedback from this signal is used to fix the standard value for the strength of the laser. The LD unit is also non-adjustable so there are no LD power adjustments required after the LD unit has been replaced.

LD Safety Switch (Front Door Interlock Switch)

The front door is provided with a single interlock switch that disables the laser unit when the front door is opened. When the interlock switch opens, this cuts the 5V circuit to the LDB and disables it.



Laser Unit Control

The 600 dpi 10-bit scan data is converted to either 1200 dpi, 1- bit digital data, or 600 dpi/1-bit digitized data in the IPU on the BICU and then input to the laser control module of the ASIC. The converted data is then digitized through 35 levels of Pulse Width Modulation (PWM) to determine the strength of light exposure.

Line scan mechanism

The six facets of a polygon mirror, driven by a polygon motor, are used to expose the drum in the main scan direction. The polygon motor rotates constantly and stops only when the machine is off or in low power mode.

Multi-beam Scanning

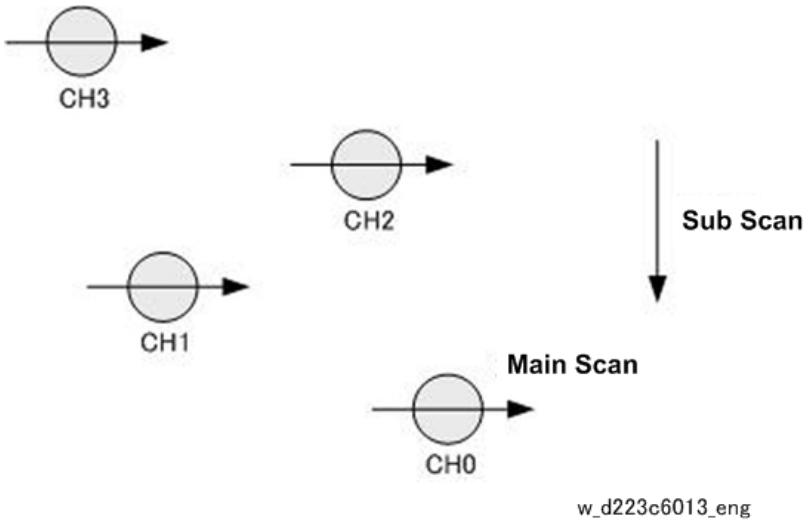
The LD unit emits four beams simultaneously. There are three advantages to this multi-beam method.

- The service life of the polygon motor is extended because the rotation speed is reduced.
- There is less noise from operation of the polygon motor because the number of rotations is reduced.
- The modulation frequency of the LD unit is reduced.

The speed of the rotation of the polygon motor is different for each mode and line speed:

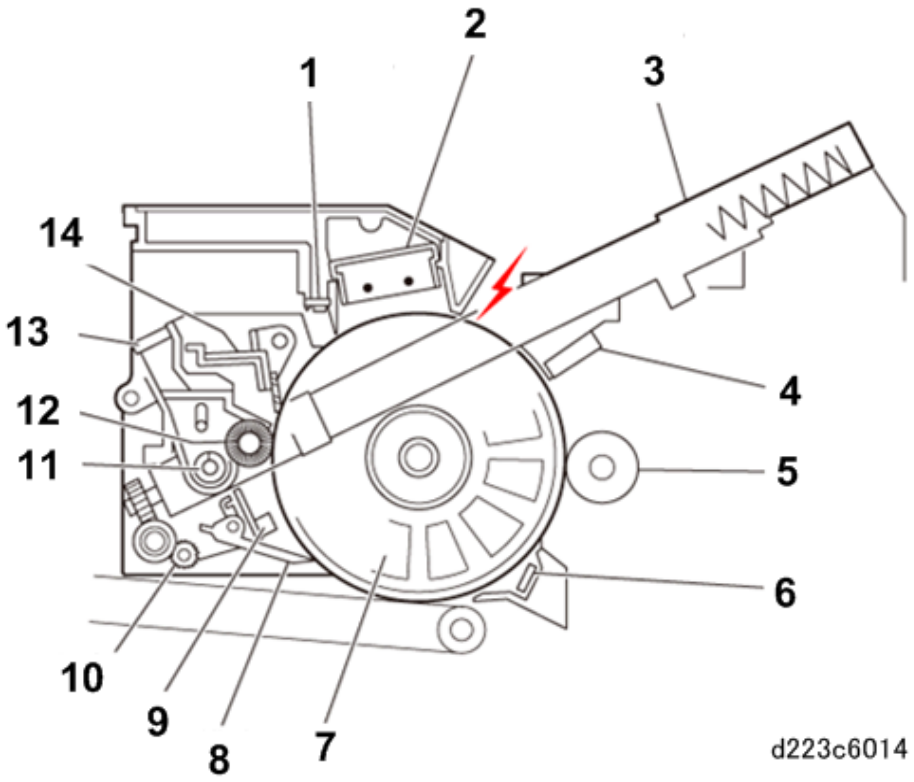
- Polygon motor rotations (D223/D224: 31,890 rpm 1200 dpi) **thick paper** line speed
- Polygon motor rotations (D223/D224: 42,756 rpm 1200 dpi) **normal paper** line speed
- Polygon motor rotations (D225: 49,606 rpm 1200 dpi)

The diagonal arrangement of the LD four beams from CH0 and CH2 at the front, and CH1 and CH3 at the rear achieves 1200 dpi resolution.



5.4.2 DRUM UNIT

Cross Section of Drum Unit



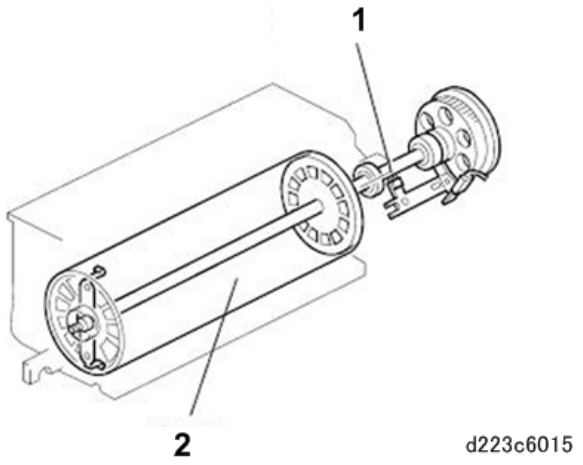
No.	Name	No.	Name
1	Quenching Lamp	8	Stripper Pawls
2	Drum Charge Unit	9	ID Sensor
3	Toner Recycling Pipe	10	Stripper Spurs
4	Potential Sensor	11	Toner Collection Coil
5	Development Sleeve	12	Brush Cleaning Roller
6	PTL	13	Pressure Release Filter
7	Drum (OPC)	14	Cleaning Blade

Here is a summary of the main components ands features of the drum unit:

- **OPC Drum**. Durable OPC Drum (100 mm dia.)
- **Quenching**. 16 red LEDs quench the charge from the surface of the drum.
- **Drum charge mechanism**. Scorotron grid charge wire charging and cleaning system.
- **Paper separation pawls**. Paper separation with pick-off spurs.
- **Cleaning mechanism**. Counter blade method.
- **ID sensor, Potential sensor**. Used for process control.
- **Drive unit**. A single drum motor drives both drum and drum cleaning mechanism.
- **Toner recycling mechanism**. Toner is retrieved and recycled in the development unit by suction through a recycling tube.

OPC Drum

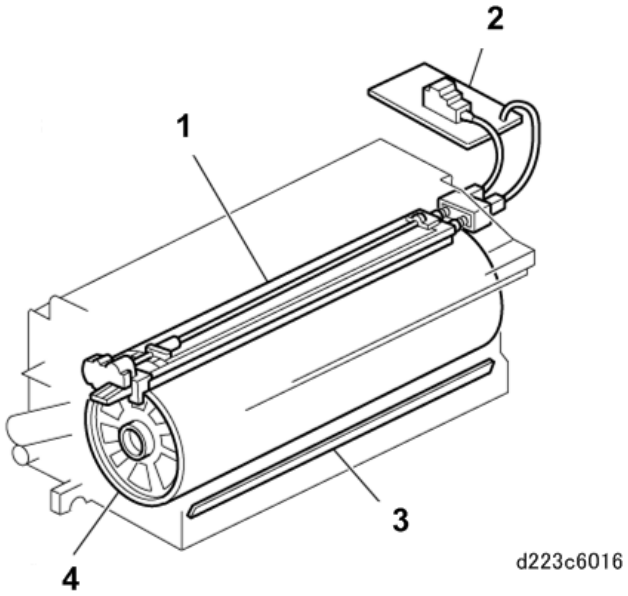
The OPC drum has an open flange with large holes to permit air to flow through to cool the drum. The drum is also grounded with a brush at the back of the machine. Quenching is done with an array of 16 red LEDs.



No.	Name
1	Brush Ground
2	Drum (OPC)

Charge

The Scorotron method, a charge wire and grid, applies an even charge over the surface of the drum, Applying the same electrical potential to the grid and casing also ensures a uniform charge on the drum.

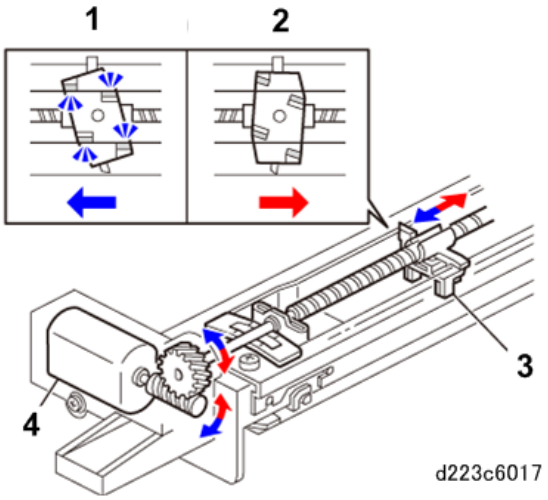


No.	Name
1	Drum Charge Unit
2	Drum Charge Power Pack (CG PP)
3	PTL
4	Drum (OPC)

In order to prevent poor quality images caused by a dirty corona wire, the charge unit is equipped with a wire cleaning mechanism. When the wire cleaner motor switches on, this moves the wire cleaning pad forward to clean the wire and then back to the home position.

Charge Wire Cleaning

The wire is cleaned every 5,000 prints.

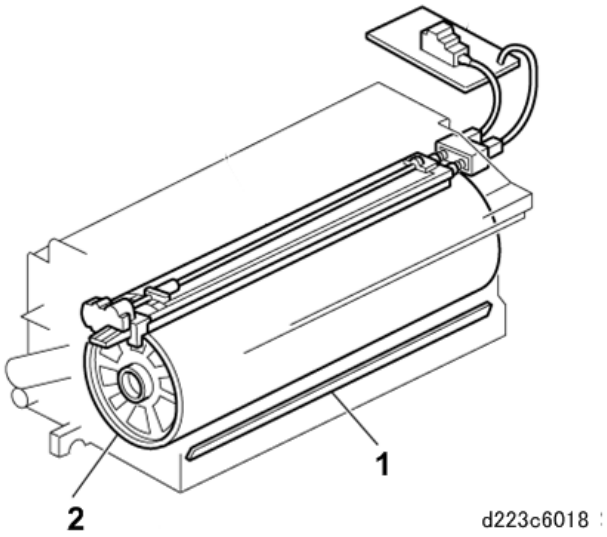


No.	Name
1	Forward stroke – Cleaning
2	Rear stroke – Return without cleaning
3	Cleaner Pad
4	Charge Wire Cleaner Motor

PTL (Pre-Transfer Lamp)

The PTL improves paper separation and reduces the appearance of pawl marks on the leading edges of paper. In order to improve paper separation from the drum, the PTL switches on at the leading edge of the paper only when printing with normal or translucent paper in simple mode. The PTL does not illuminate for jobs that use OHP, index tab, thick paper or postcards.

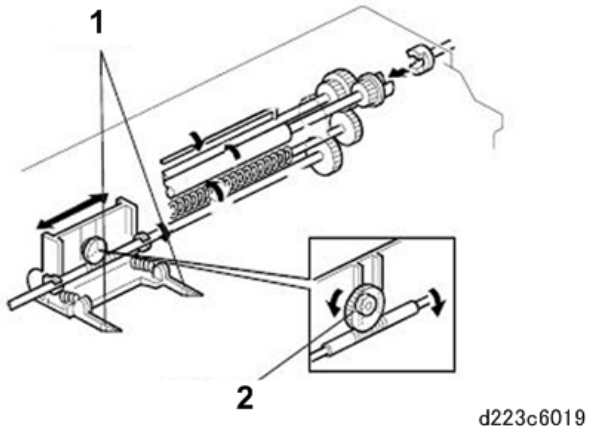
- **On Timing**. Synchronized with registration motor on timing.
- **Off Timing**. Goes off when the leading edge of the paper has advanced 3 mm. However, this distance can be adjusted in the range 30 mm in 1 mm steps with an SP code.



No.	Name
1	PTL
2	Drum (OPC)

Paper separation pawls

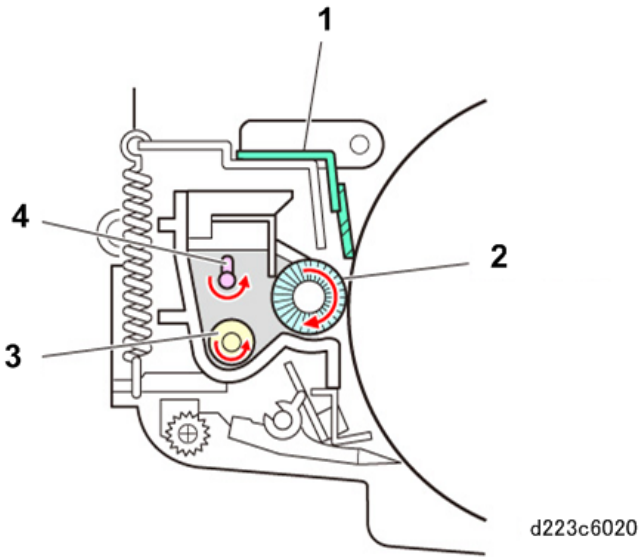
The separation pawls are always in contact with the drum surface to separate paper that clings to the drum. The drum spurs of this machine are an improved design and are more efficient in separating paper from the drum. In order to prevent damage to the drum from the separation pawls as a result of constant contact, a small vibrating cam operates while the drum rotates to keep the pawls vibrating slightly and free on the drum surface.



No.	Name
1	Paper Separation Pawls
2	Vibrating Cam

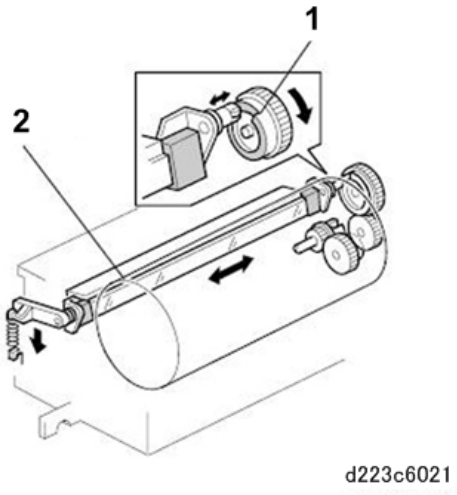
Drum Cleaning mechanism

The cleaning blade skims toner from the surface of the drum, and then the drum cleaning roller brushes the loose toner into the toner collection unit, as both brush roller and drum rotate forward (clockwise). The toner collected from the drum is sent into the toner collection coil and then into the recycle pipe.



No.	Name
1	Cleaning Blade
2	Drum Cleaning Roller (Brush)
3	Toner Collection Coil
4	Agitator

A small cam vibrates the cleaning blade slightly to keep the blade loose on the surface of the drum so it does snag on the drum surface. At the end of every job, the drum motor stops and reverse rotates the drum briefly to remove any toner that has stuck to the edge of the cleaning blade. The arc of this reverse rotation is about 5 mm.

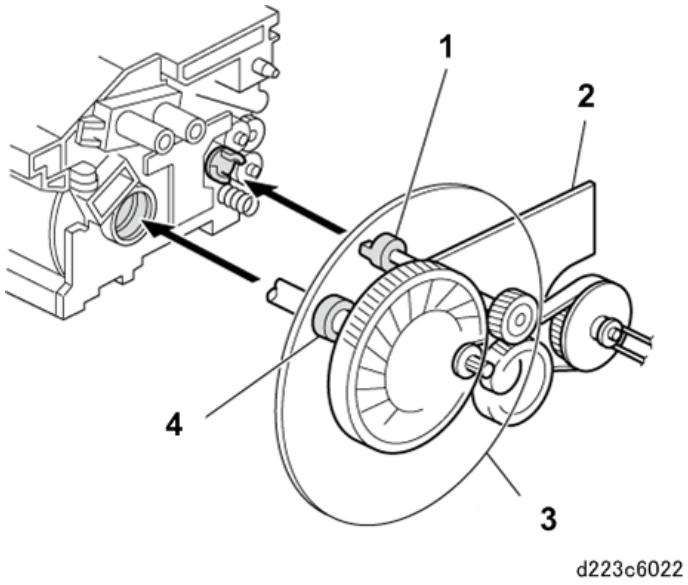


No.	Name
1	Rotating Cam
2	Cleaning Blade

Drum Cleaning Drive

The drum motor rotates the drum and drives the cleaning mechanism through a single gear train. A large flywheel on the shaft of the drum reduces jitter during drum rotation. The drum speeds are different for each model of this series:

- D223/D224 (Thick Paper 3, 4): 270 mm/sec.
- D223/D224 (Normal Paper, Thick Paper 3, 4): 362 mm/sec.
- D225: 420 mm/sec.

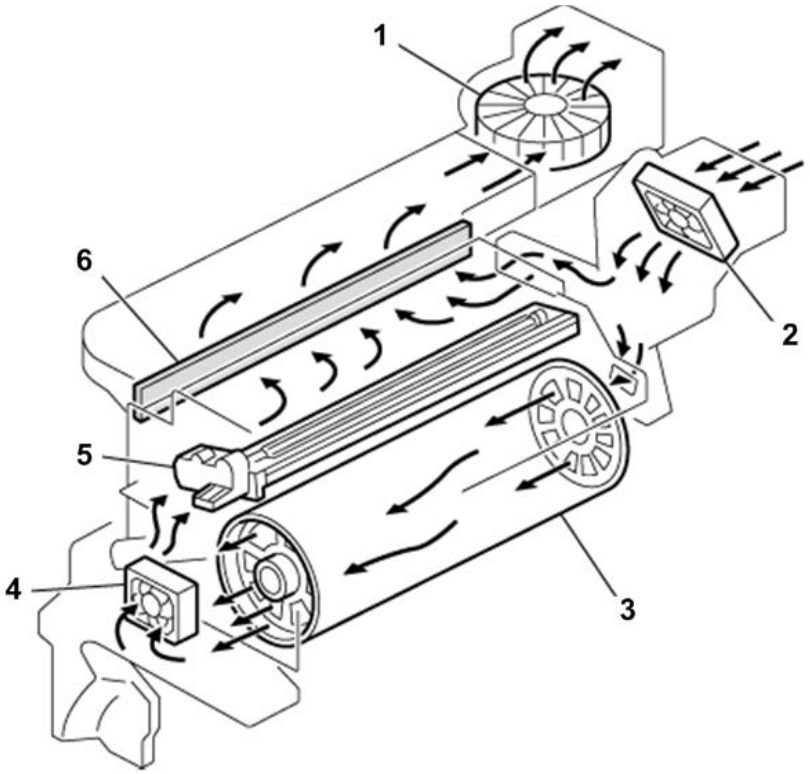


No.	Name
1	Drum Cleaning Coupling
2	Drum Motor
3	Flywheel
4	Drum Drive Coupling

Ozone Filters and Drum Cooling

As shown below, the machine is provided with fans that draw air through the flange of the drum and into the center to cool the drum as well as expel ozone from inside the machine.

- In order to reduce the amount of noise from the fans, the fans switch on when the machine is turned on, and then the fan operation and speed are synchronized with the operation level of the machine.
- The PCU fans are switched on and off when the machine is switched on and off to draw off the heat from the fusing unit and drum.
- The main intake fan also cycles on/off when the machine is switched on/off.

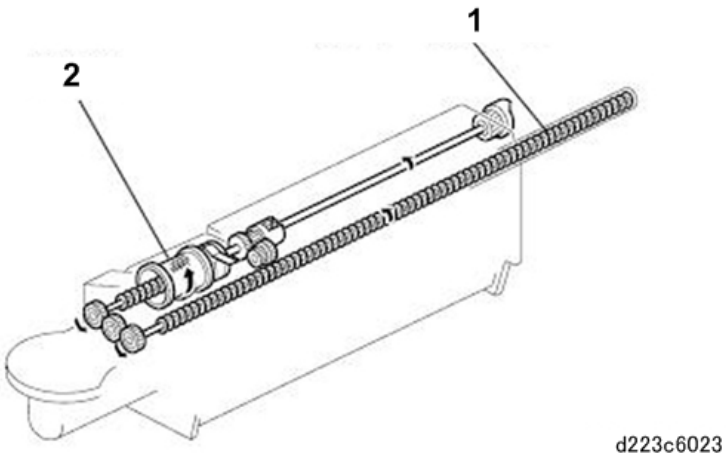


No.	Name
1	Main Intake Fan
2	Drum Fan
3	OPC Drum
4	PCU fan
5	Charge Corona Unit
6	Dust Filter

Toner recycling mechanism

The toner collected by the drum cleaning mechanism is sent through the recycling pipe to the toner separation unit in the hopper of the development unit.

- Reusable toner and waste toner are separated in the toner separation unit.
- The toner separation unit is driven by the toner transport coil.

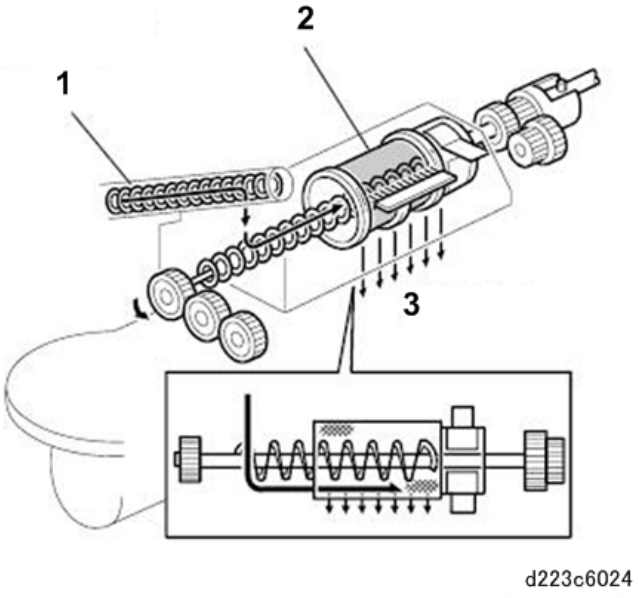


No.	Name
1	Used Toner Transport Coil
2	Toner Separation Unit

Reusable and Unreusable Toner Separation Mechanism

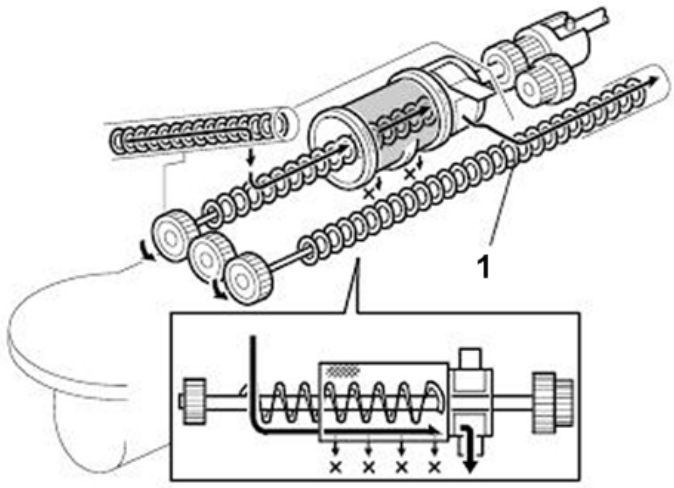
Toner that can pass through the mesh inside the toner separation unit can be reused.

- A brush outside the mesh brushes away toner that collects on the mesh to prevent the mesh from clogging.
- Another brush roller inside the mesh pushes out the reusable toner from the collected toner.



No.	Name
1	Toner Recycle Pipe
2	Toner Separation Mesh
3	Reusable Toner

Clumps of toner that cannot pass through the mesh go into the toner collection unit. The used toner transport coil then carries them away and dumps them into the used toner bottle.



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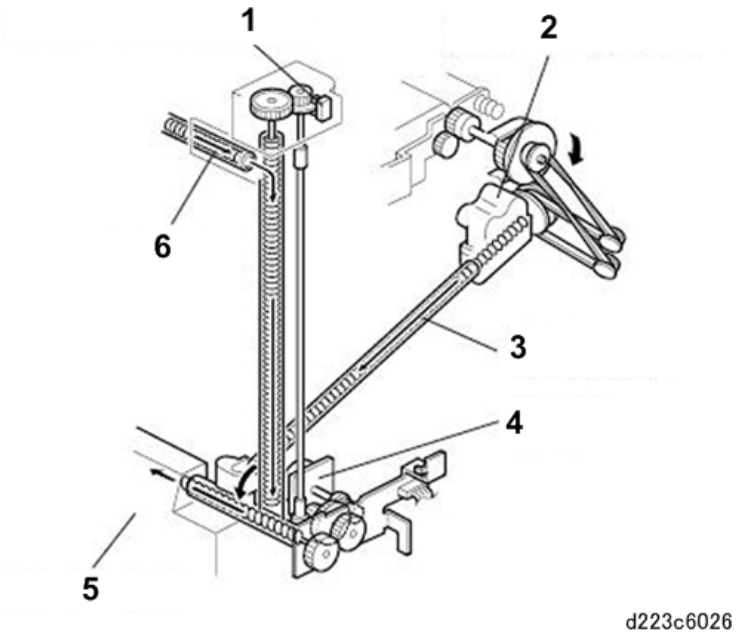
No.	Name
1	Used Toner

Used Toner Bottle

After toner from the transfer unit is moved by the transport coil, it is sent to the used toner bottle through the toner exit coil driven by the used toner motor.

- The toner in the toner separation unit that cannot be reused is also sent to the used toner bottle.
- If the used toner lock sensor detects that the used toner coil has become overloaded and cannot rotate, the drum motor continues to rotate for 3 sec., stops, and then the machine issues **SC495-00** (Toner Transport Unit Lock).
- The used toner motor rotation sensor monitors the rotation of the used toner motor, and if the motor stops rotation for more than 3 sec. then the machine issues **SC590-00** (Toner Motor Lock).
- The used toner motor and drum motor switch on at the same time. However, when the used toner bottle full sensor switches on, this means the torque on the rotation of the used toner motor has increased.
- When the used toner bottle full sensor signals that the toner bottle is full, the pressure on the toner exit coil shuts off the toner collection motor, and a message alerts the operator that the machine will shut down after 100 more copies.

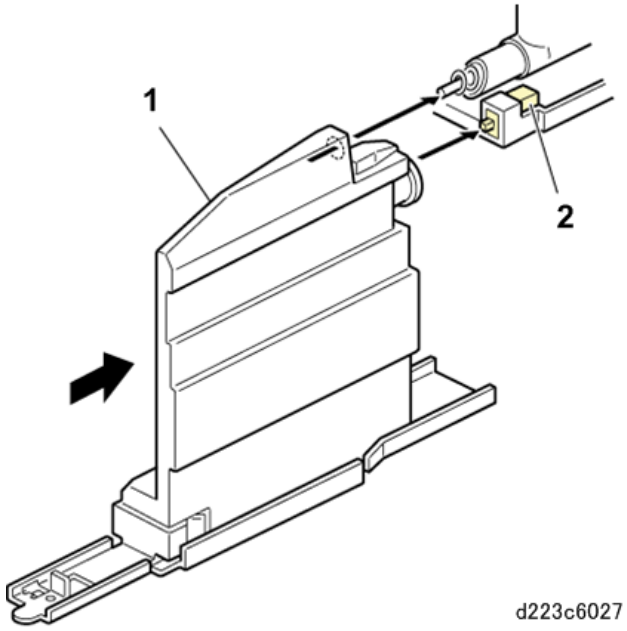


No.	Name
1	Used Toner Motor Sensor
2	Used Toner Lock Sensor
3	Transport Coil (from Belt Transfer Unit)

No.	Name
4	Used Toner Motor
5	Used Toner Bottle
6	Transport Coil (from Toner Separation Unit)

The used toner bottle full alert is released when the full toner bottle is replaced by an empty bottle that activates the toner bottle set switch.

- If the used toner bottle is not installed correctly, the machine will issue SC496-00 (Used Toner Bottle Not Set).
- The capacity of the used toner bottle is 5,000 cc, equivalent to about 1,000K copies (A4 at 6% coverage).



No.	Name
1	Used Toner Bottle
2	Used Toner Bottle Set Sensor

Process Control

The machine uses process control to make adjustments to compensate for changes over time around the drum that can be caused by dirty optics, changes in the output of the charge corona unit, and deterioration of the drum sensitivity. Here is a description of what happens when the machine is turned on with the fusing temperature below 50°C (122F) (when process control is switched on with **SP3901**).

Settings Adjusted Around the Drum Automatically at Power On

Main SW ON (Fusing Temp. < 50C)	
V	
Pre-rotation starts (Until fusing temperature > 140C)	
V	
Potential sensor (Vb, Vg, LD control)	
V	
Adjust ID sensor Vsg	
V	
Adjust image density (Vref update, toner density control)	
V	
Pre-rotation cycle end	

Here are some important points to remember'

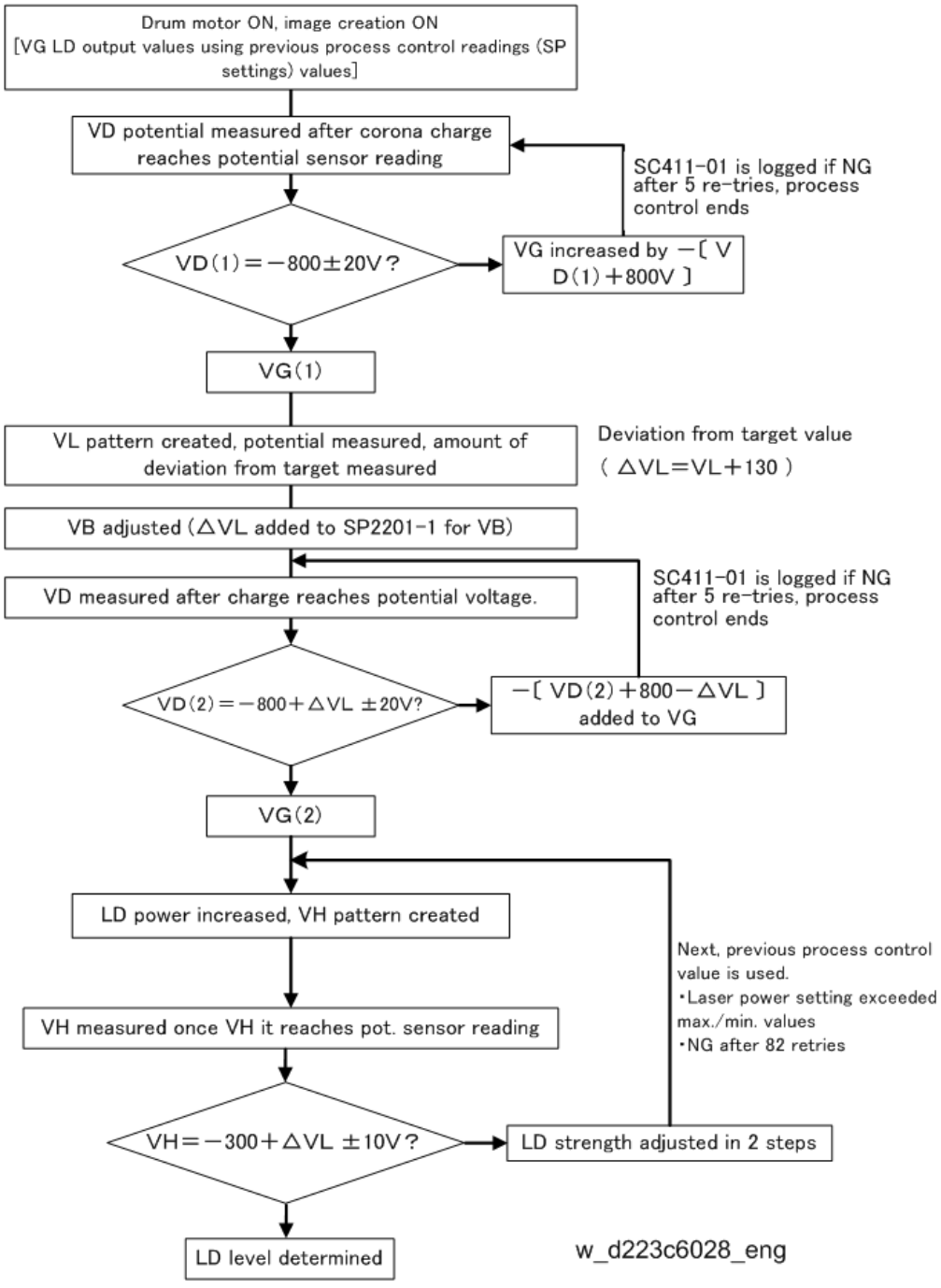
- Vref is raised by image density control, but toner density control is also performed to update toner density.
- These adjustments are used to determine toner supply, so it is very important that the developer be initialized with **SP2963** at machine installation and initialized with **SP2801** every time developer is replaced.

Automatic Setting Operation

ID sensor Vsg is adjusted (automatic adjustment) and Vref is updated for image density control. This controls the amount of light emitted by the ID sensor LED, and it is adjusted automatically in the range of 4.0±0.2V An SC is logged if the amount of light emitted by the LED cannot be set between the max./min. range after ID sensor calibration has started.

- After the development bias, drum charge grid, and laser diode (LD) power have been adjusted based on the readings of the potential sensor, the ID sensor reading is used to update the standard Vref for the TD sensor.
- The ID sensor pattern density is calculated (Vsp/Vsg), and based on this result, the value of Vref is retrieved from a lookup table and used to adjust the amount of shift for the standard Vref setting for the TD sensor.
- By adjusting the Vref setting, this sets the correct setting according to the reading of the current ID sensor pattern with reference to the toner supply to the development unit.
- However, if the ID sensor is not functioning correctly, Vref is not updated and the previous Vref is used to control toner supply.

This flowchart shows how potential sensor readings are used to adjust development bias, drum charge, and LD power.



- The development bias (Vb), charge grid voltage (Vg) and LD power are determined based on the potential sensor readings in the process shown in the flowchart above.
- In a case where the LD power cannot be determined, if the setting cannot be done after 25 attempts, then the value at initialization is restored (-127 and +127).
- LD power is adjusted for the sensitivity of the drum, which can be affected by ambient temperature and humidity, as well as long term weather changes, so it must be adjusted and controlled within a maximum and minimum range.
- If grid voltage (Vg) adjustment fails, the machine issues **SC411-01** and **SC411-02**.

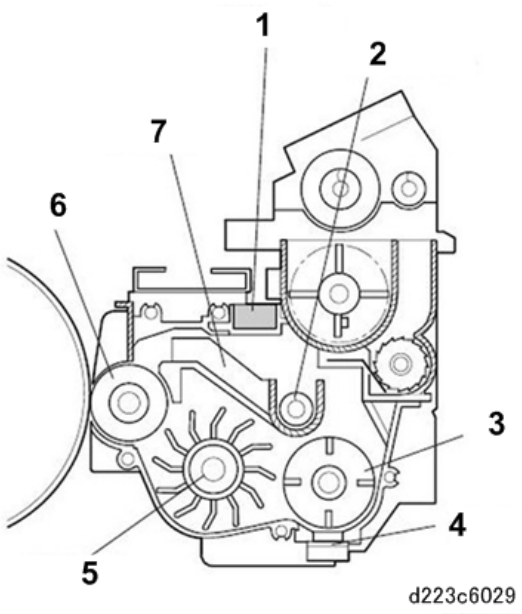
Automatic Process Control

Automatic process control can be switched off/on with **SP3901** (Auto Process Control).

- Normally, automatic process control should be on (the default setting for **SP3901**)
- If automatic process control is switched off then the next time the machine is cycled off/on, the LD power will not be adjusted.
- If SP3901 is switched on again then the machine once again enters the automatic process control mode with **SP2962** where the machine is automatically calibrated for the conditions around the drum.

5.4.3 DEVELOPMENT UNIT

Development Unit Cross Section



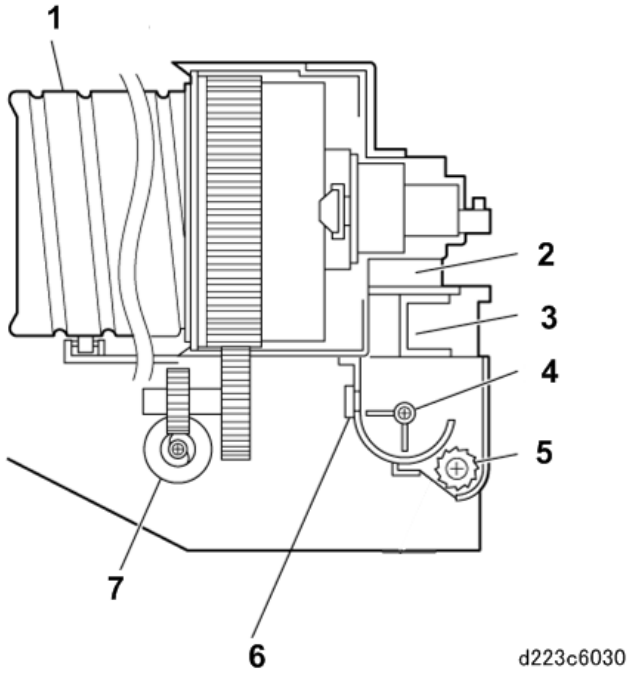
No.	Name
1	Development Filter
2	Toner Transport Coil
3	Agitator
4	TD Sensor
5	Paddle Roller
6	Development Sleeve
7	Back-spill Plate

Here is a summary of the development unit mechanisms and features.

- **Development Mechanism**. Dual, small diameter granulated components for dry electrostatic development.
- **Developer auger mechanism**. A paddle roller, developer agitator, separator, and transport coil mix and transport the developer and toner.
- **Development bias mechanism**. The development power pack supplies bias to the development unit.

- **Toner density control**. Toner density is monitored and controlled by the ID sensor and TD sensor.
- **Development Unit Drive Mechanism**. A single, dedicated motor drives the development unit.
- **Development Unit Pressure Release (D225 only).** A pressure release tube ensures air flow.

Toner Supply Unit



No.	Name
1	Toner Bottle
2	Shutter Lever
3	Shutter
4	Agitator
5	Toner Supply Roller
6	Toner End Sensor
7	Toner Bottle Motor

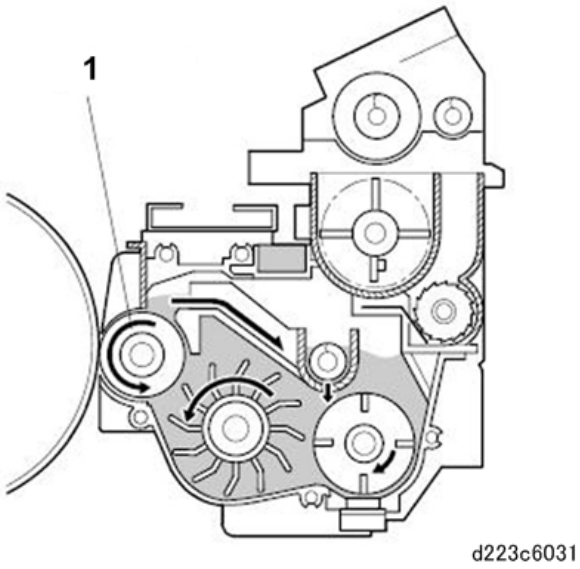
Here is a summary of the toner supply mechanisms and features.

- **Toner Transport Mechanism**. Toner inside the toner hopper on top of the development unit is moved from the front to the rear on the toner supply roller.
- **Toner end detection**. The toner end sensor (a pressure sensor) detects when there is no toner in the hopper.
- **Toner bottle shutter**. The toner bottle shutter prevents toner from spilling when the toner bottle holder is opened during toner bottle replacement.
- **Toner bottle supply mechanism**. A small toner bottle motor rotates the toner bottle.
- **Toner separation**. The toner separation mechanism separates paper dust and clumps from recycled toner.

Development Mechanism

In order to improve the quality of images, the development unit employs a single development roller sleeve, and a concentrated magnetic band inside the sleeve.

- The small diameter, pulverized toner is comprised of two components.
- The toner collected during cleaning can be recycled and used again, greatly reducing toner consumption.

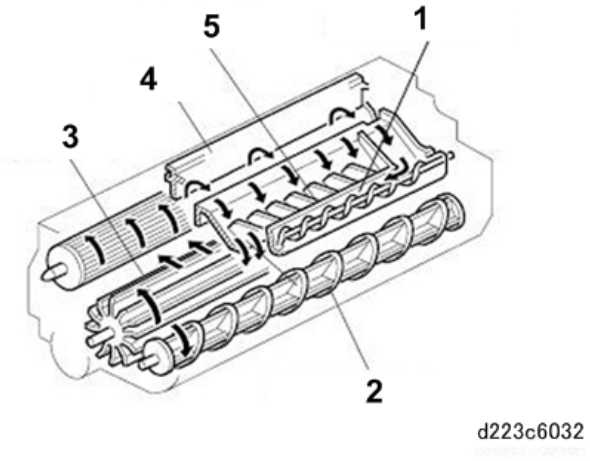


No.	Name
1	Development Sleeve

Inside the Development Unit

The thickness of toner on the sleeve is controlled by the doctor blade. Excess toner flows to the back-spill plate on top of the development unit. From there, the Toner Transport Coil distributes the toner evenly from front to rear.

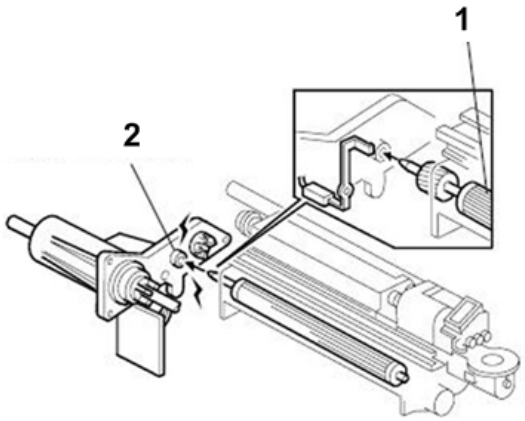
- The toner at the rear of the separator falls into the mixing vanes which move the toner from rear to front.
- New toner supplied to the development agitator is agitated by the paddle roller while it is being mixed with the developer.



No.	Name
1	Transport Coil
2	Development Agitator
3	Paddle Roller
4	Doctor Blade
5	Separator

Development Bias

The development power pack above the drum applies a negative charge (-550V) to the development unit which in turn passes this negative charge to the toner for its part in the development process. (-550 V). When bias is applied to the development sleeve roller, it is also applied to the lower casing and doctor blade to prevent toner back spill from the drum.



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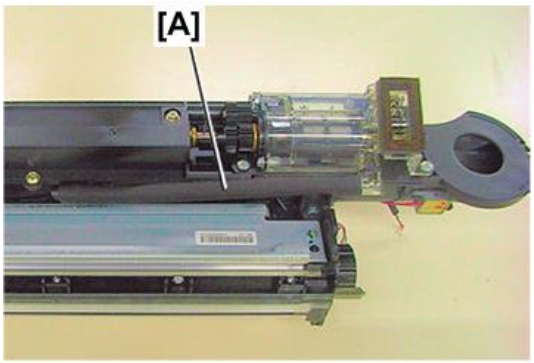
No.	Name
1	Development Sleeve
2	Development Bias Terminal

Development Unit Pressure Release (D225 only)

In order to relieve the build up of pressure inside the development unit, the development unit of the D225 is provided with pressure release tube [A].



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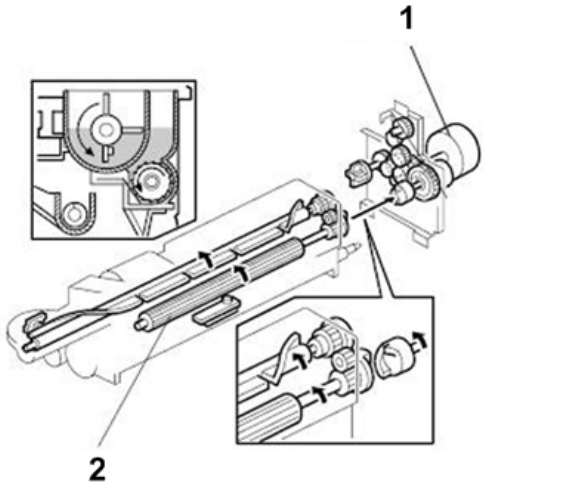
Toner Supply

The readings of the ID sensor and TD sensor are used to control toner density by telling the machine when to switch the toner supply clutch on and off to control the supply of toner to the toner supply roller. The toner supply roller has 8 grooves that catch the toner and then dump it into the development unit as the roller rotates.



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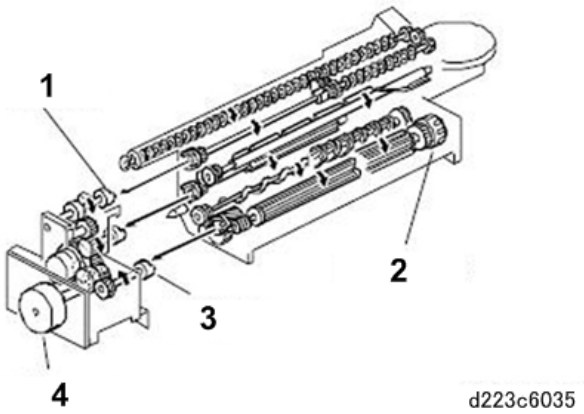
No.	Name
1	Toner Supply Clutch
2	Toner Supply Roller

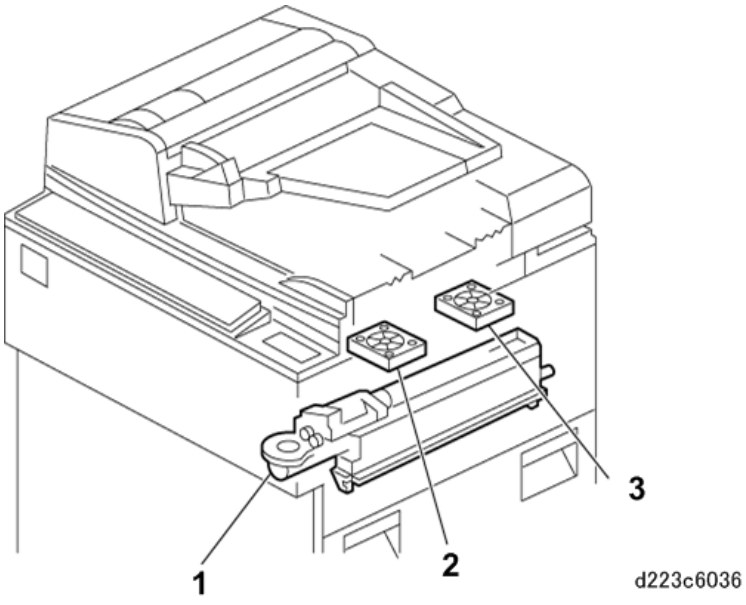
Development Unit Drive and Cooling

The development motor drives the development unit, toner supply mechanism, and toner separation mechanism. The knob attached to the paddle roller rotates in one direction only.



No.	Name
1	Toner Supply Drive
2	Manual Turn Knob
3	Development Coupling
4	Development Motor

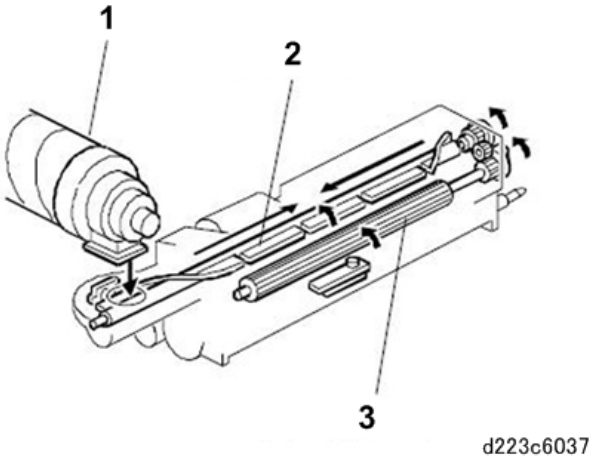
Two large fans on the right side of the machine cool the development unit. These fans are set to switch on/off when the machine is switched on/off (the fans remain on for 10 sec. after the machine is switched off).



No.	Name
1	Development Unit
2	Development Unit Fan 1
3	Development Unit Fan 2

Toner Transport

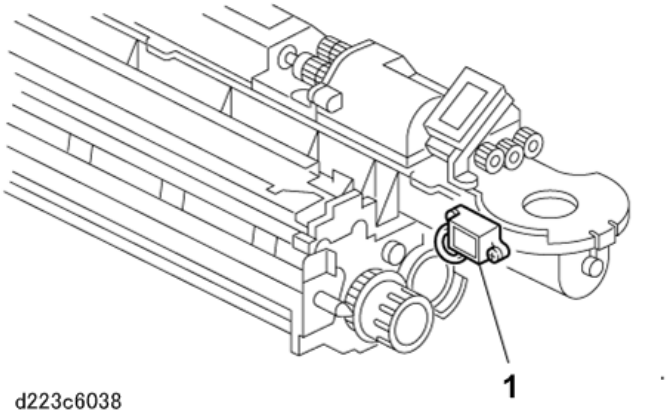
Fresh toner from the toner bottle and reusable toner collected during drum cleaning are sent to the agitator where they are mixed with developer. A gear train operates the paddle drive when the toner supply clutch is on.



No.	Name
1	Toner Bottle
2	Agitator
3	Toner Supply Roller

Toner End Detection

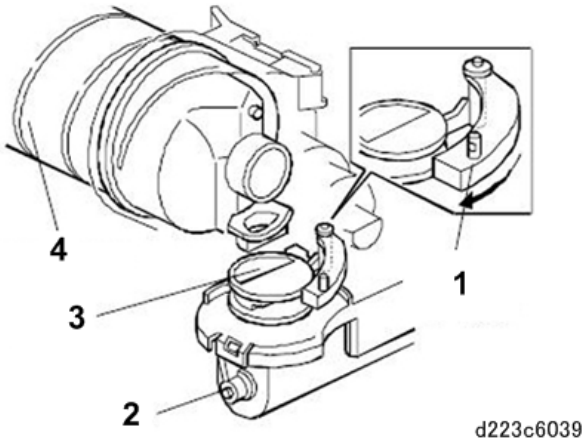
The toner end sensor (a piezoelectric sensor sensitive to changes in pressure) at the front end of the development unit detects toner end. The machine is released from the toner end state by opening and closing the front door of the machine.



No.	Name
1	Toner End Sensor

Shutter Mechanism

When the toner holder is opened and the toner bottle is removed for maintenance, a self-sealing shutter closes automatically to prevent toner spillage. The top of the shutter has a semi-circular opening that normally allows toner to flow into the toner hopper.

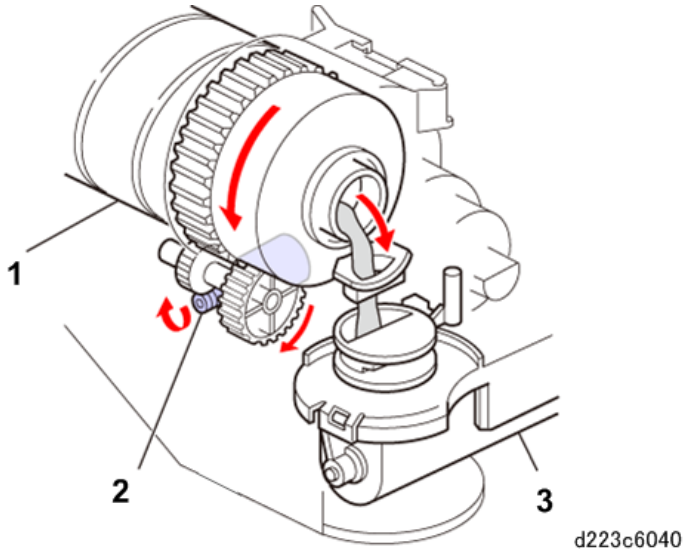


No.	Name
1	Toner Shutter
2	Toner Hopper
3	Toner Port
4	Toner Bottle

Toner Bottle Supply, Toner Bottle Cooling

The toner bottle motor (DC motor) drives the gear that rotates the toner bottle.

- The operation of the toner bottle motor is controlled by the toner end sensor; when the sensor detects no toner in the hopper twice, it signals the motor to rotate the bottle for 1.1 sec.



No.	Name
1	Toner Bottle
2	Toner Bottle Motor
3	Toner Hopper

- In order to prevent toner from clumping in the toner bottle, the toner bottle cooling fan behind the toner bottle switches on/off when the polygon motor in the laser switches on/off.

5.4.4 TONER SUPPLY CONTROL

There are two toner supply control modes:

- Sensor Control
- Pixel Count

Either can be selected with **SP2208** with Sensor Control as the default, or normal operation mode).

Sensor Control Mode

In sensor control mode the machine uses the input of the ID sensor and the TD sensor: the TD sensor reads the toner density during development and the ID sensor reads the density of the toner on the drum. The purpose of monitoring the toner density is to keep a fixed amount of toner in the developer while keeping the density level suitable for the images being printed.

Here is a brief overview of toner density control:

1. The TD sensor reads the density of the toner in the developer for every copy. This reading is output by the TD sensor as Vt. Vt (the TD sensor reading) and Vref (the targeted control reference voltage for the TD sensor) are used to calculate the value of the GAIN. (0, 1, 2, 3, 4).
2. The equation below is used to calculate the clutch ON time.

$$\text{Toner supply clutch} = \frac{(\text{GAIN} \times \text{Image pixel count} \times \text{Target density})}{\text{Toner supply rate}}$$

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Where, if GAIN = 0, startup time of 16 ms is reset to 0.

- Image pixel count: The density for every dot in the output data for the page is calculated (Example: 255 for A3).
- Target density: 0.7 mg/cm^2
- Toner supply: 850 mg/s (This default setting can be adjusted with SP2209).
- Clutch startup time: 16 ms (The actual time required for the toner to reach the hopper after the clutch turns on.)

3. At 10-copy intervals (adjustable with SP2210) and at job end the ID sensor measures Vsg, Vsp.
4. Vref (target reference voltage) from the TD sensor is updated with the new readings of Vsp, Vsg.

Pixel Count Mode

The ON time is calculated with the same formula described above, but the GAIN value is fixed at 0.7.

TD Sensor Reference Voltage

The TD sensor reference voltage must be initialized the first time the development unit is filled with developer at machine installation and every time the developer is replaced. The sensor control voltage is adjusted until the output is 3.0±0.1V, and after the control voltage is set, Vt is sampled 100 times, and then these samplings are averaged and used to set the standard reference value for Vt.

Here are some important points to remember:

- After the developer has been replaced, it must be initialized with **SP2801**.
- After the TD sensor has been replaced, it must be initialized with **SP2801**.
- If a partially used development unit from another machine is installed, open **SP2220** (Vref Manual Setting) on the loan machine to display the Vref value of the TD sensor, and then enter this value in the other machine with the same SP. Next, open **SP2906** (TD Sensor Control Voltage Setting) to display the setting, and then enter this setting on the other machine with the same SP.
- These initial settings are stored in NVRAM. Before replacing an NVRAM, always print an SMC report so you can read the settings off the report and enter them manually after NVRAM has been replaced.

Abnormal TD Sensor Output

If a problem occurs with the TD when developer in initialized:

- SC codes are issued and the machine will display the immediately previous value of **SP2906** (TD Sensor Control Voltage Setting).
- If Vt is "0" then the machine returns **SC360-01**.
- After the start of adjustment, if the TD sensor output does not enter the target range of Vt = 3.0±0.1V within 20 sec., the machine returns **SC360-11**.

If a problem occurs with the TD sensor during a print job, one of the following conditions has been detected:

- TD sensor outut Vt is 0.5V or lower (**SC362-00**).
- TD sensor outut Vt is 4V or higher (**SC361-00**).

The SC code is logged, and the toner supply moves into the ID Sensor Supply Mode + Pixel Count Mode, or the Pixel Count Mode (using ID sensor reading as reference).

ID Sensor Control

At power on, or after the specified number of prints (Default: 10) and at job end, the ID sensor reads the ID sensor pattern on the drum. The purpose of the ID sensor reading is to calculate the ID sensor pattern density (Vsp/Vsg) and then use this result to determine the target reference voltage of the TD sensor. The timing of when these ID sensor patterns are created on the drum is controlled by turning process control on/off in the SP mode.

When process control is on and the potential sensor output is normal:

- Drum charge grid voltage is set automatically, based on conditions around the drum.
- LD power is set automatically, based on conditions around the drum, and on the reading of a Vh pattern (reading of half-tone) on the drum.
- The potential sensor checks the development bias voltage when the ID sensor pattern is created (Target: -240V set by **SP2201-004**).

If process control is off, or if the potential sensor is defective:

- Charge corona grid voltage is set to the previous successful process control value
- LD power is set to the previous successful process control value.
- Development bias is set to the previous successful process control value.

Note

- For operators who are concerned about changes in toner density during long, continuous copy jobs, the machine can be set to create ID sensor patterns during long jobs by switching on **SP2507-001**, and then setting the interval for pattern creations with **SP2507-002**. However, if an interval is set for ID sensor pattern creation and sampling during long jobs, this could cause delays at 2 or 3 sec. intervals and lower productivity of the machine.

Both TD Sensor and ID Sensor Abnormal

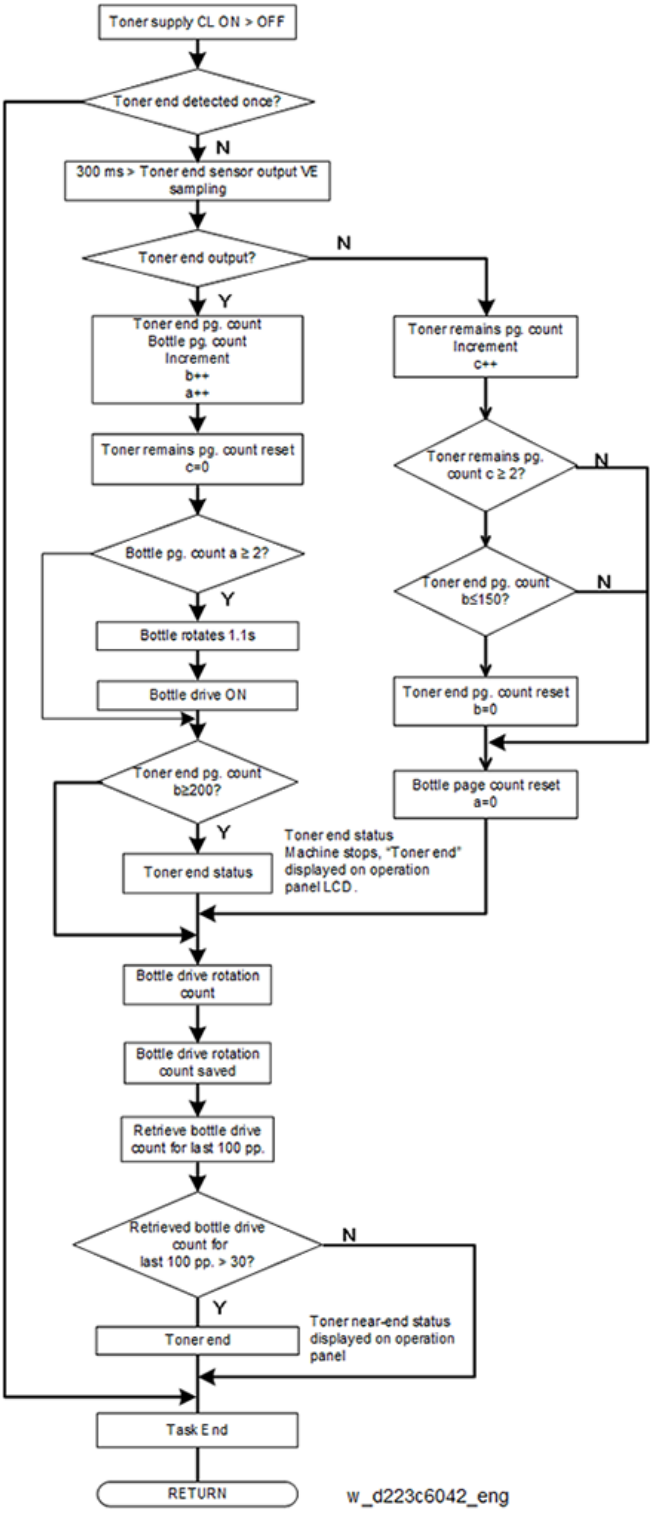
If the output of both of these sensors is abnormal during toner supply, toner supply mode will change.

- When the TD sensor and ID sensor are both operating normally, both sensors are used during toner supply control.
- If only the TD sensor fails, then ID sensor output is used with Pixel Count.
- If only the ID sensor fails, then TD sensor output is used.
- If TD sensor and ID sensor both fail, then only Pixel Count is used.

SC codes are issued with the failure of either the TD sensor or ID sensor.

Toner Near-End Control

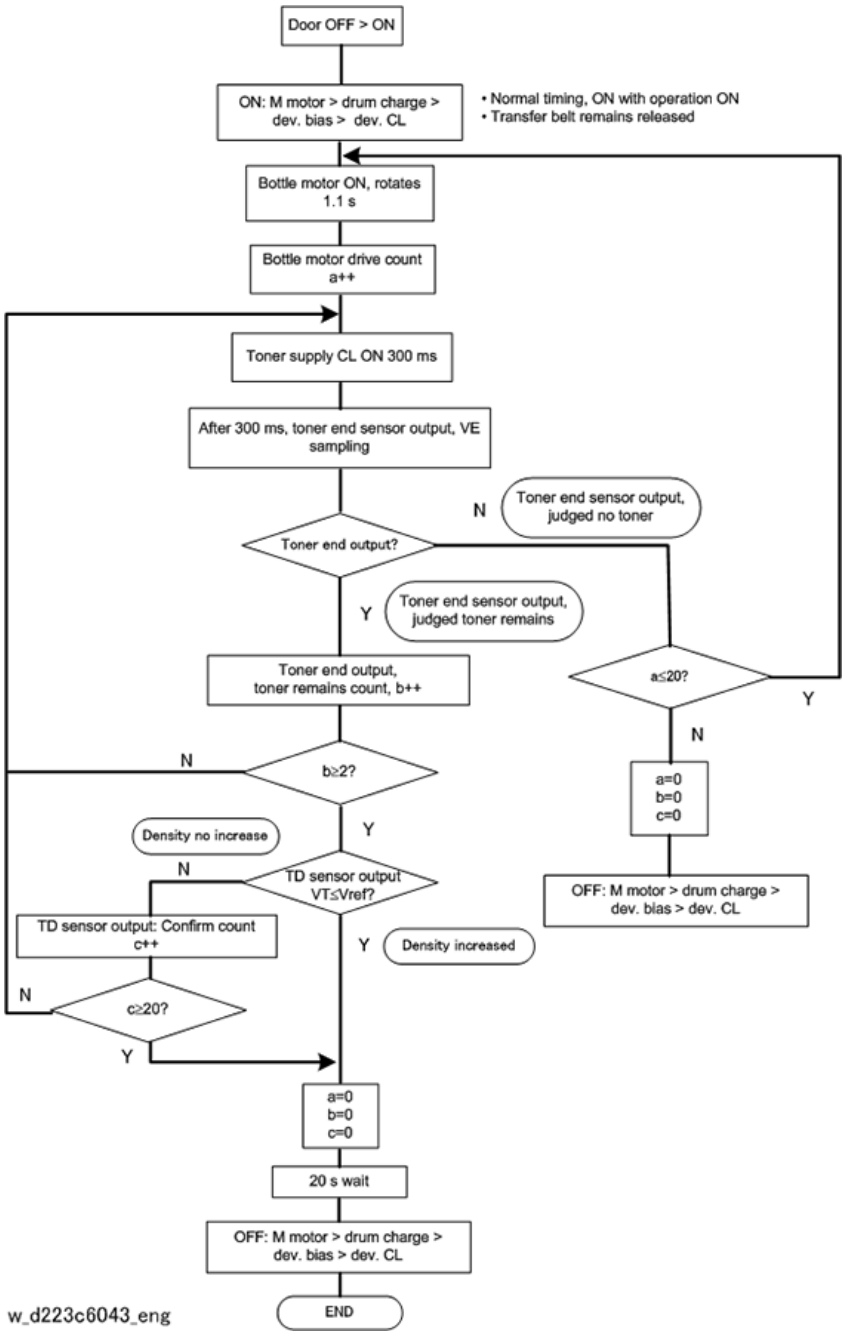
The toner end detection and control sequence is described in the flowchart below. The machine can continue to print up to 1,000 sheets (A4 at 6% coverage) after the toner near-end alert is issued.



Toner End Recovery

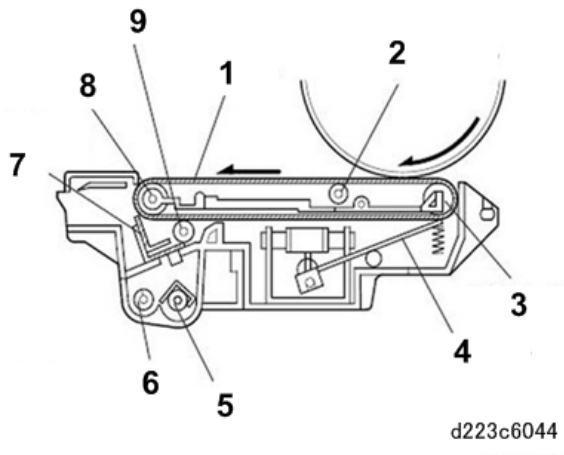
At toner near-end the toner bottle is nearly empty and can be replaced.

- When the front door is opened and closed, the machine attempts to recover on the assumption that the bottle has been replaced.
- The description below is based on the assumption that front door has been opened and closed after the toner near-end or toner end alert appeared.



5.4.5 TRANSFER BELT UNIT

Overview



No.	Name
1	Transfer Belt
2	Transfer Bias Roller
3	Belt Idle Roller
4	Separation Lever
5	Agitator
6	Toner Collection Coil
7	Cleaning Blade
8	Belt Drive Roller
9	Cleaning Bias Roller

Here is a summary of the transfer belt unit mechanisms and features:

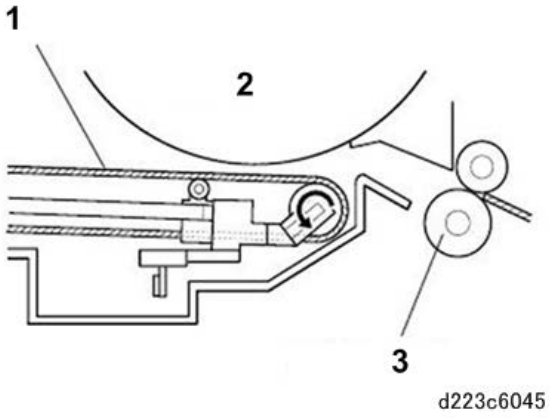
- **Image Transfer and Paper Separation Mechanism**. A system wherein a bias roller applies an electrostatic charge to a transfer belt of moderately low resistance. A wide transfer belt compatible with many types of paper and that generates no ozone is used.
- **Transfer Belt Lift Mechanism**. Job timing controls the DC solenoid that raises and lowers the transfer belt unit.
- **Drive and Paper Transport Mechanism**. The drum motor rotates the gear and roller that drives the transport belt that carries the paper.

- **Transfer Belt Cleaning Mechanism**. A counter blade, cleaning bias roller, and bias roller cleaning blade comprise the transfer belt cleaning mechanism.
- **Transfer Belt Release Mechanism**. The easy-to-operate belt release makes paper jam removal easy.
- **Transfer Belt Anti-Slip Mechanism**. Roller ends are tapered to prevent belt slippage.
- **Anti-Condensation Mechanism**. A single heater (option) installed below the belt unit.

Transfer Separation Mechanism

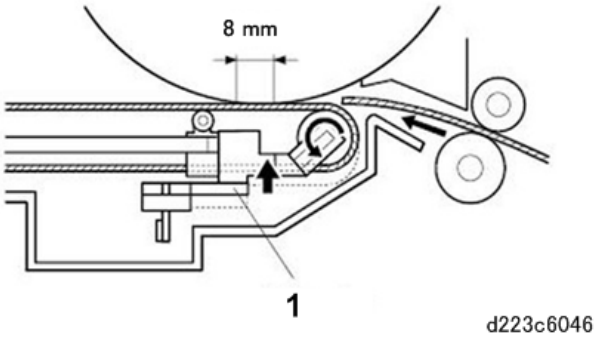
Each sheet of paper is fed as far as the registration roller. This is timed so that the leading edge of the sheet reaches the leading edge of the image on the surface of the drum above.

- Normally, the transfer belt remains separated from the drum.
- The transfer separation solenoid switches on and raises the transfer belt when the registration sensor detects the leading edge of the first sheet, and then the belt remains up until the end of the job.



No.	Name
1	Transfer Belt
2	Drum (OPC)
3	Registration Roller

- When the paper approaches the point where the leading edge of the paper on the belt will come into contact with the drum above, the transfer belt lift solenoid raises the separation lever so the belt comes into contact with the drum above.
- This creates a nip between the belt and drum about 8 mm wide.

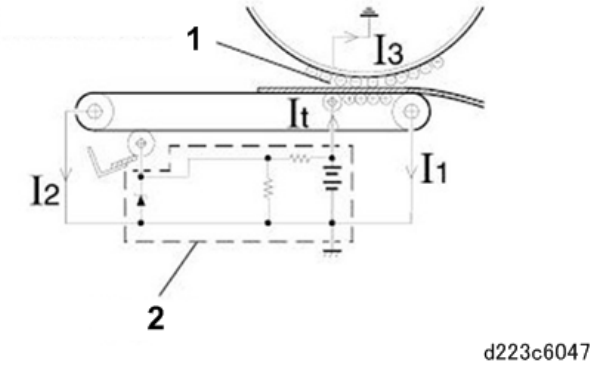


No.	Name
1	Separation Lever

Image Transfer Mechanism

When the paper enters the nip between belt and drum, the transfer bias roller applies a negative bias charge to the belt. This pulls the toner with a positive charge from the drum onto the paper.

- The transfer belt is of moderately low resistance, so the belt and electrical charge on the belt is neutralized with the movement of toner from drum to belt.
- The transfer power pack inside the transfer belt unit applies the high bias charge to the transfer bias roller.
- This transfer system is controlled with a constant voltage system that ensures stable image transfer and paper separation for a variety of paper in variable ambient conditions which can cause changes on the surface of the low resistance belt.

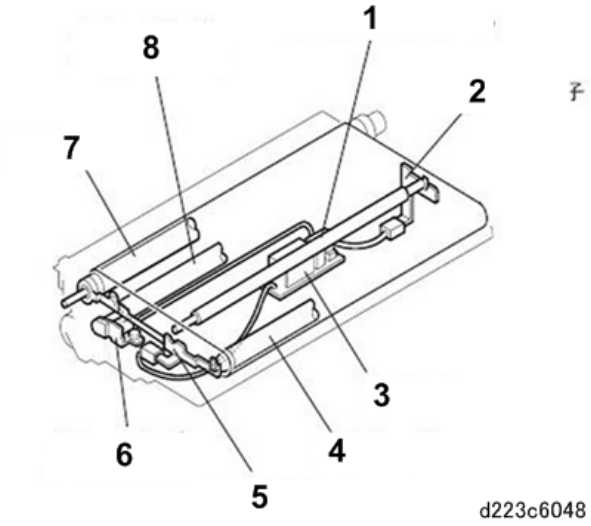


No.	Name
1	Transfer Bias Roller
2	Transfer Power Pack

Transfer Bias Charge Mechanism

The transfer power pack inside the transfer belt unit applies the charge (Max. +7.0 KV) to the bias roller.

- The power pack divides the charge and also applies a charge (Max. 1000V) to the terminal of the cleaning bias roller.
- The belt drive roller and idle roller are grounded to improve the efficiency of cleaning.



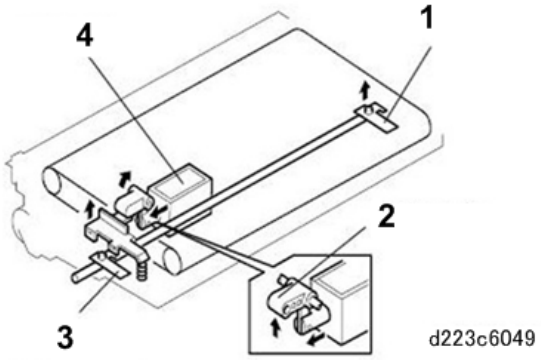
No.	Name
1	Transfer Bias Roller
2	Transfer Bias Terminal
3	Transfer Power Pack
4	Transfer Belt Idle Roller
5	Ground Terminal
6	Cleaning Bias Terminal
7	Transfer Belt Drive Roller
8	Cleaning Bias Roller

Transfer Belt Lift

The transfer belt lift solenoid inside the transfer belt unit is switched on by job timing to raise the belt against the drum. Springs are attached to the front of the solenoid to apply pressure in the direction of lift to reduce the load placed on the solenoid.

Normally, the transfer belt remains separated from the drum for the following reasons:

- The transfer belt would rub the ID sensor patterns off the surface of the drum.
- Cleaning ID sensor patterns from the surface of the belt would put an extra load on the belt cleaning mechanism.
- If the transfer belt and drum were in constant contact this would cause the materials from the belt to stick to the drum and increase wear on both drum and belt.

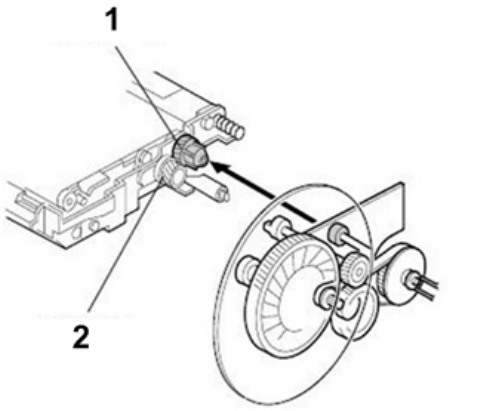


No.	Name
1	Transfer Separation Lever (Rear)
2	Separation Lever
3	Transfer Separation Lever (Front)
4	Transfer Separation Solenoid

Transfer Belt Drive and Paper Transport Mechanism

The drum motor drives the belt and gears that rotate the transfer belt drive roller.

- The electrostatic charge on the belt holds the paper on the belt while the drive roller drives the belt.
- The electrical charge on the belt is discharged, to make the separation of paper from the belt at the drive roller much easier.



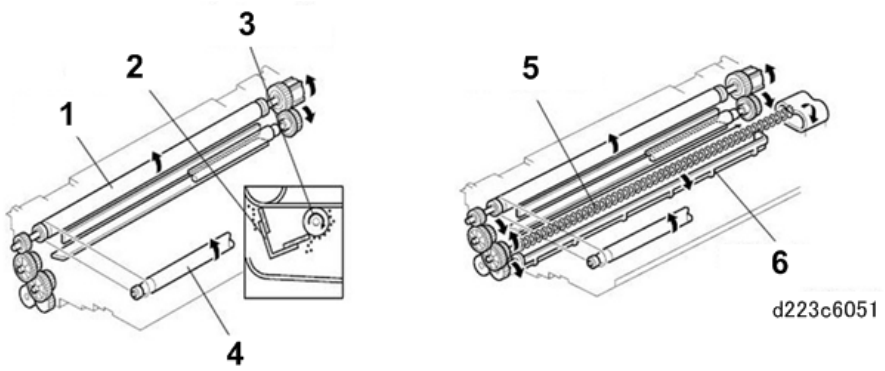
d223c6050

No.	Name
1	Transfer Belt Driver Roller
2	Center Connecting Gear

Transfer Belt Cleaning Mechanism

While the job timing keeps the transfer belt and drum in contact as paper passes between them, paper dust and toner from blank areas on the paper can adhere to the surface of the drum above and then pass on to the transfer belt below.

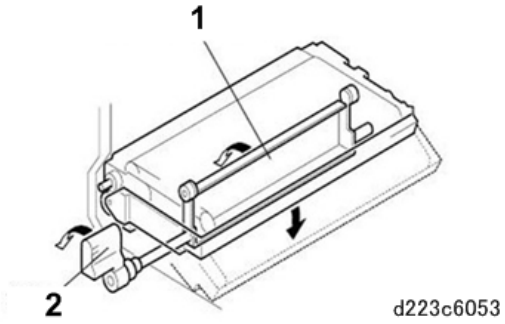
- The positive charge applied to the cleaning bias roller can pull the negatively charged toner and paper dust away from the belt and onto the bias roller blade.
- The cleaning blade in direct contact with the belt also scrapes away toner and paper dust, the collected toner and dust are dumped into the toner collection coil and transported to the rear of the machine, and then are sent to the used toner bottle.



No.	Name
1	Drive Roller
2	Cleaning Blade
3	Cleaning Bias Roller
4	Idle Roller
5	Toner Collection Coil
6	Agitator

Transfer Belt Release Mechanism

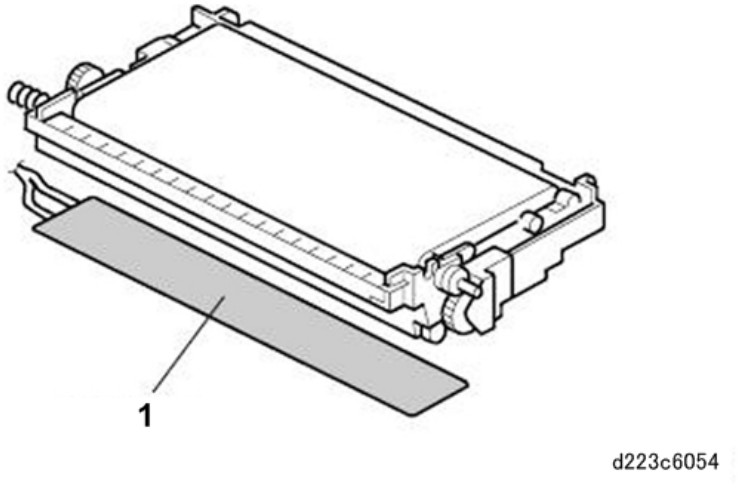
Rotating the **C1** release lever to the left lowers the drive roller clockwise to release the belt. Lowering the transfer belt lets the operator easily remove paper jams, and allows the service technician to service the machine much easier, especially when removing and reinstalling the drum unit.



No.	Name
1	Transfer Pressure Arm
2	Separation Lever

Anti-Condensation Heater (Option)

If the drum heater (option) is installed below the transfer belt unit and drum, it will switch on every time the main unit is switched off to prevent condensation from forming around the transfer belt and drum while the machine is idle.



No.	Name
1	Drum Heater

Image Transfer Current Settings

Here is a list of the default electrical current settings for optimal image transfer to paper from each paper station.

Optimal Transfer Current Settings

Conditions	Transfer Current (Default)	SP No.
Tray 1 (Front Side)	D223/D224, 75uA D225 85uA	2-301-001
Tray 2 (Back Side)	D223/D224 75uA, D225 85uA	2-301-002
Bypass Tray (Front Side)	D223/D224 80uA, D225 90uA	2-301-003
Postcard (Back Side)	165 uA	2-301-004
Paper Interval	15 uA	2-301-005

Paper Line Speed Mode Transfer Current Settings (D223/D224 Only)

Conditions	Transfer Current (Default)	SP No.
Thick 3 (Front Side)	D223/D224:100uA	2-301-145
Thick 3 (Back Side)	D223/D224:100uA	2-301-146
Thick 4 (Back Side) Japan only	D223/D224:100uA	2-301-149

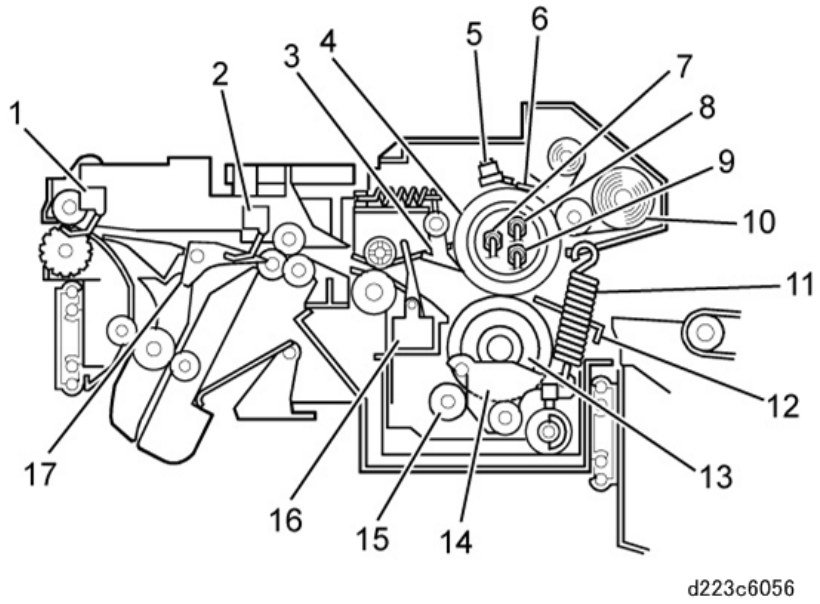
- In order for the machine to recognize postcard size, the bypass side fences must be set to A6 width.
- Bias is applied to the intervals between paper edges to improve the efficiency of belt cleaning.
- Not done at job end, or when process control is executing to automatically compensate for ambient conditions around the drum.

The transfer output is set for 2.6 KV (constant voltage) while the main motor is on, and the cleaning bias is set for 1000V for transfer belt cleaning.

5.4.6 FUSING UNIT

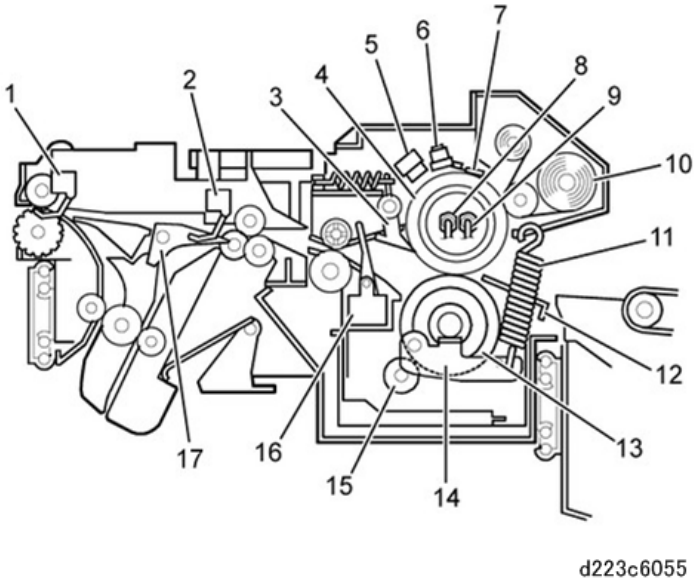
Overview

D223/D224 (Three Fusing Lamps)



No.	Part Name:	No.	Part Name:
1	Paper Exit Sensor	10	Cleaning Web
2	Exit Unit Entrance Sensor	11	Pressure Spring
3	Pickoff pawls	12	Entrance Guide Plate
4	Hot Roller	13	Pressure Roller
5	Thermostats (190C/200C)	14	Pressure Arm
6	Thermistor (Contact x1, NC x)	15	Pressure Roller Cleaning Roller
7	Fusing Lamp (100V 700W)	16	Fusing Unit Paper Sensor
8	Fusing Lamp (50V 750W)	17	Exit Junction Gate
9	Fusing Lamp (100V 550W)	-	-

D225 (Two Fusing Lamps)



No.	Part Name:	No.	Part Name:
1	Paper Exit Sensor	10	Cleaning Web
2	Exit Unit Entrance Sensor	11	Pressure Spring
3	Pickoff pawls	12	Entrance Guide Plate
4	Hot Roller	13	Pressure Roller
5	Thermistor (Non-Contact Type)	14	Pressure Arm
6	Thermostats (190C/193C)	15	Pressure Roller Cleaning Roller
7	Thermistor (Contact Type)	16	Fusing Unit Paper Sensor
8	Fusing Lamp (100V 400W)	17	Exit Junction Gate
9	Fusing Lamp (100V 800W)		

Here is summary of the mechanisms and features of these fusing units.

- **Fusing**. Finely lubricated heat roller system.
- **Fusing Pressure**. Pressure roller and spring mechanism
- **Pressure Application Method (D223/D224 Only).** A pressure release mechanism prevents the pressure roller from being permanently warped.
- **Fusing Unit Drive**. Fusing exit motor and drive belt
- **Fusing Pressure.** Spring mounted on cleaning roller

- **Temperature Control**. Hot roller center fusing lamp, hot roller end fusing lamp heated by DC fusing lamp. (The DC fusing lamp is provided on the D22/D224 only.)
- **Hot Roller Cleaning Web**. Web roller applies a thin coat of oil for lubrication and cleaning.

More About the Fusing Unit

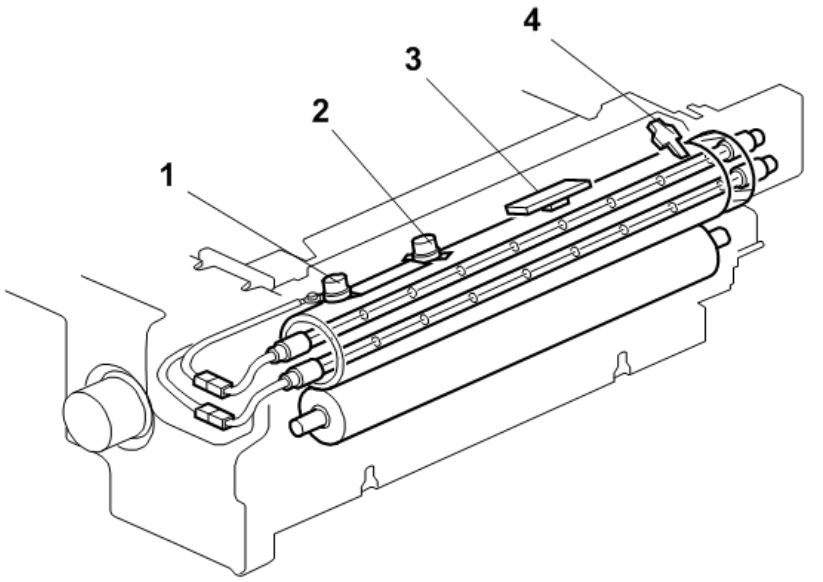
The fusing unit employs two fusing lamps inside the hot roller, an end fusing lamp (D223/D224 700W, D225 400W) and a center fusing lamp (D223/D224 550W, D225 800). The D223/D224, however, are provided with an additional auxiliary fusing DC lamp (750W) to prevent a drop in fusing temperature during long jobs for a total of three lamps.

D223/D224

- The surface of the roller is thin (0.7 mm) so it can reach standby temperature within 10 sec. of startup.
- The pressure roller surface is a soft, pliable bubble like material that creates a nip of optimal width against the hot roller.
- The center thermistor is a non-contact thermistor, but the end thermistors contact the hot roller to achieve more precise fusing temperature control.
- The end thermistors are located far enough away from the ends of the roller so as to not interfere with image fusing.
- The stripper pawls are the same as those on the D225, making it easier to service all models with the same replacement pawls.

D225

- In order to maintain fusing ability, the hot roller coating is 5 mm thick and the diameter of the roller is 50 mm.
- In order to achieve standby temperature within 300 sec. after startup, the center thermistor is a non-contact type.
- The end thermistors are contact type.

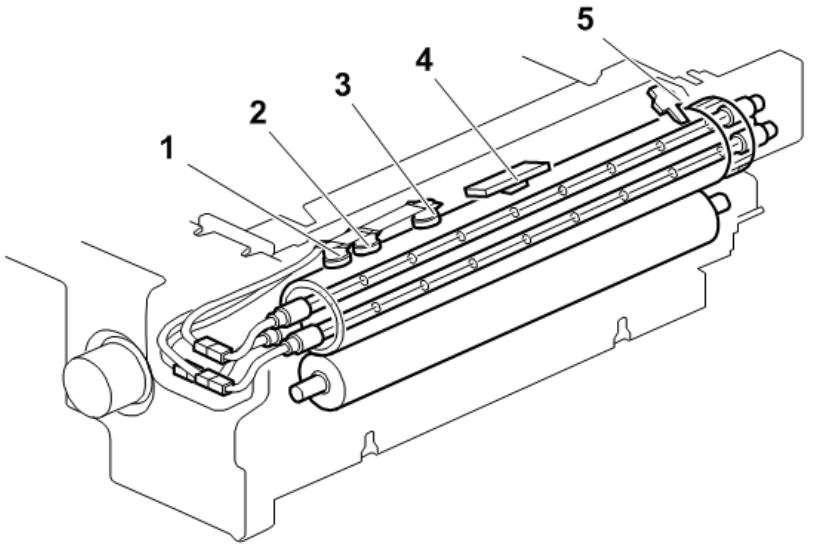


d223d7302

No.	Part Name
1	Fusing Thermostat (190C)
2	Fusing Thermostat (193C)
3	Fusing Center Thermistor (Non-Contact Sensor)
4	Fusing End Thermistor (Contact)

D223/D224

- The surface of the hot roller coating is thin (0.7 mm) so it can reach standby temperature within 10 sec. of startup.
- The pressure roller surface is a soft, pliable bubble like material that creates a nip of optimal width.



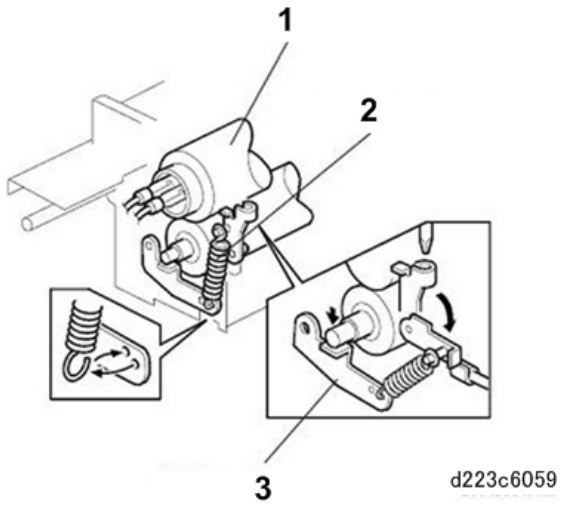
d223d7301

No.	Part Name
1	Fusing Thermostat (192C)
2	Fusing Thermostat (200C)
3	Fusing Thermostat (192C)
4	Fusing Center Thermistor (Non-Contact Sensor)
5	Fusing End Thermistor (Contact)

Fusing Pressure Mechanism

Large springs apply pressure to the front and rear ends of the pressure roller to create the fusing pressure between pressure roller and hot roller.

- The springs are attached to the pressure arms below both ends of the pressure roller, pulling the pressure roller up against the hot roller.
- The pressure exerted by the pressure roller can be released easily in order to service the fusing unit.
- There are two holes on each pressure arm, and normally the springs should be attached to the lower holes, but the ends of the springs can be set in the upper holes for printing on extremely thin paper.

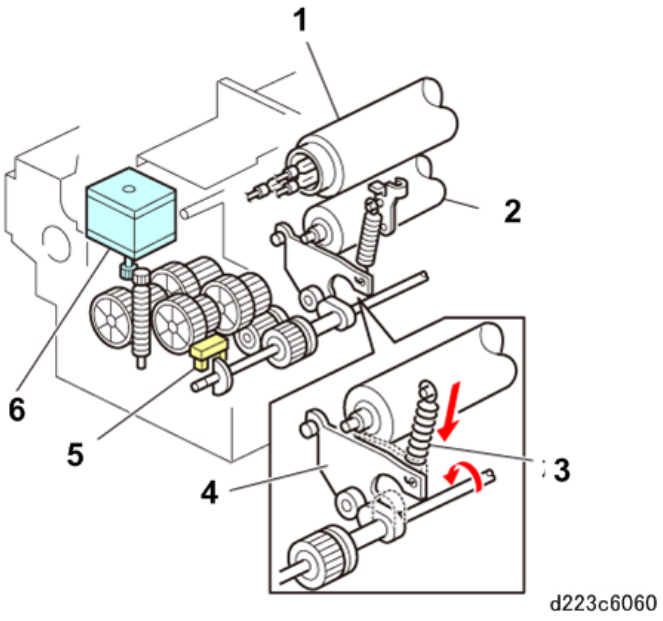


No.	Name
1	Hot Roller
2	Pressure Roller
3	Pressure Arm

Pressure Application (D223/D224 Only)

This mechanism ensures that the shape of the pressure roller does not become distorted:

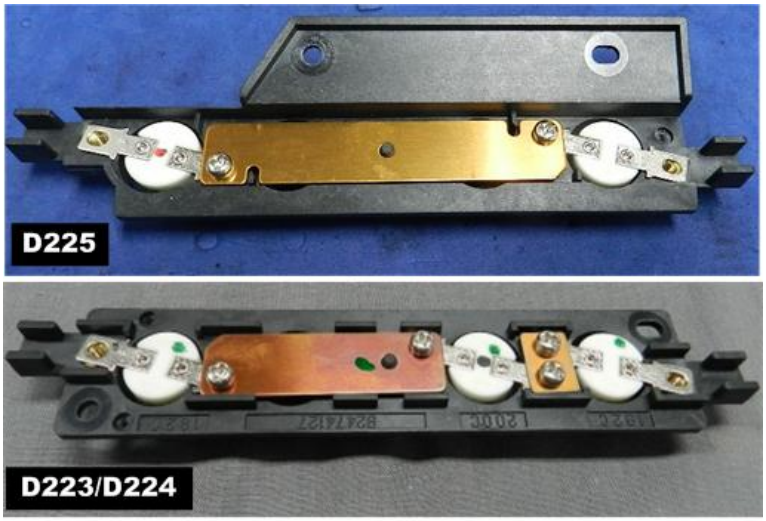
- At power on, the pressure roller HP sensor activates and keeps the pressure roller at rest away from the surface of the hot roller.
- At the start of a job, the pressure roller moves up against the hot roller.
- After the last sheet exits at the end of a job, the pressure roller pulls away from the hot roller.
- If there is no next job, the pressure roller remains away from the hot roller.
- If a paper jam or SC error occurs during a job, the hot roller and pressure roller stop, and then the pressure roller pulls away from the hot roller.



No.	Name
1	Hot Roller
2	Pressure Roller
3	Pressure Roller Spring
4	Pressure Arm
5	Fusing Pressure Release Sensor
6	Fusing Pressure Release Motor

Fusing Safety Devices

The fusing units are provided with thermostats that trip the power supply to the fusing unit if the unit overheats. Always pay attention to the placement of thermostats when they are replaced. The D225 has two thermostats, and the D223/D224 has three thermostats.

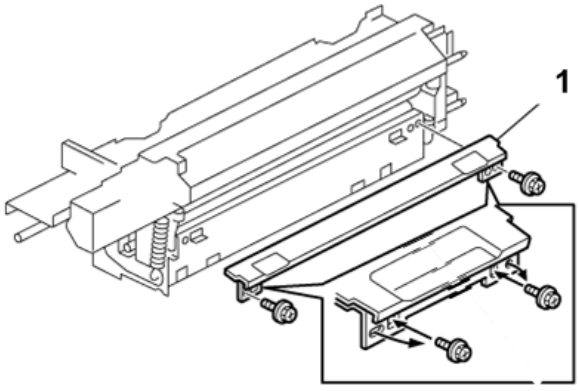


d223c3335

Entrance Guide Height Adjustment

The height of the entrance guide can be adjusted with screws.

- Remove the screws and move them to the inner holes to lower the guide for paper smaller than A4 or thin paper that wrinkles easily.
- For sheets larger than A4 that wrinkles easily, move the screws to the outer positions.
- The screws are set at the outer holes before the machine leaves the factory (default positions).

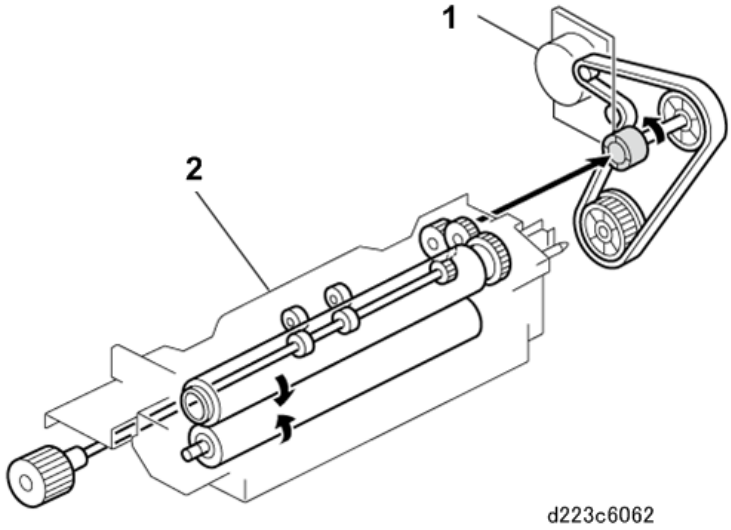


d223c6061

No.	Name
1	Entrance Guide

Fusing Drive Mechanism

The fusing exit motor drives the drive belt that rotates the fusing unit drive coupling.
This coupling on the rear end of the fusing unit engages automatically when the unit is pushed into the machine.



No.	Name
1	Fusing Exit Motor
2	Fusing Unit

Temperature Control for Special Paper

The method of fusing temperature control for special paper is determined by the type of paper (OHP, thick paper, etc.) selected on the operation panel by the operator.

- For OHP sheets fed from the bypass tray, the initial setting is 210°C, and 220°C for Thick Paper. This can be adjusted with **SP1105-001**.
- CPM Down Mode (CPM=Copies per Minute) adjusts the speed for Thick Paper in long print jobs. The fusing temperate for CPM Down Mode can be adjusted with **SP1901-001**.

Fusing Temperature Control

When the machine is switched on, the fusing lamps are switched on and off to heat the hot roller (on/off control). During printing or copying, however, the hot roller is heated using phase control.

- Copying/printing will be possible within 30 sec. as soon as an ambient temperature of 15°C (59°F) or higher is detected, but at less than 15°C it will take 20 sec. for the D225 to reach standby temperature and 300 sec. for the D223/D225.
- These temperature readings are done by the temperature/humidity sensor located in the center of the machine, near the laser unit.

CPM Down Mode

At low ambient temperature (less than 15°C (59°F)):

- CPM is reduced 80% (Example: 65 CPM to 52 CPM)
- CPM is restored to 100% when hot roller temperature rises to 160°C +3°C.

At temperature below 165°C during a job at normal ambient temperature:

- CPM is reduced 80% (Example: 65 CPM to 52 CPM)
- CPM is restored to 100% when hot roller temperature rises to 160°C +3°C.

Important Related SP Codes

To Reduce Back Side Paper Curl During Duplex Printing

- **SP1102-001** Fusing Temperature Adjustment - Duplex Actual Temperature (Default: None). The temperature for fusing control is calculated based on the values of **SP1102-2** (Center) and **SP1102-002** (End) in order to reduce back curl (paper curl toward back side of the paper).

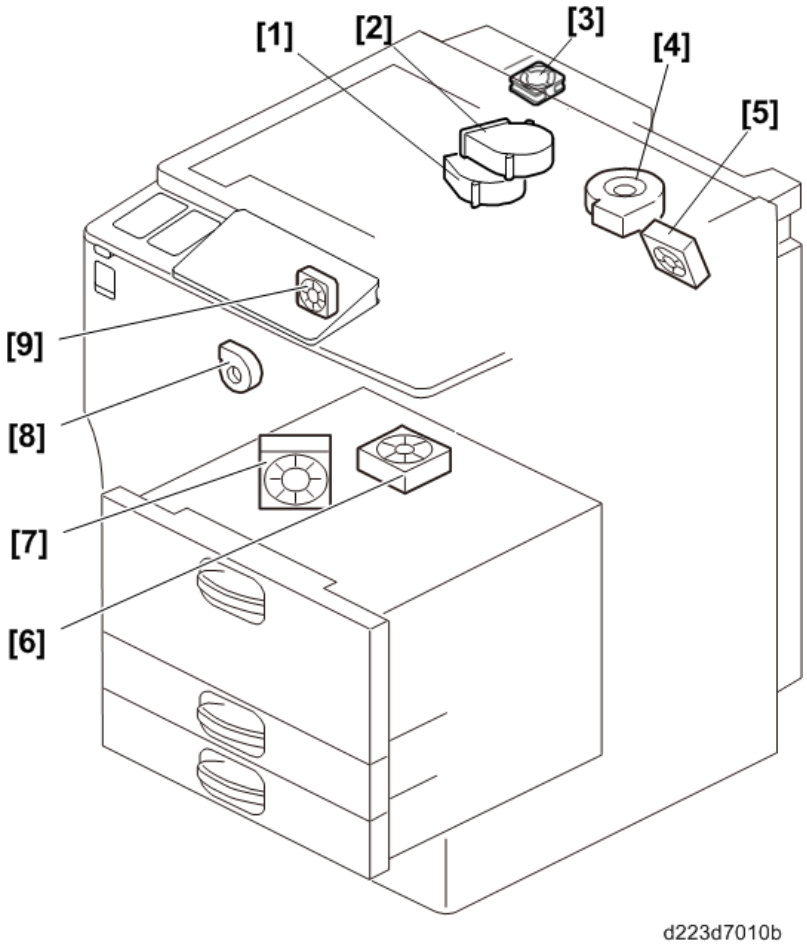
To Improve Fusibility

- **SP1901-001** CPM Down Setting for Special Paper - Thick Paper 1, 2 (Default: 40 cpm)
- **SP1901-005** CPM Down Setting for Special paper - Thick Paper 3 or More (Default: 40 cpm). If fusibility is low, CPM can be lowered to 35 or 25. At this time **SP1907-001** (Thick Paper 1, 2) or **SP1907-009** (Thick Paper 3 or More), the "Pre-Fusing Idling Time" setting can be switched on to improve fusibility. However, this setting increases the amount of time to reach standby temperature and will slow down the line speed.
- **SP1901-002** CPM Down Setting for Special Paper - Tab Sheet (Default: 25 cpm). Turning "Pre-Fusing Idling Time" on can significantly improve fusibility.
- **SP1901-003** CPM Down Setting for Special Paper - Label CPM (Default: 25 cpm). Turning "Pre-Fusing Idling Time" of **SP1907-007** on can also significantly improve fusibility.
- **SP1925-001 to 004** Idling Setting (001 Medium Thick "On", 002 Thick "Off", 003 Normal 1 "Off", 004 Normal 2 "Off"). The pre-fusing idling time done immediately after the machine is turned on at the start of the work day can improve fusibility. The machine enters fusing idling mode if the center thermistor returns a reading lower than 60°C (140°F) at startup. If the reading is more than 60°C, pre-fusing idling is not done. However, the maximum wait is 60 sec.

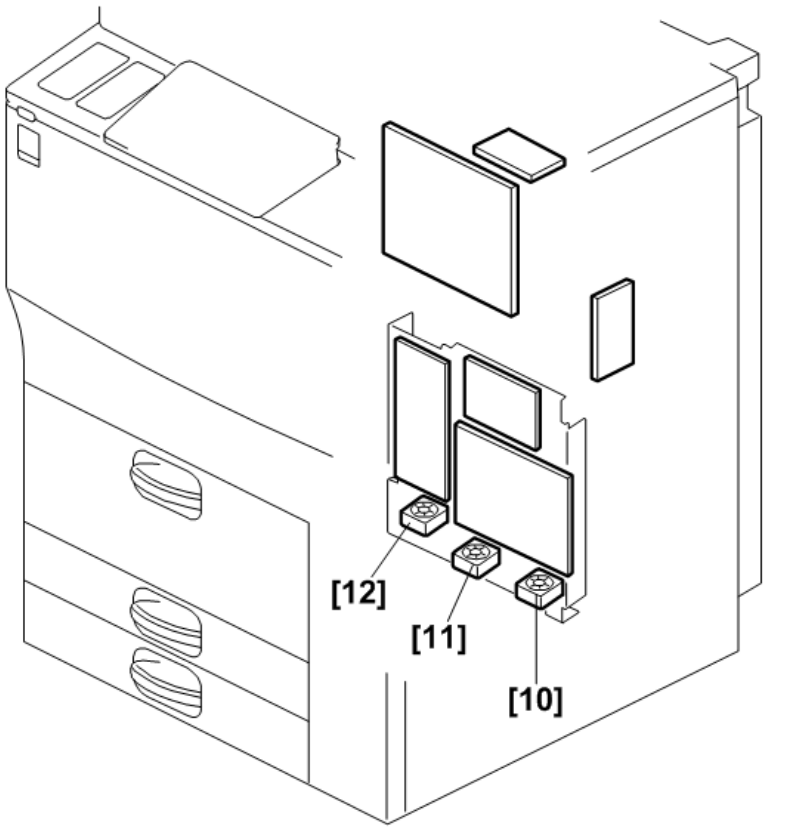
5.4.7 TEMPERATURE SENSOR FAN CONTROL

The readings of a new temperature center mounted near the center of the machine are used to control the cooling fans and operation of the machine. Also, these temperature readings are used to control the speed of rotation of the main intake fan, main exhaust fan, and heat exhaust fan.

Fans Controlled by Temperature Sensor

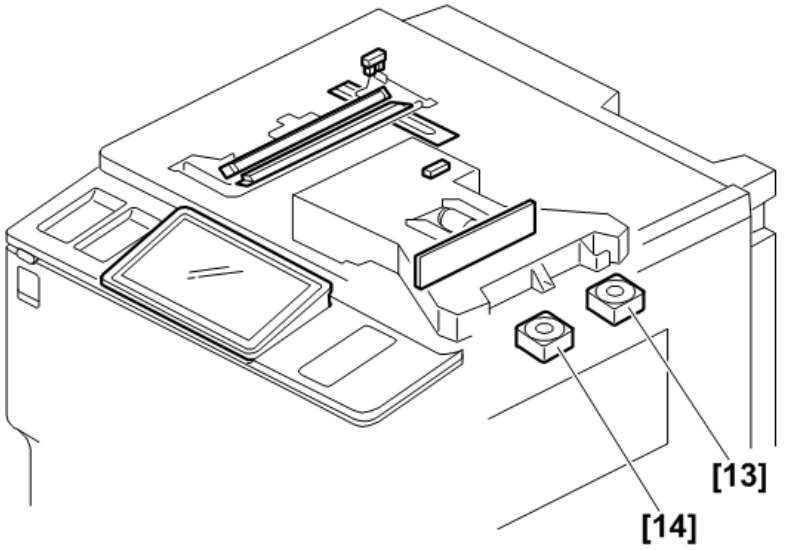


No.	Part	No.	Part
1	Heat Exhaust Fan	6	Duplex Fan
2	Main Exhaust Fan	7	PCU Fan
3	Controller Fan	8	Fusing Inner Cover Fan
4	Main Intake Fan	9	Toner Bottle Fan
5	Drum Fan		



d223d7007a

No.	Part
10	PSU Fan 1
11	PSU Fan 2
12	AC Drive Board Fan



No.	Part
13	Development Unit Fan 1
14	Development Unit Fan 2

Fan Speed Control by Temperature Sensor

Main Exhaust Fan

Critical Temp.	Operation Parameters (SP Codes)
Up to 20°C (68°F)	SP1956-001 Exhaust Fan Duty Adj. Silent [0 to 100/**20**/1%]
20°C to 35°C (68°F to 95°F)	SP1956-002 Exhaust Fan Duty Adj. Low Speed [0 to 100/**20**/1%]
35°C to 37°C (95°F to 98.6°F)	SP1956-003 Exhaust Fan Duty Adj. Mid Speed [0 to 100/**20**/1%]
Above 37°C (98.6°F)	SP1956-004 Exhaust Fan Duty Adj. High Speed [0 to 100/**20**/1%]
Print Status	SP1956-005 Exhaust Fan Duty Adj. Printing [0 to 100/**35**/1%]

Main Intake Fan

Critical Temp.	Operation Parameters (SP Codes)
Up to 20°C (68°F)	SP1957-001 Intake Fan Duty Adj. Silent [0 to 100/**30**/1%]
20°C to 35°C (68°F to 95°F)	SP1957-002 Intake Fan Duty Adj. Low Speed [0 to 100/**50**/1%]
35°C to 37°C (95°F to 98.6°F)	SP1957-003 Intake Fan Duty Adj. Mid Speed [0 to 100/**60**/1%]
Above 37°C (98.6°F)	SP1957-004 Intake Fan Duty Adj. High Speed [0 to 100/**70**/1%]

Heat Exhaust Fan

Critical Temp.	Operation Parameters (SP Codes)
Up to 20°C (68°F)	SP1958-001 Heat Exhaust Fan Duty Adj. Silent [0 to 100/**30**/1%]
20°C to 35°C (68°F to 95°F)	SP1958-002 Heat Exhaust Fan Duty Adj. Low Speed [0 to 100/**30**/1%]
35°C to 37°C (95°F to 98.6°F)	SP1958-003 Heat Exhaust Fan Duty Adj. Mid Speed [0 to 100/**40**/1%]
Above 37°C (98.6°F)	SP1958-004 Heat Exhaust Fan Duty Adj. High Speed [0 to 100/**45**/1%]

Relate SP Codes

SP	Name, Function	Settings
2972-001	Toner Bottle Fan Setting – Force Operation Switches toner bottle fan control off/on	[0 to 1/**0**/1 Step] 0: Operates fan based on engine operation and temperature sensor readings. 1: Fan always operates regardless of machine mode when it would normally be off (standby, low power mode, etc.)
2974-001	Drum Fan Setting – Force Operation Switches drum fan control off/on	0 to 1/**0**/1 Step] 0: Operates fan based on engine operation and temperature sensor readings. 1: Fan always operates regardless of machine mode when it would normally be off (standby, low power mode, etc.)
2976-001	Development Unit Fan 1, 2 – Force Operation Switches development unit fan control off/on.	0 to 1/**0**/1 Step] 0: Operates fans based on engine operation and temperature sensor readings. 1: Fans always operates regardless of machine mode when they would normally be off (standby, low power mode, etc.)
2978-001	Fan Time Extension Setting Extends fan operation time at job end.	[0 to 255/**0**/1 min.] Fans normally turn off at job end, but the length time the fans remain on after job end can be extended with this SP.
9540-001	Temperature Control Switch Setting – Sensor Detection DFU (for Design and Factory Use only). Normally not adjusted in the field.	[0 to 4/0/1] Sets fans to always operate within a fixed temperature ranged, defined by the operator. 0: Normal 1: Up to x°C 2: x°C to y°C 3: y°C to z°C 4: Above z°C

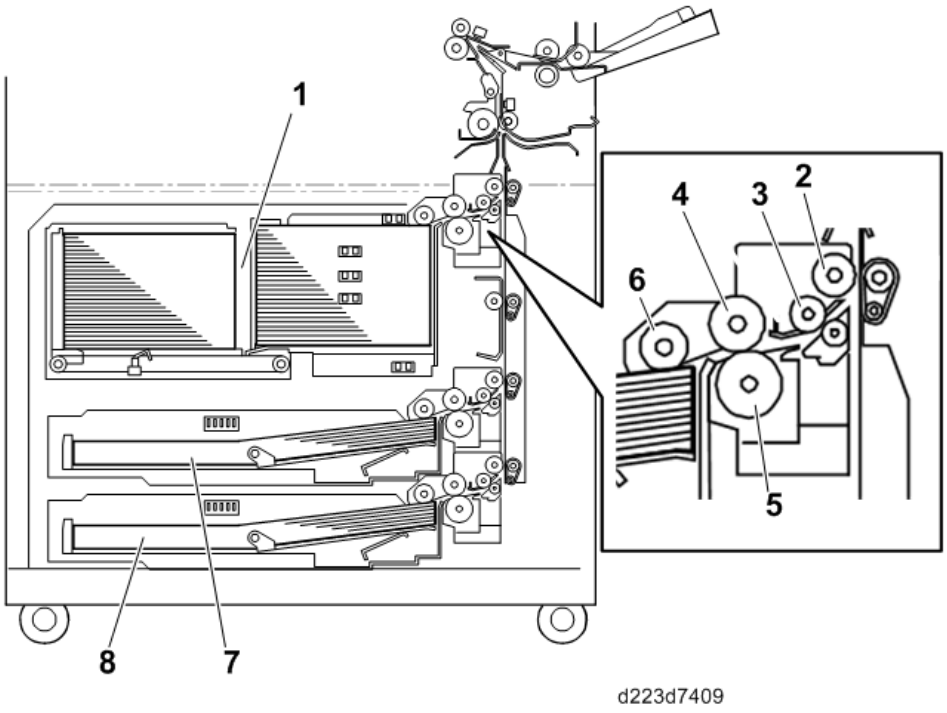
5.5 PAPER TRANSPORT

5.5.1 PAPER FEED UNITS (PFU)

Overview

Each paper bank has an independent, identical paper feed unit (PFU). The universal paper trays also have identical components.

- The PFUs are also provided with two grip rollers for handling thick paper.
- The bypass paper feed unit also employs the FRR (Feed and Reverse Roller) paper feed mechanism.



No.	Name	No.	Name
1	Tray 1 (Tandem Tray)	5	Separation Roller
2	Grip Roller	6	Pick-up Roller
3	Lower Grip Roller	7	Tray 2 (Universal Tray)
4	Feed Roller	8	Tray 3 (Universal Tray)

Summary of the PFU mechanisms and features.

Paper Bank

- **Paper Separation and Feed**. The FRR system employs a maintenance free, nip release torque limiter in the separation roller. Driven by the feed motor.
- **Tray Movement**. A lift motor raises and lowers the bottom plate. Pulling out a paper tray disengages a coupling at the back of the tray and this lowers the bottom tray automatically.
- **Paper Stack Height Detection**. The lift motor can detect paper near-end and trigger a paper near-end alert.
- **Paper End Detection**. A reflective photo-interrupter sensor detects paper end (paper out).
- **Paper Size Detection**. For Tray 1 (tandem tray) SP5959-001 must be set for the size of the paper loaded in the tray. The universal trays have actuators connected to the side fences that will activate switches in a 5-switch array, indicating the size of the loaded paper.
- **Vertical Paper Feed**. Each PFU has a grip roller that pulls the paper fed out of the tray by the feed roller and sends it into the vertical paper path.
- **Tray Set Mechanism**. Each tray locks in place automatically when pushed into the machine.
- **Anti-Condensation**. Two paper bank heaters are provided as standard equipment with the machine.
- **Tandem Tray**. The left tray of Tray 1 has a mechanism that can move a stack of paper into the right tray.

Bypass Feed

- **Bypass Feed Tray**. The bypass feed tray which can be opened and closed against the right side of the machine can hold up to 100 sheets of paper.
- **Paper Separation and Feed and Separation**. A maintenance free torque limiter (slip clutch) is employed in an FRR (Feed and Reverse Roller) system. Driven by bypass feed motor and bypass feed clutch.
- **Paper End Detection**. A drop feeler and photo-interrupt sensor comprise the paper end detection mechanism.
- **Paper Size Detection**. Side fences set against the side of the stack detect paper size. A new paper length sensor detects paper length as it feeds.

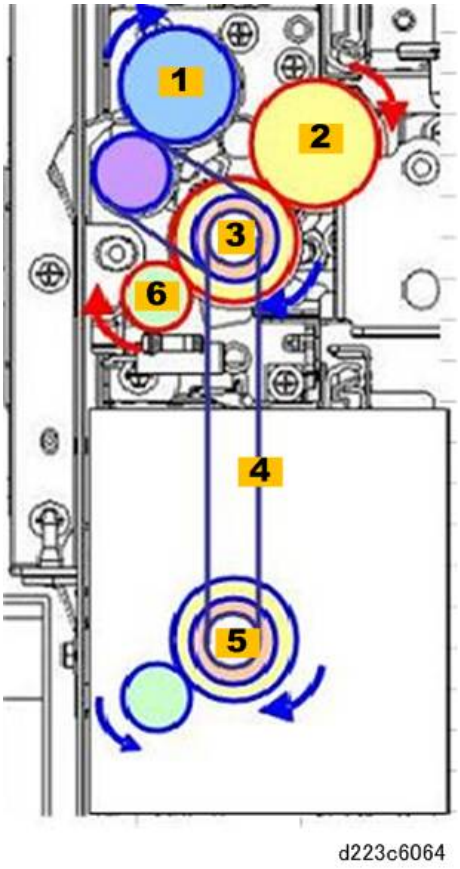
Paper Registration and Transport

- **Registration and Transport Mechanism**. Paper from each of four paper feed stations (paper banks, bypass feed tray, duplex unit, LCIT) is guided to the same paper registration unit. In order to make it easier to remove paper jams, jammed sheets can be removed from the area between the registration rollers and the entrance to the duplex unit.
- **Paper Dust Collection**. A mylar sheet extends below the registration roller to collect paper dust.
- **Paper Transport Drive Layout**. Each PFU is equipped with its own paper feed motor (DC motor).

5.5.2 TRAY PAPER FEED DRIVE

Paper Feed From Tray 1

- There are two paper feed motors in Tray 1 (tandem tray).
- In Tray 1 and Tray 2, both motors work together when feeding from either tray.
- This change was implemented to provide more drive power during paper feed.



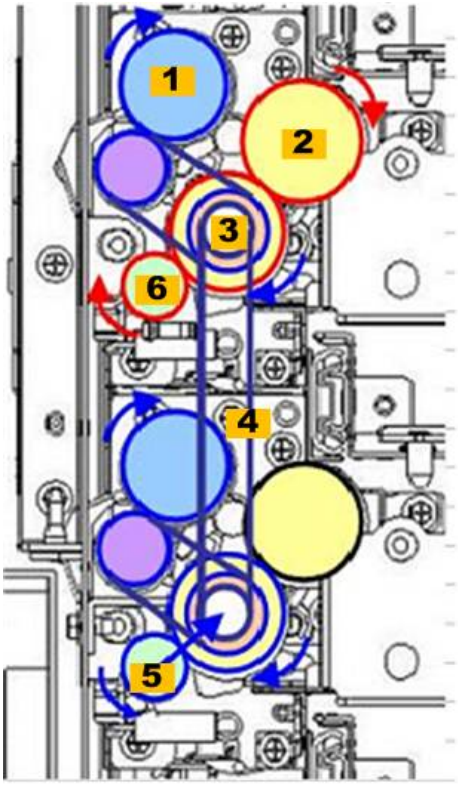
Tray 1 (Rear View)

No.	Part
1	Tray 1 Grip Roller
2	Tray 1 Feed Roller
3	Tray 1 Reverse Roller
4	Belt
5	Tray 1 Lower Motor
6	Tray 1 Upper Motor

Tray 1 Paper Feed

- The upper motor turns clockwise and rotates the pick-up and feed rollers.
- The reverse roller does not turn at this time because it has a one-way clutch.
- The lower motor turns counter-clockwise, and the belt drives the grip roller and reverse roller.

Paper Feed From Tray 2



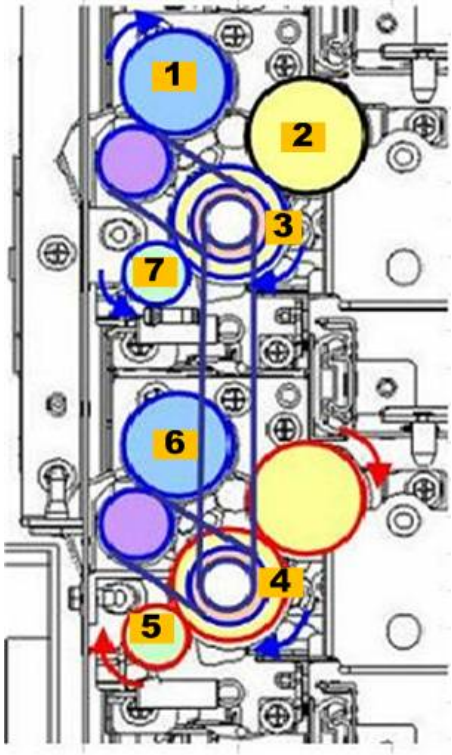
Tray 2, Tray 3 (Rear View)

No.	Part
1	Tray 2 Grip Roller
2	Tray 2 Feed Roller
3	Tray 2 Reverse Roller
4	Belt
5	Tray 3 Motor
6	Tray 2 Motor

Tray 2 Paper Feed

- Tray 2 motor turns clockwise and rotates the pick-up and feed rollers.
- The reverse roller does not turn at this time because it has a one-way clutch.
- Tray 3 motor turns counterclockwise, and the belt drives the grip roller and reverse rollers in Tray 2.

Paper Feed From Tray 3



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Tray 1 (Rear View)

No.	Part
1	Tray 2 Grip Roller
2	Tray 2 Feed Roller
3	Tray 2 Reverse Roller
4	Tray 3 Reverse Roller
5	Tray 3 Motor
6	Tray 3 Grip Roller
7	Tray 2 Motor

Tray 3 Paper Feed

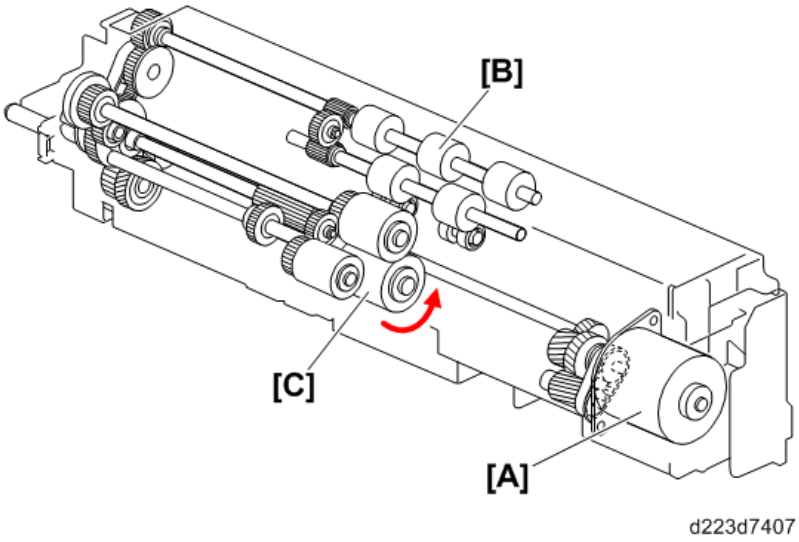
- Tray 3 motor turns clockwise and rotates the pick-up and feed rollers.
- The reverse roller does not turn at this time because it has a one-way clutch.
- Tray 2 motor turns counterclockwise, and the belt drives the grip roller and reverse rollers in Tray 2 and Tray 3.
- The grip roller in Tray 2 must rotate in order to feed the paper up from Tray 3 into the machine.

5.5.3 PFU AND TRAY DETAILS

Paper Feed and Separation

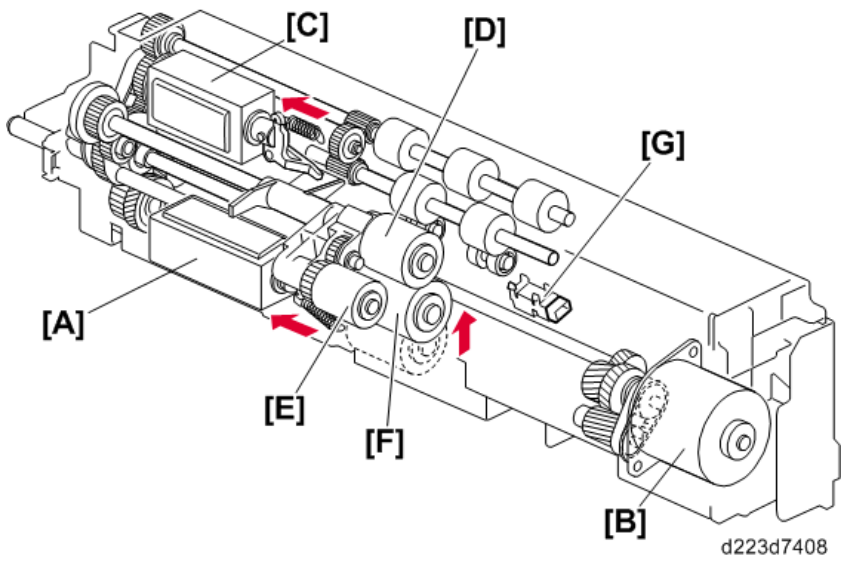
During Standby

- The adjacent feed motor [A] rotates, grip roller [B] also rotates, and the shaft of separation roller [C] rotates in the direction of the arrow.
- The reverse roller rotates freely in either direction because the separation solenoid is off.



Paper Feed and Separation

- Separation solenoid [A] turns on, and then the adjacent feed motor [B] turns on. Next, pick-up solenoid [C] turns on, and at the same time, the PFU feed motor turns on. The shaft of feed roller [D] rotates, and the feed roller turns with the rotation of the one-way clutch. Next, pick-up roller [E] (driven by relay gears) feeds the first sheet from the top of the stack.
- Separation roller [F], with its internal torque limiter that allows the roller to rotate in either direction depending on the coefficient of friction with the paper above, also rotates with the feed roller.
- If two or more sheets of paper feed at the same time the extra friction will lock the torque limiter and reverse the direction of rotation of the separation roller, and then force the lower sheets back into the tray.
- Next, feed sensor [G] (a reflective sensor) detects the paper, the pick-up solenoid turns off, and the pick-up roller lifts and releases the paper. The paper is then fed to the registration unit.

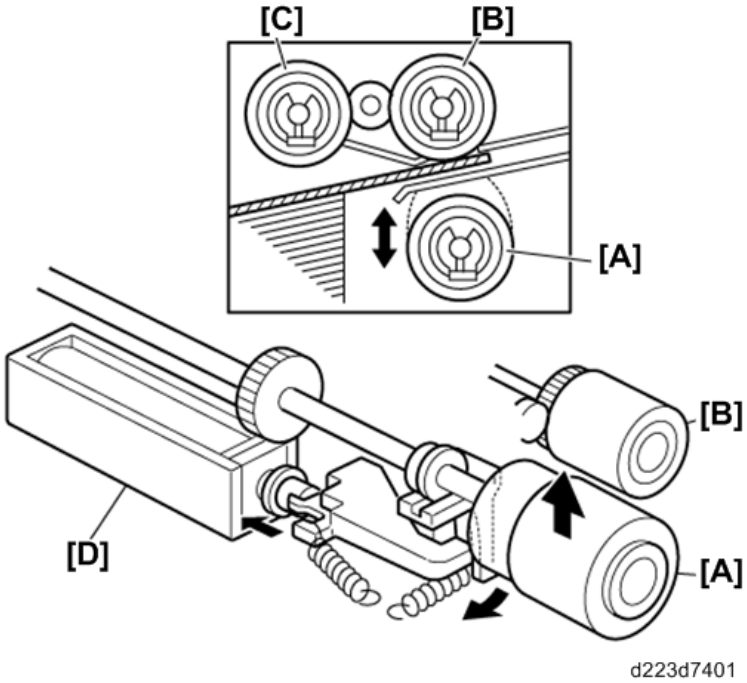


- The table below shows the rotation of each roller when the feed motor is rotating forward or reverse.

Name	Forward	Reverse
Pick-up Roller	Rotate	Stop
Feed Roller	Rotate	Stop
Separation Roller	Stop	Rotate
Grip Roller	Stop	Rotate
Lower Grip Roller	Stop	Rotate

Separation Roller Release

When the machine is idle, the separation roller [A] and feed roller [B] are separated, but during paper feed the separation roller [C] is pushed up by the separation roller solenoid [D] against the feed roller.



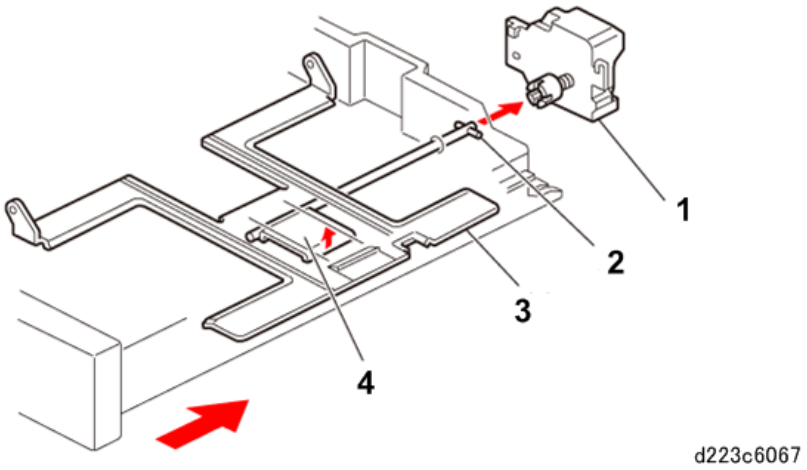
These mechanisms have the following advantages:

- Pressure is on the separation roller only when the feed station is selected for paper feed, so this reduces wear on the rollers and extends their service lives.
- Paper is easier to remove from separated rollers if a paper jam occurs.

Tray Raising and Lowering

The tray lift motor behind the tray is coupled by a socket and pin to the arm of a bottom plate that holds the stack. The stack is raised and lowered when the motor operates.

- This mechanism raises and lowers the bottom tray and the paper stack. The socket and pin of the coupling and the plate lift arm automatically disengage and engage again smoothly when the paper tray is opened and closed.
- The rotation angle of the tray lift motor is adjusted for the amount of paper remaining in the tray.

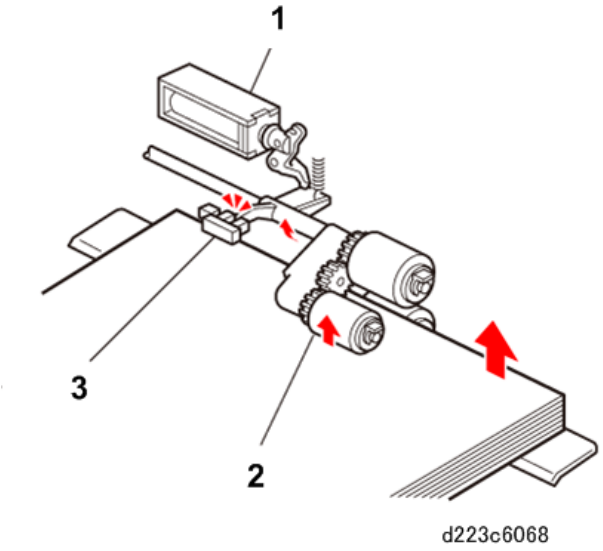


No.	Name
1	Bottom Plate Lift Motor
2	Plate Lift Arm Shaft
3	Bottom Plate
4	Plate Lift Arm

Tray Upper Limit Detection

As soon as the tray is closed, the pick-up solenoid turns on and lowers the pick-up roller.

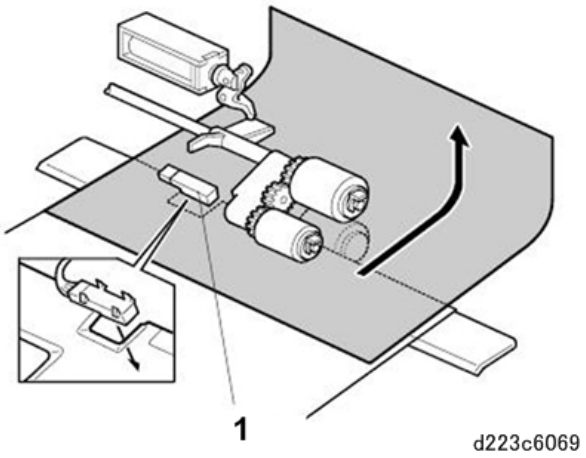
- At this time the tray lift motor lifts the tray, and the top of the stack raises the pick-up roller until the actuator on the pick-up roller arm activates the tray lift sensor which turns off the lift motor.
- Next, in order to verify that the top of the stack is at the feed position, the lift motor reverses, the tray lift sensor deactivates, the motor turns forward, this activates the lift sensor, and then this stops the motor.
- Once printing begins, the pick-up roller arm gradually descends as more and more paper leaves the tray. When the arm is low enough the actuator deactivates the sensor, which turns on the tray lift motor, and this raises the bottom plate and the paper stack.



No.	Name
1	Pick-up Solenoid
2	Pick-up Roller
3	Lift Sensor

Paper End Detection

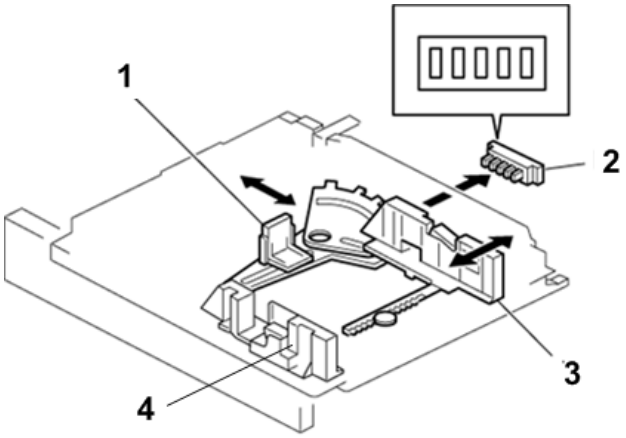
A reflective sensor below bottom plate activates and signals paper end when the last sheet leaves the tray.



No.	Name
1	Paper End Sensor

Paper Size Detection

- **Tandem Tray (Fixed Tray).** Side fences are adjusted to the size of the paper (A4 or LT), and then the selected paper size must be input with SP5959-001.
- **Universal Trays**. The operator can adjust the side fences to the sides of the stack in the tray, and the machine automatically detects the paper size based on the settings of the side fences. An array of 5 switches is used to detect the positions of the end fence and side fence, and the combination of these settings is used to detect the size of the setting that will be displayed for the tray on the operation panel.



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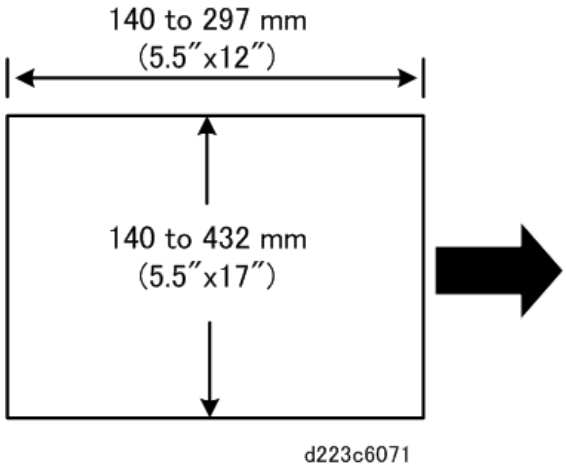
No.	Name
1	Front Side Fence
2	Rear Side Fence Sensor
3	Rear Fence
4	Front Side Fence

0: Switch OFF (Sensor output: H)

1: Switch ON (Sensor output: L)

Paper Size	Feed Edge	Width	A	B	C	D	E
A3	420	297	1	1	0	0	1
B4	364	257	1	0	0	1	1
A4 SEF	297	210	0	1	0	0	1
A4 LEF	210	297	1	1	0	0	0
B5 SEF	257	182	1	0	1	0	1
B5 LEF	182	257	0	0	0	1	1
A5 SEF	210	148	1	1	1	0	1
A5 LEF	148	210	0	1	1	0	1
DLT (11"x17")	431.8	279.4	1	1	1	0	0
LG(8.5"×14")	355.6	215.9	1	0	1	1	0
LT(8.5"×11")	279.4	215.9	1	1	0	1	0
LT LEF	215.9	279.4	0	1	1	0	0
HTL SEF	215.9	139.7	0	1	1	1	0
HLT SEF	139.7	215.9	1	1	1	1	0
F4(8.5"×13")	330.2	215.9	1	1	0	1	1
Folio(8.25"×13")	330.2	209.55	0	1	0	1	1
F4(8"×13")	330.2	203.2	0	1	1	1	1
Executive(7.25"×10.5")SEF	266.7	184.2	1	0	1	0	0
Exective(7.25"×10.5")LEF	184.2	266.7	0	0	1	1	1
8-kai SEF	390	267	0	0	1	1	0
16-kai SEF	267	195	1	0	0	1	0
16-kai LEF	195	267	1	0	1	1	1

Settings for custom paper sizes can also be specified in the User Tools menus. The entered paper sizes are displayed on the operation panel.

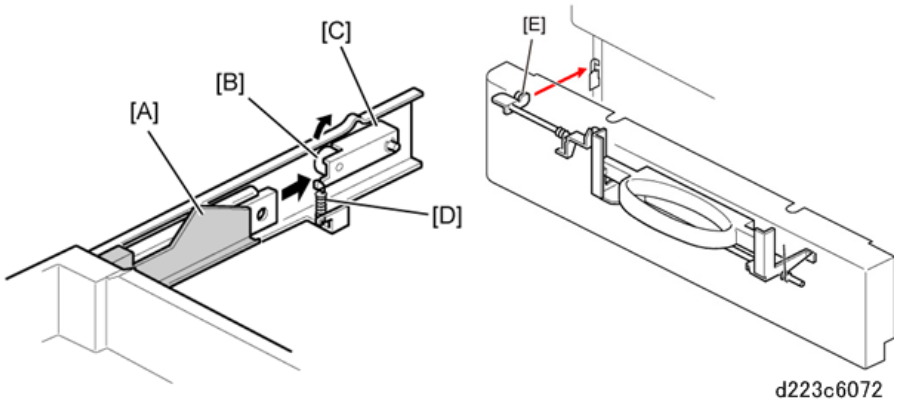


Size	Sensor
A3 SEF	0 1 1 1 1
B4 SEF	0 0 1 1 1
A4 SEF	1 0 0 1 1
A4 LEF	0 1 0 0 1
B5 SEF	0 0 1 0 0
B5 LEF	0 0 0 1 0
A5 SEF	0 0 0 0 1
A5 LEF	1 0 0 0 0
LT LEF	1 1 0 0 0
210x170, x182	1 1 1 0 0
*	1 1 1 1 0

Tray Set Mechanism

To set the position of the tray when the tray is pushed into the machine, a stopper [A] mounted on the bank frame drops behind a lock roller [B] on the tray cover.

- A spring comprises the mechanism that locks the tray lock roller and the lock arm for each tray. Each tray has a rail stopper that prevents the tray from moving.
- When a tray is pushed into the machine, the stopper pushes against the lock roller, and locks the tray once it is pushed in completely.

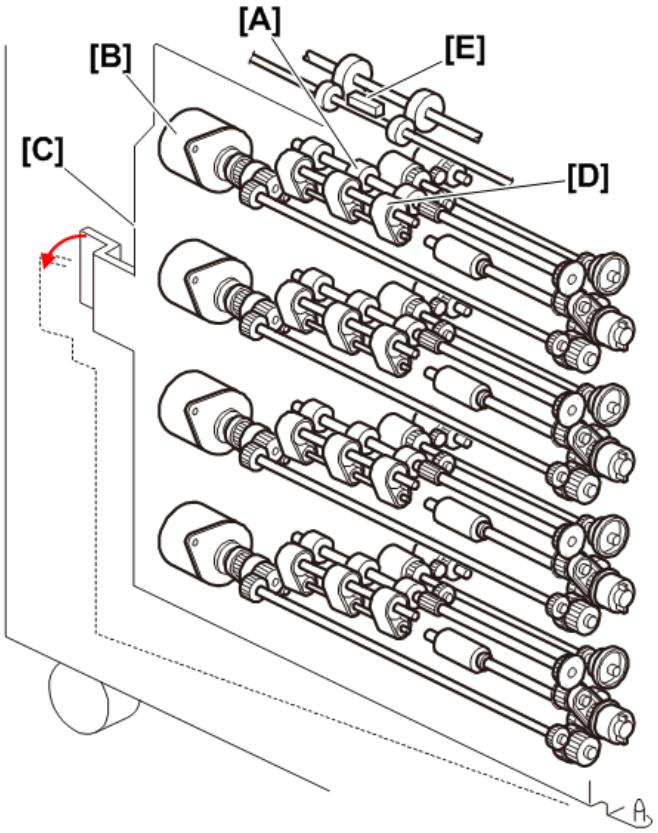


No.	Part Name
[A]	Stopper
[B]	Lock Roller
[C]	Lock Arm
[D]	Pressure Spring
[E]	Stopper Arm

Vertical Paper Feed

Each PFU is provided with a grip roller [A] and these three rollers (one in each PFU) comprise part of the vertical transport paper path.

- The shaft of each grip roller is driven by the paper feed motor [B] of each PFU. This arrangement allows more efficient paper feed (CPM: Copies per Minute) for optimum image development.
- The bank paper feed motors drive the rollers of the vertical transport unit, and the main unit vertical transport drive is provided by the bypass motor.
- Transport guide [C] (held in place by a lock pin) opens and closes the vertical transport feed path.
- Each grip roller is provided with a vertical drive belt [D] held in place by a pressure spring.
- Relay sensor [E] triggers image development and also detects jams at the top of the vertical path.



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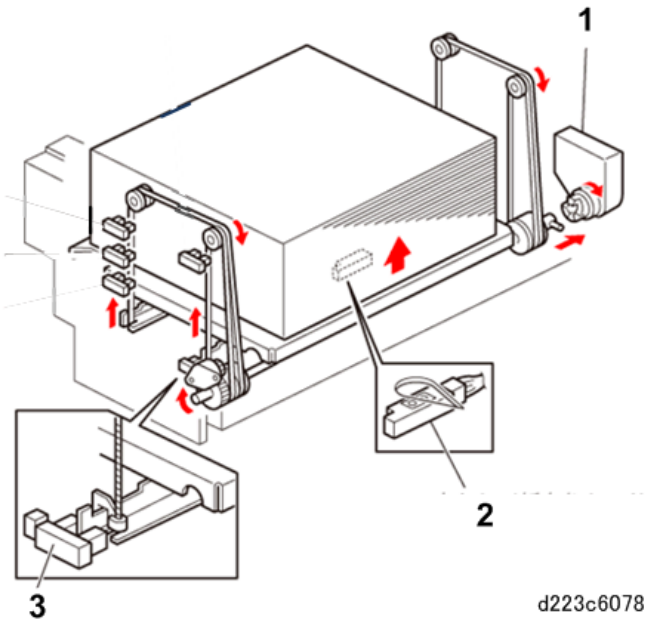
5.5.4 TRAY 1 (TANDEM TRAY)

Paper Size Detection

The tandem tray (Tray 1) has no mechanism to automatically detect paper size, so in order to switch the paper size the service technician must move the rear and front side fences, and then enter the new setting into **SP5959-001**.

Tray Movement Mechanism

- A pin on the end of the tray lift motor drive shaft behind the tray meshes with the coupling on the end of the arm of the bottom tray where the paper sits, and the rotation of the coupled shaft raises the bottom tray and paper stack.
- The rotation of the coupled shaft drives wires on pulleys at the front and rear of the tray raises the bottom tray.
- The pin on the end of the bottom tray lift arm and the socket of the tray lift motor drive shaft disengage easily when the tray is opened, and then the bottom tray descends slowly under its own weight.
- Dampers ensure that the tray descends slowly and quietly and prevent the tray from falling too rapidly.
- The right tray paper sensor (a light reflective sensor) detects the presence of paper in the right tray.
- The capacity of the right tray is 1,550 sheets, and the paper sensor is provided for immediate detection of paper in the right tray to avoid having to raise the bottom plate to detect paper end and wasting several seconds.
- A lower limit sensor is positioned below the bottom tray to detect the lower limit of bottom plate movement.

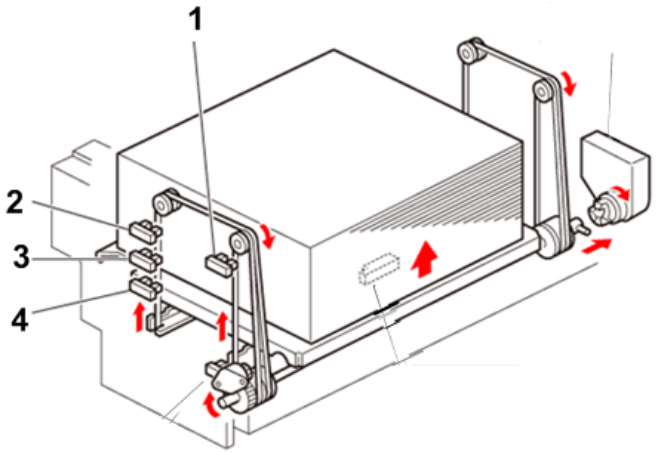


No.	Name
1	Bottom Plate Lift Motor
2	Right Tray Paper Sensor
3	Tray Down Sensor

Paper Height Detection

Three sensors at the front of the right tray detect the amount of paper remaining in the tray.

- Every time the tray lift motor stops, and detects which sensor has been actuated (blocked by the actuator): tray end sensor, sensor 1 (25% remains), sensor 2 (50% remains), sensor 3 (75% remains), and then this reading is displayed on the operation panel.
- If no sensor has been actuated (blocked by the actuator), then the reading is 100%.



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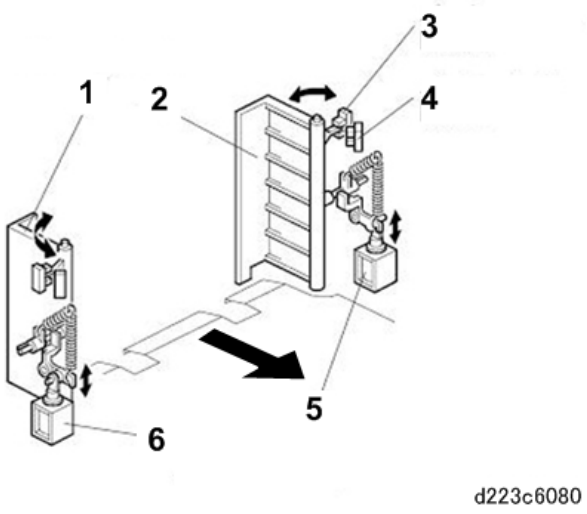
No.	Name
1	Near-end Sensor
2	Paper Height Sensor 1
3	Paper Height Sensor 2
4	Paper Height Sensor 3

Right Tray Fence Movement Mechanism

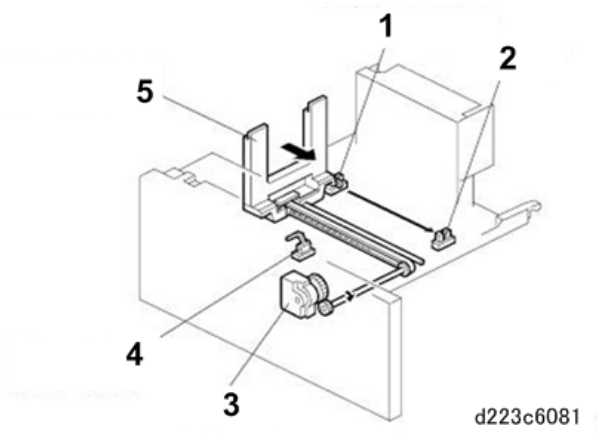
- The tandem tray is equipped with two fence solenoids, one for the front side fence and one for the rear fence.
- When paper runs out in the right tray, the front and rear fence solenoids turn on, open the front and rear fence, and then remain on until the fence open sensor goes on.
- When the paper stack is pushed into the right tray from the left tray, the rear fence return sensor detects the stack now in the right tray, and then switches the fence solenoids off which closes the front side fence and rear side fence.
- The fence closed sensor detects the fences at the closed position, switches on, and then signals that the fences are closed.
- If the fences are not closed, the machine will prompt the operator to manually correct the setting of the stack in right tray.



No.	Name
1	Front Side Fence
2	Rear Side Fence
3	Rear Side Fence Closed Sensor
4	Rear Side Fence Open Sensor
5	Rear Side Fence Solenoid
6	Front Side Fence Solenoid

Left Tray Movement

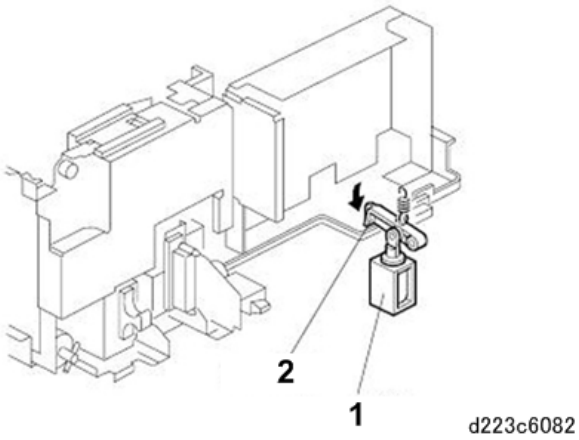
- When left tray paper sensor detects paper in the left tray and the right tray paper end sensor detects paper end, the rear fence motor (DCM) switches on and pushes the rear fence against the stack in the left tray to move it into the right tray.
- When the rear fence return sensor of the left tray detects that the stack is no longer in the left tray it will signal the rear fence motor to reverse rotate (counter-clockwise) and bring the rear fence back to its home position, and then the motor will turn off once the rear fence return sensor detects the rear fence at its home position.
- For the left tray to move paper into the right tray, the left tray paper end sensor must detect 10 sheets of paper or more in the left tray.



No.	Name
1	Rear Side Fence HP Sensor
2	Rear Tray Return Sensor
3	Rear Side Fence Motor
4	Left Tray Paper End Sensor
5	Rear Side Fence

Left Tray Lock Mechanism

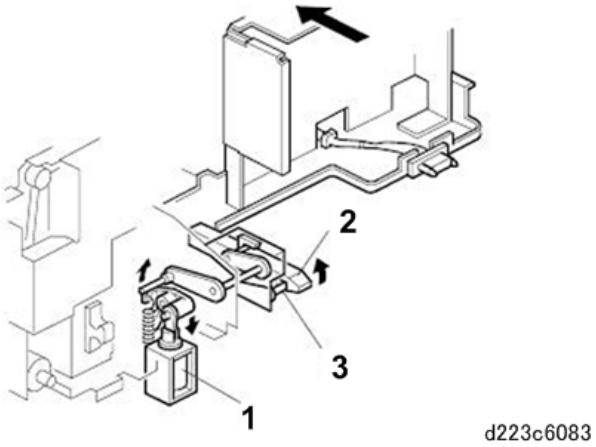
- The left tray is locked and cannot be opened while paper is moving from the left tray into the right tray.
- When the stack in the left tray starts to move into the right tray, the left tray lock solenoid turns on and locks a pawl into the bottom plate of the left tray.
- After the stack has moved into the right tray and the side fence of the left tray has returned to its home position, the left tray lock solenoid goes off and releases the pawl from the bottom of the left tray.
- This mechanism prevents opening the left tray while the stack is moving from left to right.



No.	Name
1	Left Tray Lock Solenoid
2	Lock Pawl

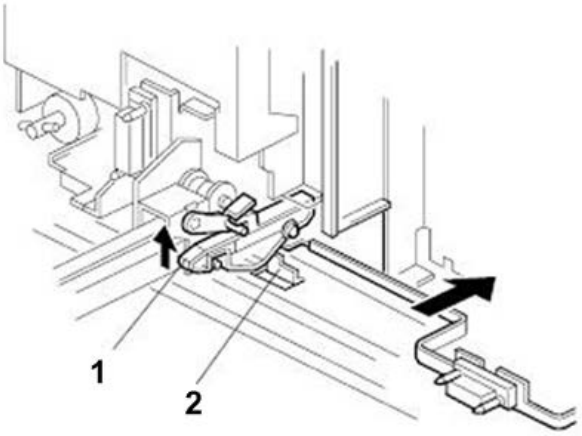
Right Tray Lock Mechanism

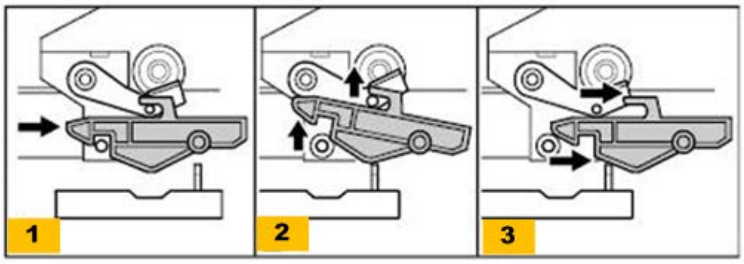
- When the lock release solenoid turns on, a lock lever opens.
- There is a lock lever on the left tray that latches to a shaft in the right tray, and this allows only the left tray to open when Tray 1 drawer is opened.
- While the release lock solenoid is off, the lock lever is engaged with the shaft of the right tray and both trays will come out when Tray 1 is opened.



No.	Name
1	Lock Release Solenoid
2	Lock Lever
3	Shaft

- When Tray 1 is opened completely, the lock lever is pushed up by a bracket and the left and right trays separate. The separation of the trays allows easier loading of paper.





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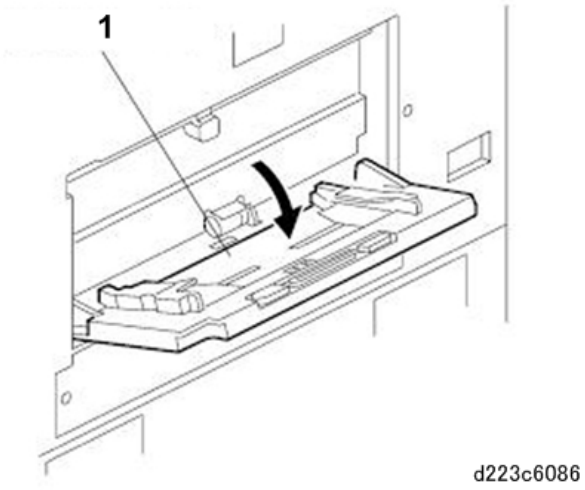
No.	Name
1	Lock Lever
2	Bracket

5.5.5 BYPASS TRAY

Bypass Feed Tray Mechanism

The bypass tray, which opens and closes against the right side of the machine, becomes the selected paper feed station once paper is loaded in the tray. The bypass tray has a capacity of 100 sheets.

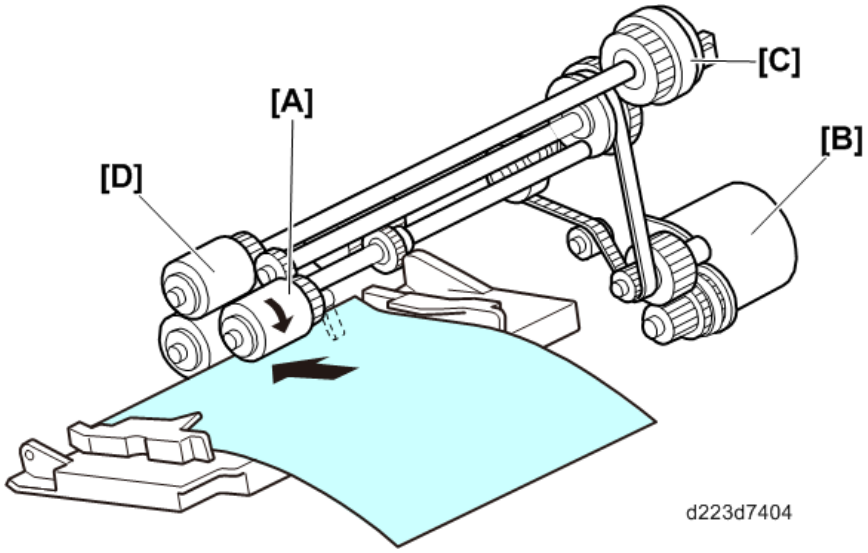


No.	Name
1	Bypass Tray

Bypass Tray Feed and Separation Mechanism

The bypass feed unit uses the same FRR feed mechanisms as those in the PFUs of the main machine.

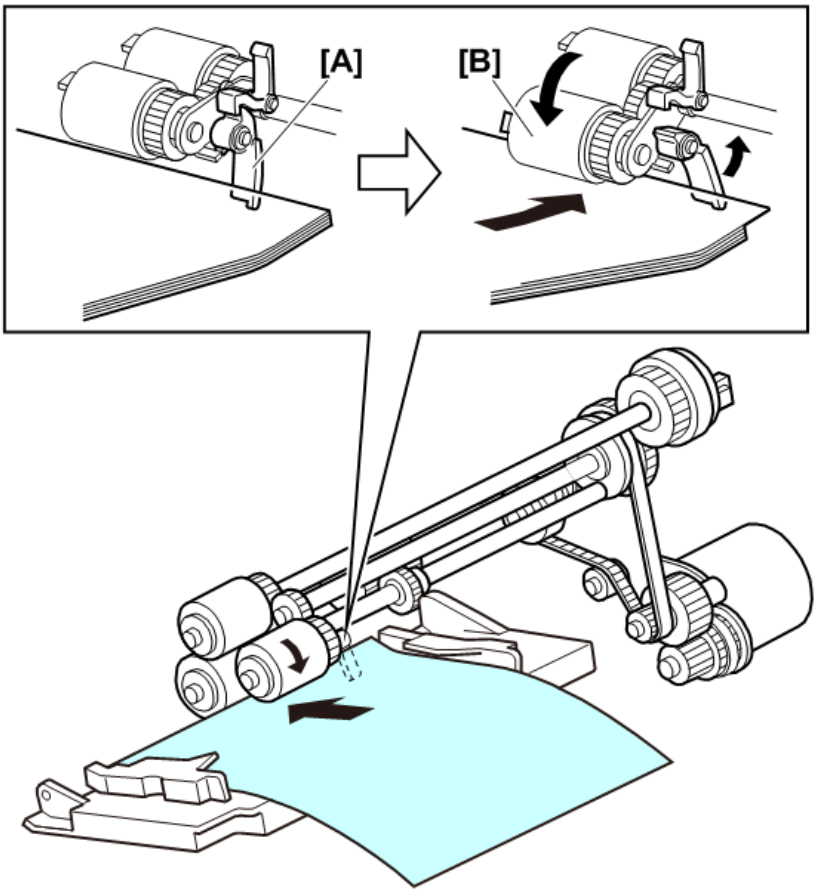
- At the start of a job, the pick-up solenoid turns on and lowers the pick-up roller [A] to the top of the stack.
- Next, the bypass feed motor [B] and bypass feed clutch [C] switch on and paper feed starts.
- The diameter and size of the feed roller [D] is different to prevent it from being installed in the incorrect position (the hubs of the bypass rollers are blue).



Paper Stopper Mechanism

The feed slot of the bypass paper tray is provided with a paper stopper [A] that prevents the paper from sliding into the the bypass unit when it is set on the tray.

- At the start of the job, the pawl of the stopper attached to the arm of the pick-up roller [A] releases when the roller is lowered so the edge of the stack is no longer blocked and can feed.



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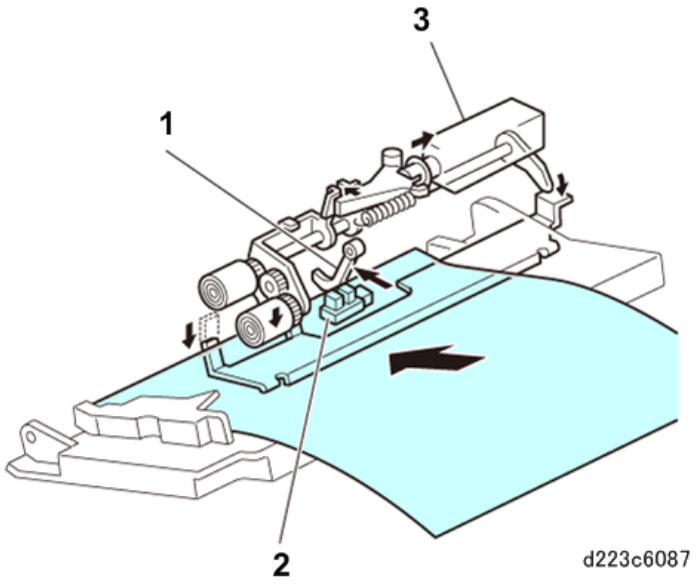
Bypass Tray Paper End Detection Mechanism

- When paper is set in the bypass tray, the top of the stack pushes up the paper feeler that switches on the paper end sensor mounted next to the pick-up roller (this detects paper in the tray).
- After the last sheet of the stack feeds, the feeler drops into a slot in the tray, the paper end sensor goes off and signals paper end.

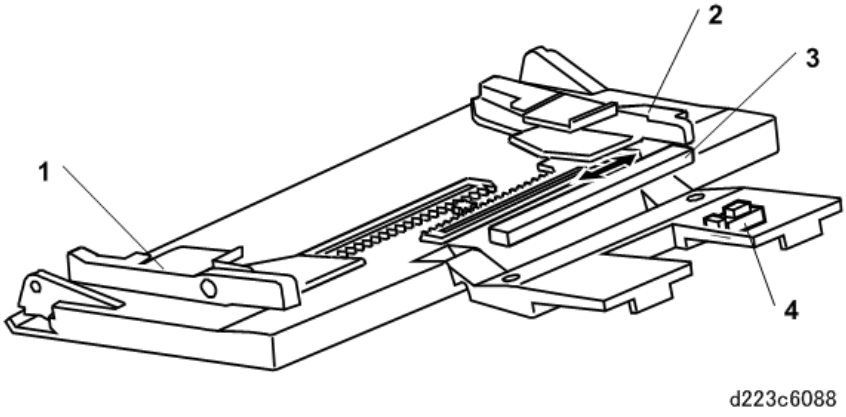


No.	Name
1	Paper Feeler
2	Bypass Paper End Sensor
3	Bypass Pick-up Solenoid

Paper Size Detection

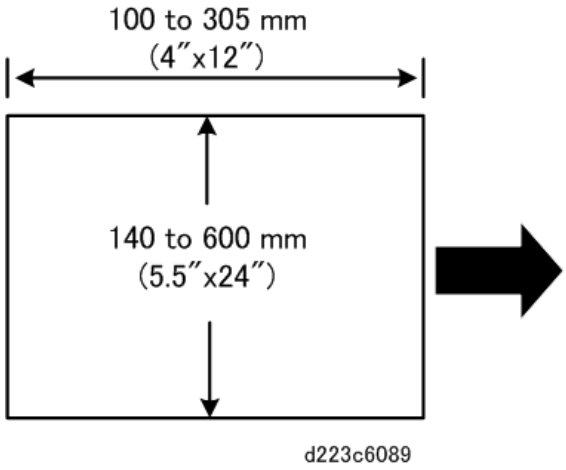
When paper is set in the bypass tray, the operator manually adjusts the front and rear paper guides to the sides of the stack.

- The size guides are attached inside the tray to a rack and pinion mechanism that activates an array of switches registered with the bypass paper width sensor that detects the size of the paper based on the positioning of the paper guides.
- As soon as the first sheet feeds, the paper length sensor starts a pulse count. After the trailing edge of the paper passes over the sensor, the machine can estimate the length of the paper based on the pulse count (amount of time it took for the paper to pass over the sensor).



No.	Name
1	Front Paper Guide
2	Rear Paper Guide
3	Bypass Paper Width Sensor
4	Bypass Paper Length Sensor

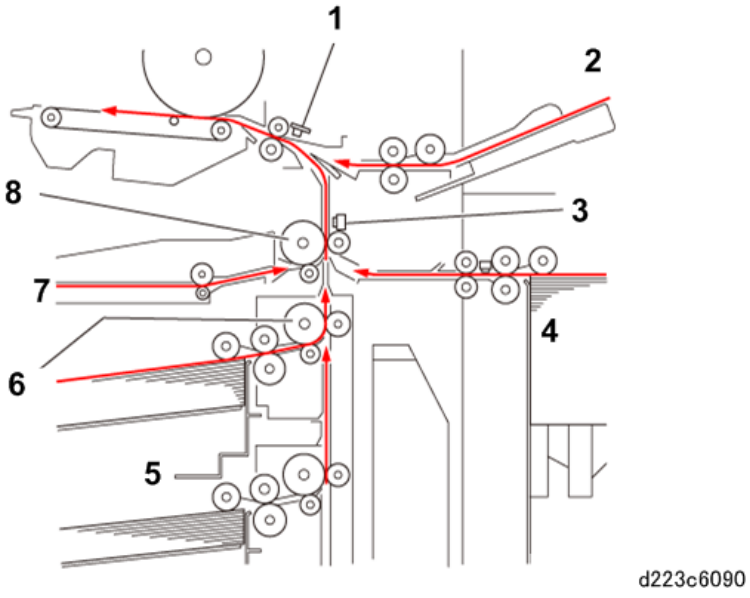
- The operator can also specify custom paper sizes (non-standard) with User Tool settings.



Paper Registration and Transport in Bypass Unit

Every sheet of paper fed into the machine must pass the paper registration rollers.

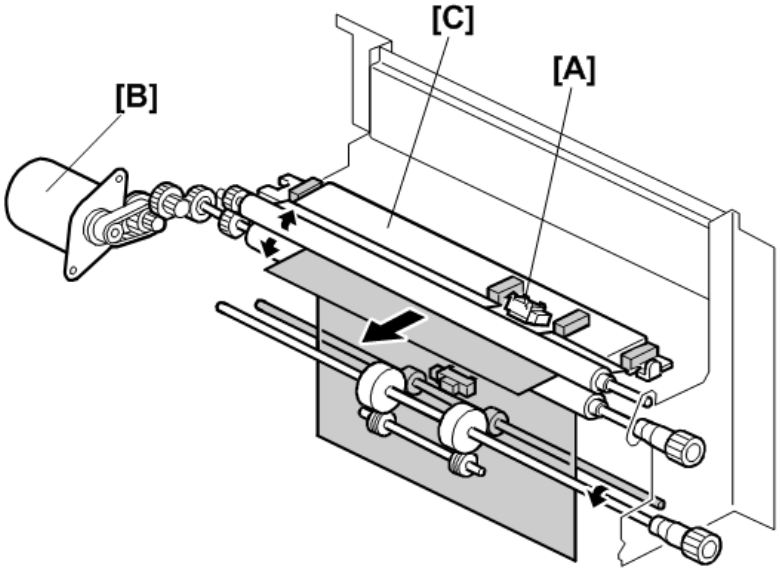
- Paper comes to the paper registration roller from four feed stations.
- All paper fed from the PFUs through the vertical transport path is fed to the registration unit by the upper relay roller.
- Paper fed from the bypass tray (or LCIT option) goes directly to the registration rollers
- Paper from the duplex unit or paper bank is fed from below, into the vertical feed path, and then fed to registration rollers by the relay roller.



No.	Name
1	Registration Sensor
2	Bypass Tray

No.	Name
3	Relay Sensor
4	LCIT (Option)
5	Paper Bank
6	Grip Roller
7	Duplex Unit
8	Upper Relay Roller

- The bypass feed motor switches off when the registration sensor detects the leading edge of the paper, and then the paper is stopped briefly at the registration roller to correct skew.
- Next, registration motor [B] rotates the registration roller so the paper can start moving again in the paper path.
- The machine is equipped with an independent registration motor, which eliminates the shock and jitter caused by a registration clutch turning on and off.
- A mylar sheet [C] in contact with the top of the registration roller (and covering the registration sensor) scavenges paper dust that may have accumulated on the feed and reverse rollers and passed on to the paper at paper feed. This arrangement greatly reduces the amount of paper dust in the paper path downstream of the registration roller.



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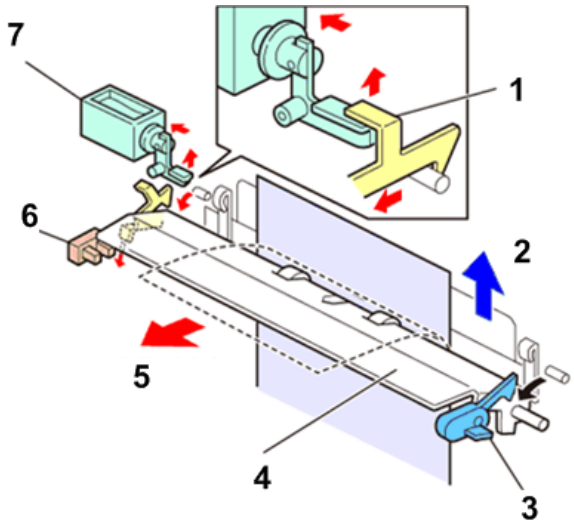
- The registration guide plate is at the end of the registration roller at the front of the machine.
- In order to make jam removal easier, if a paper jam occurs at the registration roller, the guide plate solenoid turns on and opens the guide plate.
- After a jam has occurred, this action guides the following sheets into the duplex tray and stacks them.
- As soon as the guide plate opens, at the front an actuator on the guide plate actuates the guide plate position sensor.
- After the jammed paper has been removed from the jam point and from the duplex tray, the guide plate must be closed.
- If the plate is not closed the guide plate position sensor will trigger a prompt on the operation panel for the operator to close the plate at **B2** (the Start key will be disabled until the guide plate is closed).



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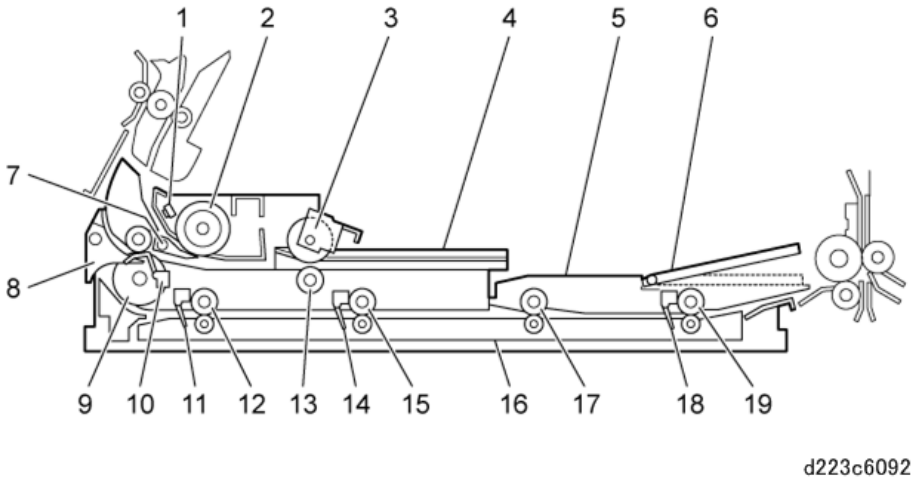
No.	Name
1	Guide Plate Lock Pawl
2	Normal Paper Feed Direction
3	Guide Plate Set Lever
4	Guide Plate
5	Jam Removal Direction
6	Guide Plate Sensor
7	Guide Plate Solenoid

5.5.6 INVERT, DUPLEX UNIT

Overview



No.	Part Name	No.	Part Name
1	Duplex Entrance Sensor	11	Duplex Transport Sensor 1
2	Invert Entrance Roller	12	Transport Roller 1
3	Invert Positioning Roller	13	Reverse Roller
4	Jogger Fence	14	Duplex Transport Sensor 2
5	Duplex Right Table	15	Transport Roller 2
6	Right Table Guide	16	Horizontal Transport Guide Plate
7	Invert Junction Gate	17	Transport Roller 3
8	Duplex Junction Gate	18	Duplex Transport Sensor 3
9	Duplex Turn Roller	19	Transport Roller 4
10	Invert Exit Sensor	-	-

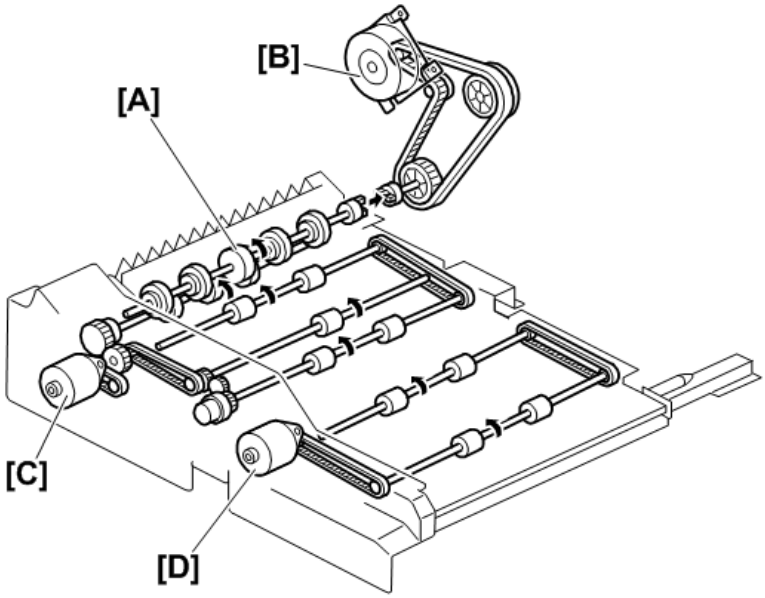
Here is a summary of the mechanisms and features of the invert duplex unit.

- **Invert Mechanism**. The invert entrance roller transports the copied sheet into the invert unit. The invert positioning roller inverts the printed sheet.
- **Exit/Duplex Junction Gate Mechanism**. The invert/duplex exit roller sends the printed paper out of the machine. The duplex junction gate opens and closes to guide the paper into the duplex or exit path.

- **Duplex Transport Mechanism**. The invert/duplex exit roller sends the paper to transport rollers 1, 2, 3, 4. Feeding A5 LEF is also possible. Pulling out the unit drops the edge guide plate to the horizontal, making it easier to remove paper.

Motors

In the duplex unit the single invert/entrance roller [A] is driven by the fusing exit motor [B], and the other rollers are driven by the duplex invert motor [C] and the duplex transport motor [D].



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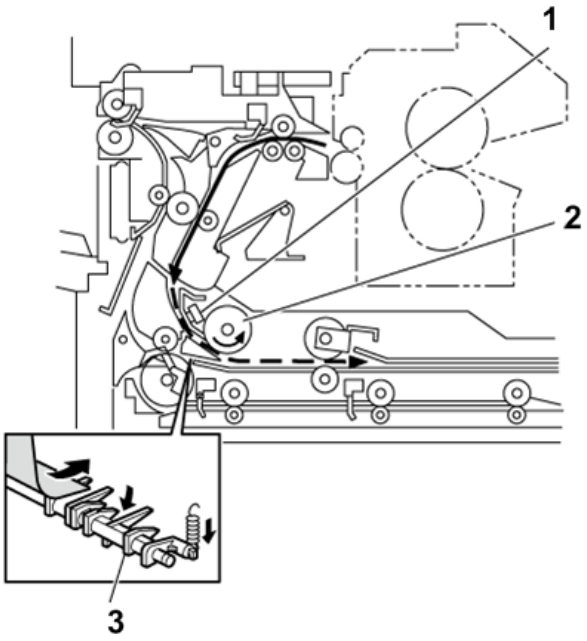
Invert Duplex Entrance

The invert duplex roller feeds the printed sheet transported from the exit unit into the invert duplex unit. The invert junction gate mounted in the invert duplex unit lowers under pressure of the printed sheet and guides the sheet into the jogger unit.

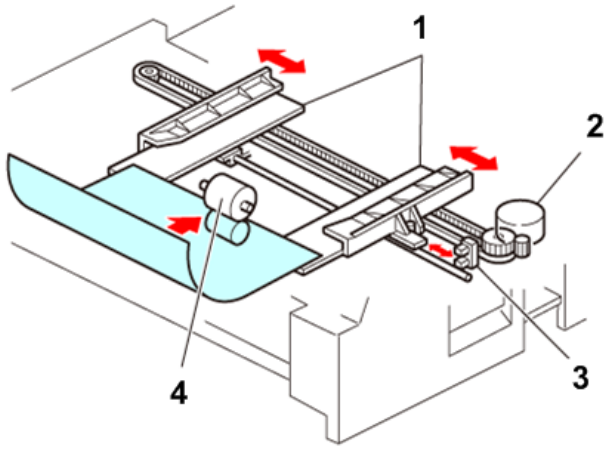


No.	Name
1	Duplex Entrance Sensor
2	Invert Entrance Roller
3	Invert Junction Gate Pawl

Jogging Operation

After the trailing edge of the printed sheet fed by the transport roller passes the invert junction gate into the jogger unit.

- The jogger unit front and rear fence align each sheet.
- The actual timing for the start of jogging is 83 ms after the trailing edge of the paper switches off the invert/duplex entrance sensor when it passes.
- After the Start key is pressed to start the job, the front and rear jogger fences are moved to the standby position 12 mm away from the sides of the selected paper size.
- As each sheet comes into the jogger unit, both fences move to the sides of the sheet to align it.
- After the edges of the sheet are aligned, both jogger fences return to the standby position 12 mm away from the sides of the selected paper size and wait for the next sheet.



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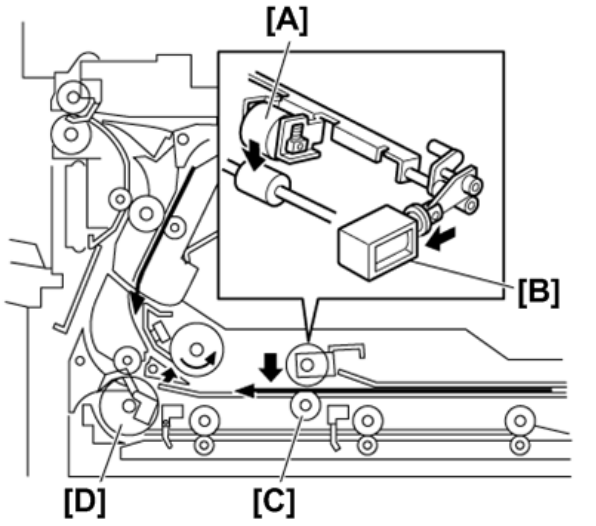
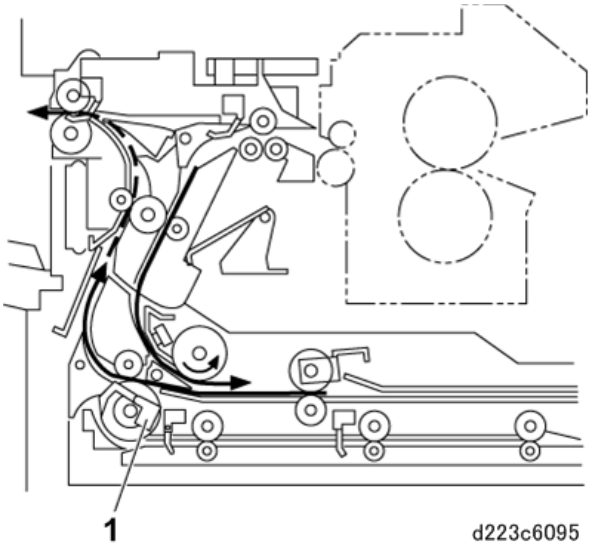
No.	Name
1	Jogger Fences
2	Duplex Jogger Motor
3	Duplex Jogger HP Sensor
4	Invert Positioning Roller

Invert Operation

After the jogging operation finishes, the invert positioning roller [A], activated by the duplex invert solenoid [B], contacts the sheet and grips it with the reverse roller [C] to invert the sheet, and then the paper is fed by the duplex turn roller [D].



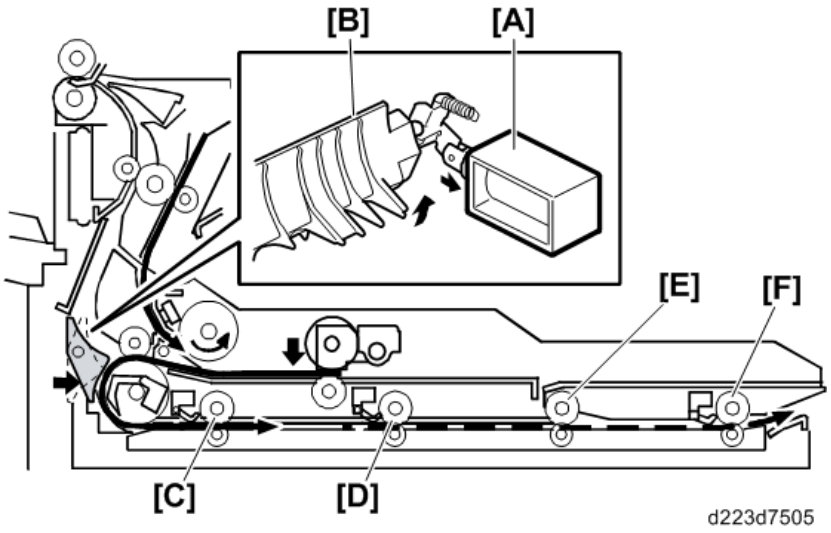
The duplex invert exit sensor [1] detects the leading edge and trailing edge of the paper as it passes out of the unit and triggers a jam if the paper stops.



No.	Name
1	Duplex Invert Exit Sensor

Duplex Transport Mechanism

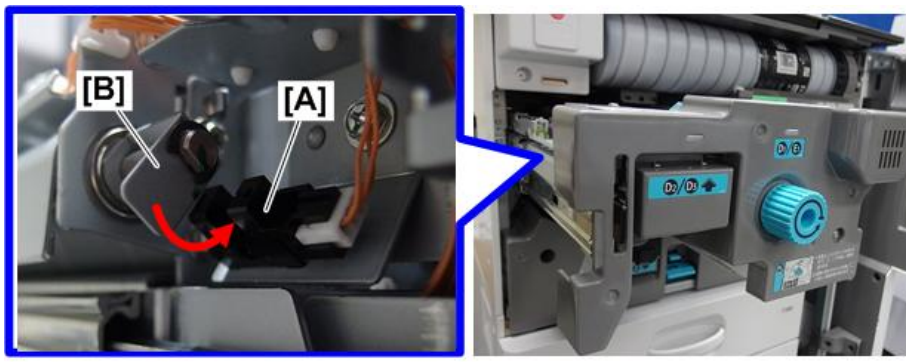
- If the job is set for printing on the back side of the paper, the duplex junction gate solenoid [A] turns on and opens the junction gate [B] which guides the paper into the duplex feed path.
- The jogger fences do not reset to the standby position and the positioning step is skipped if image processing requires much time.
- The paper passes through the duplex unit past transport roller 1 [C], transport roller 2 [D], transport roller 3 [E], and finally transport roller 4 [F], all driven by the duplex transport motor.
- If the paper is to exit from the duplex unit, then it exits according to the timing of the bypass feed motor as it feeds straight through.



Paper Jam Release and Reset Mechanism

In the previous machine when there was a jam at the fusing exit, the adjacent knob had to be turned 11 to 12 times (with the operator keeping the count mentally) to feed the jammed sheet manually far enough so it could be removed.

- This machine is equipped with a turn sensor [A] and actuator [B] that will turn off the LED to signal when the paper has been fed manually far enough so that it can be removed.



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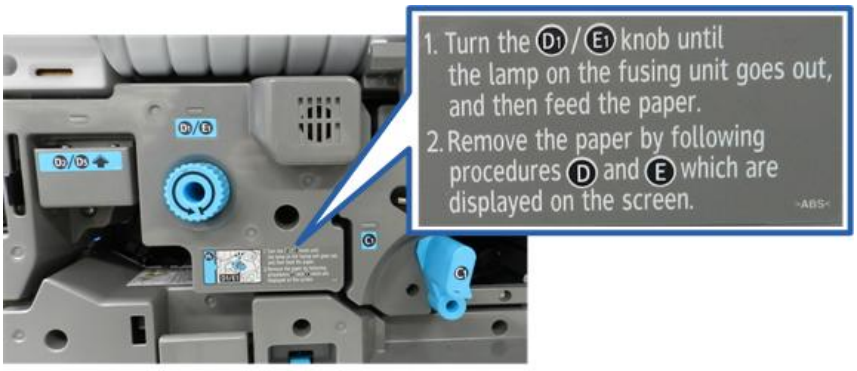
- The turn sensor at the fusing unit exit counts the 12 turns and switches off the sensor after the 12th turn.
- This also switches off the duplex entrance sensor at the exit sensor. (Paper trailing edge pulled out)
- Instructions for this procedure are written on the fusing inner cover.



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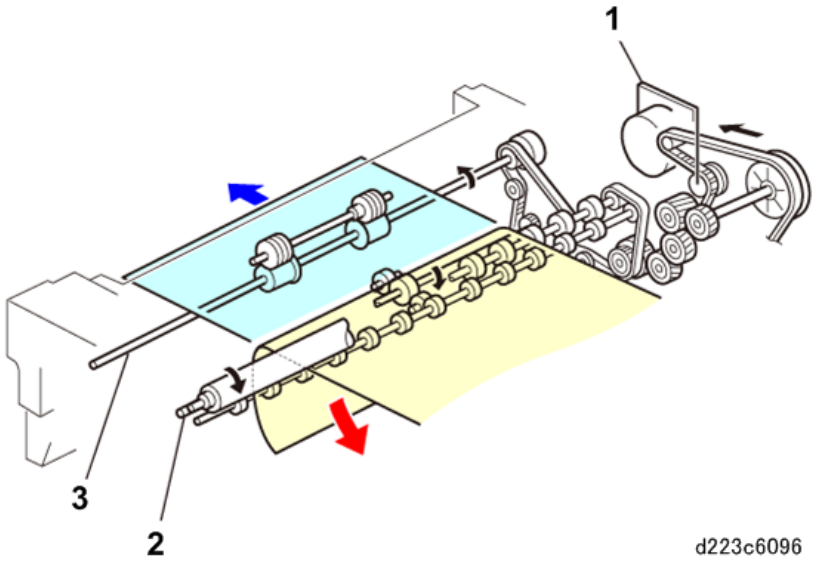
5.5.7 EXIT UNIT

Overview



No.	Name
1	Fusing Exit Motor
2	Decurl Roller
3	Exit Roller

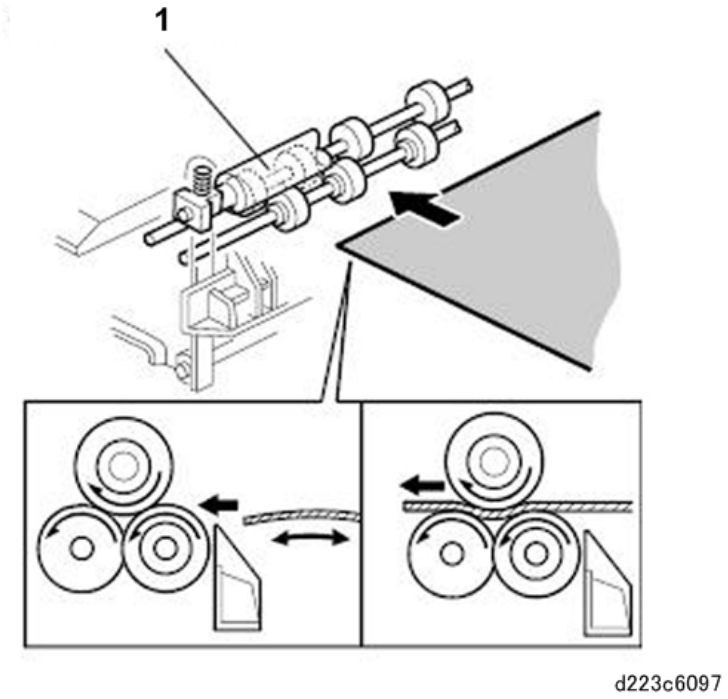
Here is a summary of the exit unit mechanisms and features.

- **Decurl Mechanism**. The decurl roller removes back curl from the printed sheets.
- **Exit Junction Gate Mechanism**. Face-up, Face-down Exit. Normally, printed sheets feed straight through the fusing unit and exit the machine face-up.

Decurl Mechanism

A paper decurl unit has been added to the exit unit entrance in order to improve paper transport through the duplex unit and finishers.

- Three rollers comprise the decurl unit that depresses each sheet as it exits the fusing unit in order to correct back curl.

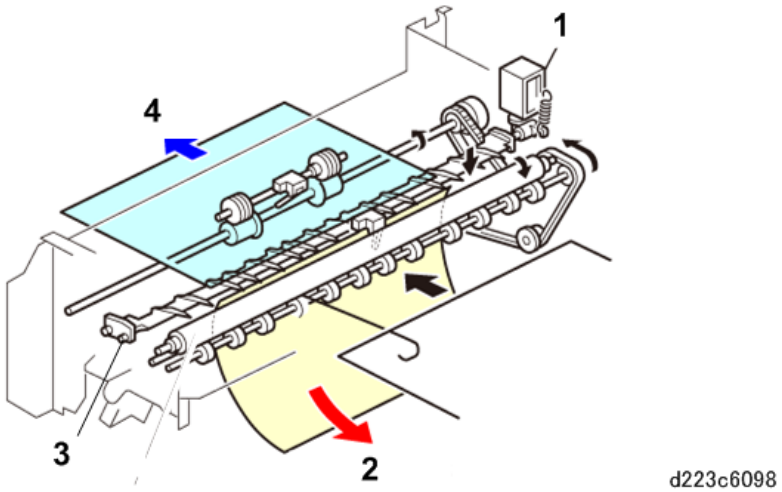


No.	Name
1	Decurl Roller

Exit Junction Gate Mechanism

The exit junction gate at the entrance to the exit unit guides each sheet directly to the exit for face-up delivery or down into the invert unit for face-down delivery.

- The position of the junction gate is switched with the exit junction gate solenoid (solenoid is on for exit and face-up delivery).
- The junction gate solenoid is at the rear of the duplex unit.



No.	Name
1	Exit Junction Gate Solenoid
2	Invert/Duplex Paper Feed Direction
3	Exit Junction Gate Pawl
4	Face-up Feed Direction

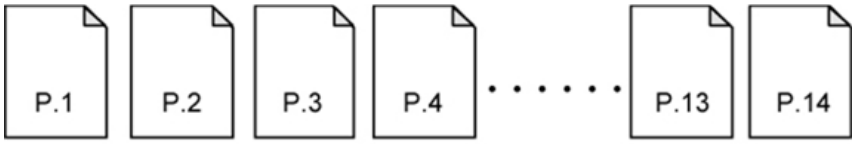
Duplex Interleave Feed Sequence

This machine employs interleave processing.

- This avoids having to print first the front and then the back side of each sheet which would be extremely slow.
- Interleave processing allows the machine to print the front and back sides out of sequence while keeping several sheets in the paper path.
- For example, the machine can handle up to three sheets in the paper path when duplex printing paper A4/LT SEF sizes or smaller.
- For other sizes like A4 LEF or larger, the machine can handle two pages at once.
- Duplex interleave printing always starts from the first page.
- This operation is described below.

In the illustrated example below:

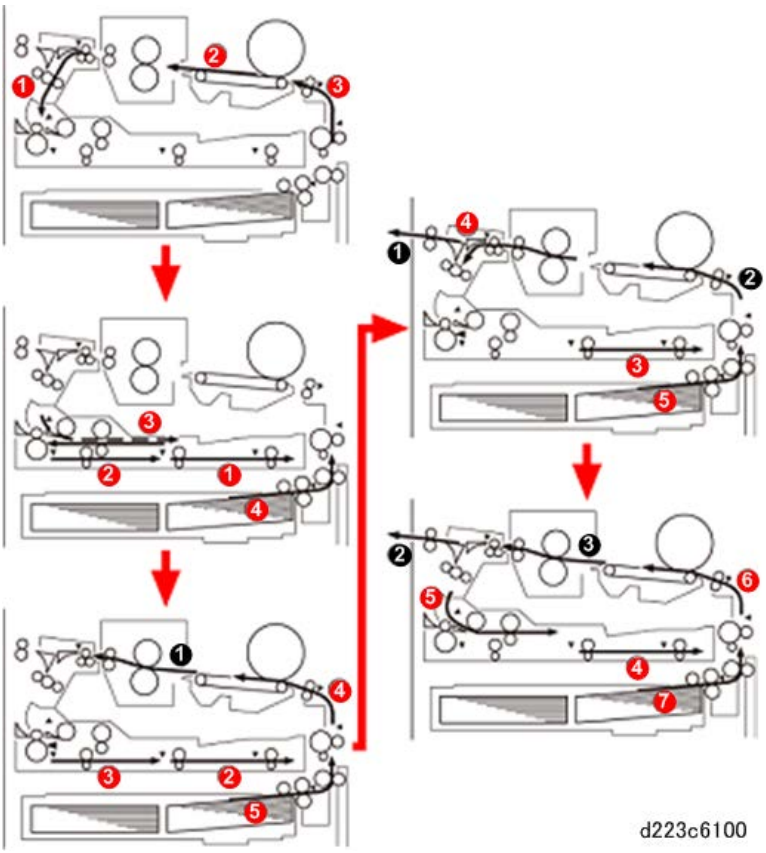
- Original: 14 pages
- Scanning Mode: Duplex (both sides scanned simultaneously)
- Printed copies: Sheets (14 pages)



	Order of Page Processing													
Scan Order	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Only 1	1	3	5	2	7	4	9	6	11	8	13	10	12	14
Smaller than A4/LT LEF	1	3	5	2	7	4	9	6	11	8	13	10	12	14
A3, etc.	1	3	2	5	4	7	6	9	8	11	10	13	12	14

- Original scan: Original scan order
- With A4 LEF and smaller, 3 pages can be handled at once
- With A3 and larger sizes, only 2 sheets can be handled at once.
- Sequence is the same for one document.

Interleave processing with first 3 sheets

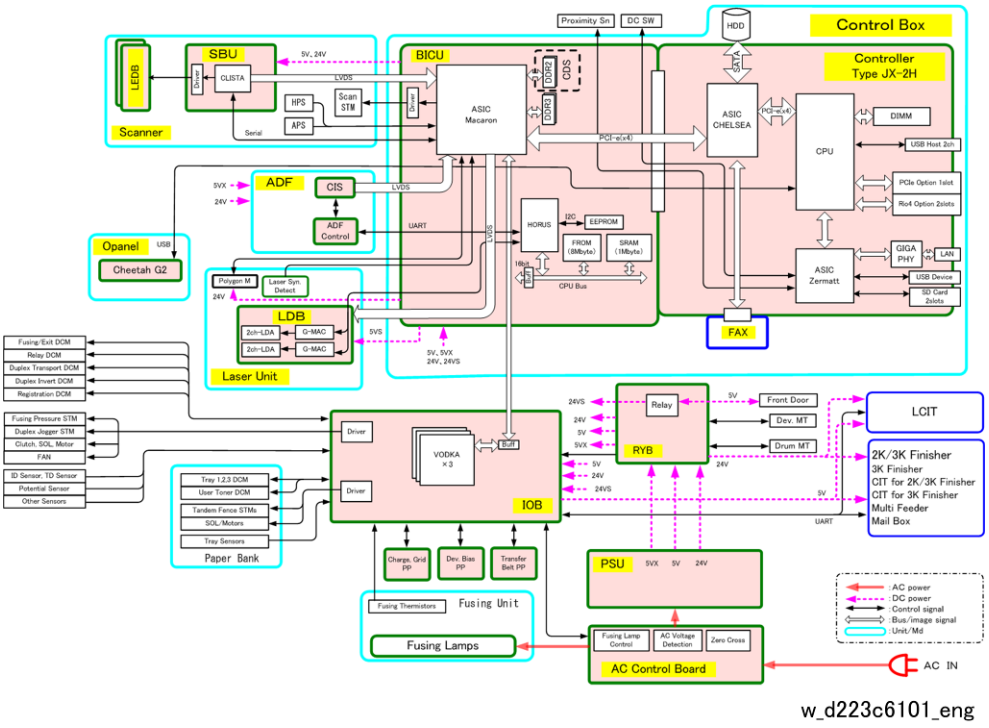


1. After 3 pages feed, 1st sheet front page printed (page 1), 2nd sheet front printed (page 3), 3rd sheet printed (page 5)
2. 1st, 2nd, 3rd sheets fed to duplex tray, inverter table and inverted
3. 4th sheet feeds
4. 1st sheet back page prints (page 2)
5. 4th sheet feeds, front page prints (page 7)
6. 1st sheet exits (pages 1, 2)
7. 4th sheet feeds to duplex unit
8. 2nd sheet back page prints (page 4)
9. 5th sheet feeds
10. 2nd sheet exits
11. 5th sheet back page prints (page 9), feeds to duplex tray
12. 3rd sheet back page prints (page 6)
13. 6th sheet back page prints (page 11)
14. 4th sheet back page (page 8), 7th sheet front page (page 13) copied in order, the above process repeats

5.6 ELECTRONIC COMPONENTS

5.6.1 BOARDS

Board Layout



Board Functions

This machine employs a controller designed with GW (Grand Workware) architecture that supports MFP devices.

BICU. The BICU (formerly "BCU") is the main board that controls the main machine, maintains overall system control, and image processing. This machine does not have separate boards for an IPU and an SIO. These functions have been mounted on the BICU. Some of its specific functions of the BICU are:

- Engine sequence timing control
- Timing of peripheral devices
- Original scanning control
- Laser control (image writing)
- C-MOS image sensor scanning and image processing with a CIS

Controller Board. The controller board (with the exception of the engine functions controlled by the BICU) controls the system. This includes:

- Power supply monitoring (shutdown, Energy Save Mode)
- Network monitoring
- Printing, scanning control

- Memory control (includes HDD)
- Operation panel control

SBU (Sensor Board Unit). The SBU takes the analog signals of the image scanned with the C-MOS image sensor and does the A/D (analog-to-digital) conversion.

IOB (I/O Board). The IOB handles the input and output of all motors, solenoids, clutches, and sensors.

RYB (Relay Board). The RYB distributes DC current.

HDD (Hard Disk Drive). The HDD stores image data.

- Capacity: 320 GB.
- Document server capacity: 96,750 MB
- Document server max. capacity: 10,000 pages, SP expansion 45,000 pages (SP182-001).

PSU (Power Supply Unit). The PSU supplies DC power to the entire system.

PSU Fuse Table

Fuse	Rating	Blown Fuse
FU1	2A/250V	SC664-01 (SC log 664-21, Soft Error 991-00
FU2	5A/250V	The copy and initial settings icons are not displayed on the Home screen. Machine returns SC670-01 about 4 min. after power on. (Soft error 899-00 logged.)
FU3	10A/250V	SC272-10 (SC log 547-02, Soft Error 515-00)
FU4	10A/250V	Detected connection of LCIT but cannot detect paper, or finisher not recognized. Copy jam
FU5	10A/250V	M223/M224: SC547-02. (SC log 202-00, 647-02, 120-00.) M225: No power code. (SC log 202-00, 531-01, 530-05, 581-00, 120-00)
FU7	---	Not used

AC Drive Board

The AC Drive board distributes AC power to the PSU, and also distributes power to the fusing unit and anti-condensation heaters. This board also holds the protection circuits for the PSU.

AC Drive Board Fuses for M223/M224

Fuse	Rating	Blown Fuse
FU101	15A/250V	SC547-02
FU102	15A/250V	Machine does not boot.
FU103	15A/250V	No SP display, no abnormal operation
FU105	2A/250V	Machine does not operate after more than 30 sec. have elapsed at machine start up, or while the fusing unit is cooling (recovery).

AC Drive Board Fuses for M225

Fuse	Rating: 100V	Blown Fuse
FU101	15A/250V	SC547-02
FU102	15A/250V	No power code display. (SC log 581-00)
FU103	15A/250V	No SP display, no abnormal operation
FU105	15A/250V	No power code display. (SC log 581-00)
FU106	15A/250V	Machine does not boot.

LDB. This is the laser drive board that holds the laser diode (LD) that creates images on the drum.
Power Packs. Supplies the voltage requested by process control to perform adjustments for conditions around the drum. There are three powers packs. The transfer coronal power pack applies charge to the drum, the development power pack supplies the bias charge to the development unit, and the transfer power pack supplies the charge for the transfer unit to transfer the image from drum to paper (and also for paper separation from transfer belt).
Operation panel boards. For more information about the operation opanel boards, please refer to "Smart Operation Panel Second Generation" manual.

5.7 ADF UNIT

5.7.1 OVERVIEW

Specifications

Item	Specification
Configuration	Automatic document feed duplex scanner (one pass two-side scanning)
Original size	Duplex: A3, A4, A5, B4, B5, B6, DLT, LG, LT, HLT, Long (up to 1260 mm)
	Single side: A3, A4, A5, B4, B5, B6, DLT, LG, LT, HLT
Scanning origin point	Origin at rear upper left corner
Original setting	Face-up on original tray
Original feed	Feeds from top of stack on original tray
Original separation	Feed belt and reverse roller separation by friction
Original scanning method	Through-sheet method (Front: White platen plate, Back: Color CIS and white roller)
Original tray capacity	220 sheets (81.4 g/mm^2)(stack height < 25 mm (1 in.)
Line Speed	500 mm/sec. (Monochrome)
Scanning productivity	
Simplex	Copying 90 ipm: LT LEF, A4 LEF 1 to 1(Monochrome/color) Scanning 120 ipm (200/300 dpi), LT LEF, A4 LEF 1-to-1 (color)
Duplex	Copying 90 ipm: LT LEF, A4 LEF 1 to 1(Monochrome/color) Scanning 220 ipm (200/300dpi), LT LEF, A4 LEF 1-to-1(color)

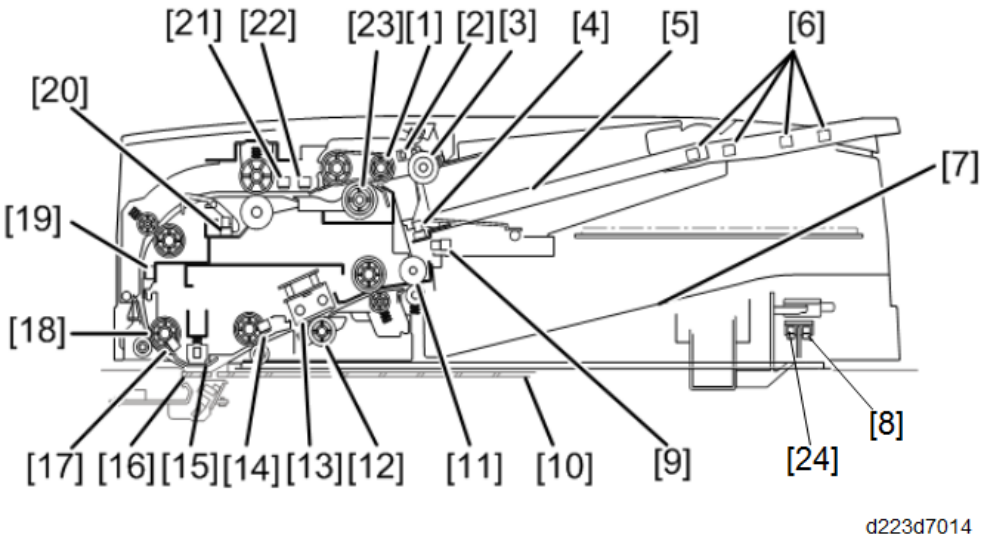
Item	Specification
ADF magnification	Front/Back6.7% (750 mm/sec.) (system rate: 25 to 400%)
Dimensions (w x d x h)	587 x 520 x 175 mm (23 x 20 x 7 in.)
Weight	Less than 13.9 kg (30.5 lb.)
Power Supply	DC 24V, DC 12V, DC 5V (supplied from main machine)
Power consumption	Less than 72.2 W

Original Size

Paper Weight	**40.7 g/m^2**	**46.5 g/m^2**	**52.8 g/m^2**	**64 g/m^2**	**81.4 g/m^2**	**105 g/m^2**	**128 g/m^2**	**Translucent**
Sheets	**250**	**250**	**250**	**250**	**220**	**150**	**125**	**1**
A3/A4	○	○	◎	◎	◎	◎	◎	△
A5	○	○	◎	◎	◎	◎	◎	---
B4/B5	○	○	◎	◎	◎	◎	◎	△
B6P	-	-	○	○	○	○	○	---
DLT	○	○	◎	◎	◎	◎	◎	---
LT	○	○	◎	◎	◎	◎	◎	---
HLT	○	○	◎	◎	◎	◎	◎	---
Folio	○	○	◎	◎	◎	◎	◎	---

◎ Simplex/duplex
○ Simplex only
△ SADF Simplex only
--- No compatible paper

Cross-Section of ADF Unit



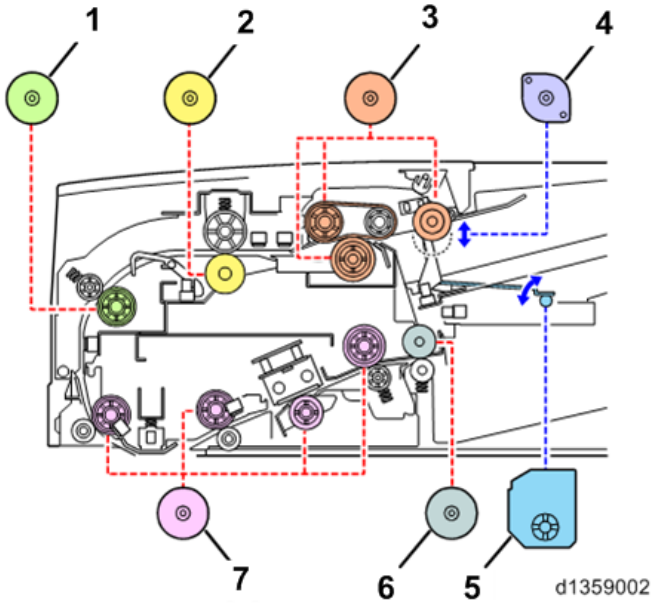
No,	Part	No.	Part
1	Feed Belt	13	CIS
2	Bottom Plate Position Sensor	14	Original Exit Sensor
3	Pick-up Roller	15	Scanning guide plate
4	Original Set Sensor	16	CIS Glass
5	Original Tray	17	Original Registration Sensor
6	Original Length Sensors	18	Scanning Entrance Roller
7	Output Tray	19	Interval Sensor
8	Lift Sensor	20	Original Width Sensors
9	Bottom Plate HP Sensor	21	Skew Correction Sensor
10	Exposure Glass	22	Separation Sensor
11	Exit Roller	23	ADF Separation Roller
12	CIS White Roller	24	ADF Lift Interlock Switch

Scanning Sequence

- **Original Pick-up**. Pick-up roller picks up leading edge of original.
- **Original Feed and Separation**. Feed belt and reverse roller combination feed originals and separate double-feeds.
- **Original size detection**. 9 original size sensors, 5 for width and 4 for length, detect original stack size on the original tray.
- **Original Scanning**. A color CIS unit scans the reverse side of originals (both sides scanned in one pass).

5.7.2 ADF COMPONENTS

Motors



No.	Part
1	Relay Motor
2	Entrance Motor
3	Feed Motor
4	Pick-up Motor
5	Tray Lift Motor
6	Exit Motor
7	Transport Motor

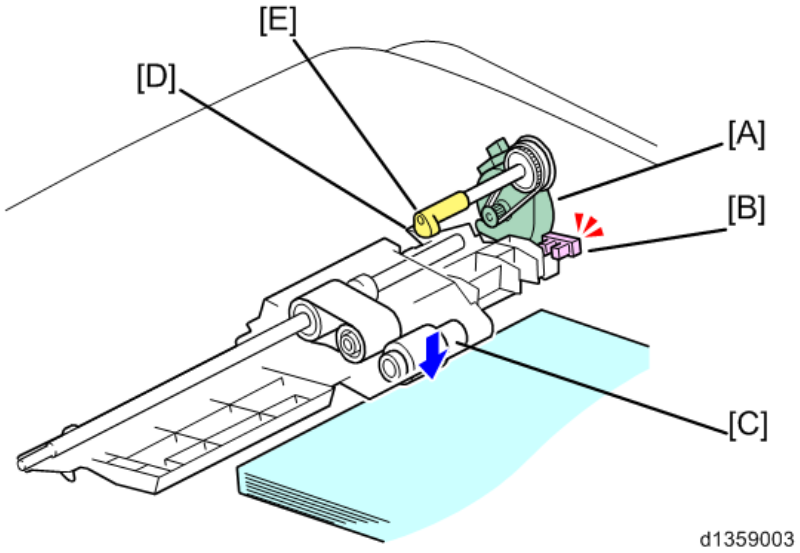
Original Pick-up

Paper Feed

When an original is placed on the original tray, its leading edge raises the feeler of the original set sensor to detect the original.

Pick-up Roller

- When there is no original on the original tray, the pick-up roller [C] swings up to the limit of its vertical movement.
- To lower the pick-up roller, the pick-up roller motor [A] switches and rotates lift cam [E] which lowers pick-up arm [D] and the pick-up roller.
- When the pick-up roller is lowered, the pick-up roller motor [A] switches on.
- When the actuator switches off the bottom plate position sensor [B], the pick-up roller motor goes off, and then the lift cam [E] holds the roller up.



Pick-up Roller Down Timing

The pick-up roller lowers:

- When an original (or stack of originals) is set on the original table.
- When the trailing edge of the original passes the sensor (but, it does not lower for the last original).
- For A4/LT LEF when the leading edge reaches the registration sensor.

Pick-up Motor On/Off Timing

The pick-up motor switches on:

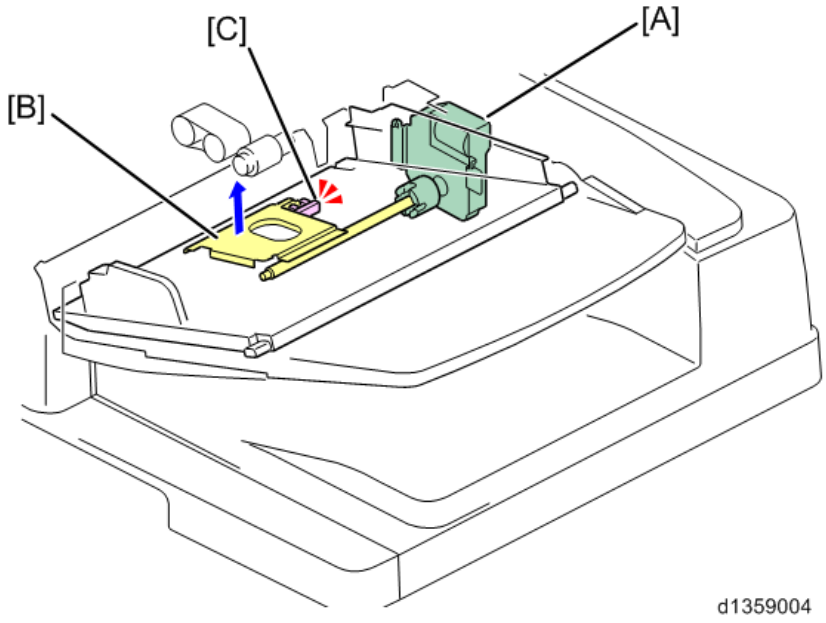
- When the original set sensor detects the leading edge of the original.
- When the machine is turned on

The pick-up motor switches off:

- When the original feed cover open.
- When an original jams in the ADF paper path.

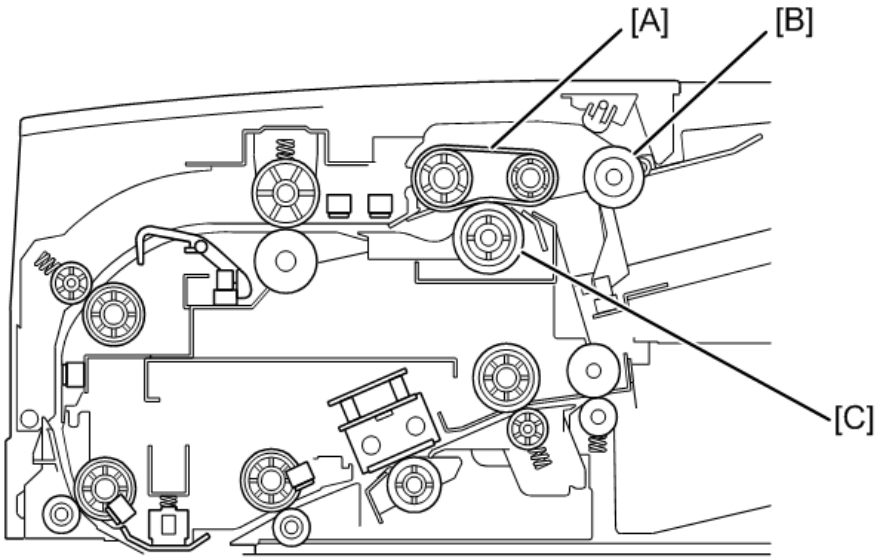
Bottom Plate Lift

- When an original is set on the original tray, after the pick-up roller drops, the bottom plate position sensor goes off, and then the plate lift motor [A] goes on and raises lift lever [B] and raises the bottom plate.
- The actuator above the pick-roller holder switches on the bottom plate position sensor [C] and this turns the plate lift motor [A] off so the stack is positioned at the correct feed position.
- During scanning with the ADF, when the top of the stack becomes too low, the pick-up roller drops low enough to turn the bottom plate position sensor [C] off, which switches the lift motor [A] on again and raises the stack until once again it is at the paper feed position.
- This mechanism performs continuously and keeps the top of the stack at the correct feed height for original stacks of up to 220 sheets (81.4 g/m2).
- At the end of the job the original table descends under its own weight as far as the bottom plate HP sensor.



Original Feed and Separation Mechanism

- A feed belt [A] and ADF separation roller [C] comprise the FRR original separation mechanism.
- If more than one original feeds between the nip of the feed roller and ADF separation roller, when pick-up roller [B] picks up the front edge of the original, the rotation of the ADF separation roller [C] reverses immediately.
- This sends the bottom sheet back into the tray while the sheet above continues to feed normally.



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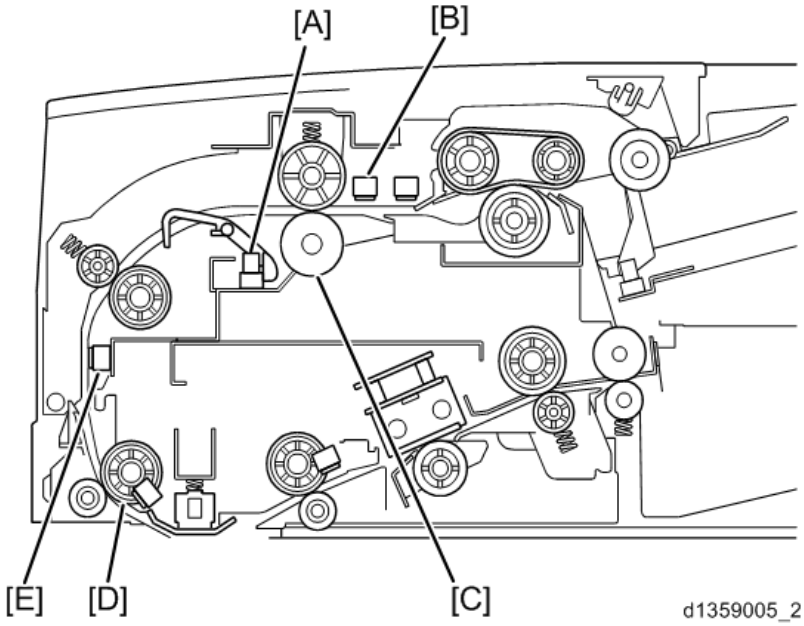
- When more than one original feeds this increases torque above the limit of the spring loaded torque limiter which reverses the rotation of the ADF separation roller against the rotation the feed belt above.
- The bottom sheet reverse feeds while the sheet above continues to feed into the paper path.

Skew Correction Mechanism

- After the original feeds, the skew correction sensor detects its leading edge, and stops the rotation of the feed motor for the prescribed number of pulses.
- The leading edge hits and straightens against the stationary roller to correct skew.
- If the original is small (B6, A5, B5, HLT) (or when duplex scanning regardless of paper size), when the interval sensor [E] detects the leading edge of the original, it stops the pre-scanning roller [D] for a prescribed number of pulses, long enough for the original to buckle against the stationary roller and correct skew.

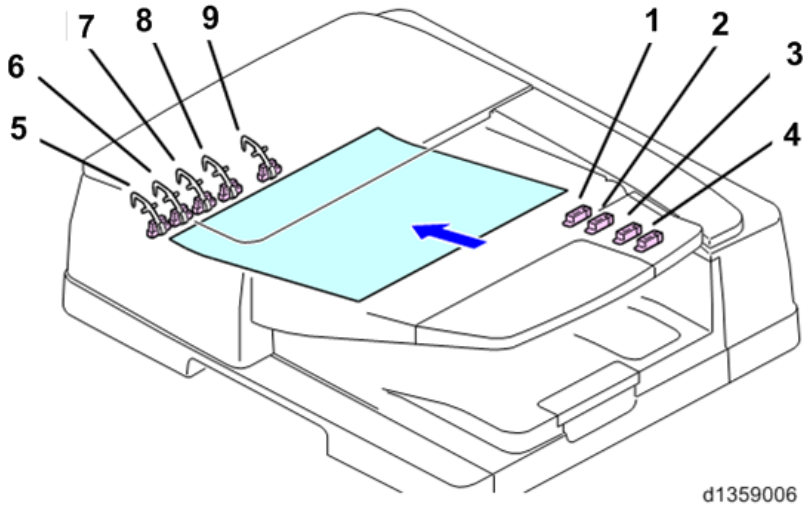


No.	Part
[A]	Original Width Sensors
[B]	Skew Correction Sensor
[C]	Entrance Roller
[D]	Scanning Entrance Roller
[E]	Interval Sensor

- You can turn on **SP6020-001** (ADF Contact Mode In/Out) to enable skew correction at both the entrance roller above as well as the pre-scanning roller below for all paper sizes but this may slow down the speed of original feeding.

Original Size Detection

- When the leading edge of the original reaches the interval sensor, the machine determines the width from the readings of the 5 original width sensors.
- The length of the original is determined by the readings of the 3 original length sensors under the original table and one sensor on the bottom plate.
- These two arrays of sensors are used to determine the size of the originals.



No.	Part
1	Original Length Sensor A4/LT LEF
2	Original Length Sensor B5
3	Original Length Sensor A4
4	Original Length Sensor LG
5	Original Width Sensor 5
6	Original Width Sensor 4
7	Original Width Sensor 3
8	Original Width Sensor 2
9	Original Width Sensor 1

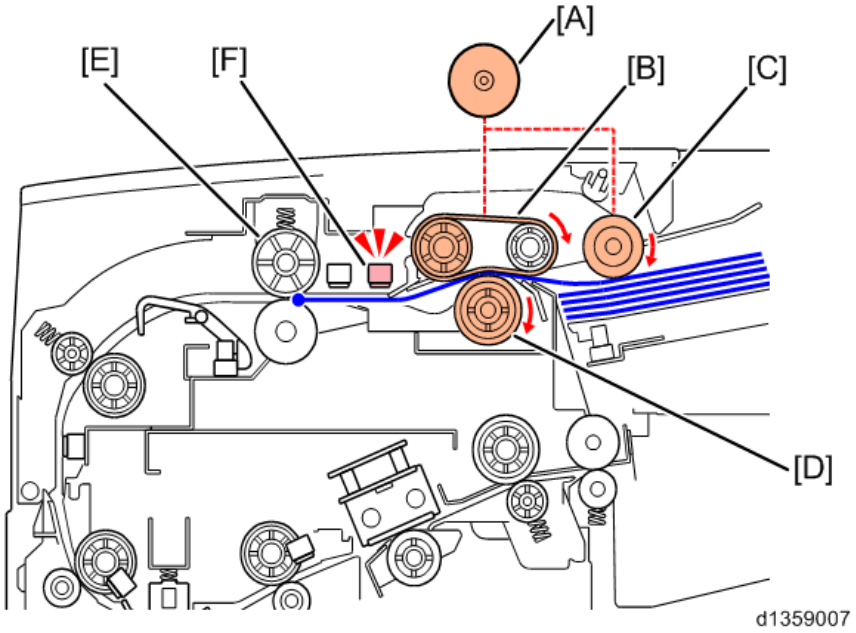
	Width Sensors					Length Sensors			
	1	2	3	4	5	A4 LEF	B5	A4	LG
A3(297x420)	ON	ON	ON	ON	ON	ON	ON	ON	ON
B4(257x364)	ON	ON	ON	---	---	ON	ON	ON	ON
A4 SEF (210x297)	ON	ON	---	---	---	ON	ON	ON	-
A4 LEF (297x210)	ON	ON	ON	ON	ON	---	---	---	---
A4 SEF (210x297)	ON	---	---	---	---	ON	ON	---	---
A4 LEF (297x210)	ON	ON	ON	---	---	---	---	---	---
A4 SEF (210x297)	---	---	---	---	---	---	---	---	---
A4 LEF (297x210)	ON	---	---	---	---	---	---	---	---
DLT SEF (11"x17")	ON	ON	ON	ON	---	ON	ON	ON	ON
DLT SEF (11"x17")	ON	ON	ON	ON	---	ON	ON	ON	ON
8 1/2"x11" SEF (LT)	ON	ON	---	---	---	ON	ON	---	---
11"x8 1/2" LEF (LT)	ON	ON	ON	ON	---	---	---	---	---

Note

- 11"x17", 11"x15" are detected as the same size, so you need to select one or the other with **SP6016-001** (Original Size Determination Priority) to choose whichever are using.

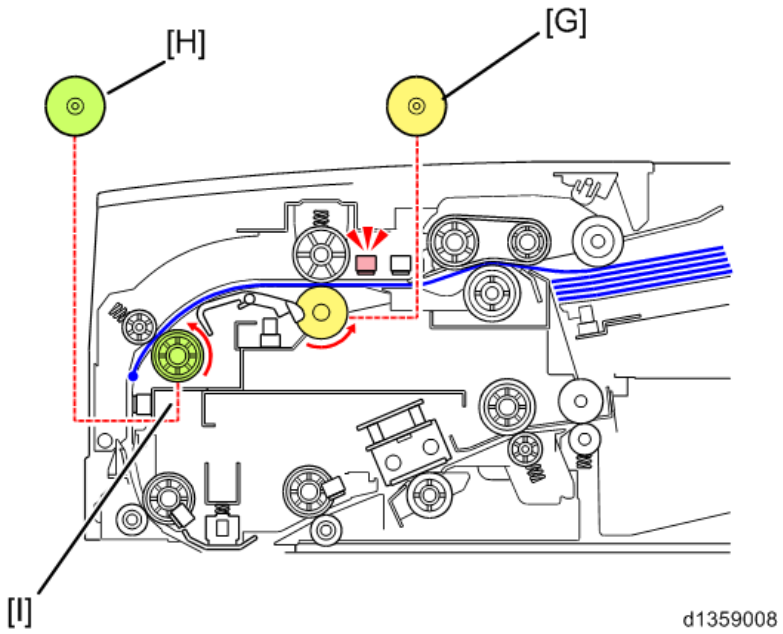
Original Transport

- At the beginning of the job, the original feed motor switches on and rotates the pick-up roller, feed belt, and reverse roller to feed the original into the original feed path.
- The original is fed to the entrance roller as it leaves the original tray. Original skew is corrected at the entrance roller.



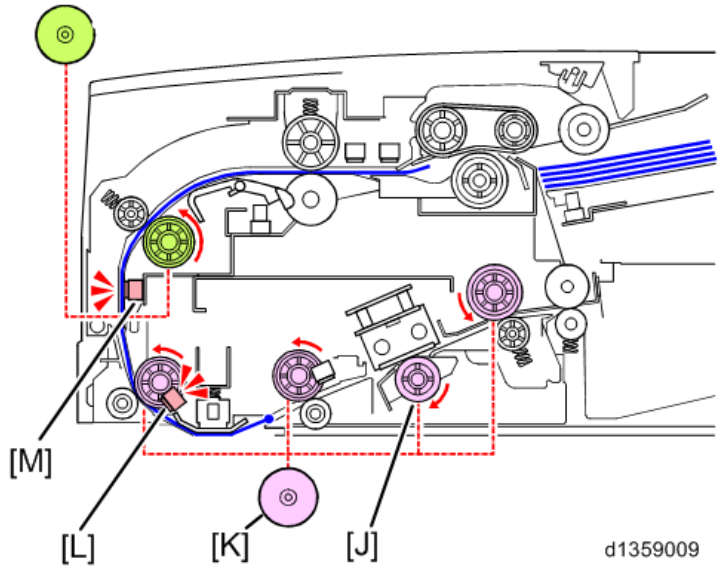
No.	Part
[A]	Feed Motor
[B]	Feed Belt
[C]	Pick-up Roller
[D]	ADF Separation Roller
[E]	Entrance Roller
[F]	Separation Sensor

- After skew is corrected at the entrance roller, the entrance motor [G] and transport motor [H] rotate the rollers in the original path and feed the original to the scanning section below.

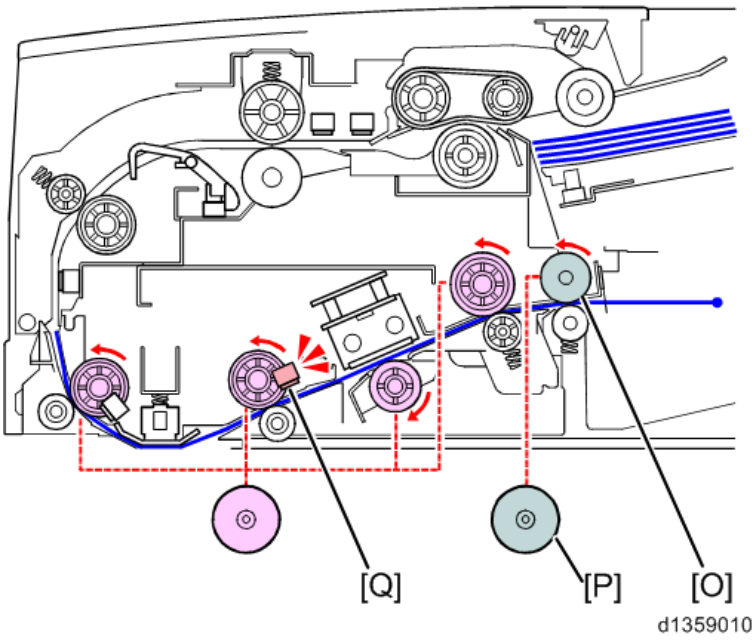


No.	Part
[G]	Entrance Motor
[H]	Relay Motor
[I]	Transport Roller

- When the interval sensor [M] detects the original, the transport motor [K] turns on and rotates the white roller [J] and feeds the original through the scan unit.
- After rotation of the entrance roller, the entrance motor speeds up slightly to reduce the gap between the trailing edge of the original in the scanning unit and the leading edge of the next original in the path.
- If this were allowed to continue, the differences in roller rotation speed could cause the originals to bend or buckle in the original path around the pre-scanning roller.
- To avoid this, when the interval sensor detects the leading edge of an original it slows the rotation of the scanning belt and the speed of the original in the nip of the pre-scanning roller slows.

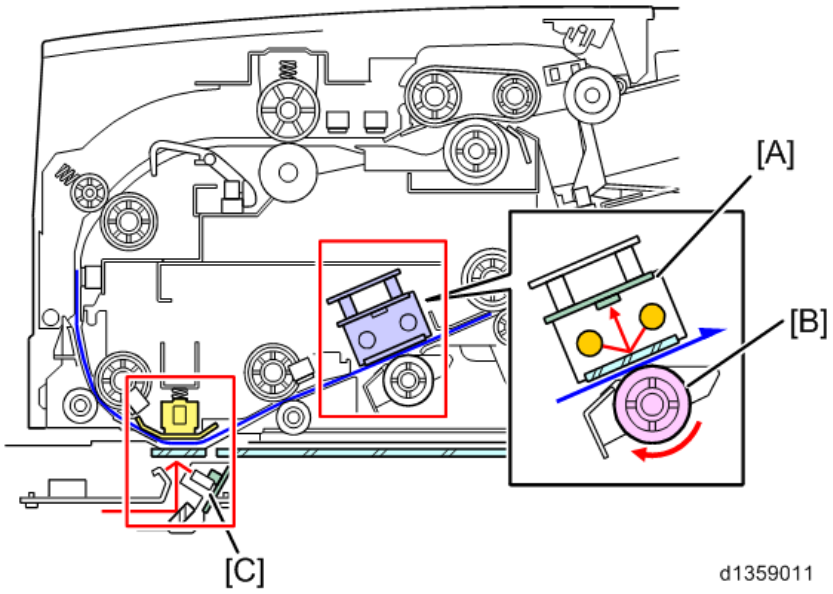


- When original exit sensor [Q] detects the leading edge of the original, the exit motor [P] switches on and rotates the exit roller [O] which feeds the original out onto the original output tray.



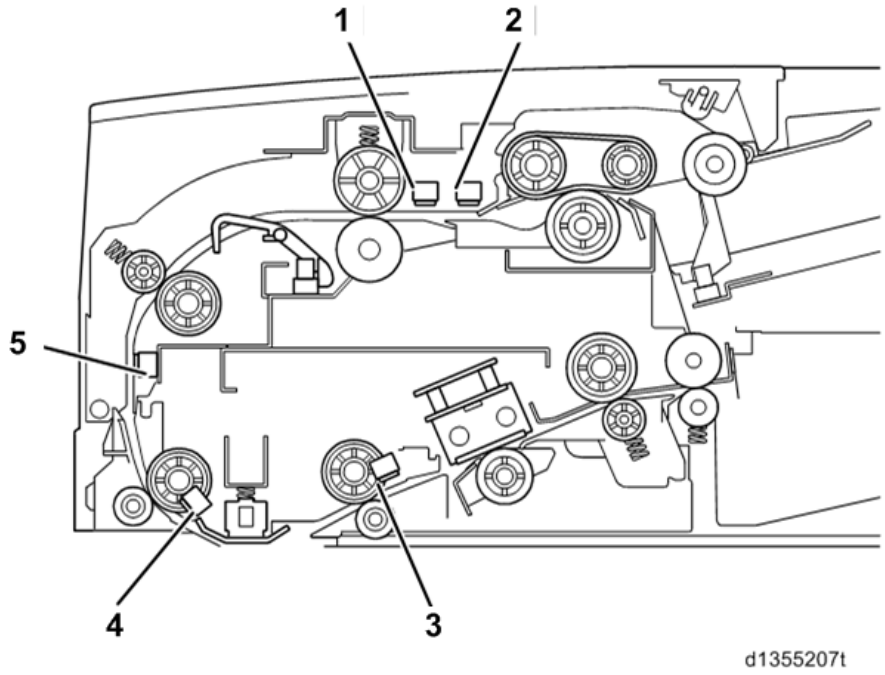
Original Scanning

This machine is provided with a color CIS (Contact Image Sensor) to improve its scanning ability with its ability to scan both sides of an original at the same time.



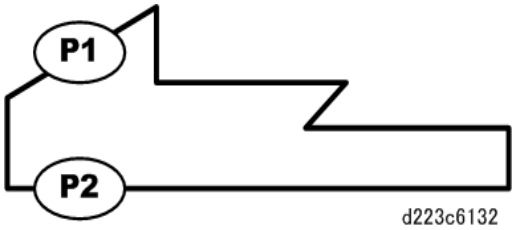
No.	Part
[A]	ADF
[B]	White Roller
[C]	Scanner LEDs (Exposure Lamps)

Jam Detection Sensors



No.	Part
[1]	Skew Correction Sensor
[2]	Separation Sensor
[3]	Original Exit Sensor
[4]	Registration Sensor
[5]	Interval Sensor

Jams are detected by the 5 sensors listed above. The detection conditions are shown in the table below.



Jam Display	Jam Name	Detection Condition
P1	Separation sensor late jam	Feed motor on but leading edge failed to arrive after motor on long enough to feed 224 mm.
P1	Skew correction sensor late jam	Leading edge failed to arrive after separation sensor detection and enough time elapsed for the original to feed 46 mm.
P1	Interval sensor late jam	Leading edge failed to arrow after entrance motor started and remained on long enough for the original to feed 172 mm.
P!	Registration sensor late jam	Original failed to arriave after it was detected by the interval sensor and enough time elapsed for the original to feed 96 mm.
P2	Original exit sensor late jam	Original failed to arrive after it was detected by the registration sensor and enough time elapsed for it to feed 130 mm.
P1	Separation sensor lag jam	After the entrance roller started to pull the original out of the original tray after initial feeding, the original failed to move based on the calculations below.

A4/LT	L1	L2	L3	Std.
Not	Not	Not	Not	226.8
Detected	Not	Not	Not	253.8
-	**Detected**	Not	Not	291
-	-	**Detected**	Not	320
-	-	-	**Detected**	432

	However, in some cases the operator may have specified another length longer than the standard value and that value will be used as standard (Std.).	
P1	Skew correction sensor lag jam	After the separation sensor detected the trailing edge, the trailing edge was still detected after enough time had elapsed for the original to feed 46 mm.
P!	Interval sensor lag jam	After the transport motor turned on, the trailing edge of the original was not detected after enough time had elapsed for the original to feed 82 mm.
P2	Registration sensor lag jam	After the interval sensor detected the trailing edge, the trailing edge was still detected after enough time had elapsed for the original to feed 93 mm.
P2	Original exit sensor late lag	After the registration sensor detected the trailing edge, the trailing edge was still detected after enough time had elapsed for the original to feed 130 mm.

5.7.3 ADF SC ERRORS

SC	Error Name	Probable Cause
700-01*	ADF bottom plate lift motor error	▪ No output from bottom plate position sensor ▪ No output from bottom plate HP sensor ▪ Bottom plate motor not operating ▪ ADF main board problem
700-02*	ADF original pick-up motor error	▪ No signal from the pickup HP sensor because sensor harness, connector loose, broken, defective. ▪ Pick-up HP sensor defective ▪ Pick-up motor harness, connector, is loose, broken, defective. ▪ Pick-up motor defective. ▪ ADF main defective
700-04*	ADF feed motor error	▪ Paper jammed in paper path ▪ Motor overload due to blockage ▪ Motor harness loose, broken, defective ▪ Motor bracket, motor installed incorrectly ▪ Feed motor defective
700-05*	ADF entrance motor error	▪ Paper jammed in paper path ▪ Motor overload due to blockage ▪ Motor harness loose, broken, defective ▪ Motor bracket, motor installed incorrectly ▪ Entrance motor defective
700-06*	ADF transport motor error	▪ Paper jammed in paper path ▪ Motor overload due to blockage ▪ Motor harness loose, broken, defective ▪ Motor bracket, motor installed incorrectly ▪ Transport motor defective

SC	Error Name	Probable Cause
700-07*	ADF scan motor error	▪ Paper jammed in paper path ▪ Motor overload due to blockage ▪ Motor harness loose, broken, defective ▪ Motor bracket, motor installed incorrectly ▪ Scan motor defective
700-09*	ADF exit motor error	▪ Paper jammed in paper path ▪ Motor overload due to blockage ▪ Motor harness loose, broken, defective ▪ Motor bracket, motor installed incorrectly ▪ Exit motor defective
702-04	ADF protection circuit error 4	▪ Defective motor or harness on the interlock circuit.
702-05	ADF protection circuit error 5	▪ Interlock power circuit harness, switch is loose, broken, defective. ▪ Motor harness, connector is loose, broken, or defective. ▪ Motor is defective.
151-00	Black level error: Back side	▪ CIS defective
152-00	White level error: Back side	▪ ADF CIS device defective ▪ CIS white roller background or white plate damaged ▪ CIS dirty or installed incorrectly
154-00	Scanner communication error: Back side	▪ Harness between the ADF PCB and CIS is loose, broken, defective ▪ ASIC in CIS is defective ▪ FROM in CIS is defective

*Machine issues jam alert for first two occurrences, and then issues the SC code at the third occurrence. To recover, cycle the machine off/on.

5.8 NEW FEATURES

5.8.1 HUMAN DETECTION (PROXIMITY) SENSOR

Overview

The new sensor is located above the power switch on the left upper corner of the main machine.

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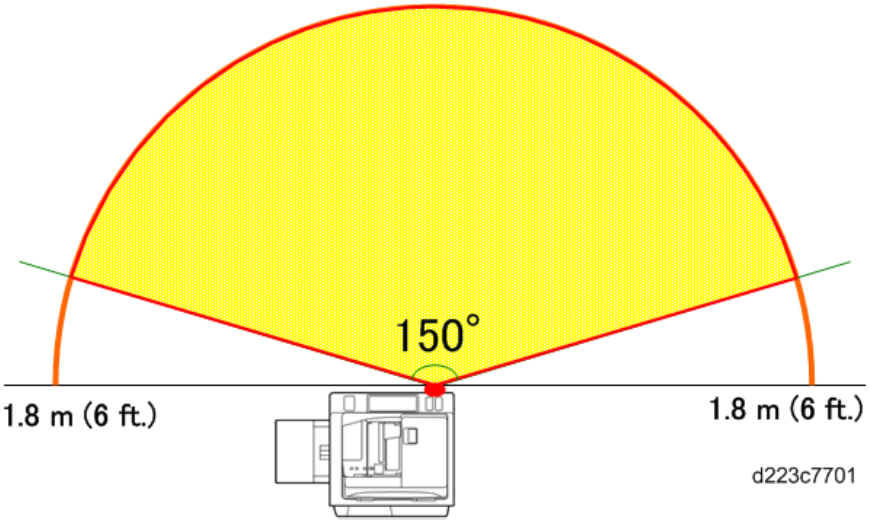
When the machine has been idle for a long period and the sensor detects the presence of anyone in front of the machine, it signals the machine to prepare itself for quick recovery to operation status by shortening the time required for the machine to recover full operation (pre-recovery mode) before the operator even touches the machine or operation panel. This sensor employs infrared and can detect the presence of the operator within an arc of 150° out to 1.8 m (6 ft.) away from the front of the machine.



Sensor Operation

There are three phases in the operation of the this sensor:

- First, the sensor detects the presence of the operator within the arc in front of the machine, and then signals the machine to leave the STR mode (or Engine OFF mode) and enter the Pre-recovery mode.
- Second, as soon as the machine enters the Pre-recovery mode it resets the Engine Off mode timer for 5 min. If the operator does not touch the machine for 5 minutes, the machine slips back into the Engine Off mode. If the operator touches the LCD, or opens and closes the ADF or front door, etc., the machine shifts to Standby mode.
- Third, once the machine enters Standby mode, if the operator does nothing to start operation, the machine will gradually step down from Standby mode to Lower Energy mode, Quiet mode, Engine Off mode, and then finally to STR mode.

Operation Modes

Here are more details about these operation mode levels.

- **STR mode**. Suspend-to-RAM mode. The power supply to the CPU, adjacent chips, and the clock on the controller board is shut down.
- **Engine Off mode**. The fusing lamps and other engine components remain off. The operation panel backlight is off, but there is power supplied to the operation panel and the controller boards.
- **Pre-recovery mode**. The operation panel and HDD are on but the engine components remain off (Energy Save mode). However, the operation backlight still remains off, so there is no change on the operation panel to indicate that the machine has shifted from STR mode, through Engine Off mode, and into Pre-recovery mode.
- **Quiet mode**. Fusing lamps still remain off, but the HDD and SD cards are accessible so the machine can receive jobs (Data In) and incoming faxes.
- **Lower Power mode**. Finally, power is restored to the fusing lamps but maintained at low temperature.
- **Standby mode**. The machine is ready to operate.

User Tool

The operation of the sensor can be switched off and on with a User Tool setting.

1. Touch "User Tools" on the operation panel.
2. Select System Settings > Basic Settings > Proximity Sensor
3. You can switch the sensor off/on by selected Disabled/Enabled. The default setting is "Enabled".

Related SC Codes

One of two SC codes is issued if the sensor fails.

SC869-01 Human detection (proximity) sensor failure: Error 1.

The sensor remained on for over 24 hours.

- Cycling the machine off/on does not cancel this error.
- When this error occurs the machine enters sensor failure mode and ignores subsequent input from the sensor.
- Even though the sensor is on, the machine does not enter Pre-recovery mode, and the Engine Off timer setting is not affected and continues to operate normally.
- To cancel the error, switch off the sensor with the User Tool setting described above.
- The sensor and its components require replacement.

SC869-02 Human detection (proximity) sensor failure: Error 2

The sensor remained off, even after the operator performed 20 actions with the machine operation panel, opening and closing the front door, ADF, etc. The machine will issue this error code after every 20 events in operation of the machine.

- Cycling the machine off/on does not cancel this error.
- To cancel the error, switch off the sensor with the User Tool setting described above.
- The sensor and its components require replacement.

Related SP Code

There is one human detection sensor related SP code: SP5102-203 Auto Detect: Human Detection Sensor Check. This is an on/off check.

- Enter "0" to switch the sensor off.
- Enter "1" to switch the sensor on.

This SP is used to check the operation of the sensor. It confirms that the sensor can be switched off and on normally. (Default: On). This check can be used regardless of the User Tool setting. Even if the sensor is switched off with the User Tool setting, a check can be done with this SP code.

5.8.2 OPERATION PANEL

This machine employs the Smart Operation Panel. For more details, refer to the "Smart Operation Panel 2nd Generation" field service manual.

5.8.3 SHUTDOWN FEATURE

Specification

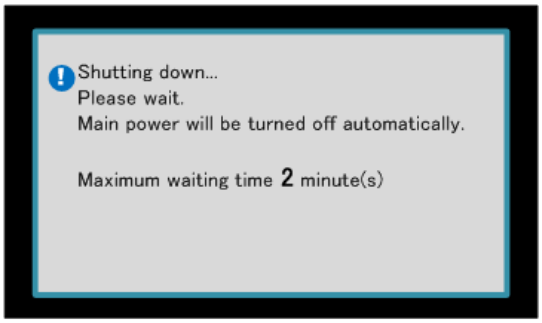
A new shutdown feature is provided to prevent possible damage to the machine or the loss of valuable data due to turning the machine off while it is printing, scanning, or saving data to the HDD.

The following conditions are met before power to the machine actually cuts off after the operator presses the power switch to turn off the machine.

- There can be no damage caused to any part of the system: HDD, NAND, SD and USB devices.
- The machine should not be shut down with paper in any part of the paper path. (Excluding cases when a jam occurs prior to shutting down the machine.)
- Job log, access log are all saved.

The Shutdown Screen

The screen below appears after the operator presses the power button to turn off the machine as a notice that the shutdown procedure is in progress.



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The shutdown screen doe not appear in the following cases.

- When the time to power off is very short.
- When the machine is turned off with the controller off.
- When the operator presses the power switch to turn off the machine in special modes (global delete, during firmware update, auto encryption mode).
- If the power switch is turned off while the machine is rebooting.

The machine should not be switched off immediately after the machine enters standby mode. When you see the "Turn main Power Switch off" prompt, wait for at least 10 sec. with the machine in Standby mode before you press the power switch to turn the machine off.

5.8.4 AUTOMATIC DELETE MEMORY FUNCTION (HDD SECURITY)

Specification

The function deletes the temporary data that is created on the HDD during job processing. There are functions to automatically overwrite the temporary data on the HDD created by every job (memory auto delete) as it is created, and to overwrite all such temporary data in one sweep (memory global delete).

These functions reside on the controller board. This DOS option (Data Overwrite Security) is switched on with SP5878-001 (Option Setup) before the machine leaves the factory. Function Details

Option Setup

- The option is set up at the factory before the machine is shipped.
- This option must be set up again after the controller board has been replaced.
- Related SP Codes
- **SP5878-001** (Option Setup - Data Overwrite Security)

When you execute this SP code to set up DOS after replacing the controller board, be sure to print a self-diagnostic report with SP5990-005 (SP Print Mode Diagnostic Report) to confirm that DOS is installed correctly. In the installed program column you should see a notation like: GW4a_zoffyxstd/D3775912A

"Zoffy" is the data overwrite security program.

Automatic Delete Function Setup (for Operators)

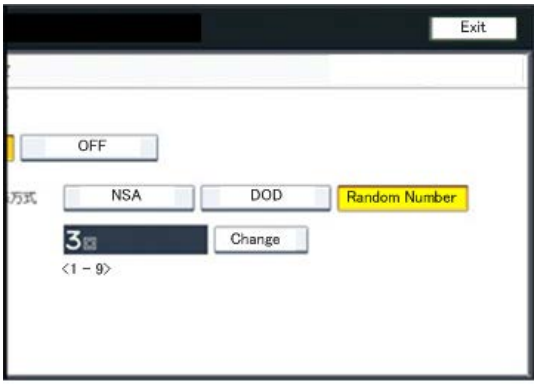
The operator can set up the automatic delete function.

- The operator must log in as a supervisor with a supervisor password in order to access these settings.
- The operator must log in as an administrator with a login password in order to access these settings.

1. Log in on the operation panel as the Administrator.
2. Touch [System Initial Settings].
3. Touch [Administrator Settings].
4. Touch [Next] twice.
5. Touch [Memory Auto Delete Settings].

d223c6105

6. Touch [Yes]. If the operator does not want to automatically overwrite the temporary data on the HDD, touch [No] and then [Set].
7. Select one of the options: [NSA Method], [DOD Method], [Random Method].
   For [NSA Method], [DOD Method] "10" is recommended, and for [Random Method] "8" is recommended.



d223c6106

8. Touch [Update].
9. Enter the number for the number of repetitions, and then touch [#].
   The number you enter is the number of times the data is overwritten with the Random Method. You can set a number in the range 1 to 9 (Default: 3).
10. Touch [Set].
11. Confirm that the "Overwrite Delete Icon" appears on the operation panel touch screen.
12. Make one copy, and then confirm that the data overwrite icon changes from the "Data Remains" appears and then starts flashing, and then the "No Data Remains" icon appears.

Icon	Icon Name
d223c6107	Data remains display. The "Data Remains" icon flashes as the data is being overwritten and deleted.
d223c6108	No data remains display.

- If the display does not change to the "No data remains" icon, check and see if there is are any background print or test print data on the disk.
- Output the background print and test print data (these are the first targets for overwrite and delete).
- If an HDD continues to be used with the [Memory Auto Delete Setting] off and then suddenly this setting is turned on, up to 10 hours may be required to pass before the disk can be used.

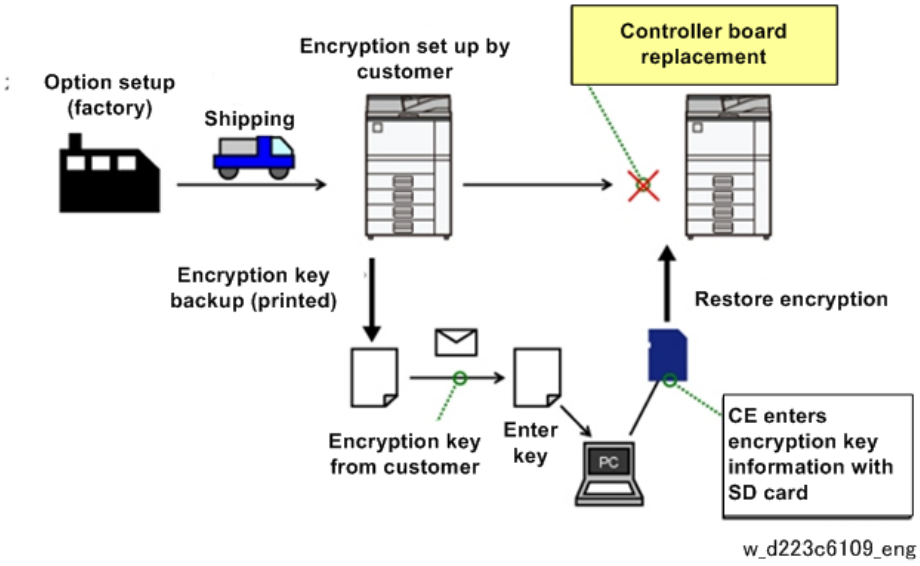
5.8.5 DATA ENCRYPTION

Overview

This function encrypts recorded address book data, certification data, and stored documents as they are stored in this machine to prevent the threats of data loss through either electronic or physical theft.

- These functions reside on the controller board.
- This data encryption option is switched on with **SP5878-002** (Option Setup - HDD Encryption) before the machine leaves the factory.
- If the customer (with Administrator rights) turns this feature on with the default settings, the data encryption key is printed out. (The customer has the responsibility of safeguarding this key.)
- If the controller board is replaced, the data encryption key must be entered onto an SD card and then this card used to recover the HDD.
- If the data encryption key sheet has been lost, then the HDD data cannot be recovered after the controller board has been replaced.

Handling Data Encryption



Data Targeted for Encryption

The following data in the machine memory and HDD are encrypted when encryption is turned on.

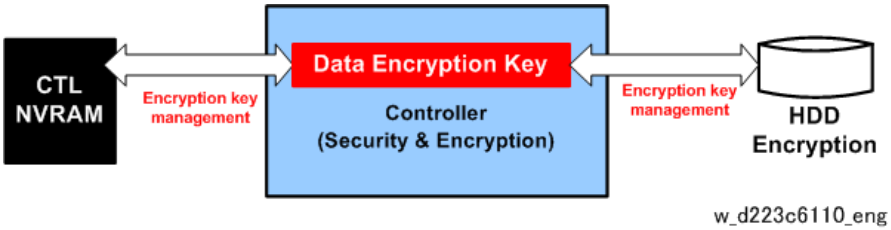
- Address book
- User certification data
- Stored document data
- Temporary document data
- Log data
- Network I/F setting information
- Device setting information data

Precautions About Encryption

Data on the HDD is lost after the HDD is replaced (data automatically encrypted after replacement)

- After NVRAM replacement, data are automatically encrypted.
- After controller board replacement, the restore key is required.
- If the restore key is available, then the HDD can continue to be used.
- If the restore key is not available, boot the machine with an SD card holding the encryption key initialization settings, and then clear NVRAM and initialize the HDD (data on the HDD is lost).
- Replacing Controller Board and NVRAM

If the encryption key data has been lost then the HDD data is also lost.



5.8.6 PREFERENCES FUNCTION (SMC DATA MEDIA STORAGE)

Function Details

This function saves SMC in CSV file format to an SD card. The data is saved to an SD card inserted into the media slot on the side of the operation panel, or inserted into Slot 2 (service slot) on the controller board faceplate on the back of the main machine. To save this data, go into the SP mode, open SP5992 (SP Text Mode) and then touch [EXECUTE].

SP992 Sub Groups

When you do **SP5992** you can select the data that you want to save by selecting the number of one of the sub groups.

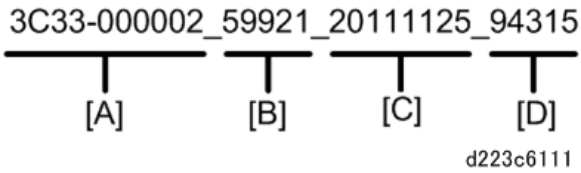
No.	Data to Save
001	All (Data List)
002	SP (Mode Data List)
003	User Program Data
004	Logging Data
005	Diagnostic Report
006	Non-Default (SP codes not set to default)
007	NIB Summary
008	Capture Log
021	Copier User Program
022	Scanner SP Mode
023	Scanner User Program
024	SDK/J Summary
025	SDK/J Application Information
026	Printer SP Mode

Data Saved on SD Card

When **SP5992** (SP Text Mode) is executed, a folder is created automatically on the SD card, and then the text data is saved in CSV format directly below this folder.

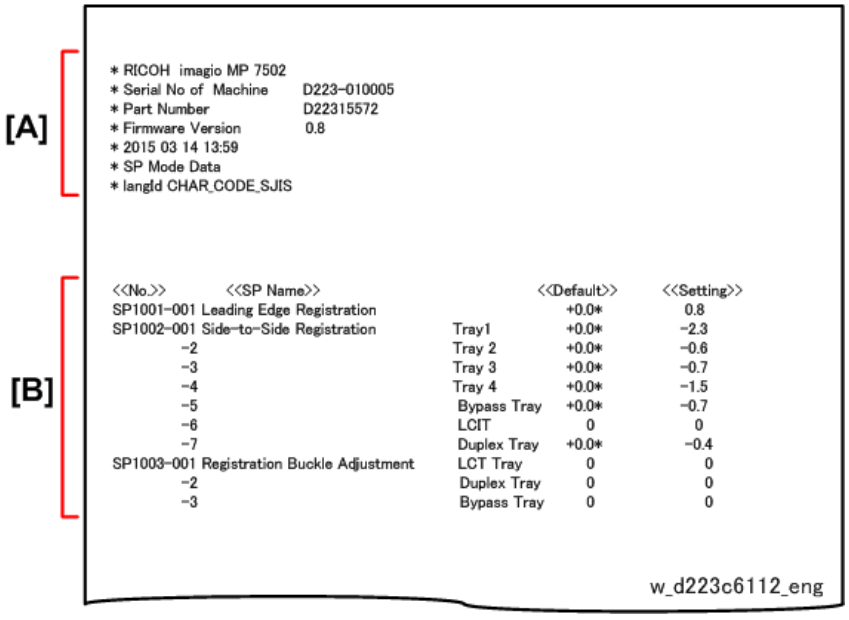
- Folder Name: Machine model number

- Filename Example



[A]	Machine model number
[B]	Shows number of the SP code executed First four digits (5992) is SP5992. The remaining digits denote the number of the sub group. The "0" prefix is reserved for the sub group numbers.
[C]	File creation date: YYYY/MM/DD. If the month, day is a single digit, then only one digit is used.
[D]	File creation time: HH/MM/SS. If the hour, minute, second is a single digit, then only one digit is used.

- Text Data Example



[A]	Base information (Model name, number, code, firmware version, date of file creation, etc.)
[B]	SMC List (**SP5992** selection branches selected for listing)

Import and Export Headings

1. The machine could freeze if the SD card is removed while data is being exported.
2. You can confirm data access (reading/writing) by watching the SD card slot LED.
3. Always confirm that the access LED of the slot is off before you remove the SD card from the slot.
4. If the machine stalls, just cycle the machine off/on to recover.
5. If less than 182.mm is specified for [Custom Size Data], when the the preferences information is exported or imported, the information under the [Custom Size Data] heading may fail to be imported.
6. The settings for small paper sizes specified for the trays may not display for each application screen, even if they are updated.

SYSTEM MAINTENANCE

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

6. SYSTEM MAINTENANCE

6.1 SERVICE PROGRAM MODE

⚠CAUTION

- Make sure that the data-in LED on the operation panel is not on before you go into the SP mode. This LED indicates that some data is coming to the machine. When the LED is on, wait for the copier to process the data.

6.1.1 ENABLING AND DISABLING SERVICE PROGRAM MODE

Note

- The Service Program Mode is for use by service representatives only. If this mode is used by anyone other than service representatives for any reason, data might be deleted or settings might be changed. In such a case, product quality cannot be guaranteed.

Entering SP Mode

For details, ask your supervisor.

Exiting SP Mode

- Press "Exit" on the LCD twice to return to the copy window.

6.1.2 TYPES OF SP MODES

- System SP: SP modes related to the engine functions
- Printer SP: SP modes related to the controller functions
- Scanner SP: SP modes related to the scanner functions
- Fax SP: SP modes related to the fax functions

Select one of the Service Program modes (System, Printer, Scanner, or Fax) from the touch panel as shown in the diagram below after you access the SP mode. This section explains the functions of the System/Printer/Scanner SP modes. Refer to the Fax service manual for the Fax SP modes.

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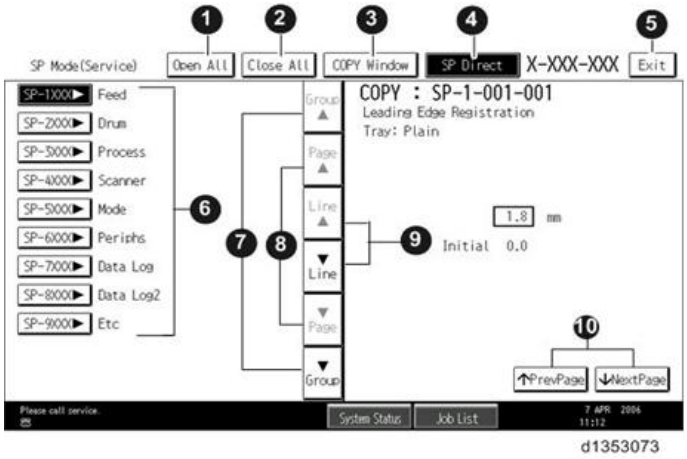
SP Mode Button Summary

Here is a short summary of the touch-panel buttons.



d1353073

1	Opens all SP groups and sublevels.
2	Closes all open groups and sublevels and restores the initial SP mode display.
3	Opens the copy window (copy mode) so you can make test copies. Press SP Mode (highlighted) in the copy window to return to the SP mode screen,
4	Enter the SP code directly with the number keys if you know the SP number. Then press [#]. The required SP Mode number will be highlighted when pressing [#]. If not, just press the required SP Mode number.)
5	Press two times to leave the SP mode and return to the copy window to resume normal operation.
6	Press any Class 1 number to open a list of Class 2 SP modes.

7	Press to scroll the show to the previous or next group.
8	Press to scroll to the previous or next display in segments the size of the screen display (page).
9	Press to scroll the show the previous or next line (line by line).
10	Press to move the highlight on the left to the previous or next selection in the list.

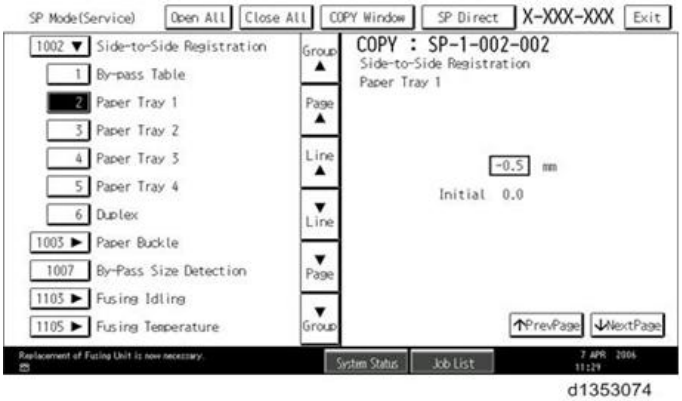
Switching Between SP Mode and Copy Mode for Test Printing

1. In the SP mode, select the test print. Then press "Copy Window".
2. Use the copy window (copier mode), to select the appropriate settings (paper size, etc.) for the test print.
3. Press [Start] key to start the test print.
4. Press SP Mode (highlighted) to return to the SP mode screen and repeat from step 1.

Selecting the Program Number

Program numbers have two or three levels.

1. Refer to the Service Tables to find the SP that you want to adjust before you begin.
2. Press the Group number on the left side SP Mode window that contains the SP that you want to adjust.
3. Use the scrolling buttons in the center of the SP mode window to show the SP number that you want to open. Then press that number to expand the list.
4. Use the center touch-panel buttons to scroll to the number and title of the item that you want to set and press it. The small entry box on the right activates and shows the below default or the current settings.



d1353074

Note

- Refer to the Service Tables for the range of allowed settings.

5. Do this procedure to enter a setting:
   - Press to toggle between plus and minus and use the keypad to enter the appropriate number. The number you enter writes over the previous setting.
   - Press [#] to enter the setting. (The value is not registered if you enter a number that is out of range.)
   - Press "Yes" when you are prompted to complete the selection.
6. If you need to perform a test print, press Copy Window to open the copy window and select the settings for the test print. Press [Start] key and then press SP Mode (highlighted) in the copy window to return to the SP mode display.
7. Press Exit two times to return to the copy window when you are finished.

Exiting Service Mode

Press the Exit key on the touch-panel.

Service Mode Lock/Unlock

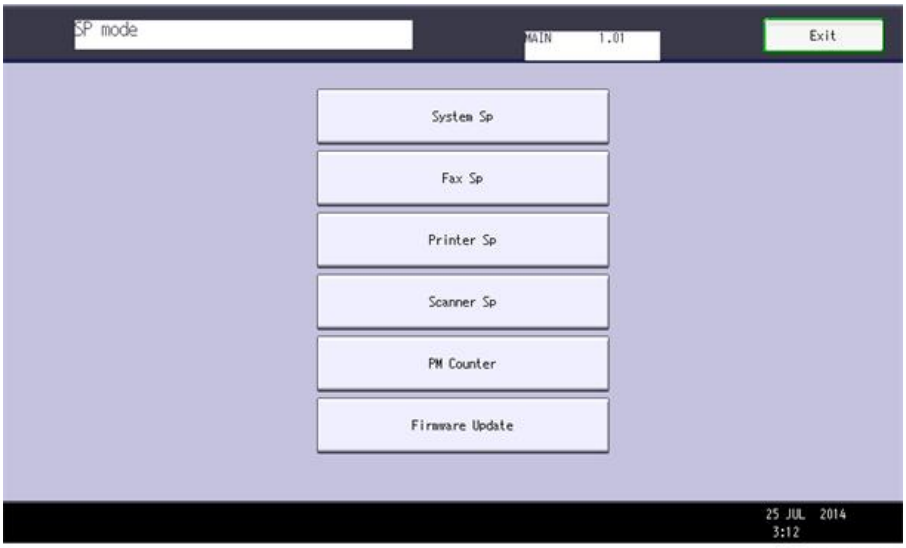
At locations where the machine contains sensitive data, the customer engineer cannot operate the machine until the Administrator turns the service mode lock off. This function makes sure that work on the machine is always done with the permission of the Administrator.

1. If you cannot go into the SP mode, ask the Administrator to log in with the User Tool and then set "Service Mode Lock" to OFF after he or she logs in:
   > > User Tools> Machine Features> System Settings> Administrator Tools > Service Mode Lock
   - This unlocks the machine and lets you get access to all the SP codes.
   - The CE can service the machine and turn the machine power switch off and on. It is not necessary to ask the Administrator to log in again each time the main power switch is turned on.
2. Go into the SP mode and set **SP5-169** to "1" if you must use the printer bit switches.
3. After machine servicing is completed:
   - Change **SP5-169** from "1" to "0".
   - Turn the machine power switch off and on. Tell the administrator that you have completed servicing the machine.
   - The Administrator will then set the "Service Mode Lock" to ON.

PM Counter/ Firmware Update

PM Counter and Firmware Update can be entered in the SP mode main screen.

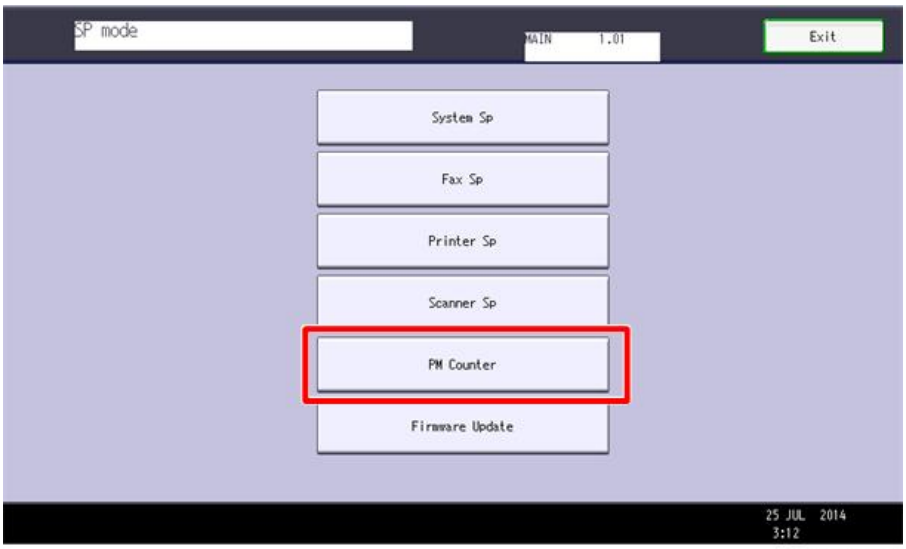
- PM Counter: PM counters for each PM part
- Firmware Update: Immediate remote update and remote update at next visit.



d197z3001

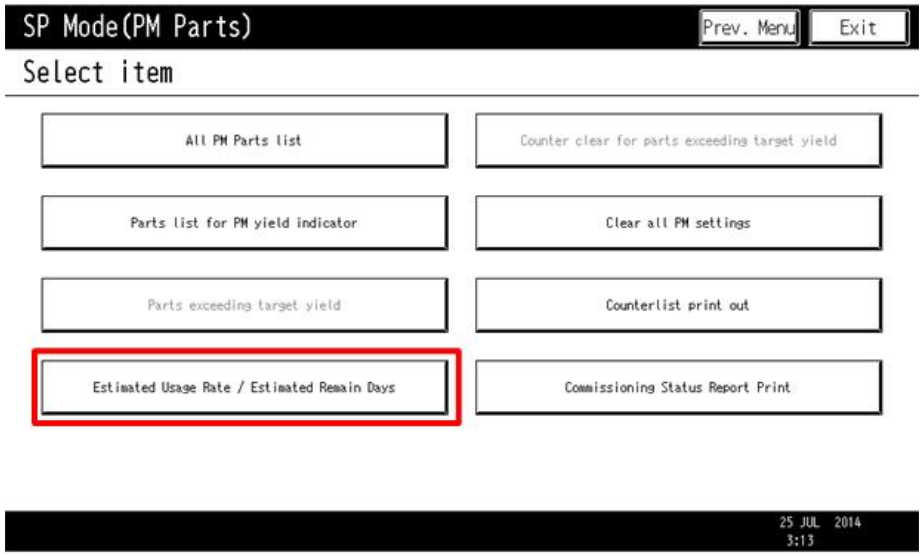
Checking the PM Counter

1. Enter the SP mode, and then press [PM Counter].



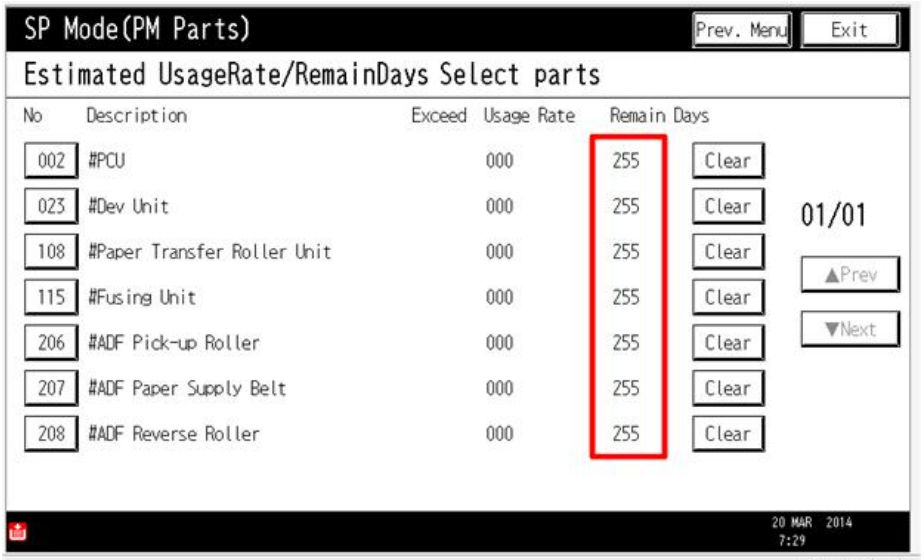
d197z3002

2. Press [Estimated Usage Rate/Estimated Remain Days].



d197z3003

3. You can see the “Remaining Days for each part”.



d197z3004

Executing Firmware Update

For details about how to use the Firmware Update, refer to Package Firmware Update.

6.1.3 REMARKS

The maximum number of characters which can show on the control panel screen is limited to 30 characters. For this reason, some of the SP modes shown on the screen need to be abbreviated. The following are abbreviations used for the SP modes for which the full description is over 20 characters.

Item	Description
Paper Weight	Thin paper: 52-59 g/m^2, 13.9-15.7lb. Plain Paper1: 60-74 g/m^2, 16-19.7lb. Plain Paper2: 75-81 g/m^2, 20-21.6lb. Middle Thick: 82-105 g/m^2, 21.9-28lb. Thick Paper1: 106-157 g/m^2, 28.3-41.9lb.
Paper Type	N: Normal paper MTH: Middle thick paper TH: Thick paper
Paper Feed Station	P: Paper tray B: By-pass table
Print Mode	S: Simplex D: Duplex

Others

The settings of each SP mode are explained in the right-hand column of the SP table in the following way.

[Adjustable range / **Default setting** / Step] Alphanumeric

Note

- If "Alphanumeric" is written to the right of the bracket as shown above, the setting of the SP mode shows on the screen using alphanumeric characters instead of only numbers. However, the settings in the bracket in the SP mode table are explained by using only the numbers.

The following symbols are used in the SP mode tables.

Notation	What it means
ENG	Engine SP
CTL	Controller SP
FA	Factory setting: Data may be adjusted from the default setting at the factory. Refer to the factory setting sheets enclosed. You can find it in the front cover.
DFU	Design/Factory Use only: Do not touch these SP modes in the field.
*	An asterisk (*) to the left side of ENG/CTL column means that this mode is stored in the NVRAM. If you do a RAM clear, this SP mode will be reset to the default value. "ENG" and "CTL" show which NVRAM contains the data. ▪ *ENG: NVRAM on the BCU board ▪ *CTL: NVRAM on the controller board
SSP	This denotes a "Special Service Program" mode setting.

6.2 TEST PATTERN PRINTING

6.2.1 PRINTING TEST PATTERN: SP2902

Some of these test patterns are used for copy image adjustments but most are used primarily for design testing. These test patterns do not use the IPU.

Note

- Do not operate the machine until the test pattern is printed out completely. Otherwise, an SC may occur.

1. Enter the SP mode and select **SP2902**.
2. Enter the number for the test pattern that you want to print and press [#]. (See the table below.)
3. When you are prompted to confirm your selection, press Yes to select the test pattern for printing.
4. Press Copy Window to open the copy window, then select the settings for the test print (paper size, etc.)
5. Press [Start] twice (ignore the “Place Original” messages) to start the test print.
6. After checking the test pattern, press SP Mode (highlighted) to return to the SP mode display.
7. Exit the SP mode.

Test Pattern Table

These patterns can be selected.

No.	Test Pattern
0	None
1	Alternating Dot Pattern (1-dot)
2	Alternating Dot Pattern (2-dot)
3	Alternating Dot Pattern (4-dot)
4	Alternating Dot Pattern (1024-dot)
5	Grid Pattern (1-dot): 0ch
6	Grid Pattern (1-dot): 1ch
7	Grid Pattern (1-dot): 2ch
8	Grid Pattern (1-dot): 3ch

No.	Test Pattern
9	Grid Pattern (1-dot pair)
10	Checker Flag Pattern
11	Horizontal Line (2-dot)
12	Vertical Line (2-dot)
13	Horizontal Line (1-dot)
14	Vertical Line (1-dot)
15	Cross Stitch (Vertical)
16	Cross Stitch (Horizontal)
17	Argyle Pattern
18	Trimming Area
19	Full Dot Pattern
20	Black Band (Vertical)
21	Black Band (Horizontal)
22	Blank Image
23	Grid (1 dot: Och with Outside Data)
24	Trimming Area (with external data)
25	Argyle Pattern (with external data)

6.3 FIRMWARE UPDATE

6.3.1 SOFTWARE UPDATE

Software Update Procedure

SD cards are used to update the software and to back up important data. Here is a list of the firmware modules that can be updated or restored from an SD card:

- GW controller software
- BCU software
- LCDC (operation panel) software
- Network Sys (network) software
- Web Sys (Web Image Monitor)
- Document Server software
- NFA (Net File) software
- Printer application software
- Scanner application software
- DESS (encryption module) software

Important

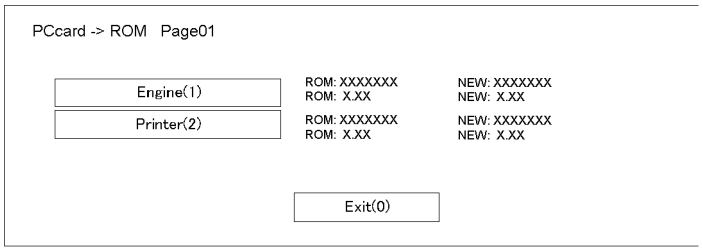
- Never connect or remove an SD card with the machine power turned on.
- Never turn the power off while the machine is downloading data from an SD card.
- Never store SD cards in a location where they are exposed to high temperature, high humidity, or direct sunlight.
- Never bend an SD card, scratch it, or expose it to strong vibration.
- Before uploading data to an SD card, always confirm that its write-protect switch is off.

Doing the Software Update Procedure

Before you do this procedure you must have the most recent version of the firmware downloaded to an SC card.

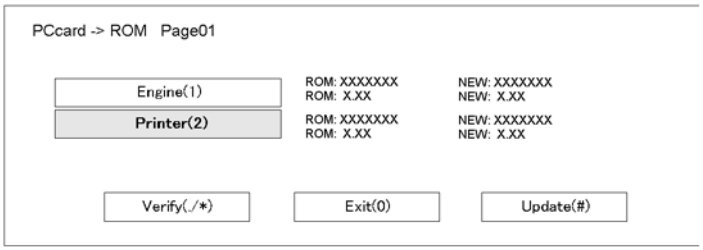
1. Turn the main switch off.
2. Remove the SD card slot cover.
3. Insert the SD card into SD card Slot 2. Make sure that the SD card has clicked and locked in place.
4. Turn the machine on.
5. The machine will prompt you "Please Wait" as the firmware update program boots. This requires about 35 sec.
6. Wait for the version update screen to appear.
   If the SD card contains more than one software application, the screen will be almost the same as the one below. The screen below shows that the SC card contains two applications:

"Engine" and "Printer".



b246s903

7. To select the item for upgrade, touch the selection on the touch panel, or push the corresponding key on the 10-key pad (1 to 5) of the operation panel. The number in parentheses tells you which key to push. When you make a selection, the [Verify(./*)] and [Update(#)] buttons come on the screen.



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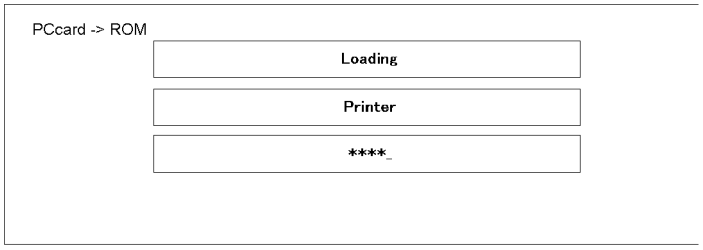
- If you push [Exit] (or the [0] key), you go back to the usual operation screen.
- Push the [Start] key on the operation panel to select and download all the options shown on the screen.
- Push the [Clear] key on the operation panel if you want to cancel your selections and make new ones.
- "ROM": This is the number and other version information of the ROM firmware installed in the machine at this time.
- "NEW": This is the number and other version information of the firmware on the SD card.

8. With the selected items shown in reverse color, push the [Update] button or the [#] key on the operation panel to start the update.
   After you push [Update]:



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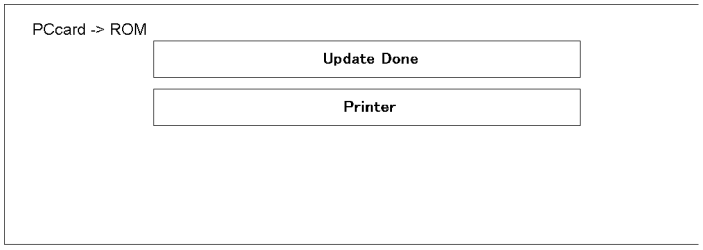
- The middle bar shows the name of the module that the machine updates at this time. (The example above shows that the machine updates the "Printer" module at this time.)
- The bottom bar is a progress bar. The "_" marks in the progress bar are replaced by "*" marks. This progress bar cannot be displayed during the firmware update for the operation panel. But, the LED of the [Start] key on the operation panel changes from red to green to show that the update of the operation panel firmware continues.
- When the update is completed, you will see this screen.



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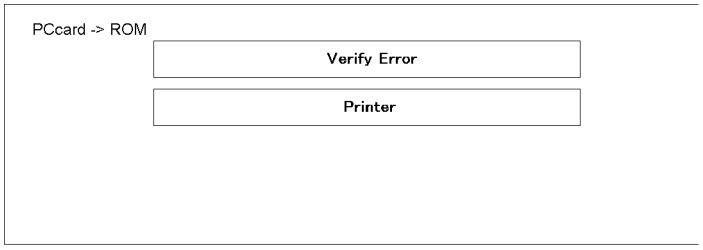
After the firmware update, you will see "Update Done" in the first bar. The name of the module in the bottom bar is the name of the last module that was updated (only the name of the last module is shown, if several modules were been updated).

9. Turn the power off and on. Then, select the items that you updated, and then push the [Verify] button. This is to check that the modules were updated correctly.
10. If you see "Verify Error" in the first bar on the screen, then you must do the procedure again for the module shown in the bottom bar.



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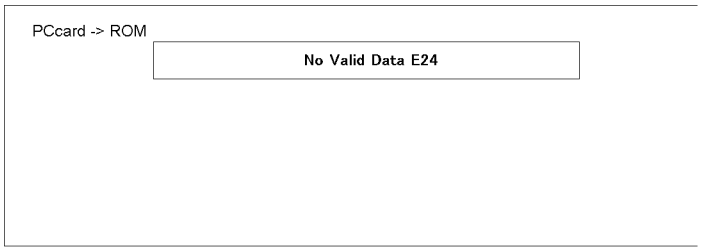
Note

- The "Verify" procedure is not necessary but it is strongly recommended.

11. After the firmware is correctly updated, turn the main power switch off.
12. Push the SD card in a small distance to release it, then pull it out of the slot.
13. Turn the main power switch on, and check that the machine operates correctly.

Errors During Firmware Update



b246s908

If an error occurs during a download, an error message will appear. The error code consists of the letter "E" and a number ("E20", for example).

Error Message Table

No.	Meaning	Solution
20	Cannot map logical address	Make sure the SD card is installed correctly, or use a different SD card.
21	Cannot access memory	HDD connection not correct, or replace hard disk.
22	Cannot decompress compressed data	The ROM data on the SD card is not correct, or data is damaged.
23	Error occurred when ROM update program started	Controller program defective. If the second attempt fails, replace the controller board.
24	SD card access error	Make sure the SD card is installed correctly, or use a different SD card.
30	No HDD available for stamp data download	HDD connection not correct or replace hard disks.
31	Data incorrect for continuous download	Install the SD card with the remaining data necessary for the download, then re-start the procedure.
32	Data incorrect after download interrupted	Do the recovery procedure for the module, then repeat the installation procedure.
33	Incorrect SD card version	The ROM data on the SD card is not correct, or data is damaged.

No.	Meaning	Solution
34	Module mismatch - Correct module is not on the SD card	The data on the SD is not correct. Get the correct data (Japan, Overseas, OEM, etc.) then install again.
35	Module mismatch – Module on SD card is not for this machine	SD update data is not correct. The data on the SD card is for a different machine. Get the correct data then install again.
36	Cannot write module – Cause other than E34, E35	SD update data is not correct. The data on the SD card is for a different machine. Get the correct data then install again.
40	Engine module download failed	Replace the data for the module on the SD card and try again, or replace the BCU board.
42	Operation panel module download failed	Replace the data for the module on the SD card and try again, or replace the LCDC.
43	Stamp data module download failed	Replace the data for the module on the SD card and try again, or replace the hard disk.
44	Controller module download failed	Replace the data for the module on the SD card and tray again, or replace the controller board.
50	Electronic confirmation check failed	SD update data is not correct. The data on the SD card is for a different machine. Get the correct data then install again.
143	Clear/Stop	

Updating the LCDC for the Operation Panel

1. Use this procedure to update the LCDC (LCD Control Board).
2. Turn the copier main switch off.
3. Put the SD card into slot 2.
4. Turn the copier main switch on.
5. Stop until the card utility screen is displayed.
   After approximately 10 seconds, the initial screen opens in English.
6. Touch [Opepanel.DOM].
7. Touch [UpDate(#)] to start the update.
   While the data downloads, the operation panel goes off.
   The LED on the [Start] key flashes red at 1/2 second intervals for approximately 6 minutes.
   When the update is completed, the [Start] key starts to flash at 1-second intervals.
8. Turn the copier main power switch off, remove the SD card, then turn the copier on again.

Downloading Stamp Data

After you replace or format the HDD, download the stamp data from the controller firmware to the hard disk.

1. Go into the SP mode.
2. Select **SP5853** then press "Execute".
3. Obey the instructions on the screen to complete the procedure.

6.3.2 UPLOADING/DOWNLOADING NVRAM DATA

Uploading Content of NVRAM to an SD card

Do this procedure to upload SP code settings from NVRAM to an SD card.

Note

- Always upload this data to an SD card before you replace the NVRAM.

1. Before you turn the machine off, do SP5990 001 (SMC Print). This gives you a record of the NVRAM settings if the upload fails.
2. Turn the copier main power switch off.
3. Put the SD card into slot 2, then turn the copier on.
4. Do **SP5824 001** (NVRAM Data Upload) then push the "Execute" key
   When uploading is completed, a file is coped to the NVRAM folder on the SD card. The file is saved to this path and filename:
   NVRAM¥<serial number>.NV
5. To prevent an error during the download, write the serial number of the machine on the SD card.

   Note

   - This is necessary because NVRAM data from more than one machine can be uploaded to the same SD card.

Downloading an SD Card to NVRAM

Do this procedure to download SP data from an SD card to the NVRAM in the machine.

- If the SD card with the NVRAM data is damaged, or if the connection between the controller and BCU is defective, the NVRAM data download will not complete correctly.
- If the download does not complete correctly, do the download procedure again.
- If this does not complete correctly, input the NVRAM data manually from the SMC print that you made before you uploaded the NVRAM data.

1. Turn the copier main power switch off.
2. Put the SD card with the NVRAM data into slot 2.
3. Turn the copier main power switch on.
4. Do SP5825-001 (NVRAM Data Download) and push the "Execute" key.

   Note

   - This procedure also downloads the C/O, P/O Count data to the NVRAM:
   - The serial number of the file on the SD card must match the serial number of the machine. If the serial numbers do not match, the download will not complete correctly.

6.4 UPDATING JAVAVM

6.4.1 CREATING AN SD CARD FOR UPDATING

1. Download the update modules from Firmware Download Center. As one of the model modules, "Java VM v11 UpdateTool" is available for download. (The version differs depending on the model.)
2. Unzip the downloaded file. Copy the whole "sdk" folder to the root of the SD card directly below.

Note

- When unzipping the downloaded file, two subfolders ("update" and "sdk") exist in the "sdk" folder. Rather than just copying the subfolder "sdk", copy the whole folder "sdk".

Updating Procedure

⚠CAUTION

- SD card can be inserted with the machine power off.
- During the updating process, do not turn off the power.
- If you turn off the power during the updating, the machine performance is not guaranteed. (There is a possibility that an SC and boot failure occurs.)
- If you accidentally turn off the power during the updating, retry the updating procedure from the beginning. (If the update fails again, you will need to replace the controller board.)

1. If the boot priority application is set to the ESA application, switch to the copy application. ([System Settings]-[General Features]-[Function Priority])
2. Insert the SD card you created into the service slot, and then turn ON the main power switch.
3. After booting Java VM, update of the application is started. "Updating SDK/J" appears in the banner message of the touch panel display. (Estimated time: about 2 minutes)

4. When the update is complete, "Update SDK / J done SUCCESS" will appear in the banner message of the touch panel display. After turning off the power, remove the SD card from the slot.
   When you fail to update, "Update SDK/J done FAIL" is displayed. You can confirm the cause of the error message below.
5. Reconfigure the Heap size. ([Extended Feature Settings]-[Administrator Tools]-[Heap/Stack Size Settings]).
   See the manual for the ESA application to know what value to set for the heap size.
6. Return to the previous setting for the boot priority application.

List of Error Messages

Update results are output as a text file on the SD card called "sdkjversionup.log" in the "¥sdk ¥update" folder.

Result	File contents	Description of the output
Success	script file = /mnt/sd0/sdk/update/bootscript 2012/08/22 17:57:47 start 2012/08/22 17:59:47 end SUCCESS	Boot script path Boot scripts processing start time End time boot script processing, the results
Failure	script file = /mnt/sd0/sdk/update/bootscript 2012/08/22 17:57:47 start XXXX Error 2012/08/22 17:57:57 end FAIL	Boot script path Boot scripts processing start time Error message (Possibly multiple) End time boot script processing, the results

Error Message	Cause	Remedy
PIECEMARK Error,machine=XXXXX	Applied the wrong updating tool (Using the updating tool of a different model)	Use the correct updating tool for this model.
pasePut() - error : The file of the copy origin is not found Put Error!	Inadequacy with the SD card for updating (Files are missing in the updating tool)	Re-create the SD card for updating.

Error Message	Cause	Remedy
paseCopy() - error : The file of the copy origin is not found. Copy Error!	Inadequacy SD card for updating (Files in the updating tool are missing)	Inadequacy SD card for updating (Files in the updating tool are missing)
[file name: XX] error,No space left on device pasePut() - error : The destination directory cannot be made. pasePut() - error : fileCopy Error. Put Error!	Writing destination is full. (The NAND flash memory on the controller board is full.)	Uninstall the unnecessary SDK applications. If you can not uninstall it, implement escalation, stating the "model name, application configuration, SMC sheet (SP5-990-006/024/025), and error file."
[file name: XX] error,No space left on device paseCopy() - error : The destination directory cannot be made. paseCopy() - error : fileCopy Error. Copy Error!	Writing destination is full. (The NAND flash memory on the controller board is full.)	Uninstall the unnecessary SDK applications. If you can not uninstall it, implement escalation stating the "model name, application configuration, SMC sheet (SP5-990-006/024/025), and error file."
Put Error! *1	Error, not normally expected to occur	If you cannot uninstall it, implement escalation stating the "model name, application configuration, SMC sheet (SP5-990-006/024/025), and error file." *1 Without the foregoing error message, only "Put Error / Copy Error" will be displayed
Copy Error! *1		
Delete Error!		
[XXXXX] is an unsupported command.		
Version Error		

6.5 NVRAM UPLOAD/DOWNLOAD

6.5.1 UPLOADING NVRAM DATA TO AN SD CARD

Before you begin, please note:

- Uploading NVRAM contents to an SD card will fail if the machine serial number of the machine is not registered with **SP5811**.
- The machine serial number is set at the factory before shipping.
- NVRAM data can be uploaded from several machines and stored on the same SD card because a unique filename is created automatically for each machine.

1. Enter the SP mode and do **SP5990-2** to print an SMC report.
   - Always print an SMC report before uploading NVRAM data, just in case the download of the NVRAM data fails.
   - If the download fails, you can use the report to re-enter the SP and UP settings manually.
2. Turn the machine off.
3. Remove the SD slot cover.
4. Insert the SD card into SD Card Slot 2 (lower slot).
5. Turn the machine on.
6. Enter the SP mode and do **SP5824** (NVRAM Data Upload).
7. Touch [EXECUTE] on the operation panel to start the upload.
   - Data uploaded from NVRAM is stored in a file in the NVRAM folder created on the on the card: NVRAM folder> D224*.nv
     where D224*.nv is the number of the machine entered at the factory before shipping. The number will be unique for each machine.
   - If this upload is done with the NVRAM folder and file from a previous upload is stored on the SD card, the folder and file will be overwritten. (A new directory and file are not created.)

6.5.2 DOWNLOADING NVRAM DATA FROM AN SD CARD

Before you begin, please note:

- Downloading NVRAM data from an SD card may fail if the SD card is defective.
- If downloading NVRAM data from an SD card fails, just repeat the procedure.
- If the second attempt to download from the SD card fails, then you must enter the SP and UP settings manually from the SMC report you printed before uploading the NVRAM data to the SD card.

1. Turn the machine off.
2. Remove the SD slot cover.
3. Insert the SD card that holds the NVRAM data into SD Card Slot 2 (lower slot).

   Important

   - The machine number included in the filename of the file on the SD card must match the number of the machine.
4. Turn the machine on.
5. Enter the SP mode and open **SP5825**.
6. Touch [EXECUTE]. The download executes.
7. When the prompt that tells you that the operation has completed and that the machine must be re-booted, touch [Exit].
8. Exit the SP mode and remove the SD card.
9. Cycle the machine off/on.

6.6 UP/SP DATA IMPORT/EXPORT

6.6.1 OVERVIEW

Import/export conditions

Import/export is possible between devices only if their model type, region of use, and the following device configurations match.

- Input Tray
- Output Tray
- ARDF
- Whether or not equipped with a hard disk
- Whether or not equipped with a finisher and the type of finisher

6.6.2 UP DATA IMPORT/EXPORT

Data that can be imported and exported

- Copier / Document Server Features
- Printer Features
- Scanner Features
- Facsimile Features
- Browser Features
- Extended Feature Settings
- Program (Document Server)
- Program (Copier)
- Program (Scanner)
- Web Image Monitor Setting
- Web Service Settings
- System Settings

Data that cannot be imported or exported

- Some System Settings *1 *2

  *1 The setting for the date, settings that require the device certificate, and settings that need to be adjusted for each machine (for example, image adjustment settings) cannot be imported or exported.

  *2 Settings only for executing functions and settings only for viewing cannot be imported or exported.
- Extended Feature Settings
- Address book
- Programs (fax function)

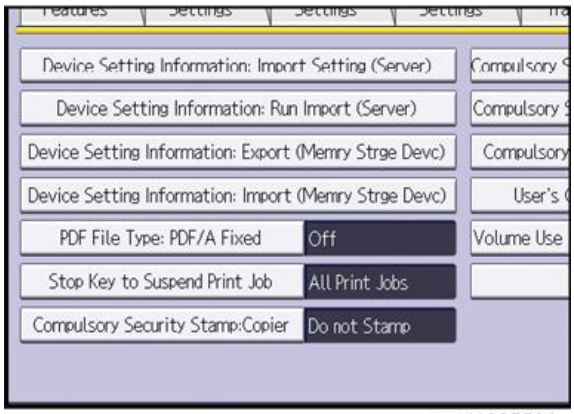
- Programs (printer function)
- User stamp in Copier / Document Server Features
- Settings that can be specified via telnet
- @Remote-related data
- Counters
- EFI printer unit settings
- Settings that can only be specified via Web Image Monitor or Web Service (for example, Bonjour, SSDP setting)

Exporting Device Information

This can be exported / imported by an administrator with all privileges.

When exporting SP device information from the control panel, the data is saved on an SD card.

1. Insert an SD card into the media slot on the side of the control panel.
2. Log in from the control panel as an administrator with all privileges.
3. > > User Tools> Machine Features
4. Press [System Settings].
5. Press [Administrator Tools].
6. Press [Next] four times.
7. Press [Device Setting Information: Export (Memry Strge Devc)].



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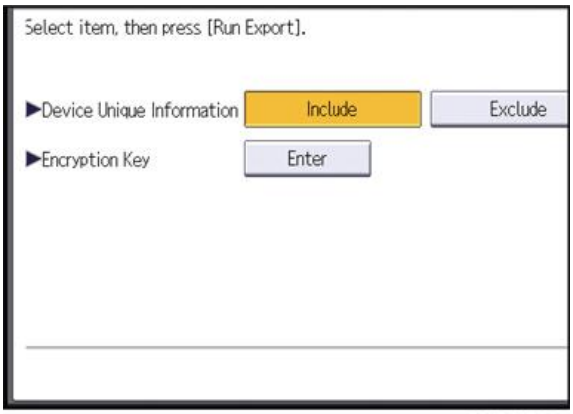
8. Set the export conditions.
   - Specify whether to [Include] or [Exclude] the "Device Unique Information". "Device Unique Information" includes the IP address, host name, fax number, etc.
   - Specify an encryption key.



w_d1825502

9. Press [Run Export].
10. Press [OK].
11. Press [Exit].
12. Log out.

Note

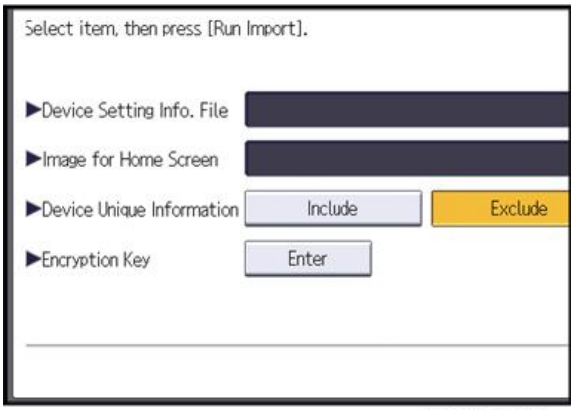
- If data export fails, the details of the error can be viewed in the log.
- When device Information is periodically imported, it is necessary to create the device setting information file with special software and store it on the web server.

Importing Device Information

This can be exported / imported by an administrator with all privileges.

Import device information saved on an SD card.

1. Insert an SD card into the media slot on the side of the control panel.
2. Log in from the control panel as an administrator with all privileges.
3. > > User Tools> Machine Features
4. Press [System Settings].
5. Press [Administrator Tools].
6. Press [Next] four times.
7. Press [Device Setting Information: Import (Memry Strge Devc)].
8. Configure the import conditions.



w_d1825503

- Press [Select] of the "Device Setting Info. File" to select the file(s) to import.
- When inserting a file into a home screen, press [Select] for the Image for Home screen and select the file. You cannot use this setting when using the Smart Operation Panel.
- Specify whether to [Include] or [Exclude] the "Device Unique Information". "Device Unique Information" includes the IP address, host name, fax number, etc.
- Enter the encryption key that was specified when the file was exported.

9. Press [Run Import].
10. Press [OK].
11. Press [Exit].

    The machine restarts.

Note

- If data export fails, the details of the error can be viewed in the log.

6.6.3 SP DATA IMPORT/EXPORT

Data that can be imported and exported

- System SP
- Printer SP
- Fax SP
- Scanner SP

Exporting Device Information

When exporting SP device information from the control panel, the data is saved on an SD card.

1. Insert an SD card into the media slot on the side of the control panel.
2. Enter SP mode.
3. Open **SP5-749-001** (Import/Export: Export)
4. Select “Target” SP settings (System, Printer, Scanner, Fax, Smart Operation Panel) to be exported.
5. Select “Option” settings (Unique/Secret).

Item	Specification	Note
Unique	Unique information of the machine is included in the exported file if you select "Unique" setting.	**Unique information that can be updated** #1. Items that are to be used to identify the machine. Example: Network Information/ Host name / Information related to fax number /Mail address assigned to the machine #2. Items for specifying the options equipped on the machine. Example: Lot number for developer **Unique information that cannot be updated** #1. Items that may cause a problem if imported Example: Serial number / Information related to @Remote #2. Items for managing the history of the machine Example: Time and date / Counter information / Installation date #3. Setting values for the Engine

Item	Specification	Note
Secret	Secret information is exported if you select "Secret" setting.	**Secret information** #1. Data that cannot be exported without being encrypted. (Exported data is encrypted.) Example: Password / Encryption key / PIN code #2. Confidential information for the customer Example: User name / User ID / Department code / Mail address / **Phone number** #3. Personal information Example: Document name / Image data #4. Sensitive information for the customer Example: MAC address / Network parameters

* The IP address is exported when both 'Unique' and 'Secret' are selected.

6. Select “Crpt config” setting (Encryption).

Encryption	Select whether to encrypt or not when exporting. If you push the "Encryption" key, you can export secret information.	If the encryption function is used, setting of an encryption key is required by direct input. ▪ Type the arbitrary password using the soft keyboard ▪ Can enter up to 32 characters

7. Press [Execute].
8. Press [OK].

Note

- If data export fails, the details of the error can be viewed in the log.

Importing Device Information

Import device information saved on an SD card.

1. Insert an SD card into the media slot on the side of the control panel.
2. Enter SP mode.
3. Press **SP5-749-101**(Import/Export: Import)
4. Select a unique setting.
5. Press [Encryption Key], if the encryption key was created when the file was exported.
6. Select an encryption setting.

Unique	If you want to apply the unique information to the target machine, select the "Unique" key.	Refer to the above information.
Encryption	If an encrypted file is selected as the import file, this setting is required.	

7. Press [Execute].
8. Press [OK].

Note

- If data export fails, the details of the error can be viewed in the log.

6.6.4 POSSIBLE SOLUTIONS FOR IMPORT/EXPORT PROBLEMS

The access log file is created when export/import is executed. The file is stored in the same location as the exported device setting information file.

If an error occurs, check the log's result code in the access log file first. Values other than 0 indicate that an error occurred.

The result code will appear in the circled area illustrated below.

- Example of a log file

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If you cannot solve the problem or do not know how to solve it after checking the code, note down the error log entry, then contact your supervisor.

2 (INVALID REQUEST)

- **Cause**: A file import was attempted between different models or machines with different device configurations.
- **Solution**: Import files exported from the same model with the same device configurations.

4 (INVALID OUTPUT DIR)

- **Cause**: Failed to write the device information to the destination device.
- **Solution**: Check whether the destination device is operating normally.

7(MODULE ERROR)

- **Cause**: An unexpected error occurred during import or export.
- **Solution**: Switch the power off and then back on, and then try the operation again. If the error persists, contact your supervisor.

8 (DISK FULL)

- **Cause**: The available storage space on the external medium is insufficient.
- **Solution**: Execute the operation again after making sure there is enough storage space.

9 (DEVICE ERROR)

- **Cause**: Failed to write or read the log file.
- **Solution**: Check whether the path to the folder for storing the file or the folder in which the file is stored is missing.

10 (LOG ERROR)

- **Cause**: The hard disk is faulty.
- **Solution**: Contact your supervisor.

20 (PART FAILED)

- **Cause**: Failed to import some settings.
- **Solution**: The reason for the failure is logged in "NgCode". Check the code.

  Reason for the Error (Ng-Name)

  2. INVALID VALUE

  The specified value exceeds the allowable range.

  3. PERMISSION ERROR

  The permission to edit the setting is missing.

  4. NOT EXIST

  The setting does not exist in the system.

  5. INTERLOCK ERROR

  The setting cannot be changed because of the system status or interlocking with other specified settings.

  6. OTHER ERROR

  The setting cannot be changed for some other reason.

21 (INVALID FILE)

- **Cause**: Failed to import the file because it is in the wrong format in the external medium.
- **Solution**: Check whether the file format is correct. The import file should be a CSV file.

22 (INVALID KEY)

- **Cause**: The encryption key is not valid.
- **Solution**: Use the correct encryption key.

Note

- When exporting device information from the control panel, the data can be saved only on an SD card. The file format for exports is CSV.

6.7 ADDRESS BOOK UPLOAD/DOWNLOAD

6.7.1 INFORMATION LIST

The following information is possible to be uploaded and downloaded.

- Registration No.
- User Code
- E-mail
- Protection Code
- Group Name
- Key Display
- Select Title
- Folder
- Local Authentication
- Folder Authentication
- Account ACL
- New Document Initial ACL
- LDAP Authentication

6.7.2 DOWNLOAD ADDRESS BOOK

1. Prepare a formatted SD card.
2. Make sure that the write-protection on the SD card is off.
3. Turn off the main power switch of the main machine.
4. Remove the SD slot cover.
5. Insert an SD card into Slot 2.
6. Turn the machine on.
7. Enter the SP mode.
8. Do **SP5846-051** (Backup All Addr Book).
9. Exit the SP mode, and then turn the machine off.
10. Remove the SD card form Slot 2.
11. Re-attach the SD card slot cover.

Note

- If the capacity of SD card is not enough to store the address book data, an error message is displayed.
- Handle the SD card with care.
- Never remove an SD card with address book information from the work site.

6.7.3 UPLOAD ADDRESS BOOK

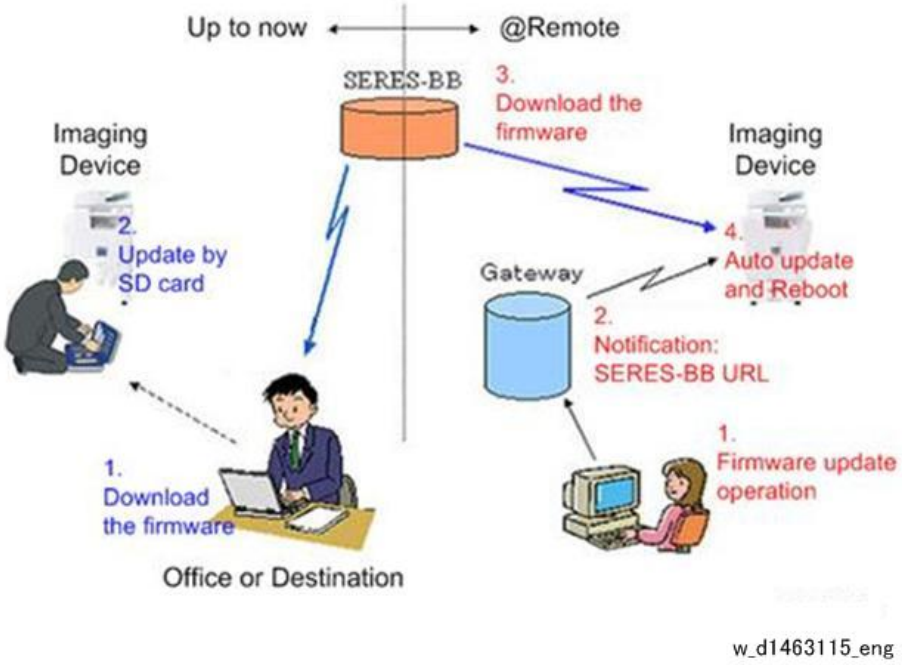
1. Turn the machine off.
2. Remove the SD slot cover [A] (x 1).
3. Insert the SD card that holds the address book data into Slot 2.
4. Turn the machine on.
5. Enter the SP mode.
6. Do **SP5846-052** (Restore All Addr Book).
7. Exit the SP mode, and then turn the machine off.
8. Remove the SD card from Slot 2.
9. Re-attach the SD slot cover.

Important

- The counter in the user code information is initialized after uploading.
- Administrator and supervisor related information can be neither downloaded nor uploaded.
- If there is no address book data on the SD card, the machine will return an error message.

6.8 RFU FIRMWARE UPDATE

In this machine, software can be updated by remote control using @Remote.



6.8.1 RFU CONDITIONS

RFU can be done with a device which meets the following conditions:

There are two conditions for RFU:

1. First, the customer must consent to the use of RFU.
2. Second, the device must be connected to a network via TCP/IP for @Remote.

System Maintenance

6.9 FIRMWARE UPDATE (AUTO REMOTE FIRMWARE UPDATE)

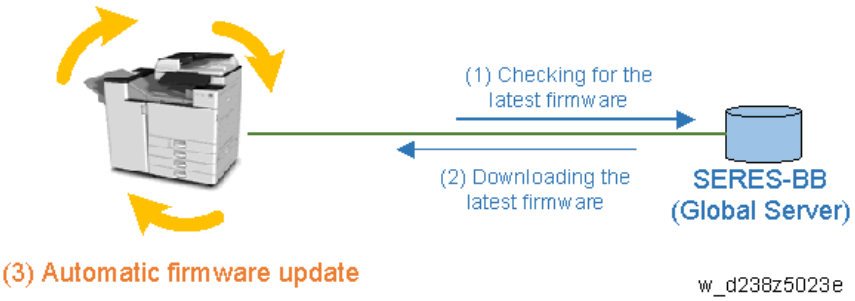
Note

- Auto remote firmware update (ARFU) requires connection to an external network. Be sure to get permission from the customer before setting.
- Internet connection is needed.

6.9.1 OVERVIEW

By Auto Remote Firmware Update (ARFU), the firmware is updated by checking the global server every 76 hours and downloading the latest package if it is newer than the one installed on the machine.

Function Overview



Types of firmware update files, supported update methods:

	SFU	SD Card	RFU	ARFU
Individual firmware	N/A	Available	Available	N/A
Package firmware	Available	Available	Available	Available

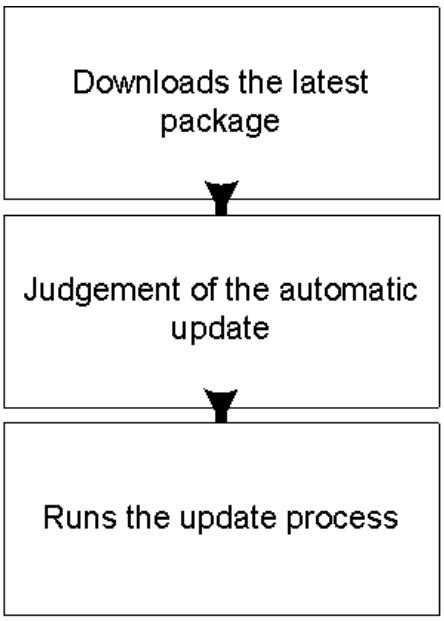
What is Included in the Firmware Package

Modules included in the firmware package are indicated by ticks (✓).

Firmware not included in the package requires updating by SD cards, etc.

Included	Firmware
-	aics
✓	animation
✓	Application Site
✓	BluetoothService
✓	CheetahSystem
-	CSPF
-	Data Erase Onb
-	EcoInfoWidget
✓	Engine
-	External Auth
✓	Fax
-	FaxInfoWidget
✓	GWFCU3.8-9(WW)

6.9.2 DOWNLOADING AND UPDATING PROCESS



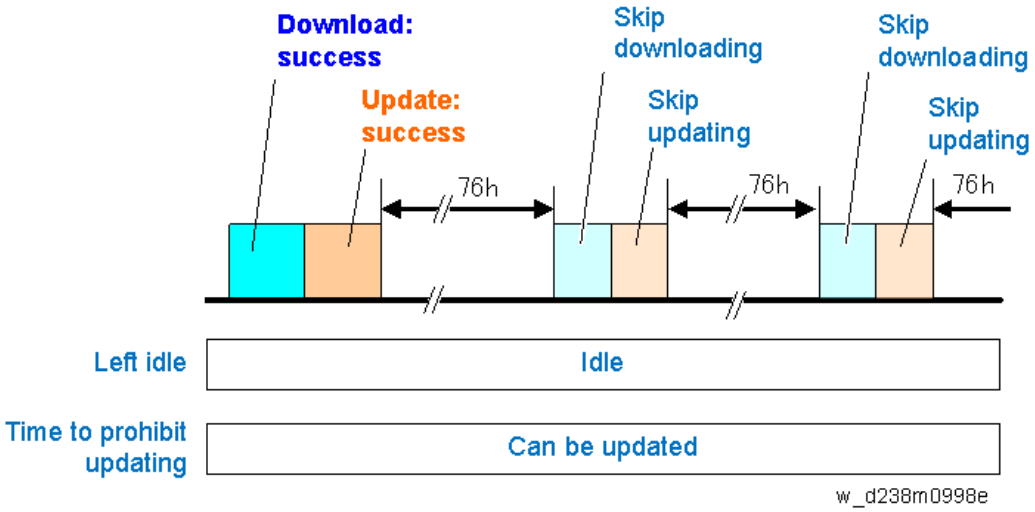
w_d238z5024e

Downloads the latest package

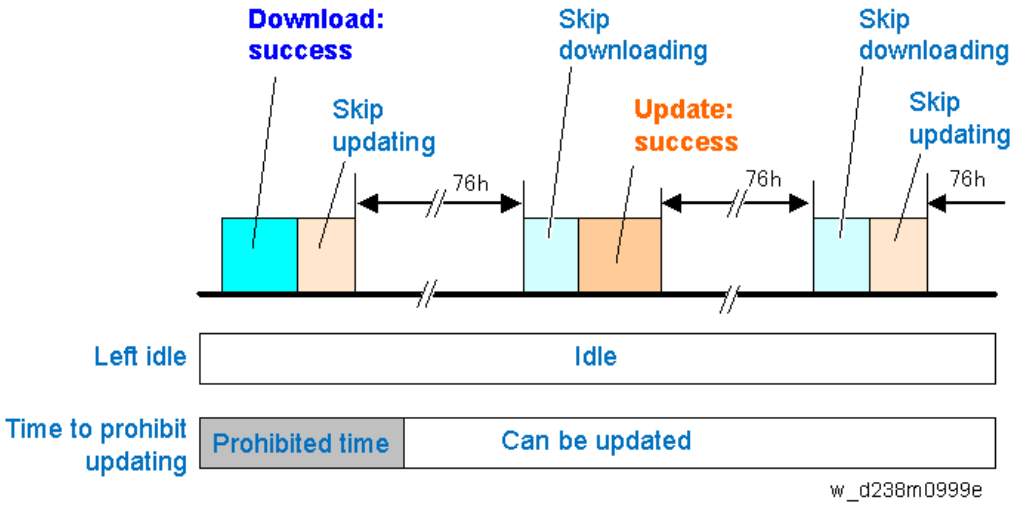
The machine checks the server for the latest package version.
If the version of the package on the global server is later than that of the package installed on the machine, or if the machine has not downloaded the firmware package, the machine downloads the latest package in the background even when the customer is using the machine.
If download fails, the machine will retry downloading 76 hours later.
The downloaded package can also be used with SFU (Smart Firmware Update). A package downloaded with SFU (Smart Firmware Update) can be used with ARFU (Auto Remote Firmware Update) and vice versa.
When replacing the hard disk, information concerning the current firmware package becomes lost from the hard disk. So, even if the latest firmware is on the new hard disk, be sure to download the latest package data.
When the machine connects to the server where the package files are stored, the DNS settings and the name solution by DNS are needed. The machine will still try to download the package even if the name cannot be resolved, but will fail as the name is not resolved.
The time and date to send the next inquiry to the global server can be checked with SP5-886-116 (Farm Update Setting: Auto Update Next Date).
The auto remote firmware update is executed every 76 hours.

Judgement of ARFU

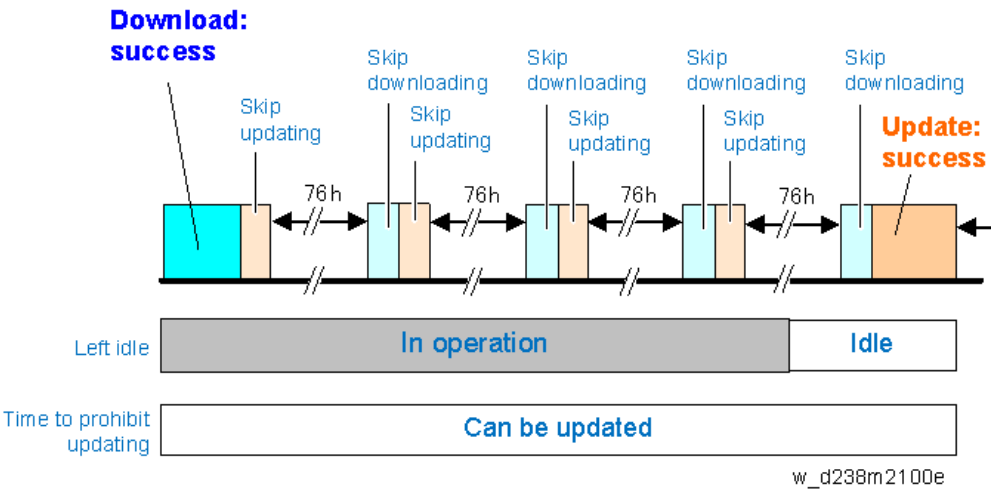
Update judgement is done when the latest update package is successfully downloaded, or the package has already been downloaded.



If the judgement timing is in the range of the update prohibited time or day set with SP or WIM, the machine will retry the update after 76 hours.



If the machine is in use when the judgement process runs, the process is retried. Retry is done up to three times every hour (can be changed with SP) and if the machine is in use for all three retries, the machine will retry the update after 76 hours



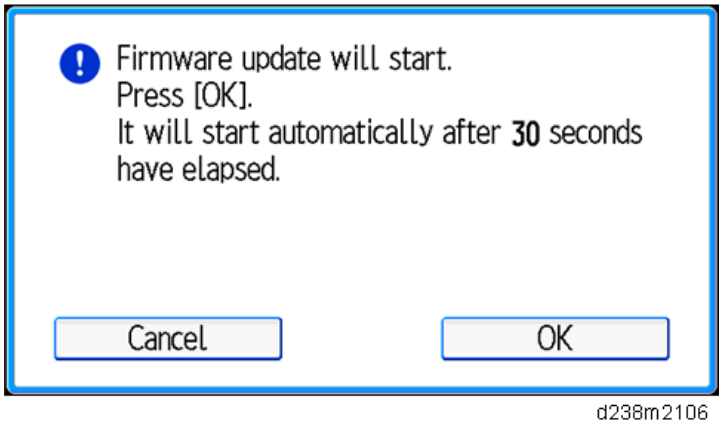
Situations judged as machine in use

No.	Situations judged as machine in use
1	When the control panel is used within 30 seconds
2	During firmware update
3	While firmware update is disabled
4	While printing (copy, printer, fax, re-printing via network)
5	While scanning (copy, scanner, fax)
6	Retrieving image data via network
7	While initial setting (User Tools settings) or SP is being set
8	While fax is transferring data
9	During on hook / on handset
10	During the PC-FAX process (from PC to machine data transfer to the end of the job)
11	While shifting to/from the energy server mode
12	When not being able to run firmware update due to the modules that are running e.g.) Waiting for DCS transfer (refer to appendix), accessing devices such as HDD/SD card, etc.
13	While displaying a preview
14	While the document server function is in use

No.	Situations judged as machine in use
15	Connecting to TWAIN
16	During the interrupt copy process
17	While displaying the printer menu
18	While updating the display for the document server function via WIM or for stored fax documents
19	While writing log information
20	While accessing the address book
21	During SC

Update Process

When the machine has decided to run the auto firmware update, the following message is displayed.



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The popup will have "Cancel" and "OK" buttons and the update process will start either when the "OK" button is selected or 30 seconds has passed.

When the "Cancel" button is selected, the machine will run the "Retry update" process.

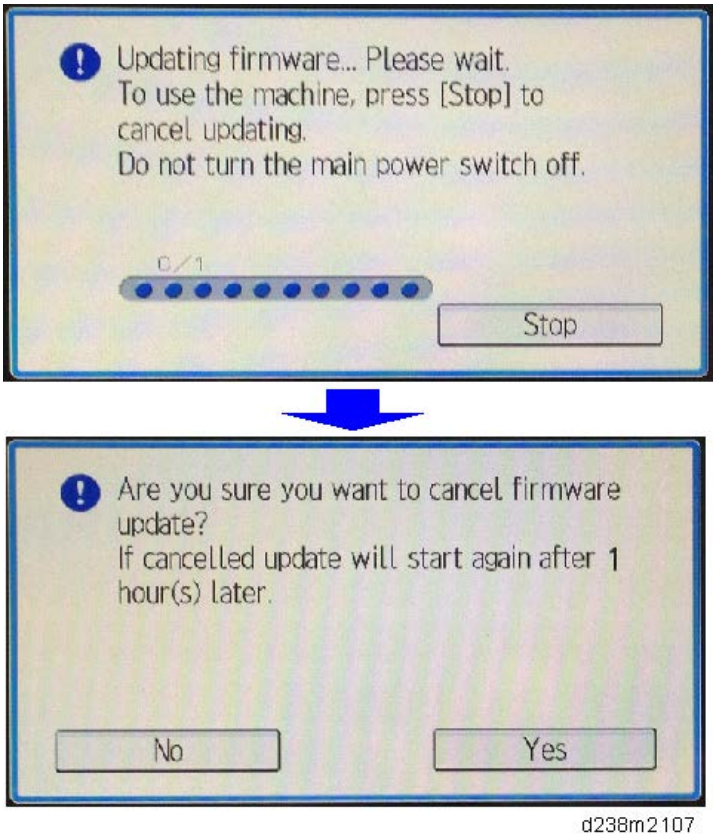
When the device update and three retries in recovery mode both fail, it is determined as a device defect and will display an SC for the defective device. If such an SC appears, replace the indicated board. In the case of SC845, the SC cannot be reported to the call center.

Device and corresponding SC number.

Device name	SC number
Engine board	SC845-01
Controller board	SC845-02
Operation panel (normal panel)	SC845-03
Operation panel (smart panel)	SC845-04
FCU	SC845-05

Canceling the update

It is possible to cancel the Auto Remote Firmware Update (ARFU) or update in recovery mode from the operation panel.



But this is not possible while updating the operation panel itself. On the other hand, the update for the operation panel will run at the final stage of the update. Thus canceling the update at that stage has no real effect.

When the update is cancelled, the machine will reboot when updates for all modules of one of the following devices is done.

1. Engine Board
2. FCU
3. Controller Board
4. Operation Panel

For example, when the update process is cancelled while updating the first module of the operation panel, the machine will reboot when all modules in the operation panel have been updated.

The firmware contents included in the package can be referred to in the release note in SERES release of the package.

The next update will run 76 hours after the cancellation. The old (cancelled) package will be discarded if the package downloaded 76 hours later is the latest.

6.9.3 RELATED SP

SP Number	Selection **Def.**	Overview
SP5-886-111	0: OFF **1: ON**	Sets auto update ON/OFF by ARFU.
SP5-886-112	**0: OFF** 1: ON	Will not run the update when update prohibited time setting is ON and the current time is in the range of the time set. ▪ Start time < End time: Prohibited time is from the start time to the end time on the same day. ▪ Start time > End time: Prohibited time is from the start time to the end time on the next day. ▪ Start time == End time: Prohibited time setting is disabled. (Update will not be prohibited.)
SP5-886-113	0 to 23 **9**	
SP5-886-114	0 to 23 **17**	
SP5-886-115	**0: OFF** 1: ON	Even when the update function is disabled, downloading the package is allowed. The downloaded package can be used with SFU.
SP5-886-116	Display only	Displays when the latest package check will run.
SP5-886-117	1 to 24 **1**	Set time for the next version check after retry.

