Model MD-P2
Machine Code: M075

Field Service Manual

8 October, 2010

Safety Notices

Important Safety Notices

Prevention of Physical Injury

1. Before disassembling or assembling parts of the printer and peripherals, make sure that the printer power cord is unplugged.
2. The wall outlet should be near the printer 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 printer 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 printer starts operation.
5. The inside and the metal parts of the fusing unit become extremely hot while the printer is operating. Be careful to avoid touching those components with your bare hands.

Health Safety Conditions

Toner is non-toxic, but if you get either of them in your eyes by accident, it may cause temporary eye discomfort. Try to remove with eye drops or flush with water as first aid. If unsuccessful, get medical attention.

Observance of Electrical Safety Standards

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

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.

⚠WARNING

- To prevent a fire or explosion, keep the machine away from flammable liquids, gases, and aerosols. A fire or an explosion might occur.

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

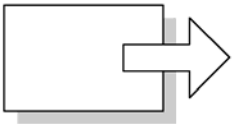
- Use of controls, or adjustment, or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

⚠WARNING
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:  3b_laser

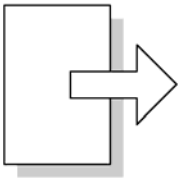
Symbols, Abbreviations and Trademarks

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

	See or Refer to
	Clip ring
	Screw
	Connector
	Clamp
	E-ring
SEF	Short Edge Feed
LEF	Long Edge Feed



Short Edge Feed (SEF)



Long Edge Feed (LEF)

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5. System Maintenance Reference

6. Troubleshooting

7. Energy Saving

1. Product Information

Specifications

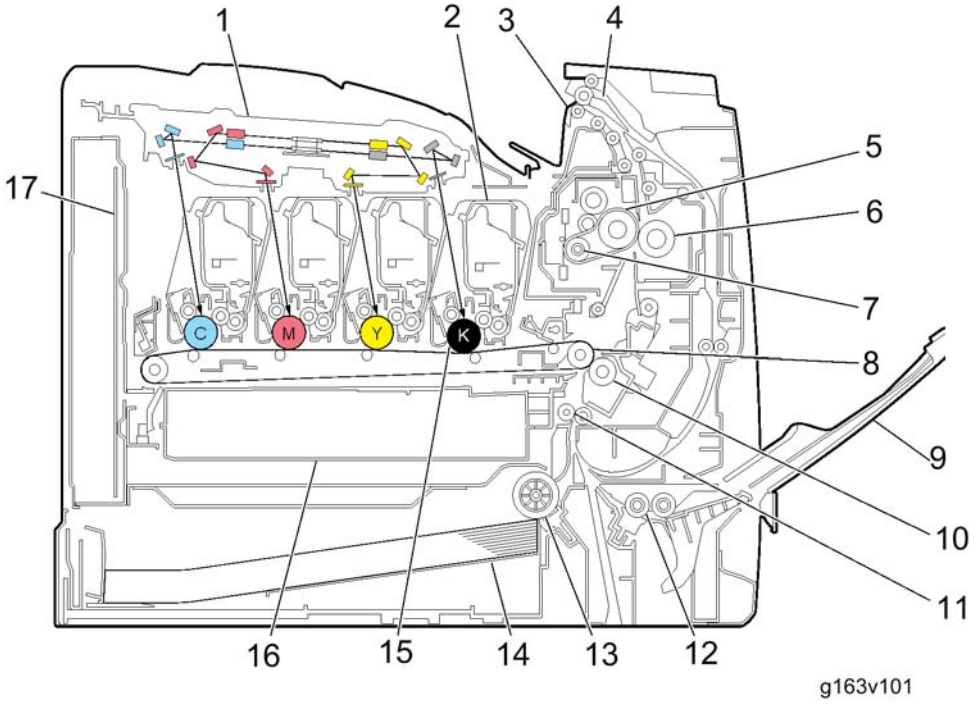
See "Appendices" for the followings;

- General Specifications
- Supported Paper Sizes

Machine Overview

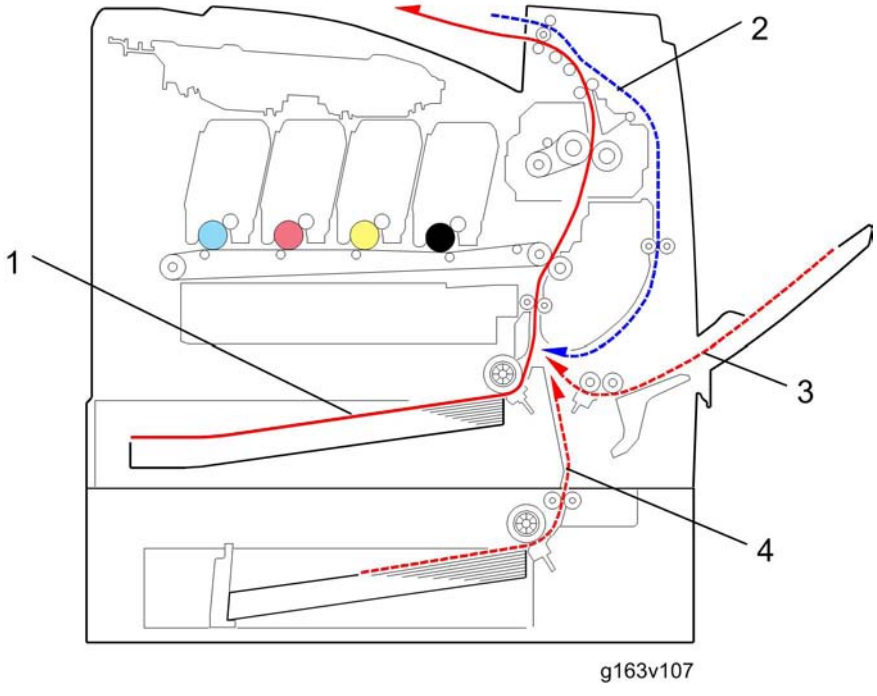
1

Component Layout



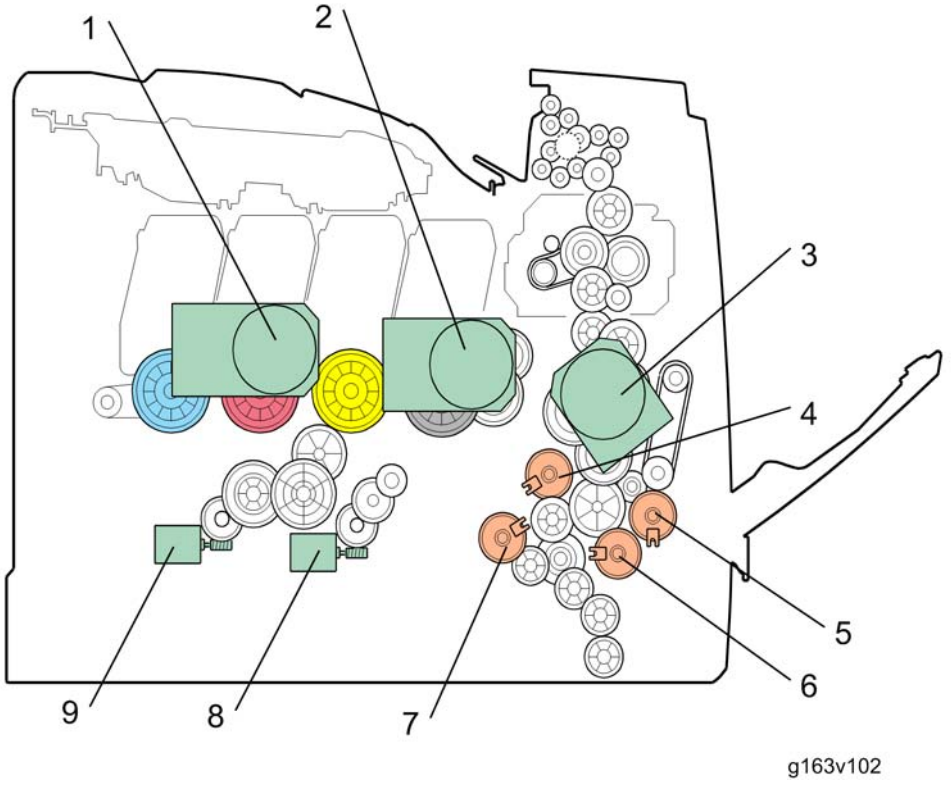
1. Laser Optics Housing Unit	10. Transfer Roller
2. Print Cartridge (AIO)	11. Registration Roller
3. Paper Exit	12. By-pass Feed Roller
4. Inverter Path	13. Paper Feed Roller
5. Fusing Belt	14. Tray 1
6. Pressure Roller	15. OPC (AIO)
7. Fusing Lamp	16. Waste Toner Bottle
8. ITB (Image Transfer Belt) Unit	17. EGB/ Controller Board
9. By-pass Tray	

Paper Path



1. Paper path from the tray 1 to the output tray
2. Paper path in the duplex path
3. Paper path from the by-pass tray
4. Paper path from the optional tray 2 to the output tray

Drive Layout



1. Color AIO Motor 2. Black AIO Motor 3. Transport/Fusing Motor 4. Registration Clutch 5. Duplex Clutch	6. By-pass Clutch 7. Paper Feed Clutch 8. Agitator Motor 9. ITB (Image Transfer Belt) Contact Motor

- **Color AIO Motor:**

  This drives the color AIO cartridges (Cyan, Magenta and Yellow)

- **Black AIO Motor:**

  This drives the black AIO and the ITB (Image Transfer Belt).

- **Transport/Fusing Motor:**

  This drives the fusing unit, paper feed roller, registration roller and paper exit roller* via the paper feed clutch, registration clutch and gears. (*: This motor only drives the paper exit roller in non-duplex models.)

- **Registration Clutch:**

  This transfers drive from the transport/ fusing motor to the registration roller.
- **Duplex Clutch:**

  This transfers drive from the transport/ fusing motor to the duplex rollers.
- **By-pass Clutch**

  This transfers drive from the transport/ fusing motor to the duplex rollers.
- **Paper Feed Clutch:**

  This transfers drive from the transport/ fusing motor to the paper feed roller.
- **Agitator Motor:**

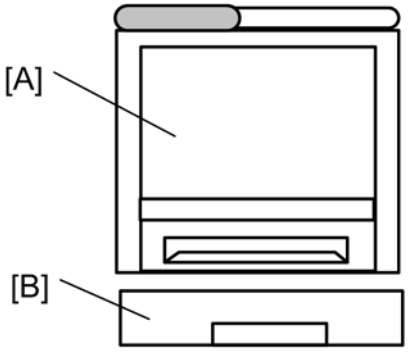
  This moves the agitators in the waste toner bottle.
- **ITB Contact Motor:**

  This moves the ITB into contact with and away from the color OPCs.

Machine Configuration

1

Mainframe (M075) and Option



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Model	Model No.	Call out	Description
MD –P2	M075	[A]	Auto-duplex model
Paper Feed Unit TK 1010	G849	[B]	Common with MD-P1

Controller Options

Item	Model No.	Description
Memory Unit Type G 256MB	D362	Z-P1/ G-P3/ Al-P1/ KR-P2/ SI-P2
Memory Unit Type I 512MB	D435	Z-P1/ DI-C1
Camera Direct Print Card Type H	M385	Z-P1
IEEE 1284 Interface Board Type A	B679	Z-P1/ KR-P2/ SI-P2
IEEE802.11a/g Interface Unit Type L/M	M344-01, -02	Z-P1
Gigabit Ethernet Board Type A	G874	Z-P1/ KR-P2/ SI-P2
Hard Disk Drive Option Type C320	M394-01	New

Item	Model No.	Description
VM Card (Type O)	M385	Z-P1 (512 MB memory option is required.)
NetWare (Type F)	M394-10	New

Guidance for Those Who are Familiar with Predecessor Products

1

Machine M075 is a similar model with Machine M040/M041. If you have experience with those products, the following information will be of help when you read this manual.

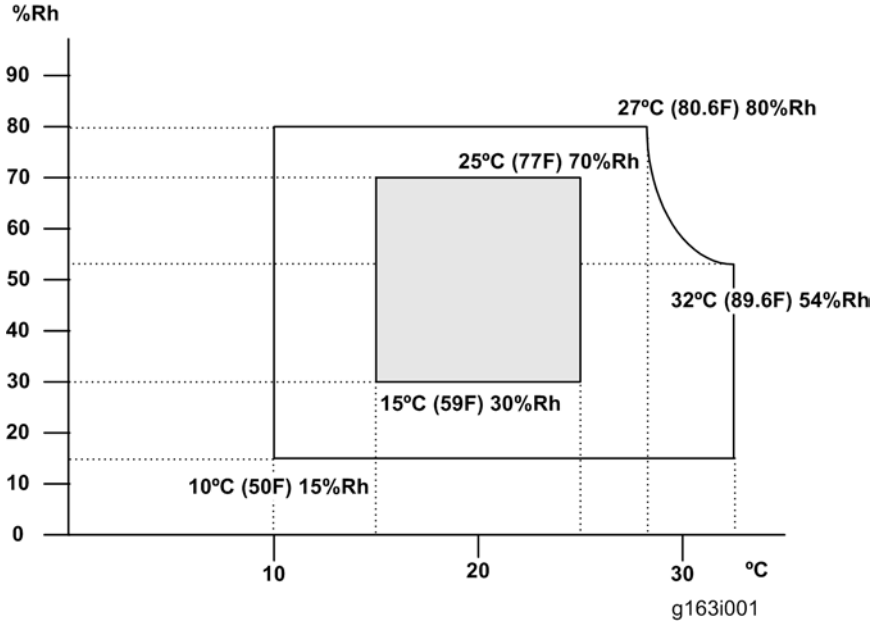
Different Points from Previous Products

	M075	M040/M041
Controller	GW controller	Non GW controller
SD slot	2 SD slots	Not available
Operation panel	4 lines LCD	2 lines LCD
Light sensor	Available	Not available

2. Installation

Installation Requirements

Environment



1. Temperature Range: 10°C to 32°C (50°F to 89.6°F)
2. Humidity Range: 15% to 80% RH
3. Ambient Illumination: Less than 2,000 lux (do not expose to direct sunlight)
4. Ventilation: 3 times/hr/person
5. Do not put the machine in areas that get sudden temperature changes. This includes:
    - Areas directly exposed to cool air from an air conditioner
    - Areas directly exposed to heat from a heater.
6. Do not put the machine in areas that get exposed to corrosive gas.
7. Do not install the machine at locations over 2,500 m (8,125 ft.) above sea level.
8. Put the machine on a strong, level base. (Inclination on any side must be no more than 5 mm.)
9. Do not put the machine in areas with strong vibrations.

Machine level

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

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

2

Machine Space Requirement

Put the machine near the power source with these clearances:

Left side: Over 20 cm (7.9")

Rear: Over 10 cm (4")

Right side: Over 10 cm (4")

Front: Over 70 cm (27.5")

Power Requirements

⚠CAUTION

- Make sure that the plug is tightly connected to the outlet.
- Avoid multi-wiring.
- Make sure that you ground the machine.

Input voltage level	120 V, 60 Hz: More than 11 A (for North America) 220 V to 240 V, 50 Hz/60 Hz: More than 6 A (for Europe/ Asia)
Permitted voltage fluctuation: 10%	

Do not set anything on the power cord.

Installation Procedure

Refer to the Quick Installation Guide for details about installing the machine.

3. Preventive Maintenance

Preventive Maintenance

See "Appendices" for the "User Replaceable Items".

4. Replacement and Adjustment

Before You Start

⚠CAUTION

- If there are printer jobs in the machine, print out all jobs in the printer buffer.
- Turn off the main power switch and unplug the machine before you do the procedures in this section.

Important

- **Always touch a grounded surface to discharge static electricity from your hands before you handle SD cards, printed circuit boards, NVRAM or memory boards.**

Special Tool

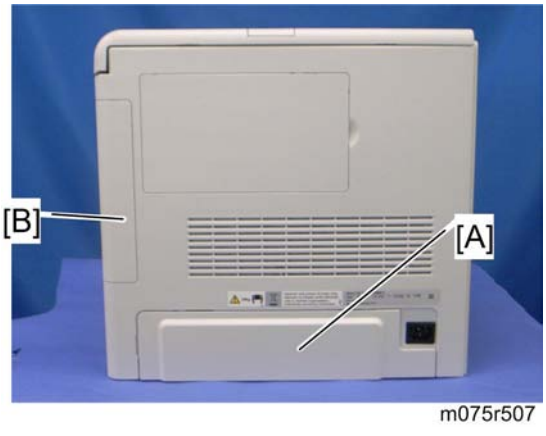
- SD card

Exterior Covers

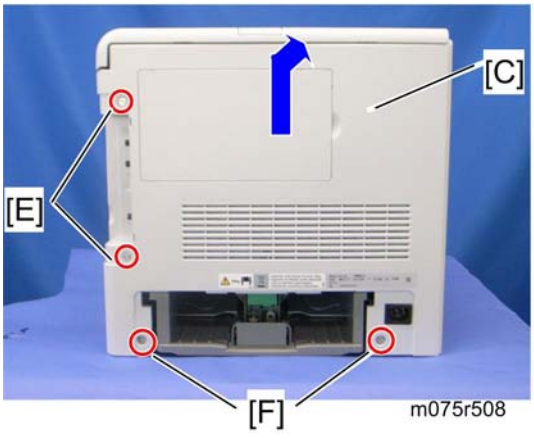
⚠CAUTION

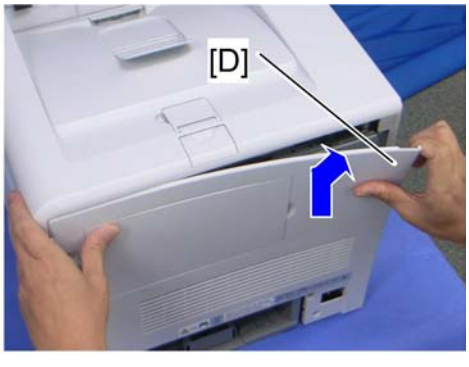
- Turn off the main power switch and unplug the printer before you do the procedures in this section.

Rear Cover



1. Rear tray cover [A] (hooks)
2. Interface cover [B] (hooks)





3. Rear cover [C] (x 4)

Note

- After removing four screws from the rear cover, pull the rear cover from the top left [D] to the top right while lifting up the rear cover
- Upper screw [E]: "M3x8" x 2, Lower screws [F]: "M4x10" x 2

Operation Panel

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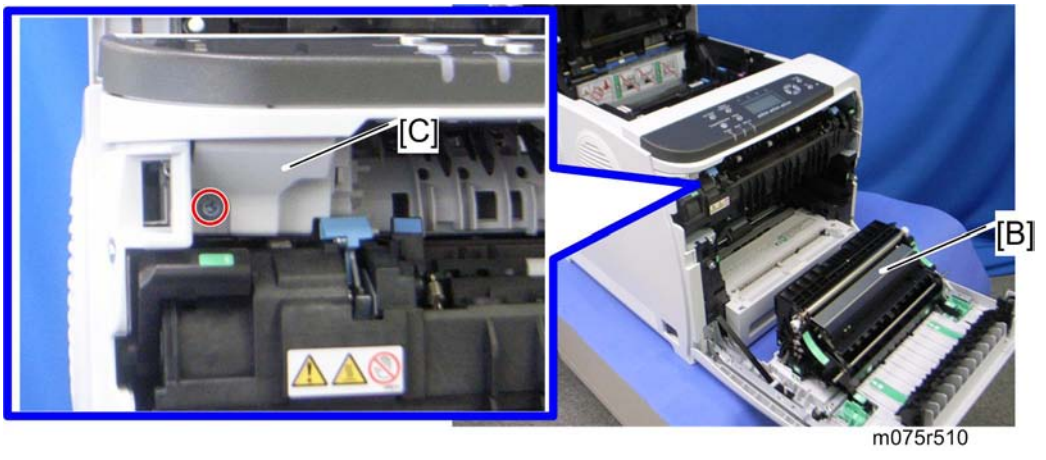
1. Open the top cover [A].



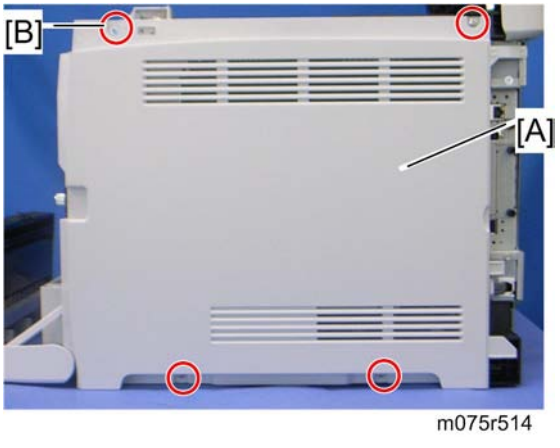
m075r510

2. Open the front cover [B].
3. Front harness cover [C] (x 1)

4. Operation panel [D] (x 2, x 1)

Right Cover

1. Rear cover (p.25)
2. Operation panel (p.26)



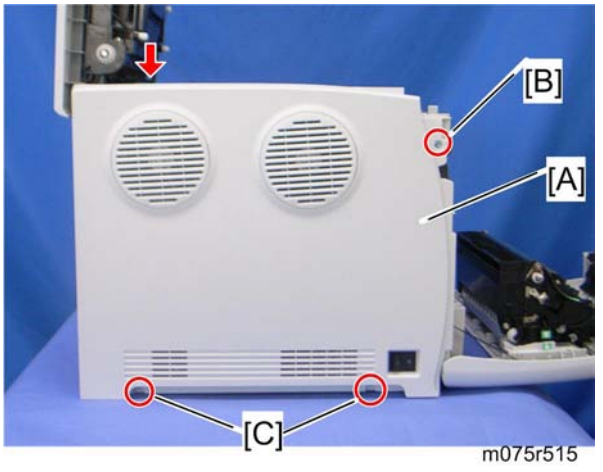
3. Right cover [A] (x 4)

Note

- Top front screw [B]: M3x8, others: M4x10

Left Cover

1. Operation panel (p.26)



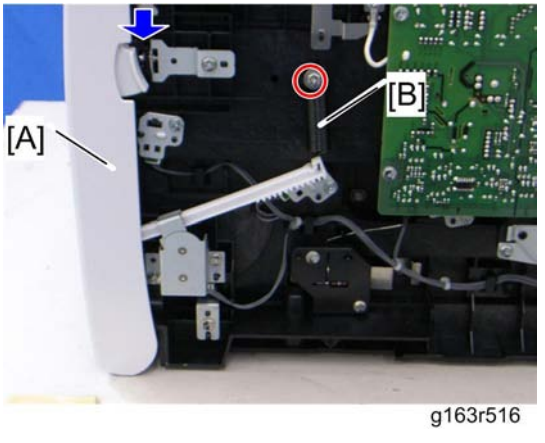
2. Left cover [A] (x 3, hook at arrow mark)

Note

- Top front screw [B]: M3x8, others [C]: M4x10

Front Cover Unit

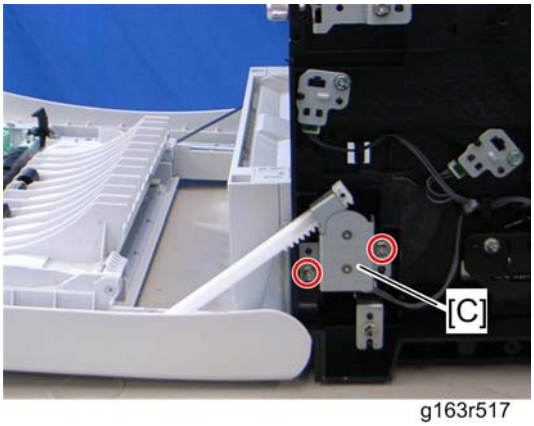
1. Rear cover (p.25)
2. Operation panel (p.26)
3. Transfer unit (p.49)
4. Right cover (p.27)



5. Close the front cover [A].
6. Spring [B] (x 1)

⚠CAUTION

- Do not remove the spring [B] with the front cover open. The strong tension of the spring can cause injury.



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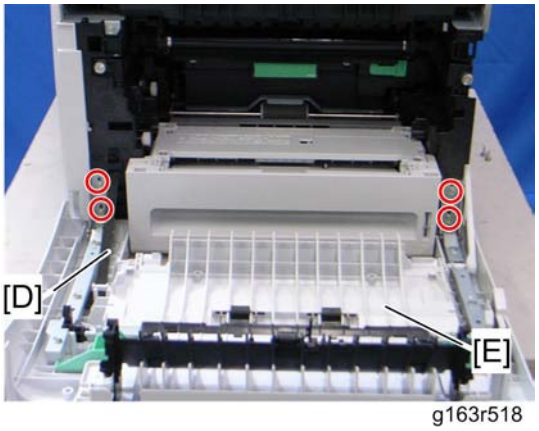
7. Cover link gear unit [C] (x 2)



g163r518

8. Release the belt [D].
9. Front cover unit [E] (x 4)

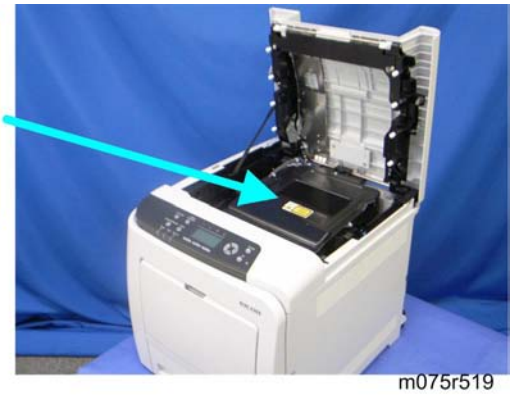
Laser Optics

⚠WARNING

- Turn off the main power switch and unplug the printer before beginning any of the procedures in this section. Laser beams can cause serious eye injury.

Caution Decal Location

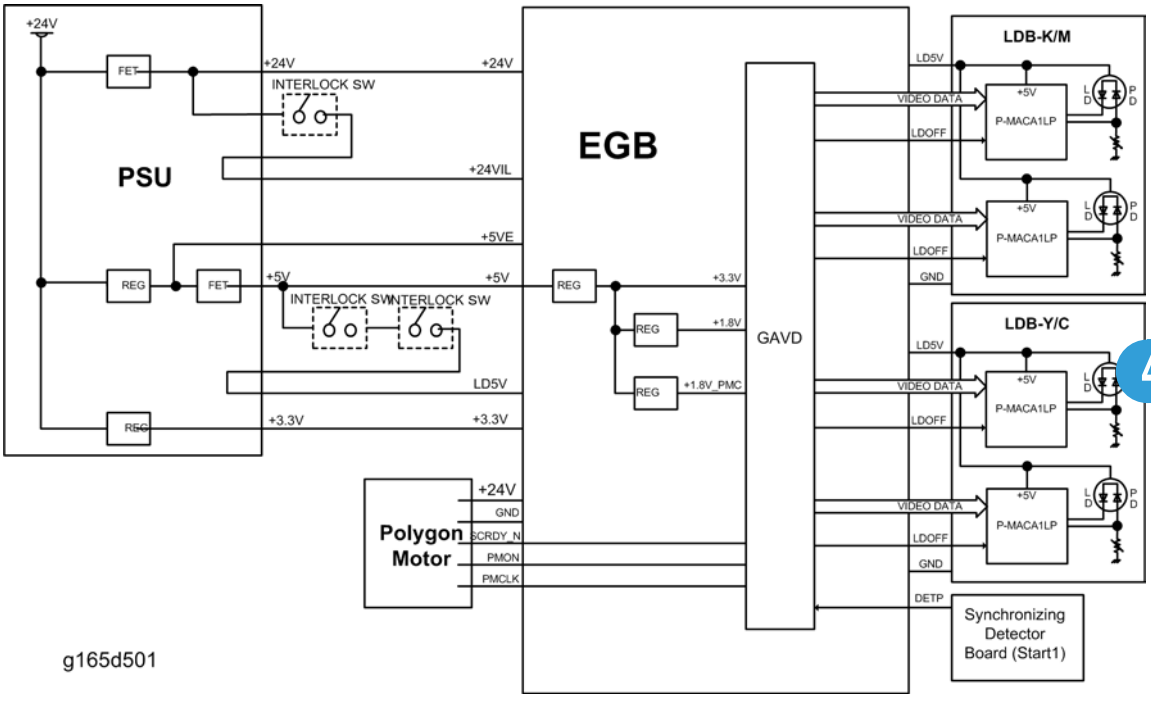
Caution decals are attached as shown below.



⚠WARNING

- Be sure to turn off the main power switch and disconnect the power plug from the power outlet before beginning any disassembly or adjustment of the laser unit. This printer uses a class IIIb laser beam with a wavelength of 780 nm and an output of 7 mW. The laser can cause serious eye injury.

LD Safety Switch



A safety switch turns off when the front cover or the right door is opened. As a result, the relay on the PSU cuts off the power supply (+5V) to the four LD boards. (The electric circuits go through the EGB and IOB) This system prevents unexpected laser emission, and ensures user safety and technician safety.

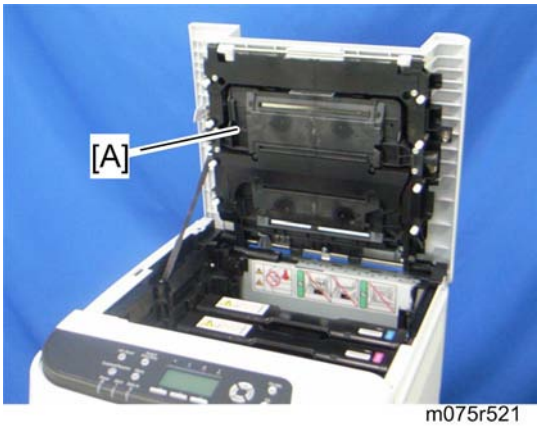
Laser Optics Housing Unit

1. Rear cover (p.25)
2. Controller box cover (p.73 "Controller Board")


g163r520

4

3. Disconnect the three harnesses from CN301, 302 and 303 on the EGB (x 3).



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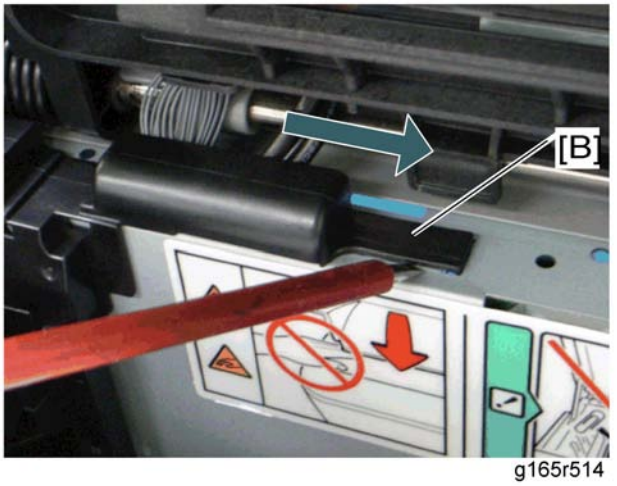
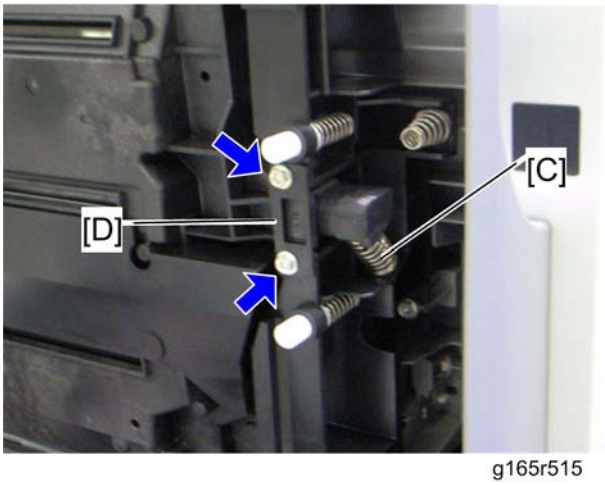
4. Open the top cover [A].



g165r514

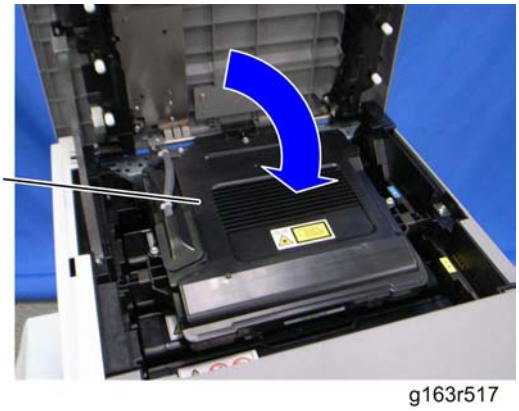
5. Lift up the hook of the harness guide [B] at the rear-left frame and slide the harness guide to the right.



g165r515

6. Remove the springs [C] (left side and right side).
7. Stoppers [D] (x 2 each; left side and right side)

g165r516



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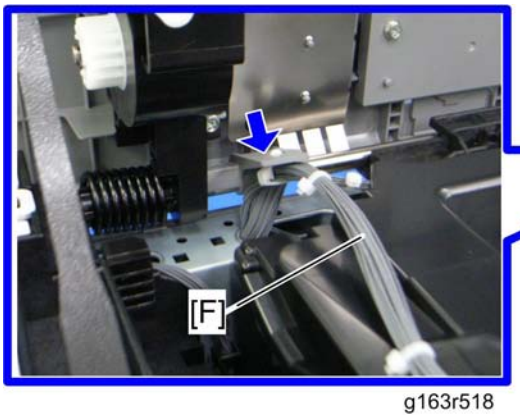
8. Remove the laser optics housing unit [E] from the top cover and place it on the main body.

Note

- Always use two hands when carrying the laser optics housing unit. Be sure not to drop the laser optics housing unit.



