Model MET-C1
Machine Code:
D176/D177/D237

Field Service Manual

Revision History

Version	Date	Description
1.00	September, 2013	Initial release of this manual. Created this manual for D176/D177 series.
1.10	August, 2014	Revised all sections according to the release of D237. See "page 1 "Version 1.10 Revision List"" for details.

Version 1.10 Revision List

Chapter	Section	Details
Product Information	Product Overview > Drive Unit > Drive Layout	Deleted "Development Motor: Black"
	Machine Codes and Peripherals Configuration > Diagram	• Added the diagram for D237. • Modified the product name of D787. • Corrected the type name for Data Overwrite Security Unit.
	Guidance for Those Who are Familiar with Similar Products > Differences from similar models	Added D237 to the heading of all lists.
	Guidance for Those Who are Familiar with Similar Products > New features of D176/D177/D237	Revised the section name.

Chapter	Section	Details
Installation	Main Machine Installation > Installation Flowchart	Added a flowchart for D237 installation.
	Main Machine Installation > Accessory Check	Revised the list according to D237.
	Internal Shift Tray SH3070 > Installation Procedure	Modified the description of Step 12.
	• 1 Bin Tray BN3110 • Internal Shift Tray SH3070 • Side Tray Type M3 • Internal Finisher SR3130 • Punch Unit PU3040 • Internal Finisher SR3180 • Smart Card Reader Built-in Unit Type M2 • IEEE 1284 Interface Board Type A • Bluetooth Interface Unit Type D • Data Overwrite Security Unit Type H (D377) • Camera Direct Print Card Type M3 • Browser Unit Type M9 • SD card for NetWare printing Type M3 • OCR Unit Type M2 • Memory Unit Type M3 2GB	• Deleted "IPDS Unit Type M3". • Added a Note about the models which the option is available.
	Internal Options > List of Slots	
	SD Card Option > List of Slots Used	

Chapter	Section	Details
Installation	Anti-Condensation Heater	• Modified the Notes when installing Scanner/PCDU heater. • Changed the part name "electrical box" to "power supply box". • Added a Note in Step 5 on Anti-Condensation Heater (PCDU), and Anti-Condensation Heater (Scanner). • Added a Note about SP5-805.
	Anti-Condensation Heater for LCT	Newly added this section
	SD Card Appli Move > Move Exec	Added a Note about SD card to use in merging.
	Key Counter Bracket Type M3 > Accessory Check	Updated the accessory list.
	Data Overwrite Security Unit Type I (D377)	Changed the title according to the type name correction for this option.

Chapter	Section	Details
Replacement and Adjustment	Electrical Components > Overview > Printed Circuit/Parts Inside the Power Supply Box	Revised the section name to make consistent with other usage.
	Electrical Components > Overview >Printed Circuits Behind the Power Supply Box	
	PCDU > PCU/Development Unit > Replacement	Added a Caution for when holding the development unit.
	Image Adjustment > Printer Gamma Correction	Revised all descriptions.
	Image Transfer Unit > ITB Lock Unit	Newly added this section.
	Image Transfer Unit > Image Transfer Belt Unit	Added Cautions for when assembling the unit.
	Image Transfer Unit > Paper Transfer Roller	
	Image Transfer Unit > Image Transfer Cleaning Unit > Replacement	Added a step about applying toner on the ITB during assembling.
	Paper Exit > Inversion Sensor	Changed the part names to these in order to match with other naming rule.
	Paper Exit > Inversion Motor	
	Fans/Filters > Controller Box Cooling Fan	
	Image Adjustment > Color Registration	Modified some SPs for color registration adjustment.

Chapter	Section	Details
Troubleshooting	Self-Diagnostic Mode > Service Call Codes > Service Call Conditions	Revised the Caution for Pattern A.
	Self-Diagnostic Mode > SC automatic reboot > HDD-related message	Newly added this section.
	Service Call 501-584 > SC500 (Engine: Paper transport 1: Paper Feed, Duplex, Transport)	Revised the description of SC547-02 and SC549-00.
	Service Call 620-689 > SC600 (Engine: Communication and Others)	• Added the SC641-00 and SC673-00. • Revised the description of SC665.
	OCR Unit Type M2	Added a Note about the models which the option is available.
	Image Quality	• Changed the pitch information in the flowchart. • Consolidated [Roller Pitch] section into the flowchart.

Important Safety Notices

Prevention of Physical Injury

1. Before disassembling or assembling parts of the copier and peripherals, make sure that the copier power cord is unplugged.

2. The wall outlet should be near the copier and easily accessible.

3. 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.

4. The copier drives some of its components when it completes the warm-up period. Be careful to keep hands away from the mechanical and electrical components as the copier starts operation.

5. The inside and the metal parts of the fusing unit become extremely hot while the copier is operating. Be careful to avoid touching those components with your bare hands.

Health Safety Conditions

1. Toner and developer are non-toxic, but if you get either of them in your eyes by accident, it may cause temporary eye discomfort. Immediately wash eyes with plenty of water. If unsuccessful, get medical attention.

2. The copier, which use high voltage power source, can generate ozone gas. High ozone density is harmful to human health. Therefore, the machine must be installed in a well-ventilated room.

Observance of Electrical Safety Standards

The copier and its peripherals must be serviced by a customer service representative who has completed the training course on those models.

RTB 10
Important notice for Taiwan about lithium batteries

⚠ WARNING

- Keep the machine away from flammable liquids, gases, and aerosols. A fire or an explosion might occur.

⚠ CAUTION

- The Controller board on this machine 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.

- The optional fax and memory expansion units contain lithium batteries, which can explode if replaced incorrectly. Replace only with the same or an equivalent type recommended by the

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manufacturer. Do not recharge or burn the batteries. Used batteries must be handled in accordance with local regulations.

Safety and Ecological Notes for Disposal

1. Do not incinerate toner bottles or used toner. Toner dust may ignite suddenly when exposed to an open flame.

2. Dispose of used toner, the maintenance unit which includes developer or the organic photoconductor 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.

Laser Safety

The Center for Devices and Radiological Health (CDRH) prohibits the repair of laser-based optical units in the field. The optical housing unit can only be repaired in a factory or at a location with the requisite equipment. The laser subsystem is replaceable in the field by a qualified Customer Engineer. The laser chassis is not repairable in the field. 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.

⚠️ **WARNING**

- Turn off the main switch before attempting any of the procedures in the Laser Optics Housing Unit section. Laser beams can seriously damage your eyes.
  CAUTION MARKING:

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 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.

Symbols, Abbreviations and Trademarks

This manual uses several symbols and abbreviations. The meaning of those symbols and abbreviations are as follows:

	Clip ring
	Screw
	Connector
	Clamp
SEF	Short Edge Feed
LEF	Long Edge Feed

[A] Short Edge Feed (SEF)

[B] Long Edge Feed (LEF)

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2. Installation

6. Environment

1. Product Information

Product Overview

Component Layout
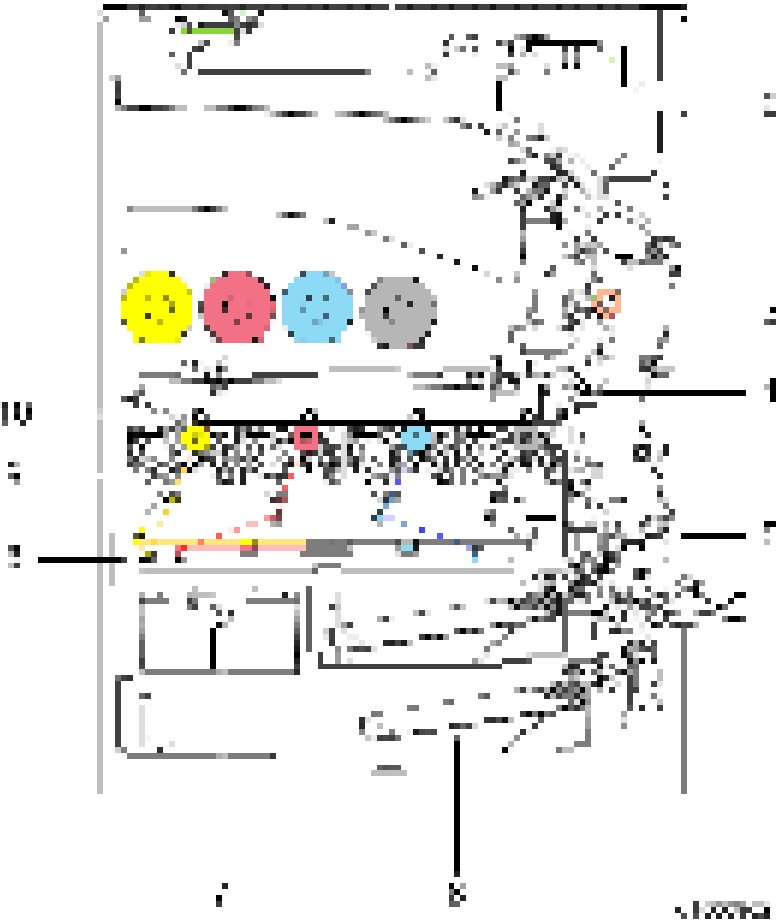
No.	Description	No.	Description
1	Scanner Unit	6	Paper Feed Unit
2	Paper Exit Unit	7	Waste Toner Unit

No.	Description	No.	Description
3	Fusing Unit	8	Laser Exposure Unit
4	Paper Transfer Unit	9	PCDU
5	Duplex Unit	10	Image Transfer Unit

Scanner Unit
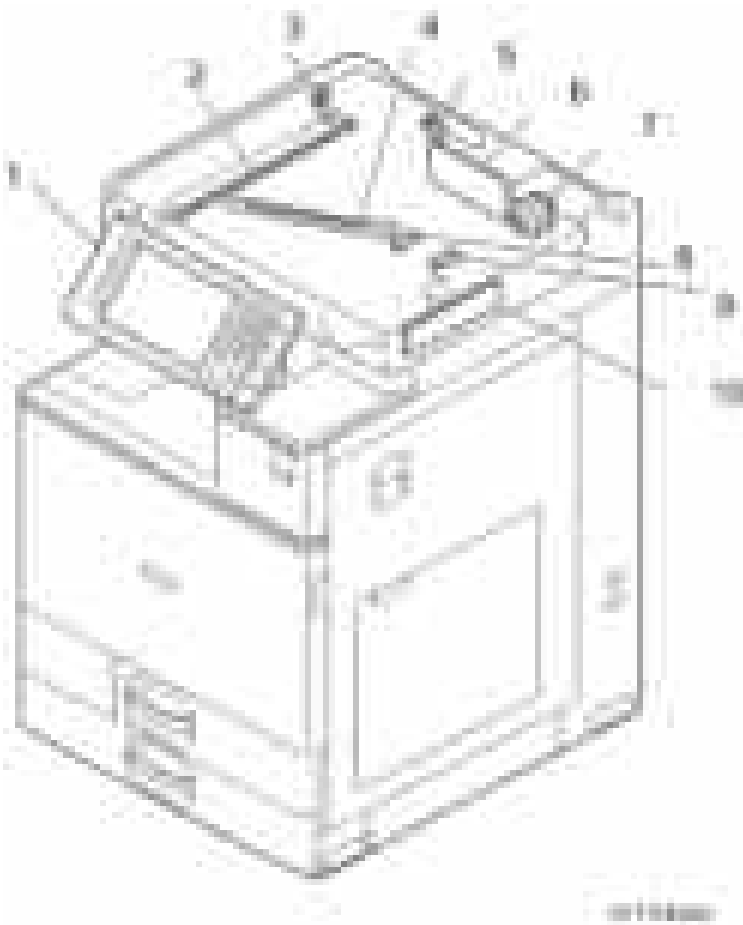
No.	Description	No.	Description
1	Operation Panel	6	Scanner Input/Output (SIO) Board
2	Scanner Lamp Unit (LED)	7	Scanner Motor

No.	Description	No.	Description
3	Scanner Home Position sensor	8	Auto Paper Size Detection (APS) Sensor 1
4	Anti-condensation Heater (Scanner Heater) *1	9	Auto Paper Size Detection (APS) Sensor 2
5	DF Position Sensor	10	Sensor Board Unit (SBU)

*1   Option

Laser Exposure Unit
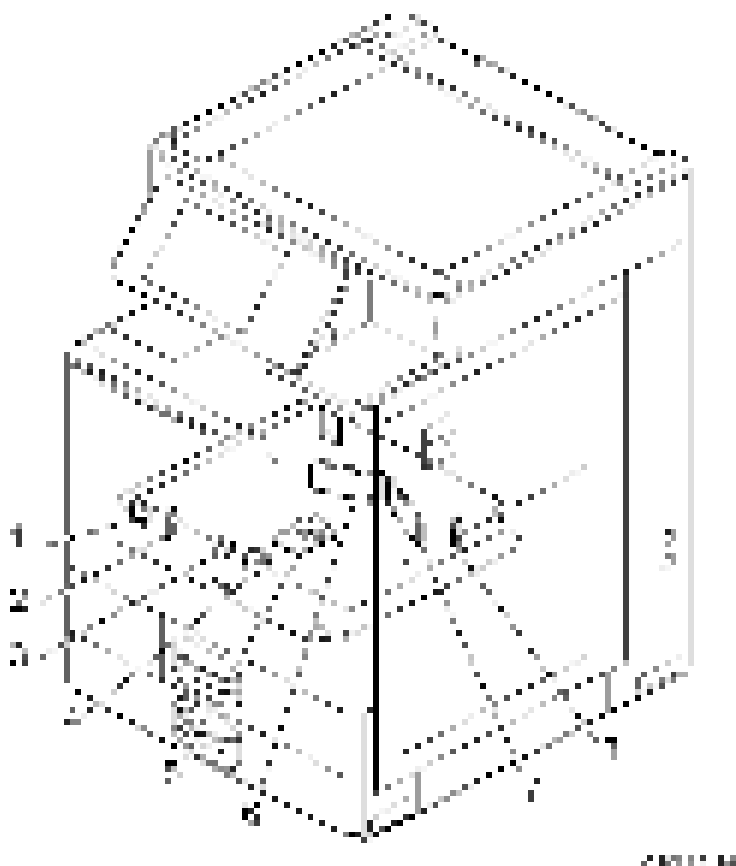
No.	Description	No.	Description
1	Skew Motor	5	Polygon Mirror Motor
2	Synchronizing Detector board: M/Y-S	6	LD Drive Board (M/Y)

No.	Description	No.	Description
3	Skew Motor	7	LD Drive Board (Bk/C)
4	Skew Motor	8	Synchronizing Detector Board: Bk/C-S

Image Transfer Unit
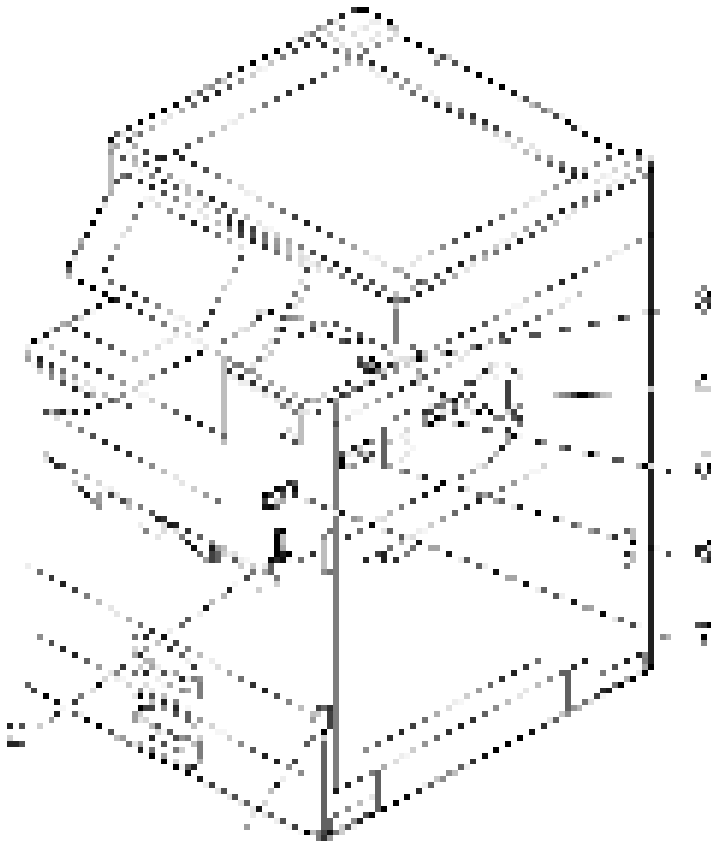
No.	Description
1	Interlock Switch: Front Cover (LD Safety Switch)
2	Interlock Switch: Duplex Unit (LD Safety Switch)
3	ITB Contact and Release Sensor
4	TM/P Sensor Shutter Solenoid

No.	Description
5	TM/P Sensor (Rear)
6	TM/P Sensor (Center)
7	TM/P Sensor (Front)

PCDU
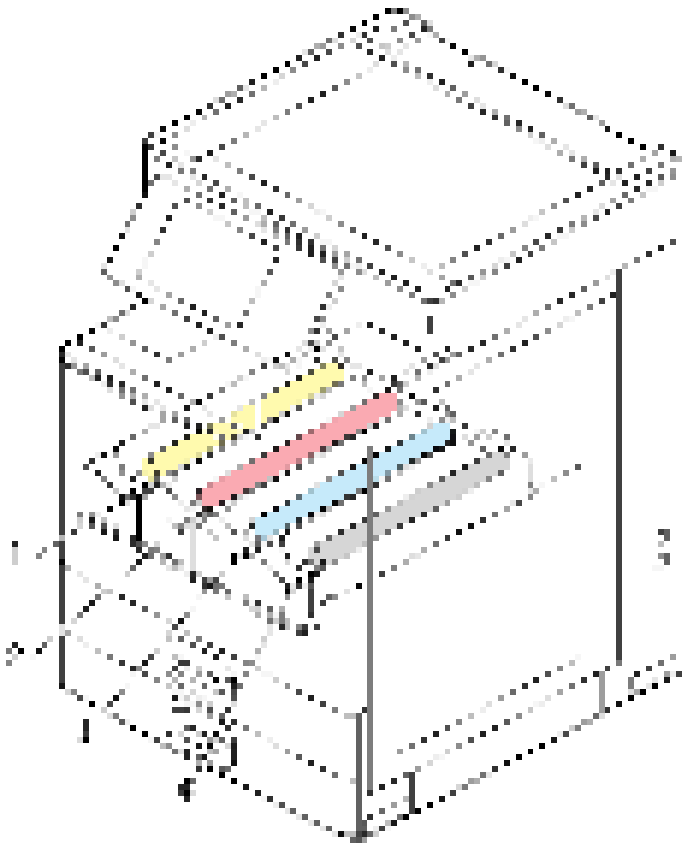
No.	Description	No.	Description
1	PCDU (Y)	3	PCDU (C)
2	PCDU (M)	4	PCDU (Bk)

Toner Supply / Waste Toner Bottle
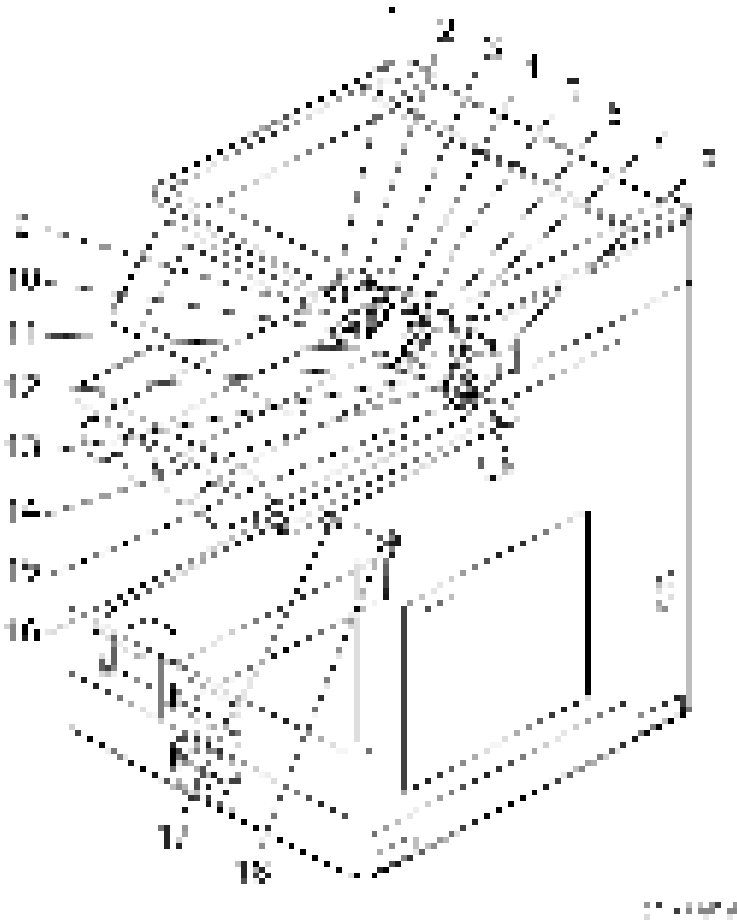
No.	Description	No.	Description
1	ID Chip (Y)	10	Toner End Sensor (Y)
2	Toner Bottle Drive Motor (Y)	11	Toner Transport Motor (M)
3	ID Chip (M)	12	Toner End Sensor (M)
4	Toner bottle Drive Motor (M)	13	Toner Transport Motor (C)
5	ID Chip (C)	14	Toner End Sensor (C)
6	Toner bottle Drive Motor (C)	15	Toner End Sensor (Bk)
7	ID Chip (Bk)	16	Toner Transport Motor (Bk)

No.	Description	No.	Description
8	Toner Bottle Drive Motor (Bk)	17	Waste Toner Capacity Sensor
9	Toner Transport Motor (Y)	18	Waste Toner Bottle Set Switch

Paper Feed Unit
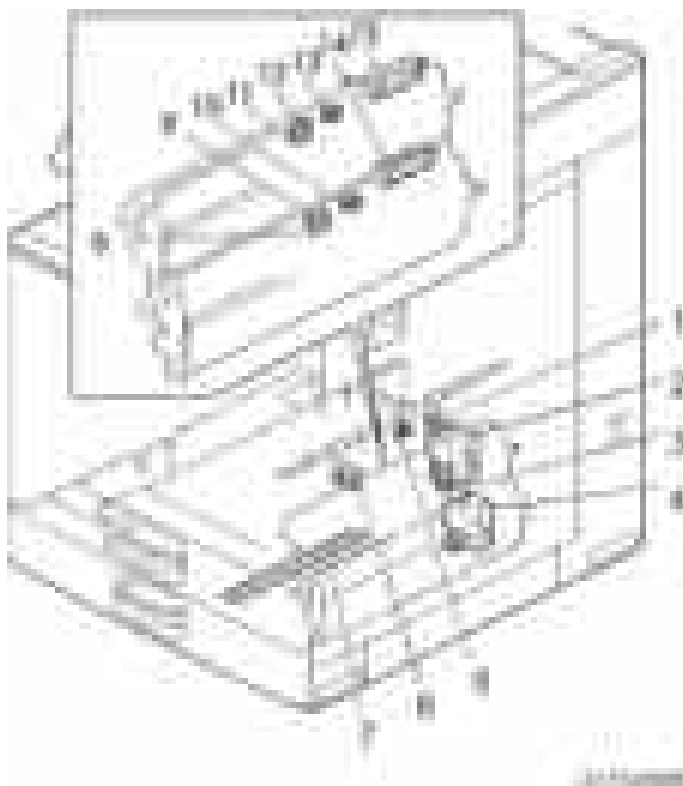
No.	Description	No.	Description
1	Tray Set Switch (1st Feed Tray)	9	Paper End Sensor (2nd Feed Tray)
2	Lift Motor (1st Feed Tray)	10	Limit Sensor (2nd Feed Tray)
3	Tray Set Switch (2nd Feed Tray)	11	Transport Sensor (1st Feed Tray)
4	Lift Motor (2nd Feed Tray)	12	Paper End Sensor (1st Feed Tray)
5	Registration Sensor	13	Limit Sensor (1st Feed Tray)
6	Size Switch (2nd Feed Tray)	14	Pick-up Solenoid (2nd Feed Tray)

No.	Description	No.	Description
7	Anti-condensation Heater	15	Pick-up Solenoid (1st Feed Tray)
8	Paper Feed Sensor (2nd Feed Tray)		

Duplex Unit
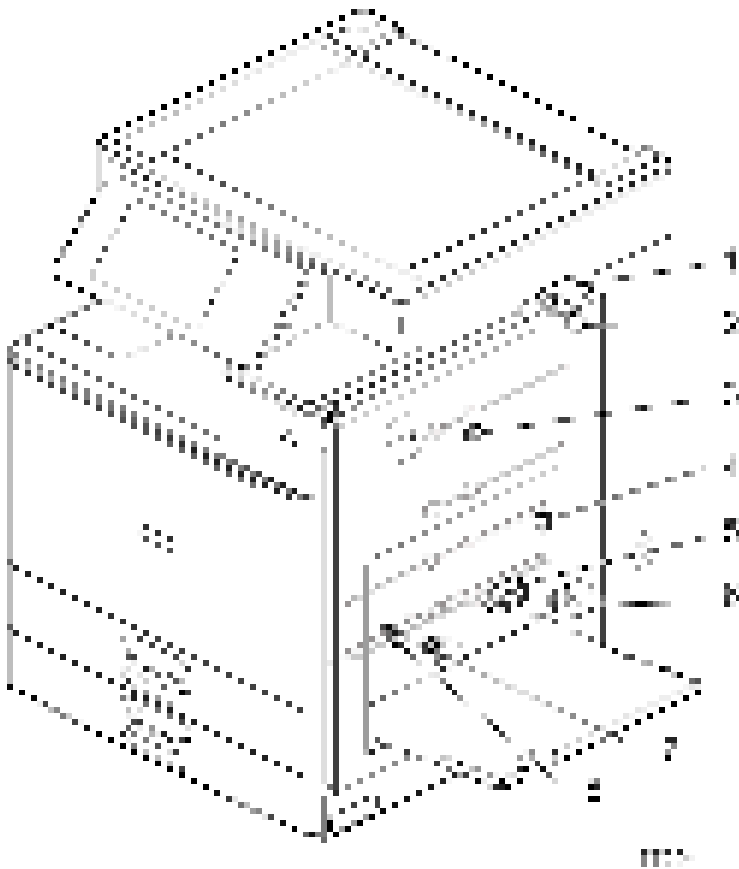
No.	Description	No.	Description
1	Duplex Entrance Motor	5	By-pass Pick-up Solenoid
2	Right Door Open/Close Switch	6	By-pass/Duplex Motor
3	Duplex Entrance Sensor	7	By-pass Paper End Sensor
4	Duplex Unit Open/Close Sensor	8	Duplex Exit Sensor

By-pass Unit
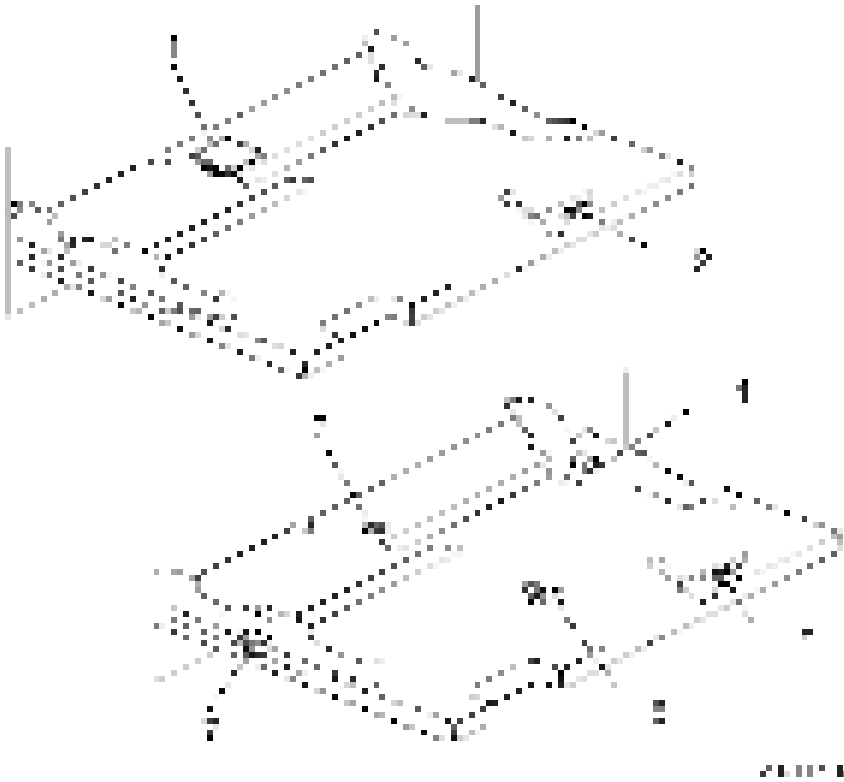
No.	Description	No.	Description
1	Main Scanning Sensor	5	By-pass Length Sensor
2	By-pass Length Sensor	6	Side Fence Drive Motor
3	Main Scanning Sensor	7	Side Fence Paper Contact Sensor
4	Side Fence Paper Contact Sensor		

Fusing Unit
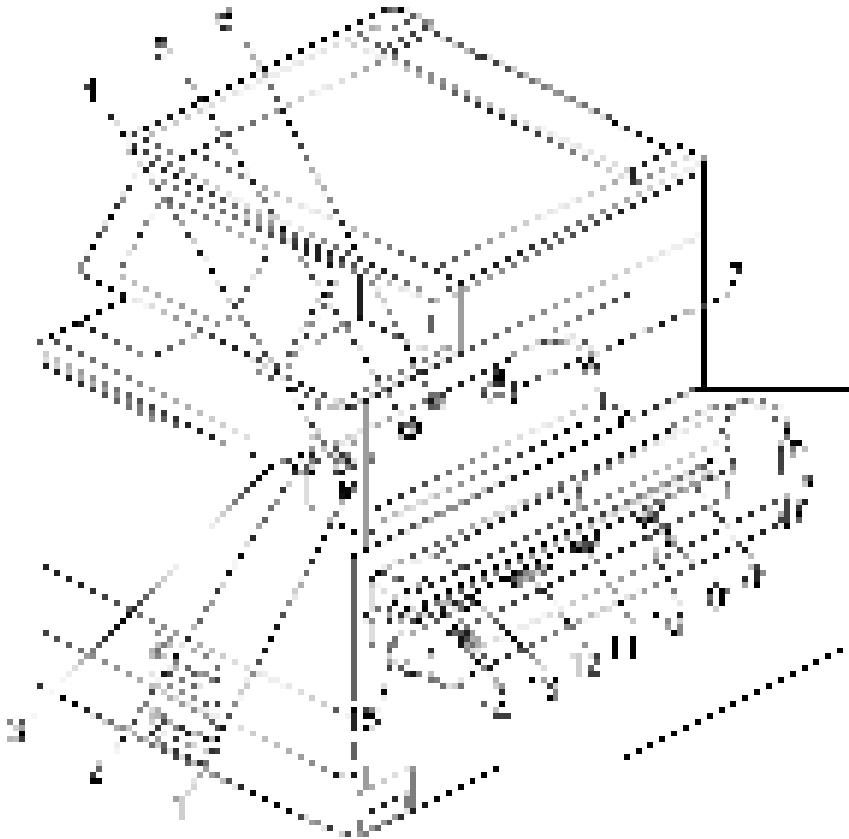
No.	Description	No.	Description
1	Fusing Pressure Release Sensor	9	Thermistor (Center)
2	Shield Position Sensor (Lower)	10	Thermostat (Edge)
3	Shield Position Sensor (Upper)	11	Thermostat (Center)
4	Thermopile (Edge)	12	NC Sensor (Center)
5	Thermopile (Center)	13	NC Sensor (Edge)
6	Fusing Exit Sensor	14	Thermistor (Edge)
7	Shield Drive Motor	15	Shield Sensor 1 / 2
8	Fusing Heater		

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Paper Transfer / Paper Exit
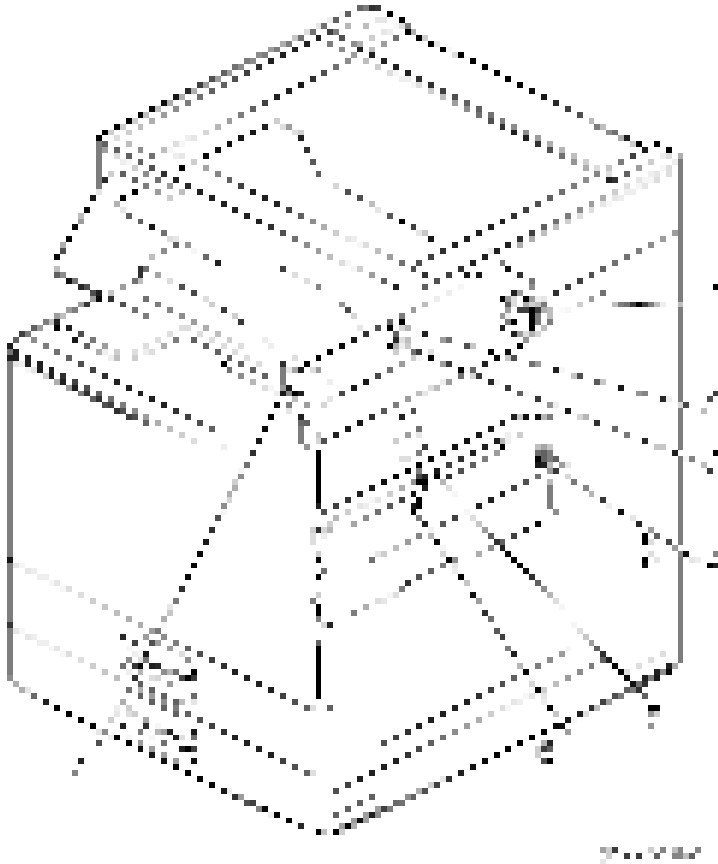
No.	Description	No.	Description
1	Inversion Motor	5	Fusing Entrance Sensor
2	Inversion Sensor	6	Fusing Jam Sensor
3	Paper Exit Sensor	7	Paper Exit Solenoid
4	PTR Open/Close Sensor		

Air Flow
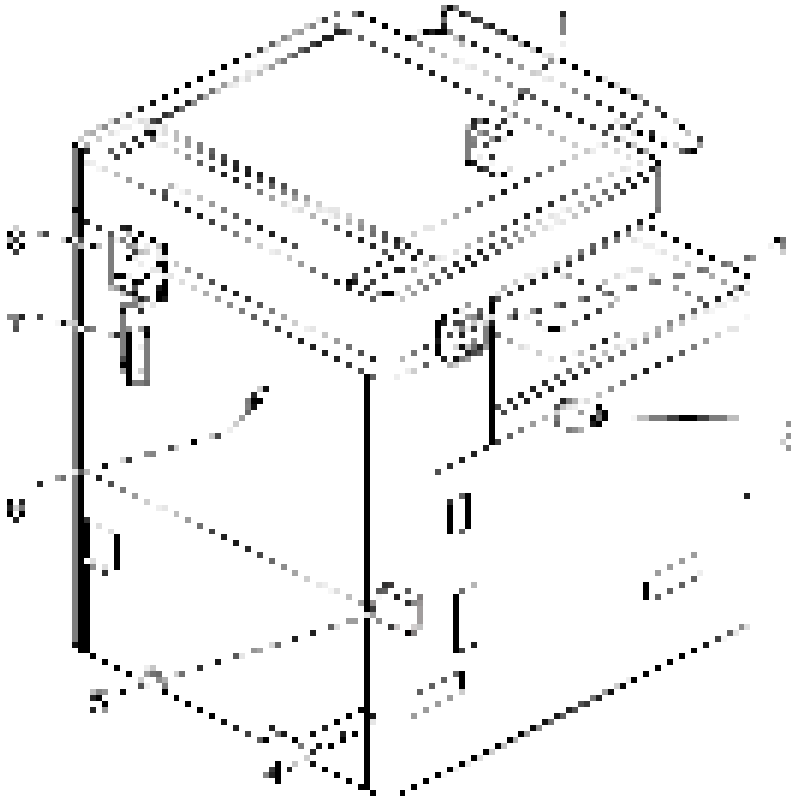
No.	Description	No.	Description
1	Paper Exit Cooling Fan	5	Ozone Exhaust Fan
2	Development Intake Fan: Right	6	Thermistor
3	Development Intake Fan: Left	7	Toner Supply Cooling Fan
4	PSU Cooling Fan	8	Fusing Exhaust Heat Fan

Drive Unit
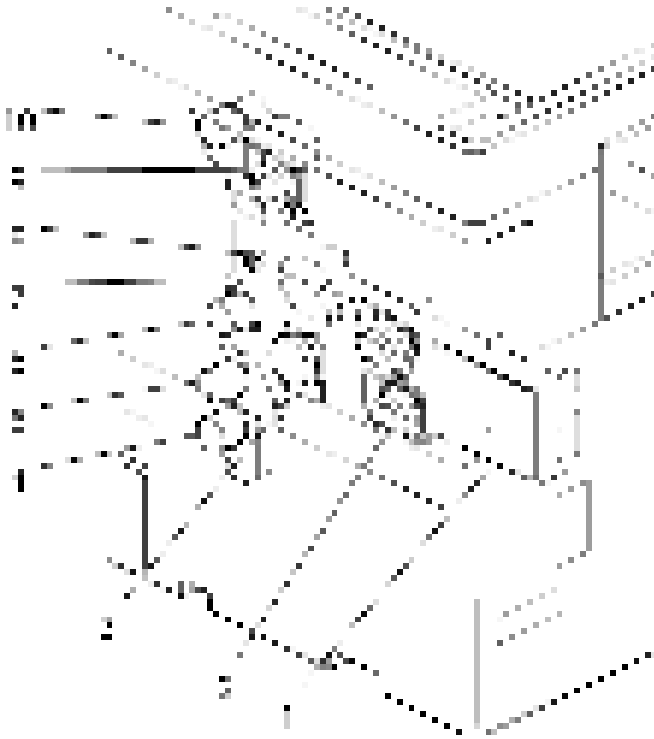
No.	Description	No.	Description
1	Imaging IOB	6	Registration Motor
2	Development Motor: CMY	7	PCU Motor: CMY
3	PCU: Black / Image Transfer Motor	8	Phase Sensor
4	Paper Feed Motor	9	Fusing Motor
5	Transport Motor	10	Paper Exit / Pressure Release Motor

Board / Switch
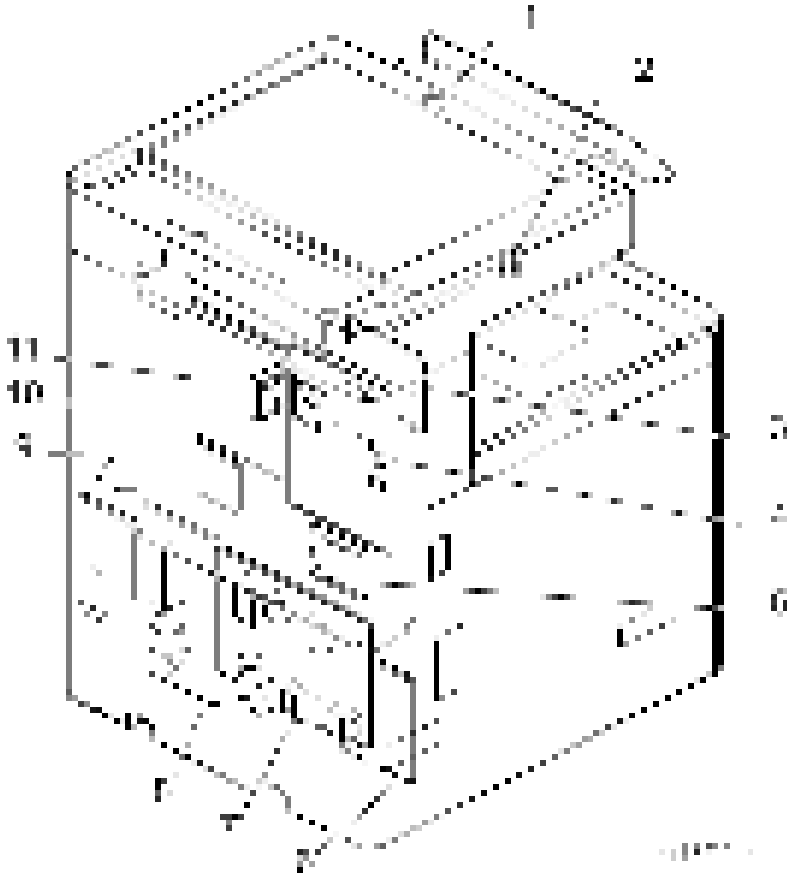
No.	Description	No.	Description
1	Power Switch	7	PSU (DC Power)
2	Interlock Switch: Front Cover	8	PSU (AC Controller Board)
3	HVP_TTS	9	BCU
4	Control Board	10	Controller Box Cooling Fan
5	HDD	11	IPU
6	Paper Transport IOB		

Paper Path
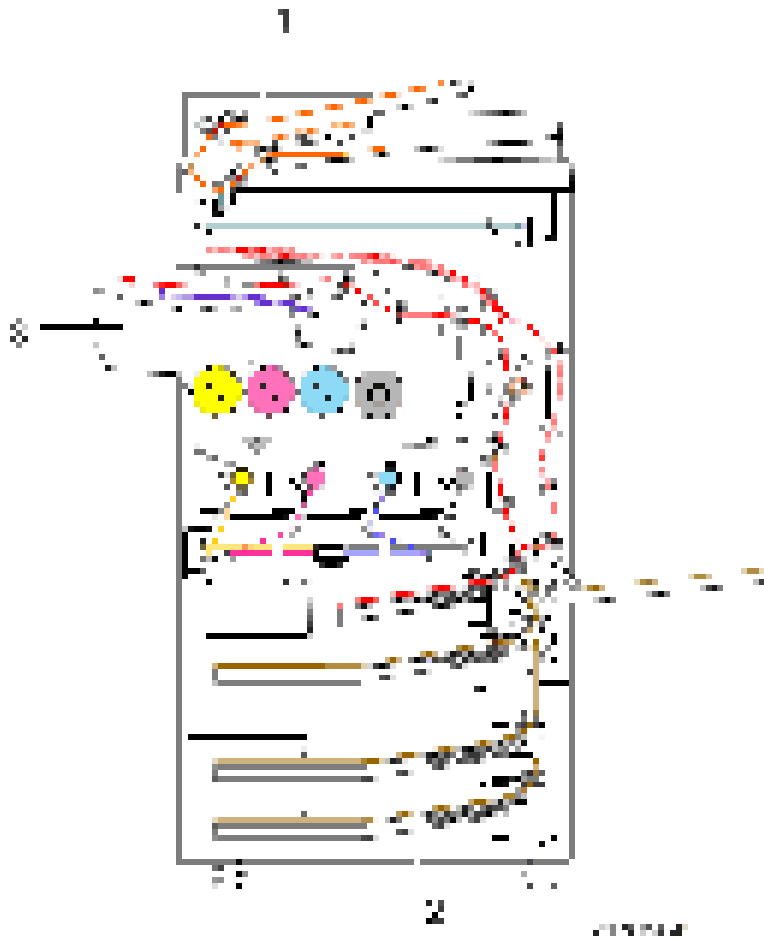
No.	Description	No.	Description
1	ARDF DF3090	3	Internal Finisher SR3130
2	Paper Feed Unit PB3210/PB3220		
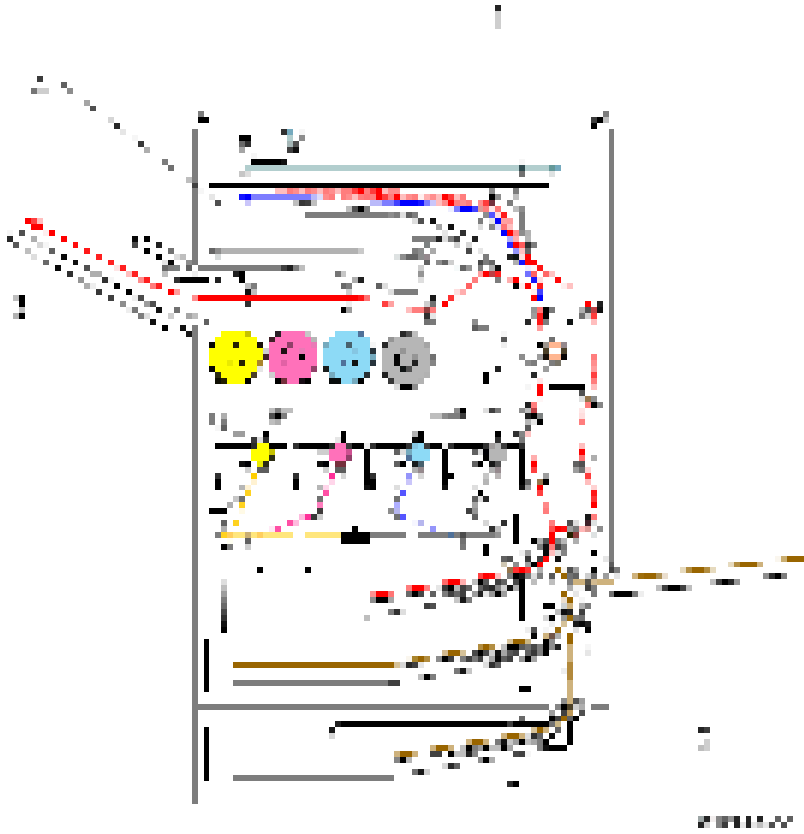
No.	Description	No.	Description
1	Platen Cover PN2000	3	Side Tray Type M3
2	Paper Feed Unit PB3150	4	1 Bin Tray BN3110

1

Drive Layout
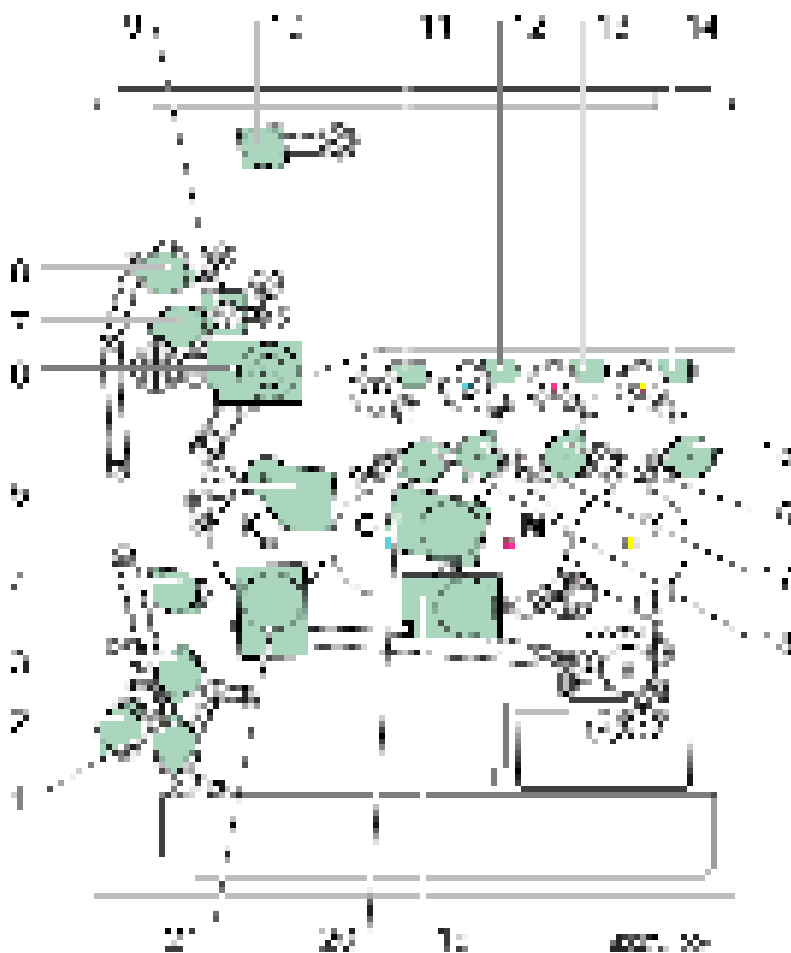
No.	Description	No.	Description
1	Paper Feed Motor	12	Toner Bottle Drive Motor (C)
2	Duplex/By-pass Motor	13	Toner Bottle Drive Motor (M)
3	Transport Motor	14	Toner Bottle Drive Motor (Y)
4	Registration Motor	15	Toner Transport Motor (Y)
5	Paper Transfer Contact Motor	16	Toner Transport Motor (M)
6	Fusing Motor	17	Toner Transport Motor (C)
7	Paper Exit / Pressure Release Motor	18	Toner Transport Motor (Bk)

No.	Description	No.	Description
8	Duplex Entrance Motor	19	Development Motor: CMY
9	Inversion Motor	20	PCU Motor: CMY
10	Scanner Motor	21	PCU: Black / Image Transfer Motor
11	Toner Bottle Drive Motor (Bk)	-	

Machine Codes and Peripherals Configuration

Diagram

Options (D176/D177)

Main frame: ARDF as standard (NA, EU)
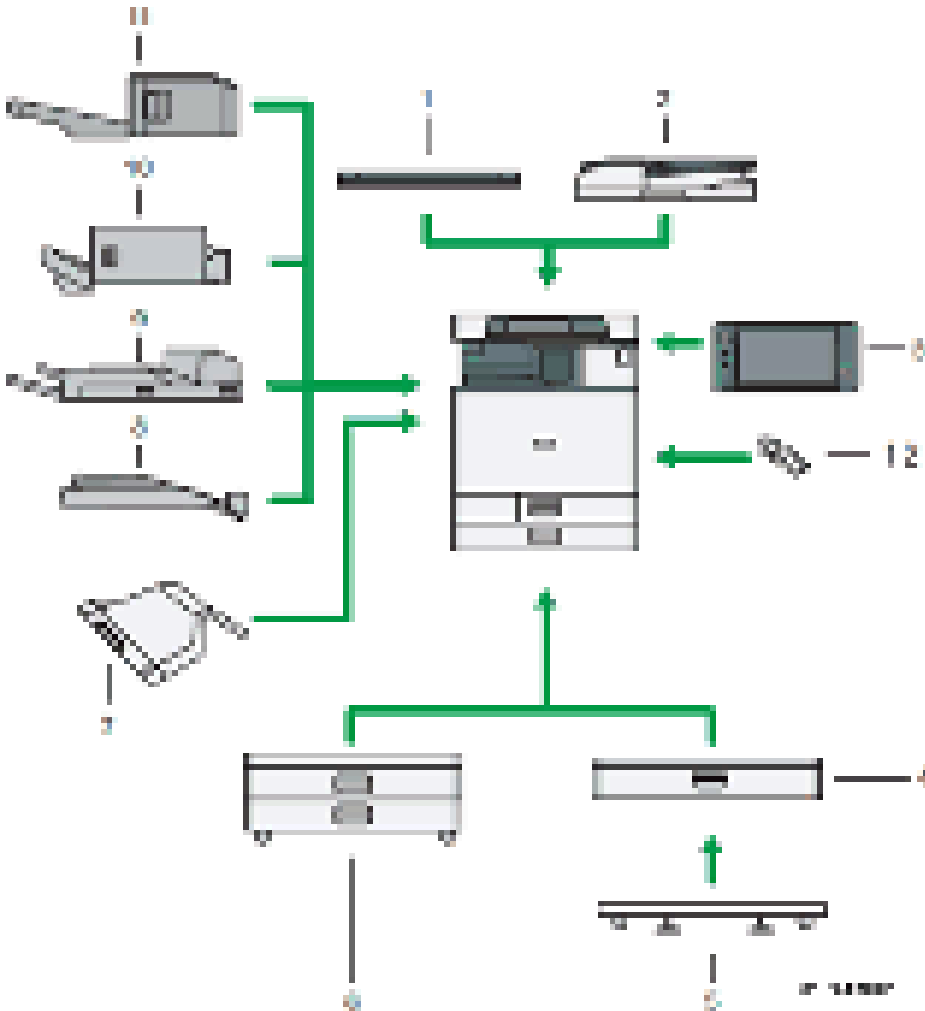
Item	Machine Code	Call out
Platen Cover PN 2000	D700 (EU, Asia, TWN, CHN, KOR)	1

1

Item	Machine Code	Call out
ARDF DF3090	D779 (Asia, TWN, CHN, KOR)	2
Smart Operation Panel Type M3	D148-81 (NA) D148-85 (TWN, CHN)	3
Paper Feed Unit PB3150	D694	4
Caster Table Type M3	D178	5
Paper Feed Unit PB3210 (EU) Paper Feed Unit PB3220 (NA, Asia, KOR, TWN, CHN)	D787	6
1 Bin Tray BN3110	D692	7
Internal Shift Tray SH3070	D691	8
Side Tray Type M3	D725	9
Internal Finisher SR3130	D690	10
Internal Finisher SR3180	D766	11
Handset HS3020	D739-05	12
Punch Unit PU3040 NA	D716-17	-
Punch Unit PU3040 EU	D716-27	-
Punch Unit PU3040 SC	D716-28	-
Fax Option Type M3	D163	-
G3 Interface Unit Type M3	D163	-
Memory Unit Type B 32MB	G578	-
IEEE 802.11a/g/n Interface Unit Type M2	D164-01	-
Memory Unit Type M3 2GB	D164-03	-
Fax Connection Unit Type M3	D165-01 (NA) D165-02 (EU) D165-03 (Asia)	-

Item	Machine Code	Call out
Postscript3 Unit Type M3	D165-05 (NA) D165-06 (EU) D165-07 (Asia)	-
Camera Direct Print Card Type M3	D165-13	-
Browser Unit Type M9	D165-25 (NA) D165-26 (EU) D165-27 (Asia, TWN, CHN, KOR)	-
SD card for NetWare printing Type M3	D165-19	-
IPDS Unit Type M3	D165-20 (NA) D165-21 (EU) D165-22 (Asia)	-
OCR Unit Type M2	D166-25 (NA) D166-26 (EU) D166-27 (Asia)	-
Smart Card Reader Built-in Unit Type M2	D739-06	-
Imageable Area Extension Unit Type M3	D739-07	-
Marker Type 30	H903	-
ADF Handle Type C	D593-81	-
IEEE 1284 Interface Board Type A	B679	-
Bluetooth Interface Unit Type D	D566	-
File Format Converter Type E	D377-04	-
Copy Data Security Unit Type G	D640	-
Optional Counter Interface Unit Type A	B870	-
Key Counter Bracket Type M3	D739-09	-
Card Reader Bracket Type 3352	D593-61	-
Unicode Font Package for SAP(R) 1 License	B869-01	-

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Item	Machine Code	Call out
Unicode Font Package for SAP(R) 10 License	B869-02	-
Unicode Font Package for SAP(R) 100 License	B869-03	-
Data Overwrite Security Unit Type I	D377-06	-
Waste Toner Bottle MP C6003	D860-01	-
External Keyboard Bracket Type M3	D739-10	-

Options (D237)

Main frame: ARDF as standard (EU)
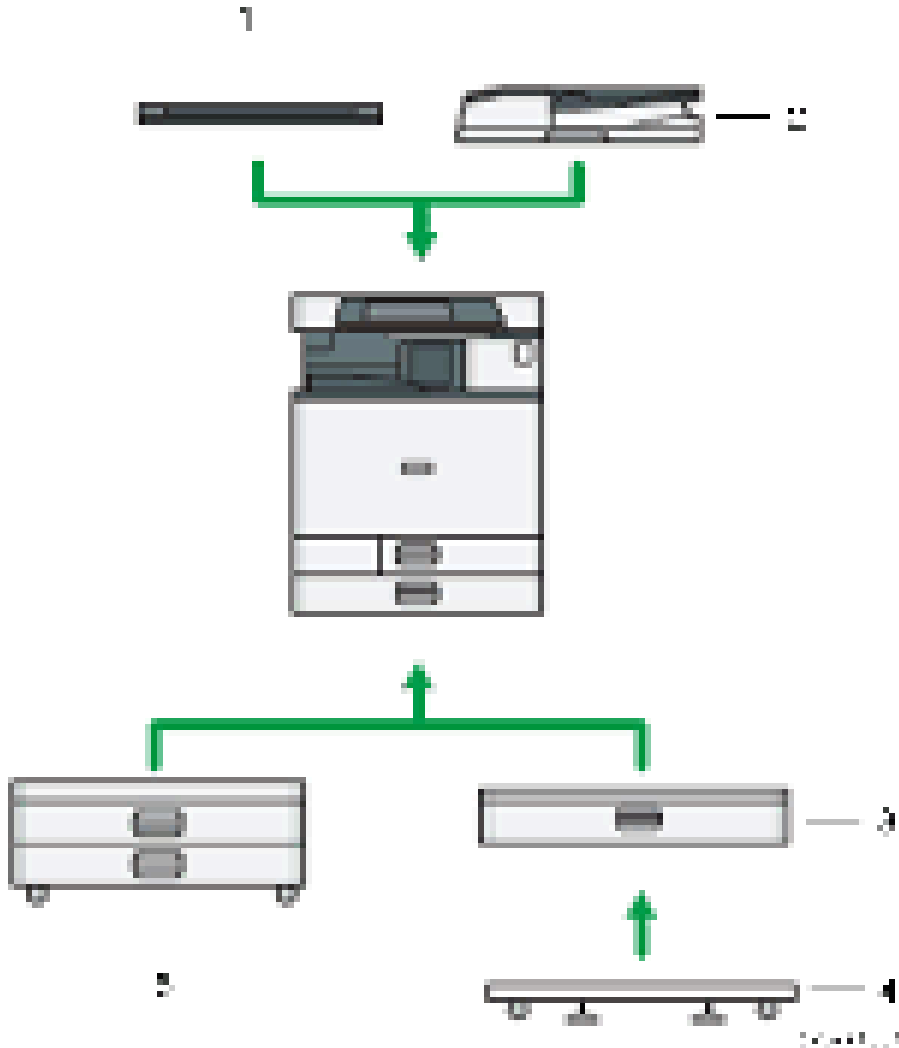
Item	Machine Code	Call out
Platen Cover PN 2000	D700 (Asia, TWN, CHN, KOR)	1
ARDF DF3090	D779 (Asia, TWN, CHN, KOR)	2
Paper Feed Unit PB3150	D694	3
Caster Table Type M3	D178	4
Paper Feed Unit PB3210 (EU) Paper Feed Unit PB3220 (NA, Asia, KOR, TWN, CHN)	D787	5

Item	Machine Code	Call out
IEEE 802.11a/g/n Interface Unit Type M2	D164-01 (EU, Asia, KOR)	-
Postscript3 Unit Type M3	D165-06 (EU) D165-07 (Asia, KOR, TWN, CHN)	-
Imageable Area Extension Unit Type M3	D739-07	-
ADF Handle Type C	D593-81	-
File Format Converter Type E	D377-04	-
Copy Data Security Unit Type G	D640	-
Optional Counter Interface Unit Type A	B870	-
Key Counter Bracket Type M3	D739-09	-
Unicode Font Package for SAP(R) 1 License	B869-01	-
Unicode Font Package for SAP(R) 10 License	B869-02	-
Unicode Font Package for SAP(R) 100 License	B869-03	-
Waste Toner Bottle MP C6003	D860-01	-
External Keyboard Bracket Type M3	D739-10	-

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Specifications

See "Appendices" for the following information:

- General Specifications
- Supported Paper Sizes
- Software Accessories
- Optional Equipment
- Other Specifications

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Guidance for Those Who are Familiar with Similar Products

Differences from Similar Models

Scan, LD Unit, Paper Feed Unit

Item	D176/D177/D237	D146/D147/D148/D149/D150
LD unit	LD 1 beam	(D146/D147) LD 1 beam (D148/D149/D150) LD 4 beams
Paper feed	Change of pick-up roller material Locked tray No pick-up solenoid No paper feed sensor (main frame only) No double feed detection	Double feed detection (D150 only) Tray pull-in mechanism

Duplex, Driving, Main frame

Item	D176/D177/D237	D146/D147/D148/D149/D150
Duplex / Exit	Duplex: 52 - 169 g/m^2 No paper exit full sensor	Duplex: 52 - 256g/m^2 Jam detection LED (D148/D149/D150 only)
Paper Feed Capacity	Up to 2300 maximum. (550×4, 100)	Up to 4700 maximum. (550×2, 1000×2, 1500, 100)
Memory	1.5 GB	(D146/D147) 1.5 GB (D148/D149/D150) 2.0 GB

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Item	D176/D177/D237	D146/D147/D148/D149/D150
First copy time (BW)	3.1 sec	(D146/D147) 4.6 sec (D148) 4.0 sec (D149/D150) 3.1 sec
First copy time (Color)	4.6 sec	(D146/D147) 7.3 sec (D148) 5.7 sec (D149/D150) 4.6 sec
Warm-up time	Less than 19 sec	(D146/D147) 19 sec (D148) 20 sec (D149/D150) 17 sec
By-pass	No side fence set assist function	Side fence set assist function(D150 only)
Air flow	8 fans	(D146/D147) 8 fans (D148/D149/D150) 11 fans

PCDU

Item	D176/D177/D237	D146/D147/D148/D149/D150
PCDU	DC charge roller (Contact type) No lubricant bar 3-layer drum Discharge lamp is in the main frame Correction SP value must be input when PCU is replaced	AC charge roller (No contact type) Lubricant bar 4-layer drum No discharge lamp
Dev. Unit	Two mixing augers, two-way circulation (see diagram [B] below)	Two mixing augers, one way circulation (see diagram [A] below)
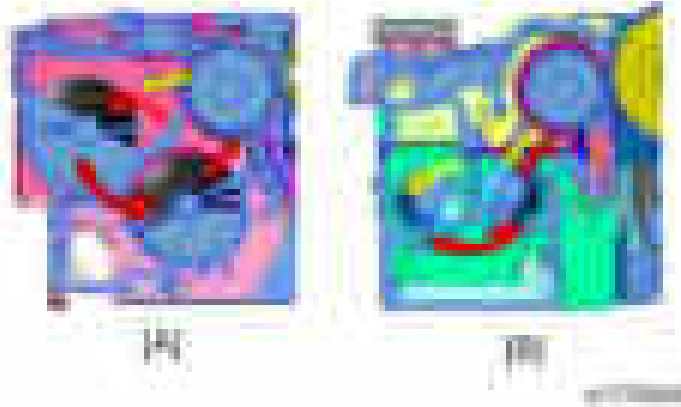
Fusing

Item	D176/D177/D237	D146/D147/D148/D149/D150
Heating sleeve unit	No reflective plate with heating sleeve unit	Reflective plate with heating sleeve unit

Electrical Component

Item	D176/D177/D237	D146/D147/D148/D149/D150
HVP-CB	Correction SP value must be input when this board is replaced.	No SP value

New Features of D176/D177/D237

Item	Description
SFU (Smart Firmware Update)	New feature of firmware update. Firmware can be updated through a simple operation at the operation panel only if the machine is connected to @Remote.

Important Notice for Machine

Item	Description
Correction SP value after replacement of specific parts	New PCU has unstable charging characteristics and sensitive to charging voltage. When replacing parts below, please make sure to correct SP values to optimize imaging process. • PCU • HVP-CB

1

2. Installation

Installation Requirements

Environment
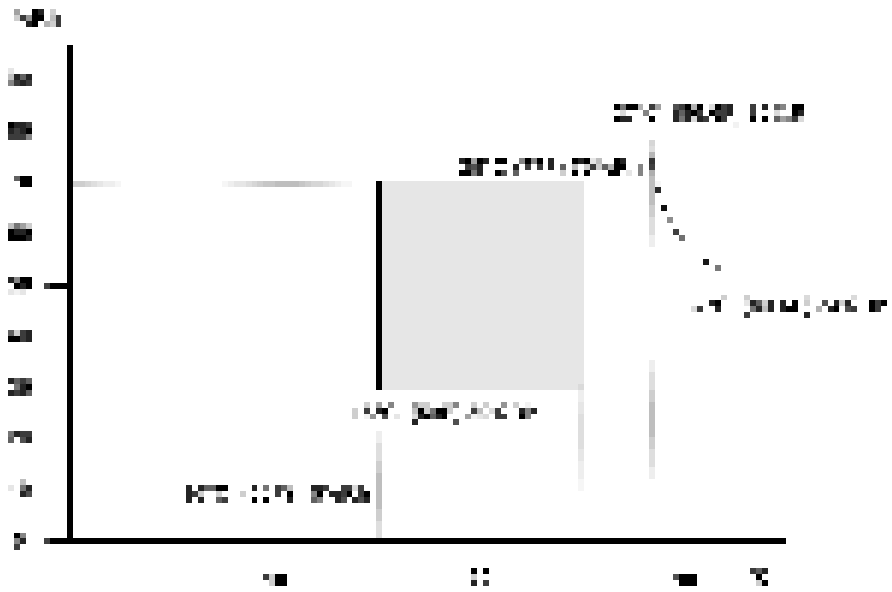
Temperature Range:	10°C to 32°C (50°F to 90°F)
Humidity Range:	15% to 80% RH
Ambient Illumination:	Less than 1,500 lux (do not expose to direct sunlight.)
Ventilation:	Room air should turn over at least 30 m3/hr/person

1. Avoid areas exposed to sudden temperature changes:

   1) Areas directly exposed to cool air from an air conditioner.

   2) Areas directly exposed to heat from a heater.

2. Do not place the machine where it will be exposed to corrosive gases.

3. Do not install the machine at any location over 2,000 m (6,500 ft.) above sea level. (D135 for NA can be installed only up to 2,500m (8,202 ft.))

4. Place the main machine on a strong and level base. Inclination on any side should be no more than 5 mm (0.2").

5. Do not place the machine where it may be subjected to strong vibrations.

Machine Space Requirements
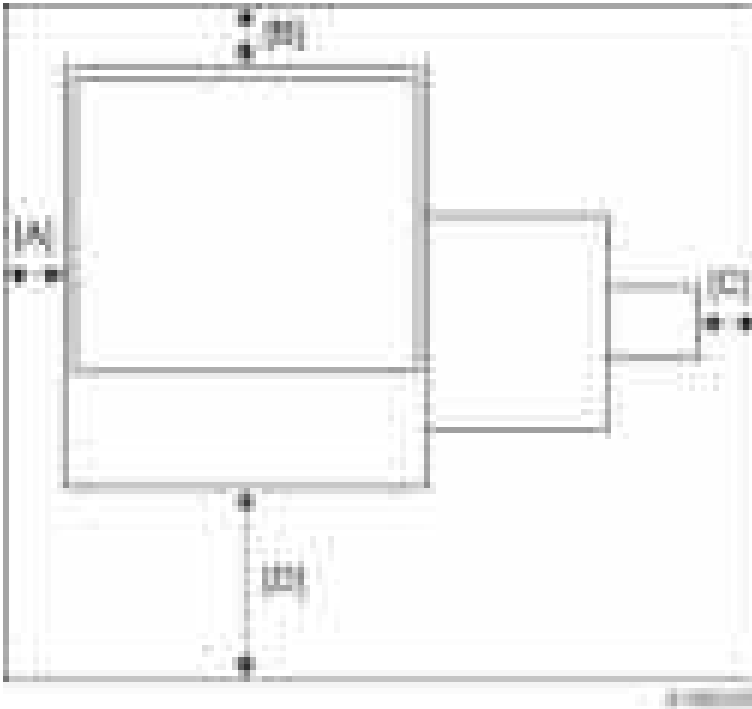
[A]	Left	Over 100 mm (3.9")
[B]	Rear	Over 100 mm (3.9")
[C]	Right	Over 100 mm (3.9")
[D]	Front	Over 750 mm (29.5")

Put the machine near the power source with the clearance shown above.

Machine Dimensions
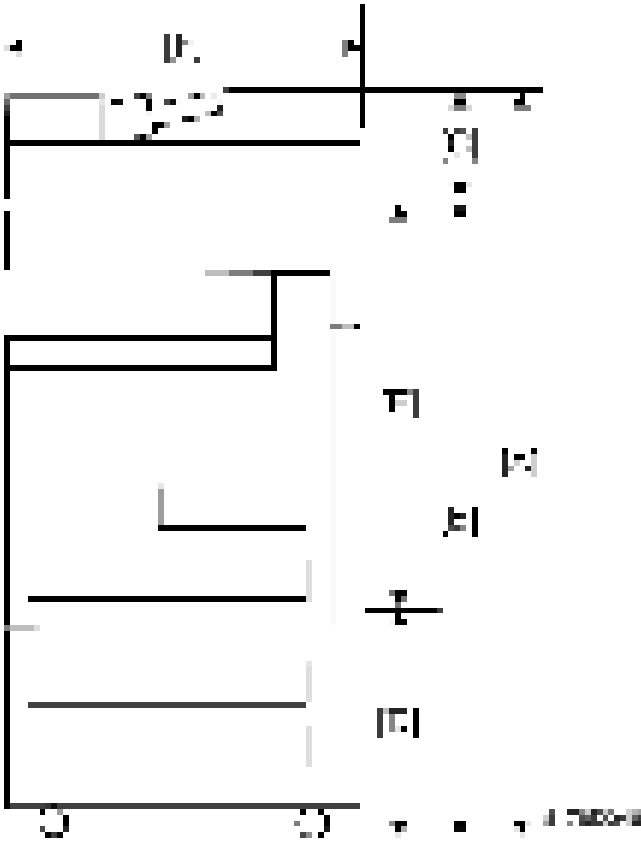
[A]	1210 mm	[D]	247 mm
[B]	1030 mm	[E]	788 mm
[C]	180 mm	[F]	587mm

Power Requirements

⚠ CAUTION

- Insert the plug firmly in the outlet.

- Do not use an outlet extension plug or cord.

- Ground the machine.

Input voltage level

Destination	Power supply voltage	Rated current consumption	Permissible voltage fluctuation
NA	120 to 127V	12A or more	Imaging: 108V(120V-10%) to 138V(127V+8.66%) Motions: 102V(120V-15%) to 138V(127V+8.66%)
EU	220 to 240V	10A	Imaging: ±10% Motions: ±15%
AP			
CHN			
TWN	110 V	20A	

Main Machine Installation

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 is shown up at the first power-up.

Overview

- The following Program/Change Administrator screen is displayed at the first power-up.

- When the customers set the administrator/supervisor login password, the display disappears and the home display will appear. The customers, however, can erase this screen with the following procedure in the case that they think there is no need to set the password.

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, then the home display appears.**

- SP5-755-002 allows you to skip this screen temporarily and continue the installation procedure without setting an administrator password. However, the Program/Change Administrator screen appears every time you turn the power OFF/ON, if the password is not set.

Password Setting Procedure

⬇ **Note**

- For more details about this security issue, see "Notes on Using Multi-Function Printers Safely" supplied with the MFP.

⚠ **CAUTION**

- When Supervisor / Administrator 1-4 passwords are configured via network, the "Change Supervisor login password" window won't display.

- The passwords for Supervisor or Administrator 1 to 4 can be set via "System Settings". But the Program/Change Administrator screen appears every time the power switch is turned ON if the passwords are input this way. So we recommend the customers to set the passwords via network or the Program/Change Administrator screen.

1. **Install the MFP.**

2. **Turn the main power switch ON.**

3. **Change the Supervisor login password.**
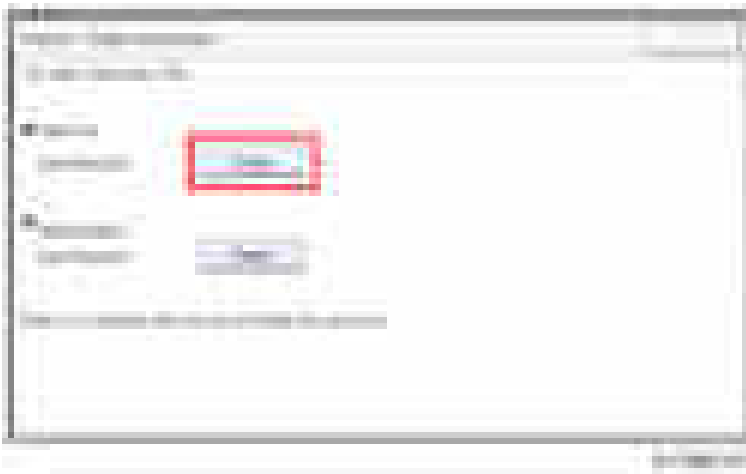
4. **Input the password.**
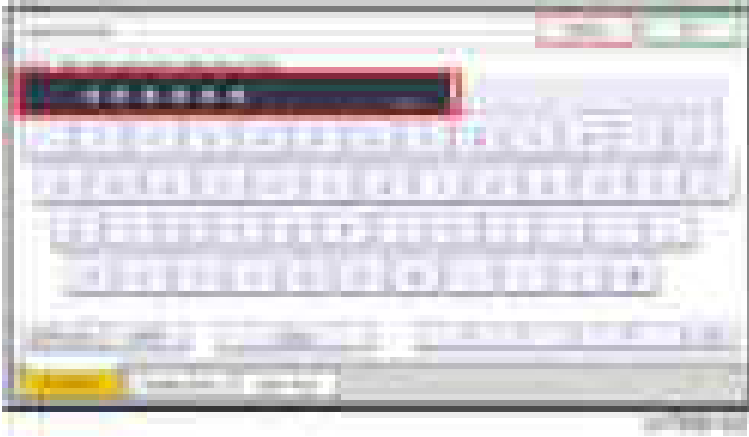
5. **Press [OK].**

6. **Confirm the Password.**

7. **Press [OK].**

8. **Change the Administrator 1 login password.**

9. **Input the password.**

10. **Press [OK].**

11. Confirm the password.

12. Press [OK].

13. Cycle the power OFF/ON.

Installation Flowchart

D176/D177 Installation Flowchart
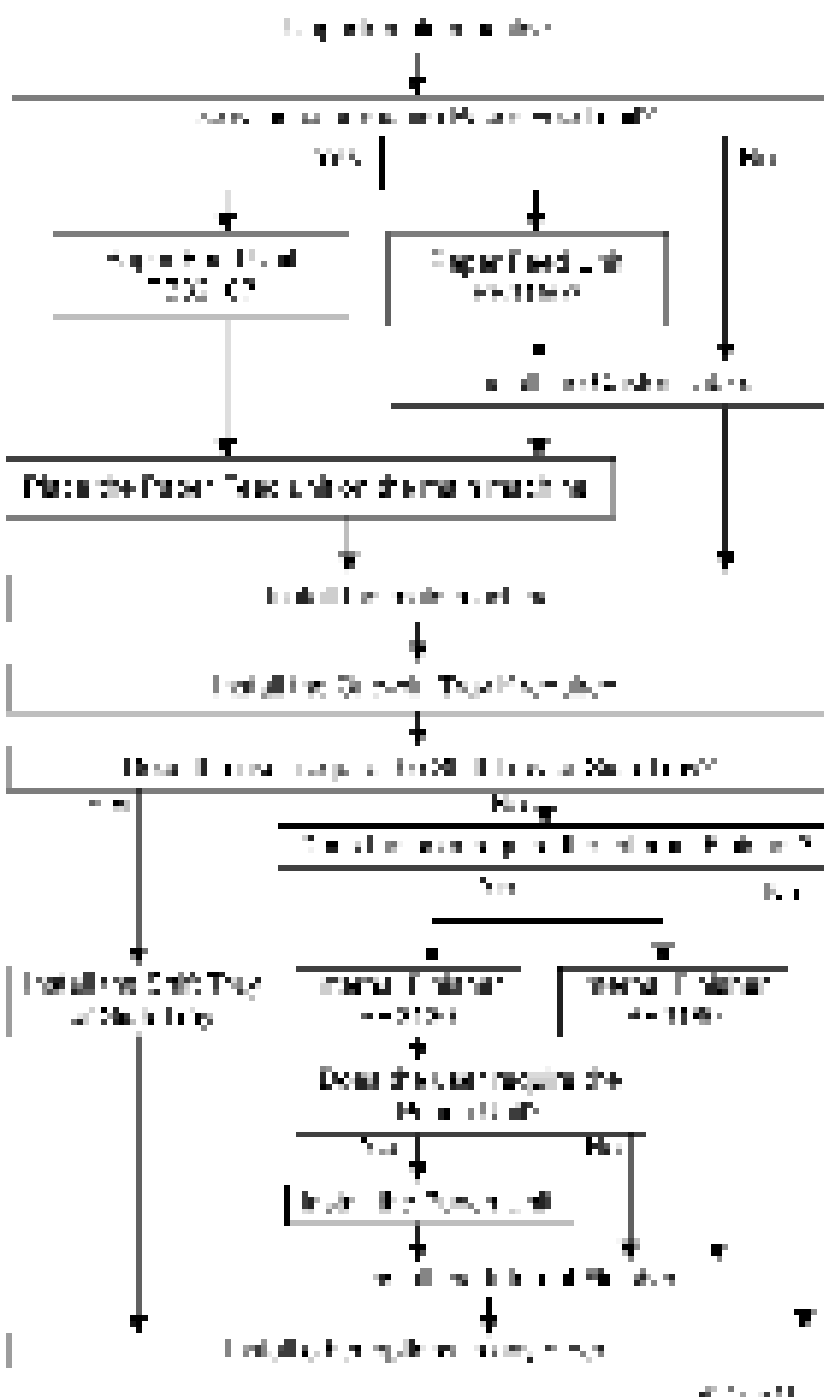
D237 Installation Flowchart
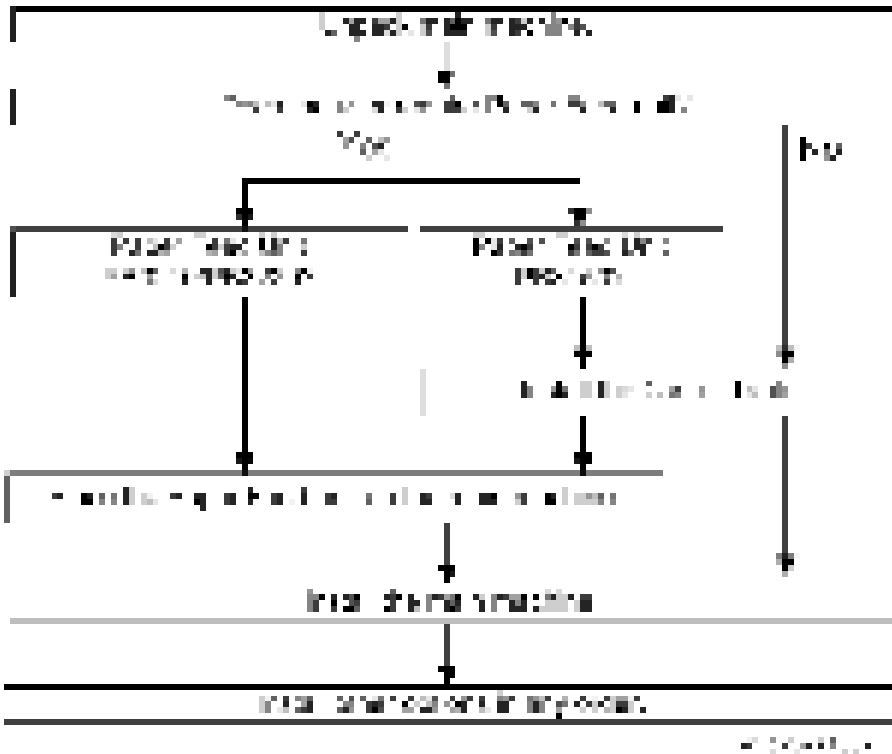
Accessory Check

Description	Q'ty
Power Supply Cord	1
Operation Instruction (User Guide)	1
Operation Instruction (Read This First)	1
Operation Instruction (Security Guide)	1
CD-ROM - Driver (D176/D177:NA/EU/AA) (D237: EU/AA)	1
CD-ROM - OI (D176/D177: NA/EU/AA) (D237: EU/AA)	1

Description	Q'ty
CD-ROM - Driver/OI (TWN/CHN)	1
Holder - Glass cleaner	1
Sheet : Exposure Glass	1
Image Transfer Cover	1
TAPPING SCREW	1
Plate - Logo	1
Sheet - Logo	1
End Fence - Output Tray	1
Sheet - Application : Multi Language: Blank	1
Sheet - Application : Multi Language: EU	1
Sheet - Journal : Blank	1
Sheet - Safety (EU)	1
Sheet - EMC (EU)	1
Sheet - Name: TEL (CHN)	1
Sheet - EULA	1
Sheet - Security Password	1
Seal - Caution	1
Decal - Paper Tray	1
Decal - Original Table	1
Decal - Caution : Original : Multi Language	1

Installation Procedure

⚠CAUTION

- Remove the tape from the development units before you turn the main switch on. The development units can be severely damaged if you do not remove the tape.

Put the machine on the paper tray unit first if you install an optional paper tray unit at the same time. Then install the machine and other options.

🔽**Note**

- Keep the shipping retainers after you install the machine. You may need them in the future if you transport the machine to another location.

2

Removal of Packing Materials and Shipping Retainers / Removal of PCDU Seal

1. **Remove the machine from the box, and check the items in the package.**

⚠**CAUTION**

- Before lifting up the machine, as there are hidden handles, remove the retainers [A] at the lower front right.
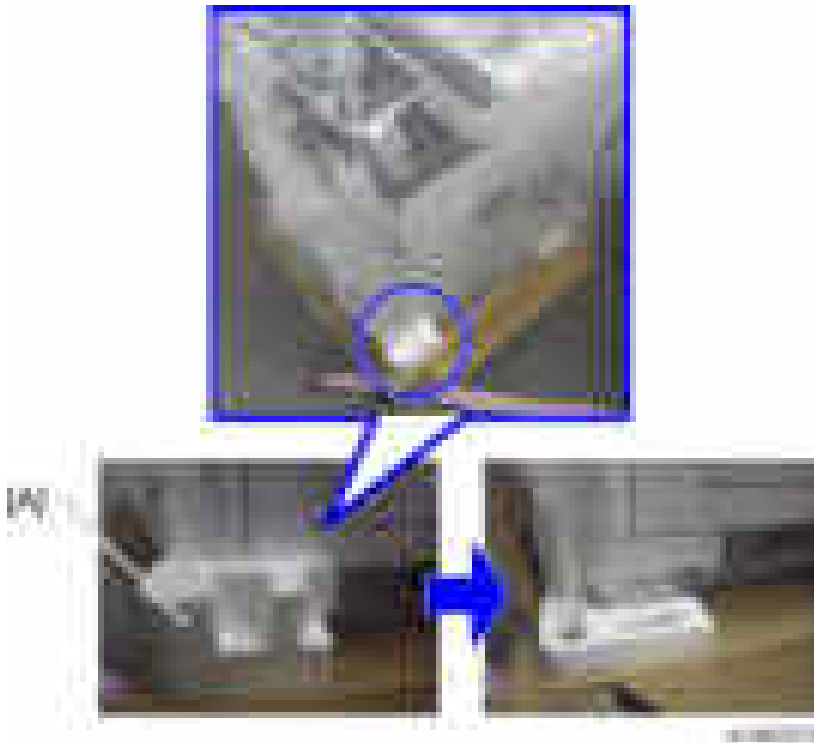
🔽**Note**

- When you lift the machine, hold the correct parts, as shown in the diagram below.
- Do not lift by holding the scanner unit, etc., because this might deform the machine or break the exterior covers

RTB 76
Right rear cover

2

2. **Remove the orange tape and retainers on the outside.**

3. Remove the paper size decal [A] on the exposure glass.

4. Pull out the 1st and 2nd paper feed tray, and remove the orange tape.

5. Remove the scanner support [A].

6. **Open the front cover, and store the scanner support in the storage location [A].**
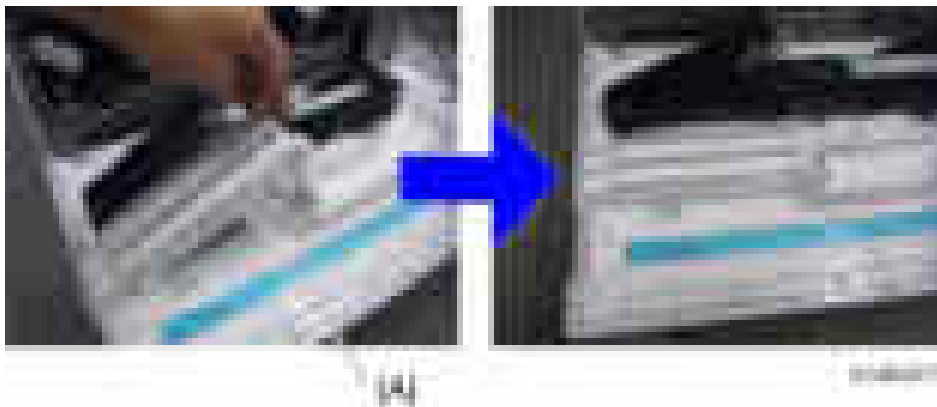
🔽 **Note**

- The factory setting sheet is kept in the position [A].

7. **Carefully pull out the heat seal [A].**

8. Secure the ITB unit front cover [A] (x1).
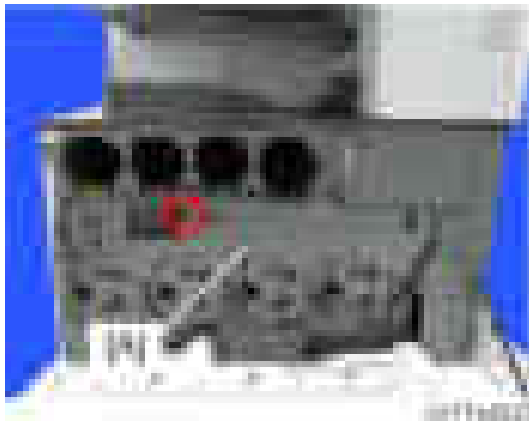
Toner Bottle Installation

1. Open the front cover.
2. Shake the toner bottle (Bk) 5 to 6 times.
3. Remove the toner bottle protection cap [A].

2

4. **Push the toner bottle into the machine slowly.**

5. **Set the toner bottles (Y, M, C) in the same way.**

6. **Close the front cover.**

⬇Note

- When the power is turned on, it will fill up for the first time in about 5 minutes.

Attaching the Optical Cloth Pocket

1. **Clean the adhesive surface of the optical cloth pocket with an alcohol-soaked cloth.**

2. **Attach the optical cloth pocket [A] to the left side of the scanner and put the optical cloth into the pocket.**

Attaching Paper Output Tray Parts

1. **Attach the part [A] to the paper output tray.**

   First, insert and attach the front pin (inside the blue circle).
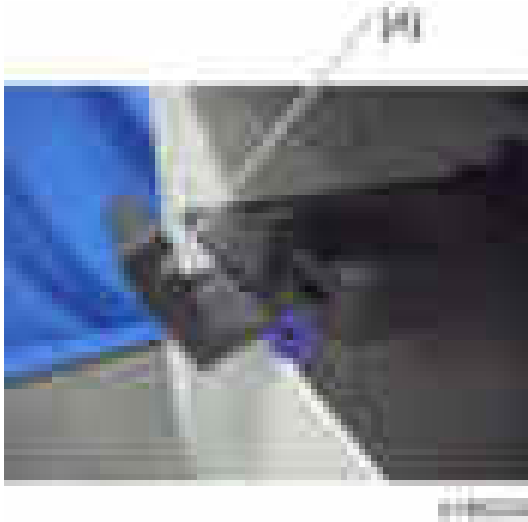
Connecting the Power Cord

⚠CAUTION

- Do not use any connectors other than the power cord provided. Also, do not use an extension cord.

1. **Connect the power cord to the machine.**

   RTB 44
   When turning power on for the first time, if you need to update firmware, do ACC first

77

Image Quality Test / Settings

Image Quality Test

When there are other options to be installed, install according to the procedure for each.

1. **After checking that clamps, etc., have been removed, connect the power plug to the wall socket.**

2. **Turn the main power supply switch ON.**

3. **Check that the operation panel shows the following display.**

   "Please supply the tray with paper."