SP Number	Selection **Def.**	Overview
SP5-886-120	**0x00**	Update will not run if the corresponding bit for each day below is set to 1. ▪ prohibited:bit7 ▪ Monday: bit 6 ▪ Tuesday: bit 5 ▪ Wednesday: bit 4 ▪ Thursday: bit 3 ▪ Friday: bit 2 ▪ Saturday: bit 1 ▪ Sunday: bit 0 This setting is not affected by the prohibited time setting. e.g.) Prohibited on Mon., Fri., Sat., and Sun. : 0x47 (01000111)
SP7-520-011 to 015	Display only	History of date and time when update has started. The five most recent are recorded, the lowest number being most recent. If the last update failed, this is not recorded.
SP7-520-021 to 025	Display only	History of date and time when update has finished. The five most recent are recorded, the lowest number being most recent. The record is created when the update has successfully finished. When the update is cancelled, no record is created.
SP7-520-031 to 035	Display only	History of the package number (including suffix) for which update has completed. The five most recent are recorded, the lowest number being most recent. The record is created when the update has successfully finished. When the update is cancelled, no record is created.

SP Number	Selection **Def.**	Overview
SP7-520-041 to 045	Display only	History of the package version for which update has completed. The five most recent are recorded, the lowest number being most recent. The record is created when the update has successfully finished. When the update is cancelled, no record is created.
SP7-520-051 to 060	Display only	History of the result of the download and the update. Refer below for the numbers set.

Numbers set for the result history for SP7-520-051 to 060

No.	Result	Description
1	Downloading with SFU	Cannot download or update as the machine is now downloading the package for SFU.
2	HDD uninstalled	Cannot download or update as the machine has no HDD.
3	Updating with SFU	Cannot download or update as the machine is being updated with SFU.
4	HDD error	Cannot download or update as the HDD cannot be used.
5	Version information obtain error	Cannot download or update as the version information cannot be obtained.
6	Update download error	Cannot download or update as the update download failed. In non @Remote method, this shows that the download failed because there was no proxy set.
7	Name resolution error	Cannot download or update as the name cannot be resolved upon downloading the update.

No.	Result	Description
8	Auto update setting disabled	The package has been downloaded but will not run the update as SP5-886-111 (auto update setting) is disabled and SP5-886-115 (auto download setting for SFU) is enabled.
9	Update prohibited time	Cannot start to update as the auto update prohibited time setting (SP5-886-112) is enabled and the time update initiated was in the range of prohibited time (SP5-886-113 to 114). Or the day which update was initiated was a day for which update was prohibited (SP5-886-120).
10	Update postponed due to machine in use	Cannot start update due to the following conditions when update was initiated. ▪ The machine is in use by a user (the panel was used within 30 seconds) ▪ Machine offline for other reasons ▪ Operation prohibited ▪ Displaying SP/UP menu ▪ Firmware update is running with another method ▪ Configuration change prohibited ▪ Verifying the operation panel (smart panel)
11	Update cancelled by user	Update was cancelled because a user selected "Cancel" in the popup shown before starting the update.
12	Offline failed	Cannot start to update as the machine is offline for other reasons.
13	Update successful	Update was started and successfully completed.
14	Update failed	Update was started but failed.
15	Update cancelled by user after update initiated	Update was cancelled after the process initiated because a user selected "Cancel" during the update.

No.	Result	Description
16	Update deemed completed	Update was cancelled after the process was initiated because a user selected “Cancel”. There is no need to resume the update due to one of the following reasons: ▪ A newer update has been released and received. ▪ When retrying ARFU, the update has already been completed by another method.
17	Version information obtain error (proxy verification failure)	Cannot download or update as the proxy verification failed with proxy settings when obtaining version information.
18	Version information obtain error (other than proxy verification failure when proxy is set)	Cannot download or update as an error other than proxy verification with proxy settings occurred when obtaining version information.
19	Update download error (proxy verification failure)	Cannot download or update as the proxy verification failed with proxy settings when downloading the package.
20	Update download error (other than proxy verification failure when proxy is set)	Cannot download or update as an error other than proxy verification with proxy settings occurred when downloading the package.
22	Update by retry successful	After power failure, unsuccessful update, or rebooting, update by retry is executed successfully. However, this does not apply to the case where the update was cancelled after the process was initiated because a user selected “Cancel”. In this case, the update is “successful” if the retry is not executed between the start and completion of the next update (76 hours after the cancellation).

6.10 PACKAGE FIRMWARE UPDATE

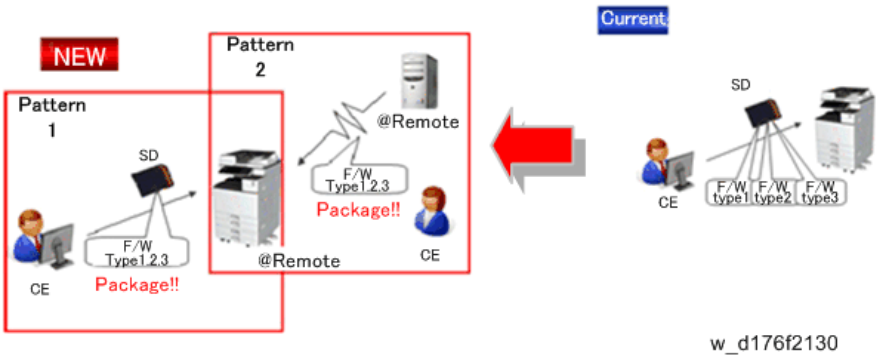
⚠CAUTION

- The HDD unit must be installed on the machine to enable the SFU or the package firmware update via SD card.

6.10.1 OVERVIEW

Each firmware module (such as System/Copy, Engine, etc) used to be updated individually. However, an all-inclusive firmware package (package_ALL) is now available.
There are two ways to update using the firmware package.

- Package Firmware Update via a network: SFU (Smart Firmware Update)
- Package Firmware Update with an SD card



Package Firmware Update via a network: SFU (Smart Firmware Update)

- There are two methods for SFU.
  1. Immediate Update: To update the firmware when visiting
  2. Update at the next visit: To set the date and time for downloading. The firmware will be automatically downloaded beforehand and updated at the following visit.
- "Update at the next visit" is recommended since firmware download may take some minutes due to the network condition.

Note

- SFU requires the connection to @Remote via a device which has the embedded @Remote communicating function. When a machine is connected to @Remote via an intermediate device (RC Gate), the SFU function is disabled.

Package Firmware Update via an SD Card

Package firmware update can also be performed using the conventional SD card method by writing the package firmware directly to the SD card.

Types of firmware update files, supported update methods:

	SFU	SD	RFU
Individual firmware	N/A	Available	Available
Package firmware	Available	Available	N/A

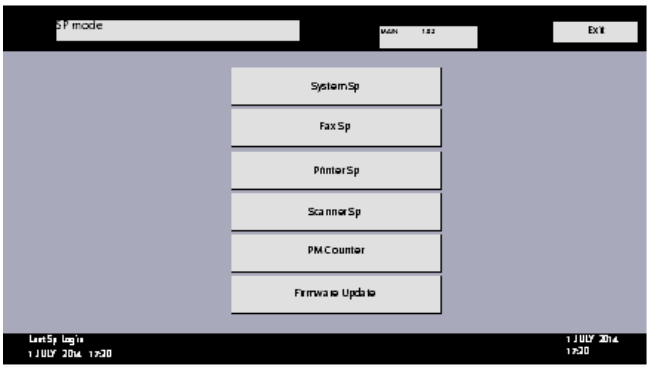
6.10.2 IMMEDIATE UPDATE

Enter the [Firmware Update] menu in the SP mode and update the package firmware.

Note

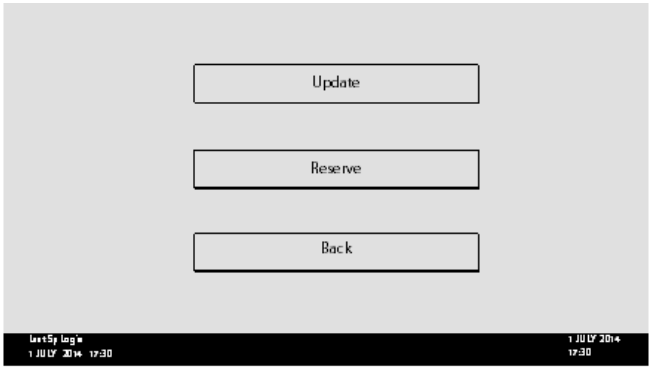
- The [Firmware Update] button will appear even when a machine is connected to @Remote with a device which does not have an embedded @Remote communicating function.
- If an error code is displayed, refer to Errors During Firmware Update (page 6-11).

1. Enter the SP mode.
2. Touch [Firmware Update].



d197f0507

3. Touch [Update].



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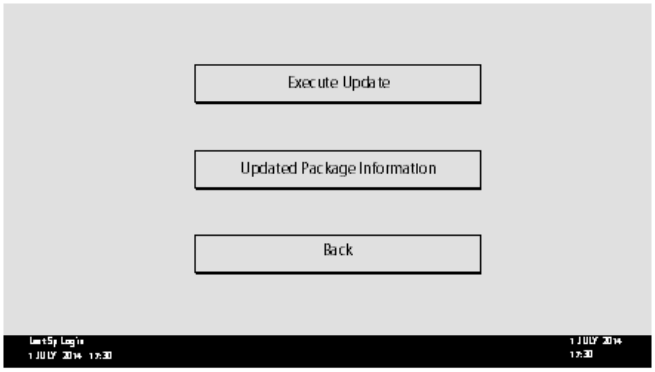
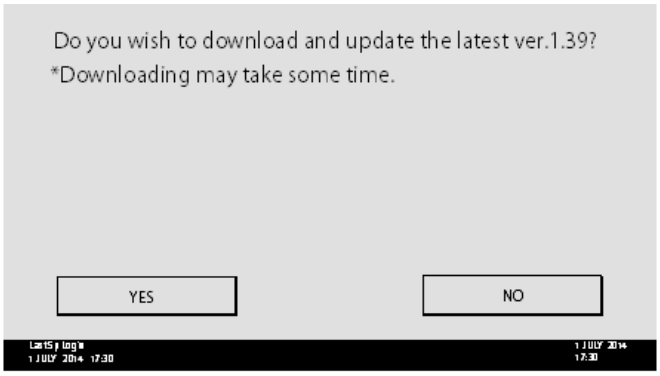
System Maintenance

4. Touch [Execute Update].



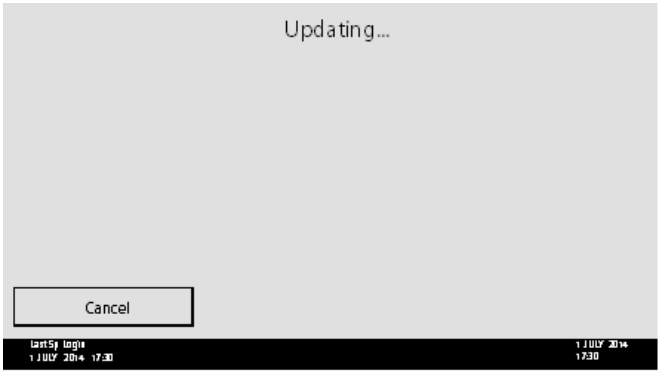
d197f0509

5. Touch [YES].



d197f0514

6. The following display will be displayed.

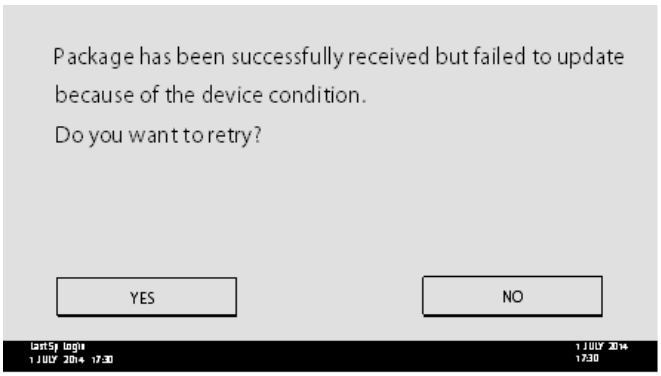


d197f0513

Note

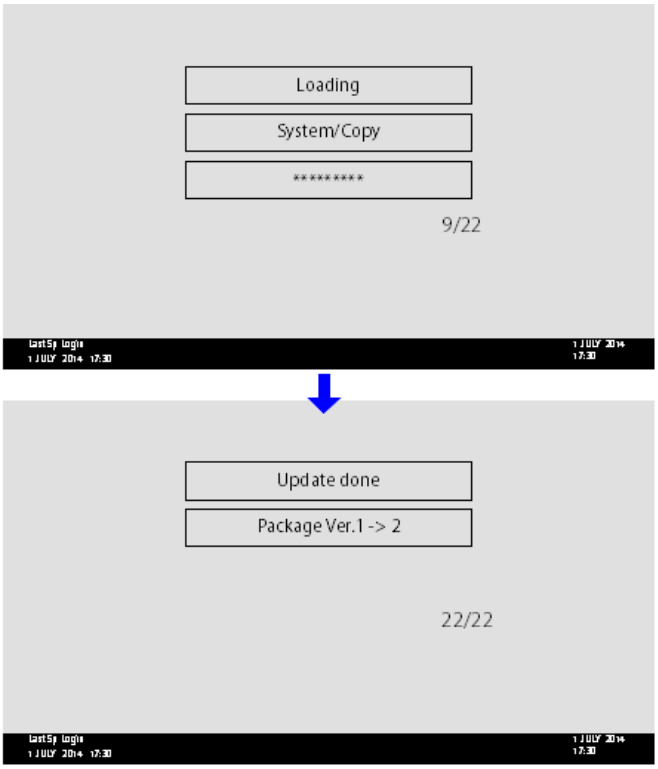
- If the error code E66, which indicates that the download of the firmware has failed, is displayed, implement this procedure from step 1.
- Update will be started automatically after the download is finished.
- When the machine is in the update mode, the automatic update is suspended if a print job is implemented.

After the print job is finished, touch [YES] on the display shown with the following picture to restart updating.



d197f0515

7. [Update done] is displayed. The machine will automatically reboot itself.



d197f0518

Note

- The numbers in the lower right corner of the screen indicate “Number of updated items/ All items to be updated”.

6.10.3 UPDATE AT THE NEXT VISIT (RESERVE)

It is possible to set the machine to download the package firmware which is necessary for SFU in advance, and then perform the actual installation at the next service visit. This saves waiting time for the firmware to download at the service visit.

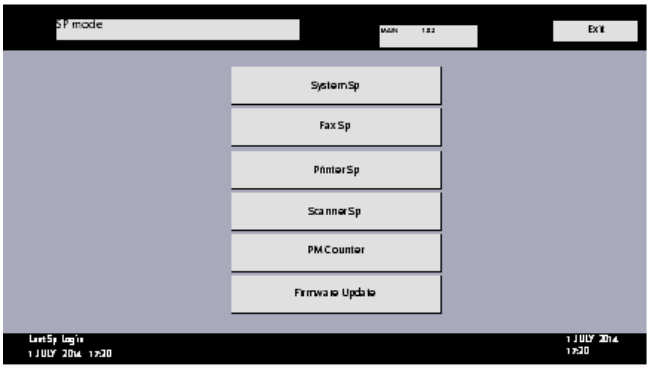
How to Set the Machine to Download Firmware Later (RESERVE)

Enter the [Firmware Update] menu in the SP mode and update the package firmware.

Note

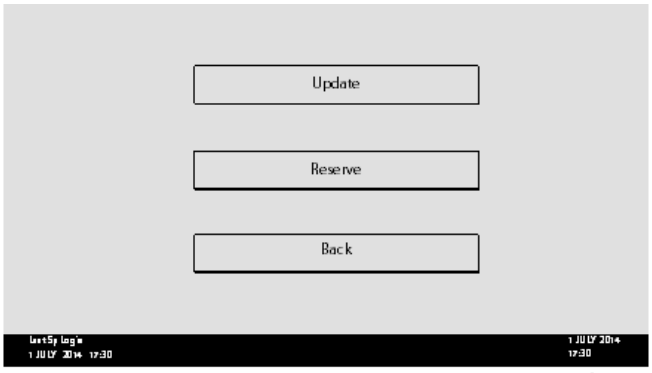
- The [Firmware Update] button will appear even when a machine is connected to @Remote with a device which does not have an embedded @Remote communicating function. If an error code is displayed, refer to Errors During Firmware Update (page 6-11).

1. Enter the SP mode.
2. Touch [Firmware Update].



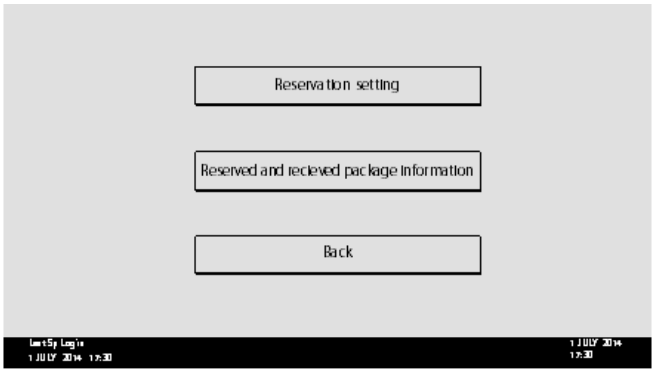
d197f0507

3. Touch [Reserve].



d197f0508

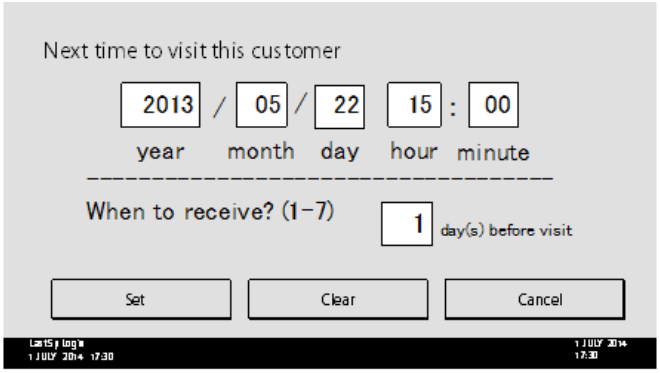
4. Touch [Reservation setting].



d197f0510

5. Enter the dates and times of next visit and start of receiving data.

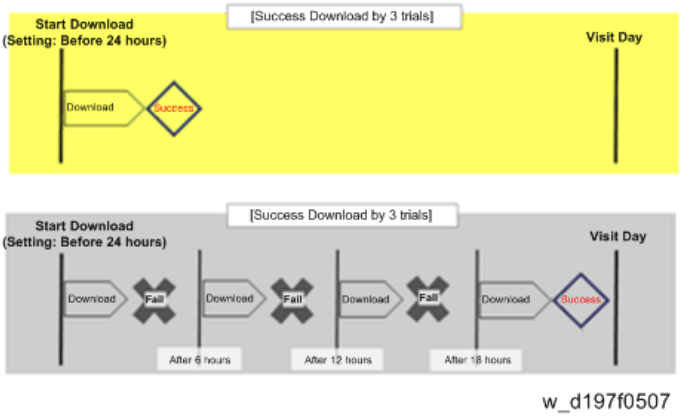
- ”Next time to visit this customer”: The package firmware will be automatically downloaded by this time/date.
- ”When to receive? (1-7)”: The download of the package firmware will begin this number of days before the next visit.



d197f0512

Successful Download

In the two diagrams below, the firmware is set to be downloaded by the day before the next scheduled visit. In the first diagram, the download is successful on the first try. In the second diagram, the download fails three times and is successful on the fourth try.

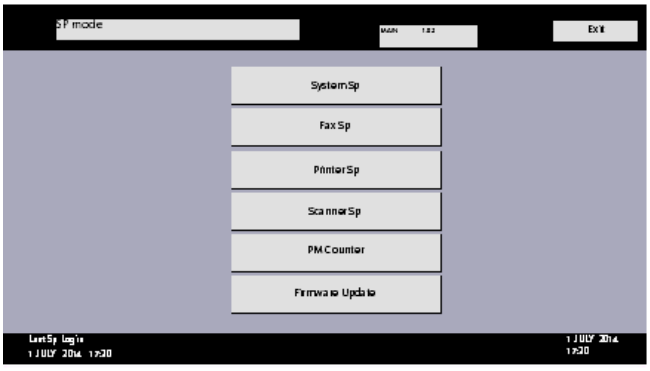


w_d197f0507

- If the firmware download fails or cannot be completed due to the network settings/condition, no power to the machine, or other reason, the machine will continue retrying every six hours until the scheduled deadline (up to a maximum of four tries). For example, if the download is set for the day before the next visit, the machine will attempt the download at 24 hours before the visit, and then continue trying every six hours (max. four tries total).
- The retry is only performed in cases when the firmware download has failed.
- If the machine is in Energy Saver mode when the download is scheduled to begin, the download will be performed in the background and the machine/panel will stay in Energy Saver mode.
- The download will continue uninterrupted even if the customer initiates a print job, copy job, fax receiving or other operation while the download is in progress.
- The download will be terminated if the customer turns the power off while the download is in progress.
- If the download cannot be completed successfully by the time of the next scheduled visit, the machine will stop trying to download the firmware.

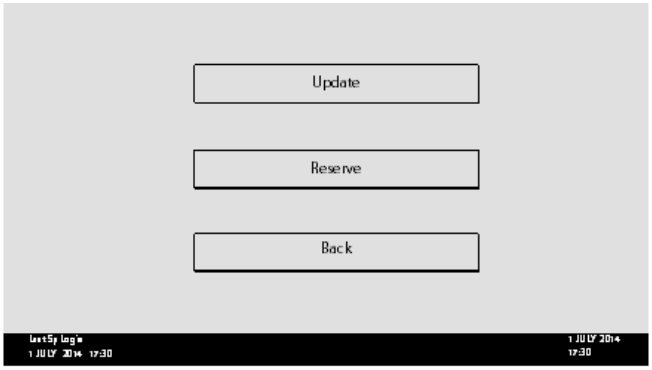
How to Check if the Firmware Downloaded with RESERVE

1. Enter the SP mode.
2. Touch [Firmware Update].



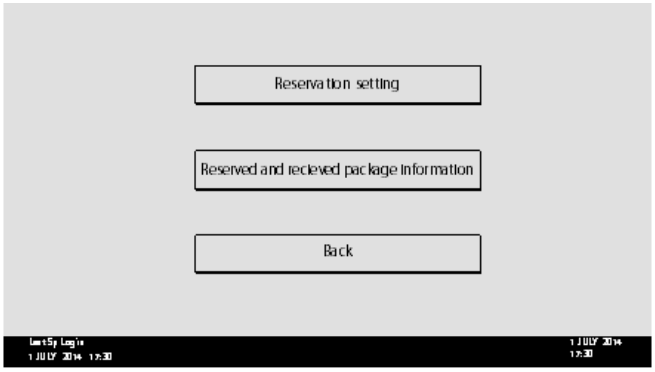
d197f0507

3. Touch [Reserve].



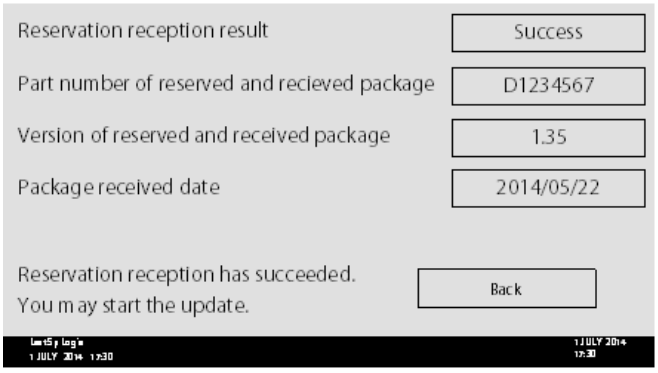
d197f0508

4. Touch [Reserve and received package information].



d197f0510

5. Check the information displayed.
   When the package firmware is downloaded successfully, the details of the download result are displayed as the following picture shows.



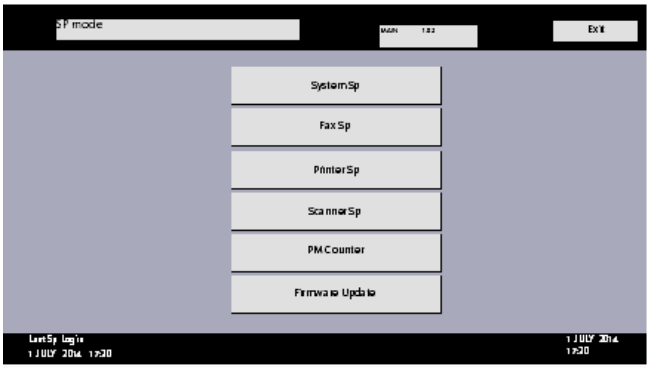
d197f0511

Note

- This information will only be displayed if the reserved firmware has already been downloaded. If not, all the data items are indicated with "-".

How to Install Firmware Downloaded with RESERVE

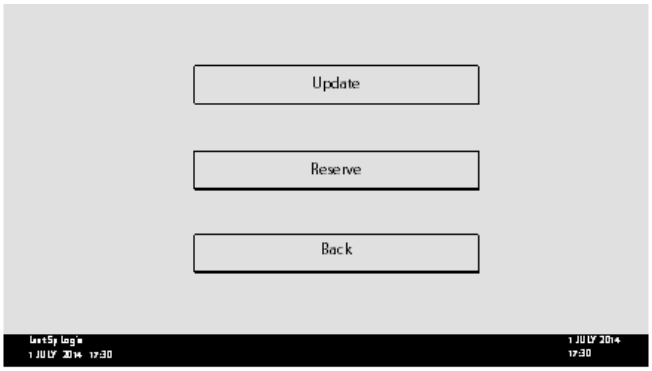
1. Enter the SP mode.
2. Touch [Firmware Update].



d197f0507

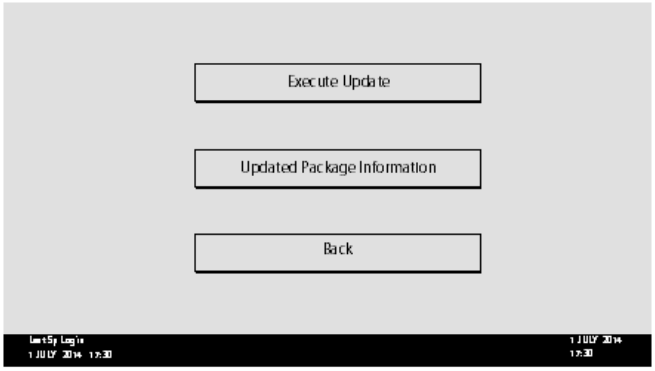
System Maintenance

3. Touch [Update].



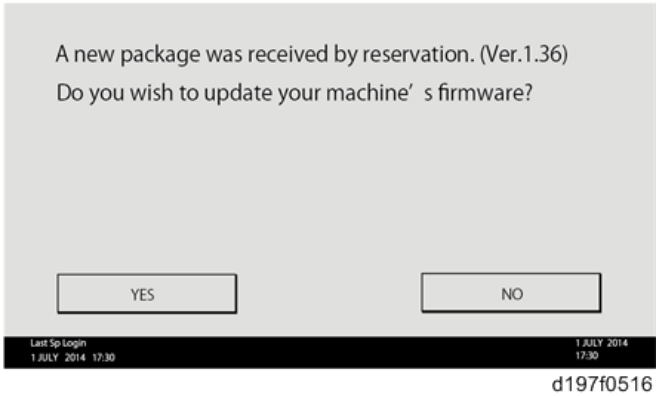
d197f0508

4. Touch [Execute Update].



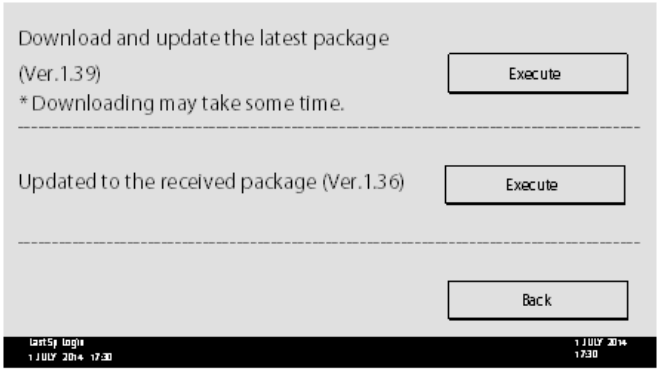
d197f0509

5. Check the version of the received package firmware, and then touch [YES].
   Update is started.



d197f0516

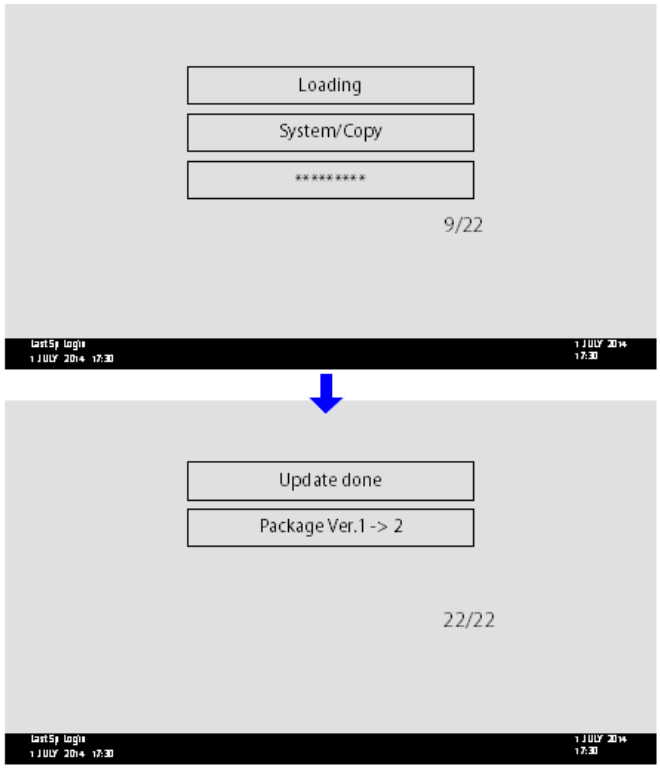
If the version of the reserved package in the HDD is older than the latest version, the messages shown in the following picture are displayed.



d197f0517

- If you wish to download the latest version, touch [Execute] beside the message "Download and update the latest package." Then update of the package firmware will be started.
- If you wish to update using the firmware in the HDD (old version), touch [Execute] beside the message "Update to the received package."

6. [Update done] message is displayed. The machine will automatically reboot.



d197f0518

Note

- The numbers in the lower right corner of the screen indicate "Number of updated items/ All items to be updated".

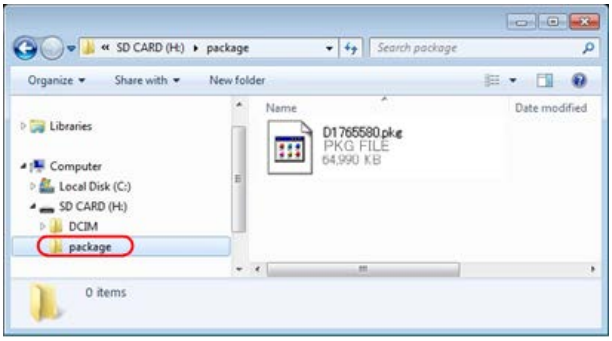
6.10.4 UPDATE VIA SD CARD

Update with an SD card, which is the conventional method, is available if you write the package firmware to the SD card.

Note

- If an error code is displayed, refer Errors During Firmware Update (page 6-11).

1. Create a new folder in the SD card, and then name it “package”.
2. Copy the package firmware (xxxxxxxx.pkg) to this folder.

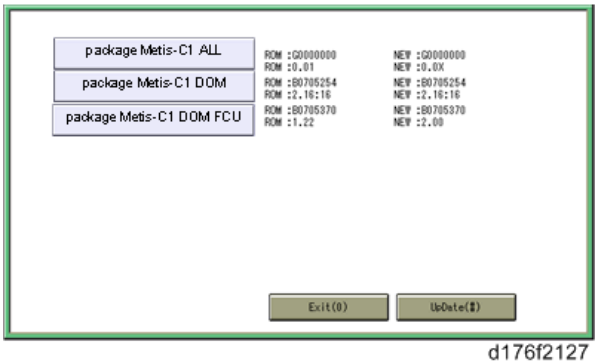


d197f0504

Important

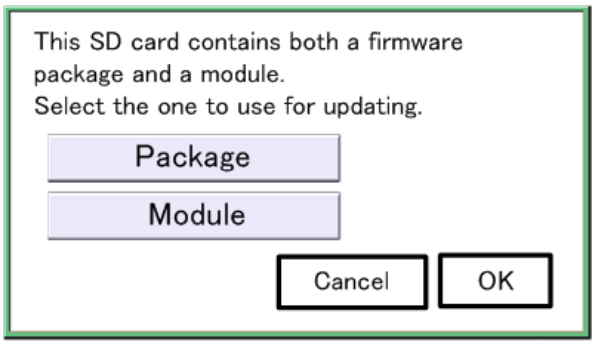
- If you copy the package firmware into the conventional “romdata” folder, the update will not work.
- Only one version of the package firmware should be copied into the folder.
- If you copy multiple versions of package firmware to the SD card, the machine will select only one version of the firmware randomly.

3. Turn the power OFF.
4. Insert the SD card which contains the package into SD card slot 2 (for service).
5. Turn the machine on and touch [Update].



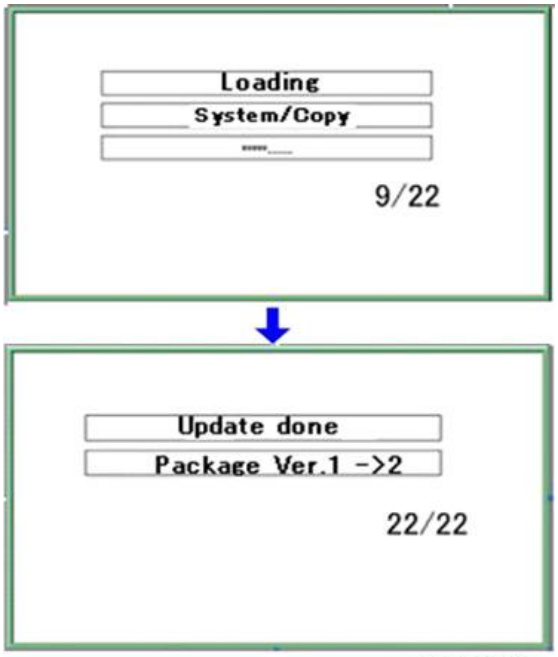
d176f2127

When the SD card contains both a firmware package and one or more modules, the following display may show up. Select [Package] and touch [OK] to move to step 4 above.



d176f2128

6. Update is started automatically after the package firmware download to the HDD has been completed.
7. When update is completed, “Update done” is displayed.



w_d177z0021a

Note

- The numbers in the lower right corner of the screen indicate “Number of updated items/ All items to be updated”.

8. Turn the main power switch OFF, and then pull out the SD card from SD card slot 2.
9. Turn the machine on.

6.11 CAPTURING DEBUG LOGS

6.11.1 OVERVIEW

With this feature, you can save debug logs that are stored in the machine (HDD or operation panel) on an SD card. This function allows the Customer Engineer to save and retrieve error information for analysis. The Capturing Log feature saves debug logs for:

- Controller
- Engine
- Operation panel

Important

- In older models, a technician enabled the logging tool after a problem occurred. After that, when the problem had been reproduced, the technician was able to retrieve the debug log.
- However, this new feature saves the debug logs whenever a problem occurs, and then this log can be saved to an SD card.
- You can retrieve the debug logs with an SD card without a network.
- Analysis of the debug log is effective for problems caused by the software. Analysis of the debug log is not valid for the selection of defective parts or problems caused by hardware.

Types of debug logs that can be saved

Type	Storage Timing	Destination (maximum storage capacity)
Controller debug log (GW debug log)	▪ Saved at all times	HDD (4 GB). Compressed when written to an SD card from the HDD (from 4 GB to about 300 MB)
Engine debug log	▪ When an engine SC occurs ▪ When paper feeding/output stop by jams ▪ When the machine doors are opened during normal operation	HDD (up to 300 times)
Operation panel debug log	▪ When a controller SC occurs ▪ When saving by manual operation with the Number keys and the Reset key (Press “Reset”, “0”, "1” and “C”(hold for 3 seconds)) ▪ When the operation unit detects an error ▪ When the operation panel detects an error	Operation panel (400 MB /Up to 30 times) When updating the firmware for the operation panel, the debug logs are erased.

Debug logs are not saved when:

- Memory is being erased
- Data encryption equipment is being installed
- Firmware configuration is being changed
- There is a power outage (power cord disconnected accidentally)
- The machine is shutdown normally with the power switch and data write to the HDD cannot be completed. For example, when shutdown starts immediately after a paper jam occurs or the front door is opened or closed, the machine needs about 5 sec. to save the debug log after the machine stops completely.
- Power supply to the HDD is off because of energy saving (engine OFF mode /STR mode)

Operation Log Security

The following operation logs related to security are never saved.

- User ID
- Password
- IP address
- Telephone number
- Encryption key
- Transition to SP mode

The following operation logs are never saved.

- Number keys (0 to 9) on the operation panel
- Soft keyboard on the touch panel display
- External keyboard

6.11.2 RETRIEVING DEBUG LOGS

Retrieve debug logs to identify the date of occurrence and details about problems.

- Analysis of the debug log is effective for problems caused by the software.
- Analysis of the debug log cannot identify defects in parts or problems caused by hardware.

Procedure for Retrieving the Debug Log

1. Insert the SD card into the slot on the left side of the operation panel.

d223c3777

2. Enter SP mode.
3. Set the start date of the log with **SP5857-101**.
   - Enter the date in the format yyyymmdd where yyyy is the year, mm the month, and dd the day.
   - For example, for March 28, 2013 you would enter "20130328"
   - Enter a date 72 hours before the problem occurred.
4. Set the end date of the log with **SP5857-102**.
   - Use the same format (yyyymmdd) that you used to enter the start date.
   - For example, for March 31, 2013 you would enter "20130331".

5. Next, do **SP5-857-103** to retrieve the debug log data and store it onto the SD card.

SP	Function
5857-103	All debug log
5857-104	Controller debug log
5857-105	Engine debug log
5857-107	Operation panel log

6. When the transfer is finished, the machine will display "Completed" on the operation panel.

Important

- The length of time needed to transfer the debug log data can be affected by the type and format of the SD card. Formatting the SD card with Panasonic SD Formatter (freeware) is recommended.

The approximate time required for the transfer of the following debug logs are:

- Controller (GW): 2 to 20 min.
- Engine debug log: 2 min.
- Operation: 2 to 20 min.

1. Make sure that the SD card access LED is off, then remove the SD card.
   If you see the "Failed" message, remove the SD card, cycle the machine off/on, and then repeat this procedure from Step 2.

Debug logs are saved with the following file names.

Debug Log	Filename Format
Controller(GW)	/LogTrace/machine no./watching/yyyymmdd_hhmmss_unique ID.gz
Engine	/LogTrace/machine number/engine/yyyymmdd_hhmmss.gz
Operation Panel	/LogTrace/machine no./opepanel/yyyymmdd_hhmmss.tar.gz

TROUBLESHOOTING

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
240 ~ 241	10/16/2016	Added SC954, 955, 965, 994 and 995

7. TROUBLESHOOTING

7.1 SELF-DIAGNOSTIC MODE

7.1.1 SERVICE CALL CODES

Service Call Conditions

Level	Display	How to reset
A	Fatal error. The SC is displayed on the operation panel, and the machine cannot be used (safety-related SC).	Execute CE reset with **SP5810**, and then cycle the machine off/on..
B	When a function is selected, the SC is displayed on the operation panel, and the machine cannot be used.	Cycle the machine off/on.
C	No display on the operation panel, and the machine can be used.	Count only logging.
D	The SC is displayed on the operation panel, and the machine cannot be used (machine-error SC).	Cycle the machine off/on.

- When a Level D code is returned, an automatic reboot is performed.
- When an event is reported by the customer support system, even in the event of an ordinary SC, reboot is not performed. During automatic reboot, a confirmation screen is displayed after the reboot.
- When automatic reboot occurs twice, an SC is displayed without rebooting, and logging count is performed. Also, when an SMC print is output, an asterisk (*) is attached to the SC number
- Automatic reboot can be enabled or disabled with **SP5875-001** (SC automatic reboot setting) (default value: ON).

7.1.2 SC LOGGING

When an SC is generated, the "total count value when the SC is generated" and the "SC code" are logged. However, if the total count value during the SC is the same as last time, logging is not performed.

Logged data can be checked by printing and SMC report. The SC history is logged up to the last 10 entries, and if there are more than 10 entries, data are progressively deleted starting from the oldest.

7.1.3 SC AUTOMATIC REBOOT

When a Level D SC is returned, the machine reboots automatically.

- Automatic reboot or reboot by the operator can be set by SP5-875-001 (SC automatic reboot setting out) (default value: 0 "Automatic reboot").
- When a Level D error occurs, automatic reboot is done or the machine display asks the customer if it can reboot. However, when the SC occurs twice in succession, the machine sends a report to the @Remote server without rebooting.
- This is because just rebooting may not be a good solution if an SC occurs twice.
- When an automatic reboot is performed, a confirmation screen is displayed after reboot. The confirmation screen can be cancelled by pressing the [OK] key (display is not cancelled only when the main power switch is switched OFF to ON).

Screen display during reboot

- Status display on the current screen
  - Post-processing ..... Post-processing during printing, etc.

    ■■□□□□□□□□
  - Automatic reboot .... After operation end

    □□□□□□□□□□
- Reset key (Reboot key)

  Key to perform reboot

  # Cancel key is not displayed.
- Turn on spanner LED (same as when an SC is generated).

Operation during SC reboot

- Timing of SC reboot

  When @Remote is enabled, and when a NRS alarm*1 is not generated, the corresponding SC is the object of an automatic reboot.

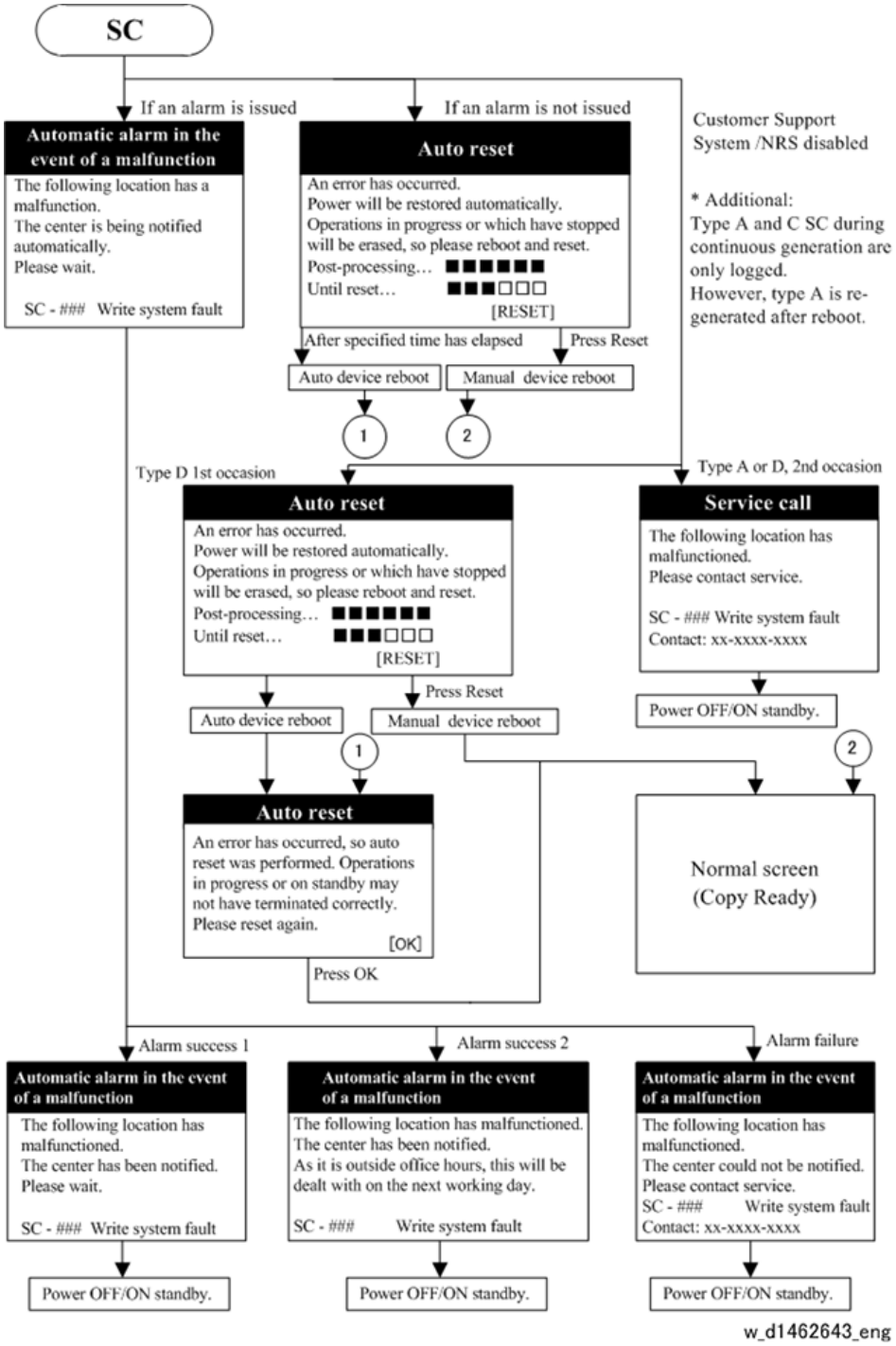
  *1 NRS alarm: Issued when an ordinary SC (type D) is generated twice while the total counter counts 10 times.
- Time to automatic reboot

  Reboot is performed 30 seconds after an engine reboot is possible, after the end of post-processing during printing, etc.

At that time, a reboot is performed even if the MFP is operating. The engine does not start process control when a reboot is possible.

- Automatic reboot

  See the flowchart below.



7.2 SERVICE CALL CONDITIONS

7.2.1 SERVICE MODE LOCK/UNLOCK

At locations where the machine contains sensitive data, the customer engineer cannot operate the machine until the Administrator turns the service mode lock off. This function ensures that work on the machine is always done with the permission of the Administrator.

1. If you cannot go into the SP mode, ask the Administrator to log in with the User Tool and then set "Service Mode Lock" to OFF. After he or she logs in:
   - User Tools > System Settings > Administrator Tools > Service Mode Lock > OFF
   - This unlocks the machine and lets you get access to all the SP codes.
   - The customer engineer can do servicing on the machine and turn the machine off and on. It is not necessary to ask the Administrator to log in again each time the machine is turned on.
2. If you must use the printer bit switches, go into the SP mode and set SP 5169 to "1".
3. After machine servicing is completed:
   - Change SP5169 from "1" to "0".
   - Cycle the machine off/on.
   - Tell the administrator that you completed servicing the machine.
   - The Administrator will then set the "Service Mode Lock" to ON.

7.2.2 SERVICE CALL CONDITIONS

There are 4 levels of service call conditions.

Level	Definition	Reset Procedure
A	Fusing unit SCs displayed on the operation panel. The machine is disabled. The user cannot reset the SC.	This is a fatal error. The machine cannot be used until the service technician releases it for servicing with **SP5810**, solves the problem, and then cycles the machine off/on.
B	SCs that disable only the features that use the defective item. Although these SCs are not shown to the user under normal conditions, they are displayed on the operation panel only when the defective feature is selected.	Turn the main power switch off/on.
C	SCs that are not shown on the operation panel. They are internally logged.	Logging only. The SC code is logged but not displayed.
D	Cycling the machine off/on resets SCs displayed on the operation panel. These are re-displayed if the error occurs again.	Cycle the machine off/on with the power switch.

7.2.3 BEFORE YOU USE THE TABLES

The following notations are used to identify which finisher the SC codes refer to.

Notation	Finisher
D610	Finisher SR4080 (D610)
3K Finisher	Finisher SR4120 (D3CG) (Max. tray capacity: 3,000 sheets)
2K Finisher	Finisher SR4130 (D3CH) (Max. tray capacity: 2,000 booklets)
D615	Multi Folding Unit FD4000 (D615)

Only one of these finishers can be installed in the system. Many of the SC codes apply to more than one finisher because they have nearly identical parts and part names.

Example

SC725	B	Exit guide motor (D610/D3CG/D3CH)
		The status of the exit guide sensor did not change at the prescribed time during operation of the exit guide.
		▪ Exit guide open sensor loose, broken, defective. ▪ Exit guide motor defective ▪ Finisher main board defective
		▪ Inspect exit guide open sensor, and reconnect it. ▪ Replace exit guide open sensor ▪ Replace exit guide motor ▪ Replace finisher main board

SC725 applies to the exit guide motor of whichever finisher is installed: The SR4080, the Finisher SR4120, or the Booklet Finisher SR4130.

Important

- If a problem concerns electrical circuit boards, always disconnect then reconnect the connectors before replacing the PCBs.
- If a motor lock error occurs, first check the mechanical load (obstacles like waste paper, tools, etc. that are interfering with operation of the motor) before replacing motors or sensors.
- When a Level "A" or "B" SC occurs while in an SP mode, the display does not display the SC number. If this occurs, check the SC number after leaving the SP mode.

7.3 SC100: SCANNING

7.3.1 SC100

SC101-01	D	Exposure lamp error: Front side scan
		The peak detection level reading on the reference white plate is too low.
		▪ Defective exposure lamp LED ▪ SBU (LED driver) on lens block defective ▪ BICU defective ▪ Power source, signal harness loose, broken, defective ▪ Condensation in scanner unit ▪ Scanner mirror or lens out of position or dirty ▪ Reference white plate out of position or dirty
		▪ Check harness connections of exposure lamp, SBU, BICU ▪ Inspect scanner unit for moisture. If moisture detected, install scanner heater. ▪ Remove exposure glass and inspect scanner mirror, lenses and clean. ▪ Raise ADF and check condition of white plate. Clean and re-position. ▪ Replace exposure lamp. ▪ Replace lens block with new SBU ▪ Replace BICU.

SC101-02	D	Exposure lamp error: Front side (LR) scan initialization
		One or more of the elements in the LEDs on either side failed to light.
		▪ LED (both sides) defective ▪ SBU (LED driver) on lens block defective ▪ Power source, signal harness loose, broken, defective

		▪ Cycle the machine off/on ▪ If that does not solve the problem, inspect the exposure lamp harnesses for loose, broken, defective connection. ▪ Reset the harnesses. ▪ Replace exposure lamp LED PCBs. ▪ Replace lens block (SBU LED driver)

SC101-05	D	Exposure lamp error: Front side (L) scan initialization
		One or more of the elements of the left LED failed to light.
		▪ Left LED defective ▪ SBU (LED driver) on lens block defective ▪ Power source, signal harness loose, broken, defective
		▪ Cycle the machine off/on ▪ If that does not solve the problem, inspect the exposure lamp harnesses for loose, broken, defective connection. ▪ Reset the harnesses. ▪ Replace exposure lamp LED PCBs. ▪ Replace lens block (SBU LED driver)

SC101-06	C	Exposure lamp error: Front side (R) scan initialization
		One or more of the elements of the right LED failed to light.
		▪ Right LED defective ▪ SBU (LED driver) defective ▪ Power source, signal harness loose, broken, defective
		▪ Cycle the machine off/on ▪ If that does not solve the problem, inspect the LED harnesses for loose, broken, defective connection. ▪ Reset the harnesses. ▪ Replace right LED PCB. ▪ Replace lens block (SBU LED driver)

SC102-00	D	Exposure lamp error: Front side
		The reading of the reference white plate within the specified number of pulses returned a value that was too high.
		▪ LED defective ▪ SBU (LED driver) defective ▪ SBU defective ▪ BICU defective ▪ Power source harness, or signal harness loose, broken, defective
		▪ Cycle the machine off/on ▪ Inspect and reset power harness, signal harness ▪ Replace exposure LED PCBs ▪ Replace lens block (SBU LED driver).

SC120-00	D	Scanner home position error 1
		The scanner HP sensor does not detect the OFF condition during initialization or copying.
		▪ BICU defective ▪ Scanner motor defective ▪ Scanner HP sensor defective. ▪ Harness between BICU, SIOB, scanner motor disconnected. ▪ Harness between scanner HP sensor and BICU disconnected. ▪ Scanner wire, timing belt, pulley, or carriage installed incorrectly.
		▪ Inspect installation of scanner wire, timing belt, pulley, carriage. ▪ Inspect the harness between scanner HP sensor and BICU. ▪ Check function of scanner HP sensor (input/output check) and replace sensor if defective. ▪ Check operation of scanner motor (input/output check) and replace motor if defective. ▪ Replace BICU.

SC121-00	D	Scanner home position error 2
		The scanner HP sensor does not detect the ON condition during initialization or copying.
		▪ BICU defective ▪ Scanner motor defective ▪ Scanner HP sensor defective ▪ Harness between BICU, SIOB, scanner motor disconnected ▪ Harness between scanner HP sensor and BICU disconnected ▪ Scanner wire, timing belt, pulley or carriage installed incorrectly.
		▪ Inspect installation of scanner wire, timing belt, pulley, carriage. ▪ Inspect the HP sensor harness ▪ Inspect harnesses to BICU ▪ Check function of scanner HP sensor (input/output check) and replace sensor if defective. ▪ Check operation of scanner motor (input/output check) and replace motor if defective. ▪ Replace BICU.

SC141-00	D	Black level detection error
		The black level cannot be adjusted within the target during auto gain control.
		▪ Harness to BICU loose, broken, defective ▪ Defective SBU ▪ Defective BICU
		▪ Check the harness connections from scanner unit to BICU ▪ Replace the lens block (new SBU) ▪ Replace the BICU

SC142-00	D	White level detection error
		The white level cannot be adjusted to the second target level within the target during auto gain control.
	-	▪ Dirty exposure lamp or optics section ▪ SBU board defective ▪ BICU board defective ▪ Harnesses are disconnected. ▪ Exposure LED (lamp) defective ▪ Lamp stabilizer defective ▪ Scanner motor defective
		▪ Clean the exposure glass, white plate, mirrors, and lens. ▪ Check if the exposure LEDs light during initialization ▪ Check the harness connections ▪ Replace the exposure LED lamps. ▪ Replace the scanner motor. ▪ Replace the lens block (SBU), BICU

SC144-00	D	SBU transmission error
		After the SBU switches on, the BICU detects one of the following conditions on the SBU: ▪ 1 s after power on, the SYDO signal does not go high, even after 1 retry. ▪ 1 s after power on, the SYDO signal goes high, but the SBU ID could not be read after 3 attempts.
		▪ SBU defective ▪ BICU defective
		▪ Inspect harness between scanner unit and BICU ▪ Replace lens block (new SBU) ▪ Replace BICU.

SC151-00	D	Black level error: Back side
		Not even one pixel was within permitted range when the black level was created.
		▪ CIS defective
		▪ Replace CIS

SC152-00	D	White level error: Back side
		The value of the shading peak data return from the CIS device was defective.
		▪ ADF CIS device defective ▪ CIS white roller background or white plate damaged ▪ CIS dirty or installed incorrectly
		▪ Inspect CIS harnesses and connections. ▪ Check CIS background roller for damage, clean dirt, check installation ▪ Replace CIS.

SC154-00	D	Scanner communication error: Back side
		The read operation of the ASIC registry in the CIS returned an unexpected value.
		▪ Harness between the ADF PCB and CIS is loose, broken, defective ▪ ASIC in CIS is defective ▪ FROM in CIS is defective
		▪ Inspect and reset power harness, signal harness. ▪ Replace CIS signal harness ▪ Replace CIS ▪ Replace ADF main board.

SC195-00	D	Machine serial number error
		The number registered for the machine serial number does not match.
	-	▪ The correct 11-digit serial number must be registered in the main machine.
		▪ Confirm the correct serial number. ▪ The correct serial number must be entered with SP5811-001.

7.4 SC200: EXPOSURE

7.4.1 SC200

SC202-00	D	Polygon mirror motor error 1: Timeout at ON
		The polygon mirror motor unit did not enter "Ready" status within 20 sec. after the motor was turned on,
		▪ The polygon mirror motor PCB connector is loose, broken, or defective ▪ Polygon mirror motor PCB defective ▪ Polygon mirror motor defective ▪ BICU defective
		▪ Inspect polygon mirror motor harness, replace if damaged ▪ Replace polygon mirror motor ▪ Replace BICU

SC203-00	D	Polygon mirror motor error 2: Timeout at OFF
		The polygon mirror motor did not leave "Ready" within 3 sec. after the motor was switched off. (The XSCRDY signal did not go HIGH (inactive) within 3 sec.)
		▪ The polygon mirror motor PCB connector is loose, broken, or defective ▪ Polygon mirror motor PCB defective ▪ Polygon mirror motor defective
		▪ Inspect polygon mirror motor harness, replace if damaged ▪ Replace polygon mirror motor

SC204-00	D	Polygon mirror motor error 3: XSCRDY signal error
		The polygon mirror motor "Ready" signal goes inactive (HIGH) while images are being produced or the synchronization signal is being output.
		▪ Polygon mirror motor PCB connector loose, broken, defective ▪ Polygon mirror motor PCB defective ▪ Polygon mirror motor defective
		▪ Inspect motor PCB connection ▪ Replace polygon mirror motor

SC220-00	D	Laser synchronization detection error
		The laser synchronization detection unit could not detect the line synchronization signal (DETP0) within 500 ms while the polygon mirror motor was operating at normal speed. **Note:** The unit polls for the signal every 50 ms. This SC is issued after the 10th attempt fails to detect the signal.
		▪ Laser synchronization board connector loose, broken, defective ▪ Laser synchronization detection board is not installed correctly (out of alignment) ▪ Laser synchronization board defective
		▪ Inspect, reset laser synchronization detector harness ▪ Replace laser synchronization detector

SC221-00	D	Laser Synchronization Detector Error: K Leading Edge (LD1)
		While the polygon motor is rotating normally, no synchronizing detection signal is output for black, leading edge for any LD other than LD0.
		▪ Laser synchronization detector harness is loose, broken, defective ▪ LD unit defective ▪ Laser diode board defective ▪ BICU defective
		▪ Check LD unit, laser diode board connections ▪ Replace LD unit ▪ Replace laser diode board ▪ Replace BICU

SC230-00	D	FGATE ON error: K
		The PFGATE ON signal does not assert within 5 seconds after processing the image in normal job or MUSIC for start position [K].
		▪ Defective ASIC ▪ Poor connection between controller board and BICU. ▪ Defective BICU
		▪ Check the connection between the controller board and the BICU. ▪ Replace the BICU. ▪ Replace the controller board.

SC231-00	D	FGATE OFF Error: K
		▪ The PFGATE ON signal still asserts within 5 seconds after processing the image in normal job or MUSIC for end position [K]. ▪ The PFGATE ON signal still asserts when the next job starts.
		▪ Defective ASIC ▪ Poor connection between controller board and BICU. ▪ Defective BICU
		▪ Check the connection between the controller board and the BICU. ▪ Replace the BICU. ▪ Replace the controller board.

SC240-00	C	LD unit error
		The BICU detects laser diode board (LDB) error a few times consecutively when LDB unit turns on after LDB initialization.
		▪ Worn-out LD ▪ LD unit harnesses loose, broken, defective ▪ BICU defective
		▪ Replace LD unit harness ▪ Replace LD unit ▪ Replace the BICU.

SC270-00	D	GAVD communication error
		A problem occurred in the GAVD or eSOC.
		▪ BICU defective ▪ LD unit effective
		▪ Check connection points on the BICU for loose, broken, or defective harness or connector ▪ Replace LD unit ▪ Replace BICU

SC272-01	D	LD driver communication error
		The read/write values were compared twice but there was not match. A parity check failed after three re-tries.
		▪ LDB harness loose, broken, defective ▪ LDB defective ▪ BICU defective
		▪ Cycle the machine off/on ▪ Replace LDB harness ▪ Replace LD unit ▪ Replace BICU

SC272-10		LD driver communication error
		There was an door open interrupt (LD5V OFF) with the door closed.
		▪ BICU/RYB defective (+5VS error) ▪ LDB defective ▪ LDB harness loose, broken, defective ▪ BICU-RYB harness loose, broken, defective
		▪ Cycle the machine off/on ▪ Replace BICU-RYB harness ▪ Replace LDB harness ▪ Replace BICU/RYB ▪ Replace LD unit

7.5 SC300: IMAGE DEVELOPMENT 1

7.5.1 SC300

SC300-00	D	Charge corona output error
		The feedback voltage from the charge corona unit is detected too high 9 times.
		▪ Charge corona unit connection loose, broken, defective ▪ Charge corona power pack defective
		▪ Inspect charge corona unit harness ▪ Replace charge corona power pack

SC305-00	D	Charge corona wire cleaner error 1
		The charge cleaner pad did not arrive at the home position: ▪ Motor locked within 4 s after switching on, or does not lock within 30 s. ▪ Motor locked within 10 s after reversing, or does not lock within 30 s.
		▪ Charge corona wire cleaner motor harness loose, broken, defective ▪ Charge corona wire cleaner motor defective
		▪ Inspect motor harness ▪ Replace charge corona wire cleaner motor

SC306-00	C	Charge corona wire cleaner error 2
		Charge corona motor is not operating. The current at the charge corona motor was detected less than 83 mA.
		▪ Charge corona wire cleaner motor connector is defective or disconnected ▪ Motor defective
		▪ Inspect motor harness ▪ Replace charge corona wire cleaner motor

SC307-00	D	Charge grid circuit open
		When high voltage went to the corona grid, feedback voltage was detected more than the set value 9 times. This feedback voltage is used to update PWM for output control.
		▪ Charge corona harness defective ▪ Charge corona unit defective or disconnected ▪ Charge corona power pack is defective.
		▪ Inspect charge corona harness ▪ Replace charge corona unit ▪ Replace charge corona power pack

SC320-01	D	Development output abnormal
		The high voltage applied to the development unit is detected 10 times higher than the upper limit (45%) of PWM.
		▪ Development bias leak due to poor connection, defective connector ▪ Development power pack defective
		▪ Inspect development unit terminals for damage ▪ Replace development unit ▪ Replace development unit power pack

SC324-01	D	Development motor lock
		The development motor lock signal remained high for 2 sec. while the development motor was on.
		▪ Drive mechanism overloaded due to toner clumping in the used toner path ▪ Motor drive board defective
		▪ Inspect the toner supply unit coil. ▪ If the gear is not damaged, replace the coil. ▪ If the gear is damaged, replace the entire unit ▪ Replace development motor

SC360-01	D	TD sensor adjustment error: Adjustment output abnormal
		During the TD sensor auto adjustment, the TD sensor output voltage (Vt) is 2.5 volts or higher even though the control voltage is set to the minimum value (PWM = 0). When this error occurs, SP2-906-1 reads 0.00V. **Note:** ▪ This SC is released only after correct adjustment of the TD sensor has been achieved. ▪ Cycling the machine off/on will cancel the SC display, but does not release ID sensor toner supply. ▪ When the TD sensor is defective, the toner supply is controlled using pixel count and the ID sensor.
		▪ TD harness, connector loose, broken, defective ▪ Toner bottle motor harness loose, broken, defective ▪ TD sensor defective ▪ IOB defective ▪ Toner bottle motor defective
		▪ Remove the development unit and inspect the TD sensor harness ▪ Inspect the toner bottle motor harness ▪ Replace TD sensor ▪ Replace toner bottle motor ▪ Replace IOB

SC360-11	D	TD sensor adjustment error: Timeout Error
		During the TD sensor auto adjustment, the TD sensor output voltage (Vt) does not enter the target range (3.0 ± 0.1V) within 20 s. When this error occurs, the display of SP2-906-1 reads 0.00V. **Note:** ▪ This SC is released only after correct adjustment of the TD sensor has been achieved. ▪ Cycling the machine off/on will cancel the SC display, but does not release ID sensor toner supply.
		▪ TD sensor harness loose, broken, defective ▪ TD sensor defective ▪ IOB defective
		▪ Remove development unit and inspect TD sensor harness ▪ Replace TD sensor ▪ Replace IOB

SC361-00	C	TD sensor output error: Upper Limit
		TD sensor output voltage (Vt), measured during each copy cycle, is detected higher than 4V for 10 prints.
		▪ TD sensor harness loose, broken defective ▪ Toner bottle motor harness loose, broken, defective ▪ TD sensor defective ▪ IOB defective ▪ Toner bottle motor defective **Note**: When the TD sensor is defective, the toner supply is controlled using pixel count and the ID sensor.
		▪ Remove the development unit and inspect the TD sensor harness ▪ Inspect the toner bottle motor harness ▪ Replace TD sensor ▪ Replace toner bottle motor ▪ Replace IOB

SC362-00	C	TD sensor output error: Lower limit
		TD sensor output voltage (Vt), measured during each copy cycle, is detected 10 times lower than 0.5V.
		▪ TD sensor harness loose, broken defective ▪ Toner bottle motor harness loose, broken, defective ▪ TD sensor defective ▪ IOB defective ▪ Toner bottle motor defective **Note**: When the TD sensor is defective, the toner supply is controlled using pixel count and the ID sensor.
		▪ Remove the development unit and inspect the TD sensor harness ▪ Inspect the toner bottle motor harness ▪ Replace TD sensor ▪ Replace toner bottle motor ▪ Replace IOB

SC370-01	C	ID sensor adjustment error: LED output abnormal
		One of the following ID sensor output voltages is detected at ID sensor initialization. ▪ Vsg less than 4.0V when the maximum PWM input (255) is applied to the ID sensor. ▪ Vsg greater than or equal to 4.0V when the minimum PWM input (0) is applied to the ID sensor.
		▪ ID sensor dirty (ID sensor pattern defective) ▪ ID sensor harness, connector loose, broken, defective ▪ ID sensor defective ▪ IOB defective
		▪ Remove the drum unit and inspect ID sensor harness ▪ Clean ID sensor ▪ Replace ID sensor ▪ Replace IOB

SC370-11	C	ID sensor adjustment error: Timeout error
		Vsg falls out of the adjustment target (4.0 ±0.2V) during Vsg checking within 20 sec.
		▪ ID sensor dirty (ID sensor pattern defective) ▪ ID sensor harness, connector loose, broken, defective ▪ ID sensor defective ▪ IOB defective
		▪ Remove the drum unit and inspect ID sensor harness ▪ Clean ID sensor ▪ Replace ID sensor ▪ Replace IOB

SC375-00	C	ID sensor error: Drum surface voltage error
		The ID sensor output voltage is 5.0V and the PWM signal input to the ID sensor is 0 when checking the ID sensor pattern.
		▪ ID sensor dirty (ID sensor pattern defective) ▪ ID sensor harness, connector loose, broken, defective ▪ Charge power pack harness loose, broken defective ▪ Charge power pack defective ▪ ID sensor defective ▪ IOB defective
		▪ Remove the drum unit and inspect ID sensor harness ▪ Clean ID sensor ▪ Replace ID sensor ▪ Replace charge power pack ▪ Replace IOB

SC376-00	C	ID sensor error: Pattern edge detection failed
		For 2 s during the ID sensor pattern check, the ID sensor pattern edge voltage is not 2.5V or the pattern edge is not detected within 800 ms.
		▪ ID sensor dirty (ID sensor pattern defective) ▪ ID sensor harness, connector loose, broken, defective ▪ Charge power pack harness loose, broken defective ▪ Charge power pack defective ▪ ID sensor defective ▪ IOB defective
		▪ Remove the drum unit and inspect ID sensor harness ▪ Clean ID sensor ▪ Replace ID sensor ▪ Replace charge power pack ▪ Replace IOB

SC377-00	C	ID sensor error: Potential surface reading error
		The Vp value, which measures the reflectivity of the ID sensor pattern, was not in the range of -70V to -400V.
		▪ ID sensor dirty ▪ Potential sensor harness, connector loose, broken, defective ▪ Drum unit disconnected at the front ▪ Charge corona unit disconnected ▪ Potential sensor defective ▪ IOB defective ▪ Charge corona wire dirty, broken
		▪ Clean ID sensor ▪ Inspect potential sensor harness ▪ Inspect drum unit connection ▪ Inspect charge corona unit harness ▪ Replace potential sensor ▪ Check, clean, replace charge corona unit ▪ Replace IOB

SC378-00	C	ID sensor pattern error
		One of the following ID sensor output voltages was detected twice consecutively when checking the ID sensor pattern. ▪ Vsp greater than or equals 2.5V ▪ Vsg less than 2.5 ▪ Vsp = 0V ▪ Vsg = 0
		▪ ID sensor dirty (poor ID sensor pattern image, image density incorrect) ▪ ID sensor harness, connector loose, broken, defective ▪ Charge power pack harness loose, broken, defective ▪ ID sensor defective ▪ IOB defective ▪ Charge power pack defective
		▪ Remove drum unit, inspect clean ID sensor ▪ Inspect ID sensor harness ▪ Inspect charge power pack harness ▪ Replace ID sensor ▪ Replace charge power pack ▪ Replace IOB

SC380-51	C	Potential sensor calibration (VL)
		During drum potential sensor calibration, when VL was adjusted, the pattern surface potential VL pattern was not within range 0V to -400V. (VL is the potential after exposing a white pattern.)
		▪ Potential sensor harness, connector loose, broken, defective ▪ Drum unit connection harness loose, broken, defective ▪ Charge corona unit harness loose, broken, defective ▪ Development power pack harness loose, broken, defective ▪ Potential sensor defective ▪ Charge corona unit defective ▪ Development power pack defective ▪ IOB defective

		▪ Inspect drum unit connection ▪ Remove drum unit and inspect potential sensor harness ▪ Inspect charge corona harness ▪ Inspect development unit power pack harness ▪ Replace potential sensor ▪ Replace charge corona unit ▪ Replace development power pack ▪ Replace IOB

SC396-01	D	Drum motor error
		The drum motor lock signal remains low for 2 seconds while the main motor is on.
		▪ Drive mechanism overloaded ▪ Motor drive board defective
		▪ Inspect the area around the motor and make sure no obstacles are blocking operation of the motor ▪ Check the motor for loose or broken drive belts ▪ Replace drum motor

7.6 SC400: IMAGE DEVELOPMENT 2

7.6.1 SC400

SC410-00	C	Quenching lamp error
		At the completion of auto process control initialization, the potential of the drum surface detected by the potential sensor was more than -400V, the prescribed value.
		▪ Quenching lamp, connector loose, broken, defective ▪ Quenching lamp defective
		▪ Remove the drum unit and inspect the quenching lamp harness and connector ▪ Replace quenching lamp

SC411-01	C	Charge potential: VD (1) adjustment error
		The is SC code is logged by the machine if it detects either event below: ▪ Adjustment of VD (1) = VD default +/-20 V failed within the 5 prescribed attempts. ▪ Adjustment of the drum surface potential for VD (1), achieved a result of VD (1) for VG (1) with VD (1) > than VG (1). The machine stops and the SC is logged without displaying the SC number. Also, when SP3901 (Automatic Process Control On/Off) is set to "On", the problem is detected only when control is enabled for the potential sensor.
		▪ Potential sensor harness, connector loose, broken, defective ▪ Drum unit harness, connector loose, broken, defective ▪ Drum unit installed incorrectly ▪ Charge corona power pack harness loose, broken, defective ▪ Charge corona grid damaged, dirty ▪ Potential sensor defective ▪ Charge corona power pack defective ▪ Drum quenching lamp defective ▪ IOB defective

		▪ Check the drum harness, connector at the front of the machine ▪ Confirm that the drum unit is installed correctly ▪ Remove the drum unit and inspect the potential sensor ▪ Inspect the harnesses of the charge corona power pack ▪ Remove the charge corona unit and inspect the grid for damage, dirt, dust ▪ Replace potential sensor ▪ Replace charge corona power pack ▪ Replace drum quenching lamp ▪ Replace IOB

SC411-02	C	Charge potenial: VD (2) adjustment error
		The is SC code is logged by the machine if it detects either event below: ▪ Adjustment of VD (2) failed within the 5 prescribed attempts. ▪ Adjustment of the drum surface potential for VD (2), achieved a result of VD (2) for VG with VD (2) > than VG. The machine stops and the SC is logged without displaying the SC number. Also, when SP3901 (Automatic Process Control On/Off) is set to "On", the problem is detected only when control is enabled for the potential sensor.
		▪ Potential sensor harness, connector loose, broken, defective ▪ Drum unit harness, connector loose, broken, defective ▪ Drum unit installed incorrectly ▪ Charge corona power pack harness loose, broken, defective ▪ Charge corona grid damaged, dirty ▪ Potential sensor defective ▪ Charge corona power pack defective ▪ Drum quenching lamp defective ▪ IOB defective

		▪ Check the drum harness, connector at the front of the machine ▪ Confirm that the drum unit is installed correctly ▪ Remove the drum unit and inspect the potential sensor ▪ Inspect the harnesses of the charge corona power pack ▪ Remove the charge corona unit and inspect the grid for damage, dirt, dust ▪ Replace potential sensor ▪ Replace charge corona power pack ▪ Replace drum quenching lamp ▪ Replace IOB

SC440-01	D	Transfer output abnormal (voltage leak detected)
		When the transfer voltage was output, the feedback voltage remained higher than 4V for 60 ms.
		▪ Transfer current terminal, transfer power pack disconnected, damaged connector ▪ Transfer power pack defective
		▪ Remove the transfer unit ▪ Inspect the terminals at the front and rear ▪ Replace transfer power pack

SC440-02	D	Transfer output abnormal release detection
		When the transfer is output, there is hardly any feedback voltage within 60 ms even with application of 24% PWM.
		▪ Transfer connector loose, defective ▪ Transfer unit harness disconnected ▪ Transfer power pack defective
		▪ Remove transfer unit ▪ Inspect harnesses and connectors ▪ Replace transfer power pack

SC495-00	D	Toner recycling unit error
		Encoder pulse does not change for 3 s after the drum motor switched on.
		▪ Waste toner transport has stopped due to drum motor overload ▪ Toner end sensor defective, disconnected
		▪ Inspect the area around the drum motor ▪ Remove any obstacles that could interfere with motor operation ▪ Inspect the transport coils and check for clogging ▪ Remove the development unit and inspect the toner end sensor harness and connector ▪ Replace toner end sensor

SC496-00	D	Toner collection bottle error
		The toner collection bottle set switch remained off when the front door is closed.
		▪ No toner collection bottle is in the machine ▪ Toner collection bottle set switch harness loose, broken, defective ▪ Toner collection bottle set switch defective
		▪ Confirm that there is a used toner collection bottle in the machine ▪ Inspect the harness of the toner collection bottle set switch ▪ Replace toner bottle collection set switch

7.7 SC500: FEED, TRANSPORT, DUPLEX, AND FUSING

7.7.1 SC500

SC501-01	B	Tray 1 lift malfunction
		▪ The lift sensor is not activated within 10 s after the tray lift motor starts lifting the bottom plate. ▪ When the tray lowers, the tray lift sensor does not go off within 1.5 s. ▪ Tray overload detected when the tray is set. ▪ The lower limit sensor of the LCIT does not detect the lower limit within 10 s.
		▪ Tray lift motor defective, disconnected ▪ Paper or other obstacle trapped between tray and motor ▪ Pick-up solenoid disconnected, blocked by an obstacle ▪ Too much paper loaded in tray **Note** ▪ At first, the machine displays a message asking the operator to reset the tray. ▪ This SC will not display until the operator has pulled the tray out and pushed it in 3 times. ▪ If the operator turns the machine off/on before the 3rd opening and closing of the tray, the 3-count is reset.
		▪ Make sure Tray 1 is not overloaded. ▪ Check for obstacles (paper scraps, etc.) around the tray and motor. ▪ Check tray lift motor connection ▪ Check around pick-up solenoid for obstacles. ▪ Check solenoid connection.

SC502-00	B	Tray 2 lift malfunction
		▪ The lift sensor is not activated within 10 s after the tray lift motor starts lifting the bottom plate. ▪ When the tray lowers, the tray lift sensor does not go off within 1.5 s. ▪ Tray overload detected when the tray is set.
		▪ Tray lift motor defective or disconnected ▪ Paper or other obstacle trapped between tray and motor ▪ Pick-up solenoid disconnected or blocked by an obstacle ▪ Too much paper loaded in tray **Note** ▪ At first, the machine displays a message asking the operator to reset the tray. ▪ This SC will not display until the operator has pulled the tray out and pushed it in 3 times. ▪ If the operator turns the machine off/on before the 3rd opening and closing of the tray, the 3-count is reset.
		▪ Make sure Tray 2 is not overloaded. ▪ Check for obstacles (paper scraps, etc.) around the tray and motor. ▪ Check tray lift motor connection ▪ Check around pick-up solenoid for obstacles. ▪ Check solenoid connection.

SC503-00	B	Tray 3 lift malfunction
		▪ The lift sensor is not activated within 10 s after the tray lift motor starts lifting the bottom plate. ▪ When the tray lowers, the tray lift sensor does not go off within 1.5 s. ▪ Tray overload detected when the tray is set.
		▪ Tray lift motor defective or disconnected ▪ Paper or other obstacle trapped between tray and motor ▪ Pick-up solenoid disconnected or blocked by an obstacle ▪ Too much paper loaded in tray **Note** ▪ At first, the machine displays a message asking the operator to reset the tray. ▪ This SC will not display until the operator has pulled the tray out and pushed it in 3 times. ▪ If the operator turns the machine off/on before the 3rd opening and closing of the tray, the 3-count is reset.
		▪ Make sure Tray 3 is not overloaded. ▪ Check for obstacles (paper scraps, etc.) around the tray and motor. ▪ Check tray lift motor connection ▪ Check around pick-up solenoid for obstacles. ▪ Check solenoid connection.

SC504-00	B	Tray 4 lift malfunction **Japan Only**
		▪ The lift sensor is not activated within 10 s after the tray lift motor starts lifting the bottom plate. ▪ When the tray lowers, the tray lift sensor does not go off within 1.5 s. ▪ Tray overload detected when the tray is set.
		▪ Tray lift motor defective or disconnected ▪ Paper or other obstacle trapped between tray and motor ▪ Pick-up solenoid disconnected or blocked by an obstacle ▪ Too much paper loaded in tray **Note** ▪ At first, the machine displays a message asking the operator to reset the tray. ▪ This SC will not display until the operator has pulled the tray out and pushed it in 3 times. ▪ If the operator turns the machine off/on before the 3rd opening and closing of the tray, the 3-count is reset.
		▪ Make sure Tray 4 is not overloaded. ▪ Check for obstacles (paper scraps, etc.) around the tray and motor. ▪ Check tray lift motor connection ▪ Check around pick-up solenoid for obstacles. ▪ Check solenoid connection.

SC505-01	B	LCIT error: Lift error
		Before the pickup solenoid went ON at tray initialization, the machine failed to detect the tray lift sensor OFF after 5 attempts.
		▪ Pick-up solenoid harness connector loose, broken, defective ▪ Pickup solenoid defective ▪ Lift sensor harness connector loose, broken, defective ▪ Lift sensor defective ▪ LCIT main board defective
		▪ Check pick-up solenoid harness, connector, and replace if damaged. ▪ Check lift sensor harness, connector, and replace if damaged. ▪ Replace pickup solenoid ▪ Replace lift sensor ▪ Replace LCIT main board

SC505-02	B	LCIT error: Lift time-out error
		At tray initialization the tray bottom plate was not detected at the up position within the prescribed time (30 s).
		▪ Lift motor harness connector loose, broken, defective ▪ Lift sensor harness connector loose, broken, defective ▪ Lift motor defective ▪ Lift sensor defective ▪ LCIT main board defective
		▪ Inspect lift motor harness connector, and replace if damaged. ▪ Inspect lift sensor harness connector and replace if damaged. ▪ Replace lift sensor ▪ Replace lift motor ▪ Replace LCIT main board

SC505-03	B	LCIT error: Lower time-out error
		At initialization, the bottom plate was lowered to check it at the down position, but the upper limit sensor was still ON after the prescribed 30 s, and the lower limit sensor and four paper height sensors remained OFF. -or- At paper end, or after the down switch went ON, the machine lowered the bottom plate, but the paper detect sensor or the lower limit sensor did not go ON within the prescribed time (remained OFF for more than 30 s).
		▪ Lift motor harness connector loose, broken, defective ▪ Lift sensor harness connector loose, broken, defective ▪ Paper sensor harness connector loose, broken, defective ▪ Lower limit sensor harness connector loose, broken, defective ▪ Paper height sensor harness connector loose, broken, defective ▪ Lift motor defective ▪ Lift sensor defective ▪ Paper sensor defective ▪ Lower limit sensor defective ▪ Paper height sensor defective ▪ LCIT main board defective
		▪ Inspect lift motor harness, connector and replace if defective ▪ Inspect lift sensor harness, connector and replace if defective. ▪ Inspect paper sensor harness, connector and replace if defective. ▪ Inspect lower limit sensor harness, connector and replace if defective. ▪ Inspect paper height sensor harness, connector and replace if defective. ▪ Replace lift motor. ▪ Replace lift sensor. ▪ Replace paper sensor. ▪ Replace lower limit sensor. ▪ Replace paper height sensor. ▪ Replace LCIT main board

SC505-04	B	LCIT error: Paper overload error
		At initialization the machine detected both the lift sensor and lower limit sensor ON.
		▪ Paper tray overload ▪ Lift sensor harness, connector loose, broken, defective ▪ Lower limit sensor harness, connector loose, broken, defective ▪ Lift sensor defective ▪ Lower limit sensor defective ▪ LCIT main board defective
		▪ Check the load limit mark on the paper tray. ▪ Inspect the lift sensor harness, connector loose, and replace if defective. ▪ Inspect the lower limit sensor harness, connector and replace if defective. ▪ Replace lift sensor. ▪ Replace lower limit sensor. ▪ Replace LCIT main board

SC515-00	C	Duplex jogger motor error 1
		When the jogger fence moves to the home position, the jogger HP sensor does not turn on even if the jogger fence motor has moved the jogger fence 153.5 mm.
		▪ Paper or other obstacle has jammed jogger fence mechanism ▪ Jogger HP sensor connector disconnected or defective ▪ Jogger HP sensor defective
		▪ Inspect jogger fence mechanism for obstacles (paper scraps, etc.) ▪ Inspect jogger HP sensor connector, harness and replace if damaged. ▪ Replace jogger HP sensor.

SC516-00	C	Duplex jogger motor error 2
		When the jogger fence moves from the home position, the jogger fence HP sensor does not turn off even if the jogger motor has moved the jogger fence 153.5 mm.
		▪ Paper or other obstacle has jammed mechanism ▪ Jogger fence HP sensor connector disconnected or defective ▪ Jogger fence HP sensor defective
		▪ Inspect jogger fence mechanism for obstacles (paper scraps, etc.) ▪ Inspect jogger HP sensor connector, harness and replace if damaged. ▪ Replace jogger HP sensor.

SC520-01	C	Tray 1 paper feed motor error: Lock
		An error was detected in the motor register (VODKA: Transport DCM) within 100 ms after the motor turned on, or the error was detected in the register 5 successive times, and the machine determined that the motor was not rotating correctly. **Note**: VODKA is a component of the IOB.
		▪ Motor harness, connector loose, broken, defective ▪ Motor torque too high, due to blockage, obstacle ▪ Motor defective ▪ IOB defective
		▪ Inspect motor harness, connector, and replace if damaged. ▪ Inspect motor and area around the motor for obstacles. ▪ Replace Tray 1 paper feed motor ▪ Replace IOB.

SC520-02		Tray2 paper feed motor error: Lock
		An error was detected in the motor register (VODKA: Transport DCM) within 100 ms after the motor turned on, or the error was detected in the register 5 successive times, and the machine determined that the motor was not rotating correctly. **Note**: VODKA is a component of the IOB.
		▪ Motor harness, connector loose, broken, defective ▪ Motor torque too high, due to blockage, obstacle ▪ Motor defective ▪ IOB defective
		▪ Inspect motor harness, connector, and replace if damaged. ▪ Inspect motor and area around the motor for obstacles. ▪ Replace Tray 2 paper feed motor ▪ Replace IOB.

SC520-03	C	Tray 3 paper feed motor error: Lock
		An error was detected in the motor register (VODKA: Transport DCM) within 100 ms after the motor turned on, or the error was detected in the register 5 successive times, and the machine determined that the motor was not rotating correctly. **Note**: VODKA is a component of the IOB.
		▪ Motor harness, connector loose, broken, defective ▪ Motor torque too high, due to blockage, obstacle ▪ Motor defective ▪ IOB defective
		▪ Inspect motor harness, connector, and replace if damaged. ▪ Inspect motor and area around the motor for obstacles. ▪ Replace Tray 3 paper feed motor ▪ Replace IOB.

SC520-04	C	Tray 4 paper feed motor error: Lock **Japan Only**
		An error was detected in the motor register (VODKA: Transport DCM) within 100 ms after the motor turned on, or the error was detected in the register 5 successive times, and the machine determined that the motor was not rotating correctly. **Note**: VODKA is a component of the IOB.
		▪ Motor harness, connector loose, broken, defective ▪ Motor torque too high, due to blockage, obstacle ▪ Motor defective ▪ IOB defective
		▪ Inspect motor harness, connector, and replace if damaged. ▪ Inspect motor and area around the motor for obstacles. ▪ Replace Tray 4 paper feed motor ▪ Replace IOB.

SC521-01	C	Main relay motor lock error
		An error was detected in the motor register (VODKA: Transport DCM) within 100 ms after the motor turned on, or the error was detected in the register 5 successive times, and the machine determined that the motor was not rotating correctly. **Note**: VODKA is a component of the IOB.
		▪ Motor harness, connector loose, broken, defective ▪ Motor torque too high, due to blockage, obstacle ▪ Motor defective ▪ IOB defective
		▪ Inspect motor harness, connector, and replace if damaged. ▪ Inspect motor and area around the motor for obstacles. ▪ Replace main relay motor ▪ Replace IOB.

SC521-02	C	Registration motor lock error
		An error was detected in the motor register (VODKA: Transport DCM) within 100 ms after the motor turned on, or the error was detected in the register 5 successive times, and the machine determined that the motor was not rotating correctly. **Note**: VODKA is a component of the IOB.
		▪ Motor harness, connector loose, broken, defective ▪ Motor torque too high, due to blockage, obstacle ▪ Motor defective ▪ IOB defective
		▪ Inspect motor harness, connector, and replace if damaged. ▪ Inspect motor and area around the motor for obstacles. ▪ Replace registration motor ▪ Replace IOB.

SC522-01	C	Invert duplex motor lock error
		An error was detected in the motor register (VODKA: Transport DCM) within 100 ms after the motor turned on, or the error was detected in the register 5 successive times, and the machine determined that the motor was not rotating correctly. **Note**: VODKA is a component of the IOB.
		▪ Motor harness, connector loose, broken, defective ▪ Motor torque too high, due to blockage, obstacle ▪ Motor defective ▪ IOB defective
		▪ Inspect motor harness, connector, and replace if damaged. ▪ Inspect motor and area around the motor for obstacles. ▪ Replace invert duplex motor ▪ Replace IOB.

SC522-02	C	Duplex transport motor lock error
		An error was detected in the motor register (VODKA: Transport DCM) within 100 ms after the motor turned on, or the error was detected in the register 5 successive times, and the machine determined that the motor was not rotating correctly. **Note**: VODKA is a component of the IOB.
		▪ Motor harness, connector loose, broken, defective ▪ Motor torque too high, due to blockage, obstacle ▪ Motor defective ▪ IOB defective
		▪ Inspect motor harness, connector, and replace if damaged. ▪ Inspect motor and area around the motor for obstacles. ▪ Replace duplex transport motor ▪ Replace IOB.

SC530-01		Drum fan error
		After the fan turns on, the fan lock signal is checked at 1 sec. intervals. ▪ Due to an obstruction or other problem, the lock signal went HIGH 1.5 s after the fan turned on and remained HIGH for 6 consecutive counts. ▪ The lock signal should remain LOW during normal operation. ▪ The fan stopped and then the machine stopped.
		▪ Fan motor overload due to an obstruction. ▪ Fan motor connector, harness loose, broken, defective. ▪ Fan motor defective.
		▪ Inspect the area around the fan for obstructions that could interfere with the rotation of the fan blades. ▪ Inspect harness, connector and replace if damaged. ▪ Replace the drum fan.

SC530-02		Development unit fan 1 error
		After the fan turns on, the fan lock signal is checked at 1 sec. intervals. ▪ Due to an obstruction or other problem, the lock signal went HIGH 1.5 s after the fan turned on and remained HIGH for 6 consecutive counts. ▪ The lock signal should remain LOW during normal operation. ▪ The fan stopped and then the machine stopped.
		▪ Fan motor overload due to an obstruction. ▪ Fan motor connector, harness loose, broken, defective. ▪ Fan motor defective.
		▪ Inspect the area around the fan for obstructions that could interfere with the rotation of the fan blades. ▪ Inspect harness, connector and replace if damaged. ▪ Replace development unit fan 1.

SC530-03		Development unit fan 2 error
		After the fan turns on, the fan lock signal is checked at 1 sec. intervals. ▪ Due to an obstruction or other problem, the lock signal went HIGH 1.5 s after the fan turned on and remained HIGH for 6 consecutive counts. ▪ The lock signal should remain LOW during normal operation. ▪ The fan stopped and then the machine stopped.
		▪ Fan motor overload due to an obstruction. ▪ Fan motor connector, harness loose, broken, defective. ▪ Fan motor defective.
		▪ Inspect the area around the fan for obstructions that could interfere with the rotation of the fan blades. ▪ Inspect harness, connector and replace if damaged. ▪ Replace development unit fan 2.

SC530-04		Duplex fan error
		After the fan turns on, the fan lock signal is checked at 1 sec. intervals. ▪ Due to an obstruction or other problem, the lock signal went HIGH 1.5 s after the fan turned on and remained HIGH for 6 consecutive counts. ▪ The lock signal should remain LOW during normal operation. ▪ The fan stopped and then the machine stopped.
		▪ Fan motor overload due to an obstruction. ▪ Fan motor connector, harness loose, broken, defective. ▪ Fan motor defective.
		▪ Inspect the area around the fan for obstructions that could interfere with the rotation of the fan blades. ▪ Inspect harness, connector and replace if damaged. ▪ Replace duplex fan.

SC530-05		PCU fan error
		After the fan turns on, the fan lock signal is checked at 1 sec. intervals. ▪ Due to an obstruction or other problem, the lock signal went HIGH 1.5 s after the fan turned on and remained HIGH for 6 consecutive counts. ▪ The lock signal should remain LOW during normal operation. ▪ The fan stopped and then the machine stopped.
		▪ Fan motor overload due to an obstruction. ▪ Fan motor connector, harness loose, broken, defective. ▪ Fan motor defective.
		▪ Inspect the area around the fan for obstructions that could interfere with the rotation of the fan blades. ▪ Inspect harness, connector and replace if damaged. ▪ Replace the PCU fan.

SC530-06		Toner bottle fan error
		After the fan turns on, the fan lock signal is checked at 1 sec. intervals. ▪ Due to an obstruction or other problem, the lock signal went HIGH 1.5 s after the fan turned on and remained HIGH for 6 consecutive counts. ▪ The lock signal should remain LOW during normal operation. ▪ The fan stopped and then the machine stopped.
		▪ Fan motor overload due to an obstruction. ▪ Fan motor connector, harness loose, broken, defective. ▪ Fan motor defective.
		▪ Inspect the area around the fan for obstructions that could interfere with the rotation of the fan blades. ▪ Inspect harness, connector and replace if damaged. ▪ Replace the toner bottle fan.

SC530-07		Fusing inner cover fan error
		After the fan turns on, the fan lock signal is checked at 1 sec. intervals. ▪ Due to an obstruction or other problem, the lock signal went HIGH 1.5 s after the fan turned on and remained HIGH for 6 consecutive counts. ▪ The lock signal should remain LOW during normal operation. ▪ The fan stopped and then the machine stopped.
		▪ Fan motor overload due to an obstruction. ▪ Fan motor connector, harness loose, broken, defective. ▪ Fan motor defective.
		▪ Inspect the area around the fan for obstructions that could interfere with the rotation of the fan blades. ▪ Inspect harness, connector and replace if damaged. ▪ Replace the fusing inner cover fan.

SC530-08		PSU fan 1 error
		After the fan turns on, the fan lock signal is checked at 1 sec. intervals. ▪ Due to an obstruction or other problem, the lock signal went HIGH 1.5 s after the fan turned on and remained HIGH for 6 consecutive counts. ▪ The lock signal should remain LOW during normal operation. ▪ The fan stopped and then the machine stopped.
		▪ Fan motor overload due to an obstruction. ▪ Fan motor connector, harness loose, broken, defective. ▪ Fan motor defective.
		▪ Inspect the area around the fan for obstructions that could interfere with the rotation of the fan blades. ▪ Inspect harness, connector and replace if damaged. ▪ Replace PSU fan 1.

SC530-09		PSU fan 2 error
		After the fan turns on, the fan lock signal is checked at 1 sec. intervals. ▪ Due to an obstruction or other problem, the lock signal went HIGH 1.5 s after the fan turned on and remained HIGH for 6 consecutive counts. ▪ The lock signal should remain LOW during normal operation. ▪ The fan stopped and then the machine stopped.
		▪ Fan motor overload due to an obstruction. ▪ Fan motor connector, harness loose, broken, defective. ▪ Fan motor defective.
		▪ Inspect the area around the fan for obstructions that could interfere with the rotation of the fan blades. ▪ Inspect harness, connector and replace if damaged. ▪ Replace PSU fan 2.

SC530-10		AC drive board fan
		After the fan turns on, the fan lock signal is checked at 1 sec. intervals. ▪ Due to an obstruction or other problem, the lock signal went HIGH 1.5 s after the fan turned on and remained HIGH for 6 consecutive counts. ▪ The lock signal should remain LOW during normal operation. ▪ The fan stopped and then the machine stopped.
		▪ Fan motor overload due to an obstruction. ▪ Fan motor connector, harness loose, broken, defective. ▪ Fan motor defective.
		▪ Inspect the area around the fan for obstructions that could interfere with the rotation of the fan blades. ▪ Inspect harness, connector and replace if damaged. ▪ Replace the AC drive board fan.

SC530-11		Controller fan 2 (top: exhaust)
		After the fan turns on, the fan lock signal is checked at 1 sec. intervals. ▪ Due to an obstruction or other problem, the lock signal went HIGH 1.5 s after the fan turned on and remained HIGH for 6 consecutive counts. ▪ The lock signal should remain LOW during normal operation. ▪ The fan stopped and then the machine stopped.
		▪ Fan motor overload due to an obstruction. ▪ Fan motor connector, harness loose, broken, defective. ▪ Fan motor defective.
		▪ Inspect the area around the fan for obstructions that could interfere with the rotation of the fan blades. ▪ Inspect harness, connector and replace if damaged. ▪ Replace controller fan 2.

SC530-12	B	Capacitor fan error **Japan Only**
		After the fan turns on, the fan lock signal is checked at 1 sec. intervals. ▪ Due to an obstruction or other problem, the lock signal went HIGH 1.5 s after the fan turned on and remained HIGH for 6 consecutive counts. ▪ The lock signal should remain LOW during normal operation. ▪ The fan stopped and then the machine stopped.
		▪ Fan motor overload due to an obstruction. ▪ Fan motor connector, harness loose, broken, defective. ▪ Fan motor defective.
		▪ Inspect the area around the fan for obstructions that could interfere with the rotation of the fan blades. ▪ Inspect harness, connector and replace if damaged. ▪ Replace the capacitor fan.

SC530-13		PFU fan 1 error
		After the fan turns on, the fan lock signal is checked at 1 sec. intervals. ▪ Due to an obstruction or other problem, the lock signal went HIGH 1.5 s after the fan turned on and remained HIGH for 6 consecutive counts. ▪ The lock signal should remain LOW during normal operation. ▪ The fan stopped and then the machine stopped.
		▪ Fan motor overload due to an obstruction. ▪ Fan motor connector, harness loose, broken, defective. ▪ Fan motor defective.
		▪ Inspect the area around the fan for obstructions that could interfere with the rotation of the fan blades. ▪ Inspect harness, connector and replace if damaged. ▪ Replace PFU fan 1.

SC530-14		Paper feed unit fan 2 error
		After the fan turns on, the fan lock signal is checked at 1 sec. intervals. ▪ Due to an obstruction or other problem, the lock signal went HIGH 1.5 s after the fan turned on and remained HIGH for 6 consecutive counts. ▪ The lock signal should remain LOW during normal operation. ▪ The fan stopped and then the machine stopped.
		▪ Fan motor overload due to an obstruction. ▪ Fan motor connector, harness loose, broken, defective. ▪ Fan motor defective.
		▪ Inspect the area around the fan for obstructions that could interfere with the rotation of the fan blades. ▪ Inspect harness, connector and replace if damaged. ▪ Replace PFU fan 2.

SC530-15		Paper feed unit fan 3 error
		After the fan turns on, the fan lock signal is checked at 1 sec. intervals. ▪ Due to an obstruction or other problem, the lock signal went HIGH 1.5 s after the fan turned on and remained HIGH for 6 consecutive counts. ▪ The lock signal should remain LOW during normal operation. ▪ The fan stopped and then the machine stopped.
		▪ Fan motor overload due to an obstruction. ▪ Fan motor connector, harness loose, broken, defective. ▪ Fan motor defective.
		▪ Inspect the area around the fan for obstructions that could interfere with the rotation of the fan blades. ▪ Inspect harness, connector and replace if damaged. ▪ Replace PFU fan 3.

SC530-16		Paper feed unit fan 4 error **Japan Only**
		Note: The machines of this series have four trays in Japan, and machines in areas outside Japan have three trays. Tray 1 is a tandem tray, but Tray 1 in Japan is smaller. After the fan turns on, the fan lock signal is checked at 1 sec. intervals. ▪ Due to an obstruction or other problem, the lock signal went HIGH 1.5 s after the fan turned on and remained HIGH for 6 consecutive counts. ▪ The lock signal should remain LOW during normal operation. ▪ The fan stopped and then the machine stopped.
		▪ Fan motor overload due to an obstruction. ▪ Fan motor connector, harness loose, broken, defective. ▪ Fan motor defective.
		▪ Inspect the area around the fan for obstructions that could interfere with the rotation of the fan blades. ▪ Inspect harness, connector and replace if damaged. ▪ Replace PFU fan 4.

SC531-01	D	Main intake fan
		After the fan turns on, the fan lock signal is checked at 1 sec. intervals. ▪ Due to an obstruction or other problem, the lock signal went HIGH 1.5 s after the fan turned on and remained HIGH for 6 consecutive counts. ▪ The lock signal should remain LOW during normal operation. ▪ The fan stopped and then the machine stopped.
		▪ Fan motor overload due to an obstruction. ▪ Fan motor connector, harness loose, broken, defective. ▪ Fan motor defective.
		▪ Inspect the area around the fan for obstructions that could interfere with the rotation of the fan blades. ▪ Inspect harness, connector and replace if damaged. ▪ Replace the main intake fan.

SC531-02		Main exhaust fan
		After the fan turns on, the fan lock signal is checked at 1 sec. intervals. ▪ Due to an obstruction or other problem, the lock signal went HIGH 1.5 s after the fan turned on and remained HIGH for 6 consecutive counts. ▪ The lock signal should remain LOW during normal operation. ▪ The fan stopped and then the machine stopped.
		▪ Fan motor overload due to an obstruction. ▪ Fan motor connector, harness loose, broken, defective. ▪ Fan motor defective.
		▪ Inspect the area around the fan for obstructions that could interfere with the rotation of the fan blades. ▪ Inspect harness, connector and replace if damaged. ▪ Replace the main exhaust fan.

SC531-03		Heat exhaust fan error
		After the fan turns on, the fan lock signal is checked at 1 sec. intervals. ▪ Due to an obstruction or other problem, the lock signal went HIGH 1.5 s after the fan turned on and remained HIGH for 6 consecutive counts. ▪ The lock signal should remain LOW during normal operation. ▪ The fan stopped and then the machine stopped.
		▪ Fan motor overload due to an obstruction. ▪ Fan motor connector, harness loose, broken, defective. ▪ Fan motor defective.
		▪ Inspect the area around the fan for obstructions that could interfere with the rotation of the fan blades. ▪ Inspect harness, connector and replace if damaged. ▪ Replace the heat exhaust fan.

SC540-01	D	Fusing web motor error 1
		The amount of current detected during operation of the web motor exceeded 350 mA in 5 successive samples.
		▪ Web motor connection loose, broken, defective ▪ Web motor disconnected ▪ Harness loose, broken, defective
		▪ Inspect harness connection at CN252 on the IOB ▪ Inspect web motor connector, harness, and replace if damaged. ▪ Inspect paper exit harnesses from the point where web motor connects under the fusing unit. ▪ Replace web motor ▪ Replace IOB

SC540-03	A	Fusing web motor error 2
		SC540-02 has occurred three times and the machine has shut down automatically due to failure of the web motor.
		▪ Web motor harness loose, broken, defective ▪ Web motor disconnected ▪ Web motor defective
		▪ Inspect harness connection ▪ Inspect motor harness, connector, and replace if damaged. ▪ Replace motor

SC540-04	A	Fusing web motor error 3
		SC540-02 has occurred at total of 10 times and the machine has shut down automatically due to failure of the web motor.
		▪ Web motor harness loose, broken, defective ▪ Web motor disconnected ▪ Web motor defective
		▪ Inspect harness connection ▪ Inspect motor harness, connector, and replace if damaged. ▪ Replace motor

SC541-00	A	Fusing center thermistor error
		The fusing temperature detected by the center NC sensor (thermistor) was below 0°C for 7 s.
		▪ Thermistor connector defective ▪ Thermistor damaged, or out of position
		▪ Pull fusing unit out of machine. ▪ At the front of the fusing unit, inspect the connection of the NC thermistor. ▪ Inspect the installation of the NC thermistor and confirm that it is not out of position. ▪ Replace NC thermistor.

SC542-01	A	Fusing temperature warm-up error 1: Center thermistor
		The center NC sensor (thermistor) above the hot roller determined that the hot roller failed to reach the warm-up temperature within the prescribed time.
		▪ Fusing lamp disconnected ▪ Center thermistor out of position
		▪ Pull the fusing unit out of the machine. ▪ Inspect the fusing lamp connections at front and rear. ▪ Inspect center NC sensor and confirm that it is installed correctly,.

SC542-02	A	Fusing temperature warm-up error 2: Center thermistor
		The center NC sensor (thermistor) above the hot roller determined that the hot roller failed to reach the 100°C within the prescribed time.
		▪ Fusing lamp disconnected ▪ Center thermistor out of position
		▪ Pull the fusing unit out of the machine. ▪ Inspect the fusing lamp connections at front and rear. ▪ Inspect center NC sensor and confirm that it is installed correctly.

SC542-03	A	Fusing temperature warm-up error 3: Center thermistor
		The center NC sensor (thermistor) above the hot roller determined that the hot roller failed to reach the reload temperature within the prescribed time.
		▪ Fusing lamp disconnected ▪ Center thermistor out of position
		▪ Pull the fusing unit out of the machine. ▪ Inspect the fusing lamp connections at front and rear. ▪ Inspect center NC sensor and confirm that it is installed correctly.

SC543-00	A	Fusing lamp overheat error 1 (software)
		The center thermistor (NC sensor) detected a temperature of 240°C at the center of the hot roller. Fusing temperature control software error
		▪ PSU defective ▪ IOB defective ▪ BICU defective
		▪ Replace PSU ▪ Replace IOB ▪ Replace BICU

SC544-00	A	Fusing lamp overheat error 1: Hardware
		The center thermistor (NC sensor) or an end thermistor detected a temperature of 250°C on the hot roller.
		▪ PSU defective ▪ IOB defective ▪ BICU defective
		▪ Replace PSU ▪ Replace IOB ▪ Replace BICU

SC545-00	A	Fusing lamp overheat error 2: Center lamp
		After the hot roller reached warm-up temperature, the fusing lamps remained on at full capacity for 11 samplings (1.8 s. duration) while the hot roller was not rotating.
		▪ Thermistor damaged, or out of position ▪ Fusing lamp disconnected
		▪ Pull the fusing unit out of the machine. ▪ Inspect all thermistor connections, harnesses. ▪ Inspect fusing lamp connections, harnesses.

SC547-01	D	Zero cross signal error 1: Fusing relay
		At power on and with the fusing relay off, 3 samplings detected that the zero cross was not normal.
		▪ Fusing relay short ▪ Fusing relay drive circuit defective
		▪ Cycle the machine off/on. ▪ If the problem persists, check the harnesses and connections between the AC drive board and the IOB. ▪ Replace damaged harnesses, connectors ▪ Replace AC drive board. ▪ Replace IOB

SC547-02	D	Zero cross signal error 2: Fusing relay
		No zero cross signal was detected within 3 sec. after power on or after closing the front door.
		▪ Fusing relay short ▪ Fusing relay drive circuit defective
		▪ Cycle the machine off/on. ▪ If the problem persists, check the harnesses and connections between the AC drive board and the IOB. ▪ Replace damaged harnesses, connectors ▪ Inspect and replace PSU fuses (24VS). ▪ Replace AC drive board. ▪ Replace IOB

SC547-03	D	Zero cross signal error 2: Unstable power supply
		After 11 samplings the power supply was not within 50 to 60 Hz, indicating that the power supply is not stable.
		▪ Power supply unstable.
		▪ First, cycle the machine off/on. ▪ Consult with power supply company to confirm that the power supply is stable. ▪ Check harnesses, connections between the AC drive board and the IOB. ▪ Replace AC drive board. ▪ Replace IOB.

SC551-00	A	Fusing thermistor error 1: End thermistor
		The end thermistor (contact type) was less than 0C (32F) for more than 7 seconds.
		▪ Thermistor connector loose, broken, defective ▪ Thermistor incorrectly installed or loose, and floating out of position.

		▪ Pull the fusing unit out. ▪ Inspect all thermistor harnesses, connectors ▪ Confirm that thermistors are installed correctly.

SC552-01	A	Fusing reload temperature error 1: End thermistor
		The end thermistor (contact type) could not detect: ▪ 100°C 25 seconds after the start of the warm-up cycle. ▪ A change in temperature more than 16 degrees for 5 seconds. ▪ The reload temperature with 56 seconds after the start of the fusing temperature control cycle.
		▪ Fusing lamp disconnected ▪ End thermistor connector loose, broken, defective ▪ End thermistor out of position, installed incorrectly ▪ Thermostat open
		▪ Pull out the fusing unit. ▪ Inspect the fusing lamp harnesses, connections. ▪ Check end thermistor harnesses, connector ▪ Inspect end thermistor and make sure that it is installed correctly and not floating free. ▪ Replace thermostats.

SC552-02	A	Fusing reload temperature error 2: End thermistor
		The hot roller did not reach 100^{o}C within the prescribed time.
		▪ Fusing lamp disconnected ▪ Thermistor connector loose, broken, defective ▪ Thermistor out of position, installed incorrectly ▪ Thermostat open
		▪ Pull out the fusing unit. ▪ Inspect the fusing lamp harnesses, connections. ▪ Check end thermistor harnesses, connector ▪ Inspect end thermistor and make sure that it is installed correctly and not floating free. ▪ Replace thermostats.

SC552-03	A	Fusing reload temperature error 3: End thermistor
		The hot roller did not reach the prescribed temperature within 3 sec, after the start of the fusing temperature control cycle.
		▪ Fusing lamp disconnected ▪ Thermistor connector loose, broken, defective ▪ Thermistor out of position, installed incorrectly ▪ Thermostat open
		▪ Pull out the fusing unit. ▪ Inspect the fusing lamp harnesses, connections. ▪ Check end thermistor harnesses, connector ▪ Inspect end thermistor and make sure that it is installed correctly and not floating free. ▪ Replace thermostats.

SC553-00	A	Fusing thermistor error 4: End thermistor (software)
		The end thermistor (contact type) was at 240°C (464°F) for more than 1 second. The temperature is read 10 times every second. (at 0.1 s intervals).
		▪ PSU defective ▪ IOB control board defective ▪ BICU control board defective
		▪ Replace PSU ▪ Replace IOB ▪ Replace BICU

SC555-00	A	Fusing lamp error
		After the start of the warmup cycle, a fusing lamp was at full power for 1.8 s but the hot roller did not turn.
		▪ Thermistor bent, out of position ▪ Fusing lamp disconnected
		▪ Pull out fusing unit. ▪ Inspect thermistor harnesses, connectors ▪ Inspect fusing lamp harnesses, connectors ▪ Inspect thermistors and make sure they are installed correctly and not floating free.

SC557-00	C	Zero cross signal error
		High frequency noise was detected on the power line.
		The SC code is logged and the operation of the machine is not affected.
		▪ No action required.

SC559-00	A	Fusing jam: 3 counts
		At the fusing exit sensor the paper was detected late for three pulse counts (lag error), and SP1159 was on.
		▪ If this SC occurs, the machine cannot be used until the service technician cancels the SC code. ▪ This SC occurs only if SP1159 has been set to "1" (On). (Default: 0 (Off)).
		▪ Enter the SP mode ▪ Cycle the machine off/on.

SC569-00	D	Fusing pressure release motor error
		During copying, the HP sensor could not detect the actuator, tried again 3 times and could not detect.
		▪ Motor lock due to overload ▪ Motor drive board defective ▪ HP sensor defective, disconnected, connector defective, harness damaged
		▪ Pull out the fusing unit. ▪ Inspect the area around the pressure motor for obstacles that could interfere with the motor. ▪ Inspect pressure release sensor harness, connector, and replace if damaged. ▪ Replace pressure release sensor. ▪ Replace motor.

SC570-00	B	Capacitor discharge error 1 **Japan Only**
		An error code was output from the capacitor control board (CAPCNT). At discharge the capacitor unit could not boost: ▪ After the capacitor discharged the charge/discharge device issued an error code to signal that an error had occurred. ▪ When the error was issued, a message appeared on the operation panel display: "V Parts Maintenance Required". ▪ The capacitor unit ceased charging and discharging. ▪ The machine set charge/discharge control to the OFF state, but the machine can continue operations that do not use the capacitor.
		▪ Capacitor control board (CAPCNT) damaged ▪ Charge/discharge device damaged
		▪ Cycle the machine off/on twice. ▪ If the problem persists, replace the capacitor control board (CAPCNT) ▪ Replace the capacitor unit V Parts. ▪ The original charge output data done before shipping must also be restored.

SC571-00	B	Capacitor discharge error 3 **Japan Only**
		An error code was output from the capacitor control board (CAPCNT). When discharge was halted, the discharge from the capacitor unit did not stop: ▪ After the capacitor discharged the charge/discharge device issued an error code to signal that an error had occurred. ▪ When the error was issued, a message appeared on the operation panel display: "V Parts Maintenance Required". ▪ The capacitor unit ceased charging and discharging. ▪ The machine set charge/discharge control to the OFF state, but the machine can continue operations that do not use the capacitor.
		▪ Capacitor control board (CAPCNT) damaged ▪ Charge/discharge device damaged
		▪ Cycle the machine off/on twice. ▪ If the problem persists, replace the capacitor control board (CAPCNT) ▪ Replace the capacitor unit V Parts. ▪ The original charge output data done before shipping must also be restored.

SC572-00	B	Capacitor discharge error 2 **Japan Only**
		An error code was output from the capacitor control board (CAPCNT). When discharge started, the capacitor unit could not discharge: ▪ After the capacitor discharged the charge/discharge device issued an error code to signal that an error had occurred. ▪ When the error was issued, a message appeared on the operation panel display: "V Parts Maintenance Required". ▪ The capacitor unit ceased charging and discharging. ▪ The machine set charge/discharge control to the OFF state, but the machine can continue operations that do not use the capacitor.

		▪ Discharge FED damaged ▪ Capacitor control board (CAPCNT) damaged ▪ Charge/discharge device damaged ▪ Discharge device harness loose, broken, defective ▪ Connector loose ▪ DC heater disconnected
		▪ Cycle the machine off/on twice. ▪ If the problem persists, replace the capacitor control board (CAPCNT) ▪ Replace the capacitor unit V Parts. ▪ The original charge output data done before shipping must also be restored.

SC573-00	B	Discharge device error **Japan Only**
		An error code was output from the capacitor control board (CAPCNT). At charge the capacitor unit could not charge: ▪ While the capacitor boosted with an abnormal voltage when it started to charge, or the machine detected that the capacitor voltage did not rise and signaled an error. ▪ When the error was issued, a message appeared on the operation panel display: "V Parts Maintenance Required". ▪ The capacitor unit ceased charging and discharging. ▪ The machine set charge/discharge control to the OFF state, but the machine can continue operations that do not use the capacitor.
		▪ Charge device harness loose, broken, defective ▪ Connector loose, damaged ▪ Capacitor control board (CAPCNT) damaged ▪ Charge/discharge device damaged ▪ There was a drop in the power supply voltage (lower than AC78V).

		▪ Cycle the machine off/on twice. ▪ If the problem persists, replace the capacitor control board (CAPCNT) ▪ Replace the capacitor unit V Parts. ▪ The original charge output data done before shipping must also be restored.

SC574-00	B	Capacitor deterioration error **Japan Only**
		The capacity of the capacitor has dropped and the machine has entered CPM down mode: ▪ The capacity of the capacitor calculated by CAPCNT from the result of a measurement at the start of charging was determined to be below standard, and the error was issued because the number exceeded the specification for CPM down. ▪ When the error was issued, a message appeared on the operation panel display: "V Parts Maintenance Required". ▪ Normal operation continues without shutting down the capacitor or the engine.
		▪ Capacity is too low due to deterioration of the capacitor ▪ Capacitor control board (CAPCNT) damaged ▪ Charge/discharge device damaged
		▪ Replace the capacitor control board (CAPCNT) ▪ Replace the capacitor unit V Parts. ▪ The original charge output data done before shipping must also be restored.

SC575-00	B	Capacitor unit installation error **Japan Only**
		The machine was not able to detect that the capacitor unit was set. ▪ When the error was issued, a message appeared on the operation panel display: "V Parts Maintenance Required". ▪ The capacitor unit ceased charging and discharging. ▪ The machine set charge/discharge control to the OFF state, but the machine can continue operations that do not use the capacitor.

		▪ IOB-CAPCNT harness loose, broken, defective ▪ Capacitor unit damaged, not installed correctly ▪ Capacitor control board (CAPCNT) damaged
		▪ Confirm that the capacitor unit is installed correctly. ▪ Cycle the machine off/on twice. ▪ If the problem persists, first check IOB-CAPCNT harness and replace if damaged ▪ Replace the capacitor control board (CAPCNT) ▪ Replace the capacitor unit V Parts. ▪ The original charge output data done before shipping must also be restored.

SC581-00	D	Power cord not connected properly.
		According to the control specification for this machine "Power Cord Connection Detection (DOM 90 cpm)", a message on the operation panel (not an SC code) alerts the operator that the power cord is disconnected. This message display is: "Power cord disconnected. Turn machine off, and then connect power cord to power source." The following fusing unit SC codes are provided, listed here in order of importance: ▪ High temperature: SC543, SC544, SC553 ▪ Thermistor SC codes: SC541, SC551 ▪ Fusing lamp on alert SC codes (reload temperature failure): SC542, SC552, SC545, SC555 Note the following: ▪ If the power cord is not detected as disconnected, a reload temperature failure SC code is issued. ▪ If the power cord is detected disconnected, then the power cord connection failure takes priority. ▪ In this case, the reload temperature failure SC (fusing lamp on SC) SC flag is cleared.
		▪ Power cord on the fusing unit side is disconnected.
		▪ Turn the machine OFF. ▪ Connect the power cord to the power source. ▪ Turn the machine ON.

SC585-00	C	Temperature sensor error
		Machine issues this SC code after 3 consecutive abnormal temperature readings. ▪ Temperature reading below –10°C ▪ Temperature reading above 100°C
		▪ Temperature sensor harness connector loose, broken, defective ▪ Thermistor damaged
		▪ Inspect temperature sensor harness, connector. ▪ Reset the temperature sensor ▪ Replace temperature sensor.

SC590-00	D	Toner collection motor error
		The toner collection motor sensor output does not change for 3 s while the toner collection motor is on.
		▪ Vertical drive shaft missing, not installed correctly. ▪ Motor lock due to obstruction ▪ Motor harness, connector loose, broken, defective ▪ Toner collection motor sensor harness, connector loose, broken, defective. ▪ Toner collection motor sensor defective ▪ Motor defective
		▪ Make sure that the vertical drive shaft is installed, and installed correctly at the bottom end of the shaft where it connects to the motor. ▪ Check the area around the motor for obstacles that could interfere with motor operation. ▪ Inspect the motor harness, connector and replace if damaged. ▪ Inspect toner collection motor sensor harness, connector and replace if damaged. ▪ Replace toner collection motor sensor. ▪ Replace toner collection motor.

7.8 SC600: DATA COMMUNICATION

7.8.1 SC600

SC620-01	D	ADF communication error 1
		There was a communication error between the main machine and the ADF connected via the ASAP. The break was detected after normal connection. One of the following occurred: ▪ This SC occurred after a problem was detected after the ADF connection was recognized at startup. ▪ There was no reply even with the ADF not connected at startup, but the machine can still be used (no SC code was issued) without ADF function (scanning, copying originals on the original tray).
		▪ Poor ADF connection ▪ Electrical noise on the power line ▪ ADF damaged ▪ IPU damaged (IPU resides on BICU).
		▪ Check ADF connection ▪ Check ADF-BICU connection ▪ Replace ADF ▪ Replace BICU

SC620-02	D	ADF communication error 2
		There was a communication error between the main machine and the ADF connected via ASAP. A retry was triggered by the communication error after normal connection. One of the following occurred: ▪ The SC occurred after a problem was detected when the ADF connection was recognized at startup. ▪ There was no reply even with the ADF not connected at startup, but the machine can still be used (no SC code was issued) without ADF function (scanning, copying originals on the original tray). ▪ The SC was issued when connection of an incompatible ADF was detected (the ADF cord specifications did not match).
		▪ Incompatible ADF connection (ADF cable specifications do not match) ▪ Electrical noise on the power line ▪ Poor ADF connection at BICU ▪ ADF damaged ▪ IPU damaged (IPU resides on BICU)
		▪ Confirm that the ADF is the correct device for the machine. ▪ Replace ADF with compatible ADF ▪ Determine if there is electrical noise on the power line. ▪ Check ADF cable connection at the BICU. ▪ Replace ADF. ▪ Replace BICU.

SC620-03	D	ADF communication error 3
		No signal received within the time prescribed for receipt of the CIS initialization end command. ▪ Nothing was received within 3 sec. after the machine was turned on or recovered from Energy Save mode. ▪ If the machine does not receive the CIS initialization end command, it determines there is a problem with the ADF and issues this SC code.
		▪ Electrical noise on the power line. ▪ Poor ADF connection. ▪ ADF damaged. ▪ IPU damaged (IPU resides on the BICU).
		▪ Determine if there is electrical noise on the power line. ▪ Check ADF cable connection to BICU. ▪ Replace ADF ▪ Replace BICU

SC621-01	D	BICU > Finisher communication error: Break error
		During communication with the finisher MBX, the BICU received a break (LOW) signal from the finisher.
		▪ I/F cable connection to main machine or upstream finisher and loose, broken, defective ▪ Breaker switch defective ▪ Power cord loose, broken, defective ▪ Peripheral unit control board defective
		▪ Inspect I/F cable connections of finishers to the main machine or to upstream unit. ▪ If the peripheral unit has a breaker switch, test it. ▪ Check power cord of peripheral unit if it has separate power cord. ▪ Replace peripheral unit control board.

SC621-02	D	BICU> Finisher communication error: Timeout error
		During communication between the finisher MBX and the BICU, no ACK signal was detected for 100 ms after three attempts.
		▪ Serial line level unstable, external noise on the line ▪ I/F cable connection to main machine or upstream finisher and loose, broken, defective ▪ Breaker switch defective ▪ Power cord loose, broken, defective ▪ Peripheral unit control board defective ▪ BICU defective
		▪ Determine if there is electrical noise on the power line or around the machine. ▪ Inspect I/F cable connections of finishers to the main machine or to upstream unit. ▪ If the peripheral unit has a breaker switch, test it. ▪ Check power cord of peripheral unit if it has separate power cord. ▪ Replace peripheral unit control board. ▪ Replace BICU

SC626-01	D	BICU, LCIT communication error: Break reception error
		During communication with the LCIT, the BICU received a break (Low) signal.
		▪ Serial line connection unstable ▪ External noise on the line ▪ LCIT connection to main machine loose, broken, defective ▪ LCIT control board defective ▪ BICU defective
		▪ Determine if there is electrical noise on the power line or around the machine. ▪ Check I/F cable connection of the LCIT on the right side of the main machine. ▪ Inspect the cable connector for damage. ▪ Make sure the connector is locked and connected. ▪ Replace LCIT control board. ▪ Replace BICU.

SC626-02	D	BICU, LCIT communication error: Timeout error
		After 1 data frame is sent to the LCIT, an ACK signal is not received within 100 ms, and is not received after 3 retries.
		▪ Serial line connection unstable ▪ External noise on the line ▪ LCIT connection to main machine loose, broken, defective ▪ LCIT control board defective ▪ BICU defective
		▪ Determine if there is electrical noise on the power line or around the machine. ▪ Check I/F cable connection of the LCIT on the right side of the main machine. ▪ Inspect the cable connector for damage. ▪ Make sure the connector is locked and connected. ▪ Replace LCIT control board. ▪ Replace BICU.

SC628-01	B	IOB-CAPCNT communication break error **Japan Only**
		When the error was issued, a message appeared on the operation panel display: "V Parts Maintenance Required". The capacitor unit ceased charging and discharging. ▪ A break (LOW signal) did not release at startup, or a break (LOW signal) was received while the communication circuit was connected to CAPCNT. ▪ The machine set charge/discharge control to the OFF state, but the machine can continue operations that do not use the capacitor.
		▪ The serial line is unstable ▪ External electrical noise on power line or around the machine. ▪ Electrical short in the IOB-CAPCNT harness ▪ Capacitor control board (CAPCNT) damaged
		▪ Cycle the machine off/on. ▪ If the problem persists, inspect the IOB-CAPCNT harness, connectors, and replace if damaged. ▪ Replace the capacitor control board (CAPCNT).

SC628-02	B	IOB-CAPCNT communication timeout error **Japan Only**
		There was no ACK returned within 100 ms after one frame of data was sent to CAPCNT.
		▪ The serial line is unstable ▪ External electrical noise on power line or around the machine. ▪ Electrical short in the IOB-CAPCNT harness ▪ Capacitor control board (CAPCNT) damaged
		▪ Cycle the machine off/on. ▪ If the problem persists, inspect the IOB-CAPCNT harness, connectors, and replace if damaged. ▪ Replace the capacitor control board (CAPCNT).

SC641-00	D	Communication error between BICU and controller	CTL
		The RAPI protocol issued a frame from the controller to the BICU but the BICU did not respond. Three attempts were done at 100 ms intervals with no response. The RAPI driver failed to open at startup, or a retry error was issued four times during operation. Three attempts at 100 ms intervals failed to get a response from the engine.	
		▪ Faulty connection between BICU and controller board. ▪ Controller board or controller software error ▪ BICU defective ▪ Controller board defective	
		▪ Check the harnesses and connectors that connect the BICU and controller boards for loose, broken, connectors or harness damage. ▪ Cycle the machine off/on. ▪ Replace BICU. ▪ Replace controller board.	

SC664-01		VODKA 1 SRAM access permission error (no write permission)
		When the machine was turned on, or recovered from the Energy Save mode, there was an error detected in the connection signal between VODKA (resides on IOB) and SRAM.
		▪ IOB, BICU harness, connectors loose, broken, defective. ▪ IOB defective ▪ BICU defective
		▪ Cycle the main power switch off/on. ▪ If the problem persists, inspect the harnesses, connectors between BICU and IOB, and replace if damaged. ▪ Replace IOB. ▪ Replace BICU.

SC664-02		VODKA 1 SRAM write error (write result abnormal)
		When the machine was turned on, or recovered from the Energy Save mode, there was an error detected in the connection signal between VODKA (resides on IOB) and SRAM.
		▪ IOB, BICU harness, connectors loose, broken, defective. ▪ IOB defective ▪ BICU defective
		▪ Cycle the main power switch off/on. ▪ If the problem persists, inspect the harnesses, connectors between BICU and IOB, and replace if damaged. ▪ Replace IOB. ▪ Replace BICU.

SC664-03		VODKA 1 program start error
		When the machine was turned, on or recovered from the Energy Save mode, there was an error detected in the connection signal between VODKA (resides on IOB) and SRAM.
		▪ IOB, BICU harness, connectors loose, broken, defective. ▪ IOB defective ▪ BICU defective
		▪ Cycle the main power switch off/on. ▪ If the problem persists, inspect the harnesses, connectors between BICU and IOB, and replace if damaged. ▪ Replace IOB. ▪ Replace BICU.

SC664-11		VODKA 2 SRAM access permission error (no write permission)
		When the machine was turned on, or recovered from the Energy Save mode, there was an error detected in the connection signal between VODKA 2 (resides on IOB) and SRAM.
		▪ IOB, BICU harness, connectors loose, broken, defective. ▪ IOB defective ▪ BICU defective
		▪ Cycle the main power switch off/on. ▪ If the problem persists, inspect the harnesses, connectors between BICU and IOB, and replace if damaged. ▪ Replace IOB. ▪ Replace BICU.

SC664-12		VODKA 2 SRAM write error (write result abnormal)
		When the machine was turned, on or recovered from the Energy Save mode, there was an error detected in the connection signal between VODKA 2 (resides on IOB) and SRAM.
		▪ IOB, BICU harness, connectors loose, broken, defective. ▪ IOB defective ▪ BICU defective
		▪ Cycle the main power switch off/on. ▪ If the problem persists, inspect the harnesses, connectors between BICU and IOB, and replace if damaged. ▪ Replace IOB. ▪ Replace BICU.

SC664-13		VODKA 2 program start error
		When the machine was turned on, or recovered from the Energy Save mode, there was an error detected in the connection signal between VODKA 2 (resides on IOB) and SRAM.
		▪ IOB, BICU harness, connectors loose, broken, defective. ▪ IOB defective ▪ BICU defective
		▪ Cycle the main power switch off/on. ▪ If the problem persists, inspect the harnesses, connectors between BICU and IOB, and replace if damaged. ▪ Replace IOB. ▪ Replace BICU.

SC664-21		VODKA 3 SRAM access permission error (no write permission)
		When the machine was turned on, or recovered from the Energy Save mode, there was an error detected in the connection signal between VODKA 3 (resides on IOB) and SRAM.
		▪ IOB, BICU harness, connectors loose, broken, defective. ▪ IOB defective ▪ BICU defective
		▪ Cycle the main power switch off/on. ▪ If the problem persists, inspect the harnesses, connectors between BICU and IOB, and replace if damaged. ▪ Replace IOB. ▪ Replace BICU.

SC664-22		VODKA 3 SRAM write error (write result abnormal)
		When the machine was turned on, or recovered from the Energy Save mode, there was an error detected in the connection signal between VODKA 3 (resides on IOB) and SRAM.
		▪ IOB, BICU harness, connectors loose, broken, defective. ▪ IOB defective ▪ BICU defective
		▪ Cycle the main power switch off/on. ▪ If the problem persists, inspect the harnesses, connectors between BICU and IOB, and replace if damaged. ▪ Replace IOB. ▪ Replace BICU.

SC664-23		VODKA 3 program start error
		When the machine was turned on, or recovered from the Energy Save mode, there was an error detected in the connection signal between VODKA 3 (resides on IOB) and SRAM.
		▪ IOB, BICU harness, connectors loose, broken, defective. ▪ IOB defective ▪ BICU defective
		▪ Cycle the main power switch off/on. ▪ If the problem persists, inspect the harnesses, connectors between BICU and IOB, and replace if damaged. ▪ Replace IOB. ▪ Replace BICU.

SC665-04	D	IOB failure to start error
		There was a problem with the IOB_WAKE signal: ▪ The IOB_WAKE signal was detected abnormal when out of the WAKE status. This occurred when the three VODKA modules on the IOB were reset. ▪ There were IOB_WAKE signals detected from the 3 VODKA modules on the IOB, but there were not released from WAKE status. ▪ IOB_WAKE status will not be released if the machine detects an IOB_WAKE signal from even one of the three VODKA modules on the IOB.
		▪ BICU-IOB harnesses, connectors, loose, broken, defective ▪ PSU 5V not output ▪ IOB damaged ▪ RYB damaged ▪ BICU damaged
		▪ Inspect BICU-IOB harnesses, connectors and replace if damaged. ▪ Replace PSU. ▪ Replace IOB. ▪ Replace RYB. ▪ Replace BICU.

SC669-01		ID Error at NVRAM OPEN
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged

		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-02		Channel Error at NVRAM OPEN
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-03		Device Error at NVRAM OPEN
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-04		Communication interrupt error at NVRAM OPEN
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged

		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-05		Communication timeout error at NVRAM OPEN
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-06		Operation interrupt error at NVRAM OPEN
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-07		Buffer Full Error at NVRAM OPEN
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-08		No error code at NVRAM OPEN
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-09		ID error at NVRAM CLOSE
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-10		No error code at NVRAM CLOSE
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-11		ID Error When Writing Data to NVRAM
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-12		Channel error when writing data to NVRAM
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-13		Device error when writing data to NVRAM
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-14		Communication interrupt error when writing data to NVRAM
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-15		Communication timeout error when writing data to NVRAM
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-16		Operation interrupt error when writing data to NVRAM
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-17		Buffer full error when writing data to NVRAM
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-18		No error code when writing data to NVRAM
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-19		ID error when reading data from NVRAM
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-20		Channel error when reading data from NVRAM
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-21		Device error when reading data from NVRAM
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-22		Communication error when reading data from NVRAM
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-23		Communication timeout error when reading data from NVRAM
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-24		Operation error when reading data from NVRAM
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-25		Buffer full error when reading data from NVRAM
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-26		No error code when reading data from NVRAM
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-27		ID error at NVRAM device detection
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-28		Channel error at NVRAM device detection
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-29		Device error at NVRAM device detection
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-30		Communication interrupt error at NVRAM device detection
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-31		Communication timeout error at NVRAM device detection
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-32		Operation interrupt error at NVRAM device detection
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-33		Buffer full error at NVRAM device detection
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC669-34		No error code at NVRAM device detection
		An error occurred during communication with the NVRAM on the BICU. Three attempts to communicate with NVRAM failed.
		▪ Electronic noise ▪ NVRAM missing, not mounted on BICU ▪ NVRAM not installed correctly ▪ NVRAM damaged ▪ BICU damaged
		▪ Cycle the machine off/on. ▪ If the error persists, first determine if there is any electronic noise on the power line or around the machine. ▪ Remove the rear upper cover and inspect the NVRAM on the BICU. ▪ Confirm that the NVRAM is installed, undamaged, and installed correctly. ▪ Make sure that the pins of the NVRAM are seated correctly (not bent out of place). ▪ Replace NVRAM. ▪ Replace BICU.

SC670-01	D	Engine startup error	CTL
		The BICU failed to respond within the prescribed time when the machine was turned on.	
		▪ Connections between BICU and controller board are loose, disconnected, or damaged ▪ BICU defective ▪ Controller board defective	
		▪ Inspect the harness connections between the BICU and controller board. ▪ Inspect the harnesses and replace if damaged. ▪ Replace BICU. ▪ Replace controller board.	

SC670-02	D	Engine shutdown after startup	CTL
		An unexpected condition (hardware damage, faulty software, electrical noise) forced a CPU reset, or VODKA reset on the BICU.	
		▪ After the ENGRDY signal was asserted, there was an unexpected problem. The machine shifted to Engine Off mode. ▪ However, when the machine was turned off instability in the electrical circuit the controller shut the controller board down first, so the error detection was delayed 10 sec.	
		▪ Cycle the machine off/on. ▪ Check the connectors and harnesses that connect the BICU and controller board for damage, loose or broken connections. ▪ Update the firmware ▪ If these measures fail, replace the boards in this order: ▪ Replace BICU ▪ Replace PSU ▪ Replace controller board	

SC672-10	D	Controller start up error	CTL
		After the machine was powered on, communication between the controller and the operation panel was not established.	
		▪ Controller stalled ▪ Board installed incorrectly ▪ Controller board defective ▪ Operation panel connector loose, broken, or defective ▪ Controller late	
		▪ Turn the main power off/on. ▪ Check the connection of the controller board. ▪ Replace the controller board. ▪ Check the control panel harness.	

SC672-11	D	Controller start up error	CTL
		After the machine was powered on, communication between the controller and the operation panel was not established, or communication with controller was interrupted after a normal startup.	
		▪ Controller stalled ▪ Board installed incorrectly ▪ Controller board defective ▪ Operation panel connector loose, broken, or defective ▪ Controller late	
		▪ Turn the main power off/on. ▪ Check the connection of the controller board. ▪ Replace the controller board. ▪ Check the control panel harness.	

SC672-12	D	Controller start up error	CTL
		Communication with controller was interrupted after a normal startup.	
		▪ Controller stalled ▪ Board installed incorrectly ▪ Controller board defective ▪ Operation panel connector loose, broken, or defective ▪ Controller late	
		▪ Turn the main power off/on. ▪ Check the connection of the controller board. ▪ Replace the controller board. ▪ Check the control panel harness.	

SC672-13	D	Controller start up error	CTL
		The operation panel detected that the controller is down.	
		▪ Controller stalled ▪ Board installed incorrectly ▪ Controller board defective ▪ Operation panel connector loose, broken, or defective ▪ Controller late	
		▪ Turn the main power off/on. ▪ Check the connection of the controller board. ▪ Replace the controller board. ▪ Check the control panel harness.	

SC672-99	D	Controller start up error	CTL
		The operation panel software ended abnormally.	
		▪ Controller stalled ▪ Board installed incorrectly ▪ Controller board defective ▪ Operation panel connector loose, broken, or defective ▪ Controller late	
		▪ Turn the main power off/on. ▪ Check the connection of the controller board. ▪ Replace the controller board. ▪ Check the control panel harness.	

SC689-01	C	Proximity sensor failure: Error 1
		The proximity sensor has remained on (operator presence detected) for longer than 24 hours and it is not functioning.
		▪ Sensor remains on because it is damaged.
		▪ Enter the User Tools mode and set the sensor to "Disabled". (Default: Enabled) so the message will not appear while waiting for replacement. ▪ Replace the sensor and its components.

SC689-02	C	Proximity sensor failure: Error 2
		The proximity sensor will not detect the presence of the operator (remains off), even after 20 occurrences of activity on the machine: using the operation panel, opening/closing the ADF, setting an original, opening/closing the front door, opening/closing a paper tray. The operator can continue to use the machine (only the sensor function is disabled.)
		▪ The sensor remains off because it is damaged.
		▪ Enter the User Tools mode and set the sensor to "Disabled". (Default: Enabled) so the message will not appear while waiting for replacement. ▪ Replace the sensor and its components.

7.9 SC700: PERIPHERALS

7.9.1 SC700: PERIPHERALS

SC700-01	D	ADF bottom plate lift motor error
		The bottom plate position sensor did not go on after the bottom plate lift motor switched on to raise or lower the bottom plate. -or- The bottom plate HP sensor did not go off after the bottom plate lift motor switched on to lower the bottom plate. ▪ The bottom plate lift motor raises and lowers the bottom plate that holds the originals. ▪ If the output of the bottom plate position sensor does not change after the bottom plate is raised or lowered, at the first occurrence the ADF signals the main machine that a problem has occurred in the operation of the ADF. ▪ At the second occurrence the ADF signals a jam error.
		▪ No output from bottom plate position sensor ▪ No output from bottom plate HP sensor ▪ Bottom plate motor not operating ▪ ADF main board problem
		▪ Inspect the harnesses, connectors of the bottom plate position sensor and the bottom plate HP sensor. ▪ Check the harness, connector of the bottom plate lift motor. ▪ Replace bottom plate position sensor. ▪ Replace bottom plate HP sensor. ▪ Replace bottom plate lift motor. ▪ Replace ADF main board.

SC700-02	D	ADF original pick-up motor error

		The pick-up motor is operating but the status of the pickup HP sensor does not change. ▪ Normally, the rotation of the pick-up motor lowers the pickup roller onto the surface of the original on top of the raised stack to separate it and feed it. ▪ The pickup roller HP sensor detects when the pickup roller is raised and lowered, but if there is no output from this sensor, the ADF signals the main machine that a problem has occurred with the original pickup operation. ▪ At the second occurrence the ADF signals a jam.
		▪ No signal from the pickup HP sensor because sensor harness, connector loose, broken, defective. ▪ Pick-up HP sensor defective ▪ Pick-up motor harness, connector, is loose, broken, defective. ▪ Pick-up motor defective. ▪ ADF main defective
		▪ Inspect the pick-up HP sensor harness, connector for damage and replace. ▪ Inspect pick-up motor sensor harness, connector for damage and replace. ▪ Inspect ADF main board harnesses, connectors. ▪ Replace pick-up HP sensor. ▪ Replace pick-up motor. ▪ Replace ADF main board.

SC700-04	D	ADF feed motor error
		The machine detected an error signal during operation of the feed motor. ▪ A problem is detected when an error is detected in register of the feed motor encoder, in encoder channel A (B), or when the overload signal is detected. ▪ However, at the second occurrence the ADF signals a jam. ▪ A problem occurs in the encoder channel when there is no change in the encoder pulse even after a drive command is sent. ▪ An overload error occurs when the PWM duty continues high after the prescribed has elapsed.
		▪ Paper jammed in paper path ▪ Motor overload due to blockage ▪ Motor harness loose, broken, defective ▪ Motor bracket, motor installed incorrectly ▪ Feed motor defective
		▪ Inspect the paper path for jammed paper, paper scraps, etc. ▪ Inspect the area around the feed motor and remove any obstacles that could interfere with motor operation. ▪ Check feed motor harness, connector for damage and replace. ▪ Inspect the feed motor bracket and motor and confirm that they are installed correctly. ▪ Replace feed motor.

SC700-05	D	ADF entrance motor error
		The machine detected an error signal during operation of the motor. ▪ A problem is detected when an error is detected in register of the entrance motor encoder, in encoder channel A (B), or when the overload signal is detected. ▪ However, at the second occurrence the ADF signals a jam. ▪ A problem occurs in the encoder channel when there is no change in the encoder pulse even after a drive command is sent. ▪ An overload error occurs when the PWM duty continues high after the prescribed has elapsed.
		▪ Paper jammed in paper path ▪ Motor overload due to blockage ▪ Motor harness loose, broken, defective ▪ Motor bracket, motor installed incorrectly ▪ Entrance motor defective
		▪ Inspect the paper path for jammed paper, paper scraps, etc. ▪ Inspect the area around the entrance motor and remove any obstacles that could interfere with motor operation. ▪ Check entrance motor harness, connector for damage and replace. ▪ Inspect the entrance motor bracket and motor and confirm that they are installed correctly. ▪ Replace feed motor.

SC700-06	D	ADF transport motor error
		The machine detected an error signal during operation of the motor. ▪ A problem is detected when an error is detected in register of the transport motor encoder, in encoder channel A (B), or when the overload signal is detected. ▪ However, at the second occurrence the ADF signals a jam. ▪ A problem occurs in the encoder channel when there is no change in the encoder pulse even after a drive command is sent. ▪ An overload error occurs when the PWM duty continues high after the prescribed has elapsed.
		▪ Paper jammed in paper path ▪ Motor overload due to blockage ▪ Motor harness loose, broken, defective ▪ Motor bracket, motor installed incorrectly ▪ Transport motor defective
		▪ Inspect the paper path for jammed paper, paper scraps, etc. ▪ Inspect the area around the transport motor and remove any obstacles that could interfere with motor operation. ▪ Check relay motor harness, connector for damage and replace. ▪ Inspect the transport motor bracket and motor and confirm that they are installed correctly. ▪ Replace transport motor.

SC700-07	D	ADF scan motor error
		The machine detected an error signal during operation of the motor. ▪ A problem is detected when an error is detected in register of the scan motor encoder, in encoder channel A (B), or when the overload signal is detected. ▪ However, at the second occurrence the ADF signals a jam. ▪ A problem occurs in the encoder channel when there is no change in the encoder pulse even after a drive command is sent. ▪ An overload error occurs when the PWM duty continues high after the prescribed has elapsed.
		▪ Paper jammed in paper path ▪ Motor overload due to blockage ▪ Motor harness loose, broken, defective ▪ Motor bracket, motor installed incorrectly ▪ Scan motor defective
		▪ Inspect the paper path for jammed paper, paper scraps, etc. ▪ Inspect the area around the scan motor and remove any obstacles that could interfere with motor operation. ▪ Check scan motor harness, connector for damage and replace. ▪ Inspect the relay motor bracket and motor and confirm that they are installed correctly. ▪ Replace scan motor.

SC700-09	D	ADF exit motor error
		The machine detected an error signal during operation of the motor. ▪ A problem is detected when an error is detected in register of the exit motor encoder, in encoder channel A (B), or when the overload signal is detected. ▪ However, at the second occurrence the ADF signals a jam. ▪ A problem occurs in the encoder channel when there is no change in the encoder pulse even after a drive command is sent. ▪ An overload error occurs when the PWM duty continues high after the prescribed has elapsed.
		▪ Paper jammed in paper path ▪ Motor overload due to blockage ▪ Motor harness loose, broken, defective ▪ Motor bracket, motor installed incorrectly ▪ Exit motor defective
		▪ Inspect the paper path for jammed paper, paper scraps, etc. ▪ Inspect the area around the exit motor and remove any obstacles that could interfere with motor operation. ▪ Check exit motor harness, connector for damage and replace. ▪ Inspect the exit motor bracket and motor and confirm that they are installed correctly. ▪ Replace exit motor.

SC702-04	D	ADF protection circuit error 4
		A problem occurred on the interlock power protection circuit while the main 24V power was on. A problem with the pick-up motor, bottom plate lift motor, or a short circuit in a harness, tripped an interrupt on the interlock power protection circuit.
		▪ Defective motor or harness on the interlock circuit.
		▪ Inspect the interlock power protection circuit harness, switch. ▪ Inspect all harnesses, connectors of motors ADF main board and replace if damaged. ▪ Replace main board.

SC702-05		ADF protection circuit error 5
		A problem occurred on the interlock power protection circuit while the main 24V power was on.
		▪ Interlock power circuit harness, switch is loose, broken, defective. ▪ Motor harness, connector is loose, broken, or defective. ▪ Motor is defective.
		▪ Inspect the interlock power protection circuit harness, connector, and confirm that switch is installed correctly. ▪ Inspect all motor harnesses, connectors and replace if damaged. ▪ Use SP6007 (ADF Input Check) and SP6008 (ADF Output Check) to check the operation of all ADF harnesses and motors and replace if defective. ▪ Inspect ADF main board harnesses, connectors. ▪ Replace ADF main board

SC720-01	D	Downstream unit error (3K/2K Finisher)
		Three signals to the downstream unit to establish communication were not answered.
		▪ Downstream I/F cable harness, connector is loose, broken, or defective. ▪ Downstream unit main board defective ▪ Main machine controller board defective
		▪ Inspect the connection of I/F cable for loose connection or damage. ▪ Replace downstream unit main board. ▪ Replace main machine controller board.

SC720-03	D	Overload protection short circuit 1 (3K/2K Finisher)
		A blown fuse interrupted the overload protection circuit. If the machine does not reboot automatically, this means a fuse has blown.
		▪ Motor overload ▪ Motor harness, connector is loose, broken, defective ▪ Motor defective ▪ Solenoid defective
		▪ Inspect the areas around the motors and solenoids and remove any obstructions. ▪ Inspect motor and solenoid harnesses, connectors, and replace if damaged. ▪ Use SP6007 (ADF Input Check) and SP6008 (ADF Output Check) to check the operation of all ADF harnesses and motors and replace if defective.

SC720-04	D	Overload protection short circuit 2 (Mailbox)
		A blown fuse interrupted the overload protection circuit. Mail box failure disabled finisher operation.
		▪ Motor overload ▪ Motor harness, connector is loose, broken, defective ▪ Motor defective ▪ Solenoid defective
		▪ Check Mailbox main motor, main board, and solenoid harnesses, connectors and replace if damaged. ▪ Replace main motor ▪ Replace solenoid ▪ Replace main board.

SC720-06	C	NVRAM access error (3K/2K Finisher)
		An error occurred when NVRAM memory of the finisher was accessed.
		▪ NVRAM memory defective, damaged
		▪ Replace finisher main board

SC720-10	D	Entrance motor error (3K/2K Finisher)
		A problem was detected with the motor drive board that controls this DC motor. The first detection issues a jam alert, and the second detection issues this SC code.
		▪ Motor harness, connector is loose, broken, or defective. ▪ Motor or drive board defective.
		▪ Inspect motor harness, connector and replace if damaged. ▪ Replace entrance motor. ▪ Replace Finisher main board.

SC720-11	D	Horizontal transport motor error (3K/2K Finisher)
		A problem was detected with the motor drive board that controls this DC motor. The first detection issues a jam alert, and the second detection issues this SC code.
		▪ Motor harness, connector is loose, broken, or defective. ▪ Motor or drive board defective.
		▪ Inspect motor harness, connector and replace if damaged. ▪ Replace horizontal transport motor. ▪ Replace Finisher main board.

SC720-13	B	Relay motor error (3K/2K Finisher)
		A problem was detected with the motor drive board that controls this DC motor. The first detection issues a jam alert, and the second detection issues this SC code.
		▪ Motor harness, connector is loose, broken, or defective. ▪ Motor or drive board defective.
		▪ Inspect motor harness, connector and replace if damaged. ▪ Replace relay motor. ▪ Replace Finisher main board.

SC720-15	B	Pre-stack transport motor error (3K/2K Finisher)
		A problem was detected with the motor drive board that controls this DC motor. The first detection issues a jam alert, and the second detection issues this SC code.
		▪ Motor harness, connector is loose, broken, or defective. ▪ Motor or drive board defective.
		▪ Inspect motor harness, connector and replace if damaged. ▪ Replace pre-stack transport motor. ▪ Replace Finisher main board.

SC720-17	B	Exit motor error (3K/2K Finisher)
		A problem was detected with the motor drive board that controls this DC motor. The first detection issues a jam alert, and the second detection issues this SC code.
		▪ Motor harness, connector is loose, broken, or defective. ▪ Motor or drive board defective.
		▪ Inspect motor harness, connector and replace if damaged. ▪ Replace exit motor. ▪ Replace Finisher main board.

SC720-20	B	Lower junction gate motor error (3K/2K Finisher)
		The lower junction gate did not return to its home position within the prescribed number of pulses (p0), or the number of pulses exceeded the limit when the junction gate moved out of the home position. The first occurrence of this error signals a jam alert, the second occurrence issues this SC code.
		▪ Motor overload. ▪ Motor harness, connector is loose, broken, or defective. ▪ Junction gate HP sensor harness, connector is loose, broken, or defective. ▪ Motor defective. ▪ Junction gate HP sensor defective.
		▪ Inspect the area around the motor for obstacles that could interfere with motor operation. ▪ Inspect lower junction gate motor harness, connector and replace if damaged. ▪ Inspect junction gate HP sensor harness, connector and replace if damaged. ▪ Replace lower junction gate motor. ▪ Replace lower junction gate HP sensor. ▪ Replace Finisher main board.

SC720-24	B	Exit guide motor error (3K/2K Finisher)
		The exit guide did not return to its home position within the prescribed number of pulses (p0), or the number of pulses exceeded the limit when it moved out of the home position.
		▪ Motor overload. ▪ Motor harness, connector is loose, broken, or defective. ▪ Exit guide HP sensor harness, connector is loose, broken, or defective. ▪ Motor defective. ▪ Exit guide HP sensor defective.
		▪ Inspect the area around the motor for obstacles that could interfere with motor operation. ▪ Inspect exit guide motor harness, connector and replace if damaged. ▪ Inspect exit guide HP sensor harness, connector and replace if damaged. ▪ Replace exit guide motor. ▪ Replace exit guide HP sensor. ▪ Replace Finisher main board.

SC720-25	D	Punch drive motor error (3K/2K Finisher)
		The punch unit did not return to its home position within the prescribed number of pulses (p0), or the number of pulses exceeded the limit when it moved out of the home position. The first occurrence of this error issues a jam alert, the second occurrence issues this SC code.
		▪ Motor overload. ▪ Motor harness, connector is loose, broken, or defective. ▪ Punch unit HP sensor harness, connector is loose, broken, or defective. ▪ Motor defective. ▪ Punch unit HP sensor defective.
		▪ Inspect the area around the motor for obstacles that could interfere with motor operation. ▪ Inspect punch motor harness, connector and replace if damaged. ▪ Inspect punch unit HP sensor harness, connector and replace if damaged. ▪ Replace punch drive motor. ▪ Replace punch unit HP sensor. ▪ Replace Finisher main board.

SC720-27	D	Punch movement motor error (3K/2K Finisher)
		Did not return to its home position within the prescribed number of pulses (p0), or the number of pulses exceeded the limit when moved out of the home position. The first occurrence of this error issues a jam alert, the second occurrence issues this SC code.
		▪ Motor overload. ▪ Motor harness, connector is loose, broken, or defective. ▪ Punch unit HP sensor harness, connector is loose, broken, or defective. ▪ Motor defective. ▪ Punch unit HP sensor defective.
		▪ Inspect the area around the motor for obstacles that could interfere with motor operation. ▪ Inspect punch movement motor harness, connector and replace if damaged. ▪ Inspect punch unit HP sensor harness, connector and replace if damaged. ▪ Replace punch movement motor. ▪ Replace punch unit HP sensor. ▪ Replace Finisher main board.

SC720-28	D	Paper position sensor error (3K/2K Finisher)
		The punch unit not return to its home position within the prescribed number of pulses (p0), or the number of pulses exceeded the limit when it moved out of the home position. The first occurrence of this error issues a jam alert, the second occurrence issues this SC code.
		▪ Motor overload. ▪ Motor harness, connector is loose, broken, or defective. ▪ Paper position (CIS) sensor harness, connector is loose, broken, or defective. ▪ Motor defective. ▪ Sensor defective.
		▪ Inspect the area around the motor for obstacles that could interfere with motor operation. ▪ Inspect punch movement motor harness, connector and replace if damaged. ▪ Inspect punch unit HP sensor harness, connector and replace if damaged. ▪ Replace punch movement motor. ▪ Replace punch unit HP sensor. ▪ Replace Finisher main board.

SC720-30	B	Jogger motor error (3K/2K Finisher)
		The front or rear jogger fence did not return to its home position within the prescribed number of pulses (p0), or the number of pulses exceeded the limit when the fence moved out of the home position. The first occurrence of this error issues a jam alert, and the second occurrence issues this SC code.
		▪ Motor overload. ▪ Motor harness, sensor is loose, broken, or defective. ▪ Front or rear jogger motor is defective. ▪ Front or rear jogger fence HP sensor is defective.
		▪ Inspect the area around the motor for obstacles that could interfere with operation of the motor. ▪ Inspect harnesses, connectors of the front and rear jogger motors, and replace if damaged. ▪ Inspect harnesses, connectors of front and rear jogger fence HP sensors and replace if damaged. ▪ Replace defective motor. ▪ Replace defective sensor. ▪ Replace Finisher main board.

SC720-33	B	Positioning roller lift motor error (3K/2K Finisher)
		The positioning roller not return to its home position within the prescribed number of pulses (p0), or the number of pulses exceeded the limit when it moved out of the home position. The first occurrence of this error issues a jam alert, and the second occurrence issues this SC code.
		▪ Motor overload. ▪ Motor harness, sensor is loose, broken, or defective. ▪ Positioning roller lift motor is defective. ▪ Positioning roller HP sensor is defective.
		▪ Inspect the area around the motor for obstacles that could interfere with operation of the motor. ▪ Inspect harnesses, connectors of the positioning roller motor. ▪ Inspect harnesses, connectors of the positioning roller HP sensor and replace if damaged. ▪ Replace positioning roller lift motor. ▪ Replace positioning roller HP sensor. ▪ Replace Finisher main board.

SC720-34	B	Positioning roller drive motor error (3K/2K Finisher)
		An error was detected on the motor drive board that controls operation of this DC motor. The first occurrence of this error signals a jam alert, the second occurrence issues this SC code.
		▪ Motor overload ▪ Motor harness, connector is loose, broken, or defective. ▪ Motor, motor drive board defective
		▪ Inspect the area around the motor for obstacles that could interfere with operation of the motor. ▪ Replace positioning roller drive motor. ▪ Replace Finisher main board.

SC720-35	B	TE press motor error (3K/2K Finisher)
		An error occurred in the motor drive board that controls operation of this DC motor. The TE (trailing edge) press plate was not detected at the home position within the prescribed time, or the plate did not move away from the home position within the prescribed time.
		▪ Motor overload. ▪ Motor harness, connector is loose, broken, or defective. ▪ TE press plate HP sensor harness, connector is loose, broken, or defective. ▪ HP sensor defective ▪ Motor, motor drive board defective.
		▪ Inspect the area around the motor for obstacles that could interfere with operation of the motor. ▪ Inspect motor harness, connector and replace if damaged. ▪ Inspect HP sensor harness, connector and replace if damaged. ▪ Replace TE press plate HP sensor. ▪ Replace TE press motor. ▪ Replace Finisher main board.

SC720-41	B	Feed-out belt motor error (3K/2K Finisher)
		An error occurred on the motor drive board that controls the operation of this DC motor, and the feed-out belt was not detected at the home position within the number of prescribed pulses, or the belt pawl not leave the home position within the number of prescribed pulses. The first occurrence of this error issues a jam alert, the second occurrence issues this SC code.
		▪ Motor overload. ▪ Motor harness, connector is loose, broken, or defective. ▪ Feed-out belt HP sensor harness, connector is loose, broken, or defective. ▪ HP sensor defective ▪ Motor, motor drive board defective.
		▪ Inspect the area around the motor for obstacles that could interfere with operation of the motor. ▪ Inspect motor harness, connector and replace if damaged. ▪ Inspect feed-out belt HP sensor harness, connector and replace if damaged. ▪ Replace feed-out belt HP sensor. ▪ Replace feed-out belt motor. ▪ Replace Finisher main board.

SC720-42	B	Corner stapler movement motor error (3K/2K Finisher)
		The stapler did not return to its home position within the prescribed number of pulses, or did not leave the home position within the prescribed number of pulses. The first occurrence issues a jam alert, the second issues this SC code.
		▪ Motor overload. ▪ Motor harness, connector is loose, broken, or defective. ▪ Stapler HP sensor harness, connector is loose, broken, or defective. ▪ HP sensor defective ▪ Motor, motor drive board defective.
		▪ Inspect the area around the motor for obstacles that could interfere with operation of the motor. ▪ Inspect motor harness, connector and replace if damaged. ▪ Inspect stapler HP sensor harness, connector and replace if damaged. ▪ Replace corner stapler HP sensor. ▪ Replace corner stapler movement motor. ▪ Replace Finisher main board.

SC720-44	B	Corner stapler motor error (3K/2K Finisher)
		The corner stapler not move out of the home position with the prescribed time. The first occurrence of this error signals a jam, the second occurrence issues this SC code.
		▪ Motor overload (too many sheets for stapling). ▪ Motor harness, connector is loose, broken, or defective. ▪ Corner stapler HP sensor harness, connector is loose, broken, or defective. ▪ HP sensor defective ▪ Motor, motor drive board defective.
		▪ Inspect the area around the motor for obstacles that could interfere with operation of the motor. ▪ Inspect motor harness, connector and replace if damaged. ▪ Inspect corner stapler HP sensor harness, connector and replace if damaged. ▪ Replace corner stapler HP sensor. ▪ Replace corner stapler motor. ▪ Replace Finisher main board.

SC720-50	B	Stapler side fence motor error (2K Finisher)
		The side fences did not return to their home positions within the prescribed number of pulses, or the number of pulses exceeded the limit when they moved out of the home position. The first occurrence issues a jam alert, the second occurrence issues this SC code.
		▪ Motor overload ▪ Side fence motors harnesses, connectors are loose, broken, or defective. ▪ Side fence HP sensors harnesses, connectors are loose, broken, or defective. ▪ Front or rear side fence motor defective. ▪ Front or rear side fence HP sensor defective.
		▪ Inspect the areas around the motors for obstacles that could interfere with operation of the motors. ▪ Inspect the harnesses, connectors of the front and rear stapler side fence motors and replace if damaged. ▪ Inspect the harnesses, connectors of the front and rear side fence HP sensors, and replace if damaged. ▪ Replace front or rear side fence motor. ▪ Replace front or rear side fence HP sensor.

SC720-51	B	Bottom fence motor error (2K Finisher)
		The bottom fence did not return to its home position within the prescribed number of pulses, or it did not leave the home position within the prescribed number of pulses. The first occurrence issues a jam alert, and the second occurrence issues this SC code.
		▪ Motor overload ▪ Bottom fence motor harness, connector is loose, broken, or defective. ▪ Bottom fence HP sensor, connector is loose, broken, or defective. ▪ Booklet bottom fence motor defective. ▪ Booklet bottom fence HP sensor defective.
		▪ Inspect the areas around the motor for obstacles that could interfere with operation of the motors. ▪ Inspect the harness, connector of the bottom fence motor and replace if damaged. ▪ Inspect the harnesses, connectors of the bottom fence HP sensor, and replace if damaged. ▪ Replace bottom fence motor. ▪ Replace bottom fence HP sensor.

SC720-52	B	Fold plate motor error (3K/2K Finisher)
		The fold plate did not return to its home position within the prescribed number of pulses, or it did not leave the home position within the prescribed number of pulses. The first occurrence of this error signals a jam, the second occurrence issues this SC code.
		▪ Motor overload. ▪ Motor harness, connector is loose, broken, or defective. ▪ Fold plate HP sensor harness, connector is loose, broken, or defective. ▪ HP sensor defective ▪ Motor defective.
		▪ Inspect the area around the motor for obstacles that could interfere with operation of the motor. ▪ Inspect motor harness, connector and replace if damaged. ▪ Inspect fold plate HP sensor harness, connector and replace if damaged. ▪ Replace fold plate HP sensor. ▪ Replace fold plate motor. ▪ Replace Finisher main board.

SC720-53	B	Booklet bottom fence motor error (2K Finisher)
		The bottom fence not return to its home position within the prescribed number of pulses, or the number of pulses exceeded the limit when it moved out of the home position. The first occurrence issues a jam alert, the second occurrence issues this SC code.
		▪ Motor overload. ▪ Motor harness, connector is loose, broken, or defective. ▪ Bottom fence HP sensor harness, connector is loose, broken, or defective. ▪ HP sensor defective ▪ Motor defective.
		▪ Inspect the area around the motor for obstacles that could interfere with operation of the motor. ▪ Inspect motor harness, connector and replace if damaged. ▪ Inspect bottom fence HP sensor harness, connector and replace if damaged. ▪ Replace bottom HP sensor. ▪ Replace bottom fence motor. ▪ Replace Finisher main board.

SC720-54	B	Stack transport motor error (2K Finisher)
		When a problem like a short or overheating is detected with the motor drive board that controls this DC motor, the first detection issues a jam alert and the second detection issues this SC code.
		▪ Motor overload. ▪ Motor harness, connector is loose, broken, or defective. ▪ Motor defective.
		▪ Inspect the area around the motor for obstacles that could interfere with operation of the motor. ▪ Inspect motor harness, connector and replace if damaged. ▪ Replace motor ▪ Replace Finisher main board.

SC720-60	B	Booklet stapler motor error (2K Finisher)
		The booklet stapler unit did not return to its home position within the prescribed time t0sec), or did not leave the home position within the prescribed time (t1sec). The first occurrence issues a jam alert, and the second occurrence issues this SC code.
		▪ Motor overloaded. ▪ Motor harness, connector is loose, broken, or defective. ▪ Booklet stapler HP sensor harness, connector is loose, broken, or defective. ▪ Booklet stapler motor defective. ▪ Booklet stapler HP sensor defective.
		▪ Inspect the area around the motor for obstacles that could interfere with operation of the motor. ▪ Inspect motor harness, connector and replace if damaged. ▪ Inspect the HP sensor harness, connector and replace if damaged. ▪ Replace booklet stapler HP sensor. ▪ Replace booklet stapler motor. ▪ Replace Finisher main board.

SC720-70	B	Finisher tray lift motor error (3K/2K Finisher)
		A problem was detected with the motor controller (overload) but the status of the shift tray paper height sensor did not change. ▪ It remained on, detecting the top of the stack, even after the prescribed time elapsed for when the tray was lowered. ▪ Or, the sensor did not detect the top of the tray within the prescribed time when the tray was raised. ▪ The first occurrence issues a jam alert, and the second occurrence issues this SC code.
		▪ Motor overloaded. ▪ Motor harness, connector is loose, broken, or defective. ▪ Lift tray HP sensor harness, connector is loose, broken, or defective. ▪ Tray lift motor defective. ▪ Tray HP sensor defective.
		▪ Inspect the area around the motor for obstacles that could interfere with operation of the motor. ▪ Inspect motor harness, connector and replace if damaged. ▪ Inspect the HP sensor harness, connector and replace if damaged. ▪ Replace tray HP sensor. ▪ Replace tray lift motor. ▪ Replace Finisher main board.

SC720-71	D	Shift motor error (3K/2K Finisher)
		Did not return to its home position within the prescribed number of pulses (p0), or did not leave the home position within the prescribed number of pulses. The first occurrence issues a jam alert, the second occurrence issues this SC code.
		▪ Motor overloaded. ▪ Motor harness, connector is loose, broken, or defective. ▪ Shift tray HP sensor harness, connector is loose, broken, or defective. ▪ Shift exit motor defective. ▪ Shift tray HP sensor defective.
		▪ Inspect the area around the motor for obstacles that could interfere with operation of the motor. ▪ Inspect motor harness, connector and replace if damaged. ▪ Inspect the HP sensor harness, connector and replace if damaged. ▪ Replace shift tray HP sensor. ▪ Replace shift exit motor. ▪ Replace Finisher main board.

SC720-72	B	Front shift jogger motor error (3K/2K Finisher)
		The front shift jogger fence did not return to its home position within the prescribed number of pulses, or it did not leave the home position within the prescribed number of pulses. The first occurrence issues a jam alert, and the second occurrence issues this SC code.
		▪ Motor overloaded. ▪ Motor harness, connector is loose, broken, or defective. ▪ Shift tray jogger HP sensor harness, connector is loose, broken, or defective. ▪ Front shift jogger motor defective. ▪ Shift tray jogger HP sensor defective.
		▪ Inspect the area around the motor for obstacles that could interfere with operation of the motor. ▪ Inspect motor harness, connector and replace if damaged. ▪ Inspect the shift tray exit sensor harness, connector and replace if damaged. ▪ Replace shift tray jogger HP sensor. ▪ Replace shift tray jogger motor. ▪ Replace Finisher main board.

SC720-73	B	Shift jogger fence retract motor error (3K/2K Finisher)
		Jogger fences did not return to home position within the prescribed number of pulses, or did not leave the home position within the prescribed number of pulses. The first occurrence issues a jam alert, and the second occurrence issues this SC code.
		▪ Motor overloaded. ▪ Motor harness, connector is loose, broken, or defective. ▪ Shift jogger retract HP sensor harness, connector is loose, broken, or defective. ▪ Shift jogger fence retract motor defective. ▪ Shift jogger retract HP sensor defective.
		▪ Inspect the area around the motor for obstacles that could interfere with operation of the motor. ▪ Inspect motor harness, connector and replace if damaged. ▪ Inspect the HP sensor harness, connector and replace if damaged. ▪ Replace shift jogger retract HP sensor. ▪ Replace shift jogger fence retract motor. ▪ Replace Finisher main board.

SC720-74	B	Drag roller retraction motor error (3K/2K Finisher)
		The drag roller not return to its home position within the prescribed number of pulses, or it did not leave the home position within the prescribed number of pulses. The first occurrence issues a jam alert, the second occurrence issues this SC code.
		▪ Motor overloaded. ▪ Motor harness, connector is loose, broken, or defective. ▪ Shift jogger retract HP sensor harness, connector is loose, broken, or defective. ▪ Drag roller retraction motor defective. ▪ Shift jogger retract HP sensor defective.
		▪ Inspect the area around the motor for obstacles that could interfere with operation of the motor. ▪ Inspect motor harness, connector and replace if damaged. ▪ Inspect the HP sensor harness, connector and replace if damaged. ▪ Replace shift jogger retract HP sensor. ▪ Replace drag roller retraction motor. ▪ Replace Finisher main board.

SC720-75	B	Drag roller drive motor error (3K/2K Finisher)
		An error occurred in the motor drive board that controls operation of this DC motor, and the roller moving to the home position was not detected within the prescribed time, or the roller did not move away from the home position within the prescribed time. The first occurrence of this error signals a jam, and the second occurrence issues this SC code.
		▪ Motor overloaded. ▪ Motor harness, connector is loose, broken, or defective. ▪ Drag roller HP sensor harness, connector is loose, broken, or defective. ▪ Motor defective. ▪ Shift jogger retract HP sensor defective.
		▪ Inspect the area around the motor for obstacles that could interfere with operation of the motor. ▪ Inspect motor harness, connector and replace if damaged. ▪ Inspect the HP sensor harness, connector and replace if damaged. ▪ Replace shift jogger retract HP sensor. ▪ Replace drag roller drive motor. ▪ Replace Finisher main board.

SC720-80	D	Overload protection circuit error 3 (3K/2K Finisher)
		A blown fuse interrupted the overload protection circuit.
		▪ Interlock power circuit harness, switch is loose, broken, defective. ▪ Motor harness, connector is loose, broken, or defective. ▪ Solenoid harness, connector is loose, broken, or defective. ▪ Solenoid defective. ▪ Motor defective.
		▪ Inspect the interlock power protection circuit harness, connector, and confirm that switch is installed correctly. ▪ Inspect all motor, solenoid harnesses, connectors and replace if damaged. ▪ Use SP6007 (ADF Input Check) and SP6008 (ADF Output Check) to check the operation of all finisher motors, solenoids and replace if defective. ▪ Inspect main board harnesses, connectors. ▪ Replace ADF main board

SC720-81	D	Fold roller motor error (3K/2K Finisher)
		An error was detected on the motor drive board that controls operation of this DC motor. The first occurrence of this error signals a jam alert, and the second occurrence issues this SC code.
		▪ Motor overload ▪ Motor harness loose, broken, or defective. ▪ Motor, motor drive board defective.
		▪ Inspect the area around the motor for obstacles that could interfere with operation of the motor. ▪ Inspect motor harness, connector and replace if damaged. ▪ Replace motor ▪ Replace finisher main board.

SC720-82	B	Leading edge stopper motor error (3K/2K Finisher)
		The leading edge stopper did not return to its home position within the prescribed number of pulses, or it did not leave the home position within the prescribed number of pulses. The first occurrence of this error signals a jam, the second occurrence issues this SC code.
		▪ Leading edge stopper motor overloaded. ▪ Motor harness, connector is loose, broken, or defective. ▪ Leading edge stopper HP sensor harness, connector is loose, broken, or defective. ▪ Motor defective. ▪ HP sensor defective.
		▪ Inspect the area around the motor for obstacles that could interfere with operation of the motor. ▪ Inspect motor harness, connector and replace if damaged. ▪ Inspect the HP sensor harness, connector and replace if damaged. ▪ Replace leading edge stopper HP sensor. ▪ Replace leading edge stopper motor. ▪ Replace Finisher main board.

SC720-83	B	Junction gate motor error (3K/2K Finisher)
		The proof/shift junction gate not return to its home position within the prescribed number of pulses (p0), or did not leave the home position within the prescribed number of pulses. The first occurrence of this error signals a jam, and the second occurrence issues this SC code.
		▪ Junction gate motor overloaded. ▪ Motor harness, connector is loose, broken, or defective. ▪ Proof JG HP sensor harness, connector is loose, broken, or defective. ▪ Motor defective. ▪ HP sensor defective.
		▪ Inspect the area around the motor for obstacles that could interfere with operation of the motor. ▪ Inspect motor harness, connector and replace if damaged. ▪ Inspect the HP sensor harness, connector and replace if damaged. ▪ Replace proof JG HP sensor. ▪ Replace junction gate motor. ▪ Replace Finisher main board.

SC720-84	D	Overload protection circuit error 2 (3K/2K Finisher: Mailbox)
		A blown fuse interrupted the overload protection circuit. If the machine does not reboot automatically, this means a fuse has blown.
		▪ Motor overload ▪ Motor damage ▪ Solenoid damage
		▪ Inspect the areas around the finisher motors for obstacles that could interfere with operation of the motors. ▪ Check motor harnesses, connectors and replace if damaged. ▪ Inspect Mailbox main motor, solenoids for obstacles that could interfere with motor operation. ▪ Check Mailbox main motor, solenoid harness, connect and replace if damaged. ▪ Use SP6121 and SP6124 to do the input/output checks for the Finisher and then replace defective components. ▪ Replace finisher main board.

SC720-87	D	Finisher punch motor error (3K/2K)
		The punch HP sensor was not activated within the specified time after the punch motor turned on. The first detection failure issues a jam error, and the second failure issues this SC code.
		▪ Punch motor overload due to obstruction ▪ Punch HP sensor disconnected, defective ▪ Punch motor disconnected, defective
		▪ Inspect the area around the punch motor for obstacles that could interfere with operation of the motor. ▪ Inspect harness, connector of punch motor and replace if damaged. ▪ Inspect harness, connector of punch HP sensor and replace if defective. ▪ Replace punch motor. ▪ Replace punch HP sensor.

SC722-01	D	Downstream finisher communication error (Finisher D610)
		No response signal was received from the downstream finisher after 3 attempts
		▪ Finisher I/F cable loose, broken defective ▪ Finisher control board defective ▪ Main controller board defective
		▪ Inspect the connection of I/F cable for loose connection or damage. ▪ Replace downstream unit main board. ▪ Replace main machine controller board.

SC722-10	B	Transport motor error (Finisher D610)
		A pulse signal from the transport motor could not be detected within the prescribed time. The first detection triggers a jam code, and the second detection triggers this SC.
		▪ Motor overload due to an obstruction ▪ Motor harness connector loose, broken, defective ▪ Motor defective
		▪ Inspect the area around the motor for obstacles that could interfere with operation of the motor. ▪ Inspect harness, connector of punch motor and replace if damaged. ▪ Replace transport motor

SC722-24	B	Exit guide motor (Finisher D610)
		The status of the exit guide sensor did not change at the prescribed time during operation of the exit guide.
		▪ Exit guide open sensor harness, connector is loose, broken, defective. ▪ Exit guide motor harness, sensor is loose, broken, defective. ▪ Exit guide sensor defective ▪ Exit guide motor defective ▪ Finisher main board defective
		▪ Inspect the area around the motor for obstacles that could interfere with operation of the motor. ▪ Inspect harness, connector of exit open sensor and replace if damaged. ▪ Replace exit guide open sensor. ▪ Replace exit guide motor.

SC722-25		Punch motor error (Finisher D610)
		After the punch operation, the punch HP sensor did not detect the punch unit at the home position.
		▪ Punch motor connection loose, broken, or defective. ▪ Punch overload (blocked by obstruction) ▪ HP sensor connection loose, broken, or defective ▪ Punch HP sensor defective
		▪ Inspect the area around the motor for obstacles that could interfere with operation of the motor. ▪ Inspect motor harness, connector and replace if damaged. ▪ Inspect punch HP sensor harness, connector and replace if damaged. ▪ Replace punch HP sensor. ▪ Replace punch motor

SC722-30	B	Finisher jogger motor error (Finisher D610)
		▪ The finisher jogger HP sensor remained off for more than1,000 pulses when the jogger fence returned to home position. ▪ The finisher jogger HP sensor remained on for more than 1,000 pulses when the fence away from home position.
		▪ Jogger mechanism overload ▪ Jogger fence HP sensor harness disconnected or defective ▪ Jogger fence motor harness, connector is loose, broken, or defective. ▪ Jogger fence HP sensor defective ▪ Jogger motor defective ▪ Finisher main board defective
		▪ Inspect the area around the motor for obstacles that could interfere with operation of the motor. ▪ Inspect motor harness, connector and replace if damaged. ▪ Inspect HP sensor harness, connector and replace if damaged. ▪ Replace jogger motor. ▪ Replace jogger fence HP sensor. ▪ Replace Finisher main board.

SC722-33	B	Finisher staple hammer motor error (Finisher D610)
		The staple hammer motor did not return to the home position within the prescribed time (340 ms).
		▪ Electrical overload on the stapler drive PCB ▪ Staple hammer HP sensor loose, broken, defective ▪ Staple hammer motor defective ▪ Finisher main board defective
		▪ Reduce the number of sheets in the stack for stapling. ▪ Inspect the hammer HP sensor harness, connector and replace if damaged. ▪ Replace staple hammer motor ▪ Replace Finisher main board.

SC722-35	D	Stack Plate Motor Error 1: Front Motor(Finisher D610)
		The stack plate HP sensor (front) did not activate within 500 ms after the motor turned on. The first detection failure causes a jam error, and the second failure causes this SC code.
		If the motor is operating: ▪ Front stack plate HP sensor harness loose, broken, defective ▪ Front stack plate HP sensor defective If the motor is not operating: ▪ Motor blocked by an obstruction ▪ Motor harness loose, broken, defective ▪ Motor defective ▪ Finisher main board defective
		If the motor is operating: ▪ Inspect stack plate HP sensor harness, connector and replace if damaged. ▪ Replace front stack plate HP sensor. If the motor is not operating: ▪ Inspect area around the motor and remove any obstacles that could interfere with motor operation. ▪ Inspect motor harness, connector and replace if damaged. ▪ Replace motor ▪ Replace finisher main board

SC722-36	D	Stack Plate Motor Error 2: Center Motor (Finisher D610)
		The stack plate HP sensor (center) did not activate within 500 ms after the motor turned on. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		If the motor is operating ▪ Center stack plate HP sensor harness loose, broken, defective ▪ Center stack plate HP sensor defective If the motor is not operating: ▪ Motor blocked by an obstruction ▪ Motor harness loose, broken, defective ▪ Motor defective ▪ Finisher main board defective
		If the motor is operating ▪ Inspect center stack plate HP sensor harness and replace if damaged. ▪ Replace center stack plate HP sensor. If the motor is not operating: ▪ Inspect the area around the motor, and remove any obstacle to motor operation. ▪ Inspect motor harness, connector and replace if damaged. ▪ Replace stack plate motor ▪ Replace finisher main board.

SC722-37	D	Stack Plate Motor Error 3: Rear Motor (Finisher D610)
		The stack plate HP sensor (rear) does not activate within 500 ms after the motor turns on. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		If the motor is operating ▪ Rear stack plate HP sensor harness loose, broken, defective ▪ Rear stack plate HP sensor defective If the motor is not operating: ▪ Motor blocked by an obstruction ▪ Motor harness loose, broken, defective ▪ Motor defective ▪ Booklet finisher main board defective
		If the motor is operating ▪ Inspect rear stack plate HP sensor harness and replace if damaged. ▪ Replace rear stack plate HP sensor If the motor is not operating: ▪ Inspect the area around the motor, and remove any obstacle to motor operation. ▪ Inspect motor harness, connector and replace if damaged. ▪ Replace rear motor ▪ Replace finisher main board.

SC722-39	B	Jogger Top Fence Motor (Finisher D610)
		The top fence HP sensor detected that: The top fence did not arrive at the home position within the specified number of pulses. -or- The top fence failed to leave the home position within the specified number of pulses.
		If the jogger top fence motor is operating: ▪ Top fence HP sensor harness loose, broken, defective ▪ Top fence HP sensor defective If the jogger top fence motor is not operating: ▪ Motor blocked by an obstruction ▪ Motor harness loose, broken, defective ▪ Motor defective ▪ Finisher main board defective
		If the motor is operating ▪ Inspect rear top fence HP sensor harness and replace if damaged. ▪ Replace top fence HP sensor If the motor is not operating: ▪ Inspect the area around the motor, and remove any obstacle to motor operation. ▪ Inspect motor harness, connector and replace if damaged. ▪ Replace jogger top fence motor ▪ Replace finisher main board.

SC722-40	B	Jogger Bottom Fence Motor (Finisher D610)
		The bottom fence HP sensor detected that: The bottom fence did not arrive at the home position at the specified time. -or- The bottom fence failed to leave the home position at the specified time.
		If the jogger bottom fence motor is operating: ▪ Bottom fence HP sensor harness loose, broken, defective ▪ Bottom fence HP sensor defective If the jogger bottom fence motor is not operating: ▪ Motor blocked by an obstruction ▪ Motor harness loose, broken, defective ▪ Motor defective ▪ Finisher main board defective
		If the motor is operating ▪ Inspect rear bottom fence HP sensor harness and replace if damaged. ▪ Replace bottom fence HP sensor If the motor is not operating: ▪ Inspect the area around the motor, and remove any obstacle to motor operation. ▪ Inspect motor harness, connector and replace if damaged. ▪ Replace jogger bottom fence motor ▪ Replace finisher main board.

SC722-41	D	Feed-Out Belt Motor Error (Finisher D610)
		The stack feed-out belt HP sensor does not activate within the specified time after the stack feed-out belt motor turns on. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		If the motor is operating ▪ Stack feed-out HP sensor harness loose, broken, defective ▪ Stack feed-out HP sensor defective If the motor is not operating: ▪ Feed-out motor blocked by an obstruction ▪ Feed-out motor harness loose, broken, defective ▪ Feed-out motor defective ▪ Booklet finisher main board defective
		If the motor is operating ▪ Inspect stack feed-out HP sensor harness and replace if damaged. ▪ Replace stack feed-out HP sensor If the motor is not operating: ▪ Inspect the area around the motor, and remove any obstacle to motor operation. ▪ Inspect motor harness, connector and replace if damaged. ▪ Replace feed-out belt motor ▪ Replace finisher main board.

SC722-42	B	Finisher stapler movement motor error (Finisher D610)
		The stapler HP sensor is not activated within the specified time after the stapler motor turned on. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Stapler movement motor overloaded due to obstruction ▪ Stapler HP sensor harness, connector loose, broken, defective. ▪ Stapler HP sensor defective ▪ Stapler movement motor harness, connector loose, broken, defective. ▪ Stapler movement motor defective.
		▪ Inspect the area around the motor and remove any obstacles to operation of the motor. ▪ Inspect stapler HP sensor harness, connector and replace if damaged. ▪ Replace stapler HP sensor. ▪ Inspect stapler movement motor harness, connector and replace if damaged. ▪ Replace stapler movement motor.

SC722-43	B	Finisher corner stapler rotation motor error (Finisher D610)
		The stapler does not return to its home position within the specified time after stapling. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Stapler rotation motor overloaded due to obstruction ▪ Motor disconnected. ▪ Motor defective. ▪ Stapler rotation HP sensor harness, connector loose, broken, defective. ▪ Sensor defective.
		▪ Inspect the area around the stapler rotation motor and remove any obstructions. ▪ Inspect motor harness, connector and replace if damaged. ▪ Inspect stapler rotation HP sensor harness, connector and replace if damaged. ▪ Replace sensor.

SC722-44	B	Finisher corner stapler motor error (Finisher D610)
		The stapler motor does not switch off within the prescribed time after operating. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Staple jam ▪ Number of sheets in the stack exceeds the limit for stapling ▪ Stapler motor harness, connector loose, broken, defective. ▪ Motor defective.
		▪ Remove staple jam. ▪ Inspect, empty staple hopper. ▪ Check the number of sheets being stapled. ▪ Inspect stapler motor harness, connector and replace if damaged. ▪ Replace motor.

SC722-70	B	Finisher tray 1 (upper tray lift) motor error (Finisher D610)
		The upper tray paper height sensor does not change its status with the specified time after the tray raises or lowers. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Tray lift motor harness, connector loose, broken, defective. ▪ Motor defective. ▪ Upper tray paper height sensor harness, connector loose, broken, defective. ▪ Sensor defective ▪ Finisher main board connection to motor loose, broken, defective. ▪ Finisher main board defective
		▪ Inspect the tray lift motor harness, connector and replace if damaged. ▪ Inspect motor harness connect at the finisher main board. ▪ Replace motor ▪ Inspect upper tray paper height sensor harness, connector and replace if damaged. ▪ Replace sensor ▪ Replace finisher main board.

SC722-71	D	Shift Motor Error (Finisher D610)
		The shift tray half-turn sensors: Failed twice to detect the shift tray at the home position at the specified time. -or- Failed twice to detect that the shift tray had left the home position.
		If the motor is operating ▪ Half-turn sensor 1, 2 harnesses loose, broken, defective ▪ One of the half-turn sensors is defective If the motor is not operating: ▪ Shift motor blocked by an obstruction ▪ Motor harness loose, broken, defective ▪ Motor defective ▪ Finisher main board defective
		If the motor is operating ▪ Inspect the half-turn sensor 1, 2 harnesses, connectors and replace if damaged. ▪ Replace one or both half-turn sensors. If the motor is not operating: ▪ Inspect the area around the shift motor and remove any obstructions. ▪ Inspect motor harness, connector and replace if damaged. ▪ Replace motor. ▪ Replace finisher main board.

SC722-72	B	Front shift jogger motor error (Finisher D610)
		The sides fences do not retract within the prescribed time after the shift jogger motor switches on. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Front shift jogger motor overloaded due to obstruction. ▪ Motor harness, connector loose, broken, defective. ▪ Motor defective ▪ Front shift jogger HP sensor harness, connector loose, broken, defective. ▪ Sensor defective
		▪ Inspect the area around the front shift jogger motor and remove any obstructions. ▪ Inspect motor harness and replace if damaged. ▪ Inspect front shift jogger HP sensor harness, connector and replace if damaged. ▪ Replace sensor. ▪ Replace motor.

SC722-74	B	Shift jogger retraction motor error (Finisher D610)
		The side fences do not retract within the prescribed time after the retraction motor switches on. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Motor overload ▪ Motor harness disconnected, loose, defective ▪ Motor defective ▪ HP sensor defective
		▪ Inspect the area around the shift jogger retraction motor and remove any obstruction. ▪ Inspect motor harness and replace if damaged. ▪ Inspect home position sensor harness and replace if damaged. ▪ Replace sensor. ▪ Replace motor.

SC722-75	B	Return roller motor error (Finisher D610)
		Occurs during the operation of the lower tray pressure motor.
		▪ Motor overloaded ▪ Motor harness disconnected, loose, defective ▪ Home position sensor harness disconnected, loose, defective ▪ HP sensor defective
		▪ Inspect the area around the return roller motor and remove any obstruction. ▪ Inspect motor harness and replace if damaged. ▪ Inspect home position sensor harness and replace if damaged. ▪ Replace sensor. ▪ Replace motor.

SC722-80	B	Finisher staple trimming hopper full (Finisher D610)
		The staple waste hopper is full of cut staples.
		▪ If the hopper is not full, the hopper full sensor is disconnected ▪ Sensor defective
		▪ Empty the hopper. ▪ Inspect the hopper full sensor harness and replace if damaged. ▪ Replace sensor.

SC722-81	D	Finisher transport motor error (Finisher D610)
		The encoder pulse of the finisher transport motor does not change state (high/low) within 600 ms and does not change after 2 retries.
		▪ Transport motor harness disconnected, or defective ▪ Finisher transport motor defective ▪ Finisher main board defective
		▪ Inspect transport motor harness and replace if damaged. ▪ Replace motor. ▪ Replace finisher main board.

SC722-83	D	Finisher punch motor error (Finisher D610)
		The punch HP sensor is not activated within the specified time after the punch motor turned on. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Punch motor overload due to obstruction ▪ Punch HP sensor disconnected, defective ▪ Punch motor disconnected, defective
		▪ Inspect the area around the punch motor and remove any obstructions. ▪ Inspect the punch HP sensor harness and replace if damaged. ▪ Replace punch motor.

SC724-03	D	Overload protection circuit error 1 (1-Bin Tray **Japan Only**)
		When a protective element interrupt (blown 24V fuse) is detected:
		▪ Short circuit due to motor overload ▪ Harness connector loose, broken, defective ▪ Motor defective.
		▪ Inspect the area round the motor and remove any obstructions. ▪ Inspect the harness and replace if damaged. ▪ Replace the motor.

SC724-71	B	Shift roller motor 1 error (1-Bin Tray **Japan Only**)
		This SC is issued with one detection of an error in motor drive output or a short circuit. ▪ The roller home position sensor was not detected within the prescribed time when roller moved to home position. ▪ During normal operation the time interval for returning and leaving the home position is calculated and measured. For normal operation this is 1.5 to 2 times the prescribed times t0 and t1. ▪ Done only during paper shift.
		▪ Motor overload. ▪ Motor damaged, defective ▪ Motor connector loose, broken, defective ▪ Roller HP sensor harness disconnected or defective ▪ Roller HP sensor defective
		▪ Inspect the area around the motor and remove any obstructions. ▪ Inspect the motor harness and replace if damaged. ▪ Inspect roller HP sensor harness and replace if damaged. ▪ Replace sensor. ▪ Replace motor.

SC724-80	D	Tray lift motor error (1-Bin Tray **Japan Only**)
		When the tray was raised, the status of the shift tray paper height sensor did not change within the prescribed time (t0sec). -or- When the tray was lowered, the shift tray paper height sensor failed to detect the top of the stack within the prescribed time (t1sec). ▪ The first occurrence of this error signals a jam, the second occurrence issues this SC code. ▪ During normal operation the detection time of the paper stack is calculated and measured. ▪ For normal operation this is 2 to 3 times the prescribed times t0 and t1.
		▪ Motor overload. ▪ Motor disconnected. ▪ Motor damaged, defective ▪ Paper height sensor disconnected. ▪ Paper height sensor defective.
		▪ Inspect the area around the motor and remove any obstructions. ▪ Inspect the motor harness and replace if damaged. ▪ Inspect the paper height sensor harness and replace if damaged. ▪ Replace paper height sensor. ▪ Replace tray lift motor.

SC725-01	D	Finisher communication error	(Multi Folder D615)
		No response signal was received from the downstream finisher (D615) after 3 attempts	
		▪ Finisher I/F cable loose, broken defective ▪ Finisher main board defective	
		▪ Confirm that the finisher is connected to the upstream unit. ▪ Inspect the finisher I/F cable harness, connector and replace if damaged. ▪ Replace finisher main board.	

SC725-12	B	Reg. roller transport motor error	(Multi Folder D615)
		The motor drive PCB detected an error at the motor.	
		▪ Motor harness or connector loose, broken, defective ▪ Motor or motor drive board defective	
		▪ Inspect the motor harness and replace if damaged. ▪ Replace the motor.	

SC725-13	B	Dynamic roller transport motor error (Multi Folder D615)
		The motor drive PCB detected an error at the motor.
		▪ Motor harness or connector loose, broken, defective ▪ Motor or motor drive board defective
		▪ Inspect the motor harness and replace if damaged. ▪ Replace the motor.

SC725-14	B	Z-fold top tray exit motor error (Multi Folder D615)
		The motor driver detects an error.
		▪ Motor over current ▪ Motor driver overheat
		▪ Inspect the motor harness and replace if damaged. ▪ Replace the motor.

SC725-30	B	Z-fold stopper 1 motor error (Multi Folder D615)	
		The bottom fence HP sensor detected that: The bottom fence did not arrive at the home position at the specified time. -or- The bottom fence failed to leave the home position at the specified time.	
		▪ Motor overload. ▪ Motor driver overheat ▪ Motor harness loose	
		▪ Inspect the area around the motor and remove any obstructions. ▪ Inspect the motor harness and replace if damaged. ▪ Replace the motor.	

SC725-31	B	2nd Stopper motor error	(Multi Folder D615)
		The 2nd stopper HP sensor did not detect the 2nd stopper in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		▪ 2nd stopper HP sensor dirty ▪ Sensor harness or connector loose, broken, defective ▪ 2nd stopper motor harness or connector loose, broken, defective ▪ Sensor defective ▪ Motor or motor drive board defective	
		▪ Clean 2nd stopper HP sensor. ▪ Inspect sensor harness and replace if defective. ▪ Inspect 2nd stopper motor harness and replace if damaged. ▪ Replace 2nd stopper HP sensor. ▪ Replace 2nd stopper motor.	

SC725-32	B	3rd Stopper motor error	(Multi Folder D615)
		The 3rd stopper HP sensor did not detect the 3rd stopper in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		▪ 3rd stopper HP sensor dirty ▪ Sensor harness or connector loose, broken, defective ▪ 3rd stopper motor harness or connector loose, broken, defective ▪ Sensor defective ▪ Motor or motor drive board defective	
		▪ Clean 3rd stopper HP sensor. ▪ Inspect sensor harness and replace if defective. ▪ Inspect 3rd stopper motor harness and replace if damaged. ▪ Replace 3rd stopper HP sensor. ▪ Replace 3rd stopper motor.	

SC725-33	B	Jogger Fence Motor	(Multi Folder D615)
		The jogger fence HP sensor did not detect the jogger fence in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		▪ Jogger fence HP sensor dirty ▪ Sensor harness or connector loose, broken, defective ▪ Jogger fence motor harness or connector loose, broken, defective ▪ Sensor defective ▪ Motor or motor drive board defective	
		▪ Clean jogger fence HP sensor. ▪ Inspect sensor harness and replace if defective. ▪ Inspect jogger fence motor harness and replace if damaged. ▪ Replace jogger fence HP sensor. ▪ Replace jogger fence motor.	

SC725-34	B	Dynamic Roller Lift Motor Error	(Multi Folder D615)
		The dynamic roller HP sensor did not detect the dynamic roller in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		▪ Dynamic roller HP sensor dirty ▪ Sensor harness or connector loose, broken, defective ▪ Dynamic roller lift motor harness or connector loose, broken, defective ▪ Sensor defective ▪ Motor or motor drive board defective	
		▪ Clean dynamic roller HP sensor. ▪ Inspect sensor harness and replace if defective. ▪ Inspect dynamic roller lift motor harness and replace if damaged. ▪ Replace dynamic roller HP sensor. ▪ Replace dynamic roller lift motor.	

SC725-35	B	Registration Roller Release Motor Error	(Multi Folder D615)
		The registration roller HP sensor did not detect the registration roller in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		▪ Registration roller HP sensor dirty ▪ Sensor harness or connector loose, broken, defective ▪ Registration roller release motor harness or connector loose, broken, defective ▪ Sensor defective ▪ Motor or motor drive board defective	
		▪ Clean registration roller HP sensor. ▪ Inspect sensor harness and replace if defective. ▪ Inspect registration roller release motor harness and replace if damaged. ▪ Replace registration roller HP sensor. ▪ Replace registration roller release motor.	

SC725-36	B	FM2 Direct-Send JG Motor	(Multi Folder D615)
		The direct-send JG HP sensor did not detect the direct-send JG in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		▪ FM2 direct-send JG HP sensor dirty ▪ Sensor harness or connector loose, broken, defective ▪ FM2 direct-send JG motor harness or connector loose, broken, defective ▪ Sensor defective ▪ Motor or motor drive board defective	
		▪ Clean FM2 direct-send JG HP sensor. ▪ Inspect sensor harness and replace if defective. ▪ Inspect FM2 direct-send JG motor harness and replace if damaged. ▪ Replace FM2 direct-send JG HP sensor. ▪ Replace FM2 direct-send JG motor.	

SC725-37	B	FM6 Pawl Motor	(Multi Folder D615)
		The FM6 pawl HP sensor did not detect the FM6 pawl in (or out of) its home position. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		▪ FM6 pawl HP sensor dirty ▪ Sensor harness or connector loose, broken, defective ▪ FM6 pawl motor harness or connector loose, broken, defective ▪ Sensor defective ▪ Motor or motor drive board defective	
		▪ Clean FM6 pawl HP sensor. ▪ Inspect sensor harness and replace if defective. ▪ Inspect FM6 pawl motor harness and replace if damaged. ▪ Replace FM6 pawl HP sensor. ▪ Replace FM6 pawl motor.	

SC725-38	B	Fold Plate Motor Error	(Multi Folder D615)
		The fold plate HP sensor did not detect the fold plate in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		▪ Fold plate HP sensor dirty ▪ Sensor harness or connector loose, broken, defective ▪ Fold plate motor harness or connector loose, broken, defective ▪ Sensor defective ▪ Motor or motor drive board defective	
		▪ Clean Fold plate HP sensor. ▪ Inspect sensor harness and replace if defective. ▪ Inspect fold plate motor harness and replace if damaged. ▪ Replace Fold plate HP sensor. ▪ Replace fold plate motor.	

SC725-39	B	1st Fold Motor Error	(Multi Folder D615)
		The motor drive PCB detected an error at the motor.	
		▪ Motor harness or connector loose, broken, defective ▪ Motor or motor drive board defective	
		▪ Inspect 1st fold motor harness and replace if damaged. ▪ Replace motor.	

SC725-40	B	2nd Fold Motor Error	(Multi Folder D615)
		The motor drive PCB detected an error at the motor.	
		▪ Motor harness or connector loose, broken, defective ▪ Motor or motor drive board defective	
		▪ Inspect 2nd fold motor harness and replace if damaged. ▪ Replace motor.	

SC725-41	B	Crease Motor Error	(Multi Folder D615)
		The motor drive PCB detected an error at the motor.	
		▪ Motor harness or connector loose, broken, defective ▪ Motor or motor drive board defective	
		▪ Inspect crease motor harness and replace if damaged. ▪ Replace motor.	

SC725-71	D	Horizontal Transport Motor Error	(Multi Folder D615)
		The motor drive PCB detected an error at the motor.	
		▪ Motor harness or connector loose, broken, defective ▪ Motor or motor drive board defective	
		▪ Inspect horizontal transport motor harness and replace if damaged. ▪ Replace motor.	

SC725-72	D	Horizontal exit motor error
		An error occurred on the motor drive board.
		▪ Motor current overload ▪ Motor drive board defective (replace motor)
		▪ Inspect horizontal exit motor harness and replace if damaged. ▪ Replace motor.

SC725-73	D	Top Tray Exit Motor	(Multi Folder D615)
		The motor drive PCB detected an error at the motor.	
		▪ Motor harness or connector loose, broken, defective ▪ Motor or motor drive board defective	
		▪ Inspect top tray exit motor harness and replace if damaged. ▪ Replace motor.	

SC725-74	D	Entrance JG Motor	(Multi Folder D615)
		The entrance junction gate HP sensor did not detect the entrance junction gate at (or out of) its home position. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		▪ Entrance JG HP sensor dirty ▪ Sensor harness or connector loose, broken, defective ▪ Entrance JG motor harness or connector loose, broken, defective ▪ Sensor defective ▪ Motor or motor drive board defective	
		▪ Clean entrance JG HP sensor. ▪ Inspect sensor harness and replace if defective. ▪ Inspect entrance JG motor harness and replace if damaged. ▪ Replace entrance JG HP sensor. ▪ Replace entrance JG motor.	

SC740-03	D	Cover feeder protection circuit error 1 – Blow Fuse (CIT)
		A fuse (24V) has blown on a circuit for a motor or sensor.
		▪ Short circuit caused by overload ▪ Connector harness loose, broken, defective ▪ Motor, sensor defective
		▪ Cycle machine off/on ▪ After each corrective step, try to cycle the machine off/on. If the machine does not reboot automatically, this means there is a blown fuse. ▪ Check the connector harnesses of motors and sensors for loose connections, damage, broken insulation ▪ Inspect areas around motors to confirm there are no obstacles interfering with operation ▪ Inspect motors for damage, and replace damaged motor ▪ Inspect PCBs for damage or evidence or a blown fuse ▪ Replace PCB with blown fuse (the board must be replaced, not just the fuse).

SC740-10	B	Cover interposer tray bottom plate motor error (CIT)
		One of the following occurred: The lift sensor did not go ON within the prescribed time after the machine tried to lift the bottom plate. The lower limit sensor did not go ON within the prescribed time after the machine tried to lower the bottom plate. In either case, the first occurrence of the error issues a JAM alert. The second occurrence issues this SC code, and the Cover Interposer Tray cannot be used.
		▪ Motor connector harness loose, broken, defective ▪ Motor overload ▪ Motor defective ▪ Sensor connector harness loose, broken, defective ▪ Sensor defective ▪ PCB defective
		▪ Cycle the machine off/on after each corrective step. ▪ Inspect the motor for obstructions that could interfere with operation of the motor ▪ Inspect motor and sensor harness for poor connections, damage, poor insulation, and then reset or replace harness ▪ Be sure to inspect connector harnesses at the PCBs ▪ Do SP6451 and do an INPUT check for the motor and sensors to make sure that they are functioning correctly. ▪ Replace defective motor or sensors. ▪ Replace PCB where motor and harnesses are connected.

SC745-03	D	Mail box protection circuit error 1 (CIT)
		A blown fuse interrupted the overload protection circuit.
		▪ Short circuit due to overload ▪ Motor harness loose, broken, defective. ▪ Motor defective ▪ Solenoid damaged
		▪ Inspect the area around the main motor and remove any obstructions. ▪ Inspect the motor harness and replace if damaged. ▪ Inspect the solenoid harnesses and replace if damaged. ▪ Replace the defective solenoid.

7.10 SC800: OVERALL SYSTEM

7.10.1 SC800

SC816	[0x0000]	Energy save I/O subsystem error
SC816-01	D	Subsystem error
SC816-02	D	Sysarch (LPUX_GET_PORT_INFO) error
SC816-03	D	Transition to STR was denied.
SC816-04	D	Interrupt in kernel communication driver
SC816-05	D	Preparation for transition to STR failed.
SC816-07	D	Sysarch (LPUX_GET_PORT_INFO) error
SC816-08	D	Sysarch (LPUX_ENGINE_TIMERCTRL) error
SC816-09	D	Sysarch (LPUX_RETURN_FACTOR_STR) error
SC816-10	D	Sysarch (LPUX_GET_PORT_INFO) error
SC816-11	D	Sysarch (LPUX_GET_PORT_INFO) error
SC816-12	D	Sysarch (LPUX_GET_PORT_INFO) error
SC816-13	D	open() error
SC816-14	D	Memory address error
SC816-15	D	open() error
SC816-16	D	open() error
SC816-17	D	open() error
SC816-18	D	open() error
SC816-19	D	Double open() error
SC816-20	D	open() error
SC816-22	D	Parameter error
SC816-23	D	read() error

SC816-24	D	read() error
SC816-25	D	read() error
SC816-26	D	write() communication retry error
SC816-27	D	write() communication retry error
SC816-28	D	write() communication retry error
SC816-29	D	write() communication retry error
SC816-30	D	write() communication retry error
SC816-35	D	read() error
SC816-36	D	Subsystem error
SC816-37	D	Subsystem error
SC816-38	D	Subsystem error
SC816-39	D	Subsystem error
SC816-40	D	Subsystem error
SC816-41	D	Subsystem error
SC816-42	D	Subsystem error
SC816-43	D	Subsystem error
SC816-44	D	Subsystem error
SC816-45	D	Subsystem error
SC816-46	D	Subsystem error
SC816-47	D	Subsystem error
SC816-48	D	Subsystem error
SC816-49	D	Subsystem error
SC816-50	D	Subsystem error
SC816-51	D	Subsystem error
SC816-52	D	Subsystem error
SC816-53	D	Subsystem error

SC816-54	D	Subsystem error
SC816-55	D	Subsystem error
SC816-56	D	Subsystem error
SC816-57	D	Subsystem error
SC816-58	D	Subsystem error
SC816-59	D	Subsystem error
SC816-60	D	Subsystem error
SC816-61	D	Subsystem error
SC816-62	D	Subsystem error
SC816-63	D	Subsystem error
SC816-64	D	Subsystem error
SC816-65	D	Subsystem error
SC816-66	D	Subsystem error
SC816-67	D	Subsystem error
SC816-68	D	Subsystem error
SC816-69	D	Subsystem error
SC816-70	D	Subsystem error
SC816-71	D	Subsystem error
SC816-72	D	Subsystem error
SC816-73	D	Subsystem error
SC816-74	D	Subsystem error
SC816-75	D	Subsystem error
SC816-76	D	Subsystem error
SC816-77	D	Subsystem error
SC816-78	D	Subsystem error
SC816-79	D	Subsystem error

SC816-80	D	Subsystem error
SC816-81	D	Subsystem error
SC816-82	D	Subsystem error
SC816-83	D	Subsystem error
SC816-84	D	Subsystem error
SC816-85	D	Subsystem error
SC816-86	D	Subsystem error
SC816-87	D	Subsystem error
SC816-88	D	Subsystem error
SC816-89	D	Subsystem error
SC816-90	D	Subsystem error
SC816-91	D	Subsystem error
SC816-92	D	Subsystem error
SC816-93	D	Subsystem error
SC816-94	D	Subsystem error
		Energy save I/O subsystem detected some abnormality.
		▪ Energy save I/O subsystem defective ▪ Energy save I/O subsystem detected a controller board error (non-response). ▪ Error was detected during preparation for transition to STR.
		▪ Cycle the machine off/on. ▪ Replace the controller board.

SC816-96	D	Energy save I/O subsystem error 1	CTL
		An error was detected in the energy save I/O subsystem.	
		▪ Energy save subsystem defective ▪ There was no response to the energy save subsystem from the controller board. ▪ A problem was detected before the machine shifted to STR mode (Suspend-to-RAM).	
		▪ Cycle the machine off/on. ▪ Update the firmware. ▪ Execute SP5191-001 and disable machine shift to STR mode. ▪ Replace the controller board.	

SC816-98	D	Energy save I/O subsystem error 2	CTL
		An error was detected in the energy save I/O subsystem.	
		▪ Energy save subsystem defective ▪ There was no response to the energy save subsystem from the controller board. ▪ A problem was detected before the machine shifted to STR mode (Suspend-to-RAM).	
		▪ Cycle the machine off/on. ▪ Update the firmware. ▪ Execute SP5191-001 and disable machine shift to STR mode. ▪ Replace the controller board.	

SC817-00	D	Monitor error: file detection/digital signature error	CTL
		▪ The bootloader cannot read any of diagnostic module, kernel, or root file system. ▪ In a bootloader SD card, the digital signature checking for any of diagnostic module, kernel, or root file system failed.	
		▪ One or more of the following does not exist or is corrupted: OS flash ROM, diagnostic module on SD card, kernel, root file system ▪ One or more of the following has been updated incorrectly: diagnostic module in SD card,kernel, root file system	
		▪ Update controller ROM ▪ Use an SD boot card with a valid digital signature.	

SC819-00	D	Fatal kernel error	CTL
		Due to a control error, a RAM overflow occurred during system processing. One of the following messages was displayed on the operation panel.	
		0x5032	HAIC-P2 error
		0x5245	Link-up fail
		0x5355	L2 Status Time Out
		0x696e	gwinit died
		0x766d	Vm_pageout: VM is full
		554C	USB loader defect
		Other	Other error
			▪ System program defective ▪ Controller board defective ▪ Optional board defective ▪ Replace controller firmware

SC840-00	D	EEPROM access error	CTL
		An error occurred during I/O processing. ▪ A read error occurred and 3 retries failed. ▪ A write error occurred.	
		EEPROM defective or end-of-life	
		-	

SC841-00	D	EEPROM read data error	CTL
		Compared the data from 3 areas of the EEPROM mirror data with the original data and all 3 of them were different from the original data.	
		Data in the specific area of the EEPROM has been modified.	
		-	

SC842-00	C	Nand-Flash updating verification error	CTL
		During remote ROM update or ROM update, the SCS detected a write error (verify error) regarding the data written to the Nand-Flash.	
		Nand-Flash damaged	
		Cycle the machine off/on.	

SC842-01	B	Nand-Flash block number exceeded threshold	CTL
		When the status of the Nand-Flash was checked at power-on or when returning from energy saver mode, the number of bad blocks exceeded the threshold.	
		Nand-Flash bad block number exceeding the threshold	
		Replace the controller board.	

SC842-02	B	Nand-Flash block erase exceeded threshold	CTL
		When the status of the Nand-Flash was checked at power-on or when returning from energy saver mode, the number of times the block was erased exceeded the threshold.	
		Number of times of Nand-Flash block erase exceeding the threshold	
		Replace the controller board.	

SC845-01	D	HW 1: Detected during automatic firmware update	CTL
SC845-02		HW 2: Detected during automatic firmware update	CTL
SC845-03		HW 3: Detected during automatic firmware update	CTL
SC845-04		HW 4: Detected during automatic firmware update	CTL
SC845-05		HW 5: Detected during automatic firmware update	CTL
		Due to a sudden loss of power during firmware update, reading and writing data was interrupted and suspended. If there was no damage to the main machine or finisher, the operation should resume automatically but the machine did not recover after three failed attempts.	
		▪ One or more of the following boards is defective: ▪ BICU ▪ Controller board ▪ Operation panel control board ▪ FCU	
		▪ Replace BICU ▪ Replace controller board ▪ Replace operation panel control board ▪ Replace FCU ▪ If replacing the controller board fails to solve the problem replace the HDD and memory board. (Firmware update must be done if the HDD is replaced.)	

SC855-01	B	Wireless LAN board error	CTL
		Wireless LAN board error (wireless LAN card: 802.11 is covered)	
		▪ Defective wireless LAN board ▪ Loose connection	
		▪ Cycle the machine off/on. ▪ Replace wireless LAN board	

SC855-02	B	Wireless LAN board error (initialization failed)	CTL
		Wireless LAN board error (wireless LAN card: 802.11 is covered)	
		▪ Defective wireless LAN board ▪ Loose connection	
		▪ Cycle the machine off/on. ▪ Replace wireless LAN board	

SC857-00	B	USB I/F Error	CTL
		The USB interface is unusable because of a driver error.	
		USB driver error (There are three causes of USB error: RX error/CRC error/STALL. SC is issued only in the case of STALL.)	
		▪ Check USB connection. ▪ Replace the controller board.	

SC858-00	A	Data encryption conversion error 1	CTL
		A serious error occurred during an attempt to update the encryption key.	
		▪ Data in the USB Flash etc. corrupted ▪ Communication error because of electromagnetic interference etc. ▪ Controller board defective	
		Replace the board.	

SC858-01	A	Data encryption conversion error 1	CTL
		A serious error occurred during an attempt to update the encryption key.	
		▪ Data in the USB Flash etc. corrupted ▪ Communication error because of electromagnetic interference etc. ▪ Controller board defective	
		Replace the board.	

SC858-02	A	Data encryption conversion error 2	CTL
		A serious error occurred after data conversion during an attempt to update the encryption key.	
		NVRAM defective	
		Replace controller board.	

SC858-30	A	Data encryption conversion error 3	CTL
		A serious error occurred after data conversion during an attempt to update the encryption key.	
		Software error such as conversion parameters being invalid.	
		Replace controller board.	

SC858-31	A	Data encryption conversion error 4	CTL
		A serious error occurred after data conversion during an attempt to update the encryption key.	
		Controller board defective	
		Replace the board.	

SC859-00	B	HDD data encryption conversion error 1	CTL
		HDD data was converted incorrectly when the data encryption key was updated. Image is displayed at conversion (SC code does not appear), but SC code appears after the machine is cycled off/on.	
		▪ HDD conversion was set with the data encryption key update function, but the HDD was removed. ▪ Machine lost power during data encryption key update. ▪ Electrostatic noise, or an HDD error occurred, during data encryption key update, and data was not encrypted.	
		▪ Check HDD connection. ▪ Format the HDD. ▪ Replace.	

SC859-01	B	HDD Data encryption conversion error 2	CTL
		HDD was not converted correctly during an attempt to update the encryption key. Only an error screen is displayed and no SC is issued during conversion. This SC is issued after machine restart.	
		▪ HDD conversion was selected in the Encryption key update function but the machine was turned on with the HDD removed. ▪ Power failure occurred during encryption key update. ▪ HDD was not successfully converted during encryption key update due to HDD errors or cable noises.	
		▪ Check HDD connection. ▪ Format the HDD. ▪ If there is a problem with the HDD, it has to be replaced.	

SC859-02	B	HDD data encryption conversion error 3	CTL
		HDD was not converted correctly during an attempt to update the encryption key. Only an error screen is displayed and no SC is issued during conversion. This SC is issued after machine restart. Details: NVRAM/HDD conversion is incomplete.	
		Power failure occurred during encryption key update.	
		None The display after restart instructs the user to format the HDD.	

SC859-10	B	HDD data encryption conversion error 4	CTL
		HDD was not converted correctly during an attempt to update the encryption key. Only an error screen is displayed and no SC is issued during conversion. This SC is issued after machine restart. Details: Abnormal DMAC return value has been received two or more times (DMAC timeout, serial communication error etc.)	
		HDD was not successfully converted during encryption key update due to HDD errors or cable noises.	
		▪ Check HDD connection. ▪ Format the HDD. ▪ If there is a problem with the HDD, it has to be replaced.	

SC860-00	B	HDD startup error at power on	CTL
		The HDD is connected but the driver detected the following errors. ▪ SS_NOT_READY:/* (-2)HDD does not become READY*/ ▪ SS_BAD_LABEL:/* (-4)Wrong partition type*/ ▪ SS_READ_ERROR:/* (-5)Error occurred while reading or checking the label*/ ▪ SS_WRITE_ERROR:/* (-6)Error occurred while writing or checking the label*/ ▪ SS_FS_ERROR:/* (-7)Failed to repair the filesystem*/ ▪ SS_MOUNT_ERROR:/* (-8)Failed to mount the filesystem*/ ▪ SS_COMMAND_ERROR:/* (-9)Drive not responding to command*/ ▪ SS_KERNEL_ERROR:/* (-10)Internal kernel error*/ ▪ SS_SIZE_ERROR:/* (-11)Drive size too small*/ ▪ SS_NO_PARTITION:/* (-12)The specified partition does not exist*/ ▪ SS_NO_FILE:/* (-13)Device file does not exist*/ Attempted to acquire HDD status through the driver but there has been no response for 30 seconds or more.	
		▪ Unformatted HDD ▪ Label data corrupted ▪ HDD defective	
		Format the HDD through SP mode.	

SC862-00	D	Number of bad sectors exceeded maximum	CTL
		The number of bad sections in the area on the disk where images are stored exceeded 100.	
		The number of bad sectors reached 101 during image read operation.	
		▪ Up to 100 bad sectors are allowed where images are stored.	
		▪ Format HDD with SP4911-002 ▪ If the problem persists, replace HDD.	

SC863-00	D	HDD data read failure 1	CTL
		The data written to the HDD cannot be read normally.	
		Bad sectors were generated during operation. (An error occurred in an area that does not belong to a partition, such as the disk label area.)	
		If one or more of the following problems persist, the HDD may be defective: ▪ This SC code has occurred ten times or more at short intervals. ▪ This SC occurred repeatedly at the same time (power-on, etc.). ▪ Startup takes too long (20 sec. or longer) when the main power is turned on. Normal HDD access time after main power on is about 5 seconds. ▪ HDD-related SCs such as SC860* and SC863*. Print and check the SC logs.	
		▪ Replace the HDD	

SC863-01	D	HDD data read failure 2	CTL
		The data written to the HDD cannot be read normally.	
		Bad sectors were generated during operation. (An error occurred in an area that does not belong to a partition, such as the disklabel area.)	
		If one or more of the following problems persist, the HDD may be defective: ▪ This SC code has occurred ten times or more at short intervals. ▪ This SC occurred repeatedly at the same time (power-on, etc.). ▪ Startup takes too long (20 sec. or longer) when the main power is turned on. Normal HDD access time after main power on is about 5 seconds. ▪ HDD-related SCs such as SC860* and SC863*. Print and check the SC logs.	
		▪ Replace the HDD	

SC863-02	D	HDD data read failure 3	CTL
		The data written to the HDD cannot be read normally.	
		Bad sectors were generated during operation. (An error occurred in partition "a".)	
		If one or more of the following problems persist, the HDD may be defective: ▪ This SC code has occurred ten times or more at short intervals. ▪ This SC occurred repeatedly at the same time (power-on, etc.). ▪ Startup takes too long (20 sec. or longer) when the main power is turned on. Normal HDD access time after main power on is about 5 seconds. ▪ HDD-related SCs such as SC860* and SC863*. Print and check the SC logs.	
		▪ Replace the HDD	

SC863-03	D	HDD data read failure 4	CTL
		The data written to the HDD cannot be read normally.	
		Bad sectors were generated during operation. (An error occurred in partition "b".)	
		If one or more of the following problems persist, the HDD may be defective: ▪ This SC code has occurred ten times or more at short intervals. ▪ This SC occurred repeatedly at the same time (power-on, etc.). ▪ Startup takes too long (20 sec. or longer) when the main power is turned on. Normal HDD access time after main power on is about 5 seconds. ▪ HDD-related SCs such as SC860* and SC863*. Print and check the SC logs.	
		▪ Replace the HDD	

SC863-04	D	HDD data read failure 5	CTL
		The data written to the HDD cannot be read normally.	
		Bad sectors were generated during operation. (An error occurred in partition "c".)	
		If one or more of the following problems persist, the HDD may be defective: ▪ This SC code has occurred ten times or more at short intervals. ▪ This SC occurred repeatedly at the same time (power-on, etc.). ▪ Startup takes too long (20 sec. or longer) when the main power is turned on. Normal HDD access time after main power on is about 5 seconds. ▪ HDD-related SCs such as SC860* and SC863*. Print and check the SC logs.	
		▪ Replace the HDD	

SC863-05	D	HDD data read failure 6	CTL
		The data written to the HDD cannot be read normally.	
		Bad sectors were generated during operation. (An error occurred in partition "d".)	
		If one or more of the following problems persist, the HDD may be defective: ▪ This SC code has occurred ten times or more at short intervals. ▪ This SC occurred repeatedly at the same time (power-on, etc.). ▪ Startup takes too long (20 sec. or longer) when the main power is turned on. Normal HDD access time after main power on is about 5 seconds. ▪ HDD-related SCs such as SC860* and SC863*. Print and check the SC logs.	
		▪ Replace the HDD	

SC863-06	D	HDD data read failure 7	CTL
		The data written to the HDD cannot be read normally.	
		Bad sectors were generated during operation. (An error occurred in partition "e".)	
		If one or more of the following problems persist, the HDD may be defective: ▪ This SC code has occurred ten times or more at short intervals. ▪ This SC occurred repeatedly at the same time (power-on, etc.). ▪ Startup takes too long (20 sec. or longer) when the main power is turned on. Normal HDD access time after main power on is about 5 seconds. ▪ HDD-related SCs such as SC860* and SC863*. Print and check the SC logs.	
		▪ Replace the HDD	

SC863-07	D	HDD data read failure 8	CTL
		The data written to the HDD cannot be read normally.	
		Bad sectors were generated during operation. (An error occurred in partition "f".)	
		If one or more of the following problems persist, the HDD may be defective: ▪ This SC code has occurred ten times or more at short intervals. ▪ This SC occurred repeatedly at the same time (power-on, etc.). ▪ Startup takes too long (20 sec. or longer) when the main power is turned on. Normal HDD access time after main power on is about 5 seconds. ▪ HDD-related SCs such as SC860* and SC863*. Print and check the SC logs.	
		▪ Replace the HDD	

SC863-08	D	HDD data read failure 9	CTL
		The data written to the HDD cannot be read normally.	
		Bad sectors were generated during operation. (An error occurred in partition "g".)	
		If one or more of the following problems persist, the HDD may be defective: ▪ This SC code has occurred ten times or more at short intervals. ▪ This SC occurred repeatedly at the same time (power-on, etc.). ▪ Startup takes too long (20 sec. or longer) when the main power is turned on. Normal HDD access time after main power on is about 5 seconds. ▪ HDD-related SCs such as SC860* and SC863*. Print and check the SC logs.	
		▪ Replace the HDD	

SC863-09	D	HDD data read failure 10	CTL
		The data written to the HDD cannot be read normally.	
		Bad sectors were generated during operation. (An error occurred in partition "h".)	
		If one or more of the following problems persist, the HDD may be defective: ▪ This SC code has occurred ten times or more at short intervals. ▪ This SC occurred repeatedly at the same time (power-on, etc.). ▪ Startup takes too long (20 sec. or longer) when the main power is turned on. Normal HDD access time after main power on is about 5 seconds. ▪ HDD-related SCs such as SC860* and SC863*. Print and check the SC logs.	
		▪ Replace the HDD	

SC863-10	D	HDD data read failure 11	CTL
		The data written to the HDD cannot be read normally.	
		Bad sectors were generated during operation. (An error occurred in partition "i".)	
		If one or more of the following problems persist, the HDD may be defective: ▪ This SC code has occurred ten times or more at short intervals. ▪ This SC occurred repeatedly at the same time (power-on, etc.). ▪ Startup takes too long (20 sec. or longer) when the main power is turned on. Normal HDD access time after main power on is about 5 seconds. ▪ HDD-related SCs such as SC860* and SC863*. Print and check the SC logs.	
		▪ Replace the HDD	

SC863-11	D	HDD data read failure 12	CTL
		The data written to the HDD cannot be read normally.	
		Bad sectors were generated during operation. (An error occurred in partition "j".)	
		If one or more of the following problems persist, the HDD may be defective: ▪ This SC code has occurred ten times or more at short intervals. ▪ This SC occurred repeatedly at the same time (power-on, etc.). ▪ Startup takes too long (20 sec. or longer) when the main power is turned on. Normal HDD access time after main power on is about 5 seconds. ▪ HDD-related SCs such as SC860* and SC863*. Print and check the SC logs.	
		▪ Replace the HDD	

SC863-12	D	HDD data read failure 13	CTL
		The data written to the HDD cannot be read normally.	
		Bad sectors were generated during operation. (An error occurred in partition "k".)	
		If one or more of the following problems persist, the HDD may be defective: ▪ This SC code has occurred ten times or more at short intervals. ▪ This SC occurred repeatedly at the same time (power-on, etc.). ▪ Startup takes too long (20 sec. or longer) when the main power is turned on. Normal HDD access time after main power on is about 5 seconds. ▪ HDD-related SCs such as SC860* and SC863*. Print and check the SC logs.	
		▪ Replace the HDD	

SC863-13	D	HDD data read failure 14	CTL
		The data written to the HDD cannot be read normally.	
		Bad sectors were generated during operation. (An error occurred in partition "l".)	
		If one or more of the following problems persist, the HDD may be defective: ▪ This SC code has occurred ten times or more at short intervals. ▪ This SC occurred repeatedly at the same time (power-on, etc.). ▪ Startup takes too long (20 sec. or longer) when the main power is turned on. Normal HDD access time after main power on is about 5 seconds. ▪ HDD-related SCs such as SC860* and SC863*. Print and check the SC logs.	
		▪ Replace the HDD	

SC863-14	D	HDD data read failure 15	CTL
		The data written to the HDD cannot be read normally.	
		Bad sectors were generated during operation. (An error occurred in partition "m".)	
		If one or more of the following problems persist, the HDD may be defective: ▪ This SC code has occurred ten times or more at short intervals. ▪ This SC occurred repeatedly at the same time (power-on, etc.). ▪ Startup takes too long (20 sec. or longer) when the main power is turned on. Normal HDD access time after main power on is about 5 seconds. ▪ HDD-related SCs such as SC860* and SC863*. Print and check the SC logs.	
		▪ Replace the HDD	

SC863-15	D	HDD data read failure 16	CTL
		The data written to the HDD cannot be read normally.	
		Bad sectors were generated during operation. (An error occurred in partition "n".)	
		If one or more of the following problems persist, the HDD may be defective: ▪ This SC code has occurred ten times or more at short intervals. ▪ This SC occurred repeatedly at the same time (power-on, etc.). ▪ Startup takes too long (20 sec. or longer) when the main power is turned on. Normal HDD access time after main power on is about 5 seconds. ▪ HDD-related SCs such as SC860* and SC863*. Print and check the SC logs.	
		▪ Replace the HDD	

SC863-16	D	HDD data read failure 17	CTL
		The data written to the HDD cannot be read normally.	
		Bad sectors were generated during operation. (An error occurred in partition "o".)	
		If one or more of the following problems persist, the HDD may be defective: ▪ This SC code has occurred ten times or more at short intervals. ▪ This SC occurred repeatedly at the same time (power-on, etc.). ▪ Startup takes too long (20 sec. or longer) when the main power is turned on. Normal HDD access time after main power on is about 5 seconds. ▪ HDD-related SCs such as SC860* and SC863*. Print and check the SC logs.	
		▪ Replace the HDD	

SC863-17	D	HDD data read failure 18	CTL
		The data written to the HDD cannot be read normally.	
		Bad sectors were generated during operation. (An error occurred in partition "p".)	
		If one or more of the following problems persist, the HDD may be defective: ▪ This SC code has occurred ten times or more at short intervals. ▪ This SC occurred repeatedly at the same time (power-on, etc.). ▪ Startup takes too long (20 sec. or longer) when the main power is turned on. Normal HDD access time after main power on is about 5 seconds. ▪ HDD-related SCs such as SC860* and SC863*. Print and check the SC logs.	
		▪ Replace the HDD	

SC863-18	D	HDD data read failure 19	CTL
		The data written to the HDD cannot be read normally.	
		Bad sectors were generated during operation. (An error occurred in partition "q".)	
		If one or more of the following problems persist, the HDD may be defective: ▪ This SC code has occurred ten times or more at short intervals. ▪ This SC occurred repeatedly at the same time (power-on, etc.). ▪ Startup takes too long (20 sec. or longer) when the main power is turned on. Normal HDD access time after main power on is about 5 seconds. ▪ HDD-related SCs such as SC860* and SC863*. Print and check the SC logs.	
		▪ Replace the HDD	

SC863-19	D	HDD data read failure 20	CTL
		The data written to the HDD cannot be read normally.	
		Bad sectors were generated during operation. (An error occurred in partition "r.)	
		If one or more of the following problems persist, the HDD may be defective: ▪ This SC code has occurred ten times or more at short intervals. ▪ This SC occurred repeatedly at the same time (power-on, etc.). ▪ Startup takes too long (20 sec. or longer) when the main power is turned on. Normal HDD access time after main power on is about 5 seconds. ▪ HDD-related SCs such as SC860* and SC863*. Print and check the SC logs.	
		▪ Replace the HDD	

SC863-20	D	HDD data read failure 21	CTL
		The data written to the HDD cannot be read normally.	
		Bad sectors were generated during operation. (An error occurred in partition "r.)	
		If one or more of the following problems persist, the HDD may be defective: ▪ This SC code has occurred ten times or more at short intervals. ▪ This SC occurred repeatedly at the same time (power-on, etc.). ▪ Startup takes too long (20 sec. or longer) when the main power is turned on. Normal HDD access time after main power on is about 5 seconds. ▪ HDD-related SCs such as SC860* and SC863*. Print and check the SC logs.	
		▪ Replace the HDD	

SC863-21	D	HDD data read failure 22	CTL
		The data written to the HDD cannot be read normally.	
		Bad sectors were generated during operation. (An error occurred in partition "t)	
		If one or more of the following problems persist, the HDD may be defective: ▪ This SC code has occurred ten times or more at short intervals. ▪ This SC occurred repeatedly at the same time (power-on, etc.). ▪ Startup takes too long (20 sec. or longer) when the main power is turned on. Normal HDD access time after main power on is about 5 seconds. ▪ HDD-related SCs such as SC860* and SC863*. Print and check the SC logs.	
		▪ Replace the HDD	

SC863-22	D	HDD data read failure 23	CTL
		The data written to the HDD cannot be read normally.	
		Bad sectors were generated during operation. (An error occurred in partition "u".)	
		If one or more of the following problems persist, the HDD may be defective: ▪ This SC code has occurred ten times or more at short intervals. ▪ This SC occurred repeatedly at the same time (power-on, etc.). ▪ Startup takes too long (20 sec. or longer) when the main power is turned on. Normal HDD access time after main power on is about 5 seconds. ▪ HDD-related SCs such as SC860* and SC863*. Print and check the SC logs.	
		▪ Replace the HDD	

SC863-23	D	HDD data read failure 24	CTL
		The data written to the HDD cannot be read normally.	
		Bad sectors were generated during operation. (An error occurred in partition "y".)	
		If one or more of the following problems persist, the HDD may be defective: ▪ This SC code has occurred ten times or more at short intervals. ▪ This SC occurred repeatedly at the same time (power-on, etc.). ▪ Startup takes too long (20 sec. or longer) when the main power is turned on. Normal HDD access time after main power on is about 5 seconds. ▪ HDD-related SCs such as SC860* and SC863*. Print and check the SC logs.	
		▪ Replace the HDD	

SC864-01	D	HDD data CRC error 1	CTL
		During HDD operation, the HDD returned a CRC error.	
		Bad sectors were generated during operation. (An error occurred in an area that does not belong to a partition, such as the disk label area.)	
		▪ Format the HDD. ▪ Replace the HDD.	

SC864-02	D	HDD data CRC error 2	CTL
		During HDD operation, the HDD returned a CRC error.	
		Bad sectors were generated during operation. (An error occurred in partition "a".)	
		▪ Format the HDD. ▪ Replace the HDD.	

SC864-03	D	HDD data CRC error 3	CTL
		During HDD operation, the HDD returned a CRC error.	
		Bad sectors were generated during operation. (An error occurred in partition "b".)	
		▪ Format the HDD. ▪ Replace the HDD.	

SC864-04	D	HDD data CRC error 4	CTL
		During HDD operation, the HDD returned a CRC error.	
		Bad sectors were generated during operation. (An error occurred in partition "c".)	
		▪ Format the HDD. ▪ Replace the HDD.	

SC864-05	D	HDD data CRC error 5	CTL
		During HDD operation, the HDD returned a CRC error.	
		Bad sectors were generated during operation. (An error occurred in partition "d".)	
		▪ Format the HDD. ▪ Replace the HDD.	

SC864-06	D	HDD data CRC error 6	CTL
		During HDD operation, the HDD returned a CRC error.	
		Bad sectors were generated during operation. (An error occurred in partition "e".)	
		▪ Format the HDD. ▪ Replace the HDD.	

SC864-07	D	HDD data CRC error 7	CTL
		During HDD operation, the HDD returned a CRC error.	
		Bad sectors were generated during operation. (An error occurred in partition "f".)	
		▪ Format the HDD. ▪ Replace the HDD.	

SC864-08	D	HDD data CRC error 8	CTL
		During HDD operation, the HDD returned a CRC error.	
		Bad sectors were generated during operation. (An error occurred in partition "g".)	
		▪ Format the HDD. ▪ Replace the HDD.	

SC864-09	D	HDD data CRC error 9	CTL
		During HDD operation, the HDD returned a CRC error.	
		Bad sectors were generated during operation. (An error occurred in partition "h".)	
		▪ Format the HDD. ▪ Replace the HDD.	

SC864-10	D	HDD data CRC error 10	CTL
		During HDD operation, the HDD returned a CRC error.	
		Bad sectors were generated during operation. (An error occurred in partition "i".)	
		▪ Format the HDD. ▪ Replace the HDD.	

SC864-11	D	HDD data CRC error 11	CTL
		During HDD operation, the HDD returned a CRC error.	
		Bad sectors were generated during operation. (An error occurred in partition "j".)	
		▪ Format the HDD. ▪ Replace the HDD.	

SC864-12	D	HDD data CRC error 12	CTL
		During HDD operation, the HDD returned a CRC error.	
		Bad sectors were generated during operation. (An error occurred in partition "k".)	
		▪ Format the HDD. ▪ Replace the HDD.	

SC864-13	D	HDD data CRC error 13	CTL
		During HDD operation, the HDD returned a CRC error.	
		Bad sectors were generated during operation. (An error occurred in partition "l".)	
		▪ Format the HDD. ▪ Replace the HDD.	

SC864-14	D	HDD data CRC error 14	CTL
		During HDD operation, the HDD returned a CRC error.	
		Bad sectors were generated during operation. (An error occurred in partition "m".)	
		▪ Format the HDD. ▪ Replace the HDD.	

SC864-15	D	HDD data CRC error 15	CTL
		During HDD operation, the HDD returned a CRC error.	
		Bad sectors were generated during operation. (An error occurred in partition "n".)	
		▪ Format the HDD. ▪ Replace the HDD.	

SC864-16	D	HDD data CRC error 16	CTL
		During HDD operation, the HDD returned a CRC error.	
		Bad sectors were generated during operation. (An error occurred in partition "o".)	
		▪ Format the HDD. ▪ Replace the HDD.	

SC864-17	D	HDD data CRC error 17	CTL
		During HDD operation, the HDD returned a CRC error.	
		Bad sectors were generated during operation. (An error occurred in partition "p".)	
		▪ Format the HDD. ▪ Replace the HDD.	

SC864-18	D	HDD data CRC error 18	CTL
		During HDD operation, the HDD returned a CRC error.	
		Bad sectors were generated during operation. (An error occurred in partition "q".)	
		▪ Format the HDD. ▪ Replace the HDD.	

SC864-19	D	HDD data CRC error 19	CTL
		During HDD operation, the HDD returned a CRC error.	
		Bad sectors were generated during operation. (An error occurred in partition "r".)	
		▪ Format the HDD. ▪ Replace the HDD.	

SC864-20	D	HDD data CRC error 20	CTL
		During HDD operation, the HDD returned a CRC error.	
		Bad sectors were generated during operation. (An error occurred in partition "s".)	
		▪ Format the HDD. ▪ Replace the HDD.	

SC864-21	D	HDD data CRC error 21	CTL
		During HDD operation, the HDD returned a CRC error.	
		Bad sectors were generated during operation. (An error occurred in partition "t".)	
		▪ Format the HDD. ▪ Replace the HDD.	

SC864-22	D	HDD data CRC error 22	CTL
		During HDD operation, the HDD returned a CRC error.	
		Bad sectors were generated during operation. (An error occurred in partition "u".)	
		▪ Format the HDD. ▪ Replace the HDD.	

SC864-23	D	HDD data CRC error 23	CTL
		During HDD operation, the HDD returned a CRC error.	
		Bad sectors were generated during operation. (An error occurred in partition "v".)	
		▪ Format the HDD. ▪ Replace the HDD.	

SC865-00	D	HDD access error 1	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error).	
		Replace the HDD.	

SC865-01	D	HDD access error 2	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in an area that does not belong to a partition, such as the disklabel area.)	
		Replace the HDD.	

SC865-02	D	HDD access error 3	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "a".)	
		Replace the HDD.	

SC865-03	D	HDD access error 4	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "b".)	
		Replace the HDD.	

SC865-03	D	HDD access error 5	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "c".)	
		Replace the HDD.	

SC865-05	D	HDD access error 6	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "d".)	
		Replace the HDD.	

SC865-06	D	HDD access error 7	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "e".)	
		Replace the HDD.	

SC865-07	D	HDD access error 8	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "f".)	
		Replace the HDD.	

SC865-08	D	HDD access error 9	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "g".)	
		Replace the HDD.	

SC865-09	D	HDD access error 10	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "h".)	
		Replace the HDD.	

SC865-10	D	HDD access error 11	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "i".)	
		Replace the HDD.	

SC865-11	D	HDD access error 12	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "j".)	
		Replace the HDD.	

SC865-12	D	HDD access error 13	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "k".)	
		Replace the HDD.	

SC865-13	D	HDD access error 14	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "l".)	
		Replace the HDD.	

SC865-14	D	HDD access error 15	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "m".)	
		Replace the HDD.	

SC865-15	D	HDD access error 16	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "n".)	
		Replace the HDD.	

SC865-16	D	HDD access error 17	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "o".)	
		Replace the HDD.	

SC865-17	D	HDD access error 18	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "p".)	
		Replace the HDD.	

SC865-18	D	HDD access error 19	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "q".)	
		Replace the HDD.	

SC865-19	D	HDD access error 20	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "r".)	
		Replace the HDD.	

SC865-20	D	HDD access error 21	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "s".)	
		Replace the HDD.	

SC865-21	D	HDD access error 22	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "t".)	
		Replace the HDD.	

SC865-22	D	HDD access error 23	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "u".)	
		Replace the HDD.	

SC865-23	D	HDD access error 24	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "v".)	
		Replace the HDD.	

SC865-50	D	HDD access time-out error 1	CTL
		During HDD operation, the machine did not detect a reply from the HDD (timeout).	
		The HDD did not respond to a read/write command from the machine.	
		▪ Check harness connections between the controller board and the HDD. ▪ Replace the HDD.	

SC865-51	D	HDD access time-out error 1	CTL
		During HDD operation, the machine did not detect a reply from the HDD (timeout).	
		The HDD did not respond to a read/write command from the machine.	
		▪ Check harness connections between the controller board and the HDD. ▪ Replace the HDD.	

SC865-52	D	HDD access time-out error 2	CTL
		During HDD operation, the machine did not detect a reply from the HDD (timeout).	
		The HDD did not respond to a read/write command from the machine in sector "a".	
		▪ Check harness connections between the controller board and the HDD. ▪ Replace the HDD.	

SC865-53	D	HDD access time-out error 3	CTL
		During HDD operation, the machine did not detect a reply from the HDD (timeout).	
		The HDD did not respond to a read/write command from the machine in sector "b".	
		▪ Check harness connections between the controller board and the HDD. ▪ Replace the HDD.	

SC865-54	D	HDD access time-out error 4	CTL
		During HDD operation, the machine did not detect a reply from the HDD (timeout).	
		The HDD did not respond to a read/write command from the machine in sector "c".	
		▪ Check harness connections between the controller board and the HDD. ▪ Replace the HDD.	

SC865-55	D	HDD access time-out error 5	CTL
		During HDD operation, the machine did not detect a reply from the HDD (timeout).	
		The HDD did not respond to a read/write command from the machine in sector "d".	
		▪ Check harness connections between the controller board and the HDD. ▪ Replace the HDD.	

SC865-56	D	HDD access time-out error 6	CTL
		During HDD operation, the machine did not detect a reply from the HDD (timeout).	
		The HDD did not respond to a read/write command from the machine in sector "e".	
		▪ Check harness connections between the controller board and the HDD. ▪ Replace the HDD.	

SC865-57	D	HDD access time-out error 7	CTL
		During HDD operation, the machine did not detect a reply from the HDD (timeout).	
		The HDD did not respond to a read/write command from the machine in sector "f".	
		▪ Check harness connections between the controller board and the HDD. ▪ Replace the HDD.	

SC865-58	D	HDD access time-out error 8	CTL
		During HDD operation, the machine did not detect a reply from the HDD (timeout).	
		The HDD did not respond to a read/write command from the machine in sector "g".	
		▪ Check harness connections between the controller board and the HDD. ▪ Replace the HDD.	

SC865-59	D	HDD access time-out error 9	CTL
		During HDD operation, the HDD returned an error.	
		During HDD operation, the machine did not detect a reply from the HDD (timeout).	
		The HDD did not respond to a read/write command from the machine in sector "h".	
		▪ Check harness connections between the controller board and the HDD. ▪ Replace the HDD.	

SC865-60	D	HDD access time-out error 10	CTL
		During HDD operation, the machine did not detect a reply from the HDD (timeout).	
		The HDD did not respond to a read/write command from the machine in sector "i".	
		▪ Check harness connections between the controller board and the HDD. ▪ Replace the HDD.	

SC865-61	D	HDD access time-out error 11	CTL
		During HDD operation, the machine did not detect a reply from the HDD (timeout).	
		The HDD did not respond to a read/write command from the machine in sector "j".	
		▪ Check harness connections between the controller board and the HDD. ▪ Replace the HDD.	

SC865-62	D	HDD access time-out error 12	CTL
		During HDD operation, the machine did not detect a reply from the HDD (timeout).	
		The HDD did not respond to a read/write command from the machine in sector "k".	
		▪ Check harness connections between the controller board and the HDD. ▪ Replace the HDD.	

SC865-63	D	HDD access time-out error 13	CTL
		During HDD operation, the machine did not detect a reply from the HDD (timeout).	
		The HDD did not respond to a read/write command from the machine in sector "l".	
		▪ Check harness connections between the controller board and the HDD. ▪ Replace the HDD.	

SC865-64	D	HDD access time-out error 14	CTL
		During HDD operation, the machine did not detect a reply from the HDD (timeout).	
		The HDD did not respond to a read/write command from the machine in sector "m".	
		▪ Check harness connections between the controller board and the HDD. ▪ Replace the HDD.	

SC865-65	D	HDD access time-out error 15	CTL
		During HDD operation, the machine did not detect a reply from the HDD (timeout).	
		The HDD did not respond to a read/write command from the machine in sector "n".	
		▪ Check harness connections between the controller board and the HDD. ▪ Replace the HDD.	

SC865-66	D	HDD access time-out error 16	CTL
		During HDD operation, the machine did not detect a reply from the HDD (timeout).	
		The HDD did not respond to a read/write command from the machine in sector "o".	
		▪ Check harness connections between the controller board and the HDD. ▪ Replace the HDD.	

SC865-67	D	HDD access time-out error 17	CTL
		During HDD operation, the machine did not detect a reply from the HDD (timeout).	
		The HDD did not respond to a read/write command from the machine in sector "p".	
		▪ Check harness connections between the controller board and the HDD. ▪ Replace the HDD.	

SC865-68	D	HDD access time-out error 18	CTL
		During HDD operation, the machine did not detect a reply from the HDD (timeout).	
		The HDD did not respond to a read/write command from the machine in sector "q".	
		▪ Check harness connections between the controller board and the HDD. ▪ Replace the HDD.	

SC865-69	D	HDD access time-out error 19	CTL
		During HDD operation, the machine did not detect a reply from the HDD (timeout).	
		The HDD did not respond to a read/write command from the machine in sector "r".	
		▪ Check harness connections between the controller board and the HDD. ▪ Replace the HDD.	

SC865-70	D	HDD access time-out error 20	CTL
		During HDD operation, the machine did not detect a reply from the HDD (timeout).	
		The HDD did not respond to a read/write command from the machine in sector "s".	
		▪ Check harness connections between the controller board and the HDD. ▪ Replace the HDD.	

SC865-71	D	HDD access time-out error 21	CTL
		During HDD operation, the HDD returned an error.	
		The HDD returned an error that does not constitute SC863 (bad sector) or SC864 (CRC error). (An error occurred in partition "t".)	
		Replace the HDD.	

SC865-72	D	HDD access time-out error 22	CTL
		During HDD operation, the machine did not detect a reply from the HDD (timeout).	
		The HDD did not respond to a read/write command from the machine in sector "u".	
		▪ Check harness connections between the controller board and the HDD. ▪ Replace the HDD.	

SC865-73	D	HDD access time-out error 23	CTL
		During HDD operation, the machine did not detect a reply from the HDD (timeout).	
		The HDD did not respond to a read/write command from the machine in sector "v".	
		▪ Check harness connections between the controller board and the HDD. ▪ Replace the HDD.	

SC866-00	B	SD card authentication error	CTL
		A license error of an application that is started from the SD card was detected.	
		Invalid program data is stored on the SD card.	
		Store a valid program data on the SD card.	

SC867-00	D	SD card removed 1	CTL
		The SD card that starts an application was removed from the slot.	
		The SD card that starts an application was removed from the slot (mount point of /mnt/sd0).	
		Cycle the machine off/on.	

SC867-01	D	SD card removed 2	CTL
		The SD card that starts an application was removed from the slot.	
		The SD card that starts an application was removed from the slot (mount point of /mnt/sd1).	
		Cycle the machine off/on.	

SC867-02	D	SD card removed 3	CTL
		The SD card that starts an application was removed from the slot.	
		The SD card that starts an application was removed from the slot (mount point of /mnt/sd2).	
		Cycle the machine off/on.	

SC868-00	D	SD card access error 1	CTL
		The SD controller returned an error during operation. (Error occurred at the mount point of /mnt/sd0)	
		▪ SD card defective ▪ SD controller defective	
		▪ Reformat the SD card (using the "SD Formatter" made by Panasonic).* ▪ Check the SD card insertion status. ▪ Replace the SD card. ▪ Replace the controller board.	

* Do not format an SD card supplied with the main machine or sold as an option. You may only format SD cards used for Firmware Update by a Customer Engineer.

SC868-01	D	SD card access error 2	CTL
		The SD controller returned an error during operation. (Error occurred at the mount point of /mnt/sd1)	
		▪ SD card defective ▪ SD controller defective	

		SD card that starts an application
		▪ Turn the main power off and check the SD card insertion status.
		  ▪ If no problem is found, insert the SD card and turn the main power on.
		  ▪ If an error occurs, replace the SD card.
		▪ SD card for users
		  ▪ In case of a file system error, reformat the SD card (using the "SD Formatter" made by Panasonic).*
		  ▪ In case of a device access error, turn the main power off and check the SD card insertion status.
		  ▪ If no problem is found, insert the SD card and turn the main power on.
		  ▪ If an error occurs, use another SD card.	

* Do not format an SD card supplied with the main machine or sold as an option. You may only format SD cards used for Firmware Update by a Customer Engineer.

SC868-02	D	SD card access error 3	CTL
		The SD controller returned an error during operation. (Error occurred at the mount point of /mnt/sd1)	
		▪ SD card defective ▪ SD controller defective	
		SD card that starts an application Turn the main power off and check the SD card insertion status. ▪ If no problem is found, insert the SD card and turn the main power on. ▪ If an error occurs, replace the SD card. SD card for users ▪ In case of a file system error, reformat the SD card (using the "SD Formatter" made by Panasonic).* ▪ In case of a device access error, turn the main power off and check the SD card insertion status. ▪ If no problem is found, insert the SD card and turn the main power on. ▪ If an error occurs, use another SD card.	

* Do not format an SD card supplied with the main machine or sold as an option. You may only format SD cards used for Firmware Update by a Customer Engineer.

SC869-01	C	Human detection (proximity) sensor error 1	CTL
		The sensor detected a presence near the machine for longer than 24 hours.	
		Due to malfunction, the sensor remained on for longer than 24 hours. This SC code has no effect on printing or other operation of the machine. Once this SC appears, the sensor no longer functions.	
		▪ Replace the sensor unit	

SC869-01	C	Human detection (proximity) sensor error 2	CTL
		The sensor remains off after 20 of the following actions: ▪ Touching the Energy Save key ▪ Opening/closing the ADF ▪ Setting an original ▪ Opening/closing the front door ▪ Opening/closing a paper tray	
		One or more of the above actions normally triggers the machine to leave low energy mode and return to full operation, but the sensor remained to detect the presence of the operator. This SC code has no effect on printing or other operation of the machine. Once this SC appears, the sensor no longer functions.	
		▪ Replace the sensor unit	

SC870-00	B	Address Book data error (Anytime: Address Book Error.)
SC870-01	B	Address Book data error (On startup: Media required for storing the Address Book is missing.)
SC870-02	B	Address Book data error (On startup: encryption is configured but the module required for encryption (DESS) is missing.)
SC870-03	B	Address Book data error (Initialization: Failed to generate a file to store internal Address Book.)
SC870-04	B	Address Book data error (Initialization: Failed to generate a file to store delivery sender.)
SC870-05	B	Address Book data error (Initialization: Failed to generate a file to store delivery destination.)
SC870-06	B	Address Book data error (Initialization: Failed to generate a file to store information required for LDAP search.)
SC870-07	B	Address Book data error (Initialization: Failed to initialize entries required for machine operation.)
SC870-08	B	Address Book data error (Machine configuration: HDD is present but the space for storing the Address Book is unusable.)

SC870-10	B	Address Book data error (Machine configuration: Cannot make a directory for storing the Address Book in the SD/USB FlashROM.)
SC870-11	B	Address Book data error(On startup: Inconsistency in Address Book entry number.)
SC870-20	B	Address Book data error (File I/O: Failed to initialize file.)
SC870-21	B	Address Book data error (File I/O: Failed to generate file.)
SC870-22	B	Address Book data error (File I/O: Failed to open file.)
SC870-23	B	Address Book data error (File I/O: Failed to write to file.)
SC870-24	B	Address Book data error (File I/O: Failed to read file.)
SC870-25	B	Address Book data error (File I/O: Failed to check file size.)
SC870-26	B	Address Book data error (File I/O: Failed to delete data.)
SC870-27	B	Address Book data error (File I/O: Failed to add data.)
SC870-30	B	Address Book data error (Search: Failed to obtain data from cache when searching in the machine Address Book. delivery destination/sender.)
SC870-31	B	Address Book data error (Search:Failed to obtain data from cache during LDAP search.)
SC870-32	B	Address Book data error (Search:Failed to obtain data from cache while searching the WS-Scanner Address Book.)
SC870-41	B	Address Book data error (Cache: failed to obtain data from cache.)
SC870-50	B	Address Book data error (On startup: Detected abnormality of the Address Book encryption status.)
SC870-51	B	Address Book data error (Encryption settings: Failed to create directory required for conversion between plaintext and encrypted text.)
SC870-52	B	Address Book data error (Encryption settings: Failed to convert from plaintext to encrypted text.)

SC870-53	B	Address Book data error (Encryption settings: Failed to convert from encrypted text to plaintext.)
SC870-54	B	Address Book data error (Encryption settings: Detected data inconsistency when reading the encrypted Address Book.)
SC870-55	B	Address Book data error (Encryption settings: Failed to delete file when changing encryption setting.)
SC870-56	B	Address Book data error (Encryption settings: Failed to erase the file that records the encryption key during an attempt to change the encryption setting.)
SC870-57	B	Address Book data error (Encryption settings: Failed to move a file during an attempt to change the encryption setting.)
SC870-58	B	Address Book data error (Encryption settings: Failed to delete a directory during an attempt to change the encryption setting.)
SC870-59	B	Address Book data error (Encryption settings: Detected a resource shortage during an attempt to change the encryption setting.)

SC872-00	B	HDD mail reception error 1	CTL
		An error was detected on the HDD immediately after the machine was turned on.	
		▪ HDD defective ▪ Power was turned of while the machine used the HDD.	
		▪ Format the HDD (SP5-832-007). ▪ Replace the HDD. When you do the above, the following information will be initialized. ▪ Partly received partial mail messages. ▪ Already-read statuses of POP3-received messages (All messages on the mail server are handled as new messages).	

SC873-00	B	HDD mail reception error 2	CTL
		An error was detected on the HDD immediately after the machine was turned on.	
		▪ HDD defective ▪ Power was turned of while the machine used the HDD.	
		▪ Format the HDD (SP5-832-007). ▪ Replace the HDD. When you do the above, the following information will be initialized. ▪ Default sender name/password (SMB/FTP/NCP) ▪ Administrator mail address ▪ Scanner delivery history	

SC874-05	D	All delete - Read error
SC874-06	D	All delete - Write error
SC874-09	D	All delete - No response from drive to command
SC874-10	D	All delete - Kernel internal error
SC874-12	D	All delete - Specified partition does not exist
SC874-13	D	All delete - No device file
SC874-14	D	All delete - Error in startup option
SC874-15	D	All delete - No number for specified sector
SC874-16	D	All delete - Execution of "hdderase" failed
SC874-41	D	All delete - Other fatal error
SC874-42	D	All delete - Halt command ended operation
SC874-61	D	All delete - Failed library recovery: hde_can_use()
SC874-62	D	All delete - Failed library recovery: hde_start()
SC874-63	D	All delete - Failed library recovery: hde_end()
SC874-64	D	All delete - Failed library recovery: hde_abort()

SC874-65	D	All delete - Failed library recovery: hde_get_stat()
SC874-66	D	All delete - Cannot use
SC874-67	D	All delete - Delete end unfinished
SC874-68	D	All delete - HDD format failure (normal)
SC874-69	D	All delete - HDD format failure (abnormal)
SC874-70	D	All delete - Library illegal recovery
SC874-99	D	All delete - Unexpected error
		An error was detected during HDD or NVRAM all delete operation after the option was executed.
		▪ There was an error in the HDD delete program, or the NVRAM all delete program. An alert is not issued for the SC error by @Remote and is not displayed with network devices.
		▪ Cycle the machine off/on ▪ Reset the option SD card. ▪ Execute HDD All Delete again.

SC875-01	D	Delete all error on HDD (hddchack –i error)	CTL
SC875-02	D	Delete all error (HDD erasure) (Data deletion failure)	
		An error was detected before HDD/data erasure starts. (Failed to erase data/failed to logically format HDD)	
		▪ HDD logical formatting failed. ▪ The modules failed to erase data.	
		Cycle the machine off/on.	

SC877-00	B	Data Overwrite Security card error	CTL
		The "Auto Erase Memory" function of the Data Overwrite Security is set to on but it cannot be done.	
		▪ Data Overwrite Security option SD card is broken. ▪ Data Overwrite Security option SD card has been removed.	
		▪ If the SD card is broken, prepare a new Data Overwrite Security option SD card and replace the NVRAM. ▪ If the SD card has been removed, turn the main power off and reinstall a working Data Overwrite Security option SD card.	

SC878-00	D	TPM electronic authentication error	CTL
		The machine failed TPM electronic authentication. System hash registered in the TPM did not match the data on the USB flash.	
		▪ System module was updated in an unauthorized manner. ▪ USB flash is not working correctly.	
		▪ Replace controller board.	

SC878-01	D	USB Flash error	CTL
		USB Flash file system error	
		USB Flash file system has been destroyed.	
		▪ Replace controller board.	

SC878-02	D	TPM error	CTL
		Error occurred in the TPM or TPM driver.	
		TPM defective	
		▪ Replace controller board.	

SC878-03	D	TCSD error	CTL
		Error occurred in TPM software stack.	
		▪ Unable to start TPM ▪ Necessary files missing from the TPM.	
		▪ Replace controller board.	

SC878-20	D	Random number test error	CTL
		An error was detected when a random number table was generated during a self-test. The random number table is generated by TPM (Trusted Platform Module). The table generated by TPM failed the test. **Note**: TPM (Trusted Platform Module) is a computer chip that can securely store information used to authenticate the platform. This information can include passwords, certificates, and encryption keys.	
		TPM is defective	
		▪ Cycle the machine off/on. ▪ Replace the controller board.	

SC878-21	D	DESS self-test error	CTL
		The power-on self-test for TPM failed at startup when the controller encryption software was tested, due to random number test failure (SC878-20) or other problem.	
		TPM firmware or CPU is defective. **Note**: TPM (Trusted Platform Module) is a computer chip that can securely store information used to authenticate the platform. This information can include passwords, certificates, and encryption keys.	
		▪ Cycle the machine on. ▪ If the problem persists, replace the controller board.	

SC880-00	D	MLB error	CTL
		Reply to MLB access was not returned within a specified time. The MLB (Media Link Board) is the File Format Converter.	
		MLB defective	
		▪ Replace the MLB. ▪ Remove the MLB.	

SC899-00	D	Software error: Signal reception end	CTL
		Occurs when an internal program behaves abnormally.	
		In case of a hardware defect ▪ Replace the hardware. In case of a software error ▪ Cycle the machine off/on. ▪ Try updating the firmware.	

7.11 SC900: MISCELLANEOUS

7.11.1 SC900

SC954	D	Printer image setting error
		The settings required for image processing using the printer controller are not sent from the BiCU.
		▪ Software defective

SC955	D	Memory setting error
		The settings that are required for image processing using the memory are not sent from the BiCU.
		▪ Software defective

SC965	B	Print Start error
		During print processing, another command to start printing was received.
		Software bug

SC990-00	D	Software operation error	CTL
		Software attempted an unexpected operation.	
		▪ Parameter error ▪ Internal parameter error ▪ Insufficient work memory ▪ Operation error caused by abnormalities that are normally undetectable.	
		▪ Cycle the machine off/on. ▪ Reinstall the software of the controller and BICU board.	

SC991-00	C	Recoverable software operation error	CTL
		Software attempted an unexpected operation. SC991 covers recoverable errors as opposed toCS990.	
		▪ Parameter error ▪ Internal parameter error ▪ Insufficient work memory ▪ Operation error caused by abnormalities that are normally undetectable.	
		▪ Logging only	

SC992-00	D	Undefined SC issued.	CTL
		An error not controlled by the system, occurred.	
		▪ An SC for the previous model was used mistakenly, etc. ▪ Basically a software bug.	
		▪ Cycle the machine off/on.	

SC994	C	Operation Panel Management Records Exceeded	CTL
		An error occurred because the number of records exceeded the limit for images managed in the service layer of the firmware. This can occur if there are too many application screens open on the operation panel.	
		No action required because this SC does not interfere with operation of the machine.	

SC995	D	CPM setting error	CTL
01		▪ Defective BCU ▪ NVRAM Replacement error	
		▪ Install the previous NVRAM. ▪ Input the serial number with SP5-811-004, and turn the main power switch off and on.	
02		▪ Defective NVRAM ▪ Defective controller	
		▪ Update the controller firmware. ▪ Install a new NVRAM, and turn off and on the main power switch after SC995-002 has occurred.	
03		▪ Incorrect type controller installed ▪ Defective controller	
		▪ Replace the controller with the correct type.	
04		▪ Incorrect model controller installed.	
		▪ Replace the controller with the correct model.	

SC997-00	D	Application function selection error	CTL
		The application selected by the operation panel key operated abnormally (No response, abnormal ending).	
		▪ Software bug (mainly the application)	
		▪ Check the optional RAM, DIMM, boards required by the application program. ▪ Check if the combination of downloaded programs are correct.	

SC998-00	D	Application start error	CTL
		▪ No application was registered to system within a specified time after the main power was turned on. (No application starts/All applications have been terminated abnormally) ▪ Application started but cannot be drawn now for some reason.	
		▪ Software bug (mainly the application) ▪ The optional RAM, DIMM, boards required by the application program. Are not installed correctly.	
		▪ Cycle the machine off/on. ▪ Check the optional RAM, DIMM, boards ▪ Check the combination of programs ▪ Replace the controller board.	

7.12 SC540 TO SC545

7.12.1 BEFORE YOU BEGIN

This section is a summary of some of the most common fusing unit SC codes that require your attention.

- These are fatal fusing unit errors. Once one of these SC codes appears, the machine cannot be used until the service technician releases it for servicing with **SP5810**, solves the problem, and then cycles the machine off/on.
- There are three machines in this series (D223, D224, and D225). Make sure all replacement parts are the correct ones for the machine you are servicing.

⚠CAUTION

- To prevent a fire, never attempt to reset a blown thermostat by manipulating the exposed edges of the black cover with a screwdriver, or by hitting it on a table.
- A thermostat that has been reset manually could fail and cause a fire.
- Always replace a blown thermostat with a new one.

d223c3745

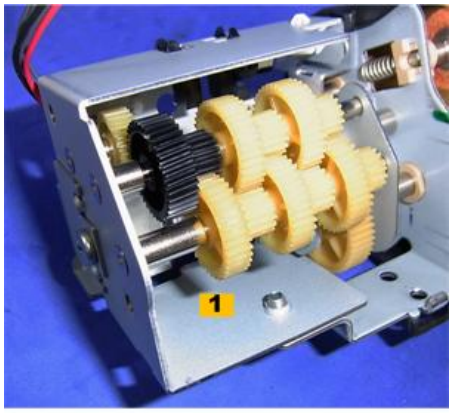
7.12.2 SC540 FUSING WEB MOTOR ERROR

Please follow the steps in order as presented below.

① *Confirm failure to feed*

1. Cycle the machine off/on.
2. Paper fails to feed continuously for 1 min., and SC error recurs?
3. If the SC error does not recur > End.
4. If the SC error recurs, go to ②.

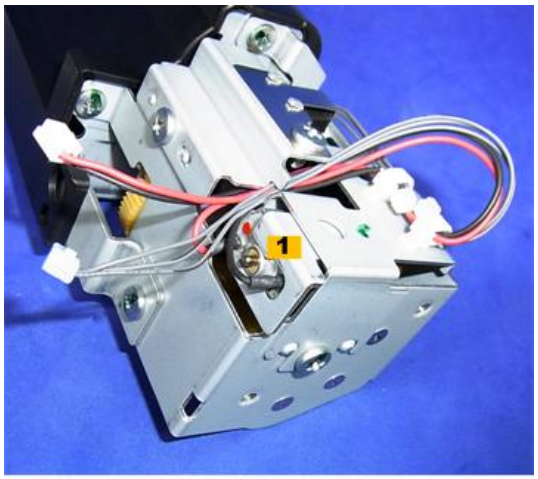
② *Web drive gears*



d223c4008

1. Check the web drive gears [1] for paper scraps, paper dust, or any other stray materials jammed into the gears.
2. Remove any foreign material.
3. Any gears damaged or broken? > Replace the web unit.
4. Cycle the machine off/on.
5. Determine if paper feed has resumed, and then see if the SC error recurs.
6. If the SC error does not recur > End.
7. If the SC error recurs, go to ③.

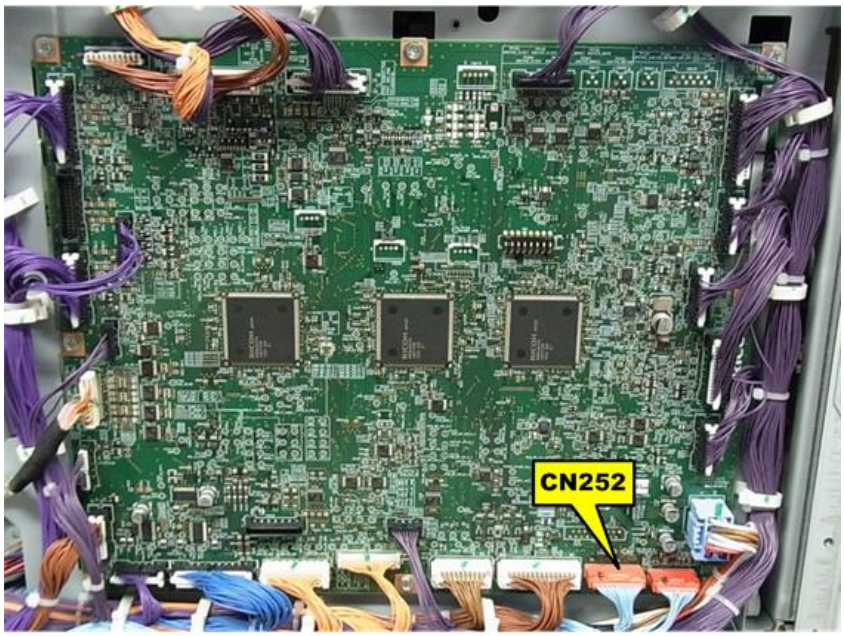
③ *Web motor*



d223c4009

1. Replace web motor [1].
2. Cycle the machine off/on.
3. Determine if paper feed has resumed, and then see if the SC error recurs.
4. If the SC error does not recur > End.
5. If the SC error recurs, go to ④.

④ *IOB connections*



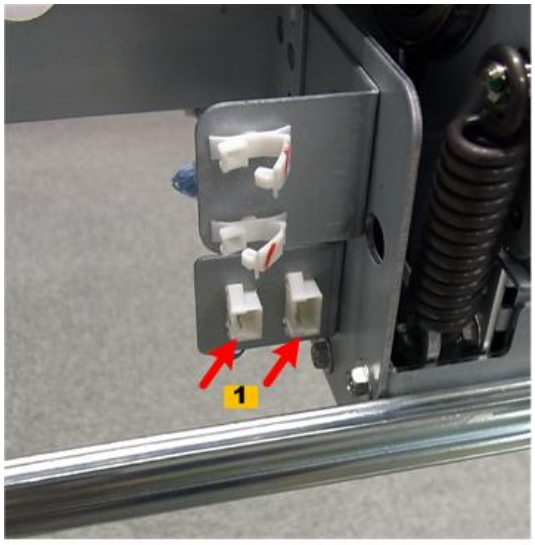
d223c4007

1. Reset the connection of the harness at CN252, cycle the machine off/on, and then see if the SC error recurs.
2. If the SC error does not recur > End.
3. If the SC error recurs, go to ⑤.

⑤ *IOB*

1. Replace IOB, cycle the machine off/on, and then see if the SC code recurs.
2. If the SC error does not recur > End.
3. If the SC error recurs, go to ⑥.

⑥ *Web motor harnesses*



d223c4010

1. Check the harnesses between the web motor and the paper exit drawer connectors.
2. Check the harness insulation for signs of damage.
3. Before you replace a harness, confirm that the replacement is the correct type for the machine. The harnesses are slightly different for the D223, D224, D225.
4. Cycle the machine off/on, and then see if the SC code recurs.
5. If the SC error does not recur > End.
6. If the SC error recurs, go to ⑦.

⑦ *Paper exit unit harnesses*

1. Check the harnesses between the paper exit unit drawer connector and the IOB for disconnections or damaged insulation
2. Replace damaged harnesses.
3. Before you replace a harness, confirm that the replacement is the correct type for the machine. The harnesses are slightly different for the D223, D224, D225.
4. Cycle the machine off/on, and then see if the SC error recurs.
5. If the SC error does not recur > End.

7.12.3 SC542 FUSING WARM-UP ERROR 1: CENTER THERMISTOR

Please follow the steps in order as presented below.

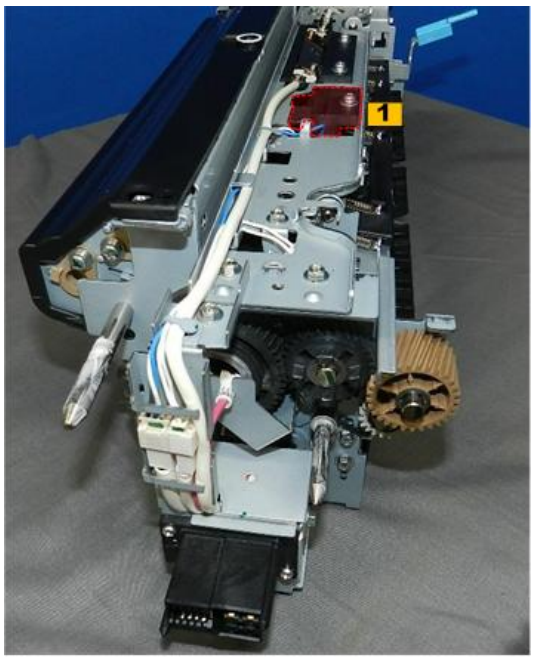
① *Error duplication*

For your safety and to prevent damage to the machine, once the SC occurs start to troubleshoot the problem immediately with the power supply check below (do not attempt to duplicate the error).
Go to ②.

② *Power supply voltage level*

1. Do SP1913-002 and check the displayed value to determine if it deviates from the voltage rated for the machine.
2. If the voltage is lower than rated voltage, investigate the power supply at the client work site.
3. If the power supply is not higher than the rated voltage > Got to ③

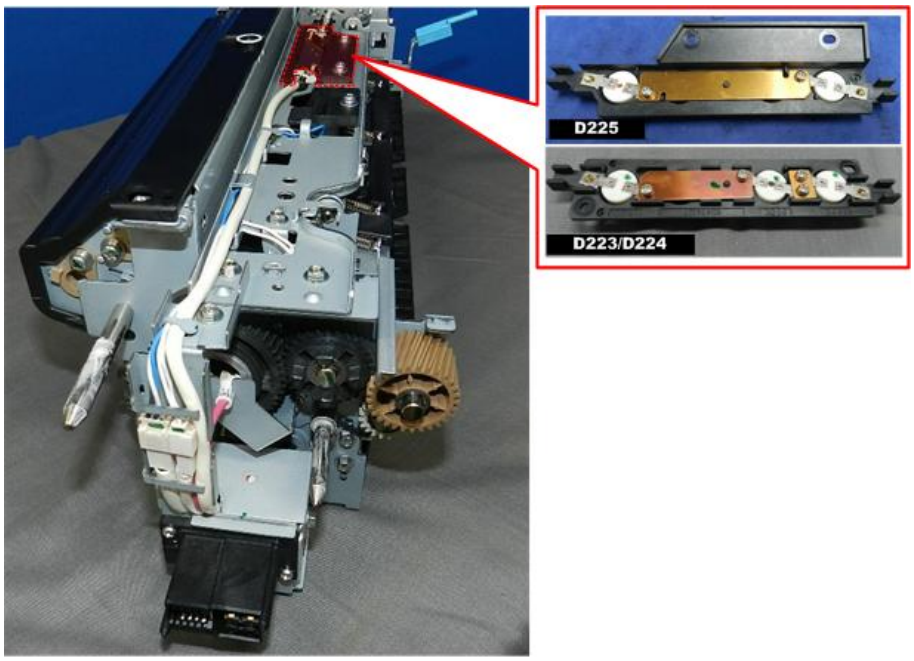
③ *Center NC sensor position*



d223c4001

1. Make sure that the center NC sensor [1] is installed correctly, and that the area around the sensor is free of paper dust and other material.
2. If the NC sensor is not aligned correctly, re-install it at the correct position.
3. Clean the sensor and the area around the sensor.
4. Next, cycle the machine off/on to see if the SC error recurs.
5. If the SC error does not recur > End.
6. If the SC error recurs, go to ④.

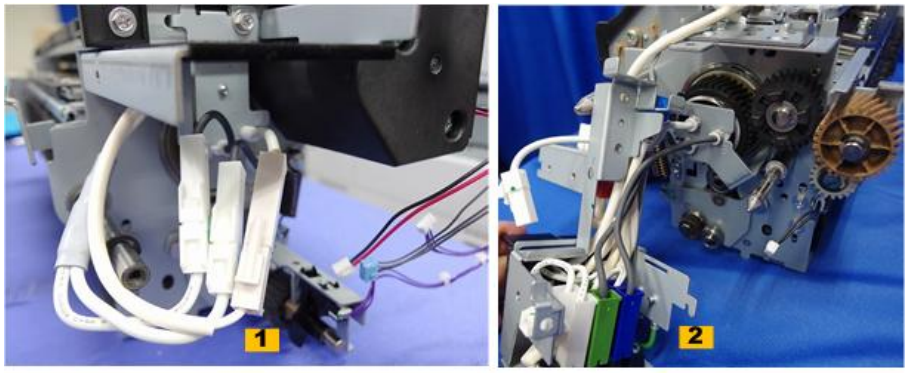
④ *Thermostats*



d223c4002

1. Check the condition of the thermostats.
2. Surface of a thermostat is blackened and bowed outward, or has pushed in? These are signs that the thermostat is blown and cannot conduct current.
3. Replace the thermostat.
4. Next, cycle the machine off/on to see if the SC error recurs.
5. If the SC error does not recur > End.
6. If the SC error recurs, go to ⑤.

⑤ *Fusing lamp connections*

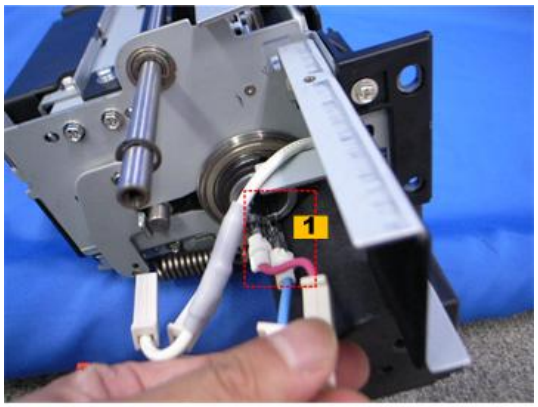


d223c4003

1. Inspect the fusing lamp connections at the front [1] and rear [2] of the fusing unit and make sure that they are set correctly.
2. Harness disconnected, or only half connected? Re-connect the loose harness.
3. Next, cycle the machine off/on to see if the SC error recurs.
4. If the SC error does not recur > End.

5. If the SC error recurs, go to ⑥.

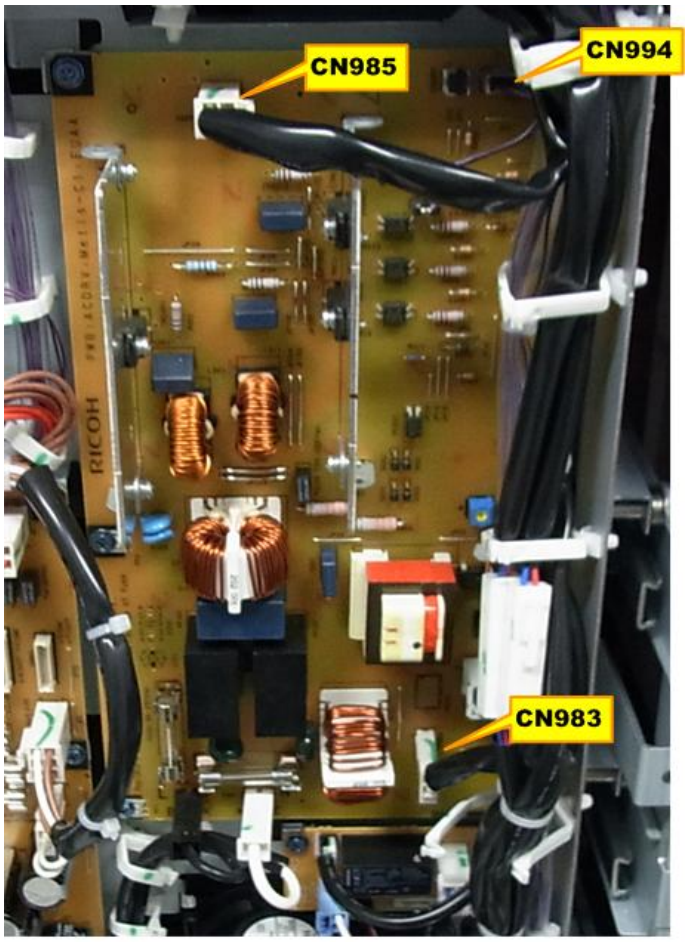
⑥ *Fusing lamp filaments*



d223c4004

1. Remove the lamps [1] and inspect each fusing lamp for broken filaments inside the lamp.
2. Any filaments broken? Replace the fusing lamp.
3. Next, cycle the machine off/on to see if the SC error recurs.
4. If the SC error does not recur > End.
5. If the SC error recurs, go to ⑦.

⑦ *AC control board connections*



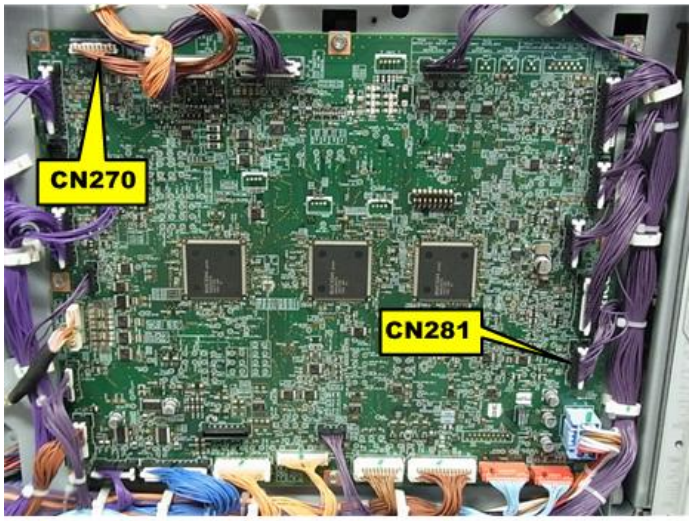
d223c4005

1. Reset the connections of the harnesses at CN983, CN985, CN994.
2. Cycle the machine off/on to see if the SC error recurs.
3. If the SC error does not recur > End.
4. If the SC error recurs, go to ⑧.

⑧ *AC control board*

1. Replace AC control board.
2. Cycle the machine off/on, and then see if the SC code recurs.
3. If the SC error does not recur > End.
4. If the SC error recurs, go to ⑨.

⑨ *IOB connections*



d223c4006

1. Reset the connections of the harnesses at CN270, CN281.
2. Cycle the machine off/on, and then see if the SC error recurs.
3. If the SC error does not recur > End.
4. If the SC error recurs, go to ⑩.

⑩ *IOB*

1. Replace IOB, cycle the machine off/on, and then see if the SC code recurs.
2. If the SC error does not recur > End.
3. If the SC error recurs, go to ⑪.

⑪ *Harnesses*

Harnesses in poor condition (broken or insulation damaged and causing short circuits).

1. Check the harnesses between the fusing unit and AC control board and IOB, and replace them if you see any damage.
2. Make sure that the harnesses are correct for the machine. For example, the harnesses for the D223 are not the same as those for the D225.
3. After replacing the harnesses, cycle the machine off to see if the error recurs.
4. If the SC error does not recur > End.

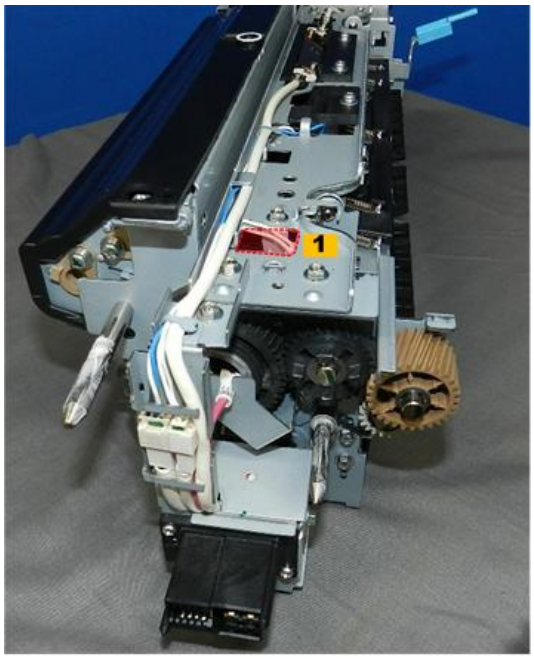
7.12.4 SC543 FUSING LAMP OVERHEAT ERROR 1 (SOFTWARE)

Please follow the steps in order as presented below.

① *Error duplication*

For your safety and to prevent damage to the machine, once the SC occurs start to troubleshoot the problem immediately (do not attempt to duplicate the error).
Go to ②.

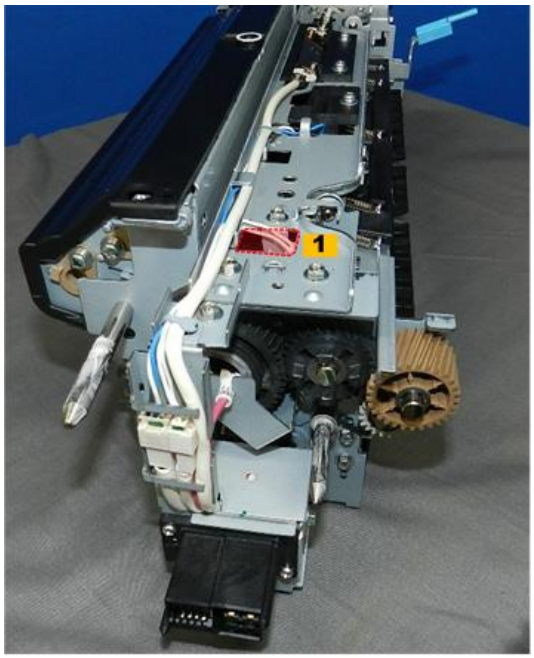
② *End thermistor alignment*



d223c4011

1. Check the area between the end thermistor [1] and the hot roller for paper dust or other dirt.
2. Area around the thermistor dirty? > Clean the thermistor and surrounding area.
3. Make sure that the thermistor is securely fastened and not floating free.
4. Cycle the machine off/on to see if the SC error recurs.
5. If the SC error does not recur > End.
6. If the SC error recurs, go to ③.

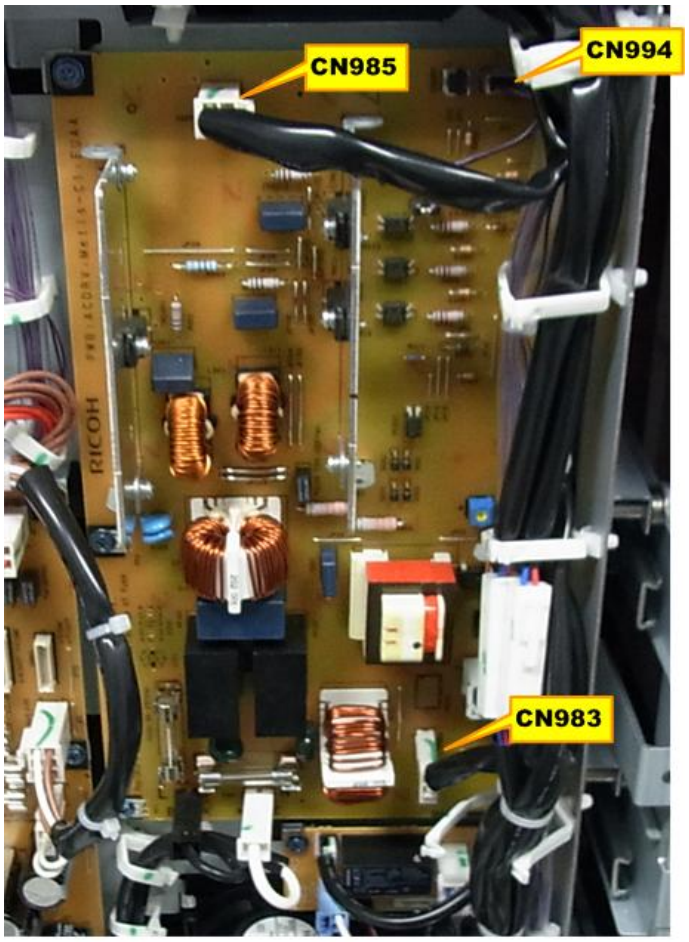
③ *End thermistor damage*



d223c4011

1. Check the end thermistor [1] for bending, warping, etc.
2. If the thermistor is bent out of alignment and not in contact with the roller, replace the thermistor.
3. Cycle the machine off/on, and then see if the SC error recurs.
4. If the SC error does not recur > End.
5. If the SC error recurs, go to ④.

④ *AC control board connections*



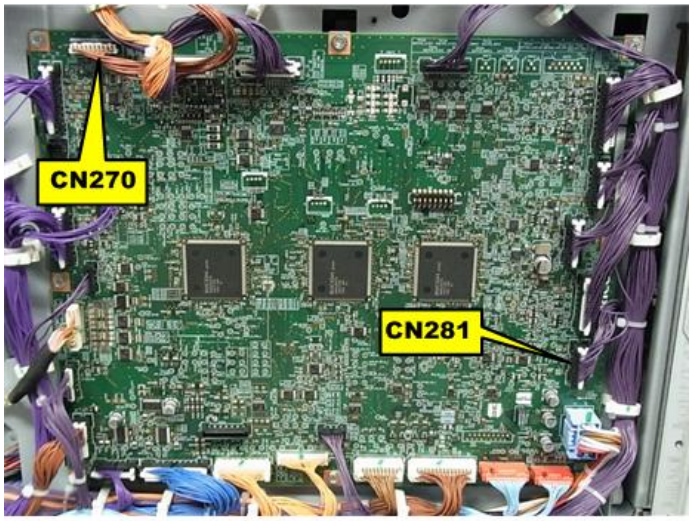
d223c4005

1. Reset the connections of the harnesses at CN983, CN985, CN994
2. Cycle the machine off/on to see if the SC error recurs.
3. If the SC error does not recur > End.
4. If the SC error recurs, go to ⑤.

⑤ *AC control board*

1. Replace AC control board.
2. Cycle the machine off/on, and then see if the SC code recurs.
3. If the SC error does not recur > End.
4. If the SC error recurs, go to ⑥.

⑥ *IOB connection*



d223c4006

1. Reset the connections of the harnesses at CN270, CN281.
2. Cycle the machine off/on, and then see if the SC error recurs.
3. If the SC error does not recur > End.
4. If the SC error recurs, go to ⑦.

⑦ *IOB*

1. Replace IOB, cycle the machine off/on, and then see if the SC code recurs.
2. If the SC error does not recur > End.
3. If the SC error recurs, go to ⑧.

⑧ *Harnesses*

1. Check the condition of the harnesses between the fusing unit and AC control board and IOB (broken wires, worn insulation can cause short circuits)
2. Replace the harnesses if you see any damage.
3. Make sure that the replacement harnesses are correct for the machine. For example, the harnesses for the D223 are not the same as those for the D225.
4. After replacing the harnesses, cycle the machine off to see if the error recurs.
5. If the SC error does not recur > End.

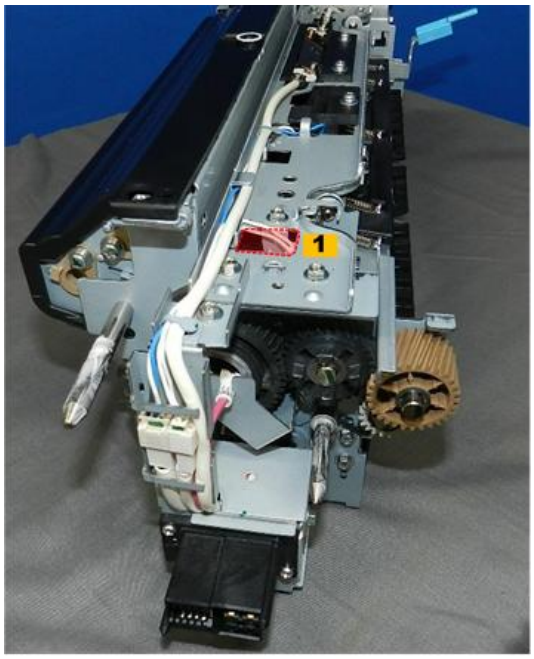
7.12.5 SC544 FUSING LAMP OVERHEAT ERROR 1: HARDWARE

Please follow the steps in order as presented below.

① *Error duplication*

For your safety and to prevent damage to the machine, once the SC occurs start to troubleshoot the problem immediately (do not attempt to duplicate the error).
Go to ②.

② *End thermistor alignment*



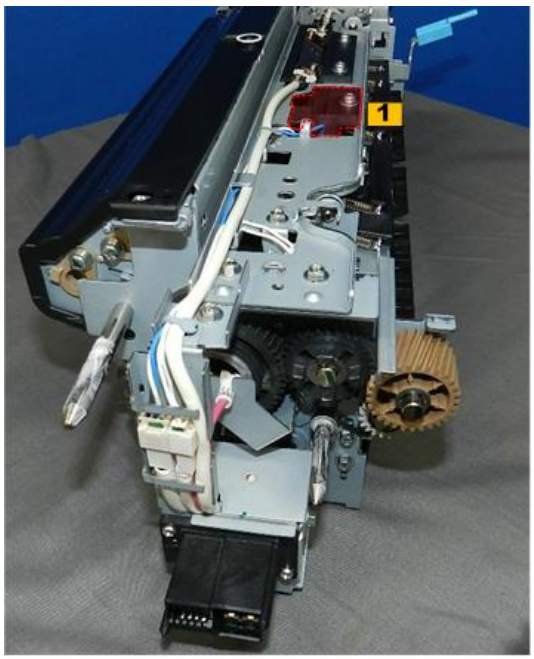
d223c4011

1. Check the area between the end thermistor [1] and the fusing roller for paper dust or other dirt.
2. Area around the thermistor dirty? > Clean the thermistor and surrounding area.
3. Make sure that the thermistor is securely fastened and not floating free.
4. Next, cycle the machine off/on to see if the SC error recurs.
5. If the SC error does not recur > End.
6. If the SC error recurs, go to ③.

③ *End thermistor damage check*

1. Check the end thermistor for bending, warping, etc.
2. If the thermistor is bent out of alignment and not in contact with the roller, replace the thermistor.
3. Cycle the machine off/on, and then see if the SC error recurs.
4. If the SC error does not recur > End.
5. If the SC error recurs, go to ④.

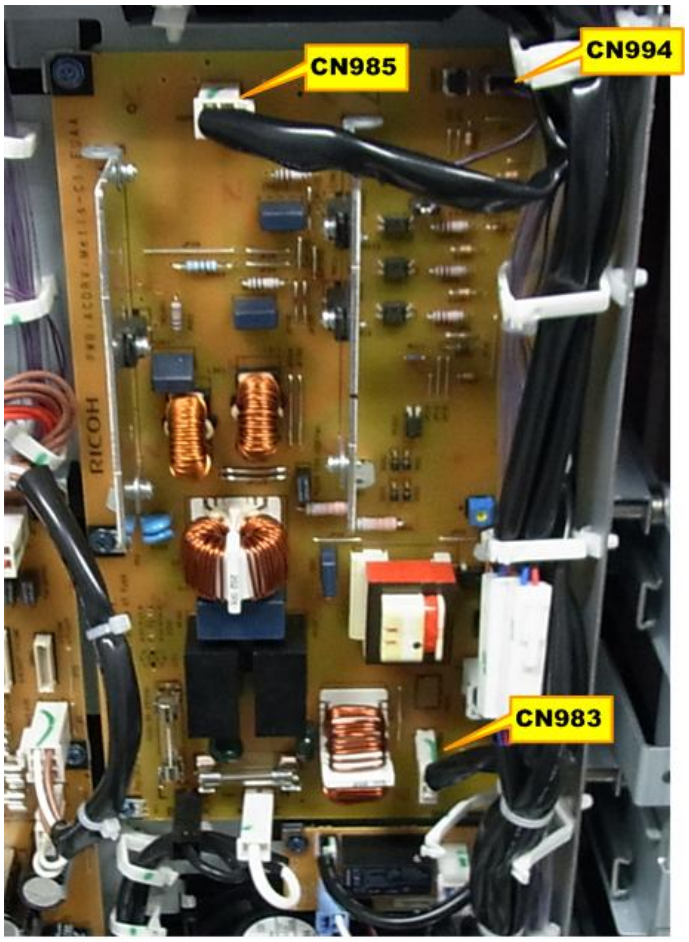
④ *Center NC sensor position*



d223c4001

1. In the center of the fusing unit, check the NC sensor [1] for misalignment.
2. If the NC sensor is not aligned correctly, re-install it at the correct position.
3. Cycle the machine off/on to see if the SC error recurs.
4. If the SC error does not recur > End.
5. If the SC error recurs, go to ⑤.

⑤ *AC control board connections*



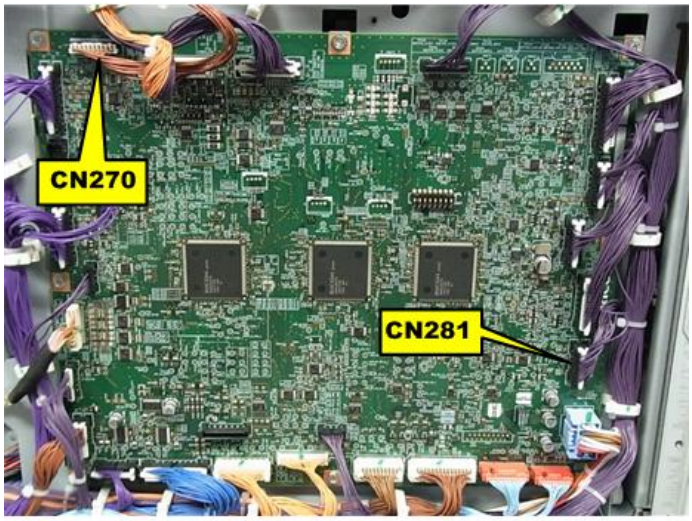
d223c4005

1. Reset the connections of the harnesses at CN983, CN985, CN994.
2. Cycle the machine off/on to see if the SC error recurs.
3. If the SC error does not recur > End.
4. If the SC error recurs, go to ⑥.

⑥ *AC control board*

1. Replace AC control board, cycle the machine off/on, and then see if the SC code recurs.
2. If the SC error does not recur > End.
3. If the SC error recurs, go to ⑦.
4. IOB check

⑦ *IOB Connections*



d223c4006

1. Reset the connections of the harnesses at CN270, CN281.
2. Cycle the machine off/on, and then see if the SC error recurs.
3. If the SC error does not recur > End.
4. If the SC error recurs, go to ⑧.

⑧ *IOB*

1. Replace IOB.
2. Cycle the machine off/on, and then see if the SC code recurs.
3. If the SC error does not recur > End.
4. If the SC error recurs, go to ⑨.

⑨ *Harnesses*

1. Check the condition of the harnesses between the fusing unit and AC control board and IOB (broken wires, worn insulation can cause short circuits)
2. Replace the harnesses if you see any damage.
3. Make sure that the replacement harnesses are correct for the machine. For example, the harnesses for the D223 are not the same as those for the D225.
4. After replacing the harnesses, cycle the machine off to see if the error recurs.
5. If the SC error does not recur > End.

7.12.6 SC545 FUSING LAMP OVERHEAT ERROR 2: CENTER LAMP

Please follow the steps in order as presented below.

① *Duplication of the error*

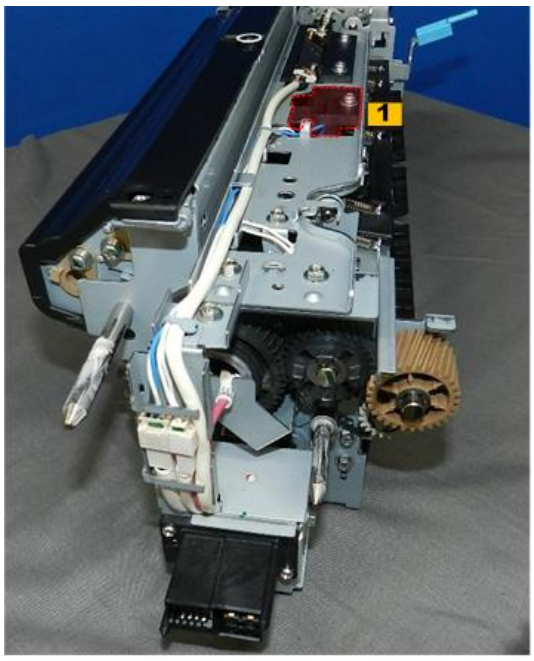
For your safety and to prevent damage to the machine, once the SC occurs start to troubleshoot the problem immediately with the power supply check below (do not attempt to duplicate the error).

Go top ②.

② *Power supply voltage level*

1. Do SP1913-002 and check the displayed value to determine if it deviates from the voltage rated for the machine.
2. If the voltage is lower than rated voltage, investigate the power supply at the client work site.
3. If the power supply is not higher than the rated voltage > Got to ③

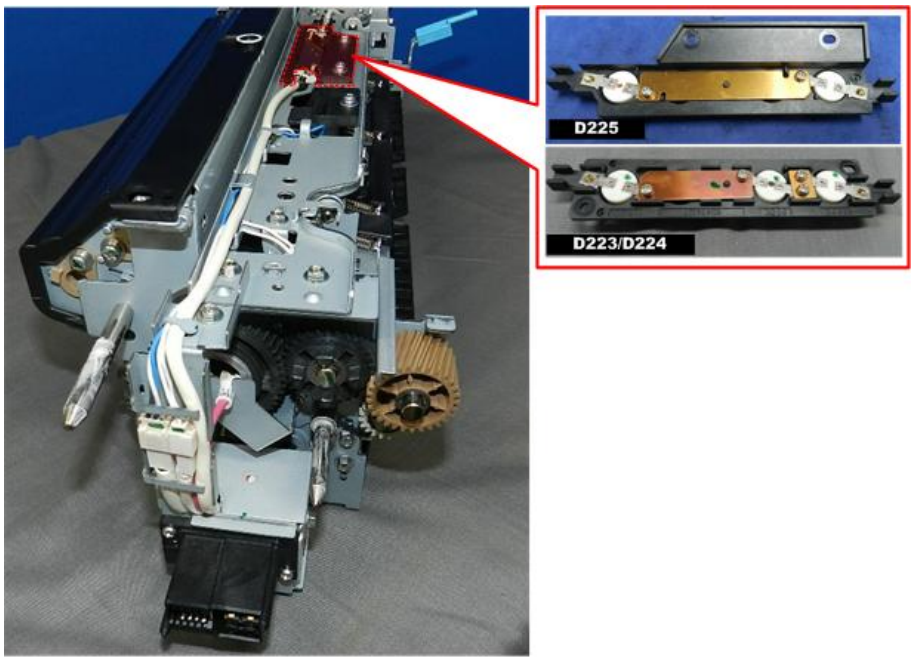
③ *Center NC sensor position*



d223c4001

1. Make sure that the center NC sensor [1] is installed correctly, and that the area around the sensor is free of paper dust and other material.
2. If the NC sensor is not aligned correctly, re-install it at the correct position.
3. Clean the sensor and the area around the sensor.
4. Next, cycle the machine off/on to see if the SC error recurs.
5. If the SC error does not recur > End.
6. If the SC error recurs, go to ④.

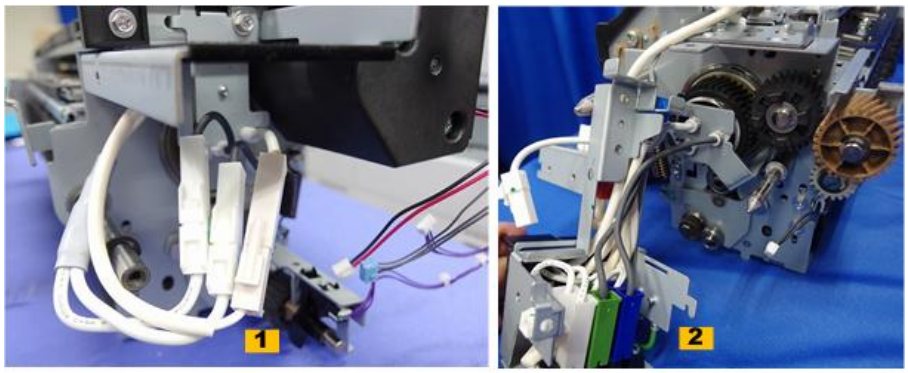
④ *Thermostats*



d223c4002

1. Check the condition of the thermostats.
2. Surface of a thermostat is blackened and bowed outward, or has pushed in? These are signs that the thermostat is blown and cannot conduct current.
3. Replace the thermostat.
4. Next, cycle the machine off/on to see if the SC error recurs.
5. If the SC error does not recur > End.
6. If the SC error recurs, go to ⑤.

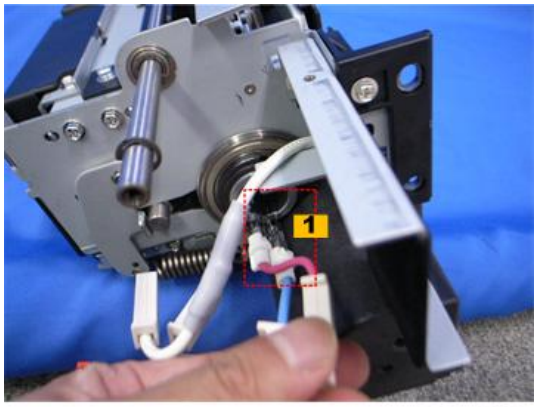
⑤ *Fusing lamp connections*



d223c4003

1. Inspect the fusing lamp connections at the front [1] and rear [2] of the fusing unit and make sure that they are set correctly.
2. Harness disconnected, or only half connected? > Re-connect the loose harness.
3. Cycle the machine off/on to see if the SC error recurs.
4. If the SC error does not recur > End.
5. If the SC error recurs, go to ⑥.

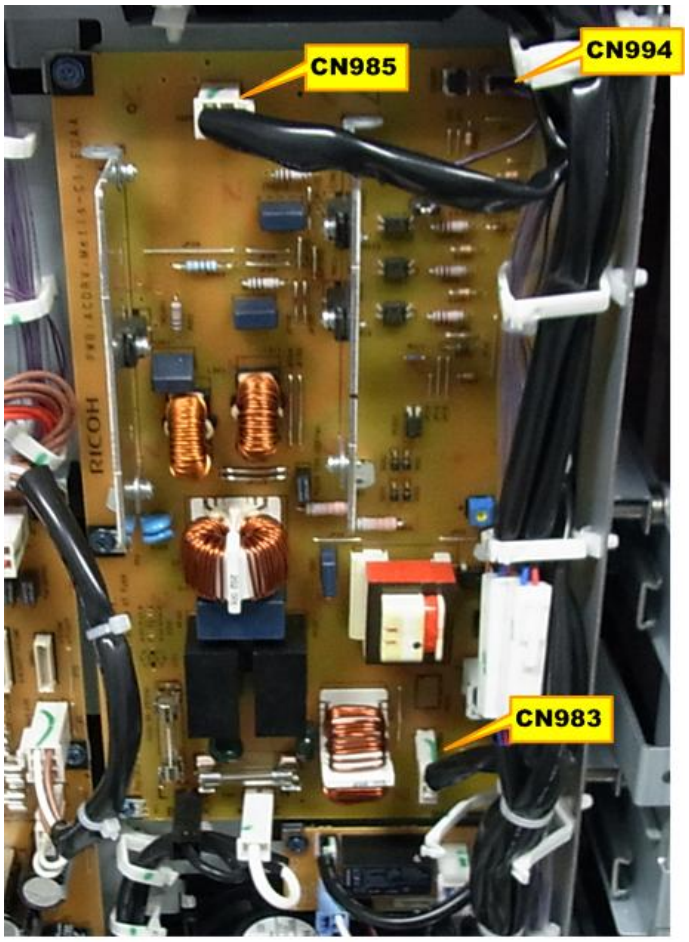
⑥ *Fusing lamp filaments*



d223c4004

1. Inspect each fusing lamp [1] for broken filaments inside the lamp.
2. Any filaments broken? Replace the fusing lamp.
3. Cycle the machine off/on to see if the SC error recurs.
4. If the SC error does not recur > End.
5. If the SC error recurs, go to ⑦.

⑦ *AC control board connections*



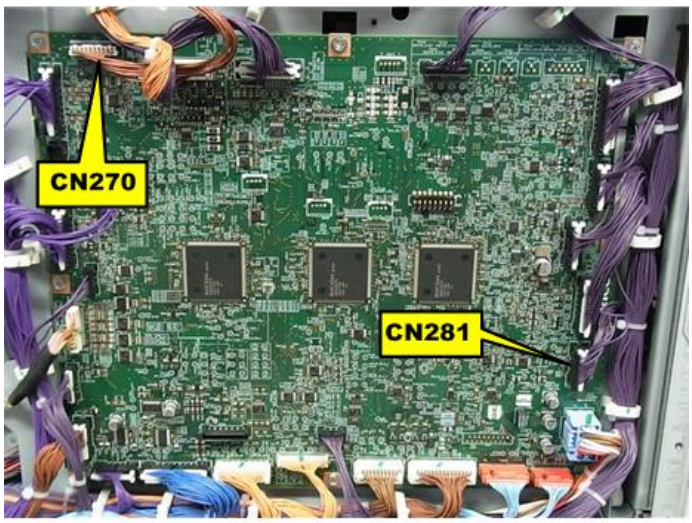
d223c4005

1. Reset the connections of the harnesses at CN983, CN985, CN994.
2. Cycle the machine off/on to see if the SC error recurs.
3. If the SC error does not recur > End.
4. If the SC error recurs, go to ⑧.

⑧ *AC control board*

1. Replace AC control board.
2. Cycle the machine off/on, and then see if the SC code recurs.
3. If the SC error does not recur > End.
4. If the SC error recurs, go to ⑨.

⑨ *IOB connections*



d223c4006

1. Reset the connections of the harnesses at CN270, CN281.
2. Cycle the machine off/on, and then see if the SC error recurs.
3. If the SC error does not recur > End.
4. If the SC error recurs, go to ⑩.

⑩ *IOB*

1. Replace IOB, cycle the machine off/on, and then see if the SC code recurs.
2. If the SC error does not recur > End.
3. If the SC error recurs, go to ⑪.

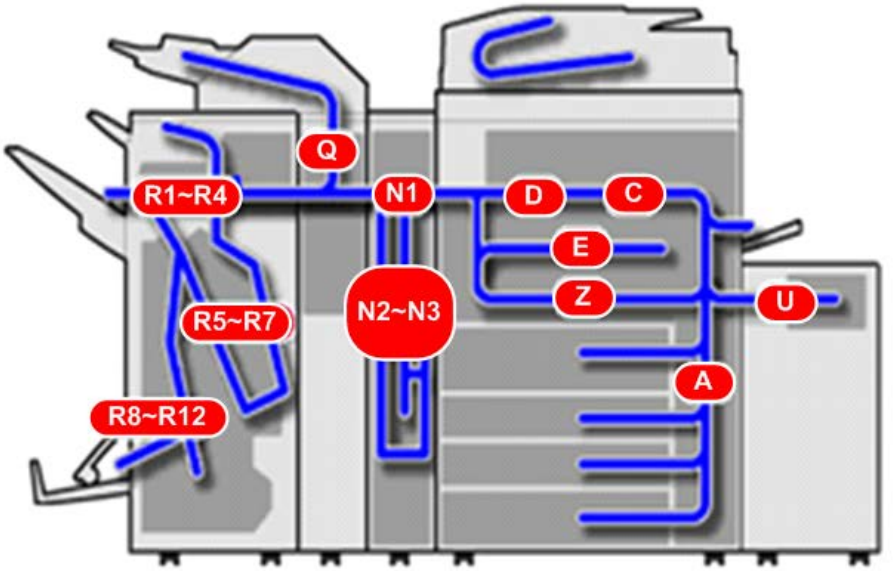
⑪ *Harnesses*

1. Check the condition of the harnesses between the fusing unit and AC control board and IOB (broken wires, worn insulation can cause short circuits)
2. Replace the harnesses if you see any damage.
3. Make sure that the replacement harnesses are correct for the machine. For example, the harnesses for the D223 are not the same as those for the D225.
4. After replacing the harnesses, cycle the machine off to see if the error recurs.
5. If the SC error does not recur > End.

7.13 JAM DETECTION

7.13.1 PAPER JAM CODE DISPLAY

A jam code letter and number indicates the location of the jam as shown below.



d223c6200

7.13.2 JAM CODES AND DISPLAY CODES

Here are lists of SC codes that are printed in the SMC report; they do not appear on the operation panel display.

Main Unit and LCIT: Paper Jam Errors

No.	Location	Position Code
	Paper Late Jams	
003	1st Paper Feed SN: Late	A1
004	2nd Paper Feed SN: Late	A1
005	3rd Paper Feed SN: Late	A1
006	4th Paper Feed SN: Late (Japan Only)	A1
007	LCT Feed SN: Late	U
008	1st Vertical Transport SN: Late	A1
009	2nd Vertical Transport SN: Late	A1
010	3rd Vertical Transport SN: Late	A1
011	4th Vertical Transport SN: Late	B
012	Relay SN: Late	B
013	Registration SN: Late	D
014	Fusing Exit SN: Late	D
015	Exit Unit Entrance SN: Late	E
016	Exit Unit Exit SN: Late	E
019	Duplex Entrance SN: Late	E
020	Duplex Transport SN 1: Late	E
021	Duplex Transport SN 2: Late	Z
022	Duplex Transport SN 3: Late	Z
023	Duplex Exit SN: Late	E

No.	Location	Position Code
024	LCT Relay SN: Late	B/U
034	By-pass Paper Feed SN: Late	A2
045	Transport SN: Late/Lag	R
046	Shift Tray Lift Motor	R
047	Shift Tray Motor	R
	Paper Lag Jams	
053	1st Paper Feed SN: Lag	A1
054	2nd Paper Feed SN: Lag	A1
055	3rd Paper Feed SN: Lag	A1
056	4th Paper Feed SN: Lag (Japan Only)	A1
057	LCT Feed SN: Lag	U
058	1st Vertical Transport SN: Lag	A1
059	2nd Vertical Transport SN: Lag	A1
060	3rd Vertical Transport SN: Lag	A1
061	4th Vertical Transport SN: Lag (Japan Only)	A1
062	Relay SN: Lag	B
063	Registration SN: Lag	B/C
066	Paper Exit SN: Lag	E
069	Duplex Entrance SN: Lag	E
071	Duplex Transport SN 2: Lag	Z
072	Duplex Transport SN 3: Lag	Z
074	LCT Relay SN: Lag	B/U

ADF: Paper Jam Errors

No.	Jam Location	Position Code
013	Separation SN: Late	P1
063	Separation SN: Lag	P1
014	Interval SN: Late	P1
064	Interval SN: Lag	P1
015	Scan Entrance SN: Late	P1
065	Scan Entrance SN: Lag	P1
016	Registration SN: Late	P2
066	Registration SN: Lag	P2
017	Exit SN: Late	P2
067	Exit SN: Lag	P2
239	Original Remove	P1
001	Initial Feed Jam	P1
001	Original Tray Overload	P1

Finisher SR4120 Paper Jam Errors

No.	Location	Code
101	Entrance SN: Late	R1 to 5
102	Entrance SN: Lag	R1 to 5
103	Horizontal Transport SN: Late	R1 to 5
104	Horizontal Transport SN: Lag	R1 to 5
105	Switchback Transport SN: Late	R1 to 5
106	Switchback Transport SN: Lag	R1 to 5
107	Proof Tray Exit SN: Late	R1 to 5
108	Proof Tray Exit SN: Lag	R1 to 5
109	Shift Tray Exit SN: Late	R1 to 5
110	Shift Tray Exit SN: Lag	R1 to 5
111	Entrance Motor Jam	R1 to 5
112	Horizontal Transport Motor Jam	R1 to 5
113	Pre-stack Transport Motor Jam	R1 to 5
114	Relay Transport Motor Jam	R1 to 5
115	Exit Motor Jam	R1 to 5
116	Trailing Edge Press Motor Jam	R1 to 5
117	Paper Exit Guide Plate Jam	R1 to 5
118	Punch Motor Jam	R1 to 5
119	Punch Movement Motor Jam	R1 to 5
120	Paper Position Movement Motor Jam	R1 to 5
121	Lower Junction Gate Motor Jam	R1 to 5
122	Jogger Motor Jam	R1 to 5
123	Positioning Roller Drive Motor Jam	R1 to 5

No.	Location	Code
124	Stack Feed-out Motor Jam	R1 to 5
125	Booklet Stapler Movement Motor Jam	R1 to 5
126	Booklet Stapler Motor Jam	R1 to 5
130	Tray Lift Motor Jam	R1 to 5
131	Shift Motor Jam	R1 to 5
132	Shift Jogger Front Motor	R1 to 5
133	Shift Jogger Rear Motor	R1 to 5
134	Shift Tray Jogger Retraction Motor Jam	R1 to 5
135	Drag Roller Motor Jam	R1 to 5
136	Leading Edge Guide Motor Jam	R1 to 5
140	Positioning Roller Driver Motor Jam	R1 to 5
141	Paper Guide Motor Jam	R1 to 5
149	Main Machine Command Error Jam	R1 to 5

Finisher SR4130 Paper Jam Errors

No.	Location	Code
151	Entrance SN: Late	R1 to 5
152	Entrance SN: Lag	R1 to 5
153	Horizontal Transport SN: Late	R1 to 5
154	Horizontal Transport SN: Lag	R1 to 5
155	Switchback Transport SN: Late	R1 to 5
156	Switchback Transport SN: Lag	R1 to 5
157	Proof Tray Exit SN: Late	R1 to 5
158	Proof Tray Exit SN: Lag	R1 to 5
159	Shift Tray Exit SN: Late	R1 to 5
160	Shift Tray Exit SN: Lag	R1 to 5
161	Booklet Exit SN: Late	R6 to 11
162	Booklet Exit SN: Lag	R6 to 11
163	Entrance Motor Jam	R1 to 5
164	Horizontal Transport Motor Jam	R1 to 5
165	Pre-stack Transport Motor Jam	R1 to 5
166	Relay Transport Motor Jam	R1 to 5
167	Exit Motor Jam	R1 to 5
168	Trailing Edge Press Motor Jam	R1 to 5
169	Paper Exit Guide Plate Jam	R1 to 5
170	Punch Motor Jam	R1 to 5
171	Punch Movement Motor Jam	R1 to 5
172	Paper Position Movement Motor Jam	R1 to 5
173	Lower Junction Gate Motor Jam	R1 to 5

No.	Location	Code
174	Jogger Motor Jam	R1 to 5
175	Positioning Roller Drive Motor Jam	R1 to 5
176	Stack Feed-out Motor Jam	R1 to 5
177	Booklet Stapler Movement Motor Jam	R1 to 5
178	Booklet Stapler Motor Jam	R1 to 5
179	Booklet Jogger Motor Jam	R6 to 11
180	Booklet Jogger Pawl Movement Motor Jam	R6 to 11
181	Booklet Bottom Fence Motor Jam	R6 to 11
182	Booklet Stapler Motor Jam	R6 to 11
183	Dynamic Roller Motor Jam	R6 to 11
184	Fold Transport Motor Jam	R6 to 11
185	Square Fold Motor Jam	R6 to 11
186	Tray Lift Motor Jam	R1 to 5
187	Shift Motor Jam	R1 to 5
188	Front Shift Jogger Motor Jam	R1 to 5
189	Rear Shift Jogger Motor Jam	R1 to 5
190	Shift Jogger Retraction Motor Jam	R1 to 5
191	Drag Roller Motor Jam	R1 to 5
192	Leading Edge Guide Motor Jam	R1 to 5
196	Position Roller Motor Jam	R1 to 5
197	Paper Guide Motor Jam	R1 to 5
199	Main Machine Command Error Jam	R1 to 5

Finisher SR4080 Paper Jam Errors

No.	Location	Code
201	Entrance Jam	R1 to 3
202	Proof Tray Exit Jam	R1 to 3
203	Shift Tray Exit Jam	R1 to 3
204	Stapled Stack Exit Jam	R4 to 7
205	Pre-Stack Unit Jam	R4 to 7
206	Stack Output Jam	R4 to 7
208	Transport Motor Jam	R1 to 3
209	Tray Lift Motor Jam	R1 to 3
210	Positioning Roller Motor Jam	R4 to 7
211	Jogger Motor Jam	R4 to 7
212	Press Plate Center Motor Jam	R4 to 7
213	Press Plate Front Motor Jam	R4 to 7
214	Press Plate Rear Motor Jam	R4 to 7
215	Shift Motor Jam	R1 to 3
216	Drag Drive Motor Jam	R1 to 3
217	Shift Jogger Motor Jam	R1 to 3
218	Shift Jogger Retraction Motor Jam	R1 to 3
219	Exit Motor Jam	R4 to 7
220	Stapler Motor Jam	Staples
221	Stapler Movement Motor Jam	R4 to 7
222	Stapler Lift Motor Jam	R4 to 7
223	Output Motor Jam	R4 to 7
224	Punch Motor Jam	R1 to 3
225	Leading Edge Stop Motor Jam	R4 to 7
226	Bottom Fence Motor Jam	R4 to 7

No.	Location	Code
247	Main Machine Command Error Jam	R1 to 3,R4 to 7

Mail Box CS4010 Paper Jam Errors

No.	Location	Code
251	Vertical Transport SN 1: Late	W
252	Vertical Transport SN 1: Lag	W
253	Vertical Transport SN 2: Late	W
254	Vertical Transport SN 2: Lag	W
255	Vertical Transport SN 3: Late	W
256	Vertical Transport SN 3: Lag	W
257	Vertical Transport SN 4: Late	W
258	Vertical Transport SN 4: Lag	W
259	Vertical Transport SN 5: Late	W
260	Vertical Transport SN 5: Lag	W
299	Main Machine Command Error Jam	W

Cover Interposer Tray CI4030/CI4040 Paper Jam Errors

No.	Location	Position Code
301	Paper Feed Sensor	Q
302	Vertical Transport Path	Q
303	Bottom Plate Position Sensor	Q

Multi Folding Unit FD4000 Paper Jam Errors

No.	Location	Position Code
401	Entrance SN: Late	N1 to N5
402	Entrance SN: Lag	N1 to N5
403	Top Tray Exit SN: Late	N1 to N5
404	Top Tray Exit SN: Lag	N1 to N5
405	Horizontal Path Exit SN: Late	N1 to N5
406	Horizontal Path Exit SN: Lag	N1 to N5
407	1st Stopper HP SN: Late	N6 to N22
408	1st Stopper HP SN: Lag	N6 to N22
409	2nd Stopper HP SN: Late	N6 to N22
410	2nd Stopper HP SN: Lag	N6 to N22
411	3rd Stopper HP SN: Late	N6 to N22
412	3rd Stopper HP SN: Lag	N6 to N22
413	Skew Correction Jam	N6 to N22
414	Folded Paper Path Jam	N1 to N5
417	Entrance JG Motor Jam	N1 to N5
418	1st Stopper Motor Jam	N6 to N22
419	2nd Stopper Motor Jam	N6 to N22
420	3rd Stopper Motor Jam	N6 to N22
421	Dynamic Roller Trans. Motor Jam	N6 to N22
422	Registration Roller Release Motor Jam	N6 to N22
423	Fold Plate Motor Jam	N6 to N22
424	Jogger Fence Motor Jam	N6 to N22
426	Direct-Send JG Motor Jam	N6 to N22

No.	Location	Position Code
427	FM6 Pawl Motor Jam	N6 to N22
449	Main Machine Set. Incorrect	N1 to N5, N6 to N22

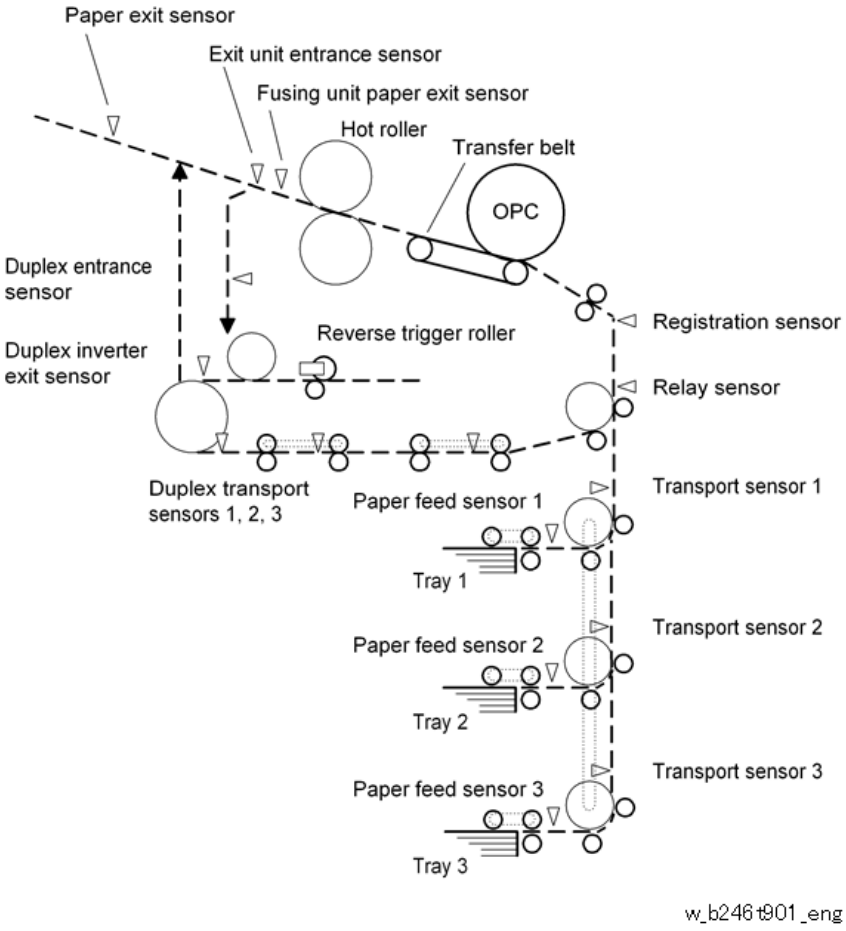
7.13.3 PAPER SIZE CODES

The table below lists the paper size codes. Measurements in the right columns (Main Scan/Sub Scan Lengths) are 0.1 mm

Size Code	Paper Size	Orientation	Main Scan	Sub Scan
005(05H)	A4	LEF	2970	2100
006(06H)	A5	LEF	2100	1480
014(0EH)	B5	LEF	2570	1820
038(26H)	$8^1/_2$×11(LT)	LEF	2794	2159
044(2CH)	$5^1/_2$×$8^1/_2$(HLT)	LEF	2159	1397
132(84H)	A3	SEF	2970	4200
133(85H)	A4	SEF	2100	2970
134(86H)	A5	SEF	1480	2100
141(8DH)	B4	SEF	2570	3640
142(8EH)	B5	SEF	1820	2570
160(A0H)	11×17(DLT)	SEF	2794	4318
164(A4H)	$8^1/_2$×14(LG)	SEF	2159	3556
166(A6H)	$8^1/_2$×11(LT)	SEF	2159	2794
172(ACH)	$5^1/_2$×$8^1/_2$(HLT)	SEF	1397	2159
072(48H)	8.5"x13.4"(Oficio)	LEF	3404	2159
200(C8H)	8.5"x13.4"(Oficio)	SEF	2159	3404
255(FFH)	Other	-	-	-

7.13.4 MAIN MACHINE SENSOR LOCATIONS

The illustration below shows the locations of the jam sensors in the main machine.



7.13.5 FREQUENT PAPER JAMS

If there are frequent paper jams, check SP7504 in “Service Tables”. If these locations have frequent jams, do the procedures described below.

Symptom 1: Jams when paper is fed from a by-pass tray that is not used frequently

If the customer does not use the by-pass tray frequently, the rollers can become worn.