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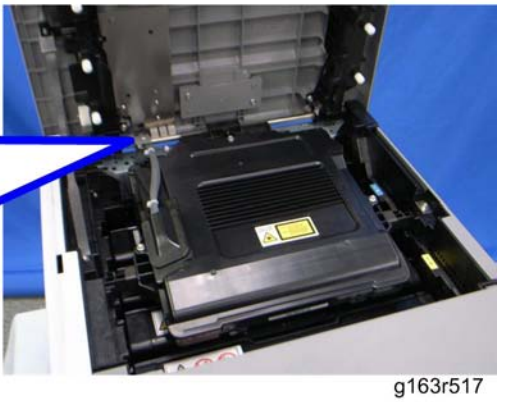


g163r517

4

9. Take out the harnesses [F] (x 1).
10. Pull out the harnesses from the rear side.

g165r519

11. Remove the laser optics housing unit.

After replacing the laser optics housing unit

1. Turn on the machine.
2. Execute "Pro.Position Adj" with SP2-120-001, and then execute "LPos. Adj:Fine" with SP2-120-002.
3. Adjust the registration settings for each tray and for the front and rear sides of the paper with SP1-001 and SP1-002 if necessary.

AIO Cartridge

AIO Cartridge (All In One Cartridge)

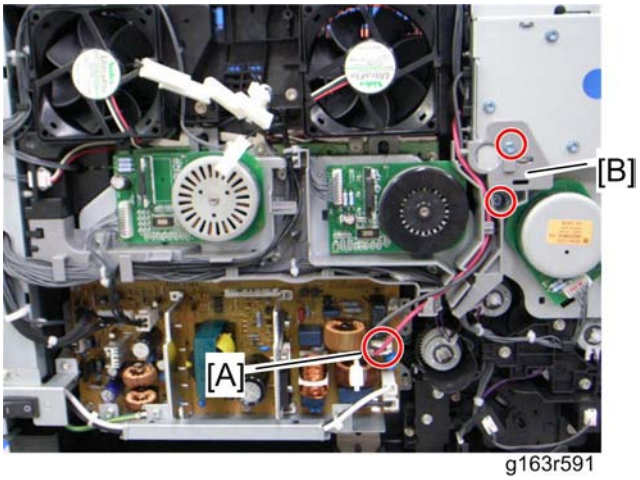
1. Open the top cover.

m075r522

2. AIO cartridge [A]

Black AIO Motor

1. Left cover (p.27)
2. Interlock switch base (p.77 "Interlock Switches")



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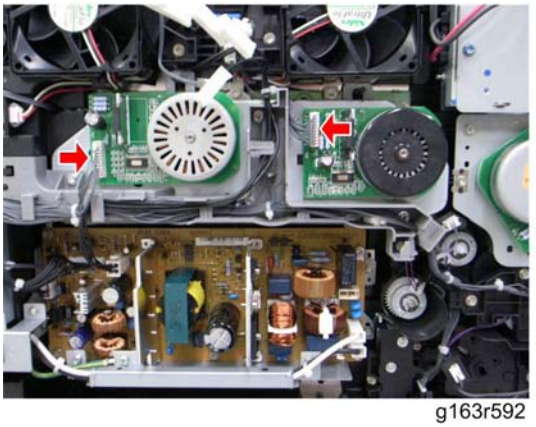
3. Disconnect the fusing connector [A].
4. Fusing harness guide [B] (x 2)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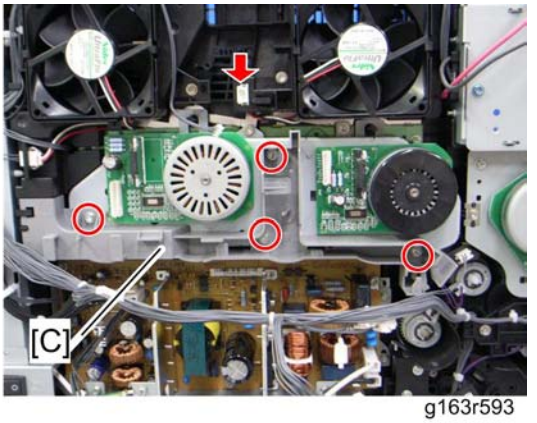
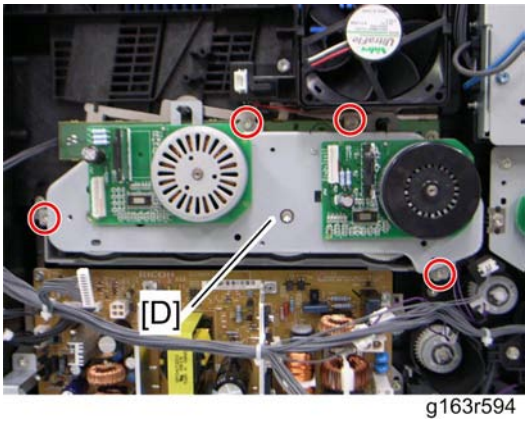


g163r593

4

5. Disconnect the connectors pointed by arrows in the above picture and take aside all harnesses on the harness guide [C].
6. Harness guide [C] (x 4)
7. Remove the LSU fan base (p.80 "ID Chip Board")



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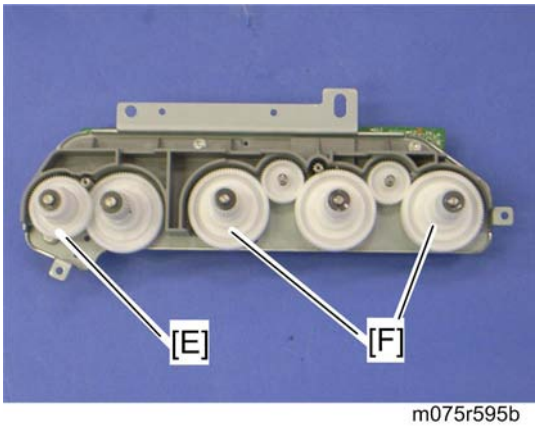
8. Drive unit [D] (x 4)



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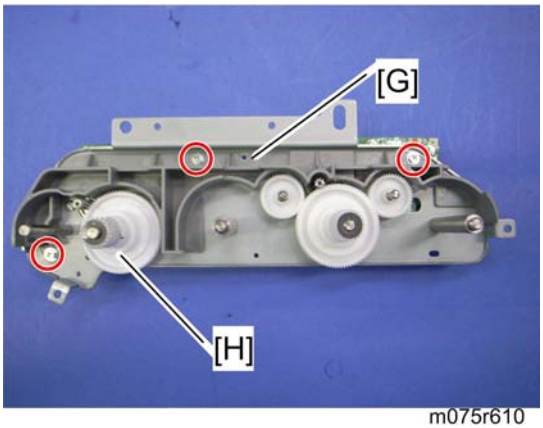
9. Image transfer unit gear [E] (washer x 1)
10. AIO gears [F] (washer x 1 each)



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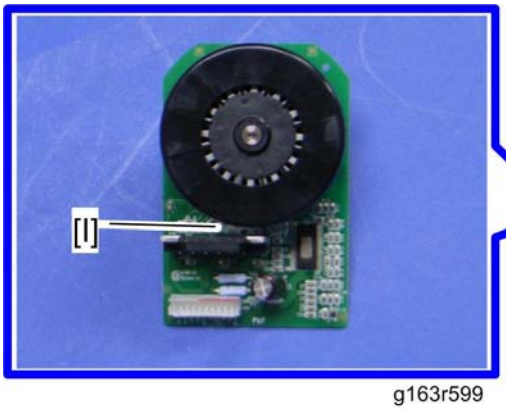
11. Drive unit guide [G] (x 3)
12. AIO gear [H]



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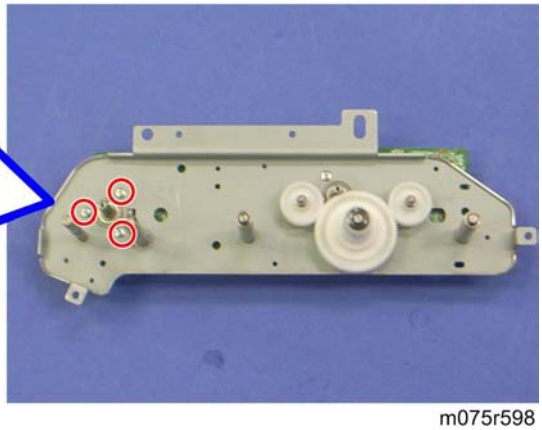
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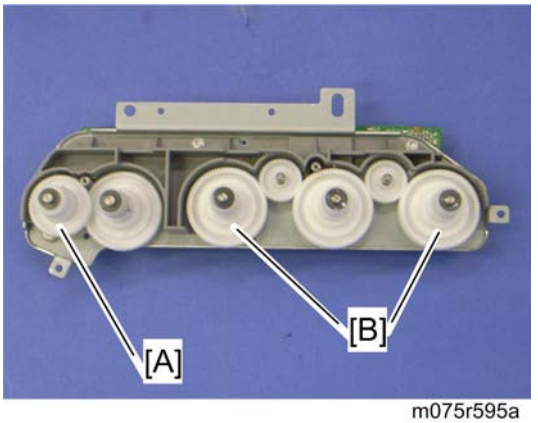
13. Black AIO motor [I] (x 3)

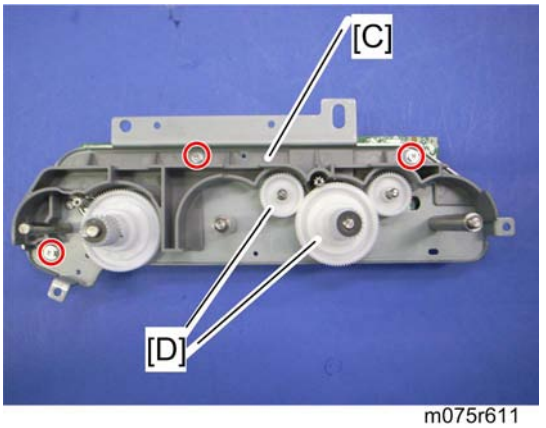
Color AIO Motor

1. Drive unit (p.35 "Black AIO Motor")



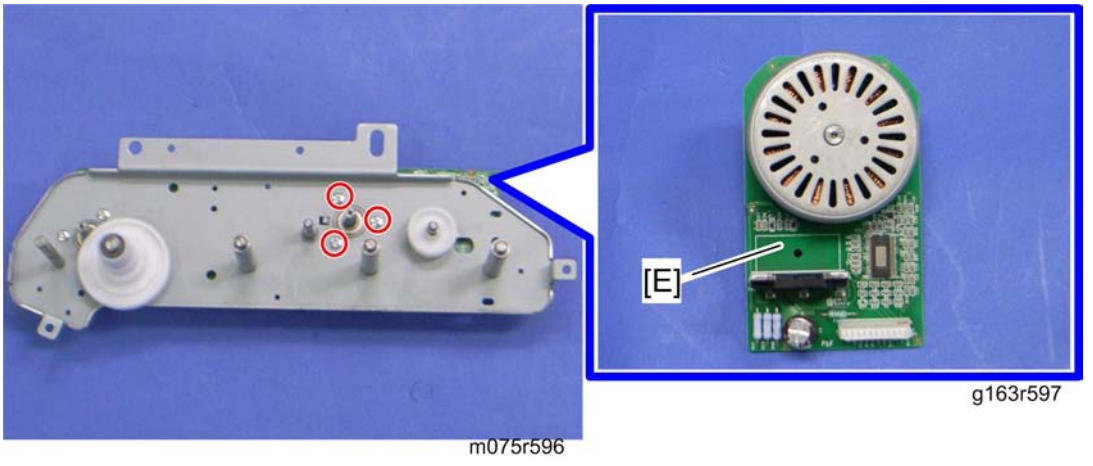
m075r595a

2. Image transfer unit gear [A] (washer x 1)
3. Color AIO gear [B] (washer x 1)



m075r611

4. Drive unit guide [C] (x 3)
5. AIO gear and idle gear [D]



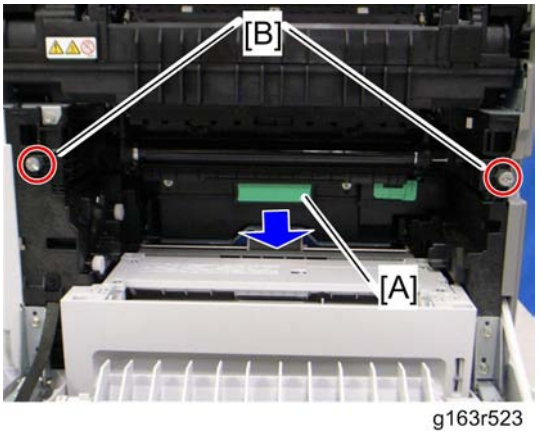
m075r596
g163r597

6. Color AIO motor [E] (x 3)

Image Transfer

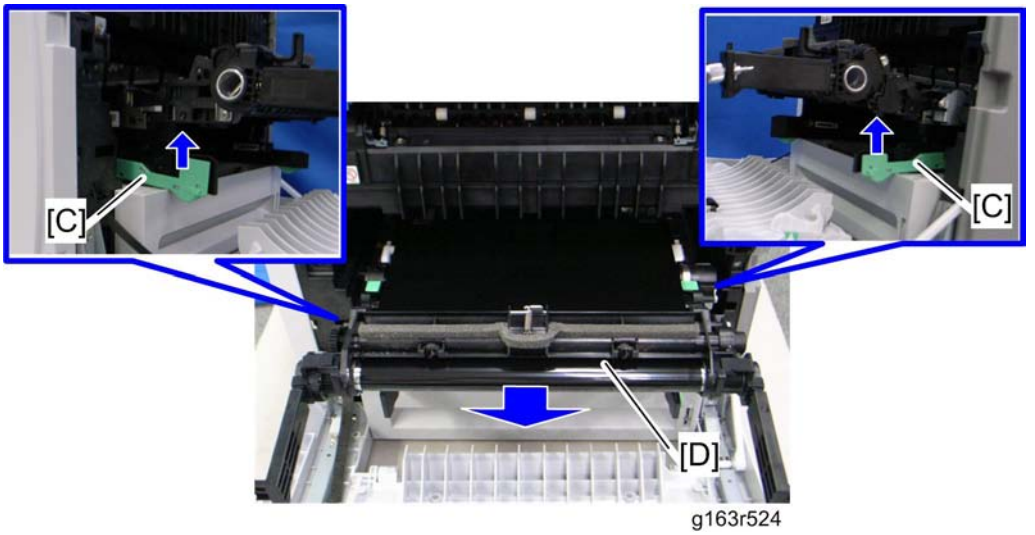
Image Transfer Belt Unit

1. Remove all the AIO cartridges (p.35 "AIO Cartridge (All In One Cartridge) ").
2. Transfer unit (p.49)



g163r523

3. Remove the waste toner bottle [A].
4. Remove the two screws [B].



g163r524

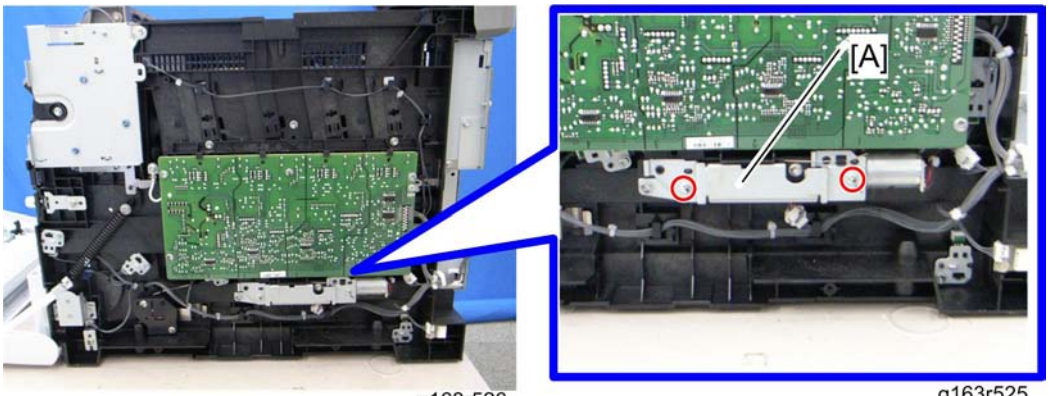
5. Grab the handles [C], and then pull out the image transfer belt unit [D].

After installing a new image transfer belt unit

Execute SP2-120-009 (Transfer Belt Adj) after installing a new image transfer belt unit.

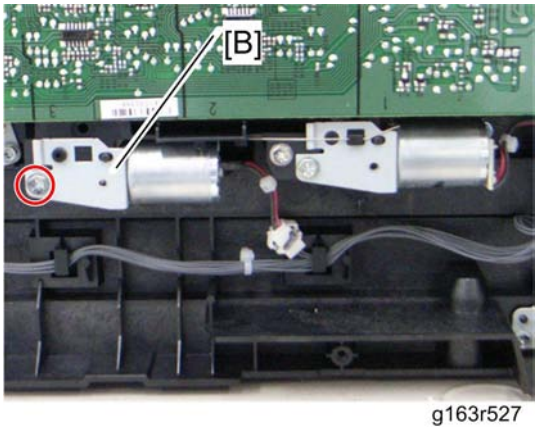
Agitator Motor

1. Right cover (p.27)



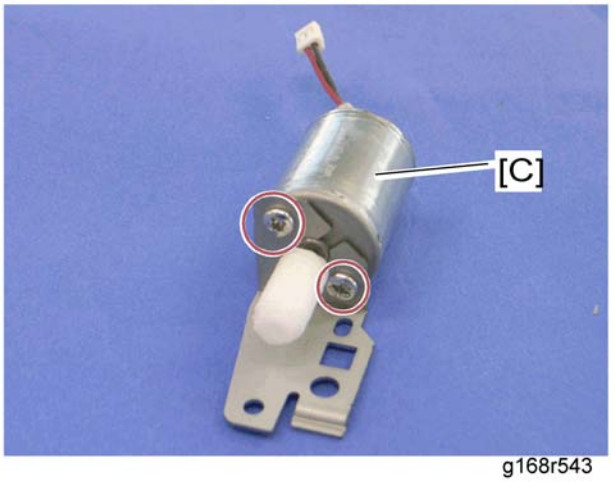
g163r526 g163r525

2. Motor bracket [A] (x 2)



g163r527

3. Agitator motor assembly [B] (x 1, x 1)

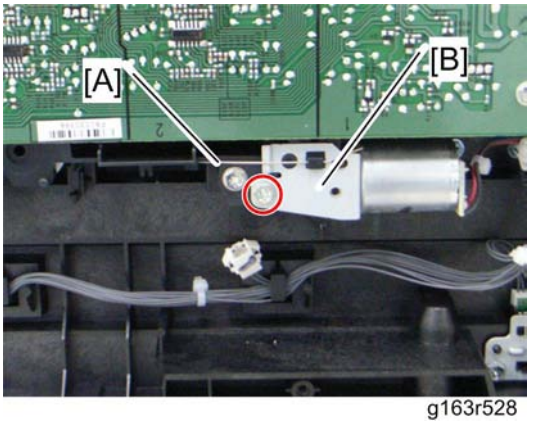


g168r543

4. Agitator motor [C] (x 2)

ITB (Image Transfer Belt) Contact Motor

1. Agitator motor (p.41)



g163r528

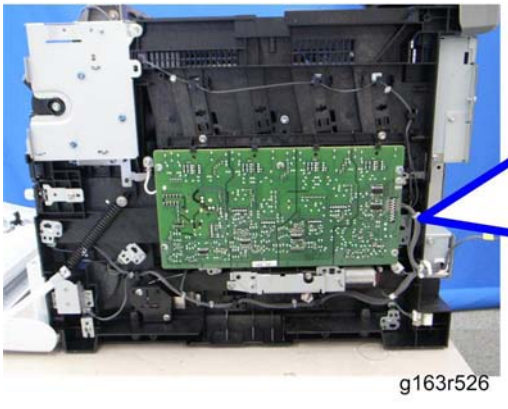
2. Release the wire [A].
3. ITB contact motor assembly [B] (x 1, x 1)

g168r545

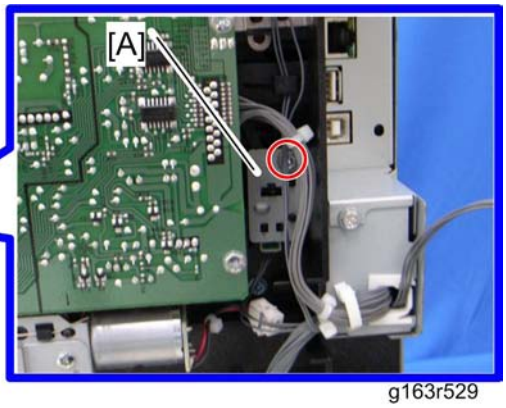
4. ITB contact motor [C] (x 2)

ITB (Image Transfer Belt) Contact Sensor

1. Right cover (p.27)

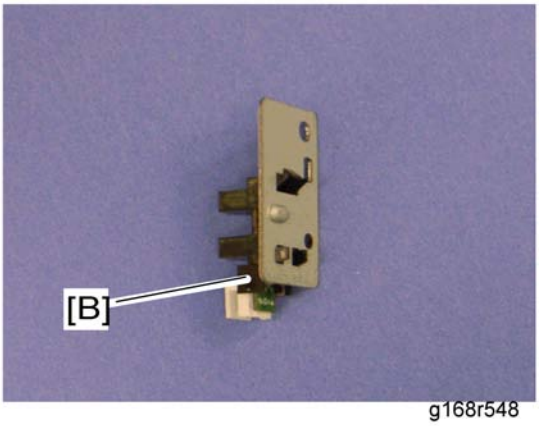


g163r526



g163r529

2. ITB contact sensor assembly [A] (x 1, x 1)

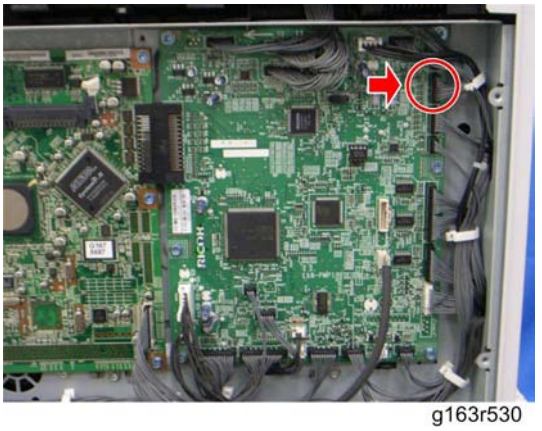


g168r548

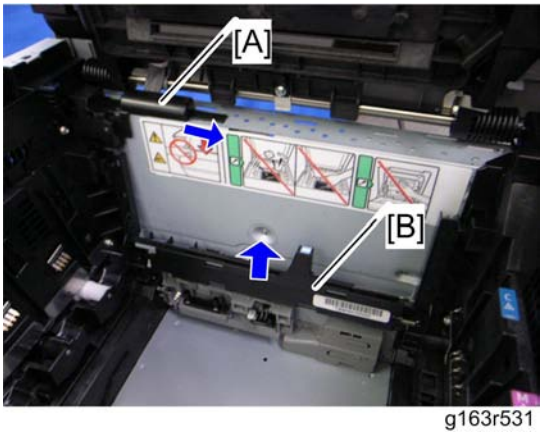
3. ITB contact sensor [B] (hooks)

TM (Toner Mark) Sensor Base

1. Open the top cover.
2. Remove all AIO cartridges (p.35).
3. Slide the ITB unit to the front side or remove it.
4. Rear cover (p.25)
5. Controller box cover (p.73 "Controller Board")


g163r530

6. Disconnect CN306 on the EGB (x 1).

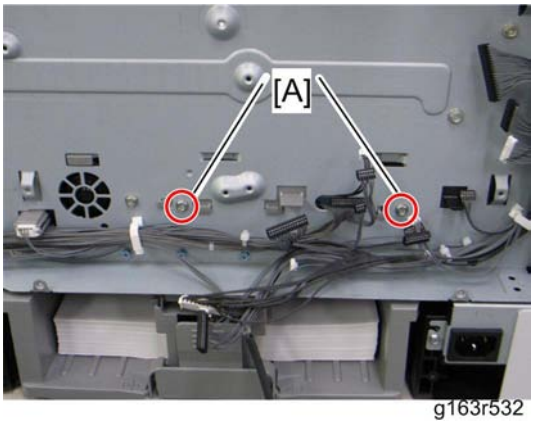


g163r531

7. Harness cover [A] (hooks)
8. TM sensor base [B]

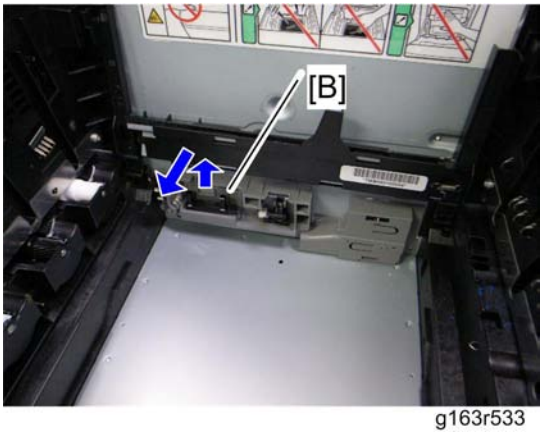
Waste Toner Bottle Set Sensor

1. Remove all AIO cartridges. (p.35)
2. Image transfer belt unit (p.40)
3. EGB (p.76)



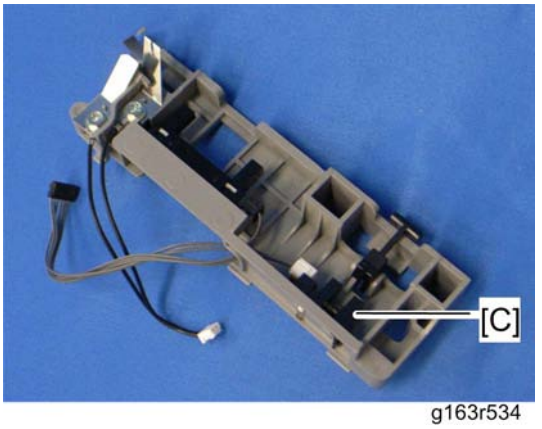
g163r532

4. Remove two screws [A] for the waste toner sensor base.



g163r533

5. Waste toner sensor base [B]
6. Remove the mylar at the bottom of the waste toner bottle set sensor.



g163r534

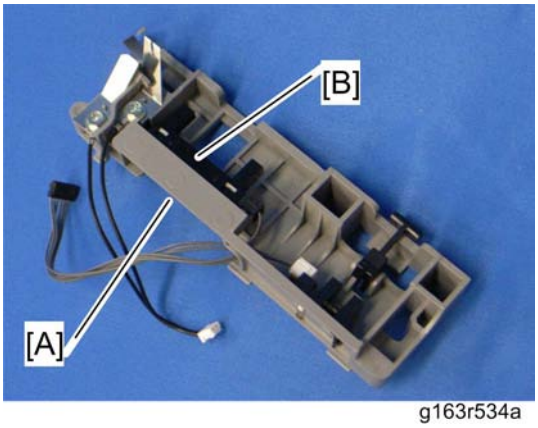
7. Waste toner bottle set sensor [C] (hooks, x 1)

Note

- When reinstalling the waste toner bottle set sensor, connect it to the white connector of the harness.

Waste Toner Overflow Sensor

1. Remove all AIO cartridges. (p.35)
2. Image transfer belt unit (p.40)
3. EGB (p.76)
4. Waste toner sensor base (p.45 "Waste Toner Bottle Set Sensor")



g163r534a

5. Remove the mylar [A] securing the three hooks of the waste toner overflow sensor (at the bottom of this sensor base).

Note

- Reattach this mylar after reinstalling the waste toner overflow sensor.

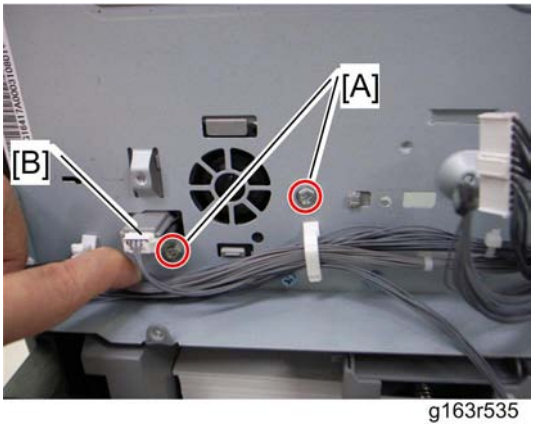
6. Waste toner overflow sensor [B] (hooks, x 1)

Note

- When reinstalling the waste toner overflow sensor, connect it to the black connector of the harness.

Air Intake Fan

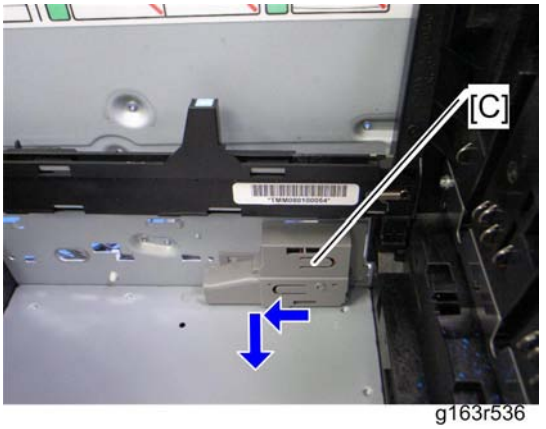
1. Remove all AIO Cartridge. (p.35)
2. Image transfer belt unit (p.40)
3. EGB (p.76)
4. Waste toner sensor base (p.45 "Waste Toner Bottle Set Sensor")



g163r535

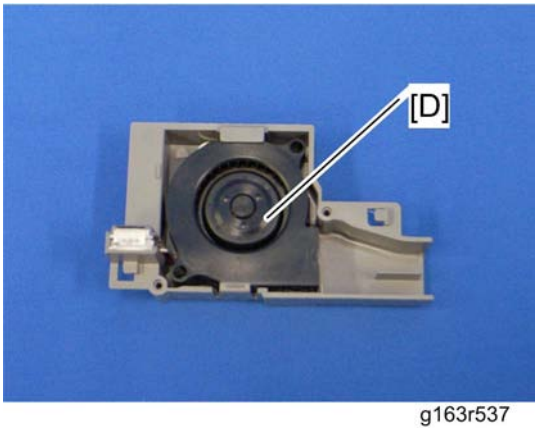
5. Remove two screws [A] for the air intake fan base.

6. Disconnect the harness [B].



g163r536

7. Air intake fan base [C]



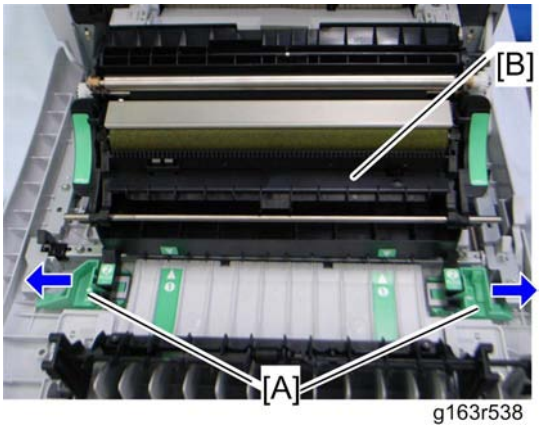
g163r537

8. Air intake fan [D] (x 1)

Paper Transfer

Transfer Unit

1. Open the front cover.

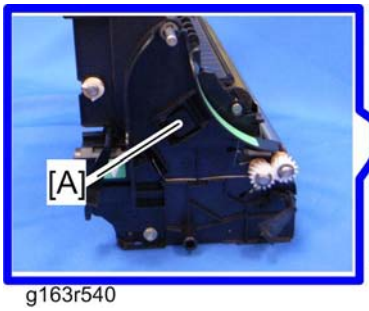


g163r538

2. Release the locks [A].
3. Transfer unit [B]

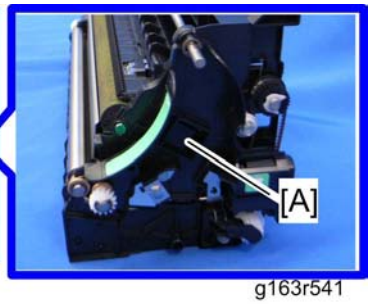
Transfer Roller

1. Transfer Unit (p.49)



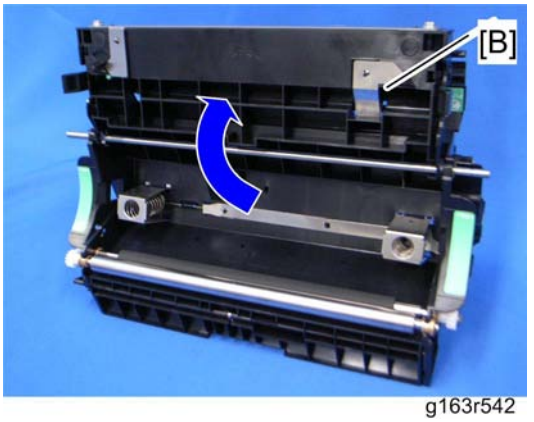
g163r540


g163r539



g163r541

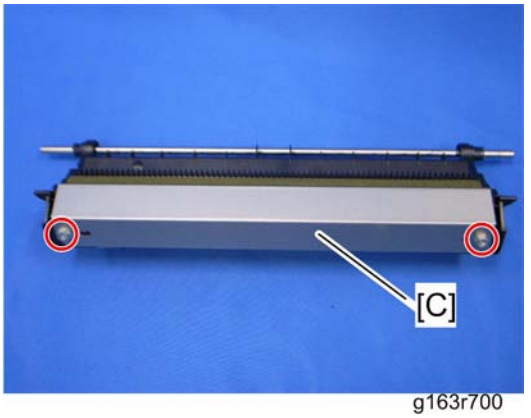
2. Release the two hooks [A] at both sides of the transfer unit.



g163r542

4

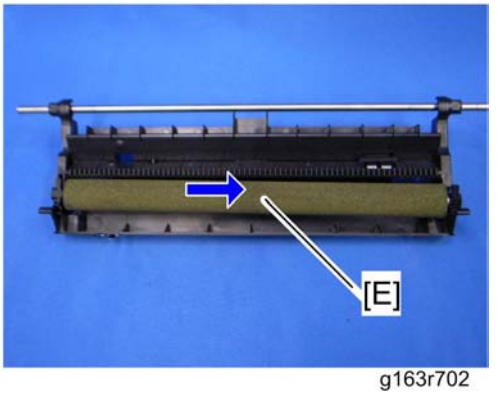
3. Open the transfer roller unit [B] and remove it.



g163r700

4. Transfer roller assembly [C] (x 2)

g163r701

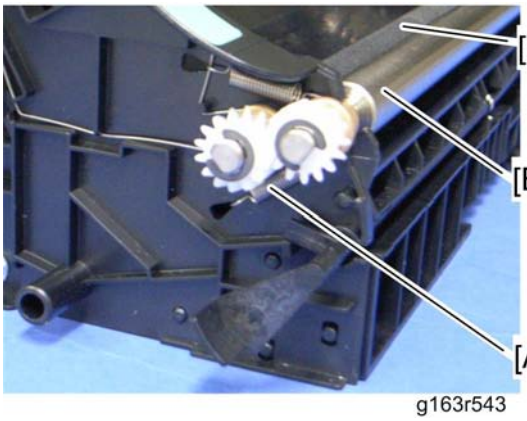


g163r702

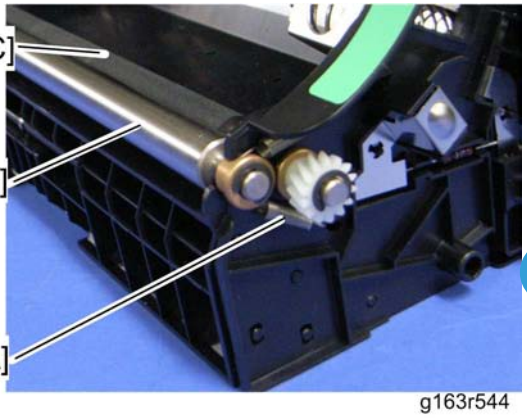
5. Release the holder [D] at the left side of the transfer roller unit (hook).
6. Transfer roller [E]

Registration Roller

1. Transfer unit (p.49)
2. Transfer roller unit (p.49)



g163r543


g163r544

3. Tension springs [A] (both sides)
4. Registration idle roller [B] (C x 2, gear x 1, bushing x 2)
5. Registration roller [C] (C x 2, gear x 2, bushing x 2)

Reassembling the registration roller unit

g168r559

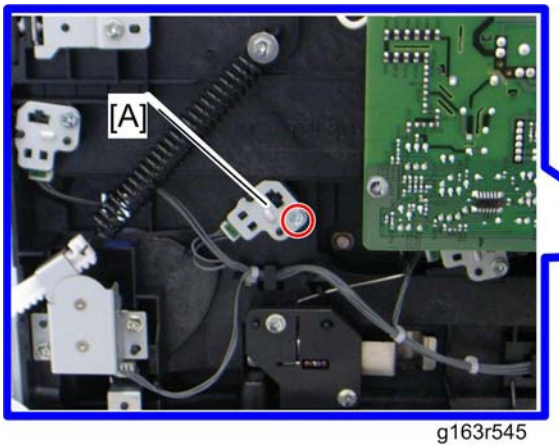
When installing the tension spring, make sure that the tension spring correctly hooks onto the bushing of the registration idle roller as shown above [A].