4. **The paper size is basically detected automatically.**

   1. Pull out the paper feed tray slowly until it stops.

   2. While pressing the release lever, adjust the side fence to the paper size to be set.

   3. Set the back fence.

Checking the Copy Image with the Test Chart

Check the copy image with the test chart.

Paper Setting

1. If necessary, adjust the registration for the paper feed tray.

* SP1-002-002 (Side-to-Side Registration Paper Tray 1)

* SP1-002-003 (Side-to-Side Registration Paper Tray 2)

Moving the Machine

This section shows you how to manually move the machine from one floor to another floor. See the section "Transporting the Machine" if you have to pack the machine and move it a longer distance.

- Before turning off the main power, make sure 100% is shown as available memory on the screen if the fax option is installed.

- Turn off the main power.

- Disconnect the power plug from the outlet.

- Close all covers and paper trays, including the front cover and bypass tray.

- Keep the machine level and carry it carefully, taking care not to jolt or tip it, and protect the machine from strong shocks.

• When moving the machine, do not press against the ADF.

Paper Feed Unit PB3210/PB3220

Accessory Check

No.	Description	Q'ty
1	SCREW:M4X10	2
2	SCREW:SPRING WASHER:ROUND POINT:M4X10	1
3	BRACKET:COUPLING	2
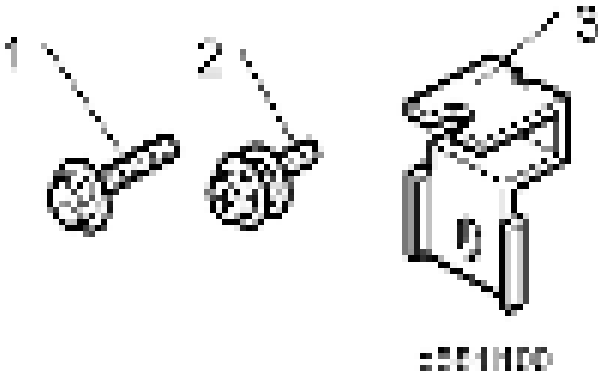
Installation Procedure

⚠ CAUTION

- The machine should be held at the correct locations and lifted gently.
- If it is lifted without care, handled carelessly or dropped, it may result in an injury.
- When installing this option, turn the machine power OFF, and unplug the power supply cord from the wall socket.
- If it is installed with the power on, it may result in an electric shock or a malfunction.
- Be sure to join the machine to the paper feed unit so as to prevent equipment from falling over.
- If they are not connected, they may move and fall over, resulting in injury.

1. **Remove the orange tape and retainers.**
2. **Remove the items provided (fixing screws, etc.) from the package.**

   Holding the grips on the machine, align it with the locating pin [A], and place the machine on the paper feed unit.

2

Note

- When you lift the machine, hold the correct locations.

- In particular, do not lift the machine by holding the scanner unit, etc, because this may cause the machine to deform.

- Do not put the machine down on the paper feed unit as a temporary resting place. This may cause the paper feed unit to deform. Always connect the machine and paper feed unit properly.

3. **Pull out the 2nd paper feed tray.**

4. **Using securing bracket as a screwdriver, fix the machine to the feed unit (spring washer: screw: M4×10: 1).**

5. **Attach the securing brackets [A] to two positions on the left and right at the rear of the machine (screws: 1 each).**

6. **Return the paper feed tray to the machine.**

7. **Attach the decals as shown below.**
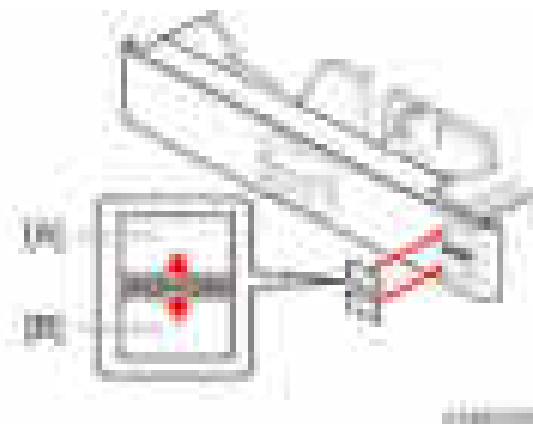
[A]: Tray number decal

[B]: Paper size decal

🔽 Note

- The tray number decal and paper size decal are packaged together with the machine.

8. **Lock the casters of the paper feed unit.**

9. **Connect the power cord to the machine.**

   ⬇**Note**

   - Stabilizers are attached to the machine when it is shipped. Do not remove it.

10. **Turn the power switch ON.**

11. **Set the paper, and check that the paper size set in the paper feed tray is displayed on the operation panel.**

12. **Adjust the registration for the paper feed unit.**

    SP1-002-004 (Side-to-Side Registration Paper Tray 3)

    SP1-002-005 (Side-to-Side Registration Paper Tray 4)

Paper Feed Unit PB3150

Accessory Check

Description	Q'ty
Securing Bracket	2
Screw with Spring Washer - M4 × 10	1
Screws - M4 × 10	2

Installation Procedure

⚠️CAUTION

- The machine should be held at the correct locations and lifted gently by two people.
- If it is lifted without care, handled carelessly or dropped, it may result in injury.
- When installing this option, turn the machine power OFF, and unplug the power supply cord from the wall socket.
- If it is installed with the power on, it may result in an electric shock or a malfunction.
- Be sure to join the machine to the paper feed unit so as to prevent equipment from falling over.
- If they are not connected, they may move and fall over, resulting in injury.

1. **Remove the orange tape and retainers.**
2. **Remove the items provided (fixing screws, etc.) from the package.**

3. Holding the grips on the machine, align it with the locating pin [A], and place the machine on the paper feed unit.
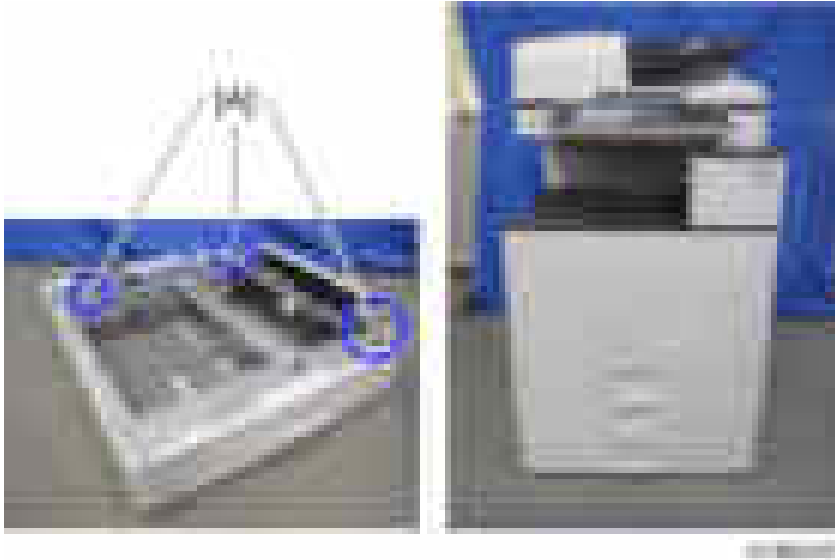
Note

- When you lift the machine, hold the correct locations.
- In particular, do not lift the machine by holding the scanner unit, etc., because this may cause the machine to deform.
- Do not put the machine down on the paper feed unit as a temporary resting place. This may cause the paper feed unit to deform. Always connect the machine and paper feed unit properly.

4. Pull out the 2nd paper feed tray.

5. Using a securing bracket as a screwdriver, fix the machine to the feed unit (spring washer: screw: M4×10: 1).

2

6. **Attach the securing brackets [A] to two positions on the left and right at the rear of the machine (screws: 1 each).**

7. **Return the paper feed tray to the machine.**

8. **Attach the decals as shown below.**
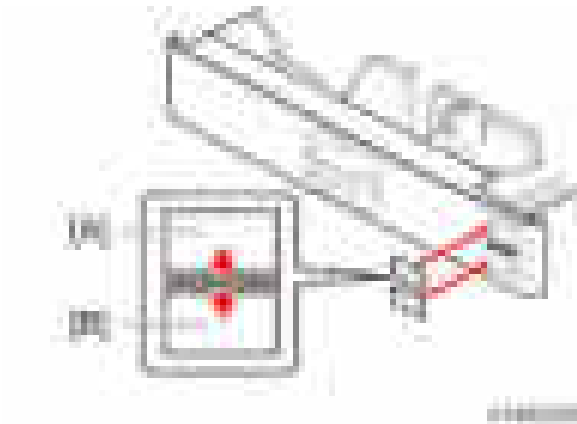
[A]: Tray number decal

[B]: Paper size decal

⬇ Note

- The tray number decal and paper size decal are packaged together with the machine.

9. **Connect the power cord to the machine.**

10. **Turn the power switch ON.**

11. **Set the paper, and check that the paper size set in the paper feed tray is displayed on the operation panel.**

12. Adjust the registration for the paper feed unit.

SP1-002-004 (Side-to-Side Registration Paper Tray 3)

2

Caster Table Type M3

Accessory Check

No.	Description	Q'ty
1	COVER:RIGHT:LOWER	1
2	BRACKET:COUPLING	2
3	SCREW:M4X10	2
4	SCREW:SPRING WASHER:ROUND POINT:M4X10	1
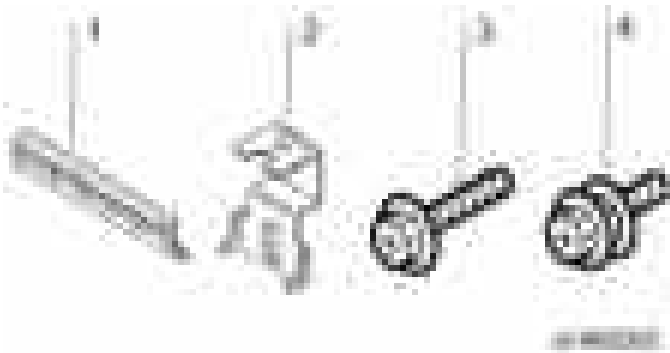
Installation Procedure

⚠ CAUTION

- The machine must be held at the correct locations, and must be lifted slowly.

- If it is lifted with force, handled carelessly or dropped, it will result in an injury.

- If installing this option, turn the power to the machine off, and unplug the power plug from the wall socket.

- If it is installed when the power is on, it will result in an electric shock or malfunction.

- Be sure to join the machine and caster table to prevent equipment from falling over.

- If it is not joined, the machine will move or fall over, which will result in an injury.

2

How to Place MFP on the Caster Table

1. **Attach the three locating pins.**

2. **Holding the grips on the machine, align with the locating pin, and place the machine on the caster table.**

   ⬇**Note**

   - When you lift the machine, hold the lifting handles.

   - In particular, do not lift it by holding the scanner unit, etc., (as it may deform). .

   - Do not put the machine down on the caster table as a temporary resting place. This may cause the machine to deform. Always connect the machine and caster unit properly.

3. **Pull out the 2nd paper feed tray.**

4. **Using a securing bracket, fix the machine to the paper tray unit (spring washer : screw: M4×10: 1).**

5. **Attach the securing brackets [A] at two positions to left and right at the rear of the machine (screws: 1 each).**

6. **Return the paper feed tray to the machine.**

How to Place the Paper Feed Unit PB3150 on the Caster Table

1. **Attach the three locating pins.**

2. **Place the paper feed unit on the caster table.**

3. **Pull out the 1st paper feed tray of the paper feed unit.**

4. **Using a securing bracket, fix the caster table to the paper tray unit (spring washer : screw: M4×10: 1).**

5. **Attach the securing brackets at two positions to left and right at the rear of the machine (screws: 1 each).**

6. **Return the paper feed tray to the machine.**

7. **Holding the grips on the machine, align with the locating pins of the paper feed unit, and place the machine on the paper feed unit.**

Platen Cover PN2000

Accessory Check

Check that you have the accessories indicated below.

No.	Description	Q'ty
1	COVER:PRESSURE PLATE	1
2	SHEET:PRESSURE PLATE:ASS'Y	1
3	SUPPORTER:FEELER	1
4	GUIDE PIN:PRESSURE PLATE:HINGE	2

Installation Procedure

⚠CAUTION

- Unplug the machine power cord before starting the following procedure.

1. **Install the stepped screws (▨ × 2).**

2. **Install the feeler guide [A].**

3. **Install the platen cover [A].**
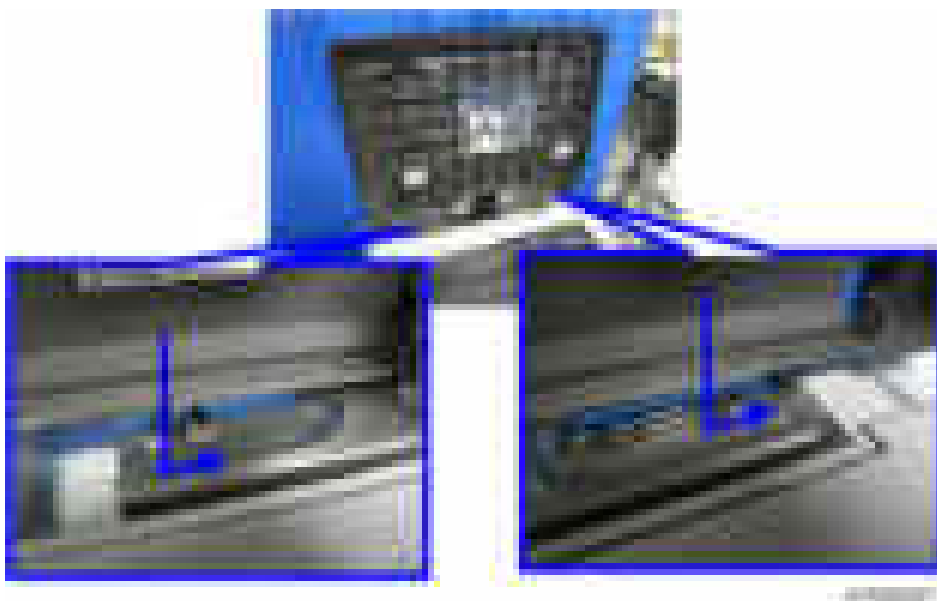
4. Place the platen sheet [A] on the exposure glass.

5. Line up the rear left corner of the platen sheet flush against corner [B] on the exposure glass.
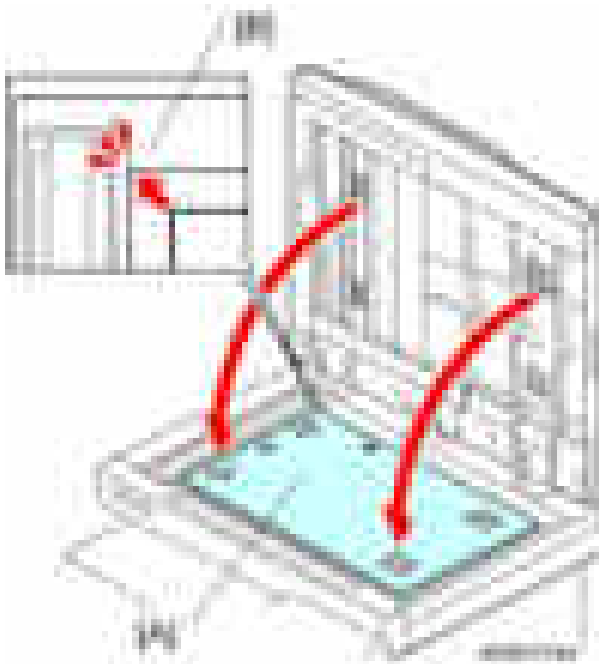
6. Close the platen cover.

7. Open the platen cover.

8. Press the surface of the platen sheet gently to fix it on the platen cover securely.

ARDF DF3090

Accessory Check

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

No.	Description	Q'ty
1	TAPPING SCREW:3X6	2
2	SCREW:POSITIONING:HINGE	1
3	SCREW:HINGE:INNER BACK	1
4	FULL DUG POINT SCREW:FIX:HINGE	2
5	Stamp	1
6	DECAL:CAUTION:ORIGINAL:MANY LANGUAGES	1

Installation Procedure

⚠ CAUTION

- Unplug the copier power cord before starting the following procedure.

1. **Remove all the tapes and shipping retainers.**

2. **Insert the two stud screws ([A] is the larger stud; [B] is the smaller stud).**

3. **Mount the ARDF [A] by aligning the screw keyholes [B] of the ARDF support plate over the stud screws.**

4. **Slide the ARDF toward the front of the machine.**

5. **Secure the ARDF with the two knob screws [C].**
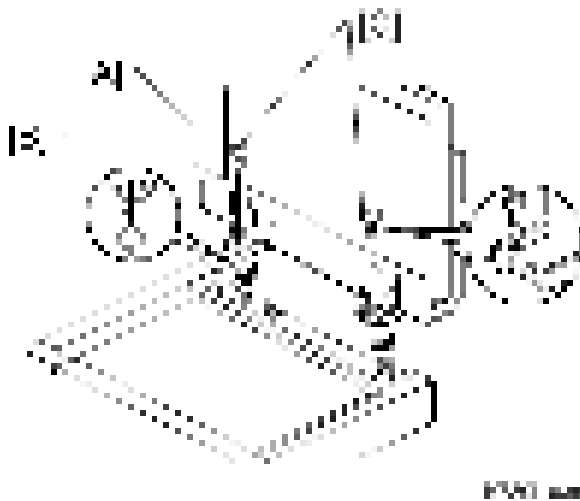
6. **Align the rear left corner of the platen sheet [A] with the corner [B] on the exposure glass.**

7. **Close the ARDF.**

8. **Open the ARDF and check that the platen sheet is correctly attached.**

9. **Lift the ARDF original tray.**

10. **Slide the stamp holder [A] out and install the stamp cartridge in it, if necessary.**
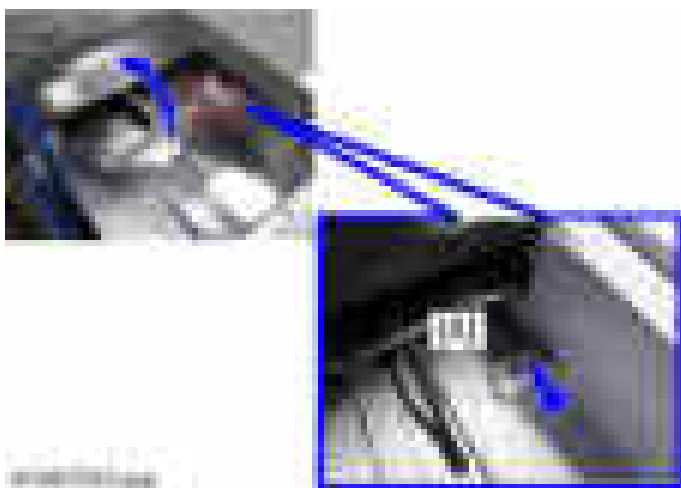
🔽Note

- After the stamp installation, be sure to slide the holder in correctly. If not, jam detection (J001) will occur.

11. **Attach the decals [A] [B] to the top cover as shown. Choose the language that you want.**
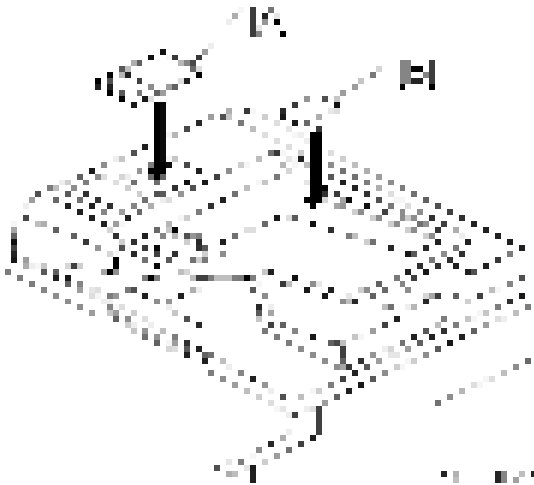
12. **Remove the scanner rear cover [A] (📷×3).**

13. Connect the harness [A].

14. Attach the bracket [A] (🔩×1).

15. Fasten the grounding wire [A] (🔩×1).

16. Attach the rear cover.

17. **Plug in and turn on the main power switch of the machine, and then check the ARDF operation.**

18. **Make a full size copy. Check that the registrations (side-to-side and leading edge) and image skew are correct. If they are not, adjust the registrations and image skew (see ARDF Image Adjustment in the "Replacements and Adjustments" chapter).**

When Feeding Thin Paper

When feeding thin paper, adjust the sliding tray to the point shown below [A].

When feeding normal paper, adjust the sliding tray to the point shown below [B].

If not, it may cause problems as follows:

- Original jam

- Original curl

- Originals cannot be stacked neatly
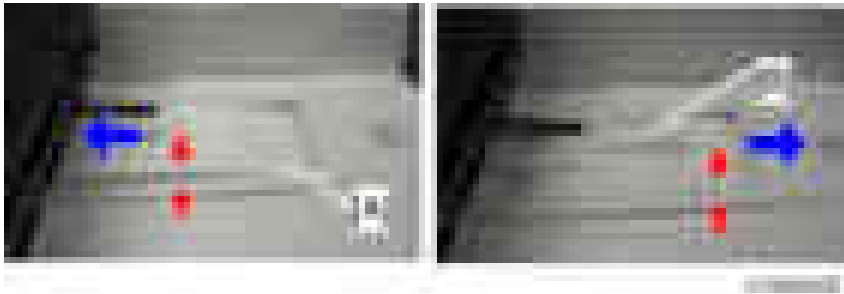
1 Bin Tray BN3110

⬇ Note

- This option is available with only D176/D177.

Accessory Check

No.	Description	Q'ty
1	TRAY:SUPPORT:ASS'Y	1
2	TRAY:EXIT:ASS'Y	1
3	GEAR:Z22	1
4	COVER:TRAY	1
5	TAPPING SCREW:ROUND POINT:3X8	2

Installation Procedure

⚠ CAUTION

- When installing this option, turn the machine power off, and unplug the power plug from the wall socket. If it is installed with the power on, it will result in an electric shock or a malfunction.

Note

- If you install this option together with "Side Tray Type M3", first install this option, and then install "Side Tray Type M3".

- When installing "1 Bin Tray BN3110" on the main frame, install the tray support bar unit and end fence in advance.

1. **Remove the orange tape and shipping retainers.**

2. **Take out the package items (fixing screws, etc.).**

3. **Open the right cover.**

4. **Main power switch cover [A] (×1).**

⚠**CAUTION**

- Remember that there is a tab at the positions in the blue circles.

5. **Paper output tray [A].**

6. **Open the front cover.**

7. **Upper left cover [A] (![]×1).**
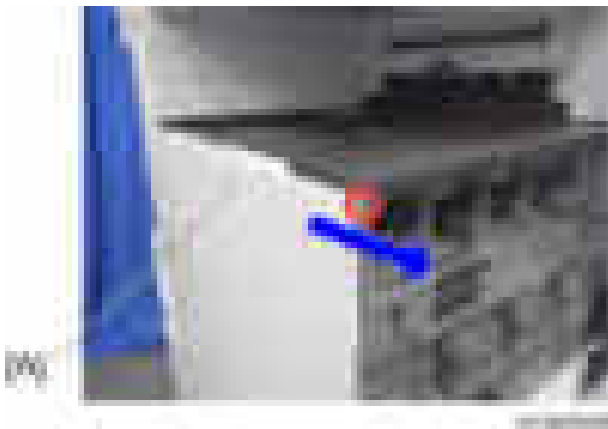
8. **Left rear cover [A] (![]×2).**

9. Inverter tray [A], tray support rod cover [B] (🔩×1).

10. Paper output cover [A] (🔩×1).

11. Attach the gear [A] provided.

12. Attach the 1 bin tray unit [A] (![icon]×1, ![icon]×2).

⚠ CAUTION

- Take care that the harness is not trapped between the 1 bin tray unit and the machine frame.

13. Attach the harness provided.

14. Attach the tray support bar [A] (×1).

🔽Note

- Take out the harness attached in the previous step from the position in the blue circle.

15. Hook the 1 bin tray [A] onto the 1 bin tray unit, aligning the positions in the blue circles.
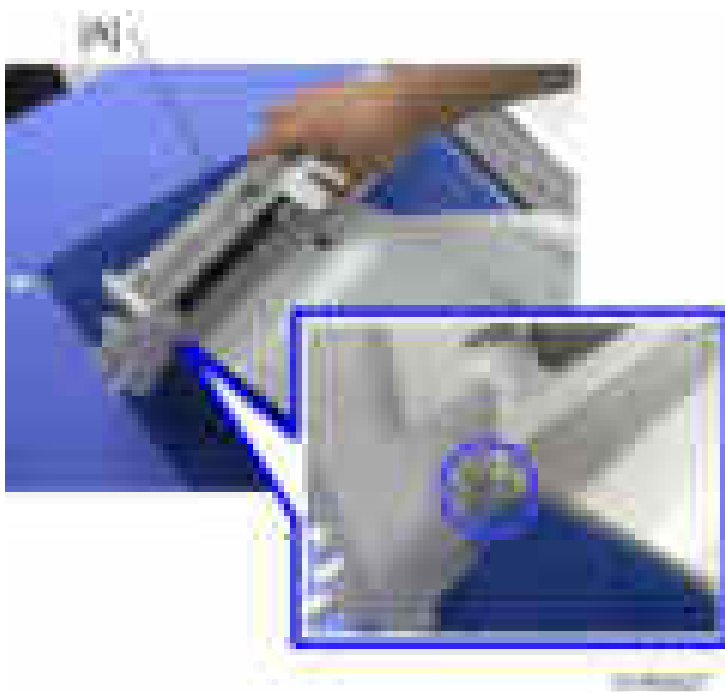
16. Connect the harness to the 1 bin tray, and bring it around.
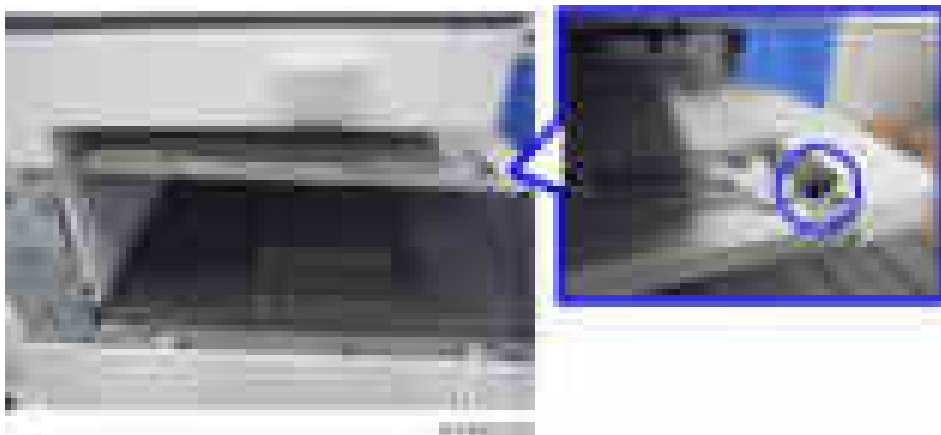
17. **Insert the tray support bar firmly in the 1 bin tray, and attach the harness cover [A].**

18. **Attach the left rear cover, upper left cover and main power switch cover, and close the duplex unit.**

19. **Turn the power switch ON.**

20. **Check that output to this tray can be selected on the operation panel, and check operation.**

Internal Shift Tray SH3070

📥 Note

- This option is available with only D176/D177.

Accessory Check

No.	Description	Q'ty
1	COVER:SHIFT TRAY	1
2	LEVER:EXIT:ASS'Y	1
3	SHEET:PAPER EXIT SUB-UNIT	2
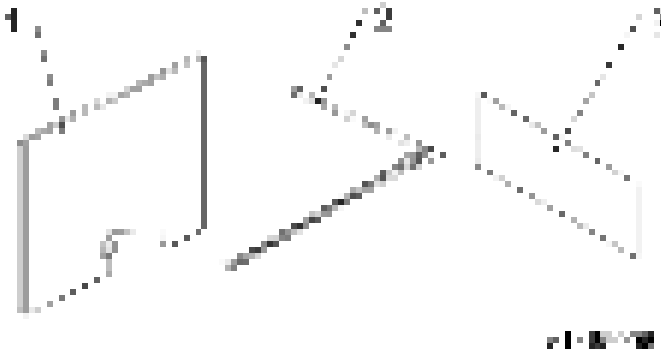
Installation Procedure

⚠ CAUTION

- When installing this option, turn the power to the machine off, and unplug the power plug from the wall socket.
- If it is installed when the power is on, it will result in an electric shock or a malfunction.

1. **Remove the filament tape and packing material.**
2. **Take out the package items (fixing screws, etc.).**

3. **Attach the part [B] to the shift tray [A].**

4. **Paper output tray [A].**

2
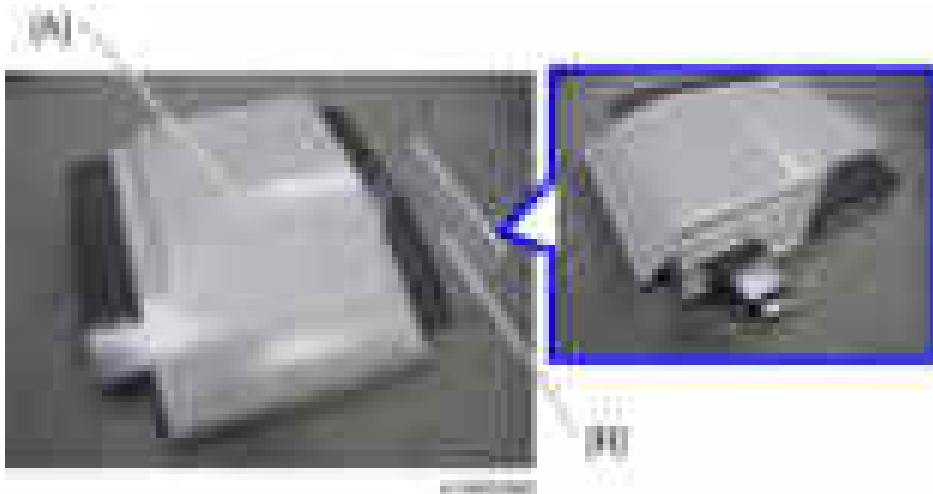
5. **Connector cover [A].**

6. **Attach the shift tray.**

7. **Open the right cover.**

8. **Main power switch cover [A] (×1).**

⚠CAUTION

- Remember that there is a claw at the positions in the blue circles.

9. **Paper output cover [A] (⬚×1).**

10. **Attach the shift tray feeler [A].**

11. Cut the aperture for paper out cover.
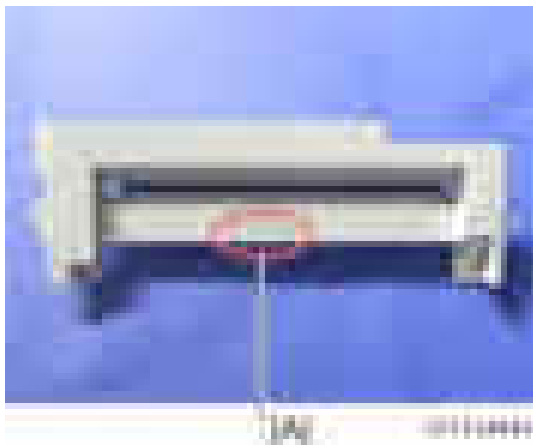
12. Attach the sheets [A] at the both sides of the paper output cover.

[B]: Attach the sheet along this red-dashed line: Allowable margin is within 0 -5 mm from the edge.

[C]: Attach the sheet right at the edge of cover: Allowable margin is 0 mm.
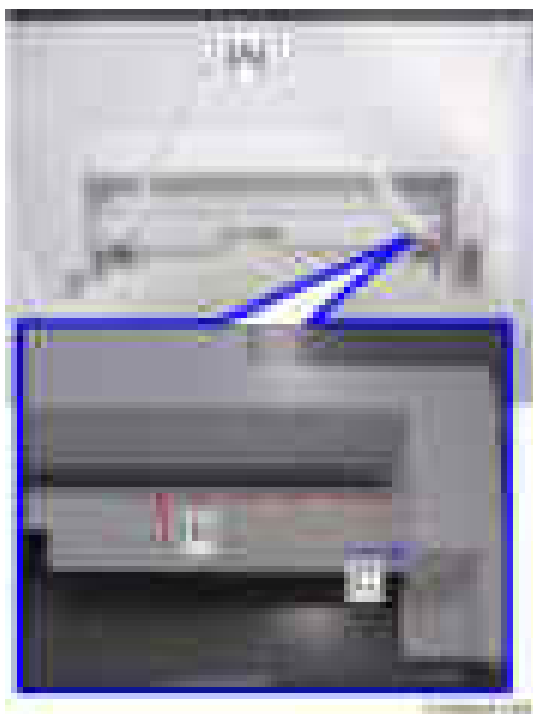
The close-up picture shows on the front side. Do the rear side in the same way as the front.

13. Attach the paper output cover and main power switch cover, and close the duplex unit.

14. Turn the power switch ON.

15. **Check that paper output to the shift tray can be selected at the operation panel, and check the operation.**

2

Side Tray Type M3

💬 **Note**

- This option is available with only D176/D177.

Accessory Check

No.	Description	Q'ty
1	TRAY:LEFT:EXIT	1
2	EXTENSION TRAY:LEFT:EXIT	1
2	EXTENSION TRAY:EXIT:UPPER	1
3	STAY:COUPLING	1
4	SCREW:M4	1
5	TAPPING SCREW:3X8	1
6	TAPPING SCREW:4X10	1
7	BRACKET:RIGHT FRONT	1

Installation Procedure

⚠ CAUTION

- When installing this option, turn the power to the machine off, and unplug the power plug from the wall socket.

- If it is installed when the power is on, it will result in an electric shock or a malfunction.

🔽 **Note**

- The side tray cannot be used together with "Internal Shift Tray SH3070".

- To use together with the "1 Bin Tray BN3110", attach the "1 Bin Tray BN3110" first before installing the side tray.

1. **Remove the orange tape and shipping retainers.**

2. **Take out the package items (fixing screws, etc.).**

3. **Paper output tray [A].**

4. **Open the right cover.**

5. **Main power switch cover [A] (×1).**

⚠ CAUTION

- Remember that there is a claw at the positions in the blue circles.

2

6. Connector cover [A].

7. Attach the bracket [A] (🔩×1).

8. Attach the main power switch cover, and close the duplex unit.

2

9. Attach the side tray unit [A] to the machine, and fix with a knob screw. (×1).

10. Attach the fixing plate [A] (×1).

11. Attach the upper extension tray [A] and the left extension tray [B].

12. Turn the power switch ON.

13. Check that paper output to the side tray can be selected at the operation panel, and check the operation.

Internal Finisher SR3130

⬇ **Note**

- This option is available with only D176/D177.

Accessory Check

No.	Description	Q'ty
1	Staple Cartridge	1
2	Front Right Cover	1
3	Caster Stand	2
4	Bottom Plate	1
5	Left Lower Cover	1
6	Entrance Guide Plate	1
-	Screw - M3 × 6	6
-	Tapping Screw – M4 x 6	1
-	Decal - EMC Address	1

Installation Procedure

⚠️CAUTION

- When you install this option, turn off the power to the machine, and unplug the power plug from the wall socket.

- If it is installed with the power on, it will result in an electric shock or a malfunction.

⬇Note

- This option cannot be used together with "Internal Shift Tray SH3070", "Side Tray Type M3".

- To use this option together with the "1 Bin Tray BN3110", after attaching the bottom plate of this option, attach the "1 Bin Tray BN3110", and then install this option.

- To use this option together with the "Punch Unit PU3040", first attach the "Punch Unit PU3040" before installing this option.

1. **Remove the orange tape and shipping retainers.**
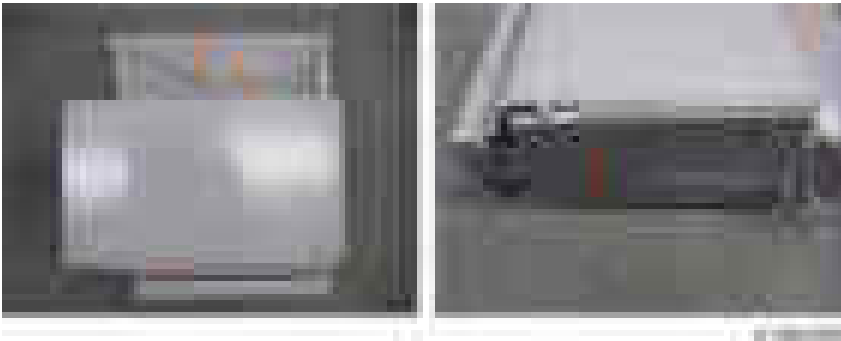
2. **Take out the package items (fixing screws, etc.).**

3. **Open the front cover.**

4. **Paper output tray [A].**

5. **Upper left cover [A] (🔩×1).**
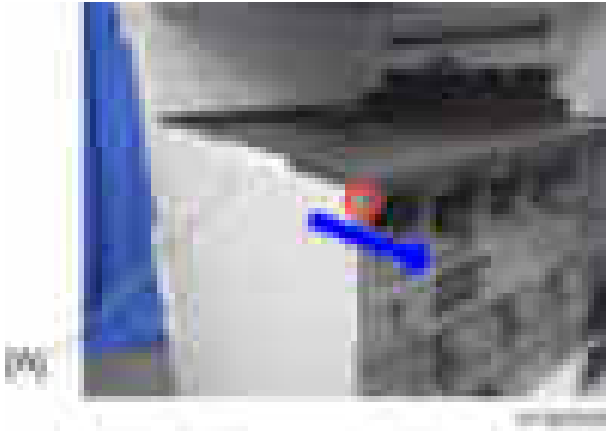
6. **Left rear cover [A] (🔩×2).**

2

7. Inverter tray [A], tray support plate [B].

8. Open the right cover.

9. Main power switch cover [A] (![]×1).

⚠CAUTION

- Remember that there is a claw at each location in the blue circles.

10. **Paper output cover [A] (×1).**

11. **Connector cover [A].**

12. **Paper output lower cover [A] (×3).**

13. **Upper rear inner cover [A] (▨×2).**

14. **Install a screw [A] removed in step 12.**

15. **While pressing the bottom plate [A] into the area shown by the blue circle [B], insert it into the slot shown by the blue circles [C][D] (⬚×3).**
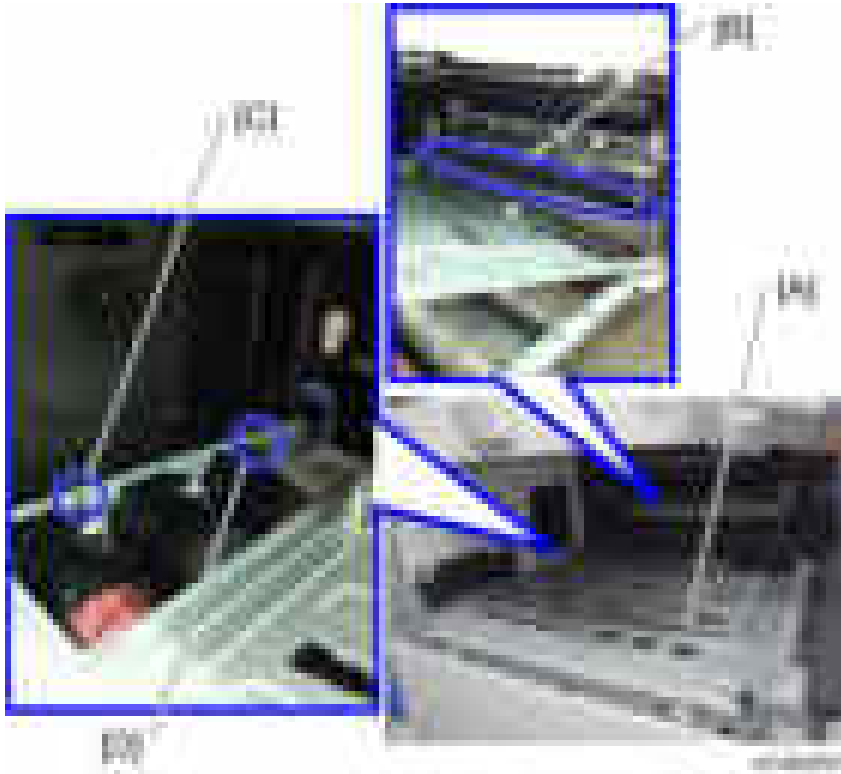
🔽Note

- The following procedure is the easiest way to set this component.
- 1) Slip the bottom plate [A] into the position in the blue circle [B].
- 2) Insert the bottom plate [A] into the hole in the blue circle [C].
- 3) When the bottom plate [A] is picked up (see below), it can be inserted into the hole in the blue circle [D].

16. **Attach the upper rear inner cover.**

17. **Attach the paper output cover.**

    ⬇ Note

    • Up to this point, the procedure is the same as punch unit installation (for fitting the punch unit, refer to Step 3 and later of the Punch unit installation procedure).

18. **Attach the connector cover.**

19. **Attach the main power switch cover, and close the right cover.**

20. **Slide the finisher right front cover [A] from left to right to attach it (⬛×1).**
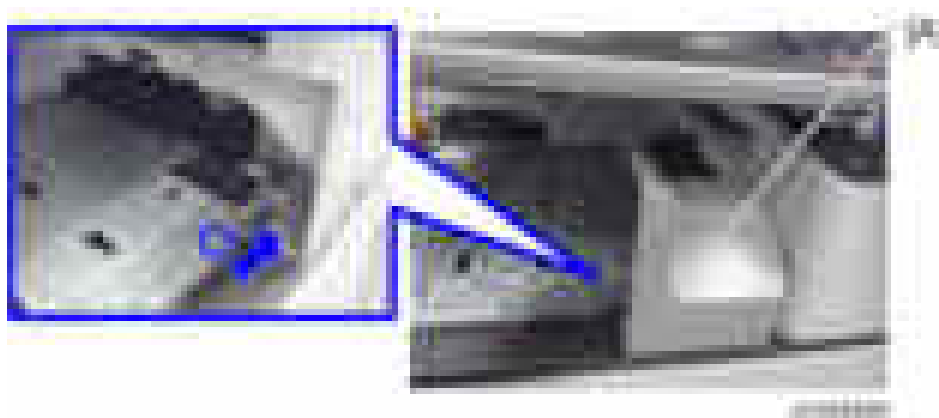
21. **Attach the inverter tray.**

22. **Attach the entrance guide plate [B] to the finisher [A] (×2).**

23. **Slide the finisher [A] along the rail of the bottom plate from the left-hand side of the machine to attach it (×1).**
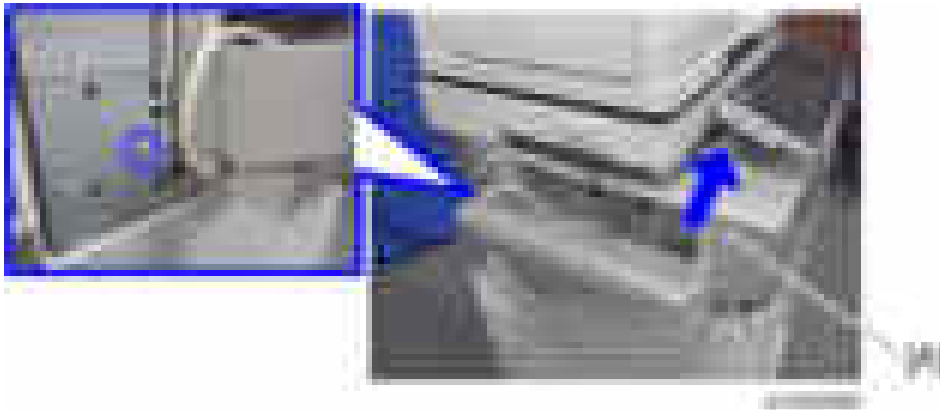
🔸Note

- Hold the front side [A] of the inner finisher as shown below to check if the inner finisher is correctly set in the rail of the bottom plate.

2

24. **Attach the left rear cover.**

25. **Insert the upper left cover [A] from the front, and slide it to attach it.**

26. **Attach caster stands [A].**

🔽 Note

- Because the weight is biased to the right of the machine if the inner finisher is installed, caster stands are required on the left side. Because they are included with the finisher, install these components at the same time as you install the inner finisher.

27. **Connect the interface cable to the machine.**

28. **Move forward the stapler unit, then set the staple cartridge [A].**
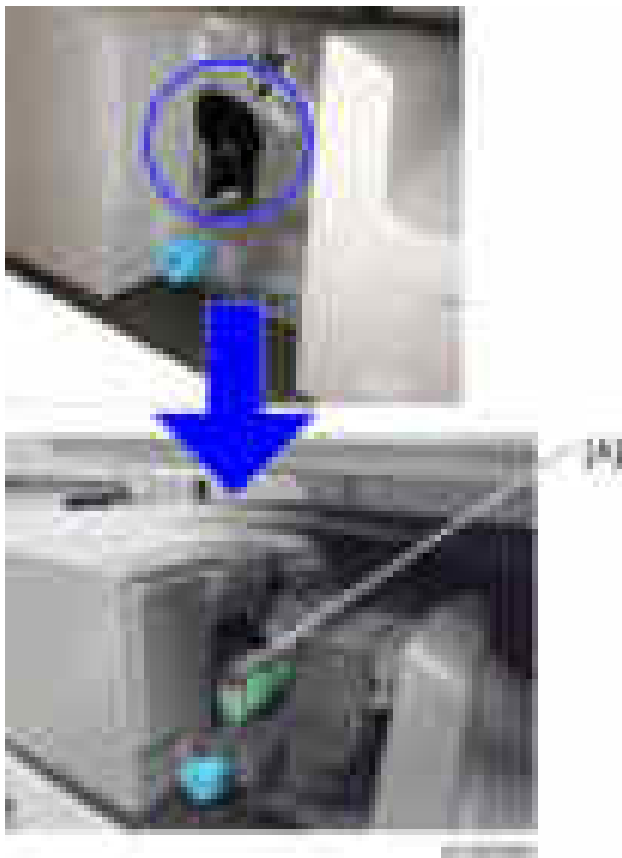
29. **Turn the power switch on.**
30. **Check that the finisher can be selected at the operation panel, and check the finisher operation. Also when punch unit is installed, check the punching operation.**

Punch Unit PU3040

⬇Note

- This option is available with only D176/D177.

Accessory Check

No.	Description	Q'ty
1	TONER HOPPER:ASS'Y	1
2	COVER:FRONT:PUNCH UNIT:ASS'Y	1
3	COVER:TRAY:LOWER FRONT	1
4	COVER:TRAY:LOWER REAR	1
5	HOLDER:LOCK:RELEASE:PUNCH	1
-	SCREW:M3X6	3
-	KNOB SCREW:M3	1
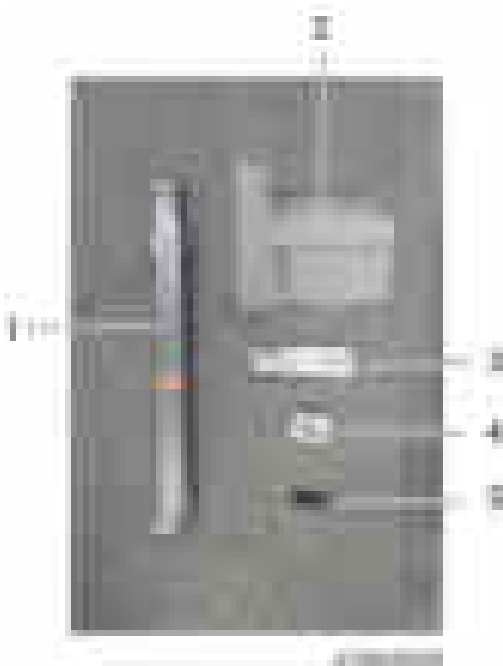
Installation Procedure

⚠️CAUTION

- When installing this option, turn the power to the machine off, and unplug the power plug from the wall socket.

- If it is installed when the power is on, it will result in an electric shock or a malfunction.

⬇️Note

- When supplied together with the "Internal Finisher SR3130", attach this option before installing the "Internal Finisher SR3130"

- If the "Internal Finisher SR3130" is already attached, attach this option after removing the finisher.

1. **Take out from the box, and remove the filament tape and packing material.**

2. **Remove the finisher and finisher front right cover from the machine.**

3. **Perform steps 1 to 17 of the installation procedure for the "Internal finisher SR3130".**

4. **Change the fixing position of the bracket [A] of the bottom plate (×1).**
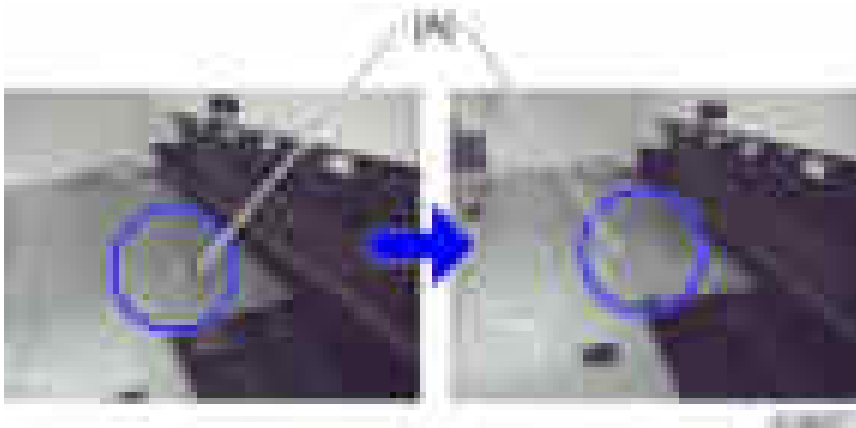
5. Replace the lock holder of the bottom plate with the lock holder [A] provided (![screw]×1).

6. Attach the main power switch cover.

7. Pass the shafts [B] of the punch unit [A] through the bearings [C] of the bottom plate, and attach to the machine (![screw]×1, knob screw).

   If it is difficult to insert by probing, look from the side while you insert it into the bearings of the bottom plate.
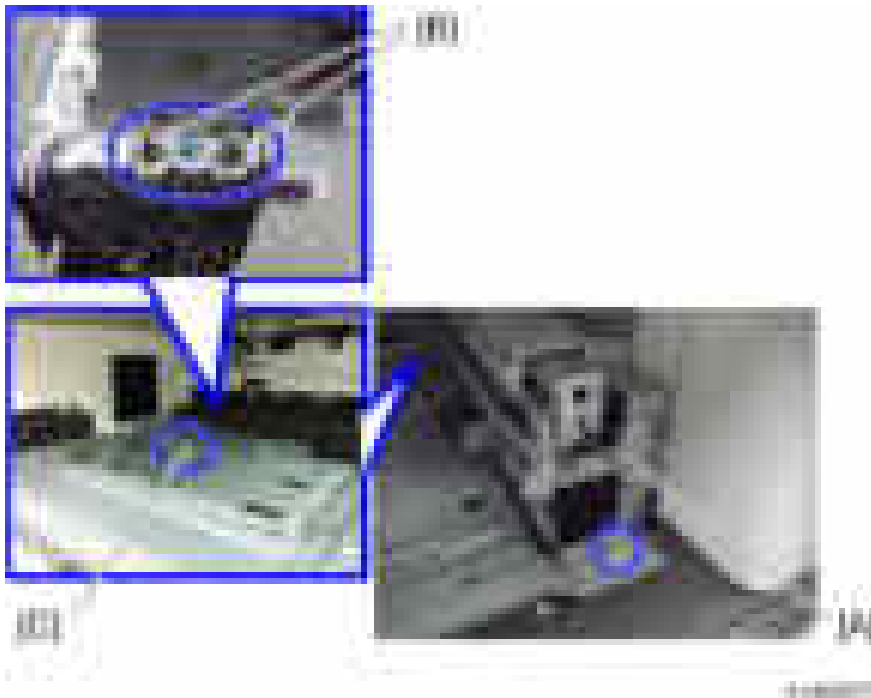
8. **When installing the punch unit in a finisher that is already installed, remove the relay guide plate [A] (×2).**

🔻Note

- This step is unnecessary when installing the finisher and punch unit at the same time.

9. Attach the front right cover [A] provided, inserting the claws (×1).

10. Insert the hopper [A].

11. **Slide the finisher [A] along the rail of the bottom plate from the left-hand side of the machine to attach it (×1).**
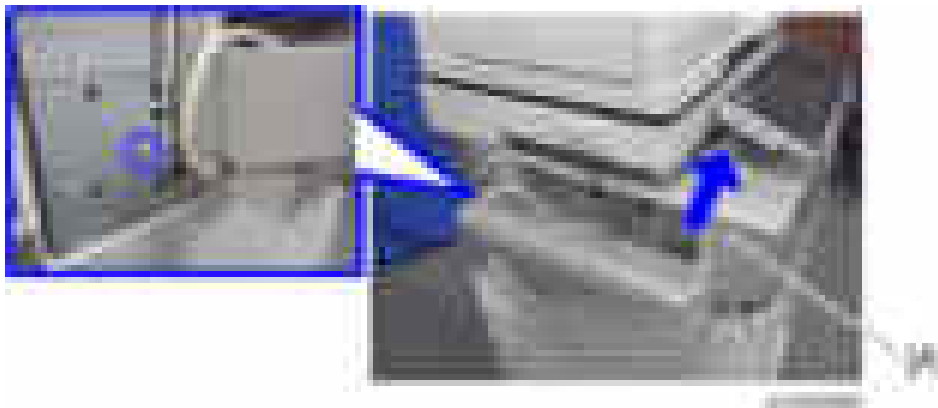
12. **Attach the components [A] and [B] to the finisher (×2).**
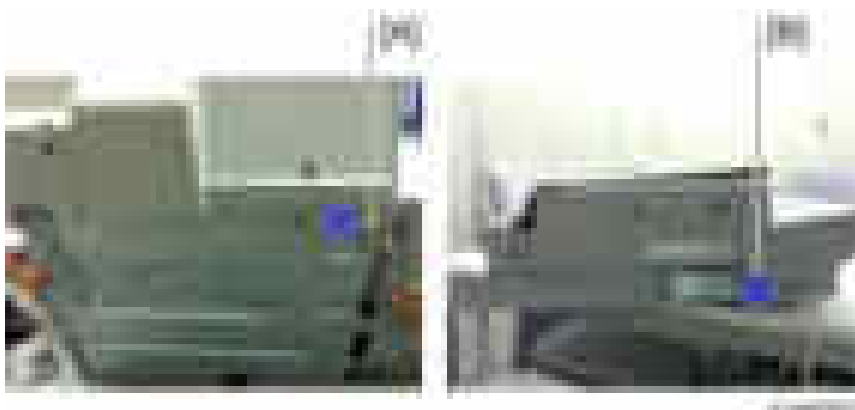
13. **Attach the left rear cover**

14. **Insert the upper left cover [A] from the front, and slide it to attach it.**

15. **Attach stabilizers [A].**

⬇️**Note**

- Because the weight is biased to the right of the machine if the inner finisher is installed, anti-tip components are required on the left side. Because they are included with the finisher, install these components at the same time as you install the inner finisher.

16. **Connect the interface cable to the machine.**

17. Move forward the stapler unit, and then set the stapler [A].

18. Turn the power switch on.
19. Check that the finisher can be selected at the operation panel, and check the finisher and punch operation.

Internal Finisher SR3180

⬇ **Note**

- This option is available with only D176/D177.

Accessory Check

No.	Description	Q'ty
1	Bottom Plate	1
2	Left Lower Cover	1
3	Paper Output Tray	1
4	TAPPING SCREW:3X8	2
5	TAPPING SCREW:3X8	2
6	TAPPING SCREW:3X8	2
7	SCREW:M3X6	3
8	TAPPING SCREW:3X6	1
9	TAPPING SCREW:4X8	1
10	Slide Rail	1
11	Nylon Clamp	1
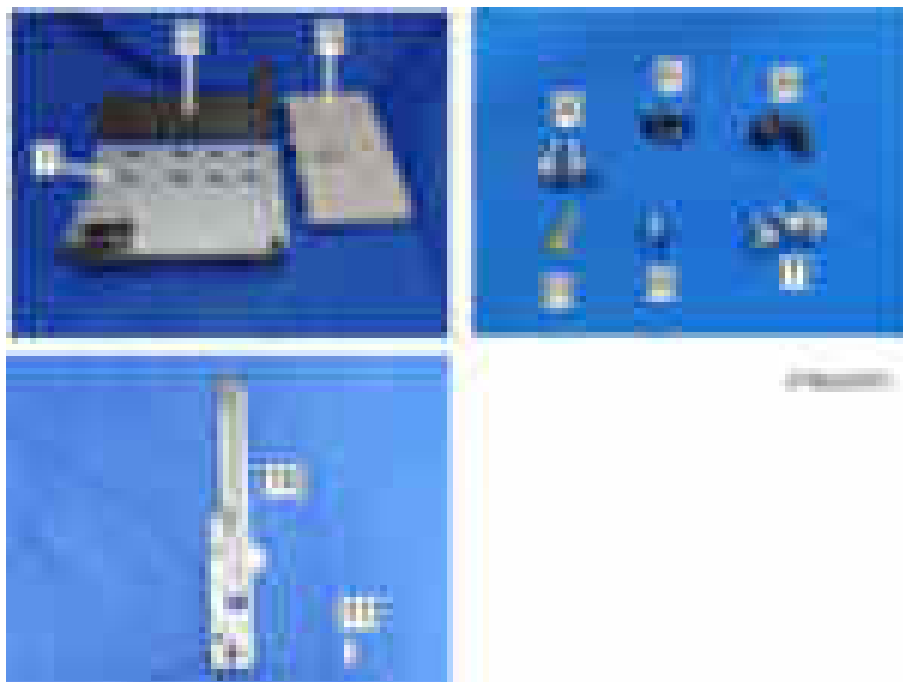
Installation Procedure

⚠️CAUTION

- When you install this option, turn off the power to the machine, and unplug the power plug from the wall socket.

- If this option is installed with the power on, it will result in an electric shock or a malfunction.

⬇ Note

- Cannot be used together with "Internal Shift Tray SH3070" and "Side Tray Type M3".

- For using this option together with "1 Bin Tray BN3110", attach the bottom plate of this option at the beginning, then install the "1 Bin Tray BN3110", followed by installing this option.

1. **Remove the orange tape and shipping retainers.**

2. **Remove the screw securing the unit (x 1).**

3. **Remove the shaft [B] from the slide rail [A] (x 1).**

4. Remove the Paper output cover [A] (x 2).
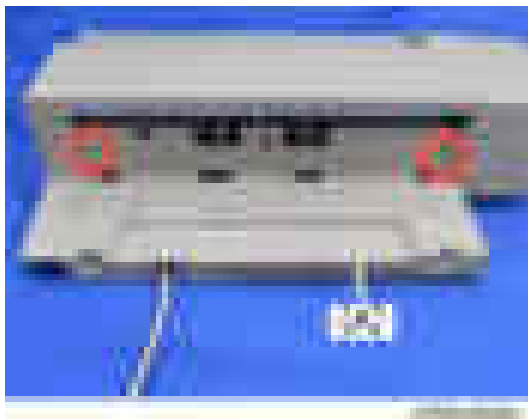
5. Place the slide rail [A] under the internal finisher [B].

6. Insert the shaft [A] into the holes located in the slide rail and internal finisher, and then fasten with the screw (x 1).

7. Attach the paper output cover (removed in step 4) [A] (x 2).
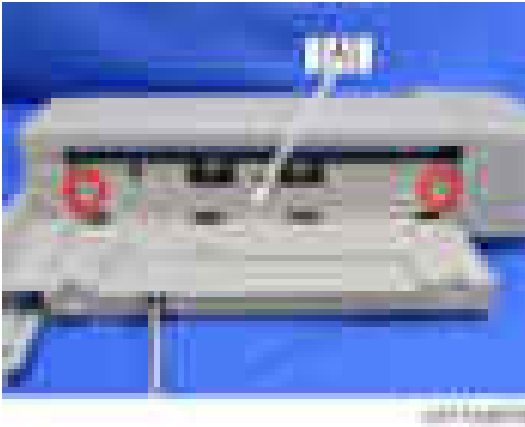
8. Remove the Paper output tray [A]. (Take hold of the claw with your fingers)

9. Open the front cover.

10. Remove the Left upper cover [A] (x 1).
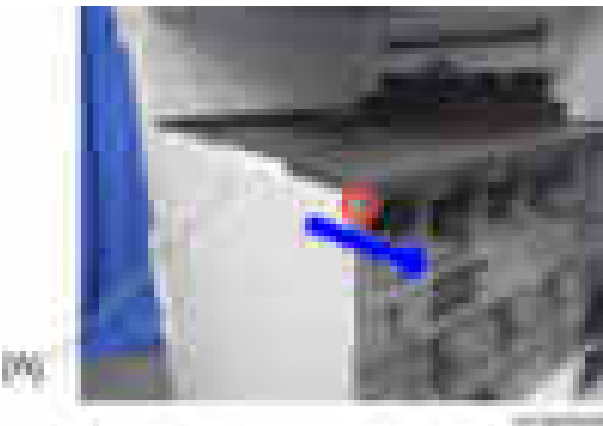
11. Remove the Left rear cover [A] (🔧 x 2).

12. Remove the Inverter tray [A] and tray support plate [B].

13. Open the duplex unit.

14. Remove the Main power switch cover [A] (🔧 x 1).

⚠️**CAUTION**

- The main power switch cover has three tabs: two on the left side (paper exit) and one on the right side (right cover).

2

15. **Remove the Paper exit cover [A] (x 1).**

16. **Remove the Connector cover [A].**

17. **Remove the Paper output lower cover [A] (x 2).**

    Note

    - The lower inside cover can be removed together with the paper output lower cover, since the inside cover is secured on the paper output lower cover with two screws.

18. **Remove the lower inside cover [B] from the paper output lower cover [A] (x 2).**

19. **Remove the Upper inside cover [A] (🔩 x 2).**

20. **Insert the bottom plate [A] into the hole inside.**

21. **Install the bottom plate [A] (🔩 x 3, Accessory No. 7).**

2
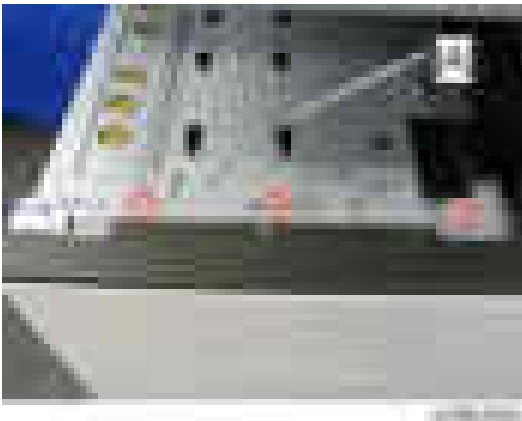
22. **Install the lower inside cover (removed in step 13) [A] in the finisher (x 2, Accessory No.5).**

23. **Install the upper inside cover (removed in step 19) [A] (x 2).**
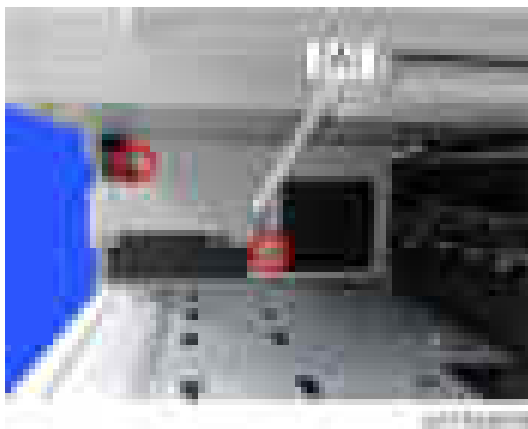
24. **Attach the tray support plate (removed in step 12) [A].**

25. **Install the paper exit cover (removed in step 14 and step 15) [A] and the connector cover [B].**

> ⚠**CAUTION**
>
> • Touching the moving parts inside of the cover can result in an injury. To avoid this, be sure to install the connector cover [B].
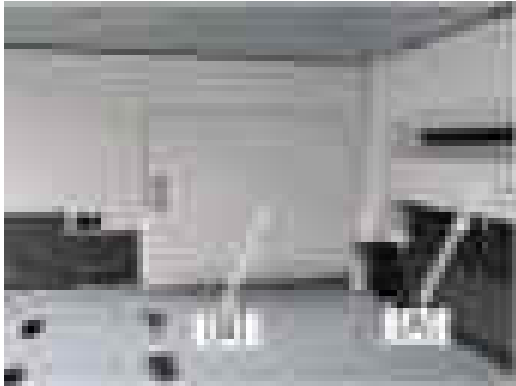
26. **Attach the main power switch cover [A] (removed in step 14) and then close the duplex unit.**

27. **Attach the finisher [B].**

28. Secure the finisher (🖼 x 1, Accessory No.8).
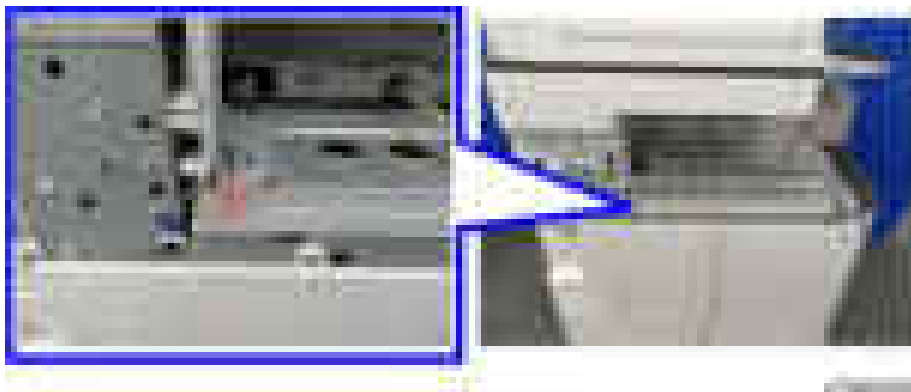
29. Attach the left upper cover [A] and the left rear cover [B] (removed in step 10 and 11).

30. Attach the left lower cover (🖼 x 2, Accessory No.6).

31. Attach the paper output tray [A] (![icon] x 2, Accessory No.4).
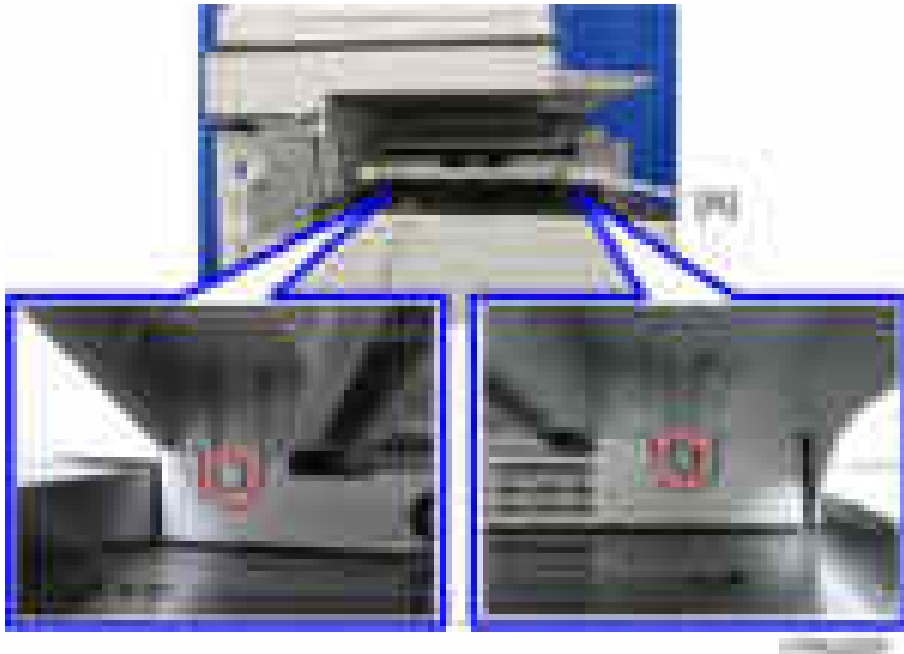
32. Attach the inverter tray removed in step 12.

33. Remove the Connector cover [A] (Release the tab).

34. Connect the interface cable.

35. Attach the nylon clamp [A] as shown below (x 1, Accessory No.9).
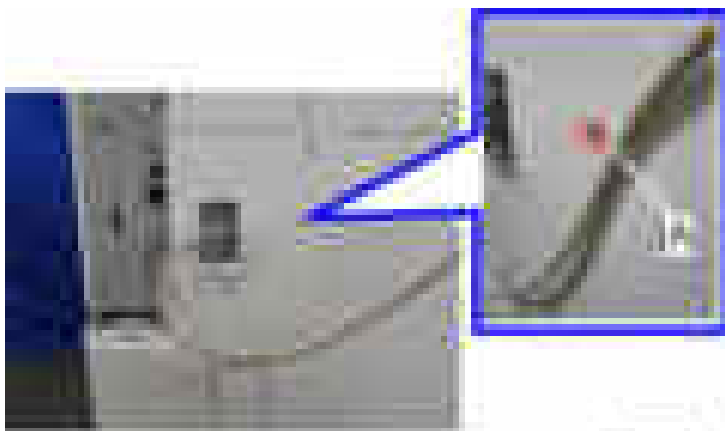
36. Turn the main power ON.

37. Ensure that the operation panel displays finisher jobs properly and that it works properly.

Staple Setting As an Initial Setting

📥Note

- To adjust the strength of crimp between sheets of paper stapled, there is a setting which makes single/ double staple changeable into each other.
- The power of crimp is weakened when there is an image (toner) on the point where is to be stapled. There also is a setting to mask the image on the point for staple, in order to avoid the strength of crimp to be weakened.
- Depending on users demands, explain the settings/ methods of the settings by checking the following instruction.

<How to change the setting of Staple Method (Single/ Double) for Stapleless Stapler>

1. [User Mode/ counter]
2. [System Setting]
3. [General Setting] and [next]
4. [Stapling Method for Stapleless Stapler]

<How to set Margin Erase for Stapleless Stapler>
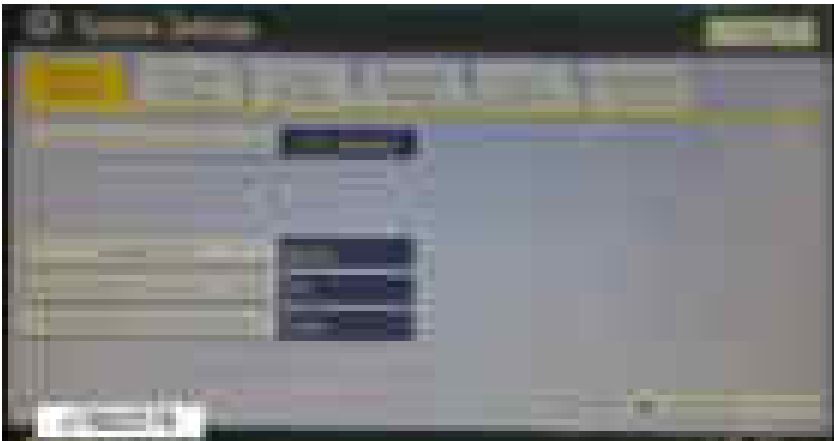
1. [User Mode/ counter]
2. [System Setting]
3. [General Setting] and [next]

4. **[Erase Margin for Stapleless Stapler]**
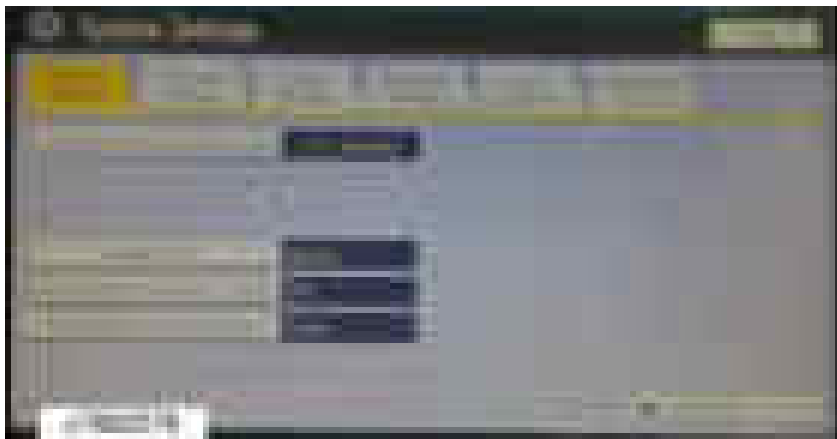
Anti-Condensation Heater

⚠ CAUTION

- Unplug the machine power cord before starting the following procedure.

- Do the following procedure not to damage any harnesses.

- Check that harnesses are not damaged or pinched after installation.

Anti-Condensation Heater (Scanner)

↓ Note

- This option is provided as a service part.

- If you want to install Anti-Condensation Heater (Scanner), both "heater for scanner" and "electrical part" are required.

RTB 55: New information

RTB 68
RTB 69
Modified

Accessory Check

< Heater for scanner >

RTB 55
Lists are
modified

Description	Q'ty
SCREW:M3X3	2
HEATER:230V:9W	1
BRACKET:DEHUMIDIFIER:HEATER	1

< Electrical part >

Description	Q'ty
TAPPING SCREW:3X6	3
CLAMP:LWSM-0605A	4
PCB:DHB	1
HARNESS:SCANNER:PCU:HEATER:EXP	1
HARNESS:DC:HEATER:DHB	1
HARNESS:AC:HEATER:DHB:EU	1

Installation Procedure

1. **Remove the power supply box (page 440).**

2. **Remove the HVP-CB unit (page 441).**

3. **Route the combined Blue/White harness.**

Note

- The harness will connect to the relay unit. See the details in step 5.

4. **Re-install the HVP-CB unit and power supply box.**

5. **Secure the relay board to the main machine and connect the Blue/White harness to the socket on the board (× 2).**

👇**Note**

- The following picture shows the location of connectors on the PCB:DHB.

- [A]: For PSU
- [B]: For PCDU/Scanner Heater
- [C]: For Paper Tray Heater

6. **Connect the harnesses on the relay board to the sockets on the PSU.**

👇**Note**

- Two types of harnesses are packed with the heater. Both the Blue/White one [A] and the Gray one [B] must be connected as below.

7. Route the harness around the outside of the PSU and pull the harness out of the power supply box through the hole [A] (▇x 4).

8. Route the harness in the direction of the scanner (⬛ x 5).

9. Route the harness in the rear side of the scanner.

🔽Note

- Do not connect the harness at this time. It will be connected in a later procedure.

10. Remove the rear right cover (**page 259**).

11. Remove the Scanner rear cover (**page 260**).

12. Remove the Exposure Glass (**page 280**).

13. Move the carriage to the center.

14. Attach the bracket [A] to the left side of the scanner.

15. Install the scanner heater [A] (⬚ × 2).
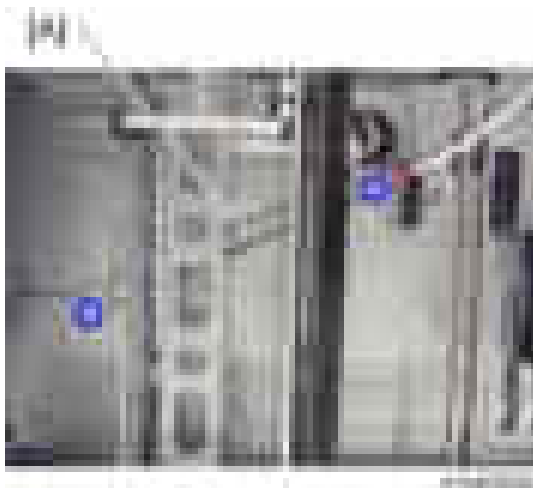
16. Route the harness while inserting into the claw.
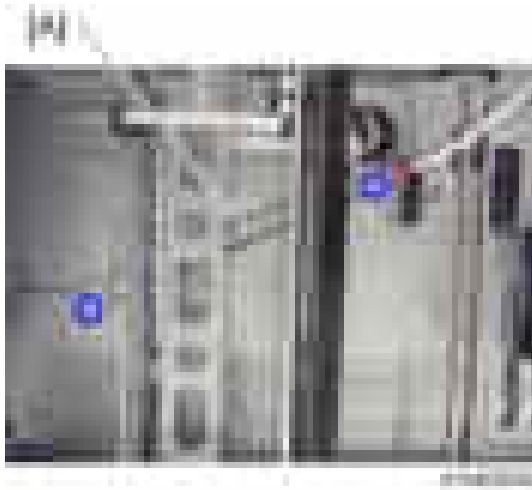
17. Pull the harness out of the frame hole.

RTB 55: Two new steps inserted here

18. Connect the harness with the other harness shown in step 9.

19. Reattach all the removed covers.

↓Note

- Setting SP5-805-001 to "1" allows the heater to work in Ready Mode; however, energy consumption will slightly increase.

- Fig .1 shows the operating conditions of each heater and operating mode in SP5-805-001 settings.

Fig.1

Heater Option	SP5-805-001	Plug in	Energy Saving Mode	Ready Mode	Printing
Main machine paper tray heater	0: OFF	ON	ON	OFF	OFF
	1: ON	ON	ON	ON	OFF
Optional paper tray heater	0: OFF	ON	ON	OFF	OFF
	1: ON	ON	ON	ON	OFF
Anti-condensation heater (scanner)	0: OFF	ON	ON	OFF	OFF
	1: ON	ON	ON	ON	OFF
Anti-condensation heater (PCDU)	0: OFF	ON	ON	OFF	OFF
	1: ON	ON	ON	ON	OFF

Anti-Condensation Heater (PCDU)

⬇Note

- This option is provided as a service part.
- If you want to install Anti-Condensation Heater (PCDU), both "heater for PCDU" and "electrical part" are required.

Accessory Check

< Heater for PCDU >

Description	Q'ty
TAPPING SCREW:WASHER:3X8	1
HEATER:PHOTOCONDUCTOR:EU:ADHESION	1
DECAL:H-TEMP WARNING:HEATER:OPTION	1

< Electrical part >

Description	Q'ty
TAPPING SCREW:3X6	3
CLAMP:LWSM-0605A	4
PCB:DHB	1
HARNESS:SCANNER:PCU:HEATER:EXP	1
HARNESS:DC:HEATER:DHB	1
HARNESS:AC:HEATER:DHB:EU	1

Installation Procedure

1. **Remove the power supply box (page 440).**
2. **Remove the HVP-CB unit (page 441).**

3. **Route the combined Blue/White harness.**

⬇Note

- The harness will connect to the relay unit. See the details in step 5.

4. **Re-install the HVP-CB unit and power supply box.**

5. **Secure the relay board to the main machine and connect the Blue/White harness to the socket on the board (× 2).**

⬇Note

- The following picture shows the location of connectors on the PCB:DHB.

- [A]: For PSU
- [B]: For PCDU/Scanner Heater
- [C]: For Paper Tray Heater

6. **Connect the harnesses on the relay board to the sockets on the PSU.**

   ⬇ Note

   - Two types of harnesses are packed with the heater. Both the Blue/White one [A] and the Gray one [B] must be connected as below.

7. **Route the harness around the outside of the PSU and pull the harness out of the power supply box through the hole [A] (▦x 4).**

8. **Route the harness in the direction of the scanner (▦ x 5).**

9. **Route the harness in the rear side of the scanner.**

Note

- Do not connect the harness if the heater for scanner is not to be installed.

10. **Remove Feed Trays 1 and 2.**

11. **The connecter cover located inside the machine [A] (× 1).**

12. Temporarily tighten a screw at the top.

13. Install the heater [A] by connecting the connecter to the inside of the machine, then tighten the screw completely.

🔽Note

- Hold the heater against the inside during final tightening.

14. Re-install the connecter cover (🔩 × 1).

15. Reassemble the machine.

🔽Note

- Setting SP5-805-001 to "1" allows the heater to work in Ready Mode; however, energy consumption will slightly increase.

- Fig .1 shows the operating conditions of each heater and operating mode in SP5-805-001 settings.

Fig.1

Heater Option	SP5-805-001	Plug in	Energy Saving Mode	Ready Mode	Printing
Main machine paper tray heater	0: OFF	ON	ON	OFF	OFF
	1: ON	ON	ON	ON	OFF
Optional paper tray heater	0: OFF	ON	ON	OFF	OFF
	1: ON	ON	ON	ON	OFF
Anti-condensation heater (scanner)	0: OFF	ON	ON	OFF	OFF
	1: ON	ON	ON	ON	OFF
Anti-condensation heater (PCDU)	0: OFF	ON	ON	OFF	OFF
	1: ON	ON	ON	ON	OFF

2

Anti-Condensation Heater for LCT

⚠ **CAUTION**

- Unplug the machine power cord before starting the following procedure.

- Do the following procedure not to damage any harnesses.

- Check that harnesses are not damaged or pinched after installation.

Connecting to Main Machine

Accessory Check

No.	Description	Q'ty
1	Tray heater	1
2	Tapping screw: M3 X 8	1
3	PCB: DHB	1
4	Harness for tray	1
5	Harness for DC	1
6	Harness for AC	1
7	Tapping screw: M3 X 6	3

Installation Procedure

< Steps for heater attachment >

1. Remove trays 1 and 2 from the machine.

2. Connect the connector of the heater to the connector of the main machine.
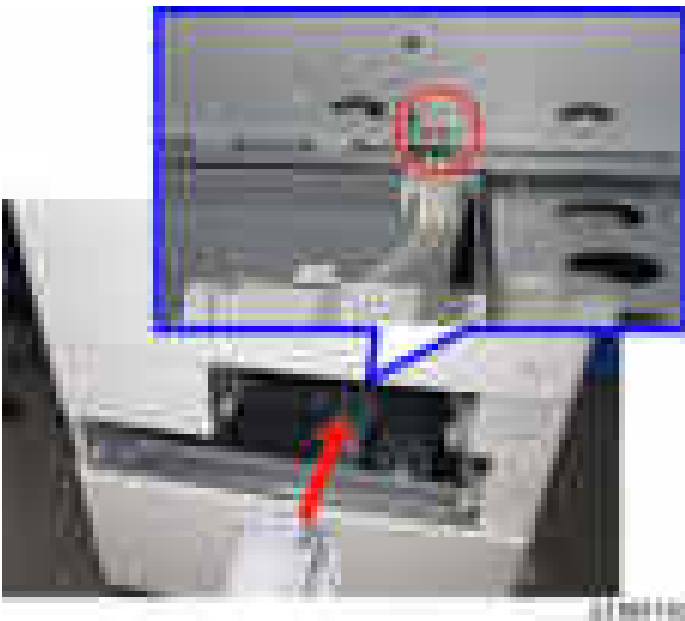
3. **Install the heater inside the machine (▨x 1).**

4. **Reassemble the machine.**

< Steps for PCB and harness attachment >

1. **Remove the rear lower cover. (page 259)**

2. **Attach PCB: DHB(▨X 3)**

3. **Connect the two harnesses between "PCB: DHB " and "PSU".**

🔽**Note**

- Red dashed circled cable is only white for NA, red for EU/AA.
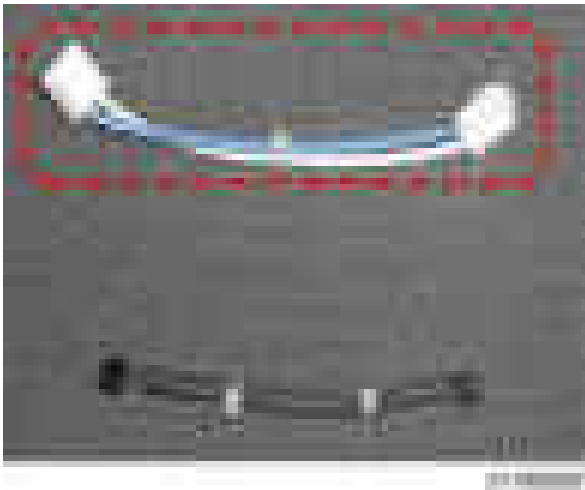
- The following picture shows the location of connectors on the PCB:DHB.

- [A]: For PSU
- [B]: For PCDU/Scanner Heater
- [C]: For Paper Tray Heater

173
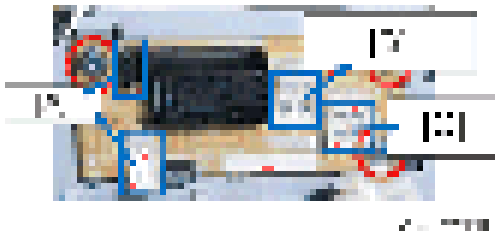
4. **Connect the connector 1.**

5. **Connect the connector 2 to the harness already attached.**

6. **Attach the connector 3 for optional paper bank.**

🔽**Note**

- This cable is only white for NA/EU/AA.

7. **Remove the bracket (▦X 1) when additional heater is attached on optional paper bank.**

🔽**Note**

- The removed bracket is not be used.

Connecting to Paper Feed Unit PB3210/PB3220

Accessory Check

No.	Description	Q'ty
1	Tray heater	1
2	Harness	1
3	Spring screw:M4 X 10	1

Installation Procedure

< Steps for heater attachment >

1. **Remove trays from the machine.**

2
2. Connect the connector of the heater to the connector of the main machine.

3. Install the heater inside the machine (x 1).

4. Reassemble the machine.

5. Remove the rear cover (Paper Feed Unit PB3210/PB3220)

6. Release clamps and connect the harness to these two points. (▆×2)

7. Reassemble the machine.

8. Power on the main switch.

↓ Note

- Setting SP5-805-001 to "1" allows the heater to work in Ready Mode; however, energy consumption will slightly increase.

- Fig .1 shows the operating conditions of each heater and operating mode in SP5-805-001 settings.

Fig.1

Heater Option	SP5-805-001	Plug in	Energy Saving Mode	Ready Mode	Printing
Main machine paper tray heater	0: OFF	ON	ON	OFF	OFF
	1: ON	ON	ON	ON	OFF
Optional paper tray heater	0: OFF	ON	ON	OFF	OFF
	1: ON	ON	ON	ON	OFF
Anti-condensation heater (scanner)	0: OFF	ON	ON	OFF	OFF
	1: ON	ON	ON	ON	OFF

Heater Option	SP5-805-001	Plug in	Energy Saving Mode	Ready Mode	Printing
Anti-condensation heater (PCDU)	0: OFF	ON	ON	OFF	OFF
	1: ON	ON	ON	ON	OFF

Connecting to Paper Feed Unit PB3150

Accessory Check

No.	Description	Q'ty
1	Tray heater	1
2	Harness	1
3	Spring screw:M4 X 10	1

Installation Procedure

< Steps for heater attachment >

1. **Remove trays from the machine.**

2

2. **Connect the connector of the heater to the connector of the main machine.**

3. **Install the heater inside the machine (🔧x 1).**

4. **Reassemble the machine.**

5. **Remover the rear cover (Paper Feed Unit PB3150)**

6. **Remover the controller board (Paper Feed Unit PB3150)**

7. **Connect the harness.**

8. **Reattach the controller board.**

9. **Release clamps and connect the harness. (▇× 2)**

10. **Reassemble the machine.**

11. **Power on the main switch.**

◆Note

- Setting SP5-805-001 to "1" allows the heater to work in Ready Mode; however, energy consumption will slightly increase.

- Fig .1 shows the operating conditions of each heater and operating mode in SP5-805-001 settings.