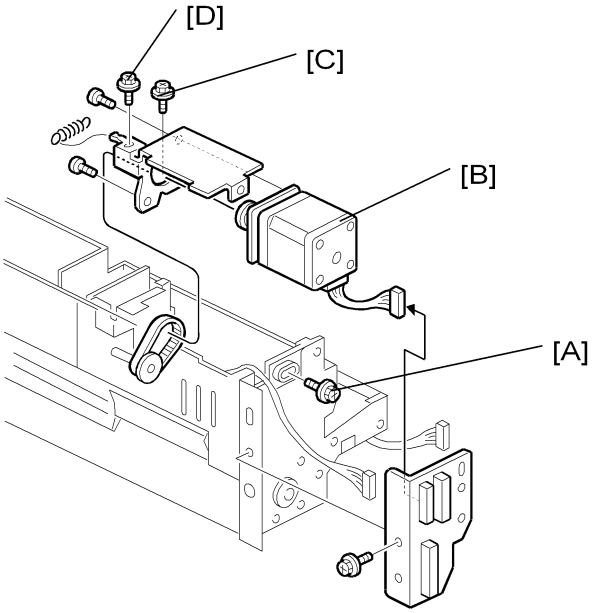
1. Visually check the by-pass tray pick-up, feed, and separation rollers.
2. If these rollers are paler than the rollers in paper trays that are more frequently used, replace the rollers in the by-pass tray.

Note

- For more details, see Replacement and Adjustment - By-Pass Tray Rollers.

Symptom 2: Jams with noise from the paper feed unit

1. Remove the paper feed unit.
2. Loosen screw [A].
3. Push the motor [B] toward the tray side, then tighten the screw [A].
4. Loosen screws [C] and [D], let the spring move the unit to the correct position, then tighten the screws.



B246T905

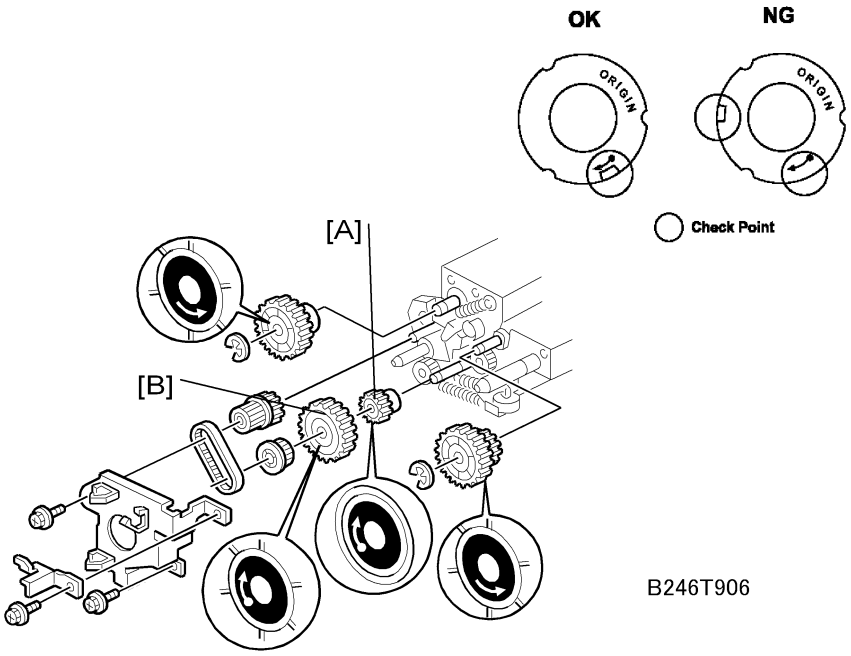
Symptom 3: Other

If none of the two symptoms 1 or 2 applies, do this procedure.

1. Use SP7504 to check the jam counts and find which SPs have high counts.
2. From the table and illustration below, find which gears must be replaced.
   Example: For tray 1, if SP7504-012 is high, replace gear A, or if SP7504-008 is high, replace gear B.

Tray	SP7504 12	SP7504 8	SP7504 9	SP7504 10	SP7504 11
Tray 1	Gear [A]	Gear [B]			
Tray 2		Gear [A]	Gear [B]		
Tray 3			Gear [A]	Gear [B]	
Tray 4				Gear [A]	Gear [B]

1. Clean the shafts and replace the necessary gears.
2. Replace a gear if its cutout and arrow are not in the same position.
3. When you replace Gear [A] or Gear [B], be sure to put the metal face on the outer side, and the arrow must be in view.



4. If a replacement gear is not available, do this as a temporary procedure:
   - Remove the paper feed unit.
   - Remove the gear.
   - Clean the gear shaft and inside the gear.
   - Attach the gear.
   - Install the paper feed unit.

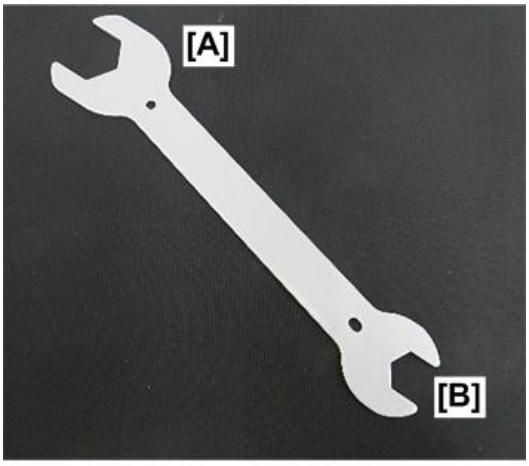
7.14 PERIPHERAL UNITS

7.14.1 HEIGHT AND LEVEL ADJUSTMENT

Before you begin:

- The main machine should be installed first and adjusted to level front-to-back, and side-to-side.
- Note the settings on the leveling gauge. Due to the length of the paper path with several optional peripheral units installed, it is extremely important that every unit be leveled to match the front-to-back and side-to-side measurements of the main machine.
- The height and level of each peripheral unit must be adjusted at installation.
- The height and level of each unit must be adjusted before testing for the presence of skew and checking that side-to-side registration is correct.
- If an accessory wrench is provided with the machine, use the large end [A] to adjust the front and rear feet of the main machine.
- The small end of the wrench [B] is for the feet of the peripheral units.

1. If an accessory wrench is provided with the machine, use the large end [A] to adjust the front and rear feet of the main machine.
2. The small end of the wrench [B] is for the feet of the peripheral units.



d1790999

Setting the Leveling Shoes

Important

- Do this procedure near each caster where an adjustable bolt is provided.
- The number of leveling shoes will differ, depending on which unit you are leveling.

d1795700

1. Turn the lower nut to lower the bolt.

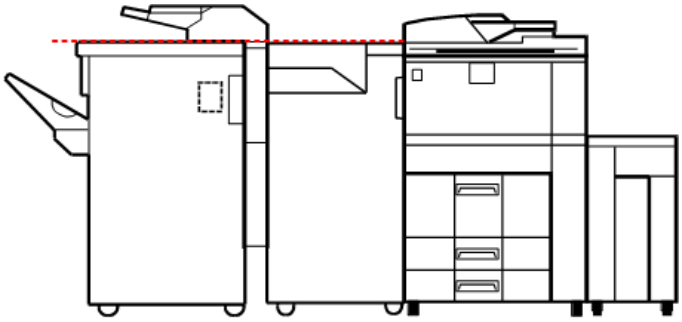
   Note

   - The upper bold is spot-welded to the frame and does not move.

2. Set a leveling shoe below the bolt.

d1795701

3. Continue to turn the lower nut until it stops against the shoe.
4. Set a level on the front, rear, and side edges to determine if the unit is level.
5. Adjust the height at each corner until the unit is level.



d223c5702

6. Check the results of the adjustments.
   - The top of the first peripheral unit on the left must be at the same height as the left side of the main machine.
   - The tops of the other peripheral units on the left where the units are joined must be at the same height.
   - The top of the LCIT on the right must at the same height as the right side of the main machine.

d1795703

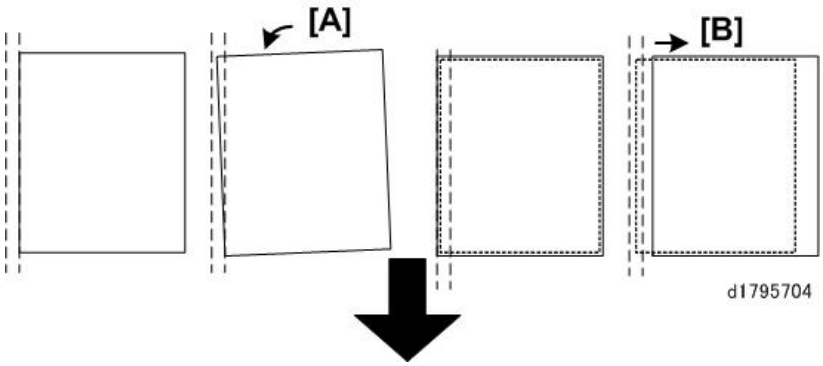
   - Make sure that the plate at the paper exit on the left side of the main machine [A] moves freely and is not bent. It must be able to move to handle thick paper.
   - Between the right side of the main machine and the LCIT, make sure that the LCIT guide plate moves freely and does not interfere with the main machine guide plate.

7.14.2 SKEW AND SIDE-TO-SIDE REGISTRATION

Overview

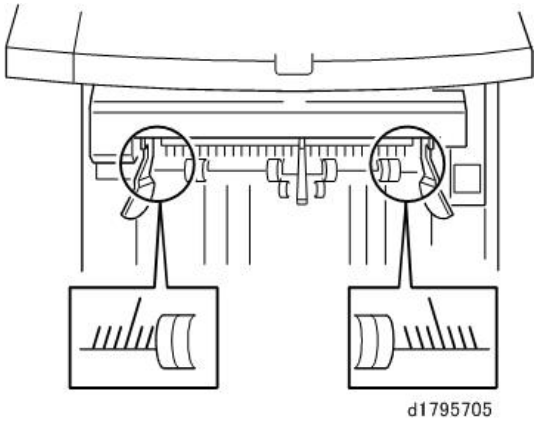
The paper feed path is long when more than one peripheral unit is installed. In a longer path, the cumulative effect of paper skew or deviation in side-to-side registration may require adjustment.

- Skew [A] occurs when the trailing edge of the paper rotates away from the direction of paper feed.
- If side-to-side registration shift [B] occurs, the sheet remains straight but shifts left or right away from center of the paper path.



Note

- Before adjusting skew manually, be sure to enter the SP mode and set **SP1206** to "2" (OFF). This disables side-to-side registration in the main machine's registration unit.

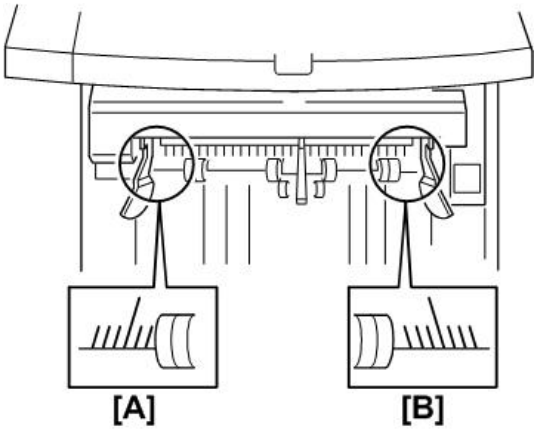


Scales

- Skew and side-to-side registration can be checked with graduated scales where paper exits.
- The scales are provided so that you can visually check and measure the amount of skew or deviation in side-to-side registration.
- Correction for both skew and side-to-side registration are possible on peripheral units provided with the graduated scale.

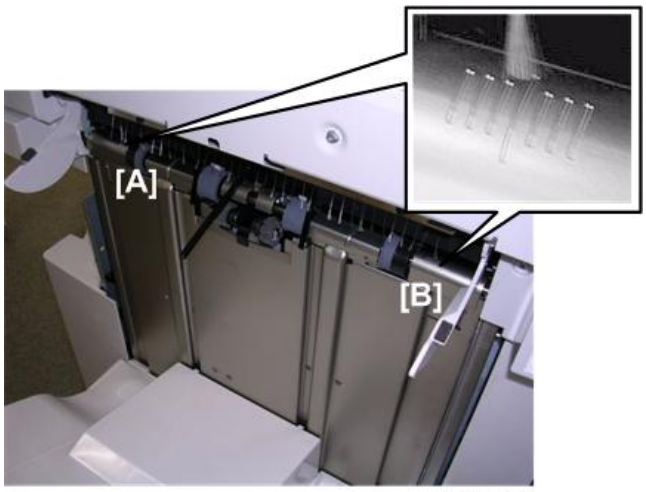
Use either the rear scale or front scale, depending on the type of paper used in your area:

- Rear [A]: **DLT** SEF
- Front [B]: **A3** SEF



d1795706

Here is a photo that shows the actual scales. It shows the scale on the left side of the Booklet Finisher Tray. [A] is for DLT, and [B] is for A3.



d1795707

Here are some general rules for testing and adjusting for paper skew or a shift in side-to-side registration.

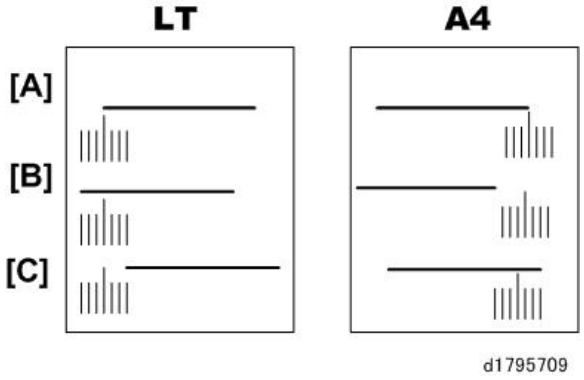
1. After installation of each peripheral device, do some test prints and check for the presence of skew, and check that side-to-side registration is correct.
2. When you detect a problem with skew or side-to-side registration, do the adjustment on the joint bracket attached to the peripheral unit **upstream of the unit where the problem occurred**.

3. Side-to-side registration is corrected by shifting the upstream joint bracket left or right. (See the next procedure.)
4. Skew is eliminated by inserting shims under the rear or front end of the joint bracket. These are attached by screws to the peripheral units before they leave the factory.

Checking Side-to-Side Registration

Do this procedure to confirm that the paper is centered in the paper path.

1. Make sure that the I/F cable of the unit is connected to the upstream unit.
2. Disconnect the unit to the left of the unit to be tested.
3. Execute a run by feeding paper from Tray 2 of the host machine.
4. When each sheet exits, check the position of the paper on the scale to see if the paper is centered.
   - Read the **rear scale** for **DLT**-size paper.
   - Read the **front scale** for **A3**-size paper.
   - The scale graduations are at 2 mm apart.
5. The paper must not deviate more than ±2 mm on the scale.



[A]	Leading/trailing edges centered. No adjustment necessary.
[B]	Leading/trailing edges offset to the rear by more than 2 mm. Adjustment required.
[C]	Leading/trailing edges offset to the front by more than 2 mm. Adjustment required.

If the edge of the paper is on the scale at the center [A], no adjustment is required.

-or-

If the edge of the paper is ±2 mm off the center line on the scale, adjustment is required. Do the procedure in the next section.

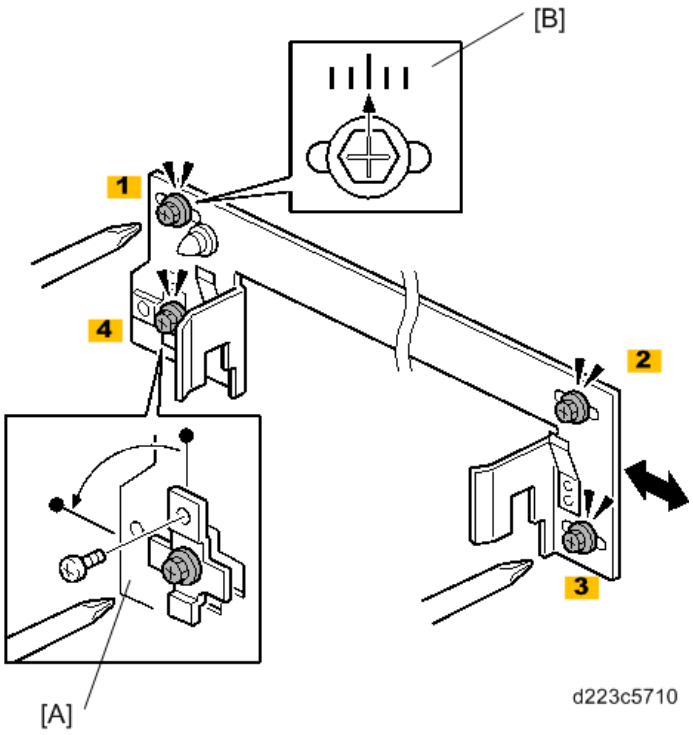
Correcting Side-to-Side Registration

Each peripheral unit has a single-piece connection bracket. This adjustment can be done for every unit on the connection bracket attached to the upstream unit

1. Enter the SP mode and set SP1206 to "2" (OFF).
2. Disconnect the peripheral unit from the upstream unit.
3. On the joint bracket attached to the upstream unit, loosen screws [1], [2], [3], [4].
4. Remove bracket [A] (x1), rotate it 90 degrees, and then re-fasten the screw. Changing the position of this bracket aligns the oval cut-out horizontally and frees the joint bracket so it can slide from side to side.
5. Look at scale [B].
6. Slide the bracket to the left or right and tighten the screw.
7. If the deviation from center was toward the front, slide the bracket to the rear and tighten screw [1].

   -or-

   If the deviation from center was toward the rear, side the bracket to the front and tighten screw [1].
8. Tighten screws [2], [3], and [4].

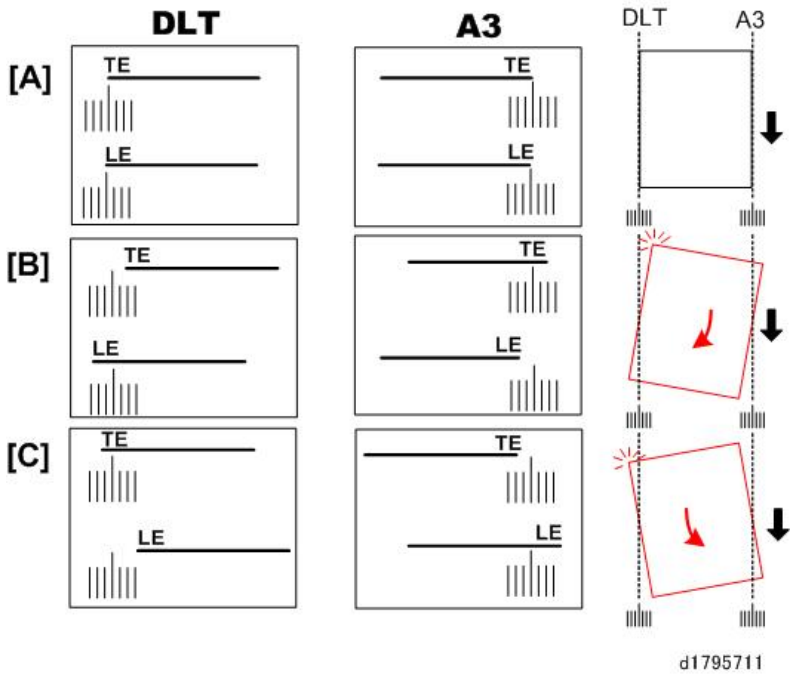


9. Do another test run, so that you can check the results
10. When you are finished, enter the SP mode and re-set **SP1206** to "1".

Detecting Paper Skew

Do this check to detect the presence of skew.

1. Make sure that the I/F cable of the unit is connected to the upstream unit.
2. If a peripheral unit is connected on the left side, disconnect it and pull it away.
3. Execute a straight-through run.
4. Check the scale where each sheet exits.
   - The **rear scale** is for **DLT**-size paper.
   - The **front scale** [2] is for **A3**-size paper.
   - Be sure to read the correct scale for the paper size in use.



[A]	Centered. No adjustment necessary.
[B]	Trailing edge skew to the front, total skew more than ±2 mm. Adjustment required.
[C]	Trailing edge skew to the rear, total skew more than ±2 mm. Adjustment required.

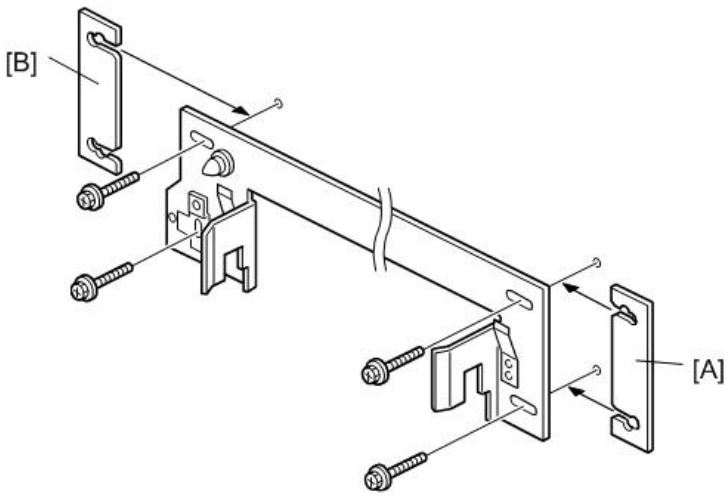
Correcting Skew

1. Enter the SP mode and set SP1206 to "2" (OFF).
2. Disconnect the peripheral unit from the upstream unit.
3. Locate and remove the shims from the peripheral unit where the problem occurred.
4. If the peripheral unit is provided with shims, open the front door you will find them attached to the lower right corner. For example, here is the location for the shims attached to the Multi Fold Unit.

d1795712

5. Open the front door.
6. Remove the shims.

Inserting Shims



d1795714

1. Loosen the screws of the joint bracket attached to the peripheral upstream of the unit where the problem occurred.
2. Insert a shim and tighten the screws.

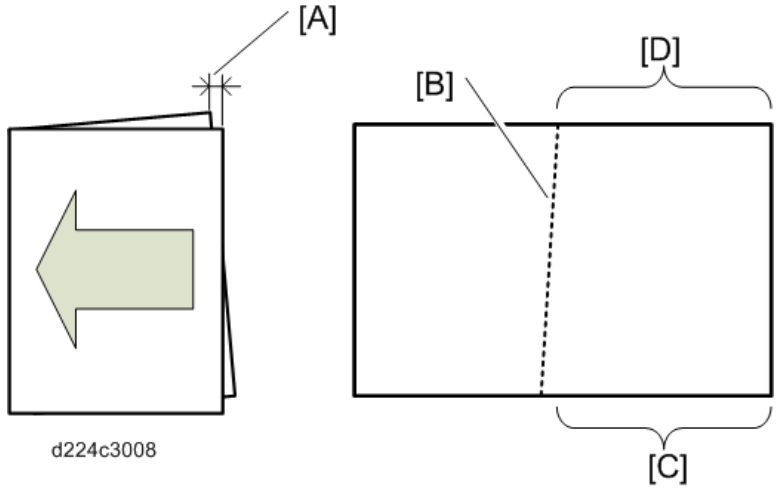
3. If the trailing edge of the paper is **skewing toward the front** of the machine, insert a shim [A] under the **rear end of the bracket** and tighten the screws.
   -or-
   If the trailing edge is **skewing toward the rear** of the machine, insert a shim [B] under the **front end of the bracket** and tighten the screws.
4. Do another run to check the adjustment. If skew is still present, insert another shim.
   - Each shim is 2 mm thick.
   - Only two shims are provided, so the maximum adjustment is 4 mm (using two shims).
5. Enter the SP mode and re-set SP1206 to "1".

7.14.3 BOOKLET FINISHER CENTER FOLD CORRECTION

If the angle between the bottom fence and fold plate is not correct, this can cause the bottom of the fold line to slant out of alignment in the direction of paper feed or opposite the direction of paper feed.

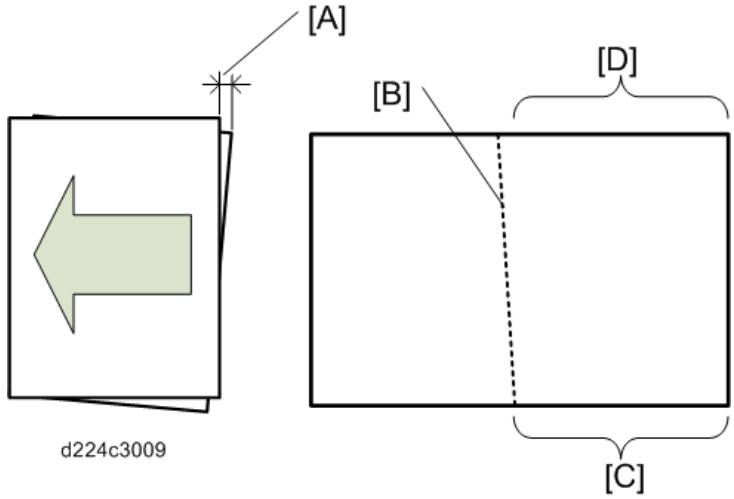
Slant in the direction of paper feed

When sheets are center-folded, the fold line [B] can slant in the direction of paper feed, causing the front side [C] to be longer than the rear side [D] and cause misalignment [A].



Slant opposite the direction of paper feed

The fold line [B] can also slant opposite the direction of paper feed, causing the front side [C] to be shorter than the rear side [D] and cause misalignment [A].

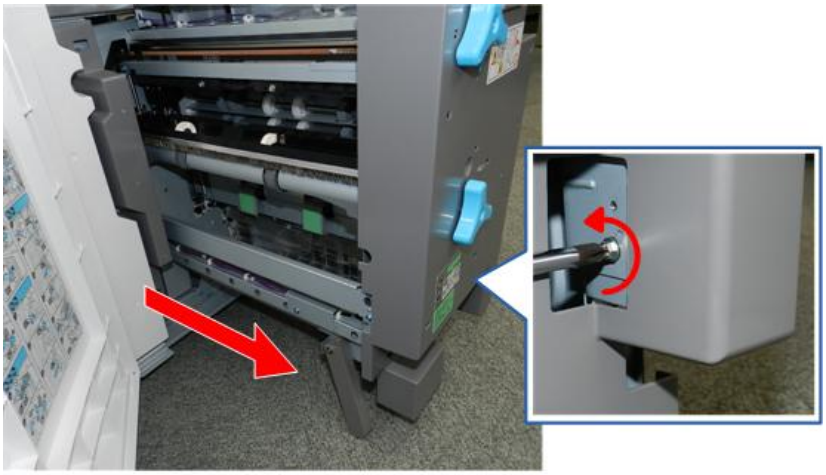


These problems occur if the angle between the bottom fence [1] and fold plate [2] is not correct.

d224c0083

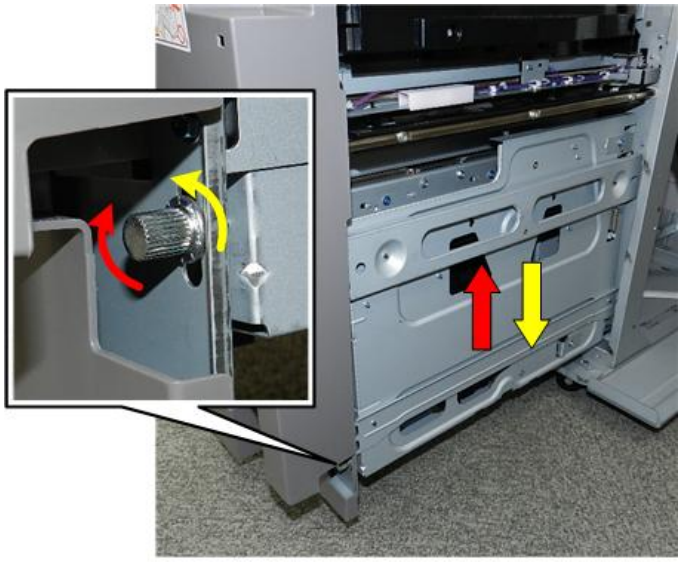
How to Correct Misaligned Center Folding

1. Pull out the jogger unit and loosen bottom fence lock screw.



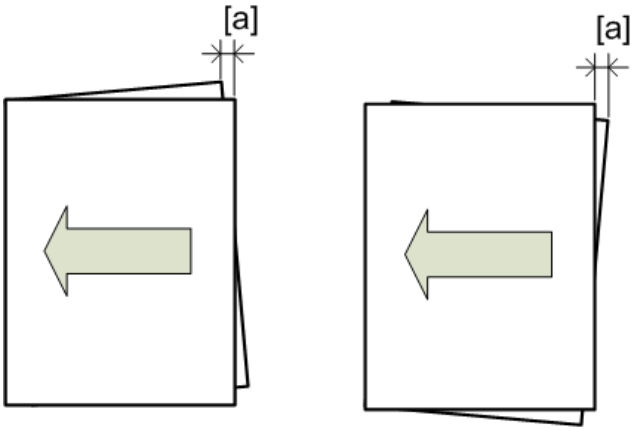
d224c0084

2. Turn the bottom fence adjustment screw to adjust the angle between the bottom fence and the folding plate.
   - If the center line is slanting in the direction of paper feed, turn the bottom fence adjustment screw clockwise to raise the bottom fence.
   - If the center line is slanting away from the direction of paper feed, turn the bottom fence adjustment screw counter-clockwise to lower the bottom fence.



d224c0085

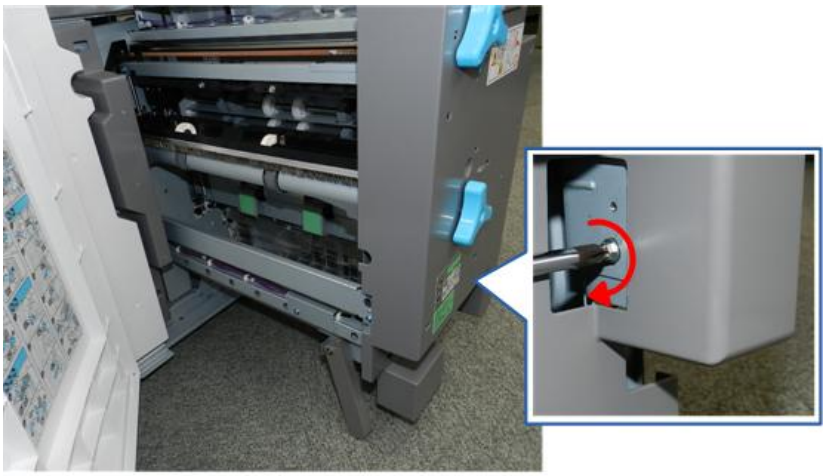
To adjust [a]:



d224c3010

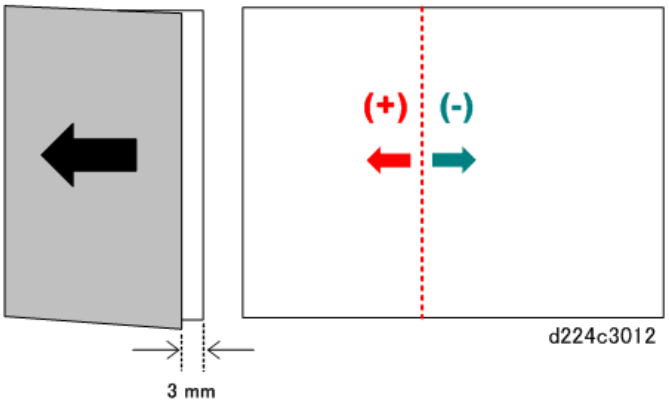
Paper size	Clockwise	Counterclockwise
B5	0.56 mm	0.55 mm
A4	0.64 mm	0.64 mm
B4	0.79 mm	0.78 mm
A3	0.91 mm	0.90 mm

3. Tighten the bottom fence lock screw.



d224c0086

4. If the adjustment has caused the folding position to shift to left or right, make corrections with **SP6-113**.
5. For example, if there is a 3mm gap between the edges as shown below, shift the folding line "-1.5mm" in the (-) direction.



7.14.4 FINISHER SR4080 (D610): Z-FOLDED PAPER OUTPUT

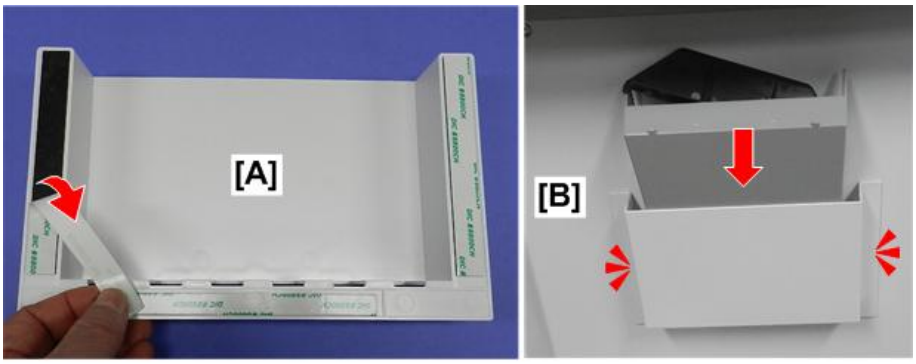
1. Set the shift auxiliary tray on the shift tray when you expect folded paper from the Multi Folding unit to be output to the shift tray.

d610c1014

2. Set the proof auxiliary tray in the proof tray when you expect Z-folded paper from the Multi Folding unit to be output to the proof tray.

d610c1015

3. Peel the tape from the tray holder [A].
4. Attach the tray holder to the back of the finisher [B].



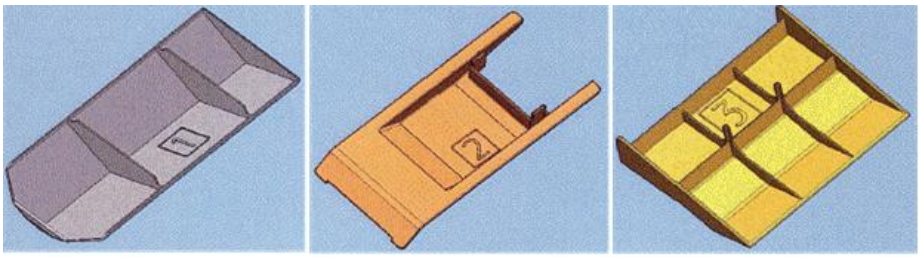
d610c1016

5. Store the auxiliary trays in the holder if they are not needed.

7.14.5 FINISHERS SR4120/SR4130 (D3CG/D3CH)

Using Auxiliary Trays

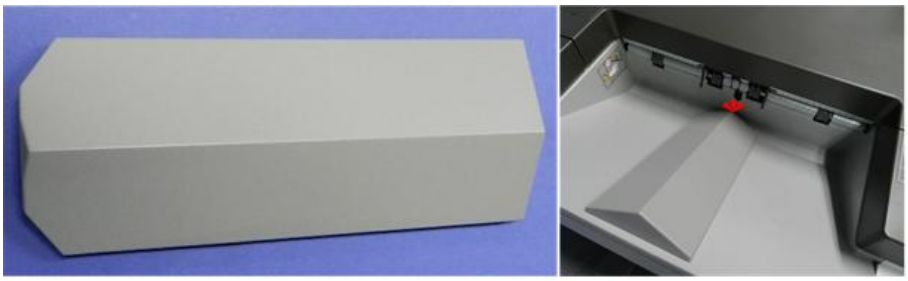
The trailing edges of excessively curled or Z-folded paper can activate the tray full sensors before the tray is actually full. Once this occurs and the "Exit Tray Full" message appears, the job stops and cannot continue until some sheets are removed from the tray which is only partially full. The auxiliary trays, number [1], [2], and [3] on their undersides are designed to prevent this problem.



d3cgc1005

Thin or soft paper does not exit completely

Set auxiliary Tray 1 on the proof tray when using thin or soft paper that may not exit completely and interfere with the tray full sensor.



d3cgc1199

Z-folded paper, Curled paper interfere with tray full sensor

Z-folded paper or paper with curled edges can interfere with the tray full sensor by signaling tray full before the tray is actually full.

d223c8210

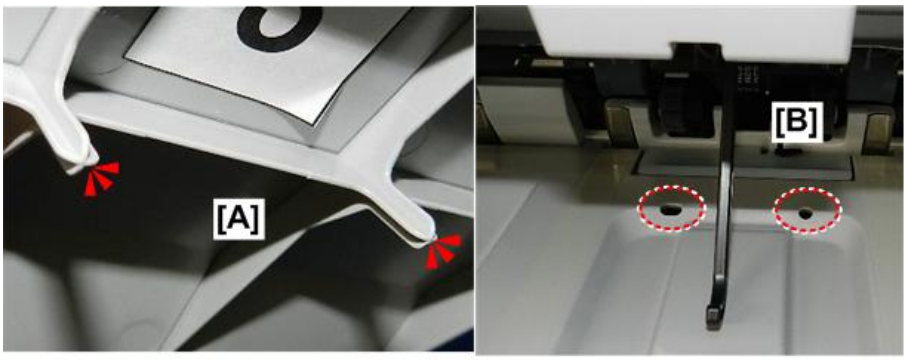
Set auxiliary Tray 2 on the proof tray when Z-folding paper or excessively curled is output.

d3cgc1650

Problems with Z-folded paper from the Multi Folding Unit

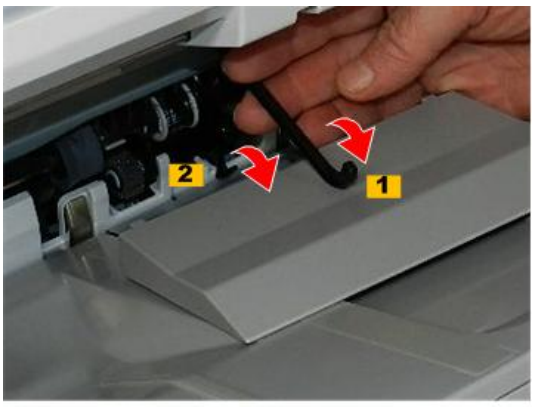
Set auxiliary Tray 3 only when the Multi-Folding Unit is installed, especially when working with Z-folded paper.

1. The pegs [A] on the bottom of this tray fit into the holes in the shift tray [B].



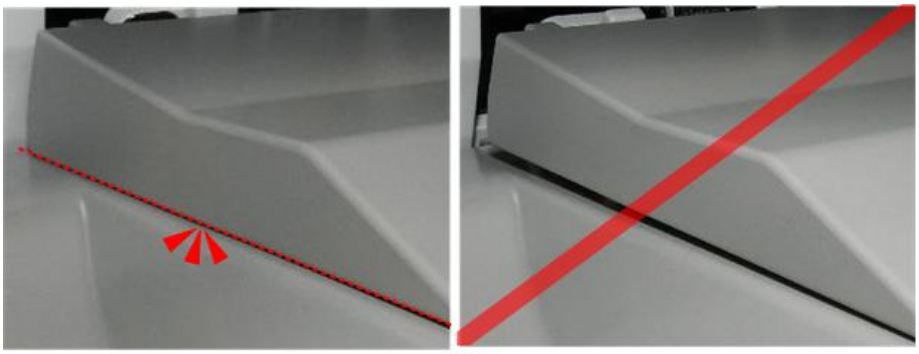
d223c8207

2. When you set the tray, position feelers [1] and [2] on top of the tray.



d223c8208

3. Confirm that the tray is perfectly flat on the shift tray below. There should be no gap between the trays.



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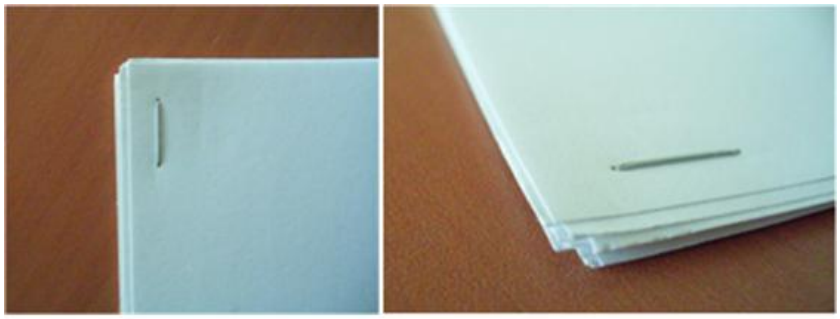
7.14.6 OUTPUT JOGGER UNITS

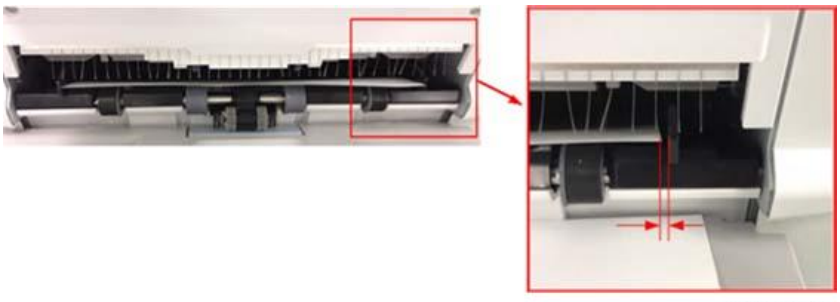
Jogger Width Adjustment Procedure

If a paper alignment problem occurs as below, do the following procedure to adjust the jogger width.

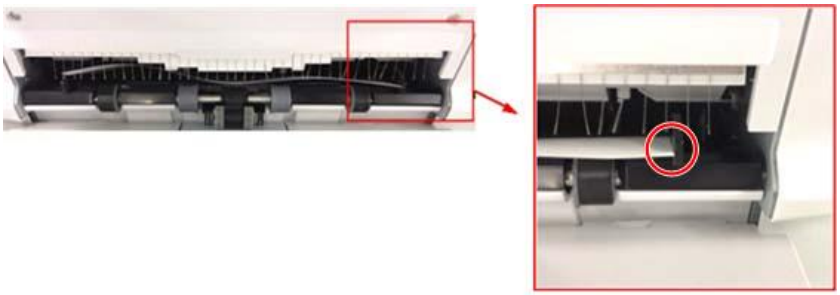


d146z0091

1. Place an A4 original (SEF) on the exposure glass.
2. Select [Staple] on the operation panel (you can select any staple location: top or bottom.)
3. Press [Start].
4. A copy is put out on the staple tray, and is stopped with the jogger not holding the sheet.
5. Check the jogger operation visually in the previous step, and then check the position and distance of jogger width and sheet.



d146z0092



d146z0093

6. Press the [#] button.
7. Adjust the jogger width with **SP6143-004** (Range: -1.5 to +1.5 mm for each paper size).
8. Repeat step 3 through step 6 to complete the adjustment.
9. Adjust the jogger width to be slightly narrower (approximately -0.5 mm) than the paper width.

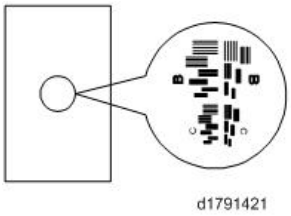
7.15 OTHER PROBLEMS

7.15.1 COMMON PROBLEMS

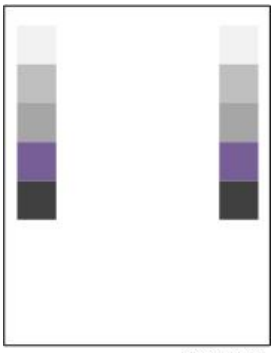
Problem	Check	Inspect, Clean, Replace
Dirty Copies	Fusing Unit	Pressure roller
Jam – Fusing Unit	Fusing Unit	Hot roller
Jam – Fusing Unit	Fusing Unit	Hot roller strippers
Jam – Original	ADF	Pick-up, paper feed, separation rollers
Lines (black or white)	Around the Drum	Cleaning blade, cleaning brush
Misfeed – Fusing Unit	Fusing Unit	Hot roller
Offset	Fusing Unit	Hot roller
Poor separation	Transfer Belt Unit	Transfer belt, transfer belt cleaning blade
SC300 ~ SC306	Around the Drum	Charge corona wire, charge corona grid, charge corona wire cleaner.
Skew – Original	ADF	Pick-up, paper feed, separation rollers
Toner on transfer belt	Transfer Belt Unit	Transfer belt, transfer belt cleaning blade
Wrinkling	Fusing Unit	Pressure roller

7.15.2 CHECKING IMAGE QUALITY

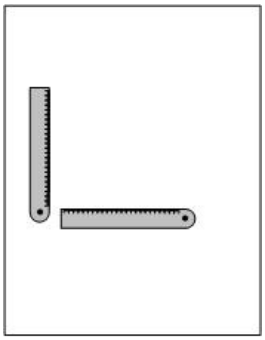
Resolution

Standard	1:1/Enlargement:	4.5 lines/mm or more
	Reduction:	4.5 x M or more mag.
What You Need	S-2-1 Chart	
Method	 d1791421 Resolution measured after copying in Text Mode at AE5 notch with Normal Paper	

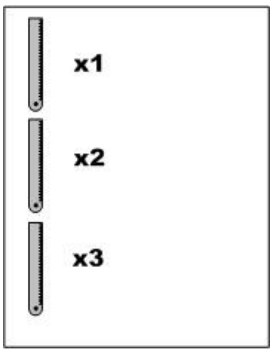
Even Density

Standard	Left, right grayscale within 0.1 at 0.2 to 0.6
What You Need	S-2-1 Chart
Method	 d1791422 Right, left density measured after copying in Text Mode at AE5 notch with Normal Paper.

Magnification Errors

Standards	1:1	Main scan: <±0.5%, Sub scan: <±0.8%
	Magnification	Main scan: <±1.0%, Sub scan: <±1.0%
What You Need	150 mm scale	
Method	 d1791423 1. Set two scales on the exposure glass, and then copy them. 2. Wait at least 10 min. after the paper exits. 3. Measure 100 mm on the copied images with the actual scale.	

Magnification Error Variation

Standard	1:1/Mag.: Sub scan (horizontal, vertical) less than 1.0%
What You Need	150 mm scale
Method	 d1791424 1. Place three 150 mm scales on the exposure glass, and then copy them. 2. Wait at least 3 min. after the paper exits. 3. Use a scale to measure 100 mm against each scale image (x1, x2, x3) on the paper. 4. Determine the maximum and minimum deviation (%) from the standard. 5. Calculate the difference between the maximum and minimum deviation. Notes ▪ For example, if the three measurements of the scales are 100.4 mm, 99.5 mm, 100.2 mm, then the difference between the maximum and minimum values is 0.9 mm (100.4 – 99.5). ▪ Set the scales in the main scan direction (horizontal), copy them, and then use the same method to determine the variation ▪ For best results, using at least three scales is recommended. ▪ If you have only one scale, then you can make three copies with the scale at different positions. ▪ Please remember that line speed may vary slightly depending on the number of copies in a job.

7.15.3 REINSTRALLING OCR UNIT TYPE M2

When the OCR unit is installed, its function is stored in the HDD, and its ID information in the SD card is stored in the NVRAM. So the OCR unit must be installed again when you replace the HDD and/or NVRAM.

If you have the original SD card and when you replaced:

- Only HDD
- Re-install the unit with the original SD card.
- Only NVRAM
- Re-install with the original SD card if you upload/download of the NVRAM data.
- Order a new SD card and Re-install with the new SD card if you do not upload/download of the NVRAM data.
- Both the HDD and NVRAM at the same time
- Re-install the original SD card.

If you do not have the original SD card, order a new SD card and Re-install with the new SD card.

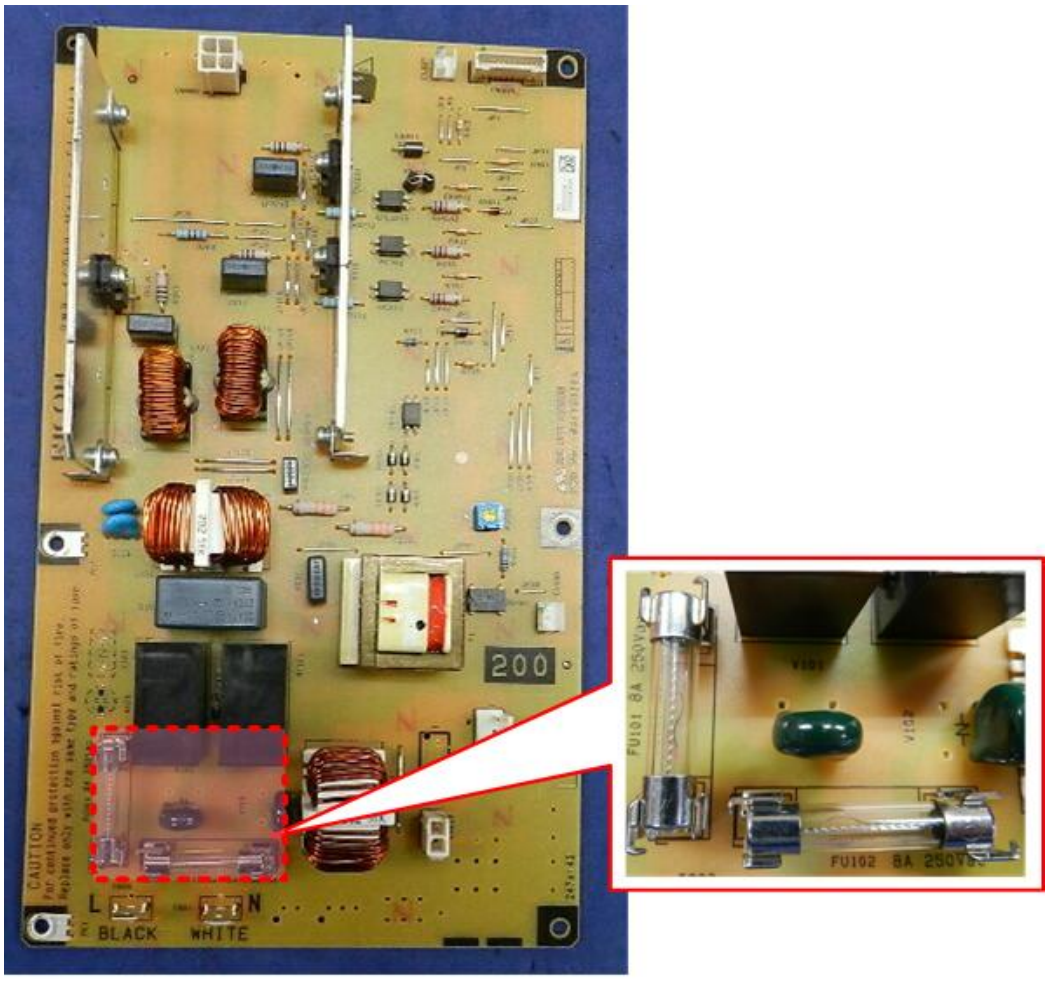
Note

- Re-installation procedure is the same as the installation procedure.

7.16 FUSES

7.16.1 AC DRIVE BOARD

Fuse	Rating		Blown Fuse
	NA	EU	
FU101	15A/250VAC	8A/250VAC	SC547-02
FU102	15A/250VAC	8A/250VAC	Power switch does not operate.
FU103	**Japan only**	**Japan only**	
FU105	2A/250VAC	2A/250VAC	SC547-02
FU106	**Japan only**	**Japan only**	



d223c3755

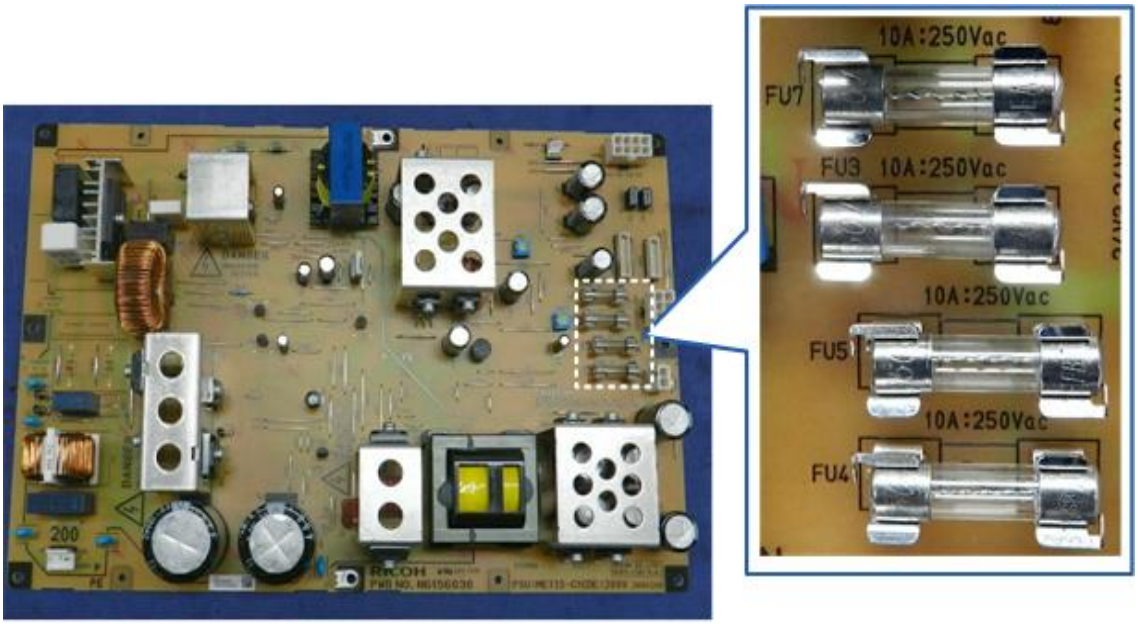
7.16.2 DHB

Fuse	Rating		Blown Fuse
	NA	EU	
FU110	2A/250VAC	2A/250VAC	Heater does not operate.

d223c3485

7.16.3 PSU

Fuse	Rating		Blown Fuse
	NA	EU	
FU1	15A/250VAC	15A/250VAC	SC664-01 (SC log SC664-21, SC991-00(
FU2	15A/250VAC	15A/250VAC	No copy icon, SC670-01 at power on, SC log SC899-00
FU3	10A/250VAC	10A/250VAC	SC272-10 (SC log SC547-02, SC515-00)
FU4	10A/250VAC	10A/250VAC	LCIT, Finisher do not operate, paper jam
FU5	10A/250VAC	10A/250VAC	SC530 (SC log SC531-02, SC531-03, SC531-01, SC202-00, SC530-07, SC530-05, SC120-00
FU7	10A/250VAC	10A/250VAC	Not used. No SC code returned, no abnormal operation.



d223c3481

D223/D224/D225
SERVICE MANUAL APPENDICES

D223/D224/D225 APPENDICES

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APPENDIX:

SPECIFICATIONS

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

1. MACHINE SPECIFICATIONS

1.1 GENERAL SPECIFICATIONS

1.1.1 COPIER

Engine

Configuration	Console	
	Original: Sheet/Book/Objects Original Size Max. A3/11" x 17" Min. B6 SEF/5.5" x 8.5" (using ADF) Original Alignment: Rear left corner	
Copy Method	Dry static conduction	
Development Method	Dual component developer/toner, electromagnetic brush method with 1-step sleeve	
Fusing Method	Heating roller with fusing belt and pressure roller	
Original Feed	Book scanning, ADF standard multiple feed	
Scanning Method	Simultaneous dual side scanning	
Front	Color CMOS element (3-line CMOS color linear image sensor with two LEDs as exposure lamps)	
Back	Color CIS element	
Original Size	Simplex: A3/11" x 17" – B6/5.5" x 8.5" Duplex: A3/11" x 17" – B5/5.5" x 8.5" Max. size: 12"x17" platen mode.	
Copy Paper Size	Paper tray, Duplex	A3/11" x 17" – A5/ 5.5" x 8.5"
	Bypass tray	A3/11" x 17" – A6 SEF/5.5" x 8.5"

	Non-standard sizes	Width: 139.7 – 297 mm (5.5" x 11.7") Length: 139.7 – 432 mm (5.5" x 17")
Copy Paper Weight	Paper Tray	52.3 to 127.9 g/m^2 (14 to 34 lb.)
	Duplex	64 to 127.9 g/m^2 (17 to 34 lb.)
		By-pass ▪ Standard: 52.3 to 157 g/m^2 (14 to 43 lb.) ▪ Thick Paper mode: 52.3 to 216 g/m^2 (14 to 58 lb.)
Paper Weight		
D223/D224	Tray 1	52-256g/m^2(45-220kg
	Tray 2, 3	52-256g/m^2(45-220kg)
	Bypass (std. Thick 1 to 3)	52-256g/m^2(45-220kg)
	Bypass(Tracing paper)	52-128g/m^2(45-110kg)
	Bypass(Labels)	52-128g/m^2(45-110kg)
D225	Tray 1	52-256g/m^2(45-220kg)
	Tray 2 to 3	52-256g/m^2(45-220kg
	Bypass (Std. Thick 1 to 3)	52-256g/m^2(45-220kg
	Bypass(Tracing paper)	52-128g/m^2(45-110kg
	Bypass (Labels)	52-128g/m^2(45-110kg
Reproduction Ratios	7 reduction ratios, 5 enlargement ratios Metric (%): 400, 200, 141, 122, 115, 93, 82, 75, 71, 65, 50, 25 Inch (%): 400, 200, 155, 129, 121, 93, 85, 78, 73, 65, 50, 25 Std. adjustment: Horizontal/vertical < ±1.0% Free adjustment: Horizontal/vertical < ±1.0%	

Zoom	25% to 400% (1% units selectable)		
Margins (White Space)	Leading margin		4.2±1.5mm
	Left margin		0.5±4.0mm
	Right margin		0.5±4.0mm
	Trailing margin		0.5±6.0mm
Continuous Copying Speed	D223: 65 ppm (A4, LT LEF) D224: 75 ppm (A4, LT LEF) D225: 90 ppm (A4, LT LEF)		
Max. Original Size	A3 (297x420 mm), 11x17 LEF (279x432 mm)		
First Copy Time	D223	3.2 s	(Tray 1, A4/LT LEF face-up, contact glass mode, APS off)
	D224	3.2 s	
	D225	2.9 s	
Warm-up Time	D223: < 20 seconds D224: < 20 seconds D225: < 300 seconds From power on at 20°C (68°F)		
	< 30 sec. at return from power off mode		
Continuous Copying	1 to 999 (Operation panel entry)		
Paper Type	Standard (normal) bond, tracing paper (including translucent), OHP, labels, color papers, postcards, index tab		
Paper Capacity	Tray 1		3100 sheets (1550 x2)
	Tray 2		550 sheets
	Tray 3		550 sheets
	Bypass tray		100 sheets (80 g/m^2, 20 lb.)
Paper Output	A4/8.5" x 11" and smaller		500 sheets
	B4 and larger		250 sheets

Power Source	North America	D224: 120-127V, 60Hz, 20A D225: 208-240, 60Hz, 12A	
	Europe/Asia/China	220-240V/10A 50/60Hz	
	Taiwan	D224: 110V/14A+110V/4A 60Hz D225: 220V/10A 60Hz	
Power Consumption	Full System	NA	D223/D224: <1.8 KW D225: <1.9 KW
		EU	D223/D224: < 1.9 KW D225: < 1.9 KW
Energy Start	Implemented		
Memory	4 GB		
HDD Capacity	320 GB		
Semi-conductor	OPC drum		
Allowed voltage fluctuation	10%		
Dimensions (wxdxh)	690 x 803 x 1161 mm (27.2 x 31.6 x 45.7 in.)		
Space required (wxd)	1175 x 821 mm (46.3 x 32.3 in.)		
Weight	M223/M224	Approx. 200 kg (440 lb.)	
	M225	Approx. 208 kg (458 lb.)	
Resolution	Scanning	600 dpi 89-bit	
	Printing	1200 dpi 1-bit	
Gradation	256 levels (scanning and printing)		
Toner Replenishment	Cartridge exchange (1100 g)		
Total Counter	Electric Counter		

ADF

Original Size	Simplex: A3/11" x 17" – B6/5.5" x 8.5" Duplex: A3/11" x 17" – B5/5.5" x 8.5" **Note**: Dual side scanning is not possible with B6 LEF/SEF.
Original Weight	Simplex: 40 to 128 g/m^2 (11 to 34 lb.) Duplex: 52 to 128 g/m^2 (14 to 34 lb.)
Table Capacity	250 sheets: 69g/m^2 (150 sheets: 80g/m^2, 20 lb. Bond)
Original Standard Position	Rear left corner (platen mode/ADF mode)
Separation	Feed belt and separation roller
Original Transport	Roller transport
Original Feed Order	From top original
Reproduction Range	100%
Power Source	DC 24 V from the main machine
Power Consumption	< 110 W
Rated Voltage of Output Connector	Max. DC 24 V
Permissible voltage fluctuation	±10%
Dimensions (w x d x h)	680 x 560 x 180 mm (26.8" x 22.0" x 7.1")
Weight	18 kg (39.6 lb.)

Power Consumption

NA

Operation Mode	D223	D224	D225
Main unit only			
Warm Up	1380W	1400W	1720W
Stand-by	269W	269W	299W
During printing	1230W	1250W	1480W
Maximum	1620W	1640W	1750W
Complete system*[1]			
Warm Up	1410W	1420W	1740W
Stand-by	289W	289W	320W
During printing	1330W	1350W	1610W
Maximum	1720W	1740W	1880W

*[1] Main Machine + Finisher + Cover Interposer Tray + LCT

EU/AA

Operation Mode	D223	D224	D225
Main unit only			
Warm Up	1500W	1510W	1730W
Stand-by	279W	279W	299W
During printing	1260W	1280W	1490W
Maximum	1730W	1760W	1790W
Complete system*[1]			
Warm Up	1520W	1530W	1740W
Stand-by	310W	310W	320W
During printing	1330W	1360W	1540W
Maximum	1800W	1830W	1840W

*[1] Main Machine + Finisher + Cover Interposer Tray + LCT

Noise Emission

No.	Test Mode dB (A)	Noise Power Level	Operator Position	Bystander Position Max.
D223	Standby OFF Mode: MFP, CTL FAN ON	49.3	37.5	36.6
	Book Mode	67.0	51.9	53.9
	System: LCT Feed DF Simplex, Punch Sort	74.3	62.4	59.8
	System: Standby Engine OFF	50.1	35.7	37.5
D224	Standby OFF Mode: MFP, CTL FAN ON	49.4	37.7	36.9
	Book Mode	69.7	55.2	58.8
	System: LCT Feed DF Simplex, Punch Sort	74.3	62.1	59.9
	System: Standby Engine OFF	50.0	35.7	37.5
D225	Standby OFF Mode: MFP, CTL FAN ON	50.4	38.2	37.7
	Book Mode	71.0	56.4	58.3
	System: LCT Feed DF Simplex, Punch Sort	75.0	62.4	60.5
	System: Standby Engine OFF	52.3	36.9	39.5
*1 System: Main Machine + Finisher + Multi Folder +LCT				

Note

- The above measurements were made in accordance with ISO 7779. Full system measurements include the Mainframe + Finisher + LCT + Cover Interposer + Punch.

1.1.2 PRINTER SPECIFICATIONS

Print Size	Standard	Max.A3SEF(297×420mm), 11×17SEF(279.4×431.8mm)
	Custom	Max. 305×600mm(Bypass Tray: Std.)Max. 305×1260mm(Bypass Tray: Long)
Print Speed	M225: 90 ppm M224: 75 ppm M223: 65 ppm	
Resolution	200 dpi, 300 dpi/, 400 dpi, 600 dpi, 1200 dpi	
Printer Languages	Standard	RPCS, RPDL, PDF
	Option	Adobe PostScript 3, PCL6(PCL XL/PCL 5e)
Emulation (option)	Adobe PostScript 3, R55(IBM5577, RTIFF, XPS	
Interface	Standard	Cover Interposer Tray (1000BASE-T/100BASE-TX/10BASE-T) Operation Panel USB2.0 port(A type) USB2.0 port(B type) Operation Panel SD Card Slot
	Option	IEEE1284 standard bi-directional parallel IEEE 802.11a/b/g/h(Wireless LAN)
Protocols	TCP/IP(IPv4, IPv6, LPD, DIPRINT, FTP, SFTP, IPP, SMB, IPP-SSL, RHPP, WSD(Printer, Port9100	
USB Interface	▪ Compatible OS: Windows Vista, Windows 7, Windows 8, Windows 8.1, Windows 10, Windows Server 2003, Windows Server 2003 R2, Windows Server 2008, Windows Server 2008 R2, Windows Server 2012, Windows Server 2012R2, OSX 10.7 and after ▪ Communication Method USB2.0 Standard Compatible ▪ Connection Method USB2.0 Standard Compatible Device	

Compatible OS	Windows Vista, Windows 7, Windows 8, Windows 8.1, Windows 10, Windows Server 2003, Windows Server 2003 R2, Windows Server 2008, Windows Server 2008 R2, Windows Server 2012, Windows Server 2012R2, Option OSX 10.7and after (option)	
Built-in Fonts	Standard	Courier10, Prestige Elite12, Letter Gothic15, Bold Face PS, Courier 4, Arial 4, Times New Roman 4, Wingdings, Century, Symbol, OCR-B
	Option	MBBB(PostScript3, for direct printing to PDF), European 45, International font 13(for PCL)
Bar Codes	2 of 5(Industrial, 2 of 5(ITF, 2 of 5(Matrix, CODE128(B, CODE39, CUSTOMER, JAN(Compressed, JAN(Std., NW-7, UPC(A, UPC(E	
Reduction Rate	25 to 400%	

Note

- The RPDL printer driver is not provided.
- With a Macintosh only the standard USB port is compatible.
- When the Cover Interposer Tray is installed (1000BASE-T, 100BASE-TX, 10BASE-T) the interface cable cannot be longer than 100.

1.1.3 SCANNER SPECIFICATIONS

Configuration	Full color scanner
Scanning Method	Fixed platen and ADF dual-side scanning
Image Sensors	Front side: CMOS image sensor Back side: CCD image sensor
Original	Cut sheet, platen book mode
Original Size	SEF: 10 to 297 mm (0.4 to 11.7 in.) LEF: 10 to 432 mm (0.4 to 17 in.)
Paper Size	A3 SEF, B4 SEF, A4 LEF/SEF, B5 LEF/SEF, A5 LEF/SEF, B6 LEF/SEF, 11x17 SEF, 8.5x11 LEF/SEF **Note**: These sizes are detected automatically when placed on the exposure glass.
Scanning Speed	Mail TX/Folder TX/WSD Scanner(Push)DSM Scanner(Original Size: A4LEF, Resolution: 200dpi/300dpi) ▪ 1-Side B&W: 120 ppm (Text/Drawing, MMH compression, ITU-T Chart No. 1) ▪ 2-Side B&W: 220 ppm (Text/Drawing, MMH compression, ITU-T Chart No. 1) ▪ 1-Side FC: 120 ppm (Text/Drawing, Grayscale/FC), JPEG standard compression, Ricoh Test Chart) ▪ 2-Side FC: 220ppm (Text/Photo, Grayscale/FC, JPEG standard compression, Ricoh Test Chart) **Note**: Speed could vary depending on ambient conditions, content of the document, and computer environment.
Gradation	B&W: 2-Step FC/Grayscale: 256-Step
Scan Resolution	200 dpi (standard)
Compression	B&W: TIFF (MH, MR, MMR, JBIG2)
	Grayscale/FC: JPEG

Interface	Standard	Cover Interposer Tray(1000BASE-T, 100BASE-TX, 10BASE-T) Operation Panel USB2.0 Port(A-type) Operation Panel SD Card Slot
	Option	IEEE802.11a/b/g/h (Wireless LAN)
Network I/F	TCP/IP	
Mail TX		
Resolution	100 dpi, 200 dpi, 300 dpi, 400 dpi, 600 dpi	
Protocol	SMTP	
Output Format	TIFF, JPEG, PDF, Clear Write PDF, PDF/A	
Folder TX		
Resolution	100 dpi, 200 dpi, 300 dpi, 400 dpi, 600 dpi	
Protocol	SMB, FTP, NCP	
Output Format	TIFF, JPEG, PDF, Clear Write PDF, PDF/A	
TWAIN Driver		
Resolution	100 to 1200dpi	
Protocol	TCP/IP	
Compatible OS	Windows Vista, Windows 7, Windows 8.1, Windows 10, Windows Server 2003, Windows Server 2003 R2, Windows Server 2008, Windows Server 2008 R2, Windows Server 2012, Windows Server 2012R2 **Note**: Networked TWAIN driver is compatible with 64-bit OS in 32-bit compatible mode.	
Network Resolution	100 dpi, 200 dpi, 300 dpi, 400 dpi, 600 dpi	
WIA Scanner		
Resolution	100 to 1200dpi	
Protocol	TCP/IP	

Compatible OS	Windows Vista(SP1 and after, Windows 7, Windows 8, Windows 8.1, Windows 10, Windows Server 2008, Windows 2008 R2, Windows 2012, Windows 2012R2 Note: A WIA scanner is also compatible with 64-bit OS.

1.2 SUPPORTED PAPER SIZES

1.2.1 ORIGINAL SIZE DETECTION

Book Mode (Exposure Glass) Original Size Detection

- Original size detection is triggered by the APS when the ADF is lowered.
- Original length is detected using one original size sensor.
- At the same time, pre-scanning is done so the C-MOS image sensor can detect the original width. At this time the scanner LED lights only one-third of the detection area near the front.
- If the Start key is pressed with the ADF unit up (APS: OFF), the size of the previous original is used.

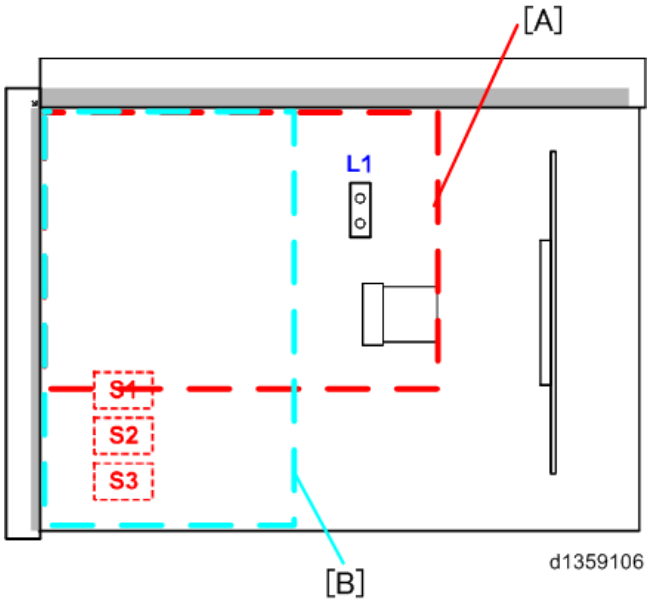
Sensor States

The combinations of the sensor states are used to determine the original size, and this data can be confirmed with **SP4-301-001**. The data for each detected size is displayed by **SP4-301-001** as shown below. Due to the layout of the sensors, paper sizes smaller than B5 cannot be detected, so in this case all zeroes are displayed (0000 0000).

Original Size Detection

[A] A4 SEF

[B] A4 LEF



A: A4 SEF

B: A4 LEF

Size	L1	SP4-301-001 Display
A3	On	00000001
B4	On	00000001
A4 SEF	On	00000001
A4 LEF	Off	00000000
B5 SEF	On	00000001
B5 LEF	Off	00000000
A5 SEF	Off	00000000
A5 LEF	Off	00000000

If the value detected by the C-MOS image sensor is more than "18" in the width direction as displayed by **SP4-310-001** to **009**, then the machine determines that an original is on the exposure glass. However, the value displayed is the result of the most recent reading.

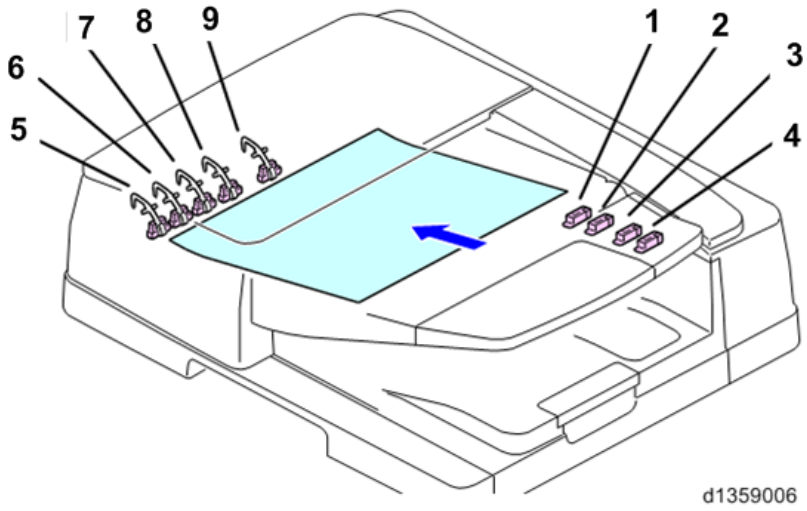
SP4-310-001: Scanned value of **R** at **S1** during original size detection.	Even if only one reading is more than **18**, it is judged that an original is at **S1**.
SP4-310-002: Scanned value of **G** at **S1** during original size detection.	
SP4-310-003: Scanned value of **B** at **S1** during original size detection.	
SP4-310-004: Scanned value of **R** at **S2** during original size detection.	Even if only one reading is more than **18**, it is judged that an original is at **S2**.
SP4-310-005: Scanned value of **G** at **S2** during original size detection.	
SP4-310-006: Scanned value of **B** at **S2** during original size detection.	
SP4-310-007: Scanned value of **R** at **S3** during original size detection.	Even if only one reading is more than **18**, it is judged that an original is at **S3**.
SP4-310-008: Scanned value of **G** at **S3** during original size detection.	

SP4-310-009: Scanned value of **B** at **S3** during original size detection.	

Size	Feed	Size (LxW)	S1	S2	S3
A3	SEF	297x420	ON	ON	ON
B4	SEF	257x364	ON	ON	OFF
A4	SEF	210x297	ON	OFF	OFF
A4	LEF	297x210	ON	ON	ON
B5	SEF	182x257	OFF	OFF	OFF
B5	LEF	257x182	ON	ON	OFF
A5	SEF	148x210	OFF	OFF	OFF
A5	LEF	210x148	ON	OFF	OFF
B6	SEF	128x182	OFF	OFF	OFF
B6	LEF	182x128	OFF	OFF	OFF

ADF Original Size Detection

- When the leading edge of the original reaches the interval sensor, the machine determines the width from the readings of the 5 original width sensors.
- The length of the original is determined by the readings of the 3 original length sensors under the original table and one sensor on the bottom plate.
- These two arrays of sensors are used to determine the size of the originals.



No.	Part
1	Original Length Sensor A4/LT LEF
2	Original Length Sensor B5
3	Original Length Sensor A4
4	Original Length Sensor LG
5	Original Width Sensor 5
6	Original Width Sensor 4
7	Original Width Sensor 3
8	Original Width Sensor 2
9	Original Width Sensor 1

	Width Sensors					Length Sensors			
	1	2	3	4	5	A4 LEF	B5	A4	LG
A3(297x420)	ON	ON	ON	ON	ON	ON	ON	ON	ON
B4(257x364)	ON	ON	ON	---	---	ON	ON	ON	ON
A4 SEF (210x297)	ON	ON	---	---	---	ON	ON	ON	-
A4 LEF (297x210)	ON	ON	ON	ON	ON	---	---	---	---
A4 SEF (210x297)	ON	---	---	---	---	ON	ON	---	---
A4 LEF (297x210)	ON	ON	ON	---	---	---	---	---	---
A4 SEF (210x297)	---	---	---	---	---	---	---	---	---
A4 LEF (297x210)	ON	---	---	---	---	---	---	---	---
DLT SEF (11"x17")	ON	ON	ON	ON	---	ON	ON	ON	ON
DLT SEF (11"x17")	ON	ON	ON	ON	---	ON	ON	ON	ON
8 $_{1/2}$"x11" SEF (LT)	ON	ON	---	---	---	ON	ON	---	---
11"x8$_{1/2}$" LEF (LT)	ON	ON	ON	ON	---	---	---	---	---

Note

- 11"x17", 11"x15" are detected as the same size, so you need to select one or the other with **SP6016-001** (Original Size Determination Priority) to choose whichever are using.

1.2.2 PAPER FEED

Remarks

A	Auto detectable. Also can be selected with size button of initial setting.
B	Can be selected with size button from initial setting.
C	Select this size by setting the dial.
D	Set dial to "*", then select with size button from initial setting.
E	**Bypass setting.** Copy window/Bypass/Standard size/Size select or select with the print bypass paper size/size button from initial setting.
F	Select with SP from preset paper sizes. Cannot be selected from printer driver.
G	Switches which size to set as auto detect with SP. *Example: The combination of A1-G1. G (When not auto detectable) will be as same as B. Combinations are only made from same region same tray. *Example: The combination of G1 and J1. G (When not auto detectable) will be as same as E. Combinations are only made from same region same tray.
H	Size fixed when shipping.
I	**Bypass setting.** With bypass tray, after 1st sheet trailing edge goes through, auto detects size, then fixed to size detected from the 2nd sheet.
J	**Bypass setting.** Auto detect of Copy window/Bypass/Standard size/Select with size button.
K	Select with SP from preset paper sizes. Can be selected from printer driver.
---	Not available

Notes

0	Paper without designated size code can pass through the peripheral as a custom size.
1	Sizes that can be used in Tray 1 (Tandem Tray).
2	Long paper up to 432 mm long can be effectively fed from the bypass tray.
3	The paper size can be set with an SP code.
4	Paper lengths up to 150 mm (Thick 1, 2, 3) are not within specification.
5	When duplex printing with paper fed from the bypass tray, settings can be done (front sheet, back sheet, etc.), or the default settings (paper type, paper size, thickness) can be used.

Examples

Combinations of letters and numbers direct your attention to the **Remarks** and **Notes** table above.

- “E4” Refers to Remark “E and Note “4”.
- “K1” Refers to Remark K and Note 1.
- Do not confuse these notations with paper sizes (A4, etc.) The paper sizes are listed only in the left column.

Main Machine

	Bypass (100)		Tray 1 (Tandem) (1550+1550)		Tray 2, 3 (Universal) (550 ea.)	
	NA	**EU/Asia**	**NA**	**EU/Asia**	**NA**	**EU/Asia**
A3 SEF (297x420 mm)	J	J	---	---	A	A
A4 SEF (210x297 mm)	E	J	---	---	A	A
A4 LEF (297x210 mm)	J	J	K1	H1	A	A
A5 SEF (148x210 mm)	E	J	---	---	A	A
A5 LEF (210x148 mm)	E4	J4	---	---	A4	A4
A6 SEF (105x148 mm)	E	E	---	---	---	---
B4 SEF (257x364 mm)	E	E	---	---	A	A
B5 SEF (182x257 mm)	E	E	---	---	A	A
B5 LEF (257x182 mm)	E	E	---	---	A	A
B6 SEF (128x182 mm)	E	E	---	---	---	---
DLT SEF (11x17 in.)	J	E	---	---	A	A
Legal SEF (8.5x14 in.)	A1	E	---	---	A	A
Foolscap SEF (8.5x13 in.)	E	E	---	---	A	A
Letter SEF (8.5x11 in.)	G1	E	---	---	A1	A1
Letter LEF (11x8.5 in.)	J	E	H1	K1	A	A
Govt LG SEF (8.25x14 in.)	E	E	---	---	B	B
Folio SEF (8.25x13 in.)	E	E	---	---	A	A
F/GL SEF (8x13 in.)	E	E	---	---	A	A
Eng Quatro SEF (8x10 in.)	E	E	---	---	---	---
Eng Quatro LEF 10x8 in.)	E	E	---	---	---	---

	Bypass (100)		Tray 1 (Tandem) (1550+1550)		Tray 2, 3 (Universal) (550 ea.)	
	NA	**EU/Asia**	**NA**	**EU/Asia**	**NA**	**EU/Asia**
Executive SEF (7.25x10.5 in.)	E	E	---	---	A	A
Executive LEF (10.5x7.25 in.)	E	E	---	---	A	A
Half Letter SEF (5.5x8.5 in.)	J	E	---	---	A	A
Half Letter LEF (8.5x5.5 in.)	J4	E4	---	---	A4	A4
8K SEF (267x390 mm)	---	---	---	---	A	A
16K SEF (195x267 mm)	---	---	---	---	A	A
16K LEF (267x195 mm)	---	---	---	---	A	A
11x15 SEF (11x15 in.)	E	E	---	---	B	B
11x14 SEF (11x14 in.)	E	E	---	---	B	B
10x15 SEF (10x15 in.)	E	E	---	---	B	B
10x14 SEF (10x14 in.)	E	E	---	---	---	---
$8\ _{1/2}$ x $13\ _{2/5}$ SEF (8.5x13.4 in.)	G1	E	---	---	G1	G1

Feed Station Options: A3/DLT Kit, LCIT, Cover Interposer Trays

Tray 1 A3/DLT Kit, LCIT

	Tray 1 A3/DLT Kit (1000)		LCIT (4000)	
	NA	**EU/Asia**	**NA**	**EU/Asia**
A3 SEF (297x420 mm)	K	K	---	---
A4 SEF (210x297 mm)	K	K	---	---
A4 LEF (297x210 mm)	K	H	K	H
A5 SEF (148x210 mm)	---	---	---	---
A5 LEF (210x148 mm)	---	---	---	---
A6 SEF (105x148 mm)	---	---	---	---
B4 SEF (257x364 mm)	K	K	---	---
B5 SEF (182x257 mm)	---	---	---	---
B5 LEF (257x182 mm)	---	---	K	K
B6 SEF (128x182 mm)	---	---	---	---
DLT SEF (11x17 in.)	K	K	---	---
Legal SEF (8.5x14 in.)	K	K	---	---
Foolscap SEF (8.5x13 in.)	---	---	---	---
Letter SEF (8.5x11 in.)	K	K	---	---
Letter LEF (11x8.5 in.)	H	K	H	K
Govt LG SEF (8.25x14 in.)	---	---	---	---
Folio SEF (8.25x13 in.)	---	---	---	---
F/GL SEF (8x13 in.)	---	---	---	---
Eng Quatro (SEF 8x10 in.)	---	---	---	---
Eng Quatro LEF (10x8 in.)	---	---	---	---

	Tray 1 A3/DLT Kit (1000)		LCIT (4000)	
	NA	**EU/Asia**	**NA**	**EU/Asia**
Executive SEF (7.25x10.5 in.)	---	---	---	---
Executive LEF (10.5x7.25 in.)	---	---	---	---
Half Letter SEF (5.5x8.5 in.)	---	---	---	---
Half Letter LEF (8.5x5.5 in.)	---	---	---	---
8K SEF (267x390 mm)	---	---	---	---
16K SEF (195x267 mm)	---	---	---	---
16K LEF (267x195 mm)	---	---	---	---
11x15 SEF (11x15 in.)	---	---	---	---
11x14 SEF (11x14 in.)	---	---	---	---
10x15 SEF (10x15 in.)	---	---	---	---
10x14 SEF (10x14 in.)	---	---	---	---
$8\ _{1/2}$ x $13\ _{2/5}$ SEF (8.5x13.4 in.)	K	K	---	---

Cover Interposer Trays

	Cover Interposer Trays (200)		
	NA	**EU**	**Asia**
A3 SEF (297x420 mm)	A	A	A
A4 SEF (210x297 mm)	A	A	A
A4 LEF (297x210 mm)	A	A	A
A5 SEF (148x210 mm)	A	---	A
A5 LEF (210x148 mm)	A	---	A
A6 SEF (105x148 mm)	---	---	---
B4 SEF (257x364 mm)	A	---	A
B5 SEF (182x257 mm)	A	---	A
B5 LEF (257x182 mm)	A	---	A
B6 SEF (128x182 mm)	---	---	---
DLT SEF (11x17 in.)	A	A	G4
Legal SEF (8.5x14 in.)	---	A1	---
Foolscap SEF (8.5x13 in.)	---	G1	A7
Letter SEF (8.5x11 in.)	A	A2	G6
Letter LEF (11x8.5 in.)	A	A3	G5
Govt LG SEF (8.25x14 in.)	---	---	---
Folio SEF (8.25x13 in.)	---	---	G7
F/GL SEF (8x13 in.)	---	---	G7
Eng Quatro (SEF 8x10 in.)	---	G2	---
Eng Quatro LEF (10x8 in.)	---	---	---
Executive SEF (7.25x10.5 in.)	---	A	---
Executive LEF (10.5x7.25 in.)	---	G3	---

	Cover Interposer Trays (200)		
	NA	**EU**	**Asia**
Half Letter SEF (5.5x8.5 in.)	---	A	---
Half Letter LEF (8.5x5.5 in.)	---	A	---
8K SEF (267x390 mm)	---	---	A4
16K SEF (195x267 mm)	---	---	A6
16K LEF (267x195 mm)	---	---	A5
11x15 SEF (11x15 in.)	---	---	---
11x14 SEF (11x14 in.)	---	---	---
10x15 SEF (10x15 in.)	---	---	---
10x14 SEF (10x14 in.)	---	A	---
8 1/2 x 13 2/5 SEF (8.5x13.4 in.)	---	A	---

1.2.3 PAPER EXIT

Remarks:

A	Paper exit is available and paper will pass.
B	Paper exit is available but passage is not guaranteed as the paper is not with specifications.
---	Not available.

Notes

0	Paper without designated size code can pass through the peripheral as a custom size.
1	Folding is possible with Multi Folder with thick paper in the range 64 to 80 g/m^2.
2	Main machine controls stapling.
3	Not used.
4	Not used.
5	Paper longer than 432 mm is not within specification
6	Paper lengths up to 150 mm (Thick 1, 2, 3) are not within specification.
7	There are limitations on FM 3 Letter Fold-out, FM 4 Letter Fold-in, FM6 Gate Folding with A3, B4, DLT and LG size paper due to the possibility of wrinkling.
8	There are limitations on FM6 Gate Folding with A3, B4, DLT and LG size paper due to the possibility of creasing.
9	Out of specification for stack alignment by jogger operation on the 2K/3K Finishers.
10	Estimated eight Z-folded sheets for 52 to 80 g/m^2. Estimated thirteen Z-folded sheets for 80.1 to 105 g/m^2.
11	Up to 5 multi-folded sheets allowed with 2K/3K Finishers.
12	Range of paper size that can be shifted with the 2K/3K Finishers Width:125.0 to 304.8 mm Length: 139.7 to 457.2 mm

13	Range of paper size that can be corner stapled with the 2K/3K Finishers Width:182.0 to 297 mm Length: 182.0 to 457.2 mm
14	Range of paper size that can be booklet stapled with the 2K/3K Finishers Width:182.0 to 330.2 mm Length: 257.0 to 457.2 mm However, the width is further restricted to 182 mm, 207 to 225 mm, 250 to 257 mm, 279.4 to 306 mm
15	Can exit if folded with Multi Folder unit. Cannot exit if not folded.

Examples

Combinations of letters and numbers direct your attention to the **Remarks** and **Notes** table above.

- "A6" Refers to Remark "A" and Note "6".
- "A(3)1 Refers to Remark "A" (3 sheets), Note "1".
- Do not confuse these notations with paper sizes (A6, etc.) The paper sizes are listed only in the left column.

Exit Tray (Main Machine), Mail Box CS4010

	Exit Tray	Mail Box
A3 SEF (297x420 mm)	A	A
A4 SEF (210x297 mm)	A	A
A4 LEF (297x210 mm)	A	A
A5 SEF (148x210 mm)	A	A
A5 LEF (210x148 mm)	A6	A6
A6 SEF (105x148 mm)	A	---
B4 SEF (257x364 mm)	A	A
B5 SEF (182x257 mm)	A	A
B5 LEF (257x182 mm)	A	A
B6 SEF (128x182 mm)	A	---

	Exit Tray	Mail Box
DLT SEF (11x17 in.)	A	A
Legal SEF (8.5x14 in.)	A	A
Foolscap SEF (8.5x13 in.)	A	A
Letter SEF (8.5x11 in.)	A	A
Letter LEF (11x8.5 in.)	A	A
Govt LG SEF (8.25x14 in.)	A	A
Folio SEF (8.25x13 in.)	A	A
F/GL SEF (8x13 in.)	A	A
G LT SEF (8x10.5 in.)	A	A
G LT LEF (10.5x8 in.)	A	A
Eng Quatro SEF (8x10 in.)	A	A
Eng Quatro LEF (10x8 in.)	A	A
Executive SEF (7.25x10.5 in.)	A	A
Executive LEF (10.5x7.25 in.)	A	A
Half Letter SEF (5.5x8.5 in.)	A	A
Half Letter LEF (8.5x5.5 in.)	A6	A6
8K SEF (267x390 mm)	A	A
16K SEF (195x267 mm)	A	A
16K LEF (267x195 mm)	A	A
11x15 SEF (11x15 in.)	A	A
11x14 SEF (11x14 in.)	A	A
10x15 SEF (10x15 in.)	A	A
10x14 SEF (10x14 in.)	A	A
8.5 x 13.4 SEF (8.5x13.4 in.)	A	A

Finisher SR4080 (3K Finisher Corner Stapling Only)

	Exit			Stapling		
	Proof	**Shift**	**Shifting**	**Corner**	**Booklet**	**Sheets**
A3 SEF (297x420 mm)	A	A	A	A	A	50 (2)
A4 SEF (210x297 mm)	A	A	A	A	A	100
A4 LEF (297x210 mm)	A	A	A	A	A	100
A5 SEF (148x210 mm)	A	A	A	---	1. ---	
A5 LEF (210x148 mm)	A6	A6	A6	---	---	
A6 SEF (105x148 mm)	A	---	---	---	---	
B4 SEF (257x364 mm)	A	A	A	A	A	50 (2)
B5 SEF (182x257 mm)	A	A	A	A	A	100
B5 LEF (257x182 mm)	A	A	A	A	A	100
B6 SEF (128x182 mm)	A	---	---	---	---	
DLT SEF (11x17 in.)	A	A	A	A	A	50 (2)
Legal SEF (8.5x14 in.)	A	A	A	A	A	50 (2)
Foolscap SEF (8.5x13 in.)	A	A	A	A	A	50 (2)
Letter SEF (8.5x11 in.)	A	A	A	A	A	100
Letter LEF (11x8.5 in.)	A	A	A	A	A	100
Govt LG SEF (8.25x14 in.)	A	A	A	A	A	50 (2)
Folio SEF (8.25x13 in.)	A	A	A	A	A	50 (2)
F/GL SEF (8x13 in.)	A	A	A	A	A	50 (2)
G LT SEF (8x10.5 in.)	A	A	A	A	A	50 (2)
G LT LEF (10.5x8 in.)	A	A	A	A	A	50 (2)
Eng Quatro SEF (8x10 in.)	A	A	A	A	A	50 (2)
Eng Quatro LEF (10x8 in.)	A	A	A	A	A	50 (2)

	Exit			Stapling		
	Proof	**Shift**	**Shifting**	**Corner**	**Booklet**	**Sheets**
Executive SEF (7.25x10.5 in.)	A	A	A	A	A	50 (2)
Executive LEF (10.5x7.25 in.)	A	A	A	A	A	50 (2)
Half Letter SEF (5.5x8.5 in.)	A	A	A	---	---	---
Half Letter LEF (8.5x5.5 in.)	A6	A6	A	---	---	---
8K SEF (267x390 mm)	A	A	A	A	A	50 (2)
16K SEF (195x267 mm)	A	A	A	A	A	50 (2)
16K LEF (267x195 mm)	A	A	A	A	A	50 (2)
11x15 SEF (11x15 in.)	A	A	A	A	A	50 (2)
11x14 SEF (11x14 in.)	A	A	A	A	A	50 (2)
10x15 SEF (10x15 in.)	A	A	A	A	A	50 (2)
10x14 SEF (10x14 in.)	A	A	A	A	A	50 (2)
8.5 x 13.4 SEF (8.5x13.4 in.)	A	A	A	A	A	50 (2)

In the table below “EU-2” means European 2-hole punch, “NA-2”, “NA-3” means North American 2-hole, 3-hole punch, and “SC4” means Scandinavian 4-hole punch.

	Punching				
	EU-2	**NA-2**	**NA-3**	**EU-4**	**SC-4**
A3 SEF (297x420 mm)	A	A	A	A	A
A4 SEF (210x297 mm)	A	A	---	---	A
A4 LEF (297x210 mm)	A	A	A	A	A
A5 SEF (148x210 mm)	A	A	---	---	A
A5 LEF (210x148 mm)	A6	A6	---	---	A6
A6 SEF (105x148 mm)	A	A	---	---	---
B4 SEF (257x364 mm)	A	A	A	A	A
B5 SEF (182x257 mm)	A	A	---	---	A
B5 LEF (257x182 mm)	A	A	A	A	A
B6 SEF (128x182 mm)	A	A	---	---	---
DLT SEF (11x17 in.)	A	A	A	A	A
Legal SEF (8.5x14 in.)	A	A	---	---	A
Foolscap SEF (8.5x13 in.)	A	A	---	---	A
Letter SEF (8.5x11 in.)	A	A	---	---	A
Letter LEF (11x8.5 in.)	A	A	A	A	A
Govt LG SEF (8.25x14 in.)	A	A	---	---	A
Folio SEF (8.25x13 in.)	A	A	---	---	A
F/GL SEF (8x13 in.)	A	A	---	---	A
G LT SEF (8x10.5 in.)	A	A	---	---	A
G LT LEF (10.5x8 in.)	A	A	A	A	A
Eng Quatro SEF (8x10 in.)	A	A	---	---	A
Eng Quatro LEF (10x8 in.)	A	A	A	---	A

	Punching				
	EU-2	**NA-2**	**NA-3**	**EU-4**	**SC-4**
Executive SEF (7.25x10.5 in.)	A	A	---	---	A
Executive LEF (10.5x7.25 in.)	A	A	A	A	A
Half Letter SEF (5.5x8.5 in.)	A	A	---	---	A
Half Letter LEF (8.5x5.5 in.)	A6	A6	---	---	A6
8K SEF (267x390 mm)	A	A	A	A	A
16K SEF (195x267 mm)	A	A	---	---	A
16K LEF (267x195 mm)	A	A	A	A	A
11x15 SEF (11x15 in.)	A	A	A	A	A
11x14 SEF (11x14 in.)	A	A	A	A	A
10x15 SEF (10x15 in.)	A	A	A	---	A
10x14 SEF (10x14 in.)	A	A	A	---	A
8.5 x 13.4 SEF (8.5x13.4 in.)	A	A	---	---	A

3K/2K Finishers

The 3K finisher is the Finisher SR4120 (Corner Stapling Only), and the 2K finisher is the Booklet Finisher SR4130 (Corner and Booklet Stapling.

Exit, Folded

	Exit				Folded
	Proof	**Shift**	**Shifting**	**Booklet**	**Booklet**
A3 SEF (297x420 mm)	A	A	A	A	A11
A4 SEF (210x297 mm)	A	A	A	A	A11
A4 LEF (297x210 mm)	A	A	A	---	---
A5 SEF (148x210 mm)	A	A	A	---	---
A5 LEF (210x148 mm)	A6	A6	A6	---	---
A6 SEF (105x148 mm)	A	B	---	---	---
B4 SEF (257x364 mm)	A	A	A	A	A11
B5 SEF (182x257 mm)	A	A	A	A	A11
B5 LEF (257x182 mm)	A	A	A	---	---
B6 SEF (128x182 mm)	A	A	B	---	---
DLT SEF (11x17 in.)	A	A	A	A	A11
Legal SEF (8.5x14 in.)	A	A	A	A	A11
Foolscap SEF (8.5x13 in.)	A	A	A	---	---
Letter SEF (8.5x11 in.)	A	A	A	A	A11
Letter LEF (11x8.5 in.)	A	A	A	---	---
Govt LG SEF (8.25x14 in.)	A	A	A	A	A11
Folio SEF (8.25x13 in.)	A	A	A	A	A11
F/GL SEF (8x13 in.)	A	A	A	---	---
G LT SEF (8x10.5 in.)	A	A	A	---	---
G LT LEF (10.5x8 in.)	A	A	A	---	---

	Exit				Folded
	Proof	**Shift**	**Shifting**	**Booklet**	**Booklet**
Eng Quatro SEF (8x10 in.)	A	A	A	---	---
Eng Quatro LEF (10x8 in.)	A	A	A	---	---
Executive SEF (7.25x10.5 in.)	A	A	A	---	---
Executive LEF (10.5x7.25 in.)	A	A	A	---	---
Half Letter SEF (5.5x8.5 in.)	A	A	A	---	---
Half Letter LEF (8.5x5.5 in.)	A6	A6	A6	---	---
8K SEF (267x390 mm)	A	A	A	---	---
16K SEF (195x267 mm)	A	A	A	---	---
16K LEF (267x195 mm)	A	A	A	---	---
11x15 SEF (11x15 in.)	A	A	A	A	A11
11x14 SEF (11x14 in.)	A	A	A	A	A11
10x15 SEF (10x15 in.)	A	A	A	A	A11
10x14 SEF (10x14 in.)	A	A	A	A	A11
8.5 x 13.4 SEF (8.5x13.4 in.)	A	A	A	A	A11

Stapling

	Stapled				
	Corner	**Double**	**Sheets**	**Booklet**	**Sheets**
A3 SEF (297x420 mm)	A	A	65	A	20
A4 SEF (210x297 mm)	A	A	65	A	20
A4 LEF (297x210 mm)	A	A	65	---	---
A5 SEF (148x210 mm)	---	---	---	---	---
A5 LEF (210x148 mm)	---	---	---	---	---
A6 SEF (105x148 mm)	---	---	---	---	---
B4 SEF (257x364 mm)	A	A	65	A	20
B5 SEF (182x257 mm)	A	A	65	A	20
B5 LEF (257x182 mm)	A	A	65	---	---
B6 SEF (128x182 mm)	---	---	---	---	---
DLT SEF (11x17 in.)	A	A	65	A	20
Legal SEF (8.5x14 in.)	A	A	65	A	20
Foolscap SEF (8.5x13 in.)	A	A	65	---	---
Letter SEF (8.5x11 in.)	A	A	65	A	20
Letter LEF (11x8.5 in.)	A	A	65	---	---
Govt LG SEF (8.25x14 in.)	A	A	65	A	20
Folio SEF (8.25x13 in.)	A	A	65	A	20
F/GL SEF (8x13 in.)	A	A	65	---	---
G LT SEF (8x10.5 in.)	---	---	---	---	---
G LT LEF (10.5x8 in.)	---	---	---	---	---
Eng Quatro SEF (8x10 in.)	---	---	---	---	---
Eng Quatro LEF (10x8 in.)	---	---	---	---	---

	Stapled				
	Corner	**Double**	**Sheets**	**Booklet**	**Sheets**
Executive SEF (7.25x10.5 in.)	A	A	65	---	---
Executive LEF (10.5x7.25 in.)	A	A	65	---	---
Half Letter SEF (5.5x8.5 in.)	---	---	---	---	---
Half Letter LEF (8.5x5.5 in.)	---	---	---	---	---
8K SEF (267x390 mm)	A	A	65	---	---
16K SEF (195x267 mm)	A	A	65	---	---
16K LEF (267x195 mm)	A	A	65	---	---
11x15 SEF (11x15 in.)	A	A	65	A	20
11x14 SEF (11x14 in.)	A	A	65	A	20
10x15 SEF (10x15 in.)	A	A	65	A	20
10x14 SEF (10x14 in.)	A	A	65	A	20
8.5 x 13.4 SEF (8.5x13.4 in.)	A	A	65	A	20

Punching

In the table below “EU-2” means European 2-hole punch, “NA-2”, “NA-3” means North American 2-hole, 3-hole punch, and “SC4” means Scandinavian 4-hole punch.

	Punch				
	EU-2	**NA-2**	**NA-3**	**EU-4**	**SC-4**
A3 SEF (297x420 mm)	A	A	A	A	A
A4 SEF (210x297 mm)	A	B	---	---	A
A4 LEF (297x210 mm)	A	A	A	A	A
A5 SEF (148x210 mm)	A	A	---	---	A
A5 LEF (210x148 mm)	A6	B	---	---	A6
A6 SEF (105x148 mm)	---	---	---	---	---
B4 SEF (257x364 mm)	A	A	A	A	A
B5 SEF (182x257 mm)	A	A	---	---	A
B5 LEF (257x182 mm)	A	A	A	A	A
B6 SEF (128x182 mm)	---	---	---	---	---
DLT SEF (11x17 in.)	A	A	A	A	A
Legal SEF (8.5x14 in.)	A	A	---	---	A
Foolscap SEF (8.5x13 in.)	A	A	---	---	A
Letter SEF (8.5x11 in.)	A	A	---	---	A
Letter LEF (11x8.5 in.)	A	A	A	A	A
Govt LG SEF (8.25x14 in.)	A	A	---	---	A
Folio SEF (8.25x13 in.)	A	A	---	---	A
F/GL SEF (8x13 in.)	A	A	---	---	A
G LT SEF (8x10.5 in.)	A	A	---	---	A
G LT LEF (10.5x8 in.)	A	A	A	A	A

	Punch				
	EU-2	**NA-2**	**NA-3**	**EU-4**	**SC-4**
Eng Quatro SEF (8x10 in.)	A	A	---	---	A
Eng Quatro LEF (10x8 in.)	A	A	A	A	A
Executive SEF (7.25x10.5 in.)	A	A	---	---	A
Executive LEF (10.5x7.25 in.)	A	A	A	A	A
Half Letter SEF (5.5x8.5 in.)	A	A	---	---	A
Half Letter LEF (8.5x5.5 in.)	A6	A6	---	---	A6
8K SEF (267x390 mm)	A	A	A	A	A
16K SEF (195x267 mm)	A	A	---	---	A
16K LEF (267x195 mm)	A	A	A	A	A
11x15 SEF (11x15 in.)	A	A	A	A	A
11x14 SEF (11x14 in.)	A	A	A	A	A
10x15 SEF (10x15 in.)	A	A	A	---	A
10x14 SEF (10x14 in.)	A	A	A	---	A
8.5 x 13.4 SEF (8.5x13.4 in.)	A	A	---	---	A

Multi-Folding Unit FD4000

	Exit	Straight Through
	Fold Tray	**Downstream**
A3 SEF (297x420 mm)	A15	A
A4 SEF (210x297 mm)	A15	A
A4 LEF (297x210 mm)	A	A
A5 SEF (148x210 mm)	A	A
A5 LEF (210x148 mm)	A6	A6
A6 SEF (105x148 mm)	A	A
B4 SEF (257x364 mm)	A15	A
B5 SEF (182x257 mm)	A	A
B5 LEF (257x182 mm)	A	A
B6 SEF (128x182 mm)	A	A
DLT SEF (11x17 in.)	A15	A
Legal SEF (8.5x14 in.)	A15	A
Foolscap SEF (8.5x13 in.)	---	A
Letter SEF (8.5x11 in.)	A15	A
Letter LEF (11x8.5 in.)	A	A
Govt LG SEF (8.25x14 in.)	---	A
Folio SEF (8.25x13 in.)	---	A
F/GL SEF (8x13 in.)	---	A
G LT SEF (8x10.5 in.)	---	A
G LT LEF (10.5x8 in.)	A	A
Eng Quatro SEF (8x10 in.)	A	A
Eng Quatro LEF (10x8 in.)	A	A

	Exit	Straight Through
	Fold Tray	Downstream
Executive SEF (7.25x10.5 in.)	---	A
Executive LEF (10.5x7.25 in.)	A	A
Half Letter SEF (5.5x8.5 in.)	A	A
Half Letter LEF (8.5x5.5 in.)	A6	A6
8K SEF (267x390 mm)	A15	A
16K SEF (195x267 mm)	---	A
16K LEF (267x195 mm)	A	A
11x15 SEF (11x15 in.)	---	A
11x14 SEF (11x14 in.)	---	A
10x15 SEF (10x15 in.)	---	A
10x14 SEF (10x14 in.)	---	A
8.5 x 13.4 SEF (8.5x13.4 in.)	A15	A

	FM1 Z-Fold	FM2 Half-Fold		FM3 Letter Out	
	Single	Single	Multi	Single	Multi
A3 SEF (297x420 mm)	A	A	A(3)1	A7	---
A4 SEF (210x297 mm)	A	A	A(3)1	A	A(3)1
A4 LEF (297x210 mm)	---	---	---	---	---
A5 SEF (148x210 mm)	---	---	---	---	---
A5 LEF (210x148 mm)	---	---	---	---	---
A6 SEF (105x148 mm)	---	---	---	---	---
B4 SEF (257x364 mm)	A	A	A(3)1	A7	A(3)1
B5 SEF (182x257 mm)	---	A	A(3)1	A	A(3)1
B5 LEF (257x182 mm)	---	---	---	---	---
B6 SEF (128x182 mm)	---	---	---	---	---
DLT SEF (11x17 in.)	A	A	A(3)1	A7	---
Legal SEF (8.5x14 in.)	A	A	A(3)1	A7	A(3)1
Foolscap SEF (8.5x13 in.)	---	---	---	---	---
Letter SEF (8.5x11 in.)	A	A	A(3)1	A	A(3)1
Letter LEF (11x8.5 in.)	---	---	---	---	---
Govt LG SEF (8.25x14 in.)	---	---	---	---	---
Folio SEF (8.25x13 in.)	---	---	---	---	---
F/GL SEF (8x13 in.)	---	---	---	---	---
G LT SEF (8x10.5 in.)	---	---	---	---	---
G LT LEF (10.5x8 in.)	---	---	---	---	---
Eng Quatro SEF (8x10 in.)	---	---	---	---	---
Eng Quatro LEF (10x8 in.)	---	---	---	---	---

	FM1 Z-Fold	FM2 Half-Fold		FM3 Letter Out	
	Single	**Single**	**Multi**	**Single**	**Multi**
Executive SEF (7.25x10.5 in.)	---	---	---	---	---
Executive LEF (10.5x7.25 in.)	---	---	---	---	---
Half Letter SEF (5.5x8.5 in.)	---	---	---	---	---
Half Letter LEF (8.5x5.5 in.)	---	---	---	---	---
8K SEF (267x390 mm)	A	A	A(3)1	A	---
16K SEF (195x267 mm)	---	---	---	---	---
16K LEF (267x195 mm)	---	---	---	---	---
11x15 SEF (11x15 in.)	---	---	---	---	---
11x14 SEF (11x14 in.)	---	---	---	---	---
10x15 SEF (10x15 in.)	---	---	---	---	---
10x14 SEF (10x14 in.)	---	---	---	---	---
8.5 x 13.4 SEF (8.5x13.4 in.)	A	A	A(3)1	A	A(3)1

	FM4 Letter In		FM5 Dbl Parallel	FM6 Gate
	Single	Multi	Single	Single
A3 SEF (297x420 mm)	A7	A(3)1,7	A	A7,8
A4 SEF (210x297 mm)	A	A(3)1	A	A
A4 LEF (297x210 mm)	---	---	---	---
A5 SEF (148x210 mm)	---	---	---	---
A5 LEF (210x148 mm)	---	---	---	---
A6 SEF (105x148 mm)	---	---	---	---
B4 SEF (257x364 mm)	A7	A(3)1,7	A	A7,8
B5 SEF (182x257 mm)	A	A(3)1	A	A
B5 LEF (257x182 mm)	---	---	---	---
B6 SEF (128x182 mm)	---	---	---	---
DLT SEF (11x17 in.)	A7	A(3)1,7	A	A7,8
Legal SEF (8.5x14 in.)	A7	A(3)1,7	A	A7,8
Foolscap SEF (8.5x13 in.)	---	---	---	---
Letter SEF (8.5x11 in.)	A	A(3)1	A	A
Letter LEF (11x8.5 in.)	---	---	---	---
Govt LG SEF (8.25x14 in.)	---	---	---	---
Folio SEF (8.25x13 in.)	---	---	---	---
F/GL SEF (8x13 in.)	---	---	---	---
G LT SEF (8x10.5 in.)	---	---	---	---
G LT LEF (10.5x8 in.)	---	---	---	---
Eng Quatro SEF (8x10 in.)	---	---	---	---
Eng Quatro LEF (10x8 in.)	---	---	---	---

	FM4 Letter In		FM5 Dbl Parallel	FM6 Gate
	Single	**Multi**	**Single**	**Single**
Executive SEF (7.25x10.5 in.)	---	---	---	---
Executive LEF (10.5x7.25 in.)	---	---	---	---
Half Letter SEF (5.5x8.5 in.)	---	---	---	---
Half Letter LEF (8.5x5.5 in.)	---	---	---	---
8K SEF (267x390 mm)	A	A(3)1	A	A
16K SEF (195x267 mm)	---	---	---	---
16K LEF (267x195 mm)	---	---	---	---
11x15 SEF (11x15 in.)	---	---	---	---
11x14 SEF (11x14 in.)	---	---	---	---
10x15 SEF (10x15 in.)	---	---	---	---
10x14 SEF (10x14 in.)	---	---	---	---
8.5 x 13.4 SEF (8.5x13.4 in.)	A	A(3)1	A	A

Cover Interposer Trays

The Cover Interposer Tray CI4030 (E-Type) is for the 3K Finisher, the Cover Interposer Tray CI4040 (F-type) is for 3K/2K Finisher.

	Straight Through
A3 SEF (297x420 mm)	A
A4 SEF (210x297 mm)	A
A4 LEF (297x210 mm)	A
A5 SEF (148x210 mm)	A
A5 LEF (210x148 mm)	A6
A6 SEF (105x148 mm)	A
B4 SEF (257x364 mm)	A
B5 SEF (182x257 mm)	A
B5 LEF (257x182 mm)	A
B6 SEF (128x182 mm)	A
DLT SEF (11x17 in.)	A
Legal SEF (8.5x14 in.)	A
Foolscap SEF (8.5x13 in.)	A
Letter SEF (8.5x11 in.)	A
Letter LEF (11x8.5 in.)	A
Govt LG SEF (8.25x14 in.)	A
Folio SEF (8.25x13 in.)	A
F/GL SEF (8x13 in.)	A
G LT SEF (8x10.5 in.)	A
G LT LEF (10.5x8 in.)	A
Eng Quatro SEF (8x10 in.)	A

	Straight Through
Eng Quatro LEF (10x8 in.)	A
Executive SEF (7.25x10.5 in.)	A
Executive LEF (10.5x7.25 in.)	A
Half Letter SEF (5.5x8.5 in.)	A
Half Letter LEF (8.5x5.5 in.)	A6
8K SEF (267x390 mm)	A
16K SEF (195x267 mm)	A
16K LEF (267x195 mm)	A
11x15 SEF (11x15 in.)	A
11x14 SEF (11x14 in.)	A
10x15 SEF (10x15 in.)	A
10x14 SEF (10x14 in.)	A
8.5 x 13.4 SEF (8.5x13.4 in.)	A

1.3 SOFTWARE ACCESSORIES

The printer drivers and utility software are provided on one CD-ROM. An auto-run installer allows you to select which components to install.

Y = Supported; N = Not Supported

1.3.1 PRINTER DRIVERS

Windows Environment

OS	Type	PCL5e	PCL6	PostScript3
Windows Vista	Starter	N	N	N
	Home Basic	Y	Y	Y
	Home Premium	Y	Y	Y
	Business	Y	Y	Y
	Ultimate	Y	Y	Y
	Enterprise	Y	Y	Y
Windows 7	Starter	N	N	N
	Home Basic	N	N	N
	Home Premium	Y	Y	Y
	Professional	Y	Y	Y
	Ultimate	Y	Y	Y
	Enterprise	Y	Y	Y
Windows 8	Windows 8	Y	Y	Y
	Pro	Y	Y	Y
	Enterprise	Y	Y	Y
	RT	N	N	N
Windows 8.1	Windows 8.1	Y	Y	Y
	Pro	Y	Y	Y

OS	Type	PCL5e	PCL6	PostScript3
	Enterprise	Y	Y	Y
Windows Server 2003	Standard Edition	Y*[3]	Y	Y
	Enterprise Edition	Y*[3]	Y	Y
	Datacenter Edition	N	N	N
	Web Edition	N	N	N
Windows Server 2003 R2	Standard Edition	Y*[3]	Y	Y
	Enterprise Edition	Y*[3]	Y	Y
	Datacenter Edition	N	N	N
Windows Server 2008	Standard Edition	Y	Y	Y
	Enterprise Edition	Y	Y	Y
	Datacenter Edition	N	N	N
	Web Edition	N	N	N
Windows Server 2008R2	Standard Edition	Y	Y	Y
	Enterprise Edition	Y	Y	Y
	Datacenter Edition	N	N	N
	Web Edition	N	N	N
Windows Server 2012	Foundation	Y	Y	Y
	Essentials	Y	Y	Y
	Standard	Y	Y	Y
	Datacenter	N	N	N

*RPCS driver has been discontinued.

Point and Print

Windows OS		Drivers		
Server	Client(Push to)	PCL5e	PCL6	PostScript3
Windows Server 2003 /2003 R2	7	Y	Y	Y
	8	Y	Y	Y
	Vista	Y	Y	Y
	XP	Y	Y	Y
	W2K Pro	N	N	N
Windows Server 2008	7	Y	Y	Y
	8	Y	Y	Y
	Vista	Y	Y	Y
	XP	Y	Y	Y
	W2K Pro	N	N	N
Windows Server 2008R2	7	Y	Y	Y
	8	Y	Y	Y
	Vista	Y	Y	Y
	XP	Y	Y	Y
	W2K Pro	N	N	N
Windows 2000 Professional Server & Advanced Server	7	N	N	N
	8	N	N	N
	Vista	N	N	N
	XP	N	N	N
	W2K Pro	N	N	N
Windows XP Professional	7	Y	Y	Y
	8	Y	Y	Y

Windows OS		Drivers		
Server	Client(Push to)	PCL5e	PCL6	PostScript3
	Vista	Y	Y	Y
	XP	Y	Y	Y
	W2K Pro	N	N	N
Windows Vista	7	Y	Y	Y
	8	Y	Y	Y
	Vista	Y	Y	Y
	XP	Y	Y	Y
	W2K Pro	N	N	N
Windows 7	7	Y	Y	Y
	8	Y	Y	Y
	Vista	Y	Y	Y
	XP	Y	Y	Y
	W2K Pro	N	N	N
Windows 8	7	Y	Y	Y
	8	Y	Y	Y
	Vista	Y	Y	Y
	XP	Y	Y	Y
	W2K Pro	N	N	N
Windows Server 2012	7	Y	Y	Y
	8	Y	Y	Y
	Vista	Y	Y	Y
	XP	Y	Y	Y

Mac OS and UNIX Environment

Mac OS

OS	PostScript3	Printer Utility for Mac
Mac OS 8.6 or later, Mac OS X classic	N	N
Mac OS X Native: v.10.7 or later	Y	N

Supported platforms for Unix filter

Platforms	Version
Sun Solaris	9, 10
HP-UX	11.x, 11i v2, 11i v3
Red Hat Linux	Enterprise V4, V5, V6
SCO OpenServer	5.0.7, 6.0
IBM AIX	V 5L, V5.3, V6.1, V7.1

1.3.2 SCANNER AND LAN FAX DRIVERS

Operating System	Driver	
	TWAIN*[9]	LAN-FAX
Windows Vista[*1*5]	Y	Y
Windows 7[*2*5]	Y	Y
Windows 8[*5*6]	Y	Y
Windows 8.1	Y	Y
Windows Server 2003[*3*5]	Y	Y
Windows Server 2008[*4*5]	Y	Y
Windows Server 2012[*7]	Y	Y
Macintosh	N	N

*1 Microsoft Windows Vista Ultimate / Enterprise / Business / Home Premium / Home Basic

*2 Microsoft Windows 7 Home Premium / Professional / Ultimate / Enterprise

*3 Microsoft Windows Server 2003 Standard Edition / Enterprise Edition / Microsoft Windows Server 2003 R2 Standard Edition / Enterprise Edition

*4 Microsoft Windows Server 2008 Standard / Enterprise / Microsoft Windows Server 2008 R2 Standard / Enterprise

*5 Supports both 32bit, 64bit (Scanner driver works on 32bit compatible mode)

*6 Microsoft Windows 8 (Core Edition) / Pro / Enterprise

*7 Microsoft Windows Server 2012 Standard / Datacenter / Essentials

*8 TWAIN scanner runs on a 64-bit operating system, but is not compatible with 64-bit applications. Use it with 32-bit applications.

Note

- With LAN-FAX driver, sending documents directly from PC will be available.
- Also Address Book Editor and Cover Sheet Editor will installed along.
- Network TWAIN driver will be provided on the scanner driver CD-ROM.

1.4 OPTIONAL EQUIPMENT SPECIFICATIONS

1.4.1 8 1/2"X14" PAPER SIZE TRAY TYPE M25 (B474)

Paper Size	B4, 8.5" x 14", A4 SEF, 8.5" x 11" SEF
Paper Weight	52 to 128 g/m^2 (14 to 34 lb)
Tray Capacity	1,000 sheets (80 g/m^2, 20lb)

1.4.2 A3/11" X 17" TRAY TYPE M25 (D615)

Paper Size	A3, B4, 11" x 17", 8.5" x 14", A4 SEF, A4 LEF, 8.5" x 11" SEF, 11" x 8.5" LEF
Paper Weight	52 to 163 g/m^2 16 to 40 lb. Bond 50 to 60 lb. Cover 90 lb. Index (no Tab)
Tray Capacity	1,000 sheets (80 g/m^2, 20lb)

1.4.3 LCIT RT4040 (D3A6)

Paper capacity	4,000 sheets
Paper Sizes	A4 LEF, B5 LEF, 8.5" x 11" LEF *1
Paper Weight	52 to 128 g/m^2 (14 to 34 lb)
Pick-up and Feed	FRR (Feed and Reverse Roller)
Power Consumption	Less than 50 W (Max.)
Power Supply	DC24 V, 5V (powered by the main unit)
Rated Voltage of Output Connector	Max. DC 24 V
Dimensions (W x D x H)	314 x 458 x 659 mm (12.4" x 18.1" x 25.9")
Weight	20.0 kg (44 lb.)

*1: In platen mode, APS (Auto Paper Select) with the original length and original width sensors are not used.

1.4.4 FINISHER SR4080 (D610)

Upper Tray

Paper Capacity (80 g/m^2)	500 sheets (A4, 8.5" x 11" and smaller)
	250 sheets (B4, 8.5" x 14" and larger)
Paper Size	A3 to A6 SEF, 11" x 17" to 5.5" x 8.5", 12" x 18"
Paper Weight	52 to 216 g/m^2 (14 to 58 lb)
Upper Tray Full Detection	Provided

Shift Tray

Paper Capacity (80 g/m^2)	3000 sheets (A4 LEF, B5 LEF, 8.5" x 11" LEF)
	1500 sheets (A3, A4 SEF, B4 and B5 SEF, 11" x 17", 8.5" x 14", 8.5" x 11" SEF, 12" x 18")
	500 sheets (A5 LEF, 5.5" x 8.5" LEF)
	100 sheets (A5 SEF, 5.5" x 8.5" SEF)
Paper Size	A3 to A5, 11" x 17" to 5.5" x 8.5", 12" x 18" (including tab paper)
Paper Weight	52 to 216 g/m^2 (14 to 58 lb)
Shift Tray Full Detection	Provided

Stapler

<table>
<tr><td>Stapling Stack Size</td><td colspan="3">A4, B5, 8.5" x 11" (Max. 100 Sheets)
A3, B4, 11" x 17", 8.5" x 14" (Max. 50 sheets)</td></tr>
<tr><td>Stapling Paper Size</td><td colspan="3">A3 to B5
11" x 17" to 8.5" x 11"</td></tr>
<tr><td>Stapling Paper Weight</td><td colspan="3">64 to 80 g/m^2 (17 to 20 lb)</td></tr>
<tr><td>Staple Position</td><td colspan="3">4 Modes
▪ 1 Staple: Front, Rear, Rear-Oblique
▪ 2 Stapes: 2 locations</td></tr>
<tr><td>Staple Capacity</td><td colspan="3">5000 staples/cartridge</td></tr>
<tr><td>Staple Supply</td><td colspan="3">Cartridge or Staple Replacement</td></tr>
<tr><td rowspan="5">Stapled Stack Size</td><td>Sheets</td><td>Sets</td><td>Sizes</td></tr>
<tr><td>10 to 100</td><td>200 to 30</td><td rowspan="2">A4 SEF, B5 SEF, 8.5" x 11" SEF
A4 LEF, B5 LEF, 8.5" x 11" LEF</td></tr>
<tr><td>2 to 9</td><td>150</td></tr>
<tr><td>10 to 50</td><td>150 to 30</td><td rowspan="2">A3, B4, 11" x 17", 8.5" x 14"</td></tr>
<tr><td>2 to 9</td><td>150</td></tr>
<tr><td>Trim Waste Staple Capacity</td><td colspan="3">30,000 or more</td></tr>
<tr><td>Waste Staple Hopper Full Detection</td><td colspan="3">Provided</td></tr>
<tr><td>Power Consumption</td><td colspan="3">Less than 100 W</td></tr>
<tr><td>Power Source</td><td colspan="3">DC 24 V (From Mainframe)</td></tr>
<tr><td>Size (W x D x H)</td><td colspan="3">800 x 730 x 980 mm (31.5" x 28.7" x 38.6")</td></tr>
<tr><td>Weight</td><td colspan="3">Less than 65 kg (143 lb.)</td></tr>
</table>

1.4.5 PUNCH UNIT TYPE 1075 (B531)

This punch unit is installed in the Finisher SR4080.

Punch Hole Positions	2/3-hole (North America) 2/4-hole (Europe)
Punch Paper Size	
2-Hole (NA)	A5 to A3 SEF, 11" x 17" to 5.5" x 8.5" SEF A5 to A4 LEF, 8.5" x 11" LEF, 5.5" x 8.5" LEF
3-Hole (NA)	A3 SEF, B4 SEF, 11" x 17" SEF A4 LEF, B5 LEF, 8.5" x11" LEF
4-Hole (EUR/A)	A3 SEF, 11" x 17" SEF A4 LEF, 8.5" x 11" LEF
Paper Weight	
2-Hole (NA)	52 g/m^2 to 163 g/m^2 (14 to 43 lb)
3-Hole (NA)	52 g/m^2 to 163 g/m^2 (14 to 43 lb)
4-Hole (EUR/A)	52 g/m^2 to 128 g/m^2 (14 to 34 lb)
Punch Waste Hopper Capacity	
2-Hole (NA)	10K
3-Hole (NA)	15K
4-Hole (EUR/A)	15K
Operation Modes	All (Shift, Proof, Staple)

DIP SW Settings

The correct DIP SW settings of the Punch Unit 531 are provided in the table below for your reference only. The DIP switches of these punch units do not need to be changed at installation, or adjusted for operation.

Punch Unit	Unit No.	DIP SW Settings			
		1	2	3	4
2/3-Hole (NA)	B531-17	1	0	1	0
2/4-Hole (EUR/A)	B531-27	1	0	0	1

0: OFF, 1: ON

1.4.6 PUNCH UNIT TYPE 850 SC (A812)

This punch unit is installed in the Finisher SR4080.

Punch Hole Positions	2-hole, 3-hole (NA) 4-hole (EUR/A) 4-hole (North Europe)
Punch Paper Size	
2-Hole	A5 to A3 SEF, 11" x 17" to 8.5" x 11" SEF A5 to A4 LEF, 8.5" x 11" LEF
3-Hole (NA)	A3 SEF, B4 SEF, 11" x 17" SEF A4 LEF, B5 LEF, 8.5" x 11" LEF
4-Hole (EUR/A)	A3 SEF, 11" x 17" SEF A4 LEF, 11" x 17" LEF
4-Hole (North Europe)	B5 to A3 SEF, 8.5" x 11" to 11" x 17" SEF A5 to A4 LEF, 8.5" x 11" LEF, 5.5" x 8.5" LEF
Paper Weight	
2-Hole, 3-Hole (NA)	52 g/m^2 to 163 g/m^2 (14 to 43 lb)
4-Hole (Europe/North Europe)	52 g/m^2 to 128 g/m^2 (14 to 34 lb)
Punch Waste Hopper Capacity	

2-Hole	40K
3-Hole (NA)	15K
4-Hole (EUR/A)	15K
4-Hole (North Europe)	15K
Power Supply	DC 24 V (From Finisher)
Power Consumption	60 W
Weight	Less than 2.4 K (5.3 lb.)
Operation Modes	All (Shift, Proof, Staple)

DIP SW Settings

The correct DIP SW settings of the Punch Unit A812 are provided in the table below for your reference only. The DIP switches of these punch units do not need to be changed at installation, or adjusted for operation.

Punch Unit	Unit No.	DIP SW Settings			
		1	2	3	4
2-Hole (EUR/A)	A812-40/A812-67	0	0	0	0
3-Hole (NA)	A812-57	1	0	0	0
4-Hole EUR/A)	A812-30	0	1	0	0
4-Hole (North Europe)	A812-31	0	0	1	0
2-Hole (NA)	A812-32	0	0	0	1

0: OFF, 1: ON

1.4.7 OUTPUT JOGGER UNIT TYPE 9002B (B513)

This jogger unit is installed above the shift tray of the Finisher SR4080.

Paper Size	A3 SEF, B4 SEF, 11" x 17" SEF A4 LEF, B5 LEF, 8.5" x 11" LEF
Paper Weight	52 g/m^2 to 216 g/m^2 (14 to 58 lb)
Weight	Less than 1.7 kg (3.7 lb.)
Dimensions (W x D x H)	125 mm x 450 mm x 100 mm (5" x 17.7" x 4")
Power Supply	DC 24 V, DC 5V (From Finisher)
Power Consumption	24 W

1.4.8 OUTPUT JOGGER UNIT TYPE M25 (D3CJ)

This option is installed on the Booklet Finisher SR4130 or Finisher SR4120.

Paper Size	A3 SEF, B4 SEF, A4 LEF, B5 LEF, 11”×17” SEF, 81/2”×11” LEF
Power Supply	From main machine
Power Consumption	Less than 15W
Power Source	DC24V
Dimensions (W x D x H)	125×450×100 mm (5 x 18 x 4 in.)
Weight	1.7 kg (3.7 lb.)

1.4.9 FINISHER SR4120 (D3CG)

This finisher provides corner stapling only.

Finisher

Dimensions (W x D x H)	657 x 613 x 960 mm		
Weight	Less than 54 kg Less than 56 kg with Punch Unit		
Power Consumption	Less than 96 W		
Noise	Less than 75 db		
Configuration	Console type attached base-unit		
Power Source	From base-unit		
Proof Tray	Stack Capacity*	250 sheets	A4, 8.5"x11" or smaller
		50 sheets	B4, 8.5"x14" or larger
	Paper Size	A5-A3 SEF, A6 SEF, A6 SEF 5.5"x8.5"-11"x17"SEF, 12"x18" SEF	
	Paper Weight	52 g/m²-163 g/m² 14 lb Bond- 43 lb Bond / 90 lb Index / 60 lb Cover	
Shift Tray	Stack Capacity*	3,000 sheets	A4 LEF, 1/2" x11" LEF
		1,500 sheets	A3 SEF, A4 SEF, B4 SEF, B5, 11"x17" SEF, $8_{1/2}$" x14" SEF, $8_{1/2}$" x 11" SEF, 12"x18" SEF
		500 sheets	A5 LEF**
		100 sheets	A5 SEF, B6 SEF, A6 SEF, $5_{1/2}$" x $8_{1/2}$",SEF
	Paper Size	A5 - A3 SEF, A6 SEF, B6 SEF, $5_{1/2}$" x $8_{1/2}$" - 11"x17" SEF, 12" x 18" SEF	
	Paper Weight	52 g/m²-256 g/m² 14 lb Bond- 68 lb Bond / 140 lb Index / 90 lb Cover	

Stapler

Paper Size	B5-A3 8.5"x11"-11"x17", 12"x18"		
Paper Weight	64 g/m²-90 g/m² 17 lb Bond-28 lb Bond		
Staple Position	Top, Bottom, 2 Staple, Top-slant		
Stapling Capacity	Same Paper Size	50 sheets	A4, 1/2" x11" or smaller
		30 sheets	B4, 1/2" x14" or larger
	Mixed Paper Size	30 sheets	A4 LEF + A3 SEF, B5 LEF + B4 SEF, 8 1/2" x11" LEF + 11" x17" SEF
Staple Replenishment	Cartridge exchange / 5000 pins per cartridge		
Stapled Stack Capacity (same size)	Paper Size	Pages/Set	Sets
	A4 LEF, 8.5"x11" LEF	20-50 pages	150-60 sets
		2-19 pages	150 sets
	A4 SEF, B5, 8.5"x11" SEF	15-50 pages	100-30 sets
		2-14 pages	100 sets
	Others	15-30 pages	100-33 sets
		2-14 pages	100 sets
Stapled Stack Capacity (mixed sizes)	A4 LEF & A3 SEF, B5 LEF & B4 SEF, 8.5"x11" LEF, 11" x17" SEF	2-30 pages	50 set

1.4.10 BOOKLET FINISHER SR4130 (D3CH)

This finisher provides booklet as well as corner stapling. Equipped with two trays, the upper tray holds stapled and shifted copies, and the lower tray holds booklet stapled and folded copies.

Finisher

Dimensions (W x D x H)	657 x 613 x 960 mm (25.9 x 24.1 x 37.8")		
Weight	Less than 63 kg (138.6 lb.) (no punch unit) Less than 65 kg (143 lb.) (with punch unit)		
Power Consumption	Less than 96 W		
Noise	Less than 75 db		
Configuration	Console type attached base-unit		
Power Source	From base-unit		
Proof Tray	Stack Capacity*	250 sheets A4, 8.5"x11" or smaller 50 sheets B4, 8.5"x14 or larger	
	Paper Size	A5-A3 SEF, A6 SEF, A6 LEF $5_{1/2}$" x$8_{1/2}$" to 11" x 17" SEF, 12"x18" SEF	
	Paper Weight	52 g/m²-163 g/m² 14 lb Bond- 43 lb Bond / 90 lb Index / 60 lb Cover	
Shift Tray	Stack Capacity*	2,000 sheets	A4 LEF, 8.5"x11" LEF
		1,000 sheets	A3 SEF, A4 SEF, B4 SEF, B5 11"x17" SEF, $8_{1/2}$" x14" SEF, $8_{1/2}$" x 11" SEF, 12"x18" SEF
		500 sheets	A5 LEF
		100 sheets	A5 SEF, B6 SEF, A6 SEF, $5_{1/2}$" x$8_{1/2}$" SEF

	Paper Size	A5 - A3 SEF, A6 SEF, B6 SEF $5_{1/2}$" x$8_{1/2}$" to 11" x 17" SEF, 12" x 18" SEF
	Paper Weight	52 g/m²-256 g/m² 14 lb Bond- 68 lb Bond / 140 lb Index / 90 lb Cover

Stapler

Paper Size	B5-A3, 8.5"x11"-11"x17", 12"x18"		
Paper Weight	64 g/m²-90 g/m², 17 lb Bond-28 lb Bond		
Staple Position	Top, Bottom, 2 Staple, Top-slant		
Staples Capacity*	Same Paper Size	50 sheets	A4, $8_{1/2}$" x 11" or smaller
		30 sheets	B4, $8_{1/2}$" x 14" or larger
	Mixed Paper Size	30 sheets	A4 LEF & A3 SEF, B5 LEF & B4 SEF, $8_{1/2}$"x11" LEF & 11" x17" SEF
	Booklet Stapling	15 sheets	A4 SEF, A3 SEF, B5 SEF, B4 SEF, 8.5"x11" SEF, 8.5"x14" SEF, 11"x17" SEF, 12"x18" SEF
Staple Replenishment	Corner staple	5,000 staples per cartridge	
	Booklet staple	2,000 staples per cartridge	
Corner Staple Capacity	Same Size	A4 LEF, 8.5"x11" LEF	13-50 pages 2-12 pages
		A4 SEF, B5, 8.5"x11" SEF	10-50 pages 2-9 pages
		Others	10-30 pages 2-9 pages

	Mixed Size	A4 LEF + A3 SEF B5 LEF + B4 SEF 8.5"x11" LEF + 11" x17" SEF	2-30 pages
Booklet Staple Capacity	A4 SEF, A3 SEF, B5 SEF, B4 SEF 8.5"x11" SEF, 8.5"x14" SEF, 11"x17" SEF 12"x18" SEF	2-5 pages 6-10 pages 11-15 pages	

SR4120/SR4130 Paper Specifications

Paper Size	Plain Paper			Paper Type	
	Copier PPC	Used Paper	Recycled Paper	Colored Paper	Translucent Blueprint
A3 SEF	●	—	●	●	▲
B4 SEF	●	▲	●	●	▲
A4 SEF	●	▲	●	●	▲
A4 LEF	◆	▲	◆	◆	▲
B5 SEF	●	▲	●	●	▲
B5 LEF	◆	▲	◆	◆	▲
A5 SEF	○	—	—	—	—
A5 LEF	○	—	—	—	—
B6 SEF	▲	—	—	—	—
B6 LEF	▲	—	—	—	—
12" x 18" SEF	●	—	●	●	—

Paper Size	Plain Paper			Paper Type	
	Copier PPC	Used Paper	Recycled Paper	Colored Paper	Translucent Blueprint
11" x 17" SEF	●	—	●	●	▲
$8_{1/2}$" x 14"	●	—	●	●	▲
$8_{1/2}$" x 11" SEF	●	—	●	●	▲
$8_{1/2}$" x 11" LEF	◆	▲	◆	◆	▲
$5_{1/2}$" x $8_{1/2}$"	○	—	—	○	—
$5_{1/2}$" x $8_{1/2}$"	○	—	—	○	—

◆: Corner stapling, Shift, YES

●: Booklet stapling/folding, Shift, YES

○: Shift ONLY

▲: Shift NO

—: Not available

1.4.11 PUNCH UNIT TYPE 3060 (B706)

This punch unit is designed for use with the Finisher SR4060 and Finisher SR4070. There are three variations of this punch unit:

- Punch Unit Type 3060 SC (B706)
- Punch Unit Type 3060 2/4 EU (B706)
- Punch Unit Type 3060 NA 3/2 (B706)

Available Punch Units	NA	2/3 hole switchable	
	EU	2/4 holes switchable	
	Scandinavia	4 holes	
Punch Waste Replenishment	NA 2-hole	Up to 5,000 sheets	
	NA 3-hole	Up to 5,000 sheets	
	EU 2-hole	Up to 14,000 sheets	
	EU 4-hole	Up to 7,000 sheets	
	Scandinavia 4-hole	Up to 7,000 sheets	
Paper Weight	52 g/m²-163 g/m², 14 lb Bond to 43 lb Bond / 90 lb Index / 60 lb Cover		
Paper Sizes	NA 2-hole	SEF	A5 to A3, $5_{1/2}$" x$8_{1/2}$" to 11"x17"
		LEF	A5 - A4, $5_{1/2}$" x $8_{1/2}$", $8_{1/2}$" x 11"
	NA 3-hole	SEF	A3, B4, 11"x17"
		LEF	A4, B5, $8_{1/2}$" x 11"
	EU 2-hole	SEF	A5 - A3, $5_{1/2}$" x $8_{1/2}$" to 11" x 17"
		LEF	A5 to A4, $5_{1/2}$" x $8_{1/2}$", $8_{1/2}$" x 11"
	EU 4-hole	SEF	A3, B4, 11"x17"
		LEF	A4, B5, $8_{1/2}$" x 11"
	Scandinavia 4-hole	SEF	A5 to A3, $5_{1/2}$" x $8_{1/2}$" to 11" x 17"
		LEF	A5 - A4, $5_{1/2}$"x$8_{1/2}$", $8_{1/2}$" x 11"

1.4.12 MAIL BOX CS4010 (D708)

The mailbox can be installed on top of the Finisher SR4060, SR4070, or SR4080.

Dimensions (w x d x h)	540 x 600 x 660 mm (21.3 x 23.6 x 26 in.)
Weight	Less than 15 kg (33 lb.)
Power Consumption	Less than 48 W
Noise	Less than 74 dB
Number of Bins	9 bins
Stack Capacity of each Bin	100 sheets*
Paper Size	A5. A4, A3
	$5_{1/2}$" x $8_{1/2}$", $8_{1/2}$" x11", $8_{1/2}$" x14", 11"x17"
Paper Weight	52 - 128g/m²
	14 lb – 34 lb Bond

1.4.13 COVER INTERPOSER TRAY CI4040 (DC3N)

Dimension (W x D x H)		500 x 600 x 600 mm (19.7 x 23.6 x 23.6 in.)
Weight		Less than 12 Kg (26.4 lb.)
Power Consumption		Less than 43 W
Noise		Less than 65 db
Stack Capability*		200 Sheets
Paper Size		A5-A3, $5_{1/2}$" x $8_{1/2}$" - 11" x 17"
Paper Weight		64 g/m^2-216 g/m^2 17 lb. Bond- 80 lb. b Cover
Original Set Position		Center
Original Set	Normal Feed	Face-up
	Booklet Feed	Face-down

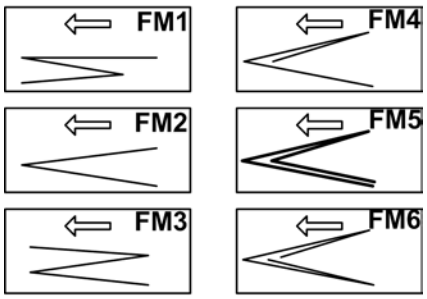
1.4.14 COVER INTERPOSER TRAY CI4030 (D3D7)

Configuration	Stack cover inserter for finisher
Paper Separation at Feed	Standard FRR
Feed Mechanism	Feed Rollers
Paper Weight	64 to 216 g/m2
Paper Size	A3 SEF, B4 SEF, A4 LEF/SEF, B5 LEF/SEF, A5 LEF/SEF, 11×17 SEF, 81/2”×11 LEF/SEF
Allowed Curl	H: Less than 5 mm
Stack Size	200 sheets
Paper Detection	None
Power Consumption	Less than 43W
Power Supply	Main Machine
Dimension (W x D x H)	500×600×600 mm (20 x 23.5 x 23.5 in.)
Weight	12 kg (35.2 lb.)

1.4.15 MULTI FOLDING UNIT FD4000 (D615)

General

Dimensions (W × D × H)	470 × 980 × 730 mm (18.6 × 38.6 × 28.8 in.)	
Weight	Approx. 92 kg (202.9 lb.)	
Power Consumption	Maximum 270 W (A separate power source is required.)	
Power Source	220 - 240 V, 50/60 Hz, 1.2 A	
Operating Environment	Temperature and humidity ranges: Same as main machine.	
Paper Weight	Single sheet mode: 64 to 103 g/m^2 (17 lb. Bond - 28 lb. Bond) Multiple sheets mode: 64 to 80 g/m^2 (17 lb. Bond - 20 lb. Bond)	
Folding Methods	6 (see below)	
Speed	Straight-Through	100 to 700 mm/s
	Folding	270 to 700 mm/s
Straight-Through Feed	Size	Postcard to 13x19.2"
	Type	Used paper: A3, A4, B4, B5 OHP: A4, B5 Tap paper: A4 LEF, LT LEF
Folding Methods	6 (FM1 to FM6)	



FM1: Z-Folding
FM2: Half Fold
FM3: Letter Fold-out
FM4: Letter Fold-in
FM5: Double Parallel Fold
FM6: Gate Fold

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Paper Sizes (Folding)	FM1	A3, B4, DLT, LG, A4, LT, 12x18", 8-kai
	FM2	A3, B4, DLT, LG, A4, B5, LT 12x18", 12.6x18.5", 12.6x19.2", 13x18", 13x19", 13x19.2", 226x310 mm, 310x432 mm, SRA3, SRA4, 8-kai
	FM3	A3, B4, DLT, LG, A4, LT, B5, 12x18", 8-kai
	FM4	
	FM5	
	FM6	
Paper Weights (Folding)	FM1	64 to 105 g/m^2
	FM2	
	FM3	
	FM4	
	FM5	
	FM6	
Multiple Folding	FM1	Not allowed
	FM2	Max. 3 (64 to 80 g/m^2 only)
	FM3	Max. 3 (64 to 80 g/m^2 only)

	FM4	Max. 3 (64 to 80 g/m^2 , B4, A4, LT, B5 only)
	FM5	Not allowed
	FM6	
Line Speed (Only FM1 Z-Folded paper can exit downstream)		
No Fold	350 mm/sec. to top tray To downstream: Same as main machine.	
FM1	700 mm/sec. to top tray (paper ≦ 355.6 mm long) 450 mm/sec. to top tray (paper < 355.6 mm long) To downstream: Same as main machine.	
FM2	1 Sheet: Same as main machine 2-3 Sheets: 454 mm/sec. 700 mm/sec. to top tray (paper ≦ 355.6 mm long) 350 mm/sec. to top tray (paper ≦ 279.4 <355.6 mm long) 250 mm/sec. to top tray (paper < 279.4 mm long)	
FM3 FM4	1 Sheet: Same as main machine 2-3 Sheets: 454 mm/sec. to top tray 350 mm/sec. to top tray (paper ≦ 420 mm long) 250 mm/sec. to top tray (paper < 420 mm long)	
FM5	1 Sheet: Same as main machine 350 mm/sec. to top tray (paper ≦ 420 mm long) 250 mm/sec. to top tray (paper < 420 mm long)	
FM6	1 Sheet: Same as main machine as far as 3rd Stopper. At 3rd stopper feeds 50 mm at 100 mm/sec. 350 mm/sec. to top tray (paper ≦ 420 mm long) 250 mm/sec. to top tray (paper < 420 mm long)	
Power Supply	NA	AC 120V 60 Hz, 15A
	EU	AC 220 to 240V, 50/60 Hz 10A
Power Consumption	270 W	
Size (w x d x h)	466 x 980 x 730 mm (18.4 x 38.6 x 28.7 in.)	
Level	Less than 5 mm deviation at front/back, left/right	
Weight	92 kg (203 lb)	

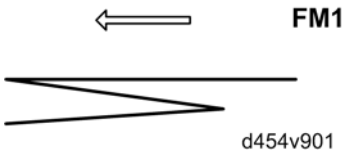
Noise Level (dB A)	Mode	Alone	System
	No Folding	< 76 dB	---
	Folding	< 78 dB	< 83 dB

Tray Capacity

The capacity of the tray on top of the unit for folded paper is determined by these variables:

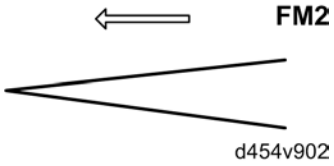
- Folding Methods (FM1 to FM6)
- Paper size
- Paper weight

Folding Mode FM1



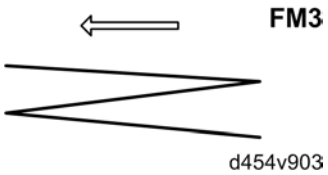
Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
8-kai	35	20
12x18"	35	20
A3 SEF	35	20
DLT	35	20
B4 SEF	35	20
LG SEF	35	20
A4 SEF	30	20
LT SEF	30	20

Folding Mode FM2



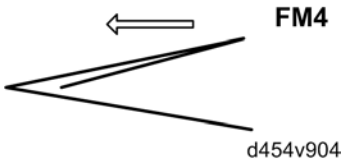
Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
13x19.2"	40	25
13x19"	40	25
12.6x19.2"	40	25
12.6x18.5"	40	25
13x18"	40	25
SRA3 (320x450 mm)	40	25
SRA4 (225x320 mm)	40	25
226x310 mm	40	25
310x432 mm	40	25
8-kai	40	25
12x18"	40	25
A3 SEF	40	25
DLT	40	25
B4 SEF	40	25
LG SEF	40	25
A4 SEF	50	50
LT SEF	50	50
B5 SEF	50	50

Folding Mode FM3



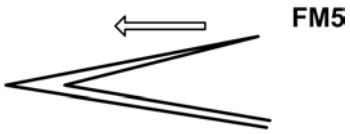
Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
8-kai	30	20
12x18"	30	20
A3 SEF	30	20
DLT	30	20
B4 SEF	30	20
LG SEF	30	20
A4 SEF	40	30
LT SEF	40	30
B5 SEF	40	30

Folding Mode FM4



Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
8-kai	40	20
12x18"	40	20
A3 SEF	40	20
DLT	40	20
B4 SEF	40	20
LG SEF	40	20
A4 SEF	50	40
LT SEF	50	40
B5 SEF	50	40

Folding Mode FM5



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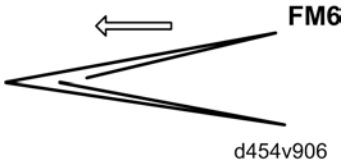
Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
8-kai	30	20
12x18"	30	20
A3 SEF	30	20
DLT	30	20
B4 SEF	30	20
LG SEF	30	20
A4 SEF	30	30
LT SEF	30	30
B5 SEF	30	30

Folding Mode FM6



Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
8-kai	50	20
12x18"	50	20
A3 SEF	50	20
DLT	50	20
B4 SEF	50	20
LG SEF	50	20
A4 SEF	30	30
LT SEF	30	30
B5 SEF	30	30

APPENDIX:

ENGINE SP MODE TABLES

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

2. ENGINE SP MODE TABLES

2.1 ENGINE SP TABLES-1

2.1.1 SP1-XXX (FEED)

1001	[Leading Edge Registration]		
1-001-001	Std Tray: Feed LCT: Duplex	ENG	[-9.0 to 9.0 / **0** / 0.1 mm / step]
1-001-002	By-pass	ENG	[-9.0 to 9.0 / **0** / 0.1 mm / step]
1-001-003	Thick Paper: Std Tray: Feed LCT: Duplex	ENG	[-9.0 to 9.0 / **0** / 0.1 mm / step]
1-001-004	Thick Paper: By-pass	ENG	[-9.0 to 9.0 / **0** / 0.1 mm / step]

1002	[Side-to-Side Registration]		
1-002-001	Tray-1	ENG	[-9.0 to 9.0 / **0** / 0.1 mm / step]
1-002-002	Tray-2	ENG	[-9.0 to 9.0 / **0** / 0.1 mm / step]
1-002-003	Tray-3	ENG	[-9.0 to 9.0 / **0** / 0.1 mm / step]
1-002-004	Tray-4	ENG	[-9.0 to 9.0 / **0** / 0.1 mm / step]
1-002-005	By-pass Tray	ENG	[-9.0 to 9.0 / **0** / 0.1 mm / step]
1-002-006	LCT	ENG	[-9.0 to 9.0 / **0** / 0.1 mm / step]
1-002-007	Duplex Tray	ENG	[-9.0 to 9.0 / **0** / 0.1 mm / step]

1003	[Registration Buckle Adjustment]		
1-003-001	Tray LCT	ENG	[-9 to 9 / **0** / 1 mm / step]
1-003-002	Duplex Tray	ENG	[-9 to 9 / **0** / 1 mm / step]

1-003-003	By-pass Tray	ENG	[-9 to 9 / **0** / 1 mm / step]
1-003-004	ThickPaper Tray	ENG	[-9 to 9 / **0** / 1 mm / step]
1-003-005	ThickPaper Duplex Tray	ENG	[-9 to 9 / **0** / 1 mm / step]

1007	**[By-pass FeedPaper Size Display]**		
1-007-001	-	ENG	[0x00 to 0xFF / **0x00** / 1 / step]

1008	**[Duplex Fence Adjustment]**		
1-008-001	-	ENG	[-5.0 to 5.0 / **0** / 0.1 mm / step]

1016	**[Fine Adjust Reg Roller Speed]**		
1-016-001	Normal Paper:Front Side	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-002	Normal Paper:Back Side	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-003	Med Thick:Front Side	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-004	Med Thick:Back Side	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-005	Thick Paper1:Front Side	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-006	Thick Paper1:Back Side	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-007	Thick Paper2:Front Side	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-008	Thick Paper2:Back Side	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-009	Thick Paper3:Front Side	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]

1-016-010	Thick Paper3:Back Side	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-011	Thick Paper4:Back Side	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-012	Cardstock	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-013	OHP	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-014	Tracing Paper	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-015	Envelope	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-016	Label	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-017	Postcard	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-101	Normal Paper:Front Side: Low Speed	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-102	Normal Paper:Back Side: Low Speed	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-103	Med Thick:Front Side: Low Speed	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-104	Med Thick:Back Side: Low Speed	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-105	Thick Paper1:Front Side: Low Speed	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-106	Thick Paper1:Back Side: Low Speed	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-107	Thick Paper2:Front Side: Low Speed	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-108	Thick Paper2:Back Side: Low Speed	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-109	Thick Paper3:Front Side: Low Speed	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-110	Thick Paper3:Back Side: Low Speed	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]

1-016-111	Thick Paper4:Front Side: Low Speed	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-112	Cardstock: Low Speed	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-113	OHP: Low Speed	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-114	Tracing Paper: Low Speed	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-115	Envelope: Low Speed	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-116	Label: Low Speed	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]
1-016-117	Postcard: Low Speed	ENG	[-3.0 to 3.0 / **0** / 0.1% / step]

1102	**[Fusing Temperature Adjustment]**		
1-102-001	Duplex Actual Temperature	ENG*	[0 or 1 / **0** / 1 / step]
1-102-002	Duplex Balance Temp (Center Thermistor)	ENG*	[-30 to 0 / **-15** / 1 deg / step]
1-102-003	Duplex Balance Temp (End Thermistor)	ENG*	[-30 to 0 / **-15** / 1 deg / step]

1103	**[Fusing Idling]**		
1-103-001	IdlingTime(Nomal)	ENG*	[0 to 300 / **6** / 1 sec/ step]
1-103-002	IdlingTime(Low)	ENG*	MP 6503 SP/7503 SP: [0 to 300 / **66** / 1 sec / step] MP 9003 SP: [0 to 300 / **200** / 1 sec / step]
1-103-003	IdlingTime(LowPower)	ENG*	[0 to 300 / **0** / 1 sec / step]

1-103-004	IdlingTime(LowVoltage)	ENG*	MP 6503 SP/7503 SP: [0 to 300 / **8** / 1 sec / step] MP 9003 SP: [0 to 300 / **260** / 1 sec / step]
1-103-005	IdlingTime(CapacitorLowVoltage)	ENG*	[0 to 300 / **90** / 1 sec / step]
1-103-006	IdlingTime: 20s	ENG*	[0 to 300 / **0** / 1 sec / step]
1-103-007	IdlingTime: Warm	ENG*	[0 to 300 / **0** / 1 sec / step]

1105	**[Fusing Temperature Adjustment]**		
1-105-001	Normal Time (Center Thermistor)	ENG*	MP 6503 SP/7503 SP: [130 to 220 / **205** / 1 deg / step] MP 9003 SP: [130 to 220 / **205** / 1 deg / step]
1-105-002	Normal Time (End Thermistor)	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **180** / 1 deg / step] MP 9003 SP: [100 to 220 / **150** / 1 deg / step]
1-105-003	OHP (Center Thermistor)	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **210** / 1 deg / step] MP 9003 SP: [100 to 220 / **1700** / 1 deg / step]
1-105-004	OHP (End Thermistor)	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **195** / 1 deg / step] MP 9003 SP: [100 to 220 / **170** / 1 deg / step]
1-105-005	Thick Paper 1,2 (Center Thermistor)	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **220** / 1 deg / step] MP 9003 SP: [100 to 220 / **195** / 1 deg / step]
1-105-006	Thick Paper 1,2 (End Thermistor)	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **205** / 1 deg / step] MP 9003 SP: [100 to 220 / **195** / 1 deg / step]

1-105-007	Normal Paper (Center Thermistor)	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **215** / 1 deg / step] MP 9003 SP: [100 to 220 / **185** / 1 deg / step]
1-105-008	Normal Paper (End Thermistor)	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **200** / 1 deg / step] MP 9003 SP: [100 to 220 / **185** / 1 deg / step]
1-105-009	Small SizeNormal Paper (Center Thermistor)	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **210** / 1 deg / step] MP 9003 SP: [100 to 220 / **185** / 1 deg / step]
1-105-010	Small SizeThick Paper1,2 (Center Thermistor)	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **210** / 1 deg / step] MP 9003 SP: [100 to 220 / **195** / 1 deg / step]
1-105-011	Label (Center Thermistor)	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **220** / 1 deg / step] MP 9003 SP: [100 to 220 / **195** / 1 deg / step]
1-105-012	Label (End Thermistor)	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **205** / 1 deg / step] MP 9003 SP: [100 to 220 / **195** / 1 deg / step]
1-105-013	Tab Sheet (Center Thermistor)	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **220** / 1 deg / step] MP 9003 SP: [100 to 220 / **195** / 1 deg / step]
1-105-014	Tab Sheet (End Thermistor)	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **205** / 1 deg / step] MP 9003 SP: [100 to 220 / **195** / 1 deg / step]

1-105-015	Thick Paper 3 (Center Thermistor)	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **220** / 1 deg / step] MP 9003 SP: [100 to 220 / **195** / 1 deg / step]
1-105-016	Thick Paper 3 (End Thermistor)	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **205** / 1 deg / step] MP 9003 SP: [100 to 220 / **195** / 1 deg / step]
1-105-017	Small Size Thick Paper 3 (Center Thermistor)	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **210** / 1 deg / step] MP 9003 SP: [100 to 220 / **195** / 1 deg / step]
1-105-018	Temp: Ready2: Thermistor: Center	ENG*	MP 6503 SP/7503 SP: [130 to 220 / **190** / 1 deg / step] MP 9003 SP: [100 to 220 / **170** / 1 deg / step]
1-105-019	Time: Ready2: Thermistor: Center	ENG*	MP 6503 SP/7503 SP: [20 to 300 / **20** / 1 sec / step] MP 9003 SP: [20 to 300 / **60** / 1 sec / step]
1-105-020	Temp: Ready2: Thermistor: End	ENG*	MP 6503 SP/7503 SP: [130 to 220 / **165** / 1 deg / step] MP 9003 SP: [130 to 220 / **150** / 1 deg / step]
1-105-021	Time: Ready2: Thermistor: End	ENG*	MP 6503 SP/7503 SP: [20 to 300 / **20** / 1 sec / step] MP 9003 SP: [20 to 300 / **60** / 1 sec / step]

1106	**[Fusing Temperature Display]**		
1-106-001	Center Temperature	ENG	[0 to 0 / **0** / 0 deg / step]
1-106-002	End Temperature	ENG	[0 to 0 / **0** / 0 deg / step]

1-106-003	Pressure Roller Temperature	ENG	[0 to 0 / **0** / 0 deg / step]

1107	**[Start Fusing Temp. Time Adj.]**		
1-107-001	Center Lamp Temperature	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **220** / 1 deg / step] MP 9003 SP: [100 to 220 / **190** / 1 deg / step]
1-107-002	End Lamp Temperature	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **210** / 1 deg / step] MP 9003 SP: [100 to 220 / **190** / 1 deg / step]
1-107-003	Center Lamp Actual Time	ENG*	MP 6503 SP/7503 SP: [0 to 120 / **60** / 1 sec / step] MP 9003 SP: [0 to 120 / **10** / 1 sec / step]
1-107-004	End Lamp Actual Time	ENG*	MP 6503 SP/7503 SP: [0 to 120 / **55** / 1 sec / step] MP 9003 SP: [0 to 120 / **10** / 1 sec / step]
1-107-005	Center Lamp Temp (Small Size Paper)	ENG*	MP 6503 SP/7503 SP: [140 to 220 / **220** / 1 deg / step] MP 9003 SP: [140 to 220 / **190** / 1 deg / step]
1-107-006	Center Lamp Actual Time (Small Size Paper)	ENG*	MP 6503 SP/7503 SP: [0 to 120 / **60** / 1 sec / step] MP 9003 SP: [0 to 120 / **10** / 1 sec / step]
1-107-007	Center Lamp Temp (Thick Paper 1,2)	ENG*	MP 6503 SP/7503 SP: [140 to 220 / **220** / 1 deg / step] MP 9003 SP: [140 to 220 / **200** / 1 deg / step]

1-107-008	Center Lamp Actual Time (Thick Paper 1,2)	ENG*	MP 6503 SP: [0 to 120 / **0** / 1 sec / step] MP 7503 SP: [0 to 120 / **5** / 1 sec / step] MP 9003 SP: [0 to 120 / **10** / 1 sec / step]
1-107-009	Capacitor Heater Temperature	ENG*	[120 to 220 / **200** / 1 deg / step]
1-107-010	Capacitor Heater Actual Time	ENG*	MP 6503 SP/MP 9003 SP: [0 to 120 / **0** / 1 sec / step] MP 7503 SP: [0 to 120 / **60** / 1 sec / step]
1-107-011	Center Lamp Temp (Label)	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **220** / 1 deg / step] MP 9003 SP: [100 to 220 / **195** / 1 deg / step]
1-107-012	Center Lamp Actual Time (Label)	ENG*	[0 to 120 / **0** / 1 sec / step]
1-107-013	End Lamp Temp (Label)	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **205** / 1 deg / step] MP 9003 SP: [100 to 220 / **195** / 1 deg / step]
1-107-014	Center Lamp Actual Time (Label)	ENG*	[0 to 120 / **0** / 1 sec /step]
1-107-015	Center Lamp Temp (Tab Sheet)	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **220** / 1 deg / step] MP 9003 SP: [100 to 220 / **195** / 1 deg / step]
1-107-016	Center Lamp Actual Time (Tab Sheet)	ENG*	[0 to 120 / **0** / 1 sec / step]
1-107-017	End Lamp Temp (Tab Sheet)	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **205** / 1 deg / step] MP 9003 SP: [100 to 220 / **195** / 1 deg / step]

1-107-018	End Lamp Actual Time (Tab Sheet)	ENG*	[0 to 120 / **0** / 1 sec / step]
1-107-019	Center Lamp Temperature	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **205** / 1 deg / step] MP 9003 SP: [100 to 220 / **190** / 1 deg / step]
1-107-020	End Lamp Temperature	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **205** / 1 deg / step] MP 9003 SP: [100 to 220 / **190** / 1 deg / step]
1-107-021	Center Lamp Actual Time	ENG*	MP 6503 SP/7503 SP: [0 to 120 / **60** / 1 sec / step] MP 9003 SP: [0 to 120 / **10** / 1 sec / step]
1-107-022	End Lamp Actual Time	ENG*	MP 6503 SP/7503 SP: [0 to 120 / **55** / 1 sec / step] MP 9003 SP: [0 to 120 / **10** / 1 sec / step]
1-107-023	Capacitor Heater Temperature	ENG*	MP 6503 SP/9003 SP: [140 to 220 / **200** / 1 deg / step] MP 7503 SP: [140 to 220 / **195** / 1 deg / step]
1-107-024	Capacitor Heater Actual Time	ENG*	MP 6503 SP/9003 SP: [0 to 120 / **0** / 1 sec / step] MP 7503 SP: [0 to 120 / **17** / 1 sec / step]
1-107-025	Center Lamp Temperature (Warm Paper 1)	ENG*	[100 to 220 / **205** / 1 deg / step]
1-107-026	End Lamp Temperature (Warm Paper 1)	ENG*	[100 to 220 / **205** / 1 deg / step]

1-107-027	Center Lamp Actual Time (Warm Paper 1)	ENG*	MP 6503 SP/7503 SP: [0 to 120 / **60** / 1 sec / step] MP 9003 SP: [0 to 120 / **10** / 1 sec / step]
1-107-028	End Lamp Actual Time (Warm Paper 1)	ENG*	MP 6503 SP/7503 SP: [0 to 120 / **55** / 1 sec / step] MP 9003 SP: [0 to 120 / **10** / 1 sec / step]
1-107-029	Center Lamp Temp (Thick Paper 3)	ENG*	MP 6503 SP/7503 SP: [140 to 220 / **220** / 1 deg / step] MP 9003 SP: [140 to 220 / **200** / 1 deg / step]
1-107-030	Center Lamp Actual Time (Thick Paper 3)	ENG*	MP 6503 SP: [0 to 120 / **0** / 1 sec / step] MP 7503 SP: [0 to 120 / **5** / 1 sec / step] MP 9003 SP: [0 to 120 / 1**0** / 1 sec / step]
1-107-031	Capacitor Heater Temperature (Warm Paper 1)	ENG*	MP 6503 SP: [120 to 220 / **205** / 1 deg / step] MP 7503 SP: [120 to 220 / **200** / 1 deg / step] MP 9003 SP: [120 to 220 / **190** / 1 deg / step]
1-107-032	Capacitor Heater Actual Time (Warm Paper 1)	ENG*	MP 6503 SP/9003 SP: [0 to 120 / **0** / 1 sec / step] MP 7503 SP: [0 to 120 / **17** / 1 sec / step]
1-107-033	Temp: Thick Paper1, 2: Heater: Center	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **205** / 1 deg / step] MP 9003 SP: [100 to 220 / **195** / 1 deg / step]
1-107-034	Time: Thick Paper1, 2: Heater: Center	ENG*	[0 to 120 / **0** / 1 sec / step]

1-107-035	Temp: Thick Paper1, 2: Heater: End	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **205** / 1 deg / step] MP 9003 SP: [100 to 220 / **195** / 1 deg / step]
1-107-036	Time: Thick Paper1, 2: Heater: End	ENG*	[0 to 120 / **0** / 1 sec / step]
1-107-037	Temp: Thick Paper3: Heater: Center	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **205** / 1 deg / step] MP 9003 SP: [100 to 220 / **195** / 1 deg / step]
1-107-038	Time: Thick Paper3: Heater: Center	ENG*	[0 to 120 / **0** / 1 sec / step]
1-107-039	Temp: Thick Paper3: Heater: End	ENG*	MP 6503 SP/7503 SP: [100 to 220 / **205** / 1 deg / step] MP 9003 SP: [100 to 220 / **195** / 1 deg / step]
1-107-040	Time: Thick Paper3: Heater: End	ENG*	[0 to 120 / **0** / 1 sec / step]

1108	**[Environment Correction]**		
1-108-001	Corr Temp: Low Temp: Start-up	ENG*	[0 to 20 / **0** / 1 deg / step]
1-108-002	Corr Temp: Low Temp (PI1)	ENG*	[0 to 20 / **0** / 1 deg / step]
1-108-003	Corr Temp: Low Temp (PI2)	ENG*	[0 to 20 / **0** / 1 deg / step]
1-108-004	Corr Temp: Low Temp (TH1,2)	ENG*	[0 to 20 / **0** / 1 deg / step]
1-108-005	Corr Temp: Low Temp (TH3)	ENG*	[0 to 20 / **0** / 1 deg / step]
1-108-006	Corr Temp: Low Temp (OHP)	ENG*	[0 to 20 / **0** / 1 deg / step]

1-108-007	Corr Temp: Low Temp (Lbl)	ENG*	[0 to 20 / **0** / 1 deg / step]
1-108-008	Corr Temp: Low Temp (Indx)	ENG*	[0 to 20 / **0** / 1 deg / step]
1-108-009	Corr Temp Cap: Low Temp (Pl1)	ENG*	[0 to 20 / **0** / 1 deg / step]
1-108-010	Corr Temp Cap: Low Temp (Pl2)	ENG*	[0 to 20 / **0** / 1 deg / step]
1-108-011	Corr Temp Cap: Low Temp (TH1,2)	ENG*	[0 to 20 / **0** / 1 deg / step]
1-108-012	Corr Temp Cap: Low Temp (TH3)	ENG*	[0 to 20 / **0** / 1 deg / step]
1-108-013	Corr Temp Cap: Low Temp (OHP)	ENG*	[0 to 20 / **0** / 1 deg / step]
1-108-014	Corr Temp Cap: Low Temp (Lbl)	ENG*	[0 to 20 / **0** / 1 deg / step]
1-108-015	Corr Temp Cap: Low Temp (Indx)	ENG*	[0 to 20 / **0** / 1 deg / step]

1109	**[Measure Nip Width]**		
1-109-001	Execute	ENG	[0 or 1 / **0** / 1 / step]
1-109-002	Nip Width (Adjust Value)	ENG*	[200 to 400 / **300** / 10 mm / step]

1112	**[Auto Process Co]**		
1-112-001	-	ENG*	[70 to 150 / **140** / 1 deg / step]

1159	**[Fusing Jam SC Setting]**		
1-159-001	-	ENG*	[0 or 1 / **0** / 1 / step]

1901	**[CPM Down for Special Paper]**		
1-901-001	Thick Paper CPM (0:25/1:35/2:40/3:45/4:55)	ENG*	MP 6503 SP/7503 SP: [0 to 4 / **2** / 1 / step] MP 9003 SP: [0 to 4 / **3** / 1 / step]
1-901-002	Tab Sheet CPM (0:25/1:35/2:40/3:45/4:55)	ENG*	[0 to 4 / **0** / 1 / step]
1-901-003	Label CPM (0:25/1:35/2:40/3:45/4:55)	ENG*	[0 to 4 / **0** / 1 / step]
1-901-004	Special Paper CPM (0:25/1:35/2:40/3:45/4:55)	ENG*	[0 to 4 / **0** / 1 / step]
1-901-005	Thick Paper 3 CPM (0:25/1:35/2:40/3:45/4:55)	ENG*	MP 6503 SP/7503 SP: [0 to 4 / **2** / 1 / step] MP 9003 SP: [0 to 4 / **3** / 1 / step]

1902	**[Fusing Web Motor Control]**		
1-902-001	Fusing Web Used Area Display/Setting	ENG*	[0 to 120 / **0** / 1 / step]
1-902-002	Fusing Web Motor Operation Interval	ENG*	MP 6503 SP: [5 to 50 / **17** / 1 / step] MP 7503 SP: [5 to 50 / **16** / 1 / step] MP 9003 SP: [5 to 50 / **14** / 1 / step]
1-902-004	Web Near End Value	ENG*	[0 to 100 / **80** / 1 / step]
1-902-005	Web Roll Coefficient	ENG*	[5 to 30 / **18** / 1 / step]
1-902-006	Web Length (0: 20m 1: 22.7m)	ENG*	MP 6503 SP/7503 SP: [0 to 3 / **3** / 1 / step] MP 9003 SP: [0 to 3 / **2** / 1 / step]

1-902-007	Web Motor Counter:Continuous	ENG*	[0 to 255 / **0** / 1 / step]
1-902-008	Web Motor Counter:Total	ENG*	[0 to 255 / **0** / 1 / step]

1903	**[Web Job End]**		
1-903-001	Yes/No	ENG*	[0 or 1 / **0** / 1 / step]
1-903-002	Job End Condition (Continous PPC Time)	ENG*	[1 to 99 / **7** / 1 / step]
1-903-003	Job End Frequency	ENG*	[1 to 5 / **2** / 1 / step]

1904	**[By-passTrayPaperSizeCorrection]**		
1-904-001	Minimum Size	ENG	[0 to 0 / **0** / 0 / step]
1-904-002	Maximum Size	ENG	[0 to 0 / **0** / 0 / step]

1905	**[By-pass Adj.]**		
1-905-001	Thick Paper - By-pass Tray	ENG	[0 or 1 / **1** / 1 / step]
1-905-002	Size Setting: Priority Detecting	ENG	[0 or 1 / **0** / 1 / step]
1-905-003	Adj. Size Determining Time	ENG	[0 to 3 / **3** / 1 sec / step]

1906	**[Temp/humid Sensor]**		
1-906-001	Temp/humid Sensor	ENG*	[0 or 1 / **1** / 1 / step]

1907	**[Pre-Fusing Idling]**		
1-907-001	Thick 1,2 (1:ON/0:OFF)	ENG*	[0 or 1 / **0** / 1 / step]

1-907-002	Thick 1,2: Small Paper Size (1:ON/0:OFF)	ENG*	[0 or 1 / **0** / 1 / step]
1-907-003	Nomal Mode (1:ON/0:OFF)	ENG*	[0 or 1 / **0** / 1 / step]
1-907-004	Normal Mode: Small Paper Size (1:ON/0:OFF)	ENG*	[0 or 1 / **0** / 1 / step]
1-907-005	Middle Thick (1:ON/0:OFF)	ENG*	[0 or 1 / **0** / 1 / step]
1-907-006	Middle Thick: S-size (1:ON/0:OFF)	ENG*	[0 or 1 / **0** / 1 / step]
1-907-007	Label (1:ON/0:OFF)	ENG*	[0 or 1 / **0** / 1 / step]
1-907-008	Envelope (1:ON/0:OFF)	ENG*	[0 or 1 / **0** / 1 / step]
1-907-009	Thick 3 Mode (1:ON/0:OFF)	ENG*	[0 or 1 / **0** / 1 / step]
1-907-010	Thick 3 Mode: Small Paper Size (1:ON/0:OFF)	ENG*	[0 or 1 / **0** / 1 / step]

1908	**[Pre-Fusing Idling]**		
1-908-001	1:ON/0:OFF	ENG*	[0 or 1 / **1** / 1 / step]

1908	**[Pre-Fusing Idling: Low Temp.]**		
1-908-002	Standby (Pre-Idling)	ENG*	[0 to 180 / **0** / 1 sec / step]
1-908-003	Sleep Mode (Pre-Idling)	ENG*	[0 to 180 / **60** / 1 sec / step]

1909	[LowSpeedMode]		
1-909-001	Enable/Disable	ENG*	MP 6503 SP/7503 SP: [0 or 1 / **1** / 1 / step] MP 9003 SP: [0 or 1 / **0** / 1 / step]
1-909-002	Previous Paper: Speed	ENG*	[0 or 1 / **0** / 1 / step]
1-909-003	LowSpeedMode (Tab Sheet)	ENG*	[0 or 1 / **0** / 1 / step]
1-909-004	LowSpeedMode (Label)	ENG*	[0 or 1 / **0** / 1 / step]
1-909-005	LowSpeedMode (Special Paper)	ENG*	[0 or 1 / **0** / 1 / step]
1-909-006	LowSpeedMode ProcessControl	ENG*	[0 to 2 / **0** / 1 / step]
1-909-007	ProcessControl Action Print Distance(Adj2)	ENG*	[0 to 9999999 / 1050 / 1 cm / step]

1910	[Capacitor Status Display]		
1-910-001	Latest Capacity	ENG*	[0 to 200 / **0** / 1 F / step]
1-910-002	Current Voltage	ENG	[0 to 5000 / **0** / 0.01 V / step]
1-910-003	Charge Time	ENG	[0 to 600000 / **0** / 1 ms / step]
1-910-004	Worn-out Counter	ENG*	[0 to 255 / **0** / 1 / step]
1-910-005	Charged Power	ENG*	[0 to 500 / **285** / 1 W / step]

1911	[Capacitor Discharge Stop Volt]		
1-911-001	-	ENG*	[1 to 20 / **7** / 1 V / step]

1912	[Capacitor Worn-out Detection]		
1-912-002	Worn-out Counter	ENG*	[30 to 255 / **30** / 1 / step]
1-912-003	AC Input Voltage	ENG*	[80 to 100 / **99** / 1 V / step]
1-912-004	Capacitor Capacity	ENG*	[50 to 150 / **100** / 1 F / step]

1913	[AC Input Voltage Display]		
1-913-001	AC Input Voltage initial value	ENG	NA: MP 6503 SP/7503 SP: [0 to 200 / **120** / 1 V / step] NA: MP 9003 SP: [0 to 200 / **240** / 1 V / step] EU/Asia [0 to 200 / **240** / 1 V / step] CN: [0 to 200 / **220** / 1 V / step] TW: MP 6503 SP/7503 SP: [0 to 200 / **110** / 1 V / step] TW: MP 9003 SP: [0 to 200 / **240** / 1 V / step]
1-913-002	AC Input Voltage measured value	ENG	[0 to 300 / **0** / 1 / step]

1920	[Capacitor Charge Setting]		
1-920-001	0:ON/1:OFF	ENG*	[0 or 1 / **0** / 1 / step]

1921	[Job End Idlling]		
1-921-001	Idlling Time	ENG*	[0 to 30 / **0** / 1 sec / step]
1-921-002	Target Temperature	ENG*	[190 to 205 / **200** / 1 deg / step]

1922	[Not Used]		
1-922-001	0:OFF 1:ON	ENG*	[0 or 1 / **1** / 1 / step]

1923	[HV Fusing Temp Cont]		
1-923-001	0:OFF 1:ON	ENG*	[0 or 1 / **1** / 1 / step]

1924	[10 Sec. Recovery Temperature]		
1-924-001	Temperature Sensor	ENG*	[16 to 25 / **20** / 1 / step]

1925	[Idling Setting:Power On]		
1-925-001	Middle Thick (1:ON/0:OFF)	ENG*	[0 or 1 / **1** / 1 / step]
1-925-002	Thick 1,2 (1:ON/0:OFF)	ENG*	[0 or 1 / **0** / 1 / step]
1-925-003	Nomal Paper1(1:ON/0:OFF)	ENG*	[0 or 1 / **0** / 1 / step]
1-925-004	Nomal Paper2(1:ON/0:OFF)	ENG*	[0 or 1 / **0** / 1 / step]
1-925-005	Thick 3 (1:ON/0:OFF)	ENG*	[0 or 1 / **0** / 1 / step]

1926	[Capacitor Discharge: S-Size]		
1-926-001	End Thermistor	ENG*	[135 to 220 / **190** / 1 deg / step]

1927	[Capacitor Discharge Setting]		
1-927-001	Capacitor Discharge Time	ENG*	[12 to 120 / **30** / 1 sec / step]

1928	[Heater OFF during Feeding]		
1-928-001	Heater OFF Time	ENG*	MP 6503 SP/7503 SP: [5 to 60 / **5** / 1 deg / step] MP 9003 SP: [5 to 60 / **10** / 1 deg / step]

1929	[Capacitor OFF: Feeding]		
1-929-001	1:ON/0:OFF	ENG*	[0 or 1 / **1** / 1 / step]

1930	[Web Operation: Fusing Idling]		
1-930-001	1:ON/0:OFF	ENG*	[0 or 1 / **0** / 1 / step]
1-930-002	Operation Times	ENG*	[1 to 5 / **2** / 1 / step]

1931	[Normal Paper Setting 1 control]		
1-931-001	1:ON/0:OFF	ENG*	[0 or 1 / **0** / 1 / step]
1-931-002	Capacitor Voltage	ENG*	[15 to 25 / **22** / 1 V / step]

1933	[Not Used]		
1-933-001	Not Used	ENG*	[0 or 1 / **0** / 1 / step]
1-933-002	Not Used	ENG*	[7 to 8 / **0** / 1 sec / step]
1-933-003	Not Used	ENG*	[0 to 200 / **50** / 1 deg / step]

1933	[20sec Recover Reload]		
1-933-004	Forced Reload (1: Enable/0: Disable)	ENG*	[0 or 1 / **1** / 1 / step]
1-933-005	Forced Reload Time	ENG*	[7 to 10 / **8** / 1 sec / step]
1-933-006	Forced Reload Permit Temp	ENG*	[0 to 200 / **50** / 1 deg / step]

1951	[Dsp Inside Machine Temperature]		
1-951-001	Temperature	ENG	[-128 to 127 / **0** / 1 deg / step]

1952	[Switching Temp: Fan Operation]		
1-952-001	Operation Switch Temp: Silent Mode	ENG*	[0 to100 / **25** / 1 deg / step]
1-952-002	Operation Switch Temp: Normal Mode	ENG*	[0 to 100 / **40** / 1 deg / step]
1-952-003	Operation Switch Temp: High Temp Mode	ENG*	[0 to 100 / **42** / 1 deg / step]

1953	[DevUnitFan: Forced Enable Set]		
1-953-001	Forced Enable	ENG*	[0 or 1 / **0** / 1 / step]

1954	[Extra Operation]		
1-954-001	Determining Temp	ENG*	[0 to 100 / **50** / 1 deg / step]

1955	[Switching Temperature]		
1-955-001	Threshold Temperature	ENG	[0 to 20 / **2** / 1 deg / step]

1956	[Exhaust Fan DUTY Adj.]		
1-956-001	Silent	ENG*	[0 to100 / **20** / 1 % / step]
1-956-002	Low Speed	ENG*	[0 to 100 / **20** / 1 % / step]
1-956-003	Mid Speed	ENG*	[0 to 100 / **20** / 1 % / step]
1-956-004	High Speed	ENG*	[0 to 100 / **20** / 1 % / step]
1-956-005	Printing	ENG*	[0 to 100 / **35** / 1 % / step]

1957	**[Intake Fan DUTY Adj.]**		
1-957-001	Silent	ENG*	[0 to100 / **30** / 1 % / step]
1-957-002	Low Speed	ENG*	[0 to 100 / **50** / 1 % / step]
1-957-003	Mid Speed	ENG*	[0 to 100 / **60** / 1 % / step]
1-957-004	High Speed	ENG*	[0 to 100 / **70** / 1 % / step]

1958	**[Fusing Exhaust Fan DUTY Adj.]**		
1-958-001	Silent	ENG*	[0 to100 / **30** / 1 % / step]
1-958-002	Low Speed	ENG*	[0 to 100 / **30** / 1 % / step]
1-958-003	Mid Speed	ENG*	[0 to 100 / **40** / 1 % / step]
1-958-004	High Speed	ENG*	[0 to 100 / **45** / 1 % / step]

2.2 ENGINE SP TABLES-2

2.2.1 SP2-XXX (DRUM)

2001	**[Charge Roller Bias Adjustment]**		
2-001-002	ID Sensor Pattern: Adj. of Applied Voltage	ENG	[600 to 1500 / **800** / 10 V / step]
2-001-003	Setting for Total Bias Current	ENG*	[900 to 1500 / **900** / 10 uA / step]
2-001-004	Setting for Total Bias Current of Grid	ENG*	[600 to 1500 / **900** /10 V / step]
2-001-005	Total Bias Grid Voltage: OHP Total	ENG	[600 to 1500 / **650** / 10 V / step]
2-001-006	Total Bias Grid Current: Photo Mode Total	ENG	[1400 to 1500 / **1500** / 10 uA / step]
2-001-007	Set for Total Bias Current of Grid(LowSpeed)	ENG*	[600 to 1500 / **900** / 10 V / step]

2101	**[Printing Erase Margin]**		
2-101-001	Leading Edge	ENG	[0 to 9.0 / **2.5** / 0.1 mm / step]
2-101-002	Trailing Edge	ENG	[0 to 9.0 / **2.0** / 0.1 mm / step]
2-101-003	Left edge	ENG	[0 to 9.0 / **2.0** / 0.1 mm / step]
2-101-004	Right edge	ENG	[0 to 9.0 / **2.0** / 0.1 mm / step]

2104	[Small Pitch Band]		
2-104-001	Reduction Mode O	ENG*	[0 or 1 / **1** / 1 - / step]
2-104-002	Reduction Mode O	ENG*	[-20 to 10 / **0** / 1 - / step]
2-104-003	Reduction Mode O	ENG*	[0 or 1 / **0** / 1- / step]
2-104-004	Reduction Mode O	ENG*	[-20 to 10 / **0** / 1 - / step]

2107	[Image Parameter]		
2-107-001	Image Gamma Flag	ENG	[0 or 1 / **1** / 1 / step]
2-107-002	Shading Correction Flag	ENG*	[0 or 1 / **1** / 1 / step]

2110	[LD Driver]		
2-110-001	Error Flag	ENG*	[0x0000 to 0xFFFF / **0x0000** / 1 / step]
2-110-005	Writing Unit Adj. Transfer	ENG	[0 or 1 / **0** / 1 / step]

2114	[Binary Edge Pro]		
2-114-001	Leading Edge Pixe	ENG	[2 to 15 / **8** / 1 - / step]
2-114-002	Trailing Edge Pix	ENG	[2 to 15 / **15** / 1 - / step]
2-114-004	Independent Dot P	ENG	[2 to 15 / **8** / 1 - / step]
2-114-005	Leading Edge Pixe	ENG	[2 to 15 / **7** / 1 - / step]
2-114-006	Trailing Edge Pix	ENG	[2 to 15 / **15** / 1 - / step]
2-114-008	Independent Dot P	ENG	[2 to 15 / **15** / 1 - / step]

2115	[Main Scan Beam Pitch Adj.]		
2-115-001	Pitch Adj. Between LD0 and LD2	ENG*	[-100 to 100 / **0** / 1 um / step]
2-115-002	Pitch Adj. Between LD1 and LD3	ENG*	[-100 to 100 / **0** / 1 um / step]
2-115-003	Pitch Adj. Between LD0 and LD1	ENG*	[-999 to 999 / **0** / 1 um / step]

2115	[Main Scan Mag. Adj.]		
2-115-004	Main Scan:Front Between LD0 and LD1	ENG*	[-100 to 100 / **0** / 1 um / step]
2-115-005	Main Scan:Rear Between LD0 and LD1	ENG*	[-100 to 100 / **0** / 1 um / step]

2201	[Development Bia]		
2-201-001	Dev. Bias (Image)	ENG*	[100 to 800 / **550** / 10 V / step]
2-201-002	ID Sensor Pattern	ENG*	[100 to 800 / **360** / 10 V / step]
2-201-003	OHP	ENG	[100 to 800 / **300** / 10 V / step]
2-201-004	ID Sensor Pattern	ENG*	[140 to 380 / **240** / 10 V / step]
2-201-005	Vb Scale Voltage	ENG*	[100 to 800 / **550** / 1 V / step]
2-201-006	Dev. Bias (Image)(LowSpeed)	ENG*	[100 to 800 / **550** / 10 V / step]

2207	[Forced Toner Su]		
2-207-001	-	ENG	[0 to 0 / **0** / 0 - / step]

2208	**[Toner Supply Mode]**		
2-208-001	(0:Sensor 1:Pixel Count)	ENG*	[0 or 1 / **0** / 1 / step]

2209	**[Toner Supply Rate]**		
2-209-001	-	ENG*	[50 to 2000 / **850** / 5 mgpsec / step]

2210	**[ID Sensor Patter]**		
2-210-001	-	ENG	[0 to 200 / **10** / 1 - / step]

2220	**[Vref Manual Setting]**		
2-220-001	-	ENG*	[100 to 400 / **250** / 0.01 V / step]

2223	**[Vt Display]**		
2-223-001	-	ENG	[0 to 500 / **400** / 0.02 V / step]

2224	**[Tnr Remains: Disp]**		
2-224-001	Tnr mg(NewBtl)	ENG	[0 to 999999990 / **11000000** / 0.1 mg / step]
2-224-002	mg Remains	ENG	[0 to 999999990 / **11000000** / 0.1 mg / step]
2-224-003	% Remains	ENG*	[0.0 to 100 / **100** / 1 % / step]
2-224-004	TnrRemainsCoef	ENG	[0 to 3000 / **100** / 0.01 / step]
2-224-006	Coverage date	ENG	[0 to 99999999 / **0** / 1 / step]

2301	**[Trans. Curr. Adj.]**		
2-301-001	Main Unit Image Area: Front Side	ENG	MP 6503 SP/7503 SP: [10 to 200 / **65** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]
2-301-002	Main Unit Image Area: Back Side	ENG	MP 6503 SP/7503 SP: [10 to 200 / **65** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]
2-301-003	By-pass Image Area: Front Side	ENG	MP 6503 SP/7503 SP: [10 to 200 / **75** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]
2-301-004	Postcard	ENG	[10 to 200 / **165** / 1 uA / step]
2-301-005	Paper Interval	ENG	[10 to 200 / **15** / 1 uA / step]
2-301-006	Tab Paper	ENG	MP 6503 SP/7503 SP: [10 to 200 / **75** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]
2-301-009	OHP: Front Side	ENG	MP 6503 SP/7503 SP: [10 to 200 / **75** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]
2-301-010	Tracing Paper: Front Side	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-011	Image Leading Edge: Front	ENG	MP 6503 SP/7503 SP: [10 to 200 / **65** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]

2-301-012	Image Trailing Edge: Front	ENG	MP 6503 SP/7503 SP: [10 to 200 / **65** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]
2-301-013	Image Leading Edge: Back	ENG	MP 6503 SP/7503 SP: [10 to 200 / **65** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]
2-301-014	Image Trailing Edge: Back	ENG	MP 6503 SP/7503 SP: [10 to 200 / **65** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]
2-301-015	Bypass: Image Leading Edge	ENG	MP 6503 SP/7503 SP: [10 to 200 / **75** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]
2-301-016	Bypass: Image Trailing Edge	ENG	MP 6503 SP/7503 SP: [10 to 200 / **75** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]
2-301-017	Image Leading Edge: Postcard	ENG	[10 to 200 / **165** / 1 uA / step]
2-301-018	Image Trailing Edge: Postcard	ENG	[10 to 200 / **165** / 1 uA / step]
2-301-019	Image Leading Edge:Tab Paper	ENG	MP 6503 SP/7503 SP: [10 to 200 / **75** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]
2-301-020	Image Trailing Edge:Tab Paper	ENG	MP 6503 SP/7503 SP: [10 to 200 / **75** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]

2-301-023	Image Leading Edge:OHP	ENG	MP 6503 SP/7503 SP: [10 to 200 / **75** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]
2-301-024	Image Trailing Edge:OHP	ENG	MP 6503 SP/7503 SP: [10 to 200 / **75** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]
2-301-025	Image Leading Edge:Tracing Paper	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-026	Image Trailing Edge:Tracing Paper	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-027	Label	ENG	MP 6503 SP/7503 SP: [10 to 200 / **65** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]
2-301-028	Image Leading Edge:Label	ENG	MP 6503 SP/7503 SP: [10 to 200 / **65** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]
2-301-029	Image Trailing Edge:Label	ENG	MP 6503 SP/7503 SP: [10 to 200 / **65** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]
2-301-030	envelope	ENG	MP 6503 SP/7503 SP: [10 to 200 / **65** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]
2-301-031	Image Leading Edge:envelope	ENG	MP 6503 SP/7503 SP: [10 to 200 / **65** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]

2-301-032	Image Trailing Edge:envelope	ENG	MP 6503 SP/7503 SP: [10 to 200 / **65** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]
2-301-033	Med Thick Paper: Front Side Side	ENG	MP 6503 SP/7503 SP: [10 to 200 / **65** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]
2-301-034	Med Thick Paper: Back Side	ENG	MP 6503 SP/7503 SP: [10 to 200 / **65** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]
2-301-035	Image Leading Edge:Med Thick Paper	ENG	MP 6503 SP/7503 SP: [10 to 200 / **65** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]
2-301-036	Image Trailing Edge:Med Thick Paper	ENG	MP 6503 SP/7503 SP: [10 to 200 / **65** / 1 uA / step] MP 9003 SP: [10 to 200 / **80** / 1 uA / step]
2-301-037	Thick Paper1: Front Side	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-038	Thick Paper1: Back Side	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-039	Image Leading Edge:Thick Paper1	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-040	Image Trailing Edge:Thick Paper1	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-041	Thick Paper2: Front Side	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-042	Thick Paper2: Back Side	ENG	[10 to 200 / **120** / 1 uA / step]

2-301-043	Image Leading Edge:Thick Paper2	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-044	Image Trailing Edge:Thick Paper2	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-045	Thick Paper3: Front Side	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-046	Thick Paper3: Back Side	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-047	Image Leading Edge:Thick Paper3	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-048	Image Trailing Edge:Thick Paper3	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-049	Thick Paper4: Front Side	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-050	Image Leading Edge:Thick Paper4	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-051	Image Trailing Edge:Thick Paper4	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-101	Main Unit Image Area: Front Side: Low Speed	ENG	[10 to 200 / **50** / 1 uA / step]
2-301-102	Main Unit Image Area: Back Side: Low Speed	ENG	[10 to 200 / **50** / 1 uA / step]
2-301-103	By-pass Image Area: Front Side: Low Speed	ENG	[10 to 200 / **75** / 1 uA / step]
2-301-104	Postcard: Low Speed	ENG	[10 to 200 / **165** / 1 uA / step]
2-301-105	Paper Interval: Low Speed	ENG	[10 to 200 / **15** / 1 uA / step]

2-301-106	Tab Paper: Low Speed	ENG	[10 to 200 / **75** / 1 uA / step]
2-301-109	OHP: Front Side: Low Speed	ENG	[10 to 200 / **75** / 1 uA / step]
2-301-110	Tracing Paper: Front Side: Low Speed	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-111	Image Leading Edge: Front: Low Speed	ENG	[10 to 200 / **50** / 1 uA / step]
2-301-112	Image Trailing Edge: Front: Low Speed	ENG	[10 to 200 / **50** / 1 uA / step]
2-301-113	Image Leading Edge: Back: Low Speed	ENG	[10 to 200 / **50** / 1 uA / step]
2-301-114	Image Trailing Edge: Back: Low Speed	ENG	[10 to 200 / **50** / 1 uA / step]
2-301-115	Image Leading Edge:Low Speed	ENG	[10 to 200 / **75** / 1 uA / step]
2-301-116	Image Trailing Edge:Low Speed	ENG	[10 to 200 / **75** / 1 uA / step]
2-301-117	Image Leading Edge: Postcard: Low Speed	ENG	[10 to 200 / **165** / 1 uA / step]
2-301-118	Image Trailing Edge: Postcard: Low Speed	ENG	[10 to 200 / **165** / 1 uA / step]
2-301-119	Image Leading Edge:Tab Paper: Low Speed	ENG	[10 to 200 / **75** / 1 uA / step]
2-301-120	Image Trailing Edge:Tab Paper: Low Speed	ENG	[10 to 200 / **75** / 1 uA / step]
2-301-123	Image Leading Edge:OHP: Low Speed	ENG	[10 to 200 / **75** / 1 uA / step]

2-301-124	Image Trailing Edge:OHP: Low Speed	ENG	[10 to 200 / **75** / 1 uA / step]
2-301-125	Image Leading Edge:Tracing Paper: Low Speed	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-126	Image Trailing Edge:Tracing Paper: Low Speed	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-127	Label: Low Speed	ENG	[10 to 200 / **50** / 1 uA / step]
2-301-128	Image Leading Edge:Label: Low Speed	ENG	[10 to 200 / **50** / 1 uA / step]
2-301-129	Image Trailing Edge:Label: Low Speed	ENG	[10 to 200 / **50** / 1 uA / step]
2-301-130	envelope: Low Speed	ENG	[10 to 200 / **50** / 1 uA / step]
2-301-131	Image Leading Edge:envelope: Low Speed	ENG	[10 to 200 / **50** / 1 uA / step]
2-301-132	Image Trailing Edge:envelope: Low Speed	ENG	[10 to 200 / **50** / 1 uA / step]
2-301-133	Med Thick Paper: Front: Low Speed	ENG	[10 to 200 / **50** / 1 uA / step]
2-301-134	Med Thick Paper: Back: Low Speed	ENG	[10 to 200 / **50** / 1 uA / step]
2-301-135	Img Leading Edge:Med Thick Paper: Low Speed	ENG	[10 to 200 / **50** / 1 uA / step]

2-301-136	Img Trailing Edge:Med Thick Paper: Low Speed	ENG	[10 to 200 / **50** / 1 uA / step]
2-301-137	Thick Paper1: Front Side: Low Speed	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-138	Thick Paper1: Back Side: Low Speed	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-139	Image Leading Edge:Thick Paper1: Low Speed	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-140	Image Trailing Edge:Thick Paper1: Low Speed	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-141	Thick Paper2: Front Side: Low Speed	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-142	Thick Paper2: Back Side: Low Speed	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-143	Image Leading Edge:Thick Paper2: Low Speed	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-144	Image Trailing Edge:Thick Paper2: Low Speed	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-145	Thick Paper3: Front Side: Low Speed	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-146	Thick Paper3: Back Side: Low Speed	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-147	Image Leading Edge:Thick Paper3: Low Speed	ENG	[10 to 200 / **120** / 1 uA / step]

2-301-148	Image Trailing Edge:Thick Paper3: Low Speed	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-149	Thick Paper4: Front Side: Low Speed	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-150	Image Leading Edge:Thick Paper4: Low Speed	ENG	[10 to 200 / **120** / 1 uA / step]
2-301-151	Image Trailing Edge:Thick Paper4: Low Speed	ENG	[10 to 200 / **120** / 1 uA / step]

2506	**[Cont. Op.Time Cleaning Setting]**		
2-506-001	Operation Setting	ENG	[0 or 1 / **1** / 1 / step]
2-506-002	Time Setting	ENG	[1 to 100 / **15** / 1 min / step]

2507	**[ID Sen. Patt. Du]**		
2-507-001	Operation Setting	ENG	[0 or 1 / **0** / 1 - / step]
2-507-002	No. of Sheets	ENG	[1 to 10000 / **100** / 1 - / step]

2602	**[PTL Setting]**		
2-602-001	1st Side: ON/OFF Setting	ENG	[0 or 1 / **1** / 1 / step]
2-602-002	1st Side: OFF Timing	ENG	[-10 to 20 / **3** / 1 mm / step]
2-602-003	2nd Side: ON/OFF Setting	ENG	[0 or 1 / **0** / 1 / step]
2-602-004	2nd Side: OFF Timing	ENG	[-10 to 20 / **3** / 1 mm / step]
2-602-101	1st Side: ON/OFF Setting: Low Speed	ENG	[0 or 1 / **1** / 1 / step]

2-602-102	1st Side: OFF Timing: Low Speed	ENG	[-10 to 20 / **3** / 1 mm / step]
2-602-103	2nd Side: ON/OFF Setting: Low Speed	ENG	[0 or 1 / **0** / 1 / step]
2-602-104	2nd Side: OFF Timing: Low Speed	ENG	[-10 to 20 / **3** / 1 mm / step]

2801	**[TD Sensor Initial Setting]**		
2-801-001	-	ENG	[0 to 0 / **0** / 0 / step]
2-801-002	Developer Lot Number Input	ENG	[0 to 0 / **0** / 0 / step]

2803	**[Charge Cleaner Start Time]**		
2-803-001	-	ENG	[0 to 0 / **0** / 0 / step]

2804	**[Charge Cleaner]**		
2-804-001	Operation Mode	ENG*	[0 or 1 / **1** / 1 / step]
2-804-002	Number of Sheets	ENG*	[100 to 10000 / **5000** / 1 / step]

2901	**[HumidityControl]**		
2-901-001	(0:OFF 1:ON)	ENG*	[0 or 1 / **0** / 1 / step]
2-901-002	Humidity Thresh: Trans. Bias	ENG*	[0 to 100 / **70** / 1 % / step]

2902	**[Test Pattern]**		
2-902-003	Printing Test Pattern	ENG	[0 to 25 / **0** / 1 / step]

2906	**[TD Sensor Ctrl Voltage & Check]**

2-906-001	TD Sensor Ctrl Voltage Setting	ENG	[0 to 240 / **97** / 0.1 V / step]
2-906-002	Automatic Adjustment Setting	ENG	[0 to 240 / **97** / 0.1 V / step]

2909	**[Writing Main Scan Mag.]**		
2-909-001	-	ENG*	[-2.0 to 2.0 / **0** / 0.1 % / step]

2910	**[Writing Sub Scan Mag.]**		
2-910-001	-	ENG*	[-1.0 to 1.0 / **0** / 0.1 % / step]

2912	**[Drum Reverse Rotation Interval]**		
2-912-001	-	ENG*	[0 to 6 / **0** / 0 / step]

2913	**[Temp/humid Display]**		
2-913-001	Internal Temparature	ENG	[-128 to 127 / **0** / 1 deg / step]

2920	**[LD Off Check]**		
2-920-001	0:ON 1:OFF	ENG	[0 or 1 / **0** / 0 / step]

2930	**[Transfer Idle Cleaning]**		
2-930-001	-	ENG	[0 or 1 / **0** / 0 / step]

2931	**[Trans.Cur. On/OffTiming:LCT]**		
2-931-001	On Timing: La1(Front)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-931-002	La1f(Front)	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-003	Lc1r(Front)	ENG	[0 to 20 / **0** / 1 mm / step]

2-931-004	Off Timing: Lc1(Front)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-931-005	On Timing: La2(Back)	ENG	[-30 to 30 / **0** / 1 mm / step]
2-931-006	Leading Edge: La2f(Back)	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-007	Trailing Edge: Lc2r(Back)	ENG	[0 to -20 / **0** / 1 mm / step]
2-931-008	On Timing: Lc2(Back)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-931-013	On Timing: M-Thick	ENG	[-30 to 30 / **0** / 1 mm / step]
2-931-014	Leading Edge: M-Thick	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-015	Trailing Edge:M-Thick	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-016	Off Timing: M-Thick	ENG	[-30 to 30 / **15** / 1 mm / step]
2-931-017	On Timing: After Punch	ENG	[-30 to 30 / **20** / 1 mm / step]
2-931-018	Leading Edge: After Punch	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-019	Trailing Edge: After Punch	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-020	Off Timing: After Punch	ENG	MP 6503 SP/7503 SP: [-30 to 30 / **-22** / 1 mm / step] MP 9003 SP: [-30 to 30 / **-25** / 1 mm / step]
2-931-021	On Timing: Thick Paper1	ENG	[-30 to 30 / **0** / 1 mm / step]
2-931-022	Leading Edge: Thick Paper1	ENG	[0 to 20 / **0** / 1 mm / step]

2-931-023	Trailing Edge: Thick Paper1	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-024	Off Timing: Thick Paper1	ENG	[-30 to 30 / **15** / 1 mm / step]
2-931-025	On Timing: Thick Paper2	ENG	[-30 to 30 / **0** / 1 mm / step]
2-931-026	Leading Edge: Thick Paper2	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-027	Trailing Edge: Thick Paper2	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-028	Off Timing: Thick Paper2	ENG	[-30 to 30 / **15** / 1 mm / step]
2-931-029	On Timing: Thick Paper3	ENG	[-30 to 30 / **0** / 1 mm / step]
2-931-030	Leading Edge: Thick Paper3	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-031	Trailing Edge: Thick Paper3	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-032	Off Timing: Thick Paper3	ENG	[-30 to 30 / **15** / 1 mm / step]
2-931-033	On Timing: Thick Paper4	ENG	[-30 to 30 / **0** / 1 mm / step]
2-931-034	Leading Edge: Thick Paper4	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-035	Trailing Edge: Thick Paper4	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-036	Off Timing: Thick Paper4	ENG	[-30 to 30 / **15** / 1 mm / step]
2-931-101	Low Speed: On Timing: La1(Front)	ENG	[-30 to 30 / **20** / 1 mm / step]

2-931-102	Low Speed: La1f(Front)	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-103	Low Speed: Lc1r(Front)	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-104	Low Speed: Off Timing: Lc1(Front)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-931-105	Low Speed: On Timing: La2(Back)	ENG	[-30 to 30 / **0** / 1 mm / step]
2-931-106	Low Speed: Leading Edge: La2f(Back)	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-107	Low Speed: Trailing Edge: Lc2r(Back)	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-108	Low Speed: On Timing: Lc2(Back)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-931-113	Low Speed: On Timing: M-Thick	ENG	[-30 to 30 / **0** / 1 mm / step]
2-931-114	Low Speed: Leading Edge: M-Thick	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-115	Low Speed: Trailing Edge:M-Thick	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-116	Low Speed: Off Timing: M-Thick	ENG	[-30 to 30 / **15** / 1 mm / step]
2-931-117	Low Speed: On Timing: After Punch	ENG	[-30 to 30 / **20** / 1 mm / step]
2-931-118	Low Speed: Leading Edge: After Punch	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-119	Low Speed: Trailing Edge: After Punch	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-120	Low Speed: Off Timing: After Punch	ENG	[-30 to 30 / **-16** / 1 mm / step]

2-931-121	Low Speed: On Timing: Thick Paper1	ENG	[-30 to 30 / **0** / 1 mm / step]
2-931-122	Low Speed: Leading Edge: Thick Paper1	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-123	Low Speed: Trailing Edge: Thick Paper1	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-124	Low Speed: Off Timing: Thick Paper1	ENG	[-30 to 30 / **15** / 1 mm / step]
2-931-125	Low Speed: On Timing: Thick Paper2	ENG	[-30 to 30 / **0** / 1 mm / step]
2-931-126	Low Speed: Leading Edge: Thick Paper2	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-127	Low Speed: Trailing Edge: Thick Paper2	ENG	[0 to 20 / **0**/ 1 mm / step]
2-931-128	Low Speed: Off Timing: Thick Paper2	ENG	[-30 to 30 / **15** / 1 mm / step]
2-931-129	Low Speed: On Timing: Thick Paper3	ENG	[-30 to 30 / **0** / 1 mm / step]
2-931-130	Low Speed: Leading Edge: Thick Paper3	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-131	Low Speed: Trailing Edge: Thick Paper3	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-132	Low Speed: Off Timing: Thick Paper3	ENG	[-30 to 30 / **15** / 1 mm / step]
2-931-133	Low Speed: On Timing: Thick Paper4	ENG	[-30 to 30 / **0** / 1 mm / step]
2-931-134	Low Speed: Leading Edge: Thick Paper4	ENG	[0 to 20 / **0** / 1 mm / step]
2-931-135	Low Speed: Trailing Edge: Thick Paper4	ENG	[0 to 20 / **0** / 1 mm / step]

2-931-136	Low Speed: Off Timing: Thick Paper4	ENG	[-30 to 30 / **15** / 1 mm / step]

2932	**[Trans.Cur. On/OffTiming:Tray1]**		
2-932-001	On Timing: La1(Front)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-932-002	La1f(Front)	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-003	Lc1r(Front)	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-004	Off Timing: Lc1(Front)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-932-005	On Timing: La2(Back)	ENG	[-30 to 30 / **0** / 1 mm / step]
2-932-006	Leading Edge: La2f(Back)	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-007	Trailing Edge: Lc2r(Back)	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-008	On Timing: Lc2(Back)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-932-013	On Timing: M-Thick	ENG	[-30 to 30 / **0** / 1 mm / step]
2-932-014	Leading Edge: M-Thick	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-015	Trailing Edge:M-Thick	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-016	Off Timing: M-Thick	ENG	[-30 to 30 / **15** / 1 mm / step]
2-932-017	On Timing: After Punch	ENG	[-30 to 30 / **20** / 1 mm / step]
2-932-018	Leading Edge: After Punch	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-019	Trailing Edge: After Punch	ENG	[0 to 20 / **0** / 1 mm / step]

2-932-020	Off Timing: After Punch	ENG	MP 6503 SP/7503 SP: [-30 to 30 / **-22** / 1 mm / step] MP 9003 SP: [-30 to 30 / **-25** / 1 mm / step]
2-932-021	On Timing: Thick Paper1	ENG	[-30 to 30 / **0** / 1 mm / step]
2-932-022	Leading Edge: Thick Paper1	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-023	Trailing Edge: Thick Paper1	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-024	Off Timing: Thick Paper1	ENG	[-30 to 30 / **15** / 1 mm / step]
2-932-025	On Timing: Thick Paper2	ENG	[-30 to 30 / **0** / 1 mm / step]
2-932-026	Leading Edge: Thick Paper2	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-027	Trailing Edge: Thick Paper2	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-028	Off Timing: Thick Paper2	ENG	[-30 to 30 / **15** / 1 mm / step]
2-932-029	On Timing: Thick Paper3	ENG	[-30 to 30 / **0** / 1 mm / step]
2-932-030	Leading Edge: Thick Paper3	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-031	Trailing Edge: Thick Paper3	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-032	Off Timing: Thick Paper3	ENG	[-30 to 30 / **15** / 1 mm / step]
2-932-101	Low Speed: On Timing: La1(Front)	ENG	[-30 to 30 / **20** / 1 mm / step]

2-932-102	Low Speed: La1f(Front)	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-103	Low Speed: Lc1r(Front)	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-104	Low Speed: Off Timing: Lc1(Front)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-932-105	Low Speed: On Timing: La2(Back)	ENG	[-30 to 30 / **0** / 1 mm / step]
2-932-106	Low Speed: Leading Edge: La2f(Back)	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-107	Low Speed: Trailing Edge: Lc2r(Back)	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-108	Low Speed: On Timing: Lc2(Back)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-932-113	Low Speed: On Timing: M-Thick	ENG	[-30 to 30 / **0** / 1 mm / step]
2-932-114	Low Speed: Leading Edge: M-Thick	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-115	Low Speed: Trailing Edge:M-Thick	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-116	Low Speed: Off Timing: M-Thick	ENG	[-30 to 30 / **15** / 1 mm / step]
2-932-117	Low Speed: On Timing: After Punch	ENG	[-30 to 30 / **20** / 1 mm / step]
2-932-118	Low Speed: Leading Edge: After Punch	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-119	Low Speed: Trailing Edge: After Punch	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-120	Low Speed: Off Timing: After Punch	ENG	[-30 to 30 / **-16** / 1 mm / step]

2-932-121	Low Speed: On Timing: Thick Paper1	ENG	[-30 to 30 / **0** / 1 mm / step]
2-932-122	Low Speed: Leading Edge: Thick Paper1	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-123	Low Speed: Trailing Edge: Thick Paper1	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-124	Low Speed: Off Timing: Thick Paper1	ENG	[-30 to 30 / **15** / 1 mm / step]
2-932-125	Low Speed: On Timing: Thick Paper2	ENG	[-30 to 30 / **0** / 1 mm / step]
2-932-126	Low Speed: Leading Edge: Thick Paper2	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-127	Low Speed: Trailing Edge: Thick Paper2	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-128	Low Speed: Off Timing: Thick Paper2	ENG	[-30 to 30 / **15** / 1 mm / step]
2-932-129	Low Speed: On Timing: Thick Paper3	ENG	[-30 to 30 / **0** / 1 mm / step]
2-932-130	Low Speed: Leading Edge: Thick Paper3	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-131	Low Speed: Trailing Edge: Thick Paper3	ENG	[0 to 20 / **0** / 1 mm / step]
2-932-132	Low Speed: Off Timing: Thick Paper3	ENG	[-30 to 30 / **15** / 1 mm / step]

2933	**[Trans.Cur. On/OffTiming:Tray2]**		
2-933-001	On Timing: La1(Front)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-933-002	La1f(Front)	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-003	Lc1r(Front)	ENG	[0 to 20 / **0** / 1 mm / step]

2-933-004	Off Timing: Lc1(Front)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-933-005	On Timing: La2(Back)	ENG	[-30 to 30 / **0** / 1 mm / step]
2-933-006	Leading Edge: La2f(Back)	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-007	Trailing Edge: Lc2r(Back)	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-008	On Timing: Lc2(Back)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-933-013	On Timing: M-Thick	ENG	[-30 to 30 / **0** / 1 mm / step]
2-933-014	Leading Edge: M-Thick	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-015	Trailing Edge:M-Thick	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-016	Off Timing: M-Thick	ENG	[-30 to 30 / **15** / 1 mm / step]
2-933-017	On Timing: After Punch	ENG	[-30 to 30 / **20** / 1 mm / step]
2-933-018	Leading Edge: After Punch	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-019	Trailing Edge: After Punch	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-020	Off Timing: After Punch	ENG	MP 6503 SP/7503 SP: [-30 to 30 / **-22** / 1 mm / step] MP 9003 SP: [-30 to 30 / **-25** / 1 mm / step]
2-933-021	On Timing: Thick Paper1	ENG	[-30 to 30 / **0** / 1 mm / step]
2-933-022	Leading Edge: Thick Paper1	ENG	[0 to 20 / **0** / 1 mm / step]

2-933-023	Trailing Edge: Thick Paper1	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-024	Off Timing: Thick Paper1	ENG	[-30 to 30 / **15** / 1 mm / step]
2-933-025	On Timing: Thick Paper2	ENG	[-30 to 30 / **0** / 1 mm / step]
2-933-026	Leading Edge: Thick Paper2	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-027	Trailing Edge: Thick Paper2	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-028	Off Timing: Thick Paper2	ENG	[-30 to 30 / **15** / 1 mm / step]
2-933-029	On Timing: Thick Paper3	ENG	[-30 to 30 / **0** / 1 mm / step]
2-933-030	Leading Edge: Thick Paper3	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-031	Trailing Edge: Thick Paper3	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-032	Off Timing: Thick Paper3	ENG	[-30 to 30 / **15** / 1 mm / step]
2-933-101	Low Speed: On Timing: La1(Front)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-933-102	Low Speed: La1f(Front)	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-103	Low Speed: Lc1r(Front)	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-104	Low Speed: Off Timing: Lc1(Front)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-933-105	Low Speed: On Timing: La2(Back)	ENG	[-30 to 30 / **0** / 1 mm / step]

2-933-106	Low Speed: Leading Edge: La2f(Back)	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-107	Low Speed: Trailing Edge: Lc2r(Back)	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-108	Low Speed: On Timing: Lc2(Back)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-933-113	Low Speed: On Timing: M-Thick	ENG	[-30 to 30 / **0** / 1 mm / step]
2-933-114	Low Speed: Leading Edge: M-Thick	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-115	Low Speed: Trailing Edge:M-Thick	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-116	Low Speed: Off Timing: M-Thick	ENG	[-30 to 30 / **15** / 1 mm / step]
2-933-117	Low Speed: On Timing: After Punch	ENG	[-30 to 30 / **20** / 1 mm / step]
2-933-118	Low Speed: Leading Edge: After Punch	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-119	Low Speed: Trailing Edge: After Punch	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-120	Low Speed: Off Timing: After Punch	ENG	[-30 to 30 / **-16** / 1 mm / step]
2-933-121	Low Speed: On Timing: Thick Paper1	ENG	[-30 to 30 / **0** / 1 mm / step]
2-933-122	Low Speed: Leading Edge: Thick Paper1	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-123	Low Speed: Trailing Edge: Thick Paper1	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-124	Low Speed: Off Timing: Thick Paper1	ENG	[-30 to 30 / **15** / 1 mm / step]

2-933-125	Low Speed: On Timing: Thick Paper2	ENG	[-30 to 30 / **0** / 1 mm / step]
2-933-126	Low Speed: Leading Edge: Thick Paper2	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-127	Low Speed: Trailing Edge: Thick Paper2	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-128	Low Speed: Off Timing: Thick Paper2	ENG	[-30 to 30 / **15** / 1 mm / step]
2-933-129	Low Speed: On Timing: Thick Paper3	ENG	[-30 to 30 / **0** / 1 mm / step]
2-933-130	Low Speed: Leading Edge: Thick Paper3	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-131	Low Speed: Trailing Edge: Thick Paper3	ENG	[0 to 20 / **0** / 1 mm / step]
2-933-132	Low Speed: Off Timing: Thick Paper3	ENG	[-30 to 30 / **15** / 1 mm / step]

2934	**[Trans.Cur. On/OffTiming:Tray3]**		
2-934-001	On Timing: La1(Front)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-934-002	La1f(Front)	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-003	Lc1r(Front)	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-004	Off Timing: Lc1(Front)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-934-005	On Timing: La2(Back)	ENG	[-30 to 30 / **0** / 1 mm / step]
2-934-006	Leading Edge: La2f(Back)	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-007	Trailing Edge: Lc2r(Back)	ENG	[0 to 20 / **0** / 1 mm / step]

2-934-008	On Timing: Lc2(Back)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-934-013	On Timing: M-Thick	ENG	[-30 to 30 / **0** / 1 mm / step]
2-934-014	Leading Edge: M-Thick	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-015	Trailing Edge:M-Thick	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-016	Off Timing: M-Thick	ENG	[-30 to 30 / **15** / 1 mm / step]
2-934-017	On Timing: After Punch	ENG	[-30 to 30 / **20** / 1 mm / step]
2-934-018	Leading Edge: After Punch	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-019	Trailing Edge: After Punch	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-020	Off Timing: After Punch	ENG	MP 6503 SP/7503 SP: [-30 to 30 / **-22** / 1 mm / step] MP 9003 SP: [-30 to 30 / **-25** / 1 mm / step]
2-934-021	On Timing: Thick Paper1	ENG	[-30 to 30 / **0** / 1 mm / step]
2-934-022	Leading Edge: Thick Paper1	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-023	Trailing Edge: Thick Paper1	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-024	Off Timing: Thick Paper1	ENG	[-30 to 30 / **15** / 1 mm / step]
2-934-025	On Timing: Thick Paper2	ENG	[-30 to 30 / **0** / 1 mm / step]
2-934-026	Leading Edge: Thick Paper2	ENG	[0 to 20 / **0** / 1 mm / step]

2-934-027	Trailing Edge: Thick Paper2	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-028	Off Timing: Thick Paper2	ENG	[-30 to 30 / **15** / 1 mm / step]
2-934-029	On Timing: Thick Paper3	ENG	[-30 to 30 / **0** / 1 mm / step]
2-934-030	Leading Edge: Thick Paper3	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-031	Trailing Edge: Thick Paper3	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-032	Off Timing: Thick Paper3	ENG	[-30 to 30 / **15** / 1 mm / step]
2-934-101	Low Speed: On Timing: La1(Front)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-934-102	Low Speed: La1f(Front)	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-103	Low Speed: Lc1r(Front)	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-104	Low Speed: Off Timing: Lc1(Front)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-934-105	Low Speed: On Timing: La2(Back)	ENG	[-30 to 30 / **0** / 1 mm / step]
2-934-106	Low Speed: Leading Edge: La2f(Back)	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-107	Low Speed: Trailing Edge: Lc2r(Back)	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-108	Low Speed: On Timing: Lc2(Back)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-934-113	Low Speed: On Timing: M-Thick	ENG	[-30 to 30 / **0** / 1 mm / step]

2-934-114	Low Speed: Leading Edge: M-Thick	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-115	Low Speed: Trailing Edge:M-Thick	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-116	Low Speed: Off Timing: M-Thick	ENG	[-30 to 30 / **15** / 1 mm / step]
2-934-117	Low Speed: On Timing: After Punch	ENG	[-30 to 30 / **20** / 1 mm / step]
2-934-118	Low Speed: Leading Edge: After Punch	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-119	Low Speed: Trailing Edge: After Punch	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-120	Low Speed: Off Timing: After Punch	ENG	[-30 to 30 / **-16** / 1 mm / step]
2-934-121	Low Speed: On Timing: Thick Paper1	ENG	[-30 to 30 / **0** / 1 mm / step]
2-934-122	Low Speed: Leading Edge: Thick Paper1	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-123	Low Speed: Trailing Edge: Thick Paper1	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-124	Low Speed: Off Timing: Thick Paper1	ENG	[-30 to 30 / **15** / 1 mm / step]
2-934-125	Low Speed: On Timing: Thick Paper2	ENG	[-30 to 30 / **0** / 1 mm / step]
2-934-126	Low Speed: Leading Edge: Thick Paper2	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-127	Low Speed: Trailing Edge: Thick Paper2	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-128	Low Speed: Off Timing: Thick Paper2	ENG	[-30 to 30 / **15** / 1 mm / step]

2-934-129	Low Speed: On Timing: Thick Paper3	ENG	[-30 to 30 / **0** / 1 mm / step]
2-934-130	Low Speed: Leading Edge: Thick Paper3	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-131	Low Speed: Trailing Edge: Thick Paper3	ENG	[0 to 20 / **0** / 1 mm / step]
2-934-132	Low Speed: Off Timing: Thick Paper3	ENG	[-30 to 30 / **15** / 1 mm / step]

2935	**[Trans.Cur. On/OffTiming:Tray4]**		
2-935-001	On Timing: La1(Front)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-935-002	La1f(Front)	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-003	Lc1r(Front)	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-004	Off Timing: Lc1(Front)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-935-005	On Timing: La2(Back)	ENG	[-30 to 30 / **0** / 1 mm / step]
2-935-006	Leading Edge: La2f(Back)	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-007	Trailing Edge: Lc2r(Back)	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-008	On Timing: Lc2(Back)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-935-013	On Timing: M-Thick	ENG	[-30 to 30 / **0** / 1 mm / step]
2-935-014	Leading Edge: M-Thick	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-015	Trailing Edge:M-Thick	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-016	Off Timing: M-Thick	ENG	[-30 to 30 / **15** / 1 mm / step]

2-935-017	On Timing: After Punch	ENG	[-30 to 30 / **20** / 1 mm / step]
2-935-018	Leading Edge: After Punch	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-019	Trailing Edge: After Punch	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-020	Off Timing: After Punch	ENG	MP 6503 SP/7503 SP: [-30 to 30 / **-22** / 1 mm / step] MP 9003 SP: [-30 to 30 / **-25** / 1 mm / step]
2-935-021	On Timing: Thick Paper1	ENG	[-30 to 30 / **0** / 1 mm / step]
2-935-022	Leading Edge: Thick Paper1	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-023	Trailing Edge: Thick Paper1	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-024	Off Timing: Thick Paper1	ENG	[-30 to 30 / **15** / 1 mm / step]
2-935-025	On Timing: Thick Paper2	ENG	[-30 to 30 / **0** / 1 mm / step]
2-935-026	Leading Edge: Thick Paper2	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-027	Trailing Edge: Thick Paper2	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-028	Off Timing: Thick Paper2	ENG	[-30 to 30 / **15** / 1 mm / step]
2-935-029	On Timing: Thick Paper3	ENG	[-30 to 30 / **0** / 1 mm / step]
2-935-030	Leading Edge: Thick Paper3	ENG	[0 to 20 / **0** / 1 mm / step]

2-935-031	Trailing Edge: Thick Paper3	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-032	Off Timing: Thick Paper3	ENG	[-30 to 30 / **15** / 1 mm / step]
2-935-101	Low Speed: On Timing: La1(Front)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-935-102	Low Speed: La1f(Front)	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-103	Low Speed: Lc1r(Front)	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-104	Low Speed: Off Timing: Lc1(Front)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-935-105	Low Speed: On Timing: La2(Back)	ENG	[-30 to 30 / **0** / 1 mm / step]
2-935-106	Low Speed: Leading Edge: La2f(Back)	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-107	Low Speed: Trailing Edge: Lc2r(Back)	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-108	Low Speed: On Timing: Lc2(Back)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-935-113	Low Speed: On Timing: M-Thick	ENG	[-30 to 30 / **0** / 1 mm / step]
2-935-114	Low Speed: Leading Edge: M-Thick	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-115	Low Speed: Trailing Edge:M-Thick	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-116	Low Speed: Off Timing: M-Thick	ENG	[-30 to 30 / **15** / 1 mm / step]
2-935-117	Low Speed: On Timing: After Punch	ENG	[-30 to 30 / **20** / 1 mm / step]

2-935-118	Low Speed: Leading Edge: After Punch	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-119	Low Speed: Trailing Edge: After Punch	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-120	Low Speed: Off Timing: After Punch	ENG	[-30 to 30 / **-16** / 1 mm / step]
2-935-121	Low Speed: On Timing: Thick Paper1	ENG	[-30 to 30 / **0** / 1 mm / step]
2-935-122	Low Speed: Leading Edge: Thick Paper1	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-123	Low Speed: Trailing Edge: Thick Paper1	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-124	Low Speed: Off Timing: Thick Paper1	ENG	[-30 to 30 / **15** / 1 mm / step]
2-935-125	Low Speed: On Timing: Thick Paper2	ENG	[-30 to 30 / **0** / 1 mm / step]
2-935-126	Low Speed: Leading Edge: Thick Paper2	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-127	Low Speed: Trailing Edge: Thick Paper2	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-128	Low Speed: Off Timing: Thick Paper2	ENG	[-30 to 30 / **15** / 1 mm / step]
2-935-129	Low Speed: On Timing: Thick Paper3	ENG	[-30 to 30 / **0** / 1 mm / step]
2-935-130	Low Speed: Leading Edge: Thick Paper3	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-131	Low Speed: Trailing Edge: Thick Paper3	ENG	[0 to 20 / **0** / 1 mm / step]
2-935-132	Low Speed: Off Timing: Thick Paper3	ENG	[-30 to 30 / **15** / 1 mm / step]

2936	**[Trans.Cur. On/OffTiming:Bypass]**		
2-936-001	On Timing: La1(Front)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-936-002	La1f(Front)	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-003	Lc1r(Front)	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-004	Off Timing: Lc1(Front)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-936-005	On Timing: La2(Back)	ENG	[-30 to 30 / **0** / 1 mm / step]
2-936-006	Leading Edge: La2f(Back)	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-007	Trailing Edge: Lc2r(Back)	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-008	On Timing: Lc2(Back)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-936-013	On Timing: OHP	ENG	[-30 to 30 / **0** / 1 mm / step]
2-936-014	Leading Edge: OHP	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-015	Trailing Edge: OHP	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-016	Off Timing: OHP	ENG	[-30 to 30 / **20** / 1 mm / step]
2-936-017	On Timing: M-Thick	ENG	[-30 to 30 / **0** / 1 mm / step]
2-936-018	Leading Edge: M-Thick	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-019	Trailing Edge: M-Thick	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-020	Off Timing: M-Thick	ENG	[-30 to 30 / **15** / 1 mm / step]
2-936-021	On Timing: After Punch	ENG	[-30 to 30 / **20** / 1 mm / step]
2-936-022	Leading Edge: After Punch	ENG	[0 to 20 / **0** / 1 mm / step]

2-936-023	Trailing Edge: After Punch	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-024	Off Timing: After Punch	ENG	MP 6503 SP/7503 SP: [-30 to 30 / **-22** / 1 mm / step] MP 9003 SP: [-30 to 30 / **-25** / 1 mm / step]
2-936-025	ON Timing:Label La1	ENG	[-30 to 30 / **20** / 1 mm / step]
2-936-026	Label La1	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-027	Label Lc1	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-028	OFF Timing:Label Lc1	ENG	[-30 to 30 / **20** / 1 mm / step]
2-936-029	ON Timing:envelope La1	ENG	[-30 to 30 / **20** / 1 mm / step]
2-936-030	envelope La1	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-031	envelope Lc1	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-032	OFF Timing:envelope Lc1	ENG	[-30 to 30 / **20** / 1 mm / step]
2-936-033	On Timing: Thick Paper1	ENG	[-30 to 30 / **0** / 1 mm / step]
2-936-034	Leading Edge: Thick Paper1	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-035	Trailing Edge: Thick Paper1	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-036	Off Timing: Thick Paper1	ENG	[-30 to 30 / **15** / 1 mm / step]
2-936-037	On Timing: Thick Paper2	ENG	[-30 to 30 / **0** / 1 mm / step]
2-936-038	Leading Edge: Thick Paper2	ENG	[0 to 20 / **0** / 1 mm / step]

2-936-039	Trailing Edge: Thick Paper2	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-040	Off Timing: Thick Paper2	ENG	[-30 to 30 / **15** / 1 mm / step]
2-936-041	On Timing: Thick Paper3	ENG	[-30 to 30 / **0** / 1 mm / step]
2-936-042	Leading Edge: Thick Paper3	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-043	Trailing Edge: Thick Paper3	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-044	Off Timing: Thick Paper3	ENG	[-30 to 30 / **15** / 1 mm / step]
2-936-045	On Timing: Thick Paper4	ENG	[-30 to 30 / **0** / 1 mm / step]
2-936-046	Leading Edge: Thick Paper4	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-047	Trailing Edge: Thick Paper4	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-048	Off Timing: Thick Paper4	ENG	[-30 to 30 / **15** / 1 mm / step]
2-936-101	Low Speed: On Timing: La1(Front)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-936-102	Low Speed: La1f(Front)	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-103	Low Speed: Lc1r(Front)	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-104	Low Speed: Off Timing: Lc1(Front)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-936-105	Low Speed: On Timing: La2(Back)	ENG	[-30 to 30 / **0** / 1 mm / step]

2-936-106	Low Speed: Leading Edge: La2f(Back)	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-107	Low Speed: Trailing Edge: Lc2r(Back)	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-108	Low Speed: On Timing: Lc2(Back)	ENG	[-30 to 30 / **20** / 1 mm / step]
2-936-113	Low Speed: On Timing: OHP	ENG	[-30 to 30 / **0** / 1 mm / step]
2-936-114	Low Speed: Leading Edge: OHP	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-115	Low Speed: Trailing Edge:OHP	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-116	Low Speed: Off Timing: OHP	ENG	[-30 to 30 / **20** / 1 mm / step]
2-936-117	Low Speed: On Timing: M-Thick	ENG	[-30 to 30 / **0** / 1 mm / step]
2-936-118	Low Speed: Leading Edge: M-Thick	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-119	Low Speed: Trailing Edge:M-Thick	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-120	Low Speed: Off Timing: M-Thick	ENG	[-30 to 30 / **15** / 1 mm / step]
2-936-121	Low Speed: On Timing: After Punch	ENG	[-30 to 30 / **20** / 1 mm / step]
2-936-122	Low Speed: Leading Edge: After Punch	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-123	Low Speed: Trailing Edge: After Punch	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-124	Low Speed: Off Timing: After Punch	ENG	[-30 to 30 / **-16** / 1 mm / step]

2-936-125	Low Speed: On Timing: Label	ENG	[-30 to 30 / **20** / 1 mm / step]
2-936-126	Low Speed: Leading Edge: Label	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-127	Low Speed: Trailing Edge: Label	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-128	Low Speed: Off Timing: Label	ENG	[-30 to 30 / **20** / 1 mm / step]
2-936-129	Low Speed: On Timing: envelope	ENG	[-30 to 30 / **20** / 1 mm / step]
2-936-130	Low Speed: Leading Edge: envelope	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-131	Low Speed: Trailing Edge: envelope	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-132	Low Speed: Off Timing: envelope	ENG	[-30 to 30 / **20** / 1 mm / step]
2-936-133	Low Speed: On Timing: Thick Paper1	ENG	[-30 to 30 / **0** / 1 mm / step]
2-936-134	Low Speed: Leading Edge: Thick Paper1	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-135	Low Speed: Trailing Edge: Thick Paper1	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-136	Low Speed: Off Timing: Thick Paper1	ENG	[-30 to 30 / **15** / 1 mm / step]
2-936-137	Low Speed: On Timing: Thick Paper2	ENG	[-30 to 30 / **0** / 1 mm / step]
2-936-138	Low Speed: Leading Edge: Thick Paper2	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-139	Low Speed: Trailing Edge: Thick Paper2	ENG	[0 to 20 / **0** / 1 mm / step]

2-936-140	Low Speed: Off Timing: Thick Paper2	ENG	[-30 to 30 / **15** / 1 mm / step]
2-936-141	Low Speed: On Timing: Thick Paper3	ENG	[-30 to 30 / **0** / 1 mm / step]
2-936-142	Low Speed: Leading Edge: Thick Paper3	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-143	Low Speed: Trailing Edge: Thick Paper3	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-144	Low Speed: Off Timing: Thick Paper3	ENG	[-30 to 30 / **15** / 1 mm / step]
2-936-145	Low Speed: On Timing: Thick Paper4	ENG	[-30 to 30 / **0** / 1 mm / step]
2-936-146	Low Speed: Leading Edge: Thick Paper4	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-147	Low Speed: Trailing Edge: Thick Paper4	ENG	[0 to 20 / **0** / 1 mm / step]
2-936-148	Low Speed: Off Timing: Thick Paper4	ENG	[-30 to 30 / **15** / 1 mm / step]

2940	**[Reface Mode]**		
2-940-001	Pattern Count	ENG*	[0 to 100 / **0** / 1 / step]

2950	**[Vh Pattern Creation Setting]**		
2-950-001	Exposure Level	ENG*	[0 to 15 / **8** / 1 - / step]
2-950-002	Offset Light Amount	ENG*	[-100 to 0 / **-45** / 1 - / step]

2960	**[Process Interval]**		
2-960-001	Additional Time	ENG	[0 to 7 / **0** / 1 sec / step]

2961	**[Developer Adjust Mode]**		
2-961-001	-	ENG	[0 to 0 / **0** / 0 / step]

2962	**[AutomaticAdj of DrumConditions]**		
2-962-001	-	ENG	[0 to 0 / **0** / 0 - / step]

2963	**[Installation Mode]**		
2-963-001	-	ENG	[0 to 0 / **0** / 0 - / step]
2-963-002	Developer Lot Number Input	ENG	[0 to 0 / **0** / 0 / step]

2966	**[Drum Conditions: Periodic Adj]**		
2-966-002	Interval Setting	ENG*	[1 to 24 / **24** / 1 hour / step]

2967	**[Developer Density Adj Mode]**		
2-967-001	-	ENG*	[0 or 1 / **0** / 1 - / step]

2968	**[Toner Exit Mode]**		
2-968-001	-	ENG	[0 to 0 / **0** / 0 / step]

2969	**[Toner Bottle Revolution Count]**		
2-969-001	Copy Count Setting	ENG*	[50 to 112 / **100** / 1 Mai / step]
2-969-002	Count Reset	ENG	[0 to 0 / **0** / 0 / step]
2-969-003	Copy Count Display	ENG	[0 to 0xFFFF / **0** / 0 Kai / step]

2970	**[Trans. Belt Resistance:Display]**		
2-970-001	-	ENG	[0 to 0xFFFF / **0** / 0 Mohm / step]

2971	**[Trans. Interval Output]**		
2-971-001	Voltage	ENG	[0 to 0xFFFF / **0** / 0 V / step]
2-971-002	Current	ENG	[0 to 0xFFFF / **0** / 0 uA / step]

2972	**[New Toner Bottle Fan Setting]**		
2-972-001	NewTonerBottle Cooling Fan Forced Operation	ENG	[0 or 1 / **0** / 1 / step]

2973	**[Development motor speed change]**		
2-973-001	Development motor speed setting	ENG*	[0 to 3 / **0** / 1 / step]

2974	**[Drum Cooling Fan Setting]**		
2-974-001	Drum Cooling Fan Forced Operation	ENG	[0 or 1 / **0** / 1 / step]

2975	**[Main Intake FanDriveCtrl]**		
2-975-001	-	ENG	[0 or 1 / **0** / 1 / step]

2976	**[Dev. Cooling Fan 1/2 Setting]**		
2-976-001	Development Cooling Fan1, 2 Forced Operation	ENG	[0 to 1 / **0** / 1 / step]

2977	**[Main Exhaust Fan Drive Setting]**		
2-977-001	-	ENG	[0 to 2 / **1** / 1 / step]

2978	**[Fan Extension Time Setting]**		
2-978-001	Extension Time Setting	ENG*	[0 to 255 / **0** / 1 min / step]

2980	**[PaperIntervalTransCur.OnTiming]**		
2-980-001	-	ENG*	[80 to 500 / **170** / 10 msec / step]

2986	**[Refresh Mode]**		
2-986-001	Interval	ENG	[0 to 25 / **0** / 1 Kmai / step]
2-986-002	Level	ENG	[0 to 4 / **2** / 1 / step]
2-986-003	Repetitions	ENG	[1 to 3 / **2** / 1 / step]
2-986-004	Execution Mode	ENG	[0 to 0 / **0** / 0 / step]

2.3 ENGINE SP TABLES-3

2.3.1 SP3-XXX (PROCESS)

3001	**[ID Sensor Initial Setting]**		
3-001-001	ID Sensor PWM Setting	ENG*	[0 to 255 / **70** / 1 - / step]
3-001-002	ID Sensor Initialization	ENG	[0 to 0 / **0** / 0 - / step]

3103	**[ID Sensor Output Display]**		
3-103-001	Vsg	ENG	[0 to 500 / **408** / 0.01 V / step]
3-103-002	Vsp	ENG	[0 to 500 / **0** / 0.01 V / step]
3-103-003	Vpdp	ENG	[0 to 500 / **408** / 0.01 V / step]

3901	**[Auto Process Control On/OffSet]**		
3-901-001	-	ENG*	[0 or 1 / **1** / 1 - / step]

3902	**[Drum Condition Display]**		
3-902-001	Auto Process Control On/Off	ENG	[0 or 1 / **0** / 1 - / step]
3-902-002	Vd	ENG*	[100 to 970 / **800** / 1 - / step]
3-902-003	Vh	ENG*	[100 to 500 / **300** / 3 - / step]
3-902-004	Vg	ENG*	[0 to 0xFFFF / **0** / 1 - / step]
3-902-005	LD Level	ENG*	[-127 to 127 / **0** / 3 - / step]
3-902-006	ID Sensor Pattern Potential	ENG*	[0 to 0xFFFF / **0** / 1 - / step]
3-902-007	Vql	ENG*	[0 to 0xFFFF / **0** / 1 - / step]

3-902-008	Vl	ENG*	[-32768 to 32767 / **0** / 1 - / step]
3-902-009	LD Level(LowSpeed)	ENG*	[-127 to 127 / **0** / 3 - / step]

3903	**[Drum Rotate Time ExtensionMode]**		
3-903-001	(0:OFF, 1:ON)	ENG*	[0 or 1 / **0** / 1 / step]
3-903-002	Drum Rotation Time	ENG*	[120 to 600 / **240** / 1 sec / step]
3-903-003	Interval	ENG*	[30 to 360 / **120** / 1 min / step]
3-903-004	Pattern Count	ENG*	[50 to 100 / **100** / 1 set / step]
3-903-005	Start Time	ENG	[0 to 0 / **0** / 0 / step]

3904	**[Warm Up Short Mode]**		
3-904-001	Action Level	ENG*	MP 6503 SP/7503 SP: [0 to 3 / **0** / 1 - / step] MP 9003 SP: [0 to 3 / **2** / 1 - / step]

3905	**[exclusion time(90cpm)]**		
3-905-001	Interval Setting	ENG*	[0 to 24 / **2** / 1 hour / step]

3930	**[Total Bias Current]**		
3-930-001	Change Control On/Off Set	ENG*	[0 or 1 / **1** / 1 - / step]
3-930-002	Change Control Threshold	ENG*	[0 to 500 / **180** / 1 V / step]
3-930-003	Average |VG|-|VD|	ENG*	[0 to 1000 / **0** / 1 V / step]

3940	**[|VG|-|VD| History]**		
3-940-001	Latest 1	ENG*	[0 to 1000 / **0** / 1 V / step]
3-940-002	Latest 2	ENG*	[0 to 1000 / **0** / 1 V / step]
3-940-003	Latest 3	ENG*	[0 to 1000 / **0** / 1 V / step]
3-940-004	Latest 4	ENG*	[0 to 1000 / **0** / 1 V / step]
3-940-005	Latest 5	ENG*	[0 to 1000 / **0** / 1 V / step]
3-940-006	Latest 6	ENG*	[0 to 1000 / **0** / 1 V / step]
3-940-007	Latest 7	ENG*	[0 to 1000 / **0** / 1 V / step]
3-940-008	Latest 8	ENG*	[0 to 1000 / **0** / 1 V / step]
3-940-009	Latest 9	ENG*	[0 to 1000 / **0** / 1 V / step]
3-940-010	Latest 10	ENG*	[0 to 1000 / **0** / 1 V / step]

3990	**[Engine Process Adjust 1]**		
3-990-001		ENG	[-32768 to 32767 / **0** / 1 / step]

3990	**[Engine Process Adjust 2]**		
3-990-002	-	ENG*	[-32768 to 32767 / **0** / 1 / step]

3990	**[Engine Process Adjust 3]**		
3-990-003	-	ENG*	[-32768 to 32767 / **0** / 1 / step]

3990	**[Engine Process Adjust 4]**		
3-990-004	-	ENG*	[-32768 to 32767 / **0** / 1 / step]

3990	**[Toner Supply Execution Count]**		
3-990-005	Count Value Setting	ENG*	[0 to 2 / **0** / 1 / step]

2.4 ENGINE SP TABLES-4

2.4.1 SP4-XXX (SCANNER)

4008	**[Sub Scan Magnification Adj]**		
4-008-001	-	ENG	[-1.0 to 1.0 / **0** / 0.1 % / step]

4010	**[Sub Scan Registration Adj]**		
4-010-001	-	ENG	[-2.0 to 2.0 / **0** / 0.1 mm / step]

4011	**[Main Scan Reg]**		
4-011-001	-	ENG*	[-2.5 to 2.5 / **0** / 0.1 mm / step]

4012	**[Set Scale Mask]**		
4-012-001	Book:Sub LEdge	ENG	[0 to 3.0 / **1.0** / 0.1 mm / step]
4-012-002	Book:Sub TEdge	ENG	[0 to 3.0 / **0** / 0.1 mm / step]
4-012-003	Book:Main:LEdge	ENG	[0 to 3.0 / **1.0** / 0.1 mm / step]
4-012-004	Book:Main:TEdge	ENG	[0 to 3.0 / **0** / 0.1 mm / step]
4-012-005	ADF: Leading Edge	ENG*	[0 to 3.0 / **0** / 0.1 mm / step]
4-012-007	ADF: Right	ENG*	[0 to 3.0 / **0** / 0.1 mm / step]
4-012-008	ADF: left	ENG*	[0 to 3.0 / **0** / 0.1 mm / step]

4013	**[Scanner Free run]**		
4-013-001	Book mode :Lamp Off	ENG	[0 or 1 / **0** / 1 / step]
4-013-002	Book mode :Lamp On	ENG	[0 or 1 / **0** / 1 / step]

4020	**[Dust Check]**		
4-020-001	Dust Detect:On/Off	ENG*	[0 or 1 / **0** / 1 / step]
4-020-002	Dust Detect:Lvl	ENG*	[0 to 8 / **4** / 1 / step]

4020	**[Dust Check Lvl]**		
4-020-003	Dust Reject:Lvl	ENG*	[0 to 4 / **0** / 1 / step]

4020	**[DF Dust Check]**		
4-020-011	Dust Detect Level:Rear	ENG*	[0 or 1 / **0** / 1 / step]
4-020-012	Correction Level:Rear	ENG*	[0 to 8 / **4** / 1 / step]

4201	**[LoCPP edge level:K]**		
4-201-001	600dpi 2bit edge1	ENG*	[0 to 15 / **15** / 1 / step]
4-201-002	600dpi 2bit edge23	ENG*	[0 to 15 / **15** / 1 / step]
4-201-003	600dpi 4bit edge1	ENG*	[0 to 15 / **15** / 1 / step]
4-201-004	600dpi 4bit edge23	ENG*	[0 to 15 / **15** / 1 / step]

4201	**[LoCPP edge off/on:K]**		
4-201-011	1200dpi 1bit edge12	ENG*	[0 or 1 / **0** / 1 / step]
4-201-012	1200dpi 1bit edge345	ENG*	[0 or 1 / **0** / 1 / step]

4301	**[Operation Check APS Sensor]**		
4-301-001	-	ENG	[0x00 to 0xFF / 0x00 / 1 / step]

4303	**[Min Size for APS]**		
4-303-001	-	ENG*	[0 or 1 / **0** / 1 / step]

4305	**[8K/16K Detection]**		
4-305-001	-	ENG*	[0 to 3 / **0** / 1 / step]

4308	**[Scan Size Detection]**		
4-308-001	Detection ON/OFF	ENG*	[0 to 2 / **1** / 1 / step]

4309	**[Scan Size Detect:Setting]**		
4-309-001	Original Density Thresh	ENG*	[0 to 255 / **28** / 1 digit / step]
4-309-002	Detection Time	ENG*	[20 to 100 / **60** / 20 msec / step]
4-309-003	Lamp ON:Delay Time	ENG*	[40 to 200 / **40** / 10 msec / step]
4-309-004	LED PWM Duty	ENG*	[0 to 100 / **15** / 1 / step]

4310	**[Scan Size Detect Value]**		
4-310-001	S1:R	ENG	[0 to 255 / **0** / 1 digit / step]
4-310-002	S1:G	ENG	[0 to 255 / **0** / 1 digit / step]
4-310-003	S1:B	ENG	[0 to 255 / **0** / 1 digit / step]
4-310-004	S2:R	ENG	[0 to 255 / **0** / 1 digit / step]
4-310-005	S2:G	ENG	[0 to 255 / **0** / 1 digit / step]
4-310-006	S2:B	ENG	[0 to 255 / **0** / 1 digit / step]
4-310-007	S3:R	ENG	[0 to 255 / **0** / 1 digit / step]
4-310-008	S3:G	ENG	[0 to 255 / **0** / 1 digit / step]
4-310-009	S3:B	ENG	[0 to 255 / **0** / 1 digit / step]

4400	**[Org Edge Mask]**		
4-400-001	Book:Sub LEdge	ENG	[0 to 3.0 / **1.0** / 0.1 mm / step]
4-400-002	Book:Sub:TEdge	ENG	[0 to 3.0 / **0** / 0.1 mm / step]
4-400-003	Book:Main:LEdge	ENG	[0 to 3.0 / **1.0** / 0.1 mm / step]
4-400-004	Book:Main:Tedge	ENG	[0 to 3.0 / **0** / 0.1 mm / step]
4-400-005	ADF: Leading Edge	ENG*	[0 to 3.0 / **0** / 0.1 mm / step]
4-400-007	ADF: Right	ENG*	[0 to 3.0 / **0** / 0.1 mm / step]
4-400-008	ADF: left	ENG*	[0 to 3.0 / **0** / 0.1 mm / step]

4417	**[IPU Test Pattern]**		
4-417-001	Test Pattern	ENG	[0 to 8 / **0** / 1 / step]

4429	**[Select Copy Data Security]**		
4-429-001	Copying	ENG*	[0 to 3 / **3** / 1 / step]
4-429-002	Scanning	ENG*	[0 to 3 / **3** / 1 / step]
4-429-003	Fax Operation	ENG	[0 to 3 / **3** / 1 / step]

4460	**[Digital AE]**		
4-460-001	Low Limit Value	ENG*	[0 to 1023 / **364** / 1 / step]
4-460-002	Background level	ENG*	[512 to 1535 / **932** / 1 / step]

4550	**[Scan Apli:Txt/Print]**		
4-550-005	MTF: 0(Off) 1-15 (Weak-Strong)	ENG*	[0 to 15 / **8** / 1 / step]
4-550-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG*	[0 to 7 / **4** / 1 / step]
4-550-007	Brightness: 1-255	ENG*	[1 to 255 / **128** / 1 / step]

4-550-008	Contrast: 1-255	ENG*	[1 to 255 / **128** / 1 / step]
4-550-009	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG*	[0 to 7 / **0** / 1 / step]

4551	**[Scan Apli:Txt]**		
4-551-005	MTF: 0(Off) 1-15 (Weak-Strong)	ENG*	[0 to 15 / **8** / 1 / step]
4-551-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG*	[0 to 7 / **4** / 1 / step]
4-551-007	Brightness: 1-255	ENG*	[1 to 255 / **128** / 1 / step]
4-551-008	Contrast: 1-255	ENG*	[1 to 255 / **128** / 1 / step]
4-551-009	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG*	[0 to 7 / **0** / 1 / step]

4552	**[Scan Apli:Txt Dropout]**		
4-552-005	MTF: 0(Off) 1-15 (Weak-Strong)	ENG*	[0 to 15 / **8** / 1 / step]
4-552-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG*	[0 to 7 / **4** / 1 / step]
4-552-007	Brightness: 1-255	ENG*	[1 to 255 / **128** / 1 / step]
4-552-008	Contrast: 1-255	ENG*	[1 to 255 / **128** / 1 / step]
4-552-009	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG*	[0 to 7 / **0** / 1 / step]

4553	**[Scan Apli:Txt/Photo]**		
4-553-005	MTF: 0(Off) 1-15 (Weak-Strong)	ENG*	[0 to 15 / **8** / 1 / step]

4-553-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG*	[0 to 7 / **4** / 1 / step]
4-553-007	Brightness: 1-255	ENG*	[1 to 255 / **128** / 1 / step]
4-553-008	Contrast: 1-255	ENG*	[1 to 255 / **128** / 1 / step]
4-553-009	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG*	[0 to 7 / **0** / 1 / step]

4554	**[Scan Apli:Photo]**		
4-554-005	MTF: 0(Off) 1-15 (Weak-Strong)	ENG*	[0 to 15 / **8** / 1 / step]
4-554-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG*	[0 to 7 / **4** / 1 / step]
4-554-007	Brightness: 1-255	ENG*	[1 to 255 / **128** / 1 / step]
4-554-008	Contrast: 1-255	ENG*	[1 to 255 / **128** / 1 / step]
4-554-009	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG*	[0 to 7 / **0** / 1 / step]

4565	**[Scan Apli:GrayScale]**		
4-565-005	MTF: 0(Off) 1-15 (Weak-Strong)	ENG*	[0 to 15 / **8** / 1 / step]
4-565-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG*	[0 to 7 / **4** / 1 / step]
4-565-007	Brightness: 1-255	ENG*	[1 to 255 / **128** / 1 / step]
4-565-008	Contrast: 1-255	ENG*	[1 to 255 / **128** / 1 / step]
4-565-009	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG*	[0 to 7 / **0** / 1 / step]

4570	**[Scan Apli:Col Txt/Photo]**		
4-570-005	MTF: 0(Off) 1-15 (Weak-Strong)	ENG*	[0 to 15 / **8** / 1 / step]
4-570-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG*	[0 to 7 / **4** / 1 / step]
4-570-007	Brightness: 1-255	ENG*	[1 to 255 / **128** / 1 / step]
4-570-008	Contrast: 1-255	ENG*	[1 to 255 / **128** / 1 / step]
4-570-009	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG*	[0 to 7 / **0** / 1 / step]

4571	**[Scan Apli:Col Gloss Photo]**		
4-571-005	MTF: 0(Off) 1-15 (Weak-Strong)	ENG*	[0 to 15 / **8** / 1 / step]
4-571-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG*	[0 to 7 / **4** / 1 / step]
4-571-007	Brightness: 1-255	ENG*	[1 to 255 / **128** / 1 / step]
4-571-008	Contrast: 1-255	ENG*	[1 to 255 / **128** / 1 / step]
4-571-009	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG*	[0 to 7 / **0** / 1 / step]

4572	**[Scan Apli:AutoCol]**		
4-572-005	MTF: 0(Off) 1-15 (Weak-Strong)	ENG*	[0 to 15 / **8** / 1 / step]
4-572-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG*	[0 to 7 / **4** / 1 / step]
4-572-007	Brightness: 1-255	ENG*	[1 to 255 / **128** / 1 / step]
4-572-008	Contrast: 1-255	ENG*	[1 to 255 / **128** / 1 / step]

4-572-009	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG*	[0 to 7 / **0** / 1 / step]

4580	**[Fax Apli:Txt/Chart]**		
4-580-005	MTF: 0(Off) 1-15 (Weak-Strong)	ENG	[0 to 15 / **8** / 1 / step]
4-580-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG	[0 to 7 / **4** / 1 / step]
4-580-007	Brightness: 1-255	ENG	[1 to 255 / **128** / 1 / step]
4-580-008	Contrast: 1-255	ENG	[1 to 255 / **128** / 1 / step]
4-580-009	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG	[0 to 7 / **0** / 1 / step]
4-580-010	Texture Erase: 0	ENG	[0 to 2 / **0** / 1 / step]

4581	**[Fax Apli:Txt]**		
4-581-005	MTF: 0(Off) 1-15 (Weak-Strong)	ENG	[0 to 15 / **8** / 1 / step]
4-581-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG	[0 to 7 / **4** / 1 / step]
4-581-007	Brightness: 1-255	ENG	[1 to 255 / **128** / 1 / step]
4-581-008	Contrast: 1-255	ENG	[1 to 255 / **128** / 1 / step]
4-581-009	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG	[0 to 7 / **0** / 1 / step]

4582	**[Fax Apli:Txt/Photo]**		
4-582-005	MTF: 0(Off) 1-15 (Weak-Strong)	ENG	[0 to 15 / **8** / 1 / step]
4-582-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG	[0 to 7 / **4** / 1 / step]
4-582-007	Brightness: 1-255	ENG	[1 to 255 / **128** / 1 / step]
4-582-008	Contrast: 1-255	ENG	[1 to 255 / **128** / 1 / step]
4-582-009	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG	[0 to 7 / **0** / 1 / step]
4-582-010	Texture Erase: 0	ENG	[0 to 2 / **0** / 1 / step]

4583	**[Fax Apli:Photo]**		
4-583-005	MTF: 0(Off) 1-15 (Weak-Strong)	ENG	[0 to 15 / **8** / 1 / step]
4-583-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG	[0 to 7 / **4** / 1 / step]
4-583-007	Brightness: 1-255	ENG	[1 to 255 / **128** / 1 / step]
4-583-008	Contrast: 1-255	ENG	[1 to 255 / **128** / 1 / step]
4-583-009	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG	[0 to 7 / **0** / 1 / step]
4-583-010	Texture Erase: 0	ENG	[0 to 2 / **0** / 1 / step]

4584	**[Fax Apli:Original 1]**		
4-584-005	MTF: 0(Off) 1-15 (Weak-Strong)	ENG	[0 to 15 / **8** / 1 / step]
4-584-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG	[0 to 7 / **4** / 1 / step]
4-584-007	Brightness: 1-255	ENG	[1 to 255 / **128** / 1 / step]
4-584-008	Contrast: 1-255	ENG	[1 to 255 / **128** / 1 / step]
4-584-009	Ind Dot Erase: 0(Off) 1-7 (Weak-Strong)	ENG	[0 to 7 / **0** / 1 / step]

4585	**[Fax Apli:Original 2]**		
4-585-005	MTF: 0(Off) 1-15 (Weak-Strong)	ENG	[0 to 15 / **8** / 1 / step]
4-585-006	Smoothing: 0(x1) 1-7 (Weak-Strong)	ENG	[0 to 7 / **4** / 1 / step]
4-585-007	Brightness: 1-255	ENG	[1 to 255 / **128** / 1 / step]
4-585-008	Contrast: 1-255	ENG	[1 to 255 / **128** / 1 / step]
4-585-009	Independent Dot Erase (0)/ 1-7 (Strong)	ENG	[0 to 7 / **0** / 1 / step]

4600	**[SBU Version Display]**		
4-600-001	SBU_ID	ENG	[0x0000 to 0xFFFF / **0** / 1 / step]

4609	**[Gray Balance Set: R]**		
4-609-001	Book Scan	ENG*	[-384 to 255 / **-100** / 1 digit / step]
4-609-002	DF Scan	ENG*	[-384 to 255 / **-100** / 1 digit / step]

4610	**[Gray Balance Set: G]**		
4-610-001	Book Scan	ENG*	[-384 to 255 / **-100** / 1 digit / step]
4-610-002	DF Scan	ENG*	[-384 to 255 / **-100** / 1 digit / step]

4611	**[Gray Balance Set: B]**		
4-611-001	Book Scan	ENG*	[-384 to 255 / **-100** / 1 digit / step]
4-611-002	DF Scan	ENG*	[-384 to 255 / **-100** / 1 digit / step]

4646	**[Scan Adjust Error]**		
4-646-001	White level	ENG*	[0 to 65535 / **0** / 1 / step]
4-646-002	Black level	ENG*	[0 to 65535 / **0** / 1 / step]

4647	**[Scanner Hard Error]**		
4-647-001	Power-ON	ENG	[0 to 65535 / **0** / 1 / step]

4688	**[Scan Image Density Adjustment]**		
4-688-002	1-pass DF	ENG*	[80 to 120 / **103** / 1 % / step]

4699	**[SBU Test Pattern Change]**		
4-699-001	-	ENG	[0 to 255 / **0** / 1 / step]

4700	**[CIS ID Display]**		
4-700-001	-	ENG	[0x00 to 0xFF / **0** / 1 / step]

4712	**[CIS GB Adj. Value: R]**		
4-712-001	-	ENG*	[0 to 2048 / **1023** / 1 digit / step]

4713	**[CIS GB Adj. Value: G]**		
4-713-001	-	ENG*	[0 to 2048 / **1023** / 1 digit / step]

4714	**[CIS GB Adj. Value: B]**		
4-714-001	-	ENG*	[0 to 2048 / **1023** / 1 digit / step]

4730	**[FROM ADF Factory Setting]**		
4-730-001	CIS Parameter	ENG	[0 or 1 / **0** / 0 / step]

4730	**[FROM Factory Setting]**		
4-730-002	Execution ON/OFF	ENG	[0 or 1 / **0** / 0 / step]
4-730-003	Execution Flag	ENG*	[0 or 1 / **0** / 1 / step]

4730	**[FROM Data Update]**		
4-730-004	-	ENG	[0 or 1 / **0** / 0 / step]

4745	**[CIS Image Level Error Flag]**		
4-745-001		ENG	[0 to 65535 / **0** / 1 / step]

4746	**[CIS GB Adj Error Flag]**		
4-746-001	-	ENG	[0 to 7 / **0** / 1 / step]

4747	**[CIS Hard Error Flag]**		
4-747-001	-	ENG	[0 to 15 / **0** / 1 / step]

4796	**[Low Density Color Correction]**		
4-796-001	Front Side	ENG*	[0 to 3 / **0** / 1 / step]
4-796-002	Rear Side	ENG*	[0 to 3 / **0** / 1 / step]

4797	**[Rear Side: Digital AE]**		
4-797-001	Low Limit Setting	ENG*	[0 to 1023 / **364** / 1 / step]
4-797-002	Background Erase Level	ENG*	[512 to 1535 / **932** / 1 / step]

4799	**[CIS TEST Pattern]**		
4-799-001	select	ENG	[0 to 5 / **0** / 1 / step]
4-799-002	Even Output Level Setting	ENG	[0 to 1023 / **0** / 1 digit / step]
4-799-003	Odd Output Level Setting	ENG	[0 to 1023 / **0** / 1 digit / step]

4803	**[Home Position Adj Value]**		
4-803-001	-	ENG*	[-2.0 to 2.0 / **0** / 0.1 mm / step]

4813	**[ALC Selection]**		
4-813-001	FC	ENG*	[0 to 1 / **1** / 1 / step]
4-813-002	BW	ENG*	[0 to 1 / **1** / 1 / step]

4850	**[PWM]**		
4-850-001	Latest	ENG*	[0 to 8416 / **0** / 1 digit / step]
4-850-002	Factory Setting	ENG*	[0 to 8416 / **0** / 1 digit / step]

4853	**[Partial LED ON]**		
4-853-001	ON/OFF(Scan)	ENG*	[0 to 1 / **1** / 1 / step]
4-853-002	ON/OFF(Size Detection)	ENG*	[0 to 1 / **1** / 1 / step]

4901	**[Background Erase]**		
4-901-020	Blue Original (Lighter)	ENG*	[-128 to 127 / **0** / 1 / step]
4-901-021	Blue Original (Normal)	ENG*	[-128 to 127 / **0** / 1 / step]
4-901-022	Blue Original (Darker)	ENG*	[-128 to 127 / **0** / 1 / step]

4903	**[Filter Setting]**		
4-903-001	Ind Dot Erase: Text	ENG*	[0 to 7 / **0** / 1 / step]
4-903-002	Ind Dot Erase: Generation Copy	ENG*	[0 to 7 / **0** / 1 / step]

4905	**[Select Gradation Level]**		
4-905-001	-	ENG*	[0 to 255 / **0** / 1 / step]

4918	**[Man Gamma Adj]**		
4-918-009	-	ENG	[0 to 0 / **0** / 0 / step]

4938	**[ACS:Edge Mask]**		
4-938-005	Scan:Sub LEdge	ENG*	[0 to 31 / **15** / 1 / step]
4-938-006	Scan:Sub TEdge	ENG*	[0 to 31 / **15** / 1 / step]
4-938-007	Scan:Main LEdge	ENG*	[0 to 31 / **15** / 1 / step]

4-938-008	Scan:Main TEdge	ENG*	[0 to 31 / **15** / 1 / step]

4939	**[ACS:Color Range]**		
4-939-001	-	ENG*	[-2 to 2 / **0** / 1 / step]

4954	**[Standard Chart: Restore]**		
4-954-005	Standard Chart Chronaticity Rank	ENG*	[0 to 255 / **0** / 1 / step]

4958	**[Standard Chart: Back: Restore]**		
4-958-005	Standard Chart Chronaticity Rank	ENG*	[0 to 255 / **0** / 1 / step]

4993	**[High Light Correction]**		
4-993-001	Sensitivity Selection	ENG*	[0 to 9 / **4** / 1 / step]
4-993-002	Range Selection	ENG*	[0 to 9 / **4** / 1 / step]

4994	**[Adj Txt/Photo Recog Level]**		
4-994-001	High Compression PDF	ENG*	[0 to 2 / **1** / 1 / step]

4996	**[White Paper Detection Level]**		
4-996-001		ENG*	[0 to 6 / **3** / 1 / step]

2.5 ENGINE SP TABLES-5

2.5.1 SP5-XXX (MODE)

5126	**[Set F-size Document]**		
5-126-001	-	ENG*	[0 to 2 / **0** / 1 / step]

5129	**[F Paper Size Selection]**		
5-129-001	-	ENG	[0 to 2 / **0** / 1 / step]

5131	**[Paper Size Type Selection]**		
5-131-001	Paper Size Destination Selection	ENG*	NA: [0 to 3 / **1** / 1 / step] Others: [0 to 3 / **2** / 1 / step]
5-131-002	Bypass Automatic Size Detection ON/OFF	ENG*	[0 or 1 / **1** / 1 / step]

5135	**[Oficio Priority Detection Set]**		
5-135-001	-	ENG*	[0 or 1 / **0** / 1 / step]

5179	**[By-pass PaperSize ErrorDisplay]**		
5-179-001	0: OFF/1: ON	ENG	[0 or 1 / **0** / 1 / step]

5801	**[Memory Clear]**		
5-801-002	Engine	ENG	[0 or1 / **0** / 1 / step]

5802	**[Printer Free Run]**		
5-802-001		ENG*	[0 or 1 / **0** / 1 / step]

5803	**[INPUTCHECK]**
	page 2-148 "Main Machine, LTC"

5804	**[Output Check]**
	page 2-176 "Main Machine, LTC"

5811	**[MachineSerial]**		
5-811-002	Display	ENG*	[0 to 255 / **0** / 1 / step]

5811	**[Machine Serial Number]**		
5-811-004	Set:BICU	ENG	[0 to 255 / **0** / 1 / step]
5-811-023	Previous	ENG*	[0 to 255 / **0** / 1 / step]
5-811-026	Previous (BICU)	ENG*	[0 to 255 / **0** / 1 / step]

5811	**[Machine Serial Update Date]**		
5-811-021	Latest	ENG*	[0 or 1 / **0** / 1 / step]
5-811-022	Previous	ENG*	[0 or 1 / **0** / 1 / step]
5-811-024	Latest (BICU)	ENG*	[0 or 1 / **0** / 1 / step]
5-811-025	Previous (BICU)	ENG*	[0 or 1 / **0** / 1 / step]

5894	**[External Charge Unit Setting]**		
5-894-001	Switch Charge Mode	ENG	[0 to 2 / **0** / 1 / step]

5899	**[PM Double Count]**		
5-899-001	-	ENG	[0 or 1 / **0** / 1 / step]

5900	**[Engine Log Upload]**		
5-900-001	Pattern	ENG*	[0 to 4 / **0** / 1 / step]

5915	**[Mechanical Counter Detection]**		
5-915-001	(1:Detect)	ENG	[0 to 0 / **0** / 0 / step]

5952	**[Fact Adjust Mode]**		
5-952-001	-	ENG	[0 or 1 / **0** / 1 / step]

5957	**[Front/Right Door Config. SW]**		
5-957-001	-	ENG	[0 or 1 / **1** / 1 / step]

5959	**[Paper Size]**		
5-959-001	Tray 1	ENG*	NA: [0 to 11 / **1** / 1 / step] Others: [0 to 11 / **0** / 1 / step]
5-959-005	LCT	ENG*	NA: [0 to 11 / **1** / 1 / step] Others: [0 to 11 / **0** / 1 / step]
5-959-006	Cover Sheet	ENG	[0 to 255 / **0** / 1 / step]

2.6 ENGINE SP TABLES-6

2.6.1 SP6-XXX (PERIPHERALS)

6006	**[ADF Adjustment]**		
6-006-001	Side-to-Side Regist: Front	ENG*	[-3.0 to 3.0 / **0** / 0.1 mm / step]
6-006-002	Side-to-Side Regist: Rear	ENG*	[-3.0 to 3.0 / **0** / 0.1 mm / step]
6-006-010	L-Edge Regist (1-Pass): Front	ENG*	[-5.0 to 5.0 / **0** / 0.1 mm / step]
6-006-011	L-Edge Regist (1-Pass): Rear	ENG*	[-5.0 to 5.0 / **0** / 0.1 mm / step]
6-006-012	1st Buckle (1-Pass)	ENG*	[-3.0 to 3.0 / **0** / 0.1 mm / step]
6-006-013	2nd Buckle (1-Pass)	ENG*	[-2.0 to 3.0 / **0** / 0.1 mm / step]
6-006-014	T-Edge Erase (1-Pass): Front	ENG*	[-5.0 to 5.0 / **-3.0** / 0.1 mm / step]
6-006-015	T-Edge Erase (1-Pass): Rear	ENG*	[-5.0 to 5.0 / **-2.5** / 0.1 mm / step]

6009	**[ADF FreeRun]**		
6-009-001	Free Run Simplex Motion	ENG	[0 or 1 / **0** / 1 / step]
6-009-002	Free Run Duplex Motion	ENG	[0 or 1 / **0** / 1 / step]
6-009-003	Free Run Stamp Motion	ENG	[0 or 1 / **0** / 1 / step]

6010	**[Stamp Position Adj.]**		
6-010-001	-	ENG*	[-5.0 to 5.0 / **0** / 0.1 mm / step]

6011	**[1-Pass ADF INPUT Check]**
	page 2-165 "ADF"

6012	**[1-Pass ADF OUTPUT Check]**
	page 2-181 "ADF"

6016	**[Original Size Detect Setting]**		
6-016-001	-	ENG*	[0x00 to 0xFF / **0x00** / 1 / step]

6017	**[DF Magnification Adj.]**		
6-017-001	-	ENG*	[-5.0 to 5.0 / **0** / 0.1 % / step]

6020	**[Skew Correction Moving Setting]**		
6-020-001	-	ENG*	[0 or 1 / **0** / 1 / step]

6100	**[Sub-scanPunchPosAdj:2K/3K FIN]**		
6-100-001	JPN/EU: 2-Hole	ENG	[-75 to 75 / **0** / 0.5 mm / step]
6-100-002	NA: 3-Hole	ENG	[-75 to 75 / **0** / 0.5 mm / step]
6-100-003	Europe: 4-Hole	ENG	[-75 to 75 / **0** / 0.5 mm / step]
6-100-004	NEU: 4-Hole	ENG	[-75 to 75 / **0** / 0.5 mm / step]
6-100-005	NA: 2-Hole	ENG	[-75 to 75 / **0** / 0.5 mm / step]
6-100-006	JPN: 1-Hole	ENG	[-75 to 75 / **0** / 0.5 mm / step]

6101	**[Main-scanPunchPosAdj:2K/3K FIN]**		
6-101-001	JPN/EU: 2-Hole	ENG	[-20 to 20 / **0** / 0.4 mm / step]
6-101-002	NA: 3-Hole	ENG	[-20 to 20 / **0** / 0.4 mm / step]
6-101-003	Europe: 4-Hole	ENG	[-20 to 20 / **0** / 0.4 mm / step]

6-101-004	NEU: 4-Hole	ENG	[-20 to 20 / **0** / 0.4 mm / step]
6-101-005	NA: 2-Hole	ENG	[-20 to 20 / **0** / 0.4 mm / step]
6-101-006	JPN:1-1Hole	ENG	[-20 to 20 / **0** / 0.5 mm / step]

6102	**[SkewCorrectBuckleAdj:2K/3K FIN]**		
6-102-001	A3 SEF	ENG	[-50 to 50 / **0** / 0.2 mm / step]
6-102-002	B4 SEF	ENG	[-50 to 50 / **0** / 0.2 mm / step]
6-102-003	A4 SEF	ENG	[-50 to 50 / **0** / 0.2 mm / step]
6-102-004	A4 LEF	ENG	[-50 to 50 / **0** / 0.2 mm / step]
6-102-005	B5 SEF	ENG	[-50 to 50 / **0** / 0.2 mm / step]
6-102-006	B5 LEF	ENG	[-50 to 50 / **0** / 0.2 mm / step]
6-102-007	A5 LEF	ENG	[-50 to 50 / **0** / 0.2 mm / step]
6-102-008	DLT SEF	ENG	[-50 to 50 / **0** / 0.2 mm / step]
6-102-009	LG SEF	ENG	[-50 to 50 / **0** / 0.2 mm / step]
6-102-010	Oficio SEF	ENG	[-50 to 50 / **0** / 0.2 mm / step]
6-102-011	LT SEF	ENG	[-50 to 50 / **0** / 0.2 mm / step]
6-102-012	LT LEF	ENG	[-50 to 50 / **0** / 0.2 mm / step]
6-102-013	HLT LEF	ENG	[-50 to 50 / **0** / 0.2 mm / step]
6-102-014	12"x18"	ENG	[-50 to 50 / **0** / 0.2 mm / step]
6-102-015	8K SEF	ENG	[-50 to 50 / **0** / 0.2 mm / step]
6-102-016	16K SEF	ENG	[-50 to 50 / **0** / 0.2 mm / step]
6-102-017	16K LEF	ENG	[-50 to 50 / **0** / 0.2 mm / step]
6-102-018	Other	ENG	[-50 to 50 / **0** / 0.2 mm / step]

6103	[SkewCorrectCtrlSW:2K/3K FIN]		
6-103-001	A3 SEF	ENG	[0 or 1 / **0** / 1 / step]
6-103-002	B4 SEF	ENG	[0 or 1 / **0** / 1 / step]
6-103-003	A4 SEF	ENG	[0 or 1 / **0** / 1 / step]
6-103-004	A4 LEF	ENG	[0 or 1 / **0** / 1 / step]
6-103-005	B5 SEF	ENG	[0 or 1 / **0** / 1 / step]
6-103-006	B5 LEF	ENG	[0 or 1 / **0** / 1 / step]
6-103-007	A5 LEF	ENG	[0 or 1 / **0** / 1 / step]
6-103-008	DLT SEF	ENG	[0 or 1 / **0** / 1 / step]
6-103-009	LG SEF	ENG	[0 or 1 / **0** / 1 / step]
6-103-010	Oficio SEF	ENG	[0 or 1 / **0** / 1 / step]
6-103-011	LT SEF	ENG	[0 or 1 / **0** / 1 / step]
6-103-012	LT LEF	ENG	[0 or 1 / **0** / 1 / step]
6-103-013	HLT LEF	ENG	[0 or 1 / **0** / 1 / step]
6-103-014	12"x18"	ENG	[0 or 1 / **0** / 1 / step]
6-103-015	8K SEF	ENG	[0 or 1 / **0** / 1 / step]
6-103-016	16K SEF	ENG	[0 or 1 / **0** / 1 / step]
6-103-017	16K LEF	ENG	[0 or 1 / **0** / 1 / step]
6-103-018	Other	ENG	[0 or 1 / **0** / 1 / step]

6104	[ShiftTrayJogPosAdj:2K/3K FIN]		
6-104-001	A3 SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-104-002	B4 SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-104-003	A4 SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-104-004	A4 LEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]

6-104-005	B5 LEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-104-006	A5 LEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-104-007	DLT SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-104-008	LG SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-104-009	Oficio SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-104-010	LT SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-104-011	LT LEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-104-012	HLT LEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-104-013	8K SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-104-014	16K LEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-104-015	Other	ENG	[-15 to 15 / **0** / 0.5 mm / step]

6105	**[ShftTJogRtrctAngAdj:2K/3K FIN]**		
6-105-001	A3 SEF	ENG	[-10 to 10 / **0** / 5 deg / step]
6-105-002	B4 SEF	ENG	[-10 to 10 / **0** / 5 deg / step]
6-105-003	A4 SEF	ENG	[-10 to 10 / **0** / 5 deg / step]
6-105-004	DLT SEF	ENG	[-10 to 10 / **0** / 5 deg / step]
6-105-005	LG SEF	ENG	[-10 to 10 / **0** / 5 deg / step]
6-105-006	Oficio SEF	ENG	[-10 to 10 / **0** / 5 deg / step]
6-105-007	LT SEF	ENG	[-10 to 10 / **0** / 5 deg / step]
6-105-008	8K SEF	ENG	[-10 to 10 / **0** / 5 deg / step]
6-105-009	Other	ENG	[-10 to 10 / **0** / 5 deg / step]

6106	**[Use Paper Jogger: 2K/3K FIN]**		
6-106-001	A3 SEF	ENG	[0 or 1 / **0** / 1 / step]
6-106-002	B4 SEF	ENG	[0 or 1 / **0** / 1 / step]

6-106-003	A4 SEF	ENG	[0 or 1 / **0** / 1 / step]
6-106-004	A4 LEF	ENG	[0 or 1 / **0** / 1 / step]
6-106-005	B5 LEF	ENG	[0 or 1 / **0** / 1 / step]
6-106-006	A5 LEF	ENG	[0 or 1 / **0** / 1 / step]
6-106-007	DLT SEF	ENG	[0 or 1 / **0** / 1 / step]
6-106-008	LG SEF	ENG	[0 or 1 / **0** / 1 / step]
6-106-009	Oficio SEF	ENG	[0 or 1 / **0** / 1 / step]
6-106-010	LT SEF	ENG	[0 or 1 / **0** / 1 / step]
6-106-011	LT LEF	ENG	[0 or 1 / **0** / 1 / step]
6-106-012	HLT LEF	ENG	[0 or 1 / **0** / 1 / step]
6-106-013	8K SEF	ENG	[0 or 1 / **0** / 1 / step]
6-106-014	16K LEF	ENG	[0 or 1 / **0** / 1 / step]
6-106-015	Other	ENG	[0 or 1 / **0** / 1 / step]

6107	**[JogPosAdj(CrnrStplr):2K/3K FIN]**		
6-107-001	A3 SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-107-002	B4 SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-107-003	A4 SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-107-004	A4 LEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-107-005	B5 SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-107-006	B5 LEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-107-007	DLT SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-107-008	LG SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-107-009	Oficio SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-107-010	LT SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-107-011	LT LEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]

6-107-012	8K SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-107-013	16K SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-107-014	16K LEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-107-015	Other	ENG	[-15 to 15 / **0** / 0.5 mm / step]

6108	**[JogPosAdj(BookStplr):2K/3K FIN]**		
6-108-001	A3 SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-108-002	B4 SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-108-003	A4 SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-108-004	B5 SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-108-005	DLT SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-108-006	LG SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-108-007	Oficio SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-108-008	LT SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-108-009	12"x18"	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-108-010	8K SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-108-011	Other	ENG	[-15 to 15 / **0** / 0.5 mm / step]

6109	**[CrnrStplrJogTimeAdj:2K/3K FIN]**		
6-109-001	A3 SEF	ENG	[0 to 2 / **0** / 1 times / step]
6-109-002	B4 SEF	ENG	[0 to 2 / **0** / 1 times / step]
6-109-003	A4 SEF	ENG	[0 to 2 / **0** / 1 times / step]
6-109-004	A4 LEF	ENG	[0 to 2 / **0** / 1 times / step]
6-109-005	B5 SEF	ENG	[0 to 2 / **0** / 1 times / step]
6-109-006	B5 LEF	ENG	[0 to 2 / **0** / 1 times / step]
6-109-007	DLT SEF	ENG	[0 to 2 / **0** / 1 times / step]

6-109-008	LG SEF	ENG	[0 to 2 / **0** / 1 times / step]
6-109-009	Oficio SEF	ENG	[0 to 2 / **0** / 1 times / step]
6-109-010	LT SEF	ENG	[0 to 2 / **0** / 1 times / step]
6-109-011	LT LEF	ENG	[0 to 2 / **0** / 1 times / step]
6-109-012	8K SEF	ENG	[0 to 2 / **0** / 1 times / step]
6-109-013	16K SEF	ENG	[0 to 2 / **0** / 1 times / step]
6-109-014	16K LEF	ENG	[0 to 2 / **0** / 1 times / step]
6-109-015	Other	ENG	[0 to 2 / **0** / 1 times / step]

6110	**[BookStplrJogTimeAdj:2K/3K FIN]**		
6-110-001	A3 SEF	ENG	[0 to 2 / **0** / 1 times / step]
6-110-002	B4 SEF	ENG	[0 to 2 / **0** / 1 times / step]
6-110-003	A4 SEF	ENG	[0 to 2 / **0** / 1 times / step]
6-110-004	B5 SEF	ENG	[0 to 2 / **0** / 1 times / step]
6-110-005	DLT SEF	ENG	[0 to 2 / **0** / 1 times / step]
6-110-006	LG SEF	ENG	[0 to 2 / **0** / 1 times / step]
6-110-007	Oficio SEF	ENG	[0 to 2 / **0** / 1 times / step]
6-110-008	LT SEF	ENG	[0 to 2 / **0** / 1 times / step]
6-110-009	12"x18"	ENG	[0 to 2 / **0** / 1 times / step]
6-110-010	8K SEF	ENG	[0 to 2 / **0** / 1 times / step]
6-110-011	Other	ENG	[0 to 2 / **0** / 1 times / step]

6111	**[Staple Position Adj: 2K/3K FIN]**		
6-111-001	A3 SEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]
6-111-002	B4 SEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]
6-111-003	A4 SEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]

6-111-004	A4 LEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]
6-111-005	B5 SEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]
6-111-006	B5 LEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]
6-111-007	DLT SEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]
6-111-008	LG SEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]
6-111-009	Oficio SEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]
6-111-010	LT SEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]
6-111-011	LT LEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]
6-111-012	8K SEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]
6-111-013	16K SEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]
6-111-014	16K LEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]
6-111-015	Other	ENG	[-35 to 35 / **0** / 0.5 mm / step]

6112	**[BookletStaplerPosAdj:2K/3K FIN]**		
6-112-001	A3 SEF	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-112-002	B4 SEF	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-112-003	A4 SEF	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-112-004	B5 SEF	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-112-005	DLT SEF	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-112-006	LG SEF	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-112-007	Oficio SEF	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-112-008	LT SEF	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-112-009	12"x18"	ENG	[-18 to 18 / **0** / 0.2 mm / step]
6-112-010	8K SEF	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-112-011	Other	ENG	[-18 to 18 / **0** / 0.2 mm / step]

6113	**[BookletFolderPosAdj:2K/3K FIN]**		
6-113-001	A3 SEF	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-002	B4 SEF	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-003	A4 SEF	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-004	B5 SEF	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-005	DLT SEF	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-006	LG SEF	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-007	Oficio SEF	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-008	LT SEF	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-009	12"*18"	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-010	8-Kai SEF	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-011	Other	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-012	A3 SEF(1-5)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-013	A3 SEF(6-10)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-014	A3 SEF(11-15)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-015	A3 SEF(16-over)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-016	B4 SEF(1-5)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-017	B4 SEF(6-10)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-018	B4 SEF(11-15)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-019	B4 SEF(16-over)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-020	A4 SEF(1-5)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-021	A4 SEF(6-10)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-022	A4 SEF(11-15)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-023	A4 SEF(16-over)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-024	B5 SEF(1-5)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-025	B5 SEF(6-10)	ENG	[-30 to 30 / **0** / 0.2 mm / step]

6-113-026	B5 SEF(11-15)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-027	B5 SEF(16-over)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-028	DLT SEF(1-5)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-029	DLT SEF(6-10)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-030	DLT SEF(11-15)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-031	DLT SEF(16-over)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-032	LG SEF(1-5)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-033	LG SEF(6-10)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-034	LG SEF(11-15)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-035	LG SEF(16-over)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-036	Oficio SEF(1-5)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-037	Oficio SEF(6-10)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-038	Oficio SEF(11-15)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-039	Oficio SEF(16-over)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-040	LT SEF(1-5)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-041	LT SEF(6-10)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-042	LT SEF(11-15)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-043	LT SEF(16-over)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-044	12"x18"(1-5)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-045	12"x18"(6-10)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-046	12"x18"(11-15)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-047	12"x18"(16-over)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-048	8K SEF(1-5)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-049	8K SEF(6-10)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-050	8K SEF(11-15)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-051	8K SEF(16-over)	ENG	[-30 to 30 / **0** / 0.2 mm / step]

6-113-052	Other(1-5)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-053	Other(6-10)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-054	Other(11-15)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-113-055	Other(16-over)	ENG	[-30 to 30 / **0** / 0.2 mm / step]

6114	**[Fold Speed Adj.: 2K/3K FIN]**		
6-114-001	A3 SEF	ENG	[0 to 2 / **0** / 1 / step]
6-114-002	B4 SEF	ENG	[0 to 2 / **0** / 1 / step]
6-114-003	A4 SEF	ENG	[0 to 2 / **0** / 1 / step]
6-114-004	B5 SEF	ENG	[0 to 2 / **0** / 1 / step]
6-114-005	DLT SEF	ENG	[0 to 2 / **0** / 1 / step]
6-114-006	LG SEF	ENG	[0 to 2 / **0** / 1 / step]
6-114-007	Oficio SEF	ENG	[0 to 2 / **0** / 1 / step]
6-114-008	LT SEF	ENG	[0 to 2 / **0** / 1 / step]
6-114-009	12"x18"	ENG	[0 to 2 / **0** / 1 / step]
6-114-010	8K SEF	ENG	[0 to 2 / **0** / 1 / step]
6-114-011	Other	ENG	[0 to 2 / **0** / 1 / step]

6115	**[Finisher Free Run: 2K/3K FIN]**		
6-115-001	Free Run 1	ENG	[0 or 1 / **0** / 1 / step]
6-115-002	Free Run 2	ENG	[0 or 1 / **0** / 1 / step]
6-115-003	Free Run 3	ENG	[0 or 1 / **0** / 1 / step]
6-115-004	Free Run 4	ENG	[0 or 1 / **0** / 1 / step]
6-115-005	Service Parts Psition Shift Free Run	ENG	[0 or 1 / **0** / 1 / step]

6116	**[CrnrStplrMxPrstkShAdj:2K/3KFIN]**

6-116-001	A3 SEF	ENG	[-1 to 0 / **0** / 1 sheets / step]
6-116-002	B4 SEF	ENG	[-1 to 0 / **0** / 1 sheets / step]
6-116-003	A4 SEF	ENG	[-1 to 0 / **0** / 1 sheets / step]
6-116-004	A4 LEF	ENG	[-1 to 0 / **0** / 1 sheets / step]
6-116-005	B5 SEF	ENG	[-1 to 0 / **0** / 1 sheets / step]
6-116-006	B5 LEF	ENG	[-1 to 0 / **0** / 1 sheets / step]
6-116-007	DLT SEF	ENG	[-1 to 0 / **0** / 1 sheets / step]
6-116-008	LG SEF	ENG	[-1 to 0 / **0** / 1 sheets / step]
6-116-009	Oficio SEF	ENG	[-1 to 0 / **0** / 1 sheets / step]
6-116-010	LT SEF	ENG	[-1 to 0 / **0** / 1 sheets / step]
6-116-011	LT LEF	ENG	[-1 to 0 / **0** / 1 sheets / step]
6-116-012	8K SEF	ENG	[-1 to 0 / **0** / 1 sheets / step]
6-116-013	16K SEF	ENG	[-1 to 0 / **0** / 1 sheets / step]
6-116-014	16K LEF	ENG	[-1 to 0 / **0** / 1 sheets / step]
6-116-015	Other	ENG	[-1 to 0 / **0** / 1 sheets / step]

6117	**[BookStplrMxPrstkShAdj:2K/3KFIN]**		
6-117-001	A3 SEF	ENG	[-2 to 0 / **0** / 1 sheets / step]
6-117-002	B4 SEF	ENG	[-2 to 0 / **0** / 1 sheets / step]
6-117-003	A4 SEF	ENG	[-2 to 0 / **0** / 1 sheets / step]
6-117-004	B5 SEF	ENG	[-2 to 0 / **0** / 1 sheets / step]
6-117-005	DLT SEF	ENG	[-2 to 0 / **0** / 1 sheets / step]
6-117-006	LG SEF	ENG	[-2 to 0 / **0** / 1 sheets / step]
6-117-007	Oficio SEF	ENG	[-2 to 0 / **0** / 1 sheets / step]
6-117-008	LT SEF	ENG	[-2 to 0 / **0** / 1 sheets / step]
6-117-009	12"x18"	ENG	[-2 to 0 / **0** / 1 sheets / step]

6-117-010	8K SEF	ENG	[-2 to 0 / **0** / 1 sheets / step]
6-117-011	Other	ENG	[-2 to 0 / **0** / 1 sheets / step]

6118	**[CrnrStplrPrstkOffsAdj:2K/3KFIN]**		
6-118-001	A3 SEF	ENG	[-16 to 16 / **0** / 2 mm / step]
6-118-002	B4 SEF	ENG	[-16 to 16 / **0** / 2 mm / step]
6-118-003	A4 SEF	ENG	[-16 to 16 / **0** / 2 mm / step]
6-118-004	A4 LEF	ENG	[-16 to 16 / **0** / 2 mm / step]
6-118-005	B5 SEF	ENG	[-16 to 16 / **0** / 2 mm / step]
6-118-006	B5 LEF	ENG	[-16 to 16 / **0** / 2 mm / step]
6-118-007	DLT SEF	ENG	[-16 to 16 / **0** / 2 mm / step]
6-118-008	LG SEF	ENG	[-16 to 16 / **0** / 2 mm / step]
6-118-009	Oficio SEF	ENG	[-16 to 16 / **0** / 2 mm / step]
6-118-010	LT SEF	ENG	[-16 to 16 / **0** / 2 mm / step]
6-118-011	LT LEF	ENG	[-16 to 16 / **0** / 2 mm / step]
6-118-012	8K SEF	ENG	[-16 to 16 / **0** / 2 mm / step]
6-118-013	16K SEF	ENG	[-16 to 16 / **0** / 2 mm / step]
6-118-014	16K LEF	ENG	[-16 to 16 / **0** / 2 mm / step]
6-118-015	Other	ENG	[-16 to 16 / **0** / 2 mm / step]

6119	**[BookStplrMxPrstkShAdj:2K/3KFIN]**		
6-119-001	A3 SEF	ENG	[-30 to 30 / **0** / 2 mm / step]
6-119-002	B4 SEF	ENG	[-30 to 30 / **0** / 2 mm / step]
6-119-003	A4 SEF	ENG	[-30 to 30 / **0** / 2 mm / step]
6-119-004	B5 SEF	ENG	[-30 to 30 / **0** / 2 mm / step]
6-119-005	DLT SEF	ENG	[-30 to 30 / **0** / 2 mm / step]

6-119-006	LG SEF	ENG	[-30 to 30 / **0** / 2 mm / step]
6-119-007	Oficio SEF	ENG	[-30 to 30 / **0** / 2 mm / step]
6-119-008	LT SEF	ENG	[-30 to 30 / **0** / 2 mm / step]
6-119-009	12"x18"	ENG	[-30 to 30 / **0** / 2 mm / step]
6-119-010	8K SEF	ENG	[-30 to 30 / **0** / 2 mm / step]
6-119-011	Other	ENG	[-30 to 30 / **0** / 2 mm / step]

6120	**[CrnStpPosExFeedAmtAdj:2K/3KFIN]**		
6-120-001	A3 SEF	ENG	[0 to 30 / **0** / 10 mm / step]
6-120-002	B4 SEF	ENG	[0 to 30 / **0** / 10 mm / step]
6-120-003	A4 SEF	ENG	[0 to 30 / **0** / 10 mm / step]
6-120-004	A4 LEF	ENG	[0 to 30 / **0** / 10 mm / step]
6-120-005	B5 SEF	ENG	[0 to 30 / **0** / 10 mm / step]
6-120-006	B5 LEF	ENG	[0 to 30 / **0** / 10 mm / step]
6-120-007	DLT SEF	ENG	[0 to 30 / **0** / 10 mm / step]
6-120-008	LG SEF	ENG	[0 to 30 / **0** / 10 mm / step]
6-120-009	Oficio SEF	ENG	[0 to 30 / **0** / 10 mm / step]
6-120-010	LT SEF	ENG	[0 to 30 / **0** / 10 mm / step]
6-120-011	LT LEF	ENG	[0 to 30 / **0** / 10 mm / step]
6-120-012	8K SEF	ENG	[0 to 30 / **0** / 10 mm / step]
6-120-013	16K SEF	ENG	[0 to 30 / **0** / 10 mm / step]
6-120-014	16K LEF	ENG	[0 to 30 / **0** / 10 mm / step]
6-120-015	Other	ENG	[0 to 30 / **0** / 10 mm / step]

6121	**[NV Adjustment Data Rewrite]**

6-121-001	Jogger Position Factory Adj.	ENG	[-30 to 30 / **0** / 0.5 mm / step]
6-121-002	Folding Position Factory Adj.	ENG	[-14 to 14 / **0** / 0.2 mm / step]

6122	**[BkFoldJogSolMovAmtAdj:2K/3KFIN]**		
6-122-001	A3 SEF	ENG	[-5 to 5 / **0** / 1 mm / step]
6-122-002	B4 SEF	ENG	[-5 to 5 / **0** / 1 mm / step]
6-122-003	A4 SEF	ENG	[-5 to 5 / **0** / 1 mm / step]
6-122-004	B5 SEF	ENG	[-5 to 5 / **0** / 1 mm / step]
6-122-005	DLT SEF	ENG	[-5 to 5 / **0** / 1 mm / step]
6-122-006	LG SEF	ENG	[-5 to 5 / **0** / 1 mm / step]
6-122-007	Oficio SEF	ENG	[-5 to 5 / **0** / 1 mm / step]
6-122-008	LT SEF	ENG	[-5 to 5 / **0** / 1 mm / step]
6-122-009	12"x18"	ENG	[-5 to 5 / **0** / 1 mm / step]
6-122-010	8K SEF	ENG	[-5 to 5 / **0** / 1 mm / step]
6-122-011	Other	ENG	[-5 to 5 / **0** / 1 mm / step]

6123	**[INPUT Check: 2K/3K FIN]**
	page 2-166 "**2K/3K Finisher**"

6124	**[OUTPUT Check: 2K/3K FIN]**
	page 2-181 "2K/3K Finisher"

6125	**[Use Paper Guide(Big Size)]**		
6-125-001	All Size	ENG	[0 or 1 / **1** / 1 / step]

6126	**[Use Paper Guide(Small Size)]**		
6-126-001	All Size	ENG	[0 or 1 / **0** / 1 / step]

6127	**[Paper Guide PossAdj:2K/3K FIN]**		
6-127-001	All Size	ENG	[-10 to 10 / **0** / 1 mm / step]

6128	**[Paper Guide RetraAdj:2K/3K FIN]**		
6-128-001	All Size	ENG	[-50 to 50 / **0** / 5 mm / step]

6129	**[Paper Guide AceptAdj:2K/3K FIN]**		
6-129-001	All Size	ENG	[-50 to 50 / **0** / 5 msec / step]

6140	**[Punch Hole Position Adjustment]**		
6-140-001	JPN/EU: 2-Hole	ENG	[-75 to 75 / **0** / 0.5 mm / step]
6-140-002	JPN/NA: 3-Hole	ENG	[-75 to 75 / **0** / 0.5 mm / step]
6-140-003	EU: 4-Hole	ENG	[-75 to 75 / **0** / 0.5 mm / step]
6-140-004	NEU: 4-Hole	ENG	[-75 to 75 / **0** / 0.5 mm / step]
6-140-005	NA: 2-Hole	ENG	[-75 to 75 / **0** / 0.5 mm / step]
6-140-006	JPN:1-1Hole	ENG	[-75 to 75 / **0** / 0.5 mm / step]

6141	**[Jogger Fence Fine Adj.]**		
6-141-001	A3 SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-141-002	B4 SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-141-003	A4 SEF	ENG	[--15 to 15 / **0** / 0.5 mm / step]
6-141-004	A4 LEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-141-005	B5 SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]

6-141-006	B5 LEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-141-007	DLT SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-141-008	LG SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-141-009	LT SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-141-010	LT LEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-141-011	Oficio SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-141-012	Other	ENG	[-15 to 15 / **0** / 0.5 mm / step]

6142	**[Staple Position Adjustment]**		
6-142-001	A3 SEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]
6-142-002	B4 SEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]
6-142-003	A4 SEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]
6-142-004	A4 LEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]
6-142-005	B5 SEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]
6-142-006	B5 LEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]
6-142-007	DLT SEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]
6-142-008	LG SEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]
6-142-009	LT SEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]
6-142-010	LT LEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]
6-142-011	Oficio SEF	ENG	[-35 to 35 / **0** / 0.5 mm / step]
6-142-012	Other	ENG	[-35 to 35 / **0** / 0.5 mm / step]

6143	**[Adjust Output Jog Position]**		
6-143-001	A3 SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-143-002	B4 SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-143-004	A4 LEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]

6-143-006	B5 LEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-143-009	DLT SEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-143-012	LT LEF	ENG	[-15 to 15 / **0** / 0.5 mm / step]
6-143-016	Other	ENG	[-15 to 15 / **0** / 0.5 mm / step]

6146	**[Staple Jogging Times Fin 2]**		
6-146-001	A3 SEF	ENG	[0 or 1 / **0** / 1 / step]
6-146-002	B4 SEF	ENG	[0 or 1 / **0** / 1 / step]
6-146-003	A4 SEF	ENG	[0 or 1 / **0** / 1 / step]
6-146-004	A4 LEF	ENG	[0 or 1 / **0** / 1 / step]
6-146-005	B5 SEF	ENG	[0 or 1 / **0** / 1 / step]
6-146-006	B5 LEF	ENG	[0 or 1 / **0** / 1 / step]
6-146-007	DLT SEF	ENG	[0 or 1 / **0** / 1 / step]
6-146-008	LG SEF	ENG	[0 or 1 / **0** / 1 / step]
6-146-009	LT SEF	ENG	[0 or 1 / **0** / 1 / step]
6-146-010	LT LEF	ENG	[0 or 1 / **0** / 1 / step]
6-146-011	Oficio SEF	ENG	[0 or 1 / **0** / 1 / step]
6-146-012	Other	ENG	[0 or 1 / **0** / 1 / step]

6147	**[Finisher Input Check: Fin 2]**
	page 2-170 "Finisher"

6148	**[Finisher Output Check: Fin 2]**
	page 2-183 "Finisher"

6149	**[Finisher Free Run: Fin 2]**		
6-149-001	Free Run 1	ENG	[0 or 1 / **0** / 1 / step]
6-149-002	Free Run 2	ENG	[0 or 1 / **0** / 1 / step]
6-149-003	Free Run 3	ENG	[0 or 1 / **0** / 1 / step]

6250	**[INPUT Check Slide Sort Tray]**
	page 2-172 "Slide Sort Tray"

6251	**[OUTPUT Check Slide Sort Tray]**
	page 2-185 "Slide Sort Tray"

6252	**[Free Run Slide Sort Tray]**		
6-252-001	-	ENG	[0 or 1 / **0** / 1 / step]

6301	**[Fine Adjust Z-Fold 1]**		
6-301-001	1st Fold: A3 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-301-002	1st Fold: B4 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-301-003	1st Fold: A4 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-301-004	1st Fold: DLT SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-301-005	1st Fold: LG SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-301-006	1st Fold: LT SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-301-007	1st Fold: 12"x18"	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-301-008	1st Fold: Other	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-301-009	2nd Fold: A3 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-301-010	2nd Fold: B4 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-301-011	2nd Fold: A4 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]

6-301-012	2nd Fold: DLT SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-301-013	2nd Fold: LG SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-301-014	2nd Fold: LT SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-301-015	2nd Fold: 12"x18"	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-301-016	2nd Fold: Other	ENG	[-40 to 40 / **0** / 0.2 mm / step]

6309	**[INPUT Check Multi Folder]**
	page 2-172 "Multi Folder"

6310	**[Output Check Multi Folder]**
	page 2-185 "Multi Folder"

6311	**[Free Run Multi Folder]**		
6-311-001	Free Run 1	ENG	[0 or 1 / **0** / 1 / step]
6-311-002	Free Run 2	ENG	[0 or 1 / **0** / 1 / step]
6-311-003	Free Run 3	ENG	[0 or 1 / **0** / 1 / step]
6-311-004	Free Run 4	ENG	[0 or 1 / **0** / 1 / step]

6312	**[FM1 Z-Fld: Fine Adj 1st Fld]**		
6-312-001	A3 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-312-002	B4 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-312-003	A4 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-312-004	DLT SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-312-005	LG SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-312-006	LT SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-312-007	12"*18"	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-312-008	8-kai	ENG	[-40 to 40 / **0** / 0.2 mm / step]

6-312-019	Oficio SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-312-020	Other	ENG	[-40 to 40 / **0** / 0.2 mm / step]

6313	**[FM1 Z-Fld: Fine Adj 2nd Fld]**		
6-313-001	A3 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-313-002	B4 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-313-003	A4 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-313-004	DLT SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-313-005	LG SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-313-006	LT SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-313-007	12"*18"	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-313-008	8-kai	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-313-019	Oficio SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-313-020	Other	ENG	[-40 to 40 / **0** / 0.2 mm / step]

6314	**[FM2 Equal 1/2:FineAdjFld]**		
6-314-001	A3 SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-314-002	B4 SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-314-003	A4 SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-314-004	DLT SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-314-005	LG SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-314-006	LT SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-314-007	12"*18" (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-314-008	8-kai (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-314-009	B5 SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-314-011	13"*19" (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]

6-314-019	Oficio SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-314-020	Custom (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-314-021	A3 SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-314-022	B4 SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-314-023	A4 SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-314-024	DLT SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-314-025	LG SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-314-026	LT SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-314-027	12"*18" (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-314-028	8-kai (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-314-029	B5 SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-314-031	13"*19" (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-314-039	Oficio SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-314-040	Custom (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]

6315	**[FM3 Equal 3rds:Fine Adj 1st]**		
6-315-001	A3 SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-315-002	B4 SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-315-003	A4 SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-315-004	DLT SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-315-005	LG SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-315-006	LT SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-315-007	12"*18" (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-315-008	8-kai (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-315-009	B5 SEF (Single Sheet)	ENG	[-30 to 30 / **0** / 0.2 mm / step]

6-315-019	Oficio SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-315-020	Custom (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-315-022	B4 SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-315-023	A4 SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-315-025	LG SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-315-026	LT SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-315-029	B5 SEF (Multi Sheet)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-315-039	Oficio SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-315-040	Custom (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]

6316	**[FM3 Equal 3rds:Fine Adj 2nd]**		
6-316-001	A3 SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-316-002	B4 SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-316-003	A4 SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-316-004	DLT SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-316-005	LG SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-316-006	LT SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-316-007	12"*18" (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-316-008	8-kai (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-316-009	B5 SEF (Single Sheet)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-316-019	Oficio SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-316-020	Custom (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-316-022	B4 SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-316-023	A4 SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-316-025	LG SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]

6-316-026	LT SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-316-029	B5 SEF (Multi Sheet)	ENG	[-30 to 30 / **0** / 0.2 mm / step]
6-316-039	Oficio SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-316-040	Custom (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]

6317	**[FM4 3rds 1 Flap:Fine Adj 1st]**		
6-317-001	A3 SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-317-002	B4 SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-317-003	A4 SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-317-004	DLT SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-317-005	LG SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-317-006	LT SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-317-007	12"*18" (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-317-008	8-kai (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-317-009	B5 SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-317-019	Oficio SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-317-020	Custom (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-317-021	A3 SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-317-022	B4 SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-317-023	A4 SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-317-024	DLT SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-317-025	LG SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-317-026	LT SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-317-027	12"*18" (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-317-028	8-kai (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]

6-317-029	B5 SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-317-039	Oficio SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-317-040	Custom (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]

6318	**[FM4 3rds 1 Flap:Fine Adj 2nd]**		
6-318-001	A3 SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-318-002	B4 SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-318-003	A4 SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-318-004	DLT SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-318-005	LG SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-318-006	LT SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-318-007	12"*18" (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-318-008	8-kai (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-318-009	B5 SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-318-019	Oficio SEF (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-318-020	Custom (Single Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-318-021	A3 SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-318-022	B4 SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-318-023	A4 SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-318-024	DLT SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-318-025	LG SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-318-026	LT SEF (Multi Sheet)	ENG	[0 to 40 / **0** / 0.2 mm / step]
6-318-027	12"*18" (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-318-028	8-kai (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-318-029	B5 SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]

6-318-039	Oficio SEF (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-318-040	Custom (Multi Sheet)	ENG	[-40 to 40 / **0** / 0.2 mm / step]

6319	**[FM5 4ths "V": Fine Adjust 1st]**		
6-319-001	A3 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-319-002	B4 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-319-003	A4 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-319-003	DLT SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-319-004	LG SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-319-005	LT SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-319-006	12"*18"	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-319-007	8-kai	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-319-009	B5 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-319-019	Oficio SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-319-020	Other	ENG	[-40 to 40 / **0** / 0.2 mm / step]

6320	**[FM5 4ths "V": Fine Adjust 2nd]**		
6-320-001	A3 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-320-002	B4 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-320-003	A4 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-320-003	DLT SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-320-004	LG SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-320-005	LT SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-320-006	12"*18"	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-320-007	8-kai	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-320-009	B5 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]

6-320-019	Oficio SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-320-020	Other	ENG	[-40 to 40 / **0** / 0.2 mm / step]

6321	**[FM6 4ths 2 Flap:Fine Adj 1st]**		
6-321-001	A3 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-321-002	B4 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-321-003	A4 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-321-004	DLT SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-321-005	LG SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-321-006	LT SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-321-008	8-kai	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-321-009	B5 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-321-019	Oficio SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-321-020	Other	ENG	[-40 to 40 / **0** / 0.2 mm / step]

6322	**[FM6 4ths 2 Flap:Fine Adj 2nd]**		
6-322-001	A3 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-322-002	B4 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-322-003	A4 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-322-004	DLT SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-322-005	LG SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-322-006	LT SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-322-008	8-kai	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-322-009	B5 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-322-019	Oficio SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-322-020	Other	ENG	[-40 to 40 / **0** / 0.2 mm / step]

6323	**[FM6 4ths 2 Flap:Fine Adj 3rd]**		
6-323-001	A3 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-323-002	B4 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-323-003	A4 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-323-004	DLT SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-323-005	LG SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-323-006	LT SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-323-007	12"*18"	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-323-008	8-kai	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-323-009	B5 SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-323-019	Oficio SEF	ENG	[-40 to 40 / **0** / 0.2 mm / step]
6-323-020	Other	ENG	[-40 to 40 / **0** / 0.2 mm / step]

6324	**[Jogger Fence Position Adjust]**		
6-324-001	A3 SEF	ENG	[-20 to 20 / **0** / 0.5 mm / step]
6-324-002	B4 SEF	ENG	[-20 to 20 / **0** / 0.5 mm / step]
6-324-003	A4 SEF	ENG	[-20 to 20 / **0** / 0.5 mm / step]
6-324-004	DLT SEF	ENG	[-20 to 20 / **0** / 0.5 mm / step]
6-324-005	LG SEF	ENG	[-20 to 20 / **0** / 0.5 mm / step]
6-324-006	LT SEF	ENG	[-20 to 20 / **0** / 0.5 mm / step]
6-324-007	12"*18"	ENG	[-20 to 20 / **0** / 0.5 mm / step]
6-324-008	8-Kai	ENG	[-20 to 20 / **0** / 0.5 mm / step]
6-324-009	B5 SEF	ENG	[-20 to 20 / **0** / 0.5 mm / step]
6-324-019	Oficio SEF	ENG	[-20 to 20 / **0** / 0.5 mm / step]
6-324-020	Other	ENG	[-20 to 20 / **0** / 0.5 mm / step]

6325	**[Registration Buckle Adjust]**		
6-325-001	A3 SEF	ENG	[-4 to 2 / **0** / 1 mm / step]
6-325-002	B4 SEF	ENG	[-4 to 2 / **0** / 1 mm / step]
6-325-003	A4 SEF	ENG	[-4 to 2 / **0** / 1 mm / step]
6-325-004	DLT SEF	ENG	[-4 to 2 / **0** / 1 mm / step]
6-325-005	LG SEF	ENG	[-4 to 2 / **0** / 1 mm / step]
6-325-006	LT SEF	ENG	[-4 to 2 / **0** / 1 mm / step]
6-325-007	12"*18"	ENG	[-4 to 2 / **0** / 1 mm / step]
6-325-008	8-Kai	ENG	[-4 to 2 / **0** / 1 mm / step]
6-325-009	B5 SEF	ENG	[-4 to 2 / **0** / 1 mm / step]
6-325-019	Oficio SEF	ENG	[-4 to 2 / **0** / 1 mm / step]
6-325-020	Other	ENG	[-4 to 2 / **0** / 1 mm / step]

6326	**[Reg Buckle Adjust Select]**		
6-326-001	-	ENG	[0 or 1 / **0** / 1 / step]

6327	**[Top Tray Full Set: Enable]**		
6-327-001	-	ENG	[0 or 1 / **0** / 1 / step]

6328	**[TopTray Full Set:Limit Output]**		
6-328-001	-	ENG	[0 to 250 / **0** / 1 / step]

6350	**[Input Check Print Post]**
	page 2-174 "Print Post"

6351	**[Output Check Print Post]**
	page 2-187 "Print Post"

6352	[Free Run Print Post]		
6-352-001	-	ENG	[0 or 1 / **0** / 1 / step]

6450	[PrioritySizeSetting:1-TrayCIT]		
6-450-001	A3SEF/12"*18"	ENG	[0 or 1 / **0** / 1 / step]
6-450-002	EU,CHN,Taiwan:8.5"*13"	ENG	[0 or 2 / **0** / 1 / step]
6-450-003	NA:8.5"*14"	ENG	[0 or 1 / **0** / 1 / step]
6-450-004	NA:11"*8.5"	ENG	[0 or 1 / **0** / 1 / step]
6-450-005	NA:8.5"*11"	ENG	[0 or 1 / **0** / 1 / step]
6-450-006	EU,CHN,Taiwan:8K	ENG	[0 or 1 / **0** / 1 / step]
6-450-007	EU,CHN,Taiwan:16K(267*195)	ENG	[0 or 1 / **0** / 1 / step]
6-450-008	EU,CHN,Taiwan:16K(195*267)	ENG	[0 or 1 / **0** / 1 / step]

6451	[INPUT Check:1-Tray CIT]
	page 2-175 "1-Tray CIT"

6801	[1-pass Stamp Unit]		
6-801-001	-	ENG*	[0 or 1 / **0** / 1 / step]

6900	[ADF Bottom Plate Setting]		
6-900-001	-	ENG*	[0 or 1 / **0** / 1 / step]

6901	[ADF Operation Setting]		
6-901-001	-	ENG	[0 or 1 / **0** / 1 / step]

2.7 ENGINE SP TABLES-7

2.7.1 SP7-XXX (DATA LOG)

7001	**[Main Motor Operation Time]**		
7-001-001	-	ENG*	[0 to 9999999 / **0** / 0 / step]

7621	**[Display PM Count]**		
7-621-001	Developer	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-002	Hot Roller	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-003	Pressure Roller	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-004	Hot Roller Bearings	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-005	Pressure Roller Bearings	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-006	Hot Roller Strippers	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-007	Cleaning Roller	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-008	Cleaning Roller Bearings	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-009	Web Roll	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-010	Web Cleaning Roller	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-011	Development Filter	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-012	Toner Recycling Unit	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-013	Pressure Release Filter	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-014	Charge Corona Wire	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-015	Grid Plate	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-016	Cleaning Pad	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-017	Cleaning Blade	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-018	Cleaning Brush	ENG	[0 to 99999999 / **0** / 1 / step]

7-621-019	Transfer Belt	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-020	Transfer Belt Cleaning Blade	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-022	ADF Pick-up Roller	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-023	ADF Feed Belt	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-024	ADF Separation Roller	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-025	Feed Roller-Tray1	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-026	Pick-up Roller-Tray1	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-027	Separation Roller-Tray1	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-028	Feed Roller-Tray2	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-029	Pick-up Roller-Tray2	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-030	Separation Roller-Tray2	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-031	Feed Roller-Tray3	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-032	Pick-up Roller-Tray3	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-033	Separation Roller-Tray3	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-034	Feed Roller-Tray4	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-035	Pick-up Roller-Tray4	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-036	Separation Roller-Tray4	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-037	Feed Roller-LCT	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-038	Pick-up Roller-LCT	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-039	Separation Roller-LCT	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-040	Feed Belt Cover feeder	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-041	Pick-up Roller Cover feeder	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-042	Separation Roller Cover feeder	ENG	[0 to 99999999 / **0** / 1 / step]

7-621-044	Fusing unit:Thermistor(Back)	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-045	Fusing unit:Thermistor(Center)	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-046	Dust Filter(Main)	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-047	Main Tray(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-048	Main Tray(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-049	Main Tray(Custom 3)	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-050	Main Tray(Custom 4)	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-051	Paper Tray1(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-052	Paper Tray1(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-053	Paper Tray2(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-054	Paper Tray2(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-055	Paper Tray3(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-056	Paper Tray3(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-057	Paper Tray4(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-058	Paper Tray4(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-059	LCT(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-060	LCT(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-063	Interposer(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-064	Interposer(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-621-066	Ozon Filter(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]

7622	**[Clear PM Count]**		
7-622-001	Developer	ENG	[0 to 0 / **0** / 0 / step]
7-622-002	Hot Roller	ENG	[0 to 0 / **0** / 0 / step]
7-622-003	Pressure Roller	ENG	[0 to 0 / **0** / 0 / step]

7-622-004	Hot Roller Bearings	ENG	[0 to 0 / **0** / 0 / step]
7-622-005	Pressure Roller Bearings	ENG	[0 to 0 / **0** / 0 / step]
7-622-006	Hot Roller Strippers	ENG	[0 to 0 / **0** / 0 / step]
7-622-007	Cleaning Roller	ENG	[0 to 0 / **0** / 0 / step]
7-622-008	Cleaning Roller Bearings	ENG	[0 to 0 / **0** / 0 / step]
7-622-009	Web Roll	ENG	[0 to 0 / **0** / 0 / step]
7-622-010	Web Cleaning Roller	ENG	[0 to 0 / **0** / 0 / step]
7-622-011	Development Filter	ENG	[0 to 0 / **0** / 0 / step]
7-622-012	Toner Recycling Unit	ENG	[0 to 0 / **0** / 0 / step]
7-622-013	Pressure Release Filter	ENG	[0 to 0 / **0** / 0 / step]
7-622-014	Charge Corona Wire	ENG	[0 to 0 / **0** / 0 / step]
7-622-015	Grid Plate	ENG	[0 to 0 / **0** / 0 / step]
7-622-016	Cleaning Pad	ENG	[0 to 0 / **0** / 0 / step]
7-622-017	Cleaning Blade	ENG	[0 to 0 / **0** / 0 / step]
7-622-018	Cleaning Brush	ENG	[0 to 0 / **0** / 0 / step]
7-622-019	Transfer Belt	ENG	[0 to 0 / **0** / 0 / step]
7-622-020	Transfer Belt Cleaning Blade	ENG	[0 to 0 / **0** / 0 / step]
7-622-022	ADF Pick-up Roller	ENG	[0 to 0 / **0** / 0 / step]
7-622-023	ADF Feed Belt	ENG	[0 to 0 / **0** / 0 / step]
7-622-024	ADF Separation Roller	ENG	[0 to 0 / **0** / 0 / step]
7-622-025	Feed Roller-Tray1	ENG	[0 to 0 / **0** / 0 / step]
7-622-026	Pick-up Roller-Tray1	ENG	[0 to 0 / **0** / 0 / step]
7-622-027	Separation Roller-Tray1	ENG	[0 to 0 / **0** / 0 / step]
7-622-028	Feed Roller-Tray2	ENG	[0 to 0 / **0** / 0 / step]
7-622-029	Pick-up Roller-Tray2	ENG	[0 to 0 / **0** / 0 / step]

7-622-030	Separation Roller-Tray2	ENG	[0 to 0 / **0** / 0 / step]
7-622-031	Feed Roller-Tray3	ENG	[0 to 0 / **0** / 0 / step]
7-622-032	Pick-up Roller-Tray3	ENG	[0 to 0 / **0** / 0 / step]
7-622-033	Separation Roller-Tray3	ENG	[0 to 0 / **0** / 0 / step]
7-622-034	Feed Roller-Tray4	ENG	[0 to 0 / **0** / 0 / step]
7-622-035	Pick-up Roller-Tray4	ENG	[0 to 0 / **0** / 0 / step]
7-622-036	Separation Roller-Tray4	ENG	[0 to 0 / **0** / 0 / step]
7-622-037	Feed Roller-LCT	ENG	[0 to 0 / **0** / 0 / step]
7-622-038	Pick-up Roller-LCT	ENG	[0 to 0 / **0** / 0 / step]
7-622-039	Separation Roller-LCT	ENG	[0 to 0 / **0** / 0 / step]
7-622-040	Feed Belt Cover feeder	ENG	[0 to 0 / **0** / 0 / step]
7-622-041	Pick-up Roller Cover feeder	ENG	[0 to 0 / **0** / 0 / step]
7-622-042	Separation Roller Cover feeder	ENG	[0 to 0 / **0** / 0 / step]
7-622-044	Fusing unit:Thermistor(Back)	ENG	[0 to 0 / **0** / 0 / step]
7-622-045	Fusing unit:Thermistor(Center)	ENG	[0 to 0 / **0** / 0 / step]
7-622-046	Dust Filter(Main)	ENG	[0 to 0 / **0** / 0 / step]
7-622-047	Main Tray(Custom 1)	ENG	[0 to 0 / **0** / 0 / step]
7-622-048	Main Tray(Custom 2)	ENG	[0 to 0 / **0** / 0 / step]
7-622-049	Main Tray(Custom 3)	ENG	[0 to 0 / **0** / 0 / step]
7-622-050	Main Tray(Custom 4)	ENG	[0 to 0 / **0** / 0 / step]
7-622-051	Paper Tray1(Custom 1)	ENG	[0 to 0 / **0** / 0 / step]
7-622-052	Paper Tray1(Custom 2)	ENG	[0 to 0 / **0** / 0 / step]
7-622-053	Paper Tray2(Custom 1)	ENG	[0 to 0 / **0** / 0 / step]

7-622-054	Paper Tray2(Custom 2)	ENG	[0 to 0 / **0** / 0 / step]
7-622-055	Paper Tray3(Custom 1)	ENG	[0 to 0 / **0** / 0 / step]
7-622-056	Paper Tray3(Custom 2)	ENG	[0 to 0 / **0** / 0 / step]
7-622-057	Paper Tray4(Custom 1)	ENG	[0 to 0 / **0** / 0 / step]
7-622-058	Paper Tray4(Custom 2)	ENG	[0 to 0 / **0** / 0 / step]
7-622-059	LCT(Custom 1)	ENG	[0 to 0 / **0** / 0 / step]
7-622-060	LCT(Custom 2)	ENG	[0 to 0 / **0** / 0 / step]
7-622-063	Interposer(Custom 1)	ENG	[0 to 0 / **0** / 0 / step]
7-622-064	Interposer(Custom 2)	ENG	[0 to 0 / **0** / 0 / step]
7-622-066	Ozon Filter(Custom 1)	ENG	[0 to 0 / **0** / 0 / step]

7623	**[Unit PM Target]**		
7-623-001	Developer	ENG	[0 to 99999999 / **350000** / 1 / step]
7-623-002	Hot Roller	ENG	[0 to 99999999 / **450000** / 1 / step]
7-623-003	Pressure Roller	ENG	[0 to 99999999 / **450000** / 1 / step]
7-623-004	Hot Roller Bearings	ENG	[0 to 99999999 / **450000** / 1 / step]
7-623-005	Pressure Roller Bearings	ENG	[0 to 99999999 / **450000** / 1 / step]
7-623-006	Hot Roller Strippers	ENG	[0 to 99999999 / **450000** / 1 / step]
7-623-007	Cleaning Roller	ENG	[0 to 99999999 / **450000** / 1 / step]
7-623-008	Cleaning Roller Bearings	ENG	[0 to 99999999 / **450000** / 1 / step]
7-623-009	Web Roll	ENG	[0 to 99999999 / **450000** / 1 / step]
7-623-010	Web Cleaning Roller	ENG	[0 to 99999999 / **450000** / 1 / step]
7-623-011	Development Filter	ENG	[0 to 99999999 / **300000** / 1 / step]
7-623-012	Toner Recycling Unit	ENG	[0 to 99999999 / **600000** / 1 / step]
7-623-013	Pressure Release Filter	ENG	[0 to 99999999 / **300000** / 1 / step]
7-623-014	Charge Corona Wire	ENG	[0 to 99999999 / **300000** / 1 / step]

7-623-015	Grid Plate	ENG	[0 to 99999999 / **300000** / 1 / step]
7-623-016	Cleaning Pad	ENG	[0 to 99999999 / **300000** / 1 / step]
7-623-017	Cleaning Blade	ENG	[0 to 99999999 / **300000** / 1 / step]
7-623-018	Cleaning Brush	ENG	[0 to 99999999 / **300000** / 1 / step]
7-623-019	Transfer Belt	ENG	[0 to 99999999 / **600000** / 1 / step]
7-623-020	Transfer Belt Cleaning Blade	ENG	[0 to 99999999 / **600000** / 1 / step]
7-623-022	ADF Pick-up Roller	ENG	[0 to 99999999 / **120000** / 1 / step]
7-623-023	ADF Feed Belt	ENG	[0 to 99999999 / **120000** / 1 / step]
7-623-024	ADF Separation Roller	ENG	[0 to 99999999 / **120000** / 1 / step]
7-623-025	Feed Roller-Tray1	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-026	Pick-up Roller-Tray1	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-027	Separation Roller-Tray1	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-028	Feed Roller-Tray2	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-029	Pick-up Roller-Tray2	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-030	Separation Roller-Tray2	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-031	Feed Roller-Tray3	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-032	Pick-up Roller-Tray3	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-033	Separation Roller-Tray3	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-034	Feed Roller-Tray4	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-035	Pick-up Roller-Tray4	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-036	Separation Roller-Tray4	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-037	Feed Roller-LCT	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-038	Pick-up Roller-LCT	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-039	Separation Roller-LCT	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-040	Feed Belt Cover feeder	ENG	[0 to 99999999 / **60000** / 1 / step]

7-623-041	Pick-up Roller Cover feeder	ENG	[0 to 99999999 / **60000** / 1 / step]
7-623-042	Separation Roller Cover feeder	ENG	[0 to 99999999 / **60000** / 1 / step]
7-623-044	Fusing unit:Thermistor(Back)	ENG	[0 to 99999999 / **450000** / 1 / step]
7-623-045	Fusing unit:Thermistor(Center)	ENG	[0 to 99999999 / **450000** / 1 / step]
7-623-046	Dust Filter(Main)	ENG	[0 to 99999999 / **300000** / 1 / step]
7-623-047	Main Tray(Custom 1)	ENG	[0 to 99999999 / **300000** / 1 / step]
7-623-048	Main Tray(Custom 2)	ENG	[0 to 99999999 / **300000** / 1 / step]
7-623-049	Main Tray(Custom 3)	ENG	[0 to 99999999 / **300000** / 1 / step]
7-623-050	Main Tray(Custom 4)	ENG	[0 to 99999999 / **300000** / 1 / step]
7-623-051	Paper Tray1(Custom 1)	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-052	Paper Tray1(Custom 2)	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-053	Paper Tray2(Custom 1)	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-054	Paper Tray2(Custom 2)	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-055	Paper Tray3(Custom 1)	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-056	Paper Tray3(Custom 2)	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-057	Paper Tray4(Custom 1)	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-058	Paper Tray4(Custom 2)	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-059	LCT(Custom 1)	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-060	LCT(Custom 2)	ENG	[0 to 99999999 / **1000000** / 1 / step]
7-623-063	Interposer(Custom 1)	ENG	[0 to 99999999 / **60000** / 1 / step]
7-623-064	Interposer(Custom 2)	ENG	[0 to 99999999 / **60000** / 1 / step]
7-623-066	Ozon Filter(Custom 1)	ENG	[0 to 99999999 / **300000** / 1 / step]

7625	**[Pg Count History:Latest 1]**		
7-625-001	Developer	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-002	Hot Roller	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-003	Pressure Roller	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-004	Hot Roller Bearings	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-005	Pressure Roller Bearings	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-006	Hot Roller Strippers	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-007	Cleaning Roller	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-008	Cleaning Roller Bearings	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-009	Web Roll	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-010	Web Cleaning Roller	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-011	Development Filter	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-012	Toner Recycling Unit	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-013	Pressure Release Filter	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-014	Charge Corona Wire	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-015	Grid Plate	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-016	Cleaning Pad	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-017	Cleaning Blade	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-018	Cleaning Brush	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-019	Transfer Belt	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-020	Transfer Belt Cleaning Blade	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-022	ADF Pick-up Roller	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-023	ADF Feed Belt	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-024	ADF Separation Roller	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-025	Feed Roller-Tray1	ENG	[0 to 99999999 / **0** / 1 / step]

7-625-026	Pick-up Roller-Tray1	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-027	Separation Roller-Tray1	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-028	Feed Roller-Tray2	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-029	Pick-up Roller-Tray2	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-030	Separation Roller-Tray2	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-031	Feed Roller-Tray3	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-032	Pick-up Roller-Tray3	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-033	Separation Roller-Tray3	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-034	Feed Roller-Tray4	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-035	Pick-up Roller-Tray4	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-036	Separation Roller-Tray4	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-037	Feed Roller-LCT	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-038	Pick-up Roller-LCT	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-039	Separation Roller-LCT	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-040	Feed Belt Cover feeder	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-041	Pick-up Roller Cover feeder	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-042	Separation Roller Cover feeder	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-044	Fusing unit:Thermistor(Back)	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-045	Fusing unit:Thermistor(Center)	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-046	Dust Filter(Main)	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-047	Main Tray(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-048	Main Tray(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-049	Main Tray(Custom 3)	ENG	[0 to 99999999 / **0** / 1 / step]

7-625-050	Main Tray(Custom 4)	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-051	Paper Tray1(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-052	Paper Tray1(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-053	Paper Tray2(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-054	Paper Tray2(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-055	Paper Tray3(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-056	Paper Tray3(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-057	Paper Tray4(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-058	Paper Tray4(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-059	LCT(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-060	LCT(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-063	Interposer(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-064	Interposer(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-625-066	Ozon Filter(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]

7626	**[Pg Count History:Latest 2]**		
7-626-001	Developer	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-002	Hot Roller	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-003	Pressure Roller	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-004	Hot Roller Bearings	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-005	Pressure Roller Bearings	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-006	Hot Roller Strippers	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-007	Cleaning Roller	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-008	Cleaning Roller Bearings	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-009	Web Roll	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-010	Web Cleaning Roller	ENG	[0 to 99999999 / **0** / 1 / step]

7-626-011	Development Filter	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-012	Toner Recycling Unit	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-013	Pressure Release Filter	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-014	Charge Corona Wire	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-015	Grid Plate	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-016	Cleaning Pad	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-017	Cleaning Blade	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-018	Cleaning Brush	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-019	Transfer Belt	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-020	Transfer Belt Cleaning Blade	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-022	ADF Pick-up Roller	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-023	ADF Feed Belt	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-024	ADF Separation Roller	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-025	Feed Roller-Tray1	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-026	Pick-up Roller-Tray1	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-027	Separation Roller-Tray1	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-028	Feed Roller-Tray2	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-029	Pick-up Roller-Tray2	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-030	Separation Roller-Tray2	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-031	Feed Roller-Tray3	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-032	Pick-up Roller-Tray3	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-033	Separation Roller-Tray3	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-034	Feed Roller-Tray4	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-035	Pick-up Roller-Tray4	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-036	Separation Roller-Tray4	ENG	[0 to 99999999 / **0** / 1 / step]

7-626-037	Feed Roller-LCT	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-038	Pick-up Roller-LCT	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-039	Separation Roller-LCT	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-040	Feed Belt Cover feeder	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-041	Pick-up Roller Cover feeder	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-042	Separation Roller Cover feeder	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-044	Fusing unit:Thermistor(Back)	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-045	Fusing unit:Thermistor(Center)	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-046	Dust Filter(Main)	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-047	Main Tray(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-048	Main Tray(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-049	Main Tray(Custom 3)	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-050	Main Tray(Custom 4)	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-051	Paper Tray1(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-052	Paper Tray1(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-053	Paper Tray2(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-054	Paper Tray2(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-055	Paper Tray3(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-056	Paper Tray3(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-057	Paper Tray4(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-058	Paper Tray4(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-059	LCT(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-060	LCT(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]

7-626-063	Interposer(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-064	Interposer(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-626-066	Ozon Filter(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]

7627	**[Pg Count History:Latest 3]**		
7-627-001	Developer	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-002	Hot Roller	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-003	Pressure Roller	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-004	Hot Roller Bearings	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-005	Pressure Roller Bearings	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-006	Hot Roller Strippers	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-007	Cleaning Roller	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-008	Cleaning Roller Bearings	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-009	Web Roll	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-010	Web Cleaning Roller	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-011	Development Filter	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-012	Toner Recycling Unit	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-013	Pressure Release Filter	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-014	Charge Corona Wire	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-015	Grid Plate	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-016	Cleaning Pad	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-017	Cleaning Blade	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-018	Cleaning Brush	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-019	Transfer Belt	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-020	Transfer Belt Cleaning Blade	ENG	[0 to 99999999 / **0** / 1 / step]

7-627-022	ADF Pick-up Roller	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-023	ADF Feed Belt	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-024	ADF Separation Roller	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-025	Feed Roller-Tray1	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-026	Pick-up Roller-Tray1	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-027	Separation Roller-Tray1	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-028	Feed Roller-Tray2	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-029	Pick-up Roller-Tray2	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-030	Separation Roller-Tray2	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-031	Feed Roller-Tray3	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-032	Pick-up Roller-Tray3	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-033	Separation Roller-Tray3	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-034	Feed Roller-Tray4	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-035	Pick-up Roller-Tray4	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-036	Separation Roller-Tray4	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-037	Feed Roller-LCT	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-038	Pick-up Roller-LCT	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-039	Separation Roller-LCT	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-040	Feed Belt Cover feeder	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-041	Pick-up Roller Cover feeder	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-042	Separation Roller Cover feeder	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-044	Fusing unit:Thermistor(Back)	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-045	Fusing unit:Thermistor(Center)	ENG	[0 to 99999999 / **0** / 1 / step]

7-627-046	Dust Filter(Main)	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-047	Main Tray(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-048	Main Tray(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-049	Main Tray(Custom 3)	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-050	Main Tray(Custom 4)	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-051	Paper Tray1(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-052	Paper Tray1(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-053	Paper Tray2(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-054	Paper Tray2(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-055	Paper Tray3(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-056	Paper Tray3(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-057	Paper Tray4(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-058	Paper Tray4(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-059	LCT(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-060	LCT(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-063	Interposer(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-064	Interposer(Custom 2)	ENG	[0 to 99999999 / **0** / 1 / step]
7-627-066	Ozon Filter(Custom 1)	ENG	[0 to 99999999 / **0** / 1 / step]

7628	**[Clear PM Counter]**		
7-628-001	Clear Exceeded Counts	ENG	[0 to 0 / **0** / 0 / step]
7-628-002	Reset All Counts	ENG	[0 to 0 / **0** / 0 / step]

7801	**[ROM No.]**		
7-801-002	Engine	ENG	[0 to 0 / **0** / 0 / step]
7-801-005	ADF	ENG	[0 to 0 / **0** / 0 / step]
7-801-007	Finisher	ENG	[0 to 0 / **0** / 0 / step]
7-801-009	Bank	ENG	[0 to 0 / **0** / 0 / step]
7-801-010	LCT	ENG	[0 to 0 / **0** / 0 / step]
7-801-011	Mail Box	ENG	[0 to 0 / **0** / 0 / step]
7-801-020	Cover Interposer	ENG	[0 to 0 / **0** / 0 / step]
7-801-024	Capacitor	ENG	[0 to 0 / **0** / 0 / step]
7-801-025	Holding Unit	ENG	[0 to 0 / **0** / 0 / step]

7801	**[Firmware Version]**		
7-801-102	Engine	ENG	[0 to 0 / **0** / 0 / step]
7-801-105	ADF	ENG	[0 to 0 / **0** / 0 / step]
7-801-107	Finisher	ENG	[0 to 0 / **0** / 0 / step]
7-801-109	Bank	ENG	[0 to 0 / **0** / 0 / step]
7-801-110	LCT	ENG	[0 to 0 / **0** / 0 / step]
7-801-111	Mail Box	ENG	[0 to 0 / **0** / 0 / step]
7-801-120	Cover Interposer	ENG	[0 to 0 / **0** / 0 / step]
7-801-124	Capacitor	ENG	[0 to 0 / **0** / 0 / step]
7-801-125	Holding Unit	ENG	[0 to 0 / **0** / 0 / step]

7834	**[Clear Pixel Coverage Data]**		
7-834-001	Last & Average	ENG	[0 to 0 / **0** / 0 / step]
7-834-002	Toner Bottles In Use	ENG	[0 to 0 / **0** / 0 / step]

7-834-003	Page Counts (2 Prev. Toner Bottles)	ENG	[0 to 0 / **0** / 0 / step]
7-834-004	Pixel Coverage Clear	ENG	[0 to 0 / **0** / 0 / step]
7-834-255	All Clear	ENG	[0 to 0 / **0** / 0 / step]

7852	**[DF Glass Dust Check]**		
7-852-001	Dust Detection Counter	ENG*	[0 to 65535 / **0** / 1 / step]
7-852-002	Dust Counter Clear Counter	ENG*	[0 to 65535 / **0** / 1 / step]
7-852-003	Dust Detection Counter: Back	ENG*	[0 to 65535 / **0** / 1 / step]

7940	**[Drive Distance:End Std Value]**		
7-940-001	Developer	ENG	MP 6503 SP: [0 to 99999999 / **170200** / 1 m / step] MP 7503 SP: [0 to 99999999 / **160900** / 1 m / step] MP 9003 SP: [0 to 99999999 / **137400** / 1 m / step]
7-940-002	Hot Roller	ENG	MP 6503 SP: [0 to 99999999 / **193100** / 1 m / step] MP 7503 SP: [0 to 99999999 / **171000** / 1 m / step] MP 9003 SP: [0 to 99999999 / **146800** / 1 m / step]
7-940-003	Pressure Roller	ENG	MP 6503 SP: [0 to 99999999 / **193100** / 1 m / step] MP 7503 SP: [0 to 99999999 / **171000** / 1 m / step] MP 9003 SP: [0 to 99999999 / **146800** / 1 m / step]

7-940-004	Hot Roller Bearings	ENG	MP 6503 SP: [0 to 99999999 / **193100** / 1 m / step] MP 7503 SP: [0 to 99999999 / **171000** / 1 m / step] MP 9003 SP: [0 to 99999999 / **146800** / 1 m / step]
7-940-005	Pressure Roller Bearings	ENG	MP 6503 SP: [0 to 99999999 / **193100** / 1 m / step] MP 7503 SP: [0 to 99999999 / **171000** / 1 m / step] MP 9003 SP: [0 to 99999999 / **146800** / 1 m / step]
7-940-006	Hot Roller Strippers	ENG	MP 6503 SP: [0 to 99999999 / **193100** / 1 m / step] MP 7503 SP: [0 to 99999999 / **171000** / 1 m / step] MP 9003 SP: [0 to 99999999 / **146800** / 1 m / step]
7-940-007	Cleaning Roller	ENG	MP 6503 SP: [0 to 99999999 / **193100** / 1 m / step] MP 7503 SP: [0 to 99999999 / **171000** / 1 m / step] MP 9003 SP: [0 to 99999999 / **146800** / 1 m / step]
7-940-008	Cleaning Roller Bearings	ENG	MP 6503 SP: [0 to 99999999 / **193100** / 1 m / step] MP 7503 SP: [0 to 99999999 / **171000** / 1 m / step] MP 9003 SP: [0 to 99999999 / **146800** / 1 m / step]
7-940-009	Web Roll	ENG	MP 6503 SP: [0 to 99999999 / **193100** / 1 m / step] MP 7503 SP: [0 to 99999999 / **171000** / 1 m / step] MP 9003 SP: [0 to 99999999 / **146800** / 1 m / step]

7-940-010	Web Cleaning Roller	ENG	MP 6503 SP: [0 to 99999999 / **193100** / 1 m / step] MP 7503 SP: [0 to 99999999 / **171000** / 1 m / step] MP 9003 SP: [0 to 99999999 / **146800** / 1 m / step]
7-940-011	Development Filter	ENG	MP 6503 SP: [0 to 99999999 / **145900** / 1 m / step] MP 7503 SP: [0 to 99999999 / **137900** / 1 m / step] MP 9003 SP: [0 to 99999999 / **117800** / 1 m / step]
7-940-012	Toner Recycling Unit	ENG	MP 6503 SP: [0 to 99999999 / **291900** / 1 m / step] MP 7503 SP: [0 to 99999999 / **275800** / 1 m / step] MP 9003 SP: [0 to 99999999 / **235600** / 1 m / step]
7-940-013	Pressure Release Filter	ENG	MP 6503 SP: [0 to 99999999 / **167400** / 1 m / step] MP 7503 SP: [0 to 99999999 / **160500** / 1 m / step] MP 9003 SP: [0 to 99999999 / **129400** / 1 m / step]
7-940-014	Charge Corona Wire	ENG	MP 6503 SP: [0 to 99999999 / **167400** / 1 m / step] MP 7503 SP: [0 to 99999999 / **160500** / 1 m / step] MP 9003 SP: [0 to 99999999 / **129400** / 1 m / step]
7-940-015	Grid Plate	ENG	MP 6503 SP: [0 to 99999999 / **167400** / 1 m / step] MP 7503 SP: [0 to 99999999 / **160500** / 1 m / step] MP 9003 SP: [0 to 99999999 / **129400** / 1 m / step]

7-940-016	Cleaning Pad	ENG	MP 6503 SP: [0 to 99999999 / **167400** / 1 m / step] MP 7503 SP: [0 to 99999999 / **160500** / 1 m / step] MP 9003 SP: [0 to 99999999 / **129400** / 1 m / step]
7-940-017	Cleaning Blade	ENG	MP 6503 SP: [0 to 99999999 / **167400** / 1 m / step] MP 7503 SP: [0 to 99999999 / **160500** / 1 m / step] MP 9003 SP: [0 to 99999999 / **129400** / 1 m / step]
7-940-018	Cleaning Brush	ENG	MP 6503 SP: [0 to 99999999 / **167400** / 1 m / step] MP 7503 SP: [0 to 99999999 / **160500** / 1 m / step] MP 9003 SP: [0 to 99999999 / **129400** / 1 m / step]
7-940-019	Transfer Belt	ENG	MP 6503 SP: [0 to 99999999 / **334900** / 1 m / step] MP 7503 SP: [0 to 99999999 / **321000** / 1 m / step] MP 9003 SP: [0 to 99999999 / **258800** / 1 m / step]
7-940-020	Transfer Belt Cleaning Blade	ENG	MP 6503 SP: [0 to 99999999 / **334900** / 1 m / step] MP 7503 SP: [0 to 99999999 / **321000** / 1 m / step] MP 9003 SP: [0 to 99999999 / **258800** / 1 m / step]
7-940-044	Fusing unit:Thermistor(Back)	ENG	MP 6503 SP: [0 to 99999999 / **199300** / 1 m / step] MP 7503 SP: [0 to 99999999 / **171000** / 1 m / step] MP 9003 SP: [0 to 99999999 / **146800** / 1 m / step]

7-940-045	Fusing unit:Thermistor(Center)	ENG	MP 6503 SP: [0 to 99999999 / **199300** / 1 m / step] MP 7503 SP: [0 to 99999999 / **171000** / 1 m / step] MP 9003 SP: [0 to 99999999 / **146800** / 1 m / step]

7942	**[Drive Distance % Counter]**		
7-942-001	Developer	ENG	[0 to 255 / **0** / 1 % / step]
7-942-002	Hot Roller	ENG	[0 to 255 / **0** / 1 % / step]
7-942-003	Pressure Roller	ENG	[0 to 255 / **0** / 1 % / step]
7-942-004	Hot Roller Bearings	ENG	[0 to 255 / **0** / 1 % / step]
7-942-005	Pressure Roller Bearings	ENG	[0 to 255 / **0** / 1 % / step]
7-942-006	Hot Roller Strippers	ENG	[0 to 255 / **0** / 1 % / step]
7-942-007	Cleaning Roller	ENG	[0 to 255 / **0** / 1 % / step]
7-942-008	Cleaning Roller Bearings	ENG	[0 to 255 / **0** / 1 % / step]
7-942-009	Web Roll	ENG	[0 to 255 / **0** / 1 % / step]
7-942-010	Web Cleaning Roller	ENG	[0 to 255 / **0** / 1 % / step]
7-942-011	Development Filter	ENG	[0 to 255 / **0** / 1 % / step]
7-942-012	Toner Recycling Unit	ENG	[0 to 255 / **0** / 1 % / step]
7-942-013	Pressure Release Filter	ENG	[0 to 255 / **0** / 1 % / step]
7-942-014	Charge Corona Wire	ENG	[0 to 255 / **0** / 1 % / step]
7-942-015	Grid Plate	ENG	[0 to 255 / **0** / 1 % / step]
7-942-016	Cleaning Pad	ENG	[0 to 255 / **0** / 1 % / step]
7-942-017	Cleaning Blade	ENG	[0 to 255 / **0** / 1 % / step]
7-942-018	Cleaning Brush	ENG	[0 to 255 / **0** / 1 % / step]
7-942-019	Transfer Belt	ENG	[0 to 255 / **0** / 1 % / step]

7-942-020	Transfer Belt Cleaning Blade	ENG	[0 to 255 / **0** / 1 % / step]
7-942-044	Fusing unit:Thermistor(Back)	ENG	[0 to 255 / **0** / 1 % / step]
7-942-045	Fusing unit:Thermistor(Center)	ENG	[0 to 255 / **0** / 1 % / step]

7944	**[Drive Distance Counter]**		
7-944-001	Developer	ENG	[0 to 99999999 / **0** / 1 m / step]
7-944-002	Hot Roller	ENG	[0 to 99999999 / **0** / 1 m / step]
7-944-003	Pressure Roller	ENG	[0 to 99999999 / **0** / 1 m / step]
7-944-004	Hot Roller Bearings	ENG	[0 to 99999999 / **0** / 1 m / step]
7-944-005	Pressure Roller Bearings	ENG	[0 to 99999999 / **0** / 1 m / step]
7-944-006	Hot Roller Strippers	ENG	[0 to 99999999 / **0** / 1 m / step]
7-944-007	Cleaning Roller	ENG	[0 to 99999999 / **0** / 1 m / step]
7-944-008	Cleaning Roller Bearings	ENG	[0 to 99999999 / **0** / 1 m / step]
7-944-009	Web Roll	ENG	[0 to 99999999 / **0** / 1 m / step]
7-944-010	Web Cleaning Roller	ENG	[0 to 99999999 / **0** / 1 m / step]
7-944-011	Development Filter	ENG	[0 to 99999999 / **0** / 1 m / step]
7-944-012	Toner Recycling Unit	ENG	[0 to 99999999 / **0** / 1 m / step]
7-944-013	Pressure Release Filter	ENG	[0 to 99999999 / **0** / 1 m / step]
7-944-014	Charge Corona Wire	ENG	[0 to 99999999 / **0** / 1 m / step]
7-944-015	Grid Plate	ENG	[0 to 99999999 / **0** / 1 m / step]
7-944-016	Cleaning Pad	ENG	[0 to 99999999 / **0** / 1 m / step]
7-944-017	Cleaning Blade	ENG	[0 to 99999999 / **0** / 1 m / step]
7-944-018	Cleaning Brush	ENG	[0 to 99999999 / **0** / 1 m / step]
7-944-019	Transfer Belt	ENG	[0 to 99999999 / **0** / 1 m / step]

7-944-020	Transfer Belt Cleaning Blade	ENG	[0 to 99999999 / **0** / 1 m / step]
7-944-044	Fusing unit:Thermistor(Back)	ENG	[0 to 99999999 / **0** / 1 m / step]
7-944-045	Fusing unit:Thermistor(Center)	ENG	[0 to 99999999 / **0** / 1 m / step]

7954	**[Pg Counter (%)]**		
7-954-001	Developer	ENG	[0 to 255 / **0** / 1 % / step]
7-954-002	Hot Roller	ENG	[0 to 255 / **0** / 1 % / step]
7-954-003	Pressure Roller	ENG	[0 to 255 / **0** / 1 % / step]
7-954-004	Hot Roller Bearings	ENG	[0 to 255 / **0** / 1 % / step]
7-954-005	Pressure Roller Bearings	ENG	[0 to 255 / **0** / 1 % / step]
7-954-006	Hot Roller Strippers	ENG	[0 to 255 / **0** / 1 % / step]
7-954-007	Cleaning Roller	ENG	[0 to 255 / **0** / 1 % / step]
7-954-008	Cleaning Roller Bearings	ENG	[0 to 255 / **0** / 1 % / step]
7-954-009	Web Roll	ENG	[0 to 255 / **0** / 1 % / step]
7-954-010	Web Cleaning Roller	ENG	[0 to 255 / **0** / 1 % / step]
7-954-011	Development Filter	ENG	[0 to 255 / **0** / 1 % / step]
7-954-012	Toner Recycling Unit	ENG	[0 to 255 / **0** / 1 % / step]
7-954-013	Pressure Release Filter	ENG	[0 to 255 / **0** / 1 % / step]
7-954-014	Charge Corona Wire	ENG	[0 to 255 / **0** / 1 % / step]
7-954-015	Grid Plate	ENG	[0 to 255 / **0** / 1 % / step]
7-954-016	Cleaning Pad	ENG	[0 to 255 / **0** / 1 % / step]
7-954-017	Cleaning Blade	ENG	[0 to 255 / **0** / 1 % / step]
7-954-018	Cleaning Brush	ENG	[0 to 255 / **0** / 1 % / step]
7-954-019	Transfer Belt	ENG	[0 to 255 / **0** / 1 % / step]

7-954-020	Transfer Belt Cleaning Blade	ENG	[0 to 255 / **0** / 1 % / step]
7-954-022	ADF Pick-up Roller	ENG	[0 to 255 / **0** / 1 % / step]
7-954-023	ADF Feed Belt	ENG	[0 to 255 / **0** / 1 % / step]
7-954-024	ADF Separation Roller	ENG	[0 to 255 / **0** / 1 % / step]
7-954-025	Feed Roller-Tray1	ENG	[0 to 255 / **0** / 1 % / step]
7-954-026	Pick-up Roller-Tray1	ENG	[0 to 255 / **0** / 1 % / step]
7-954-027	Separation Roller-Tray1	ENG	[0 to 255 / **0** / 1 % / step]
7-954-028	Feed Roller-Tray2	ENG	[0 to 255 / **0** / 1 % / step]
7-954-029	Pick-up Roller-Tray2	ENG	[0 to 255 / **0** / 1 % / step]
7-954-030	Separation Roller-Tray2	ENG	[0 to 255 / **0** / 1 % / step]
7-954-031	Feed Roller-Tray3	ENG	[0 to 255 / **0** / 1 % / step]
7-954-032	Pick-up Roller-Tray3	ENG	[0 to 255 / **0** / 1 % / step]
7-954-033	Separation Roller-Tray3	ENG	[0 to 255 / **0** / 1 % / step]
7-954-034	Feed Roller-Tray4	ENG	[0 to 255 / **0** / 1 % / step]
7-954-035	Pick-up Roller-Tray4	ENG	[0 to 255 / **0** / 1 % / step]
7-954-036	Separation Roller-Tray4	ENG	[0 to 255 / **0** / 1 % / step]
7-954-037	Feed Roller-LCT	ENG	[0 to 255 / **0** / 1 % / step]
7-954-038	Pick-up Roller-LCT	ENG	[0 to 255 / **0** / 1 % / step]
7-954-039	Separation Roller-LCT	ENG	[0 to 255 / **0** / 1 % / step]
7-954-040	Feed Belt Cover feeder	ENG	[0 to 255 / **0** / 1 % / step]
7-954-041	Pick-up Roller Cover feeder	ENG	[0 to 255 / **0** / 1 % / step]
7-954-042	Separation Roller Cover feeder	ENG	[0 to 255 / **0** / 1 % / step]
7-954-044	Fusing unit:Thermistor(Back)	ENG	[0 to 255 / **0** / 1 % / step]

7-954-045	Fusing unit:Thermistor(Center)	ENG	[0 to 255 / **0** / 1 % / step]
7-954-046	Dust Filter(Main)	ENG	[0 to 255 / **0** / 1 % / step]
7-954-047	Main Tray(Custom 1)	ENG	[0 to 255 / **0** / 1 % / step]
7-954-048	Main Tray(Custom 2)	ENG	[0 to 255 / **0** / 1 % / step]
7-954-049	Main Tray(Custom 3)	ENG	[0 to 255 / **0** / 1 % / step]
7-954-050	Main Tray(Custom 4)	ENG	[0 to 255 / **0** / 1 % / step]
7-954-051	Paper Tray1(Custom 1)	ENG	[0 to 255 / **0** / 1 % / step]
7-954-052	Paper Tray1(Custom 2)	ENG	[0 to 255 / **0** / 1 % / step]
7-954-053	Paper Tray2(Custom 1)	ENG	[0 to 255 / **0** / 1 % / step]
7-954-054	Paper Tray2(Custom 2)	ENG	[0 to 255 / **0** / 1 % / step]
7-954-055	Paper Tray3(Custom 1)	ENG	[0 to 255 / **0** / 1 % / step]
7-954-056	Paper Tray3(Custom 2)	ENG	[0 to 255 / **0** / 1 % / step]
7-954-057	Paper Tray4(Custom 1)	ENG	[0 to 255 / **0** / 1 % / step]
7-954-058	Paper Tray4(Custom 2)	ENG	[0 to 255 / **0** / 1 % / step]
7-954-059	LCT(Custom 1)	ENG	[0 to 255 / **0** / 1 % / step]
7-954-060	LCT(Custom 2)	ENG	[0 to 255 / **0** / 1 % / step]
7-954-063	Interposer(Custom 1)	ENG	[0 to 255 / **0** / 1 % / step]
7-954-064	Interposer(Custom 2)	ENG	[0 to 255 / **0** / 1 % / step]
7-954-066	Ozon Filter(Custom 1)	ENG	[0 to 255 / **0** / 1 % / step]

7960	**[Estimated Usage Rate]**		
7-960-001	Developer	ENG	[0 to 255 / **0** / 1 % / step]
7-960-002	Hot Roller	ENG	[0 to 255 / **0** / 1 % / step]
7-960-003	Pressure Roller	ENG	[0 to 255 / **0** / 1 % / step]
7-960-004	Hot Roller Bearings	ENG	[0 to 255 / **0** / 1 % / step]

7-960-005	Pressure Roller Bearings	ENG	[0 to 255 / **0** / 1 % / step]
7-960-006	Hot Roller Strippers	ENG	[0 to 255 / **0** / 1 % / step]
7-960-007	Cleaning Roller	ENG	[0 to 255 / **0** / 1 % / step]
7-960-008	Cleaning Roller Bearings	ENG	[0 to 255 / **0** / 1 % / step]
7-960-009	Web Roll	ENG	[0 to 255 / **0** / 1 % / step]
7-960-010	Web Cleaning Roller	ENG	[0 to 255 / **0** / 1 % / step]
7-960-011	Development Filter	ENG	[0 to 255 / **0** / 1 % / step]
7-960-012	Toner Recycling Unit	ENG	[0 to 255 / **0** / 1 % / step]
7-960-013	Pressure Release Filter	ENG	[0 to 255 / **0** / 1 % / step]
7-960-014	Charge Corona Wire	ENG	[0 to 255 / **0** / 1 % / step]
7-960-015	Grid Plate	ENG	[0 to 255 / **0** / 1 % / step]
7-960-016	Cleaning Pad	ENG	[0 to 255 / **0** / 1 % / step]
7-960-017	Cleaning Blade	ENG	[0 to 255 / **0** / 1 % / step]
7-960-018	Cleaning Brush	ENG	[0 to 255 / **0** / 1 % / step]
7-960-019	Transfer Belt	ENG	[0 to 255 / **0** / 1 % / step]
7-960-020	Transfer Belt Cleaning Blade	ENG	[0 to 255 / **0** / 1 % / step]
7-960-022	ADF Pick-up Roller	ENG	[0 to 255 / **0** / 1 % / step]
7-960-023	ADF Feed Belt	ENG	[0 to 255 / **0** / 1 % / step]
7-960-024	ADF Separation Roller	ENG	[0 to 255 / **0** / 1 % / step]
7-960-025	Feed Roller-Tray1	ENG	[0 to 255 / **0** / 1 % / step]
7-960-026	Pick-up Roller-Tray1	ENG	[0 to 255 / **0** / 1 % / step]
7-960-027	Separation Roller-Tray1	ENG	[0 to 255 / **0** / 1 % / step]
7-960-028	Feed Roller-Tray2	ENG	[0 to 255 / **0** / 1 % / step]
7-960-029	Pick-up Roller-Tray2	ENG	[0 to 255 / **0** / 1 % / step]
7-960-030	Separation Roller-Tray2	ENG	[0 to 255 / **0** / 1 % / step]

7-960-031	Feed Roller-Tray3	ENG	[0 to 255 / **0** / 1 % / step]
7-960-032	Pick-up Roller-Tray3	ENG	[0 to 255 / **0** / 1 % / step]
7-960-033	Separation Roller-Tray3	ENG	[0 to 255 / **0** / 1 % / step]
7-960-034	Feed Roller-Tray4	ENG	[0 to 255 / **0** / 1 % / step]
7-960-035	Pick-up Roller-Tray4	ENG	[0 to 255 / **0** / 1 % / step]
7-960-036	Separation Roller-Tray4	ENG	[0 to 255 / **0** / 1 % / step]
7-960-037	Feed Roller-LCT	ENG	[0 to 255 / **0** / 1 % / step]
7-960-038	Pick-up Roller-LCT	ENG	[0 to 255 / **0** / 1 % / step]
7-960-039	Separation Roller-LCT	ENG	[0 to 255 / **0** / 1 % / step]
7-960-040	Feed Belt Cover feeder	ENG	[0 to 255 / **0** / 1 % / step]
7-960-041	Pick-up Roller Cover feeder	ENG	[0 to 255 / **0** / 1 % / step]
7-960-042	Separation Roller Cover feeder	ENG	[0 to 255 / **0** / 1 % / step]
7-960-044	Fusing unit:Thermistor(Back)	ENG	[0 to 255 / **0** / 1 % / step]
7-960-045	Fusing unit:Thermistor(Center)	ENG	[0 to 255 / **0** / 1 % / step]
7-960-046	Dust Filter(Main)	ENG	[0 to 255 / **0** / 1 % / step]
7-960-047	Main Tray(Custom 1)	ENG	[0 to 255 / **0** / 1 % / step]
7-960-048	Main Tray(Custom 2)	ENG	[0 to 255 / **0** / 1 % / step]
7-960-049	Main Tray(Custom 3)	ENG	[0 to 255 / **0** / 1 % / step]
7-960-050	Main Tray(Custom 4)	ENG	[0 to 255 / **0** / 1 % / step]
7-960-051	Paper Tray1(Custom 1)	ENG	[0 to 255 / **0** / 1 % / step]
7-960-052	Paper Tray1(Custom 2)	ENG	[0 to 255 / **0** / 1 % / step]
7-960-053	Paper Tray2(Custom 1)	ENG	[0 to 255 / **0** / 1 % / step]
7-960-054	Paper Tray2(Custom 2)	ENG	[0 to 255 / **0** / 1 % / step]

7-960-055	Paper Tray3(Custom 1)	ENG	[0 to 255 / **0** / 1 % / step]
7-960-056	Paper Tray3(Custom 2)	ENG	[0 to 255 / **0** / 1 % / step]
7-960-057	Paper Tray4(Custom 1)	ENG	[0 to 255 / **0** / 1 % / step]
7-960-058	Paper Tray4(Custom 2)	ENG	[0 to 255 / **0** / 1 % / step]
7-960-059	LCT(Custom 1)	ENG	[0 to 255 / **0** / 1 % / step]
7-960-060	LCT(Custom 2)	ENG	[0 to 255 / **0** / 1 % / step]
7-960-063	Interposer(Custom 1)	ENG	[0 to 255 / **0** / 1 % / step]
7-960-064	Interposer(Custom 2)	ENG	[0 to 255 / **0** / 1 % / step]
7-960-066	Ozon Filter(Custom 1)	ENG	[0 to 255 / **0** / 1 % / step]

7979	**[ENG Reset Log]**		
7-979-001	Data1	ENG*	[0x00 to 0xFF / **0x00** / 1 / step]
7-979-002	Data2	ENG*	[0x0000 to 0xFFFF / **0x0000** / 1 / step]
7-979-003	Data3	ENG*	[0x0000 to 0xFFFF / **0x0000** / 1 / step]
7-979-004	Data4	ENG*	[0x0000 to 0xFFFF / **0x0000** / 1 / step]
7-979-005	Data5	ENG*	[0x0000 to 0xFFFF / **0x0000** / 1 / step]
7-979-006	Data6	ENG*	[0x0000 to 0xFFFF / **0x0000** / 1 / step]
7-979-007	Data7	ENG*	[0x0000 to 0xFFFF / **0x0000** / 1 / step]
7-979-008	Data8	ENG*	[0x0000 to 0xFFFF / **0x0000** / 1 / step]
7-979-009	Data9	ENG*	[0x0000 to 0xFFFF / **0x0000** / 1 / step]
7-979-010	Data10	ENG*	[0x0000 to 0xFFFF / **0x0000** / 1 / step]
7-979-011	Data11	ENG*	[0x0000 to 0xFFFF / **0x0000** / 1 / step]
7-979-012	Data12	ENG*	[0x0000 to 0xFFFF / **0x0000** / 1 / step]
7-979-013	Data13	ENG*	[0x0000 to 0xFFFF / **0x0000** / 1 / step]
7-979-014	Data14	ENG*	[0x0000 to 0xFFFF / **0x0000** / 1 / step]
7-979-015	Data15	ENG*	[0x0000 to 0xFFFF / **0x0000** / 1 / step]

7-979-016	Data16	ENG*	[0x0000 to 0xFFFF / **0x0000** / 1 / step]
7-979-017	Data17	ENG*	[0x0000 to 0xFFFF / **0x0000** / 1 / step]
7-979-018	Data18	ENG*	[0x0000 to 0xFFFF / **0x0000** / 1 / step]
7-979-019	Data19	ENG*	[0x0000 to 0xFFFF / **0x0000** / 1 / step]
7-979-020	Data20	ENG*	[0x0000 to 0xFFFF / **0x0000** / 1 / step]
7-979-021	Data21	ENG*	[0x0000 to 0xFFFF / **0x0000** / 1 / step]

2.8 INPUT AND OUTPUT CHECK

2.8.1 INPUT CHECK TABLE

When entering the Input Check mode, 8 digits display the result for a section. Each digit corresponds to a different device as shown in the table.