⚠CAUTION

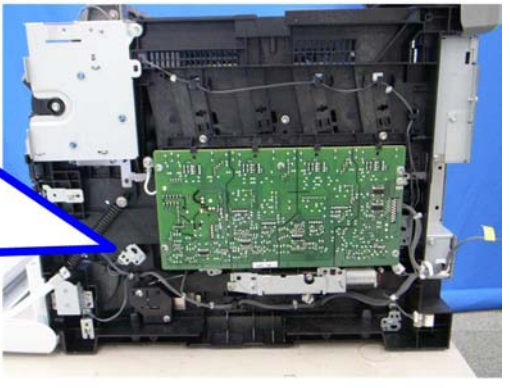
- Never fail to reassemble the registration idle roller in the right direction.

Registration Sensor

1. Right Cover (☛p.27)

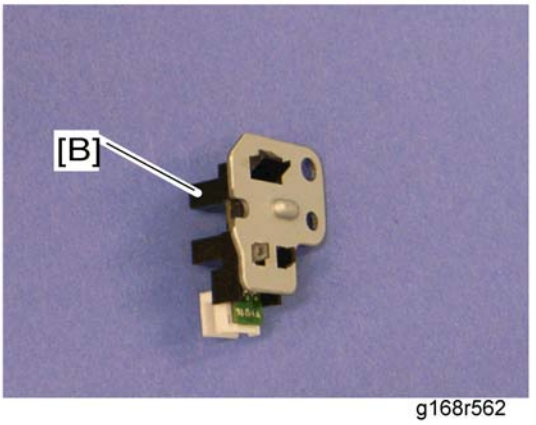


g163r545



g163r526

2. Registration sensor assembly [A] (x 1, x 1)



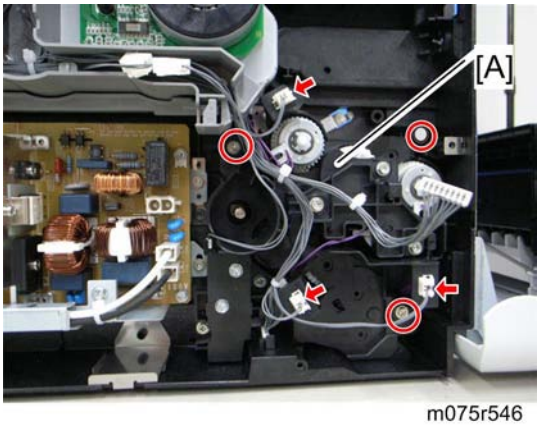
g168r562

3. Registration sensor [B] (hooks)

Registration and Duplex Clutch

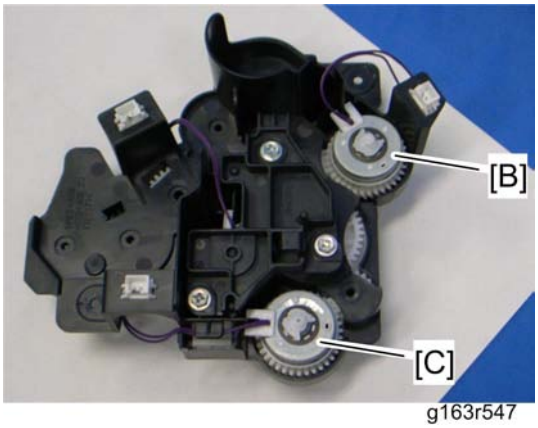
1. Rear cover (☛p.25)
2. Left cover (☛p.27)
3. Paper feed clutch (☛p.64)

4. Transport/Fusing motor (☛p.62)



m075r546

5. Lower transport gear unit [A] (x 3, x 3)

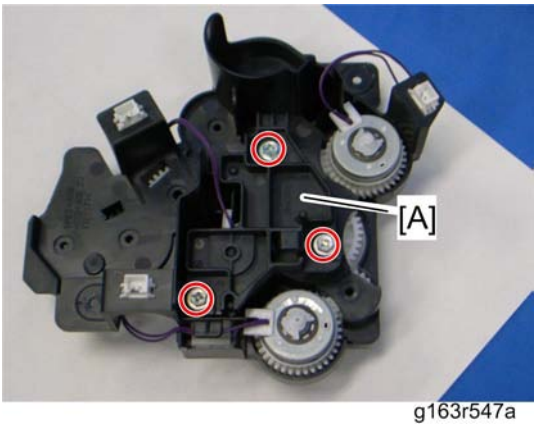


g163r547

6. Registration clutch [B] (x 1, x 1)
7. Duplex clutch [C] (x 1, x 1)

By-pass Clutch

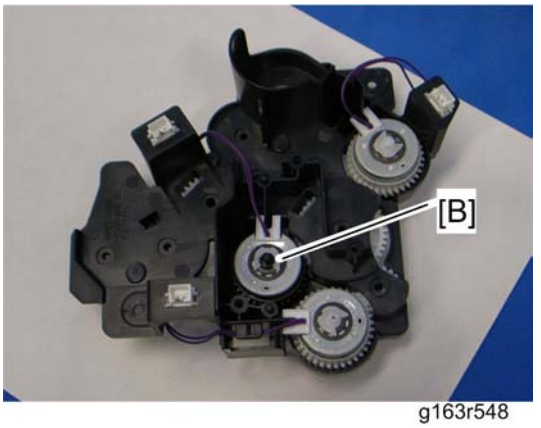
1. Lower transport gear unit (☛p.52 "Registration and Duplex Clutch")



g163r547a

4

2. Cover [A] (x 3)

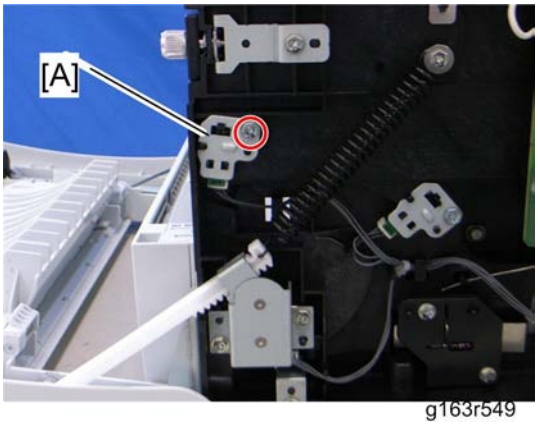


g163r548

3. By-pass clutch [B] (x 1, x 1)

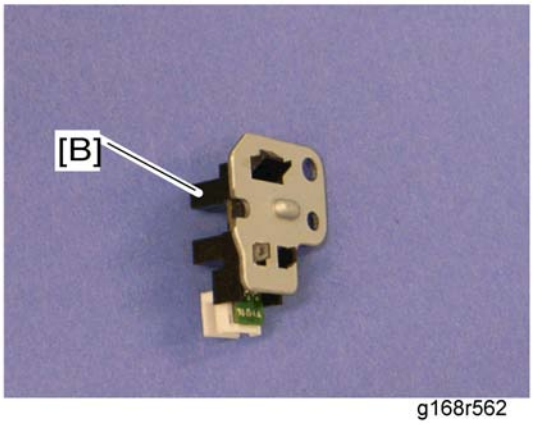
Front Cover Open Sensor

1. Right Cover (p.27)



g163r549

2. Front cover open sensor assembly [A] (x 1, x 1)



g168r562

3. Front cover open sensor [B] (hooks)

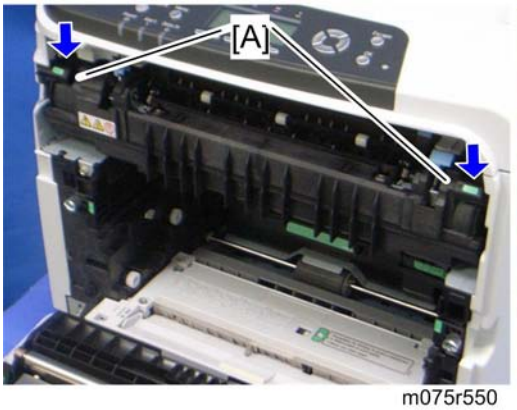
Image Fusing

⚠CAUTION

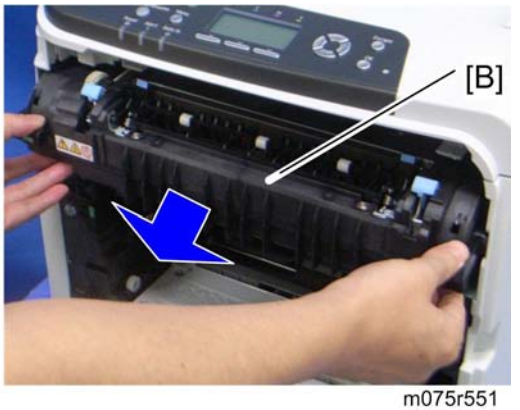
- Make sure that the fusing unit is cool before you touch it. The fusing unit can be very hot.
- Make sure to restore the insulators, shields, etc after you service the fusing unit.

Fusing Unit

1. Open the front cover.



m075r550



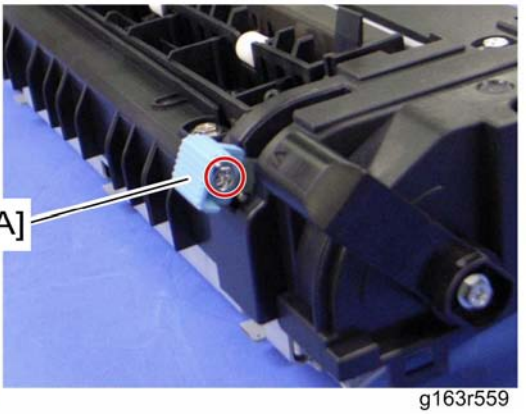
m075r551

2. Hold the fusing unit lock levers [A].
3. Fusing unit [B]

Fusing Lamp

1. Fusing unit (☛p.56)

g163r558


g163r559

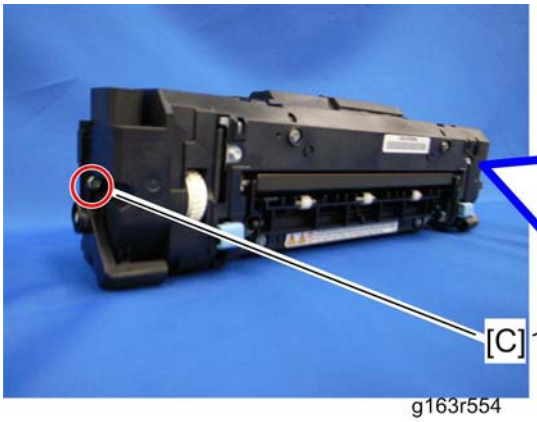
2. Pressure release lever knobs [A] (x 1 each)

g163r605

3. Lower the both pressure release levers [B].

⚠CAUTION

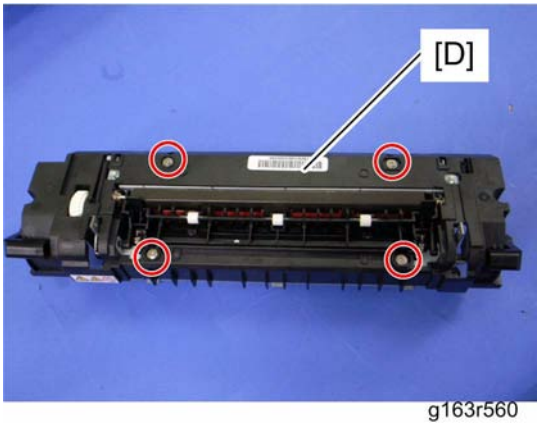
- Do not place the fusing unit with its rear entrance guide down. Otherwise, the fusing rear entrance guide can be broken.



g163r554

g163r555

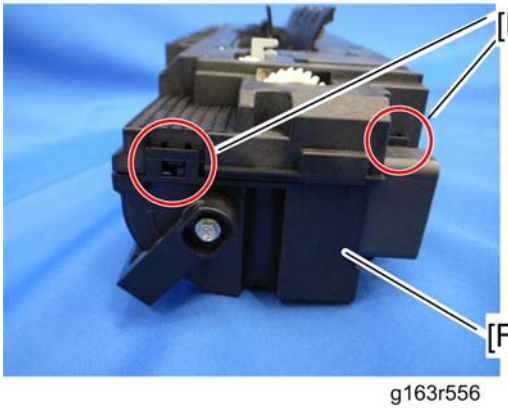
4. Remove two screws [C] at the left and right edge of the fusing unit.



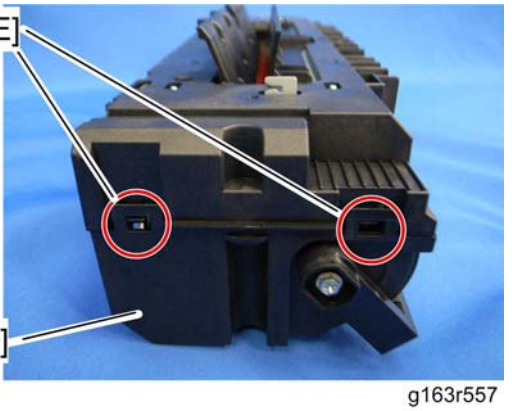
g163r560

4

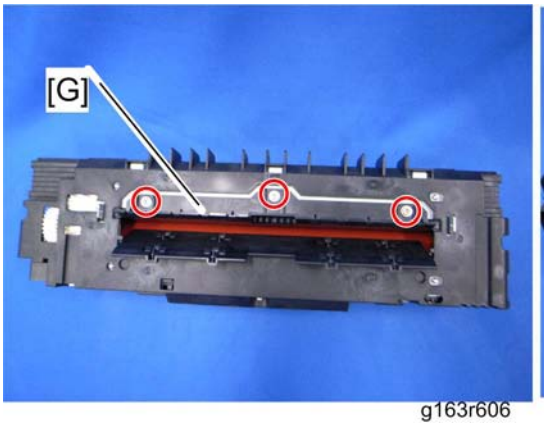
5. Remove four screws on the fusing upper cover [D].



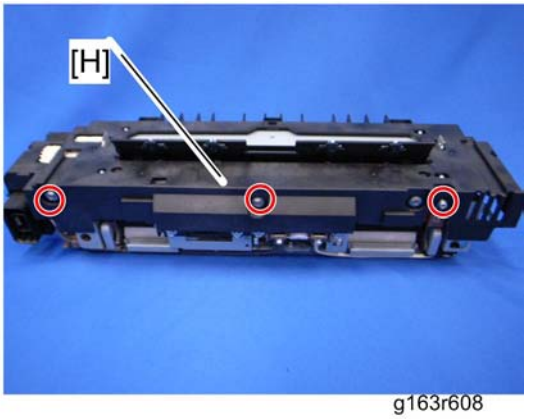
g163r556


g163r557

6. Release four hooks [E] of the fusing upper cover, and then remove the fusing upper cover [F].

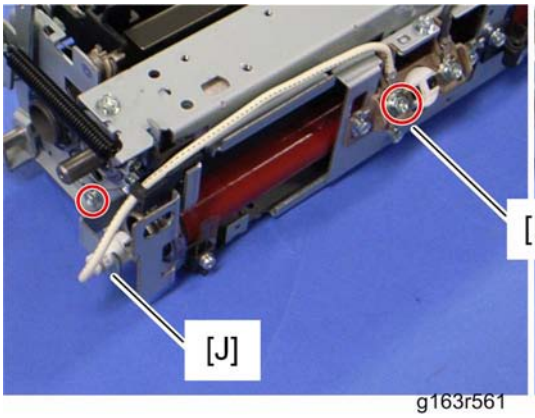


g163r606

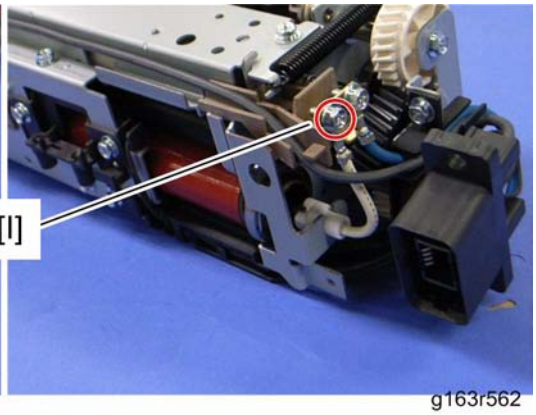


g163r608

7. Fusing lower guide front plate [G] (x 3)
8. Fusing lower cover [H] (x 3)

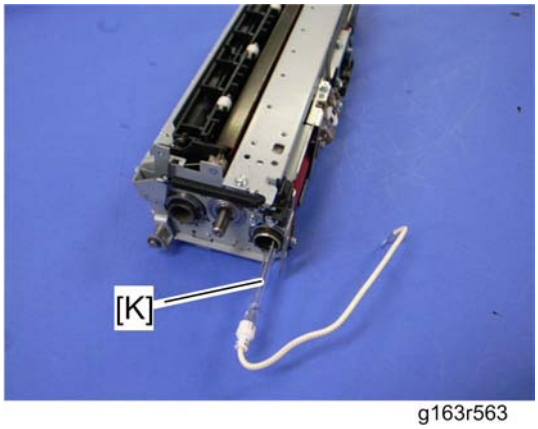


g163r561



g163r562

9. Remove two screws [I].
10. Fusing lamp right stay [J] (x 1)

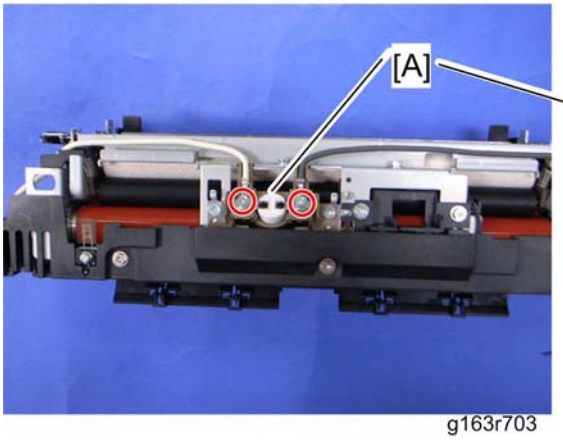


g163r563

11. Fusing lamp [K]

Thermostat

1. Fusing unit (☛p.56)
2. Fusing upper cover (☛p.56 "Fusing Lamp")



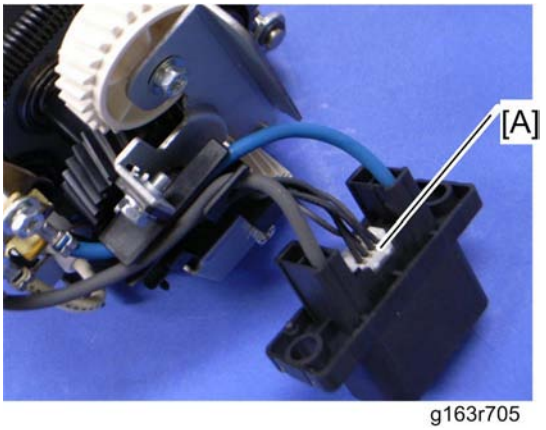
g163r703

g163r704

3. Thermostat [A] (x 2)

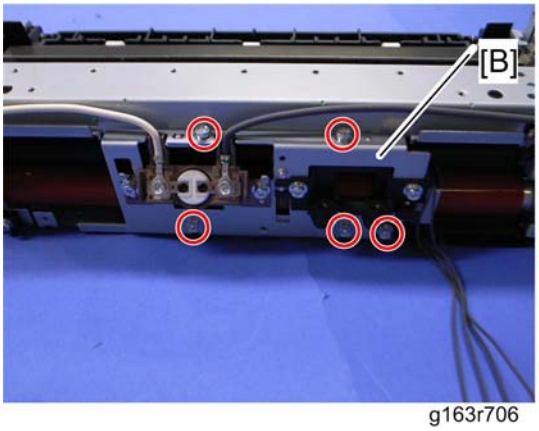
Thermistors

1. Fusing unit (p.56)
2. Fusing upper cover (p.56 "Fusing Lamp")
1. Fusing lower cover (p.56 "Fusing Lamp")

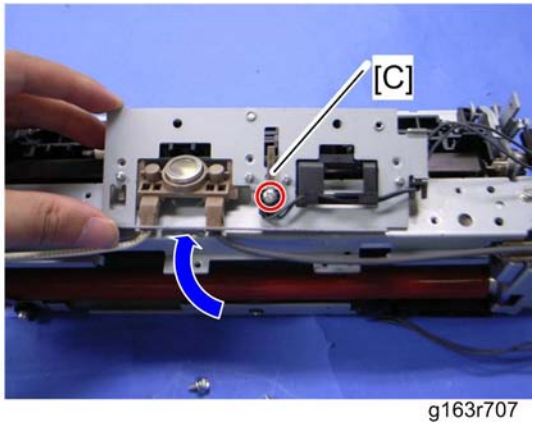


g163r705

2. Disconnect the thermistor connector [A].

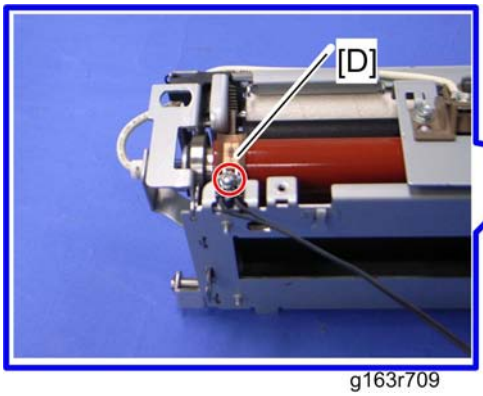


g163r706

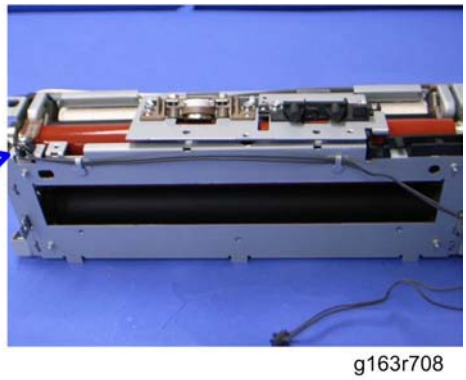


g163r707

3. Thermostat bracket [B] (x 5)
4. Thermistor: center [C] (x 1)

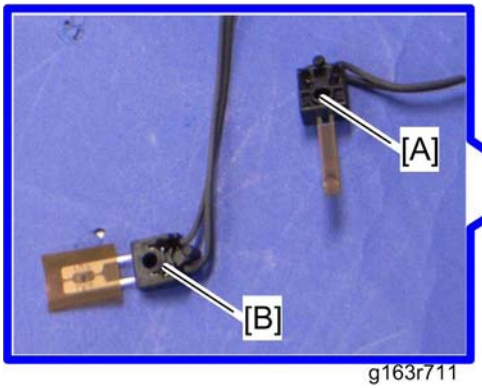


g163r709


g163r708

5. Thermistor: end [D] (x 1)

When installing the thermistors: center and end

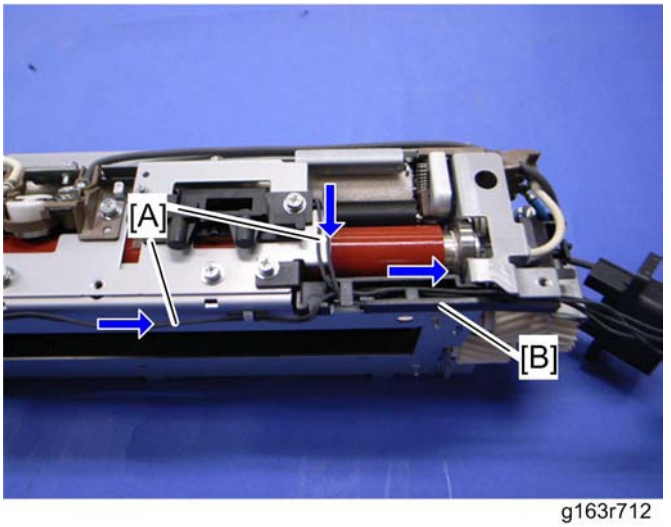


g163r711


g163r710

Do not mix up two thermistors;

- [A]: Thermistor: center
- [B]: Thermistor: end

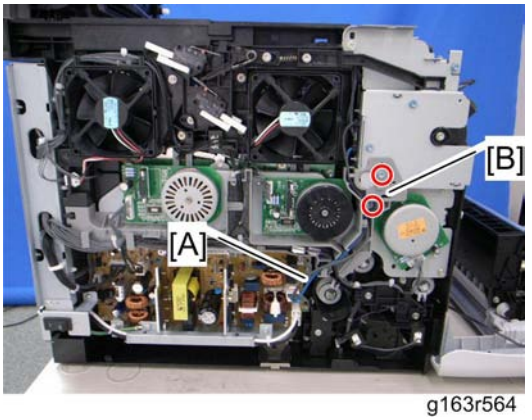


g163r712

Set the cables [A] of two thermistors along the cable guide [B].

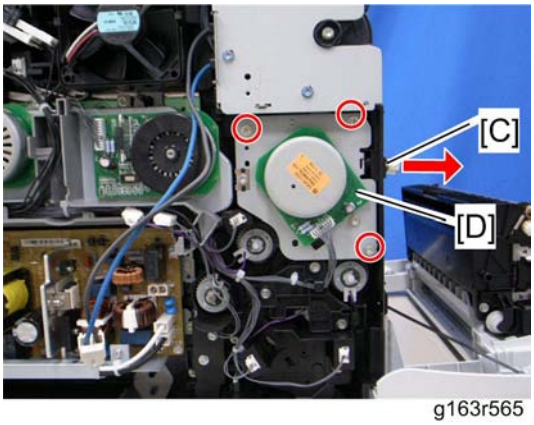
Transport/Fusing Motor

1. Rear cover (p.25)
2. Left cover (p.27)



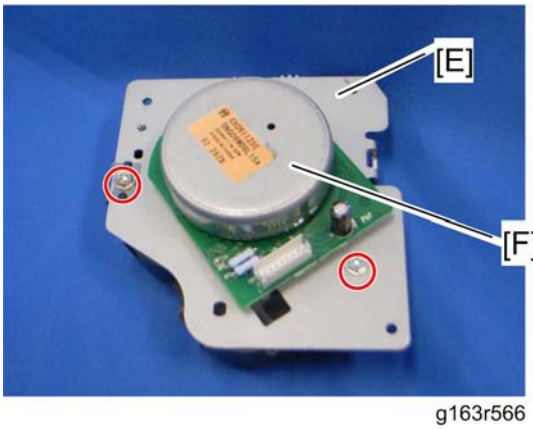
g163r564

3. Disconnect the fusing cables [A].
4. Fusing harness guide [B] (x 2)

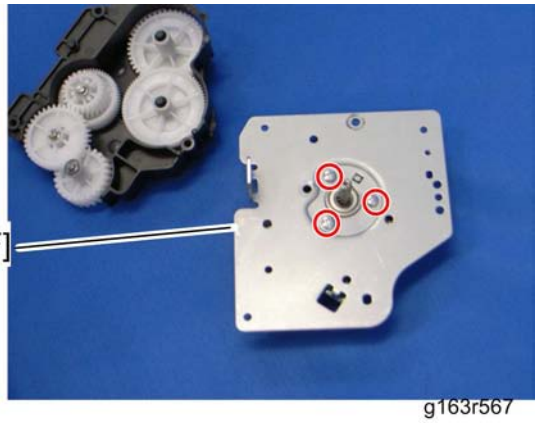


g163r565

5. Pull out the ITB unit [C] (x 2).
6. Transport/Fusing motor assembly [D] (x 3, x 1)



g163r566



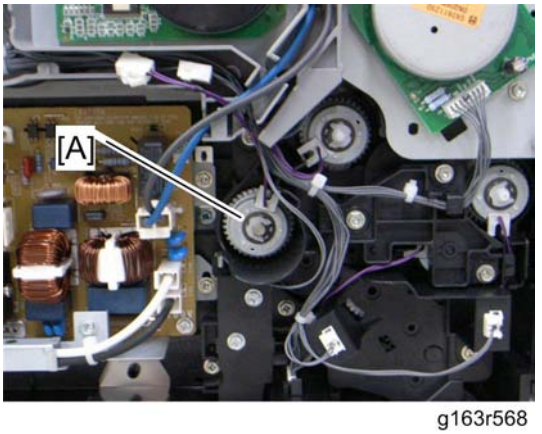
g163r567

7. Motor bracket [E] (x 2, ground plate x 1)
8. Transport/Fusing motor [F] (x 3)

Paper Feed and Exit

Paper Feed Clutch

1. Rear cover (p.25)
2. Left cover (p.27)

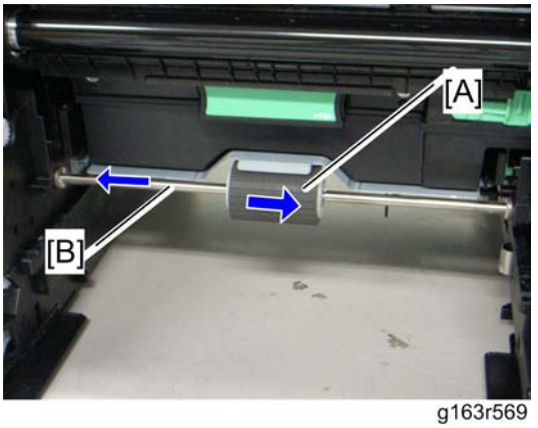


g163r568

3. Paper feed clutch [A] (x 1, x 1)

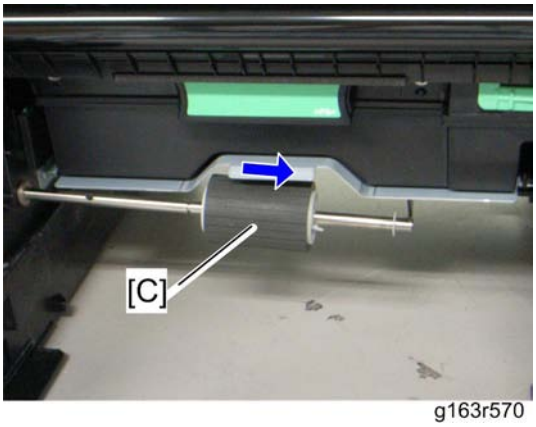
Paper Feed Roller

1. Pull out the tray.
2. Open the front cover.
3. Transfer unit (p.49)
4. Paper feed clutch (p.64)



g163r569

5. Slide the paper feed roller [A] to the right side (hook).
6. Slide the paper feed shaft [B] to the left side (x 1).

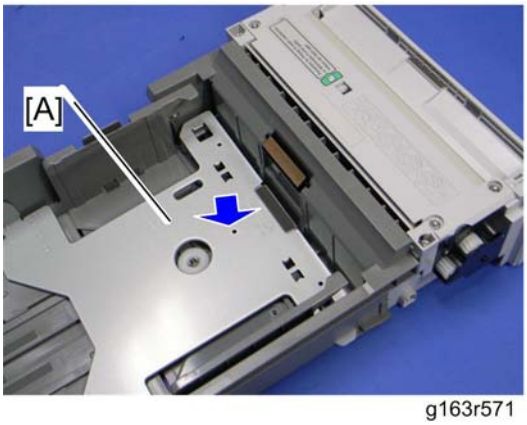


g163r570

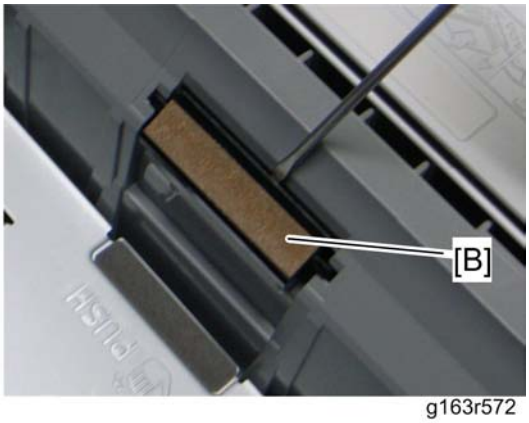
7. Paper feed roller [C] (x 1)

Separation Pad

1. Pull out the tray.



g163r571



g163r572

2. Push down the bottom plate [A].
3. Separation pad [B] (hooks, spring x 1)

g163r573

g163r574

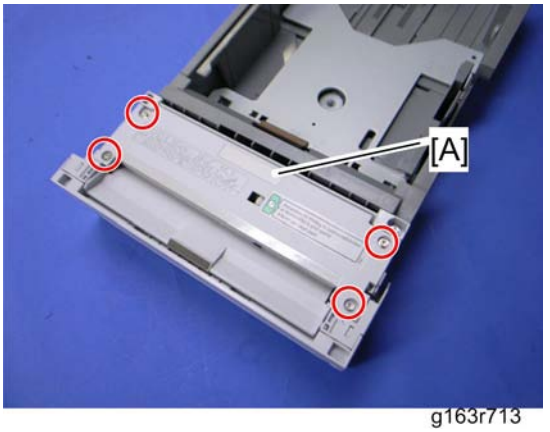
4

Note

- When reinstalling the separation pad, make sure that the mylar [C] is not placed under the separation pad. The right side image above shows incorrect installation.