Fig.1

Heater Option	SP5-805-001	Plug in	Energy Saving Mode	Ready Mode	Printing
Main machine paper tray heater	0: OFF	ON	ON	OFF	OFF
	1: ON	ON	ON	ON	OFF
Optional paper tray heater	0: OFF	ON	ON	OFF	OFF
	1: ON	ON	ON	ON	OFF
Anti-condensation heater (scanner)	0: OFF	ON	ON	OFF	OFF
	1: ON	ON	ON	ON	OFF

Heater Option	SP5-805-001	Plug in	Energy Saving Mode	Ready Mode	Printing
Anti-condensation heater (PCDU)	0: OFF	ON	ON	OFF	OFF
	1: ON	ON	ON	ON	OFF

2

Key Counter Bracket Type M3

Accessory Check

No.	Description	Q'ty
1	Bracket: Key counter holder: Ass'y	1
2	Cover: key counter holder: Ass'y	1
3	Decal: ROHS:CHN:10:10mm	1
4	Label: ROHS:CHN:DATE: 40mm	1
5	Screw M3x8	1
6	Tapping screw	3
7	Clamp: LWS-1211Z	2
8	Clamp: NK-3N	1
9	Dual faces tape	2
10	Plate nut	2
11	Harness: Key counter	1

Installation Procedure

1. **Remove the scanner right cover.**

2

2. **Make a screw hole in the removed scanner right cover with a screwdriver or drill.**

3. **Attach the tray bracket [A] to the scanner right cover ([B] × 2: M3x10).**

   • For this model, use the screw holes marked "1" on the table bracket.
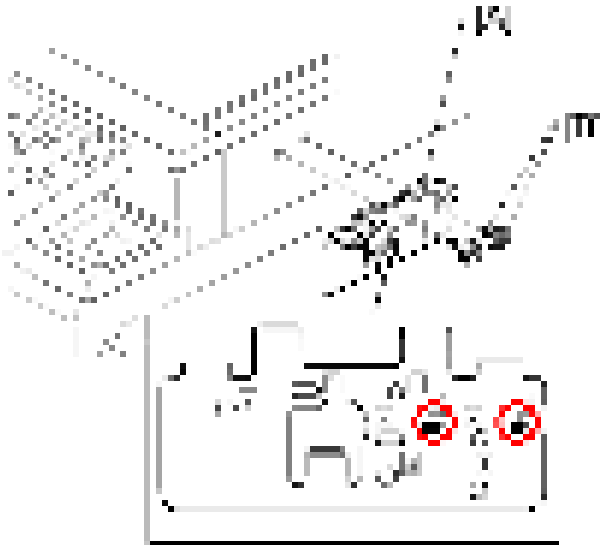
4. **Attach the lower tray [A] to the tray bracket (×2: M3x8).**

5. **Attach the upper tray [B] to the tray bracket (×1: M3x8).**

6. **Use the clamps as necessary to clamp the cable of the card read/writer device.**
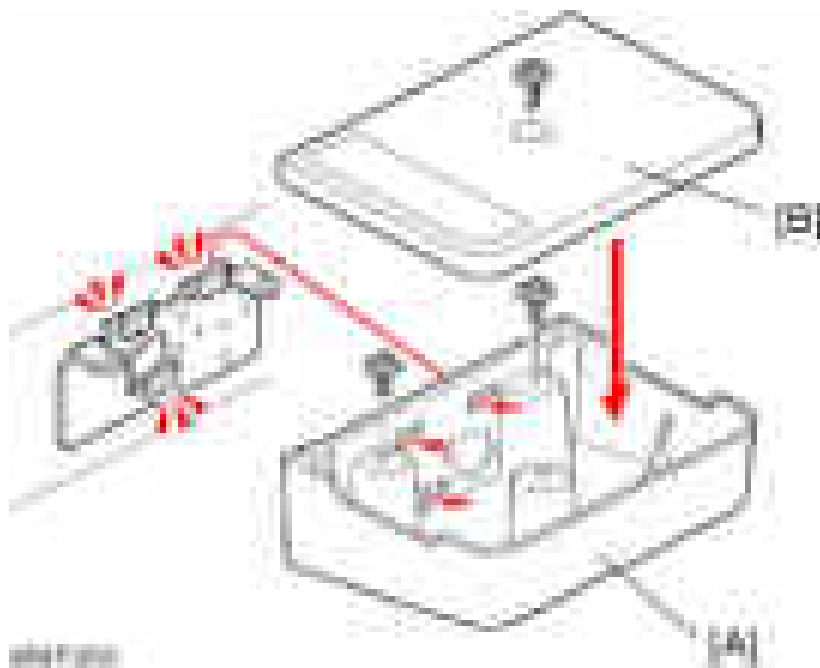
⭐**Important**

- The smart card reader must be placed on this card reader table. If not, some antenna or transmitter in the main machine may be interrupted.

Optional Counter Interface Unit Type A

Accessory Check

No.	Description	Q'ty
-	TAPPING SCREW:3X6	4
-	WIRE BINDER	1
-	12.7MM:V-0	4
-	CLAMP:LWS-0711Z	1
-	HARNESS:IOB:MKB	1

Installation Procedure

⚠CAUTION

- When you install this option, switch the MFP's power supply OFF, and unplug the power plug from the mains outlet.

- If installed when the power is on, it will result in an electric shock or malfunction.

Key Counter

1. **Remove the rear right cover (page 259).**

2

2. After attaching the clamps provided, attach the counter interface board [A] (▪×4).

3. Connect the harness of the MFP to the upper connector (white/13 pin) [A].

👇Note

• Do not use the harness provided for the interface cable.

Smart Card Reader Built-in Unit Type M2 (D739-36)

⬇ **Note**

- This option is available with only D176/D177.

Accessory Check

Description	Q'ty
Smart card reader cover	1
Lower cover	1
Double-faced adhesive tape	2
Clamp	3
Smart card reader/writer	1
USB cable	1

Installation Procedure

1. **Open the right cover.**
2. **Main power switch cover [A] (🔩×1).**

2

3. **Replace the upper cover [A] of the main power switch cover [B] with the lower cover for the smart card reader built-in unit (, tab x 2).**
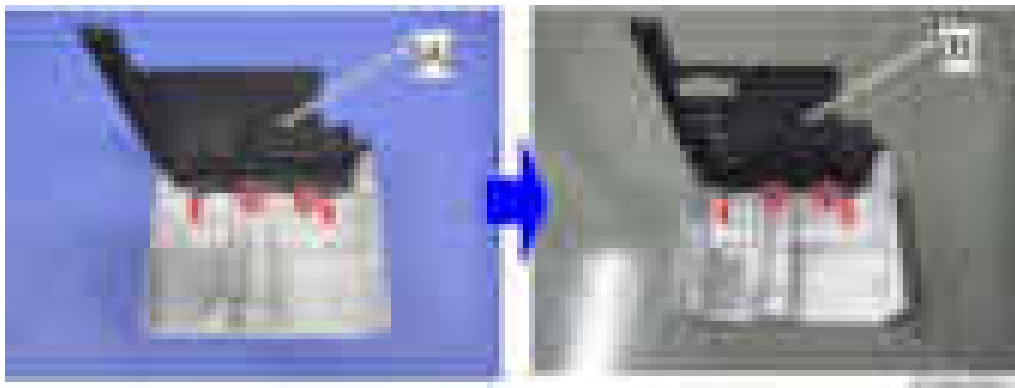
4. **Pass the USB cable [A] for the smart card reader through the hole in the lower cover [B], and then attach the main power switch cover to the main machine (x1).**

5. **Attach the smart card reader stand to the lower cover [A] (tab x 2).**

6. **Attach two strips of double-faced adhesive tape [A] on the smart card stand [B].**

7. **Scanner rear cover [A] (×3).**
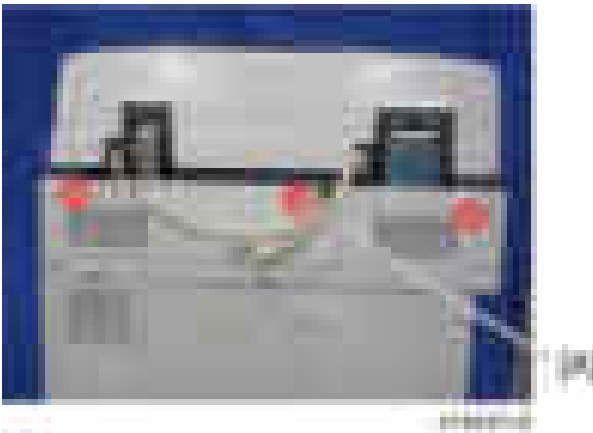
8. **Scanner right cover [A] (×1).**

9. **Place the smart card reader/writer [A] on the smart card reader stand.**

10. **Connect the USB cable [B] to the smart card reader/writer.**

    - Make a loop with the USB cable when connecting.

11. **Attach the smart card reader cover on the smart card reader/writer.**

12. **Attach the clamps [A] on the right side of the scanner unit, and then route the USB cable (▪x3).**

13. **Route the USB cable along the rear side of the scanner unit (▪x1).**

    - Adjust the USB cable by making loops if the USB cable has too much slack.
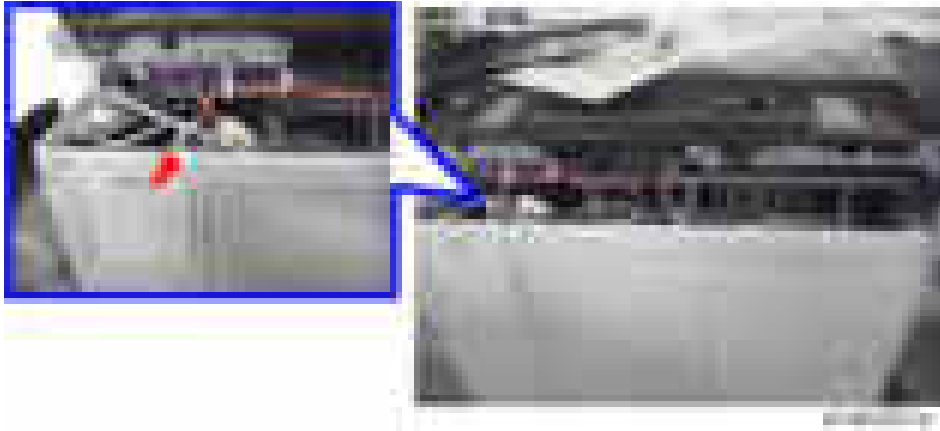
14. Remove the cutout [A] in the left rear cover to make a cable hole, and then pass the USB cable [B] through it.

15. Connect the USB cable to the USB slot (the left side).

16. Reattach the scanner right cover [A] (×1).

17. Reattach the scanner rear cover [A] (×3).

18.   Close the right cover.

Imageable Area Extension Unit Type M3

Accessory Check

No.	Description	Q'ty
-	TRANSFER ROLLER:SECOND:OPTION:ASS'Y	1

Installation Procedure

⚠ CAUTION

- Do not touch the roller surface during replacement.

1. **Change the value of SP2-400-001.**

SP	Description	Default	Setting
SP2-400-001	Paper Transfer Roller Settings Width of Paper Transfer Roller	0	1

🔽 **Note**

- When SP2-400-001 is changed over, a message is displayed stating "Switch the power OFF/ON".

2. **After you changed the value of this SP, turn the power off.**

3. **Replace the roller.**
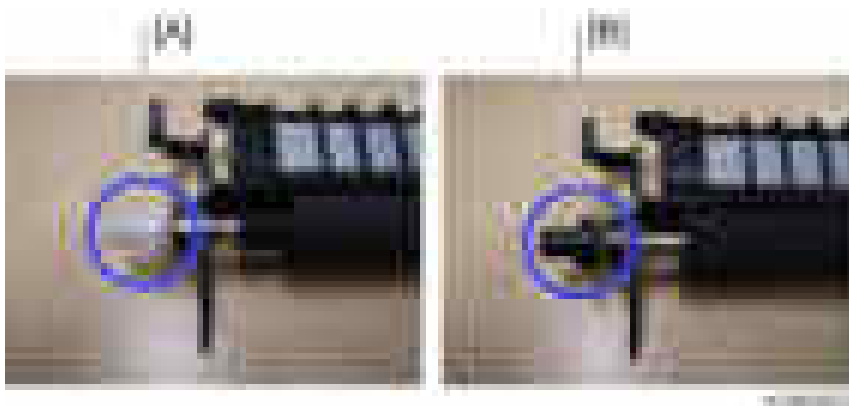
[A]: Standard roller

[B]: Imageable Area Extension Unit Type M3

↓ Note

- During PM replacement, do not install the wrong type of roller.

4. **Turn the power on.**

5. **Using SRA3 paper, check that a full-bleed halftone image is output, and that the image extends to 315 mm in width.**

When You Forgot to Change the SP

The following problems occur:

When a change-over was made from a standard roller to the imaging range extension option:

(If the SP setting is the normal setting (SRA3 paper not supported), but the optional longer paper transfer roller is installed)

- The image cannot be correctly transferred to the SRA3 paper area.

- MUSIC/program control pattern adheres to the ends of the paper transfer roller (outside the A3 area), and this can transfer to the underside of printouts.

- Real-time process control cannot be performed correctly, and an abnormal image and SC285-00 (MUSIC error) may occur.

When a change-over was made from the imaging range extension option to a standard roller:

(If the SP setting is for SRA3, but the paper transfer roller is the normal one (SRA3 paper not supported))

- Real-time process control is not performed, and the interval between process controls becomes short.

- The waiting time for fusing temperature rise is longer than intended.

Internal Options

List of Slots
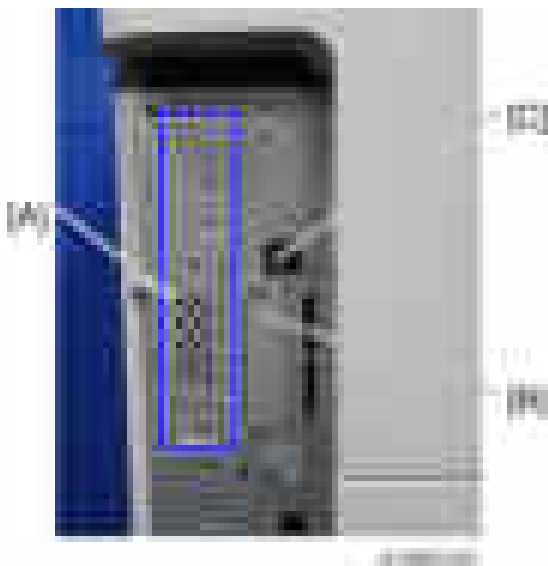
Slot		Option
[A]	I/F slot A[*1]	Fax Option Type M3[*5]
[B]	I/F slot B	IEEE 1284 Interface Board Type A[*5]
		File Format Converter Type E
		IEEE 802.11a/g/n Interface Unit Type M2[*3]
		RC-GATE/LB[*5]
		Color Controller Connection Board Type M3[*5]
[C]	USB port[*2]	Bluetooth Interface Unit Type D[*4][*5]
		Smart Card Reader Built-in Unit Type M2[*5]

[*1] Dedicated slot for fax unit

[*2] "Smart card Reader Built-in Unit Type M2" is only available on the left USB port; "Bluetooth Interface Unit Type D" is available on both the left and right USB ports.

*3 "IEEE 802.11a/g/n Interface Unit Type M2" cannot be used together with "Bluetooth Interface Unit Type D".

*4 "Bluetooth Interface Unit Type D" cannot be used together with "IEEE 802.11a/g/n Interface Unit Type M2".

*5 These options are available with only D176/D177.

IEEE 802.11a/g/n Interface Unit Type M2

Accessory Check

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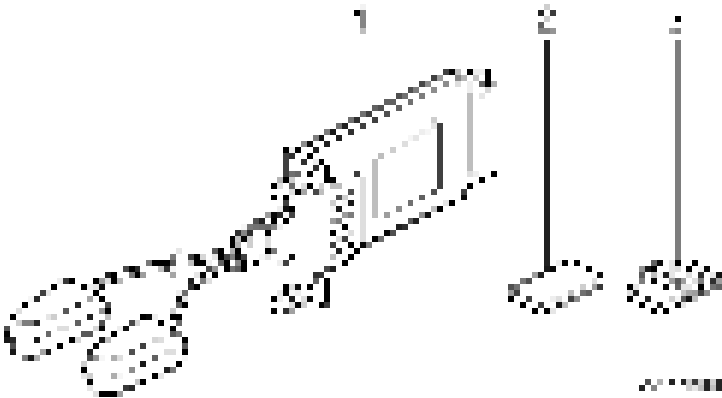
⭐ **Important**

- Since disassembly/alteration of a wireless LAN board is illegal, during service replacements, replace the whole PCB assembly.

- Be sure to give the leaflet provided to the customer.

Installation Procedure

⚠ WARNING

- When you install this option, Switch the MFP's power supply OFF, and unplug the power plug from the mains outlet.

⚠ CAUTION

- Do not put your hand into the controller box. It will result in a malfunction or injury.

- Before doing any work, touch a metal object to discharge static electricity from the body. There is a possibility that the extension wireless LAN board may malfunction due to static electricity.

Important

- *** When using wireless LAN (IEEE802.11 b/g/n:2.4-GHz band), this radio product uses the 2.4-GHz band. Check that industrial, scientific and medical devices using the same frequency bands, such as a microwave oven and cordless telephone, are not used nearby.**

- If there is interference, communication may become unstable. Check that there are no devices likely to cause interference in the surrounding area.

Attaching the Boards

1. **Remove the I/F slot B cover [B] (×2).**

2. **Attach the extended wireless LAN board to a slot (×2).**

   Note

   - Press the extended wireless LAN board firmly in, and check it is firmly connected.

   - The customer should keep the I/F card slot covers which were removed.

Attaching the Antenna

1. **Stick the fastener provided on the antenna case.**

   Note

   - Stick the fastener provided on the lower half (cable side) of the case.

   - It can be stuck to either side of the antenna case.

2. **Attach the two antennas to the rear cover of the MFP.**

   ⬇️**Note**

   • The two antennas must be attached at least 12 cm apart from each other.

3. **Stick the eight cable stickers on the rear face of the MFP.**

4. **Fix the cable.**

   ⬇️**Note**

   • Take care to loop it around so that it does not interfere with other options or I/F cables.

5. **Switch the power supply ON.**

6. **Check that the system settings list is output, and the option is recognized correctly.**

Settings

Check the Connection of the Wireless LAN Interface

1. **Check the IPv4 address and subnet mask, or IPv6 address setting of the MFP.**

2. **Press the [Default setting/counter] key.**

3. **Press the [System default setting] button.**

4. **Choose [Wireless LAN] in [Interface setting].**

5. **Set each item, and press the [Setting] button.**
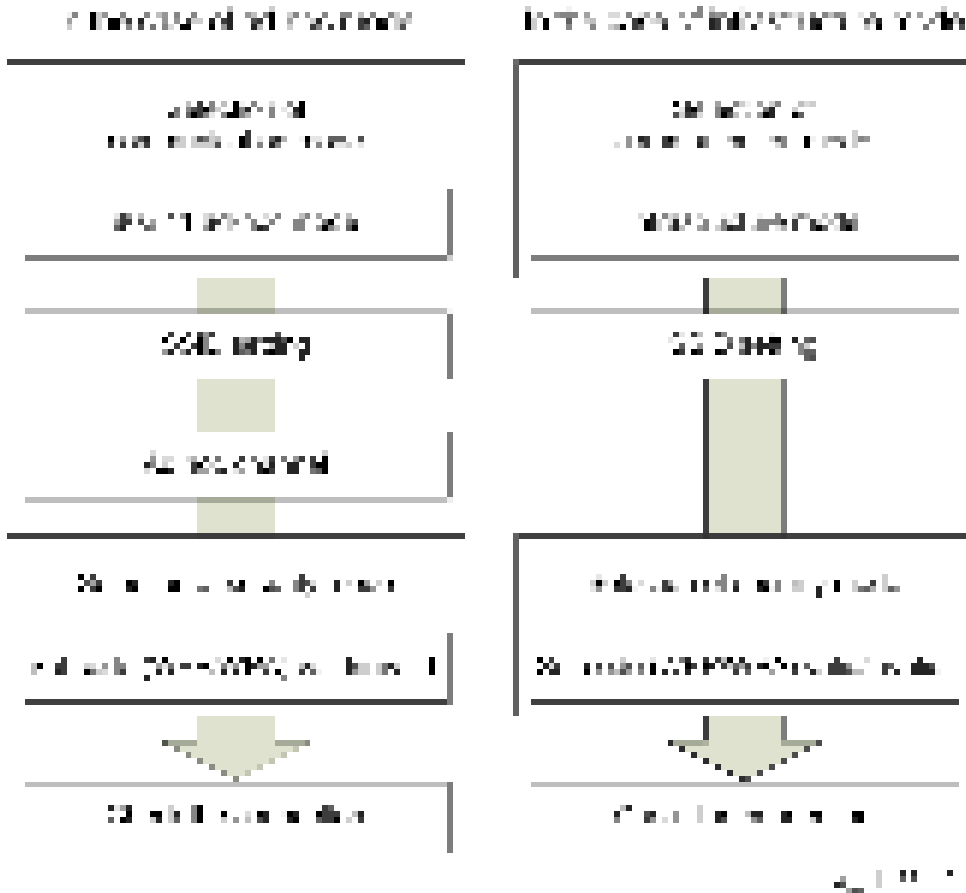
Note

- For details, refer to instructions for use. (Check instructions for use, "Network connection/System default setting" "Wireless LAN interface connection")

- If the extended wireless LAN board does not work correctly, refer to the leaflet provided in the options box.

IEEE 1284 Interface Board Type A

⬇ Note

- This option is available with only D176/D177.

Accessory Check

No.	Description	Q'ty
-	PCB:IEEE1284:ASS'Y	1

Installation Procedure

⚠ WARNING

- When you install this option, Switch the MFP's power supply OFF, and unplug the power plug from the mains outlet.

⚠ CAUTION

- Do not put your hand into the controller box. It will result in a malfunction or injury.

- Before doing any work, touch a metal object to discharge static electricity from the body. There is a possibility that the IEEE 1284 Interface Board may malfunction due to static electricity.

1. **Remove the I/F slot B cover [B] (▨×2).**

2. **Attach the IEEE 1284 Interface Board to the I/F slot B (×2).**

3. **Check that the system settings list is output, and that the board is recognized correctly.**

   ⬇Note

   • The customer should keep the I/F card slot covers which were removed.

File Format Converter Type E

Accessory Check

No.	Description	Q'ty
1	PCB:MLB32:ASS'Y	1
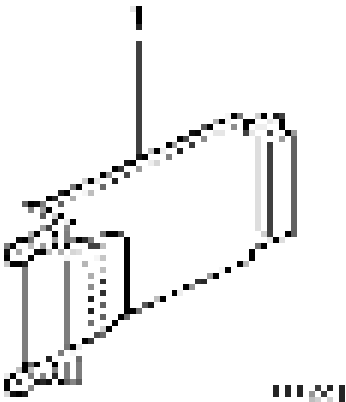
Installation Procedure

⚠ WARNING

- When you install this option, switch the MFP's power supply OFF, and unplug the power plug from the mains outlet.

⚠ CAUTION

- Do not put your hand into the controller box. It will result in a malfunction or injury.

- Before doing any work, touch a metal object to discharge static electricity from the body. There is a possibility that the board may malfunction due to static electricity.

1. **Remove the I/F slot B cover [B] (×2).**

2. **Set the File Format Converter in an I/F slot (×2).**

3. **Turn the main power ON.**

4. **Check the system settings list is output, and that the option is recognized correctly.**

   ⬇Note

   • The customer should keep the I/F card slot covers which were removed.

Copy Data Security Unit Type G

Accessory Check

No.	Description	Q'ty
1	PCB:ICIB-3	1
2	BRACKET:ICIB:ALEX	1
3	SCREW:M3X4	2
4	SCREW:M3X6	4
-	TAPPING SCREW:3X8	2
-	SPACER:SQ-7	1
-	BRACKET:ICIB:GRIFFIN-C1	1
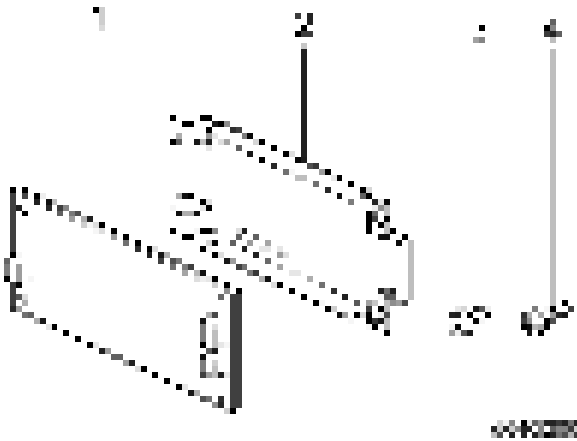
Installation Procedure

⚠ WARNING

- When you install this option, switch the MFP's power supply OFF, and unplug the power plug from the mains outlet.

- If this option is installed when the power is on, it will result in an electric shock or malfunction.

1. **Remove the rear cover (page 258).**

2. **Attach the copy data security module [A] to the IPU (×2, ×1 (CN581)).**

   ⬇Note

   • The Copy Data Security Unit [A] must be connected directly to the CN581 in the IPU.
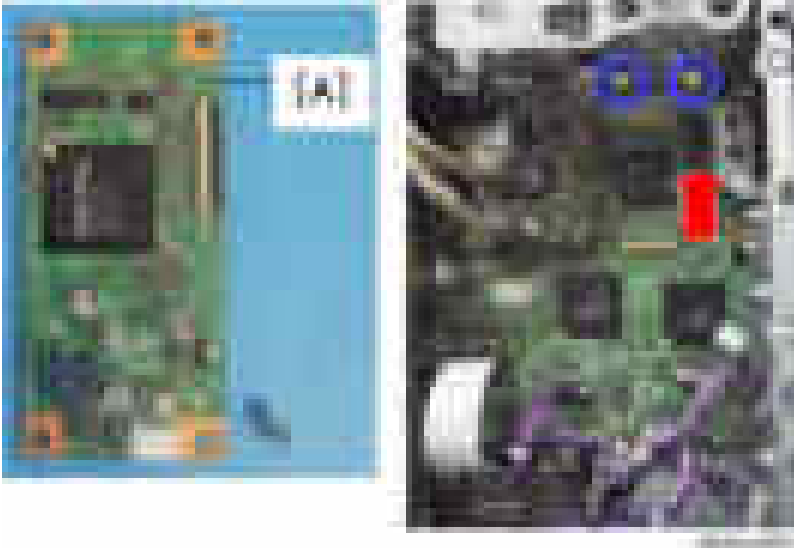
3. **Attach the rear cover.**

Settings (to be done by the user)

Equipment Administrator Settings

In order to validate administrator authentication, select [YES] in administrator authentication management settings. When the setting is validated, the initial-setting item currently assigned to each administrator will be the administration item.

1. **Press the [Default setting/counter] key.**

2. **Press the [System default setting] button.**

3. **Press the [Administrator settings] button.**

4. **Press the [Next] button.**

5. **Press the [Administrator authentication management] button.**

Bluetooth Interface Unit Type D

🔻**Note**

- This option is available with only D176/D177.

Accessory Check

No.	Description	Q'ty
1	MODULE:BLUETOOTH:USB	1
	CD-ROM:BLUETOOTH:OI:EXP:ASS'Y	1

Installation Procedure

⚠️ WARNING

- When you install this option, switch the MFP's power supply OFF, and unplug the power plug from the mains outlet.

⚠️ CAUTION

- Do not put your hand into the controller box. It will result in a malfunction or injury.

- Before doing any work, touch a metal object to discharge static electricity from the body. There is a possibility that the wireless interface board may malfunction due to static electricity.

1. **Attach the BT wireless interface to the USB-A slot [A].**

🡇**Note**

• There is no difference between the left and right USB ports.

2. **Check the system settings list is output, and that the option is recognized correctly.**

SD Card Option

SD Card Slots

[A]: SD card slot 1 (option slot)

[B]: SD card slot 2 (service slot)

List of Slots Used

Optional SD cards can be set in either slot 1 or slot 2. But slot 2 is the service slot, so we recommend that you use slot 1 to install the SD card options.

Name	Data Capacity (MB)	Source	Destination	Remarks
Postscript3 Unit Type M3	128	✓	✓	• Optional SD cards can be set and used in either slot 1 or slot 2. • "Memory Unit Type M3 2GB" must be installed before installing "Browser Unit Type M9"
Camera Direct Print Card Type M3*[1]	128	✓	✓	
SD card for Netware printing Type M3*[1]	128	✓	✓	
Fax Connection Unit Type M3*[1]	128	✓	✓	
Browser Unit Type M9*[1]	128	✓	✓	
OCR Unit Type M2*[1]	128	✓	✓	

*1 These options are available with only D176/D177.

Note

• In this machine, it is possible to transfer data from a "Postscript3 Unit" SD card, unlike in earlier models, due to a change in the software licensing (the part of the Postscript software that requires licensing is now built into the controller, so the portion on the SD card can be moved to another SD card).

SD Card Appli Move

Overview

Since there are only two SD card slots (one of them is a service slot), three or more SD card applications cannot be used simultaneously.

However, if multiple SD card applications are merged, three or more SD card options can be used.

This function is referred to as the "SD card merge function."

The "SD card merge function" is a function which enables the use of three or more functions within the capacity of two SD cards by physically transferring the function of one SD card to other SD cards (all SD card options can be stored in two SD cards).

However, SD card applications are under license, therefore, since an SD card license after merge is transferred to the target SD card, it cannot be used even if it is moved to the target machine.

Also, a process to prevent illegal copying is performed.

Note

- After merge, store the empty SD card in the location shown below.

1. **Unlock the lever [A], and then open the right cover [B].**

2

2. **Main power switch cover [A].**

3. **Insert the SD card in the storage location [A] inside the cover.**

Move Exec

Note

*   When merging SD cards, you can merge them in which SD card.

1. **Turn the power off.**

2. **SD card slot cover [A] (×1).**

3. **Set the destination SD card (SD card where data is to be stored) in Slot 1 [A], and set the original SD card (SD card from which data is to be transferred) in Slot 2 [B].**

4. **Turn the power on, and press [ENTER] in SP5-873-001 (SD Card Appli Move: Move Exec).**

5. **When a confirmation screen is displayed, press [ENTER] (it takes about 2 - 3 minutes).**

   ⬇ Note

   • If [CANCEL] is pressed, the display returns to the previous screen.

   • Note that if the power supply is turned off, a panel operation is performed, or the cover is opened during merge, it will result in a malfunction.

6. **When merge is complete, and the following screen is displayed, press [CLOSE].**

   ⬇ Note

   • If the process is terminated abnormally, perform the merge in SP mode again.

   • If the capacity of the destination SD card is insufficient, the merge operation cannot be performed.

1. Press [END] twice.

2. Turn the power off.

3. Remove the empty SD card after transfer from Slot 2.

4. Attach the slot cover(×1).

5. Turn the power on, output the system setting list, and check that the options are recognized correctly.

Undo Exec

This is a recovery function if an application is incorrectly transferred to a different device of the same model.

1. **Turn the power off.**

2. **SD card slot cover [A] (×1).**

3. **Set the integrated SD card in Slot 1.**

4. **Set the SD card which became empty after integration in Slot 2.**

5. **Turn the power on, and press [ENTER] in SP5-873-002 (SD Card Appli Move: Undo Exec).**

6. **When a confirmation screen is displayed, press [ENTER].**

   🔽Note

   • If [CANCEL] is pressed, the display returns to the previous screen.

   • Note that if the power supply is turned off, a panel operation is performed, or the cover is opened during cancellation, it will result in a malfunction.

7. **When cancellation is complete, press [CLOSE].**

8. **Press [END] twice.**

9. **Turn the power off.**

10. **Attach the SD card slot cover (×1).**

11. **Turn the power on, and check that the application has been deleted.**

Data Overwrite Security Unit Type I (D377)

⬇Note

- This option is available with only D176/D177.

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 (page 78).

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
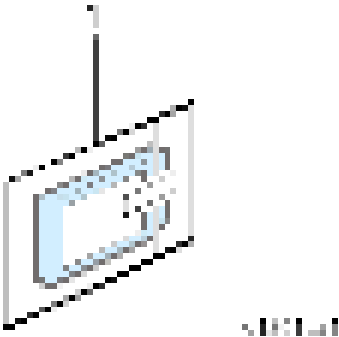
Before You Begin the Procedure

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 I**".

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
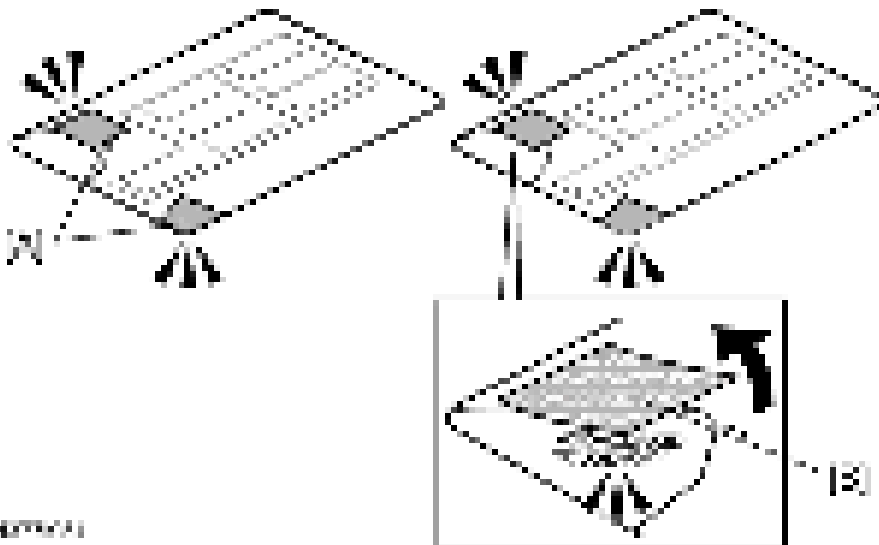
⚠CAUTION

• You must check the box seals to make sure that they were not removed after the items were sealed in the box at the factory before you do the installation.

1. Check the box seals [1] 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 [2] when you remove each seal. In this condition, they cannot be attached to the box again.

Installation Procedure

1. Insert the SD card (DataOverwriteSecurity Unit) in SD slot 1 (upper) [A] with its label face towards the front of the machine. Then push it slowly into SD slot 1 (upper) until you hear a click.

2. Install the application using SP5-878-001.

Camera Direct Print Card Type M3

📥 **Note**

- This option is available with only D176/D177.

Accessory Check

No.	Description	Q'ty
1	SD-CARD:P-BRIDGE:METIS-C1:EXP:ASS'Y	1
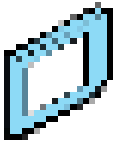
Installation Procedure

1. **Remove the SD card slot cover [B] (⬚×1).**

2. **Put the camera direct print card in SD card slot 1 [A].**

Note

- When installing more than one SD card, perform the merge operation.

3. **Switch the power ON.**

4. **Attach the SD card slot cover (×1).**

5. **Stick the "PictBridge" sticker on the front face of the MFP.**

6. **After switching the power ON, check that the system settings list is output, and that the option is recognized correctly.**

Browser Unit Type M9

⬇ **Note**

- This option is available with only D176/D177.
- "Memory Unit Type M3 2GB" must be installed before installing this option.

Accessory Check

No.	Description	Q'ty
1	SD Card	1

Installation Procedure

The browser unit uses a native application such as a full browser in order to improve web browsing.

Also, to provide a solution utilizing the web as in previous machines, Extended JavaScript is also provided as an SDK application.

Due to the above, the browser unit for this model has two firmware modules, native application firmware, and Type-C application EXJS firmware.

The browser for these models is not installed in the SD card HDD, but in order to start up using the data on the SD card, it must be operated with the SD card inserted.

⤵ Note

- In addition to link-up with the conventional Scan Router and MFP, the browser unit has the following functions.

- "Memory Unit Type M3 2GB" must be installed before installing "Browser Unit Type M9". If "Memory Unit Type M3 2GB" is not installed, the machine will not work well due to insufficient memory.

- For scanning, arbitrary distribution types and preset values are selected and delivered.

- Mail is delivered (login transmission) to an address previously set in the profile of the user who logged in.

1. **Switch the power OFF.**

2. **Remove the SD card slot cover [B] (🔩×1)**

3. **Insert the browser unit card in SD card slot 1 [A].**

↓Note

- When installing more than one SD card, perform the merge operation.

4. **Switch the power ON.**

5. **Press the [Default setting/Counter] key.**

6. **Press the [Extension function default setting] button.**

7. **Press the [Extension function default setting] button on the [Extension function default menu setting] screen.**

8. **On the [Startup setting] tab, check that "Extended JS" was installed automatically and has started.**

9. **Switch the power OFF/ON.**

10. **Press the [Default setting/Counter] key.**

11. **Press the [Home editing] button.**

12. **Press the [Add icon] button.**

13. **Press the [Browser] button displayed on the "Application" tab.**

14. **Select the position at which [Blank] is displayed, and press the [OK] button.**

15. **Check that the [Browser] icon has been added to the Home screen.**

Settings

Browser Default Setting

Register the browser default settings. For details, refer to the following.

1. **Switch ON the power.**

2. **Press the [Default settings/counter] key.**

3. **Press the [Browser default settings] button.**

4. **Press the [Home screen] button on the "Browser Settings" tab.**

5. **Press the [URL input] button.**

6. **Input the URL, and press the [OK] button.**

7. **Press the [Settings] button.**

8. **Press the [End] button twice, and finish.**

SD Card for NetWare Printing Type M3

⬇Note

- This option is available with only D176/D177.

Accessory Check

No.	Description	Q'ty
1	SD-CARD:NETWARE:MET-C1:EXP:ASS'Y	1
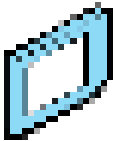
Installation Procedure

1. **Remove the SD card slot cover [B] (▨×1).**

2. **Put the SD card for NetWare printing in SD card slot 1 [A].**

⬇Note

- When installing more than one SD card, perform the merge operation.

3. **Switch the power ON.**

4. **Attach the SD card slot cover. (×1)**

5. **After switching the power ON, check that the system settings list is output, and that the option is recognized correctly.**

OCR Unit Type M2

This option adds a searchable PDF function to the scanning function.

Note

- This option is available with only D176/D177.

Accessory Check

No.	Description	Q'ty
1	SD-CARD:OCR:MET-C1:EXP:ASS'Y	1
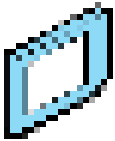
Searchable PDF Function Outline

- The searchable PDF function performs OCR by the MFP on a document read with the scanner, and embeds text data in the PDF. This permits PDF text browsing, automatic assignment of filenames, and automatic alignment of document orientation.

- This option is provided with an SD card. By installing an SD card in the MFP, a functional icon is added to the control unit. It is not necessary to install software in a PC.

- If this option is installed, various settings related to the searchable PDF function are available.

- After reading of the document is completed (after it is read by the ADF and output), OCR is performed. Therefore, after reading is completed, documents can be collected from the exposure glass or ADF.

- Other functions, such as the copy function and printer function, can be used during OCR.

Installation Procedure

⚠CAUTION

- Switch the MFP's power supply OFF, and unplug the power plug from the mains outlet.

- If the battery is replaced by the wrong type, there is a danger of explosion. Dispose of used batteries according to the instructions.

1. **Remove the SD card slot cover [B] (×1).**

2. **Insert the OCR module SD card in SD card slot 1 [A] or slot 2 [B].**

2

3. **Switch the power supply ON.**

4. **Press "Enter" in SP5-878-004 (Option Setup: OCR Dictionary).**

   The SD card ID is saved in the NVRAM, and the ID of the MFP is saved on the SD card. The MFP and SD card are thereby linked.

5. **When "operation complete" is displayed, press "Close".**

   ⬇Note

   - If installation fails, "Failed" is displayed.

   - If installation fails, perform the following steps.

   1. Check whether it is a used SD card.

   2. Switch the power OFF, and repeat steps 1-5.

6. **Switch the power OFF/ON.**

7. **Press "Enter" in SP5-878-004 (Option Setup: OCR Dictionary).**

   Dictionary data is copied to the HDD.

   ⬇Note

   - On the first run, SP5-878-004 links the SD card, and on the second run, copies dictionary data.

8. **Switch the power OFF, and remove the SD card from the SD card slot.**

   ⬇Note

   - Keep the SD card in the SD card storage location of the MFP. The original SD card is needed in the event of a HDD malfunction.

9. **Return the SD card slot cover to the original position.**

10. **Switch the power ON.**

11. **Press [File Format / File Name] on the scanner function screen.**

12. **Check that [OCR setting] is displayed on the "File format / "File Name" screen.**

⬇Note

- After installation, the OCR setting can be changed on the "OCR setting" screen.

- When setting OCR, set [OCR setting] to [Yes]. (Default setting: [No])

Postscript3 Unit Type M3

Accessory Check

No.	Description	Q'ty
1	SD-CARD:PS3:MET-C1:EXP:ASS'Y	1

Installation Procedure

1. **Remove the SD card slot cover [B] (▨×1).**

2. **Insert the Postscript3 SD card in SD card slot 1 [A].**

↓Note

- When installing more than one SD card, perform the merge operation.

3. **Switch the power ON.**

4. **Attach the SD card slot cover (⬛×1).**

5. **Stick the "Adobe PostScript3" decal on the front face of the MFP.**

6. **Turn the main power ON.**

7. **Check that the system settings list is output, and that the option is recognized correctly.**

↓Note

- The PDF firmware installed as standard contains a program required to print Postscript3 data as default. However, this Postscript3 program is normally disabled.

- The PS3 firmware is a dongle (key) which enables PS3 data printing functions. When the PS3 firmware is installed, the Postscript3 program in the PDF firmware is enabled. Due to this specification, the self-diagnosis result report shows the ROM part number/software version of the PDF firmware contained in the Postscript3 program.

Security Function Installation

The machine contains the Security functions (Data Overwrite Security and HDD Encryption unit) built into the controller board.

If you are installing a new machine, it is recommended to activate the Data Overwrite Security and HDD Encryption unit by selecting "Format All Data" from "System Settings" on the operation panel.

↓Note

- This method is recommended because there is no user data on the hard drive yet (Address Book data, image data, etc.).

If the customer wishes to activate the Data Overwrite Security and HDD Encryption unit on a machine that is already running, it is recommended to activate the unit by selecting "All Data" from "System Settings" on the operation panel.

★Important

- **Selecting "All Data" will preserve the data that has already been saved to the hard drive. (If "Format All Data" is selected, all user data saved to the hard drive up to that point will be erased).**

Immediately after encryption is enabled, the encryption setting process will take several minutes to complete before you can begin using the machine.

↓Note

- If encryption is enabled after data has been stored on the disk, 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.

Make sure that the machine's main power is not turned off while the encryption process is in progress.

If the machine's main power is turned off while the encryption process is in progress, the hard disk will be damaged and all data on it will be unusable.

Print the encryption key and keep the encryption key (which is printed as a paper sheet).

Keep the encryption key in a safe place. If the encryption key is lost and is needed, the controller board, hard disk and NVRAM must all be replaced at the same time.

↓Note

- "NVRAM" mentioned in here means the NVRAM on the Controller Board.
- "NVRAM" or EEPROM on the BCU has nothing to do with this.

Please use the following procedure when the Data Overwrite Security and HDD Encryption is reinstalled.

Data Overwrite Security

Before You Begin the Procedure

1. **Make sure that the following settings (1) to (3) are not at their factory default values.**

   (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. **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.

3. **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.

Installation Procedure

1. **Connect the network cable if it needs to be connected.**

2. **Go into the User Tools mode, and select [System Settings] [Administrator Tools] [Auto Erase Memory Setting] [On].**

3. **Exit the User Tools mode.**

	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.

4. **Check the display and make sure that the overwrite erase icon appears.**

5. **Check the overwrite erase icon.**

   The icon [1] is lit when there is temporary data to be overwritten, and blinks during overwriting.

   The icon [2] is lit when there is no temporary data to be overwritten.

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

These settings must be set up by the customer before the HDD Encryption unit can be installed.

2. **Confirm that "Admin. Authentication" is on: [User tools/Counter] key -> [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/Counter] key -> [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

1. **Press the [User tools/Counter] key.**

2. **Press [System Settings].**

3. **Press [Administrator Tools].**

4. **Press [Machine Data Encryption Settings]. If this item is not visible, press [Next] to display more settings.**

5. **Press [Encrypt].**

6. **Select the data to be carried over to the hard disk and not be reset.**

To carry all of the data over to the hard disk, 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].
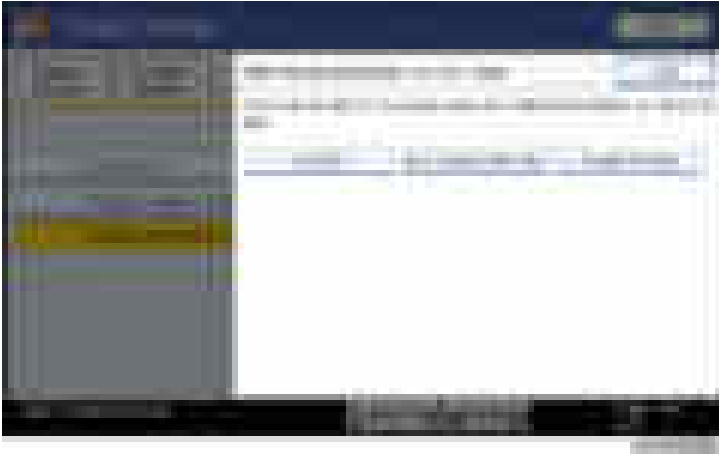
7. **The following message will be displayed. Press the [Start] key to print the encryption key for safe keeping.**
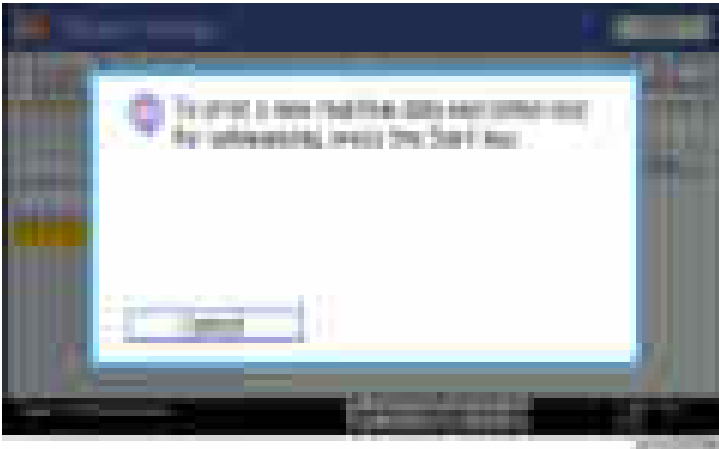
8. Press [Exit] to remove the following message.
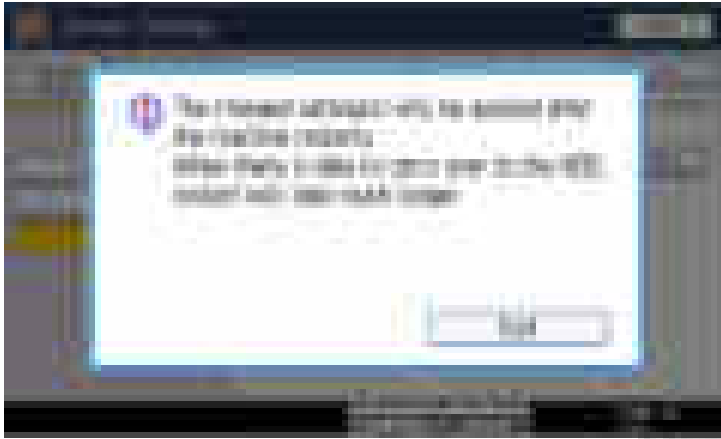
9. Press [Exit] again.

10. Press the [User Tools/Counter] key.

11. Turn the main power switch off and on.

12. "Memory Conversion complete. Turn the main power switch off" is displayed as below. Then turn the main power switch off and on.
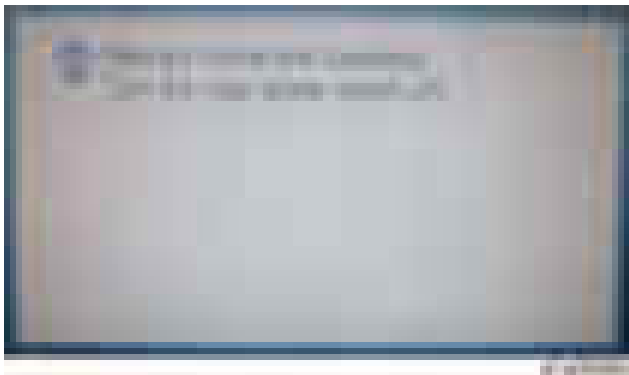
13. **Then initial operation display appears again. After this step, HDD data encryption has already been completed.**

Check the Encryption Settings

1. **Press the [User tools/Counter] key.**
2. **Press [System Settings].**
3. **Press [Administrator Tools].**

4. **Press [Machine Data Encryption Settings].**
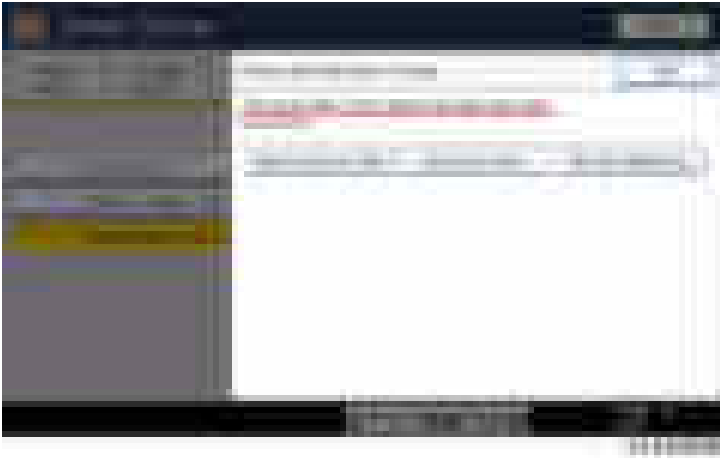
5. **Please confirm whether the encryption has been completed or not on this display.**

Print the Encryption Key

Use the following procedure to print the key again if it has been lost or misplaced.

1. **Press the [User tools/Counter] key.**

2. **Press [System Settings].**

3. **Press [Administrator Tools].**

4. **Press [Machine Data Encryption Settings].**

5. **Press [Print Encryption Key].**

6. **Select [Save to SD card] or [Print on paper].**

Encryption key sample

The encryption key is printed out as a sheet of paper like the example shown above.

Please instruct the customer to keep it in a safe place.

Memory Unit Type M3 2GB

⬇Note

- This option is available with only D176/D177.

Accessory Check

No.	Description	Q'ty
1	PCB:DDR3-DIMM:RC-A:2GB:ASS'Y	1

Installation Procedure

1. **Remove the rear cover (page 258).**
2. **Remove the DIMM [A] (Unlock).**
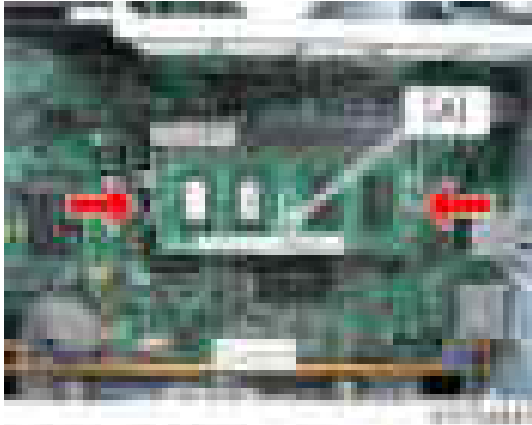
3. **Install the Memory Unit Type M3 [A].**

4. **Turn the main power ON.**

5. **Output the system setting list to make sure that the memory unit is recognized properly.**

3. Preventive Maintenance

PM Parts Settings

Replacement Procedure of the PM Parts

1. Enter the SP mode.

2. Output the SMC logging data with SP5-990-004.

3. Set the following SPs to "1" before you turn the power off.

4. Replace the PM parts and turn the power on, then, the machine will reset the PM counters automatically. In the case of developer, the developer initialization will also be done automatically.

5. Exit the SP mode.

Item	SP
PCDU	Black: 3701-002, 003 Yellow: 3701-071, 072 Cyan: 3701-025, 026 Magenta: 3701-048, 049
Development unit	Black: 3701-003 Yellow: 3701-071, 072 Cyan: 3701-025, 026 Magenta: 3701-048, 049
PCU	Black: 3701-002 Yellow: 3701-071, 072 Cyan: 3701-025, 026 Magenta: 3701-048, 049
Pressure Roller (not necessary for complete fusing unit and Heating sleeve belt unit; see below)	Pressure roller: 3701-118
Image Transfer Belt Unit	3701-093
Image Transfer Belt Cleaning Unit	3701-102

Item	SP
PTR Unit	3701-109
Exhaust Filter	3701-132

⭐ **Important**

- After the PM counter for the heating sleeve belt unit reaches its PM life (240K pages), the machine stops the operation automatically. Replace the heating sleeve belt unit before the machine stops its operation (stop warning: 244K pages, stop: 248K pages).

For the following units, there is a new unit detection mechanism. It is not necessary to reset PM counters.

- Fusing unit
- Heating sleeve unit
- Toner Collection Bottle (if full or near-full)

Note

- Even if you replace the new Toner Collection Bottle, PM counter will not reset soon (The machine judges whether PM counter should be reset or not after printing for some time).
- Even if you set SP3-701-142 or SP7-622-142, PM counter of Toner Collection Bottle will not reset.

After Installing the New PM parts

1. **Turn on the main power switch.**
2. **Output the SMC logging data with SP5-990-004 and check the counter values.**
3. **Make sure that the PM counters for the replaced units are "0" with SP7-944. If the PM counter for a unit was not reset, then reset that counter with SP 7-622.**
4. **Make sure that the exchange counter counts up with SP7-853.**
5. **Make sure that the counters for the previous units (SP7-908) on the new SMC logging data list (from step 2 above) are equal to the counters (SP7-803) for these units on the previous SMC logging data list (the list that was output in the "Before removing the old parts" section).**
6. **Make sure that the unit replacement date is updated with SP7-950.**

Preparation before Operation Check

1. **Clean the exposure glasses (for DF and book scanning).**
2. **Enter the user tools mode.**

3. **Do the "Automatic Color Calibration(ACC)" for the copier mode & printer mode as follows:**

   - Print the ACC test pattern (User Tools Maintenance ACC Start).

   - Put the printout on the exposure glass.

   - Put 10 sheets of white paper on the test chart. This ensures the precise ACC adjustment.

   - Close the ARDF or the platen cover.

   - Press "Start Scanning" on the LCD. Then, the machine starts the ACC.

4. **Exit the User Tools mode, and then enter the SP mode.**

5. **Perform line adjustment.**

   SP2-111-004: Forced Line Position Adj. Mode d

   The result can be checked with SP2-194-007 (MUSIC Execution Result Execution Result)

   (0:Succeed, 1: Fail).

   Also, results for each color can be checked with SP2-194-010 to 013.

6. **Exit the SP mode.**

Operation Check

Check if the sample image has been copied normally.

4. Replacement and Adjustment

Notes on the Main Power Switch

Push Switch

The main power button of this machine has been changed to a push-button switch (push button) 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)

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.

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.

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.

- How to remove the residual charge inside the machine

  After you unplug the power cord from the AC wall outlet, in order to remove the residual charge from inside the machine, be sure to press the main power switch. Thus, the charge remaining in the machine is released, and it is possible to remove boards.

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. 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 machine.

2. The shutdown message is displayed. Wait for 3 minutes for the machine to shut down.

Note

- After the shutdown process, the main power is turned off automatically.

⚠ CAUTION

- Before removing and adjusting electrical boards, do the following procedure. Otherwise, the board can be damaged by the residual charge inside the machine and must be replaced.

1. Take out the power cord after shutdown.

2. Press the power switch for a second to remove the residual charge inside the machine.

Forced Shutdown

In case normal shutdown does not complete for some reason, the machine has a forced shutdown function.

To make a forced shutdown, press and hold the main power switch for 6 seconds.

In general, do not use the forced shutdown.

⭐**Important**

- Forced shutdown may damage the hard disk and memory, and can cause damage to the machine. Use a forced shutdown only if it is unavoidable.

Beforehand

⚠️WARNING

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

- After replacing, make sure that all harnesses that were removed are connected up again and secured in their clamps.

Special Tools

The following special tools should be prepared for maintenance of the new model in the field:

Item	Part Number	Description	Q'ty
1	A1849501	Scanner Positioning Pin (2 pcs/set)	1
2	B6455020	SD Card (1GB)	1
3	52039502	Silicon Grease G-501	1
4	A2579300	Grease Barrierta – S552R	1
5	C4019503	20X Magnification Scope	1
6	VSSG9002	FLUOTRIBO MG GREASE: 100G	1
7	A0929503	C4 Color Test Chart (3 pcs/set)	1

4

Exterior Covers

The Aim of Anti-tip Components and Precautions

The anti-tip components are necessary for meeting the requirements of IEC60950-1, the international standard for safety.

The aim of these components is to prevent the products, which are heavy, from toppling as a result of people running into or leaning onto the products, which can lead to serious accidents such as persons becoming trapped under the product. (U.S.: UL60950-1, Europe: EN60950-1)

Therefore, removal of such components must always be with the consent of the customer.

Do not remove them at your own judgment.

Front Cover

1. **Open the front cover [A].**

2. **Belt [A].**

3. **Front cover [A].**

Controller Cover

1. Controller cover [A] (	×4).

Upper Left Cover

⚠CAUTION

• Each part enclosed by a blue circle has a tab. Be careful not to damage it when attaching and detaching.

1. Open the front cover (**page 252**).

2. Paper exit tray (**page 264**).

3. Upper left cover [A] (	×1).

   Slide the cover in the direction of the blue arrow.
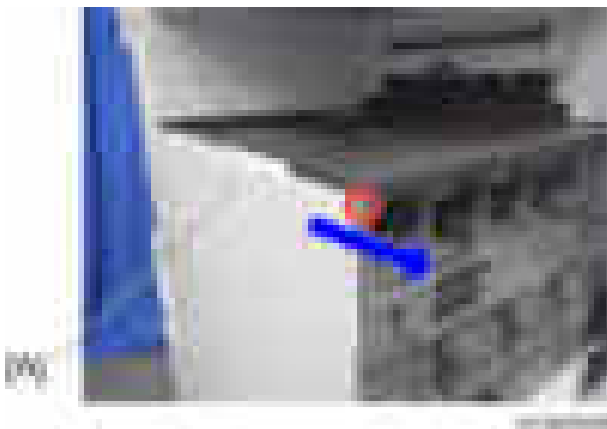
Left Rear Cover

1. Upper left cover (page 254).
2. Left rear cover [A] (🔩×2).

Left Cover

⚠ CAUTION

- Each part enclosed by a blue circle has a tab. Be careful not to damage it when attaching and detaching.
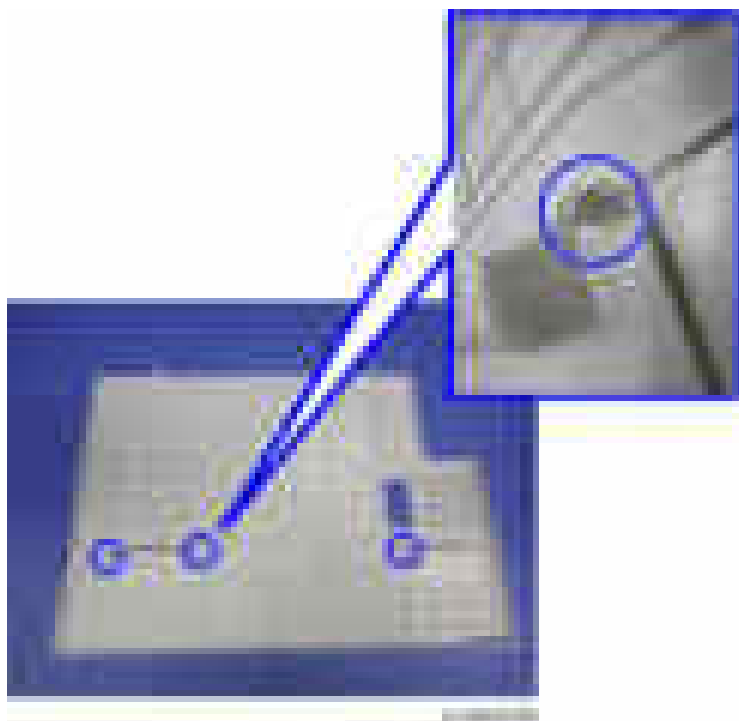
1. **Controller cover (page 254).**

2. **Upper left cover (page 254).**

3. **Left rear cover (page 255).**

4. **Open the 2nd paper feed tray slightly.**
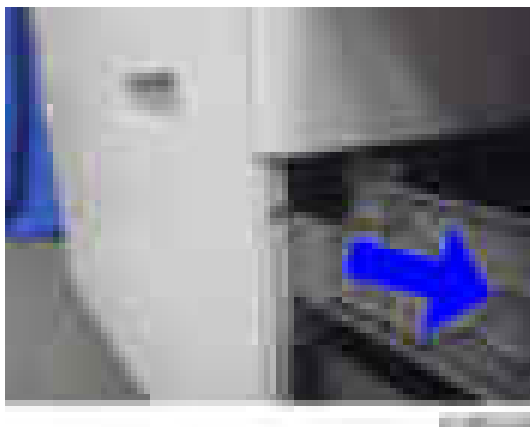
5. **Left cover [A] (×5).**

   Remove it while pressing down.

<Order to remove>
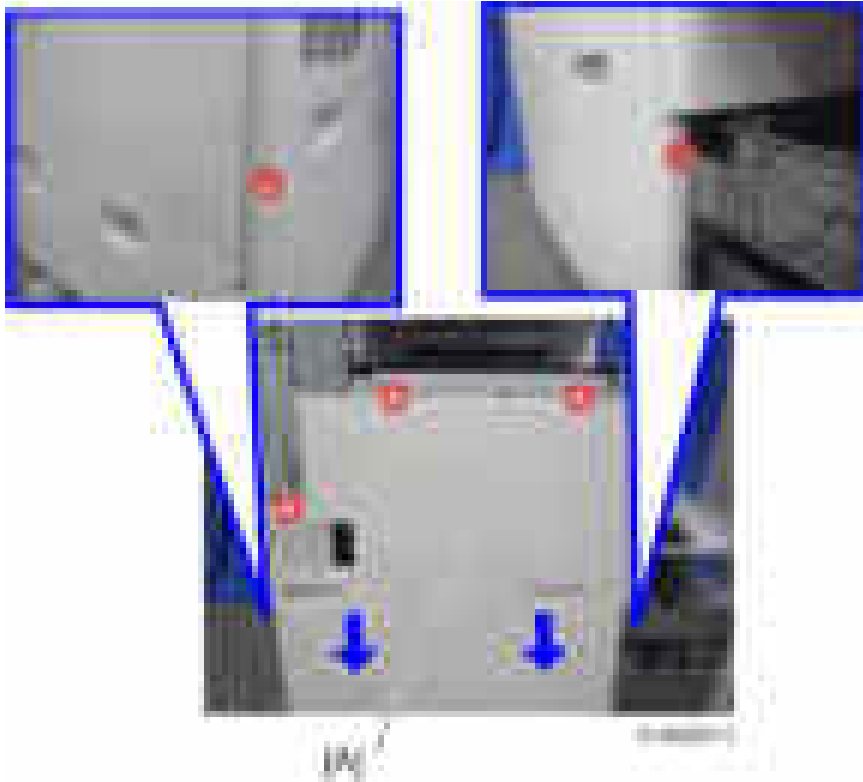
1. **Paper exit tray**

2. **Controller cover**

3. **Ozone filter / Dust-shield filter box**

4. **Front cover**

5. **Upper left cover**

6. **Left rear cover**

7. **2nd paper feed tray**

8. **Left cover**

Rear Cover

⚠ CAUTION

- There are six hooks (left-facing) on the back face of the rear cover. When fitting or removing the cover, take care not to damage it.

1. **Controller cover (page 254).**
2. **Rear cover [A] (▦×4).**
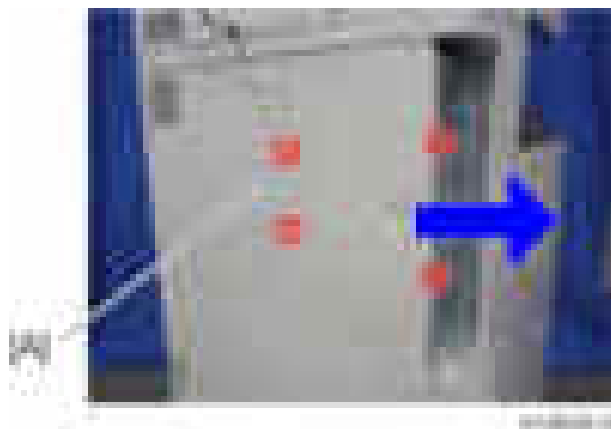
Rear Right Cover

1. Rear cover (**page 258**).
2. Rear Right Cover [A] (×3).

Rear Lower Cover

1. Rear cover (**page 258**).
2. Rear lower cover [A] (×5).
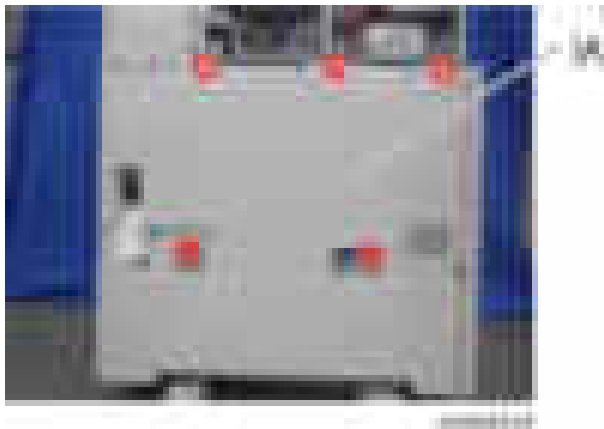
Scanner Rear Cover

1. Scanner rear cover [A] (![screw]×3).
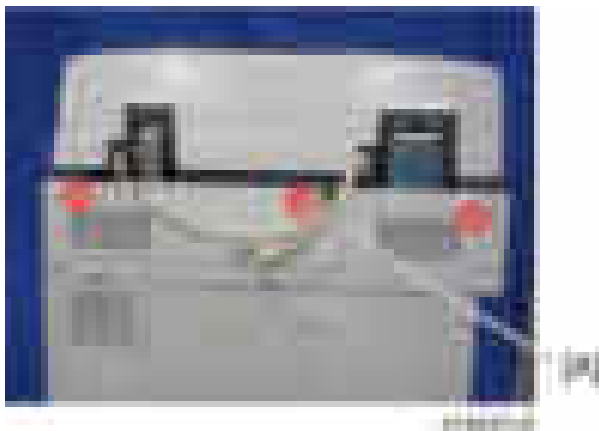
Scanner Rear Cover (Small)

1. Rear cover (page 258).
2. Scanner rear cover (Small) [A] (![screw]×2).

Right Rear Cover

1. Open the right cover (page 418).

2. **Right rear cover [A] (![screw]×4, Among them, tapping screw×1).**
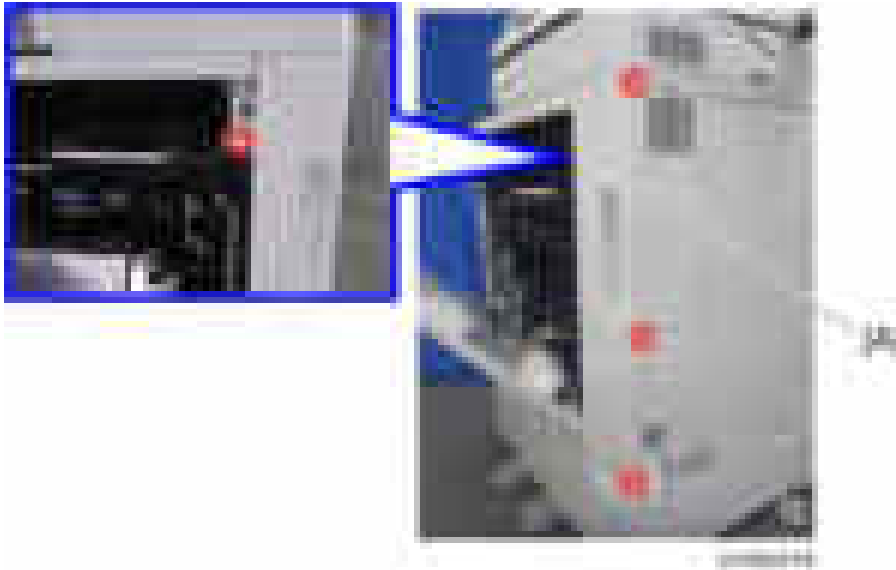
⬇Note

• When installing, insert the projections [A] in the holes [B], taking care not to trap the harness inside.
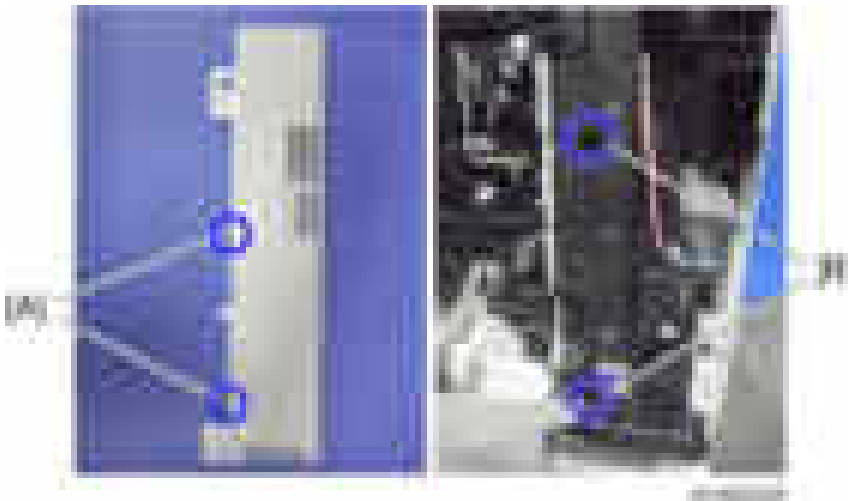
Right Upper Cover

1. **Main power switch cover (page 262).**

2. **Right upper cover [A] (×2).**

Main power switch cover

1. **Open the right cover (page 418).**
2. **Main power switch cover [A] (×1).**

Waste Toner Cover

1. **Front cover (page 252).**

2. Waste Toner Cover [A].

Reverse Tray

1. Reverse Tray [A].
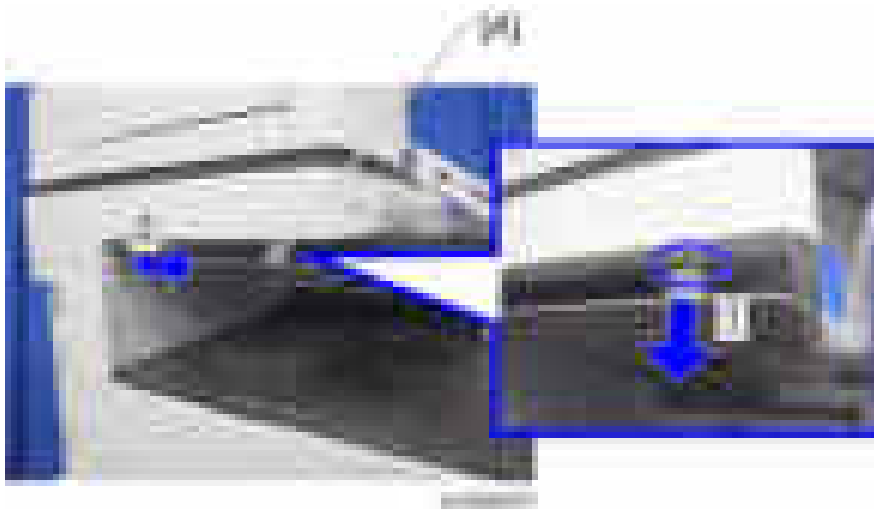
Paper Exit Tray

1. Paper Exit Tray [A].

Paper Exit Cover

1. Main power switch cover (**page 262**).

2. Reverse tray (**page 263**).

3. Paper exit cover [A] (⬚×1).

Paper Exit Lower Cover

1. Left rear cover (**page 255**).

2. Paper exit cover (**page 264**).

3. **Connector cover [A].**

4. **Paper exit lower cover [A] (🔩×2).**

Paper Exit Front Cover

1. **Paper exit lower cover (page 264).**

2. **Paper exit front cover [A] (×4).**

Inner Upper Cover

1. **Open the front cover, and remove the belt (page 252).**

2. **Open the right cover. (page 418).**

3. **Paper exit front cover (page 265).**

4. **Image transfer unit (page 321).**

5. **Inner upper cover [A] (×4).**

Inner Lower Cover

1. Front cover (**page 252**).

2. Inner upper cover (**page 266**).

3. PCDU front cover (Y) (**page 309**).

4. Inner cover: front: right-lower.

5. Inner lower cover [A] (×3).
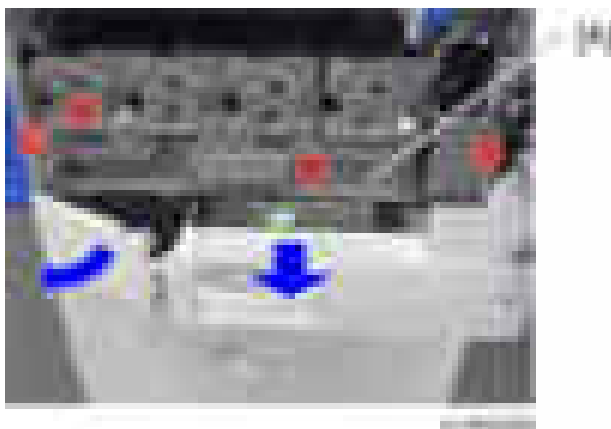
Operation Panel Unit

Operation Panel

1. Scanner front cover (**page 279**).

2. Operation panel upper cover [A].

3. Operation panel [A] (×6, ×2).
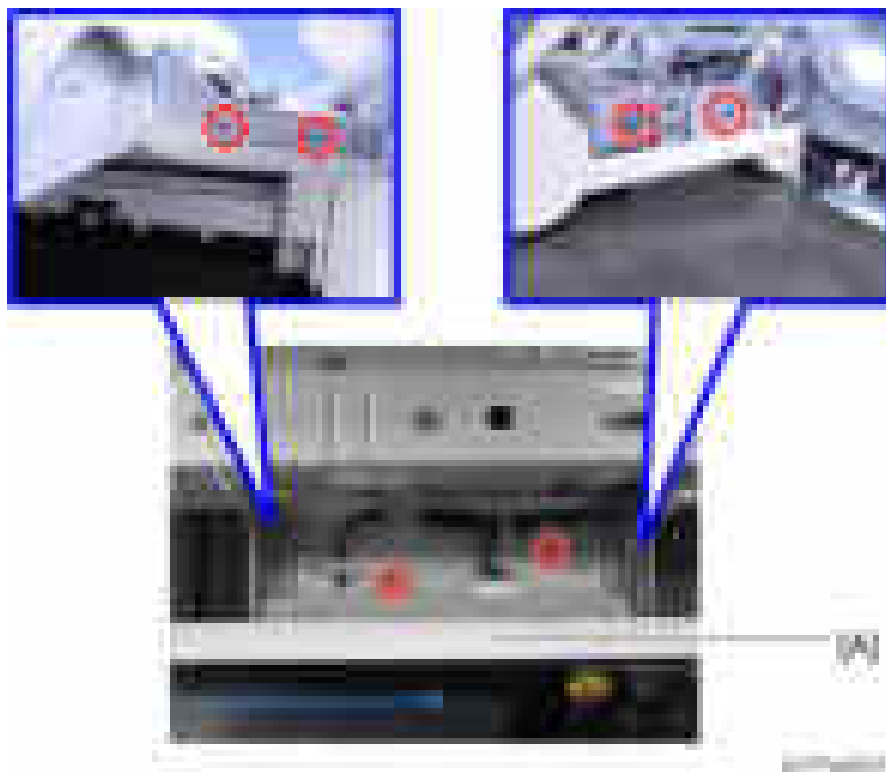
Board A

1. Operation panel (**page 268**).

2. Operation panel lower cover [A] (×6).

3. **Harness guide [A] (![]×2).**

4. **Bracket covers [A] [B].**
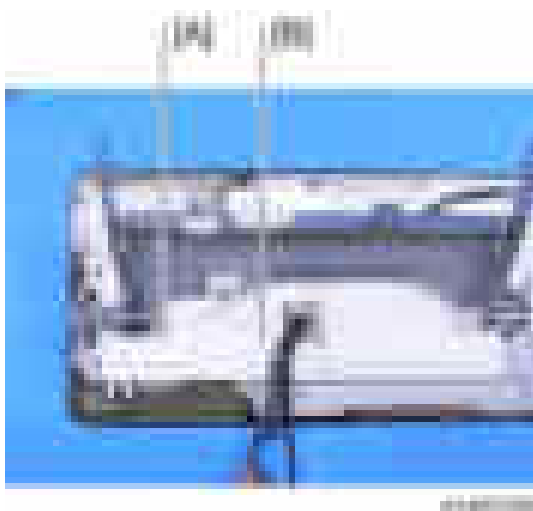
5. **Operation panel arm bracket [A] (🔩×6).**
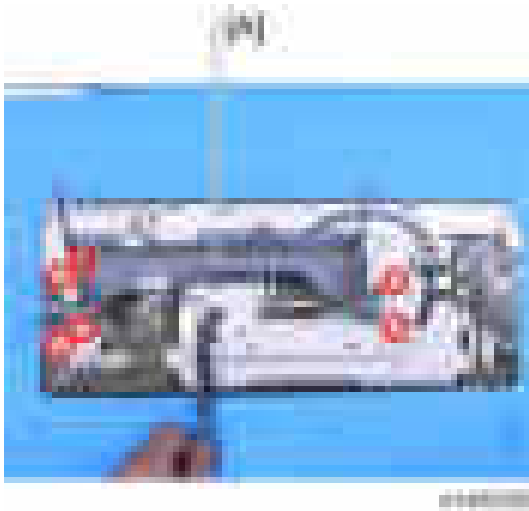
6. **Board A [A] (🔩×8, 🔩×3).**

Board B

1. **Operation panel arm bracket (page 268).**

2. **Board B [A] (▨×4, ▨×1, USB×2).**

Board C

1. **Operation panel arm bracket (page 268).**
2. **Board C [A] (▨×4, ▨×1, USB×2).**

LCD Panel

1. **Operation panel arm bracket (page 268).**

2. **Bracket [A] (×6,   ×5, USB×2).**

3. **LCD panel unit [A].**
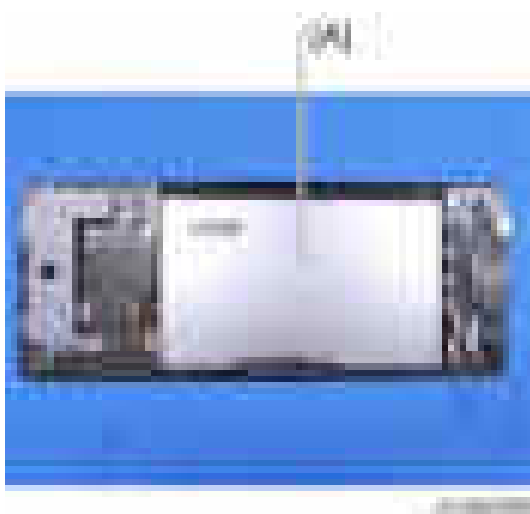
LCD

Notes When Replacing the LCD

Since LCD panels from three vendors are used, the replacement parts differ depending on the vendors. When replacing, check the vendor used, and ensure that you use the correct part.

↓Note

- The LCD panels are supplied by company S, company C and company A. Company S and A's panels are interchangeable because they use parts with the same specification.

Distinguishing method

Of the three labels on the rear of the operation panel, the center label shows the LCD model number.

Operation panel rear surface
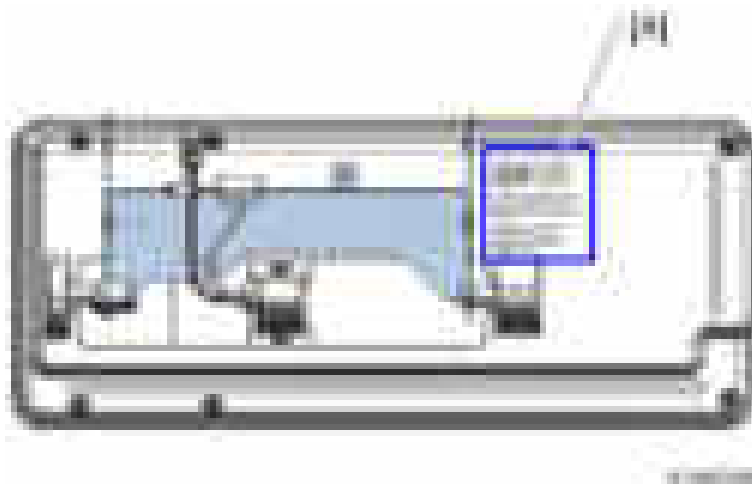
[A]: Label attachment position

Label

[A]: S Co. LCD: Printed as Sxxxxx...

[B]: C Co. LCD: Printed as Cxxxxx...

[C]: A Co. LCD: Printed as Axxxxx...

Differences between operation panels from three vendors

- Operation panel upper cover

  There is no difference in appearance, but there is a difference in internal layout.

- LCD bracket

  There is a difference in the shape of the bracket and the stamp inside the blue circle.

  S Co. / A Co.: SH stamp

C Co.: CM stamp
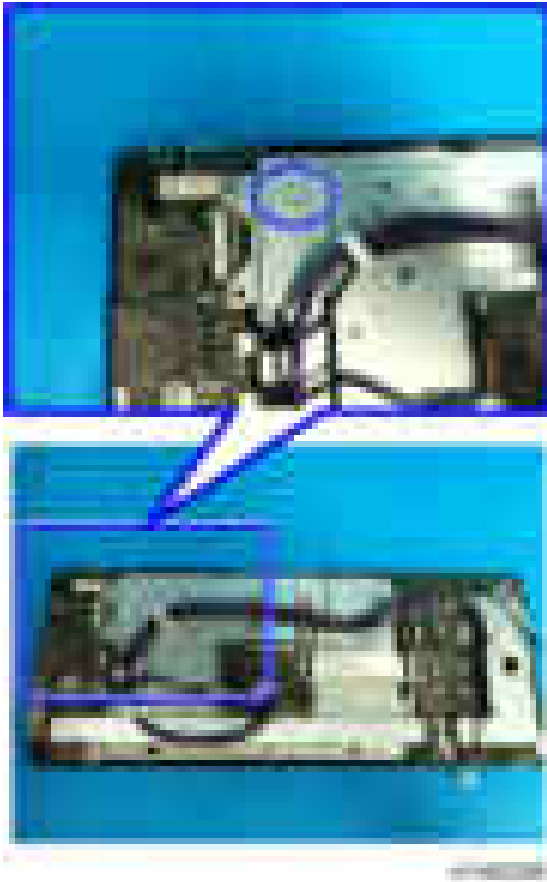
- Use of FFC (Flexible Flat Cable)

  For S Co. and A Co., FFC is used, but for C Co., instead of an FFC, a cable integrated with the LCD (orange) is used.
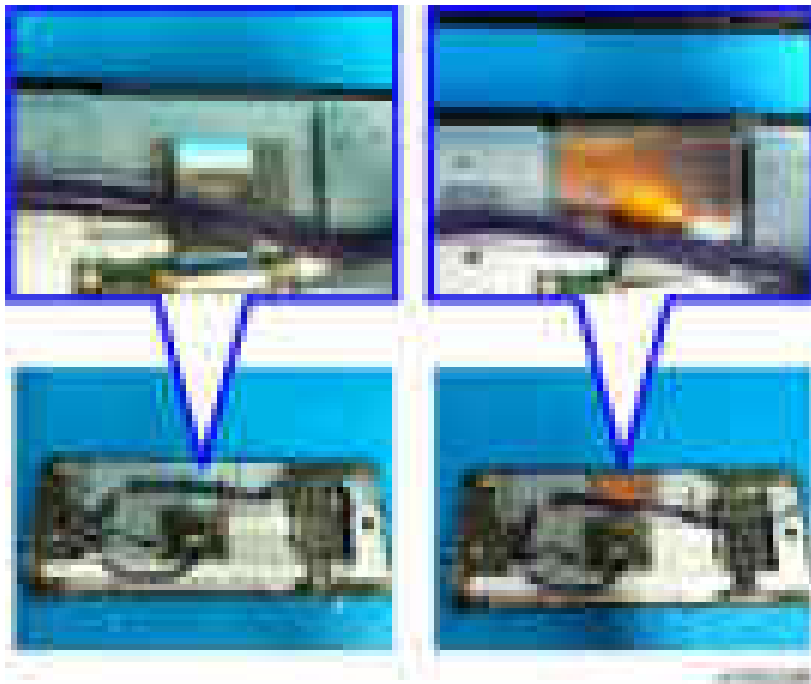
Replacement Procedure

1. Operation panel arm bracket (**page 268**).
2. Bracket [A] (, , USB×2).
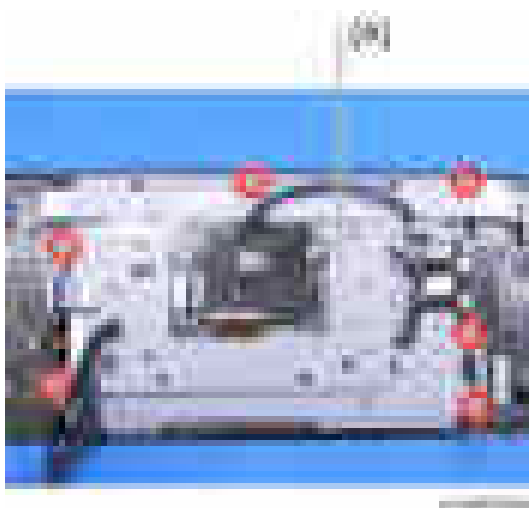
3. LCD panel unit [A].
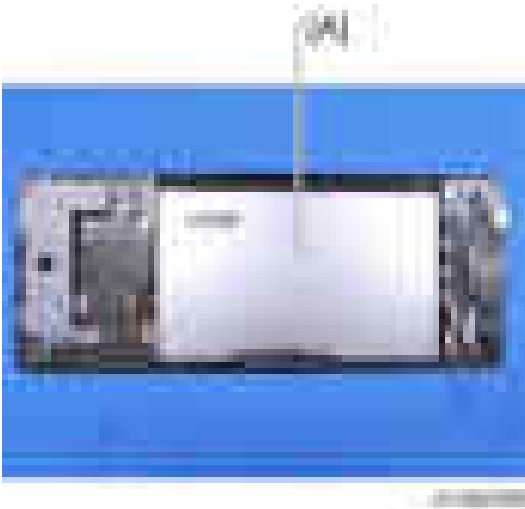
Scanner Unit

Note

- When you replace the scanner wire, use the standard positioning pins.

Scanner Exterior

Scanner Upper Cover

1. Platen cover or ADF.
2. Scanner rear cover (**page 260**).
3. Scanner Upper Cover [A] (×2).

Scanner Right Cover

1. Scanner rear cover (**page 260**).

2. Scanner right cover [A] (🔩×1).

Scanner Front Cover

1. Scanner front cover [A] (🔩×2).

Scanner Left Cover

1. Left rear cover (**page 255**).
2. Scanner front cover (**page 279**).

3. **Scanner left cover [A] (🔩×3).**

Exposure Glass

1. **Open the platen cover or ADF, and remove the scale [A] (🔩×3).**

2. **ADF exposure glass [A].**
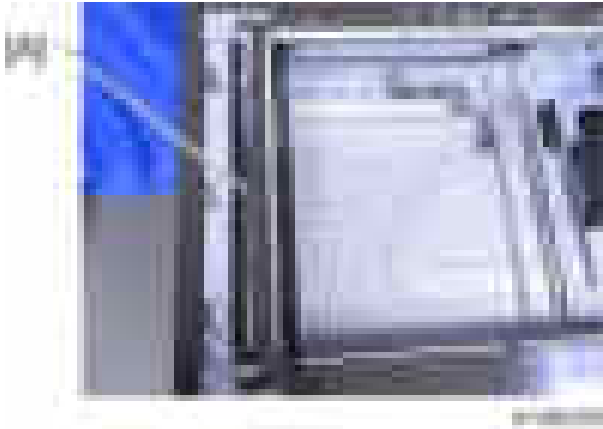
3. **Rear scale [A] (×3).**

4. **Left scale and exposure glass [A].**

⚠**CAUTION**

- The exposure glass and the left scale are attached with double-sided tape.