Bit No.	7	6	5	4	3	2	1	0
Result	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1

Main Machine, LTC

5-803-001 IOB-VODKA1-GPIO3

Bit	Description	1	0
0	PCB version detection 4	Combination 1	Combination 1
1	PCB version detection 3	Combination 1	Combination 1
2	PCB version detection 2	Combination 1	Combination 1
3	PCB version detection 1	Combination 1	Combination 1
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-

5-803-002 IOB-VODKA1-GPIO9

Bit	Description	1	0
0	-	-	-
1	-	-	-
2	-	-	-
3	-	-	-
4	Front fence open sensor	Open	Closed
5	Front fence release sensor	Closed	Open
6	Back fence open sensor	Open	Closed
7	Back fence release sensor	Closed	Open

5-803-003 IOB-VODKA1-GPIO10

Bit	Description	1	0
0	-	-	-
1	-	-	-
2	-	-	-
3	-	-	-
4	-	-	-
5	-	-	-
6	Controller exhaust fan		Locked
7	-	-	-

5-803-004 IOB-VODKA1-GPIO13

Bit	Description	1	0
0	-	-	-
1	Tandem right tray set detection	Not set	Set
2	Tandem tray down sensor	Down	
3	Right tray paper sensor	No paper	Paper
4	Tray 1 paper height sensor 3	Detect	Not detect
5	Tray 1 paper height sensor 2	Detect	Not detect
6	Tray 1 paper height sensor 1	Detect	Not detect
7	Tandem 1 near end sensor	-	-

5-803-005 IOB-VODKA1-GPIO17

Bit	Description	1	0
0	-	-	-
1	Tandem left tray set detect	Not set	Set
2	Side fence HP sensor	HP	
3	Pressure sensor	Pressed	
4	Left tray paper end sensor	No paper	Paper
5	Tray type detect	3 trays	4 trays
6	Back fence open/close sensor	Closed	Open
7	Back fence HP sensor		HP

5-803-006 IOB-VODKA1-GPIO18

Bit	Description	1	0
0	-	-	-
1	CPM detection	90 cpm	65/75 cpm
2	3 trays/ 4 trays detection	3 trays	4 trays
3	Tray 2 paper size detection switch 5	Off	On
4	Tray 2 paper size detection switch 4	Off	On
5	Tray 2 paper size detection switch 3	Off	On
6	Tray 2 paper size detection switch 2	Off	On
7	Tray 2 paper size detection switch 1	Off	On

5-803-007 IOB-VODKA1-GPIO19

Bit	Description	1	0
0	Paper feed sensor 1	No paper	Paper
1	Paper feed sensor 2	No paper	Paper
2	Paper feed sensor 3	No paper	Paper
3	Paper feed sensor 4	No paper	Paper
4	Vertical Transport Sensor 1	No paper	Paper
5	Vertical Transport Sensor 2	No paper	Paper
6	Vertical Transport Sensor 3	No paper	Paper
7	Vertical Transport Sensor 4	No paper	Paper

5-803-008 IOB-VODKA1-GPIO21

Bit	Description	1	0
0	Paper end sensor 1	No paper	Paper
1	Paper end sensor 2	No paper	Paper
2	Paper end sensor 3	No paper	Paper
3	Paper end sensor 4	No paper	Paper
4	Tray 1 paper height sensor 1	Paper	No paper
5	Tray 2 paper height sensor 1	Paper	No paper
6	Tray 3 paper height sensor 1	Paper	No paper
7	Tray 4 paper height sensor 1	Paper	No paper

5-803-009 IOB-VODKA1-GPIO22

Bit	Description	1	0
0	Tray 1 paper height sensor 2	Paper	Near end
1	Tray 2 paper height sensor 2	Paper	Near end
2	Tray 3 paper height sensor 2	Paper	Near end
3	Tray 4 paper height sensor 2	Paper	Near end
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-

5-803-010 IOB-VODKA1-GPIO24

Bit	Description	1	0
0	-	-	-
1	-	-	-
2	-	-	-
3	Tray 3 paper size detection switch 5	Off	On
4	Tray 3 paper size detection switch 4	Off	On
5	Tray 3 paper size detection switch 3	Off	On
6	Tray 3 paper size detection switch 2	Off	On
7	Tray 3 paper size detection switch 1	Off	On

5-803-011 IOB-VODKA1-GPIO25

Bit	Description	1	0
0	Tray 4 paper size detection switch 5	Off	On
1	Tray 4 paper size detection switch 4	Off	On
2	Tray 4 paper size detection switch 3	Off	On
3	Tray 4 paper size detection switch 2	Off	On
4	Tray 4 paper size detection switch 1	Off	On
5	-	-	-

Bit	Description	1	0
6	-	-	-
7	PFU fan 4		Locked

5-803-012 IOB-VODKA1-GPIO30

Bit	Description	1	0
0	PFU fan 1		Locked
1	PFU fan 2		Locked
2	-	-	-
3	PFU fan 3		Locked
4	Lift sensor 1	-	Up
5	Lift sensor 2	-	Up
6	Lift sensor 3	-	Up
7	Lift sensor 4	-	Up

5-803-013 IOB-VODKA2-GPIO23

Bit	Description	1	0
0	Key card		Copy allowed
1	Hardware high temperature detection 2	Normal	
2	-	-	-
3	-	-	-
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-

5-803-014 IOB-VODKA2-GPIO26

Bit	Description	1	0
0	Reserve fan		Locked
1	Fusing exit sensor	Paper	No paper
2	Fusing unit set detection	Not set	Set
3	Key counter set detection 2	Set	Not set
4	Duplex unit set detection	Not set	Set
5	-	-	-
6	-	-	-
7	-	-	-

5-803-015 IOB-VODKA2-GPIO27

Bit	Description	1	0
0	-	-	-
1	Duplex entrance sensor	No paper	Paper
2	Inverter exit sensor	No paper	Paper
3	-	-	-
4	Jogger HP sensor	Feeler	No feeler
5	Transport sensors 1	No paper	Paper
6	Transport sensors 2	No paper	Paper
7	Transport sensors 3	No paper	Paper

5-803-016 IOB-VODKA2-GPIO29

Bit	Description	1	0
0	-	-	-
1	-	-	-
2	-	-	-
3	-	-	-
4	Key counter set detection	Not set	Set
5	Grid PP leak detection		Normal
6	Charge PP leak detection		Normal
7	Toner collection motor sensor	Detect	Not detect

5-803-017 IOB-VODKA2-GPIO30

Bit	Description	1	0
0	Drum fan		Locked
1	Development unit fan 2		Locked
2	Development unit fan 1		Locked
3	Main intake fan	Locked	
4	Main intake fan	Locked	
5	Main exhaust fan	Locked	
6	PCU fan		Locked
7	Toner bottle fan		Locked

5-803-018 IOB-VODKA3-GPIO1

Bit	Description	1	0
0	DIP SW 8	Off	On
1	DIP SW 7	Off	On
2	DIP SW 6	Off	On
3	DIP SW 5	Off	On
4	DIP SW 4	Off	On
5	DIP SW 3	Off	On
6	DIP SW 2	Off	On
7	DIP SW 1	Off	On

5803	**[Input Check]**		
5-803-019	LD0 Iop Monitor	ENG	[0 to 999 / **0** / 0.1 mA / step]
5-803-020	LD1 Iop Monitor	ENG	[0 to 999 / **0** / 0.1 mA / step]
5-803-021	LD2 Iop Monitor	ENG	[0 to 999 / **0** / 0.1 mA / step]
5-803-022	LD3 Iop Monitor	ENG	[0 to 999 / **0** / 0.1 mA / step]
5-803-023	Capacitor Port 1	ENG	[0x00 to 0xFF / **0x00** / 1 / step]
5-803-024	Capacitor Port 5	ENG	[0x00 to 0xFF / **0x00** / 1 / step]
5-803-025	Capacitor Port 7	ENG	[0x00 to 0xFF / **0x00** / 1 / step]

5-803-026 IOB-VODKA3-GPIO12

Bit	Description	1	0
0	PCU fan 1		Locked
1	PCU fan 2		Locked
2	-	-	-
3	Used toner bottle set sensor	Not set	Set
4	Drum motor		Rated rotation
5	-	-	-
6	Development motor		Rated rotation
7	-	-	-

5-803-027 IOB-VODKA3-GPIO13

Bit	Description	1	0
0	-	-	-
1	Exit unit entrance sensor	No paper	Paper
2	Paper exit sensor	No paper	Paper
3	Turn sensor	Detect	Not detect
4	Fusing inner cover fan		Locked
5	Fusing pressure release sensor	Pressure released	
6	Exit unit set detection	Not set	Set
7	Web end sensor	Web end	

5-803-028 IOB-VODKA3-GPIO19

Bit	Description	1	0
0	-	-	-
1	Development PP error detection		Normal
2	Lever C1 open/close sensor	Open	Closed
3	CAPCNT: WAKEUP	Sleep	Boot
4	CAPCNT set detection	Not set	Set
5	65CPM unit set detection	Not set	Set
6	-	-	-
7	Used toner lock sensor	Detect	Not detect

5-803-029 IOB-VODKA3-GPIO22

Bit	Description	1	0
0	-	-	-
1	-	-	-
2	-	-	-
3	-	-	-
4	AC drive board fan		Locked
5	Used toner bottle full sensor	Full	Not full
6	Toner end sensor	Toner	No toner
7	Front door open/close detection	Open	Closed

5-803-030 IOB-VODKA3-GPIO26

Bit	Description	1	0
0	Total counter set detection	Set	Not set
1	Reserved	-	-
2	Reserved	-	-
3	Reserved	-	-
4	-	-	-
5	Hardware high temperature detection 1	Normal	
6	NC sensor high temperature detection	Normal	
7	-	-	-

5-803-031 IOB-VODKA3-GPIO30

Bit	Description	1	0
0	-	-	-
1	-	-	-
2	-	-	-
3	Bypass paper end sensor	No paper	Paper
4	Duplex fan		Locked
5	Guide open/close sensor	Open	Closed
6	Exit full sensor	Full	Not full
7	Bypass paper length sensor	No paper	Paper

5-803-032 IOB-VODKA2-EIMON1

Bit	Description	1	0
0	-	-	-
1	-	-	-
2	-	-	-
3	-	-	-
4	Relay sensor	No paper	Paper
5	-	-	-
6	Registration sensor	No paper	Paper
7	-	-	-

5-803-033 IOB-VODKA2-GPIO7

Bit	Description	1	0
0	-	-	-
1	-	-	-
2	Fusing exit motor	Rated rotation	-
3	-	-	-
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-

5-803-050 LCT Port1

Bit	Description	1	0
0	Paper feed motor	Normal	
1	-	-	-
2	-	-	-
3	-	-	-
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-

5-803-051 LCT Port2

Bit	Description	1	0
0	Paper supply cover open/close sensor	Open	Closed
1	Tray falling SW	Off	On
2	Paper detection	Not detect	Detect
3	Paper jam release open/close SW	Open	Closed
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-

5-803-052 LCT Port3

Bit	Description	1	0
0	Lower limit detection	Lower limit	
1	Paper end detection	No paper	Paper
2	Upper limit detection	Upper limit	
3	-	-	-
4	-	-	-
5	Paper feed sensor	No paper	Paper
6	-	-	-
7	-	-	-

5-803-053 LCT Port4

Bit	Description	1	0
0	Paper stack height detection 1 (near end)	Detect	Not detect
1	Paper stack height detection 2 (1500 pages)	Detect	Not detect
2	Paper stack height detection 3 (2500 pages)	Detect	Not detect
3	Paper stack height detection 4 (3500 pages)	Detect	Not detect
4	-	-	-
5	Blown fuse detection	Blown	Normal
6	-	-	-
7	-	-	-

5803	**[Input Check]**		
5-803-200	HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
5-803-201	Platen ADF Sensor	ENG	[0 or 1 / **0** / 1 / step]
5-803-202	Scanner fan lock signal	ENG	[0 to 3 / **0** / 1 / step]

ADF

6011	[1-Pass ADF INPUT Check]		
6-011-001	Original Length 1 (B5 Sensor)	ENG	[0 or 1 / **0** / 1 / step]
6-011-002	Original Length 2 (A4 Sensor)	ENG	[0 or 1 / **0** / 1 / step]
6-011-003	Original Length 3 (LG Sensor)	ENG	[0 or 1 / **0** / 1 / step]
6-011-004	Original Width 1	ENG	[0 or 1 / **0** / 1 / step]
6-011-005	Original Width 2	ENG	[0 or 1 / **0** / 1 / step]
6-011-006	Original Width 3	ENG	[0 or 1 / **0** / 1 / step]
6-011-007	Original Width 4	ENG	[0 or 1 / **0** / 1 / step]
6-011-008	Original Width 5	ENG	[0 or 1 / **0** / 1 / step]
6-011-009	Original Detection	ENG	[0 or 1 / **0** / 1 / step]
6-011-010	Separation Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-011-011	Skew Correction	ENG	[0 or 1 / **0** / 1 / step]
6-011-012	Scan Entrance Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-011-013	Registration Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-011-014	Exit Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-011-015	Feed Cover Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-011-016	Lift Up Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-011-018	Pick-Up Roller HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-011-021	Bottom Plate HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-011-022	Bottom Plate Position Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-011-023	Original Length 4 (LT/A4 Tail Sensor)	ENG	[0 or 1 / **0** / 1 / step]

2K/3K Finisher

6123	**[INPUT Check: 2K/3K FIN]**		
6-123-001	Entrance Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-002	Horizontal Transport Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-003	Switchback Transport Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-004	Proof Tray Exit Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-005	Shift Tray Exit Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-006	Booklet Stapler Exit Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-007	Paper Exit Open/Close Guide HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-008	Punch HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-009	Punch Move HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-010	S-to-S Registration Detection HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-011	Lower Junction Solenoid HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-012	Jogger HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-013	Positioning Roller HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-014	Feed-out HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-015	Stapler Moving HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-016	Booklet Stapler HP Sensor	ENG	[0 or 1 / **0** / 1 / step]

6-123-017	Booklet Jogger HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-018	Booklet Jog Solenoid HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-019	Booklet Standard Fence HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-020	Booklet Stapler HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-022	Folder Blade Cam HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-023	Folder Blade HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-024	Shift Roller HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-028	Drag Roller Vibrating HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-029	LE Guide HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-030	TE Stack Plate HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-031	Staple Tray Paper Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-032	ITB Paper Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-033	Booklet Stapler Transport Paper Sn: Upper	ENG	[0 or 1 / **0** / 1 / step]
6-123-034	Booklet Stapler Transport Paper Sn: Lower	ENG	[0 or 1 / **0** / 1 / step]
6-123-035	Paper Height Sensor: Shift	ENG	[0 or 1 / **0** / 1 / step]
6-123-036	Corner Stapler Paper Height Sensor 1	ENG	[0 or 1 / **0** / 1 / step]

6-123-037	Corner Stapler Paper Height Sensor 2	ENG	[0 or 1 / **0** / 1 / step]
6-123-038	Proof Tray Full Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-039	Booklet Stapler Full Sensor 1	ENG	[0 or 1 / **0** / 1 / step]
6-123-040	Booklet Stapler Full Sensor 2	ENG	[0 or 1 / **0** / 1 / step]
6-123-041	S-to-S Registration Detection Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-042	Punch RPS Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-043	Corner Stapler Leading Edge Detection Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-044	Corner Stapler Staple End Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-045	Booklet Stapler Staple End Sensor: Front	ENG	[0 or 1 / **0** / 1 / step]
6-123-046	Booklet Stapler Staple End Sensor: Rear	ENG	[0 or 1 / **0** / 1 / step]
6-123-047	Shift Tray Lower Limit Sensor 1	ENG	[0 or 1 / **0** / 1 / step]
6-123-048	Shift Tray Lower Limit Sensor 2	ENG	[0 or 1 / **0** / 1 / step]
6-123-049	Shift Tray Lower Limit Sensor 3	ENG	[0 or 1 / **0** / 1 / step]
6-123-050	Shift Tray Lower Limit Sensor 4	ENG	[0 or 1 / **0** / 1 / step]
6-123-051	Shift Tray Lower Limit Sensor 5	ENG	[0 or 1 / **0** / 1 / step]
6-123-052	Punch Chad Full Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-053	Punch Set Detection	ENG	[0 or 1 / **0** / 1 / step]

6-123-054	Shift Jogger Set Detection	ENG	[0 or 1 / **0** / 1 / step]
6-123-055	Booklet Stapler Set Detection	ENG	[0 or 1 / **0** / 1 / step]
6-123-056	Front Door SW	ENG	[0 or 1 / **0** / 1 / step]
6-123-057	Dynamic Roller Open/Close Guide Plate Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-058	Tray Upper Limit SW	ENG	[0 or 1 / **0** / 1 / step]
6-123-059	Paper Exit Open/Close Guide Plate Limit SW	ENG	[0 or 1 / **0** / 1 / step]
6-123-060	Punch Selection DIPSW 1	ENG	[0 or 1 / **0** / 1 / step]
6-123-061	Punch Selection DIPSW 2	ENG	[0 or 1 / **0** / 1 / step]
6-123-065	Paper Guide HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-123-066	Shift Jogger HP Sensor: Front	ENG	[0 or 1 / **0** / 1 / step]
6-123-067	Shift Jogger HP Sensor: Rear	ENG	[0 or 1 / **0** / 1 / step]
6-123-068	Shift Jogger Retraction HP Sensor: Upper	ENG	[0 or 1 / **0** / 1 / step]
6-123-069	Shift Jogger Retraction HP Sensor: Lower	ENG	[0 or 1 / **0** / 1 / step]

Finisher

6147	**[Finisher Input Check: Fin 2]**		
6-147-001	Entrance Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-002	Proof Exit Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-003	Shift Exit Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-004	Staple Exit Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-005	Tray Lower Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-006	Tray Near Lower Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-007	Stack Feed-out HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-008	Jogger HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-009	Shift HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-010	Stapler Moving HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-011	Staple HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-012	Staple Cartridge Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-013	Staple Tray Paper Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-014	Door Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-015	Punch Unit Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-016	Punch HP1 Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-017	Punch Chad Full Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-018	Paper Detection Sensor: Staple	ENG	[0 or 1 / **0** / 1 / step]
6-147-019	Paper Detection Sensor: Shift	ENG	[0 or 1 / **0** / 1 / step]

6-147-021	Proof Full Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-022	Stapler Moving HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-023	Staple Waste Hopper Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-024	Pre-stack Tray Paper Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-025	Hold HP Snsor	ENG	[0 or 1 / **0** / 1 / step]
6-147-026	Exit Guide HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-027	Stapler Reverse Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-028	Staper Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-029	Front Hold HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-030	Rear Hold HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-031	Knock Hold HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-032	Reverse Drive HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-033	Paper Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-034	Tray Lower Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-035	Punch HP 2 Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-036	Shift Jogger Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-037	Shift Jogger HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-038	Shift Jogger Release HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-039	Front Door Safty Switch	ENG	[0 or 1 / **0** / 1 / step]
6-147-040	Top Fence HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-147-041	Bottom Fence HP Sensor	ENG	[0 or 1 / **0** / 1 / step]

6-147-042	Lower Tray Full Sn (Z-Folded Papor)	ENG	[0 or 1 / **0** / 1 / step]
6-147-051	Staple Cartridge Set Sensor	ENG	[0 or 1 / **0** / 1 / step]

Slide Sort Tray

6250	**[INPUT Check Slide Sort Tray]**		
6-250-001	Transport Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-250-002	Shift Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-250-003	Lower Limit Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-250-004	Paper Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-250-005	Door Switch	ENG	[0 or 1 / **0** / 1 / step]

Multi Folder

6309	**[INPUT Check Multi Folder]**		
6-309-001	Entrance Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-309-002	Entrance JG HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-309-004	Registration Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-309-005	Dynamic Roller HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-309-006	Registration Roller HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-309-007	Fold Plate HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-309-008	Jogger Fence HP Sensor	ENG	[0 or 1 / **0** / 1 / step]

6-309-010	1st Stopper Paper Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-309-011	1st Stopper HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-309-012	2nd Stopper Paper Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-309-013	2nd Stopper HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-309-014	3rd Stopper Paper Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-309-015	3rd Stopper HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-309-016	Direct-Send JG HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-309-017	FM6 Pawl HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-309-018	Top Tray Paper Path Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-309-019	Top Tray Exit Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-309-020	Horizontal Path Exit Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-309-021	Top Tray Full Sensor (E)	ENG	[0 or 1 / **0** / 1 / step]
6-309-023	Front Door Switch (SW1)	ENG	[0 or 1 / **0** / 1 / step]
6-309-024	Horizontal Path Paper Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-309-025	Vertical Path Paper Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-309-026	Bypass Entrance Paper Sensor	ENG	[0 or 1 / **0** / 1 / step]
6-309-027	Bypass Exit Paper Sensor	ENG	[0 or 1 / **0** / 1 / step]

Print Post

6350	[Input Check Print Post]		
6-350-001	Paper Detect Sn 1	ENG	[0 or 1 / **0** / 1 / step]
6-350-002	Vert Transport Sn1:Bin1	ENG	[0 or 1 / **0** / 1 / step]
6-350-003	Paper Overflow Sn 1	ENG	[0 or 1 / **0** / 1 / step]
6-350-004	Paper Detect Sn 2	ENG	[0 or 1 / **0** / 1 / step]
6-350-005	Vert Transport Sn2:Bin3	ENG	[0 or 1 / **0** / 1 / step]
6-350-006	Paper Overflow Sn 2	ENG	[0 or 1 / **0** / 1 / step]
6-350-007	Paper Detect Sn 3	ENG	[0 or 1 / **0** / 1 / step]
6-350-008	Paper Overflow Sn 3	ENG	[0 or 1 / **0** / 1 / step]
6-350-009	Paper Detect Sn 4	ENG	[0 or 1 / **0** / 1 / step]
6-350-010	Vert Transport Sn3:Bin5	ENG	[0 or 1 / **0** / 1 / step]
6-350-011	Paper Overflow Sn 4	ENG	[0 or 1 / **0** / 1 / step]
6-350-012	Paper Detect Sn 5	ENG	[0 or 1 / **0** / 1 / step]
6-350-013	Paper Overflow Sn 5	ENG	[0 or 1 / **0** / 1 / step]
6-350-014	Paper Detect Sn 6	ENG	[0 or 1 / **0** / 1 / step]
6-350-015	Vert Transport Sn4:Bin7	ENG	[0 or 1 / **0** / 1 / step]
6-350-016	Paper Overflow Sn 6	ENG	[0 or 1 / **0** / 1 / step]
6-350-017	Paper Detect Sn 7	ENG	[0 or 1 / **0** / 1 / step]
6-350-018	Paper Overflow Sn 7	ENG	[0 or 1 / **0** / 1 / step]
6-350-019	Paper Detect Sn 8	ENG	[0 or 1 / **0** / 1 / step]
6-350-020	Vert Transport Sn5:Bin9	ENG	[0 or 1 / **0** / 1 / step]
6-350-021	Paper Overflow Sn 8	ENG	[0 or 1 / **0** / 1 / step]
6-350-022	Paper Detect Sn 9	ENG	[0 or 1 / **0** / 1 / step]
6-350-023	Paper Overflow Sn 9	ENG	[0 or 1 / **0** / 1 / step]

6-350-024	Door Open Switch	ENG	[0 or 1 / **0** / 1 / step]

1-Tray CIT

6451	**[INPUT Check:1-Tray CIT]**		
6451001	Paper Feed Cover Sensor	ENG	[0 or 1 / **0** / 1 / step]
6451002	Bottom Plate HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6451003	Paper Near End Sensor	ENG	[0 or 1 / **0** / 1 / step]
6451004	Paper Set Sensor	ENG	[0 or 1 / **0** / 1 / step]
6451005	Bottom Plate HP Sensor	ENG	[0 or 1 / **0** / 1 / step]
6451006	Grip Sensor	ENG	[0 or 1 / **0** / 1 / step]
6451007	Guide Plate Set Sensor	ENG	[0 or 1 / **0** / 1 / step]
6451008	Exit Sensor	ENG	[0 or 1 / **0** / 1 / step]
6451009	Paper Set Sensor	ENG	[0 or 1 / **0** / 1 / step]
6451010	Width Sensor 1	ENG	[0 or 1 / **0** / 1 / step]
6451011	Width Sensor 2	ENG	[0 or 1 / **0** / 1 / step]
6451012	Width Sensor 3	ENG	[0 or 1 / **0** / 1 / step]
6451013	Length Sensor 1	ENG	[0 or 1 / **0** / 1 / step]
6451014	Length Sensor 2	ENG	[0 or 1 / **0** / 1 / step]
6451015	Length Sensor 3	ENG	[0 or 1 / **0** / 1 / step]

2.8.2 OUTPUT CHECK TABLE

Activates the electrical components for functional check.

It is not possible to activate more than one component at the same time.

Main Machine, LTC

5804	**[Output Check]**		
5-804-001	Feed Motor 1	ENG	[0 or 1 / **0** / 0 / step]
5-804-002	Feed Motor 2	ENG	[0 or 1 / **0** / 0 / step]
5-804-003	Feed Motor 3	ENG	[0 or 1 / **0** / 0 / step]
5-804-004	Feed Motor 4	ENG	[0 or 1 / **0** / 0 / step]
5-804-005	By-pass Feed Clutch	ENG	[0 or 1 / **0** / 0 / step]
5-804-006	LCT Feed Motor	ENG	[0 or 1 / **0** / 1 / step]
5-804-009	Pick-up SOL 1	ENG	[0 or 1 / **0** / 0 / step]
5-804-010	Pick-up SOL 2	ENG	[0 or 1 / **0** / 0 / step]
5-804-011	Pick-up SOL 3	ENG	[0 or 1 / **0** / 0 / step]
5-804-012	Pick-up SOL 4	ENG	[0 or 1 / **0** / 0 / step]
5-804-013	By-pass Pick-up SOL	ENG	[0 or 1 / **0** / 0 / step]
5-804-014	LCT Pick-up SOL	ENG	[0 or 1 / **0** / 1 / step]
5-804-017	Reverse Release SOL 1	ENG	[0 or 1 / **0** / 0 / step]
5-804-018	Reverse Release SOL 2	ENG	[0 or 1 / **0** / 0 / step]
5-804-019	Reverse Release SOL 3	ENG	[0 or 1 / **0** / 0 / step]
5-804-020	Reverse Release SOL 4	ENG	[0 or 1 / **0** / 0 / step]
5-804-022	Tandem Connection Release SOL	ENG	[0 or 1 / **0** / 0 / step]

5-804-023	Left Tandem Lock SOL	ENG	[0 or 1 / **0** / 0 / step]
5-804-024	Tandem Transport Motor	ENG	[0 or 1 / **0** / 0 / step]
5-804-027	Relay Motor	ENG	[0 or 1 / **0** / 0 / step]
5-804-028	Main Motor	ENG	[0 or 1 / **0** / 0 / step]
5-804-031	Fusing Discharge Motor	ENG	[0 or 1 / **0** / 0 / step]
5-804-032	Fusing Removal Motor	ENG	[0 or 1 / **0** / 1 / step]
5-804-039	Registration Motor	ENG	[0 or 1 / **0** / 0 / step]
5-804-040	Guide Plate Release SOL	ENG	[0 or 1 / **0** / 0 / step]
5-804-041	Exit Junction SOL	ENG	[0 or 1 / **0** / 1 / step]
5-804-043	Inverter Duplex Motor	ENG	[0 or 1 / **0** / 0 / step]
5-804-044	Duplex Transport Motor	ENG	[0 or 1 / **0** / 0 / step]
5-804-045	Duplex Entrance Gate SOL	ENG	[0 or 1 / **0** / 0 / step]
5-804-046	Inverter Jogger SOL	ENG	[0 or 1 / **0** / 0 / step]
5-804-048	Duplex Jogger	ENG	[0 or 1 / **0** / 0 / step]
5-804-052	Toner Supply CL	ENG	[0 or 1 / **0** / 0 / step]
5-804-053	Development Motor	ENG	[0 or 1 / **0** / 0 / step]
5-804-054	Used Toner Motor	ENG	[0 or 1 / **0** / 0 / step]
5-804-055	Web Motor	ENG	[0 or 1 / **0** / 1 / step]
5-804-056	Toner Bottle Motor	ENG	[0 or 1 / **0** / 0 / step]
5-804-057	Transfer/Separation SOL	ENG	[0 or 1 / **0** / 0 / step]

5-804-062	Quenching Lamp	ENG	[0 or 1 / **0** / 0 / step]
5-804-063	Charge Corona	ENG	[0 or 1 / **0** / 0 / step]
5-804-064	Grid Wire	ENG	[0 or 1 / **0** / 0 / step]
5-804-067	Development Bias	ENG	[0 or 1 / **0** / 0 / step]
5-804-069	Transfer Bias	ENG	[0 or 1 / **0** / 0 / step]
5-804-070	ID Sensor LED	ENG	[0 or 1 / **0** / 0 / step]
5-804-073	New Toner Bottle Cooling Fan	ENG	[0 or 1 / **0** / 0 / step]
5-804-074	Development Unit Fan 1	ENG	[0 or 1 / **0** / 0 / step]
5-804-075	Duplex Unit Fan	ENG	[0 or 1 / **0** / 0 / step]
5-804-076	Main Ventilation Fan	ENG	[0 or 1 / **0** / 0 / step]
5-804-077	Main Suction Fan	ENG	[0 or 1 / **0** / 0 / step]
5-804-078	Drum Cooling Fan	ENG	[0 or 1 / **0** / 0 / step]
5-804-079	OPC Fan	ENG	[0 or 1 / **0** / 0 / step]
5-804-084	Total Counter	ENG	[0 or 1 / **0** / 0 / step]
5-804-098	Status Lamp (Green)	ENG	[0 or 1 / **0** / 0 / step]
5-804-099	Status Lamp (Red)	ENG	[0 or 1 / **0** / 0 / step]
5-804-100	PTL	ENG	[0 or 1 / **0** / 0 / step]
5-804-101	LD0 DC Lamp	ENG	[0 or 1 / **0** / 0 / step]
5-804-102	LD1 DC Lamp	ENG	[0 or 1 / **0** / 0 / step]
5-804-103	LD2 DC Lamp	ENG	[0 or 1 / **0** / 0 / step]
5-804-104	LD3 DC Lamp	ENG	[0 or 1 / **0** / 0 / step]
5-804-111	Development Unit Fan 2	ENG	[0 or 1 / **0** / 0 / step]
5-804-112	Fusing Exit Inner Cover Fan	ENG	[0 or 1 / **0** / 0 / step]

5-804-113	PSU Cooling Fan 1	ENG	[0 or 1 / **0** / 0 / step]
5-804-114	PSU Cooling Fan 2	ENG	[0 or 1 / **0** / 0 / step]
5-804-115	AC Cooling Fan	ENG	[0 or 1 / **0** / 0 / step]
5-804-116	Controller Exhaust Fan	ENG	[0 or 1 / **0** / 0 / step]
5-804-117	Capacitor Cooling Fan	ENG	[0 or 1 / **0** / 0 / step]
5-804-118	Exhaust Heat Fan	ENG	[0 or 1 / **0** / 0 / step]
5-804-120	Paper Feeding Fan 1	ENG	[0 or 1 / **0** / 0 / step]
5-804-121	Paper Feeding Fan 2	ENG	[0 or 1 / **0** / 0 / step]
5-804-122	Paper Feeding Fan 3	ENG	[0 or 1 / **0** / 0 / step]
5-804-123	Paper Feeding Fan 4	ENG	[0 or 1 / **0** / 0 / step]
5-804-150	LED A	ENG	[0 or 1 / **0** / 0 / step]
5-804-151	LED B1	ENG	[0 or 1 / **0** / 0 / step]
5-804-152	LED B2	ENG	[0 or 1 / **0** / 0 / step]
5-804-153	LED C1	ENG	[0 or 1 / **0** / 0 / step]
5-804-154	LED C2	ENG	[0 or 1 / **0** / 0 / step]
5-804-155	LED D1/E1	ENG	[0 or 1 / **0** / 0 / step]
5-804-156	LED D2/D3	ENG	[0 or 1 / **0** / 0 / step]
5-804-157	LED E2/Z	ENG	[0 or 1 / **0** / 0 / step]
5-804-158	LED Front Cover	ENG	[0 or 1 / **0** / 0 / step]
5-804-159	LED ALL	ENG	[0 or 1 / **0** / 0 / step]
5-804-161	Tray 1 Lift Motor (Up: 1sec)	ENG	[0 or 1 / **0** / 0 / step]
5-804-162	Tray 1 Lift Motor (Down: 1sec)	ENG	[0 or 1 / **0** / 0 / step]
5-804-163	Tray 2 Lift Motor (Up: 1sec)	ENG	[0 or 1 / **0** / 0 / step]

5-804-164	Tray 2 Lift Motor (Down: 1sec)	ENG	[0 or 1 / **0** / 0 / step]
5-804-165	Tray 3 Lift Motor (Up: 1sec)	ENG	[0 or 1 / **0** / 0 / step]
5-804-166	Tray 3 Lift Motor (Down: 1sec)	ENG	[0 or 1 / **0** / 0 / step]
5-804-167	Tray 4 Lift Motor (Up: 1sec)	ENG	[0 or 1 / **0** / 0 / step]
5-804-168	Tray 4 Lift Motor (Down: 1sec)	ENG	[0 or 1 / **0** / 0 / step]
5-804-169	Front End Fence SOL	ENG	[0 or 1 / **0** / 0 / step]
5-804-170	Rear End Fence SOL	ENG	[0 or 1 / **0** / 0 / step]
5-804-171	Back Fence Open/Close Motor	ENG	[0 or 1 / **0** / 0 / step]
5-804-200	Scanner fanmotor	ENG	[0 to 2 / **1** / 1 / step]
5-804-202	Scanner Lamp	ENG	[0 or 1 / **0** / 1 / step]
5-804-203	Scanner Motor	ENG	[0 or 1 / **1** / 1 / step]

ADF

6012	**[1-Pass ADF OUTPUT Check]**		
6-012-001	Pick-Up Motor Forward	ENG	[0 or 1 / **0** / 1 / step]
6-012-003	Feed Motor Forward	ENG	[0 or 1 / **0** / 1 / step]
6-012-005	Relay Motor Forward	ENG	[0 or 1 / **0** / 1 / step]
6-012-009	Exit Motor Forward	ENG	[0 or 1 / **0** / 1 / step]
6-012-010	Bottom Plate Motor For/Rev	ENG	[0 or 1 / **0** / 1 / step]
6-012-012	Stamp	ENG	[0 or 1 / **0** / 1 / step]
6-012-015	Pull-Out Motor Forward	ENG	[0 or 1 / **0** / 1 / step]
6-012-016	Middle Motor Forward	ENG	[0 or 1 / **0** / 1 / step]

2K/3K Finisher

6124	**[OUTPUT Check: 2K/3K FIN]**		
6-124-001	Entrance Transport Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-002	Horizontal Transport Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-003	Pre-Stack Transport Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-004	ITB Transport Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-005	Paper Exit Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-006	Upper Junction Solenoid	ENG	[0 or 1 / **0** / 1 / step]
6-124-007	TE Stack Plate Motor	ENG	[0 or 1 / **0** / 1 / step]

6-124-008	Paper Exit Open/Close Guide Plate Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-009	Punching Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-010	Punch Move Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-011	S-to-S Registration Detection Move Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-012	Lower Junction Solenoid Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-013	Jogger Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-014	Positioning Roller Rotation Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-015	Feed-out Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-016	Booklet Stapler Move Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-017	Corner Stapler Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-018	Booklet Stapler Jogger Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-019	Booklet Stapler Jog Solenoid Move Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-020	Booklet Stapler Standard Fence Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-021	Booklet Stapler Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-022	Dynamic Roller Transport Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-023	Folder Transport Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-025	Square-fold Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-026	Tray Lift Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-027	Shift Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-028	Front Shift Jogger Motor	ENG	[0 or 1 / **0** / 1 / step]

6-124-029	Rear Shift Jogger Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-030	Shift Jogger Retraction Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-031	Drag Roller Vibrating Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-032	LE Guide Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-033	Navigation LED (All)	ENG	[0 or 1 / **0** / 1 / step]
6-124-037	Positioning Roller Transport Motor	ENG	[0 or 1 / **0** / 1 / step]
6-124-038	Paper Guide Motor	ENG	[0 or 1 / **0** / 1 / step]

Finisher

6148	**[Finisher Output Check: Fin 2]**		
6-148-001	Main Motor	ENG	[0 or 1 / **0** / 1 / step]
6-148-002	Shift Tray Exit Motor	ENG	[0 or 1 / **0** / 1 / step]
6-148-003	Proof Junction Gate SOL	ENG	[0 or 1 / **0** / 1 / step]
6-148-004	Shift Relay Motor	ENG	[0 or 1 / **0** / 1 / step]
6-148-005	Jogger Motor	ENG	[0 or 1 / **0** / 1 / step]
6-148-006	Stapler Moving Motor	ENG	[0 or 1 / **0** / 1 / step]
6-148-007	Stapler Motor	ENG	[0 or 1 / **0** / 1 / step]
6-148-008	Punch Motor	ENG	[0 or 1 / **0** / 1 / step]
6-148-009	Stapler Solenoid	ENG	[0 or 1 / **0** / 1 / step]
6-148-010	Knock Roller Motor	ENG	[0 or 1 / **0** / 1 / step]
6-148-011	Stack Feed-out Motor	ENG	[0 or 1 / **0** / 1 / step]
6-148-012	Shift Motor	ENG	[0 or 1 / **0** / 1 / step]

6-148-013	Staple Lift Motor	ENG	[0 or 1 / **0** / 1 / step]
6-148-014	Staple Exit Motor	ENG	[0 or 1 / **0** / 1 / step]
6-148-015	Exit Motor	ENG	[0 or 1 / **0** / 1 / step]
6-148-016	Hold Motor	ENG	[0 or 1 / **0** / 1 / step]
6-148-017	Pre-stack Solenoid	ENG	[0 or 1 / **0** / 1 / step]
6-148-018	Guide Solenoid	ENG	[0 or 1 / **0** / 1 / step]
6-148-019	Front Hold Motor	ENG	[0 or 1 / **0** / 1 / step]
6-148-020	Rear Hold Motor	ENG	[0 or 1 / **0** / 1 / step]
6-148-021	Reverse Drive Motor	ENG	[0 or 1 / **0** / 1 / step]
6-148-022	Reverse Feed Motor	ENG	[0 or 1 / **0** / 1 / step]
6-148-023	Exit Jogger Motor	ENG	[0 or 1 / **0** / 1 / step]
6-148-024	Exit Jogger Release Motor	ENG	[0 or 1 / **0** / 1 / step]
6-148-025	Jogger Top Fence Motor	ENG	[0 or 1 / **0** / 1 / step]
6-148-026	Jogger Bottome Fence Motor	ENG	[0 or 1 / **0** / 1 / step]
6-148-032	Stapler Release Solenoid	ENG	[0 or 1 / **0** / 1 / step]

Slide Sort Tray

6251	**[OUTPUT Check Slide Sort Tray]**		
6-251-001	Transport Motor:Continuous	ENG	[0 or 1 / **0** / 1 / step]
6-251-002	Transport Moter:1 Op	ENG	[0 or 1 / **0** / 1 / step]
6-251-003	Shift Moter:1 Op	ENG	[0 or 1 / **0** / 1 / step]
6-251-004	Tray Lift Motor:Up	ENG	[0 or 1 / **0** / 1 / step]
6-251-005	Tray Lift Motor:Down	ENG	[0 or 1 / **0** / 1 / step]
6-251-006	Tray Lift Moter:1 Op	ENG	[0 or 1 / **0** / 1 / step]

Multi Folder

6310	**[Output Check Multi Folder]**		
6-310-001	Horizontal Transport Motor	ENG	[0 or 1 / **0** / 1 / step]
6-310-002	Top Tray Transport Motor	ENG	[0 or 1 / **0** / 1 / step]
6-310-003	Top Tray Exit Motor	ENG	[0 or 1 / **0** / 1 / step]
6-310-004	Dynamic Roller Transport Motor	ENG	[0 or 1 / **0** / 1 / step]
6-310-005	Registration Roller Transport Motor	ENG	[0 or 1 / **0** / 1 / step]
6-310-007	Entrance JG Motor	ENG	[0 or 1 / **0** / 1 / step]
6-310-008	1st Stopper Motor	ENG	[0 or 1 / **0** / 1 / step]
6-310-009	2nd Stopper Motor	ENG	[0 or 1 / **0** / 1 / step]
6-310-010	3rd Stopper Motor	ENG	[0 or 1 / **0** / 1 / step]

6-310-011	Dynamic Roller Lift Motor	ENG	[0 or 1 / **0** / 1 / step]
6-310-012	Registration Roller Release Motor	ENG	[0 or 1 / **0** / 1 / step]
6-310-013	Fold Plate Motor	ENG	[0 or 1 / **0** / 1 / step]
6-310-014	Jogger Fence Motor	ENG	[0 or 1 / **0** / 1 / step]
6-310-016	Direct-Send JG Motor	ENG	[0 or 1 / **0** / 1 / step]
6-310-017	FM6 Pawl Motor	ENG	[0 or 1 / **0** / 1 / step]
6-310-018	1st Fold Motor	ENG	[0 or 1 / **0** / 1 / step]
6-310-019	2nd Fold Motor	ENG	[0 or 1 / **0** / 1 / step]
6-310-020	Crease Motor	ENG	[0 or 1 / **0** / 1 / step]
6-310-021	Bypass JG Solenoid	ENG	[0 or 1 / **0** / 1 / step]
6-310-022	Exit JG Solenoid	ENG	[0 or 1 / **0** / 1 / step]
6-310-023	Top Tray JG Solenoid	ENG	[0 or 1 / **0** / 1 / step]
6-310-024	LE Stop Pawl Solenoid	ENG	[0 or 1 / **0** / 1 / step]
6-310-025	Reverse JG Solenoid	ENG	[0 or 1 / **0** / 1 / step]
6-310-026	Horizontal Exit Motor	ENG	[0 or 1 / **0** / 1 / step]

Print Post

6351	**[Output Check Print Post]**		
6-351-001	Vert Transport Motor	ENG	[0 or 1 / **0** / 1 / step]
6-351-002	Junction Gate SOL1	ENG	[0 or 1 / **0** / 1 / step]
6-351-003	Turn Gate SOL1	ENG	[0 or 1 / **0** / 1 / step]
6-351-004	Turn Gate SOL2	ENG	[0 or 1 / **0** / 1 / step]
6-351-005	Turn Gate SOL3	ENG	[0 or 1 / **0** / 1 / step]
6-351-006	Turn Gate SOL4	ENG	[0 or 1 / **0** / 1 / step]
6-351-007	Turn Gate SOL5	ENG	[0 or 1 / **0** / 1 / step]
6-351-008	Turn Gate SOL6	ENG	[0 or 1 / **0** / 1 / step]
6-351-009	Turn Gate SOL7	ENG	[0 or 1 / **0** / 1 / step]
6-351-010	Turn Gate SOL8	ENG	[0 or 1 / **0** / 1 / step]

APPENDIX:

CONTROLLER SP MODE TABLES

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

3. CONTROLLER SP MODE TABLES

3.1 CONTROLLER SP TABLES-5

3.1.1 SP5-XXX (MODE)

5009	**[Add Display Language]**		
	Adds language available in user choice. (Only the languages registered in the machine) Refer to the displayed language list to set in the way showed below. List Number Assigned Bit Switch No.1 to 8 BIT1 to 8 (SP5009-201) No.9 to 16BIT1 to 8 (SP5009-202) No.17 to 24BIT1 to 8 (SP5009-203) No.25 to 32BIT1 to 8 (SP5009-204) No.33 to 40BIT1 to 8 (SP5009-205) No.41 to 48BIT1 to 8 (SP5009-206) No.49 to 56BIT1 to 8 (SP5009-207) Example: To add American(No.3 in the list) or Czech (No.15) Turn Bit 3 of “SP5009-201” 0 to 1 for American. Turn Bit 7 of “SP5009-202” 0 to 1 for Czech. After setting, turn the main power switch off and on to make the setting valid.		
5-009-201	1-8	*CTL	[0 to 255 / **0** / 1]
5-009-202	9-16	*CTL	[0 to 255 / **0** / 1]
5-009-203	17-24	*CTL	[0 to 255 / **0** / 1]
5-009-204	25-32	*CTL	[0 to 255 / **0** / 1]
5-009-205	33-40	*CTL	[0 to 255 / **0** / 1]
5-009-206	41-48	*CTL	[0 to 255 / **0** / 1]
5-009-207	49-56	*CTL	[0 to 255 / **0** / 1]

5024	[mm/inch Display Selection]		
	Display units (mm or inch) for custom paper sizes.		
5-024-001	0:mm 1:inch	*CTL	[0 or 1 / **1(NA), 0(Others)** / 1] 0: mm 1: inch

5045	[Accounting counter]		
5-045-001	Counter Method	*CTL	[0 to 7 / **1** / step] 0: Developments 1: Prints 2: Coverage 7: Coverage (YMC)

5047	[Paper Display]		
5-047-001	Backing Paper	*CTL	[0 or 1 / **0** / 1] 0: OFF 1: ON

5055	[Display IP Address]		
5-055-001	-	*CTL	[0 or 1 / **0** / 1] 0: OFF 1: ON

5062	[Parts Replacement Alert Display]		
5-062-001	Developer	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-002	Fuser Unit:Fusing Roller	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display

5-062-003	Fuser Unit:Pressure Roller	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-004	Fuser Unit:FusingR:Bearings	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-005	Fuser Unit:PressR:Bearings	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-006	Hot Roller Strippers	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-007	Cleaning Roller	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-008	Cleaning Roller Bearings	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-009	Web Roll	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-010	Web Cleaning Roller	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-011	Development Filter	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-012	Toner Recycling Unit	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-013	Pressure Release Filter	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display

5-062-014	Charge Corona Wire	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-015	Grid Plate	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-016	Cleaning Pad	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-017	Clearning Blead	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-018	Cleaning Brush	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-019	Transfer Belt	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-020	Transfer Belt Cleaning Blade	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-022	ADF Pick-up Roller	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-023	ADF Feed Belt	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-024	ADF Separation Roller	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-025	Tray1:Pickup Roller	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display

5-062-026	Tray1:Feed Roller	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-027	Tray1:Separate Roller	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-028	Tray2:Pickup Roller	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-029	Tray2:Feed Roller	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-030	Tray2:Separate Roller	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-031	Feed Roller-Tray3	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-032	Pick-up Roller-Tray3	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-033	Separation Roller-Tray3	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-034	Feed Roller-Tray4	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-035	Pick-up Roller-Tray4	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-036	Separation Roller-Tray4	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display

5-062-037	Feed Roller-LCT	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-038	Pick-up Roller-LCT	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-039	Separation Roller-LCT	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-040	Feed Belt Cover feeder	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-041	Pick-up Roller Cover feeder	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-042	Separation Roller Cover feeder	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-044	Thermistor Fusing unit Rearr	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-045	Thermistor Fusing unit Center	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-046	Dust Filter	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-047	Main Tray(Custom 1)	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-048	Main Tray(Custom 2)	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display

5-062-049	Main Tray(Custom 3)	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-050	Main Tray(Custom 4)	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-051	Paper Tray1 (Custom 1)	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-052	Paper Tray1 (Custom 2)	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-053	Paper Tray2 (Custom 1)	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-054	Paper Tray2 (Custom 2)	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-055	Paper Tray3 (Custom 1)	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-056	Paper Tray3 (Custom 2)	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-057	Paper Tray4 (Custom 1)	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-058	Paper Tray4 (Custom 2)	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-059	LCT(Custom 1)	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display

5-062-060	LCT(Custom 2)	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-063	Interposer(Custom 1)	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-064	Interposer(Custom 2)	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-065	Wast Toner Bottle	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display
5-062-066	Ozon Filter (Custom 1)	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display

5066	**[PM Parts Display]**		
5-066-001	-	*CTL	[0 or 1 / **0** / 1] 0: Not display 1: Display

5067	**[Part Replacement Operation Type]**		
5-067-001	Developer	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-002	Fuser Unit:Fusing Roller	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-003	Fuser Unit:Pressure Roller	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User

5-067-004	Fuser Unit:FusingR:Bearings	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-005	Fuser Unit:PressR:Bearings	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-006	Hot Roller Strippers	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-007	Cleaning Roller	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-008	Cleaning Roller Bearings	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-009	Web Roll	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-010	Web Cleaning Roller	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-011	Development Filter	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-012	Toner Recycling Unit	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-013	Pressure Release Filter	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-014	Charge Corona Wire	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User

5-067-015	Grid Plate	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-016	Cleaning Pad	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-017	Clearning Blead	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-018	Cleaning Brush	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-019	Transfer Belt	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-020	Transfer Belt Cleaning Blade	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-022	ADF Pick-up Roller	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-023	ADF Feed Belt	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-024	ADF Separation Roller	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-025	Tray1:Pickup Roller	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-026	Tray1:Feed Roller	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User

5-067-027	Tray1:Separate Roller	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-028	Tray2:Pickup Roller	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-029	Tray2:Feed Roller	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-030	Tray2:Separate Roller	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-031	Feed Roller-Tray3	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-032	Pick-up Roller-Tray3	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-033	Separation Roller-Tray3	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-034	Feed Roller-Tray4	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-035	Pick-up Roller-Tray4	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-036	Separation Roller-Tray4	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-037	Feed Roller-LCT	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User

5-067-038	Pick-up Roller-LCT	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-039	Separation Roller-LCT	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-040	Feed Belt Cover feeder	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-041	Pick-up Roller Cover feeder	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-042	Separation Roller Cover feeder	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-044	Thermistor Fusing unit Rearr	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-045	Thermistor Fusing unit Center	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-046	Dust Filter	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-047	Main Tray(Custom 1)	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-048	Main Tray(Custom 2)	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-049	Main Tray(Custom 3)	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User

5-067-050	Main Tray(Custom 4)	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-051	Paper Tray1 (Custom 1)	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-052	Paper Tray1 (Custom 2)	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-053	Paper Tray2 (Custom 1)	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-054	Paper Tray2 (Custom 2)	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-055	Paper Tray3 (Custom 1)	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-056	Paper Tray3 (Custom 2)	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-057	Paper Tray4 (Custom 1)	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-058	Paper Tray4 (Custom 2)	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-059	LCT(Custom 1)	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-060	LCT(Custom 2)	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User

5-067-063	Interposer(Custom 1)	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-064	Interposer(Custom 2)	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-065	Wast Toner Bottle	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User
5-067-066	Ozon Filter (Custom 1)	*CTL	[0 or 1 / **0** / 1] 0: Service 1: User

5071	**[Set Bypass Paper Size Display]**		
5-071-001	-	CTL	[0 or 1 / **0** / 1] 0: Off 1: On

5074	**[Home Screen Login]**		
5-074-002	Login Setting	*CTL	[0 to 255 / **0** / 1]
5-074-050	Show Home Edit Menu	*CTL	[0 to 2 / **0** / 1]
5-074-091	Function Setting	*CTL	[0 to 2 / **0** / 1] 0: Function disable 1: SDK application 2: Legacy application (reserved)
5-074-092	Product ID	*CTL	[0x00000000 to 0xffffffff / **0** / 1]
5-074-093	Application Screen ID	*CTL	[0 to 255 / **0** / 1]

5075	**[USB Keyboard]**		
5-075-003	Display setting	*CTL	[0 or 1 / **0** / 1] 0: Disable 1: Enable

5081	[ServiceSP Entery Code Setting]		
	DFU		
5-081-001	-	-	-

5083	[LED Light Switch Setting]		
5-083-001	Toner Near End	*CTL	[0 or 1 / **0** / 1] 0: OFF 1: ON
5-083-002	Waste Toner Near End	*CTL	[0 or 1 / **0** / 1]

5101	[Copy Auto Clear Setting]		
5-101-202	Auto Clear Timer Setting (0:ON 1:OFF)	*CTL	[0 or 1 / **0** / 1]

5102	[AutoDetect]		
5-102-203	HumanDetectSetting	*CTL	[0 or 1 / **0** / 1]

5112	[Non-Std. Paper Sel.]		
5-112-001	(0:OFF 1:ON)	*CTL	[0 or 1 / **0** / 1] 0: Not installed 1: Installed (scanning accounting)

5113	[Optional Counter Type]		
5-113-001	Default Optional Counter Type	*CTL	[0 to 12 / **0** / 1] 0: Not installed 1: Installed (scanning accounting)
5-113-002	External Optional Counter Type	*CTL	[0 to 3 / **0** / 1] 0: Not installed 1: Installed (scanning accounting)

5114	**[Optional Counter I/F]**		
5-114-001	MF Key Card Extension	*CTL	[0 or 1 / **0** / 1] 0: Not installed 1: Installed (scanning accounting)

5118	**[Disable Copying]**		
5-118-001	-	*CTL	[0 or 1 / **0** / 1] 0: Not disabled 1: Disabled

5120	**[Mode Clear Opt. Counter Removal]**		
5-120-001	0:Yes 1:StandBy 2:No	*CTL	[0 to 2 / **0** / 1] 0: Yes (removed) 1: Standby (installed but not used) 2: No (not removed)

5121	**[Counter Up Timing]**		
5-121-001	0:Feed 1:Exit	*CTL	[0 or 1 / **0** / 1] 0: Feed 1: Exit

5127	**[APS OFF Mode]**		
5-127-001	-	*CTL	[0 or 1 / **0** / 1] 0: Not disabled 1: Disabled

5150	**[Length Setting]**		
5-150-001	Bypass(0:OFF 1:Long)	CTL	[0 or 1 / **0** / 1] 0: OFF 1: ON

5162	[App. Switch Method]		
5-162-001	-	*CTL	[0 or 1 / **0** / 1] 0: Soft Key Set 1: Hard Key Set

5167	[Fax Printing Mode at Optional Counter Off]		
5-167-001	-	*CTL	[0 or 1 / **0** / 1] 0: Automatic printing 1: No automatic printing

5169	[CE Login]		
5-169-001	-	*CTL	[0 or 1 / **0** / 1] 0: Disabled 1: Enabled

5182	[HDD Pages Mgmt]		
5-182-001	Release LS Limit	*CTL	[0 or 1 / **0** / 0]

5188	[Copy Nv Version]		
5-188-001	-	*CTL	[- / **-** / -]

5191	[Mode Set]		
5-191-001	Power Str Set	*CTL	[0 or 1 / **1** / 1] 0: OFF 1: ON

5195	[Limitless SW]		
5-195-001	-	*CTL	[0 or 1 / **0** / 1] 0: Productivity Precede 1: Use paper up

5199	**[Paper Exit After Staple End]**		
5-199-001	Staple(1:Without 2:After 0:Auto)	CTL	[0 to 2 / **0** / 1]
5-199-002	Saddle(1:Without 2:After 0:Auto)	CTL	[0 or 1 / **0** / 1]

5212	**[Page Numbering]**		
5-212-003	Duplex Printout Left/Right Position of Left/Right Facing	*CTL	[-1000 to 1000 / **0** / 0.01mm/step]
5-212-004	Duplex Printout Top/Bottom Position of Left/Right Facing	*CTL	[-1000 to 1000 / **0** / 0.01mm/step]
5-212-018	Duplex Printout Left/Right Position of Top/Bottom Facing	*CTL	[-1000 to 1000 / **0** / 0.01mm/step]
5-212-019	Duplex Printout Top/Bottom Position of Top/Bottom Facing	*CTL	[-1000 to 1000 / **0** / 0.01mm/step]

5227	**[Page numbering]**		
5-227-201	Allow Page No. Entry	*CTL	[2 to 9 / **9** / 1]
5-227-202	Zero Surplus Stting	*CTL	[0 or 1 / **0** / 1] 0:OFF 1:ON

5302	**[Set Time]**

	Adjusts the RTC (real time clock) time setting for the local time zone. Examples: For Japan (+9 GMT), enter 540 (9 hours x 60 min.) DOM: +540 (Tokyo) NA: -300 (New York) EU: + 60 (Paris) CH: +480 (Beijing) TW: +480 (Taipei) AS: +480 (Hong Kong)		
5-302-002	Time Difference	*CTL	[-1440 to 1440 / **-** / 1 min / step]

5305	**[Auto Off Set]**		
5-305-101	Auto Off Limit Set	*CTL	[0 or 1 / **0** / 1]

5307	**[Daylight Saving Time]**		
5-307-001	Setting	*CTL	[0 or 1 / **-** / 1] 0: Disabled 1: Enabled (Default) 1: NA and EUR 0: ASIA and others
	Enables or disables the summer time mode. Note ▪ Make sure that both SP5-307-3 and -4 are correctly set. Otherwise, this SP is not activated even if this SP is set to "1".		
5-307-003	Rule Set(Start)	*CTL	[0 to 0xffffffff / **-** / 1] (Default) NA: 0x03200210 EUR: 0x03500010 ASIA: 0x10500010 Other: 0x00000000

	Specifies the start setting for the summer time mode. There are 8 digits in this SP. For months 1 to 9, the "0" cannot be input in the first digit, so the eight-digit setting for -2 or -3 becomes a seven-digit setting. 1st and 2nd digits: The month. [1 to 12] 3rd digit: The week of the month. [1 to 5] 4th digit: The day of the week. [0 to 6 = Sunday to Saturday] 5th and 6th digits: The hour. [00 to 23] 7th digit: The length of the advanced time. [0 to 9 / 1 hour] 8th digit: The length of the advanced time. [0 to 5 / 10 minutes] ▪ The digits are counted from the left. ▪ Make sure that SP5-307-1 is set to "1".		
5-307-004	Rule Set (End)	-	[0 to 0xffffffff / **-** / 1] (Default) NA: 0x11100200 EUR: 0x10500100 ASIA: 0x03100000 Other: 0x00000000
	Specifies the end setting for the summer time mode. There are 8 digits in this SP. 1st and 2nd digits: The month. [1 to 12] 3rd digit: The week of the month. [0 to 5] 4th digit: The day of the week. [0 to 7 = Sunday to Saturday] 5th and 6th digits: The hour. [00 to 23] The 7th and 8 digits must be set to "00". ▪ The digits are counted from the left. ▪ Make sure that SP5-307-1 is set to "1".		

5401	**[Access Control]**		
5-401-103	Default Document ACL	CTL	[0 to 3 / **0** / 1]
5-401-104	Authentication Time	CTL	[0 to 255 / **0** / 1 sec / step]
5-401-162	Extend Certification Detail	CTL	[0 to 0xff / **0** / 1]
5-401-200	SDK1 UniqueID	CTL	[0 to 0xFFFFFFFF / **0** / 1]
5-401-201	SDK1 Certification Method	CTL	[0 to 0xFF / **0** / 1]
5-401-210	SDK2 UniqueID	CTL	[0 to 0xFFFFFFFF / **0** / 1]

5-401-211	SDK2 Certification Method	CTL	[0 to 0xFF / **0** / 1]
5-401-220	SDK3 UniqueID	CTL	[0 to 0xFFFFFFFF / **0** / 1]
5-401-221	SDK3 Certification Method	CTL	[0 to 0xFF / **0** / 1]
5-401-230	SDK Certification Device	*CTL	[0 to 0xFF / **0** / 1] 0-1: SDK authentication available 0-0: Disable all functions 1-1: SKB Display 1-0: Disable 2-1: Administrator login 2-0: Disable 3 to 7-0: Reserved (set “0” only)
5-401-240	Detail Option	*CTL	[0 to 0xFF / **0** / 1]
	0: Logout confirm option -1: ON, 0: OFF 2 to 1: Auto-logout timer(retry timer) -11: 30sec, 10: 20sec, 01: 10sec, 00: 60sec 3: personal authority / Group authority and operation -1: ON, 0: OFF		

5402	**[Access Control]**		
5-402-101 to 5-402-130	SDKJ1 Limit Setting - SDKJ30 Limit Setting	CTL	[0 to 0xFF / **0** / 1] Bit0: SDKJ Authentication 0: Panel Type1: Remote Type Bit1: Using user code setup 0: OFF, 1: ON Bit2: Using key-counter setup 0: OFF, 1: ON Bit3: Using external billing device setup 0: OFF, 1: ON Bit4: Using extended external billing devicesetup 0: OFF, 1: ON Bit5, Bit6: Not used Bit7: Using extended function J limit users 0: OFF, 1: ON
5-402-131 to 5-402-170	SDKJ1 ProductID – SDKJ30 ProductID	CTL	[0 to 0xFFFFFFFF / **0** / 1]

5404	**[User Code Count Clear]**		
5-404-001	User Code Count Clear	*CTL	[- / **-** / -] [Execute]
5-404-101	User Code Count Clear Permit Setting	*CTL	[0 or 1 / **0** / 1]

5411	[LDAP-Certification]		
5-411-004	Easy Certification	*CTL	[0 or 1 / **1** / 1] 1: On 0: Off
5-411-005	Password Null Not Permit	*CTL	[0 or 1 / **1** / 1] 0: Password NULL not permitted. 1: Password NULL permitted.
5-411-006	Detail Option	*CTL	[0 to 0xff / **0** / 1] 0: OFF 1: ON

5412	[Krb-Certification]		
5-412-100	Encrypt Mode	CTL	[0 to 0xFF / **0x1F** / 1]

5413	[Lockout Setting]		
5-413-001	Lockout On/Off	*CTL	[0 or 1 / **0** / 1] 0: Off 1: On
5-413-002	Lockout Threshold	*CTL	[1 to 10 / **5** / 1]
5-413-003	Cancellation On/Off	*CTL	[0 or 1 / **0** / 1] 0: Off (no wait time, lockout not cancelled) 1: On (system waits, cancels lockout if correct user ID and password are entered.
5-413-004	Cancellation Time	*CTL	[1 to 9999 / 60 / 1 min]

5414	**[Access Mitigation]**		
5-414-001	Mitigation On/Off	*CTL	[0 or 1 / **0** / 1] 0: OFF 1: ON
5-414-002	Mitigation Time	*CTL	[0 to 60 / **15** / 1 min / step]

5415	**[Password Attack]**		
5-415-001	Permissible Number	*CTL	[0 to 100 / **30** /1 / step]
5-415-002	Detect Time	*CTL	[1 to 10 / **5** / 1 / step]

5416	**[Access Information]**		
5-416-001	Access User Max Num	*CTL	[50 to 200 / **200** / 1 / step]
5-416-002	Access Password Max Num	*CTL	[50 to 200 / **200** / 1 / step]
5-416-003	Monitor Interval	*CTL	[1 to 10 / **3** / 1 / step]

5417	**[Access Attack]**		
5-417-001	Access Permissible Number	*CTL	[0 to 500 / **100** / 1 / step]
5-417-002	Attack Detect Time	*CTL	[10 to 30 / **10** / 1 sec / step]
5-417-003	Productivity Fall Wait	*CTL	[0 to 9 / **3** / 1 sec / step]
5-417-004	Attack Max Num	*CTL	[50 to 200 / **200** / 1 / step]

5420	**[User Authentication]**		
5-420-001	Copy	*CTL	[0 or 1 / **0** / 1] 0: On 1: Off
5-420-011	DocumentServer	*CTL	[0 or 1 / **0** / 1] 0: On 1: Off

5-420-021	Fax	*CTL	[0 or 1 / **0** / 1] 0: On 1: Off
5-420-031	Scanner	*CTL	[0 or 1 / **0** / 1] 0: On 1: Off
5-420-041	Printer	*CTL	[0 or 1 / **0** / 1] 0: On 1: Off
5-420-051	SDK1	*CTL	[0 or 1 / **0** / 1] 0: ON 1: OFF
5-420-061	SDK2	*CTL	
5-420-071	SDK3	*CTL	
5-420-081	Browser	*CTL	[0 or 1 / **0** / 1] 0: ON 1: OFF

5430	**[Auth Dialog Message Change]**		
5-430-001	Message Change On/Off	CTL	[0 or 1 / 1 / 1]
5-430-002	Message Text Download	CTL	[0 or 1 / 1 / 1]
5-430-003	Message Text ID	CTL	[0 or 1 / 1 / 1]

5431	**[External Auth User Preset]**		
5-431-010	Tag	CTL	[0 or 1 / **1** / 1]
5-431-011	Entry	CTL	[0 or 1 / **1** / 1]
5-431-012	Group	CTL	[0 or 1 / **1** / 1]
5-431-020	Mail	CTL	[0 or 1 / **1** / 1]
5-431-030	Fax	CTL	[0 or 1 / **1** / 1]
5-431-031	FaxSub	CTL	[0 or 1 / **1** / 1]

5-431-032	Folder	CTL	[0 or 1 / **1** / 1]
5-431-033	ProtectCode	CTL	[0 or 1 / **1** / 1]
5-431-034	SmtpAuth	CTL	[0 or 1 / **1** / 1]
5-431-035	LdapAuth	CTL	[0 or 1 / **1** / 1]
5-431-036	Smb Ftp Fldr Auth	CTL	[0 or 1 / **1** / 1]
5-431-037	AcntAcl	CTL	[0 or 1 / **1** / 1]
5-431-038	DocumentAcl	CTL	[0 or 1 / **1** / 1]
5-431-040	CertCrypt	CTL	[0 or 1 / **0** / 1]
5-431-050	UserLimitCount	CTL	[0 or 1 / **1** / 1]

5481	**[Authentication Error Code]**		
5-481-001	System Log Disp	*CTL	[0 or 1 / **0** / 1] 0: Off 1: On
5-481-002	Panel Disp	*CTL	[0 or 1 / **1** / 1] 1: On 0: Off

5490	**[MF KeyCard (Japan only)]**		
5-490-001	Job Permit Setting	*CTL	[0 or 1 / **0** / 1] 0: Disabled. Cancels operation without a user code. 1: Enabled. Allows operation without a user code.

5491	**[Optional Counter]**		
5-491-001	Detail Option	*CTL	[0 to 0xff / **0** / 1]

5501	**[PM Alarm]**		
5-501-001	PM Alarm Level	*CTL	[0 to 9999 / **0** / 1] 0: Alarm off 1 to 9999: Alarm goes off when Value (1 to 9999) x 1000 > PM counter

5504	**[Jam Alarm]**		
5-504-001	-	*CTL	[0 to 3 / **3** / 1] 0: Z 1: L 2: M 3: H
5-504-002	Threshold	*CTL	[1 to 99 / **10** / 1]

5505	**[Error Alarm]**		
5-505-001	-	*CTL	MP 6503 SP: [0 to 255 / **10 /** 1K] MP 7503 SP: [0 to 255 / **14 /** 1K] MP 9003 SP: [0 to 255 / **17 /** 1K] 0: Alarm Off
5-505-002	Threshold	*CTL	[1 to 99 / **7** / 1]

5507	**[Supply/CC Alarm]**		
5-507-001	Paper Supply Alarm	*CTL	[0 or 1 / **0** / 1] 0: OFF 1: ON
5-507-002	Staple Supply Alarm	*CTL	[0 or 1 / **0 (Japan), 1 (Others)** / 1] 0: OFF 1: ON
5-507-003	Toner Supply Alarm	*CTL	[0 or 1 / **0 (Japan), 1 (Others)** / 1] 0: OFF 1: ON
5-507-080	Toner Call Timing	*CTL	[0 or 1 / **0** / 1] 0: Toner bottle replacement 1: Less than toner threshold
5-507-081	Toner Call Threshold:Bk	CTL	[10 to 90 / **50** / 10 % / step]
5-507-128	Interval :Others	*CTL	[250 to 10000 / **1000** / 1]
5-507-132	Interval :A3	*CTL	[250 to 10000 / **1000** / 1]
5-507-133	Interval :A4	*CTL	[250 to 10000 / **1000** / 1]
5-507-134	Interval :A5	*CTL	[250 to 10000 / **1000** / 1]
5-507-141	Interval :B4	*CTL	[250 to 10000 / **1000** / 1]
5-507-142	Interval :B5	*CTL	[250 to 10000 / **1000** / 1]
5-507-160	Interval :DLT	*CTL	[250 to 10000 / **1000** / 1]
5-507-164	Interval: LG	*CTL	[250 to 10000 / **1000** / 1]
5-507-166	Interval :LT	*CTL	[250 to 10000 / **1000** / 1]
5-507-172	Interval :HLT	*CTL	[250 to 10000 / **1000** / 1]

5508	**[CC Call]**		
5-508-001	Jam Remains	*CTL	[0 or 1 / **1** / 1] 0: Disable 1: Enable
5-508-002	Continuous Jams	*CTL	[0 or 1 / **1** / 1] 0: Disable 1: Enable
5-508-003	Continuous Door Open	*CTL	[0 or 1 / **1** / 1] 0: Disable 1: Enable
5-508-011	Jam Detection: Time Length	*CTL	[3 to 30 / **10** / 1]
5-508-012	Jam Detection: Continuous Count	*CTL	[2 to 10 / **5** / 1]
5-508-013	Door Open: Time Length	*CTL	[3 to 30 / **10** / 1]

5513	**[PartsAlermlevelCount]**		
5-513-001	Normal	*CTL	[1 to 9999 / **300** / 1]
5-513-002	Df	*CTL	[1 to 9999 / **300** / 1]

5514	**[PartsAlermlev]**		
5-514-001	Normal	*CTL	[0 or 1 / **1** / 1]
5-514-002	Df	*CTL	[0 or 1 / **0** / 1]

5515	**[SC/Alarm Setting]**		
5-515-001	SC Call	*CTL	[0 or 1 / **1** / 1] 0: OFF 1: ON
5-515-002	Service Parts Near End Call	*CTL	
5-515-003	Service Parts End Call	*CTL	

5-515-004	User Call	*CTL	
5-515-006	Communication Test Call	*CTL	
5-515-007	Machine Information Notice	*CTL	
5-515-008	Alarm Notice	*CTL	
5-515-009	Non Genuine Tonner Ararm	*CTL	
5-515-010	Supply Automatic Ordering Call	*CTL	
5-515-011	Supply Management Report Call	*CTL	
5-515-012	Jam/Door Open Call	*CTL	
5-515-050	Timeout:Manual Call	*CTL	[1 to 255 / **5** / 1 min / step]
5-515-051	Timeout:Other Call	*CTL	[1 to 255 / **10** / 1 min / step]

5517	**[Get Machine Information]**		
5-517-061	AutoDiscovery Execution Setting	*CTL	[0 or 1 / **0** / 1]
5-517-062	AutoDiscovery Execution Interval	*CTL	[0 or 1 / **0** / 1]
5-517-063	AutoDiscovery Execution Weekday	*CTL	[0 to 6 / **0** / 1]
5-517-064	AutoDiscovery Execution Hour	*CTL	[0 to 23 / **0** / 1]
5-517-065	AutoDiscovery Execution Minute	*CTL	[0 to 59 / **0** / 1]
5-517-066	AutoDiscovery SNMP Community Name	*CTL	[- / **-** / -]

5728	[Network Setting]		
5-728-001	NAT Machine Port1	CTL	[1 to 65535 / **49101** / 1]
5-728-002	NAT UI Port1	CTL	[1 to 65535 / **55101** / 1]
5-728-003	NAT Machine Port2	CTL	[1 to 65535 / **49102** / 1]
5-728-004	NAT UI Port2	CTL	[1 to 65535 / **55102** / 1]
5-728-005	NAT Machine Port3	CTL	[1 to 65535 / **49103** / 1]
5-728-006	NAT UI Port3	CTL	[1 to 65535 / **55103** / 1]
5-728-007	NAT Machine Port4	CTL	[1 to 65535 / **49104** / 1]
5-728-008	NAT UI Port4	CTL	[1 to 65535 / **55104** / 1]
5-728-009	NAT Machine Port5	CTL	[1 to 65535 / **49105** / 1]
5-728-010	NAT UI Port5	CTL	[1 to 65535 / **55105** / 1]
5-728-011	NAT Machine Port6	CTL	[1 to 65535 / **49106** / 1]
5-728-012	NAT UI Port6	CTL	[1 to 65535 / **55106** / 1]
5-728-013	NAT Machine Port7	CTL	[1 to 65535 / **49107** / 1]
5-728-014	NAT UI Port7	CTL	[1 to 65535 / **55107** / 1]
5-728-015	NAT Machine Port8	CTL	[1 to 65535 / **49108** / 1]
5-728-016	NAT UI Port8	CTL	[1 to 65535 / **55108** / 1]
5-728-017	NAT Machine Port9	CTL	[1 to 65535 / **49109** / 1]
5-728-018	NAT UI Port9	CTL	[1 to 65535 / **55109** / 1]
5-728-019	NAT Machine Port10	CTL	[1 to 65535 / **49110** / 1]
5-728-020	NAT UI Port10	CTL	[1 to 65535 / **55110** / 1]
5-728-101	PacketCapture	CTL	[0 to 1 / **0** / 1]
5-728-102	PacketCapture:mode	CTL	[0 to 1 / **0** / 1]
5-728-103	PacketCapture:interface	CTL	[0 to 1 / **0** / 1]
5-728-104	PacketCapture:length	CTL	[54 to 65535 / **128** / 1]

5-728-105	PacketCapture:broadcast	CTL	[0 to 1 / **0** / 1]
5-728-106	PacketCapture:specify port	CTL	[0 to 1 / **0** / 1]
5-728-107	PacketCapture:portnumber	CTL	[0 to 65535 / **0** / 1]
5-728-108	PacketCapture:time	CTL	[0 to 0xffffffff / **0** / 1]

5730	**[Extended Function Setting]**		
	-		
5-730-001	JavaTM Platform setting	*CTL	[0 or 1 / **0 (Japan), 1 (Others)** / 1] 0: Disable, 1: Enable
5-730-010	Expiration Prior Alarm Set	*CTL	[0 to 999 / **20** / 1 day / step]

5731	**[Counter Effect]**		
	This SP is uesd only for DOM machines.		
5-731-001	Change MK1 Cnt (Paper->Combine)	*CTL	[0 or 1 / **0** / 1]

5734	**[PDF Setting]**		
5-734-001	PDF/A Fixed	*CTL	[0 or 1 / **0** / 1]

5741	**[Node Authentication Timuout]**		
5-741-001	-	*CTL	[1 to 255 / **60** / 1 sec / step]

5745	**[DeemedPowerConsumption]**		
5-745-211	Controller Standby	*CTL	[0 to 9999 / **0** / 1]
5-745-212	STR	*CTL	[0 to 9999 / **0** / 1]
5-745-213	Main Power Off	*CTL	[0 to 9999 / **0** / 1]
5-745-214	Scanning and Printing	*CTL	[0 to 9999 / **0** / 1]
5-745-215	Printing	*CTL	[0 to 9999 / **0** / 1]

5-745-216	Scanning	*CTL	[0 to 9999 / **0** / 1]
5-745-217	Engine Standby	*CTL	[0 to 9999 / **0** / 1]
5-745-218	Low Power Consumption	*CTL	[0 to 9999 / **0** / 1]
5-745-219	Silent condition	*CTL	[0 to 9999 / **0** / 1]
5-745-220	Heater Off	*CTL	[0 to 9999 / **0** / 1]

5748	**[OpePanel Setting]**		
5-748-101	Op Type Action Setting	CTL	[0 to 255 / **0** / 1] ▪ bit0 0: Normal operation panel 1: Smart operation panel
5-748-201	Cheetah Panel Connect Setting	CTL	[0 or 1 / **0** / 0] 0: OFF 1: ON

5749	**[Import/Export]**		
5-749-001	Export	CTL	[- / **-** / -] Target: System, Printer, Fax, Scanner Option: Unique, Secret Copy config: Encryption, Encryption key(if selected) [Execute]
5-749-101	Import	CTL	[- / **-** / -] Option: Unique Copy config: Encryption, Encryption key(if selected) [Execute]

5751	**[Key Event Encryption Setting]**		
5-751-001	Password	CTL	[0 to 255 / 0 / 1]

5752	**[Copy:WebAPI Setting]**		
5-752-001	Copy FlairAPI Setting	*CTL	* see BitSwitch below:

Bit	Setting	meanings		Description
		0	1	
bit 0	Start of FlairAPI Server	**Off (Do not Start)**	On (Start)	Sets whether to start exclusive FlairAPI http server. If it is 0, scanning FlairAPI function and simple UI function will be disabled. The machine installed Android operating panel option, set “1”, others set “0”.
bit 1	Access permission of FlairAPI from outside of the machine	**Disabled**	Enabled	If it is “0”, accessing is limited from the machine only, such as operating panel, SDK/J, MFP browsers etc... If it is “1”, accessing is allowed from outside of FlairAPI such as PC, Remote UI, IT-Box etc...
bit 2	Reserved	-	-	-
bit 3	Reserved	-	-	-
bit 4	Simple UI Function	**Disabled**	Enabled	If it is “1”, the machine can be used Scanner Simple UI. If it is “0”, requesting URL of Simple UI returns “404 Not Found”

bit 5	Accessing permission of Simple UI from outside of the machine	**Disabled**	Enabled	If it is “0”, accessing is limited from the machine only (operating panel and MFP browser). If it is “1”, accessing is allowed from outside of Simple UI such as PC, mobile devices, and so on.
bit 6	Reserved	-	-	-
bit 7	Reserved	-	-	-

5755	**[Display Setting]**		
5-755-001	Disp Administrator Password Change Scrn	CTL	[- / **-** / -]
5-755-002	Hide Administrator Password Change Scrn	CTL	[- / **-** / -]

5758	**[RemoteUI Setting]**		
5-758-001	Authentication	*CTL	[0 or 1 / **0** / 1]

5759	**[Machine Limit Count]**		
5-759-001	Machine Limit Count Setting	*CTL	[0 or 1 / **0** / 1]
5-759-051	Limit Count	*CTL	[0 to 99999999 / **0** / 1]

5761	**[SmartOperationPanel Setting]**		
5-761-001	Restore the default Home screen	*CTL	[0 to 255 / **0** / 1]

5801	**[Memory Clear]**		
5-801-001	All Clear	CTL	[- / **-** / -] [Execute]

5-801-003	SCS	CTL	[- / - / -] [Execute]
5-801-004	IMH Memory Clr	CTL	[- / - / -] [Execute]
5-801-005	Mcs	CTL	[- / - / -] [Execute]
5-801-006	Copier Application	CTL	[- / - / -] [Execute]
5-801-007	Fax Application	CTL	[- / - / -] [Execute]
5-801-008	Printer Application	CTL	[- / - / -] [Execute]
	The following service settings: ▪ Bit switches ▪ Gamma settings (User & Service) ▪ Toner Limit The following user settings: ▪ Tray Priority ▪ Menu Protect ▪ System Setting except for setting of Energy Saver ▪ I/F Setup (I/O Buffer and I/O Timeout) ▪ PCL Menu		
5-801-009	Scanner Application	CTL	[- / - / -] [Execute]
5-801-010	Web Service	CTL	[- / - / -] [Execute]
5-801-011	NCS	CTL	[- / - / -] [Execute]
5-801-012	R-Fax	CTL	[- / - / -] [Execute]
5-801-014	Clear DCS Setting	CTL	[- / - / -] [Execute]

5-801-015	Clear UCS Setting	CTL	[- / - / -] [Execute]
5-801-016	MIRS Memory Clr	CTL	[- / - / -] [Execute]
5-801-017	CCS	CTL	[- / - / -] [Execute]
5-801-018	SRM Memory Clr	CTL	[- / - / -] [Execute]
5-801-019	LCS Memory Clr	CTL	[- / - / -] [Execute]
5-801-020	Web Uapli	CTL	[- / - / -] [Execute]
5-801-021	ECS	CTL	[- / - / -] [Execute]
5-801-023	AICS	CTL	[- / - / -] [Execute]
5-801-025	Websys	CTL	[- / - / -] [Execute]
5-801-026	PLN	CTL	[- / - / -] [Execute]
5-801-027	SAS	CTL	[- / - / -] [Execute]
5-801-028	Rest WebService	CTL	[- / - / -] [Execute]

5812	**[Service Tel. No. Setting]**		
5-812-001	Service	*CTL	[up to 20 / - / 0]
5-812-002	Facsimile	*CTL	[up to 20 / - / 0]
5-812-003	Supply	*CTL	[up to 20 / - / 0]
5-812-004	Operation	*CTL	[up to 20 / - / 0]

5816	**[Remote Service]**			
5-816-001	I/F Setting	*CTL	[0 to 2 / **2** / 1] 0: Remote service off 1: CSS remote service on 2: NRS remote service on	
5-816-002	CE Call	*CTL	[0 or 1 / **0** / 1] 0: Start of the service 1: End of the service	
5-816-003	Function Flag	*CTL	[0 or 1 / **0** / 1] 0: Disabled 1: Enabled	
5-816-007	SSL Disable	*CTL	[0 or 1 / **0** / 1] 0: Yes. SSL not used. 1: No. SSL used.	
5-816-008	RCG Connect Timeout	*CTL	[1 to 90 / **30** / 1 second / step]	
5-816-009	RCG Write Timeout	*CTL	[0 to 100 / **60** / 1 second / step]	
5-816-010	RCG Read Timeout	*CTL	[0 to 100 / **60** / 1 second / step]	
5-816-011	Port 80 Enable	*CTL	[0 or 1 / **0** / 1] 0: No. Access denied 1: Yes. Access granted.	
5-816-013	RFU Timing	*CTL	[0 or 1 / **1** / 1] 0: Any status of a target machine 1: Sleep or panel off mode only	
5-816-014	RCG Error Cause	CTL	[0 to 2 / **0** / 1] 0: Initial state, normal condition 1: Error	
5-816-021	RCG-C Registed	*CTL	[0 or 1 / **0** / 1] 0: Installation not completed 1: Installation completed	

5-816-023	Connect Type(N/M/3G)	*CTL	[0 to 2 / **0** / 1] 0: internet connection 1: Dial-up connection	
5-816-061	Cert Expire Timing	*CTL	[0 to 0 / **0** / 1]	
5-816-062	Use Proxy	*CTL	[0 or 1 / **0** / 1] 0: Not use 1: Use	
5-816-063	Proxy Host	*CTL	[- / **-** / -]	
5-816-064	Proxy PortNumber	*CTL	[0 to 0xffff / **0** / 1]	
5-816-065	Proxy User Name	*CTL	[up to 32 / **-** / 0]	
5-816-066	Proxy Password	*CTL	[up to 32 / **-** / 0]	
5-816-067	CERT:Up State	*CTL	[0 to 255 / **0** / 1]	
	Displays status of the certification used for Cumin. If it is not installed as Cumin, the value of this SP will be set when it installed, after checking the certification status.			
	0	The certification adequately set on the machine.		
	1	Request for certification update in progress.		
	2	Certification Update completed and notification of the success status to the G/W in progress.		
	3	Certification Update failed and notification of the result to the G/W in progress.		
	4	Certification expiration date will be coming soon. Notifying the G/W to request for certification update.		
	11	Rescue certification setting for connecting to the rescue G/W in progress because update for rescue certification needed.		
	12	Setting for rescue certification has completed. Requesting to the rescue G/W for updating certification.		
	13	Notification for certification updating request has completed. Waiting for the certification update request from the rescue G/W.		

	14	Received the notification for certification updating request from the rescue G/W. Writing the certification.		
	15	Writing the certification has completed. Notifying the result of certification update to the G/W.		
	16	Writing the certification has failed. Notifying the result of certification update to the G/W.		
	17	Writing a rescue certification because received a certification error again after completed the certification update request from the G/W and noticed the result of certification update with the updated certification.		
	18	The writing operation mentioned in #17 has completed. Notifying the result of certification update to the rescue G/W.		
5-816-068	CERT: Error		*CTL	[0 to 255 / **0** / 1]
	Displays a number code that describes the reason for the request for update of the certification.			
	0	Normal. There is no request for certification update in progress.		
	1	Request for certification update in progress. The current certification has expired.		
	2	An SSL error notification has been issued. Issued after the certification has expired.		
	3	Notification of shift from a common authentication to an individual certification.		
	4	Notification of a common certification without ID2.		
	5	Notification that no certification was issued.		
	6	Notification that GW URL does not exist.		
5-816-069	CERT: Up ID		*CTL	[- / **-** / -]
	-			

5-816-083	Firm Up Status	*CTL	[0 or 1 / **0** / 1] 0: Waiting for accepting firm update 1: Waiting for firm update start schedule 2: Waiting for user confirmation 3: In preparation for the machine firm update 4: processing the machine firm update 5: processing the closing operation of the machine firm update	
5-816-085	Firm Up User Check	CTL	[0 or 1 / **0** / 1]	
5-816-086	Firmware Size	CTL	[0 to 0xffffffff / **0** / 1]	
5-816-087	CERT:Macro Ver.	CTL	[8 digits / **-** / 0]	
5-816-088	CERT:PAC Ver.	CTL	[16 digits / **-** / 0]	
5-816-089	CERT:ID2Code	CTL	[17 digits / **-** / 0]	
5-816-090	CERT:Subject	CTL	[17 digits / **-** / 0]	
5-816-091	CERT:Serial No.	CTL	[16 digits / **-** / 0]	
5-816-092	CERT:Issuer	CTL	[30 digits / **-** / 0]	
5-816-093	CERT:Valid Start	CTL	[10 digits / **-** / 0]	
5-816-094	CERT:Valid End	CTL	[10 digits / **-** / 0]	
5-816-102	CERT:Encrypt Level	*CTL	[1 to 2 / **1** / 1]	
5-816-103	Client Communication Method	CTL	[0 to 3 / **0** / 1]	
5-816-104	Client Communication Limit	CTL	[1 to 7 / **7** / 1]	
5-816-115	Network Information Waiting timer	CTL	[5 to 255 / **5** / 1 sec / step]	

5-816-150	Selection Country	CTL	[0 to 10 / **1** / 1] 0: Others 1: NA 3: Europe	
	Select the country where embedded RCG-M is installed in the machine. After selecting the country, you must also set the following SP codes for embedded RCG-M: ▪ SP5816-153 ▪ SP5816-154 ▪ SP5816-161			
5-816-151	Line Type AutomaticJudgment	CTL	[0 or 1 / **0** / 1] [Execute]	
5-816-152	Line Type Judgment Result	CTL	[0 to 255 / **0** / 0]	
	Displays a number to show the result of the execution of SP5816 151. Here is a list of what the numbers mean. 0: Success 1: In progress (no result yet). Please wait. 2: Line abnormal 3: Cannot detect dial tone automatically 4: Line is disconnected 5: Insufficient electrical power supply 6: Line classification not supported 7: Error because fax transmission in progress – ioctl() occurred. 8: Other error occurred 9: Line classification still in progress. Please wait.			
5-816-153	Selection Dial / Push	CTL	[0 to 1 (NA, Europe), 2 (Others) / **0** / 0] 0: Tone Dialing Phone 1: Pulse Dialing Phone Inside Japan "2" may also be displayed: 0: Tone Dialing Phone 1: Pulse Dialing Phone 10PPS 2: Pulse Dialing Phone 20PPS	

5-816-154	Outside Line Outgoing Number	CTL	[- / **-** / -]	
5-816-156	Dial Up User Name	CTL	[up to 32 / **-** / 0]	
5-816-157	Dial Up Password	CTL	[up to 32 / **-** / 0]	
5-816-161	Local Phone Number	CTL	[up to 24 / **-** / 0]	
5-816-162	Connection Timing Adjustment Incoming	CTL	[0 to 24 / **1** / 1]	
5-816-163	Access Point	CTL	[- / **-** / -]	
5-816-164	Line Connecting	CTL	[0 to 1 / **0** / 1] 0: Sharing Fax 1: No Sharing Fax	
5-816-173	Modem Serial No.	CTL	[- / **-** / -]	
5-816-174	Retransmission Limit	CTL	[0 or 1/ **0** / 1]	
5-816-187	FAX TX Priority	CTL	[0 or 1/ **0** / 1] 0: Disable 1: Enable	
5-816-190	3G DongleID	CTL	[0 to 0 / **0** / 0]	
5-816-199	ppp Connect Timer	CTL	[15 to 30 / **15** / 1 min / step]	
5-816-200	Manual Polling	CTL	[0 or 1/ **0** / 1] [Execute]	
5-816-201	Regist Status	CTL	[0 to 255 / **0** / 1] [Execute]	
	Displays the installation status as the target of NRS services.			
	0	Not installed as NRS machines or Cumin.		
	1	Installing as Cumin. Box enrollment has completed. Unable to response for the machine serching from Basil at this status.		
	2	Installation has completed. Unable to response for the machine serching from Basil at this status.		
	3	As a NRS machine, installation has completed. It cannot install as Cumin.		

	4	NRS modules is not being launched.		
5-816-202	Letter Number		*CTL	[- / **-** / -]
5-816-203	Confirm Ececute		*CTL	[0 or 1 / **0** / 1] [Execute]
5-816-204	Confirm Result		CTL	[0 to 255 / **0** / 1] 0: Success Inquiry 1: Request number error 3: Communication error (Enabled Proxy) 4: Communication error (Disabled Proxy) 5: Proxy error (failed auth.) 6: Communication error 8: Other error (See SP5-816-208 for detail) 9: Processing inquiry 20: Failed Dial-up auth. 21: Failed answer tone detection 22: Failed career detection 23: Invalid modem value 24: Shortage of electrical current 25: Cable disconnected 26: Line occupied
	Displays the result of SP5-816-203.			

5-816-205	Confirm Place		CTL	[0 or 1 / **0** / 1] 0: Success registration 1: Request number error 3: Communication error (Enabled Proxy) 4: Communication error (Disabled Proxy) 5: Proxy error (failed auth.) 6: Communication error 8: Other error (See SP5-816-208 for detail) 9: Processing registration 20: Failed Dial-up auth. 21: Failed answer tone detection 22: Failed career detection 23: Invalid modem value 24: Shortage of electrical current 25: Cable disconnected 26: Line occupied	
	Displays the installed section informed from G/W for response of request number inquiry if the section is enrolled on the G/W.				
5-816-206	Register Execute		CTL	[0 to 1 / **0** / 1] [Execute]	
	Executes the registration of Cumin.				
5-816-207	Register Result		CTL	[0 to 255 / **0** / 1]	
	Displays the registration result. Shows the executed status of SP5-816-206.				
5-816-208	Error Code		CTL	[-2147483647 to 2147483647 / **0** / -]	
	Displays the registration result of SP5-816-204.				
5-816-208	**Invalid modem parameter**				
	-11001	Chat parameter error.			
	-11002	Chat execution error.			
	-11003	Unexpected error			

	-11004	Disconnect operation occurred during modem communication,	
	-11005	NCS reboot occurred during modem communication.	
5-816-208	**Errors with invalid procedure or settings**		
	-12002	Attempted to inquiry or registration without obtaining the installation status.	
	-12003	Attempted to registrate without inquiry despite un-registered status.	
	-12004	Attempted to install with invalid certification, ID2, and without input the machine number.	
	-12005	Executed inquiry/ registration in a invalid Cumin function and prohibited @Remote communication.	
5-816-208	-12006	Attempted to inquiry in BOX registration completed.	
	-12007	Registration attempted with the different request number from the number used for the last inquiry.	
	-12008	Certificaton update failed because Job processing etc.	
	-12009	Mismatched between ID2 in NR-RAM and ID2 in the individual certification.	
	-12010	Not initialized the certification area.	
5-816-208	**Error with error response from G/W**		
	-2385	Inappropriate international dialing prefix	
	-2387	Not supported in the center.	
	-2389	DB failure	
	-2390	Program failure	
	-2391	Double registration of the machine	
5-816-208	-2392	Parameter error	
	-2393	Not managed Basil	
	-2394	Not managed machine	
	-2395	Invalid BOX ID of Basil	

	-2396	Invalid Devic ID of Basil		
	-2397	Different format of ID2 (includes invalid ID2)		
	-2398	Different format of request number		
5-816-209	Instl Clear		CTL	[0 or 1 / **0** / 1]
5-816-240	CommErrorTime		CTL	[0 to 0 / **0** / 1]
5-816-241	CommErrorCode 1		CTL	[0 to 0xffffffff / **0x00000000** / 1]
5-816-242	CommErrorCode 2		CTL	[0 to 0xffffffff / **0x00000000** / 1]
5-816-243	CommErrorCode 3		CTL	[0 to 0xffffffff / **0x00000000** / 1]
5-816-244	CommErrorState 1		CTL	[0 to 0xffff / **0x0000** / 1]
5-816-245	CommErrorState 2		CTL	[0 to 0xffff / **0x0000** / 1]
5-816-246	CommErrorState 3		CTL	[0 to 0xffff / **0x0000** / 1]
5-816-247	SSL Error Count		CTL	[0 to 255 / **0** / 0]
5-816-248	Other Err Count		CTL	[0 to 255 / **0** / 1]
5-816-250	CommLog Print		CTL	[0 to 255 / **0** / 0]

5821	**[Remote Service RCG Setting]**		
5-821-002	RCG IP Address	*CTL	[0 to 0xffffffff / **0** / 1]
5-821-003	RCG Port Number	*CTL	[0 to 65535 / **443** / 1]
5-821-004	RCG IPv4 URL Path	*CTL	[0 to 0 / **0** / 0]
5-821-005	RCG IPv6 Address	*CTL	[0 to 0 / **0** / 0]
5-821-006	RCG IPv6 URL Path	*CTL	[0 to 0 / **0** / 0]
5-821-007	RCG Host Name	*CTL	[0 to 0 / **0** / 0]
5-821-008	RCG Host URL Path	*CTL	[0 to 0 / **0** / 0]

5824	**[NV-RAM Data Upload]**		
5-824-001	-	CTL	[- / **-** / -] [Execute]

5825	**[NV-RAM Data Download]**		
5-825-001	-	CTL	[- / **-** / -] [Execute]

5828	**[Network Setting]**		
5-828-039	User Class	CTL	[0 to 0 / **0** / 0]
5-828-040	Class Id	CTL	[0 to 0 / **0** / 0]
5-828-050	1284 Compatibility (Centro)	*CTL	[0 or 1 / **1** / 1] 0: Disabled 1: Enabled
5-828-052	ECP (Centro)	*CTL	[0 or 1 / **1** / 1] 0: Disabled 1: Enabled
	Enables or disables ECP Compatibility.		
5-828-065	Job Spooling	*CTL	[0 or 1 / **0** / 1] 0: Disabled 1: Enabled
5-828-066	Job Spooling Clear: Start Time	*CTL	[0 or 1 / **1** / 1] 0: ON (Data is cleared) 1: OFF (Automatically printed)

5-828-069	Job Spooling (Protocol)	*CTL	[0x00 to 0xff / **0x7f** / 0] 0: Validates 1: Invalidates bit0: LPR bit1: FTP bit2: IPP bit3: SMB bit4: BMLinkS bit5: DIPRINT bit6: sftp bit7: (Reserved)
5-828-087	Protocol usage	* CTL	[0x00000000 to 0xffffffff / **0x00000000** / 1]
	Shows which protocols have been used with the network. 0: Off (Not used the network with the protocol.) 1: On (Used the network with the protocol once or more.) bit0: IPsec, bit1: IPv6, bit2: IEEE 802. 1X, bit3:Wireless LAN, bit4: Security mode level setting, bit5:Appletalk, bit6: DHCP, bit7: DHCPv6, bit8: telnet, bit9: SSL, bit10: HTTPS, bit11: BMLinkS printing, bit12: diprint printing, bit13: LPR printing, bit14: ftp printing, bit15: rsh printing, bit16: SMB printing, bit17: WSD-Printer, bit18: WSD-Scanner, bit19: Scan to SMB, bit20: Scan to NCP, bit21: Reserve, bit22: Bluetooth, bit23: IEEE 1284, bit24: USB printing, bit25: Dynamic DNS, bit26: Netware printing, bit27: LLTD, bit28: IPP printing, bit29: IPP printing (SSL), bit30: ssh, bit31: sftp		
5-828-090	TELNET (0: OFF 1: ON)	* CTL	[0 or 1 / **1** / 1] 0: Disable 1: Enable
5-828-091	Web (0: OFF 1: ON)	* CTL	[0 or 1 / **1** / 1] 0: Disable 1: Enable
5-828-145	Active IPv6 Link Local Address	CTL	[- / **-** / -]
5-828-147	Active IPv6 Stateless Address 1	CTL	[- / **-** / -] These SPs are the IPv6 status

5-828-149	Active IPv6 Stateless Address 2	CTL	addresses (1 to 5) referenced on the Ethernet or wireless LAN (802.11b) in the format: "Status Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
5-828-151	Active IPv6 Stateless Address 3	CTL	
5-828-153	Active IPv6 Stateless Address 4	CTL	[- / **-** / -] These SPs are the IPv6 status addresses (1 to 5) referenced on the Ethernet or wireless LAN (802.11b) in the format: "Status Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
5-828-155	Active IPv6 Stateless Address 5	CTL	
5-828-156	IPv6 Manual Address	*CTL	
5-828-158	IPv6 Gateway Address	*CTL	[- / **-** / -]
5-828-161	IPv6 Stateless Auto Setting	*CTL	[0 or 1 / **1** / 1] 0: Disable 1: Enable
5-828-219	IPsec Aggressive Mode Setting	CTL	[0 or 1 / **0** / 1]
5-828-236	Web Item visible	*CTL	[0x0000 to 0xffff / **0xffff** / 1]
	Displays or does not display the Web system items. bit0: Net RICOH bit1: Consumable Supplier bit2-15: Reserved (all)		
5-828-237	Web shopping link visible	*CTL	[0 or 1 / **1** / 1] 0: Not display 1:Display

5-828-238	Web supplies Link visible	*CTL	[0 or 1 / **1** / 1] 0: Not display 1: Display
5-828-239	Web Link1 Name	*CTL	[Up to 31char / **0** / 0]
5-828-240	Web Link1 URL	*CTL	[Up to 127char / **0** / 0]
5-828-241	Web Link1 visible	*CTL	[0 or 1 / **1** / 1] 0: Not display 1: Display
5-828-242	Web Link2 Name	*CTL	[- / **-** / -]
5-828-243	Web Link2 URL	*CTL	[- / **-** / -]
5-828-244	Web Link2 visible	*CTL	[0 or 1 / **1** / 1]
5-828-249	DHCPv6 DUID	CTL	[- / **-** / -]

5832	**[HDD]**		
5-832-001	HDD Formatting (ALL)	CTL	[- / **-** / -] [Execute]
5-832-002	HDD Formatting (IMH)	CTL	[- / **-** / -] [Execute]
5-832-003	HDD Formatting (Thumbnail)	CTL	[- / **-** / -] [Execute]
5-832-004	HDD Formatting (Job Log)	CTL	[- / **-** / -] [Execute]
5-832-005	HDD Formatting (Printer Fonts)	CTL	[- / **-** / -] [Execute]
5-832-006	HDD Formatting (User Info1)	CTL	[- / **-** / -] [Execute]
5-832-007	Mail RX Data	CTL	[- / **-** / -] [Execute]
5-832-008	Mail TX Data	CTL	[- / **-** / -] [Execute]

5-832-009	HDD Formatting (Data for a Design)	CTL	[- / **-** / -] [Execute]
5-832-010	HDD Formatting (Log)	CTL	[- / **-** / -] [Execute]
5-832-011	HDD Formatting (Ridoc I/F)	CTL	[- / **-** / -] [Execute]
5-832-012	HDD Formatting (Thumbnail)	CTL	[- / **-** / -] [Execute]

5836	**[Capture Setting]**		
5-836-001	Capture Function (0:Off 1:On)	* CTL	[0 or 1 / **0** / 1] 0: Disable 1: Enable
5-836-011	Capture Setting: Copy	* CTL	[0 or 1 / **0** / 1]
5-836-012	Capture Setting: Doc. Svr.	* CTL	[0 or 1 / **0** / 1]
5-836-013	Capture Setting: Fax RX Printer	* CTL	[0 or 1 / **0** / 1]
5-836-014	Capture Setting: Fax TX	* CTL	[0 or 1 / **0** / 1]
5-836-015	Capture Setting: Printer	* CTL	[0 or 1 / **0** / 1]
5-836-016	Capture Setting: Scanner	* CTL	[0 or 1 / **0** / 1]
5-836-017	Capture Setting: SDK	* CTL	[0 or 1 / **0** / 1]
5-836-061	Captured File Resend (0:Off 1:On)	* CTL	[0 or 1 / **0** / 1]

5836	**[Capture Setting]**		
5-836-071	Reduction for Copy Color	*CTL	[0 to 3 / **2** / 1] 0: 1to-1 1: 1/2 2: 1/3 3: 1/4

5-836-072	Reduction for Copy B&W Text	*CTL	[0 to 6 / **0** / 1] 0: 1to-1 1: 1/2 2: 1/3 3: 1/4 6: 2/3
5-836-073	Reduction for Copy B&W Other	*CTL	[0 to 6 / **0** / 1] 0: 1to-1 1: 1/2 2: 1/3 3: 1/4 6: 2/3
5-836-074	Reduction for Printer Color	*CTL	[0 to 3 / **2** / 1] 0: 1to-1 1: 1/2 2: 1/3 3: 1/4
5-836-075	Reduction for Printer B&W	*CTL	[0 to 6 / **0** / 1] 0: 1to-1 1: 1/2 2: 1/3 3: 1/4 6: 2/3
5-836-077	Reduction for Printer Color 1200dpi	*CTL	[1 to 5 / **4** / 1] 1:1/2 3:1/4 4:1/6 5:1/8
5-836-078	Reduction for Printer B&W 1200dpi	*CTL	[1 to 5 / **1** / 1] 0: 1 1: 1/2 2: 1/3 3: 1/4 4: 1/6 5: 1/8

5-836-081	Format for Copy Color	*CTL	[0 / **0** / 1] 0: JFIF/JPEG 1: TIFF/MMR 2: TIFF/MH 3: TIFF/MR
5-836-082	Format for Copy B&W Text	*CTL	[0 to 3 / **1** / 1] 0: JFIF/JPEG 1: TIFF/MMR 2: TIFF/MH 3: TIFF/MR
5-836-083	Format for Copy B&W Other	*CTL	[0 to 3 / **1** / 1] 0: JFIF/JPEG 1: TIFF/MMR 2: TIFF/MH 3: TIFF/MR
5-836-084	Format for Printer Color	*CTL	[0 / **0** / 1]
5-836-085	Format for Printer B&W	*CTL	[0 to 3 / **1** / 1] 0: JFIF/JPEG 1: TIFF/MMR 2: TIFF/MH 3: TIFF/MR
5-836-091	Default for JPEG	*CTL	[5 to 95 / **50** / 1]
5-836-101	Primary srv IP address	*CTL	[000.000.000.000 to 255.255.255.255 / **-** / 0]
5-836-102	Primary srv scheme	*CTL	[0 / **NULL** / -]
5-836-103	Primary srv port number	*CTL	[1 to 65535 / **80** / 1]
5-836-104	Primary srv URL path	*CTL	[0 / **-** / 0]
5-836-111	Secondary srv IP address	*CTL	[000.000.000.000 to 255.255.255.255 / **-** / 1]
5-836-112	Secondary srv scheme	*CTL	[0 / **NULL** / -]
5-836-113	Secondary srv port number	*CTL	[1 to 65535 / **80** / 1]
5-836-114	Secondary srv URL path	*CTL	[0 / **-** / 0]

5-836-120	Default Reso Rate Switch	*CTL	[0 or 1 / **0** / 1]
5-836-122	Reso: Copy(Mono)	*CTL	[0 to 255 / **3** / 1] 0: 600dpi/ 1: 400dpi/ 2: 300dpi/ 3: 200dpi/ 4: 150dpi/ 5: 100dpi/ 6: 75dpi
5-836-124	Reso: Print(Mono)	*CTL	[0 to 255 / **3** / 1] 0:600DPi 1:400DPi 2:300DPi 3:200DPi 4:150DPi 5:100DPi 6:75DPi
5-836-125	Reso: Fax(Color)	*CTL	[0 to 255 / **4** / 1] 0:600DPi 1:400DPi 2:300DPi 3:200DPi 4:150DPi 5:100DPi 6:75DPi
5-836-126	Reso: Fax(Mono)	*CTL	[0 to 255 / **3** / 1] 0:600DPi 1:400DPi 2:300DPi 3:200DPi 4:150DPi 5:100DPi 6:75DPi

5-836-127	Reso: Scanner(Color)	*CTL	[0 to 255 / **4** / 1] 0:600DPi 1:400DPi 2:300DPi 3:200DPi 4:150DPi 5:100DPi 6:75DPi
5-836-128	Reso: Scanner(Mono)	*CTL	[0 to 255 / **3** / 1] 0:600DPi 1:400DPi 2:300DPi 3:200DPi 4:150DPi 5:100DPi 6:75DPi
5-836-129	Reso: SDK(Color)	*CTL	[0 to 255 / **4** / 1]
5-836-130	Reso: SDK(Mono)	*CTL	[0 to 255 / **3** / 1]
5-836-141	All Addr Info Switch	*CTL	[0 or 1 / **1** / 1]
5-836-142	Stand-by Doc Max Number	*CTL	[10 to 10000 / **2000** / 1]
5-836-143	ClearLightPDF Switch	*CTL	[0 or 1 / **0** / 1]

5840	**[IEEE 802.11]**		
5-840-006	Channel Max	*CTL	[1 to 14 / **14** / 1] Europe/Asia: 1 to 13 NA/ Asia: 1 to 11
	DFU		
5-840-007	Channel Min	*CTL	[1 to 14 / **1** / 1] Europe: 1 to 13 NA/ Asia: 1 to 11
	DFU		

5-840-011	WEP key Select	*CTL	[0x00 to 0x11 / **0x00** / 0] 00: Key #1 01: Key #2 (Reserved) 10: Key #3 (Reserved) 11: Key #4 (Reserved)
5-840-045	WPA Debug Lvl	*CTL	[1 to 3 / **3** / 1] 1: Info 2: wArning 3: error
5-840-046	11w	*CTL	[0 to 2 / **0** / 1]
5-840-047	PSK Set Type	*CTL	[0 or 1 / **0** / 1]

5841	**[Supply Name Setting]**		
5-841-001	Toner Name Setting:Black	*CTL	[- / **-** / -]
5-841-011	Staple Std1	*CTL	Specifies supply names. These appear on the screen when the user presses the Inquiry button in the user tools screen. [- / **-** / -]
5-841-012	Staple Std2	*CTL	
5-841-013	Staple Std3	*CTL	
5-841-014	Staple Std4	*CTL	
5-841-021	Staple Bind 1	*CTL	
5-841-022	Staple Bind 2	*CTL	
5-841-023	Staple Bind 3	*CTL	

5842	**[GWWS Analysis]**		
5-842-001	Setting 1	*CTL	[0x00 to 0xFF / **0** / 1] 0bit[LSB]: system, other group 1bit: capture related group 2bit: authentication related group 3bit: address book related group 4bit: device management related group 5bit: output related(print, FAX, and delivery) group 6bit: repository, F0,etc. document related group 7bit: debug log level suppression
	Default: **00000000** – do not change Netfiles: Jobs to be printed from the document server using a PC and the DeskTopBinder software		
5-842-002	Setting 2	*CTL	[0x00 to 0xFF / **0** / 1] 0~6bit: unused 7bit: time stamp setting for 5682mmesg log. (1: min./sec/msec, 0: day/hour/min./sec)

5844	**[USB]**		
5-844-001	Transfer Rate	*CTL	[1 to 4 / **4** / 0] 0x01: Full speed 0x04: Auto Change
5-844-002	Vendor ID	*CTL	[0x0000 to 0xffff / **0x05ca** / 0]
	DFU		
5-844-003	Product ID	*CTL	[0x0000 to 0xffff / **0x0403** / 0]
	DFU		

5-844-004	Device Release Number	*CTL	[0 to 9999 / **100** / 1]
	DFU		
5-844-005	Fixed USB Port	*CTL	[0 to 2 / **0** / 1]
5-844-006	PnP Model Name	*CTL	[0 to 0 / **0** / 0]
5-844-007	PnP Serial Number	*CTL	[0 to 0 / **0** / 0]
5-844-008	Mac Supply Level	*CTL	[0 or 1 / **1** / 1]
5-844-009	USB Toggle Clear Mode	*CTL	[0 or 1 / **0** / 1]
5-844-100	Notify Unsupport	*CTL	[0 or 1 / **1** / 1]

5845	**[Delivery Server Setting]**		
5-845-001	FTP Port No.	*CTL	[0 to 65535 / **3670** / 1]
5-845-002	IP Address (Primary)	*CTL	[000.000.000.000 to 255.255.255.255 / **000.000.000.000** / -]
5-845-006	Delivery Error Display Time	*CTL	[0 to 999 / **300** / 1 second]
5-845-008	IP Address (Secondary)	*CTL	[000.000.000.000 to 255.255.255.255 / **000.000.000.000** / -]
5-845-009	Delivery Server Model	*CTL	[0 to 4 / **0** / 1] 0: Unknown 1: SG1 Provided 2: SG1 Package 3: SG2 Provided 4: SG2 Package
5-845-010	Delivery Svr. Capability	*CTL	[0 to 255 / **-** / 1]
	Bit7	1 Comment information exits	
	Bit6	1 Direct specification of mail address possible	
	Bit5	1 Mail RX confirmation setting possible	

	Bit4	1 Address book automatic update function exists	
	Bit3	1 Fax RX delivery function exists	
	Bit2	1 Sender password function exists	
	Bit1	1 Function to link MK-1 user and Sender exists	
	Bit0	1 Sender specification required (if set to 1, Bit6 is set to “0”)	
5-845-011	Delivery Svr Capability (Ext)	*CTL	[0 to 255 / **-** / 1]
	Bit7 = 1 Address book usage limitation (Limitation for each authorized user) Bit6 = 1 RDH authorization link Bit5 to 0: Not used		
5-845-013	Server Scheme (Primary)	*CTL	[Up to 6 char / **-** / -]
5-845-014	Server Port Number (Primary)	*CTL	[1 to 65535 / **80** / 1]
5-845-015	Server URL Path (Primary)	*CTL	[- / **-** / -]
5-845-016	Server Scheme (Secondary)	*CTL	[Up to 6 char / **-** / -]
5-845-017	Server Port Number (Secondary)	*CTL	[1 to 65535 / **80** / 1]
5-845-018	Server URL Path (Secondary)	*CTL	[Up to 16 byte / **-** / -]
5-845-022	Rapid Sending Control	*CTL	[0 or 1 / **1** / 1] 0: Control disabled 1: Control enabled

5846	**[UCS Setting]**		
5-846-001	Machine ID (for Delivery Server)	*CTL	[- / **-** / -]
5-846-002	Machine ID Clear(for Delivery Server)	*CTL	[- / **-** / -] [Execute]

5-846-003	Maximum Entries	*CTL	[2000 to 20000 / **2000** / 1]
5-846-006	Delivery Server Retry Timer	*CTL	[0 to 255 / **0** / 1]
5-846-007	Delivery Server Retry Times	*CTL	[0 to 255 / **0** / 1]
5-846-008	Delivery Server Maximum Entries	*CTL	[2000 to 20000 / **2000** / 1]
5-846-010	LDAP Search Timeout	*CTL	[1 to 255 / **60** / 1]
5-846-020	WSD Maximum Entries	*CTL	[50 to 250 / **250** / 1]
5-846-021	Folder Auth Change	*CTL	[0 or 1 / **0** / 1] 0: Login User, 1: Destination
5-846-040	Addr Book Migration(USB->HDD)	*CTL	[- / **-** / -] [Execute]
5-846-041	Fill Addr Acl Info	*CTL	[- / **-** / -] [Execute]
5-846-043	Addr Book Media	*CTL	[0 to 30 / **0** /1] 0: Unconfirmed 1: SD Slot 1 2: SD Slot 2 3: SD Slot 3 4: USB Flash ROM 10: SD Slot 10 20: HDD 30: Nothing
5-846-047	Initialize Local Address Book	CTL	[- / **-** / -] [Execute]
5-846-048	Initialize Delivery Addr Book	CTL	[- / **-** / -] [Execute]
5-846-049	Initialize LDAP Addr Book	CTL	[- / **-** / -] [Execute]
5-846-050	Initialize All Addr Book	CTL	[- / **-** / -] [Execute]

5-846-051	Backup All Addr Book	CTL	[- / **-** / -] [Execute]
5-846-052	Restore All Addr Book	CTL	[- / **-** / -] [Execute]
5-846-053	Clear Backup Info	CTL	[- / **-** / -] [Execute]
5-846-060	Search Option	*CTL	[0x00 to 0xff / **0x0f**/ 1]
	This SP uses bit switches to set up the fuzzy search options for the UCS local address book. Bit: Meaning 0: Checks both upper/lower case characters 1: Japan Only 2: Japan Only 3: Japan Only 4 to 7: Not Used		
5-846-062	Complexity Option 1	*CTL	[0 to 32 / **0** / 1]
5-846-063	Complexity Option 2	*CTL	[0 to 32 / **0** / 1]
5-846-064	Complexity Option 3	*CTL	[0 to 32 / **0** / 1]
5-846-065	Complexity Option 4	*CTL	[0 to 32 / **0** / 1]
5-846-091	FTP Auth Port Setting	*CTL	[0 to 65535 / **3671** / 1]
5-846-094	Encryption Stat	*CTL	[0 to 255 / **-** / 0]

5847	**[Rep Resolution Reduction]**		
5-847-002	Rate for Copy B&W Text	*CTL	[0 to 6 / **0** / 1] 0: 1x 1: 1/2x 2: 1/3x 3: 1/4x 4: 1/6x 5: 1/8x 6: 2/3x
5-847-003	Rate for Copy B&W Other	*CTL	

5-847-005	Rate for Printer B&W	*CTL	[0 to 6 / **0** / 1] 0: 1x 1: 1/2x 2: 1/3x 3: 1/4x 4: 1/6x 5: 1/8x 6: 2/3x
5-847-007	Rate for Printer B&W 1200dpi	*CTL	[0 to 6 / **1** / 1] 0: 1x 1: 1/2x 2: 1/3x 3: 1/4x 4: 1/6x 5: 1/8x 6: 2/3x
5-847-021	Network Quality Default for JPEG	*CTL	[5 to 95 / **50** / 1]

5848	**[Web Service]**		
5-848-002	Access Ctrl: Repository (only Lower 4 bits)	*CTL	[0x00 to 0xFF / **0x02** / 0] 0000: No access control 0001: Denies access to DeskTop Binder. 0010: No writing control
5-848-003	Access Control: Doc. Svr. Print (Lower 4 bits)	*CTL	[0x00 to 0xFF / **0x00** / 0] 0000: No access control 0001: Denies access to DeskTop Binder.
5-848-004	Access Control: udirectory (Lower 4 bits)	*CTL	[0x00 to 0xFF / **0x00** / 0] 0000: No access control 0001: Denies access to DeskTop Binder.

5-848-007	Access Ctrl: Comm. Log Fax (Lower 4 bits)	*CTL	[0x00 to 0xFF / **0x00** / 0] 0000: No access control 0001: Denies access to DeskTop Binder.
5-848-009	Access Ctrl: Job Ctrl (Lower 4 bits)	*CTL	[0x00 to 0xFF / **0x00** / 0] 0000: No access control 0001: Denies access to DeskTop Binder.
5-848-011	Access Ctrl: Devicemanagement (Lower 4bits)	*CTL	[0x00 to 0xFF / **0x00** / 0] 0000: No access control 0001: Denies access to DeskTop Binder.
5-848-021	Access Ctrl: Delivery (Lower 4 bits)	*CTL	[0x00 to 0xFF / **0x00** / 0] 0000: No access control 0001: Denies access to DeskTop Binder.
5-848-022	Access Ctrl: uadministration (Lower 4bits)	*CTL	[0x00 to 0xFF / **0x00** / 0] 0000: No access control 0001: Denies access to DeskTop Binder.
5-848-024	Access Ctrl: Log Service (Lower 4bits)	*CTL	[0x00 to 0xFF / **0x00** / 0] 0000: No access control 0001: Denies access to DeskTop Binder.
5-848-025	Access Ctrl: Rest WebService (Lower 4bits)	*CTL	[0x00 to 0xFF / **0x00** / 0] 0000: No access control 0001: Denies access to DeskTop Binder.
5-848-099	Repository: Download Image Setting	*CTL	[0x00 to 0xFF / **0x00** / 1] **DFU**
5-848-100	Repository: Download Image Max. Size	*CTL	[1 to 2048 / **2048** / 1]
5-848-150	Log Operation Mode	*CTL	[0 to 9 / **0** / 1]

5-848-217	Setting: Timing	*CTL	[0 to 2 / **0** / 1] NIA

5849	**[Installation Date]**		
5-849-001	Display	*CTL	[- / **-** / -]
5-849-002	Switch to Print	*CTL	[0 or 1 / **0 (Japan), 1 (Others)** / 1] 0: OFF (No Print) 1: ON (Print)
5-849-003	Setup Count	*CTL	[0 to 99999999 / **0** / 1]

5850	**[Address Book Function]**		
5-850-003	Replacement of Circuit Classifications	*CTL	[- / **-** / -] 1: G3 2: EXT 3: G3-1 4: G3-1- EXT 5: G3-2 6: G3-2- EXT 7: G3-3 8: G3-3-EXT 9: G3-idle-EXT 10: idle-EXT 11: I-G3 12: I-G3-EXT 13: G4

5851	**[Bluetooth]**		
5-851-001	mode	*CTL	[0x00 to 0x01 / **0x00** / 1]

5853	**[Stamp Date Download]**		
5-853-001	-	CTL	[- / **-** / -]

5856	**[Remote ROM Update]**		
	Allows the technician to upgrade the firmware using a local port (IEEE1284) when updating the remote ROM.		
5-856-002	Local Port	*CTL	[0 or 1 / **0** / 1] 0: Disable 1: Enable

5858	**[Collect Machine Info]**		
5-858-001	0:OFF 1:ON	CTL	[0 or 1 / **1** / 1]
5-858-002	Save To (0:HDD 1:SD)	CTL	[0 or 1 / **0** / 1]
5-858-003	Make Log Trace Dir	CTL	[0 or 1 / **0** / 0]
5-858-101	Failure Occuring Date	CTL	[0 to 20371212 / **0** / 1]
5-858-102	Tracing Days	CTL	[1 to 180 / **2** / 1 day / step]
5-858-103	Acquire Fax Address(0:OFF 1:ON)	CTL	[0 or 1 / **0** / 1]
5-858-111	Acquire All Info & Logs	CTL	[0 or 1 / **0** / 0]
5-858-121	Acquire Configuration Page	CTL	[0 or 1 / **0** / 0]
5-858-122	Acquire Font Page	CTL	[0 or 1 / **0** / 0]
5-858-123	Acquire Print Setting List	CTL	[0 or 1 / **0** / 0]
5-858-124	Acquire Error Log	CTL	[0 or 1 / **0** / 0]
5-858-131	Acquire Fax Info	CTL	[0 or 1 / **0** / 0]
5-858-141	Acquire All Debug Logs	CTL	[0 or 1 / **0** / 0]
5-858-142	Acquire Controller Debug Logs Only	CTL	[0 or 1 / **0** / 0]
5-858-143	Acquire Engine Debug Logs Only	CTL	[0 or 1 / **0** / 0]

5-858-144	Acquire Opepanel Debug Logs Only	CTL	[0 or 1 / **0** / 0]
5-858-145	Acquire FCU Debug Logs Only	CTL	[0 or 1 / **0** / 0]
5-858-146	Acquire Only Network Packets	CTL	[0 or 1 / **0** / 0]

5860	**[SMTP/POP3/IMAP4]**		
5-860-020	Partial Mail Receive Timeout	*CTL	[1 to 168 / **72** / 1 hour / step]
5-860-021	MDN Response RFC2298 Compliance	*CTL	[0 or 1 / **1** / 1] 0: No 1: Yes
5-860-022	SMTP Auth. From Field Replacement	*CTL	[0 to 1 / **0** / 1] 0: No. “From” item not switched. 1: Yes. “From item switched.
5-860-025	SMTP Auth. Direct Setting	*CTL	[0 to 0xff / **0x00** / 1]
	Selects the authentication method for SMPT. Bit switch: Bit 0: LOGIN Bit 1: PLAIN Bit 2: CRAM MD5 Bit 3: DIGEST MD5 Bit 4 to 7: Not used Note ▪ This SP is activated only when SMTP authorization is enabled by UP mode.		
5-860-026	S/MIME:MIME Header Setting	*CTL	[0 to 2 / **0** / 1] 0: Microsoft Outlook Express standard 1: Internet Draft standard 2: RFC standard

5-860-028	S/MIME: Authentication Check	*CTL	[0 or 1 / **0** / 1] 0: No (not check) 1: Yes (check)

5866	**[Email Report]**		
5-866-001	Report Validity	CTL	[0 or 1 / **0** / 1] 0: Enabled 1: Disabled
5-866-005	Add Date Field	CTL	[0 or 1 / **0** / 1] 0: Enabled 1: Disabled
5-866-110	CounterE-Mail:Validity	CTL	[0 or 1 / **0** / 1]
5-866-111	CounterE-Mail:Destination Registration	CTL	[0 to 0 / **0** / 0]
5-866-112	CounterE-Mail:Send Test	CTL	[0 to 0 / **0** / 0]
5-866-113	CounterE-Mail:Next Send Date	CTL	[0 to 0 / **0** / 0]
5-866-114	CounterE-Mail:Send Date Setting	CTL	[0 to 31 / **0** / 1]
5-866-115	CounterE-Mail:Send Time Setting	CTL	[0 to 2359 / **0** / 1]
5-866-121	CounterE-Mail:Destination1	CTL	[0 to 0 / **0** / 0]
5-866-122	CounterE-Mail:Destination2	CTL	[0 to 0 / **0** / 0]
5-866-123	CounterE-Mail:Destination3	CTL	[0 to 0 / **0** / 0]

5870	**[Common Key Info Writing]**		
5-870-001	Writing	CTL	[0 or 1 / **0** / 1] [Execute]
5-870-003	Initialize	CTL	[0 or 1 / **0** / 1] [Execute]

5-870-004	Writing: 2048bit	CTL	[0 or 1 / **0** / 1] [Execute]

5873	**[SD Card Appli Move]**		
5-873-001	Move Exec	CTL	[- / **-** / -] [Execute]
5-873-002	Undo Exec	CTL	[- / **-** / -] [Execute]

5875	**[SC Auto Reboot]**		
	-		
5-875-001	Reboot Setting	* CTL	[0 or 1 / **0** / 1]
5-875-002	Reboot Type	*CTL	[0 or 1 / **0 (Japan), 1 (Others)** / 1] 0: Manual reboot 1: Automatic reboot

5878	**[Option Setup]**		
5-878-001	Data Overwrite Security	CTL	[- / **-** / -] [Execute]
5-878-002	HDD Encryption	CTL	[- / **-** / -] [Execute]
5-878-004	OCR Dictionary	CTL	[- / **-** / -] [Execute]

5881	**[Fixed Phrase Block Erasing]**		
5-881-001	-	CTL	[- / **-** / -]
	Delete the fixed phrase.		

5885	**[Set WIM Function]** Web Image Monitor Settings		
5-885-020	DocSvr Acc Ctrl	*CTL	[0x00 or 0xFF / **0x00** / 0] 0: OFF 1: ON Bit Meaning 0: Forbid all document server access (1) 1: Forbid user mode access (1) 2: Forbid print function (1) 3: Forbid fax TX (1) 4: Forbid scan sending (1) 5: Forbid downloading (1) 6: Forbid delete (1) 7: Reserved
5-885-050	DocSvr Format	*CTL	[0 to 2 / **0** / 1] 0: Thumbnail, 1: Icon, 2: Details
5-885-051	DocSvr Trans	*CTL	[5 to 20 / **10** / 1]
5-885-100	Set Signature	*CTL	[0 to 2 / **0** / 1] 0: Setting for each e-mail 1: Signature for all 2: No signature
5-885-101	Set Encrypsion	*CTL	[0 or 1 / **0** / 1] 0: Not encrypted 1: Encryption
5-885-200	Detect Mem Leak	*CTL	[0x00 to 0xFF / **0x00** / 0]

5886	**[Farm Update Setting]**		
5-886-100	Skip Version Check	CTL	[0 or 1 / **0** / 1]
5-886-101	Skip LR Check	CTL	[0 or 1 / **0** / 1]
5-886-111	Auto Update Setting	CTL	[0 or 1 / **0** / 1]
5-886-112	Auto Update Prohibit Term Setting	CTL	[0 or 1 / **1** / 1]

5-886-113	Auto Update Prohibit Start hour	CTL	[0 to 23 / **9** / 1 hour / step]
5-886-114	Auto Update Prohibit End hour	CTL	[0 to 23 / **17** / 1 hour / step]
5-886-115	SFU Auto Download Setting	CTL	[0 or 1 / **0** / 1]
5-886-116	Auto Update Next Date	CTL	[0 to 0 / **0** / 0]
5-886-117	Auto Update Retry Interval Hour	CTL	[1 to 24 / **1** / 1 hour / step]
5-886-119	Auto Update @Remote Using Setting	CTL	[0 or 1 / **0** / 1]
5-886-120	Auto Update Prohibit Day of Week Setting	CTL	[0 to 255 / **0** / 1]
5-886-151	Permit SubId Update	CTL	[0 or 1 / **0** / 1]
5-886-201	Restore Date	CTL	[0 to 0 / **0** / 0]
5-886-202	Save Old Version List	CTL	[0 to 0 / **0** / 0]

5887	**[SD GetCounter]**		
5-887-001		CTL	[- / **-** / -] [Execute]

5888	**[Personal Information Protect]**		
5-888-001	-	*CTL	[0 or 1 / **0** / 1]
	Selects the protection level for logs. 0: No authentication, No protection for logs 1: No authentication, Protected logs (only an administrator can see the logs)		

5893	**[SDK Apli Cnt Name]**		
5-893-001	SDK-1	CTL	[- / **-** / -] [Display text]

5-893-002	SDK-2	CTL	[- / **-** / -] [Display text]
5-893-003	SDK-3	CTL	[- / **-** / -] [Display text]
5-893-004	SDK-4	CTL	[- / **-** / -] [Display text]
5-893-005	SDK-5	CTL	[- / **-** / -] [Display text]
5-893-006	SDK-6	CTL	[- / **-** / -] [Display text]
5-893-007	SDK-7	CTL	[- / **-** / -] [Display text]
5-893-008	SDK-8	CTL	[- / **-** / -] [Display text]
5-893-009	SDK-9	CTL	[- / **-** / -] [Display text]
5-893-010	SDK-10	CTL	[- / **-** / -] [Display text]
5-893-011	SDK-11	CTL	[- / **-** / -] [Display text]
5-893-012	SDK-12	CTL	[- / **-** / -] [Display text]

5895	**[Application invalidation]**		
5-895-001	Printer	CTL	[0 or 1 / **0** / 0]
5-895-002	Scanner	CTL	[0 or 1 / **0** / 0]

5907	**[Plug & Play Maker/Model Name]**		
5-907-001	-	*CTL	[0 to 255 / **0** / 1]

5913	[Switchover Permission Time]		
5-913-002	Print Application Timer	*CTL	[0 to 30 / **3** / 1]

5967	[Copy Server: Set Function]		
5-967-001	(0: ON 1: OFF)	*CTL	[0 or 1 / **0** / 1] 0: ON 1: OFF

5973	[User Stamp Registration]		
5-973-101	Frame deletion setting	CTL	[0 to 3 / **0** / 1]

5985	[Device Setting]		
5-985-001	On Board NIC	CTL	[0 to 2 / **0** / 1] 0: Disable 1: Enable 2: Function limitation
5-985-002	On Board USB	CTL	[0 or 1 / **0** / 1]

5990	[SP Print Mode]		
5-990-001	All (Data List)	CTL	[0 to 255 / **0** / 0]
5-990-002	SP (Mode Data List)	CTL	[0 to 255 / **0** / 0]
5-990-003	User Program	CTL	[0 to 255 / **0** / 0]
5-990-004	Logging Data	CTL	[0 to 255 / **0** / 0]
5-990-005	Diagnostic Report	CTL	[0 to 255 / **0** / 0]
5-990-006	Non-Default	CTL	[0 to 255 / **0** / 0]
5-990-007	NIB Summary	CTL	[- / **-** / -]
5-990-008	Capture Log	CTL	[0 to 255 / **0** / 1]
5-990-021	Copier User Program	CTL	[- / **-** / -]

5-990-022	Scanner SP	CTL	[0 to 255 / **0** / 0]
5-990-023	Scanner User Program	CTL	[0 to 255 / **0** / 0]
5-990-024	SDK/J Summary	CTL	[- / **-** / -]
5-990-025	SDK/J Application Info	CTL	[- / **-** / -]
5-990-026	Printer SP	CTL	[0 to 255 / **0** / 0]
5-990-027	SmartOperationPanel SP	CTL	[0 to 255 / **0** / 0]
5-990-028	SmartOperationPanel UP	CTL	[0 to 255 / **0** / 0]

5992	**[SP Text mode]**		
5-992-001	All (Data List)	CTL	[0 to 255 / **0** / 0]
5-992-002	SP (Mode Data List)	CTL	[0 to 255 / **0** / 0] [Execute]
5-992-003	User Program	CTL	[0 to 255 / **0** / 0] [Execute]
5-992-004	Logging Data	CTL	[0 to 255 / **0** / 0] [Execute]
5-992-005	Diagnostic Report	CTL	[0 to 255 / **0** / 0] [Execute]
5-992-006	Non-Default	CTL	[0 to 255 / **0** / 0] [Execute]
5-992-007	NIB Summary	CTL	[- / **-** / -] [Execute]
5-992-008	Capture Log	CTL	[0 to 255 / **0** / 0] [Execute]
5-992-021	Copier User Program	CTL	[- / **-** / -] [Execute]
5-992-022	Scanner SP	CTL	[0 to 255 / **0** / 0] [Execute]

5-992-023	Scanner User Program	CTL	[0 to 255 / **0** / 0] [Execute]
5-992-024	SDK/J Summary	CTL	[- / **-** / -] [Execute]
5-992-025	SDK/J Application Info	CTL	[- / **-** / -] [Execute]
5-992-026	Printer SP mode	CTL	[0 to 255 / **0** / 0] [Execute]
5-992-027	SmartOperationPanel SP	CTL	[0 to 255 / **0** / 0] [Execute]
5-992-028	SmartOperationPanel UP	CTL	[0 to 255 / **0** / 0] [Execute]

3.2 CONTROLLER SP TABLES-6

3.2.1 SP6-XXX (DATA LOG)

6830	**[Extra]**		
6-830-001	Staples 0 to 50 (Initial:0)	CTL	[0 to 50 / **0** / 1]
6-830-002	Saddles 0 to 50 (Initial:0)	CTL	[0 to 50 / **0** / 1]
6-830-003	Half-Fold 0 to 50 (Initial:0)	CTL	[0 to 50 / **0** / 1]

6890	**[Function Enabled]**		
6-890-001	Z-Fold 0:No Punch 1:Punching OK	CTL	[0 or 1 / **0** / 1]

3.3 CONTROLLER SP TABLES-7

3.3.1 SP7-XXX (DATA LOG)

7401	**[Total SC]**		
	Stores total SC occurring count. If the same SC codes are detected continuously and total counter is not increasing, it only logs once in case of deleting other SC code logs.		
7-401-001	SC Counter	*CTL	[0 to 65535 / **-** / 0]
7-401-002	Total SC Counter	*CTL	[0 to 65535 / **-** / 0]

7403	**[SC History]**		
	Logs and displays the SC codes detected. The 10 most recently detected SC Codes are displayed on the screen, and also can be seen on the SMC (logging) outputs. Note ▪ If the same SC codes are detected continuously and total counter is not increasing, it only logs once in case of deleting other SC code logs.		
7-403-001	Latest	*CTL	[- / **-** / -]
7-403-002	Latest 1	*CTL	
7-403-003	Latest 2	*CTL	
7-403-004	Latest 3	*CTL	
7-403-005	Latest 4	*CTL	
7-403-006	Latest 5	*CTL	
7-403-007	Latest 6	*CTL	
7-403-008	Latest 7	*CTL	
7-403-009	Latest 8	*CTL	
7-403-010	Latest 9	*CTL	

7404	[Software Error History]		
7-404-001	Latest	*CTL	[- / - / -]
7-404-002	Latest 1	*CTL	
7-404-003	Latest 2	*CTL	
7-404-004	Latest 3	*CTL	
7-404-005	Latest 4	*CTL	
7-404-006	Latest 5	*CTL	
7-404-007	Latest 6	*CTL	
7-404-008	Latest 7	*CTL	
7-404-009	Latest 8	*CTL	
7-404-010	Latest 9	*CTL	

7502	[Total Paper Jam]		
7-502-001	Jam Counter	*CTL	[0 to 65535 / - / 0]
7-502-002	Total Jam Counter	*CTL	[0 to 65535 / - / 0]

7503	[Total Original Jam Counter]		
7-503-001		*CTL	[0 to 65535 / - / 0]
7503	[Total Original Jam]		
7-503-002	Total Original Counter	*CTL	[0 to 65535 / - / 0]

7504	[Paper Jam Location]		
7-504-001	At Power On	*CTL	Paper is not fed at power on. [0 to 65535 / **0** / 0]
7-504-003	1st Paper Feed SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-004	2nd Paper Feed SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-005	3rd Paper Feed SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-006	4th Paper Feed SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-007	LCT Paper Feed SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-008	1st Vertical Transport SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-009	2nd Vertical Transport SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-010	3rd Vertical Transport SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-011	4th Vertical Transport SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-012	Relay SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-013	Registration SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-014	Fusing Exit SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-015	Exit Unit Entrance SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-016	Paper Exit SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-019	Duplex Entrance SN: Late	*CTL	[0 to 65535 / **0** / 0]

7-504-020	Duplex Transport SN 1: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-021	Duplex Transport SN 2: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-022	Duplex Transport SN 3: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-023	Duplex Exit SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-024	LCT Relay SN: Late3	*CTL	[0 to 65535 / **0** / 0]
7-504-034	Bypass Paper Feed SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-045	Sort Tray: Paper Exit SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-046	Sort Tray: Tray Lift Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-047	Sort Tray: Shift Tray Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-053	1st Paper Feed SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-054	2nd Paper Feed SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-055	3rd Paper Feed SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-056	4th Paper Feed SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-057	LCT Paper Feed SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-058	1st Vertical Transport SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-059	2nd Vertical Transport SN: Lag	*CTL	[0 to 65535 / **0** / 0]

7-504-060	3rd Vertical Transport SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-061	4th Vertical Transport SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-062	Relay SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-063	Registration SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-066	Paper Exit SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-069	Duplex Entrance SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-071	Duplex Transport SN 2: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-072	Duplex Transport SN 3: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-074	Relay SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-101	Entrance SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-102	Entrance SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-103	Horizontal Trans. SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-104	Horizontal Trans. SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-105	Switchback Trans. SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-106	Switchback Trans. SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-107	Top Tray Exit SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-108	Top Tray Exit SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-109	Shift Tray Exit: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-110	Shift Tray Exit: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-111	Entrance Trans. Motor	*CTL	[0 to 65535 / **0** / 0]

7-504-112	Horizontal Trans. Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-113	Pre-stack Transport Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-114	Relay Transport Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-115	Paper Exit Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-116	Trailing Edge Pressure Plate Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-117	Paper Exit Gate Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-118	Punching Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-119	Punch Shift Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-120	S-to-S Regist. Move Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-121	Lower Junction Gate Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-122	Jogger Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-123	Positioning Roller Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-124	Feed Out Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-125	Corner Stapler Shift Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-126	Corner Stapler Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-130	Output Tray Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-131	Shift Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-132	Shift Tray Jogger Front Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-133	Shift Tray Jogger Rear Motor	*CTL	[0 to 65535 / **0** / 0]

7-504-134	Shift Tray Jogger Retraction Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-135	Stacking Roller Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-136	Leading Edge Guide Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-140	Positioning Roller Transport Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-141	Paper Guide Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-149	Main Machine Setting Incorrect	*CTL	[0 to 65535 / **0** / 0]
7-504-151	Booklet Entrance SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-152	Booklet Duplex Entrance SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-153	Booklet Horizontal Trans. SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-154	Booklet Horizontal Trans. SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-155	Booklet Switchback Trans. SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-156	Booklet Switchback Trans. SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-157	Booklet Top Tray Exit SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-158	Booklet Top Tray Exit SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-159	Booklet Shift Tray Exit: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-160	Booklet Shift Tray Exit: Lag	*CTL	[0 to 65535 / **0** / 0]

7-504-161	Booklet Stapler Exit Sn: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-162	Booklet Stapler Exit Sn: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-163	Booklet Entrance Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-164	Booklet Horizontal Trans. Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-165	Booklet Pre-stack Transport Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-166	Booklet Relay Transport Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-167	Booklet Paper Exit Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-168	Booklet Trailing Edge Pressure Plate Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-169	Booklet Paper Exit Gate Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-170	Booklet Punching Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-171	Booklet Punch Shift Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-172	Booklet S-to-S Regist. Move Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-173	Booklet Lower Junction Gate Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-174	Booklet Jogger Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-175	Booklet Positioning Roller Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-176	Booklet Stack Feed-Out Belt Motor	*CTL	[0 to 65535 / **0** / 0]

7-504-177	Booklet Corner Stapler Shift Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-178	Booklet Corner Stapler Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-179	Booklet Jogger Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-180	Booklet Guide Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-181	Booklet Fence Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-182	Booklet Stapler Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-183	Movement Roller Transport Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-184	Folding Transport Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-185	Flat Fold Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-186	Booklet Output Tray Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-187	Booklet Shift Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-188	Booklet Shift Jogger Front Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-189	Booklet Shift Jogger Rear Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-190	Booklet Shift Tray Jogger Retraction Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-191	Booklet Stacking Roller Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-192	Booklet Leading Edge Guide Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-196	Booklet Positioning Roller Transport Motor	*CTL	[0 to 65535 / **0** / 0]

7-504-197	Booklet Paper Guide Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-199	Booklet Main Machine Setting Incorrect	*CTL	[0 to 65535 / **0** / 0]
7-504-201	Entrance Sensor	*CTL	[0 to 65535 / **0** / 0]
7-504-202	Proof Tray Exit	*CTL	[0 to 65535 / **0** / 0]
7-504-203	Shift Tray Exit	*CTL	[0 to 65535 / **0** / 0]
7-504-204	Staple Tray Exit	*CTL	[0 to 65535 / **0** / 0]
7-504-205	Pre-Stack	*CTL	[0 to 65535 / **0** / 0]
7-504-206	Exit After Jogging	*CTL	[0 to 65535 / **0** / 0]
7-504-208	Upper Trans Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-209	Shift Tray Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-210	Positioning Roller Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-211	Jogger Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-212	Stack Plate Motor (Center)	*CTL	[0 to 65535 / **0** / 0]
7-504-213	Stack Plate Motor (Front)	*CTL	[0 to 65535 / **0** / 0]
7-504-214	Stack Plate Motor (Rear)	*CTL	[0 to 65535 / **0** / 0]
7-504-215	Shift Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-216	Drag Drive Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-217	Shift Tray Jogger Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-218	Shift Tray Jogger Retraction Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-219	Exit Guide Motor	*CTL	[0 to 65535 / **0** / 0]

7-504-220	Staple Hammer Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-221	Stapler Movement Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-222	Stapler Rotation Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-223	Stack Feed-Out Belt Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-224	Punch Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-225	Top Fence Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-226	Bottom Fence Motor	*CTL	[0 to 65535 / **0** / 0]
7-504-247	Main Machine Setting Incorrect	*CTL	[0 to 65535 / **0** / 0]
7-504-249	GBC Jam	*CTL	[0 to 65535 / **0** / 0]
7-504-251	1st Vertical Transport SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-252	1st Vertical Transport SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-253	2nd Vertical Transport SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-504-254	2nd Vertical Transport SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-504-255	3rd Vertical Transport SN: Late	*CTL	[0 to 65535 / **0** / 0]

7505	**[Original Jam Detection]**		
7-505-001	At Power On	*CTL	[0 to 65535 / **0** / 0]
7-505-013	Separation Sensor: Late	*CTL	[0 to 65535 / **0** / 0]
7-505-014	Skew Correction Sn: Late	*CTL	[0 to 65535 / **0** / 0]

7-505-015	Scanning Entrance Sn: Late	*CTL	[0 to 65535 / **0** / 0]
7-505-016	Registration Sensor: Late	*CTL	[0 to 65535 / **0** / 0]
7-505-017	Original Exit Sensor: Late	*CTL	[0 to 65535 / **0** / 0]
7-505-063	Separation Sensor: Lag	*CTL	[0 to 65535 / **0** / 0]
7-505-064	Skew Correction Sn: Lag	*CTL	[0 to 65535 / **0** / 0]
7-505-065	Scanning Entrance Sn: Lag	*CTL	[0 to 65535 / **0** / 0]
7-505-066	Registration Sensor: Lag	*CTL	[0 to 65535 / **0** / 0]
7-505-067	Original Exit Sensor: Lag	*CTL	[0 to 65535 / **0** / 0]
7-505-239	Original Pull	*CTL	[0 to 65535 / **0** / 0]

7506	**[Jam Count by Paper Size]**		
7-506-005	A4 LEF	*CTL	[0 to 65535 / **0** / 0]
7-506-006	A5 LEF	*CTL	
7-506-014	B5 LEF	*CTL	
7-506-038	LT LEF	*CTL	
7-506-044	HLT LEF	*CTL	
7-506-132	A3 SEF	*CTL	
7-506-133	A4 SEF	*CTL	
7-506-134	A5 SEF	*CTL	
7-506-141	B4 SEF	*CTL	
7-506-142	B5 SEF	*CTL	
7-506-160	DLT SEF	*CTL	
7-506-164	LG SEF	*CTL	
7-506-166	LT SEF	*CTL	

7-506-172	HLT SEF	*CTL	
7-506-255	Others	*CTL	

7507	**[Plotter Jam History]**		
7-507-001	Latest	*CTL	[-/ **-** / -]
7-507-002	Latest 1	*CTL	
7-507-003	Latest 2	*CTL	
7-507-004	Latest 3	*CTL	
7-507-005	Latest 4	*CTL	
7-507-006	Latest 5	*CTL	
7-507-007	Latest 6	*CTL	
7-507-008	Latest 7	*CTL	
7-507-009	Latest 8	*CTL	
7-507-010	Latest 9	*CTL	

7508	**[Original Jam History]**		
7-508-001	Latest	*CTL	[- / **-** / -]
7-508-002	Latest 1	*CTL	
7-508-003	Latest 2	*CTL	
7-508-004	Latest 3	*CTL	
7-508-005	Latest 4	*CTL	
7-508-006	Latest 5	*CTL	
7-508-007	Latest 6	*CTL	
7-508-008	Latest 7	*CTL	
7-508-009	Latest 8	*CTL	
7-508-010	Latest 9	*CTL	

7509	**[Paper Jam Location]**		
7-509-001	3rd Vertical Transport SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-509-002	4th Vertical Transport SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-509-003	4th Vertical Transport SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-509-004	5th Vertical Transport SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-509-005	5th Vertical Transport SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-509-044	Main Machine Setting Incorrect	*CTL	[0 to 65535 / **0** / 0]
7-509-046	Cover Feeder: Paper Feed SN: Late or Lag	*CTL	[0 to 65535 / **0** / 0]
7-509-047	Cover Feeder: Paper Exit SN: Late or Lag	*CTL	[0 to 65535 / **0** / 0]
7-509-048	Cover Feeder: Bottom Plate Mtr: Late or Lag	*CTL	[0 to 65535 / **0** / 0]
7-509-096	Paper Feed: Late	*CTL	[0 to 65535 / **0** / 0]
7-509-097	Paper Feed: Lag	*CTL	[0 to 65535 / **0** / 0]
7-509-098	Pressure Timing SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-509-099	Pressure Timing SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-509-100	Contact Timing SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-509-101	Contact Timing SN: Lag	*CTL	[0 to 65535 / **0** / 0]

7-509-102	2nd Stopper Motor: Late	*CTL	[0 to 65535 / **0** / 0]
7-509-103	2nd Stopper Motor: Lag	*CTL	[0 to 65535 / **0** / 0]
7-509-104	Paper Exit Sensor 1: Late	*CTL	[0 to 65535 / **0** / 0]
7-509-105	Paper Exit Sensor 1: Lag	*CTL	[0 to 65535 / **0** / 0]
7-509-108	Paper Exit Sensor 3: Late	*CTL	[0 to 65535 / **0** / 0]
7-509-109	Paper Exit Sensor 3: Lag	*CTL	[0 to 65535 / **0** / 0]
7-509-110	Brushless Motor	*CTL	[0 to 65535 / **0** / 0]
7-509-111	Lower Stopper Motor Jam	*CTL	[0 to 65535 / **0** / 0]
7-509-112	Upper Stopper Motor Jam	*CTL	[0 to 65535 / **0** / 0]
7-509-144	Main Machine Setting Incorrect	*CTL	[0 to 65535 / **0** / 0]
7-509-146	Entrance SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-509-147	Entrance SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-509-148	Folder:Top Tray Exit Sn (Late)	*CTL	[0 to 65535 / **0** / 0]
7-509-149	Folder:Top Tray Exit Sn (Stay on)	*CTL	[0 to 65535 / **0** / 0]
7-509-150	Folder:Horizontal Path Exit Sn (Late)	*CTL	[0 to 65535 / **0** / 0]
7-509-151	Folder:Horizontal Path Exit Sn (Stay on)	*CTL	[0 to 65535 / **0** / 0]

7-509-152	HP SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-509-153	1st Stopper HP SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-509-154	2nd Stopper HP SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-509-155	2nd Stopper HP SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-509-156	3rd Stopper HP SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-509-157	3rd Stopper HP SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-509-158	Registration Sensor	*CTL	[0 to 65535 / **0** / 0]
7-509-159	Folder:Top Tray Paper Path Sensor	*CTL	[0 to 65535 / **0** / 0]
7-509-162	Entrance Junction Solenoid Motor	*CTL	[0 to 65535 / **0** / 0]
7-509-163	1st Stopper Motor Error	*CTL	[0 to 65535 / **0** / 0]
7-509-164	2nd Stopper Motor Error	*CTL	[0 to 65535 / **0** / 0]
7-509-165	3rd Stopper Motor Error	*CTL	[0 to 65535 / **0** / 0]
7-509-166	Movement Roller Up/Down M Jam	*CTL	[0 to 65535 / **0** / 0]
7-509-167	Regist. Roller Release M Jam	*CTL	[0 to 65535 / **0** / 0]
7-509-168	Fold Plate Motor Jam	*CTL	[0 to 65535 / **0** / 0]
7-509-169	Jogger Fence Motor Jam	*CTL	[0 to 65535 / **0** / 0]

7-509-171	Direct-Send JG Motor Jam	*CTL	[0 to 65535 / **0** / 0]
7-509-172	FM6 Pawl Motor Jam	*CTL	[0 to 65535 / **0** / 0]
7-509-194	Main Machine Setting Incorrect	*CTL	[0 to 65535 / **0** / 0]

7514	**[Paper Jam Count by Location]**		
7-514-001	At Power On	*CTL	Paper is not fed at power on. [0 to 65535 / **0** / 0]
7-514-003	1st Paper Feed SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-004	2nd Paper Feed SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-005	3rd Paper Feed SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-006	4th Paper Feed SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-007	LCT Paper Feed SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-008	1st Vertical Transport SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-009	2nd Vertical Transport SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-010	3rd Vertical Transport SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-011	4th Vertical Transport SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-012	Relay SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-013	Registration SN: Late	*CTL	[0 to 65535 / **0** / 0]

7-514-014	Fusing Exit SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-015	Exit Unit Entrance SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-016	Paper Exit SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-019	Duplex Entrance SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-020	Duplex Transport SN 1: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-021	Duplex Transport SN 2: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-022	Duplex Transport SN 3: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-023	Duplex Exit SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-024	LCT Relay SN: Late3	*CTL	[0 to 65535 / **0** / 0]
7-514-034	Bypass Paper Feed SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-045	Sort Tray: Paper Exit SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-046	Sort Tray: Tray Lift Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-047	Sort Tray: Shift Tray Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-053	1st Paper Feed SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-054	2nd Paper Feed SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-055	3rd Paper Feed SN: Lag	*CTL	[0 to 65535 / **0** / 0]

7-514-056	4th Paper Feed SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-057	LCT Paper Feed SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-058	1st Vertical Transport SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-059	2nd Vertical Transport SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-060	3rd Vertical Transport SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-061	4th Vertical Transport SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-062	Relay SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-063	Registration SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-066	Paper Exit SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-069	Duplex Entrance SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-071	Duplex Transport SN 2: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-072	Duplex Transport SN 3: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-074	Relay SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-101	Entrance SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-102	Entrance SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-103	Horizontal Trans. SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-104	Horizontal Trans. SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-105	Switchback Trans. SN: Late	*CTL	[0 to 65535 / **0** / 0]

7-514-106	Switchback Trans. SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-107	Top Tray Exit SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-108	Top Tray Exit SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-109	Shift Tray Exit: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-110	Shift Tray Exit: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-111	Entrance Trans. Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-112	Horizontal Trans. Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-113	Pre-stack Transport Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-114	Relay Transport Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-115	Paper Exit Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-116	Trailing Edge Pressure Plate Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-117	Paper Exit Gate Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-118	Punching Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-119	Punch Shift Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-120	S-to-S Regist. Move Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-121	Lower Junction Gate Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-122	Jogger Motor	*CTL	[0 to 65535 / **0** / 0]

7-514-123	Positioning Roller Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-124	Feed Out Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-125	Corner Stapler Shift Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-126	Corner Stapler Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-130	Output Tray Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-131	Shift Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-132	Shift Tray Jogger Front Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-133	Shift Tray Jogger Rear Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-134	Shift Tray Jogger Retraction Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-135	Stacking Roller Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-136	Leading Edge Guide Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-140	Positioning Roller Transport Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-141	Paper Guide Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-149	Main Machine Setting Incorrect	*CTL	[0 to 65535 / **0** / 0]
7-514-151	Booklet Entrance SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-152	Booklet Duplex Entrance SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-153	Booklet Horizontal Trans. SN: Late	*CTL	[0 to 65535 / **0** / 0]

7-514-154	Booklet Horizontal Trans. SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-155	Booklet Switchback Trans. SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-156	Booklet Switchback Trans. SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-157	Booklet Top Tray Exit SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-158	Booklet Top Tray Exit SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-159	Booklet Shift Tray Exit: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-160	Booklet Shift Tray Exit: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-161	Booklet Stapler Exit Sn: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-162	Booklet Stapler Exit Sn: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-163	Booklet Entrance Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-164	Booklet Horizontal Trans. Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-165	Booklet Pre-stack Transport Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-166	Booklet Relay Transport Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-167	Booklet Paper Exit Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-168	Booklet Trailing Edge Pressure Plate Motor	*CTL	[0 to 65535 / **0** / 0]

7-514-169	Booklet Paper Exit Gate Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-170	Booklet Punching Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-171	Booklet Punch Shift Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-172	Booklet S-to-S Regist. Move Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-173	Booklet Lower Junction Gate Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-174	Booklet Jogger Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-175	Booklet Positioning Roller Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-176	Booklet Stack Feed-Out Belt Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-177	Booklet Corner Stapler Shift Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-178	Booklet Corner Stapler Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-179	Booklet Jogger Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-180	Booklet Guide Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-181	Booklet Fence Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-182	Booklet Stapler Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-183	Movement Roller Transport Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-184	Folding Transport Motor	*CTL	[0 to 65535 / **0** / 0]

7-514-185	Flat Fold Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-186	Booklet Output Tray Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-187	Booklet Shift Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-188	Booklet Shift Jogger Front Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-189	Booklet Shift Jogger Rear Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-190	Booklet Shift Tray Jogger Retraction Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-191	Booklet Stacking Roller Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-192	Booklet Leading Edge Guide Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-196	Booklet Positioning Roller Transport Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-197	Booklet Paper Guide Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-199	Booklet Main Machine Setting Incorrect	*CTL	[0 to 65535 / **0** / 0]
7-514-201	Entrance Sensor	*CTL	[0 to 65535 / **0** / 0]
7-514-202	Proof Tray Exit	*CTL	[0 to 65535 / **0** / 0]
7-514-203	Shift Tray Exit	*CTL	[0 to 65535 / **0** / 0]
7-514-204	Staple Tray Exit	*CTL	[0 to 65535 / **0** / 0]
7-514-205	Pre-Stack	*CTL	[0 to 65535 / **0** / 0]
7-514-206	Exit After Jogging	*CTL	[0 to 65535 / **0** / 0]
7-514-208	Upper Trans Motor	*CTL	[0 to 65535 / **0** / 0]

7-514-209	Shift Tray Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-210	Positioning Roller Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-211	Jogger Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-212	Stack Plate Motor (Center)	*CTL	[0 to 65535 / **0** / 0]
7-514-213	Stack Plate Motor (Front)	*CTL	[0 to 65535 / **0** / 0]
7-514-214	Stack Plate Motor (Rear)	*CTL	[0 to 65535 / **0** / 0]
7-514-215	Shift Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-216	Drag Drive Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-217	Shift Tray Jogger Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-218	Shift Tray Jogger Retraction Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-219	Exit Guide Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-220	Staple Hammer Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-221	Stapler Movement Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-222	Stapler Rotation Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-223	Stack Feed-Out Belt Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-224	Punch Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-225	Top Fence Motor	*CTL	[0 to 65535 / **0** / 0]
7-514-226	Bottom Fence Motor	*CTL	[0 to 65535 / **0** / 0]

7-514-247	Main Machine Setting Incorrect	*CTL	[0 to 65535 / **0** / 0]
7-514-249	GBC Jam	*CTL	[0 to 65535 / **0** / 0]
7-514-251	1st Vertical Transport SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-252	1st Vertical Transport SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-253	2nd Vertical Transport SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-514-254	2nd Vertical Transport SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-514-255	3rd Vertical Transport SN: Late	*CTL	[0 to 65535 / **0** / 0]

7515	**[Original Jam Count by Detection]**		
7-515-001	At Power On	*CTL	[0 to 65535 / **0** / 0]
7-515-013	Separation Sensor: Late	*CTL	[0 to 65535 / **0** / 0]
7-515-014	Skew Correction Sn: Late	*CTL	[0 to 65535 / **0** / 0]
7-515-015	Scanning Entrance Sn: Late	*CTL	[0 to 65535 / **0** / 0]
7-515-016	Registration Sensor: Late	*CTL	[0 to 65535 / **0** / 0]
7-515-017	Original Exit Sensor: Late	*CTL	[0 to 65535 / **0** / 0]
7-515-063	Separation Sensor: Lag	*CTL	[0 to 65535 / **0** / 0]
7-515-064	Skew Correction Sn: Lag	*CTL	[0 to 65535 / **0** / 0]

7-515-065	Scanning Entrance Sn: Lag	*CTL	[0 to 65535 / **0** / 0]
7-515-066	Registration Sensor: Lag	*CTL	[0 to 65535 / **0** / 0]
7-515-067	Original Exit Sensor: Lag	*CTL	[0 to 65535 / **0** / 0]
7-515-239	Original Pull	*CTL	[0 to 65535 / **0** / 0]

7516	**[Jam Paper Size Cnt]**		
	Displays occurring count of transfer paper jams by each paper size.		
7-516-005	A4 LEF	*CTL	[0 to 65535 / **0** / 0]
7-516-006	A5 LEF	*CTL	
7-516-014	B5 LEF	*CTL	
7-516-038	LT LEF	*CTL	
7-516-044	HLT LEF	*CTL	
7-516-132	A3 SEF	*CTL	[0 to 65535 / **0** / 0]
7-516-133	A4 SEF	*CTL	
7-516-134	A5 SEF	*CTL	
7-516-141	B4 SEF	*CTL	
7-516-142	B5 SEF	*CTL	
7-516-160	DLT SEF	*CTL	[0 to 65535 / **0** / 0]
7-516-164	LG SEF	*CTL	
7-516-166	LT SEF	*CTL	
7-516-172	HLT SEF	*CTL	
7-516-255	Others	*CTL	

7519	**[Paper Jam Count by Location]**

7-519-001	3rd Vertical Transport SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-519-002	4th Vertical Transport SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-519-003	4th Vertical Transport SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-519-004	5th Vertical Transport SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-519-005	5th Vertical Transport SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-519-044	Main Machine Setting Incorrect	*CTL	[0 to 65535 / **0** / 0]
7-519-046	Cover Feeder: Paper Feed SN: Late or Lag	*CTL	[0 to 65535 / **0** / 0]
7-519-047	Cover Feeder: Paper Exit SN: Late or Lag	*CTL	[0 to 65535 / **0** / 0]
7-519-048	Cover Feeder: Bottom Plate Mtr: Late or Lag	*CTL	[0 to 65535 / **0** / 0]
7-519-096	Paper Feed: Late	*CTL	[0 to 65535 / **0** / 0]
7-519-097	Paper Feed: Lag	*CTL	[0 to 65535 / **0** / 0]
7-519-098	Pressure Timing SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-519-099	Pressure Timing SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-519-100	Contact Timing SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-519-101	Contact Timing SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-519-102	2nd Stopper Motor: Late	*CTL	[0 to 65535 / **0** / 0]

7-519-103	2nd Stopper Motor: Lag	*CTL	[0 to 65535 / **0** / 0]
7-519-104	Paper Exit Sensor 1: Late	*CTL	[0 to 65535 / **0** / 0]
7-519-105	Paper Exit Sensor 1: Lag	*CTL	[0 to 65535 / **0** / 0]
7-519-108	Paper Exit Sensor 3: Late	*CTL	[0 to 65535 / **0** / 0]
7-519-109	Paper Exit Sensor 3: Lag	*CTL	[0 to 65535 / **0** / 0]
7-519-110	Brushless Motor	*CTL	[0 to 65535 / **0** / 0]
7-519-111	Lower Stopper Motor Jam	*CTL	[0 to 65535 / **0** / 0]
7-519-112	Upper Stopper Motor Jam	*CTL	[0 to 65535 / **0** / 0]
7-519-144	Main Machine Setting Incorrect	*CTL	[0 to 65535 / **0** / 0]
7-519-146	Entrance SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-519-147	Entrance SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-519-148	Folder:Top Tray Exit Sn (Late)	*CTL	[0 to 65535 / **0** / 0]
7-519-149	Folder:Top Tray Exit Sn (Stay on)	*CTL	[0 to 65535 / **0** / 0]
7-519-150	Folder:Horizontal Path Exit Sn (Late)	*CTL	[0 to 65535 / **0** / 0]
7-519-151	Folder:Horizontal Path Exit Sn (Stay on)	*CTL	[0 to 65535 / **0** / 0]
7-519-152	HP SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-519-153	1st Stopper HP SN: Lag	*CTL	[0 to 65535 / **0** / 0]

7-519-154	2nd Stopper HP SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-519-155	2nd Stopper HP SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-519-156	3rd Stopper HP SN: Late	*CTL	[0 to 65535 / **0** / 0]
7-519-157	3rd Stopper HP SN: Lag	*CTL	[0 to 65535 / **0** / 0]
7-519-158	Registration Sensor	*CTL	[0 to 65535 / **0** / 0]
7-519-159	Folder:Top Tray Paper Path Sensor	*CTL	[0 to 65535 / **0** / 0]
7-519-162	Entrance Junction Solenoid Motor	*CTL	[0 to 65535 / **0** / 0]
7-519-163	1st Stopper Motor Error	*CTL	[0 to 65535 / **0** / 0]
7-519-164	2nd Stopper Motor Error	*CTL	[0 to 65535 / **0** / 0]
7-519-165	3rd Stopper Motor Error	*CTL	[0 to 65535 / **0** / 0]
7-519-166	Movement Roller Up/Down M Jam	*CTL	[0 to 65535 / **0** / 0]
7-519-167	Regist. Roller Release M Jam	*CTL	[0 to 65535 / **0** / 0]
7-519-168	Fold Plate Motor Jam	*CTL	[0 to 65535 / **0** / 0]
7-519-169	Jogger Fence Motor Jam	*CTL	[0 to 65535 / **0** / 0]
7-519-171	Direct-Send JG Motor Jam	*CTL	[0 to 65535 / **0** / 0]
7-519-172	FM6 Pawl Motor Jam	*CTL	[0 to 65535 / **0** / 0]

7-519-194	Main Machine Setting Incorrect	*CTL	[0 to 65535 / **0** / 0]

7520	**[Update Log]**		
7-520-001	ErrorRecord1	*CTL	[0 to 255 / **0** / 1]
7-520-002	ErrorRecord2	*CTL	[0 to 255 / **0** / 1]
7-520-003	ErrorRecord3	*CTL	[0 to 255 / **0** / 1]
7-520-004	ErrorRecord4	*CTL	[0 to 255 / **0** / 1]
7-520-005	ErrorRecord5	*CTL	[0 to 255 / **0** / 1]
7-520-006	ErrorRecord6	*CTL	[0 to 255 / **0** / 1]
7-520-007	ErrorRecord7	*CTL	[0 to 255 / **0** / 1]
7-520-008	ErrorRecord8	*CTL	[0 to 255 / **0** / 1]
7-520-009	ErrorRecord9	*CTL	[0 to 255 / **0** / 1]
7-520-010	ErrorRecord10	*CTL	[0 to 255 / **0** / 1]
7-520-011	Auto:StartDate1	*CTL	[0 to 0 / **0** / 0]
7-520-012	Auto:StartDate2	*CTL	[0 to 0 / **0** / 0]
7-520-013	Auto:StartDate3	*CTL	[0 to 0 / **0** / 0]
7-520-014	Auto:StartDate4	*CTL	[0 to 0 / **0** / 0]
7-520-015	Auto:StartDate5	*CTL	[0 to 0 / **0** / 0]
7-520-021	Auto:EndDate1	*CTL	[0 to 0 / **0** / 0]
7-520-022	Auto:EndDate2	*CTL	[0 to 0 / **0** / 0]
7-520-023	Auto:EndDate3	*CTL	[0 to 0 / **0** / 0]
7-520-024	Auto:EndDate4	*CTL	[0 to 0 / **0** / 0]
7-520-025	Auto:EndDate5	*CTL	[0 to 0 / **0** / 0]
7-520-031	Auto:Piecemark1	*CTL	[0 to 0 / **0** / 0]
7-520-032	Auto:Piecemark2	*CTL	[0 to 0 / **0** / 0]

7-520-033	Auto:Piecemark3	*CTL	[0 to 0 / **0** / 0]
7-520-034	Auto:Piecemark4	*CTL	[0 to 0 / **0** / 0]
7-520-035	Auto:Piecemark5	*CTL	[0 to 0 / **0** / 0]
7-520-041	Auto:Version1	*CTL	[0 to 0 / **0** / 0]
7-520-042	Auto:Version2	*CTL	[0 to 0 / **0** / 0]
7-520-043	Auto:Version3	*CTL	[0 to 0 / **0** / 0]
7-520-044	Auto:Version4	*CTL	[0 to 0 / **0** / 0]
7-520-045	Auto:Version5	*CTL	[0 to 0 / **0** / 0]
7-520-051	Auto:Result1	*CTL	[0 to 255 / **0** / 1]
7-520-052	Auto:Result2	*CTL	[0 to 255 / **0** / 1]
7-520-053	Auto:Result3	*CTL	[0 to 255 / **0** / 1]
7-520-054	Auto:Result4	*CTL	[0 to 255 / **0** / 1]
7-520-055	Auto:Result5	*CTL	[0 to 255 / **0** / 1]
7-520-056	Auto:Result6	*CTL	[0 to 255 / **0** / 1]
7-520-057	Auto:Result7	*CTL	[0 to 255 / **0** / 1]
7-520-058	Auto:Result8	*CTL	[0 to 255 / **0** / 1]
7-520-059	Auto:Result9	*CTL	[0 to 255 / **0** / 1]
7-520-060	Auto:Result10	*CTL	[0 to 255 / **0** / 1]

7624	**[Parts Replacement Operation ON/OFF]**		
7-624-001	Developer	*CTL	[0 or 1 / **1** / 1]
7-624-002	Fuser Unit:Fusing Roller	*CTL	[0 or 1 / **1** / 1]
7-624-003	Fuser Unit:Pressure Roller	*CTL	[0 or 1 / **1** / 1]
7-624-004	Fuser Unit:FusingR:Bearings	*CTL	[0 or 1 / **1** / 1]

7-624-005	Fuser Unit:PressR:Bearings	*CTL	[0 or 1 / **1** / 1]
7-624-006	Hot Roller Strippers	*CTL	[0 or 1 / **1** / 1]
7-624-007	Cleaning Roller	*CTL	[0 or 1 / **1** / 1]
7-624-008	Cleaning Roller Bearings	*CTL	[0 or 1 / **1** / 1]
7-624-009	Web Roll	*CTL	[0 or 1 / **1** / 1]
7-624-010	Web Cleaning Roller	*CTL	[0 or 1 / **1** / 1]
7-624-011	Development Filter	*CTL	[0 or 1 / **1** / 1]
7-624-012	Toner Recycling Unit	*CTL	[0 or 1 / **1** / 1]
7-624-013	Pressure Release Filter	*CTL	[0 or 1 / **1** / 1]
7-624-014	Charge Corona Wire	*CTL	[0 or 1 / **1** / 1]
7-624-015	Grid Plate	*CTL	[0 or 1 / **1** / 1]
7-624-016	Cleaning Pad	*CTL	[0 or 1 / **1** / 1]
7-624-017	Clearning Blead	*CTL	[0 or 1 / **1** / 1]
7-624-018	Cleaning Brush	*CTL	[0 or 1 / **1** / 1]
7-624-019	Transfer Belt	*CTL	[0 or 1 / **1** / 1]
7-624-020	Transfer Belt Cleaning Blade	*CTL	[0 or 1 / **1** / 1]
7-624-022	ADF Pick-up Roller	*CTL	[0 or 1 / **1** / 1]
7-624-023	ADF Feed Belt	*CTL	[0 or 1 / **1** / 1]
7-624-024	ADF Separation Roller	*CTL	[0 or 1 / **1** / 1]
7-624-025	Tray1:Pickup Roller	*CTL	[0 or 1 / **1** / 1]
7-624-026	Tray1:Feed Roller	*CTL	[0 or 1 / **1** / 1]
7-624-027	Tray1:Separate Roller	*CTL	[0 or 1 / **1** / 1]
7-624-028	Tray2:Pickup Roller	*CTL	[0 or 1 / **1** / 1]
7-624-029	Tray2:Feed Roller	*CTL	[0 or 1 / **1** / 1]

7-624-030	Tray2:Separate Roller	*CTL	[0 or 1 / **1** / 1]
7-624-031	Feed Roller-Tray3	*CTL	[0 or 1 / **1** / 1]
7-624-032	Pick-up Roller-Tray3	*CTL	[0 or 1 / **1** / 1]
7-624-033	Separation Roller-Tray3	*CTL	[0 or 1 / **1** / 1]
7-624-034	Feed Roller-Tray4	*CTL	[0 or 1 / **1** / 1]
7-624-035	Pick-up Roller-Tray4	*CTL	[0 or 1 / **1** / 1]
7-624-036	Separation Roller-Tray4	*CTL	[0 or 1 / **1** / 1]
7-624-037	Feed Roller-LCT	*CTL	[0 or 1 / **1** / 1]
7-624-038	Pick-up Roller-LCT	*CTL	[0 or 1 / **1** / 1]
7-624-039	Separation Roller-LCT	*CTL	[0 or 1 / **1** / 1]
7-624-040	Feed Belt Cover feeder	*CTL	[0 or 1 / **1** / 1]
7-624-041	Pick-up Roller Cover feeder	*CTL	[0 or 1 / **1** / 1]
7-624-042	Separation Roller Cover feeder	*CTL	[0 or 1 / **1** / 1]
7-624-044	Thermistor Fusing unit Rearr	*CTL	[0 or 1 / **1** / 1]
7-624-045	Thermistor Fusing unit Center	*CTL	[0 or 1 / **1** / 1]
7-624-046	Dust Filter	*CTL	[0 or 1 / **1** / 1]
7-624-047	Main Tray (Custom 1)	*CTL	[0 or 1 / **1** / 1]
7-624-048	Main Tray (Custom 2)	*CTL	[0 or 1 / **1** / 1]
7-624-049	Main Tray (Custom 3)	*CTL	[0 or 1 / **1** / 1]
7-624-050	Main Tray (Custom 4)	*CTL	[0 or 1 / **1** / 1]
7-624-051	Paper Tray1 (Custom 1)	*CTL	[0 or 1 / **1** / 1]

7-624-052	Paper Tray1 (Custom 2)	*CTL	[0 or 1 / **1** / 1]
7-624-053	Paper Tray2 (Custom 1)	*CTL	[0 or 1 / **1** / 1]
7-624-054	Paper Tray2 (Custom 2)	*CTL	[0 or 1 / **1** / 1]
7-624-055	Paper Tray3 (Custom 1)	*CTL	[0 or 1 / **1** / 1]
7-624-056	Paper Tray3 (Custom 2)	*CTL	[0 or 1 / **1** / 1]
7-624-057	Paper Tray4 (Custom 1)	*CTL	[0 or 1 / **1** / 1]
7-624-058	Paper Tray4 (Custom 2)	*CTL	[0 or 1 / **1** / 1]
7-624-059	LCT (Custom 1)	*CTL	[0 or 1 / **1** / 1]
7-624-060	LCT (Custom 2)	*CTL	[0 or 1 / **1** / 1]
7-624-063	Interposer (Custom 1)	*CTL	[0 or 1 / **1** / 1]
7-624-064	Interposer (Custom 2)	*CTL	[0 or 1 / **1** / 1]
7-624-065	Wast Toner Bottle	*CTL	[0 or 1 / **1** / 1]
7-624-066	Ozon Filter (Custom 1)	*CTL	[0 or 1 / **1** / 1]

7801	**[ROM No./ Firmware Version]**		
7-801-255	-	CTL	-

7803	**[PM Counter Display]**		
7-803-001	Paper	*CTL	[0 to 999999 / **0** / 1/step]

7804	**[PM Counter Reset]**		
7-804-001	Paper	CTL	[- / **-** / -] [Execute]

7807	**[SC/Jam Counter Reset]**		
7-807-001	-	*CTL	[- / **-** / -] [Execute]

7826	**[MF Error Counter]**		
7-826-001	Error Total	*CTL	[0 to 9999999 / **-** / 0]
7-826-002	Error Staple	*CTL	[0 to 9999999 / **-** / 0]

7827	**[MF Error Counter Clear]**		
7-827-001	-	*CTL	[- / **-** / -] [Execute]

7832	**[Self-Diagnose Result Display]**		
7-832-001	-	CTL	[- / **-** / -] [Execute]

7836	**[Total Memory Size]**		
	Displays the memory capacity of the controller system.		
7-836-001	Total Memory Size	CTL	[0 to 0xffffffff / **0** / 0 MB / step]

7840	[Service SP Entry Code Chg Hist]		
7-840-001	Change Time :Latest	*CTL	[- / **-** / -]
7-840-002	Change Time : Last1	*CTL	[- / **-** / -]
7-840-101	Initialize Time : Latest	*CTL	[- / **-** / -]
7-840-102	Initialize Time : Last1	*CTL	[- / **-** / -]

7901	[Assert Info.]		
7-901-001	File Name	*CTL	[- / **-** / -]
7-901-002	Number of Lines	*CTL	[- / **-** / -]
7-901-003	Location	*CTL	[- / **-** / -]

7910	[ROM No]		
7-910-001	System/Copy	CTL	[0 to 0 / **0** / 0]
7-910-002	Engine	CTL	[0 to 0 / **0** / 0]
7-910-003	Lcdc	CTL	[0 to 0 / **0** / 0]
7-910-005	ADF	CTL	[0 to 0 / **0** / 0]
7-910-007	Finisher1	CTL	[0 to 0 / **0** / 0]
7-910-009	Bank	CTL	[0 to 0 / **0** / 0]
7-910-010	LCT	CTL	[0 to 0 / **0** / 0]
7-910-011	Mail Box	CTL	[0 to 0 / **0** / 0]
7-910-012	FCU	CTL	[0 to 0 / **0** / 0]
7-910-018	NetworkSupport	CTL	[0 to 0 / **0** / 0]
7-910-020	Cover Interposer	CTL	[0 to 0 / **0** / 0]
7-910-022	BIOS	CTL	[0 to 0 / **0** / 0]
7-910-023	HDD Format Option	CTL	[0 to 0 / **0** / 0]

7-910-024	Capacitor	CTL	[0 to 0 / **0** / 0]
7-910-025	Folding Unit	CTL	[0 to 0 / **0** / 0]
7-910-150	RPCS	CTL	[0 to 0 / **0** / 0]
7-910-151	PS	CTL	[0 to 0 / **0** / 0]
7-910-152	RPDL	CTL	[0 to 0 / **0** / 0]
7-910-156	R55	CTL	[0 to 0 / **0** / 0]
7-910-157	RTIFF	CTL	[0 to 0 / **0** / 0]
7-910-158	PCL	CTL	[0 to 0 / **0** / 0]
7-910-159	PCLXL	CTL	[0 to 0 / **0** / 0]
7-910-160	MSIS	CTL	[0 to 0 / **0** / 0]
7-910-162	PDF	CTL	[0 to 0 / **0** / 0]
7-910-165	PJL	CTL	[0 to 0 / **0** / 0]
7-910-166	IPDS	CTL	[0 to 0 / **0** / 0]
7-910-167	MediaPrint:JPEG	CTL	[0 to 0 / **0** / 0]
7-910-168	MediaPrint:TIFF	CTL	[0 to 0 / **0** / 0]
7-910-169	XPS	CTL	[0 to 0 / **0** / 0]
7-910-180	FONT	CTL	[0 to 0 / **0** / 0]
7-910-181	FONT1	CTL	[0 to 0 / **0** / 0]
7-910-182	FONT2	CTL	[0 to 0 / **0** / 0]
7-910-183	FONT3	CTL	[0 to 0 / **0** / 0]
7-910-184	FONT4	CTL	[0 to 0 / **0** / 0]
7-910-185	FONT5	CTL	[0 to 0 / **0** / 0]
7-910-200	Factory	CTL	[0 to 0 / **0** / 0]
7-910-201	Copy	CTL	[0 to 0 / **0** / 0]
7-910-202	NetworkDocBox	CTL	[0 to 0 / **0** / 0]
7-910-203	Fax	CTL	[0 to 0 / **0** / 0]

7-910-204	Printer	CTL	[0 to 0 / **0** / 0]
7-910-205	Scanner	CTL	[0 to 0 / **0** / 0]
7-910-206	RFax	CTL	[0 to 0 / **0** / 0]
7-910-210	MIB	CTL	[0 to 0 / **0** / 0]
7-910-211	Websupport	CTL	[0 to 0 / **0** / 0]
7-910-212	WebUapl	CTL	[0 to 0 / **0** / 0]
7-910-213	SDK1	CTL	[0 to 0 / **0** / 0]
7-910-214	SDK2	CTL	[0 to 0 / **0** / 0]
7-910-215	SDK3	CTL	[0 to 0 / **0** / 0]
7-910-250	Package	CTL	[0 to 0 / **0** / 0]

7911	**[Firmware Version]**		
7-911-001	System/Copy	CTL	[0 to 0 / **0** / 0]
7-911-002	Engine	CTL	[0 to 0 / **0** / 0]
7-911-003	Lcdc	CTL	[0 to 0 / **0** / 0]
7-911-005	ADF	CTL	[0 to 0 / **0** / 0]
7-911-007	Finisher1	CTL	[0 to 0 / **0** / 0]
7-911-009	Bank	CTL	[0 to 0 / **0** / 0]
7-911-010	LCT	CTL	[0 to 0 / **0** / 0]
7-911-011	Mail Box	CTL	[0 to 0 / **0** / 0]
7-911-012	FCU	CTL	[0 to 0 / **0** / 0]
7-911-018	NetworkSupport	CTL	[0 to 0 / **0** / 0]
7-911-020	Cover Interposer	CTL	[0 to 0 / **0** / 0]
7-911-022	BIOS	CTL	[0 to 0 / **0** / 0]
7-911-023	HDD Format Option	CTL	[0 to 0 / **0** / 0]
7-911-024	Capacitor	CTL	[0 to 0 / **0** / 0]

7-911-025	Folding Unit	CTL	[0 to 0 / **0** / 0]
7-911-150	RPCS	CTL	[0 to 0 / **0** / 0]
7-911-151	PS	CTL	[0 to 0 / **0** / 0]
7-911-152	RPDL	CTL	[0 to 0 / **0** / 0]
7-911-156	R55	CTL	[0 to 0 / **0** / 0]
7-911-157	RTIFF	CTL	[0 to 0 / **0** / 0]
7-911-158	PCL	CTL	[0 to 0 / **0** / 0]
7-911-159	PCLXL	CTL	[0 to 0 / **0** / 0]
7-911-160	MSIS	CTL	[0 to 0 / **0** / 0]
7-911-162	PDF	CTL	[0 to 0 / **0** / 0]
7-911-165	PJL	CTL	[0 to 0 / **0** / 0]
7-911-166	IPDS	CTL	[0 to 0 / **0** / 0]
7-911-167	MediaPrint:JPEG	CTL	[0 to 0 / **0** / 0]
7-911-168	MediaPrint:TIFF	CTL	[0 to 0 / **0** / 0]
7-911-169	XPS	CTL	[0 to 0 / **0** / 0]
7-911-180	FONT	CTL	[0 to 0 / **0** / 0]
7-911-181	FONT1	CTL	[0 to 0 / **0** / 0]
7-911-182	FONT2	CTL	[0 to 0 / **0** / 0]
7-911-183	FONT3	CTL	[0 to 0 / **0** / 0]
7-911-184	FONT4	CTL	[0 to 0 / **0** / 0]
7-911-185	FONT5	CTL	[0 to 0 / **0** / 0]
7-911-200	Factory	CTL	[0 to 0 / **0** / 0]
7-911-201	Copy	CTL	[0 to 0 / **0** / 0]
7-911-202	NetworkDocBox	CTL	[0 to 0 / **0** / 0]
7-911-203	Fax	CTL	[0 to 0 / **0** / 0]
7-911-204	Printer	CTL	[0 to 0 / **0** / 0]

7-911-205	Scanner	CTL	[0 to 0 / **0** / 0]
7-911-206	RFax	CTL	[0 to 0 / **0** / 0]
7-911-210	MIB	CTL	[0 to 0 / **0** / 0]
7-911-211	Websupport	CTL	[0 to 0 / **0** / 0]
7-911-212	WebUapl	CTL	[0 to 0 / **0** / 0]
7-911-213	SDK1	CTL	[0 to 0 / **0** / 0]
7-911-214	SDK2	CTL	[0 to 0 / **0** / 0]
7-911-215	SDK3	CTL	[0 to 0 / **0** / 0]
7-911-250	Package	CTL	[0 to 0 / **0** / 0]

3.4 CONTROLLER SP TABLES-8

3.4.1 SP8-XXX (DATA LOG2)

Many of these counters are provided for features that are currently not available, such as sending color faxes, and so on. However, here are some Group 8 codes that when used in combination with others, can provide useful information.

SP Numbers	What They Do
SP8211 to SP8216	The number of pages scanned to the document server.
SP8401 to SP8406	The number of pages printed from the document server.
SP8691 to SP8696	The number of pages sent from the document server.

Specifically, the following questions can be answered:

- How is the document server actually being used?
- What application is using the document server most frequently?
- What data in the document server is being reused?

Most of the SPs in this group are prefixed with a letter that indicates the mode of operation (the mode of operation is referred to as an "application"). Before reading the Group 8 Service Table, make sure that you understand what these prefixes mean.

Prefixes	What it means	
T:	Total: (Grand Total).	Grand total of the items counted for all applications (C, F, P, etc.).
C:	Copy application.	Totals (pages, jobs, etc.) executed for each application when the job was not stored on the document server.
F:	Fax application.	
P:	Print application.	
S:	Scan application.	

Prefixes	What it means	
L:	Local storage (document server)	Totals (jobs, pages, etc.) for the document server. The L: counters work differently case by case. Sometimes, they count jobs/pages stored on the document server; this can be in document server mode (from the document server window), or from another mode, such as from a printer driver or by pressing the Store File button in the Copy mode window. Sometimes, they include occasions when the user uses a file that is already on the document server. Each counter will be discussed case by case.
O:	Other applications (external network applications, for example)	Refers to network applications such as Web Image Monitor. Utilities developed with the SDK (Software Development Kit) will also be counted with this group in the future.

The Group 8 SP codes are limited to 17 characters, forced by the necessity of displaying them on the small LCDs of printers and faxes that also use these SPs. Read over the list of abbreviations below and refer to it again if you see the name of an SP that you do not understand.

Key for Abbreviations

Abbreviation	What it means
/	"By", e.g. "T:Jobs/Apl" = Total Jobs "by" Application
>	More (2> "2 or more", 4> "4 or more"
AddBook	Address Book
Apl	Application
B/W	Black & White
Bk	Black
C	Cyan
ColCr	Color Create
ColMode	Color Mode

Abbreviation	What it means
Comb	Combine
Comp	Compression
Deliv	Delivery
DesApl	Designated Application. The application (Copy, Fax, Scan, Print) used to store the job on the document server, for example.
Dev Counter	Development Count, no. of pages developed.
Dup, Duplex	Duplex, printing on both sides
Emul	Emulation
FC	Full Color
FIN	Post-print processing, i.e. finishing (punching, stapling, etc.)
Full Bleed	No Margins
GenCopy	Generation Copy Mode
GPC	Get Print Counter. For jobs 10 pages or less, this counter does not count up. For jobs larger than 10 pages, this counter counts up by the number that is in excess of 10 (e.g., for an 11-page job, the counter counts up 11-10 =1)
IFax	Internet Fax
ImgEdt	Image Edit performed on the original with the copier GUI, e.g. border removal, adding stamps, page numbers, etc.
K	Black (YMCK)
LS	Local Storage. Refers to the document server.
LSize	Large (paper) Size
Mag	Magnification
MC	One color (monochrome)

Abbreviation	What it means
NRS	New Remote Service, which allows a service center to monitor machines remotely. "NRS" is used overseas, "CSS" is used in Japan.
Org	Original for scanning
OrgJam	Original Jam
Palm 2	Print Job Manager/Desk Top Editor: A pair of utilities that allows print jobs to be distributed evenly among the printers on the network, and allows files to moved around, combined, and converted to different formats.
PC	Personal Computer
PGS	Pages. A page is the total scanned surface of the original. Duplex pages count as two pages, and A3 simplex count as two pages if the A3/DLT counter SP is switched ON.
PJob	Print Jobs
Ppr	Paper
PrtJam	Printer (plotter) Jam
PrtPGS	Print Pages
R	Red (Toner Remaining). Applies to the wide format model A2 only. This machine is under development and currently not available.
Rez	Resolution
SC	Service Code (Error SC code displayed)
Scn	Scan
Sim, Simplex	Simplex, printing on 1 side.
S-to-Email	Scan-to-E-mail
SMC	SMC report printed with SP5990. All of the Group 8 counters are recorded in the SMC report.
Svr	Server

Abbreviation	What it means
TonEnd	Toner End
TonSave	Toner Save
TXJob	Send, Transmission
YMC	Yellow, Magenta, Cyan
YMCK	Yellow, Magenta, Cyan, Black

Note

- All of the Group 8 SPs are reset with SP5 801 1 Memory All Clear.

8001	T:Total Jobs	*CTL	These SPs count the number of times each application is used to do a job. [0 to 99999999/ **0** / 1/step] **Note:** The L: counter is the total number of times the other applications are used to send a job to the document server, plus the number of times a file already on the document server is used.
8002	C:Total Jobs	*CTL	
8003	F:Total Jobs	*CTL	
8004	P:Total Jobs	*CTL	
8005	S:Total Jobs	*CTL	
8006	L:Total Jobs	*CTL	

- These SPs reveal the number of times an application is used, not the number of pages processed.
- When an application is opened for image input or output, this counts as one job.
- Interrupted jobs (paper jams, etc.) are counted, even though they do not finish.
- Only jobs executed by the customer are counted. Jobs executed by the customer engineer using the SP modes are not counted.
- When using secure printing (when a password is required to start the print job), the job is counted at the time when either "Delete Data" or "Specify Output" is specified.
- A job is counted as a fax job when the job is stored for sending.
- When a fax is received to fax memory, the F: counter increments but the L: counter does not (the document server is not used).
- A fax broadcast counts as one job for the F: counter (the fax destinations in the broadcast are not counted separately).
- A fax broadcast is counted only after all the faxes have been sent to their destinations. If one transmission generates an error, then the broadcast will not be counted until the transmission

has been completed.

- A printed fax report counts as one job for the F: counter.
- The F: counter does not distinguish between fax sending or receiving.
- When a copy job on the document server is printed, SP8022 also increments, and when a print job stored on the document server is printed, SP8024 also increments.
- When an original is both copied and stored on the document server, the C: and L: counters both increment.
- When a print job is stored on the document server, only the L: counter increments.
- When the user presses the Document Server button to store the job on the document server, only the L: counter increments.
- When the user enters document server mode and prints data stored on the document server, only the L: counter increments.
- When an image received from Palm 2 is received and stored, the L: counter increments.
- When the customer prints a report (user code list, for example), the O: counter increments. However, for fax reports and reports executed from the fax application, the F: counter increments.

8011	T:Jobs/LS	*CTL	These SPs count the number of jobs stored to the document server by each application, to reveal how local storage is being used for input. [0 to 99999999/ **0** / 1/step] The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel.
8012	C:Jobs/LS	*CTL	
8013	F:Jobs/LS	*CTL	
8014	P:Jobs/LS	*CTL	
8015	S:Jobs/LS	*CTL	
8016	L:Jobs/LS	*CTL	
8017	O:Jobs/LS	*CTL	

- When a scan job is sent to the document server, the S: counter increments. When you enter document server mode and then scan an original, the L: counter increments.
- When a print job is sent to the document server, the P: counter increments.
- When a network application sends data to the document server, the O: counter increments.
- When an image from Palm 2 is stored on the document server, the O: counter increments.
- When a fax is sent to the document server, the F: counter increments.

8021	T:Pjob/LS	*CTL	These SPs reveal how files printed from the document server were stored on the document server originally. [0 to 99999999/ **0** / 1/step] The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel.
8022	C:Pjob/LS	*CTL	
8023	F:Pjob/LS	*CTL	
8024	P:Pjob/LS	*CTL	
8025	S:Pjob/LS	*CTL	
8026	L:Pjob/LS	*CTL	
8027	O:Pjob/LS	*CTL	

- When a copy job stored on the document server is printed with another application, the C: counter increments.
- When an application like DeskTopBinder merges a copy job that was stored on the document server with a print job that was stored on the document server, the C: and P: counters both increment.
- When a job already on the document server is printed with another application, the L: counter increments.
- When a scanner job stored on the document server is printed with another application, the S: counter increments. If the original was scanned from within document server mode, then the L: counter increments.
- When images stored on the document server by a network application (including Palm 2), are printed with another application, the O: counter increments.
- When a copy job stored on the document server is printed with a network application (Web Image Monitor, for example), the C: counter increments.
- When a fax on the document server is printed, the F: counter increments.

8031	T:Pjob/DesApl	*CTL	These SPs reveal what applications were used to output documents from the document server. [0 to 99999999/ **0** / 1/step] The L: counter counts the number of jobs printed from within the document server mode screen at the operation panel.
8032	C:Pjob/DesApl	*CTL	
8033	F:Pjob/DesApl	*CTL	
8034	P:Pjob/DesApl	*CTL	
8035	S:Pjob/DesApl	*CTL	
8036	L:Pjob/DesApl	*CTL	
8037	O:Pjob/DesApl	*CTL	

- When documents already stored on the document server are printed, the count for the application that started the print job is incremented.
- When the print job is started from a network application (Desk Top Binder, Web Image Monitor, etc.) the L: counter increments.

8041	T:TX Jobs/LS	*CTL	These SPs count the applications that stored files on the document server that were later accessed for transmission over the telephone line or over a network (attached to an e-mail, or as a fax image by I-Fax). [0 to 99999999/ **0** / 1/step] **Note:** Jobs merged for sending are counted separately. The L: counter counts the number of jobs scanned from within the document server mode screen at the operation panel.
8042	C:TX Jobs/LS	*CTL	
8043	F:TX Jobs/LS	*CTL	
8044	P:TX Jobs/LS	*CTL	
8045	S:TX Jobs/LS	*CTL	
8046	L:TX Jobs/LS	*CTL	
8047	O:TX Jobs/LS	*CTL	

- When a stored copy job is sent from the document server, the C: counter increments.
- When images stored on the document server by a network application or Palm2 are sent as an e-mail, the O: counter increments.

8051	T:TX Jobs/DesApl	*CTL	These SPs count the applications used to send files from the document server over the telephone line or over a network (attached to an e-mail, or as a fax image by I-Fax). Jobs merged for sending are counted separately. [0 to 99999999/ **0** / 1/step] The L: counter counts the number of jobs sent from within the document server mode screen at the operation panel.
8052	C:TX Jobs/DesApl	*CTL	
8053	F:TX Jobs/DesApl	*CTL	
8054	P:TX Jobs/DesApl	*CTL	
8055	S:TX Jobs/DesApl	*CTL	
8056	L:TX Jobs/DesApl	*CTL	
8057	O:TX Jobs/DesApl	*CTL	

- If the send is started from Desk Top Binder or Web Image Monitor, for example, then the O: counter increments.

8061	T:FIN Jobs	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs total the finishing methods. The finishing method is specified by the application.		
8062	C:FIN Jobs	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs total finishing methods for copy jobs only. The finishing method is specified by the application.		
8063	F:FIN Jobs	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs total finishing methods for fax jobs only. The finishing method is specified by the application. **Note:** Finishing features for fax jobs are not available at this time.		
8064	P:FIN Jobs	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs total finishing methods for print jobs only. The finishing method is specified by the application.		
8065	S:FIN Jobs	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs total finishing methods for scan jobs only. The finishing method is specified by the application. **Note:** Finishing features for scan jobs are not available at this time.		

8066	L:FIN Jobs	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs total finishing methods for jobs output from within the document server mode screen at the operation panel. The finishing method is specified from the print window within document server mode.		
8067	O:FIN Jobs	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs total finishing methods for jobs executed by an external application, over the network. The finishing method is specified by the application.		

Last three digits for SP8 061 to 067

806x-001	Sort	Number of jobs started in Sort mode. When a stored copy job is set for Sort and then stored on the document server, the L: counter increments. (See SP8 066 1)
806x-002	Stack	Number of jobs started out of Sort mode.
806x-003	Staple	Number of jobs started in Staple mode.
806x-004	Booklet	Number of jobs started in Booklet mode. If the machine is in staple mode, the Staple counter also increments.
806x-005	Z-Fold	Number of jobs started In any mode other than the Booklet mode and set for folding (Z-fold).
806x-006	Punch	Number of jobs started in Punch mode. When Punch is set for a print job, the P: counter increments. (See SP8 064 6.)
806x-007	Other	Reserved. Not used.
806x-008	Inside-Fold	Not used
806x-009	Three-IN-Fold	Not used
806x-010	Three-OUT-Fold	Not used
806x-011	Four-Fold	Not used
806x-012	KANNON-Fold	Not used

806x-013	Perfect-Bind	Not used
806x-014	Ring-Bind	Not used
806x-015	3rd Vendor	

8071	T:Jobs/PGS	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the number of jobs broken down by the number of pages in the job, regardless of which application was used.		
8072	C:Jobs/PGS	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count and calculate the number of copy jobs by size based on the number of pages in the job.		
8073	F:Jobs/PGS	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count and calculate the number of fax jobs by size based on the number of pages in the job.		
8074	P:Jobs/PGS	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count and calculate the number of print jobs by size based on the number of pages in the job.		
8075	S:Jobs/PGS	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count and calculate the number of scan jobs by size based on the number of pages in the job.		
8076	L:Jobs/PGS	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count and calculate the number of jobs printed from within the document server mode window at the operation panel, by the number of pages in the job.		
8077	O:Jobs/PGS	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count and calculate the number of "Other" application jobs (Web Image Monitor, Palm 2, etc.) by size based on the number of pages in the job.		

Last three digits for SP8 071 to 077

807x-001	1 Page	8 07x 8	21 to 50 Pages
807x-002	2 Pages	8 07x 9	51 to 100 Pages
807x-003	3 Pages	8 07x 10	101 to 300 Pages
807x-004	4 Pages	8 07x 11	301 to 500 Pages
807x-005	5 Pages	8 07x 12	501 to 700 Pages
807x-006	6 to 10 Pages	8 07x 13	701 to 1000 Pages
807x-007	11 to 20 Pages	8 07x 14	More than 1001 Pages

- For example: When a copy job stored on the document server is printed in document server mode, the appropriate L: counter (SP8076 0xx) increments.
- Printing a fax report counts as a job and increments the F: counter (SP 8073).
- Interrupted jobs (paper jam, etc.) are counted, even though they do not finish.
- If a job is paused and re-started, it counts as one job.
- If the finisher runs out of staples during a print and staple job, then the job is counted at the time the error occurs.
- For copy jobs (SP 8072) and scan jobs (SP 8075), the total is calculated by multiplying the number of sets of copies by the number of pages scanned. (One duplex page counts as 2.)
- The first test print and subsequent test prints to adjust settings are added to the number of pages of the copy job (SP 8072).
- When printing the first page of a job from within the document server screen, the page is counted.

8111	T:FAX TX Jobs	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the total number of jobs (color or black-and-white) sent by fax, either directly or using a file stored on the document server, on a telephone line. **Note:** Color fax sending is not available at this time.		
8113	F: FAX TX Jobs	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the total number of jobs (color or black-and-white) sent by fax directly on a telephone line. **Note:** Color fax sending is not available at this time.		
811x-001	B/W		

811x-002	Color

- These counters count jobs, not pages.
- This SP counts fax jobs sent over a telephone line with a fax application, including documents stored on the document server.
- If the mode is changed during the job, the job will count with the mode set when the job started.
- If the same document is faxed to both a public fax line and an I-Fax at a destination where both are available, then this counter increments, and the I-Fax counter (8 12x) also increments.
- The fax job is counted when the job is scanned for sending, not when the job is sent.

8121	T:IFAX TX Jobs	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the total number of jobs (color or black-and-white) sent, either directly or using a file stored on the document server, as fax images using I-Fax. **Note:** Color fax sending is not available at this time.		
8123	F: IFAX TX Jobs	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the number of jobs (color or black-and-white) sent (not stored on the document server), as fax images using I-Fax. **Note:** Color fax sending is not available at this time.		
812x-001	B/W		
812x-002	Color		

- These counters count jobs, not pages.
- The counters for color are provided for future use; the color fax feature is not available at this time.
- The fax job is counted when the job is scanned for sending, not when the job is sent.

8131	T:S-to-Email Jobs	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the total number of jobs (color or black-and-white) scanned and attached to an e-mail, regardless of whether the document server was used or not.		
8135	S:S-to-Email Jobs	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the number of jobs (color or black-and-white) scanned and attached to e-mail, without storing the original on the document server.		
813x-001	B/W		
813x-002	Color		
813x-003	ACS		

- These counters count jobs, not pages.
- If the job is stored on the document server, after the job is stored it is determined to be color or black-and-white then counted.
- If the job is cancelled during scanning, or if the job is cancelled while the document is waiting to be sent, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- If several jobs are combined for sending to the Scan Router, Scan-to-Email, or Scan-to-PC, or if one job is sent to more than one destination. each send is counted separately. For example, if the same document is sent by Scan-to-Email as well as Scan-to-PC, then it is counted twice (once for Scan-to-Email and once for Scan-to-PC).

8141	T:Deliv Jobs/Svr	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the total number of jobs (color or black-and-white) scanned and sent to a Scan Router server.		
8145	S: Deliv Jobs/Svr	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the number of jobs (color or black-and-white) scanned in scanner mode and sent to a Scan Router server.		
814x-001	B/W		
814x-002	Color		

814x-003	ACS

- These counters count jobs, not pages.
- The jobs are counted even though the arrival and reception of the jobs at the Scan Router server cannot be confirmed.
- If even one color image is mixed with black-and-white images, then the job is counted as a "Color" job.
- If the job is cancelled during scanning, or if the job is cancelled while the document is waiting to be delivered, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- Even if several files are combined for sending, the transmission counts as one job.

8151	T:Deliv Jobs/PC	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the total number of jobs (color or black-and-white) scanned and sent to a folder on a PC (Scan-to-PC). **Note:** At the present time, 8 151 and 8 155 perform identical counts.		
8155	S:Deliv Jobs/PC	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the total number of jobs (color or black-and-white) scanned and sent with Scan-to-PC.		
815x-001	B/W		
815x-002	Color		
815x-003	ACS		

- These counters count jobs, not pages.
- If the job is cancelled during scanning, it is not counted.
- If the job is cancelled while it is waiting to be sent, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- Even if several files are combined for sending, the transmission counts as one job.

8161	T:PCFAX TX Jobs	*CTL	These SPs count the number of PC Fax transmission jobs. A job is counted from when it is registered for sending, not when it is sent. [0 to 99999999/ **0** / 1/step] **Note:** At the present time, these counters perform identical counts.
8163	F:PCFAX TX Jobs	*CTL	

- This counts fax jobs started from a PC using a PC fax application, and sending the data out to the destination from the PC through the copier.

8171	T:Deliv Jobs/WSD	*CTL	These SPs count the pages scanned by WS. [0 to 99999999/ **0** / 1/step]
8175	S:Deliv Jobs/WSD	*CTL	
001	B/W		
002	Color		
003	ACS		

8181	T:Scan to Media Jobs	*CTL	These SPs count the scanned pages in a media by the scanner application. [0 to 99999999/ **0** / 1/step]
8185	S:Scan to Media Jobs	*CTL	
001	B/W		
002	Color		
003	ACS		

8191	T:Total Scan PGS	*CTL	These SPs count the pages scanned by each application that uses the scanner to scan images. [0 to 99999999/ **0** / 1/step]
8192	C:Total Scan PGS	*CTL	
8193	F:Total Scan PGS	*CTL	
8195	S:Total Scan PGS	*CTL	
8196	L:Total Scan PGS	*CTL	

- SP 8 191 to 8 196 count the number of scanned sides of pages, not the number of physical pages.
- These counters do not count reading user stamp data, or reading color charts to adjust color.
- Previews done with a scanner driver are not counted.
- A count is done only after all images of a job have been scanned.
- Scans made in SP mode are not counted.

Examples

- If both sides of 3 A4 sheets are copied and stored to the document server using the Store File button in the Copy mode window, the C: count is 6 and the L: count is 6.
- If both sides of 3 A4 sheets are copied but not stored, the C: count is 6.
- If you enter document server mode then scan 6 pages, the L: count is 6.

8201	T:LSize Scan PGS A3/DLT, Larger	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the total number of large pages input with the scanner for scan and copy jobs. Large size paper scanned for fax transmission is not counted. **Note:** These counters are displayed in the SMC Report, and in the User Tools display.		
8203	F: LSize Scan PGS A3/DLT, Larger	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the total number of large pages input with the scanner for fax transmission. **Note:** These counters are displayed in the SMC Report, and in the User Tools display.		
8205	S:LSize Scan PGS A3/DLT, Larger	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the total number of large pages input with the scanner for scan jobs only. Large size paper scanned for fax transmission is not counted. **Note:** These counters are displayed in the SMC Report, and in the User Tools display.		

8211	T:Scan PGS/LS	*CTL	These SPs count the number of pages scanned into the document server [0 to 99999999/ **0** / 1/step] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen.
8212	C:Scan PGS/LS	*CTL	
8213	F:Scan PGS/LS	*CTL	
8215	S:Scan PGS/LS	*CTL	
8216	L:Scan PGS/LS	*CTL	

- Reading user stamp data is not counted.
- If a job is cancelled, the pages output as far as the cancellation are counted.
- If the scanner application scans and stores 3 B5 sheets and 1 A4 sheet, the S: count is 4.
- If pages are copied but not stored on the document server, these counters do not change.
- If both sides of 3 A4 sheets are copied and stored to the document server, the C: count is 6 and the L: count is 6.
- If you enter document server mode then scan 6 pages, the L: count is 6.

8221	ADF Org Feeds	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the number of pages fed through the ADF for front and back side scanning.		
001	**Front** Number of front sides fed for scanning: With an ADF that can scan both sides simultaneously, the Front side count is the same as the number of pages fed for either simplex or duplex scanning. With an ADF that cannot scan both sides simultaneously, the Front side count is the same as the number of pages fed for duplex front side scanning. (The front side is determined by which side the user loads face up.)		
002	**Back** Number of rear sides fed for scanning: With an ADF that can scan both sides simultaneously, the Back count is the same as the number of pages fed for duplex scanning. With an ADF that cannot scan both sides simultaneously, the Back count is the same as the number of pages fed for duplex rear-side scanning.		

- When 1 sheet is fed for duplex scanning the Front count is 1 and the Back count is 1.
- If a jam occurs during the job, recovery processing is not counted to avoid double counting. Also, the pages are not counted if the jam occurs before the first sheet is output.

8231	Scan PGS/Mode	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the number of pages scanned by each ADF mode to determine the work load on the ADF.		
001	Large Volume	Selectable. Large copy jobs that cannot be loaded in the ADF at one time.	
002	SADF	Selectable. Feeding pages one by one through the ADF.	
003	Mixed Size	Selectable. Select "Mixed Sizes" on the operation panel.	
004	Custom Size	Selectable. Originals of non-standard size.	
005	Platen	Book mode. Raising the ADF and placing the original directly on the platen.	
006	Mixed 1side/2side	Simplex and Duplex mode.	

- If the scan mode is changed during the job, for example, if the user switches from ADF to Platen mode, the count is done for the last selected mode.
- The user cannot select mixed sizes or non-standard sizes with the fax application so if the original's page sizes are mixed or non-standard, these are not counted.
- If the user selects "Mixed Sizes" for copying in the platen mode, the Mixed Size count is enabled.
- In the SADF mode if the user copies 1 page in platen mode and then copies 2 pages with SADF, the Platen count is 1 and the SADF count is 3.

8241	T:Scan PGS/Org	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the total number of scanned pages by original type for all jobs, regardless of which application was used.		
8242	C:Scan PGS/Org	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the number of pages scanned by original type for Copy jobs.		
8243	F:Scan PGS/Org	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the number of pages scanned by original type for Fax jobs.		
8245	S:Scan PGS/Org	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the number of pages scanned by original type for Scan jobs.		
8246	L:Scan PGS/Org	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the number of pages scanned and stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen		

Last three digits for SP8 241 to 246

	8 241	**8 242**	**8 243**	**8 245**	**8 246**
824x-001: Text	Yes	Yes	Yes	Yes	Yes
824x-002: Text/Photo	Yes	Yes	Yes	Yes	Yes
824x-003: Photo	Yes	Yes	Yes	Yes	Yes
824x-004: GenCopy, Pale	Yes	Yes	No	Yes	Yes
824x-005: Map	Yes	Yes	No	No	Yes
824x-006: Normal/Detail	Yes	No	Yes	No	No
824x-007: Fine/Super Fine	Yes	No	Yes	No	No
824x-008: Binary	Yes	No	No	Yes	No
824x-009: Grayscale	Yes	No	No	Yes	No
824x-010: Color	Yes	No	No	Yes	No
824x-011: Other	Yes	Yes	Yes	Yes	Yes

- If the scan mode is changed during the job, for example, if the user switches from ADF to Platen mode, the count is done for the last selected mode.

8251	T:Scan PGS/ImgEdt	*CTL	These SPs show how many times Image Edit features have been selected at the operation panel for each application. Some examples of these editing features are: ▪ Erase → Border ▪ Erase → Center ▪ Image Repeat ▪ Centering ▪ Positive/Negative [0 to 99999999/ **0** / 1/step] **Note:** The count totals the number of times the edit features have been used. A detailed breakdown of exactly which features have been used is not given.
8252	C:Scan PGS/ImgEdt	*CTL	
8255	S : Scan PGS/ImgEdr	*CTL	
8256	L:Scan PGS/ImgEdt	*CTL	
8257	O:Scan PGS/ImgEdt	*CTL	

The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen.

8261	T:Scn PGS/ ColCr	*CTL	-
8262	C:Scn PGS/ ColCr	*CTL	-
8265	S:Scn PGS/Color	*CTL	-
8266	L:Scn PGS/ColCr	*CTL	-

Last three digits for SP8 261, 262, 265 and 266

826x-001	Color Conversion	These SPs show how many times color creation features have been selected at the operation panel.
826x-002	Color Erase	
826x-003	Background	
826x-004	Other	

8281	T:Scan PGS/TWAIN	*CTL	These SPs count the number of pages scanned using a TWAIN driver. These counters reveal how the TWAIN driver is used for delivery functions. [0 to 99999999/ **0** / 1/step] **Note:** At the present time, these counters perform identical counts.
8285	S:Scan PGS/TWAIN	*CTL	

8291	T:Scan PGS/Stamp	*CTL	These SPs count the number of pages stamped with the stamp in the ADF unit. [0 to 99999999/ **0** / 1/step] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen
8293	F:Scan PGS/Stamp	*CTL	
8295	S:Scan PGS/Stamp	*CTL	

8301	T:Scan PGS/Size	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by size the total number of pages scanned by all applications. Use these totals to compare original page size (scanning) and output (printing) page size [SP 8-441].		
8302	C:Scan PGS/Size	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by size the total number of pages scanned by the Copy application. Use these totals to compare original page size (scanning) and output (printing) page size [SP 8-442].		
8303	F:Scan PGS/Size	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by size the total number of pages scanned by the Fax application. Use these totals to compare original page size (scanning) and output page size [SP 8-443].		
8305	S:Scan PGS/Size	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by size the total number of pages scanned by the Scan application. Use these totals to compare original page size (scanning) and output page size [SP 8-445].		

8306	L:Scan PGS/Size	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by size the total number of pages scanned and stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen. Use these totals to compare original page size (scanning) and output page size [SP 8-446].		

Last three digits for SP8 301 to 306

830x-001	A3	830x-007	LG
830x-002	A4	830x-008	LT
830x-003	A5	830x-009	HLT
830x-004	B4	830x-010	Full Bleed
830x-005	B5	830x-254	Other (Standard)
830x-006	DLT	830x-255	Other (Custom)

8311	T:Scan PGS/Rez	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by resolution setting the total number of pages scanned by applications that can specify resolution settings.		
8315	S: Scan PGS/Rez	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by resolution setting the total number of pages scanned by applications that can specify resolution settings. **Note:** At the present time, SP8-311 and SP8-315 perform identical counts.		

Last three digits for SP8 311 and 315

831x-001	1200 dpi
831x-002	600 dpi to 1199 dpi
831x-003	400 dpi to 599 dpi
831x-004	200 dpi to 399 dpi
831x-005	199 dpi or less

- Copy resolution settings are fixed so they are not counted.
- The Fax application does not allow finely-adjusted resolution settings so no count is done for the Fax application.

8321	T:Sacn Poster	*CTL	[0 to 99999999/ **0** / 1/step]
8322	C:Sacn Poster	*CTL	[0 to 99999999/ **0** / 1/step]
8326	L:Sacn Poster	*CTL	[0 to 99999999/ **0** / 1/step]

832x-001	2 Sheet
832x-002	4 Sheet
832x-003	9 Sheet

8381	T:Total PrtPGS	*CTL	These SPs count the number of pages printed by the customer. The counter for the application used for storing the pages increments. [0 to 99999999/ **0** / 1/step] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel. Pages stored with the Store File button from within the Copy mode screen go to the C: counter.
8382	C:Total PrtPGS	*CTL	
8383	F:Total PrtPGS	*CTL	
8384	P:Total PrtPGS	*CTL	
8385	S:Total PrtPGS	*CTL	
8386	L:Total PrtPGS	*CTL	
8387	O:Total PrtPGS	*CTL	

- When several documents are merged for a print job, the number of pages stored is counted for the application that stored them.
- These counters are used primarily to calculate charges on use of the machine, so the following pages are not counted as printed pages:
  - Blank pages in a duplex printing job.
  - Blank pages inserted as document covers, chapter title sheets, and slip sheets.
  - Reports printed to confirm counts.
  - All reports done in the service mode (service summaries, engine maintenance reports, etc.)

- Test prints for machine image adjustment.
- Error notification reports.
- Partially printed pages as the result of a copier jam.

8391	LSize PrtPGS		
	These SPs count pages printed on paper sizes A4/LT and larger. **Note:** In addition to being displayed in the SMC Report, these counters are also displayed in the User Tools display on the copy machine.		
001	A3/DLT, Larger	*CTL	[0 to 99999999/ **0** / 1/step]
003	BannaerPaper	*CTL	[0 to 9999999/ **0** / 1/step]

8401	T:PrtPGS/LS	*CTL	These SPs count the number of pages printed from the document server. The counter for the application used to print the pages is incremented. The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel. [0 to 99999999/ **0** / 1/step]
8402	C:PrtPGS/LS	*CTL	
8403	F:PrtPGS/LS	*CTL	
8404	P:PrtPGS/LS	*CTL	
8405	S:PrtPGS/LS	*CTL	
8406	L:PrtPGS/LS	*CTL	

- Print jobs done with Web Image Monitor and Desk Top Binder are added to the L: count.
- Fax jobs done with Web Image Monitor and Desk Top Binder are added to the F: count.

8411	Prints/Duplex	*CTL	This SP counts the amount of paper (front/back counted as 1 page) used for duplex printing. Last pages printed only on one side are not counted. [0 to 99999999/ **0** / 1/step]

8421	T:PrtPGS/Dup Comb	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing. This is the total for all applications.		
8422	C:PrtPGS/Dup Comb	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the copier application.		
8423	F:PrtPGS/Dup Comb	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the fax application.		
8424	P:PrtPGS/Dup Comb	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the printer application.		
8425	S:PrtPGS/Dup Comb	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the scanner application.		
8426	L:PrtPGS/Dup Comb	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing from within the document server mode window at the operation panel.		
8427	O:PrtPGS/Dup Comb	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by Other applications		

Last three digits for SP8 421 to 427

842x-001	Simplex> Duplex	-
842x-002	Duplex> Duplex	-
842x-003	Book> Duplex	-
842x-004	Simplex Combine	-

842x-005	Duplex Combine	-
842x-006	2in1	2 pages on 1 side (2-Up)
842x-007	4in1	4 pages on 1 side (4-Up)
842x-008	6in1	6 pages on 1 side (6-Up)
842x-009	8in1	8 pages on 1 side (8-Up)
842x-010	9in1	9 pages on 1 side (9-Up)
842x-011	16in1	16 pages on 1 side (16-Up)
842x-012	Booklet	-
842x-013	Magazine	-
842x-014	2in1 + Booklet	-
842x-015	4in1 + Booklet	-
842x-016	6in1 + Booklet	-
842x-017	8in1 + Booklet	-
842x-018	9in1 + Booklet	-
842x-019	2in1 + Magazine	-
842x-020	4in1 + Magazine	-
842x-021	6in1 + Magazine	-
842x-022	8in1 + Magazine	-
842x-023	9in1 + Magazine	-
842x-024	16in1 + Magazine	-

- These counts (SP8 421 to SP8 427) are especially useful for customers who need to improve their compliance with ISO standards for the reduction of paper consumption.
- Pages that are only partially printed with the n-Up functions are counted as 1 page.
- Here is a summary of how the counters work for Booklet and Magazine modes:

Booklet		Magazine	
Original Pages	Count	Original Pages	Count
1	1	1	1
2	2	2	2
3	2	3	2
4	2	4	2
5	3	5	4
6	4	6	4
7	4	7	4
8	4	8	4

8431	T:PrtPGS/ImgEdt	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the total number of pages output with the three features below, regardless of which application was used.		
8432	C:PrtPGS/ImgEdt	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the total number of pages output with the three features below with the copy application.		
8434	P:PrtPGS/ImgEdt	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the total number of pages output with the three features below with the print application.		
8436	L:PrtPGS/ImgEdt	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the total number of pages output from within the document server mode window at the operation panel with the three features below.		
8437	O:PrtPGS/ImgEdt	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the total number of pages output with the three features below with Other applications.		

Last three digits for SP8 431 to 437

843x-001	Cover/Slip Sheet	Total number of covers or slip sheets inserted. The count for a cover printed on both sides counts 2.
843x-002	Series/Book	The number of pages printed in series (one side) or printed as a book with booklet right/left pagination.
843x-003	User Stamp	The number of pages printed where stamps were applied, including page numbering and date stamping.

8441	T:PrtPGS/Ppr Size	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by print paper size the number of pages printed by all applications.		
8442	C:PrtPGS/Ppr Size	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by print paper size the number of pages printed by the copy application.		
8443	F:PrtPGS/Ppr Size	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by print paper size the number of pages printed by the fax application.		
8444	P:PrtPGS/Ppr Size	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by print paper size the number of pages printed by the printer application.		
8445	S:PrtPGS/Ppr Size	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by print paper size the number of pages printed by the scanner application.		
8446	L:PrtPGS/Ppr Size	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by print paper size the number of pages printed from within the document server mode window at the operation panel.		

8447	O:PrtPGS/Ppr Size	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by print paper size the number of pages printed by Other applications.		

Last three digits for SP8 441 to 447

844x-001	A3
844x-002	A4
844x-003	A5
844x-004	B4
844x-005	B5
844x-006	DLT
844x-007	LG
844x-008	LT
844x-009	HLT
844x-010	Full Bleed
844x-254	Other (Standard)
844x-255	Other (Custom)

- These counters do not distinguish between LEF and SEF.

8451	PrtPGS/Ppr Tray	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the number of sheets fed from each paper feed station.		
001	Bypass Tray	Bypass Tray	
002	Tray 1	Machine	
003	Tray 2	Paper Tray Unit (Option)	
004	Tray 3	Paper Tray Unit (Option)	
005	Tray 4	Paper Tray Unit (Option)	
006	Tray 5	Not used	
007	Tray 6	Not used	
008	Tray 7	Not used	
009	Tray 8	Not used	
010	Tray 9	Not used	
011	Tray10	Not used	
012	Tray11	Not used	
013	Tray12	Not used	
014	Tray13	Not used	
015	Tray14	Not used	
016	Tray15	Not used	

8461	T:PrtPGS/Ppr Type	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by paper type the number pages printed by all applications. ▪ These counters are not the same as the PM counter. The PM counter is based on feed timing to accurately measure the service life of the feed rollers. However, these counts are based on output timing. ▪ Blank sheets (covers, chapter covers, slip sheets) are also counted. ▪ During duplex printing, pages printed on both sides count as 1, and a page printed on one side counts as 1.		
8462	C:PrtPGS/Ppr Type	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by paper type the number pages printed by the copy application.		
8463	F:PrtPGS/Ppr Type	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by paper type the number pages printed by the fax application.		
8464	P:PrtPGS/Ppr Type	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by paper type the number pages printed by the printer application.		
8466	L:PrtPGS/Ppr Type	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by paper type the number pages printed from within the document server mode window at the operation panel.		

Last three digits for SP8 461 to 466

846x-001	Normal
846x-002	Recycled
846x-003	Special
846x-004	Thick
846x-005	Normal (Back)
846x-006	Thick (Back)
846x-007	OHP

846x-008	Other

8471	PrtPGS/Mag	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by magnification rate the number of pages printed.		
001	49% or less		
002	50% to 99%		
003	100%		
004	101% to 200%		
005	201% or more		

- Counts are done for magnification adjusted for pages, not only on the operation panel but performed remotely with an external network application capable of performing magnification adjustment as well.
- Magnification adjustments done with printer drivers with PC applications such as Excel are also counted.
- Magnification adjustments done for adjustments after they have been stored on the document server are not counted.
- Magnification adjustments performed automatically during Auto Reduce/Enlarge copying are counted.
- The magnification rates of blank cover sheets, slip sheets, etc. are automatically assigned a rate of 100%.

8481	T:PrtPGS/TonSave	*CTL	[0 to 99999999/ **0** / 1/step]
8484	P:PrtPGS/TonSave	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the number of pages printed with the Toner Save feature switched on. **Note:** These SPs return the same results as this SP is limited to the Print application.		

8491	T:PrtPGS/Col Mode	*CTL	These SPs count the number of pages printed in the Color Mode by each application.
8492	C:PrtPGS/Col Mode	*CTL	
8493	F:PrtPGS/Col Mode	*CTL	
8496	L:PrtPGS/Col Mode	*CTL	
8497	O:PrtPGS/Col Mode	*CTL	

Last three digits for SP8 491 to 493, 496 and 497

849x-001	B/W
849x-002	Single Color
849x-003	Two Color
849x-004	Full Color
849x-051	B/W(Banner)
849x-052	Single Color(Banner)
849x-053	Two Color(Banner)
849x-054	Full Color(Banner)

8501	T:PrtPGS/Col Mode	*CTL	These SPs count the number of pages printed in the Color Mode by the print application.
8504	P:PrtPGS/Col Mode	*CTL	
8507	O:PrtPGS/Col Mode	*CTL	

Last three digits for SP8 501, 504 and 507

850x-001	B/W
850x-002	Mono Color
850x-003	Full Color
850x-004	Single Color
850x-005	Two Color

850x-051	B/W(Banner)
850x-052	Full Color(Banner)
850x-053	Single Color(Banner)
850x-054	Two Color(Banner)

8511	T:PrtPGS/Emul	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by printer emulation mode the total number of pages printed.		
8514	P:PrtPGS/Emul	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by printer emulation mode the total number of pages printed.		

Last three digits for SP8 511 and 514

851x-001	RPCS	-
851x-002	RPDL	-
851x-003	PS3	-
851x-004	R98	-
851x-005	R16	-
851x-006	GL/GL2	-
851x-007	R55	-
851x-008	RTIFF	-
851x-009	PDF	-
851x-010	PCL5e/5c	-
851x-011	PCL XL	-
851x-012	IPDL-C	-
851x-013	BM-Links	Japan Only
851x-014	Other	-

851x-015	IPDS	-
851x-016	XPS	-

- SP8 511 and SP8 514 return the same results as they are both limited to the Print application.
- Print jobs output to the document server are not counted.

8521	T:PrtPGS/FIN	*CTL	[0 to 99999999 / **0** / 1/step]
	These SPs count by finishing mode the total number of pages printed by all applications.		
8522	C:PrtPGS/FIN	*CTL	[0 to 99999999 / **0** / 1/step]
	These SPs count by finishing mode the total number of pages printed by the Copy application.		
8523	F:PrtPGS/FIN	*CTL	[0 to 99999999 / **0** / 1/step]
	These SPs count by finishing mode the total number of pages printed by the Fax application. **Note:** Print finishing options for received faxes are currently not available.		
8524	P:PrtPGS/FIN	*CTL	[0 to 99999999 / **0** / 1/step]
	These SPs count by finishing mode the total number of pages printed by the Print application.		
8525	S:PrtPGS/FIN	*CTL	[0 to 99999999 / **0** / 1/step]
	These SPs count by finishing mode the total number of pages printed by the Scanner application.		
8526	L:PrtPGS/FIN	*CTL	[0 to 99999999 / **0** / 1/step]
	These SPs count by finishing mode the total number of pages printed from within the document server mode window at the operation panel.		

Last three digits for SP8 521 to 526

852x-001	Sort	852x-009	Three-IN-Fold
852x-002	Stack	852x-010	Three-OUT-Fold
852x-003	Staple	852x-011	Four-Fold

852x-004	Booklet	852x-012	KANNON-Fold
852x-005	Z-Fold	852x-013	Perfect-Bind
852x-006	Punch	852x-014	Ring-Bind
852x-007	Other	852x-015	3rd Vendor
852x-008	Inside-Fold		

Note

- If stapling is selected for finishing and the stack is too large for stapling, the unstapled pages are still counted.
- The counts for staple finishing are based on output to the staple tray, so jam recoveries are counted.

8531	Staple		
	This SP counts the amount of staples used (-001) or count stapled (-002) by the machine.		
001	Staples	*CTL	[0 to 99999999 / **0** / 1]
002	Stapless	*CTL	[0 to 99999999 / **0** / 1]

8551	T:PrtBooks/FIN	*CTL	-
8552	C:PrtBooks/FIN	*CTL	-
8554	P:PrtBooks/FIN	*CTL	-
8556	L:PrtBooks/FIN	*CTL	-
855x-001	Perfect-Bind	Not used	
855x-002	Ring-Bind	Not used	

8561	T:A Sheet Of Paper	*CTL	[0 to 99999999 / **0** / 1/step]
8562	C:A Sheet Of Paper	*CTL	[0 to 99999999 / **0** / 1/step]
8563	F:A Sheet Of Paper	*CTL	[0 to 99999999 / **0** / 1/step]
8564	P:A Sheet Of Paper	*CTL	[0 to 99999999 / **0** / 1/step]
8566	L:A Sheet Of Paper	*CTL	[0 to 99999999 / **0** / 1/step]
8567	O:A Sheet Of Paper	*CTL	[0 to 99999999 / **0** / 1/step]

Last three digits for SP8 561 to 567

856x-001	Total: Over A3/DLT
856x-002	Total: Under A3/DLT
856x-003	Duplex: Over A3/DLT
856x-004	Duplex: Under A3/DLT

8581	T:Counter	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the total output broken down by color output, regardless of the application used. In addition to being displayed in the SMC Report, these counters are also displayed in the User Tools display on the copy machine.		
001	Total		
002	Total: Full Color		
003	B&W/Single Color		
004	Development: CMY		
005	Development: K		
006	Copy: Color		
007	Copy: B/W		
008	Print: Color		

009	Print: B/W
010	Total: Color
011	Total: B/W
012	Full Color: A3
013	Full Color: B4 JIS or Smaller
014	Full Color Print
015	Mono Color Print
016	Full Color GPC
017	Twin Color Mode Print
018	Full Color Print(Twin)
019	Mono Color Print(Twin)
020	Full Color Total(CV)
021	Mono Color Total(CV)
022	Full Color Print(CV)
028	Development: CMY(A3)
029	Development: K(A3)
030	Total: Color(A3)
031	Total: B/W(A3)
032	Total: B/W(A3)

8582	C:Counter	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the total output of the copy application broken down by color output.		
001	B/W		
002	Single Color		
003	Two Color		

004	Full Color

8583	F:Counter	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the total output of the fax application broken down by color output.		
001	B/W		
002	Single Color		

8584	P:Counter	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the total output of the print application broken down by color output.		
001	B/W		
002	Mono Color		
003	Full Color		
004	Single Color		
005	Two Color		

8586	L:Counter	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the total output of the local storage broken down by color output.		
001	B/W		
002	Single Color		
003	Two Color		
004	Full Color		

8591	O:Counter	*CTL	[0 to 99999999/ **0** / 1/step]

	These SPs count the totals for A3/DLT paper use, number of duplex pages printed, and the number of staples used. These totals are for Other (O:) applications only.
001	A3/DLT
002	Duplex
005	Banner

8601	T:Coverage Counter	*CTL	[0 to 2147483647/ **0** / 1%/step]
	These SPs count the total coverage for each color and the total printout pages for each printing mode.		
001	B/W		
002	Color		
011	B/W Printing Pages		
012	Color Printing Pages		
021	Coverage Counter 1		
022	Coverage Counter 2		
023	Coverage Counter 3		
031	Coverage Counter 1 (YMC)		
032	Coverage Counter 2 (YMC)		
033	Coverage Counter 3 (YMC)		

8602	C:Coverage Counter	*CTL	[0 to 2147483647/ **0** / 1%/step]
	These SPs count the total coverage for each color and the total printout pages for each printing mode.		
8603	F:Coverage Counter	*CTL	[0 to 2147483647/ **0** / 1%/step]
	These SPs count the total coverage for each color and the total printout pages for each printing mode.		
8604	P:Coverage Counter	*CTL	[0 to 2147483647/ **0** / 1%/step]

	These SPs count the total coverage for each color and the total printout pages for each printing mode.		
8606	L:Coverage Counter	*CTL	[0 to 2147483647/ **0** / 1%/step]
	These SPs count the total coverage for each color and the total printout pages for each printing mode.		

Last three digits for SP8 602 to 606

	8 602	**8 603**	**8 604**	**8 606**
860x-001: B/W	Yes	Yes	Yes	Yes
860x-002: Single Color	Yes	Yes	Yes	Yes
860x-003: Two Color	Yes	No	Yes	Yes
860x-004: Full Color	Yes	No	Yes	Yes

8617	SDK Apli Counter	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the total printout pages for each SDK applicaion.		
001	SDK-1		
002	SDK-2		
003	SDK-3		
004	SDK-4		
005	SDK-5		
006	SDK-6		
007	SDK-7		
008	SDK-8		
009	SDK-9		
010	SDK-10		
011	SDK-11		
012	SDK-12		

8621	Func Use Counter **DFU**
001 to 064	Function 001 to Function 064

8631	T:FAX TX PGS	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by color mode the number of pages sent by fax to a telephone number.		
8633	F:FAX TX PGS	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by color mode the number of pages sent by fax to a telephone number.		
863x-001	B/W		
863x-002	Color		

- If a document has color and black-and-white pages mixed, the pages are counted separately as B/W or Color.
- At the present time, this feature is provided for the Fax application only so SP8631 and SP8633 are the same.
- The counts include error pages.
- If a document is sent to more than one destination with a Group transmission, the count is done for each destination.
- Polling transmissions are counted but polling RX are not.
- Relay, memory, and confidential mailbox transmissions and are counted for each destination.

8641	T:IFAX TX PGS	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by color mode the number of pages sent by fax to as fax images using I-Fax.		
8643	F:IFAX TX PGS	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by color mode the number of pages sent by Fax as fax images using I-Fax.		
864x-001	B/W		
864x-002	Color		

- If a document has color and black-and-white pages mixed, the pages are counted separately as B/W or Color.
- At the present time, this feature is provided for the Fax application only so SP8641 and SP8643 are the same.
- The counts include error pages.
- If a document is sent to more than one destination with a Group transmission, the count is done for each destination.
- Polling transmissions are counted but polling RX are not.
- Relay, memory, and confidential mailbox transmissions and are counted for each destination.

8651	T:S-to-Email PGS	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by color mode the total number of pages attached to an e-mail for both the Scan and document server applications.		
8655	S:S-to-Email PGS	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by color mode the total number of pages attached to an e-mail for the Scan application only.		
865x-001	B/W		
865x-002	Color		

Note

- The count for B/W and Color pages is done after the document is stored on the HDD. If the job is cancelled before it is stored, the pages are not counted.
- If Scan-to-Email is used to send a 10-page document to 5 addresses, the count is 10 (the pages are sent to the same SMTP server together).
- If Scan-to-PC is used to send a 10-page document to 5 folders, the count is 50 (the document is sent to each destination of the SMB/FTP server).
- Due to restrictions on some devices, if Scan-to-Email is used to send a 10-page document to a large number of destinations, the count may be divided and counted separately. For example, if a 10-page document is sent to 200 addresses, the count is 10 for the first 100 destinations and the count is also 10 for the second 100 destinations, for a total of 20.).

8661	T:Deliv PGS/Svr	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by color mode the total number of pages sent to a Scan Router server by both Scan and LS applications.		

8665	S:Deliv PGS/Svr	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by color mode the total number of pages sent to a Scan Router server by the Scan application.		
866x-001	B/W		
866x-002	Color		

Note

- The B/W and Color counts are done after the document is stored on the HDD of the Scan Router server.
- If the job is canceled before storage on the Scan Router server finishes, the counts are not done.
- The count is executed even if regardless of confirmation of the arrival at the Scan Router server.

8671	T:Deliv PGS/PC	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by color mode the total number of pages sent to a folder on a PC (Scan-to-PC) with the Scan and LS applications.		
8675	S: Deliv PGS/PC	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count by color mode the total number of pages sent with Scan-to-PC with the Scan application.		
867x-001	B/W		
867x-002	Color		

8681	T:PCFAX TXPGS	*CTL	These SPs count the number of pages sent by PC Fax. These SPs are provided for the Fax application only, so the counts for SP8 681 and SP8 683 are the same. [0 to 99999999/ **0** / 1/step]
8683	F:PCFAX TXPGS	*CTL	

- This counts pages sent from a PC using a PC fax application, from the PC through the copier to the destination.
- When sending the same message to more than one place using broadcasting, the pages are only counted once. (For example, a 10-page fax is sent to location A and location B. The

counter goes up by 10, not 20.)

8691	T:TX PGS/LS	*CTL	These SPs count the number of pages sent from the document server. The counter for the application that was used to store the pages is incremented. [0 to 99999999/ **0** / 1/step] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel. Pages stored with the Store File button from within the Copy mode screen go to the C: counter.
8692	C:TX PGS/LS	*CTL	
8693	F:TX PGS/LS	*CTL	
8694	P:TX PGS/LS	*CTL	
8695	S:TX PGS/LS	*CTL	
8696	L:TX PGS/LS	*CTL	

Note

- Print jobs done with Web Image Monitor and Desk Top Binder are added to the count.
- If several documents are merged for sending, the number of pages stored are counted for the application that stored them.
- When several documents are sent by a Fax broadcast, the F: count is done for the number of pages sent to each destination.

8701	TX PGS/Port	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the number of pages sent by the physical port used to send them. For example, if a 3-page original is sent to 4 destinations via ISDN G4, the count for ISDN (G3, G4) is 12.		
001	PSTN-1		
002	PSTN-2		
003	PSTN-3		
004	ISDN (G3,G4)		
005	Network		

8711	T:Scan PGS/Comp	*CTL	[0 to 99999999/ **0** / 1/step]
8715	S:Scan PGS/Comp	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the number of pages sent by each compression mode.		

871x-001	JPEG/JPEG2000
871x-002	TIFF(Multi/Single)
871x-003	PDF
871x-004	Other
871x-005	PDF/Comp
871x-006	PDF/A
871x-007	PDF(OCR)
871x-008	PDF/Comp(OCR)
871x-009	PDF/A(OCR)

8721	T: Deliv PGS/WSD	*CTL	[0 to 99999999/ **0** / 1/step]
8725	S: Deliv PGS/WSD	*CTL	
	These SPs count the number of pages scanned by each scanner mode.		
872x-001	B/W		
872x-002	Color		

8731	T:Scan PGS/Media	*CTL	[0 to 99999999/ **0** / 1/step]
8735	S:Scan PGS/Media	*CTL	
	These SPs count the number of pages scanned and saved in a meia by each scanner mode.		
873x-001	B/W		
873x-002	Color		

8741	RX PGS/Port	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the number of pages received by the physical port used to receive them.		
001	PSTN-1		

002	PSTN-2
003	PSTN-3
004	ISDN (G3,G4)
005	Network

8771	Dev Counter	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the frequency of use (number of rotations of the development rollers) for black and other color toners.		
001	Total		
002	K		
003	Y		
004	M		
005	C		

8781	Toner_Botol_Info.	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs display the number of already replaced toner bottles. **Note:** Currently, the data in SP7-833-011 through 014 and the data in SP8-781-001 through 004 are the same.		
001	BK	The number of black-toner bottles	
002	Y	The number of yellow-toner bottles	
003	M	The number of magenta-toner bottles	
004	C	The number of cyan-toner bottles	

8791	LS Memory Remain	*CTL	[0 to 100 / **0** / 1/%]
	This SP displays the percent of space available on the document server for storing documents.		
001	BK	The number of black-toner bottles	

8801	Toner Remain	*CTL	[0 to 100/ **0** / 1/%]
	These SPs display the percent of toner remaining for each color. This SP allows the user to check the toner supply at any time. **Note:** This precise method of measuring remaining toner supply (1% steps) is better than other machines in the market that can only measure in increments of 10 (10% steps).		
001	K		
002	Y		
003	M		
004	C		

8811	Eco Counter		
001	Eco Total	*CTL	[0 to 99999999 / **0** / 1/step]
	Displays the number of pages reduced by using the color, full color, duplex and combine function.		
004	Duplex	*CTL	[0 to 99999999 / **0** / 1/step]
	Displays the number of pages reduced by using the duplex function.		
005	Combine	*CTL	[0 to 99999999 / **0** / 1/step]
	Displays the number of pages reduced by using the combine function.		
008	Duplex(%)	*CTL	[0 to 100 / **0** / 1/%]
	Displays the utilization ratio of the duplex function.		
009	Combine(%)	*CTL	[0 to 100 / **0** / 1/%]
	Displays the utilization ratio of the combine function.		
010	Paper Cut(%)	*CTL	[0 to 100/ **0** / 1/%]
	Displays the paper reduction ratio.		
051	Sync Eco Total	*CTL	[0 to 99999999/ **0** / 1/step]
054	Sync Duplex	*CTL	[0 to 99999999/ **0** / 1/step]
055	Sync Combine	*CTL	[0 to 99999999/ **0** / 1/step]

058	Sync Duplex(%)	*CTL	[0 to 100/ **0** / 1/%]
059	Sync Combine(%)	*CTL	[0 to 100/ **0** / 1/%]
060	Sync Paper Cut(%)	*CTL	[0 to 100/ **0** / 1/%]
101	Eco Totalr:Last	*CTL	[0 to 99999999/ **0** / 1/step]
104	Duplex:Last	*CTL	[0 to 99999999/ **0** / 1/step]
105	Combine:Last	*CTL	[0 to 99999999/ **0** / 1/step]
108	Duplex(%):Last	*CTL	[0 to 100/ **0** / 1/%]
109	Combine(%):Last	*CTL	[0 to 100/ **0** / 1/%]
110	Paper Cut(%):Last	*CTL	[0 to 100/ **0** / 1/%]
151	Sync Eco Totalr:Last	*CTL	[0 to 9999999 / **0** / 1/step]
154	Sync Duplex:Last	*CTL	[0 to 9999999 / **0** / 1/step]
155	Sync Combine:Last	*CTL	[0 to 9999999 / **0** / 1/step]
158	Sync Duplex(%):Last	*CTL	[0 to 100/ **0** / 1/%]
159	Sync Combine(%):Last	*CTL	[0 to 100/ **0** / 1/%]
160	Sync Paper Cut(%):Last	*CTL	[0 to 100/ **0** / 1/%]

8851	CVr Cnt: 0-10%	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs display the number of scanned sheets on which the coverage of each color is from 0% to 10%.		
011	0 to 2%: BK	031	5 to 7%: BK
012	0 to 2%: Y	032	5 to 7%: Y
013	0 to 2%: M	033	5 to 7%: M
014	0 to 2%: C	034	5 to 7%: C
021	3 to 4%: BK	041	8 to 10%: BK
022	3 to 4%: Y	042	8 to 10%: Y
023	3 to 4%: M	043	8 to 10%: M

024	3 to 4%: C	044	8 to 10%: C

8861	CVr Cnt: 11-20%	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs display the number of scanned sheets on which the coverage of each color is from 11% to 20%.		
001	BK		
002	Y		
003	M		
004	C		

8871	CVr Cnt: 21-30%	*CTL	[0 to 9999999/ **0** / 1/step]
	These SPs display the number of scanned sheets on which the coverage of each color is from 21% to 30%.		
001	BK		
002	Y		
003	M		
004	C		

8881	CVr Cnt: 31%-	*CTL	[0 to 9999999/ **0** / 1/step]
	These SPs display the number of scanned sheets on which the coverage of each color is 31% or higher.		
001	BK		
002	Y		
003	M		
004	C		

8891	Page/Toner Bottle	*CTL	[0 to 9999999/ **0** / 1/step]

	These SPs display the amount of the remaining current toner for each color.
001	BK
002	Y
003	M
004	C

8901	Page/Toner_Prev1	*CTL	[0 to 9999999/ **0** / 1/step]
	These SPs display the amount of the remaining previous toner for each color.		
001	BK		
002	Y		
003	M		
004	C		

8911	Page/Toner_Prev2	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs display the amount of the remaining 2nd previous toner for each color.		
001	BK		
002	Y		
003	M		
004	C		

8921	Cvr Cnt/Total	*CTL	[0 to 2147483647/ **0** / 1/%]
	Displays the total coverage and total printout number for each color.		
001	Coverage(%):BK		
002	Coverage (%) Y		

003	Coverage (%) M		
004	Coverage (%) C		
8921	Cvr Cnt/Total	*CTL	[0 to 99999999/ **0** / 1/step]
011	Coverage /P: BK		
012	Coverage /P: Y		
013	Coverage /P: M		
014	Coverage /P: C		

8941	Machine Status	*CTL	[0 to 99999999/ **0** / 1/step]
	These SPs count the amount of time the machine spends in each operation mode. These SPs are useful for customers who need to investigate machine operation for improvement in their compliance with ISO Standards.		
001	Operation Time	Engine operation time. Does not include time while controller is saving data to HDD (while engine is not operating).	
002	Standby Time	Engine not operating. Includes time while controller saves data to HDD. Does not include time spent in Energy Save, Low Power, or Off modes.	
003	Energy Save Time	Includes time while the machine is performing background printing.	
004	Low Power Time	Includes time in Energy Save mode with Engine on. Includes time while machine is performing background printing.	
005	Off Mode Time	Includes time while machine is performing background printing. Does not include time machine remains powered off with the power switches.	
006	SC	Total time when SC errors have been staying.	

007	PrtJam	Total time when paper jams have been staying during printing.
008	OrgJam	Total time when original jams have been staying during scanning.
009	Supply PM Unit End	Total time when toner end has been staying.

8951	AddBook Register	*CTL	-
	These SPs count the number of events when the machine manages data registration.		
001	User Code /User ID	User code registrations.	[0 to 99999/ **0** / 1/step]
002	Mail Address	Mail address registrations.	
003	Fax Destination	Fax destination registrations.	
004	Group	Group destination registrations.	
005	Transfer Request	Fax relay destination registrations for relay TX.	
006	F-Code	F-Code box registrations.	
007	Copy Program	Copy application registrations with the Program (job settings) feature.	[0 to 255 / **0** / 1/step]
008	Fax Program	Fax application registrations with the Program (job settings) feature.	
009	Printer Program	Printer application registrations with the Program (job settings) feature.	
010	Scanner Program	Scanner application registrations with the Program (job settings) feature.	

8961	Electricity Status	*CTL	[0 to 99999999/ **0** / 1/step]

	-
001	Ctrl Standby Time
002	STR Time
003	Main Power Off Time
004	Reading and Printing Time
005	Printing Time
006	Reading Time
007	Eng Waiting Time
008	Low Pawer State Time
009	Silent State Time
010	Heater Off State Time
011	LCD on Time
101	Silent Print

8971	Unit Control	*CTL	[0 to 99999999/ **0** / 1/step]
	-		
001	Engine Off Recovery Count		
002	Power Off Count		
003	Force Power Off Count		

8999	Admin. Counter List		
	Displays the total coverage and total printout number for each color.		
001	Total	*CTL	[0 to 99999999/ **0** / 1]
002	Copy: Full Color	*CTL	[0 to 99999999/ **0** / 1]
003	Copy: BW	*CTL	[0 to 99999999/ **0** / 1]
004	Copy: Single Color	*CTL	[0 to 99999999/ **0** / 1]

005	Copy: Two Color	*CTL	[0 to 99999999/ **0** / 1]
006	Printer Full Color	*CTL	[0 to 99999999/ **0** / 1]
007	Printer BW	*CTL	[0 to 99999999/ **0** / 1]
008	Printer Single Color	*CTL	[0 to 99999999/ **0** / 1]
009	Printer Two Color	*CTL	[0 to 99999999/ **0** / 1]
010	Fax Print: BW	*CTL	[0 to 99999999/ **0** / 1]
011	Fax Print: Single Color	*CTL	[0 to 99999999/ **0** / 1]
013	Duplex	*CTL	[0 to 99999999/ **0** / 1]
022	Copy: Full Color(%)	*CTL	[0 to 2147483647/ **0** / 1]
023	Copy: BW(%)	*CTL	[0 to 2147483647/ **0** / 1]
024	Copy: Single Color(%)	*CTL	[0 to 2147483647/ **0** / 1]
025	Copy: Two Color(%)	*CTL	[0 to 2147483647/ **0** / 1]
026	Printer: Full Color(%)	*CTL	[0 to 2147483647/ **0** / 1]
027	Printer: BW(%)	*CTL	[0 to 2147483647/ **0** / 1]
028	Printer: Single Color(%)	*CTL	[0 to 2147483647/ **0** / 1]
029	Printer: Two Color(%)	*CTL	[0 to 2147483647/ **0** / 1]
030	Fax Print: BW(%)	*CTL	[0 to 2147483647/ **0** / 1]
031	Fax Print: Single Color(%)	*CTL	[0 to 2147483647/ **0** / 1]
101	Transmission Total: Color	*CTL	[0 to 99999999/ **0** / 1]
102	Transmission Total: BW	*CTL	[0 to 99999999/ **0** / 1]
103	FAX Transmission	*CTL	[0 to 99999999/ **0** / 1]
104	Scanner Transmission: Color	*CTL	[0 to 99999999/ **0** / 1]

105	Scanner Transmission: BW	*CTL	[0 to 99999999/ **0** / 1]

3.5 PRINTER SERVICE MENU

3.5.1 SP1-XXX (SERVICE MODE)

1001	[Bit Switch]			
1-001-001	Bit Switch 1		0	1
	bit 0	DFU	-	-
	bit 1	Responding with the hostname as the sysName	Model name (PnP name)	Hostname
		This BitSwitch can change the value of the sysName. 0 (default): Model name (PnP name) such as "MP C401SP" 1: Host name		
	bit 2	DFU	-	-
	bit 3	**No I/O Timeout**	**Disabled**	Enabled
		Enables/Disables MFP I/O Timeouts. If enabled, the MFP I/O Timeout setting will have no affect. I/O Timeouts will never occur.		
	bit 4	**SD Card Save Mode**	**Disabled**	Enabled
		If this bit switch is enabled, print jobs will be saved to the GW SD slot and not output to paper.		
	bit 5	[PS and PDF] Paper size error margin	±5pt	±10pt
		When a PS job is printed by using a custom paper size, the job might not be printed because of a paper size mismatch caused by a calculation error. By default, the error margin for matching to a paper size is ±5 points. By enabling this BitSwitch, the error margin for matching to a paper size can be extended to ±10 points.		
	bit 6	DFU	-	-

	bit 7	**[RPCS,PCL]: Printable area frame border**	**Disabled**	Enabled
		Prints all RPCS and PCL jobs with a border around the printable area.		

1001	**[Bit Switch]**			
1-001-002	Bit Switch 2		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	**Applying a Collate Type**	**Shift Collate**	Normal Collate
		A collate type (shift or normal) will be applied to all jobs that do not explicitly define a collate type. **Note:** If #5-0 is enabled, this BitSwitch has no effect.		
	bit 3	**[PCL5e/c,PS]: PDL Auto Switching**	**Enabled**	Disabled
		Enables/Disables the MFPs ability to change the PDL processor mid-job. Some host systems submit jobs that contain both PS and PCL5e/c. If Auto PDL switching is disabled, these jobs will not be printed properly.		
	bit 4	**Color balance switching**	Disabled	Enabled
		This BitSwitch can be used to restore the color balance to match that of previous models. If this BitSwitch is set to "1" (Enabled), the color balance from 09A and Extended 09A models will be used.		
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	DFU	-	-

1001	**[Bit Switch]**			
1-001-003	Bit Switch 3		0	1
	bit 0	DFU	-	-

	bit 1	DFU	-	-
	bit 2	**[PCL5e/c]: Legacy HP compatibility**	**Disabled**	Enabled
		Uses the same left margin as older HP models such as HP4000/HP8000. In other words, the left margin defined in the job (usually "<ESC>*r0A") will be changed to "<ESC>*r1A".		
	bit 3	DFU	-	-
	bit 4	DFU	-	-
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	DFU	-	-

1001	**[Bit Switch]**			
1-001-004	Bit Switch 4		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	DFU	-	-
	bit 3	DFU	-	-
	bit 4	DFU	-	-
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	DFU	-	-

1001	**[Bit Switch]**			
1-001-005	Bit Switch 5		0	1
	bit 0	**Show "Collate Type", "Staple Type" and "Punch Type" buttons on the operation panel.**	**Disabled**	Enabled

		If enabled, users will be able to configure a Collate Type, Staple Type, and Punch Type from the operation panel. The available Types will depend on the device and configured options. After enabling this BitSw, the settings will appear under: "User Tools > Printer Features > System"		
	bit 1	**Multiple copies if a paper size or type mismatch occurs**	**Disabled (single copy)**	Enabled (multiple)
		If a paper size or type mismatch occurs during the printing of multiple copies, only a single copy is output by default. Using this BitSw, the device can be configured to print all copies even if a paper mismatch occurs.		
	bit 2	**Prevent SDK applications from altering the contents of a job.**	**Disabled**	Enabled
		If this BitSw is enabled, SDK applications will not be able to alter print data. This is achieved by preventing SDK applications from accessing a module called the "GPS Filter". Note: The main purpose of this BitSw is for troubleshooting the effects of SDK applications on data.		
	bit 3	**[PS] PS Criteria**	**Pattern3**	Pattern1
		Change the number of PS criterion used by the PS interpreter to determine whether a job is PS data or not.		
	bit 4	**Increase max. number of stored jobs.**	**Disabled (100)**	Enabled (750)
		Changes the maximum number of jobs that can be stored on the HDD. The default (disabled) is 100. If this is enabled, the max. will be raised to 750 or 1000 depending on the model.		
	bit 5	Face-up output	**Disabled**	Enabled (Face-up)
	bit 6	**Method for determining the image rotation for the edge to bind on.**	**Disabled**	Enabled

		If enabled, the image rotation will be performed as they were in the specifications of older models for the binding of pages of mixed orientation jobs. The old models are below: - PCL: Pre-04A models - PS/PDF/RPCS:Pre-05S models		
	bit 7	DFU	-	-

1001	**[Bit Switch]**			
1-001-006	Bit Switch 6		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	DFU	-	-
	bit 3	DFU	-	-
	bit 4	DFU	-	-
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	DFU	-	-

1001	**[Bit Switch]**			
1-001-007	Bit Switch 7		0	1
	bit	**Print path**	**Disabled**	Enabled

	0	If enabled, simplex pages (in mixed simplex/duplex PS/PCL5 jobs only) and the last page of an odd paged duplex job (PS, PCL5, PCL6), are always routed through the duplex unit. Not having to switch paper paths increases the print speed slightly.		
	bit 1	DFU	-	-
	bit 2	DFU	-	-
	bit 3	DFU	-	-
	bit 4	DFU	-	-
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	DFU	-	-

1001	**[Bit Switch]**			
1-001-008	Bit Switch 8		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	DFU	-	-
	bit 3	DFU	-	-
	bit 4	DFU	-	-

	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	**[PDF]: Orientation Auto Detect Function**	**Enabled**	Disabled
		Automatically chooses page orientations of PDF jobs (Landscape or Portrait) based on the content.		

1001	**[Bit Switch]**			
1-001-009	Bit Switch 9		0	1
	bit 0	**PDL Auto Detection timeout of jobs submitted via USB or Parallel Port (IEEE 1284).**	**Disabled (Immediately)**	Enabled (10 seconds)
		To be used if PDL auto-detection fails. A failure of PDL auto detection doesn't necessarily mean that the job can't be printed. This bit switch tells the device whether to time-out immediately (default) upon failure or to wait 10 seconds.		
	bit 1	DFU	-	-
	bit 2	**Job Cancel**	**Disabled (Not cancelled)**	Enabled (Cancelled)
		If this bit switch, all jobs will be cancelled after a jam occurs. **Note:** If this bitsw is enabled, printing under the following conditions might result in problems: - Job submission via USB or Parallel Port - Spool printing (WIM >Configuration > Device Settings > System)		
	bit 3	DFU	-	-
	bit 4	**Timing of the PJL Status ReadBack (JOB END) when printing multiple collated copies.**	**Disable**	Enable

		This bitsw determines the timing of the PJL USTATUS JOB END sent when multiple collated copies are being printed. 0 (default): JOB END is sent by the device to the client after the first copy has completed printing. This causes the page counter to be incremented after the first copy and then again at the end of the job. 1: JOB END is sent by the device to the client after the last copy has finished printing. This causes the page counter to be incremented at the end of each job.		
	bit 5	**Display UTF-8 text in the operation panel**	**Enabled**	Disabled
		Enabled (=0): Text composed of UTF-8 characters can be displayed in the operation panel. Disabled (=1): UTF-8 characters cannot be displayed in the operation panel. For example, job names are sometimes stored in the MIB using UTF-8 encoded characters. When these are displayed on the operation panel, they will be garbled unless this BitSw is enabled (=0).		
	bit 6	**Disable super option**	**Enabled**	Disabled
		Switches super option disable on / off. It this is On, multiple jobs are grouped at LPR port. PJL settings are enabled even jobs that are specified queue names are sent.		
	bit 7	**Enable/Disable Print from USB/SD's Preview function**	Enabled	**Disabled**
		Determines whether Print from USB/SD will have the Preview function. Enabled (=0): Print from USB/SD will have the Preview function. Disabled (=1): Print from USB/SD will not have the Preview function.		

1001	**[Bit Switch]**			
1-001-010	Bit Switch A		0	1
	bit 0	DFU	-	-

	bit 1	DFU	-	-
	bit 2	DFU	-	-
	bit 3	DFU	-	-
	bit 4	DFU	-	-
	bit 5	**Store and Skip Errored Job locks the queue**	**Queue is not locked after SSEJ**	Queue locked after SSEJ
		If this is 1, then after a job is stored using Store and Skip Errored Job (SSEJ), new jobs cannot be added to the queue until the stored job has been completely printed.		
	bit 6	**Allow use of Store and Skip Errored Job if connected to an external charge device.**	**Does not allow SSEJ with ECD**	Allows SSEJ with ECD
		If this is 0, Store and Skip Errored Job (SSEJ) will be automatically disabled if an external charge device is connected. **Note:** We do not officially support enabling this bitsw (1). Use it at your own risk.		
	bit 7	**Job cancels remaining pages when the paid-for pages have been printed on an external charge device**	**Job does not cancel**	Job cancels
		When setting 1 is enabled, after printing the paid-for pages on an external charge device, the job that includes any remaining pages will be canceled. This setting will prevent the next user from printing the unnecessary pages from the previous user's print job.		

1001	**[Bit Switch]**		
1-001-011	Bit Switch B	0	1

	bit 0	**Show Menu List**	**Hide Menu List**	Show Menu List
		If this is 0, the Menu List button will be removed from Printer Features.		
	bit 1	**Print job interruption**	**Does not allow interruption**	Allow interruption
		0 (default): Print jobs are not interrupted. If a job is promoted to the top of the print queue, it will wait for the currently printing job to finish. 1: If a job is promoted to the top of the queue, it will interrupt the currently printing job and start printing immediately.		
	bit 2	DFU	-	-
	bit 3	Not Used	-	-
	bit 4	Add "Apply Auto Paper Select" is the condition that decides if the device's paper size or paper type should be overwritten.	**Disabled**	Enabled-
		If this BitSwitch is set to "1" (enabled), the "Apply Auto Paper Select" setting will decide if the paper size or paper type that is specified in the device settings should be overwritten by the job's commands when "Tray Setting Priority" is set to "Driver/Command" or "Any Type". - Apply Auto Paper Select = OFF: Overwritten (priority is given to the job’s commands) - Apply Auto Paper Select = ON: Not overwritten (priority is given to the device settings)		
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	DFU	-	-

1001	[Bit Switch]			
1-001-012	Bit Switch C		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	DFU	-	-
	bit 3	DFU	-	-
	bit 4	DFU	-	-
	bit 5	**Change the user ID type displayed on the operation panel**	**Login User Name**	User ID
		As of 15S models, the Login User Name can be displayed on the operation panel. The user ID type displayed on the operation panel can be changed by configuring BitSwitch #12-5 as follows: - 0 (default): Login User Name - 1: User ID. If this is enabled, User ID will be displayed, which is equivalent to the behavior exhibited in 14A and earlier models.		
	bit 6	DFU	-	-
	bit 7	DFU	-	-

1003	[Clear Setting]		
1-003-001	Initialize System	*CTL	[- / **-** / -] [Execute]
	Initializes settings in the "System" menu of the user mode.		

1-003-003	Delete Program	*CTL	[- / **-** / -] [Execute]

1004	**[Print Summary]**		
	Prints the service summary sheet (a summary of all the controller settings).		
1-004-001	Print Summary	*CTL	[- / **-** / -] [Execute]
1-004-002	Print Summary2	*CTL	[- / **-** / -] [Execute]

1005	**[Display Version]**		
1-005-002	Printer Version	*CTL	[- / **-** / -]
	Displays the version of the controller firmware.		

1006	**[Sample / Proof Print]**		
1-006-001	Sample / Proof Print	*CTL	[0 or 1 / **1** / 1 /step] 0: Linked, 1: On
	Enables and disables the document server. When you select "0," the document server is enabled or disabled in accordance with Copy Service Mode SP5-967. When you select "1," the document server is enabled regardless of Copy Service Mode SP5-967.		

1101	**[Data Recall]**		
	Recalls a set of gamma settings. This can be either a) the factory setting, b) the previous setting, or c) the current setting.		
1-101-001	Factory	*CTL	[- / **-** / -] [Execute]
1-101-002	Previous	*CTL	
1-101-003	Current	*CTL	
1-101-004	ACC	*CTL	

1102	**[Resolution Setting]**		
	Selects the printing mode (resolution) for the printer gamma adjustment.		
1-102-001	Tone Control Mode Selection	CTL	[0 to 8 / **0** / 1/step] 0: 1200x1200 Photo 1: 2400x600 Photo 2: 1800x600 Photo 3: 00x600 Photo 4: 1200x1200 Text 5: 2400x600 Text 6: 1800x600 Text 7: 600x600 Text

1103	**[Test Page]**		
	Prints the test page to check the color balance before and after the gamma adjustment.		
1-103-001	Color Gray Scale	CTL	[- / **-** / -] [Execute]
1-103-002	Color Pattern	CTL	

1104	**[Gamma Adjustment]**		
	Adjusts the printer gamma for the mode selected in the "Mode Selection" menu.		
1-104-001	Black: Highlight	CTL	[0 to 30 / **00** / 1/step]
1-104-002	Black: Shadow	CTL	
1-104-003	Black: Middle	CTL	
1-104-004	Black: IDmax	CTL	
1-104-021	Cyan: Highlight	CTL	
1-104-022	Cyan: Shadow	CTL	
1-104-023	Cyan: Middle	CTL	
1-104-024	Cyan: IDmax	CTL	
1-104-041	Magenta: Highlight	CTL	

1-104-042	Magenta: Shadow	CTL	
1-104-043	Magenta: Middle	CTL	
1-104-044	Magenta: IDmax	CTL	
1-104-061	Yellow: Highlight	CTL	
1-104-062	Yellow: Shadow	CTL	
1-104-063	Yellow: Middle	CTL	
1-104-064	Yellow: IDmax	CTL	

1105	**[Save Tone Control Value]**		
	Stores the print gamma adjusted with the "Gamma Adj." menu item as the current setting. Before the machine stores the new "current setting", it moves the data currently stored as the "previous setting" memory storage location.		
1-105-001	Save Tone Control Value	*CTL	[- / **-** / -] [Execute]

1106	**[Toner Limit]**		
	Adjusts the maximum toner amount for image development.		
1-106-001	Toner Limit Value	*CTL	[0 to 400 / **0** / 1 %/step]

1110	**[Media Print Device Setting]**		
	Selects the setting for the media print device.		
1-110-002	0: Disable 1: Enable	*CTL	[0 or 1 / **1** / 1 / step]

1111	**[All Job Delete Mode]**		
1-111-001	-	*CTL	[0 or 1 / **0** / 1 / step] 0: Excluding New Job 1: Including New Job

	Selects whether to include an image processing job in jobs subject to full cancellation from the SCS job list.

1113	**[IBACC Exec]**		
	Sets IBACC correction execution (calculation IBACC gamma) on / off. 0: Not calculate IBACC gamma. (Sets IBACC gamma linear) 1: Calculate IBACC gamma		
1-113-001	0:Off 1:On	*CTL	[0 or 1 / **1** / 1/step]

1114	**[IBACC ToneCtlSet]**		
	Sets back to the previous value of IBACC gamma correction for all resolutions. If there is no previous value, sets to the factory default values.		
1-114-001	Tone (Prev.)	CTL	-
1-114-002	Tone (Factory)	CTL	-

1115	**[IBACC Exec Time]**		
	Displays the time when IBACC is executed or sets back to the previous / initial value.		
1-115-001	Time	CTL	-

3.6 SCANNER SERVICE MENU

3.6.1 SP1-XXX (SYSTEM AND OTHERS)

1001	**[Scan Nv Version]**		
1-001-005	-	*CTL	[- / **-** / -]

1005	**[Erase Margin(Remote scan)]**		
1-005-001	Range from 0 to 5 mm	*CTL	[0 to 5 / **0** / 1 / step]

1009	**[Remote scan disable]**		
1-009-001	0:Enable 1:Disable	*CTL	[0 or 1 / **0** / 1 / step] 0: ON (enabled) 1: OFF (disabled)

1010	**[Non Display Clear Light PDF]**		
1-010-001	0:Display 1:Nondisplay	*CTL	[0 or 1 / **0** / 1 / step] 0: Display, 1: No display

1011	**[Org Count Display]**		
1-011-001	0:ON 1:OFF	*CTL	[0 or 1 / **0** / 1 / step] 0: OFF (no display) 1: ON (count displays)

1012	**[User Info Release]**		
1-012-001	0:No 1:Yes	*CTL	[0 or 1 / **1** / 1 / step] 1: Release 0: Do not release

1013	**[Multi Media Function]**

1-013-002	0:OFF 1:ON	*CTL	[0 or 1 / **1** / 1 / step] 0: Disable 1: Enable

1014	**[Scan to Folder Pass Input Set]**		
1-014-001	0: OFF 1: ON	*CTL	[0 or 1 / **0** / 1 / step] **0: OFF** 1: ON

1041	**[Scan:FlairAPI Setting]**			
1-041-001	0x00 – 0xff	*CTL	* see BitSwitch below:	
	Sets Scanner FlairAPI Function enable / disable. This SP is set by BitSwitch and needs to reboot the machine after making changes.			
bit	Setting	meanings		Description
		0	1	
bit 0	Start of FlairAPI Server	**Off (Do not Start)**	On (Start)	Sets whether to start exclusive FlairAPI http server. If it is 0, scanning FlairAPI function and simple UI function will be disabled.
bit 1	Access permission of FlairAPI from outside of the machine	**Disabled**	Enabled	If it is “0”, accessing is limited from the machine only, such as operating panel, SDK/J, MFP browsers etc… If it is “1”, accessing is allowed from outside of FlairAPI such as PC, Remote UI, IT-Box etc…

bit 2	IPv6 (Exclusive) / IPv4 (Priority) Switching	**IPv6 (Exclusive)**	IPv4 (Priority)	If this bit is “0”, only IPv6 accessing is permitted. If this bit is “1” and IPv4 is enabled, the machine uses IPv4 accessing. If this bit is “1” and IPv4 is disabled, the machine uses IPv6 accessing. In this case, it is unable to access through Smart Operation Panel if IPv4 address is enabled.
bit 3	Remote UI Function	**Not Used**	Use	Sets use of Remote UI for scanner function.
bit 4	Reserved	-	-	-
bit 5	Reserved	-	-	-
bit 6	Reserved	-	-	-
bit 7	Reserved	-	-	-

3.6.2 SP2-XXX (SCANNING-IMAGE QUALITY)

2021	[Compression Level (Gray-scale)]		
2-021-001	Comp1:5-95	*CTL	[5 to 95 / **20** / 1 / step]
2-021-002	Comp2:5-95	*CTL	[5 to 95 / **40** / 1 / step]
2-021-003	Comp3:5-95	*CTL	[5 to 95 / **65** / 1 / step]
2-021-004	Comp4:5-95	*CTL	[5 to 95 / **80** / 1 / step]
2-021-005	Comp5:5-95	*CTL	[5 to 95 / **95** / 1 / step]

2023	[ClearLightPDF:ACS Setting]		
	This SP code enables/disables the ACS function.		
2-023-001	0:OFF 1:ON	*CTL	[0 or 1 / **1** / 1 / step] 0: Disable **1: Enable**

2024	[Compression ratio of ClearLight PDF]		
2-024-001	Compression Ratio (Normal)	*CTL	[5 to 95 / **20** / 1 / step]
2-024-002	Compression Ratio (High)	*CTL	[5 to 95 / **20** / 1 / step]

2025	[Compression ratio of ClearLightPDF JPEG2000]		
2-025-001	Compression Ratio (Normal) JPEG2000	*CTL	[5 to 95 / **25** / 1 / step]
2-025-002	Compression Ratio (High) JEPG2000	*CTL	[5 to 95 / **15** / 1 / step]

2030	[OCR PDF DetectSens]

2-030-001	White Lumi Value: 0 - 255	*CTL	[0 to 255 / **250** / 1 / step]
2-030-002	White Pix Ratio: 0 - 100	*CTL	[0 to 100 / **80** / 1 / step]
2-030-003	White Tile Ratio: 0 - 100	*CTL	[0 to 100 / **80** / 1 / step]

2031	**[Vertical Judgment Setting]**		
2-031-001	Function Setting: 0 - 1	*CTL	[0 to 255 / **250** / 1 / step]
2-031-002	Algorithm Setting: 0 - 2	*CTL	[0 to 100 / **80** / 1 / step]

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BOOKLET FINISHER SR4130

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

FINISHER SR4120/

BOOKLET FINISHER SR4130

(D3CG/D3CH)

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READ THIS FIRST

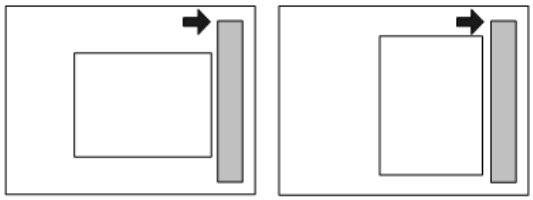
Safety, Conventions, Trademarks

Conventions

Common Terms

This is a list of symbols and abbreviations used in this manual.

Item	Meaning
	Blue screw
	Bushing
	C-ring
	Connector
	E-ring
	Flexible film cable
	Harness clamp
	Hook
	Screw
	Spring
	Timing belt
JG	Junction Gate
LEF	Long Edge Feed
SEF	Short Edge Feed
TE	Trailing Edge of paper



_safe001

Warnings, Cautions, Notes

In this manual, the following important symbols and notations are used.

⚠WARNING

- A Warning indicates a potentially hazardous situation. Failure to obey a Warning could result in death or serious injury.

⚠CAUTION

- A Caution indicates a potentially hazardous situation. Failure to obey a Caution could result in minor or moderate injury or damage to the finisher or other property.

Important

- Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine.

Note

- This information provides tips and advice about how to best service the machine.

General Safety Instructions

For your safety, please read this manual carefully before you use this product. Keep this manual handy for future reference.

Safety Information

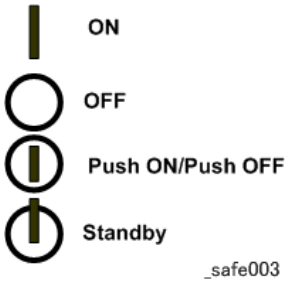
Always obey the following safety precautions when using this product.

Safety During Operation

In this manual, the following important symbols and notations are used.

Switches and Symbols

Where symbols are used on or near switches on machines for Europe and other areas, the meaning of each symbol conforms with IEC60417.



_safe003

Responsibilities of the Customer Engineer

Reference Material for Maintenance

- Maintenance shall be done using the special tools and procedures prescribed for maintenance of the machine described in the reference materials (service manuals, technical bulletins, operating instructions, and safety guidelines for customer engineers).
- In regard to other safety issues not described in this document, all customer engineers shall strictly obey procedures and recommendations described the “CE Safety Guide”.
- Use only consumable supplies and replacement parts designed for use of the machine.

Before Installation, Maintenance

Power

⚠WARNING

- Always disconnect the power plug before doing any maintenance procedure. After switching off the machine, power is still supplied to the main machine and other devices. To prevent electrical shock, switch the machine off, wait for a few seconds, then unplug the machine from the power source.
- Before you do any checks or adjustments after turning the machine off, work carefully to avoid injury. After removing covers or opening the machine to do checks or adjustments, never touch electrical components or moving parts (gears, timing belts, etc.).
- After turning the machine on with any cover removed, keep your hands away from electrical components and moving parts. Never touch the cover of the fusing unit, gears, timing belts, etc.

Installation, Disassembly, and Adjustments

⚠WARNING

- After installation, maintenance, or adjustment, always check the operation of the machine to make sure that it is operating normally. This ensures that all shipping materials, protective materials, wires and tags, metal brackets, etc., removed for installation, have been removed and that no tools remain inside the machine. This also ensures that all release interlock switches have been restored to normal operation.
- Never use your fingers to check moving parts causing spurious noise. Never use your fingers to lubricate moving parts while the machine is operating.

Special Tools

⚠CAUTION

- Use only standard tools approved for machine maintenance.
- For special adjustments, use only the special tools and lubricants described in the service manual. Using tools incorrectly, or using tools that could damage parts, could damage the machine or cause injuries.

During Maintenance

General

⚠CAUTION

- Before you begin a maintenance procedure: 1) Switch the machine off, 2) Disconnect the power plug from the power source, 3) Allow the machine to cool for at least 10 minutes.
- Avoid touching the components inside the machine that are labeled as hot surfaces.

Safety Devices

⚠WARNING

- Never remove any safety device unless it requires replacement. Always replace safety devices immediately.
- Never do any procedure that defeats the function of any safety device. Modification or removal of a safety device (fuse, switch, etc.) could lead to a fire and personal injury. Always test the operation of the machine to ensure that it is operating normally and safely after removal and replacement of any safety device.
- For replacements use only the correct fuses or circuit breakers rated for use with the machine. Using replacement devices not designed for use with the machine could lead to a fire and personal injuries.

Organic Cleaners

⚠CAUTION

- During preventive maintenance, never use any organic cleaners (alcohol, etc.) other than those described in the service manual.
- Make sure the room is well ventilated before using any organic cleaner. Use organic solvents in small amounts to avoid breathing the fumes and becoming nauseous.
- Switch the machine off, unplug it, and allow it to cool before doing preventive maintenance. To avoid fire or explosion, never use an organic cleaner near any part that generates heat.
- Wash your hands thoroughly after cleaning parts with an organic cleaner to contamination of food, drinks, etc. which could cause illness.
- Clean the floor completely after accidental spillage of silicone oil or other materials to prevent slippery surfaces that could cause accidents leading to hand or leg injuries. Use “My Ace” Silicone Oil Remover (or dry rags) to soak up spills. For more details, please refer to Technical Bulletin “Silicone Oil Removal” (A024-50).

Ozone Filters

⚠CAUTION

- Always replace ozone filters as soon as their service life expires (as described in the service manual).
- An excessive amount of ozone can build up around machines that use ozone filters if they are not replaced at the prescribed time. Excessive ozone could cause personnel working around the machine to feel unwell.

Power Plug and Power Cord

⚠WARNING

- Before servicing the machine (especially when responding to a service call), always make sure that the power plug has been inserted completely into the power source. A partially inserted plug could lead to heat generation (due to a power surge caused by high resistance) and cause a fire or other problems.
- Always check the power plug and make sure that it is free of dust and lint. Clean it if necessary. A dirty plug can generate heat which could cause a fire.
- Inspect the length of the power cord for cuts or other damage. Replace the power cord if necessary. A frayed or otherwise damaged power cord can cause a short circuit which could lead to a fire or personal injury from electrical shock.
- Check the length of the power cord between the machine and power supply. Make sure the power cord is not coiled or wrapped around any object such as a table leg. Coiling the power cord can cause excessive heat to build up and could cause a fire.
- Make sure that the area around the power source is free of obstacles so the power cord can be removed quickly in case of an emergency.
- Make sure that the power cord is grounded (earthed) at the power source with the ground wire on the plug.
- Connect the power cord directly into the power source. Never use an extension cord.
- When you disconnect the power plug from the power source, always pull on the plug, not the cable.

After Installation, Servicing

Disposal of Used Items

⚠CAUTION

- Always dispose of used items (developer, toner, toner cartridges, OPC drums, etc.) in accordance with the local laws and regulations regarding the disposal of such items.
- To protect the environment, never dispose of this product or any kind of waste from consumables at a household waste collection point. Dispose of these items at one of our dealers or at an authorized collection site.

Points to Confirm with Operators

At the end of installation or a service call, instruct the user about use of the machine. Emphasize the following points.

- Show operators how to remove jammed paper and troubleshoot other minor problems by following the procedures described in the operating instructions.
- Point out the parts inside the machine that they should never touch or attempt to remove.
- Confirm that operators know how to store and dispose of consumables.
- Make sure that all operators have access to an operating instruction manual for the machine.
- Confirm that operators have read and understand all the safety instructions described in the operating instructions.
- Demonstrate how to turn off the power and disconnect the power plug (by pulling the plug, not the cord) if any of the following events occur: 1) something has spilled into the product, 2) service or repair of the product is necessary, 3) the product cover has been damaged.
- Caution operators about removing paper fasteners around the machine. They should never allow paper clips, staples, or any other small metallic objects to fall into the machine.

Safety Instructions for this Machine

1. The installation must be done by trained service technicians.
2. This machine weighs 92 kg. (202.9 lb.). At least four persons are required to remove the machine from its pallet and position it for installation.
3. To prevent fire hazards never use flammable solvents around the machine.
4. Never place any object on the machine.
5. If anything falls into the machine, turn off the main power switch on the right side of the machine, then disconnect the power cord from the power source.
6. Locate the machine on a sturdy flat surface where it will not be exposed to excessive vibration.
7. To avoid fire hazard, confirm that the ventilation ports are not blocked, so air can flow freely.
8. Gas generated by the molten glue can irritate the eyes, throat, and nose. The machine should always be used in a well ventilated room.
9. To avoid the dangers of fire and electrical shock, make sure that the machine is never exposed to:
    - Excessive high temperatures and/or humidity
    - Dust
    - Water
    - Direct sunlight
    - Open flame
    - Corrosive gases

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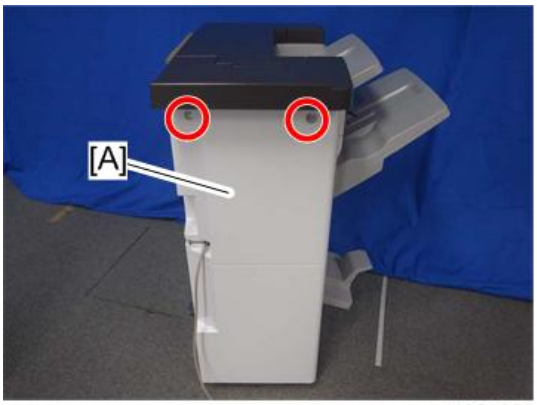
1. REPLACEMENT AND ADJUSTMENT

1.1 COVERS

1.1.1 REAR UPPER COVER, REAR LOWER COVER, UPPER COVER

1. Rear upper cover [A] (x 2)



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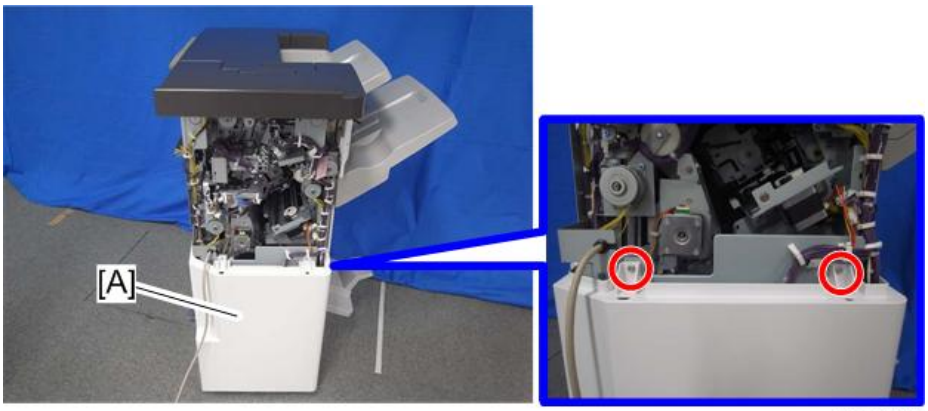
2. Rear lower cover [A] (x 2)



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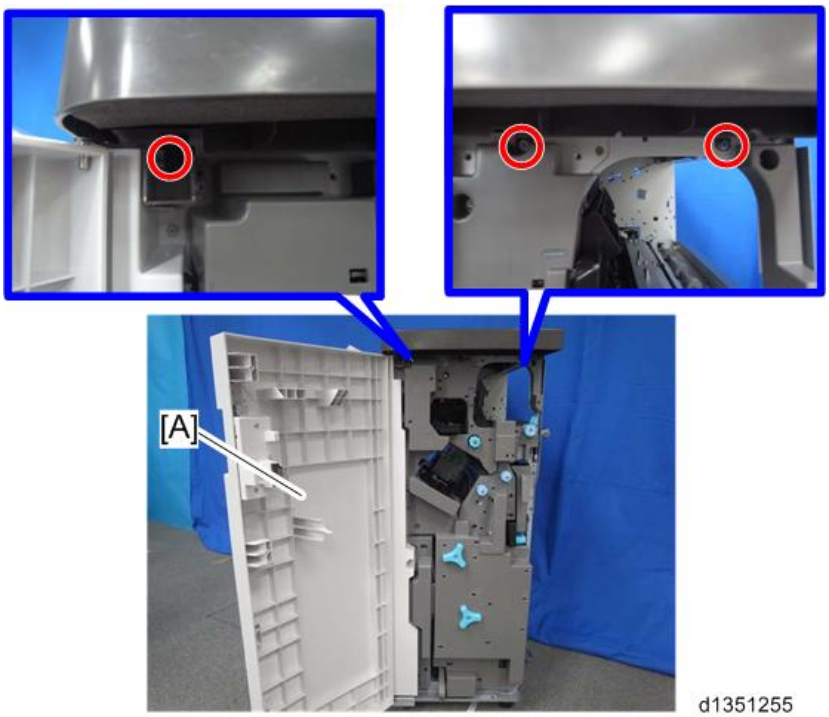
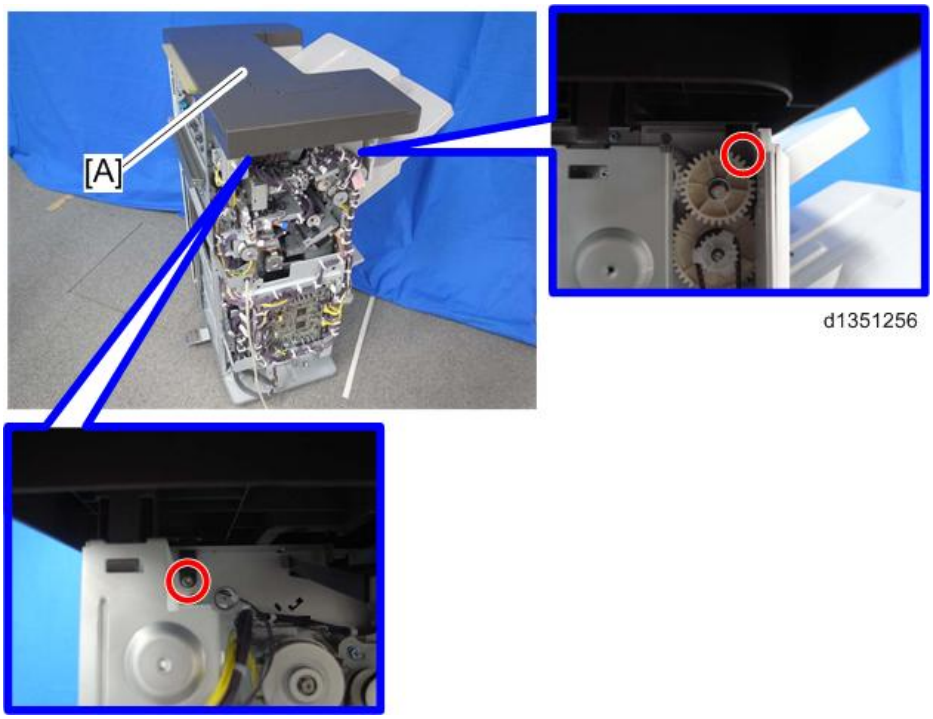
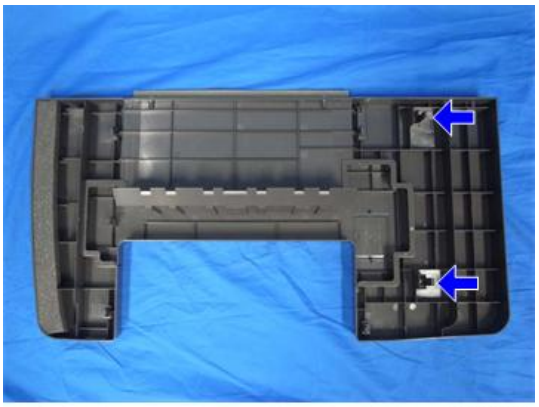
3. Open the front door [A], and remove the screws of the upper cover. (x 5)



4. Upper cover [A] (x 2, x 2)

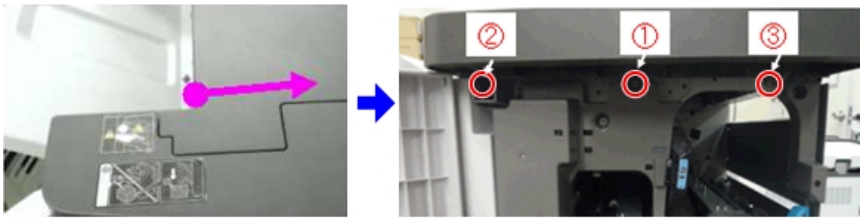


5. Check the positions of the bosses and hooks before removing the upper cover.



d1351257

6. When the upper cover is re-attached, tighten the screws on the right side in the order shown below: 1 > 2 > 3.



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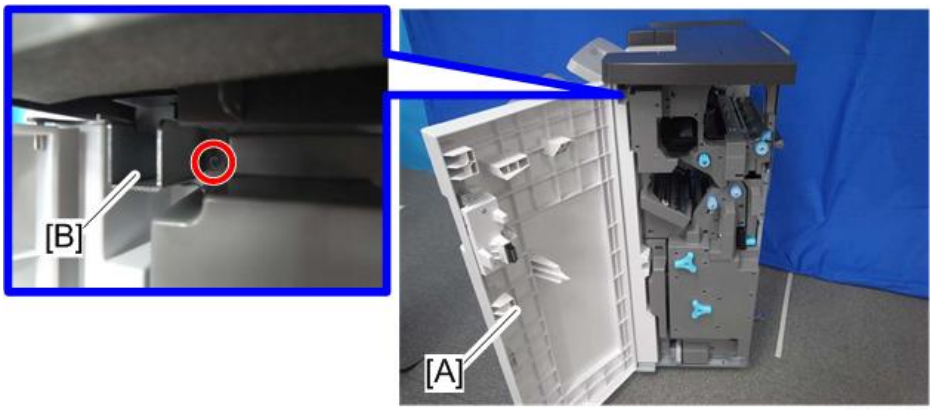
1.1.2 FRONT COVER, FRONT LEFT SIDE COVER

1. Open the front door [A], and then remove the front door bracket [B]. (x 1)
2. Front door [A]



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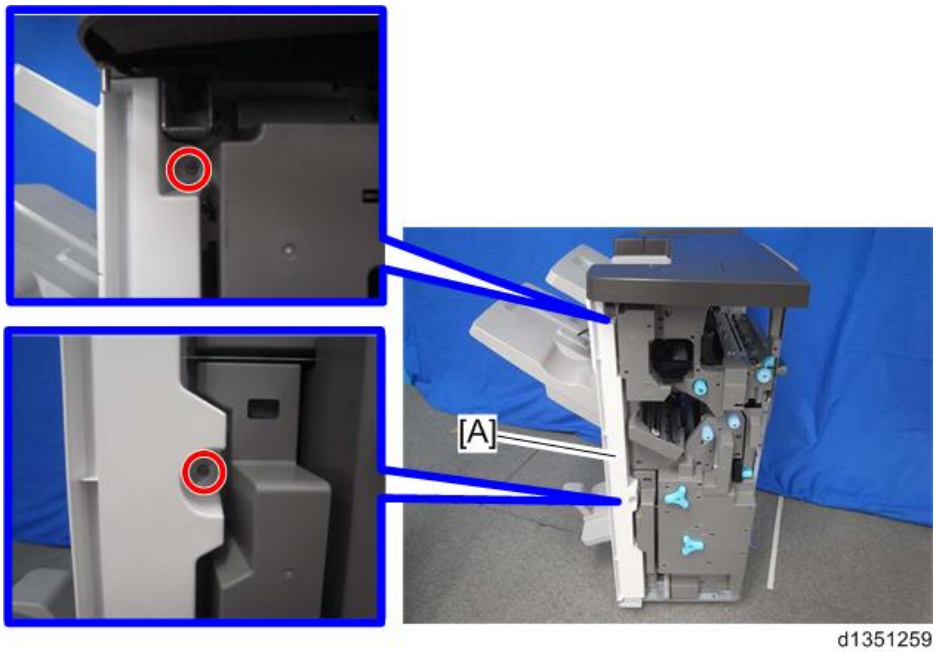
3. Front left side cover [A] (x 2)



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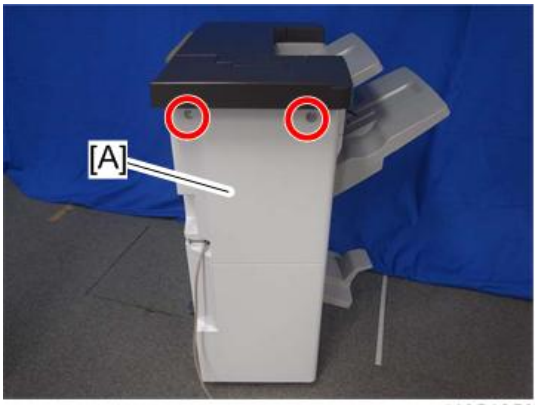
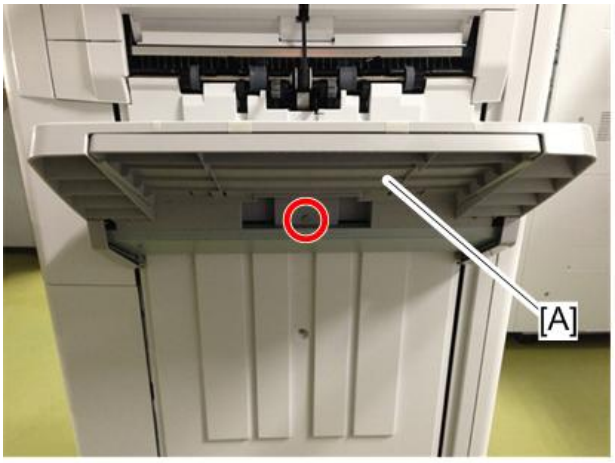
1.1.3 PAPER GUIDE COVER

1. Remove rear upper cover [A] (x1).



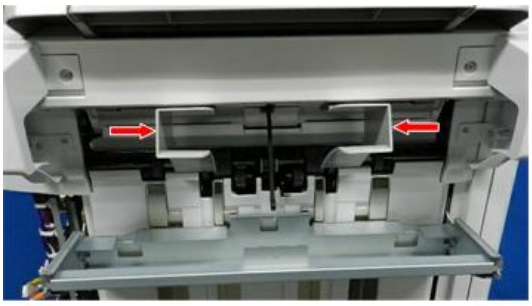
d1351253

2. Remove shift tray [A] (x1).



d1351777

3. Push the guides in to the center.



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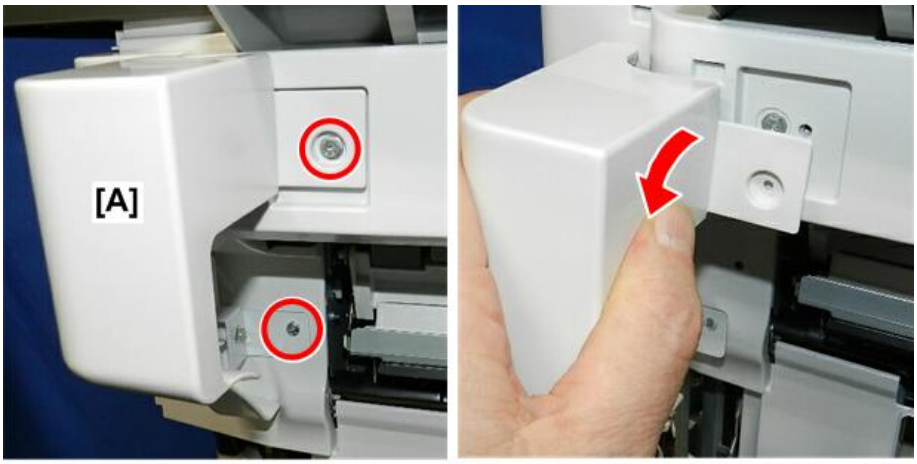
4. Remove rear paper guide cover [A] (x1).



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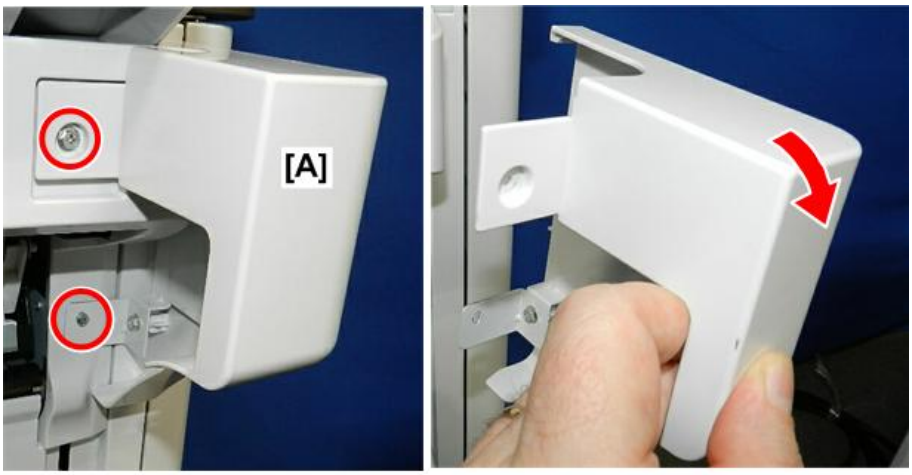
5. Remove front paper guide cover [A] (x2).



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6. Remove paper guide cover [A] screws (x2).