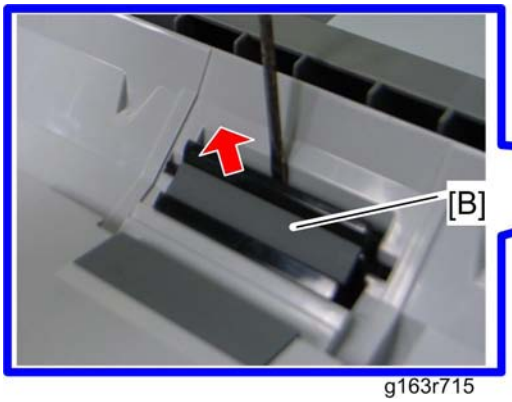
By-pass Separation Pad

1. Pull out the tray 1.

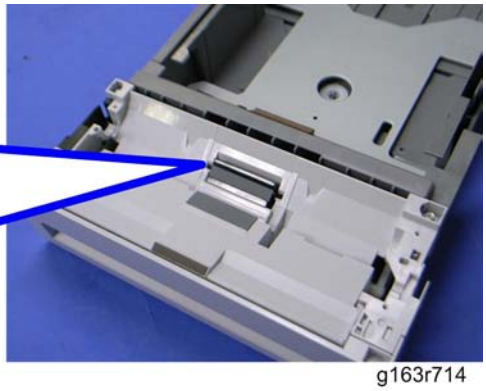


g163r713

2. By-pass feed unit [A] (x 4)



g163r715



g163r714

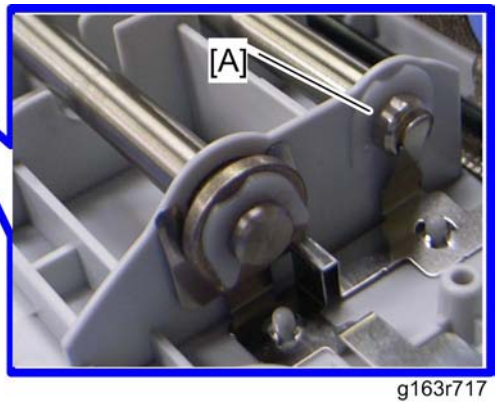
3. By-pass separation pad [B]

By-pass Pick-up and Feed Rollers

By-pass Pick-up Roller

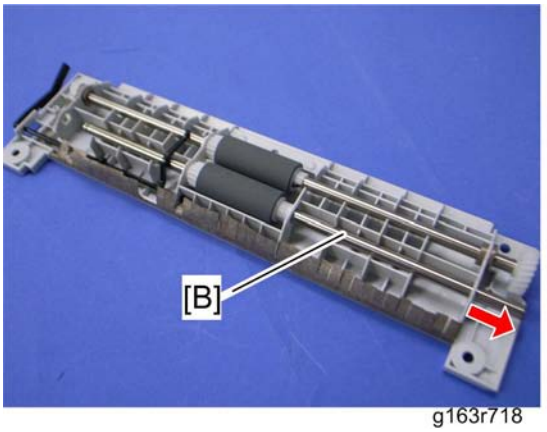
1. Pull out the tray 1.
2. By-pass feed unit (☛p.66 "By-pass Separation Pad")

g163r716

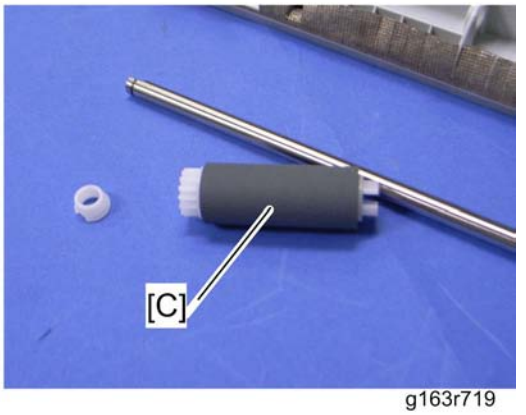


g163r717

3. Remove the clip [A].



g163r718



g163r719

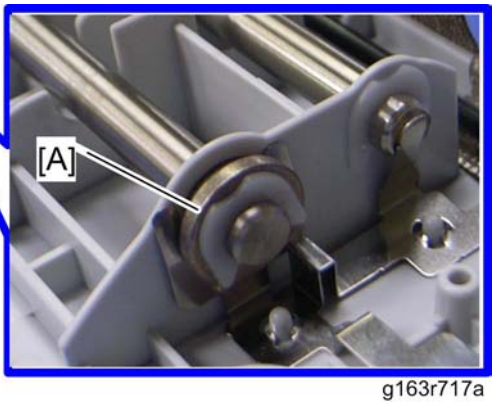
4

4. Pull out the by-pass pick-up roller shaft [B] (bushing x 1).
5. Pick-up roller [C]

By-pass Feed Roller

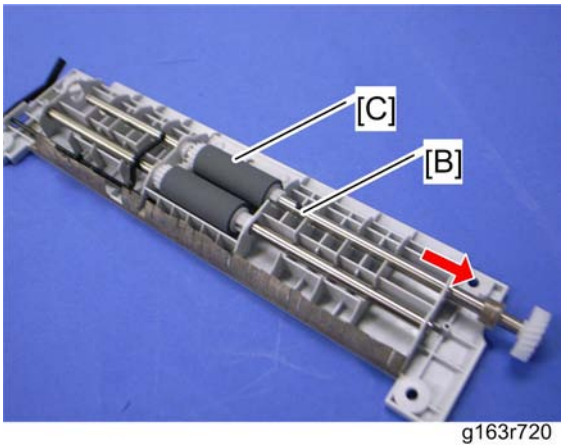
1. Pull out the tray 1.
2. By-pass feed unit (p.66 "By-pass Separation Pad")


g163r716a



g163r717a

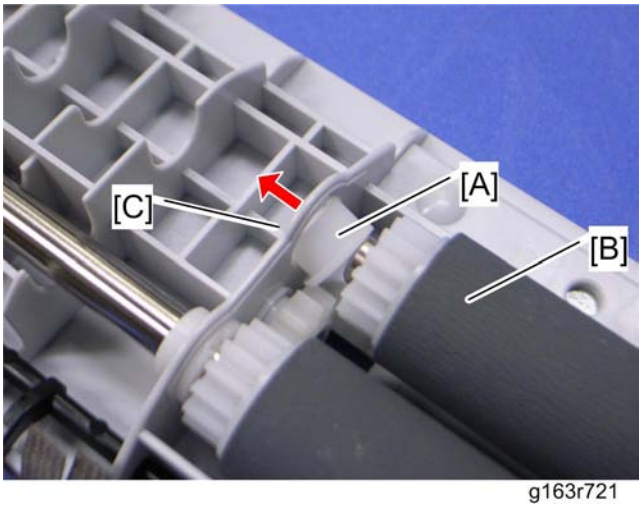
3. Bushing [A] at the by-pass feed roller shaft (x 1).



g163r720

4. Pull out the by-pass feed roller shaft [B] (bushing x 1).
5. Pick-up roller [C]

When installing the by-pass pick-up and feed rollers

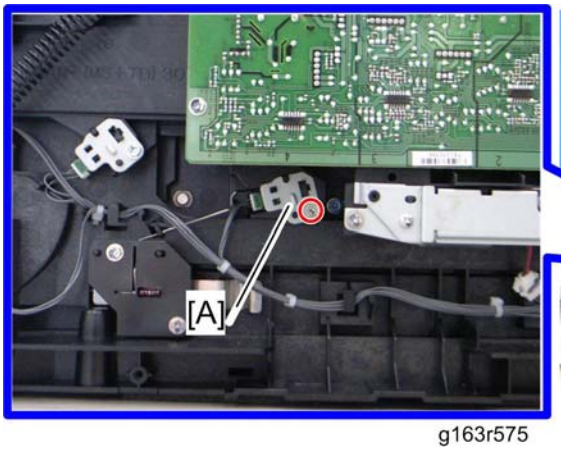


g163r721

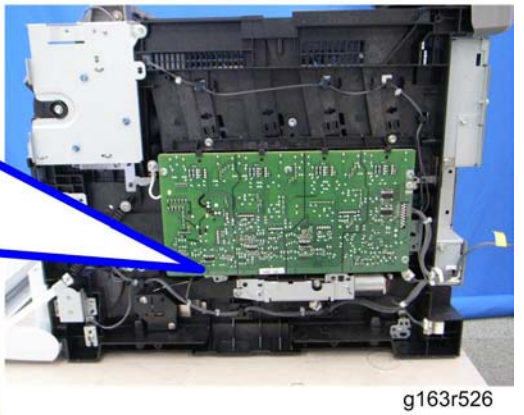
Make sure that the small plastic bushing [A] is correctly inserted between the pick-up or feed roller [B] and roller support plate [C].

Paper End Sensor

1. Rear cover (p.25)
2. Right cover (p.27)

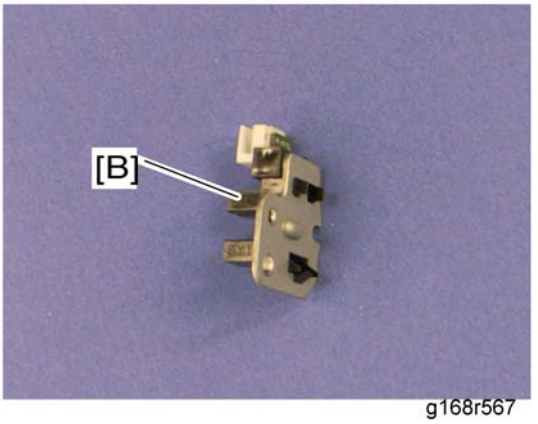


g163r575



g163r526

3. Paper end sensor assembly [A] (x 1, x 1)

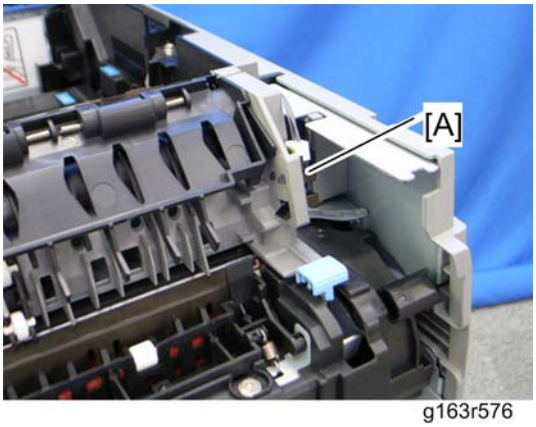


g168r567

4. Paper end sensor [B] (hooks)

Paper Exit Sensor

1. Operation panel (p.26)



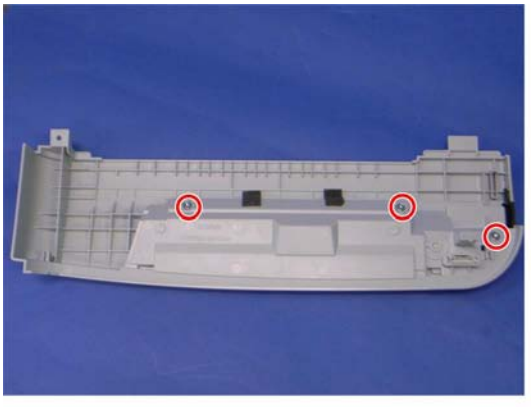
g163r576

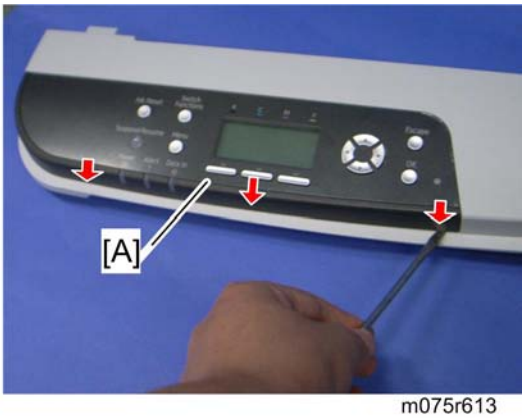
2. Remove the mylar at the bottom of the paper exit sensor.
3. Paper exit sensor [A] (hooks, x 1)

Electrical Components

Light Sensor

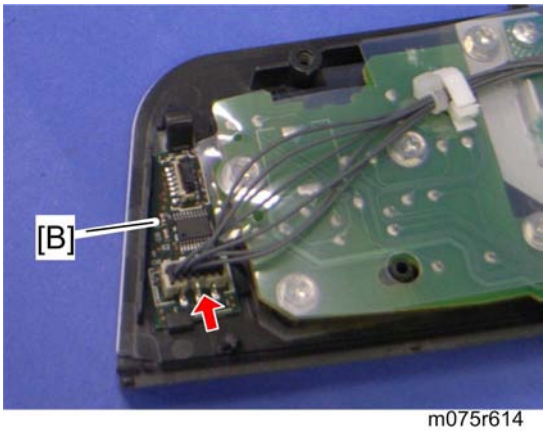
1. Operation panel (p.26)





m075r613

2. Remove three screws on the bottom of the operation panel.
3. Operation panel cover [A] (hooks)

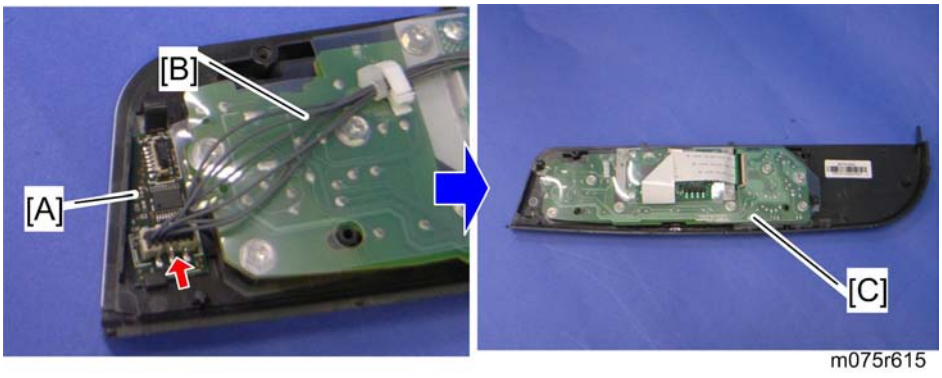


m075r614

4. Light sensor [B] (x 1, hooks)

Operation Panel Board Unit

1. Operation panel (p.26)



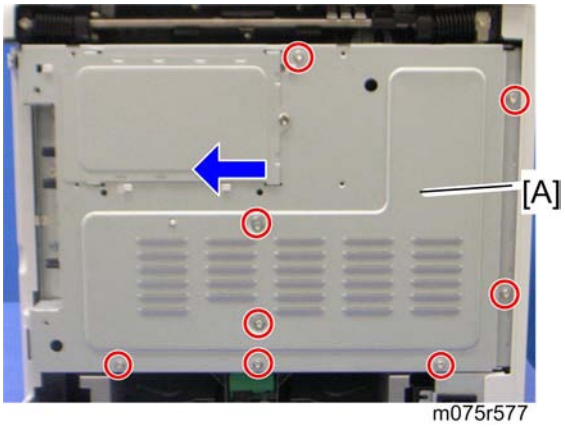
2. Light sensor [A] (x 1, hooks)
3. Harness [B]
4. Operation panel board unit [C]

Controller Board

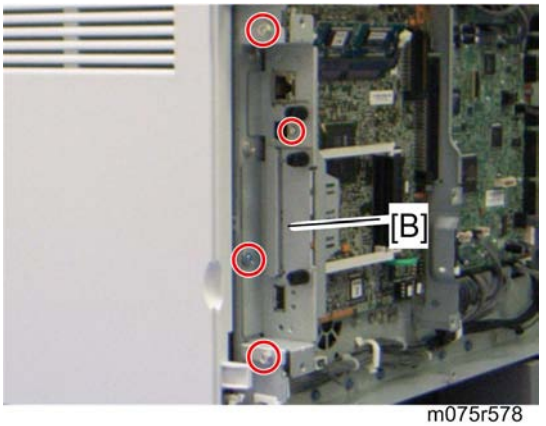
Important

- **Always touch a grounded surface to discharge static electricity from your hands before you handle SD cards, printed circuit boards, NVRAM or memory boards.**

1. Rear cover (p.25)

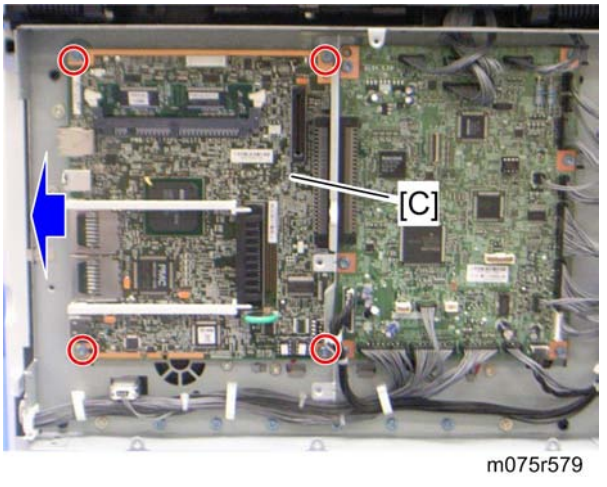


2. Controller box cover [A] (x 8)

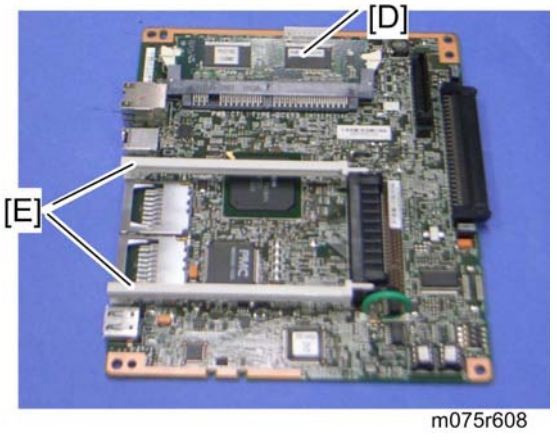


4

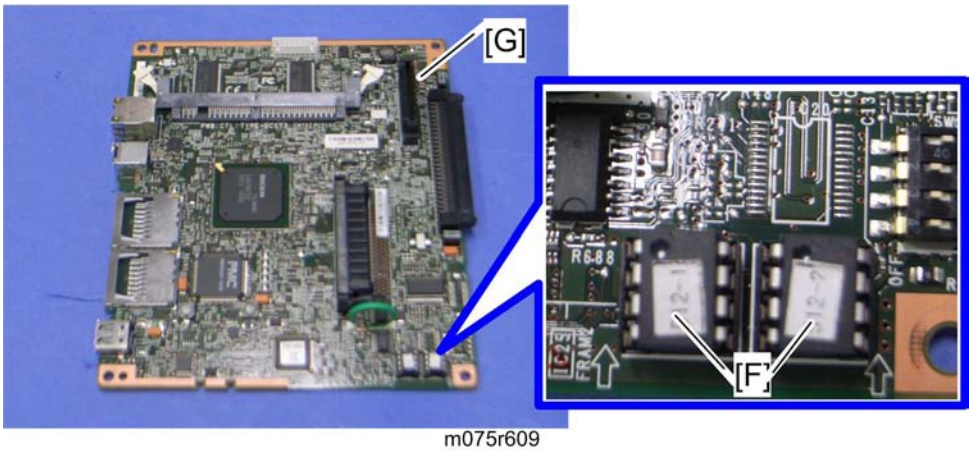
3. Interface bracket [B] (x4)



4. Controller board unit [C] (x 4)



5. RAM DIMM [D] and rails [E]

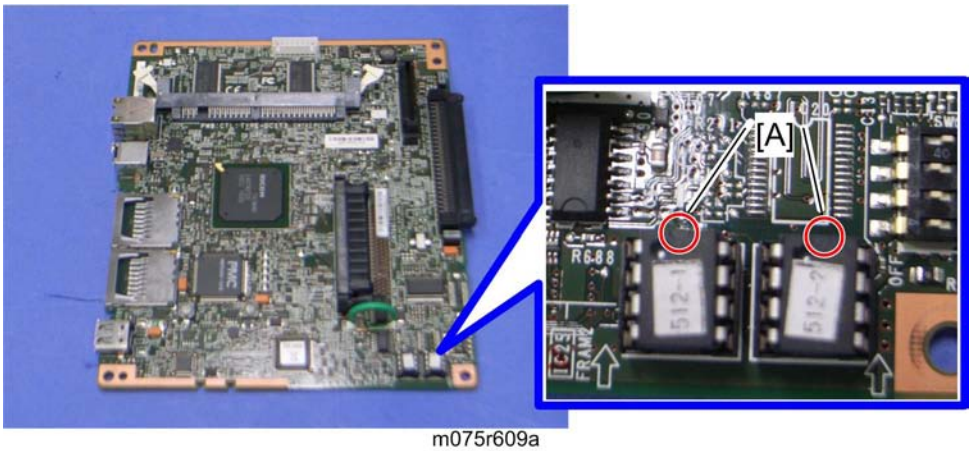


m075r609

6. NVRAMs [F]
7. Controller board [G]

When installing the new Controller Board

1. Remove the NVRAMs from the old controller board.



m075r609a

2. Install the removed NVRAM which has "1" label on itself in the left-handed slot on the new controller board with the mark [A] pointing to the upward.
3. Install the removed NVRAM which has "2" label on itself in the right-handed slot on the new controller board with the mark [A] pointing to the upward.
4. Replace the NVRAMs if the NVRAMs on the old EGB are defective.

⚠CAUTION

- Keep the NVRAMs away from objects that can cause static electricity. Static electricity can damage NVRAM data.

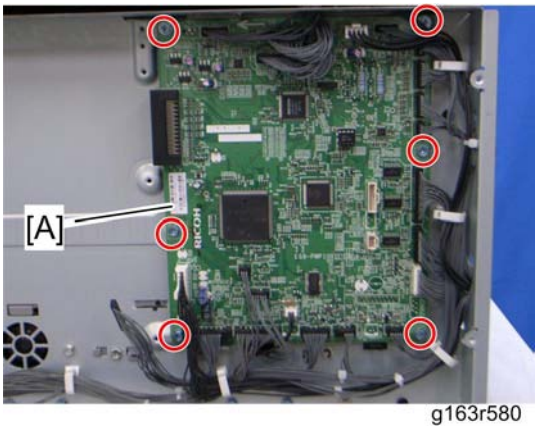
- Make sure that the NVRAM 1 is correctly installed in the left-hand slot and NVRAM 2 is correctly installed in the right-hand slot on the controller board. Otherwise, the machine will never operate.

EGB (Engine Board)

Important

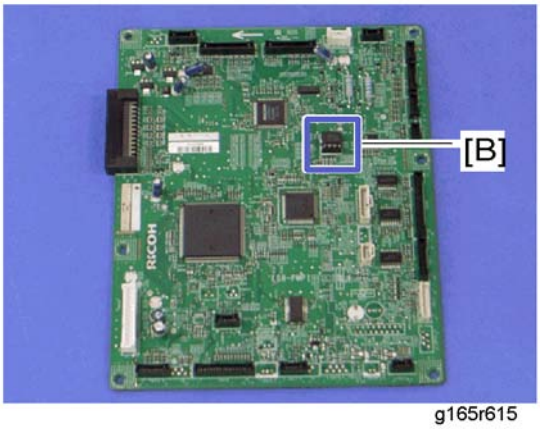
- **Always touch a grounded surface to discharge static electricity from your hands before you handle SD cards, printed circuit boards, NVRAM or memory boards.**

1. Rear cover (p.25)
2. Controller board (p.73)



g163r580

3. EGB [A] (x 6, x all)



g165r615

4. NVRAM [B]

When installing the new EGB

1. Remove the NVRAM from the old EGB.


g165r615

g165r616

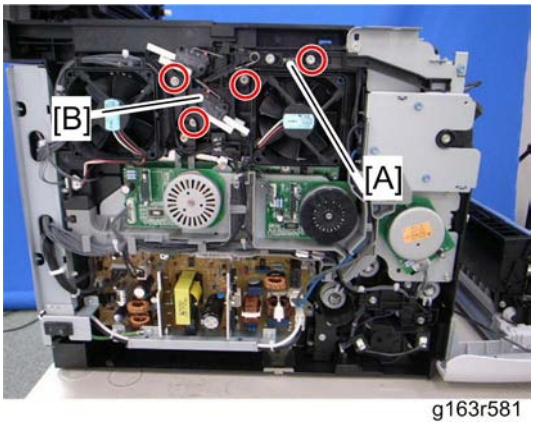
2. Install the removed NVRAM on the new EGB with the mark [A] pointing to the left side of the board after you replace the EGB.
3. Replace the NVRAM if the NVRAM on the old EGB is defective.

⚠CAUTION

- Keep the NVRAM away from objects that can cause static electricity. Static electricity can damage NVRAM data.
- Make sure that the NVRAM is correctly installed on the EGB.

Interlock Switches

1. Operation panel (☛p.26)
2. Rear cover (☛p.25)
3. Left cover (☛p.27)



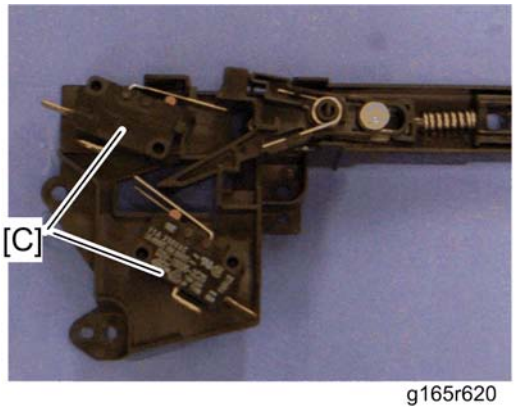
g163r581

4

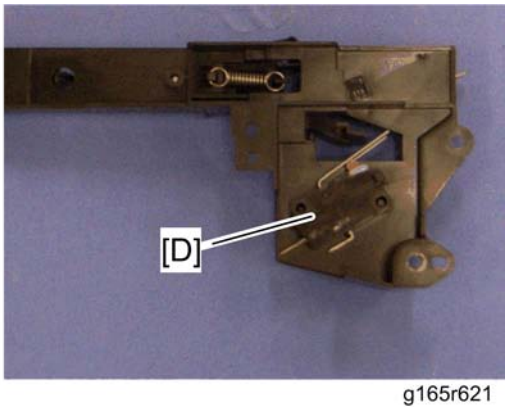
4. Remove the spring [A].
5. Interlock switch base [B] (x 4, x all)

Note

- Remove all connectors after the interlock switch base has been removed.



g165r620

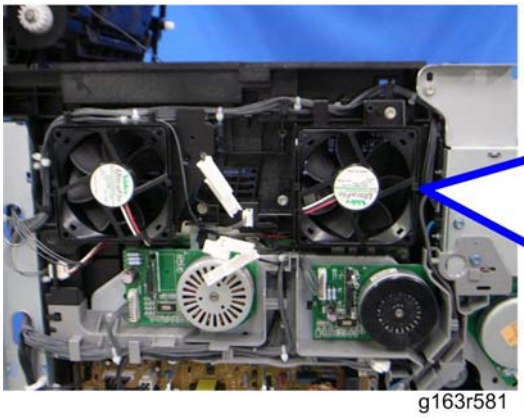


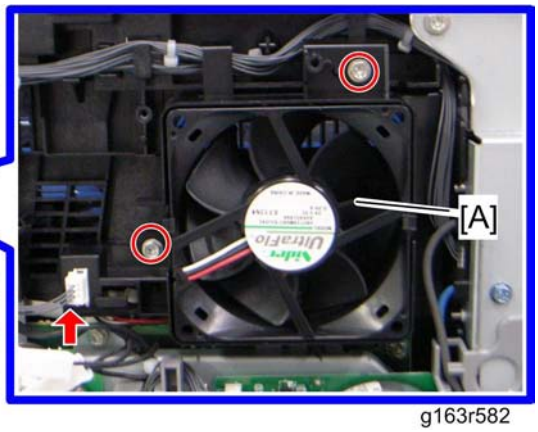
g165r621

6. Two interlock switches [C] at the outside of the base and one interlock switch [D] at the inside of the base (hooks)

Fusing Fan Motor

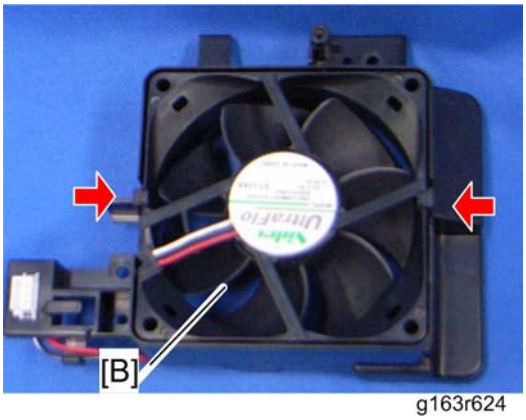
1. Operation panel (p.26)
2. Rear cover (p.25)
3. Left cover (p.27)
4. Interlock switch base (p.77 "Interlock Switches")


g163r581



g163r582

5. Fusing fan base [A] (x 2, x 1)



g163r624

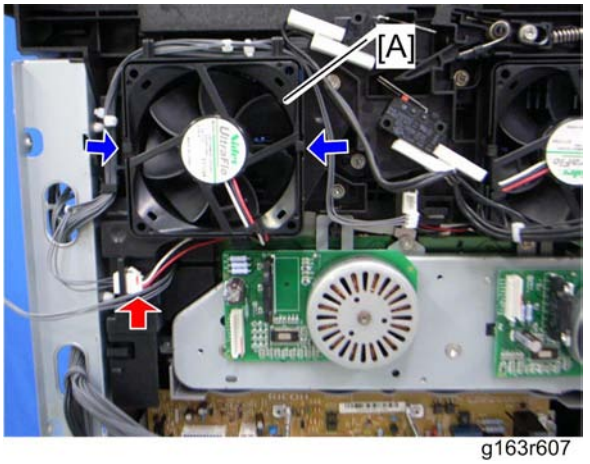
6. Fusing fan motor [B] (hooks, x 1)

⚠CAUTION

- Install the fusing fan motor with its decal is facing the outside of the machine.
- Make sure the fan cable is facing the correct direction by noting the correct orientation of its cable. (Also notice that the fusing fan motor sticker is installed upside down.)

LSU Fan Motor

1. Operation panel (p.26)
2. Rear cover (p.25)
3. Left cover (p.27)



g163r607

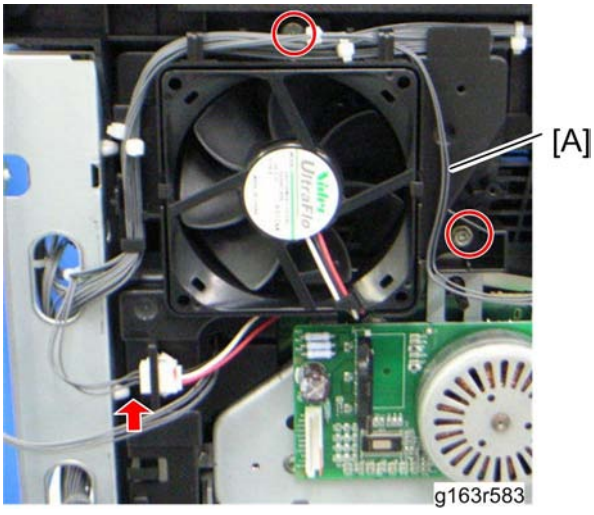
4. LSU fan motor [A] (hooks, x 1)

⚠CAUTION

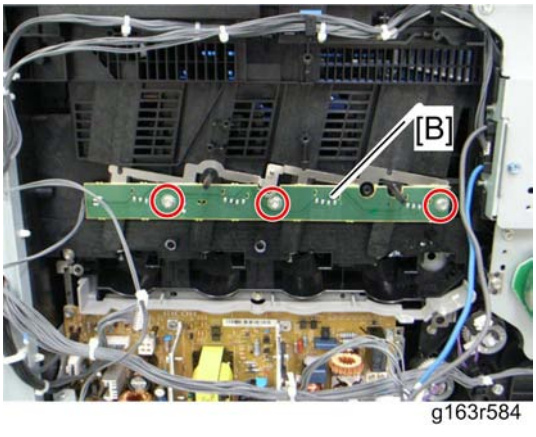
- Install the LSU fan motor, orienting it as shown in above photo, with its decal facing the outside of the machine.
- When reinstalling the LSU fan motor, make sure that its cable is oriented as shown above and that the decal is visible. (If the decal is not visible, the motor is installed backwards.)