⬇ Note

- When installing, please follow the points below:
- Set so that the blue mark [A] of the ADF exposure glass is on the left at the front of the operation panel.
- Set so that the locating hole of the left scale fits over the locating boss of the front/rear frame.
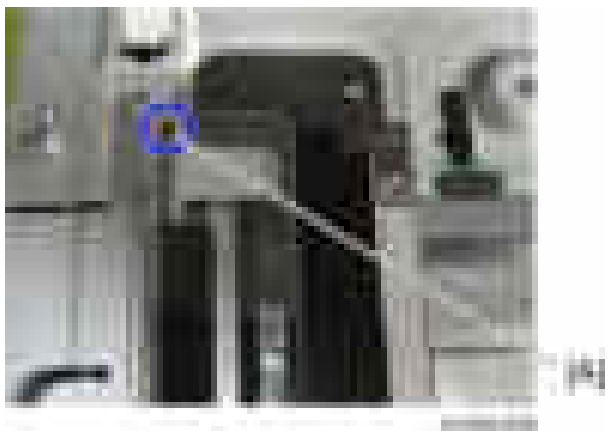
Exposure Lamp (LED)

1. **Exposure glass (page 280).**

2. Move the exposure lamp (1st scanner carriage) [A] to position [B].

3. Exposure lamp [A] (🔩×2, 🔌×1).
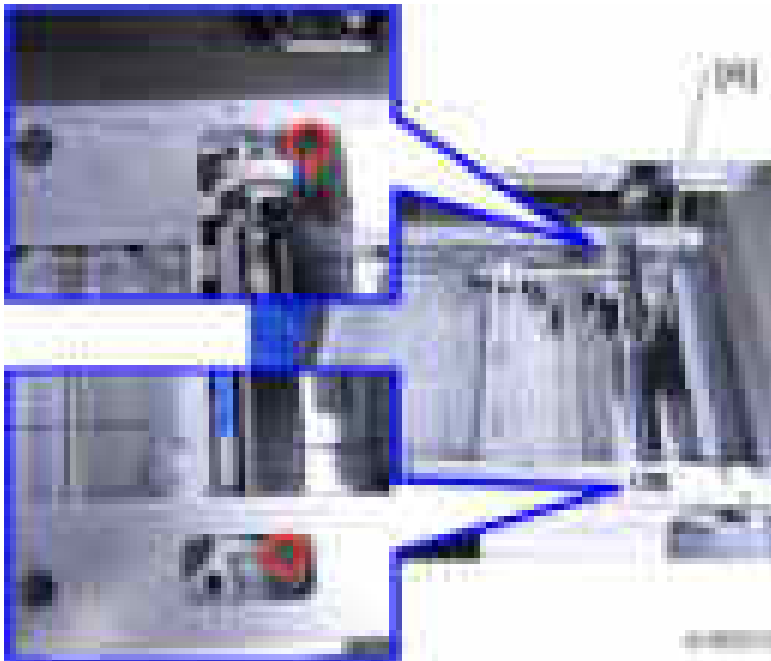
Scanner Motor

1. Scanner upper cover (**page 278**).

2. **SIO unit [A] (** ×2, ×7**).**

3. **Bracket [A] (** ×4, ×3**).**
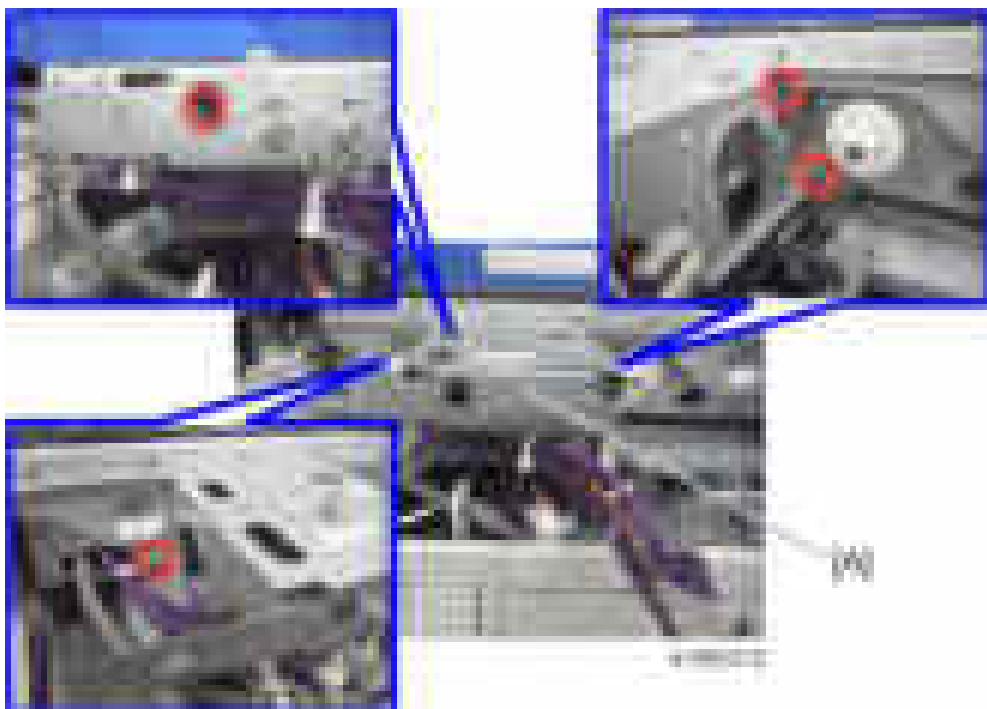
4. **Spring [A].**

5. **Scanner motor unit [A] (⊞×2, ⊞×1).**
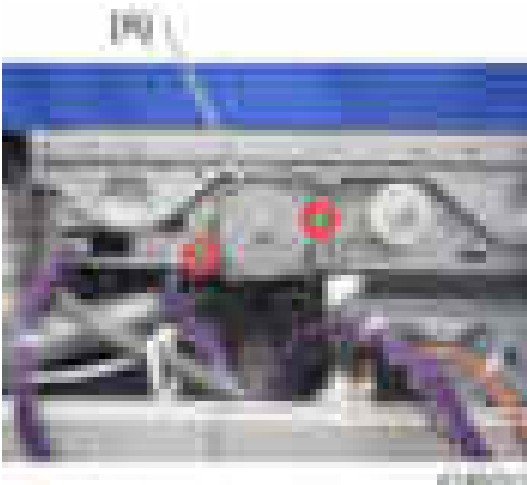
6. **Scanner motor [A] (⊞×2).**

Lens Block

1. **Exposure Glass (page 280).**

2. **Lens block cover [A] (×2).**

3. **Lens block [A] (×5, ×2).**

Original Size Sensor

1. **Exposure glass (page 280).**

2. **Original size sensor [A] (** ×1).

🔻**Note**

- When a screw driver is inserted, the tab can be removed smoothly.

SIO

1. **Scanner rear cover (page 260).**

2. **Scanner upper cover (page 278).**

3. **Bracket [A] (** ×1).

4. SIO [A] (×4, ×7).

Scanner HP Sensor

1. Scanner upper cover (**page 278**).

2. Exposure glass (**page 280**).

3. Slide the exposure lamp (1st scanner carriage) [A] in the direction of the arrow a little.
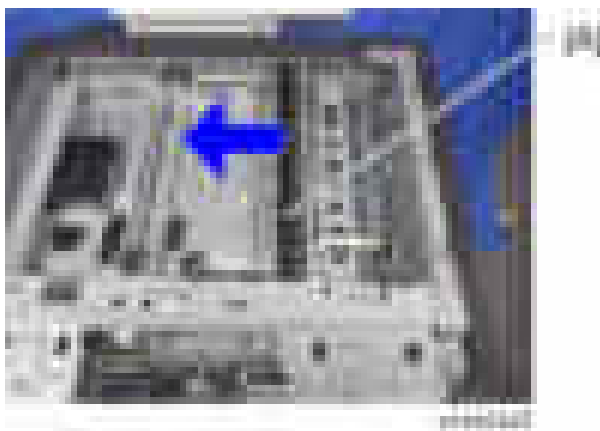
4. **Peel off the sensor stopper [A].**

5. **Scanner HP Sensor [A] (▭ ×1).**

DF Position Sensor

1. **Scanner upper cover (page 278).**

2. **DF Position sensor [A] (** ×1, ×1**).**

Adjusting the Scanner Wire

Scanner Wire (Front)

1. **Exposure glass (page 280).**
2. **Scanner right cover (page 278).**
3. **Operation panel (page 268).**
4. **Main power switch cover (page 262).**
5. **Lower bracket [A] of the operation panel (** ×6, ×3**).**
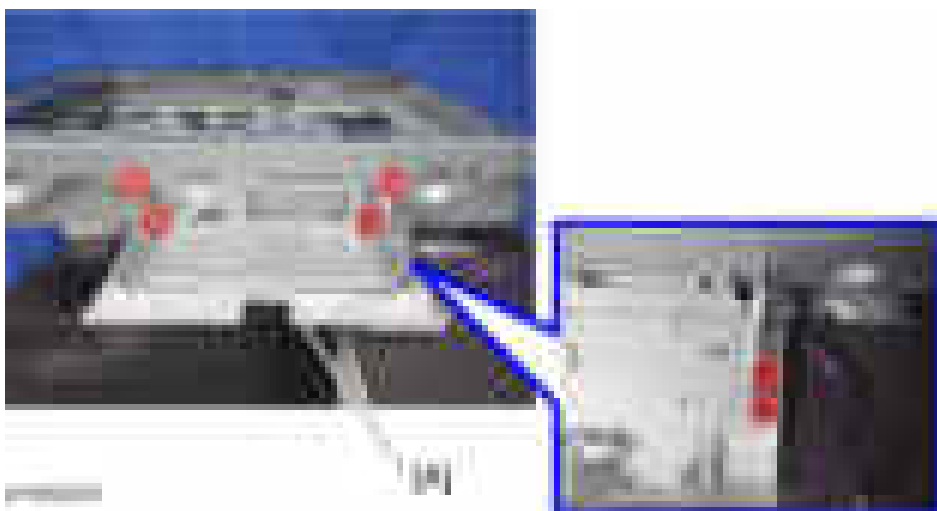
6. **Scanner front frame [A] (×6).**
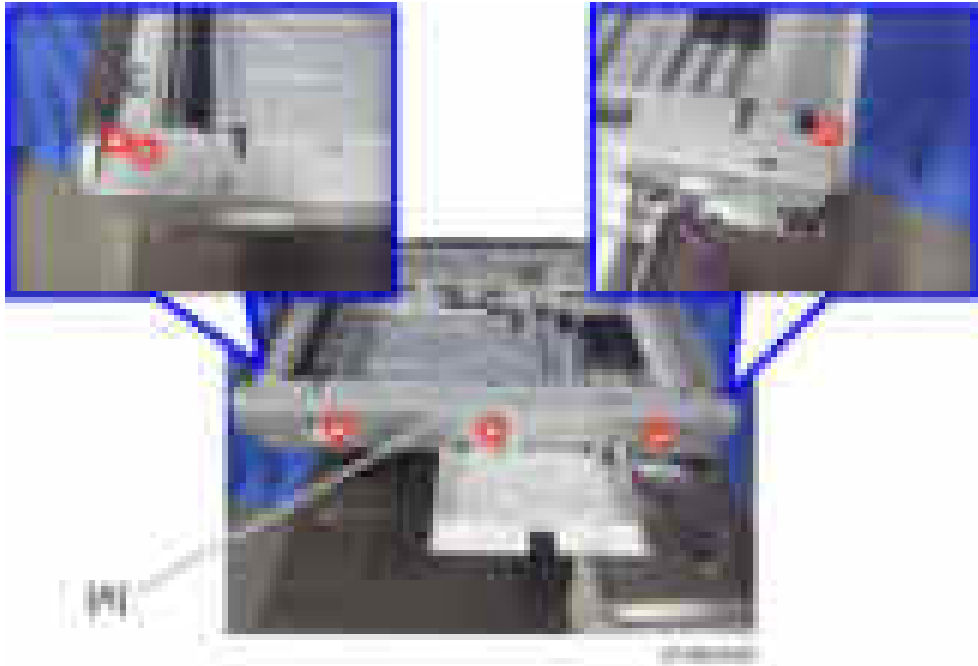
7. **Move the 1st scanner carriage to the set position of the scanner fixing pin.**
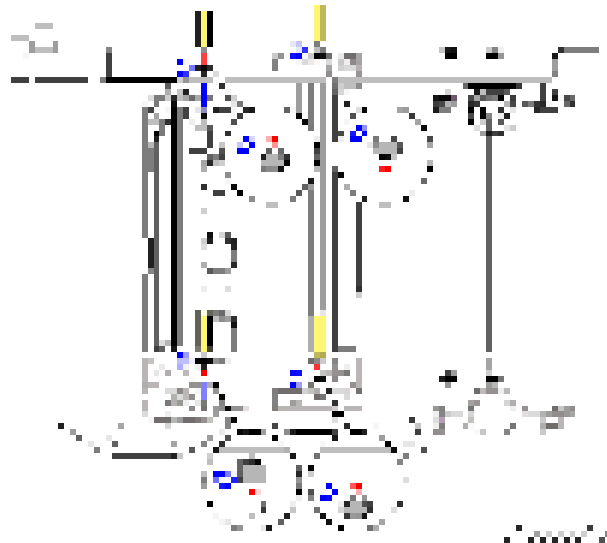
8. Wire clamp [A] (🔩×1).

9. Wire fixing bracket [A], spring [B] (🔩×1).

10. Wire pulley [A] (🔩×1, 📎×1).

🔽Note

- Do not touch the mirror and the lamp.

- When you move the carriage, hold the central part and move it gently.

Scanner Wire Assembly (Front Side)
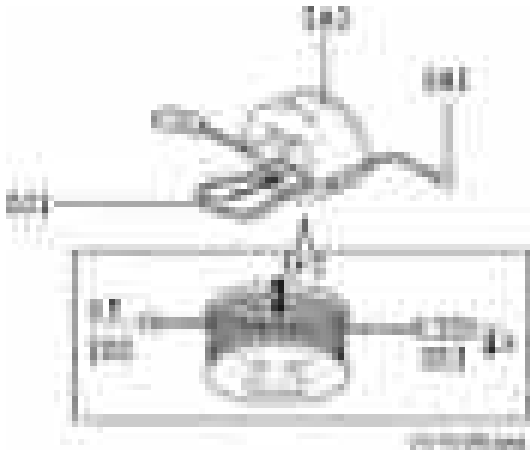
1. **Pull the scanner wire ball end [B] to the pulley [A] from the left side of the pulley as shown in the diagram.**

2. **Set the ball [C] in the center part of the wire on the pulley.**

3. **Turn the ball end [D] 5 times counterclockwise along the edge on the rear side of the pulley.**

4. **Turn the ring end [E] 3.5times clockwise along the edge at the front side of pulley.**

5. **Check that the blue marks [F] of the wire overlap, and secure it temporarily with Teflon tape, etc.**
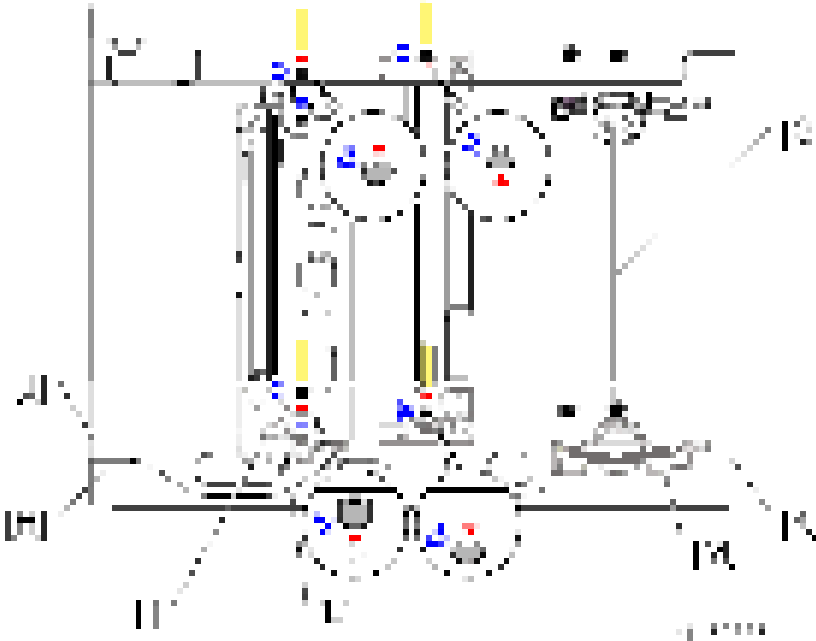
6. **Set the pulley on the drive shaft [G] (tighten the screw temporarily).**

7. **Set the ball end of the wire in the following order.**

   1. Left frame pulley (outside) [H]

   2. 2nd scanner carriage (outside) [I]

   3. Left frame slit [J]

8. **Set the ring end of the wire in the following order.**

   1. Right frame pulley (outside) [K]

   2. 2nd scanner carriage (inside) [L]

   3. Scanner retaining bracket [M]

      (Tighten the screw of the scanner retaining bracket temporarily)

9. **Remove the tape which temporarily held the wire in Step 5.**

10. **Attach the spring.**

Scanner Position Adjustment
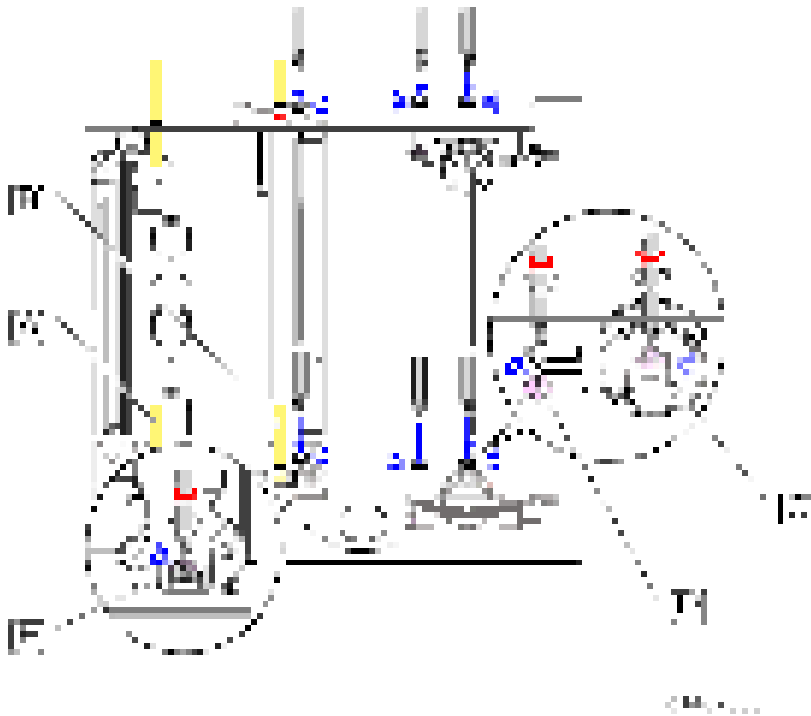
1. **Set the scanner positioning pins (4).**

   - 2nd scanner carriage and frame hole [A]

   - 1st scanner carriage and frame hole [B]

   - Same position as [A] on the rear side

   - Same position as [B] on the rear side

2. **Tighten the screw [C] of the pulley which was temporarily tightened.**

3. **Tighten the screw [D] of the scanner retaining bracket which was temporarily tightened.**

4. **Attach the wire clamp [E].**

5. **Pull out the scanner positioning pins.**

6. **Holding the center part of the 1st scanner carriage, move it to the left and right to ensure it moves smoothly.**

   If it does not move smoothly, loosen the scanner wire, and perform the scanner position adjustment procedure again.

⬇️**Note**

- After replacing the wire, make a test copy, and check skew, magnification, and whether there is a registration gap. If there is a gap, adjust the scanner wire position again, or perform Scan Registration Adjustment (SP4010-SP4011).

Scanner Wire (Rear)

1. **Scanner right cover (page 278).**

2. **Scanner left cover (page 279).**

3. **Exposure glass (page 280).**

4. **Scanner motor (page 283).**

5. **Bracket [A] (　×7, 　×1).**
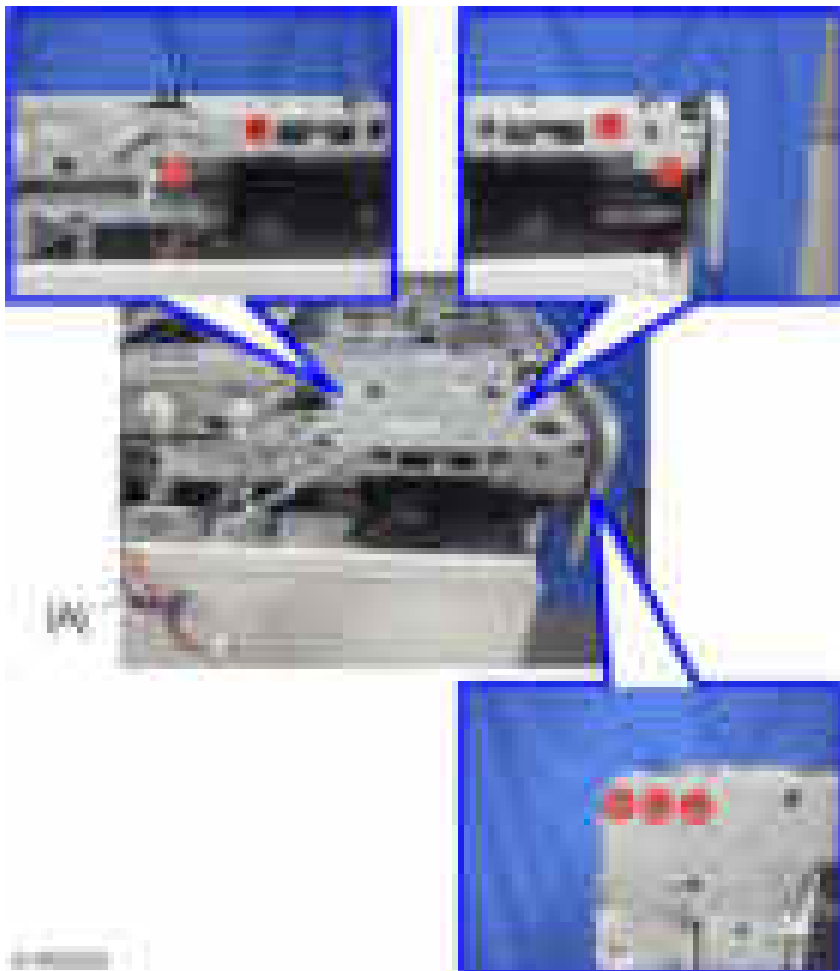
6. **Rear frame [A] (** ×6).
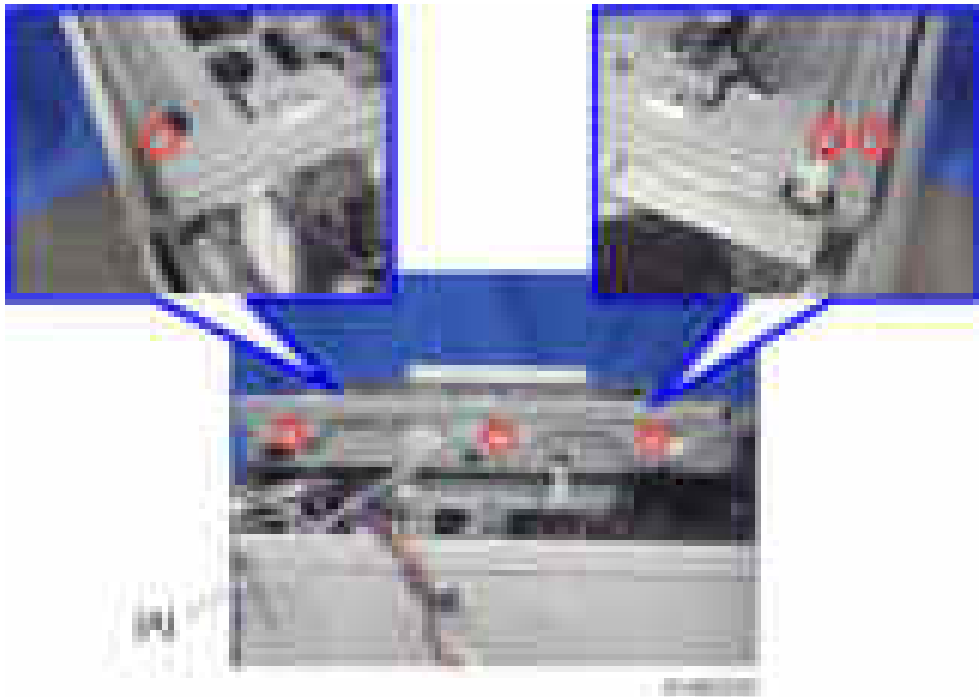
7. **Move to the set position of the fixing pin for the first carriage.**
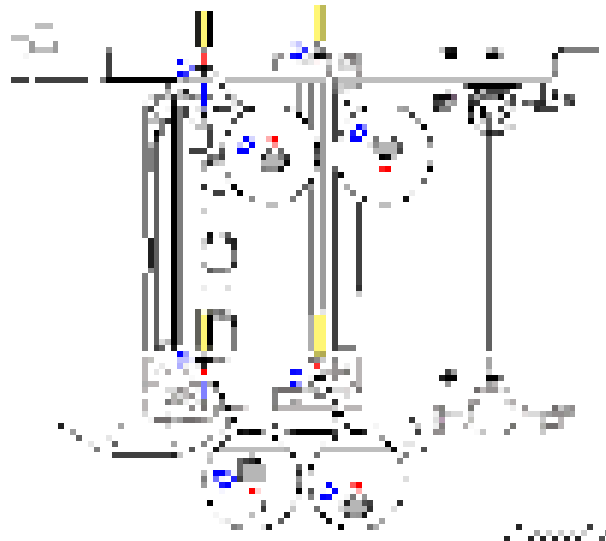
8. **Wire clamp [A] (🔲×1).**

9. **Wire fixing bracket [A], spring [B] (🔲×1).**

10. **Scanner drive gear [A] (🔲×1).**

11. Remove the screw and the clip ring of the wire pulley (front) [A] and wire pulley (rear) [C], draw out the scanner drive shaft [B] in the direction of the arrow, and remove the wire pulley (rear) [C] (▦×1, ▦×2).
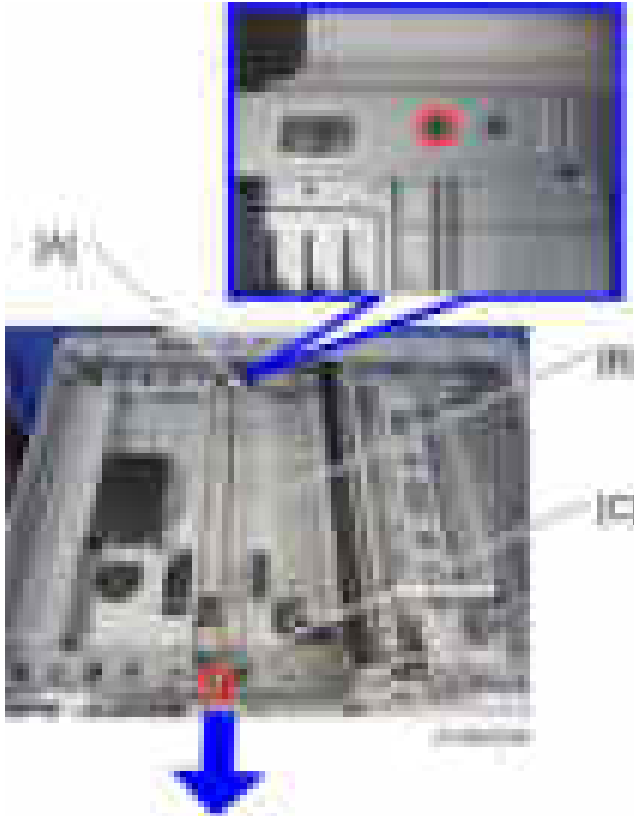
Scanner Wire Assembly (Rear Side)
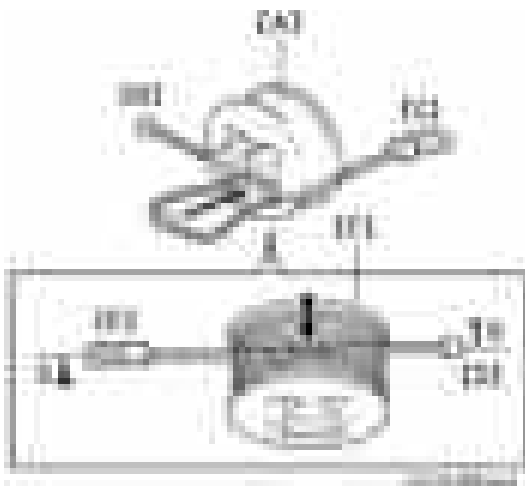
1. Pull the scanner wire ball end [B] to the pulley [A] from the right side of the pulley as shown in the diagram.

2. Set the ball [C] in the center part of the wire on the pulley.

3. Turn the ball end [D] 4.5 times clockwise along the edge on the rear side of the pulley.

4. Turn the ring end [E] 3.5 times counterclockwise along the edge at the front side of the pulley.

5. Check that the blue marks [F] of the wire overlap, and secure it temporarily with Teflon tape, etc.

6. Set the pulley on the drive shaft, and attach the scanner drive gear.

7. Attach the scanner wire on the rear side as in Step 7, attaching the scanner wire (front side).

Modifying the Scanner (Contact/Contactless) When Using ARDF

Procedure for the ADF

1. ADF front cover [A] (▨×1).

   ↓Note

   • Remove with the document table [B] lifted up.

2. **Document reader guide plate [A] (■×1).**
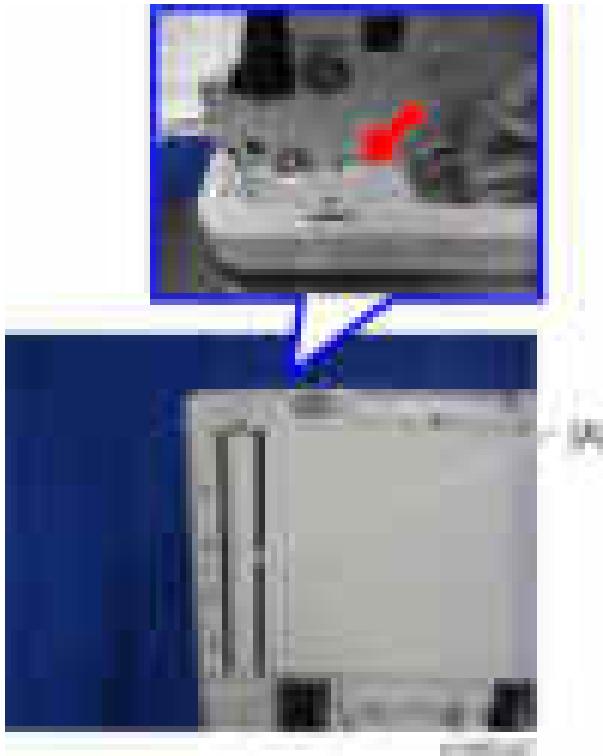
3. **Replace the contactless guide plate (front) [A] with the contact guide plate (front) [B] (■ ×1).**

There is a hole in the contact guide plate (front).
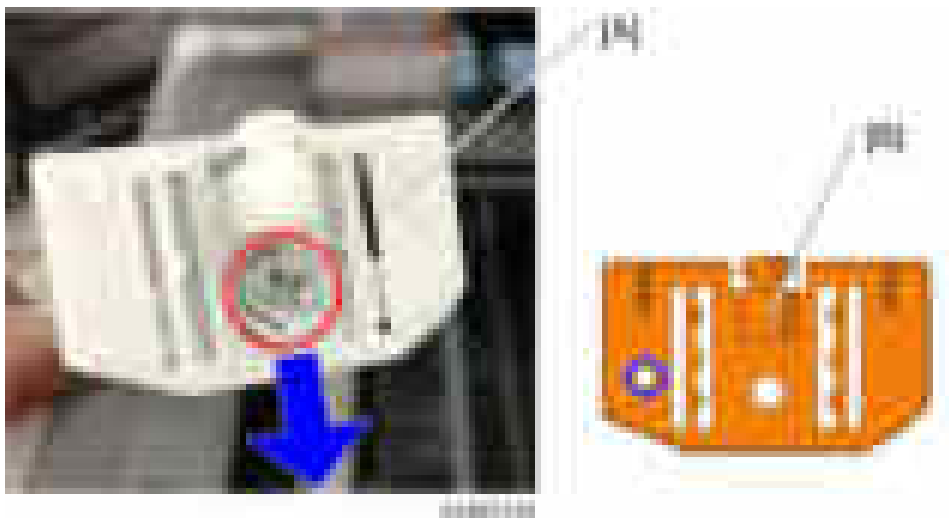
4. **Replace the contactless guide plate (rear) [A] with the contact guide plate (rear) [B].**

There is a hole in the contact guide plate (rear).
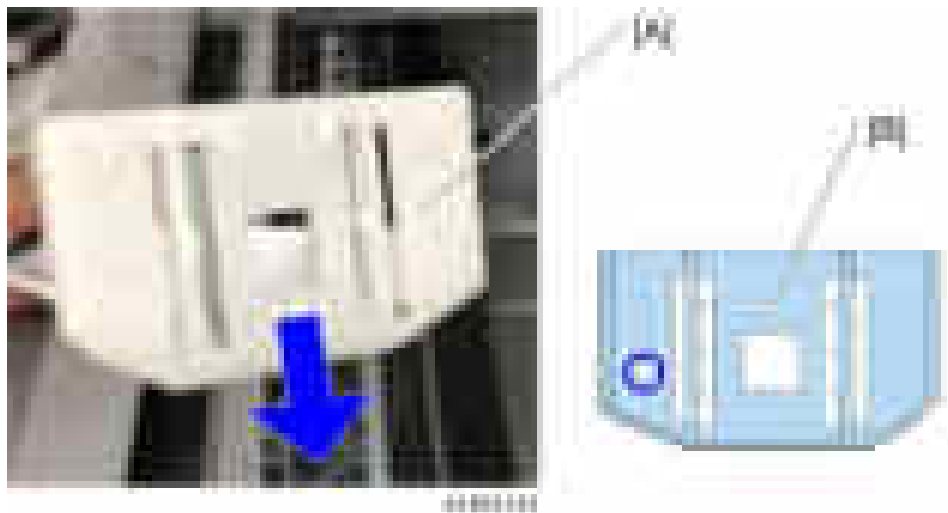
5. **Attach the document reader guide plate. Be careful not to scratch the sheet [A].**

6. **Attach the ADF front cover, and return the ADF to its original position.**

7. **From the SP mode, change the DF density setting (SP4-688-001) from [102%] to [97%].**

Procedure for the Scanner

1. Remove the exposure glass, and peel off the sheet [A].
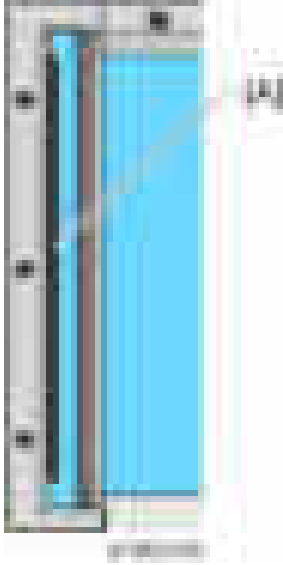
2. Wipe the exposure glass with alcohol, etc., so that no glue remains from the double-sided tape.

🔽Note

- Remember that if any glue remains, it will cause a paper jam in the ADF.

Laser Unit

⚠WARNING

- Turn off the main switch and unplug the machine before beginning any of the procedures in this section. Laser beams can cause serious eye injury.

- Caution Decals

- Decal Location

Laser Unit

⚠CAUTION

- A polygon motor protection bracket and a red label are attached to each new laser unit. Remove these before you install the new unit.

Before Replacement

1. Polygon motor cover [A] (×4).
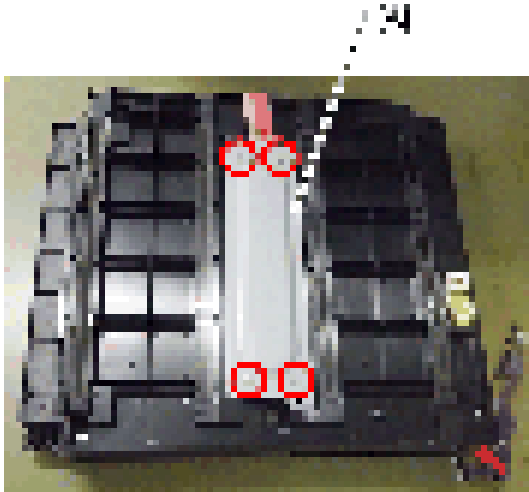
2. Polygon motor bracket [A], Red tag [B] (×3).

3. Reattach the polygon motor cover.

Removing Laser Unit

1. Left cover (page 255).

2. Laser unit [A] (▨×2, ▨×4, ▨×3).
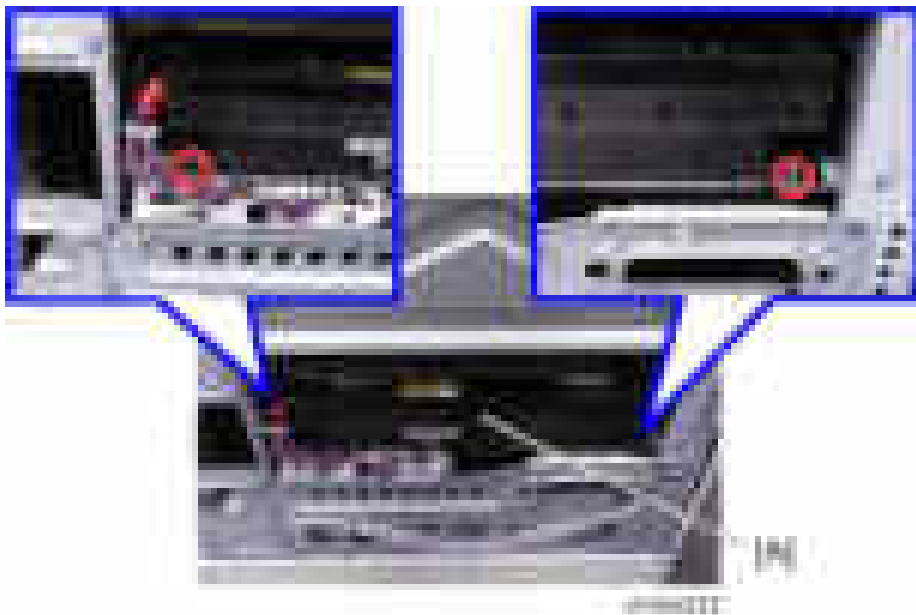
Installing a New Laser Unit

1. Insert the new laser unit in the main body carefully.

2. Connect all harnesses except the skew correction motor harness [A] (2nd from right).
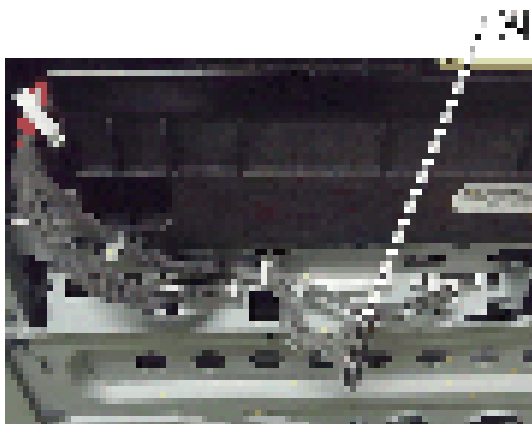
3. Reassemble the machine.

Adjustment after Replacing the Laser Unit

1. **Close the front cover and attach the left cover.**

   ## ⚠ WARNING

   - Attach the left cover before turning on the main switch. Laser beams can seriously damage your eyes.

2. **Plug in and turn on the main power switch.**

3. **Download the data of the new laser unit to the main body with SP2-110-005.**

   ⬇ Note

   - If it fails (see step 4 below), perform SP2-110-005 again.

   - If it is not executed correctly, outputs will be abnormal (magnification and color registration errors), and SC 285 may occur.

4. **Check that SP2-119-001 to 003 is "0."**

   ⬇ Note

   - If it is not "0", perform SP2-110-005 again.

5. **Turn off the main power switch and disconnect the power cord.**

6. **Remove the left cover and attach the skew correction motor harness [A].**
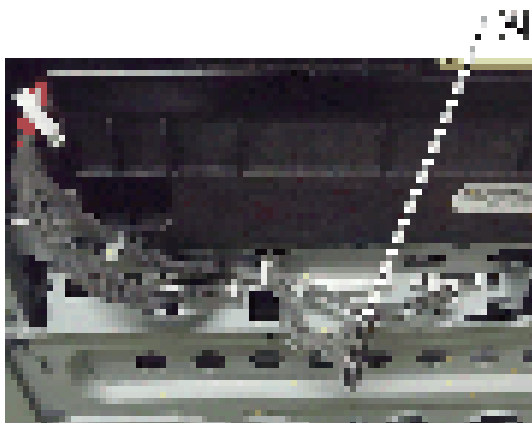
7. **Close the left cover.**

8. **Plug in and turn on the main power switch.**

9. **Set SP2-109-003 to 1, press 'Copy Window', and print. The 1-dot vertical line test pattern is printed.**

   After outputting the 1-dot vertical line pattern, set SP2-109-003 to "0."

   Check that the space on either side is less than 4±1 mm. If it is not within these limits, change the reference value of the main scanning magnification adjustment (SP4-011-001).

10. **Perform line adjustment.**

    SP2-111-004: Forced Line Position Adj. Mode d

    The result can be checked with SP2-194-007 (MUSIC Execution Result Execution Result) (0: Succeed, 1: Fail).

    Also, results for each color can be checked with SP2-194-010 to 013.

11. **Exit the SP mode.**

Polygon Motor

1. **Polygon motor cover (page 304).**
2. **Polygon motor holder [A], Polygon motor [B] (　×5, 　×1).**
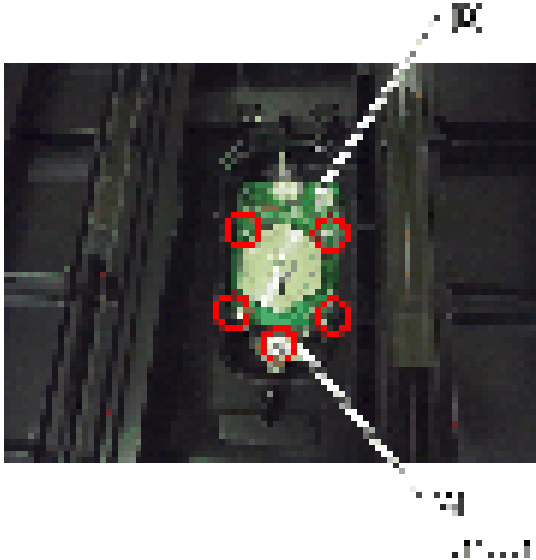
Adjustment after Replacing the Polygon Motor

SP2-111-004: Forced Line Position Adj. Mode d

The result can be checked with SP2-194-007 (MUSIC Execution Result Execution Result) (0: Succeed, 1: Fail).

Also, results for each color can be checked with SP2-194-010 to 013.

PCDU

PCDU

Before Replacing the PCDU

An PCDU has two components: a drum unit and a development unit. Before replacing the PCDU, set SP3-701 to "1" for the PCU that you will replace, and again for the development unit that you will replace. Then switch the power OFF, replace the PCDU, and then switch the power ON.

Replacement

1. **Open the front cover [A].**

2. **Remove the ITB front cover [A] (x 1).**

🔸 **Note**

- The screw for the ITB front cover is shorter than the screws for the PCDU cover. Pay attention to use proper screw(s) when attaching these covers.
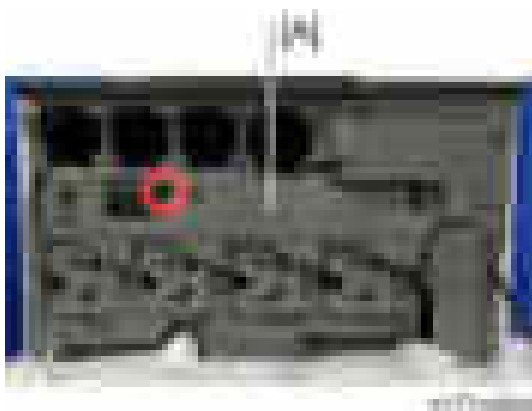
3. Remove the PCDU cover.
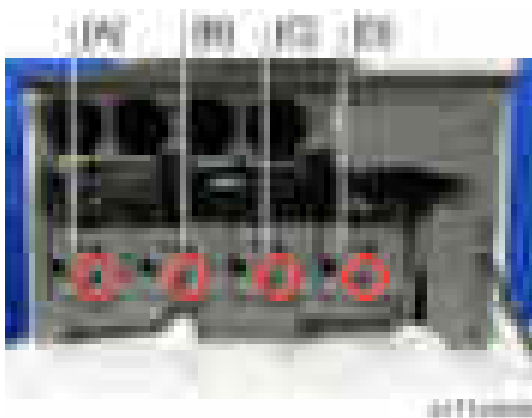
[A]	Y	x 1
[B]	M	x 1
[C]	C	x 1
[D]	K	x 1

4. **Release the lock for the ITB contact/separation lever [A].**
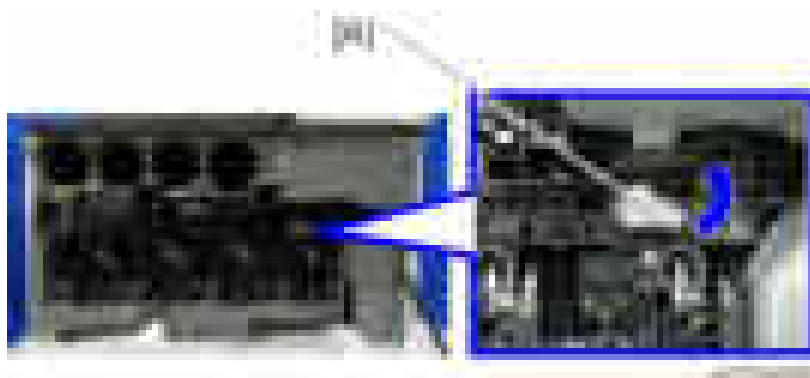
5. **Remove the PCDU.**

[A]	Y	🔩 x 1, 🔌 x 1
[B]	M	🔩 x 1, 🔌 x 1
[C]	C	🔩 x 1, 🔌 x 1
[D]	K	🔩 x 1, 🔌 x 1

PCU/Development Unit

Before Replacing a PCU

⚠️ **CAUTION**

• Before replacing a PCU, do the procedure shown below. The main points are as follows.

  • Input the charge voltage correction value for the new PCU.

- The machine will optimize SP settings related to imaging using process control, after you input the charge voltage correction value and replace the PCU.

1. **Set SP3-701: New PCU detection to "1" before replacing the PCU.**

2. **Check the charge voltage correction value printed on the label attached to the new PCU. This value is adjusted for each PCU.**

   ↓Note

   - It is not necessary to input the correction value when installing a complete brand-new PCDU.
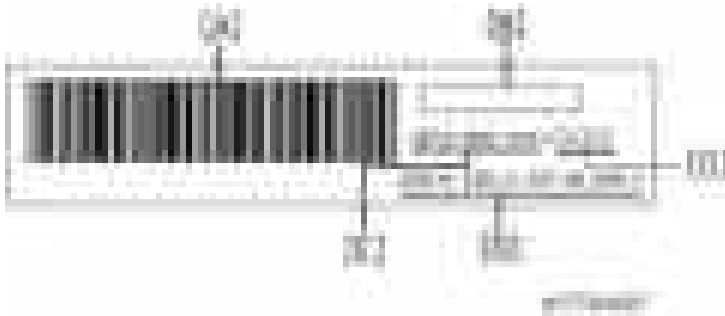
A	Bar code
B	PCU Lot No.
C	Correction value
D	Last three digits of SP number
E	SP No.

3. **Input the value (located at [C] on the decal as shown above) into the correct SP2-005 as shown below.**

   SPs for charge voltage correction before replacing PCU

	SP No.
K	SP2-005-235
C	SP2-005-236
M	SP2-005-237
Y	SP2-005-238

4. **Turn the power OFF.**

5. **After replacing the PCU, turn the power ON. (Process control is done automatically.)**

⬇Note

• If you replace the PCU without inputting the correction value, do the following procedure:

    • Case 1: When you set SP3-701 to "1"

      1. Input the PCU correction value.

      2. Execute process control manually with SP3-011-001 in order to adjust the machine settings with the PCU correction value. Note that if you replaced the PCU using the proper procedure mentioned above, process control starts automatically.

    • Case 2: When you **did not** set SP3-701 to "1"

      1. Set SP3-701 to "1".

      2. Input the PCU correction value.

      3. Turn the power OFF. Note that process control will start automatically.

Before Replacing a Development Unit

RTB 74
Agitate the developer by shaking the unit

⚠CAUTION

• Before replacing the Development Unit, set SP3-701: New Development Unit detection to "1", and switch the power OFF. Then replace the development unit and switch the power ON. Doing the replacement in the wrong order will clear the PM counter and the remaining counter of the PCU.

RTB 44
When turning power on after replacement, if you need to update firmware, do ACC first

Replacement

1. **PCDU (page 309).**

2. **Release the connecting part (front) [A] (🔲 x 2) and harness [B].**

3. Cover [A] (x 1).

⚠CAUTION

- Be careful not to break the plate (the red arrow).

- Handle with care to prevent deformation of the plate. Deformation can cause unstable images due to contact failure. Be sure to attach this cover to the PCDU and install the PCDU in the mainframe.

4. **Connecting part (rear) [A] (⬚ x 3).**

5. **Separate PCU [A] and development unit [B].**
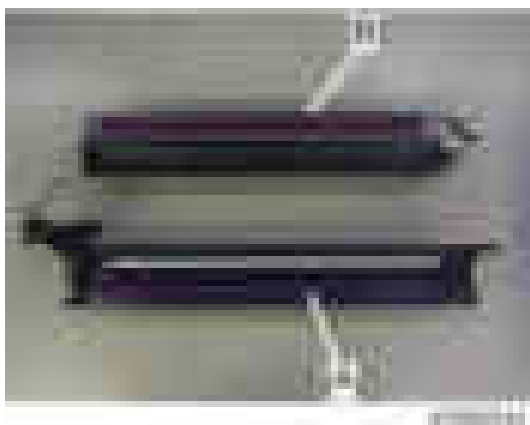
⚠️**CAUTION**

- When holding the development unit, be sure to obey the following three DO NOTs:

- **DO NOT** touch the development roller housing [A]. Doing so will deform the development roller housing, which causes the development roller to be scratched.

- **DO NOT** touch the doctor blade [B]. The doctor blade is an extremely sharp-edged blade, made with a high precision to work properly. So touching the blade causes physical injury as well as deformation of the blade assembly which causes a malfunction of development unit.

- **DO NOT** touch the development roller. Doing so develops a fingerprint on paper.
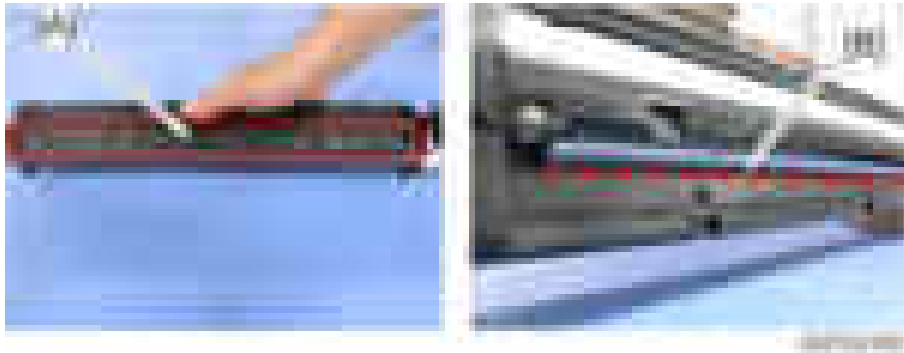
• Hold the development unit as below:

⬇Note

• When separating the PCU and development unit, the drum may come off and this could cause a toner spillage. Hold the PCU [A] with the drum side up as shown below to prevent toner spillage.

Notes for Assembling PCU/Development Unit

Pay close attention not to spill any toner on the charge roller when assembling.

⊙Note

- Remove the heat seal [A] after replacing the PCDU.
- Remove the cap [B] pasted on the toner port when replacing the PCDU.

Method for Checking after Replacement

Before installing, rotate the drum in the blue arrow direction, to ensure that toner lines do not occur.

Imaging Temperature Sensor (Thermistor)

1. **Open the controller box (page 351).**

2. **Connector [A].**

3. **Imaging temperature sensor harness guide [A] and Imaging temperature sensor [B]** (×2).

Waste Toner

Replacement

1. **Open the waste toner cover [A].**

   Push the blue circle area, then open the cover.

2. **Pull out the waste toner bottle [A].**
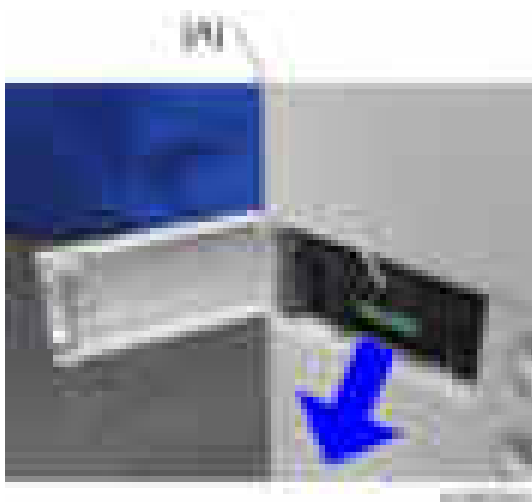
Adjustment after Replacing

The counter for the Waste Toner Bottle is reset automatically.

The counter isn't reset with SP3-701-142 (Manual New Unit Set: Waste Toner Bottle) and SP7-622-142 (PM Counter reset: Waste Toner Bottle).

4

Image Transfer Unit

Image Transfer Belt Unit

⚠ CAUTION

- Note that if the two levers [A] are not pointing up, the image transfer belt unit cannot be inserted.
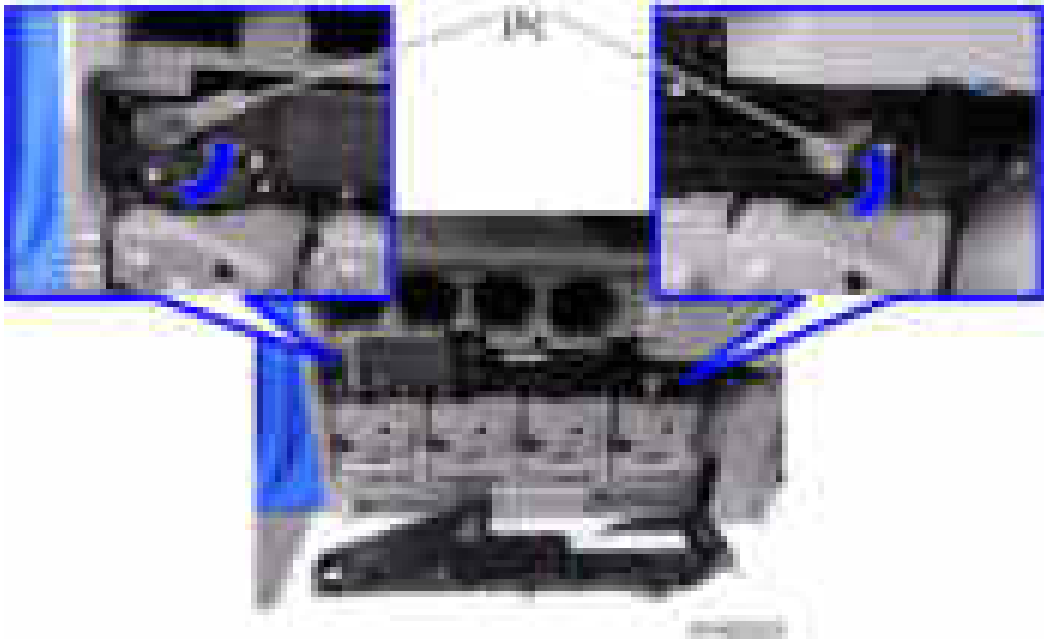
- Before you remove or attach the image transfer belt unit, remove the duplex unit and open the paper transfer unit.

- Do not touch the rollers but hold the upper/lower resin part [A] when you lift the Image Transfer Unit. Touching the rollers may cause poor image quality.

⚠️CAUTION

- Precautions when attaching the image transfer belt unit:

  - When attaching the image transfer belt unit, after fitting the unit into the machine, push the unit in firmly once more as shown in the illustration below. Check that the unit is inserted as far as it will go, and then lock the ITB lock lever and ITB contact lever.
    If the ITB contact lever is locked when the image transfer belt unit is not pushed right in, the paper transfer roller will not be mounted in the correct position when the paper transfer roller unit is closed, resulting in shadows on the image, paper jamming or failure of the paper transfer roller unit to open.

Adjustment before Replacing the Image Transfer Belt Unit

Before replacing the Image Transfer Belt unit, set SP3-701-093 to "1" and switch the power OFF.

Then replace the Image Transfer Belt unit and switch the power ON.

Replacement

1. **Open the front cover. (page 252)**

2. **Image transfer front cover [A] (×1)**

3. **Release the lock [A] and open the right cover [B].**

4. **Pull the handle [A] and open the paper transfer unit [B].**
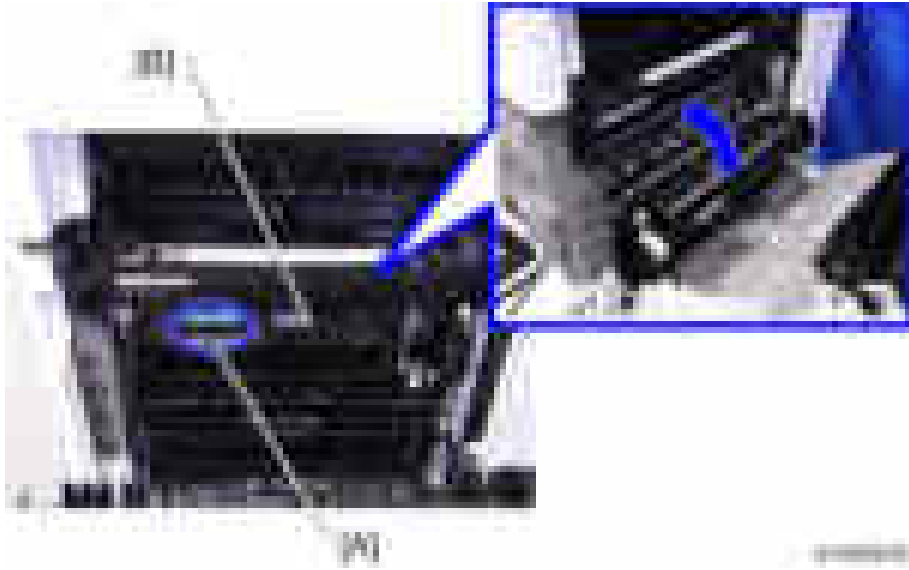
5. **Release the ITB lock lever [A] and ITB contact lever [B].**
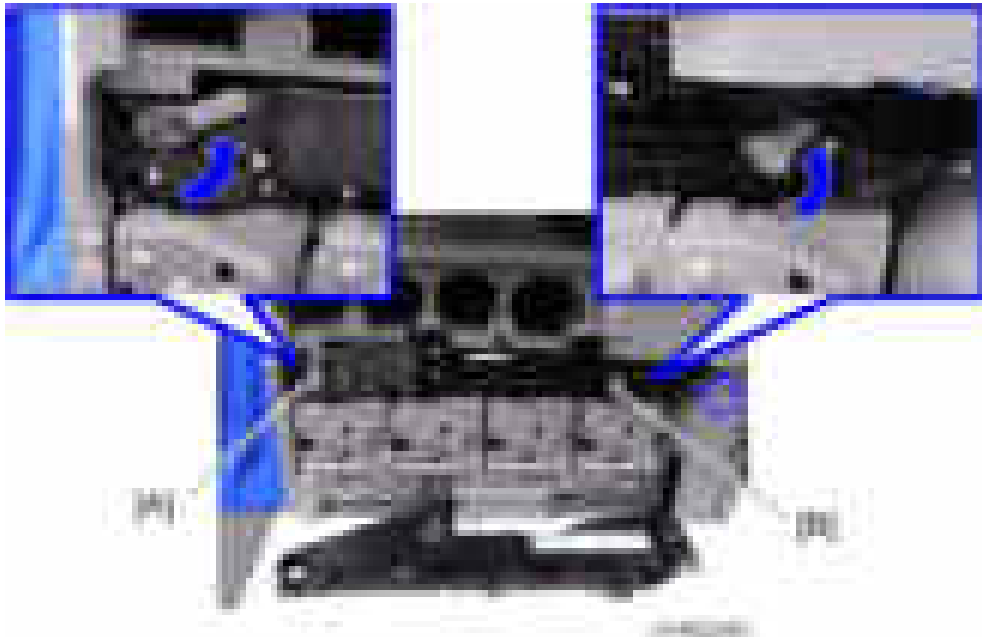
6. **Image Transfer Belt Unit [A]**

   🔽Note

   • To prevent the image transfer belt unit from falling out, there is a lock mechanism. After pulling out the image transfer belt unit fully, lift the handle [B] to release the lock, and remove image transfer belt unit.

Locking mechanism by handle
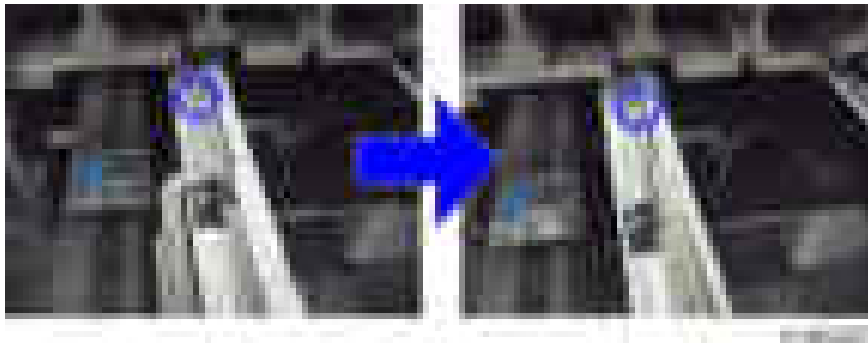
Image Transfer Cleaning Unit

⚠CAUTION

- When removing the image transfer cleaning unit, to prevent scattering of toner, remove it so that the image transfer cleaning unit is underneath the image transfer belt unit.

Adjustment before Replacing the Image Transfer Cleaning Unit

Before replacing the Image Transfer Belt Cleaning, set SP3-701-093 to "1" and switch the power OFF.

Then replace the Image Transfer Belt Cleaning and switch the power ON.

Replacement

1. **Image transfer unit (page 321)**

2. **Image transfer lock unit [A] (×3, Among them, stepping screw ×1)**

3. Remove the screw above the image transfer cleaning unit [A] (📷×2).

4. Turn the whole image transfer belt unit over, and remove the screw below the image transfer cleaning unit (📷×2).
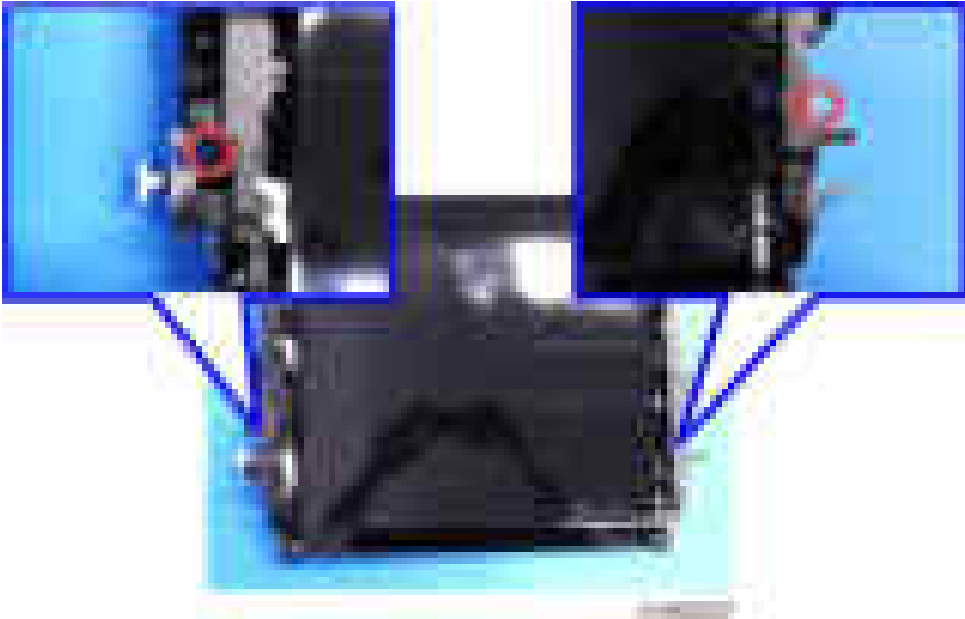
5. While releasing the hook, lift the image transfer belt unit gently, and remove the image transfer cleaning unit.

4

6. Put toner on the image transfer belt.

[A]: 20mm or more

[B]: About 5mm

7. Attach the image transfer cleaning unit.

8. Rotate the image transfer belt about 10mm [A] in the reverse direction, then turn it forward one complete turn [B].
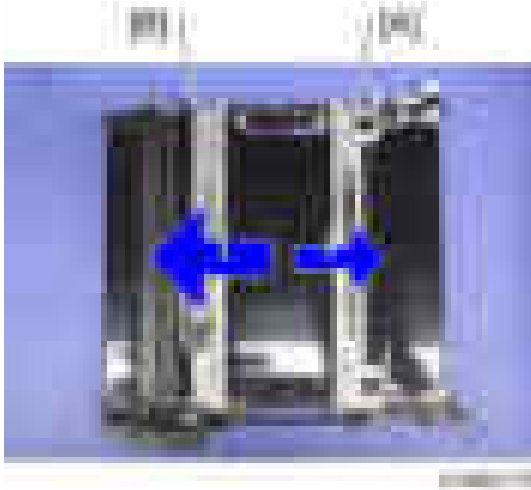
Image Transfer Belt

Replacement

⚠**CAUTION**

- Do not touch the rollers but hold the upper/lower resin part [A] when you lift the Image Transfer Unit. Touching the rollers may cause poor image quality.

1. Image transfer unit (page 321)

2. **Bracket [A] (×1)**

3. **Brackets [A] [B] (×4)**

4. **Image transfer cleaning unit (page 325)**

5. **Remove the tension fixing frames [A] and [B] (front side: black, rear side: gray).**
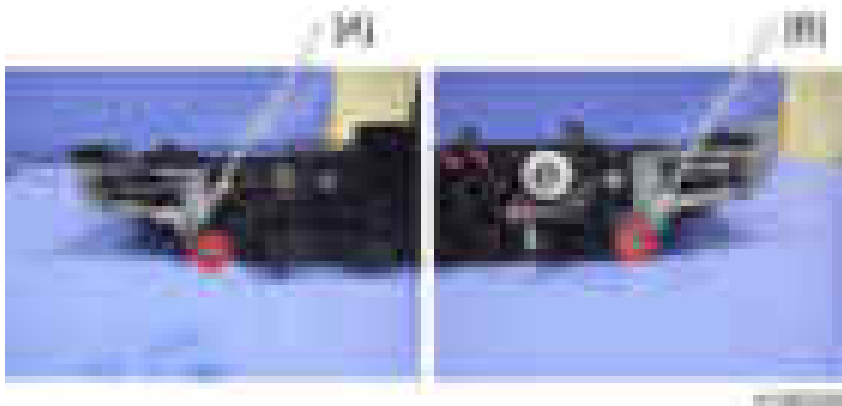
6. **Position the image transfer unit with the front side underneath.**

7. **Rotate the gear [A] to change to the OPEN position.**
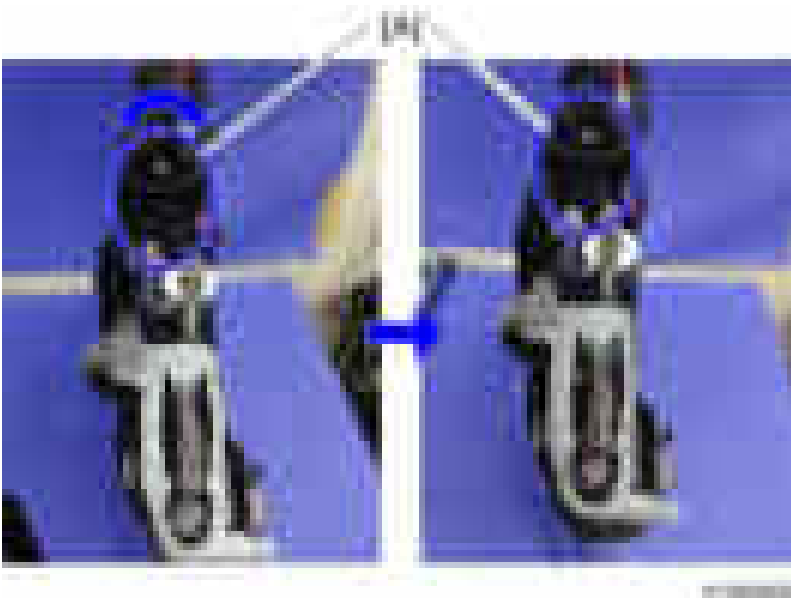
8. **Release the tension and remove the belt.**
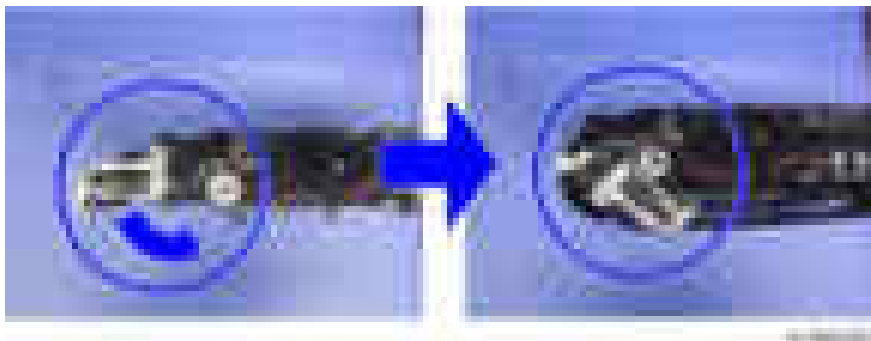
Adjustment after Replacing the Image Transfer Belt

After replacing the image transfer belt, to prevent twisting of the belt, pass the belt round once in the direction of the arrow.

Paper Transfer Roller

1. **Open the paper transfer roller unit. (page 321)**

2. **Paper transfer roller [A]**

When Reinstalling the Paper Transfer Roller

When reinstalling the paper transfer roller, do not install the wrong type of roller.

[A]: Standard roller

[B]: Imageable Area Extension Unit Type M3

When attaching the paper transfer roller, make sure that the roller is mounted in the correct position, paying attention to the three points shown below.

⚠CAUTION

• If the paper transfer roller is mounted incorrectly, the following problems may result.

- Damage to the image transfer belt
- Dislodging of the roller by opening and closing the paper transfer roller unit to remedy a paper jam
- Failure of the paper transfer roller unit to open

1. Check that the claw [A] on the roller holder is under the guide board [B].
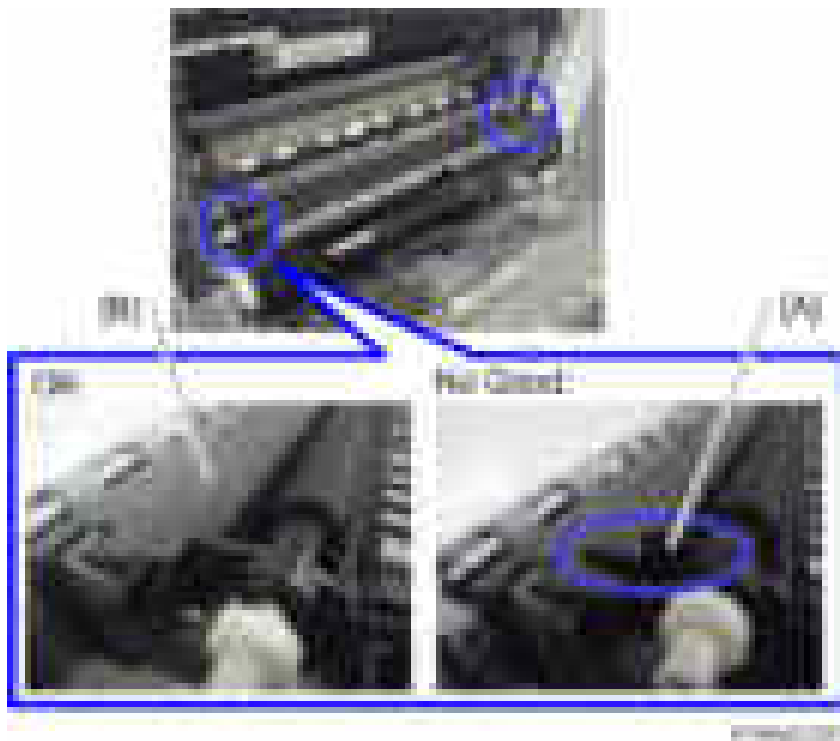
2. Check that the pin [A] on either side of the paper transfer roller is inserted correctly.
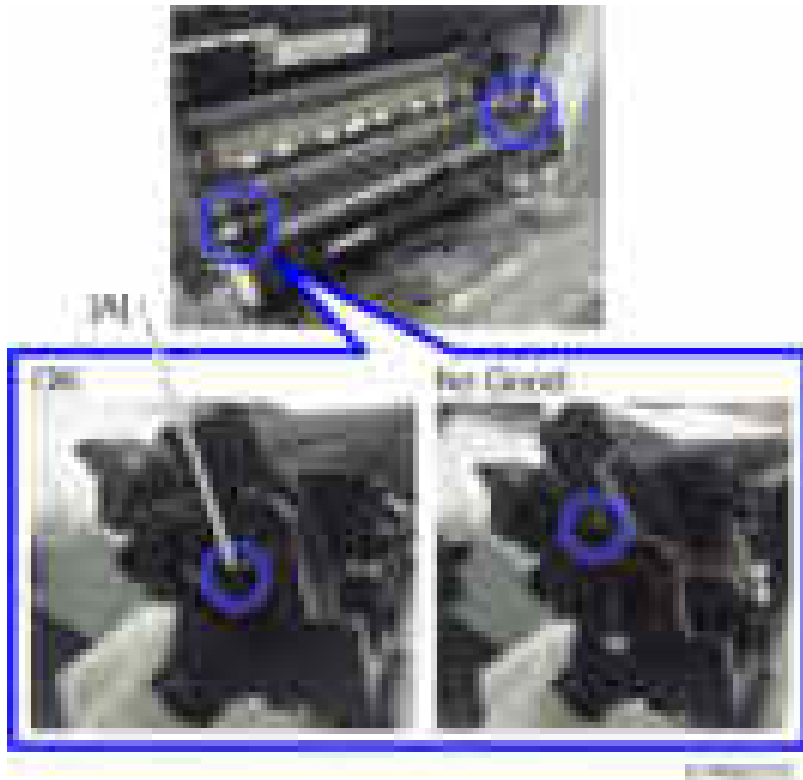
3. Check that the spring [A] at either end of the paper transfer roller unit is in the correct position at each end.
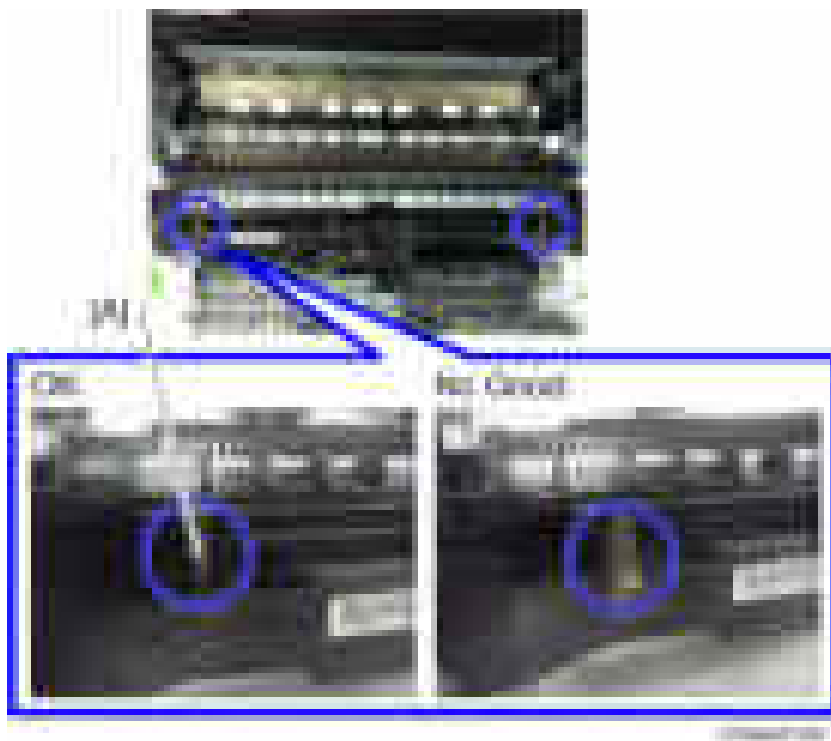
Paper Transfer Roller Unit

Adjustment before Replacing the Paper Transfer Roller Unit

Before replacing the Image Paper Transfer Roller Unit, set SP3-701-109 to "1" and switch the power OFF. Then replace the Image Paper Transfer Roller Unit and switch the power ON.

Replacement

1. Open the right cover (page 321).

2. After removing the clip ring and connector on the rear side, open the paper transfer roller unit, remove the clip ring at the front side, and remove the paper transfer roller unit [A] (▇×2,▇×1).

⚠CAUTION

• Note that the sizes of the clip ring differ on the left and right.

Note

- When attaching a paper transfer roller unit, first attach the stops [B] to the paper transfer roller unit.
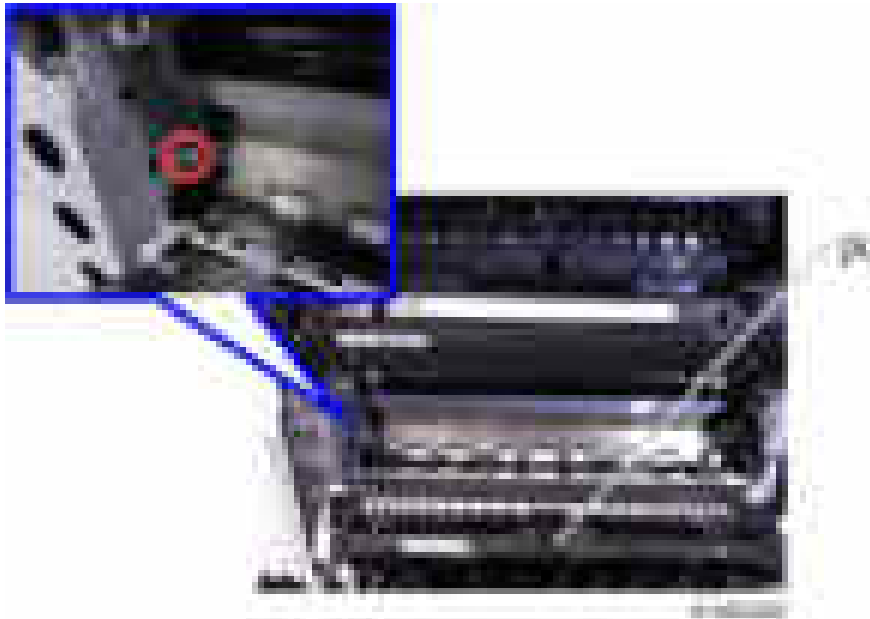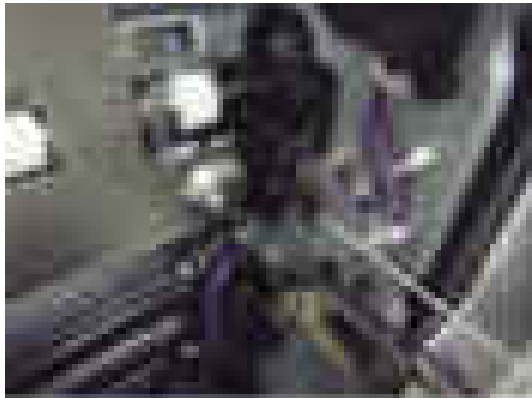
Fusing Entrance Sensor

1. **Open the right cover (page 321).**

2. **Fusing entrance sensor unit [A] (▨×1, ▨×1)**

3. **Fusing entrance sensor [A]**

TM (ID) Sensor

Before Replacing the TM (ID) Sensor

Each sensor assembly has a list of characteristic values attached to it. Before you replacing the TM / ID sensor, you must do the following procedure, or process control/MUSIC will not be done correctly after power is switched on (it will use the values for the old sensor).

↓Note

- The characteristic values attached to the service part must be entered before replacement. It is recommended that in case Process control/MUSIC after replacement is not completed successfully, take a note of values of SP3-333,SP3-334,SP3-335.

1. **Note the characteristic values that are listed on the bar code label.**
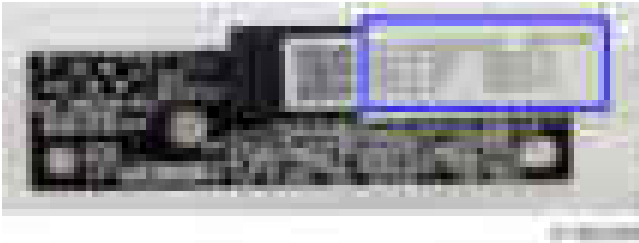
↓Note

- TM/P Sensor (front): F, TM/P Sensor (center): C, TM/P Sensor (rear): R, be careful.

2. **Turn on the main power switch, and then go into the SP mode.**

3. **Input the characteristic values.**

   Input data for TM/P Sensor: F into SP3-333. Input data for TM/P sensor: C into SP3-334. Input data for TM/P sensor: R into SP3-335.

SP No.	Classification 1	Classification 2	Value
3-333-001	ID.Sens TestVal:F	K2: Check	TM/P sensor: F, value of [1]
3-333-002	ID.Sens TestVal:F	Diffuse Corr	TM/P sensor: F, value of [2]
3-333-003	ID.Sens TestVal:F	Vct_reg Check:Slope	TM/P sensor: F, value of [3]
3-333-004	ID.Sens TestVal:F	Vct_reg Check:Xint	TM/P sensor: F, value of [4]
3-333-005	ID.Sens TestVal:F	Vct_dif Check:Slope	TM/P sensor: F, value of [5]
3-333-006	ID.Sens TestVal:F	Vct_dif Check:Xint	TM/P sensor: F, value of [6]
3-334-001	ID.Sens TestVal:C	K2: Check	TM/P sensor: C, value of [1]

SP No.	Classification 1	Classification 2	Value
3-334-002	ID.Sens TestVal:C	Diffuse Corr	TM/P sensor: C, value of [2]
3-334-003	ID.Sens TestVal:C	Vct_reg Check:Slope	TM/P sensor: C, value of [3]
3-334-004	ID.Sens TestVal:C	Vct_reg Check:Xint	TM/P sensor: C, value of [4]
3-334-005	ID.Sens TestVal:C	Vct_dif Check:Slope	TM/P sensor: C, value of [5]
3-334-006	ID.Sens TestVal:C	Vct_dif Check:Xint	TM/P sensor: C, value of [6]
3-335-001	ID.Sens TestVal:R	K2: Check	TM/P sensor: R, value of [1]
3-335-002	ID.Sens TestVal:R	Diffuse Corr	TM/P sensor: R, value of [2]
3-335-003	ID.Sens TestVal:R	Vct_reg Check:Slope	TM/P sensor: R, value of [3]
3-335-004	ID.Sens TestVal:R	Vct_reg Check:Xint	TM/P sensor: R, value of [4]
3-335-005	ID.Sens TestVal:R	Vct_dif Check:Slope	TM/P sensor: R, value of [5]
3-335-006	ID.Sens TestVal:R	Vct_dif Check:Xint	TM/P sensor: R, value of [6]

Replacement Procedure

1. **Image transfer belt unit (page 321).**
2. **Paper transfer roller unit (page 336).**
3. **Fusing unit (page 375).**
4. **Fusing dowser position sensor unit (page 391).**

5. TM(ID) sensor unit [A] (×2, ×3, ×5).

⚠CAUTION

- When installing the TM / ID sensor unit.
    1. Attach the screw of the front side [B]

- 2. Attach the screw of the back side [C]

- When installed in reverse order, an SC may occur because the sensor position has shifted.
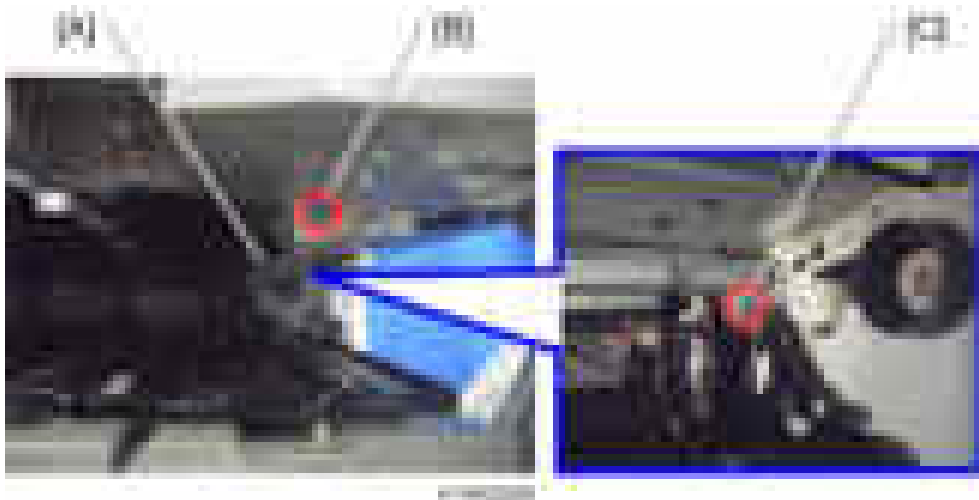
6. TM(ID) sensor [A] (×6)
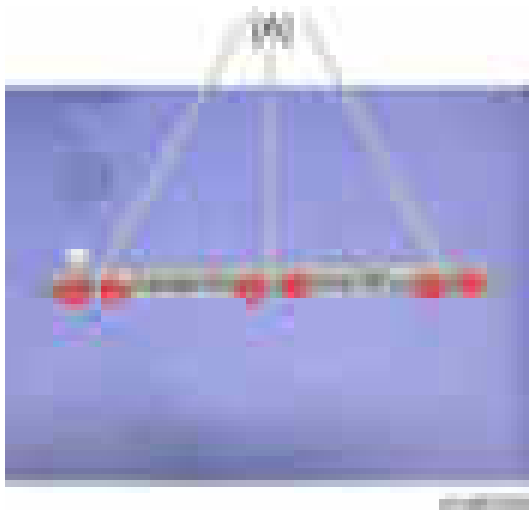
Adjustment after Replacing the TM(ID) Sensor

1. Turn on the main power switch, and then go into the SP mode.

2. **Run SP3-011-004 (Manual Procon: Exe Full MUSIC).**

   🔽**Note**

   - If the SP3-011-004 can't finish successfully, make sure you are entering the correct value to the SP.