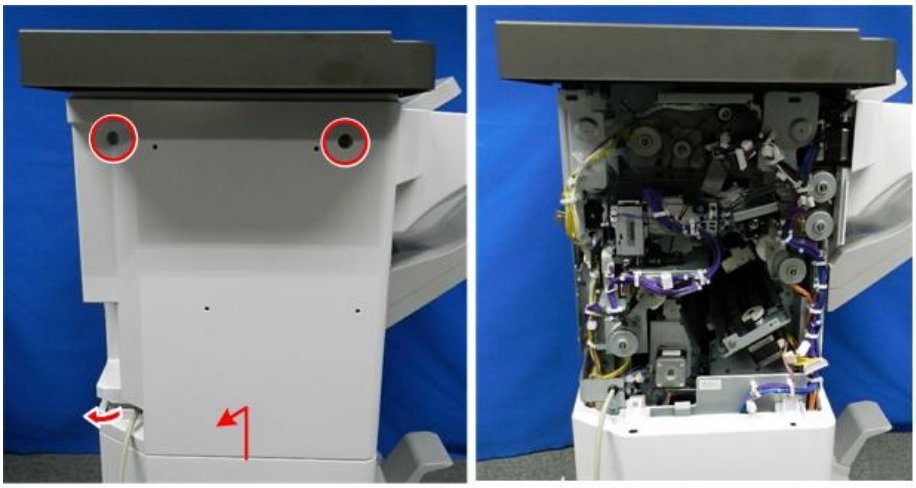
d3cjc1007a

7. Disconnect front tab, and then remove the cover.

d3cjc1008a

1.1.4 PAPER EXIT COVER

1. Disconnect the finisher from the main frame.
2. Remove the rear cover.



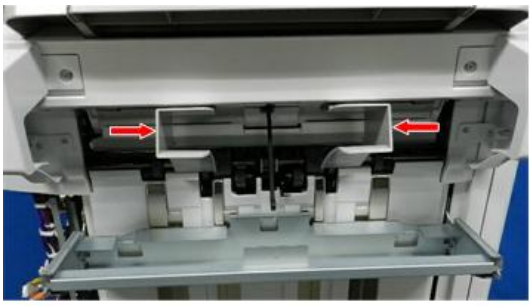
x2

d3cjc1002

3. Remove the shift tray.

x1 d3cjc1003

4. Push the paper guides to the center.



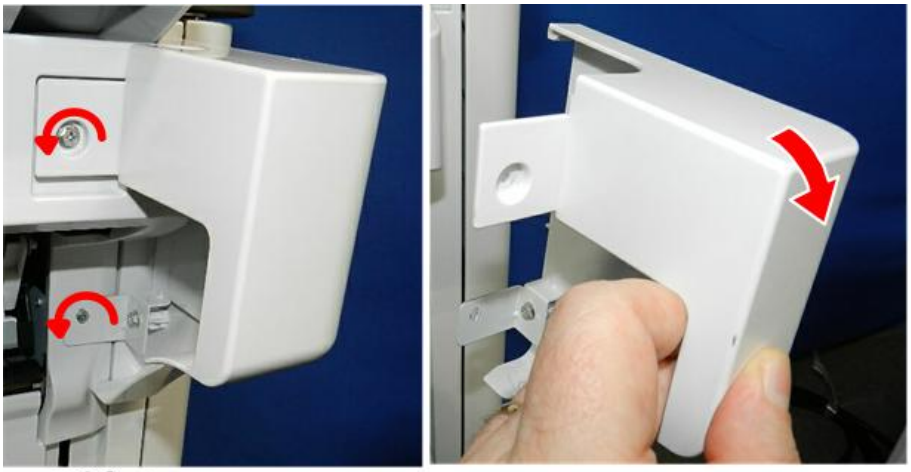
d3cjc1004

5. Remove the rear paper guide cover.

x2

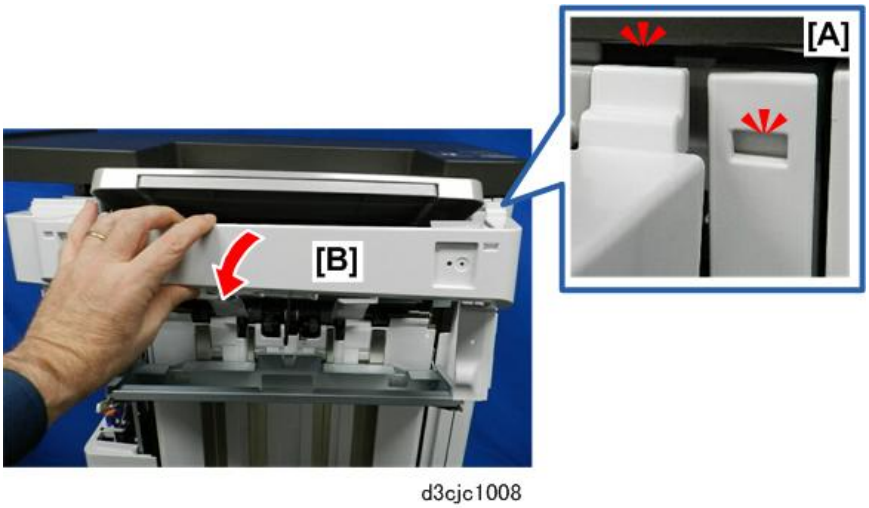
d3cjc1005

6. Remove the front paper guide cover.



7. Disconnect the main paper guide cover.

8. Carefully, separate the front tabs at [A], and then remove the main paper guide cover [B].



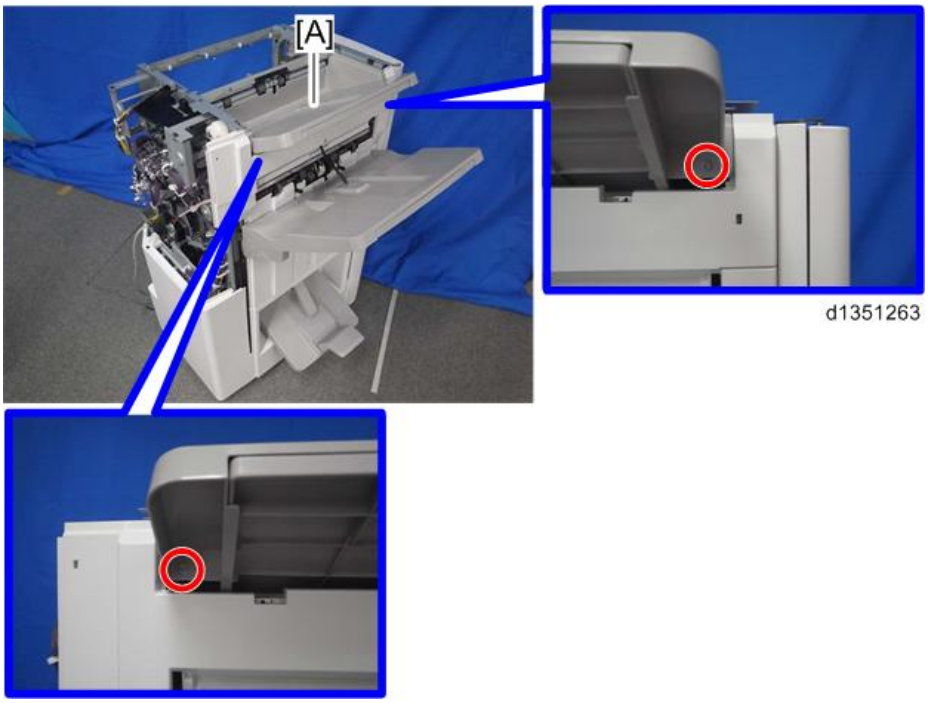
1.1.5 LOWER TRAY

1. Lower tray [A]

d1351262

1.1.6 PROOF TRAY

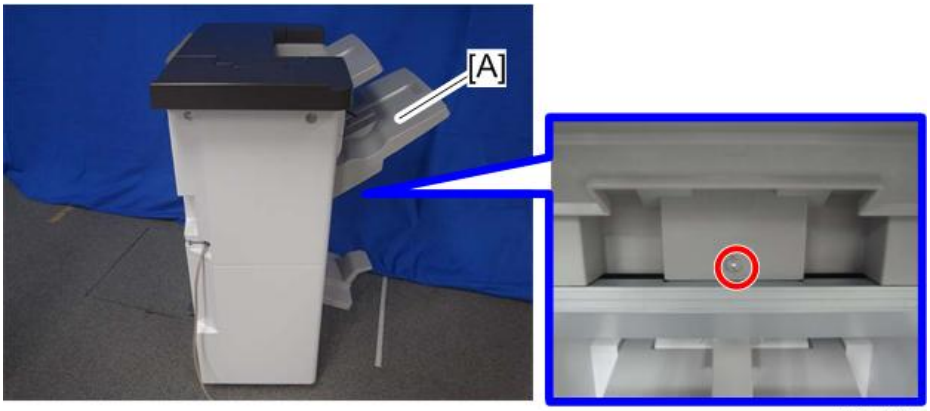
1. Remove the following covers. page 1
   - Rear upper cover
   - Upper cover
2. Proof tray [A] (x 2)



d1351263

1.1.7 UPPER TRAY

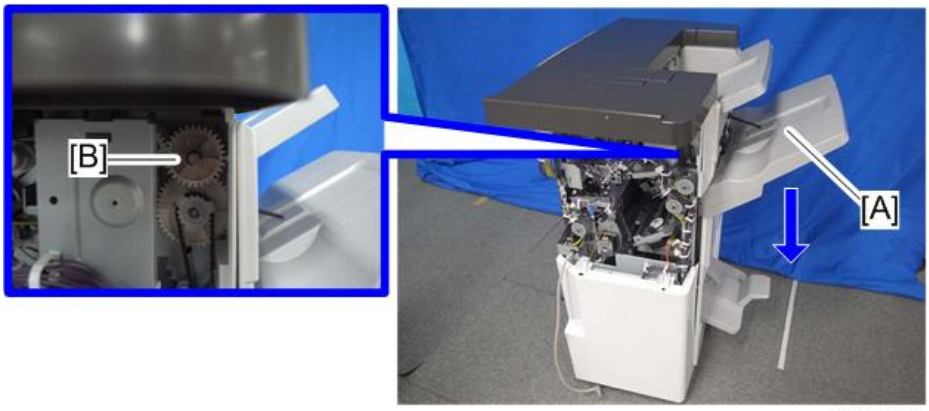
1. Upper tray [A] (x 1)



d1351267

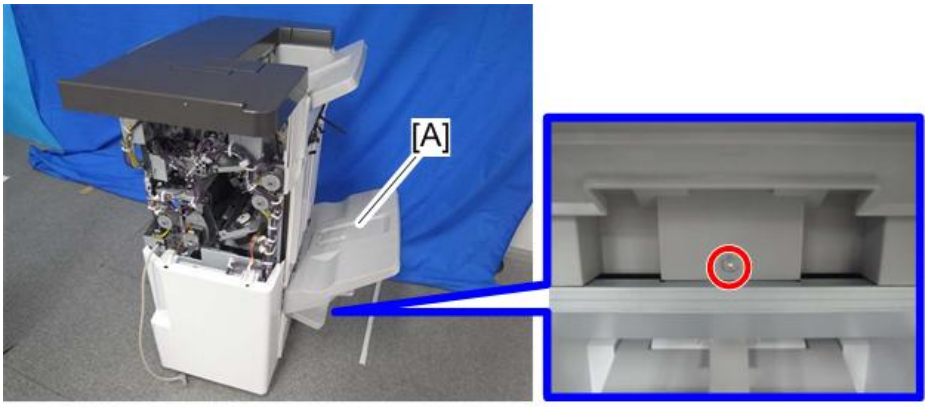
1.1.8 END FENCE (SR4130)

1. Remove rear Upper Cover page 1
2. Support the upper tray [A] with your right hand, and then pull gear [B] toward you to release.



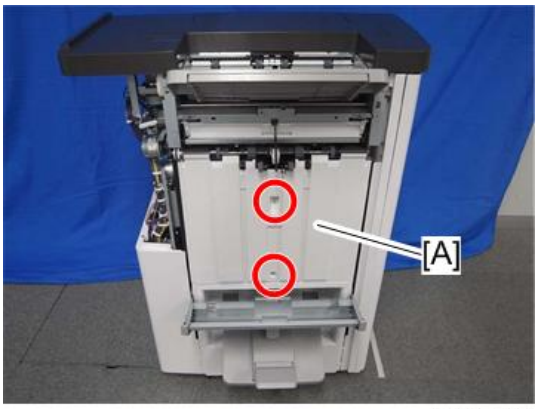
d1351264

3. Upper tray [A] (x 1)



d1351265

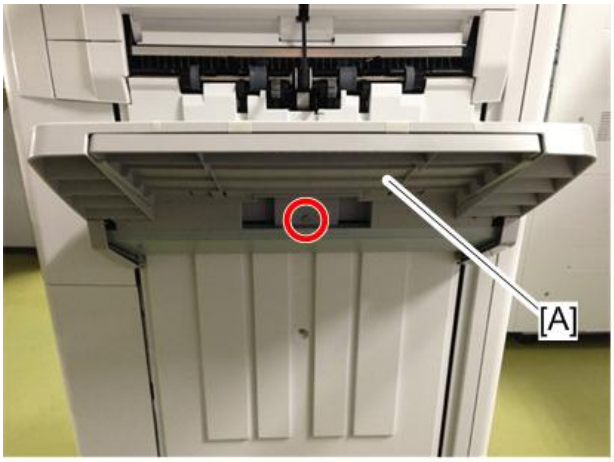
4. Lower Tray (Lower Tray)
5. End fence [A] (x 2)



d1351266

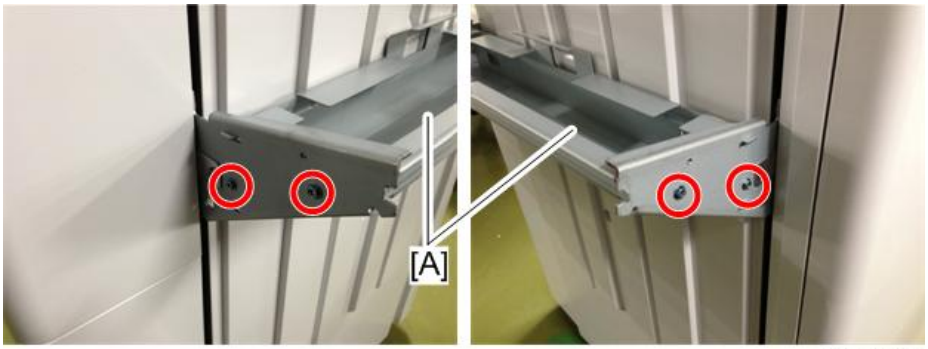
1.1.9 END FENCE (SR4120)

1. Upper Tray [A] (x 1)



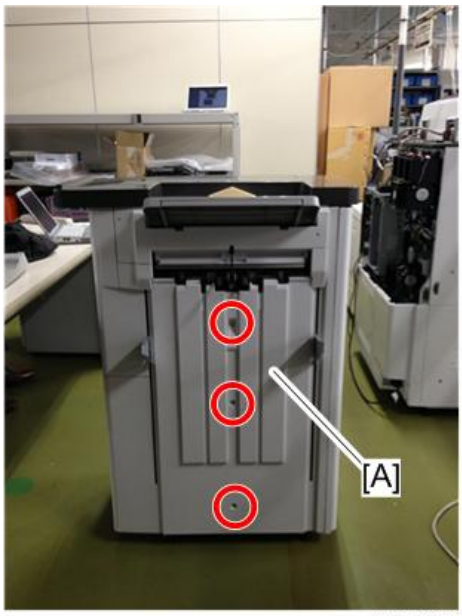
d1351777

2. Shift tray bracket [A] (x 4)



d1351780

3. End fence [A] (x 3)



d1351781

1.1.10 PAPER GUIDE UNIT

1. Remove the paper exit guide.
2. If the Output Jogger Unit Type M25 (option) unit is installed, remove it.
3. Remove paper guide cover support bracket [A] (x2).

d3cjc1009a

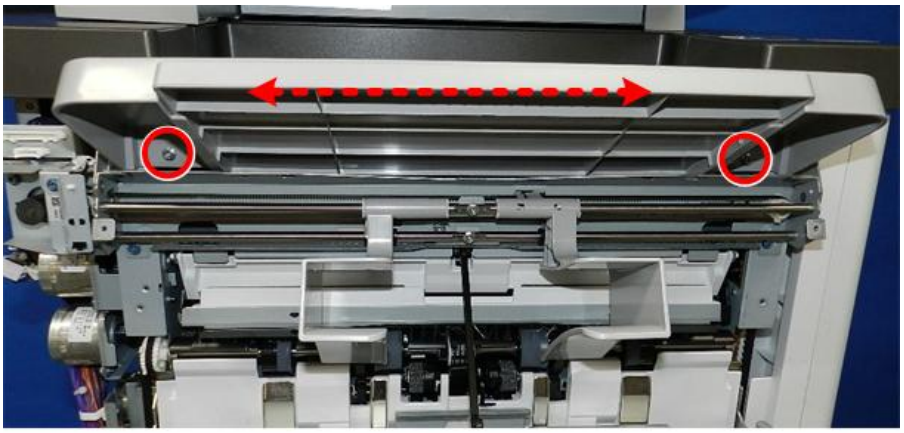
4. At the front and back remove the shoulder screws [A] and [B] of the output jogger unit if it was installed.

Note

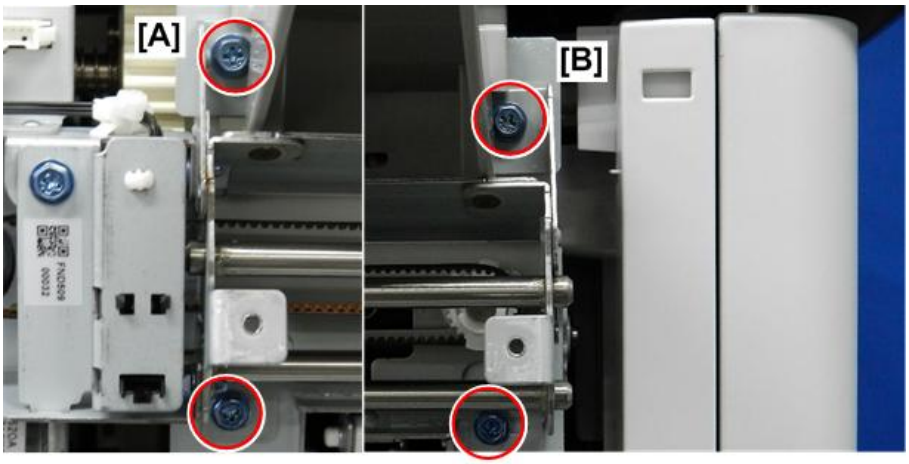
- Remove jogger unit to make it easier to access the screws of the paper guide unit fastening screws. Do not lose these screws.

d3cjc1011a

5. Loosen the proof tray screws temporarily to make it easier to reach the paper guide fastening screws.

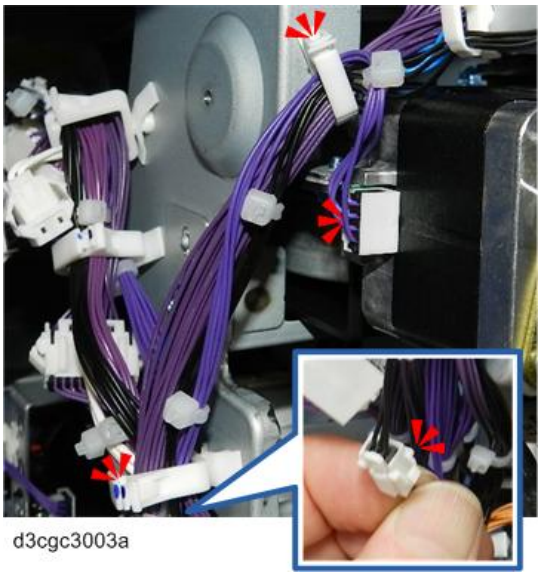

d3cgc3001

6. Remove the paper guide fastening screws at the front [A] and rear [B] (x4).



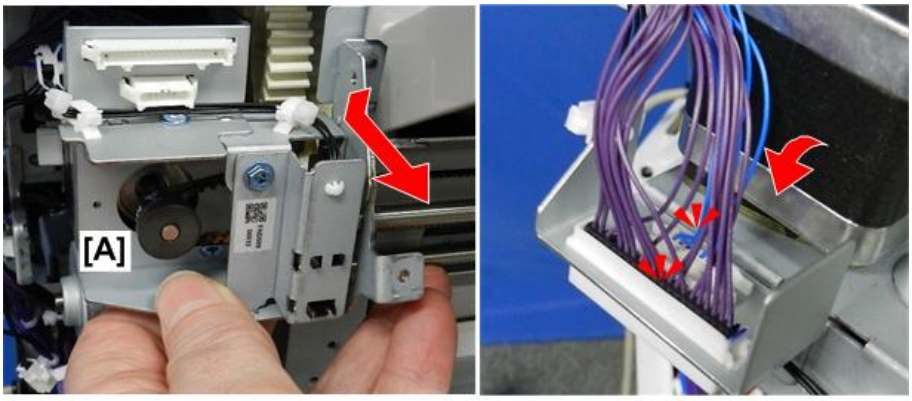
d3cgc3002a

7. At the rear, open the clamp, and then disconnect the motor and sensor (x2, x2).



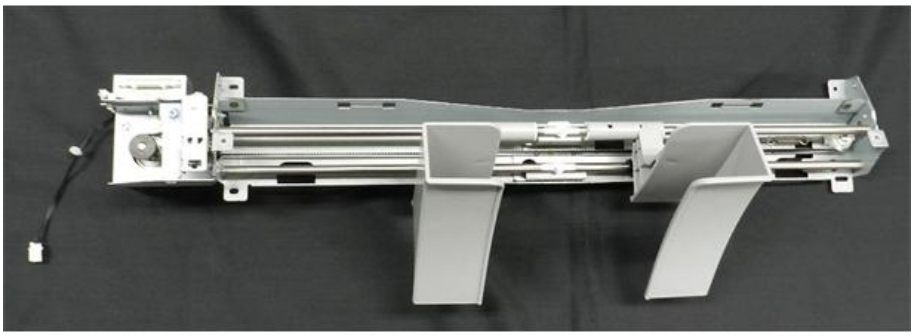
d3cgc3003a

8. Tilt the paper guide unit toward you, and then disconnect the rear end of the harness of motor bracket [A].



d3cgc3004a

9. Remove the paper guide unit and place on a flat, clean surface.

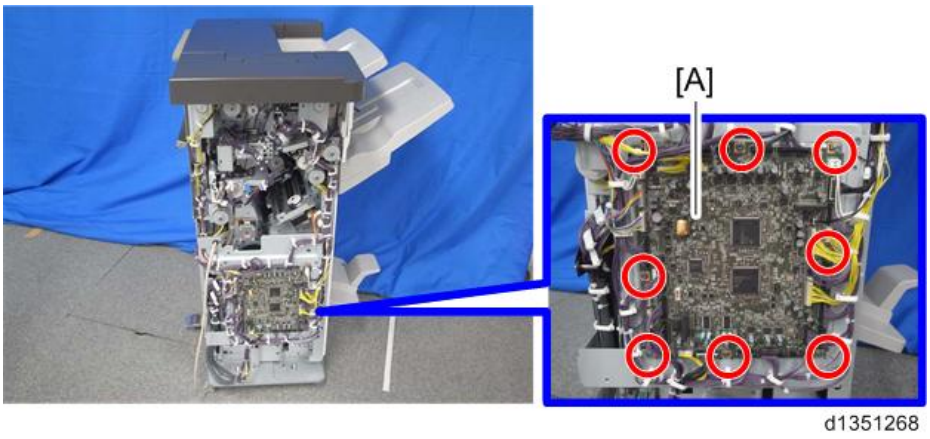


d3cgc3005a

1.2 BOARDS

1.2.1 MAIN BOARD

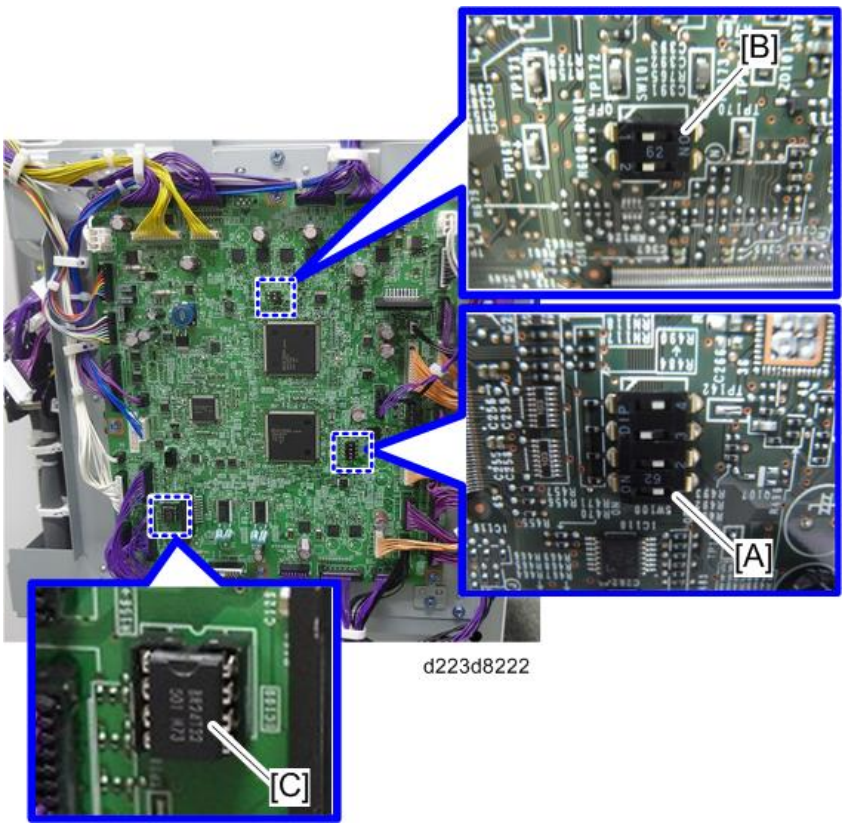
1. Remove the following covers. page 1
   - Rear upper cover
   - Rear lower cover
2. Main board [A] (x 4, x All)



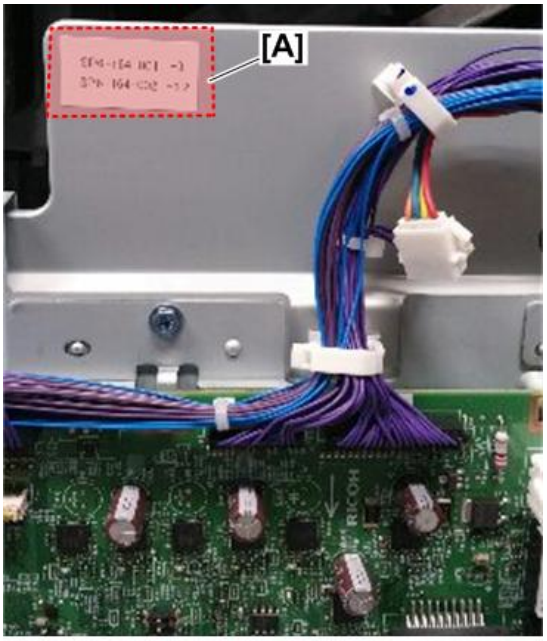
When replacing the main board

This board has two blocks of DIP switches. When you reinstall the main board, follow the procedure below regarding the dip switch settings.

1. Check the settings of dip switch [A] on the old main board.
2. Replace the main board.
3. Change the settings of dip switch [A] on the new main board to match the settings on the old main board.
4. Make sure the switches of dip switch [B] on the new main board are all OFF.
5. When replacing the control board, remove EEPROM [C] from the old board and install it on the new board.



6. Locate the seal [A] attached to the near the right corner of the board.



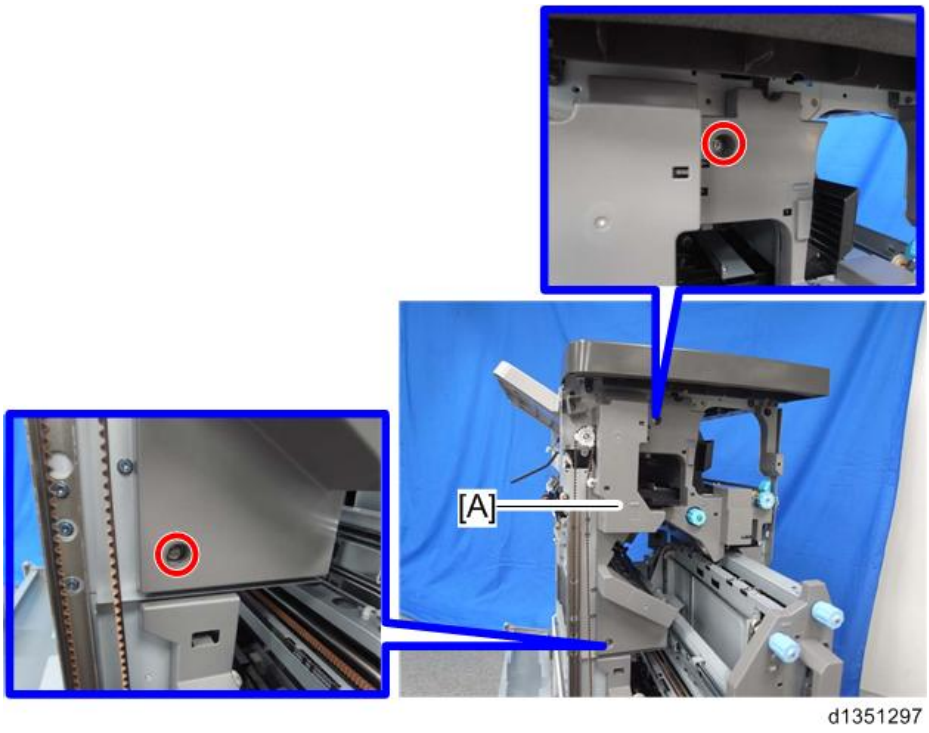
d223d8235

7. Go into the SP mode, open these SP codes, and then enter the numbers you see on the seal.
   - SP6121-001 NV Adj. Data: Jog Position: Factory Adj.
   - SP6121-002 NV Adj. Data: Fold Position: Factory Adj.

1.3 MAIN MOTORS

1.3.1 CORNER STAPLING UNIT

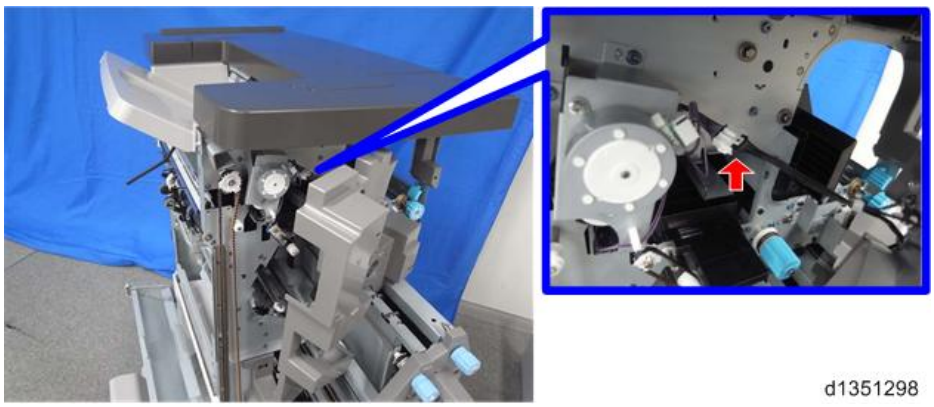
1. Remove the following covers. page 1
   - Front door
   - Front left side cover
   - End fence
   - Rear upper cover
   - Rear lower cover
2. Pull out the booklet stapler unit, and remove the inner upper cover [A]. (x 2)



d1351297

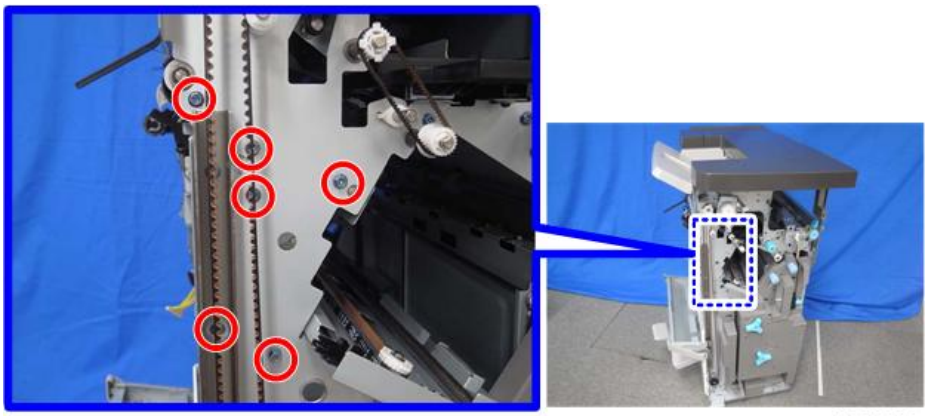
Note

- Disconnect the harness from the back side of the inner upper cover when you remove the inner upper cover.



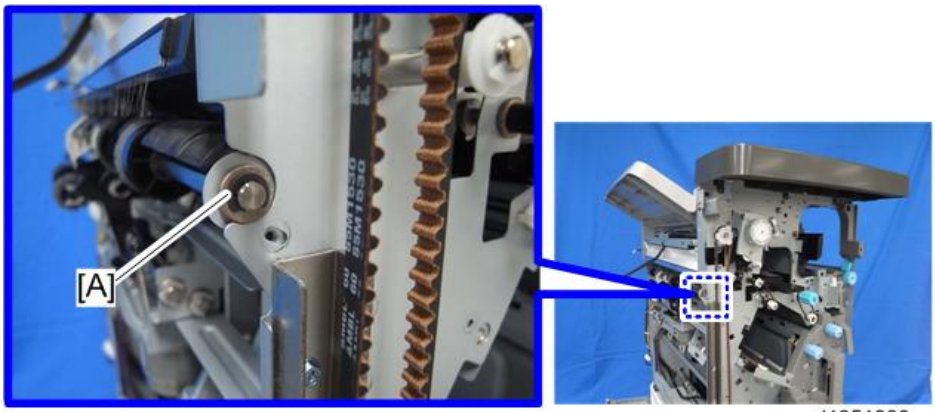
d1351298

3. Remove the screws from the front side of the finisher. (x 6)



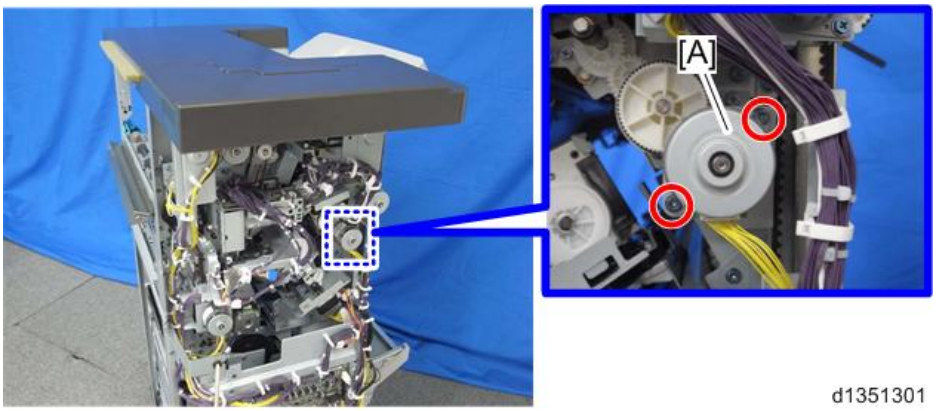
d1351299

4. Remove the bushing [A] from the front side of the finisher. (x1)



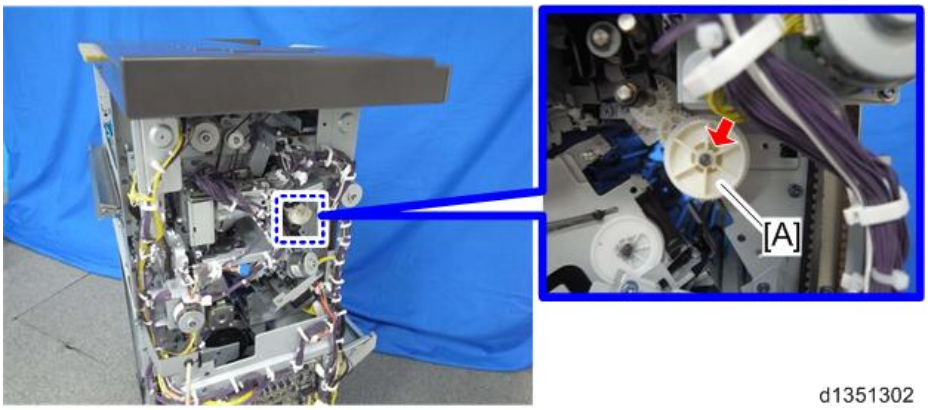
d1351300

5. Remove the pressure release motor bracket [A] from the rear side of the finisher. (x 2)

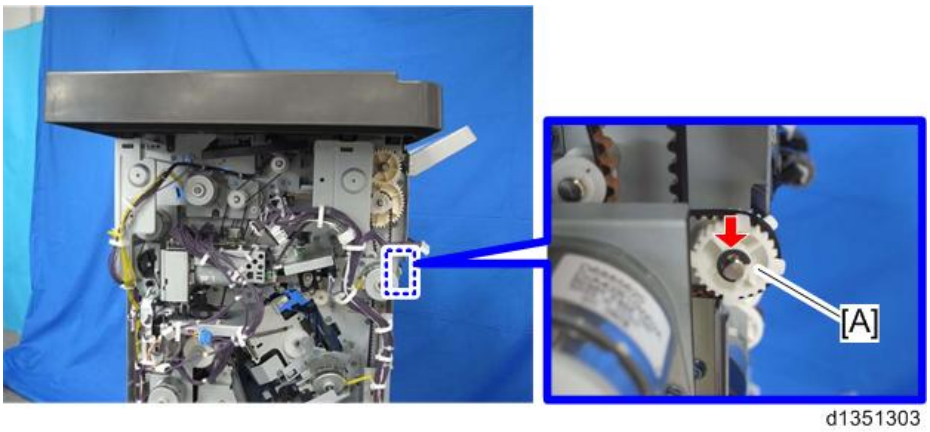


d1351301

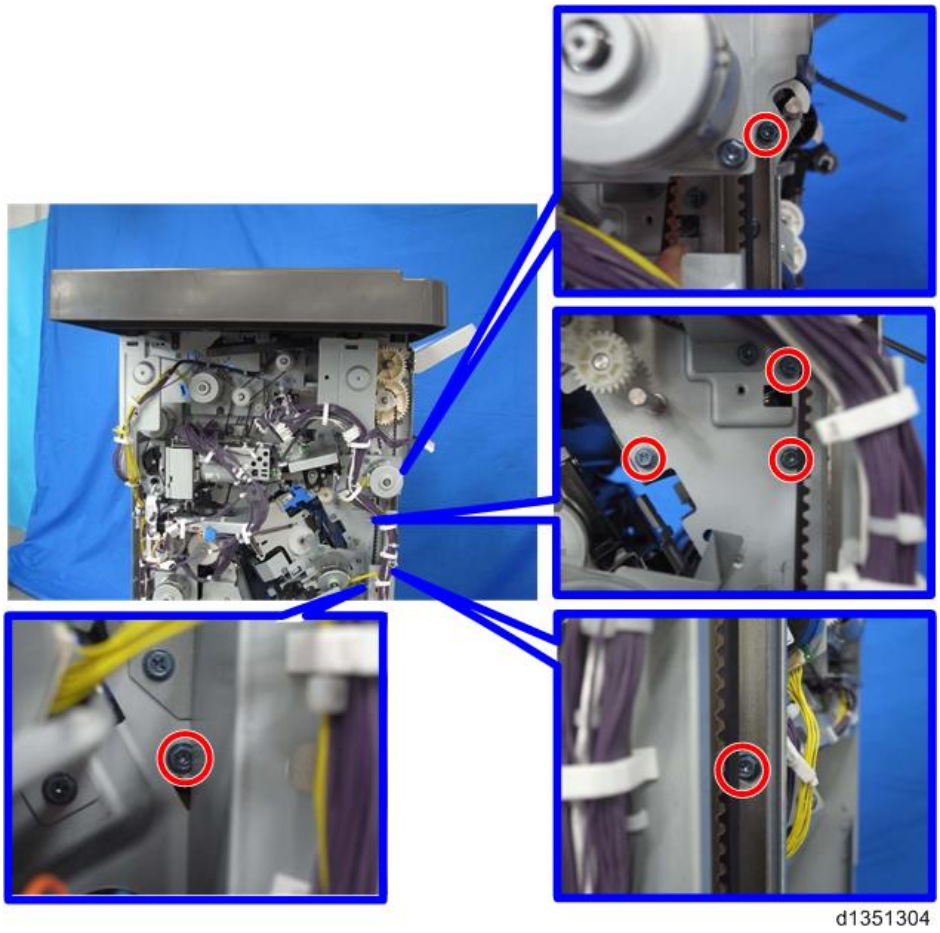
6. Remove the gear [A] from the rear side of the finisher. (x 1)



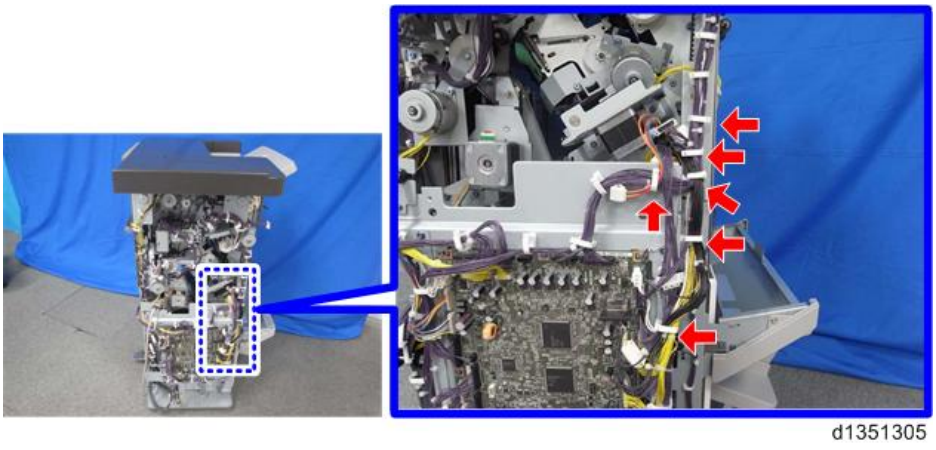
7. Remove the pulley [A] from the rear side of the finisher. (x 1)



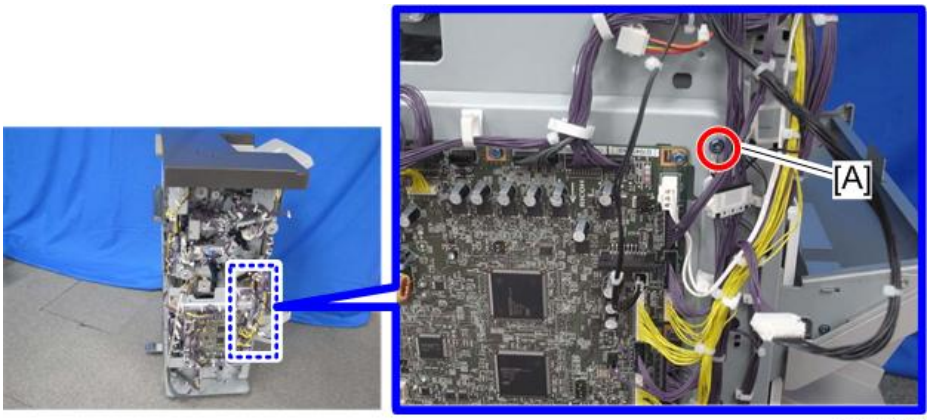
8. Remove screws from the rear side of the finisher. (x 6)



9. Remove the clamps shown below. (x 6)

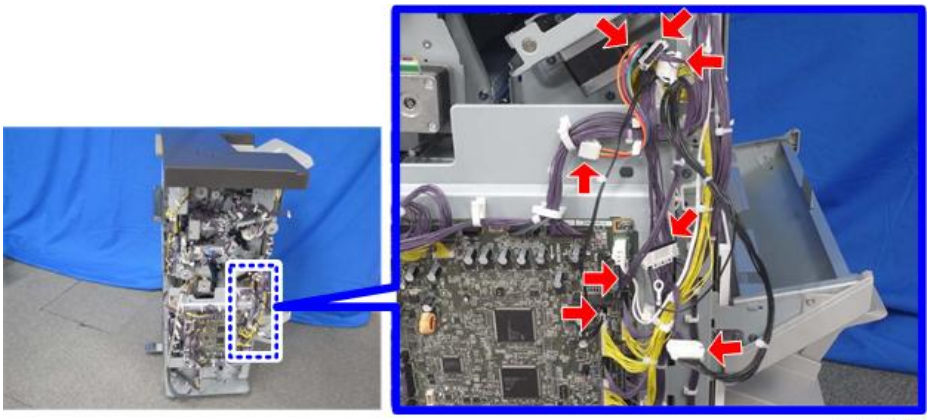


10. Remove the ground wire [A] of the main board. (x 1)



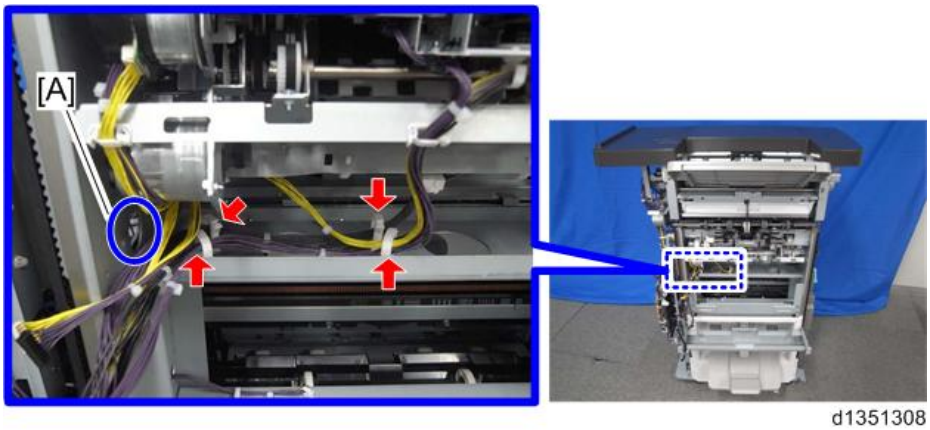
d1351306

11. Disconnect the connectors shown below. (x 8)



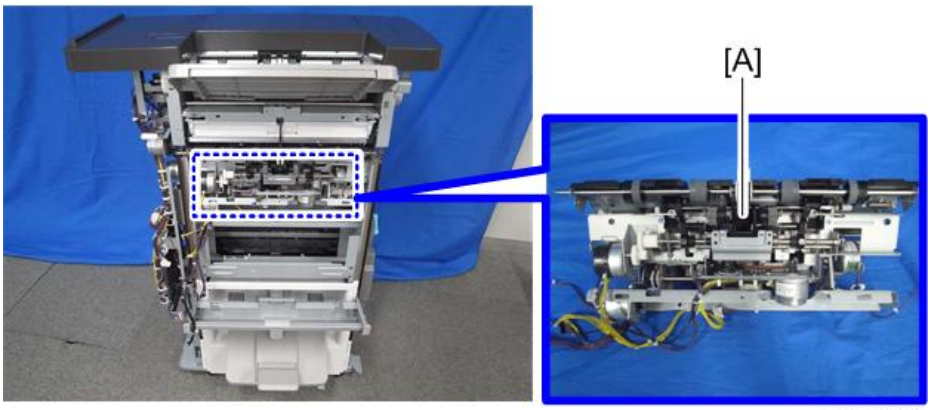
d1351307

12. Pull out the harnesses disconnected in step 11 to the right side of the finisher through the hole [A].
13. Remove the harness from the clamps. (x 4)



d1351308

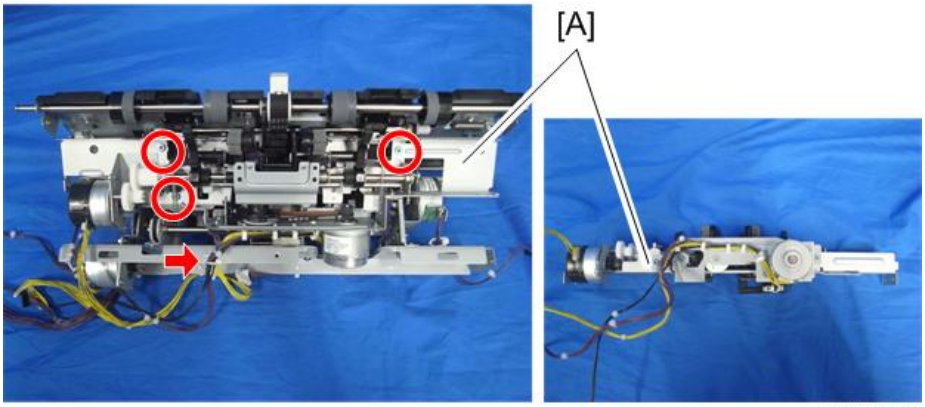
14. Remove the corner stapling unit [A] from between the front and left plate.



d1351309

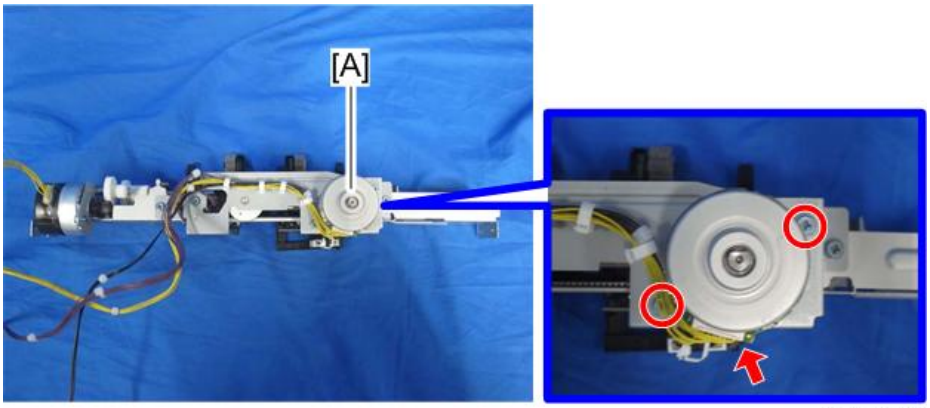
1.3.2 PAPER EXIT GATE MOTOR

1. Corner stapling unit (Corner Stapling Unit)
2. Stapler bracket [A] (x 3, x 1)



d1351269

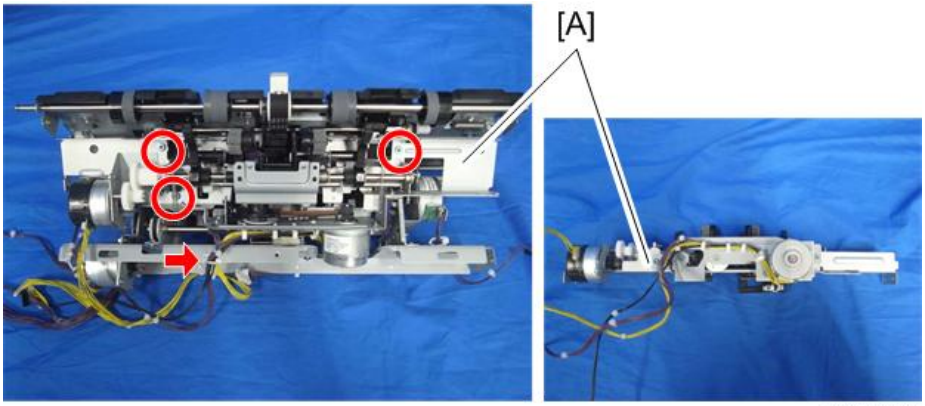
3. Paper exit gate motor [A] (x 2, x 1)



d1351270

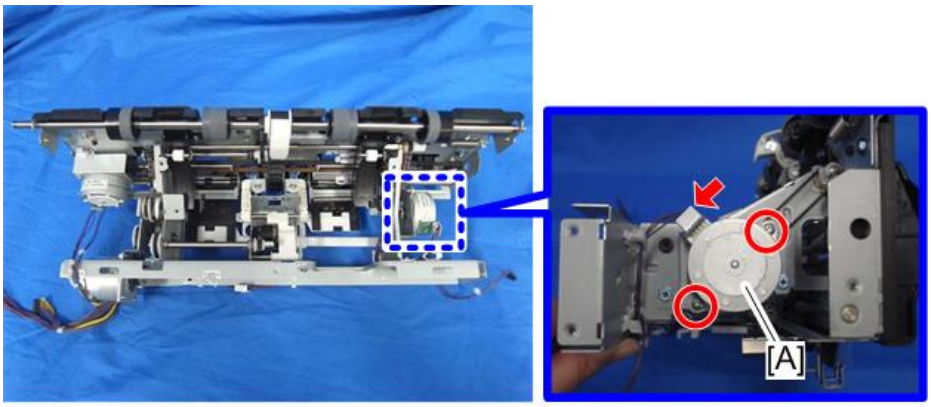
1.3.3 LEADING EDGE GUIDE MOTOR

1. Corner stapling unit (Corner Stapling Unit)
2. Stapler bracket [A] (x 3, x 1)



d1351269

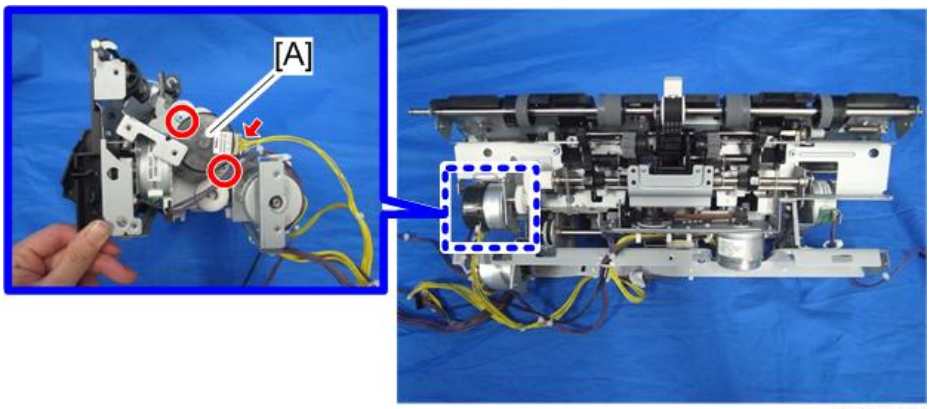
3. Leading edge guide motor [A] (x 2, x 1)



d1351271

1.3.4 TRAILING EDGE PRESSURE PLATE MOTOR

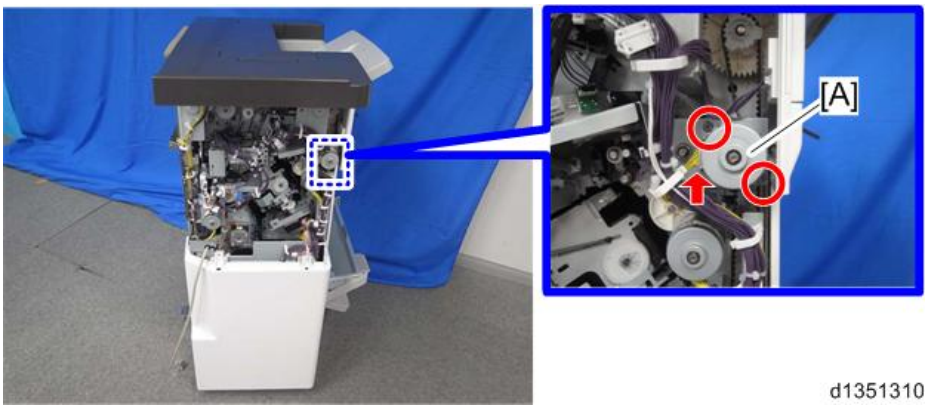
1. Corner stapling unit (Corner Stapling Unit)
2. Trailing edge pressure plate motor [A] (x 2, x 1)



d1351272

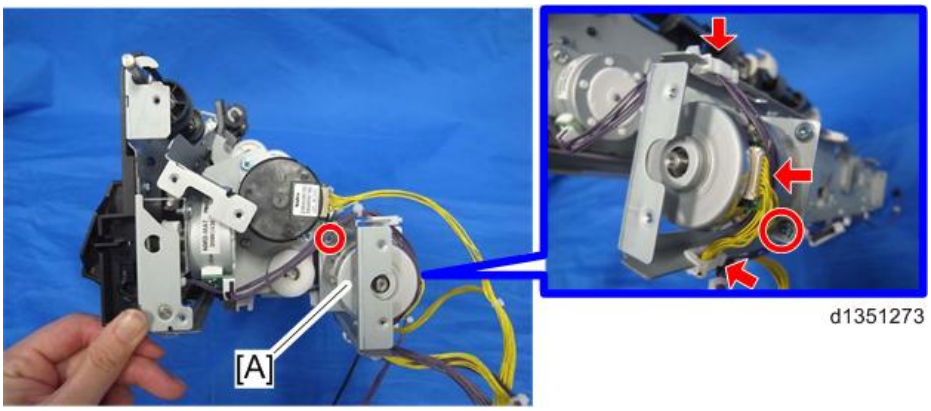
1.3.5 STACKING ROLLER MOTOR

1. Rear upper cover (Covers)
2. Stacking roller motor [A] (x 2, x 1)



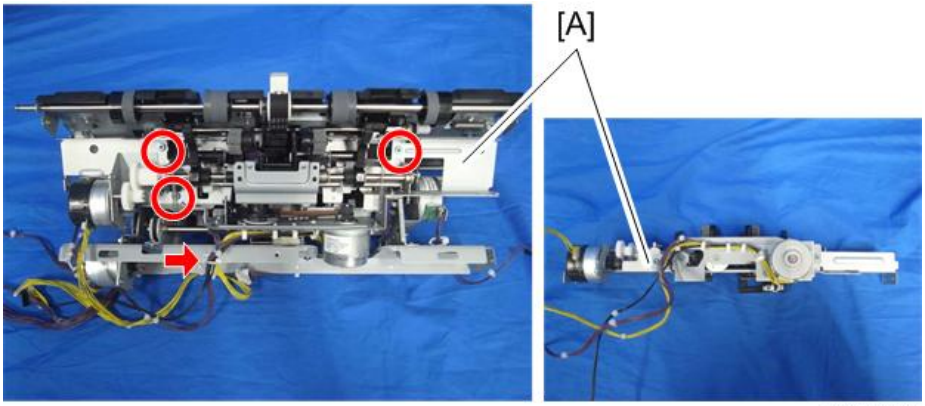
1.3.6 FEED OUT MOTOR

1. Corner stapling unit (Corner Stapling Unit)
2. Feed out motor [A] (x 2, x 1, x 2)



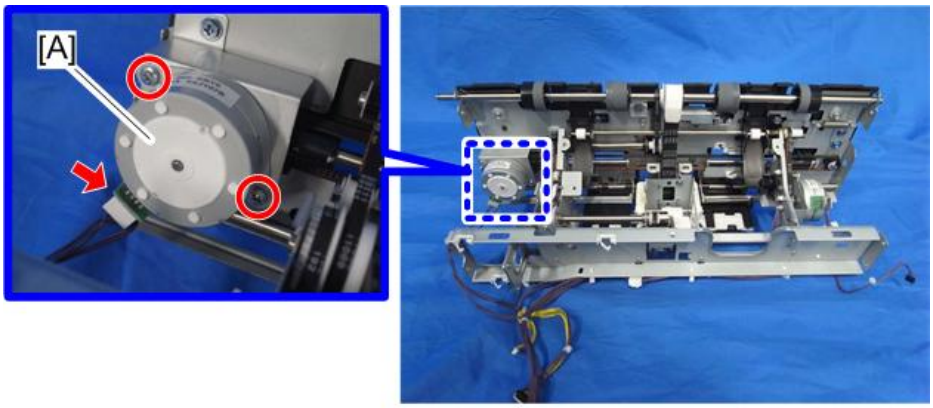
1.3.7 JOGGER MOTOR

1. Corner stapling unit (Corner Stapling Unit)
2. Stapler bracket [A] (x 3, x 1)



d1351269

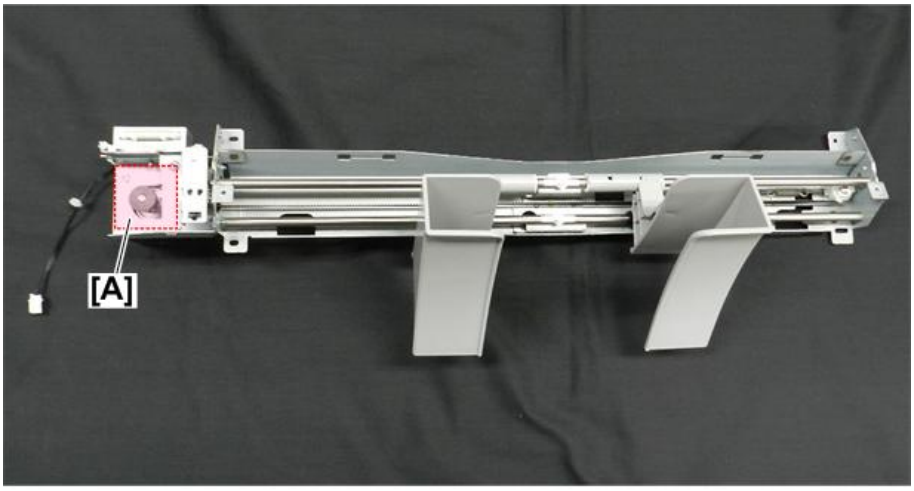
3. Feed out motor (Feed Out Motor)
4. Jogger motor [A] (x 2, x 1)



d1351274

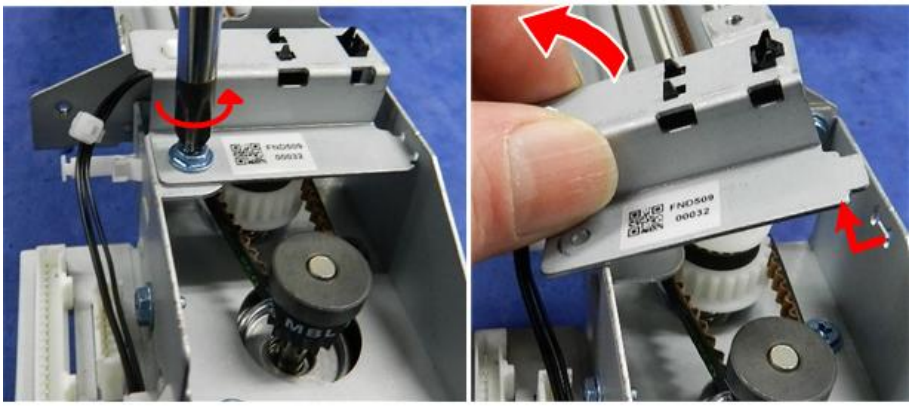
1.3.8 PAPER GUIDE MOTOR

1. The paper guide motor is at [A].



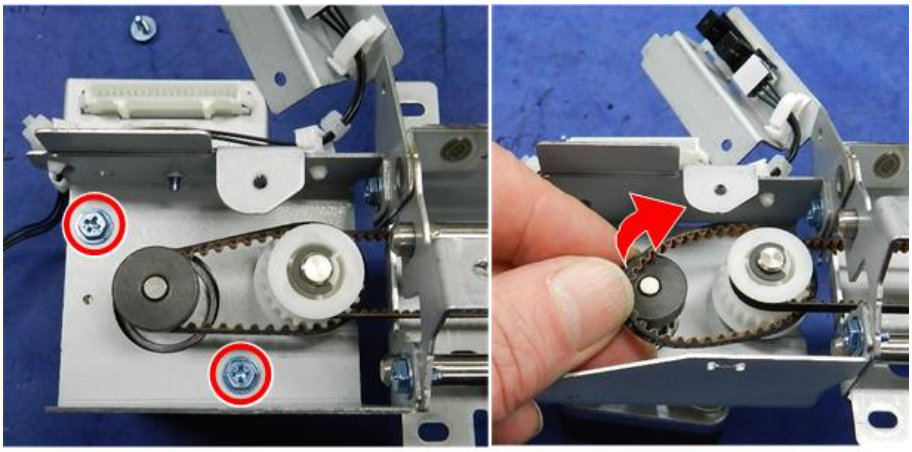
d3cgc3005c

2. Remove the paper guide unit. page 13
3. Remove sensor bracket (x1).



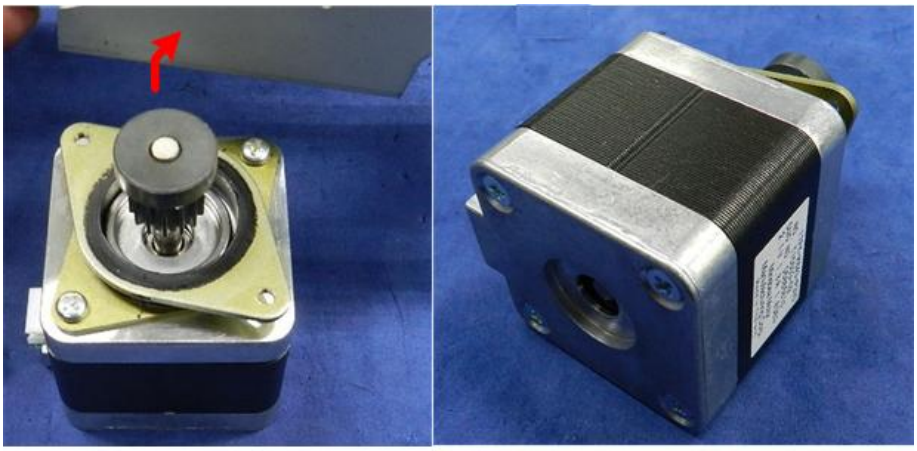
d3cgc3006a

4. Unfasten the motor, and disconnect the belt (x2, x1).



d3cgc3010a

5. Disconnect the motor harness, and then remove the motor (x1).



d3cgc3011

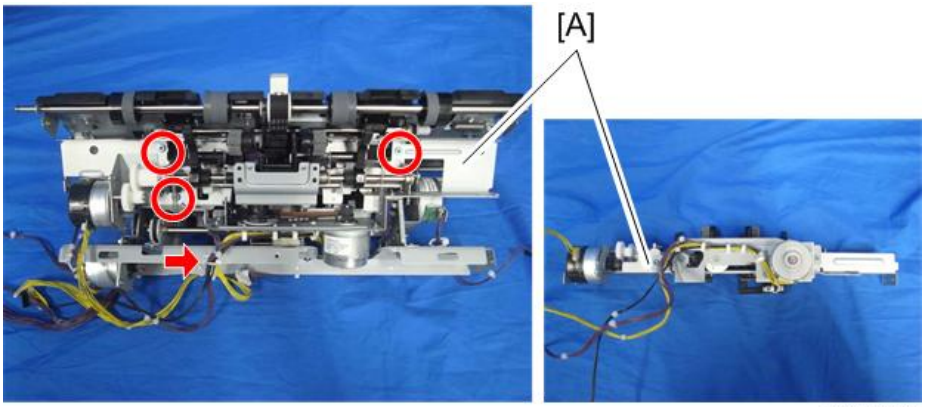
6. When you re-install the motor, make sure that the connector is pointing to the back of the unit.

d3cgc3012

1.4 SENSORS

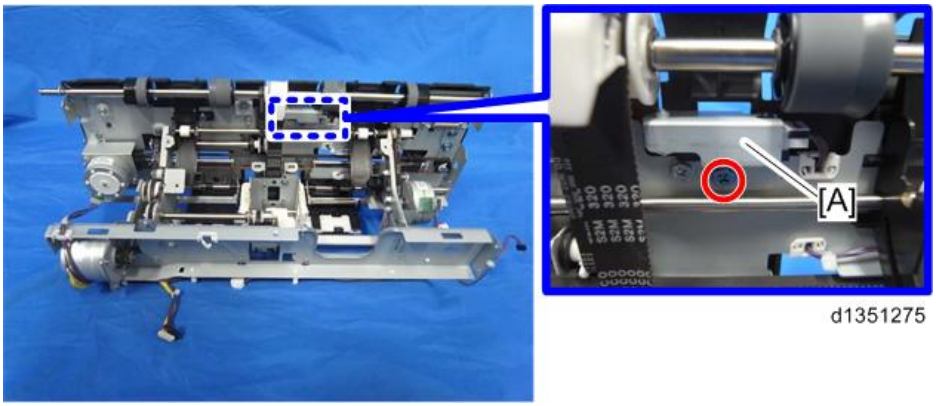
1.4.1 SHIFT TRAY PAPER SENSOR

1. Corner stapling unit
2. Stapler bracket [A] (x 3, x 1)



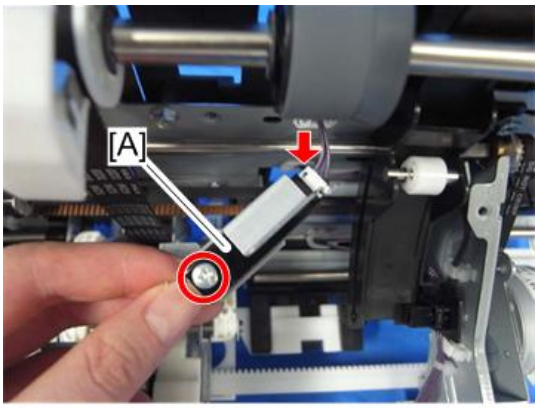
d1351269

3. Shift tray paper sensor bracket [A] (x 1)



d1351275

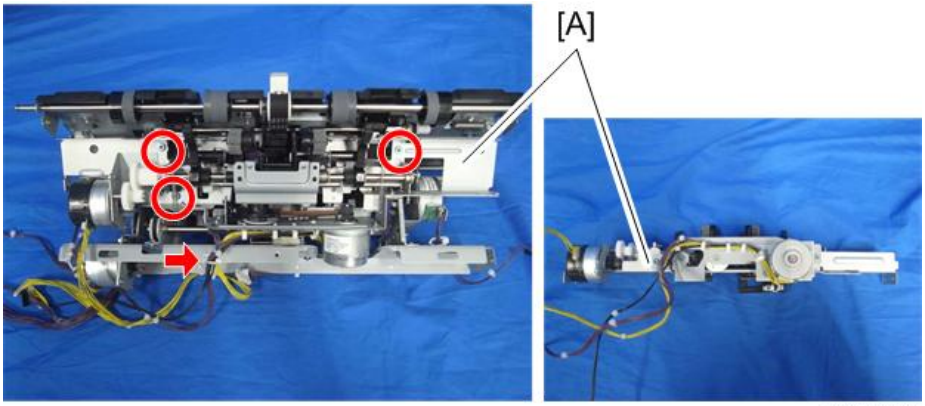
4. Shift tray paper sensor [A] (x 1, x 1)



d1351276

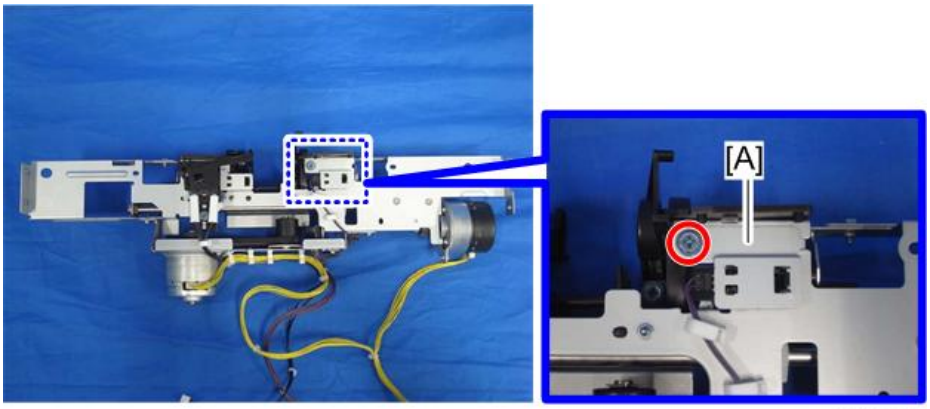
1.4.2 TRAILING EDGE PRESSURE PLATE HP SENSOR

1. Corner stapling unit (Corner Stapling Unit)
2. Stapler bracket [A] (x 3, x 1)



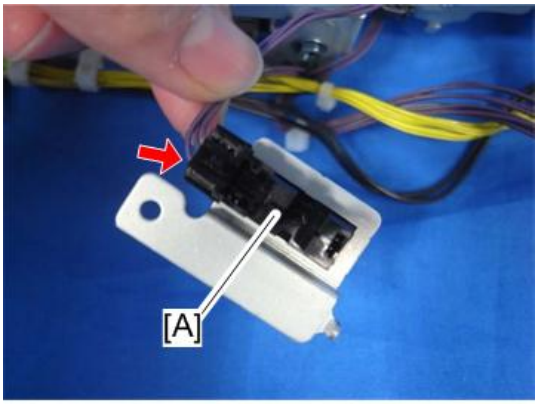
d1351269

3. Turn back the stapler bracket, and remove the trailing edge pressure plate HP sensor bracket [A]. (x 1)



d1351290

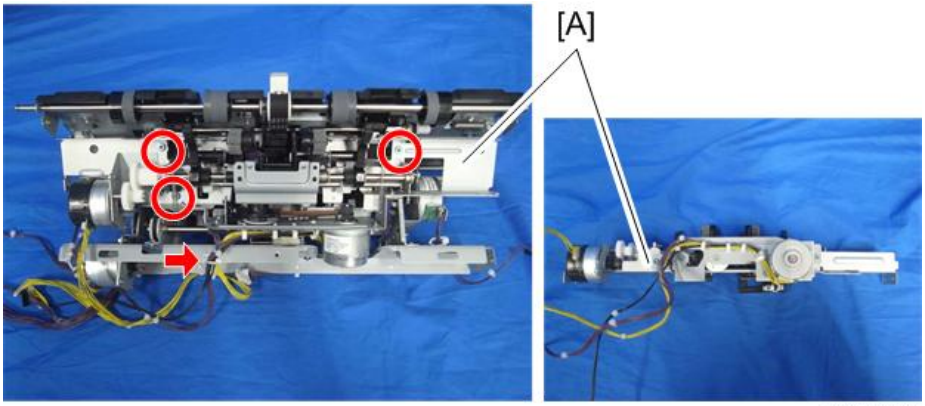
4. Trailing edge pressure plate HP sensor [A] (x 1)



d1351291

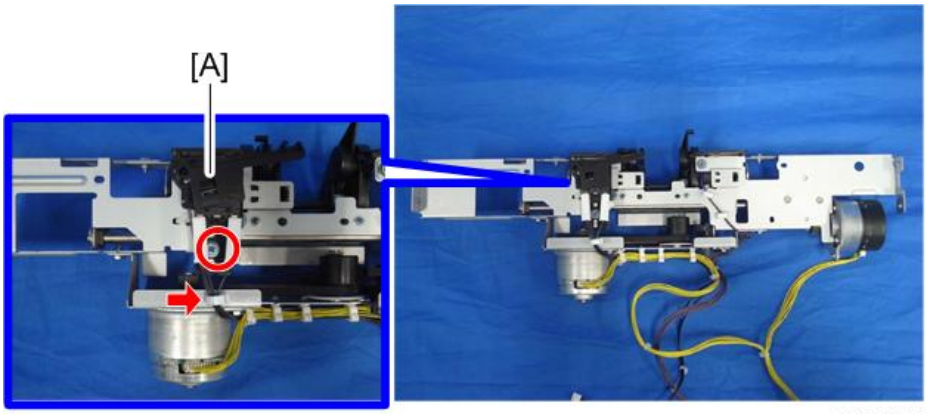
1.4.3 STACKING ROLLER HP SENSOR

1. Corner stapling unit (Corner Stapling Unit)
2. Stapler bracket [A] (x 3, x 1)



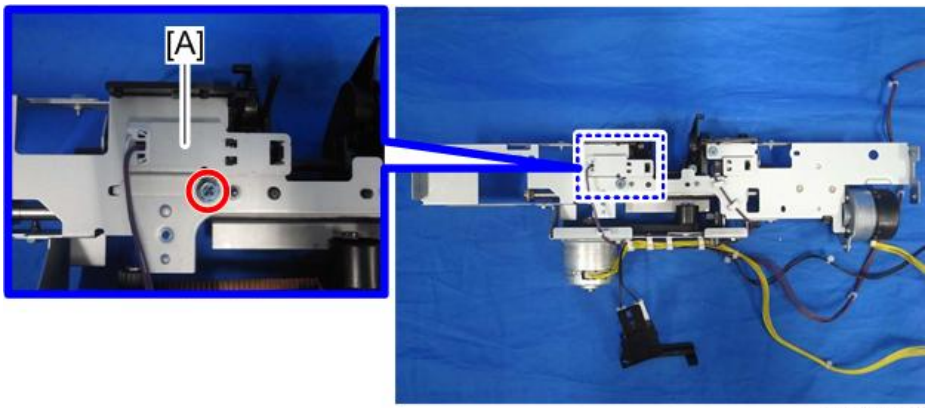
d1351269

3. Turn back the stapler bracket, and remove the paper exit gate motor bracket [A]. (x 1, x 1)



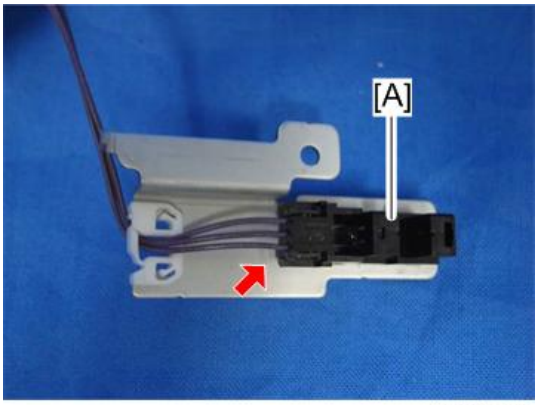
d1351292

4. Stacking roller HP sensor bracket [A] (x 1)



d1351293

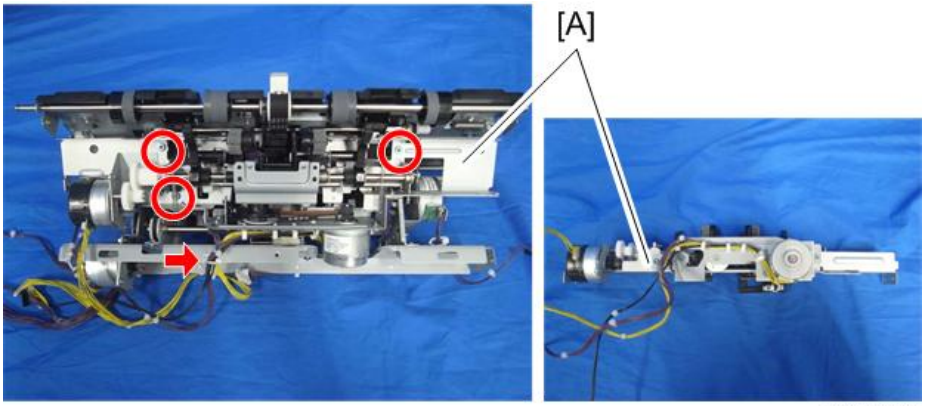
5. Stacking roller HP sensor [A] (x 1)



d1351294

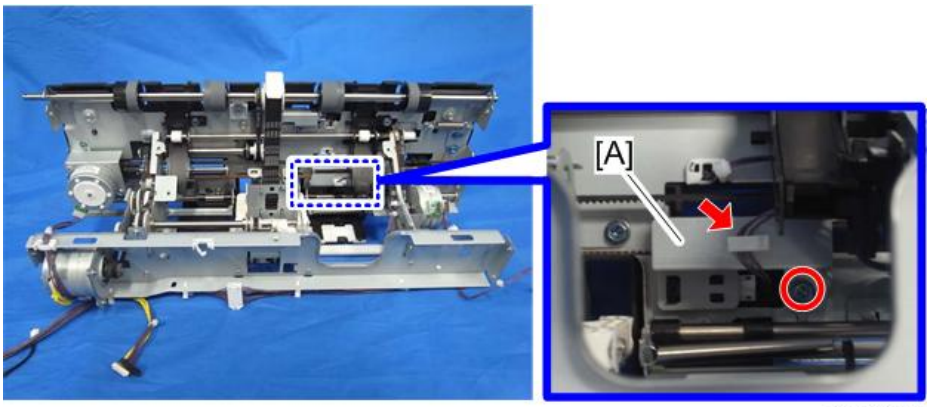
1.4.4 STAPLE TRAY PAPER SENSOR

1. Corner stapling unit (Corner Stapling Unit)
2. Stapler bracket [A] (x 3, x 1)



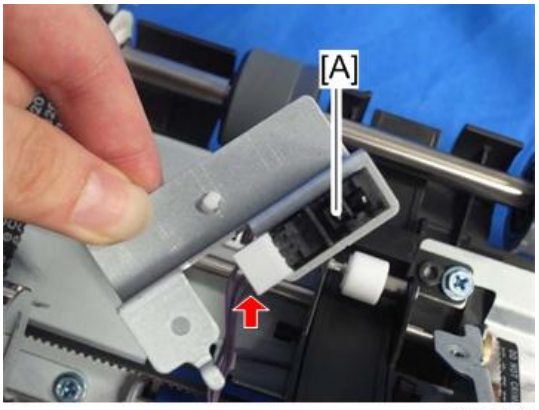
d1351269

3. Staple tray paper sensor bracket [A] (x 1, x 1)



d1351295

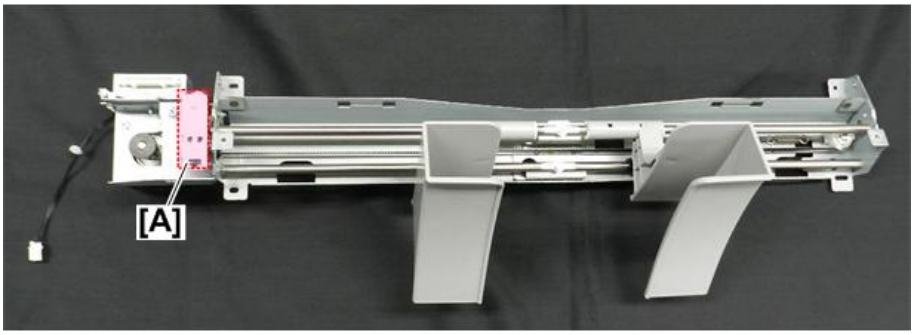
4. Staple tray paper sensor [A] (x 1)



d1351296

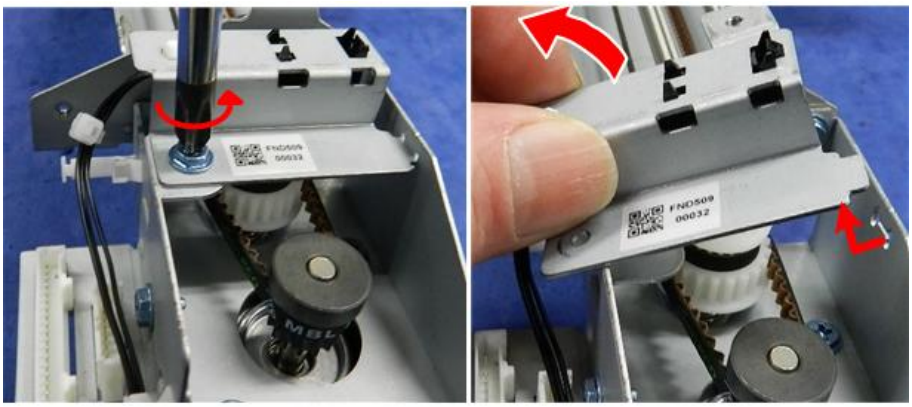
1.4.5 PAPER GUIDE HP SENSOR

1. The paper guide HP sensor is located at [A].



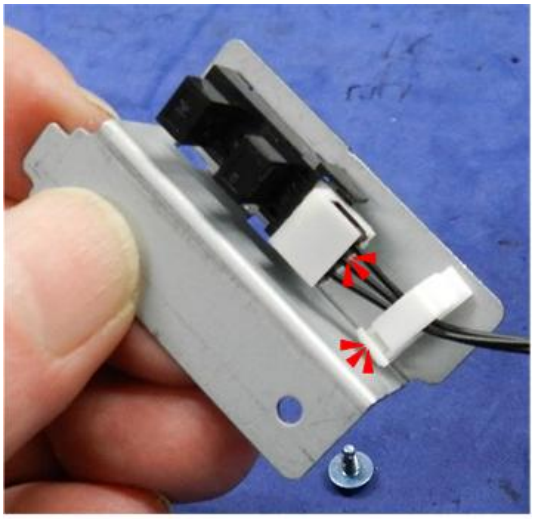
d3cgc3005b

2. Remove the paper guide unit. page 13
3. Remove sensor bracket (x1).



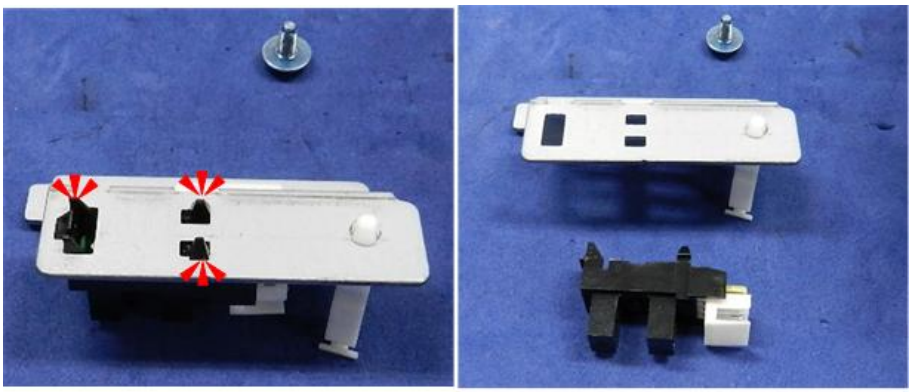
d3cgc3006a

4. Open the clamp and disconnect the sensor (x1, x1).



d3cgc3007a

5. Separate the sensor and bracket (x3).

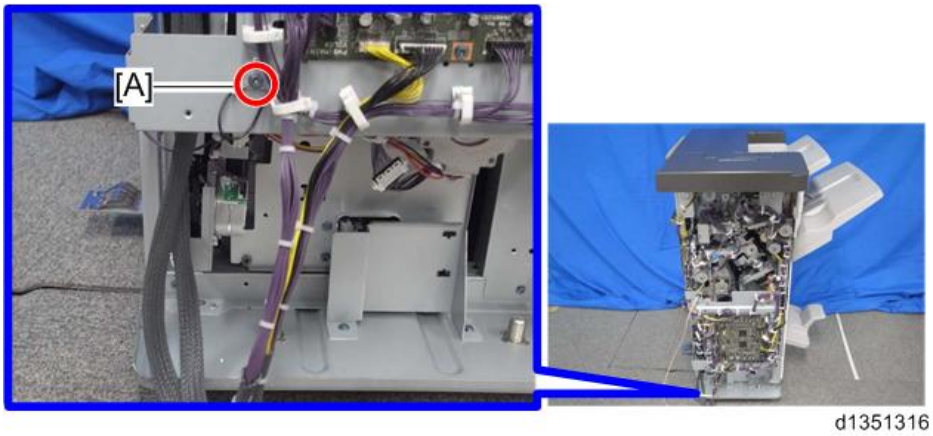


d3cgc3008a

1.5 BOOKLET UNIT MOTORS

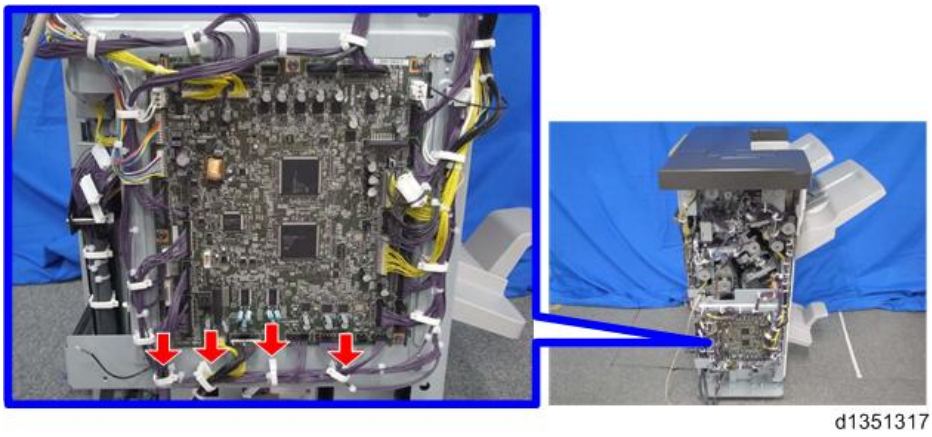
1.5.1 BOOKLET STAPLER UNIT

1. Remove the following covers. page 1
   - Rear Upper Cover
   - Rear Lower Cover
2. Remove the ground wire [A] in the left lower side of the main unit. (x 1)



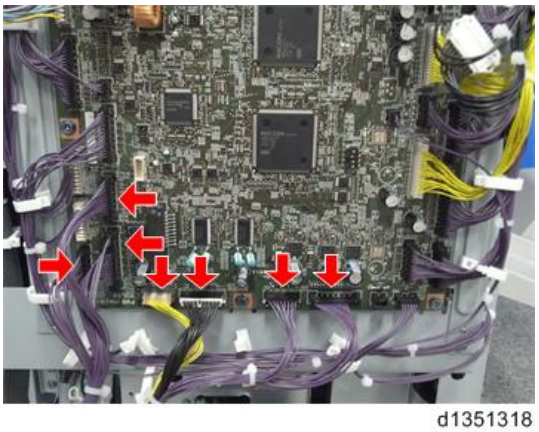
d1351316

3. Release the harness from the 4 clamps shown below. (x 4)



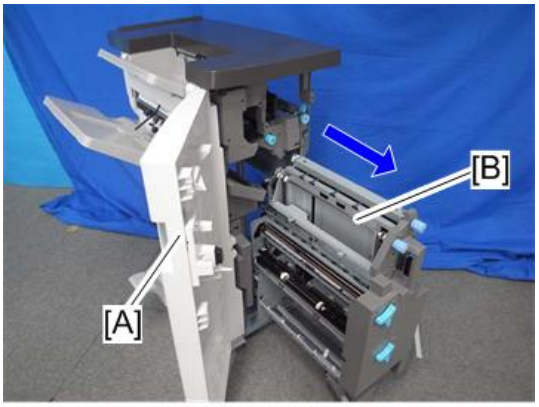
d1351317

4. Disconnect the following 7 connectors from the main board. (x 7)



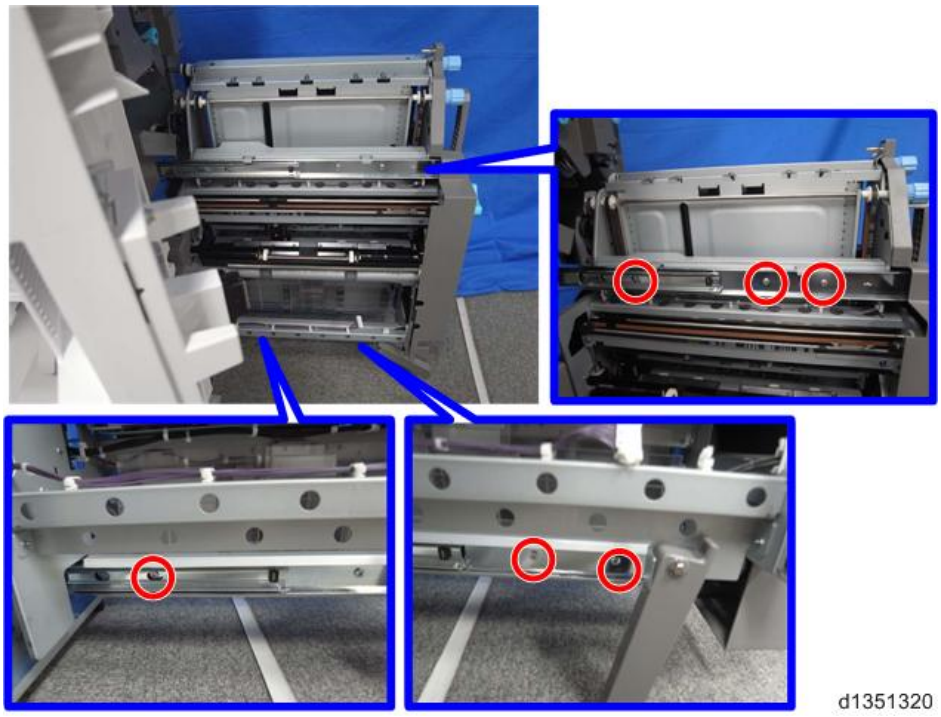
d1351318

5. Open the front door [A] and pull out the booklet stapler unit [B].



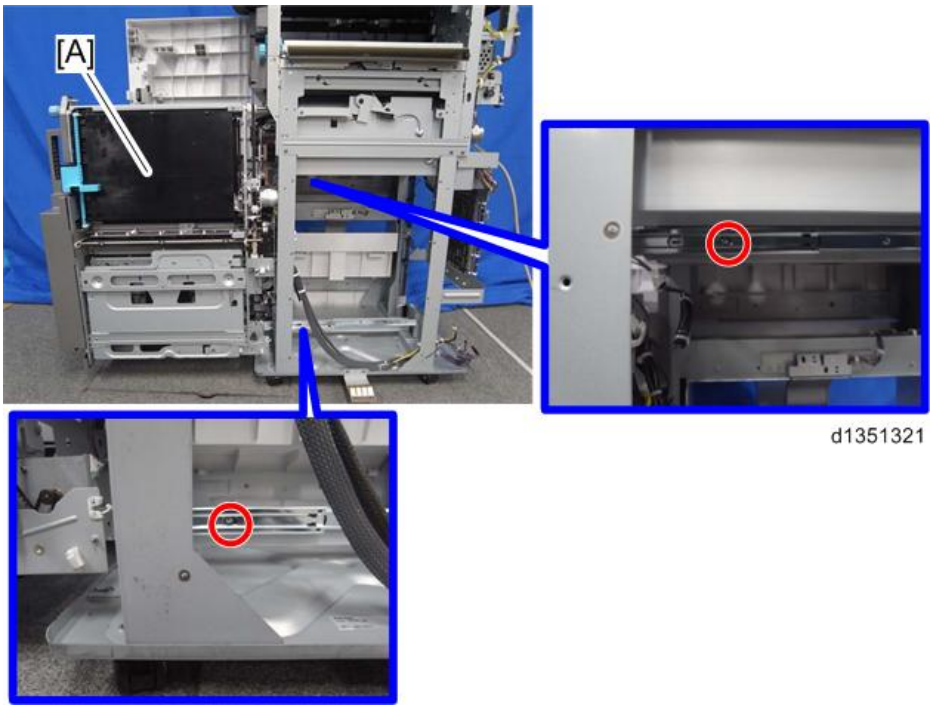
d1351319

6. Remove the following screws. (x 6)



d1351320

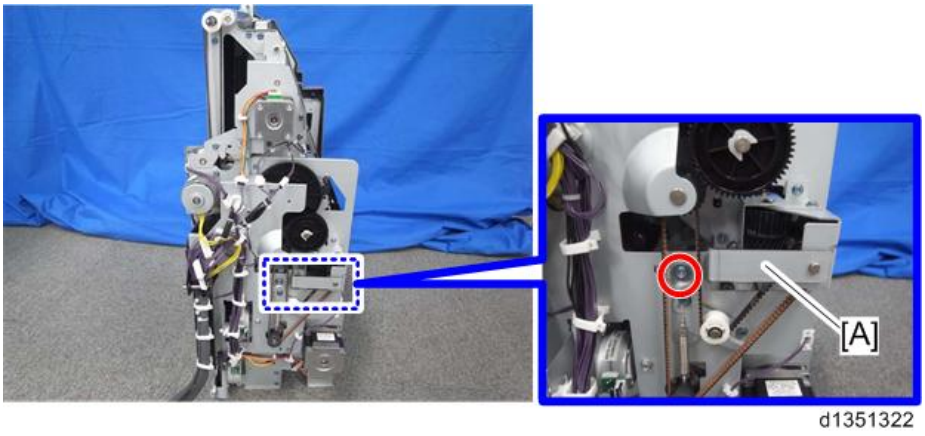
7. Lift up to remove the booklet stapler unit [A]. (x 2)



d1351321

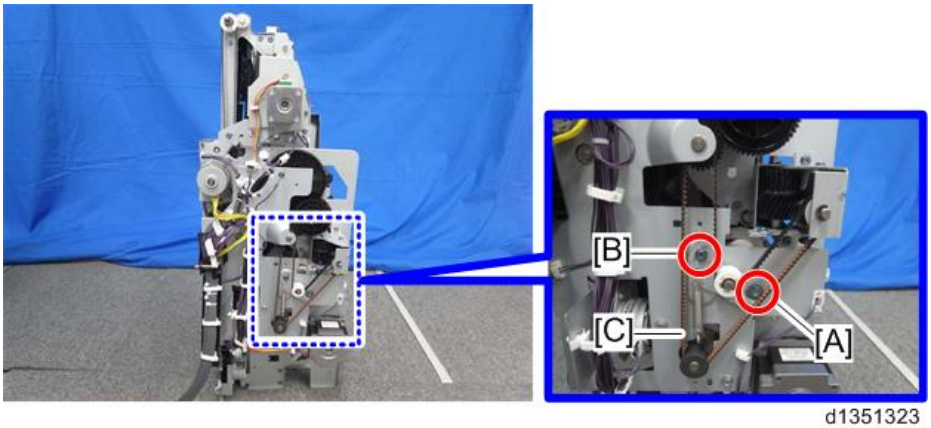
1.5.2 PRESS FOLD MOTOR

1. Booklet stapler unit page 37
2. Remove bracket [A]. (x 1)



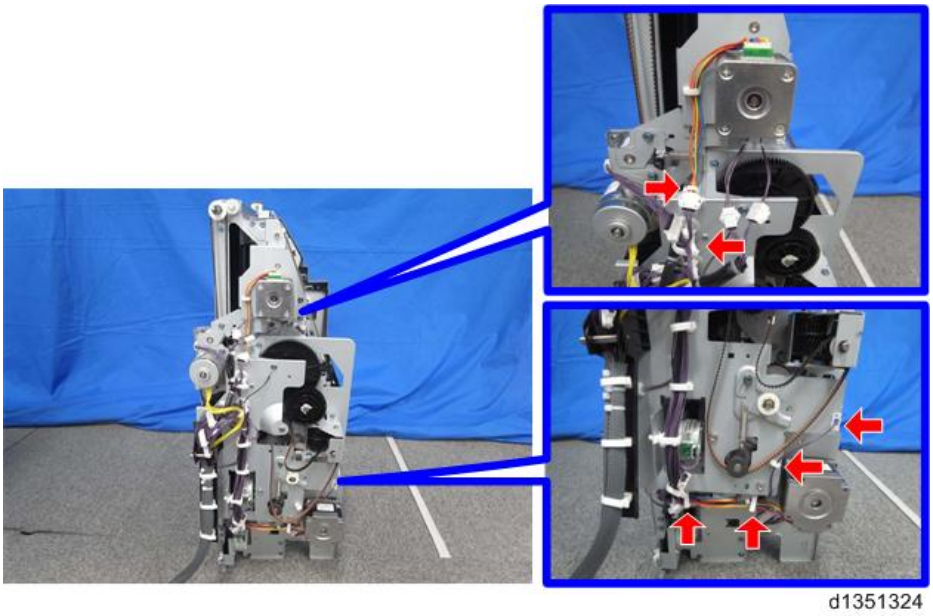
d1351322

3. Remove the screw [A] described in the photo below. (x 1)
4. Loosen the screw [B] to loosen the press fold motor belt [C].



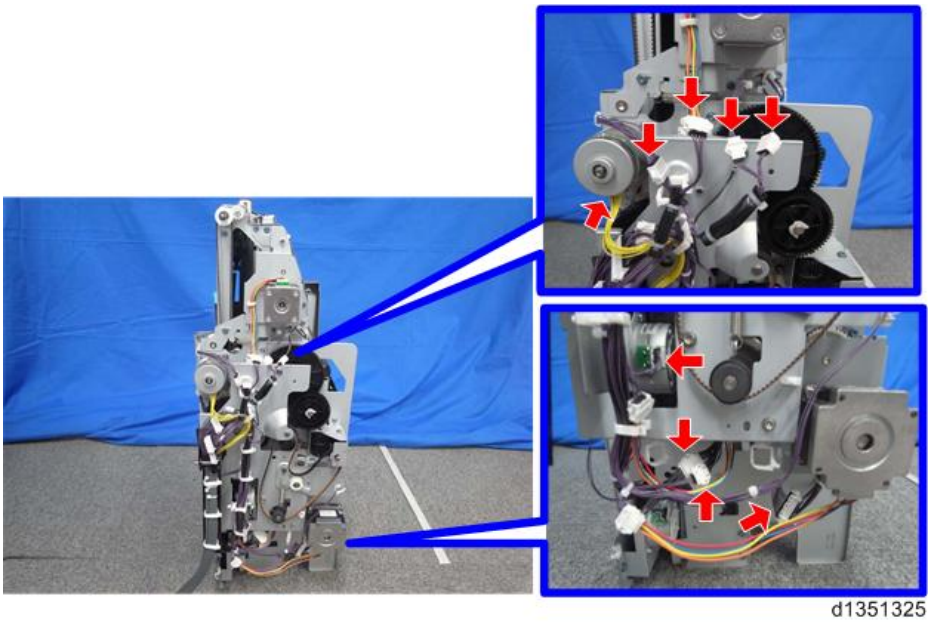
d1351323

5. Release the harness from the 6 clamps shown below. (x 6)



d1351324

6. Disconnect the 9 connectors shown below. (x 9)

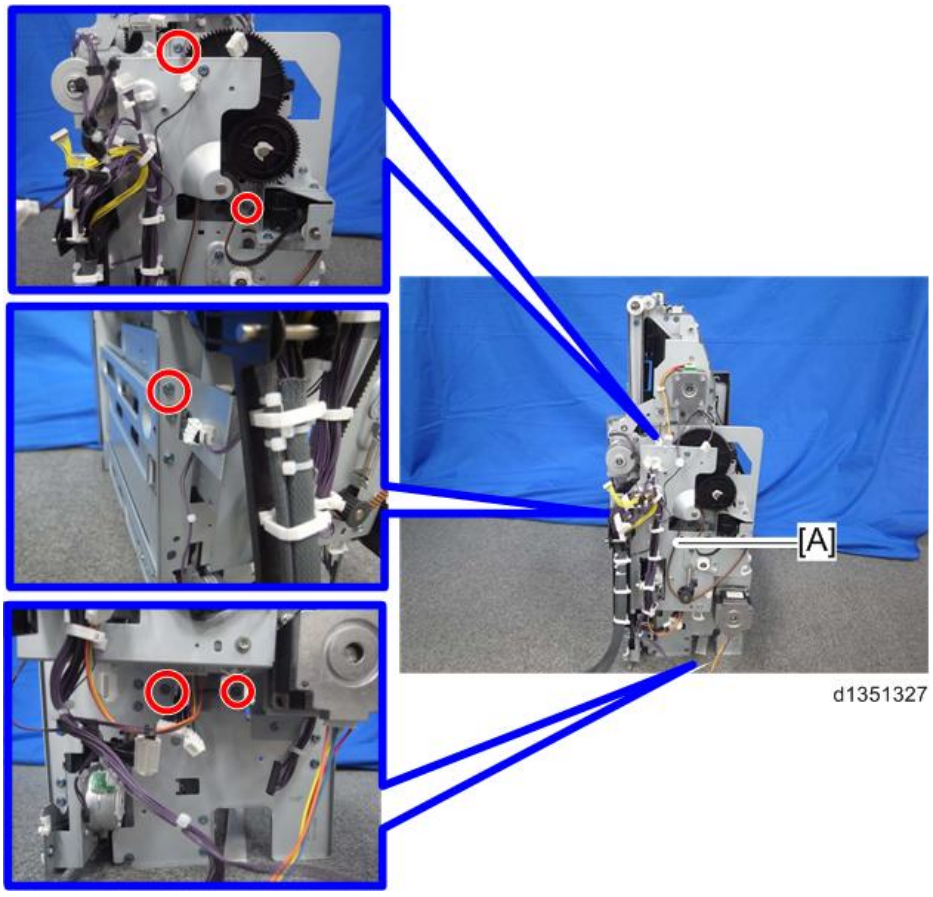


d1351325

7. Disconnect the 2 connectors shown below. (x 2)

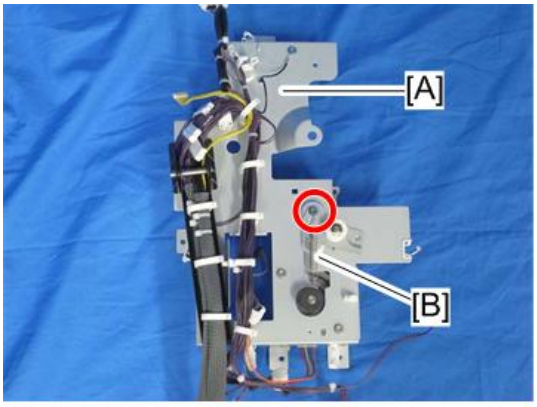
d1351326

8. Remove the press fold motor bracket [A]. (x 5)



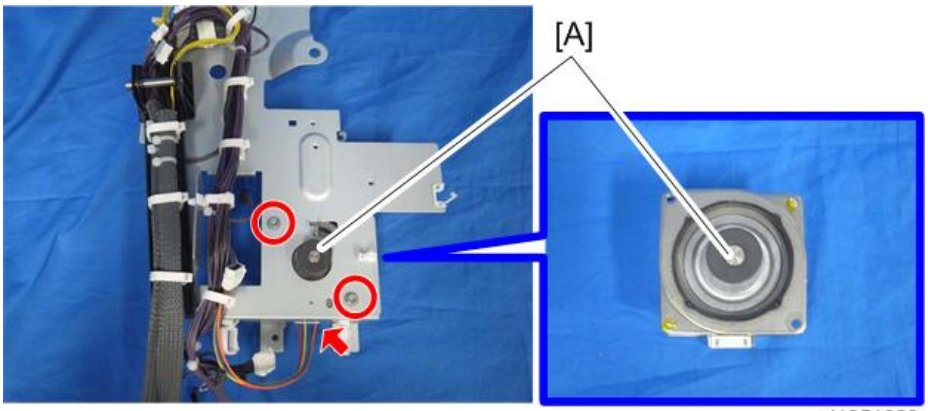
d1351327

9. Remove the spring [B] from the press fold motor bracket [A] (x 1, x 1)



d1351328

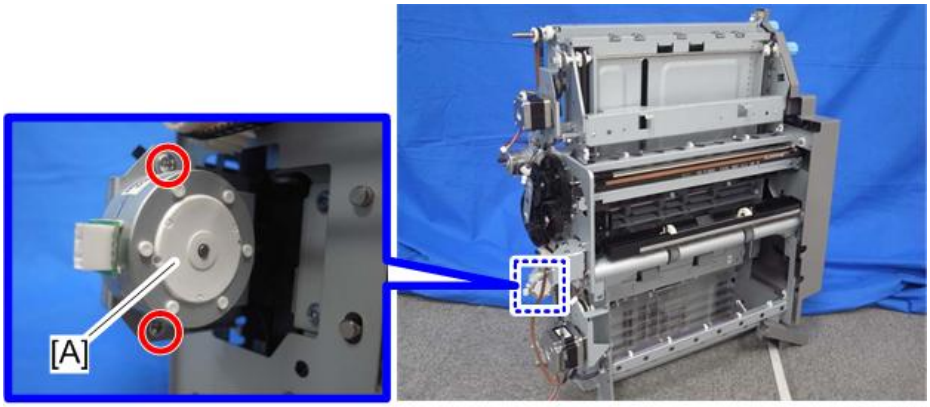
10. Remove the press fold motor [A] (x 2, x 1)



d1351329

1.5.3 BOOKLET JOGGER MOTOR

1. Booklet stapler unit page 37
2. Press fold motor bracket page 39
3. Booklet Jogger Motor [A] (x 2)

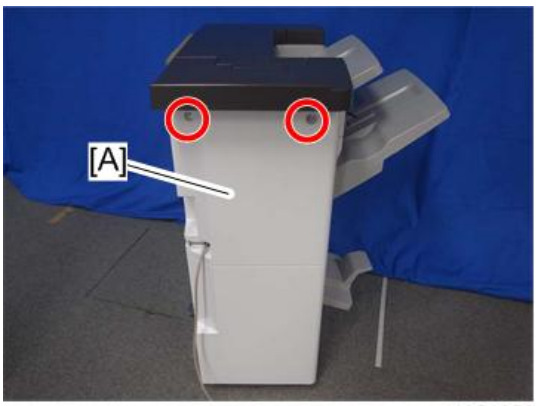


d1351330

1.6 STAPLER UNIT

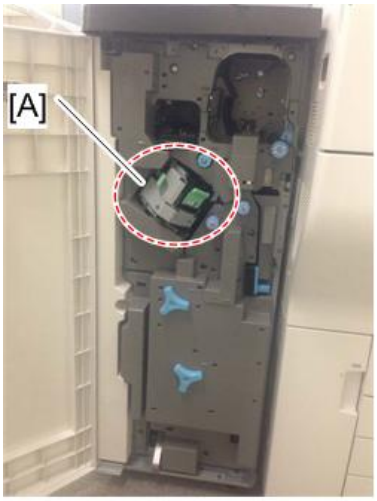
1.6.1 STAPLER UNIT

1. Remove the rear upper cover [A]. (x 2)



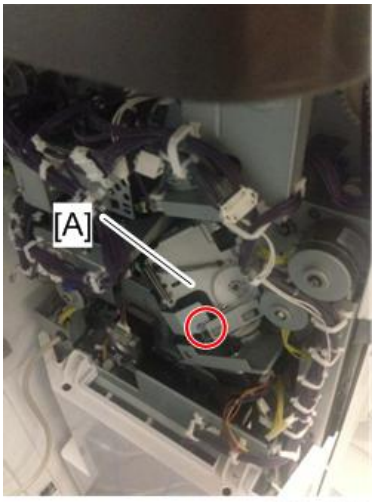
d1351253

2. Open the front door and push the stapler [A] to the rear side of the finisher.



d135a0026

3. At the rear side, remove the screw circled in the photo below from the stapler [A].



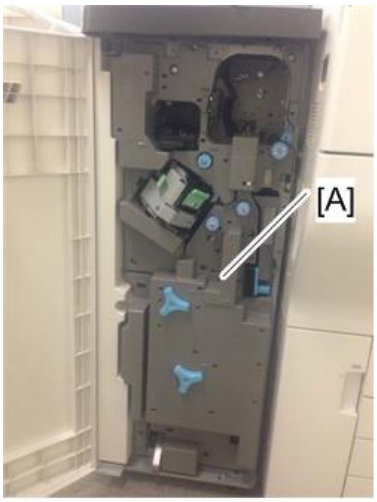
d135a0027

4. Push the stapler to the front side of the finisher.

5. Remove the inner upper cover [A]. (x 2)

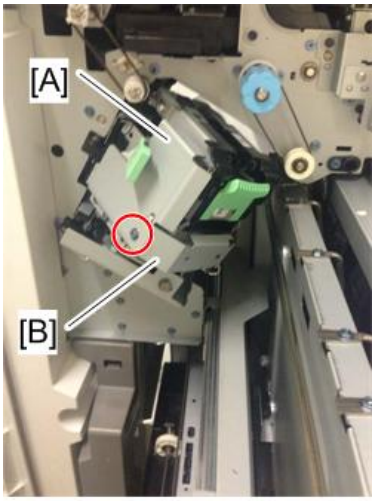
d135a0028

6. Pull out the stapler unit [A].



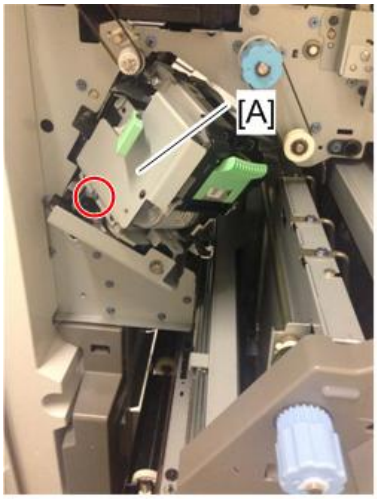
d135a0029

7. Remove the bracket [B] from the stapler [A]. (x 1)



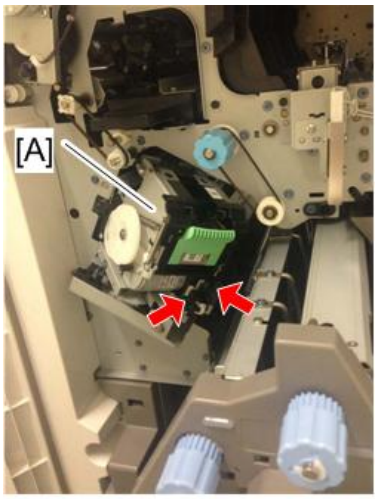
d135a0030

8. Remove bracket [A]. (x 1)



d135a0031

9. Remove the stapler [A]. (x 2)



d135a0032

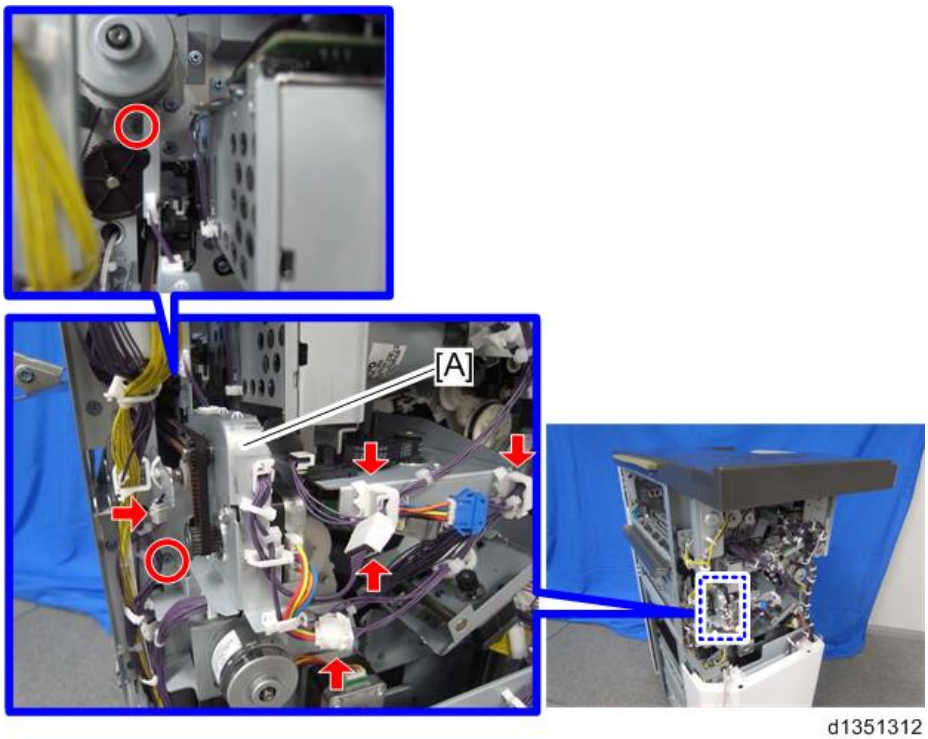
1.7 PUNCH UNIT

The punch unit is already adjusted in the factory, so you don't need to adjust it. When you need to replace the parts of the punch unit, replace the whole unit.

Note

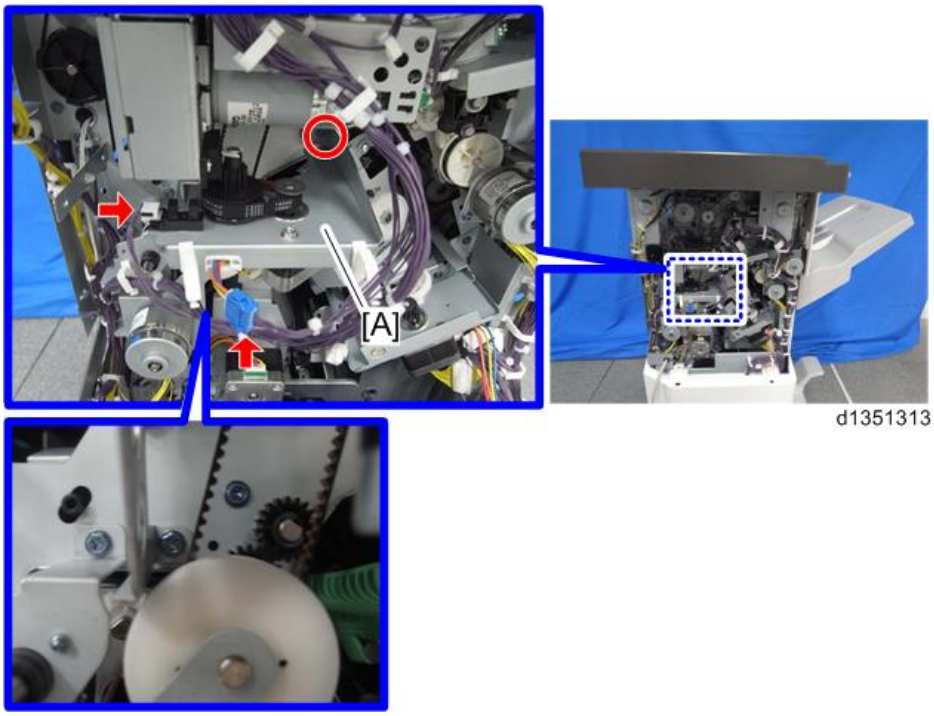
- Do not disassemble the punch unit. This unit is precisely adjusted in the factory.
- Do not drop or give a shock to the unit when you replace it. The unit could be damaged.

1. Remove the following covers. page 1
   - Rear Upper Cover
   - Rear Lower Cover
2. Registration sensor bracket [A] (x 2, x 3, x 2)

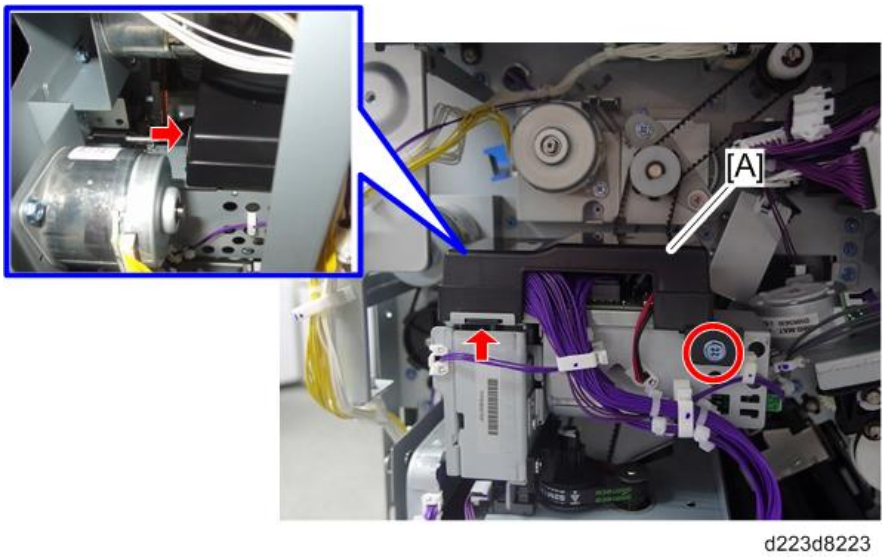


d1351312

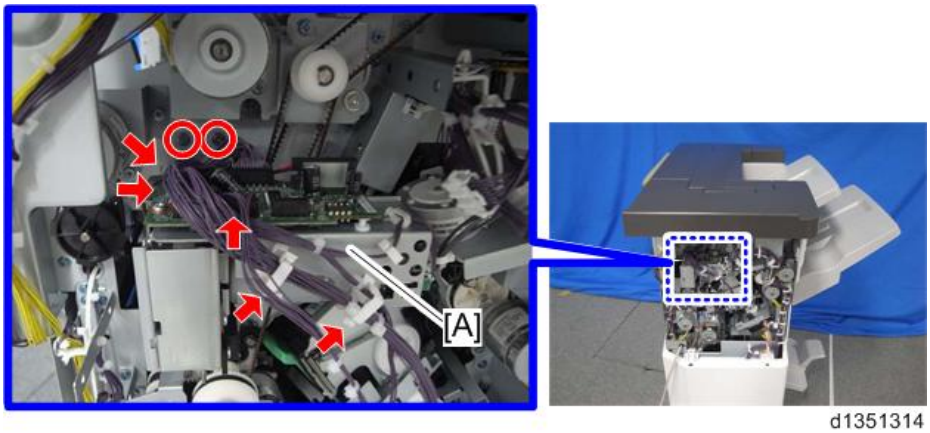
3. Stepper motor bracket [A] (x 1, x 2)



4. Remove punch unit control board [A] (x1, x2).



5. Pull out the punch unit [A] (x 2, x 2, x 2)



d1351314

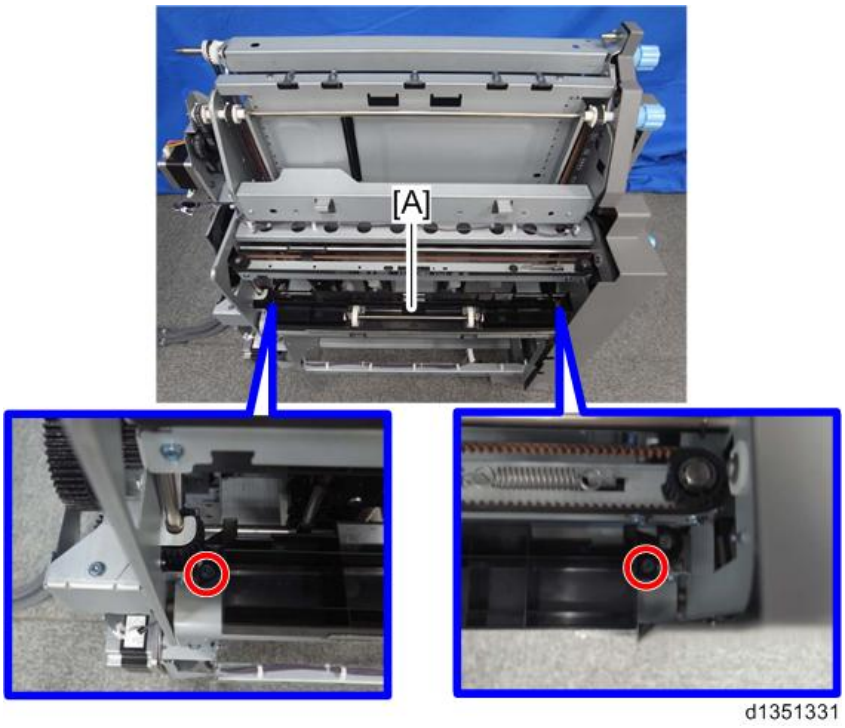
d1351315

1.8 FOLD ADJUSTMENTS

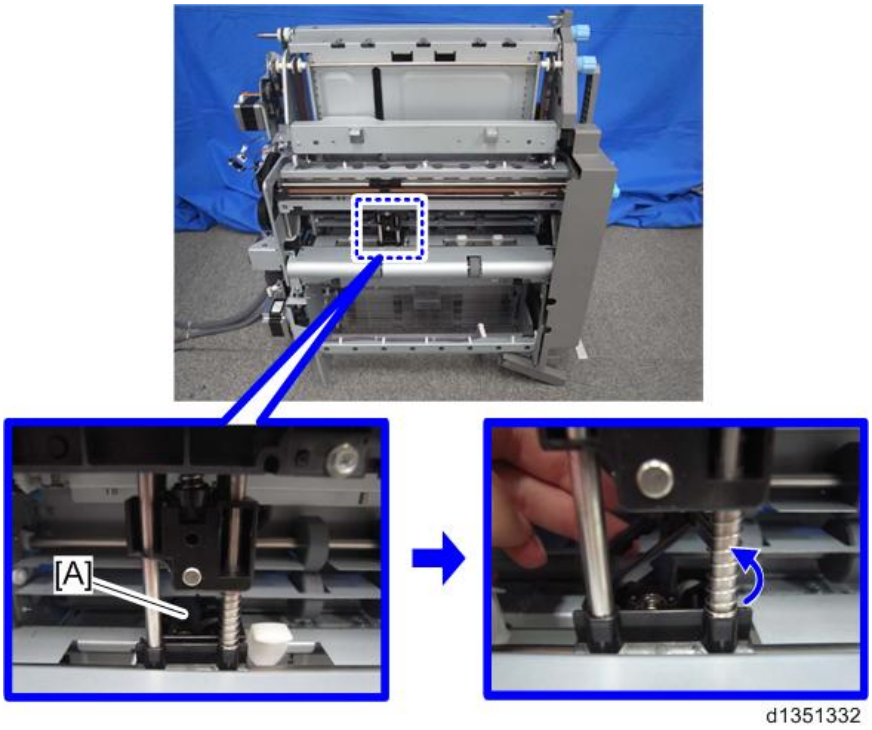
1.8.1 FLAT FOLD ROLLER ALIGNMENT

To adjust the folding strength, adjust the difference in vertical alignment between the flat fold rollers.

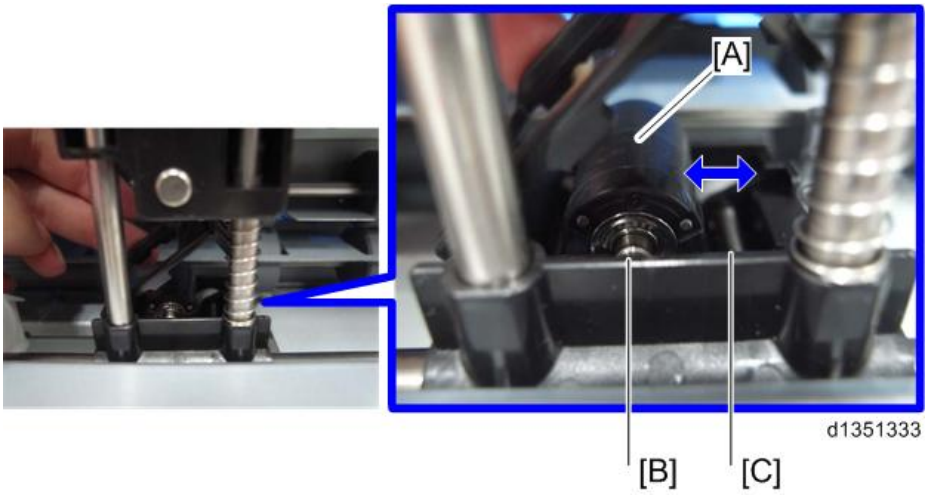
1. Booklet stapler unit page 37
2. Fold plate bracket [A] (x 2)

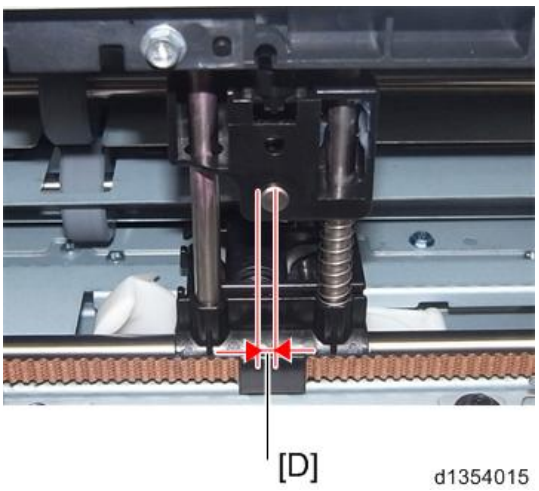


3. Open the bracket [A] of the flat fold roller.



4. Adjust the position of the flat fold lower roller [A] to adjust the difference in alignment between the upper and lower rollers of the flat fold booklet unit.





Note

- With the factory default, the upper and lower rollers of the flat fold booklet unit are not aligned vertically. There is a 3mm difference [D] between the upper and lower rollers. However, you can change the lower roller position from [B] (factory default) to [C]. If you change the lower roller position to [C], the difference becomes 0mm. In this condition, the upper and lower rollers are aligned vertically.
- If the toner does not stick well to the folding line of the booklet due to excessive folding strength, change the lower roller position to [C]. In this position, the booklet will be thicker than the factory default position.
- If you want increase the folding strength, the lower roller position should be [B] (factory default position). In addition, this will make the booklet thinner.
  If you want to reduce the folding strength, the lower roller position should be [C] (the difference in alignment is 0mm). In addition, this will make the booklet thicker.

Difference in Alignment and Folding Strength

Difference in Alignment	Folding Strength	Thickness of the booklet	The amount of toner sticking to the folding line
3mm (default)	Strong	Thin	OK
0mm	Weak	Thick	Good

5. Close the bracket after the adjustment.
6. Reassemble the machine.

1.8.2 ADJUSTING THE FOLDING SPEED

You can adjust the thickness of the booklet by adjusting the moving speed of the flat fold booklet unit.

If you want to make the booklet thinner, set a slower speed. If you want to make the booklet thicker, set a faster speed.

1. Enter the SP mode.
2. Set the moving speed of the flat fold booklet unit for each paper size with SP6-114-001 to 010 (Fold Speed Adj.: 2K/3K FIN).

SP	Setting Items	Selection	Default Value
SP6-114-001	Fold Speed Adj.: 2K/3K FIN: A3 SEF	0: Standard (faster) 1: Middle (slow) 2: Low (very slow)	0: Standard
SP6-114-002	Fold Speed Adj.: 2K/3K FIN: B4 SEF		
SP6-114-003	Fold Speed Adj.: 2K/3K FIN: A4 SEF		
SP6-114-004	Fold Speed Adj.: 2K/3K FIN: B5 SEF		
SP6-114-005	Fold Speed Adj.: 2K/3K FIN: DLT SEF		
SP6-114-006	Fold Speed Adj.: 2K/3K FIN: LG SEF		
SP6-114-007	Fold Speed Adj.: 2K/3K FIN: LT SEF		
SP6-114-008	Fold Speed Adj.: 2K/3K FIN: 12"x18"		
SP6-114-009	Fold Speed Adj.: 2K/3K FIN: 8K SEF		
SP6-114-010	Fold Speed Adj.: 2K/3K FIN: Other		

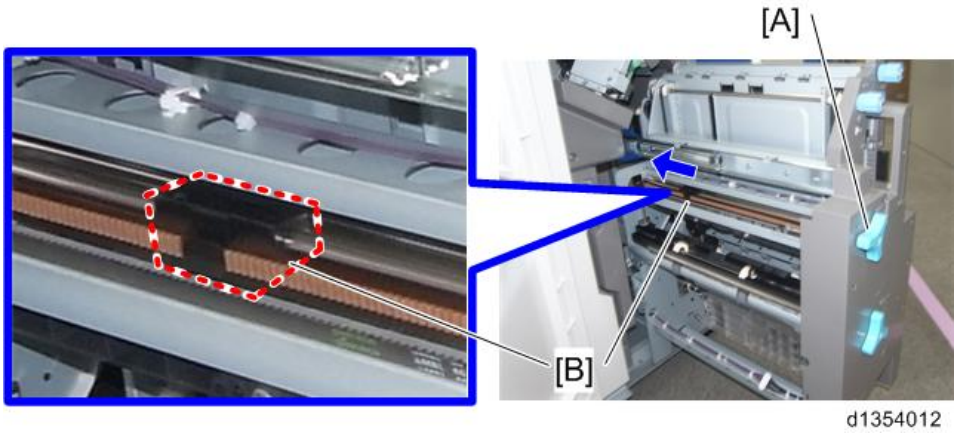
3. Exit the SP mode.

1.8.3 FLAT FOLD BOOKLET UNIT HOME POSITION ADJUSTMENT

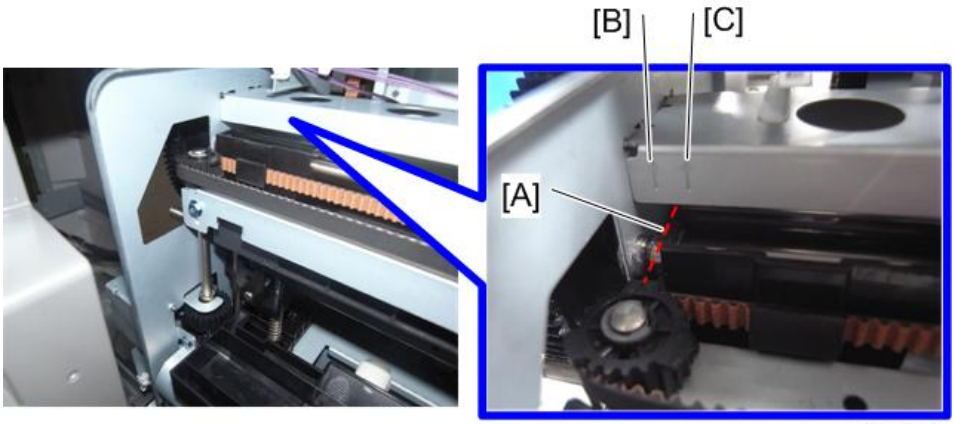
1. Pull out the stapling unit [A].

2. Timing gear [A] (☞ x 1)

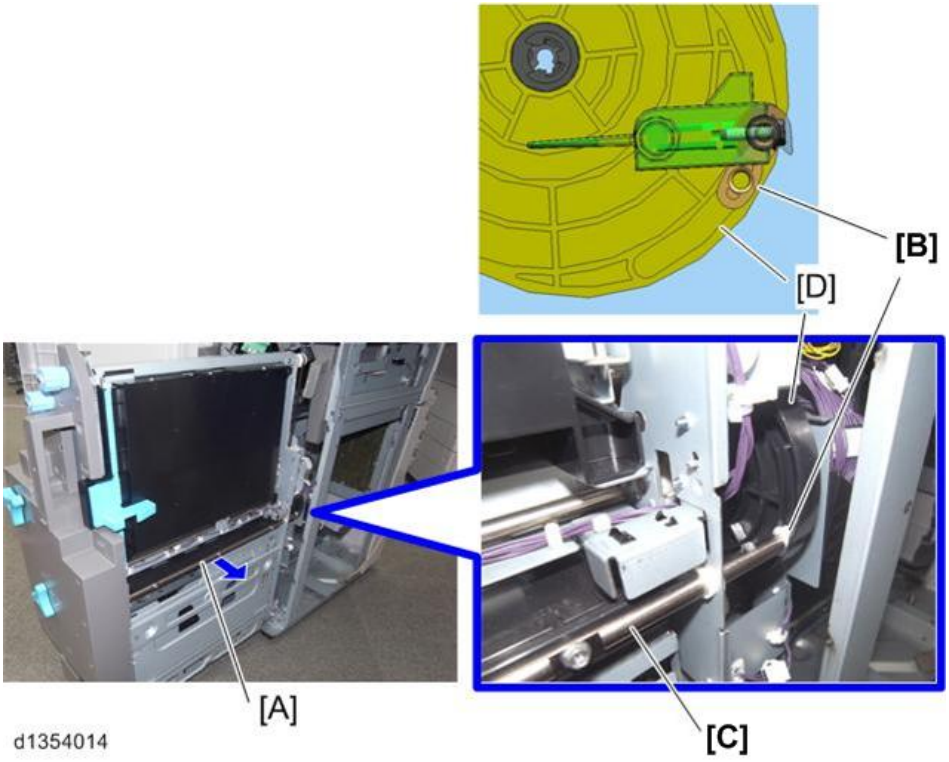
3. Turn the knob [A] clockwise to move the flat fold roller unit [B] in the direction of the arrow.



4. Move the flat fold roller unit until the edge of the unit [A] is between the guide lines [B] and [C] inscribed on the bracket.



5. Check that the fold plate [A] has been moved in the direction of the arrow as far as it can go and the bushing [B] on the rear end of the fold plate shaft [C] is aligned with the fold plate positioning cam [D].



6. Re-attach the timing gear [A] (x 1)

d1354011

7. Reassemble the finisher and connect it to the copier.
8. Turn on the copier.
9. After the finisher initialization is complete, check that the flat fold roller unit, fold plate and the cam are positioned as described in steps 4 and 5.

1.9 PAPER GUIDE UNIT

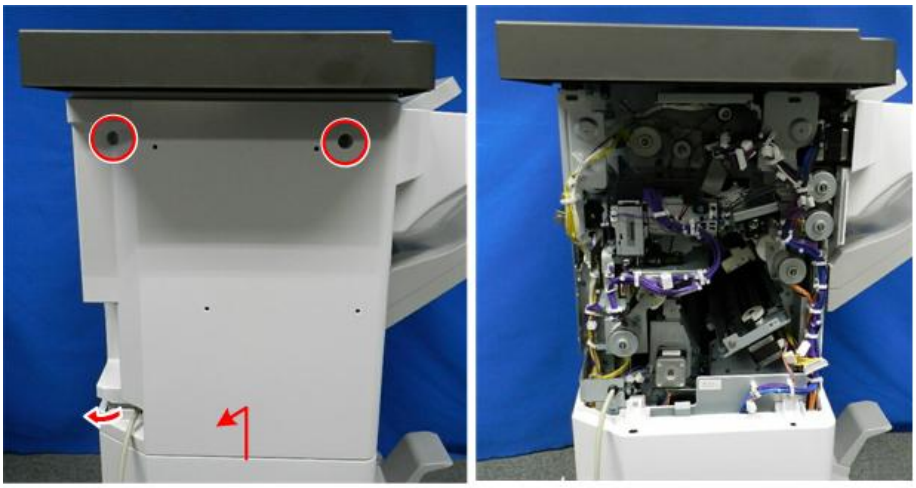
1.9.1 PAPER EXIT COVER, OPTIONAL OUTPUT JOGGER UNIT

The paper exit covers must be removed before the paper guide unit can be removed. Removal of these covers is different, depending on whether the Output Jogger Unit Type M25 is installed.

- If the optional output jogger unit is not installed, do the Procedure 1 below. It is necessary to remove only the paper exit cover.
- If the optional jogger unit is installed do Procedure 2 below. It is necessary to remove the optional jogger unit as well as the paper exit covers.

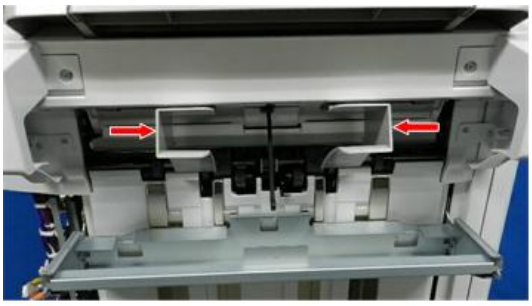
Procedure 1: Optional output jogger unit not installed

1. Disconnect the finisher from the main frame.
2. Remove the rear cover.



3. Remove the shift tray.

4. Push the paper guides to the center.



d3cjc1004

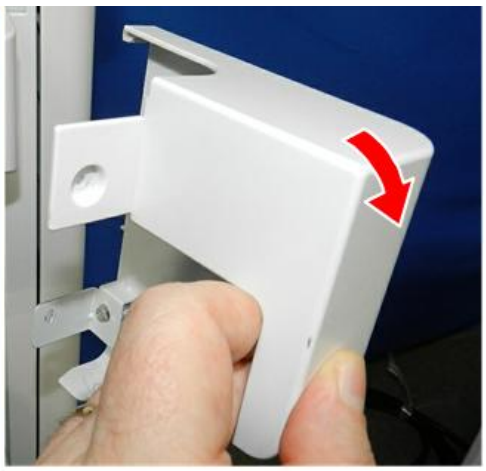
5. Remove the rear paper guide cover.

x2

d3cjc1005

6. Remove the front paper guide cover.

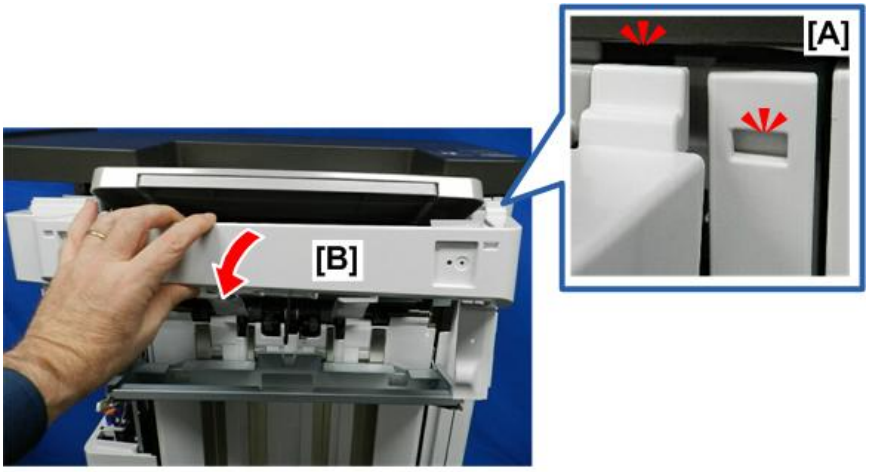
x2



d3cjc1006

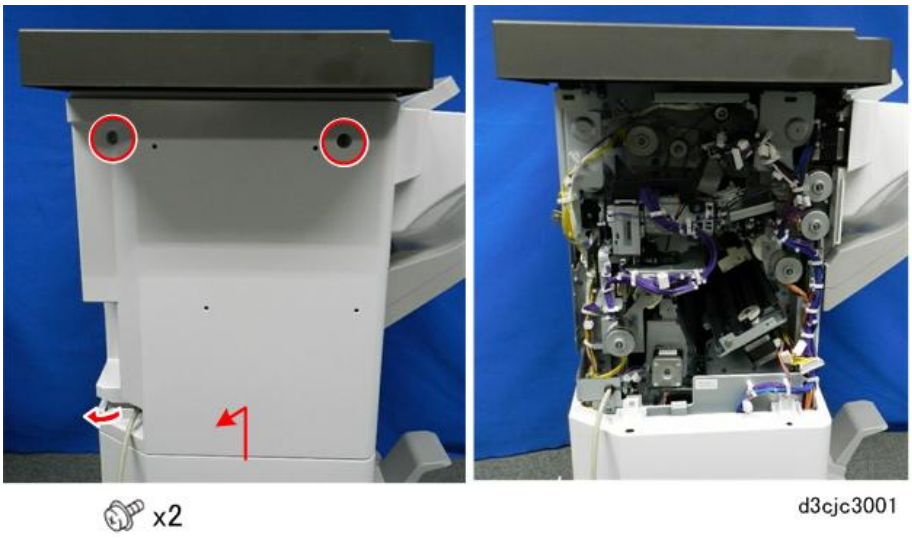
7. Disconnect the main paper guide cover.

8. Carefully, separate the front tabs at [A], and then remove the main paper guide cover [B].

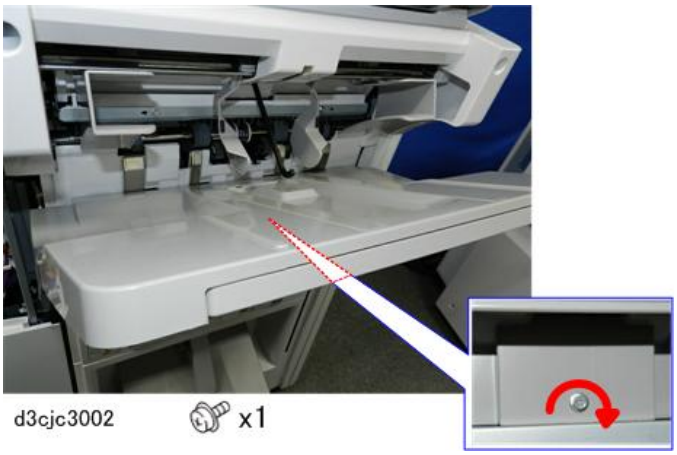


Procedure 2: Optional output jogger unit installed

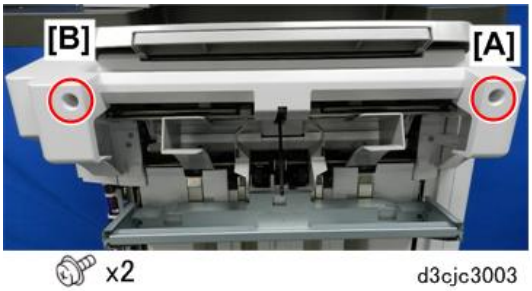
1. Remove the rear cover.



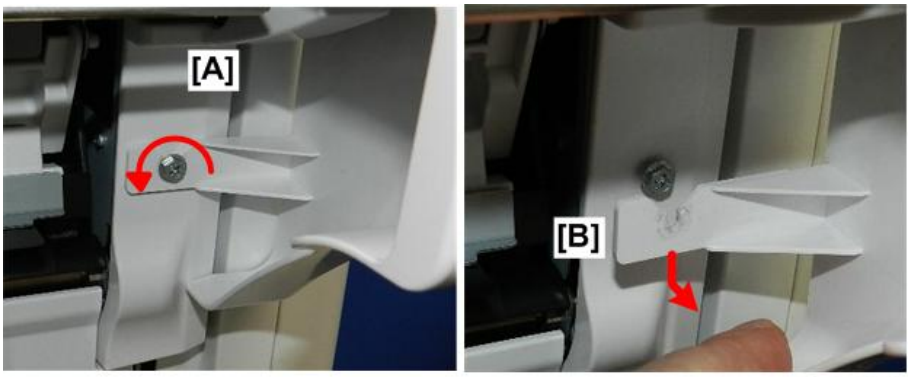
2. Remove the shift tray.



3. Disconnect the jogger unit cover at the front [A] and rear [B].

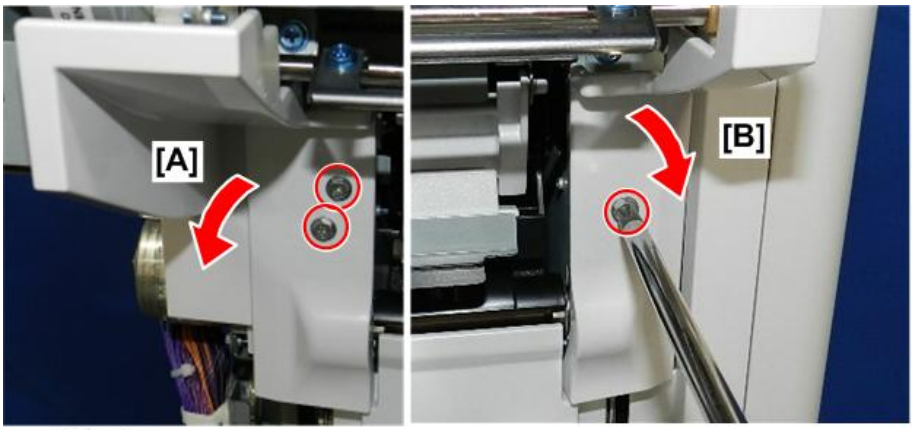


4. Below the front end of the jogger unit cover [A], loosen the screw (do not remove).
5. Pull the V-notch of the arm [B] out from under the loosened screw.

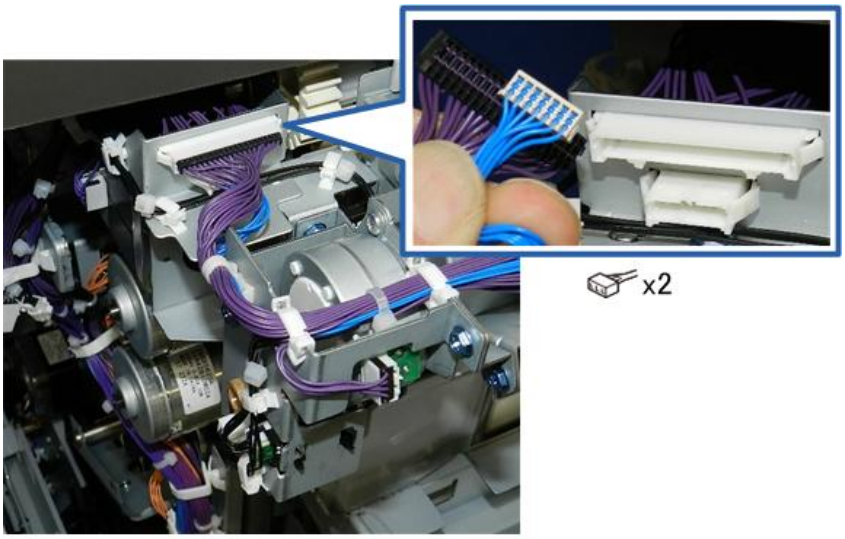


6. Remove the jogger unit cover.

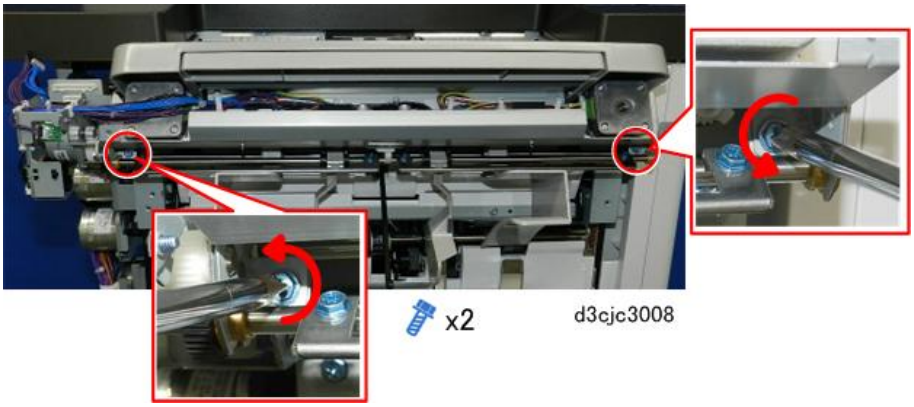
7. Remove rear end cover [A] and front end cover [B].



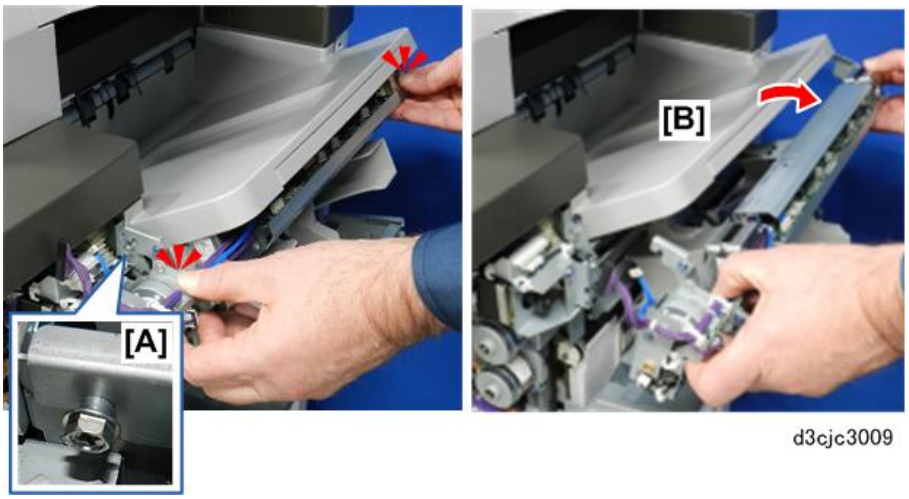
8. At the rear, disconnect the jogger unit.



9. Disconnect the jogger unit at the front and rear.



10. The jogger unit hangs on two shoulder screws [A] (one at the front and one at the end).
11. Lift the joggger unit [B] off the shoulder screws and remove it.



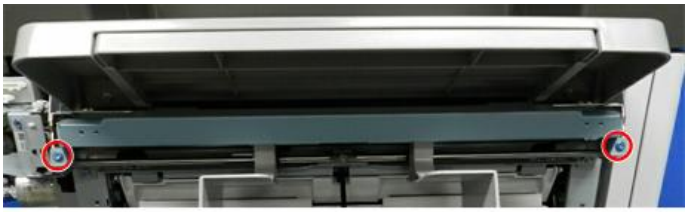
d3cjc3009

12. Lay the jogger unit on a flat, clean surface.

d3cjc3010

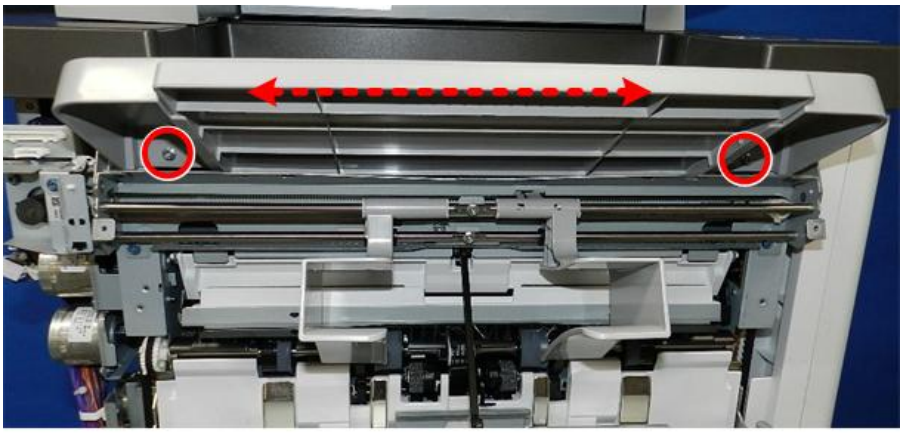
1.9.2 PAPER GUIDE UNIT

1. Remove the paper exit covers if the optional output jogger unit is not installed. (Procedure 1: Optional output jogger unit not installed)
   -or-
   If the optional output jogger unit is installed, remove it. (Procedure 2: Optional output jogger unit installed)
2. Disconnect the cover support bracket.

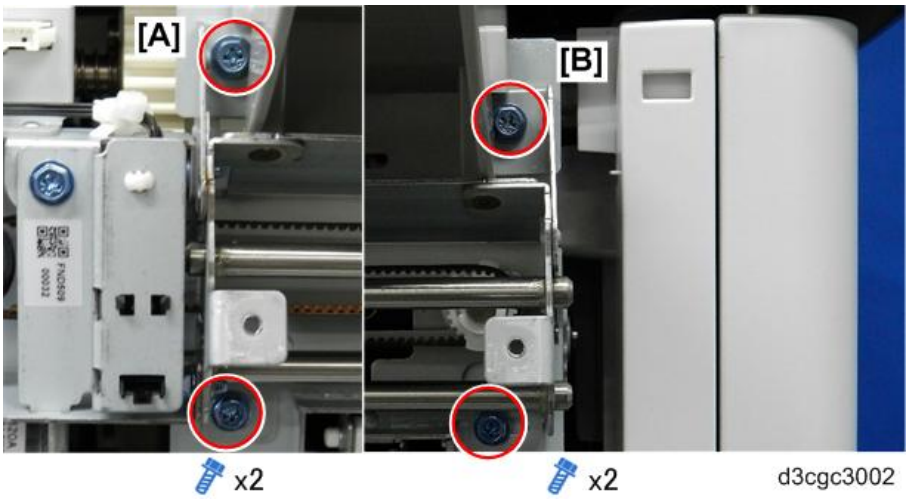


3. Remove the cover support bracket.

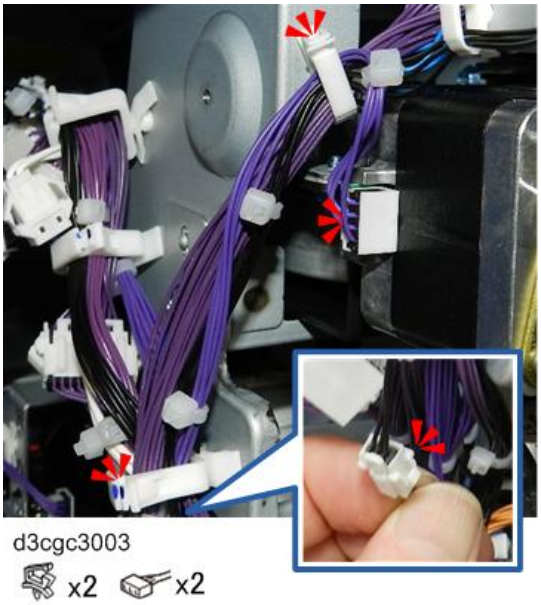
4. **Loosen** (do not remove) the screws on both ends of the paper exit. This will loosen the tray so you can move the tray slightly side-to-side in order to remove the bracket screws more easily.



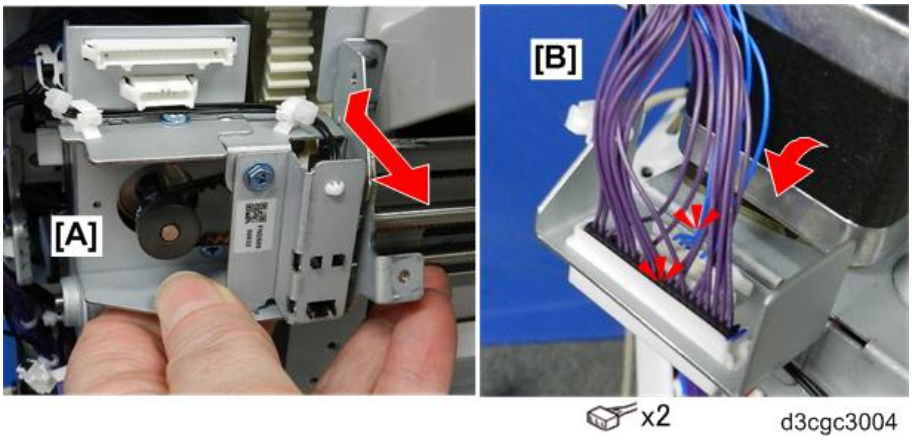
5. Disconnect the rear end of the paper guide unit bracket [A].
6. Disconnect the front end of the paper guide unit bracket [B].



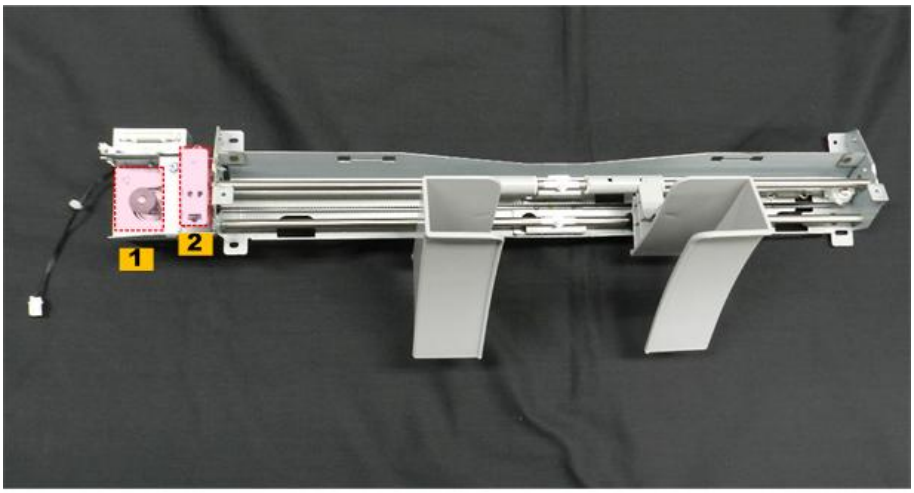
7. At the rear, open the clamps and disconnect the motor and sensor harnesses.



8. Hold the unit bracket with both hands, lower the rear end [A], roll it toward you slightly, and then disconnect the harnesses [B].



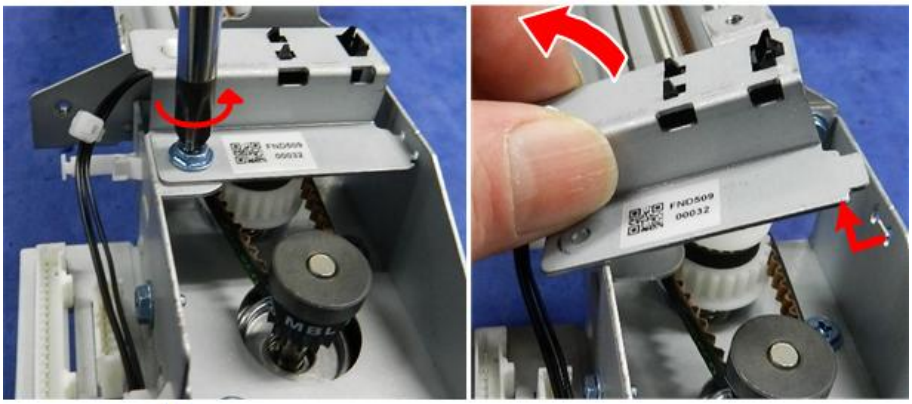
9. Lay the unit on flat clean surface so you can see the paper guide motor [1] and paper guide position sensor bracket [2].



d3cgc3005

1.9.3 PAPER GUIDE UNIT SENSOR

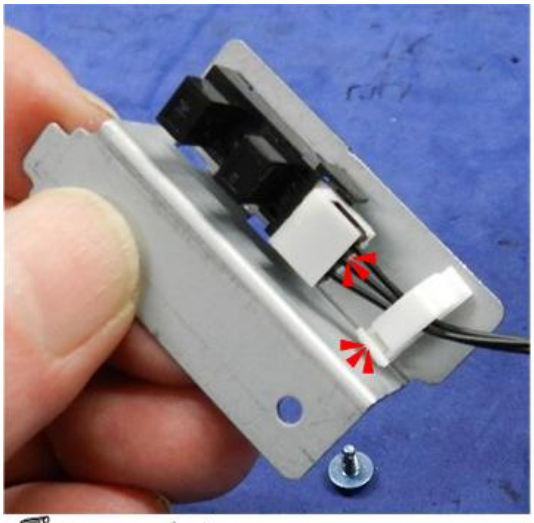
1. Remove the paper guide unit. page 13
2. Disconnect the sensor bracket.



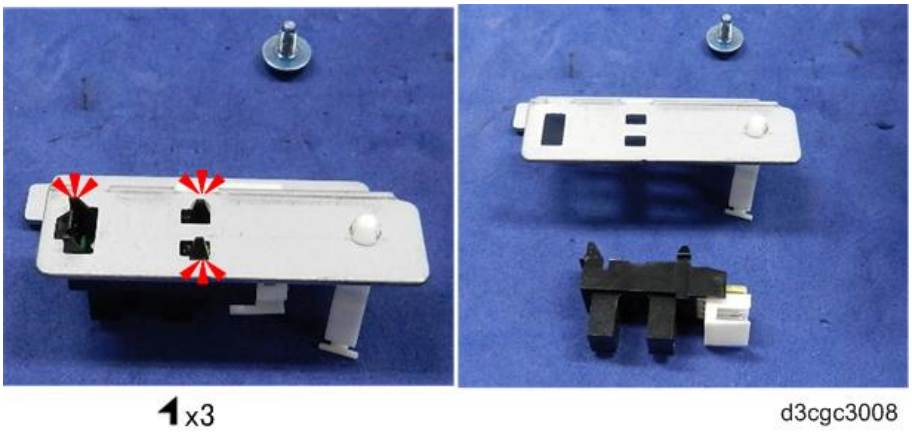
x1

d3cgc3006

3. Disconnect the sensor.

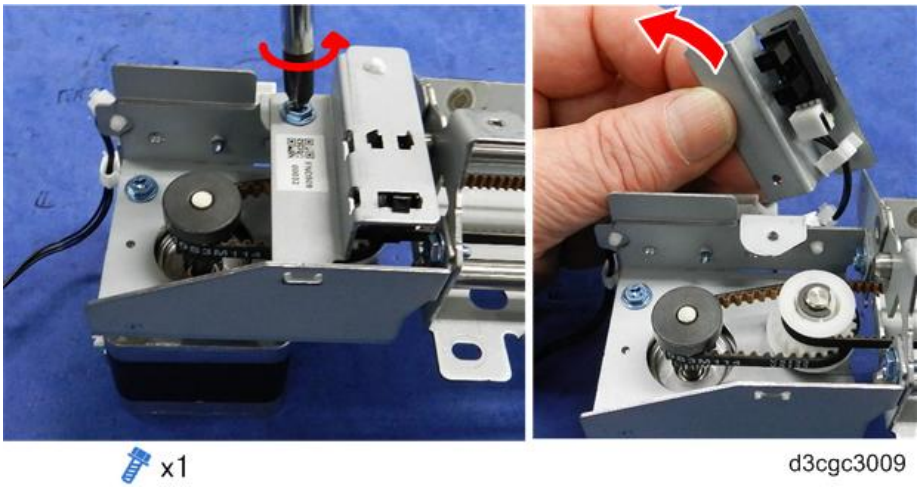


4. Separate the sensor and bracket.

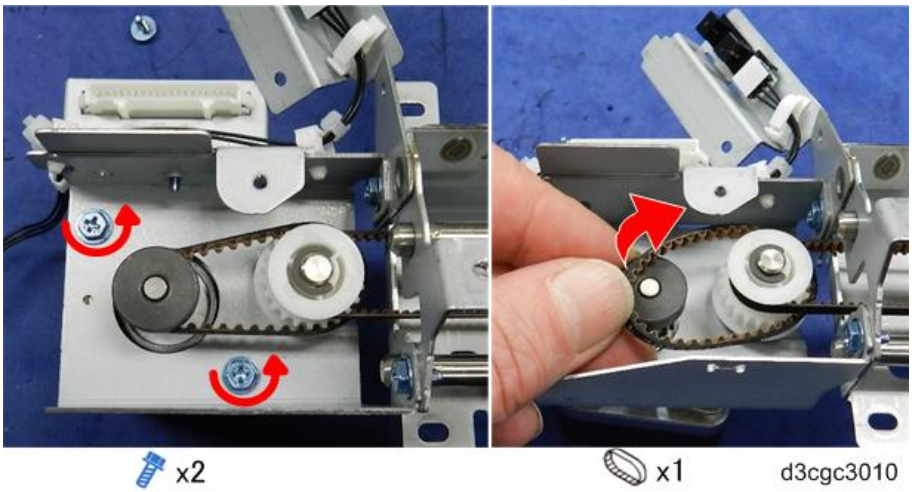


1.9.4 PAPER GUIDE MOTOR

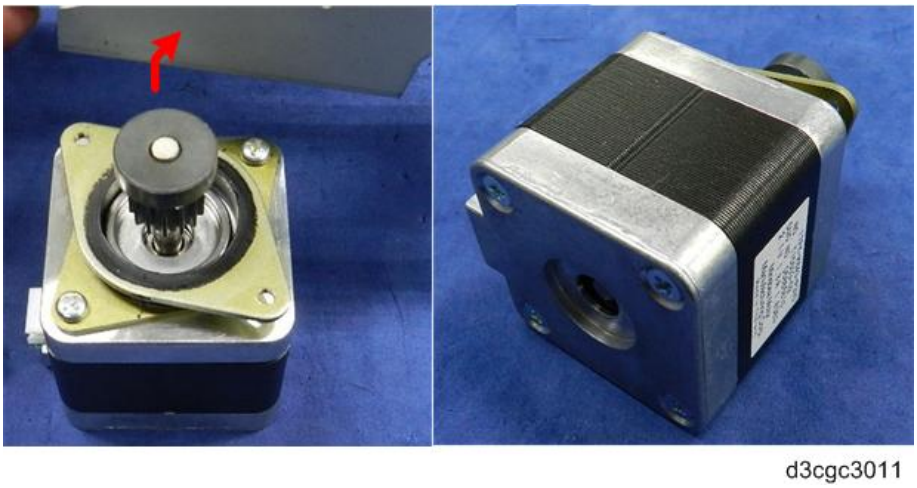
1. Remove the paper guide unit. page 13
2. Disconnect the sensor bracket so you can access the screw below.



3. Disconnect the motor.



4. Separate the unit from the motor.



5. When you re-install the motor, make sure the open bracket connector is pointing to the rear.

2. DETAILED DESCRIPTIONS

2.1 OVERVIEW

2.1.1 SPECIFICATIONS

Finisher SR4120

Item		Specification
Upper tray	Paper Sizes	A3 SEF,A4 LEF/ SEF, A5 LEF/ SEF, A6 SEF, B4 SEF, B5 LEF/ SEF, B6 SEF, 11”×17” SEF, $8^1/_2$”×14” SEF, $8^1/_2$”×11” LEF/ SEF, 8”×13” SEF, $7^1/_4$”×$10^1/_2$” LEF/ SEF, $5^1/_2$”×$8^1/_2$” LEF/ SEF, Postal Postcard SEF, 12”×18” SEF, 10”×15” SEF, 10”×14” SEF, 13”×$19^1/_5$” SEF, 13”×19” SEF, $12^3/_5$”×$19^1/_5$” SEF, $12^3/_5$”×$18^1/_2$” SEF, 13”×18” SEF, SRA3 SEF, SRA4 LEF/ SEF, Custom Size(90x139.7 to 330.2x487.7 mm)
	Capacity (Normal Paper)	▪ A4, $8^1/_2$”×11” or smaller: 250 sheets ▪ B4, $8^1/_2$”×14” or smaller: 50 sheets * Up to 80g/m^2, no folding
	Paper thickness	52.0 to 220.0 g/m^2
Shift tray	Paper Sizes	A3 SEF, A4 LEF/ SEF, A5 LEF/ SEF, A6 SEF, B4 SEF, B5 LEF/ SEF, B6 SEF, 11”×17” SEF, $8^1/_2$”×14” SEF, $8^1/_2$”×11” LEF/ SEF, 8”×13” SEF, $7^1/_4$”×$10^1/_2$” LEF/ SEF, $5^1/_2$”×$8^1/_2$” LEF/ SEF, Postal Postcard SEF, 12”×18” SEF, 10”×15” SEF, 10”×14” SEF, 13”×$19^1/_5$” SEF, 13”×19” SEF, $12^3/_5$”×$19^1/_5$” SEF, $12^3/_5$”×$18^1/_2$” SEF, 13”×18” SEF, SRA3 SEF, SRA4 LEF/ SEF, Custom Size(90x139.7 to 330.2x487.7mm)

Item		Specification
Shift tray	Capacity (Normal Paper)	▪ A4 LEF, $8^1/_2$”×11” LEF: 3,000 sheets ▪ A3 SEF, A4 SEF, B4 SEF, B5 LEF/ SEF, 11”×17” SEF, $8^1/_2$”×14” SEF, $8^1/_2$”×11” SEF, 12”×18”, SRA3 SEF, 13”×$19^1/_5$” SEF: 1,500 sheets ▪ A5 LEF: 500 sheets ▪ A5 SEF, A6 SEF, B6 SEF, $5^1/_2$”×$8^1/_2$” SEF: 100 sheets * Up to 80g/m^2, no folding
Shift tray	Paper thickness	52.3 to 300.0g/m^2
	Paper size for shift operation	A3 SEF, A4 LEF/ SEF, A5 LEF/ SEF, B4 SEF, B5 LEF/ SEF, 11”×17” SEF, $8^1/_2$”×14” SEF, $8^1/_2$”×11” LEF/ SEF, 8”×13” SEF, $7^1/_4$”×$10^1/_2$” LEF/ SEF, $5^1/_2$”×$8^1/_2$” LEF/ SEF, 12”×18” SEF, 10”×15” SEF, 10”×14” SEF, SRA4 SEF, Custom Sizes(125x139.7 to 304.8x457.2 mm)
	Paper thickness for shift operation	52.3 to 300.0g/m^2
Staple Tray	Paper sizes	A3 SEF, A4 LEF/ SEF, B4 SEF, B5 LEF/ SEF, 11”×17” SEF, $8^1/_2$”×14” SEF, $8^1/_2$”×11” LEF/ SEF, 8”×13” SEF, $7^1/_4$”×$10^1/_2$” LEF/ SEF, 10”×15” SEF, 10”×14” SEF, Custom Sizes

Item		Specification
Staple Tray	Staple stack size (Normal Paper)	▪ A3 SEF, A4 LEF/ SEF, B4 SEF, B5 LEF/ SEF, 11”×17” SEF, $8^1/_2$”×14” SEF, $8^1/_2$”×11” LEF/ SEF, 8”×13” SEF, $7^1/_4$”×$10^1/_2$” LEF/ SEF, 10”×15” SEF, 10”×14” SEF, $8^1/_2$”×13” SEF, $8^1/_4$”×14” SEF, $8^1/_4$”×13” SEF, 8K SEF, 11”×14” SEF, 11”×15” SEF: 65 sheets ▪ Mixed sizes: 65 sheets(A3 SEF/A4 LEF, B4 SEF/B5 LEF, 11”×17” SEF/$8^1/_2$×11 LEF) * Up to 80g/ m^2, no folding ▪ Z-folding 5 sheets (80 – 105 g/m^2) ▪ 8 sheets (52 – 80 g/m^2) ▪ Z-folding yes/no ▪ When Z-folded paper and other paper are mixed, 1 sheet without Z-folding (52 to 80 g/m^2), 13 sheets (80 to 105 g/m^2) is upper limit
Staple Tray	Tray capacity after stapling (Normal Paper)	▪ A4 LEF, $8^1/_2$”×11” LEF: 20 to 65 stapled sheets, 150 to 46 sets, 2 to 19 sheets 150 sets ▪ A4 SEF, B5 SEF/ LEF, $8^1/_2$×11 SEF: 15 to 65 stapled sheets,100 to 23set, 2 to 14 sheets 100 sets ▪ Other paper sizes: 15 to 65 stapled sheets 100 to 23 sets, 2 to 14 stapled sheets 100 sets ▪ Mixed sizes: 65 sheets 23 sets (A3 SEF/A4 LEF, B4 SEF/B5 LEF, 11”×17” SEF, $8^1/_2$×11 LEF) * Up to 80g/m^2, no folding
	Staple paper thickness	52.3 to 105.0 g/m^2 * A4 LT cover sheets (up to 256g/ m^2)1 to 2 mixed bundles possible

Item		Specification
	Stapling positions	Rear, front, rear oblique, left edge (x2), top edge (x2)
Punch specifications	Paper size	A3 SEF, A4 LEF/ SEF, A5 LEF/ SEF, B4 SEF, B5 LEF/ SEF, 11”×17” SEF, $8^1/_2$”×14” SEF, $8^1/_2$”×11” LEF/ SEF, 8”×13” SEF, $7^1/_4$”×$10^1/_2$” LEF/ SEF, $5^1/_2$”×$8^1/_2$” LEF/ SEF, 10”×15” SEF, 10”×14” SEF, Custom Sizes
	Punch paper thickness	52.3 to 256.0g/m^2
	Punch position	2 holes
Max. power consumption		67 W (supplied from main machine)
Dimensions (w x d x h)		657×730×980 mm (26 x 29 x 39 in.)
Weight		Approximately 41 kg (90 lb.)

Finisher SR4130

Item		Specification
Upper tray	Paper Sizes	A3 SEF, A4 LEF/ SEF, A5 LEF/ SEF, A6 SEF, B4 SEF, B5 LEF/ SEF, B6 SEF, 11”×17” SEF, $8^1/_2$”×14” SEF, $8^1/_2$”×11” LEF/ SEF, 8”×13” SEF, 7^1/4”×$10^1/_2$” LEF/ SEF, $5^1/_2$”×$8^1/_2$” LEF/ SEF, Postcards SEF, 12”×18” SEF, 10”×15” SEF, 10”×14” SEF, 13”×$19^1/_5$” SEF, 13”×19” SEF, $12^3/_5$”×$19^1/_5$” SEF, $12^3/_5$”×$18^1/_2$” SEF, 13”×18” SEF, SRA3 SEF, SRA4 LEF/ SEF, Custom Sizes(90x139.7 to 330.2x487.7 mm)
	Capacity (Normal Paper)	▪ A4, $8^1/_2$”×11” or smaller: 250 sheets ▪ B4, $8^1/_2$”×14” and larger 50 sheets * Up to 80g/ m^2, no folding
	Paper thickness	52.3 to 220.0g/m^2

Item		Specification
Shift tray	Paper Sizes	A3 SEF, A4 LEF/ SEF, A5 LEF/ SEF, A6 SEF, B4 SEF, B5 LEF/ SEF, B6 SEF, 11”×17” SEF, $8^1/_2$”×14” SEF, $8^1/_2$”×11” LEF/ SEF, 8”×13” SEF, $7^1/_4$”×$10^1/_2$” LEF/ SEF, $5^1/_2$”×$8^1/_2$” LEF/ SEF, Postal Postcard SEF, 12”×18” SEF, 10”×15” SEF, 10”×14” SEF, 13”×$19^1/_5$” SEF, 13”×19” SEF, $12^3/_5$”×$19^1/_5$” SEF, $12^3/_5$”×$18^1/_2$” SEF, 13”×18” SEF, SRA3 SEF, SRA4 LEF/ SEF, Custom Size(90x139.7 to 330.2x4 87.7mm)
	Capacity (Normal Paper)	▪ A4 LEF, $8^1/_2$”×11” LEF: 2,000 sheets ▪ A3 SEF, B4 SEF, A4 SEF, B5 LEF/ SEF, 11”×17” SEF, $8^1/_2$”×14” SEF, $8^1/_2$”×11” SEF, 12”×18” SEF, SRA3 SEF, 13”×$19^1/_5$” SEF: 1,000 sheets ▪ A5 LEF: 500 sheets ▪ A5 SEF, A6 SEF, $5^1/_2$”×$8^1/_2$” SEF, A6 SEF: 100 sheets * Up to 80g/m^2, no folding
	Paper thickness	52.0 to 300.0 g/m^2
	Paper size for shift operation	A3 SEF, A4 LEF/ SEF, A5 LEF/ SEF, B4 SEF, B5 LEF/ SEF, 11”×17” SEF, $8^1/_2$”×14” SEF, $8^1/_2$”×11” LEF/ SEF, 8”×13” SEF, $7^1/_4$”×$10^1/_2$” LEF/ SEF, $5^1/_2$”×$8^1/_2$” LEF/ SEF, 12”×18” SEF, 10”×15” SEF, 10”×14” SEF, SRA4 SEF, Custom Sizes(125x139.7 to 304.8x457.2 mm)

Item		Specification
	Paper thickness for shift operation	52.0 to 300.0 g/m^2
Corner stapling specifications	Paper sizes	A3 SEF, A4 LEF/ SEF, B4 SEF, B5 LEF/ SEF, 11”×17” SEF, $8^1/_2$”×14” SEF, $8^1/_2$”×11” LEF/ SEF, 8”×13” SEF, $7^1/_4$”×$10^1/_2$” LEF/ SEF, 10”×15” SEF, 10”×14” SEF, Custom Sizes
Corner stapling specifications	Staple stack size	▪ A3 SEF, A4 LEF/ SEF, B4 SEF, B5 LEF/ SEF, 11”×17” SEF, $8^1/_2$”×14” SEF, $8^1/_2$”×11” LEF/ SEF, $8^1/_2$”×13” SEF, $8^1/_4$”×14” SEF, $8^1/_4$”×13” SEF, 8”×13” SEF, 8K SEF, 11”×15” SEF, 11”×14” SEF, 10”×15” SEF, 10”×14” SEF, $7^1/_4$”×$10^1/_2$” LEF/ SEF: 65 sheets ▪ Mixed paper sizes 65 sheets(A3 SEF/A4 LEF, B4 SEF/B5 LEF, 11”×17” SEF/$8^1/_2$”×11” LEF) * Up to 80g/m^2, no folding (Normal Paper) ▪ Z-folding 5 sheets (80 - 105g/m^2) ▪ 8 sheets (52 - 80g/m^2) When Z-folded paper and other paper are mixed, 1 sheet without Z-folding 8 sheets (52 to 80 g/m^2), 13 sheets (80 to 105 g/m^2) is upper limit

Item		Specification
Corner stapling specifications	Tray capacity after stapling (Normal Paper)	▪ A4 LEF, $8^1/_2$”×11” LEF: 13 to 65 stapled sheets, 150 to 30 sets, 2 to 12 sheets 150 sets ▪ Other paper sizes: 10 to 65 stapled sheets 100 to 15 sets, 2 to 9 stapled sheets 100 sets ▪ Mixed paper sizes Mixed sizes: 2 to 65 sheets 23 sets (A3 SEF/A4 LEF, B4 SEF/B5 LEF, 11”×17” SEF/$8^1/_2$×11 LEF) * Up to 80g/m^2, no folding
	Staple paper thickness	52.3 to 105.0g/m^2 * A4 LT cover sheets (up to 256g/m^2)1 to 2 mixed bundles possible
	Stapling positions	Rear, front, rear oblique, left edge (x2), top edge (x2)
Booklet stapling specifications	Booklet staple stack size	20 sheets (Normal Paper) * Less than 80g/m^2
	Booklet staple paper sizes	A3 SEF, A4 SEF, B4 SEF, B5 SEF, 11”×17” SEF, $8^1/_2$”×14” SEF, $8^1/_2$”×11” SEF, 12”×18” SEF, 11”×15” SEF, 11”×14” SEF, 10”×15” SEF, 10”×14” SEF, 13”×18” SEF, SRA4 SEF, SRA3 SEF, Custom Sizes(W 182 to 330, L 257 to 457 However, Width range: 182, 207 to 225, 250 to 257, 279.4 to 306, 330 to 33, Length limit: B5 (257mm) or larger, up to 18 in.(457.2mm)

Item		Specification
	Booklet output tray capacity	2 to 5 sheets, 30 booklets, 6 to 10 sheets: 15 booklets, 11 to 15 sheets 10 booklets, 16 to 20 sheets 6 booklets, approximately (These estimates may vary, depending on paper type.))
	Booklet staple paper thickness	64.0 to 105.0g/m^2 Cover sheets (less than 216 g/m^2), 1 booklet, 1 cover sheet
	Booklet staple position	2 staples, centered
	Booklet folding	Center
Punch specifications	Paper size	A3 SEF, A4 LEF/ SEF, A5 LEF/ SEF, B4 SEF, B5 LEF/ SEF, 11”×17” SEF, $8^1/_2$”×14” SEF, $8^1/_2$”×11” LEF/ SEF, 8”×13” SEF, $7^1/_4$”×$10^1/_2$” LEF/ SEF, $5^1/_2$”×$8^1/_2$” LEF/ SEF, 10”×15” SEF, 10”×14” SEF, Custom Sizes
	Punch paper thickness	52.3 to 256.0g/m^2
	Punch position	2 holes
Fold specifications	Fold type	FM2: Equal Halves
	Half-fold paper sizes	A3 SEF, A4 SEF, B4 SEF, B5 SEF, 11”×17” SEF, $8^1/_2$”×14” SEF, $8^1/_2$”×11” SEF, 12”×18” SEF, 11”×15” SEF, 11”×14” SEF, 10”×15” SEF, 10”×14” SEF, 13”×18” SEF, SRA4 SEF, SRA3 SEF
	Half-fold paper thickness	64.0 to 105.0 g/m^2 Cover sheets (less than 216 g/m^2), 1 booklet, 1 cover sheet

Item		Specification
	Multi-sheet fold paper sizes	A3 SEF, A4 SEF, B4 SEF, B5 SEF, 11”×17” SEF, $8^1/_2$”×14” SEF, $8^1/_2$”×11” SEF, 12”×18” SEF, 11”×15” SEF, 11”×14” SEF, 10”×15” SEF, 10”×14” SEF, 13”×18” SEF, SRA4
	Multi-sheet fold paper thickness	64.0 to 105.0g/m^2
Max. power consumption		67 W (supplied from main machine: DC24V +10% -5%)
Dimensions (w x d x h)		657×730×980 mm (26 x 29 x 39 in.)
Weight		Approximately 61kg (90 lb.)

Paper Specifications

Size	Normal	Thin (52-59)	Norm 1 (60-74)	Norm 2 (75-81)	Med Thk (82-105)	Thk 1 (160-169)	Thk 2 (170-220)	Thk 3 (221-256)	Thk 4 (257-300)
A3 SEF	◎	◎	◎	◎	◎	●	●	△	▲
B4 SEF	◎	◎	◎	◎	◎	●	●	△	▲
A4 SEF	◎	◎	◎	◎	◎	●	●	△	▲
A4 LEF	■	■	■	■	■	●	●	△	▲
B5 SEF	◎	◎	◎	◎	◎	●	●	△	▲
B5 LEF	■	■	■	■	■	●	●	△	▲
A5 SEF	●	●	●	●	●	●	●	△	▲
A5 LEF	●	●	●	●	●	●	●	△	▲
B6 SEF	◇	◇	◇	◇	◇	◇	◇	▲	▲
A6 SEF	◇	◇	◇	◇	◇	◇	◇	▲	▲
13”×19.2” SEF	-	◇	◇	◇	◇	◇	◇	▲	▲
12”×18” SEF	-	◇	◇	◇	◇	◇	◇	▲	▲
12.6”×17.7”(SRA3) SEF	-	◇	◇	◇	◇	◇	◇	▲	▲
11”×17” SEF	-	◎	◎	◎	◎	●	●	△	▲
8 1/2”×14” SEF	-	◎	◎	◎	◎	●	●	△	▲
8 1/2”×11” SEF	-	◎	◎	◎	◎	●	●	△	▲
$8^1/_2$”×11” LEF	-	■	■	■	■	●	●	△	▲
$5^1/_2$”×$8^1/_2$” SEF	-	●	●	●	●	●	●	△	▲
$5^1/_2$”×$8^1/_2$” LEF	-	◇	◇	◇	◇	◇	◇	▲	▲

Here is the key for the symbols.

◎ Corner stapling, booklet stapling, paper shift, proof tray, punching possible
○ Booklet stapling, shift tray, proof tray
■ Corner stapling, shift tray, proof tray, punching possible
● Shift tray, proof tray, punching possible
△ Shift tray, punching possible
◇ Shift tray, proof tray possible
▲ Shift tray possible
x Cannot be used
▪ Incompatible

	Color	Translucent	Label SA	Postcard	Transparencies
A3 SEF	●	△	-	-	-
B4 SEF	●	△	△	-	-
A4 SEF	●	△	△	△	△
A4 LEF	◎	△	△	△	△
B5 SEF	●	△	-	-	△
B5 LEF	◎	△	-	-	△
A5 SEF	-	-	-	-	-
A5 LEF	-	-	-	-	-
B6 SEF	-	-	-	-	-
B6 LEF	-	-	-	-	-
12”×18” SEF	●*1	-	-	-	-
11”×17” SEF	●	△	-	-	-
8 1/2”×14” SEF	●	△	-	-	-
8 1/2”×11” SEF	●	△	-	-	-
$8^1/_2$”×11” LEF	◎	△	-	-	-
$5^1/_2$”×$8^1/_2$” SEF	-	-	-	-	-

	Color	Translucent	Label SA	Postcard	Transparencies
$5^1/_2$"×$8^1/_2$" LEF	-	-	-	-	-

*1 No corner stapling

Here is the key for the symbols.

◎ Corner stapling, booklet stapling, paper shift, proof tray, punching possible

● Shift tray, proof tray, punching possible

○ Booklet stapling, shift tray, proof tray

△ Shift tray, punching possible

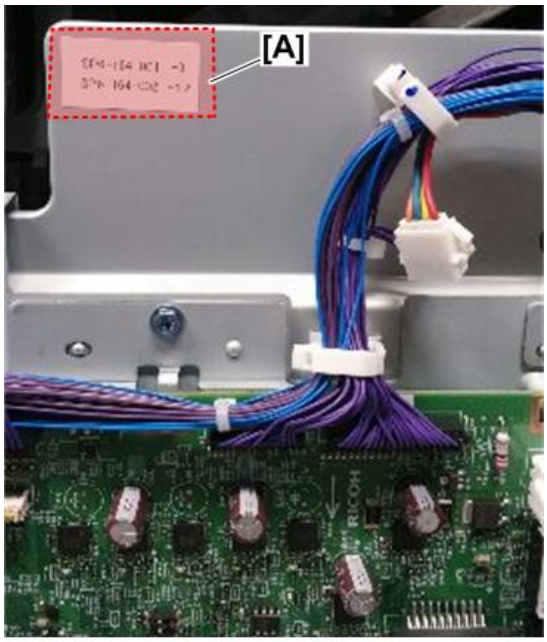
◇ Shift tray, proof tray possible

x Cannot be used

▪ Incompatible

2.1.2 LAYOUT

General Layout



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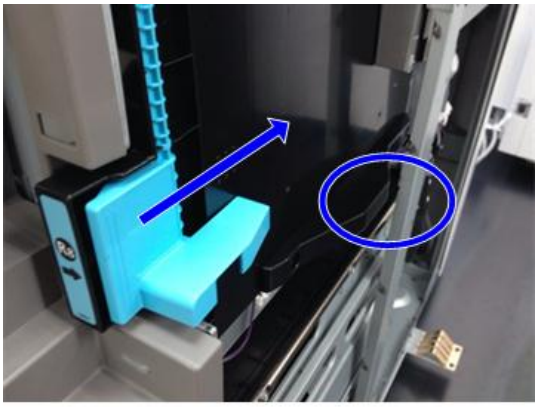
No.	Name	No.	Name
1	Punch Units	5	Corner Stapler
2	Side-to-Side Fold Roller	6	Shift Tray
3	Booklet Stapler	7	Proof Tray
4	Booklet Staple Tray	-	-

Note

- When pushing the booklet stapler unit into the finisher, make sure that the unit is against the frame, as shown in the blue circle, and that jam release lever R8 is closed completely.



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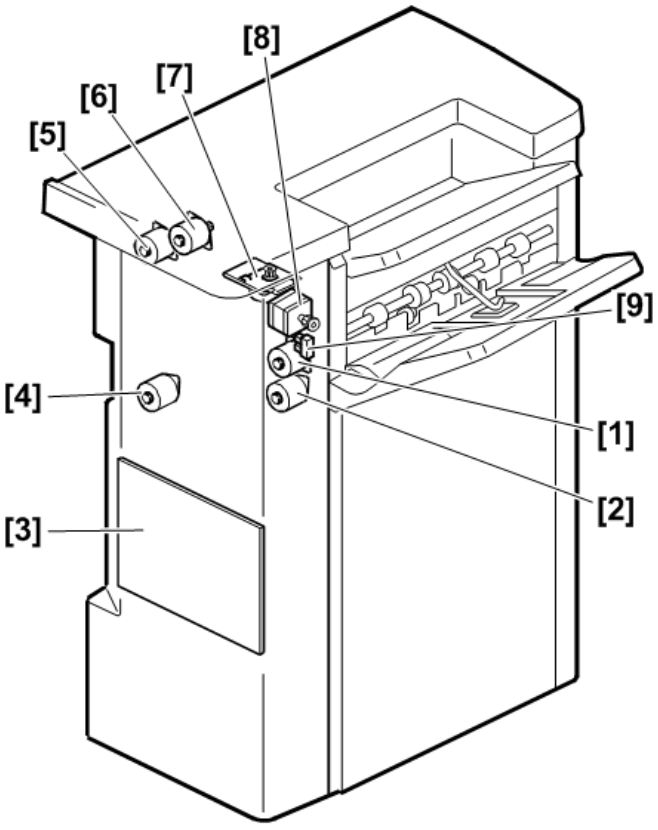
Electrical Component Layout



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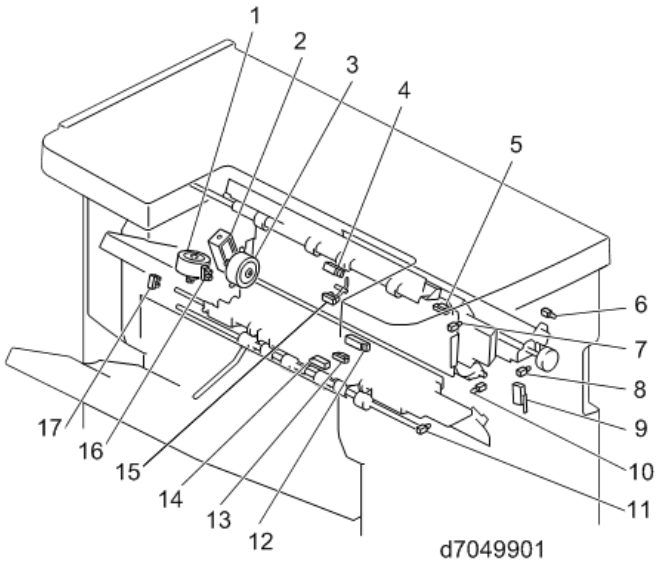
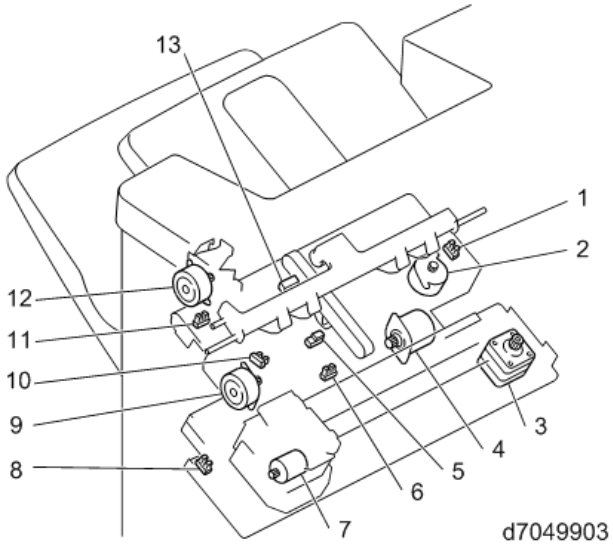
No.	Part
1	Exit Motor
2	Transport Motor
3	Main Control Board
4	Pre-stack Transport Motor

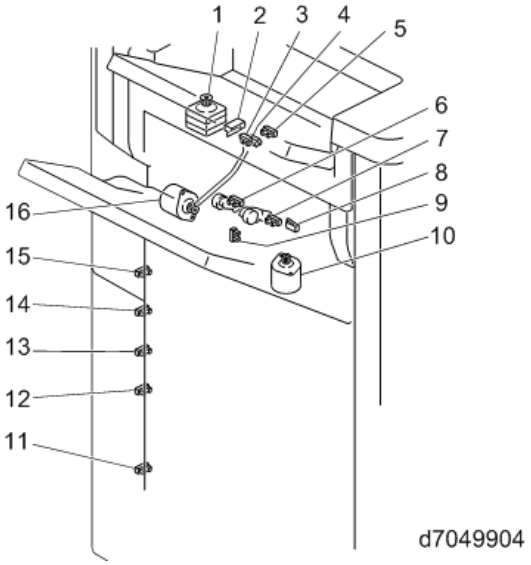
No.	Part
5	Entrance Transport Motor
6	Horizontal Transport Motor
7	Tray Lift Motor
8	Paper Guide Motor
9	Paper Guide HP Sensor



No.	Part	No.	Part
1	Shift Motor	10	LED 3
2	Upper Junction Gate Solenoid	11	LED 2
3	Lower Junction Gate Motor	12	Horizontal Transport Sensor
4	Proof Tray Full Sensor	13	Switchback Transport Sensor
5	Entrance Sensor	14	Transport Path Paper Sensor
6	LED 5	15	Proof Tray Exit Sensor
7	LED 1	16	Lower Junction Gate JP Sensor
8	LED 4	17	Shift Roller HP Sensor
9	Front Door Switch		

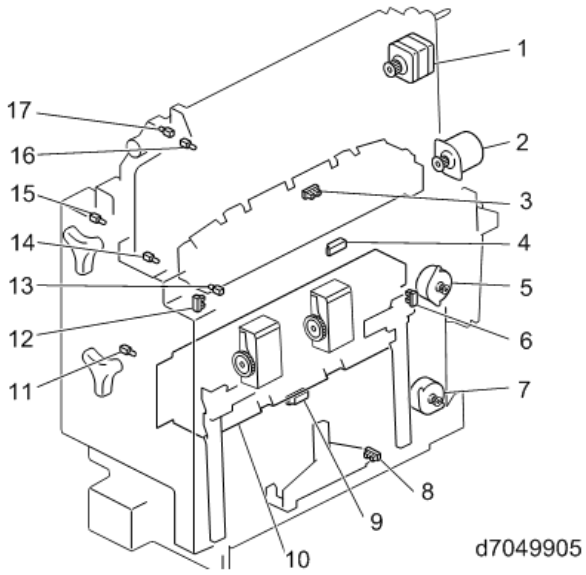


No.	Part	No.	Part
1	Jogger Fence HP Sensor	8	Stapler Move HP Sensor
2	Jogger Motor	9	Leading Edge Guide Motor
3	Corner Stapler Movement Motor	10	Leading Edge Guide HP Sensor
4	Feed-out belt motor	11	Positioning Roller HP Sensor
5	Staple Tray Paper Sensor	12	Positioning Roller Motor
6	Feed-out Belt HP Sensor	13	Shift Tray Exit Sensor
7	Corner Stapler Motor		

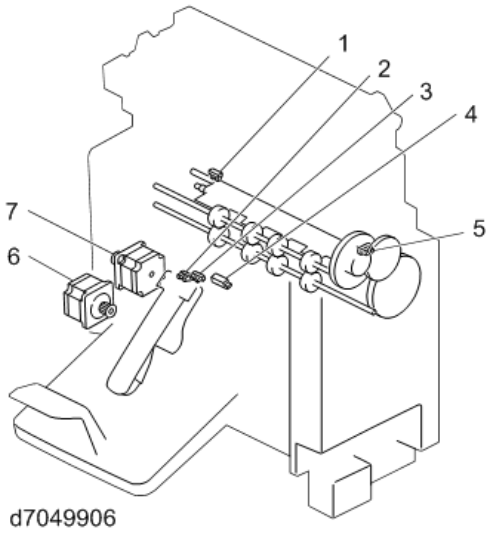


No.	Part	No.	Part
1	Paper Exit Guide Plate Motor	9	Return Roller HP Sensor
2	Paper Exit Guide Plate Limit Switch	10	Return Roller Motor
3	Booklet Stack Height Sensor 1	11	Shift Tray Lower Limit Sensor 5
4	Booklet Stack Height Sensor 2	12	Shift Tray Lower Limit Sensor 4
5	Exit Guide Plate HP Sensor	13	Shift Tray Lower Limit Sensor 3
6	Trailing Edge Press HP Sensor	14	Shift Tray Lower Limit Sensor 2
7	Shift Paper Height Sensor	15	Shift Tray Lower Limit Sensor 1
8	Upper Tray Height Limit Switch	16	Trailing Edge Press Motor

Booklet Finisher SR4130 Electrical Components

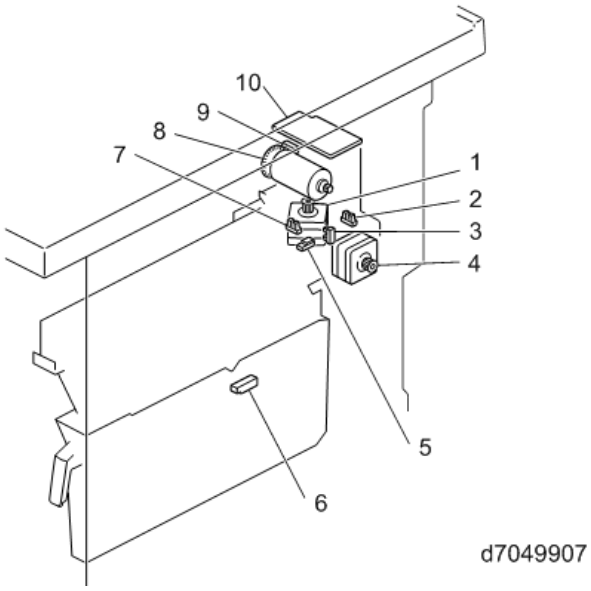


No.	Part	No.	Part
1	Booklet Jogging Pawl Movement Motor	10	Booklet Stapler Motor
2	Dynamic Roller Transport Motor	11	Booklet LED 1
3	Booklet Jogging Pawl HP Sensor	12	Booklet Guide Plate Sensor
4	Booklet Upper Transport Path Stack Sensor	13	Booklet LED 2
5	Booklet Jogger Motor	14	Booklet LED 3
6	Booklet Jogging HP Sensor	15	Booklet LED 4
7	Booklet Bottom Fence Motor	16	Booklet LED 5
8	Booklet Trailing Edge Bottom Fence HP Sensor	17	Booklet LED 6
9	Booklet Lower Transport Path Stack Sensor		



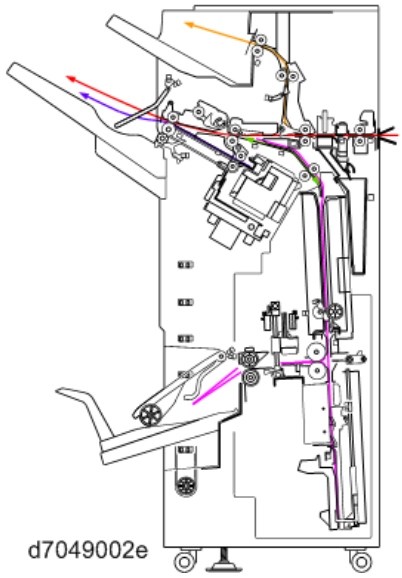
No.	Part
1	Fold Plate HP Sensor
2	Booklet Tray Full Sensor 2
3	Booklet Tray Full Sensor 1
4	Booklet Exit Sensor 1
5	Fold Plate Cam HP Sensor
6	Fold Transport Motor
7	Press Fold Motor

Punch Units



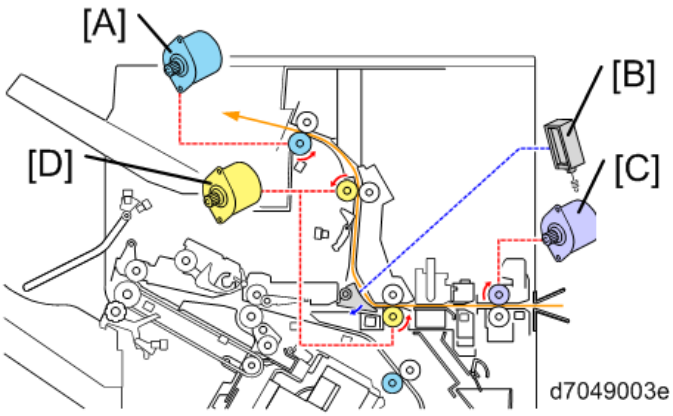
No.	Part
1	Punch Movement Motor
2	Punch Unit HP Sensor
3	Punch Registration HP Sensor
4	Punch Registration Motor
5	Punch Registration Sensor
6	Punchout Hopper Full Sensor
7	Punch HP Sensor
8	Punch Motor
9	Punch Motor Rotation Sensor
10	Punch Unit Control Board

Transport Layout



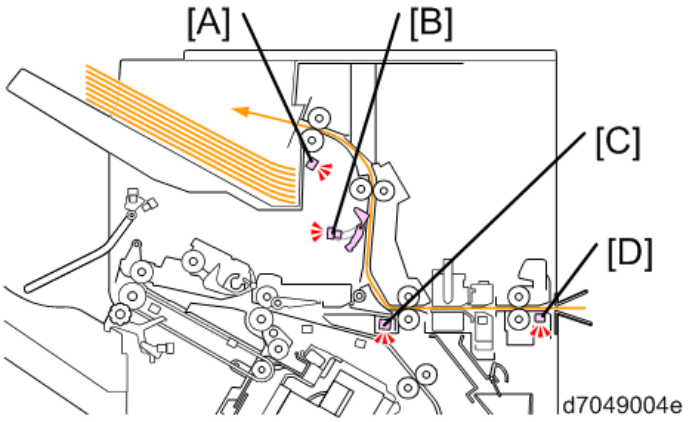
Red	Straight Through Path
Orange	Proof Path
Green	Pre-stack Path
Purple	Corner Staple Path
Pink	Booklet Staple Path

Proof Transport Layout (Drive)



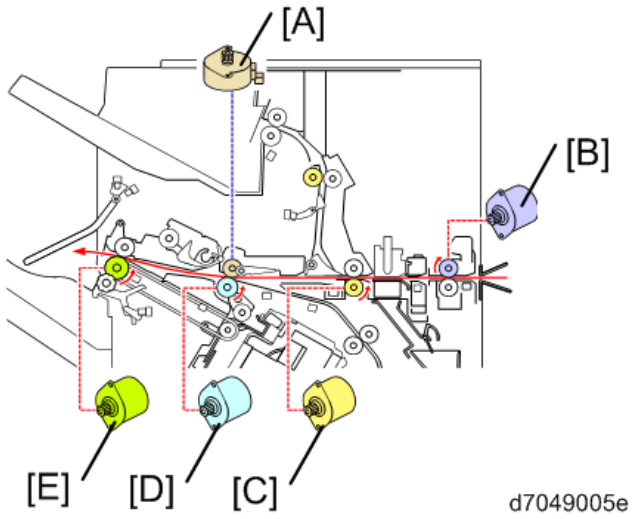
No.	Name
A	Proof Exit Motor
B	Junction Gate Solenoid
C	Entrance Transport Motor
D	Horizontal Transport Motor

Proof Transport Layout (Sensor)



No.	Name
A	Proof Tray Full Sensor
B	Proof Exit Sensor
C	Horizontal Transport Sensor
D	Entrance Sensor

Shift Transport Layout (Drive)

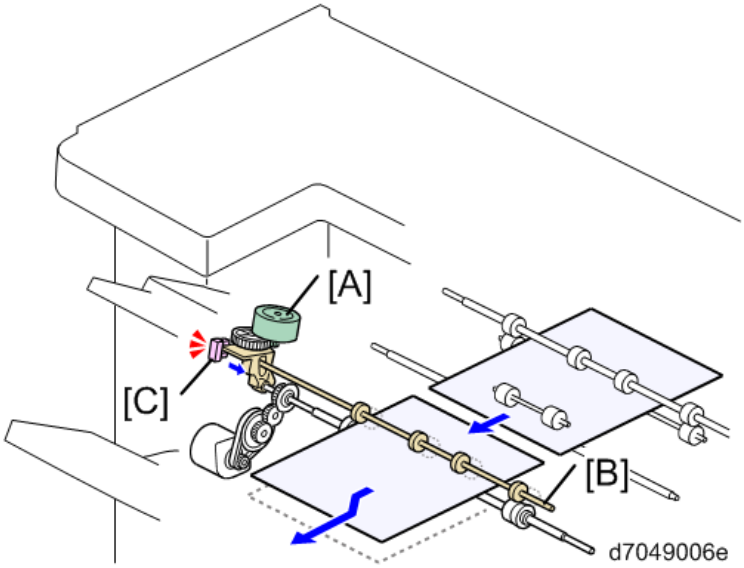


No.	Name
A	Shift Roller Motor (shift only)
B	Entrance Transport Motor
C	Horizontal Transport Motor
D	Relay Transport Motor
E	Upper Tray Exit Motor

2.2 OPERATION DETAILS

2.2.1 SHIFT OPERATION (SHIFT TRANSPORT)

To output paper, the shift roller motor [A] moves the shift roller [B] side-to-side while a transport operation (the shift roller is driven). The shift roller HP sensor [C] is used to control this mechanism.

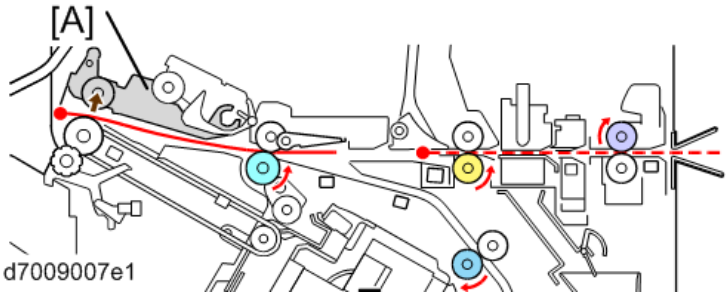


2.2.2 PRE-STACK OPERATION (IN CORNER STAPLING)

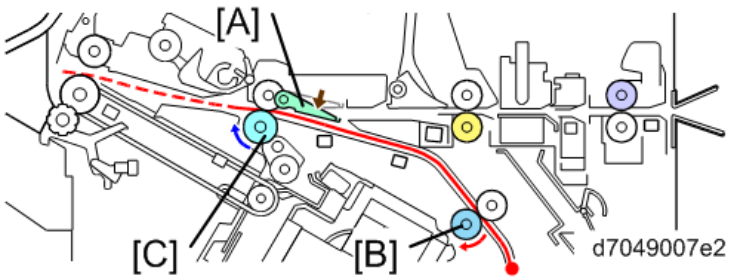
- **Pre-stack Capacity:** 1 sheet
- **Pre-stack Size:** A4 SEF/LEF, B5 SEF/LEF, LT SEF/LEF

There are four steps as follows:

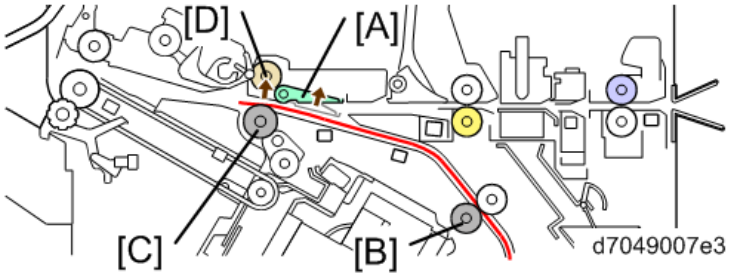
1. The upper tray exit guide plate [A] shifts up (open). Paper comes through the entrance transport path and reaches the relay transport path.



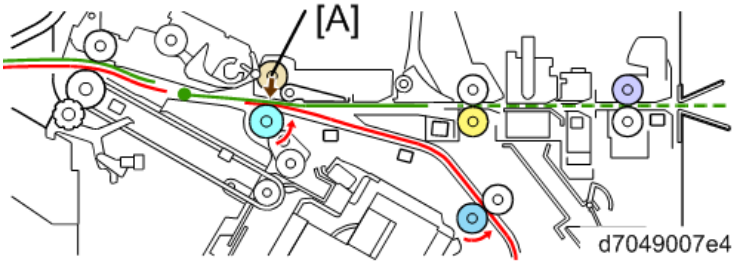
2. After paper passes by the pre-stack junction gate [A], the pre-stack junction gate [A] shifts down (closed) and the relay transport roller [C] rotates in reverse. The pre-stack roller [B] rotates to transport paper to the pre-stack position.



3. The rotation of the relay transport roller [C] and the pre-stack roller [B] stops, and the pre-stack junction gate [A] shifts up (open). The shift roller [D] also shifts up to release the pressure between itself [D] and the relay transport roller [C].



4. The following paper comes through the entrance and reaches the relay transport path. After that, the shift roller [A] that stays in the upper position drops in order to press pre-stacked paper and the following paper. Then with pre-stacked paper, the following paper goes to the next process (corner staple part).

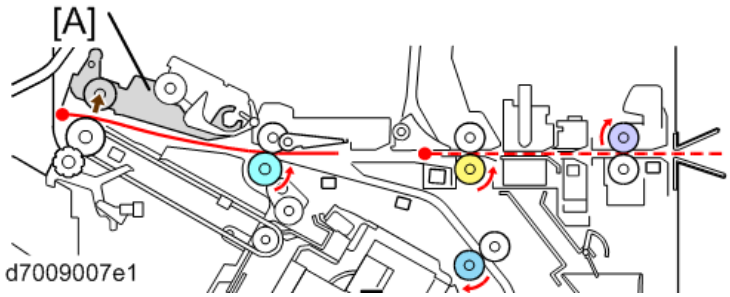


2.2.3 PRE-STACK OPERATION (BOOKLET STAPLING)

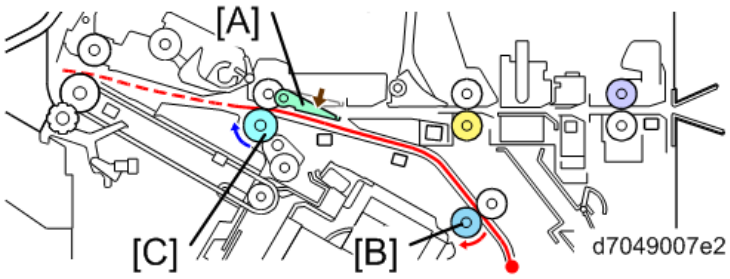
- **Pre-stack Capacity:** 2 sheet
- **Pre-stack Size:** All Sizes

There are five steps as follows:

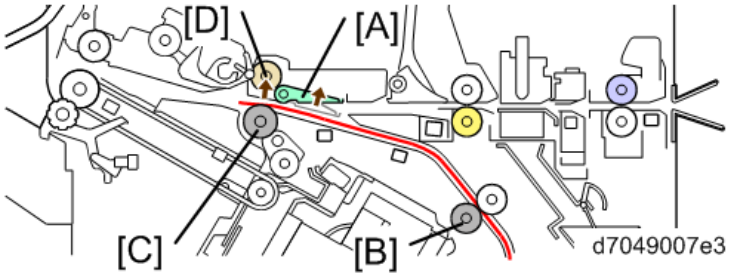
1. The upper tray exit guide plate [A] shifts up (open). Paper comes through the entrance transport and reaches the relay transport path.



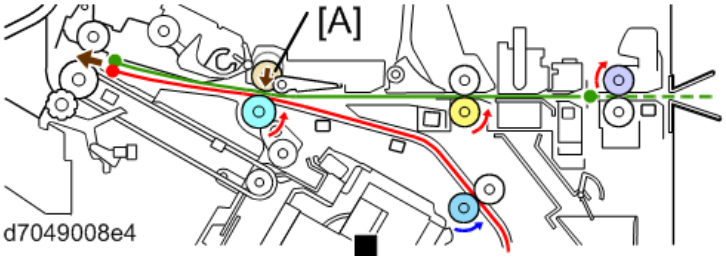
2. The pre-stack junction gate [A] drops (closed) and the relay transport roller [C] rotates in reverse. The pre-stack roller [B] rotates to transport paper to the pre-stack position.



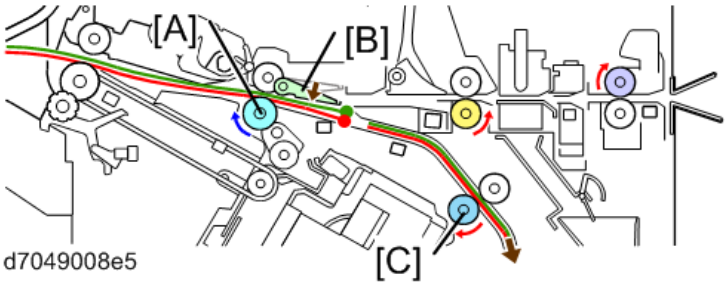
3. The rotation of the relay transport roller [C] and the pre-stack roller [B] stops, and the pre-stack junction gate [A] shifts up (open). The shift roller [D] shifts up to release the pressure between itself [D] and the relay transport roller [C].



4. The following paper comes thorough the entrance and reaches the relay transport path. After that the shift roller [A] that stays in the upper position drops to press pre-stacked paper and the following paper. With pre-stacked paper, the following paper goes toward the rest of the path (not passes through completely).



5. The pre-stack junction gate [B] drops (closed) again and the relay transport roller [A] rotates in reverse and the pre-stack roller [C] rotates to send doubled paper (pre-stacked paper and the following paper) to the booklet staple path.



2.2.4 UPPER TRAY SHIFT DRIVE / LIMIT SENSOR / FULL SENSOR

Upper Tray Shift Up/down

The upper tray lift motor [A] moves the upper tray up/down.

Upper-position Detection

With the actuator, the limit sensor [B] detects the upper position of the tray (without output paper). To prevent too much moving upward, the forced stop switch (interlock SW) [C] is installed. When the upper tray moves up to the upper position but doesn't stop, the forced stop switch is pushed and the tray shift motor [A] stops forcedly.

Upper Tray Full Detection

Condition 1

Five full sensors [D] are installed on the rear side of the machine. The state of those sensors [D] that are interrupted determines the full state.

The finishers are equipped with 5 sensors to detect when the tray is full.

SR4130: Three sensors to detect 500, 1000, 2000 sheets

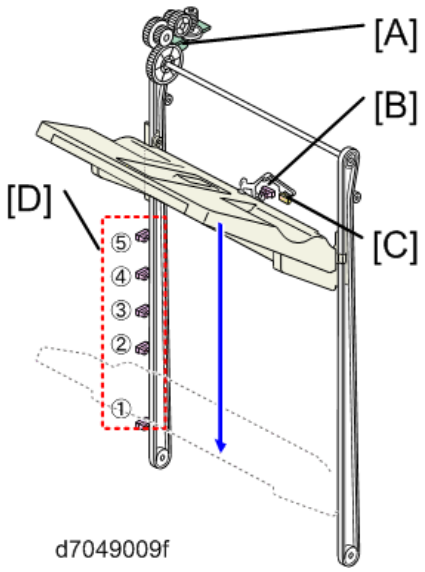
SR4120: Three sensors to detect 500, 1500, 3000 sheets

Booklet Finisher SR4130

Detect	Sensors	Paper Size	Length
500 sheet full	Shift Tray Lower Limit Sensor 5	A5 SEF,A5 LEF, B6 SEF,HLT LEF, A6 SEF	148 to 182 mm
1,000 sheet full	Shift Tray Lower Limit Sensor 4	A3 .SEF, A4. SEF, B4 SEF, B5 SEF, B5 LEF, DLT SEF, LG, SEF, LT SEF, 12"x18" SEF, SRA3,13"x19.2" SEF	182 to 488 mm
2,000 sheet full	Shift Tray Lower Limit Sensor 2	A4 LEF, LT LEF	

Finisher SR4120

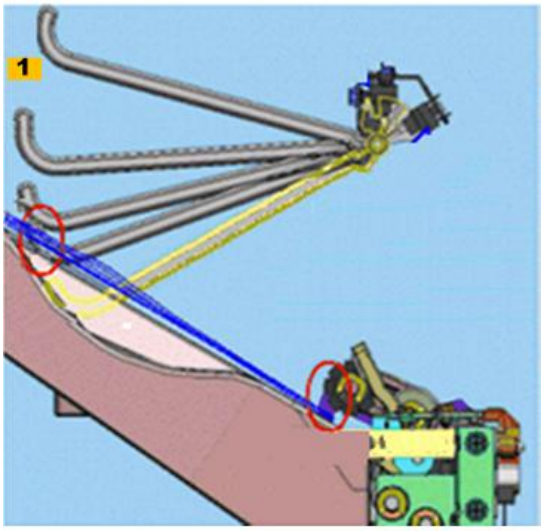
Detect	Sensors	Paper Size	Length
500 sheet full	Shift Tray Lower Limit Sensor 5	A5 SEF, A5 LEF, B6 SEF, HLT SEF, A6 SEF	148 to 182 mm
1,500 sheet full	Shift Tray Lower Limit Sensor 3	A3 SEF, A4 SEF, B4 SEF, B5 SEF, B5 LEF, DLT SEF, LG SEF, LT SEF, 12"x18" SEF, SRA3 SEF, 13"x19.2" SEF	182 to 488 mm
3,000 sheet full	Shift Tray Lower Limit Sensor 1	A4 LEF, LT LEF	



Condition 2

When the feeler is pushed up as far as "1", and remains there for 13 sec., the tray is detected full.

The purpose is to accurately detect “tray full” for stacks of Z-folded paper, or poorly stacked documents.



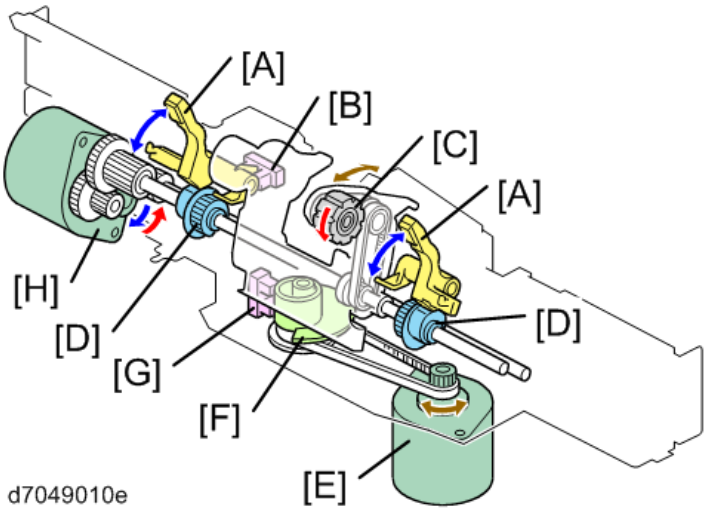
d3cgc3014

Condition 3

Shift tray detection input check: SP6123-35 is normally set to "0" (default), tray not full.

2.2.5 PULL-IN ROLLER / PAPER STACK HOLDER

Components

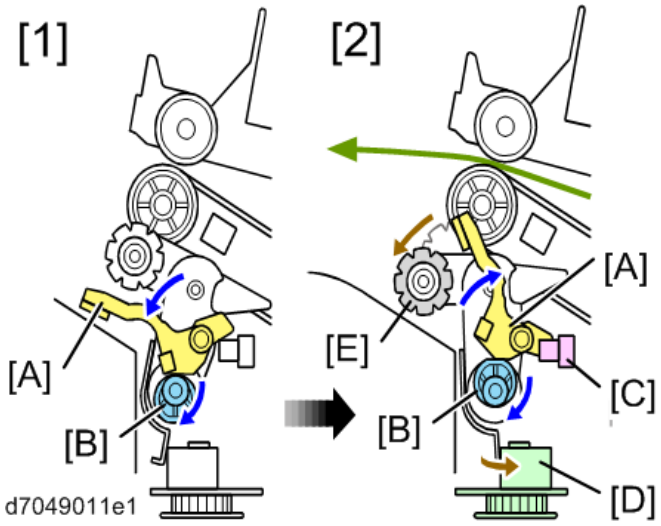


No.	Name	No.	Name
A	Paper Stacking Holder	E	Stacking Sponge Roller Fluctuation Motor
B	Holder HP Sensor	F	Stacking Sponge Roller Cam
C	Stacking Sponge Roller	G	Stacking Sponge Roller HP Sensor
D	Paper Stacking Holder Cam	H	Paper Stacking Holder Motor

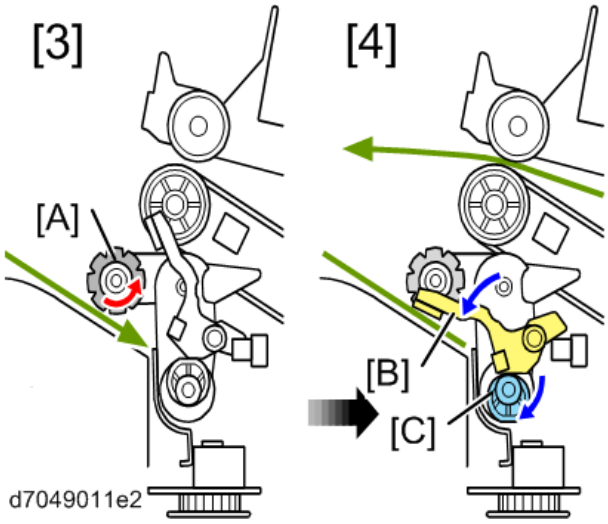
Operation

There are five steps in the operation:

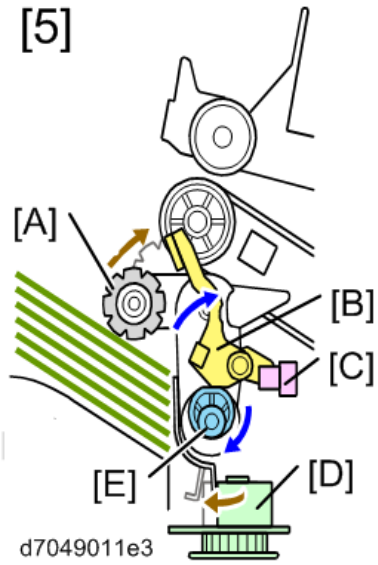
1. When a job starts, the paper stacking holder motor rotates the paper stacking holder cam [B] to shift the paper stacking holder [A] down.
2. The stacking sponge roller fluctuation motor rotates the stacking sponge roller cam [D] to move the stacking sponge roller [E] down. The paper stacking holder motor rotates the paper stacking holder cam [B] to lift the paper stacking holder [A] up to its HP (until the paper stacking holder interrupts the paper stacking holder HP sensor [C]).



3. The paper stacking holder motor drives in reverse to let the stacking sponge roller [A] pull output paper in.
4. The paper stacking holder motor rotates the paper stacking holder cam [C] to drop the paper stacking holder [B] down (until a job end, the machine repeats step3 and step4).

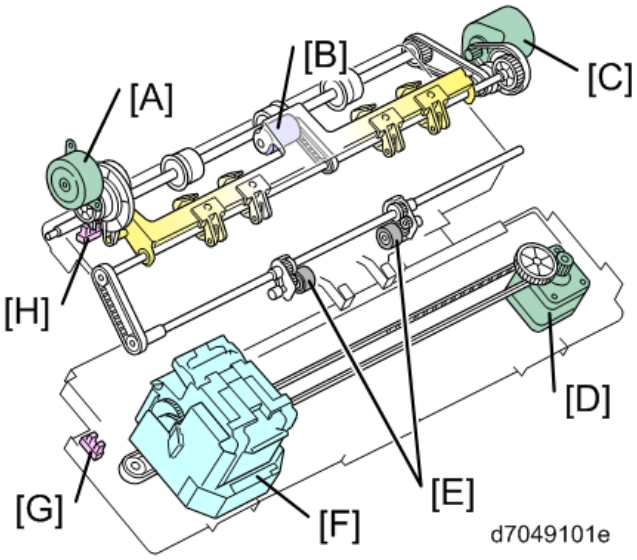


5. After a job end, the stacking sponge fluctuation motor rotates the stacking sponge roller cam [D] to lift the stacking sponge roller [A] up to its HP position. At the same time, the paper stacking holder motor rotates the holder cam [E] to lift the paper stacking holder [B] up to its HP (until the paper stacking holder HP sensor [C] detects the end of the paper stacking holder [B]).

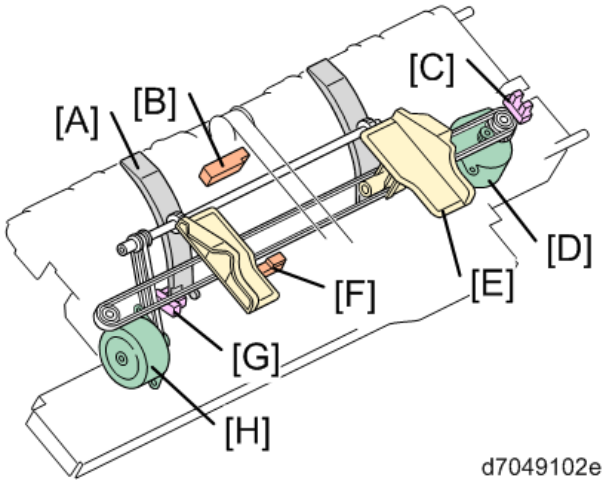


2.2.6 CORNER STAPLING

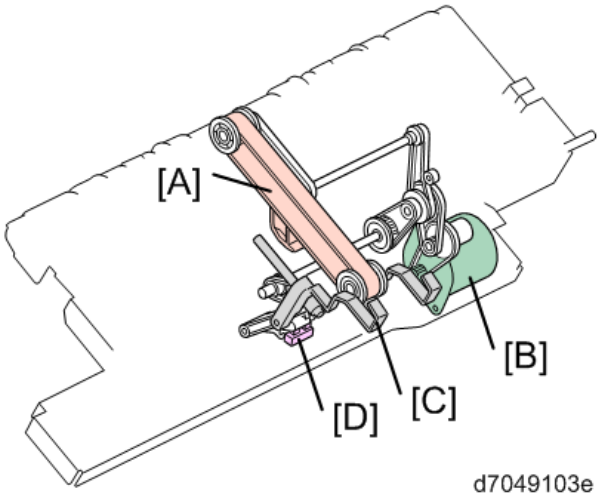
Components



No.	Name	No.	Name
A	Positioning Roller Lift Motor	E	Drag Roller
B	Positioning Roller	F	Stapler
C	Exit Motor	G	Stapler HP Sensor
D	Stapler Movement Motor	H	Positioning Roller HP Sensor



No.	Name	No.	Name
A	Edge Guide	E	Jogger Fence
B	Upper Tray Exit Sensor	F	Staple Tray Paper Sensor
C	Jogger HP sensor	G	Edge Guide HP Sensor
D	Jogger Motor	H	Edge Guide Motor

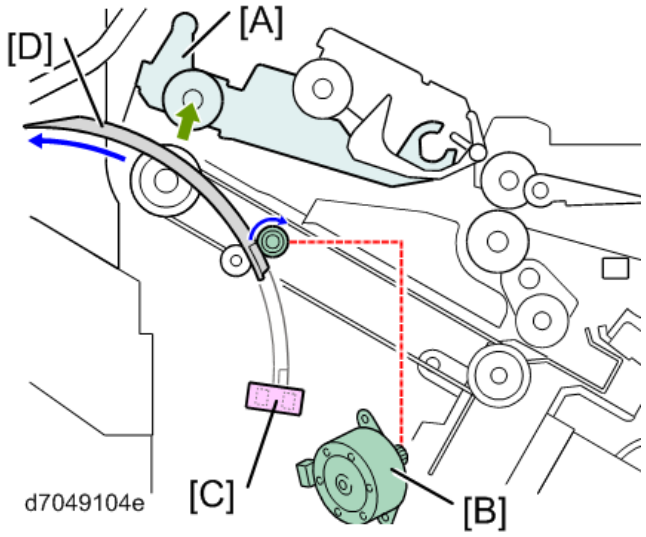


No.	Name	No.	Name
A	Stack Feed-out Belt (with stack feed-out pawl)	C	Bottom Pawl
B	Stack Feed-out Motor	D	Stack Feed-out Pawl HP

Edge Guide

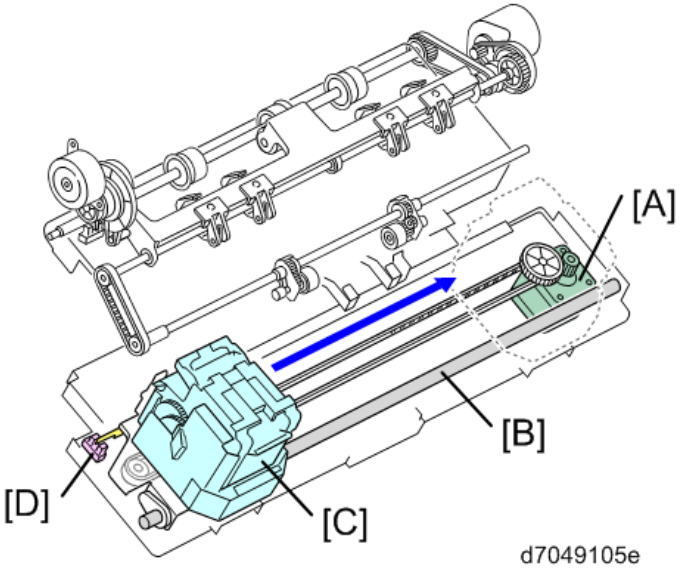
This machine applies a corner-staple to a paper stack whose body lingers out of the exit. At this time, to prevent a paper stack from dropping down to the upper tray, the edge guide [D] comes out of the unit. The edge guide operates as the following way:

1. When a job starts, the upper tray guide plate [A] shifts up.
2. The edge guide motor [B] drives to push the edge guide [D] out. The edge guide retreats to the machine when the last paper of a job is output (the edge guide HP sensor [C] detects the edge guide).



Stapler Move

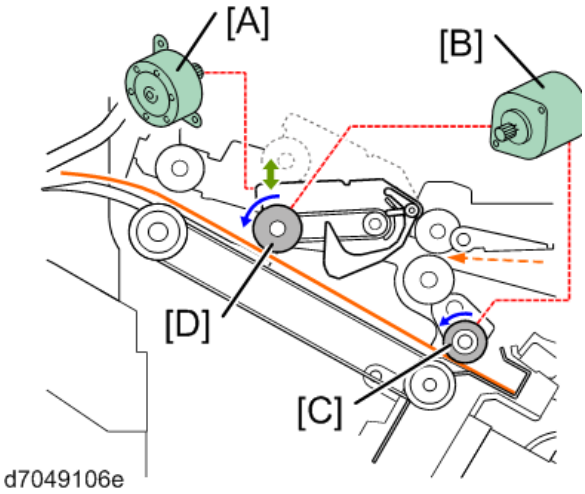
The staple movement motor [A] moves the stapler [C] along the guide rod [B]. After a job finishes, the stapler [C] returns to its HP (the stapler HP sensor [D] detects the base of the stapler).



Positioning Roller / Drag Roller

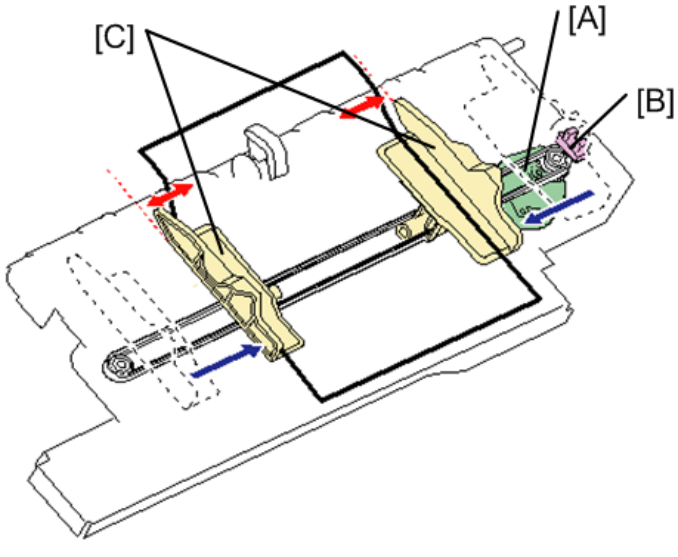
The positioning roller and drag roller operate as follows:

1. The positioning roller shift motor [A] moves the positioning roller [D] down at the start of every job.
    1. The positioning roller motor [B] rotates the positioning roller [D] to transport paper to the staple tray.
    2. The positioning roller motor [B] also rotates the drag roller [C]. The drag roller [C] is a sponge roller that pushes paper against the bottom pawl, in order to hold paper in the staple position.



Jogger

The jogger motor [A] moves the jogger fences [C] to the ready position and wait for the first sheet. As each sheet enters, the jogger fences push toward the center At the end of the job, the jogger fences return to their HP and stop. The jogger fence HP sensor [B] detects the jogger fence at the home position.

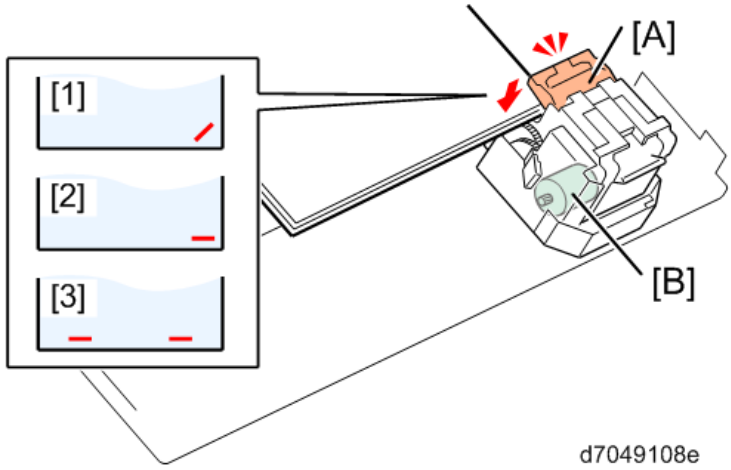


Stapling

The staple hammer motor [B] lets the staple hammer [A] down in order to staple a paper stack.

The stapling points vary as follows:

- **When oblique stapling:** [1]
- **When horizontally stapling:** [2]
- **When horizontally stapling (2 points stapling)**: [3]



Feeding-out

The bottom pawl [B] moves paper up to the proper position to output. Then the stack feed-out pawl [A] that attaches on the stack feed-out belt [C] pushes paper out. The stack feed-out motor [D] moves not only the stack feed-out pawl [A] but also the bottom pawl [B]. After an output, both of the pawls [A] [B] return to their HP.

There are two types of stack output.

1. Pawl, exit roller: Small sizes (A4, LT, B4 SEF)

Output is performed finally by the exit roller as described in the output operation described above.

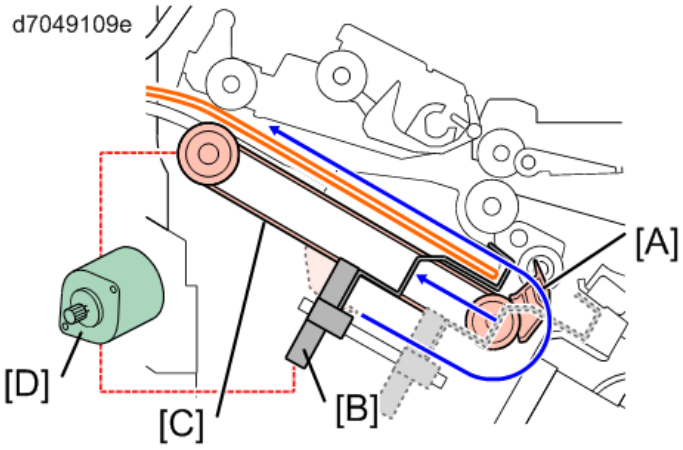
2. Roller exit: A4, LT, B5 LEF

Only the exit roller is used to perform output without using the mobile fence and output pawls.

* Large Sizes (A3, B4, LG, DLT)

1 to 10 documents: Roller output method

More than 11 documents: Pawl, roller output method



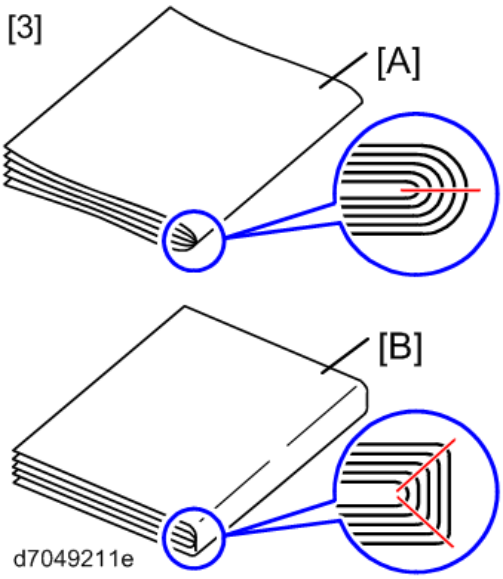
2.2.7 SADDLE STAPLING (BOOKLET STAPLING)

What is Saddle Stapling?

Compared to normal center stapling, center stapling with this finisher can reduce the bulge at the center of the booklet.

[A] Common saddle stapling

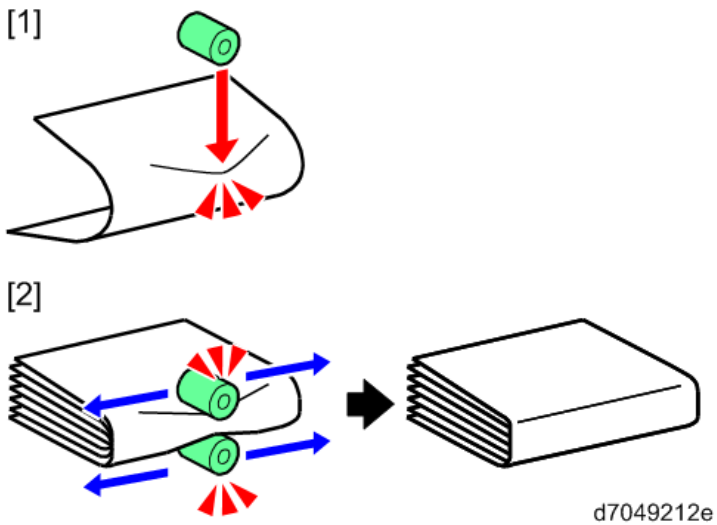
[B] Saddle stapling with this finisher



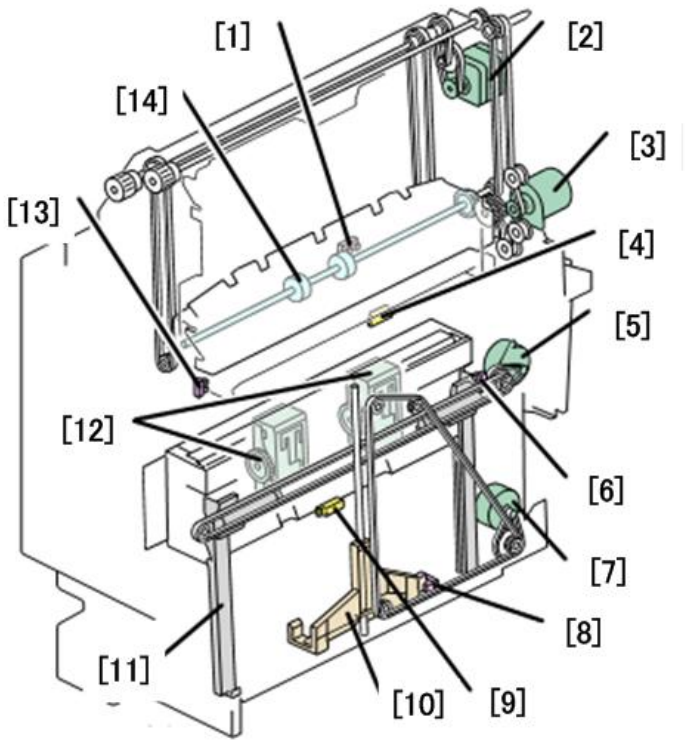
Saddle Stapling with This Finisher

Until now very heavy pressure needed to be applied in order to shape the saddle, and this could not be done unless the finisher was very large. This finisher, however, in spite of being very small, uses the device described below to achieve a better saddle shape.

- Pressure is applied to the fold with a roller to form the saddle.
- Pressure is applied while the paper is buckled at the top and bottom with two rollers to form the saddle. The rollers move front and back to strengthen the crease with two, not just one fold.



Components



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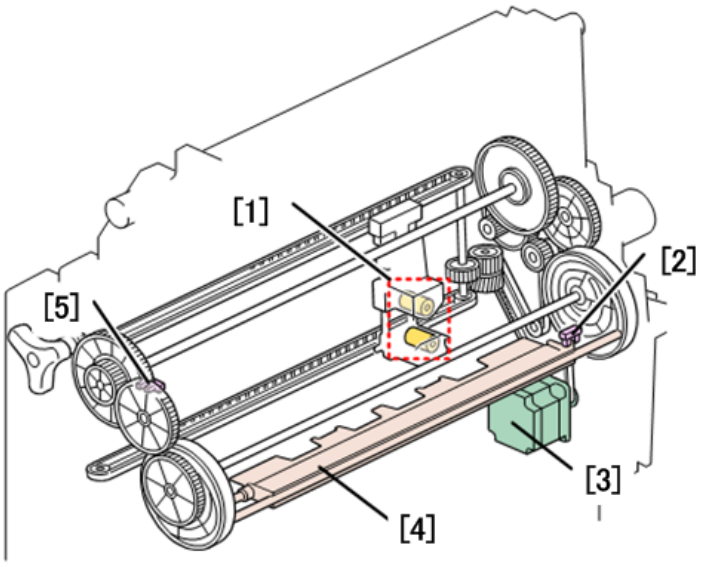
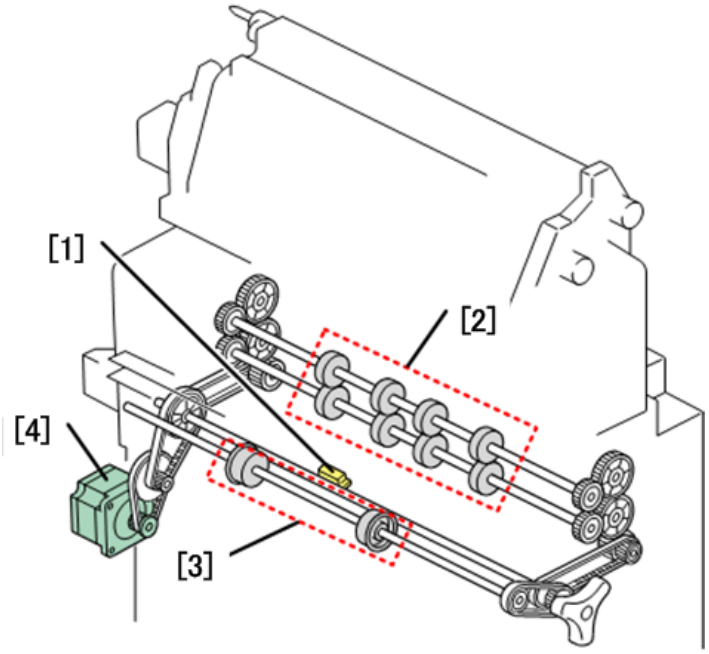
No.	Name	No.	Name
1	Stack junction Gate HP Sensor	8	Bottom Fence HP Sensor
2	Shift Roller Lift Motor	9	Booklet Lower Transport Path Paper Sensor
3	Shift Roller Drive Motor	10	Bottom Fence
4	Booklet Upper Transport Path Paper Sensor	11	Jogger Fence
5	Jogger Fence Motor	12	Booklet Stapler
6	Jogger Fence HP Sensor	13	Guide Open/Closed Sensor
7	Bottom Fence Motor	14	Shift Roller



d223d8218

No.	Name	No.	Name
1	Side-to-side Shift Fold Roller	4	Fold Plate
2	Fold Plate HP Sensor	5	Fold Plate Cam Sensor
3	Fold Plate Motor		

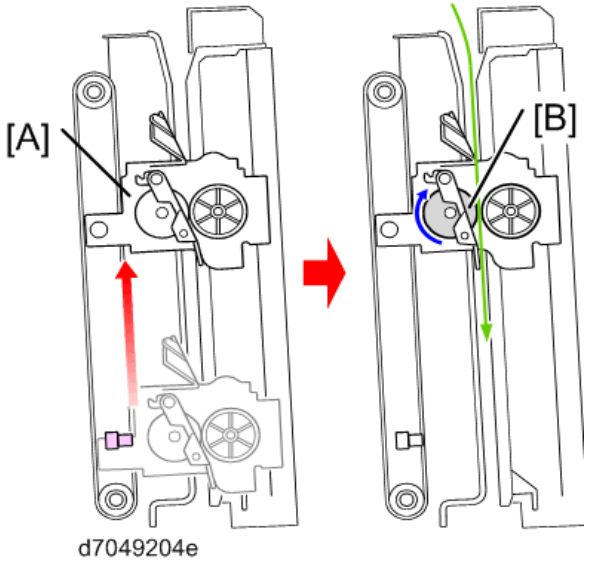


d223d8219

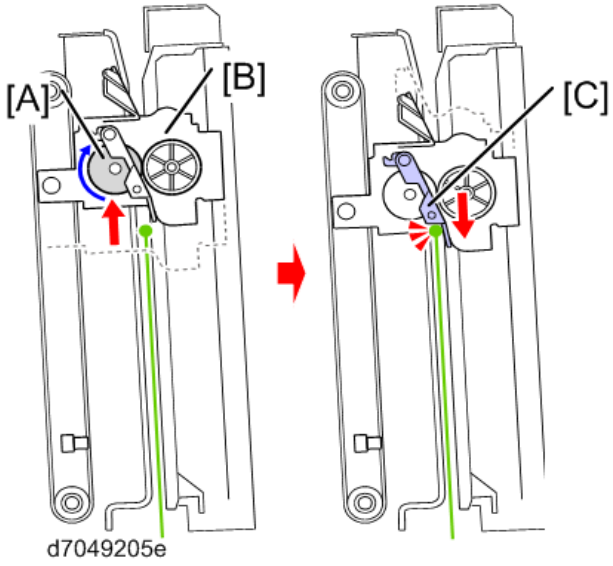
No.	Name	No.	Name
1	Fold Unit Exit Sensor	3	Fold Unit Exit Roller
2	Fold Roller	4	Fold Roller Motor

Booklet Staple Transport

When paper begins to go through the booklet staple path, the shift roller unit [A] moves up to its operating position in order to be ready to transport paper. The shift roller lift motor moves the shift roller unit [A]. The shift roller drive motor rotates the shift roller [B] to transport paper to the bottom.



After the transportation has finished, the shift roller unit [B] moves up away from the paper face. While the shift roller unit moves up, the shift roller [A] rotates to feed paper out to the bottom. Then the shift roller unit drops to bump the stack junction gate [C] onto the edge of a paper stack. With this operation, a paper stack is aligned.

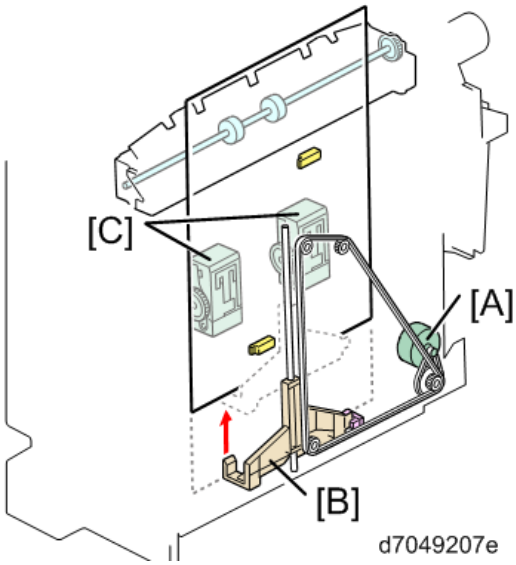


Jogger

The jogger fence motor [A] moves the jogger fences [B] in to align the sides of each page. When a job starts, the jogger fences move to the ready position (this depends on the paper size).

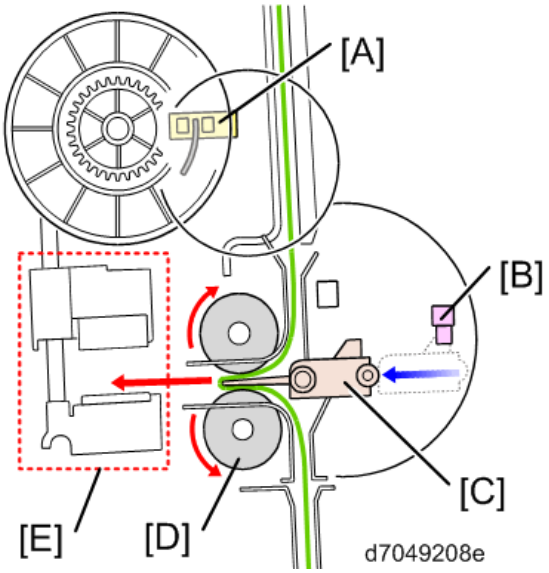
Bottom Fence Operation / Staple

Paper that is pushed with the stack junction gate bumps onto the bottom fence [B] in order to align a paper stack. Then the booklet staplers [C] staple at the middle points of the paper stack. After that, the bottom fence motor [A] moves the bottom fence [B] up to the position where a paper stack is folded with the fold plate.



Overview of Center Folding, Saddle Shaping

Fold plate [C] center folds the stack lifted to the fold position by the bottom fence with the pressure of the fold transport motor [D]. Next, the side-to-side fold roller unit [E] forms the saddle shape. The press fold motor drives both the fold plate [C] and the side-to-side fold roller [E]. This is so the fold plate [C] and side-to-side fold roller [E] can operate at the same time. [A] is the side-to-side fold unit HP sensor and [B] us the fold plate HP sensor.

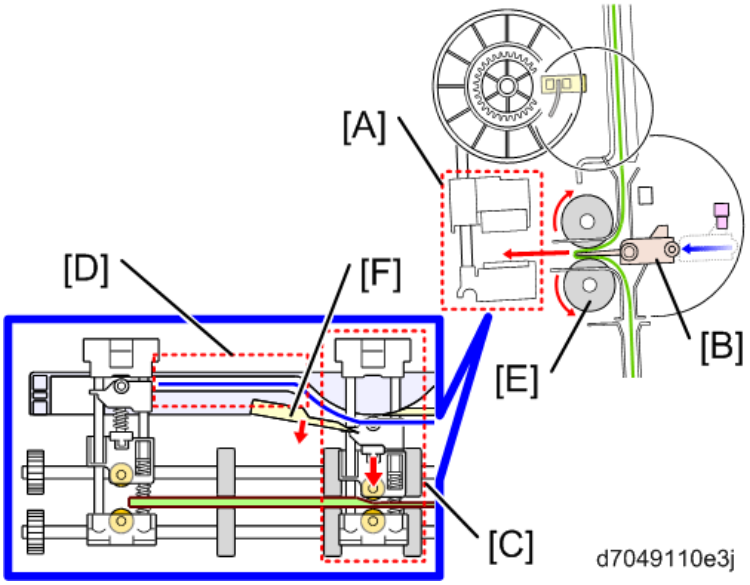


Center Folding, Saddle Shaping Operation

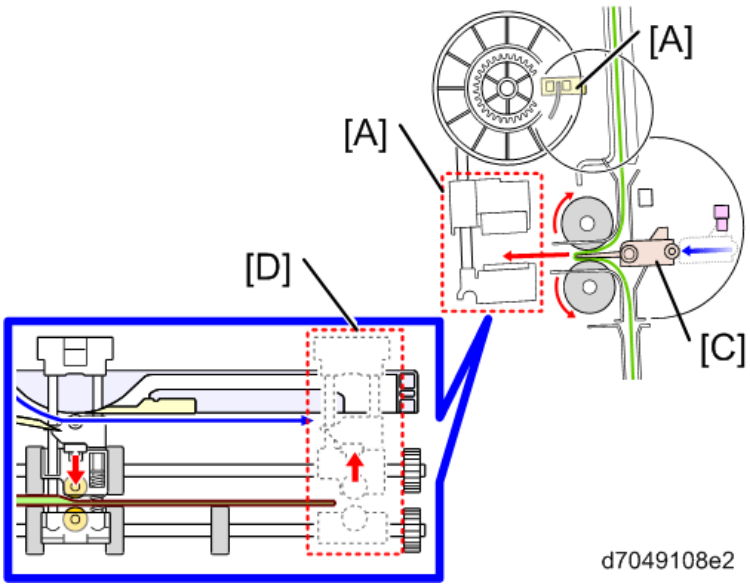
The operation of stack folding and saddle shaping is described below.

Saddle shaping alone is described below under "Saddle Shaping Operation".

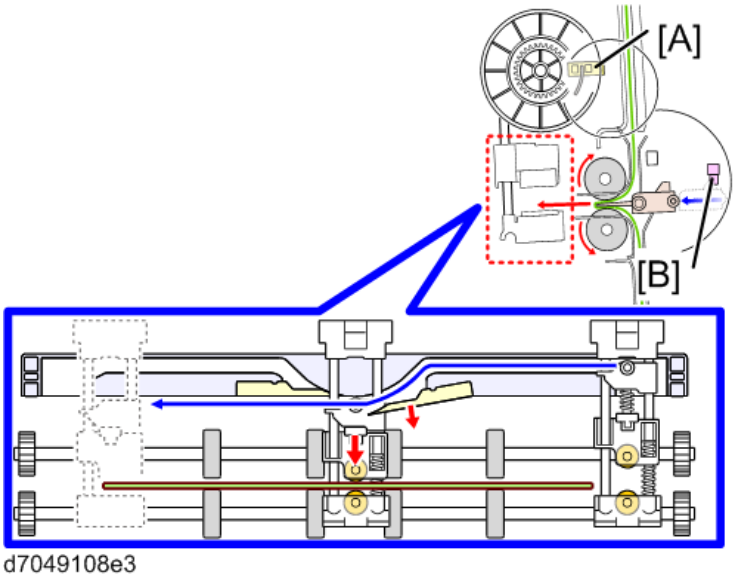
When the fold plate [B] pushes the center of the stack between the fold transport rollers [E], the side-to-side roller unit [A] slides along the upper path [D]. Next, when the fold plate [B] has pushed the center of the stack completely between the fold rollers, the upper part of the fold roller unit, while pushing out switch plate 1 [F], slides down onto the lower path. Next, the lowering of the top of the side-to-side roller unit [C] presses in the center of the stack with pressure by a large spring, and then center folding begins when the fold plate [B] pushes into the center of the stack.



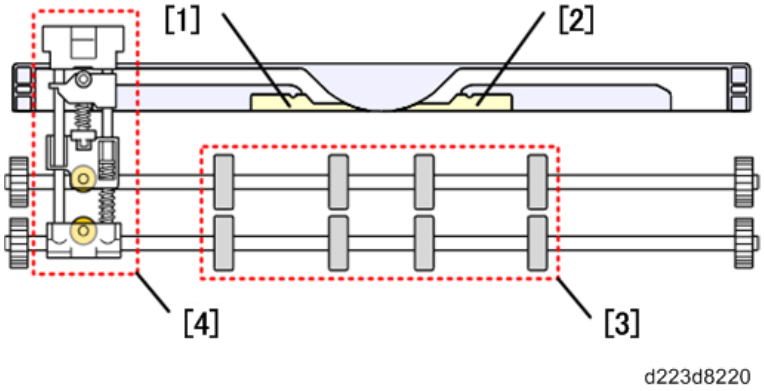
The movement of the fold plate cam stops fold plate [C] and this holds the center of the stack out in the folded position. The fold roller [B] applies pressure to the protruding stack and moves it toward the left as shown below. Next, when fold roller unit cam sensor [A] goes on twice after the cam has rotated twice, the saddle shape operation is half finished, the fold roller unit is at position [D], and then the press fold motor switches into reverse. At the same time, in the upper path the top of fold roller unit reverses on the upper, releasing pressure on the fold.



When the fold roller unit releases pressure and starts to reverse its direction, the top of the side-to-side fold roller presses on switch plate 2 which directs it down into the lower path. When pressure is applied to the remaining part of the stack, fold roller [A] returns to the home position, detected by the fold blade HP sensor [B].



Saddle Shaping Operation



No.	Name	No.	Name
1	Guide Plate 1	3	Fold Transport Roller
2	Guide Plate 2	4	Side-to-Side Fold Roller Unit

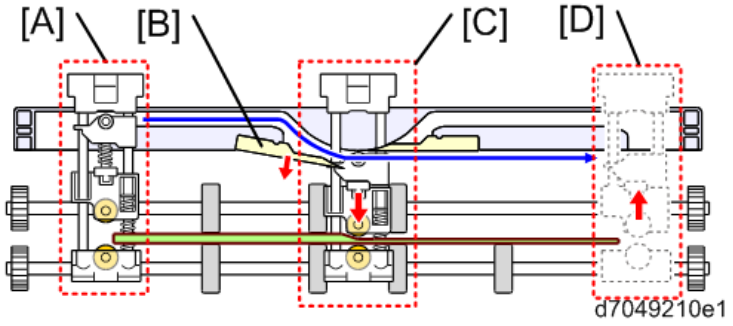
Here is a description of the saddle shaping operation.

The side-to-side fold roller unit in the center moves from [A] to [C].

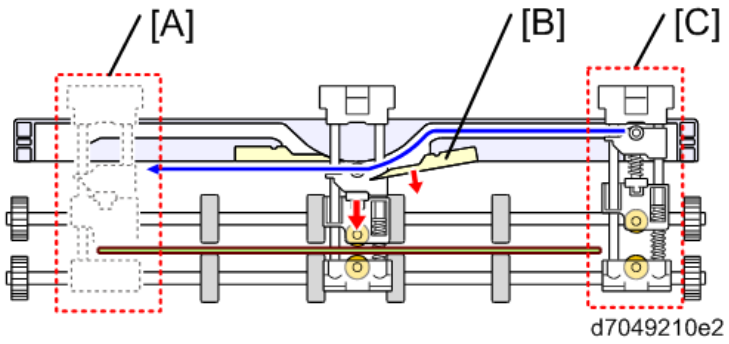
It moves along a rail when it comes to the center, the upper fold (up) descends [B], and then pressure from a large spring folds the center of the stack.

With the pressure of the side-to-side fold roller applied, the unit moves forward from [C] to [D].

When the roller moves as far as [D] the upper roller of the roller unit ascends from the lower path to the upper path, releasing the pressure on the center of the stack.

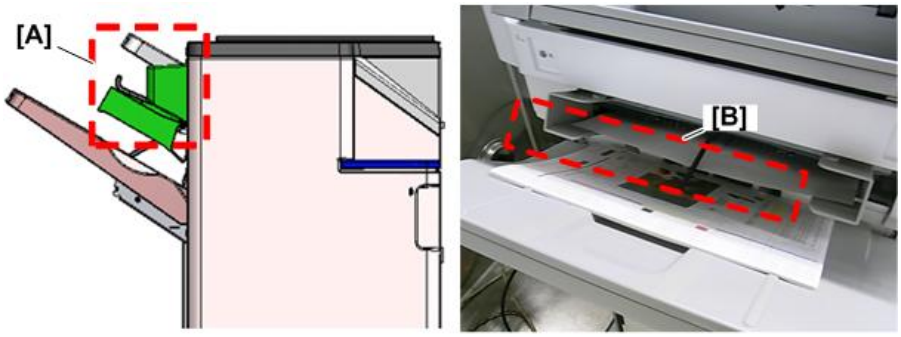


The fold plate motor reverses, and the unit increases pressure on the stack as it moves and applies creasing on the remainder of the saddle shape as it moves from [C] to [A]. When top of the side-to-side fold unit reaches the side-to-side fold unit HP sensor, the unit ascends to the upper path [B] and releases pressure on the center of the stack.



Paper Guide Unit

As each stapled copy exits the finisher it contacts the copy ahead of it already on the shift tray, and the paper guide unit prevents the copies from becoming entangled on the shift tray. This finisher is equipped with a paper guide unit [A] in order to prevent his with a paper guide motor that drives the paper guide cover to reduce the amount of curl and prevent the leading edges from curling and improve the output of stapled copies on the shift tray [B].



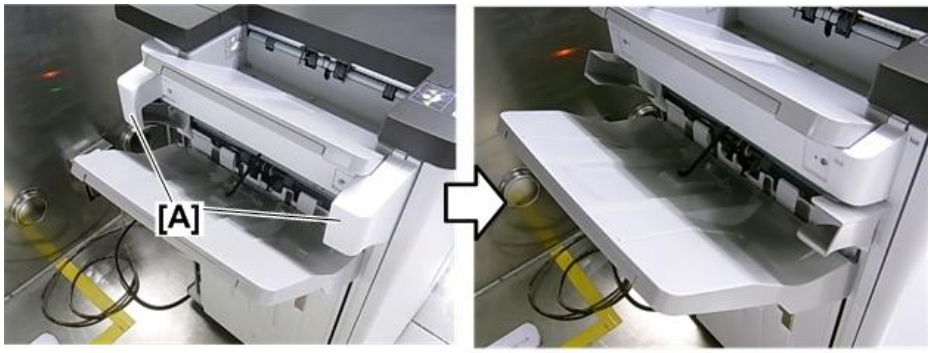
Related SP Codes

The paper guide mode for corner stapled copies does not operate for shift tray exit, booklet stapled copes, large paper sizes above 300 mm.

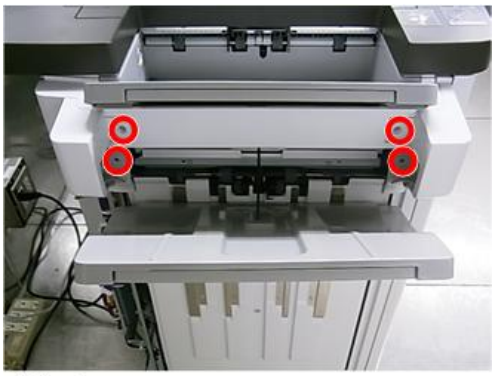
- SP6126-001 Use Paper Guide (Small sizes up to 300 mm)
- SP6125-001 Use Paper Guide (Large sizes large than 300 mm)

Paper Guide Removal

The paper guide unit is provided with the paper guide covers [A] at the initial position for uses who want to take advantage of the stacking, but these covers can be removed. (Even with the covers removed, output will be done correctly even if the paper guides touch during operation.)



d223d8203



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D3CJ

OUTPUT JOGGER UNIT TYPE M25

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

OUTPUT JOGGER UNIT TYPE M25 (D3CJ)

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1.3.3 FENCE LIFT MOTOR 17

1.4 BOARD 21

1.4.1 MAIN BOARD 21

READ THIS FIRST

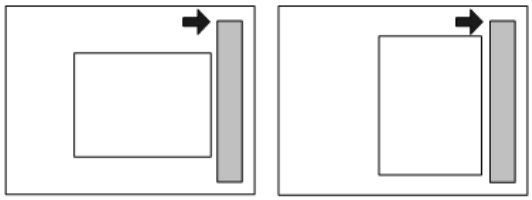
Safety, Conventions, Trademarks

Conventions

Common Terms

This is a list of symbols and abbreviations used in this manual.

Symbol, Abbreviation	Meaning
	Blue screw
	Bushing
	C-ring
	Connector
	E-ring
	Flexible film cable
	Harness clamp
	Hook
	Screw
	Spring
	Timing belt
JG	Junction Gate
LEF	Long Edge Feed
SEF	Short Edge Feed
TE	Trailing Edge of paper



_safe001

Warnings, Cautions, Notes

In this manual, the following important symbols and notations are used.

⚠WARNING

- A Warning indicates a potentially hazardous situation. Failure to obey a Warning could result in death or serious injury.

⚠CAUTION

- A Caution indicates a potentially hazardous situation. Failure to obey a Caution could result in minor or moderate injury or damage to the finisher or other property.

Important

- Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine.

Note

- This information provides tips and advice about how to best service the machine.

General Safety Instructions

For your safety, please read this manual carefully before you use this product. Keep this manual handy for future reference.

Safety Information

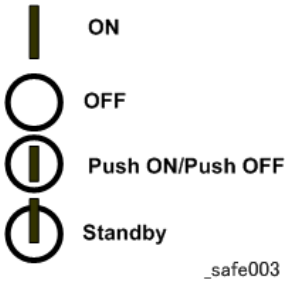
Always obey the following safety precautions when using this product.

Safety During Operation

In this manual, the following important symbols and notations are used.

Switches and Symbols

Where symbols are used on or near switches on machines for Europe and other areas, the meaning of each symbol conforms with IEC60417.



_safe003

Responsibilities of the Customer Engineer

Reference Material for Maintenance

- Maintenance shall be done using the special tools and procedures prescribed for maintenance of the machine described in the reference materials (service manuals, technical bulletins, operating instructions, and safety guidelines for customer engineers).
- In regard to other safety issues not described in this document, all customer engineers shall strictly obey procedures and recommendations described the “CE Safety Guide”.
- Use only consumable supplies and replacement parts designed for use of the machine.

Before Installation, Maintenance

Power

⚠WARNING

- Always disconnect the power plug before doing any maintenance procedure. After switching off the machine, power is still supplied to the main machine and other devices. To prevent electrical shock, switch the machine off, wait for a few seconds, then unplug the machine from the power source.
- Before you do any checks or adjustments after turning the machine off, work carefully to avoid injury. After removing covers or opening the machine to do checks or adjustments, never touch electrical components or moving parts (gears, timing belts, etc.).
- After turning the machine on with any cover removed, keep your hands away from electrical components and moving parts. Never touch the cover of the fusing unit, gears, timing belts, etc.

Installation, Disassembly, and Adjustments

⚠WARNING

- After installation, maintenance, or adjustment, always check the operation of the machine to make sure that it is operating normally. This ensures that all shipping materials, protective materials, wires and tags, metal brackets, etc., removed for installation, have been removed and that no tools remain inside the machine. This also ensures that all release interlock switches have been restored to normal operation.
- Never use your fingers to check moving parts causing spurious noise. Never use your fingers to lubricate moving parts while the machine is operating.

Special Tools

⚠CAUTION

- Use only standard tools approved for machine maintenance.
- For special adjustments, use only the special tools and lubricants described in the service manual. Using tools incorrectly, or using tools that could damage parts, could damage the machine or cause injuries.

During Maintenance

General

⚠CAUTION

- Before you begin a maintenance procedure: 1) Switch the machine off, 2) Disconnect the power plug from the power source, 3) Allow the machine to cool for at least 10 minutes.
- Avoid touching the components inside the machine that are labeled as hot surfaces.

Safety Devices

⚠WARNING

- Never remove any safety device unless it requires replacement. Always replace safety devices immediately.
- Never do any procedure that defeats the function of any safety device. Modification or removal of a safety device (fuse, switch, etc.) could lead to a fire and personal injury. Always test the operation of the machine to ensure that it is operating normally and safely after removal and replacement of any safety device.
- For replacements use only the correct fuses or circuit breakers rated for use with the machine. Using replacement devices not designed for use with the machine could lead to a fire and personal injuries.

Organic Cleaners

⚠CAUTION

- During preventive maintenance, never use any organic cleaners (alcohol, etc.) other than those described in the service manual.
- Make sure the room is well ventilated before using any organic cleaner. Use organic solvents in small amounts to avoid breathing the fumes and becoming nauseous.
- Switch the machine off, unplug it, and allow it to cool before doing preventive maintenance. To avoid fire or explosion, never use an organic cleaner near any part that generates heat.
- Wash your hands thoroughly after cleaning parts with an organic cleaner to contamination of food, drinks, etc. which could cause illness.
- Clean the floor completely after accidental spillage of silicone oil or other materials to prevent slippery surfaces that could cause accidents leading to hand or leg injuries. Use “My Ace” Silicone Oil Remover (or dry rags) to soak up spills. For more details, please refer to Technical Bulletin “Silicone Oil Removal” (A024-50).

Ozone Filters

⚠CAUTION

- Always replace ozone filters as soon as their service life expires (as described in the service manual).
- An excessive amount of ozone can build up around machines that use ozone filters if they are not replaced at the prescribed time. Excessive ozone could cause personnel working around the machine to feel unwell.

Power Plug and Power Cord

⚠WARNING

- Before servicing the machine (especially when responding to a service call), always make sure that the power plug has been inserted completely into the power source. A partially inserted plug could lead to heat generation (due to a power surge caused by high resistance) and cause a fire or other problems.
- Always check the power plug and make sure that it is free of dust and lint. Clean it if necessary. A dirty plug can generate heat which could cause a fire.
- Inspect the length of the power cord for cuts or other damage. Replace the power cord if necessary. A frayed or otherwise damaged power cord can cause a short circuit which could lead to a fire or personal injury from electrical shock.
- Check the length of the power cord between the machine and power supply. Make sure the power cord is not coiled or wrapped around any object such as a table leg. Coiling the power cord can cause excessive heat to build up and could cause a fire.
- Make sure that the area around the power source is free of obstacles so the power cord

can be removed quickly in case of an emergency.

- Make sure that the power cord is grounded (earthed) at the power source with the ground wire on the plug.
- Connect the power cord directly into the power source. Never use an extension cord.
- When you disconnect the power plug from the power source, always pull on the plug, not the cable.

After Installation, Servicing

Disposal of Used Items

⚠CAUTION

- Always dispose of used items (developer, toner, toner cartridges, OPC drums, etc.) in accordance with the local laws and regulations regarding the disposal of such items.
- To protect the environment, never dispose of this product or any kind of waste from consumables at a household waste collection point. Dispose of these items at one of our dealers or at an authorized collection site.

Points to Confirm with Operators

At the end of installation or a service call, instruct the user about use of the machine. Emphasize the following points.

- Show operators how to remove jammed paper and troubleshoot other minor problems by following the procedures described in the operating instructions.
- Point out the parts inside the machine that they should never touch or attempt to remove.
- Confirm that operators know how to store and dispose of consumables.
- Make sure that all operators have access to an operating instruction manual for the machine.
- Confirm that operators have read and understand all the safety instructions described in the operating instructions.
- Demonstrate how to turn off the power and disconnect the power plug (by pulling the plug, not the cord) if any of the following events occur: 1) something has spilled into the product, 2) service or repair of the product is necessary, 3) the product cover has been damaged.
- Caution operators about removing paper fasteners around the machine. They should never allow paper clips, staples, or any other small metallic objects to fall into the machine.

Safety Instructions for this Machine

1. The installation must be done by trained service technicians.
2. This machine weighs 92 kg. (202.9 lb.). At least four persons are required to remove the machine from its pallet and position it for installation.
3. To prevent fire hazards never use flammable solvents around the machine.
4. Never place any object on the machine.
5. If anything falls into the machine, turn off the main power switch on the right side of the machine, then disconnect the power cord from the power source.
6. Locate the machine on a sturdy flat surface where it will not be exposed to excessive vibration.
7. To avoid fire hazard, confirm that the ventilation ports are not blocked, so air can flow freely.
8. Gas generated by the molten glue can irritate the eyes, throat, and nose. The machine should always be used in a well ventilated room.
9. To avoid the dangers of fire and electrical shock, make sure that the machine is never exposed to:
    - Excessive high temperatures and/or humidity
    - Dust
    - Water
    - Direct sunlight
    - Open flame
    - Corrosive gases

Trademarks

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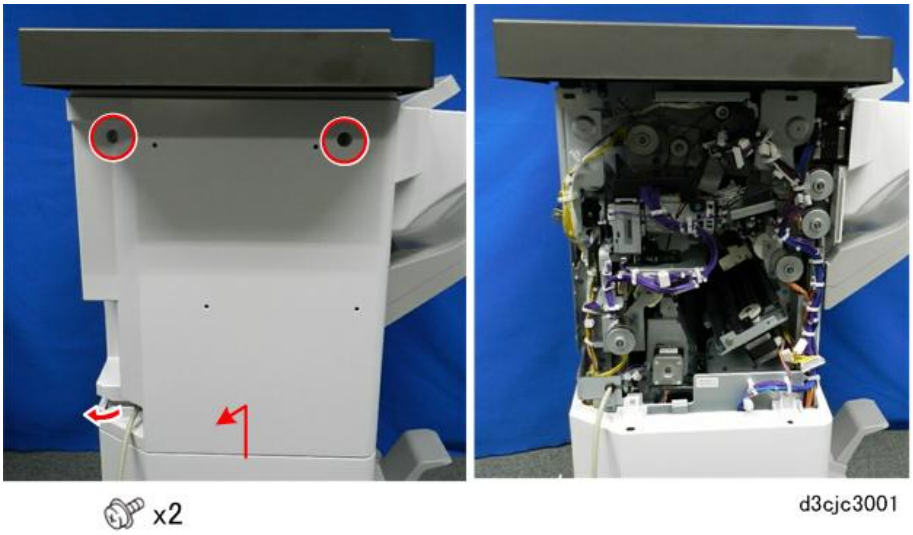
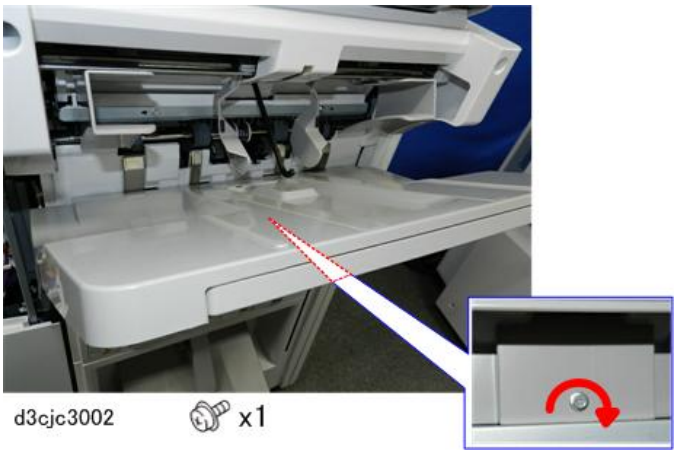
1. REPLACEMENT AND ADJUSTMENT

1.1 JOGGER UNIT REMOVAL

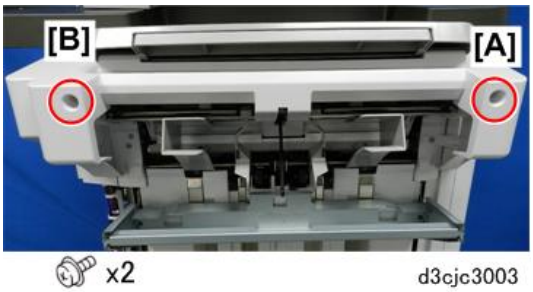
1. Remove the rear cover.



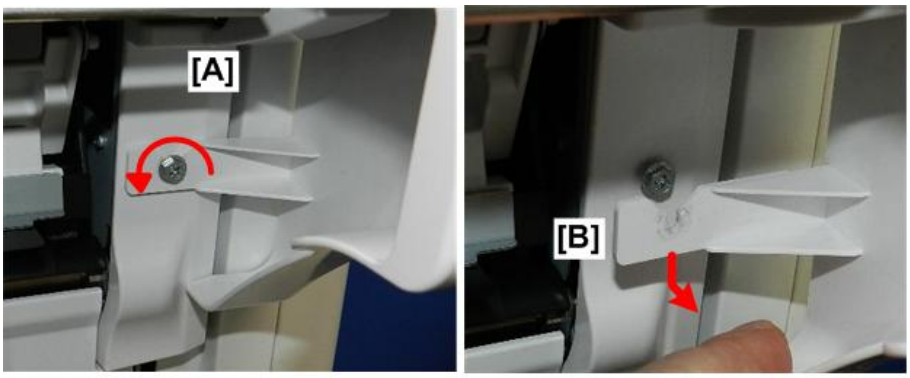
2. Remove the shift tray.



3. Disconnect the jogger unit cover at the front [A] and rear [B].



4. Below the front end of the jogger unit cover [A], loosen the screw (do not remove).
5. Pull the V-notch of the arm [B] out from under the loosened screw.

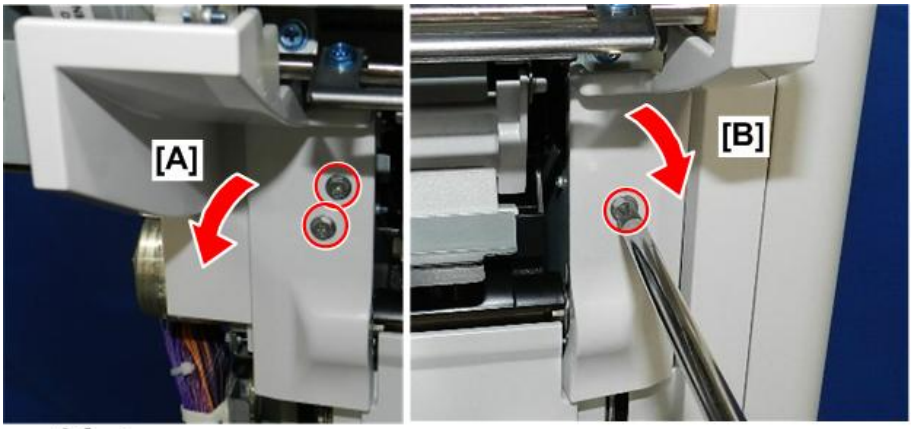


d3cjc3004

6. Remove the jogger unit cover.

d3cjc3005

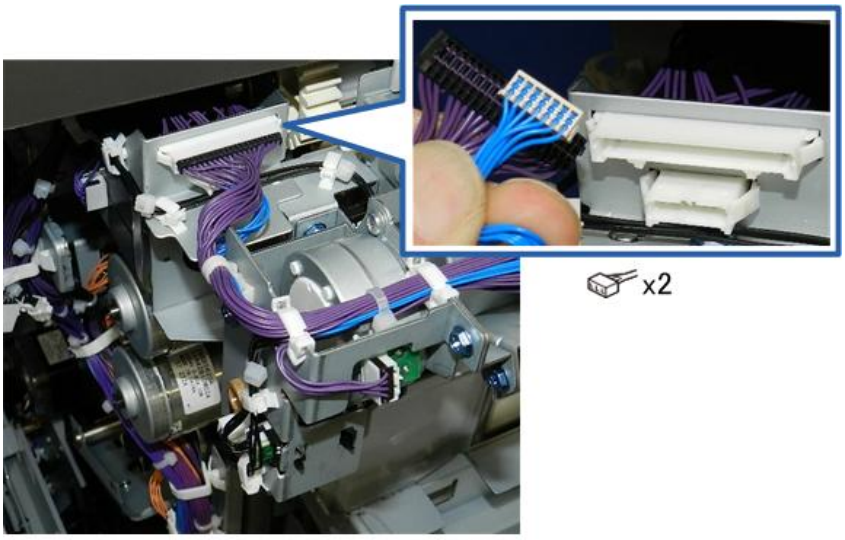
7. Remove rear end cover [A] and front end cover [B].



x3

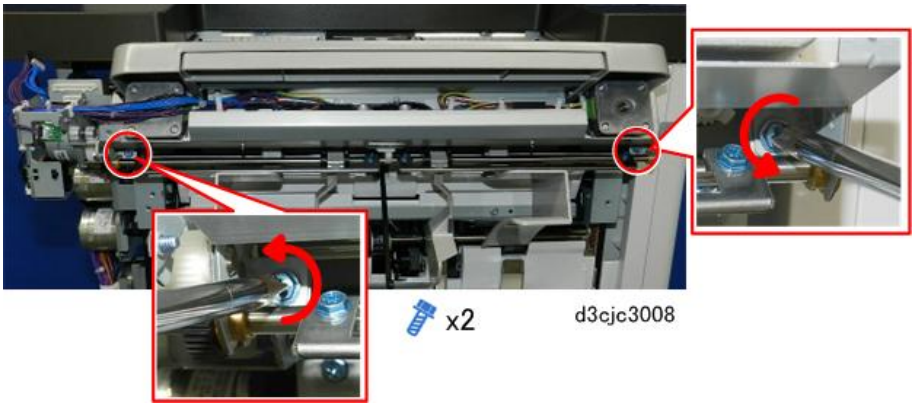
d3cjc3006

8. At the rear, disconnect the jogger unit.



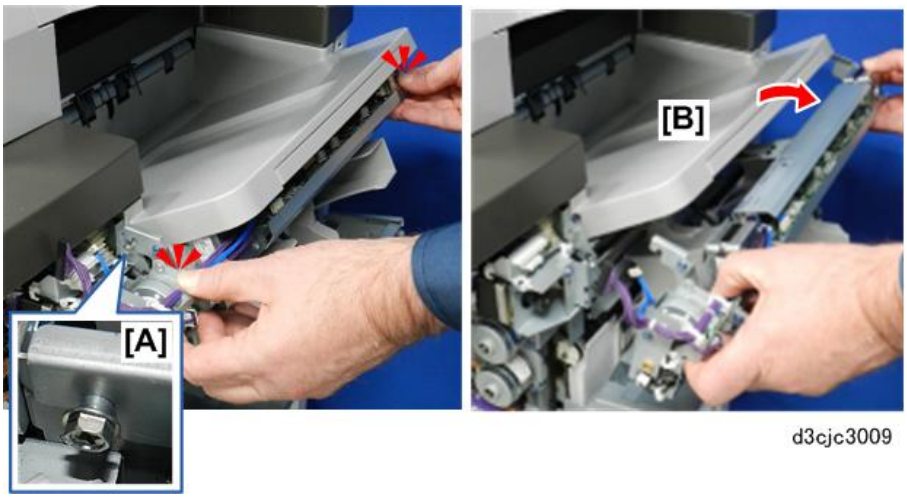
d3cjc3007

9. Disconnect the jogger unit at the front and rear.



d3cjc3008

10. The jogger unit hangs on two shoulder screws [A] (one at the front and one at the end).
11. Lift the joggger unit [B] off the shoulder screws and remove it.



d3cjc3009

12. Lay the jogger unit on a flat, clean surface.

d3cjc3010

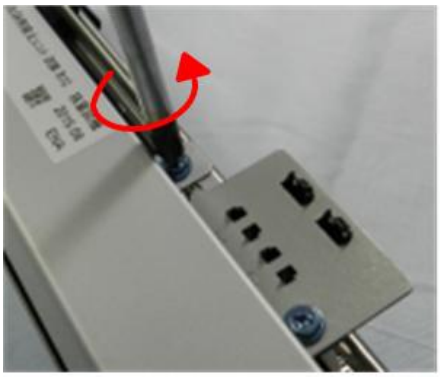
1.2 SENSORS

1.2.1 FRONT FENCE SENSOR, REAR FENCE SENSOR

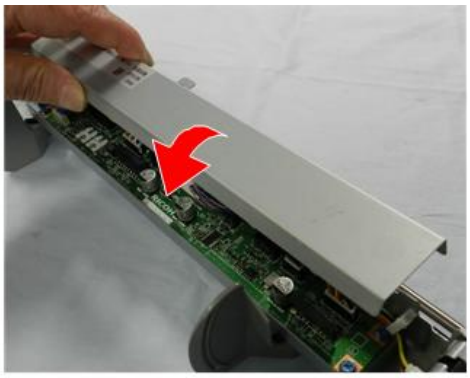
1. Remove the jogger unit. page 1
2. The front fence sensor and rear fence sensor are mounted on the sensor bracket at the center of the unit.

d3cjc3045

3. Remove the top cover.

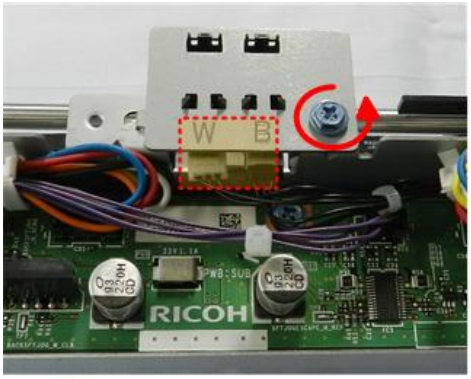


x1

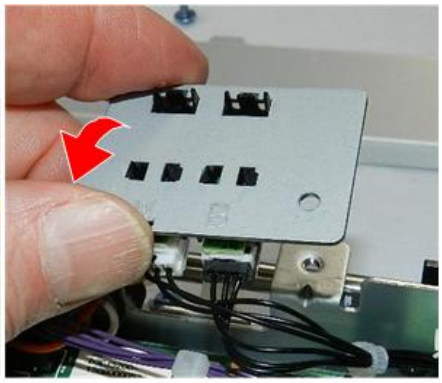


d3cjc3011

4. Disconnect the sensor bracket.

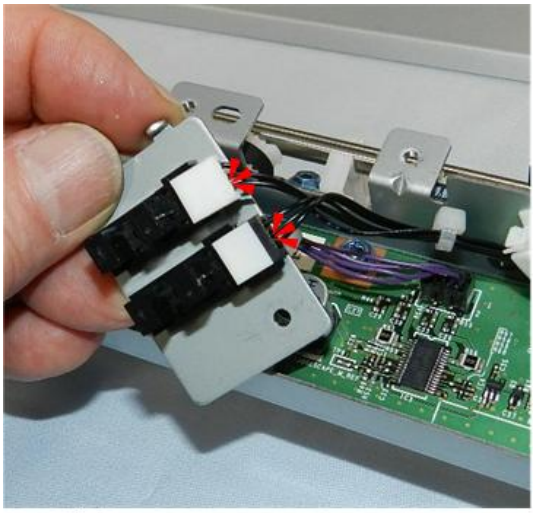


x1



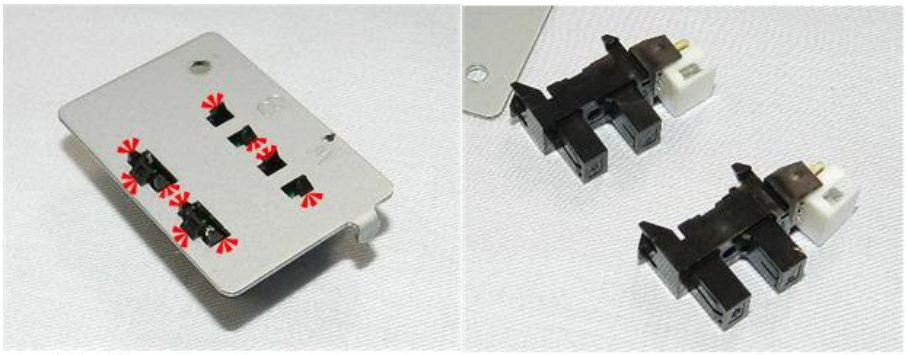
d3cjc3017

5. Disconnect the sensors.



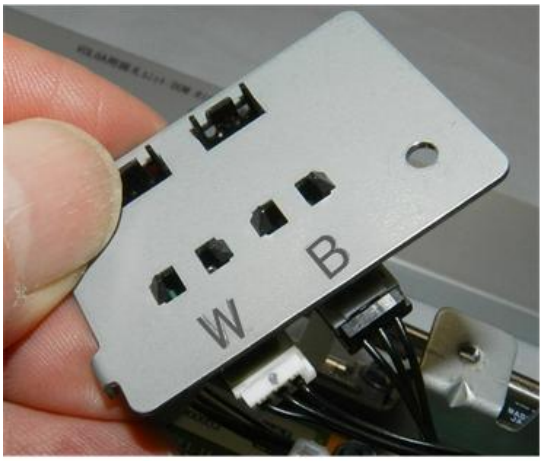
x2 d3cjc3018

6. Disconnect the sensors from the sensor bracket.



x10 d3cjc3019

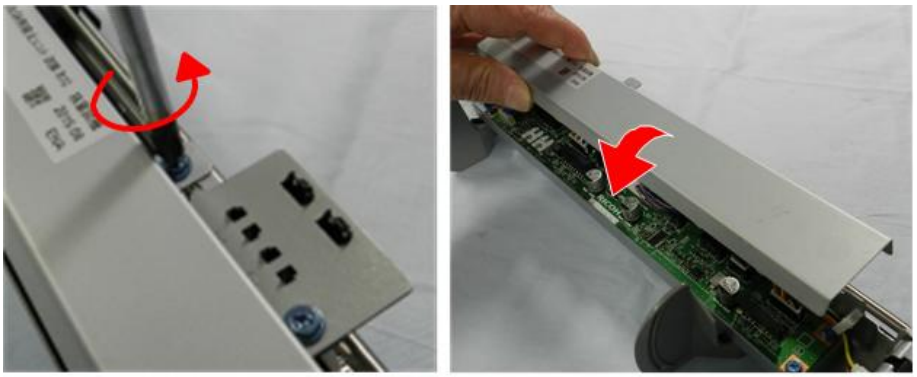
7. The sensors are identical, but when you reconnect them, connect the Black connector at **B** and the White connector at **W**.



d3cjc3020

1.2.2 LIFT SENSORS

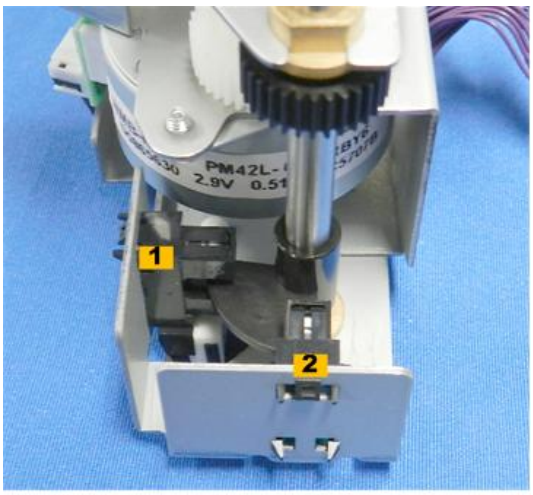
1. Remove the jogger unit. page 1
2. Remove the top cover.



x1

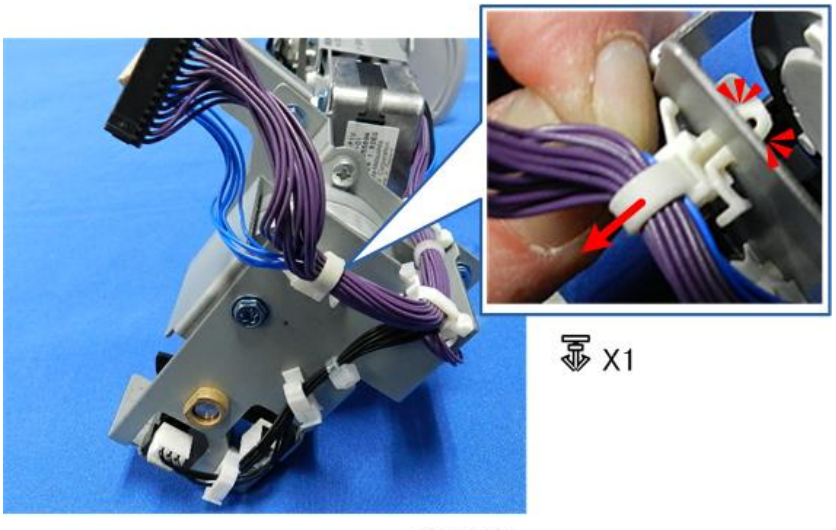
d3cjc3011

3. The lift sensors, the up sensor [1] and down sensor [2], are located at the rear end of the jogger unit.



d3cjc3046

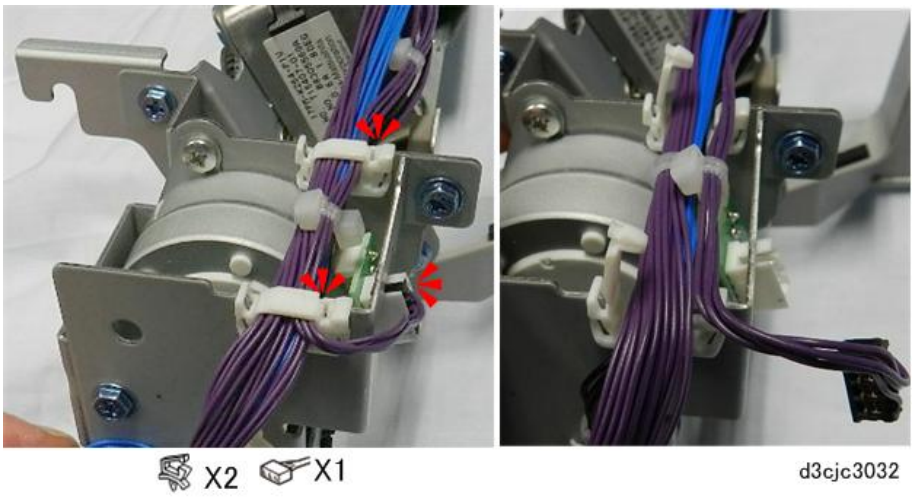
4. Disconnect the harness clamp from the plate.



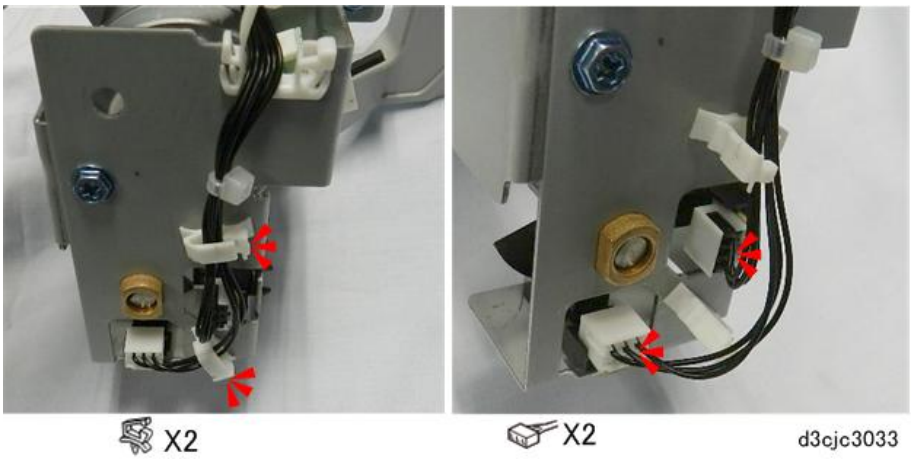
X1

d3cjc3031

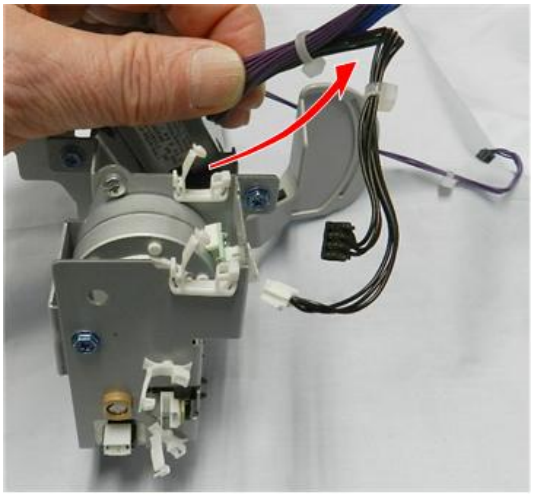
5. Disconnect the lift motor and free the harnesses.



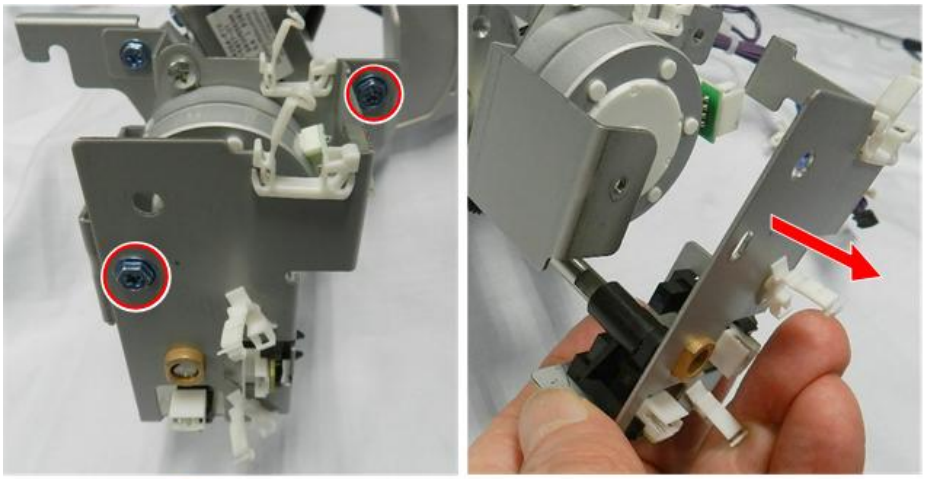
6. Disconnect the lift sensors.



7. Pull the freed harnesses away from the rear end of the unit.



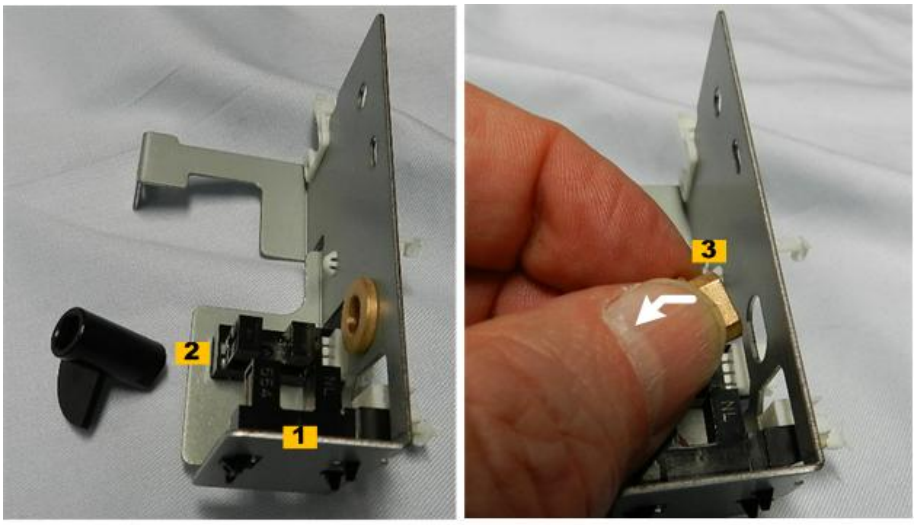
8. Remove the rear end plate.



X2

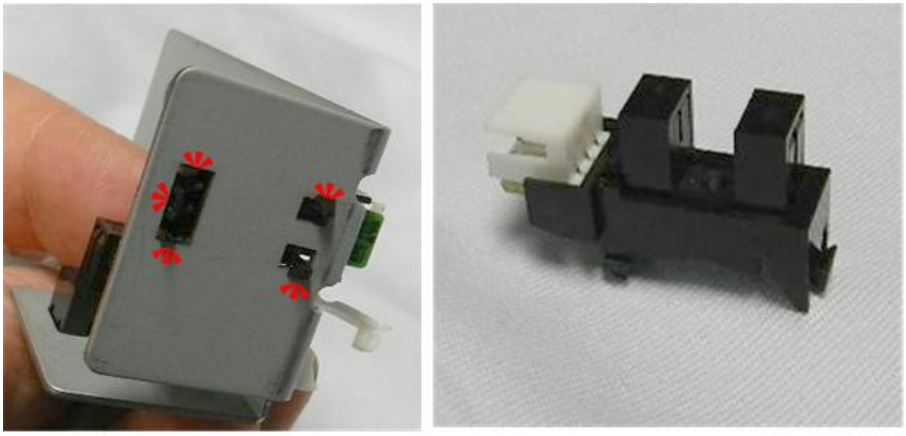
d3cjc3035

9. Set the plate aside with the actuator of the down sensor [1] and up sensor [2].
10. Remove bushing [3] so it does not fall out and get lost accidentally.



d3cjc3039

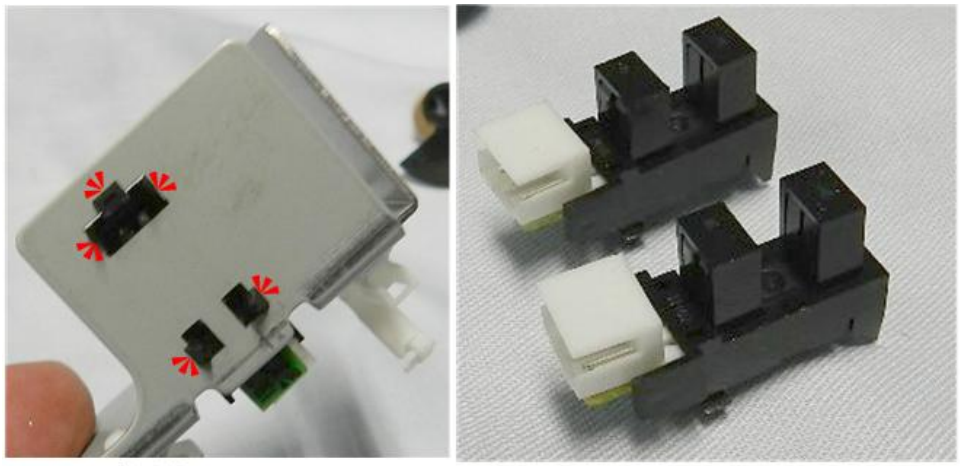
11. Disconnect the first sensor.



X5

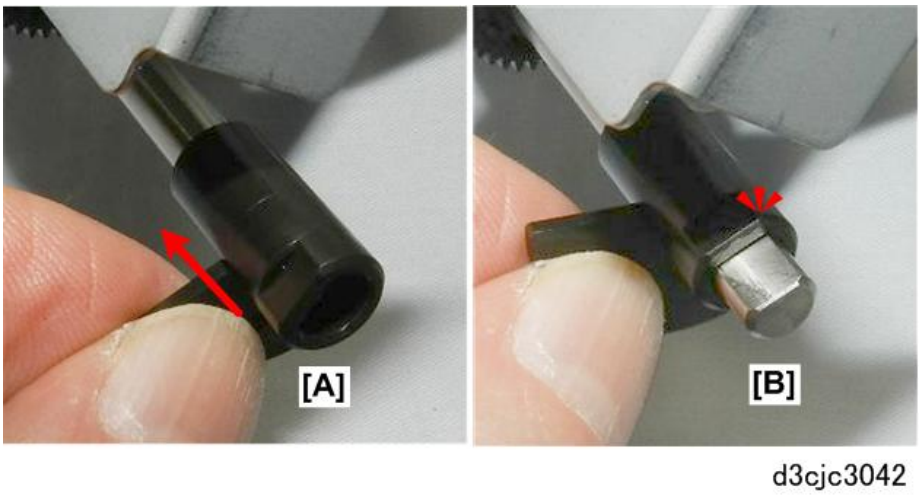
d3cjc3040

12. Disconnect the second sensor.

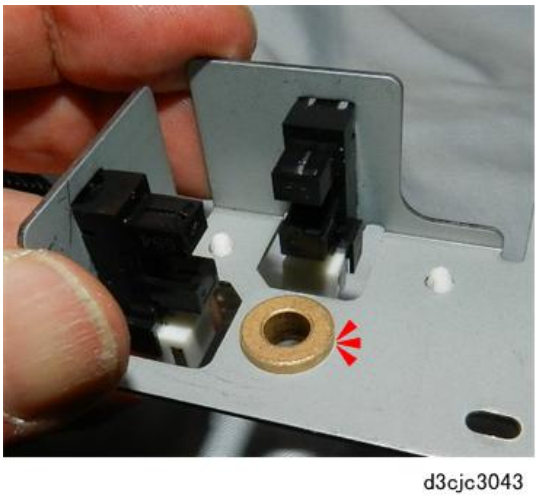


Reinstallation

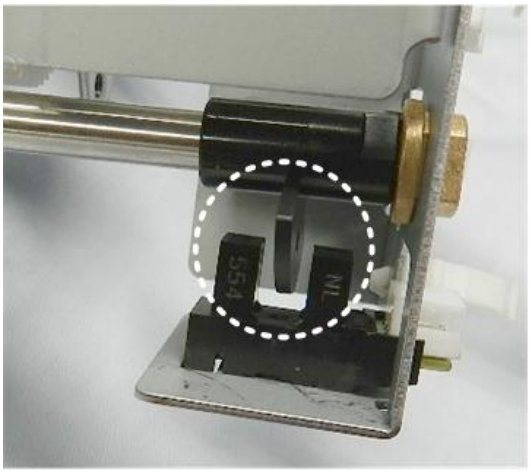
1. Set the long side of the actuator on the tip of the shaft [A].
2. Rotate it slightly until it fits over the "D" so you can see the end of the shaft [B].



3. Set the bushing in the end plate.



4. Reattach the end plate so the actuator is in the gap of the down sensor.



d3cjc3044

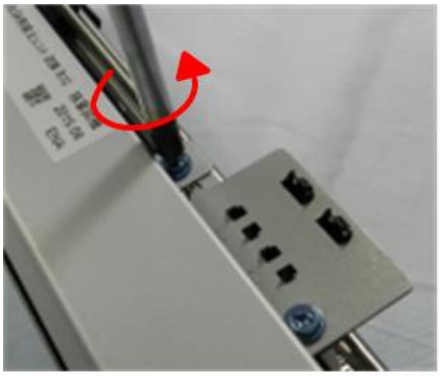
1.3 MOTORS

1.3.1 FRONT FENCE MOTOR

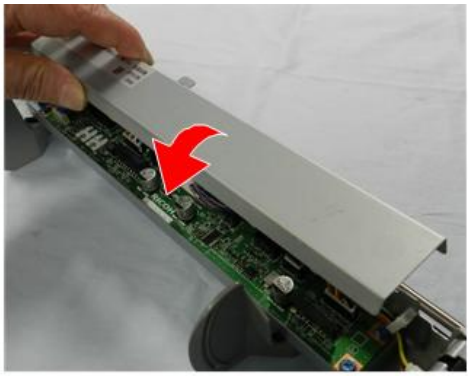
1. Remove the jogger unit. page 1
2. The front fence motor is on the front end of the unit.

d3cjc3047

3. Remove the top cover.

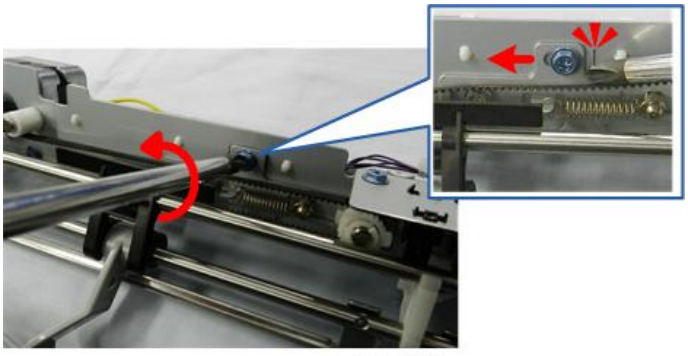


x1



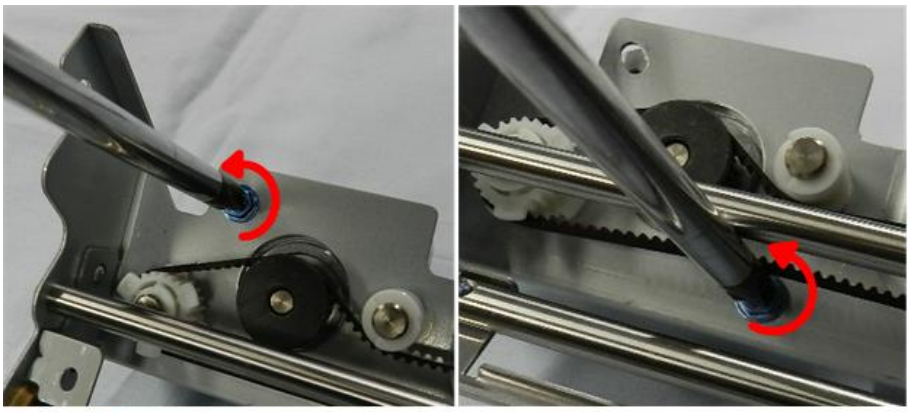
d3cjc3011

4. Loosen the tension bracket of the front fence drive belt. This will create some slack in the belt so it is easier to remove.



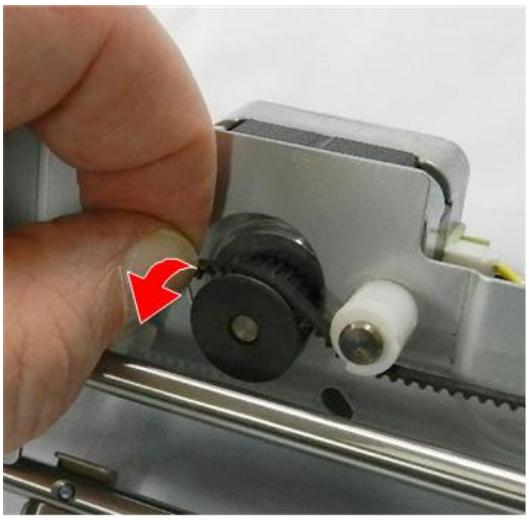
d3cjc3021

5. Disconnect the front fence motor.



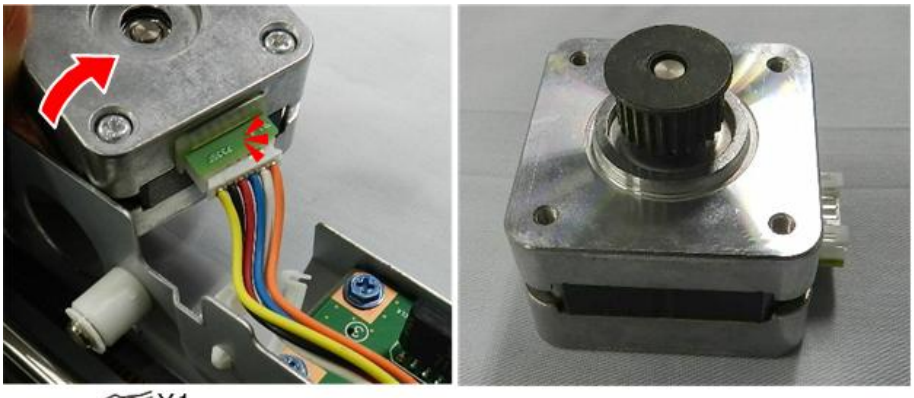
X2 d3cjc3022

6. Disconnect the drive belt.



X1 d3cjc3023

7. Pull the motor out and disconnect it.



X1 d3cjc3024

8. Be sure to tighten the belt tension bracket after you reinstall the motor.

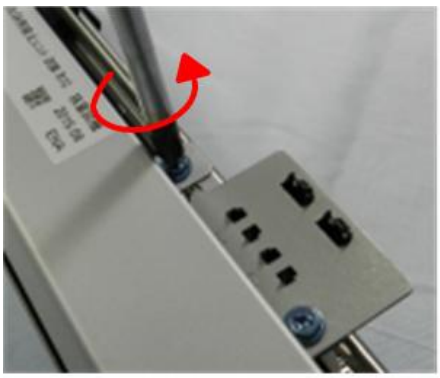
d3cjc3025

1.3.2 REAR FENCE MOTOR

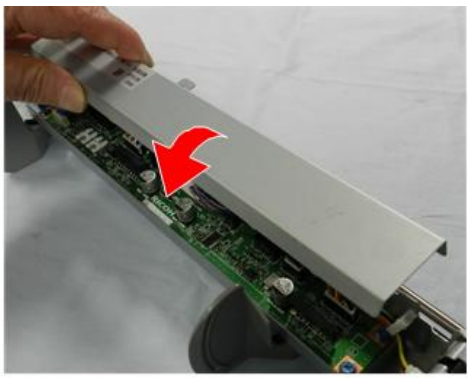
1. Remove the jogger unit. page 1
2. The rear fence motor is on the rear end of the unit.

d3cjc3048

3. Remove the top cover.

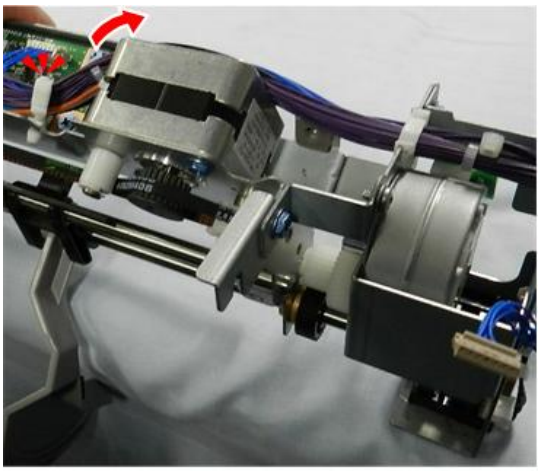


x1



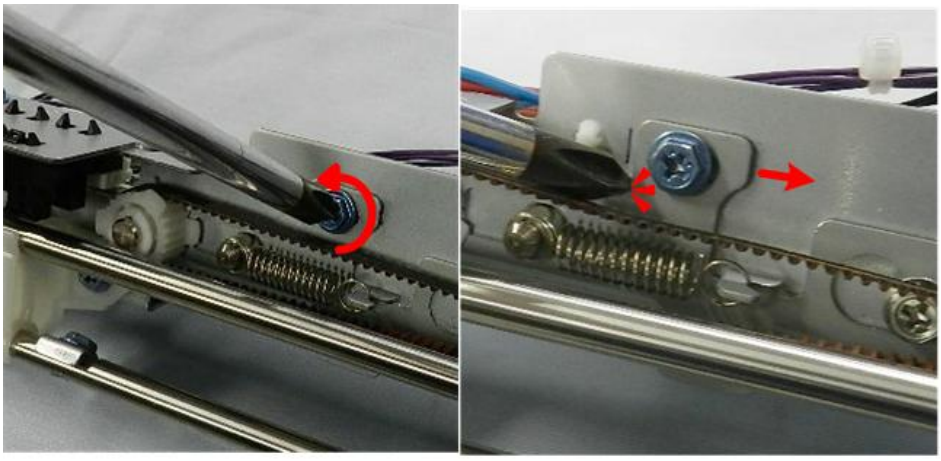
d3cjc3011

4. Open the clamp and free the harness laying on top of the motor



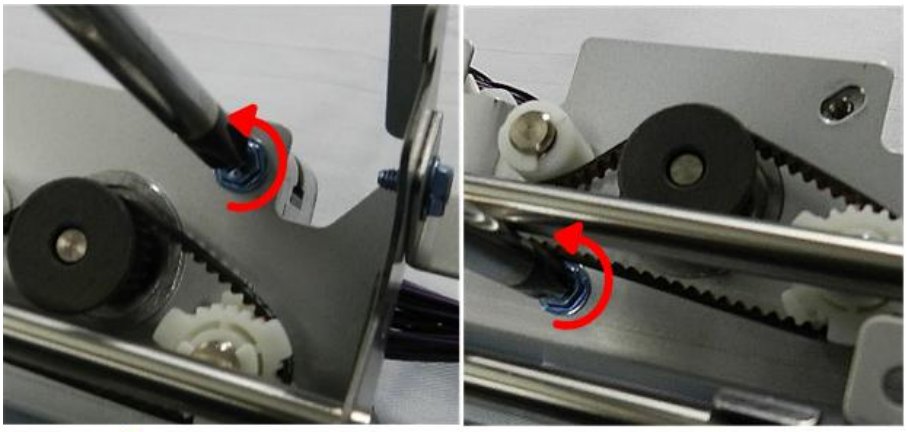
X1 d3cjc3026

5. Loosen the tension bracket of the rear fence drive belt. This will create some slack in the belt so it is easier to remove.