ID Chip Board

1. Operation panel (p.26)
2. Rear cover (p.25)
3. Left cover (p.27)
4. Controller box cover (p.73 "Controller Board")
5. Disconnect the connector (CN305) on the EGB (x 1).
6. Interlock switch base (p.77 "Interlock Switches")
7. Fusing fan base (p.78 "Fusing Fan Motor")



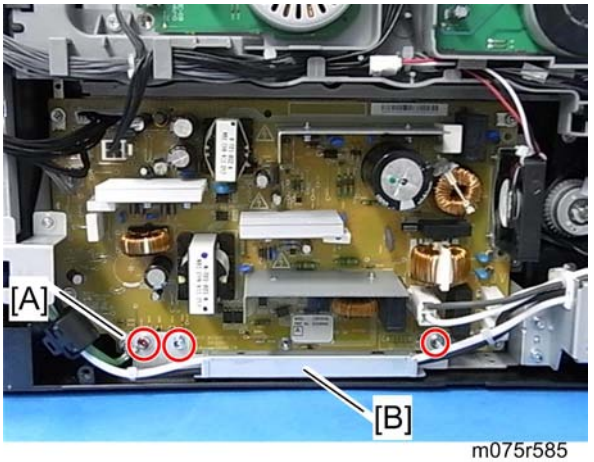
8. Take the harnesses aside around the LSU fan base [A].
9. LSU fan base [A] (x 2, x 1)
1. Drive unit (p.35)



2. ID Chip Board [B] (x 3, x 1)

PSU

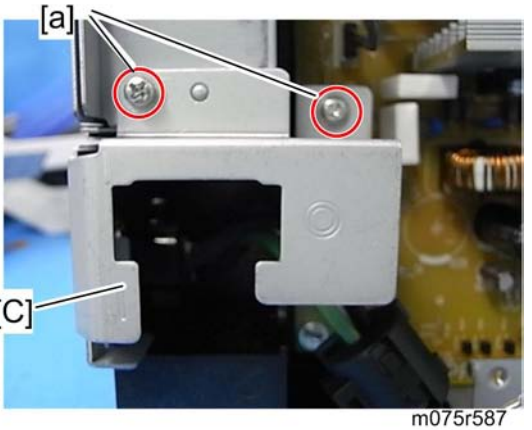
1. Operation panel (p.26)
2. Rear cover (p.25)
3. Left cover (p.27)



m075r585

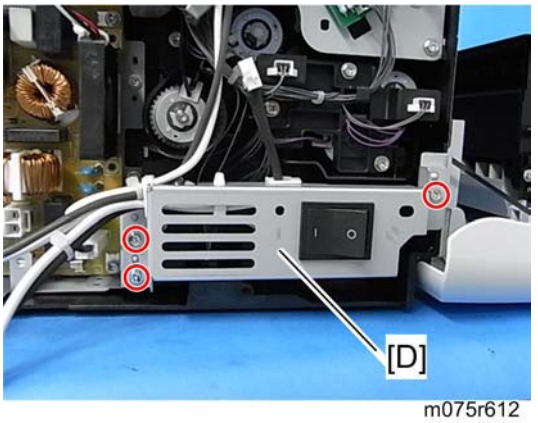
4. Ground cable [A] (x 1)
5. Power cord bracket [B] (x 2)


m075r586



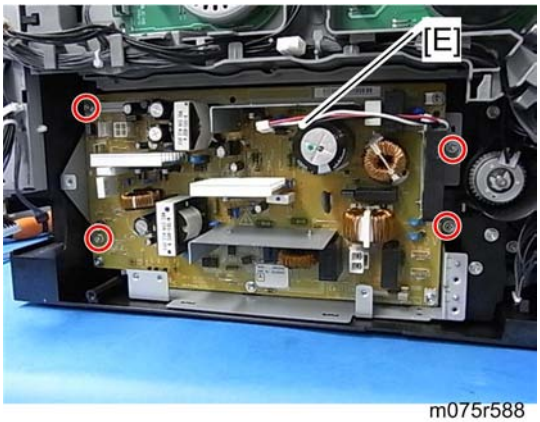
m075r587

6. AC inlet assembly [C] (: washer screw [a] x 2, x 1, x 2)



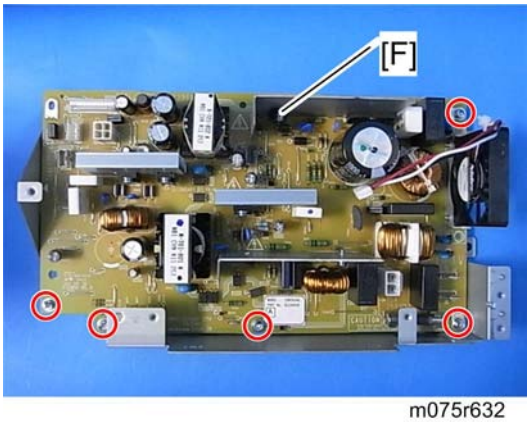
m075r612

7. Power switch assembly [D] (x 3)



m075r588

8. PSU bracket [E] (x 4, x all)



m075r632

9. PSU [F] (x 5)

Important

- **There are two types of PSUs for this model. Do not install a wrong PSU in the machine.**

Fuse

There is the removable fuse on the PSU.

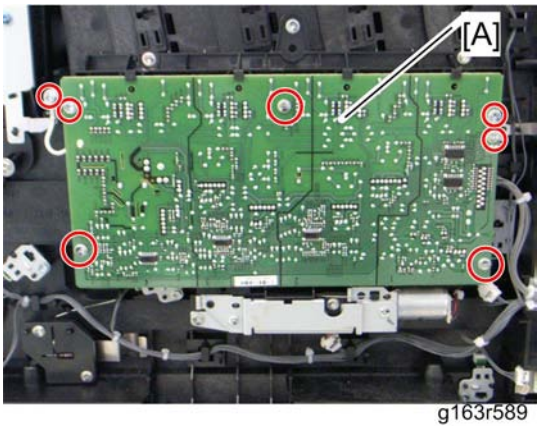
Fuse No.	Rating
FU101: NA	15 A, 125V
FU101: EU, ASIA	6.3A, 250V

⚠CAUTION

- Use a correct rating fuse for the fuse replacement. Never use a wrong rating fuse. If do so, the machine may be damaged.
- Never try direct connection of PSU circuit without a fuse.

High Voltage Power Supply Board

1. Remove all AIO cartridges.
1. Operation panel (☛p.26)
2. Rear cover (☛p.25)
3. Right cover (☛p.27)

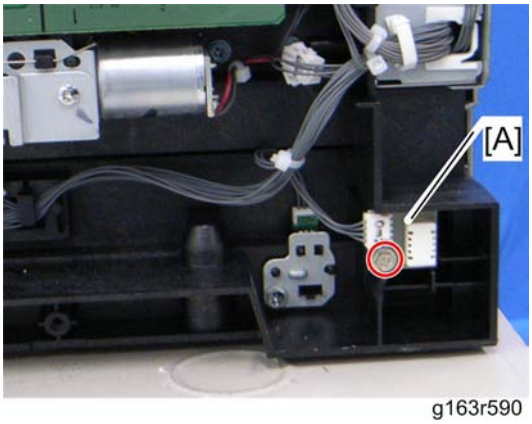


g163r589

4. High Voltage Power Supply Board [A] (x 7, ground cable x 1, x 1)

Temperature/Humidity Sensor

1. Operation panel (☛p.26)
2. Rear cover (☛p.25)
3. Right cover (☛p.27)

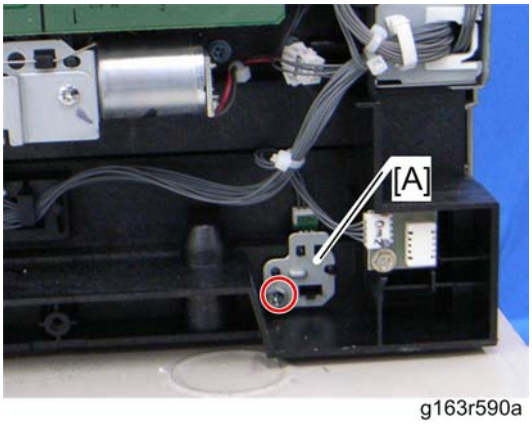


g163r590

4. Temperature/Humidity sensor [A] (x 1, x 1)

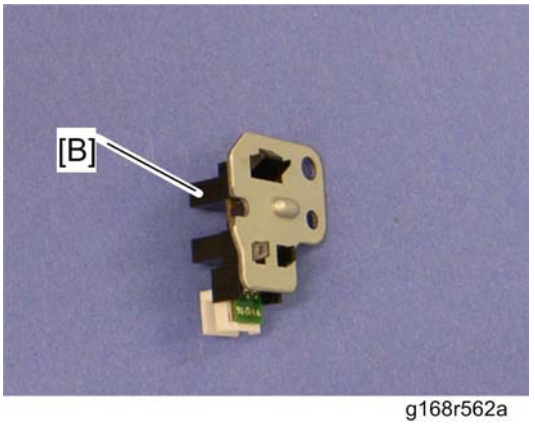
Tray Set Sensor

1. Operation panel (p.26)
2. Rear cover (p.25)
3. Right cover (p.27)



g163r590a

4. Tray set sensor assembly [A] (x 1, x 1)



g168r562a

5. Tray set sensor [B] (hooks)

NVRAM

Note

- Replacement and Reinstallation procedures for the NVRAM are included in the "EGB (Engine Board)" and "Controller Board" replacement procedures. Refer to "EGB (Engine Board)" or "Controller Board" for details.

When replacing an old NVRAM with a new NVRAM, NVRAM setting is required. Follow the NVRAM setting procedure described below.

NVRAM on the Controller

1. Insert an SD card in the lower SD slot.
2. Plug in, and then turn on the main power switch.
3. Start the SP mode.
4. Use SP5-990 to print out the SMC reports (“SP Mode Data” and “Logging Data”) if possible.
5. Use SP5-824-001 to upload the NVRAM data if possible.
6. Turn off the main power switch and unplug the power cord.
7. Remove the SD card from the lower SD slot.
8. Replace the NVRAM on the controller and reassemble the machine.
9. Insert the SD card in the lower SD slot.
10. Plug in the power cord.
11. Turn on the main power switch.
12. Start the SP mode.

13. Use SP5-825-001 to download the NVRAM data if possible. If it can be done, the following steps are not required.
14. Use Memory Clear (SP5-801) to reset this data:
    - SCS (SP5-801-003)
    - PRT (SP5-801-008)
    - NCS (SP5-801-011)
15. Do Counter Clear (SP7-810).
16. Make these contract-related settings:
    - Counter Method (SP5-045)
    - Telephone Number Setting > Fax Telephone Number (SP5-812-002) if the meter charge mode (SP5-930-001) is "ON" (enabled)
17. Enter the SP mode changes previously made at the factory and the field.

NVRAM on the EGB (Engine Board)

For this procedure, you must know the device number and the destination code (☛ step 8).

1. Start the SP mode.
2. Use SP5-990 to print out the SMC reports ("SP Mode Data" and "Logging Data") if possible.
3. Turn off the main power switch and unplug the power cord.
4. Replace the NVRAM on the EGB and reassemble the machine.
5. Plug in the power cord.
6. Turn on the main power switch.
7. Start the SP mode.
8. Contact your supervisor to enter the machine's device number.

   Note

   - SC542 may be displayed until the machine's device number and destination code are programmed properly.
9. Turn the main power switch off and on.
10. Start the SP mode.
11. Use SP5-801-002 to reset the engine settings.
12. Reset the meter charge settings (SP5-930-001).
13. Enter the SP mode changes previously made at the factory and the field.
14. Replace all maintenance kits with new ones.

5. System Maintenance Reference

Service Program

See "Appendices" for the followings;

- System SP
- Engine SP

Main SP Tables

SP1-XXX (Feed)

1001	[Lead Edge Reg.] Leading Edge Registration (Tray or By-pass, Paper Type, Process Speed) Process Speed: LowSpd: Low Speed, HlfSpd: Half speed, NorSpd: Normal speed		
	Note • Adjusts the leading edge registration. This SP changes the registration clutch operation timing for each mode. • A +ve value sets the registration start timing earlier. • A –ve value sets the registration start timing later. The value of the normal paper in RS is the standard value. The values of papers other than normal are added to the value of the normal paper in RS.		
002	T1:NorSpd 0.3mm	*EGB	[-9.0 to 9.0 / **0** / 0.3 mm/step]
003	T1:HlfSpd 0.3mm	*EGB	[-9.0 to 9.0 / **0** / 0.3 mm/step]
006	T2:NorSpd 0.3mm	*EGB	[-9.0 to 9.0 / **0** / 0.3 mm/step]
007	T2:HlfSpd 0.3mm	*EGB	[-9.0 to 9.0 / **0** / 0.3 mm/step]
014	ByPas:NorSpd 0.3mm	*EGB	[-9.0 to 9.0 / **0** / 0.3 mm/step]
015	ByPas:HlfSpd 0.3mm	*EGB	[-9.0 to 9.0 / **0** / 0.3 mm/step]
018	Dup:NorSpd 0.3mm	*EGB	[-9.0 to 9.0 / **0** / 0.3 mm/step]
021	Dup:HlfSpd 0.3mm	*EGB	[-9.0 to 9.0 / **0** / 0.3 mm/step]
063	T1:LowSpd 0.3mm	*EGB	[-9.0 to 9.0 / **0** / 0.3 mm/step]
065	ByPas:LowSpd 0.3mm	*EGB	[-9.0 to 9.0 / **0** / 0.3 mm/step]
066	Dup:LowSpd 0.3mm	*EGB	[-9.0 to 9.0 / **0** / 0.3 mm/step]
100	Mar.pos 0:OFF1:ON	*EGB	[0 or 1 / **0** / -/step]

1002	[S-to-S Reg.] Side-to-Side Registration

001	By-pass 0.0846mm	*EGB	Adjusts the side-to-side registration for each mode. This SP changes the laser main scan start position. [-63 to 63 / **0** / 0.0846 mm /step]
002	Tray1 0.0846mm	*EGB	
003	Tray2 0.0846mm	*EGB	
004	Duplex 0.0846mm	*EGB	

1003	[Paper Buckle] Paper Buckle (Tray or By-pass, Paper Type, Process Speed)		
002	Tray1 0.3mm	*EGB	Adjusts the amount of paper buckle at the registration roller for each mode. This SP changes the paper feed timing. [-10.0 to 10.0 / **0.0** / 0.1 mm/step]
006	Tray2 0.3mm	*EGB	
014	By-pass 0.3mm	*EGB	
018	Duplex 0.3mm	*EGB	

1100	[Lead Edge Reg.] Leading Edge Registration (Tray or By-pass, Paper Type, Process Speed) Process Speed: LowSpd: Low Speed, HlfSpd: Half speed, NorSpd: Normal speed		
	These SPs can be adjusted by UP mode. The setting range of SP1100 is different from the setting range of SP1001.		
002	T1:NorSpd 0.3mm	*EGB	[0 to 9.0 / **0** / 0.3 mm/step]
003	T1:HlfSpd 0.3mm	*EGB	[0 to 9.0 / **0** / 0.3 mm/step]
006	T2:NorSpd 0.3mm	*EGB	[0 to 9.0 / **0** / 0.3 mm/step]
007	T2:HlfSpd 0.3mm	*EGB	[0 to 9.0 / **0** / 0.3 mm/step]
014	ByPas:NorSpd 0.3mm	*EGB	[0 to 9.0 / **0** / 0.3 mm/step]
015	ByPas:HlfSpd 0.3mm	*EGB	[0 to 9.0 / **0** / 0.3 mm/step]
018	Dup:NorSpd 0.3mm	*EGB	[0 to 9.0 / **0** / 0.3 mm/step]
021	Dup:HlfSpd 0.3mm	*EGB	[0 to 9.0 / **0** / 0.3 mm/step]
063	T1:LowSpd 0.3mm	*EGB	[0 to 9.0 / **0** / 0.3 mm/step]
065	ByPas:LowSpd 0.3mm	*EGB	[0 to 9.0 / **0** / 0.3 mm/step]
066	Dup:LowSpd 0.3mm	*EGB	[0 to 9.0 / **0** / 0.3 mm/step]

1102	[S-to-S Reg.] Side-to-Side Registration		
	These SPs can be adjusted by UP mode. The setting range of SP1102 is different from the setting range of SP1002.		
001	By-pass 0.34mm	*EGB	Adjusts the side-to-side registration for each mode. This SP changes the laser main scan start position. [-15 to 15 / **0** / 0.34 mm /step]
002	Tray1 0.34mm	*EGB	
003	Tray2 0.34mm	*EGB	
004	Duplex 0.34mm	*EGB	

1105	[Temp. Adj.] Temperature Adjustment		
	Adjusts the fusing unit temperature.		
001	Fusing Temp.	*EGB	[100 to 180 / **160** / 10 deg /step]

1159	[Fusing JAM SC] Fusing JAM SC Setting		
001	Fusing JAM SC 0:OFF 1:ON	*EGB	Turns on or off the fusing jam SC to detect the three consecutive paper jams at fusing unit. [0 or 1 / **0** / 1 /step] 0: OFF, 1: ON

1900	[Print Support]		
	These SPs can be adjusted by UP mode.		
001	FullDetc.0:OFF1:ON	*EGB	[0 or 1 / **0** / 1 /step] 0: OFF, 1: ON
003	SSizeSup0:OFF 1:ON	*EGB	[0 or 1 / **0** / 1 /step] 0: OFF, 1: ON
005	FullDetc.0:OFF1:ON	*EGB	[0 or 1 / **0** / 1 /step] 0: OFF, 1: ON

Configuration Page Information

Overview

The configuration page for this model has information about the machine's status. Print this sheet as shown below. Check the configuration page when doing machine maintenance.

To Print the Configuration Page from the Machine

Before turning on the machine

1. Hold down the "OK" key, and then turn on the main switch of the printer with holding down the "OK " key.
2. Keep holding down the "OK" key for approximately 5 seconds.

When the machine is power-on

1. Press "Menu" key.
2. Press the "▲" or "▼" key to select "List/Test Print", and then press the "#Enter" key.
3. Press the "#Enter" key at the "Config. Page".

Firmware Update

To update the firmware for this machine, you must have the new version of the firmware downloaded onto an SD (Secure Digital) Card. The SD Card is inserted into SD Card Slot 2 (lower slot) on the right side of the controller box.

Type of Firmware

There are 12 types of firmware as shown below.

Type of firmware	Function	Location of firmware	Message shown
Engine	Printer engine control	EGB Flash ROM	Engine
System	Operating system	Controller flash ROM	System
Net File	Feature application		NetworkDocBox
Printer	Feature application		Printer
NIB	Network Interface		Network Support
WebSystem	Web Service application		Web Support
FONT	Page description language (PostScript3)		PS3 Font
FONT1	Font		Fonr
DESS	Security control		Security Module
PictBridge	PictBridge control	PictBridge SD card	Option PctBrgd

Before You Begin

An SD card is a precision device. Always observe the following precautions when you handle SD cards:

- Always switch the machine off before you insert an SD card. Never insert the SD card into the slot with the power on.
- Do not remove the SD card from the service slot after the power has been switched on.
- Never switch the machine off while the firmware is downloading from the SD card.
- Keep SD cards in a safe location where they are not exposed to high temperature, high humidity, or exposure to direct sunlight.

- Always handle SD cards with care. Do not bend or scratch them. Do not let the SD card get exposed to shock or vibration.
- Make sure that the write protection of an SD card is unlocked when you download an application to it. If not, downloading fails and a download error (e.g. Error Code 44) occurs during a firmware upgrade.

Keep the following points in mind when you use the firmware update software:

- "Upload" means to send data from the machine to the SD card. "Download" means to send data from the SD card to the machine.
- To select an item on the LCD, press the appropriate key on the operation panel.
- Make sure that the machine is disconnected from the network to prevent a print job for arriving while the firmware update is in progress before you start the firmware update procedure.

Updating Firmware

File Arrangement

How the Program Works:

The firmware-update program for this machine searches the folder romdata for necessary firmware. When you save the firmware in an SD card, make the folder ‘romdata’. You must not make the folder ‘romdata’ in another folder.

Note

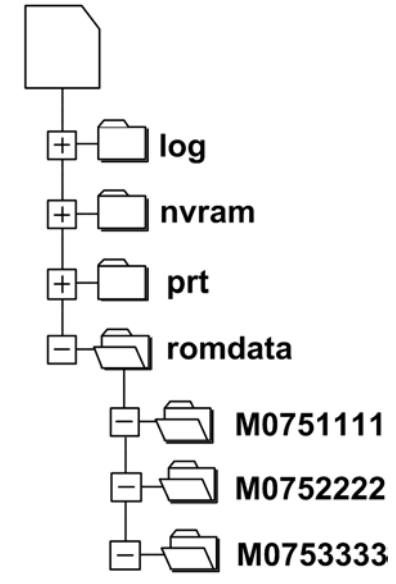
- Do not make another firmware-update program folder in the folder ‘romdata’.
- Otherwise, it may cause a malfunction for the firmware updating. You just keep only one firmware update program folder in the folder ‘romdata’.

The firmware program contains the file information. Before downloading the firmware from an SD card, the firmware-update program reads the file information. The firmware is downloaded only when the file information is correct.

Note

- The file information can identify the firmware, but this information does not guarantee that the data is not corrupted.

Example



m075s901a

When you save the firmware, we recommend that you arrange folders and files as follows:

- In the folder romdata, make only one folder and use this folder for one model. Use the machine code as the name of this folder.
- When you save some files other than firmware, make a new folder outside romdata. Save the files in this folder. Do not save any file outside the folders. (The diagram shows an example. Three folders, log, nvramdata, and prt, are outside romdata. These folders can store debug logs, NVRAM data, and captured files respectively.)

Update Procedure

1. Turn off the main power switch.
2. Disconnect the printer from the network.
3. Remove the SD slot cover from SD slot 2 (x 1).

   Note

   - Do not use slot 1 (upper slot). Slot 1 is for customer use.
4. Turn the SD card face to the rear side of the printer, and insert it into slot 2.
5. Slowly push the SD card into the slot until it clicks.
6. Make sure that the SD card is locked in place.

Note

- To remove the SD card, push it in until it clicks, and release it slowly. The slot pushes out the SD card.

7. Turn on the main power switch.
8. Wait until a firmware name is shown on the display (about 1 minute).

Note

- The firmware name is read from inside the firmware. The firmware name is not changed even if you change the file name on your PC.

9. If the necessary firmware name is shown on the display, check the firmware version with the left-arrow or right-arrow keys. Pressing the left or right-arrow key shows a firmware name, firmware version and serial number in order.
10. To use a different firmware, push the up-arrow key or the down-arrow key to find the necessary firmware.

Note

- Controller, engine and operation panel firmware cannot be updated at the same time. It is recommended to update firmware modules one by one.

11. To select the firmware, push the OK key. Make sure that the selected firmware is high-lighted.
12. If you update more than one firmware program at the same time, find each of them and select each of them. Make sure that the selected firmware is high-lighted.

Note

- If the customer has used all of the slots, you have to keep an empty slot for this procedure. Ask the customer to temporarily remove the SD card in slot 2.

13. To start firmware update, push the "UpDate" key. While each firmware is downloaded, the underscores on the operation panel are replaced by stars.
14. Wait until the message "Update done" is shown.
15. Turn off the main power switch.
16. Remove the SD card from the slot 2.
17. Attach the slot cover to the SD card slot 2 (x 1).
18. Connect the printer to the network physically.
19. Turn on the main power switch.
20. Print the Configuration Page to check that the every firmware is correctly updated: Menu > List/Test Print > Config. Page

Error Handling

An error code is shown if an error occurs during the download. Error codes have the letter "E" and a number. If an error occurs, the firmware is not correctly downloaded; see the error code table (p.100 "Handling Firmware Update Errors") and do the necessary steps. After this, download the firmware again.

Power Failure

If firmware update is interrupted by power failure, the firmware is not correctly downloaded. In this condition, machine operation is not guaranteed. You have to download the firmware again.

NVRAM Data Upload/Download

⚠CAUTION

- Turn off the main power switch before you insert or remove an SD card. Make sure that the controller and the EGB are correctly connected.

Uploading NVRAM Data

Copy the data from the NVRAM to an SD card (referred to as "to upload NVRAM data" in this section) before you replace the NVRAM. If you cannot upload NVRAM data, manually input the necessary settings referring to the factory settings sheet stored inside the front door of the mainframe after replacing the NVRAM.

1. Prepare a formatted SD card.
2. Make sure that the write-protection on the SD card is off.
3. Start the SP mode.
4. Select SP5990-001 (ALL (Data List)).
5. Do the SP.
6. See if the SMC Report is correctly output.

   Note

   - You may need the SMC Report when the machine did not complete an NVRAM data upload or download ("Downloading NVRAM Data") correctly.
7. Go out of the SP mode.
8. Turn off the main power switch.
9. Insert an SD card into SD card slot 2.
10. Turn on the main power switch.
11. Start the SP mode.

12. Select SP5-824-001(NVRAM Upload).
13. Push the "OK" key. The upload starts.
    - When uploading ends correctly, the following file is made: NVRAM\serial_number.NV where "NVRAM" is the folder name in the SD card and "serial_number.NV" is the file name with the extension ".NV". The serial number of the printer is used as the file name. For example, if the serial number is M0750017, the file name is "M0750017.NV".
14. Go out of the SP mode.
15. Turn off the main power switch.
16. Remove the SD card from SD card slot 2.
17. Install the SD slot cover to SD card slot 2.
18. Mark the SD card with, for example, the machine code. You need this SD card when you download NVRAM data (☛ "Downloading NVRAM Data").

Note

- One SD card can store the NVRAM data from two or more machines.

Downloading NVRAM Data

Copy the data from the SD card to the NVRAM (referred to as "to download NVRAM data" in this section) after you replace the NVRAM. If you cannot download NVRAM data, manually input the necessary settings referring to the factory settings sheet stored inside the front door of the mainframe.

1. Make sure that the main power switch is off. If it is on, turn it off.
2. Make sure that you have the correct SD card that contains the necessary NVRAM data.
3. Insert the SD card into SD card slot 2.
4. Turn on the main power switch.
5. Start the SP mode.
6. Select SP5-825-001 (NVRAM Download).
7. Push the "OK" key. The download starts.

Note

- The machine cannot do the download if the file name in the SD card is different from the serial number of the printer (☛ "Uploading NVRAM Data").

8. Go out of the SP mode.
9. Turn off the main power switch.
10. Remove the SD card from SD card slot 2.
11. Install the SD slot cover on SD card slot 2.
12. Turn on the main power switch.

13. Check that the NVRAM data is correctly downloaded.

Important

- **This procedure does not download the following data to the NVRAM:**
  - **Total Count**
  - **Serial Number**

Handling Firmware Update Errors

An error message shows in the first line if an error occurs during a download. The error code consists of the letter "E" and a number ("E20", for example).

Error Message Table

Code	Meaning	Solution
20	Cannot map logical address	Make sure the SD card is inserted correctly.
21	Cannot access memory	HDD connection incorrect or replace hard disks.
22	Cannot decompress compressed data	Incorrect ROM data on the SD card or data is corrupted.
23	Error occurred when ROM update program started	Controller program abnormal. If the second attempt fails, replace controller board.
24	SD card access error	Make sure SD card inserted correctly, or use another SD card.
30	No HDD available for stamp data download	HDD connection incorrect or replace hard disks.
31	Data incorrect for continuous download	Insert the SD card with the remaining data required for the download, the re-start the procedure.
32	Data incorrect after download interrupted	Execute the recovery procedure for the intended module download, then repeat the installation procedure.
33	Incorrect SD card version	Incorrect ROM data on the SD card, or data is corrupted.
34	Module mismatch - Correct module is not on the SD card)	SD update data is incorrect. Acquire the correct data (Japan, Overseas, OEM, etc.) then install again.

35	Module mismatch – Module on SD card is not for this machine	SD update data is incorrect. The data on the SD card is for another machine. Acquire correct update data then install again.
36	Cannot write module – Cause other than E34, E35	SD update data is incorrect. The data on the SD card is for another machine. Acquire correct update data then install again.
40	Engine module download failed	Replace the update data for the module on the SD card and try again, or replace the EGB board.
42	Operation panel module download failed	Replace the update data for the module on the SD card and try again, or replace the LCDC.
43	Stamp data module download failed	Replace the update data for the module on the SD card and try again, or replace the hard disks.
44	Controller module download failed	Replace the update data for the module on the SD card and tray again, or replace controller board.
50	Electronic confirmation check failed	SD update data is incorrect. The data on the SD card is for another machine. Acquire correct update data then install again.

6. Troubleshooting

SC Conditions

Summary

This machine issues an SC (Service Call) code if an error occurs on the machine. The error code can be seen on the LCD of the operation panel.

Make sure that you understand the following points;

1. All SCs are logged.
2. At first, always turn the main switch off and on if an SC code is issued.
3. First, disconnect then reconnect the connectors before you replace the PCBs, if the problem concerns electrical circuit boards.
4. First, check the mechanical load before you replace motors or sensors, if the problem concerns a motor lock.
5. Fusing related SCs: To prevent damage to the machine, the main machine cannot be operated until the fusing related SC has been reset by a service representative.
    - How to reset; Execute SP5-810-001 to clear SC541, SC542, SC543, SC545 or SC548.

Engine SC

SC 1xx (Other Error)

195	Serial Number Error
	The serial number stored in the memory (EGB) is not correct.
	• EEPROM defective • EGB replaced without original EEPROM 1. Check the serial number. 2. If the stored serial number is incorrect, contact your supervisor.

SC 2xx (Laser Optics Error)

202	Polygon motor error 1: ON timeout

	The polygon mirror motor does not reach the targeted operating speed within 5 sec. after turning on or changing speed
203	Polygon motor error 2: OFF timeout
	The polygon mirror motor does not leave the READY status within 3 sec. after the polygon motor switched off.
204	Polygon motor error 3: XSCRDY signal error
	The SCRDY_N signal remains HIGH for 350 ms while the LD unit is firing.
	• Polygon motor/driver board harness loose or disconnected • Polygon motor/driver board defective • Laser optics unit defective • IPU (EGB) defective 1. Replace the interface harness of the laser optics unit. 2. Replace the laser optics unit. 3. Replace the EGB (Engine Board).

220	Laser Synchronizing Detection Error: [K]/[Y]
	The laser synchronizing detection signal for LDB [K]/[Y] is not output after the LDB unit has turned on while the polygon motor is rotating normally.
222	Laser Synchronizing Detection Error: [M]/[C]
	The laser synchronizing detection signal for LDB [M]/[C] is not output after the LDB unit has turned on while the polygon motor is rotating normally.
	• Disconnected cable from the laser synchronizing detection unit or defective connection • Defective laser synchronizing detector • Defective LDB • Defective EGB 1. Check the connectors. 2. Replace the laser optics unit. 3. Replace the EGB.

240	LD error

	The IPU (EGB) detects a problem at the LD unit.
	• Worn-out LD • Disconnected or broken harness of the LD. 1. Replace the laser optics unit.

SC 3xx (Charge Error)

300	High voltage power output error
	The measured voltage is not correct when the EGB measures each charge output (charge, development, image transfer belt unit, and transfer unit).
	• Disconnected or defective high voltage harness • Defective high voltage power supply • Defective EGB 1. Check or replace the harnesses. 2. Replace the high voltage power supply board 3. Replace the EGB. 4. Replace the AIOs.

396	Black drum motor error
	The LOCK signal error is detected when the EGB monitors the black drum motor state. (This monitoring is done immediately after power-on, when the motor starts rotating, and immediately after the motor stops.)
	• Disconnected or defective motor harness. • Motor slips due to excessive load 1. Check the harness from the black drum motor. Replace it if necessary.
397	Color drum motor error
	The LOCK signal error is detected when the EGB monitors the color drum motor state. (This monitoring is done immediately after power-on, when the motor starts rotating, and immediately after the motor stops.)
	• Disconnected or defective motor harness. • Motor slips due to excessive load 1. Check the harness from the color drum motor. Replace it if necessary.

SC 4xx (Image Transfer and Transfer Error)

445	ITB (Image Transfer Belt) Unit: Home Position Error
	The ITB contact sensor does not detect the home position of the ITB for 5 seconds after the ITB unit initialization has been done.
	ITB (Image Transfer Belt) Unit: Contact Position Error
	The ITB contact sensor does not detect the contact position of the ITB for 5 seconds after the ITB unit has moved to the contact position.
	ITB (Image Transfer Belt) Unit: No-contact Position Error
	The ITB contact sensor does not detect the home position of the ITB for 5 seconds after the ITB unit has moved to no-contact position.
	• Defective ITB contact motor • Defective ITB contact sensor • Defective ITB unit 1. Replace the ITB contact motor. 2. Replace the ITB contact sensor. 3. Replace the ITB unit.

480	Agitator Motor Error
	The agitator motor error is detected twice for 10 msec during the initialization at power-on or after the cover is closed.
	• Disconnected or defective harness • Defective agitator motor 1. Check or replace the harness. 2. Replace the agitator motor.

C 5xx (Motor and Fusing Error)

500	Transport/Fusing Motor Error
	The LOCK signal error is detected when the EGB monitors the transport/fusing motor state. (This monitoring is done immediately after power-on, when the motor starts rotating, and immediately after the motor stops.)

	• Disconnected or defective motor harness. • Motor slips due to excessive load 1. Check the harness from the transport/fusing motor. Replace it if necessary.

530	LSU Fan Motor Error
	A LOCK signal is not detected for more than ten seconds while the motor START signal is on and if this error occurs twice consecutively, this SC is issued.
	• Disconnected or defective motor harness. • Defective LSU fan motor 1. Check or replace the motor harness. 2. Replace the LSU fan motor.