Temperature and Humidity Sensor

1. **1st and 2nd paper tray (page 401).**
2. **Right lower cover (x1).**

3. **Temperature and humidity sensor bracket (x1).**

4. **Temperature and humidity sensor (⬚x1, ⬚x1).**

ITB Contact and Release Sensor

1. **PCDUs (page 309).**

2. **ITB contact and release sensor bracket [A] (⬚×2).**

3. ITB contact and release sensor [A].

ITB Lock Unit

Removal

1. Open the front cover (**page 252**).
2. Image transfer front cover [A] (×1).

3. **Unlock the ITB lock lever [A].**
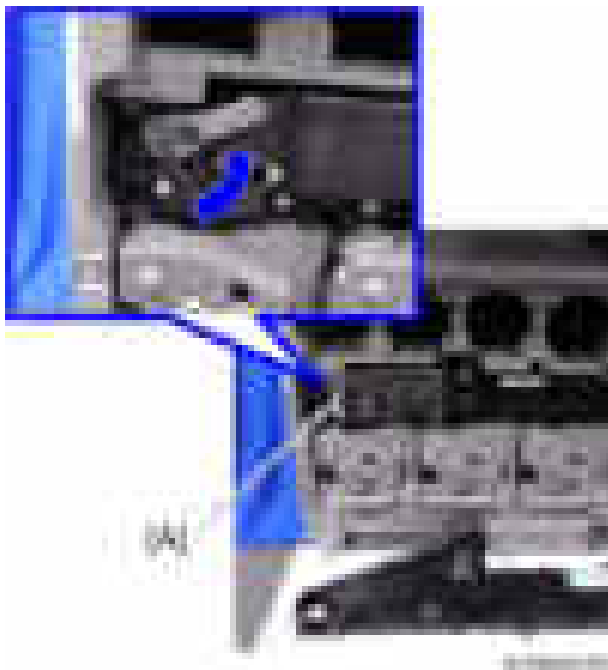
4. **ITB lock unit [A] (×3, one of them is a step screw).**

Assembling

⚠️**CAUTION**

- To prevent the inner pin shown by the red circle in this picture from a deformation, be sure to follow the instruction below. A deformed inner pin blocks the open/close shutter in the waste toner collection route, which causes a possible waste toner blockage in the cleaning unit.

- **Inner pin in the ITB lock unit:**

1. **Unlock the ITB lock lever.**

2. **Insert the gear [B] on the ITB unit into the space enclosed by blue dotted-line on the ITB lock unit [A] (×3, one of them is a step screw).**
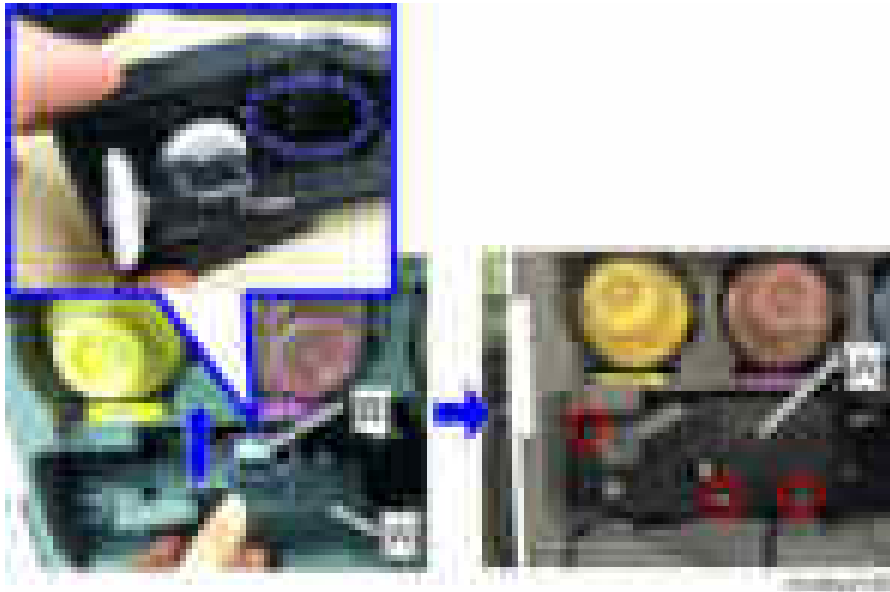
3. **Lock the ITB lock lever [A].**

Drive Unit

Overview
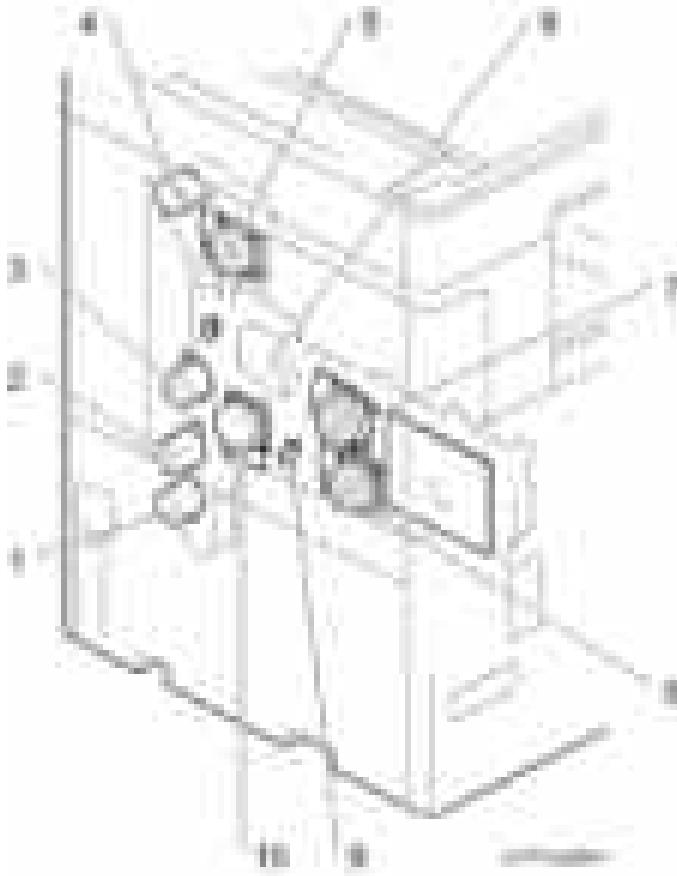
No.	Description	No.	Description
1	Paper Feed Motor	6	Paper Transfer Contact Motor
2	Transport Motor	7	PCU Motor: CMY
3	Registration Motor	8	Development Motor: CMY
4	Paper Exit / Pressure Release Motor	9	Development Solenoid
5	Fusing Motor	10	PCU: Black / Image Transfer Motor

Paper Feed Motor

1. **Power supply box (page 440).**
2. **Paper Feed Motor [A] (■×2, ■×1).**

Transport Motor

1. **Power supply box (page 440).**
2. **Transport motor [A] (■×2, ■×1).**

Transfer Motor Unit

1. **Rear right cover (page 259).**

2. **Scanner rear lower cover (page 260).**

3. **Bracket [A] [B] (📷×2).**

4. **Bracket [A] (📷×3).**

5. Controller box [A] (×8, ×16, ×17, USB×1).
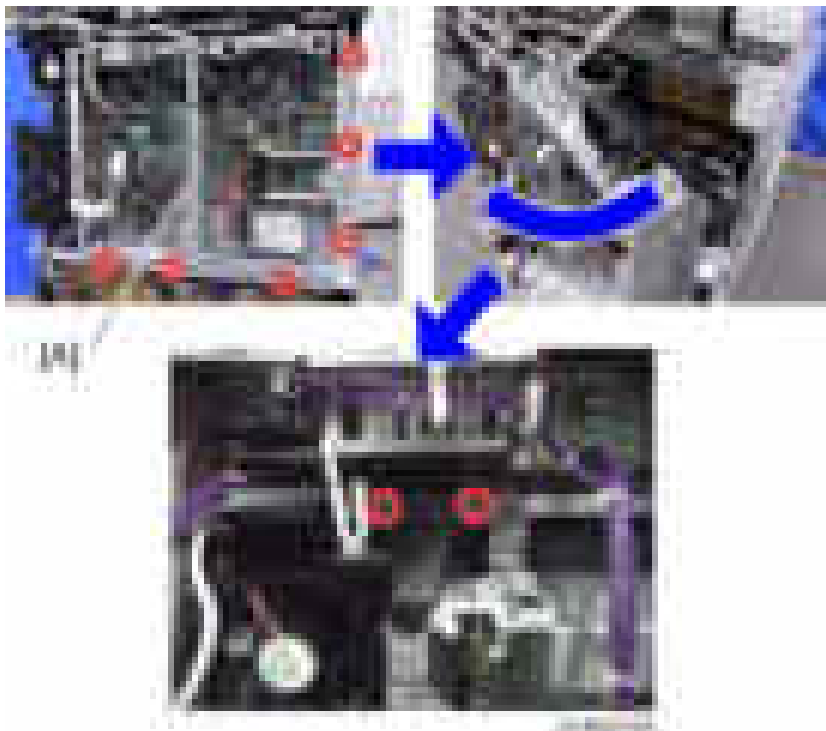
6. Paper transfer contact motor unit [A] (×2).

Imaging Drive Unit

1. Paper transfer contact motor unit (**page 351**).

2. Power supply box (**page 440**).
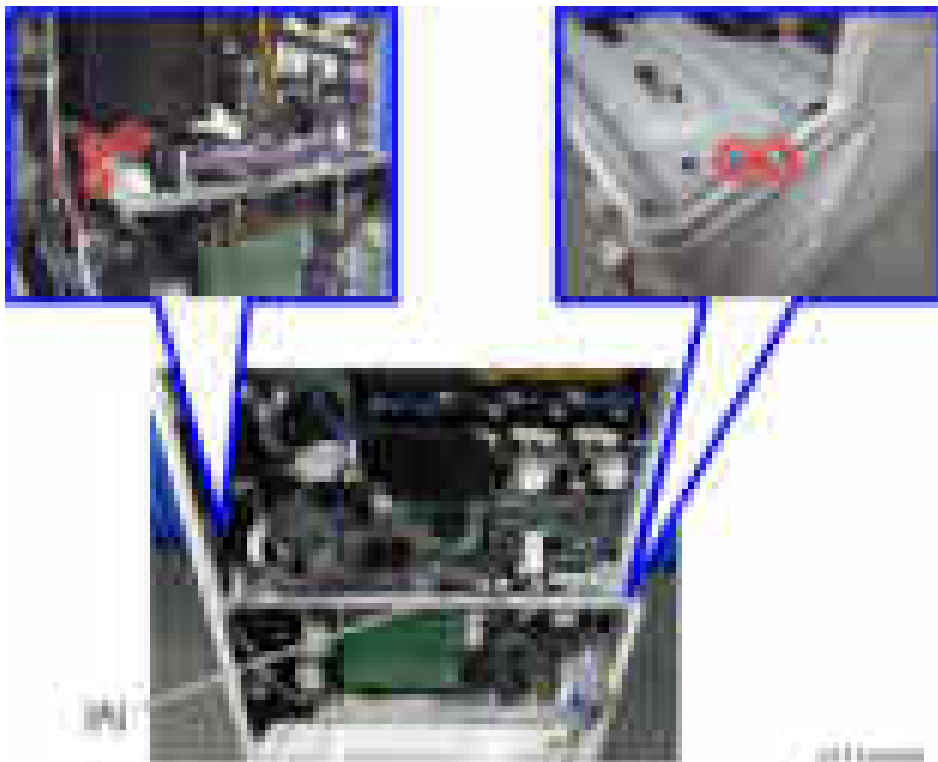
3. Bracket [A] (×4).

4. Ground plate [A] (×2).
5. Toner supply fan air duct [A] (×3).
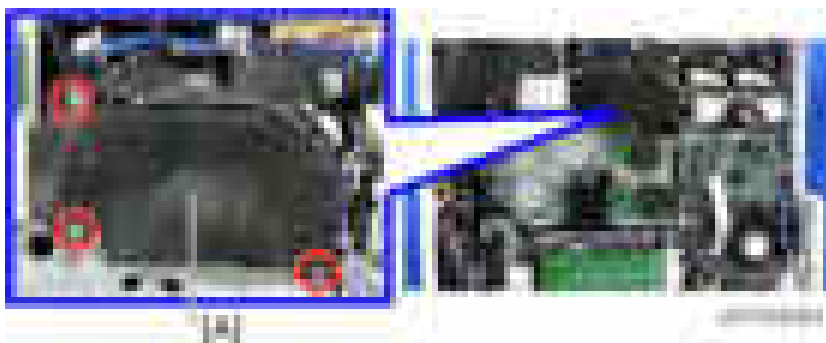
6. PCU motor: Color (**page 354**).
7. Development motor: CMY (**page 354**)
8. Development solenoid (**page 354**).
9. Transfer drum motor (**page 351**).
10. Imaging IOB (**page 437**).

11. **Imaging drive unit [A] (×9, ×1).**

PCU Motor: CMY

1. **Controller box (page 351).**
2. **Color PCU motor [A] (×4, ×1).**

Development Motor: CMY

1. **Bracket (page 352).**
2. **Color Development motor [A] (×4).**
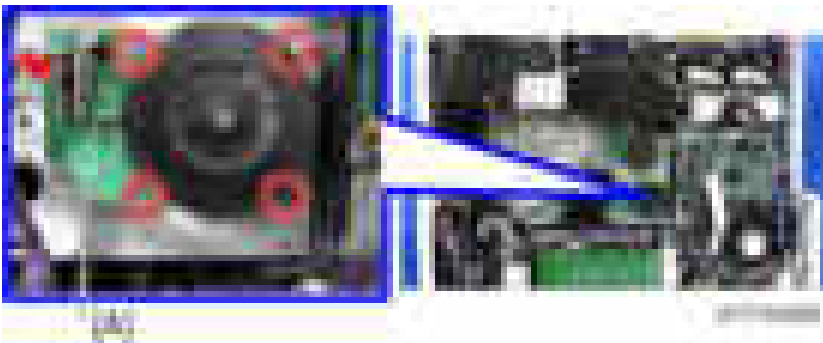
Development Solenoid

1. **Controller box (page 351).**
2. **Power supply box (page 440).**

3. Solenoid cover [A] (🔩×2).

4. Development solenoid [A] (🔩×2, 🔌×1, spring×1).

PCU: Black / Image Transfer Motor

1. Bracket (page 352).

2. **PCU: Black / Image Transfer Motor [A] (🔩×4).**

4
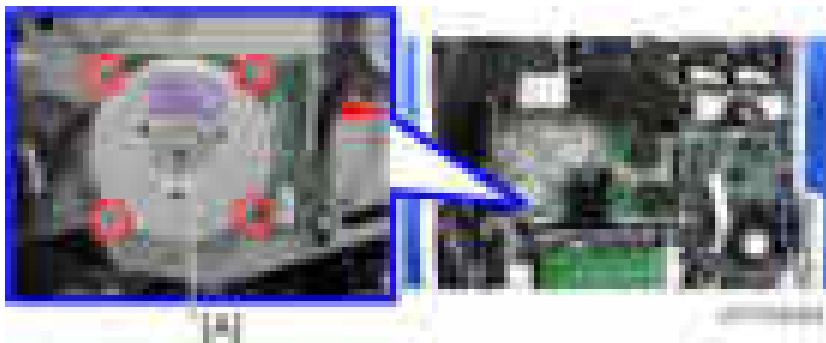
Registration Motor

1. **Power supply box (page 440).**
2. **Drive cooling fan.**
3. **Registration motor [A] (🔩×2, 🔌×1).**

Fusing Motor

1. **Rear right cover (page 259).**

2. Fusing motor [A] (🔩×4, 🔌×1).

Paper Exit / Pressure Release Motor

1. Fusing exhaust heat fan (page 449).

2. Paper exit / Pressure release motor [A] (🔩×2, 🔌×1).

Duplex Entrance Motor

1. Paper exit unit (page 394).

2. Fusing exhaust heat fan (page 449).

3. **Duplex entrance motor unit [A] (×3, ×2).**

4. **Duplex entrance motor [A] (×2).**

Toner Transport Motor

1. **Controller box (page 352).**

2. Toner transport motor.

[A]	K	🔩×2, 🔌×1
[B]	C	🔩×2, 🔌×1
[C]	M	🔩×2, 🔌×1
[D]	Y	🔩×2, 🔌×1
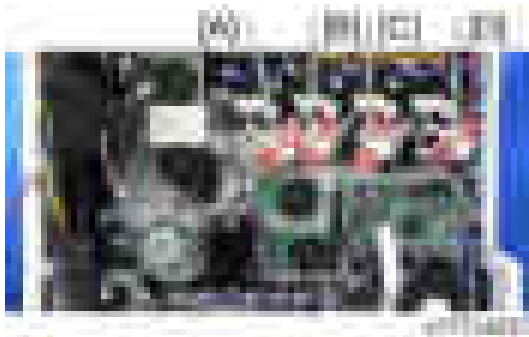
Sub Hopper

K

1. Pull out the image transfer unit about 5 cm.
2. Controller box (**page 351**).
3. Toner transport motor unit (K) [A] (🔩×3).

4. **Sub hopper (K) [A].**

C

1. **Pull out the image transfer unit about 5cm.**

2. **Controller box (page 351).**

3. **Harness guide [A] (×2).**
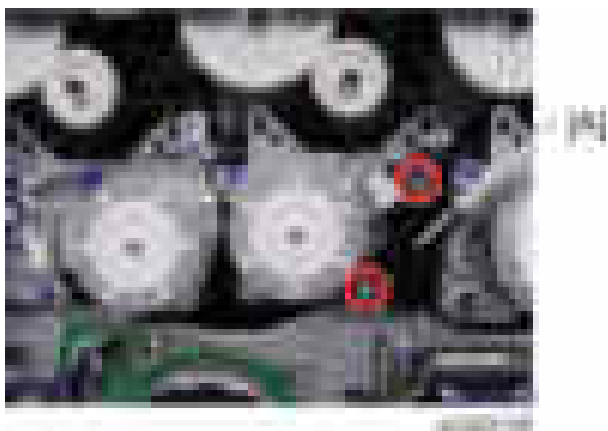
4. **Toner transport motor unit (C) [A] (⚙×1).**

5. **Hopper (C) [A].**

M

1. **Controller box (page 351).**

2. **Harness guide [A] (🔩×2).**
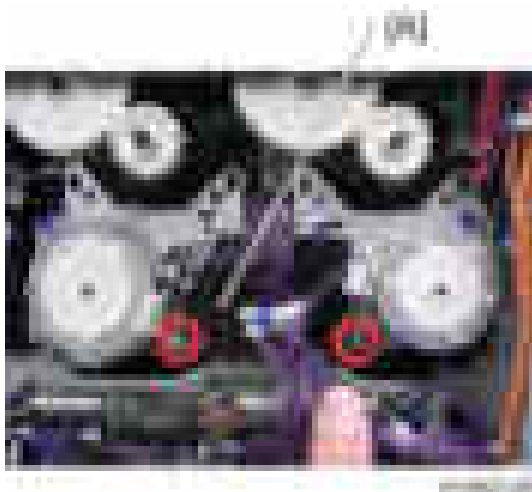
3. **Toner transport motor unit (M) [A] (🔩×3).**

4. **Hopper (M) [A].**

Y

1. Harness guide (**page 361**).

2. Toner transport motor unit (Y) [A] (×3).

3. Hopper (Y) [A].

Toner End Sensor

1. Hopper (**page 359**).

2. **Toner end sensor [A].**
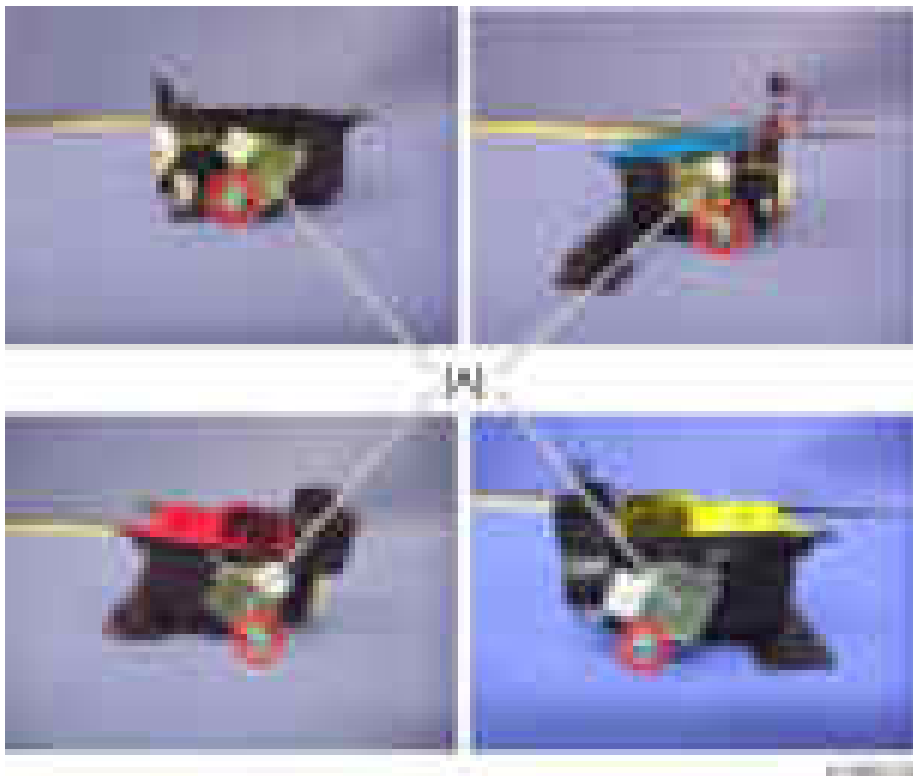
⬇Note

- Since the machine uses the same four toner end sensors, you can install a toner end sensor to any colors.

Toner Bottle Drive Motor

K

1. **Toner transport motor (K) (page 358).**

2. Toner bottle drive motor (K) [A] (×2).

C

1. Toner transport motor (C) (page 358).

2. Toner bottle drive motor (C) [A] (×2).

M

1. Toner transport motor (M) (page 358).

2. Toner bottle drive motor (M) [A] (×2).

Y

1. Toner transport motor (Y) (page 358).
2. Toner bottle drive motor (Y) [A] (×2).

ID Chip

K

1. Toner bottle drive motor (K) (page 364).
2. Toner bottle drive motor (C) (page 365).

3. ID chip (K) [A] (🖥️×2).

C

1. Toner bottle drive motor (C) (**page 365**).
2. Toner bottle drive motor (M) (**page 365**).
3. ID chip (C) [A] (🖥️×2).

M

1. Toner bottle drive motor (M) (**page 365**).
2. Toner bottle drive motor (Y) (**page 366**).

3. ID chip (M) [A] (×2).

Y

1. Toner bottle drive motor (Y) (**page 366**).
2. ID chip (Y) [A] (×2).

Transport Screw

Y

1. Image transfer unit (**page 321**).

2. **PCDU (page 309).**

3. **Toner Bottle Drive Motor (page 364).**

4. **Sub hopper (page 359).**

5. **ID chip (page 366).**

6. **Put a piece of disposable paper [A] on the inside of the machine to avoid damage due to toner spillage.**
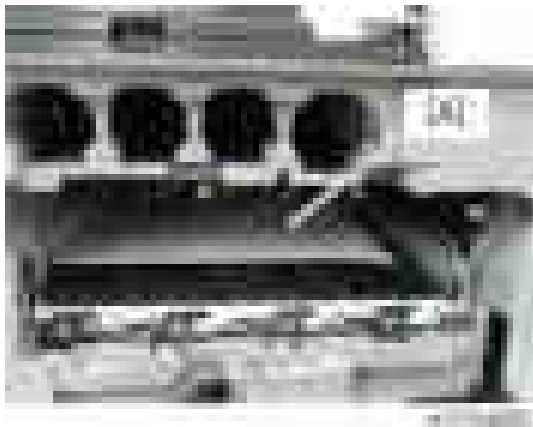
7. **Put a piece of disposable paper [A] under the transport screw to avoid damage due to toner spillage.**

8. Remove all the harnesses connecting to the transport screw unit (![]×8).
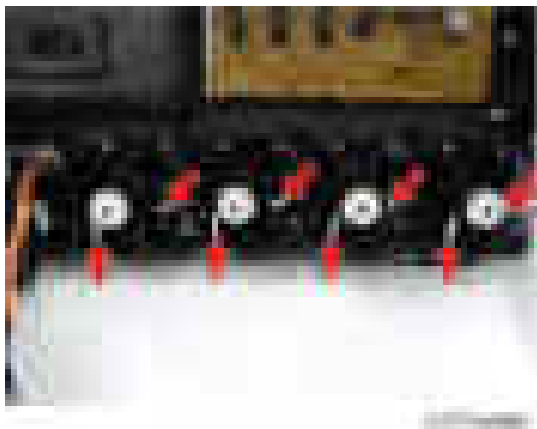
9. Remove the screws fixing the transport screw units [A] (![]×5, each color).

10. Release the claws for the transport screw units [A] (claw ×1, each color).
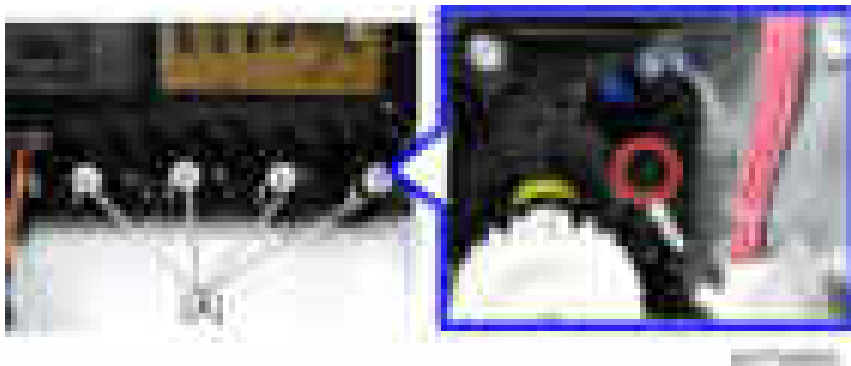
11. Remove the screws securing the bracket [A] (×2).
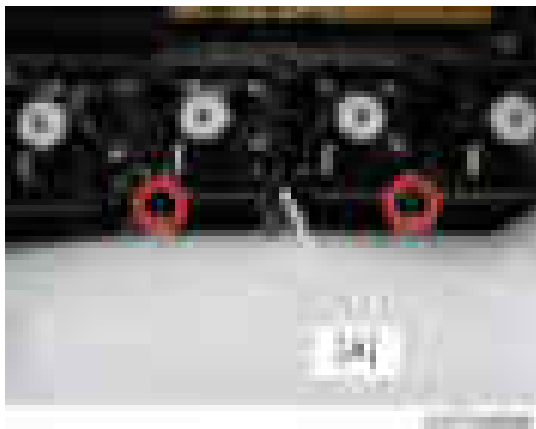
12. Put a piece of disposable paper on the floor because toner can spill when you put the transport screw unit down.

13. Pull out the whole transport screw unit [A] together with the bracket [B].

🔻Note

• Be sure to put a piece of disposable paper on the floor because toner can spill when you put the transport screw unit down.

14. **Transport screw unit for (Y) [A] (tab×1).**
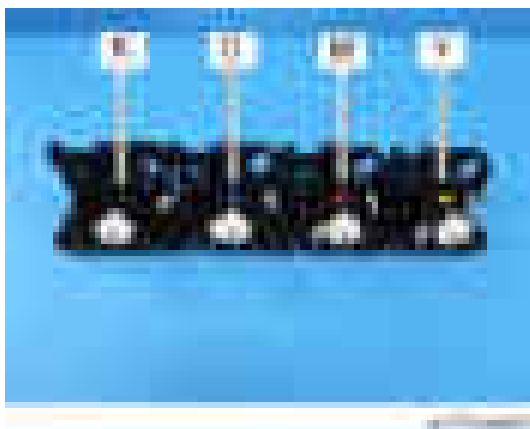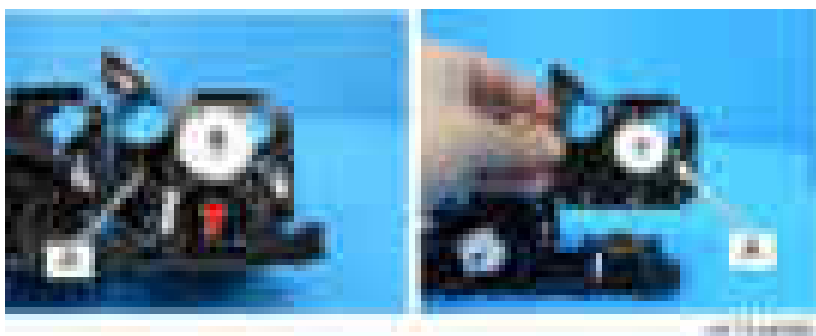
M

1. See steps 1 to 13 in the transport screw replacement procedure for "Y" **(page 373)**.

2. **Transport screw unit for (M) [A] (tab×1).**
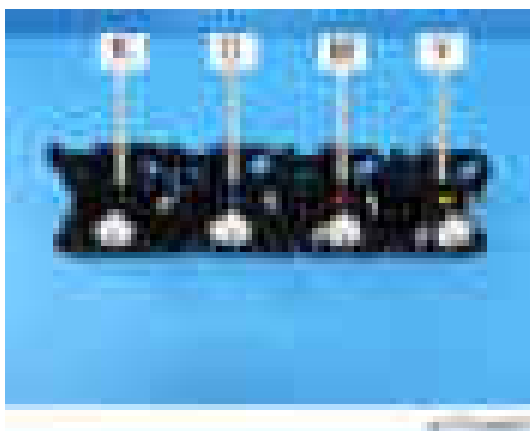
C

1. See steps 1 to 13 in the transport screw replacement procedure for "Y" (**page 373**).

2. Transport screw unit for (C) [A] (tab×1).
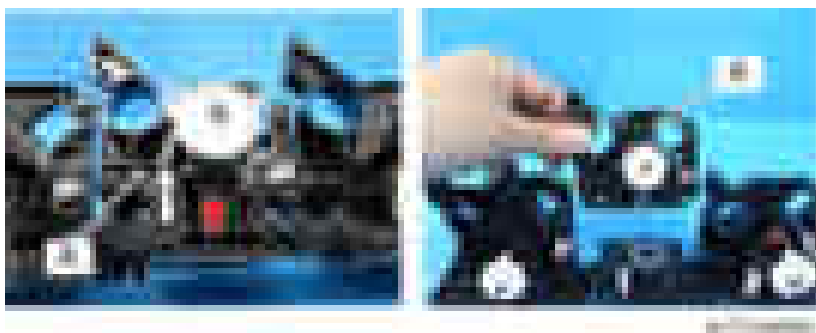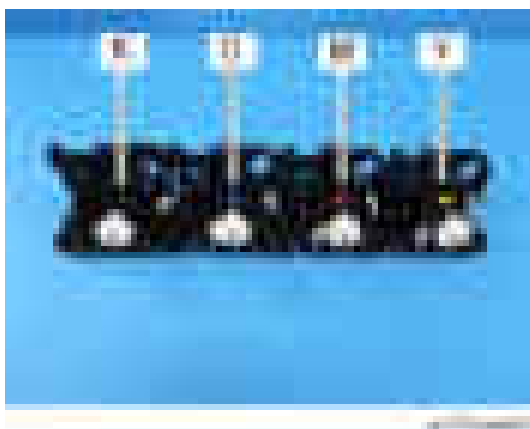
K

1. See steps 1 to 13 in the transport screw replacement procedure for "Y" (**page 373**).

2. **Transport screw unit for (K) [A] (tab×1).**
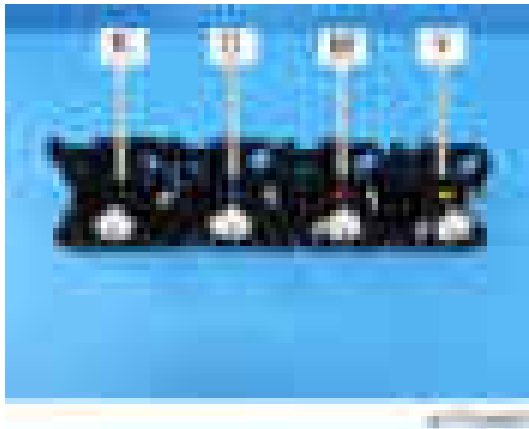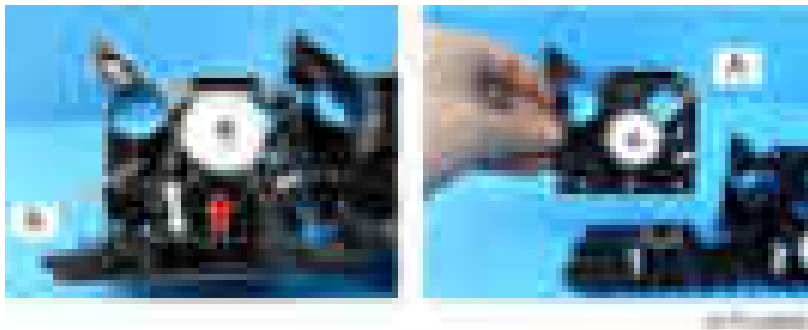
Fusing Unit

Fusing Unit

Adjustment before Replacing the Fusing Unit

⚠CAUTION

- Because there is a danger of burns on contact with hot parts of the fusing unit, start work when the temperature drops to a low enough temperature.

- To cancel SC544-02/554-02, it is necessary to replace the fusing unit or install the old one with an intact new unit detection fuse. If you cancel the SC by replacing the fusing unit, follow the instruction below.
1. Install the new fusing unit (Do not install a previously installed unit because the machine will check it is a new part or not with the new unit detection fuse).
2. Execute SP5-810-002 (SC Reset: Hard High Temp. Detection).
3. Execute SP3-701-115 (Manual New Unit Set: #Fusing unit).

- A spare fuse is packed with the heating sleeve unit. For how to cancel the SCs by installing a new fuse, see the explanation at the end of the replacement procedure for the Heating sleeve unit (page 382).

🔽Note

- When the fusing unit is used past its target yield (400k), the fusing unit may break, causing a service call. Therefore, the machine displays a warning on the operation panel at 415k pages and stops at 430k pages.

🔽Note

- The fusing unit for replacement has a function that detects a new part, so it does not require a PM counter reset on SP mode.

Replacement

1. **Open the paper transfer unit (page 321).**

2. **Fusing unit [A] (** **×2).**

Note

- To attach the fusing unit, fasten the screws in the order [B] (rear), [C] (front).

Fusing Entrance Guide Plate

Replacement

1. **Fusing unit (page 375).**
2. **Fusing entrance guide plate [A] (** **×2).**

Note

- The screw [B] is a threaded screw. When you assemble the unit, take care not to use the wrong screws.

- Attach the fusing entrance guide plate on the outer of the two screw holes.

Cleaning the Fusing Entrance Guide Plate

Carefully remove toner adhering as shown in the diagram below with a dry cloth. Then, wipe with a cloth moistened with alcohol.

Fusing Exit Guide Plate

Replacement

1. **Fusing unit (page 375).**
2. **Fusing upper cover (page 379).**
3. **Fusing exit guide plate [A].**
    1. Open the fusing exit guide plate in the direction of the arrow 1.
    2. Remove the fusing exit guide plate in the direction of the arrow 2.

Cleaning the Fusing Exit Guide Plate

1. Open the fusing exit guide plate [A].
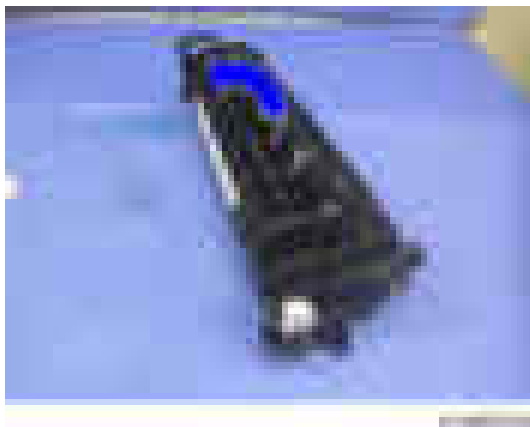
2. Wipe clean with a dry cloth. Then wipe clean with a cloth dampened with alcohol.

Fusing Upper Cover

1. **Fusing unit (page 375).**
2. **Fusing upper cover [A] (×4).**

Fusing Lower Cover

1. **Fusing unit (page 375).**

2. Fusing lower cover [A] (×4).

Fusing Front Cover

1. Fusing unit (**page 375**).

2. **Fusing front cover [A] (▨×3).**

4

Fusing Rear Cover

1. **Fusing unit (page 375).**
2. **Gear [A] (▨×1), Fusing rear cover [B] (▨×2).**

Heating Sleeve Unit

Replacement

⚠ CAUTION

- The heating sleeve unit is designed with a highly soft material. Do not touch the sleeve belt unit with your hands to prevent dents during replacement. If you have touched it and a dent has been made, the dent will gradually become larger during operation and it can cause a fusing malfunction or sleeve belt breakage.

⚠ CAUTION

- To cancel SC544-02/554-02, it is necessary to replace the fusing unit or install an intact new unit detection fuse. If you will cancel these SCs by installing a new unit detection fuse, follow the instruction at the end of this procedure.
- If you are replacing the heating sleeve unit for PM or any reason other than canceling these SCs, you can discard the fuse that is packed with the new heating sleeve unit.

1. **Fusing upper cover (page 379).**
2. **Fusing lower cover (page 379).**
3. **Fusing front cover (page 380).**
4. **Fusing rear cover (page 381).**
5. **Exit guide plate (left) unit [A] (▨×2).**

6. **Left frame [A] (⊙×4, ⊟×4).**

7. **Side plate [A] (⊙×1).**

8. **Heating sleeve unit [A] (🔩×4).**

↓Note

- Be careful not to touch the temperature sensor unit [A] against the heating sleeve unit when installing the electrical unit in the fusing unit.
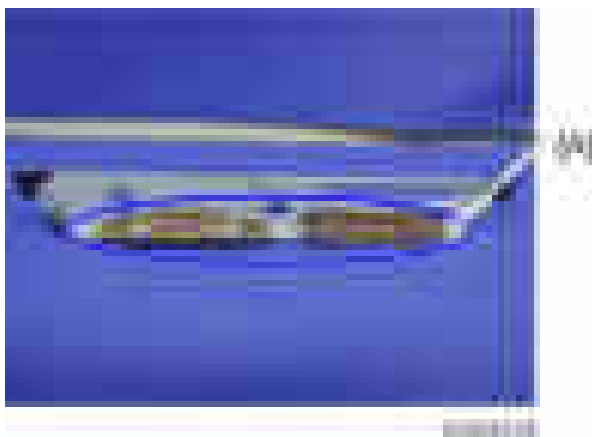
How to Cancel SC544-02/SC554-02 with a New Unit Detection Fuse

⚠**CAUTION**

- To cancel SC544-02/554-02, it is necessary to replace the fusing unit or install an intact new unit detection fuse. If you will cancel these SCs by installing a new unit detection fuse, follow the instruction below.

- If you are replacing the heating sleeve unit for PM or any reason other than canceling these SCs, you can discard the fuse that is packed with the new heating sleeve unit.

1. **There is a new unit detection fuse packed with the new heating sleeve unit.**
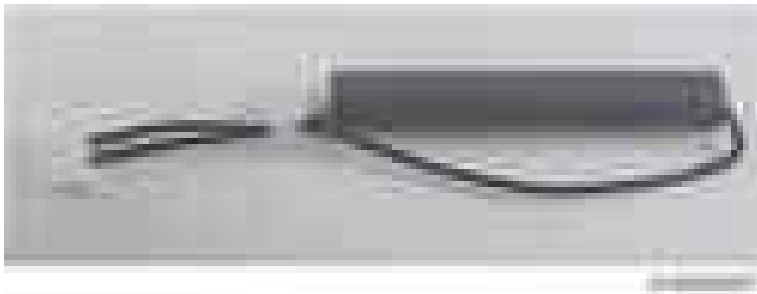
2. **Connect the new unit detection fuse to the connector.**

3. **Pass the fuse harness through the slit located next to the connector (blue arrow) and place the fuse in the empty space (blue circle).**

4. **Execute SP5-810-002 [SC Reset: Hard High Temp. Detection].**

5. **Execute SP3-701-116 [Manual New Unit Set: #Fusing Belt].**

Pressure Roller

Adjustment before Replacing the Pressure Roller

Before replacing the Pressure Roller, set SP3-701-118 to "1" and switch the power OFF. Then replace the Pressure Roller and switch the power ON.

Replacement

⚠CAUTION

• Do not remove or adjust the pressure adjusting screws [A] when replacing the pressure roller.

The fusing unit is adjusted in the factory to match the hardness of the pressure roller, so that the nip width will be correct, so please do not release the pressure adjustment screw.

⚠CAUTION

- This screw is adjusted in the factory for the correct nip width, to match the hardness characteristics of each roller. Do not adjust the pressure adjustment screw in the field.

- Also, do not move the pressure roller to another fusing unit.

1. Heating sleeve unit (**page 382**).
2. Pressure roller [A] (C-ring ×2).

3. **Apply the grease (FLUOTRIBO MG GREASE) to the rear shaft of the pressure roller at 5-7mm from the cut edge.**
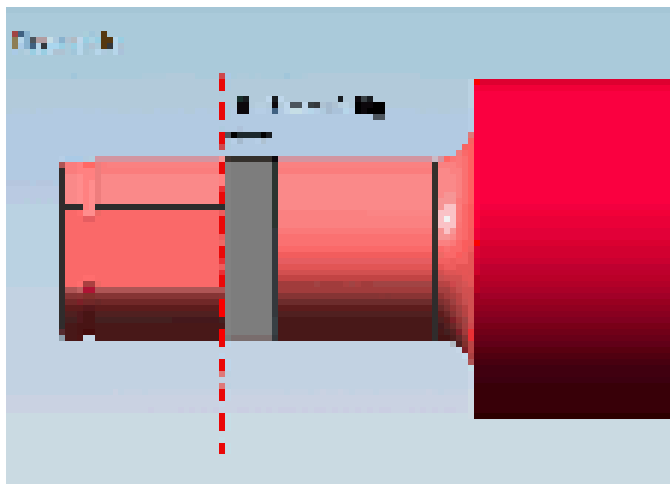
4. **Apply the grease (FLUOTRIBO MG GREASE) to the front shaft of the pressure roller at 5-7mm from the C-ring notch.**
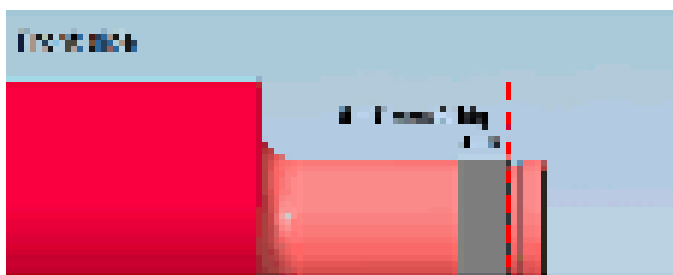
Thermostat Unit

1. **Left frame (page 382).**

2. Thermostat unit [A] (🖼️×2).
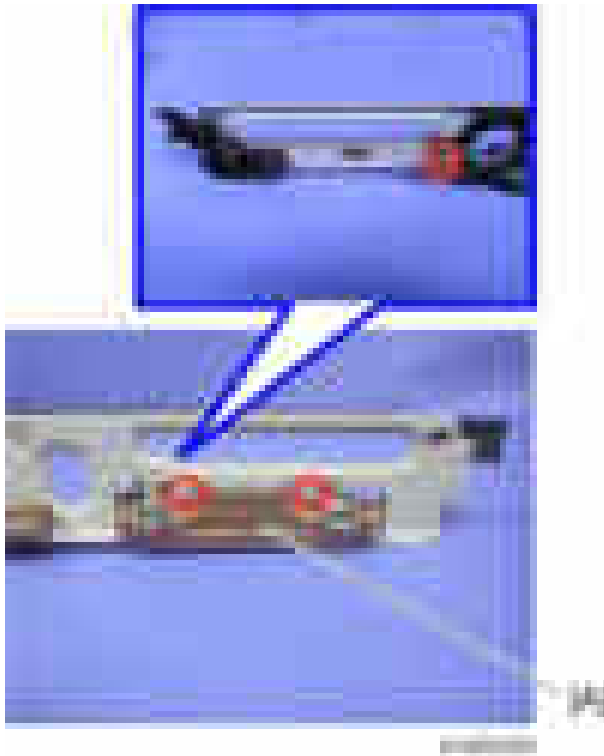
Non-contact Thermistor Unit

1. Left frame (page 382).

2. Non-contact Thermistor unit [A] (🖼️×2, 🖼️×2).

Fusing Thermistor

1. Fusing upper cover (**page 379**).
2. Fusing lower cover (**page 379**).
3. Fusing thermistor (edge) [A], fusing thermistor (center) [B] (▨×2, ▨×2, ▨×1).
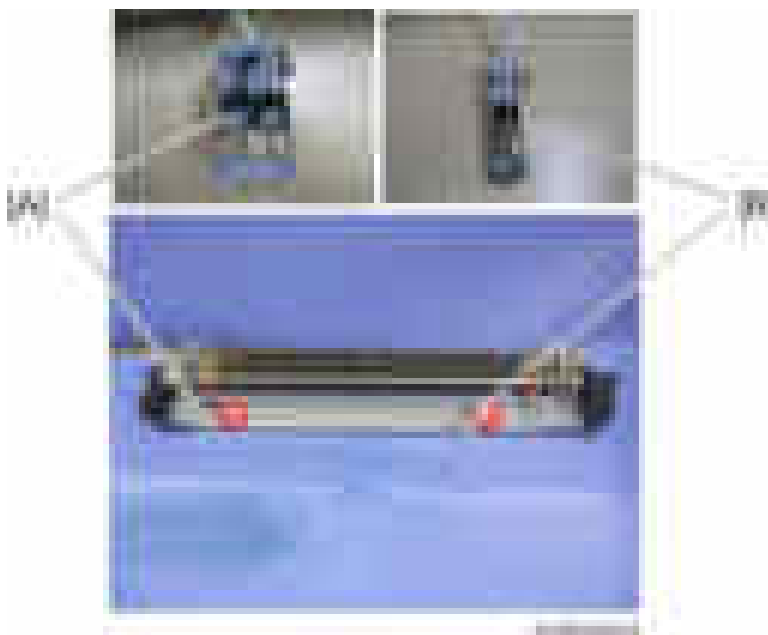
Fusing Thermopile Unit

1. Fusing unit (**page 375**).
2. Fusing thermopile unit [A] (▨×2, ▨×2).
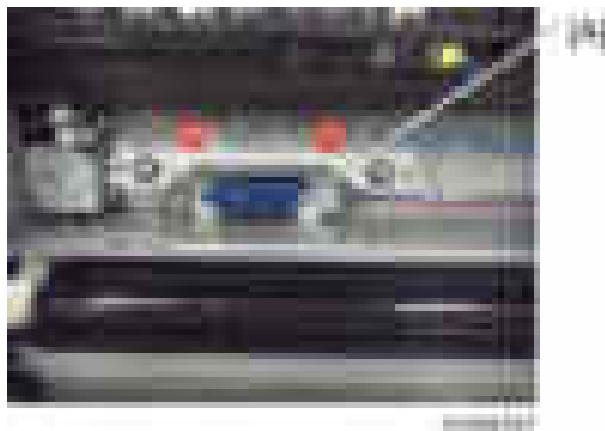
Pressure Roller HP Sensor

1. **Fusing unit (page 375).**

2. **Pressure roller HP sensor unit [A] (×1, ×1).**
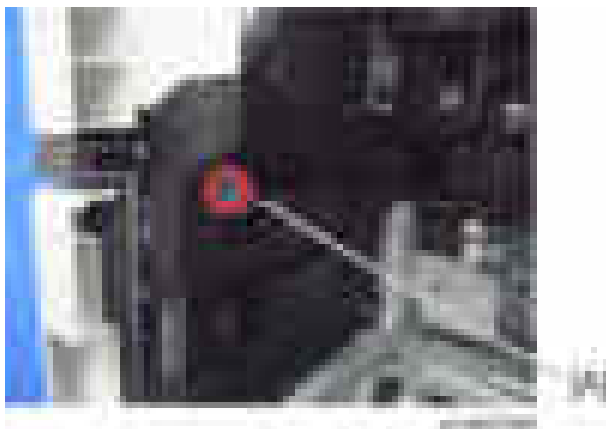
3. **Pressure roller HP sensor [A]**
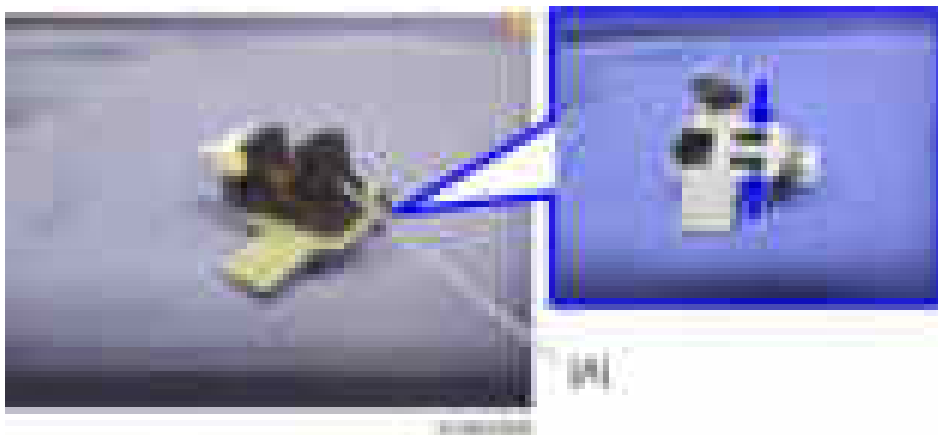
Fusing Shield Position Sensor

1. **Fusing unit (page 375).**

2. **Fusing shield position sensor unit [A] (×1, ×2).**

3. **Fusing shield position sensor (upper) [A], Fusing shield position sensor (lower)[B].**
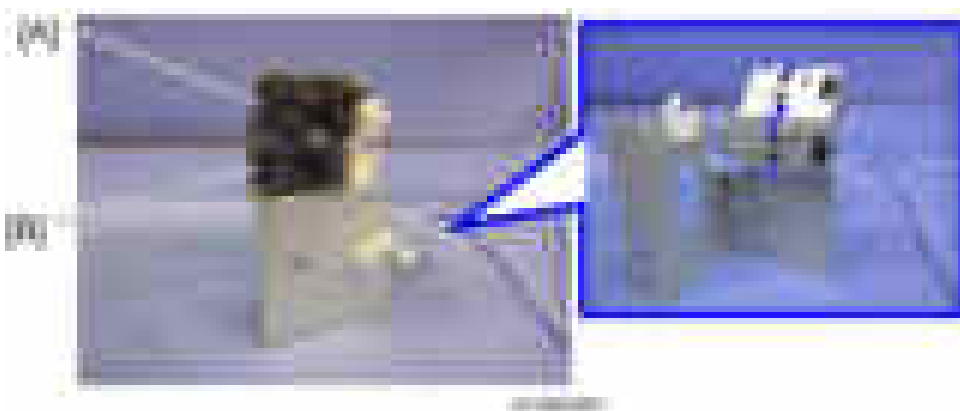
Fusing Shield Drive Motor

1. **Fusing unit (page 375).**

2. **Fusing shield drive motor unit [A] (×2, ×1).**

3. **Fusing shield drive motor [A] (×2).**

Paper Exit

Paper Exit Unit

1. Open the right cover (**page 418**).

2. Fusing unit (**page 375**).

3. Inner cover [A] (![screw]×2).

4. Paper exit unit [A] (![screw]×1, ![connector]×2).

Paper Exit Switching Solenoid

1. Paper exit unit (**page 394**).

2. **Paper exit switching solenoid [A] (▦×2, ▦×1,▦×1).**

Paper Exit Sensor

1. **Paper exit unit (page 394).**
2. **Feeler [A].**

3. **Harness [A] (![]×1, ![]×3).**

4. **Paper exit sensor unit [A] (![]×1, ![]×1).**

5. Paper exit sensor [A].
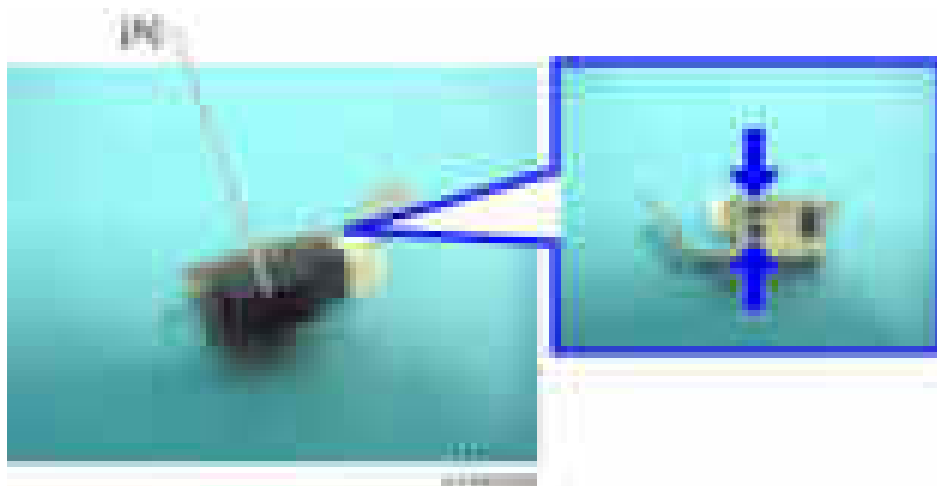
Inversion Sensor

1. Paper exit unit (page 394).

2. Inversion sensor unit [A] (█×1, █×1, █×1).
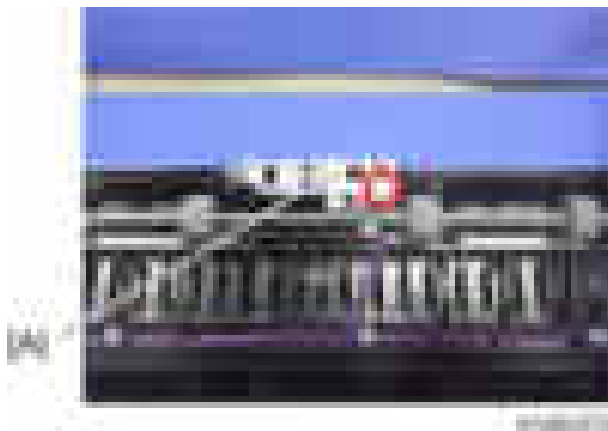
3. **Inversion sensor [A].**

Inversion Motor

1. **Paper exit unit (page 394).**
2. **Gear [A].**
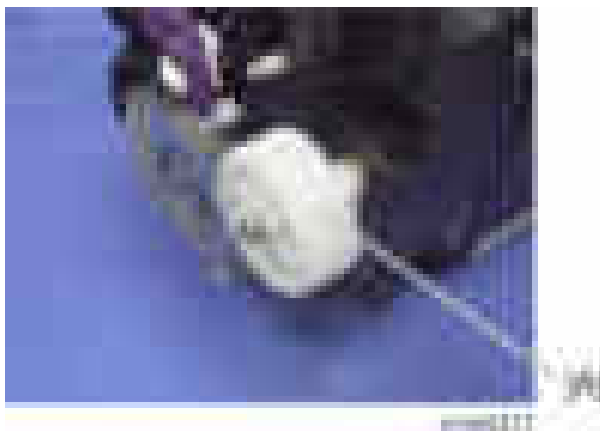
3. Inversion motor unit [A] (▩×3, ▦×1, ▧×1,▧×1).

4. Inversion motor [A] (▩×2, ▦×1).

Fusing Exit Sensor

1. Paper exit unit (**page 394**).

2. **Fusing exit sensor unit [A] (** ×1, ×1, ×1**).**
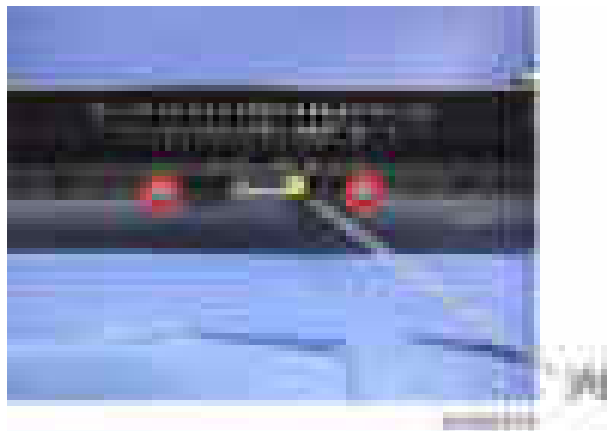
3. **Fusing exit sensor [A].**

Paper Feed

Note

- The 1st paper feed unit can be removed without removing the duplex unit (just open the right cover), and you can remove the paper feed unit after pulling out the paper tray.

- Note that the 1st paper feed unit and 2nd paper feed unit are not interchangeable.

Paper Feed Unit

1st Paper Feed Unit

1. **Open the right cover [A] wide (▪×2).**

2. **Pull out the 1st paper tray [A].**
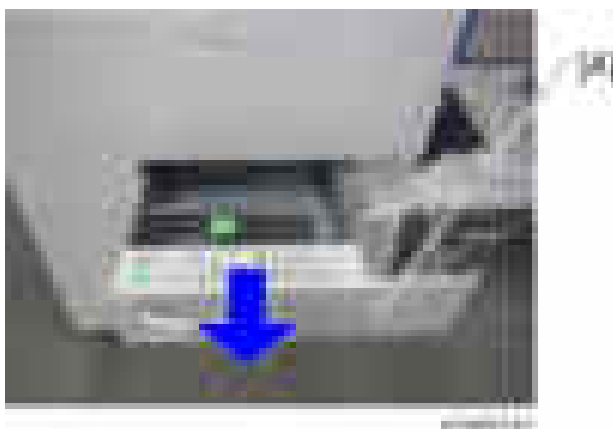
3. **Paper feed guide plate [A].**

4. **1st paper feed unit [A] (🖼×2, 🖼×1).**

2nd Paper Feed Unit

1. **Duplex unit (page 418).**

2. **Pull out the 2nd paper tray [A].**
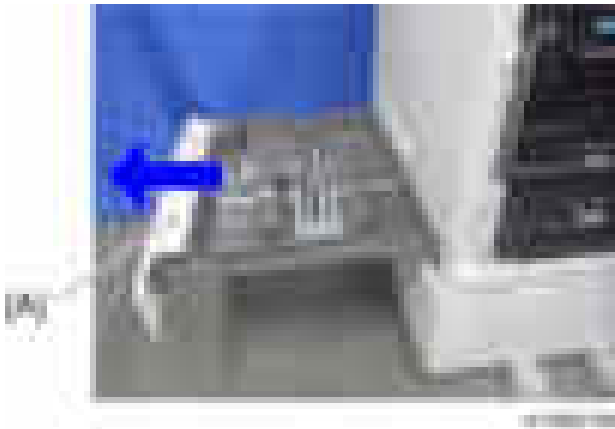
3. **Transport guide [A] (×1).**

4. **Harness guide [A] (×1).**

5. **Paper feed guide plate [A].**

6. **2nd paper feed unit [A] (▩×2, ▩×1).**

Paper Dust Collection Unit

1. **Open the right cover (page 418).**

2. Paper dust collection unit [A] (🔩×1).
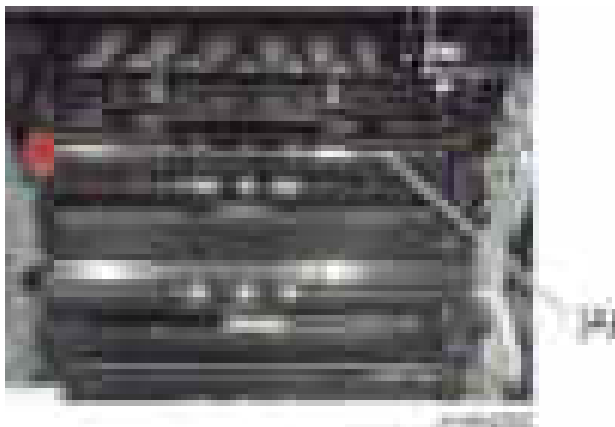
Separation Roller, Torque Limiter

1. Pull out the paper tray [A].

2. **Open the right cover [A] (page 418).**

3. **Separation Roller [A], Torque Limiter [B] (▨×1).**
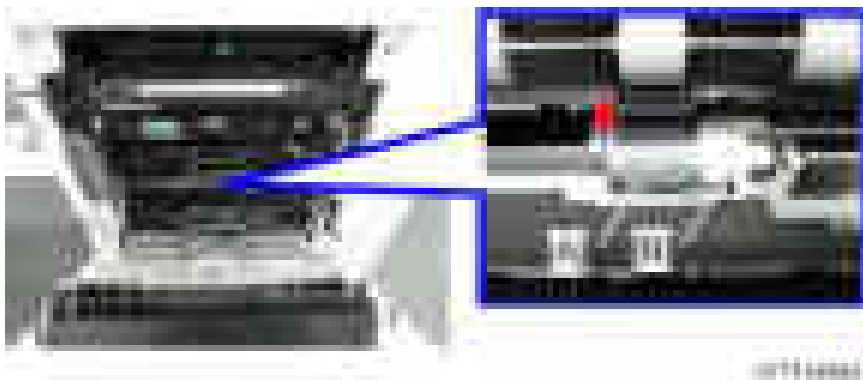
Pick-up Roller, Paper Feed Roller

1. **Pull out the paper tray (page 406, page 405).**
2. **Open the right cover (page 406, page 405).**

3. Retainer [A] (▨×1).

4. Pick-up Roller [A], Paper Feed Roller [B].

1st Tray Lift Motor / 2nd Tray Lift Motor

1. HVP CB (page 441).

2. **1st Tray Lift Motor [A] (×2, ×1).**

3. **2nd Tray Lift Motor [A] (×2, ×1).**

Vertical Transport Sensor

1. **Paper feed unit (page 401).**

2. Vertical transport sensor unit [A] (🔩×1, 🔌×1).

3. Vertical transport sensor [A].
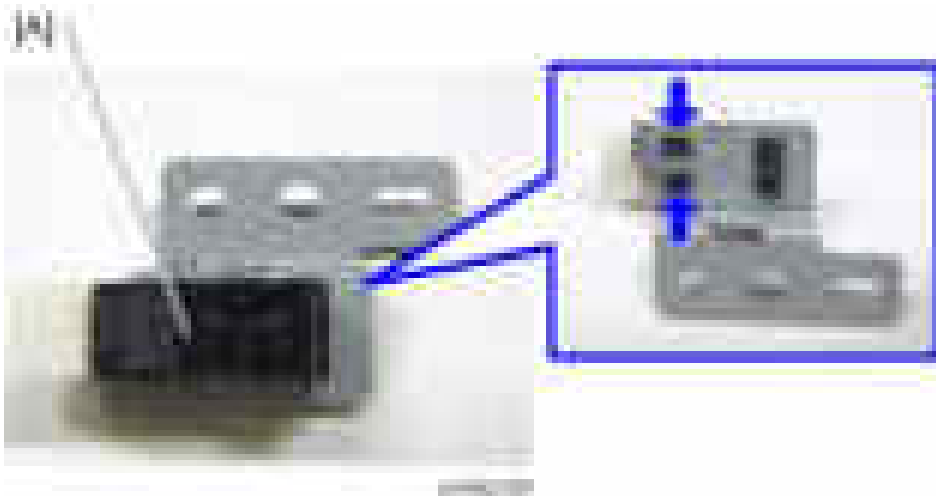
Limit Sensor

1. Paper feed unit (**page 401**).

2. **Limit sensor [A].**

Paper End Sensor

1. **Paper feed unit (page 401).**

2. **While pressing the tab enclosed by the blue circle, remove the paper end sensor [A] (Harness×1).**
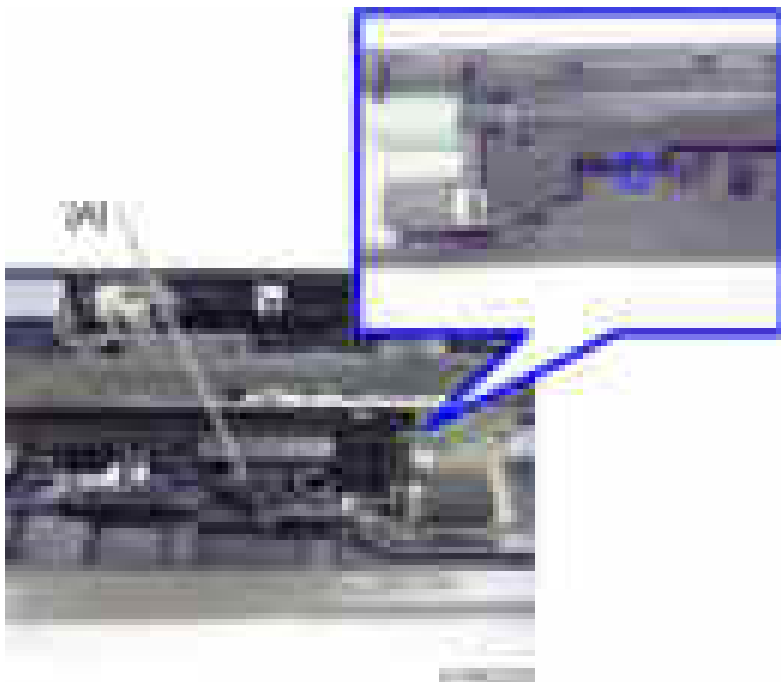
Registration Sensor

1. Open the right cover (**page 418**).

2. Paper transfer roller unit (**page 336**).

3. Inner bracket [A] (×3).

4. Remove the registration sensor from the stay gap using a slotted screwdriver (×1).
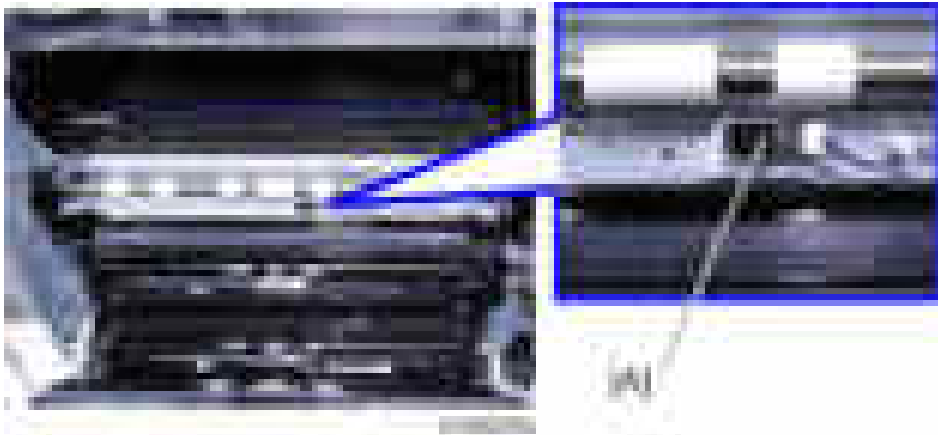
By-pass Tray Unit

By-pass Tray

1. **Open the right cover (page 418).**
2. **Wire [A] (▦×1).**

3. **Open the duplex unit wide (page 394).**
4. **Paper transport guide [A] (▦×2).**

5. **By-pass tray [A] (**×4, ×3, ×4**).**
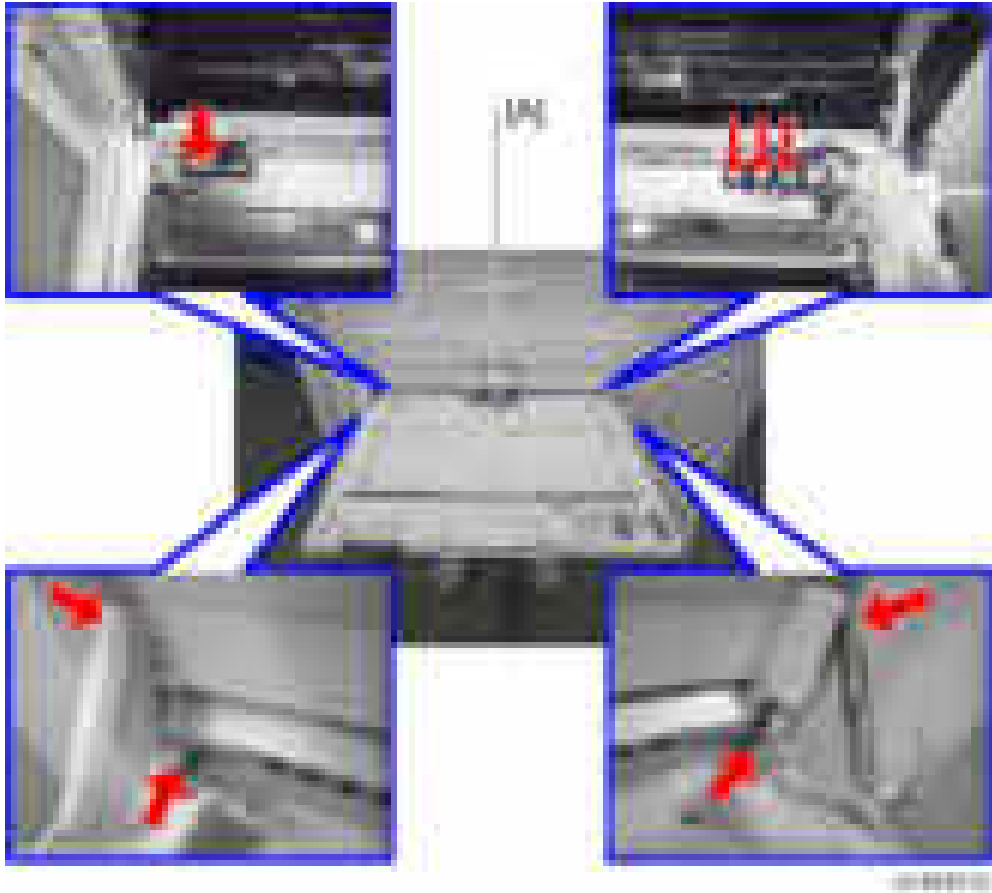
By-pass Paper End Sensor

1. **Open the by-pass tray [A].**
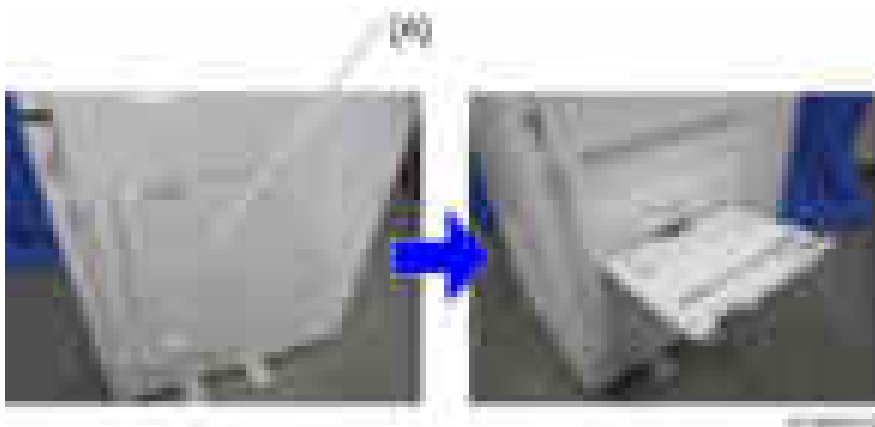
2. **By-pass paper end sensor cover [A].**
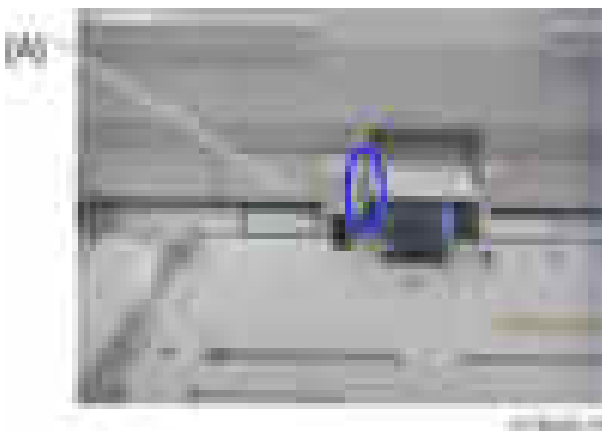
3. **By-pass paper end sensor unit [A] (×1, ×1).**

4. **By-pass paper end sensor [A].**
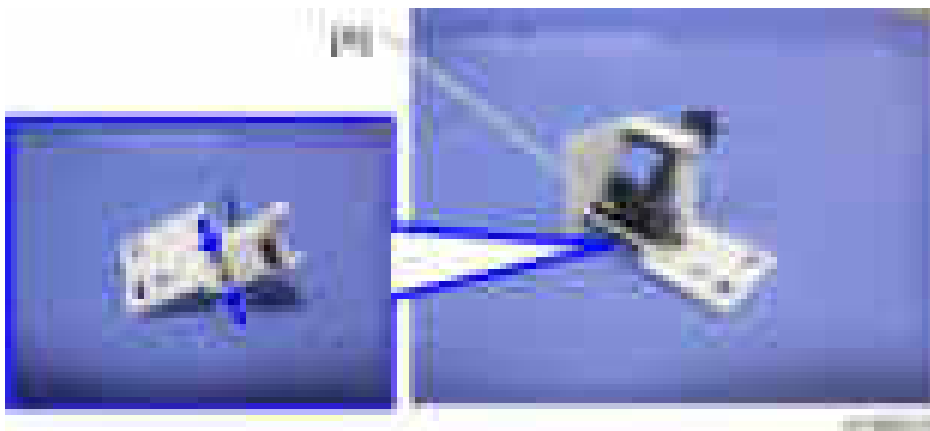
By-pass Pick-up Roller

1. **Open the by-pass tray (page 412).**

2. **By-pass pick-up roller [A] (▦×1).**

By-pass Paper Feed Roller

1. **Paper End Sensor (page 410).**
2. **By-pass paper feed roller [A] (▦×1).**

By-pass Separation Roller

1. **Paper transport guide (page 412).**

2. **By-pass separation roller [A] (▇×1).**

Torque Limiter

1. **By-pass separation roller (page 416).**
2. **Torque limiter [A].**

Duplex Unit

Duplex Unit

1. **Unlock the lever [A], and then open the right cover [B].**

2. **Arms [A] [B] (▪×2).**
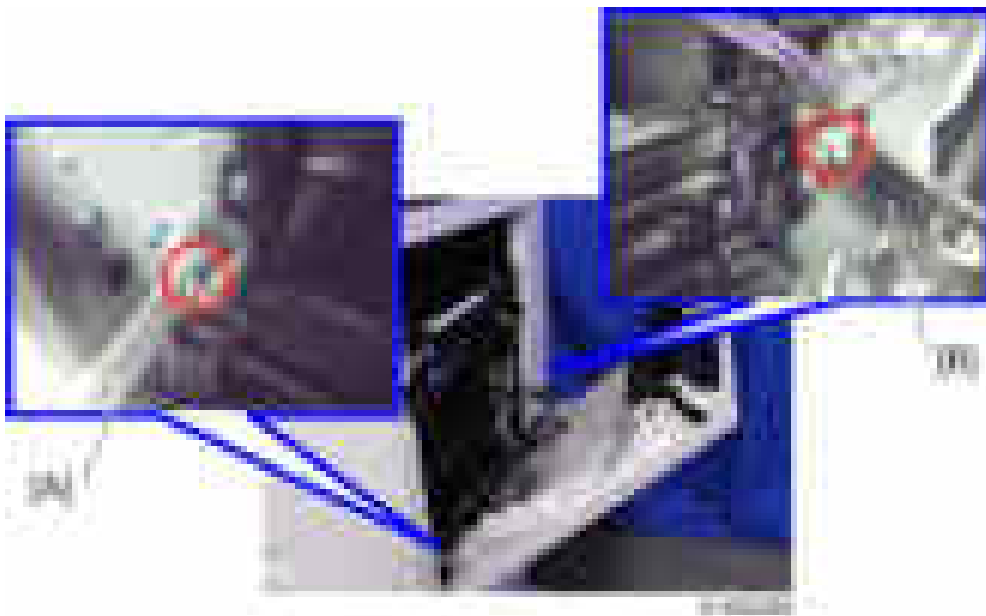
3. **Right rear cover (page 260).**

4. Open the 1st paper feed tray [A] and 2nd paper feed tray [B].

5. Cover [A] (×1).
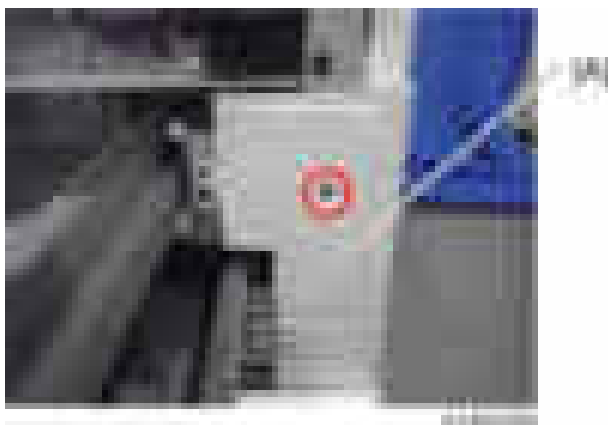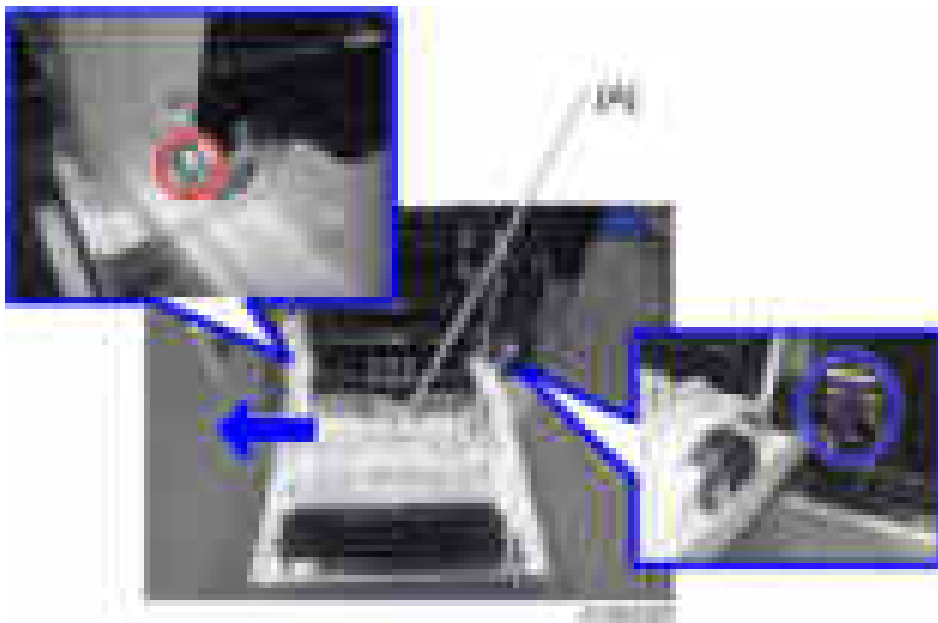
6. **Duplex unit [A] (×1, ×3).**

Note

* To attach the duplex unit, loop the harness around as shown in the diagram.
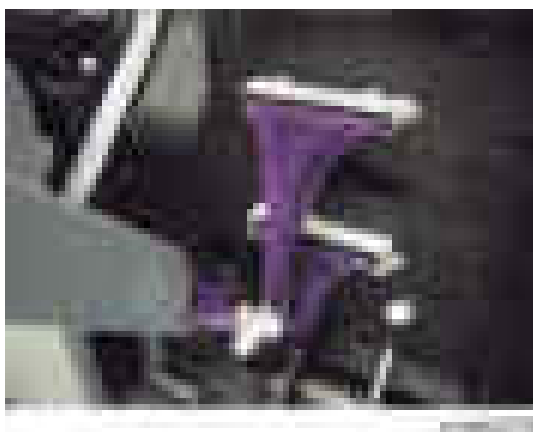
Duplex/By-pass Motor

1. **Duplex unit (page 418).**

2. **Harness guide [A] (⬜×4).**

3. **Duplex/by-pass motor unit [A] (⬜×3, ⬜×1, ⬜×3).**

4. **Duplex/By-pass Motor [A] (⬜×2).**

Duplex Entrance Sensor

1. Harness guide (**page 418**).

2. Remove two tabs, and remove the transport guide [A].
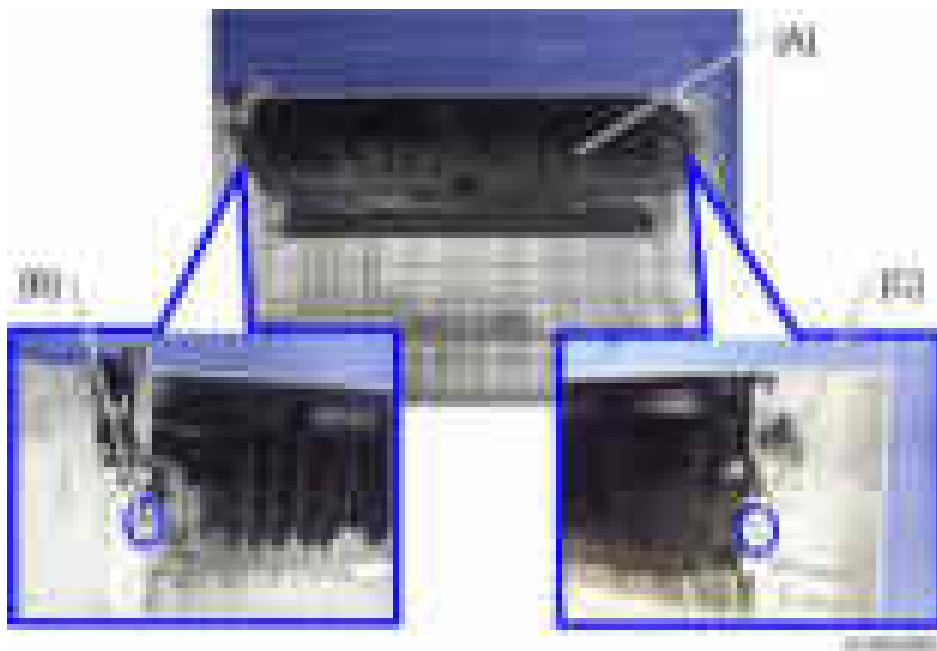
3. Duplex entrance unit [A] (📷×8).
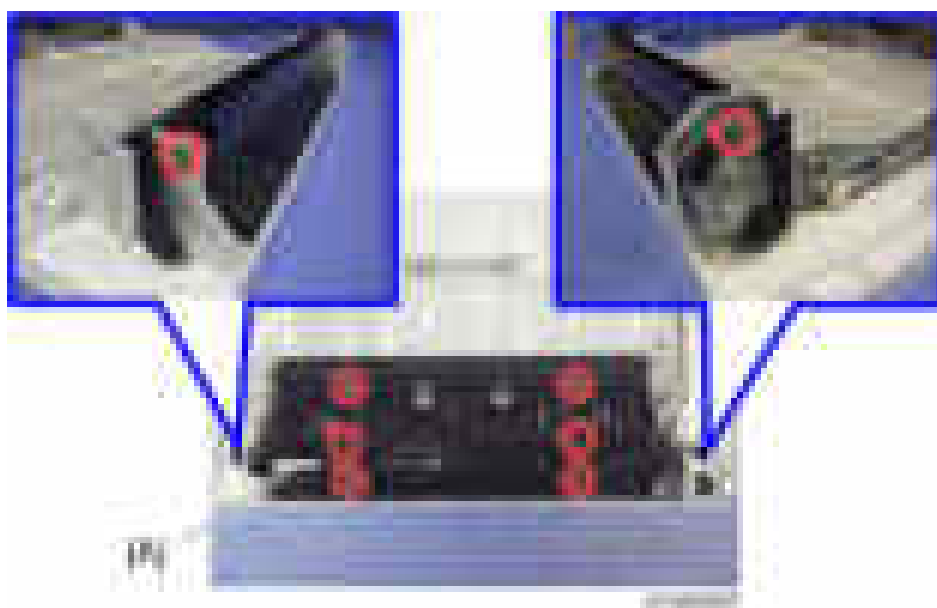
4. Duplex entrance sensor unit [A] (×1).
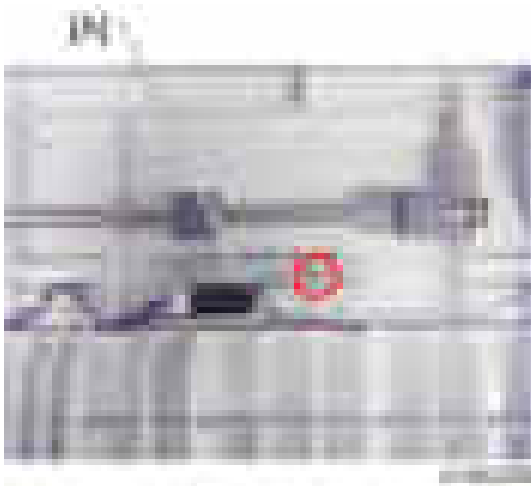
5. Duplex entrance sensor [A] (×1).
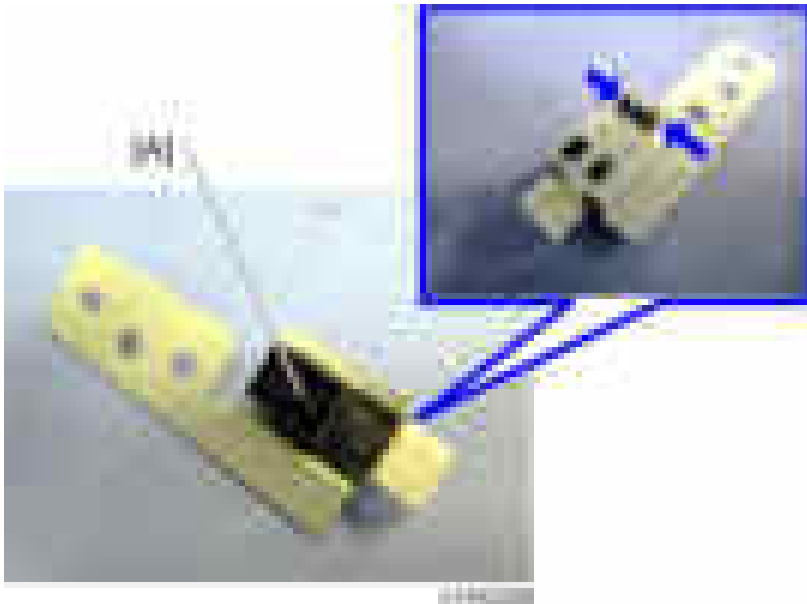
Duplex Exit Sensor

1. Duplex unit (page 418).

2. **Harness guide [A] (×1).**
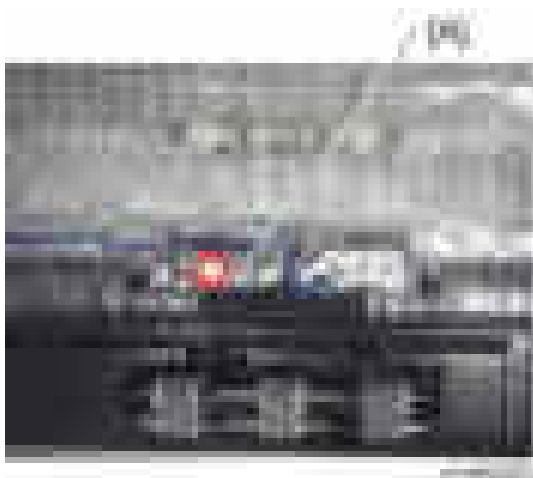
3. **Duplex exit sensor unit [A] (×1).**
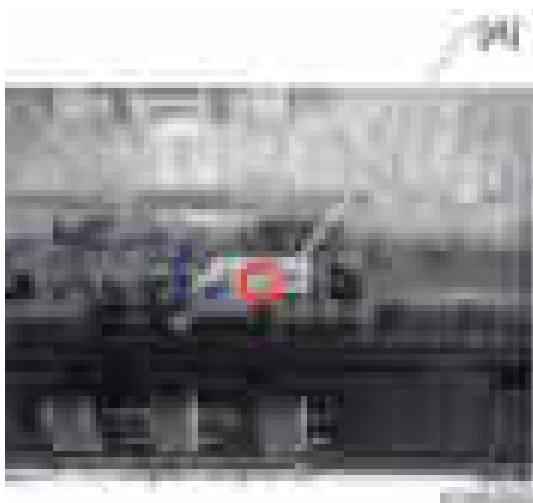
4. **Duplex exit sensor [A] (🔌×1).**

Electrical Components

⚠️CAUTION

- There is a FFC with tabs. Release the tabs to remove.