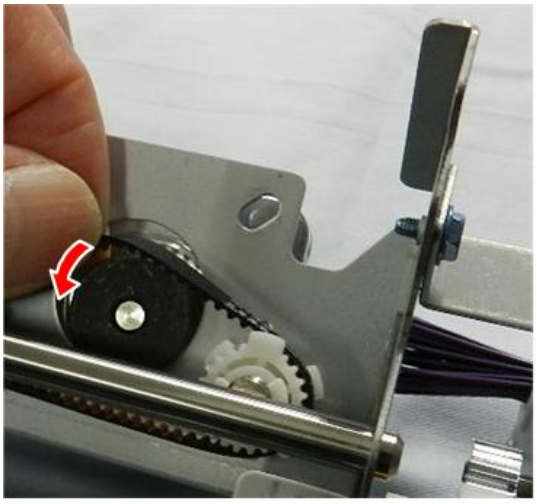
d3cjc3027

6. Disconnect the motor.



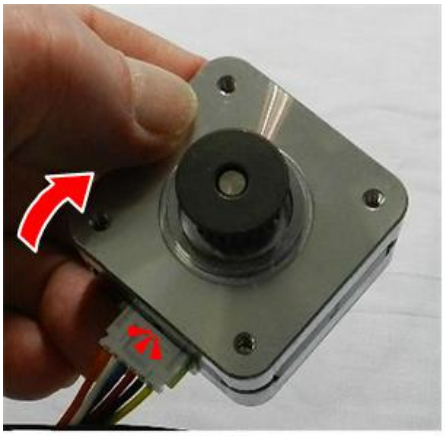
X2 d3cjc3028

7. Disconnect the drive belt.



d3cjc3051

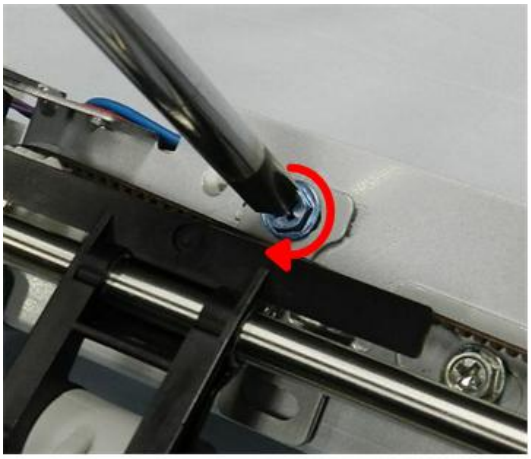
8. Pull the motor out and disconnect it.



X1

d3cjc3029

9. Be sure to tighten the belt tension bracket after you reinstall the motor.



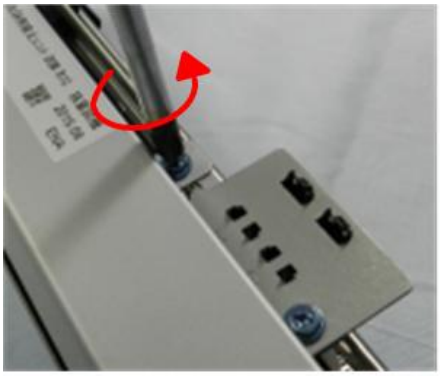
d3cjc3030

1.3.3 FENCE LIFT MOTOR

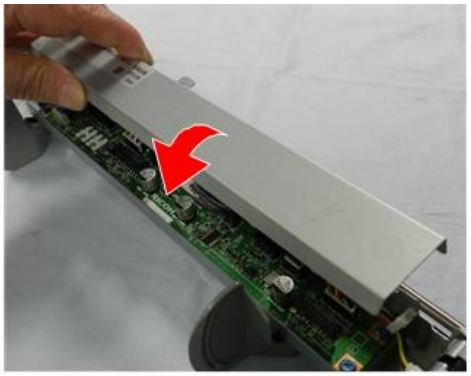
1. Remove the jogger unit. page 1
2. The fence lift motor is on the rear end of the unit.

d3cjc3049

3. Remove the top cover.

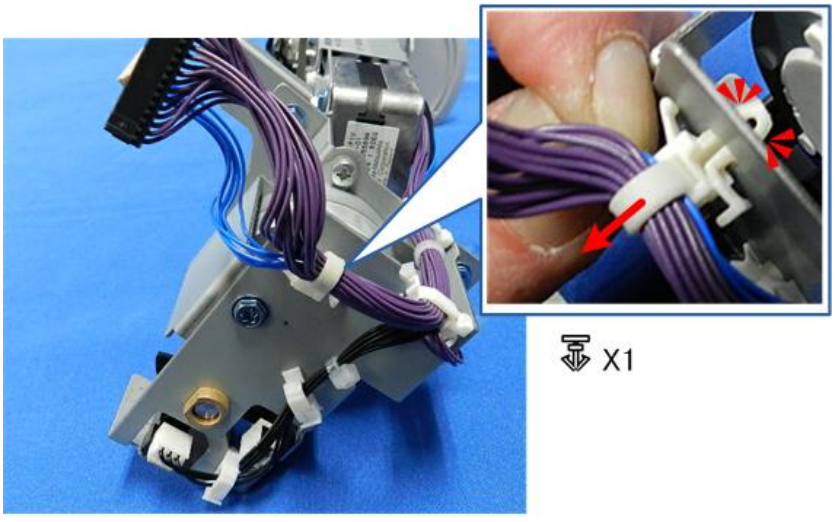


x1



d3cjc3011

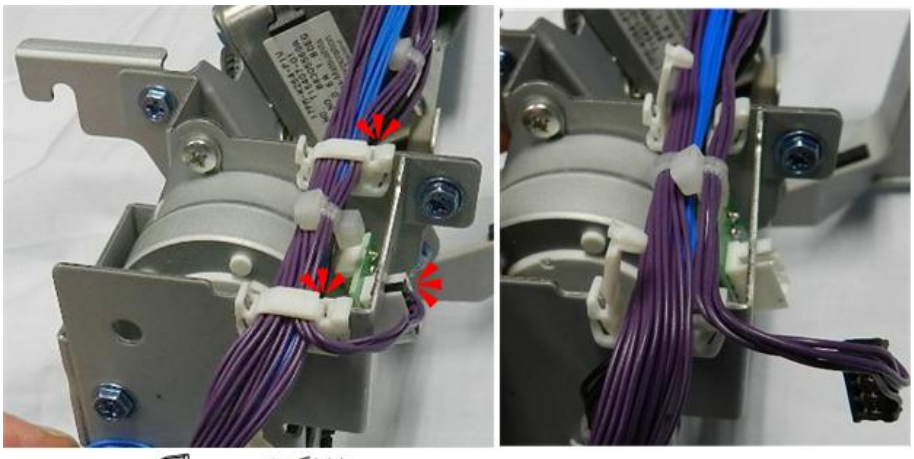
4. Disconnect the harness clamp from the plate.



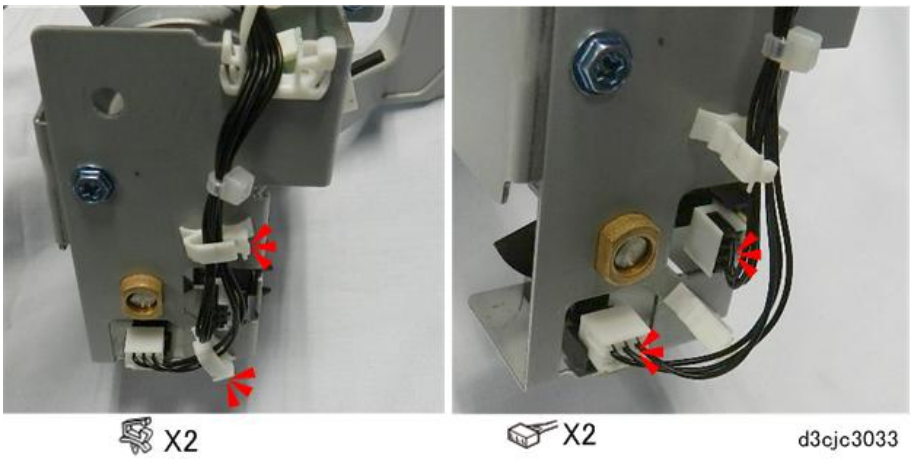
X1

d3cjc3031

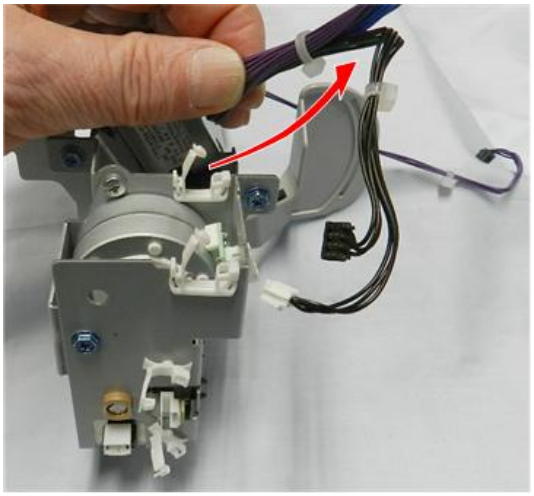
5. Disconnect the lift motor and free the harnesses.



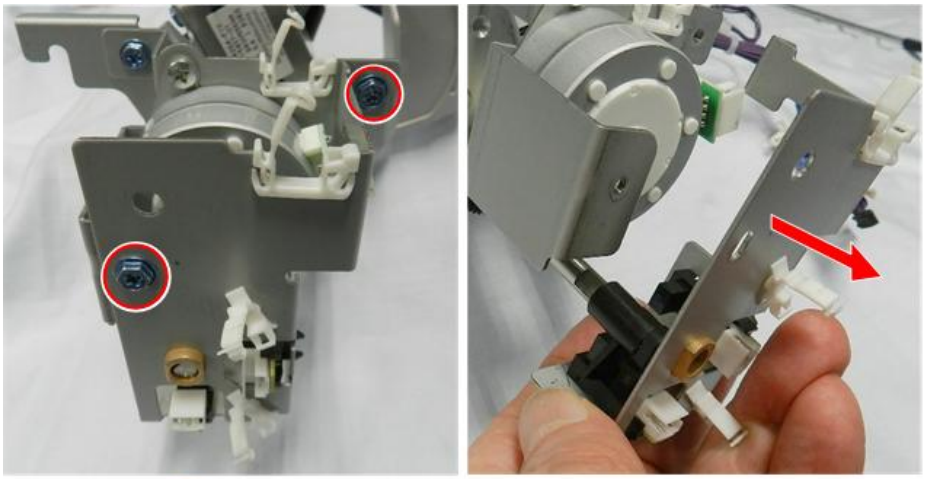
6. Disconnect the lift sensors.



7. Pull the freed harnesses away from the rear end of the unit.



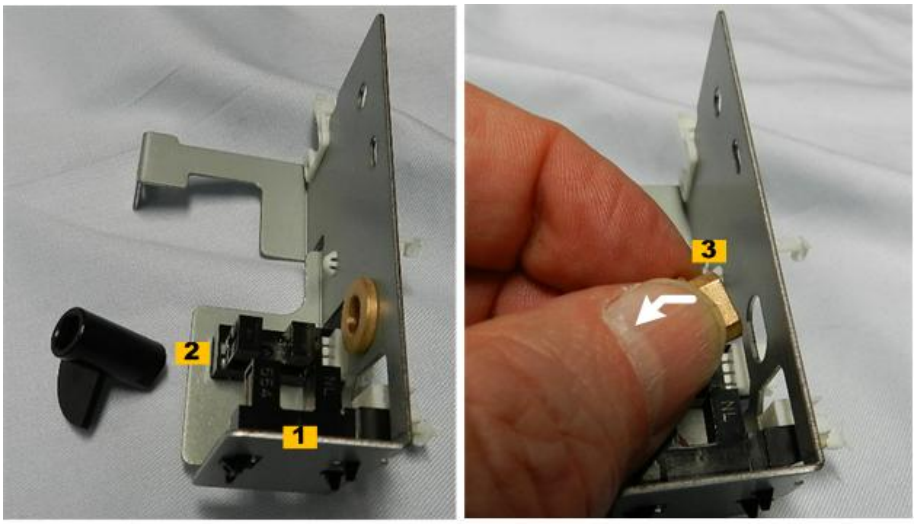
8. Remove the rear end plate.



X2

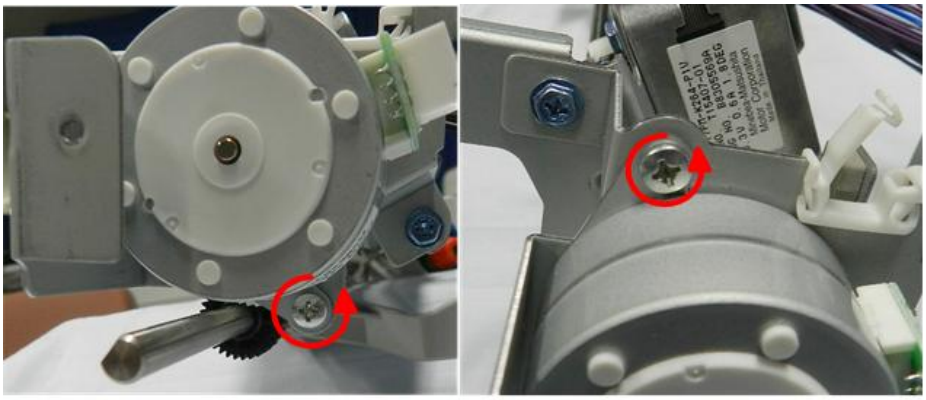
d3cjc3035

9. Set the plate aside with the actuator of the down sensor [1] and up sensor [2].
10. Remove bushing [3] so it does not fall out and get lost accidentally.



d3cjc3039

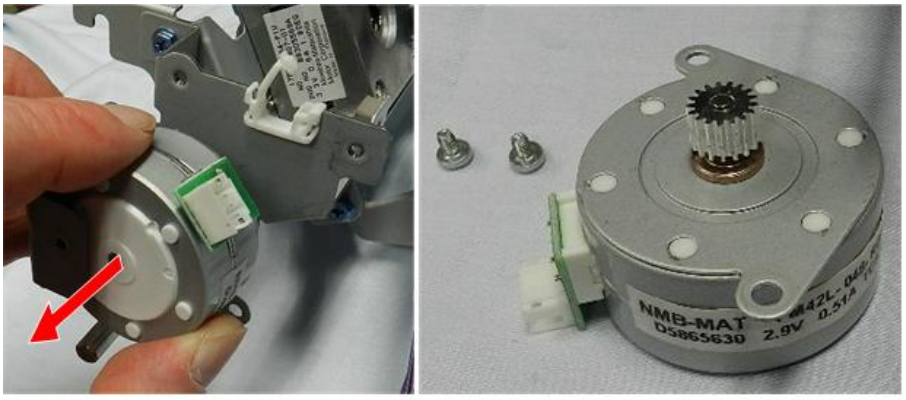
11. Disconnect the lift motor.



X2

d3cjc3037

12. Remove the motor.

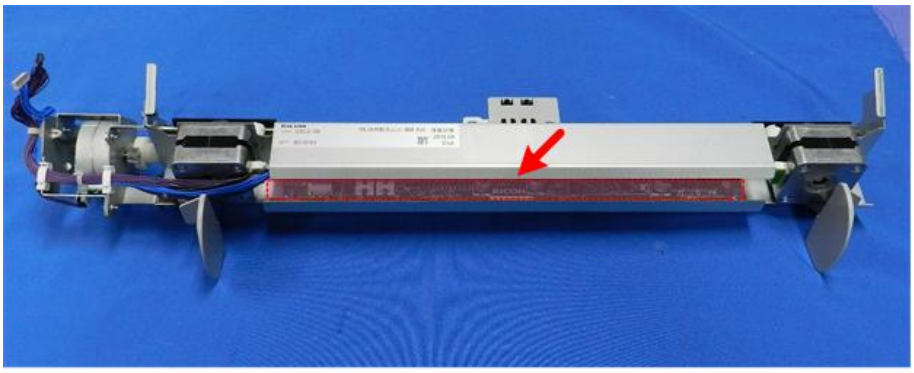


d3cjc3038

1.4 BOARD

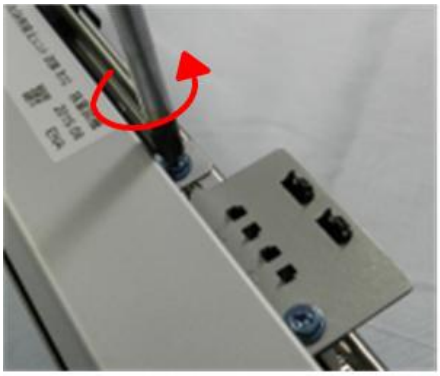
1.4.1 MAIN BOARD

1. Remove the jogger unit. page 1
2. The jogger unit control board is under the top cover.

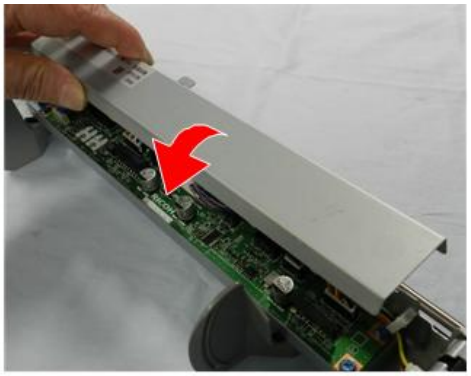


d3cjc3050

3. Remove the top cover.

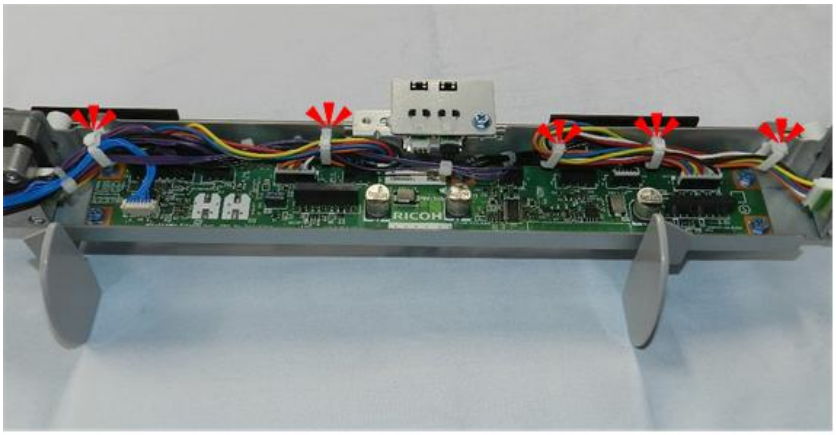


x1



d3cjc3011

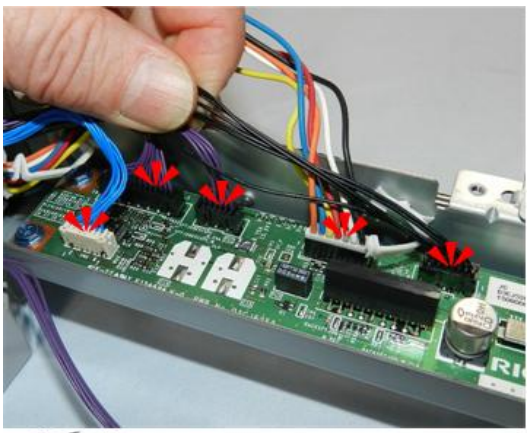
4. Open the clamps and free the harnesses.



x5

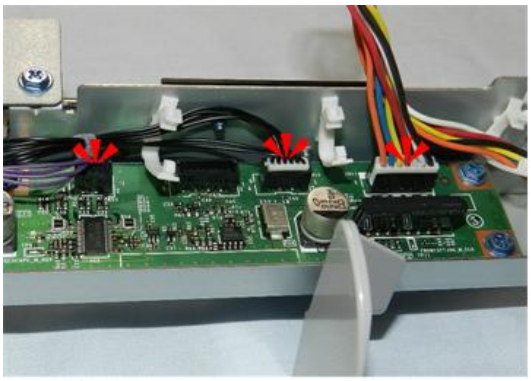
d3cjc3012

5. Disconnect the rear end of the board.



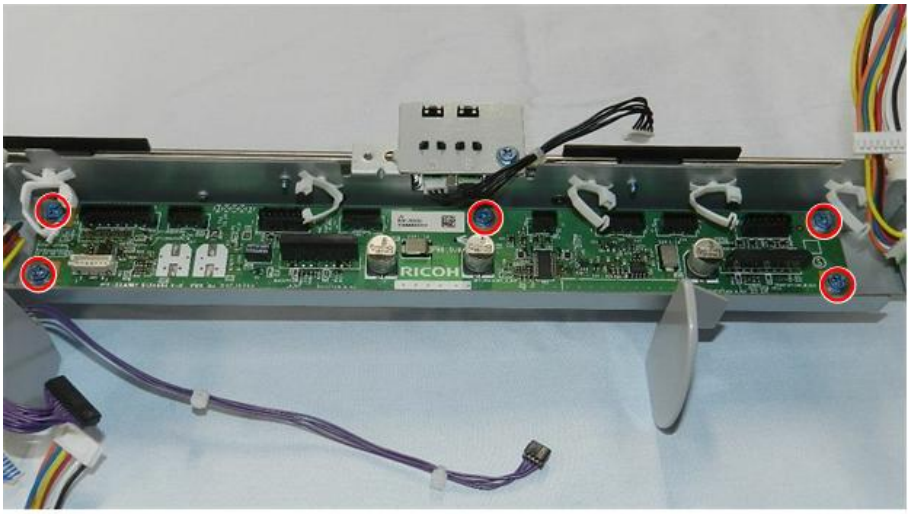
x5 d3cjc3013

6. Disconnect the front end of the board.



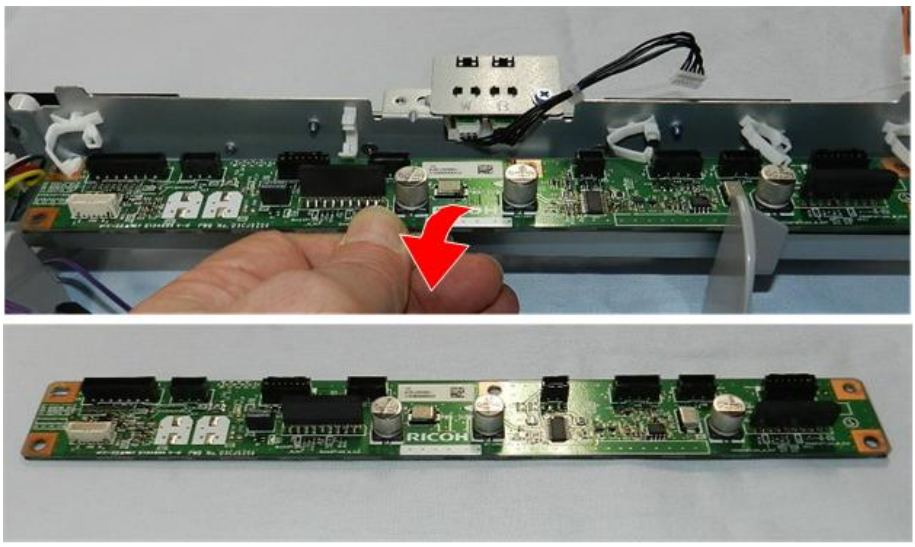
x3 d3cjc3014

7. Unfasten the board from the unit.



x5 d3cjc3015

8. Remove the board.



d3cjc3016

D3CN

COVER INTERPOSER TRAY CI4040

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

COVER INTERPOSER TRAY CI4040 (D3CN)

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READ THIS FIRST

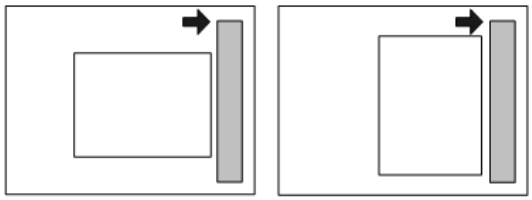
Safety, Conventions, Trademarks

Conventions

Common Terms

This is a list of symbols and abbreviations used in this manual.

Symbol, Abbreviation	Meaning
	Blue screw
	Bushing
	C-ring
	Connector
	E-ring
	Flexible film cable
	Harness clamp
	Hook
	Screw
	Spring
	Timing belt
JG	Junction Gate
LEF	Long Edge Feed
SEF	Short Edge Feed
TE	Trailing Edge of paper



_safe001

Warnings, Cautions, Notes

In this manual, the following important symbols and notations are used.

⚠WARNING

- A Warning indicates a potentially hazardous situation. Failure to obey a Warning could result in death or serious injury.

⚠CAUTION

- A Caution indicates a potentially hazardous situation. Failure to obey a Caution could result in minor or moderate injury or damage to the finisher or other property.

Important

- Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine.

Note

- This information provides tips and advice about how to best service the machine.

General Safety Instructions

For your safety, please read this manual carefully before you use this product. Keep this manual handy for future reference.

Safety Information

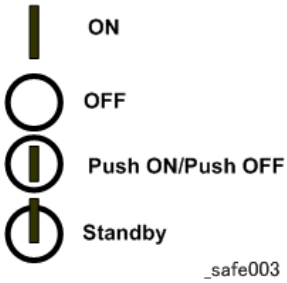
Always obey the following safety precautions when using this product.

Safety During Operation

In this manual, the following important symbols and notations are used.

Switches and Symbols

Where symbols are used on or near switches on machines for Europe and other areas, the meaning of each symbol conforms with IEC60417.



_safe003

Responsibilities of the Customer Engineer

Reference Material for Maintenance

- Maintenance shall be done using the special tools and procedures prescribed for maintenance of the machine described in the reference materials (service manuals, technical bulletins, operating instructions, and safety guidelines for customer engineers).
- In regard to other safety issues not described in this document, all customer engineers shall strictly obey procedures and recommendations described the “CE Safety Guide”.
- Use only consumable supplies and replacement parts designed for use of the machine.

Before Installation, Maintenance

Power

⚠WARNING

- Always disconnect the power plug before doing any maintenance procedure. After switching off the machine, power is still supplied to the main machine and other devices. To prevent electrical shock, switch the machine off, wait for a few seconds, then unplug the machine from the power source.
- Before you do any checks or adjustments after turning the machine off, work carefully to avoid injury. After removing covers or opening the machine to do checks or adjustments, never touch electrical components or moving parts (gears, timing belts, etc.).
- After turning the machine on with any cover removed, keep your hands away from electrical components and moving parts. Never touch the cover of the fusing unit, gears, timing belts, etc.

Installation, Disassembly, and Adjustments

⚠WARNING

- After installation, maintenance, or adjustment, always check the operation of the machine to make sure that it is operating normally. This ensures that all shipping materials, protective materials, wires and tags, metal brackets, etc., removed for installation, have been removed and that no tools remain inside the machine. This also ensures that all release interlock switches have been restored to normal operation.
- Never use your fingers to check moving parts causing spurious noise. Never use your fingers to lubricate moving parts while the machine is operating.

Special Tools

⚠CAUTION

- Use only standard tools approved for machine maintenance.
- For special adjustments, use only the special tools and lubricants described in the service manual. Using tools incorrectly, or using tools that could damage parts, could damage the machine or cause injuries.

During Maintenance

General

⚠CAUTION

- Before you begin a maintenance procedure: 1) Switch the machine off, 2) Disconnect the power plug from the power source, 3) Allow the machine to cool for at least 10 minutes.
- Avoid touching the components inside the machine that are labeled as hot surfaces.

Safety Devices

⚠WARNING

- Never remove any safety device unless it requires replacement. Always replace safety devices immediately.
- Never do any procedure that defeats the function of any safety device. Modification or removal of a safety device (fuse, switch, etc.) could lead to a fire and personal injury. Always test the operation of the machine to ensure that it is operating normally and safely after removal and replacement of any safety device.
- For replacements use only the correct fuses or circuit breakers rated for use with the machine. Using replacement devices not designed for use with the machine could lead to a fire and personal injuries.

Organic Cleaners

⚠CAUTION

- During preventive maintenance, never use any organic cleaners (alcohol, etc.) other than those described in the service manual.
- Make sure the room is well ventilated before using any organic cleaner. Use organic solvents in small amounts to avoid breathing the fumes and becoming nauseous.
- Switch the machine off, unplug it, and allow it to cool before doing preventive maintenance. To avoid fire or explosion, never use an organic cleaner near any part that generates heat.
- Wash your hands thoroughly after cleaning parts with an organic cleaner to contamination of food, drinks, etc. which could cause illness.
- Clean the floor completely after accidental spillage of silicone oil or other materials to prevent slippery surfaces that could cause accidents leading to hand or leg injuries. Use “My Ace” Silicone Oil Remover (or dry rags) to soak up spills. For more details, please refer to Technical Bulletin “Silicone Oil Removal” (A024-50).

Ozone Filters

⚠CAUTION

- Always replace ozone filters as soon as their service life expires (as described in the service manual).
- An excessive amount of ozone can build up around machines that use ozone filters if they are not replaced at the prescribed time. Excessive ozone could cause personnel working around the machine to feel unwell.

Power Plug and Power Cord

⚠WARNING

- Before servicing the machine (especially when responding to a service call), always make sure that the power plug has been inserted completely into the power source. A partially inserted plug could lead to heat generation (due to a power surge caused by high resistance) and cause a fire or other problems.
- Always check the power plug and make sure that it is free of dust and lint. Clean it if necessary. A dirty plug can generate heat which could cause a fire.
- Inspect the length of the power cord for cuts or other damage. Replace the power cord if necessary. A frayed or otherwise damaged power cord can cause a short circuit which could lead to a fire or personal injury from electrical shock.
- Check the length of the power cord between the machine and power supply. Make sure the power cord is not coiled or wrapped around any object such as a table leg. Coiling the power cord can cause excessive heat to build up and could cause a fire.
- Make sure that the area around the power source is free of obstacles so the power cord can be removed quickly in case of an emergency.
- Make sure that the power cord is grounded (earthed) at the power source with the ground wire on the plug.
- Connect the power cord directly into the power source. Never use an extension cord.
- When you disconnect the power plug from the power source, always pull on the plug, not the cable.

After Installation, Servicing

Disposal of Used Items

⚠CAUTION

- Always dispose of used items (developer, toner, toner cartridges, OPC drums, etc.) in accordance with the local laws and regulations regarding the disposal of such items.
- To protect the environment, never dispose of this product or any kind of waste from consumables at a household waste collection point. Dispose of these items at one of our dealers or at an authorized collection site.

Points to Confirm with Operators

At the end of installation or a service call, instruct the user about use of the machine. Emphasize the following points.

- Show operators how to remove jammed paper and troubleshoot other minor problems by following the procedures described in the operating instructions.
- Point out the parts inside the machine that they should never touch or attempt to remove.
- Confirm that operators know how to store and dispose of consumables.
- Make sure that all operators have access to an operating instruction manual for the machine.
- Confirm that operators have read and understand all the safety instructions described in the operating instructions.
- Demonstrate how to turn off the power and disconnect the power plug (by pulling the plug, not the cord) if any of the following events occur: 1) something has spilled into the product, 2) service or repair of the product is necessary, 3) the product cover has been damaged.
- Caution operators about removing paper fasteners around the machine. They should never allow paper clips, staples, or any other small metallic objects to fall into the machine.

Safety Instructions for this Machine

1. The installation must be done by trained service technicians.
2. This machine weighs 92 kg. (202.9 lb.). At least four persons are required to remove the machine from its pallet and position it for installation.
3. To prevent fire hazards never use flammable solvents around the machine.
4. Never place any object on the machine.
5. If anything falls into the machine, turn off the main power switch on the right side of the machine, then disconnect the power cord from the power source.
6. Locate the machine on a sturdy flat surface where it will not be exposed to excessive vibration.
7. To avoid fire hazard, confirm that the ventilation ports are not blocked, so air can flow freely.
8. Gas generated by the molten glue can irritate the eyes, throat, and nose. The machine should always be used in a well ventilated room.
9. To avoid the dangers of fire and electrical shock, make sure that the machine is never exposed to:
    - Excessive high temperatures and/or humidity
    - Dust
    - Water
    - Direct sunlight
    - Open flame
    - Corrosive gases

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1. REPLACEMENT AND ADJUSTMENT

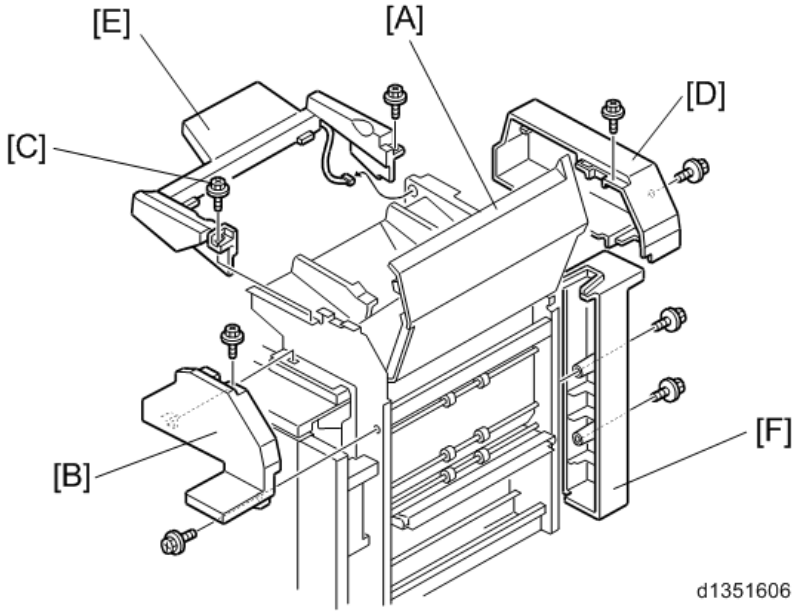
1.1 COVERS

1. Open the feed cover [A].
2. Upper front cover [B] (x 2)

Note

- To remove the upper front cover, screw [C] must be removed.

3. Rear upper cover [D] (x 2)
4. Slip sheet tray [E] (x 2, x 1)
5. Rear middle cover [F] (x 2)

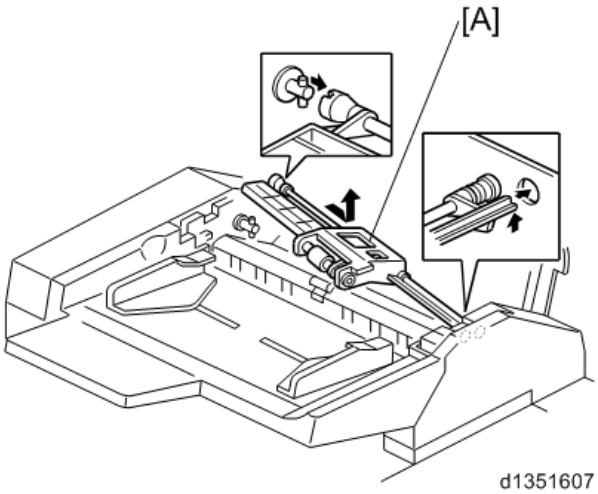


1.2 FEED UNIT, PICK-UP ROLLER

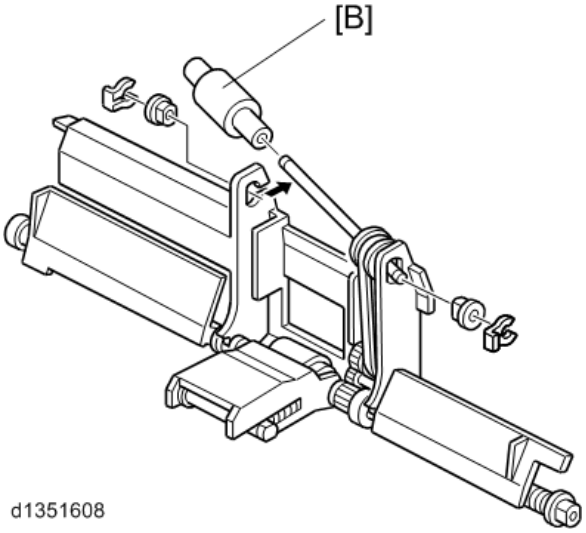
1. Open the feed cover.
2. Feed unit [A]

Note

- The unit is spring loaded. Push it to the right to release it, then lift it out.



3. Pick-up roller [B] (x 2, bushings x 2)



1.3 FEED BELT

1. Feed unit page 2
2. Pick-up roller unit [A]

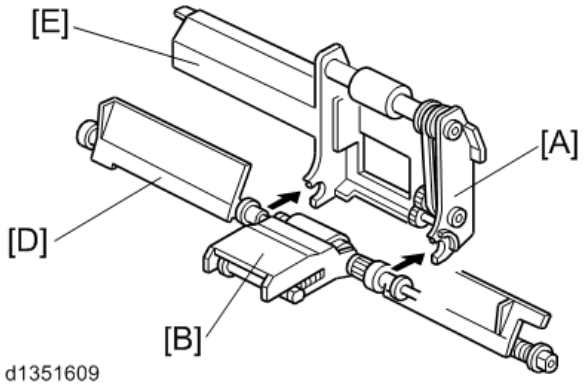
Note

- Pull the unit away from the bushings in the direction of the arrow.

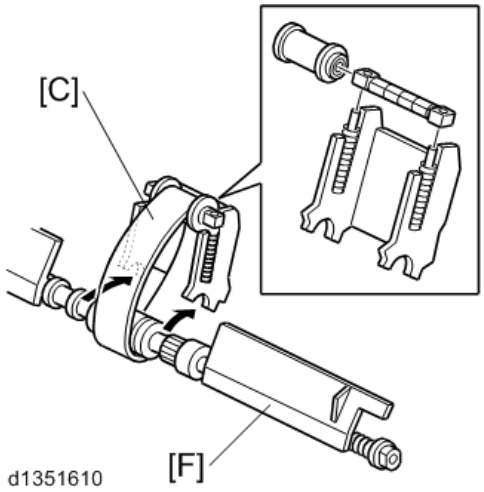
3. Feed belt holder [B]

Note

- Hold the feed belt holder by the sides, then lift up to separate from the holder.
- Pull slowly to avoid losing the springs.



4. Feed belt [C]



Re-assembly

1. Position the pick-up roller unit [A] and feed belt holder [B] as shown above.
2. On the rear side, slide out the bushing, and rotate [D] until its flat side is parallel with [E], then snap it on.
3. On the front side, rotate [F] until its flat side is parallel with [D], then snap it on. Viewed from the bottom, the plates must be aligned.

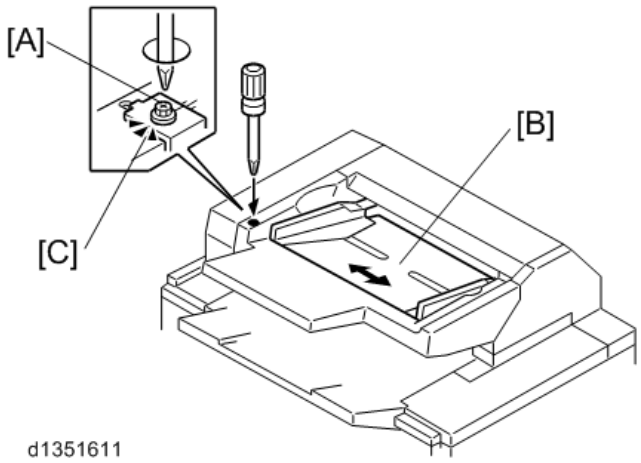
1.4 GUIDE PLATE ADJUSTMENT

Adjust the guide plate if the holes punched in the covers or slip sheets are not correctly aligned with holes punched in the other sheets.

1. Open the feed cover.
2. Loosen the screw [A].
3. Push the table [B] left or right to change its position, then tighten the screw.

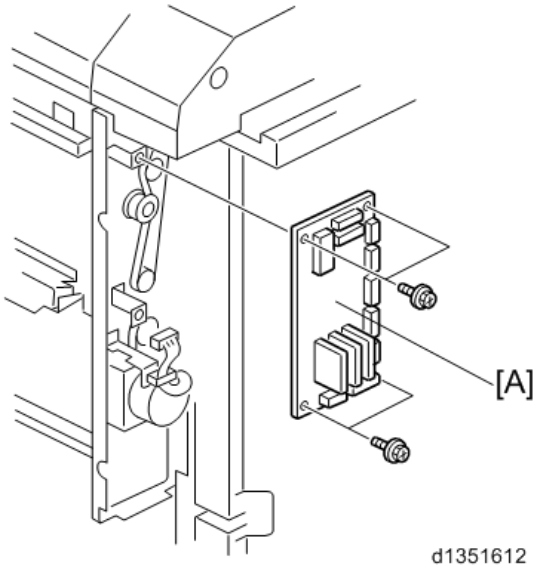
Note

- If you want to see the scale [C], you must remove the rear cover and the support tray.



1.5 MAIN BOARD

1. Open the top cover.
2. Rear cover (x 1)
3. Main board [A] (x 9, x 4)



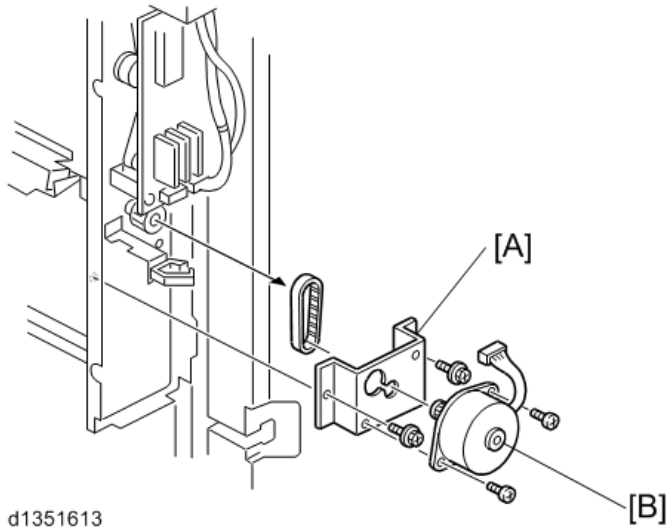
Note

- All DIP switch settings on the main board of the cover sheet unit should be set to OFF.

1.6 MOTOR REPLACEMENT

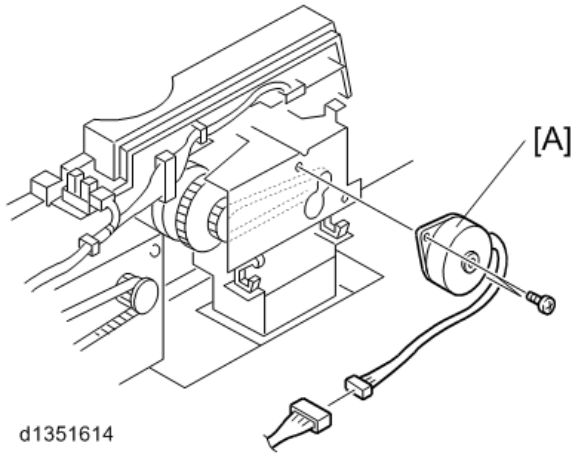
1.6.1 VERTICAL TRANSPORT MOTOR

1. Open the top cover.
2. Rear middle cover (x 1) page 1
3. Motor bracket [A] (x 1, harness x 1, x 2, timing belt x 1)
4. Motor [B] (x 2)



1.6.2 BOTTOM PLATE LIFT MOTOR

1. Rear upper cover page 1
2. Bottom plate lift motor [A] (harness x 2, x 1, x 2)

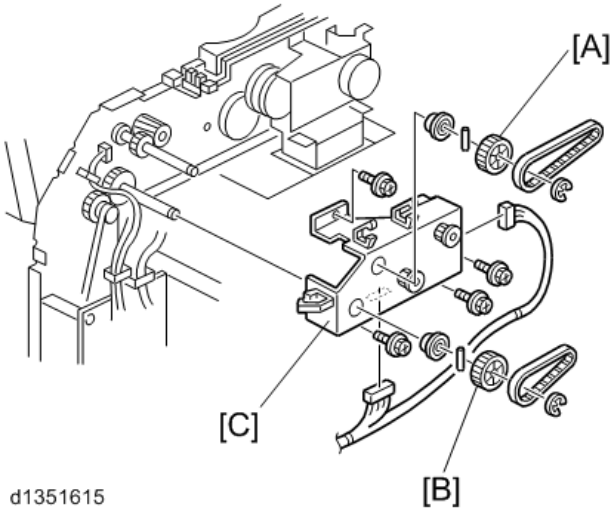


1.6.3 FEED MOTOR, TRANSPORT MOTOR

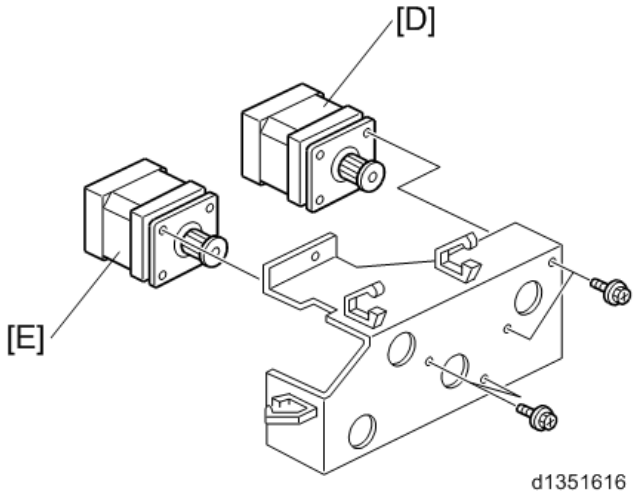
Note

- When removing the feed gear and transport gear, hold one hand under the gear to catch the pin as it falls from the hole in the shaft.

1. Rear upper cover page 1
2. Feed gear [A] (x 1, pin x 1, timing belt x 1, bushing x 1)
3. Transport gear [B] (x 1, pin x 1, timing belt x 1, bushing x 1)
4. Motor bracket [C] (harness x 5, x 4)



5. Feed motor [D] (x 1, x 2)
6. Transport motor [E] (x 1, x 2)



2. DETAILED DESCRIPTIONS

2.1 OVERVIEW

2.1.1 SPECIFICATIONS

Item	Descriptions	Remarks
Name	Cover Interposer Tray CI4010	
System	Cover Interposer for Finisher	
Separation Method	FRR Separation	
Transfer Method	Roller	
Passable Paper Size	A3 SEF to A5, DLT SEF to HLT	Feed straight through: 13" x 19"
Thickness (Paper Weight)	64 to 216g/m^2	Feed straight through: 300g/m^2
Paper Type	White Paper, Print Paper, Ricoh PPC, Image-transferable Print Paper	
Allowable Curl Amount	H: 5mm or less, more than 30R	
Tray Capacity	200 Sheets (80g/m^2)	
Paper End Detection	Available	
Supported Supplied DC	DC24V±10%, DC5V±5%	
Power Consumption	43W or less	
Dimensions	(W) 500 × (D) 600 × (H) 600	
Weight	12kg or less	

Supported Paper Sizes

	Designated Paper			Plain Paper							
Paper Quality, Paper Type	T6000, 6200	HQ paper20 lb	HQ paper 80g/m^2	HQ paper 157.0 g/m^2	HQ paper 127.9 g/m^2	HQ paper 104.4 g/m^2	HQ paper 81.4g /m^2	HQ paper 64.0g /m^2	HQ paper 52.3g /m^2	Woody Paper	Recycled Paper
A3 Short Edge (SE)	○	●	○	○	○	○	○	○	●	X	X
B4 SE	○	●	○	○	○	○	○	○	●	X	○
A4 SE	○	●	○	○	○	○	○	○	●	●	○
A4 Long Edge (LE)	○	●	○	○	○	○	○	○	●	●	○
B5 SE	○	●	○	○	○	○	○	○	●	●	○
B5 LE	○	●	○	○	○	○	○	○	●	●	○
A5 SE	○	●	○	○	○	○	○	○	●	X	X
A5 SE LE	○	●	○	○	○	○	○	○	●	X	X
B6 SE	●	●	●	●	●	●	●	●	●	X	X
B6 LE	●	●	●	●	●	●	●	●	●	X	X
8 1/2"×14"SE	○	○	○	○	○	○	○	○	●	X	○
8 1/2”×11" SE	○	○	○	○	○	○	○	○	●	X	○

	Designated Paper			Plain Paper							
8 1/2"×11 "LE	○	○	○	○	○	○	○	○	●	X	○
5 1/2"×8 1/2" SE	○	○	○	○	○	○	○	○	●	X	○
5 1/2"×8 1/2" LE	○	○	○	○	○	○	○	○	●	X	○

○: Passable

●: Impassable

X: Not Supported

	Application							
Paper Quality, Paper Type	Colored Paper	2nd Drawing Issue	Released paper SA	Letter, Ricoh Post Card	Off Master	OHP	Payment Slip	Business Card
A3 Short Edge (SE)	○	●	X	X	X	X	X	X
B4 SE	○	●	X	X	●	X	X	X
A4 SE	○	●	●	X	●	X	X	X
A4 Long Edge (LE)	○	●	●	X	●	●	X	X
B5 SE	○	●	X	X	●	●	X	X
B5 LE	○	●	X	X	●	●	X	X
A5 SE	X	X	X	X	X	X	●	X
A5 SE LE	X	X	X	X	X	X	●	X
B6 SE	X	X	X	X	X	X	X	X

	Application							
B6 LE	X	X	X	X	X	X	X	X
8 1/2"×14"SE	○	X	X	X	X	X	X	X
8 1/2”×11" SE	○	X	X	X	X	X	X	X
8 1/2"×11"LE	○	X	X	X	X	X	X	X
5 1/2"×8 1/2" SE	○	X	X	X	X	X	X	X
5 1/2"×8 1/2" LE	○	X	X	X	X	X	X	X

○: Passable

●: Impassable

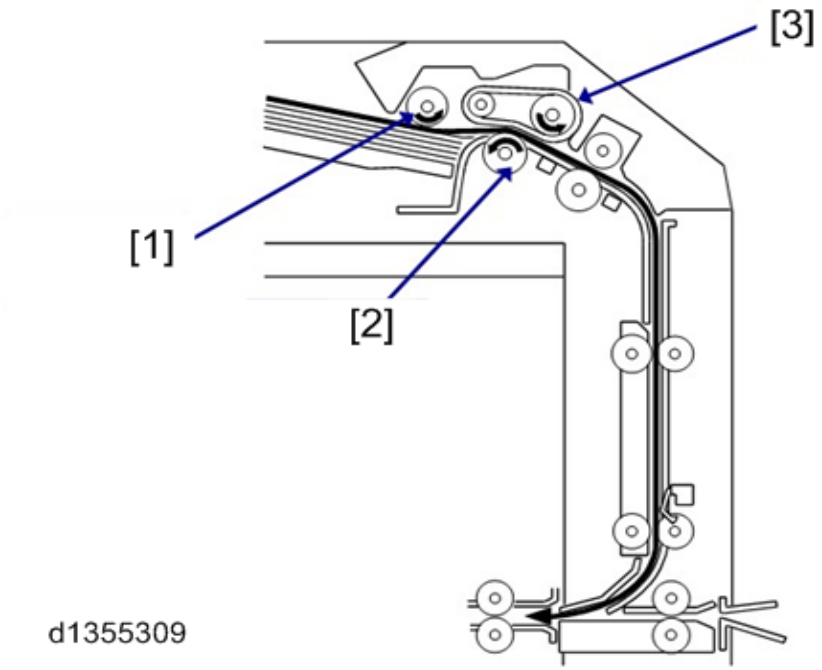
X: Not Supported

SE: Short Edge Feed

LE: Long Edge Feed

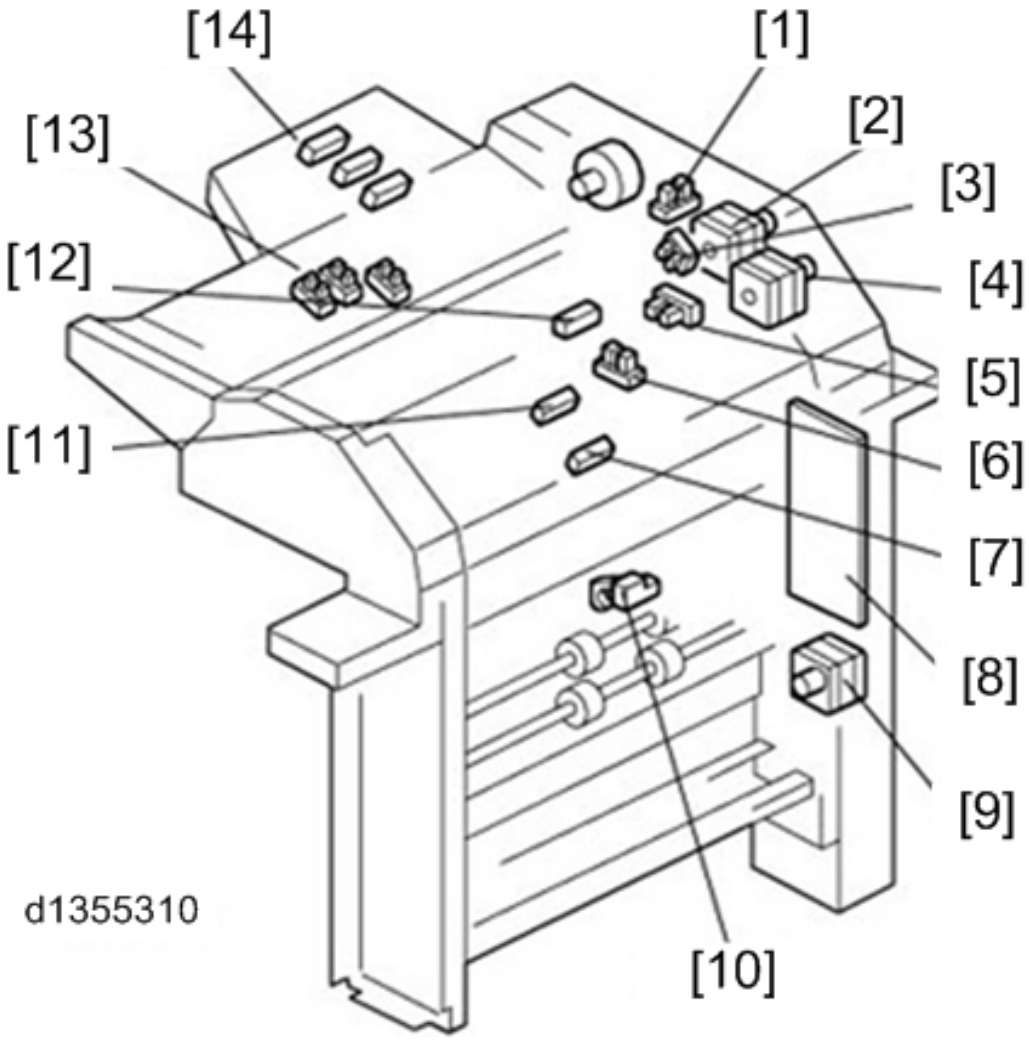
2.2 MAIN COMPONENTS

2.2.1 SIDE VIEW

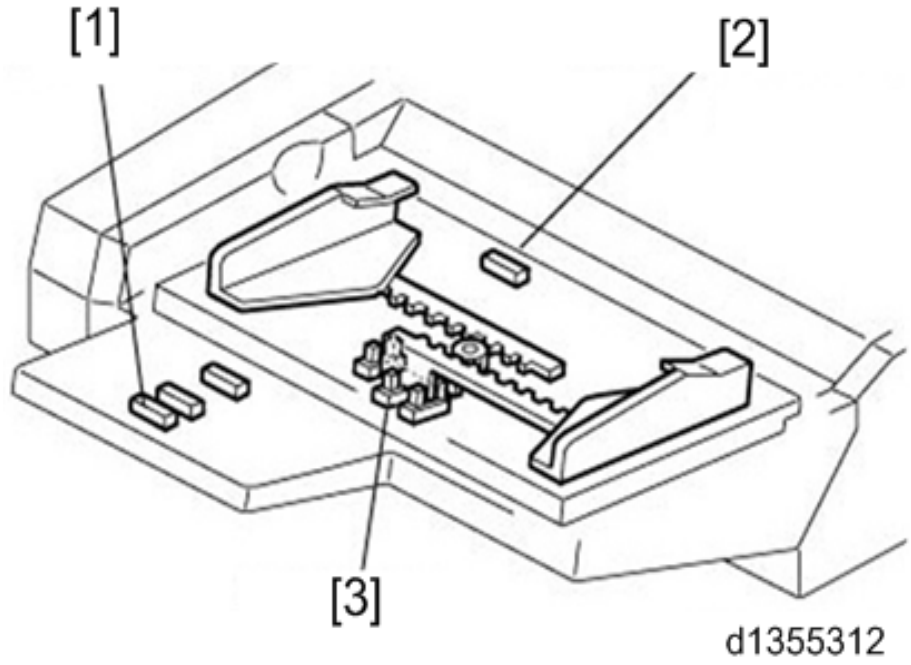


No.	Part
1	Pick-up Roller
2	Reverse Roller
3	Feed Belt

2.2.2 ELECTRICAL COMPONENT LAYOUT

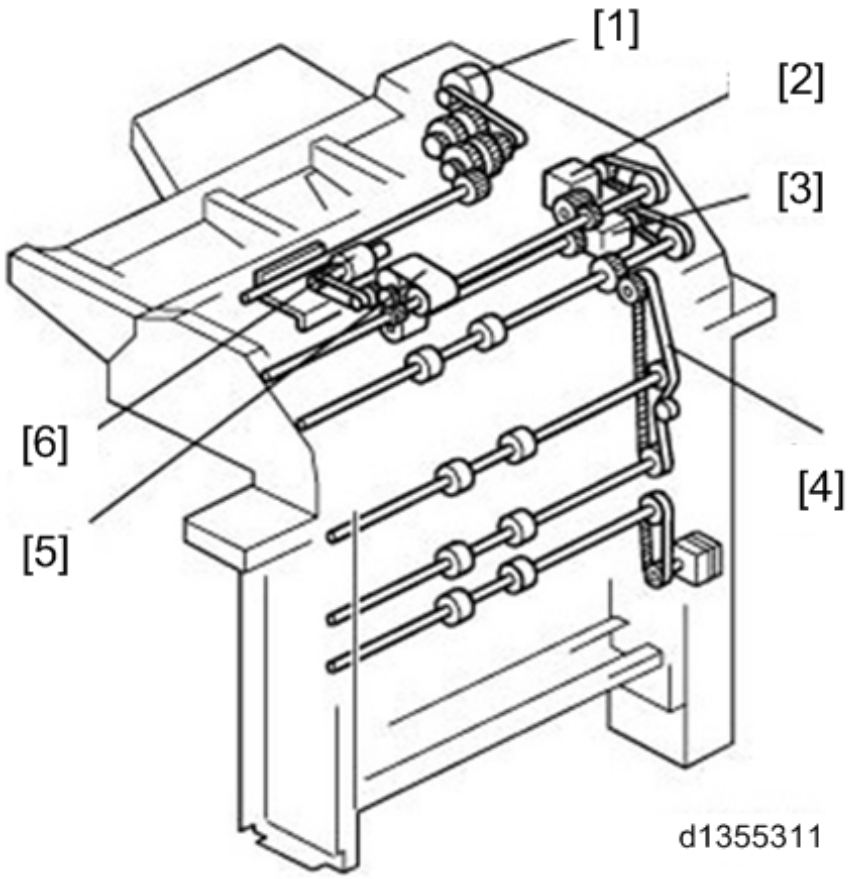


No.	Part	No.	Part
1	Feed Cover Set Sensor	8	Controller Board
2	Feed Motor	9	Exit Motor
3	Bottom Plate Sensor	10	Exit Sensor
4	Transport Roller	11	Feed Sensor
5	Near End Sensor	12	Feed Set Sensor
6	Bottom Plate HP Sensor	13	Width Sensors 1 to 3
7	Pick-up Sensor	14	Length Sensor 1 to 3



No.	Part
1	Length Sensor 1 to 3
2	Feed Set Sensor
3	Width Sensor 1 to 3

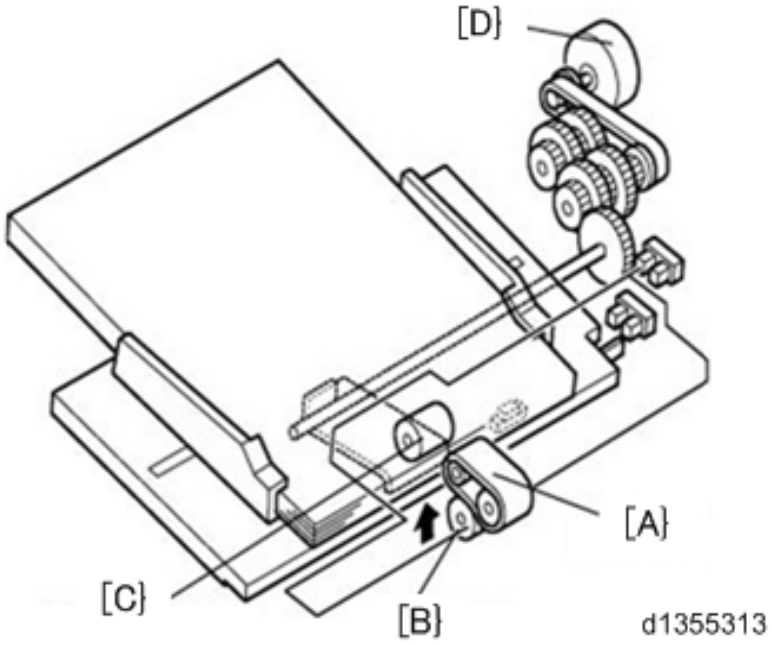
2.2.3 DRIVE LAYOUT



No.	Part
1	Bottom Plate Motor
2	Feed Motor
3	Transport Motor
4	Timing Belt
5	Feed Belt
6	Pick-up Roller

2.3 TRAY MECHANISM

2.3.1 PAPER FEED



No.	Part
[A]	Feed Belt
[B]	Reverse Roller
[C]	Pick-up Roller
[C]	Bottom Plate Motor

- This machine has a feed belt and reverse roller (FRR method).
- The direction that the reverse roller turns depends on the frictional forces acting on it. When there is a single sheet of paper between the feed belt and reverse roller, the friction between the feed belt and the paper is greater than the reverse force from the reverse roller. So, the reverse roller turns in the direction of paper feed.
- If two or more sheets are fed between the belt and roller, the forward force on the second sheet becomes less than reverse force from the reverse roller because of the low friction between the two sheets. So, the reverse roller drives the second sheet back to the tray.
- Finally, the feed belt and the reverse roller feed the paper into the machine.

D3D5

FAX OPTION TYPE M25

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

FAX OPTION TYPE M25
(D3D5)

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READ THIS FIRST

Important Safety Notices

⚠WARNING

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.
- Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
- Do not use a telephone or cellular phone to report a gas leak in the vicinity of the leak.

⚠CAUTION

- Before installing the fax unit, switch off the main switch, and disconnect the power cord.
- The fax unit contains a lithium battery. The danger of explosion exists if a battery of this type is incorrectly replaced. Replace only with the same or an equivalent type recommended by the manufacturer. Discard batteries in accordance with the manufacturer's instructions and local regulations.

Note

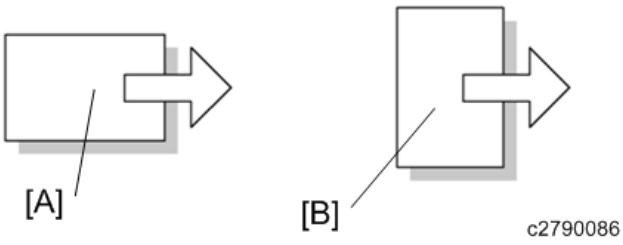
- **Note for Australia**:
- Unit must be connected to Telecommunication Network through a line cord that meets the requirements of ACA Technical Standard TS008.

Symbols and Abbreviations

Conventions Used in this Manual

This manual uses several symbols.

Symbol	What it means
	Refer to section number
	Screw
	Connector
	E-ring
	Clip ring
	Clamp



[A]	SEF (Short Edge Feed)
[B]	LEF (Long Edge Feed)

Cautions, Notes, etc.

The following headings provide special information:

⚠WARNING

- Failure to obey warning information could result in serious injury or death.

⚠CAUTION

- Obey these guidelines to ensure safe operation and prevent minor injuries.

Important

- Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine.
- Always obey these guidelines to avoid serious problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine. bold is added for emphasis.

Note

- This document provides tips and advice about how to best service the machine.

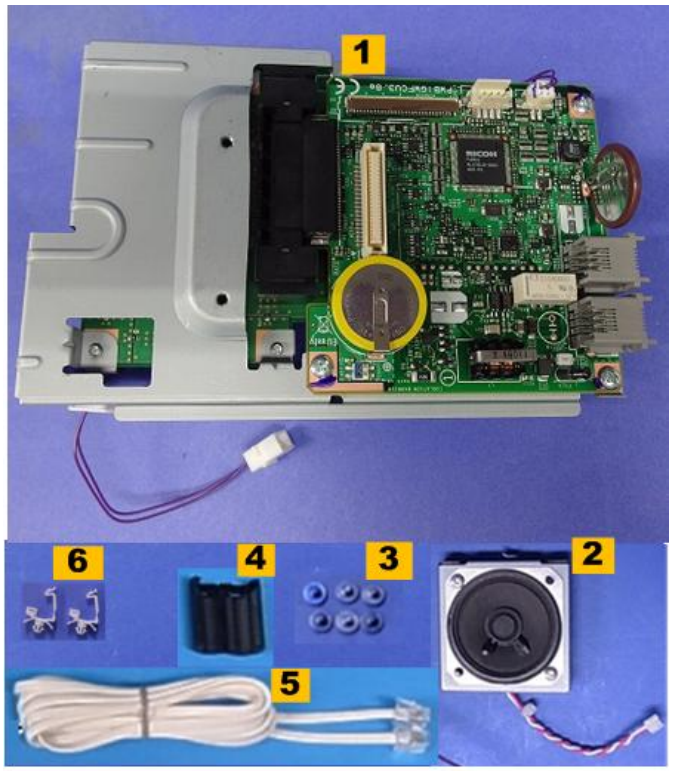
1. INSTALLATION

1.1 FAX OPTION TYPE M25

1.1.1 ACCESSORIES

Check the quantity and condition of the components against the following list.

No.	Description	Q'ty
1	FCU	1
2	Speaker	1
3	Screws (Blue M3 x 6)	4
4	Ferrite Core	1
5	Telephone Cable (NA only)	1
6	Clamps	2
7	FCC Decal (NA Only)	1
8	Serial Number Decal	1
9	Multi-Language Decals	1 *1
10	EMC Address Decal	1*1
*1	EU only	



d3d4c1001b

1.1.2 INSTALLATION

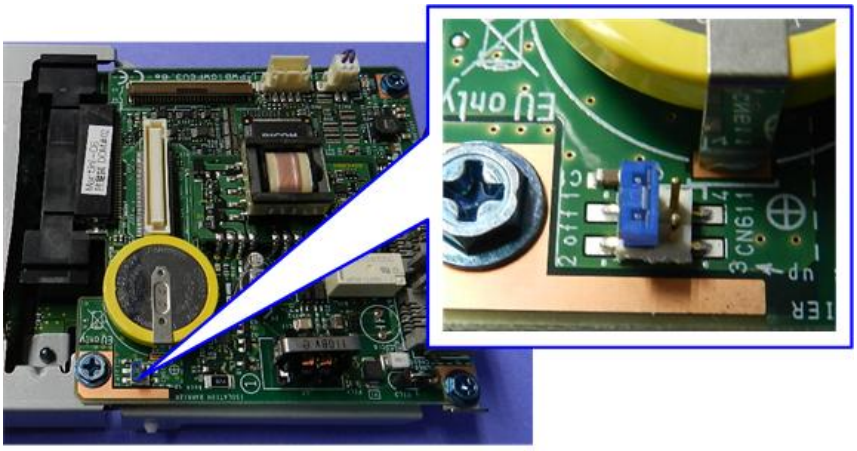
Before You Begin

1. Turn off the main power switch and disconnect the power cord and the network cable.
2. Remove the rear cover of the main machine. (x2)
3. Remove the controller box cover. (x4)

Checking, Setting Jumper

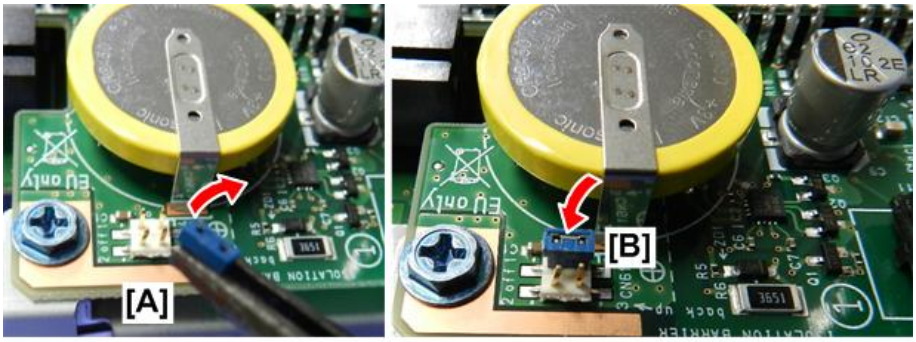
Before you install the FCU, the jumper switch must be set to “on”. (There are two settings: “off” and “on”.

1. Check the jumper to see if it is on or off.
2. Upon delivery the jumper on the FCU board may be set to “off” as shown below.



d3d4c1003

3. If the jumper is at the “off” position, remove jumper [A], and then set it to the “on” position [B].
   -or-
   If the jumper is already at the “on” position [B], just go on to the next step.



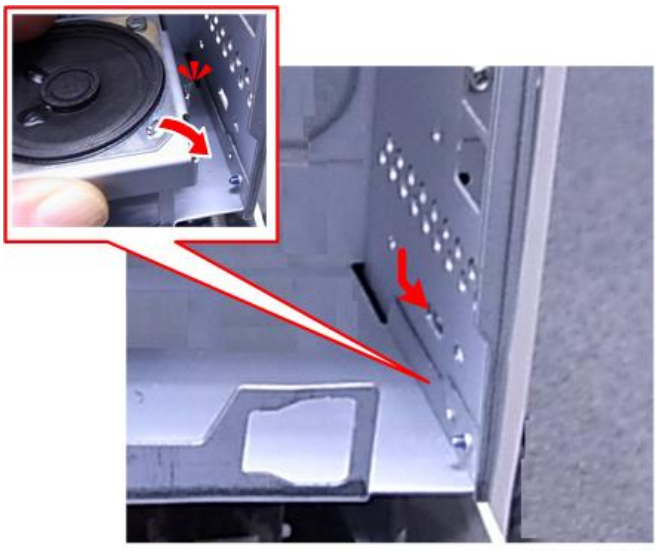
d3d4c1004

Installing the FCU

1. Remove the two knockouts at the bottom corner of the controller box faceplate.

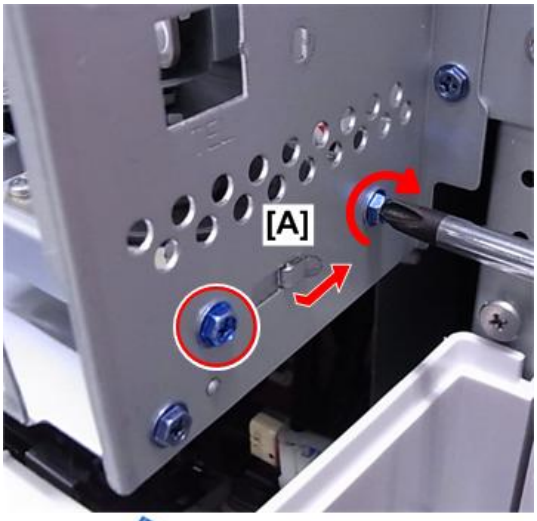
d3d4c1005

2. Set the tab on the side of the speaker into the hole on the controller faceplate.



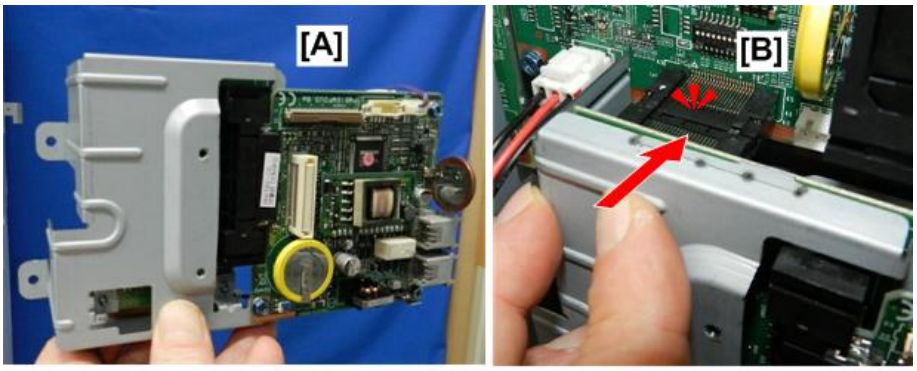
d3d4c1022

3. Slide the speaker bracket to the rear, and then fasten the bracket to the faceplate.



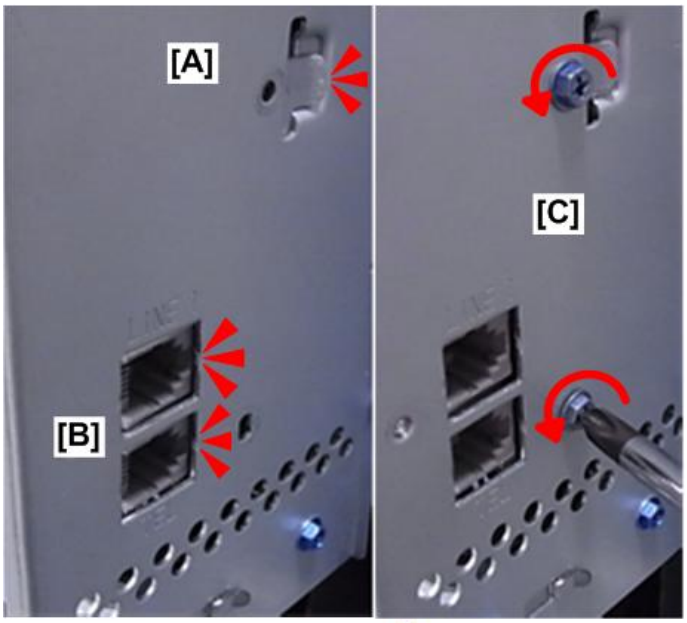
x2 d3d4c1023

4. Hold the FCU [A] as shown, and then connect it to the controller board [B].



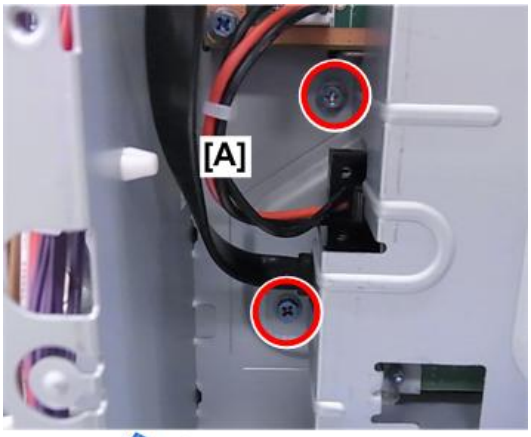
d3d4c1009

5. Make sure that the tab is inserted at [A].
6. Check the connectors [B], and make sure that they are straight in the holes.
7. Fasten the FCU to the controller faceplate [C].



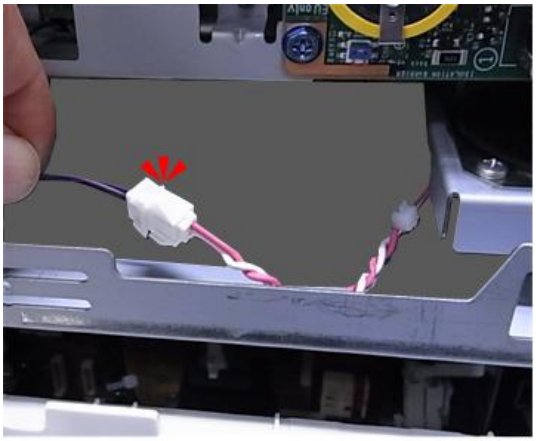
x2 d3d4c1010

8. Fasten the left side of the FCU [A].



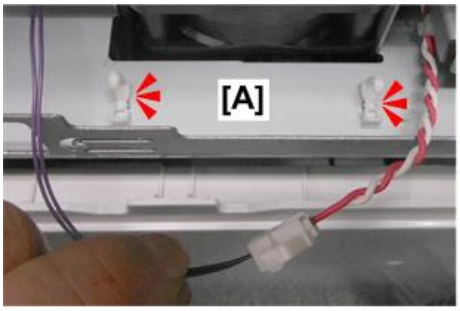
x2 d3d4c1011

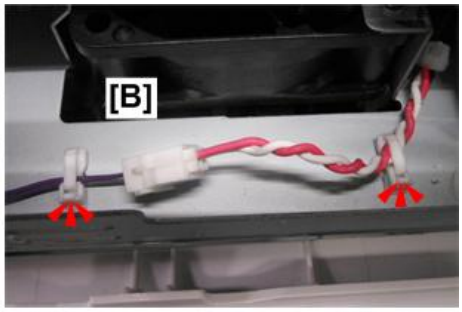
9. Connect the speaker and FCU.



x1 d3d4c1024

10. Below the FCU, set the clamps [A], and then fasten the clamps on the harness [B].

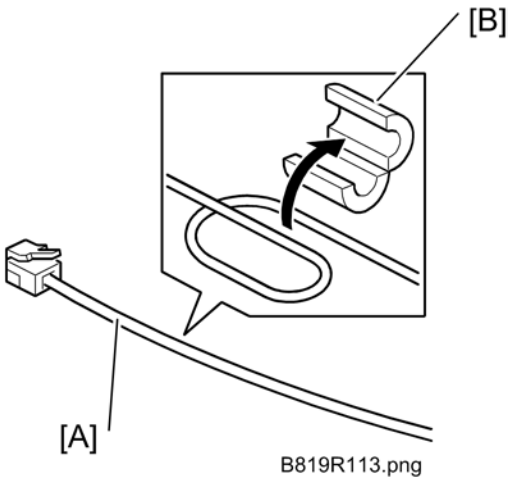




x2 d3d4c1028

11. Re-attach the remove covers.
12. Affix the serial number decal next to the power rating decal on the main machine.
13. This completes installation of the FCU.

Line Connection and Settings



B819R113.png

1. Loop one end of the telephone cable [A] once, then clamp it with the ferrite core (K3 NF-75(N)BK0) [B] as shown.

   Note

   - Attach the ferrite core at least 9 cm (3.5 in.) from the connector.

2. Connect the telephone cable to the "LINE 1" jack.

1.2 FAX TYPE M25 OPTIONS

1.2.1 ACCESSORIES

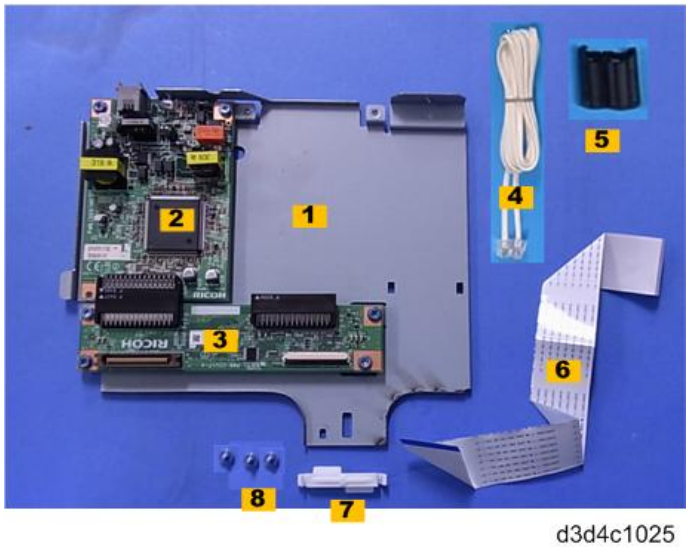
Check the quantity and condition of the components against the following list.

Note

- The number of screws is listed for each item. All screws are blue screws (M3x6).

G3 Interface Type M25

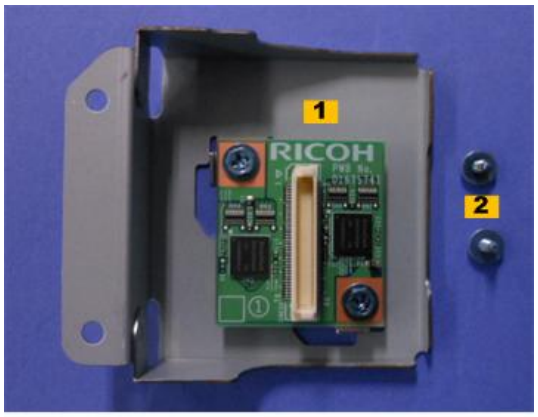
No.	Description	Q'ty
1	Mounting Bracket	1
2	G3 Interface Unit Type M25	1
3	Relay Board (CCUIF)	1
4	Telephone Line (NA Only)	1
5	Ferrite Core	1
6	FFC	1
7	Clamp	1
8	Screw	3



d3d4c1025

SAF Memory

No.	Description	Q'ty
1	SAF Memory	1
2	Screws	2



d3d4c1027

1.2.2 G3, SAF MEMORY OPTIONS

These are options for the Fax Connection Type M25 (D3D5).

- The FCU for this fax has its own G3 capability and can be used alone.
- The options described in this section are add-on options and require the installation of Fax Connection Unit Type M25 FCU.
- If the FCU has been previously installed, it does not need to be removed in order to install any option described in this section.
- The SAF Memory option, connected directly to the FCU in the machine, can be installed independently of any other option described here.

1.2.3 BEFORE YOU BEGIN

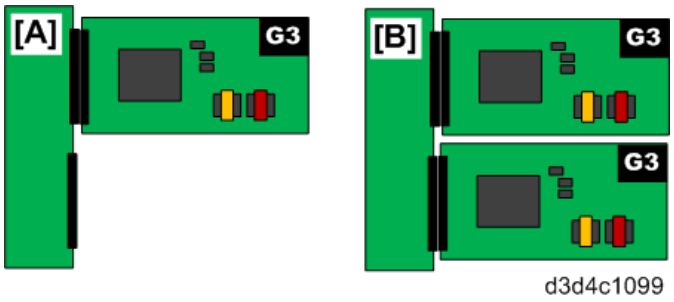
The mounting plate is marked to guide you with the installation. To the right of the relay board [A], you can see “G3” and “G3/G4”.

Note

- The "G4" option is available in Japan only.

d3d41098

Two configurations are possible.



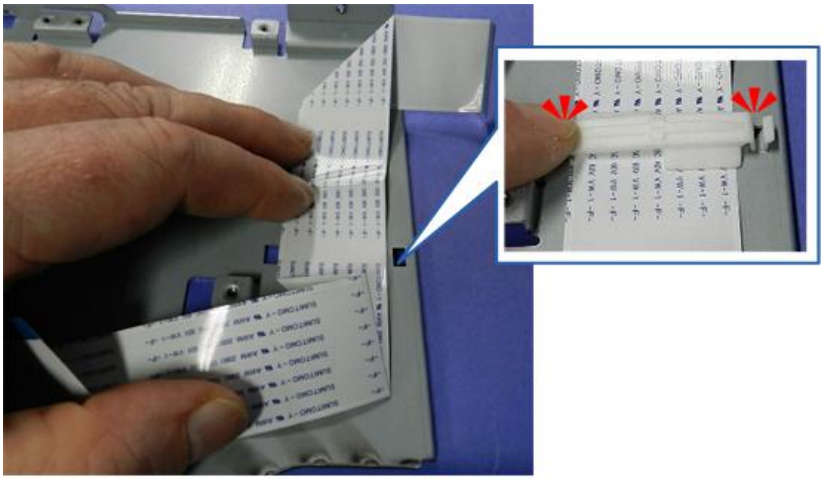
d3d4c1099

[A]	G3 interface board x1
[B]	G3 interface boards x2

1.2.4 G3 INTERFACE BOARD INSTALLATION

Hardware Installation

1. Switch the machine off and unplug it from its power source.
2. Remove the rear cover. (x2)
3. Remove the controller box cover. (x4)
4. Install the Fax Connection Type M25. (This is the installation of the FCU for this fax described in another manual.)
5. Set the FFC on the mounting plate and fasten it with the clip.

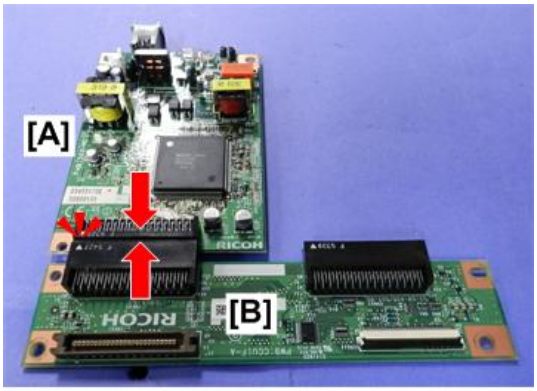


d3d4c1006

6. Insert the interface [A] board into the relay board [B]. The photo below shows one G3 interface board being inserted.

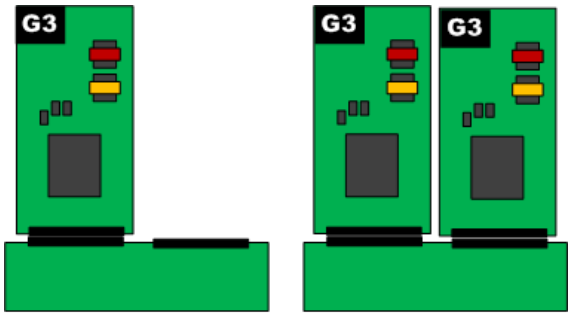
Important

- The boards must be inserted before they can be mounted on the frame with screws.



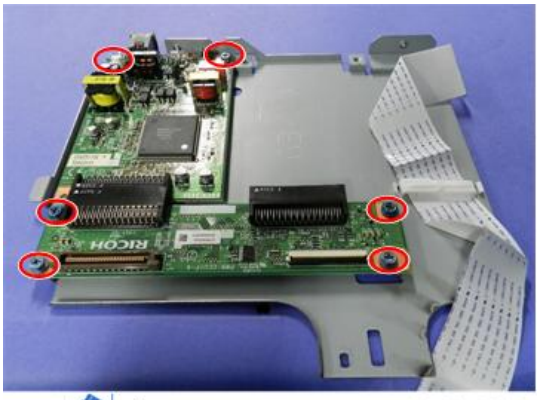
d3d4c1007

- The customer may require only one G3 board or two G3 boards.
- Follow the markings on the plate to set the first and second board correctly.



d3d4c1021

7. Fasten the boards to the mounting bracket.



x4 d3d4c1008

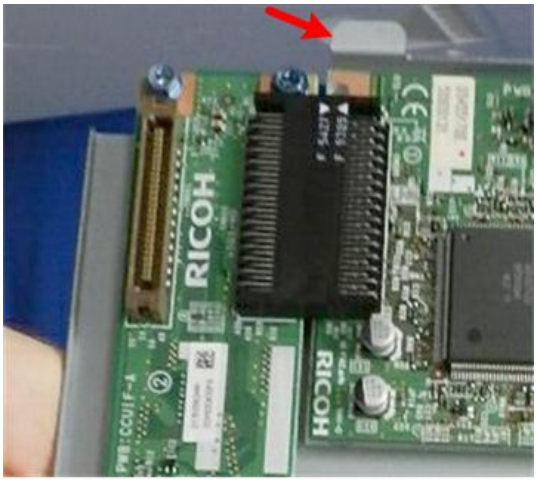
8. Remove the knockouts on the controller faceplate.

Important

- The number and position of these knockouts will depend on the number and position of the connectors are the boards to be attached. These knockouts must be removed before the boards can be installed.

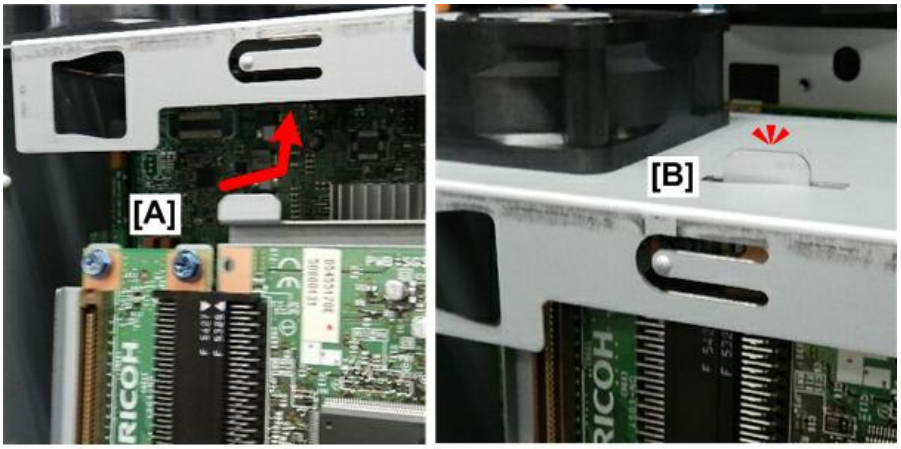
d3d4c1013

9. Hold the mounting bracket as shown with the large tab up.



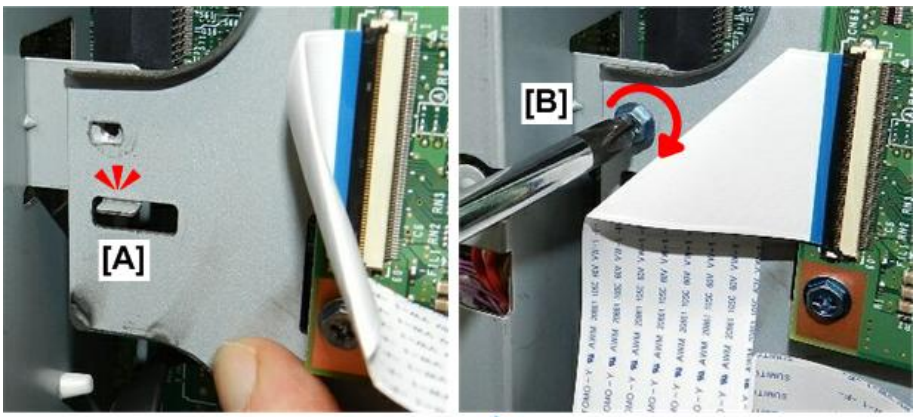
d3d4c1014

10. Insert the mounting bracket [A] holding the installed boards into the controller box frame [B].



d3d4c1015

11. Insert tab [A] into the lower left corner of the mounting bracket.
12. At the same location, fasten the bracket [B] to the frame.



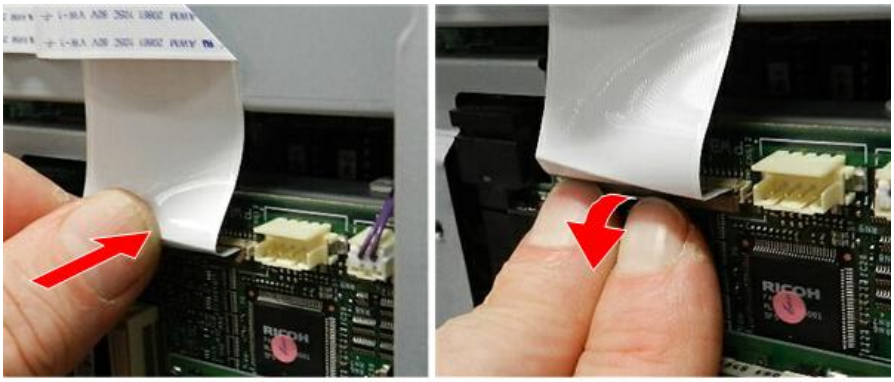
x1

d3d4c1016

13. Make sure that the connectors fit correctly into the holes on the controller box faceplate.

d3d4c1017

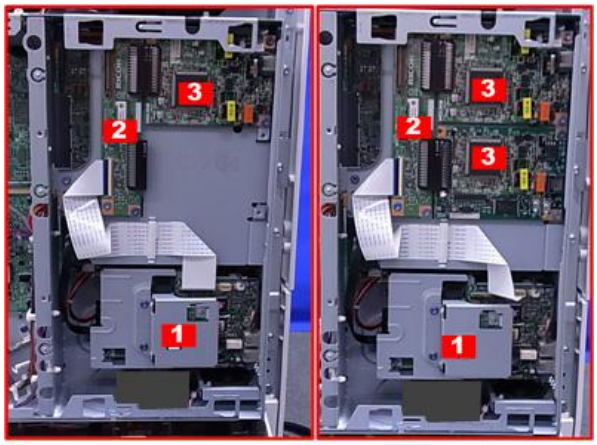
14. Insert the FFC from the relay board on the mounting bracket into the FCU below.



x1

d3d4c1018

15. This completes the hardware installation. Here are two examples:
    - The photo on the left shows [1] FCU (previously installed), [2] Relay board, [3] G3 interface board.
    - The photo on the right shows and additional G3 interface board [G3] below the first G3 board.



d3d4c1019

Finishing the Installation

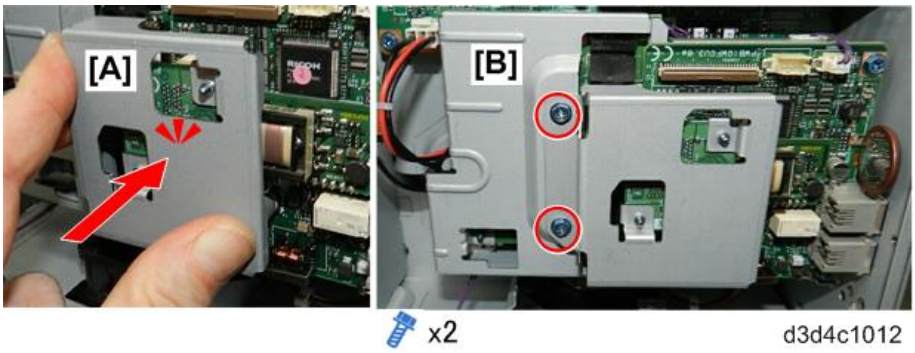
1. Turn the machine on.
2. Go into the SP mode and do the SP code settings in **SP1104-023** required for your installation.

Type	Lines	Set To:	Select	Comment
G3	1	1 Enable G3	Bit 1	COM SW16 BIT1 selects PSTN2
G3	2	1 Enable G3	Bit 3	COM SW16 BIT3 selects PSTN3

1. Exit the SP mode, and then cycle the machine off/on to enable the settings.

1.2.5 SAF MEMORY INSTALLATION

1. Switch the machine off and unplug it from its power source.
2. Remove the rear cover. (x2)
3. Remove the controller box cover. (x4)
4. Plug the memory PCB into the connector on the FCU [A].
5. Fasten the memory bracket [B] to the FCU.



1.3 FAX CONNECTION UNIT TYPE M25

1.3.1 INSTALLATION PROCEDURE

This unit allows a machine without the fax unit installed (Client Machine) to send and receive faxes via another machine with the same fax unit installed ("Remote Machine").

Requirements

- Up to six machines can be registered as Client Machines.
- Machines that have the fax unit installed cannot be used as a Client Machine.
- Only one machine can be registered as a Remote Machine.
- Firmware for this unit: "aics" (software number: D3A7759)
- Remote Fax transmissions are possible on a G3 line.
- The remote fax function does not support User Code Authentication. Disable the User Code Authentication on the Remote machine.
- Use this function to check the contents of a file that is stored in memory and not yet sent. Also, use this function to cancel a transmission from the Client Machine.

Order of Installation Procedure

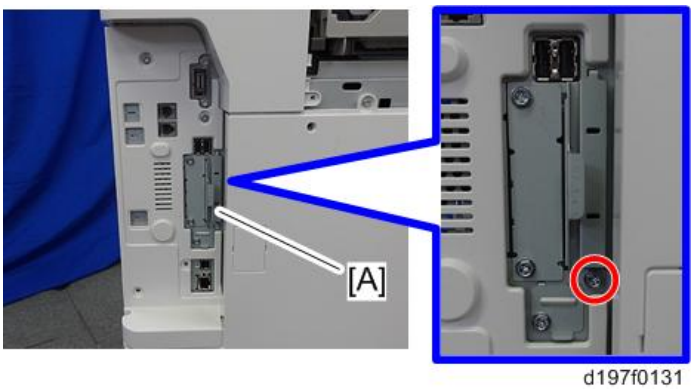
1. Install the Fax Connection Unit in the Remote Machine (fax unit installed).
2. Install the Fax Connection Unit in the Client Machine (no fax unit installed).
3. Register the Client Machine in the Remote Machine.

   Important

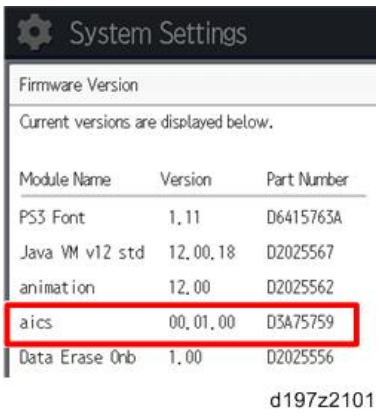
   - Do not register the Remote Machine before the Client Machine is registered in the Remote Machine. Otherwise, registering the Remote Machine fails.
4. Register the Remote Machine in the Client Machine.

Installing the application in the Remote Machine and Client Machine

1. Remove the SD card slot cover from the SD card slots [A] (x 1).



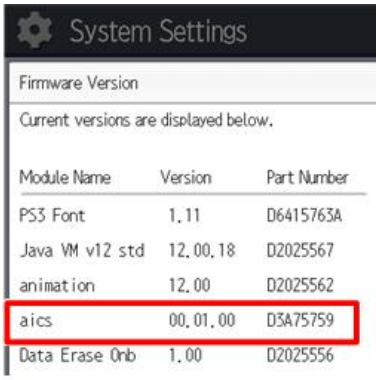
2. Insert the SD card (Fax Connection Unit Type M12) in SD slot 1 (upper) with its label face towards the front of the machine if SD slot 1 is vacant. If not, follow the procedure below.
3. Plug in, and then turn on the machine.
4. Open the Firmware Version screen:
   > > User Tools> Machine Features> System Settings> Administrator Tools > Next> Next> Firmware Version
5. Check whether "aics" version is displayed.



Moving a Fax Communication Application onto an SD card

1. Insert the SD card (Fax Connection Unit Type M12) SD slot 2 (lower) with its label face towards the front of the machine. Then push it slowly into SD slot 2 (lower) until you hear a click.
2. Plug in, and then turn on the machine.
3. Move the Fax Connection Unit Type M12 application from the SD card in SD slot 2 (lower) to the SD card in SD slot 1 (upper) with SP5-873-001.
4. Turn off the machine.
5. Remove the SD card from SD slot 2 (lower), and then keep it in a safe place (see “SD Card Appli Move” in the field service manual for the mainframe).
6. Attach the SD-card slot cover, and then turn on the machine (x 1).
7. Turn on the machine.
8. Open the Firmware Version screen:
   > > User Tools> Machine Features> System Settings> Administrator Tools > Next> Next> Firmware Version

9. Check whether "aics" is displayed.



d197z2101

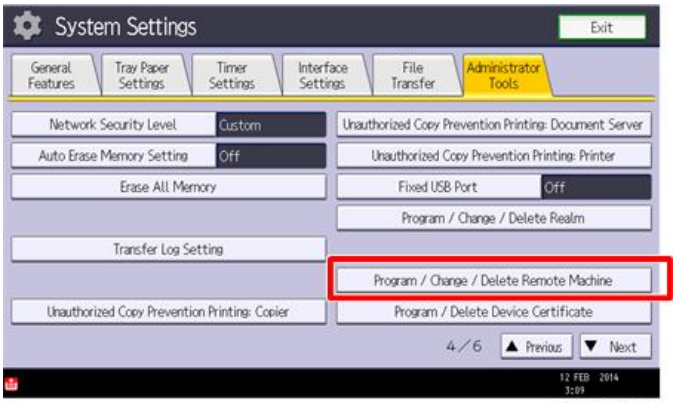
Registering One or More Client Machine

Important

- Do not register the Remote Machine in the Client machine before the Client Machine is registered in the Remote Machine. Otherwise, registering the Remote Machine fails.

On the Remote Machine:

1. Press > > User Tools> Machine Features.
2. Press [System Settings].
3. Press [Administrator Tools].
4. Press [Next] > [Next]> [Program/Change/Delete Remote Machine].

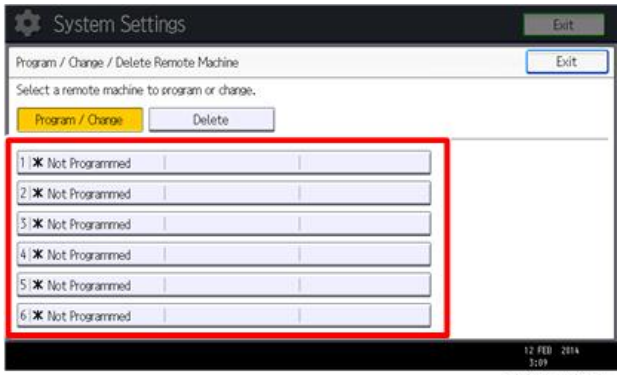


d197z2102

5. Press one of the machine registration lines, and then enter the IP address or host name of one of the Client Machines.

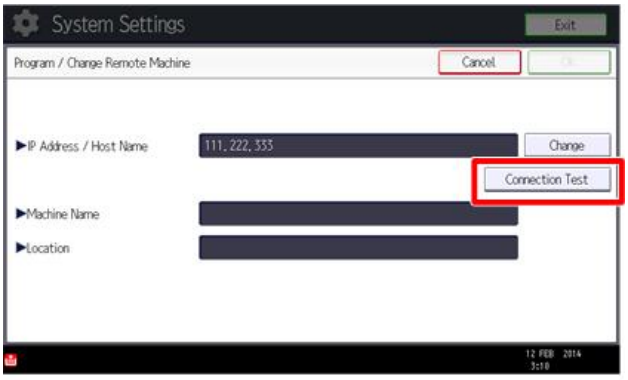
Note

- Up to six machines can be registered as the Client Machines.



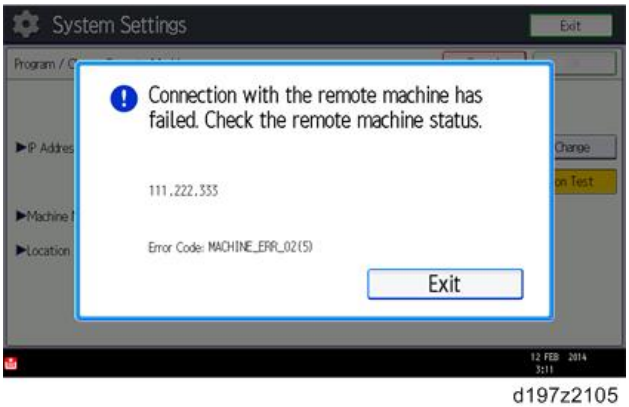
d197z2103

6. Press [Connection Test] to check the connection with the Client machine.



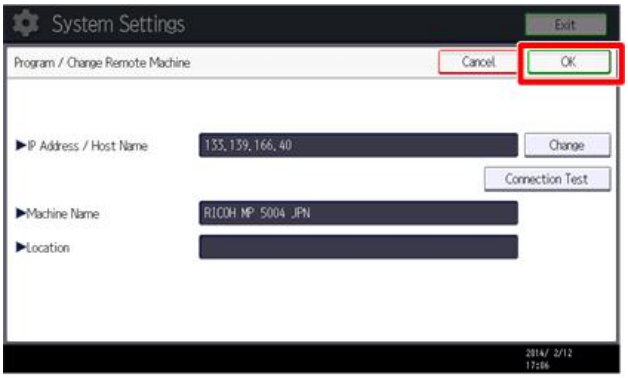
d197z2104

If an error message is displayed, check the network connection with the Client machine and make sure that the IP address of the Client machine is correct.



d197z2105

7. Press [OK] after “Connection Test” has been successfully done.



d197z2106

8. Presss [User Tools/Counter] key on the operation panel to terminate the System Settings.

Registering the Remote Machine

Important

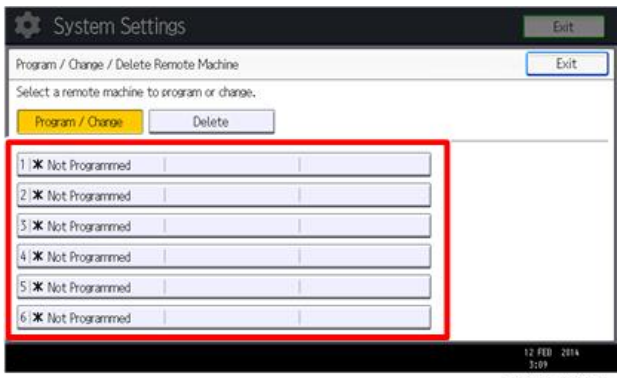
- First register the Client Machine in the Remote Machine before doing the procedure below. Otherwise, registering the Remote Machine will fail.
- Only one machine can be registered as the Remote Machine.

On a Client Machine

1. Press the [User Tools/Counter] key on the operation panel
2. Press [System Settings].
3. Press [Administrator Tools].
4. Press [Program/Change/Delete Remote Machine].
5. Enter the IP address or host name of the Remote Machine.
6. Press one of the machine registration lines, and then enter the IP address or host name of the Remote Machine

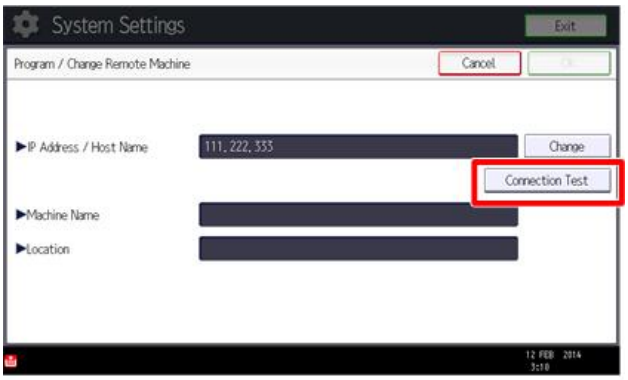
Note

- Only one machine can be registered as the Remote Machine.



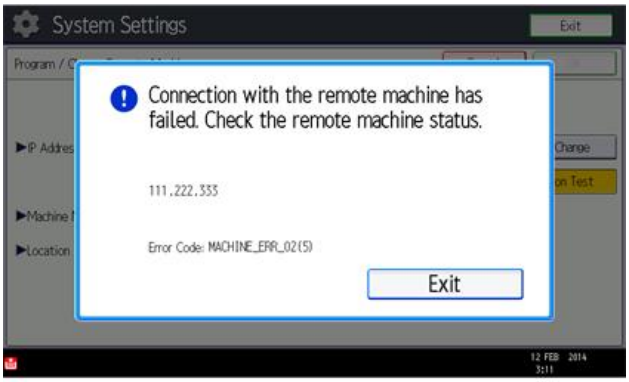
d197z2103

7. Press [Connection Test] to check the connection with the remote machine.



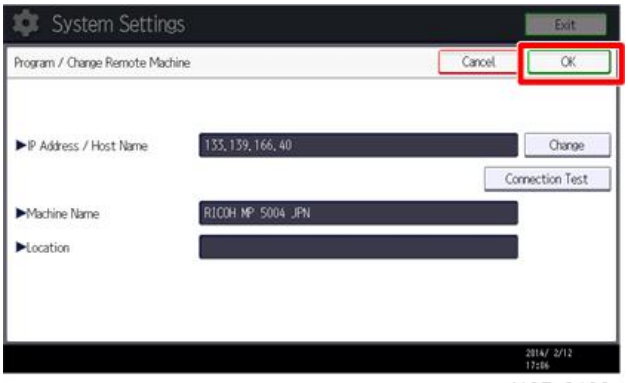
d197z2104

If an error message is displayed, check the network connection with the remote machine and make sure that the IP address of the remote machine is correct.



d197z2105

8. Press [OK] after “Connection Test” has been successfully done.



d197z2106

9. Presss [User Tools/Counter] key on the operation panel to terminate the System Settings.

Configuring Remote Reception Settings

Do the following procedure to enable a Client Machine to receive faxes via the Remote Machine. You can forward or route received documents per line or special sender.

Note

- By performing procedures described above (Installing the application in the Remote Machine and Client Machine, Registering the Client Machine(s), Registering the Remote Machine), the Client Machines can **send** faxes via the Remote Machine. The procedures shown below are necessary to enable the Client Machines to **receive** faxes.

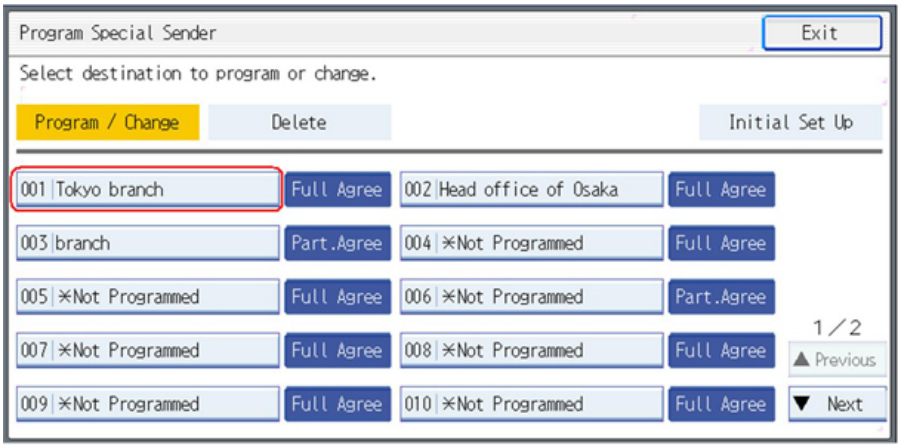
On the Remote Machine

If you use "Remote Reception Setting per Line"

1. Press [Facsimile Features].
2. Press [Remote Reception Setting per Line] in [Reception Settings].
3. Enter an IP address or a host name of the Client machine to connect.
4. Press [Set], and [Exit] to exit from the setting.

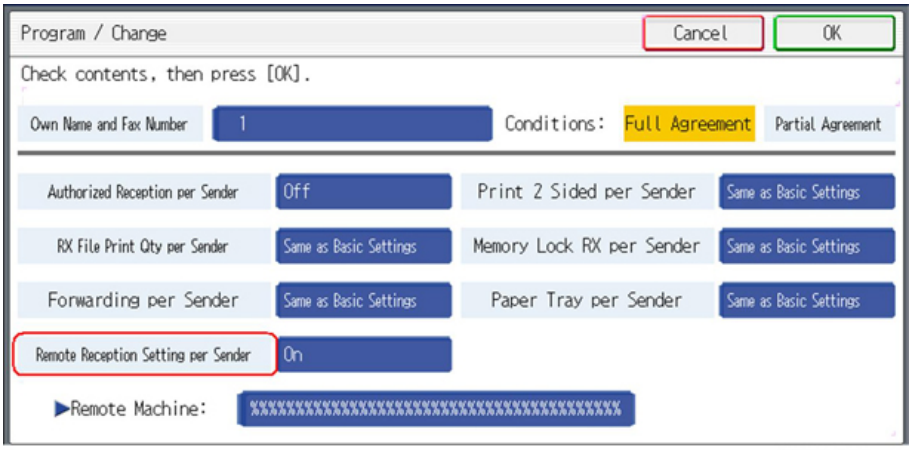
If you use "Remote Reception per Sender"

1. Press [Facsimile Features].
2. Press [Program Special Sender] in [Reception Settings].
3. Select the Special Sender.



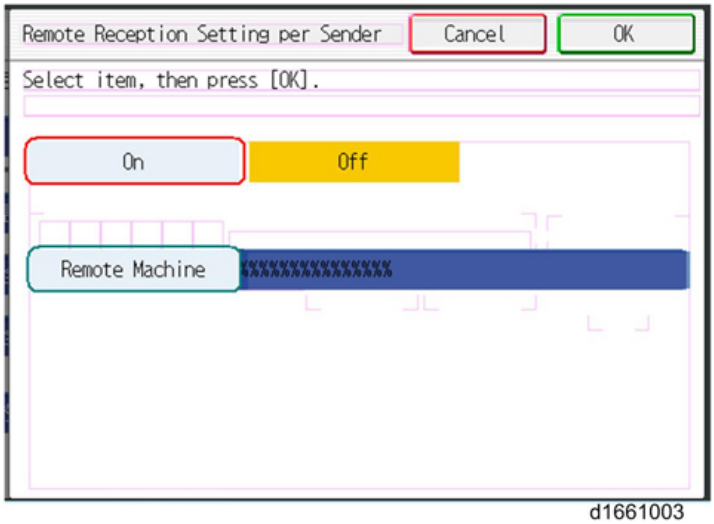
d1661001

4. Press [Remote Reception Setting per Sender].



d1661002

5. Press [On] and [Remote Machine].



d1661003

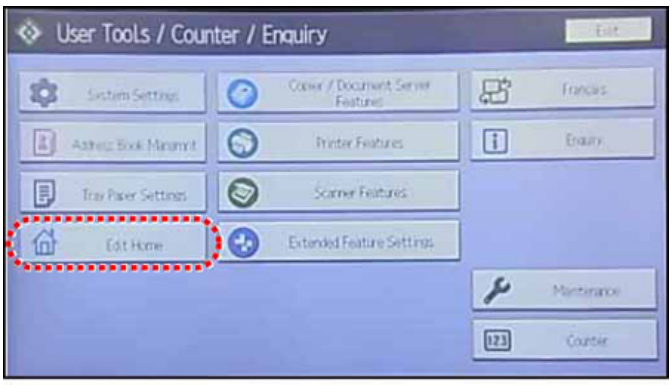
6. Enter an IP address or a host name of the Client machine to connect.
7. Press [OK] to exit from the setting.

Adding a Remote Fax Icon a Remote Machine

The icon of the fax communication is supposed to appear automatically on the home screen of the Client Machine(s) after installation of the Fax Communication. If the icon of the fax communication does not appear, add the icon manually. This procedure allows the remote fax icon to appear on the home screen of the operation panel.

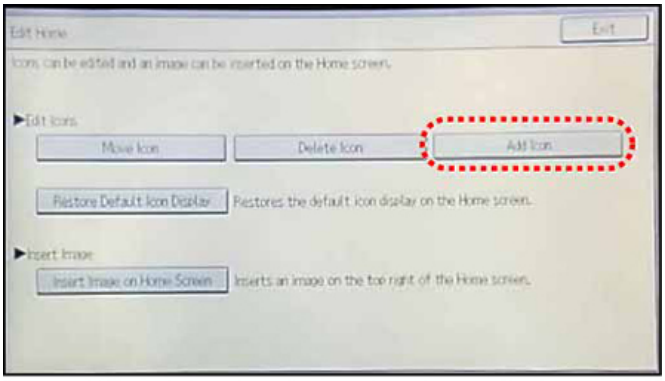
On both the Remote Machine and the Client Machines:

1. Press [User Tools].
2. Press [Edit Home].



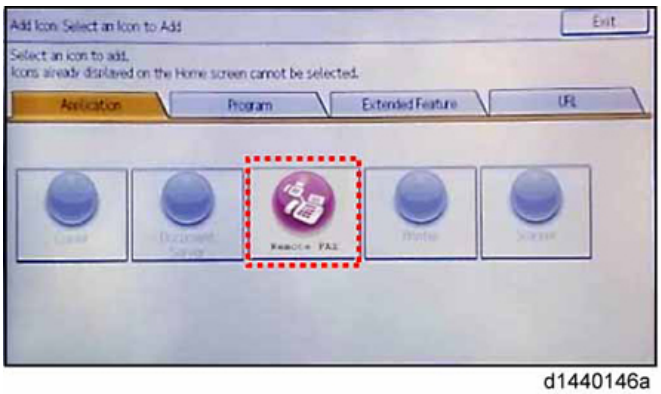
d1440144

3. Press [Add Icon].



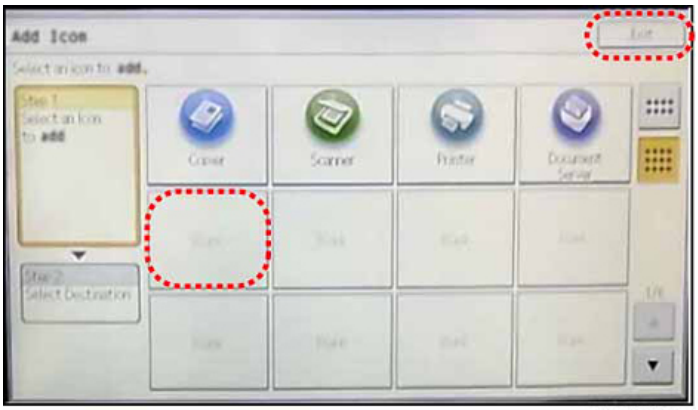
d1440145

4. Press [Remote Fax].



d1440146a

5. Press a [Blank] to set a location for the remote fax icon.



d1440147

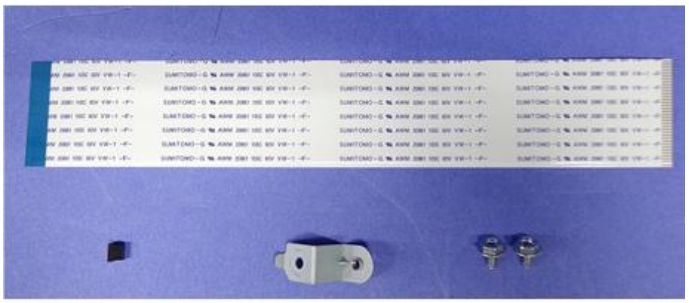
6. Press [Exit] to exit from the setup procedure.

2. REPLACEMENT AND ADJUSTMENT

2.1 FCU REPLACEMENT

2.1.1 ACCESSORIES

Here is a list of the service parts provided for FCU replacement.



d3d5d7021

No.	Part	Qty
1	FFC harness FCU-FCU	1
2	Jumper	1
3	Bracket IPU-SUB	1
4	Screws (M3x6)	2

Important

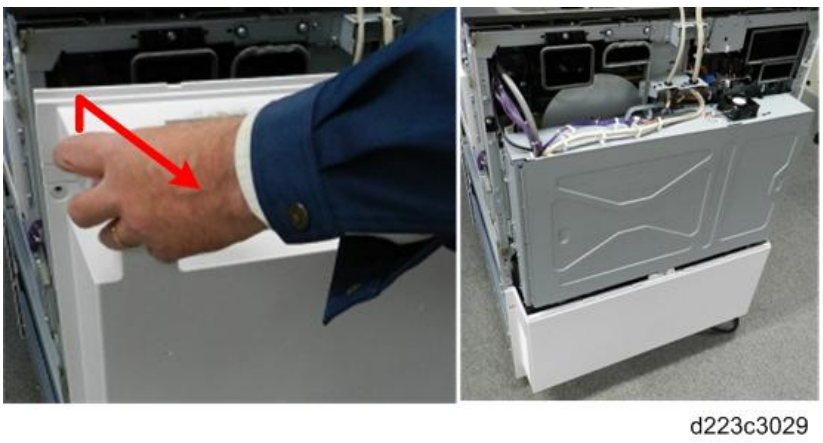
- The data in the SRAM of the old FCU must be transferred to the SRAM of the new FCU.

2.1.2 REPLACEMENT PROCEDURE

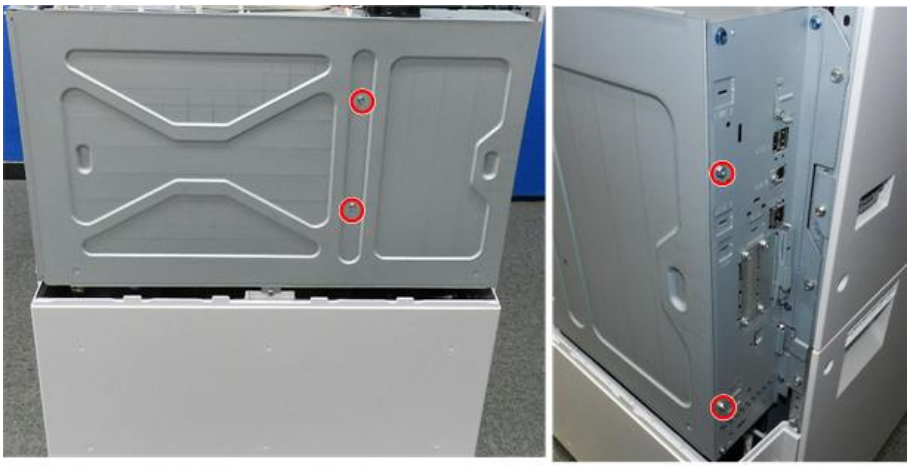
1. Loosen the lower screws of the rear upper cover. You do not need to remove them.

2. Remove the upper screws of the rear upper cover.

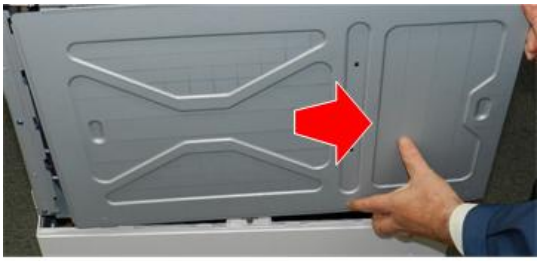
3. Remove the rear upper cover.



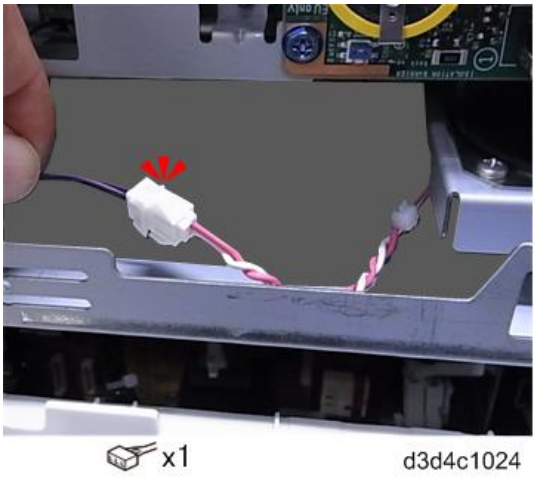
4. Disconnect the controller box cover.



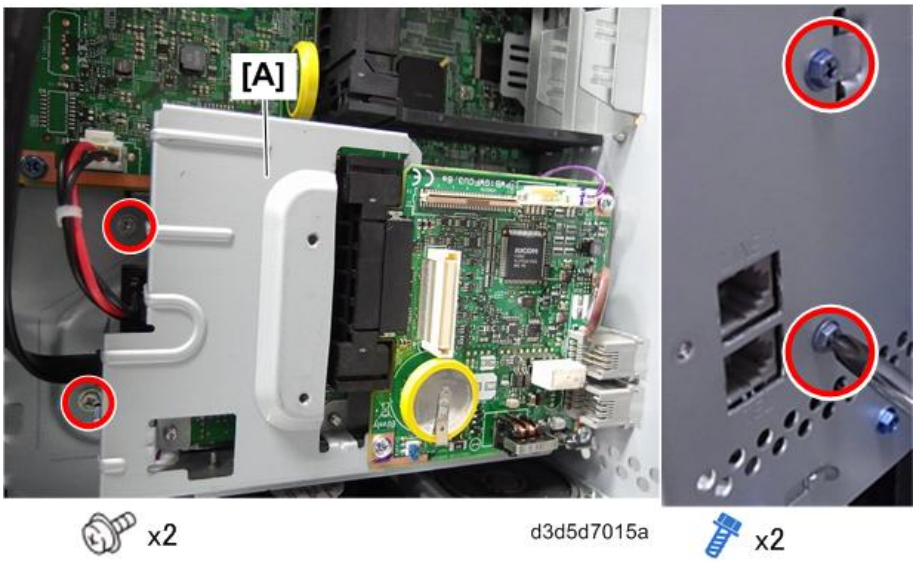
5. Slide the cover to the side, and then remove it.



6. Disconnect the FCU from the speaker.

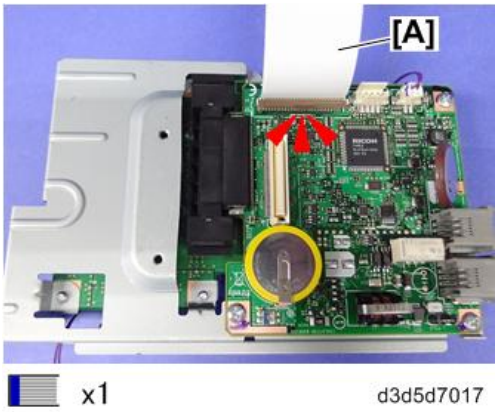


7. Remove fax unit bracket [A] with FCU attached.

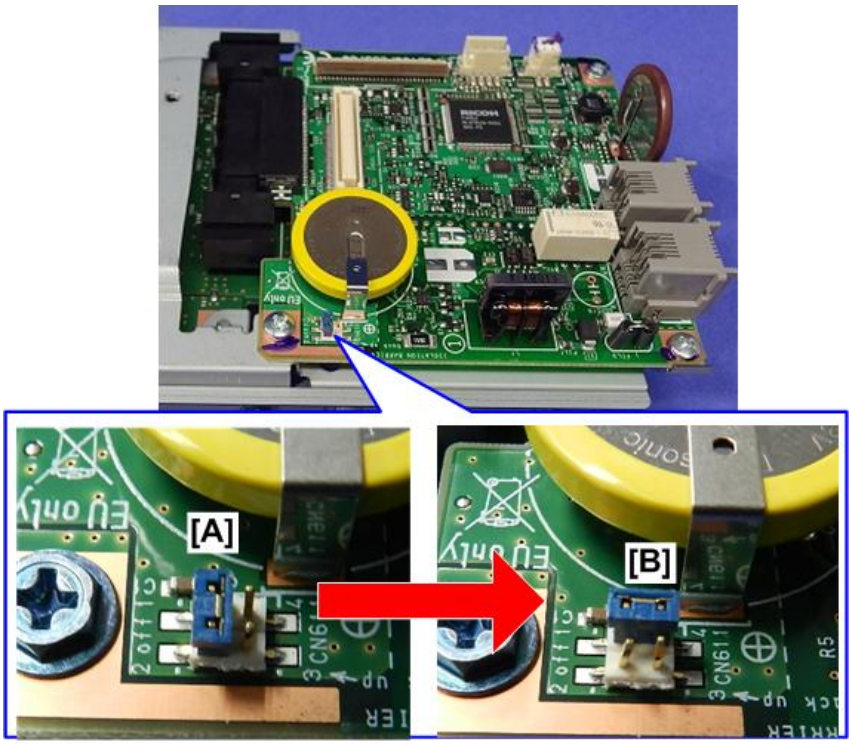


8. Remove the old FCU from the bracket, and then mount the new one on the bracket.

9. With the blue side of the edge pointing out as shown below, connect the FFC harness (accessory provided) [A] to **CN603** on the new FCU.
10. Check the connection and make sure that it is locked and straight.



11. Move the jumper on the new FCU from the OFF [A] to ON [B] to switch the onboard battery on.

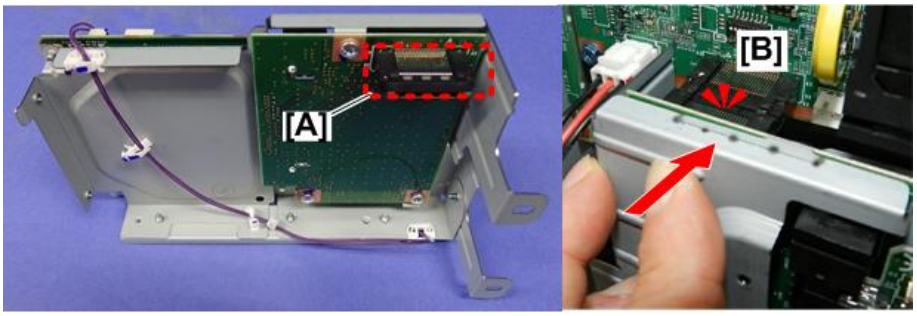


d3d5d2101

Important

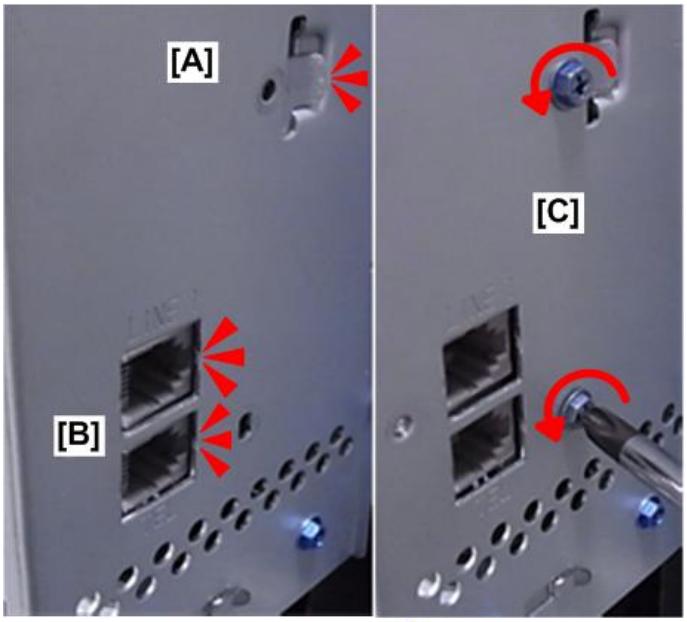
- Failure to move the jumper from OFF to ON will cause SC672-00 after the machine is turned on.

12. Insert edge connector [A] on the back of the FCU into PCU socket [B]



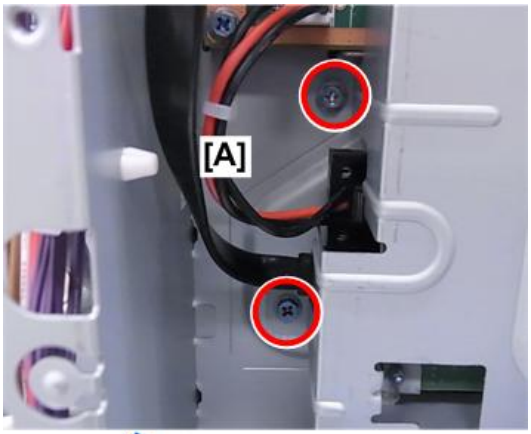
d3d4c1009a

13. Align the tab and holes of faceplate [A] with connector sockes [B], and then fasten plate [C].



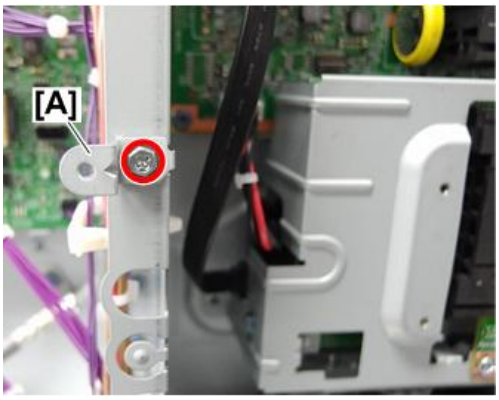
x2 d3d4c1010

14. Fasten the left edge of the FCU [A].



x2 d3d4c1011

15. Fasten the small bracket [A] (provided accessory) to the center stay of the controller box.

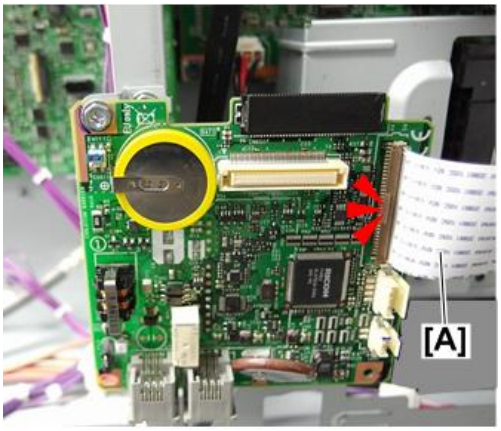


d3d5d7018

Important

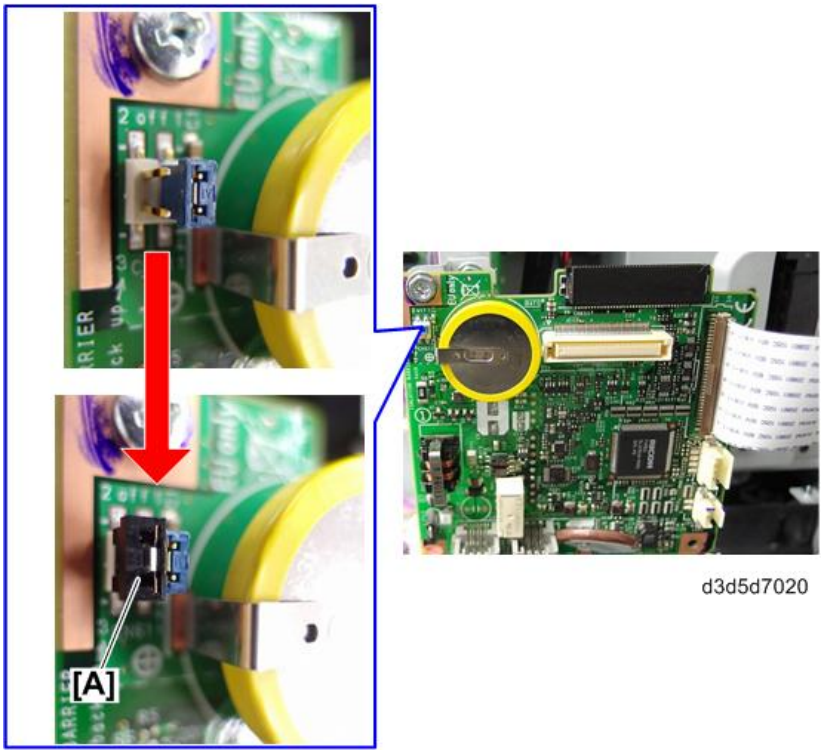
- To prevent a short circuit that could damage the boards, handle the FCU carefully to keep its soldered connection points from touching the frame of the machine.

16. Fasten the old FCU to the bracket just installed.
17. Attach the free end of the FFC attached to the new FCU to CN603 of the old FCU.
18. With the blue side of the edge pointing away as shown below, connect the free end of the FFC [A] attached to the new FCU to **CN603** on the old FCU.



d3d5d7019

19. Attach the jumper [A] (provided accessory) to the old FCU.



d3d5d7020

20. Turn on the machine to start the SRAM transmission.
21. When you hear the beep, the transfer has finished. Go to the next step.

    -or-

    If you do not hear the beep, cycle the machine off/on again to start the data transfer.

- If you still do not hear the beep, cycle the machine off/on up to three times to start the data transfer.
- If you cannot complete the data transfer successfully after the third attempt, the SRAM setting must be entered manually.

22. When “Ready” appears, turn off the machine off, and then disconnect the flat cable from the old FCU board.
23. Remove the old FCU board.
24. Remove the bracket from the center frame of the controller box.
25. Disconnect the flat cable from the new FCU board.
26. Re-assemble the machine.
27. Turn the machine on, and then do **SP6101** to print the system parameter list.
28. Check the system parameter list to make sure that the data was transferred correctly.
29. Set the correct date and time with the User Tools: > > User Tools > Machine Features > System Settings > Timer Settings > Set Date > Set Time

3. TROUBLESHOOTING

3.1 ERROR CODES

If an error code occurs, retry the communication. If the same problem occurs, try to fix the problem as suggested below. Note that some error codes appear only in the error code display and on the service report.

Code	Meaning	Suggested Cause/Action
0-00	DIS/NSF not detected within 40 s of Start being pressed	▪ Check the line connection. ▪ The machine at the other end may be incompatible. ▪ Replace the FCU. ▪ Check for DIS/NSF with an oscilloscope. ▪ If the rx signal is weak, there may be a bad line.
0-01	DCN received unexpectedly	▪ The other party is out of paper or has a jammed printer. ▪ The other party pressed Stop during communication.
0-03	Incompatible modem at the other end	The other terminal is incompatible.
0-04	CFR or FTT not received after modem training	▪ Check the line connection. ▪ Try changing the tx level and/or cable equalizer settings. ▪ Replace the FCU. ▪ The other terminal may be faulty; try sending to another machine. ▪ If the rx signal is weak or defective, there may be a bad line. **Cross reference** Tx level - NCU Parameter 01 (PSTN) Cable equalizer - G3 Switch 07 (PSTN) Dedicated Tx parameters in Service Program Mode

Code	Meaning	Suggested Cause/Action
0-05	Modem training fails even G3 shifts down to 2400 bps.	▪ Check the line connection. ▪ Try adjusting the tx level and/or cable equalizer. ▪ Replace the FCU. ▪ Check for line problems. **Cross reference** See error code 0-04.
0-06	The other terminal did not reply to DCS	▪ Check the line connection. ▪ Try adjusting the tx level and/or cable equalizer settings. ▪ Replace the FCU. ▪ The other end may be defective or incompatible; try sending to another machine. ▪ Check for line problems. **Cross reference** See error code 0-04.
0-07	No post-message response from the other end after a page was sent	▪ Check the line connection. ▪ Replace the FCU. ▪ The other end may have jammed or run out of paper. ▪ The other end user may have disconnected the call. ▪ Check for a bad line. ▪ The other end may be defective; try sending to another machine.

Code	Meaning	Suggested Cause/Action
0-08	The other end sent RTN or PIN after receiving a page, because there were too many errors	▪ Check the line connection. ▪ Replace the FCU. ▪ The other end may have jammed, or run out of paper or memory space. ▪ Try adjusting the tx level and/or cable equalizer settings. ▪ The other end may have a defective modem/FCU; try sending to another machine. ▪ Check for line problems and noise. **Cross reference** ▪ Tx level - NCU Parameter 01 (PSTN) ▪ Cable equalizer - G3 Switch 07 (PSTN) ▪ Dedicated Tx parameters in Service Program Mode
0-14	Non-standard post message response code received	▪ Incompatible or defective remote terminal; try sending to another machine. ▪ Noisy line: resend. ▪ Try adjusting the tx level and/or cable equalizer settings. ▪ Replace the FCU. **Cross reference** See error code 0-08.
0-15	The other terminal is not capable of specific functions.	The other terminal is not capable of accepting the following functions, or the other terminal's memory is full. ▪ Confidential rx ▪ Transfer function ▪ SEP/SUB/PWD/SID

Code	Meaning	Suggested Cause/Action
0-16	CFR or FTT not detected after modem training in confidential or transfer mode	▪ Check the line connection. ▪ Replace the FCU. ▪ Try adjusting the tx level and/or cable equalizer settings. ▪ The other end may have disconnected, or it may be defective; try calling another machine. ▪ If the rx signal level is too low, there may be a line problem. **Cross reference** See error code 0-08.
0-17	Communication was interrupted by pressing the Stop key	If the Stop key was not pressed and this error keeps occurring, replace the operation panel or the operation panel drive board.
0-20	Facsimile data not received within 6 s of retraining	▪ Check the line connection. ▪ Replace the FCU. ▪ Check for line problems. ▪ Try calling another fax machine. ▪ Try adjusting the reconstruction time for the first line and/or rx cable equalizer setting. **Cross reference** Reconstruction time - G3 Switch 0A, bit 6 Rx cable equalizer - G3 Switch 07 (PSTN)
0-21	EOL signal (end-of-line) from the other end not received within 5 s of the previous EOL signal	▪ Check the connections between the FCU and line. ▪ Check for line noise or other line problems. ▪ Replace the FCU. ▪ The remote machine may be defective or may have disconnected. **Cross reference** Maximum interval between EOLs and between ECM frames - G3 Bit Switch 0A, bit 4

Code	Meaning	Suggested Cause/Action
0-22	The signal from the other end was interrupted for more than the acceptable modem carrier drop time (default: 200 ms)	▪ Check the line connection. ▪ Replace the FCU. ▪ Defective remote terminal. ▪ Check for line noise or other line problems. ▪ Try adjusting the acceptable modem carrier drop time. **Cross reference** Acceptable modem carrier drop time - G3 Switch 0A, bits 0 and 1
0-23	Too many errors during reception	▪ Check the line connection. ▪ Replace the FCU. ▪ Defective remote terminal ▪ Check for line noise or other line problems. ▪ Try asking the other end to adjust their tx level. ▪ Try adjusting the rx cable equalizer setting and/or rx error criteria. **Cross reference** Rx cable equalizer - G3 Switch 07 (PSTN) Rx error criteria - Communication Switch 02, bits 0 and 1
0-29	Data block format failure in ECM reception	▪ Check for line noise or other line problems. ▪ Check the FCU - NCU connectors. ▪ Replace the NCU or FCU.
0-30	The other terminal did not reply to NSS(A) in AI short protocol mode	▪ Check the line connection. ▪ Try adjusting the tx level and/or cable equalizer settings. ▪ The other terminal may not be compatible. **Cross reference** Dedicated tx parameters - Section 4
0-32	The other terminal sent a DCS, which contained functions that the receiving machine cannot handle.	▪ Check the protocol dump list. ▪ Ask the other party to contact the manufacturer.

Code	Meaning	Suggested Cause/Action
0-33	The data reception (not ECM) is not completed within 10 minutes.	▪ Check the line connection. ▪ The other terminal may have a defective modem/FCU.
0-52	Polarity changed during communication	▪ Check the line connection. Retry communication.
0-55	FCU does not detect the SG3.	▪ FCU firmware or board defective. ▪ SG3 firmware or board defective.
0-56	The stored message data exceeds the capacity of the mailbox in the SG3.	SG3 firmware or board defective.
0-70	The communication mode specified in CM/JM was not available (V.8 calling and called terminal)	▪ The other terminal did not have a compatible communication mode (e.g., the other terminal was a V.34 data modem and not a fax modem.) ▪ A polling tx file was not ready at the other terminal when polling rx was initiated from the calling terminal.
0-74	The calling terminal fell back to T.30 mode, because it could not detect ANSam after sending CI.	▪ The calling terminal could not detect ANSam due to noise, etc. ▪ ANSam was too short to detect. ▪ Check the line connection and condition. ▪ Try making a call to another V.8/V.34 fax.
0-75	The called terminal fell back to T.30 mode, because it could not detect a CM in response to ANSam (ANSam timeout).	▪ The terminal could not detect ANSam. ▪ Check the line connection and condition. ▪ Try receiving a call from another V.8/V.34 fax.
0-76	The calling terminal fell back to T.30 mode, because it could not detect a JM in response to CM (CM timeout).	▪ The called terminal could not detect a CM due to noise, etc. ▪ Check the line connection and condition. ▪ Try making a call to another V.8/V.34 fax.

Code	Meaning	Suggested Cause/Action
0-77	The called terminal fell back to T.30 mode, because it could not detect a CJ in response to JM (JM timeout).	▪ The calling terminal could not detect a JM due to noise, etc. ▪ A network that has narrow bandwidth cannot pass JM to the other end. ▪ Check the line connection and condition. ▪ Try receiving a call from another V.8/V.34 fax.
0-79	The called terminal detected CI while waiting for a V.21 signal.	▪ Check for line noise or other line problems. ▪ If this error occurs, the called terminal falls back to T.30 mode.
0-80	The line was disconnected due to a timeout in V.34 phase 2 – line probing.	▪ The guard timer expired while starting these phases. Serious noise, narrow bandwidth, or low signal level can cause these errors. If these errors happen at the transmitting terminal: ▪ Try making a call at a later time. ▪ Try using V.17 or a slower modem using dedicated tx parameters. ▪ Try increasing the tx level. ▪ Try adjusting the tx cable equalizer setting. If these errors happen at the receiving terminal: ▪ Try adjusting the rx cable equalizer setting. ▪ Try increasing the tx level. ▪ Try using V.17 or a slower modem if the same error is frequent when receiving from multiple senders.
0-81	The line was disconnected due to a timeout in V.34 phase 3 – equalizer training.	
0-82	The line was disconnected due to a timeout in the V.34 phase 4 – control channel start-up.	
0-83	The line was disconnected due to a timeout in the V.34 control channel restart sequence.	
0-84	The line was disconnected due to abnormal signaling in V.34 phase 4 – control channel start-up.	▪ The signal did not stop within 10 s. ▪ Turn off the main power switch, then turn it back on. ▪ If the same error is frequent, replace the FCU.

Code	Meaning	Suggested Cause/Action
0-85	The line was disconnected due to abnormal signaling in V.34 control channel restart.	▪ The signal did not stop within 10 s. ▪ Turn off the main power switch, then turn it back on. ▪ If the same error is frequent, replace the FCU.
0-86	The line was disconnected because the other terminal requested a data rate using MPh that was not available in the currently selected symbol rate.	▪ The other terminal was incompatible. ▪ Ask the other party to contact the manufacturer.
0-87	The control channel started after an unsuccessful primary channel.	▪ The receiving terminal restarted the control channel because data reception in the primary channel was not successful. ▪ This does not result in an error communication.
0-88	The line was disconnected because PPR was transmitted/received 9 (default) times within the same ECM frame.	▪ Try using a lower data rate at the start. ▪ Try adjusting the cable equalizer setting.
2-11	Only one V.21 connection flag was received	▪ Replace the FCU.
2-12	Modem clock irregularity	▪ Replace the FCU.
2-13	Modem initialization error	▪ Turn off the machine, then turn it back on. ▪ Update the modem ROM. ▪ Replace the FCU.
2-22	Counter overflow error of JBIG chip	If error occurs frequently, change the settings for resolution, paper size, compression type.
2-23	JBIG compression or reconstruction error	Turn off the machine, then turn it back on.
2-24	JBIG ASIC error	▪ Turn off the machine, then turn it back on.

Code	Meaning	Suggested Cause/Action
2-25	JBIG data reconstruction error (BIH error)	▪ JBIG data error ▪ Check the sender's JBIG function. ▪ Update the FCU ROM.
2-26	JBIG data reconstruction error (Float marker error)	
2-27	JBIG data reconstruction error (End marker error)	
2-28	JBIG data reconstruction error (Timeout)	
2-29	JBIG trailing edge maker error	▪ FCU defective ▪ Check the destination device.
2-50	The machine resets itself for a fatal FCU system error	▪ If this is frequent, update the ROM, or replace the FCU.
2-51	The machine resets itself because of a fatal communication error	▪ If this is frequent, update the ROM, or replace the FCU.
2-53	Snd msg() in the manual task is an error because the mailbox for the operation task is full.	▪ The user did the same operation many times, and this gave too much load to the machine.
4-01	Line current was cut	▪ Check the line connector. ▪ Check for line problems. ▪ Replace the FCU.
4-10	Communication failed because of an ID Code mismatch (Closed Network) or Tel. No./CSI mismatch (Protection against Wrong Connections)	▪ Get the ID Codes the same and/or the CSIs programmed correctly, then resend. ▪ The machine at the other end may be defective.
5-00	Data reconstruction not possible	Replace the FCU.
5-10	DCR timer expired	▪ Replace the FCU.

Code	Meaning	Suggested Cause/Action
5-20	Storage impossible because of a lack of memory	▪ Temporary memory shortage. ▪ Test the SAF memory.
5-21	Memory overflow	
5-23	Print data error when printing a substitute rx or confidential rx message	▪ Test the SAF memory. ▪ Ask the other end to resend the message.
5-25	SAF file access error	▪ Replace an SD card or HDD. ▪ Replace the FCU.
6-00	G3 ECM - T1 time out during reception of facsimile data	▪ Try adjusting the rx cable equalizer. ▪ Replace the FCU.
6-01	G3 ECM - no V.21 signal was received	
6-02	G3 ECM - EOR was received	
6-04	G3 ECM - RTC not detected	▪ Check the line connection. ▪ Check for a bad line or defective remote terminal. ▪ Replace the FCU.
6-05	G3 ECM - facsimile data frame not received within 18 s of CFR, but there was no line fail	▪ Check the line connection. ▪ Check for a bad line or defective remote terminal. ▪ Replace the FCU. ▪ Try adjusting the rx cable equalizer **Cross reference** ▪ Rx cable equalizer - G3 Switch 07 (PSTN)
6-06	G3 ECM - coding/decoding error	▪ Defective FCU. ▪ The other terminal may be defective.
6-08	G3 ECM - PIP/PIN received in reply to PPS.NULL	▪ The other end pressed Stop during communication. ▪ The other terminal may be defective.

Code	Meaning	Suggested Cause/Action
6-09	G3 ECM - ERR received	▪ Check for a noisy line. ▪ Adjust the tx levels of the communicating machines. ▪ See code 6-05.
6-10	G3 ECM - error frames still received at the other end after all communication attempts at 2400 bps	▪ Check for line noise. ▪ Adjust the tx level (use NCU parameter 01 or the dedicated tx parameter for that address). ▪ Check the line connection. ▪ Defective remote terminal.
6-21	V.21 flag detected during high speed modem communication	▪ The other terminal may be defective or incompatible.
6-22	The machine resets the sequence because of an abnormal handshake in the V.34 control channel	▪ Check for line noise. ▪ If the same error occurs frequently, replace the FCU. ▪ Defective remote terminal.
6-99	V.21 signal not stopped within 6 s	Replace the FCU.
13-17	SIP user name registration error	▪ Double registration of the SIP user name. ▪ Capacity for user-name registration in the SIP server is not sufficient.
13-18	SIP server access error	▪ Incorrect initial setting for the SIP server. ▪ Defective SIP server.
13-24	SIP authentication error	▪ Registered password in the device does not match the password in the SIP server.
13-25	Network I/F setting error	▪ IPV4 is not active in the active protocol setting. ▪ IP address of the device is not registered.
13-26	Network I/F setting error at power on	▪ Active protocol setting does not match the I/F setting for SIP server. ▪ IP address of the device is not registered.
13-27	IP address setting error	▪ IP address of the device is not registered.

Code	Meaning	Suggested Cause/Action
14-00	SMTP Send Error	▪ Error occurred during sending to the SMTP server. Occurs for any error other than 14-01 to 16. For example, the mail address of the system administrator is not registered.
14-01	SMTP Connection Failed	▪ Failed to connect to the SMTP server (timeout) because the server could not be found. ▪ The PC is not ready to transfer files. ▪ SMTP server not functioning correctly. ▪ The DNS IP address is not registered. ▪ Network not operating correctly. ▪ Destination folder selection not correct.
14-02	No Service by SMTP Service (421)	▪ SMTP server operating incorrectly, or the destination for direct SMTP sending is not correct. ▪ Contact the system administrator and check that the SMTP server has the correct settings and operates correctly. ▪ Contact the system administrator for direct SMTP sending and check the sending destination.

Code	Meaning	Suggested Cause/Action
14-03	Access to SMTP Server Denied (450)	▪ Failed to access the SMTP server because the access is denied. ▪ SMTP server operating incorrectly. Contact the system administrator to determine if there is a problem with the SMTP server and to check that the SMTP server settings are correct. ▪ Folder send destination is incorrect. Contact the system administrator to determine that the SMTP server settings and path to the server are correct. ▪ Device settings incorrect. Confirm that the user name and password settings are correct. ▪ Direct SMTP destination incorrect. Contact the system administrator to determine if there is a problem at the destination at that the settings at the destination are correct.
14-04	Access to SMTP Server Denied (550)	▪ SMTP server operating incorrectly ▪ Direct SMTP sending not operating correctly

Code	Meaning	Suggested Cause/Action
14-05	SMTP Server HDD Full (452)	▪ Failed to access the SMTP server because the HDD on the server is full. ▪ Insufficient free space on the HDD of the SMTP server. Contact the system administrator and check the amount of space remaining on the SMTP server HDD. ▪ Insufficient free space on the HDD where the destination folder is located. Contact the system administrator and check the amount of space remaining on the HDD where the target folder is located. ▪ Insufficient free space on the HDD at the target destination for SMTP direct sending. Contact the system administrator, check the amount of space remaining on the target HDD or check if the mail size setting is the default value (2MB). ▪ Check the size of the original data. For example, if the original has too many pages, the data size can be too big to send.
14-06	User Not Found on SMTP Server (551)	▪ The designated user does not exist. ▪ The designated user does not exist on the SMTP server. ▪ The designated address is not for use with direct SMTP sending.
14-07	Data Send to SMTP Server Failed (4XX)	▪ Failed to access the SMTP server because the transmission failed. ▪ PC not operating correctly. ▪ SMTP server operating incorrectly ▪ Network not operating correctly. ▪ Destination folder setting incorrect. ▪ Direct SMTP sending not operating correctly.

Code	Meaning	Suggested Cause/Action
14-08	Data Send to SMTP Server Failed (5XX)	▪ Failed to access the SMTP server because the transmission failed. ▪ SMTP server operating incorrectly ▪ Destination folder setting incorrect. ▪ Direct SMTP sending not operating correctly. ▪ Software application error.
14-09	Authorization Failed for Sending to SMTP Server	▪ POP-Before-SMTP or SMTP authorization failed. ▪ Incorrect setting for file transfer
14-10	Addresses Exceeded	▪ Number of broadcast addresses exceeded the limit for the SMTP server.
14-11	Buffer Full	▪ The send buffer is full so the transmission could not be completed. Buffer is full due to using Scan-to-Email while the buffer is being used send mail at the same time.
14-12	Data Size Too Large	▪ Transmission was cancelled because the detected size of the file was too large.
14-13	Send Cancelled	▪ Processing is interrupted because the user pressed Stop.
14-14	Security Locked File Error	▪ Update the software because of the defective software.
14-15	Mail Data Error	▪ The transmitting a mail is interrupted via DCS due to the incorrect data. ▪ Update the software because of the defective software.
14-16	Maximum Division Number Error	▪ When a mail is divided for the mail transmission and the division number of a mail are more than the specified number, the mail transmission is interrupted. ▪ Update the software because of the defective software.

Code	Meaning	Suggested Cause/Action
14-17	Incorrect Ticket	▪ Update the software because of the defective software.
14-18	Access to MCS File Error	▪ The access to MCS file is denied due to the no permission of access. ▪ Update the software because of the defective software.
14-20	SMTP Authentication error	Make sure the administrator's e-mail address is same as the SMTP authentication address or POP before SMTP address.
14-21	Transmission error of S/MIME	Register the correct user certificate and device certificate.
14-30	MCS File Creation Failed	Failed to create the MCS file because: ▪ The number of files created with other applications on the Document Server has exceeded the limit. ▪ HDD is full or not operating correctly. ▪ Software error.
14-31	UFS File Creation Failed	UFS file could not be created: ▪ Not enough space in UFS area to handle both Scan-to-Email and IFAX transmission. ▪ HDD full or not operating correctly. ▪ Software error.
14-32	Cancelled the Mail Due to Error Detected by NFAX	▪ Error detected with NFAX and send was cancelled due to a software error.
14-33	No Mail Address For the Machine	▪ Neither the mail address of the machine nor the mail address of the network administrator is registered.
14-34	Address designated in the domain for SMTP sending does not exist	▪ Operational error in normal mail sending or direct SMTP sending. ▪ Check the address selected in the address book for SMTP sending. ▪ Check the domain selection.

Code	Meaning	Suggested Cause/Action
14-50	Mail Job Task Error	Due to an FCU mail job task error, the send was cancelled: ▪ Address book was being edited during creation of the notification mail. ▪ Software error.
14-51	UCS Destination Download Error	Not even one return notification can be downloaded: ▪ The address book was being edited. ▪ The number for the specified destination does not exist (it was deleted or edited after the job was created).
14-60	Send Cancel Failed	▪ The cancel operation by the user failed to cancel the send operation.
14-61	Notification Mail Send Failed for All Destinations	▪ All addresses for return notification mail failed.
14-62	Transmission Error due to the existence of zero line page	▪ When the 0 line page exists in received pages with G3 communication, the transmission is interrupted.
14-63	Fax Communication Unit: Transmission Error	Check the followings. ▪ Name of SMTP server ▪ Port number of SMTP ▪ DNS setting ▪ Server name (FTP) ▪ Path name (computer name and shared folder name at SMTP/ NCP) ▪ Active protocol setting (Netware/ NCP) ▪ NW flame type (NCP) ▪ Log-on mode (NDS tree/ bindery)
-		Check the SMTP server. ▪ Check if the SMTP server works normally and is connected to the network. ▪ Check if the settings of the SMTP are correct.

Code	Meaning	Suggested Cause/Action
-		Check the DNS server. ▪ Check if the DNS server works normally and is connected to the network. ▪ Check if the settings of the DNS server are correct.
-		Check the network. ▪ Check if the LAN works normally. ▪ Check if the no firewall exists.
-		Check the destination folder for the data transfer. ▪ Check if the destination folder works normally. ▪ Check if the settings of the destination folder are correct.
-		Ask an administrator of the direct SMTP server in which the data is supposed to be transferred. ▪ Check if the destination SMTP server works normally. ▪ Check if the settings of the destination SMTP server are correct.
15-01	POP3/IMAP4 Server Not Registered	▪ At startup, the system detected that the IP address of the POP3/IMAP4 server has not been registered in the machine.
15-02	POP3/IMAP4 Mail Account Information Not Registered	▪ The POP3/IMAP4 mail account has not been registered.
15-03	Mail Address Not Registered	▪ The mail address has not been registered.
15-10	DCS Mail Receive Error	▪ Error other than 15-11 to 15-18.
15-11	Connection Error	The DNS or POP3/IMAP4 server could not be found: ▪ The IP address for DNS or POP3/IMAP4 server is not stored in the machine. ▪ The DNS IP address is not registered. ▪ Network not operating correctly.

Code	Meaning	Suggested Cause/Action
15-12	Authorization Error	POP3/IMAP4 send authorization failed: ▪ Incorrect IFAX user name or password. ▪ Access was attempted by another device, such as the PC. ▪ POP3/IMAP4 settings incorrect.
15-13	Receive Buffer Full	▪ Occurs only during manual reception. Transmission cannot be received due to insufficient buffer space. The buffer is being used for mail send or Scan-to-Email.
15-14	Mail Header Format Error	▪ The mail header is not standard format. For example, the Date line description is incorrect.
15-15	Mail Divide Error	▪ The e-mail is not in standard format. There is no boundary between parts of the e-mail, including the header.
15-16	Mail Size Receive Error	▪ The mail cannot be received because it is too large.
15-17	Receive Timeout	▪ May occur during manual receiving only because the network is not operating correctly.
15-18	Incomplete Mail Received	▪ Only one portion of the mail was received.
15-31	Final Destination for Transfer Request Reception Format Error	▪ The format of the final destination for the transfer request was incorrect.
15-39	Send/Delivery Destination Error	The transmission cannot be delivered to the final destination: ▪ Destination file format is incorrect. ▪ Could not create the destination for the file transmission.
15-41	SMTP Receive Error	▪ Reception rejected because the transaction exceeded the limit for the “Auth. E-mail RX” setting.

Code	Meaning	Suggested Cause/Action
15-42	Off Ramp Gateway Error	▪ The delivery destination address was specified with Off Ramp Gateway OFF.
15-43	Address Format Error	▪ Format error in the address of the Off Ramp Gateway.
15-44	Addresses Over	▪ The number of addresses for the Off Ramp Gateway exceeded the limit of 30.
15-61	Attachment File Format Error	▪ The attached file is not TIFF format.
15-62	TIFF File Compatibility Error	Could not receive transmission due to: ▪ Resolution error ▪ Image of resolution greater than 200 dpi without extended memory. ▪ Resolution is not supported. ▪ Page size error ▪ The page size was larger than A3. ▪ Compression error ▪ File was compressed with other than MH, MR, or MMR.
15-63	TIFF Parameter Error	The TIFF file sent as the attachment could not be received because the TIFF header is incorrect: ▪ The TIFF file attachment is a type not supported. ▪ The TIFF file attachment is corrupted. ▪ Software error.
15-64	TIFF Decompression Error	The file received as an attachment caused the TIFF decompression error: ▪ The TIFF format of the attachment is corrupted. ▪ Software error.
15-71	Not Binary Image Data	▪ The file could not be received because the attachment was not binary image data.

Code	Meaning	Suggested Cause/Action
15-73	MDN Status Error	▪ Could not find the Disposition line in the header of the Return Receipt, or there is a problem with the firmware.
15-74	MDN Message ID Error	▪ Could not find the Original Message ID line in the header of the Return Receipt, or there is a problem with the firmware.
15-80	Mail Job Task Read Error	▪ Could not receive the transmission because the destination buffer is full and the destination could not be created (this error may occur when receiving a transfer request or a request for notification of reception).
15-81	Repeated Destination Registration Error	▪ Could not repeat receive the transmission because the destination buffer is full and the destination could not be created (this error may occur when receiving a transfer request or a request for notification of reception).
15-91	Send Registration Error	Could not receive the file for transfer to the final destination: ▪ The format of the final destination or the transfer destination is incorrect. ▪ Destinations are full so the final and transfer destinations could not be created.
15-92	Memory Overflow	▪ Transmission could not be received because memory overflowed during the transaction.
15-93	Memory Access Error	▪ Transaction could not complete due to a malfunction of SAF memory.
15-94	Incorrect ID Code	▪ The machine rejected an incoming e-mail for transfer request, because the ID code in the incoming e-mail did not match the ID code registered in the machine.

Code	Meaning	Suggested Cause/Action
15-95	Transfer Station Function	▪ The machine rejected an incoming e-mail for transfer because the transfer function was unavailable.
16-00	No IP address registered	▪ The machine does not get an IP address because the DNS server has not been registered for the remote machine or IP address of the remote machine has not been registered. ▪ Register the DNS server for the remote machine or configure an IP address of the remote machine.
22-00	Original length exceeded the maximum scan length	▪ Divide the original into more than one page. ▪ Check the resolution used for scanning. Lower the scan resolution if possible. ▪ Add optional page memory.
22-01	Memory overflow while receiving	▪ Wait for the files in the queue to be sent. ▪ Delete unnecessary files from memory. ▪ Transfer the substitute reception files to an another fax machine, if the machine's printer is busy or out of order. ▪ Add an optional SAF memory card or hard disk.
22-02	Tx or rx job stalled due to line disconnection at the other end	▪ The job started normally but did not finish normally; data may or may not have been received fully. ▪ Restart the machine.
22-04	The machine cannot store received data in the SAF	▪ Update the ROM ▪ Replace the FCU.
22-05	No G3 parameter confirmation answer	▪ Defective FCU board or firmware.
23-00	Data read timeout during construction	▪ Restart the machine. ▪ Replace the FCU.

Code	Meaning	Suggested Cause/Action
25-00	The machine software resets itself after a fatal transmission error occurred	▪ Update the ROM ▪ Replace the FCU.
F0-xx	V.34 modem error	▪ Replace the FCU.
F6-xx	SG3 modem error	▪ Update the SG3 modem ROM. ▪ Replace the SG3 board. ▪ Check for line noise or other line problems. ▪ Try communicating another V.8/V.34 fax.

3.2 FAX CONNECTION UNIT ERROR CODES

3.2.1 FAX CONNECTION UNIT ERROR CODE LIST

MACHINE_ERR_01

Error Code	Suggested Cause	Action
01(1)	IPv4/IPv6 not enabled	Enable IPv4 and IPv6
01(3)	“Cancel” is pressed by user.	-
01(4)	A false connection ID is being used.	Check that the network is established.
01(5)	Network disconnected because of no response within a specified time.	
01(14)	▪ The machine either of destination or of local is entering SP or Initial setting. ▪ An established connection exists.	▪ Exit SP or initial setting. ▪ Wait until the connection has finished.

MACHINE_ERR_02

Error Code	Suggested Cause	Action
02(5)	▪ Wrong IP address/hostname is used ▪ The machine at destination power off ▪ LAN cable is disconnected ▪ Network is rebooting.	▪ Enter the correct IP address/Host name ▪ Turn on the main power. ▪ Connect the LAN cable ▪ Wait until the rebooting has finished.

MACHINE_ERR_03

<table>
<tr><th>Error Code</th><th>Suggested Cause</th><th>Action</th></tr>
<tr><td rowspan="5">03</td><td rowspan="5">▪ No user authentication applies for fax application (i.e. Basic/Windows/LDAP/Custom Auth.)
▪ Settings other than user authentication are applied to the fax application.</td><td colspan="2">Configure the user authentication setting for client-side and Remote Machine as the following table.</td></tr>
<tr><td>Client-side Machine</td><td>Remote Machine</td></tr>
<tr><td>OFF</td><td>OFF</td></tr>
<tr><td>ON</td><td>OFF</td></tr>
<tr><td>ON</td><td>ON</td></tr>
</table>

MACHINE_ERR_04

Error Code	Suggested Cause	Action
04	Although the same user registered to the Remote Machine and Client-side Machine, the user name and password for login are unmatched between the two locations.	▪ Register the same user to both the Remote Machine and Client-side Machine. ▪ Be sure to match the username and password for login between the two locations.

MACHINE_ERR_05

Error Code	Suggested Cause	Action
05	An unauthorized user connects to the fax connection.	Authorize the user to use fax connection.

MACHINE_ERR_06

Error Code	Suggested Cause	Action
06	Timeout error on the node authentication	Adjust the value of SP5-741-001 to prolong the timeout for node authentication.

MACHINE_ERR_07

Error Code	Suggested Cause	Action
07	Multiple destinations are set in the Client-side Machine.	In the Client-side Machine, execute SP5-801-021 to clear AICS memory

MACHINE_ERR_08

Error Code	Suggested Cause	Action
08(1)	▪ A Client-side Machine connects to other Client-side Machine. ▪ The Client-side Machine not registered in the Remote Machine as destinations.	▪ Connect to the Remote Machine. ▪ Register the Client-side Machine to the Remote Machine as a destination.
08(2)	▪ A Remote Machine connects to other Remote Machine. ▪ Wrong Remote Machine registered in the Client-side Machine.	▪ Connect to the Client-side Machine. ▪ Check what Remote Machine registered in the Client-side Machine.

3.3 IFAX TROUBLESHOOTING

Use the following procedures to determine whether the machine or another part of the network is causing the problem.

Communication Route	Item	Action [Remarks]
General LAN	1. Connection with the LAN	▪ Check that the LAN cable is connected to the machine. ▪ Check that the LEDs on the hub are lit.
	2. LAN activity	Check that other devices connected to the LAN can communicate through the LAN.
Between IFAX and PC	1. Network settings on the PC	▪ Check the network settings on the PC. [Is the IP address registered in the TCP/IP properties in the network setup correct? Check the IP address with the administrator of the network.]
	2. Check that PC can connect with the machine	▪ Use the “ping” command on the PC to contact the machine. [At the MS-DOS prompt, type ping then the IP address of the machine, then press Enter.]
	3. LAN settings in the machine	▪ Check the LAN parameters ▪ Check if there is an IP address conflict with other PCs. [Use the “Network” function in the User Tools. If there is an IP address conflict, inform the administrator.]

Communication Route	Item	Action [Remarks]
Between machine and e-mail server	1. LAN settings in the machine	▪ Check the LAN parameters ▪ Check if there is an IP address conflict with other PCs. [Use the “Network” function in the User Tools. If there is an IP address conflict, inform the administrator.]
	2. E-mail account on the server	▪ Make sure that the machine can log into the e-mail server. ▪ Check that the account and password stored in the server are the same as in the machine. [Ask the administrator to check.]
	3. E-mail server	▪ Make sure that the client devices which have an account in the server can send/receive e-mail. [Ask the administrator to check. Send a test e-mail with the machine’s own number as the destination. The machine receives the returned e-mail if the communication is performed successfully.]
Between e-mail server and internet	1. E-mail account on the Server	▪ Make sure that the PC can log into the e-mail server. ▪ Check that the account and password stored in the server are the same as in the machine. [Ask the administrator to check.]

Communication Route	Item	Action [Remarks]
	2. E-mail server	▪ Make sure that the client devices which have an account in the server can send/receive e-mail. [Ask the administrator to check. Send a test e-mail with the machine's own number as the destination. The machine receives the returned e-mail if the communication is performed successfully.]
	3. Destination e-mail address	▪ Make sure that the e-mail address is actually used. ▪ Check that the e-mail address contains no incorrect characters such as spaces.
	4. Router settings	▪ Use the "ping" command to contact the router. ▪ Check that other devices connected to the router can sent data over the router. [Ask the administrator of the server to check.]
	5. Error message by e-mail from the network of the destination.	▪ Check whether e-mail can be sent to another address on the same network, using the application e-mail software. ▪ Check the error e-mail message. [Inform the administrator of the LAN.]

3.4 IP-FAX TROUBLESHOOTING

3.4.1 IP-FAX TRANSMISSION

Cannot send by IP Address/Host Name

Check Point		Action
1	LAN cable connected?	Check the LAN cable connection.
2	Specified IP address/hostname correct?	Check the IP address/host name.
3	Firewall/NAT is installed?	Cannot breach the firewall. Send by using another method (Fax, Internet Fax)
4	Transmission sent manually?	Manual sending not supported.
5	IP address of local machine registered?	Register the IP address.
6	Remote terminal port number setting other than 1720 (when using H.323) or 5060 (when using SIP)?	Send by specifying the port number.
7	Specified port number correct?	Confirm the port number of the remote fax.
8	DNS server registered when host name specified?	Contact the network administrator.
9	Remote fax a T.38 terminal?	Check whether the remote fax is a T38 terminal.
10	Remote fax switched off or busy?	Check that the remote fax is switched on.
11	Network bandwidth too narrow?	Request the network administrator to increase the bandwidth.
		Raise the delay level. IPFAX SW 01 Bit 0 to 3

		IP-Fax bandwidth is the same as the DCS speed. Set IP-Fax SW00 Bit 6 to 1.
12	Remote fax cancelled transmission?	Check whether the remote fax cancelled the transmission.

Cannot send via VoIP Gateway

Check Point		Action
1	LAN cable connected?	Check the LAN cable connection.
2	VoIP Gateway T.38 standard?	Contact the network administrator.
3	VoIP Gateway installed correctly?	Contact the network administrator.
4	VoIP Gateway power switched on?	Contact the network administrator.
5	Is the IP address/host name of the specified Gateway correct?	Check the IP address/host name.
6	Number of the specified fax correct?	Check the remote fax number.
7	Firewall/NAT is installed?	Cannot breach the firewall. Send by using another method (Fax, Internet Fax)
8	Transmission sent manually?	Manual sending not supported.
9	IP address of local fax registered?	Register the IP address.
10	DNS registered when host name specified?	Contact the network administrator.
11	Remote fax a G3 fax?	Check that the remote fax is a G3 fax.
12	G3 fax is connected to VoIP gateway?	Check that G3 fax is connected.
13	Remote G3 fax turned on?	Check that G3 fax is switched on.

14	Network bandwidth too narrow?	Request the network administrator to increase the bandwidth.
		Raise the network delay level. IPFAX SW 01 Bit 0 to 3
		IP-Fax bandwidth is the same as the DCS speed. Set IP-Fax SW00 Bit 6 to 1.

Cannot send by Alias Fax number.

Check Point		Action
1	LAN cable connected?	Check the LAN cable connection.
2	Number of specified Alias fax correct?	Confirm the Alias of the remote fax. Error Code: 13-14
3	Firewall/NAT installed?	Cannot breach the firewall. Send by using another method (Fax, Internet Fax)
4	Transmission sent manually?	Manual sending not supported.
5	Gatekeeper/SIP server installed correctly?	Contact the network administrator.
6	Gatekeeper/SIP server power switched on?	Contact the network administrator.
7	IP address/host name of Gatekeeper/SIP server correct?	Check the IP address/host name.
8	DNS server registered when Gatekeeper/SIP server host name specified?	Contact the network administrator.
9	Enable H.323/Enable SIP SW is set to on?	Check the settings. See User Parameter SW 34 Bit 0/SW 34 Bit 1
10	IP address of local fax registered?	Register the IP address of the local fax.

11	Alias number of local fax registered?	Register the Alias number of the local fax.
12	Remote fax registered in Gatekeeper?	Contact the network administrator.
13	Remote fax a T.38 terminal?	Check whether the remote fax is a T38 terminal.
14	Remote fax switched off or busy?	Contact the network administrator.
15	Network bandwidth too narrow?	Request the system administrator to increase the bandwidth.
		Raise the delay level. IPFAX SW 01 Bit 0 to 3
		Lower the modem transmission baud rate. IPFAX SW 05
16	Remote fax cancelled transmission?	Check whether the remote fax cancelled the transmission.

3.4.2 IP-FAX RECEPTION

Cannot receive via IP Address/Host Name.

Check Point		Action
1	LAN cable connected?	Check the LAN cable connection.
2	Firewall/NAT is installed?	Cannot breach the firewall. Send by using another method (Fax, Internet Fax)
3	IP address of local fax registered?	Register the IP address.
4	Port number specified at remote sender fax (if required)?	Request the sender to specify the port number.
5	Specified port number correct (if required)?	Request the sender to check the port number.
6	DNS server registered when host name specified on sender side?	Contact the network administrator. Note ▪ The sender machine displays this error code if the sender fax is a Ricoh model.
7	Network bandwidth too narrow?	Request the system administrator to increase the bandwidth.
		Lower the start modem reception baud rate on the receiving side. IPFAX SW06
8	Remote fax cancelled transmission?	Check whether the remote fax cancelled the transmission.

Cannot receive by VoIP Gateway.

Check Point		Action
1	LAN cable connected?	Check the LAN cable connection.
2	Firewall/NAT is installed?	Cannot breach the firewall. Request the remote fax to send by using another method (Fax, Internet Fax)
3	VoIP Gateway installed correctly?	Contact the network administrator.
4	VoIP Gateway power switched on?	Contact the network administrator.
5	IP address/host name of specified VoIP Gateway correct on sender's side?	Request the remote fax to check the IP address/host name.
6	DNS server registered when host name specified on sender side?	Contact the network administrator.
7	Network bandwidth too narrow?	Request the network administrator to increase the bandwidth.
8	G3 fax connected?	Check that G3 fax is connected.
9	G3 fax power switched on?	Check that G3 fax is switched on.

Cannot receive by Alias Fax number.

Check Point		Action
1	LAN cable connected?	Check the LAN cable connection.
2	Firewall/NAT is installed?	Cannot the breach firewall. Request the remote fax to send by using another method (Fax, Internet Fax)
3	Gatekeeper/SIP server installed correctly?	Contact the network administrator. Note ▪ The sender machine displays this error code when the sender fax is a Ricoh model.
4	Power to Gatekeeper/SIP server switched on?	Contact the network administrator. Note ▪ The sender machine displays this error code when the sender fax is a Ricoh model.
5	IP address/host name of Gatekeeper/SIP server correct on the sender's side?	Request the sender to check the IP address/host name. Note ▪ The sender machine displays this error code when the sender fax is a Ricoh model.
6	DNS server registered when Gatekeeper/SIP server host name specified on sender's side?	Contact the network administrator. Note ▪ The sender machine displays this error code when the sender fax is a Ricoh model.
7	Enable H.323/Enable SIP SW is set to on?	Request the sender to check the settings. User Parameter SW 34 Bit 0/SW 34 Bit 1 Note ▪ Only if the remote sender fax is a Ricoh fax.

8	Local fax IP address registered?	Register the IP address.
9	Local fax Alias number registered?	Register the Alias number.
10	Network bandwidth too narrow?	Request the system administrator to increase the bandwidth.
		Lower the start modem reception baud rate on the receiving side. IPFAX SW06
11	Remote fax cancelled transmission?	Check whether the remote fax cancelled the transmission.
12	Local fax registered in Gatekeeper/SIP server?	Contact the network administrator. Note ▪ The sender machine displays this error code when the sender fax is a Ricoh model.

4. SERVICE TABLES

4.1 CAUTIONS

Important

- Never turn off the main power switch when the power LED is lit or flashing. To avoid damaging the hard disk or memory, press the operation power switch to switch the power off, wait for the power LED to go off, and then switch the main power switch off.

Note

- The main power LED lights or flashes while the platen cover or ARDF is open, while the main machine is communicating with a facsimile or the network server, or while the machine is accessing the hard disk or memory for reading or writing data.

4.2 SERVICE PROGRAM TABLES

4.2.1 SP1-XXX (BIT SWITCHES)

Bit Switches - 1

1	Mode No.		Function
101	System Switch		
	001 – 032	00 – 1F	Change the bit switches for system settings for the fax option "Bit Switches - 1" : "System Switches" page 85
102	Ifax Switch		
	001 – 016	00 – 0F	Change the bit switches for internet fax settings for the fax option "Bit Switches - 2" : "I-Fax Switches" page 101
103	Printer Switch		
	001 – 016	00 – 0F	Change the bit switches for printer settings for the fax option "Bit Switches - 2" : "Printer Switches" page 101
104	Communication Switch		
	001 – 032	00 – 1F	Change the bit switches for communication settings for the fax option "Bit Switches - 3" : "Communication Switches" page 117
105	G3-1 Switch		
	001 – 016	00 – 0F	Change the bit switches for the protocol settings of the standard G3 board "Bit Switches - 4" : "G3 Switches" page 128
106	G3-2 Switch		
	001 – 016	00 – 0F	Change the bit switches for the protocol settings of the optional G3 board "Bit Switches - 5" : "G3-2 and G3-3 Switches" xref

107	G3-3 Switch		
	001 – 016	00 – 0F	Change the bit switches for the protocol settings of the optional G3 board "Bit Switches - 5" : "G3-2 and G3-3 Switches" page 138
108	G4 Internal Switch		
	001 – 032	00 – 1F	**Not used** (Do not change the bit switches)
109	G4 Parameter Switch		
	001 – 016	00 – 0F	**Not used** (Do not change the bit switches)
111	IP fax Switch		
	001 – 016	00 – 0F	Change the bit switches for optional IP fax parameters "Bit Switches - 6" : "IP Fax Switches" page 146

4.2.2 SP2-XXX (RAM)

2	Mode No.		Function
101	RAM Read/Write		
	001		Change RAM data for the fax board directly. Service RAM Addresses
102	Memory Dump		
	001	G3-1 Memory Dump	Print out RAM data for the fax board. Service RAM Addresses
	002	G3-2 Memory Dump	Print out RAM data for the optional SG3 board.
	003	G3-3 Memory Dump	Print out RAM data for the optional SG3 board.
	004	G4 Memory Dump	Not used
103	G3-1 NCU Parameters		
	001 – 023	CC, 01 – 22	NCU parameter settings for the standard G3 board. NCU Parameters
104	G3-2 NCU Parameters		
	001 – 023	CC, 01 – 22	NCU parameter settings for the optional G3 board. NCU Parameters
105	G3-3 NCU Parameters		
	001 – 023	CC, 01 – 22	NCU parameter settings for the optional G3 board. NCU Parameters

4.2.3 SP3-XXX (MACHINE SET)

3	Mode No.		Function
101	Service Station		
	001	Fax Number	Enter the fax number of the service station.
	002	Select Line	Select the line type.
102	Serial Number		
	000		Enter the fax unit's serial number.
103	PSTN-1 Port Settings		
	001	Select Line	Select the line type setting for the G3-1 line. If the machine is installed on a PABX line, select "PABX", "PABX(GND)" or "PABX(FLASH)".
	002	PSTN Access Number	Enter the PSTN access number for the G3-1 line.
	003	Memory Lock Disabled	Not used
104	PSTN-2 Port Settings		
	001	Select Line	Select the line setting for the G3-2 line. If the machine is installed on a PABX line, select "PABX", "PABX(GND)" or "PABX(FLASH)".
	002	PSTN Access Number	Enter the PSTN access number for the G3-2 line.
	003	Memory Lock Disabled	Not used
	004	Transmission Disabled	If you turn this SP on, the machine does not send any fax messages on the G3-2 line.

105	PSTN-3 Port Settings		
	001	Select Line	Select the line setting for the G3-3 line. If the machine is installed on a PABX line, select “PABX”, “PABX(GND)” or “PABX(FLASH)”.
	002	PSTN Access Number	Enter the PSTN access number for the G3-3 line.
	003	Memory Lock Disabled	Not used
	004	Transmission Disabled	If you turn this SP on, the machine does not send any fax messages on the G3-3 line.
106	ISDN Port Settings		
	001	Select Line	**Not used** (Do not change the settings.)
	002	PSTN Access Number	
	003	Memory Lock Disabled	
	004	Transmission Disabled	
107	IPFAX Port Settings		
	001	H323 Port	Sets the H323 port number.
	002	SIP Port	Sets the SIP port number.
	003	RAS Port	Sets the RAS port number.
	004	Gatekeeper port	Sets the Gatekeeper port number.
	005	T.38 Port	Sets the T.38 port number.
	006	SIP Server Port	Sets the SIP port number.
	007	IPFAX Protocol Priority	Select "H323" or "SIP".

201	FAX SW		
	001 – 032	00 – 1F	

4.2.4 SP4-XXX (ROM VERSIONS)

4	Mode No.		Function
101	001	FCU ROM Version	Displays the FCU ROM version.
102	001	Error Codes	Displays the latest 64 fax error codes.
103	001	G3-1 ROM Version	Displays the G3-1 modem version.
104	001	G3-2 ROM Version	Displays the G3-2 modem version.
105	001	G3-3 ROM Version	Displays the G3-3 modem version.
106	001	G4 ROM Version	**Not used** (Do not change the settings.)

4.2.5 SP5-XXX (RAM CLEAR)

5	Mode No.	Function
101	Initialize SRAM (except Secure)	
	000	Initializes the bit switches and user parameters, user data in the SRAM, files in the SAF memory, and clock.
102	Erase All Files	
	000	Erases all files stored in the SAF memory.
103	Reset Bit Switches (except Secure)	
	000	Resets the bit switches and user parameters.
104	Factory Setting	
	000	Resets the bit switches and user parameters, user data in the SRAM and files in the SAF memory.
105	Reset All Bit Switches	
	000	Resets all the current bit switch settings.
106	Reset Security Bit Switches	
	000	Resets only the security bit switches. If you select automatic output/display for the user parameter switches, the security settings are initialized.

4.2.6 SP6-XXX (REPORTS)

6	Mode No.		Function
101	System Parameter List		
	000	-	Touch the “ON” button to print the system parameter list.
102	Service Monitor Report		
	000	-	Touch the “ON” button to print the service monitor report.
103	G3 Protocol Dump List		
	001	G3 All Communications	Prints the protocol dump list of all communications for all G3 lines.
	002	G3-1 (All Communications)	Prints the protocol dump list of all communications for the G3-1 line.
	003	G3-1 (1 Communication)	Prints the protocol dump list of the last communication for the G3-1 line.
	004	G3-2 (All Communications)	Prints the protocol dump list of all communications for the G3-2 line.
	005	G3-2 (1 Communication)	Prints the protocol dump list of the last communication for the G3-2 line.
	006	G3-3 (All Communications)	Prints the protocol dump list of all communications for the G3-3 line.
	007	G3-3 (1 Communication)	Prints the protocol dump list of the last communication for the G3-3 line.
104	G4 Protocol Dump List		
	001	Dch + Bch 1	**Not used** (Do not change the settings.)
	002	Dch	
	003	Bch 1 Link Layer	
	004	Dch Link Layer	

	005	Dch +Bch 2	
	006	Bch 2 Link Layer	
105	All Files print out		
	000	-	Prints out all the user files in the SAF memory, including confidential messages. **Note**: Do not use this function, unless the customer is having trouble printing confidential messages or recovering files stored using the memory lock feature.
106	Journal Print out		
	001	All Journals	The machine prints all the communication records on the report.
	002	Specified Date	The machine prints all communication records after the specified date.
107	Log List Print out		
	001	All log files	These log print out functions are for designer use only.
	002	Printer	
	003	SC/TRAP Stored	
	004	Decompression	
	005	Scanner	
	006	JOB/SAF	
	007	Reconstruction	
	008	JBIG	
	009	Fax Driver	
	010	G3CCU	
	011	Fax Job	
	012	CCU	
	013	Scanner Condition	

108	IP Protocol Dump List		
	001	All Communications	Prints the protocol dump list of all communications for the IP fax line.
	002	1 Communication	Prints the protocol dump list of the last communication for the IP fax line.

4.2.7 SP7-XXX (TESTS)

These are the test modes for PTT approval.

7	Function
101	G3-1 Modem Tests
102	G3-1 DTMF Tests
103	Ringer Test
104	G3-1 V34 (S2400baud)
105	G3-1 V34 (S2800baud)
106	G3-1 V34 (S3000baud)
107	G3-1 V34 (S3200baud)
108	G3-1 V34 (S3429baud)
109	Recorded Message Test
110	G3-2 Modem Tests
111	G3-2 DTMF Tests
112	G3-2 V34 (S2400baud)
113	G3-2 V34 (S2800baud)
114	G3-2 V34 (S3000baud)
115	G3-2 V34 (S3200baud)
116	G3-2 V34 (S3429baud)
117	G3-3 Modem Tests

118	G3-3 DTMF Tests
119	G3-3 V34 (S2400baud)
120	G3-3 V34 (S2800baud)
121	G3-3 V34 (S3000baud)
122	G3-3 V34 (S3200baud)
123	G3-3 V34 (S3429baud)
124	IG3-1 Modem Tests - **Not used**
125	IG3-1 DTMF Tests - **Not used**
126	IG3-1 V34 (S2400baud) - **Not used**
127	IG3-1 V34 (S2800baud) - **Not used**
128	IG3-1 V34 (S3000baud) - **Not used**
129	IG3-1 V34 (S3200baud) - **Not used**
130	IG3-1 V34 (S3429baud) - **Not used**
131	IG3-2 Modem Tests - **Not used**
132	IG3-2 DTMF Tests - **Not used**
133	IG3-2 V34 (S2400baud) - **Not used**
134	IG3-2 V34 (S2800baud) - **Not used**
135	IG3-2 V34 (S3000baud) - **Not used**
136	IG3-2 V34 (S3200baud) - **Not used**
137	IG3-2 V34 (S3429baud) - **Not used**

4.3 BIT SWITCHES

4.3.1 BIT SWITCHES – 1

Note

- Do not adjust a bit switch or use a setting that is described as "Not used", as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

System Switches

System Switch 00 (SP No. 1-101-001)		
No	**Function**	**Comments**
0	Dedicated transmission parameter programming 0: Disabled 1: Enabled	Set this bit to 1 before changing any dedicated transmission parameters. This setting is automatically reset to "0" after turning off and on.
1	Not used	Do not change this setting.
2	Technical data printout on the Journal 0: Disabled 1: Enabled	1: Instead of the personal name, the following data are listed on the Journal for each G3 communication.

	Example: **0000 32V34 288/264 L0100 03 04** (1) (2)(3) (4) (5) (6) (7) (8) (1): EQM value (Line quality data). A larger number means more errors. (2): Symbol rate (V.34 only) (3): Final modem type used (4): Starting data rate (for example, 288 means 28.8 kbps) (5): Final data rate (6): Rx revel (see below for how to read the rx level) (7): Total number of error lines that occurred during non-ECM reception. (8): Total number of burst error lines that occurred during non-ECM reception. Note ▪ EQM and rx level are fixed at "FFFF" in tx mode. ▪ The seventh and eighth numbers are fixed at "00" for transmission records and ECM reception records.	
	Rx level calculation Example: **0000 32V34 288/264 L0100 03 04** (1) (2)(3) (4) (5) (6) (7) (8) The four-digit hexadecimal value (N) after "L" indicates the rx level. The **high** byte is given first, followed by the **low** byte. Divide the decimal value of N by -16 to get the rx level. In the above example, the decimal value of N (= 0100 [H]) is 256. So, the actual rx level is 256/-16 = -16 dB	
3	Not used	Do not change this setting.
4	Line error mark print 0: OFF, 1: ON (print)	When "1" is selected, a line error mark is printed on the printout if a line error occurs during reception. This shows error locations when ECM is turned off.
5	G3 communication parameter display 0: Disabled 1: Enabled	This is a fault-finding aid. The LCD shows the key parameters (see "G3 Communication Parameters" below this table). This is normally disabled because it cancels the CSI display for the user. Be sure to reset this bit to "0" after testing.

6	Protocol dump list output after each communication 0: Off 1: On	This is only used for communication troubleshooting. It shows the content of the transmitted facsimile protocol signals. Always reset this bit to 0 after finishing testing. If system switch 09 bit 6 is at "1", the list is only printed if there was an error during the communication.
7	Not used	Do not change the setting.

G3 Communication Parameters

Modem rate	336: 33600 bps 312: 31200 bps 288: 28800 bps 264: 26400 bps 240: 24000 bps 216: 21600 bps 192: 19200 bps	168: 16800 bps 144: 14400 bps 120: 12000 bps 96: 9600 bps 72: 7200 bps 48: 4800 bps 24: 2400 bps
Resolution	S: Standard (8 x 3.85 dots/mm) D: Detail (8 x 7.7 dots/mm) F: Fine (8 x 15.4 dots/mm) SF: Superfine (16 x 15.4 dots/mm) 21: Standard (200 x 100 dpi) 22: Detail (200 x 200 dpi) 44: Superfine (400 x 400 dpi)	
Compression mode	MMR: MMR compression MR: MR compression MH: MH compression JBO: JBIG compression (Optional mode) JBB: JBIG compression (Basic mode)	
Communication mode	ECM: With ECM NML: With no ECM	
Width and reduction	A4: A4 (8.3"), no reduction B4: B4 (10.1"), no reduction A3: A3 (11.7"), no reduction	

I/O rate	0: 0 ms/line 5: 5 ms/line 10: 10 ms/line 20: 20 ms/line 25: 2.5 ms/line 40: 40 ms/line Note ▪ "40" is displayed while receiving a fax message using AI short protocol.

System Switch 01 - Not used (Do not change the factory settings.)

System Switch 02 (SP No. 1-101-003)		
No	**Function**	**Comments**
0-1	Not used	Do not change these settings.
2	Forced reset after transmission stalls 0: Off 1: On	With this setting on, the machine resets itself automatically if a transmission stalls and fails to complete the job.
3	Not used	Do not change these settings.
4	File retention time 0: Depends on User Parameter 24 [18(H)] 1: No limit	1: A file that had a communication error will not be erased unless the communication is successful.
5-7	-	Do not change this setting

System Switch 03 - Not used (Do not change the factory settings.)

System Switch 04 (SP No. 1-101-005)		
No	**Function**	**Comments**
0-2	Not used	Do not change these settings.
3	Printing dedicated tx parameters on Quick/Speed Dial Lists 0: Disabled 1: Enabled	1: Each Quick/Speed dial number on the list is printed with the dedicated tx parameters (10 bytes each). The first 10 bytes of data are the programmed dedicated tx parameters; 34 bytes of data are printed (the other 24 bytes have no use for service technicians).
4-7	Not used	Do not change these settings.

System Switch 05 - Not used (Do not change the factory settings.)
System Switch 06 - Not used (Do not change the factory settings.)
System Switch 07 - Not used (Do not change the factory settings.)
System Switch 08 - Not used (Do not change the factory settings.)

System Switch 09 (SP No. 1-101-010)		
No	**Function**	**Comments**
0	Addition of image data from confidential transmissions on the transmission result report 0: Disabled 1: Enabled	If this feature is enabled, the top half of the first page of confidential messages will be printed on transmission result reports.
1	Print timing of communication reports on the Journal when no image data was exchanged. 0: After DCS/NSS communication (default), 1: After polling	0: The Journal is printed only when image data is sent. 1: The Journal is printed when any data is sent.

2	Automatic error report printout 0: Disabled 1: Enabled	0: Error reports will not be printed. 1: Error reports will be printed automatically after failed communications.
3	Printing of the error code on the error report 0: No 1: Yes	1: Error codes are printed on the error reports. This can be used for detecting an error which occurs rarely.
4	Not used	Do not change this setting.
5	Power failure report 0: Disabled 1: Enabled (default)	1: A power failure report will be automatically printed after the power is switched on if a fax message disappeared from the memory when the power was turned off last. **NOTE:** If "0" is selected, no reports are printed and no one may recognize that fax data is gone due to a power failure.
6	Conditions for printing the protocol dump list 0: Print for all communications 1: Print only when there is a communication error	This switch becomes effective only when system switch 00 bit 6 is set to 1. 1: Set this bit to 1 when you wish to print a protocol dump list only for communications with errors. **NOTE:** The memory size is limited. Use this bit switch only when some log reports are necessary.
7	Not used	Do not change this setting.

System Switch 0A (SP No. 1-101-011)		
No	**Function**	**Comments**
0	Automatic port selection 0: Disabled, 1: Enabled	When "1" is selected, a suitable port is automatically selected if the selected port is not used. **NOTE:** This bit is useful if all communication lines at a customer site are not the same quality
1-3	Not used	Do not change these settings.
4	Dialing on the ten-key pad when the external telephone is off-hook 0: Disabled 1: Enabled	0: Prevents dialing from the ten-key pad while the external telephone is off-hook. Use this setting when the external telephone is not by the machine, or if a wireless telephone is connected as an external telephone. 1: The user can dial on the machine's ten-key pad when the handset is off-hook.
5	On hook dial 0: Disabled 1: Enabled	0: On hook dial is disabled.
6-7	Not used	Do not change these settings

System Switch 0B - Not used (Do not change the factory settings.)
System Switch 0C - Not used (Do not change the factory settings.)
System Switch 0D - Not used (Do not change the factory settings.)

System Switch 0E (SP No. 1-101-015)		
No	**Function**	**Comments**
0-1	Not used	Do not change the settings.
2	Enable/disable for direct sending selection 0: Direct sending off 1: Direct sending on	Direct sending cannot operate when the capture function is on during sending. Setting this switch to "1" enables direct sending without capture. Setting this switch to "0" masks the direct sending function on the operation panel so direct sending with ScanRouter cannot be selected.
3	Action when the external handset goes off-hook 0: Manual tx and rx operation 1: Memory tx and rx operation (the display remains the same)	0: Manual tx is possible while the external handset is off-hook. However, manual tx during handset off-hook may not be sent to a correct direction. Manual tx is not possible. 1: The display stays in standby mode even when the external handset is used, so that other people can use the machine for memory tx operation. Note that manual tx and rx are not possible with this setting.
4-7	Not used	Do not change these settings.

System Switch 0F (SP No. 1-101-016)			
No	**Function**		**Comments**
0 to 7	Country/area code for functional settings (Hex)		This country/area code determines the factory settings of bit switches and RAM addresses. However, it has no effect on the NCU parameter settings and communication parameter RAM addresses. Cross reference NCU country code: SP No. 2-103-001 for G3-1 SP No. 2-104-001 for G3-2 SP No. 2-105-001 for G3-3
	00: France	12: Asia	
	01: Germany	13: Japan	
	02: UK	14: Hong Kong	
	03: Italy	15: South Africa	
	04: Austria	16: Australia	
	05: Belgium	17: New Zealand	
	06: Denmark	18: Singapore	
	07: Finland	19: Malaysia	
	08: Ireland	1A: China	
	09: Norway	1B: Taiwan	
	0A: Sweden	1C: Korea	
	0B: Switz.	1D: Brazil	
	0C: Portugal	20: Turkey	
	0D: Holland	21: Greece	
	0E: Spain	22: Hungary	
	0F: Israel	23: Czech	
	10: ---	24: Poland	
	11: USA		

System Switch 10 (SP No. 1-101-017)		
No	**Function**	**Comments**
0-7	Threshold memory level for parallel memory transmission	Threshold = N x 128 KB + 256 KB N can be between 00 - FF(H) Default setting: 02(H) = 512 KB

System Switch 11 (SP No. 1-101-018)		
No	**Function**	**Comments**
0	TTI printing position 0: Superimposed on the page data 1: Printed before the data leading edge	Change this bit to 1 if the TTI overprints information that the customer considers to be important (G3 transmissions). **NOTE:** If "1" is selected, it is possible that sent data is printed on two sheets of paper.
1-2	Not used	Do not change these settings.
3	TTI used for broadcasting 0: The TTIs selected for each Quick/Speed dial are used 1: The same TTI is used for all destinations	1: The TTI (TTI_1 or TTI_2) which is selected for all destinations during broadcasting.
4-7	Not used	Do not change these settings.

System Switch 12 (SP No. 1-101-019)		
No	**Function**	**Comments**
0-7	TTI printing position in the main scan direction	TTI: 08 to 92 (BCD) mm Input even numbers only. This setting determines the print start position for the TTI from the left edge of the paper. If the TTI is moved too far to the right, it may overwrite the file number which is on the top right of the page. On an A4 page, if the TTI is moved over by more than 50 mm, it may overwrite the page number.

System Switch 13 - Not used (do not change these settings)
System Switch 14 - Not used (do not change these settings)

System Switch 15 (SP No. 1-101-022)		
No	**Function**	**Comments**
0	Not used	Do not change the settings.
1	Going into the Energy Saver mode automatically 0: Enabled 1: Disabled	1: The machine will restart from the Energy Saver mode quickly, because the +5V power supply is active even in the Energy Saver mode. The LED of the operation switch is flashing instead of entering Energy Saver mode. Use this setting if an external telephone has to be used when the machine is in the Energy Saver mode.
2-3	Not used	Do not change these settings.
4-5	Interval for preventing the machine from entering Energy Saver mode if there is a pending transmission file.	If there is a file waiting for transmission, the machine does not go to Energy Saver mode during the selected period. After transmitting the file, if there is no file

	Bit 5	Bit 4	Setting	waiting for transmission, the machine goes to the Energy Saver mode.
	0	0	1 min	
	0	1	30 min	
	1	0	1 hour	
	1	1	24 hours	
6-7	Not used			Do not change

System Switch 16 (SP No. 1-101-023)		
No	**Function**	**Comments**
0	Parallel Broadcasting 0: Disabled 1: Enabled	1: The machine sends messages simultaneously using all available ports during broadcasting. **NOTE:** If a customer wants to keep a line available for fax reception or other reasons, select "0" (Disable).
1	Priority setting for the G3 line. 0: PSTN-1 > PSTN-2 or 3 1: PSTN-2 or 3 > PSTN-1	This function allows the user to select the default G3 line type. The optional SG3 units are required to use the PSTN-2 or 3 setting.
2-7	Not used	Do not change these settings.

System Switch 17 - Not used (do not change these settings)
System Switch 18 - Not used (do not change these settings)

System Switch 19 (SP No. 1-101-026)		
No	**Function**	**Comments**
0-5	Not used	Do not change the settings.
6	Extended scanner page memory after memory option is installed 0: Disabled 1: Enabled	0: After installing the memory expansion option, the scanner page memory is extended to 4 MB from 2 MB. 1: If this bit is set to 1 after installing the memory expansion option, the scanner page memory is extended to 12 MB. But the SAF memory decreases to 18 MB.
7*	Special Original mode 0: Disabled 1: Enabled	1: If the customer frequently wishes to transmit a form or letterhead which has a colored or printed background, change this bit to "1". "Original 1" and "Original 2" can be selected in addition to the "Text", "Text/Photo" and "Photo" modes.

* This setting can be used for the client machine which has no FCU.

System Switch 1A (SP No. 1-101-027)		
No	**Function**	**Comments**
0 to 7	LS RX memory capacity threshold setting 00-FF (0-1020 Kbyte: Hex)	Sets the value to x4KB. When the amount of available memory drops below this setting, RX documents are printed to conserve memory. Initial setting 0x80 (512 KB) **NOTE:** If a customer wants available memory size to be larger, decrease this threshold

System Switch 1B - Not used (do not change these settings)
System Switch 1C - Not used (do not change these settings)

System Switch 1D (SP No. 1-101-030)		
No	**Function**	**Comments**
0	RTI/CSI/CPS code display 0: Enable 1: Disable	0: RTI, CSI, CPS codes are displayed on the top line of the LCD panel during communication. 1: Codes are switched off (no display)
1-7	Not used	Do not change these settings.

System Switch 1E (SP No. 1-101-031)		
No	**Function**	**Comments**
0	Communication after the Journal data storage area has become full 0: Impossible 1: Possible	0: When this switch is on and the journal history becomes full, the next report prints. If the journal history is not deleted, the next transmission cannot be received. This prevents overwriting communication records before the machine can print them. 1: If the buffer memory of the communication records for the Journal is full, fax communications are still possible. But the machine will overwrite the oldest communication records. Note ▪ This setting is effective only when Automatic Journal printout is enabled but the machine cannot print the report (e.g., no paper).

1*	Action when the SAF memory has become full during scanning 0: The current page is erased. 1: The entire file is erased.	0: If the SAF memory becomes full during scanning for a memory transmission, the successfully scanned pages are transmitted. 1: If the SAF memory becomes full during scanning for a memory transmission, the file is erased and no pages are transmitted. Note ▪ This setting is effective only when Automatic Journal printout is enabled but the machine cannot print the report (e.g., no paper).
2	RTI/CSI display priority 0: RTI 1: CSI	This bit determines which identifier, RTI or CSI, is displayed on the LCD while the machine is communicating in G3 non-standard mode.
3	File No. printing 0: Enabled 1: Disabled	1: File numbers are not printed on any reports. **NOTE:** The file numbers may not be printed in the sequential order. If a customer does not like this numbering, select "0".
4	Action when authorized reception is enabled but authorized RTIs/CSIs are not yet programmed 0: All fax reception is disabled 1: Faxes can be received if the sender has an RTI or CSI	0: If the user has stored no acceptable sender RTIs or CSIs, the user can select “ON” in the authorized reception setting but the setting becomes invalid (“OFF”). The machine will not be able to receive any fax messages. If the customer wishes to receive messages from any sender that includes an RTI or CSI, and to block messages from senders that do not include an RTI or CSI, change this bit to "0", then enable Authorized Reception. Otherwise, keep this bit at "1 (default setting)".
5-7	Not used	Do not change the settings

* This setting can be used for the client machine which has no FCU.

System Switch 1F (SP No. 1-101-032)		
No	**Function**	**Comments**
0	Not used	Do not change the settings.
1	Report printout after an original jam during SAF storage or if the SAF memory fills up 0: Enabled 1: Disabled	0: When an original jams, or the SAF memory overflows during scanning, a report will be printed. Change this bit to "1" if the customer does not want to have a report in these cases. Memory tx – Memory storage report Parallel memory tx – Transmission result report
2	Not used	Do not change the settings.
3	Received fax print start timing (G3 reception) 0: After receiving each page 1: After receiving all pages	0: The machine prints each page immediately after the machine receives it. 1: The machine prints the complete message after the machine receives all the pages in the memory.
4-6	Not used	Do not change the factory settings.
7	Action when a fax SC has occurred 0: Automatic reset 1: Fax unit stops	0: When the fax unit detects a fax SC code other than SC1201 and SC1207, the fax unit automatically resets itself. 1: When the fax unit detects any fax SC code, the fax unit stops. **Cross Reference** Fax SC codes - See "Troubleshooting"

4.3.2 BIT SWITCHES – 2

Note

- Do not adjust a bit switch or use a setting that is described as "Not used", as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

I-Fax Switches

I-fax Switch 00 (SP No. 1-102-001)		
No	**Function**	**Comments**
Original Width of TX Attachment File		This setting sets the maximum size of the original that the destination can receive. (Bits 3 to 6 are reserved for future use or not used.)
0	A4	-
1	B4	
2	A3	
3-6	Reserved	
7	Not used	
	0: Off (not selected), 1: On (selected) If more than one of these three bits is set to "1", the larger size has priority. For example, if both Bit 2 and Bit 1 are set to "1" then the maximum size is "A3" (Bit 2). When mail is sent, there is no negotiation with the receiving machine at the destination, so the sending machine cannot make a selection for the receiving capabilities (original width setting) of the receiving machine. The original width selected with this switch is used as the RX machine's original width setting, and the original is reduced to this size before sending. The default is A4. If the width selected with this switch is higher than the receiving machine can accept, the machine detects this and this causes an error.	

<table>
<tr><th colspan="3">I-fax Switch 01 (SP No. 1-102-002)</th></tr>
<tr><th>No</th><th>Function</th><th>Comments</th></tr>
<tr><td colspan="2">Original Line Resolution of TX Attachment File</td><td>These settings set the maximum resolution of the original that the destination can receive.</td></tr>
<tr><td>0</td><td>200x100 Standard</td><td rowspan="7">0: Not selected
1: Selected
If more than one of these three bits is set to "1", the higher resolution has priority. For example, if both Bit 0 and Bit 2 are set to "1" Then The Resolution is set for "Bit 2 200 x 400.</td></tr>
<tr><td>1</td><td>200x200 Detail</td></tr>
<tr><td>2</td><td>200x400 Fine</td></tr>
<tr><td>3</td><td>300 x 300 Reserve</td></tr>
<tr><td>4</td><td>400 x 400 Super Fine</td></tr>
<tr><td>5</td><td>600 x 600 Reserve</td></tr>
<tr><td>6</td><td>Reserve</td></tr>
<tr><td>7</td><td colspan="2">mm/inch</td></tr>
<tr><td></td><td colspan="2">This setting selects mm/inch conversion for mail transmission.
0: Off (No conversion), 1: On (Conversion)
When on (set to "1"), the machine converts millimeters to inches for sending mail. There is no switch for converting inches to millimeters.
Unlike G3 fax transmissions which can negotiate between sender and receiver to determine the setting, mail cannot negotiate between terminals; the mm/inch selection is determined by the sender fax.
When this switch is Off (0):
▪ Images scanned in inches are sent in inches.
▪ Images scanned in mm are sent in mm.
▪ Images received in inches are transmitted in inches.
▪ Images received in mm are transmitted in mm.
When this switch is On (1):
▪ Images scanned in inches are sent in inches.
▪ Images scanned in mm are converted to inches.
▪ Images received in inches are transmitted in inches.
▪ Images received in mm are converted to inches.</td></tr>
</table>

I-fax Switch 02 (SP No. 1-102-003)		
No	**Function**	**Comments**
0	RX Text Mail Header Processing	
	This setting determines whether the header information is printed with text e-mails when they are received. 0: Prints only text mail. 1: Prints mail header information attached to text mail. When a text mail is received with this switch On (1), the "From" address and "Subject" address are printed as header information. When a mail with only binary data is received (a TIFF-F file, for example), this setting is ignored and no header is printed.	
1	Output from Attached Document at E-mail TX Error	
	This setting determines whether only the first page or all pages of an e-mail attachment are printed at the sending station when a transmission error occurs. This allows the customer to see which documents have not reached their intended destinations if sent to the wrong e-mail addresses, for example. 0: Prints 1st page only. 1: Prints all pages.	
2-3	Text String for Return Receipt	
	This setting determines the text string output for the Return Receipt that confirms the transmission was received normally at the destination.	

	00: "Dispatched" Sends from PC mail a request for a Return Receipt. Receives the Return Receipt with "dispatched" in the 2nd part: Disposition: Automatic-action/MDN-send automatically; dispatched The "dispatched" string is included in the Subject string. 01: "Displayed" Sends from PC mail a request for a Return Receipt. Receives the Return Receipt with "displayed" in the 2nd part: Disposition: Automatic-action/MDN-send automatically; displayed The "displayed" string is included in the Subject string. 10: Reserved 11: Reserved A mail requesting a Return Receipt sent from an IFAX with this switch set to "00" (for "dispatched") received by Microsoft Outlook 2000 may cause an error. If any setting other than "displayed" (01) causes a problem, change the setting to "01" to enable normal sending of the Return Receipt.
4	Media accept feature
	This setting adds or does not add the media accept feature to the answer mail to confirm a reception. 0: Does not add the media accept feature to the answer mail 1: Adds the media accept feature to the answer mail. Use this bit switch if a problem occurs when the machine receives an answer mail, which contains the media accept feature field.
5-6	Not Used
7	Image Resolution of RX Text Mail
	This setting determines the image resolution of the received mail. 0: 200 x 200 1: 400 x 400 The "1" setting requires installation of the Memory Unit in order to have enough SAF (Store and Forward) memory to receive images at 400 x 400 resolution.

I-fax Switch 03 - Not used (do not change these settings)

I-fax Switch 04 (SP No. 1-102-005)		
No	**Function**	**Comments**
0	Subject for Delivery TX/Memory Transfer	
	This setting determines whether the RTI/CSI registered on this machine or the RTI/CSI of the originator is used in the subject lines of transferred documents. 0: Puts the RTI/CSI of the originator in the Subject line. If this is used, either the RTI or CSI is used. Only one of these can be received for use in the subject line. 1: Puts the RTI/CSI registered on this machine in the Subject line. When this switch is used to transfer and deliver mail to a PC, the information in the Subject line that indicates where the transmission originated can be used to determine automatically the destination folder for each e-mail.	
1	Subject corresponding to mail post database 0: Standard subject 1: Mail post database subject The standard subject is replaced by the mail post database subject in the following three cases: 1) When the service technician sets the service (software) switch. 2) When memory sending or delivery specified by F code is applied by the SMTP server 3) With relay broadcasting (1st stage without the Schmidt 4 function). Note ▪ This switch does not apply for condition 3) when the RX system is set up for memory sending, delivery by F-code, sending with SMTP RX and when operators are using FOL (to prevent problems when receiving transmissions).	
2-7	Not Used	

I-fax Switch 05 (SP No. 1-102-006)		
No	**Function**	**Comments**
0	Mail Addresses of SMTP Broadcast Recipients	
	Determines whether the e-mail addresses of the destinations that receive transmissions broadcasted using SMTP protocol are recorded in the Journal. For example: "1st destination + Total number of destinations: 9" in the Journal indicates a broadcast to 9 destinations. 0: Not recorded 1: Recorded	
1	IFAXTX Retries	
	Determines whether the machine retries sending IFAX when connection and transmission fails due to errors. 0: Disabled 1: Enabled	
2-7	Not Used	

I-fax Switch 06 - Not used (do not change the settings)
I-fax Switch 07 - Not used (do not change the settings)

I-fax Switch 08 (SP No. 1-102-009)		
No	**Function**	**Comments**
0-7	Memory Threshold for POP Mail Reception	
	This setting determines the amount of SAF (Store and Forward) memory. (SAF stores fax messages to send later for transmission to more than one location, and also holds incoming messages if they cannot be printed.) When the amount of SAF memory available falls below this setting, mail can no longer be received; received mail is then stored on the mail server. 00-FF (0 to 1024 KB: HEX) The hexadecimal number you enter is multiplied by 4 KB to determine the amount of memory.	

I-fax Switch 09 (SP No. 1-102-010)		
No	**Function**	**Comments**
0-3	Not used	Do not change the settings
4-7	Restrict TX Retries	This setting determines the number of retries when connection and transmission fails due to errors. 01-F (1-15 Hex)

I-fax Switch 0A - Not used (do not change the settings)
I-fax Switch 0B - Not used (do not change the settings)
I-fax Switch 0C - Not used (do not change the settings)

I-fax Switch 0D (SP No. 1-102-014)				
No	**Function**			**Comments**
0-1	Not used			Do not change the settings
2-3	Select the signature when sending mail notification of the send results			In response to IEEE2600.1.
	Bit 2	Bit 3	Setting	
	0	0	No sign	
	0	1	No setting	
	1	**0**	Individual setting	
	1	1	Always sign	
4-5	Select the signature when sending mail.			In response to IEEE2600.1.
	Bit 5	Bit 4	Setting	
	0	0	No sign	
	0	1	No setting	
	1	**0**	Individual setting	
	1	1	Always sign	
6-7	Not used			Do not change the settings.

I-fax Switch 0E - Not used (do not change the settings)

I-fax Switch 0F (SP No. 1-102-016)		
No	**Function**	**Comments**
0	Delivery Method for SMTP RX Files	
	This setting determines whether files received with SMTP protocol are delivered or output immediately. 0: Off. Files received via SMTP are output immediately without delivery. 1: On. Files received via SMTP are delivered immediately to their destinations.	

1	Set to select the signature when receiving SMTP mail.
	0: No sign 1: Always sign
2	Set to encrypt the data when receiving SMTP mail.
	0: No encryption 1: Encryption
3-7	Not used

Printer Switches

Printer Switch 00 (SP No. 1-103-001)		
No	**Function**	**Comments**
0	Select page separation marks 0: Off 1: On	0: If a 2 page RX transmission is split, [*] is printed in the bottom right corner of the 1st page and only a [2] is printed in the upper right corner of the 2nd page. 1: If a 2 page RX transmission is split into two pages, for example, [*] [2] is printed in the bottom right corner of the 1st page and only a [2] is printed in the upper right corner of the 2nd page. Note ▪ This helps the user to identify pages that have been split because the size of the paper is smaller than the size of the document received. (When A5 is used to print an A4 size document, for example.)
1	Repetition of data when the received page is longer than the printer paper 0: Off 1: On	1: Default. 10 mm of the trailing edge of the previous page are repeated at the top of the next page. 0: The next page continues from where the previous page stopped without any repeated text.

2	Prints the date and time on received fax messages 0: Disabled 1: Enabled	This switch is only effective when user parameter 02 - bit 2 (printing the received date and time on received fax messages) is enabled. 1: The machine prints the received and printed date and time at the bottom of each received page.
3-7	Not used	Do not change the settings.

Printer Switch 01 (SP No. 1-103-002)

No	Function			Comments
0-2	Not used			Do not change the settings.
3-4	Maximum print width used in the setup protocol			These bits are only effective when bit 7 of printer switch 01 is "1".
	Bit 4	Bit 3	Setting	
	0	0	Not used	
	0	1	A3	
	1	0	B4	
	1	1	A4	
5-6	Not used			Do not change the settings.
7	Received message width restriction in the protocol signal to the sender 0: Disabled 1: Enabled			0: The machine informs the transmitting machine of the print width depending on the paper size available from the paper feed stations. Refer to the table on the next page for how the machine chooses the paper width used in the setup protocol (NSF/DIS). 1: The machine informs the transmitting machine of the fixed paper width which is specified by bits 3 and 4 above.

Relationship between available paper sizes and printer width used in the setup protocol

Available Paper Size	Printer width used in the Protocol (NSF/DIS)
A4 or 8.5" x 11"	297 mm width
B5	256 mm width
A5 or 8.5" x 5.5"	216 mm width
No paper available (Paper end)	216 mm width

<table>
<tr><th colspan="3">Printer Switch 02 (SP No. 1-103-003)</th></tr>
<tr><th>No</th><th>Function</th><th>Comments</th></tr>
<tr><td>0*</td><td>1st paper feed station usage for fax printing
0: Enabled
1: Disabled</td><td rowspan="5">0: The paper feed station can be used to print fax messages and reports.
1: The specified paper feed station will not be used for printing fax messages and reports.
Note
▪ Do not disable usage for a paper feed station which has been specified by User Parameter Switch 0F (15), or which is used for the Specified Cassette Selection feature.</td></tr>
<tr><td>1*</td><td>2nd paper feed station usage for fax printing
0: Enabled
1: Disabled</td></tr>
<tr><td>2*</td><td>3rd paper feed station usage for fax printing
0: Enabled
1: Disabled</td></tr>
<tr><td>3*</td><td>4th paper feed station usage for fax printing
0: Enabled
1: Disabled</td></tr>
<tr><td>4*</td><td>LCT usage for fax printing
0: Enabled
1: Disabled</td></tr>
<tr><td>5-7</td><td>Not used</td><td>Do not change the settings.</td></tr>
</table>

* This setting can be used for the client-side machine which has no FCU.

Printer Switch 03 (SP No. 1-103-004)		
No	**Function**	**Comments**
0*	Length reduction of received data 0: Disabled 1: Enabled	0: Incoming pages are printed without length reduction. (Page separation threshold: Printer Switch 03, bits 4 to 7) 1: Incoming page length is reduced when printing. (Maximum reducible length: Printer Switches 04, bits 0 to 4)
1-3	Not used	Do not change the settings
4 to 7	Page separation setting when sub scan compression is forbidden 00-0F (0-15 mm: Hex) Default: 6 mm	Page separation threshold (with reduction disabled with switch 03-0 above). For example, if this setting is set to "10", and A4 is the selected paper size: If the received document is 10 mm or less longer than A4, then the 10 mm are cut and only 1 page prints. If the received document is 10 mm longer than A4, then the document is split into 2 pages.

* This setting can be used for the client-side machine which has no FCU.

Printer Switch 04 (SP No. 1-103-005)

No	Function	Comments

0 to 4

Maximum reducible length when length reduction is enabled with switch 03-0 above.
[Maximum reducible length] = [Paper length] + (N x 5mm)
"N" is the decimal value of the binary setting of bits 0 to 4.

Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Setting
0	0	0	0	0	0 mm
0	0	0	0	1	5 mm
0	0	1	0	0	20 mm
1	1	1	1	1	155 mm

For A5 sideways and B5 sideways paper
[Maximum reducible length] = [Paper length] + 0.75 x (N x 5mm)

5 6

Length of the duplicated image on the next page, when page separation has taken place.

Bit 6	Bit 5	Setting
0	0	4 mm
0	1	10 mm
1	0	15 mm
1	1	Not used

7	Not used.	Do not change the setting.

Printer Switch 05 - Not used (do not change the settings)

Printer Switch 06 (SP No. 1-103-007)		
No	**Function**	**Comments**
0*	Printing while a paper cassette is pulled out, when the Just Size Printing feature is enabled. 0: Printing will not start 1: Printing will start if another cassette has a suitable size of paper, based on the paper size selection priority tables.	Cross reference Just size printing on/off – User switch 05, bit 5
1-7	Not used.	Do not change the settings.

* This setting can be used for the client-side machine which has no FCU.

Printer Switch 07 (SP No. 1-103-008)		
No	**Function**	**Comments**
0-3	Not used.	Do not change the settings.
4	Receiver name printed on the transmission result report	Selects the printing target on the transmission result report. 0: All receivers 1: Printing only receivers which have received fax transmission.
5-7	Not used.	Do not change the settings.

Printer Switch 08 - Not used (do not change the settings)
Printer Switch 09 - Not used (do not change the settings)
Printer Switch 0A - Not used (do not change the settings)
Printer Switch 0B - Not used (do not change the settings)
Printer Switch 0C - Not used (do not change the settings)

<table>
<tr><th colspan="5">Printer Switch 0E (SP No. 1-103-015)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td>0*</td><td colspan="3">Paper size selection priority
0: Width
1: Length</td><td>0: A paper size that has the same width as the received data is selected first.
1: A paper size which has enough length to print all the received lines without reduction is selected first.</td></tr>
<tr><td>1*</td><td colspan="3">Paper size selected for printing A4 width fax data
0: 8.5" x 11" size
1: A4 size</td><td>This switch determines which paper size is selected for printing A4 width fax data, when the machine has both A4 and 8.5" x 11" size paper.</td></tr>
<tr><td>2</td><td colspan="3">Page separation
0: Enabled
1: Disabled</td><td>1: If all paper sizes in the machine require page separation to print a received fax message, the machine does not print the message (Substitute Reception is used). After a larger size of paper is set in a cassette, the machine automatically prints the fax message.</td></tr>
<tr><td rowspan="5">3-4</td><td colspan="3">Printing the sample image on reports</td><td rowspan="5">"Same size" means the sample image is printed at 100%, even if page separation occurs.
User Parameter Switch 19 (13H) bit 4 must be set to "0" to enable this switch.
Refer to Detailed Section Descriptions for more on this feature.</td></tr>
<tr><td>Bit 4</td><td>Bit 3</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>The upper half only</td></tr>
<tr><td>0</td><td>1</td><td>50% reduction (sub-scan only)</td></tr>
<tr><td>1</td><td>0</td><td>Same size</td></tr>
</table>

	1	1	Not used	
5-6	Not used			Do not change the settings.
7	Equalizing the reduction ratio among separated pages (Page Separation) 0: Enabled 1: Disabled			0: When page separation has taken place, all the pages are reduced with the same reduction ratio. 1: Only the last page is reduced to fit the selected paper size when page separation has taken place. Other pages are printed without reduction.

* This setting can be used for the client-side machine which has no FCU.

Printer Switch 0F (SP No. 1-103-016)				
No	**Function**			**Comments**
0-1*	Smoothing feature			(0, 0) (0, 1): Disable smoothing if the machine receives halftone images from other manufacturers fax machines frequently.
	Bit 1	Bit 0	Setting	
	0	0	Disabled	
	0	1	Disabled	
	1	0	Enabled	
	1	1	Not used	
2*	Duplex printing 0: Disabled 1: Enabled			1: The machine always prints received fax messages in duplex printing mode:
3	Binding direction for Duplex printing 0: Left binding 1: Top binding			0: Sets the binding for the left edge of the stack. 1: Sets the binding for the top of the stack.
4-7	Not used			Do not change the settings.

* This setting can be used for the client-side machine which has no FCU.

4.3.3 BIT SWITCHES – 3PAGE 117

Note

- Do not adjust a bit switch or use a setting that is described as "Not used", as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

Communication Switches

<table>
<tr><th colspan="5">Communication Switch 00 (SP No. 1-104-001)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td rowspan="6">0-1</td><td colspan="3">Compression modes available in receive mode</td><td rowspan="6">These bits determine the compression capabilities to be declared in phase B (handshaking) of the T.30 protocol.</td></tr>
<tr><td>Bit 1</td><td>Bit 0</td><td>Modes</td></tr>
<tr><td>0</td><td>0</td><td>MH only</td></tr>
<tr><td>0</td><td>1</td><td>MH/MR</td></tr>
<tr><td>1</td><td>0</td><td>MH/MR/MMR</td></tr>
<tr><td>1</td><td>1</td><td>MH/MR/MMR/JBIG</td></tr>
<tr><td rowspan="6">2-3</td><td colspan="3">Compression modes available in transmit mode</td><td rowspan="6">These bits determine the compression capabilities to be used in the transmission and to be declared in phase B (handshaking) of the T.30 protocol.</td></tr>
<tr><td>Bit 3</td><td>Bit 2</td><td>Modes</td></tr>
<tr><td>0</td><td>0</td><td>MH only</td></tr>
<tr><td>0</td><td>1</td><td>MH/MR</td></tr>
<tr><td>1</td><td>0</td><td>MH/MR/MMR</td></tr>
<tr><td>1</td><td>1</td><td>MH/MR/MMR/JBIG</td></tr>
<tr><td>4</td><td colspan="3">Not used</td><td>Do not change the settings.</td></tr>
<tr><td>5</td><td colspan="3">JBIG compression method: Reception
0: Only basic supported
1: Basic and optional both supported</td><td>Change the setting when communication problems occur using JBIG compression.</td></tr>
</table>

6	JBIG compression method: Transmission 0: Basic mode priority 1: Optional mode priority	Change the setting when communication problems occur using JBIG compression.
7	Closed network (reception) 0: Disabled 1: Enabled	1: Reception will not go ahead if the polling ID code of the remote terminal does not match the polling ID code of the local terminal. This function is only available in NSF/NSS mode.

Communication Switch 01 (SP No. 1-104-002)

No	Function	Comments
0	ECM 0: Off 1: On	If this bit is set to 0, ECM is switched off for all communications. In addition, V.8 protocol and JBIG compression are switched off automatically.
1	Not used	Do not change the setting.
2-3	Wrong connection prevention method	(0,1): The machine will disconnect the line without sending a fax message, if the last 8 digits of the received CSI do not match the last 8 digits of the dialed telephone number. This does not work when manually dialed. (1,0): The same as above, except that only the last 4 digits are compared. (1,1): The machine will disconnect the line without sending a fax message, if the other end does not identify itself with an RTI or CSI. (0,0): Nothing is checked; transmission will always go ahead. Note ▪ This function does not work when dialing is done from the external telephone.
4-5	Not used	Do not change the setting.

Bit 3	Bit 2	Setting
0	0	None
0	1	8 digit CSI
1	0	4 digit CSI
1	1	CSI/RTI

<table>
<tr><td>6-7</td><td>Maximum printable page length available
<table><tr><td>Bit 7</td><td>Bit 6</td><td>Setting</td></tr><tr><td>0</td><td>0</td><td>No limit</td></tr><tr><td>0</td><td>1</td><td>B4 (364 mm)</td></tr><tr><td>1</td><td>0</td><td>A4 (297 mm)</td></tr><tr><td>1</td><td>1</td><td>Not used</td></tr></table></td><td>The setting determined by these bits is informed to the transmitting terminal in the pre-message protocol exchange (in the DIS/NSF frames).</td></tr>
</table>

<table>
<tr><th colspan="4">Communication Switch 02 (SP No. 1-104-003)</th></tr>
<tr><th>No</th><th>Function</th><th colspan="2">Comments</th></tr>
<tr><td rowspan="5">0</td><td rowspan="5">G3 Burst error threshold
0: Low 1: High</td><td colspan="2">If there are more consecutive error lines in the received page than the threshold, the machine will send a negative response. The Low and High threshold values depend on the sub-scan resolution, and are as follows.</td></tr>
<tr><td>100 dpi</td><td>6(L) →12(H)</td></tr>
<tr><td>200 dpi</td><td>12(L) →24(H)</td></tr>
<tr><td>300 dpi</td><td>18(L) →36(H)</td></tr>
<tr><td>400 dpi</td><td>24(L) →48(H)</td></tr>
<tr><td>1</td><td>Acceptable total error line ratio
0: 5% 1: 10%</td><td colspan="2">If the error line ratio for a page exceeds the acceptable ratio, RTN will be sent to the other end.</td></tr>
<tr><td>2</td><td>Treatment of pages received with errors during G3 reception
0: Deleted from memory without printing
1: Printed</td><td colspan="2">0: Pages received with errors are not printed.</td></tr>
</table>

3	Hang-up decision when a negative code (RTN or PIN) is received during G3 immediate transmission 0: No hang-up, 1: Hang-up	0: The next page will be sent even if RTN or PIN is received. 1: The machine will send DCN and hang up if it receives RTN or PIN. This bit is ignored for memory transmissions or if ECM is being used.
4-7	Not used	Do not change these settings.

Communication Switch 03 (SP No. 1-104-004)		
No	**Function**	**Comments**
0-7	Maximum number of page retransmissions in a G3 memory transmission	00 - FF (Hex) times. This setting is not used if ECM is switched on. Default setting - 03(H)

Communication Switch 04 (SP No. 1-104-005)		
No	**Function**	**Comments**
0	Remote mode switch (TEL mode) 0: Disable 1: Enable (Active)	Set this bit to ON when you wish to switch TEL mode to FAX mode remotely.
1	Remote mode switch (FAX mode) 0: Disable 1: Enable (Active)	Set this bit to ON when you wish to turn on the remote mode switch after automatic reception with FAX mode.
2	Remote mode switch (AUTO mode) 0: Disable 1: Enable (Active)	Set this bit to ON when you wish to turn on the remote mode switch after automatic reception with AUTO mode.
3-7	Not used	Do not change the settings.

Communication Switch 05 (SP No. 1-104-006)		
No	**Function**	**Comments**
0-3	Remote mode switch number 00-09 (0-9:HEX)	Enter the number to switch between TEL/FAX modes using the external phone.
4-7	Not used	Do not change the settings.

Communication Switch 06 - Not used (do not change the settings)
Communication Switch 07 - Not used (do not change the settings)
Communication Switch 08 - Not used (do not change the settings)

Communication Switch 09 (SP No. 1-104-009)		
No	**Function**	**Comments**
0-7	Minimum interval between automatic dialing attempts	This value is the minimum time that the machine waits before it dials the next destination.

Communication Switch 0A (SP No. 1-104-011)		
No	**Function**	**Comments**
0	Point of resumption of memory transmission upon redialing 0: From the error page 1: From page 1	0: The transmission begins from the page where transmission failed the previous time. 1: Transmission begins from the first page, using normal memory transmission.
1-7	Not used	Do not change these settings.

Communication Switch 0B (SP No. 1-104-012)		
No	**Function**	**Comments**
0-3	Not used	Do not change these settings.
4	Printout of the message when acting as a Transfer Station 0: Disabled, 1: Enabled	When the machine is acting as a Transfer Station, this bit determines whether the machine prints the fax message coming in from the Requesting Terminal.
5-7	Not used	Do not change the settings.

Communication Switch 0C - Not used (do not change the settings)

Communication Switch 0D (SP No. 1-104-014)		
No	**Function**	**Comments**
0-7	The available memory threshold, below which ringing detection (and therefore reception into memory) is disabled	00 to FF (Hex), unit = 4 kbytes (e.g., 06(H) = 24 kbytes) One page is about 24 kbytes. The machine refers to this setting before each fax reception. If the amount of remaining memory is below this threshold, the machine cannot receive any fax messages. If this setting is kept at 0, the machine will detect ringing signals and go into receive mode even if there is no memory available. This will result in communication failure.

Communication Switch 0E (SP No. 1-104-015)		
No	**Function**	**Comments**
0-7	Minimum interval between automatic dialing attempts	06 to FF (Hex), unit = 2 s (e.g., 06(H) = 12 s) This value is the minimum time that the machine waits before it dials the next destination.

Communication Switch 0F – Not used (do not change the settings.)

Communication Switch 10 (SP No. 1-104-017)		
No	**Function**	**Comments**
0-7	Memory transmission: Maximum number of dialing attempts to the same destination	01 – FE (Hex) times

Communication Switch 11 – Not used (do not change the settings.)

Communication Switch 12 (SP No. 1-104-019)		
No	**Function**	**Comments**
0-7	Memory transmission: Interval between dialing attempts to the same destination	01 – FF (Hex) minutes

Communication Switch 13 – Not used (do not change the settings.)

<table>
<tr><th colspan="5">Communication Switch 14 (SP No. 1-104-021)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td>0</td><td colspan="3">Inch-to-mm conversion during transmission
0: Disabled, 1: Enabled</td><td>0: In immediate transmission, data scanned in inch format are transmitted without conversion.
In memory transmission, data stored in the SAF memory in mm format are transmitted without conversion.
Note: When storing the scanned data into SAF memory, the fax unit always converts the data into mm format.
1: The machine converts the scanned data or stored data in the SAF memory to the format which was specified in the set-up protocol (DIS/NSF) before transmission.</td></tr>
<tr><td>1-5</td><td colspan="3">Not used</td><td>Do not change the factory settings.</td></tr>
<tr><td rowspan="6">6-7</td><td colspan="3">Available unit of resolution in which fax messages are received</td><td rowspan="6">For the best performance, do not change the factory settings.
The setting determined by these bits is informed to the transmitting terminal in the pre-message protocol exchange (in the DIS/NSF frames).</td></tr>
<tr><td>Bit 7</td><td>Bit 6</td><td>Unit</td></tr>
<tr><td>0</td><td>0</td><td>mm</td></tr>
<tr><td>0</td><td>1</td><td>inch</td></tr>
<tr><td>1</td><td>0</td><td>mm and inch</td></tr>
<tr><td>1</td><td>1</td><td>Not used</td></tr>
</table>

Communication Switch 15 – Not used (do not change the settings)

Communication Switch 16 (SP No. 1-104-023)		
No	**Function**	**Comments**
0	Not used	Do not change the settings.
1	Optional G3 unit (G3-2) 0: Not installed 1: Installed	Change this bit to 1 when installing the first optional G3 unit.
2	Not used	
3	Select PSTN connection 0: Off 1: On	This switch enables the G3-2. 0: Off, no connection 1: Recognizes and enables G3-2. This switch can be used only after G3-2 has been installed.
4-7	Not used	Do not change the settings.

Communication Switch 17 (SP No. 1-104-024)		
No	**Function**	**Comments**
0	SEP reception 0: Disabled 1: Enabled	0: Polling transmission to another maker's machine using the SEP (Selective Polling) signal is disabled.
1	SUB reception 0: Disabled 1: Enabled	0: Confidential reception to another maker's machine using the SUB (Sub-address) signal is disabled.
2	PWD reception 0: Disabled 1: Enabled	0: Disables features that require PWD (Password) signal reception.
3-4	Not used	Do not change the settings.
5	PSTN dial-in routing setting 0: OFF 1: ON	1: The machine sets multiple PSTN dial-in numbers in the PSTN dial-in line and transfers received data from each PSTN dial-in number to each address.

6	Not used	Do not change the settings.
7	Action when there is no box with an F-code that matches the received SUB code 0: Disconnect the line 1: Receive the message (using normal reception mode)	Change this setting when the customer requires.

Communication Switch 18 (SP No. 1-104-025)		
No	**Function**	**Comments**
0-4	Not used	Do not change the settings.
5	IP-Fax dial-in routing selection 0: Off 1: On	1: Transfers received data to each IP-Fax dial-in number. IP-Fax dial-in number is a 4-digit number.
6	PSTN 2 dial-in routing 0: Off 1: On	Enables or disables dial-in routing for the PSTN 2 connection.
7	PSTN 3 dial-in routing 0: Off 1: On	Enables or disables dial-in routing for the PSTN 3 connection.

Communication Switch 19 - Not used (do not change the settings)
Communication Switch 1A - Not used (do not change the settings)

Communication Switch 1B (SP No. 1-104-028)		
No	**Function**	**Comments**
0-7	Extension access code (0 to 7) to turn V.8 protocol On/Off 0: On 1: Off	If the PABX does not support V.8/V.34 protocol procedure, set this bit to "1" to disable V.8. Example: If "0" is the PSTN access code, set bit 0 to 1. When the machine detects "0" as the first dialed number, it automatically disables V.8 protocol. (Alternatively, if "3" is the PSTN access code, set bit 3 to 1.)

Communication Switch 1C (SP No. 1-104-029)		
No	**Function**	**Comments**
0-1	Extension access code (8 and 9) to turn V.8 protocol On/Off 0: On 1: Off	Refer to communication switch 1B. Example: If "8" is the PSTN access code, set bit 0 to 1. When the machine detects "8" as the first dialed number, it automatically disables V.8 protocol. (If "9" is the PSTN access code, use bit 1.)
2-7	Not used	Do not change the settings.

Communication Switch 1D - Not used (do not change the settings)
Communication Switch 1E - Not used (do not change the settings)
Communication Switch 1F - Not used (do not change the settings)

4.3.4 BIT SWITCHES – 4

Note

- Do not adjust a bit switch or use a setting that is described as "Not used", as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

G3 Switches

<table>
<tr><th colspan="5">G3 Switch 00 (SP No. 1-105-001)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td rowspan="8">0
1</td><td colspan="3">Monitor speaker during communication (tx and rx)</td><td rowspan="8">(0, 0): The monitor speaker is disabled all through the communication.
(0, 1): The monitor speaker is on up to phase B in the T.30 protocol.
(1, 0): Used for testing. The monitor speaker is on all through the communication. Make sure that you reset these bits after testing.</td></tr>
<tr><td>Bit 1</td><td>Bit 0</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>Disabled</td></tr>
<tr><td>0</td><td>1</td><td>Up to Phase B</td></tr>
<tr><td>1</td><td>0</td><td>All the time</td></tr>
<tr><td>1</td><td>1</td><td>Not used</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>2</td><td colspan="3">Monitor speaker during memory transmission
0: Disabled 1: Enabled</td><td>1: The monitor speaker is enabled during memory transmission.</td></tr>
<tr><td>3-5</td><td colspan="3">Not used</td><td>Do not change the settings.</td></tr>
<tr><td>6</td><td colspan="3">Dedicated G3 line mode selection
0: Off 1: On (Dedicated)</td><td>Set this bit to 1 when you wish to dedicate a line for G3.</td></tr>
<tr><td>7</td><td colspan="3">Not used</td><td>Do not change this setting.</td></tr>
</table>

G3 Switch 01 (SP No. 1-105-002)		
No	**Function**	**Comments**
0-3	Not used	Do not change the settings.
4	DIS frame length 0: 10 bytes 1: 4 bytes	1: The bytes in the DIS frame after the 4th byte will not be transmitted (set to 1 if there are communication problems with PC-based faxes which cannot receive the extended DIS frames).
5	Not used	Do not change the setting.
6	Forbid CED/ANsam output 0: Off 1: On (Forbid output)	Do not change this setting (Default: 0: Off), unless communication problem is caused by a CED or ANSam transmission.
7	Not used	Do not change this setting.

G3 Switch 02 (SP No. 1-105-003)		
No	**Function**	**Comments**
0	G3 protocol mode used 0: Standard and non-standard 1: Standard only	Change this bit to 1 only when the other end can only communicate with machines that send T.30-standard frames only. 1: Disables NSF/NSS signals (these are used in non-standard mode communication)
1-6	Not used	Do not change the settings.
7	Short preamble 0: Disabled 1: Enabled	Refer to Appendix B in the Group 3 Facsimile Manual for details about Short Preamble.

G3 Switch 03 (SP No. 1-105-004)		
No	**Function**	**Comments**
0	DIS detection number (Echo countermeasure) 0: 1 1: 2	0: The machine will hang up if it receives the same DIS frame twice. 1: Before sending DCS, the machine will wait for the second DIS which is caused by echo on the line.
1	Not Used	Do not change the settings.
2	Not Used	Do not change the settings.
3	ECM frame size 0: 256 bytes 1: 64 bytes	Keep this bit at "0" in most cases.
4	CTC transmission conditions 0: After one PPR signal received 1: After four PPR signals received (ITU-T standard)	0: When using ECM in non-standard (NSF/NSS) mode, the machine sends a CTC to drop back the modem rate after receiving a PPR, if the following condition is met in communications at 14.4, 12.0, 9.6, and 7.2 kbps. $\sqrt{NTransmit \leq NResend}$ NTransmit- Number of transmitted frames NResend- Number of frames to be retransmitted 1: When using ECM, the machine sends a CTC to drop back the modem rate after receiving four PPRs. PPR, CTC: These are ECM protocol signals. This bit is not effective in V.34 communications.
5	Modem rate used for the next page after receiving a negative code (RTN or PIN) 0: No change 1: Fallback	1: The machine's tx modem rate will fall back before sending the next page if a negative code is received. This bit is ignored if ECM is being used.
6	Not used	Do not change the settings

7	Select detection of reverse polarity in ringing 0: Off 1: On	This switch is used to prevent reverse polarity in ringing on the phone line (applied to PSTN-G3 ringing). Do not change this setting 0: No detection 1: Detection (Japan and Korea only)

G3 Switch 04 (SP No. 1-105-005)

No	Function	Comments
0-3	Training error detection threshold	0 - F (Hex); 0 - 15 bits If the number of error bits in the received TCF is below this threshold, the machine informs the sender that training has succeeded.
4-7	Not used	Do not change the settings.

G3 Switch 05 (SP No. 1-105-006)

No	Function					Comments
0-3	Initial Tx modem rate (kbps)					These bits set the initial starting modem rate for transmission. Use the dedicated transmission parameters if you need to change this for specific receivers. If a modem rate 14.4 kbps or slower is selected, V.8 protocol should be disabled manually. Cross reference V.8 protocol on/off - G3 switch 03, bit 2
	Bit 3	Bit 2	Bit 1	Bit 0	kbps	
	0	0	0	1	2.4	
	0	0	1	0	4.8	
	0	0	1	1	7.2	
	0	1	0	0	9.6	
	0	1	0	1	12.0	
	0	1	1	0	14.4	
	0	1	1	1	16.8	
	1	0	0	0	19.2	
	1	0	0	1	21.6	
	1	0	1	0	24.0	

<table>
<tr><td></td><td>1</td><td>0</td><td>1</td><td>1</td><td>26.4</td><td></td></tr>
<tr><td></td><td>1</td><td>1</td><td>0</td><td>0</td><td>28.8</td><td></td></tr>
<tr><td></td><td>1</td><td>1</td><td>0</td><td>1</td><td>31.2</td><td></td></tr>
<tr><td></td><td>1</td><td>1</td><td>1</td><td>0</td><td>33.6</td><td></td></tr>
<tr><td></td><td colspan="5">Other settings - Not used</td><td></td></tr>
<tr><td>4-5</td><td colspan="5">Initial modem type for 9.6 k or 7.2 kbps.</td><td>These bits set the initial modem type for 9.6 and 7.2 kbps, if the initial modem rate is set at these speeds.</td></tr>
<tr><td></td><td colspan="2">Bit 5</td><td colspan="2">Bit 4</td><td>Setting</td><td></td></tr>
<tr><td></td><td colspan="2">0</td><td colspan="2">0</td><td>V.29</td><td></td></tr>
<tr><td></td><td colspan="2">0</td><td colspan="2">1</td><td>V.17</td><td></td></tr>
<tr><td></td><td colspan="2">1</td><td colspan="2">0</td><td>V.34</td><td></td></tr>
<tr><td></td><td colspan="2">1</td><td colspan="2">1</td><td>Not used</td><td></td></tr>
<tr><td>6-7</td><td colspan="5">Not used</td><td>Do not change the settings.</td></tr>
</table>

<table>
<tr><th colspan="7">G3 Switch 06 (SP No. 1-105-007)</th></tr>
<tr><th>No</th><th colspan="5">Function</th><th>Comments</th></tr>
<tr><td>0-3</td><td colspan="5">Initial Rx modem rate(kbps)</td><td>These bits set the initial starting modem rate for reception.
Use a lower setting if high speeds pose problems during reception.
If a modem rate 14.4 kbps or slower is selected, V.8 protocol should be disabled manually.
Cross reference
V.8 protocol on/off - G3 switch 03, bit2</td></tr>
<tr><td></td><td>Bit 3</td><td>Bit 2</td><td>Bit 1</td><td>Bit 0</td><td>kbps</td><td></td></tr>
<tr><td></td><td>0</td><td>0</td><td>0</td><td>1</td><td>2.4</td><td></td></tr>
<tr><td></td><td>0</td><td>0</td><td>1</td><td>0</td><td>4.8</td><td></td></tr>
<tr><td></td><td>0</td><td>0</td><td>1</td><td>1</td><td>7.2</td><td></td></tr>
<tr><td></td><td>0</td><td>1</td><td>0</td><td>0</td><td>9.6</td><td></td></tr>
<tr><td></td><td>0</td><td>1</td><td>0</td><td>1</td><td>12.0</td><td></td></tr>
<tr><td></td><td>0</td><td>1</td><td>1</td><td>0</td><td>14.4</td><td></td></tr>
<tr><td></td><td>0</td><td>1</td><td>1</td><td>1</td><td>16.8</td><td></td></tr>
<tr><td></td><td>1</td><td>0</td><td>0</td><td>0</td><td>19.2</td><td></td></tr>
<tr><td></td><td>1</td><td>0</td><td>0</td><td>1</td><td>21.6</td><td></td></tr>
</table>

	1	0	1	0	24.0	
	1	0	1	1	26.4	
	1	1	0	0	28.8	
	1	1	0	1	31.2	
	1	1	1	0	33.6	
	Other settings - Not used					

4-7 Modem types available for reception

The setting of these bits is used to inform the transmitting terminal of the available modem type for the machine in receive mode.

If V.34 is not selected, V.8 protocol must be disabled manually.

Cross reference

V.8 protocol on/off - G3 switch 03, bit 2

Bit 7	Bit 6	Bit 5	Bit 4	Types
0	0	0	1	V.27ter
0	0	1	0	V.27ter, V.29
0	0	1	1	V.27ter, V.29, V.33
0	1	0	0	V.27ter, V.29, V.17
0	1	0	1	V.27ter, V.29, V.17, V.34
Other settings - Not used				

G3 Switch 07 (SP No. 1-105-008)

No	Function			Comments
0-1	PSTN cable equalizer (tx mode: Internal)			Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange. Use the dedicated transmission parameters for specific receivers. Also, try using the cable equalizer if one or more of the following symptoms
	Bit 1	Bit 0	Setting	
	0	0	None	
	0	1	Low	
	1	0	Medium	

<table>
<tr><td></td><td><table><tr><td>1</td><td>1</td><td>High</td></tr></table></td><td>occurs.
Communication error
Modem rate fallback occurs frequently.
Note
▪ This setting is not effective in V.34 communications.</td></tr>
<tr><td>2-3</td><td>PSTN cable equalizer
(rx mode: Internal)<table><tr><td>Bit 3</td><td>Bit 2</td><td>Setting</td></tr><tr><td>0</td><td>0</td><td>None</td></tr><tr><td>0</td><td>1</td><td>Low</td></tr><tr><td>1</td><td>0</td><td>Medium</td></tr><tr><td>1</td><td>1</td><td>High</td></tr></table></td><td>Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange.
Also, try using the cable equalizer if one or more of the following symptoms occurs.
Communication error with error codes such as 0-20, 0-23, etc.
Modem rate fallback occurs frequently.
Note
▪ This setting is not effective in V.34 communications.</td></tr>
<tr><td>4</td><td>PSTN cable equalizer
(V.8/V.17 rx mode: External)
0: Disabled
1: Enabled</td><td>Keep this bit at "1".</td></tr>
<tr><td>5</td><td>Not used</td><td>Do not change the settings.</td></tr>
<tr><td>6</td><td>Parameter selection for dial tone detection
0: Normal parameter
1: Specific parameter</td><td>0: This uses the fixed table in the ROM for dial tone detection.
1: This uses the specific parameter adjusted with SRAM (69ECBEH - 69ECDEH). Select this if the dial tone cannot be detected when the "Normal parameter: 0" is selected.</td></tr>
<tr><td>7</td><td>Not used</td><td>Do not change the settings.</td></tr>
</table>

G3 Switch 08 - Not used (do not change the settings)
G3 Switch 09 - Not used (do not change the settings)

<table>
<tr><th colspan="5">G3 Switch 0A (SP No. 1-105-011)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td rowspan="6">0-1</td><td colspan="3">Maximum allowable carrier drop during image data reception</td><td rowspan="6">These bits set the acceptable modem carrier drop time.
Try a longer setting if error code 0-22 is frequent.</td></tr>
<tr><td>Bit 1</td><td>Bit 0</td><td>Value (ms)</td></tr>
<tr><td>0</td><td>0</td><td>200</td></tr>
<tr><td>0</td><td>1</td><td>400</td></tr>
<tr><td>1</td><td>0</td><td>800</td></tr>
<tr><td>1</td><td>1</td><td>Not used</td></tr>
<tr><td>2</td><td colspan="3">Select cancellation of high-speed RX if carrier signal lost while receiving
0: Off
1: On</td><td>This switch setting determines if high-speed receiving ends if the carrier signal is lost when receiving during non-ECM mode</td></tr>
<tr><td>3</td><td colspan="3">Not used</td><td>Do not change the settings</td></tr>
<tr><td>4</td><td colspan="3">Maximum allowable frame interval during image data reception.
0: 5 s 1: 13 s</td><td>This bit set the maximum interval between EOL (end-of-line) signals and the maximum interval between ECM frames from the other end.
Try using a longer setting if error code 0-21 is frequent.</td></tr>
<tr><td>5</td><td colspan="3">Not used</td><td>Do not change the settings.</td></tr>
</table>

6	Reconstruction time for the first line in receive mode 0: 6 s 1: 12 s	When the sending terminal is controlled by a computer, there may be a delay in receiving page data after the local machine accepts set-up data and sends CFR. This is outside the T.30 recommendation. But, if this delay occurs, set this bit to 1 to give the sending machine more time to send data. Refer to error code 0-20. ITU-T T.30 recommendation: The first line should come within 5 s of CFR.
7	Not used	Do not change the settings.

G3 Switch 0B Not used (do not change the settings).

G3 Switch 0C (SP No. 1-105-013)		
No	**Function**	**Comments**
0-1	Not used	Do not change these settings.
4-5	Select detection of DTMF/DP detection when using remote switch. 00: DTMF+PSTN (Simultaneous detection) 01: DTMF 10: DP (10 PPPS) 11: DP (20 PPS)	This setting determines how to detect the signals from the handset when remote switch is active.

G3 Switch 0D Not used (do not change the settings).

G3 Switch 0E (SP No. 1-105-015)		
No	**Function**	**Comments**
0-7	Set CNG send time interval Some machines on the receiving side may not be able to automatically switch the 3-second CNG interval.	
	High order bit	3000-2250ms: 3000-50xNms 3000 – 50 x Nms 0F (3000 ms) <= N <= FF (2250 ms)
	Low order bit	00-0E(3000-3700ms: 3000+50xNms 3000 – 50 x Nms 0F (3000 ms) <= N <= 0F (3700 ms)

G3 Switch 0F (SP No. 1-105-016)		
No	**Function**	**Comments**
0	Alarm when an error occurred in Phase C or later 0: Disabled 1: Enabled	If the customer wants to hear an alarm after each error communication, change this bit to "1".
1	Alarm when the handset is off-hook at the end of communication 0: Disabled 1: Enabled	If the customer wants to hear an alarm if the handset is off-hook at the end of fax communication, change this bit to "1".
2-3	Not used	Do not change these settings.
4	Sidaa manual calibration setting 0: Off 1: On	1: manually calibrates for communication with a line whose current change occurs such as an optical fiber line.
5-7	Not used	Do not change the settings.

4.3.5 BIT SWITCHES – 5

Note

- Do not adjust a bit switch or use a setting that is described as "Not used", as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

G3-2 and G3-3 Switches

These switches require an optional G3 interface unit.

G3-3 switches are the same as for G3-2 switches.

<table>
<tr><th colspan="5">G3-2 Switch 00 (SP No. 1-106-001)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td rowspan="8">0
1</td><td colspan="3">Monitor speaker during communication (tx and rx)</td><td rowspan="8">(0, 0): The monitor speaker is disabled all through the communication.
(0, 1): The monitor speaker is on up to phase B in the T.30 protocol.
(1, 0): Used for testing. The monitor speaker is on all through the communication. Make sure that you reset these bits after testing.</td></tr>
<tr><td>Bit 1</td><td>Bit 0</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>Disable</td></tr>
<tr><td>0</td><td>1</td><td>Up to Phase B</td></tr>
<tr><td>1</td><td>0</td><td>All the time</td></tr>
<tr><td>1</td><td>1</td><td>Not used</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>2</td><td colspan="3">Monitor speaker during memory transmission
0: Disabled 1: Enabled</td><td>1: The monitor speaker is enabled during memory transmission.</td></tr>
<tr><td>3-7</td><td colspan="3">Not used</td><td>Do not change the settings.</td></tr>
</table>

G3-2 Switch 01 (SP No. 1-106-002)		
No	**Function**	**Comments**
0-3	Not used	Do not change the settings.
4	DIS frame length 0: 10 bytes 1: 4 bytes	1: The bytes in the DIS frame after the 4th byte will not be transmitted (set to 1 if there are communication problems with PC-based faxes which cannot receive the extended DIS frames).
5	Not used	Do not change the setting.
6	Forbid CED/AMsam output 0: Off 1: On (Forbid output)	Do not change this setting (Default: 0: Off), unless communication problem is caused by a CED or ANSam transmission.
7	Not used	Do not change the setting.

G3-2 Switch 02 (SP No. 1-106-003)		
No	**Function**	**Comments**
0	G3 protocol mode used 0: Standard and non-standard 1: Standard only	Change this bit to 1 only when the other end can only communicate with machines that send T.30-standard frames only. 1: Disables NSF/NSS signals (these are used in non-standard mode communication)
1-4	Not used	Do not change the settings.
5	AI modem rate selection 0: OFF, 1: ON	Selects if the AI modem rate is ON or OFF.
6	Not used	Do not change the settings.
7	Short preamble 0: Disabled 1: Enabled	Refer to Appendix B in the Group 3 Facsimile Manual for details about Short Preamble.

G3-2 Switch 03 (SP No. 1-106-004)		
No	**Function**	**Comments**
0	DIS detection number (Echo countermeasure) 0: 1 1: 2	0: The machine will hang up if it receives the same DIS frame twice. 1: Before sending DCS, the machine will wait for the second DIS which is caused by echo on the line.
1	Not Used	Do not change the settings.
2	Not Used	Do not change the settings.
3	ECM frame size 0: 256 bytes 1: 64 bytes	Keep this bit at "0" in most cases.
4	CTC transmission conditions 0: After one PPR signal received 1: After four PPR signals received (ITU-T standard)	0: When using ECM in non-standard (NSF/NSS) mode, the machine sends a CTC to drop back the modem rate after receiving a PPR, if the following condition is met in communications at 14.4, 12.0, 9.6, and 7.2 kbps. $\sqrt{NTransmit \leq NResend}$ Ntransmit = Number of transmitted frames Nresend = Number of frames to be retransmitted 1: When using ECM, the machine sends a CTC to drop back the modem rate after receiving four PPRs. PPR, CTC: These are ECM protocol signals. This bit is not effective in V.34 communications.
5	Modem rate used for the next page after receiving a negative code (RTN or PIN) 0: No change 1: Fallback	1: The machine's tx modem rate will fall back before sending the next page if a negative code is received. This bit is ignored if ECM is being used.
6	Not used	Do not change the settings

7	Select detection of reverse polarity in ringing 0: Off 1: On	This switch is used to prevent reverse polarity in ringing on the phone line (applied to PSTN-G3 ringing). Do not change this setting 0: No detection 1: Detection (Japan and Korea only)

G3-2 Switch 04 (SP No. 1-106-005)

No	Function	Comments
0-3	Training error detection threshold	0 - F (Hex); 0 - 15 bits If the number of error bits in the received TCF is below this threshold, the machine informs the sender that training has succeeded.
4-7	Not used	Do not change the settings.

G3-2 Switch 05 (SP No. 1-106-006)

No	Function					Comments
0-3	Initial Tx modem rate (kbps)					These bits set the initial starting modem rate for transmission. Use the dedicated transmission parameters if you need to change this for specific receivers. If a modem rate 14.4 kbps or slower is selected, V.8 protocol should be disabled manually. Cross reference V.8 protocol on/off - G3 switch 03, bit 2
	Bit 3	Bit 2	Bit 1	Bit 0	kbps	
	0	0	0	1	2.4	
	0	0	1	0	4.8	
	0	0	1	1	7.2	
	0	1	0	0	9.6	
	0	1	0	1	12.0	
	0	1	1	0	14.4	
	0	1	1	1	16.8	
	1	0	0	0	19.2	
	1	0	0	1	21.6	
	1	0	1	0	24.0	

<table>
<tr><td></td><td>1</td><td>0</td><td>1</td><td>1</td><td>26.4</td><td></td></tr>
<tr><td></td><td>1</td><td>1</td><td>0</td><td>0</td><td>28.8</td><td></td></tr>
<tr><td></td><td>1</td><td>1</td><td>0</td><td>1</td><td>31.2</td><td></td></tr>
<tr><td></td><td colspan="5">Other settings - Not used</td><td></td></tr>
<tr><td>4-5</td><td colspan="5">Initial modem type for 9.6 k or 7.2 kbps.</td><td>These bits set the initial modem type for 9.6 and 7.2 kbps, if the initial modem rate is set at these speeds.</td></tr>
<tr><td></td><td>Bit 5</td><td>Bit 4</td><td colspan="3">Setting</td><td></td></tr>
<tr><td></td><td>0</td><td>0</td><td colspan="3">V.29</td><td></td></tr>
<tr><td></td><td>0</td><td>1</td><td colspan="3">V.17</td><td></td></tr>
<tr><td></td><td>1</td><td>0</td><td colspan="3">V.34</td><td></td></tr>
<tr><td></td><td>1</td><td>1</td><td colspan="3">Not used</td><td></td></tr>
<tr><td>6-7</td><td colspan="5">Not used</td><td>Do not change the settings.</td></tr>
</table>

<table>
<tr><th colspan="7">G3-2 Switch 06 (SP No. 1-106-007)</th></tr>
<tr><th>No</th><th colspan="5">Function</th><th>Comments</th></tr>
<tr><td>0-3</td><td colspan="5">Initial Rx modem rate(kbps)</td><td>These bits set the initial starting modem rate for reception.
Use a lower setting if high speeds pose problems during reception.
If a modem rate 14.4 kbps or slower is selected, V.8 protocol should be disabled manually.
Cross reference
V.8 protocol on/off - G3 switch 03, bit2</td></tr>
<tr><td></td><td>Bit 3</td><td>Bit 2</td><td>Bit 1</td><td>Bit 0</td><td>kbps</td><td></td></tr>
<tr><td></td><td>0</td><td>0</td><td>0</td><td>1</td><td>2.4</td><td></td></tr>
<tr><td></td><td>0</td><td>0</td><td>1</td><td>0</td><td>4.8</td><td></td></tr>
<tr><td></td><td>0</td><td>0</td><td>1</td><td>1</td><td>7.2</td><td></td></tr>
<tr><td></td><td>0</td><td>1</td><td>0</td><td>0</td><td>9.6</td><td></td></tr>
<tr><td></td><td>0</td><td>1</td><td>0</td><td>1</td><td>12.0</td><td></td></tr>
<tr><td></td><td>0</td><td>1</td><td>1</td><td>0</td><td>14.4</td><td></td></tr>
<tr><td></td><td>0</td><td>1</td><td>1</td><td>1</td><td>16.8</td><td></td></tr>
<tr><td></td><td>1</td><td>0</td><td>0</td><td>0</td><td>19.2</td><td></td></tr>
<tr><td></td><td>1</td><td>0</td><td>0</td><td>1</td><td>21.6</td><td></td></tr>
<tr><td></td><td>1</td><td>0</td><td>1</td><td>0</td><td>24.0</td><td></td></tr>
</table>

	1	0	1	1	26.4	
	1	1	0	0	28.8	
	1	1	0	1	31.2	
	Other settings - Not used					

4-7 Modem types available for reception

The setting of these bits is used to inform the transmitting terminal of the available modem type for the machine in receive mode.

If V.34 is not selected, V.8 protocol must be disabled manually.

Cross reference

V.8 protocol on/off - G3 switch 03, bit 2

Bit 7	Bit 6	Bit 5	Bit 4	Types
0	0	0	1	V.27ter
0	0	1	0	V.27ter
0	0	1	1	V.27ter
0	1	0	0	V.27ter
0	1	0	1	V.27ter
Other settings - Not used				

G3-2 Switch 07 (SP No. 1-106-008)

No	Function			Comments
0-1	PSTN cable equalizer (tx mode: Internal)			Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange. Use the dedicated transmission parameters for specific receivers. Also, try using the cable equalizer if one or more of the following symptoms
	Bit 1	Bit 0	Setting	
	0	0	None	
	0	1	Low	
	1	0	Medium	
	1	1	High	

<table>
<tr><td></td><td></td><td>occurs.
Communication error
Modem rate fallback occurs frequently.
Note
▪ This setting is not effective in V.34 communications.</td></tr>
<tr><td>2-3</td><td>PSTN cable equalizer
(rx mode: Internal)
<table><tr><td>Bit 3</td><td>Bit 2</td><td>Setting</td></tr><tr><td>0</td><td>0</td><td>None</td></tr><tr><td>0</td><td>1</td><td>Low</td></tr><tr><td>1</td><td>0</td><td>Medium</td></tr><tr><td>1</td><td>1</td><td>High</td></tr></table></td><td>Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange.
Also, try using the cable equalizer if one or more of the following symptoms occurs.
Communication error with error codes such as 0-20, 0-23, etc.
Modem rate fallback occurs frequently.
Note
▪ This setting is not effective in V.34 communications.</td></tr>
<tr><td>4</td><td>PSTN cable equalizer
(V.8/V.17 rx mode: External)
0: Disabled
1: Enabled</td><td>Keep this bit at "1".</td></tr>
<tr><td>5-7</td><td>Not used</td><td>Do not change the settings.</td></tr>
</table>

G3-2 Switch 08 - Not used (do not change the settings)
G3-2 Switch 09 - Not used (do not change the settings)

<table>
<tr><th colspan="4">G3-2 Switch 0A (SP No. 1-106-011)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td>0-1</td><td colspan="3">Maximum allowable carrier drop during image data reception
<table><tr><td>Bit 1</td><td>Bit 0</td><td>Value (ms)</td></tr></table></td><td>These bits set the acceptable modem carrier drop time.
Try a longer setting if error code 0-22 is</td></tr>
</table>

	0	0	200	frequent.
	0	1	400	
	1	0	800	
	1	1	Not used	
2-3	Not used			Do not change the settings
4	Maximum allowable frame interval during image data reception. 0: 5 s 1: 13 s			This bit set the maximum interval between EOL (end-of-line) signals and the maximum interval between ECM frames from the other end. Try using a longer setting if error code 0-21 is frequent.
5	Not used			Do not change the settings.
6	Reconstruction time for the first line in receive mode 0: 6 s 1: 12 s			When the sending terminal is controlled by a computer, there may be a delay in receiving page data after the local machine accepts set-up data and sends CFR. This is outside the T.30 recommendation. But, if this delay occurs, set this bit to 1 to give the sending machine more time to send data. Refer to error code 0-20. ITU-T T.30 recommendation: The first line should come within 5 s of CFR.
7	Not used			Do not change the settings.

G3-2 Switch 0B- Not used (do not change the settings)
G3-2 Switch 0C- Not used (do not change the settings)
G3-2 Switch 0E- Not used (do not change the settings)
G3-2 Switch 0F- Not used (do not change the settings)

G4 Internal Switches

The G4 internal switches (SW00 to 1F) are displayed but do not change these settings. This fax option does not use G4.

G4 Parameter Switches

The G4 parameter switches (SW00 to 0F) are displayed but do not change these settings. This fax option does not use G4.

4.3.6 BIT SWITCHES - 6

Note

- Do not adjust a bit switch or use a setting that is described as "Not used", as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

IP Fax Switches

IP Fax Switch 00 (SP No. 1-111-001)		
No.	**Function**	**Comments**
0	Not used	Do not change this setting.
1	IP Fax Transport 0: TCP, 1: UDP	Selects TCP or UDP protocol for IP-Fax
2	IP Fax single port selection 0: OFF, 1: ON (enable)	Selects single data port.
3	IP Fax double ports (single data port) selection 0: OFF, 1: ON (enable)	Selects whether IP-Fax uses a double port.
4	IP Fax Gatekeeper 0: OFF, 1: ON (enable)	Enables/disables the gatekeeper for IP-Fax.
5	IP Fax T30 bit signal reverse 0: LSB first, 1: MSB first	Reverses the T30 bit signal.

6	IP Fax max bit rate setting 0: Not affected, 1: Affected	When "0" is selected, the max bit rate does not affect the value of the DIS/DCS. When "1" is selected, the max bit rate affects the value of the DIS/DCS.
7	IP Fax received telephone number confirmation 0: No confirmation, 1: Confirmation	When "0" is selected, fax data is received without checking the telephone number. When "1" is selected, fax data is received only when confirming that the telephone number from the sender matches the registered telephone number in this machine. If this confirmation fails, the line is disconnected.

IP Fax Switch 01 (SP No. 1-111-002)

No.	Function	Comments
0-3	IP Fax delay level setting Selects the acceptable delay level. Level 0 is the highest quality Default is "0000" (level 0).	

Bit 3	Bit 2	Bit 1	Bit 0	
0	0	0	0	Level 0
0	0	0	1	Level 1
0	0	1	0	Level 2
0	0	1	1	Level 3

4-7	IP Fax preamble wait time setting	Selects the preamble wait time. [00 to 0f] There are 16 values in this 4-bit binary switch combination. Waiting time: set value level x 100 ms Max: 0f (1500 ms) Min: 00 (No wait time) The default is "0000" (00H).

IP Fax Switch 02 (SP No. 1-111-003)		
No.	**Function**	**Comments**
0	IP Fax bit signal reverse setting 0: Maker code setting 1: Internal bit switch setting	When "0" is selected, the bit signal reverse method is decided by the maker code. When "1" is selected, the bit signal reverse method is decided by the internal bit switch. When communicating between IP Fax devices, LSB first is selected.)
1	IP Fax transmission speed setting 0: Modem speed 1: No limitation	Selects the transmit speed for IP Fax communication.
2	SIP transport setting 0: TCP 1: UDP	This bit switch sets the transport that has priority for receiving IP Fax data. This function is activated only when the sender has both TCP and UDP.
3	CCM connection 0: No CCM connection 1: CCM connection	When "1" is selected, only the connection call message with H.323 or no tunneled H.245 is transmitted via CCM.
4	Message reception selection from non-registered SIP server 0: Answer 1: Not answer	0: This answers the INVITE message from the SIP server not registered for the machine. 1: This does not receive the INVITE message from the SIP server not registered for the machine and send a refusal message.
5	ECM communication setting 0: No limit for image compression 1: Limit for image compression	0: This does not limit the type of the image compression with ECM communication. 1: When the other end machine is Ciscco, this permits the image compression other than JBIG or MMR with ECM communication.
6-7	Not used	Do not change these settings.

IP Fax Switch 03 (SP No. 1-111-004)		
No.	**Function**	**Comments**
0	Effective field limitation for G3 standard function information 0: OFF, 1: 4byte (DIS)	Limits the effective field for standard G3 function information.
1	Switching between G3 standard and G3 non standard 0: Enable switching 1: G3 standard only	Enables/disables switching between G3 standard and G3 non-standard.
2	Not used	Do not change this setting.
3	ECM frame size selection at transmitting 0: 256byte, 1: 64byte	Selects the ECM frame size for sending.
4	DIS detection times for echo prevention 0: 1 time, 1: 2 times	Sets the number of times for DIS to detect echoes.
5	CTC transmission selection 0: PPRx1 1: PPRx4	When "0" is selected, the transmission condition is decided by error frame numbers. When "1" is selected, the transmission condition is based on the ITU-T method.
6	Shift down setting at receiving negative code 0: OFF, 1: ON	Selects whether to shift down when negative codes are received.
7	Not used	Do not change this setting.

IP Fax Switch 04 (SP No. 1-111-005)		
No.	**Function**	**Comments**
0-3	TCF error threshold	Sets the TCF error threshold level. [00 to 0f] The default is "1111" (0fH).
4-7	Not used	Do not change these settings.

<table>
<tr><th colspan="7">IP Fax Switch 05 (SP No. 1-111-006)</th></tr>
<tr><th>No.</th><th colspan="5">Function</th><th>Comments</th></tr>
<tr><td rowspan="8">0-3</td><td colspan="5">Modem bit rate setting for transmission (kbps)</td><td rowspan="8">Sets the modem bit rate for transmission. The default is "0110" (14.4K bps).</td></tr>
<tr><td>Bit 3</td><td>Bit 2</td><td>Bit 1</td><td>Bit 0</td><td>kbps</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>1</td><td>2.4</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>1</td><td>4.8</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>1</td><td>7.2</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>0</td><td>9.6</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>1</td><td>12.0</td></tr>
<tr><td>0</td><td>1</td><td>1</td><td>0</td><td>14.4</td></tr>
<tr><td rowspan="6">4-5</td><td colspan="3">Modem setting for transmission</td><td rowspan="6">Sets the modem type for transmission.
The default is "00" (V29).</td></tr>
<tr><td colspan="2">Bit 5</td><td>Bit 4</td><td>Types</td></tr>
<tr><td colspan="2">0</td><td>0</td><td>V29</td></tr>
<tr><td colspan="2">0</td><td>1</td><td>V17</td></tr>
<tr><td colspan="2">1</td><td>0</td><td>Not used</td></tr>
<tr><td colspan="2">1</td><td>1</td><td>Not used</td></tr>
<tr><td>6-7</td><td colspan="4">Not used</td><td>Do not change these settings.</td></tr>
</table>

<table>
<tr><th colspan="6">IP Fax Switch 06 (SP No. 1-111-007)</th></tr>
<tr><th>No.</th><th colspan="4">Function</th><th>Comments</th></tr>
<tr><td>0-3</td><td colspan="5">Modem bit rate setting for reception
Sets the modem bit rate for reception. The default is "0110" (14.4K bps).</td></tr>
<tr><td rowspan="3">4-7</td><td colspan="5">Modem setting for reception
Sets the modem type for reception. The default is "0100" (V27ter, V29, V17).</td></tr>
<tr><td>Bit 7</td><td>Bit 6</td><td>Bit 5</td><td>Bit 4</td><td>Types</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>1</td><td>V.27ter</td></tr>
</table>

	0	0	1	0	V.27ter, V.29
	0	0	1	1	V.27ter, V.29, V.33
	0	1	0	0	V.27ter, V.29, V.17/V.33
	Other settings - Not used				

IP Fax Switch 07 (SP No. 1-111-008)		
No.	**Function**	**Comments**
0	TSI information 0: Not added, 1: Added	Adds or does not add TSI information to NSS(S).
1	DCN transmission setting at T1 timeout 0: Not transmitted 1: Transmitted	Transmits or does not transmit DCN at T1 timeout.
2	Not used	Do not change this setting.
3	Hang up setting at DIS reception disabled 0: No hang up 1: Hang up after transmitting DCN	Sets whether the machine disconnects after DIS reception.
4	Number of times for training 0: 1 time, 1: 2 times	Selects the number of times training is done at the same bit rate.
5	Space CSI transmission setting at no CSI registration 0: Not transmitted 1: Transmitted	When "0" is selected, frame data is enabled. When "1" is selected, the transmitted data is all spaces.
6-7	Not used	Do not change these settings.

IP Fax Switch 08 (SP No. 1-111-009)				
No.	**Function**			**Comments**
0-1	T1 timer adjustment			Adjusts the T1 timer. The default is "00" (35 seconds).
	Bit 1	Bit 0		
	0	0	35 s	
	0	1	40 s	
	1	0	50 s	
	1	1	60 s	
2-3	T4 timer adjustment			Adjust the T4 timer. The default is "00" (3 seconds).
	Bit 3	Bit 2		
	0	0	3 s	
	0	1	3.5 s	
	1	0	4 s	
	1	1	5 s	
4-5	T0 timer adjustment			Adjusts the fail safe timer. This timer sets the interval between "setup" data transmission and T.38 phase decision. If your destination return is late on the network or G3 fax return is late, adjust the longer interval timer. The default is "00" (75 seconds).
	Bit 5	Bit 4		
	0	0	75 s	
	0	1	120 s	
	1	0	180 s	
	1	1	240 s	
6-7	Not used			Do not change these settings.

IP Fax Switch 09 (SP No. 1-111-010)		
No.	**Function**	**Comments**

<table>
<tr><td>0</td><td>Network I/F setting for SIP connection
0: IPv4
1: IPv6.</td><td>Selects the connection type (IPV4 or IPV6) to connect to the SIP server.</td></tr>
<tr><td>1</td><td>Network I/F setting for Fax communication
0: Same setting as SIP server connection
1: Automatic setting</td><td>0: The I/F setting for fax communication follows the setting for SIP server connection.
1: The negotiation between the SIP server and the device decides whether IPv4 or IPv6 is used for the I/F setting for fax communication.</td></tr>
<tr><td>2</td><td>Record-route setting
0: Disable
1: Enable</td><td>0: Disables the record-route function of the SIP server.
1: Enables the record-route function of the SIP server.</td></tr>
<tr><td>3-4</td><td>re-INVITE transmission delay timer setting
<table><tr><td>Bit 4</td><td>Bit 3</td><td></td></tr><tr><td>0</td><td>0</td><td>No delay</td></tr><tr><td>0</td><td>1</td><td>1 sec</td></tr><tr><td>1</td><td>0</td><td>2 sec</td></tr><tr><td>1</td><td>1</td><td>3 sec</td></tr></table></td><td>This changes the interval for transmit re-INVITE after receiving the ACK message transmitted by T.38 device.</td></tr>
<tr><td>5</td><td>SIP-IPFAX: Adding vender information selection
0: Declare T38VendorInfo=RICOH
1: Not declare T38VendorInfo=RICOH</td><td>0: Use this setting normally.
1: This setting is used only when a customer wants to connect the machine with SIP server + VOIP-GW provided by AVAYA Inc.</td></tr>
<tr><td>6-7</td><td>Not used.</td><td>Do not change these settings.</td></tr>
</table>

IP Fax Switch 0A - Not used (do not change the settings)
IP Fax Switch 0B - Not used (do not change the settings)
IP Fax Switch 0C - Not used (do not change the settings)

IP Fax Switch 0D - Not used (do not change the settings)

IP Fax Switch 0E (SP No. 1-111-013)		
No.	**Function**	**Comments**
0-1	SIP: IP-FAX port mode (UDP) 00: 3 port mode 01: 2 port mode 10: 1 port mode	Switch the port mode for IP-FAX (T38 transport: UDP) at SIP call control.
2-3	SIP: IP-FAX port mode (TCP) 00: 3 port mode 01: 2 port mode 10: 1 port mode	Switch the port mode for IP-FAX (T38 transport: TCP) at SIP call control.
4-7	Not used.	Do not change these settings.

4.4 NCU PARAMETERS

The following tables give the RAM addresses and the parameter calculation units that the machine uses for ringing signal detection and automatic dialing. The factory settings for each country are also given. Most of these must be changed by RAM read/write (SP2-102), but some can be changed using NCU Parameter programming (SP2-103, 104 and 105); if SP2-103, 104 and 105 can be used, this will be indicated in the Remarks column. The RAM is programmed in hex code unless (BCD) is included in the Unit column.

Note

- The following addresses describe settings for the standard NCU.
- Change the fourth digit from "5" to "6" (e.g. 680500 to 680600) for the settings for the first optional G3 interface unit and from "5" to "7" (e.g. 680700) for the settings for the second optional G3 interface unit.

Address	Function					
680500	Country/Area code for NCU parameters					
	Use the Hex value to program the country/area code directly into this address, or use the decimal value to program it using SP2-103-001					
	Country /Area	**Decimal**	**Hex**	**Country /Area**	**Decimal**	**Hex**
	France	00	00	Asia	18	12
	Germany	01	01	Japan	19	13
	UK	02	02	Hong Kong	20	14
	Italy	03	03	South Africa	21	15
	Austria	04	04	Australia	22	16
	Belgium	05	05	New Zealand	26	17
	Denmark	06	06	Singapore	24	18
	Finland	07	07	Malaysia	25	19
	Ireland	08	08	China	26	1A
	Norway	09	09	Taiwan	27	1B

Address	Function					
	Sweden	10	0A	Korea	28	1C
	Switzerland	11	0B	Brazil	29	1D
	Portugal	12	0C	Turkey	32	20
	Holland	13	0D	Greece	33	21
	Spain	14	0E	Hungary	34	22
	Israel	15	0F	Czech	35	23
	USA	17	11	Poland	36	24

Address	Function	Unit	Remarks
680501	Line current detection time	20 ms	Line current detection is disabled. Line current is not detected if 680501 contains FF.
680502	Line current wait time		
680503	Line current drop detect time		
680504	PSTN dial tone frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680505	PSTN dial tone frequency upper limit (low byte)		
680506	PSTN dial tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680507	PSTN dial tone frequency lower limit (low byte)		
680508	PSTN dial tone detection time	20 ms	If 680508 contains FF(H), the machine pauses for the pause time (address 68050D / 68050E). Italy: See Note 2.
680509	PSTN dial tone reset time (LOW)		
68050A	PSTN dial tone reset time (HIGH)		
68050B	PSTN dial tone continuous tone time		

Address	Function	Unit	Remarks
68050C	PSTN dial tone permissible drop time		
68050D	PSTN wait interval (LOW)		-
68050E	PSTN wait interval (HIGH)		
68050F	PSTN ring-back tone detection time	20 ms	Detection is disabled if this contains FF.
680510	PSTN ring-back tone off detection time	20 ms	-
680511	PSTN detection time for silent period after ring-back tone detected (LOW)	20 ms	-
680512	PSTN detection time for silent period after ring-back tone detected (HIGH)	20 ms	-
680513	PSTN busy tone frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680514	PSTN busy tone frequency upper limit (low byte)		
680515	PSTN busy tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680516	PSTN busy tone frequency lower limit (low byte)		
680517	PABX dial tone frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680518	PABX dial tone frequency upper limit (low byte)		
680519	PABX dial tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
68051A	PABX dial tone frequency lower limit (low byte)		

Address	Function	Unit	Remarks
68051B	PABX dial tone detection time	20 ms	If 68051B contains FF, the machine pauses for the pause time (680520 / 680521).
68051C	PABX dial tone reset time (LOW)		
68051D	PABX dial tone reset time (HIGH)		
68051E	PABX dial tone continuous tone time		
68051F	PABX dial tone permissible drop time		
680520	PABX wait interval (LOW)		-
680521	PABX wait interval (HIGH)		
680522	PABX ringback tone detection time	20 ms	If both addresses contain FF(H), tone detection is disabled.
680523	PABX ringback tone off detection time	20 ms	
680524	PABX detection time for silent period after ringback tone detected (LOW)	20 ms	If both addresses contain FF(H), tone detection is disabled.
680525	PABX detection time for silent period after ringback tone detected (HIGH)	20 ms	
680526	PABX busy tone frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680527	PABX busy tone frequency upper limit (low byte)		
680528	PABX busy tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680529	PABX busy tone frequency lower limit (low byte)		
68052A	Busy tone ON time: range 1	20 ms	-
68052B	Busy tone OFF time: range 1		

Address	Function	Unit	Remarks
68052C	Busy tone ON time: range 2		
68052D	Busy tone OFF time: range 2		
68052E	Busy tone ON time: range 3		
68052F	Busy tone OFF time: range 3	20 ms	
680530	Busy tone ON time: range 4		
680531	Busy tone OFF time: range 4		
680532	Busy tone continuous tone detection time		
680533	Busy tone signal state time tolerance for all ranges, and number of cycles required for detection (a setting of 4 cycles means that ON-OFF-ON or OFF-ON-OFF must be detected twice). Tolerance (±) Bit 1: 0, Bit 0: 0 = 75% Bits 2 and 3 must always be kept at 0. Bit 1: 0, Bit 0: 0 = 50% Bits 2 and 3 must always be kept at 0. Bit 1: 0, Bit 0: 0 = 25% Bit 1: 0, Bit 0: 0 = 12.5% Bits 7, 6, 5, 4 - number of cycles required for cadence detection		
680534	International dial tone frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680535	International dial tone frequency upper limit (low byte)		
680536	International dial tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680537	International dial tone frequency lower limit (low byte)		
680538	International dial tone detection time	20 ms	If 680538 contains FF, the machine pauses for the pause time (68053D / 68053E).
680539	International dial tone reset time (LOW)		

Address	Function	Unit	Remarks
68053A	International dial tone reset time (HIGH)		Belgium: See Note 2.
68053B	International dial tone continuous tone time		
68053C	International dial tone permissible drop time		
68053D	International dial wait interval (LOW)		-
68053E	International dial wait interval (HIGH)		
68053F	Country dial tone upper frequency limit (HIGH)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680540	Country dial tone upper frequency limit (LOW)		
680541	Country dial tone lower frequency limit (HIGH)		If both addresses contain FF(H), tone detection is disabled.
680542	Country dial tone lower frequency limit (LOW)		
680543	Country dial tone detection time	20 ms	If 680543 contains FF, the machine pauses for the pause time (680548 / 680549).
680544	Country dial tone reset time (LOW)		
680545	Country dial tone reset time (HIGH)		
680546	Country dial tone continuous tone time	-	-
680547	Country dial tone permissible drop time	20 ms	-
680548	Country dial wait interval (LOW)		
680549	Country dial wait interval (HIGH)		

Address	Function	Unit	Remarks
68054A	Time between opening or closing the DO relay and opening the OHDI relay	1 ms	See Notes 3, 6 and 8. SP2-103-012 (parameter 11).
68054B	Break time for pulse dialing	1 ms	See Note 3. SP2-103-013 (parameter 12).
68054C	Make time for pulse dialing	1 ms	See Note 3. SP2-103-014 (parameter 13).
68054D	Time between final OHDI relay closure and DO relay opening or closing	1 ms	See Notes 3, 6 and 8. SP2-103-015 (parameter 14). This parameter is only valid in Europe.
68054E	Minimum pause between dialed digits (pulse dial mode)	20 ms	See Note 3 and 8. SP2-103-016 (parameter 15).
68054F	Time waited when a pause is entered at the operation panel		SP2-103-017 (parameter 16). See Note 3.
680550	DTMF tone on time	1 ms	SP2-103-018 (parameter 17).
680551	DTMF tone off time		SP2-103-019 (parameter 18).
680552	Tone attenuation level of DTMF signals while dialing	-N x 0.5 –3.5 dBm	SP2-103-020 (parameter 19). See Note 5.

Address	Function	Unit	Remarks
680553	Tone attenuation value difference between high frequency tone and low frequency tone in DTMF signals	-dBm x 0.5	SP2-103-021 (parameter 20). The setting must be less than –5dBm, and should not exceed the setting at 680552h above. See Note 5.
680554	PSTN: DTMF tone attenuation level after dialling	-N x 0.5 –3.5 dBm	SP2-103-022 (parameter 21). See Note 5.
680555	ISDN: DTMF tone attenuation level after dialling	-dBm x 0.5	See Note 5
680556	Not used	-	Do not change the settings.
680557	Time between 68054Dh (NCU parameter 14) and 68054Eh (NCU parameter 15)	1 ms	This parameter takes effect when the country code is set to France.
680558	Not used	-	Do not change the setting.
680559	Grounding time (ground start mode)	20 ms	The Gs relay is closed for this interval.
68055A	Break time (flash start mode)	1 ms	The OHDI relay is open for this interval.
68055B	International dial access code (High)	BCD	For a code of 100: 68055B - F1 68055C - 00
68055C	International dial access code (Low)		

Address	Function	Unit	Remarks
68055D	PSTN access pause time	20 ms	This time is waited for each pause input after the PSTN access code. If this address contains FF[H], the pause time stored in address 68054F is used. Do not set a number more than 7 in the UK.
68055E	Progress tone detection level, and cadence detection enable flags	Bit 7: 0, Bit 6: 0, Bit 5: 0 = -25.0 dBm Bit 7: 0, Bit 6: 0, Bit 5: 1 = -35.0 dBm Bit 7: 0, Bit 6: 1, Bit 5: 0 = -30.0 dBm Bit 7: 1, Bit 6: 0, Bit 5: 0 = -40.0 dBm Bit 7: 1, Bit 6: 1, Bit 5: 0 = -49.0 dBm Bits 2, 0 - See Note 2.	
68055F To 680564	**Not used**	-	Do not change the settings.
680565	Long distance call prefix (HIGH)	BCD	For a code of 0: 680565 – FF 680566 - FF
680566	Long distance call prefix (LOW)	BCD	
680567 to 680571	**Not used**	-	Do not change the settings.
680572	Acceptable ringing signal frequency: range 1, upper limit	1000/ N (Hz).	SP2-103-003 (parameter 02).
680573	Acceptable ringing signal frequency: range 1, lower limit		SP2-103-004 (parameter 03).
680574	Acceptable ringing signal frequency: range 2, upper limit		SP2-103-005 (parameter 04).
680575	Acceptable ringing signal frequency: range 2, lower limit		SP2-103-006 (parameter 05).

Address	Function	Unit	Remarks
680576	Number of rings until a call is detected	1	SP2-103-007 (parameter 06). The setting must not be zero.
680577	Minimum required length of the first ring	20 ms	See Note 4. SP2-103-008 (parameter 07).
680578	Minimum required length of the second and subsequent rings	20 ms	SP2-103-009 (parameter 08).
680579	Ringing signal detection reset time (LOW)	20 ms	SP2-103-010 (parameter 09).
68057A	Ringing signal detection reset time (HIGH)		SP2-103-011 (parameter 10).
68057B to 680580	**Not used**	-	Do not change the settings.
680581	Interval between dialing the last digit and switching the Oh relay over to the external telephone when dialing from the operation panel in handset mode.	20 ms	Factory setting: 500 ms
680582	Bits 0 and 1 - Handset off-hook detection time Bit 1:0, Bit 0: 0 = 200 ms Bit 1:0, Bit 0: 1 = 800 ms Other Not used Bits 2 and 3 - Handset on-hook detection time Bit 3: 0, Bit 2: 0 = 200 ms Bit 3: 0, Bit 2: 1 = 800 ms Other Not used Bits 4 to 7 - **Not used**		-
680583 To 6805A0	**Not used**	-	Do not change the settings.

Address	Function	Unit	Remarks
6805A1	Acceptable CED detection frequency upper limit (high byte)	BCD (Hz)	If both addresses contain FF(H), tone detection is disabled.
6805A2	Acceptable CED detection frequency upper limit (low byte)		
6805A3	Acceptable CED detection frequency lower limit (high byte)	BCD (Hz)	If both addresses contain FF(H), tone detection is disabled.
6805A4	Acceptable CED detection frequency lower limit (low byte)		
6805A5	CED detection time	20 ms ± 20 ms	Factory setting: 200 ms
6805A6	Acceptable CNG detection frequency upper limit (high byte)	BCD (Hz)	If both addresses contain FF(H), tone detection is disabled.
6805A7	Acceptable CNG detection frequency upper limit (low byte)		
6805A8	Acceptable CNG detection frequency lower limit (high byte)	BCD (Hz)	If both addresses contain FF(H), tone detection is disabled.
6805A9	Acceptable CNG detection frequency lower limit (low byte)		
6805AA	**Not used**	-	Do not change the setting.
6805AB	CNG on time	20 ms	Factory setting: 500 ms
6805AC	CNG off time	20 ms	Factory setting: 3000 ms
6805AD	Number of CNG cycles required for detection	-	The data is coded in the same way as address 680533.
6805AE	**Not used**	-	Do not change the settings.
6805AF	Acceptable AI short protocol tone (800Hz) detection frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.

Address	Function	Unit	Remarks
6805B0	Acceptable AI short protocol tone (800Hz) detection frequency upper limit (low byte)		
6805B1	Acceptable AI short protocol tone (800Hz) detection frequency lower limit (high byte)	Hz(BCD)	If both addresses contain FF(H), tone detection is disabled.
6805B2	Acceptable AI short protocol tone (800Hz) detection frequency lower limit (low byte)		
6805B3	Detection time for 800 Hz AI short protocol tone	20 ms	Factory setting: 360 ms
6805B4	PSTN: Tx level from the modem	-N – 3 dBm	SP2-103-002 (parameter 01).
6805B5	PSTN: 1100 Hz tone transmission level	- N 6805B4 - 0.5N 6805B5 –3.5 (dB) See Note 7.	
6805B6	PSTN: 2100 Hz tone transmission level	- N6805B4 - 0.5N 6805B6 –3 (dB) See Note 7.	
6805B7	PABX: Tx level from the modem	- dBm	
6805B8	PABX: 1100 Hz tone transmission level	- N 6805B7 - 0.5N 6805B8 (dB)	
6805B9	PABX: 2100 Hz tone transmission level	- N 6805B7 - 0.5N 6805B9 (dB)	
6805BD	Modem turn-on level (incoming signal detection level)	-37-0.5N (dBm)	
6805BE to 6805C6	**Not used**	-	Do not change the settings.
6805C7	Bits 0 to 3 – **Not used** Bit 4 = V.34 protocol dump 0: Simple, 1: Detailed (default) Bits 5 to 7 – **Not used.**		

Address	Function	Unit	Remarks
6805C8 to 6805D9	**Not used**	-	Do not change the settings.
6805DA	T.30 T1 timer	1 s	
6805E0 bit 3	Maximum wait time for post message	0: 12 s 1: 30 s	1: Maximum wait time for post message (EOP/EOM/MPS) can be changed to 30 s. Change this bit to “1” if communication errors occur frequently during V.17 reception.
6805E3	Bits 0 and 1 – DCV (TIP/RING) Voltage Bit 1:0, Bit 0: 0 = 3.1 V Bit 1:0, Bit 0: 1 = 3.2 V Bit 1:1, Bit 0: 0 = 3.35 V Bit 1:1, Bit 0: 1 = 3.5 V Bits 2 and 3 – MINI (minimum loop electric current) Bit 2:0, Bit 3: 0 = 10 mA Bit 2:0, Bit 2: 1 = 12 mA Bit 2:1, Bit 3: 0 = 14 mA Bit 2:1, Bit 3: 1 = 16 mA Bits 6 and 7 – ACIM (AC impedance) Bit 7:0, Bit 6: 0 Bit 5:0, Bit 4: 0= 600 Bit 7:0, Bit 6: 0 Bit 5:1, Bit 4: 0= TBR21		

Address	Function	Unit	Remarks
6805E4	Bit 0 – OHS (on hook speed) 0: OHS=0 1: OHS=1 Bit 1 – SQ (spark quench) 0: SQ=00 1: SQ=11 Bit 2 – RZ (call signal Impedance) 0: RZ=0 (high) 1: RZ=1 (low) Bit 3 – RT (call signal detection level) 0: RT=0 (low) 1: RT=1 (high) Bit 4 – ILIM (DC limitation) 0: ILIM=0 (CTR 21) 1: ILIM=1 (other than CTR 21) Bit 5 –FILTER 0: FILTER=0 (around 5Hz) 1: FILTER=1 (around 200Hz) Bits 6 to 7 – Calibration in off hook state Bit 6:0, Bit 7: 0 = off hook to ACAL:128 ms, off hook to MCAL: 1000 ms Bit 6:1, Bit 7: 0 = off hook to ACAL:128 ms, off hook to MCAL: 500 ms Bit 6:0, Bit 7: 1 = off hook to ACAL:128 ms (no MCAL) Bit 6:1, Bit 7: 1 = off hook to ACAL:8 ms (no MCAL)		
6805E5	Bits 0 to 6 – **Not used** Bits 7 – Energy saving for DSP, COMBLK, SiDAA 0: Does not save energy 1: Saves energy		

NOTES

1. If a setting is not required, store FF in the address.
2. Italy and Belgium only

   RAM address 68055E: the lower four bits have the following meaning.

   Bit 2 - 1: International dial tone cadence detection enabled (Belgium)

   Bit 1 - Not used

   Bit 0 - 1: PSTN dial tone cadence detection enabled (Italy)

   If bit 0 or bit 2 is set to 1, the functions of the following RAM addresses are changed.

680508 (if bit 0 = 1) or 680538 (if bit 2 = 1): tolerance for on or off state
duration (%), and number of cycles required for detection, coded as in address 680533.
68050B (if bit 0 = 1) or 68053B (if bit 2 = 1): on time, hex code (unit = 20 ms)
68050C (if bit 0 = 1) or 68053C (if bit 2 = 1): off time, hex code (unit = 20 ms)

3. Pulse dial parameters (addresses 68054A to 68054F) are the values for 10 pps. If 20 pps is used, the machine automatically compensates.
4. The first ring may not be detected until 1 to 2.5 wavelengths after the time specified by this parameter.
5. The calculated level must be between 0 and 10.
   The attenuation levels calculated from RAM data are:
   High frequency tone:
   - $-0.5 \times N_{680552}/_{680554} - 3.5$ dBm
   - $-0.5 \times N_{680555}$ dBm

   Low frequency tone:
   - $-0.5 \times (N_{680552}/_{680554} + N_{680553}) - 3.5$ dBm
   - $-0.5 \times (N_{680555} + N_{680553})$ dBm

   Note
   - N_{680552}, for example, means the value stored in address 680552(H)
6. 68054A: Europe - Between Ds opening and Di opening, France - Between Ds closing and Di opening
   68054D: Europe - Between Ds closing and Di closing, France - Between Ds opening and Di closing
7. Tone signals which frequency is lower than 1500Hz (e.g., 800Hz tone for AI short protocol) refer to the setting at 6805B5h. Tones which frequency is higher than 1500Hz refer to the setting at 6805B6h.
8. 68054A, 68054D, 68054E: The actual inter-digit pause (pulse dial mode) is the sum of the period specified by the RAM addresses 68054A, 68054D, and 68054E.

4.5 DEDICATED TRANSMISSION PARAMETERS

There are two sets of transmission parameters: Fax and E-mail
Each Quick Dial Key and Speed Dial Code has eight bytes of programmable parameters allocated to it. If transmissions to a particular machine often experience problems, store that terminal's fax number as a Quick Dial or Speed Dial, and adjust the parameters allocated to that number.
The programming procedure will be explained first. Then, the eight bytes will be described.

4.5.1 PROGRAMMING PROCEDURE

1. Set the bit 0 of System Bit Switch 00 to 1.
2. Enter Address Book Management mode ([User Tools]> System Settings> Key Operator> Address Book Management).
3. Select the address book that you want to program.
4. For the fax parameter, select "Fax Dest.", for the E-mail parameter, select "E-mail", then press "Start". Make sure that the LED of the Start button lights green.
5. The settings for the switch 00 are now displayed. Press the bit number that you wish to change.
6. To scroll through the parameter switches, either:
7. Select the next switch: press "Next" or Select the previous switch: "Prev." until the correct switch is displayed. Then go back to step 6.
8. After the setting is changed, press "OK".
9. After finishing, reset bit 0 of System Bit Switch 00 to 0.

4.5.2 PARAMETERS

Fax Parameters

The initial settings of the following fax parameters are all FF(H) - all the parameters are disabled.

Switch 00
FUNCTION AND COMMENTS
ITU-T T1 time (for PSTN G3 mode) If the connection time to a particular terminal is longer than the NCU parameter setting, adjust this byte. The T1 time is the value stored in this byte (in hex code), multiplied by 1 second. **Range:** 0 to 120 s (00h to 78h) FFh - The local NCU parameter factory setting is used. Do not program a value between 79h and FEh.

Switch 01

No	FUNCTION						COMMENTS
0-4	Tx level						If communication with a particular remote terminal often contains errors, the signal level may be inappropriate. Adjust the Tx level for communications with that terminal until the results are better. If the setting is "Disabled", the NCU parameter 01 setting is used. Note ▪ Do not use settings other than listed on the left.
	Bit4	Bit3	Bit2	Bit1	Bit0		
	0	0	0	0	0	0	
	0	0	0	0	1	–1	
	0	0	0	1	0	–2	
	0	0	0	1	1	–3	
	0	0	1	0	0	–4	
	↓	↓	↓	↓	↓	↓	
	0	1	1	1	1	–15	
	1	1	1	1	1	Disabled	

5-7	Cable equalizer Bit 7: 0, Bit 6: 0, Bit 5: 0 = None Bit 7: 0, Bit 6: 0, Bit 5: 1 = Low Bit 7: 0, Bit 6: 1, Bit 5: 0 = Medium Bit 7: 0, Bit 6: 1, Bit 5: 1 = High Bit 7: 1, Bit 6: 1, Bit 5: 1 = Disabled	Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange when calling the number stored in this Quick/Speed Dial. Also, try using the cable equalizer if one or more of the following symptoms occurs. Communication error with error codes such as 0-20, 0-23, etc. Modem rate fallback occurs frequently. Note ▪ Do not use settings other than listed on the left. If the setting is "Disabled", the bit switch setting is used.

Switch 02

No	FUNCTION					COMMENTS
0-3	Initial Tx modem rate					If training with a particular remote terminal always takes too long, the initial modem rate may be too high. Reduce the initial Tx modem rate using these bits. For the settings 14.4 or kbps slower, Switch 04 bit 4 must be changed to 0. Note ▪ Do not use settings other than listed on the left. If the setting is "Disabled", the bit switch setting is used.
	Bit3	Bit2	Bit1	Bit0	bps	
	0	0	0	0	Not used	
	0	0	0	1	2400	
	0	0	1	0	4800	
	0	0	1	1	7200	
	0	1	0	0	9600	
	0	1	0	1	12000	
	0	1	1	0	14400	
	0	1	1	1	16800	
	1	0	0	0	19200	

	1	0	0	1	21600	
	1	0	1	0	24000	
	1	0	1	1	26400	
	1	1	0	0	28800	
	1	1	0	1	31200	
	1	1	1	0	33600	
	1	1	1	1	Disabled	
	Other settings: **Not used**					
4-7	**Not used**					Do not change the settings.

Switch 03		
No	**FUNCTION**	**COMMENTS**
0-1	Inch-mm conversion before tx Bit 1: 0, Bit 0: 0 = Inch-mm conversion available Bit 1: 0, Bit 0: 1 = Inch only Bit 1: 1, Bit 0: 0 = Not used Bit 1: 1, Bit 0: 1 = Disabled	If "inch only" is selected on the machine uses inch-based resolutions for scanning, the printed copy may be slightly distorted at the other end if that machine uses mm-based resolutions. If the setting is "Inch-mm conversion available ", Inch-mm conversion become effective to the special senders. If the setting is "Disabled", the bit switch setting is used.
2-3	DIS/NSF detection method Bit 3: 0, Bit 2: 0 = First DIS or NSF Bit 3: 0, Bit 2: 1 = Second DIS or NSF Bit 3: 1, Bit 2: 0 = Not used Bit 3: 1, Bit 2: 1 = Disabled	(0, 1): Use this setting if echoes on the line are interfering with the set-up protocol at the start of transmission. The machine will then wait for the second DIS or NSF before sending DCS or NSS. If the setting is "Disabled", the bit switch setting is used.

4	V.8 protocol 0: Off 1: Disabled	If transmissions to a specific destination always end at a lower modem rate (14,400 bps or lower), disable V.8 protocol so as not to use V.34 protocol. 0: V.34 communication will not be possible. If the setting is "Disabled", the bit switch setting is used.
5	Compression modes available in transmit mode 0: MH only 1: Disabled	This bit determines the capabilities that are informed to the other terminal during transmission. If the setting is "Disabled", the bit switch setting is used.
6-7	ECM during transmission Bit 7: 0, Bit 6: 0 = Off Bit 7: 0, Bit 6: 1 = On Bit 7: 1, Bit 6: 0 = Not used Bit 7: 1, Bit 6: 1 = Disabled	For example, if ECM is switched on but is not wanted when sending to a particular terminal, use the (0, 0) setting. Note ▪ V.8/V.34 protocol and JBIG compression are automatically disabled if ECM is disabled. ▪ If the setting is "Disabled", the bit switch setting is used.

Switch 04 - Not used (do not change the settings)
Switch 05 - Not used (do not change the settings)
Switch 06 - Not used (do not change the settings)
Switch 07 - Not used (do not change the settings)
Switch 08 - Not used (do not change the settings)
Switch 09 - Not used (do not change the settings)

E-mail Parameters

The initial settings of the following e-mail parameters are all "0" (all parameters disabled).

Switch 00		
No	**FUNCTION**	**COMMENTS**
0	MH Compression mode for e-mail attachments **0**: Off 1: On	Switches MH compression on and off for files attached to e-mails for sending.
1	MR Compression mode for e-mail attachments **0**: Off 1: On	Switches MR compression on and off for files attached to e-mails for sending.
2	MMR Compression mode for e-mail attachments **0**: Off 1: On	Switches MMR compression on and off for files attached to e-mails for sending.
3-6	**Not used**	Do not change these settings.
7	Designates the bits to reference for compression method of e-mail attachments **0**: Registered (Bit 0 to 6) 1: No registration.	The "0" selection (default) references the settings for Bits 00, 01, 02 above. The "1" selection ignores the selections of Bits 00, 01, 02.

Switch 01		
No	**FUNCTION**	**COMMENTS**
0	Original width of e-mail attachment: A4 **0**: Off 1: On	Sets the original width of the e-mail attachment as A4.
1	Original width of e-mail attachment: B4 **0**: Off 1: On	Sets the original width of the e-mail attachment as B4.
2	Original width of e-mail attachment: A3 **0**: Off 1: On	Sets the original width of the e-mail attachment as A3.
3-6	**Not used**	Do not change these settings.
7	Designates the bits to reference for original size of e-mail attachments **0**: Registered (Bit 0 to 6) 1: No registration.	The "0" selection (default) references the settings for Bits 00, 01, 02 above. The "1" selection ignores the selections of Bits 00, 01, 02.

Switch 02		
No	**FUNCTION**	**COMMENTS**
0	Line resolution of e-mail attachment: 200 x 100 **0**: Off 1: On	Sets the line resolution of the e-mail attachment as 200 x100.
1	Line resolution of e-mail attachment: 200 x 200 **0**: Off 1: On	Sets the line resolution of the e-mail attachment as 200 x 200.

2	Line resolution of e-mail attachment: 200 x 400 **0**: Off 1: On	Sets the line resolution of the e-mail attachment as 200 x 400.
3	Not used	Do not change these settings.
4	Line resolution of e-mail attachment: 400 x 400 **0**: Off 1: On	Sets the line resolution of the e-mail attachment as 400 x 400.
5-6	**Not used**	Do not change these settings.
7	Designates the bits to reference for original size of e-mail attachments **0**: Registered (Bit 0 to 6) 1: No registration.	The "0" selection (default) references the settings for Bits 00, 01, 02, 04 above. The "1" selection ignores the selections of Bits 00, 01, 02, 04.

Switch 03 - Not used (do not change the settings)

Switch 04		
No	**FUNCTION**	**COMMENTS**
0	Full mode address selection 0: Full mode address 1: No full mode (simple mode)	If the other ends have the addresses, which have the full mode function flag ("0"), this machine determines them as full mode standard machines. ▪ This machine attaches the "demand of reception confirmation" to a message when transmitting. ▪ This machine updates the reception capability to the address book when receiving.
1-7	**Not used**	Do not change these settings.

Switch 05		
No	**FUNCTION**	**COMMENTS**
0	Directr transmission selection to SMTP server 0: ON 1: OFF	Allows or does not allow the direct transmission to SMTP server.
1-7	Not used	Do not change these settings.

Switch 06 - Not used (do not change the settings)
Switch 07 - Not used (do not change the settings)
Switch 08 - Not used (do not change the settings)
Switch 09 - Not used (do not change the settings)

4.6 SERVICE RAM ADDRESSES

⚠CAUTION

- Do not change the settings which are marked as “Not used” or “Read only.”

680001 to 680004(H) - ROM version (Read only)

680001(H) - Revision number (BCD)

680002(H) - Year (BCD)

680003(H) - Month (BCD)

680004(H) - Day (BCD)

680006 to 680015(H) - Machine’s serial number (16 digits - ASCII)

680016(H) - Language code

0: Japanese, 1: UK English, 2: US English, 3: French, 4: German, 5: Spanish, 6: Italian, 7: Dutch, 8: Swedish, 9: Norwegian, 10: Danish, 11: Finnish, 12: Czech, 13: Hungarian, 14: Polish, 15: Portuguese, 16: Russian, 17: Traditional Chinese, 18: Simplified Chinese, 19: Korean

680018(H) - Total program checksum (low)

680019(H) - Total program checksum (high)

680020 to 68003F(H) - System bit switches

680050 to 68005F(H) - Printer bit switches

680060 to 68007F(H) - Communication bit switches

680080 to 68008F(H) - G3 bit switches

680090 to 68009F(H) - G3-2 bit switches: Not used

6800A0 to 6800AF(H) - G3-3 bit switches: Not used

6800D0(H) - User parameter switch 00 (SWUER_00) : Not used

6800D1(H) - User parameter switch 01 (SWUSR_01) : Not used

6800D2(H) - User parameter switch 02 (SWUSR_02)

Bit 0: Forwarding mark printing on forwarded messages 0: Disabled, 1: Enabled

Bit 1: Center mark printing on received copies

(This switch is not printed on the user parameter list.)

0: Disabled, 1: Enabled

Bit 2: Reception time printing

(This switch is not printed on the user parameter list.)

0: Disabled, 1: Enabled

Bit 3: TSI print on received messages 0: Disabled, 1: Enabled

Bit 4: Checkered mark printing

(This switch is not printed on the user parameter list.)

0: Disabled, 1: Enabled

Bit 5: Not used

Bit 6: Not used

Bit 7: Not used

6800D3(H) - User parameter switch 03 (SWUSR_03: Automatic report printout)

Bit 0: Transmission result report (memory transmissions) 0: Off, 1: On

Bit 1: Not used

Bit 2: Memory storage report 0: Off, 1: On

Bit 3: Polling reserve report (polling reception) 0: Off, 1: On

Bit 4: Polling result report (polling reception) 0: Off, 1: On

Bit 5: Transmission result report (immediate transmissions) 0: Off, 1: On

Bit 6: Not used

Bit 7: Journal 0: Off, 1: On

6800D4(H) - User parameter switch 04 (SWUSR_04: Automatic report printout)

Bit 0: Not used

Bit 1: Automatic communication failure report and transfer result report output 0: Off, 1: On

Bits 2 to 3: Not used

Bit 4: Indicates the parties 0: Not indicated, 1: Indicated

Bit 5: Include sender's name on reports 0: Off, 1: On

Bit 6: Not used

Bit 7: Inclusion of a sample image on reports 0: Off, 1: On

6800D5(H) - User parameter switch 05 (SWUSR_05)

Bit 0: Substitute reception when the base copier is in an SC condition

0: Enabled, 1: Disabled

Bits 1 and 2: Condition for substitute rx when the machine cannot print messages (Paper end, toner end, jam, and during night mode)

Bit 2: 0, Bit 1: 0 = The machine receives all the fax messages.

Bit 2: 0, Bit 1: 1 = The machine receives the fax messages with RTI or CSI.

Bit 2: 1, Bit 1: 0 = The machine receives the fax messages with the same ID code.

Bit 2: 1, Bit 1: 1 = The machine does not receive anything.

Bit 3: Not used

Bit 4: Not used

Bit 5: Just size printing 0: Off, 1: On

Bit 6: Not used

Bit 7: Add paper display when a cassette is empty 0: Off, 1: On

6800D6(H) - User parameter switch 06 (SWUSR_06)

Bit 0:

Bit 1: V8 protocol (G3-1: Super G3) 0: Off, 1: On

Bit 2: V8 protocol (G3-2: Super G3) 0: Off, 1: On

Bit 3: V8 protocol (G3-3: Super G3) 0: Off, 1: On

6800D7(H) - User parameter switch 07 (SWUSR_07)

Bit 0 Ringing 0: Off, 1: On

Bit1: Automatic answering message 0: Off, 1: On

Bit 2: Parallel memory transmission 0: Off, 1: On

Bits 3 and 4: Not used

Bit 5: Remote control 0: Off, 1: On

Bits 6 and 7: Not used

6800D8(H) - User parameter switch 08 (SWUSR_08)

Bits 0 and 1: Not used.

Bit 2: Authorized reception

0: Only faxes from senders whose RTIs/CSIs are specified for this feature are accepted.

1: Only faxes from senders whose RTIs/CSIs are not specified for this feature are accepted.

Bits 3 to 7: Not used.

6800D9(H) - User parameter switch 09 (SWUSR_09): Not used

6800DA(H) - User parameter switch 10 (SWUSR_0A)

Bits 0 to 2: Not used

Bit 3: Page reduction 0: Off, 1: On

Bits 4 and 5: Not used

Bit 6: Use both e-mail notification and printed reports to confirm the transmission results 0: Off, 1: On

Bit 7: Not used

6800DB(H) - User parameter switch 11 (SWUSR_0B)

Bits 0 and 1: Not used

Bit 2: White original detection 0: Off, 1: On (alarm and alert message on the LCD)

Bit 3: Receive rejection for 1300 Hz transmission 0: Off (receive), 1: On (not receive)

Bit 5: Not used

Bit 6: Printout of messages received while acting as a forwarding station 0: Off, 1: On

Bit 7: Not used

6800DC(H) - User parameter switch 12 (SWUSR_0C): Not used

6800DD(H) - User parameter switch 13 (SWUSR_0D): Not used

6800DE(H) - User parameter switch 14 (SWUSR_0E)

Bit 0: Message printout while the machine is in Night Printing mode 0: On, 1: Off

Bit 1: Maximum document length detection 0: Double letter, 1: Longer than double-letter (well log) – up to 1,200 mm

Bit 2: Not used

Bit 3: Fax mode settings, such as resolution, before a mode key (Copy/Fax/Printer/Scanner) is pressed 0: Not cleared, 1: Cleared

Bits 4 to 6: Not used

Bit 7: Not used

6800DF(H) - User parameter switch 15 (SWUSR_0F)

(This switch is not printed on the user parameter list.)

Bits 0, 1 and 2: Cassette for fax printout

Bit 2: 0, Bit 1: 0, Bit 0: 1 = 1st paper feed station

Bit 2: 0, Bit 1: 1, Bit 0: 0 = 2nd paper feed station

Bit 2: 0, Bit 1: 1, Bit 0: 1 = 3rd paper feed station

Bit 2: 1, Bit 1: 0, Bit 0: 0 = 4th paper feed station

Bit 2: 1, Bit 1: 0, Bit 0: 1 = LCT

Other settings Not used

Bits 3 and 4: Not used

Bit 5: Using the cassette specified by bits 0, 1 and 2 above only 0: On, 1: Off

Bits 6 and 7: Not used

6800E0(H) – User parameter switch 16 (SWUSR_10)

(This switch is not printed on the user parameter list.)

Bits 0 and 1: Not used

Bit 2: Paper size selection priority for an A4 size fax message when A4/LT size paper is not available. 0: A3 has priority, 1: B4 has priority

Bits 3 to 7: Not used

6800E1(H) – User parameter switch 17 (SWUSR_11)

Bit 0: Not used

Bit 1: Not used

Bit 2: Inclusion of the “Add” button when a sequence of Quick/Speed dials is selected for broadcasting 0:Not needed, 1: Needed

Bits 3 to 6: Not used

Bit 7: Press “Start” key without an original when using the on hook dial or the external telephone, 0: displays “Cannot detect original size”. 1: Receives fax messages.

6800E2(H) - User parameter switch 18 (SWUSR_12)

Bit 0: TTI date 0: Off, 1: On

Bit 1: TTI sender 0: Off, 1: On

Bit 2: TTI file number 0: Off, 1: On

Bit 3: TTI page number 0: Off, 1: On

Bits 4 to 6: Not used

Bit 7: Japan only

6800E3(H) - User parameter switch 19 (SWUSR_13)

Bit 0: Not used

Bit 1: Journal format

0: The Journal is separated into transmissions and receptions

1: The Journal is separated into G3-1, G3-2, and G3-3 communications

Bit 2: Not used

Bit 3: 90° image rotation during B5 portrait Tx (This switch is not printed on the user parameter list.) 0: Off, 1: On

Bit 4: Reduction of sample images on reports to 50% in the main scan and sub-scan directions. (This switch is not printed on the user parameter list.) 0: Technician adjustment (printer switch 0E bits 3 and 4), 1: 50% reduction

Bit 5: Use of A5 size paper for reports (This switch is not printed on the user parameter list.) 0: Off, 1: On

Bits 6 and 7: Not used

6800E4(H) - User parameter switch 20 (SWUSR_14)

Bit 0: Automatic printing of the LAN fax result report 0: Off, 1: On

Bit 1: Not used.

Bits 2 to 5: Store documents in memory which could not be printed from PC fax (LAN fax) driver

Bit 5	Bit 4	Bit 3	Bit 2	Setting
0	0	0	0	0 min.
0	0	0	1	1 min.
↓	↓	↓	↓	↓
1	1	1	0	14 min.
1	1	1	1	15 min.

Bits 6 and 7: Not used.

6800E5(H) - User parameter switch 21 (SWUSR_15)

Bit 0: Print results of sending reception notice request message 0: Disabled (print only when error occurs), 1: Enabled

Bit 1: Respond to e-mail reception acknowledgment request 0: Disabled, 1: Enabled

Bit 2: Not used

Bit 3: File format for forwarded folders 0: TIFF, 1:PDF

Bit 4: Transmit Journal by E-mail 0: Disabled, 1: Enabled

Bit 5: Not used

Bit 6: Network error display 0: Displayed, 1: Not displayed

Bit 7: Transmit error mail notification 0: Enabled, 1: Disabled

6800E6(H) - User parameter switch 22 (SWUSR_16)

(This switch is not printed on the user parameter list.)

Bit 0: Dial tone detection (PSTN 1) 0: Disabled, 1: Enabled

Bits 1 to 7: Not used

6800E7(H) – User parameter switch 23 (SWUSR_17): Not used

6800E8(H) - User parameter switch 24 (SWUSR_18): Not used

6800E9(H) - User parameter switch 25 (SWUSR_19)

Bit 0: Not used

Bit 1: Reception mode switch timer 0: Off, 1: On (switching Fax or Fax/Tel)

Bit 2: Mode priority switch 0: Fax first, 1: Tel first

Bit 3: Dial in function (Japan Only)

Bit 4: **Do not Change this Bit.**

Bits 5 to 7: Not used

6800EA(H) and 6800EB(H) - User parameter switches 26 and 27 (SWUSR_1A and 1B): Not used

6800EC(H) - User parameter switch 28(SWUSR_1C): Not used

6800ED(H) - User parameter switch 29(SWUSR_1D): Not used

6800EE(H) and 6800EF(H) - User parameter switches 30 and 31 (SWUSR_1E and 1F): Not used

6800F0(H) - User parameter switch 32 (SWUSR_20)

Bit 0: Quotation priority for a destination when there is no destination of the specified type

0: Paper output priority = Priority order: 1. IP-fax destination, 2. Fax Number, 3. E-mail address, 4. Folder

1: Electric putout order = Priority order: 1. E-mail address, 2. Folder, 3. IP-fax destination, 4. Fax number

Bits 1 to 7: Not used

6800F1(H) - User parameter switch 33 (SWUSR_21): Not used

6800F2(H) - User parameter switch 34 (SWUSR_22)

Bit 0: Gatekeeper server used with IP-Fax 0: Disabled, 1: Enabled

Bit 1: SIP server used with IP-Fax 0: Disabled, 1: Enabled

Bits 2 to 7: Not used

6800F3(H) - User parameter switch 35 (SWUSR_23)

Redial interval when sending a backup file

6800F4(H) - User parameter switch 36 (SWUSR_24)

Maximum number of redials when sending a backup file

6800F5(H) - User parameter switch 37 (SWUSR_25)

Bit 0: Whether to stop sending a backup file if the destination folder becomes full while the machine is sending or waiting to send a fax or the backup file. 0: No, • 1: Yes

Bit 2 and 3: Backup file is printed along with the TX communication failure report when a backup file transmission failure occurs. 00: Do not print, 01: Print first page only, 10: Print whole file

Bit 4: Display the sender's information in the file name of documents that are forwarded to folder destinations. 0: Disabled, 1: Enabled

Bit 5: Limit the file names of documents that are forwarded to folder destinations to plain characters only. 0: Disabled, 1: Enabled

Bit 6: When using the remote fax function, the sub-machine beeps to let you know when it has printed a received document (If you specify "On", the machine will beep according to the setting of [Panel Key Sound] under [System Settings].) 0: On, 1: Off

Bit 7: Not used

6800F6(H) - User parameter switch 38 (SWUSR_26)

Maximum number of transmissions the machine attempts before determining that a fax cannot be forwarded from a sender (including special senders) to a folder destination

6800F7(H) - User parameter switch 39 (SWUSR_27)

Interval (in minutes) between resend attempts after failing to forward a fax from a sender (including special senders) to a folder destination

6800F8(H) - User parameter switch 40 (SWUSR_28)

Bit 0: When memory space is insufficient, the machine prints and then deletes the oldest faxes, creating memory space for storage of new faxes. 0: Disabled, 1: Enabled

Bit 1 to 7: Not used

6800FD(H) - User parameter switch 45 (SWUSR_2D)

Bit 0 and 1:

Bit 2: File format for files transmitted to e-mail addresses and folders registered as forwarding, destinations of backup file transmission, receivers for Personal Box, or end receivers for Transfer Box. 0: PDF 1: PDF/A

Bit 3:

Bit 4 to 7: Not used

680100 to 68010F(H) - G4 Parameter Switches – Not used

680110 to 68012F(H) - G4 Internal Switches – Not used

680130 to 68016F(H) - Service Switches

680170 to 68017F(H) - IFAX Switches

680180 to 68018F(H) - IP-FAX Switches

680190 to 6801A3(H) - PSTN-1 RTI (Max. 20 characters - ASCII) - See the following note.

6801A4 to 6801B7(H) - PSTN-2 RTI (Max. 20 characters - ASCII)

6801B8 to 6801CB(H) - PSTN-3 RTI (Max. 20 characters - ASCII)

6801CF to 68020E(H) - TTI 1 (Max. 64 characters - ASCII) - See the following note.

68020F to 68024E(H) - TTI 2

68024F to 68028E(H) - TTI 3

68028F to 6802CE(H) - TTI 4

6802CF to 68030E(H) - TTI 5

68030F to 68034E(H) - TTI 6

68034F to 68038E(H) - TTI 7

68038F to 6803CE(H) - TTI 8

6803CF to 68040E(H) - TTI 9

68040F to 68044E(H) - TTI 10

Note

- If the number of characters is less than the maximum (20 for RTI, 32 for TTI), add a stop code (00[H]) after the last character.