531	Fusing Fan Motor Error
	A LOCK signal is not detected for more than ten seconds while the motor START signal is on and if this error occurs twice consecutively, this SC is issued.
	• Disconnected or defective motor harness. • Defective LSU fan motor 1. Check or replace the motor harness. 2. Replace the fusing fan motor.

532	Air Intake Fan Motor Error
	A LOCK signal is not detected for more than ten seconds while the motor START signal is on and if this error occurs twice consecutively, this SC is issued.
	• Disconnected or defective motor harness. • Defective air intake fan motor 1. Check or replace the motor harness. 1. Replace the air intake fan motor.

541	Thermistor Error
	The thermistor output is less than 0°C for 6 seconds.
	• Disconnected thermistor

	• Defective harness connection 1. Check the harness connection of the thermistor. 2. Replace the fusing unit. **Important** • **Execute "SC Reset; Fusing SC" with SP5-810-001 to recover the machine after completing the recovery procedure. Otherwise, the machine continues to issue this SC code and cannot be operated.**

542	Print Ready Temperature Error
	• The heating roller temperature increase during a set time is not correct. • The fusing temperature does not reach the print ready temperature within a set time after the fusing lamp has turned on.
	• Defective thermistor • Incorrect power supply input at the main power socket • Defective fusing lamp 1. Check the voltage of the wall outlet. 2. Replace the fusing unit 3. Replace the fusing lamp. **Important** • **Execute "SC Reset; Fusing SC" with SP5-810-001 to recover the machine after completing the recovery procedure. Otherwise, the machine continues to issue this SC code and cannot be operated.**

543	High Temperature Detection Error
	This SC is issued if one of following conditions occurs: • The thermistor (center) detects 245°C or thermistor (end) detects 230°C. • The thermistor (center) detects a 14°C increment or more for five seconds at 220°C or more or the thermistor (end) detects a 9°C increment or more for five seconds at 160°C (Warming Up), 170 °C (Standby), or 180°C (Print) or more.
	• Defective I/O control (EGB) • Defective EGB 1. Replace the EGB

	Important • **Execute "SC Reset; Fusing SC" with SP5-810-001 to recover the machine after completing the recovery procedure. Otherwise, the machine continues to issue this SC code and cannot be operated.**

545	Heating Lamp Full-Power Error
	The fusing lamp is fully-powered for a certain time while the fusing unit stays in the stand-by mode and is not rotating.
	• Deformed thermistor • Thermistor not in the correct position • Defective fusing lamp 1. Replace the fusing unit. 2. Replace the fusing lamp. **Important** • **Execute "SC Reset; Fusing SC" with SP5-810-001 to recover the machine after completing the recovery procedure. Otherwise, the machine continues to issue this SC code and cannot be operated.**

547	Zero Cross Error
	The zero cross signal is not detected for three seconds even though the fusing lamp relay is on after turning on the main power or closing the front door.
	• Defective fusing lamp relay 1. Turn the main power switch off and on. **Important** • **Execute "Fuser SC Reset" with SOM to recover the machine after completing the recovery procedure. Otherwise, the machine continues to issue this SC code and cannot be operated.**

548	Low Temperature Error
	The center thermistor detects 90°C or less for 4 seconds.
	• Defective fusing lamp • Defective thermistor 1. Replace the fusing unit. 2. Replace the fusing lamp.

	Important • **Execute "SC Reset; Fusing SC" with SP5-810-001 to recover the machine after completing the recovery procedure. Otherwise, the machine continues to issue this SC code and cannot be operated.**

557	Zero Cross Frequency Error
	The detection error occurs ten times consecutively in ten zero cross signal detections. This error is defined when the detected zero cross signal is 17 or less/27 or more for 0.2 seconds.
	• Defective fusing lamp relay • Unstable input power source 1. Check the power supply source. 2. Replace the fusing unit.

559	Consecutive Fusing Jam
	The paper jam counter for the fusing unit reaches 3. The paper jam counter is cleared if the paper is fed correctly. This SC is activated only when this function is enabled with "Fuser SC Detect" in the SP Mode 2 tab.
	• Defective fusing unit • Defective fusing control 1. Clear this SC to send a command after a jam removal. 2. Turn off this function after a jam removal.

SC 6xx (Communication and Other Error)

669	EEPROM Error
	An unexpected value exists in the initialization flag of the EEPROM
	• EEPROM not initialized • Defective EEPROM 1. Initialize the EEPROM. 2. Replace the EEPROM. 3. Replace the EGB.

690	GAVD Communication Error
	The ID of the GAVD is not identified during initialization.
	The chip ID of the GAVD cannot be detected by the machine at power-on.
	• Defective EGB 1. Replace the EGB.

Controller SC

SC6xx

641	Controller to engine communication error.
	The controller receives no response from the engine board.
	• Defective controller • Defective engine board 1. Check the connection between the controller and the engine board. 2. Replace the engine board if the error is frequent. 3. Replace the controller board if the error is frequent.

652	@Remote Service ID2 Mismatch Error 1
	ID2 for the device did not match the ID2 stored in NVRAM. This error can occur if the controller has been replaced with the Cumin ID2 set for another machine, or if the NVRAM has been replaced with the NVRAM from another machine.
	• If this error occurs when Cumin is set up, check the Cumin documentation and make sure that the NVRAM is compatible, set the common authentication, then try again. • If this error occurs after Cumin has been set, clear the Cumin setting, check the Cumin documentation and make sure that the NVRAM is compatible, set the common authentication, then try again.

653	@Remote Service ID2 Mismatch Error 2
	One of the following problems exist with the ID2 stored in NVRAM: • ID2 has less than 17 digits

	• A non-printable character exists in ID2 • ID2 is all spaces • ID2 is NULL
	1. Replace NVRAM. 2. Clear the Cumin setting, set the common authentication, then try again.

670	Engine startup error
	The EGB fails to respond within the prescribed time when the machine is turned on.
	• Connections between EGB and controller board are loose, disconnected, or damaged • EGB defective • Controller board defective

671	Engine board mismatch error
	Engine board and controller mismatch detected.
	• Wrong engine board installed • Wrong controller board installed 1. Check the type of EGB and controller board. 2. Replace the EGB. 3. Replace the controller board.

SC8xx

816 D	Energy save I/O subsystem error
	An error was detected in the signal from the ASIC (controller board) which controls the STR (Suspend to RAM) function. **Note**: STR is a feature of this machine that minimizes energy consumption while the machine is in the energy saver mode.
	• Reboot the machine. • Replace the controller board.
-5	SCS

	Machine attempted to enter STR mode before engine is OFF.
-39	Sub System
	Error occurred during system start up.
-50	Hardware
	Printer version only. Not used for this machine.
-67	NCS (Network Control Service)
	An error occurred in the access control port list: • Number of registrations exceeded 125 • Data notifications exceeded 12 • Data extension incorrect
-79	Sub System
	Message mismatch.
-90	Hardware/System
	A forced system reset (WDOG) occurred.

819 D	Fatal kernel error
	Due to a control error, a RAM overflow occurred during system processing.
0x5032	HAIC-P2 decompression error
	Error occurred in the compression/decompression module of ASIC in HAIC-P2. • HDD defective • System memory defective • Controller board defective
0x6261	HDD Defective
	There is no response from HDD. The power supply to the HDD may have been interrupted suddenly. • Re-format HDD. • Replace HDD.

554C	USB loader defect
	USB loader is detected as defective.

820 D	Self-diagnostic error
0612	Self-diagnostic Error: CPU: ASIC Interrupt Error
	• System program defective • Controller board defective • Optional board defective • Controller firmware defective

833 D	Self-diagnostic error: Engine I/F ASIC
0F30	Device ID for ASIC can not be detected. Register error for ASIC.
0F31	ASIC register error.
0F41	The read/write check done for resident RAM on the EGB can not be done correctly.
50B1	Can not initialize or read the bus connection.
50B2	Value of the SSCG register is incorrect.
	• One or more EGB connections loose, damaged, defective • EGB defective

842 C	Verify error at NAND-Flash update
	A verify error occurred while writing to NAND-Flash when the ROM is being updated locally or remotely.
	• Do the procedure again. • If not successful after two attempts, the machine will issue SC819.

851 B	IEEE1394 I/F error

	There is an incorrect setting in the driver that prevented correct operation of the interface.
	• Check and correct the driver settings. • Network (PHY) LINK module defective • PCI interface defective • IEEE1394 I/F board defective • Controller board defective

853 B	Wireless LAN Error 1
	During machine start-up, the machine can access the board that holds the wireless LAN, but not to the wireless LAN card.
	• Wireless LAN card missing (removed) • Wireless LAN connection loose

854 B	Wireless LAN Error 2
	During machine operation, the machine can get access to the board that holds the wireless LAN, but not to the wireless LAN card (Bluetooth).
	• Wireless LAN card missing (removed) • Wireless LAN connection loose

855 B	Wireless LAN Error 3
	An error is detected on the wireless LAN card.
	• Wireless LAN card defective • Wireless LAN card connection incorrect

856 B	Wireless LAN error 4
	An error is detected on the wireless LAN board.
	• Wireless LAN board defective

	• PCI connector to EGB loose

857 B	USB I/F Error
	The USB driver is not stable and caused an error.
	• Poor USB card connection • Replace the controller board

858 A	Data Encryption Error 1
	These are errors of the HDD Data Encryption Option.
0	Key Acquisition
	Key can be acquired.
	• Replace the controller board.
1	HDD Key Setting Error
	The key is acquired but the HDD can not be set.
	• Turn the machine power off/on several times. • Replace the controller board.
2	NVRAM Read Error
	NVRAM data conversion fails (mismatch with nvram.conf).
	• Replace the NVRAM.
30	NVRAM Before Replace Error
	An error which may be recovered after recycling the power occurs before replacing NVRAM.
	Turn the machine power off/on several times. Replace the controller board.
31	Other Error
	An unexpected error occurs while data is being converted. This error is the same as SC991. See SC991 below.

859 B	Data Encryption Error 2
	These are errors of the HDD Data Encryption Option.
8	HDD Check Error
	Data conversion is attempted with no HDD unit present.
	• Confirm that HDD unit installed correctly. • Initialize HDD with SP5832-1. **Note:** After installation, a new HDD should be formatted with SP5832-1.
9	Power Loss During Data Conversion
	Data conversion stops before NVRAM/HDD data is converted.
	• Format HDD with SP5832-1.
10	Data Read Command Error
	More than two illegal DMAC communications are returned.
	• HDD defective • Format HDD with SP5832-1. • Replace HDD.

860 B	HDD startup error at power on
	HDD is connected but a driver error is detected. -or- The driver does not respond with the status of the HDD within 30 s.
	• HDD is not initialized. • Level data corrupted • HDD is defective.

861 D	HDD re-try failure

	At power on the HDD is detected. Power supply to the HDD is interrupted after the system has entered the energy save mode, but after the HDD has been awakened from the energy save mode it does not return to the ready status within 30 sec.
	• Harness between HDD and controller board disconnected, defective • HDD power connector disconnected • HDD defective • Controller board defective

863 D	HDD data read failure
	The data written to the HDD cannot be read normally, due to bad sectors generated during operation.
	• HDD defective

Note

- If the bad sectors are generated at the image partition, the bad sector information is written to NVRAM.
- The next time the HDD is accessed, these bad sectors will not be accessed for read/write operation. The HDD will probably require replacement soon.

864	D	HDD data CRC error	CTL
		During HDD operation, the HDD cannot respond to a CRC error query. Data transfer did not execute normally while data was being written to the HDD.	
		• HDD defective	

865	D	HDD access error	CTL
		HDD responded to an error during operation for a condition other than those for SC863, 864.	
		• HDD defective	

866	B	SD card error 1: Confirmation error	CTL
		The machine detected an electronic license error in the application on the SD card in the controller slot immediately after the machine was turned on.	
		• Program missing from the SD card	

867	D	SD card error 2: SD card removed	**CTL**
		The SD card in the boot slot when the machine was turned on was removed while the machine was on.	
		• Insert the SD card • Turn the machine's power off/on	

868	D	SD card error 3: SD card access	**CTL**
		An error occurred while an SD card was used.	
		• SD card not inserted correctly • SD card defective • Controller board defective • To reformat the SC card, use SD Formatter Ver 1.1.	

870	B	Address book data error	**CTL**
		Address book data on the hard disk was detected as abnormal when it was accessed from either the operation panel or the network. The address book data cannot be read from the HDD or SD card where it is stored, or the data read from the media is defective.	
		• Turn the machine power off/on. If this does not solve the problem, do the **Procedure** below. • HDD defective	
		Procedure 1. Do SP5846-50 (UCS Settings – Initialize all Directory Info.) to reset all address book data. 2. After 3 sec. reset the user information with SP5832-6 (HDD Formatting– User Information). 3. Turn the main power switch off/on.	

872	B	HDD mail receive data error	CTL
		An HDD error was detected immediately after power on, or the machine detected that the HDD was not operating correctly (data read or write) while receiving mail. The HDD may be defective or the machine was accidentally powered off while the HDD was being accessed.	
		• Reformat the mail RX data on the HDD with SP5832-7	

		• Replace the HDD

873	B	HDD mail send data error	CTL
		An error was detected on the HDD immediately after the machine was turned on, or power was turned of while the machine was using the HDD.	
		• Do SP5832-007 (Format HDD – Mail TX Data) to initialize the HDD. • Replace the HDD.	

874	D	Delete All error 1: HDD	**CTL**
		A data error was detected for the HDD/NVRAM after the Delete All option was used. **Note**: The source of this error is the Data Overwrite Security Unit running from the DOS SD card.	
		• Turn the main switch off/on, do the operation again. • Install the Data Overwrite Security Unit again. • HDD defective	

875	D	Delete All error 2: Data area	**CTL**
		An error occurred when the machine deleted data from the HDD. **Note**: The source of this error is the Data Overwrite Security Unit running from the DOS SD card.	
		• Turn the main switch off/on and try the operation again.	

876	D	Log data errors		**CTL**
		876-1	Log data error 1	
			An error was detected in the handling of the log data at power on or during machine operation. This can be caused by switching the machine off while it is operating.	
			• Initialize the HDD with SP5832-4	
		876-2	Log data error 2	
			HDD encryption unit not installed.	
			• Install the HDD encryption unit.	

		876-3	Log data error 3
			Invalid log encryption key due to defective NVRAM data.
			• Initialize the HDD with SP5832-4 • Request customer's system administrator to disable HDD encryption with the User Tool.
		876-4	Log data error 4
			Erratic HDD encryption due to defective NVRAM data.
			• Initialize HDD with SP5832-4
		876-5	Log data error 5
			• Re-install the previous NVRAM or HDD. • Initialize the HDD with SP5832-4.
		876-99	Log data error 6
			An error other than Log Data Errors 1 to 5 occurred.
			• Request assistance from your supervisor.

877	B	Security SD card error	CTL
		An error occurred, preventing successful execution of the Data Overwrite Security function, even though it has been set up and enabled.	
		• Security card is not inserted completely into the SD card slot • Security card has been removed from the SD card slot. • Security card is damaged. **Note**: • If the SD card has been removed (or was not installed correctly), switch the machine off, insert the SD card, then switch on the machine again. • If the SD card has been damaged, procure a new SD card, replace the NVRAM, then do the DOS and HDD encryption installation.	

878	D	TPM authentication error	CTL
		The system firmware could not be authenticated by the TMP security chip.	
		• System firmware updated incorrectly.	

		• Flash ROM on controller board defective. • Replace controller board.

881			

899			

SC9xx

900	D	Electrical total counter error	CTL
		The total counter contains something that is not a number.	
		• NVRAM incorrect type • NVRAM defective • NVRAM data scrambled • Unexpected error from external source	

920	B	Printer error 1	CTL
		An internal application error was detected and operation cannot continue.	
		• Software defective • Turn the machine power off/on, or change the controller firmware • Insufficient memory	

921	B	Printer Error 2	CTL
		When the printer application started, the font designated for use could not be found on the SD card.	
		• The font is not on the SD card	

990	D	Software error 1	CTL
		The software performs an unexpected function and the program cannot continue.	

		• Firmware defective: re-boot • Update firmware*1	
991	C	Software error 2	CTL
		The software performs an unexpected function. However, unlike SC990, recovery processing allows the program to continue.	
		• Software defective, re-boot*1	

*1: For more information about SC990 and SC991:

1. Execute SP7403 or print an SMC Report (SP5990) to read the history of the 10 most recent logged errors.
2. If you press [0] on the operation panel with the SP selection menu displayed, you will see detailed information about the recently logged SC990 or SC991 errors, including the software file name, line number, and so on. (1) above is the recommended method, because another SC could write over the information for the previous SC.

992	D	Erratic SC error	CTL
		There was an unusual operation by the software because of: • An incorrect argument in the program. • An incorrect internal parameter. • Work memory not sufficient. • An error occurred that could not be detected by other SC codes.	
		• Turn the main power switch off/on. • Go into the SP mode. Do SP7901 to display details about SC992 (software file name, line number, and variable), and inform your supervisor of the results.	

997	B	Cannot select application function	CTL
		An application did not start after the user pushed the correct key on the operation panel.	
		• Software bug • A RAM or DIMM option required for the application is not installed or not installed correctly.	

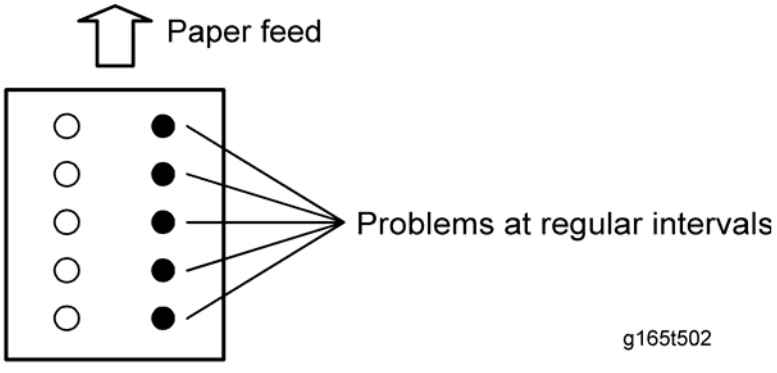
998	D	Application cannot start	CTL

		Register processing does not operate for an application within 60 s after the machine power is turned on. No applications start correctly, and all end abnormally.
		• Software bug • A RAM or DIMM option needed for the application not installed, or not installed correctly • Controller board defective

Image Problems

Overview

Image problems may appear at regular intervals that depend on circumstances of certain components. The following diagram shows the possible symptoms (black or white dots at regular intervals).

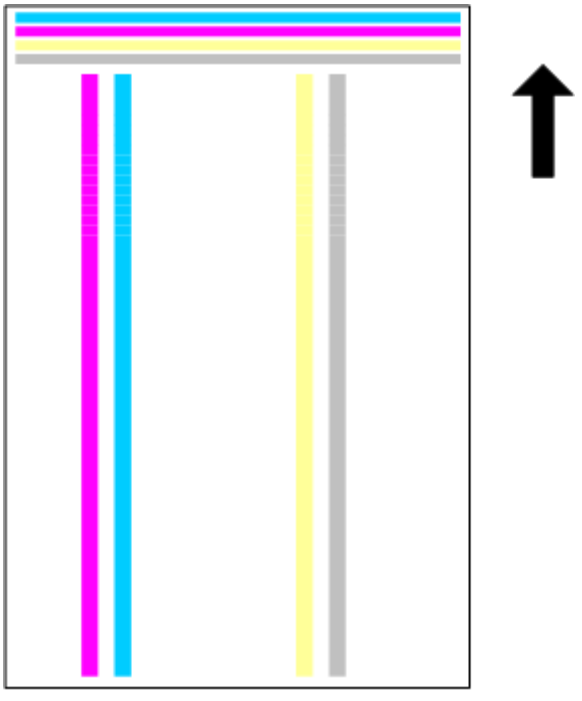


- Abnormal image at 24-mm intervals: Image transfer belt unit
- Colored spots at 38-mm intervals: AIO cartridge (Development roller)
- Abnormal image at 60-mm intervals: Transfer roller
- Colored spots at 75-mm intervals: AIO cartridge (OPC drum)
- Abnormal image at 110-mm intervals: Fusing unit (Pressure roller)
- Abnormal image at 141.3-mm intervals: Fusing unit (Fusing belt)

Checking a Sample Printout

Print out a mono-color pattern (all K, C, M, or Y), which will clarify if the cause is a problem with one of the AIO cartridges, Image transfer belt, image transfer roller, or the fusing unit. A sample page is provided with the printer driver's CD. You can print the sample page from the printer driver's CD. Before printing, you have to adjust the printer driver settings to make the problem become obvious. For details about adjusting the settings, refer to "Printer Driver Setting for Printing a Sample" described below.

- Occurs with 1-3 colors: AIO cartridge(s) failure
- Occurs with all four colors: Image transfer belt, transfer roller or fusing unit failure



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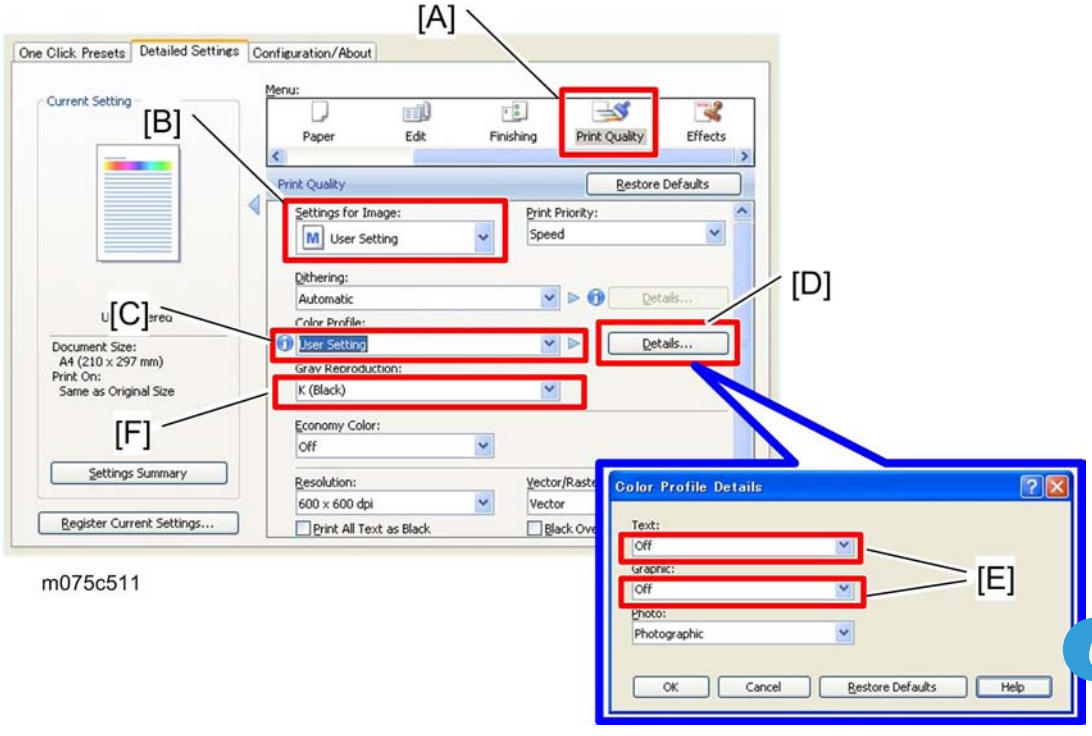
Printer Driver Setting for Printing a Sample

1. Click "Properties" on the printer driver.
2. Click "Printing Preferences" in the property screen.
3. Click "Detailed Settings" tab in the printing preferences screen.



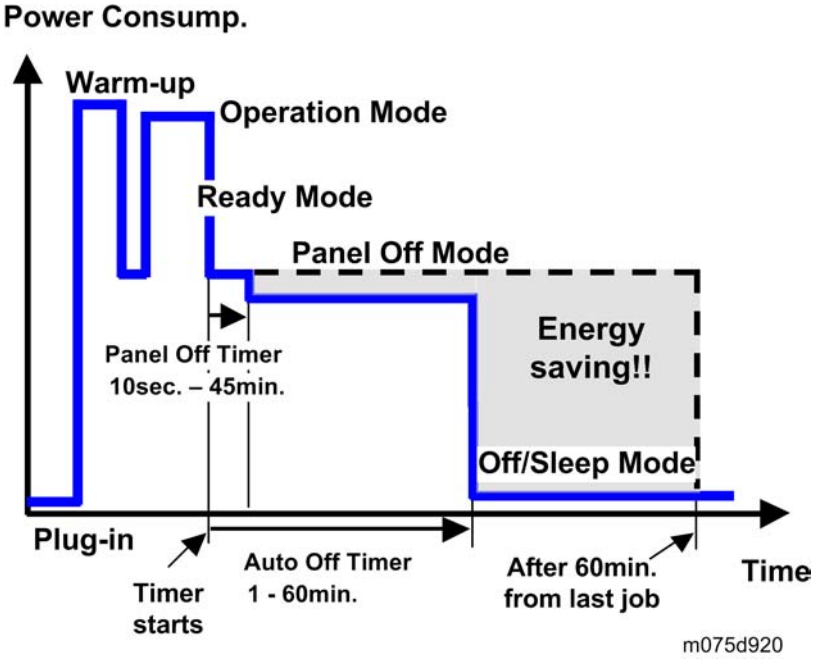
4. Click "Print Quality" [A] in the Menu.
5. Select "User Setting" from the pull-down menu in the "Settings for Image" [B].
6. Select "User Setting" from the pull-down menu in the "Color Profile" [C].
7. Press "Details..." [D], and then select "Off" from the pull-down menus [E] in the "Text:" and "Graphic".
8. Select "K (Black)" from the pull-down menu in the "Gray Reproduction" [F].

7. Energy Saving

Energy Save

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 60 min., the grey area will disappear, and no energy is saved before 60 min. expires.

Timer Settings

The user can set these timers with User Tools (System settings > Timer setting)

- Panel off timer (10 sec, 1 min, 5 min, 15 min, 30 min or 45 min): Panel Off Mode. Default setting: 10 sec.
- Auto off timer (1, 5, 8, 15, 30 or 60 min): Off/Sleep Mode. Default settings: 8 min.
- Light sensor auto off timer (5, 15, 30, 60 or 120 min): Light Sensor Off Mode. Default setting: 30 min.

Normally, Panel Off timer < Auto Off timer < Light Sensor Off Mode. But, for example, if Light sensor Off timer < or = Panel Off timer and Auto Off timer, the machine goes immediately to Off mode when the Light sensor Off time expires. It skips the Panel Off and Auto Off mode.

Example

- Panel off: 5 min.
- Auto Off: 5 min.
- Light sensor Off: 5 min.

The machine goes to Off mode after 5 minutes. Panel Off and Auto off modes are not used.

Return to Stand-by Mode

Panel Off Mode

Recovery time: 10 sec.

Off/Sleep Mode

Recovery time: 15 sec.

Eco Night Sensor

Recovery time: 20 sec.

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
- 8941-003: Energy saver mode (Panel off 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)

Here is an example calculation.

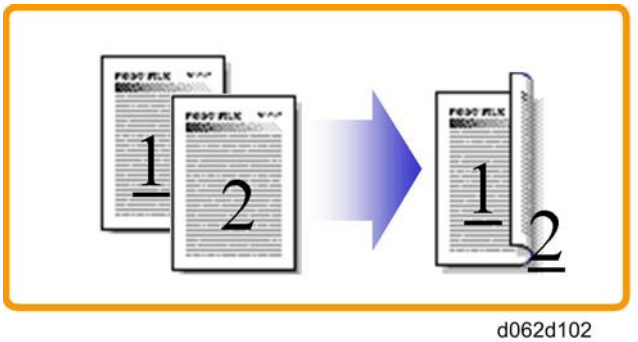
Paper Save

Effectiveness of Duplex/Combine Function

Duplexing and the combine functions reduce the amount of paper used. This means that less energy overall is used for paper production, which improves the environment.

1. Duplex:

Reduce paper volume in half!



d062d102

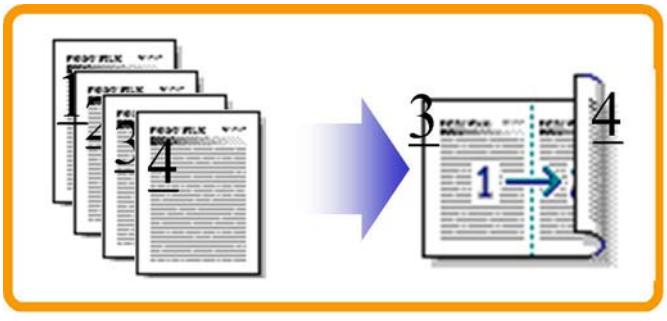
2. Combine mode:

Reduce paper volume in half!

d062d100

3. Duplex + Combine:

Using both features together can further reduce paper volume by 3/4!



d062d101

To check the paper consumption, look at the total counter and the duplex counter.

The total counter counts all pages printed.

- For one duplex page, the total counter goes up by 2.
- For a duplex job of a three-page original, the total counter goes up by 3.

The duplex counter counts pages that have images on both sides.

- For one duplex page, the duplex counter goes up by 1.
- For a duplex job of a three-page original, the duplex counter will only increase by 1, even though two sheets are used.

Recommendation

Please explain these features to the customers so they can reduce their paper usage.

Duplex Mode Tables

The following table shows paper savings and how the counters increase for some simple examples of single-sided and duplex jobs

Duplex mode:

Originals	Simplex Sheet used	Duplex Sheets used	**Paper Saved**	Total counter	Duplex counter
1	1	1	**0**	1	0
2	2	1	**1**	2	1
3	3	2	**1**	3	1
4	4	2	**2**	4	2
5	5	3	**2**	5	2

Originals	Simplex Sheet used	Duplex Sheets used	**Paper Saved**	Total counter	Duplex counter
10	10	5	**5**	10	5
20	20	10	**10**	20	10

If combine mode is used, the total and duplex counters work in the same way as explained previously. The following table shows paper savings and how the counters increase for some simple examples of duplex/ combine jobs.

2 in 1 mode:

Originals	Simplex Sheet used	Duplex Sheets used	**Paper Saved**	Total counter	Duplex counter
1	1	1	**0**	1	1
2	2	1	**1**	1	1
3	3	2	**1**	2	2
4	4	2	**2**	2	2
5	5	3	**2**	3	2
10	10	5	**5**	5	5
20	20	10	**10**	10	10

Duplex + 2 in 1 mode:

Originals	Simplex Sheet used	Duplex Sheets used	**Paper Saved**	Total counter	Duplex counter
1	1	1	**0**	1	1
2	2	1	**1**	1	1
3	3	1	**2**	2	2
4	4	1	**3**	2	2
5	5	2	**3**	3	3
6	6	2	**4**	3	3
7	7	2	**5**	4	4

Originals	Simplex Sheet used	Duplex Sheets used	**Paper Saved**	Total counter	Duplex counter
8	8	2	**6**	4	4
9	9	3	**6**	5	5
10	10	3	**7**	5	5
11	11	3	**8**	6	6
12	12	3	**9**	6	6

Model MD-P2
Machine Code: M075

Appendices

30 November, 2010

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1. Appendix: Specifications

General Specifications

Mainframe

Engine

Type			Desktop
Technology			Laser beam scanning and electro-photographic printing
			Mono-component toner development
			4-drum tandem method
Memory			384 MB (Standard)/ 768MB (Max.)
Resolution (dpi)			600 x 600 dpi (Speed Mode) 600 x 600 dpi (2bit) 1200 x 1200 dpi equivalent (Fine Mode)
Printing Speed	General Paper	A4/LT	FC: 25 ppm (LT: 26 ppm)
First Print Speed	Mono		13.5 sec or less
(A4/LT, SEF, Std. Tray)	F/C		13.5 sec or less
Duplex Printing	A4, LT, B5, LG, Exe		Automatic
Dimensions (W x D x H)			400 x 480 x 387 mm/ 15.8 x 18.9 x 15.2 inch
Weight			29.0 kg / 63.9 lb or less *Includes consumables.

Input capacity	Standard	Std Tray	500 sheets
		Bypass tray	100 sheet
	Op. Paper Tray	Paper Feed Unit	500 sheets x 1
	Max		Up to 1,100 sheets
Output capacity	Standard Tray	Face down	Up to 150 sheets (A4/LT, 80g/m^2 or 20lb)
Input Paper Size	Standard Tray		A4, B5, A5, Legal, Letter, Executive, Foolscap, Folio, F (8"x13"), Custom size: Min. 148mm x 210mm (5.8"x8. 3"), Max. 216mm x 356mm (8.5"x14.0")
	Bypass Tray		A4, B5, A5, Legal, Letter, HLT, Executive, Foolscap, Folio, F(8"x13"), B6, A6 Custom size: Min. 64mm x 125mm (2.5" x 4.9"), Max. 216mm x 1260mm (8.5" x 49.6")
	Op. Paper Tray		A4, Letter
Media Type		Std.Tray	Plain Paper/ Middle Thick/ Thick Paper/ Recycle Paper/ Color Paper/ Letterhead/ Preprinted/ Thin Paper/ Glossy/ Matted/ Special Paper/ Label
		Bypass Tray	Plain Paper/ Middle Thick/ Recycle Paper/ Envelope/ Glossy: Thick/ Matted/ Matted: Thick/ Thick Paper/ Label/ Thin Paper/ Color Paper/ Letterhead/ Preprinted/ Bond/ Cardstock/ Special Paper
		Op.Paper Feed Unit	Plain Paper/ Middle Thick/ Thick Paper/ Recycle Paper/ Color Paper/ Letterhead/ Preprinted/ Thin Paper
Paper Weight	Standard Tray		60-163 g/m^2 (16-43 lb)
	Bypass tray		60-220 g/m^2 (16-59 lb)
	Duplex		60-90 g/m^2 (16-24 lb)
	Op. Paper Tray	Paper Feed Unit	60-105g/m^2 (16-28lb)

Rating Power Spec.	NA version		120V, 60Hz
	EU version		220 - 240V, 50/60Hz
Power Consumption	NA version	Max.	1300W or less
		Energy Saver	5.5 W or less
	EU version	Max.	1300W or less
		Energy Saver	5.5 W or less
Warm-up Time			20 sec or less (from power on)
Energy Save Mode	Sleep Mode		Adjustable (off/ 1/ 5/ 8/15/ 30/ 60 min.: default 8 min.)
	Panel Off Mode		Default: Off If this mode is "On"; the default is 10 sec. (Uses approx 45 W).
Sound Pressure Level (ISO7779)	Stand by/ Energy Saver		Mainframe: Less than 31dB(A)
			System: Less than 30dB(A)
	Printing		Mainframe: Bk: 54 dB, FC: 55 dB
			System: "BK: -, FC: Less than 59 dB(A)"

Controller

CPU		533 MHz
Interface	Standard	USB2.0, USB2.0-Host, Ethernet (100 BASE-TX/ 10 BASE-T)
	Optional	IEEE1284 ECP Parallel, Gigabit Ethernet Board, IEEE 802.11 a/ g Wireless LAN
Language		PCL5c/6, PostScript 3 emulation, PDF emulation, PictBridge (Option)
Font		PCL: 45 fonts + International Fonts 13 fonts PS3: 80 fonts

Operating Systems	Standard: Windows 2000/ XP/ Server 2003 R2/ Vista/ Server2008/7 (32 bit, 64bit) MacOS (v 8.6 or later), Option: Novell Netware (V 6.5 or later)
Network Protocols	TCP/IP, Apple Talk, IPX/SPX, IPsec

Option

Paper Feed Unit

Paper Tray (500x1)	Paper Size	A4,Letter
	Paper Weight	60-105g/m^2 (16-28lb)
	Paper capacity	500 sheets x 1 tray
	Dimensions (W x D x H)	400 x 450 x 127mm/16 x 18 x 5.08 inch
	Weight	6 kg/13.2 lb

Supported Paper Sizes

A	Supported and the size is molded in the tray. Need to select paper size by operation panel/driver.
B	Supported but size is not molded in the tray. Need to select paper size by operation panel/driver.
C	Need to input paper size by operation panel and driver.
N	Not supported.