Overview

Printed Circuits / Parts Inside the Controller Box

[A]	BCU
[B]	IPU

[C]	Controller Box Cooling Fan
[D]	Controller Board
[E]	HDD

Printed Circuits Behind the Controller Box
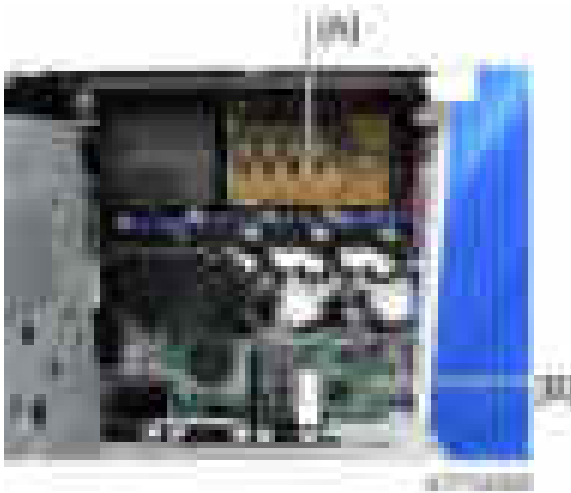
[A]	HVP_TTS
[B]	Imaging IOB

Printed Circuit / Parts Inside the Power Supply Box
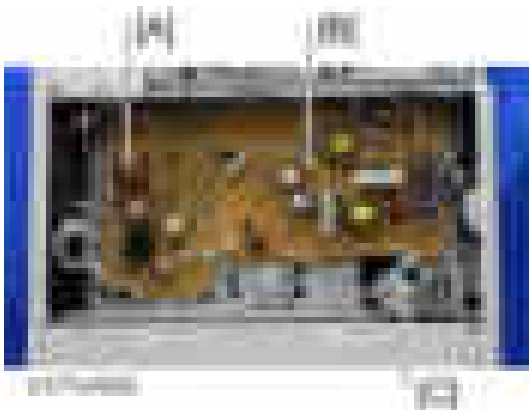
RTB 60
Caution: Some parts of the PSU retain charge for a long period after disconnecting the power.
See the diagrams in this RTB for details.

[A]	PSU (AC controller board)
[B]	PSU (DC Power)
[C]	PSU Cooling Fan

Printed Circuits Behind the Power Supply Box
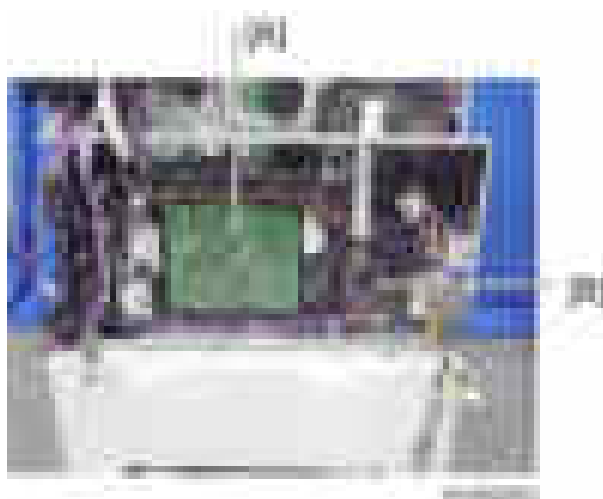
[A]	HVP_CB
[B]	Paper Transport IOB

IPU

⚠️ **CAUTION**

• The FFC connector has a lock mechanism. Do not use force to pull it out.

1. IPU [A] (×6,   ×12).
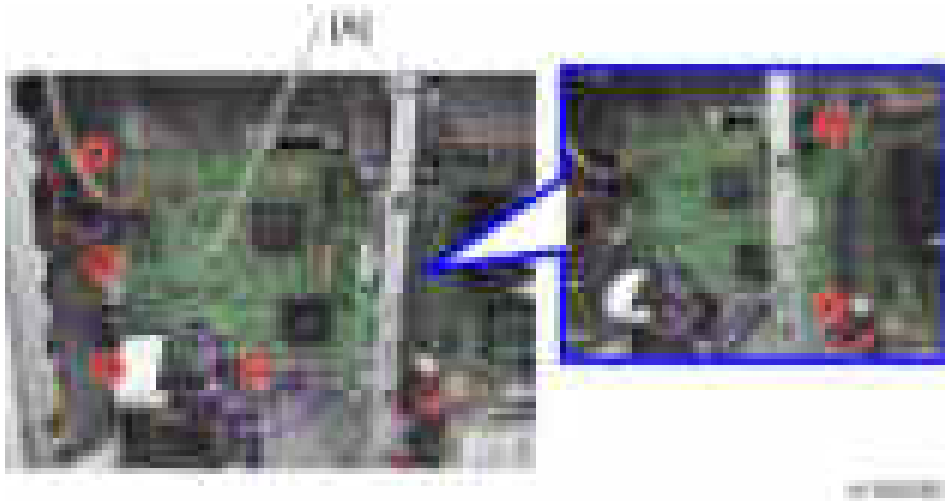
BCU

⚠CAUTION

- The FFC connector has a lock mechanism. Do not use force to pull it out.

1. **Rear cover (page 258).**
2. **BCU [A] (×2,   ×4).**

When Installing the New BCU

Remove the NVRAM from the old BCU. Then install it on the new BCU after you replace the BCU.

Replace the NVRAM (page 430) if the NVRAM on the old BCU is defective.

Note

- Make sure you print out the SMC reports ("SP Mode Data" and "Logging Data") before you replace the NVRAM.

⚠️**CAUTION**

- Keep NVRAMs (EEPROM) away from any objects that can cause static electricity. Static electricity can damage NVRAM data.

- Make sure the serial number is input in the machine for the NVRAM data with SP5-811-004, if not, SC995-001 occurs

Replacing the NVRAM (EEPROM) on the BCU

1. Make sure that you have the SMC report (factory settings). This report comes with the machine.
2. Output the SMC data ("ALL") using SP5-990-001/SP5-992-001.
3. Turn off the main switch.
4. Insert a blank SD card in the SD slot #2, and then turn on the main switch.
5. Use SP5-824-001 to upload the NVRAM data from the BCU.
6. Turn off the main power switch and unplug the power cord.
7. Replace the NVRAM on the BCU with a new one.
8. Plug in, and then turn on the main switch.

   Note

   - When the power is turned ON, SC195-00 appears, but continue with the following steps.

9. Select the destination setting. (SP5-131-001) (JPN: 0, NA: 1, EU/AA/TWN/CHN: 2)
10. Set the following SP, Machine Serial Set (SP5-811-001), Area Selection (SP5-807-001), CPM Set (SP5-882-001).

    Note

    - For information on how to configure this SP, contact the supervisor in your branch office.

11. Turn off the machine, and then turn it back on.
12. Use SP5-801-002 "Memory Clear Engine".

    Important

    - After changing the EEPROM, Some SPs do not have appropriate initial values. Because of this, steps 10 to 12 are done.

13. Turn off the machine, and then turn it back on.
14. From the SD card where you saved the NV-RAM data in step 5, download the NV-RAM data.

15. Turn off the machine, and then remove the SD card from slot #2.

16. Turn on the main switch.

17. Check the factory setting sheet and the SMC data printout from step 2, and set the user tool and SP settings so they are the same as before.

18. Do ACC (Copier function and Printer function).

Controller Board

↓Note

- Keep NVRAMs away from any objects that can cause static electricity. Static electricity can damage NVRAM data.

1. Rear cover (**page 258**).

2. Controller bracket [A] (.

3. Controller Board [A] (![](×4, .
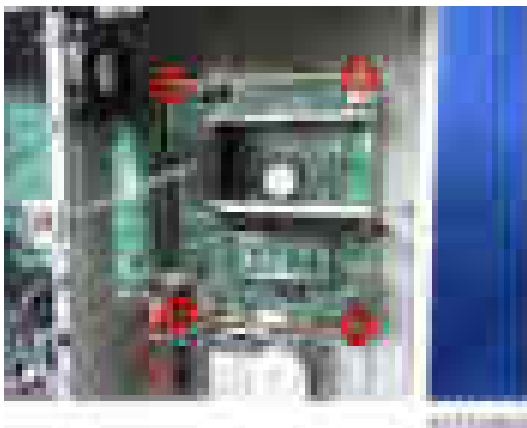
4. DIMM (Unlock).

NVRAMs on the Controller Board

⚠ CAUTION

- Referring to the following procedure, be sure that there are no mistakes in the mounting position and orientation of the NVRAMs.

⚠ CAUTION

- SC195 (Machine serial number error) will be displayed if you forget to attach the NVRAM.

- If you mounted the NVRAM in the wrong direction, each component needs to be replaced because a short circuit was caused in the controller board and the NVRAM.

1. **Make sure that you have the SMC report (factory settings). This report comes with the machine.**

2. **Output all the SMC data using SP5-990-001 (SP Print Mode: All (Data List)).**

3. **Make sure that the customer has a backup of their address book data. If not, obtain the backup by referring to the following procedure.**

   1. Turn the power OFF.

   2. Insert a SD card into slot 2 and turn the power ON.

   3. Save the address book data in the SD card using SP5-846-051.

   ⭐ **Important**

   - The address data stored in the machine will be discarded later during this procedure. So be sure to obtain a backup of the customer's address book data.

   - Note that the counters for the user will be reset when doing the backup/restore of the address book data.

- If they have a backup of the address book data, use their own backup data for restoring. This is because there is a risk that the data cannot be backed up properly depending on the NV-RAM condition.

4. Print the Box List by pressing these buttons in the following order: [Facsimile Features] - [General Setting] - [Box Setting: Print List]

5. Print the Special Sender List by pressing these buttons in the following order: [Facsimile Features] - [Reception] - [Program Special Sender: Print List]

6. Write down the following fax settings.

   - [Receiver] in [Facsimile Features] - [Reception] - [Reception File Settings] - [Forwarding].

   - [Notify Destination] in [Facsimile Features] - [Reception] - [Reception File Settings] - [Store].

   - [Specify User] in [Facsimile Features] - [Reception] - [Stored Reception File User Setting].

   - [Notify Destination] in [Facsimile Features] - [Reception] - [Folder Transfer Result Report].

   - Specified folder in [Facsimile Features] - [Send] - [Backup File TX Setting].

   - [Receiver] in [Facsimile Features] - [Reception] - [Reception File Settings] - [Output Mode Switch Timer].

   - [Store: Notify Destination] in [Facsimile Features] - [Reception] - [Output Mode Switch Timer].

   - All the destination information shown on the display.

   ◆Note

     - In the fax settings, address book data is stored with entry IDs, which the system internally assigns to each data. The entry IDs may be changed due to re-assigning in backup/ restore operations.

7. Make sure that there is no transmission standby file. If any standby file exists, ask the customer to delete it or complete the transmission.

8. Turn the power OFF and unplug the power supply cord.

9. Push the power switch ON again to discharge the residual charge.

10. Replace the NVRAM with a brand-new one.

11. Turn the power ON.

★Important

- After turning the power ON, SC995 will be displayed except for machines that have a smart operation panel.

- For machines that have a smart operation panel, SC673 will occur and SC995 might be internally issued after turning the power ON.

- After turning the power ON, SC870 will occur and the address book data will be cleared.

<Additional procedure only for machines that have the Smart Operation Panel installed>

↓Note

- SC673 will be displayed at start-up, but this is normal behavior. This is because the controller and the smart operation panel cannot communicate with each other due to changing the SP settings for the operation panel.

1. **Change the SP settings for the operation panel.**

   - SP5-748-101: (OpePanel Setting: Op Type Action Setting): Change bit 0 from 0 to 1.

   - SP5-748-201: (OpePanel Setting: Cheetah Panel Connect Setting): Change the value from 0 to 1.

2. **Change the Flair API SP values.**

   - SP5-752-001 (Copy FlairAPIFunction Setting): Change the value from 0 to 1.

   - SP1-041-001 (Scan:FlairAPI Setting): Change the value from 0 to 1.

   - SP3-301-001 (FAX:FlairAPI Setting) Change the value from 0 to 1.

3. **Cycle the power OFF/ON.**

4. **Turn the power ON, with the SD card where the NV-RAM data has been uploaded in slot 2. Then download the NV-RAM data stored in the SD card to the brand-new NV-RAM using SP5-825-001 (NV-RAM Data Download).**

   ↓Note

   - The download will take a couple of minutes.

5. **Turn the power OFF and remove the SD card from slot 2.**

6. **Turn the power ON.**

7. **Restore the original settings of the following SPs, referring to the SMC data obtained in step 2.**

   ↓Note

   - SP5-825-001 does not download the following SP data to the new NV-RAM. So you must set them manually.

   a. SP5-985-001 (Device Setting: On Board NIC)

   b. SP5-985-002 (Device Setting: On Board USB)

   c. SP5-193-001 (External Controller Info. Settings)

   d. SP5-895-001 (Application invalidation: Printer)

   f. SP5-895-002 (Application invalidation: Scanner)

   g. SP5-730-001 (Extended Function Setting: JavaTM Platform setting)

8. **If the security functions (e.g. Stored file encryption / Auto Erase Memory Setting) were applied, set the functions again.**

9. Ask the customer to restore their address book. Or restore the address book data using SP5-846-052 (UCS Setting: Restore All Addr Book), and ask the customer to ensure the address book data has been restored properly.

⭐ **Important**

- If you obtained the backup of the customer's address book data in step 3, delete the backup immediately after the NV-RAM replacement to avoid accidentally taking out the customer's data.

10. Output all the SMC data with SP5-990-001 and make sure all the SP/UP settings except for counter information are properly restored, by checking the SMC data obtained in step 2.

🔽 **Note**

- The counters will be reset.

11. Make sure that the list output in steps 4 to 6 matches the destination information in step 6. If not, set it to the setting before replacement.

12. Execute the process control (SP3-011-001).

13. Execute the ACC (Copy).

14. Execute the ACC (Printer).

⭐ **Important**

- If you cannot execute SP5-824-001 or SP5-825-001 for some reason, try all the following things.
  - Check the changed SP value on the SMC which was output in step 2 and set it manually. Especially, ensure that the values of the following SPs are same as the setting before the replacement.
    a. SP5-045-001 (Accounting counter: Counter Method)
    b. SP5-302-002 (Set Time: Time Difference)
  - Because the PM counters have been reset during NV-RAM replacement, it is necessary to replace all the PM parts for proper PM management.

🔽 **Note**

- If a message tells you need an SD card to restore displays after the NV-RAM replacement, create an "SD card for restoration" and restore with the SD card.

Correspondence table

	Position	Label on the board	Label on the NVRAM
[A]	Upper	FRAM2	2M-2
[B]	Lower	FRAM1	2M-1

Mounting position and orientation of the NVRAMs
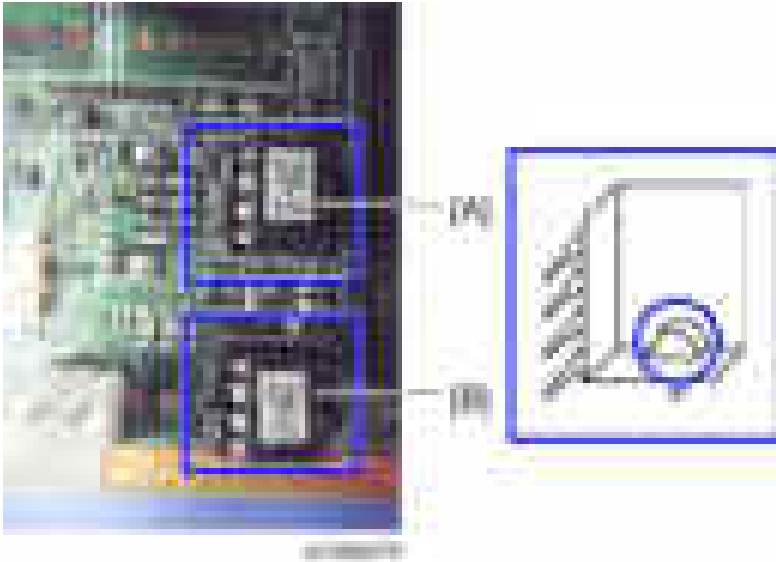
- When replacing the controller board, first, check which SDK applications have been installed. After replacing the controller board, re-install the SDK applications by following the installation instructions for each application.

- After reinstalling the SDK applications, print the SMC (SP-5-990-024/025 (SMC: SDK/ Application Info)). Then open the Main power switch cover. Store the SMC sheet and the SD card(s) that was used to install the SDK application(s).

HDD

⬇Note

- Before replacing the HDD, copy the address book data to an SD card with SP5846-051 if possible.

- If the customer is using the Data Overwrite Security, the Data Encryption feature or OCR Scanned PDF, these applications must be installed again.

1. **Rear cover (page 258).**

2. HDD [A] (🔩×3, 🔌×2).

Adjustment after Replacement

1. **Run SP5832-001, to initialize the hard disk.**

   Even if you use an HDD that is already formatted, it is recommended that you re-initialize.

2. **Run SP5853-001, to install the fixed stamps.**

3. **Run SP5846-052, to copy the address book from the SD card to the HDD.**

4. **Turn off the machine, and then turn it back on.**

Imaging IOB

1. **Scanner rear cover (page 260).**

2. **Scanner rear small cover (page 260).**

3. **Rear right cover (page 259).**

4. **Open the controller box [A] (×6).**
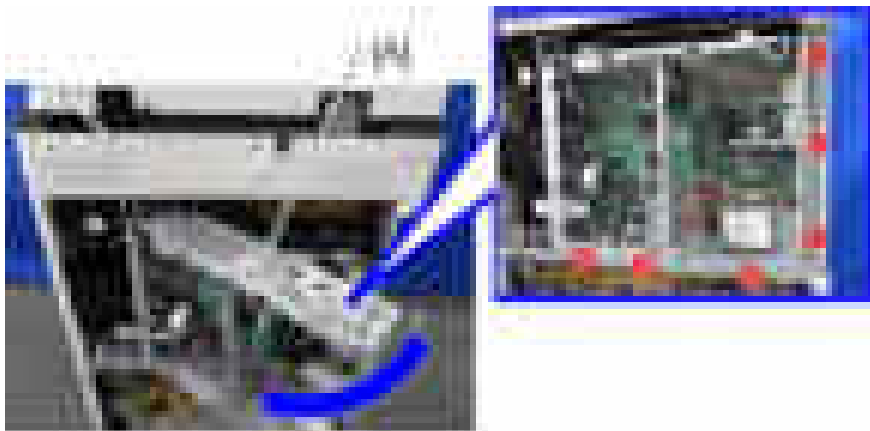
5. **Imaging IOB [A] (×5,   ×14).**

HVP_TTS

1. **Open the controller box (page 437).**

2. HVP_TTS [A] (⬜×4, ⬜×6).

PSU (AC Controller Board)

1. Rear lower cover (**page 259**).
2. PSU (AC Controller Board) [A] (⬜×6, ⬜×7 for NA, x 6 for EU/AA).
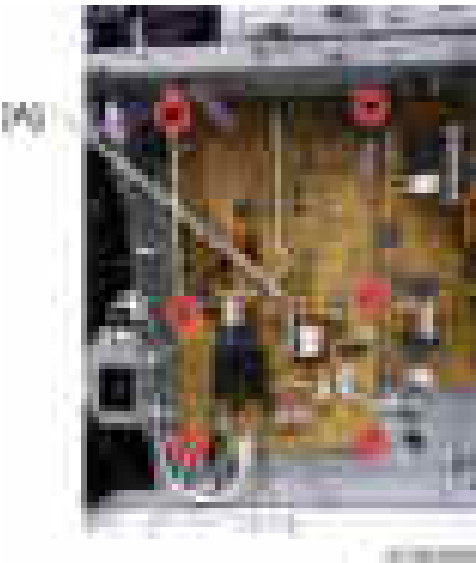
PSU (DC Power)

1. Rear lower cover (**page 259**).

2. **PSU (DC Power) [A] (⬚×8, ⬚×7).**
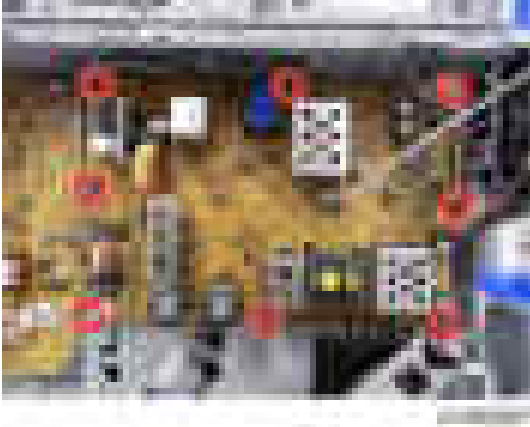
RTB 60
Caution: Some parts of the PSU retain charge for a long period after disconnecting the power. See the diagrams in this RTB for details.

Paper Transport IOB

1. **Rear lower cover (page 259).**

2. **Power supply box [A] (⬚×6, Among them, tapping screw×1, ⬚×10, ⬚×4).**

Note

- The power supply box [A] is hooked onto the machine at the locations in the blue circles.

3. **Paper transport IOB [A] (×6, ×22).**

HVP-CB

Note

- Before replacing the HVP-CB, input all the four charge voltage correction values from the decal on the new board into the correct SPs as shown below, then turn the power OFF. After replacing the board, turn the power ON.

SPs for charge voltage correction

	SP No.

K	SP2-005-239
C	SP2-005-240
M	SP2-005-241
Y	SP2-005-242

A	Serial No.
B	Left: Last three digits of SP Number Right: Correction Value
C	QR code (For production process)

The location of the bar-code decal [A]

Note

- You need to paste only the following red part on the HVP-CB. QR code and releasing paper can be discarded.

1. **Power supply box (page 440)**.

2. **HVP_CB [A] (** ×4, ×1**)**.

When Removing the HVP-CB Together with Its Bracket

1. Release the tabs attached to the bracket for HVP-CB [A] (× 4).
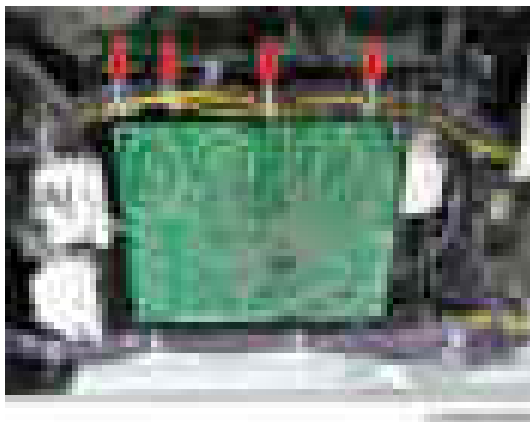
2. Remove the HVP-CB together with the bracket [A] (× 2, Tab × 2, × 1).
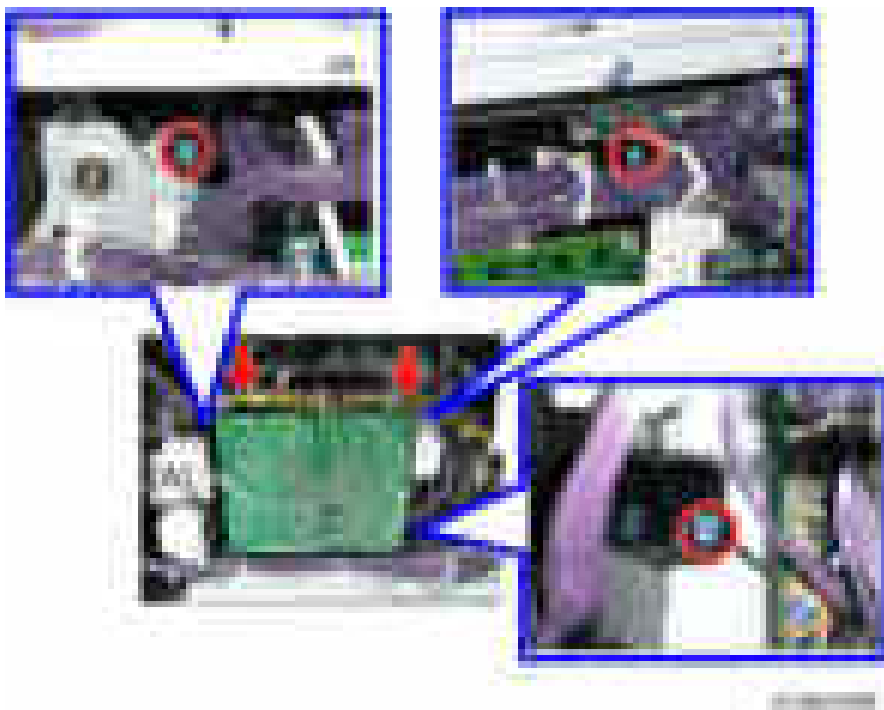
⬇ Note

- There are two tabs on the bracket [A]. Release them in a downward direction.
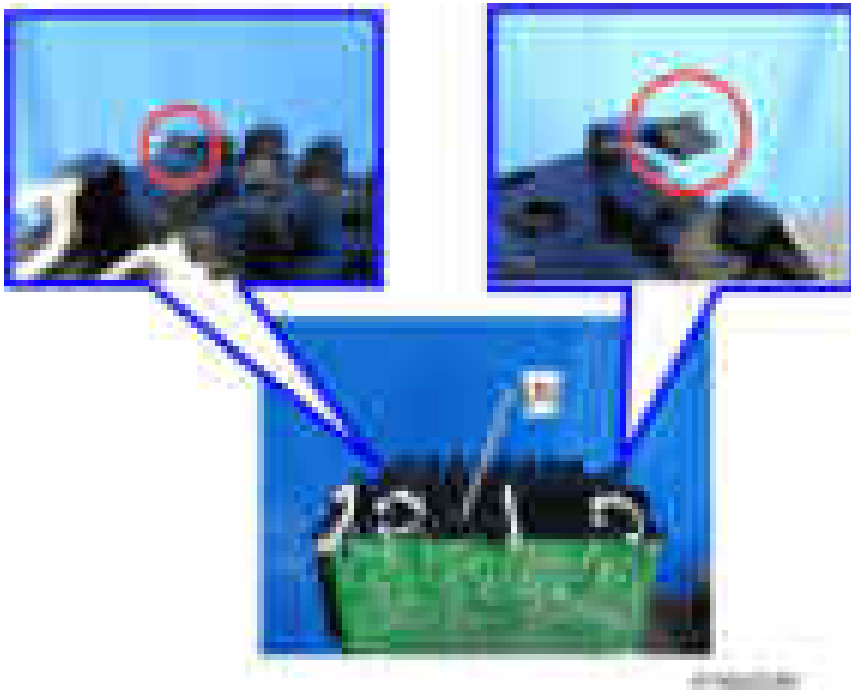
Fans/Filters

Odor Filter

1. **Odor filter box [A].**
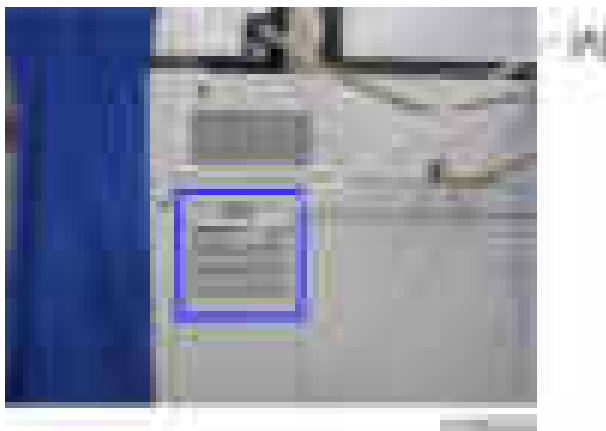
2. **Odor filter [A].**

Development Intake Fan/Right

1. **Inner lower cover (page 267).**

2. Development Intake Fan/Right unit [A] (, , .
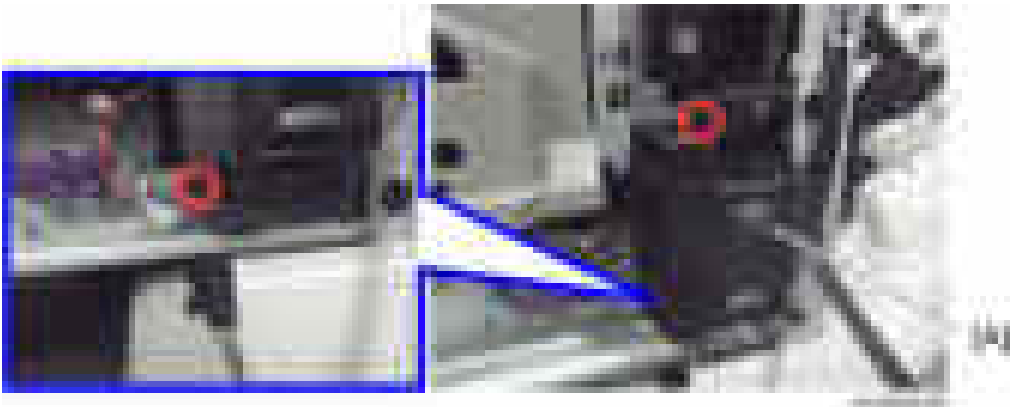
3. Development Intake Fan/Right [A] (.
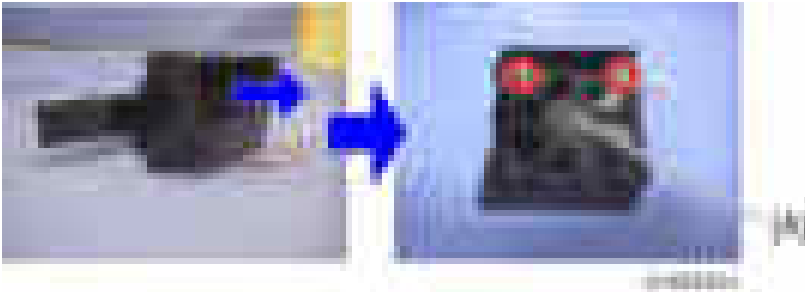
Development Intake Fan/Left

1. Inner lower cover (**page 267**).

2. Development Intake Fan/Left unit [A] (, .
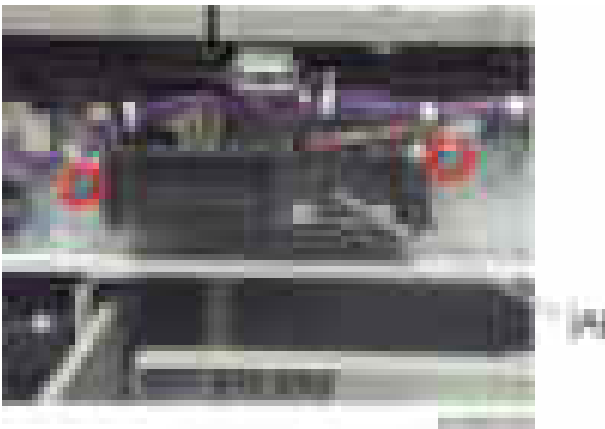
3. **Development Intake Fan/Left [A] (🔩×2).**
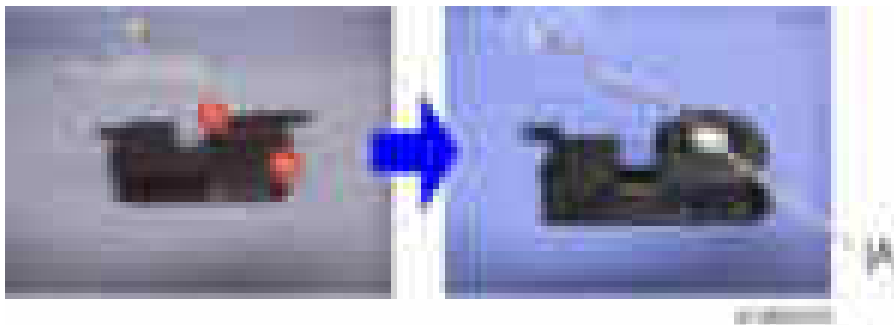
Ozone Exhaust Fan

1. **Power supply box (page 440).**
2. **Ozone exhaust fan [A] (🔩×2, 🔌×1).**

Paper Exit Cooling Fan

1. **Main power switch cover (page 262).**

2. **Paper exit cooling fan [A] (** ×2, ×1**).**
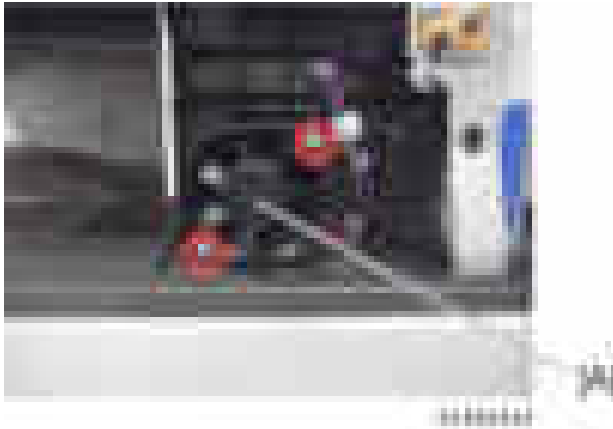
Fusing Exhaust Heat Fan

1. **Rear right cover (page 259).**

2. **Fusing exhaust heat fan unit [A] (** ×2, ×1, ×1**).**

3. **Fusing exhaust heat fan [A].**
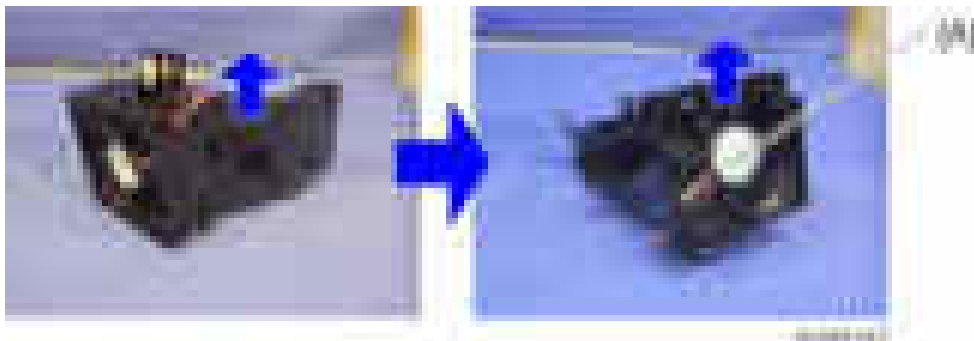
Toner Supply Cooling Fan

1. **Rear right cover (page 259).**
2. **Right rear cover (page 260).**
3. **Toner supply cooling fan unit [A] (⬛×2, ⬛×1).**

4. **Toner supply cooling fan [A].**
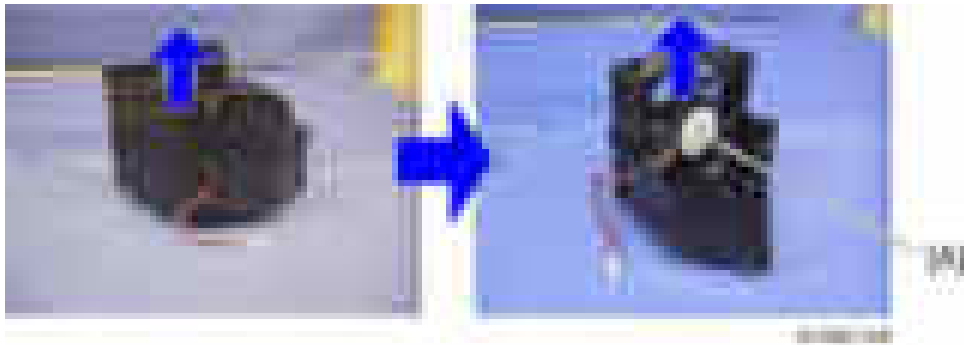
PSU Cooling Fan

1. **Rear lower cover (page 259).**
2. **PSU cooling fan unit [A] (×2, x1, x1).**

3. **PSU cooling fan [A].**
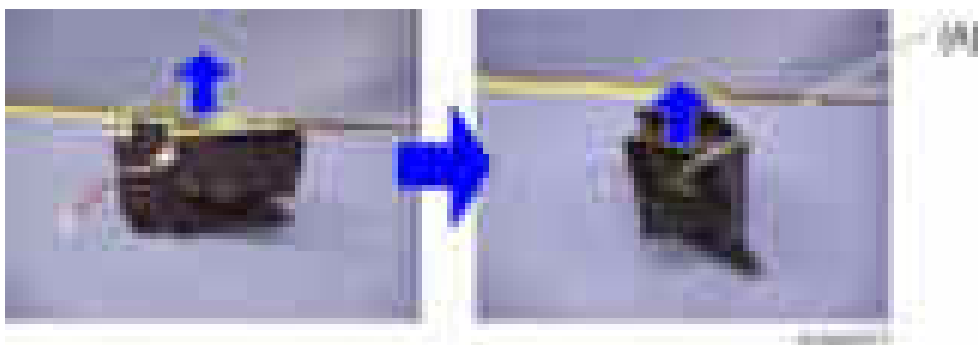
Controller Box Cooling Fan

1. **Rear cover (page 258).**

2. **Controller box cooling fan [A] (![icon]×2).**
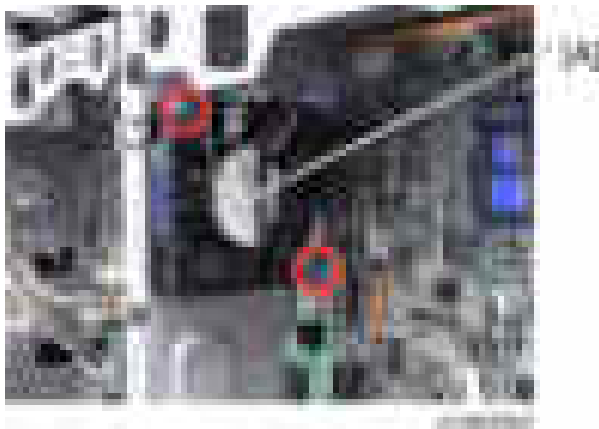
Image Adjustment

Auto Color Calibration

Image adjustment is performed by setting the Auto Color Calibration (ACC) during installation.

Note

- When you set the adjustment sheet on the exposure glass, put about 10 pieces of white paper on the adjustment sheet in order for the original to contact the exposure glass sufficiently. Instruct the customer to periodically execute the ACC.
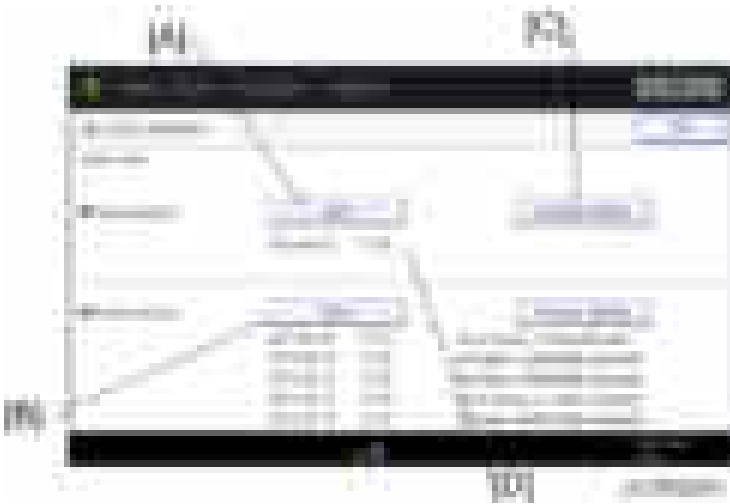
	Description
[A]	is used to output adjustment sheets.
[B]	You must execute both copy and printer.
[C]	is used to roll back to the previous value.
[D]	Displays the last date/time ACC was executed.

Printer Gamma Correction

Note

- We recommend that you keep the printer gamma correction values at the default values.

- After adjusting/saving the values in the printer SP mode, the changes are reflected for the first time by performing the Auto Color Calibration (ACC) [User Tool > Maintenance > Auto Color Calibration].

1. Select the mode you want to change in the printer SP1102-001: Resolution Setting.

1102	[Resolution Setting]		
	Selects the printing mode (resolution) for the printer gamma adjustment.		
001	Resolution Setting	CTL	[0 to 9 / **0** / 1/step] 0: 1200x1200 Photo (2bit/4col) 1: 1200x1200 Photo (1bit/4col) 2: 600x600 Photo (4bit/4col) 3: 600x600 Photo (2bit/4col) 4: 600x600 Photo (1bit/4col) 5: 1200x1200 Text (2bit/4col) 6: 1200x1200 Text (1bit/4col) 7: 600x600 Text (4bit/4col) 8: 600x600 Text (2bit/4col) 9: 600x600 Text (1bit/4col)

2. Change the gamma correction value for each color in the printer SP1104: Gamma Adjustment.

Note

- When adjusting the value, be sure to follow the sequence: I (Idmax) M (Middle) S (Shadow) H (Highlight).

- To lower the print density, reduce and save the H/M/S/I value for each color.

- To heighten the print density, increase and save the H/M/S/I value for each color.

1104	[Gamma Adjustment]
	Adjusts the printer gamma for the mode selected in the "Mode Selection" menu.

001	Set Black H	CTL	
002	Set Black S	CTL	
003	Set Black M	CTL	
004	Set Black I	CTL	
021	Set Cyan H	CTL	
022	Set Cyan S	CTL	
023	Set Cyan M	CTL	
024	Set Cyan I	CTL	[0 to 30 / **00** / 1/step]
041	Set Magenta H	CTL	
042	Set Magenta S	CTL	
043	Set Magenta M	CTL	
044	Set Magenta I	CTL	
061	Set Yellow H	CTL	
062	Set Yellow S	CTL	
063	Set Yellow M	CTL	
064	Set Yellow I	CTL	

4

Gamma Correction Sheet

Range where each value affects
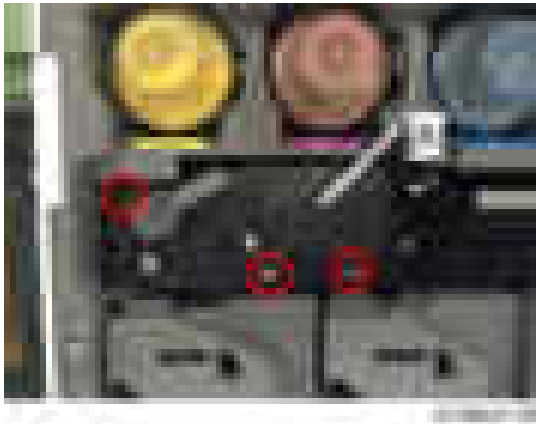
3. Execute the SP1105-001: Save Tone Control Value.

Note

- If you exit the SP mode without saving the values, any changes made in the printer SP1104: Gamma Adjustment will be lost.

- You can check the color balance before and after the gamma adjustment in the printer SP1103-001: Test Page - Color Gray Scale.

4. Perform the Auto Color Calibration (ACC) of the relevant resolution.
   [User Tool > Maintenance > Auto Color Calibration].
   *The settings are reflected by performing the above steps.

Note

- The resolution indicated in the Auto Color Calibration (ACC) differs from that in the printer SP. Refer to the correspondence table below.

Display: User Tool > Maintenance > Auto Color Calibration
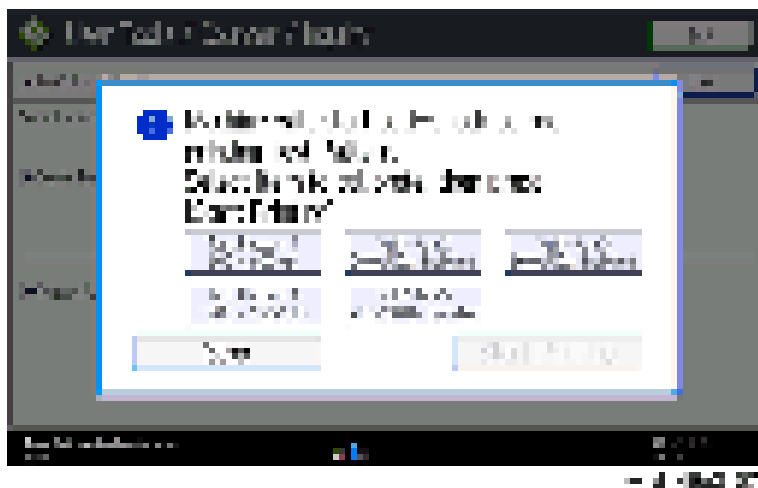
- ▦ Left column of the correspondence table

Display: printer SP
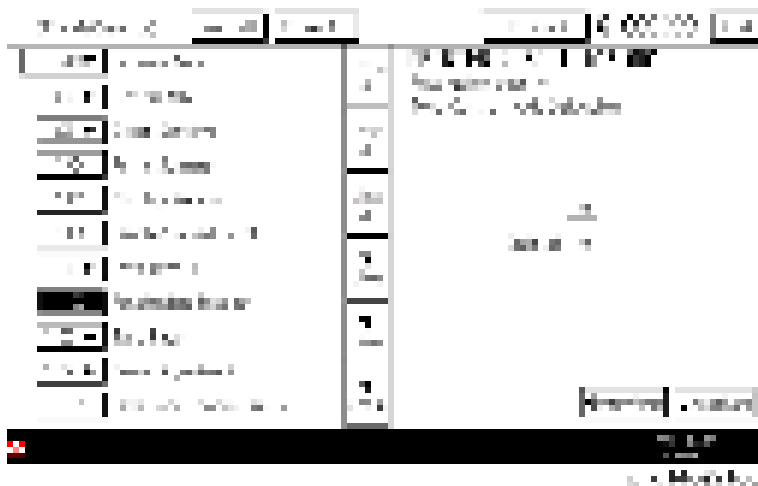
- ▦ Right column of the correspondence table

-

Correspondence table

Item of the ACC	Selected item of the printer SP
[Test Pattern 1 (600x600 dpi)]	4: 600x600 Photo (1bit/4col) / 9: 600x600 Text (1bit/4col)
[Test Pattern 2 (2400x600 dpi Equivalent)]	3: 600x600 Photo (2bit/4col) / 8: 600x600 Text (2bit/4col)
[Test Pattern 3 (9600x600 dpi Equivalent)]	2: 600x600 Photo (4bit/4col) / 7: 600x600 Text (4bit/4col)
[Test Pattern 4 (1200x1200 dpi)]	1: 1200x1200 Photo (1bit/4col) / 6: 1200x1200 Text (1bit/4col)
[Test Pattern 5 (4800x1200 dpi Equivalent)]	0: 1200x1200 Photo (2bit/4col) / 5: 1200x1200 Text (2bit/4col)

5. Check the image and repeat steps 1 - 4 until the desired image is obtained.

    *To change multiple resolutions, perform the change in the respective mode.

Color Registration

Adjust color registration with the following procedure when color registration errors occurred.

Check the Occurrence of Color Registration Errors

Prepare some A3 sheets.

1. Execute SP2-111-004 (Forced line Position Adj.: Mode d).

2. Make sure that execution completed successfully with using SP2-194-007 (MUSIC). If the value of SP2-194-007 is "0", it indicates that the result of SP2-111-004 was successful. If the value of SP2-194-007 is "1", it indicates that the result of SP2-111-004 was a failure, which you need to fix the color registration errors (See "Ways to fix color registration errors" in page 459).

3. Execute SP2-109-003 (Test Pattern: Pattern Selection)

4. With a loupe, check the details of the color registration errors on the printed test pattern (page 459).

    • Specification: Main/Sub is smaller than 180.0 um.

    • No color registration errors: Adjustment completed.

    • Color registration errors occurred: Adjust the color registration errors (See "Ways to fix color registration errors" in page 459)

Judgment for Type of Color Registration Error

In the following diagrams, solid lines represent "K" and dotted lines indicate any of "C", "M" or "Y".

1. Pattern 1

   This is a case in which there is a shift in the sub-scan direction at the leading edge of the paper. The following diagram shows "C", "M" or "Y" lines closer to the leading edge than "K" lines.

2. Pattern 2

   This is a case in which there is a shift in the sub-scan direction at the trailing edge of the paper. The following diagram shows "C", "M" or "Y" lines farther away from the leading edge than "K" lines.

3. Pattern 3

   This is a case in which a color registration error is found in the main-scan direction and size of the error is the same at the left, center and right.

4. Pattern 4

This is a case in which a color registration error is found in the main-scan direction and the size of the error is different at the left, center and right. For "M", the largest error will be at the right, followed by the center and then the left. For "C" or "Y", the order will be reversed. This is because the writing direction of the laser beam for "K" and "M" is different from "C" and "Y".

Case "M"
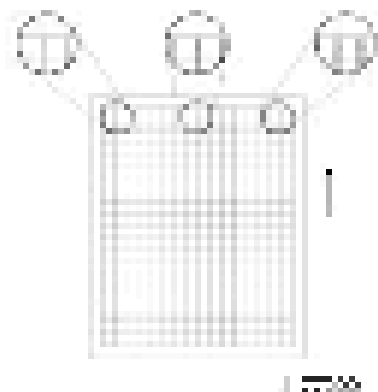
Case "C" or "Y"
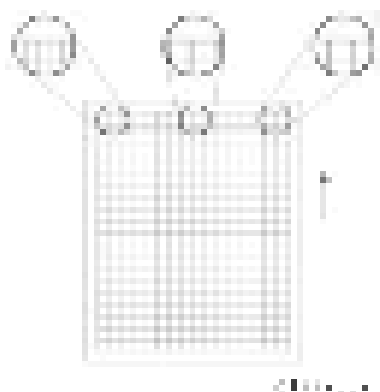
5. Pattern 5

   This is a case in which a color registration error is found in the sub-scan direction, but it is not the same as the Pattern 1 or 2. The error appears and disappears at intervals down the page.

Ways to fix color registration errors

SP2-111-004 (Forced Line Position Adj. : Mode D) Execution		
Result: Failed Case: SP2-194-007: 1 (Failed)		
SP2-194-010, 011, 012 shows "2" or "3"	Result of Check	Blank image, abnormal image, low image density
	Causes	1. Image Processing failure 2. Pattern density low 3. BCU(IPU) failure
	Solution	1.Replace PCU, Intermediate Transfer Belt, Power pack 2. Execute process control, supply toner 3. Replace BCU(IPU)
	Pattern	-

Failed to read the pattern of Line position Adj.	Result of Check	Normal (but color registration errors occur)
	Causes	1. ID Sensor shutter failure 2. ID Sensor failure 3. BCU(IPU) failure
	Solution	1. Replace ID Sensor shutter 2. Replace ID Sensor 3. Replace BCU(IPU)
	Pattern	-
Any of SP2-194-010 or 011 or 012 shows "5"	Result of Check	Image density low
	Causes	Pattern density low
	Solution	Execute the process control Supply toner
	Pattern	-
	Result of Check	Leading edge registration for "M", "C", and/or "Y" shifts over ±1.4mm from that of "K".
	Causes	1. Normal 2. Laser unit failure 3. BCU(IPU) failure
	Solution	1. Execute SP2-111-003 (Forced Line Position Adj.: Mode c) 2. Replace Laser unit 3. Replace BCU(IPU)
	Pattern	3

Out of line position correction range	Result of Check	Leading edge registration of "M", "C", and/or "Y" shifts over ±1.4mm from that of "K".
	Causes	1. Normal 2. Image Transfer Belt failure 3. Drive Section failure 4. BCU(IPU)failure
	Solution	1. Execute SP2-111-003 (Forced Line Position Adj.: Mode c) 2. Replace Image Transfer Belt 3. Replace PCU/Drum motor 4. Replace BCU(IPU)
	Pattern	1, 2
	Result of Check	The main scan magnification is OK, but the color registration in the center of the image shifts over 0.66mm.
	Causes	1.ID Sensor(Center) failure 2. Significant movement of Image Transfer Belt (Center) 3.BCU(IPU) failure
	Solution	1. Replace ID Sensor 2. Replace Image Transfer Belt 3. Replace BCU(IPU)
	Pattern	-

4

Out of line position correction range	Result of Check	Skew of "M", "C" and/or "Y" shifts over ±0.75mm against that of "K"
	Causes	1. PCU installation failure 2. Laser Unit failure 3. BCU(IPU) failure
	Solution	1. Reset/Replace PCU 2. Replace Laser Unit 3. Replace BCU(IPU)
	Pattern	-
	Result of Check	Other
	Causes	1. The upper skew correction value is abnormal 2. BCU(IPU) failure
	Solution	1. Reset skew correction value (*1) 2. Replace BCU(IPU)
	Pattern	-

*1   Do the following procedure to reset the skew correction value.

1. Turn the power OFF.

2. Remove the skew correction motor harness [A] attached to the laser unit.
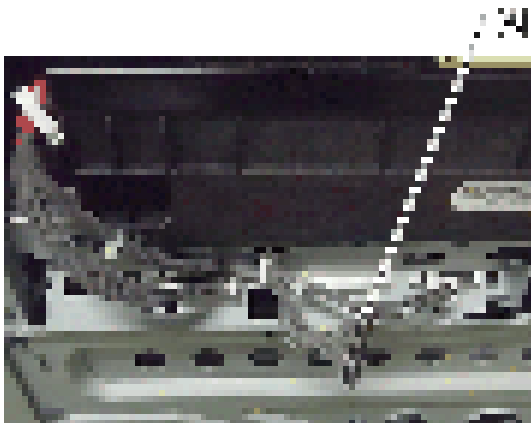
3. Turn the power ON, and then execute SP2-110-005 to set the skew correction mechanism to the origin.

4. Make sure SP2-119-001 to -003 is set to "0".

5. Turn the power OFF.

6. Connect the harness (A second part from the front side) of the skew correction motor to the laser unit.

7. Turn the power ON.

SP2-111-001 (Forced Line Position Adj.: Mode A) execution (or Color Registration Error Adjustment via the Maintenance menu)		
Result: OK Case: SP2-194-007: 0 (Success)		
No color registration errors	Result of Check	Side-to-side registration for K shifted
	Causes	Abnormal SP value of main scan color registration (K)
	Solution	Adjust SP2-101-001
	Pattern	-
	Result of Check	The main-scan magnification for "K" is not correct.
	Causes	Abnormal SP value of standard sync value between two points (K)
	Solution	Adjust SP2-102-001
	Pattern	-
Color registration errors found	Result of Check	Image density low
	Causes	Pattern density low
	Solution	Execute process control, Supply toner
	Pattern	-

Color registration errors found	Result of Check	The main scan magnification of "M", "C" and/or "Y" is not correct.
	Causes	1. Laser Unit failure 2. ID Sensor failure 3. BCU(IPU) failure 4. Normal
	Solution	1. Replace Laser Unit 2. Replace ID Sensor 3. Replace BCU(IPU) 4. Adjust the target SP(s) from among SP2-182-004 to -021
	Pattern	4
Color registration errors found	Result of Check	Although main scan magnification is OK, the color registration in the center of the image is shifted
	Causes	1. Significant movement of Image Transfer Belt (Center) 2. ID Sensor (Center) failure 3. BCU(IPU) failure
	Solution	1. Replace Image Transfer Belt 2. Replace ID Sensor 3. Replace BCU(IPU)
	Pattern	-

Color registration errors found	Result of Check	The side-to-side registration of "M", "C", and/or "Y" is not correct.
	Causes	1.ID Sensor(Center) failure 2. Significant movement of Image Transfer Belt (Center) 3.BCU(IPU) failure
	Solution	1. Replace Laser Unit 2. Replace ID Sensor 3. Replace BCU(IPU) 4. Adjust the target SP(s) from among SP2-182-004 to -021
	Pattern	3
Color registration errors found	Result of Check	The leading edge registration of "M", "C" and/or "Y" is not correct.
	Causes	1. Image Transfer Belt failure 2. Drive Section failure 3. ID Sensor failure 4. BCU(IPU) failure 5. Normal
	Solution	1. Replace Image Transfer Belt 2. Replace PCU, Drum motor 3. Replace ID Sensor 4. Replace BCU(IPU) 5. Adjust the target SP(s) from among SP2-182-022 to -039
	Pattern	1, 2

Color registration errors found	Result of Check	The skew of "M", "C" and/or "Y" is not correct.
	Causes	1. PCU installation failure 2. Laser Unit failure 3. IOB failure
	Solution	1. Reset/Replace PCU 2. Replace Laser Unit 3. Replace IOB
	Pattern	-
Color registration errors found	Result of Check	Shifted Drum phase.
	Causes	1. PCU installation failure 2. Drive Section failure 3. Phase adjustment failure
	Solution	1. Reset/Replace PCU 2. Check/Replace Drive Section 3. Execute SP1-902-001
	Pattern	5

Adjustment after Replacing

Image Position Adjustment

Parts That Require Adjustment

The following items need to be adjusted after replacement or executing SP5-801 (Memory Clear).

- Lens block
- Scanner motor
- Polygon motor*1
- Laser unit*1
- Paper Feed Tray
- Bypass Tray
- Duplex unit
- ADF

*1 Details of Polygon motor or Laser unit: see "Laser Unit" (page 304)

Laser-related Adjustment

🔽Note

- Make sure that paper is properly set on each paper feed tray when adjusting (adapt the paper sizes and types to the customer's environment). Set the value of SP2-109-003 (Test Pattern) to [14: Trimming Area], to obtain test patterns, except for the main scan magnification adjustment. After adjustment is completed, set the value of SP2-109-003 to [0: None].

<Standard (Margin)>

- Leading edge: 4.2±1.5mm (Plain, Thin)
- Right and Left: 0.5 to 4.0mm
- Trailing edge: 0.5 to 6.0mm (3.0 to 6.0mm for duplex)

<Registration Adjustment: Side-to-Side (Main scan) / Leading edge (Sub scan)>
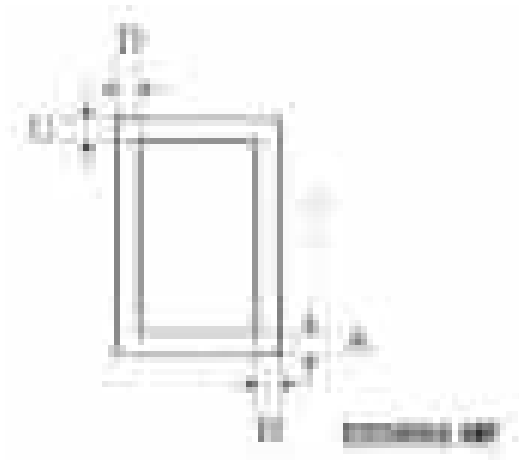
1. Output a test pattern and check [A] shown above. The value of SP1-001 (Leading Edge Registration) needs to be adjusted within the standard range if the value of [A] does not reach [5.2±2mm] for Plain Paper or [4.2±1.5mm] for thick paper, including Medium Thick.

2. Output a test pattern and check [B] shown above. If the value of [B] does not meet [2±1mm], the value of SP1-002 (Side-to-Side Registration) needs to be adjusted within the standard range.

↓Note

- If the registration adjustment could not be set within the standard, adjust the right and the leading edge erase margins. (See the information below)

<Erase margin adjustment>

1. Output a test pattern and check [A] and [B]. If the value of [A] and/or [B] are out of the standard range, adjust them with SP2-103 (Erase Margin Adjustment).

↓Note

- Adjust the erase margin for [C] and [D] only when the registration cannot be adjusted within the standard range. After completing the adjustment, perform registration adjustment, then adjust the erase margin for [A] and [B] (see "Main scan magnification adjustment" below).

<Main scan magnification adjustment>

1. Output [7: Grid Pattern Small] with SP2-109-003 (Test Pattern).

2. Check whether the magnification meets the standard. If it is out of the range, change the standard value (Bk) of main scan magnification through SP2-102-001/002/003.

   ↓Note

   - You do not need to adjust other three colors (Ma/Cy/Ye) because they will be automatically adjusted in the next steps (Scanner-related adjustment).

   - These SPs enable you to adjust for three line speeds (Standard, Middle, Low speed) for plain/thick paper modes. However, you must input the same value regardless of line speed.

- Standard (Magnification tolerance)

    * Same Size: Main scan: Less than ±0.55%

    * Same Size: Sub scan: Less than ±1.00%

    * Reduction: Main/Sub scan: Less than ±1.00/reduction ratio

    * Enlargement: Main/Sub scan: Less than ±1.00%

(ex.) current mag. (100.1%) x current SP value (249449) = 1.001 x 249449 = changed SP (249698)

Colors will be automatically corrected when performing the line position adjustment.

Scanner-related Adjustment

⬇Note

- Adjust the laser-related items before performing the scanner-related adjustment. (page 469)

- Use the C-4 or C-5 test chart for this adjustment.

<Scanner registration adjustment: Platen cover>

1. Set the test chart on the exposure glass, select a feed tray and start copying. You can select any feed tray.

2. Check [A] and [B] shown as below to see whether the registration is in the standard range.

3. If the registration is out of the range, execute SP4-010 (Sub Scan Registration Adj.) and SP4-011(Main Scan Reg.) to adjust.

    - A: 4.2±2mm

    - B: 2±1mm
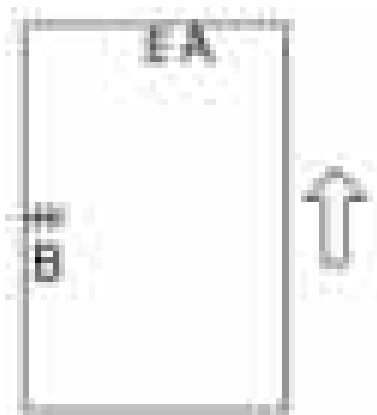
SP No.	SP Name	Range
SP4-010-001	Sub Scan Registration Adj.	±4.2±2mm
SP4-011-001	Main Scan Reg.	±2±1mm

<Scanner magnification adjustment>

1. Set the test chart on the exposure glass, select a feed tray and start copying. You can select any feed tray.
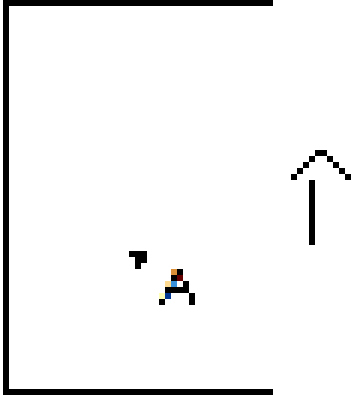
2. Check whether the output image was within the standard range compared with the test pattern. If the image is out of range, execute SP4-008(Sub scan Magnification Adj.) to change the magnification. A lower value provides images that are stretched in the feeding direction. On the other hand, a greater value provides a reduced image.

   • Standard (Magnification tolerance)

     * Same Size: Main scan: Less than ±0.55%

     * Same Size: Sub scan: Less than ±1.00%

     * Reduction: Main/Sub scan: Less than ±1.00/reduction ratio

     * Enlargement: Main/Sub scan: Less than ±1.00%

<White reference correction>

Turn the main power Off and On. The white and black reference will be corrected automatically with this procedure.

<Squareness (Skew) adjustment>

🔽Note

• Do this procedure after adjusting the image area with SP2-109: pattern 14 - trimming area.

• Method for checking

  1. Set the test chart on the exposure glass, select a feed tray and start copying.

  2. Count the number of horizontal bars in the two corners of the copy image area. There should be the same number.
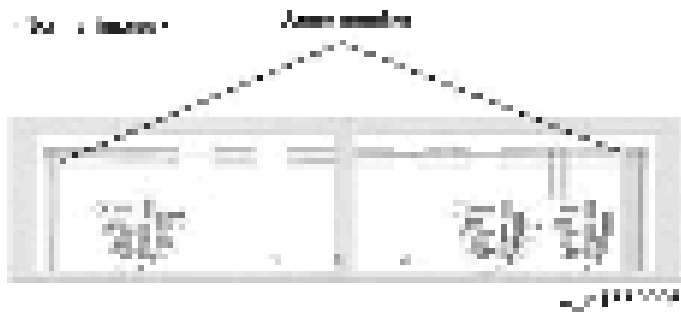
- Method for adjusting

  1. Turn Off the [Power] key and the main power switch, then disconnect the plug.

  2. Remove the Operation panel.(page 261, page 268)

  3. Remove the Scanner left cover (page 279)

  4. Loosen the screws [A] securing the scanner. (x 7)

  5. For images that shifted upward to the right, rotate the adjusting cam [B] clockwise to lower the inside of the scanner.

  6. For images that shifted upward to the left, rotate the adjusting cam [B] counterclockwise to raise the inside of the scanner.

> **Note**
>
> • The adjusting amount of the cam is 0.5 mm steps.

7. Tighten the screws [A] that were loosened in step 4.

8. Put the operation panel and covers back into their original places. (After adjustment, be sure to check that output images are normal).

ADF Image Adjustment

<Registration adjustment>

1. Create a test chart shown below with A3 paper.
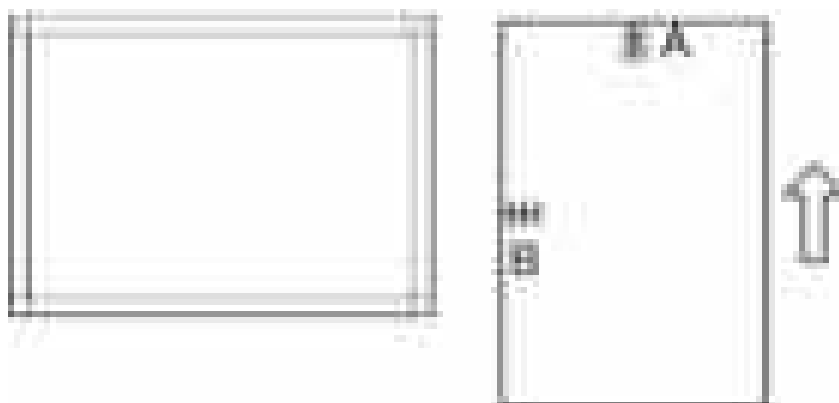
2. Set the test chart in the ADF. Select a feed tray that has A3 paper, and start copying.

3. Check [A] and [B]. If they are out of the standard range, adjust it with SP6-006 (ADF Adjustment).

- A: 4.2±2mm

- B: 2±1mm

SP No.	SP Name	Range
SP6-006-001	Side-to-Side Regist: Front	±3.0mm
SP6-006-003	Side-to-Side Regist: Rear	±5.0mm
SP6-006-005	Leading Edge Registration	±3.0mm
SP6-006-006	Buckle: Duplex Rear	±2.5mm
SP6-006-007	Rear Edge Erase	±10.0mm

<Sub scan magnification adjustment>

1. Set the same test chart as the one used in the Registration adjustment in the ADF. Select a feed tray that has A3 paper, and start copying.

2. Check whether the Sub scan magnification is within the standard range. If not, adjust it with SP6-017-001(ADF Magnification Adj.).

Standard (Magnification tolerance)

* Same Size: Sub scan: ±5.0%

* Reduction: Sub scan: ±1.00%

* Enlargement: Sub scan: ±1.00%

4

5. Troubleshooting

Self-Diagnostic Mode

Service Call Codes

Service Call Conditions

Pattern	Display	How to reset	SC call or SC alarm in customer support system
A	The SC is displayed on the operation panel, and the machine cannot be used (safety-related SC).	Execute CE reset SP mode, and switch main power from OFF to ON. ⚠️ **CAUTION** • When canceling a fusing unit SC, (SC544-02/ SC554-02), perform part replacement in accordance with the above procedure.	Occurrence & alarm count ↓ Immediate alarm
B	When a function is selected, the SC is displayed on the operation panel, and the machine cannot be used (down-time mitigation).	Switch the user reset power key or main power switch OFF to ON.	Occurrence & alarm count ↓ Power OFF → ON ↓ Alarm count and alarm only if recurrence
C	No display on the operation panel, and use is permitted.	Count only logging.	Occurrence ↓ Logging count & alarm count

Pattern	Display	How to reset	SC call or SC alarm in customer support system
D	The SC is displayed on the operation panel, and the machine cannot be used (machine-error SC).	Switch user reset power key or main power switch OFF to ON.	Occurrence & alarm count ↓ Power supply OFF → ON ↓ Alarm count and alarm only if recurrence

Note

- When an ordinary SC (type D) is generated, 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 continuously, an SC is displayed without rebooting, and logging count is performed. Also, when an SMC print is output, an * mark is added alongside the SC number for clarity.

- Automatic reboot can be enabled or disabled with SP5-875-001 (SC automatic reboot setting) (default value: ON).

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 outputting an administrative report (SMC print). 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.

SC Automatic Reboot

When an ordinary SC (pattern D) is generated, automatically reboot is performed. Automatic reboot or reboot by user operation can be set by SP5-875-001 (SC automatic reboot setting out) (default value: 0 "Automatic reboot").

When a type D occurs, automatic reboot is done or the machine display asks the customer if it can reboot. However, when the SC occurs twice in a short time, 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

        Post-processing

        ■■▔▔▔▏▔▏▔▔▏

        Until automatic reboot

        ▏▔▏▔▔▔▏▔▏▔▔▏

- 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.

5
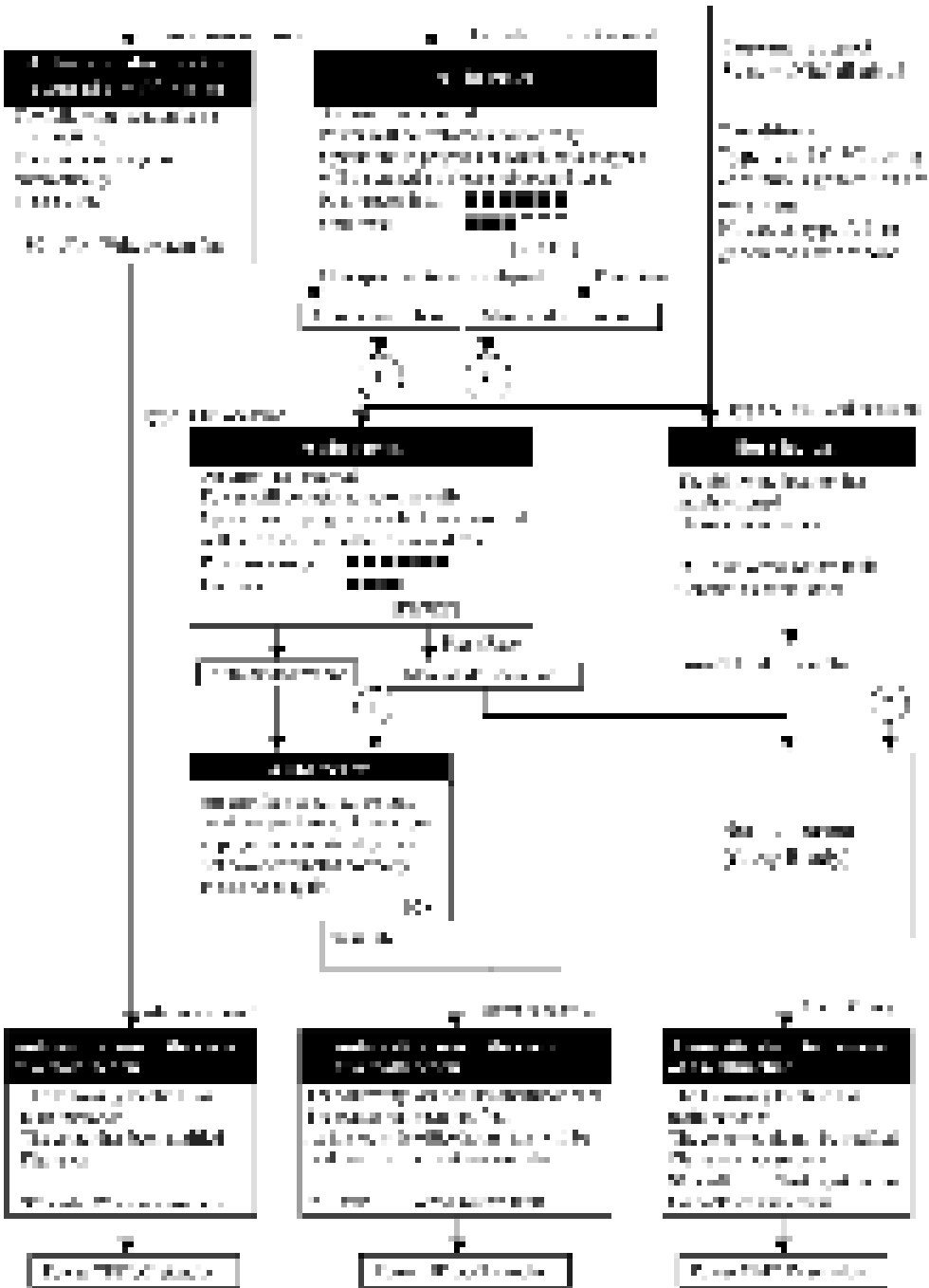
Controller Self-diagnosis Outline

Controller self-diagnosis includes 3 types, i.e., "ordinary self-diagnosis", "detailed self-diagnosis", and "SC detection". "Ordinary self-diagnosis" is diagnosis performed for every power ON, and "detailed self-diagnosis" is diagnosis treated as part of the service tools. "SC detection" detects mechanical faults when power is switched on or when the machine is operating.

Detailed self-diagnosis – Method

1. After attaching the option "extension 1284 board" to the controller board, connect the conversion connector provided.

2. Set a loop back connector in the reference Centronics I/F.

3. Press the main power supply switch while simultaneously pressing the "#" and "./*" key. The display changes to the following screen, and self-diagnosis starts.

4. After the end of detailed self-diagnosis, a "Self-diagnosis results report" is automatically printed.

   ⬇️**Note**

   • If a Centronics loopback connector is not fitted, a Centronics diagnosis error (SC 835) is generated.

   • Loop-back connector: G0219350

Controller Self-diagnosis Flowchart
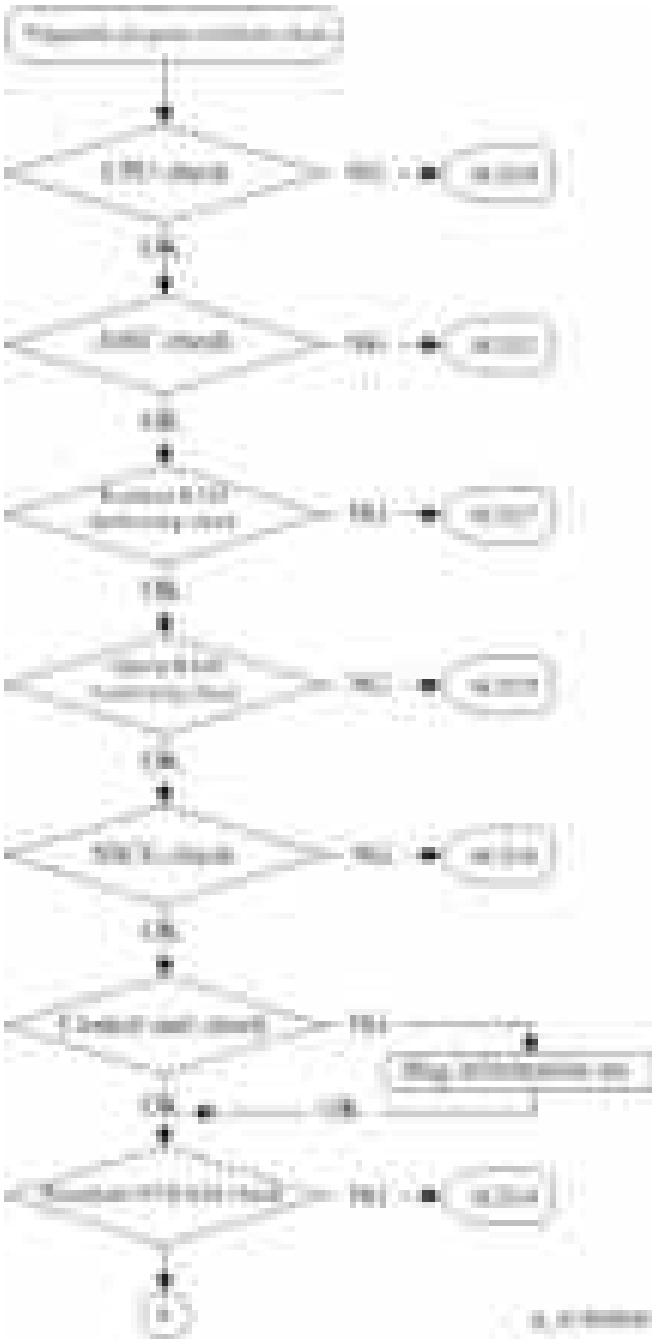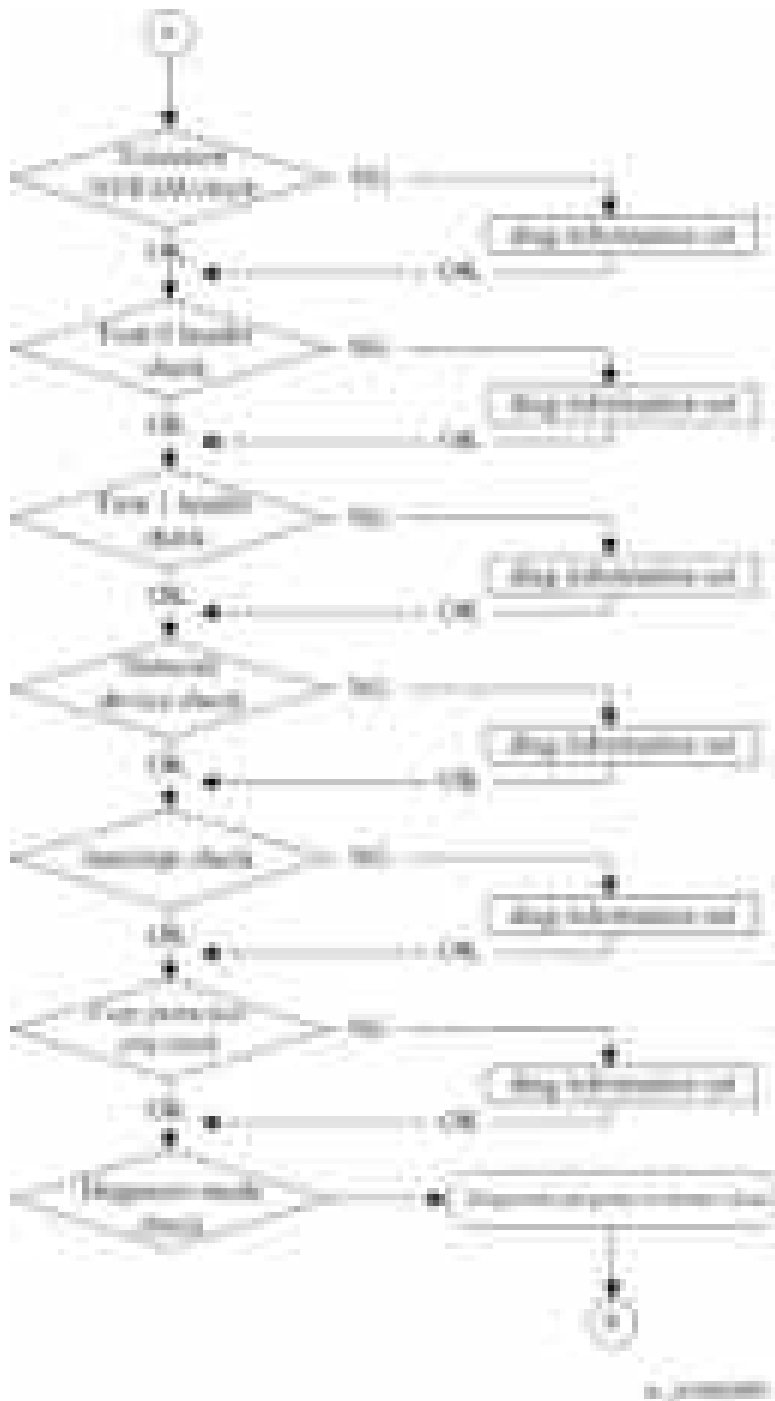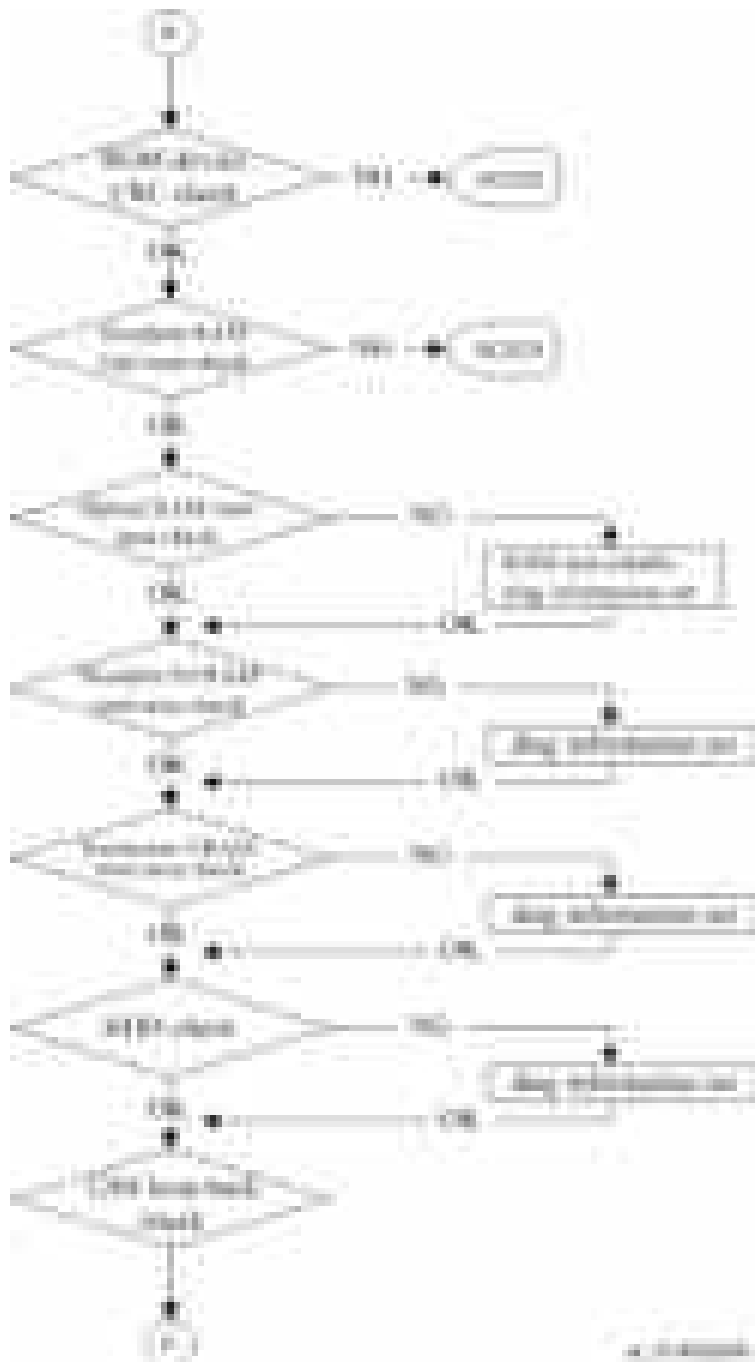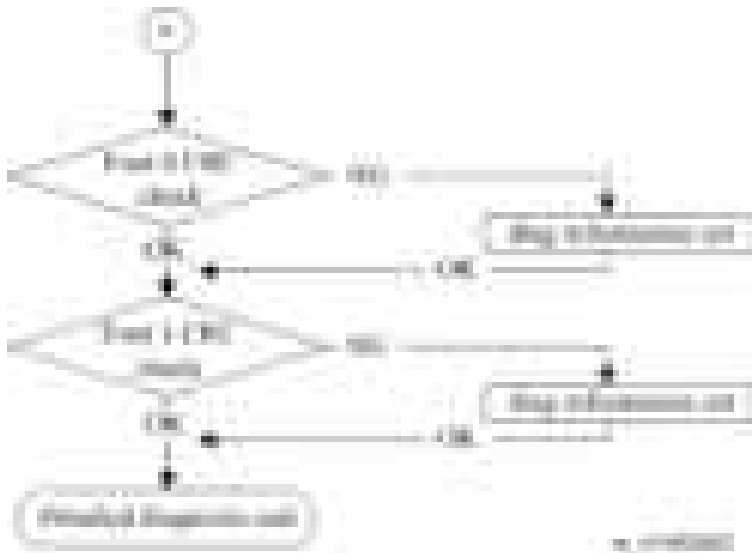
HDD-related Message

When an error occurs to the HDD, the HDD abnormality message appears on the operation panel and the screen for formatting is displayed. Also when replacing the HDD, a message "Hard Disk is replaced." appears on the operation panel and the screen for formatting is displayed.

Refer to the table shown below for the conditions of the message display.

Even when replacing the controller board, a banner "Hard Disk is replaced." appears. It is because the machine recognizes HDD has been replaced when the controller board that does not hold the HDD identification information is attached.

Message list

Message	Display Type	Normal / Abnormal	Error Condition / Major Cause / Solution
SC870	Banner	Abnormal	The HDD cannot be accessed at power-on.
			NVRAM defective
			Turn the main power off/on to initialize the machine. *When replacing the NVRAM, if possible, back up the address book before replacing the NVRAM and restore it after replacing the NVRAM.

Message	Display Type	Normal / Abnormal	Error Condition / Major Cause / Solution
Hard Disk will be formatted due to problem with Hard Disk.	Pop-up Formatting button	Abnormal	Management file on the HDD can not be read. Or the file system can not be mounted.
			HDD defective
			Replace the HDD.
Problem with the Encryption Key for Hard Disk. Format Hard Disk.	Pop-up Formatting button	Abnormal	The encryption key for the HDD is abnormal.
			HDD defective
			Replace the HDD.
Hard Disk is replaced. Format Hard Disk.	Pop-up Formatting button	Normal	A new HDD is attached.
			A new HDD attached
			Push the formatting button.
Hard Disk is replaced.	Banner	Abnormal	The HDD is replaced (Data can be read).
			• Controller board replaced • After starting the machine without an HDD, attach a new HDD to the machine and then restart the machine.
			Turn the main power off/on.
Formatting Hard Disk... Please wait, also make sure the main power switch is not turned off.	Pop-up	Abnormal	Pushing the formatting button.
			Formatting the HDD
			-
Hard Disk is formatted. Turn main power switch off then on.	Pop-up	Abnormal	Formatting the HDD is finished.
			Formatting the HDD
			Turn the main power off/on.