68044F(H)

Printing format for TTI 1

0: DOM (Japan), 1:EXP (Export)

680450(H)

Printing format for TTI 2

0: DOM, 1:EXP

680451(H)

Printing format for TTI 3

0: DOM, 1:EXP

680452(H)

Printing format for TTI 4

0: DOM, 1:EXP

680453(H)

Printing format for TTI 5

0: DOM, 1:EXP

680454(H)

Printing format for TTI 6

0: DOM, 1:EXP

680455(H)

Printing format for TTI 7

0: DOM, 1:EXP

680456(H)

Printing format for TTI 8

0: DOM, 1:EXP

680457(H)

Printing format for TTI 9

0: DOM, 1:EXP

680458(H)

Printing format for TTI 10

0: DOM, 1:EXP

680459 to 68046C(H) - PSTN-1 CSI (Max. 20 characters - ASCII)

68046D to 680480(H) - PSTN-2 CSI (Max.20 characters - ASCII)

680481 to 680494(H) - PSTN-3 CSI (Max.20 characters - ASCII)

680495(H) - Number of PSTN-1 CSI characters (Hex)

680496(H) - Number of PSTN-2 CSI characters (Hex)

680497(H) - Number of PSTN-3 CSI characters (Hex)

6804C6(H) - Memory Lock ID (BCD)

6804D2 to 6804D9(H) - Last power off time (Read only)

6804D2(H) - 01(H) - 24-hour clock, 00(H) - 12-hour clock (AM), 02(H) - 12-hour clock (PM)

6804D3(H) - Year (BCD)

6804D4(H) - Month (BCD)

6804D5(H) - Day (BCD)

6804D6 (H) – Hour

6804D7 (H) – Minute

6804D8(H) – Second

6804D8 (H) - 00: Monday, 01: Tuesday, 02: Wednesday, /// , 06: Sunday

6804E6(H) - Optional equipment (Read only – Do not change the settings)

Bit 0: Page Memory 0: Not installed, 1: Installed

Bit 1: SAF Memory (4M) 0: Not installed, 1: Installed

Bit 2: SAF Memory 0: Not installed, 1: Installed

Bits 3 to 7; Not used

6804E7(H) - Optional equipment (Read only – Do not change the settings)

Bits 0 to 3: Not used

Bit 4: G3-2 0: Not installed, 1: Installed

Bit 5: G3-3 0: Not installed, 1: Installed

Bit 6 and 7: Not used

6804EE(H) - Machine code (Check ram 3)

680500(H) - Start address of G3 table for G3-1

680600(H) - Start address of G3 table for G3-2

680700(H) - Start address of G3 table for G3-3

680800 to 68081F(H) - Service station's fax number (SP3-101)

680820 to 680829(H) - Own fax PABX extension number – Not used

68082A to 680833(H) - Own fax number (PSTN) – Not used

680834 to 680847(H) - Own fax number (ISDN G4) – Not used

680848 to 680853(H) - The first subscriber number (ISDN G3) – Not used

680854 to 68085F(H) - The second subscriber number (ISDN G3) – Not used

680860 to 68086B(H) - The first subscriber number (ISDN G4) – Not used

68086C to 680877(H) - The second subscriber number (ISDN G4) – Not used

6808A0 to 6808B7(H) - G4TID registered information (Max.24 characters - ASCII) – Not used

6808B8 to 6808CB(H) - ISDN CSI (Max.20 characters - ASCII)

6808CC(H) - Number of ISDN CSI characters (Hex)

6808D1 to 6808D4(H) - ISDN G3 subaddress registered information

6808D5 to 6808D8(H) - G4 subaddress registered information– Not used

6808DE to 6808E2 – Option G3 board (G3-2) ROM information (Read only)

6808DE(H) - Suffix (BCD)

6808DF(H) - Version (BCD)
6808E0(H) - Year (BCD)
6808E1(H) - Month (BCD)
6808E2(H) - Day (BCD)
6808E3 to 6808E7 – Option G3 board (G3-3) ROM information (Read only)
6808E3(H) - Suffix (BCD)
6808E4(H) - Version (BCD)
6808E5(H) - Year (BCD)
6808E6(H) - Month (BCD)
6808E7(H) - Day (BCD)
6808E8(H) - G3-1 Modem ROM version (Read only)
6808EA(H) - G3-2 Modem ROM version (Read only)
6808EC(H) - G3-3 Modem ROM version (Read only)
6808F8(H) - Number of multiple sets print (Read only)
68094E(H) - Time for economy transmission (Not used)
68094F(H) - Time for economy transmission (Not used)
68096A(H) - Transmission monitor volume 00 - 07(H)
68096B(H) - Reception monitor volume 00 - 07(H)
68096C(H) - On-hook monitor volume 00 - 07(H)
68096D(H) - Dialing monitor volume 00 - 07(H)
68096E(H) - Buzzer volume 00 - 07(H)
68096F(H) - Beeper volume 00 - 07(H)
680980(H) - Machine code (Check ram 4)
680982(H) - Machine serial number (ASCII)
687178 to 68717B(H) - Transmission counter (Max.24 characters - ASCII)
68717C to 68717F(H) - Reception counter (Max.24 characters - ASCII)
6871E8 to 6871EB(H) - Mail transmission counter (Max.24 characters - ASCII)
6871EC to 6871EF(H) - Mai reception counter (Max.24 characters - ASCII)
6A6DEE(H) to 6A70ED(H) - SIP server address (Read only)
6A6DEE(H) - Proxy server - Main (Max. 128 characters - ASCII)
6A6E6E(H) - Proxy server - Sub (Max. 128 characters - ASCII)
6A6EEE(H) - Redirect server - Main (Max. 128 characters - ASCII)
6A6F6E(H) - Redirect server - Sub (Max. 128 characters - ASCII)
6A6FEE(H) - Registrar server - Main (Max. 128 characters - ASCII)
6A706E(H) - Registrar server - Sub (Max. 128 characters - ASCII)
6A70EE(H) - Gatekeeper server address - Main (Max. 128 characters - ASCII)
6A716E(H) - Gatekeeper server address - Sub (Max. 128 characters - ASCII)
6A71EE(H) - Alias Number (Max. 128 characters - ASCII)
6A726E(H) - SIP user name (Max. 128 characters - ASCII)

6A72EE(H) - **SIP digest authentication password** (Max. 128 characters - ASCII)

6A736E(H) - Gateway address information (Max. 7100 characters - ASCII)

6A8F2A(H) - NGN initial setting method 0: Simple, 1: Manual

6A8F2B(H) - SIP digest authentication user name (Max. 128 characters - ASCII)

6A8FAB(H) - NGN-SIP domain name (Max. 64 characters - ASCII)

6A8FEB(H) - NGN-home gateway address (Max. 128 characters - ASCII)

6A906C(H) - Stand-by port number for H.323 connection

6A906E(H) - Stand-by port number for SIP connection

6A9070(H) - RAS port number

6A9072(H) - Gatekeeper port number

6A9074(H) - Port number of data waiting for T.38

6A9076(H) - Port number of SIP server

6A9078(H) - Priority for SIP and H.323 0: H.323, 1: SIP

6A9079(H) - SIP function 0: Disabled, 1: Enabled

6A907A(H) - H.323 function 0: Disabled, 1: Enabled

6A907B(H) - **SIP digest authentication function** 0: Disabled, 1: Enabled

6B3AE4(H) - 6B3B04 (H) - Dial tone detection parameter (Max. 11 x 3 lines)

This initializes following order. [0x04, 0x40, 0x03, 0x60, 0x64, 0xf4, 0x01,0x64, 0x04, 0xc8, 0x00]

6B3AE4(H) – Dial tone detection frequency – Upper limit (High)

Defaults: NA: 06, EU: 06, ASIA: 06

6B3AE5(H) – Dial tone detection frequency – Upper Limit (Low)

Defaults: NA: 50, EU: 50, ASIA: 50

6B3AE6(H) – Dial tone detection frequency – Lower Limit (High)

Defaults: NA: 03, EU: 02, ASIA: 02

6B3AE7(H) – Dial tone detection frequency – Lower Limit (Low)

Defaults: NA: 60, EU: 90, ASIA: 90

6B3AE8(H) –Dial tone detection waiting time (20 ms)

Defaults: NA: 64, EU 64, ASIA: 64

6B3AE9 to 6B3AEA – Dial tone detection monitoring time (20 ms)

Defaults

Area	6B35A9	6B35AA
NA	F4	01
EU	F4	01
ASIA	F4	01

6B3AEB(H) – Dial tone detect judge time (20 ms)

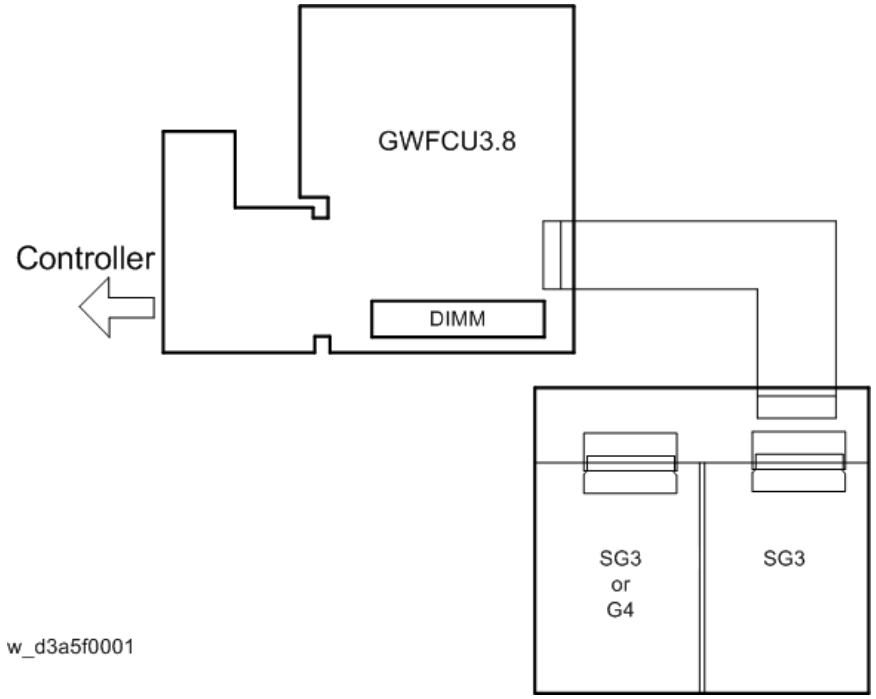
Defaults: NA: 64, EU: 1B, ASIA: 32

6B3AEC(H) – Dial tone disconnect permission time (20 ms)

Defaults: NA: 11, EU: 0F, ASIA: 11

5. DETAILS

5.1 OVERVIEW



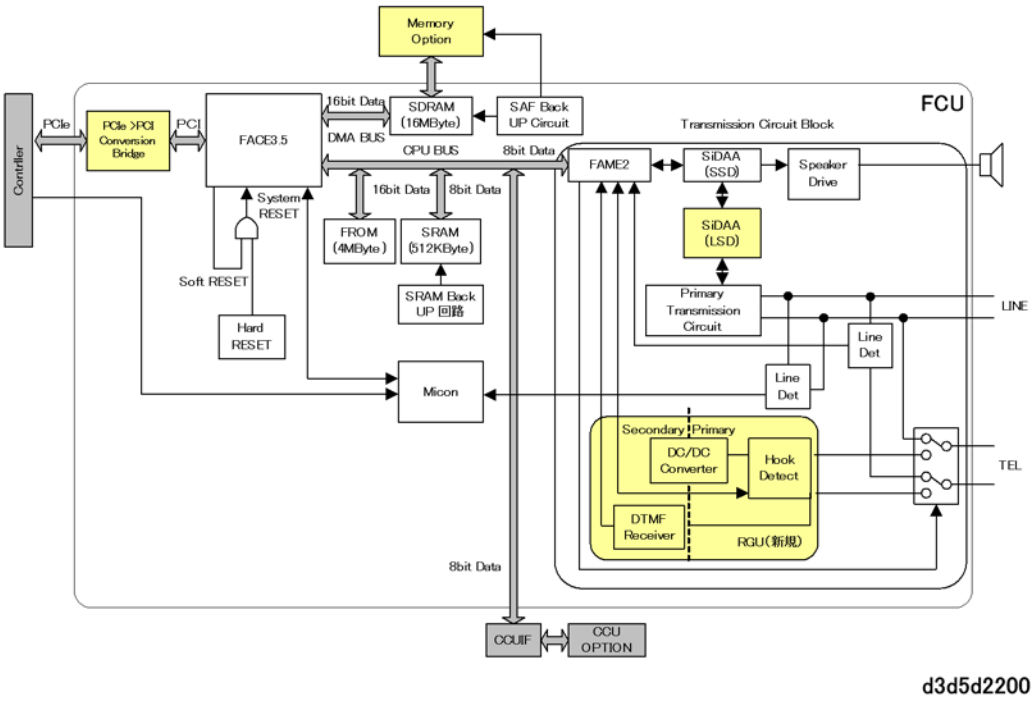
The FCU, which is composed of one PCB, controls all the fax communications and fax features, in cooperation with the controller board.

Fax Options:

- Extra G3 Interface option: This provides one more analog line interface. This allows full dual access. Two extra G3 interface options can be installed.
- Memory Expansion: This expands the SAF memory and the page memory (used for image rotation); without this expansion, the page memory is not big enough for image rotation at 400 dpi, so transmission at 400 dpi is not possible.

5.2 BOARDS

5.2.1 FCU



The FCU (Facsimile Control Unit) controls fax communications, the video interface to the base copier's engine, and all the fax options.

FACE3.5 (Fax Application Control Engine)

- CPU
- Data compression and reconstruction (DCR)
- DMA control
- Clock generation
- DRAM backup control

Modem (FAME2)

- V.34, V33, V17, V.29, V.27ter, V.21, and V.8

DRAM

- The 16 MB of DRAM is shared as follows.
  - SAF memory: 4MB
  - Working memory: 4MB
  - Page memory: 8MB
  - The SAF memory is backed up by a rechargeable battery.

ROM

- 4MB flash ROMs for system software storage

SRAM

- The 512 KB SRAM for system and user parameter storage is backed up by a lithium battery.

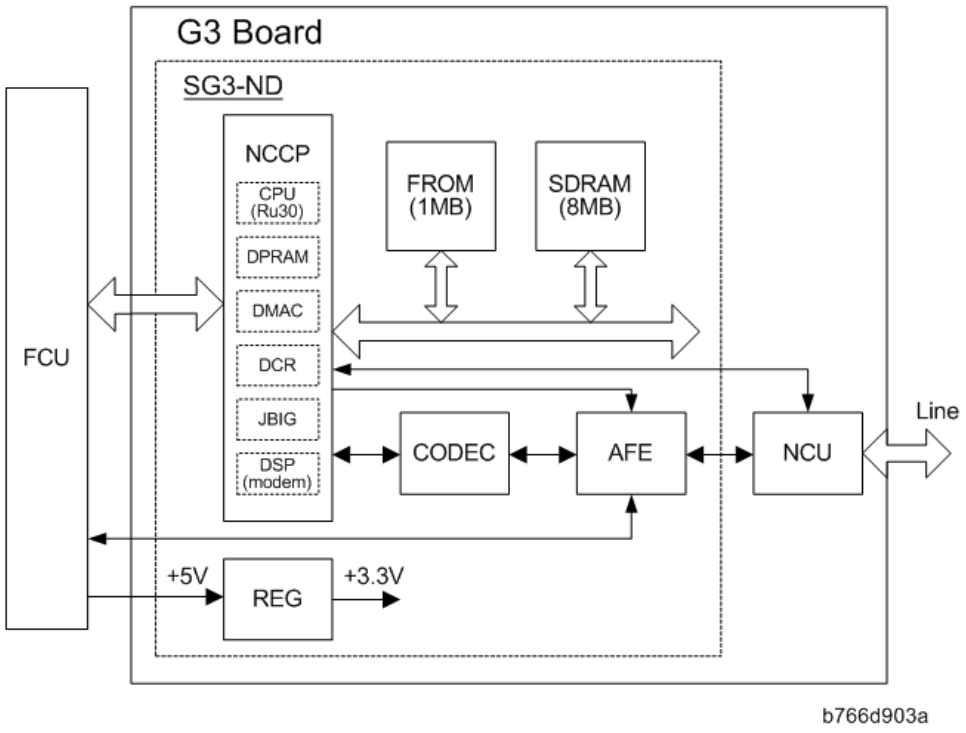
Memory Back-up

- A rechargeable battery backs up the SAF memory (DRAM) for 12 hours.
- A lithium battery backs up the system parameters and programmed items in the SRAM, in case the base copier's main switch is turned off.

Switches

Item	Description
SW1	Switches the SRAM backup battery on/off.

5.2.2 SG3 BOARD



The SG3 board allows up to three simultaneous communications when used in combination with the FCU and optional G3 boards. The NCU is on the same board as the common SG-3 board. This makes the total board structure smaller. But, the specifications of the SG3 board do not change.

NCCP (New Communication Control Processor)

- Controls the SG3 board.
- CPU (RU30)
- DPRAM (Dual Port RAM): Handshaking with the FCU is done through this block.
- DMA controller
- JBIG
- DSP V34 modem (RL5T892): Includes the DTMF Receiver function

- DCR for MH, MR, MMR, and JBIG compression and decompression

FROM

- 1Mbyte flash ROM for SG3 software storage and modem software storage

SDRAM

- 4Mbyte DRAM shared between ECM buffer, line buffer, and working memory

AFE (Analog Front End)

- Analog processing

CODEC (COder-DECoder)

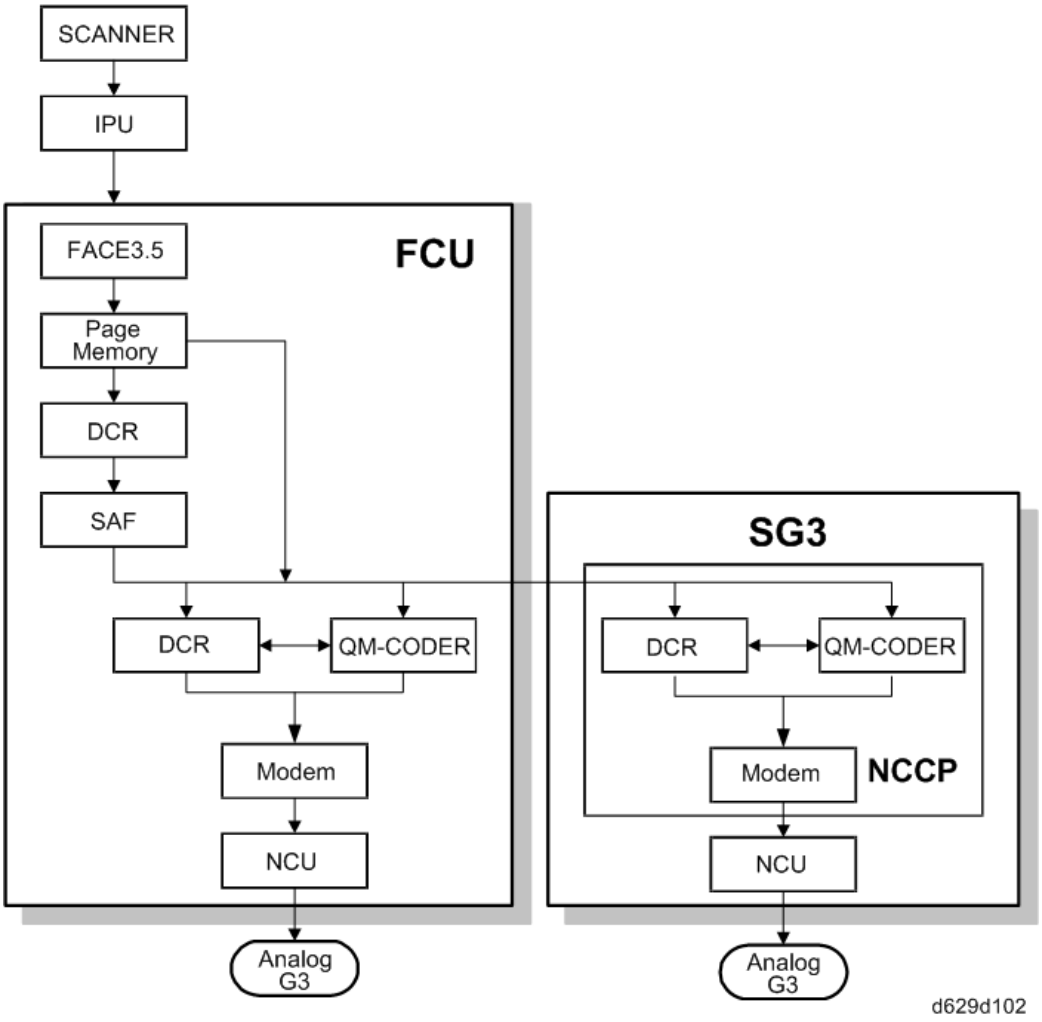
- A/D & D/A conversions for modem

REG

- Generates +3.3 V from the +5V from the FCU

5.3 VIDEO DATA PATH

5.3.1 TRANSMISSION



Memory Transmission and Parallel Memory Transmission

The base copier's scanner scans the original at the selected resolution in inch format. The IPU processes the data and transfers it to the FCU.

Note

- When scanning a fax original, the IPU uses the MTF, independent dot erase and thresholding parameter settings programmed in the fax unit's scanner bit switches, not the copier's SP modes.

Then, the FCU converts the data to mm format, and compresses the data in MMR or raw format to store it in the SAF memory. If image rotation will be done, the image is rotated in page memory before compression.

At the time of transmission, the FCU decompresses the stored data, then re-compresses and/or reduces the data if necessary for transmission. The NCU transmits the data to the line.

Immediate Transmission

The base copier's scanner scans the original at the resolution agreed with the receiving terminal. The IPU video processes the data and transfers it to the FCU.

Note

- When scanning a fax original, the IPU uses the MTF, independent dot erase and threshold parameter settings programmed in the fax unit's scanner bit switches, not the copier's SP modes.

Then the FCU stores the data in page memory, and compresses the data for transmission. The NCU transmits the data to the line.

JBIG Transmission

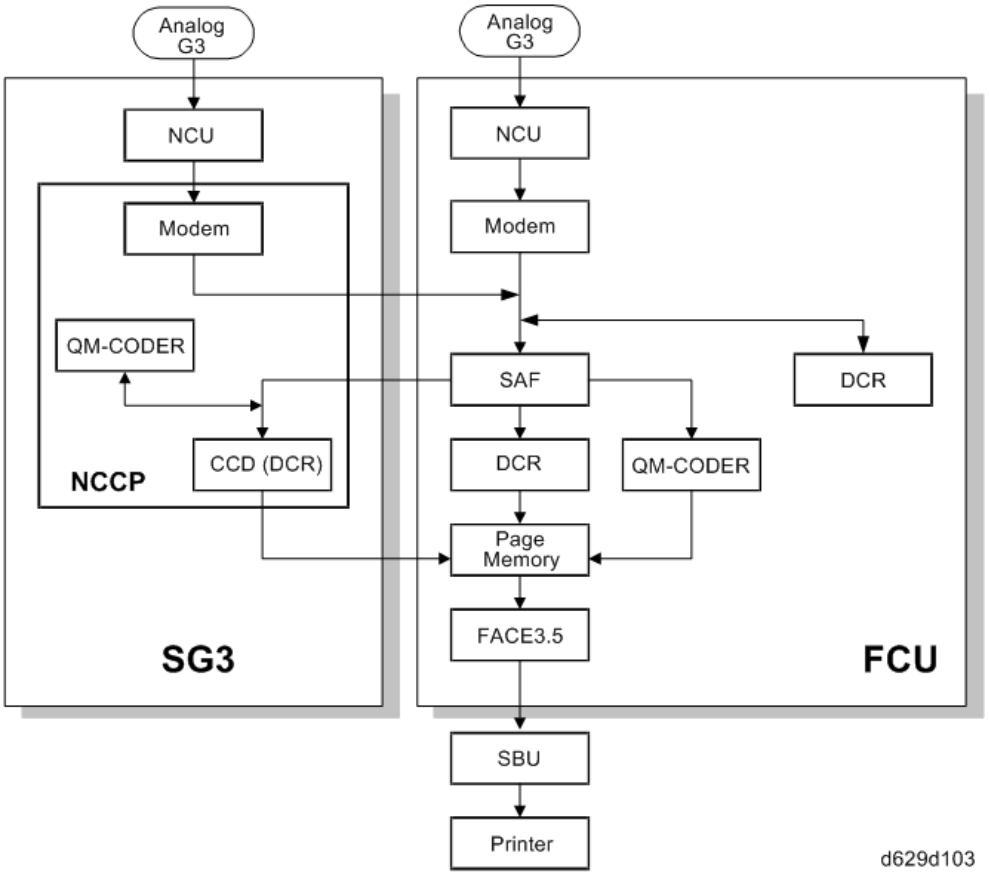
Memory transmission: If the receiver has JBIG compression, the data goes from the DCR to the QM-Coder. Then the NCU transmits the data to the line. When an optional G3 unit (SG3) is installed and PSTN2 is selected as the line type, JBIG compression is available, but only for the PSTN-2 line.

Immediate transmission: If the receiver has JBIG compression, the data goes from the page memory to the QM-Coder. Then the NCU transmits the data to the line. When an optional G3 unit (SG3) is installed and PSTN2 is selected as the line type, JBIG compression is available, but only for the PSTN-2 line.

Adjustments

- Priority for the line used for G3 transmissions (PSTN 1/PSTN 2 or 3): System switch 16 bit 1

5.3.2 RECEPTION



First, the FCU stores the incoming data from either an analog line to the SAF memory. (The data goes to the FACE3 at the same time, and is checked for error lines/frames.)
The FCU then decompresses the data and transfers it to page memory. If image rotation will be done, the image is rotated in the page memory. The data is transferred to the IPU.
If the optional G3 unit is installed, the line that the message comes in on depends on the telephone number dialled by the other party (the optional G3 unit has a different telephone number from the main fax board).

JBIG Reception

When data compressed with JBIG comes in on PSTN-1 (the standard analog line), the data is sent to the QM-CODER for decompression. Then the data is stored in the page memory, and transferred to the IPU.
When data compressed with JBIG comes in on PSTN-2 (optional extra analog line), the data is sent to the QM-CODER on the SG3 board for decompression.

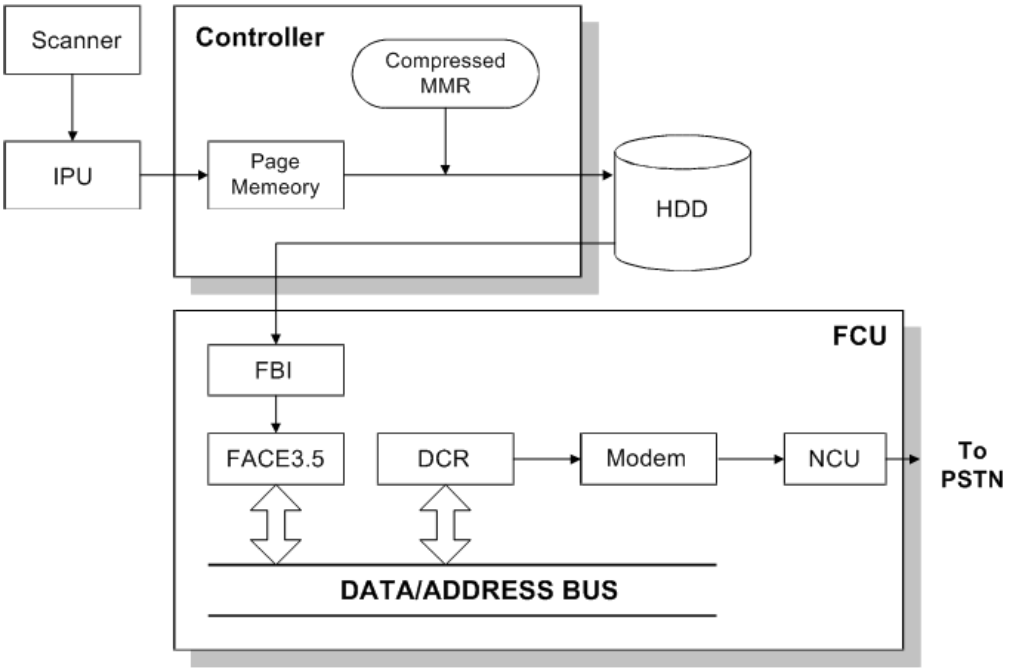
5.4 FAX COMMUNICATION FEATURES

5.4.1 MULTI-PORT

When the optional extra G3 Interface Unit is installed, communication can take place at the same time through the two or three lines at once.

Option	Available Line Type	Available protocol Combinations
Standard only	PSTN	G3
Extra G3 Interface Unit (single)	PSTN + PSTN	G3 + G3
Extra G3 Interface Unit (double)	PSTN + PSTN +PSTN	G3 + G3 +G3

5.4.2 DOCUMENT SERVER



The base copier's scanner scans the original at the selected resolution. The IPU video processes the data and transfers it to the controller board.

Then the controller stores the data in the page memory for the copier function, and compresses the data in MMR (by software) to store it in the HDD. If image rotation will be done, the image is rotated in the page memory before compression.

For transmission, the stored image data is transferred to the FCU. The FCU decompresses the image data, then recompresses and/or reduces the data if necessary for transmission. The NCU transmits the data to the line.

The documents can be stored in the HDD (Document Server) from the fax application. The stored documents in the document sever can be used for the fax transmission in many times. More than one document and the scanned document can be combined into one file and then the file can be transmitted.

- When using the document server, the SAF memory is not used.
- The document is compressed with MMR and stored.
- Up to 9,000 pages can be stored (1 file: Up to 1,000 pages) from the fax application.
- Only stored documents from the fax application can be transmitted.
- Scanned documents are given a name automatically, such as "FAX001". But it is possible to change the file name, user name and password.
- Up to 30 files can be selected at once.

Note

- The compression method of the fax application is different from the copy application. The storing time is longer than the copier storing.
- When selecting "Print 1st page", the stored document will be reduced to A4 size.

5.4.3 INTERNET MAIL COMMUNICATION

Mail Transmission

T.37 simple and full modes

This machine supports T.37 full mode. (ITU-T Recommendation, RFC2532). The difference between T.37 simple mode and full mode is as follows.

Function	T.37 Simple Mode	T.37 Full Mode
Resolution	200 x 100 200 x 200	200 x100 200 x 200 200 x 400 400 x 400 (if available)
RX Paper Width	A4	A4, B4, A3
RX Data Compression Method	MH	MH (default), MR, MMR,
Signals	Image data transmission only	Image data transmission, exchange of capability information between the two terminals, and acknowledgement of receipt of fax messages

Data Formats

The scanned data is converted into a TIFF-F formatted file.

The fields of the e-mail and their contents are as follows:

Field	Content
From	Mail address of the sender
Reply To	Destination requested for reply
To	Mail address of the destination
Bcc	Backup mail address
Subject	From CSI or RTI (Fax Message No. xxxx)
Content Type	Multipart/mixed Attached files: image/tiff
Content Transfer Encoding	Base 64, 7-bit, 8-bit, Quoted Printable
Message Body	MIME-converted TIFF-F (MIME standards specify how files are attached to e-mail messages)

Direct SMTP Transmission

Internet Fax documents can be sent directly to their destinations without going through the SMTP server. (Internet Faxes normally transmit via the SMTP server.)

For example:

e-mail address:	gts@ricoh.co.jp
SMTP server address:	gts.abcd.com

In this case, this feature destination e-mail address (gts@ricoh.co.jp) is read as the SMTP server address "gts.abcd.com", and the transmissions bypass the SMTP server. This leads to decrease the server load and to reduce the time lag during transferring the mail.

Requirements for destination server:

- Supports with Internet FAX (as a destination of Internet FAX)
- Can receive mails (as a destination of mail)
- Is installed in the same LAN as this machine
- Supports with the SMTP mail reception, and the reception protocol is set to SMTP

Note

- Set the port number for [SMTP server] to “25” to enable this feature.
- If the sender server sends an Internet FAX or a mail using this feature, the SMTP authentication is disabled even if the server sets it.
- Using this feature, error notification mail will not be sent even if the mail is not properly received.
- Also, error mail will not be sent even if the mail is not sent properly.
- This feature refers to A records (not supported with MX records).

Selectable Options

These options are available for selection:

- With the default settings, the scan resolution can be either standard or detail. Inch-mm conversion before TX depends on IFAX SW01 Bit 7. Detail resolution will be used if Super Fine resolution is selected, unless Fine resolution is enabled with IFAX SW01.
- The requirements for originals (document size, scan width, and memory capacity) are the same as for G3 fax memory TX.
- The default compression is TIFF-F format.
- IFAX SW00: Acceptable paper widths for sending
- IFAX SW09: Maximum number of attempts to the same destination

Secure Internet Transmission

SMTP Authentication:

- User Tools> System Settings> File Transfer> SMTP Authentication

POP Before SMTP:

- User Tools> System Settings> File Transfer> POP Before SMTP

Mail Reception

Three Types

This machine supports three types of e-mail reception:

- POP3 (Post Office Protocol Ver. 3.)
- IMAP4 (Internet Messaging Access Protocol)
- SMTP (Simple Mail Transfer Protocol)

Note

- For details: Core Technology Manual – Facsimile Processes – Faxing from a PC – Internet/LAN Fax Boards – Mail Reception

POP3/IMAP4 Mail Reception Procedure

The machine automatically picks up e-mail from the server at an interval which is adjustable in the range 2 to 1440 min. in 1-minute steps:

- User Tools> System Settings> File Transfer> E-mail Reception Interval

SMTP Reception

1. The IFAX must be registered as an SMTP server in the MX record of the DNS server, and the address of the received mail must specify the IFAX.
2. To enable SMTP reception: User Tools> System Settings> File Transfer> Reception Protocol
   - Even if the MX record on the DNS server includes the IFAX, mail cannot be received with SMTP until SMTP reception is enabled:
   - However, if SMTP reception is selected and the machine is not registered in the MX record of the DNS server, then either IMAP4 or POP3 is used, depending on the setting: User Tools> System Settings> File Transfer> Reception Protocol

Note

- An error will be issued and error mail will be sent to the mail source when the reception protocol is not set to SMTP even If you configure to enable SMTP reception in the DNS server.
- If the received mail contains error, the reception operation is stopped, the mail is discarded and error report is output. Error mail is also sent to the mail source.
- When a mail is received from SMTP server during sending a mail in the machine, the SMTP server will give a “Busy” response. The SMTP server will usually try to send the mail again later until the time-out is reached.
- This feature cannot be used with the POP server.

Mail Delivery Conditions: Transferring Mail Received With SMTP

1. The machine must be set up for SMTP mail delivery:
   - User Tools> Facsimile Features> Reception Settings> SMTP RX File Delivery Settings
2. If the user wishes to limit this feature so that the machine will only deliver mail from designated senders, the machine's "Auth. E-mail RX" feature must be set (User Tools> Facsimile Features> Reception Settings> SMTP RX File Delivery Settings).
3. If the "SMTP RX File Delivery Setting" is set to “Off” to prohibit SMTP receiving, and if there is mail designated for delivery, then the machine responds with an error. (User Tools> Facsimile Features> Reception Settings> SMTP RX File Delivery Settings)
4. If the quick dial, speed dial, or group dial entry is incorrect, the mail transmission is lost, and the IFAX issues an error to the SMTP server and outputs an error report.

Auth. E-mail RX

In order to limit access to mail delivery with IFAX, the addresses of senders must be limited using the Access Limit Entry. Only one entry can be registered.

1. Access Limit Entry

For example, to limit access to @IFAX.ricoh.co.jp:

gts@IFAX.ricoh.co.jp	Matches and is delivered.
gts@IFAX.abcde.co.jp	Does not match and is not delivered.
IFAX@ricoh.co.jp	Does not match and is not delivered.

1. Conditions
   - The length of the Access Limit Entry is limited to 127 characters.
   - If the Access Limit Entry address and the mail address of the incoming mail do not match, the incoming mail is discarded and not delivered, and the SMTP server responds with an error. However, in this case an error report is not output.
   - If the Access Limit Entry address is not registered, and if the incoming mail specifies a delivery destination, then the mail is delivered unconditionally.

Handling Mail Reception Errors

Abnormal files

When an error of this type occurs, the machine stops receiving and commands the server to erase the message. Then the machine prints an error report and sends information about the error by e-mail to the sender address (specified in the "From" or "Reply-to" field of the message). If there is an incomplete received message in the machine memory, it will be erased.

The machine prints an error message when it fails to send the receive error notification after a certain number of attempts.

The following types of files are judged to be abnormal if one or more of the following are detected:

1. Unsupported MIME headers.
   Supported types of MIME header

Header	Supported Types
Content-Type	Multipart/mixed, text/plain, message/rfc822 Image/tiff
Charset	US-ASCII, ISO 8859 X. Other types cannot be handled, and some garbage may appear in the data.
Content-Transfer-Encoding	Base 64, 7-bit, 8-bit, Quoted Printable

2. MIME decoding errors
3. File format not recognized as TIFF-F format
4. Resolution, document size, or compression type cannot be accepted

Remaining SAF capacity error

The machine calls the server but does not receive e-mail if the remaining SAF capacity is less than a certain value (the value depends on IFAX Switch 08. The e-mail will be received when the SAF capacity increases (for example, after substitute reception files have been printed). The error handling method for this type of error is the same as for "Abnormal files".

If the capacity of the SAF memory drops to zero during reception, the machine operates in the same way as when receiving an abnormal file (refer to "Abnormal files" above).

Secure Internet Reception

To enable password encryption and higher level security: User Tools> System Settings> File Transfer> POP3/IMAP4 Settings> Encryption (set to "On")

Transfer Request: Request By Mail

For details: Core Technology Manual – Facsimile Processes – Faxing from a PC – Internet/LAN Fax Boards – Transfer Request

The fields of the e-mail and their contents are as follows:

Field	Content
From	E-mail address of the requesting terminal
To	Destination address (Transfer Station address)
Bcc	Backup mail address
Subject	From TSI (Fax Message No. xxxx)
Content-Type	Multipart/mixed Text/Plain (for a text part), image/tiff (for attached files)
Content-Transfer-Encoding	Base 64, 7-Bit, 8-bit, Quoted Printable
Mail body (text part)	RELAY-ID-: xxxx (xxxx: 4 digits for an ID code) RELAY: #01#*X#**01….
Message body	MIME-converted TIFF-F.

E-Mail Options (Sub TX Mode)

The following features are available as options for mail sending: entering a subject, designating the level of importance, confirming reception of the mail.

Subject and Level of Importance

You can enter a subject message with: TX Mode> Subject

The Subject entry for the mail being sent is limited to 128 characters. The subject can also be prefixed with an "Confidential", "Urgent", "Please phone" or "Copy to corres. Section" notation.

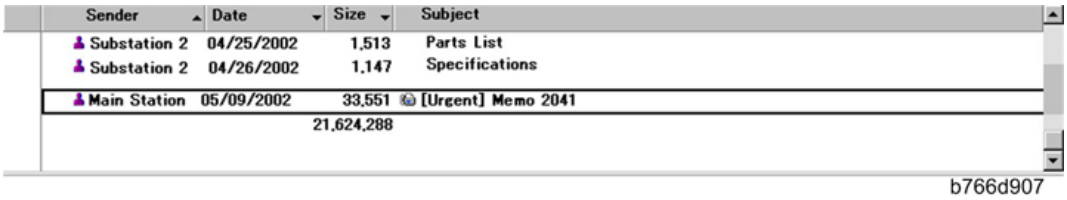
- How the Subject Differs According to Mail Type -

<table>
<tr><th>Mail Type</th><th>Item 1</th><th colspan="2">Item 2</th><th>Item 3</th></tr>
<tr><td>Subject Entry</td><td>---</td><td colspan="2">Entry Condition</td><td rowspan="5">Fax Message No.
+
File No.</td></tr>
<tr><td rowspan="4">No Subject Entry</td><td rowspan="4"></td><td colspan="2">1. "CSI" ("RTI")</td></tr>
<tr><td>2. "RTI"</td><td>CSI not registered</td></tr>
<tr><td>3. "CSI"</td><td>RTI not registered</td></tr>
<tr><td>4. None</td><td>CSI, RTI not registered</td></tr>
<tr><td rowspan="4">Confirmation of Reception</td><td rowspan="4">From</td><td colspan="2">1. "CSI" ("RTI")</td><td rowspan="2">Normal:
Return Receipt (dispatched).
You can select "displayed" with IFAX SW02 Bits 2 and 3.</td></tr>
<tr><td>2. "RTI"</td><td>CSI not registered</td></tr>
<tr><td>3. "CSI"</td><td>RTI not registered</td><td rowspan="2">Error:
Return Receipt (processed/error)</td></tr>
<tr><td>4. None</td><td>CSI, RTI not registered</td></tr>
<tr><td rowspan="2">Mail delivery, memory transfer, SMTP receiving and delivery</td><td rowspan="2">From</td><td>RTI or CSI of the station designated for delivery</td><td>Mail delivery</td><td rowspan="2">Fax Message No. +
File Number</td></tr>
<tr><td>RTI or CSI of sender</td><td>Mail sending from G3 memory</td></tr>
</table>

Mail Type	Item 1	Item 2		Item 3
		Mail address of sender	Memory sending	
		Mail address of sender	SMTP receiving and delivery (Off Ramp Gateway)	
Mail error notification	---	Error Message No. xxxx From CSI (RTI)		

Items 1, 2, and 3 in the table above are in the Subject.

- Subjects Displayed on the PC –



E-mail Messages

After entering the subject, you can enter a message with: TX Mode> Text

An e-mail message (up to 5 lines) can be pre-registered with: User Tools> System Settings> File Transfer> Program/Change/Delete E-mail Message

- Limitations on Entries -

Item	Maximum
Number of Lines	5 lines
Line Length	80 characters
Name Length	20 characters

Message Disposition Notification (MDN)

For details: Core Technology Manual – Facsimile Processes – Faxing from a PC – Internet/LAN Fax Boards – E-mail Options

The network system administrator can confirm whether a sent mail has been received correctly or not. This confirmation is done in four steps.

1. Send request for confirmation of mail reception. To enable or disable this request (known as MDN): TX Mode> Reception Notice
2. Mail reception (receive confirmation request)
3. Send confirmation of mail reception
4. Receive confirmation of mail reception

The other party's machine will not respond to the request unless the two conditions below are met:

- The other party's machine must be set up to respond to the confirmation request.
- The other party's machine must support MDN (Message Disposition Notification).

- Setting up the Receiving Party -

The receiving party will respond to the confirmation request if:

1. The "Disposition Notification To" field is in the received mail header (automatically inserted in the 4th line in the upper table on the previous page, if MDN is enabled), and
2. Sending the disposition notification must be enabled (User Parameter Setting SW21 (15 [H]) Bit 1 for this model). The content of the response is as follows:

Normal reception:	"Return Receipt (dispatched)" in the Subject line
IFAX SW02 (Bit 2, 3)	"Return Receipt (displayed)" in the Subject line
Error:	"Return Receipt (processed/error)" in the Subject line

Handling Reports

- Sending a Request for a Return Receipt by Mail -

After the mail sender transmits a request for a return receipt, the mail sender's journal is annotated with two hyphens (--) in the Result column and a "Q" in the Mode column.

- Mail Receipt (Request for Receipt Confirmation) and Sending Mail Receipt Response -

After the mail receiver sends a response to the request for a return receipt, the mail receiver's journal is annotated with two hyphens (--) in the Result column and an "A" in the Mode column.

- Receiving the Return Receipt Mail -

- After the mail sender receives a return receipt, the information in the mail sender's journal about the receipt request is replaced, i.e. the journal is annotated with "OK" in the Result column.
- When the return receipt reports an error, the journal is annotated with an "E" in the Result column.

- The arrival of the return receipt is not recorded in the journal as a separate communication. Its arrival is only reported by the presence of "OK" or "E" in the Result column.
- If the mail address used by the sender specifies a mailing list (i.e., a Group destination; the machine sends the mail to more than one location. See "How to set up Mail Delivery"), the Result column of the Journal is updated every time a return receipt is received. For example, if the mailing list was to 5 destinations, the Result column indicates the result of the communication with the 5th destination only. The results of the communications to the first 4 destinations are not shown.

  Exceptions:

  If one of the communications had an error, the Result column will indicate E, even if subsequent communications were OK.

  If two of the communications had an error, the Journal will indicate the destination for the first error only.
- Report Sample –

DATE	TIME	ADDRESS	MODE	TIME	PAGE	RESULT
MAY. 5	10:15	fuser 01@domlg. ricoh. co.	Mail SM	0'09"	2	--
	10:16	fuser 01@domlg. ricoh. co.	Mail SMQ	0'05"	1	--
	10:17	s_tadashi@domlg. ricoh. co.	Mail SMQ	0'09"	2	OK
	10:19	m_masataka@domlg. ricoh. co.	Mail SMA	0'05"	1	--

b771d506

5.5 IP-FAX

5.5.1 WHAT IS IP-FAX?

For details: Core Technology Manual – Facsimile Processes – Faxing from a PC – Internet/LAN Fax Boards – IP-FAX

5.5.2 T.38 PACKET FORMAT

TCP is selected by default for this machine, but you can change this to UDP with IPFAX SW 00 Bit 1.

UDP Related Switches

<table>
<tr><th colspan="7">IP-Fax Switch 01</th></tr>
<tr><th>No.</th><th colspan="5">Function</th><th>Comments</th></tr>
<tr><td rowspan="6">0-3</td><td colspan="5">Select IP FAX Delay Level</td><td rowspan="6">Raise the level by selecting a higher setting if too many transmission errors are occurring on the network.
If TCP/UDP is enabled on the network, raise this setting on the T.30 machine. Increasing the delay time allows the recovery of more lost packets.
If only UDP is enabled, increase the number of redundant packets.
Level 1~2: 3 Redundant packets
Level 3: 4 Redundant packets</td></tr>
<tr><td>Bit 3</td><td>Bit 2</td><td>Bit 1</td><td>Bit 0</td><td>Level</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>0</td><td>2</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>1</td><td>3</td></tr>
</table>

5.5.3 SETTINGS

User parameter switch 34 (22[H]), bit 0

IP-Fax Gate Keeper usage, 0: No, 1: Yes

IP Fax Switches: Various IP-FAX settings (see the bit switch table)

6. SPECIFICATIONS

6.1 GENERAL SPECIFICATIONS

6.1.1 FCU

Type:	Desktop type transceiver
Circuit:	PSTN (max. 3ch.) PABX
Connection:	Direct couple
Memory	4MB (60MB with optional SAF)
Original Size:	Book (Face down) Maximum Length: 432 mm [17 ins] Maximum Width: 297 mm [11.7 ins] ARDF (Face up) (Single-sided document) Length: 128 - 1200 mm [5.0 - 47.2 ins] Width: 105 - 297 mm [4.1 - 11.7 inch] (Double-sided document) Length: 128 - 432 mm [5.0 - 17 inch] Width: 105 - 297 mm [4.1 - 11.7 inch]
Scanning Method:	Flat bed, with CCD
Resolution:	G3 8 x 3.85 lines/mm (Standard) 8 x 7.7 lines/mm (Detail) 8 x 15.4 line/mm (Fine) See Note1 16 x15.4 line/mm (Super Fine) See Note 1 200 x 100 dpi (Standard) 200 x 200 dpi (Detail) 400 x 400 dpi (Super Fine) See Note 1 Note ▪ Optional Expansion Memory required

Transmission Time:	G3: 3 s at 28800 bps; Measured with G3 ECM using memory for an ITU-T #1 test document (Slerexe letter) at standard resolution
Data Compression:	MH, MR, MMR, JBIG
Protocol:	Group 3 with ECM
Modulation:	V.34, V.33, V.17 (TCM), V.29 (QAM), V.27ter (PHM), V.8, V.21 (FSK)
Data Rate:	G3: 33600/31200/28800/26400/24000/21600/ 19200/16800/14400/12000/9600/7200/4800/2400 bps Automatic fallback
DC Resistance	352 Ω
I/O Rate:	With ECM: 0 ms/line Without ECM: 2.5, 5, 10, 20, or 40 ms/line
Memory Capacity:	SAF Standard: 4 MB With optional Expansion Memory: 60 MB (4 MB+ 56 MB) Page Memory Standard: 8 MB (Print: 4 MB + Scanner: 4 MB) With optional Expansion Memory: 16 MB (8 MB + 8 MB) (Print 8 MB + Scanner: 8 MB)

6.2 CAPABILITIES OF PROGRAMMABLE ITEMS

The following table shows the capabilities of each programmable items.

Item	Standard
Quick Dial	2000
Groups	100
Destination per Group	500
Destinations dialed from the ten-key pad overall	500
Programs	100
Auto Document	6
Communication records for Journal stored in the memory	200
Specific Senders	250

The following table shows how the capabilities of the document memory will change after the Expansion Memory are installed.

	Without the Expansion Memory	With the Expansion Memory
Memory Transmission file	800	800
Maximum number of page for memory transmission	1000	1000
Memory capacity for memory transmission (Note1)	320	2240

Note

- Measured using an ITU-T #1 test document (Slerexe letter) at the standard resolution, the auto image density mode and the Text mode.

6.3 IFAX SPECIFICATIONS

Connectivity:	Local area network Ethernet 100base-Tx/10base-T Gigabit Ethernet 1000 Base-T IEEE802.11a/g, g (wireless LAN),
Resolution:	200 × 100 dpi (Standard resolution), 200 × 200 dpi (Detail resolution), 200 × 400 dpi (Fine resolution)*1, 400 × 400 dpi (Super Fine resolution)*1 Note ▪ To use 200 × 400 dpi and 400 × 400 dpi, IFAX SW01 Bit 2 and/or bit 4 must be set to “1”.
Transmission Time:	1 s (through a LAN to the server) Condition: ITU-T #1 test document (Selerexe Letter) MTF correction: OFF TTI: None Resolution: 200 x 100 dpi Communication speed: 10 Mbps Correspondent device: E-mail server Line conditions: No terminal access
Document Size:	Maximum Original Size: A3/DLT. Note ▪ To use B4 and A3 width, IFAX SW00 Bit 1 (B4) and/or Bit 2 (A3) must be set to “1”.
E-mail File Format:	Single/multi-part MIME conversion Image: TIFF-F (MH, MR, MMR)
Protocol:	**Transmission:** SMTP, TCP/IP **Reception:** POP3, SMTP, IMAP4, TCP/IP
Data Rate:	1000 Mbps (1000 Base-T) 100 Mbps (100base-Tx) 10 Mbps (10base-T)

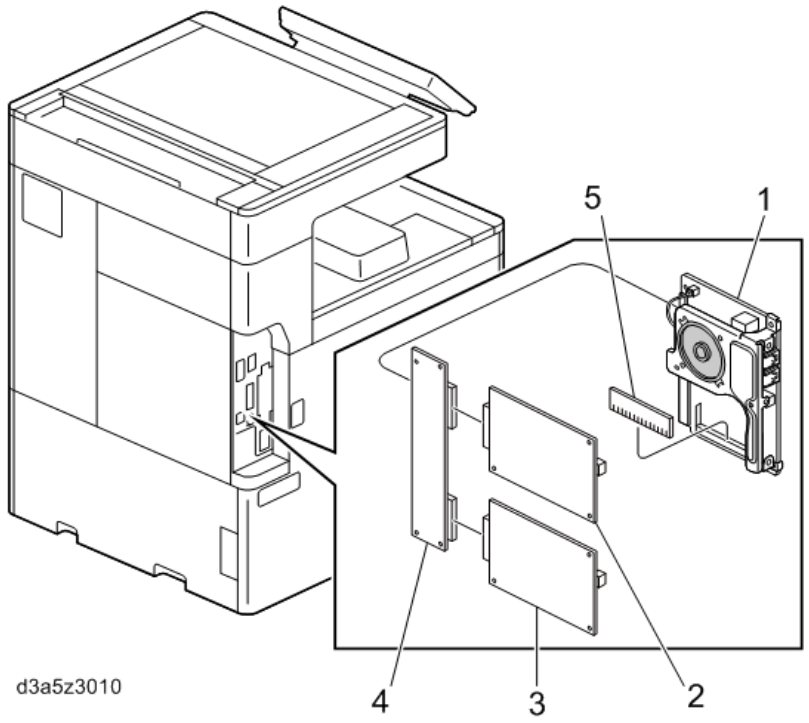
Authentication Method:	SMTP-AUTH POP before SMTP A-POP
Remark:	The machine must be set up as an e-mail client before installation. Any client PCs connected to the machine through a LAN must also be e-mail clients, or some features will not work (e.g. Autorouting).

6.4 IP-FAX SPECIFICATIONS

Network:	Local Area Network Ethernet/10base-T, 100base-TX Gigabit Ethernet/1000 Base-T IEEE802.11a/b/g/n (wireless LAN)
Scan line density:	8 x 3.85 lines/mm, 200x100 dpi (standard character), 8 x 7.7 lines/mm, 200x200 dpi (detail character), 8 x 15.4 lines/mm (fine character: optional expansion memory required), 16 x 15.4 lines/mm, 400x400 dpi (super fine character: optional expansion memory required)
Maximum Original size:	A3 or 11" x 17" (DLT) Custom: 297 mm x 1200 mm (11.7” x 47.3”)
Maximum scanning size:	297 mm x 1200 mm (11.7” x 47.3”)
Transmission protocol:	TCP, UDP/IP communication
Compatible machines:	IP-Fax compatible machines
IP-Fax transmission function:	Specify IP address and send faxes to an IP-Fax compatible fax through a network. Also capable of sending faxes from a G3 fax connected to a telephone line via a VoIP gateway.
IP-Fax reception function:	Receive faxes sent from an IP-Fax compatible fax through a network. Also capable of receiving faxes from a G3 fax connected to a telephone line via a VoIP gateway.

6.5 FAX UNIT CONFIGURATION

6.5.1 G3 INTERFACE UNIT TYPE M12



Component	Code	No.	Remarks
FCU	D3A5-01, -02, -03, -11, -12	1	-
SG3 Board	D3A5-05, -06, -07, -13	2	Optional
SG3 Board		3	Optional
CCU I/F Board		4	Included with optional G3 unit
Expansion Memory	D3A5-10	5	Optional

D3D6

LCIT RT4040

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

LCIT RT4040
(D3D6)

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READ THIS FIRST

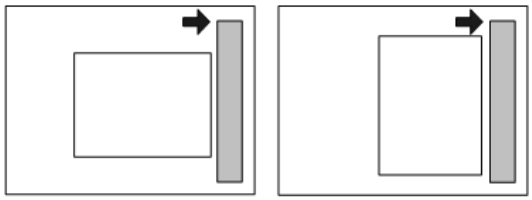
Safety, Conventions, Trademarks

Conventions

Common Terms

This is a list of symbols and abbreviations used in this manual.

Symbol, Abbreviation	Meaning
	Blue screw
	Bushing
	C-ring
	Connector
	E-ring
	Flexible film cable
	Harness clamp
	Hook
	Screw
	Spring
	Timing belt
JG	Junction Gate
LEF	Long Edge Feed
SEF	Short Edge Feed
TE	Trailing Edge of paper



_safe001

Warnings, Cautions, Notes

In this manual, the following important symbols and notations are used.

⚠WARNING

- A Warning indicates a potentially hazardous situation. Failure to obey a Warning could result in death or serious injury.

⚠CAUTION

- A Caution indicates a potentially hazardous situation. Failure to obey a Caution could result in minor or moderate injury or damage to the finisher or other property.

Important

- Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine.

Note

- This information provides tips and advice about how to best service the machine.

General Safety Instructions

For your safety, please read this manual carefully before you use this product. Keep this manual handy for future reference.

Safety Information

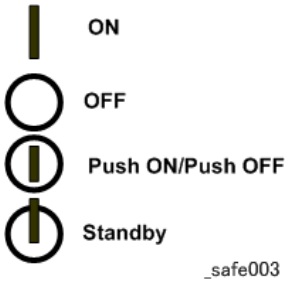
Always obey the following safety precautions when using this product.

Safety During Operation

In this manual, the following important symbols and notations are used.

Switches and Symbols

Where symbols are used on or near switches on machines for Europe and other areas, the meaning of each symbol conforms with IEC60417.



_safe003

Responsibilities of the Customer Engineer

Reference Material for Maintenance

- Maintenance shall be done using the special tools and procedures prescribed for maintenance of the machine described in the reference materials (service manuals, technical bulletins, operating instructions, and safety guidelines for customer engineers).
- In regard to other safety issues not described in this document, all customer engineers shall strictly obey procedures and recommendations described the “CE Safety Guide”.
- Use only consumable supplies and replacement parts designed for use of the machine.

Before Installation, Maintenance

Power

⚠WARNING

- Always disconnect the power plug before doing any maintenance procedure. After switching off the machine, power is still supplied to the main machine and other devices. To prevent electrical shock, switch the machine off, wait for a few seconds, then unplug the machine from the power source.
- Before you do any checks or adjustments after turning the machine off, work carefully to avoid injury. After removing covers or opening the machine to do checks or adjustments, never touch electrical components or moving parts (gears, timing belts, etc.).
- After turning the machine on with any cover removed, keep your hands away from electrical components and moving parts. Never touch the cover of the fusing unit, gears, timing belts, etc.

Installation, Disassembly, and Adjustments

⚠WARNING

- After installation, maintenance, or adjustment, always check the operation of the machine to make sure that it is operating normally. This ensures that all shipping materials, protective materials, wires and tags, metal brackets, etc., removed for installation, have been removed and that no tools remain inside the machine. This also ensures that all release interlock switches have been restored to normal operation.
- Never use your fingers to check moving parts causing spurious noise. Never use your fingers to lubricate moving parts while the machine is operating.

Special Tools

⚠CAUTION

- Use only standard tools approved for machine maintenance.
- For special adjustments, use only the special tools and lubricants described in the service manual. Using tools incorrectly, or using tools that could damage parts, could damage the machine or cause injuries.

During Maintenance

General

⚠CAUTION

- Before you begin a maintenance procedure: 1) Switch the machine off, 2) Disconnect the power plug from the power source, 3) Allow the machine to cool for at least 10 minutes.
- Avoid touching the components inside the machine that are labeled as hot surfaces.

Safety Devices

⚠WARNING

- Never remove any safety device unless it requires replacement. Always replace safety devices immediately.
- Never do any procedure that defeats the function of any safety device. Modification or removal of a safety device (fuse, switch, etc.) could lead to a fire and personal injury. Always test the operation of the machine to ensure that it is operating normally and safely after removal and replacement of any safety device.
- For replacements use only the correct fuses or circuit breakers rated for use with the machine. Using replacement devices not designed for use with the machine could lead to a fire and personal injuries.

Organic Cleaners

⚠CAUTION

- During preventive maintenance, never use any organic cleaners (alcohol, etc.) other than those described in the service manual.
- Make sure the room is well ventilated before using any organic cleaner. Use organic solvents in small amounts to avoid breathing the fumes and becoming nauseous.
- Switch the machine off, unplug it, and allow it to cool before doing preventive maintenance. To avoid fire or explosion, never use an organic cleaner near any part that generates heat.
- Wash your hands thoroughly after cleaning parts with an organic cleaner to contamination of food, drinks, etc. which could cause illness.
- Clean the floor completely after accidental spillage of silicone oil or other materials to prevent slippery surfaces that could cause accidents leading to hand or leg injuries. Use “My Ace” Silicone Oil Remover (or dry rags) to soak up spills. For more details, please refer to Technical Bulletin “Silicone Oil Removal” (A024-50).

Ozone Filters

⚠CAUTION

- Always replace ozone filters as soon as their service life expires (as described in the service manual).
- An excessive amount of ozone can build up around machines that use ozone filters if they are not replaced at the prescribed time. Excessive ozone could cause personnel working around the machine to feel unwell.

Power Plug and Power Cord

⚠WARNING

- Before servicing the machine (especially when responding to a service call), always make sure that the power plug has been inserted completely into the power source. A partially inserted plug could lead to heat generation (due to a power surge caused by high resistance) and cause a fire or other problems.
- Always check the power plug and make sure that it is free of dust and lint. Clean it if necessary. A dirty plug can generate heat which could cause a fire.
- Inspect the length of the power cord for cuts or other damage. Replace the power cord if necessary. A frayed or otherwise damaged power cord can cause a short circuit which could lead to a fire or personal injury from electrical shock.
- Check the length of the power cord between the machine and power supply. Make sure the power cord is not coiled or wrapped around any object such as a table leg. Coiling the power cord can cause excessive heat to build up and could cause a fire.
- Make sure that the area around the power source is free of obstacles so the power cord can be removed quickly in case of an emergency.
- Make sure that the power cord is grounded (earthed) at the power source with the ground wire on the plug.
- Connect the power cord directly into the power source. Never use an extension cord.
- When you disconnect the power plug from the power source, always pull on the plug, not the cable.

After Installation, Servicing

Disposal of Used Items

⚠CAUTION

- Always dispose of used items (developer, toner, toner cartridges, OPC drums, etc.) in accordance with the local laws and regulations regarding the disposal of such items.
- To protect the environment, never dispose of this product or any kind of waste from consumables at a household waste collection point. Dispose of these items at one of our dealers or at an authorized collection site.

Points to Confirm with Operators

At the end of installation or a service call, instruct the user about use of the machine. Emphasize the following points.

- Show operators how to remove jammed paper and troubleshoot other minor problems by following the procedures described in the operating instructions.
- Point out the parts inside the machine that they should never touch or attempt to remove.
- Confirm that operators know how to store and dispose of consumables.
- Make sure that all operators have access to an operating instruction manual for the machine.
- Confirm that operators have read and understand all the safety instructions described in the operating instructions.
- Demonstrate how to turn off the power and disconnect the power plug (by pulling the plug, not the cord) if any of the following events occur: 1) something has spilled into the product, 2) service or repair of the product is necessary, 3) the product cover has been damaged.
- Caution operators about removing paper fasteners around the machine. They should never allow paper clips, staples, or any other small metallic objects to fall into the machine.

Safety Instructions for this Machine

1. The installation must be done by trained service technicians.
2. This machine weighs 92 kg. (202.9 lb.). At least four persons are required to remove the machine from its pallet and position it for installation.
3. To prevent fire hazards never use flammable solvents around the machine.
4. Never place any object on the machine.
5. If anything falls into the machine, turn off the main power switch on the right side of the machine, then disconnect the power cord from the power source.
6. Locate the machine on a sturdy flat surface where it will not be exposed to excessive vibration.
7. To avoid fire hazard, confirm that the ventilation ports are not blocked, so air can flow freely.
8. Gas generated by the molten glue can irritate the eyes, throat, and nose. The machine should always be used in a well ventilated room.
9. To avoid the dangers of fire and electrical shock, make sure that the machine is never exposed to:
    - Excessive high temperatures and/or humidity
    - Dust
    - Water
    - Direct sunlight
    - Open flame
    - Corrosive gases

Trademarks

- Microsoft®, Windows®, and MS-DOS® are registered trademarks of Microsoft Corporation in the United States and /or other countries.
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- PCL® is a registered trademark of Hewlett-Packard Company.
- Ethernet® is a registered trademark of Xerox Corporation.
- PowerPC® is a registered trademark of International Business Machines Corporation.
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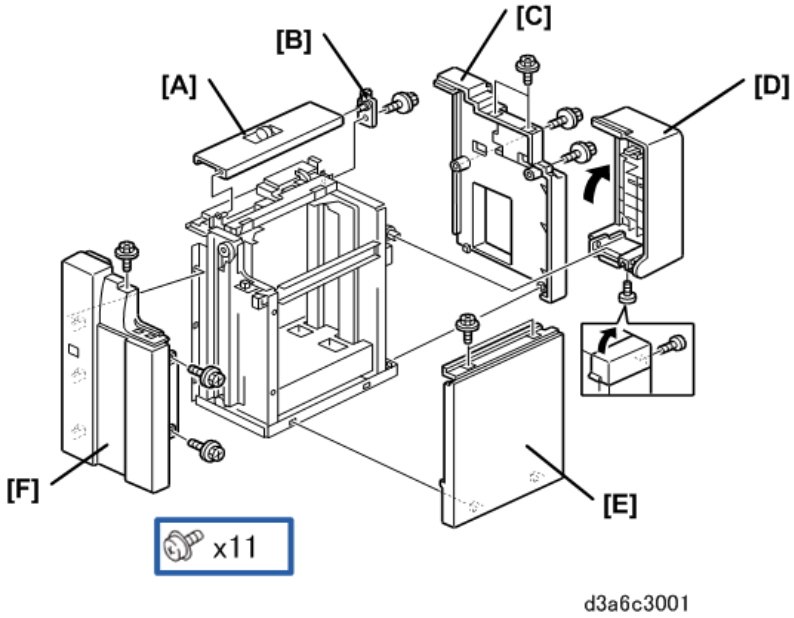
1. REPLACEMENT AND ADJUSTMENT

1.1 COVERS

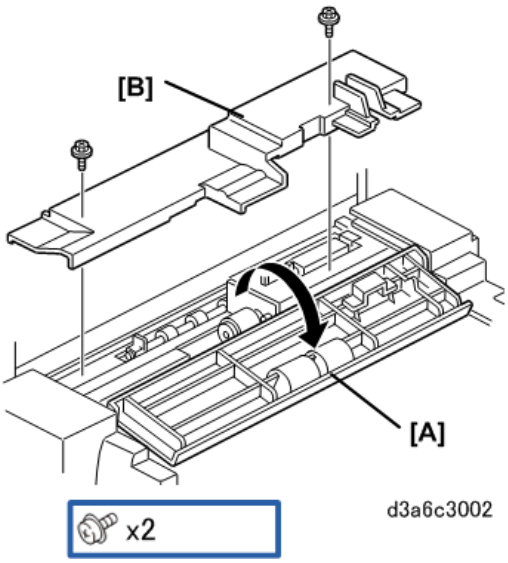


1. Remove in this order:
   [A] Transport cover (x1)
   [B] Transport cover hinge (x1)
   [C] Rear cover (x4)
   [D] Top cover (x1)
   [E] Right cover (x4)
   [F] Front cover (x3)

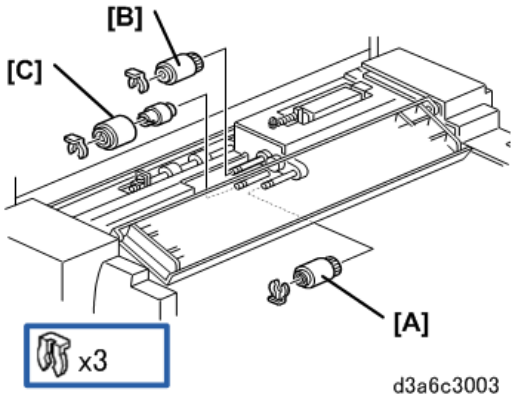
1.2 ROLLERS, SOLENOID

1.2.1 PICK-UP, FEED, AND SEPARATION ROLLERS

1. Open the transport cover [A] .
2. Remove bracket cover [B].

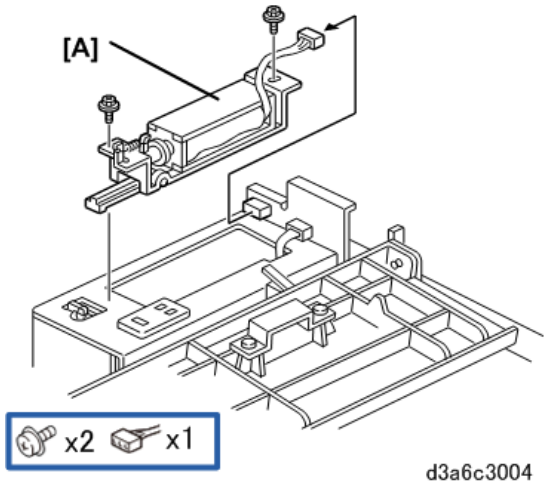


3. Remove:
   [A] Pick-up roller
   [B] Feed roller.
   [C] Separation roller



1.2.2 PICK-P SOLENOID

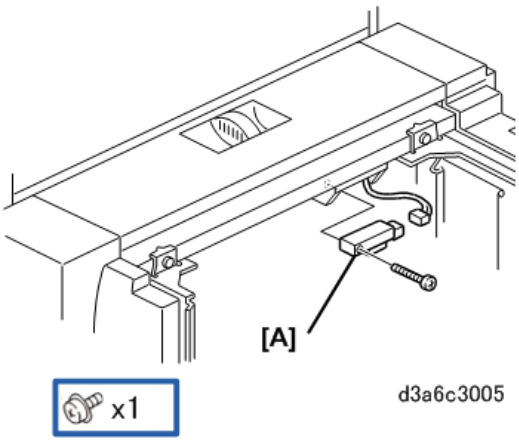
1. Remove the rear cover (x 4). page 1
2. Open the transport cover
3. Remove bracket cover.
4. Remove pick-up solenoid [A].



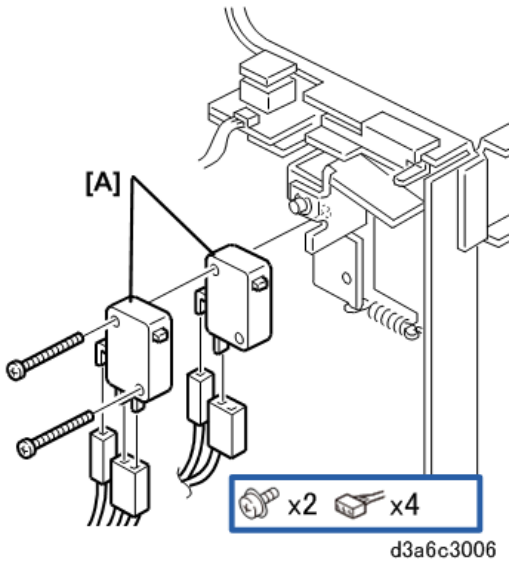
1.3 SENSORS, SWITCHES

1.3.1 PAPER END SENSOR, UPPER COVER SWITCHES

1. Open the top cover.
2. Remove the right cover. (x2) page 1
3. Remove paper end sensor [A].

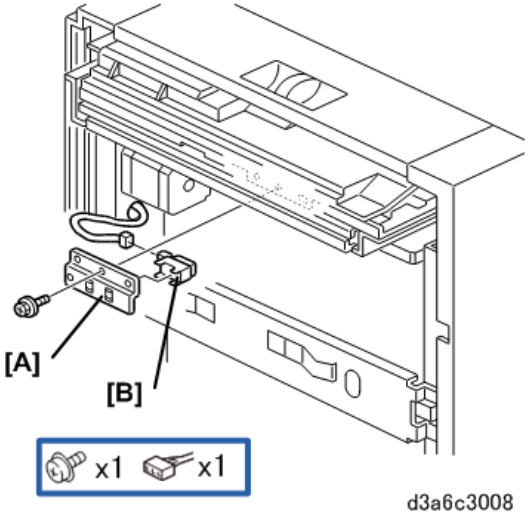


4. Remove upper cover switches 1 and 2 [A].



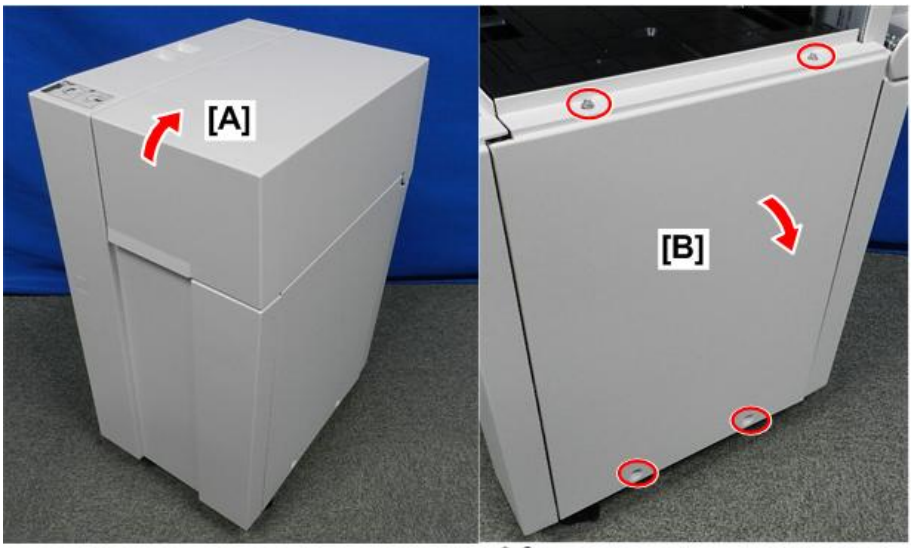
1.3.2 PAPER STACK SENSOR

1. Disconnect the LCIT from the machine.
2. Remove:
   [A] Sensor cover
   [B] Paper stack sensor



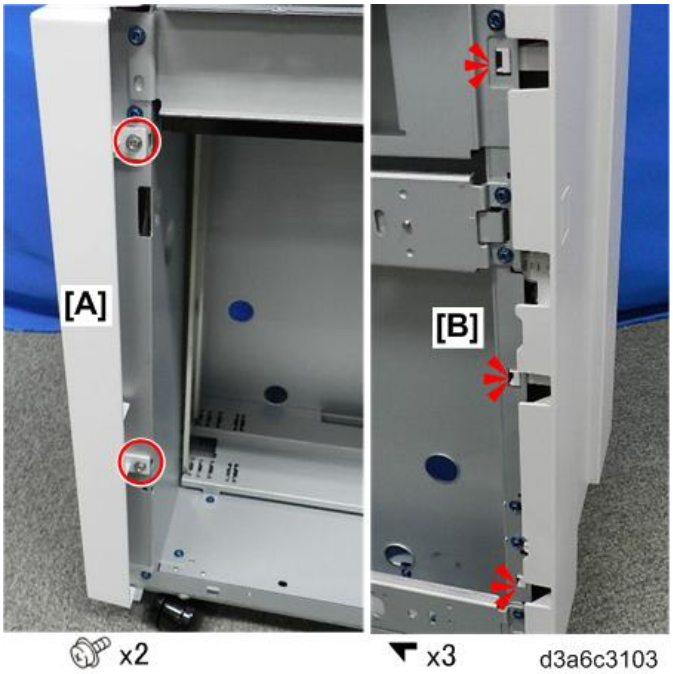
1.3.3 TRAY SWITCH LED

1. Separate the LCIT and the main machine.
2. Open top cover [A].
3. Remove right cover [B].

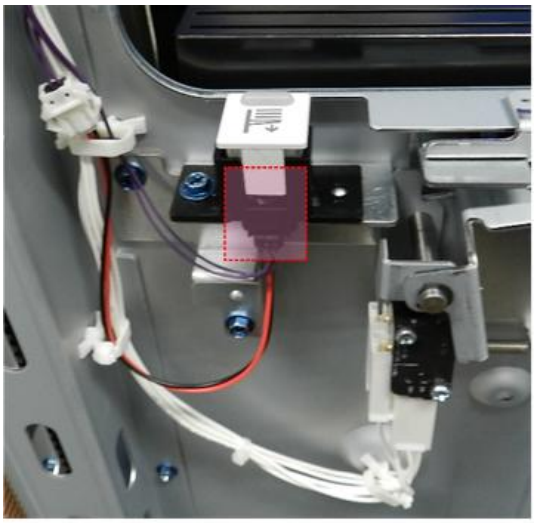


4. Disconnect the front cover at the top.

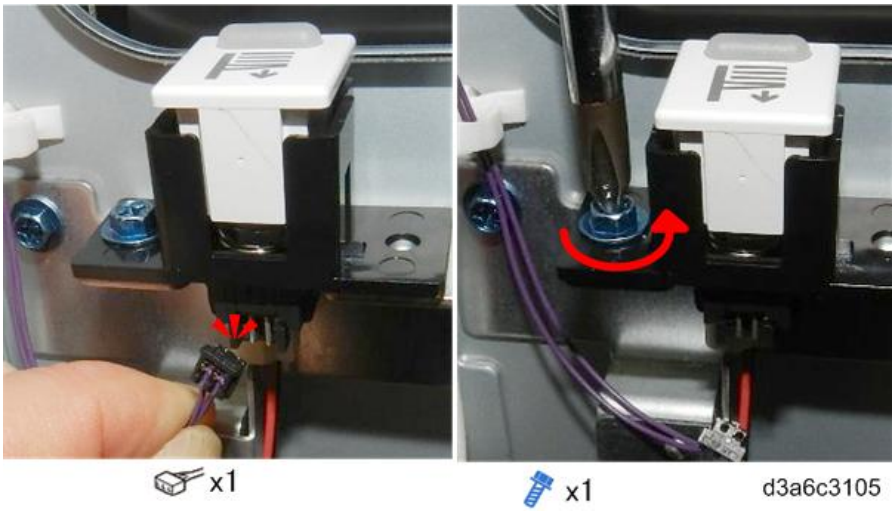
5. Disconnect the front cover on the right [A].
6. Disconnect the front cover from the tabs on the left [B].



7. The tray switch LED is below the switch.



8. Disconnect the switch.



9. Remove the switch.

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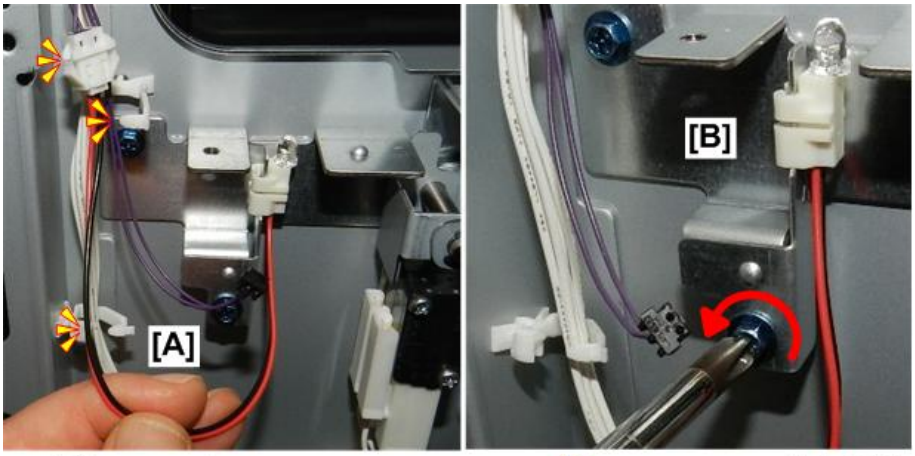
10. Disconnect LED harness [A].
11. Disconnect LED bracket [B].



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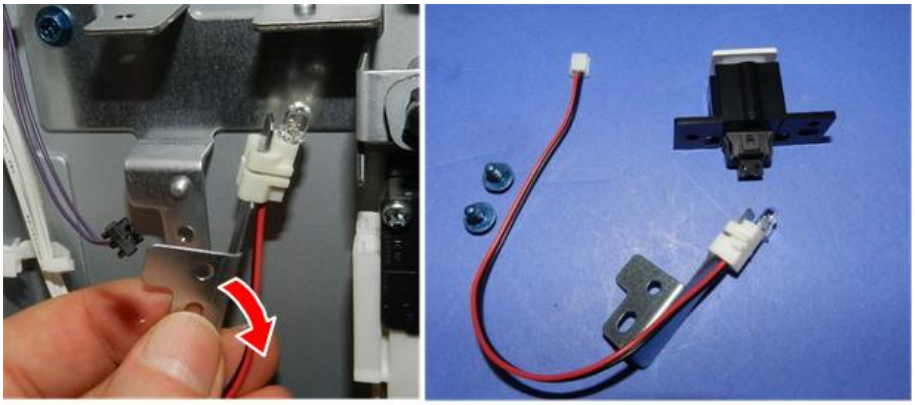
12. Remove the bracket with LED attached, and then lay it on a flat, clean surface.



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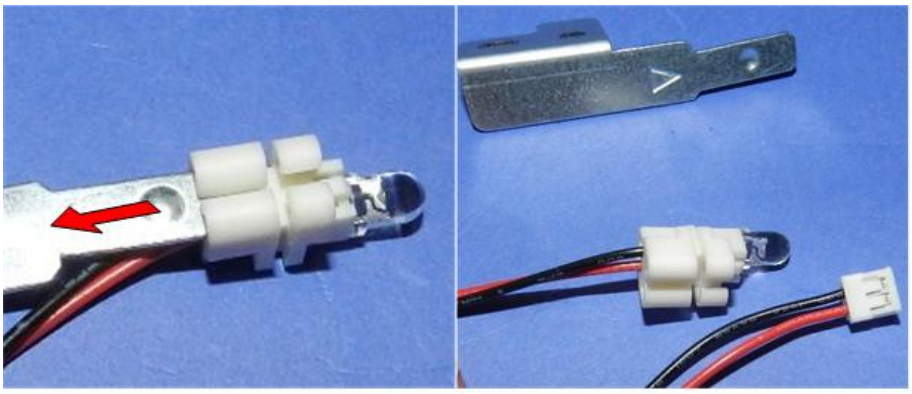
13. Separate the LED and harness from the bracket.



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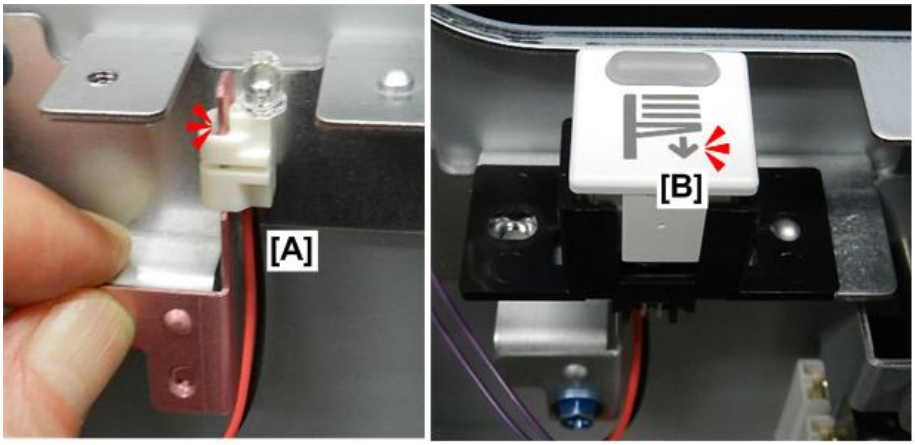
Reinstallation

1. Assemble the new LED and bracket so the harness [A] is positioned as shown.
2. Set the switch over the LED with the arrow [B] pointing forward.



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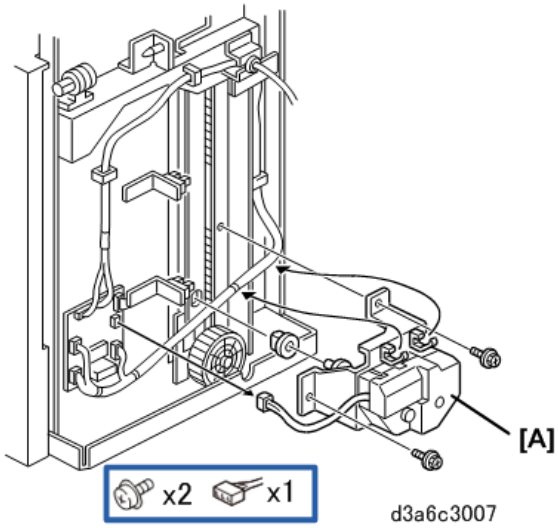
1.4 MOTOR

1.4.1 TRAY MOTOR

1. Remove the rear cover (x4). page 1
2. Remove tray motor [A]

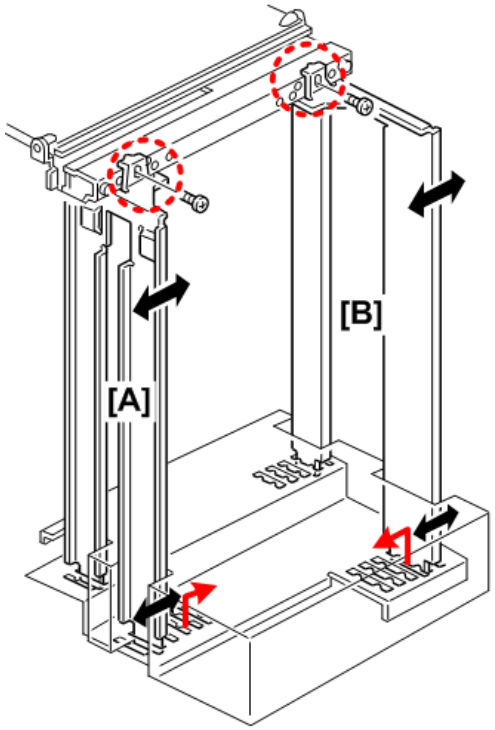


1.5 ADJUSTMENT

1.5.1 PAPER SIZE ADJUSTMENT

The side fences [A] and [B] can be adjusted for different paper sizes:

- A4 LEF
- B5 LEF
- LT LEF



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1. Open the top cover of the LCIT.

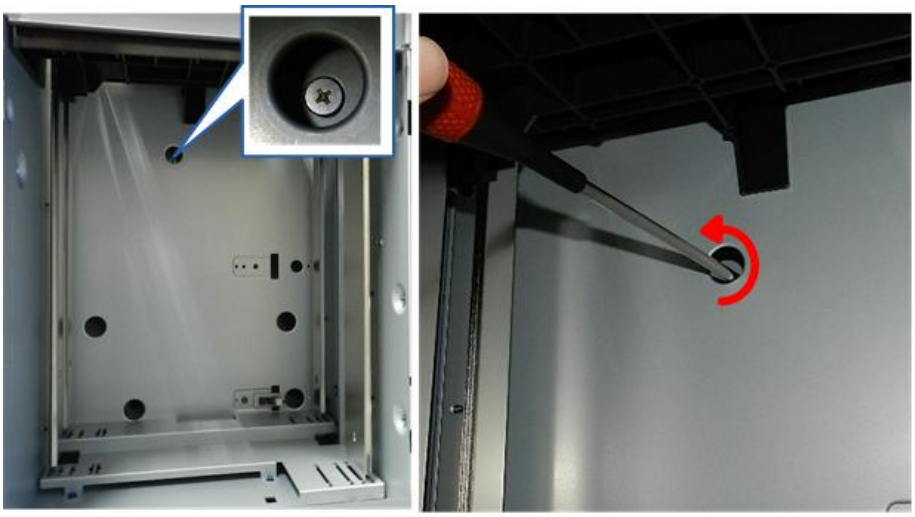
d3a6c2017

2. Remove the right panel of the LCIT.

x4

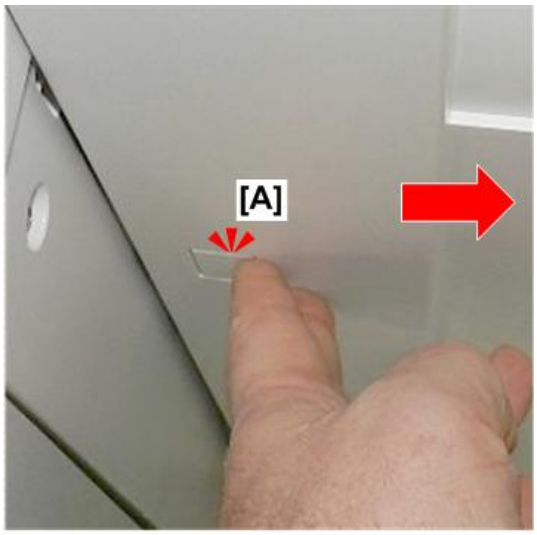
d3a6c2018

3. If the LCIT is connected to the main machine, remove the lock screw.



x1 d3a6c2019

4. Press the release button on the front of the LCIT [A], and then pull the LCIT slightly away from the side of the main machine, but do not disconnect the LCIT I/F cable.

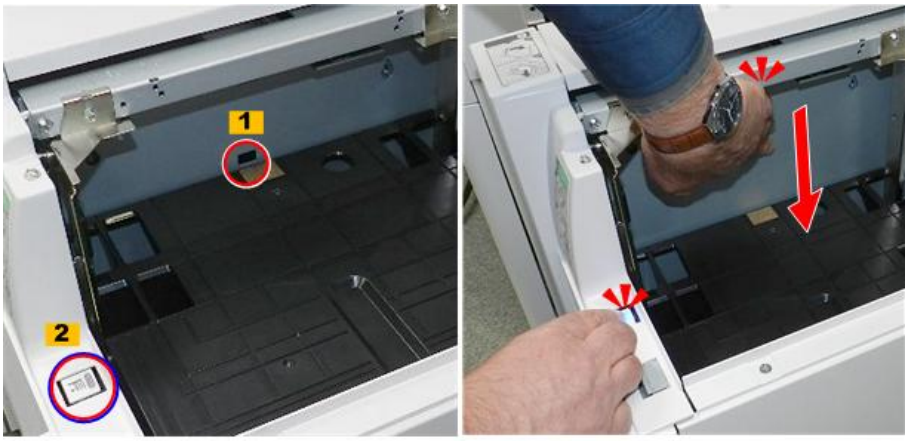


d3a6c2020

5. If the LCIT is disconnected, connect the I/F cable to the main machine [A], and then turn the machine on.
6. You must disconnect front fence [1] and rear fence [2], but these fences cannot be removed with tray plate [B] in the up position.

d3a6c2041

7. Confirm that the main machine is on, and that the LCIT is connected to the main machine.
8. To lower the tray plate, cover photosensor [1] with your left hand, and then press and hold down button [2].



d3a6c2042

9. Keep the sensor covered and the button depressed until the tray plate reaches bottom and the motor switches off. You can now remove the fences.

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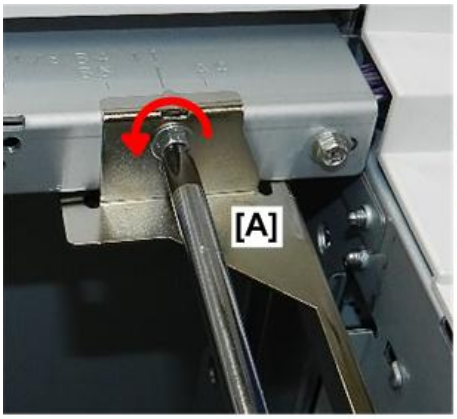
10. Unfasten and remove rear fence [A].



x1

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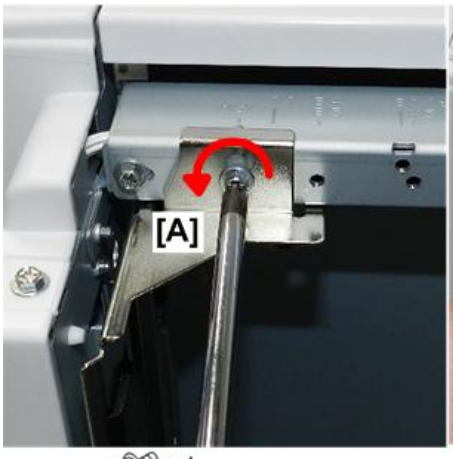
11. Unfasten and remove front fence [A].



x1

d3a6c2045

12. Set the bottom edge of each side fence into the slot for the paper size that you want you load into the LCIT
13. Set the notches at the top of each side fence at the name of the paper size.
14. Re-fasten the at the top, and then re-assemble the LCIT.
15. Turn the machine on.
16. Open **SP5959-005** (Paper Type - Tray 4), and then select the paper size you have selected with the side fences.

2. DETAILED DESCRIPTIONS

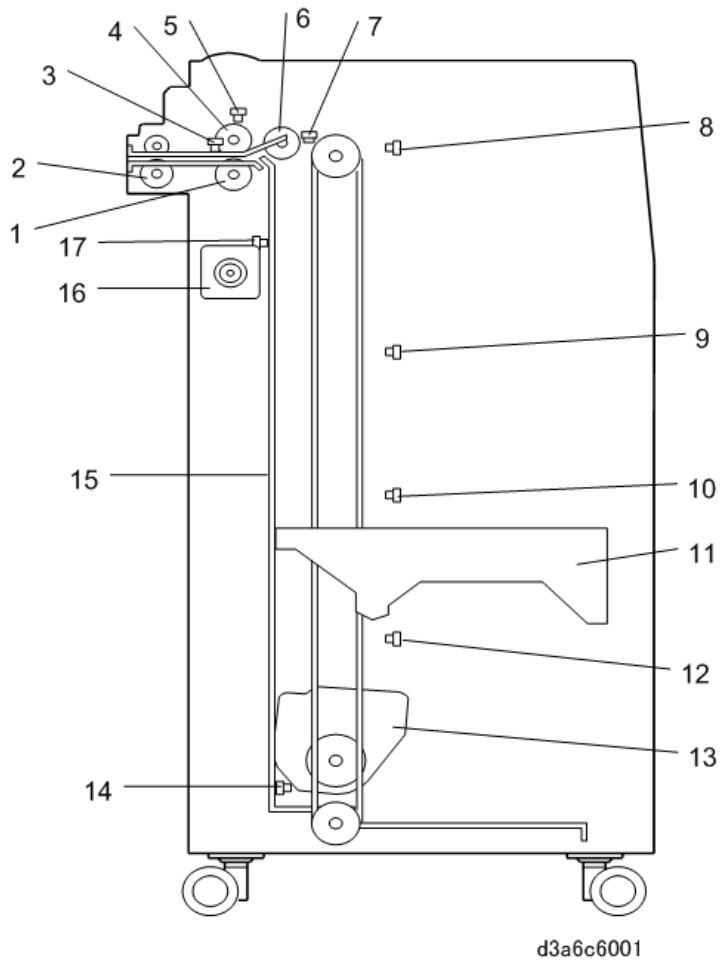
2.1 OVERVIEW

2.1.1 SPECIFICATIONS

Paper capacity	4,000 sheets
Paper Sizes	A4 LEF, B5 LEF, 8.5" x 11" LEF *1
Paper Weight	52 to 128 g/m^2 (14 to 34 lb)
Pick-up and Feed	FRR (Feed and Reverse Roller)
Power Consumption	Less than 50 W (Max.)
Power Supply	DC24 V, 5V (powered by the main unit)
Rated Voltage of Output Connector	Max. DC 24 V
Dimensions (W x D x H)	314 x 458 x 659 mm (12.4" x 18.1" x 25.9")
Weight	20.0 kg (44 lb.)

*1: In platen mode, APS (Auto Paper Select) with the original length and original width sensors are not used.

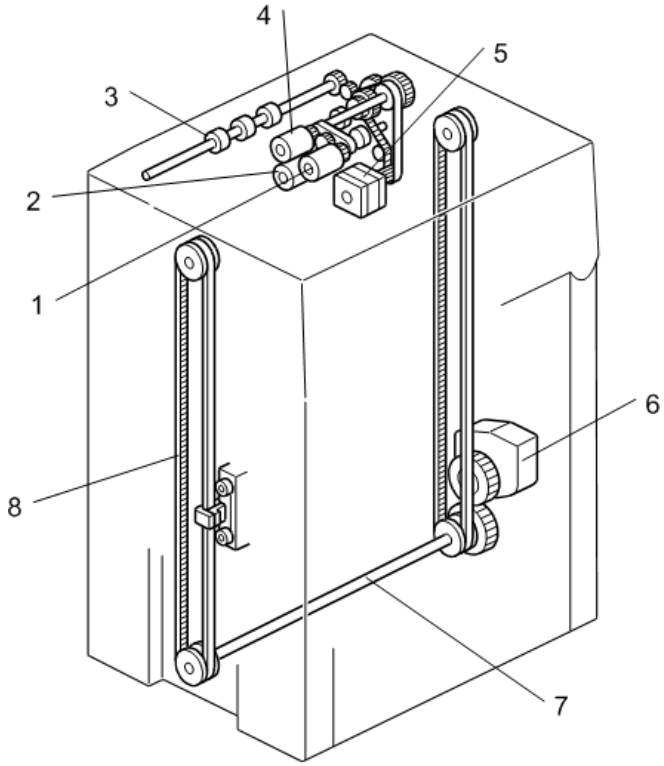
2.1.2 LCIT MAIN COMPONENTS



No.	Part	No.	Part
1	Separation Roller	10	Paper Height Sensor 2
2	Transport Roller	11	Paper Tray
3	Feed Sensor	12	Paper Height Sensor 3
4	Feed Roller	13	Paper Tray Motor
5	Lift Sensor	14	Low Limit Sensor
6	Pick-up Roller	15	Tray Drive Belt
7	Paper End Sensor	16	Feed Motor
8	Paper Near End Sensor	17	Stack Sensor
9	Paper Height Sensor 1		

- **Pick-up, Separation, Feed**. Non-contact, maintenance free FRR system.
- **Tray Lift**. Tray lift motor and timing belt raise and lower the paper tray.
- **Paper Size Detection**. The side fences cannot be adjusted by customers. The paper size must be entered with SP5959 005.
- **Paper Height Detection**. A feeler and four photo-interrupters are used.
- **Paper End Detection**. A reflective sensor on the upper stay detects paper end.

2.1.3 LCIT DRIVE LAYOUT



No.	Part
1	Pick-up Roller
2	Separation Roller
3	Transport Rollers
4	Feed Roller
5	Feed Motor
6	Tray Motor
7	Tray Lift Shaft
8	Tray Drive Belt

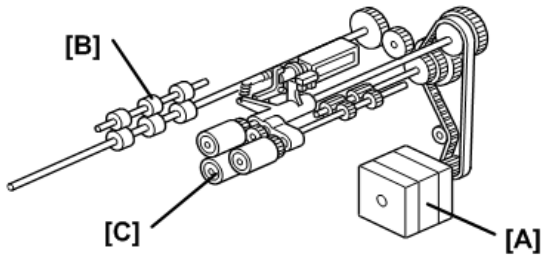
2.2 MECHANISMS

2.2.1 PAPER FEED AND SEPARATION

A standard FRR system is used. It consists of the pick-up, feed, and separation rollers.

Starting Paper Feed

The feed motor [A] drives the transport rollers [B]. The separation roller [C], which is free to rotate in the direction indicated by the arrow, remains at rest.



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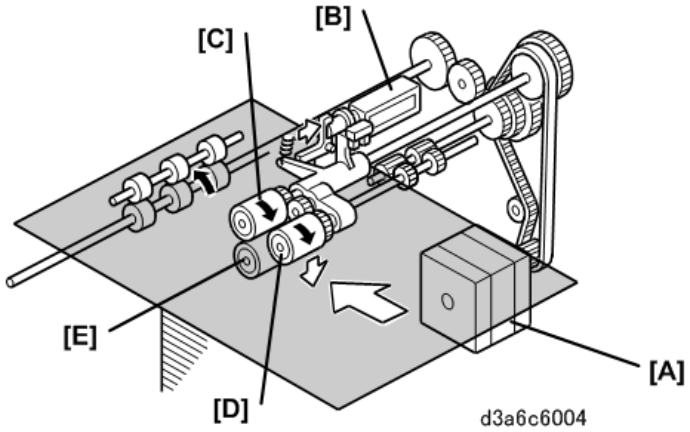
Feed and Separation

The feed motor [A] switches on, then the pick-up solenoid [B] switches on and transfers drive to the paper feed roller [C] and pick-up roller [D]. The rotating pick-up roller lowers and feeds the first sheet when it contacts the top of the stack. The separation roller [E], in contact with the feed roller, only allows one sheet out of the tray.



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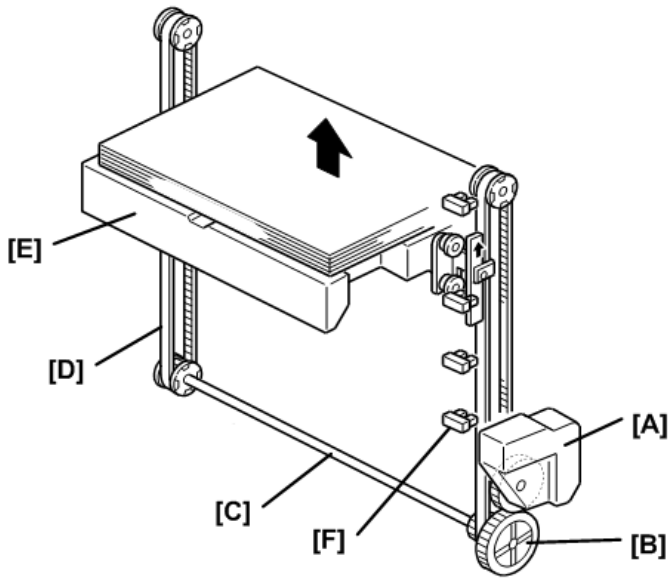
As soon as the paper feed sensor (not shown) detects the leading edge of the paper, it switches off the pick-up solenoid which raises the pick-up roller. The feed roller feeds the sheet to the registration roller.
This process is repeated for each sheet.

2.2.2 PAPER LIFT

- Tray motor [A] rotates gear [B] and connected shaft [C].
- This rotation drives tray belts [D] that raise and lower the paper tray [E].
- After paper is set in the LCIT and the upper cover is closed, if the paper height sensor [F] is not activated, the tray motor lowers the tray and stops.
- When the paper height sensor activates, the tray motor lifts the tray.



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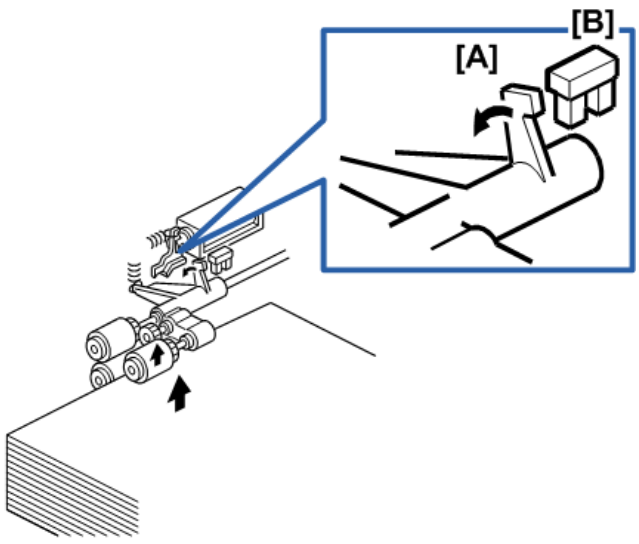
After several sheets have been fed, the paper level lowers, the actuator [A] activates the lift sensor [B], and switches on the motor again.



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The motor raises stack until the actuator de-activates the lift sensor.

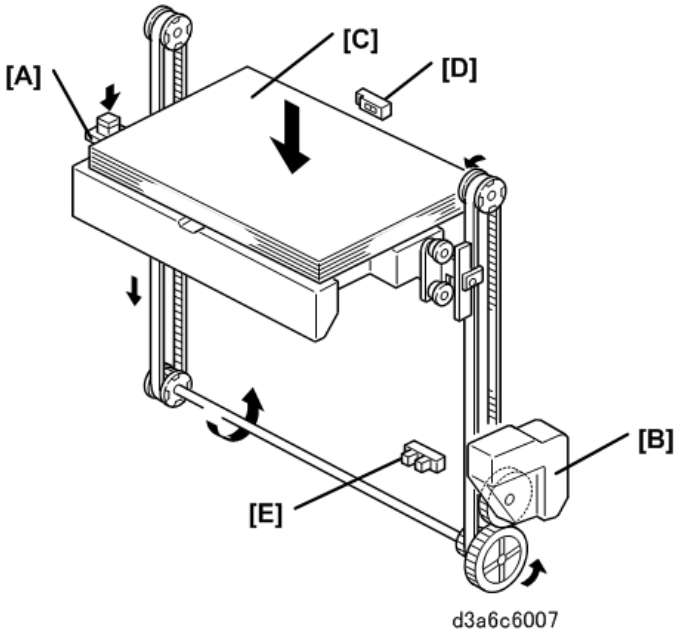
This cycle repeats to maintain the correct height of the stack until the end of the job.

Pressing the tray down button [A] reverses the rotation of the tray motor [B] and lowers the tray [C].

The tray lowers until the stack sensor [D] detects the top of the stack and stops the tray motor.

- This mechanism lowers the tray by 5 cm, which gives the user enough space to add 500 sheets of paper.
- If the down switch is then pressed again, the bottom plate moves down once again by 5 cm. This allows the customer to replenish paper in convenient amounts and at the same position.

A lower limit sensor [E] (triggered by an actuator on the bottom of the tray) is also provided to stop the tray motor if the stack sensor should fail.



Summary

The tray raises when:

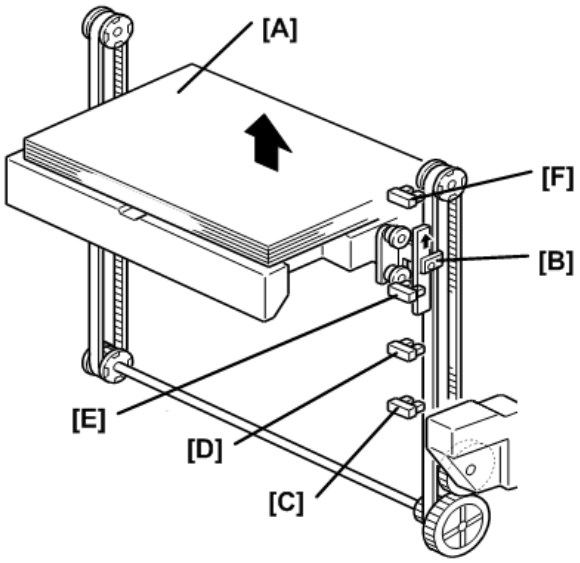
- The main power switch is turned on
- When the lift sensor switches on during copying
- The top cover is closed and the lift sensor switches on

The tray lowers when:

- The tray down button is pressed.
- The paper end sensor signals that there is no paper in the tray.

2.2.3 PAPER HEIGHT DETECTION

As paper is consumed from the top of the stack [A], the paper tray rises and the actuator [B] attached to the tray passes through paper height sensor 3 [C], paper height sensor 2 [D], and paper height sensor 1 [E] until the actuator reaches the paper near end sensor [F].



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The operation panel displays a message for each paper height until the actuator reaches the near-end sensor, then a message warns the user that the tray is nearly empty. The table summarizes the relation between sensor detection and the number of sheets remaining in the stack.

Sheet Remaining	Bars *1	Sensors			
		Near-end	P.Height 1	P.Height 2	P.Height 3
75	1	●	---	---	---
1500	2	○	●	---	---
2500	3	○	○	●	---
3500	4	○	○	○	●

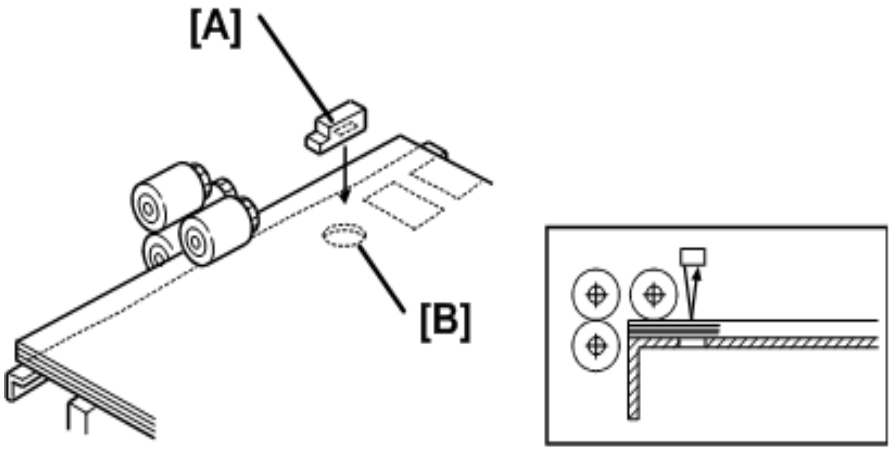
*1:The number of vertical bars in the paper height display on the operation panel.

●: Actuator blocking the sensor gap.

○: Sensor gap is open

2.2.4 PAPER END DETECTION

The paper end sensor [A] monitors the light reflected by each sheet on top of the stack. When the last sheet feeds, the cutout [B] is exposed, and the paper end sensor receives no reflected light from below because there is no paper and this signals paper end.



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COVER INTERPOSER TRAY CI4030

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

COVER INTERPOSER TRAY CI4030 (D3D7)

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READ THIS FIRST

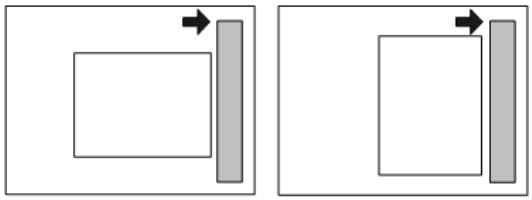
Safety, Conventions, Trademarks

Conventions

Common Terms

This is a list of symbols and abbreviations used in this manual.

Symbol, Abbreviation	Meaning
	Blue screw
	Bushing
	C-ring
	Connector
	E-ring
	Flexible film cable
	Harness clamp
	Hook
	Screw
	Spring
	Timing belt
JG	Junction Gate
LEF	Long Edge Feed
SEF	Short Edge Feed
TE	Trailing Edge of paper



_safe001

Warnings, Cautions, Notes

In this manual, the following important symbols and notations are used.

⚠WARNING

- A Warning indicates a potentially hazardous situation. Failure to obey a Warning could result in death or serious injury.

⚠CAUTION

- A Caution indicates a potentially hazardous situation. Failure to obey a Caution could result in minor or moderate injury or damage to the finisher or other property.

Important

- Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine.

Note

- This information provides tips and advice about how to best service the machine.

General Safety Instructions

For your safety, please read this manual carefully before you use this product. Keep this manual handy for future reference.

Safety Information

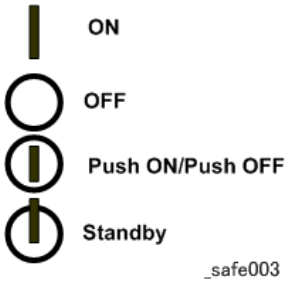
Always obey the following safety precautions when using this product.

Safety During Operation

In this manual, the following important symbols and notations are used.

Switches and Symbols

Where symbols are used on or near switches on machines for Europe and other areas, the meaning of each symbol conforms with IEC60417.



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Responsibilities of the Customer Engineer

Reference Material for Maintenance

- Maintenance shall be done using the special tools and procedures prescribed for maintenance of the machine described in the reference materials (service manuals, technical bulletins, operating instructions, and safety guidelines for customer engineers).
- In regard to other safety issues not described in this document, all customer engineers shall strictly obey procedures and recommendations described the “CE Safety Guide”.
- Use only consumable supplies and replacement parts designed for use of the machine.

Before Installation, Maintenance

Power

⚠WARNING

- Always disconnect the power plug before doing any maintenance procedure. After switching off the machine, power is still supplied to the main machine and other devices. To prevent electrical shock, switch the machine off, wait for a few seconds, then unplug the machine from the power source.
- Before you do any checks or adjustments after turning the machine off, work carefully to avoid injury. After removing covers or opening the machine to do checks or adjustments, never touch electrical components or moving parts (gears, timing belts, etc.).
- After turning the machine on with any cover removed, keep your hands away from electrical components and moving parts. Never touch the cover of the fusing unit, gears, timing belts, etc.

Installation, Disassembly, and Adjustments

⚠WARNING

- After installation, maintenance, or adjustment, always check the operation of the machine to make sure that it is operating normally. This ensures that all shipping materials, protective materials, wires and tags, metal brackets, etc., removed for installation, have been removed and that no tools remain inside the machine. This also ensures that all release interlock switches have been restored to normal operation.
- Never use your fingers to check moving parts causing spurious noise. Never use your fingers to lubricate moving parts while the machine is operating.

Special Tools

⚠CAUTION

- Use only standard tools approved for machine maintenance.
- For special adjustments, use only the special tools and lubricants described in the service manual. Using tools incorrectly, or using tools that could damage parts, could damage the machine or cause injuries.

During Maintenance

General

⚠CAUTION

- Before you begin a maintenance procedure: 1) Switch the machine off, 2) Disconnect the power plug from the power source, 3) Allow the machine to cool for at least 10 minutes.
- Avoid touching the components inside the machine that are labeled as hot surfaces.

Safety Devices

⚠WARNING

- Never remove any safety device unless it requires replacement. Always replace safety devices immediately.
- Never do any procedure that defeats the function of any safety device. Modification or removal of a safety device (fuse, switch, etc.) could lead to a fire and personal injury. Always test the operation of the machine to ensure that it is operating normally and safely after removal and replacement of any safety device.
- For replacements use only the correct fuses or circuit breakers rated for use with the machine. Using replacement devices not designed for use with the machine could lead to a fire and personal injuries.

Organic Cleaners

⚠CAUTION

- During preventive maintenance, never use any organic cleaners (alcohol, etc.) other than those described in the service manual.
- Make sure the room is well ventilated before using any organic cleaner. Use organic solvents in small amounts to avoid breathing the fumes and becoming nauseous.
- Switch the machine off, unplug it, and allow it to cool before doing preventive maintenance. To avoid fire or explosion, never use an organic cleaner near any part that generates heat.
- Wash your hands thoroughly after cleaning parts with an organic cleaner to contamination of food, drinks, etc. which could cause illness.
- Clean the floor completely after accidental spillage of silicone oil or other materials to prevent slippery surfaces that could cause accidents leading to hand or leg injuries. Use

“My Ace” Silicone Oil Remover (or dry rags) to soak up spills. For more details, please refer to Technical Bulletin “Silicone Oil Removal” (A024-50).

Ozone Filters

⚠CAUTION

- Always replace ozone filters as soon as their service life expires (as described in the service manual).
- An excessive amount of ozone can build up around machines that use ozone filters if they are not replaced at the prescribed time. Excessive ozone could cause personnel working around the machine to feel unwell.

Power Plug and Power Cord

⚠WARNING

- Before servicing the machine (especially when responding to a service call), always make sure that the power plug has been inserted completely into the power source. A partially inserted plug could lead to heat generation (due to a power surge caused by high resistance) and cause a fire or other problems.
- Always check the power plug and make sure that it is free of dust and lint. Clean it if necessary. A dirty plug can generate heat which could cause a fire.
- Inspect the length of the power cord for cuts or other damage. Replace the power cord if necessary. A frayed or otherwise damaged power cord can cause a short circuit which could lead to a fire or personal injury from electrical shock.
- Check the length of the power cord between the machine and power supply. Make sure the power cord is not coiled or wrapped around any object such as a table leg. Coiling the power cord can cause excessive heat to build up and could cause a fire.
- Make sure that the area around the power source is free of obstacles so the power cord can be removed quickly in case of an emergency.
- Make sure that the power cord is grounded (earthed) at the power source with the ground wire on the plug.
- Connect the power cord directly into the power source. Never use an extension cord.
- When you disconnect the power plug from the power source, always pull on the plug, not the cable.

After Installation, Servicing

Disposal of Used Items

⚠CAUTION

- Always dispose of used items (developer, toner, toner cartridges, OPC drums, etc.) in accordance with the local laws and regulations regarding the disposal of such items.
- To protect the environment, never dispose of this product or any kind of waste from consumables at a household waste collection point. Dispose of these items at one of our dealers or at an authorized collection site.

Points to Confirm with Operators

At the end of installation or a service call, instruct the user about use of the machine. Emphasize the following points.

- Show operators how to remove jammed paper and troubleshoot other minor problems by following the procedures described in the operating instructions.
- Point out the parts inside the machine that they should never touch or attempt to remove.
- Confirm that operators know how to store and dispose of consumables.
- Make sure that all operators have access to an operating instruction manual for the machine.
- Confirm that operators have read and understand all the safety instructions described in the operating instructions.
- Demonstrate how to turn off the power and disconnect the power plug (by pulling the plug, not the cord) if any of the following events occur: 1) something has spilled into the product, 2) service or repair of the product is necessary, 3) the product cover has been damaged.
- Caution operators about removing paper fasteners around the machine. They should never allow paper clips, staples, or any other small metallic objects to fall into the machine.

Safety Instructions for this Machine

1. The installation must be done by trained service technicians.
2. This machine weighs 92 kg. (202.9 lb.). At least four persons are required to remove the machine from its pallet and position it for installation.
3. To prevent fire hazards never use flammable solvents around the machine.
4. Never place any object on the machine.
5. If anything falls into the machine, turn off the main power switch on the right side of the machine, then disconnect the power cord from the power source.
6. Locate the machine on a sturdy flat surface where it will not be exposed to excessive vibration.
7. To avoid fire hazard, confirm that the ventilation ports are not blocked, so air can flow freely.
8. Gas generated by the molten glue can irritate the eyes, throat, and nose. The machine should always be used in a well ventilated room.
9. To avoid the dangers of fire and electrical shock, make sure that the machine is never

exposed to:

- Excessive high temperatures and/or humidity
- Dust
- Water
- Direct sunlight
- Open flame
- Corrosive gases

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- Microsoft®, Windows®, and MS-DOS® are registered trademarks of Microsoft Corporation in the United States and /or other countries.
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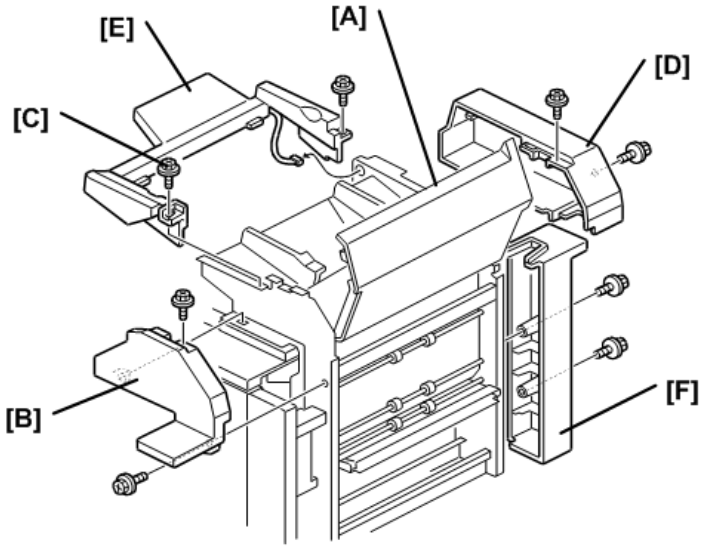
- PCL® is a registered trademark of Hewlett-Packard Company.
- Ethernet® is a registered trademark of Xerox Corporation.
- PowerPC® is a registered trademark of International Business Machines Corporation.
- Other product names used herein are for identification purposes only and may be trademarks of their respective companies. We disclaim any and all rights involved with those marks.

1. REPLACEMENT AND ADJUSTMENT

1.1 COVERS

1.1.1 COVERS, TRAY

1. Open the feed cover [A].
2. Before you remove upper front cover [B], remove screws [C].
3. Remove:
   [D] Rear upper cover
   [E] Slip sheet tray
   [F] Rear middle cover



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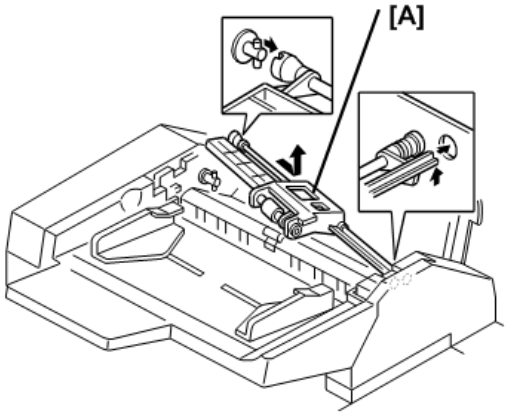
1.2 FEED UNIT

1.2.1 FEED UNIT AND PICK-UP ROLLER

1. Open the feed cover.
2. Push the feed unit [A] slightly to the right, and then remove it.



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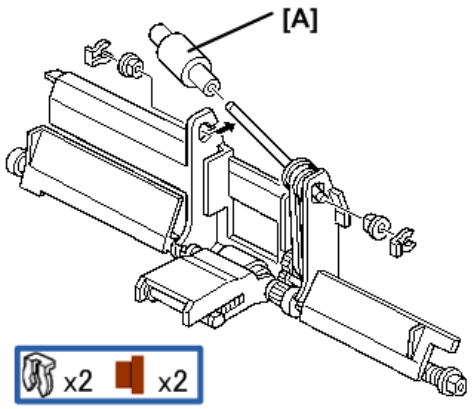
3. Remove pick-up roller [A].



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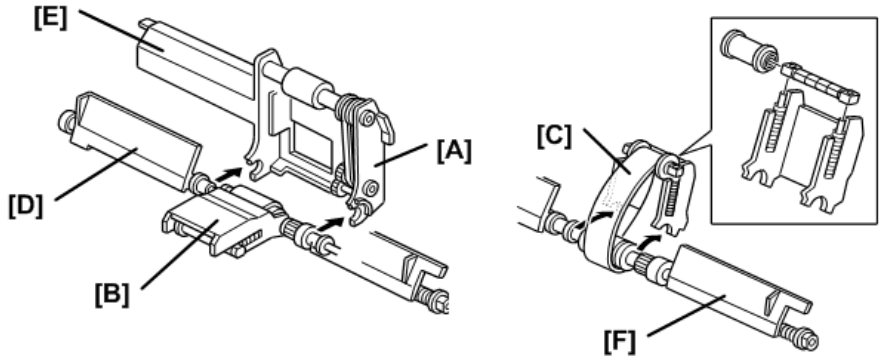
1.2.2 FEED BELT

1. Remove the feed unit. See above.
2. Pull the unit away from the bushings in the direction of the arrow, and then remoe the pick-up roller unit [A].
3. Hold the feed belt holder [B] by the sides, and then lift it up to separate the holder, while pulling slowly to avoid losing the springs.
4. Remove feed belt [C].



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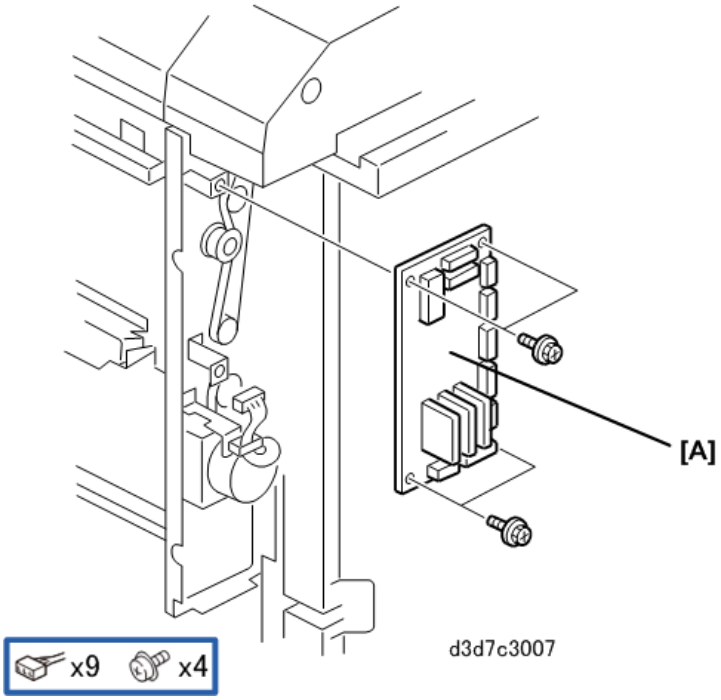
Re-assembly

1. Position the pick-up roller unit [A] and feed belt holder [B] as shown above.
2. On the rear side, slide out the bushing, and rotate [D] until its flat side is parallel with [E], then snap it on.
3. On the front side, rotate [F] until its flat side is parallel with [D], then snap it on. Viewed from the bottom, the plates must be aligned.

1.3 MAIN BOARD

1.3.1 MAIN BOARD REMOVAL

1. Open the top cover.
2. Remove the rear cover. page 1
3. Remove main board [A].

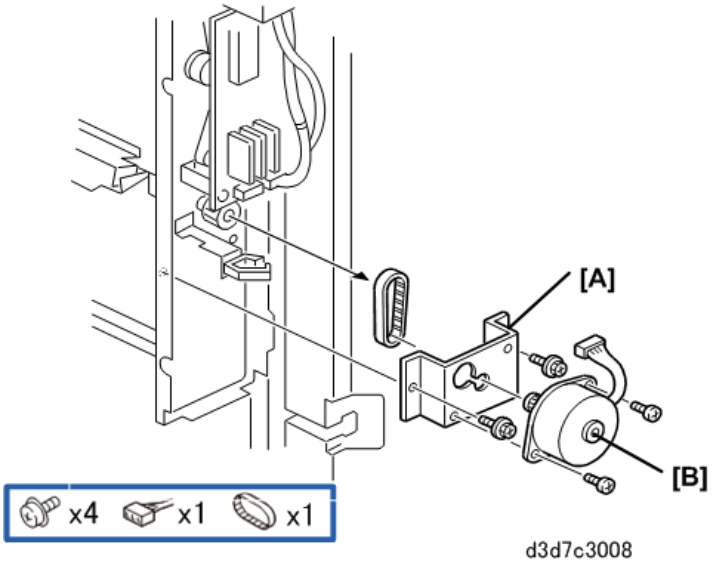


4. Check the DIP switches on the new board before you install it.
5. All DIP switch settings on the main board of the cover sheet unit must be **OFF**.

1.4 MOTORS

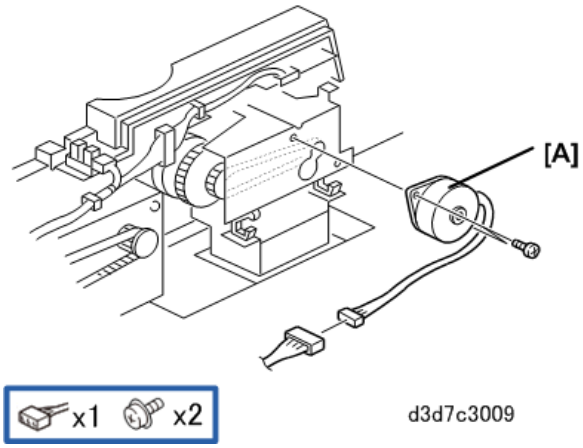
1.4.1 VERTICAL TRANSPORT MOTOR

1. Open the top cover.
2. Remove the rear middle cover. page 1
3. Remove motor bracket [A] with the motor attached.
4. Remove motor [B] from the bracket.



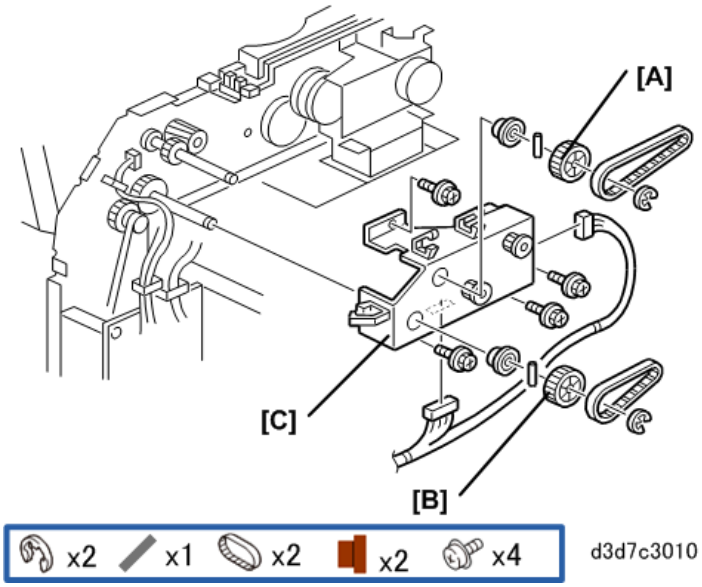
1.4.2 BOTTOM PLATE LIFT MOTOR

1. Remove rear upper cover. page 1
2. Remove bottom plate lift motor [A].

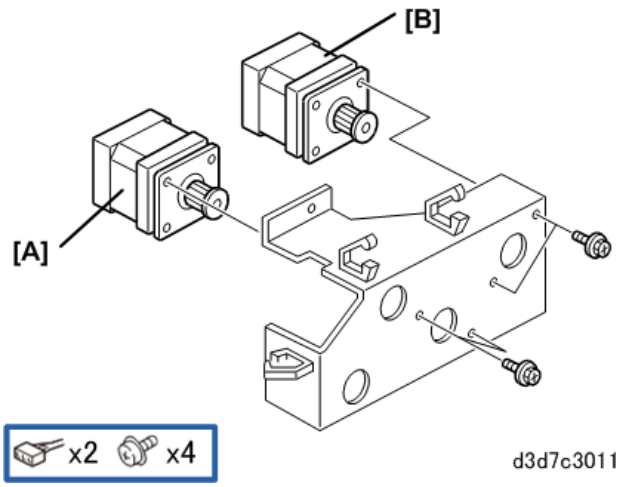


1.4.3 FEED MOTOR, TRANSPORT MOTOR

1. Remove rear upper cover. page 1
2. When removing the feed gear [A] and transport gear [B], hold one hand under the gear to catch the pin as it falls from the hole in the shaft.
3. Remove:
   [A] Feed gear
   [B] Transport gear
   [C] Motor bracket



4. Remove:
   [A] Feed motor
   [B]Transport motor



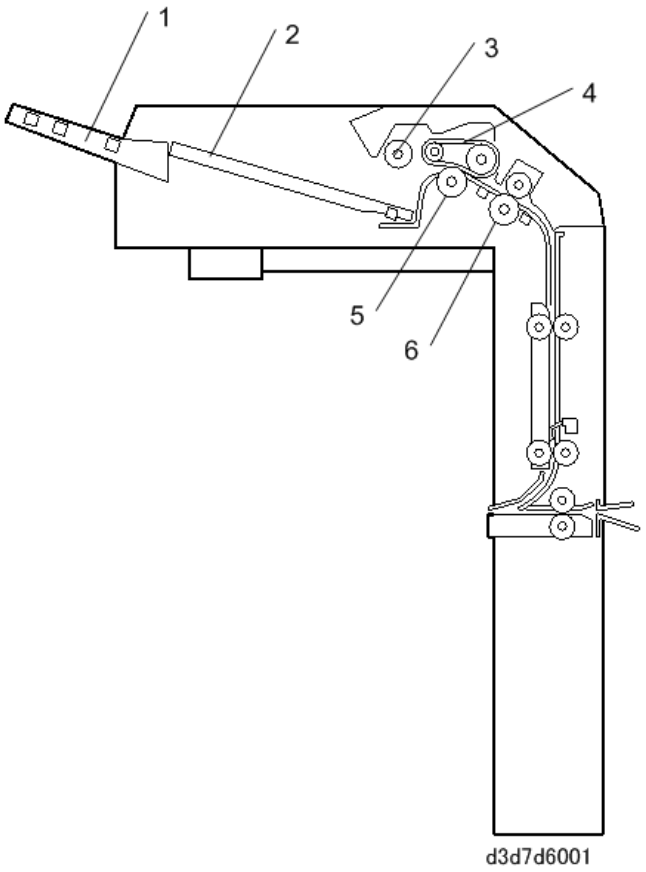
2. DETAILED DESCRIPTIONS

2.1 OVERVIEW

2.1.1 SPECIFICATIONS

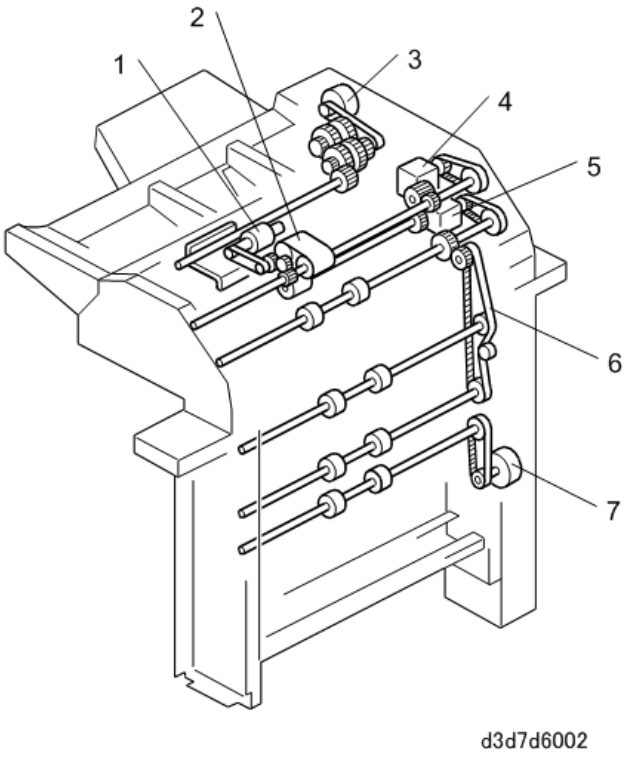
Configuration	Stack cover inserter for finisher
Paper Separation at Feed	Standard FRR
Feed Mechanism	Feed Rollers
Paper Weight	64 to 216 g/m^2
Paper Size	A3 SEF, B4 SEF, A4 LEF/SEF, B5 LEF/SEF, A5 LEF/SEF, 11×17 SEF, $8^1/_2$"×11 LEF/SEF
Allowed Curl	H: Less than 5 mm
Stack Size	200 sheets
Paper Detection	None
Power Consumption	Less than 43W
Power Supply	Main Machine
Dimension (W x D x H)	500×600×600 mm (20 x 23.5 x 23.5 in.)
Weight	12 kg (35.2 lb.)

2.1.2 MAIN LAYOUT



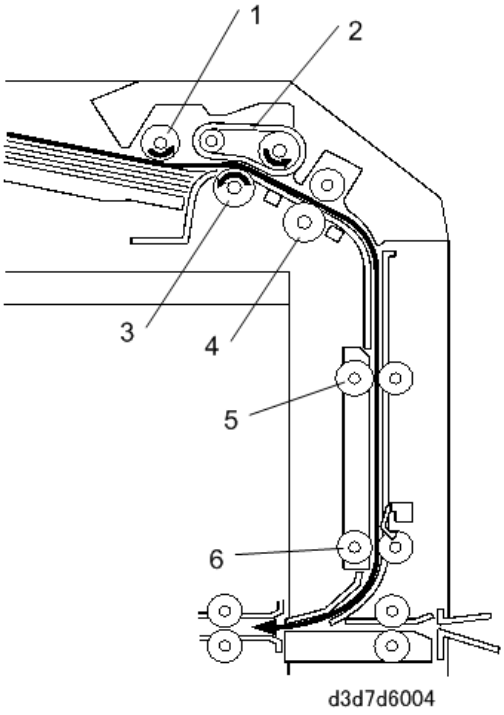
No.	Part
1	Support tray
2	Slip sheet tray
3	Pick-up roller
4	Feed belt
5	Separation roller
6	Grip roller

2.1.3 DRIVE LAYOUT



No.	Part
1	Pick-up Roller
2	Feed Belt
3	Bottom Plate Lift Motor
4	Feed Motor
5	Transport Motor
6.	Timing Belt
7.	Vertical Transport Motor

2.1.4 PAPER PATH



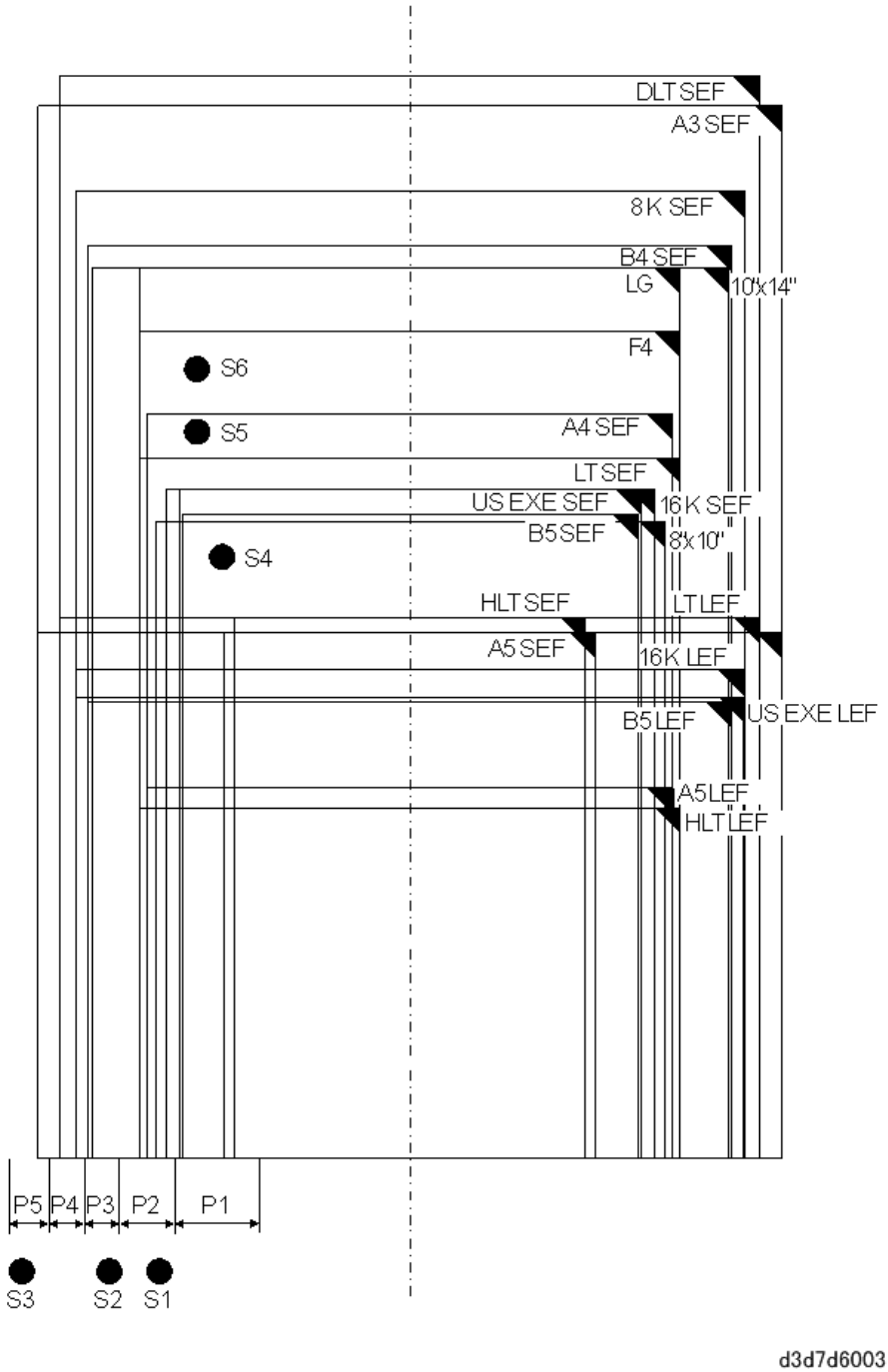
No.	Part
1	Pick-up Roller
2	Feed Belt
3	Separation Roller
4	Grip Roller
5	Transport Roller 1
6	Transport Roller 2

The paper feeds from the tray, to the feed belt, then to the grip roller and down into the paper path to the finisher below.

2.2 MECHANISMS

2.2.1 PAPER SIZE DETECTION

The width sensors [A] (S1, S2, S3) and length sensors [B] (S4, S5, S6) detect the width and length of the original on the interposer feed tray.



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The table below lists the sensor output for each paper size.

	S1	S2	S3	S4	S5	S6
A3	0	1	1	1	1	1
B4	1	1	0	1	1	1
A4 SEF	1	0	0	1	1	0
A4 LEF	0	1	1	0	0	0
B5 SEF	0	0	0	1	0	0
B5 LEF	1	1	0	0	0	0
A5 SEF	0	0	0	0	0	0
A5 LEF	1	0	0	0	0	0
11" x 17"	1	1	1	1	1	1
10" x 14" SEF	1	1	0	1	1	1
81/2" x 14"	1	0	0	1	1	1
81/2" x 13"	1	0	0	1	1	1
81/2" x 11"	1	0	0	1	0	0
11" x 81/2"	1	1	1	0	0	0
8" x 10"	1	0	0	1	0	0
51/2" x 81/2"	0	0	0	0	0	0
81/2" x 51/2"	1	0	0	0	0	0
71/2" x 101/2" (US Exec.)	0	0	0	1	0	0
101/2" x 71/2" (US Exec.)	1	1	1	0	0	0
8 K	1	1	1	1	1	1
16 K SEF	1	0	0	1	0	0
16 K LEF	1	1	1	0	0	0

The cover interposer tray detects all the paper sizes listed above. However, there are some limitations on the display of the correct paper size.

		North America	Europe/Asia
B4 SEF	257 x 364 mm	Displays 10”x14 *1	
B5 SEF	182 x 257	Displays “US Exec.” *1	
A5 SEF	148 x 210	Displays “HLT SEF” *1	
A5 LEF	210 x 148	Displays “HLT LEF” *1	
DLT SEF	11" x 17"		Displays “8K LEF” *2
LG SEF	81/2" x 14"		Displays “F4 SEF” *2
LT SEF	81/2" x 11"		Displays “16 K SEF” *2
LT LEF	11" x 81/2"		Displays “16 K LEF” *2

*1:Cannot be corrected.

*2:Can be corrected with SP5158

North America

Execute **SP5959 006** and enter the correct number for the size of the paper loaded for feeding from the cover interposer tray.

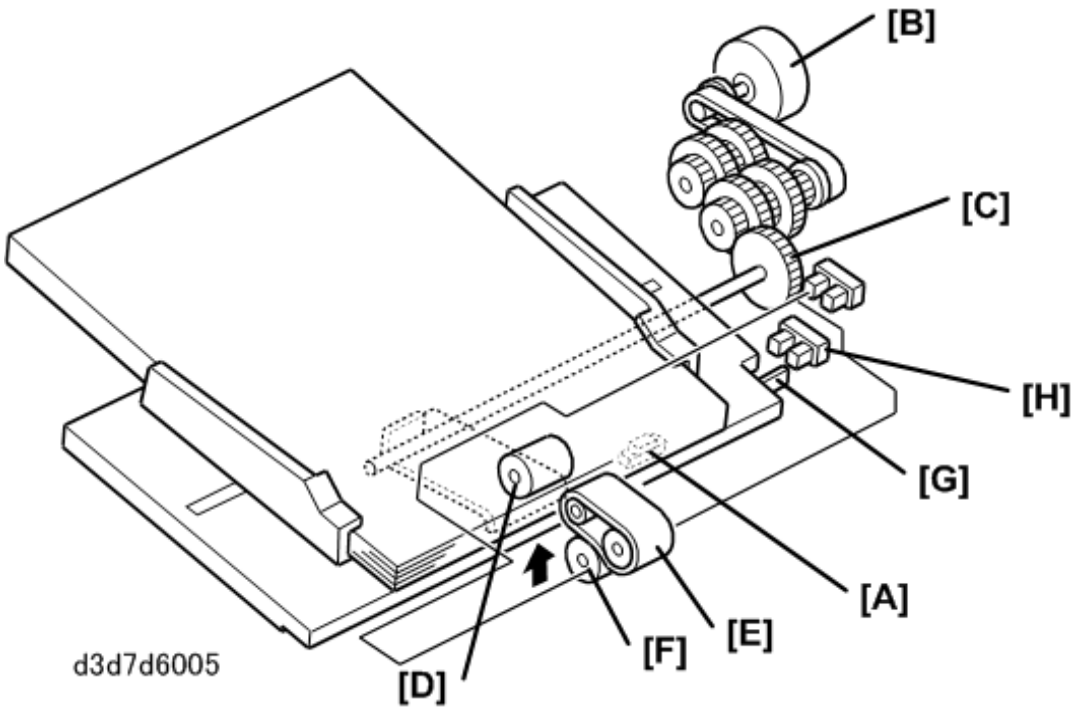
Loaded	Display (Default)	To Select for Display	Enter
81/2" x 13"	81/2" x 14"	81/2" x 13"	165
101/2" x 71/2"	81/2" x 11"	101/2" x 71/2"	173
8" x 10"	81/2" x 11"	8" x 10"	171

Europe/Asia

Execute SP5959 006 and enter the correct number for the size of the paper loaded for feeding from the cover interposer tray.

Loaded	Display (Default)	To Select for Display	Enter
11" x 17"	8 K	11" x 17"	160
81/2" x 11"	16 K SEF	81/2" x 11"	166
11" x 81/2"	16 K LEF	11" x 81/2"	38
81/4" x 13"	81/2" x 13" SEF	81/4" x 13"	168

2.2.2 PAPER FEED



Power On

When paper is placed on the tray, the paper set sensor [A] in the tray actuates and switches on the bottom plate lift motor [B]. The top of the stack raises the pick-up roller unit until the actuator on this unit actuates the pick-up roller position sensor [C] and switches the motor off.

Paper Separation and Feed

The pick-up roller [D] picks up the original, and the feed belt [E] feeds the sheet to the grip roller. The separation roller [F] reverses if more than one sheet is fed

Bottom Tray Lift

As sheets feed from the top of the stack:

- The pick-up roller unit descends until the actuator on the pick-up roller unit drops out of the pick-up roller position sensor [C].
- The bottom plate lift motor switches on to raise the stack until the actuator enters the pick-up roller unit position sensor again and switches the motor off.
- This repeats until the end of the job or until paper runs out.

Paper Near-end

Near-end is detected when the actuator [G] on the bottom plate enters the near-end sensor [H].

Paper End

After the last sheet feeds the paper set sensor [A] goes off and signals paper out.

D482

A3/11" X 17" TRAY TYPE 9001

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
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A3/11" X 17" TRAY TYPE 9001 (D482)

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READ THIS FIRST

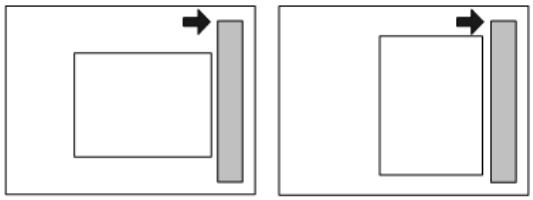
Safety, Conventions, Trademarks

Conventions

Common Terms

This is a list of symbols and abbreviations used in this manual.

Symbol, Abbreviation	Meaning
	Blue screw
	Bushing
	C-ring
	Connector
	E-ring
	Flexible film cable
	Harness clamp
	Hook
	Screw
	Spring
	Timing belt
JG	Junction Gate
LEF	Long Edge Feed
SEF	Short Edge Feed
TE	Trailing Edge of paper



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Warnings, Cautions, Notes

In this manual, the following important symbols and notations are used.

⚠WARNING

- A Warning indicates a potentially hazardous situation. Failure to obey a Warning could result in death or serious injury.

⚠CAUTION

- A Caution indicates a potentially hazardous situation. Failure to obey a Caution could result in minor or moderate injury or damage to the finisher or other property.

Important

- Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine.

Note

- This information provides tips and advice about how to best service the machine.

General Safety Instructions

For your safety, please read this manual carefully before you use this product. Keep this manual handy for future reference.

Safety Information

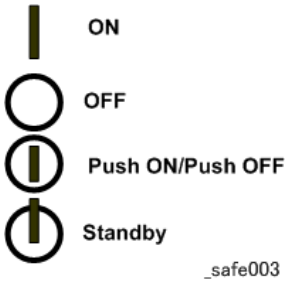
Always obey the following safety precautions when using this product.

Safety During Operation

In this manual, the following important symbols and notations are used.

Switches and Symbols

Where symbols are used on or near switches on machines for Europe and other areas, the meaning of each symbol conforms with IEC60417.



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Responsibilities of the Customer Engineer

Reference Material for Maintenance

- Maintenance shall be done using the special tools and procedures prescribed for maintenance of the machine described in the reference materials (service manuals, technical bulletins, operating instructions, and safety guidelines for customer engineers).
- In regard to other safety issues not described in this document, all customer engineers shall strictly obey procedures and recommendations described the “CE Safety Guide”.
- Use only consumable supplies and replacement parts designed for use of the machine.

Before Installation, Maintenance

Power

⚠WARNING

- Always disconnect the power plug before doing any maintenance procedure. After switching off the machine, power is still supplied to the main machine and other devices. To prevent electrical shock, switch the machine off, wait for a few seconds, then unplug the machine from the power source.
- Before you do any checks or adjustments after turning the machine off, work carefully to avoid injury. After removing covers or opening the machine to do checks or adjustments, never touch electrical components or moving parts (gears, timing belts, etc.).
- After turning the machine on with any cover removed, keep your hands away from electrical components and moving parts. Never touch the cover of the fusing unit, gears, timing belts, etc.

Installation, Disassembly, and Adjustments

⚠WARNING

- After installation, maintenance, or adjustment, always check the operation of the machine to make sure that it is operating normally. This ensures that all shipping materials, protective materials, wires and tags, metal brackets, etc., removed for installation, have been removed and that no tools remain inside the machine. This also ensures that all release interlock switches have been restored to normal operation.
- Never use your fingers to check moving parts causing spurious noise. Never use your fingers to lubricate moving parts while the machine is operating.

Special Tools

⚠CAUTION

- Use only standard tools approved for machine maintenance.
- For special adjustments, use only the special tools and lubricants described in the service manual. Using tools incorrectly, or using tools that could damage parts, could damage the machine or cause injuries.

During Maintenance

General

⚠CAUTION

- Before you begin a maintenance procedure: 1) Switch the machine off, 2) Disconnect the power plug from the power source, 3) Allow the machine to cool for at least 10 minutes.
- Avoid touching the components inside the machine that are labeled as hot surfaces.

Safety Devices

⚠WARNING

- Never remove any safety device unless it requires replacement. Always replace safety devices immediately.
- Never do any procedure that defeats the function of any safety device. Modification or removal of a safety device (fuse, switch, etc.) could lead to a fire and personal injury. Always test the operation of the machine to ensure that it is operating normally and safely after removal and replacement of any safety device.
- For replacements use only the correct fuses or circuit breakers rated for use with the machine. Using replacement devices not designed for use with the machine could lead to a fire and personal injuries.

Organic Cleaners

⚠CAUTION

- During preventive maintenance, never use any organic cleaners (alcohol, etc.) other than those described in the service manual.
- Make sure the room is well ventilated before using any organic cleaner. Use organic solvents in small amounts to avoid breathing the fumes and becoming nauseous.
- Switch the machine off, unplug it, and allow it to cool before doing preventive maintenance. To avoid fire or explosion, never use an organic cleaner near any part that generates heat.
- Wash your hands thoroughly after cleaning parts with an organic cleaner to contamination of food, drinks, etc. which could cause illness.
- Clean the floor completely after accidental spillage of silicone oil or other materials to prevent slippery surfaces that could cause accidents leading to hand or leg injuries. Use

“My Ace” Silicone Oil Remover (or dry rags) to soak up spills. For more details, please refer to Technical Bulletin “Silicone Oil Removal” (A024-50).

Ozone Filters

⚠CAUTION

- Always replace ozone filters as soon as their service life expires (as described in the service manual).
- An excessive amount of ozone can build up around machines that use ozone filters if they are not replaced at the prescribed time. Excessive ozone could cause personnel working around the machine to feel unwell.

Power Plug and Power Cord

⚠WARNING

- Before servicing the machine (especially when responding to a service call), always make sure that the power plug has been inserted completely into the power source. A partially inserted plug could lead to heat generation (due to a power surge caused by high resistance) and cause a fire or other problems.
- Always check the power plug and make sure that it is free of dust and lint. Clean it if necessary. A dirty plug can generate heat which could cause a fire.
- Inspect the length of the power cord for cuts or other damage. Replace the power cord if necessary. A frayed or otherwise damaged power cord can cause a short circuit which could lead to a fire or personal injury from electrical shock.
- Check the length of the power cord between the machine and power supply. Make sure the power cord is not coiled or wrapped around any object such as a table leg. Coiling the power cord can cause excessive heat to build up and could cause a fire.
- Make sure that the area around the power source is free of obstacles so the power cord can be removed quickly in case of an emergency.
- Make sure that the power cord is grounded (earthed) at the power source with the ground wire on the plug.
- Connect the power cord directly into the power source. Never use an extension cord.
- When you disconnect the power plug from the power source, always pull on the plug, not the cable.

After Installation, Servicing

Disposal of Used Items

⚠CAUTION

- Always dispose of used items (developer, toner, toner cartridges, OPC drums, etc.) in accordance with the local laws and regulations regarding the disposal of such items.
- To protect the environment, never dispose of this product or any kind of waste from consumables at a household waste collection point. Dispose of these items at one of our dealers or at an authorized collection site.

Points to Confirm with Operators

At the end of installation or a service call, instruct the user about use of the machine. Emphasize the following points.

- Show operators how to remove jammed paper and troubleshoot other minor problems by following the procedures described in the operating instructions.
- Point out the parts inside the machine that they should never touch or attempt to remove.
- Confirm that operators know how to store and dispose of consumables.
- Make sure that all operators have access to an operating instruction manual for the machine.
- Confirm that operators have read and understand all the safety instructions described in the operating instructions.
- Demonstrate how to turn off the power and disconnect the power plug (by pulling the plug, not the cord) if any of the following events occur: 1) something has spilled into the product, 2) service or repair of the product is necessary, 3) the product cover has been damaged.
- Caution operators about removing paper fasteners around the machine. They should never allow paper clips, staples, or any other small metallic objects to fall into the machine.

Safety Instructions for this Machine

1. The installation must be done by trained service technicians.
2. This machine weighs 92 kg. (202.9 lb.). At least four persons are required to remove the machine from its pallet and position it for installation.
3. To prevent fire hazards never use flammable solvents around the machine.
4. Never place any object on the machine.
5. If anything falls into the machine, turn off the main power switch on the right side of the machine, then disconnect the power cord from the power source.
6. Locate the machine on a sturdy flat surface where it will not be exposed to excessive vibration.
7. To avoid fire hazard, confirm that the ventilation ports are not blocked, so air can flow freely.
8. Gas generated by the molten glue can irritate the eyes, throat, and nose. The machine should always be used in a well ventilated room.
9. To avoid the dangers of fire and electrical shock, make sure that the machine is never

exposed to:

- Excessive high temperatures and/or humidity
- Dust
- Water
- Direct sunlight
- Open flame
- Corrosive gases

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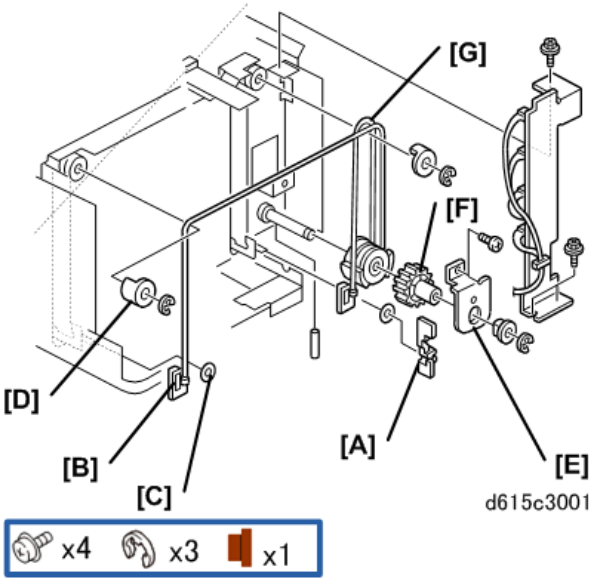
1. REPLACEMENT AND ADJUSTMENT

1.1 LIFT WIRE REPLACEMENT

1.1.1 REMOVING THE LIFT WIRE

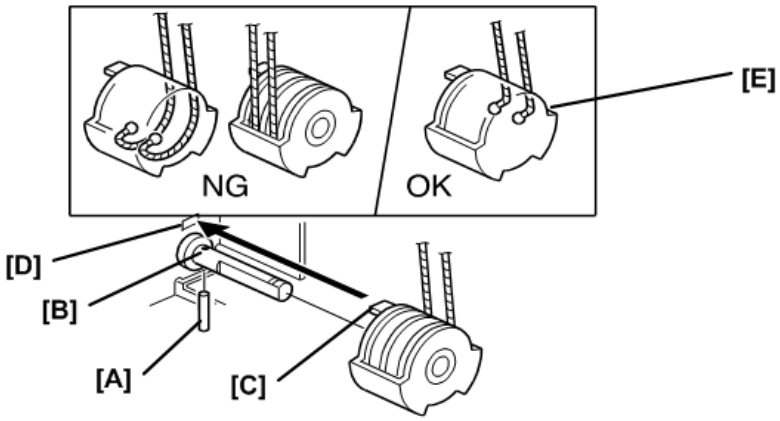
The procedures for front and rear wire removal are the same.

1. Remove the A3/DLT tray from the machine.
2. Remove inner cover (x2)
3. Remove in this order:
   [A] Sensor bracket
   [B] Wire stoppers
   [C] Wire stopper rings
   [D] Wire covers x 2
   [E] Bracket
   [F] Gear
   [G] Bottom plate lift wire



Installing the Lift Wire

1. Put the positioning pin [A] in hole [B]
2. Fit the projection [C] into slot [D].
3. Attach the wire as shown [E].
4. Make sure that the wires are not crossed.



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2. DETAILED DESCRIPTIONS

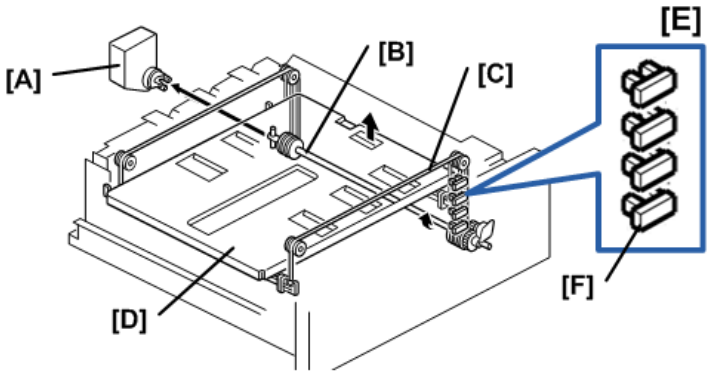
2.1 MECHANISM

2.1.1 SPECIFICATIONS

Paper Size	A3, B4, 11" x 17", 8.5" x 14", A4 SEF, A4 LEF, 8.5" x 11" SEF, 11" x 8.5" LEF
Paper Weight	52 to 163 g/m^2 16 to 40 lb. Bond 50 to 60 lb. Cover 90 lb. Index (no Tab)
Tray Capacity	1,000 sheets (80 g/m^2, 20lb)

2.1.2 MAIN MECHANISM

1. Lift motor [A] drives shaft and pulleys [B] which operate the tray wires [C] that raise the tray bottom plate [D].
2. An array of four paper height sensors [E] provides paper supply detection.
3. As each sensor is actuated, a message (percent of paper remaining) tells the operator how much paper remains.
4. When the bottom sensor [F] of the four sensors is actuated, the paper end message is displayed.



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D610

FINISHER SR4080

REVISION HISTORY		
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FINISHER SR4080
(D610)

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READ THIS FIRST

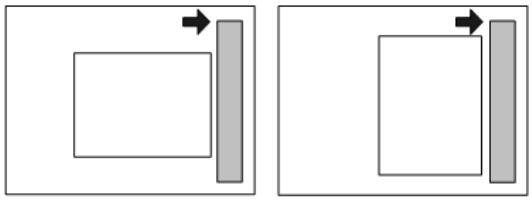
Safety, Conventions, Trademarks

Conventions

Common Terms

This is a list of symbols and abbreviations used in this manual.

Symbol, Abbreviation	Meaning
	Blue screw
	Bushing
	C-ring
	Connector
	E-ring
	Flexible film cable
	Harness clamp
	Hook
	Screw
	Spring
	Timing belt
JG	Junction Gate
LEF	Long Edge Feed
SEF	Short Edge Feed
TE	Trailing Edge of paper



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Warnings, Cautions, Notes

In this manual, the following important symbols and notations are used.

⚠WARNING

- A Warning indicates a potentially hazardous situation. Failure to obey a Warning could result in death or serious injury.

⚠CAUTION

- A Caution indicates a potentially hazardous situation. Failure to obey a Caution could result in minor or moderate injury or damage to the finisher or other property.

Important

- Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine.

Note

- This information provides tips and advice about how to best service the machine.

General Safety Instructions

For your safety, please read this manual carefully before you use this product. Keep this manual handy for future reference.

Safety Information

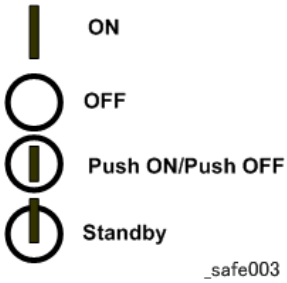
Always obey the following safety precautions when using this product.

Safety During Operation

In this manual, the following important symbols and notations are used.

Switches and Symbols

Where symbols are used on or near switches on machines for Europe and other areas, the meaning of each symbol conforms with IEC60417.



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Responsibilities of the Customer Engineer

Reference Material for Maintenance

- Maintenance shall be done using the special tools and procedures prescribed for maintenance of the machine described in the reference materials (service manuals, technical bulletins, operating instructions, and safety guidelines for customer engineers).
- In regard to other safety issues not described in this document, all customer engineers shall strictly obey procedures and recommendations described the “CE Safety Guide”.
- Use only consumable supplies and replacement parts designed for use of the machine.

Before Installation, Maintenance

Power

⚠WARNING

- Always disconnect the power plug before doing any maintenance procedure. After switching off the machine, power is still supplied to the main machine and other devices. To prevent electrical shock, switch the machine off, wait for a few seconds, then unplug the machine from the power source.
- Before you do any checks or adjustments after turning the machine off, work carefully to avoid injury. After removing covers or opening the machine to do checks or adjustments, never touch electrical components or moving parts (gears, timing belts, etc.).
- After turning the machine on with any cover removed, keep your hands away from electrical components and moving parts. Never touch the cover of the fusing unit, gears, timing belts, etc.

Installation, Disassembly, and Adjustments

⚠WARNING

- After installation, maintenance, or adjustment, always check the operation of the machine to make sure that it is operating normally. This ensures that all shipping materials, protective materials, wires and tags, metal brackets, etc., removed for installation, have been removed and that no tools remain inside the machine. This also ensures that all release interlock switches have been restored to normal operation.
- Never use your fingers to check moving parts causing spurious noise. Never use your fingers to lubricate moving parts while the machine is operating.

Special Tools

⚠CAUTION

- Use only standard tools approved for machine maintenance.
- For special adjustments, use only the special tools and lubricants described in the service manual. Using tools incorrectly, or using tools that could damage parts, could damage the machine or cause injuries.

During Maintenance

General

⚠CAUTION

- Before you begin a maintenance procedure: 1) Switch the machine off, 2) Disconnect the power plug from the power source, 3) Allow the machine to cool for at least 10 minutes.
- Avoid touching the components inside the machine that are labeled as hot surfaces.

Safety Devices

⚠WARNING

- Never remove any safety device unless it requires replacement. Always replace safety devices immediately.
- Never do any procedure that defeats the function of any safety device. Modification or removal of a safety device (fuse, switch, etc.) could lead to a fire and personal injury. Always test the operation of the machine to ensure that it is operating normally and safely after removal and replacement of any safety device.
- For replacements use only the correct fuses or circuit breakers rated for use with the machine. Using replacement devices not designed for use with the machine could lead to a fire and personal injuries.

Organic Cleaners

⚠CAUTION

- During preventive maintenance, never use any organic cleaners (alcohol, etc.) other than those described in the service manual.
- Make sure the room is well ventilated before using any organic cleaner. Use organic solvents in small amounts to avoid breathing the fumes and becoming nauseous.
- Switch the machine off, unplug it, and allow it to cool before doing preventive maintenance. To avoid fire or explosion, never use an organic cleaner near any part that generates heat.
- Wash your hands thoroughly after cleaning parts with an organic cleaner to contamination of food, drinks, etc. which could cause illness.
- Clean the floor completely after accidental spillage of silicone oil or other materials to prevent slippery surfaces that could cause accidents leading to hand or leg injuries. Use

“My Ace” Silicone Oil Remover (or dry rags) to soak up spills. For more details, please refer to Technical Bulletin “Silicone Oil Removal” (A024-50).

Ozone Filters

⚠CAUTION

- Always replace ozone filters as soon as their service life expires (as described in the service manual).
- An excessive amount of ozone can build up around machines that use ozone filters if they are not replaced at the prescribed time. Excessive ozone could cause personnel working around the machine to feel unwell.

Power Plug and Power Cord

⚠WARNING

- Before servicing the machine (especially when responding to a service call), always make sure that the power plug has been inserted completely into the power source. A partially inserted plug could lead to heat generation (due to a power surge caused by high resistance) and cause a fire or other problems.
- Always check the power plug and make sure that it is free of dust and lint. Clean it if necessary. A dirty plug can generate heat which could cause a fire.
- Inspect the length of the power cord for cuts or other damage. Replace the power cord if necessary. A frayed or otherwise damaged power cord can cause a short circuit which could lead to a fire or personal injury from electrical shock.
- Check the length of the power cord between the machine and power supply. Make sure the power cord is not coiled or wrapped around any object such as a table leg. Coiling the power cord can cause excessive heat to build up and could cause a fire.
- Make sure that the area around the power source is free of obstacles so the power cord can be removed quickly in case of an emergency.
- Make sure that the power cord is grounded (earthed) at the power source with the ground wire on the plug.
- Connect the power cord directly into the power source. Never use an extension cord.
- When you disconnect the power plug from the power source, always pull on the plug, not the cable.

After Installation, Servicing

Disposal of Used Items

⚠CAUTION

- Always dispose of used items (developer, toner, toner cartridges, OPC drums, etc.) in accordance with the local laws and regulations regarding the disposal of such items.
- To protect the environment, never dispose of this product or any kind of waste from consumables at a household waste collection point. Dispose of these items at one of our dealers or at an authorized collection site.

Points to Confirm with Operators

At the end of installation or a service call, instruct the user about use of the machine. Emphasize the following points.

- Show operators how to remove jammed paper and troubleshoot other minor problems by following the procedures described in the operating instructions.
- Point out the parts inside the machine that they should never touch or attempt to remove.
- Confirm that operators know how to store and dispose of consumables.
- Make sure that all operators have access to an operating instruction manual for the machine.
- Confirm that operators have read and understand all the safety instructions described in the operating instructions.
- Demonstrate how to turn off the power and disconnect the power plug (by pulling the plug, not the cord) if any of the following events occur: 1) something has spilled into the product, 2) service or repair of the product is necessary, 3) the product cover has been damaged.
- Caution operators about removing paper fasteners around the machine. They should never allow paper clips, staples, or any other small metallic objects to fall into the machine.

Safety Instructions for this Machine

1. The installation must be done by trained service technicians.
2. This machine weighs 92 kg. (202.9 lb.). At least four persons are required to remove the machine from its pallet and position it for installation.
3. To prevent fire hazards never use flammable solvents around the machine.
4. Never place any object on the machine.
5. If anything falls into the machine, turn off the main power switch on the right side of the machine, then disconnect the power cord from the power source.
6. Locate the machine on a sturdy flat surface where it will not be exposed to excessive vibration.
7. To avoid fire hazard, confirm that the ventilation ports are not blocked, so air can flow freely.
8. Gas generated by the molten glue can irritate the eyes, throat, and nose. The machine should always be used in a well ventilated room.
9. To avoid the dangers of fire and electrical shock, make sure that the machine is never

exposed to:

- Excessive high temperatures and/or humidity
- Dust
- Water
- Direct sunlight
- Open flame
- Corrosive gases

Trademarks

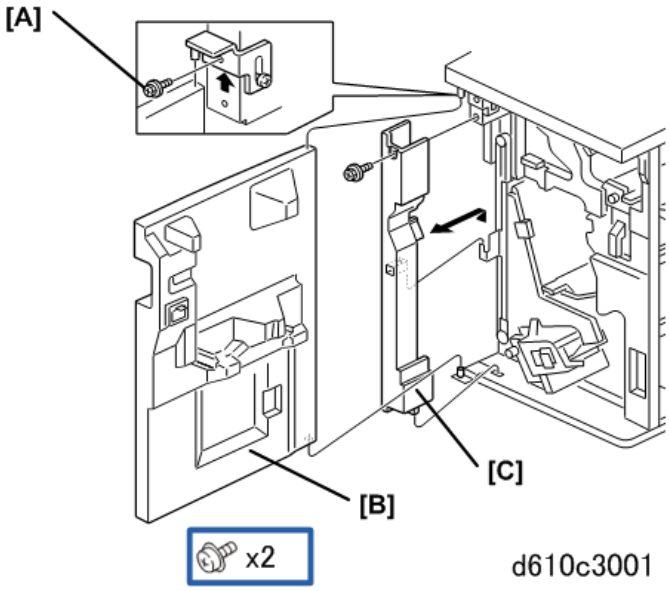
- Microsoft®, Windows®, and MS-DOS® are registered trademarks of Microsoft Corporation in the United States and /or other countries.
- PostScript® is a registered trademark of Adobe Systems, Incorporated.
- PCL® is a registered trademark of Hewlett-Packard Company.
- Ethernet® is a registered trademark of Xerox Corporation.
- PowerPC® is a registered trademark of International Business Machines Corporation.
- Other product names used herein are for identification purposes only and may be trademarks of their respective companies. We disclaim any and all rights involved with those marks.

1. REPLACEMENT AND ADJUSTMENT

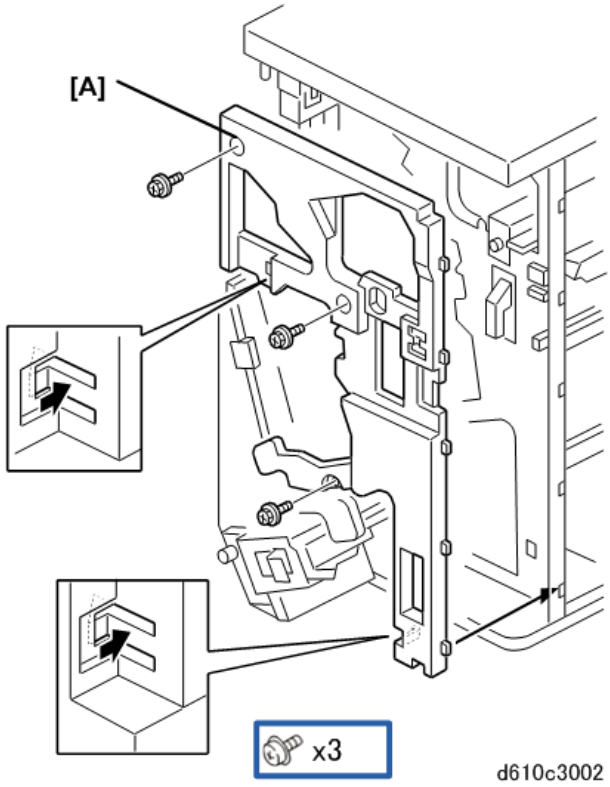
1.1 DOOR, COVERS, TRAYS

1.1.1 FRONT DOOR, LEFT INNER COVER, INNER COVER

1. Remove the front door screw [A].
2. Remove the front door [B].
3. Remove the front door.
4. Remove the left inner cover [C].

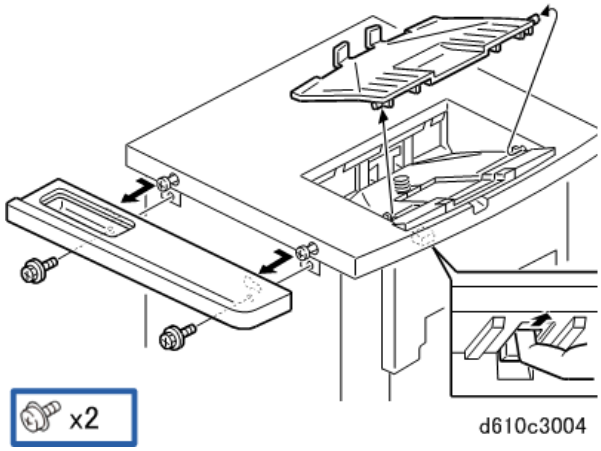


5. Remove the inner cover [A].



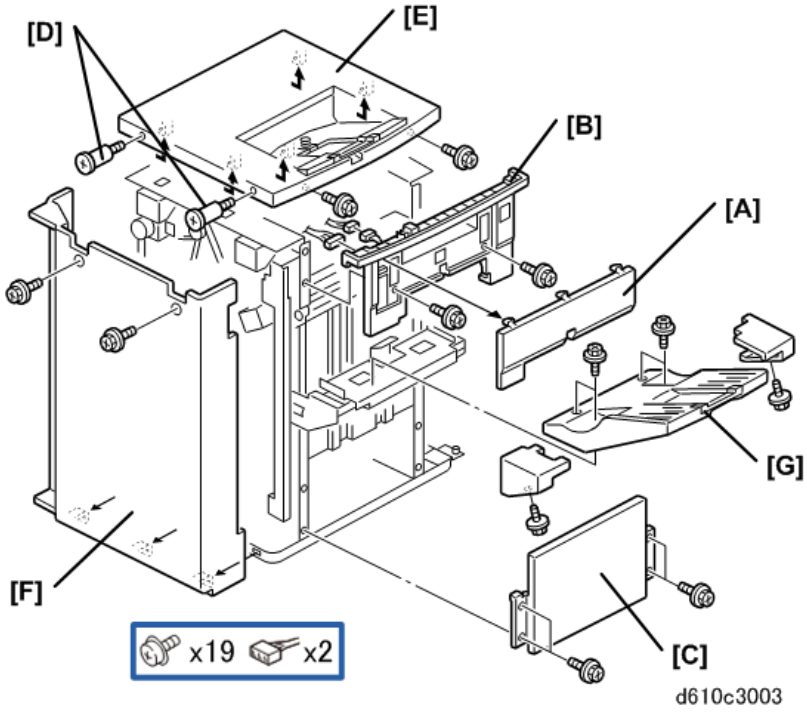
1.1.2 SIDE TABLE AND UPPER TRAY

1. Remove the side table [A]. Slide to the right to remove it.
2. Click the release lever [B] and remove the upper tray [C].



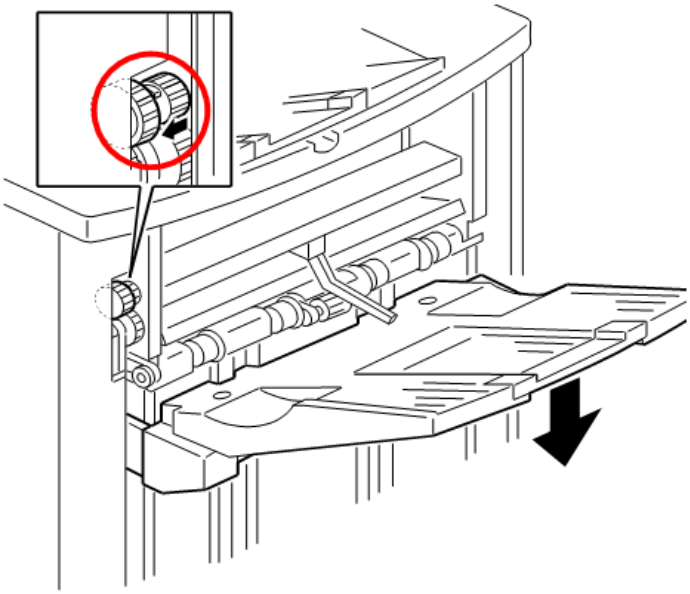
1.1.3 LEFT COVERS, REAR COVER, TOP COVER

1. Remove the left upper panel [A].
2. Remove the left upper cover [B].
3. Remove the door and left inner cover. page 1
4. Remove the rear cover [F].
5. Remove the left lower cover [C].
6. Remove the upper tray. page 2
7. Remove the step screws [D].
8. Remove the top cover [E]. Slide to the right to remove.
9. Remove the rear cover [F].



1.1.4 SHIFT TRAY

1. If you need to lower the shift tray, support the bottom of the tray with your hand, then pull the gear toward you to release the tray and lower it.
2. Remove the shift tray.
3. Remove the shift tray rear cover and front cover



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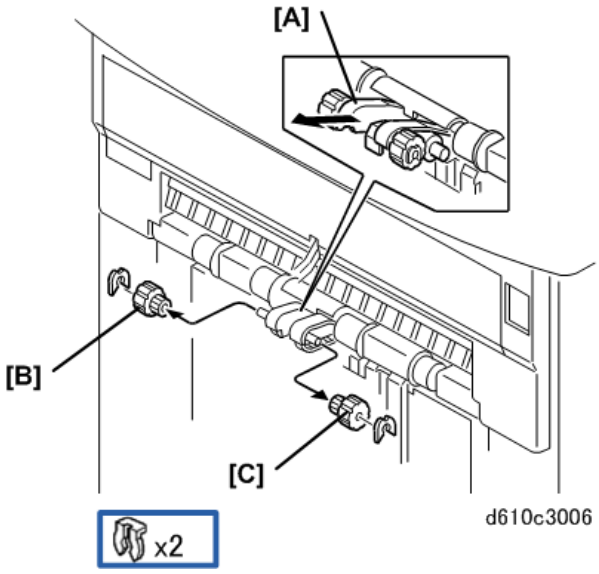
1.2 ROLLERS

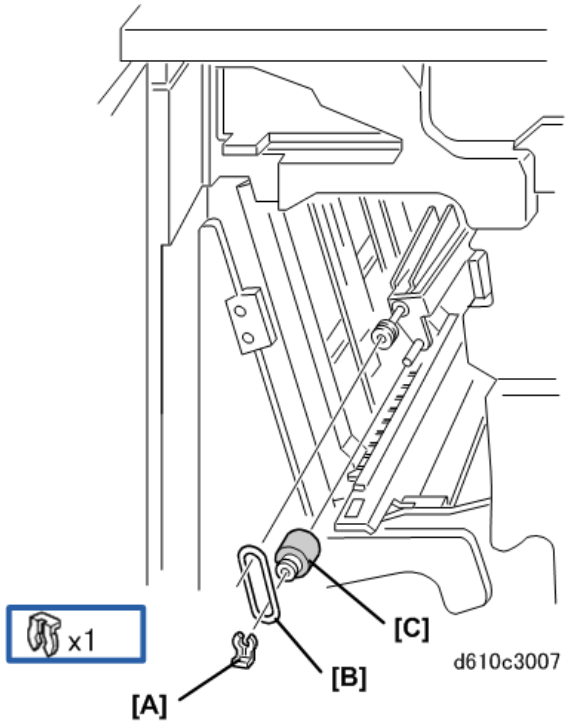
1.2.1 SHIFT POSITIONING ROLLER

1. Above the shift tray, pull the roller mount [A] out.
2. Remove the rollers [B] and [C].



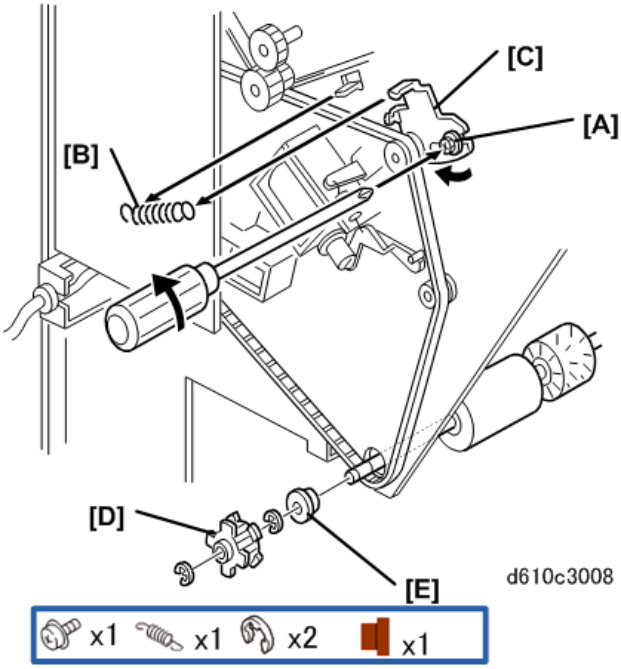
1.2.2 POSITIONING ROLLER

1. Open the front door.
2. Remove the snap ring [A].
3. Release the rubber belt [B].
4. Replace the positioning roller [C].

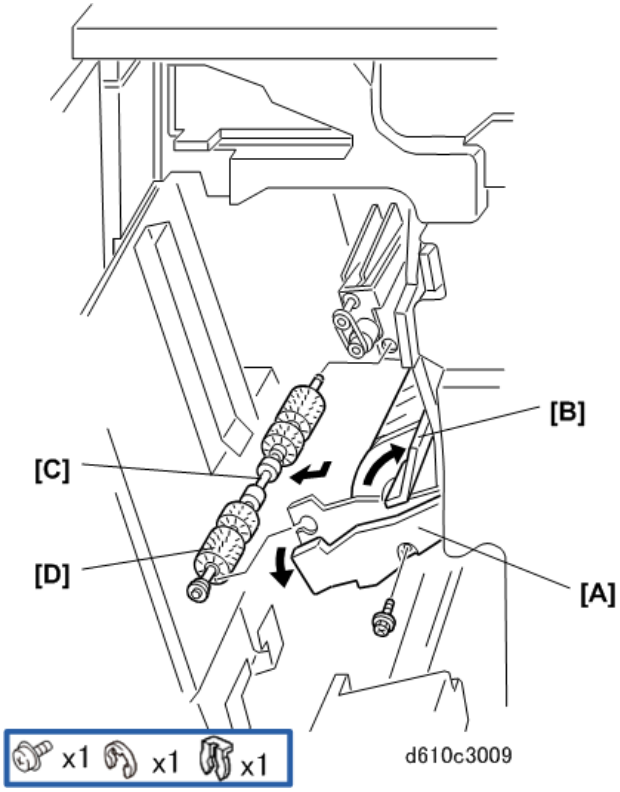


1.2.3 ALIGNMENT BRUSH ROLLER

1. Open the front door and pull out the staple unit.
2. Remove the rear cover.
3. Remove the main board and all connectors.
4. Remove the screw [A] and tension spring [B] for the tension bracket [C], and release the tension of the timing belt.
5. Remove the pulley [D] and bushing [E].



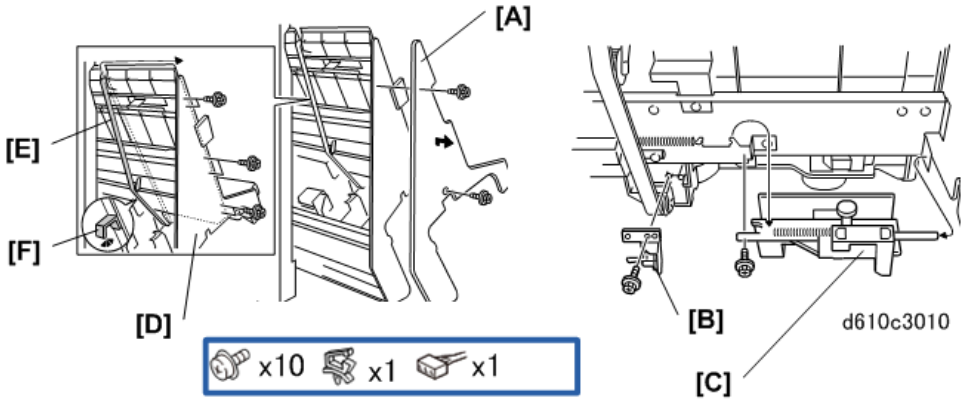
6. Remove the inner cover [A].
7. Open the guide [B], then remove the alignment brush roller assembly [C].
8. Remove the alignment brush roller [D].



1.3 STACK FEED-OUT BELT, JOGGER FENCE

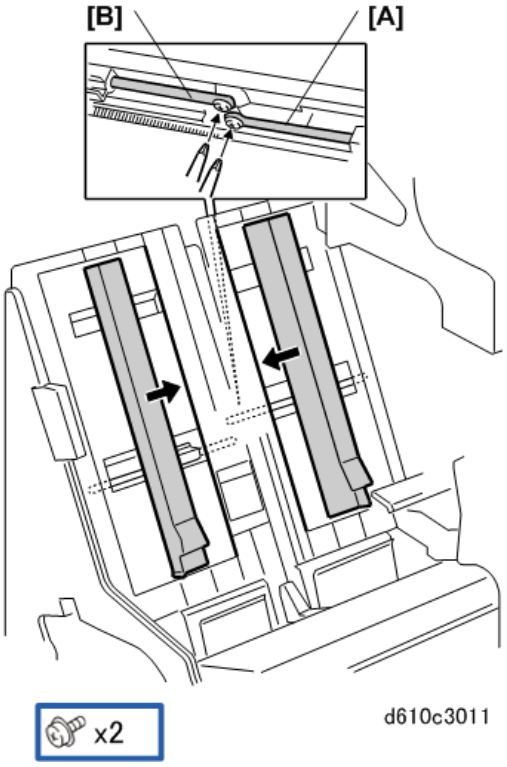
1.3.1 STACK FEED-OUT BELT

1. Open the front door.
2. Pull out the jogger and stapler unit.
3. Remove the inner cover [A].
4. Remove the sensor bracket [B].
5. Remove the front guide [C].
6. When re-installing, make sure that the flat end of the shaft is against the plate.
7. Remove the front panel [D] from the stays.
8. Remove the old belt [E] from the bottom, center, then the top.
9. Make sure the ribbed side of the new belt and pawl [F] are facing down.
10. Make sure the new belt is engaged at all three rollers.



1.3.2 JOGGER FENCE

1. Open the front door.
2. Pull out the jogger and stapler unit.
3. Push both fences to the center.
4. Remove the left jogger fence [A].
5. Remove the right jogger fence [B] .
6. If the screws are difficult to remove or re-attach, remove the jogger fence belt and spring plate.



1.4 SENSORS

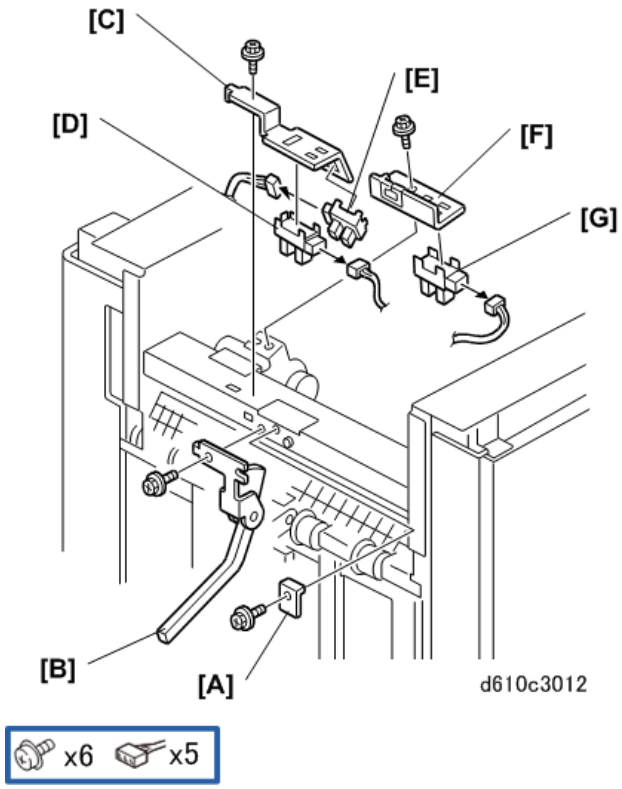
1.4.1 STACK HEIGHT 1 SENSORS, EXIT GUIDE OPEN SENSOR

Stack Height Sensors 1 and 2

1. Remove the top cover.
2. Remove the left upper panel and left upper cover.
3. Remove the protector plate [A].
4. Remove the sensor feeler [B].
5. Remove the sensor bracket [C].
6. Replace the stack height sensor 1 [D].
7. Replace the stack height sensor 2 [E].

Exit Guide Open Sensor

1. Remove the sensor bracket [F].
2. Replace the exit guide open sensor [G].



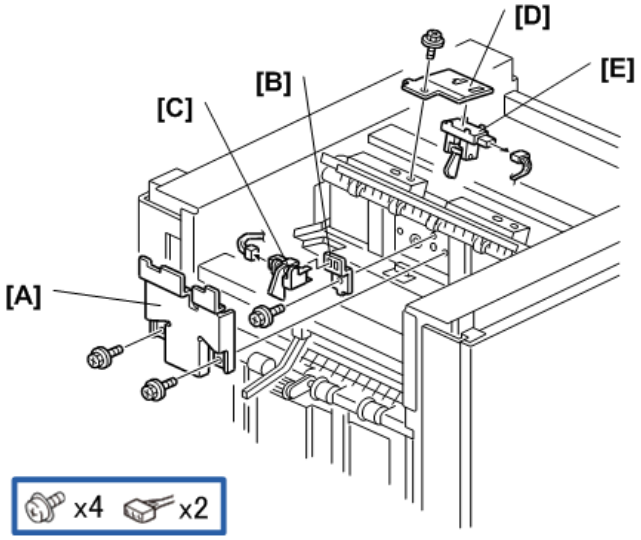
1.4.2 UPPER TRAY PAPER LIMIT AND EXIT SENSOR

Upper Tray Paper Limit Sensor

1. Remove the top cover.
2. Remove the sensor cover [A].
3. Remove the sensor bracket [B].
4. Replace the upper tray paper limit sensor [C].

Upper Tray Exit Sensor

1. Remove the sensor bracket [D].
2. Replace the upper tray exit sensor [E].



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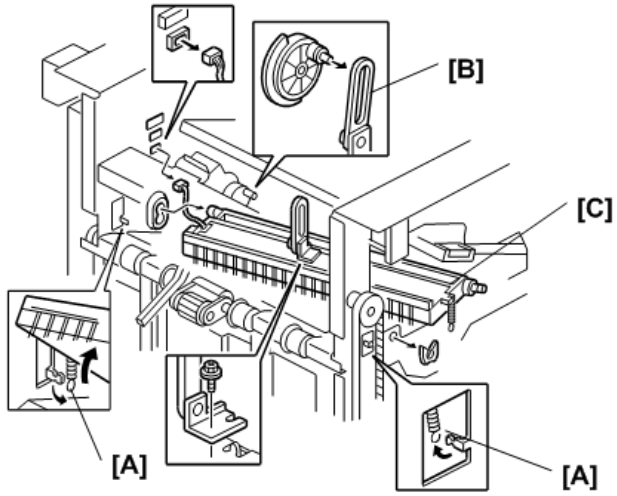
1.4.3 SHIFT TRAY EXIT SENSOR

1. Remove the top cover.
2. Open the front door.
3. Remove the inner cover.
4. Release the upper exit guide springs [A].
5. Disconnect the link [B] from the cam.
6. Remove the upper exit guide [C].



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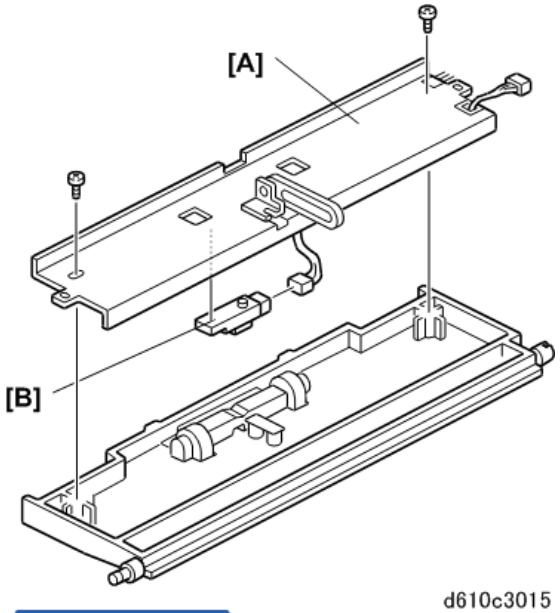
7. Remove the guide stay [A].
8. Replace the shift tray exit sensor [B].



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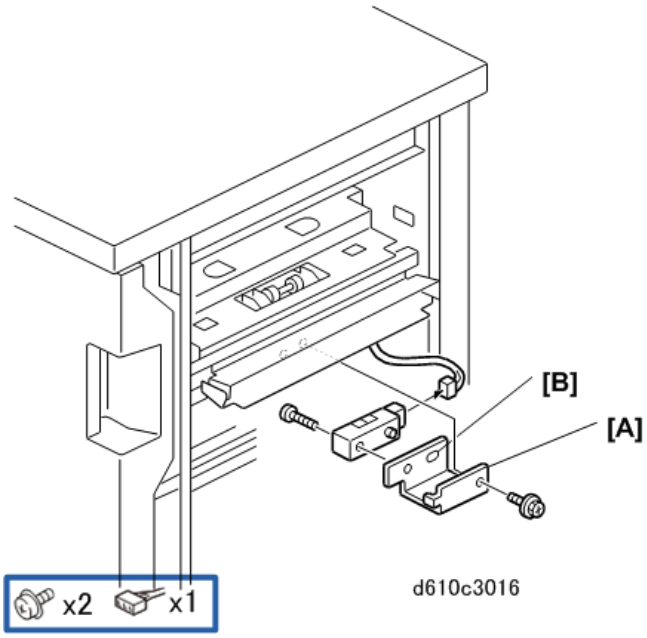
x3 x1

1.4.4 ENTRANCE AND STAPLER TRAY ENTRANCE SENSORS

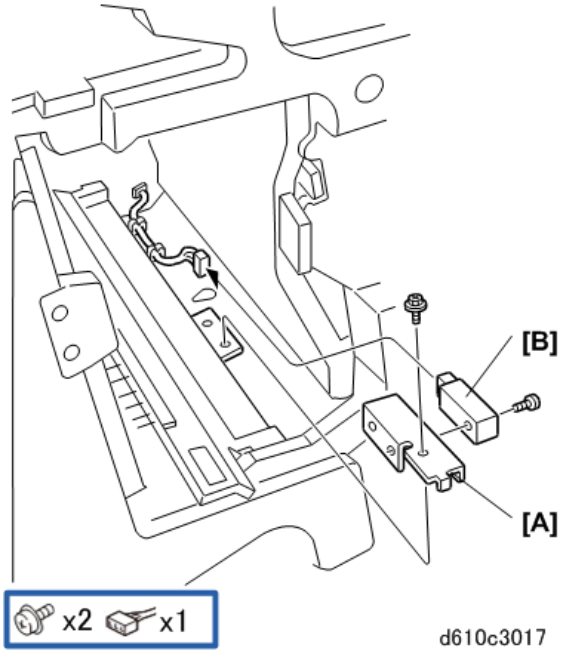
Entrance Sensor

1. Disconnect the finisher from the copier.
2. Remove the sensor bracket [A].
3. Replace the entrance sensor [B].



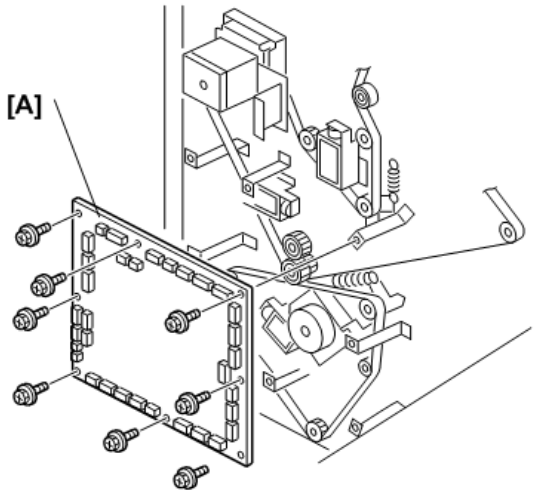
Stapler Tray Entrance Sensor

1. Open the front door.
2. Remove the sensor bracket [A].
3. Replace the stapler tray entrance sensor [B].

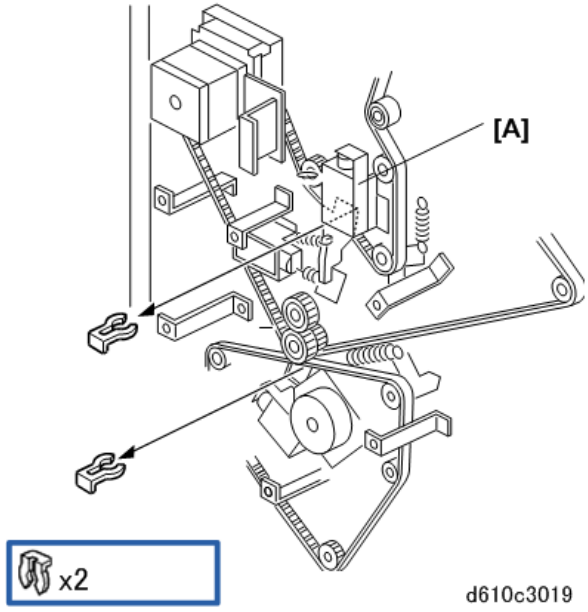


1.4.5 PRE-STACK PAPER SENSOR

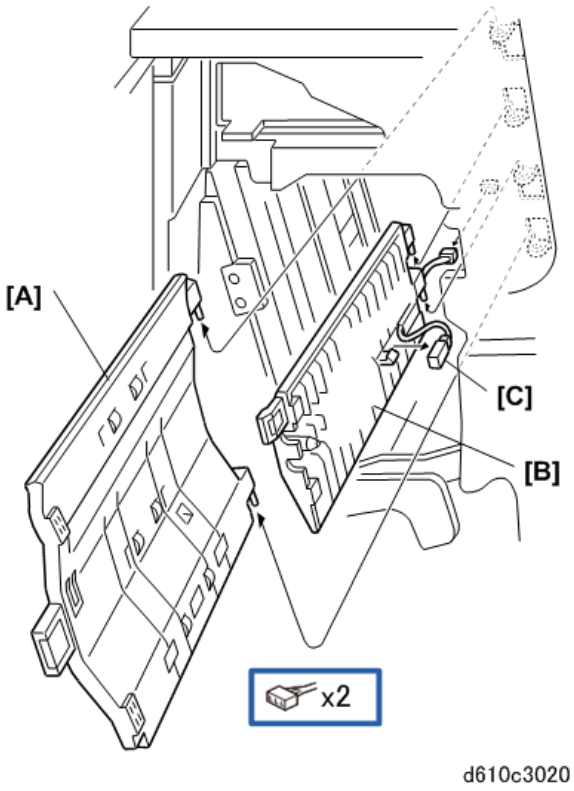
1. Remove the rear cover.
2. Remove the main board [A].



3. Release the guide [A].



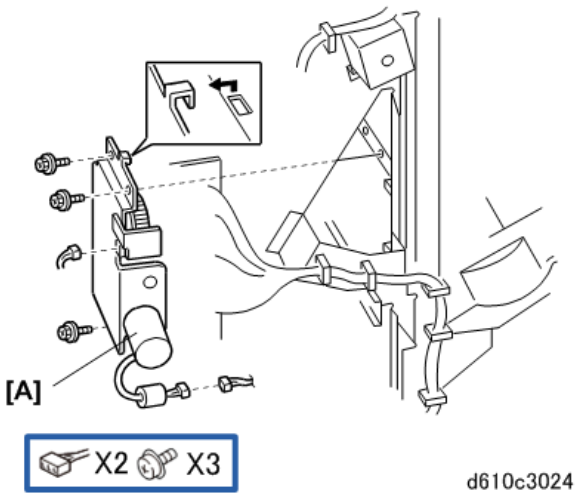
4. Open the front door.
5. Remove the left vertical transport guide [A].
6. Remove the middle vertical transport guide [B].
7. Replace the pre-stack paper sensor [C].



1.5 MOTORS

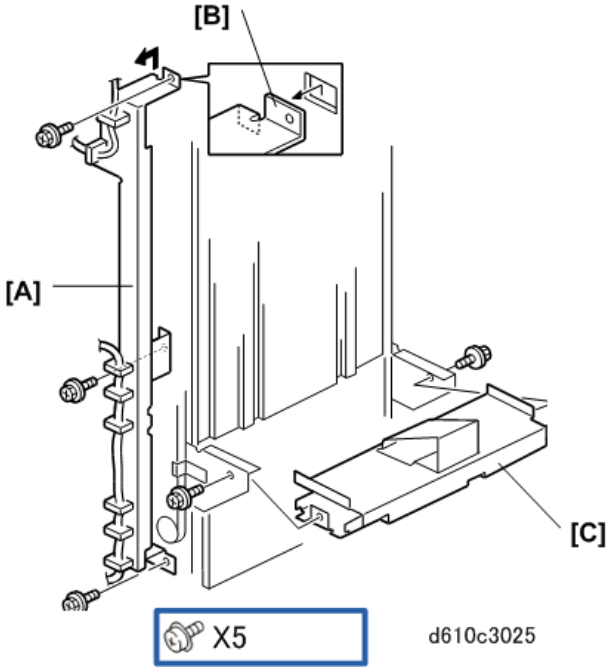
1.5.1 SHIFT TRAY MOTOR

1. Remove the front door and rear cover. page 1
2. Remove shift motor [A].

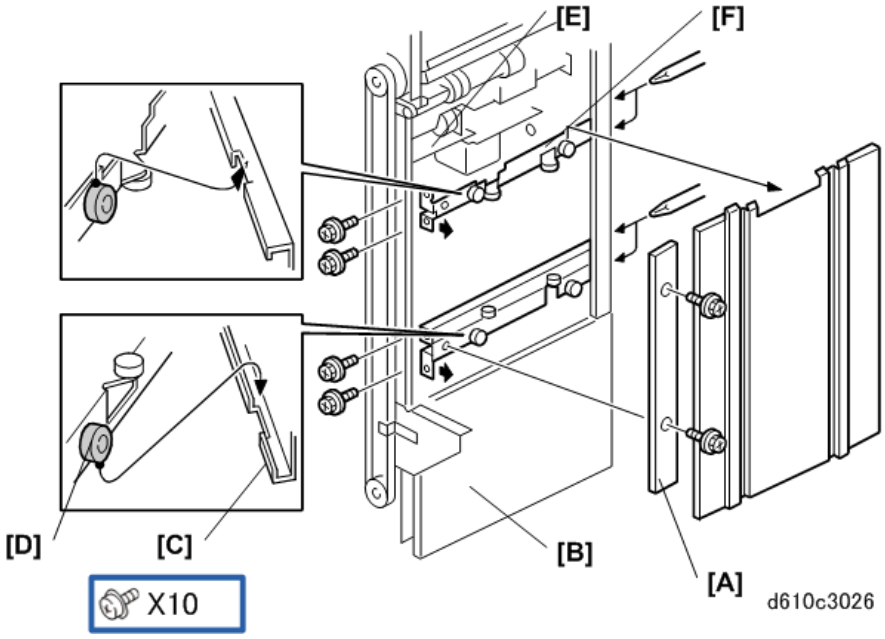


1.5.2 STACKING ROLLER, ROLLER DRAG MOTORS, RETURN HP SENSOR

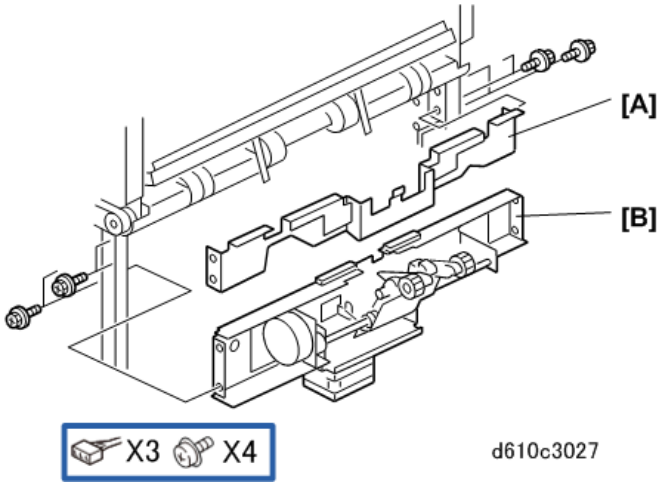
1. Do the procedures to remove the front door and all covers, with the exception of the left lower cover and top cover (labeled [C] and [E]).
2. Be sure to lower the shift tray by pulling the gear toward you. The shift tray must be down.
3. Remove the shift tray motor. See previous page.
4. Remove the left stay [A].
5. Unhook the stay at top [B].
6. Remove the shift tray mounting plate [C].



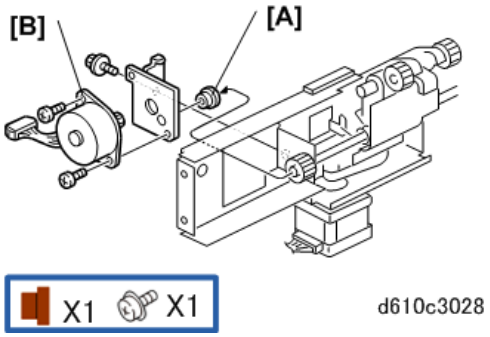
7. Remove the end fence [A] and plate [A].
8. Disengage the end fence races [B] from the rollers [C] behind the fence.
9. Remove the upper stay [E].
10. Remove the lower stay [F].



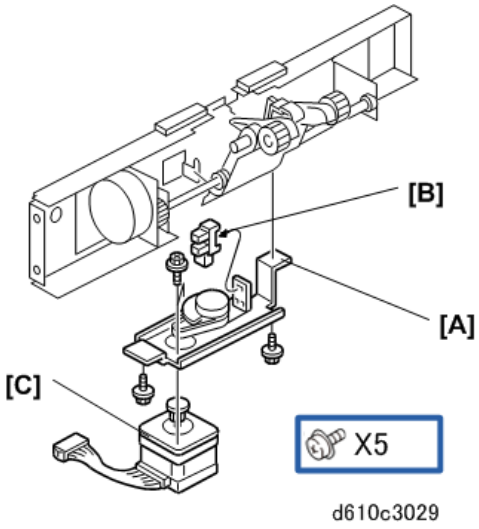
11. Remove the cover [A].
12. Remove the stacking roller/drag motor stay [B].
13. Make sure the motor and sensor connectors are disconnected before removing.



14. Remove the stacking motor bracket [A].
15. Remove the stacking motor [B].



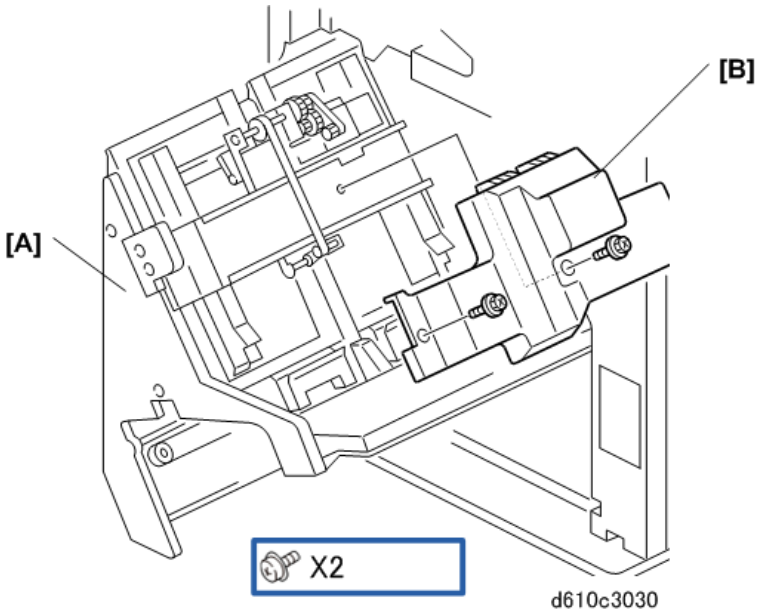
16. Remove the roller drag motor bracket [A].
17. Remove return HP sensor [B].
18. Remove the roller drag motor [C].



1.6 Z-FOLD JOGGER UNIT

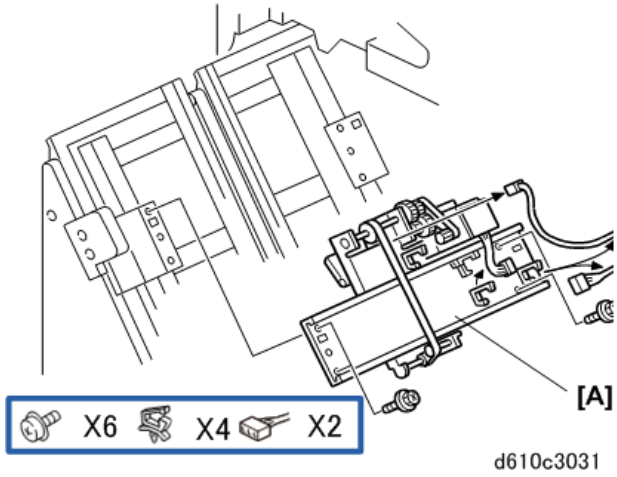
1.6.1 Z-FOLD JOGGER UNIT COVER

1. Open the front door.
2. Pull out the stapler tray unit [A].
3. Remove the Z-fold jogger unit cover [B].



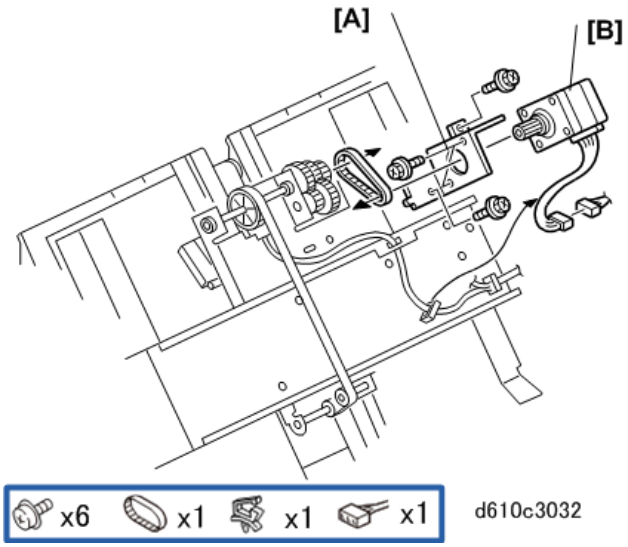
1.6.2 Z-FOLD JOGGER UNIT

1. Open the front door and pull out the stapler tray unit.
2. Remove the Z-fold jogger unit cover.
3. Remove the Z-fold jogger unit [A].



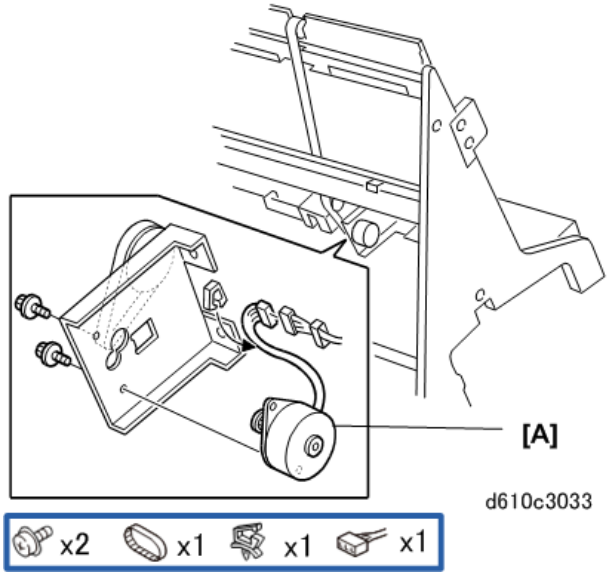
1.6.3 TOP FENCE MOTOR

1. Open the front door and pull out the stapler tray unit.
2. Remove the Z-fold jogger unit cover.
3. Remove the motor bracket [A].
4. Remove the jogger top fence motor [B].



1.6.4 BOTTOM FENCE MOTOR

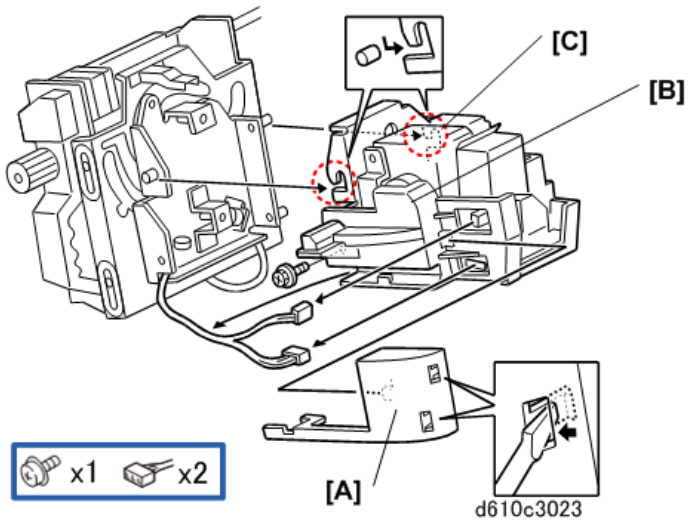
1. Open the front door and pull out the stapler tray unit.
2. Remove the jogger bottom fence motor [A].



1.7 STAPLER

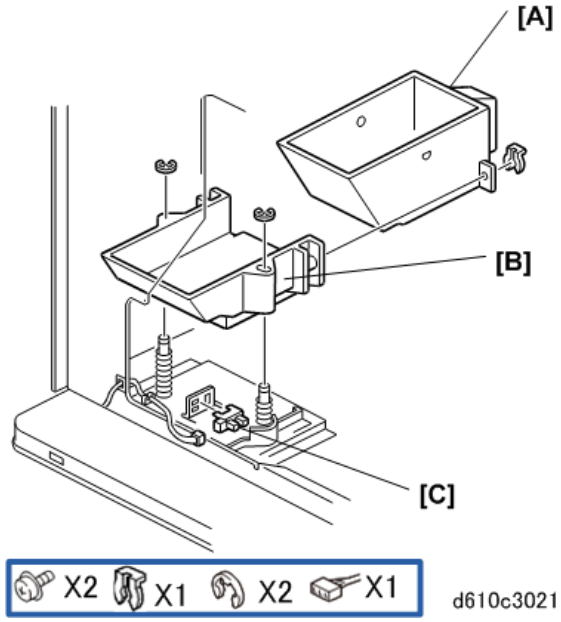
1.7.1 STAPLER REMOVAL

1. Open the front door and pull out the staple tray.
2. Remove the stapler unit harness cover [A].
3. Remove the stapler cover [B].
4. Lift the stapler off of the pegs [C].



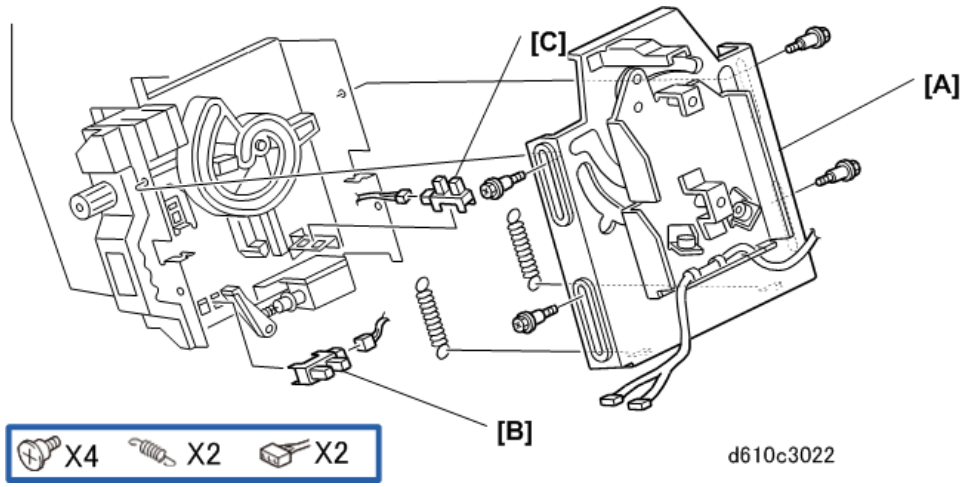
1.7.2 STAPLE WASTE HOPPER SENSOR

1. Open the front door, pull out the stapler unit, then remove the rear cover.
2. Remove the rear cover.
3. Remove the staple waste hopper [A].
4. Remove the hopper holder [B].
5. Replace the staple waste hopper sensor [C].



1.7.3 STAPLER ROTATION HP SENSOR, STAPLER RETURN SENSOR

1. Remove the stapler unit. (See above.)
2. Remove the stapler mount bracket [A].
3. Replace the stapler rotation HP sensor [B].
4. Replace the stapler return sensor [C].



1.8 PUNCH UNIT B531 (OPTION)

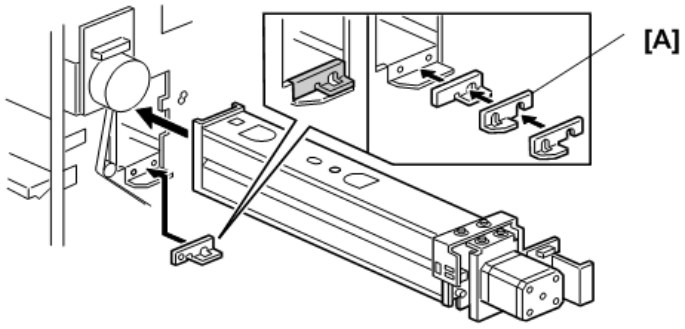
1.8.1 PUNCH POSITION ADJUSTMENT

The position of the punched holes can be adjusted in two ways.

Front to Rear Adjustment

Three spacers [A] are provided with the punch unit for manual adjustment of the hole position in the main scan direction:

- 2 mm (x 1)
- 1 mm (x 2)



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One spacer was installed at installation and the remaining spacers were fastened with a screw to the rear frame of the finisher under the rear cover and slightly above the lock bar.

Right to Left Adjustment

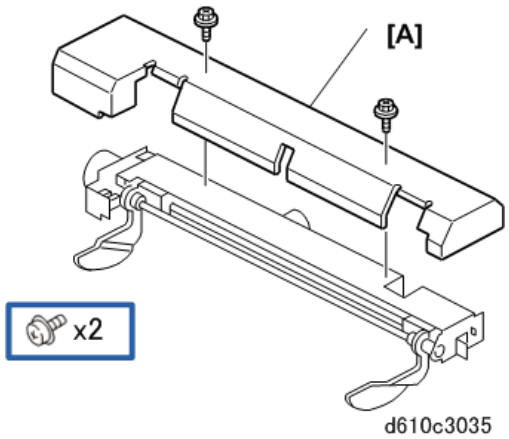
The position of the punched holes can be adjusted right to left in the sub scan direction with SP6-113 Punch Hole Position Adjustment. The position can be adjusted in the range ±7.5 mm in 0.5 mm steps. The default setting is 0.

Press the key to toggle the ± selection. A +VE value shifts the punch holes left toward the edge of the paper, and a -VE value shifts the holes right away from the edge.

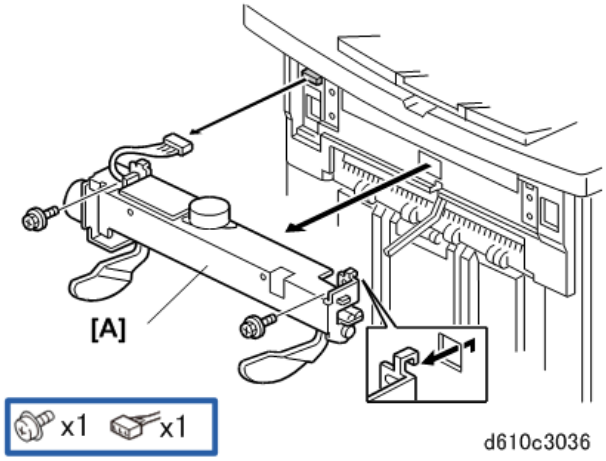
1.9 OUTPUT JOGGER UNIT B513 (OPTION)

1.9.1 JOGGER UNIT

1. Remove the jogger unit cover [A].

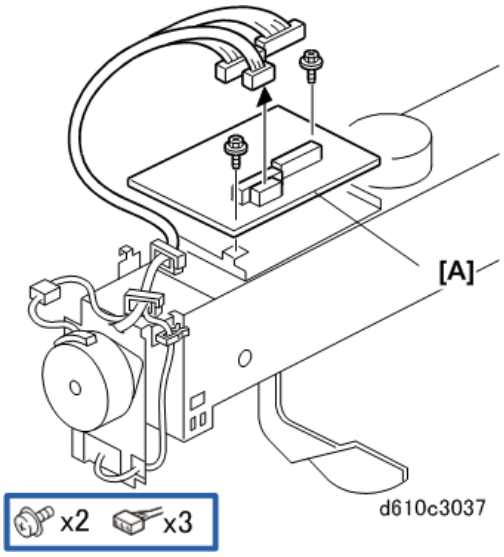


2. Remove the jogger unit [A].



1.9.2 JOGGER UNIT PCB

1. Remove the jogger unit from the finisher. (See above.)
2. Remove the jogger unit control PCB [A].



DIP Switches

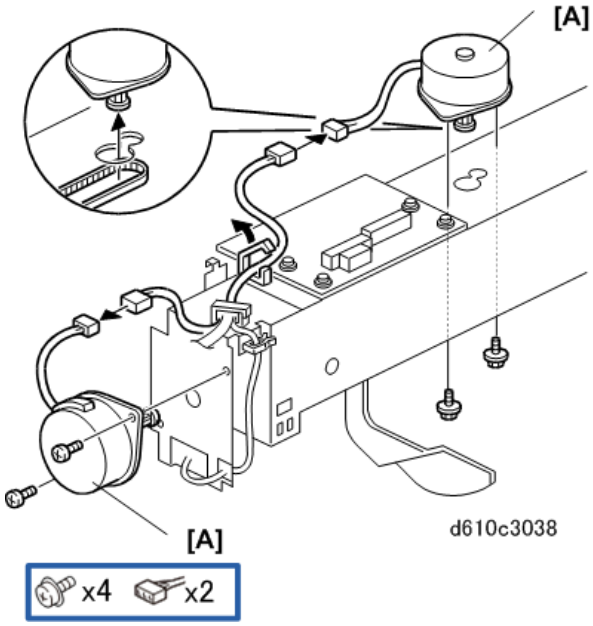
DPS100				Description
1	2	3	4	
0	0	0	0	Default
0	0	1	0	Free run: A4 LEF, staple mode
0	0	0	1	Free run: staple and tray shift

Important

- Do not use any other settings.

1.9.3 SHIFT JOGGER MOTOR, FENCE LIFT MOTOR

1. Remove the jogger unit from the finisher. (See above.)
2. Remove the shift jogger motor [A].
3. Remove the shift jogger lift motor [B].



2. DETAILED DESCRIPTIONS

2.1 OVERVIEW

2.1.1 SPECIFICATIONS

Upper Tray

Paper Capacity (80 g/m^2)	500 sheets (A4, 8.5" x 11" and smaller)
	250 sheets (B4, 8.5" x 14" and larger)
Paper Size	A3 to A6 SEF, 11" x 17" to 5.5" x 8.5", 12" x 18"
Paper Weight	52 to 216 g/m^2 (14 to 58 lb)
Upper Tray Full Detection	Provided

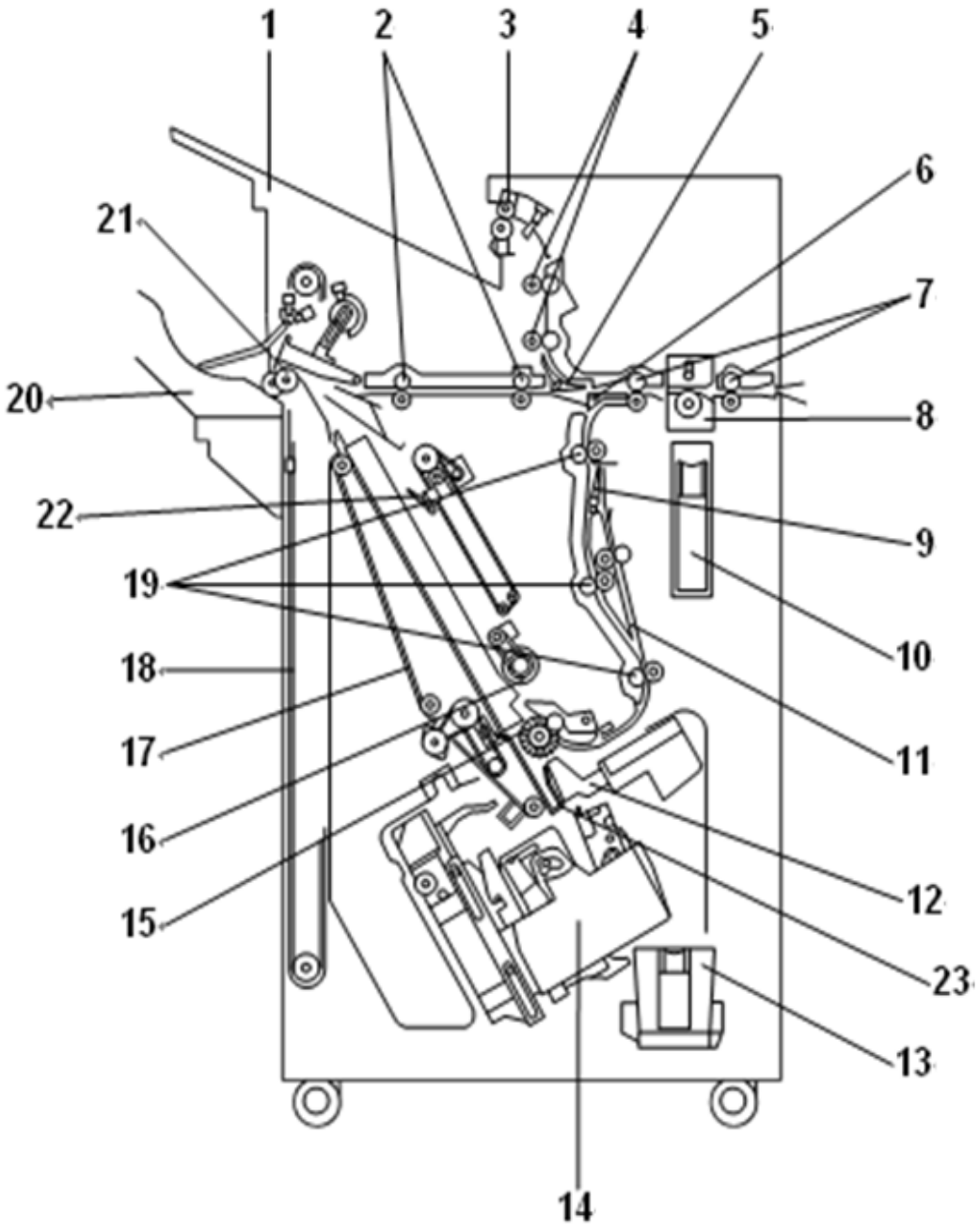
Shift Tray

Paper Capacity (80 g/m^2)	3000 sheets (A4 LEF, B5 LEF, 8.5" x 11" LEF)
	1500 sheets (A3, A4 SEF, B4 and B5 SEF, 11" x 17", 8.5" x 14", 8.5" x 11" SEF, 12" x 18")
	500 sheets (A5 LEF, 5.5" x 8.5" LEF)
	100 sheets (A5 SEF, 5.5" x 8.5" SEF)
Paper Size	A3 to A5, 11" x 17" to 5.5" x 8.5", 12" x 18" (including tab paper)
Paper Weight	52 to 216 g/m^2 (14 to 58 lb)
Shift Tray Full Detection	Provided

Stapler

<table>
<tr><td>Stapling Stack Size</td><td colspan="3">A4, B5, 8.5" x 11" (Max. 100 Sheets)
A3, B4, 11" x 17", 8.5" x 14" (Max. 50 sheets)</td></tr>
<tr><td>Stapling Paper Size</td><td colspan="3">A3 to B5
11" x 17" to 8.5" x 11"</td></tr>
<tr><td>Stapling Paper Weight</td><td colspan="3">64 to 80 g/m^2 (17 to 20 lb)</td></tr>
<tr><td>Staple Position</td><td colspan="3">4 Modes
▪ 1 Staple: Front, Rear, Rear-Oblique
▪ 2 Stapes: 2 locations</td></tr>
<tr><td>Staple Capacity</td><td colspan="3">5000 staples/cartridge</td></tr>
<tr><td>Staple Supply</td><td colspan="3">Cartridge or Staple Replacement</td></tr>
<tr><td rowspan="5">Stapled Stack Size</td><td>Sheets</td><td>Sets</td><td>Sizes</td></tr>
<tr><td>10 to 100</td><td>200 to 30</td><td rowspan="2">A4 SEF, B5 SEF, 8.5" x 11" SEF
A4 LEF, B5 LEF, 8.5" x 11" LEF</td></tr>
<tr><td>2 to 9</td><td>150</td></tr>
<tr><td>10 to 50</td><td>150 to 30</td><td rowspan="2">A3, B4, 11" x 17", 8.5" x 14"</td></tr>
<tr><td>2 to 9</td><td>150</td></tr>
<tr><td>Trim Waste Staple Capacity</td><td colspan="3">30,000 or more</td></tr>
<tr><td>Waste Staple Hopper Full Detection</td><td colspan="3">Provided</td></tr>
<tr><td>Power Consumption</td><td colspan="3">Less than 100 W</td></tr>
<tr><td>Power Source</td><td colspan="3">DC 24 V (From Mainframe)</td></tr>
<tr><td>Size (W x D x H)</td><td colspan="3">800 x 730 x 980 mm (31.5" x 28.7" x 38.6")</td></tr>
<tr><td>Weight</td><td colspan="3">Less than 65 kg (143 lb.)</td></tr>
</table>

2.1.2 MECHANICAL LAYOUT



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No.	Part	No.	Part
1	Upper Tray	13	Staple Waste Hopper
2	Middle Transport Rollers	14	Stapler
3	Upper Tray Exit Roller	15	Alignment Brush Roller
4	Upper Transport Rollers	16	Positioning Roller
5	Tray Junction Gate	17	Stack Feed-out Belt
6	Stapler Junction Gate	18	Shift Tray Drive Belt
7	Entrance Rollers	19	Lower Transport Rollers
8	Punch Unit	20	Shift Tray
9	Pre-stack Junction Gate	21	Shift Tray Exit Roller
10	Punch Waste Hopper	22	Jogger Top Fence
11	Pre-stack Tray	23	Jogger Bottom Fence
12	Stack Plate		

2.1.3 ELECTRICAL COMPONENT DESCRIPTION

The following table lists all electrical components and briefly describes their function.

MOTORS

Symbol	Name	Function
M01	Shift Tray Exit	Drives the exit roller for the shift tray.
M02	Shift Tray Lift	Moves the shift tray up or down.
M03	Exit Guide	Opens and closes the upper exit guide.
M04	Lower Transport	Drives the lower transport rollers, the positioning roller and the alignment brush roller
M05	Shift	Moves the shift tray from side to side.
M06	Positioning Roller	Moves the positioning roller into contact with the paper.
M07	Stacking Roller Drag	Moves the stacking roller in and out.
M08	Stacking Roller	Rotates the stacking roller.
M09	Jogger	Moves the jogger fences.
M10	Stack Feed-Out Belt	Drives the stack feed-out belt.
M11	Stack Plate - Center	Presses down the center of the edge for stapling.
M12	Stapler	Moves the staple unit from side to side.
M13	Stack Plate – Front	Presses down the front corner of the edge for stapling.
M14	Stack Plate – Rear	Presses down the rear corner of the edge for stapling.
M15	Stapler Rotation	Rotates the stapler 45 degrees for oblique stapling.
M16	Staple Hammer	Drives the staple hammer.
M17	Punch	Drives the punch shaft and roller. Punch Unit B531 (option).

M18	Upper Transport	Drives the entrance rollers, the middle and upper transport rollers, and upper tray exit roller.
M19	Shift Jogger	Drives the shift jogger fences against the sides of the sheets to align the stack, then reverses to return them to the home position. Jogger Unit B513 (option).
M20	Shift Jogger Lift	Raises the shift jogger fences after aligning the stack, then reverses and lowers them when returning to the home position. Jogger Unit B513 (option).
M21	Jogger Top Fence	Moves the top jogger fence.
M22	Jogger Bottom Fence	Moves the bottom jogger fence.

BOARDS

Symbol	Name	Function
PCB	Main	Controls the finisher and communicates with the copier.
PCB	Stapler	Controls the stapler unit.
PCB	Punch	Passes signals between the punch unit and the finisher main board. Punch Unit B531 (option).
PCB	Jogger	Controls the shift/jogger unit B513 (option).

SENSORS

Symbol	Name	Function
S01	Entrance	Detects the copy paper entering the finisher and checks for misfeeds.
S02	Upper Tray Exit	Checks for misfeeds at the upper tray.
S03	Upper Tray Limit	Detects when the paper stack height in the upper tray is at its upper limit.
S04	Shift Tray Exit	Checks for misfeeds at the shift tray exit.
S05	Exit Guide Open	Detects whether the guide plate is opened or not.
S06	Staple Mode HP 1	Detects the shift tray home position for standby mode and for staple mode.
S07	Staple Mode HP 2	Detects the shift tray home position for standby mode and for staple mode.
S09	Shift Lower Limit – Large Paper	Detects the lower limit for the shift tray when large paper sizes are being used
S10	Shift Tray Lower Limit 2	Not used.
S11	Shift Tray Lower Limit 3	Detects when the shift tray is at its lower limit.
S12	Shift Mode HP	Detects the shift tray home position in sort/stack mode.
S13	Stacking Roller HP	Detects when the stacking roller is at home position.
S14	Shift Tray Half-Turn	Detects whether the shift tray is at either the front or home HP.
S15	Pre-Stack Tray Paper	Determines when to turn off the pre-stack paper stopper solenoid.
S16	Stapler Tray Exit	Detects jams at the staple tray exit.
S17	Positioning Roller HP	Detects the home position of the positioning roller.
S18	Stack Feed-Out Belt HP	Detects the home position of the stack feed-out belt.

S19	Stapler Tray Paper	Detects the copy paper in the stapler tray.
S20	Jogger HP	Detects the home position of the shift jogger fences.
S21	Stack Plate - Center HP	Detects the home position of the center stack plate.
S22	Stack Plate – Front	Detects the home position of the front stack plate.
S23	Stack Plate – Rear	Detects the home position of the rear stack plate.
S24	Stapler HP	Detects the home position of the staple unit for side-to-side movement.
S25	Stapler Rotation HP	Detects the home position of the stapler unit for 45-degree rotation.
S26	Stapler Return	Detects the on timing of the stapler return solenoid.
S27	Staple Waste Hopper	Detects when the staple waste hopper is full.
S28	Punch Waste Hopper	Detects when the punch waste hopper is full and detects when the punch tray is set. Punch Unit B531 (option).
S29	Punch HP 1	Detects the cam home position for the 2-hole punch. Punch Unit B531 (option).
S30	Punch HP 2	Detects the cam home position for 3/4 punch. Punch Unit B531 (option).
S31	Shift Jogger HP	Detects the home position of the jogger unit arms during paper alignment. Jogger Unit B513 (option).
S32	Shift Jogger Lift HP	Detects the when both shift jogger fences are at the lowered position and ready to move against the sides of the stack. Jogger Unit B513 (option).
S33	Top Fence HP	Detects the top fence home position for Z-fold paper staple mode.
S34	Bottom Fence HP	Detects the bottom fence home position for Z-fold paper staple mode.

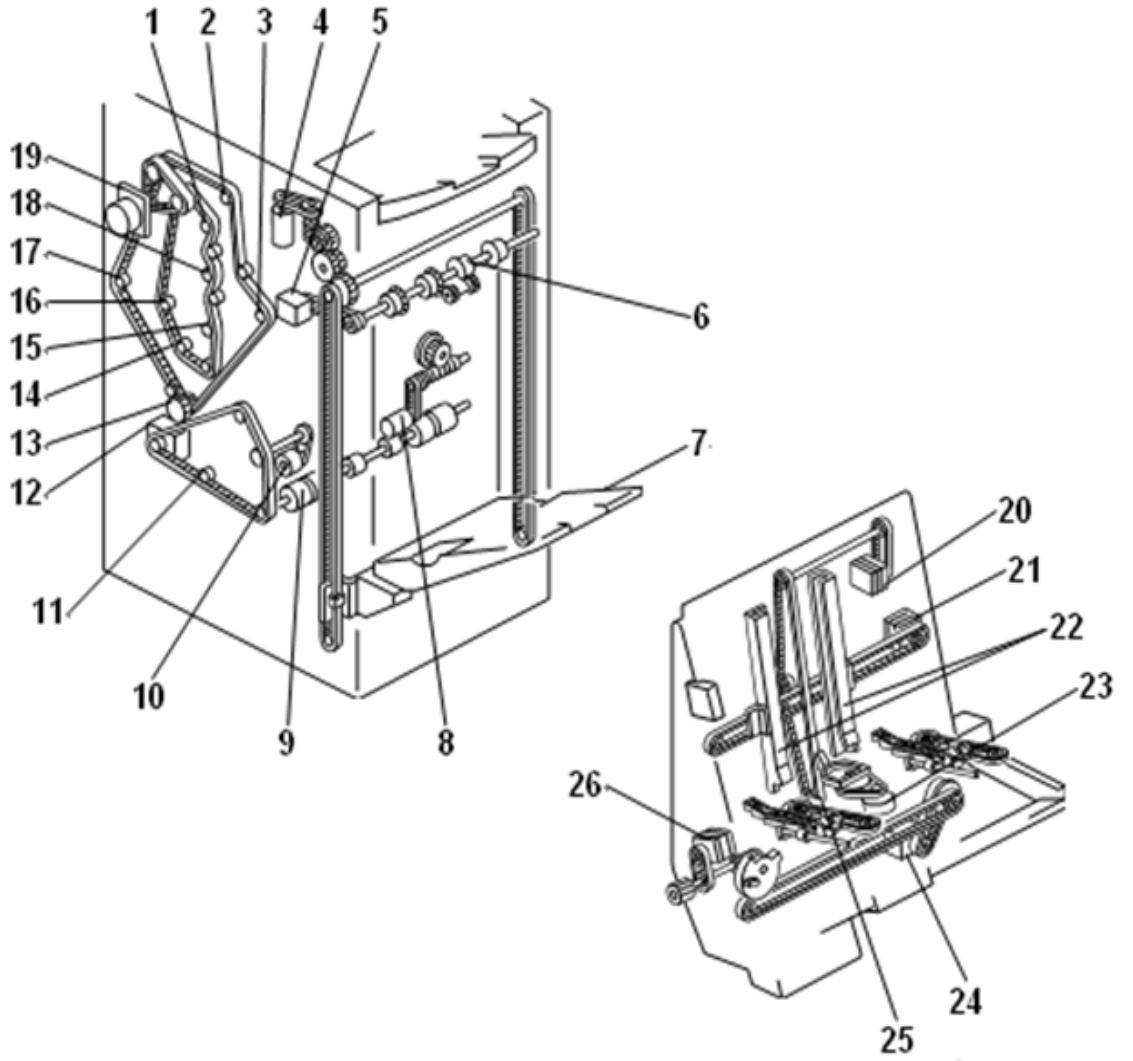
SOLENOIDS

Symbol	Name	Function
SOL1	(Upper) Tray Junction Gate	Drives the tray junction gate.
SOL2	Stapler Junction Gate	Drives the stapler junction gate.
SOL3	Pre-Stack Junction Gate	Drives the pre-stack junction gate.
SOL4	Pre-stack Paper Stopper	Drives the stopper pawl of the pre-stacking tray.
SOL5	Stapler Return	Positions the stapler correctly on its return from the staple supply point.

SWITCHES

Symbol	Name	Function
SW1	Shift Tray Upper Limit	Cuts the power to the shift tray lift motor when the shift tray position is at its upper limit.
SW2	Front Door Safety	Cuts the dc power when the front door is opened.
SW3	Emergency Stop	Switches the current job off and on to allow time for the operator to remove paper from the shift tray.

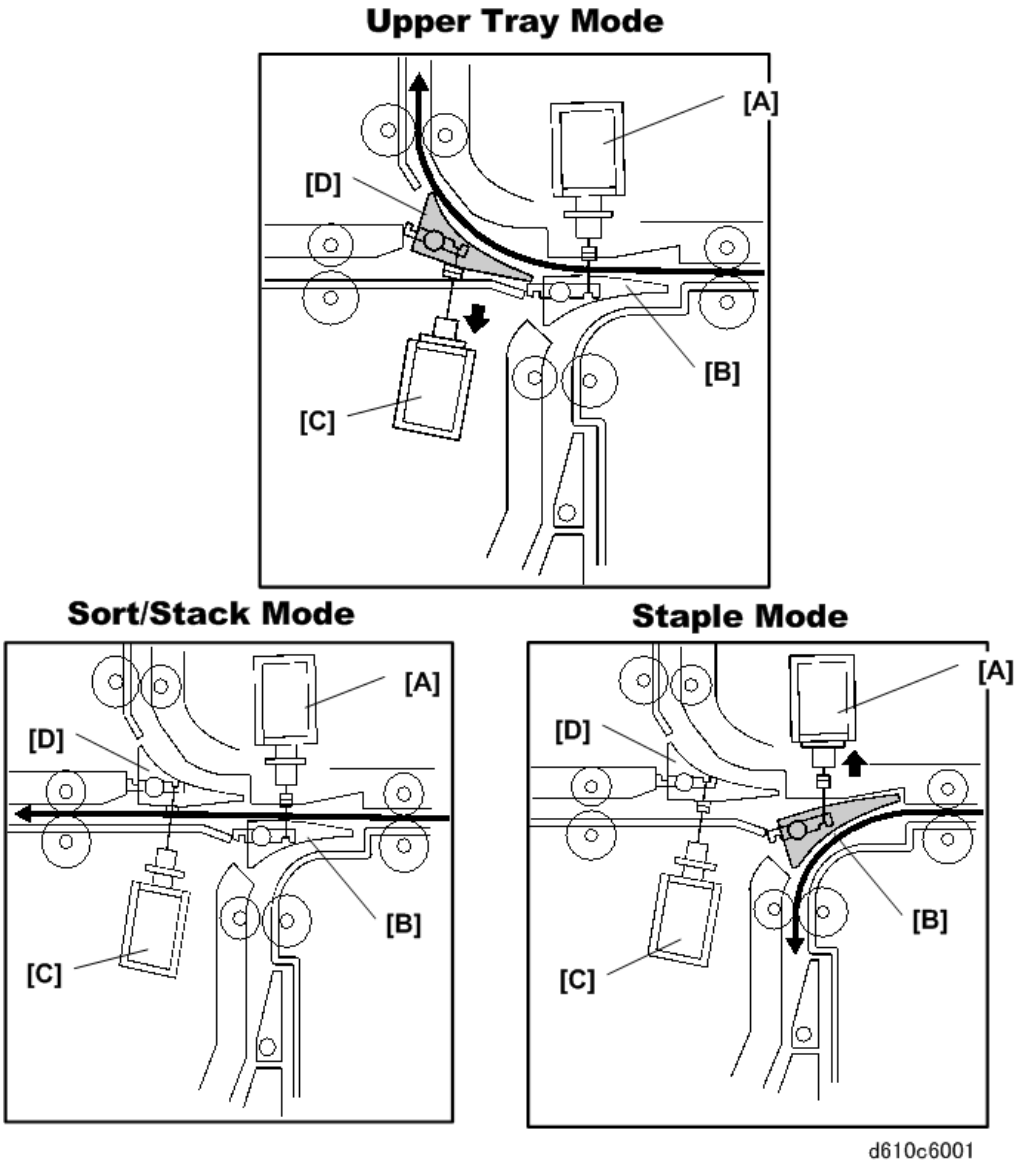
2.1.4 DRIVE LAYOUT



No.	Part	No.	Part
1	Upper Transport Roller 2	14	Lower Transport Roller 1
2	Upper Tray Exit Roller	15	Transport Roller 1
3	Lower Transport Roller 2	16	Entrance Roller 2
4	Shift Tray Lift Motor	17	Entrance Roller
5	Shift Tray Exit Motor	18	Upper Transport Roller 1
6	Shift Tray Exit Roller	19	Upper Transport Motor
7	Shift Tray	20	Stack Feed-out Motor
8	Shift Motor	21	Jogger Motor
9	Staple Tray Exit Roller	22	Jogger Fence
10	Positioning Roller	23	Stack Plate Motor
11	Lower Transport Roller 3	24	Stapler Motor
12	Lower Transport Motor	25	Stack Feed-out Belt
13	Lower Transport Rollers 2	26	Stapler Rotation Motor

2.2 MAIN MECHANISMS

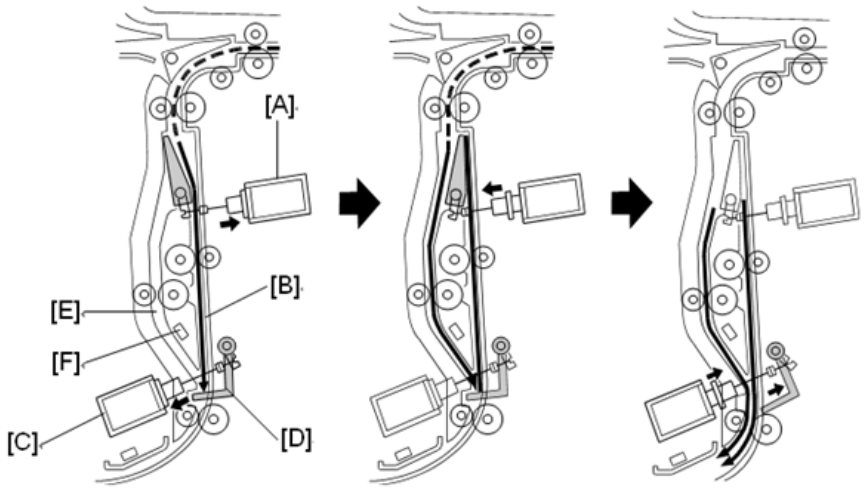
2.2.1 TRAY AND STAPLER JUNCTION GATE



Depending on the finishing mode, the copies are directed up, straight through, or down by the combinations of open and closed junction gates.

Solenoid/Gate		Selected Operation Mode		
		Upper Tray	Sort/Stack	Staple
[A]	Stapler junction gate solenoid	Off	Off	ON
[B]	Stapler junction gate	Closed	Closed	OPEN
[C]	Tray junction gate solenoid	ON	Off	Off
[D]	Tray junction gate	OPEN	Closed	Closed

2.2.2 PAPER PRE-STACKING



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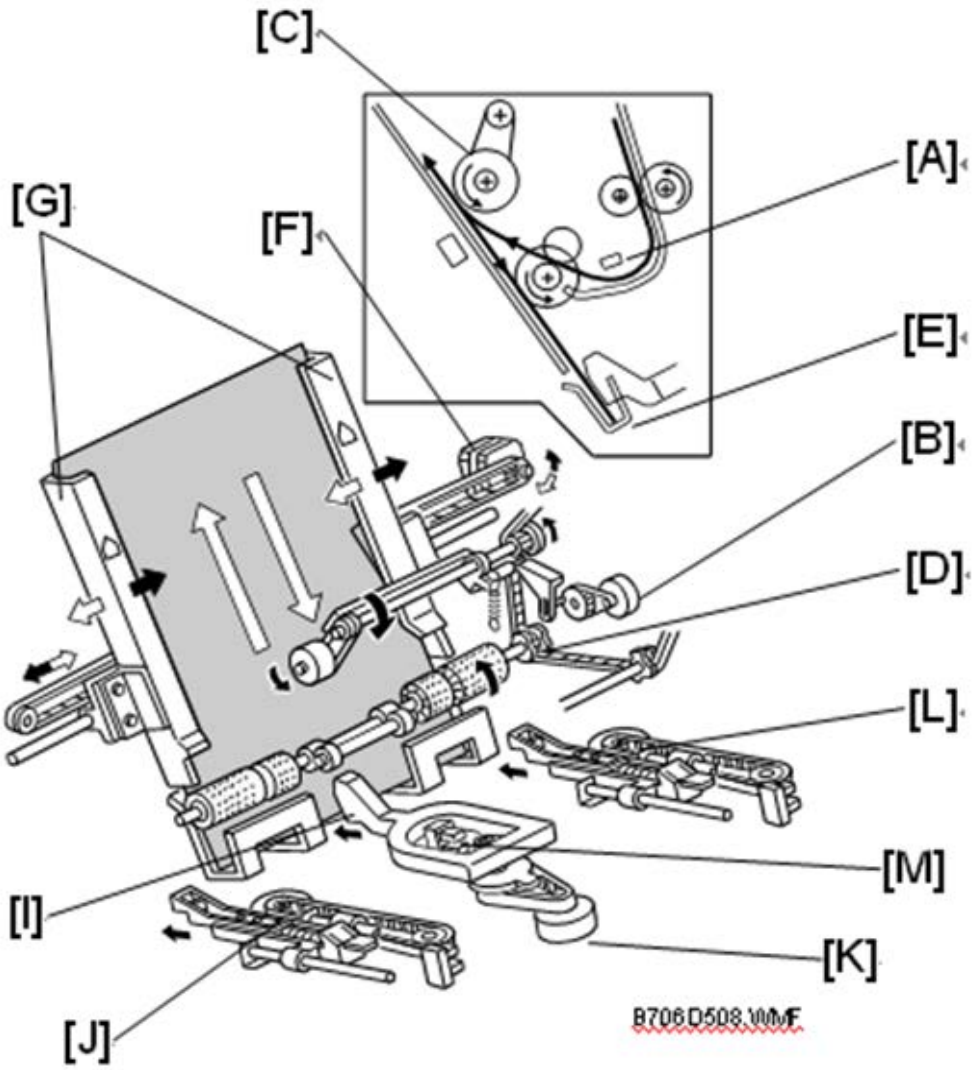
- This mechanism improves productivity in staple mode. It is only used when copying on A4, LT, or B5 (all LEF).
- During stapling, the copier has to wait. This mechanism reduces the wait by holding the first two sheets of a job while the previous job is still being stapled. It only works during the second and subsequent sets of a multi-set copy job.
- The pre-stack junction gate solenoid [A] turns on 120 mm after the 1st sheet of paper turns on the entrance sensor, and this directs the sheet to the pre-stack tray [B]. (This sheet cannot be fed to the stapler yet, because the first set is still being stapled.)
- The pre-stack paper stopper solenoid [C] turns on 350 mm after the 1st sheet turns on the entrance sensor. The pre-stack paper stopper [D] then stops the paper.
- The pre-stack junction gate solenoid turns off 230 mm after the trailing edge of the 1st sheet passes through the entrance sensor, and the 2nd sheet is sent to the paper guide [E].
- The pre-stack paper stopper is released about 40 mm after the 2nd sheet turns on the pre-stack stopper sensor [F], and the two sheets of copy paper are sent to the stapler tray. All sheets after the 2nd sheet go to the stapler tray via the paper guide [E].

2.2.3 JOGGER UNIT PAPER POSITIONING

In the staple mode, as every sheet of paper arrives in the jogger unit, it is vertically and horizontally aligned, then the staple edge is pressed flat to ensure the edge of the stack is aligned correctly for stapling.

- Vertical Paper Alignment: About 60 ms after the trailing edge of the copy passes the staple tray entrance sensor [A], the positioning roller motor [B] is energized to push the positioning roller [C] into contact with the paper.
- The positioning roller and alignment brush roller [D] rotate to push the paper back and align the trailing edge of the paper against the stack stopper [E].
- Horizontal Paper Alignment: When the print key is pressed, the jogger motor [F] turns on and the jogger fences [G] move to the wait position about 7.2 mm wider than the selected paper size on both sides.
- When the trailing edge of the paper passes the staple unit entrance sensor, the jogger motor moves the jogger fences 3.7 mm towards the paper.
- Next, the jogger motor turns on again for 3.5 mm for the horizontal paper alignment then goes back to the wait position.
- Paper Stack Correction: After the paper is aligned in the stapler tray, the left [J], center [K], and right [L] stack plate motors switch on briefly and drive the front stack, center stack, and rear stack plates against the edge of the stack to flatten the edge completely against the staple tray for stapling.
- When the next copy paper turns on the stapler entrance sensor, the stack plate motor turns on and returns to its home position. The home position is detected by stack plate HP sensor [M].



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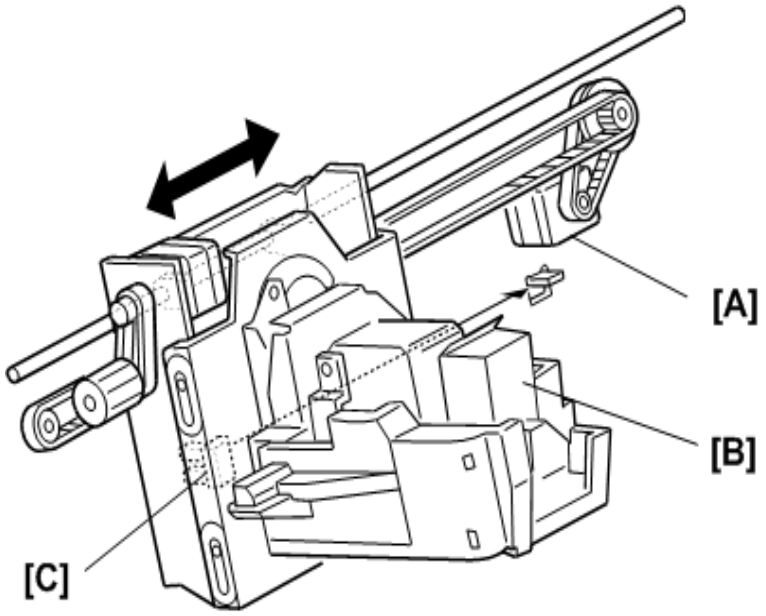
2.3 STAPLING

2.3.1 STAPLER UNIT MOVEMENT

Side-to-Side

- The stapler motor [A] moves the stapler [B] from side to side. After the start key is pressed, the stapler moves from its home position to the stapling position.
- If two-staple-position mode is selected, for the first stack the stapler moves to the rear stapling position first, staples, moves to the front position, staples and waits at the front.
- For the second stack, the stapler staples the front corner first, then moves to the rear corner and staples.
- For continuous stapling jobs, the corners are stapled rear then front for the odd number stacks and stapled front then rear for even number stacks.
- After the job is completed, the stapler returns to its home position. This is detected by the stapler HP sensor [C].



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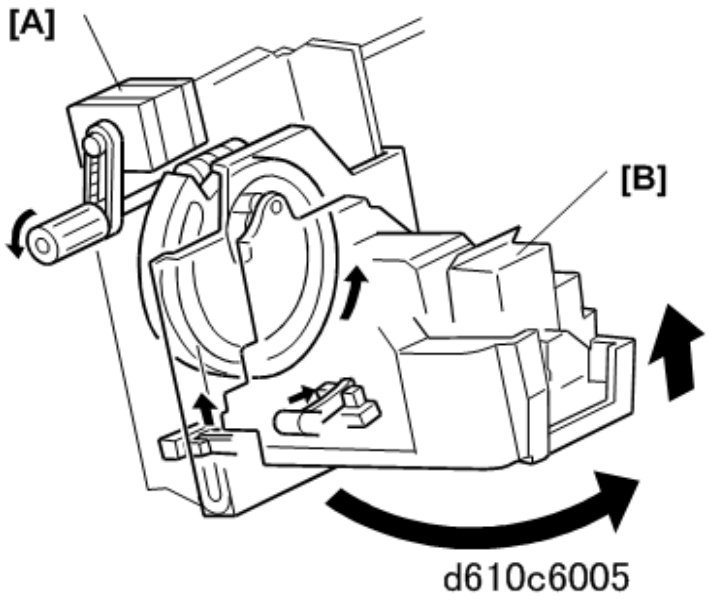
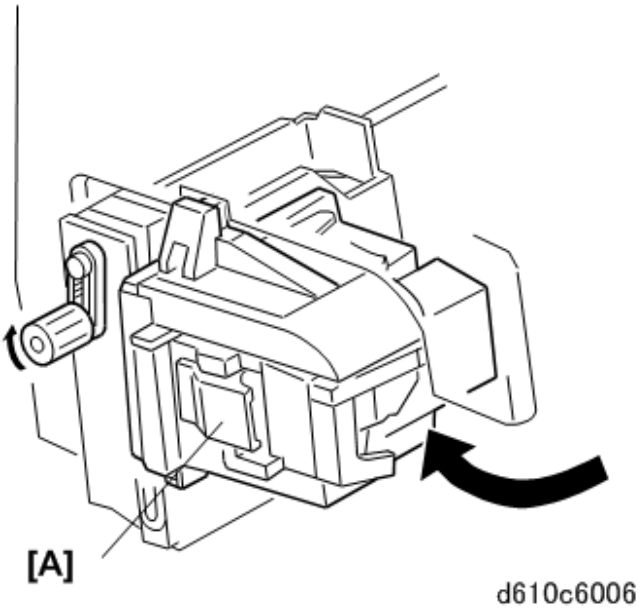
Rotation (1)

In the oblique staple position mode, the stapler rotation motor [A] rotates the stapler units [B] 45? to counterclockwise after it moves to the stapling position.

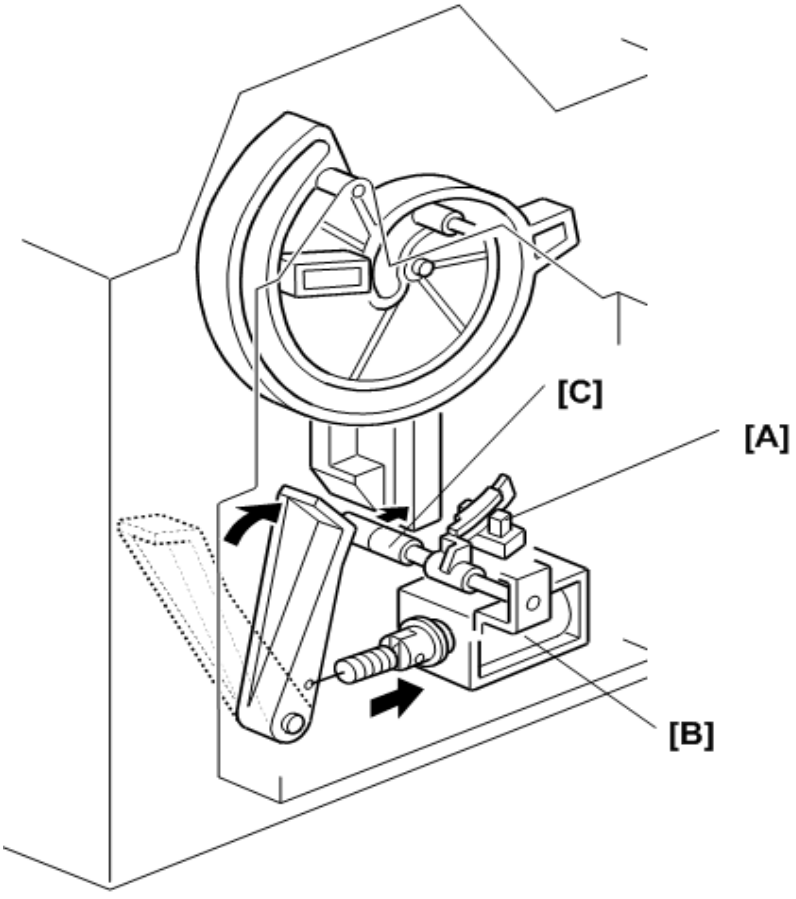


Rotation (2)

When the staple end condition arises, the stapler motor moves the stapler to the front and the stapler rotation motor rotates the stapler unit to clockwise to remove the staple cartridge [A]. This allows the user to add new staples.



Once the staples have been installed, and the front door closed, the stapler unit returns to its home position. As the stapler unit is returning to the home position, the stapler return sensor [A] is activated, the return solenoid [B] turns on and it assists the guide roller [C] to return to its guide (this guide directs the stapler during rotation).

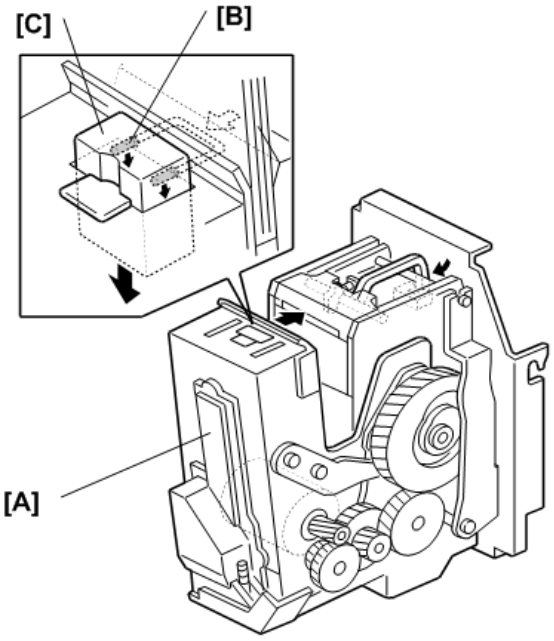


d610c6007

2.3.2 STAPLER

When the aligned copies are brought to the stapling position by the positioning roller and jogger fences, the staple hammer motor [A] starts stapling.

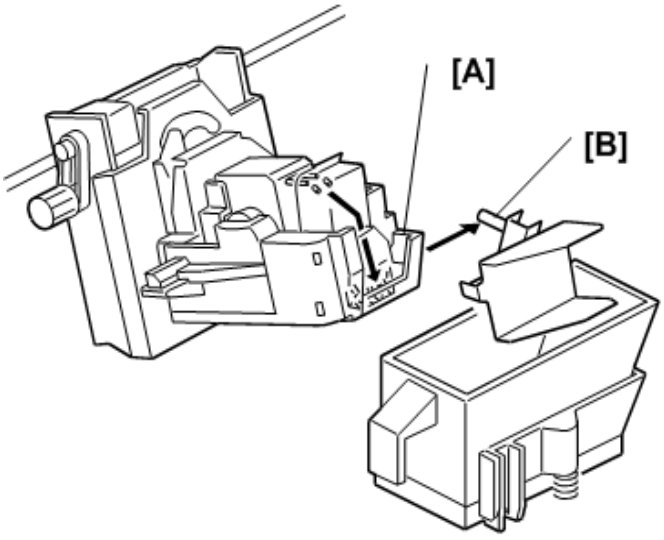
During stapling, the stapler trims off the excess length [B] of the staples by lowering the cutter [C].



d610c6008

This excess length depends on the number of copies in the set; there will be very little for a stack containing 100 sheets.

The staple waste drops into the tray [A] in the stapler. When the stapler unit returns to its home position, the tray hits the shaft [B] and the tray opens.



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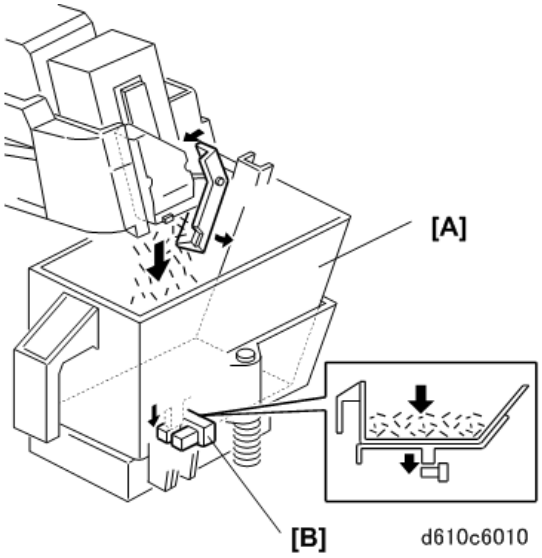
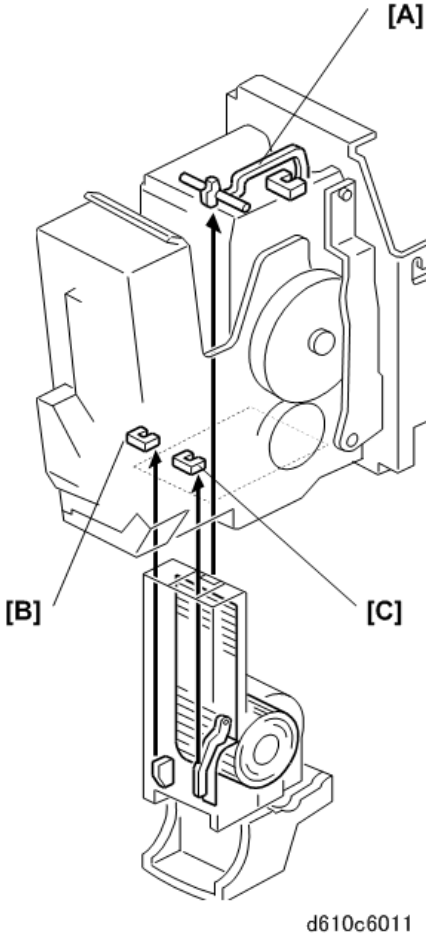
The staple waste drops into the staple waste hopper [A]. When the staple waste hopper is full, the actuator on its base activates the staple waste hopper sensor [B]. An SC737 (Full Finisher Staple Waste Hopper) is displayed.

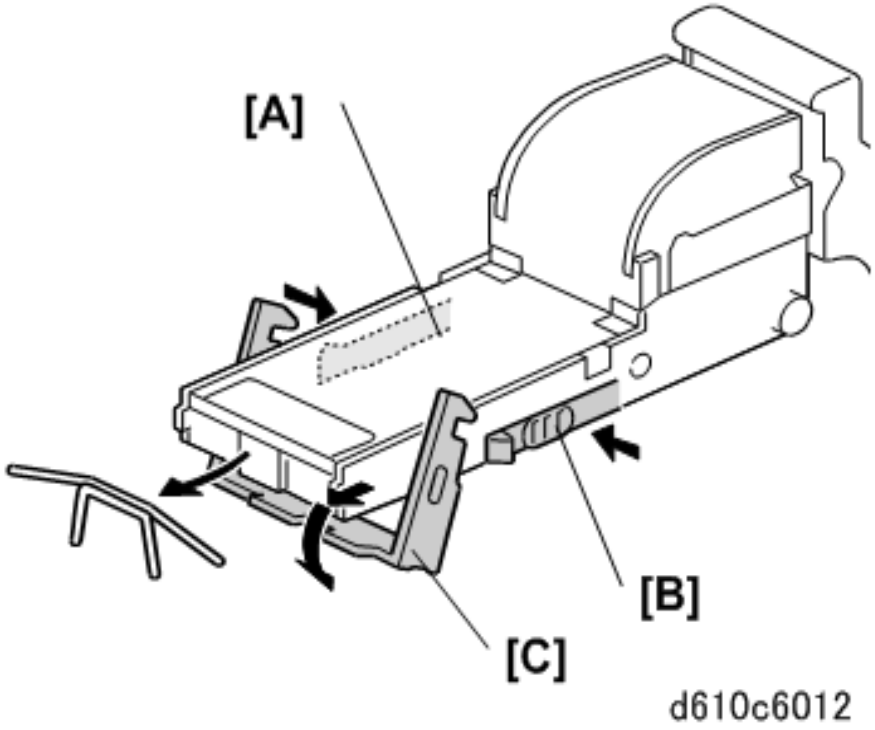


The stapler has a staple end sensor [A], cartridge set sensor [B] and staple hammer HP sensor [C].



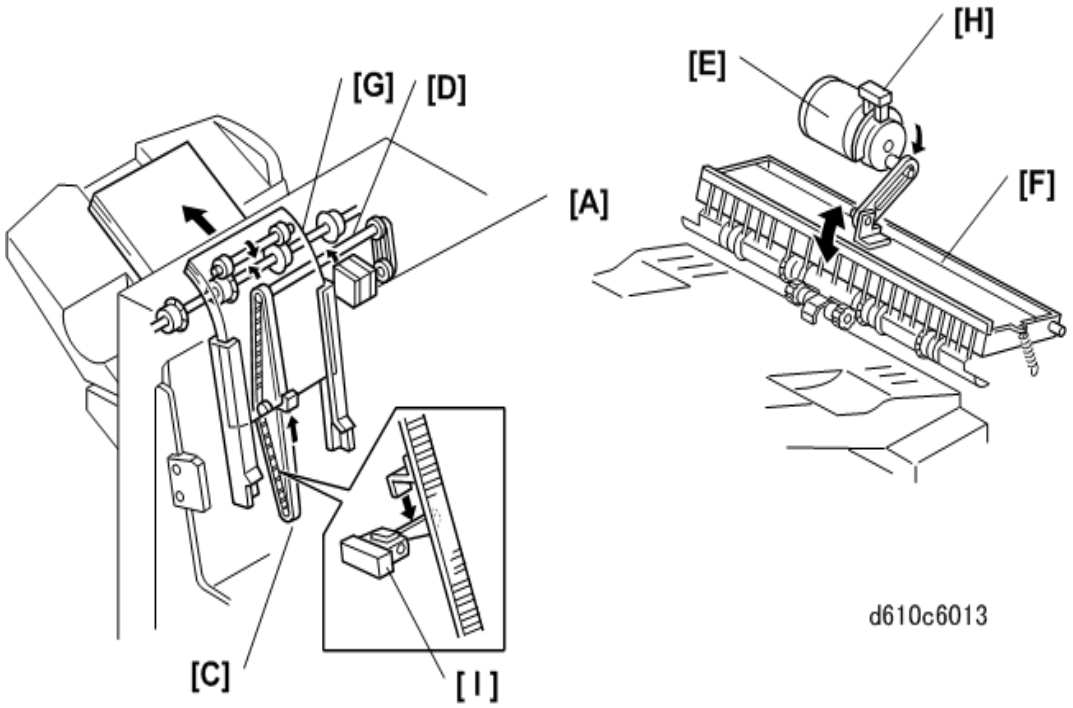
When a staple end or no cartridge condition is detected, a message is displayed advising the operator to install a staple cartridge. If this condition is detected during a copy job, the indication will appear, and the copy job will stop.

The staple cartridge has a clinch area [A] where jammed staples collect. The operator can remove the jammed staples from the clinch area by pressing in the releases [B] on both sides, then lowering the bracket lever [C].



2.3.3 FEED OUT

- After the copies have been stapled, the stack feed-out motor [A] starts.
- The pawl [B] on the stack feed-out belt [C] transports the set of stapled copies up and feeds it to the shift tray exit roller [D].
- When stapling starts, the exit guide motor [E] opens the upper exit guide [F], which includes the upper shift tray exit roller [G], in order to feed out the leading edge of the copy set smoothly.
- The exit guide motor turns on again a certain time after stapling is complete, and the upper exit guide plate is lowered. Then the shift tray exit roller takes over the stack feed-out.
- The on-off timing of the exit guide motor is detected by the exit guide open sensor [H].
- The stack-feed-out motor turns off when the pawl actuates the stack feed-out belt home position sensor [I].



2.3.4 STAPLING Z-FOLDED PAPER

*c6020

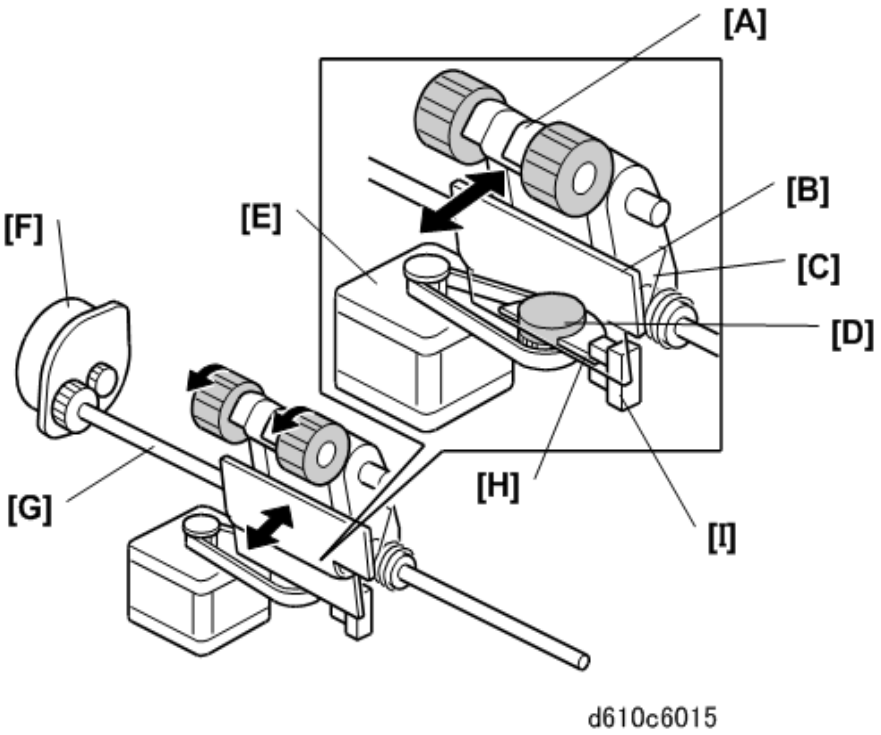
Here is the operation sequence for jogging and stapling Z-folded sheets:

[1]	The lower jogger fence lifts to receive the Z-folded sheets.
[2]	The top fence moves down, to the horizontal position.
[3]	A sheet of paper goes into the stapler tray.
[2]	The positioning roller turns when each sheet is fed to the stapler tray.
[5]	Each sheet is fed down against the lower jogger fence to align the bottom edge.
[6]	After the set number of sheets come in, the jogger top-fence motor switches on and lowers the top fence against the top of the stack. This aligns the stack for stapling.
[7]	The bottom fence motor lowers the aligned stack to the stapling position.
[8]	The stapler staples the stack.

2.4 STACK OUTPUT

2.4.1 PAPER EXIT AND STACKING

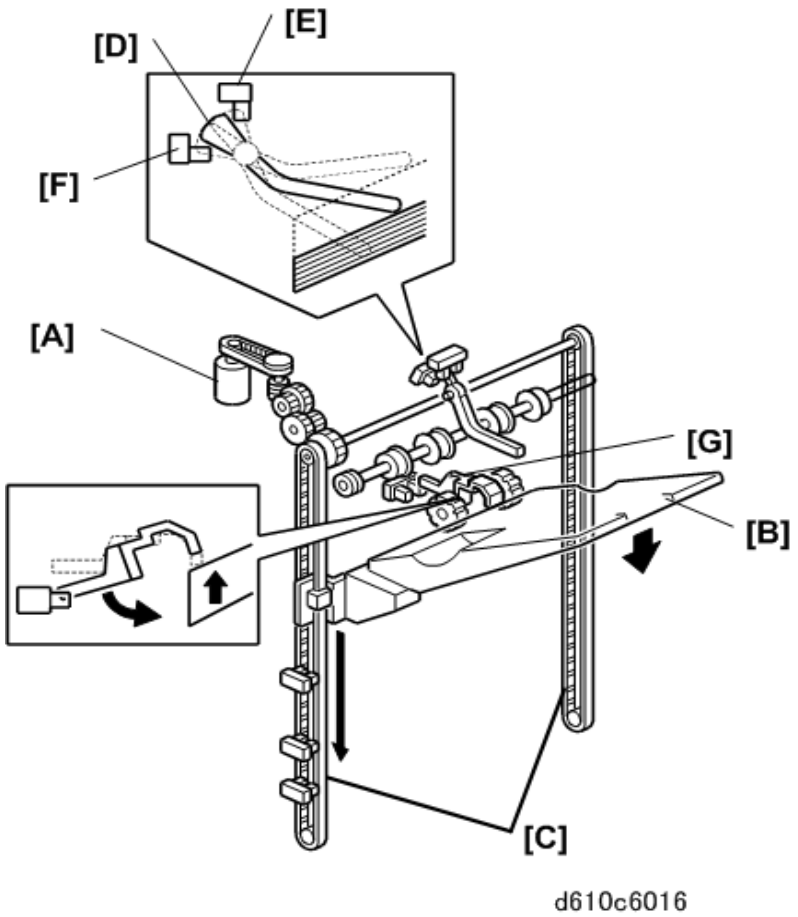
- The stacking roller assembly [A] is fastened to a plate [B] on a shaft by a spring [C]. The cam [D], in contact with the bottom of the plate, is connected to the stacking roller drag motor [E] via a timing belt.
- The stacking roller drag motor and timing belt rotate the cam against the bottom of the plate to move the rollers forward and back with each sheet ejected onto the shift tray.
- The stacking roller motor [F] drives the shaft [G] that rotates the stacking rollers counter-clockwise as the rollers move back.
- The simultaneous rotation and backward movement of the roller assembly pulls each sheet back toward the copier to align the edges of the stack on the shift tray.
- The actuator [H] is mounted on the cam and rotating with both rotating clockwise) and detects the roller assembly home position when the actuator leaves the gap of the return drive HP sensor [I] and signals the machine that the rollers are at the home position.
- The machine uses this information to control paper feed timing and confirm that the mechanism is operating correctly. The cam and actuator make one complete rotation for every sheet fed out of the machine onto the shift tray.



2.4.2 SHIFT TRAY

Overview

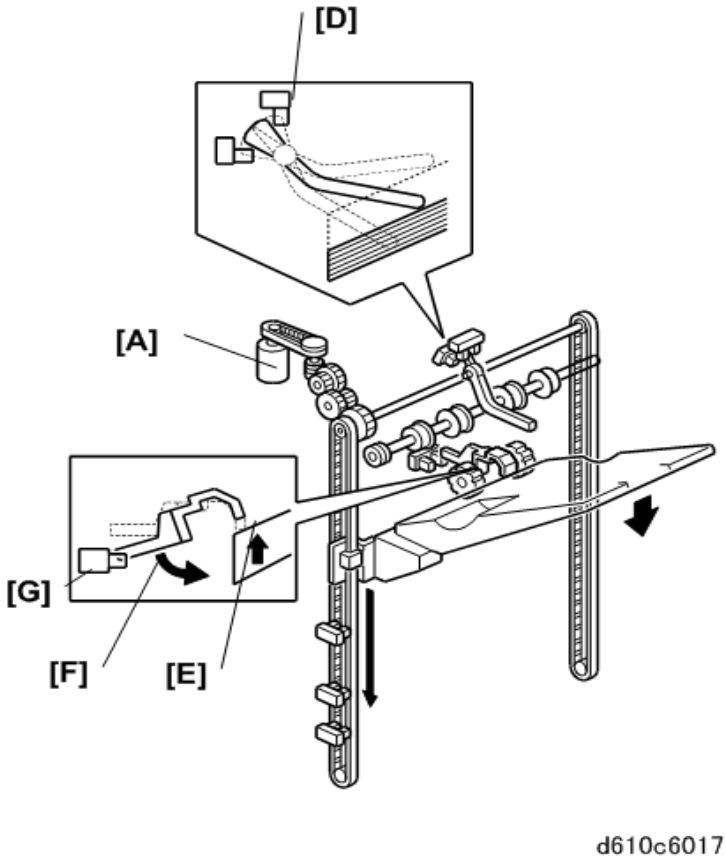
- The shift tray lift motor [A] controls the vertical position of the shift tray [B] through gears and timing belts [C].
- After the main switch is turned on, or when the stack is removed from the tray, the end of the feeler on the tray falls and its actuator [D] rotates up into staple mode HP sensor 2 [E] (S7) and switches it on.
- This switches on the lift motor, which raises the tray until the tray pushes the actuator out of the sensor [E]. Then, the lift motor stops the shift tray; this is the home position (the actuator [D] is between the two sensors [E] and [F].
- The shift tray upper limit switch (SW1) prevents the drive gear from being damaged if staple mode HP sensor 2 [E] fails. In case of a failure, when the shift tray pushes up the actuator [G] and positioning rollers, the switch will cut the power to the shift tray lift motor.



Shift Tray Raising and Lowering

Sort/Stack Mode (Shift Mode)

- The shift tray moves to home position, which is when the actuator [F] has just exited the shift mode home position sensor [G] (S12).
- During feed-out, the tray is lowered automatically at prescribed intervals; sensor [D] (S7) is ignored.
- When the stack is removed from the tray, the end of the feeler [E] between the arms of the stacking roller falls, and its actuator [F] enters sensor [G] (S12) and switches it on.
- This switches on the lift motor [A], which raises the tray until the actuator leaves the sensor. Then, the lift motor stops the tray; this is the home position.
- In sort/stack mode, if S12 fails when the tray is being lifted, the shift tray upper limit switch (SW1) prevents the drive gear from being damaged.

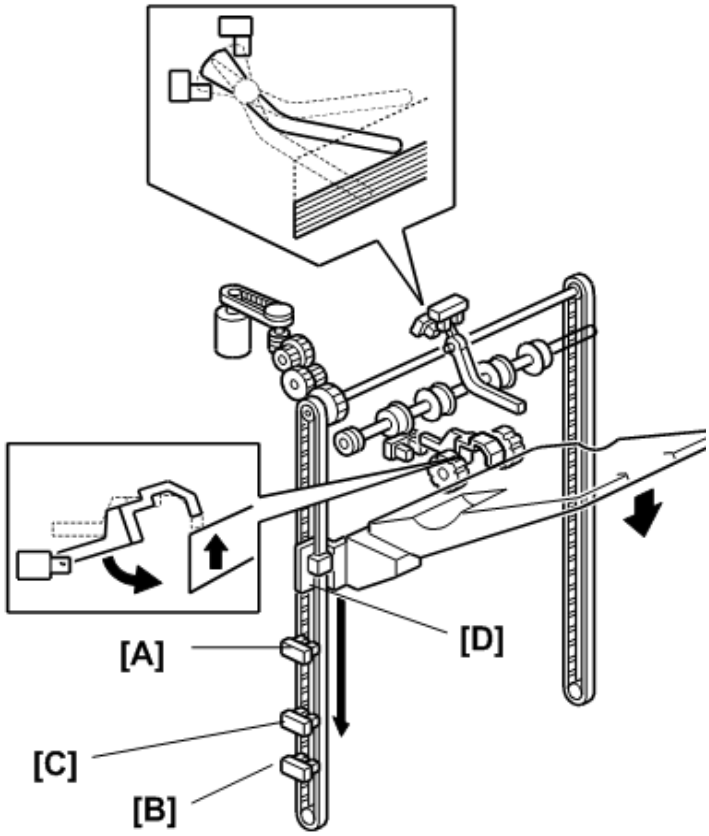


Staple Mode

The shift tray moves to home position, which is when the actuator [B] (above) is between the staple mode home position sensors [C] and [D]. During feed-out, the shift tray is lowered automatically at prescribed intervals. When the stack is removed from the tray, the tray returns to the home position for stand-by mode.

Shift Tray Lower Limit Detection

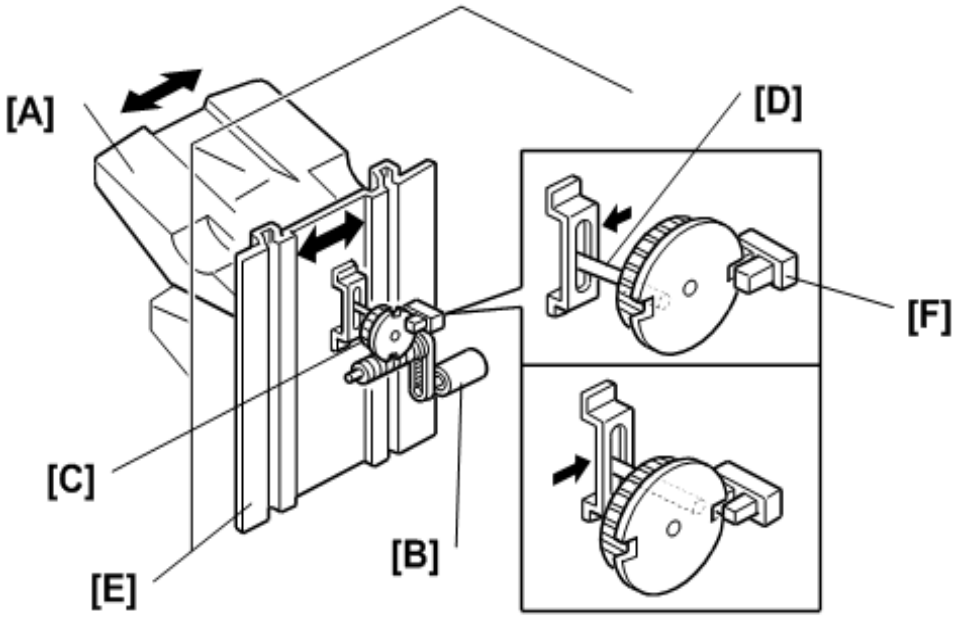
- This machine has two shift tray lower limit sensors: shift lower limit sensor [A] (S9) for large paper (B4 and larger) and shift lower limit sensor [B] (S11) for small paper (smaller than B4). (Sensor [C] (S10) is not used.)
- When the actuator [D] enters sensor [A] while using large paper (about 1500 sheets are on the tray), a message will be displayed and copying will stop.
- When the actuator [D] enters sensor [B] while using small paper (about 3,000 sheets are on the tray), a message will be displayed and copying will stop.



2.4.3 SHIFT TRAY SIDE-TO-SIDE MOVEMENT

In sort/stack mode, the shift tray [A] moves from side to side to separate the sets of copies.

- The horizontal position of the shift tray is controlled by the shift motor [B] and shift gear disk [C].
- After one set of copies is made and delivered to the shift tray, the shift motor turns on, driving the shift gear disk and the shaft [D].
- The end fence [E] is positioned by the shaft, creating the side-to-side movement.
- When the shift gear disk has rotated 180 degrees (when the shift tray is fully shifted across), the cut-out in the shift gear disk turns on the shift tray half-turn sensor [F] and the shift motor stops.
- The next set of copies is then delivered. The motor turns on, repeating the same process and moving the tray back to the previous position.



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2.4.4 JAM CONDITIONS

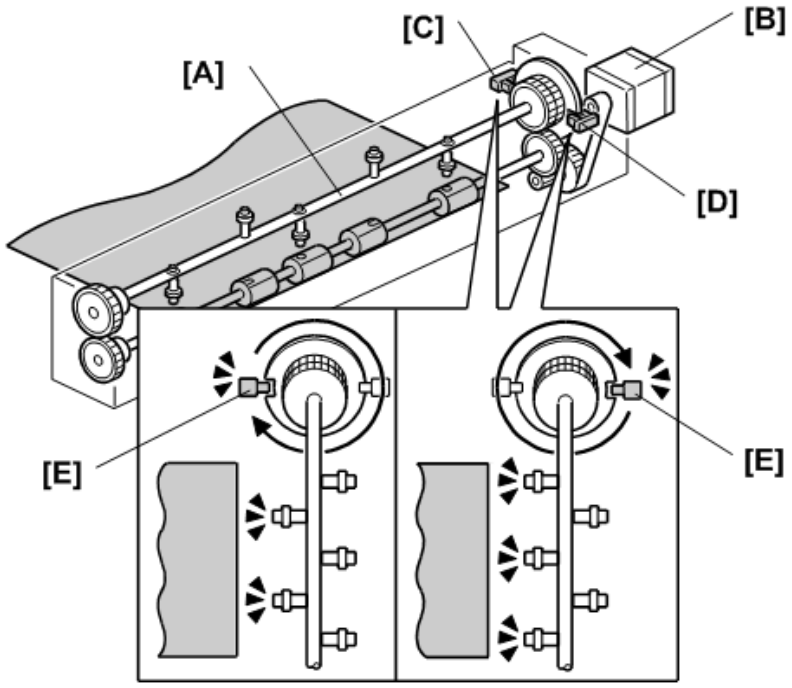
1. The entrance sensor does not turn on when the copier has fed paper 426 mm after the copier exit sensor turned off.
2. The entrance sensor does not turn off when the upper transport motor has fed paper 1.5 times the paper's length after it turned on.
3. The upper tray exit sensor does not turn on when the upper transport motor has fed paper 574 mm after the entrance sensor turned on.
4. The upper tray exit sensor does not turn off when the upper transport motor has fed paper 1.5 times the paper's length after it turned on.
5. In sort/stack mode, the shift tray exit sensor does not turn on when the upper transport motor has fed paper 733 mm after the entrance sensor turned on.
6. In sort/stack mode, the shift tray exit sensor does not turn off when the upper transport motor has fed paper 1.5 times the paper's length after it turned on.
7. In staple mode, the stapler tray entrance sensor does not turn on when the upper and lower transport motor have fed paper 835 mm after the entrance sensor turned on.
8. In staple mode, the stapler tray entrance sensor does not turn off when the upper transport motor has fed paper 1.5 times the paper's length after it turned on.
9. In staple mode, the stapler tray paper sensor does not turn off within 250 pulses of the stack feed-out motor after it started.
10. In staple mode, the shift tray exit sensor does not turn off within 1,260 ms after the stack feed-out motor started.

2.5 PUNCH UNIT B531 (OPTION)

2.5.1 PUNCH UNIT DRIVE

The punch unit makes 2 or 3 holes at the trailing edge of the paper. The number of holes depends on a selection made on the operation panel.

- The cam [A] has 2 punches on one side and 3 punches on the other, and is turned by the punch motor [B].
- The punch motor turns on immediately after the trailing edge of the paper passes the entrance sensor. The punches on the cam rotate downward and punch holes in the paper.
- After punching a sheet of paper, the cam returns to home position and stops.
- Home position depends on whether 2 holes or 3 holes are being made, so there are two punch HP sensors.
- Punch HP sensor 1 [C] is used when 2-hole punching is selected, and punch HP sensor 2 [D] is used when 3-hole punching is selected.
- When the cut-out [E] enters the slot of the punch HP in use (sensor 1 or 2-hole punching or sensor 2 for 3/4-hole punching) the motor stops.
- The knob (not shown) on the front end of the punch unit can be turned in either direction to clear paper jammed in the punch unit.



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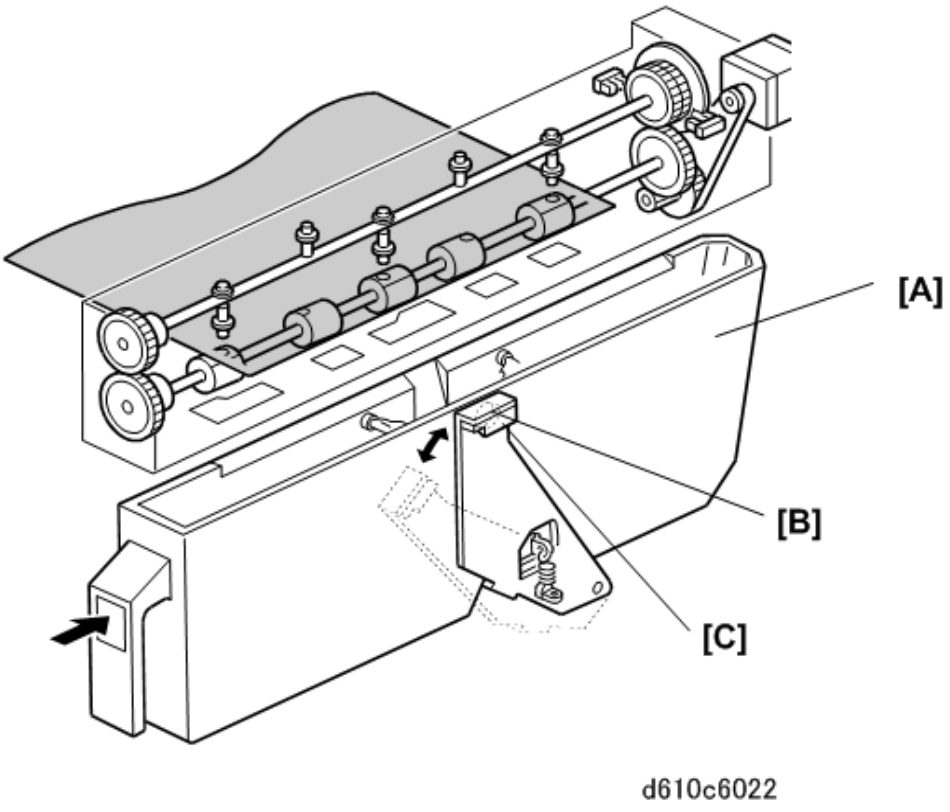
Punch Waste Collection

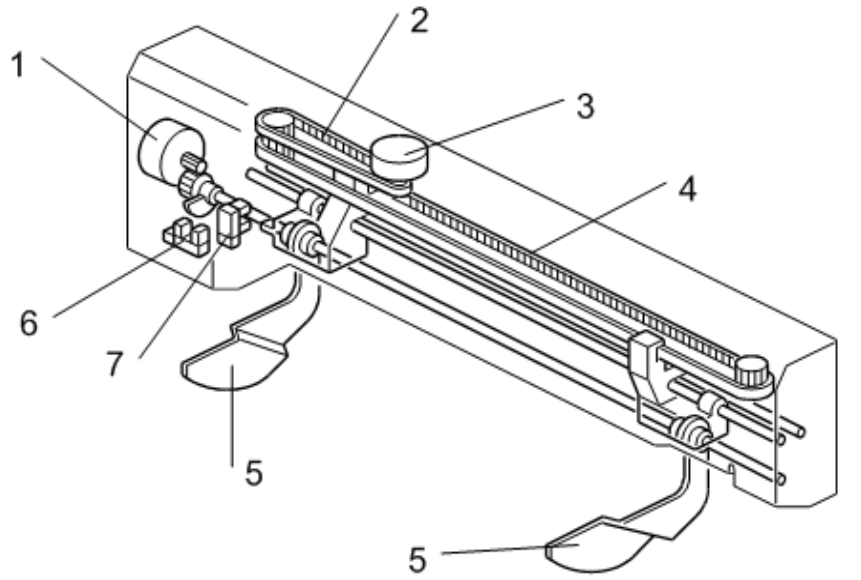
Punch waste is collected in the punch waste hopper [A] positioned under the punch unit.

- When the level of the punch waste in the hopper rises as far as the hole [B] in the hopper, the punch waste sensor [C] turns on, stops the job, and triggers a messageto indicate that the hopper is full and must be removed and emptied.
- The job resumes automatically after the hopper is emptied and returned to the finisher.
- The punch waste hopper sensor also functions as the hopper set sensor. When the hopper is not in the finisher, or if it is not inserted completely, the spring loaded sensor arm rotates up and to the right with the punch waste sensor away from the hole in the hopper holder and a message is displayed.
- The message in this case is the same as the hopper full message.



2.6 OUTPUT JOGGER UNIT B513 (OPTION)

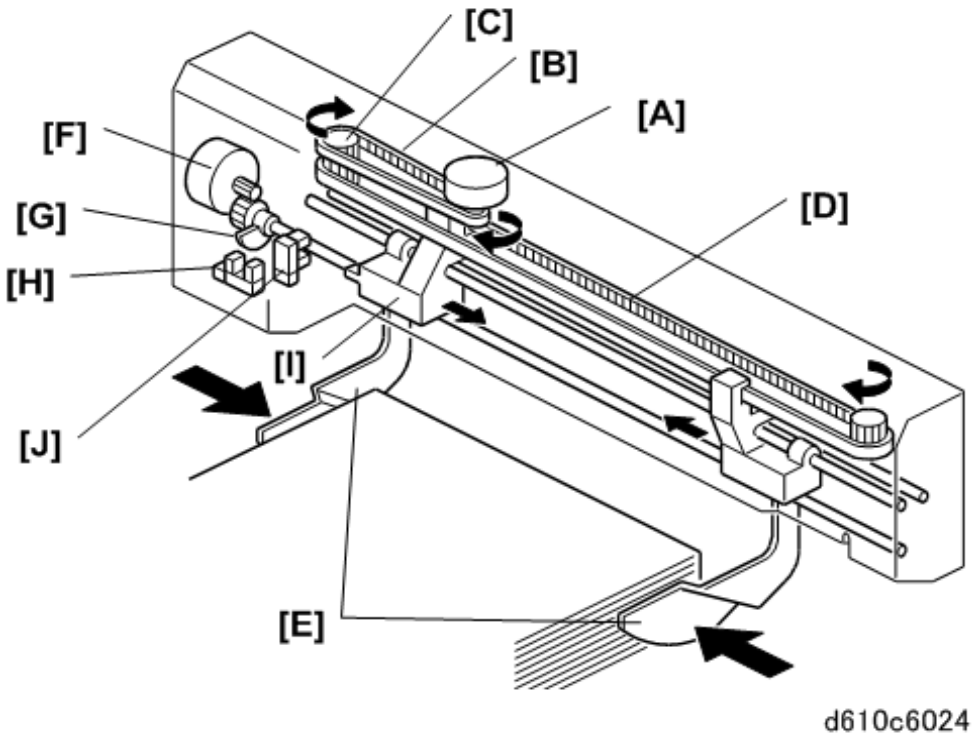
2.6.1 JOGGER UNIT MECHANICAL LAYOUT



No.	Part
1	Shift Jogger Fence Lift Motor
2	Shift Jogger Motor Timing Belt
3	Shift Jogger Motor
4	Shift Jogger Fence Timing Belt
5	Shift Jogger Fences
6	Shift Jogger HP Sensor
7	Shift Jogger Lift HP Sensor

2.6.2 JOGGER UNIT DRIVE

- At prescribed intervals, the jogger motor [A] switches on and drives the jogger timing belt [B], gear [C] and jogger fence timing belt [D] which drives the shift jogger fences [E] against the sides of the stack to align its edges.
- At the end of the job, the jogger fence lift motor [F] switches on and raises the fences until the actuator [G] leaves the slot of the shift jogger fence lift HP sensor [H] and shuts off the shift jogger fence lift motor.
- At the same time, the jogger motor reverses and drives the fences away from the sides of the stack until the actuator [I] deactivates the shift jogger fence HP sensor [J] and switches off the jogger motor.
- The jogger fences remain up in the standby position until the next job starts.



D615

MULTI-FOLDING UNIT FD4000

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

MULTI-FOLDING UNIT FD4000 (D615)

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READ THIS FIRST

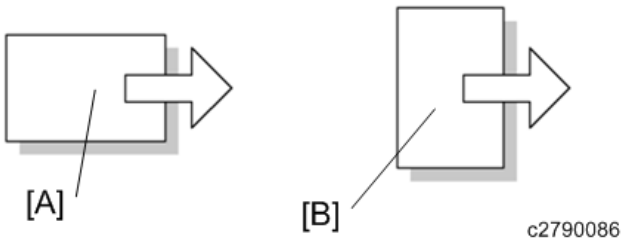
Safety, Conventions, Trademarks

Conventions

Common Terms

This is a list of symbols and abbreviations used in this manual.

Symbol, Abbreviation	Meaning
	Blue screw
	Bushing
	C-ring
	Connector
	E-ring
	Flexible film cable
	Harness clamp
	Hook
	Screw
	Spring
	Timing belt
JG	Junction Gate
LEF	Long Edge Feed
SEF	Short Edge Feed
TE	Trailing Edge of paper



[A] Short Edge Feed (SEF)

[B] Long Edge Feed (LEF)

Warnings, Cautions, Notes

In this manual, the following important symbols and notations are used.

⚠WARNING

- A Warning indicates a potentially hazardous situation. Failure to obey a Warning could result in death or serious injury.

⚠CAUTION

- A Caution indicates a potentially hazardous situation. Failure to obey a Caution could result in minor or moderate injury or damage to the finisher or other property.

Important

- Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine.

Note

- This information provides tips and advice about how to best service the machine.

General Safety Instructions

For your safety, please read this manual carefully before you use this product. Keep this manual handy for future reference.

Safety Information

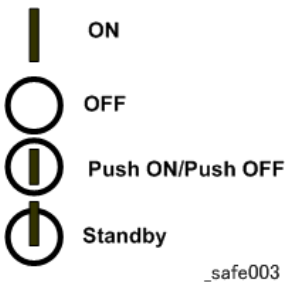
Always obey the following safety precautions when using this product.

Safety During Operation

In this manual, the following important symbols and notations are used.

Switches and Symbols

Where symbols are used on or near switches on machines for Europe and other areas, the meaning of each symbol conforms with IEC60417.



Responsibilities of the Customer Engineer

Reference Material for Maintenance

- Maintenance shall be done using the special tools and procedures prescribed for maintenance of the machine described in the reference materials (service manuals, technical bulletins, operating instructions, and safety guidelines for customer engineers).
- In regard to other safety issues not described in this document, all customer engineers shall strictly obey procedures and recommendations described the “CE Safety Guide”.
- Use only consumable supplies and replacement parts designed for use of the machine.

Before Installation, Maintenance

Power

⚠WARNING

- Always disconnect the power plug before doing any maintenance procedure. After switching off the machine, power is still supplied to the main machine and other devices. To prevent electrical shock, switch the machine off, wait for a few seconds, then unplug the machine from the power source.
- Before you do any checks or adjustments after turning the machine off, work carefully to avoid injury. After removing covers or opening the machine to do checks or adjustments, never touch electrical components or moving parts (gears, timing belts, etc.).
- After turning the machine on with any cover removed, keep your hands away from electrical components and moving parts. Never touch the cover of the fusing unit, gears, timing belts, etc.

Installation, Disassembly, and Adjustments

⚠WARNING

- After installation, maintenance, or adjustment, always check the operation of the machine to make sure that it is operating normally. This ensures that all shipping materials, protective materials, wires and tags, metal brackets, etc., removed for installation, have been removed and that no tools remain inside the machine. This also ensures that all release interlock switches have been restored to normal operation.
- Never use your fingers to check moving parts causing spurious noise. Never use your fingers to lubricate moving parts while the machine is operating.

Special Tools

⚠CAUTION

- Use only standard tools approved for machine maintenance.
- For special adjustments, use only the special tools and lubricants described in the service manual. Using tools incorrectly, or using tools that could damage parts, could damage the machine or cause injuries.

During Maintenance

General

⚠CAUTION

- Before you begin a maintenance procedure: 1) Switch the machine off, 2) Disconnect the power plug from the power source, 3) Allow the machine to cool for at least 10 minutes.
- Avoid touching the components inside the machine that are labeled as hot surfaces.

Safety Devices

⚠WARNING

- Never remove any safety device unless it requires replacement. Always replace safety devices immediately.
- Never do any procedure that defeats the function of any safety device. Modification or removal of a safety device (fuse, switch, etc.) could lead to a fire and personal injury. Always test the operation of the machine to ensure that it is operating normally and safely after removal and replacement of any safety device.
- For replacements use only the correct fuses or circuit breakers rated for use with the machine. Using replacement devices not designed for use with the machine could lead to a fire and personal injuries.

Organic Cleaners

⚠CAUTION

- During preventive maintenance, never use any organic cleaners (alcohol, etc.) other than those described in the service manual.
- Make sure the room is well ventilated before using any organic cleaner. Use organic solvents in small amounts to avoid breathing the fumes and becoming nauseous.
- Switch the machine off, unplug it, and allow it to cool before doing preventive maintenance. To avoid fire or explosion, never use an organic cleaner near any part that generates heat.
- Wash your hands thoroughly after cleaning parts with an organic cleaner to contamination of food, drinks, etc. which could cause illness.
- Clean the floor completely after accidental spillage of silicone oil or other materials to prevent slippery surfaces that could cause accidents leading to hand or leg injuries. Use

“My Ace” Silicone Oil Remover (or dry rags) to soak up spills. For more details, please refer to Technical Bulletin “Silicone Oil Removal” (A024-50).

Ozone Filters

⚠CAUTION

- Always replace ozone filters as soon as their service life expires (as described in the service manual).
- An excessive amount of ozone can build up around machines that use ozone filters if they are not replaced at the prescribed time. Excessive ozone could cause personnel working around the machine to feel unwell.

Power Plug and Power Cord

⚠WARNING

- Before servicing the machine (especially when responding to a service call), always make sure that the power plug has been inserted completely into the power source. A partially inserted plug could lead to heat generation (due to a power surge caused by high resistance) and cause a fire or other problems.
- Always check the power plug and make sure that it is free of dust and lint. Clean it if necessary. A dirty plug can generate heat which could cause a fire.
- Inspect the length of the power cord for cuts or other damage. Replace the power cord if necessary. A frayed or otherwise damaged power cord can cause a short circuit which could lead to a fire or personal injury from electrical shock.
- Check the length of the power cord between the machine and power supply. Make sure the power cord is not coiled or wrapped around any object such as a table leg. Coiling the power cord can cause excessive heat to build up and could cause a fire.
- Make sure that the area around the power source is free of obstacles so the power cord can be removed quickly in case of an emergency.
- Make sure that the power cord is grounded (earthed) at the power source with the ground wire on the plug.
- Connect the power cord directly into the power source. Never use an extension cord.
- When you disconnect the power plug from the power source, always pull on the plug, not the cable.

After Installation, Servicing

Disposal of Used Items

⚠CAUTION

- Always dispose of used items (developer, toner, toner cartridges, OPC drums, etc.) in accordance with the local laws and regulations regarding the disposal of such items.
- To protect the environment, never dispose of this product or any kind of waste from consumables at a household waste collection point. Dispose of these items at one of our dealers or at an authorized collection site.

Points to Confirm with Operators

At the end of installation or a service call, instruct the user about use of the machine. Emphasize the following points.

- Show operators how to remove jammed paper and troubleshoot other minor problems by following the procedures described in the operating instructions.
- Point out the parts inside the machine that they should never touch or attempt to remove.
- Confirm that operators know how to store and dispose of consumables.
- Make sure that all operators have access to an operating instruction manual for the machine.
- Confirm that operators have read and understand all the safety instructions described in the operating instructions.
- Demonstrate how to turn off the power and disconnect the power plug (by pulling the plug, not the cord) if any of the following events occur: 1) something has spilled into the product, 2) service or repair of the product is necessary, 3) the product cover has been damaged.
- Caution operators about removing paper fasteners around the machine. They should never allow paper clips, staples, or any other small metallic objects to fall into the machine.

Safety Instructions for this Machine

1. The installation must be done by trained service technicians.
2. This machine weighs 92 kg. (202.9 lb.). At least four persons are required to remove the machine from its pallet and position it for installation.
3. To prevent fire hazards never use flammable solvents around the machine.
4. Never place any object on the machine.
5. If anything falls into the machine, turn off the main power switch on the right side of the machine, then disconnect the power cord from the power source.
6. Locate the machine on a sturdy flat surface where it will not be exposed to excessive vibration.
7. To avoid fire hazard, confirm that the ventilation ports are not blocked, so air can flow freely.
8. Gas generated by the molten glue can irritate the eyes, throat, and nose. The machine should always be used in a well ventilated room.
9. To avoid the dangers of fire and electrical shock, make sure that the machine is never exposed to:
    - Excessive high temperatures and/or humidity
    - Dust
    - Water
    - Direct sunlight
    - Open flame
    - Corrosive gases

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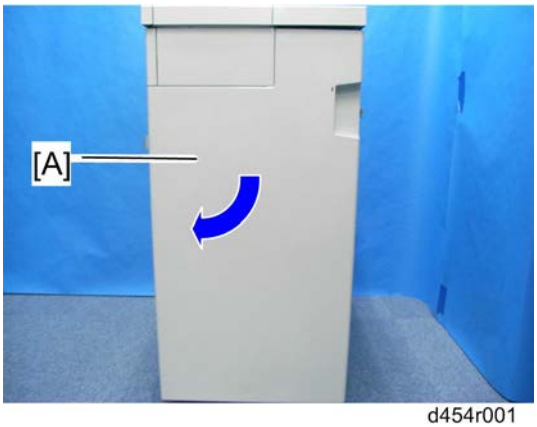
1. REPLACEMENT AND ADJUSTMENT

1.1 COVERS

1.1.1 FRONT DOOR UPPER COVER

1. Open the front door [A].

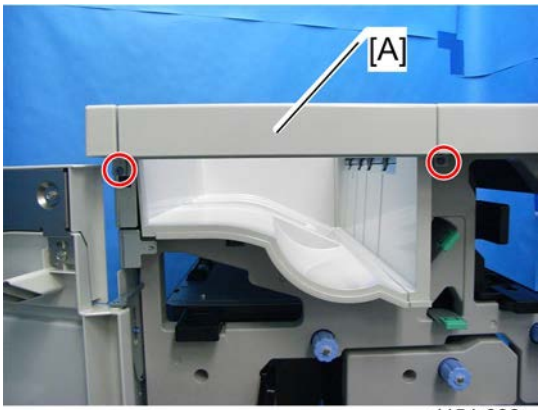


d454r001

2. Hinge cover [A] (x 1)

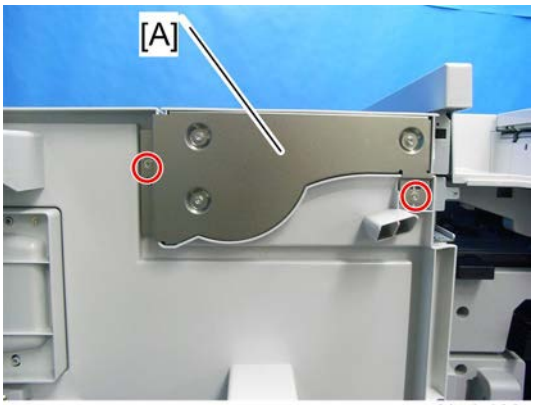
d454r002 d454r098

3. Cross-piece [A] (x 2)



d454r099

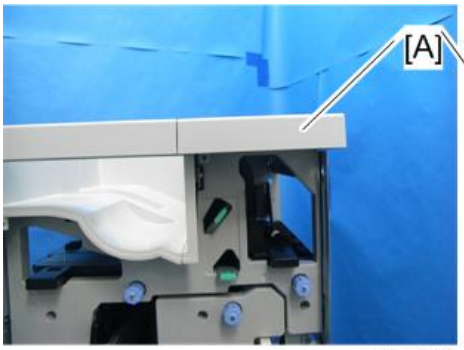
4. Front door upper cover [A] (x 2)



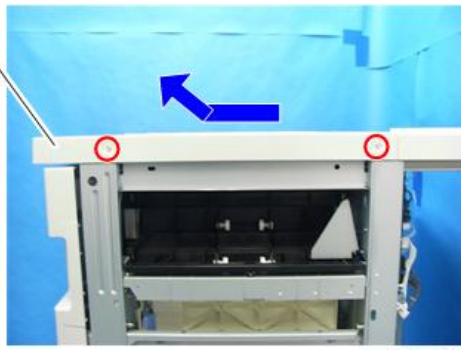
d454r100

1.1.2 TOP COVER

1. Open the front door.
2. Hinge cover page 1
3. Cross-piece page 1
4. Top cover [A] (x 2)

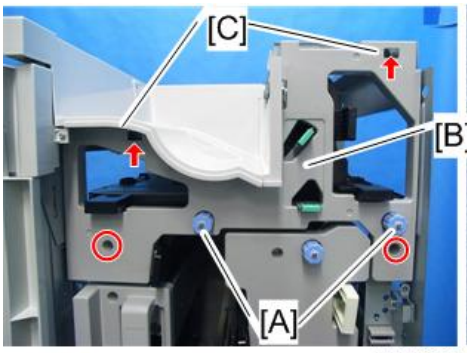


d454r021

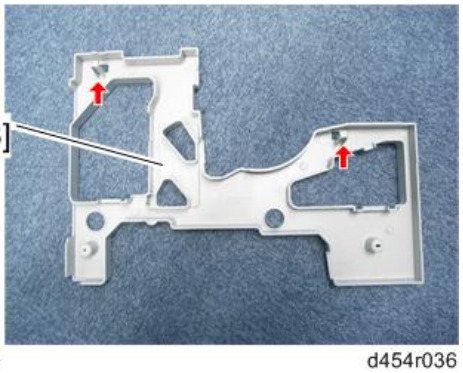

d454r020

1.1.3 INNER UPPER COVER

1. Top cover page 2
2. Remove the knobs [A] (x1 ea.).
3. Inner upper cover [B] (x2)
4. Unfasten [C] x2.

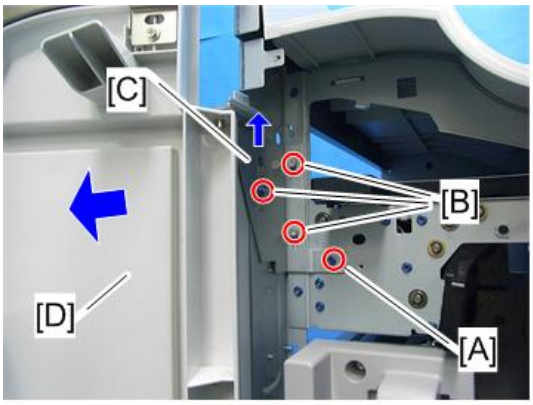


d454r082


d454r036

1.1.4 FRONT DOOR

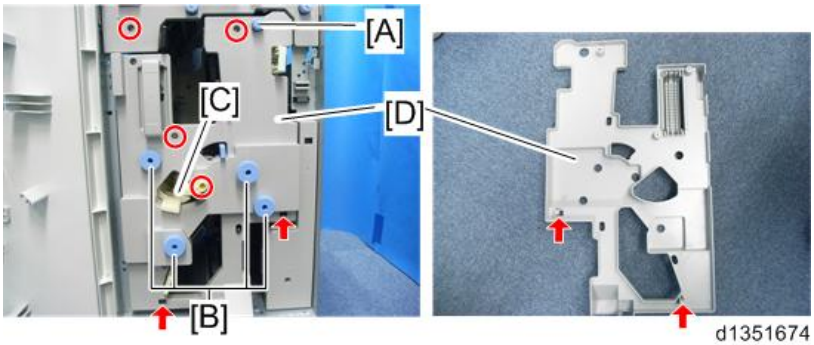
1. Top cover page 2
2. Inner upper cover page 2
3. Remove the screw [A].
4. Loosen three screws [B].
5. Lift up the hinge bracket [C].
6. Front door [D]



d1351446

1.1.5 FOLDING UNIT COVER

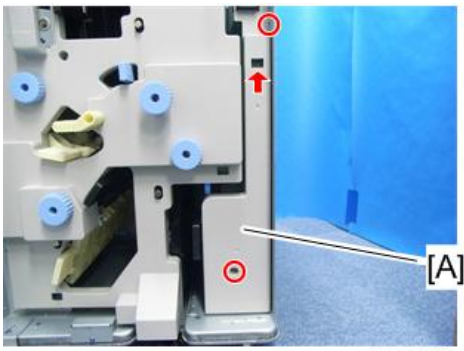
1. Open the front cover.
2. Remove the knob [A] (x1).
3. Remove four knobs [B] (x1 ea.).
4. Lever [C] (x1)
5. Folding unit cover [D] (x3, x2)



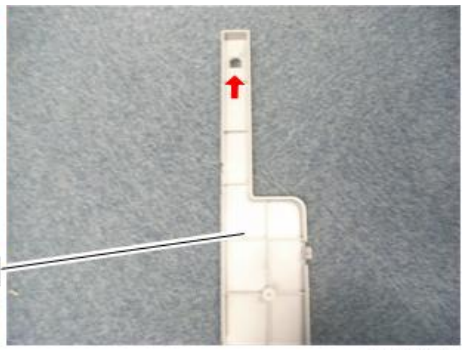
d1351674

1.1.6 INNER LOWER COVER

1. Open the front cover.
2. Inner lower cover [A] (x1, x1)

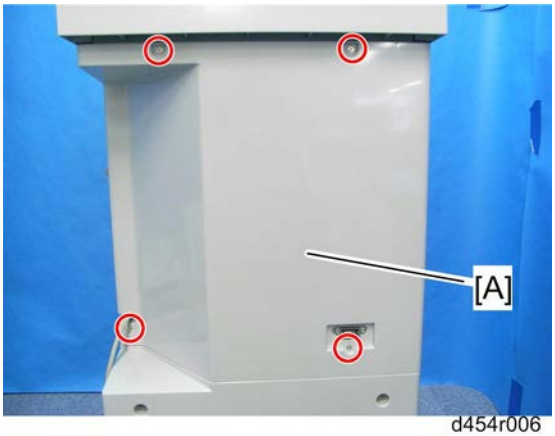


d454r092


d454r093

1.1.7 REAR UPPER COVER

1. Rear upper cover [A] (x4)



d454r006

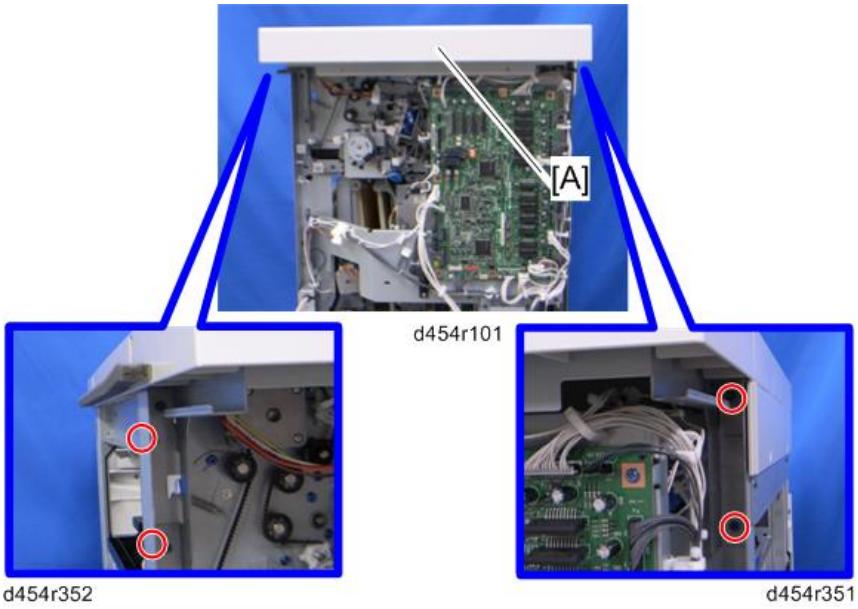
1.1.8 REAR LOWER COVER

1. Rear lower cover [A] (x3)

d454r007

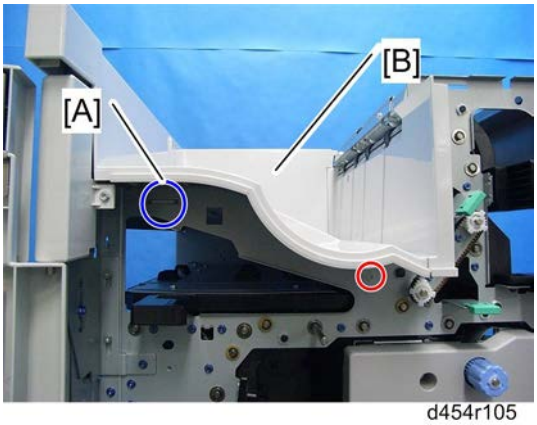
1.1.9 TOP REAR COVER

1. Rear upper cover page 4
2. Top rear cover [A] (x4)



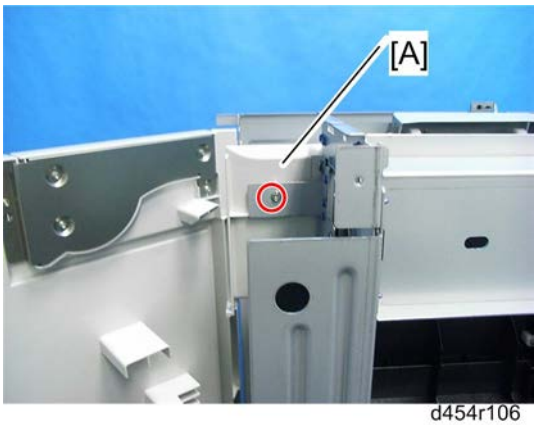
1.1.10 TOP TRAY

1. Top rear cover page 5
2. Inner upper cover page 2
3. Release the hook [A], and remove the top tray [B] (x1).



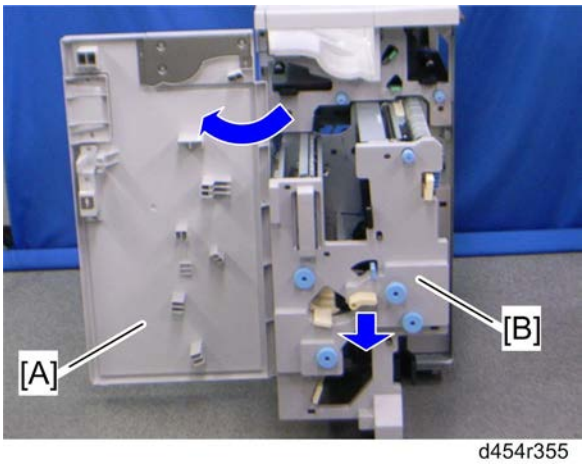
1.1.11 TOP TRAY RIGHT COVER

1. Top tray page 5
2. Top tray right cover [A] (x1)



1.1.12 PULLING OUT THE FOLDING UNIT DRAWER

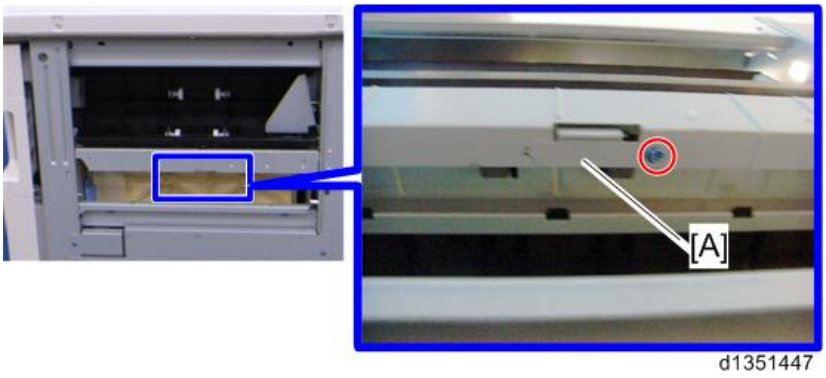
1. Open the front door [A]
2. Pull out the folding unit drawer [B].