Type		SEF/ LEF	Size	Input Tray			Auto. Dup.
				Std. Tray	Option PFU	Bypass Tray	
Plain Paper	A4	SEF	210x297	A	A	B	B
		LEF	297x210	N	N	N	N
	B5	SEF	182x257	A	N	B	B
		LEF	257x182	N	N	N	N
	A5	SEF	148x210	A	N	B	N
		LEF	210x148	N	N	N	N
	B6	SEF	128x182	N	N	B	N
		LEF	182x128	N	N	N	N
	A6	SEF	105x148	N	N	B	N
		LEF	148x105	N	N	N	N

Type		SEF/ LEF	Size	Input Tray			Auto. Dup.
				Std. Tray	Option PFU	Bypass Tray	
Plain Paper	DLT	SEF	11" x 17"	N	N	N	N
	Legal	SEF	8 1/2"x14"	A	N	B	B
	Letter	SEF	8 1/2"x11"	A	A	B	B
		LEF	11"x 8 1/2"	N	N	N	N
	Half Letter	SEF	5 1/2" x 8 1/2"	N	N	C	N
	Executive	SEF	7 1/4"x10 1/2"	A	N	B	B
		LEF	10 1/2"x7 1/4"	N	N	N	N
	F	SEF	8" x 13"	B	N	B	B
	Foolscap	SEF	8 1/2" x 13"	B	N	B	B
	Folio	SEF	8 1/4" x 13"	B	N	B	B
Plain Paper	8 Kai	SEF	267 x 390	N	N	N	N
	16 Kai	SEF	195 x 267	C	N	C	N
		LEF	267 x 195	N	N	N	N
Envelope	Com10	SEF	4 1/8" x 9 1/2"	N	N	C	N
	Monarch	SEF	3 7/8" x 7 1/2"	N	N	C	N
	C6	SEF	114 x 162	N	N	C	N
	C5	SEF	162 x 229	N	N	C	N
	DL Env	SEF	110 x 220	N	N	C	N

Type		SEF/ LEF	Size	Input Tray			Auto. Dup.
				Std. Tray	Option PFU	Bypass Tray	
Custom		Width	64-90mm (2.5″x 3.5″)	N	N	C	N
			90-148mm (3.6″x 5.8″)	N	N	C	B
			148-216mm (5.8″ x 8.5″)	C	N	C	B
		Length	125-210mm (4.9″x 8.3″)	N	N	C	N
			210-240mm (8.3″x 9.4″)	C	N	C	N
			240-356mm (9.4″x 14.0″)	C	N	C	B
			356-1260mm (14.0″x 49.6″)	N	N	C	N

1

2. Appendix: Preventive Maintenance

Preventive Maintenance

User Replaceable Items

Item	Replacement Timing
Print Cartridge (AIO)	Starter/Short: Approx. 2.8 k prints/cartridge Long: 7.2 k for BK/ 6.6 k for CMY prints/cartridge
Maintenance Kit	Fusing Unit Transfer Roller Unit Approx. 90 k prints/ unit
Image Transfer Belt Unit	Approx. 90 k prints/ unit
Waste Toner Bottle	Approx. 55 k prints/ bottle (See condition 4)

Condition:

1. An A4 (8.5"x11")/ 5% chart is used to measure the above replacement timing except the Print Cartridge (AIO).
2. The condition is standard temperature and humidity.
3. The expected yield measurement for the Print Cartridge (AIO) is based on ISO 19798 (ISO chart, continuous prints).
4. These replacement timings may change depending on the circumstances and printing conditions.
5. The replacement timing of the Maintenance Kit (Fusing Unit and Transfer Roller Unit), Transfer Belt Unit and Waste Toner Bottle are measured by 3P/J when the printer is used 50% for color and 50% for black-and-white

Yield Items

The following items are not user replaceable items. However, replacement at its yield is required for the following items to maintain the printing operation.

Item	Yield
Paper Feed Roller	Approx. 200 k prints/ peace

Separation Pad	Approx. 200 k prints/ peace

Service Maintenance

To enable the machine for the maintenance by the service technician, the meter-charge mode must be set to "1 (On)" with SP5930-001.

PM items serviced by the service technician are designated as user replaceable items and yield items.

The following table shows the expected yield values for PM items when replacing them by the service technician with the meter-charge mode on.

	Meter-charge Mode On
Image Transfer Belt Unit	135 K
Maintenance Kit (Fusing Unit and Transfer Roller Unit)	135 K

The replacement timing for the customer maintenance is set earlier than the target yield for the service maintenance in order to ensure that the parts of the machine are replaced before an image problem occurs.

3. Appendix: SP Mode Tables

Service Mode

SP1-XXX (Service Mode)

1001	Bit Switch			
001	Bit Switch 1		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	DFU	-	-
	bit 3	**No I/O Timeout**	0: Disable	1: Enable
		Enable: The MFP I/O Timeout setting will have no effect. I/O Timeouts will never occur.		
	bit 4	**SD Card Save Mode**	0: Disable	1: Enable
		Enable: Print jobs will be saved to an SD Card in the GW SD slot (☛"Card Save Function" in "System Maintenance" chapter of the Field Service Manual).		
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	**[RPCS,PCL]: Printable area frame border**	0: Disable	1: Enable
		Enable: The machine prints all RPCS and PCL jobs with a border on the edges of the printable area.		

1001	Bit Switch

002	Bit Switch 2		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	DFU	-	-
	bit 3	**[PCL5e/c,PS]: PDL Auto Switching**	0: Enable	1: Disable
		Disable: The MFPs ability to change the PDL processor mid-job. Some host systems submit jobs that contain both PS and PCL5e/c. If Auto PDL switching is disabled, these jobs will not be printed properly.		
	bit 4	DFU	-	-
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	DFU	-	-

1001	Bit Switch			
003	Bit Switch 3		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	**[PCL5e/c]: Legacy HP compatibility**	0: Disable	1: Enable
		Enable: Uses the same left margin as older HP models such as HP4000/HP8000. In other words, the left margin defined in the job (usually "<ESC>*r0A") will be changed to "<ESC>*r1A"		
	bit 3	DFU	-	-
	bit 4	DFU	-	-
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	DFU	-	-

1001	**Bit Switch**

004	Bit Switch 4 **DFU**	0	1

1001	Bit Switch			
005	Bit Switch 5		0	1
	bit 0	DFU	-	-
	bit 1	**Multiple copies if a paper size or type mismatch occurs**	0: Disable (Single copy)	1: Enable (Multiple copy)
		If a paper size or type mismatch occurs during the printing of multiple copies, only a single copy is output by default. Using this BitSw, the device can be configured to print all copies even if a paper mismatch occurs.		
	bit 2	DFU	-	-
	bit 3	**[PS] PS Criteria**	Pattern3	Pattern1
		Change the number of PS criterion used by the PS interpreter to determine whether a job is PS data or not. Pattern3: includes most PS commands. Pattern1: A small number of PS tags and headers		
	bit 4	**Increase max number of the stored jobs to 1000 jobs.**	Disable (100)	Enable (1000)
		Enable: Changes the maximum number of jobs that can be stored on the HDD via Job Type settings to 1000. The default is 100.		
	bit 5	**Face-up output**	Disable	Enable
		Enable: All print jobs will be output face-up in the destination tray.		
	bit 6	**Method for determining the image rotation for the edge to bind on.**	0: Disable	1: Enable
		If enabled, the image rotation will be performed as they were in the specifications of older models for the binding of pages of mixed orientation jobs. The old models are below: - PCL: Pre-04A models - PS/PDF/RPCS:Pre-05S models		

	bit 7	Letterhead mode printing	0: Disable	1: Enable (Duplex)

1001	Bit Switch		
006	Bit Switch 6 **DFU**	-	-

1001	Bit Switch			
007	Bit Switch 7		0	1
	bit 0	**Print path**	0: Disable	1: Enable
		If enabled, simplex pages (in mixed simplex/duplex PS/PCL5 jobs only) and the last page of an odd paged duplex job (PS, PCL5, PCL6), are always routed through the duplex unit. Not having to switch paper paths increases the print speed slightly.		
	bit 1 to 7	DFU	-	-

1001	Bit Switch			
008	Bit Switch 8		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	DFU	-	-
	bit 3	**[PCL,PS]: Allow BW jobs to print without requiring User Code**	Disable	Enable
		Enable: BW jobs submitted without a user code will be printed even if usercode authentication is enabled. **Note** • Color jobs will not be printed without a valid user code.		
	bit 4	DFU	-	-
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	DFU	-	-

1001	Bit Switch			
005	Bit Switch 9		0	1
	bit 0	**PDL Auto Detection timeout of jobs submitted via USB or Parallel Port (IEEE 1284).**	"Disabled (Immediately)"	"Enabled (10 seconds)"
		To be used if PDL auto-detection fails. A failure of PDL autodetection doesn't necessarily mean that the job can't be printed. This bit switch tells the device whether to time-out immediately (default) upon failure or to wait 10 seconds.		
	bit 1	DFU	-	-
	bit 2	**Job Cancel**	Disabled (Not cancelled)	Enabled (Cancelled)
		If this bit switch, all jobs will be cancelled after a jam occurs. Note: If this bitsw is enabled, printing under the following conditions might result in problems: - Job submission via USB or Parallel Port - Spool printing (WIM >Configuration > Device Settings > System)		
	bit 3	DFU	-	-
	bit 4	Timing of the PJL Status ReadBack (JOB END) when printing multiple collated copies.	Disabled	Enabled
		This bitsw determines the timing of the PJL USTATUS JOB END sent when multiple collated copies are being printed. 0 (default): JOB END is sent by the device to the client after the first copy has completed printing. This causes the page counter to be incremented after the first copy and then again at the end of the job. 1: JOB END is sent by the device to the client after the last copy has finished printing. This causes the page counter to be incremented at the end of each job.		
	bit 5 to 7	DFU	-	-

1003	[Clear Setting]

1003 1	Initialize System
	Initializes settings in the "System" menu of the user mode.
1003 3	Delete Program

1004	[Print Summary]
1004 1	Service Summary
	Prints the service summary sheet (a summary of all the controller settings).

1005	[Display Version]
1005 1	Printer Version
	Displays the version of the controller firmware.

1007	[Supply Display]		
	Enables or disables the display for information on each supply.		
1007 001	Development	*CTL	[0 or 1 / **0** / 1 /step] 0: OFF, 1: ON
1007 002	PCU	*CTL	
1007 003	Transfer	*CTL	
1007 004	Int. Transfer	*CTL	
1007 005	Transfer Roller	*CTL	
1007 006	Fuser	*CTL	
1007 007	Fuser Oil	*CTL	

1101	[ToneCtlSet] Toner Control Setting		
	Recalls a set of gamma settings. This can be either a) the factory setting, b) the previous setting, or c) the current setting.		
1101 1	Tone (Factory)	*CTL	
1101 2	Tone (Prev.)		
1101 3	Tone (Current)		

1102	[ToneCtlSet] Toner Control Setting
	Selects the printing mode (resolution) for the printer gamma adjustment.
1102 1	• **00: *1200x1200Photo** • 01: 600x600Text • 02: 1200x1200Text • 03: 1200x600Text • 04: 600x600Photo • 05: 1200x600Photo

1103	[PrnColorSheet] Print Color Sheet
	Prints the test page to check the color balance before and after the gamma adjustment.
1103 1	ToneCtlSheet (Toner Control Sheet)
1103 2	ColorChart

1104	[ToneCtlValue] Toner Control Value		
	Adjusts the printer gamma for the mode selected in the Mode Selection menu.		
1104 001	Set Black 1	*CTL	[0 to 255 / **16** / 1/step]
1104 021	Set Cyan 1	*CTL	
1104 041	Set Magenta 1	*CTL	
1104 061	Set Yellow 1	*CTL	
1104 002	Set Black 2	*CTL	[0 to 255 / **32** / 1/step]
1104 022	Set Cyan 2	*CTL	
1104 042	Set Magenta 2	*CTL	
1104 062	Set Yellow 2	*CTL	
1104 003	Set Black 3	*CTL	[0 to 255 / **48** / 1/step]
1104 023	Set Cyan 3	*CTL	
1104 043	Set Magenta 3	*CTL	
1104 063	Set Yellow 3	*CTL	

1104 004	Set Black 4	*CTL	[0 to 255 / **64** / 1/step]
1104 024	Set Cyan 4	*CTL	
1104 044	Set Magenta 4	*CTL	
1104 064	Set Yellow 4	*CTL	
1104 005	Set Black 5	*CTL	[0 to 255 / **80** / 1/step]
1104 025	Set Cyan 5	*CTL	
1104 045	Set Magenta 5	*CTL	
1104 065	Set Yellow 5	*CTL	
1104 006	Set Black 6	*CTL	[0 to 255 / **96** / 1/step]
1104 026	Set Cyan 6	*CTL	
1104 046	Set Magenta 6	*CTL	
1104 066	Set Yellow 6	*CTL	
1104 007	Set Black 7	*CTL	[0 to 255 / **112** / 1/step]
1104 027	Set Cyan 7	*CTL	
1104 047	Set Magenta 7	*CTL	
1104 067	Set Yellow 7	*CTL	
1104 008	Set Black 8	*CTL	[0 to 255 / **128** / 1/step]
1104 028	Set Cyan 8	*CTL	
1104 048	Set Magenta 8	*CTL	
1104 068	Set Yellow 8	*CTL	
1104 009	Set Black 9	*CTL	[0 to 255 / **144** / 1/step]
1104 029	Set Cyan 9	*CTL	
1104 049	Set Magenta 9	*CTL	
1104 069	Set Yellow 9	*CTL	

1104 010	Set Black 10	*CTL	[0 to 255 / **160** / 1/step]
1104 030	Set Cyan 10	*CTL	
1104 050	Set Magenta 10	*CTL	
1104 070	Set Yellow 10	*CTL	
1104 011	Set Black 11	*CTL	[0 to 255 / **176** / 1/step]
1104 031	Set Cyan 11	*CTL	
1104 051	Set Magenta 11	*CTL	
1104 071	Set Yellow 11	*CTL	
1104 012	Set Black 12	*CTL	[0 to 255 / **192** / 1/step]
1104 032	Set Cyan 12	*CTL	
1104 052	Set Magenta 12	*CTL	
1104 072	Set Yellow 12	*CTL	
1104 013	Set Black 13	*CTL	[0 to 255 / **208** / 1/step]
1104 033	Set Cyan 13	*CTL	
1104 053	Set Magenta 13	*CTL	
1104 073	Set Yellow 13	*CTL	
1104 014	Set Black 14	*CTL	[0 to 255 / **224** / 1/step]
1104 034	Set Cyan 14	*CTL	
1104 054	Set Magenta 14	*CTL	
1104 074	Set Yellow 14	*CTL	
1104 015	Set Black 15	*CTL	[0 to 255 / **240** / 1/step]
1104 035	Set Cyan 15	*CTL	
1104 055	Set Magenta 15	*CTL	
1104 075	Set Yellow 15	*CTL	

1105	[ToneCtlSave] Toner Control Save
	Saves the print gamma (adjusted with the Gamma Adj.) as the new Current Setting. Before the machine stores the new "current setting", it moves the data stored as the "current setting" to the "previous setting" memory-storage location.

1106	[Toner Limit]		
	Adjusts the maximum toner amount for image development.		
1106 1	Toner Limit Value	*CTL	[100 to 400 / **230** / 1 %/step]

1108	[Ext. Toner Save]		
1108 001	Mode 1: Text		DFU
1108 002	Mode 2: Text		
1108 003	Mode 1: Image		
1108 004	Mode 2: Image		
1108 005	Mode 1: Line		
1108 006	Mode 2: Line		
1108 007	Mode 1: Paint		
1108 008	Mode 2: Paint		

1109	[EconomyColor]		
	Adjusts the toner density rate for each print mode.		
1109 1	Text	*CTL	[0 to 999 / **80** / 1 %/step]
1109 2	Image	*CTL	[0 to 999 / **50** / 1 %/step]
1109 3	Line	*CTL	[0 to 999 / **30** / 1 %/step]
1109 4	Paint	*CTL	[0 to 999 / **30** / 1 %/step]

Engine SP1-xxx

SP1-XXX (Feed)

1001	[Lead Edge Reg.] Leading Edge Registration (Tray or By-pass, Paper Type, Process Speed) Process Speed: LowSpd: Low Speed, HlfSpd: Half speed, NorSpd: Normal speed		
	Note • Adjusts the leading edge registration. This SP changes the registration clutch operation timing for each mode. • A +ve value sets the registration start timing earlier. • A –ve value sets the registration start timing later. The value of the normal paper in RS is the standard value. The values of papers other than normal are added to the value of the normal paper in RS.		
002	T1:NorSpd 0.3mm	*EGB	[-9.0 to 9.0 / **0** / 0.3 mm/step]
003	T1:HlfSpd 0.3mm	*EGB	[-9.0 to 9.0 / **0** / 0.3 mm/step]
006	T2:NorSpd 0.3mm	*EGB	[-9.0 to 9.0 / **0** / 0.3 mm/step]
007	T2:HlfSpd 0.3mm	*EGB	[-9.0 to 9.0 / **0** / 0.3 mm/step]
014	ByPas:NorSpd 0.3mm	*EGB	[-9.0 to 9.0 / **0** / 0.3 mm/step]
015	ByPas:HlfSpd 0.3mm	*EGB	[-9.0 to 9.0 / **0** / 0.3 mm/step]
018	Dup:NorSpd 0.3mm	*EGB	[-9.0 to 9.0 / **0** / 0.3 mm/step]
021	Dup:HlfSpd 0.3mm	*EGB	[-9.0 to 9.0 / **0** / 0.3 mm/step]
063	T1:LowSpd 0.3mm	*EGB	[-9.0 to 9.0 / **0** / 0.3 mm/step]
065	ByPas:LowSpd 0.3mm	*EGB	[-9.0 to 9.0 / **0** / 0.3 mm/step]
066	Dup:LowSpd 0.3mm	*EGB	[-9.0 to 9.0 / **0** / 0.3 mm/step]
100	Mar.pos 0:OFF1:ON	*EGB	[0 or 1 / **0** / -/step]

1002	[S-to-S Reg.] Side-to-Side Registration

001	By-pass 0.0846mm	*EGB	Adjusts the side-to-side registration for each mode. This SP changes the laser main scan start position. [-63 to 63 / **0** / 0.0846 mm /step]
002	Tray1 0.0846mm	*EGB	
003	Tray2 0.0846mm	*EGB	
004	Duplex 0.0846mm	*EGB	

1003	[Paper Buckle] Paper Buckle (Tray or By-pass, Paper Type, Process Speed)		
002	Tray1 0.1mm	*EGB	Adjusts the amount of paper buckle at the registration roller for each mode. This SP changes the paper feed timing. [-10.0 to 10.0 / **0.0** / 0.1 mm/step]
006	Tray2 0.1mm	*EGB	
014	By-pass 0.3mm	*EGB	
018	Duplex 0.1mm	*EGB	

1100	[Lead Edge Reg.] Leading Edge Registration (Tray or By-pass, Paper Type, Process Speed) Process Speed: LowSpd: Low Speed, HlfSpd: Half speed, NorSpd: Normal speed		
	These SPs can be adjusted by UP mode. The setting range of SP1100 is different from the setting range of SP1001.		
002	T1:NorSpd 0.3mm	*EGB	[0 to 9.0 / **0** / 0.3 mm/step]
003	T1:HlfSpd 0.3mm	*EGB	[0 to 9.0 / **0** / 0.3 mm/step]
006	T2:NorSpd 0.3mm	*EGB	[0 to 9.0 / **0** / 0.3 mm/step]
007	T2:HlfSpd 0.3mm	*EGB	[0 to 9.0 / **0** / 0.3 mm/step]
014	ByPas:NorSpd 0.3mm	*EGB	[0 to 9.0 / **0** / 0.3 mm/step]
015	ByPas:HlfSpd 0.3mm	*EGB	[0 to 9.0 / **0** / 0.3 mm/step]
018	Dup:NorSpd 0.3mm	*EGB	[0 to 9.0 / **0** / 0.3 mm/step]
021	Dup:HlfSpd 0.3mm	*EGB	[0 to 9.0 / **0** / 0.3 mm/step]
063	T1:LowSpd 0.3mm	*EGB	[0 to 9.0 / **0** / 0.3 mm/step]
065	ByPas:LowSpd 0.3mm	*EGB	[0 to 9.0 / **0** / 0.3 mm/step]
066	Dup:LowSpd 0.3mm	*EGB	[0 to 9.0 / **0** / 0.3 mm/step]

1102	[S-to-S Reg.] Side-to-Side Registration		
	These SPs can be adjusted by UP mode. The setting range of SP1102 is different from the setting range of SP1002.		
001	By-pass 0.34mm	*EGB	Adjusts the side-to-side registration for each mode. This SP changes the laser main scan start position. [-15 to 15 / **0** / 0.34 mm /step]
002	Tray1 0.34mm	*EGB	
003	Tray2 0.34mm	*EGB	
004	Duplex 0.34mm	*EGB	

1105	[Temp. Adj.] Temperature Adjustment		
	Adjusts the fusing unit subtractive value for the target temperature of each paper type.		
001	Fusing Temp.	*EGB	[1 to 16 / **16** / 1 /step]
	16: No adjustment 15: -2°C 14: -4°C 13: -6°C 12: -8°C 11: -10°C 10: -12°C 9: -14°C		8: -16°C 7: -18°C 6: -20°C 5: -22°C 4: -24°C 3: -26°C 2: -28°C 1: -30°C

1159	[Fusing JAM SC] Fusing JAM SC Setting		
001	Detect 0:OFF 1:ON	*EGB	Turns on or off the fusing jam SC to detect the three consecutive paper jams at fusing unit. [0 or 1 / **0** / 1 /step] 0: OFF, 1: ON

1900	[Print Support]
	These SPs can be adjusted by UP mode.

001	FullDetc.0:OFF1:ON	*EGB	Turns on or off the paper exit overflow detection. [0 or 1 / **0** / 1 /step] 0: OFF, 1: ON
003	SSizeSup0:OFF 1:ON	*EGB	Turns on or off the small size paper (60-90 mm) detection from the by-pass tray. [0 or 1 / **0** / 1 /step] 0: OFF, 1: ON
005	FullDetc.Offset	*EGB	Specifies the threshold sheet of the paper exit overflow detection. [-150 to 150 / **0** / 1 sheet/step]

Engine SP2-xxx

SP2-XXX (Drum)

2101	[Color Regist.] Color Registration Correction ([Color], M: Main scan, S: Sub scan) **DFU**		
	You can adjust these SPs if the color registration is not good after the Line Position Adjustment (also known as 'MUSIC') is done. The [K] value (-001) is the standard value in the main scan adjustment. The values other than [k] value are added to [K] value. So, [K] value normally does not need to be adjusted in the main scan adjustment.		
001	[K]: Main Reg. Dot	*EGB	Adjusts the side edge registration by a dot for each mode. [-127 to 127 / **0** / 1 dot/step]
002	[M]: Main Reg. Dot	*EGB	
003	[C]: Main Reg. Dot	*EGB	
004	[Y]: Main Reg. Dot	*EGB	
013	[M]:Sub Reg. Line	*EGB	[-127 to 127 / **0** / 1 line/step]
014	[C]:Sub Reg. Line	*EGB	
015	[Y]:Sub Reg. Line	*EGB	
021	[K]:Sub Reg. Dot	*EGB	[0 to 15 / **0** / 1 sub-dot/step]
022	[M]:Sub Reg. Dot	*EGB	
023	[C]:Sub Reg. Dot	*EGB	
024	[Y]:Sub Reg. Dot	*EGB	

2104	[Magnifi. Adj.] Magnification Adjustment ([Color], Main Scan Magnification) **DFU**		
001	[K]:M Mag 0.001%	*EGB	Adjusts the main scan magnification. [-1200 to 1200 / **0** / 0.001% /step]
002	[M]:M Mag 0.001%	*EGB	
003	[C]:M Mag 0.001%	*EGB	
004	[Y]:M Mag 0.001%	*EGB	

2109	[Test Print]		
001	Test Print Exe	-	
002	Image Pattern 1	-	[0 to 127 / **0** / 1 /step]
	0: Grid (512 dot pitch) 2: Grid Horizontal (128dot pitch) 4: Grid / vertical line (128dot pitch) 8: Horizontal line / 2dot (4dot pitch) 16: Vertical line / 2dot (4dot pitch) 32: Horizontal line / 1 dot (2dot pitch) 64: Vertical line / 1dot (2 dot pitch)		
003	Image Pattern 2	-	[0 to 127 / **0** / 1 /step]
	0: Belt 2: Solid 4: 4 x 4 dot (8dot pitch) 8: 2 x 2 dot (4dot pitch) 16: 1 x 1 dot (2dot pitch) 32: Grid / skew 1dot (512dot pitch) 64: Grid / skew 1dot (128dot pitch)		
004	Print Page	-	Specifies the number of outputs. [0 to 127 / **0** / 1 page /step]
005	Feed Source	-	Selects the feed tray. [0 to 2 / **0** / 1 /step] 0: Tray 1, 1: By-pass, 2: Tray 2
006	Print Mode	-	Selects the print mode for the test print. [0 or 1 / **0** / 1 /step] 0: Simplex, 1: Duplex
007	Color	-	Selects the color mode for the test print. [0 to 7 / **0** / 1 /step]
	0: Black, 1: Magenta, 2: Cyan, 3: Yellow, 4: Red (Yellow and Magenta), 5: Green (Yellow and Cyan), 6: Blue (Magenta and Cyan), 7: Full Color		

2120	[Auto Adjustment] Manual Line Position Adjustment Execution		
001	LPos. Adj: Rough	-	Performs the line position rough adjustment.
002	LPos. Adj: Fine	-	Performs the line position fine adjustment.
003	LSpd LPos. Adj	-	Performs the line position adjustment for the low speed.
004	Adjustment	-	Performs the process control and line position fine adjustment.
005	ProCon 0:OFF 1:ON	*EGB	Turns on or off the automatic process control execution. [0 or 1 / **0** / 1 /step] 0:OFF, 1:ON
006	MUSIC 0:OFF 1:ON	*EGB	Turns on or off the automatic line position control execution. [0 or 1 / **0** / 1 /step] 0:OFF, 1:ON
007	Tnr Cnt 0:OFF 1:ON	*EGB	Turns on or off the automatic toner control execution. [0 or 1 / **0** / 1 /step] 0:OFF, 1:ON
008	Color Regi. Adj	*EGB	Performs the process control, line position rough adjustment, line position fine adjustment and line position adjustment for the low speed in order.
009	Transfer Belt Adj	*EGB	Performs the process control, line position rough adjustment, line position fine adjustment and line position adjustment for the low speed in order. The standard margin position is measured when executing the line position fine adjustment.

2152	[Area Shading] Area Shading Correction Setting ([Color], Area) **DFU**

2152 006	[K]: Area 0	*EGB	[0.10 to 2.00 / **1.00** / 0.01/step]
2152 007	[K]: Area 1	*EGB	
2152 008	[K]: Area 2	*EGB	
2152 009	[K]: Area 3	*EGB	
2152 010	[K]: Area 4	*EGB	
2152 011	[K]: Area 5	*EGB	
2152 012	[K]: Area 6	*EGB	
2152 013	[K]: Area 7	*EGB	
2152 014	[K]: Area 8	*EGB	
2152 017	[M]: Area 0	*EGB	[0.10 to 2.00 / **1.00** / 0.01/step]
2152 018	[M]: Area 1	*EGB	
2152 019	[M]: Area 2	*EGB	
2152 020	[M]: Area 3	*EGB	
2152 021	[M]: Area 4	*EGB	
2152 022	[M]: Area 5	*EGB	
2152 023	[M]: Area 6	*EGB	
2152 024	[M]: Area 7	*EGB	
2152 025	[M]: Area 8	*EGB	

2152 028	[C]: Area 0	*EGB	[0.10 to 2.00 / **1.00** / 0.01/step]
2152 029	[C]: Area 1	*EGB	
2152 030	[C]: Area 2	*EGB	
2152 031	[C]: Area 3	*EGB	
2152 032	[C]: Area 4	*EGB	
2152 033	[C]: Area 5	*EGB	
2152 034	[C]: Area 6	*EGB	
2152 035	[C]: Area 7	*EGB	
2152 036	[C]: Area 8	*EGB	
2152 039	[Y]: Area 0	*EGB	[0.10 to 2.00 / **1.00** / 0.01/step]
2152 040	[Y]: Area 1	*EGB	
2152 041	[Y]: Area 2	*EGB	
2152 042	[Y]: Area 3	*EGB	
2152 043	[Y]: Area 4	*EGB	
2152 044	[Y]: Area 5	*EGB	
2152 045	[Y]: Area 6	*EGB	
2152 046	[Y]: Area 7	*EGB	
2152 047	[Y]: Area 8	*EGB	

2162	[Area Magni. Cor] Area Magnification Correction ([Color], Area) **DFU**

2162 001	[K]: Area 1	*EGB	Adjusts the magnification correction for each area. [-255 to 255 / **0** / 1 sub-dot/step]
2162 002	[K]: Area 2	*EGB	
2162 003	[K]: Area 3	*EGB	
2162 004	[K]: Area 4	*EGB	
2162 005	[K]: Area 5	*EGB	
2162 006	[K]: Area 6	*EGB	
2162 007	[K]: Area 7	*EGB	
2162 008	[K]: Area 8	*EGB	
2162 013	[M]: Area 1	*EGB	Adjusts the magnification correction for each area. [-255 to 255 / **0** / 1 sub-dot/step]
2162 014	[M]: Area 2	*EGB	
2162 015	[M]: Area 3	*EGB	
2162 016	[M]: Area 4	*EGB	
2162 017	[M]: Area 5	*EGB	
2162 018	[M]: Area 6	*EGB	
2162 019	[M]: Area 7	*EGB	
2162 020	[M]: Area 8	*EGB	
2162 025	[C]: Area 1	*EGB	Adjusts the magnification correction for each area. [-255 to 255 / **0** / 1 sub-dot/step]
2162 026	[C]: Area 2	*EGB	
2162 027	[C]: Area 3	*EGB	
2162 028	[C]: Area 4	*EGB	
2162 029	[C]: Area 5	*EGB	
2162 030	[C]: Area 6	*EGB	
2162 031	[C]: Area 7	*EGB	
2162 032	[C]: Area 8	*EGB	

2162 037	[Y]: Area 1	*EGB	Adjusts the magnification correction for each area. [-255 to 255 / **0** / 1 sub-dot/step]
2162 038	[Y]: Area 2	*EGB	
2162 039	[Y]: Area 3	*EGB	
2162 040	[Y]: Area 4	*EGB	
2162 041	[Y]: Area 5	*EGB	
2162 042	[Y]: Area 6	*EGB	
2162 043	[Y]: Area 7	*EGB	
2162 044	[Y]: Area 8	*EGB	

2181	[LPos. Adj Result] Line Position Adjustment Result ([Color],Value, Unit)		
	The following SPs display the result of MUSIC for the skew correction.		
2181 001	[K]: Skew	*EGB	[-999 to 999 / **0** / 1 µm/step]
2181 011	[M]: Skew	*EGB	[-999 to 999 / **0** / 1 µm/step]
2181 021	[C]: Skew	*EGB	[-999 to 999 / **0** / 1 µm/step]
2181 031	[Y]: Skew	*EGB	[-999 to 999 / **0** / 1 µm/step]

2186	[MUSIC Record] Automatic Line Position Adjustment Record
	The following SPs display the MUSIC record.

2186 007	Result	*EGB	[0 to 999999 / **0** / 1 /step]
	MUSIC executing: 0000 MUSIC success: xxx1 ("x": any numbers) Pattern detection error: xxx2 ("x": any numbers) Skew error: 0003 Bend error: 0004 Sub-scan shift error: 0005 Main-scan shift error: 0006 D-phase error: 0007 MUSIC interruption: 0008 No MUSIC execution: 0009		
2186 008	Execution	*EGB	Displays the number of MUSIC execution. [0 to 9999 / **0** / 1 /step]
2186 009	Failure	*EGB	Displays the number of MUSIC failure. [0 to 9999 / **0** / 1 /step]

2190	[Transfer Adj]		
	Configures the settings for the image transfer belt reverse cleaning.		
001	Belt Cleaning	*EGB	[0 or 1 / **1** / 1 /step] 0: Off, 1: On
	Turns on or off the reverse cleaning mode for the image transfer belt.		
002	Paper Trans:Side1 **DFU**	*EGB	[-15 to 15 / **0** / 1 µ/step]
003	Paper Trans:Side2 **DFU**	*EGB	[-15 to 15 / **0** / 1 µ/step]
004	Media Type **DFU**	*EGB	[0 to 19 / **0** / 1 /step]

2191	[Laser Unit] **DFU**		
001	LD Default Set	*EGB	Returns the current settings for the laser unit to the factory settings.
011	Bk Data	*EGB	Inputs the BK LD initial data.
012	M Data	*EGB	Inputs the M LD initial data.