Service Call 101-195

SC100 (Engine: Scanning)

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC101-01	D	Lamp Error (Scanning)
		The white level peak did not reach the prescribed threshold when the white guide plate was scanned.
		• LED defective • IDB (LED driver) defective • SBU defective • IPU defective • Power/signal harness defective • Condensation in scanner unit • Mirrors or lenses dirty or positioned incorrectly • White guide plate dirty or installed incorrectly

		1. Turn the power off/on.
		2. Perform the following operations:
		  • Reconnect the power/signal harness.
		  • Reattach/clean the mirrors/lenses.
		  • Reattach/clean the white plate.
		  • Clean the white guide plate.
		3. Replace the following parts:
		  • Replace the LED board.
		  • Replace the IDB board or SIO board.
		  • Replace the SBU board.
		  • Replace the IPU board.
		  • Replace the power/signal harness.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
-02	D	Lamp Error (LED illumination adjustment)
		LED error was detected.
		• LED defective • IDB (LED driver) defective • Power/signal harness defective

		1. Turn the power off/on.
		2. Perform the following operations:
		    • Reconnect the power/signal harness.
		3. Replace the following parts:
		    • Replace the LED board.
		    • Replace the IDB board or SIO board.
		    • Replace the power/signal harness.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC102-00	D	LED Illumination Adjustment Error
		The white level peak reached the prescribed threshold when the white plate was scanned after a specified number of adjustments.
		• LED defective • IDB (LED driver) defective • SBU defective • IPU defective • Power/signal harness defective

		1. Turn the power off/on.
		2. Reconnect the power/signal harness.
		3. Replace the following parts:
		    • Replace the LED board.
		    • Replace the SBU board.
		    • Replace the IDB board or SIO board.
		    • Replace the IPU board.
		    • Replace the power/signal harness.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC120-00	D	Scanner Home Position Error 1
		The scanner home position sensor does not go OFF. Details: Error detection timing • During homing (when the machine is turned ON or when it returns from energy save mode) • During an automatic adjustment (when the machine is turned ON or when it returns from energy save mode) • During a scan from the ADF or exposure glass.
		• Scanner motor driver defective • Scanner motor defective • Scanner HP sensor defective • Harness defective • Timing belt, pulley, wire, or carriage not installed correctly
		Replace the following parts: • Replace the HP sensor • Replace the scanner motor • Replace the harness.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC121-00	D	Scanner Home Position Error 2
		The scanner home position sensor does not go ON. Details: Error detection timing • During homing • During an automatic adjustment • During a scan from the ADF or exposure glass.
		• Scanner motor driver defective • Scanner motor defective • Scanner HP sensor defective • Harness defective • Timing belt, pulley, wire, or carriage not installed correctly
		Replace the following parts: • Replace the home position sensor • Replace the scanner motor • Replace the harness.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC141-00	D	Black level detection error
		The black level cannot be adjusted within the target during auto gain control.
		• SBU defective • IPU defective • Power/signal harness defective
		1. Turn the power off/on. 2. Reconnect the power/signal harness. 3. Replace the following parts: • Replace the SBU board. • Replace the IPU board. • Replace the power/signal harness.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
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.
		• SBU defective • LED defective • IDB (LED driver) defective • IPU defective • Power/signal harness defective • Scanner drive error • Condensation in scanner unit • Mirrors or lenses dirty or positioned incorrectly • White plate dirty or installed incorrectly
		1. Turn the power off/on. 2. Perform the following operations: • Reconnect the power/signal harness. • Reattach/clean the mirrors/lenses. • Reattach/clean the white plate. 3. Replace the following parts: • Replace the SBU board. • Replace the LED board. • Replace the IDB board. • Replace the IPU board. • Replace the SIO board. • Replace the power/signal harness.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC144-00	D	SBU Communication Error
		• Connection to SBU cannot be confirmed. (Connection detection error) • Cannot communicate with the SBU, or the communication result is abnormal.
		• SBU defective • The other side of the communication (BCU, IPU etc.) defective • Power/signal harness defective
		1. Turn the power off/on. 2. Reconnect the power/signal harness. 3. Replace the following parts: • Replace the SBU board. • Replace the IPU board. • Replace the BCU board. • Replace the power/signal harness.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC161-01	D	IPU Error (LSYNC abnormal)
		An error occurred during the self-diagnostic test performed every time the machine is turned on, or returns to full operation from energy save mode.
		• IPU board defective (ASIC connection failure, ASIC abnormal, etc.) • Cable between SBU and IPU defective
		• Replace the IPU board. • Check the cable between SBU and IPU

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC161-02	D	IPU error
		The machine detects an error during an access to the IPU.
		IPU board defective (IPU response abnormal, etc.)
		Replace the IPU board.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC165-00	D	Copy data security unit error
		• The copy data security option is enabled in the User Tools but the option board is detected as missing or defective. • The copy data security option was detected as defective when the machine was turned on or returned from energy save mode.
		• Copy data security unit board not installed correctly • Copy data security unit board defective
		• Reinstall the copy data security unit board. • Replace the copy data security unit board.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC195-00	D	Machine serial number error
		Comparison of the product identification code in the machine serial number (11 digits).
		The product identification code in the machine serial number (11 digits) does not match.
		Re-enter the machine serial number.

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Service Call 201-285

SC200 (Engine: Image Writing)

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC201-00	D	Polygon Motor Error
		XSCRDY signal (Polygon ready) Error
		• I/F harness for Polygon Motor Driver is broken/contact failure • Polygon Motor/Polygon Motor Driver failure • Driving pulse from Polygon Motor output abnormally (Polygon controller area) • Unable to monitor XSCRDY signal (Polygon controller area)
		• Cycle the main power On/Off • Replace the polygon motor • Replace the laser unit • Replace the I/F harness • Replace the IPU

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC202-00	D	Polygon Motor: ON Timeout Error
		After the polygon motor turned on, or within T1 sec. after the rpm's changed, the motor did not enter READY status.
		• The interface harness to the polygon motor driver damaged or not connected correctly. • Polygon motor or polygon motor driver defective • Polygon motor drive pulse cannot be output correctly. (Polygon controller) • XSCRDY signal observation failing (Polygon controller)
		• Turn the power off/on • Replace the LSU or polygon motor • Replace the polygon harness • Replace the IPU board

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC203-00	D	Polygon Motor: OFF Timeout Error
		The XSCRDY signal (polygon ready) never becomes inactive (H) within 3 sec. after the polygon motor went OFF.
		• The interface harness to the polygon motor driver damaged or not connected correctly. • Polygon motor or polygon motor driver defective • Polygon motor drive pulse cannot be output correctly. (Polygon controller) • XSCRDY signal observation failing (Polygon controller)
		• Turn the power off/on • Replace the LSU or polygon motor • Replace the polygon harness • Replace the IPU board

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC204-00	D	Polygon Motor: XSCRDY Signal Error
		During polygon motor rotation, the XSCRDY signal was inactive (H) for longer than one rotation of the polygon.
		• The interface harness to the polygon motor driver damaged or not connected correctly. • Polygon motor or polygon motor driver defective
		• Turn the power off/on • Replace the LSU or polygon motor • Replace the polygon harness • Replace the IPU board

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC220-01	D	Leading Edge: LD1 synchronization detection error: Bk
SC220-04	D	Leading Edge: LD1 synchronization detection error: Ye
		The leading edge LD0 synchronization detection signal of the corresponding color was not output within T1 sec. while the polygon mirror motor was operating at normal speed.
		• The interface harness to the synchronization detection unit damaged or not connected correctly. • Synchronization detection board defective • Beam does not enter photo detector. • Abnormality around GAVD • IDB (LED driver) defective • LDB defective • BCU defective
		• Turn the power off/on • Replace the LSU or polygon motor • Replace the polygon harness • Replace the IPU board

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC230-01	D	FGATE ON error: Bk
SC230-02	D	FGATE ON error: Cy
SC230-03	D	FGATE ON error: Ma
SC230-04	D	FGATE ON error: Ye
		The FGATE signal did not turn ON within T1 sec. after the writing process of the corresponding color started.
		• GAVD defective • Image processing ASIC defective • BCU, controller board not connected correctly or defective • Harness between IPU and LDB defective
		• Turn the power off/on • Replace the IPU board • Replace the controller board

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC231-01	D	FGATE OFF error: Bk
SC231-02	D	FGATE OFF error: Cy
SC231-03	D	FGATE OFF error: Ma
SC231-04	D	FGATE OFF error: Ye
		• The FGATE signal did not turn OFF within T1 sec. after the writing process of the corresponding color ended. • The FGATE signal did not turn OFF when the next job of the corresponding color started.
		• GAVD defective • Image processing ASIC defective
		• Turn the power off/on. • Replace the IPU board. • Replace the controller board.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC240-01	D	LD error: Bk
SC240-04	D	LD error: Ma
		• If LD error terminal of LD driver of corresponding color is asserted after LD initialization. • If an error is detected during initialization of P-MAC which detects Ith/Ieta of LD of corresponding color.
		• LD degradation (LD broken, shift of output characteristics etc.) • The interface harness damaged or not connected correctly. • LD driver defective
		• Cycle the main power off/on • Replace the LD unit • Replace the harness • Replace the IPU board

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC272-01	D	LD driver communication error: Bk
SC272-02	D	LD driver communication error: Cy
SC272-03	D	LD driver communication error: Ma
SC272-04	D	LD driver communication error: Ye
SC272-10	D	LD driver communication error: Other
		In view of parity, 3 retries were performed
		• IPU defective • Harness defective • LDB defective
		• Cycle the main power off/on • Replace the LD unit • Replace the harness • Replace the IPU board

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC285-00	C	MUSIC error
		The results of MUSIC pattern reading failed 4 times. (even if mode e (real time MUSIC) fails, the error count is not incremented (+1))
		• TM sensor defective • ITB defective • PCU defective • LD unit defective • MUSIC pattern density thin
		• ITB reset • PCU reset • Toner replenishment • Replace the TM (ID) sensor • Replace the ITB • Replace the PCU • Replace the LD unit

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Service Call 324-396

SC300 (Engine: Charge, Development)

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC324-01	D	Development motor: Bk: Lock
		Lock signals are observed at 2 sec intervals during motor ON, and a High level is detected at least 20 times
		• Motor defective • Connector disconnected • Harness broken • Imaging IOB defective • Development unit torque increased
		• Replace the motor • Reconnect the connector • Replace the harness • Replace the Imaging IOB • Replace the development unit

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC324-05	D	Development motor: CMY: Lock
		Lock signals are observed at 2 sec intervals during motor ON, and a High level is detected at least 20 times
		• Motor defective • Connector disconnected • Harness broken • Imaging IOB defective • Development unit torque increased
		• Replace the motor • Reconnect the connector • Replace the harness • Replace the Imaging IOB • Replace the development unit

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC360-01	D	TD sensor adjustment error (K)
SC360-02	D	TD sensor adjustment error (C)
SC360-03	D	TD sensor adjustment error (M)
SC360-04	D	TD sensor adjustment error (Y)
		During TD sensor initialization, the TD sensor output voltage (Vt) cannot be adjusted to the target range (target value ± 0.2V, SP3-030-031 to 034) for 3 times consecutively.
		• TD sensor defective • Loose connection • Harness broken • Developer toner density differs from initial developer
		• Replace the development unit.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC361-01	D	TD sensor output error: Upper Limit (K)
SC361-02	D	TD sensor output error: Upper Limit (C)
SC361-03	D	TD sensor output error: Upper Limit (M)
SC361-04	D	TD sensor output error: Upper Limit (Y)
		TD sensor output: Vt (SP3-210-001 to 004) > output upper limit error threshold (SP3-211-002) continuously exceeded the upper limit occurrence threshold value (SP3-211-003).
		TD sensor connector dropout (connection fault)
		1. TD sensor connector missing check 2. Check whether there is any error in the TD sensor harness (disconnection, etc.) 3. If the sensor is defective, replace the development unit.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC362-01	D	TD sensor output error: Lower limit (K)
SC362-02	D	TD sensor output error: Lower limit (C)
SC362-03	D	TD sensor output error: Lower limit (M)
SC362-04	D	TD sensor output error: Lower limit (Y)
		TD sensor output: Vt (SP3-210-001 - 004) < output lower limit error threshold (SP3-211-004) is continuously below the lower limit occurrence threshold value (SP3-211-005)
		TD sensor connector missing/dropout
		1. TD sensor connector missing check 2. Check whether there is any error in the TD sensor harness (disconnection, etc.) 3. If the sensor is defective, replace the development unit.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC370-01	D	TM (ID) sensor calibration error (F)

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC370-02	D	TM (ID) sensor calibration error (C)
SC370-03	D	TM (ID) sensor calibration error (R)
		Regular reflection optical output voltage of the Front or Center or Rear TM (ID) sensor: Vsg_reg cannot be adjusted to within target range. Upper limit (SP3-320-013: initial value 4.5V) Lower limit (SP3-320-014: initial value 3.5V)
		• TM (ID) sensor connector missing/ connection fault • TM (ID) sensor detection window dirt • TM (ID) sensor malfunction • Undulation in the ITB, or belt slippage
		• Remove image transfer unit, and check for TM (ID) sensor connector missing. If it is missing, reconnect it. • Check for dirt on the ID sensor detection window. If the detection window is dirty, clean it with a damp cloth (DO NOT wipe with a dry cloth). • Check the condition of the ITB. If undulation or belt slippage has occurred, re-install or replace the ITB. • If neither of the above have occurred, perform TM (ID) sensor replacement

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC396-05	D	Drum motor (CMY) Lock
		Lock signals are observed at 2 sec intervals during motor ON, and a High level is detected at least 20 times.
		• Motor defective • Connector disconnected • Harness broken • Imaging IOB defective • Unit torque increased.
		• Replace the motor • Reconnect the connector • Replace the harness • Replace the Imaging IOB • Replace the PCDU

Service Call 441-498

SC400 (Engine: Around the Drum)

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC441-00	D	PCU: Black / Image Transfer Motor: Lock
		Lock signals are observed at 2 sec intervals during motor ON, and a High level is detected at least 20 times.
		• Motor defective • Connector disconnected • Harness broken • IOB defective • Unit torque increased.
		• Replace the motor • Reconnect the connector • Replace the harness • Replace the IOB　RTB 51 • Check the load on the motor (PCDU, Image transfer unit, Paper transfer unit, Waste toner bottle). • Replace the PCDU, Image transfer unit, Paper transfer unit or Waste toner bottle.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC442-00	D	ITB Lift Error
		Even though the ITB lift motor (also Toner supply motor (M)) rotates, the ITB lift sensor failed to detect the specified sensor feeler status within specified time. • Contact/separation operation: If not detected in 2000msec • Home position operation: If not detected in 5000msec Signal detection sampling period: 10msec
		• Image transfer unit not set/faulty setting • Sensor dirt • Sensor defective • Motor defective • Unit load large
		• Reset the Image transfer unit • Clean the sensor • Replace the sensor • Replace the contact/separation drive unit • Replace the image transfer unit • Check the harness

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC452-00	D	Paper transfer contact motor error
		Paper transfer contact motor: position sensor cannot detect the sensor filler state within the predetermined time (see below) even if the paper transfer contact motor is rotated. • Contact operation: If not detected in 2000msec • Home position operation: If not detected in 5000msec Signal detection sampling period: 10msec
		• Sensor dirt • Sensor defection • Motor defection • Unit load large
		• Replace the contact drive unit • Replace the image transfer unit • Check the harness

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC491-00	D	High voltage power source: charge/development: output error
		SC detection signal (charge/development) is L (abnormal) for 200 ms consecutively during high voltage (charge/development) output.
		H/W error • Output contact setting fault • Controller connector set fault • Ground fault of output high voltage path • Surface/air clearance insufficient (arc discharge) • Controller harness disconnection, short-circuit • PCU setting fault • Control board _IOB error (related signal error) • HVP_CB error Load error • Grounding fault of charging output, short-circuit with other outputs • Surface/air clearance insufficient in charging output path (including distance from other outputs) • Abnormal deterioration of drum, and over current due to pinholes • Drum vs charge roller gap error (PCU error). • Over current due to drum surface condensation • Grounding fault of developing output, short-circuit with other outputs • Surface/air clearance insufficient in developing output path (including distance from other outputs) • Other
		• Cycle the main power off/on • Reset or replace the harness of high voltage power supply feed path • Reset or replace the harness between IOB-HVP_CB • Reset or replace the PCU • Check the operation of the contact mechanism • Replace the HVP_CB • Replace the IOB RTB 51

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC492-00	C	High voltage power source: image transfer/paper transfer: output error
		SC detection signal (transfer) is L (abnormal) for 200 ms consecutively during high voltage (transfer) output.
		H/W error • Output power connector setting fault • Controller connector setting fault • Output high voltage Harness disconnection • Controller harness disconnection, short-circuit • Transfer unit setting fault • Control board_ IOB error (related signal error) • HVP_TTS error Load error • Increase in paper transfer roller impedance (low temperature environment/impedance rise/impedance rise due to dirt) • Operation fault of paper transfer contact mechanism • Increase in image transfer belt impedance • Opening in load power supply path
		• Reset or replacement the harness of high voltage power supply feed path • Reset or replace the harness between IOB-HVP_TTS • Reset or replace the transfer unit • Check operation of the contact mechanism • Replace the HVP_TTS • Replace the IOB RTB 51

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC493-00	D	High voltage power source: DS development: output error
		"HVP:DS:output error detection signal" is detected "0" (abnormal) for 10 times consecutively (for 200ms) during output of the PWM signal used as an error detection target
		• Leak harness fault • Unit fault • High voltage power source fault
		• Turn the power off/on • Reset or replacement the harness of high voltage power supply feed path • Reset or replace the unit • Replace the high voltage power source

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC497-00	C	Machine temperature detection thermistor error
		Temperature sensor output error: Below 0.56V (90 degrees or more), or above 3.0V (below -18 degrees)
		• Connector disconnection or broken • Sensor defective
		• Check the sensor setting • Replace the imaging temperature sensor (thermistor)

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC498-00	C	Temperature and humidity sensor error
		Temperature sensor output error: Below 0.76V, or above 2.90V, or Moisture sensor output error: more than 2.4V
		• Sensor not setting (disconnection or broken) • Sensor defective
		• Check the sensor setting • Replace the sensor

Service Call 501-584

SC500 (Engine: Paper transport 1: Paper Feed, Duplex, Transport)

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC501-01	B	1st Tray Lift Error
		The 1st tray lift motor error detection count reaches 3. (Up to 2, reset is displayed)
		• 1st tray limit sensor connector missing, malfunction, dirt • 1st tray lift motor connector missing, disconnection, malfunction. • Foreign matter, such as paper scrap, is caught between the paper feed tray and the tray lift motor. • Paper set fault
		• Reset the paper • Remove the foreign matter 1st tray limit sensor, 1st tray lift motor • Check the harness • Reset the connector • Replacement 1st paper feed unit, 1st tray • Replacement Paper transport IOB • Replacement

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC501-02	B	1st Tray Lowering Error
		The 1st tray descent motor error detection count reaches 5. (Up to 4, reset is displayed)
		• 1st tray limit sensor connector missing, malfunction, dirt • 1st tray lift motor connector missing, disconnection, malfunction • Foreign matter, such as paper scrap, is caught between the paper feed tray and the tray lift motor. • Paper set fault • Paper overload
		• Reset the paper • Remove the foreign matter 1st tray limit sensor, 1st tray lift motor • Check the harness • Reset the connector • Replacement 1st paper feed unit, 1st tray • Replacement Paper transport IOB • Replacement

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC502-01	B	2nd Tray Lift Error
		The 2nd tray lift motor error detection count reaches 3. (Up to 2, reset is displayed)
		• 2nd tray limit sensor connector missing, malfunction, dirt • 2nd tray lift motor connector missing, disconnection, malfunction • Foreign matter, such as paper scrap, is caught between the paper feed tray and the tray lift motor • Paper set fault
		• Reset the paper • Remove the foreign matter 2nd tray limit sensor, 2nd tray lift motor • Check the harness • Reset the connector • Replacement 2nd paper feed unit, 2nd tray • Replacement Paper transport IOB • Replacement

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC502-02	B	2nd Tray Lowering Error
		The detection count of 2nd tray descent motor descent errors reaches a total of 5. (Up to 4, reset is displayed)
		• The 2nd paper feed tray limit sensor connector missing, malfunction, and dirt • 2nd tray lift motor connector missing, disconnection, malfunction • Foreign matter, such as paper scrap, is caught between the paper feed tray and the tray lift motor • Paper set fault • Paper overload
		• Reset the paper • Remove the foreign matter 2nd tray limit sensor, 2nd tray lift motor • Check the harness • Reset the connector • Replacement 2nd paper feed unit, 2nd tray • Replacement Paper transport IOB • Replacement

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC503-01	B	3rd Tray Lift Error (single bank)
		• Lift motor ascent error detection During tray initialization (upper limit not detected/lower limit detection), the tray base plate is raised to check the tray base plate position, and the limit sensor is not detected although a predetermined time elapsed, for 3 times consecutively. (Up to 2 times consecutively, the bank transmits a "tray set fault" to the main machine)
		• Lift motor error/connector missing • Limit sensor error/connector missing • Harness broken • Bank control board defective • Foreign matter, such as paper scrap, is caught between the paper feed tray and the tray lift motor • Paper set fault
		• Reset the paper • Remove the foreign matter • Replace the motor • Reset the connector • Replace the harness • Replace the sensor • Replace the control board for the optional paper feed tray • Replace the tray • Replace the paper feed roller • Replace the pick-up arm

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC503-02	B	**3rd Tray Lowering Error (single bank)**
		• Lift motor descent error detection During tray initialization, the tray base plate is lowered to check the tray base plate position, and the limit sensor is detected although a predetermined time elapsed, for 3 times consecutively. (Up to 2 times consecutively, the bank transmits a "tray set fault" to the main machine)
		• Lift motor error/connector missing • Limit sensor error/connector missing • Harness broken • Bank control board defective • Paper overload • Foreign matter, such as paper scrap, is caught between the paper feed tray and the tray lift motor • Paper set fault
		• Reset the paper • Remove the foreign matter • Replace the motor • Reset the connector • Replace the harness • Replace the sensor • Replace the control board for the optional paper feed tray • Replace the tray • Replace the paper feed roller • Replace the pick-up arm

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC503-11	B	3rd Tray Lift Error (double bank, upper tray)
		• Lift motor ascent error detection During tray initialization (upper limit not detected/lower limit detection), the tray base plate is raised to check the tray base plate position, and the limit sensor is not detected although a predetermined time elapsed, for 3 times consecutively. (Up to 2 times consecutively, the bank transmits a "tray set fault" to the main machine)
		• Lift motor error/connector missing • Limit sensor error/connector missing • Harness broken • Bank control board defective • Foreign matter, such as paper scrap, is caught between the paper feed tray and the tray lift motor • Paper set fault
		• Reset the paper • Remove the foreign matter • Replace the motor • Reset the connector • Replace the harness • Replace the sensor • Replace the control board for the optional paper feed tray • Replace the tray • Replace the paper feed roller • Replace the pick-up arm

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC503-12	B	3rd Tray Lowering Error (double bank, upper tray)
		• Lift motor descent error detection During tray initialization, the tray base plate is lowered to check the tray base plate position; the limit sensor is detected although a predetermined time elapsed, for 3 times consecutively. (Up to 2 times consecutively, the bank transmits a "tray set fault" to the main machine)
		• Lift motor error/connector missing • Limit sensor error/connector missing • Harness broken • Bank control board defective • Paper overload • Foreign matter, such as paper scrap, is caught between the paper feed tray and the tray lift motor • Paper set fault
		• Reset the paper • Remove the foreign matter • Replace the motor • Reset the connector • Replace the harness • Replace the sensor • Replace the control board for the optional paper feed tray • Replace the tray • Replace the paper feed roller • Replace the pick-up arm

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC503-31	B	3rd Tray Lift Error (LCIT)
		• Upper limit detection error (during descent) During tray initialization (upper limit detection/lower limit not detected), the tray base plate is lowered to check the tray base plate position, and the limit sensor is detected although a predetermined time elapsed, for 3 times consecutively. • Upper limit detection error (during ascent) During tray initialization (upper limit not detected/lower limit detection), the tray base plate is raised to check the tray base plate position, and the limit sensor is not detected although a predetermined time elapsed, for 3 times consecutively. (Up to 2 times consecutively, LCIT transmits "tray set fault" to the main machine)

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		• Lift motor error/connector missing • Limit sensor error/connector missing • Harness broken • Bank control board defective • Foreign matter, such as paper scrap, is caught between the right tray and the tray lift motor • Paper set fault • Timing belt damage/dropout • Timing pulley damage/dropout • Base plate damage/horizontality fault • Paper feed roller missing item • Pickup arm damage • Foreign matter, such as paper scrap, is caught inside the right tray
		• Reset the paper • Remove the foreign matter • Replace the motor • Reset the connector • Replace the harness • Replace the sensor • Replace the control board for the optional paper feed tray • Replace the tray • Replace the paper feed roller • Replace the pick-up arm • Replace the timing belt • Replace the timing pulley • Replace the base plate

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC503-32	B	3rd Tray Lowering Error (LCIT)
		• Lower limit detection error (during descent) During tray initialization (upper limit not detected/lower eject limit detection), the tray base plate is lowered to check the tray base plate position, and the lower limit sensor is not detected although a predetermined time elapsed. Alternatively, at paper end, the tray base plate is lowered, but the lower limit sensor is not detected although a predetermined time elapsed. • Lower limit error (during ascent) During tray initialization (upper limit eject detection/lower limit detection), the tray base plate is raised to check the tray base plate position, and the lower limit sensor is detected although a predetermined time elapsed. *If an error occurs 3 times consecutively: LCIT transmits "3rd tray lower limit detection error" to the main machine. Up to 2 times consecutively, LCIT transmits "tray set fault" to the main machine.

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		• Lift motor error/connector missing • Lower limit sensor error/connector missing • Harness broken • Bank control board defective • Foreign matter, such as paper scrap, is caught between the right tray and the tray lift motor • Paper set fault • Timing belt damage/dropout • Timing pulley damage/dropout • Base plate damage/horizontality fault • Foreign matter, such as paper scrap, is caught inside the right tray
		• Reset the paper • Remove the foreign matter • Replace the motor • Reset the connector • Replace the harness • Replace the sensor • Replace the control board for the optional paper feed tray • Replace the tray • Replace the timing belt • Replace the timing pulley • Replace the base plate

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC503-33	B	3rd Tray Paper Overload Error (LCIT)
		During tray initialization, both the upper limit and lower limit are detected 3 times consecutively. (Up to 2 times consecutively, LCIT transmits "tray set fault" to the main machine)
		• Paper overload • Paper set fault • Limit sensor error/connector missing • Lower limit sensor error/connector missing • Harness broken • Bank control board defective • Foreign matter, such as paper scrap, is caught inside the right tray
		• Reset the paper • Remove the foreign matter • Reset the connector • Replace the harness • Replace the sensor • Replace the control board for the optional paper feed tray

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC503-34	B	3rd Tray Paper Position Error (LCIT)
		During left/right tray set, or when power is switched ON, or when transfer is complete, "open" is detected 3 times consecutively by end fence open/close detection. (Up to 2 times consecutively, LCIT transmits "tray set fault" to the main machine)
		• Paper set fault (paper is offset from position for pushing end fence) • Foreign matter entry (foreign matter is caught in the position for pushing end fence) • End fence open/close sensor error/connector missing • Harness broken • Bank control board defective
		• Reset the paper • Remove the foreign matter • Reset the connector • Replace the harness • Replace the sensor • Replace the control board for the optional paper feed tray

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC503-35	B	3rd Tray Transfer Error (LCIT)
		• Transfer end detection error At right tray paper end (right tray lower limit detection, left tray paper detection), left tray paper is transferred to the right tray, but the left tray paper sensor is detected although a predetermined time elapsed (transfer paper missing is not detected), for 3 times consecutively. (Up to 2 times consecutively, LCIT transmits "tray set fault" to the main machine)
		• Transfer motor error/connector missing • Left tray paper sensor error/connector missing • Harness broken • Bank control board defective • Paper overload • Foreign matter, such as paper scrap, is caught between the left tray and the tray transfer motor • Paper set fault • Timing belt damage/dropout • Timing pulley damage/dropout • Transfer fence defective • Foreign matter, such as paper scrap, is caught inside the left tray
		• Replace the motor • Reset the connector • Replace the harness • Replace the sensor • Replace the control board for the optional paper feed tray • Reset the paper • Remove the foreign matter • Replace the tray • Replace the timing belt • Replace the timing pulley • Replace the end fence of the left tray

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC503-36	B	3rd Tray Transfer HP Error (LCIT)
		• HP detection error (during transfer start) At right tray paper end (right tray lower limit detection, left tray paper detection), left tray paper is transferred to the right tray, but the left tray transfer fence HP sensor is detected although a predetermined time elapsed (HP sensor missing cannot be detected) • HP detection error (during transfer fence HP return) During left tray transfer fence HP not detected (stop after paper transfer, during power supply ON, during left tray set), the left tray transfer fence is moved to HP, but the left tray HP sensor is not detected although a predetermined time elapsed. *If an error occurs 3 times consecutively: LCIT transmits "3rd paper feed tray transfer HP error" to the main machine. (Up to 2 times consecutively, LCIT transmits "tray set fault" to the main machine)

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		• Transfer motor error/connector missing • Left tray transfer fence HP sensor error/connector missing • Harness broken • Bank control board defective • Paper overload • Foreign matter, such as paper scrap, is caught between the left tray and the tray transport motor • Paper set fault • Timing belt damage/dropout • Timing pulley damage/dropout • Transfer fence defective • Foreign matter, such as paper scrap, is caught inside the left tray
		• Replace the motor • Reset the connector • Replace the harness • Replace the sensor • Replace the control board for the optional paper feed tray • Reset the paper • Remove the foreign matter • Replace the tray • Replace the timing belt • Replace the timing pulley • Replace the end fence of the left tray

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC504-21	B	4th Tray Lift Error (double bank, lower tray)
		• Lift motor ascent error detection During tray initialization (upper limit not detected/lower limit detection), the tray base plate is raised to check the tray base plate position, but the limit sensor is not detected although a predetermined time elapsed, for 3 times consecutively. (Up to 2 times consecutively, the bank transmits a "tray set fault" to the main machine)
		• Lift motor error/connector missing • Limit sensor error/connector missing • Harness broken • Bank control board defective • Foreign matter, such as paper scrap, is caught between the paper feed tray and the tray lift motor • Paper set fault
		• Reset the paper • Remove the foreign matter • Replace the motor • Reset the connector • Replace the harness • Replace the sensor • Replace the control board for the optional paper feed tray • Replace the tray • Replace the paper feed roller • Replace the pick-up arm

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC504-22	B	4th Tray Lowering Error (double bank, lower tray)
		• Lift motor descent error detection During tray initialization, the tray base plate is lowered to check the tray base plate position, but the limit sensor is detected although a predetermined time elapsed, for 3 times consecutively. (Up to 2 times consecutively, the bank transmits a "tray set fault" to the main machine)
		• Lift motor error/connector missing • Limit sensor error/connector missing • Harness broken • Bank control board defective • Paper overload • Foreign matter, such as paper scrap, is caught between the paper feed tray and the tray lift motor • Paper set fault
		• Reset the paper • Remove the foreign matter • Replace the motor • Reset the connector • Replace the harness • Replace the sensor • Replace the control board for the optional paper feed tray • Replace the tray • Replace the paper feed roller • Replace the pick-up arm

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC505-41	B	Side LCIT Limit Detection Error
		• Upper limit detection error (during descent) During tray initialization (upper limit detection/lower limit not detected), the tray base plate is lowered to check the tray base plate position, but the limit sensor is detected although a predetermined time elapsed. • Upper limit detection error (during ascent) During tray initialization (upper limit not detected /lower limit detection), the tray base plate is raised to check the tray base plate position, but the limit sensor is not detected although a predetermined time elapsed. *If an error occurs for 3 times consecutively: the side LCIT transmits a "5th paper feed tray upper limit detection error" to the main machine. Up to 2 times consecutively, the side LCIT transmits a "tray set fault" to the main machine.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		• Lift motor error/connector missing • Limit sensor error/connector missing • Harness broken • Bank control board defective • Paper set fault • Timing belt damage/dropout • Timing pulley damage/dropout • Base plate damage/horizontality fault • Paper feed roller missing item • Pickup arm defective • Foreign matter, such as paper scrap, is caught inside the tray
		• Reset the paper • Remove the foreign matter • Replace the motor • Reset the connector • Replace the harness • Replace the sensor • Replace the control board for the optional side LCT • Replace the tray • Replace the paper feed roller • Replace the pick-up arm • Replace the timing belt • Replace the timing pulley • Replace the base plate

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC505-42	B	Side LCIT Lower Limit Detection Error
		• Lower limit detection error (during descent) During tray initialization (upper limit not detected /lower limit eject detection), the tray base plate is lowered to check the tray base plate position, but the lower limit sensor is not detected although a predetermined time elapsed. Alternatively, at paper end, the tray base plate is lowered, but the lower limit sensor is not detected although a predetermined time elapsed. • Lower limit detection error (during ascent) During tray initialization (upper limit not detected/lower limit detection), the tray base plate is raised to check the tray base plate position, but the lower limit sensor is detected although a predetermined time elapsed. *If an error occurs for 3 times consecutively: the side LCIT transmits a "5th paper feed tray upper limit detection error" to the main machine. Up to 2 times consecutively, the side LCIT transmits a "tray set fault" to the main machine.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		• Lift motor error/connector missing • Lower limit sensor error/connector missing • Harness broken • Bank control board defective • Paper set fault • Timing belt damage/dropout • Timing pulley damage/dropout • Base plate damage/horizontality fault • Foreign matter, such as paper scrap, is caught inside the tray
		• Reset the paper • Remove the foreign matter • Replace the motor • Reset the connector • Replace the harness • Replace the sensor • Replace the control board for the optional side LCT • Replace the tray • Replace the timing belt • Replace the timing pulley • Replace the base plate

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC505-43	B	Side LCIT Paper Overload Error
		During tray initialization, both the upper limit and lower limit are detected for 3 times consecutively (up to 2 times consecutively, the side LCIT transmits a "tray set fault" to the main machine.
		• Paper overload • Paper set fault • Limit sensor error/connector missing • Lower limit sensor error/connector missing • Harness broken • Bank control board defective • Foreign matter, such as paper scrap, is caught inside the tray
		• Reset the paper • Remove the foreign matter • Reset the connector • Replace the harness • Replace the sensor • Replace the control board for the optional side LCT

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC520-01	C	Registration Motor: Lock
SC520-02	C	Paper feed Motor: Lock
SC520-03	C	Transport Motor: Lock

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		During motor ON, after checking the motor error notification registers (err_velo and err_posi) for 500msec, the error state of either register was detected at least 5 times.
		• Motor defective • Connector disconnected • Harness broken • IOB defective • Encoder defective
		• Replace the motor • Reset the connector • Replace the harness • Replace the IOB RTB 51

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC521-01	C	Duplex Entrance Motor: Lock
SC521-02	C	Duplex By-pass Motor: Lock
		During motor ON, after checking the motor error notification registers (err_velo and err_posi) for 500msec, the error state of either register was detected at least 5 times.
		• Motor defective • Connector disconnected • Harness broken • IOB defective • Encoder defective
		• Replace the motor • Reset the connector • Replace the harness • Replace the IOB RTB 51

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC522-00	C	Paper Exit Motor: Lock
		During motor ON, after checking the motor error notification registers (err_velo and err_posi) for 500msec, the error state of either register was detected at least 5 times.
		• Motor defective • Connector disconnected • Harness broken • IOB defective • Encoder defective
		• Replace the motor • Reset the connector • Replace the harness • Replace the IOB RTB 51

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC530-00	D	Fusing Exhaust Heat Fan Lock
		In the motor ON state, the value of the lock sensor is checked every 100msec. If a lock signal is not obtained for 50 times consecutively.
		• Motor defective • Connector disconnected • Harness broken • IOB defective
		• Replace the fusing exhaust heat fan • Reset the connector • Replace the harness • Replace the IOB RTB 51

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC531-01	D	Development Intake Fan/Right Lock

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC531-02	D	Development Intake Fan/Left Lock
SC531-03	D	Drive Cooling Fan Lock
		In the motor ON state, the value of the lock sensor is checked every 100msec. If a lock signal is not obtained for 50 times consecutively.
		• Motor defective • Connector disconnected • Harness broken • IOB defective
		• Replace the development intake fan/right for SC531-01, development intake fan/left for SC531-02 or drive cooling fan for SC531-03 • Reset the connector • Replace the harness • Replace the IOB RTB 51

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC533-01	D	PSU Exhaust Heat Fan Lock
SC533-03	D	PSU Cooling Fan Lock
SC533-04	D	Controller Box Cooling Fan Lock

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		In the motor ON state, the value of the lock sensor is checked every 100msec. If a lock signal is not obtained for 50 times consecutively.
		• Motor defective • Connector disconnected • Harness broken • IOB defective
		• Replace the PSU exhaust fan for SC533-01, PSU cooling fan for SC533-04 or controller box cooling fan for SC533-04 • Reset the connector • Replace the harness • Replace the IOB RTB 51

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC534-01	D	Main Exhaust Fan Lock
SC534-02	D	Toner Supply Cooling Fan Lock
SC534-03	D	Ozone Exhaust Fan Lock
		In the motor ON state, the value of the lock sensor is checked every 100msec. If a lock signal is not obtained for 50 times consecutively.
		• Motor defective • Connector disconnected • Harness broken • IOB defective
		• Replace the development intake fan/right for SC531-01, development intake fan/left for SC531-02 or drive cooling fan for SC531-03 • Reset the connector • Replace the harness • Replace the IOB RTB 51

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC535-00	D	Paper Exit Cooling Fan Lock
		In the motor ON state, the value of the lock sensor is checked every 100msec. If a lock signal is not obtained for 50 times consecutively.
		• Motor defective • Connector disconnected • Harness broken • IOB defective
		• Replace the paper exit cooling fan • Reset the connector • Replace the harness • Replace the IOB RTB 51

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC540-00	D	Fusing Motor: Lock
		During motor ON, after checking lock signals for 2sec, a High level was detected at least 20 times.
		• Motor defective • Connector disconnected • Harness broken • IOB defective • Unit torque increased
		• Replace the fusing motor • Reset the connector • Replace the harness • Replace the IOB RTB 51

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC541-01	A	Fusing Central Thermopile Disconnection
		Below -50 degrees C (or below CB) is detected for (t11) seconds continuously.
		• disconnection • Connector disconnected
		• Replace the thermopile • Reset the connector • Replace the connector
SC541-02	A	Central NC Sensor Disconnection
		3ED - 3FF (FB voltage: 3.243V-3.300V) is detected for (t13) seconds continuously (NC sensor center: detection & compensation NC sensor edge: detection & compensation). Detection period: 100 ms, detection frequency: 10 times or more.
		• NC sensor disconnection • Connector disconnected
		• Reset the NC sensor • Reset the connector • Replace the connector
SC541-03	A	Central NC sensor short-circuit
		AD value: 0-13 (FB voltage: 0.000V-0.041V) (*3) is detected for (t14) seconds continuously. Detection period: 100 ms, detection frequency: 10 times or more.
		• NC short-circuit • Connector disconnected
		• Reset the NC sensor • Reset the connector • Replace the connector

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC542-02	A	Fusing central thermopile does not reload
		(T21) degrees C not reached after heater 1 ON for (t3) seconds
SC542-03	A	Fusing central thermopile does not reload
		Heating central reload permission temperature not reached after heater 1 ON for (t311) seconds.
		• Thermopile lens dirt • Thermopile modification/float • Outside input voltage guarantee • After excessive temperature rise prevention unit operation
		• Replace the thermopile • Check that the input voltage is within acceptable limits

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC543-00	A	Fusing central thermopile high temperature detection (software)
		Above (T3) degrees C detected for (t4) seconds continuously. Detection period 100ms, detection count: 10 times or more.
		• Triac short-circuit • IOB board defective • BCU board defective
		• Replace the IOB board RTB 51 • Replace the BCU board • Replace the fusing unit

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC544-01	A	Fusing central thermopile high temperature detection (hardware)
		In the event of an error
		• Triac defective (short-circuit) • Engine controller defective • Heating central thermopile defective • Fusing control software: out of control
		• If the triac is defective, replace the AC power supply board • If necessary, replace the BCU or the heating central thermopile

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC544-02	A	Fusing central NC sensor high temperature detection (hardware)
		In the event of an error
		• Triac defective (short-circuit) • Engine controller defective • Heating central thermopile defective • Fusing control software: out of control
		• Attach the new fusing unit, then run SP-5-810-002 • If the triac is defective, replace the AC power supply board • If necessary, replace the BCU or the Fusing central NC sensor

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC545-00	A	Fusing central heater continuously Heat
		After waiting for full power for more than (t6) seconds continuously, not detected for (t8) seconds. • Definition of heater full power Continuously heating rate set point (maximum heating rate) • Measurement start point After reload (after heater extinguished, after rotation complete) below the standby temperature (target temperature), measurement starts after a heater heat-up request is issued. • Measurement stop condition Rotation started due to a print signal during measurement or other. • Maximum heat-up Duty (SP interlinked value) 0% is excluded.
		• Thermistor deformation/float • Heater disconnection • After excessive temperature rise prevention unit operates
		• Replace the thermistor • Replace the fusing lamp • Replace the fusing unit

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC547-01	D	Zero cross error (relay-contact soldering)
		In the event of an error
		• Fusing relay defective (contact soldering) • Fusing relay drive circuit fault
		• Turn the main power supply switch OFF/ON • If the fusing relay is damaged, replace the PSU (AC Controller Board) • Check the connection between PSU (AC Controller Board) and control board, and replace harness and board if necessary

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC547-02	D	Zero cross error (relay contact fault)
		In the event of an error
		• Fusing relay damage (contact open) • Fusing relay drive circuit fault • PSU fuse (24VS) blowout
		• Turn the main power supply switch OFF/ON • If the fusing relay is damaged, replace the PSU (AC Controller Board) • Check the connection between PSU (AC Controller Board) and control board, and replace harness and board if necessary • If the PSU (AC Controller Board) fuse (24VS) blows out, replace the fuse
SC547-03	D	Zero cross error (low-frequency error)
		In the event of an error
		Frequency instability of commercial power line
		• Turn the main power supply switch OFF/ON • Check the power source • Check the connection between PSU (AC Controller Board) and control board, and replace harness and board if necessary

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC549-01	D	Shield Operation Error Detection
		During HP detection operation, shield sensors 1 and 2 detect "High" for (t30) seconds continuously.
SC549-02	D	Shield Operation Error Detection
		During shield basic operation, shield sensor 2 does not go "Low > High" even if (t31) seconds elapsed from screen motor rotation start.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC549-03	D	Shield Operation Error Detection
		During shield basic operation, shield motor does not stop even if (t32) seconds elapsed from rotation start.
SC549-04	A	Shield Operation Error Detection
		During HP detection operation, HP detection fails 3 times consecutively.
		• Motor defective • Sensor defective • Sensor actuator/feeler modification/defective • Shield modification/defective
		• Replace the motor • Replace the HP sensor • Replace the fusing unit

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC551-01	A	Fusing Edge Thermopile Disconnection
		Below -50 degrees C (or below CB) is detected for (t11) seconds continuously.
		• Thermopile disconnection • Connector disconnected
		• Replace the thermopile • Reset the connector • Replace the connector • Replace the fusing unit

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC551-02	A	Edge NC Sensor Disconnection
		3ED - 3FF (FB voltage: 3.243V-3.300V) is detected for (t13) seconds continuously (NC sensor center: detection & compensation NC sensor edge: detection & compensation). Detection period: 100 ms, detection frequency: 10 times or more.
		• NC sensor disconnection • Connector disconnected
		• Replace the NC sensor • Reset the connector • Replace the connector • Replace the fusing unit
SC551-03	A	Edge NC Sensor Short-circuit
		AD value: 0-13 (FB voltage: 0.000V-0.041V) (*3) is detected for (t14) seconds continuously. Detection period: 100 ms, detection frequency: 10 times or more.
		• NC sensor short-circuit • Connector disconnected
		• Replace the NC sensor • Reset the connector • Replace the connector • Replace the fusing unit

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC552-02	A	Fusing Central Thermopile Does Not Reload
		(T21) degrees C not reached after heater 1 ON for (t3) seconds.
SC552-03	A	Fusing Central Thermopile Does Not Reload
		Heating edge reload permission temperature not reached after heater 1 ON for (t312) seconds.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
		• Thermopile lens dirt • Thermopile modification, float • Outside input voltage guarantee • After excessive temperature rise prevention unit operation
		• Replace the thermopile. • Make sure that the input voltage is within acceptable limits. • Replace the fusing unit.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC553-00	A	Fusing End Thermopile High Temperature Detection (software)
		Above (T3) degrees C detected for (t4) seconds continuously. Detection period: 100ms, detection count: 10 times or more.
		• Triac short-circuit • IOB defective • BCU defective
		• Replace the IOB RTB 51 • Replace the BCU • Replace the fusing unit

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC554-01	A	Fusing end thermopile high temperature detection (hardware)
		In the event of an error
		• Triac defective (short-circuit) • Engine controller defective • Heating edge thermopile defective • Fusing control software: out of control
		• If the triac is defective, replace the AC power supply board • If necessary, replace the BCU or heating edge thermopile

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC554-02	A	Fusing end NC sensor high temperature detection (hardware)
		In the event of an error
		• Triac defective (short-circuit) • Engine controller defective • Heating edge thermopile defective • Fusing control software: out of control
		• Attach the new fusing unit, then run SP-5-810-002 • If necessary, replace the BCU or Fusing edge NC sensor

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC555-00	D	Fusing Edge Heater Continuously Heat

		After waiting for full power for more than (t6) seconds continuously, not detected for (t8) seconds.
		• Definition of heater full power
		   Continuously heating rate set point (maximum heating rate)
		• Measurement start point
		   After reload (after heater extinguished, after rotation complete) below the standby temperature (target temperature), measurement starts after a heater heat-up request is issued.
		• Measurement stop condition
		   Rotation started due to a print signal during measurement or other
		• Maximum heat-up Duty (SP interlinked value) 0% is excluded

		• Thermistor deformation/float • Heater disconnection • After excess temperature rise prevention unit operation
		• Replace the thermistor • Replace the fusing lamp • Replace the fusing unit

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC557-00	C	Zero Cross Frequency Exceeded
		In the event of an error
		Frequency instability of commercial power line/Noise
		-

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC559-00	A	Fusing Jam Detected for 3 Times Consecutively
		Fusing jam (does not reach fusing exit sensor) is detected for 3 times consecutively. • Detection conditions Displays the SC559-00 at the time of integrating the counter each time fusing jam occurs, became fusing jam counter value = 3. The counter value is retained without fusing jam also reset by OFF/ON the power supply. • Control ON/OFF And enables ON / OFF is this SC, the default is set to OFF, then ON at the time of customer requirements. SP1-142-001 0: OFF (default), 1: ON (Set at the time of customer requirements) • Counter reset condition occurs fusing jam 1. Normal paper exit has been done during this continuous fusing jam, fusing jam counter is reset. 2. When "1" is changed to "0" SP1-142-001, to reset the (SP9-912-001) fusing jam counter. When after displaying SC559, SC release is made, reset the (SP9912-001) fusing jam counter.
		Fusing unit paper jam
		Remove the jam

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC561-00	A	Pressurized Central Thermistor Disconnection
		Below 0 degree C (or below 3F9) detected for (t12) seconds continuously. Detection period 100ms, detection count: 10 times or more.
		• Thermistor disconnection • Connector disconnected
		• Replace the thermistor • Reset the connector • Replace the connector • Replace the fusing unit

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC562-02	A	Pressurized Central Thermistor Does Not Reload
		Does not reach (T21) degree C after heater 1ON for (t3) seconds.
		• Thermistor dirt • Thermistor deformation, float • Outside input voltage guarantee • After excess temperature rise prevention unit operation
		• Replace the thermistor • Make sure that the input voltage is within acceptable limits • Replace the fusing unit

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC563-00	A	Pressurized Central Thermistor High Temperature Detection (software)
		Above (T3) degrees C detected for (t4) seconds continuously. Detection period: 100ms, detection count: 10 times or more.
		• Triac short-circuit • IOB defective • BCU defective
		• Replace the IOB RTB 51 • Replace the BCU • Replace the fusing unit

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC564-00	A	Pressurized Central Thermistor High Temperature Detection (hardware)
		Above (T4) degrees C detected
		• Triac short-circuit • IOB controller defective • BCU controller defective • Fusing control: out of control
		• Replace the IOB RTB 51 • Replace the BCU • Replace the fusing unit

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC569-00	D	Paper Exit/ Pressure Release Motor Error Detection
		Retry operation fails 3 times consecutively.
		• Motor defective • Sensor defective • Filler modification, defective
		• Replace the paper exit/ pressure release motor. • Replace the pressure roller HP sensor. • Replace the fusing unit.

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC571-00	A	Pressurized Edge Thermistor Disconnection
		Below 0 degree C (or above 3F9) detected for (t12) continuously. Detection period: 100 ms, detection counts: 10 times or more.
		• Thermistor disconnection • Connector disconnected
		• Replace the thermistor • Reset the connector • Replace the connector • Replace the fusing unit

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC572-04	A	Pressurized Edge Thermistor Does Not Reload
		After starting continuous job with paper width of 257mm or more, does not reach (T22) degrees C after (t313) seconds.
		• Thermistor dirt • Thermistor deformation, float • Outside input voltage guarantee • After excess temperature rise prevention unit operation
		• Replace the thermistor • Make sure that the input voltage is within acceptable limits • Replace the fusing unit

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC573-00	A	Pressurized Edge Thermistor High Temperature Detection (software)
		Above (T3) degrees C detected for (t4) seconds continuously. Detection period: 100ms, detection count: 10 times or more.
		• Triac short-circuit • IOB defective • BCU defective
		• Replace the IOB RTB 51 • Replace the BCU • Replace the fusing unit

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC574-00	A	Pressurized Edge Thermistor High Temperature Detection (hardware)
		Above (T4) degrees C detected
		• Triac short-circuit • IOB defective • BCU defective • Fusing control: out of control
		• Replace the IOB RTB 51 • Replace the BCU • Replace the fusing unit

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC581-00	A	Pressurized Expanded Edge Thermistor Disconnection
		Below 0 degree C (or above 3F9) detected for (t12) seconds continuously. Detection period: 100ms, detection count: 10 times or more.
		• Thermistor disconnection • Connector disconnected
		• Replace the thermistor • Reset the connector • Replace the connector • Replace the fusing unit

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC582-04	A	Pressurized Expanded Edge Thermistor Does Not Reload
		After starting continuous job with paper width of 257mm or more, does not reach (T22) degrees C after (t313) seconds.
		• Thermistor dirt • Thermistor deformation, float • Outside input voltage guarantee • After excess temperature rise prevention unit operation
		• Replace the thermistor • Make sure that the input voltage is within acceptable limits • Replace the fusing unit

SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC583-00	A	Pressurized Expanded Edge Thermistor High Temperature Detection (software)
		Above (T3) degrees C detected for (t4) seconds continuously. Detection period: 100ms, detection count: 10 times or more.
		• Triac short-circuit • IOB defective • BCU defective
		• Replace the IOB RTB 51 • Replace the BCU • Replace the fusing unit

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SC No.	Level	Error Name/Error Condition/Major Cause/Solution
SC584-00	A	Pressurized Expanded Edge Thermistor High Temperature Detection (hardware)
		Above (T4) degrees C detected
		• Triac short-circuit • IOB controller defective • BCU controller defective • Fusing control: out of control
		• Replace the IOB RTB 51 • Replace the BCU • Replace the fusing unit

Service Call 620-689

SC600 (Engine: Communication and Others)

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC620-01	D	ADF Communication error
		After ADF connection was recognized on startup, an error is detected. (disconnection detection)
SC620-02	D	ADF Communication Error
		After ADF connection was recognized on startup, an error is detected. (Retry out due to communication error)
		• ADF connection fault • ADF defection • IPU board defection • Noise contamination
		• Check the ADF cable connection • Replace the ADF • Replace the IPU board

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC621-00	D	Finisher communication error
		• Detected an error when connecting the communication line. • Received a communication error notification from the URAT.
		• Finisher control board defective. • BCU defective • IOB defective RTB 51 • Connection fault between finisher and main machine.
		• Reconnect the Finisher interface cable • Replace the BCU • Replace the finisher • Turn the power off/on

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC622-00	D	Paper bank communication error
		• Detected an error when connecting the communication line. • Received a communication error notification from the URAT.
		• Paper bank control board defective • BCU defective • IOB defective RTB 51 • Paper bank-main machine connection fault
		• Reconnect the optional paper tray connection cable • Replace the BCU • Replace the optional paper tray • Turn the power off/on

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC623-00	D	2nd bank communication error
		During superposition of single bank - double bank, double bank - side LICT, and LCIT - side LCIT, 1. When the upper bank side recognizes the lower bank, the break of the lower bank is not canceled within t5ms. 2. After the upper bank side recognizes the lower bank, there is no ACK within t6ms after transmission of a data frame to the lower bank, and a timeout error occurs for 3 times consecutively even if retransmission is performed (Bank/LCIT transmits "between bank 1 - bank 2: communication error" to the main machine.)
		• Bank control board fault • Connector disconnected
		• Reset the optional paper tray connecting cable • Replace the BCU • Replace the optional paper tray • Turn the power off/on

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC641		Communication Error between Engine and Controller (No response)
-00	D	Engine serial communication error (Timeout)
		No response within the timeout period during communication.
		• Controller/engine board or software defect • Contact failure on controller/engine board
		• Check the connection between the two boards • Turn off/on the main power

SC664
RTB 58
RTB 61

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC664		ASIC on the IOB SRAM program expansion error
SC664-01	D	Access permission error to ASIC on the IOB SRAM (write permission fails)

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC664-02	D	Write error to ASIC on the IOB SRAM (write result error)
SC664-03	D	ASIC on the IOB program startup error
		• Noise • Hardware defection
		• Replace the imaging IOB and paper transport IOB RTB 51 • Check the harness

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC665		FFC set detection
		FFC set error is detected by port lead and AD value read-out
SC665-01	D	• Connection error between BCU and IPU • Improper harness connection • Harness terminal is damaged
		• Reconnect the FFC • Replace the FFC
SC665-02	D	• Connection error between BCU and imaging IOB • Improper harness connection • Harness terminal is damaged
		• Reconnect the FFC • Replace the FFC
SC665-03	D	• Connection error between BCU and paper transport IOB • Improper harness connection • Harness terminal is damaged
		• Reconnect the FFC • Replace the FFC

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC665-04	D	• Connection error between BCU and imaging IOB, or imaging IOB and paper transfer IOB • IOB board failure • BCU board failure • Harness ground fault between BCU and IOB • 5 volt power supply failure on IOB
		• Reconnect the FFC • Replace the FFC • Replace the IOB

SC666
RTB 1d, 2d

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC669		EEPROM Communication Error
SC669-01	D	EEPROM OPEN: ID error
SC669-02	D	EEPROM OPEN: Channel error
SC669-03	D	EEPROM OPEN: Device error
SC669-04	D	EEPROM OPEN: Communication abort error
SC669-05	D	EEPROM OPEN: Communication timeout error
SC669-06	D	EEPROM OPEN: Operation stopped error
SC669-07	D	EEPROM OPEN: Buffer full
SC669-08	D	EEPROM OPEN: No error code
SC669-09	D	EEPROM CLOSE: ID error
SC669-10	D	EEPROM CLOSE: No error code
SC669-11	D	EEPROM Data write: ID error
SC669-12	D	EEPROM Data write: Channel error
SC669-13	D	EEPROM Data write: Device error
SC669-14	D	EEPROM Data write: Communication abort error
SC669-15	D	EEPROM Data write: Communication timeout error

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC669-16	D	EEPROM Data write: Operation stopped error
SC669-17	D	EEPROM Data write: Buffer full
SC669-18	D	EEPROM Data write: No error code
SC669-19	D	EEPROM Data read: ID error
SC669-20	D	EEPROM Data read: Channel error
SC669-21	D	EEPROM Data read: Device error
SC669-22	D	EEPROM Data read: Communication abort error
SC669-23	D	EEPROM Data read: Communication timeout error
SC669-24	D	EEPROM Data read: Operation stopped error
SC669-25	D	EEPROM Data read: Buffer full
SC669-26	D	EEPROM Data read: No error code
SC669-27	D	EEPROM Device detection: ID error
SC669-28	D	EEPROM Device detection: Channel error
SC669-29	D	EEPROM Device detection: Device error
SC669-30	D	EEPROM Device detection: Communication abort error
SC669-31	D	EEPROM Device detection: Communication timeout error
SC669-32	D	EEPROM Device detection: Operation stopped error
SC669-33	D	EEPROM Device detection: Buffer full
SC669-34	D	EEPROM Device detection: No error code

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
		• Electrical noise • EEPROM not connected fully • EEPROM not installed • EEPROM damaged • BCU damaged
		• Turn the power off/on • Reconnect the EEPROM • Replace the EEPROM • Replace the BCU

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC681-		Toner Cartridge: ID Chip Communication Error
01 - 04	D	Invalid Device ID
06 - 09	D	Channel error
11 - 14	D	Device Error
16 - 19	D	Communication aborted (error during communication)
21 - 24	D	Communication timeout
26 - 29	D	Device stopped (logically stopped)
31 - 34	D	Requested buffer full
36 - 39	D	No error code

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
		• When abnormality occurs at cable connection • When error notification was received during communication with the tag and operation is not resumed after 3 retries.
		There was an error during (wired) communication with the ID chip on the toner bottle.
		• Replace the toner bottle SC branch number: 01, 06, 11, 16, 21, 26, 31, 36: K 02, 07, 12, 17, 22, 27, 32, 37: M 03, 08, 13, 18, 23, 28, 33, 38: C 04, 09, 14, 19, 24, 29, 34, 39: Y

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC682-		PCU: ID Chip Communication Error
01 - 04	D	Invalid Device ID
06 - 09	D	Channel error
11 - 14	D	Device Error
16 - 19	D	Communication aborted (error during communication)
21 - 24	D	Communication timeout
26 - 29	D	Device stopped (logically stopped)
31 - 34	D	Requested buffer full
36 - 39	D	No error code

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
		When error notification was received during communication with the tag and operation is not resumed after 3 retries.
		• HST sensor defective • EEPROM defective • PCU set error Suffix number (right edge) shows each color described below: 1, 6: K, 2, 7: Magenta, 3, 8: Cyan, 4, 9: Yellow 01, 06, 11, 16, 21, 26, 31, 36: K 02, 07, 12, 17, 22, 27, 32, 37: M 03, 08, 13, 18, 23, 28, 33, 38: C 04, 09, 14, 19, 24, 29, 34, 39: Y Example: 682-21 is for black PCDU. 01 – 04 • Device ID data corruption 06 – 09 • Connection fault (bus disconnect, etc.) 11 - 14 • No ID chip 16 – 19, 21 – 24, 26 - 29 • Noise 31 - 34, 36 - 39 Software defection
		Replace the PCU

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC687-00	D	PER Not Received Error
		Unable to receive the PER command from the controller.
		Communication error
		Replace the BCU

SC600 (Controller)

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC632-00	B	Counter device error 1
		After 3 attempts to send a data frame to the optional counter device via the serial communication line, no ACK signal was received within 100 ms.
		Serial line between the optional counter device, the relay board and copier control board is disconnected or damaged.
		• Turn the main power off/on. • Check the serial communication line.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC633-00	B	Counter device error 2
		After communication was established, the controller received the brake signal from the accounting device.
		Serial line between the optional counter device, the relay board and copier control board is disconnected or damaged.
		• Turn the main power off/on. • Check the serial communication line.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC634-00	B	Counter device error 3
		A backup RAM error was returned by the counter device.
		Counter device control board or the backup battery of counter device defective
		• Replace the counter device control board. • Replace the backup battery.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC635-00	B	Counter device error 4
		A backup battery error was returned by the counter device.
		Counter device control board or the backup battery of counter device defective
		• Replace the counter device control board. • Replace the backup battery.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC636-01	D	IC Card Error (Expanded authentication module error)
		Issued when expanded authentication management is set to "ON" but either of the following occur. • There is no expanded authentication module in the machine. • The SD card or the file of the expanded authentication module is broken. • There is no DESS module in the machine.
		• There is no DESS module in the machine (models on which the function is optional). • There is no expanded authentication module in the machine. • The SD card or the file of the expanded authentication module is broken.
		• Set a working SD card/expanded authentication module file. • Install the DESS module. • In the SSP mode set SP5-401-160 to 0. • In the SSP mode, set SP5-401-161 to 0. • Replace the NVRAM.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC636-02	D	IC Card Error (Version error)
		The version of the expanded authentication module is not correct.
		Incorrect module version
		Install the correct file of the expanded authentication module.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC636-11	D	IC Card Error (OSM user code file error)
		• The correct "usercode" file could not be found in the root folder of the SD card. • The "usercode" file on the SD card could not be read.
		• The "usercode" file does not exist on the SD card. • The "usercode" file on the SD card is an invalid file. • Data in the "usercode" file on the SD card is invalid. • "usercode" file was not moved when moving the application to another SD card
		Use the user code configuration tool for OSM users (Idissuer.exe) to create the "usercode" and store it in the root folder of the SD card containing the IC card module (eccm.mod).

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC637-01	D	Tracking Information Notification Error (Tracking application error)
		Tracking information was lost.
		• Tracking SDK application error • Internal notification error
		Turn the main power off/on.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC637-02	D	Tracking Information Notification Error (Management server error)
		Tracking information was lost.
		Communication with tracking management server failed. • Network error • tracking management server error • Tracking SDK application error
		Turn the main power off/on.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC650-01	B	Remote Service Modem Communication Error (Dialup authentication failure)
		• An error related to communication (dialup connection, modem board etc.) using the RC Gate Type M was detected or an error that prevents RC Gate operation was detected at power on. • Displayed only when an error is detected while RC Gate is operating. • SC is not issued if an error occurs during RC Gate installation (because it can be referenced using SP).
		Dialup authentication failure
		Check the following SPs. • SP5-816-156 • SP5-816-157

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC650-04	B	Remote Service Modem Communication Error (dialup failing because of incorrect modem configuration)
		• An error related to communication (dialup connection, modem board etc.) using the RC Gate Type M was detected or an error that prevents RC Gate operation was detected at power on. • Displayed only when an error is detected while RC Gate is operating. • SC is not issued if an error occurs during RC Gate installation (because it can be referenced using SP).
		Dialup failing because of incorrect modem configuration
		Check if the setting of SP5-816-160 is correct. If it is correct, then there is a software bug.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC650-05	B	Remote Service Modem Communication Error (insufficient current or connection fault)
		• An error related to communication (dialup connection, modem board etc.) using the RC Gate Type M was detected or an error that prevents RC Gate operation was detected at power on. • Displayed only when an error is detected while RC Gate is operating. • SC is not issued if an error occurs during RC Gate installation (because it can be referenced using SP).
		Insufficient current or connection fault
		The line is not supported and nothing can be done.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC650-13	B	Remote Service Modem Communication Error (RC Gate Type M was installed but modem is not present (detected during operation))
		• An error related to communication (dialup connection, modem board etc.) using the RC Gate Type M was detected or an error that prevents RC Gate operation was detected at power on. • Displayed only when an error is detected while RC Gate is operating. • SC is not issued if an error occurs during RC Gate installation (because it can be referenced using SP).
		RC Gate Type M was installed but modem is not present (detected during operation)
		• If a modem board is not installed, install it. • Check again if the modem driver configurations (SP5-816-160, SP5-816-165 to 171, SP5-816-165 to 171) are correct. • If the problem is not solved, replace the modem.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC650-14	B	Remote Service Modem Communication Error (RC Gate Type N was installed but modem is present or wired/wireless LAN is not working correctly)
		• An error related to communication (dialup connection, modem board etc.) using the RC Gate was detected or an error that prevents RC Gate operation was detected at power on. • Displayed only when an error is detected while RC Gate is operating. • SC is not issued if an error occurs during RC Gate installation (because it can be referenced using SP).
		RC Gate Type N was installed but modem is present or wired/wireless LAN is not working correctly
		• If a modem board is attached, remove it. • Check if wired/wireless LAN works.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC651-01	C	Illegal Remote Service Dial-up (Chat program parameter error)
		An unexpected error occurred when RC Gate Type M dialed up the NRS Center.
		Software bug
		Logging only.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC651-02	C	Illegal Remote Service Dial-up (Chat program execution error)
		An unexpected error occurred when RC Gate dialed up the NRS Center.
		Software bug
		Logging only.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC652-00	D	Remote service ID2 mismatching
		There was an authentication mismatch between ID2 for @Remote, the controller board, and NVRAM.
		• Used controller board installed • Used NVRAM installed (such action is not allowed.)
		• If this occurs during RC Gate installation: Check the validity of the certificate and the NVRAM, check the machine serial number, write the common certificate, and then begin installation again. • If this occurs after RC Gate installation: Clear the RC Gate install status, check the validity of the certificate and the NVRAM, check the machine serial number, write the common certificate, and then begin installation again.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC653-00	D	Incorrect remote service ID2
		ID2 stored in the NVRAM has either of the following problems. • Number of characters is not 17. • Includes a character that cannot be printed. • All spaces • NULL
		Replace the NVRAM.
		Clear the RC Gate install status, write the common certificate, and then begin installation again.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC670-00	D	Engine start up error
		• Case 1 • /ENGRDY signal was not asserted when the machine was turned on or returned from energy saver mode. • /IPURDY signal was not asserted when the machine was turned on or returned from energy saver mode. • EC response was not received within specified time from power on. • PC response was not received within specified time from power on. • SC response was not received within specified time from power on. • Writing to Rapi driver failed (the other party not found through PCI). • Case 2 • Unexpected down status was detected after /ENGRDY assertion.
		• Case 1 • Engine board does not start up. • Case 2 • Engine board reset unexpectedly.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
		Check the connection between the engine board and the controller board. • If it is always reproduced, replace the engine board. If the problem persists, consider replacing the controller board or other boards between them. • If reproducibility is low, multiple causes are to be considered, such as software, engine board, controller board, and PSU.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC672-10	D	Controller start up error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC672-11	D	Controller start up error
		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.

SC672-11
D177 RTB 57
D237 RTB 18

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC672-12	D	Controller start up error
		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
D177 RTB 57
D237 RTB 18

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC672-13	D	Controller start up error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC672-99	D	Controller start up error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC673-10	D	Connection error of Smart Operation Panel
		The main machine does not respond to the smart operation panel.
		The SP setting for the smart operation panel is mismatch.
		• Set the SP5748-201 (OpePanel Setting) to [1: ON].

Service Call 700-792

SC700 (Engine: Peripherals)

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC701-03	D	Paper Feed Motor Driver Error (ARDF)
		Detection of error signal from motor driver
		• Encoder disconnection • Encoder connector dropout • Encoder defective • Overload • Motor deterioration
		• Replace the encoder harness • Check the harness connection • Replace the motor
SC701-08	D	Paper Exit Motor Driver Error (ARDF)
		Detection of error signal from motor driver.
		• Encoder disconnection • Encoder connector dropout • Encoder defective • Overload • Motor deterioration
		• Replace the encoder harness • Check the harness connection • Replace the motor

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC702-01	D	Protection Device Intercept Error 1 (ARDF)
		When original source 5V power supply is ON, protection device intercept of 24V power supply system is detected.
		Any of feed motor, transport motor, reverse solenoid, paper feed solenoid, paper feed clutch and FAN motor defective, a harness short-circuit occurs, and the protection device of the 24V power supply system intercepts.
		• Replace the blown fuse or circuit board • Replace the short-circuited parts
SC702-02	D	Protection Device Intercept Error 2 (ARDF)
		When original source 5V power supply is ON, protection device intercept of 24V OUT power supply system is detected.
		Solenoid defective or harness short-circuit occurs in 24VOUT power supply system.
		• Replace the blown fuse or circuit board • Replace the short-circuited parts
SC702-03	D	Protection Device Intercept Error 3 (ARDF)
		When original source 5V power supply is ON, protection device intercept of 5VE power supply system is detected.
		Sensor defective or a harness short-circuit occur in 5VE power supply system.
		• Replace the blown fuse or circuit board • Replace the short-circuited parts

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC723-03	B	Power Supply Error (Internal Finisher: Non-Staple Bind)
		When original source 24V power supply is ON, protection device intercept of non-interlock power supply system is detected.
		A motor failure or harness short-circuit occur in the non-interlock power supply system.
		• Replace the short-circuited harnesses • Replace the protection devices
SC723-10	B	Transport Motor Error (Internal Finisher: Non-Staple Bind)
		The DCM driver error detection is started after reset, and T9[msec] error signal is detected. This SC will be issued when the above phenomenon repeated 2 times.
		• Transport Motor failure • Harness short-circuit • Circuit board failure • Over current Abnormal temperature
		• Replace the motor • Replace the harness Replace the circuit board.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC723-20	B	Junction Solenoid Motor Error (Internal Finisher: Non-Staple Bind)
		When the junction claw HP sensor was not turned off while T3[msec] applied to the solenoid motor with the HP sensor turned on. When the junction claw HP sensor was not turned on while T4[msec] applied to the solenoid motor with the HP sensor turned off. This SC will be issued when the above phenomenon repeated 2 times.
		• Junction Solenoid Motor failure • Connector disconnected • Over load Junction claw HP sensor error
		• Check the connection • Replace the motor/sensor Replace the harness
SC723-24	B	Exit Pressure Release Motor Error (Internal Finisher: Non-Staple Bind)
		When the exit pressure release HP sensor was not turned off while T5[msec] applied to the exit pressure release motor with the HP sensor turned on. When exit pressure release HP sensor was not turned on while T6[msec] applied to the exit pressure release motor with the HP sensor turned off. This SC will be issued when the above phenomenon repeated 2 times.
		• Exit Pressure Release Motor failure • Connector disconnected • Over load Exit pressure release HP sensor error
		• Check the connection • Replace the motor/sensor Replace the harness

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC723-44	B	Stapler Motor Error (Internal Finisher: Non-Staple Bind)
		When the stapler HP sensor was not turned off while T7[msec] applied to the stapler motor with the HP sensor turned on. When stapler HP sensor was not turned on while T6[msec] applied to the stapler motor with the HP sensor turned off. The STM driver error detection is started after reset, and T9[msec] error signal is detected. This SC will be issued when the above phenomenon repeated 2 times.
		• Stapler Motor failure • Connector disconnected • Stapler Motor overload • Stapler HP sensor error • Harness short-circuit • Circuit board failure • Excess current • Abnormal temperature
		• Check the connection • Replace the motor/sensor • Replace the harness • Replace the circuit board

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC723-71	B	Shift Motor Error (Internal Finisher: Non-Staple Bind)
		When the shift HP sensor was not turned off while T1[msec] applied to the shift motor with the HP sensor turned on.
		When shift HP sensor was not turned on while T6[msec] applied to the shift motor with the HP sensor turned off.
		The STM driver error detection is started after reset, and T9[msec] error signal is detected.
		This SC will be issued when the above phenomenon repeated 2 times.
		• Shift Motor failure • Connector disconnected • Shift Motor overload • Shift HP sensor error • Harness short-circuit • Circuit board failure • Excess current • Abnormal temperature
		• Check the connection • Replace the motor/sensor • Replace the harness • Replace the circuit board

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC724		Internal finisher Error
SC724-24	B	Paper Exit Guide Plate Open/Close Motor Error (Internal finisher)
		• When paper exit guide plate open/close motor is driven for T3 msec after paper exit guide plate HP sensor ON, the HP sensor does not switch OFF (1st time is jam notification, 2nd time is SC notification). • When paper exit guide plate open/close motor is driven for T4 msec after paper exit guide plate HP sensor OFF, the HP sensor does not switch ON (1st time is jam notification, 2nd time is SC notification).

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC724-25	B	Punch Motor Error (Internal finisher)
		• When punch motor is driven for T16 msec after punch HP sensor ON, the HP sensor does not switch OFF (1st time is jam notification, 2nd time is SC notification).
		• When punch motor is driven for T17 msec after punch HP sensor OFF, the HP sensor does not switch ON (1st time is jam notification, 2nd time is SC notification).
SC724-27	B	Punch Displacement Motor Error (Internal finisher)
		• When punch displacement motor is driven for T18 msec when punch displacement HP sensor is ON, the HP sensor does not switch OFF (1st time is jam notification, 2nd time is SC notification).
		• When punch displacement motor is driven for T19 msec when punch displacement HP sensor is OFF, the HP sensor does not switch ON (1st time is jam notification, 2nd time is SC notification).
SC724-28	B	Punch Horizontal Registration Detection Motor Error (Internal finisher)
		• When horizontal registration displacement motor is driven for T20 msec when horizontal registration displacement HP sensor is ON, the HP sensor does not switch OFF (1st time is jam notification, 2nd time is SC notification).
		• When horizontal registration displacement motor is driven for T21 msec when horizontal registration displacement HP sensor is OFF, the HP sensor does not switch ON (1st time is jam notification, 2nd time is SC notification).
SC724-31	B	Jogger Front Motor Error (Internal finisher)
		• When front jogger motor is driven for T22 msec when front jogger HP sensor is ON, the HP sensor does not switch OFF (1st time is jam notification, 2nd time is SC notification).
		• When front jogger motor is driven for T23 msec when front jogger HP sensor is OFF, the HP sensor does not switch ON (1st time is jam notification, 2nd time is SC notification).

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC724-32	B	Jogger Rear Motor Error (Internal finisher)
		• When rear jogger motor is driven for T24 msec when rear jogger HP sensor is ON, the HP sensor does not switch OFF (1st time is jam notification, 2nd time is SC notification).
		• When rear jogger motor is driven for T25 msec when rear jogger HP sensor is OFF, the HP sensor does not switch ON (1st time is jam notification, 2nd time is SC notification).
SC724-33	B	Strike Roller Motor Error (Internal finisher)
		• During initialization/strike descent, even when the strike roller motor is driven for T1 msec when the strike roller HP sensor is ON, the HP sensor does not switch OFF (1st time is jam notification, 2nd time is SC notification).
		• During initialization, even when the strike roller motor is driven for T2 msec when the strike roller HP sensor is OFF, the HP sensor does not switch ON (1st time is jam notification, 2nd time is SC notification).
		• When the strike roller is lifted from the press position, even when driven for T2 msec, the HP sensor does not switch ON (1st time is jam notification, 2nd time is SC notification).
SC724-38	B	Paper Press Motor Error (Internal finisher)
		• When the paper press HP sensor is ON and the paper press motor is driven for T14 msec, the HP sensor does not switch OFF (1st time is jam notification, 2nd time is SC notification).
		• When the paper press HP sensor is OFF and the paper press motor is driven for T15 msec, the HP sensor does not switch ON (1st time is jam notification, 2nd time is SC notification).
SC724-42	B	Stapler Displacement Movable Motor Error (Internal finisher)
		• Sifter stapler displacement HP sensor ON, even when the stapler displacement motor is driven for T9 msec, the HP sensor does not switch OFF (1st time is jam notification, 2nd time is SC notification).
		• After stapler displacement HP sensor OFF, even when the stapler displacement motor is driven for T10 msec, the HP sensor does not switch ON (1st time is jam notification, 2nd time is SC notification).

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC724-70	B	Shift Tray Ascent/Descent Motor Error (Internal finisher)
		• During ascent from paper surface sensor ON, even after T11 msec elapses, the paper surface sensor does not switch OFF (1st time is jam notification, 2nd time is SC notification).
		• During descent from paper surface sensor OFF, the paper surface sensor does not switch ON even after T12 msec elapses (1st time is jam notification, 2nd time is SC notification).
		• During descent to the packing position, the full sensor does not switch ON even if T13 msec elapses.
SC724-80	B	Shift Motor Error (Internal finisher)
		• When the shift roller HP sensor is ON, the HP sensor does not switch OFF even when the shift roller motor is driven for T5 msec (1st time is jam notification, 2nd time is SC notification)
		• When the shift roller HP sensor is OFF, the HP sensor does not switch ON even when the shift roller motor is driven for T6 msec (1st time is jam notification, 2nd time is SC notification).
SC724-86	B	Stapler Motor Error (Internal finisher)
		• HP sensor does not switch OFF even when the stapler motor is driven for T7 msec after the stapler HP sensor switches ON (1st time is jam notification, 2nd time is SC notification).
		• HP sensor does not switch ON even when the stapler motor is driven for T8 msec after the stapler HP sensor switches OFF (1st time is jam notification, 2nd time is SC notification).

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
		• Motor defective • Connector disconnected • Motor overload • Home position sensor error • Paper surface sensor error (*SC724-38, 70 only) • Staple jam (*SC724-86 only)
		• Reset the connector • Replace the motor • Replace the sensor • Replace the harness • Remove the staple jam (*SC724-86 only)

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC761		Protection Device Intercept Error *V (bridge unit or left paper output tray)
SC761-03	B	Protection Device Intercept Error 5V
SC761-04	B	Protection Device Intercept Error 24V
		Fuse blowout occurs due to over current during power injection (output detected for longer than 2 seconds). • Over current of bridge unit motor • Over current due to short-circuit in PCB
		• Replace the bridge unit • Replace the PCB

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC780-01	D	Bank 1 (Upper optional paper tray) Protection Device Intercept Error

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
		When original source of 5V power supply is ON, protection device intercept of 24V power system is detected.
		In 24V power supply system: • Motor defective • Solenoid defective • Harness short- circuit
		• Replace the PCB • Replace the short-circuited part (harness, motor, solenoid)

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC781-01	D	Bank 2 (Lower optional paper tray) Protection Device Intercept Error
		When original source of 5V power supply is ON, protection device intercept of 24V power system is detected.
		In 24V power supply system: • Motor defective • Solenoid defective • Harness short- circuit
		• Replace the PCB • Replace the short-circuited part (harness, motor, solenoid)

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC791-00	D	No bridge unit when finisher is present
		When power supply is switched on or paper is transported, finisher set is detected but bridge unit set is not detected. (during internal finisher connection, not detected)
		• Bridge unit not attached • Bridge unit defective
		• Reset the bridge unit • Turn the power off/on

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC792-00	B	No finisher, bridge unit provided
		When power supply is switched on, it is recognized there is no finisher, and a bridge unit is fitted.
		• Finisher connector set fault • In a machine which has a bridge unit connected, a finisher is not fitted • Finisher defective
		Connect finisher or disconnect bridge unit, and turn the power off/on

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Service Call 816-899

SC800 (Controller)

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
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

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
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

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
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

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
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.
		• Turn the main power off/on. • Replace the controller board.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC840-00	D	EEPROM access error
		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
		-

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC841-00	D	EEPROM read data error
		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.
		-

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC842-00	C	Nand-Flash updating verification error
		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
		Turn the main power off/on.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC842-01	B	Nand-Flash bad block number exceeding the threshold
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC842-02	B	Number of times of Nand-Flash block erase exceeding the threshold
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC853-00	B	Bluetooth device connection error
		The Bluetooth hardware (USB type) was connected after the machine was turned on.
		The Bluetooth hardware (USB type) was connected after the machine was turned on.
		Turn the main power with the Bluetooth hardware (USB type) connected.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC854-00	B	Bluetooth device disconnected
		The Bluetooth hardware (USB type) was disconnected after the machine was turned on.
		The Bluetooth hardware (USB type) was disconnected after the machine was turned on.
		Turn the main power with the Bluetooth hardware (USB type) connected.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC855-01	B	Wireless LAN board error (driver attachment failure)
		Wireless LAN board error (wireless LAN card: 802.11 is covered)
		• Defective wireless LAN board • Loose connection
		• Turn the main power off/on. • Replace wireless LAN board

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC855-02	B	Wireless LAN board error (driver initialization failure)
		Wireless LAN board error (wireless LAN card: 802.11 is covered)
		• Defective wireless LAN board • Loose connection
		• Turn the main power off/on. • Replace wireless LAN board

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC857-00	B	USB I/F Error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC858-01	-	Data encryption conversion error (HDD Key Setting Error)
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC858-02	A	Data encryption conversion error (NVRAM read/write error)
		A serious error occurred after data conversion during an attempt to update the encryption key.
		NVRAM defective
		Replace the board.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC858-30	A	Data encryption conversion error (NVRAM Before Replace error)
		A serious error occurred after data conversion during an attempt to update the encryption key.
		Software error such as conversion parameters being invalid.
		Replace the board.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC858-31	A	Data encryption conversion error (Other Error)
		A serious error occurred after data conversion during an attempt to update the encryption key.
		Controller board defective
		Replace the board.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC859-01	B	Data encryption conversion HDD conversion error (HDD check error)
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC859-02	B	Data encryption conversion HDD conversion error (Power failure during conversion)
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC859-10	B	Data encryption conversion HDD conversion error (Data read/write command error)
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC860-00	B	HDD startup error at main power on (HDD error)

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution

		• 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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC863-01	D	HDD data read failure
		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.)

		Guide for when to replace the HDD
		
		1. When SC863 has occurred ten times or more
		   • The interval is short.
		   • Repeatedly occurs in the same situation (At power-on, etc.).
		   • Startup takes a long time when the main power is turned on.
		2. It takes a long time after main power on for the operation panel to become ready.
		
		HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC863-02	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in partition "a".)

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
		Guide for when to replace the HDD 1. When SC863 has occurred ten times or more • The interval is short. • Repeatedly occurs in the same situation (At power-on, etc). • Startup takes a long time when the main power is turned on. 2. It takes a long time after main power on for the operation panel to become ready. HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC863-03	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in partition "b".)
		Guide for when to replace the HDD 1. When SC863 has occurred ten times or more • The interval is short. • Repeatedly occurs in the same situation (At power-on, etc). • Startup takes a long time when the main power is turned on. 2. It takes a long time after main power on for the operation panel to become ready. HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC863-04	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in partition "c".)
		Guide for when to replace the HDD 1. When SC863 has occurred ten times or more • The interval is short. • Repeatedly occurs in the same situation (At power-on, etc). • Startup takes a long time when the main power is turned on. 2. It takes a long time after main power on for the operation panel to become ready. HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC863-05	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in partition "d".)
		Guide for when to replace the HDD 1. When SC863 has occurred ten times or more • The interval is short. • Repeatedly occurs in the same situation (At power-on, etc). • Startup takes a long time when the main power is turned on. 2. It takes a long time after main power on for the operation panel to become ready. HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC863-06	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in partition "e".)
		Guide for when to replace the HDD 1. When SC863 has occurred ten times or more • The interval is short. • Repeatedly occurs in the same situation (At power-on, etc.) • Startup takes a long time when the main power is turned on. 2. It takes a long time after main power on for the operation panel to become ready. HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC863-07	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in partition "f".)

		Guide for when to replace the HDD
		
		1. When SC863 has occurred ten times or more
		
		    • The interval is short.
		    • Repeatedly occurs in the same situation (At power-on, etc).
		    • Startup takes a long time when the main power is turned on.
		
		2. It takes a long time after main power on for the operation panel to become ready.
		
		HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC863-08	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in partition "g".)
		Guide for when to replace the HDD 1. When SC863 has occurred ten times or more • The interval is short. • Repeatedly occurs in the same situation (At power-on, etc). • Startup takes a long time when the main power is turned on. 2. It takes a long time after main power on for the operation panel to become ready. HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC863-09	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in partition "h".)
		Guide for when to replace the HDD 1. When SC863 has occurred ten times or more • The interval is short. • Repeatedly occurs in the same situation (At power-on, etc). • Startup takes a long time when the main power is turned on. 2. It takes a long time after main power on for the operation panel to become ready. HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC863-10	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in partition "i".)
		Guide for when to replace the HDD 1. When SC863 has occurred ten times or more • The interval is short. • Repeatedly occurs in the same situation (At power-on, etc). • Startup takes a long time when the main power is turned on. 2. It takes a long time after main power on for the operation panel to become ready. HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC863-11	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in partition "¡".)
		Guide for when to replace the HDD 1. When SC863 has occurred ten times or more • The interval is short. • Repeatedly occurs in the same situation (At power-on, etc). • Startup takes a long time when the main power is turned on. 2. It takes a long time after main power on for the operation panel to become ready. HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC863-12	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in partition "k".)
		Guide for when to replace the HDD 1. When SC863 has occurred ten times or more • The interval is short. • Repeatedly occurs in the same situation (At power-on, etc.) • Startup takes a long time when the main power is turned on. 2. It takes a long time after main power on for the operation panel to become ready. HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC863-13	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in partition "l".)

		Guide for when to replace the HDD
		
		1. When SC863 has occurred ten times or more
		
		    • The interval is short.
		
		    • Repeatedly occurs in the same situation (At power-on, etc).
		
		    • Startup takes a long time when the main power is turned on.
		
		2. It takes a long time after main power on for the operation panel to become ready.
		
		HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC863-14	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in partition "m".)
		Guide for when to replace the HDD 1. When SC863 has occurred ten times or more • The interval is short. • Repeatedly occurs in the same situation (At power-on, etc). • Startup takes a long time when the main power is turned on. 2. It takes a long time after main power on for the operation panel to become ready. HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC863-15	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in partition "n".)
		Guide for when to replace the HDD 1. When SC863 has occurred ten times or more • The interval is short. • Repeatedly occurs in the same situation (At power-on, etc.). • Startup takes a long time when the main power is turned on. 2. It takes a long time after main power on for the operation panel to become ready. HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC863-16	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in partition "o".)
		Guide for when to replace the HDD 1. When SC863 has occurred ten times or more • The interval is short. • Repeatedly occurs in the same situation (At power-on, etc.). • Startup takes a long time when the main power is turned on. 2. It takes a long time after main power on for the operation panel to become ready. HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC863-17	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in partition "p".)
		Guide for when to replace the HDD 1. When SC863 has occurred ten times or more • The interval is short. • Repeatedly occurs in the same situation (At power-on, etc.). • Startup takes a long time when the main power is turned on. 2. It takes a long time after main power on for the operation panel to become ready. HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC863-18	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in partition "q".)
		Guide for when to replace the HDD 1. When SC863 has occurred ten times or more • The interval is short. • Repeatedly occurs in the same situation (At power-on, etc.). • Startup takes a long time when the main power is turned on. 2. It takes a long time after main power on for the operation panel to become ready. HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC863-19	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in partition "r.)
		Guide for when to replace the HDD 1. When SC863 has occurred ten times or more • The interval is short. • Repeatedly occurs in the same situation (At power-on, etc.). • Startup takes a long time when the main power is turned on. 2. It takes a long time after main power on for the operation panel to become ready. HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC863-20	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in partition "r.)
		Guide for when to replace the HDD 1. When SC863 has occurred ten times or more • The interval is short. • Repeatedly occurs in the same situation (At power-on, etc.). • Startup takes a long time when the main power is turned on. 2. It takes a long time after main power on for the operation panel to become ready. HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC863-21	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in partition "t)
		Guide for when to replace the HDD 1. When SC863 has occurred ten times or more • The interval is short. • Repeatedly occurs in the same situation (At power-on, etc.). • Startup takes a long time when the main power is turned on. 2. It takes a long time after main power on for the operation panel to become ready. HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC863-22	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in partition "υ".)
		Guide for when to replace the HDD 1. When SC863 has occurred ten times or more • The interval is short. • Repeatedly occurs in the same situation (At power-on, etc.). • Startup takes a long time when the main power is turned on. 2. It takes a long time after main power on for the operation panel to become ready. HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC863-23	D	HDD data read failure
		The data written to the HDD cannot be read normally.
		Bad sectors were generated during operation. (An error occurred in partition "y".)
		Guide for when to replace the HDD 1. When SC863 has occurred ten times or more • The interval is short. • Repeatedly occurs in the same situation (At power-on, etc.). • Startup takes a long time when the main power is turned on. 2. It takes a long time after main power on for the operation panel to become ready. HDD access may be consuming time. Normal HDD access time after main power on is about 5 seconds. If the machine is not waiting for the engine to be ready and it still takes 20 to 30 seconds or more, the HDD may be the cause. If there is a problem with the HDD, HDD-related SCs such as SC860 and SC863 will occur frequently. Print the SC log data and check them.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC864-01	D	HDD data CRC error
		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 disklabel area.)
		• Format the HDD. • Replace the HDD.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC864-02	D	HDD data CRC error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC864-03	D	HDD data CRC error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC864-04	D	HDD data CRC error
		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.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC864-05	D	HDD data CRC error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC864-06	D	HDD data CRC error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC864-07	D	HDD data CRC error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC864-08	D	HDD data CRC error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC864-09	D	HDD data CRC error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC864-10	D	HDD data CRC error
		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.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC864-11	D	HDD data CRC error
		During HDD operation, the HDD returned a CRC error.
		Bad sectors were generated during operation. (An error occurred in partition "¡".)
		• Format the HDD. • Replace the HDD.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC864-12	D	HDD data CRC error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC864-13	D	HDD data CRC error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC864-14	D	HDD data CRC error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC864-15	D	HDD data CRC error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC864-16	D	HDD data CRC error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC864-17	D	HDD data CRC error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC864-18	D	HDD data CRC error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC864-19	D	HDD data CRC error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC864-20	D	HDD data CRC error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC864-21	D	HDD data CRC error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC864-22	D	HDD data CRC error
		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.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC864-23	D	HDD data CRC error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC865-00	D	HDD access error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC865-01	D	HDD access error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC865-02	D	HDD access error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC865-03	D	HDD access error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC865-03	D	HDD access error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC865-05	D	HDD access error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC865-06	D	HDD access error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC865-07	D	HDD access error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC865-08	D	HDD access error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC865-09	D	HDD access error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC865-10	D	HDD access error
		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.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC865-11	D	HDD access error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC865-12	D	HDD access error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC865-13	D	HDD access error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC865-14	D	HDD access error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC865-15	D	HDD access error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC865-16	D	HDD access error
		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.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC865-17	D	HDD access error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC865-18	D	HDD access error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC865-19	D	HDD access error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC865-20	D	HDD access error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC865-21	D	HDD access error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC865-22	D	HDD access error
		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.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC865-23	D	HDD access error
		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.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC866-00	B	SD card authentication error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC867-00	D	SD card removed
		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).
		Turn the main power off/on.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC867-01	D	SD card removed
		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).
		Turn the main power off/on.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC867-02	D	SD card removed
		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).
		Turn the main power off/on.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC868-00	D	SD card access error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC868-01	D	SD card access error
		The SD controller returned an error during operation. (Error occurred at the mount point of /mnt/sd1)
		• SD card defective • SD controller defective

SC No.	Level	Error Name / Error Condition / Major Cause / Solution

		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC868-02	D	SD card access error
		The SD controller returned an error during operation. (Error occurred at the mount point of /mnt/sd1)
		• SD card defective • SD controller defective

SC No.	Level	Error Name / Error Condition / Major Cause / Solution

		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
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.)