1.2 PAPER TRANSPORT

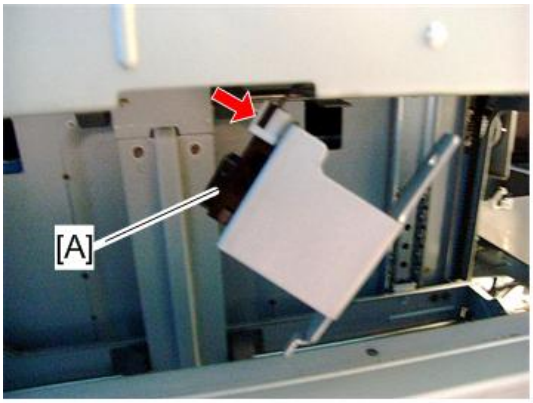
1.2.1 ENTRANCE SENSOR

1. Entrance sensor bracket [A] (x1)



d1351447

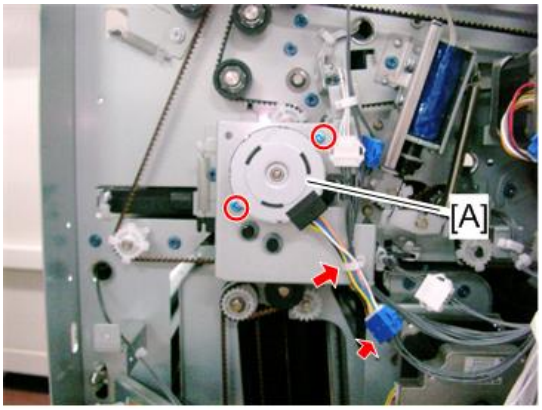
2. Entrance sensor [A] (hooks, x1)



d1351448

1.2.2 ENTRANCE JG (JUNCTION GATE) MOTOR

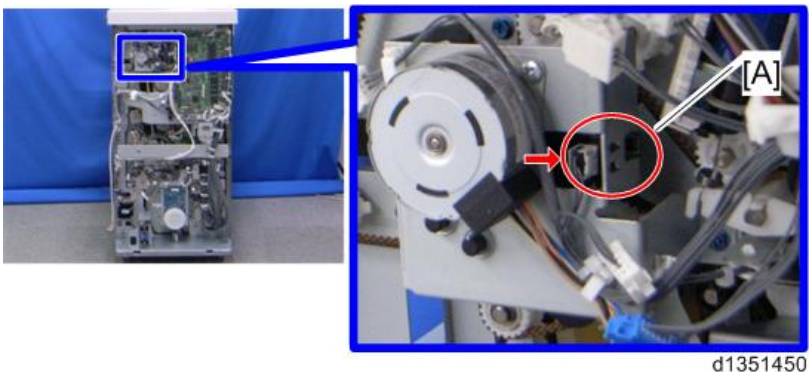
1. Rear upper cover page 4
2. Entrance JG motor [A] (x1, x1, x2)



d1351449

1.2.3 ENTRANCE JG (JUNCTION GATE) HP SENSOR

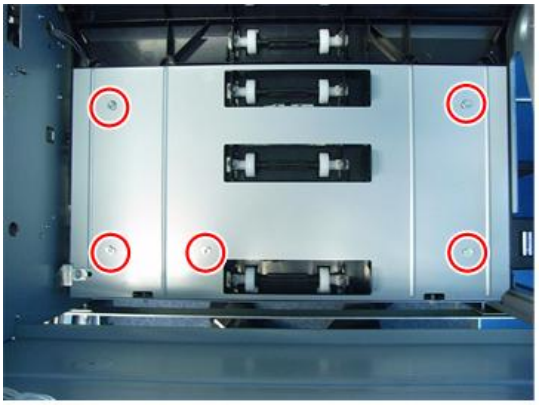
1. Rear upper cover page 4
2. Entrance JG HP sensor [A] (x4, x)



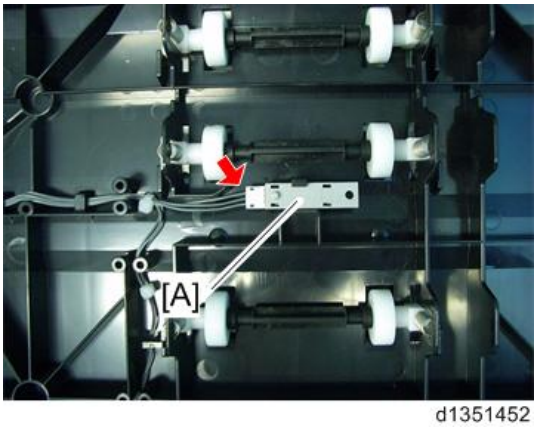
d1351450

1.2.4 VERTICAL PATH PAPER SENSOR

1. Top tray page 5
2. Remove the bracket (x5)


d1351451

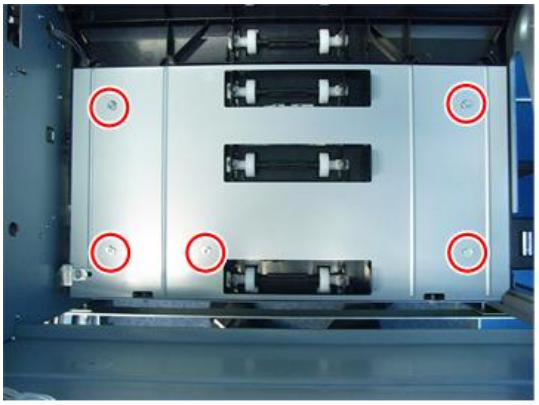
3. Vertical path paper sensor [A] (x1, x3)



d1351452

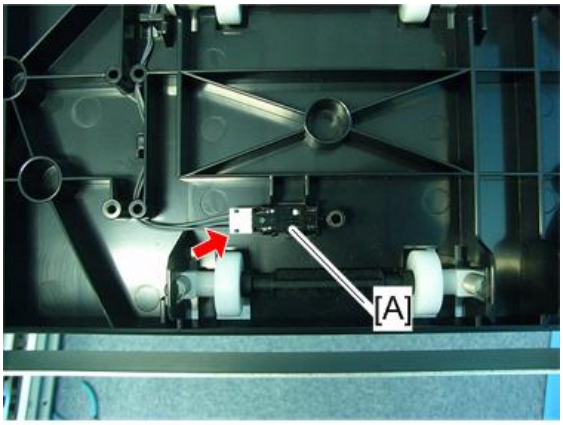
1.2.5 HORIZONTAL PATH EXIT SENSOR

1. Top tray page 5
2. Remove the bracket (x5)



d1351451

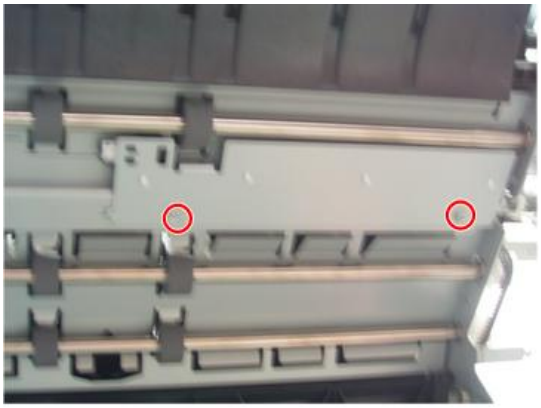
3. Horizontal path exit sensor [A] (x1)



d1351453

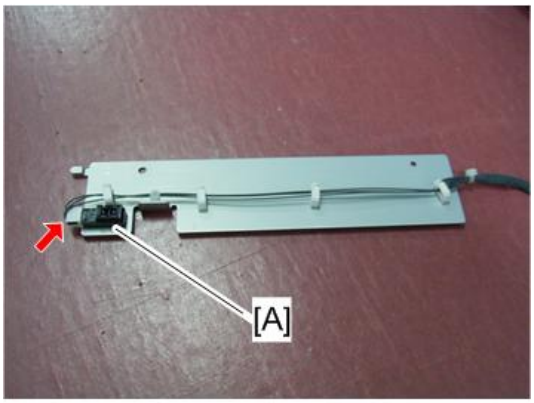
1.2.6 HORIZONTAL PATH PAPER SENSOR

1. Top tray page 5
2. Remove the bracket (x2)



d1351454

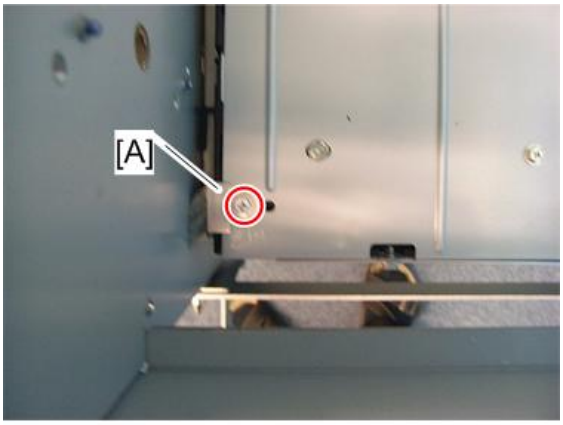
3. Horizontal path paper sensor [A] (x1, x3)



d1351455

1.2.7 DISCHARGE BRUSH 2

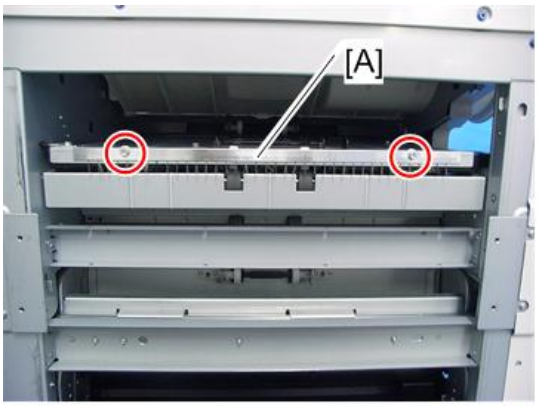
1. Top tray page 5
2. Discharge brush 2 [A] (x1)



d1351456

1.2.8 DISCHARGE BRUSH 3

1. Discharge brush 3 [A] (x2)

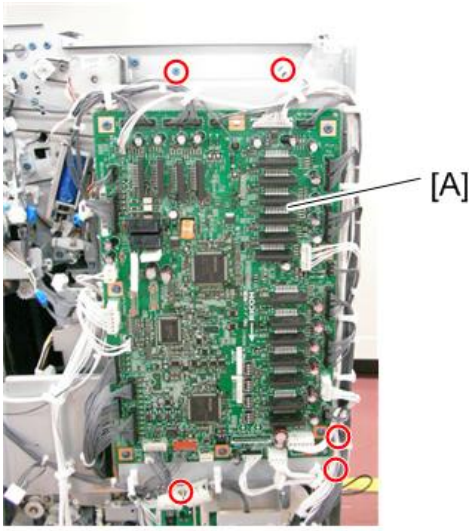


d1351457

1.3 PAPER FOLDING

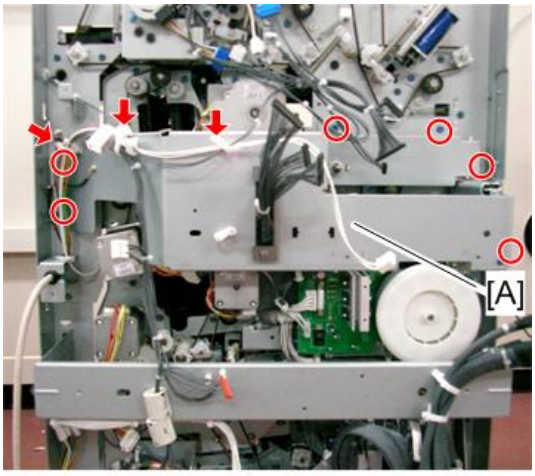
1.3.1 DYNAMIC ROLLER LIFT MOTOR

1. Rear upper cover page 4
2. Top rear cover page 5
3. Main board bracket [A] (all, all, x5, ground cable x1)



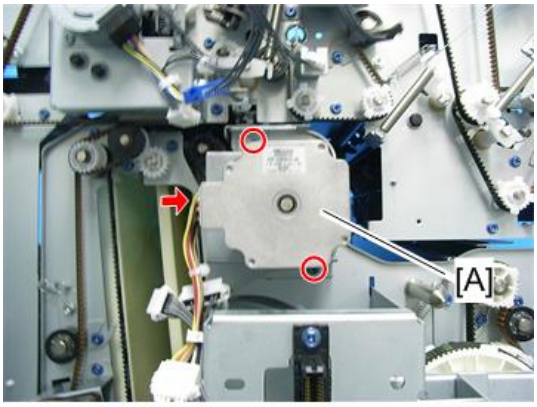
d1351595

4. Rear upper stay [A] (x3, x 6)



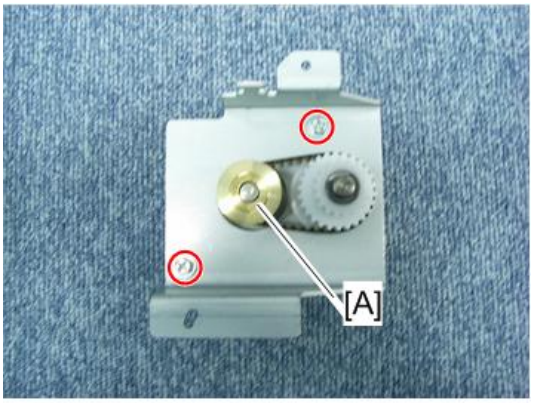
d1351458

5. Dynamic roller lift motor bracket [A] (x1, x2)



d1351459

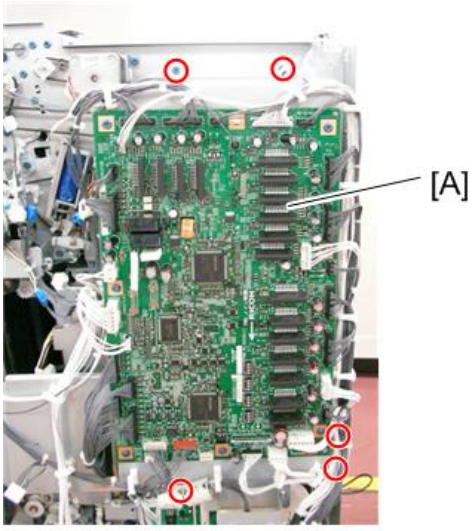
6. Dynamic roller lift motor [A] (x2)



d1351460

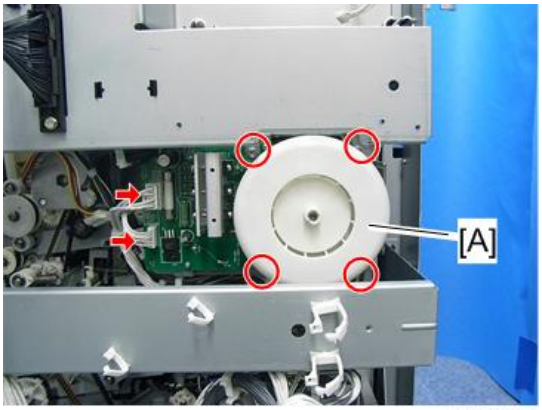
1.3.2 CREASE MOTOR

1. Rear upper cover page 4
2. Rear lower cover page 4
3. Top rear cover page 5
4. Main board bracket [A] (all, all, x5, ground cable x1)



d1351595

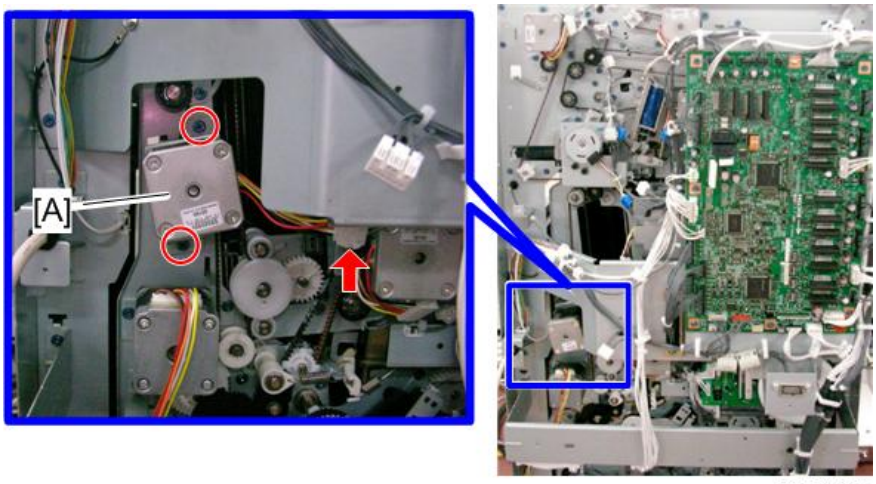
5. Crease motor [A] (x2, x4)



d1351461

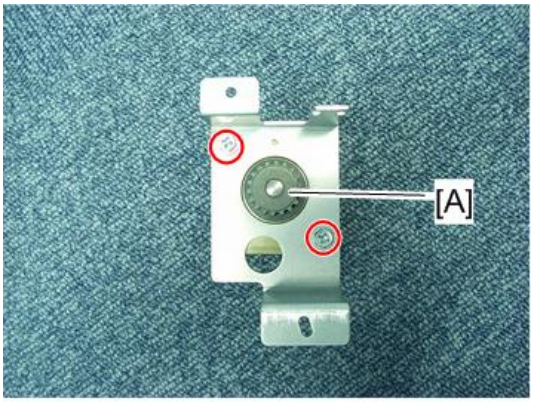
1.3.3 DYNAMIC ROLLER TRANSPORT MOTOR

1. Rear upper cover page 4
2. Dynamic roller transport motor bracket [A] (x1, x2)



d1351462

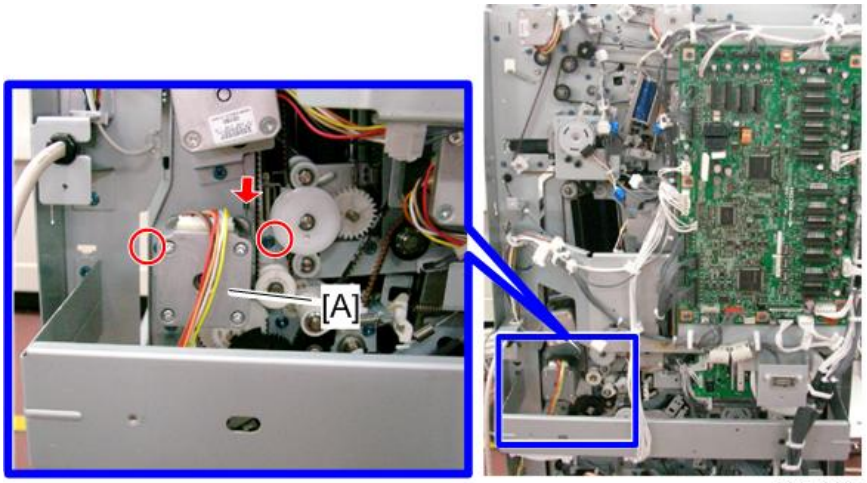
3. Dynamic roller transport motor [A] (x2)



d1351463

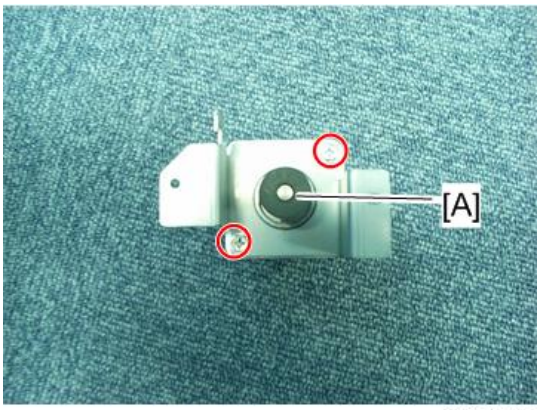
1.3.4 REGISTRATION ROLLER RELEASE MOTOR

1. Rear upper cover page 4
2. Rear lower cover page 4
3. Registration roller release motor bracket [A] (x1, x2)



d1351464

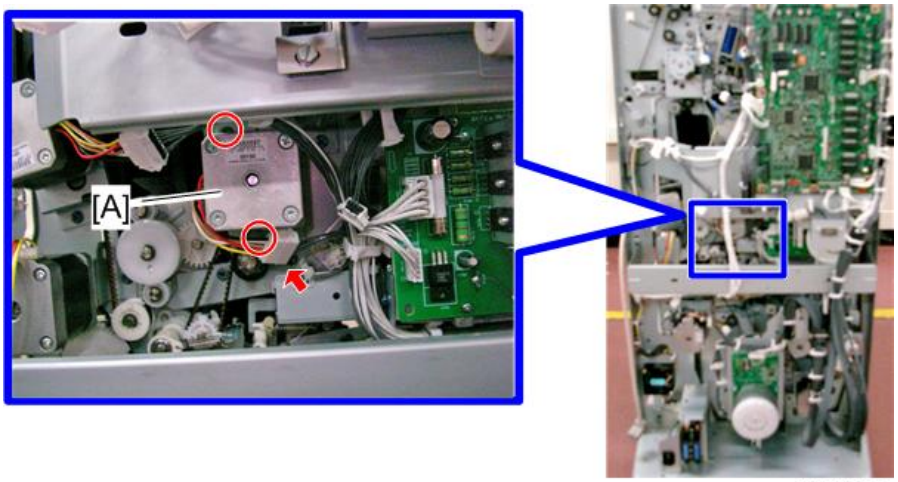
4. Registration roller release motor [A] (x2)



d1351465

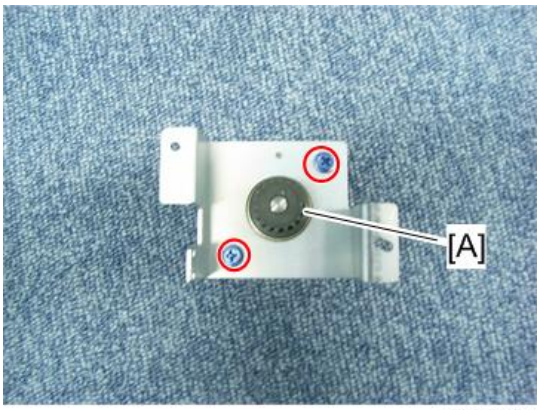
1.3.5 REGISTRATION ROLLER TRANSPORT MOTOR

1. Rear upper cover page 4
2. Rear lower cover page 4
3. Registration roller transport motor bracket [A] (x1, x2)



d1351466

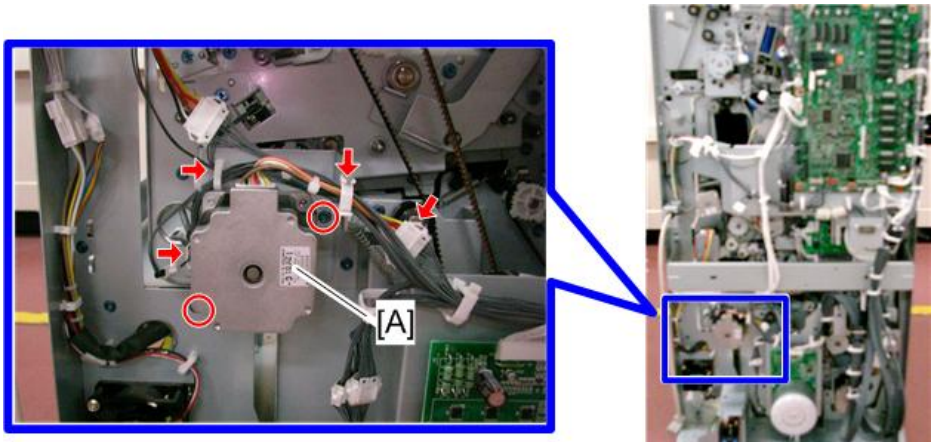
4. Registration roller transport motor [A] (x2)



d1351467

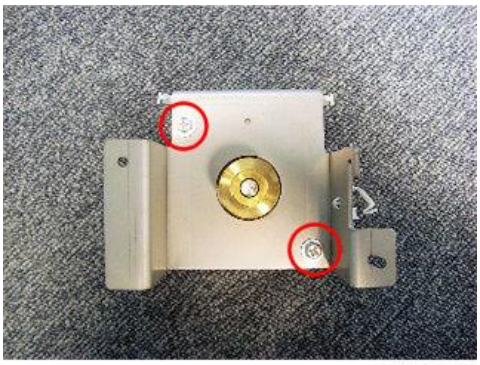
1.3.6 FOLD PLATE MOTOR

1. Rear upper cover page 4
2. Rear lower cover page 4
3. Fold plate motor bracket [A] (x3, x1, x2)



d1351468

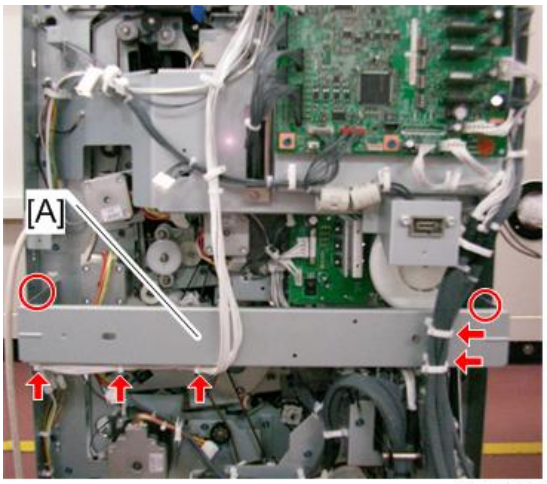
4. Fold plate motor [A] (x2)



d1351469

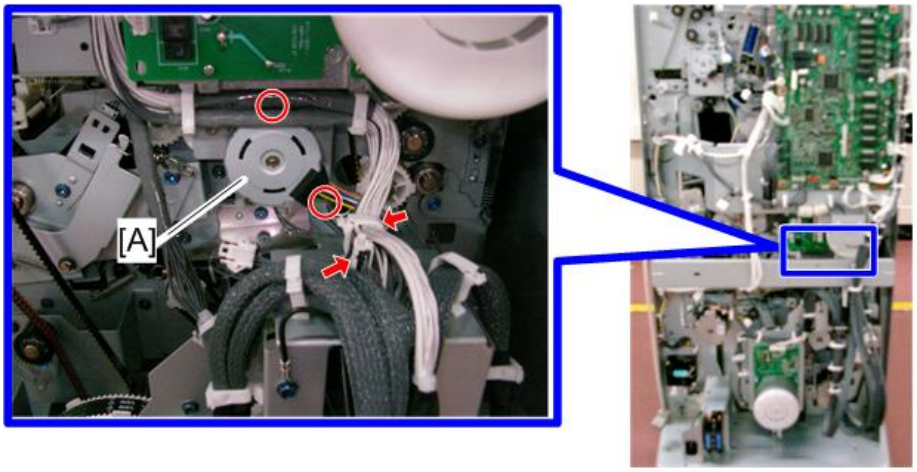
1.3.7 DIRECT-SEND JG MOTOR

1. Rear upper cover page 4
2. Rear lower cover page 4
3. Rear lower stay [A] (x5, x2)



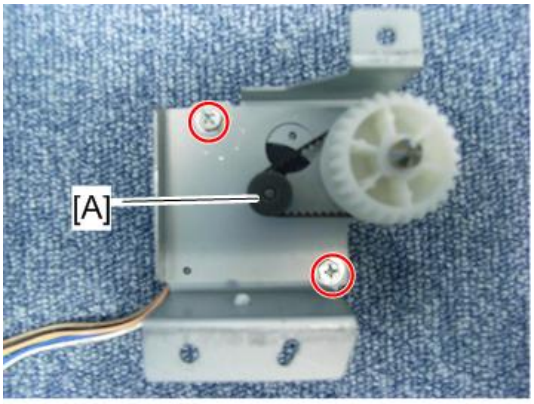
d1351470

4. Direct-Send JG motor bracket [A] (x1, x1, x2)



d1351471

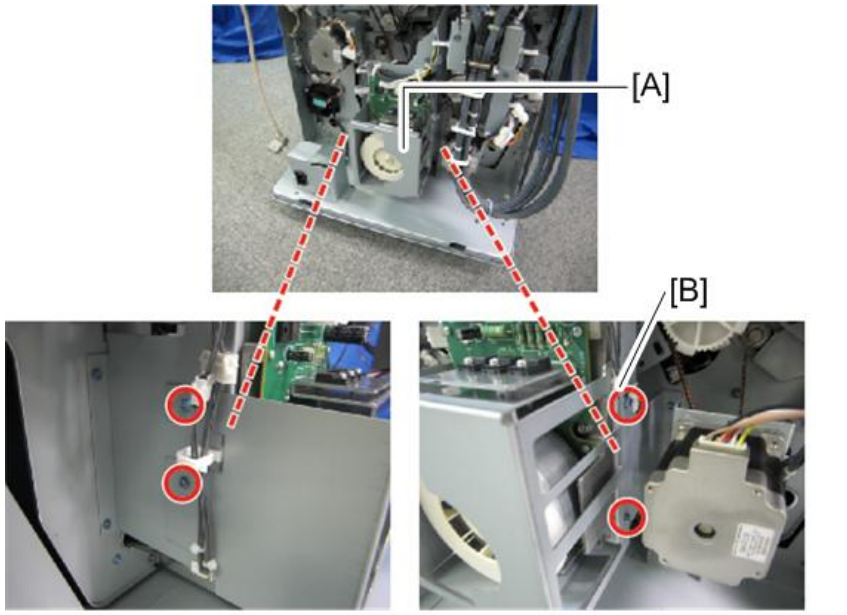
5. Direct-Send JG motor [A] (x2)



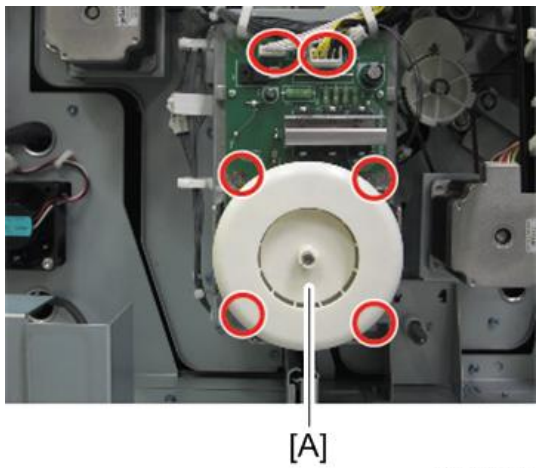
d1351472

1.3.8 1ST FOLD MOTOR

1. Rear upper cover page 4
2. Rear lower cover page 4
3. 1st Fold Motor cover [A] and [B] (x4, x1)

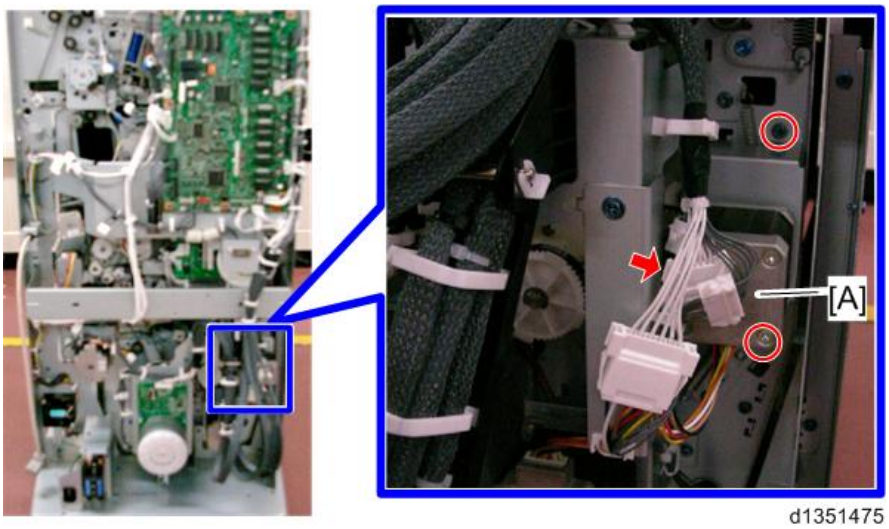


4. 1st fold motor [A] (x2, x4)



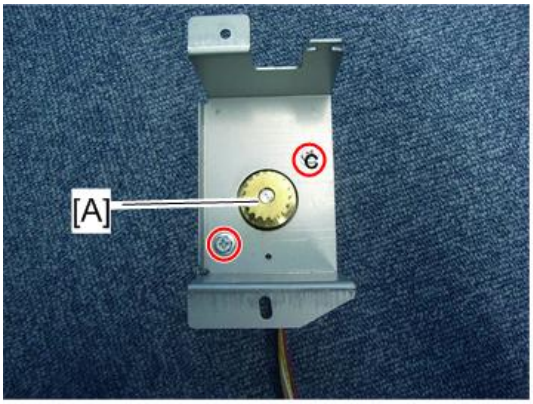
1.3.9 FM6 PAWL MOTOR

1. Rear upper cover page 4
2. Rear lower cover page 4
3. FM6 pawl motor bracket [A] (x1, x1, x2)



d1351475

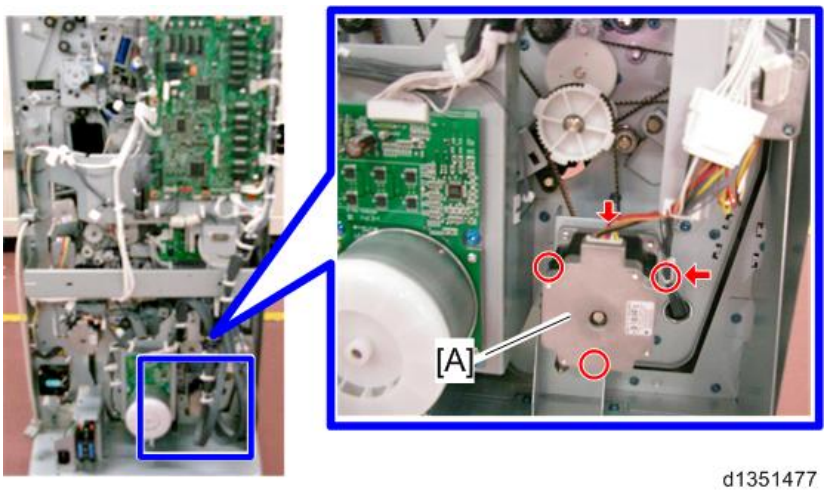
4. FM6 pawl motor [A] (x2)



d1351476

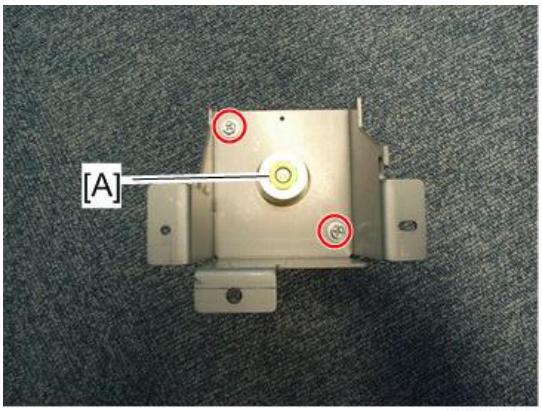
1.3.10 2ND FOLD MOTOR

1. Rear upper cover page 4
2. Rear lower cover page 4
3. 2nd fold motor bracket [A] (x, x1, x3)



d1351477

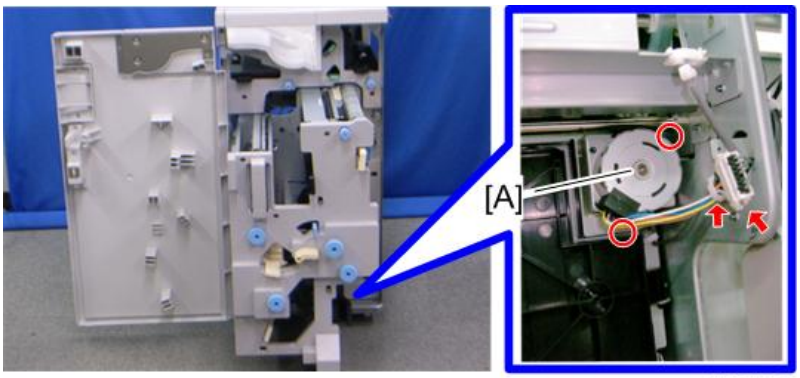
4. 2nd fold motor [A] (x2)



d1351478

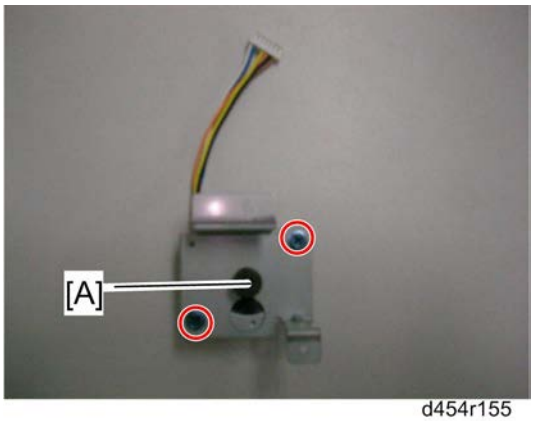
1.3.11 JOGGER FENCE MOTOR

1. Pull out the folding unit drawer. page 6
2. Jogger fence motor bracket [A] (x1, x1, x2)



d1351479

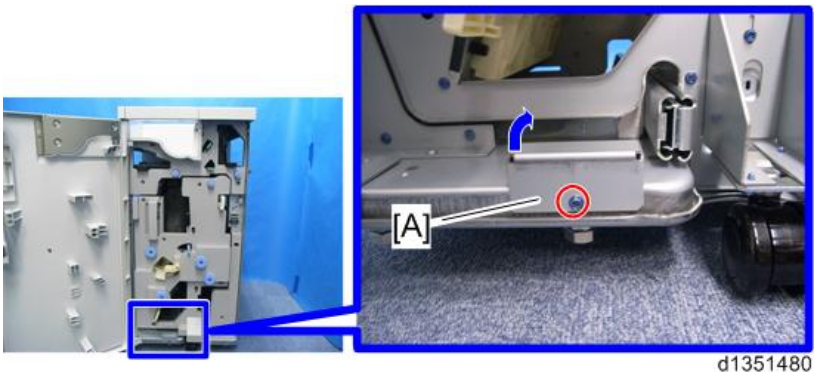
3. Jogger fence motor [A] (x2)



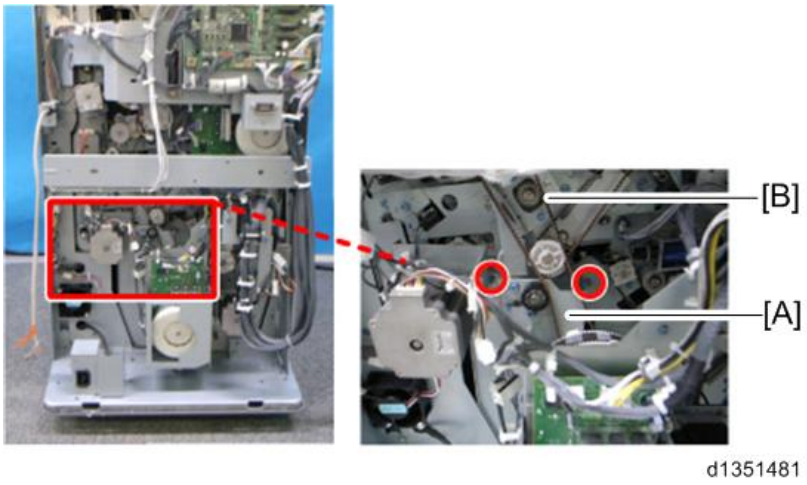
d454r155

1.3.12 1ST STOPPER UNIT

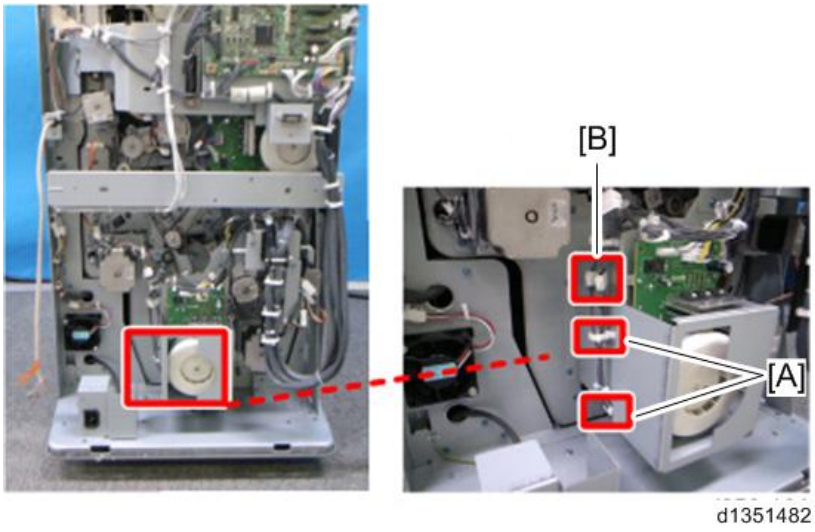
1. Folding unit cover page 3
2. Rear upper cover page 4
3. Rear lower cover page 4
4. Drawer stopper [A] (x1)



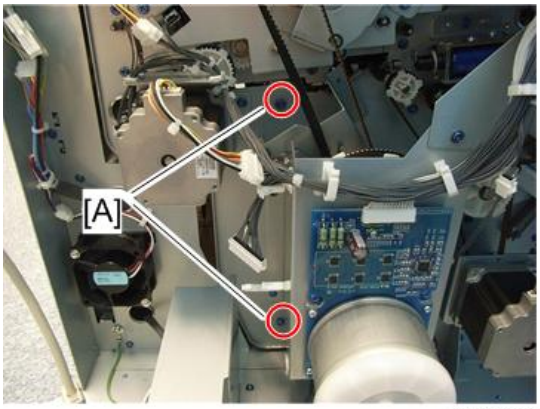
5. Belt tension bracket [A] and timing belt [B] (x2, x1)



6. Release two clamps [A]. (x2)
7. Disconnect two connectors [B].

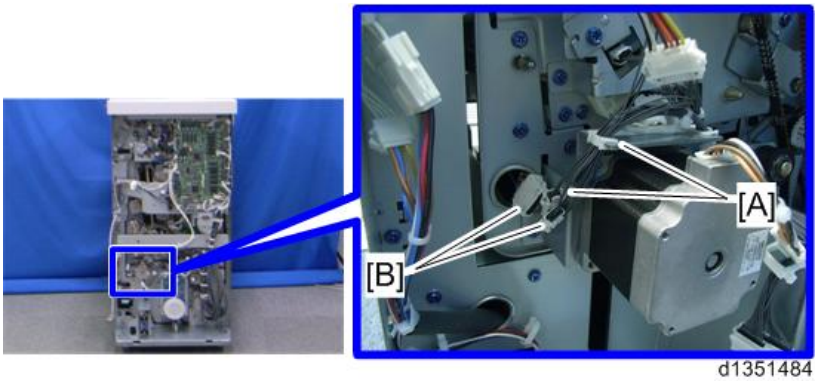


8. Remove two screws [A].



d1351483

9. Release two clamps [A]. (x2)
10. Disconnect two connectors [B].

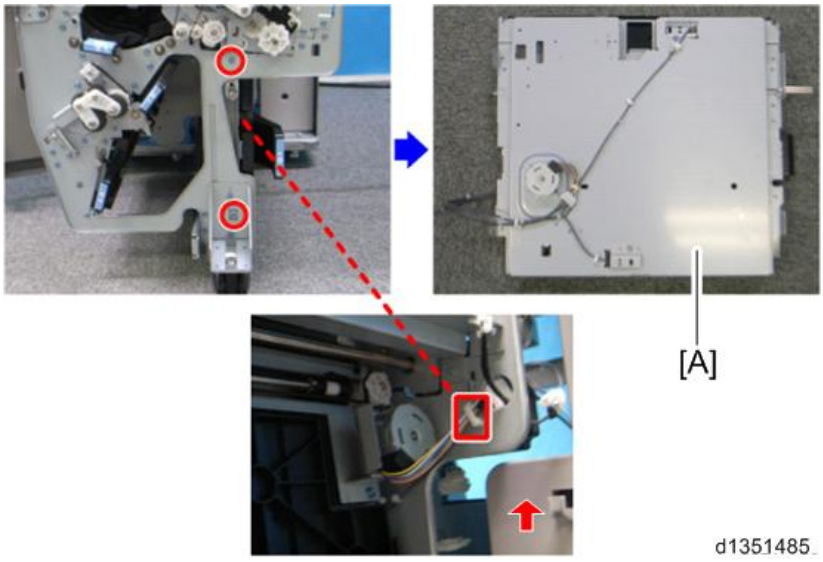


d1351484

11. Pull out the folding unit drawer page 6
12. Hold the 1st stopper unit [A], and then remove it (x2, x1).

Note

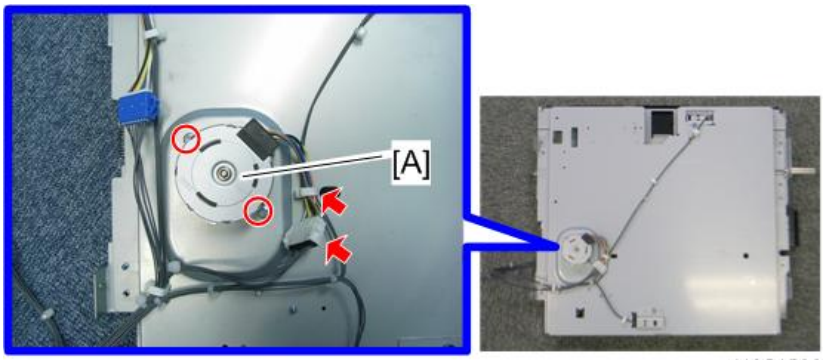
- The 1st stopper unit cannot hang from the folding unit drawer without the two screws. If you remove the 1st stopper unit without any support, the 1st stopper unit can fall and be broken.



d1351485

1.3.13 1ST STOPPER MOTOR

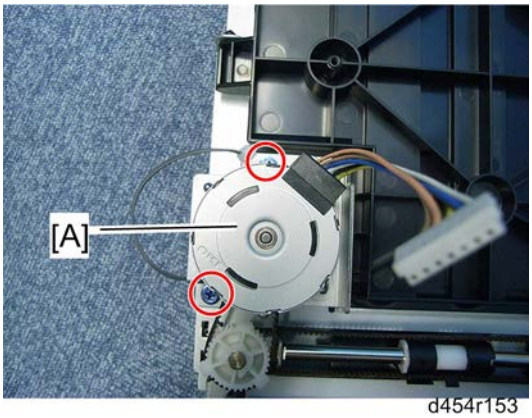
1. 1st stopper unit page 24
2. 1st stopper motor [A] (x1, x1, x2)



d1351599

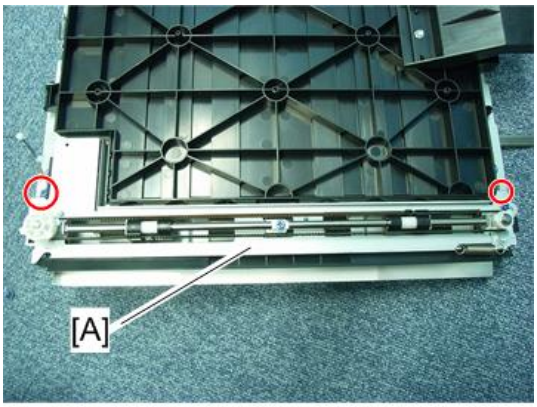
1.3.14 JOGGER FENCE HP SENSOR

1. 1st stopper unit page 24
2. Jogger fence motor bracket [A] (x2)



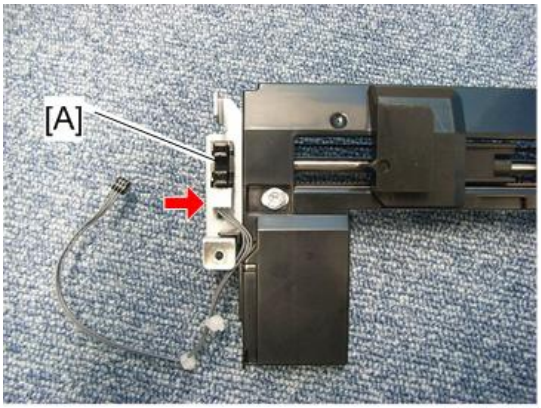
d454r153

3. Jogger fence timing belt bracket [A] (x2)



d1351486

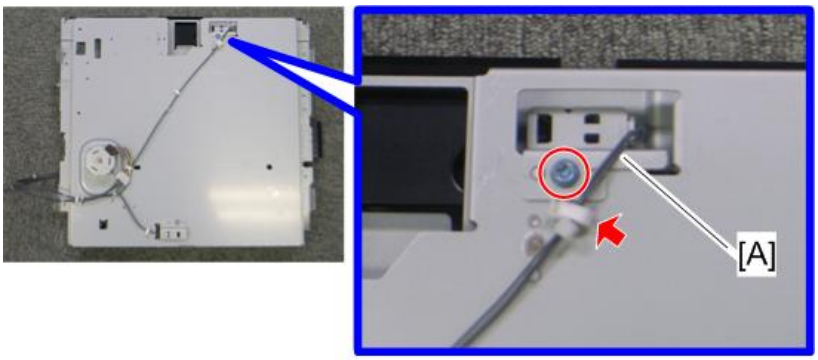
4. Jogger fence HP sensor [A] (x4, x1)



d1351487

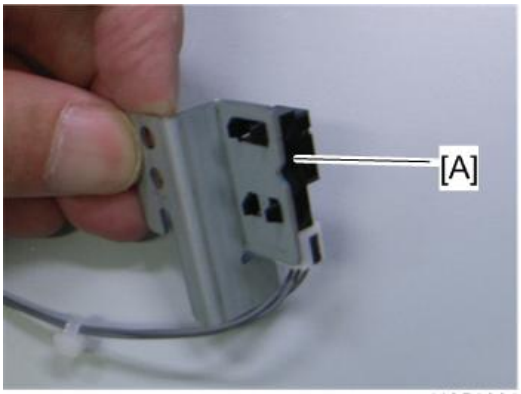
1.3.15 1ST STOPPER PAPER SENSOR

1. 1st stopper unit page 24
2. 1st stopper paper sensor bracket [A] (x1,x1)



d1351600

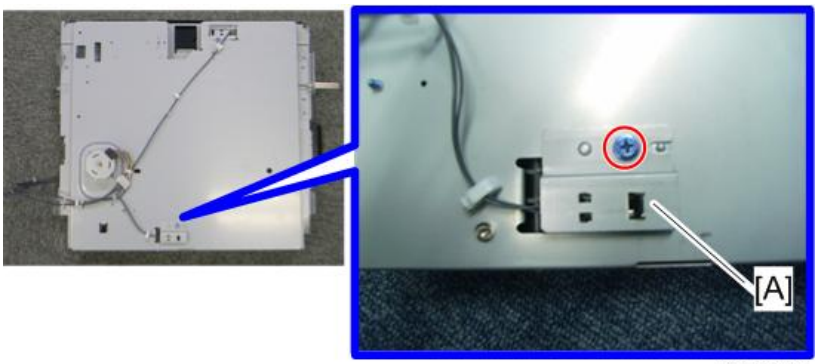
3. 1st stopper paper sensor [A] (x3)



d1351601

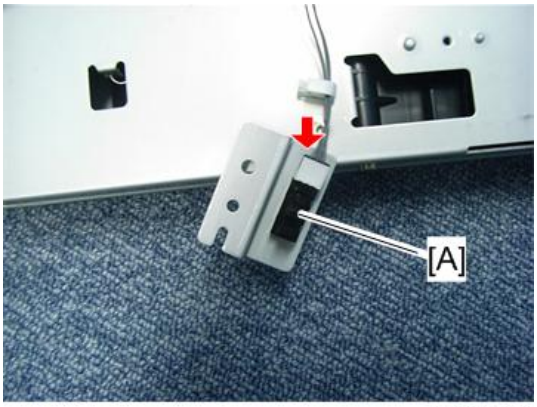
1.3.16 1ST STOPPER HP SENSOR

1. 1st stopper unit page 24
2. 1st stopper HP sensor bracket [A] (x1)



d1351602

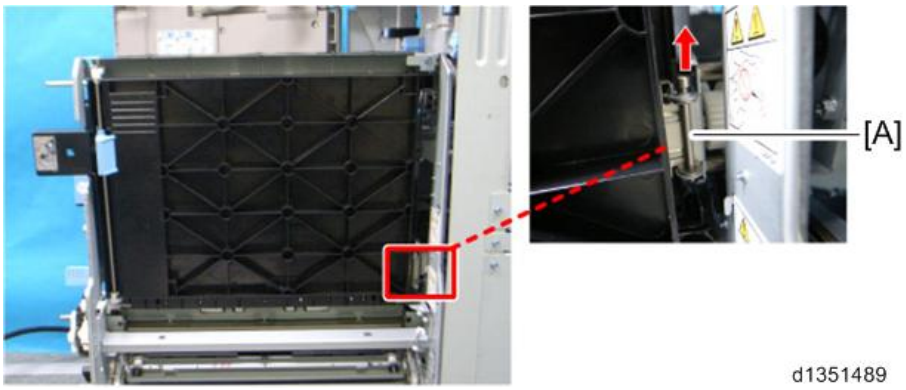
3. 1st stopper HP sensor [A] (x1, x3)



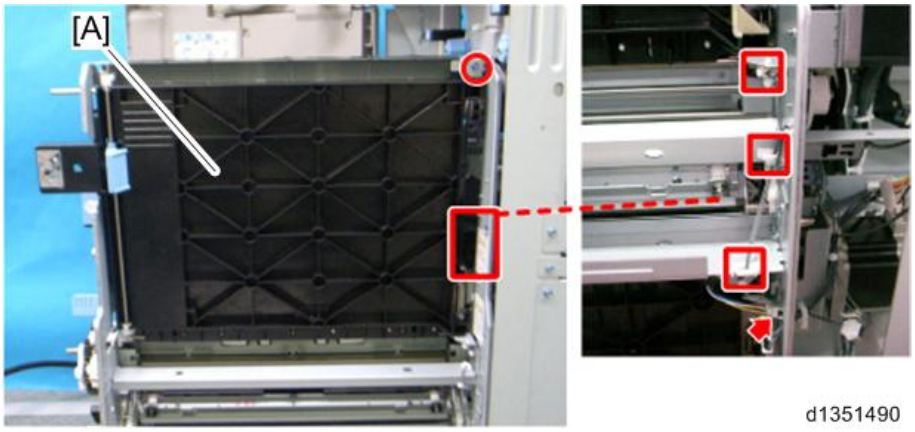
d1351488

1.3.17 REGISTRATION SENSOR

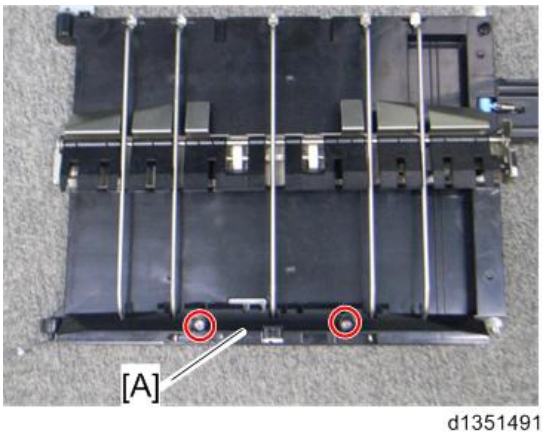
1. Pull out the folding unit drawer page 6
2. Pull out the pin [A].



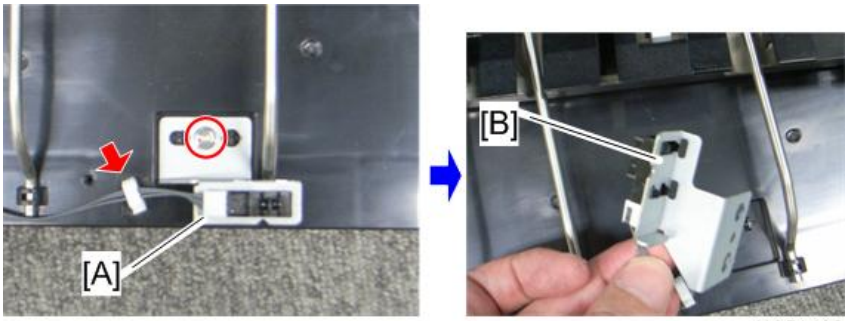
3. Jam removal door [A] (x3, x1, x1)



4. Dynamic roller bottom guide [A] (x2)



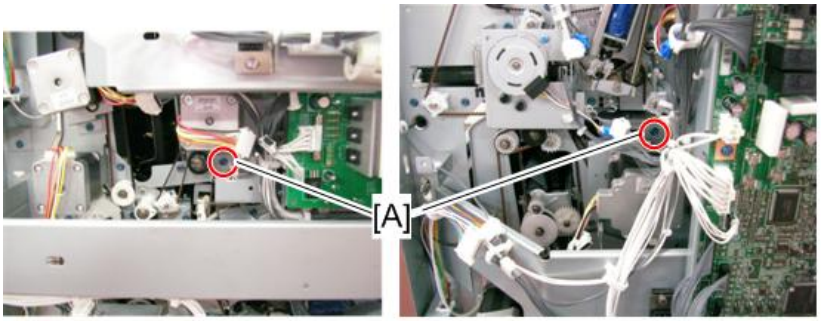
5. Registration sensor bracket [A] (x1, x1)
6. Registration sensor [B] (x1, x3)



d1351492

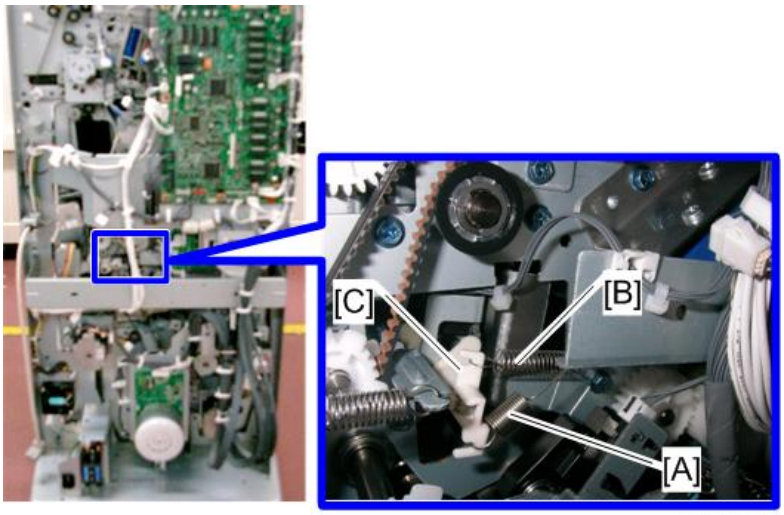
1.3.18 2ND STOPPER UNIT

1. 1st stopper unit page 24
2. Jam removal door page 30
3. Remove two screws [A] at the rear side of the folding unit drawer.



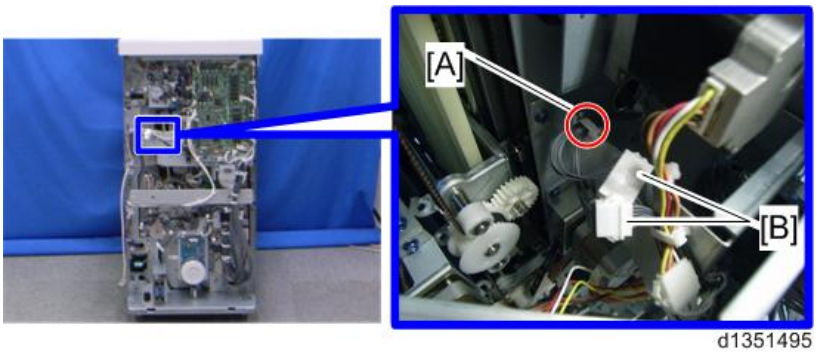
d1351493

4. Remove the spring [A] for the solenoid spring [B] for the guide plate.
5. Remove the arm [C] for the guide plate.



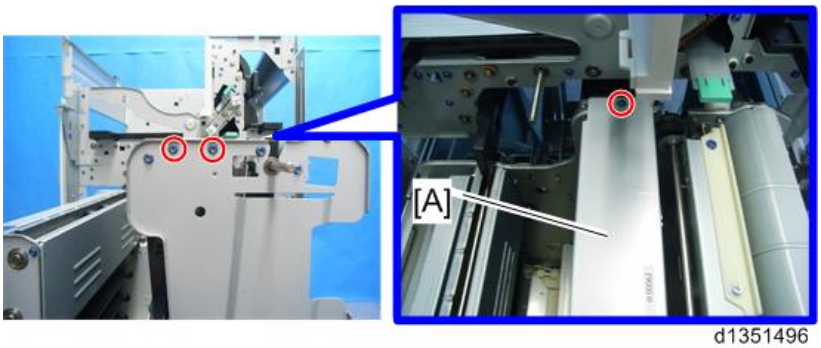
d1351494

6. Release the clamp [A] and disconnect two connectors [B].



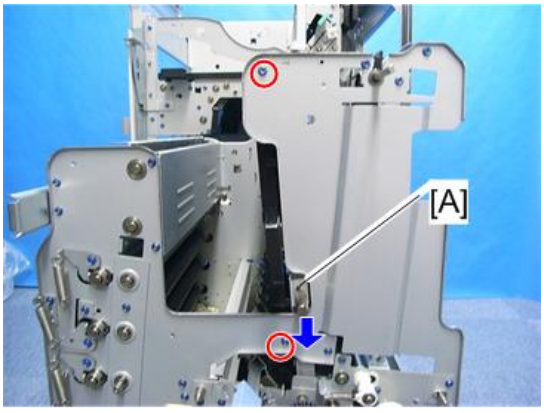
d1351495

7. Pull out the folding unit drawer. page 6
8. Top stay [A] (x3)



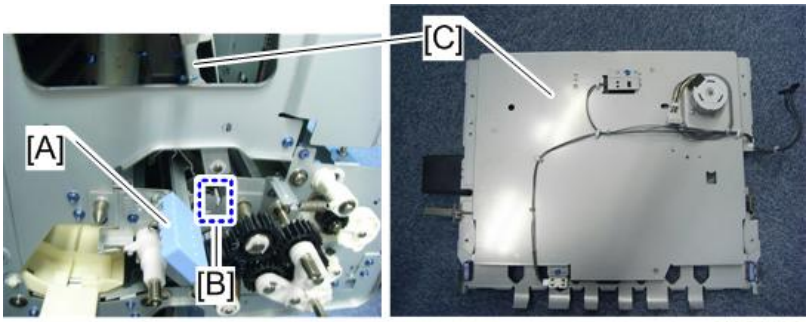
d1351496

9. Move down the 2nd stopper unit [A] a little bit (x2).



d1351497

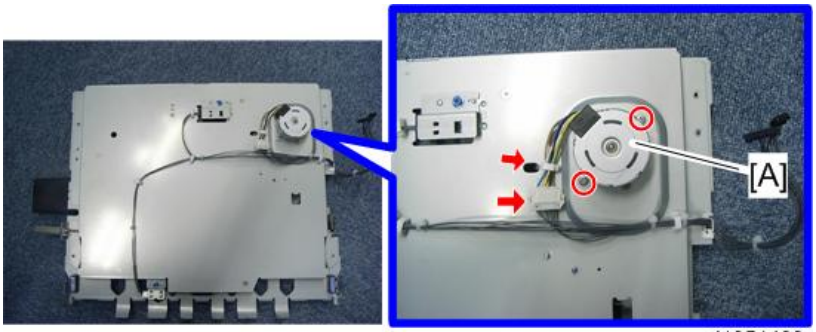
10. Open the jam removal door [A]. Hook at [B].
11. Remove the 2nd stopper unit [C].



d1351498

1.3.19 2ND STOPPER MOTOR

1. 2nd stopper unit page 31
2. 2nd stopper motor [A] (x1, x1, x2)



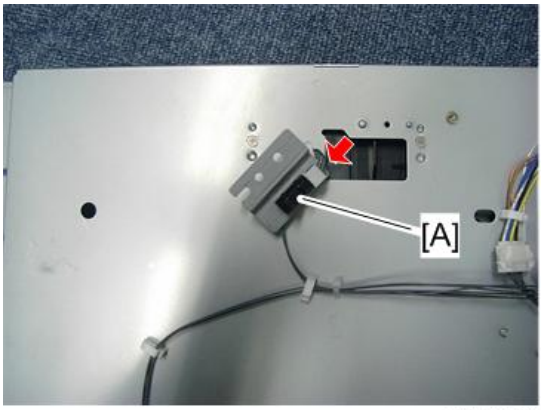
d1351499

1.3.20 2ND STOPPER HP SENSOR

1. 2nd stopper unit page 31
2. 2nd stopper HP sensor bracket [A] (x1)

d1351500

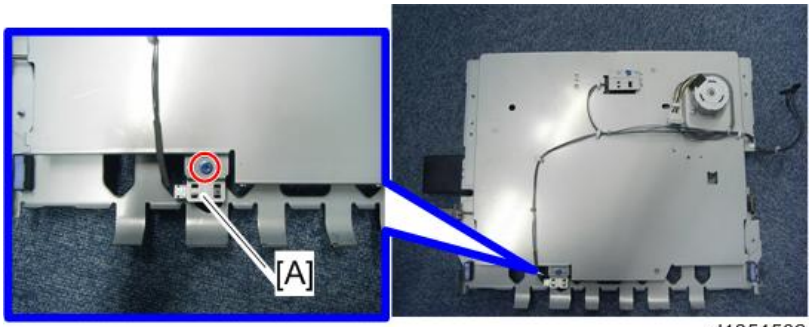
3. 2nd stopper HP sensor [A] (x1, x3)



d1351501

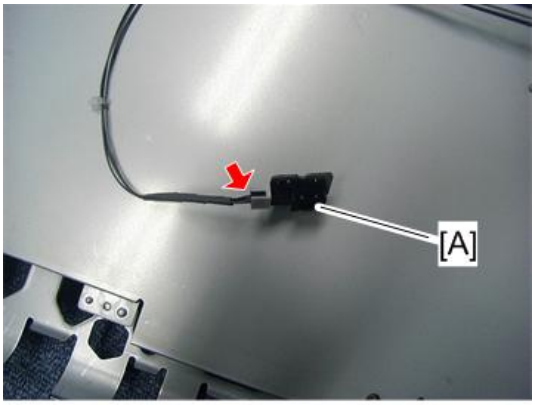
1.3.21 2ND STOPPER PAPER SENSOR

1. 2nd stopper unit page 31
2. 2nd stopper paper sensor bracket [A] (x1)



d1351502

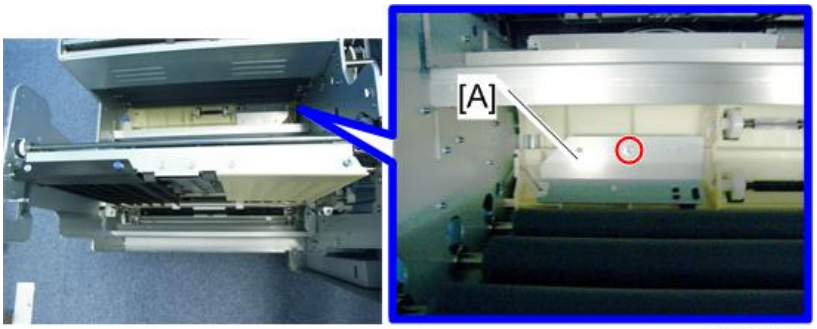
3. 2nd stopper paper sensor [A] (x1, x3)



d1351503

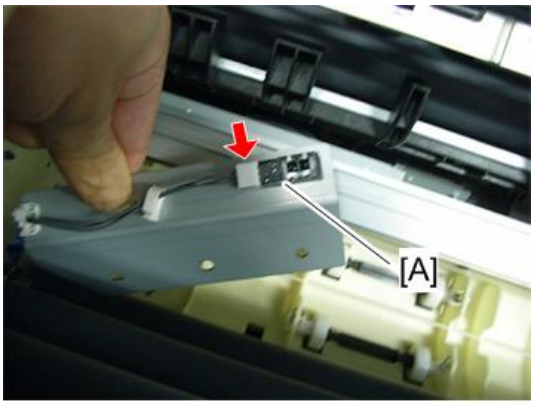
1.3.22 BYPASS EXIT PAPER SENSOR

1. Pull out the folding unit drawer. page 6
2. 2nd stopper unit page 31
3. Bypass exit paper sensor bracket [A] (x1)



d1351504

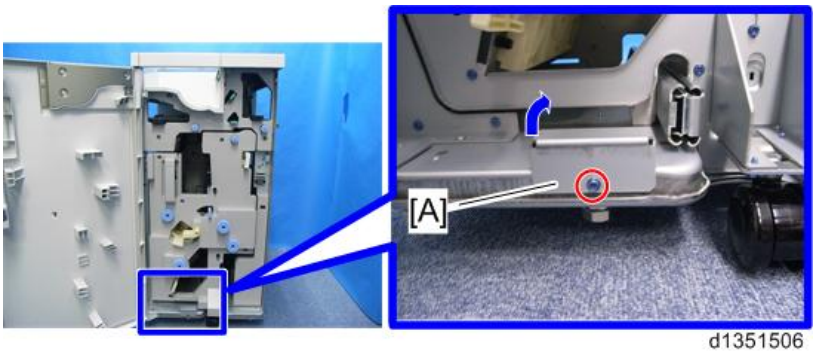
4. Bypass exit paper sensor [A] (x1, x3)



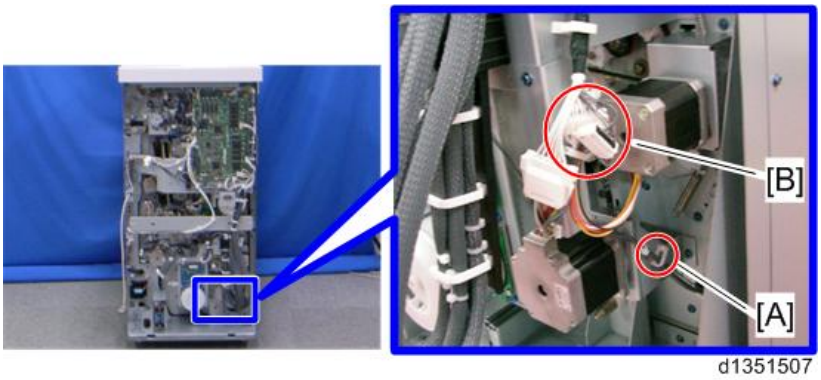
d1351505

1.3.23 3RD STOPPER UNIT

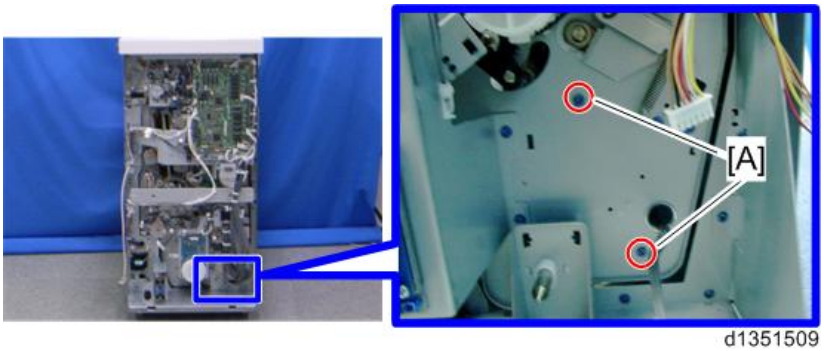
1. Folding unit cover page 3
2. Rear upper cover page 4
3. Rear lower cover page 4
4. Drawer stopper [A] (x1)



5. Release the clamp [A].
6. Disconnect two connectors [B].



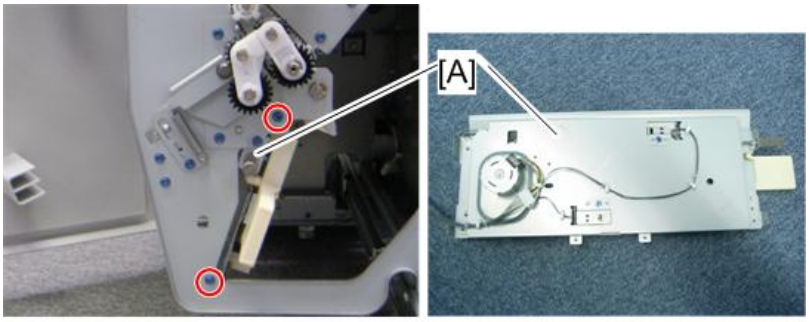
7. 2nd fold motor bracket page 22
8. Remove two screws [A].



9. Hold the 3rd stopper unit [A], and then remove it (x2).

Note

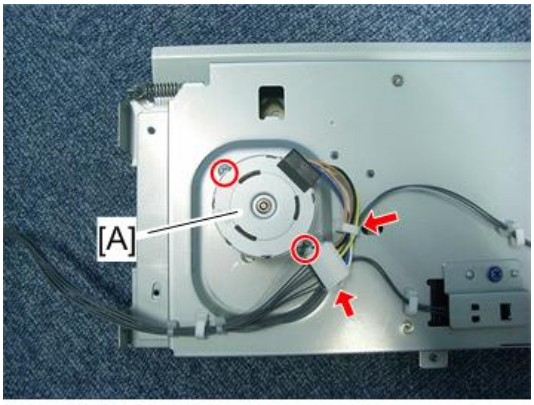
- The 3rd stopper unit cannot hang from the folding unit drawer without the two screws. If you remove the 3rd stopper unit without any support, the 3rd stopper unit can fall and be broken.



d1351508

1.3.24 3RD STOPPER MOTOR

1. 3rd stopper unit page 37
2. 3rd stopper motor [A] (x1, x1, x2)



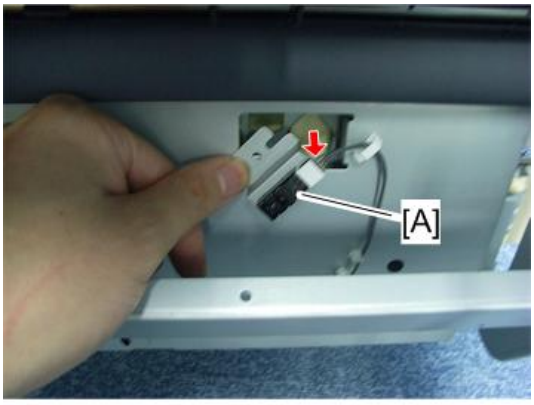
d1351510

1.3.25 3RD STOPPER PAPER SENSOR

1. Pull out the folding unit drawer. page 6
2. 3rd stopper paper sensor bracket [A] (x1)

d1351511

3. 3rd stopper paper sensor [A] (x1, hool x3)



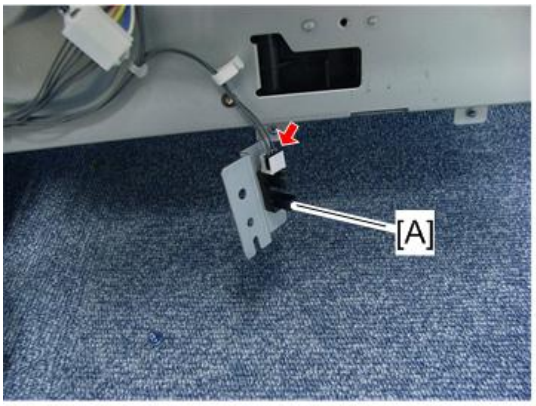
d1351512

1.3.26 3RD STOPPER HP SENSOR

1. Pull out the folding unit drawer. page 6
2. 3rd stopper HP sensor bracket [A] (x1)

d1351513

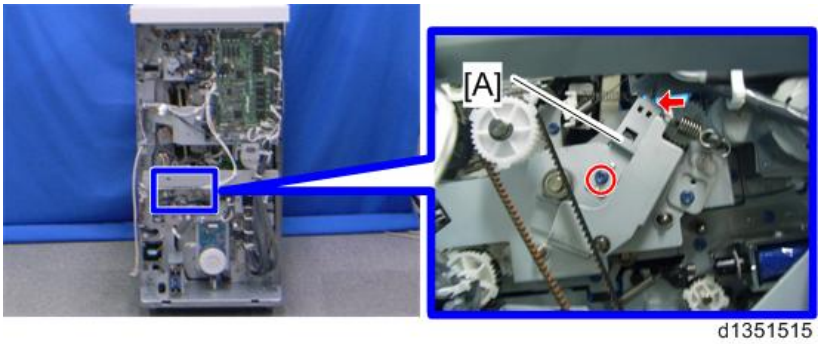
3. 3rd stopper HP sensor [A] (x1, x3)



d1351514

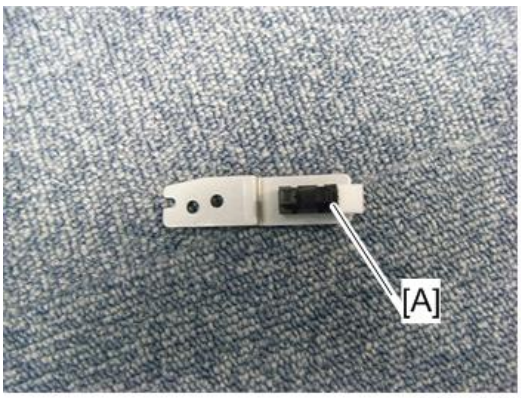
1.3.27 DIRECT-SEND JG HP SENSOR

1. Rear upper cover page 4
2. Rear lower cover page 4
3. Direct-Send JG HP sensor bracket [A] (x1, x1)



d1351515

4. Direct-Send JG HP sensor [A] (x3)



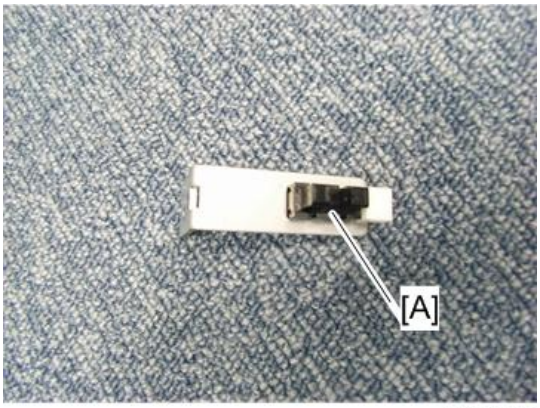
d1351516

1.3.28 REGISTRATION ROLLER HP SENSOR

1. Rear upper cover page 4
2. Rear lower cover page 4
3. Registration roller HP sensor bracket [A] (x1, x1)

d1351517

4. Registration roller HP sensor [A] (x3)



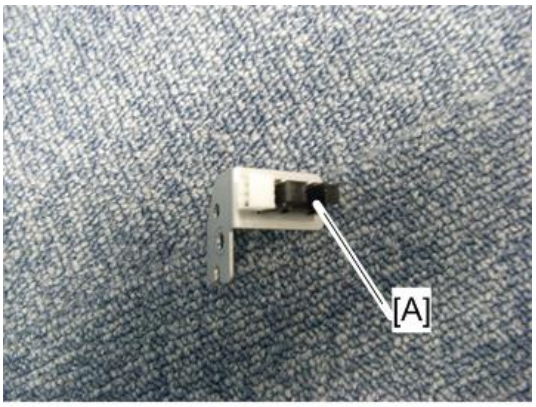
d1351518

1.3.29 FOLD PLATE HP SENSOR

1. Rear upper cover page 4
2. Rear lower cover page 4
3. Fold plate HP sensor bracket [A] (x1, x1)

d1351519

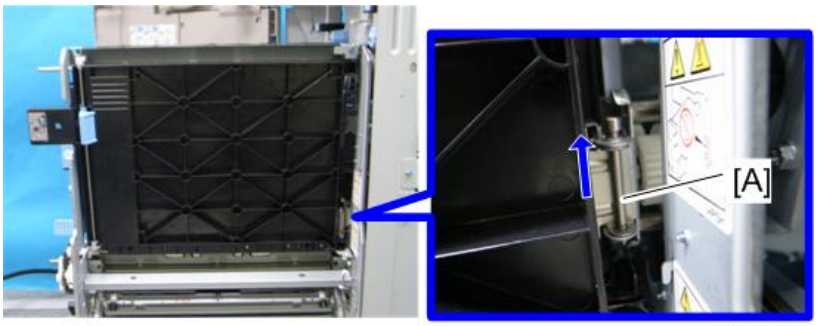
4. Fold plate HP sensor [A] (x3)



d1351520

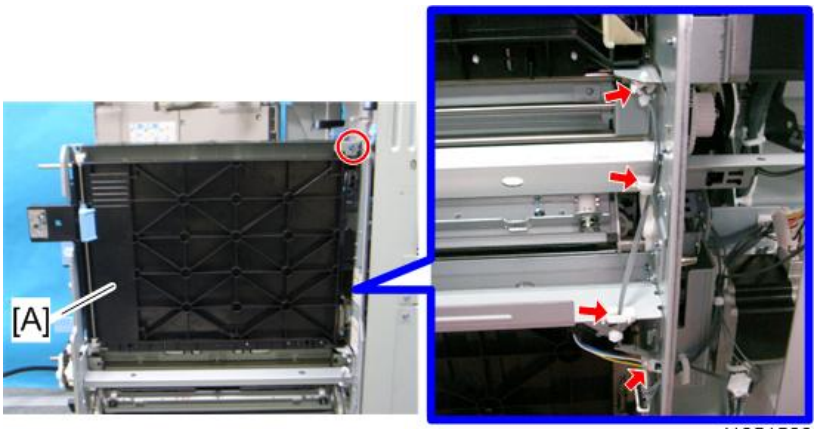
1.3.30 FIRST FOLD UNIT

1. 1st stopper unit page 24
2. Pull out the pin [A] (x1)



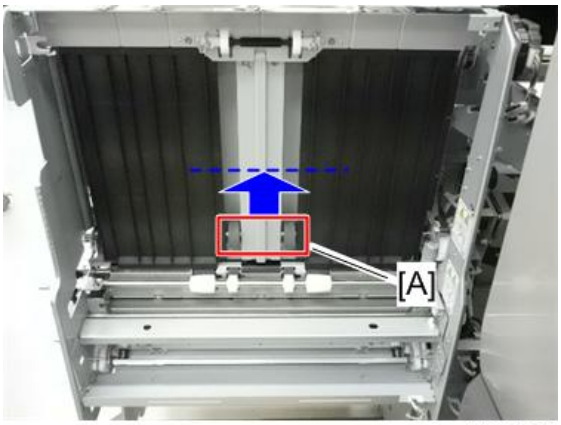
d1351521

3. Jam removal door [A] (x1, x3, x1)



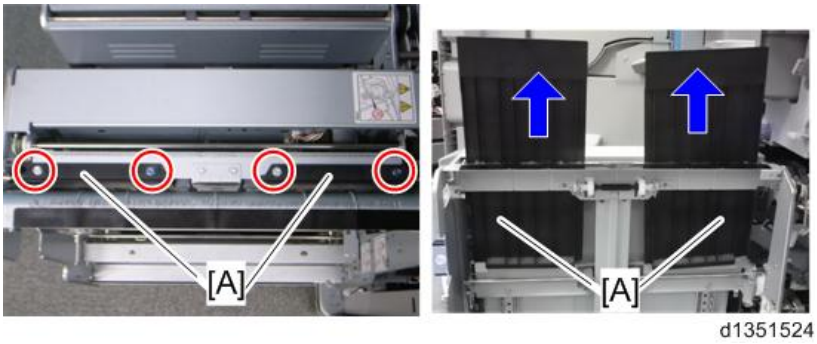
d1351522

4. Lift up the dynamic roller [A].



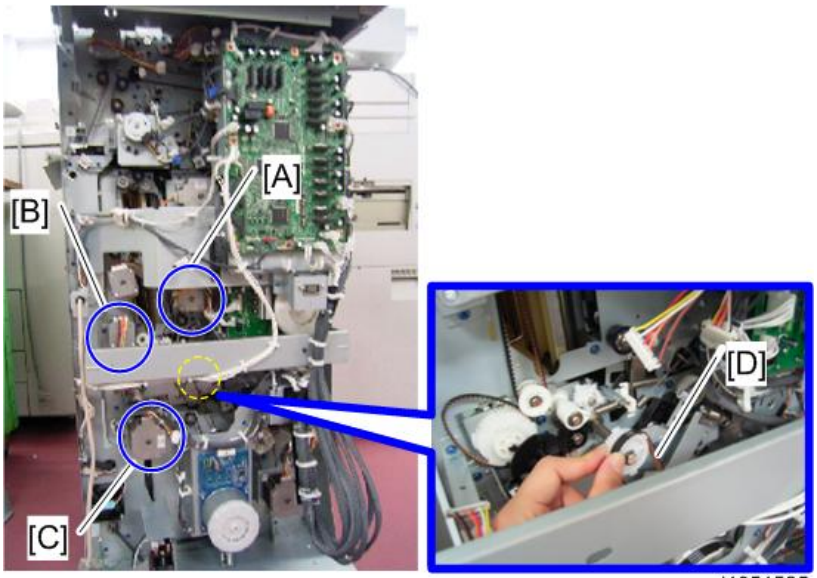
d1351523

5. Lift up two guide plates [A] (each x2).



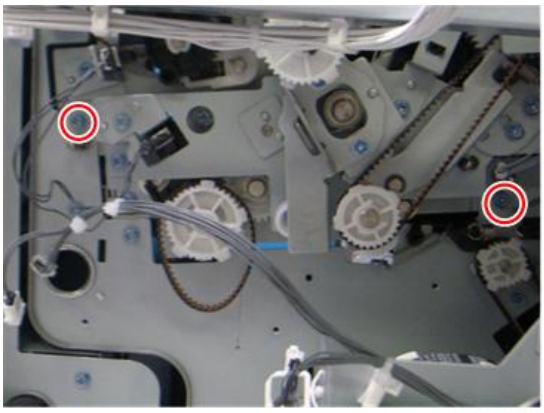
d1351524

6. Registration roller transport motor bracket [A] page 17
7. Registration roller release motor bracket [B] page 16
8. Fold plate motor bracket [C] page 18
9. Timing belt of the 1st plate motor [D]

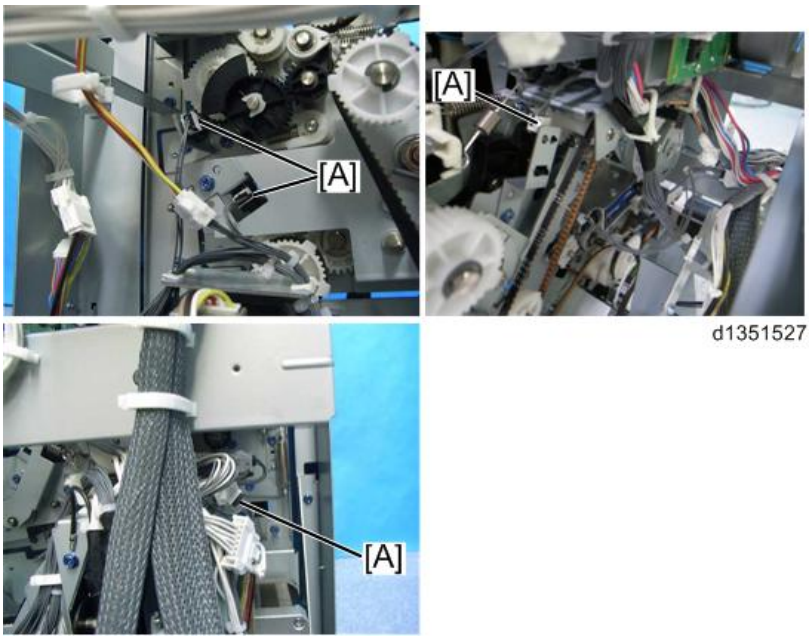


d1351525

10. Remove two screws on the rear side.

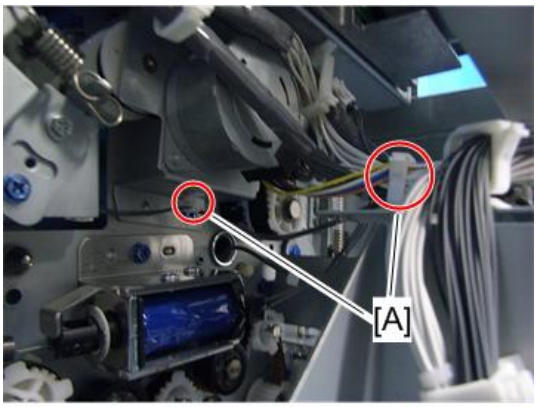

d1351526

11. Disconnect four harnesses [A] on the rear side.



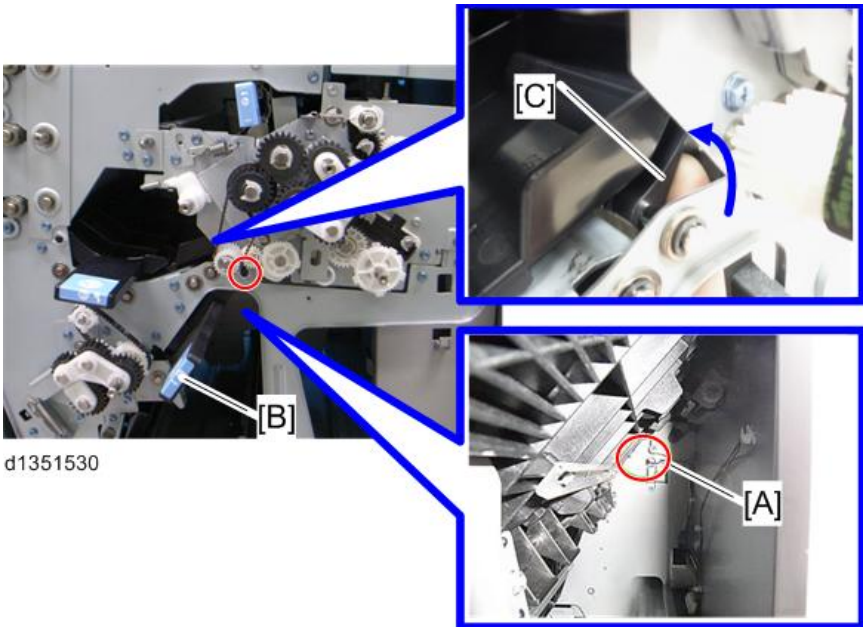
d1351527

12. Release two clamps [A].



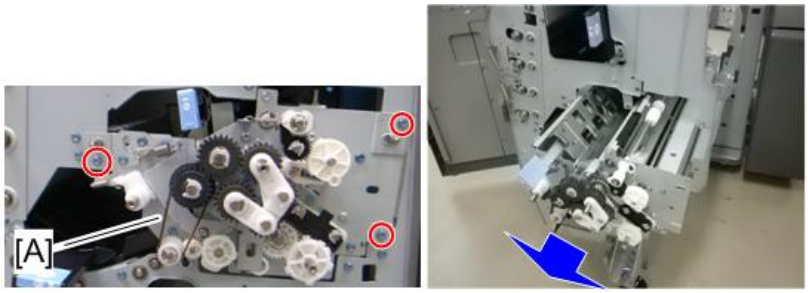
d1351528

13. Remove the spring [A] at the rear frame of the folding unit drawer.
14. Lower guide plate [B] (x1)
    - First, push the lower guide plate to the rear side while keeping the upper guide plate [C] open.
    - Secondly, take out the lower guide plate [B].



d1351530

15. Pull the first fold unit [A] until it stops (x3).

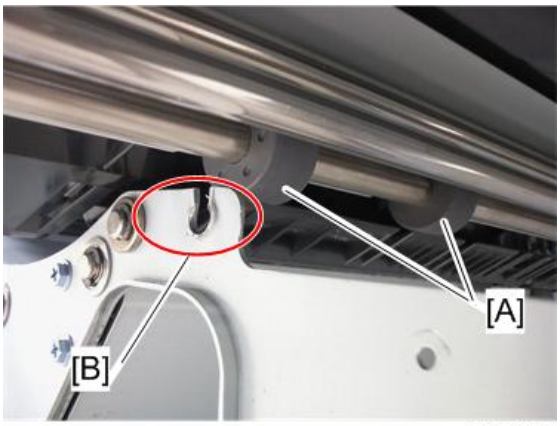


d1351529

16. Lift the first fold unit a little bit, and then remove it.

Note

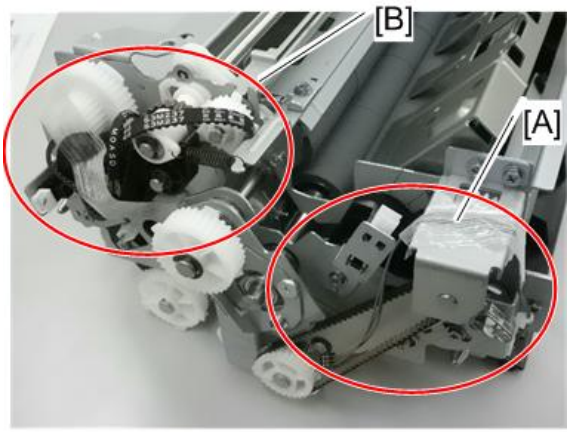
- At this time, one of the transport rollers [A] at the bottom of the first fold unit is caught in the frame [B] of the fold unit drawer.



d1351531

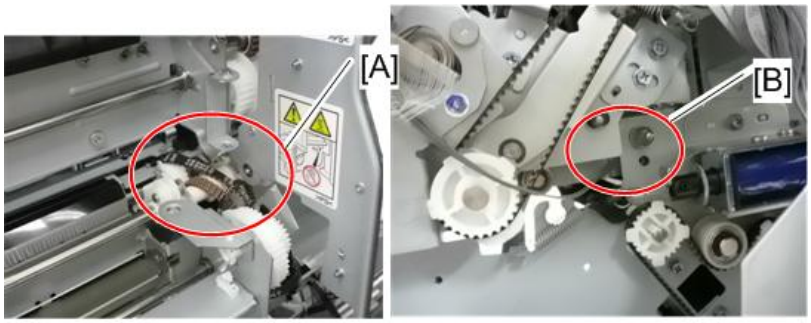
Note

- When installing the first fold unit:
- Attach the harness [A] and timing belts [B] tightly to the first fold unit with tapes so that the harness and timing belts are not caught in any parts when installing the first fold unit in the fold unit drawer.



d1351532

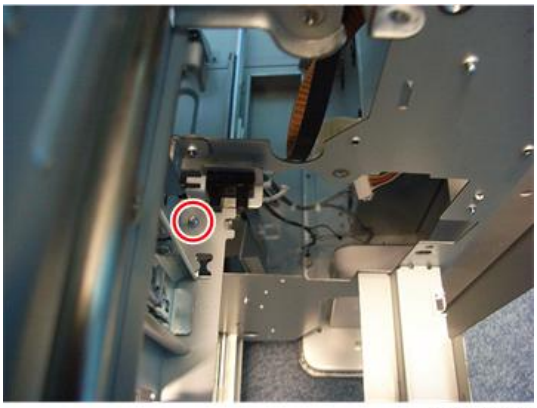
- If the first fold unit is not completely installed in the fold unit drawer, check the following:
- The timing belts are not caught [A] between the rear frame of the fold unit drawer and the frame of the first fold unit.
- The harness of the first fold unit is not pinched [B] between the rear frame of the fold unit drawer and the frame of the first fold unit.



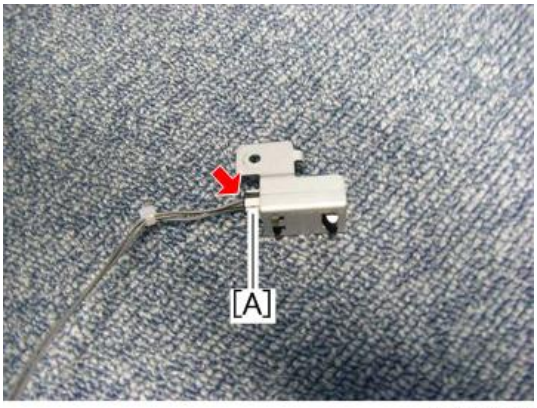
d1351533

1.3.31 DYNAMIC ROLLER HP SENSOR

1. First fold unit page 44
2. Dynamic roller HP sensor bracket (x1)


d1351534

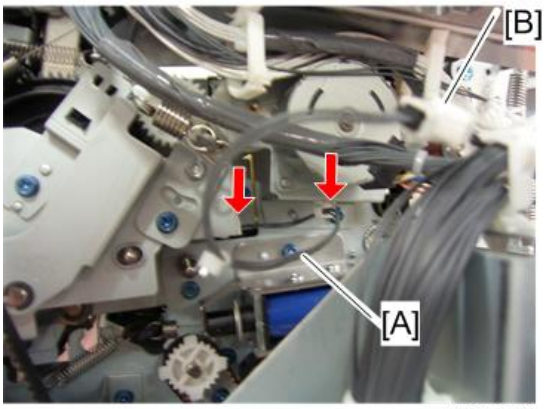
3. Dynamic roller HP sensor [A] (x1, x3)



d1351535

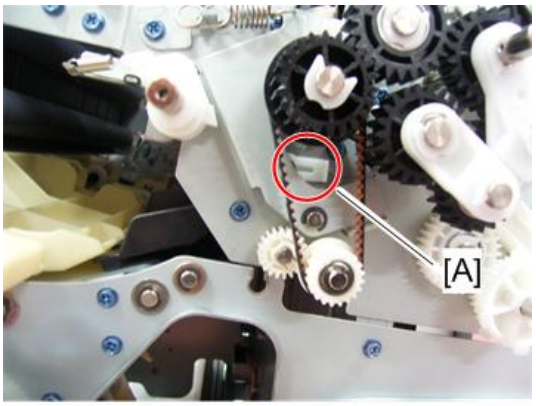
1.3.32 BYPASS ENTRANCE PAPER SENSOR

1. Folding unit cover page 3
2. Rear upper cover page 4
3. Rear lower cover page 4
4. Disconnect the bypass entrance paper sensor harness [A] from the connector [B] (x1, x2).



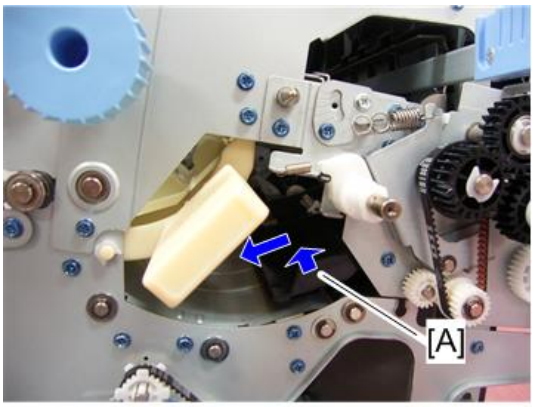
d1351536

5. Remove the clip [A] for the bypass entrance guide plate.



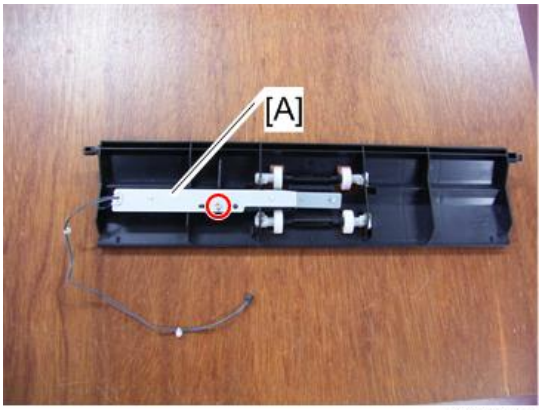
d1351537

6. Push the bypass entrance guide plate [A] to the rear, then slide it to the left, and remove it.



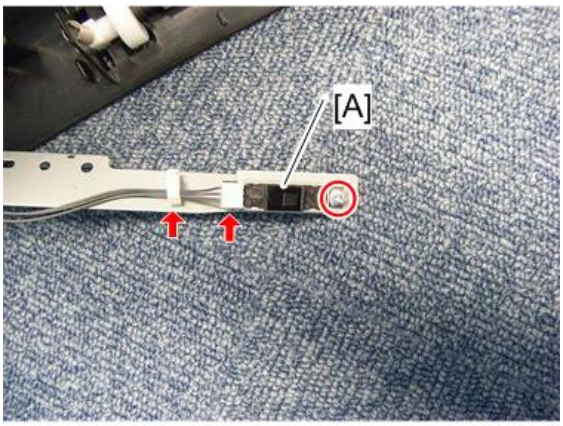
d1351538

7. Bypass entrance paper sensor bracket [A] (x1)



d1351539

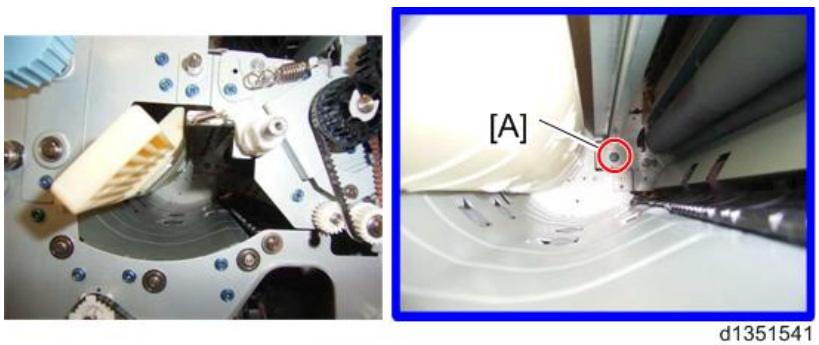
8. Bypass entrance paper sensor [A] (x1, x1, x1, x3)



d1351540

Note

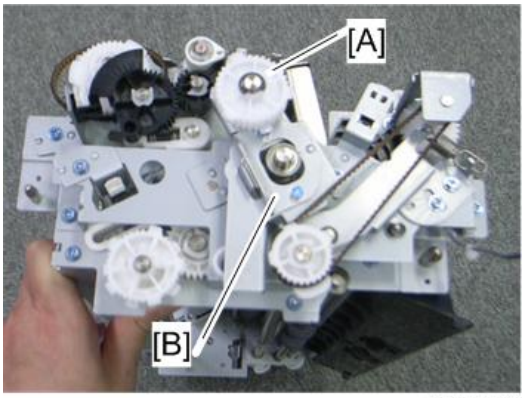
- Reinstalling the bypass entrance paper sensor:
- Put the harness of the bypass entrance paper sensor through the hole [A] in the rear frame of the drawer.



d1351541

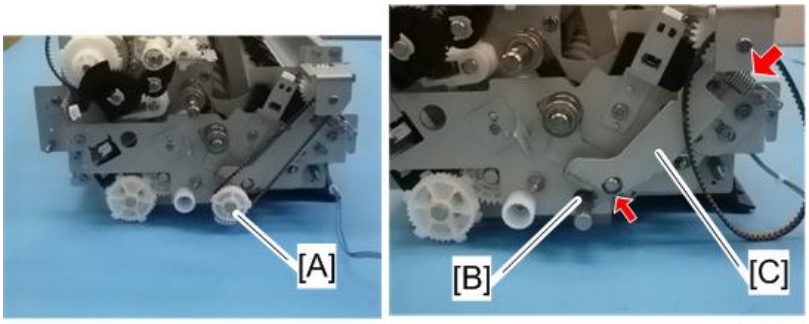
1.3.33 FIRST/ SECOND/ THIRD FOLD ROLLER

1. First fold unit page 44
2. First fold roller gear [A] (x1, pin x1, spacer x1)
3. Pressure release bracket [B]



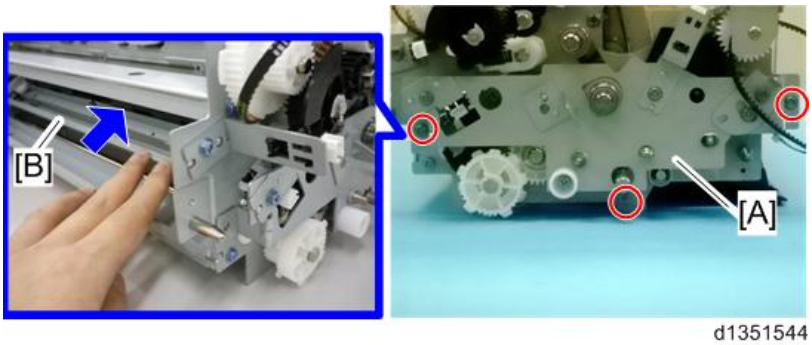
d1351542

4. Rear cam gear [A] (x1, timing belt x1)
5. Bushing [B] (x1)
6. Rear tension bracket [C] (spring x1, x1)



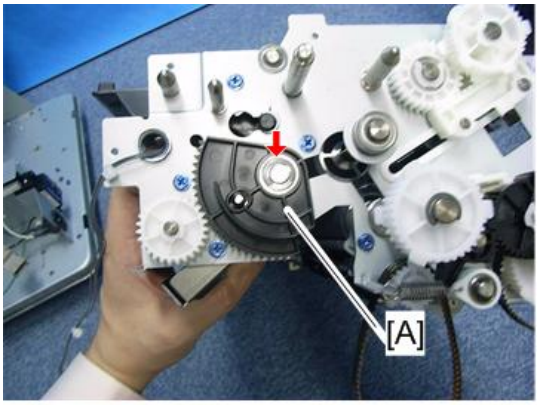
d1351543

7. Rear bracket [A] (x3)
8. When removing the rear bracket, slide the fold assist plate [B] in the arrow direction.



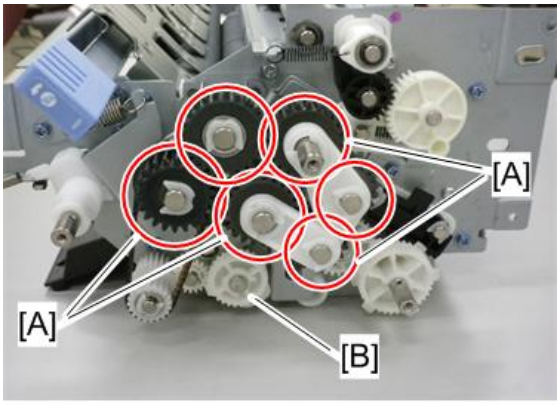
d1351544

9. Remove the gear [A] (x1)



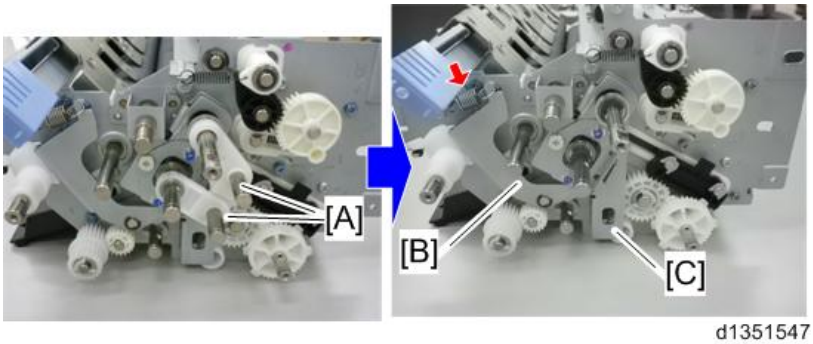
d1351546

10. Remove six gears (clip x1 each, pin x1 each for four gears [A]).
11. Cam gear [B] (x1, pin x1)



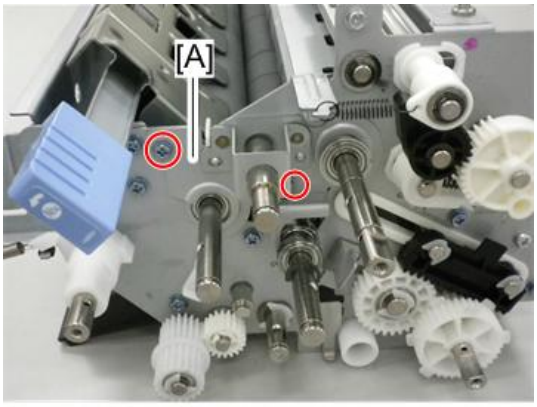
d1351545

12. Remove the gear links [A].
13. Front tension bracket [B] (spring x1, x1)
14. Frond shaft holder bracket [C] (x1, bushing x1, spacer x1)



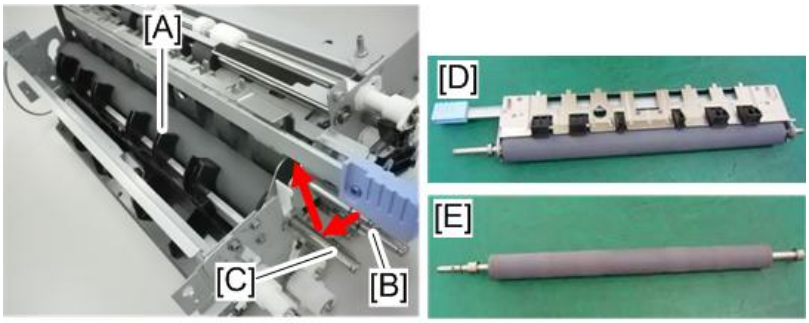
d1351547

15. Front bracket [A] (x2)



d1351548

16. Third fold roller [A] with the guide plate and direct send junction gate [B].
17. Second fold roller [C]

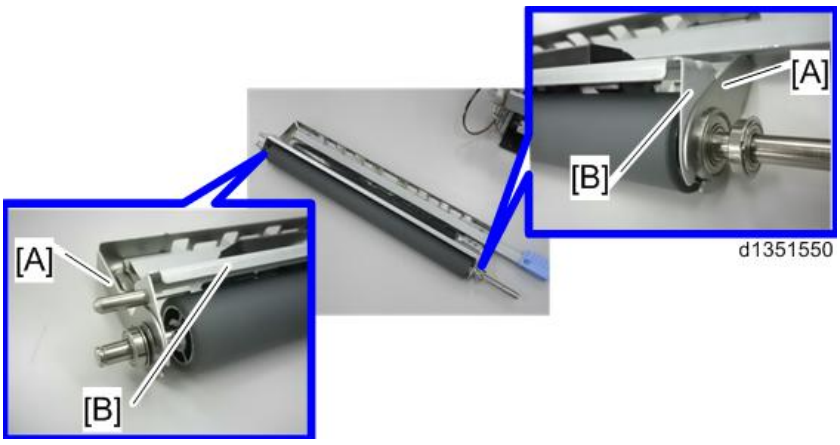


d1351549

- [D]: Third fold roller with the guide plate and direct send junction gate
- [E]: Second fold roller

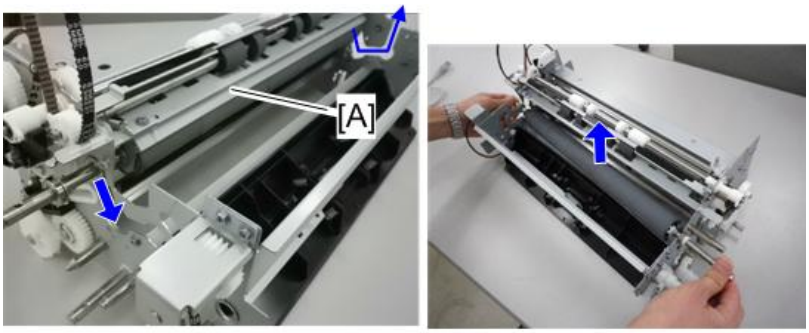
Note

- When assembling the third fold roller with direct send junction gate and guide plate, install the guide plate [A] and direct send junction gate [B] in the third fold roller unit as shown below. (The arms of the guide plate should be placed on the outer side of the arms of the direct send junction gate.)



d1351550

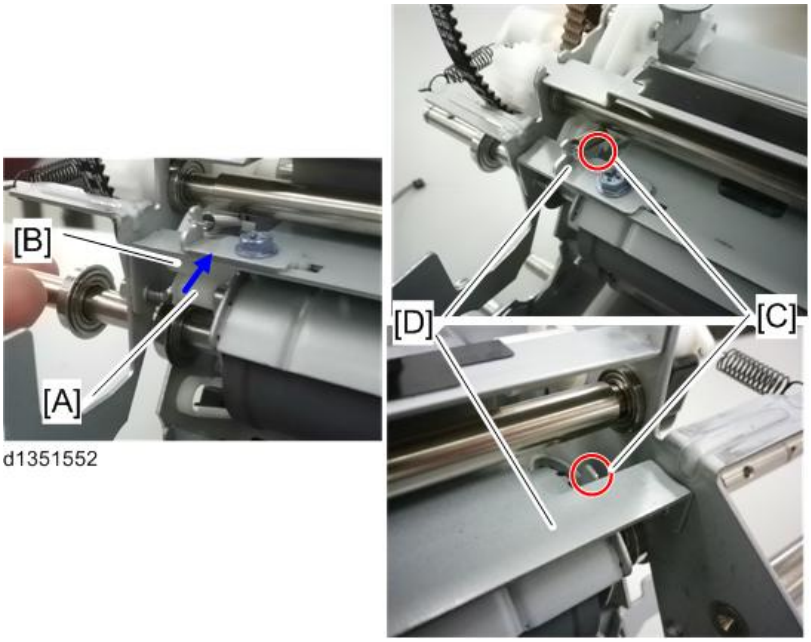
18. First fold roller with roller bracket [A]



d1351551

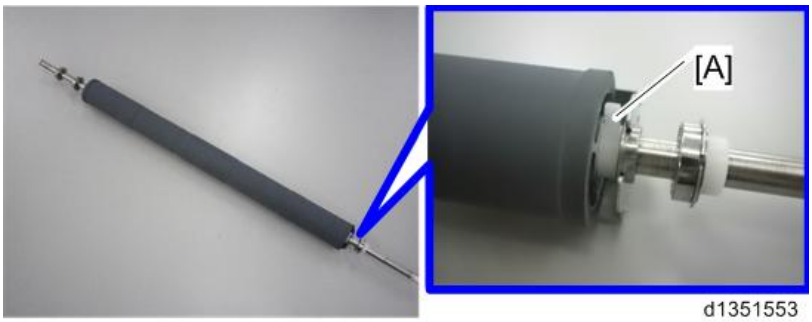
Note

- When reinstalling the first fold roller, insert the white pivot [A] in the rail [B].
- Make sure that two projections [C] hook the stay bracket [D].



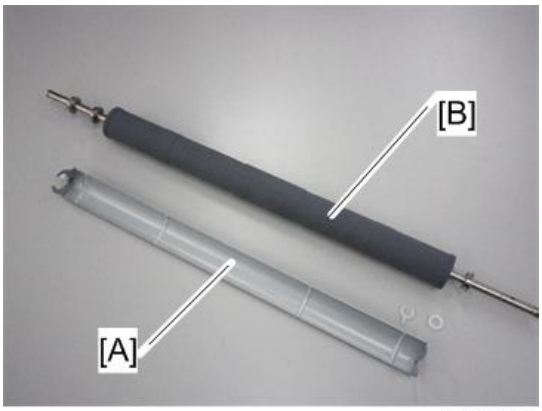
d1351552

19. Roller stopper [A]



d1351553

20. Roller bracket [A]
21. First fold roller [B] (spacer x1)



d1351554

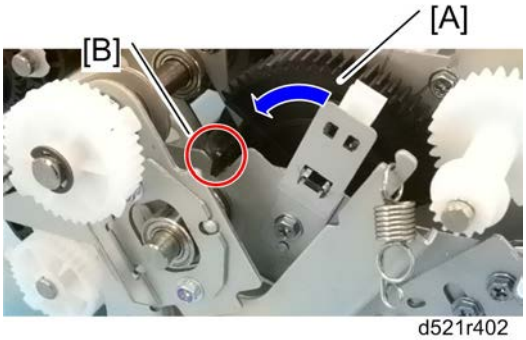
1.3.34 WHEN REINSTALLING THE FIRST, SECOND AND THIRD FOLD ROLLERS

The rear cam gear (removed in step 11) must be adjusted when reinstalling the first, second and third fold rollers. Do the following procedure.

1. Remove the rear gear holder [A] (x2).

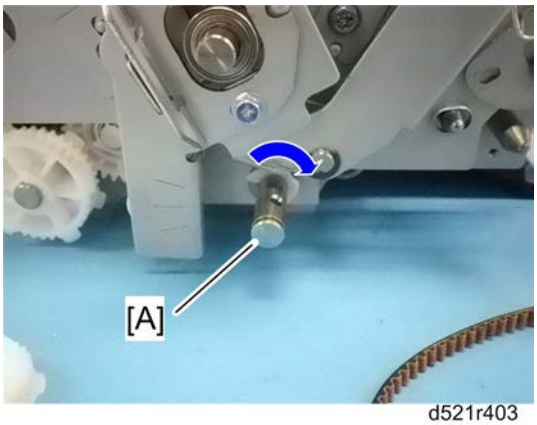
d521r407

2. Turn the direct send junction gate gear [A] to the left until the direct send junction gate gear stops at the edge [B] of the frame.



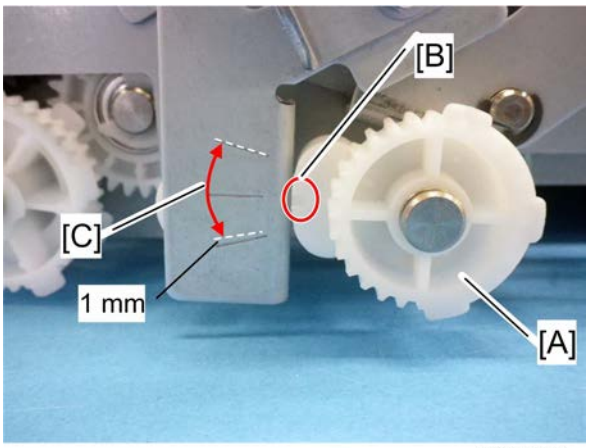
d521r402

3. Turn the cam gear shaft [A] clockwise until the cam gear shaft is stopped.



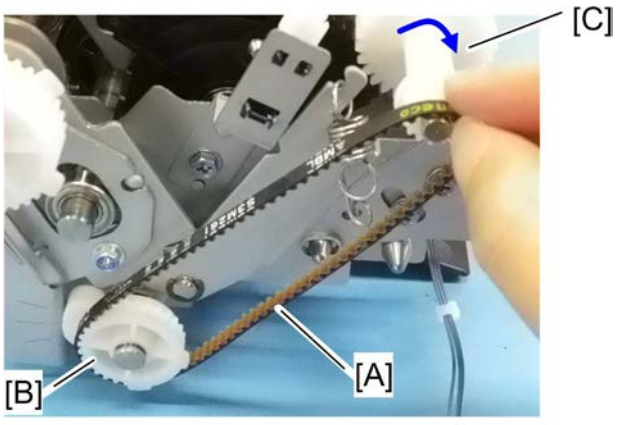
d521r403

4. Set the rear cam gear [A] (with its pin) on the cam gear shaft.
   - Make sure that the notch [B] in the rear cam gear is positioned within the proper range [C]. The lowest position is 1 mm above the lowest of the three lines.



d521r404

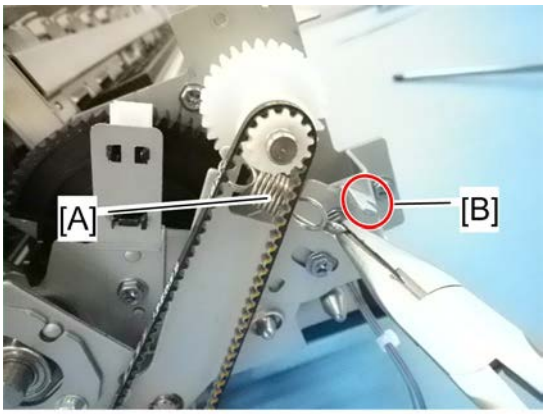
5. Hook the timing belt [A] over the rear cam gear [B] first, and then hook the timing belt over the idle gear [C] while rotating the idle gear clockwise.



d521r405

6. Check if the notch position of the rear cam gear is positioned within the proper range again.
7. Attach the rear cam gear (x1).
8. Attach the rear idle gear holder (x2).

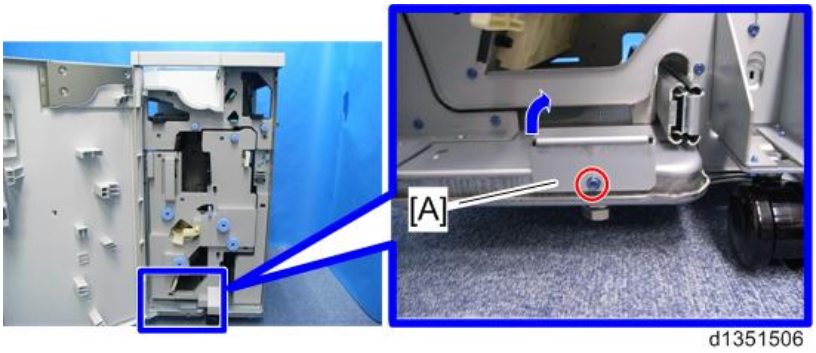
9. Hook the tension spring [A] onto the notch [B].



d521r406

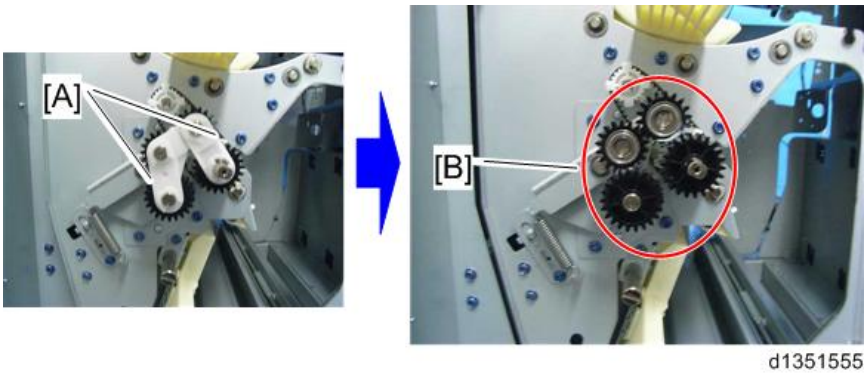
1.3.35 FOURTH / FIFTH FOLD ROLLER

1. Rear upper cover page 4
2. Rear lower cover page 4
3. Drawer stopper [A] (x1)



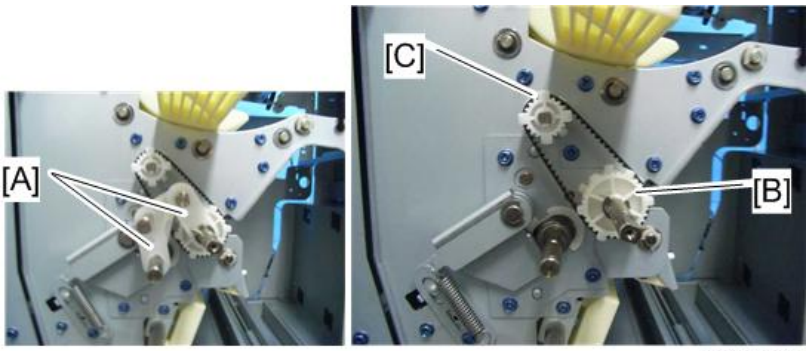
d1351506

4. Remove the links [A] on the front side.
5. Remove four gears [B]. (x1)



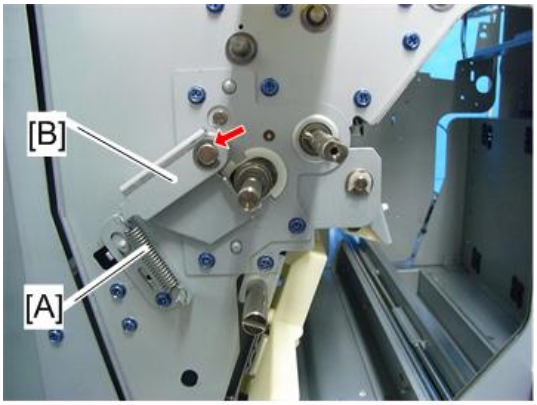
d1351555

6. Remove the links [A] (Pin x1 ea.)
7. Remove the gear [B] (x1), and the gear [C] (x1).



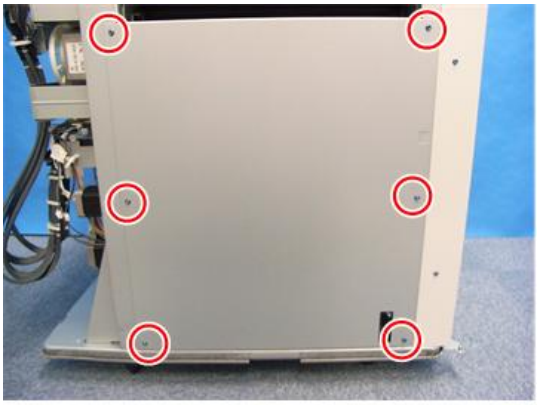
d1351556

8. Remove the spring [A] and the tension bracket [B] (x1, x1).



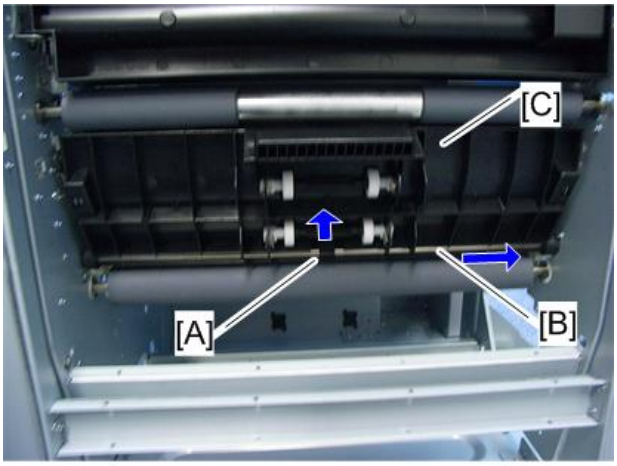
d1351557

9. Left lower bracket (x 6)



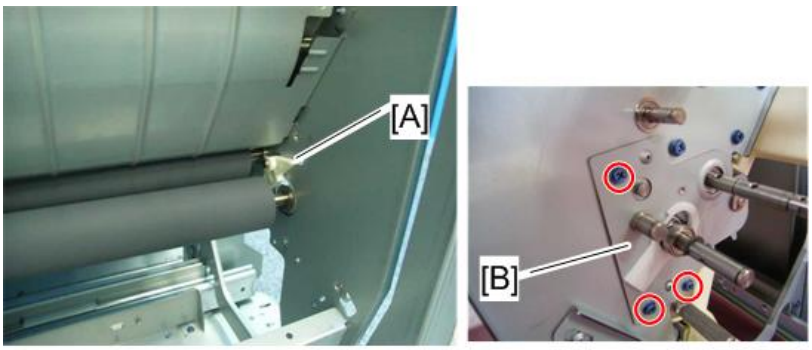
d1351558

10. Lift up the hook [A] to release the guide plate shaft [B].
11. Move the guide plate shaft [B] to the front (arrow direction), and then remove the guide plate [C].



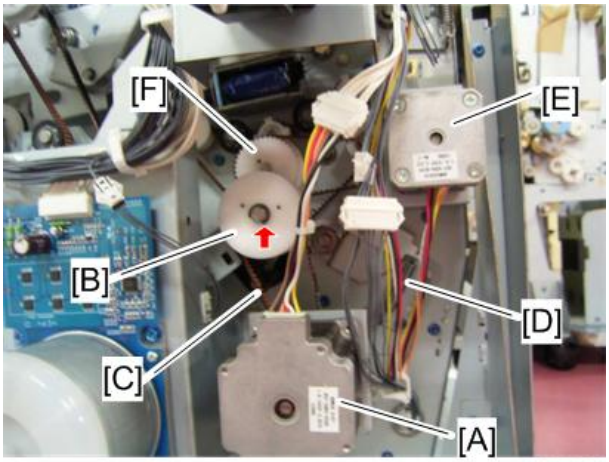
d1351559

12. Remove the cam [A] on the front.
13. Fold roller fixing front plate [B] (x3)



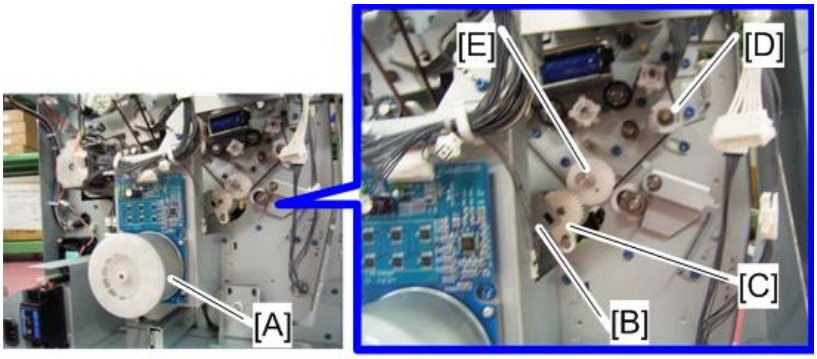
d1351561

14. 2nd fold motor [A] page 22
15. 2nd fold pulley gear [B] (x1) and idle gear
16. Timing belt [C]
17. Spring [D]
18. FM6 pawl motor [E] page 21
19. Pulley gear [F]



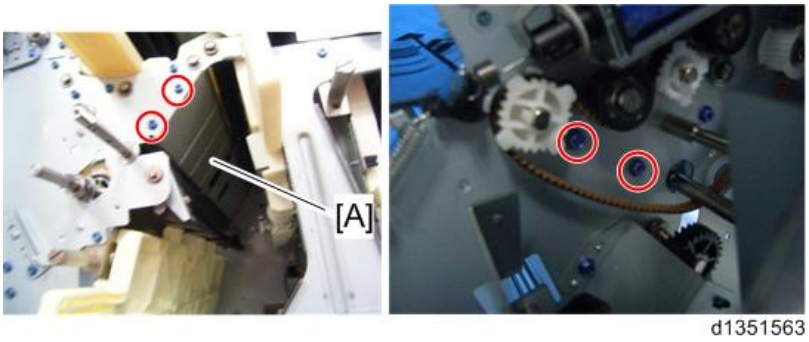
d1351560

20. 1st fold motor [A] page 20
21. FM6 pawl HP sensor bracket [B]
22. FM6 pawl cam gear [C]
23. Release the tension bracket [D], and then remove the transmission pulley gear [E] (pin x1)



d1351562

24. Remove the entrance guide plate [A] at the 2nd fold unit (x 4).

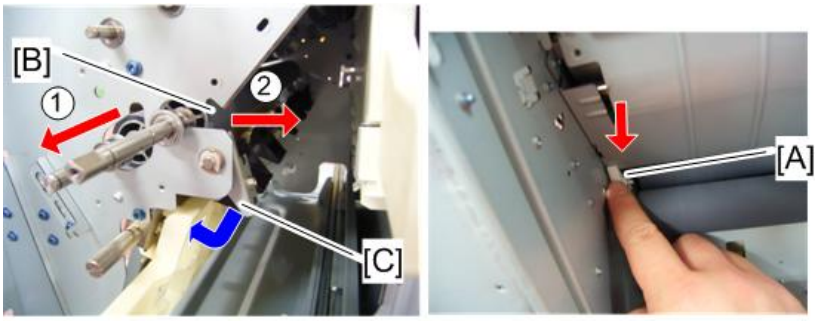


d1351563

25. Hold the fourth fold roller cam [A] at the rear of the drawer unit.
26. Pull the fourth fold roller [B] to the front ①.
27. Keep the FM6 pawl [C] open, and then remove the fourth fold roller ②.

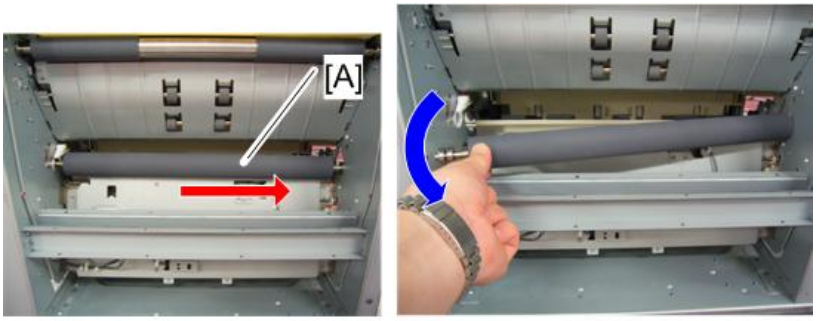
Note

- Hold the holder [A] when pulling the fourth fold roller [B] in the ① direction.



d1351564

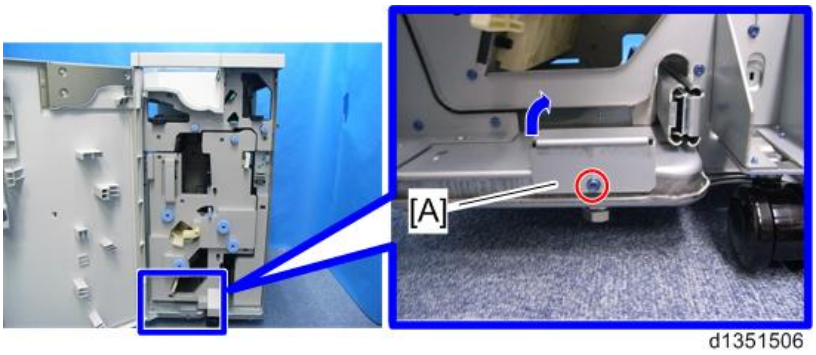
28. Remove the fifth fold roller [A].



d1351566

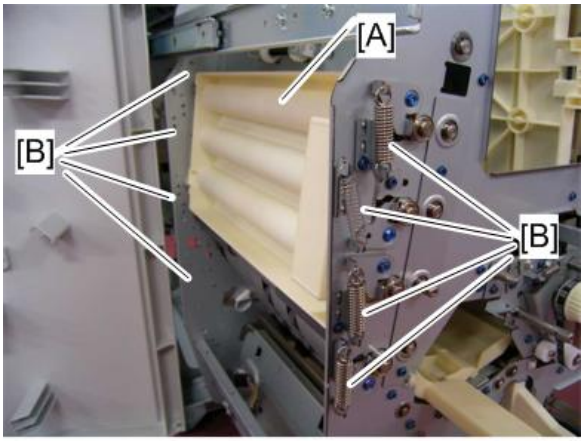
1.3.36 CREASE ROLLERS: IDLE ROLLERS

1. Folding Unit Cover page 3
2. Drawer stopper [A]



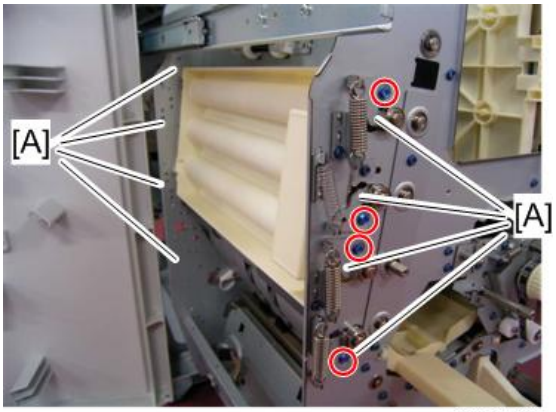
d1351506

3. Pull out the folding unit drawer fully page 6
4. Crease jam removal door [A]
5. Tension springs [B] (front: 4, rear: 4)
   - The lowest spring should be a black one when reinstalling the springs.



d1351565

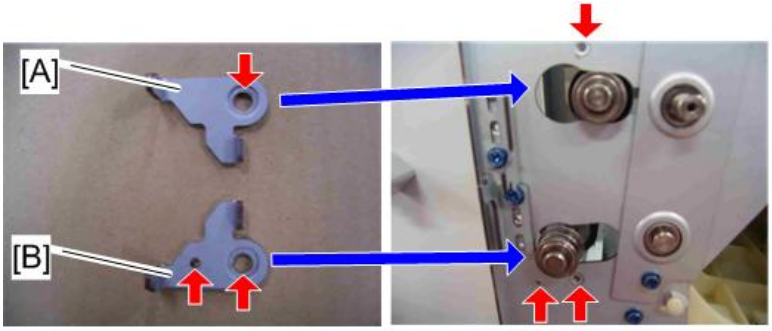
6. Tension brackets [A] (x1 each/ front: 4, rear: 4)



d1351567

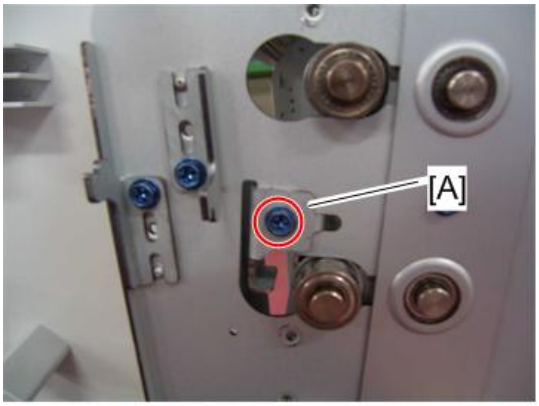
Note

- There are two types of tension brackets at the crease roller area. The difference between these brackets is the number of screw holes ([A]: one hole, [B]: two holes).
- Attach a bracket [A] with one hole to the crease roller frame with one hole.
- Attach a bracket [B] with two holes to the crease roller frame with two holes.



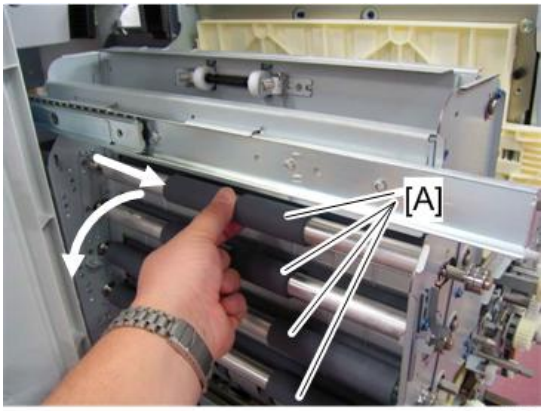
d1351568

7. Magnet attachment bracket [A] (x1)



d1351569

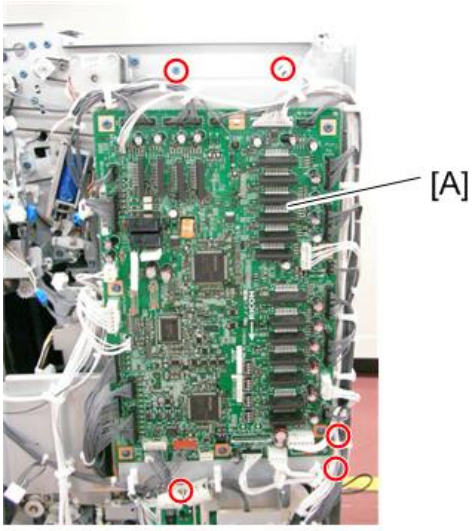
8. Crease rollers: idle rollers [A]



d1351570

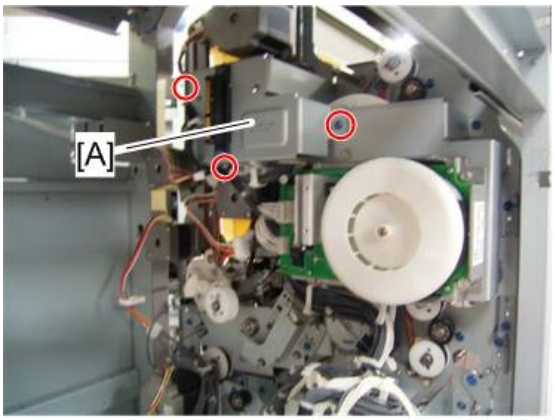
1.3.37 CREASE ROLLERS: DRIVE ROLLERS

1. Crease Rollers: Idle Rollers page 63
2. Rear upper cover page 4
3. Rear lower cover page 4
4. Main board bracket [A] (x all, x all, x 5, ground cable x1)



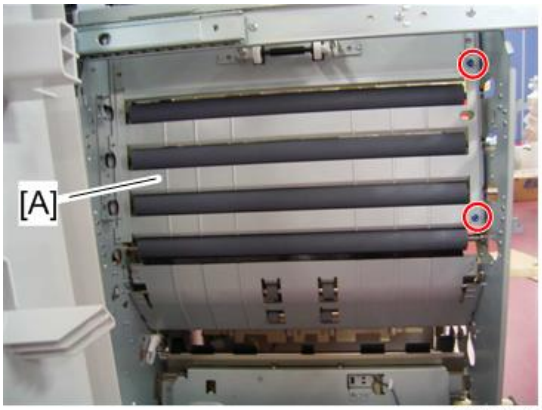
d1351595

5. Rear upper stay page 12
6. Drawer connector bracket [A] (x3)



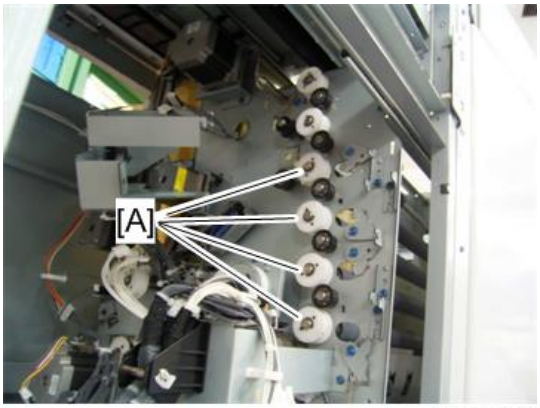
d1351571

7. Crease motor page 14
8. Crease path guide plate [A] (x 5)



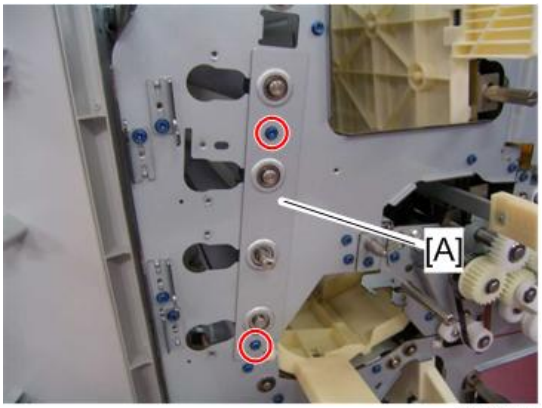
d1351572

9. Crease roller pulley gears [A] (x1 each)



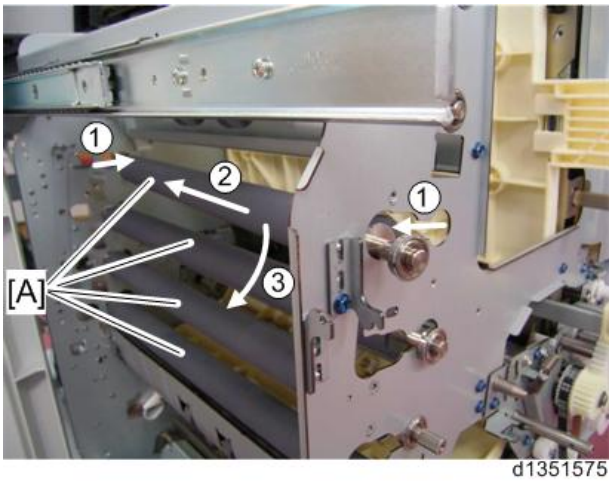
d1351573

10. Crease roller fixing plate [A] (x2)



d1351574

11. Crease rollers: drive rollers [A]

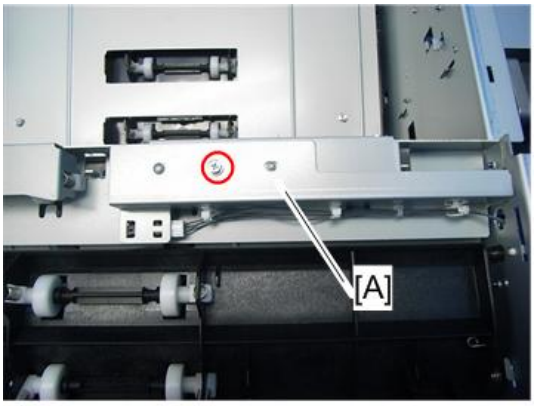


d1351575

1.4 PAPER EXIT

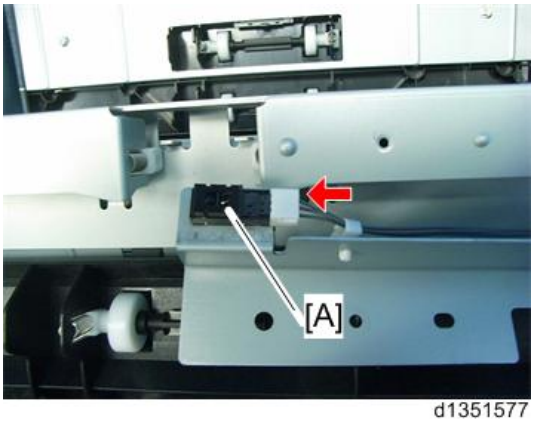
1.4.1 TOP TRAY EXIT SENSOR

1. Top cover page 2
2. Top tray exit sensor bracket [A] (x1)



d1351576

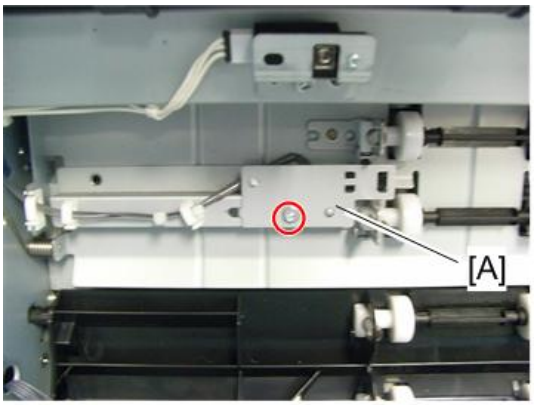
3. Top tray exit sensor [A] (x1, x3)



d1351577

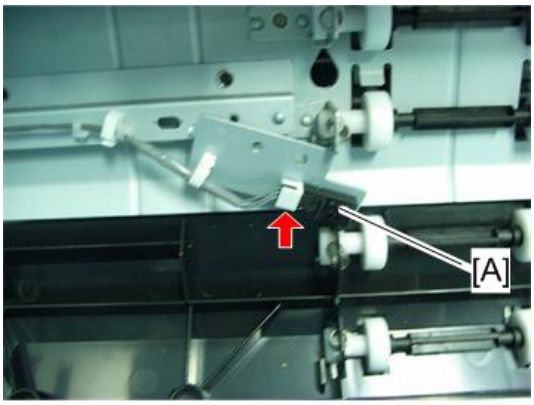
1.4.2 TOP TRAY PAPER PATH SENSOR

1. Top tray right cover page 6
2. Top tray paper path sensor bracket [A] (x1)



d1351578

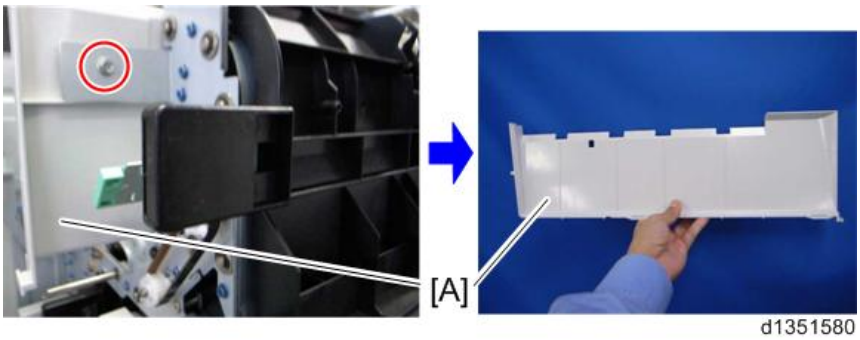
3. Top tray paper path sensor [A] (x1, x3)



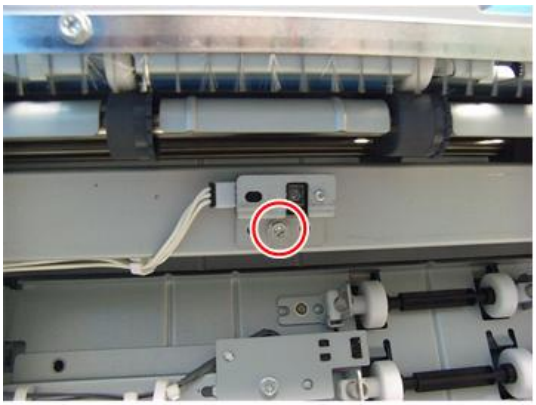
d1351579

1.4.3 TOP TRAY FULL SENSOR (E)

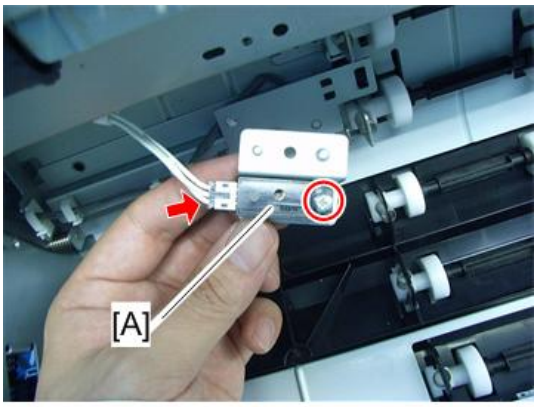
1. Top tray page 5
2. Paper exit cover [A] (x1)



3. Top tray full sensor (E) bracket (x1)

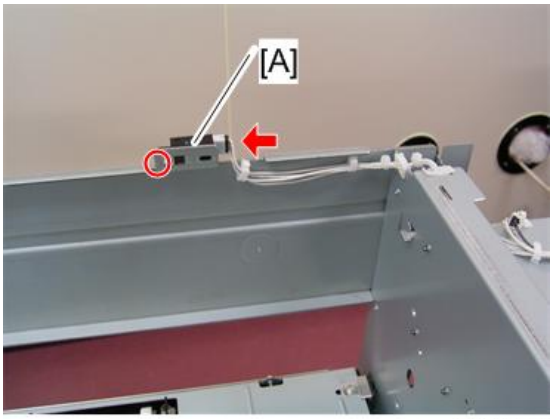


4. Top tray full sensor (E) [A] (x1, x1, x3)



1.4.4 TOP TRAY FULL SENSOR (R)

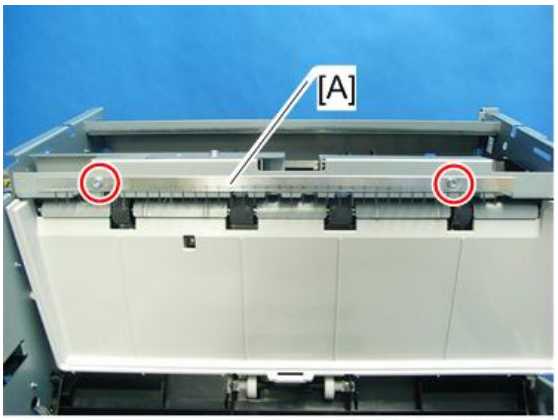
1. Top tray page 5
2. Top tray full sensor (R) [A] (x1, x1, x3)



d1351583

1.4.5 DISCHARGE BRUSH 1

1. Top tray page 5
2. Discharge brush 1 [A] (x2)

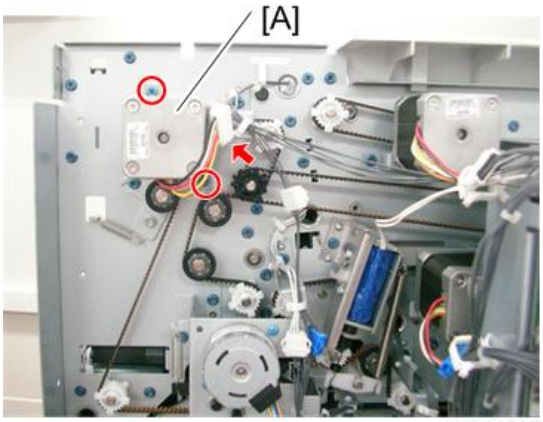


d1351584

1.5 DRIVE AREA

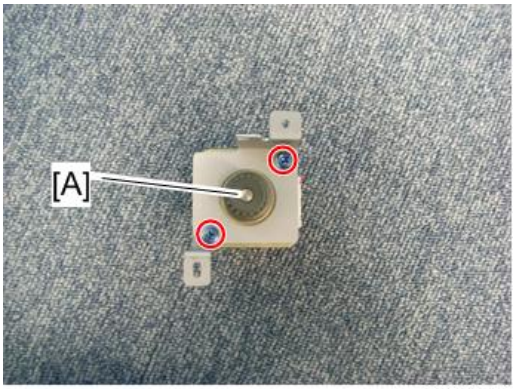
1.5.1 HORIZONTAL TRANSPORT MOTOR

1. Rear upper cover page 4
2. Top rear cover page 5
3. Horizontal transport motor bracket [A] (x1, x2)



d1351585

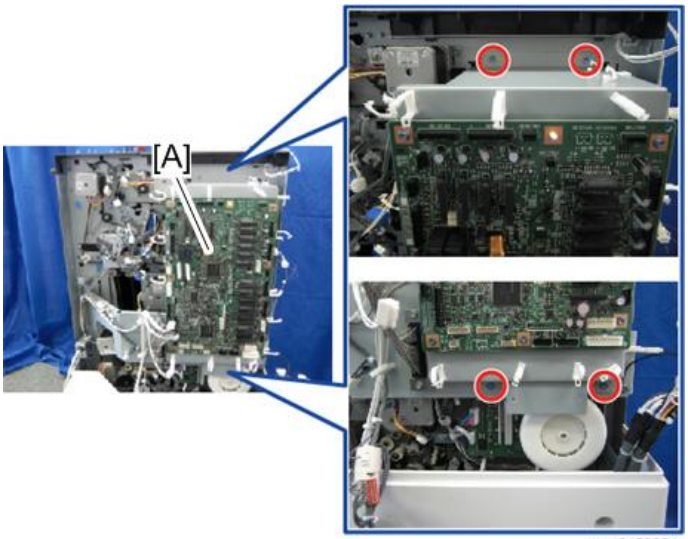
4. Horizontal transport motor [A] (x2)



d1351586

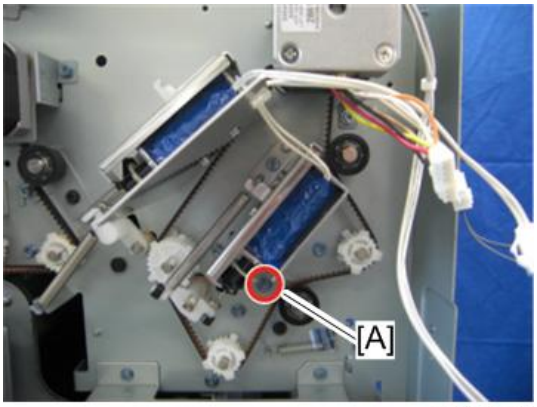
1.5.2 HORIZONTAL TRANSPORT EXIT MOTOR

1. Rear upper cover page 4
2. Top rear cover page 5
3. Main board with bracket [A] (x4, x all)



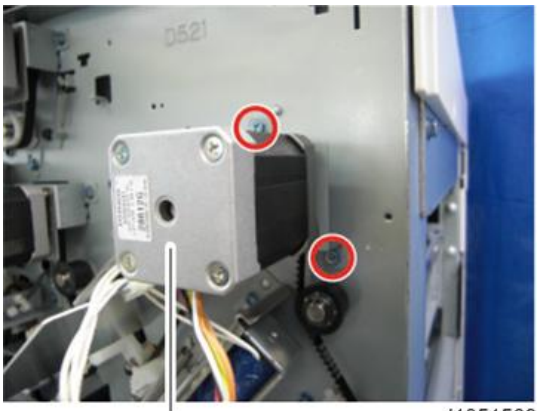
d1351587

4. Loosen the screw [A] to loosen the timing belt.



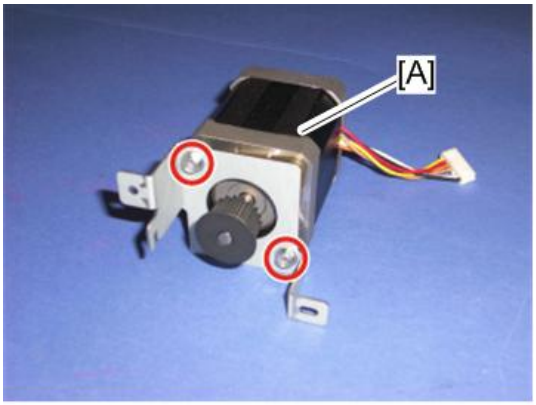
d1351588

5. Horizontal transport motor bracket [A] (x2)



d1351589

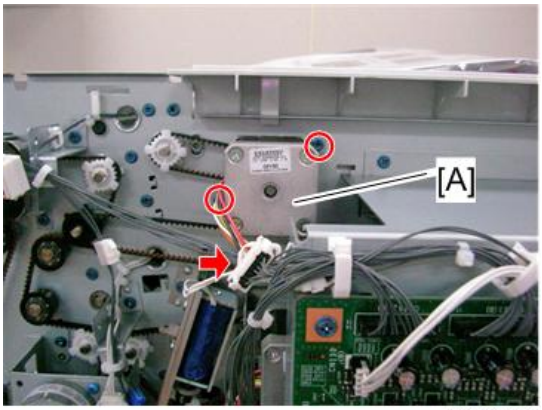
6. Horizontal transport motor [A] (x2)



d1351590

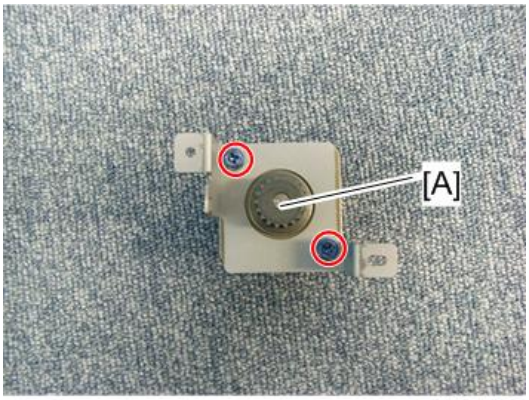
1.5.3 TOP TRAY EXIT MOTOR

1. Rear upper cover page 4
2. Top rear cover page 5
3. Top tray exit motor bracket [A] (x1, x1, x 2)



d1351591

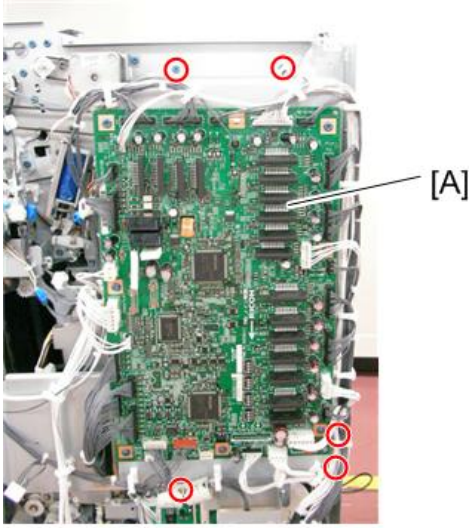
4. Top tray exit motor [A] (x2)



d1351592

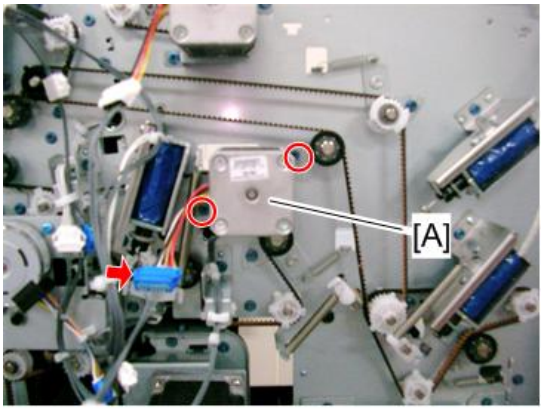
1.5.4 TOP TRAY TRANSPORT MOTOR

1. Rear upper cover page 4
2. Top rear cover page 5
3. Main board bracket [A] (x all, x all, x5, ground cable x1)



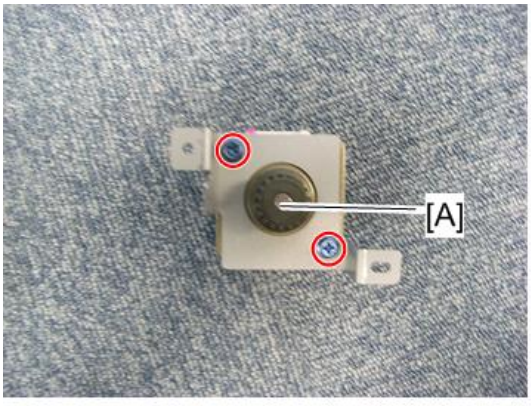
d1351595

4. Top tray transport motor bracket [A] (x1, x2)



d1351593

5. Top tray transport motor [A] (x2)

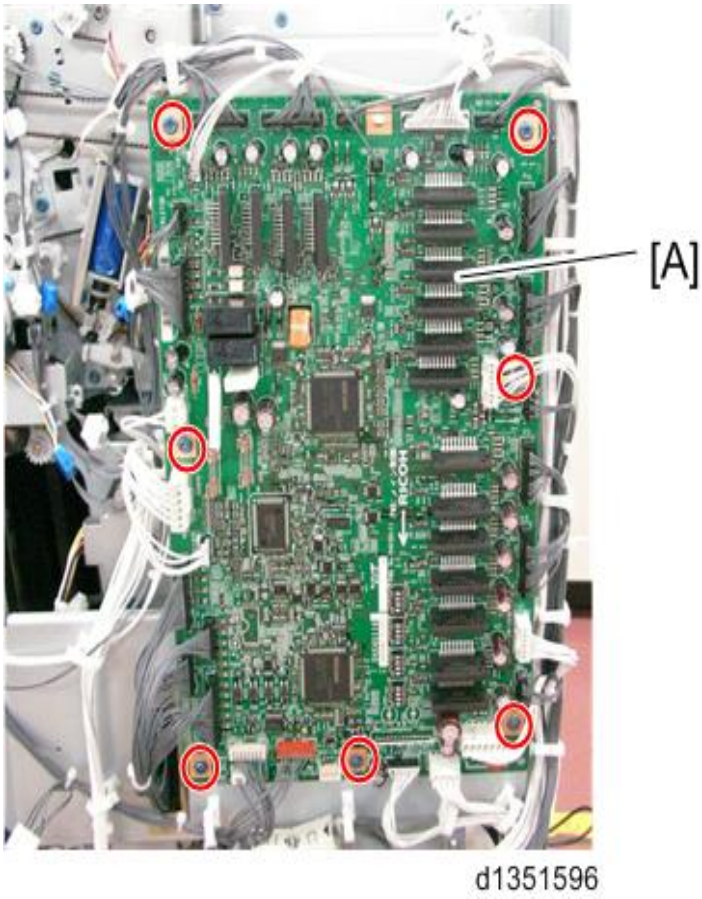


d1351594

1.6 ELECTRICAL COMPONENTS

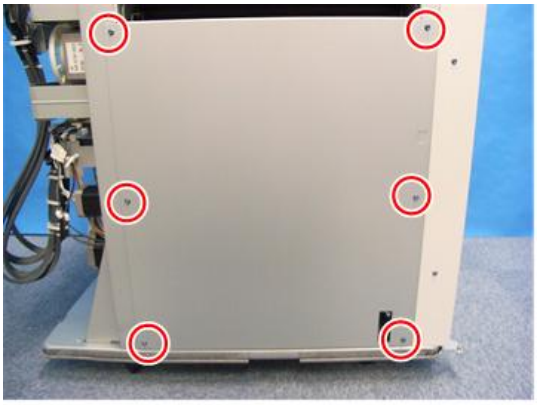
1.6.1 MAIN BOARD

1. Rear upper cover page 4
1. Main board [A] (x all, x7)



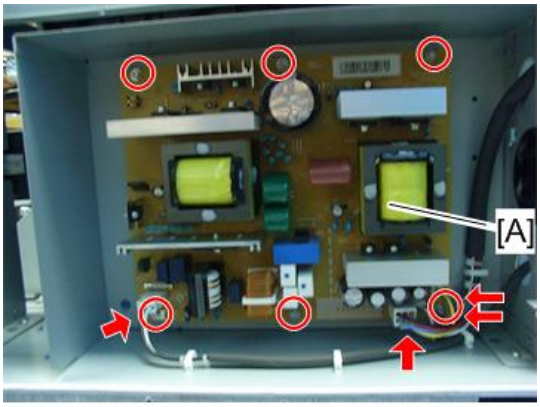
1.6.2 PSU

1. Left lower bracket (x6)



d1351597

2. PSU [A] (x6, x4)



d1351598

1.7 FOLD ADJUSTMENTS

1.7.1 BEFORE YOU BEGIN

The fold positions can be adjusted in the User Tools (Operators and Skilled Operators), the engine SP mode and Advanced Settings.

- Administrator Log-in is required to adjust Advanced Settings.
- Advanced Settings is enabled only for Custom Paper.
- Advanced Settings should be specified for each Custom Paper Profile.

Advanced Settings

Mode	Fold	Advanced Settings*[1]	SP
FM1	1st	87 Adjust Z-fold Position 1	-
	2nd	88 Adjust Z-fold Position 2	-
FM2	1st	89 Half Fold Position: Single-sheet Fold	-
FM3	1st	90 Letter Fold-out Posn 1: Single-sheet Fld	-
	2nd	91 Letter Fold-out Posn 2: Single-sheet Fld	-
FM4	1st	92 Letter Fold-in Posn 1: Single-sheet Fold	-
	2nd	93 Letter Fold-in Posn 2: Single-sheet Fold	-
FM5	1st	94 Double Parallel Fold Position 1	-
	2nd	95 Double Parallel Fold Position 2	-
FM6	1st	96 Adjust Gate Fold Position 1	-
	2nd	97 Adjust Gate Fold Position 2	-
	3rd	98 Adjust Gate Fold Position 3	-

*[1]: These numbers are the same for the advanced settings of Administrator. These settings can be adjusted for each paper profile.

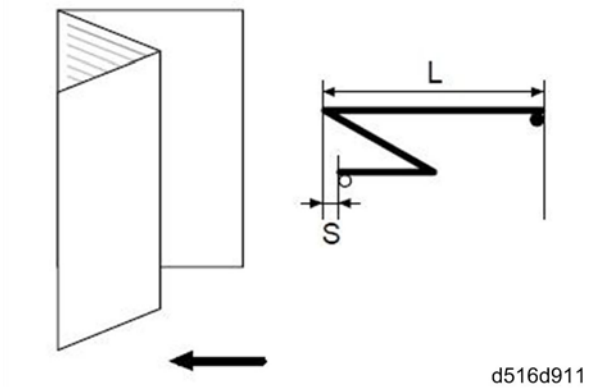
Adjustment Settings for Skilled Operators and Engine SP modes

Mode	Fold	User Tools	SP
FM2	1st	0601 Half Fold Position (Multi-sheet Fold)	6-314-021 to -039
FM3	1st	0602 Letter Fold-out Position 1 (Multi-sheet Fold)	6-315-022 to -039
	2nd	0603 Letter Fold-out Position 2 (Multi-sheet Fold)	6-316-022 to -039
FM4	1st	0604 Letter Fold-in Position 1 (Multi-sheet Fold)	6-317-021 to -039
	2nd	0605 Letter Fold-in Position 2 (Multi-sheet Fold)	6-318-021 to -039

1.7.2 FM1 Z-FOLDING

87: Adjust Z-fold Position 1

Adjust the width of the bottom end segment (S) of Z-folded sheets when using the multi-folding unit.



Press [+] to increase and [-] to reduce (S).

The mark ○ indicates the leading edge (relative to the paper feed direction), and the mark ● indicates the trailing edge.

Size	Setting	Default	Range
All sizes	S	0 mm	-4 to 4 mm
Pitch Adj.	**0.2 mm**		

88: Adjust Z-fold Position 2

Adjust the overall fold size (L) of Z-folded sheets when using the multi-folding unit. Press [+] to increase and [-] to reduce (L).

The mark ○ indicates the leading edge (relative to the paper feed direction), and the mark ● indicates the trailing edge.

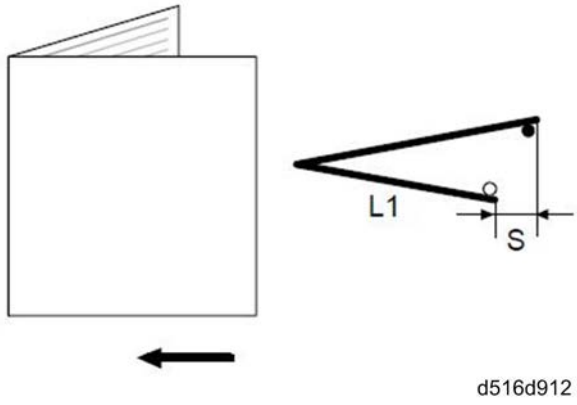
Size	Setting	Default	Range
All sizes	L	0 mm	-4 to 4 mm
Pitch Adj.	**0.2 mm**		

1.7.3 FM2 HALF FOLD: SINGLE-SHEET FOLD AND MULTI-SHEET FOLD

89: Half Fold Position: Single-sheet Fold

Adjust the fold position (S) of half folded sheets when using the multi-folding unit.

This setting will not be applied when the multi-sheet fold function is enabled.



Press [+] to increase and [-] to reduce (S).

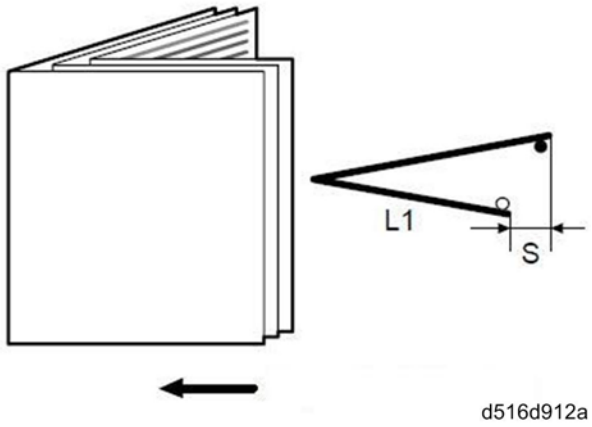
The mark ○ indicates the leading edge (relative to the paper feed direction), and the mark ● indicates the trailing edge.

Size	Setting	Default	Range
All sizes	L1	0 mm	-4 to 4 mm
Pitch Adj.	**0.2 mm**		

0601: Half Fold Position (Multi-sheet Fold)/ SP6-314-021 to -039

Adjust the folded position (S) of half folded sheets when using the multi-folding unit.

This setting will be applied if the multi-sheet fold function is enabled.



Press [+] to increase and [-] to reduce (S).

The mark ○ indicates the leading edge (relative to the paper feed direction), and the mark ● indicates the trailing edge.

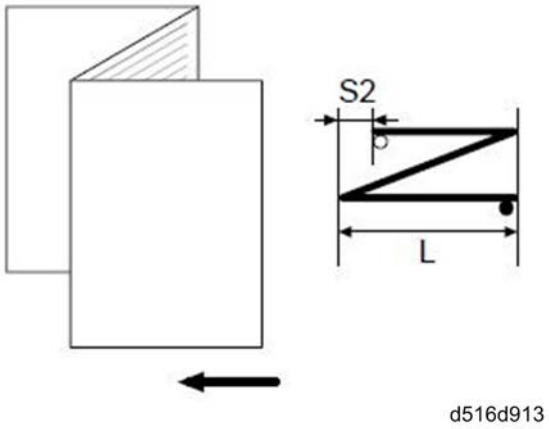
Size	Setting	Default	Range	SP
A3 SEF	S	0 mm	±4 mm	6-314-021
B4 SEF	S	0 mm	±4 mm	6-314-022
A4 SEF	S	0 mm	±4 mm	6-314-023
B5 SEF	S	0 mm	±4 mm	6-314-029
12”x18” SEF	S	0 mm	±4 mm	6-314-027
11”x17” SEF (DLT SEF)	S	0 mm	±4 mm	6-314-024
$8^1/_2$"x14" SEF (LG SEF)	S	0 mm	±4 mm	6-314-025
$8^1/_2$"x11" SEF (LT SEF)	S	0 mm	±4 mm	6-314-026
8K (8-Kai)	S	0 mm	±4 mm	6-314-028
Other (Custom)	S	0 mm	±4 mm	6-314-039
Pitch Adj.	**0.2 mm**			

1.7.4 FM3 LETTER FOLD-OUT: SINGLE-SHEET FOLD AND MULTI-SHEET FOLD

90: Letter Fold-out Posn 1: Single-sheet Fld

Adjust the fold position for the bottom segment (S2) of letter fold-out sheets when using the multi-folding unit.

This setting will not be applied when the multi-sheet fold function is enabled.



Press [+] to increase and [-] to reduce (S2).

The mark ○ indicates the leading edge (relative to the paper feed direction), and the mark ● indicates the trailing edge.

Size	Setting	Default	Range
All Sizes	S2	0 mm	±4 mm*1
Pitch Adj.	**0.2 mm**		

*1: B5 (SEF) is ±3 mm

91: Letter Fold-out Posn 2: Single-sheet Fld

Adjust the overall fold size (L) of letter fold-out sheets when using the multi-folding unit.

This setting will not be applied when the multi-sheet fold function is enabled.

Press [+] to increase and [-] to reduce (L).

The mark ○ indicates the leading edge (relative to the paper feed direction), and the mark ● indicates the trailing edge.

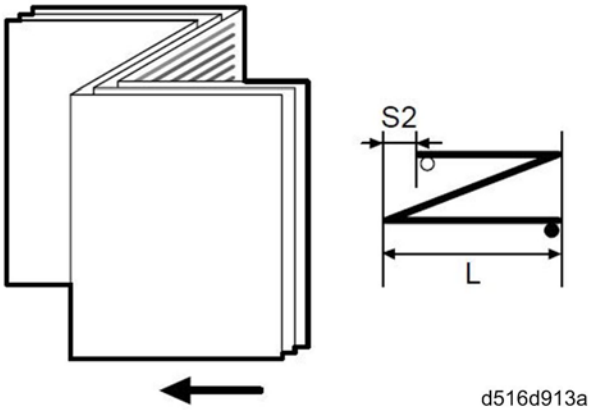
Size	Setting	Default	Range
All Sizes	L	0 mm	±4 mm*1
Pitch Adj.	**0.2 mm**		

*1: B5 (SEF) is ±3 mm

0602: Letter Fold-out Position 1 (Multi-sheet Fold)/ SP6-315-022 to -039

Adjust the fold position for the bottom segment (S2) of letters fold-out sheets when using the multi-folding unit.

This setting will be applied if the multi-sheet fold function is enabled.



Press [+] to increase and [-] to reduce (S2).

The mark ○ indicates the leading edge (relative to the paper feed direction), and the mark ● indicates the trailing edge.

Size	Setting	Default	Range	SP
B4 SEF	S2	0 mm	±4 mm	6-315-022
A4 SEF	S2	0 mm	±4 mm	6-315-023
B5 SEF	S2	0 mm	±3 mm	6-315-029
$8^1/_2$"x14" SEF (LG SEF)	S2	0 mm	±4 mm	6-315-025
$8^1/_2$"x11" SEF (LT SEF)	S2	0 mm	±4 mm	6-315-026
Other (Custom)	S2	0 mm	±4 mm	6-315-039
Pitch Adj.	**0.2 mm**			

0603: Letter Fold-out Position 2 (Multi-sheet Fold)/ SP6-316-022 to -039

Adjust the overall fold size (L) of letters fold-out sheets when using the multi-folding unit.

This setting will be applied if the multi-sheet fold function is enabled.

Press [+] to increase and [-] to reduce (L).

The mark ○ indicates the leading edge (relative to the paper feed direction), and the mark ● indicates the trailing edge.

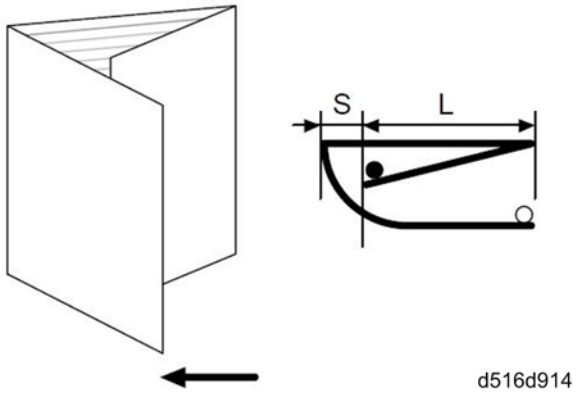
Size	Setting	Default	Range	SP
B4 SEF	L	0 mm	±4 mm	6-316-022
A4 SEF	L	0 mm	±4 mm	6-316-023
B5 SEF	L	0 mm	±3 mm	6-316-029
$8^1/_2$"x14" SEF (LG SEF)	L	0 mm	±4 mm	6-316-025
$8^1/_2$"x11" SEF (LT SEF)	L	0 mm	±4 mm	6-316-026
Other (Custom)	L	0 mm	±4 mm	6-316-039
Pitch Adj.	**0.2 mm**			

1.7.5 FM4 LETTER FOLD-IN: SINGLE-SHEET FOLD AND MULTI-SHEET FOLD

92: Letter Fold-in Posn 1: Single-sheet Fold

Adjust the fold position of the bottom segment (S) of letter fold-in sheets when using the multi-folding unit.

This setting will not be applied when the multi-sheet fold function is enabled.



Press [+] to increase and [-] to reduce (S).

The mark ○ indicates the leading edge (relative to the paper feed direction), and the mark ● indicates the trailing edge.

Size	Setting	Default	Range
All Sizes	S	0 mm	±4 mm
Pitch Adj.	**0.2 mm**		

93: Letter Fold-in Posn 2: Single-sheet Fold

Adjust the overall fold size (L) of letter fold-in sheets when using the multi-folding unit.

This setting will not be applied when the multi-sheet fold function is enabled.

Press [+] to increase and [-] to reduce (L).

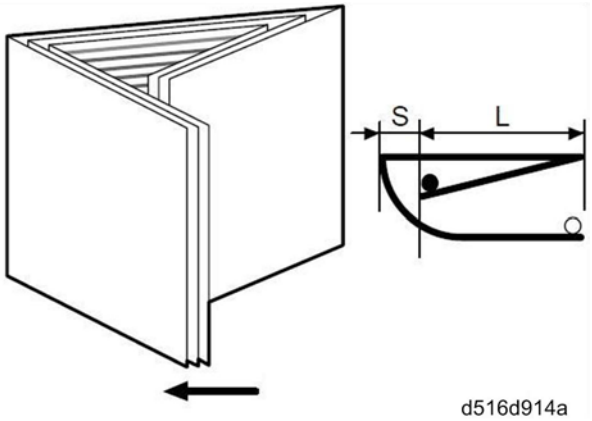
The mark ○ indicates the leading edge (relative to the paper feed direction), and the mark ● indicates the trailing edge.

Size	Setting	Default	Range
All Supported Sizes	L	0 mm	±4 mm
Pitch Adj.	**0.2 mm**		

0604: Letter Fold-in Position 1 (Multi-sheet Fold)/ SP6-317-021 to -039

Adjust the fold position of the bottom segment (S) of letters fold-in sheets when using the multi-folding unit.

This setting will be applied if the multi-sheet fold function is enabled.



Press [+] to increase and [-] to reduce (S).

The mark ○ indicates the leading edge (relative to the paper feed direction), and the mark ● indicates the trailing edge.

Size	Setting	Default	Range	SP
A3 SEF	S	0 mm	±4 mm	6-317-021
B4 SEF	S	0 mm	±4 mm	6-317-022
A4 SEF	S	0 mm	±4 mm	6-317-023
B5 SEF	S	0 mm	±4 mm	6-317-029
12”x18” SEF	S	0 mm	±4 mm	6-317-027
11”x17” SEF (DLT SEF)	S	0 mm	±4 mm	6-317-024
$8^1/_2$"x14" SEF (LG SEF)	S	0 mm	±4 mm	6-317-025
$8^1/_2$"x11" SEF (LT SEF)	S	0 mm	±4 mm	6-317-026
8K (8-Kai)	S	0 mm	±4 mm	6-317-028
Other (Custom)	S	0 mm	±4 mm	6-317-039
Pitch Adj.	**0.2 mm**			

0605: Letter Fold-in Position 2 (Multi-sheet Fold)/ SP6-318-021 to -039

Adjust the fold position (L) of letters fold-in sheets when using the multi-folding unit.

This setting will be applied if the multi-sheet fold function is enabled.

Press [+] to increase and [-] to reduce (L).

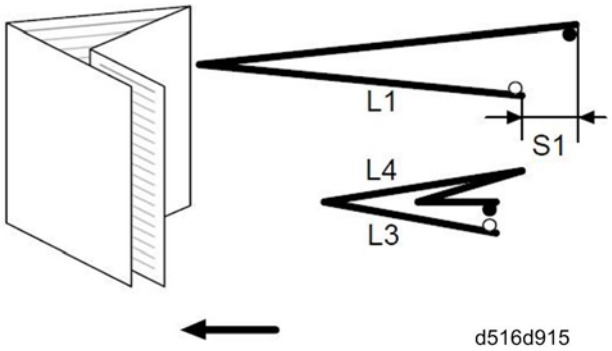
The mark ○ indicates the leading edge (relative to the paper feed direction), and the mark ● indicates the trailing edge.

Size	Setting	Default	Range	SP
A3 SEF	L	0 mm	±4 mm	6-318-021
B4 SEF	L	0 mm	±4 mm	6-318-022
A4 SEF	L	0 mm	±4 mm	6-318-023
B5 SEF	L	0 mm	±4 mm	6-318-029
12”x18” SEF	L	0 mm	±4 mm	6-318-027
11”x17” SEF (DLT SEF)	L	0 mm	±4 mm	6-318-024
$8^1/_2$"x14" SEF (LG SEF)	L	0 mm	±4 mm	6-318-025
$8^1/_2$"x11" SEF (LT SEF)	L	0 mm	0 to 4 mm	6-318-026
8K (8-Kai)	L	0 mm	±4 mm	6-318-028
Other (Custom)	L	0 mm	±4 mm	6-318-039
Pitch Adj.	**0.2 mm**			

1.7.6 FM5 DOUBLE PARALLEL FOLD

94: Double Parallel Fold Position 1

Adjust the fold position of the bottom segment 1 (S1) of double parallel-folded sheets when using the multi-folding unit.



Press [+] to increase and [-] to reduce (S1).

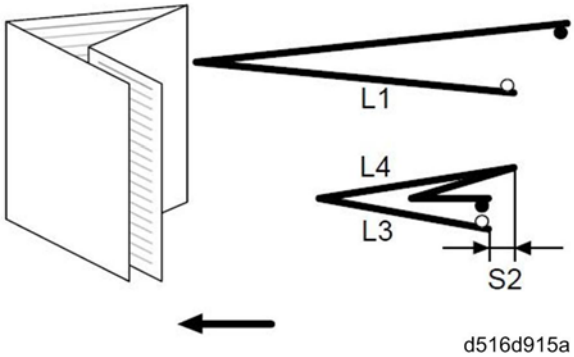
The upper right illustration shows a partly opened, double parallel-folded sheet (folded in half), and the lower right illustration shows a fully folded sheet.

The mark ○ indicates the leading edge (relative to the paper feed direction), and the mark ● indicates the trailing edge.

Size	Setting	Default	Range
All Supported Sizes	S1	0 mm	±4 mm
Pitch Adj.	**0.2 mm**		

95: Double Parallel Fold Position 2

Adjust the fold position of the bottom segment 2 (S2) of double parallel-folded sheets when using the multi-folding unit.



Press [+] to increase and [-] to reduce (S2).

The upper right illustration shows a partly opened, double parallel-folded sheet (folded in half), and the lower right illustration shows a fully folded sheet.

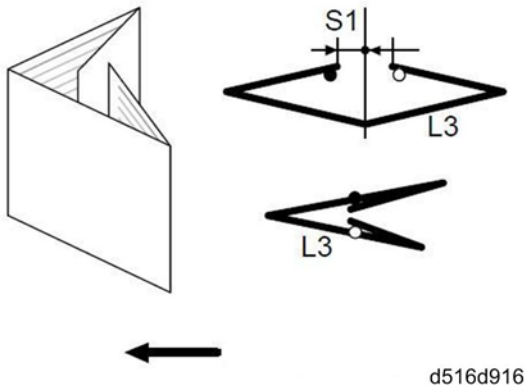
The mark ○ indicates the leading edge (relative to the paper feed direction), and the mark ● indicates the trailing edge.

Size	Setting	Default	Range
All Supported Sizes	S2	0 mm	±4 mm
Pitch Adj.	**0.2 mm**		

1.7.7 FM6 GATE FOLD

96: Adjust Gate Fold Position 1

Adjust the fold width of the bottom segment 1 (S1) of gate folded sheets when using the multi-folding unit.



Press [+] to increase and [-] to reduce (S1).

The upper right illustration shows a partly opened, gate folded sheet, and the lower right illustration shows a fully folded sheet.

The mark ○ indicates the leading edge (relative to the paper feed direction), and the mark ● indicates the trailing edge.

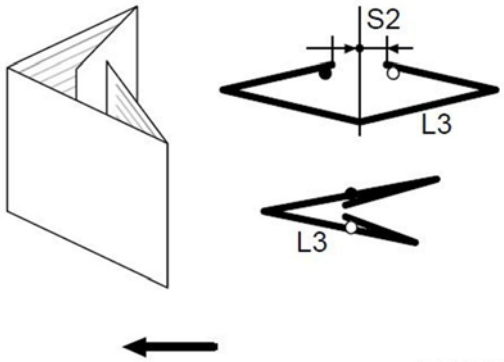
Size	Setting	Default	Range
All Supported Sizes	S1	0 mm	±4 mm
Pitch Adj.	**0.2 mm**		

Note

- You cannot specify this setting when using 12"x 18"L paper.

97: Adjust Gate Fold Position 2

Adjust the fold width of the bottom segment 2 (S2) of gate folded sheets when using the multi-folding unit.



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Press [+] to increase and [-] to reduce (S2).

The upper right illustration shows a partly opened, double parallel-folded sheet (folded in half), and the lower right illustration shows a fully folded sheet.

The mark ○ indicates the leading edge (relative to the paper feed direction), and the mark ● indicates the trailing edge.

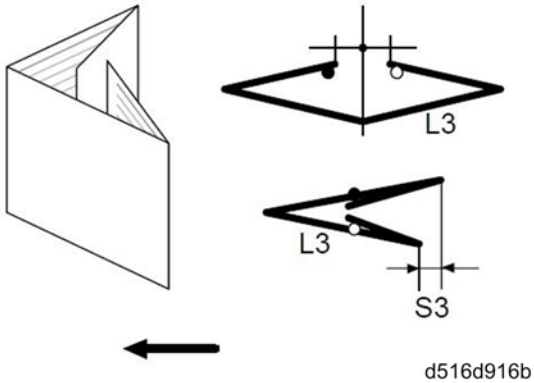
Size	Setting	Default	Range
All Supported Sizes	S2	0 mm	±4 mm
Pitch Adj.	**0.2 mm**		

Note

- You cannot specify this setting when using 12"x 18"L paper.

98: Adjust Gate Fold Position 3

Adjust the fold position of the bottom segment 3 (S3) of gate folded sheets when using the multi-folding unit.



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Press [+] to increase and [-] to reduce (S3).

The upper right illustration shows a partly opened, double parallel-folded sheet (folded in half), and the lower right illustration shows a fully folded sheet.

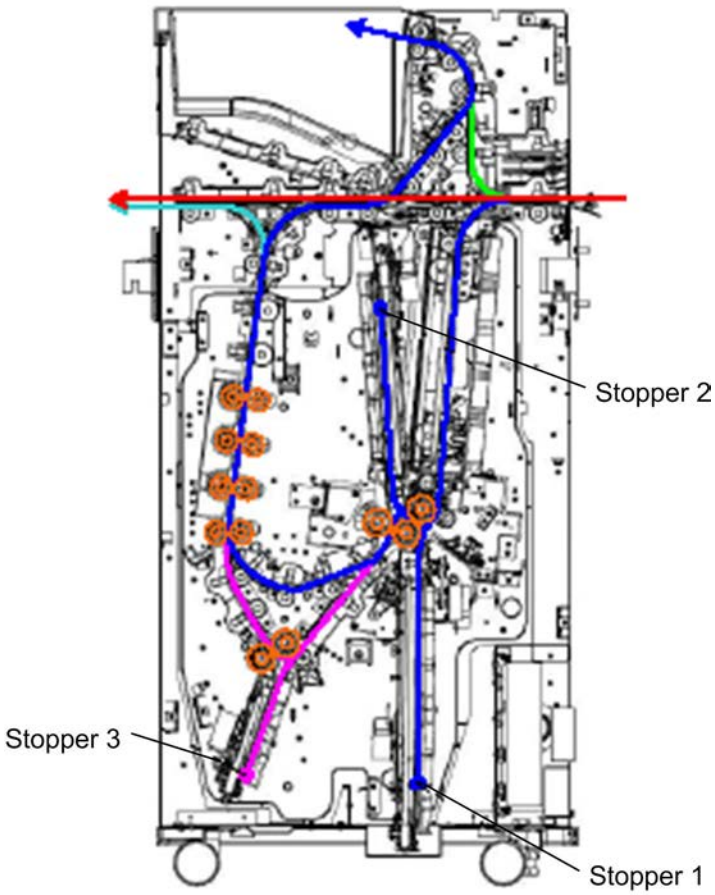
The mark ○ indicates the leading edge (relative to the paper feed direction), and the mark ● indicates the trailing edge.

Size	Setting	Default	Range
All Supported Sizes	S3	0 mm	±4 mm
Pitch Adj.	**0.2 mm**		

1.8 SKEW ADJUSTMENT

1.8.1 BEFORE YOU BEGIN

These adjustments can be done by the service technician adjusting the set and adjustment screws on the multi-folder unit.



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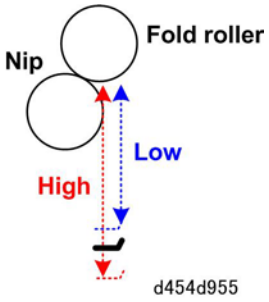
The illustration above shows the positions of the three stoppers inside the machine. The positioning of the stoppers is critical because this determines the types of folding.

1.8.2 FRONT AND REAR

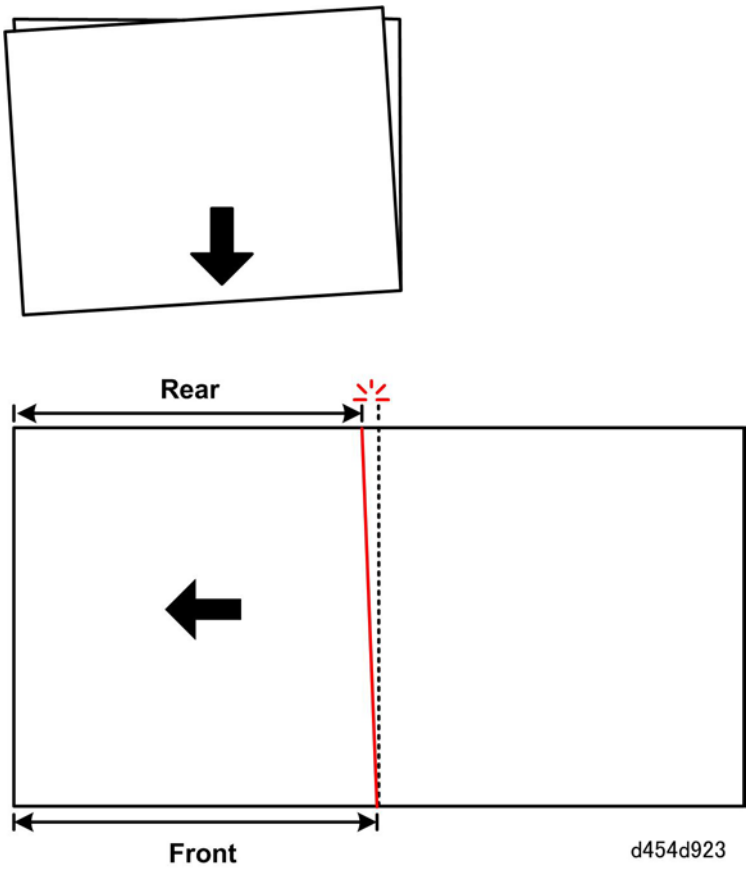
The terms "Front" and "Rear" are critical to understanding how paper is skewing during folding. These terms are defined relative to the positioning of the paper in the paper path as it feeds and exits.

- "High" means the distance from the nip of the fold roller to the stopper is too far on one end of the fence.
- "Low" means the distance from the nip of the fold roller to the stopper is too short.



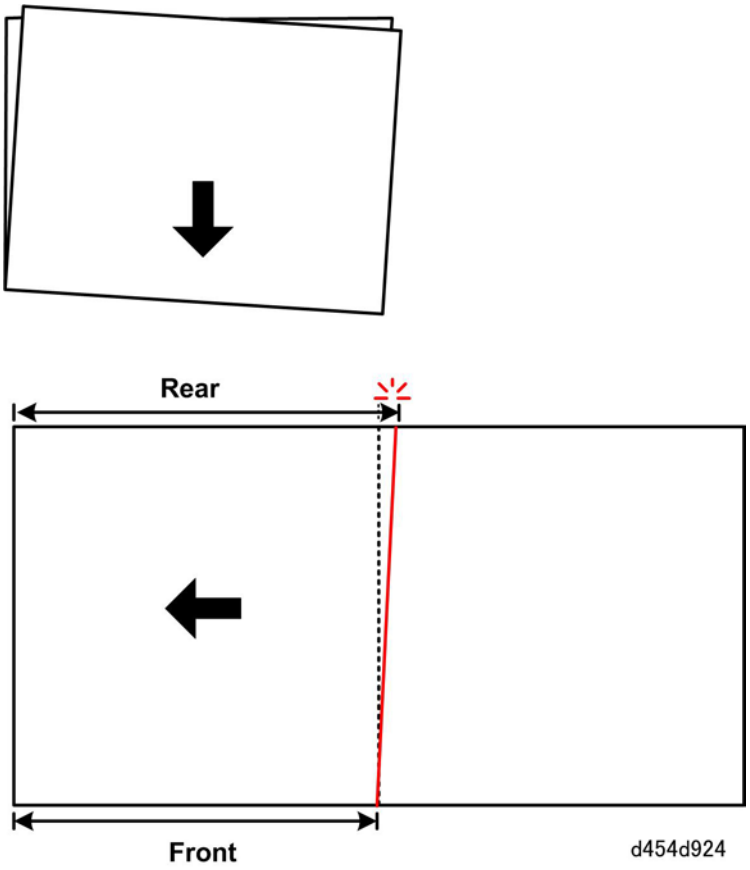
Two examples are shown below.

Example 1: High (Stopper Too Far From The Nip)



The black arrow shows the direction of paper feed from right to left. When the skew sheet is opened the **Front** edge is **longer** than the **Rear** edge.

Example 2: FM2: Low (Stopper to Close to the Nip)



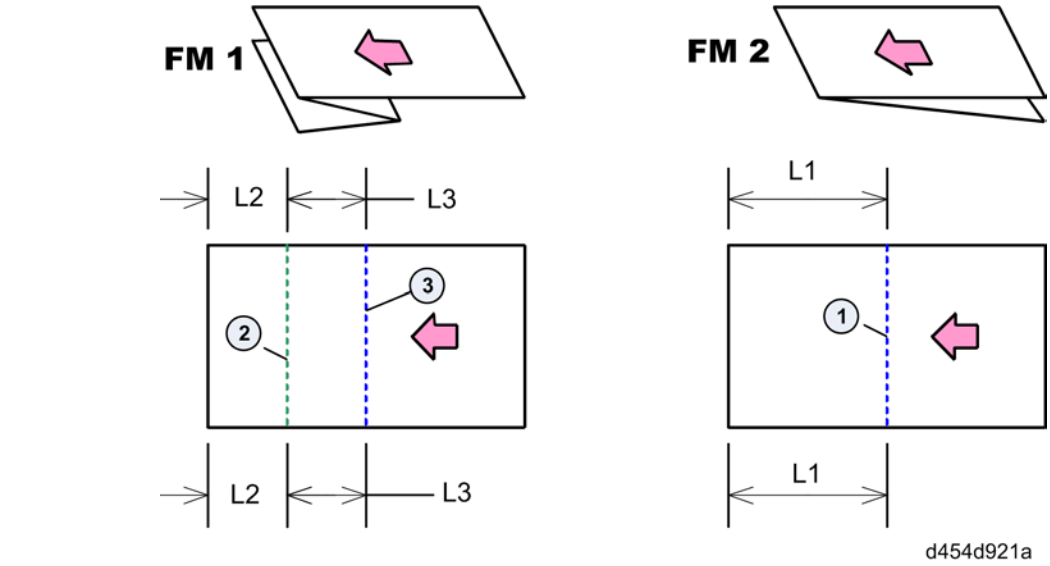
The black arrow shows the direction of paper feed from right to left. When the skew sheet is opened the **Front** edge is **shorter** than the **Rear** edge.

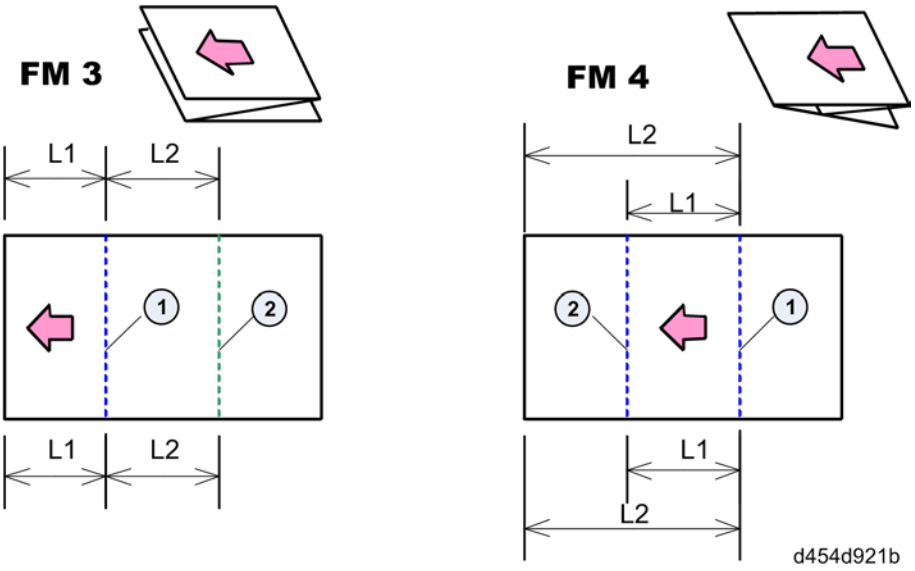
1.8.3 SKEW CORRECTION REFERENCE DIAGRAMS AND TABLE

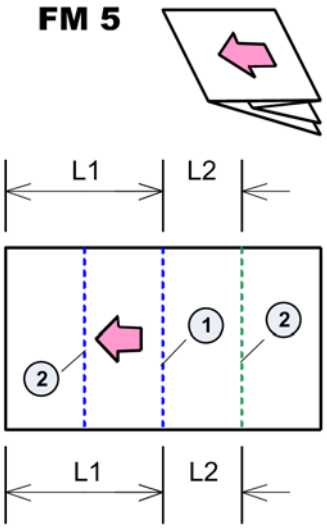
Skew Correction Reference Diagrams

Key

Symbol/Color	What It Means
①	Stopper 1 needs adjustment
②	Stopper 2 needs adjustment
③	Stopper 3 needs adjustment
Blue line	Peak fold (points left)
Green line	Valley fold (points right)







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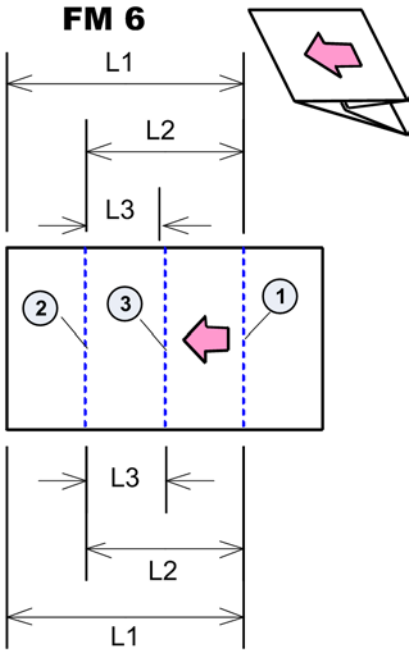
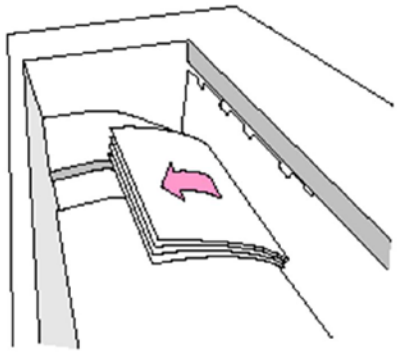


1.8.4 GENERAL PROCEDURE



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1. Retrieve the first folded paper from the top of the multi-folder. The first sheet is on the bottom of the stack.
2. If a fold is skewed, spread the paper out in the direction of paper feed shown in the diagrams above.
3. Carefully measure the distances between the folds between L1, L2, L3.
4. Compare the **Front** and **Rear** measurements.
5. Refer to the table below to determine where the paper is skewing and what type of adjustment is required.

Skew Correction Reference Table

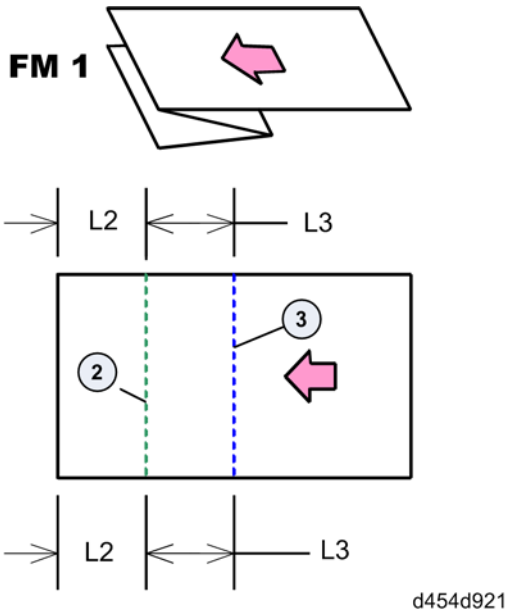
	L1	L2	L3	S1	S2	S3
FM1	---	**F** Long	**F** Long	---	Lower **F**	Raise **F**
	---	**F** Short	**F** Short	---	Raise **F**	Lower **F**
FM2	**F** Long	---	---	Raise **F**	---	---
	F Short	---	---	Lower **F**	---	---
FM3	**F** Long	**F** Long	---	Raise **F**	Lower **F**	---
	F Short	**F** Short	---	Lower **F**	Raise **F**	---
FM4	**F** Long	**F** Long	---	Raise **F**	Lower **F**	---
	F Short	**F** Short	---	Lower **F**	Raise **F**	---
FM5	**F** Long	**F** Long	---	Raise **F**	Lower **F**	---
	F Short	**F** Short	---	Lower **F**	Raise **F**	---
FM6	**F** Long	**F** Long	**F** Long	Lower **F**	Lower **F**	Raise **F**
	F Short	**F** Short	**F** Short	Raise **F**	Raise **F**	Lower **F**

Table Key

You must refer to the "Skew Correction Reference Diagrams". The following abbreviations are used in the table above.

Term	What It Means
F Long	**Front** measurement of L1, L2, or L3 is **longer** than **Rear**.
F Short	**Front** measurement of L1, L2, or L3 is **shorter** than **Rear**.
S1, S2, S3	Refers to Stopper 1, Stopper 2, Stopper. In the diagrams these are annotated as:①, ②, ③ respectively.
Raise **F**	Raise the front end of the stopper fence. For more, see below.
Lower **F**	Lower the front end of the stopper fence. For more, see below.

Example: FM1 (Z-fold)



First, compare the L2 measurements.

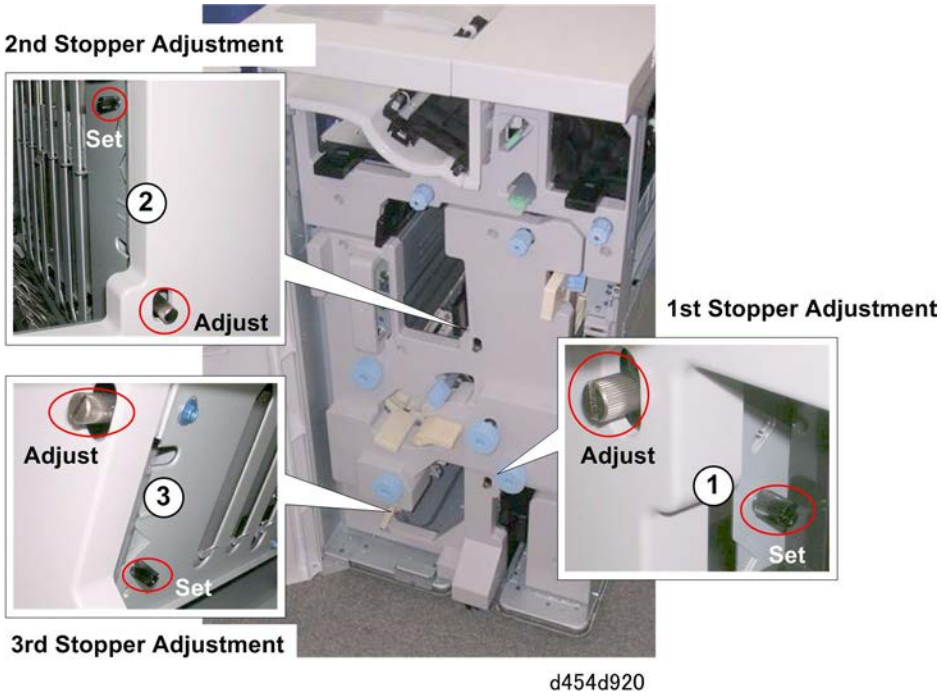
- In this example, imagine that L2 is longer at the front than at the rear.
- Look at the table, in the row for FM1, and the column for L2.
  - ‘F Long’ means Front measurement longer than Rear
  - ‘F Short’ means Rear measurement longer than Front
- L2 is longer at the front, so we have an ‘F Long’ situation.
- Then look at the next line, below ‘F Long’. It says ‘Lower F on S2’.
- This means you must lower the front end of stopper 2.

Then, compare the L3 measurements.

- In this example, imagine that L3 is longer at the front than at the rear.
- Look at the table, in the row for FM1, and the column for L3.
  - ‘F Long’ means Front measurement longer than Rear
  - ‘F Short’ means Rear measurement longer than Front
- L3 is longer at the front, so we have an ‘F Long’ situation again.
- Then look at the next line, below ‘F Long’. It says ‘Raise F on S3’.
- This means you must raise the front end of stopper 3.

1.8.5 STOPPER ADJUSTMENT PROCEDURES

1. Use the "Skew Correction Reference Diagrams" and "Skew Correction Reference Table" in the previous section to determine the location of the skew and which stopper needs adjustment.
2. Now you are ready to do the adjustment on the multi-folder unit.



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3. The illustration above shows the location for each stopper adjustment.
   - Each stopper is equipped with two screws.
   - The black plastic screw is the Set screw and the metal silver screw is the Adjustment screw.

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4. Remove the Set screw.

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5. Turn the Adjustment screw to do the adjustment for the stopper.

1st, 3rd Stopper

- Turn the Adjustment screw **clockwise** to **lower** the front end of the fence.

  -or-

- Turn the Adjustment screw **counter-clockwise** to **raise** the front of the fence.

2nd Stopper

- Turn the Adjustment screw **clockwise** to **raise** the front end of the fence.

  -or-

- Turn the Adjustment screw **counter-clockwise** to **lower** the front of the fence.

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6. Fasten the Set screw in the hole of the diagonal cutout near the hole where you removed it.

Note

- The diagonal cut may be above or below the original hole, depending on which stopper you are adjusting.
- The photo above shows the Set screw for Stopper 2.

7. Tighten the Set screw so the plate holds the adjustment.

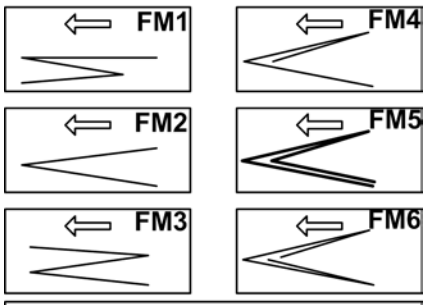
2. DETAILED DESCRIPTIONS

2.1 OVERVIEW

2.1.1 SPECIFICATIONS

General

Dimensions (W × D × H)	470 × 980 × 730 mm (18.6 × 38.6 × 28.8 in.)	
Weight	Approx. 92 kg (202.9 lb.)	
Power Consumption	Maximum 270 W (A separate power source is required.)	
Power Source	220 - 240 V, 50/60 Hz, 1.2 A	
Operating Environment	Temperature and humidity ranges: Same as main machine.	
Paper Weight	Single sheet mode: 64 to 103 g/m^2 (17 lb. Bond - 28 lb. Bond) Multiple sheets mode: 64 to 80 g/m^2 (17 lb. Bond - 20 lb. Bond)	
Folding Methods	6 (see below)	
Speed	Straight-Through	100 to 700 mm/s
	Folding	270 to 700 mm/s
Straight-Through Feed	Size	Postcard to 13x19.2"
	Type	Used paper: A3, A4, B4, B5 OHP: A4, B5 Tap paper: A4 LEF, LT LEF
Folding Methods	6 (FM1 to FM6)	



FM1: Z-Folding
FM2: Half Fold
FM3: Letter Fold-out
FM4: Letter Fold-in
FM5: Double Parallel Fold
FM6: Gate Fold

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Paper Sizes (Folding)	FM1	A3, B4, DLT, LG, A4, LT, 12x18", 8-kai
	FM2	A3, B4, DLT, LG, A4, B5, LT 12x18", 12.6x18.5", 12.6x19.2", 13x18", 13x19", 13x19.2", 226x310 mm, 310x432 mm, SRA3, SRA4, 8-kai
	FM3	A3, B4, DLT, LG, A4, LT, B5, 12x18", 8-kai
	FM4	
	FM5	
	FM6	
Paper Weights (Folding)	FM1	64 to 105 g/m^2
	FM2	
	FM3	
	FM4	
	FM5	
	FM6	
Multiple Folding	FM1	Not allowed
	FM2	Max. 3 (64 to 80 g/m^2 only)
	FM3	Max. 3 (64 to 80 g/m^2 only)

	FM4	Max. 3 (64 to 80 g/m^2 , B4, A4, LT, B5 only)
	FM5	Not allowed
	FM6	
Line Speed (Only FM1 Z-Folded paper can exit downstream)		
No Fold	350 mm/sec. to top tray To downstream: Same as main machine.	
FM1	700 mm/sec. to top tray (paper ≦ 355.6 mm long) 450 mm/sec. to top tray (paper < 355.6 mm long) To downstream: Same as main machine.	
FM2	1 Sheet: Same as main machine 2-3 Sheets: 454 mm/sec. 700 mm/sec. to top tray (paper ≦ 355.6 mm long) 350 mm/sec. to top tray (paper ≦ 279.4 <355.6 mm long) 250 mm/sec. to top tray (paper < 279.4 mm long)	
FM3 FM4	1 Sheet: Same as main machine 2-3 Sheets: 454 mm/sec. to top tray 350 mm/sec. to top tray (paper ≦ 420 mm long) 250 mm/sec. to top tray (paper < 420 mm long)	
FM5	1 Sheet: Same as main machine 350 mm/sec. to top tray (paper ≦ 420 mm long) 250 mm/sec. to top tray (paper < 420 mm long)	
FM6	1 Sheet: Same as main machine as far as 3rd Stopper. At 3rd stopper feeds 50 mm at 100 mm/sec. 350 mm/sec. to top tray (paper ≦ 420 mm long) 250 mm/sec. to top tray (paper < 420 mm long)	
Power Supply	NA	AC 120V 60 Hz, 15A
	EU	AC 220 to 240V, 50/60 Hz 10A
Power Consumption	270 W	
Size (w x d x h)	466 x 980 x 730 mm (18.4 x 38.6 x 28.7 in.)	
Level	Less than 5 mm deviation at front/back, left/right	
Weight	92 kg (203 lb)	

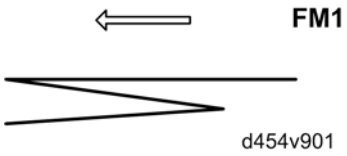
Noise Level (dB A)	Mode	Alone	System
	No Folding	< 76 dB	---
	Folding	< 78 dB	< 83 dB

Tray Capacity

The capacity of the tray on top of the unit for folded paper is determined by these variables:

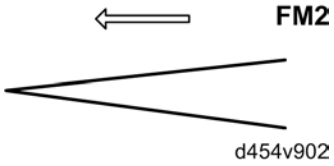
- Folding Methods (FM1 to FM6)
- Paper size
- Paper weight

Folding Mode FM1



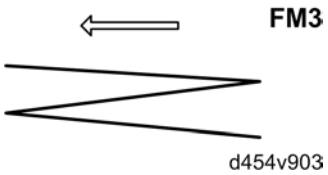
Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
8-kai	35	20
12x18"	35	20
A3 SEF	35	20
DLT	35	20
B4 SEF	35	20
LG SEF	35	20
A4 SEF	30	20
LT SEF	30	20

Folding Mode FM2



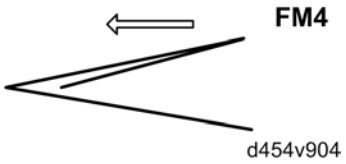
Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
13x19.2"	40	25
13x19"	40	25
12.6x19.2"	40	25
12.6x18.5"	40	25
13x18"	40	25
SRA3 (320x450 mm)	40	25
SRA4 (225x320 mm)	40	25
226x310 mm	40	25
310x432 mm	40	25
8-kai	40	25
12x18"	40	25
A3 SEF	40	25
DLT	40	25
B4 SEF	40	25
LG SEF	40	25
A4 SEF	50	50
LT SEF	50	50
B5 SEF	50	50

Folding Mode FM3



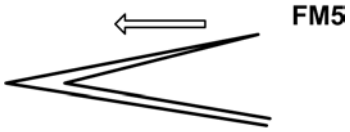
Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
8-kai	30	20
12x18"	30	20
A3 SEF	30	20
DLT	30	20
B4 SEF	30	20
LG SEF	30	20
A4 SEF	40	30
LT SEF	40	30
B5 SEF	40	30

Folding Mode FM4



Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
8-kai	40	20
12x18"	40	20
A3 SEF	40	20
DLT	40	20
B4 SEF	40	20
LG SEF	40	20
A4 SEF	50	40
LT SEF	50	40
B5 SEF	50	40

Folding Mode FM5



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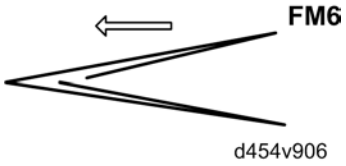
Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
8-kai	30	20
12x18"	30	20
A3 SEF	30	20
DLT	30	20
B4 SEF	30	20
LG SEF	30	20
A4 SEF	30	30
LT SEF	30	30
B5 SEF	30	30

Folding Mode FM6



Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
8-kai	50	20
12x18"	50	20
A3 SEF	50	20
DLT	50	20
B4 SEF	50	20
LG SEF	50	20
A4 SEF	30	30
LT SEF	30	30
B5 SEF	30	30

2.1.2 GENERAL LAYOUT

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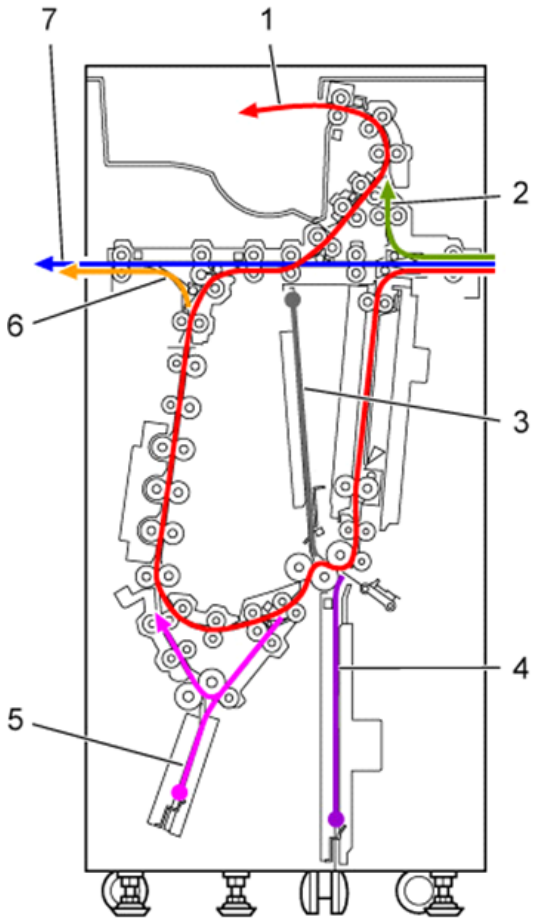
No.	Part	No.	Part
1	Top Tray Exit	8	1st Stopper
2	Mixed-Size Flat Paper	9	3rd Stopper
3	Entrance Transport Part	10	2nd Fold
4	2nd Stopper	11	Crease Part
5	Vertical Transport	12	Horizontal Transport
6	Registration Transport	13	Top Tray Transport
7	1st Fold Part		

2.1.3 TRANSPORT



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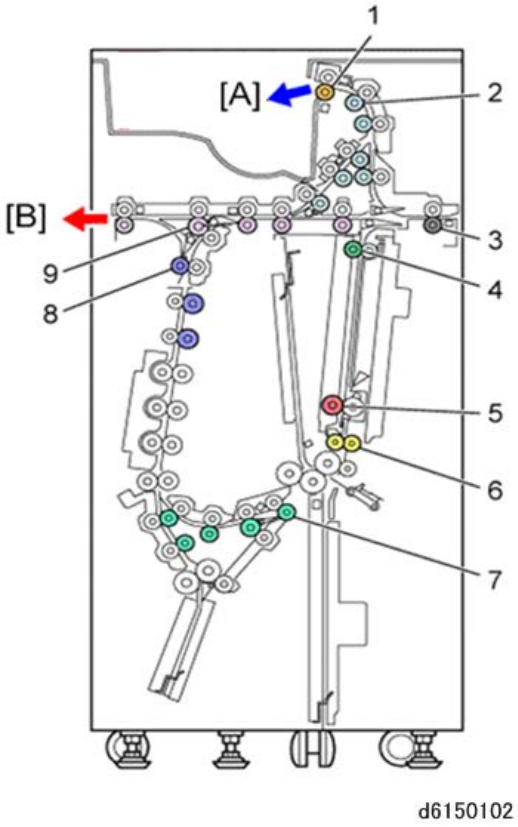
No.	Part	No.	Part
1	Paper Fold Transport Path (Top Tray)	5	3rd Stopper Transport Path
2	Mixed-Size Flat Paper Path	6	Folded Paper Exit Path (to downstream)
3	2nd Stopper Transport Path	7	Straight-through Path
4	1st Stopper Transport Path		

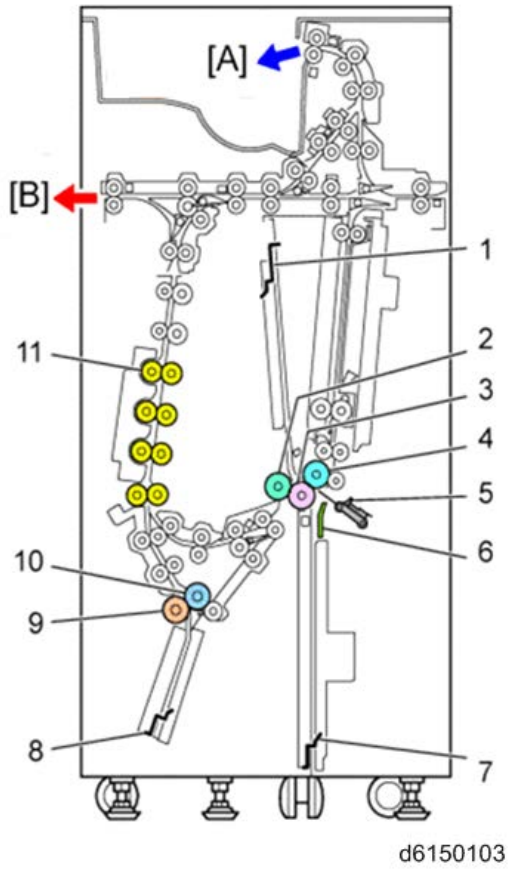
2.1.4 ROLLERS



A: Fold Paper Tray (Top Tray)

B: For Straight Through Path or For Downstream-process path

No.	Part	No.	Part
1	Top Tray Exit Roller	6	Registration Transport Roller
2	Top Tray Transport Roller	7	Bypass Transport Roller
3	Entrance Transport Roller	8	Vertical Transport Roller
4	Vertical Transport Roller	9	Horizontal Transport Roller
5	Vertical Transport Roller (Dynamic)		

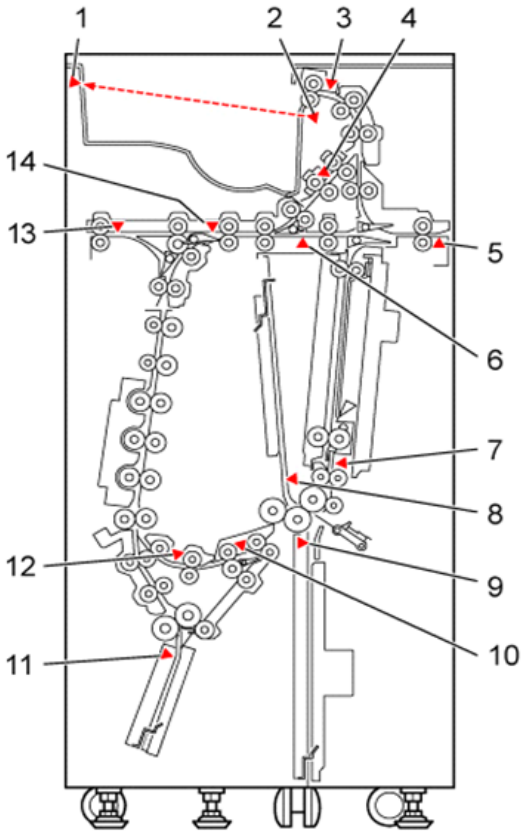


A: Fold Paper Tray (Top Tray)

B: For Straight Through Path or For Downstream-process path

No.	Part	No.	Part
1	2nd Stopper	7	1st Stopper
2	3rd Fold Roller	8	3rd Stopper
3	2nd Fold Roller	9	5th Fold Roller
4	1st Fold Roller	10	4th Folding Roller
5	Fold Plate	11	Crease Roller x 4
6	Jogger Fence		

2.1.5 TRANSPORT SENSORS

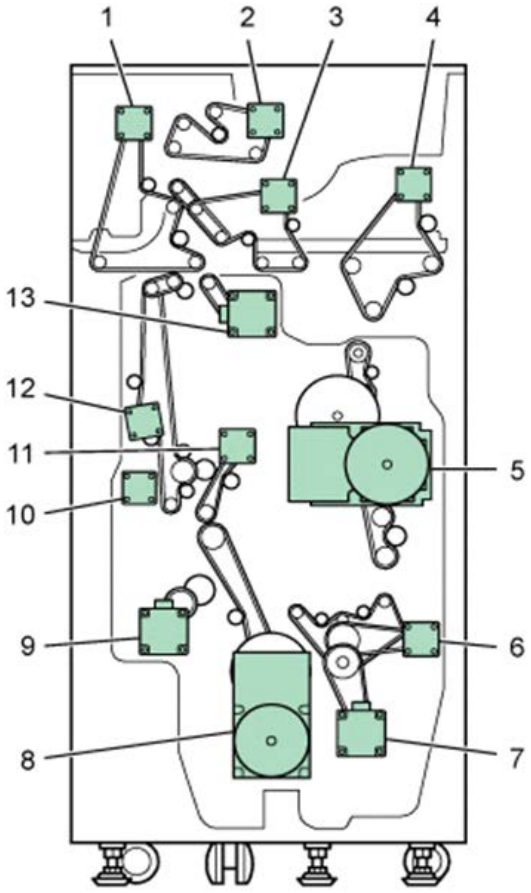


d6150104

No.	Part	No.	Part
1	Tray Full Sensor (Receiver)	8	2nd Stopper Paper Sensor
2	Tray Full Sensor (Emitter)	9	1st Stopper Paper Sensor
3	Top Tray Exit Sensor	10	Bypass Entrance Paper-Remain Sensor
4	Top Tray Transport Paper-Remain Sensor	11	3rd Stopper Pape Sensor
5	Entrance Sensor	12	Bypass Paper Remain Sensor
6	Horizontal Transport Paper-Remain Sensor	13	Horizontal Exit Sensor
7	Registration Sensor	14	Horizontal-Reverse-Transport Paper-Remain Sensor

2.1.6 MOTORS, SOLENOIDS

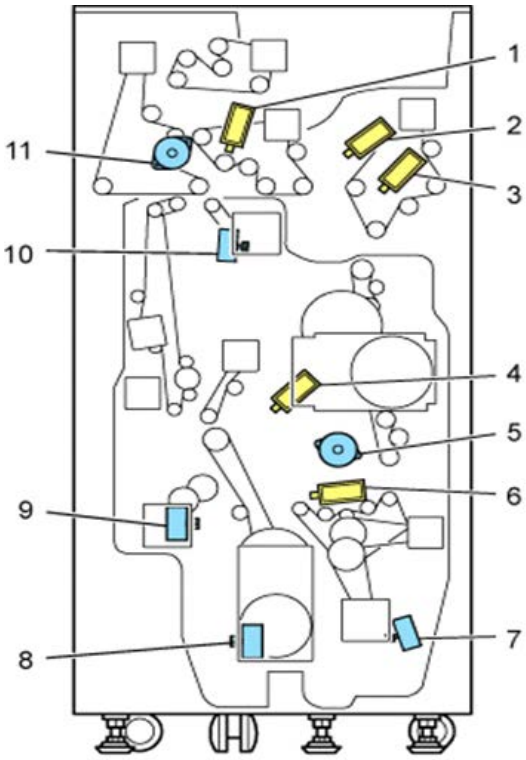
Main Motors



d6150105

No.	Part	No.	Part
1	1. Horizontal Transfer Motor	8	8. 1st Fold Motor
2	2. Top Tray Exit Motor	9	9. Fold Plate Motor
3	3. Top Tray Transfer Motor	10	10. Registration Roller Transport Motor
4	4. Horizontal Exit Motor	11	11. Registration Roller Release Motor
5	5. Crease Motor	12	12. Dynamic Roller Transport Motor
6	6. Double-Pawl Drive Motor	13	13. Dynamic Roller Up-Down Motor
7	7. 2nd Fold Motor		

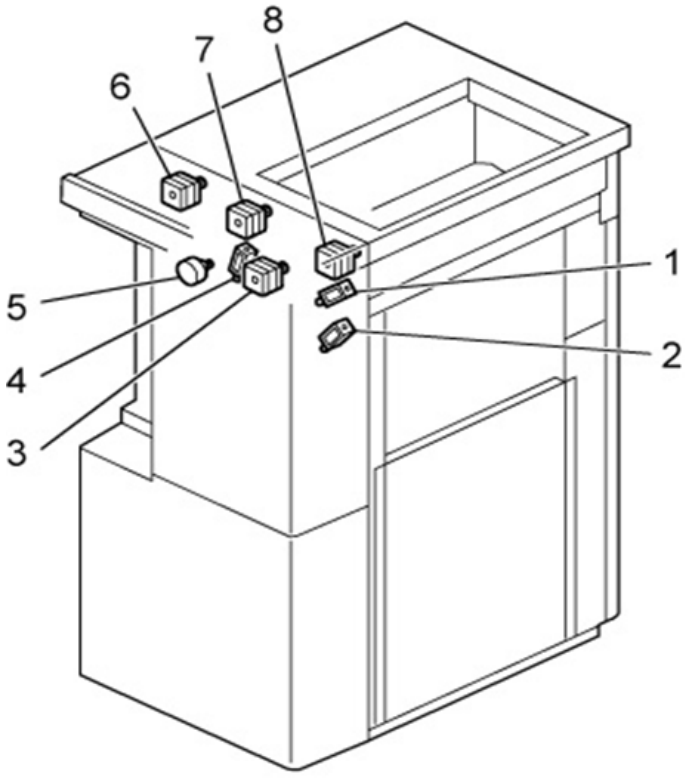
Solenoids, Motors



d6150106

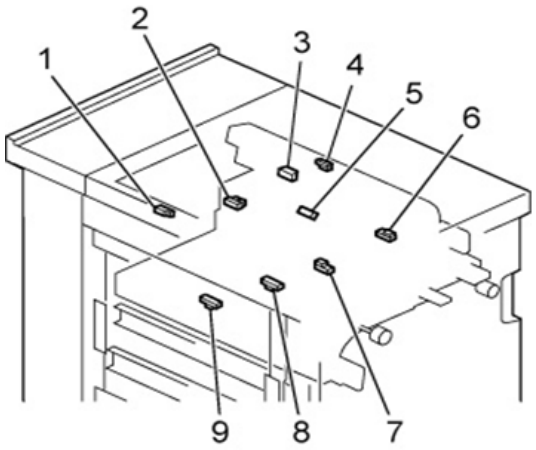
No.	Part	No.	Part
1	TopTray Junction gate Pawl Solenoid	7	3rd Stopper Motor
2	Reverse-Trasport Pawl Solenoid	8	1st Stopper Motor
3	Exit JG Pawl Solenoid	9	Jogger Shift Motor
4	Leading Edge Stop Pawl Solenoid	10	2nd Stopper Motor
5	Direct Send JG Motor	11	Entrance JG Pawl Motor
6	Bypass JG Pawl Solenoid		

2.1.7 ELECTRICAL COMPONENTS: TRANSPORT



d6150901

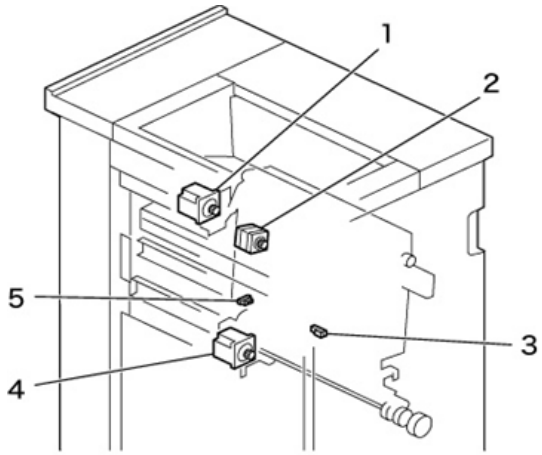
No.	Part	No.	Part
1	1. Reverse JG Pawl Solenoid	5	5. Entrance JG Pawl Motor
2	2. Exit JG Pawl Solenoid	6	6. Horizontal Transport Motor
3	3. Top Tray Transport Motor	7	7. Top Tray Exit Motor
4	4. Top Tray JG Solenoid	8	8. Horizontal Exit Motor



d6150902

No.	Part
1	Tray Full Sensor (Receiver)
2	Entrance JG Pawl HP Sensor
3	Top Tray Exit Sensor
4	Top Tray Transport Paper/Remain Sensor
5	Tray Full Sensor (Emitter)
6	Entrance Sensor
7	Horizontal Transport/Paper Remain Sensor
8	Horizontal Reverse-Send/Paper Remain Sensor
9	Horizontal Exit Sensor

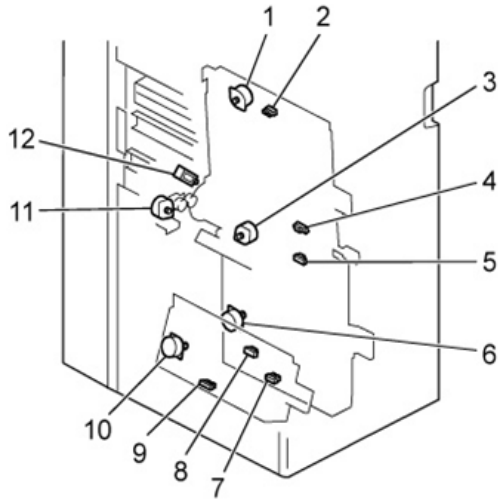
2.1.8 ELECTRICAL COMPONENTS: VERTICAL TRANSPORT



d6150904

No.	Part
1	1. Dynamic Roller Up-down Motor
2	2. Dynamic Roller Transport Motor
3	3. Registration Motor
4	4. Fold Plate Motor
5	5. Dynamic Roller HP Sensor

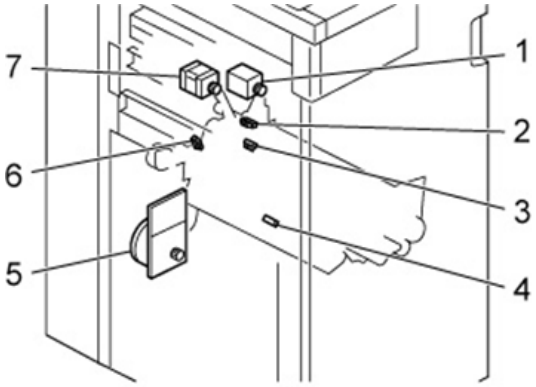
2.1.9 ELECTRICAL COMPONENTS: 1ST, 2ND, 3RD STOPPERS



d6150903

No.	Part	No.	Part
1	1. 2nd Stopper Motor	7	7. 1st Stopper HP Sensor
2	2. 2nd Stopper HP Sensor	8	8. 3rd Stopper Paper-Face Sensor
3	3. Jogger Shift Motor	9	9. 3rd Stopper HP Sensor
4	4. 2nd Stopper Paper-Face Sensor	10	10. 3rd Stopper Motor
5	5. 1st Stopper Paper-Face Sensor	11	11. Direct Send Pawl Sensor
6	6. 1st Stopper Motor	12	12. Leading Edge Stop Pawl Solenoid

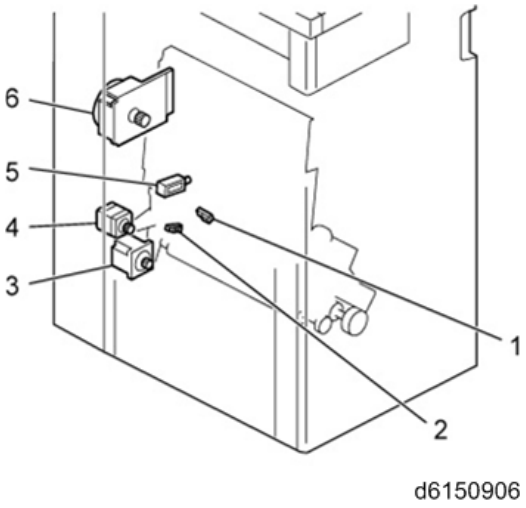
2.1.10 ELECTRICAL COMPONENTS: REGISTRATION, 1ST FOLD



d6150905

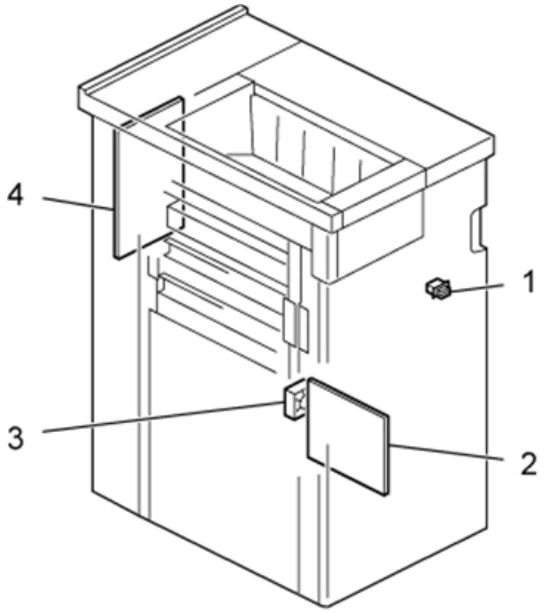
No.	Part
1	Registration Roller Release Motor
2	Registration Roller Release HP Sensor
3	Fold Plate HP Sensor
4	Bypass Entrane Paper Remain Sensor
5	1st Fold Motor
6	Direct Send Pawl HP Sensor
7	Registration Roller Transport Motor

2.1.11 ELECTRICAL COMPONENTS: 2ND FOLD, CREASE



No.	Part
1	Bypass Exit Paper Remain Sensor
2	Double Pawl HP Sensor
3	2nd Fold Motor
4	Double Pawl Motor
5	Bypass JG Pawl Solenoid
6	Crease Motor

2.1.12 ELECTRICAL COMPONENTS: SWITCH, BOARD, FAN



d6150907

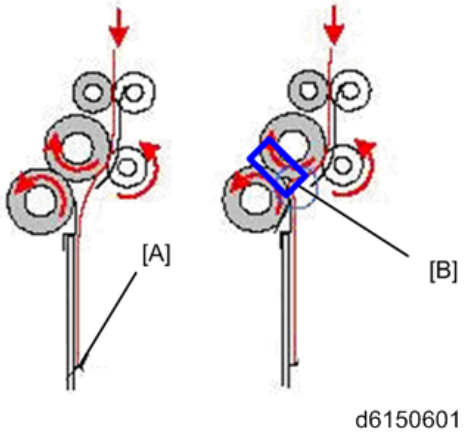
No.	Part
1	Front Cover Switch
2	PSU
3	PSU Fan
4	Main Controller Board

2.2 FOLD MECHANISMS

2.2.1 FOLD PROCESS

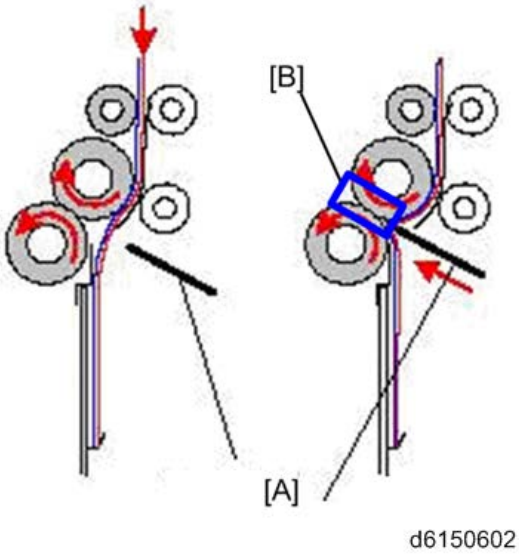
Single Sheet Fold Mode

The leading edge of paper bumps on the stopper pawl [A] but goes further to make deflection on its face. Then the deflected part is fed into the fold roller nip [B] and the fold is formed.



Double Sheet Fold Mode

One, two, or three sheet(s) of paper is (are) stacted on the pre-stack part. At this time, the transport roller that makes a deflection on paper is evacuated so no deflection is made. The fold plate [A] moves forward to press paper into the roller nip [B]. Paper goes into the roller nip while being folded.



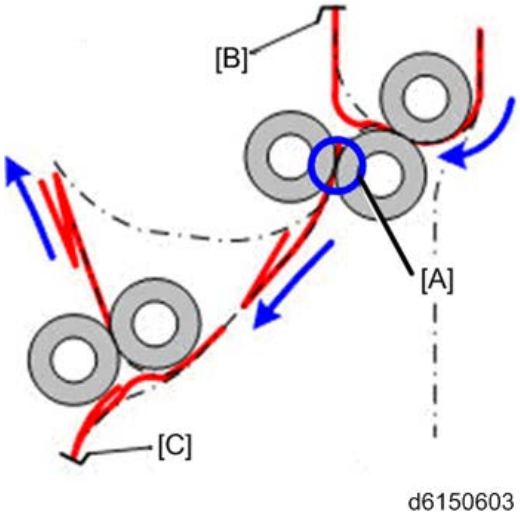
2.2.2 FOLD OPERATIONS

	1st Stopper Location	Fold Plate	2nd Stopper Location	3rd Stopper Location	Output
Z-Fold	Through		Short	Short	
Half-fold	1/2	○	Through	Through	Fold Output
Letter Fold-in	Long	○	Long	Through	Fold Output
Letter Fold-out	Short	○	Long	Through	Fold Output
Double-parallel Fold	1/2		1/2	Through	Fold Output
Gate Fold	Long		Long	1/2	Fold Output

○ The fold plate is used only in double fold.

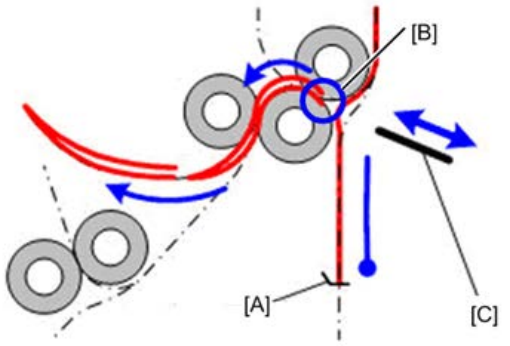
Z-Fold

Paper passes through the 1st folding part [A] without any treatment and bumps onto the 2nd stopper [B] to makes a deflection on itself. With this deflection, paper is fed into the 2nd-fold part nip and 1st fold is made.Then paper bumps onto the 3rd stopper [C] where paper is fed into to form 2nd fold. Finally Z-fold is formed.



Half-fold

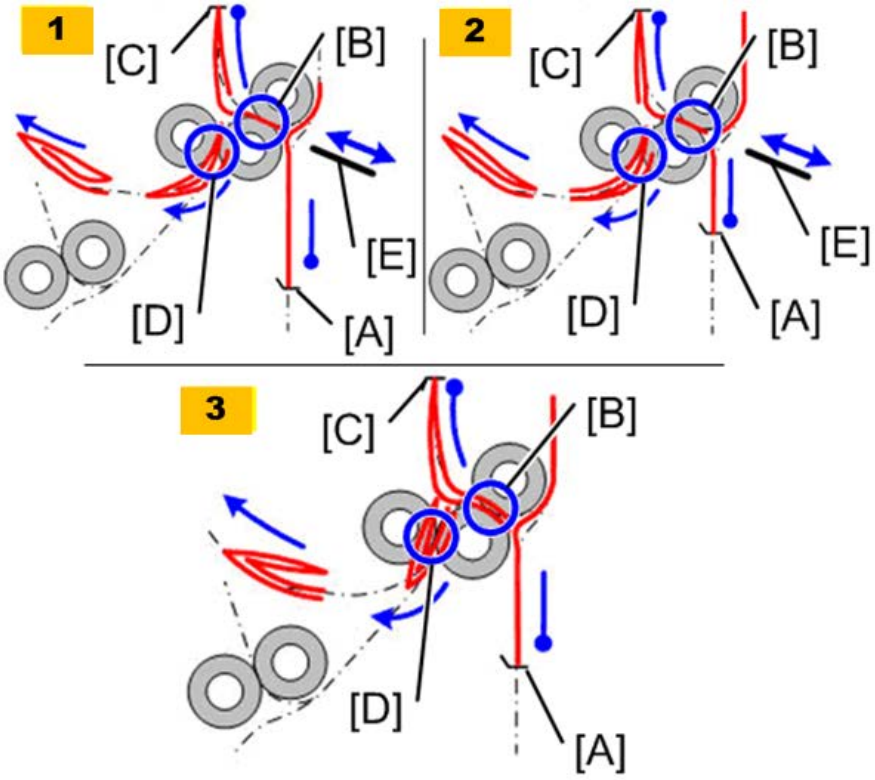
- **Single Sheet Fold**: paper bumps onto the 1st stopper [A] and makes a deflection on itself near the 1st fold nip [B]. With this deflection, paper is fed into the 1st fold nip [B] to be half-folded.
- **Double Sheet Fold**: 1 to 3 sheet(s) of paper is (are) pre-stacked while bumping onto the 1st stopper [A]. The fold plate [C] presses paper into the 1st fold nip [B] and paper is folded to be double half-fold paper.



d6150604

Letter Fold-in [1] / Letter Fold-out [2] / Double-parallel Fold [3]

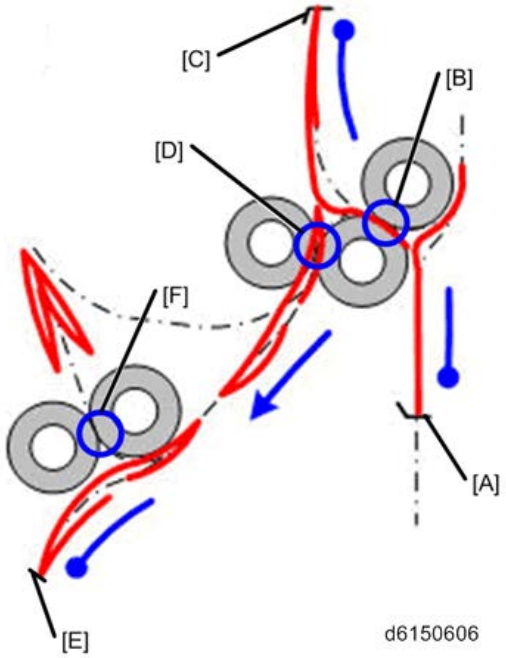
- **Single Sheet Fold:** Paper bumps onto the 1st stopper [A] to makes a deflection on itself near the 1st fold nip [B]. With this deflection, paper is fed into the 1nd fold nip [B] and 1st fold is formed. Then paper bumps onto the 2nd stopper [C] and 2nd fold is formed at the 2nd fold nip [D]. At this time, the location of the 1st stopper [A] and the 2nd stopper [C] varies depending on the mode: Letter Fold-in / Letter Fold-out / Double-parallel Fold.
- **Double Sheet Fold:** 1 to 3 sheet(s) of paper is (are) pre-stacked while bumping onto the 1st stopper [A]. The fold plate [E] presses paper into the 1st fold nip [B] and 1st-fold is formed. The following steps are same as the steps in single sheet fold.



d6150605

Gate Fold

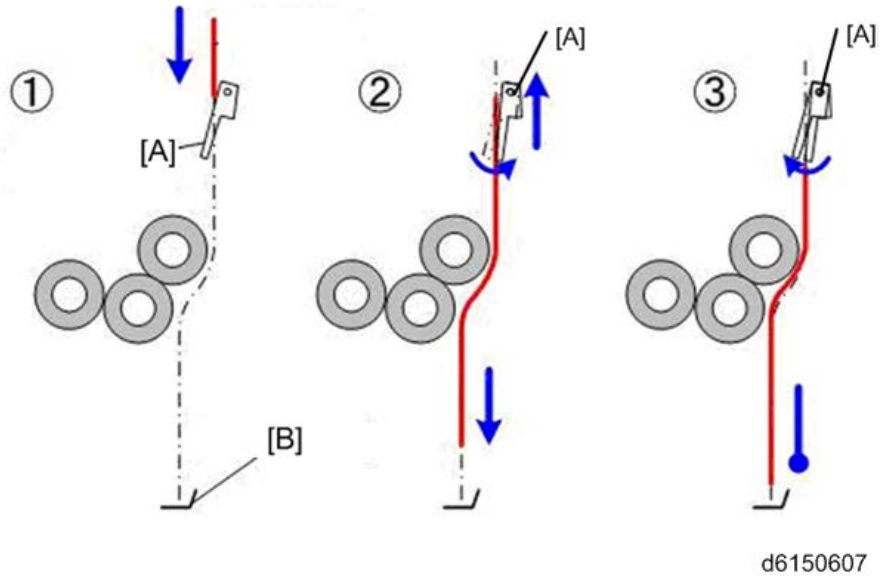
Paper bumps onto the 1st stopper [A] to makes a deflection on itself near the 1st fold nip [B]. With this deflection, paper is fed into the 1nd fold nip [B] and 1st fold is formed. After that, paper bumps onto the 2nd stopper [C] and 2nd fold is made at the 2nd fold nip [D]. After passing through the 2nd fold nip, paper bumps onto the 3rd stopper [E] and 3rd fold is made at the 3rd fold nip [F] and double gate-fold is formed.



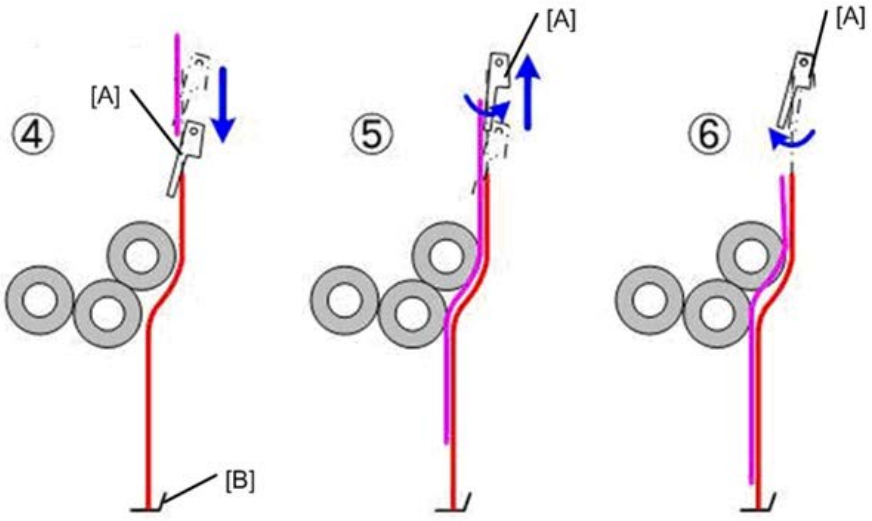
Double Fold

Mixed-loading is allowed in the range 55K to 70K

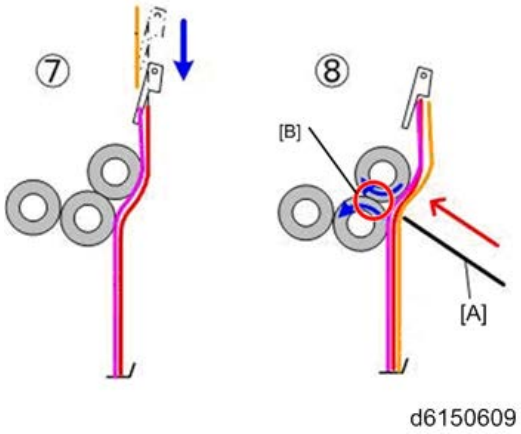
1. The 1st paper goes into the pre-stack area which includes the TE stopper pawl [A] and the 1st stopper [B].
2. Paper pushes the TE stopper pawl [A] aside and open it to pass by. The pawl [A] moves up when paper passes through a certain amount.
3. At the time when the trailing edge of paper goes off the TE stopper pawl [A], the pawl [A] switch its pawl to close.



4. The leading edge of the 1st paper reaches the 1st stopper [B] and the TE stopper pawl [A] switches its pawl to close in order not for the leading edge of the 2nd paper to bump onto the trailing edge of the 1st paper. The 2nd paper goes into the pre-stack area.
5. As “Step 2”, the 2nd paper begins to go into the pre-stack area while pushing the TE stopper pawl [A] out. Then the pawl [A] moves up at the timing when a certain amount of the 2nd paper goes into.
6. As “Step 3”, when the trailing edge of the 2nd paper goes off the TE stopper pawl [A], the pawl [A] switch its pawl to close.



7. The 3rd paper comes and the same operation (Step.4 ~ 6) is applied to it.
8. After 1 to 3 sheet(s) of paper is (are) stacked on the pre-stack part, the fold plate [A] moves forward to press paper into the direction of the roller nip [B] to fold the stack.

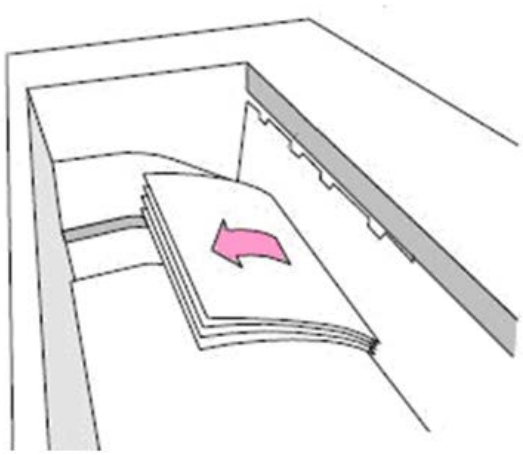


2.3 FOLD ADJUSTMENT

2.3.1 FOLD MEASUREMENT LOCATION

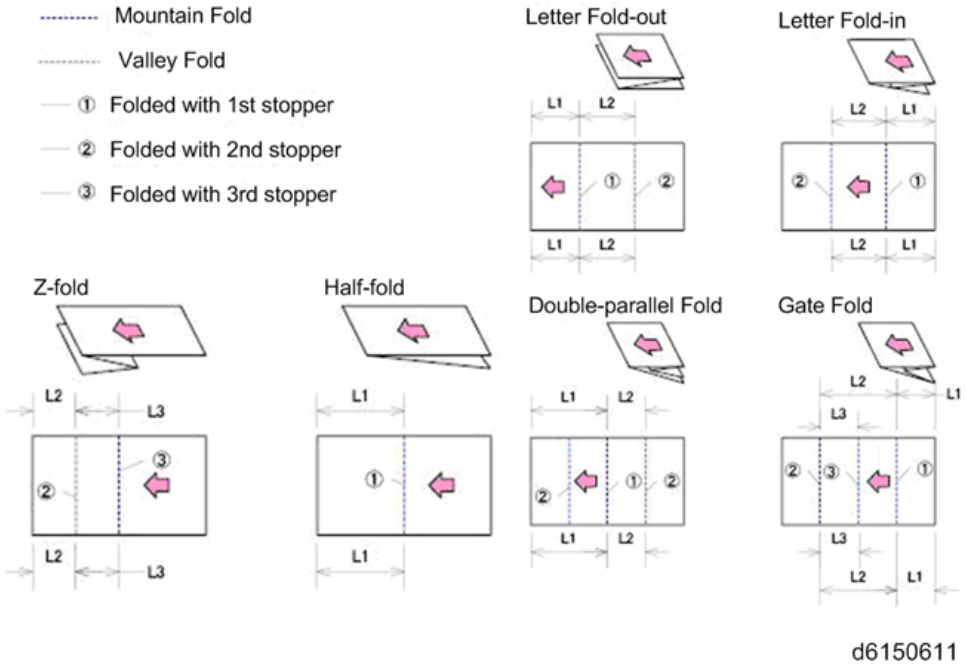
Mark the top face of folded stack on the top exit tray. Then keep the folded part on the paper stretched to measure the length of L1, L2, and L3. If there is wrong, correct a skew of the 1st, the 2nd, and the 3rd stopper.

- Direction of a folded sheet stack on the top tray



d6150610

- Definition of the areas you should measure



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- Foldtype-Catagolized Adjustment List

	L1	L2	L3	1st Stopper	2nd Stopper	3rd Stopper
Z-Fold	-	F Long	F Long	-	F Lower	F Raise
	-	F Short	F Short	-	F Raise	F Lower
Half-fold	F Long	-	-	F Raise	-	-
	F Short	-	-	F Lower	-	-
Letter Fold In	F Long	F Long	-	F Raise	F Lower	-
	F Short	F Short	-	F Lower	F Raise	-
Letter Fold Out	F Long	F Long	-	F Lower	F Lower	-
	F Short	F Short	-	F Raise	F Raise	-
Double-Parallel Fold	F Long	F Long	-	F Raise	F Lower	-
	F Short	F Short	-	F Raise	F Raise	-
Gate Fold	F Long	F Long	F Long	F Lower	F Lower	F Raise
	F Short	F Short	F Short	F Raise	F Raise	F Lower

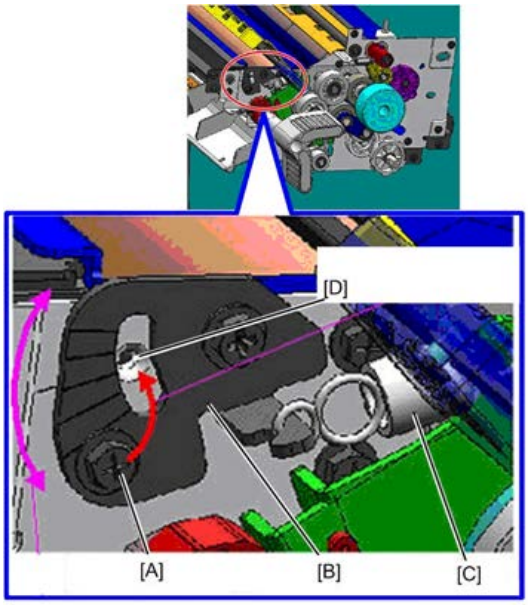
- When fold operation finishes, it is difficult to determine which stopper needs adjustment even if you measure a skew of a fold end (Exclueding half-fold case). So confirm the direction of skew by measuring the length of each fold while paper is spread out.
- Except in the case of half-fold mode, you need to determine which stopper needs adjustment from the length of the 1st fold part that affects following fold parts.

2.3.2 CREASE ROLLER ADJUSTMENT

Detach the screw [A] to move the pressure adjustment bracket [B] that affects the length of the pressure spring [C].

- **To strengthen the pressure:** Move the bracket [B] up
- **To weaken the pressure:** Move the bracket [B] down

After the adjustment, attach the screw on the other hole [D] to fix the location of the pressure adjustment bracket [B].



d6150612

2.3.3 FOLD-AREA ADJUSTMENT

1) Z-Fold

User Tool Setting

Input the change value (S) for the fold area with the operation panel;

Size	Set Area	Default	Value Range
A3 SEF	S	0mm	±10mm
B4 SEF	S	0mm	±10mm
A4 SEF	S	0mm	±10mm
DLT	S	0mm	±10mm
LG	S	0mm	±10mm
LT SEF	S	0mm	±10mm
Others	S	0mm	±10mm
Adjustment Pitch	1mm		

Adjust with SP mode*1,3, user setting*2, operator adjustment*3, special operatior adjustment*3.

Input the adjustment value for fold size (L, S) with the operation panel.

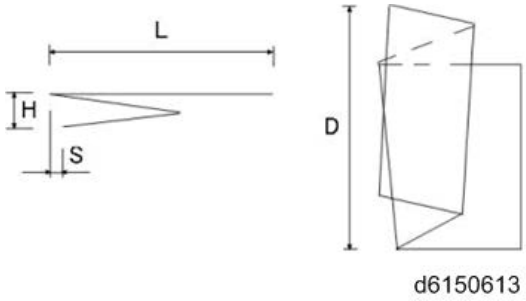
Size	Set Area	Default	Value Range
A3 SEF	S	0mm	±4mm
B4 SEF	S	0mm	±4mm
A4 SEF	S	0mm	±4mm
DLT	S	0mm	±4mm
LG	S	0mm	±4mm
LT SEF	S	0mm	±4mm
12"×18"	S	0mm	±4mm
8k	S	0mm	±4mm

Size	Set Area	Default	Value Range
13"×19"	S	0mm	±4mm
Others	S	0mm	±4mm
Adjustment Pitch	0.2mm		

*1 FD4000

*2 FD5010: For single fold

*3 FD5010: For Double fold



d6150613

2) Half-fold

User Tool Setting

Input the change value (S) for a fold area with the operation panel;

Size	Set Area	Default	Value Range
A3 SEF	S	0mm	±10mm
B4 SEF	S	0mm	±10mm
A4 SEF	S	0mm	±10mm
B5 SEF	S	0mm	±10mm
DLT	S	0mm	±10mm
LG	S	0mm	±10mm
LT SEF	S	0mm	±10mm
12×18	S	0mm	±10mm
8K	S	0mm	±10mm
Others	S	0mm	±10mm
Adjustment Pitch	1mm		

Adjust with SP mode*1, 3, user setting*2, operator adjustment*3, special operatior adjustment*3.

Input the adjustment value for a fold area (S) with the operation panel.

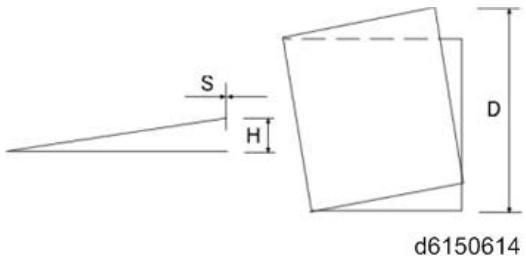
Size	Set Area	Default	Value Range
13×19.2	S	0mm	-
13×19	S	0mm	-
12.6×19.2	S	0mm	-
12.6×18.5	S	0mm	±5mm
13×18	S	0mm	±10mm
SRA3	S	0mm	±10mm
SRA4	S	0mm	±10mm

Size	Set Area	Default	Value Range
226×310	S	0mm	±10mm
310×432	S	0mm	±10mm
A3 SEF	S	0mm	±10mm
B4 SEF	S	0mm	±10mm
A4 SEF	S	0mm	±10mm
B5 SEF	S	0mm	±10mm
DLT	S	0mm	±10mm
LG	S	0mm	±10mm
LT SEF	S	0mm	±10mm
12×18	S	0mm	±10mm
8K	S	0mm	±10mm
Others	S	0mm	±10mm
Adjustment Pitch	0.2mm		

*1 FD4000

*2 FD5010: For single fold

*3 FD5010: For double fold



3) Letter Fold-in

User Tool Setting

Input the change value (S1) for a fold area with the operation panel;

Size	Set Area	Default	Value Range
A3 SEF	S1	4mm	±10mm
B4 SEF	S1	4mm	±10mm
A4 SEF	S1	4mm	±10mm
DLT	S1	4mm	±10mm
LG	S1	4mm	±10mm
LT SEF	S1	4mm	±10mm
12×18	S1	4mm	±10mm
8K	S1	4mm	±10mm
Others	S1	4mm	±10mm
Adjustment Pitch	1mm		

Adjust with SP mode*1, 3, user setting*2, operator adjustment*3, special operatior adjustment*3.

Input the adjustment value for fold area (L, S2) with the operation panel.

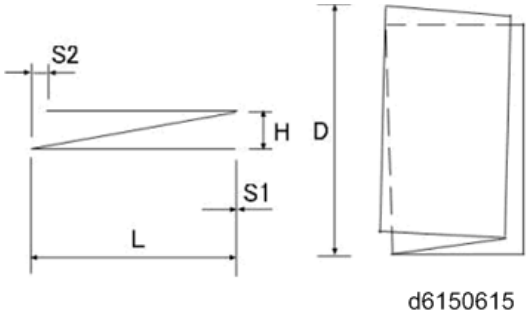
Size	Set Area	Default	Value Range	Set Area	Default	Value Range
A3 SEF	L	0mm	±4mm	S2	0mm	±4mm
B4 SEF	L	0mm	±4mm	S2	0mm	±4mm
A4 SEF	L	0mm	±4mm	S2	0mm	±4mm
DLT	L	0mm	±4mm	S2	0mm	±4mm
LG	L	0mm	±4mm	S2	0mm	±4mm
LT SEF	L	0mm	±4mm	S2	0mm	±4mm
12×18	L	0mm	±4mm	S2	0mm	±4mm

Size	Set Area	Default	Value Range	Set Area	Default	Value Range
8K	L	0mm	±4mm	S2	0mm	±4mm
Others	L	0mm	±4mm	S2	0mm	±4mm
Adjustment Pitch	0.2mm					

*1 FD4000

*2 FD5010: For single fold

*3 FD5010: For double fold



7-7-4_007.jpg

4) Letter Fold-in

User Tool Setting

Input the change value (S1) for a fold area with the operation panel;

Size	Set Area	Default	Value Range
A3 SEF	S1	2mm	2 to 7mm
B4 SEF	S1	2mm	2 to 7mm
A4 SEF	S1	2mm	2 to 7mm
B5 SEF	S1	2mm	-
DLT	S1	2mm	2 to 7mm
LG	S1	2mm	2 to 7mm
LT SEF	S1	2mm	2 to 7mm
12×18	S1	2mm	2 to 7mm
8K	S1	2mm	2 to 7mm
Others	S1	2mm	2 to 7mm
Adjustment Pitch	1mm		

Adjust with SP mode*1, 3, user setting*2, operator adjustment*3, special operatior adjustment*3.

Input the adjustment value for fold area (L1, L2) with the operation panel.

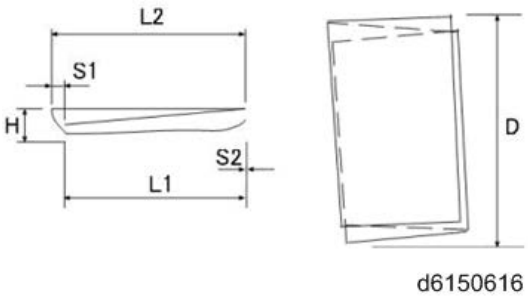
Size	Set Area	Default	Value Range	Set Area	Default	Value Range
A3 SEF	L1	0mm	±4mm	L2	0mm	±4mm
B4 SEF	L1	0mm	±4mm	L2	0mm	±4mm
A4 SEF	L1	0mm	±4mm	L2	0mm	±4mm
B5 SEF	L1	0mm	±4mm	L2	0mm	±4mm
DLT	L1	0mm	±4mm	L2	0mm	±4mm
LG	L1	0mm	±4mm	L2	0mm	±4mm

Size	Set Area	Default	Value Range	Set Area	Default	Value Range
LT SEF	L1	0mm	±4mm	L2	0mm	±4mm
12×18	L1	0mm	±4mm	L2	0mm	±4mm
8K	L1	0mm	±4mm	L2	0mm	±4mm
Others	L1	0mm	±4mm	L2	0mm	±4mm
Adjustment Pitch	0.2mm					

*1 FD4000

*2 FD5010: For single fold

*3 FD5010: For double fold



5) Double-parallel Fold

User Tool Setting

Input the change value (S1, S2) for a fold area with the operation panel;

Size	Set Area	Default	Value Range	Set Area	Default	Value Range
A3 SEF	S1	0mm	±10mm	S2	0mm	±10mm
B4 SEF	S1	0mm	±10mm	S2	0mm	±10mm
A4 SEF	S1	0mm	±10mm	S2	0mm	±10mm
B5 SEF	S1	0mm	±10mm	S2	0mm	±10mm
DLT	S1	0mm	±10mm	S2	0mm	±10mm
LG	S1	0mm	±10mm	S2	0mm	±10mm
LT SEF	S1	0mm	±10mm	S2	0mm	±10mm
12×18	S1	0mm	±10mm	S2	0mm	±10mm
8K	S1	0mm	±10mm	S2	0mm	±10mm
Others	S1	0mm	±10mm	S2	0mm	±10mm
Adjustment Pitch	1mm					

Adjust with SP mode*1, 3, user setting*2, operator adjustment*3, special operatior adjustment*3.

Input the adjustment value for fold area (S1, S2) with the operation panel.

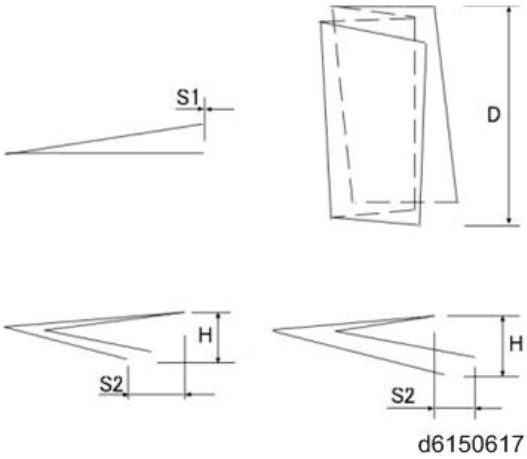
Size	Set Area	Default	Value Range	Set Area	Default	Value Range
A3 SEF	S1	0mm	±4mm	S2	0mm	±4mm
B4 SEF	S1	0mm	±4mm	S2	0mm	±4mm
A4 SEF	S1	0mm	±4mm	S2	0mm	±4mm
B5 SEF	S1	0mm	±4mm	S2	0mm	±4mm
DLT	S1	0mm	±4mm	S2	0mm	±4mm

Size	Set Area	Default	Value Range	Set Area	Default	Value Range
LG	S1	0mm	±4mm	S2	0mm	±4mm
LT SEF	S1	0mm	±4mm	S2	0mm	±4mm
12×18	S1	0mm	±4mm	S2	0mm	±4mm
8K	S1	0mm	±4mm	S2	0mm	±4mm
Others	S1	0mm	±4mm	S2	0mm	±4mm
Adjustment Pitch	0.2mm					

*1 FD4000

*2 FD5010: For single fold

*3 FD5010: For double fold



6) Gate Fold

User Tool Setting

Input the change value (S1, S2) for a fold area with the operation panel;

Size	Set Area	Default	Value Range
A3 SEF	S1(S2)	2mm	2 to 12mm
B4 SEF	S1(S2)	2mm	2 to 12mm
A4 SEF	S1(S2)	2mm	2 to 12mm
B5 SEF	S1(S2)	2mm	2 to 12mm
DLT	S1(S2)	2mm	2 to 12mm
LG	S1(S2)	2mm	2 to 12mm
LT SEF	S1(S2)	2mm	2 to 12mm
12×18	S1(S2)	2mm	-
8K	S1(S2)	2mm	2 to 12mm
Others	S1(S2)	2mm	2 to 12mm
Adjustment Pitch	1mm		

Adjust with SP mode*1,3, user setting*2, operator adjustment*3, special operatior adjustment*3.

Input the ± adjustment value for fold area (S1, S2, S3) with the operation panel.

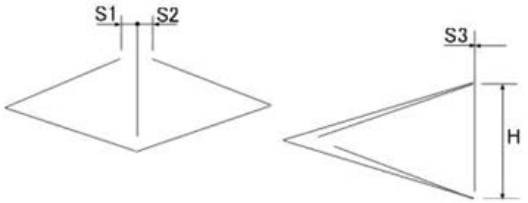
Size	Set Area	Default	Value Range	Set Area	Default	Value Range	Set Area	Default	Value Range
A3 SEF	S1	0mm	±4mm	S2	0mm	±4mm	S3	0mm	±4mm
B4 SEF	S1	0mm	±4mm	S2	0mm	±4mm	S3	0mm	±4mm
A4 SEF	S1	0mm	±4mm	S2	0mm	±4mm	S3	0mm	±4mm
B5 SEF	S1	0mm	±4mm	S2	0mm	±4mm	S3	0mm	±4mm
DLT	S1	0mm	±4mm	S2	0mm	±4mm	S3	0mm	±4mm
LG	S1	0mm	±4mm	S2	0mm	±4mm	S3	0mm	±4mm

Size	Set Area	Default	Value Range	Set Area	Default	Value Range	Set Area	Default	Value Range
LT SEF	S1	0mm	±4mm	S2	0mm	±4mm	S3	0mm	±4mm
12×18	S1	0mm	±4mm	S2	0mm	±4mm	S3	0mm	±4mm
8K	S1	0mm	±4mm	S2	0mm	±4mm	S3	0mm	±4mm
Others	S1	0mm	±4mm	S2	0mm	±4mm	S3	0mm	±4mm
Adjustment Pitch	0.2mm								

*1 FD4000

*2 FD5010: For single fold

*3 FD5010: For double fold



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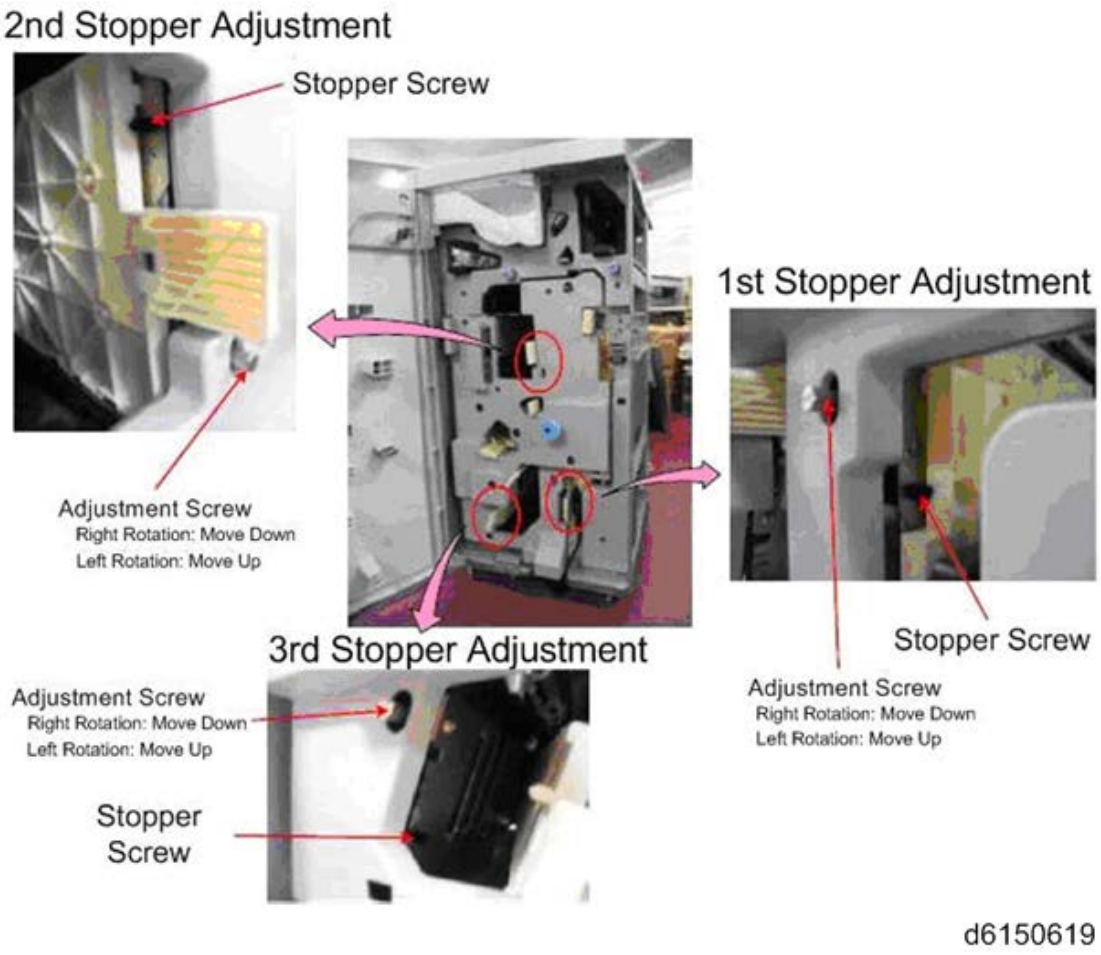
Detach the stopper screw and then relocate it to the screw hole for adjustment before fix it loosely. After that, move the adjustment screw to adjust the tilt and then fasten the stopper screw to fix the location.The location of each stopper screw and adjustment screw is shown below:


2nd Stopper Adjustment
Stopper Screw
Adjustment Screw
Right Rotation: Move Down
Left Rotation: Move Up
1st Stopper Adjustment
Stopper Screw
Adjustment Screw
Right Rotation: Move Down
Left Rotation: Move Up
3rd Stopper Adjustment
Adjustment Screw
Right Rotation: Move Down
Left Rotation: Move Up
Stopper Screw
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D708

MAIL BOX CS4010

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

MAIL BOX CS4010
(D708)

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READ THIS FIRST

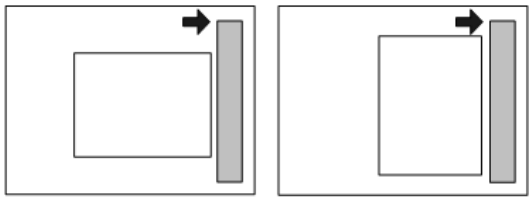
Safety, Conventions, Trademarks

Conventions

Common Terms

This is a list of symbols and abbreviations used in this manual.

Symbol, Abbreviation	Meaning
	Blue screw
	Bushing
	C-ring
	Connector
	E-ring
	Flexible film cable
	Harness clamp
	Hook
	Screw
	Spring
	Timing belt
JG	Junction Gate
LEF	Long Edge Feed
SEF	Short Edge Feed
TE	Trailing Edge of paper



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Warnings, Cautions, Notes

In this manual, the following important symbols and notations are used.

⚠WARNING

- A Warning indicates a potentially hazardous situation. Failure to obey a Warning could result in death or serious injury.

⚠CAUTION

- A Caution indicates a potentially hazardous situation. Failure to obey a Caution could result in minor or moderate injury or damage to the finisher or other property.

Important

- Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine.

Note

- This information provides tips and advice about how to best service the machine.

General Safety Instructions

For your safety, please read this manual carefully before you use this product. Keep this manual handy for future reference.

Safety Information

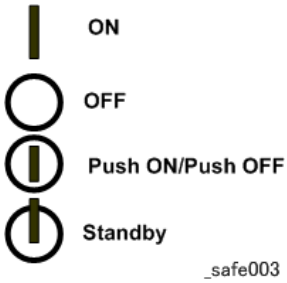
Always obey the following safety precautions when using this product.

Safety During Operation

In this manual, the following important symbols and notations are used.

Switches and Symbols

Where symbols are used on or near switches on machines for Europe and other areas, the meaning of each symbol conforms with IEC60417.



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Responsibilities of the Customer Engineer

Reference Material for Maintenance

- Maintenance shall be done using the special tools and procedures prescribed for maintenance of the machine described in the reference materials (service manuals, technical bulletins, operating instructions, and safety guidelines for customer engineers).
- In regard to other safety issues not described in this document, all customer engineers shall strictly obey procedures and recommendations described the “CE Safety Guide”.
- Use only consumable supplies and replacement parts designed for use of the machine.

Before Installation, Maintenance

Power

⚠WARNING

- Always disconnect the power plug before doing any maintenance procedure. After switching off the machine, power is still supplied to the main machine and other devices. To prevent electrical shock, switch the machine off, wait for a few seconds, then unplug the machine from the power source.
- Before you do any checks or adjustments after turning the machine off, work carefully to avoid injury. After removing covers or opening the machine to do checks or adjustments, never touch electrical components or moving parts (gears, timing belts, etc.).
- After turning the machine on with any cover removed, keep your hands away from electrical components and moving parts. Never touch the cover of the fusing unit, gears, timing belts, etc.

Installation, Disassembly, and Adjustments

⚠WARNING

- After installation, maintenance, or adjustment, always check the operation of the machine to make sure that it is operating normally. This ensures that all shipping materials, protective materials, wires and tags, metal brackets, etc., removed for installation, have been removed and that no tools remain inside the machine. This also ensures that all release interlock switches have been restored to normal operation.
- Never use your fingers to check moving parts causing spurious noise. Never use your fingers to lubricate moving parts while the machine is operating.

Special Tools

⚠CAUTION

- Use only standard tools approved for machine maintenance.
- For special adjustments, use only the special tools and lubricants described in the service manual. Using tools incorrectly, or using tools that could damage parts, could damage the machine or cause injuries.

During Maintenance

General

⚠CAUTION

- Before you begin a maintenance procedure: 1) Switch the machine off, 2) Disconnect the power plug from the power source, 3) Allow the machine to cool for at least 10 minutes.
- Avoid touching the components inside the machine that are labeled as hot surfaces.

Safety Devices

⚠WARNING

- Never remove any safety device unless it requires replacement. Always replace safety devices immediately.
- Never do any procedure that defeats the function of any safety device. Modification or removal of a safety device (fuse, switch, etc.) could lead to a fire and personal injury. Always test the operation of the machine to ensure that it is operating normally and safely after removal and replacement of any safety device.
- For replacements use only the correct fuses or circuit breakers rated for use with the machine. Using replacement devices not designed for use with the machine could lead to a fire and personal injuries.

Organic Cleaners

⚠CAUTION

- During preventive maintenance, never use any organic cleaners (alcohol, etc.) other than those described in the service manual.
- Make sure the room is well ventilated before using any organic cleaner. Use organic solvents in small amounts to avoid breathing the fumes and becoming nauseous.
- Switch the machine off, unplug it, and allow it to cool before doing preventive maintenance. To avoid fire or explosion, never use an organic cleaner near any part that generates heat.
- Wash your hands thoroughly after cleaning parts with an organic cleaner to contamination of food, drinks, etc. which could cause illness.
- Clean the floor completely after accidental spillage of silicone oil or other materials to prevent slippery surfaces that could cause accidents leading to hand or leg injuries. Use

“My Ace” Silicone Oil Remover (or dry rags) to soak up spills. For more details, please refer to Technical Bulletin “Silicone Oil Removal” (A024-50).

Ozone Filters

⚠CAUTION

- Always replace ozone filters as soon as their service life expires (as described in the service manual).
- An excessive amount of ozone can build up around machines that use ozone filters if they are not replaced at the prescribed time. Excessive ozone could cause personnel working around the machine to feel unwell.

Power Plug and Power Cord

⚠WARNING

- Before servicing the machine (especially when responding to a service call), always make sure that the power plug has been inserted completely into the power source. A partially inserted plug could lead to heat generation (due to a power surge caused by high resistance) and cause a fire or other problems.
- Always check the power plug and make sure that it is free of dust and lint. Clean it if necessary. A dirty plug can generate heat which could cause a fire.
- Inspect the length of the power cord for cuts or other damage. Replace the power cord if necessary. A frayed or otherwise damaged power cord can cause a short circuit which could lead to a fire or personal injury from electrical shock.
- Check the length of the power cord between the machine and power supply. Make sure the power cord is not coiled or wrapped around any object such as a table leg. Coiling the power cord can cause excessive heat to build up and could cause a fire.
- Make sure that the area around the power source is free of obstacles so the power cord can be removed quickly in case of an emergency.
- Make sure that the power cord is grounded (earthed) at the power source with the ground wire on the plug.
- Connect the power cord directly into the power source. Never use an extension cord.
- When you disconnect the power plug from the power source, always pull on the plug, not the cable.

After Installation, Servicing

Disposal of Used Items

⚠CAUTION

- Always dispose of used items (developer, toner, toner cartridges, OPC drums, etc.) in accordance with the local laws and regulations regarding the disposal of such items.
- To protect the environment, never dispose of this product or any kind of waste from consumables at a household waste collection point. Dispose of these items at one of our dealers or at an authorized collection site.

Points to Confirm with Operators

At the end of installation or a service call, instruct the user about use of the machine. Emphasize the following points.

- Show operators how to remove jammed paper and troubleshoot other minor problems by following the procedures described in the operating instructions.
- Point out the parts inside the machine that they should never touch or attempt to remove.
- Confirm that operators know how to store and dispose of consumables.
- Make sure that all operators have access to an operating instruction manual for the machine.
- Confirm that operators have read and understand all the safety instructions described in the operating instructions.
- Demonstrate how to turn off the power and disconnect the power plug (by pulling the plug, not the cord) if any of the following events occur: 1) something has spilled into the product, 2) service or repair of the product is necessary, 3) the product cover has been damaged.
- Caution operators about removing paper fasteners around the machine. They should never allow paper clips, staples, or any other small metallic objects to fall into the machine.

Safety Instructions for this Machine

1. The installation must be done by trained service technicians.
2. This machine weighs 92 kg. (202.9 lb.). At least four persons are required to remove the machine from its pallet and position it for installation.
3. To prevent fire hazards never use flammable solvents around the machine.
4. Never place any object on the machine.
5. If anything falls into the machine, turn off the main power switch on the right side of the machine, then disconnect the power cord from the power source.
6. Locate the machine on a sturdy flat surface where it will not be exposed to excessive vibration.
7. To avoid fire hazard, confirm that the ventilation ports are not blocked, so air can flow freely.
8. Gas generated by the molten glue can irritate the eyes, throat, and nose. The machine should always be used in a well ventilated room.
9. To avoid the dangers of fire and electrical shock, make sure that the machine is never exposed to:
    - Excessive high temperatures and/or humidity
    - Dust
    - Water
    - Direct sunlight
    - Open flame
    - Corrosive gases

Trademarks

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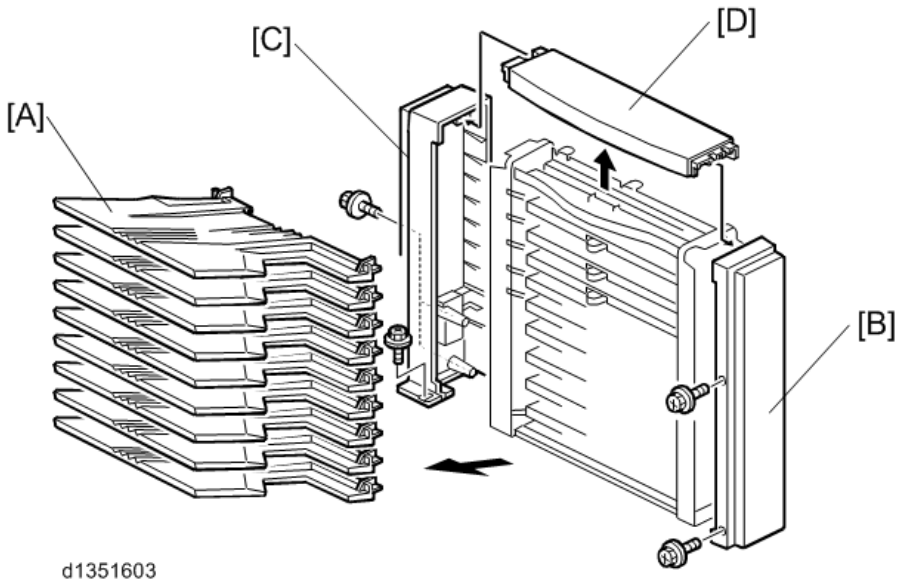
- Other product names used herein are for identification purposes only and may be trademarks of their respective companies. We disclaim any and all rights involved with those marks.

1. REPLACEMENT AND ADJUSTMENT

1.1 COVERS AND TRAYS

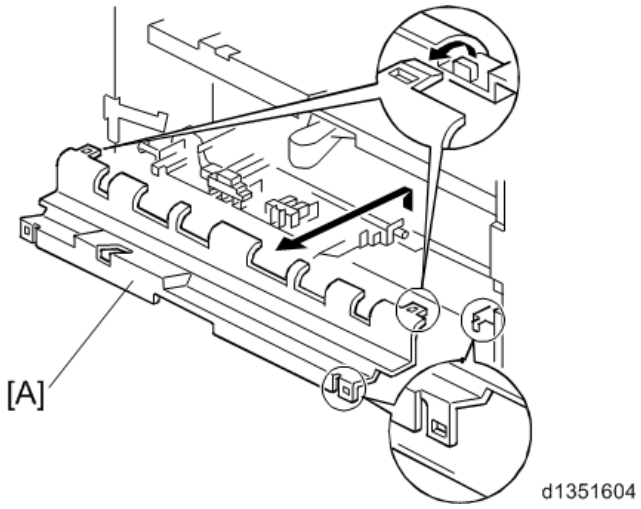
1. Trays [A]
   Grip each tray by the front and lift out.
2. Front cover [B] (x 2)
3. Rear cover [C] (x 3)
4. Top cover [D]



1.2 SENSORS

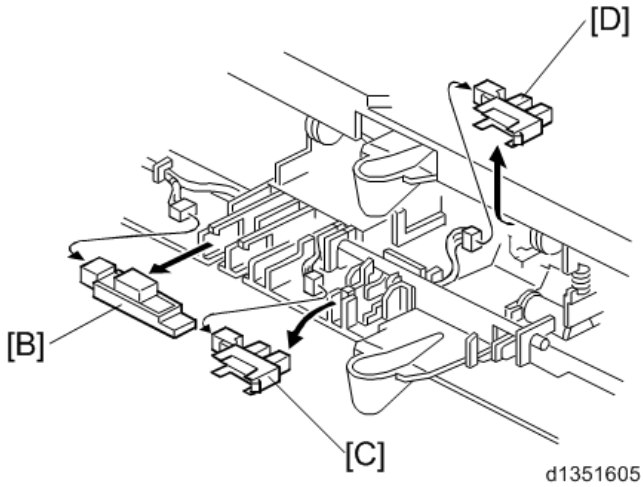
1.2.1 TRAY SENSOR, TRAY OVERFLOW SENSOR, VERTICAL TRANSPORT SENSOR

1. Switch the machine off and unplug the machine
2. Remove the tray.
3. Bin cover [A]



4. Tray sensor (x 1) [B]
5. Tray overflow sensor (x 1) [C]
6. Vertical transport sensor (x 1) [D]

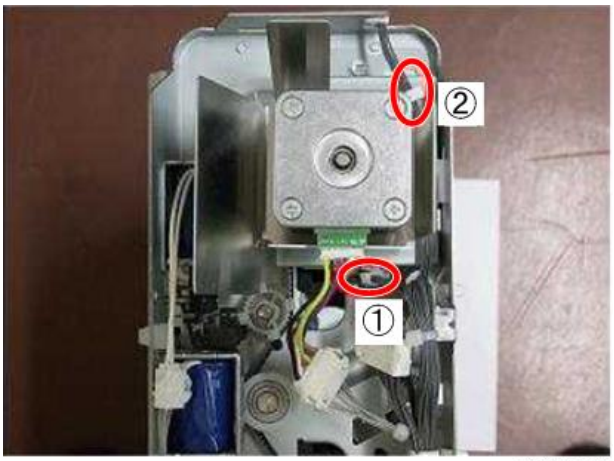
   Raise the pawl, then grip the bottom of the sensor to remove.



1.3 MAIN MOTOR AND CONTROL BOARD

1.3.1 MAIN MOTOR

1. Rear cover page 1
2. Disconnect the harness of the main motor bracket. (x 2)



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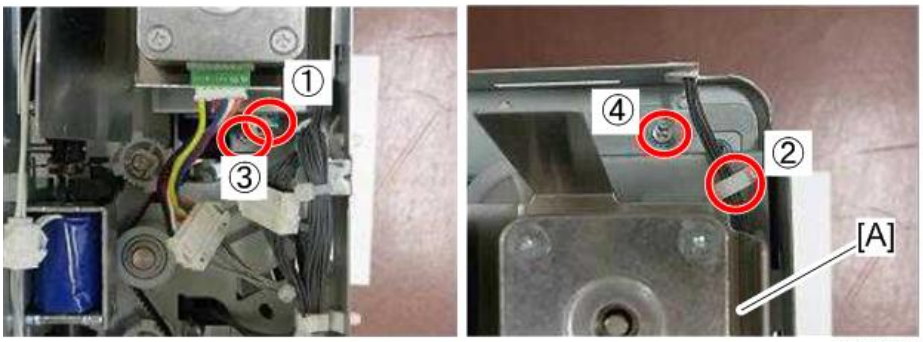
3. Main motor bracket [A] (x 3, timing belt x 1)



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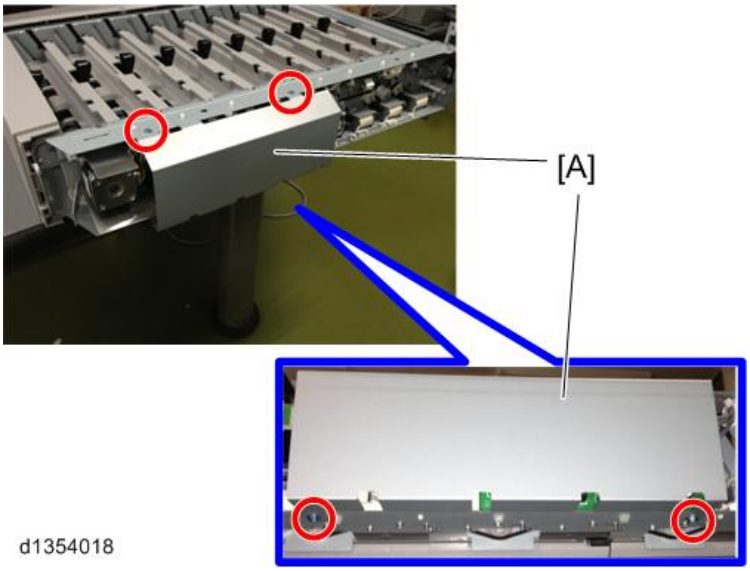
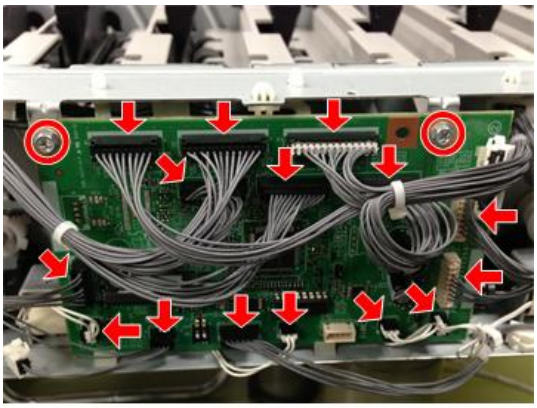
4. Main motor [A] (x 2)

1.3.2 CONTROL BOARD

1. Rear cover page 1
2. Bracket [A] (x4)



3. Control board (x2, x15)



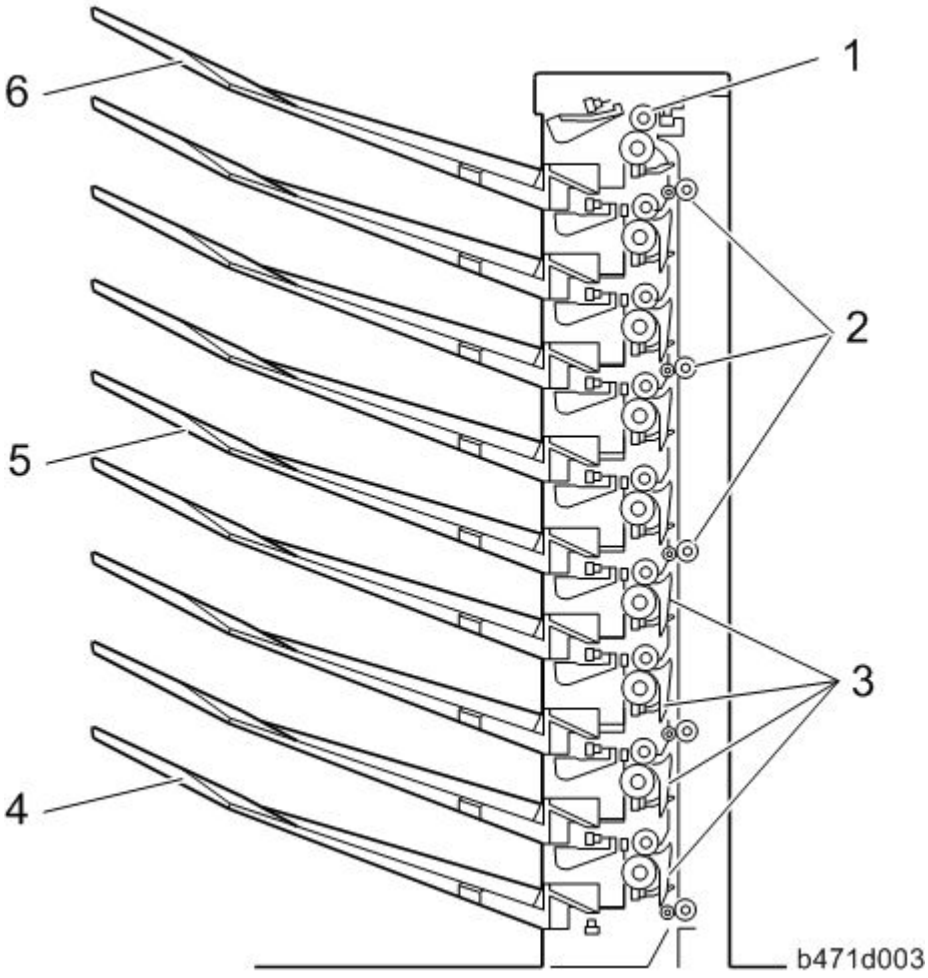
2. DETAILS

2.1 OVERVIEW

2.1.1 GENERAL SPECIFICATIONS

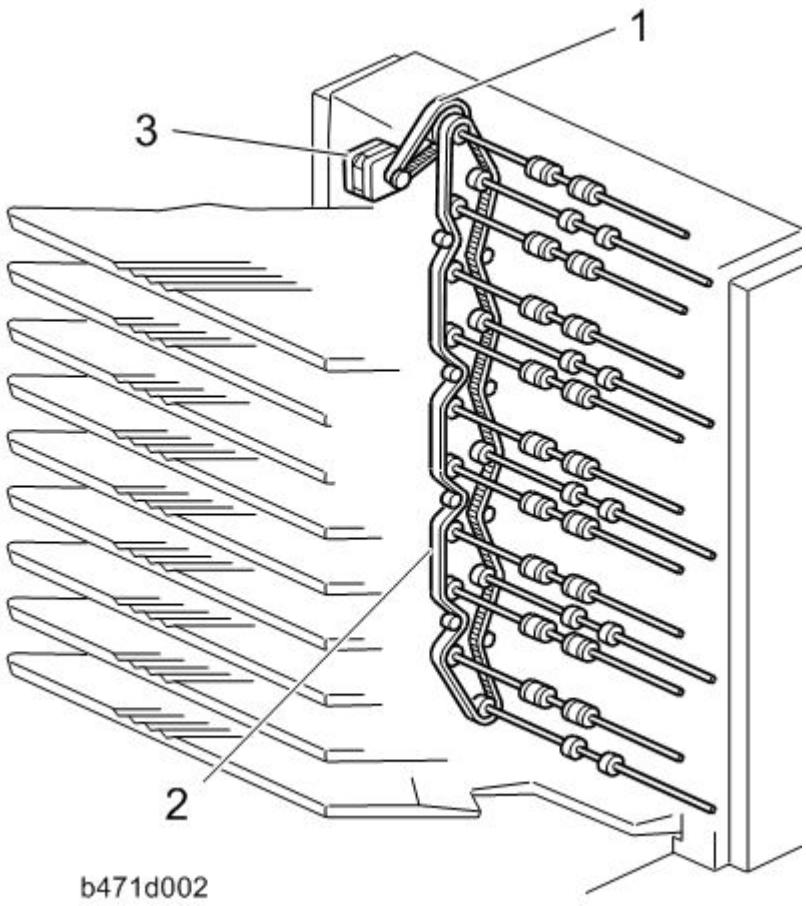
Number of Bins	9 bins
Paper Size	A5. A4, A3
	$5_{1/2}$" x $8_{1/2}$", $8_{1/2}$" x11", $8_{1/2}$" x14", 11"x17"
Paper Weight	60 to 128g/m²
	14 lb – 34 lb Bond
Dimensions (w x d x h)	540 x 600 x 660 mm (21.3 x 23.6 x 26 in.)
Weight	Less than 15 kg (33 lb.)
Power Consumption	Less than 48 W
Noise	Less than 74 dB
Stack Capacity	100 sheets (each bin)
Power Source	DC24V, 5V from main machine
Dimensions (w x d x h)	540 x 600 x 660 mm (21.3 x 23.6 x 26 in.)
Weight	Less than 15 kg (33 lb.)

2.1.2 OVERVIEW LAYOUT



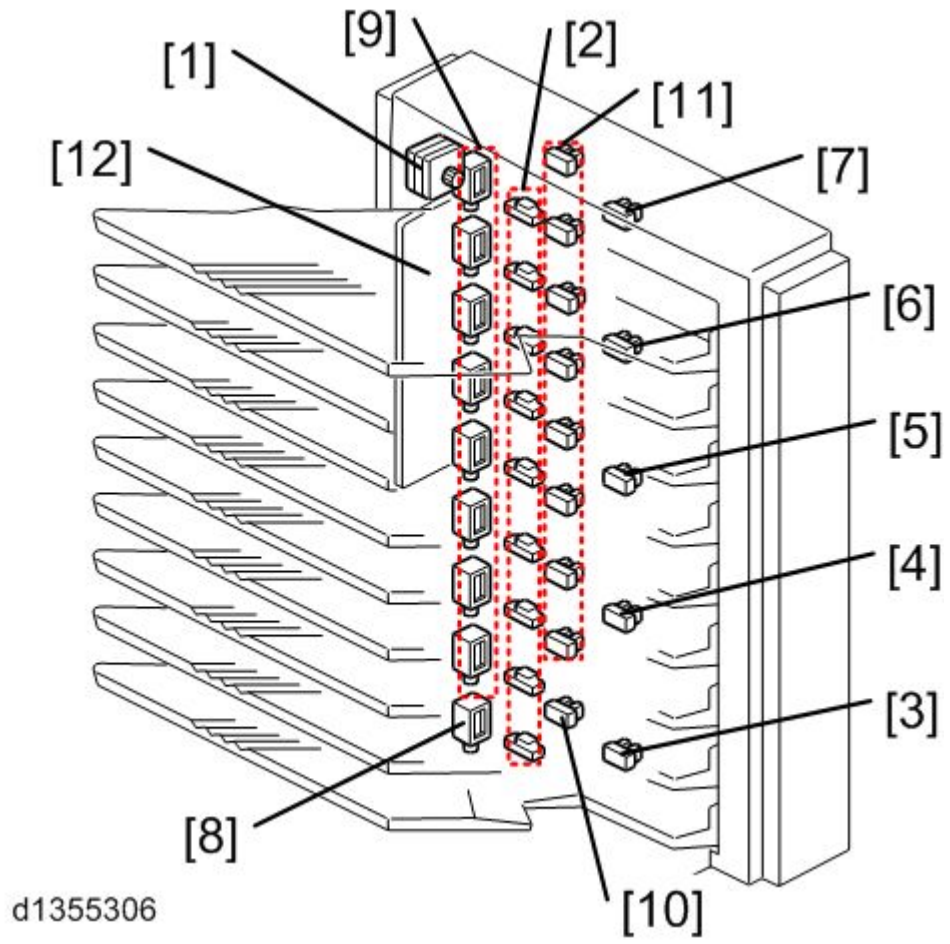
No.	Part
1	Exit Roller
2	Transport Roller
3	Junction Gate
4	1 Bin Tray
5	5 Bin Tray
6	9 Bin Tray

2.1.3 DRIVE LAYOUT



No.	Part
1	Drive Belt
2	Driven Belt
3	Transport Motor

2.1.4 ELECTRICAL COMPONENTS



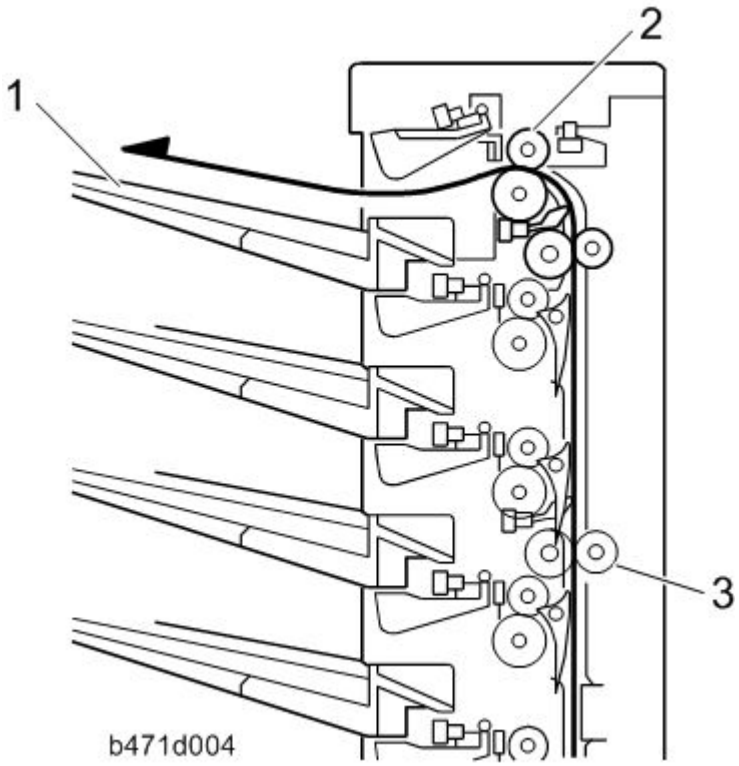
No.	Name	Function
1	Main Motor	Drives all the rollers in the unit
2	Tray Sensor (tray 1) to(Tray 9)	Detects paper in tray 1 to 9
3	Vertical Transport Sensor 1	Detects misfeeds (located between trays 1 and 2)
4	Vertical Transport Sensor 2	Detects misfeeds (located between trays 3 and 4)
5	Vertical Transport Sensor 3	Detects misfeeds (located between trays 5 and 6)
6	Vertical Transport Sensor 4	Detects misfeeds (located between trays 7 and 8)
7	Vertical Transport Sensor 5	Detects misfeeds (located at the exit to tray 9)
8	Junction Gate Solenoid 1	Opens/closes the junction gate at the entrance to the mailbox

No.	Name	Function
9	Junction Gate Solenoids 2-9	Opens/closes the junction gates for trays 1-8.
10	Paper Tray Full Sensor 1	Detects paper full in tray 1.
11	Paper Tray Full Sensor 2-9	Detects paper full in trays 2 to 9. (cannot detect A5)
12	Controller Board	Controls the unit.

2.2 MECHANISMS

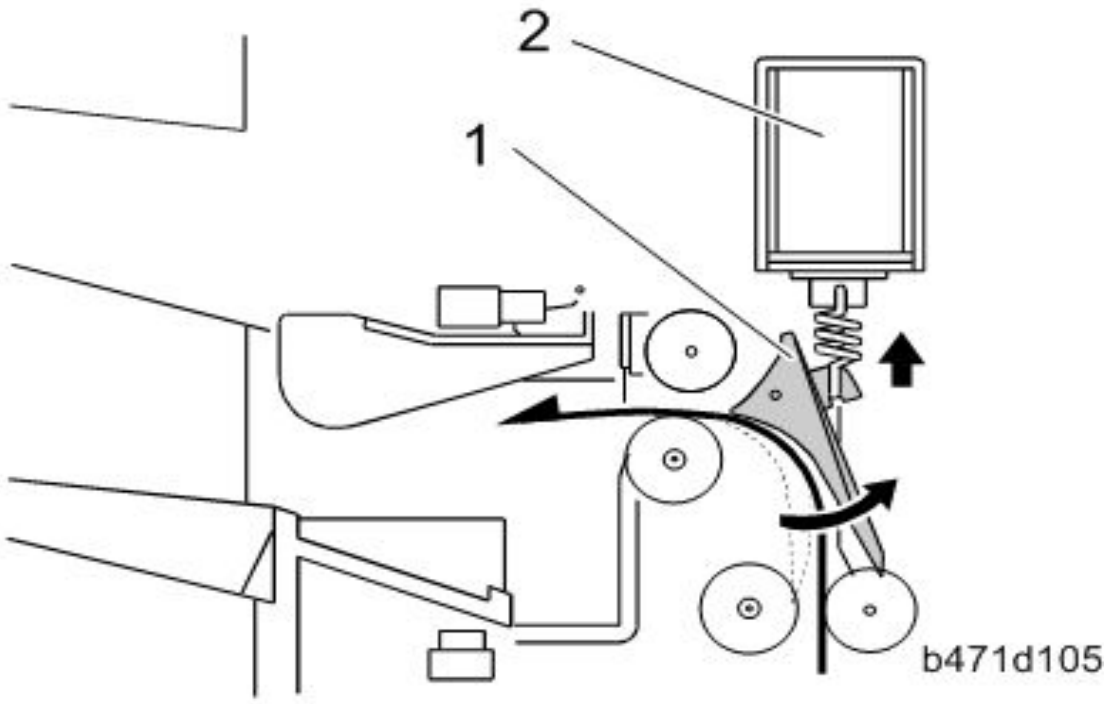
2.2.1 BASIC OPERATION

This 9-pin mailbox connects electrically to the finisher with a 14-pin drawer connector. When a print job starts, the main motor drives to rotate all rollers, and the specified bin receives the paper.



No.	Part
1	9 Bin Tray
2	Exit Roller
3	Transport Roller

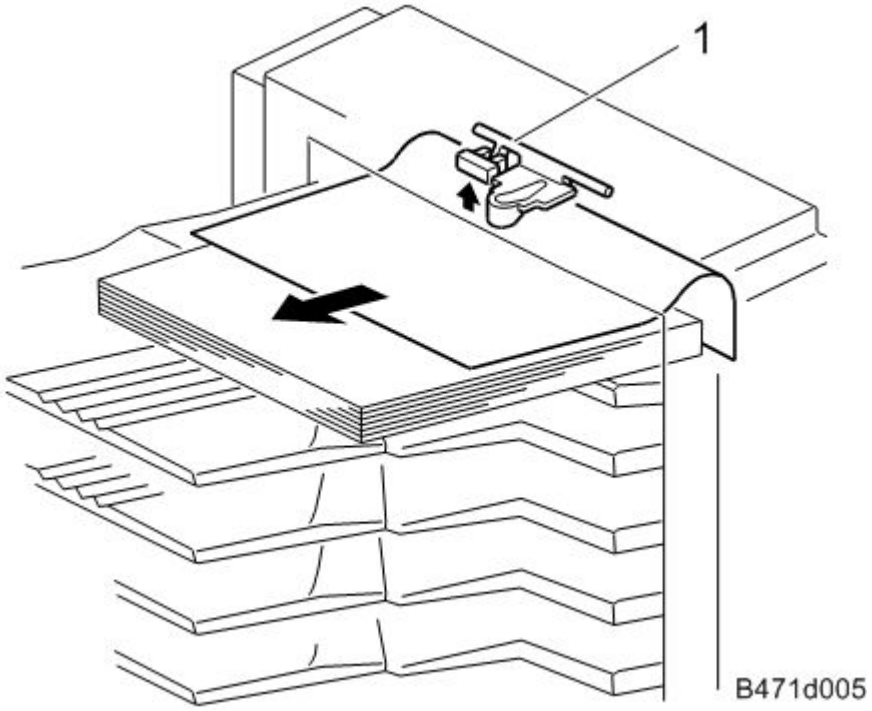
When the junction gate solenoid turns on, the gate switches and the tray receives the paper. When the uppermost tray is selected, all solenoids stay off. When the last paper's trailing edge passes the overflow sensor and the sensor turns off, the paper has gone to the tray, so the selected tray's junction gate solenoid and the main motor turn off. Normally, the speed of paper transport in this unit is nearly the same as in the finisher.



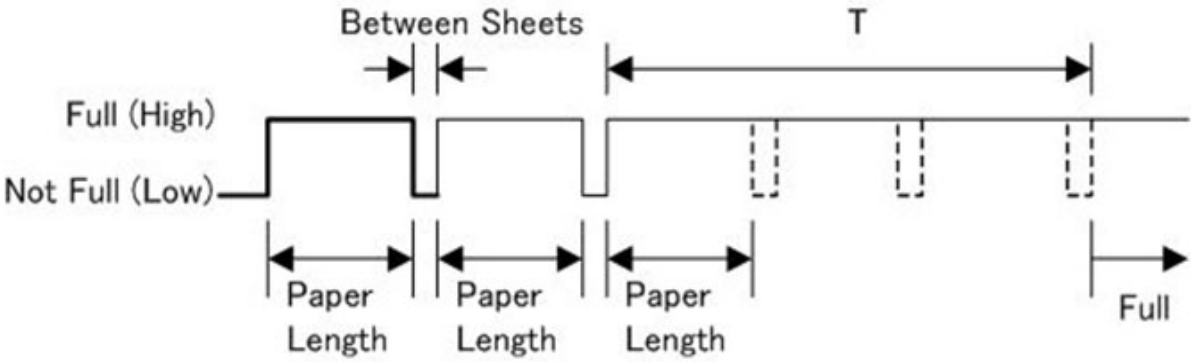
No.	Part
1	Junction Gate
2	Junction Gate Solenoid

2.2.2 PAPER TRAY FULL DETECTION

Each bin has a tray full sensor 1 (paper overflow sensor) that monitors each tray so it does not become overloaded.



2.2.3 PAPER TRAY FULL DETECTION TIMING

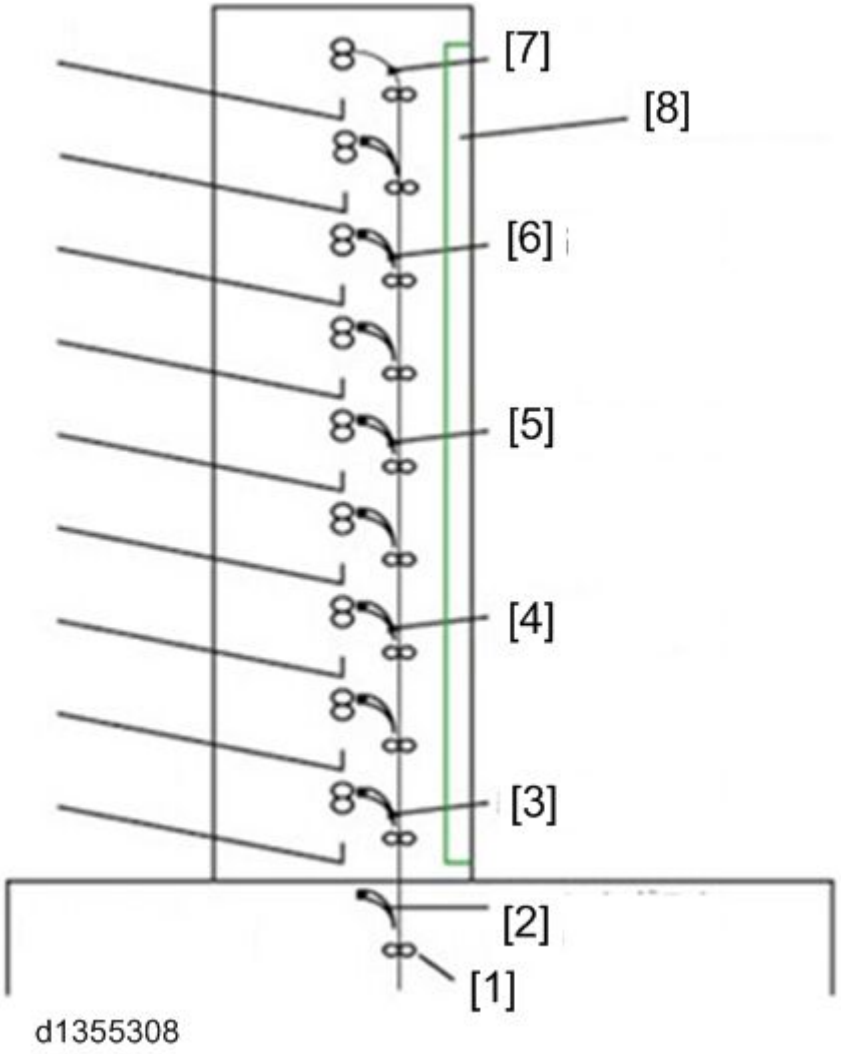


When output from the paper overflow sensor is more than (T) seconds at the "High" level, full detection will occur.
For example, at the lowest PPM (12 sheets / A3), when the sensor doesn't switch to "Low" by 40 sec after the detection, the print job will be stopped.
The machine determines the following depending on the result of the detection and the machine state.

Status	Machine State	Trigger
Full	While receiving paper	Output 8 sheets of paper in a row in the same tray while the paper overflow sensor remains ON.
	In all states other than receiving paper (with door closed, no jam, and no remaining paper)	The sensor stays on for more than 1.5 sec.
Not Full	-	The sensor turns OFF

2.2.4 JAM DETECTION

Jam is detected with the five sensors in the picture below;



No.	Part
1	Finisher Exit Roller
2	Entrance Junction Gate (CS4010)
3	Vertical Transport Sensor
4	Vertical Transport Sensor 2
5	Vertical Transport Sensor 3
6	Vertical Transport Sensor 4
7	Vertical Transport Sensor 5
8	Open/Close Guide Plate

Jam Detection Details

Jam Name	Detection Trigger	Log Code
Transport Sensor 1 Late Jam	Even though paper moves "pulse x 1.5" (“distance L”) from the finisher exit roller, the vertical transport sensor 1 in the 9-bin mailbox doesn’t turn ON.	350
Transport Sensor 1 Lag Jam	(No Change)	351
Transport Sensor 2 Late Jam	(No Change)	352
Transport Sensor 2 Lag Jam	(No Change)	353
Transport Sensor 3 Late Jam	(No Change)	354
Transport Sensor 3 Lag Jam	(No Change)	355
Transport Sensor 4 Late Jam	(No Change)	356
Transport Sensor 4 Lag Jam	(No Change)	357
Transport Sensor 5 Late Jam	(No Change)	358
Transport Sensor 5 Lag Jam	(No Change)	359
Main Machine Ordering Data-Wrong Jam	Cannot continue to receive paper because the ordering data from the main machine is wrong or rebooting is demanded because paper reception is unavailable.	360