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC870-08	B	Address Book data error (Machine configuration: HDD is present but the space for storing the Address Book is unusable.)
SC870-09	B	Address Book data error (Machine configuration: Inconsistency in the NVRAM area used for storing settings required for Address Book configuration.)
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.)

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
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.)
SC870-60	B	Address Book data error (Unable to obtain the on/off setting for administrator authentication (06A and later).)

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
		When an error related to the Address Book is detected during startup or operation.
		• Software bug • Inconsistency of Address Book source location (machine/delivery server/LDAP server) • Inconsistency of Address Book encryption setting or encryption key (NVRAM or HDD was replaced individually without formatting the Address Book) • Address Book storage device (SD/HDD) was temporarily removed or hardware configuration does not match the application configuration. • Address Book data corruption was detected.
		• Check the HDD connection. • Initialize all UCS settings and address/authentication information (SP5-846-046). • Initialize the Address Book partition (SP5-832-006).

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC872-00	B	HDD mail reception error
		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).

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC873-00	B	HDD mail reception error
		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

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC875-01	D	Delete all error (HDD erasure) (hddchack –i error)
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.
		Turn the main power off/on.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC876-01	D	Log Data Error 1
		An error was detected in the handling of the log data at power on or during machine operation.
		Damaged log data file
		Initialize the HDD (SP5-832-004).

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC876-02	D	Log Data Error 2
		An error was detected in the handling of the log data at power on or during machine operation.
		Log encryption is enabled but encryption module is not installed.
		• Replace or set again the encryption module. • Disable the log encryption setting.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC876-03	D	Log Data Error 3
		An error was detected in the handling of the log data at power on or during machine operation.
		Inconsistency of encryption key between NV-RAM and HDD.
		• Disable the log encryption setting. • Initialize LCS memory (SP5801-019). • Initialize the HDD (SP5-832-004).

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC876-04	D	Log Data Error 4
		An error was detected in the handling of the log data at power on or during machine operation.
		• Log encryption key is disabled but the log data file is encrypted. (NVRAM data corruption) • Log encryption key is enabled but the log data file is not encrypted. (NVRAM data corruption)
		Initialize the HDD (SP5-832-004).

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC876-05	D	Log Data Error 5
		An error was detected in the handling of the log data at power on or during machine operation.
		• Only the NV-RAM has been replaced with one previously used in another machine. • Only the HDD has been replaced with one previously used in another machine.
		• Attach the original NV-RAM. • Attach the original HDD. • With the configuration that caused the SC, initialize the HDD (SP5-832-004).

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC876-99	D	Log Data Error 99
		An error was detected in the handling of the log data at power on or during machine operation.
		Other causes
		-

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC877-00	B	Data Overwrite Security card error
		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.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC878-00	D	TPM electronic authentication error
		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 the board.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC878-01	D	USB Flash error
		USB Flash file system error
		USB Flash file system has been destroyed.
		Replace the controller board.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC878-02	D	TPM error
		Error occurred in the TPM or TPM driver.
		TPM defective
		Replace the controller board.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC878-03	D	TCSD error
		Error occurred in TPM software stack.
		• Unable to start TPM • Necessary files missing from the TPM.
		Replace the controller board.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC880-00	D	MLB error
		Reply to MLB access was not returned within a specified time.
		MLB defective
		• Replace the MLB. • Remove the MLB.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC881-01	D	Authentication area error
		• Software error detected. • This error may occur even if IC card option (ERIE/AYU/Greenland etc.) is not installed.
		• This is caused by accumulation of abnormal authentication information in the software. (User operation will not directly cause it.) • Occurs when authentication is done. Example: When a job is sent to the printer/when logged on from the operation panel/when logged on from a Web browser
		Turn the main power off/on.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC882-01	D	Smart Operation Panel error (Smart Operation Panel Software Invalid error)
		Occurs when the validity of the operation unit is not observed.
		• Memory corruption of the operation panel software. • Invalid applications are listed in the operation panel.
		• Format the Operation panel through SP mode • Updating the firmware

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC899-00	D	Software performance error (signal reception end)
		-
		Occurs when an internal program behaves abnormally.
		In case of a hardware defect • Replace the hardware. In case of a software error • Turn the main power off/on. • Try updating the firmware.

Service Call 900-998

SC900 (Engine: Others)

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC995-01	D	CPM setting error 1
		Comparison of machine serial number (11 digits) and machine identification code. Details: • Machine serial number cannot be identified because of BCU replacement or malfunctioning. • Machine serial number cannot be identified because of NV-RAM replacement
		Machine serial number (11 digits) or machine identification code does not match.
		• Enter the machine serial number using SP5-811, and then turn the power on/off. • Attach the NV-RAM that was installed previously.
SC995-02	D	CPM setting error 2
		Comparison of machine serial number (11 digits) and machine identification code. Details: Machine serial number cannot be identified because of NV-RAM replacement or malfunctioning.
		Machine serial number (11 digits) or machine identification code does not match.
		• Attach the NV-RAM that was installed previously. • Download data on the NV-RAM using SP5-825.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC995-03	D	CPM setting error 3
		Comparison of machine serial number (11 digits) and machine identification code. Details: Unable to recognize machine identification code because the controller was replaced incorrectly or is malfunctioning.
		Machine serial number (11 digits) or machine identification code does not match.
		Replace it with a specified controller.
SC995-04	D	CPM setting error 4
		Comparison of machine serial number (11 digits) and machine identification code.
		Machine serial number (11 digits) or machine identification code does not match.
		Return the parts to the original configuration, and then replace them according to the manual.

SC900 (Controller)

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC900-00	D	Electric counter error
		The electric total counter value is out of specification. Error is detected when increasing the total counter.
		• Unexpected NV-RAM is attached. • NV-RAM defective • NV-RAM data corrupted. • Data written to unexpected area because of external factor etc. • The count requested by the SRM on receiving PRT is not completed.
		Replace the NV-RAM.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC910-00	B	External Controller Error 1
		Notification from external application (external controller)
		Subject to external application (external controller) specification
		Turn the main power off/on.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC911-00	B	External Controller Error 2
		Notification from external application (external controller)
		Subject to external application (external controller) specification
		Turn the main power off/on.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC912-00	B	External Controller Error 3
		Notification from external application (external controller)
		Subject to external application (external controller) specification
		Turn the main power off/on.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC913-00	B	External Controller Error 4
		Notification from external application (external controller)
		Subject to external application (external controller) specification
		Turn the main power off/on.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC914-00	B	External Controller Error 5
		Notification from external application (external controller)
		Subject to external application (external controller) specification
		Turn the main power off/on.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC915-01	A	External Controller Error 6 (Egret board error)
SC915-02	A	External Controller Error 6 (HDD serial communication error)
SC915-03	A	External Controller Error 6 (CPU temperature rise)
SC915-04	A	External Controller Error 6 (Unable to communicate with GW controller because invalid command was received)
SC915-05	A	External Controller Error 6(Unable to communicate with GW controller because of an error)
		Notification from external application (external controller)
		Notification from external application (external controller)
		Replace the Egret controller board.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC919-00	D	External controller down
		While EAC (External Application Converter), the conversion module, was operating normally, the receipt of a power line interrupt signal from the FLUTE serial driver was detected, of BREAK signal from the other station was detected.
		External controller and the machine had been operating correctly (*) but the external controller was turned off or rebooted, or the video bus was disconnected. * Printing or scanning using the external controller.
		Turn the main power off/on.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC920-00	B	Printer application error (No response at PM startup)
SC920-01	B	Printer application error (Timeout during PM operation)
SC920-02	B	Printer application error (Unable to obtain work memory)
SC920-03	B	Printer application error (Unable to start filter process)
SC920-04	B	Printer application error (Abnormal termination of filter process)
		When an error is detected in the application, which makes continued operation impossible.
		• Software bug • Unexpected hardware configuration (such as insufficient memory)
		Turn the main power off/on.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC921-00	B	Printer application error (Resident font not found)
		Resident font was not found at printer startup.
		Preinstalled font files not found.
		Turn the main power off/on.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC921-01	B	Printer application error (Optional font not found)
		Optional font required by an emulation was not found at printer startup.
		Optional emulation font not found
		Turn the main power off/on.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC925-00	B	NetFile function error
SC925-01	B	NetFile function error

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
		The NetFile file management on the HDD cannot be used, or a NetFile management file is corrupted and operation cannot continue.
		• HDD defective • HDD inconsistency caused by power failure during HDD access, etc. • Software bug

		If another SC related to HDD errors (SC860 to SC865) is issued at the same time, the HDD is the cause. Solve the other SC.
		
		• If SC860 to SC865 is not issued
		
		    • Turn the main power off/on.
		
		    • If this does not work, initialize the HDD NetFile partition (SP5-832-011). Approval by the customer is required because received fax message waiting to be delivered and documents waiting to be captured will be lost.
		
		    Procedure:
		
		      1. Go into the User Tools mode and do "Delivery Settings" to print all received fax documents that are scheduled for delivery. Then erase them.
		
		      2. In the User Tools mode, do Document Management> Batch Delete Transfer Documents.
		
		      3. Do SP5832-011, then turn the machine power off and on.
		
		• If this does not solve the problem, initialize all partitions of the HDD (SP5-832-001), then turn the machine power off and on.
		
		Approval by the customer is required because documents and Address Book information in the HDD will be lost. Received fax messages stored are protected but the order may be changed.
		
		• If this does not solve the problem, replace the HDD.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC990-00	D	Software operation error
		Software attempted an unexpected operation.
		• Parameter error • Internal parameter error • Insufficient work memory • Operation error caused by abnormalities that are normally undetectable.
		• Turn the main power off/on. • Reinstall the software of the controller and Controller board.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC991-00	C	Recoverable software operation error
		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

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC992-00	D	Undefined SC issued.
		An SC, that is not controlled by the system, occurred.
		• An SC for the previous model was used mistakenly, etc. • Basically a software bug.
		Turn the main power off/on.

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SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC994-00	C	Operation error caused by abnormalities that are normally undetectable.
		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.
		Logging only.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC997-00	D	Application function selection error
		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.

SC No.	Level	Error Name / Error Condition / Major Cause / Solution
SC998-00	D	Application start error
		• 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.
		• Turn the main power off/on. • Check the optional RAM, DIMM, boards • Check the combination of programs • Replace the controller board.

When SC549 Is Displayed

Troubleshooting Flowchart

Fusing Shield Check

<Procedure 1: Operation check for the lower side of the shield detection feeler>

1. Place the fusing unit on a flat place and tilt it towards the drawer connector [A].

2. Move the shield drive gear with your hands to put the upper surface of the feeler [A] in a horizontal position.

3. Keep your fingers off the shield drive gear.

4. **Make sure that the shield detection feeler [A] moves down to the lowest point by its own weight.**
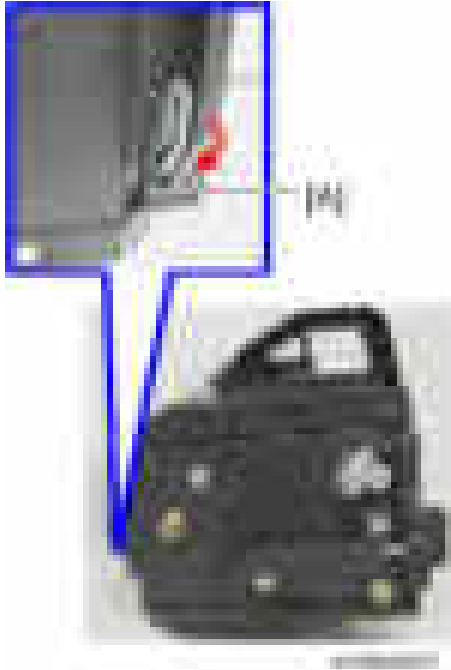
- The feeler moves smoothly: OK

- The feeler does not move / stops during moving / moves but slowly: NG

<Procedure 2: Operation check for the upper side of the shield detection feeler>

1. **Place the fusing unit on a flat place with the drawer connector [A] turned up and the handle [B] touching a flat surface.**

2. **Move the shield drive gear with your hands to put the upper surface of the feeler [A] in a vertical position.**

3. **Keep your fingers off of the shield drive gear.**

4. **Make sure that the shield detection feeler [A] moves up to the highest point by its own weight.**

- The feeler moves smoothly: OK
- The feeler does not move / stops during moving / moves but slowly: NG

<Results>

- Both Procedure 1 and 2 are OK: No problem.

- Either Procedure 1 or 2 is NG: The mechanism is blocked.

- The shield detection feeler never moves while moving the shield drive gear by hands or fingers: Locked.

Solution

By tilting the fusing unit, you can check whether the feeler does not move smoothly due to burrs on a part in the unit, and remove the burrs.

1. **Tilt the fusing unit [A] approx. 30°.**
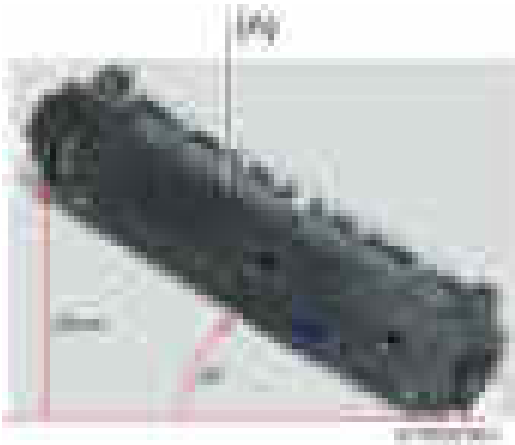
2. **Put the fusing unit back to the horizontal position.**

3. **Perform the checking procedures (page 660).**

   There is no blockage: Resolved

   There is some blockage: Not resolved

4. **Tilt the fusing unit [A] approx. 30° in the opposite direction from step 1.**

There is no blockage: Resolved

There is some blockage: Not resolved

When SC670 Is Displayed

Troubleshooting Flowchart

Jam Detection

Jam Display

When a jam occurs, cause positions will blink.

Sensor Locations
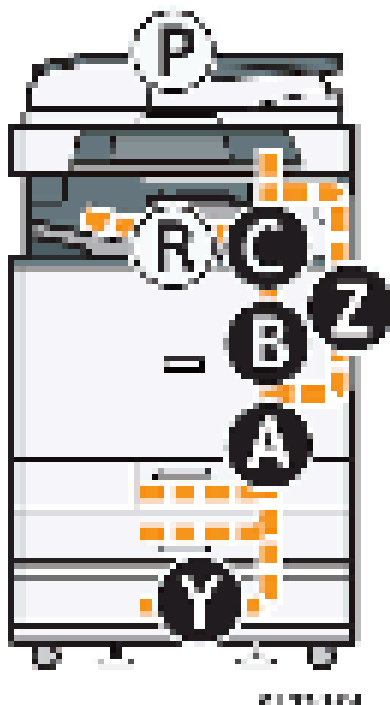
Clearing a Paper Jam

⚠ CAUTION

- Do not touch any components except the specified parts for removing jammed paper. Some parts can burn you because they become hot during operation.

🔽 Note

- Do not turn the power off during removal of jammed paper. If you turned the power off, functions or values that were previously set will be deleted.

- Be sure not to tear paper up, and that you remove all pieces. Remaining scraps of paper in the machine could cause another paper jam or machine failure.

- If there are multiple jam locations, check all the locations that are displayed at the same time.

See the decals on the machine for how to remove jammed paper.

Paper Jam History

History Checking Method

Plotter Jam History can be displayed using SP7-507.

- SP7-507-001 Plotter Jam History Latest
- SP7-507-002 Plotter Jam History Latest1
- SP7-507-003 Plotter Jam History Latest2
- SP7-507-004 Plotter Jam History Latest3
- SP7-507-005 Plotter Jam History Latest4
- SP7-507-006 Plotter Jam History Latest5
- SP7-507-007 Plotter Jam History Latest6
- SP7-507-008 Plotter Jam History Latest7
- SP7-507-009 Plotter Jam History Latest8
- SP7-507-010 Plotter Jam History Latest9

Paper Jam Display

- CODE: Indicates the jam code.
- SIZE: Indicates the paper size code.
- TOTAL: Indicates the total counter (SP7-502-001).
- DATE: Indicates the date when the jam occurred.

Note

- The jam history of the 10 latest jams is displayed.
- The first jam is not included in the history record.

Jam Codes and Display Codes

Note

- Cause code: Jam cause code displayed by log data
- Display code: Jam position displayed on control panel

ARDF DF3090

Cause code	Cause of jam	Display code
14	Paper did not reach projection sensor	P
64	Paper held up at projection sensor	P
16	Paper did not reach registration sensor	P
66	Paper held up at registration sensor	P
17	Paper did not reach output sensor	P
67	Paper held up at output sensor	P
239	Misfeed:Original Removed	P

MFP

Cause code	Cause of jam	Display code

1	There is paper in first transport sensor	A
1	There is paper in second transport sensor	A
1	There is paper in registration sensor	B
1	There is paper in fixing inlet sensor	C
1	There is paper in fixing outlet sensor	C
1	There is paper in output sensor	C
1	There is paper in Inversion sensor	C
1	There is paper in duplex outlet sensor	Z
1	There is paper in duplex inlet sensor	Z
3	Paper not fed from tray 1	A1
4	Paper not fed from tray 2	A2
8	Paper not supplied to bypass tray	A
9	Duplex not fed	Z
10	Timing disappearance	Only remaining paper position information displayed
11	Paper did not reach first transport sensor	A
12	Paper did not reach second transport sensor	A
17	Paper did not reach registration sensor	A
18	Fixing inlet sensor not reached	B
19	Paper did not reach fixing outlet sensor	C
20	Paper did not reach output sensor	C
51	Paper did not clear first transport sensor	A
52	Paper did not clear second transport sensor	A
57	Paper did not clear registration sensor	B
60	Paper did not clear output sensor	C

24	Paper did not reach Inversion sensor	C
64	Paper did not clear Inversion sensor	C
25	Paper did not reach duplex outlet sensor	Z
25	Paper did not reach duplex outlet sensor & there is no paper in duplex inlet sensor	Z
65	Paper did not clear duplex outlet sensor	Z
27	Paper did not reach duplex inlet sensor	C
27	Paper did not reach duplex inlet sensor & there is no paper in Inversion sensor	Z
67	Paper did not clear duplex inlet sensor	A

Paper Feed Unit PB3150

Cause code	Cause of jam	Display code
5	Paper not fed from tray 3	Y1
13	Paper did not reach vertical transport sensor 3	Y
53	Paper did not clear vertical transport sensor 3	Y
1	There is paper in vertical transport sensor 3	Y

Paper Feed Unit PB3210

Cause code	Cause of jam	Display code
5	Paper not fed from tray 3	Y1
13	Paper did not reach vertical transport sensor 3	Y
53	Paper did not clear vertical transport sensor 3	Y
1	There is paper in vertical transport sensor 3	Y
6	Paper not fed from tray 4	Y2
14	Paper did not reach vertical transport sensor 4	Y
54	Paper did not clear vertical transport sensor 4	Y

Cause code	Cause of jam	Display code
1	There is paper in vertical transport sensor 4	Y

Internal Finisher SR3130

Cause code	Cause of jam	Display code
100	Paper did not reach inlet sensor	R1-R2
101	Paper held up at inlet sensor	R1-R2
102	Paper did not reach transport sensor	R1-R2
103	Paper held at transport sensor	R1-R2
104	Paper output unit	R1-R2
105	Front jogger motor	R1-R2
106	Rear jogger motor	R1-R2
107	Shift roller motor	R1-R2
108	Strike roller motor	R1-R2
109	Paper output guide plate open/close motor	R1-R2
110	Stapler displacement motor	R1-R2
111	Shift tray ascent/descent motor	R1-R2
112	Stapler motor	R1-R2
113	Paper press motor	R1-R2
114	Punch motor	R1-R2
115	Punch displacement motor	R1-R2
116	Horizontal registration displacement motor	R1-R2
148	Paper output end not responding	R1-R2
149	Main instruction data defect	R1-R2

Internal Finisher SR3180

Cause code	Cause of jam	Display code
300	Paper did not reach inlet sensor	R
301	Paper held up at inlet sensor	R
302	Paper did not reach output sensor	R
303	Non-stapled paper held at output sensor	R
304	Shift motor	R
305	Junction solenoid motor	R
306	Paper output pressure release motor	R
307	Stapler motor	R
348	Paper output end not responding	R
349	Main instruction data defect	R
308	Stapled paper held at output sensor	R

Paper Size Code

Size Code	Paper Size	Size Code	Paper Size
005	A4 LEF	141	B4 SEF
006	A5 LEF	142	B5 SEF
014	B5 LEF	160	DLT SEF
038	LT LEF	164	LG SEF
044	HLT LEF	166	LT SEF
132	A3 SEF	172	HLT SEF
133	A4 SEF	255	Others
134	A5 SEF		

Image Quality

When an Abnormal Image Is Generated
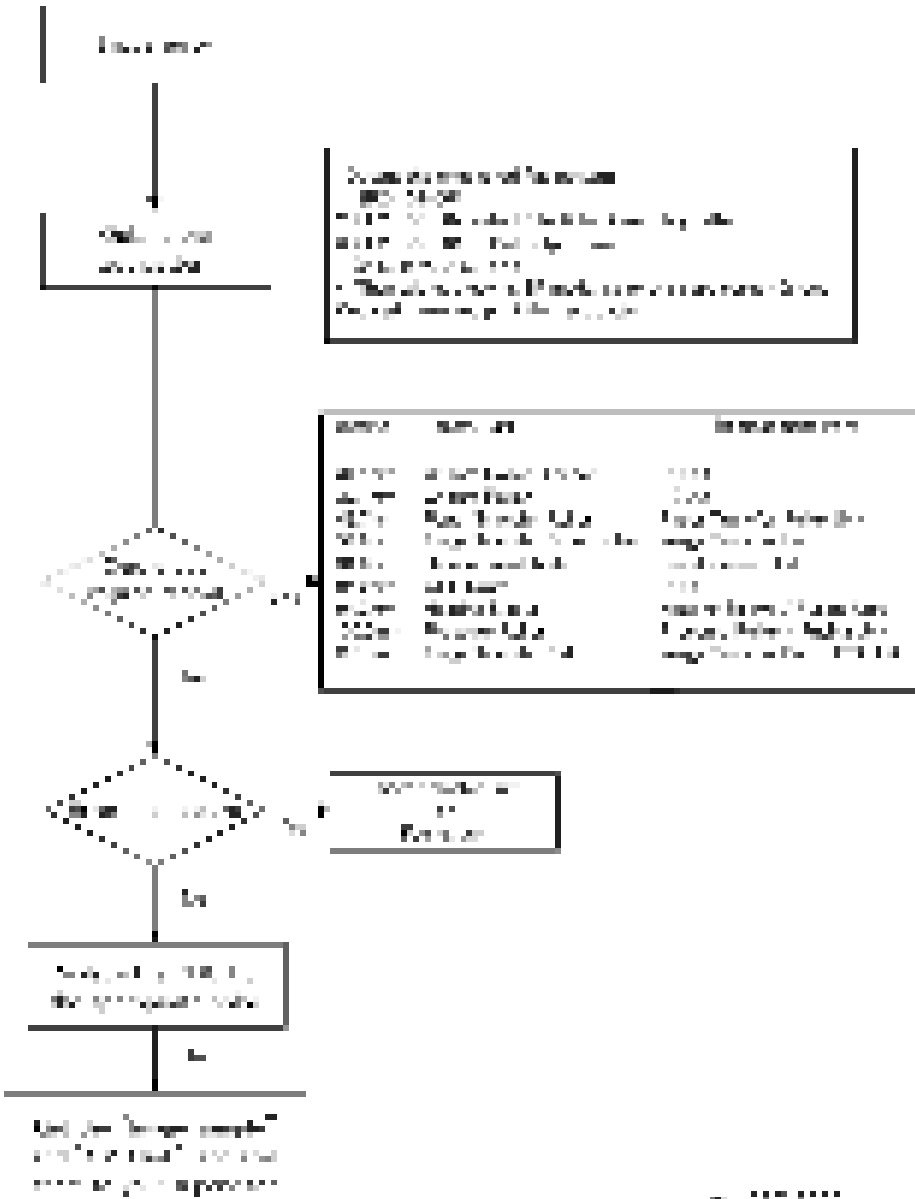
D147 RTB 132
Modified

OCR Unit Type M2

⬇ Note

- This option is available with only D176/D177.

Recovery Procedure

When this option is installed, a function is saved on the HDD, and ID information on the SD card is saved in the NVRAM. Therefore, when replacing the HDD and NVRAM, this option must be reinstalled.

When storing the original SD card

- When only the HDD is replaced

  Reinstall using the original SD card.

- When only the NVRAM is replaced

  When performing upload/download of NVRAM data, reinstall using the original SD card.

  When not performing upload/download of NVRAM data, order and reinstall a new SD card (service part).

- When the HDD and NVRAM are replaced simultaneously

  Reinstall using the original SD card.

If the original SD card is lost

  Order and reinstall a new SD card (service part).

⬇ Note

- Reinstallation procedure is the same way as installation (page 228).

Electrical Component Defects

Name	Output connector	Capacity	Part number	Serviceable in the field?
		Voltage	Part name	Remarks
FU101	CN985 (Fusing center heater) CN986 (Fusing edge heater)*1	15A*2	11071241*3	Yes
		AC	TLC-15A-N4*4	Installed on AC control board
FU102	CN988 (DC power supply)	15A*2	11071241*3	Yes
		AC	TLC-15A-N4*4	Installed on AC control board
FU110	CN921 (Mainframe feed heater, Tray heater) CN922 (Anti-Condensation Heater (Scanner), Anti-Condensation Heater (PCU))	2A	11071225	No
		AC	SLT 250V 2A	Installed on DHB*5
FU3	CN912(IOB, SIO)	8A	11071283	Yes
		24V	FBT 250V 8A(EM)	Installed on DC power supply
FU4	CN917 (Interlock switch [IOB])	8A	11071283	Yes
		24V	FBT 250V 8A(EM)	Installed on DC power supply
FU5	CN917 (Interlock switch [IOB])	8A	11071283	Yes
		24V	FBT 250V 8A(EM)	Installed on DC power supply
FU7	CN913(FIN) CN914(BANK)	8A	11071283	Yes
		24V	FBT 250V 8A(EM)	Installed on DC power supply

*1 NA only

*2 8A for EU/AA/CHN

*3 11071239 for EU/AA/CHN

*4 TLC-8A-N4 for EU/AA/CHN

*5 DHB is a service option

Fuse location

5

6. Environment

Environment

Energy Saver Modes

Customers should use energy saver modes properly, to save energy and protect the environment.
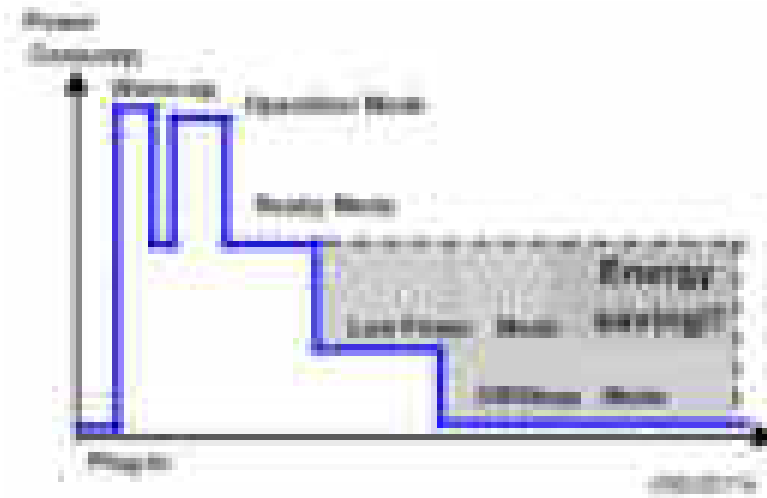
The area shaded grey in this diagram represents the amount of energy that is saved when the timers are at the default settings. If the timers are changed, then the energy saved will be different. For example, if the timers are all set to 240 min., the grey area will disappear, and no energy is saved before 240 min. expires.

*1. The settings related to Low Power Mode are available only when setting "1" on SP5101-104.

SPs for setting energy saver mode

SP name	Value	NA	EU	CHN	TWN	Asia
SP5101-004 (Timer Set: Low Power)	Min.	60(s)	60(s)	60(s)	60(s)	60(s)
	Default	60(s)	60(s)	60(s)	60(s)	60(s)
	Max.	1800(s)	1800(s)	14400(s)	14400(s)	14400(s)
	Step	1(m)	1(m)	1(m)	1(m)	1(m)

SP name	Value	NA	EU	CHN	TWN	Asia
SP5101-008 (Timer Set: -)	Min.	0 (Disable)	0 (Disable)	0 (Disable)	0 (Disable)	0 (Disable)
	Default	0 (Disable)	0 (Disable)	0 (Disable)	0 (Disable)	0 (Disable)
	Max.	1 (Enable)	1 (Enable)	1 (Enable)	1 (Enable)	1 (Enable)
	Step	-	-	-	-	-
SP5101-104 (Timer Set: Low Power Set)	Min.	0 (Disable)	0 (Disable)	0 (Disable)	0 (Disable)	0 (Disable)
	Default	0 (Disable)	0 (Disable)	0 (Disable)	0 (Disable)	0 (Disable)
	Max.	1 (Enable)	1 (Enable)	1 (Enable)	1 (Enable)	1 (Enable)
	Step	-	-	-	-	-

Timer Settings

The user can set these timers with User Tools (System settings > Timer setting)

- Energy saver timer (1-30 min for NA and EU/1-240 min for others): Low Power Mode. Default setting: 1 min.
- Auto off timer (1-60 min for NA and EU/1-240 min for others): Off/Sleep Mode. Default setting: 1 min.

Normally, Energy Saver timer < Auto Off timer. But, for example, if Auto Off timer < or = Energy Saver timer, the machine goes immediately to Off mode when the Auto Off timer expires. It skips the Energy Saver mode.

Example

- Low power: 15 min.
- Auto Off: 1 min.
- The machine goes to Off mode after 1 minute. Low Power mode is not used.

Return to Stand-by Mode

Low Power Mode

The recovery time depends on the model and the region.

- 5.1 sec. or less

Off/Sleep Mode

Recovery time.

- 5.6 sec. or less

Recommendation

We recommend that the default settings should be kept.

- If the customer requests that these settings should be changed, please explain that their energy costs could increase, and that they should consider the effects on the environment of extra energy use.

- If it is necessary to change the settings, please try to make sure that the Auto Off timer is not too long. Try with a shorter setting first, such as 30 min., then go to a longer one (such as 60 min.) if the customer is not satisfied.

- If the timers are all set to the maximum value, the machine will not begin saving energy until 240 minutes has expired after the last job. This means that after the customer has finished using the machine for the day, energy will be consumed that could otherwise be saved.

- If you change the settings, the energy consumed can be measured using SP8941, as explained below.

Energy Save Effectiveness

SP 8941 (Machine Status) keeps a record of the amount of time that the machine spends in each mode.

- 8941-001: Operating mode
- 8941-002: Standby mode
- 8941-004: Low power mode
- 8941-005: Off/sleep mode

With this data, and the power consumption values from the specifications, we can estimate the amount of energy that is used by the machine.

This should only be used as a reference value, because the power consumption specifications are measured in a controlled environment with a constant power supply.

To get an exact measurement at the customers site, a watt meter must be used to measure the actual energy consumed.

To use SP8941 to calculate the energy consumed:

- At the start of the measurement period, read the values of SP8941 001 to 005.
- At the end of the measurement period, read the values of SP8941 001 to 005 again.

- Find the amount of time spent in each mode (subtract the earlier measurement from the later measurement).

- Multiply this by the power consumption spec for each mode.

- Convert the result to kWh (kilowatt hours)

MEMO

MEMO

Model MET-C1
Machine Code:
D176/D177/D237
Appendices

October, 2014

TABLE OF CONTENTS

1. Appendices:Specifications

2. Appendices:Preventive Maintenance Tables

1. Appendices:Specifications

Specifications

General Specifications

Item	Spec.
Configuration:	Desktop
CPU:	PMC-Sierra RM7035-600MHz
RAM:	Standard: 1.5GB Option: 2GB (Extended)
Color Support:	Full color
Photosensitivity type:	Electrical Potential and OPC Drum
Copy process:	Laser beam scanning and electro-photographic printing
Development System:	Dry two-component magnetic brush development system
Fusing System:	QSU-Direct Heating (DH) Fusing System
First copy time*1:	<D176/D237> • Black & White: 5.5 Sec. or less • Color: 7.7 Sec. or less <D177> • Black & White: 5.5 Sec. or less • Color: 7.7 Sec. or less
Copy Speed:	<D176/D237> • Color: 20 sheets/min. • Black & White: 20 sheets/min. <D177> • Color: 25 sheets/min. • Black & White: 25 sheets/min.

Item	Spec.
Warm-Up-Time: (Normal Temperature 20C/68F, NRP)	D176/D237: 19 Sec. or less D177: 19 Sec. or less
Maximum original size:	A3 LEF, 11″ x 17″ LEF (297 x 432mm): A3 / DLT full size
Copy Size:	Main Unit upper tray (1st tray): A4 LEF, 11"x8 ½ (LT) LEF (A5 LEF and B5 LEF are able to set by using SP mode.) Main Unit lower tray (2nd tray): SRA3 SEF, A3 SEF, B4 SEF, A4 LEF/SEF, B5 SEF/LEF, A5 LEF/SEF, A6 SEF, B6 SEF, 12"x18" SEF, 11"x17"(DLT) SEF, 8 ½"x14" (LG) SEF, 8 ½"x13" (Foolscap) SEF, 8 ½"x11" (LT) LEF/SEF, 8¼"x14" (Government LG) SEF, 8 ¼"x13" (Folio) SEF, 8"x13"(F/GL), 8"x10" Bank lower tray: 12.6" x 17.7" / 12" x 18" to A5 LEF Bypass tray: 2.6"x17.7",12"x18"/305x458mm-A6SEF Custom size Width: 90 mm to 320 mm (Bypass) Length: 148 mm to 600 mm (FAX / Printer), 148mm to 457.2 mm (Copy / Document Box)
Paper weight:	• Tray 1,2: 60 to 300g/m^2 • Bypass tray: 52 to 300g/m^2 • Duplex: 52 to 169g/m^2
Missing image area:	• Leading edge: 4.2±1.5mm • Left/Right: 0.5 to 4.0mm • Trailing edge: 0.5 to 6.0mm (Duplex: 3.0 to 6.0mm)
Copy Scale (Zoom):	25 to 400%(1% step)
Resolution (Scanning):	600dpi x 600dpi
Resolution(Writing):	1200 x 600dpi (Standard Speed) 1200 x 1200dpi (Half Speed)
Gradation:	256 tones
Feeding System / Paper Capacity:	• 550 x 2 + 100 sheets • 550 x 2 + 550 x 1 + 100 sheets (3 drawers model) • 550 x 2 + 550 x 2 + 100 sheets (4 drawers model)

Item	Spec.
Continuous Copy:	1 to 999 Sheets
Power Source:	NA: 120 - 127V, 60Hz EU, AA, CN: 220 - 240V, 50/60Hz TW: 110V, 60Hz KO: 220V, 60Hz
Max. Watts:	NA, TW: 1.584kW or less EU, AA, CN, KO: 1.7kW or less
Dimensions (W x D x H):	EU (up to ADF): • 587 × 685 × 913 mm (23.2 × 27.0 × 36.0 inches) AA (up to exposure glass): • 587 × 685 × 788 mm (23.2 × 27.0 × 31.1 inches) NA (up to ADF): • 587 × 685 × 913 mm (23.2 × 27.0 × 36.0 inches)
Unit Occupation Dimensions (W x D):	1,149 × 1,236 mm (45.3 × 48.7 inches) (including the bypass tray and output trays)
Weight:	NA: Approx. 90kg (198.5 lb) EU: Approx. 90kg (198.5 lb) AA: Approx. 81kg (178.6 lb)

*1 A4 LEF, 1st paper feed tray, with book scanner.

Printer Specifications

Item	Spec.
Print Size:	Fixed size: Max. A3 LEF(297 x 420mm), 12 x 18 LEF (304.8 x 457.2mm) Custom: Max. 320 x 600mm (bypass tray)
Printer Language	Standard: PCL 5c/6, PDF Option: PostScript 3, PictBridge

Item	Spec.
Print Speed (A4 / 8 1/2 × 11 SEF):	D176/D237: 20 pages/minute D177: 25 pages/minute
Resolution:	200 dpi, 300 dpi, 400 dpi, 600 dpi, 1200 dpi
Interface:	Standard: • Ethernet interface (1000BASE-T/100BASE-TX/10BASE-T) • USB 2.0 (Type A) port (on the control panel) • USB 2.0 (Type B) port • SD card slot (on the control panel) Optional: • IEEE 1284 parallel interface • IEEE 802.11a/b/g/n wireless LAN interface • Gigabit Ether (1000BASE-T) (Optional for EFI) • Bluetooth interface
Protocol:	TCP/IP (IPv4/IPv6), ICMP, SNMP v1/v2/v3, DNS, Dynamic DNS, DHCP(v4/v6), SNTP, LLTD, LLMNR , WINS, NBT, IKEv1, FTP-C, SMTP-C, SMB-C, PSERVER, NPRINTER, SAP, NCP-C
USB Interface (Standard):	USB2.0 TypeA
Available Operating Systems:	Windows XP / Vista / 7 / 8 / Server 2003 / Server 2003 R2 / Server 2008 / Server 2008 R2 / Server 2012 and the successors / Mac OS X 10.5 or later
Fonts:	PCL: 45 fonts + International fonts 13 fonts PS: 136 fonts PDF: 136fonts IPDS: 108 fonts (Option)
Scale:	25% to 400%

Scan Specifications

Item	Spec.
Type	Full-color scanner

1

Item	Spec.
Scan Method	Flatbed scanning
Image Sensor Type	CCD Image Sensor
Originals:	Sheet, Book, Three-dimensional object
Available Original Size for Scanning:	Length: 10 to 297mm Width: 10 to 432mm
Auto Detectable Size for Originals Set to Book scanner:	EU, AA: A3 SEF, B4 SEF, A4 LEF/SEF, B5 LEF/SEF, A5 LEF, 8 1/2"x13"(Foolscap) SEF, (*SP mode adjustment is required : A5 SEF, 8"x13"(F) SEF, 8 1/4"x13"(Folio) SEF, 8K SEF, 16K LEF/SEF) NA: 11"x17"(DLT) SEF, 8 ½"x14"(LG) SEF, 8 ½"x11"(LT) LEF/SEF, 8 1/2"×5 1/2"(HLT) LEF, (*SP mode adjustment is required : 8 1/2"×5 1/2"(HLT)SEF)
Auto Detectable Size for Originals Set to ADF:	EU, AA: A3 SEF, B4 SEF, A4 LEF/SEF, B5 LEF/SEF, A5 LEF/SEF, B6 LEF/SEF, DLT SEF, LT SEF/LEF, 8 1/2"x13"(Foolscap) SEF, (*SP mode adjustment is required : 8"x13"(F) SEF, 8 1/4"x13"(Folio) SEF, 8K SEF, 16K LEF/SEF) NA: 11"x17" (DLT)SEF, 8 ½"x14" (LG)SEF, 8 ½"x11"(LT) LEF/SEF, 5 ½"x8 ½"(HLT) LEF/SEF, 8 1/2"×13"(Foolscap) SEF, 10"x14"SEF, 11"x15"SEF (detected the same as DLT SEF, Default = DLT SEF), 8"x10"SEF (detected the same as LT SEF, Default = LT SEF), 7 1/4"x10½"
Original Scanning Speed:	B&W: 54pages/minute (A4/LET LEF / 200dpi/300dpi) Push Scan Color: 54pages/minute (A4/LET LEF / 200dpi/300dpi) Push Scan
Gradation:	• Black & White: 2 tones • Color/Gray scale: 256 tones

Item	Spec.
Basic Scanning Resolution:	200 dpi
Compress Format for Binary B&W Image:	TIFF (MH/MR/MMR/JBIG2)
Compress Format for Gray Scale / Full Color:	JPEG
Interface:	• Ethernet (1000BASE-T/100BASE-TX/10BASE-T) • Wireless LAN (IEEE802.11a/b/g/n) • USB2.0 Type A • SD Card Slot
Protocol for Network Connection:	TCP/IP
Scanning Resolution for Sending email:	100dpi, 200dpi, 300dpi, 400dpi, 600dpi
Available Protocol for Sending email:	POP, SMTP, IMAP4
Output Format for Sending email*1:	TIFF, JPEG, PDF, Clear Light PDF, PDF/A
Scanning Resolution for Scan to Folder:	100 dpi, 200 dpi, 300 dpi, 400 dpi, 600 dpi
Available Protocol for Send to Folder:	SMB, FTP, NCP
Output Format for Send to Folder*1:	TIFF, JPEG, PDF, Clear Light PDF, PDF/A
Available Protocol for WSD Scanner Sending:	Web Services on Devices for Scanning
Scan Resolution for Network TWAIN Scanner:	100 to 1200 dpi
Available Protocol for Network TWAIN Scanner:	TCP/IP

1

Item	Spec.
Available Operating Systems for Network TWAIN Scanner:	Windows XP / 7 / 8 / Vista / Server2003 / 2003 R2 / Server 2008 / 2008 R2 / Server 2012 and the successors
Scanning Resolution for Scan to Network:	100 dpi, 200 dpi, 300 dpi, 400 dpi, 600 dpi
Scan Resolution for when Using WIA Scanner:	100 to 1200dpi
Available Protocol for when Using WIA Scanner:	TCP/IP
Available Operating Systems for WIA Scanner:	Windows Vista (SP1 or later)/7/8, Windows Server 2008/2008 R2/2012 (WIA scanner can function under both 32- and 64-bit operating systems.)

*1   Electric certificate can be attached when selecting [PDF], [Clear light PDF], or [PDF/A] as file format.

For   [PDF] or [Clear light PDF], Security Settings are available.

Other Specifications

HDD Specifications

Item	Spec.
Capacity for Document Box:	Approx. 73 GB Maximum: 9,000 pages (Total number of pages that can be accommodated stored with all functions combined.) Copier/B&W/A4 original: Approx. 9,000 pages Copier/Full Color/A4 original: Approx. 2,200 pages Printer/Full Color/A4/600 dpi, 2 bits: Approx. 9,000 pages Scanner/Full Color/A4/200 dpi, 8 bits/JPEG: Approx. 9,000 pages (Under the printer and scanner modes, the number of the pages that can be stored depends on the print image and original.)

Item	Spec.
Maximum number of stored documents:	3,000 documents
Number of pages supported by memory sorting:	Maximum: 2,000 pages Copier/B&W/A4 original: Approx. 2,000 pages Printer/B&W/A4/600 dpi, 4 bits: Approx. 2,000 pages (Under the printer mode, the number of the pages that can be sorted depends on the print image.)

Noise Emission

Sound power level:

Main Unit Only

Item	D176/D237	D177
Stand-by	32.4 dB (A)	32.5 dB (A)
Copying	BW: 59.5 dB (A) FC: 60.7 dB (A)	BW: 60.2 dB (A) FC: 61.6 dB (A)

Complete System

Item	D176/D237	D177
Stand-by	33.0 dB (A)	32.5 dB (A)
Copying	67.8 dB (A)	67.8 dB (A)

Sound pressure level:

Main Unit Only

Item	D176/D237	D177
Stand-by	19.5 dB (A)	dB (A)
Copying	BW: 46.1 dB (A) FC: 46.7 dB (A)	BW: 46.8 dB (A) FC: 47.6 dB (A)

Complete System

Item	D176/D237	D177
Stand-by	19.7 dB (A)	19.5 dB (A)
Copying	54.8 dB (A)	55.0 dB (A)

- Sound power level and sound pressure level are actual values measured in accordance with ISO 7779.

- Sound pressure level is measured from the position of the bystander.

- The complete system consists of the main unit, ADF, lower paper trays, internal tray 2, Internal Finisher SR3130, and punch unit.

Supported Paper Sizes

Original Size Detection

Size (W x L) [mm]	NA		EU/AP	
	Book	ADF	Book	ADF
A3 SEF (297 x 420)	-	Y	Y[*4]	Y
B4 SEF (257 x 364)	-	-	Y[*4]	Y
A4 SEF (210 x 297)	Y[*5]	Y	Y[*4, 5]	Y
A4 LEF (297 x 210)	Y[*5]	Y	Y[*4, 5]	Y
B5 SEF (182 x 257)	-	-	Y[*4]	Y
B5 LEF (257 x 182)	-	-	Y[*4]	Y
A5 SEF (148 x 210)	-	-	Y[*2, 4]	Y
A5 LEF (210 x 148)	-	-	Y[*4]	Y
B6 SEF (128 x 182)	-	-	-	Y
B6 LEF (182 x 128)	-	-	-	Y
DLT SEF (11" x 17")	Y	Y[*Db]	-	Y[*Df]
LG SEF ($8\frac{1}{2}$" x 14")	Y	Y[*Dc]	-	-
LT SEF ($8\frac{1}{2}$" x 11")	Y[*5]	Y[*Dd]	Y[*5]	Y[*Dg]
LT LEF (11" x $8\frac{1}{2}$")	Y[*5]	Y[*De]	Y[*5]	Y[*Dh]
HLT SEF ($5\frac{1}{2}$" x $8\frac{1}{2}$")	Y[*2]	Y	-	-
HLT LEF ($8\frac{1}{2}$" x $5\frac{1}{2}$")	Y	Y	-	-
F SEF (8" x 13")	-	-	Y[*S3]	Y[*S3]
Foolscap SEF ($8\frac{1}{2}$" x 13")	-	Y[*Sc]	Y[*D3]	Y[*D3]
Folio SEF ($8\frac{1}{4}$" x 13")	-	-	Y[*S3]	Y[*S3]
Folio SEF (11" x 15")	-	Y[*Sb]	-	-

Size (W x L) [mm]	NA		EU/AP	
	Book	ADF	Book	ADF
Folio SEF (10" x 14")	-	Y	-	-
Folio SEF (8" x 10")	-	Y*Sd	-	-
US EXE SEF ($7^1/_4$" x $10^1/_2$")	-	Y	-	-
US EXE LEF ($10^1/_2$ x $7^1/_4$")	-	Y*Se	-	-
8K SEF (267 x 390)	-	-	Y*4	Y*Sf
16K SEF (195 x 267)	-	-	Y*4	Y*Sg
16K LEF (267 x 195)	-	-	Y*4v	Y*Sh

Sizes with letters (a, b, c) means only either size with the corresponding letter can be selected for size detection. "D" is for default set sizes, and when setting "S" sizes for size detection from SP mode, "D" sizes can no longer be detected.

(*2)For detected originals smaller then A5 size, with SP mode either "detect as A5" or "Detect as Unknown" can be selected. (Default is "Detect as unknown")

(*3)F Sizes (8.5" x 13" SEF, 8.25" x 13" SEF, 8" x 13" SEF) will be available by SP mode settings.

(*4)Switch Book scanner original detection between "K" series and "A/B" series from SP mode.

(Can not set both to detect, but 8K/16K detect can de set from SO mode)

8K SEF -> Switch between A3, B4 SEF

16K SEF -> Switch between A4, A5, B5 SEF

16K LEF -> Switch between A4, A5, B5 LEF *Can not switch only either size.

(*5)Can be selected with switching A4/LT from SP mode:

- Standard detect (default)
- When placing A4/LT size LEF, detect as A4 LEF. When placing SEF, detect as LT SEF.
- When placing A4/LT size LEF, detect as LT LEF. When placing SEF, detect as A4 SEF.

Remarks:

Y	Yes; available
-	Not available

Paper Feed

Tray 1 Through 3

Size (W x L) [mm]	Tray 1		Tray 2		Tray 3/4 1 drawer /2 drawers bank	
Region (EU/AA)	NA	EU/AA	NA	EU/AA	NA	EU/AA
A3 SEF (297 x 420)	-	-	G2	A2	G2	A2
A4 SEF (210 x 297)	-	-	A	A	A	A
A4 LEF (297 x 210)	K	H	G1	A1	G1	A1
A5 SEF (148 x 210)	-	-	B	B	-	-
A5 LEF (210 x 148)	K	K	A	A	A	A
A6 SEF (105 x 148)	-	-	B	B	-	-
B4 SEF (257 x 364)	-	-	G3	A3	G3	A3
B5 SEF (182 x 257)	-	-	A	A	A	A
B5 LEF (257 x 182)	K	K	G4	A4	G4	A4
B6 SEF (128 x 182)	-	-	B	B	-	-
DLT SEF (11" x 17")	-	-	A2	G2	A2	G2
Legal SEF ($8^1/_2$" x 14")	-	-	A3	G3	A3	G3
Foolscap SEF ($8^1/_2$" x 13")	-	-	B	B	B	B
LT SEF ($8^1/_2$" x 11")	-	-	A	A	A	A
LT LEF (11" x $8^1/_2$")	H	K	A1	G1	A1	G1
Gov. LG SEF ($8^1/_4$" x 14")	-	-	B	B	B	B
Folio SEF ($8^1/_4$" x 13")	-	-	B	B	B	B
F/GL SEF (8" x 13")	-	-	B	B	B	B
GLT SEF (8" x $10^1/_2$")	-	-	-	-	-	-

Size (W x L) [mm]	Tray 1		Tray 2		Tray 3/4 1 drawer /2 drawers bank	
Region (EU/AA)	NA	EU/AA	NA	EU/AA	NA	EU/AA
GLT LEF ($10^1/_2$" x 8")	-	-	-	-	-	-
Eng Quatro SEF (8" x 10")	-	-	B	B	B	B
Eng Quatro LEF (10" x 8")	-	-	-	-	-	-
Executive SEF ($7^1/_4$" x $10^1/_2$")	-	-	B	B	B	B
Executive LEF ($10^1/_2$" x $7^1/_4$")	-	-	A4	G4	A4	G4
HLT SEF ($5^1/_2$" x $8^1/_2$")	-	-	B	B	-	-
HLT LEF ($8^1/_2$" x $5^1/_2$")	-	-	-	-	-	-
SRA3 SEF (420 x 320)	-	-	G5	A5	G5	A5
SRA4 SEF	-	-	-	-	-	-
SRA4 LEF	-	-	-	-	-	-
Line slider 1 SEF	-	-	-	-	-	-
Line slider 1 LEF	-	-	-	-	-	-
Line slider 2 SEF	-	-	-	-	-	-
Line slider 2 LEF	-	-	-	-	-	-
Com10 SEF (104.8 x 241.3)	-	-	B	B	-	-
Com10 LEF (241.3 x 104.8)	-	-	B	B	B	B
Monarch SEF (98.4 x 190.5)	-	-	B	B	-	-
Monarch LEF (190.5 x 98.4)	-	-	-	-	-	-
C5 SEF (162 x 229)	-	-	B	B	-	-
C5 LEF (229 x 162)	-	-	B	B	B	B
C6 SEF (114 x 162)	-	-	B	B	-	-
C6LEF (162 x 114)		-	B	B	-	-

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Size (W x L) [mm]	Tray 1		Tray 2		Tray 3/4 1 drawer /2 drawers bank	
Region (EU/AA)	NA	EU/AA	NA	EU/AA	NA	EU/AA
DL Env SEF (110 x 220)	-	-	B	B	-	-
DL Env LEF (220 x 110)	-	-	B	B	-	-
8K SEF (267 x 390)	-	-	B	B	B	B
16K SEF (195 x 267)	-	-	B	B	B	B
16K LEF (267 x 195)	-	-	B	B	B	B
13″ x 19.2″ SEF	-	-	-	-	-	-
13″ x 19″ SEF	-	-	-	-	-	-
13″ x 18″ SEF	-	-	-	-	-	-
12.6″ x 19.2 SEF	-	-	-	-	-	-
12.6″ x 18.5″ SEF	-	-	-	-	-	-
12" x 18" SEF	-	-	A5	G5	A5	G5
12" x 18" LEF	-	-	-	-	-	-
11" x 15" SEF	-	-	B	B	B	B
11″ x 14″ SEF	-	-	-	-	-	-
10" x 15" SEF	-	-	-	-	-	-
10" x 14" SEF	-	-	B	B	B	B

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. Can not be selected from printer driver.
G	Switches witch 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

Bypass Trays

Size (W x L) [mm]	Bypass		One Action Bypass	
Region (EU/AA)	NA	EU/AA	NA	EU/AA
A3 SEF (297 x 420)	E	J	J	J
A4 SEF (210 x 297)	E	J	E	J
A4 LEF (297 x 210)	E	J	J	J
A5 SEF (148 x 210)	E	J	J	J

Size (W x L) [mm]	Bypass		One Action Bypass	
Region (EU/AA)	NA	EU/AA	NA	EU/AA
A5 LEF (210 x 148)	E	J	J	J
A6 SEF (105 x 148)	E	J	J	J
B4 SEF (257 x 364)	E	J	E	E
B5 SEF (182 x 257)	E	J	J	J
B5 LEF (257 x 182)	E	J	J	J
B6 SEF (128 x 182)	E	J	J	J
DLT SEF (11" x 17")	J	E	J	J
Legal SEF ($8^1/_2$" x 14")	G1	E	G1	E
Foolscap SEF ($8^1/_2$" x 13")	E	E	E	E
LT SEF ($8^1/_2$" x 11")	J1	E	J1	E
LT LEF (11" x $8^1/_2$")	J	E	J	J
Gov. LG SEF ($8^1/_4$" x 14")	E	E	E	E
Folio SEF ($8^1/_4$" x 13")	E	E	E	E
F/GL SEF (8" x 13")	E	E	J	J
GLT SEF (8" x $10^1/_2$")	-	-	-	-
GLT LEF ($10^1/_2$" x 8")	-	-	-	-
Eng Quatro SEF (8" x 10")	E	E	E	E
Eng Quatro LEF (10" x 8")	-	-	-	-
Executive SEF ($7^1/_4$" x $10^1/_2$")	E	E	E	E
Executive LEF ($10^1/_2$" x $7^1/_4$")	E	E	J	J
HLT SEF ($5^1/_2$" x $8^1/_2$")	J	E	J	J
HLT LEF ($8^1/_2$" x $5^1/_2$")	-	-	-	-

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Size (W x L) [mm]	Bypass		One Action Bypass	
Region (EU/AA)	NA	EU/AA	NA	EU/AA
SRA3 SEF (420 x 320)	J	J	J	J
SRA4 SEF	E	E	G3	G3
SRA4 LEF	E	E	J	J
Line slider 1 SEF	-	-	-	-
Line slider 1 LEF	-	-	-	-
Line slider 2 SEF	-	-	-	-
Line slider 2 LEF	-	-	-	-
Com10 SEF (104.8 x 241.3)	E[*1]	E[*1]	E[*1]	E[*1]
Com10 LEF (241.3 x 104.8)	E[*1]	E[*1]	J[*1]	J[*1]
Monarch SEF (98.4 x 190.5)	E[*1]	E[*1]	E[*1]	E[*1]
Monarch LEF (190.5 x 98.4)	E[*1]	E[*1]	J[*1]	J[*1]
C5 SEF (162 x 229)	E[*1]	E[*1]	E[*1]	E[*1]
C5 LEF (229 x 162)	E[*1]	E[*1]	J3[*1]	J3[*1]
C6 SEF (114 x 162)	E[*1]	E[*1]	E[*1]	E[*1]
C6LEF (162 x 114)	E[*1]	E[*1]	J[*1]	J[*1]
DL Env SEF (110 x 220)	E[*1]	E[*1]	E[*1]	E[*1]
DL Env LEF (220 x 110)	E[*1]	E[*1]	J[*1]	J[*1]
8K SEF (267 x 390)	E	E	J	J
16K SEF (195 x 267)	E	E	E	E
16K LEF (267 x 195)	E	E	E	E
13" x 19.2" SEF	-	-	-	-
13" x 19" SEF	-	-	-	-
13" x 18" SEF	-	-	-	-
12.6" x 19.2 SEF	-	-	-	-

Size (W x L) [mm]	Bypass		One Action Bypass	
Region (EU/AA)	NA	EU/AA	NA	EU/AA
12.6" x 18.5" SEF	-	-	-	-
12" x 18" SEF	J	E	J	J
12" x 18" LEF	-	-	-	-
11" x 15" SEF	E	E	E	E
11" x 14" SEF	-	-	-	-
10" x 15" SEF	-	-	-	-
10" x 14" SEF	E	E	J	J

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. Can not be selected from printer driver.
G	Switches witch 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

*1	Even the paper size is in the range or available sizes for duplex, envelopes can not be done so.

Paper Exit

Main unit tray, 1 bin tray, Shit tray, Side tray

Size (W x L) [mm]	Main unit tray	1 bin tray	Shit tray		Side Tray	
	Main unit tray	Upper tray	shift	shifting	Bridge upper exit	Side tray
A3 SEF (297 x 420)	A	A	A	A	A	A
A4 SEF (210 x 297)	A	A	A	A	A	A
A4 LEF (297 x 210)	A	A	A	A	A	A
A5 SEF (148 x 210)	A	A	A	A	A	A
A5 LEF (210 x 148)	A	A	A	A	A	A
A6 SEF (105 x 148)	A	B[*1]	A	A	A	A
B4 SEF (257 x 364)	A	A	A	A	A	A
B5 SEF (182 x 257)	A	A	A	A	A	A
B5 LEF (257 x 182)	A	A	A	A	A	A

Size (W x L) [mm]	Main unit tray	1 bin tray	Shit tray		Side Tray	
	Main unit tray	Upper tray	shift	shifting	Bridge upper exit	Side tray
B6 SEF (128 x 182)	A	B*1	A	A	A	A
DLT SEF (11" x 17")	A	A	A	A	A	A
Legal SEF (8^1/$_2$" x 14")	A	A	A	A	A	A
Foolscap SEF (8^1/$_2$" x 13")	A	A	A	A	A	A
LT SEF (8^1/$_2$" x 11")	A	A	A	A	A	A
LT LEF (11" x 8^1/$_2$")	A	A	A	A	A	A
Gov. LG SEF (8^1/$_4$" x 14")	A	A	A	A	A	A
Folio SEF (8^1/$_4$" x 13")	A	A	A	A	A	A
F/GL SEF (8" x 13")	A	A	A	A	A	A
GLT SEF (8" x 10^1/$_2$")	-	-	-	-	-	-
GLT LEF (10^1/$_2$" x 8")	-	-	-	-	-	-
Eng Quatro SEF (8" x 10")	A	A	A	A	A	A
Eng Quatro LEF (10" x 8")	-	-	-	-	-	-
Executive SEF (7^1/$_4$" x 10^1/$_2$")	A	A	A	A	A	A
Executive LEF (10^1/$_2$" x 7^1/$_4$")	A	A	A	A	A	A
HLT SEF (5^1/$_2$" x 8^1/$_2$")	A	A	A	A	A	A
HLT LEF (8^1/$_2$" x 5^1/$_2$")	-	-	-	-	-	-
SRA3 SEF (420 x 320)	A	A	A	A	A	A
SRA4 SEF	A	A	A	A	A	A
SRA4 LEF	A	A	A	A	A	A
Line slider 1 SEF	-	-	-	-	-	-

Size (W x L) [mm]	Main unit tray	1 bin tray	Shit tray		Side Tray	
	Main unit tray	Upper tray	shift	shifting	Bridge upper exit	Side tray
Line slider 1 LEF	-	-	-	-	-	-
Line slider 2 SEF	-	-	-	-	-	-
Line slider 2 LEF	-	-	-	-	-	-
Com10 SEF (104.8 x 241.3)	A	B[*1]	A	A	A	A
Com10 LEF (241.3 x 104.8)	A	B[*1]	A	A	A[*1,2,3]	-
Monarch SEF (98.4 x 190.5)	A	B[*1]	A	A	A	A
Monarch LEF (190.5 x 98.4)	A	B[*1]	A	A	A[*1,2,3]	-
C5 SEF (162 x 229)	A	B[*1]	A	A	A	A
C5 LEF (229 x 162)	A	B[*1]	A	A	A	A
C6 SEF (114 x 162)	A	B[*1]	A	A	A	A
C6LEF (162 x 114)	A	B[*1]	A	A	A[*1,2,3]	-
DL Env SEF (110 x 220)	A	B[*1]	A	A	A	A
DL Env LEF (220 x 110)	A	B[*1]	A	A	A[*1,2,3]	-
8K SEF (267 x 390)	A	A	A	A	A	A
16K SEF (195 x 267)	A	A	A	A	A	A
16K LEF (267 x 195)	A	A	A	A	A	A
13" x 19.2" SEF	-	-	-	-	-	-
13" x 19" SEF	-	-	-	-	-	-
13" x 18" SEF	-	-	-	-	-	-
12.6" x 19.2 SEF	-	-	-	-	-	-
12.6" x 18.5" SEF	-	-	-	-	-	-
12" x 18" SEF	A	B	A	A	A	A

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Size (W x L) [mm]	Main unit tray	1 bin tray	Shit tray		Side Tray	
	Main unit tray	Upper tray	shift	shifting	Bridge upper exit	Side tray
12" x 18" LEF	-	-	-	-	-	-
11" x 15" SEF	A	A	A	A	A	A
11″ x 14″ SEF	-	-	-	-	-	-
10" x 15" SEF	-	-	-	-	-	-
10" x 14" SEF	A	A	A	A	A	A

Remarks:

A	Paper through, paper exit available.
B	Will not guarantee, but paper can go through or exit.
-	Not available.

*1	Out of the true up precision guarantee.
*2	Envelopes can only go through each at a time.
*3	Except envelops with triangle flap.

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.

Printer Drivers

Printer Language	Windows XP[*1][*6]	Windows Vista[*2][*6]	Windows 7[*3][*6]	Windows 8[*6][*8]
PCL 5c /PCL 6	Yes	Yes	Yes	Yes
PS3	Yes	Yes	Yes	Yes

Printer Language	Windows Server 2003[*4][*6]	Windows Server 2008[*5][*6]	Windows Server 2012[*9]	Macintosh[*7]
PCL 5c /PCL 6	Yes	Yes	Yes	No
PS3	Yes	Yes	Yes	Yes

*1 Microsoft Windows XP Professional Edition / Home Edition / Media Center Edition / Tablet PC Edition

*2 Microsoft Windows Vista Ultimate / Enterprise / Business / Home Premium / Home Basic

*3 Microsoft Windows 7 Home Premium / Professional / Ultimate / Enterprise

*4 Microsoft Windows Server 2003 Standard Edition / Enterprise Edition / Microsoft Windows Server 2003 R2 Standard Edition / Enterprise Edition

*5 Microsoft Windows Server 2008 Standard / Enterprise / Microsoft Windows Server 2008 R2 Standard / Enterprise

*6 Supports both 32bit, 64bit

*7 Supports Mac OS X 10.4 or later

*8 Microsoft Windows 8 (Core Edition) / Pro / Enterprise

*9 Microsoft Windows Server 2012 Standard / Datacenter / Essentials

↓Note

- All other Drivers except ones for Windows XP / 2003 / Vista / 7 / 8 are Adobe genuine PostScript driver.

- PPD file for each operation systems is included in the driver.

Scanner and LAN fax drivers

Driver	Windows XP*1*6	Windows Vista*2*6	Windows 7*3*6	Windows 8*6*7
TWAIN	Yes	Yes	Yes	Yes
PC-FAX	Yes	Yes	Yes	Yes

Driver	Windows Server 2003*4*6	Windows Server 2008*5*6	Windows Server 2012*8	Macintosh
TWAIN	Yes	Yes	Yes	No
PC-FAX	Yes	Yes	Yes	No

*1 Microsoft Windows XP Professional Edition / Home Edition / Media Center Edition / Tablet PC Edition

*2 Microsoft Windows Vista Ultimate / Enterprise / Business / Home Premium / Home Basic

*3 Microsoft Windows 7 Home Premium / Professional / Ultimate / Enterprise

*4 Microsoft Windows Server 2003 Standard Edition / Enterprise Edition / Microsoft Windows Server 2003 R2 Standard Edition / Enterprise Edition

*5 Microsoft Windows Server 2008 Standard / Enterprise / Microsoft Windows Server 2008 R2 Standard / Enterprise

*6 Supports both 32bit, 64bit (Scanner driver works on 32bit compatible mode)

*7 Microsoft Windows 8 (Core Edition) / Pro / Enterprise

*8 Microsoft Windows Server 2012 Standard / Datacenter / Essentials

⬇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.

Optional Equipment

ARDF DF3090 (D779)

Mode:	Batch mode, SADF mode, Mixed Sizes mode, Original Orientation mode, and Custom Size originals mode
Original Size:	EU/AA • One-sided originals: A3 SEF-B6 JIS LEF/SEF, 11 x 17 SEF-8 1/2 x 11 LEF/SEF • Two-sided originals: A3 SEF-A5 LEF/SEF, 11 x 17 SEF-8 1/2 x 11 LEF/SEF NA • One-sided originals: 11 x 17 SEF-5 1/2 x 8 1/2 LEF/SEF, A3 SEF-A4 LEF/SEF • Two-sided originals: 11 x 17 SEF-5 1/2 x 8 1/2 LEF/SEF, A3 SEF-A4 LEF/SEF
Original weight:	• One-sided originals: 40-128 g/m2 (11-34 lb. Bond) • Two-sided originals: 52-128 g/m2 (14-34 lb. Bond)
Number of originals to be set (81 g/m2, 20 lb. Bond):	100 sheets
Maximum power consumption:	42 W or less (Power is supplied from the main unit.)
Dimensions (W x D x H):	565 x 500 x 125 mm (22.3 x 19.7 x 5.0 inches)
Weight:	Approx. 9 kg (19.9 lb.)

Internal Finisher SR3130 (D690)

Paper size:	A3 SEF, A4 LEF/SEF, A5 LEF/SEF, A6 SEF, B4 JIS SEF, B5 JIS LEF/SEF, B6 JIS SEF, 11 x 17 SEF, 8 1/2 x 14 SEF, 8 1/2 x 13 SEF, 8 1/2 x 11 LEF/SEF, 8 1/4 x 14 SEF, 8 1/4 x 13 SEF, 8 x 13 SEF, 8 x 10 SEF, 7 1/4 x 10 1/2 LEF/SEF, 5 1/2 x 8 1/2 SEF, 4 1/8 x 9 1/2 LEF/SEF, 3 7/8 x 7 1/2 LEF/SEF, C5 Env LEF/SEF, C6 Env LEF/SEF, DL Env LEF/SEF, 8K SEF, 16K LEF/SEF, 12 x 18 SEF, 11 x 15 SEF, 10 x 14 SEF, SRA3 SEF, SRA4 LEF/SEF, custom size
Paper weight:	60–300 g/m^2 (16 lb. Bond–110 lb. Cover)
Paper sizes that can be shifted:	A3 SEF, A4 LEF/SEF, A5 LEF/SEF, B4 JIS SEF, B5 JIS LEF/SEF, 11 x 17 SEF, 8 1/2 x 14 SEF, 8 1/2 x 13 SEF, 8 1/2 x 11 LEF/SEF, 8 1/4 x 14 SEF, 8 1/4 x 13 SEF, 8 x 13 SEF, 8 x 10 SEF, 7 1/4 x 10 1/2 LEF/SEF, 8K SEF, 16K LEF/SEF, 11 x 15 SEF, 10 x 14 SEF, SRA4 SEF, custom size
Paper weight that can be shifted:	64–105 g/m^2 (17–28 lb. Bond)
Stack capacity (80 g/m2, 20 lb. Bond):	• 500 sheets: A4, 81/2 x 11 or smaller • 250 sheets: B4 JIS, 81/2 x 14 or larger
Staple paper size:	A3 SEF, A4 LEF/SEF, B4 JIS SEF, B5 JIS LEF/SEF, 11 x 17 SEF, 8 1/2 x 14 SEF, 8 1/2 x 13 SEF, 8 1/2 x 11 LEF/SEF, 8 1/4 x 14 SEF, 8 1/4 x 13 SEF, 7 1/4 x 10 1/2 LEF/SEF, 8K SEF, 16K LEF/SEF
Staple paper weight:	64–105 g/m^2 (17–28 lb. Bond)
Staple capacity (80 g/m^2, 20 lb. Bond):	• Without Mixed Size: **30 sheets:** A3 SEF, B4 JIS SEF, 11 x 17 SEF, 8 1/2 x 14 SEF, 8 1/2 x 13 SEF, 8 1/4 x 14 SEF, 8 1/4 x 13 SEF, 8K SEF **50 sheets:** A4 LEF/SEF, B5 JIS LEF/SEF, 8 1/2 x 11 LEF/SEF, 7 1/4 x 10 1/2 LEF/SEF, 16K LEF/SEF • With Mixed Size: **30 sheets:** A3 SEF/ A4 LEF, B4 JIS SEF/ B5 JIS LEF, 11 x 17 SEF/8 1/2 x 11 LEF

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Stack capacity after stapling (80 g/m², 20 lb. Bond):	• 2–9 sheets: 55–46 sets (A4 LEF, 8 1/2 x 11 LEF) • 10–50 sheets: 45–10 sets (A4 LEF, 8 1/2 x 11 LEF) • 2–9 sheets: 55–27 sets (A4 SEF, 8 1/2 x 11 SEF) • 10– 50 sheets: 25–8 sets (A4 SEF, 8 1/2 x 11 SEF) • 2–9 sheets: 55–27 sets (A3 SEF, B4 JIS SEF, 11 x 17 SEF, 8 1/2 x 14 SEF) • 10–30 sheets: 25–8 sets (A3 SEF, B4 JIS SEF, 11 x 17 SEF, 8 1/2 x 14 SEF)
Staple position:	Top 1, Bottom 1, Left 2, Top 2
Power consumption:	• 50 W or less (without punch unit) (Power is supplied from the main unit.) • 60 W or less (with punch unit) (Power is supplied from the main unit.)
Dimensions (W x D x H):	546 x 523 x 170 mm (21.5 x 20.6 x 6.7 inches)
Weight:	Approx. 13 kg (28.7 lb.) (without punch unit) Approx. 17 kg (37.5 lb.) (with punch unit)

Internal Finisher SR3180 (D766)

Paper size:	A3 SEF, A4 LEF/SEF, B4 JIS SEF, B5 JIS LEF/SEF, 11 x 17 SEF, 8 1/2 x 14 SEF, 8 1/2 x 13 SEF, 8 1/2 x 11 LEF/SEF, 8 1/4 x 14 SEF, 8 1/4 x 13 SEF, 7 1/4 x 10 1/2 LEF/SEF, 8K SEF, 16K LEF/SEF, custom size
Paper weight:	52–300 g/m²(14 lb. Bond–110 lb. Cover)
Paper sizes that can be shifted:	A3 SEF, A4 LEF/SEF, B4 JIS SEF, B5 JIS LEF/SEF, 11 x 17 SEF, 8 1/2 x 14 SEF, 8 1/2 x 13 SEF, 8 1/2 x 11 LEF/SEF, 8 1/4 x 14 SEF, 8 1/4 x 13 SEF, 7 1/4 x 10 1/2 LEF/SEF, 8K SEF, 16K LEF/SEF, custom size
Paper weight that can be shifted:	64–80 g/m² (17–20 lb. Bond)
Stack capacity (80 g/m2, 20 lb. Bond):	• 250 sheets or more:A4 LEF, B5 JIS LEF/SEF, 81/2 x 11 LEF/SEF • 125 sheets: A3 SEF to A4 SEF, B4 JIS SEF, 81/2 x 14 SEF, 11 x 17 SEF

Staple paper size:	A3 SEF, A4 LEF/SEF, B4 JIS SEF, B5 JIS LEF/SEF, 11 x 17 SEF, 8 1/2 x 14 SEF, 8 1/2 x 13 SEF, 8 1/2 x 11 LEF/SEF, 8 1/4 x 14 SEF, 8 1/4 x 13 SEF, 7 1/4 x 10 1/2 LEF/SEF, 8K SEF, 16K LEF/SEF
Staple paper weight:	64–80 g/m^2 (17–20 lb. Bond)
Staple capacity (80 g/m^2, 20 lb. Bond):	**5 sheets:** A3 SEF, A4 LEF/SEF, B4 JIS LEF/SEF, B5JIS LEF/SEF, 11x17 SEF, 8 1/2x14 SEF, 8 1/2x13 SEF 81/2x11 LEF/SEF, 8 4/1x14SEF, 8 1/4x13 SEF, 7 1/4x10 1/2 LEF/ SEF, 8K SEF, 16K LEF SEF
Stack capacity after stapling (80 g/m^2, 20 lb. Bond):	• 30 sets or more (A4 LEF, 81/2 × 11 LEF) • 20 sets or more (B5 JIS LEF/SEF) • 15 sets or more (A3 SEF- A4 SEF, B4 JIS SEF, 11 × 17 SEF, 8 1/2 × 11 SEF)
Staple position:	Bottom Slant
Power consumption:	30 W or less
Dimensions (W x D x H):	435 x 515 x 150 mm (17.2 x 20.3 x 6.0 inches)
Weight:	Approx. 10 kg (22.1 lb.)

Side Tray Type M3 (D725)

Paper size:	A3 SEF, A4 LEF/SEF, A5 LEF/SEF, A6 SEF, B4 JIS SEF, B5 JIS LEF/SEF, B6 JIS SEF, 11 x 17 SEF, 8 1/2 x 14 SEF, 8 1/2 x 13 SEF, 8 1/2 x 11 LEF/SEF, 8 1/4 x 14 SEF, 8 1/4 x 13 SEF, 8 x 13 SEF, 8 x 10 SEF, 7 1/4 x 10 1/2 LEF/SEF, 5 1/2 x 8 1/2 SEF, 4 1/8 x 9 1/2 LEF/SEF, 3 7/8 x 7 1/2 LEF/ SEF, C5 Env LEF/SEF, C6 Env LEF/SEF, DL Env LEF/SEF, 8K SEF, 16K LEF/SEF, 12 x 18 SEF, 11 x 15 SEF, 10 x 14 SEF, SRA3 SEF, SRA4 LEF/SEF, custom size
Paper weight:	52–300 g/m^2 (14 lb. Bond–110 lb. Cover)

Paper capacity (80 g/m^2, 20 lb. Bond):	• Internal tray 1: 250 sheets: A4, 81/2 x 11 or smaller 125 sheets: B4 JIS, 81/2 x 14 or larger • External tray: 125 sheets
Power consumption:	12 W or less (Power is supplied from the main unit.)
Dimensions (W x D x H):	800 x 549 x 156 mm (31.5 x 21.7 x 6.2 inches)
Weight:	Approx. 4 kg (8.9 lb.)

Shift Tray SH3070 (D691)

Paper size:	A3 SEF, A4 LEF/SEF, A5 LEF/SEF, A6 SEF, B4 JIS SEF, B5 JIS LEF/SEF, B6 JIS SEF, 11 x 17 SEF, 8 1/2 x 14 SEF, 8 1/2 x 13 SEF, 8 1/2 x 11 LEF/SEF, 8 1/4 x 14 SEF, 8 1/4 x 13 SEF, 8 x 13 SEF, 8 x 10 SEF, 7 1/4 x 10 1/2 LEF/SEF, 5 1/2 x 8 1/2 SEF, 4 1/8 x 9 1/2 LEF/SEF, 3 7/8 x 7 1/2 LEF/SEF, C5 Env LEF/SEF, C6 Env LEF/SEF, DL Env LEF/SEF, 8K SEF, 16K LEF/SEF, 12 x 18 SEF, 11 x 15 SEF, 10 x 14 SEF, SRA3 SEF, SRA4 LEF/SEF, custom size
Paper weight:	60–300 g/m^2 (16 lb. Bond–110 lb. Cover)
Paper sizes that can be shifted:	A3 SEF, A4 LEF/SEF, A5 LEF/SEF, A6 SEF, B4 JIS SEF, B5 JIS LEF/SEF, B6 JIS SEF, 11 x 17 SEF, 8 1/2 x 14 SEF, 8 1/2 x 13 SEF, 8 1/2 x 11 LEF/SEF, 8 1/4 x 14 SEF, 8 1/4 x 13 SEF, 8 x 13 SEF, 8 x 10 SEF, 7 1/4 x 10 1/2 LEF/SEF, 5 1/2 x 8 1/2 SEF, 4 1/8 x 9 1/2 LEF/SEF, 3 7/8 x 7 1/2 LEF/SEF, C5 Env LEF/SEF, C6 Env LEF/SEF, DL Env LEF/SEF, 8K SEF, 16K LEF/SEF, 12 x 18 SEF, 11 x 15 SEF, 10 x 14 SEF, SRA3 SEF, SRA4 LEF/SEF, custom size
Paper weight that can be shifted:	60–300 g/m^2 (16 lb. Bond–110 lb. Cover)
Stack capacity (80 g/m^2, 20 lb. Bond):	• 250 sheets: A4, 81/2 x 11 or smaller • 125 sheets: B4 JIS, 81/2 x 14 or larger
Power consumption:	5 W or less (Power is supplied from the main unit.)
Dimensions (W x D x H):	420 x 489 x 107 mm (16.6 x 19.3 x 4.3 inches)
Weight:	Approx. 2 kg (4.5 lb.)

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1 Bin Tray BN3110 (D692)

Number of bins:	1
Paper size:	A3 SEF, A4 LEF/SEF, A5 LEF/SEF, B4 JIS SEF B5 JIS LEF/SEF, 11 x 17 SEF, 8 1/2 x 14 SEF, 8 1/2 x 13 SEF, 8 1/2 x 11 LEF/SEF, 8 1/4 x 14 SEF, 8 1/4 x 13 SEF, 8 x 13 SEF, 8 x 10 SEF, 7 1/4 x 10 1/2 LEF/SEF, 51/2 x 8 1/2 SEF, 8K SEF, 16K LEF/SEF, 11 x 15 SEF, 10 x 14 SEF, SRA3 SEF, SRA4 LEF/SEF, custom size
Paper weight:	52–300 g/m^2 (14 lb. Bond–110 lb. Cover)
Paper capacity (80 g/m^2, 20 lb. Bond):	125 sheets
Power consumption:	1 W or less (Power is supplied from the main unit.)
Dimensions (W x D x H):	444 x 450 x 150 mm (17.5 x 17.8 x 6.0 inches)
Weight:	Approx. 2 kg (4.5 lb.)

Punch Unit PU3040 (D716)

Paper Size:

Punch unit type	Paper size
2 & 4 holes type: 2 holes	SEF: A3, A4, B4 JIS, B5 JIS, 11 x 17, 8 1/2 x 14, 8 1/2 x 13, 8 1/2 x 11, 7 1/4 x 10 1/2, 8K, 16K
2 & 4 holes type: 2 holes	LEF: A4, B5 JIS, 8 1/2 x 11, 16K
2 & 4 holes type: 4 holes	SEF: A3, 11 x 17
2 & 4 holes type: 4 holes	LEF: A4, 8 1/2 x 11
4 holes type: 4 holes	SEF: A3, A4, B4 JIS, B5 JIS, 11 x 17, 8 1/2 x 14, 8 1/2 x 13, 8 1/2 x 11, 7 1/4 x 10 1/2
4 holes type: 4 holes	LEF: A4, B5 JIS, 8 1/2 x 11
2 & 3 holes type: 2 holes	SEF: A3, 11 x 17, 8 1/2 x 14, 8 1/2 x 13, 8 1/2 x 11, 7 1/4 x 10 1/2
2 & 3 holes type: 2 holes	LEF: A4, 8 1/2 x 11

2 & 3 holes type: 3 holes	SEF: A3, 11 x 17
2 & 3 holes type: 3 holes	LEF: A4, 8 1/2 x 11
Paper weight:	60–169 g/m^2 (16 lb. Bond –90 lb. Index)

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Paper Feed Unit PB3150 (D694)

Number of trays:	1
Paper size:	A3 SEF, A4 LEF/SEF, A5 LEF, B4 JIS SEF, B5 JIS LEF/SEF, 11 x 17 SEF, 8 1/2 x 14 SEF, 8 1/2 x 13 SEF, 8 1/2 x 11 LEF/SEF, 8 1/4 x 14 SEF, 8 1/4 x 13 SEF, 8 x 13 SEF, 8 x 10 SEF, 7 1/4 x 10 1/2 LEF/SEF, 8K SEF, 16K LEF/SEF, 12 x 18 SEF, 11 x 15 SEF, 10 x 14 SEF, 4 1/8 x 9 1/2 LEF, C5 Env LEF, SRA3 SEF, custom size
Paper Weight:	60–300 g/m^2 (16 lb. Bond–110 lb. Cover)
Paper Capacity (80 g/m^2, 20 lb. Bond):	550 sheets × 1 tray
Power Consumption:	19 W or less (Power is supplied from the main unit.)
Dimension:	587 × 685 × 120 mm (23.2 × 27.0 × 4.8 inches)
Weight:	Approx. 11 kg (24.3 lb.)

Paper Feed Unit PB3210 (D787)

Number of trays:	2
Paper size:	A3 SEF, A4 LEF/SEF, A5 LEF, B4 JIS SEF, B5 JIS LEF/SEF, 11 x 17 SEF, 8 1/2 x 14 SEF, 8 1/2 x 13 SEF, 8 1/2 x 11 LEF/SEF, 8 1/4 x 14 SEF, 8 1/4 x 13 SEF, 8 x 13 SEF, 8 x 10 SEF, 7 1/4 x 10 1/2 LEF/SEF, 8K SEF, 16K LEF/SEF, 12 x 18 SEF, 11 x 15 SEF, 10 x 14 SEF, 4 1/8 x 9 1/2 LEF, C5 Env LEF, SRA3 SEF, custom size
Paper Weight:	60–300 g/m^2 (16 lb. Bond–110 lb. Cover)
Paper Capacity (80 g/m^2, 20 lb. Bond):	550 sheets × 2 trays

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Power Consumption:	21 W or less (Power is supplied from the main unit.)
Dimension:	587 × 685 × 247 mm (23.2 × 27.0 × 9.8 inches)
Weight:	Approx. 21 kg (46.3 lb.)

2. Appendices:Preventive Maintenance Tables

Preventive Maintenance

Preventive Maintenance Items

Preventive Maintenance Items

Yield Parts

The parts mentioned in these tables have a target yield. However, the total copy/print volume made by the machine will not reach the target yield within the machine's targeted lifetime if the machine is used under the target usage conditions (ACV, color ratio, P/J, and C/O). So, these parts are categorized not as PM parts but as yield parts (EM parts). The parts with "(R)" in this table are yield parts.

Chart: A4 (LT)/5%

Mode: 4 copies / original (prints/job)

Ratio 30%

Environment: Normal temperature and humidity

Yield may change depending on circumstances and print conditions.

Symbol keys: C: Clean, R: Replace, L: Lubricant, I: Inspect

Mainframe

Item	60K	120K	240K	300K	EM	Remarks
Scanner						
Reflector				C		Optics cloth
1st mirror				C		Optics cloth
2nd mirror				C		Optics cloth
3rd mirror				C		Optics cloth
Exposure Glass				C	C	Exposure glass cleaner

Item	60K	120K	240K	300K	EM	Remarks
Guide Rail(Both sides 2 steps)				C		Dry cloth
ADF Exposure Glass				C	C	Exposure glass cleaner
PCU						
PCU(K)	R					
PCU(C,M,Y)						Logging counts to replace: 48K
Waste Toner Bottle						*Replace when full of waste toner bottle detected.
Development Unit (K)		R				
Development Unit (C,M,Y)		R				
Transfer						
Image Transfer Cleaning Unit			R			
Image Transfer Belt Unit			R			
Paper transfer roller unit			R			
Fusing						
Heating Sleeve Unit (Fusing sleeve unit)			R			Upper limit counts to replace: 248K
Fusing Entrance guide plate					C	Clean deposit toner
Fusing Exit guide plate					C	Clean deposit toner
Separation Plate					C	Clean deposit toner
Pressure Roller			R			

Item	60K	120K	240K	300K	EM	Remarks
Bearing: Fusing Roller			R			Lubricating grease
Thermopile					C	Logging counts for cleaning, maintenance and lubrication:400K Dry cloth
Gears					C	Replace when worn out
idler gear					C	Replace when worn out
Miscellaneous						
Dust-shield Filter (Dust Filter)				R		
Dust Glass					C	Exposure glass cleaner
TM/P sensor					C	

Item	EM	Remarks
Paper Feed (Mainframe)		
Registration Roller	C	Damp cloth
Registration Sensor	C	Remove toner and paper dust, Dry cloth
Paper powder removal container	C	Remove toner and paper dust
Transport roller	C	Damp cloth
Transfer Sensor	C	Remove toner and paper dust, Dry cloth
Paper feed sensor	C	Remove toner and paper dust, Dry cloth
Paper Feed roller	C	Remove toner and paper dust, Dry cloth
Separation Roller	C	Remove toner and paper dust, Dry cloth
Pick-up roller	C	Remove toner and paper dust, Dry cloth
Paper Feed (Paper Trays)		

2

Item	EM	Remarks
Transport roller	C	Damp cloth
Transfer Sensor	C	Remove toner and paper dust, Dry cloth
Paper feed sensor	C	Remove toner and paper dust, Dry cloth
Paper Feed roller	C	Remove toner and paper dust, Dry cloth
Separation Roller	C	Remove toner and paper dust, Dry cloth
Pick-up roller	C	Remove toner and paper dust, Dry cloth
Duplex		
Duplex transport roller	C	Damp cloth
Duplex inlet sensor	C	Remove toner and paper dust, Dry cloth
Duplex outlet sensor	C	Remove toner and paper dust, Dry cloth
Duplex outlet roller	C	Damp cloth
Duplex inlet roller	C	Damp cloth
By-pass paper feed roller	C	Damp cloth
By-pass Separation Roller	C	Damp cloth
By-pass pick-up roller	C	Damp cloth
By-pass transport roller	C	Damp cloth
Paper Exit		
Inversion Roller	C	Damp cloth
Inversion Sensor	C	Remove toner and paper dust, Damp cloth
Paper eject roller	C	Damp cloth
Paper eject sensor	C	Remove toner and paper dust, Dry cloth

MEMO

MEMO