013	C Data	*EGB	Inputs the C LD initial data.
014	Y Data	*EGB	Inputs the Y LD initial data.

2907	[ACS SW: FC Mode]		
001	Cont.Mono Sheet	*EGB	-
	Selects the counter method for the ACS switching. [0 or 1 / **1** / -/step] 0: Document counter, 1: Page counter		

Engine SP3-xxx and SP4-xxx

SP3-XXX (Process)

3901	[Auto Adjustment]		
3901 001	TD Setting Exe	*EGB	Executes the automatic adjustment (process control).
3901 002	TD Setting Result	*EGB	Displays the result of the automatic adjustment for each color.
3901 003	Detail Result K	*EGB	Displays the result of the automatic adjustment for black.
3901 004	Detail Result M	*EGB	Displays the result of the automatic adjustment for magneta.
3901 005	Detail Result C	*EGB	Displays the result of the automatic adjustment for cyan.
3901 006	Detail Result Y	*EGB	Displays the result of the automatic adjustment for yellow.

SP4-XXX (Scanner)

4901	[Auto Adjustment]		
4901 001	Laser-TM Sn Cnt	*EGB	Displays the distance between the exposure point of black and TM sensor.

Engine SP5-xxx

SP5-XXX (Mode)

5001	[All Indicators On]		
5001 001		*CTL	Checks the LED on the operation panel.

5024	[mm/ inchDisplay]		
5024 001		*CTL	Sets units (mm or inch) for custom paper sizes. [0 or 1 / **1** /-] 0: mm (EU/AS), 1: inch (NA)

5045	[Accounting counter]		
5045 001	Counter Method	*CTL	Selects the counting method if the meter charge mode is enabled with SP5-930-001. [0 to 2 / **1** / -] 0: Developments, 1: Pages, 2:Coverage range

5051	[Refill Toner Disp] Toner Refill Display		
5051 001	Refill Toner Disp	*CTL	Enable or disable the warning display when you install a toner bottle that was refilled by third party venders. [0 or 1 / **0** / -] 0: Enable, 1: Disable

5055	[Display IP address]		
5055 001	Display IP address	*CTL	Display or does not display the IP address on the LCD. [0 or 1 / **0** / -] 0: Not display, 1: Display

5056	[Coverage Counter]

5056 001	Coverage Counter	*CTL	Display or does not display the coverage counter. [0 or 1 / **0** / -] 0: Not display, 1: Display

5169	[CE Login]		
5169 001	CE Login	*CTL	Enables or disables the CE login. [0 or 1 / **0** / -] 0: Off, 1: On

5195	[Limitless SW] **DFU**		
5195 001	-	*CTL	[0 or 1 / **0** / -] 0: Productivity priority 1: Tray priority
	Selects the paper feed mode. **Productivity priority:** This changes the feeding tray as soon as the machine detects the priority tray even the paper still remains in the feeding tray. **Tray priority:** This changes the feeding tray after the paper in the tray where the machine has been feeding paper has been run out of. This SP is activated only when a customer selects the "Auto Paper Select".		

5302	[Set Time]		
5302 002	Time difference	*CTL#	Adjusts the RTC (real time clock) time setting for the local time zone. [-1440 to 1440 / **NA, EU, CH** / 1 minute/step] NA: **-300**, EU: **60**, CH: **480**

5307	[Summer Time]		
5307 001	ON/OFF	-	Enables or disables the summer time mode. [0 to 1 / **1** / -] 0: Off, 1: On

5307 003	Rule Set(Start)	-	NA: **04100010**, EU: **035(4)00010**, ASIA: **105(4)00010**
	Specifies the start setting for the summer time mode. 1st and 2nd digits: The month. [1 to 12] 3rd digit: The week of the month. [1 to 5] 4th digit: The day of the week. [0 to 6 = Sunday to Saturday] 5th and 6th digits: The hour. [00 to 23] 7th digit: The length of the advanced time. [0 to 9 / 1 hour /step] 8th digit: The length of the advanced time. [0 to 5 / 10 minutes /step] For example: 3500010 (EU default) The timer is advanced by 1 hour at am 0:00 on the 5th Sunday in March • The digits are counted from the left. • Make sure that SP5-307-1 is set to "1".		
5307 004	Rule Set(End)	-	NA: **105(4)60000**, EU: **105(4)00000**, ASIA: **03100000**
	Specifies the end setting for the summer time mode. There are 8 digits in this SP. 1st and 2nd digits: The month. [1 to 12] 3rd digit: The week of the month. [0 to 5] 4th digit: The day of the week. [0 to 6 = Sunday to Saturday] 5th and 6th digits: The hour. [00 to 23] **The 7th and 8 digits must be set to "00".** • The digits are counted from the left. • Make sure that SP5-307-1 is set to "1".		

5401	[Access Control]		
5401 104	Authentication Time	*CTL	[0 to 255 / **0** / 1 sec/step] 0: 60 seconds
	Specifies the authentication time-out interval.		

5401 162	ExtAuth Detail	*CTL	Bit 0: Log-out without an IC card 0: Not allowed (default) 1: Allowed
	Selects the log out type for the extend authentication device.		
5401 200	SDK1 Unique ID	*CTL	"SDK" is the "Software Development Kit". These data can be converted from SAS (VAS) when installed or uninstalled. **DFU**
5401 201	SDK1 Certification Method	*CTL	
5401 210	SDK2 Unique ID	*CTL	
5401 211	SDK2 Certification Method	*CTL	
5401 220	SDK3 Unique ID	*CTL	
5401 221	SDK3 Certification Method	*CTL	
5401 230	SDK Cert	*CTL	
5401 240	Detail Option	*CTL	

5404	[User Code Clear] User Code Counter Clear		
5404 001	User Code Clear	-	Clears all counters for users.

5411	[LDAP Certification]		
5411 004	Easy Certification	*CTL	[0 or 1 / **1** / -] 0: Off, 1: On
	Determines whether easy LDAP certification is done.		
5411 005	Password Null Not Permit	*CTL	[0 or 1 / **1** / -] 0: Password NULL not permitted. 1: Password NULL permitted.
	This SP is referenced only when SP5411-4 is set to "1" (On).		

5411 006	Detail Option	*CTL	Bit 0 Guest Certification **0: OFF** (default), 1: ON
	Determines whether guest certification is done.		

5413	[Lockout Setting]		
001	Lockout On/Off	*CTL	Switches on/off the lock on the local address book account. [0 or 1 / **0** / -] 0: Off, 1: On
002	Lockout Threshold	*CTL	Sets a limit on the frequency of lockouts for account lockouts. [1 to 10 / **5** / 1/step]
003	Cancel On/Off	*CTL	Determines whether the system waits the prescribed time for input of a correct user ID and password after an account lockout has occurred. [0 or 1 / **0** / -] 0: Off (no wait time, lockout not cancelled) 1: On (system waits, cancels lockout if correct user ID and password are entered.
004	Cancel Time	*CTL	Determines the length of time that the system waits for correct input of the user ID and password after a lockout has occurred. This setting is used only if SP5413-3 is set to "1" (on). [1 to 999 / **60** / 1 min./step]

5414	[Access Mitigation]		
001	Mitigation On/Off	*CTL	Switches on/off masking of continuously used IDs and passwords that are identical. [0 or 1 / **0** / -] 0: Off, 1: On
002	Mitigation Time	*CTL	Sets the length of time for excluding continuous access for identical user IDs and passwords. [0 to 60 / **15** / 1 min./step]

5415	[Password Attack]		
001	Permission Number	*CTL	Sets the number of attempts to attack the system with random passwords to gain illegal access to the system. [0 to 100 / **30** / 1 attempt/step]
002	Detect Time	*CTL	Sets the time limit to stop a password attack once such an attack has been detected. [1 to 10 / **5** / 1 sec./step]

5416	[Access Information]		
001	User Max Num	*CTL	Limits the number of users used by the access exclusion and password attack detection functions. [50 to 200 / **200** / 1 users/step]
002	Password Max Num	*CTL	Limits the number of passwords used by the access exclusion and password attack detection functions. [50 to 200 / **200** / 1 password/step]
003	Monitor Interval	*CTL	Sets the processing time interval for referencing user ID and password information. [1 to 10 / **3** / 1 sec./step]

5417	[Access Attack]		
001	Permission Number	*CTL	Sets a limit on access attempts when an excessive number of attempts are detected for printer features. [0 to 500 / **100** / 1/step]
002	Attack Detect Time	*CTL	Sets the length of time for monitoring the frequency of access to MFP features. [10 to 30 / **10** / 1 sec./step]
003	Cert Wait	*CTL	Sets the wait time to slow down the speed of certification when an excessive number of access attempts have been detected. [0 to 9 / **3** / 1 sec./step]

004	Attack Max Num	*CTL	Sets a limit on the number of requests received for certification in order to slow down the certification speed when an excessive number of access attempts have been detected. [50 to 200 / **200** / 1 attempt/step]

5420	[User Auth]		
	These settings should be done with the System Administrator. **Note**: These functions are enabled only after the user access feature has been enabled.		
041	Printer	*CTL	Determines whether certification is required before a user can use the printer applications. [0 or 1 / **0** / -] 0: On, 1: Off
051	SDK1	*CTL	[0 or 1 / **0** / 1] 0: ON. 1: OFF Determines whether certification is required before a user can use the SDK application.
061	SDK2		
071	SDK3		

5481	[Auth. Error Code]		
	This SP codes determines how the authentication failures are displayed.		
001	System Log Disp	*CTL	Determines whether an error code appears in the system log after a user authentication failure occurs. [0 or 1/ **0** /1] 0: Off, 1: On

5501	[PM Alarm Interval] PM Alarm Interval		
5501 001	Printout	*CTL	Sets the PM alarm Interval. [0 to 9999 / **0** / 1k prints/step] The alert is sent to the e-mail address that is specified for the system administrator using a browser and the built-in web server (Web Image Monitor). 0: Disables the PM alarm When SP5-866-001 is set to "1", this SP is enabled.

5504	[Jam Alarm]		
5504 001	Jam Alarm	*CTL	[0 to 3 / **3** / 1/step] 0: Disables the jam alarm 1: 1.5K, 2: 3K, 3: 6K
	Sets the jam alarm level. If a paper jam occurs, the jam alarm counter increases by +1. If no paper jam occurs while the set number of paper is output, the jam alarm counter decreases by -1. The jam alarm occurs when the jam alarm counter gets to +10. The alert is sent to the e-mail address that is specified for the system administrator using a browser and the built-in web server (Web Image Monitor). When SP5-866-001 is set to "1", this SP is enabled.		

5505	[Error Alarm]		
5505 001	Error Alarm	*CTL	[0 to 255 / **7** / 1/step] 0: Disables the PM alarm
	Sets the error alarm level. If an SC code occurs, the error alarm counter increases by +1. If no SC code occurs while the set number of paper is output, the jam alarm counter decreases by -1. The error alarm occurs when the error alarm counter reaches +5. The alert is sent to the e-mail address that is specified for the system administrator using a browser and the built-in web server (Web Image Monitor). When SP5-866-001 is set to "1", this SP is enabled.		

5507	[Supply Alarm]		
5507 001	Paper Size	*CTL	Enables or disables the supply alarm. [0 or 1 / **0** / -] 0: Off, 1: On
5507 006	Waste Toner Bottle	*CTL	Enables or disables the supply alarm. [0 or 1 / **1** / -] 0: Off, 1: On
5507 007	Transfer Belt	*CTL	
5507 008	Fusing unit	*CTL	
5507 009	Cartridge	*CTL	

5507 080	Toner Call Timing	*CTL	Enables or disables the toner supply alarm. [0 or 1 / **0** / -] 0: Toner end, 1: Toner near end
5507 128	Interval: Others	*CTL	Sets the paper supply alarm level. A paper supply alarm counter increases by +1 when a sheet of the related size is used. The paper supply alarm occurs when one of the paper supply alarm counters gets to the set value. [250 to 10000 / **1000** / 1/step]
5507 133	Interval: A4	*CTL	
5507 134	Interval: A5	*CTL	
5507 142	Interval: B5	*CTL	
5507 164	Interval: LG	*CTL	
5507 166	Interval: LT	*CTL	
5507 172	Interval: HLT	*CTL	
	The alert is sent to the e-mail address that is specified for the system administrator using a browser and the built-in web server (Web Image Monitor). When SP5-866-001 is set to "1", this SP is enabled.		

5515	[SC/Alarm Setting]		
	Turns on or off the following SC alarm settings. These SP's are active when the CSS or NRS is enabled.		
5515 001	SC Call	*CTL	[0 or 1 / **1** / -] 0: OFF, 1: ON
5515 002	Service Parts Ne	*CTL	This SP activates the service parts near end call. [0 or 1 / **0** / -] 0: OFF, 1: ON
5515 003	Service Parts En	*CTL	This SP activates the service parts end call. [0 or 1 / **0** / -] 0: OFF, 1: ON
5515 004	User Call	*CTL	[0 or 1 / **1** / -] 0: OFF, 1: ON
5515 006	Communication Te	*CTL	This SP activates the communication test call. [0 or 1 / **1** / -] 0: OFF, 1: ON
5515 007	Machine Infomat	*CTL	This SP activates the machine information call. [0 or 1 / **1** / -] 0: OFF, 1: ON
5515 008	Alarm Notice	*CTL	[0 or 1 / **0** / -] 0: OFF, 1: ON

5515 009	Non Genuine Tonn	*CTL	This SP activates the non genuine toner bottle call. [0 or 1 / **1** / -] 0: OFF, 1: ON
5515 010	Supply Automatic	*CTL	This SP activates the automatic supply order call. [0 or 1 / **1** / -] 0: OFF, 1: ON
5515 011	Supply Management	*CTL	This SP activates the supply management call. [0 or 1 / **1** / -] 0: OFF, 1: ON
5515 012	Jam/Door Open Ca	*CTL	This SP activates the jam/door open call. [0 or 1 / **0** / -] 0: OFF, 1: ON

5801	[Memory Clear]		
5801 001	All Clear	-	Resets the SP5801-002 through 016 except the security related data in 003, 010, 011and 015. These cannot be reset with SP mode.
5801 002	Engine	-	Resets or deletes the engine-related data.
5801 003	SCS	-	Clears the system settings.
5801 004	IMH Memory Clr	-	Clears IMH data. **DFU**
5801 005	MCS	-	Clears MCS data. **DFU**
5801 008	Printer	-	Clears the printer application settings.
5801 010	GWWS	-	Clears the web service data and the network application data.
5801 011	NCS	-	Initializes the system default and interface settings (IP address also), SmartNetMonitor for Admin, WebStatusMonitor settings, and the TELNET settings.
5801 014	Clear DCS Setting	-	Resets or deletes the DCS-related data.
5801 015	Clear UCS Setting	-	Resets or deletes the UCS-related data.
5801 016	MIRS Setting	-	Resets or deletes the MIRS-related data.
5801 017	CCS	-	Resets or deletes the CSS-related data. **FA**
5801 018	SRM Memory Clr	-	Resets or deletes the SRM-related data.

5801 019	LCS	-	Resets or deletes the LCS-related data.
5801 021	ECS	-	Resets or deletes the ECS-related data.

5802	[Test Setting]		
001	Free Run	-	Performs a free run on the printer engine.
	Note • The machine starts free run in the same condition as the sequence of A4/LT printing from the 1st tray. Therefore, paper should be loaded in the 1st tray, but paper is not fed. • The main switch has to be turned off and on after using the free run mode for a test.		
002	MskMargin0:ON1:OFF	-	[0 or 1 / **0** / -] 0: Mask ON, 1: Mask OFF
	Turns on or off the margin masking function.		

5803	[Input Check]		
	See 'Input Check Table'		

5804	[Output Check]		
	See 'Output Check Table'		

5810	[Fusing SC Reset]		
5810 001	Fusing SC		Resets a type A service call condition. Turn the main power switch off and on after resetting the SC code.

5812	[Service TEL]		
5812 001	Telephone	*CTL	Sets the telephone number for a service representative. This number is printed on the Counter List, which can be printed with the user's "Counter" menu. This can be up to 19 characters (both numbers and alphabetic characters can be input).

5812 002	Facsimile	*CTL	Sets the fax or telephone number for a service representative. This number is printed on the Counter List, which can be printed with the user's "Counter" menu if the Meter Charge mode is selected with SP5-930-1. This can be up to 19 characters (both numbers and alphabetic characters can be input).

5816	[NRS Function] These settings are used for NRS.		
5816 001	I/F Setting	*CTL	[0 to 2 / **2** / 1/step] Alphanumeric 0: Off, 1: CSS (Not used) 2: Network (The remote service function is on.)
5816 002	CE Call	*CTL	[0 or 1 / **1** / 1/step] 0: Start, 1: End
5816 003	Function Flag	*CTL	[0 or 1 / **0** / 1/step] 0: Off (The remote service function is disabled.) 1: On (The remote service function is enabled.)
5816 007	SSL Disable	*CTL	[0 to 1 / **0** / 1/step] 0: On, 1: Off
5816 008	RCG Connect T/O	*CTL	Sets the timeout counter for the remote connection. [1 to 90 / **30** / 1 second/step]
5816 009	RCG Write Timeout	*CTL	Sets the timeout counter for writing processing. [0 to 100 / **60** / 1 second/step]
5816 010	RCG Read Timeout	*CTL	Sets the timeout counter for reading processing. [0 to 100 / **60** / 1 second/step]
5816 011	Port 80	*CTL	Enables or disables access to the SOAP method via port 80. [0 to 1 / **0** / 1/step] 0: Disables, 1: Enables

5816 013	RFU Timing	*CTL	Selects the timing for the remote firmware updating. [0 or 1 / **1** / –] 0: Any status of a target machine 1: Sleep or panel off mode only
5816 021	Function Flag	*CTL	[0 or 1 / **0** / -] 0: Not registered, 1: Registered
5816 022	Install Status	*CTL	This SP displays the RCG-N installation status. **0**: RCG-N not registered 1: RCG-N registered 2: Device registered
5816 023	Connect Mode (N/M)	*CTL	
	This SP displays and selects the RCG-N connection method. **0**: Internet connection 1: Dial-up connection		
5816 061	NotiTime ExpTime	*CTL	
	Proximity of the expiration of the certification.		
5816 062	HTTP Proxy use	*CTL	
	This SP setting determines if the proxy server is used when the machine communicates with the service center.		
5816 063	HTTP Proxy Host	*CTL	
	This SP sets the address of the proxy server used for communication between Cumin-N and the gateway. Use this SP to set up or display the customer proxy server address. The address is necessary to set up Cumin-N. **Note** • The address display is limited to 127 characters. Characters beyond the 127th character are ignored. • This address is customer information and is not printed in the SMC report.		

5816 064	HTTP Proxy Port	*CTL	
	This SP sets the port number of the proxy server used for communication between Cumin-N and the gateway. This setting is necessary to set up Cumin-N. **Note** • This port number is customer information and is not printed in the SMC report.		
5816 065	HTTP Proxy AutUsr	*CTL	
	This SP sets the HTTP proxy certification user name. **Note** • The length of the name is limited to 31 characters. Any character beyond the 31st character is ignored. • This name is customer information and is not printed in the SMC report.		
5816 066	HTTP Proxy AutPass	*CTL	
	This SP sets the HTTP proxy certification password. **Note** • The length of the name is limited to 31 characters. Any character beyond the 31st character is ignored. • This name is customer information and is not printed in the SMC report.		
5816 067	Cer Updt Cond	*CTL	
	Displays the status of the certification update.		
	0	The certification used by Cumin is set correctly.	
	1	The certification request (setAuthKey) for update has been received from the GW URL and certification is presently being updated.	
	2	The certification update is completed and the GW URL is being notified of the successful update.	
	3	The certification update failed, and the GW URL is being notified of the failed update.	
	4	The period of the certification has expired and new request for an update is being sent to the GW URL.	
	11	A rescue update for certification has been issued and a rescue certification setting is in progress for the rescue GW connection.	

	12	The rescue certification setting is completed and the GW URL is being notified of the certification update request.		
	13	The notification of the request for certification update has completed successfully, and the system is waiting for the certification update request from the rescue GW URL		
	14	The notification of the certification request has been received from the rescue GW controller, and the certification is being stored.		
	15	The certification has been stored, and the GW URL is being notified of the successful completion of this event.		
	16	The storing of the certification has failed, and the GW URL is being notified of the failure of this event.		
	17	The certification update request has been received from the GW URL, the GW URL was notified of the results of the update after it was completed, but an certification error has been received, and the rescue certification is being recorded.		
	18	The rescue certification of No. 17 has been recorded, and the GW URL is being notified of the failure of the certification update.		
5816 068	Cer Abnml Cause		*CTL	
	Displays a number code that describes the reason for the request for update of the certification.			
	0	Normal. There is no request for certification update in progress.		
	1	Request for certification update in progress. The current certification has expired.		
	2	An SSL error notification has been issued. Issued after the certification has expired.		
	3	Notification of shift from a common authentication to an individual certification.		
	4	Notification of a common certification without ID2.		
	5	Notification that no certification was issued.		
	6	Notification that GW URL does not exist.		
5816 069	Cer Updt ReqID		*CTL	
	The ID of the request for certification.			

5816 083	Firm Updating	*CTL	
	Displays the status of the firmware update.		
5816 085	Firm UpUsr Conf	*CTL	
	This SP setting determines if the operator can confirm the previous version of the firmware before the firmware update execution. If the option to confirm the previous version is selected, a notification is sent to the system manager and the firmware update is done with the firmware files from the URL.		
5816 086	Firmware Size	*CTL	
	Allows the service technician to confirm the size of the firmware data files during the firmware update execution.		
5816 087	CERT: MacroVsn	*CTL	
	Displays the macro version of the NRS certification.		
5816 088	CERT: PAC Vsn	*CTL	
	Displays the PAC version of the NRS certification.		
5816 089	CERT: ID2 Code	*CTL	
	Displays ID2 for the NRS certification. Spaces are displayed as underscores (_). Asteriskes () indicate that no NRS certification exists.		
5816 090	CERT: Subject	*CTL	
	Displays the common name of the NRS certification subject. CN = the following 17 bytes. Spaces are displayed as underscores (_). Asterisks () indicate that no DESS exists.		
5816 091	CERT: SeriNum	*CTL	
	Displays serial number for the NRS certification. Asterisks () indicate that no DESS exists.		
5816 092	CERT: Issuer	*CTL	
	Displays the common name of the issuer of the NRS certification. CN = the following 30 bytes. Asteriskes () indicate that no DESS exists.		
5816 093	CERT: St ExpTime	*CTL	
	Displays the start time of the period for which the current NRS certification is enabled.		

5816 094	CERT: End ExpTime	*CTL	
	Displays the end time of the period for which the current NRS certification is enabled.		
5816 200	Poling Man Exc	-	
	Executes the manual polling.		
5816 201	Instl: Condition	*CTL	
	Displays a number that indicates the status of the @Remote service device. 0: Neither the RCG device nor RCG-N device are set. 1: The RCG-N device is being set. Only Box registration is completed. In this status the external RCG unit cannot answer a polling request. 2: The RCG-N device is set. In this status the external RCG unit cannot answer a polling request. 3: The RCG device is being set. In this status the RCG-N device cannot be set. 4: The RCG module has not started.		
5816 202	Instl: ID #	*CTL	
	Allows entry of the number of the request needed for the RCG-N device.		
5816 203	Instl: Reference	*CTL	
	Executes the inquiry request to the @Remote GW URL.		
5816 204	Instl: Ref Rslt	*CTL	
	Displays a number that indicates the result of the inquiry executed with SP5816-203.		
	0: Succeeded 1: Inquiry number error 2: Registration in progress 3: Proxy error (proxy enabled) 4: Proxy error (proxy disabled) 5: Proxy error (Illegal user name or password) 6: Communication error 7: Certification update error 8: Other error 9: Inquiry executing		

5816 205	Instl: Ref Section	*CTL	
	Displays the result of the notification sent to the device from the GW URL in answer to the inquiry request. Displayed only when the result is registered at the GW URL.		
5816 206	Instl: RgstItn	*CTL	
	Executes Cumin Registration.		
5816 207	Instl: RgstItn Rst	*CTL	
	Displays a number that indicates the registration result. 0: Succeeded 2: Registration in progress 3: Proxy error (proxy enabled) 4: Proxy error (proxy disabled) 5: Proxy error (Illegal user name or password) 6: Communication error 7: Certification update error 8: Other error 9: Registration executing		
5816 208	Error Code		
	Displays a number that describes the error code that was issued when either SP5816-204 or SP5816-207 was executed.		
	Cause	Code	Meaning
	Illegal Modem Parameter	-11001	Chat parameter error
		-11002	Chat execution error
		-11003	Unexpected error

	Operation Error, Incorrect Setting	-12002	Inquiry, registration attempted without acquiring device status.
		-12003	Attempted registration without execution of an inquiry and no previous registration.
		-12004	Attempted setting with illegal entries for certification and ID2.
		-12005	@Remote communication is prohibited. The device has an Embedded RC gate-related problem.
	Operation Error, Incorrect Setting	-12006	A confirmation request was made after the confirmation had been already completed.
		-12007	The request number used at registration was different from the one used at confirmation.
		-12008	Update certification failed because mainframe was in use.
		-12009	ID2 mismatch between an individual certification and NVRAM
		-12010	Certification area is not initialized.

	Error Caused by Response from GW URL	-2385	Attempted dial up overseas without the correct international prefix for the telephone number.
		-2387	Not supported at the Service Center
		-2389	Database out of service
		-2390	Program out of service
		-2391	Two registrations for same device
		-2392	Parameter error
		-2393	Basil not managed
		-2394	Device not managed
		-2395	Box ID for Basil is illegal
		-2396	Device ID for Basil is illegal
		-2397	Incorrect ID2 format
		-2398	Incorrect request number format
5816 209	Instl Clear	*CTL	
	Releases a machine from its Cumin setup.		
5816 250	Print Com Log	*CTL	
	Prints the communication log.		

5821	[NRS Address]		
5821 002	RCG IP Address (used for NRS)	*CTL	Sets the IP address of the RCG (Remote Communication Gate). [00000000h to FFFFFFFFh / 00000000h / 1/ step]

5824	[NVRAM Upload]		
5824 001	NVRAM Upload	#	Uploads the UP and SP mode data (except for counters and the serial number) from the NVRAM to an SD card.

5825	[NVRAM Download]		
5825 001	NVRAM Download	#	Downloads the UP and SP mode data from an SD card to the NVRAM.

5828	[Network Setting] Job spool settings/ Interface selection for Ethernet and wireless LAN		
5828 050	1284 Compatible	*CTL	Switches Centronics IEEE1284 compatibility on/off for the network. [0 or 1 / **1** / -] 0: Disabled, 1: Enabled **Note** • Selecting "0" disables bi-directional data transmission.
5828 052	ECP	*CTL	Switches the ECP setting for Centronics off/on. [0 or 1 / **1** / -] 0: Disabled, 1: Enabled **Note** • With "1" selected, SP5-828-050 must be enabled for 1284 mode compatibility.
5828 065	Job Spool	*CTL	Switches the job spool on/off. [0 or 1 / **0** / -] 0: Disabled, 1: Enabled
5828 066	HD job Clear	*CTL	Selects the treatment of the job when a spooled job exists at power on. [0 or 1 / **1** / 1/step] 0: ON, 1: OFF

5828 069	Job Spool (Protocol)	*CTL	Switches job spooling off or on and enables settings for job spooling protocols. [0 or 1 / **1** / 1/step] 0: Off, 1: On Bit switches: • Bit 0: LPR • Bit 1: FPT • Bit 2: IPP • Bit 3: SMB • Bit 4: Not used. • Bit 5: DIPRINT • Bits 6 and 7: Reserved
5828 090	TELNET (0: OFF, 1: ON)	*CTL	Enables or disables Telnet. [0 or 1 / **1** / 1/step] 0: Disabled, 1: Enabled
5828 091	Web (0: OFF, 1: ON)	*CTL	Enables or disables the Web monitor. [0 or 1 / **1** / 1/step] 0: Disabled, 1: Enabled
5828 145	Active IPv6 Link	-	Displays the IPv6 link local address for the wireless LAN or Ethernet.
5828 147	Active IPv6 Stat (1)	-	Displays the IPv6 stateless address 1 to 5 for the wireless LAN or Ethernet.
5828 149	Active IPv6 Stat (2)	-	
5828 151	Active IPv6 Stat (3)	-	
5828 153	Active IPv6 Stat (4)	-	
5828 155	Active IPv6 Stat (5)	-	
5828 156	IPv6 Manual Addr	*CTL	Displays the IPv6 manual setting address for the wireless LAN or Ethernet.
5828 158	IPv6 Gateway Add	*CTL	Displays the IPv6 gateway address for the wireless LAN or Ethernet.

5828 161	IPv6 Stateless Auto Setting	*CTL	Enables or disables the automatic setting for IPv6 stateless. [0 or 1 / **1** / 1 /step] 0: Disable, 1: Enable
5828 236	Web Item visible	*CTL	Displays or does not display the Web system items. [0 x 0000 to 0 x ffff / **0 x ffff**] 0: Not displayed, 1: Displayed bit0: Net RICOH bit1: Consumable Supplier bit2-15: Reserved (all)
5828 237	Web shopping link visible	*CTL	Displays or does not display the link to Net RICOH on the top page and link page of the web system. [0 or 1 / **1** / 1] 0: Not display, 1:Display
5828 238	Web supplies Link visible	*CTL	Displays or does not display the link to Consumable Supplier on the top page and link page of the web system. [0 or 1 / **1** / 1] 0: Not display, 1:Display
5828 239	Web Link1 Name	*CTL	This SP confirms or changes the URL1 name on the link page of the web system. The maximum characters for the URL name are 31 characters.
5828 240	Web Link1 URL	*CTL	This SP confirms or changes the link to URL1 on the link page of the web system. The maximum characters for the URL are 127 characters.
5828 241	Web Link1 visible	*CTL	Displays or does not display the link to URL1 on the top page of the web system. [0 or 1 / **1** / 1] 0: Not display, 1:Display
5828 242	Web Link2 Name	*CTL	Same as "-239"
5828 243	Web Link2 URL	*CTL	Same as "-240"
5828 244	Web Link2 visible	*CTL	Same as "-241"

5832	[HDD] HDD Initialization	*CTL	Initializes the hard disk. Use this SP mode only if there is a hard disk error.
001	HDD Formatting (ALL)		
003	Format Thumbnail		
004	Format Job Log		
005	Format Font		
006	Format User Info		
007	Format Rec Mail		
008	Format Sed Mail		
009	Format DFU data		
010	Formatting All Log		
011	Format Ridoc I/F		

5840	[IEEE 802.11]		
5840 006	Channel MAX	*CTL	Sets the maximum number of channels available for data transmission via the wireless LAN. The number of channels available varies according to location. The default settings are set for the maximum end of the range for each area. Adjust the upper 4 bits to set the maximum number of channels. EU: [1 to 13 / **13** / 1/step] NA/ AS: [1 to 11 / **11** / 1/step]
5840 007	Channel MIN	*CTL	Sets the minimum number of channels available for data transmission via the wireless LAN. The number of channels available varies according to location. The default settings are set for the minimum end of the range for each area. Adjust the lower 4 bits to set the minimum number of channels. EU: [1 to 13 / **1** / 1/step] NA/ AS: [1 to 11 / **1** / 1/step]

5840 008	Transmission Speed	*CTL	[0 x 00 to 0 x FF / **0 x FF to Auto** / -] **0 x FF to Auto** [Default] 0 x 11 - 55M Fix 0 x 10 - 48M Fix 0 x 0F - 36M Fix 0 x 0E - 18M Fix 0 x 0D - 12M Fix 0 x 0B - 9M Fix 0 x 0A - 6M Fix 0 x 07 - 11M Fix 0 x 05 - 5.5M Fix 0 x 08 - 1M Fix 0 x 13 - 0 x FE (reserved) 0 x 12 - 72M (reserved) 0 x 09 - 22M (reserved)
5840 011	WEP Key Select	*CTL	Selects the WEP key. [00 to 11 / **00** / 1 binary] 00: Key #1 01: Key #2 (Reserved) 10: Key #3 (Reserved) 11: Key #4 (Reserved)
5804 042	Fragment Thresh	*CTL	Adjusts the fragment threshold for the IEEE802.11 card. [256 to 2346 / **2346** / 1] This SP is displayed only when the IEEE802.11 card is installed.
5804 043	11g CTS to Self	*CTL	Determines whether the CTS self function is turned on or off. [0 to 1 / **1** / 1] 0: Off, 1: On This SP is displayed only when the IEEE802.11 card is installed.

5804 044	11g Slot Time	*CTL	Selects the slot time for IEEE802.11. [0 to 1 / **0** / 1] 0: 20 µm, 1: 9 µm This SP is displayed only when the IEEE802.11 card is installed.
5804 045	WPA Debug Lvl	*CTL	Selects the debug level for WPA authentication application. [1 to 3 / **3** / 1] 1: Info, 2: warning, 3: error This SP is displayed only when the IEEE802.11 card is installed.

5842	[GWWS Analysis] Net File Application Analysis		
5842 001	Setting 1	*CTL	Prints or does not print the module log for each bit. [0 or 1 / **0** / 1/step] 0: Prints, 1: Not print Bit switches: • Bit 0: System or other related application. • Bit 1: Captured related application • Bit 2: Certification related application • Bit 3: Address related application • Bit 4: Control devices or transmission logs related application • Bit 5: Output (print, fax or transmission) related application • Bit 6: Documents related application in bit 7, 0: Not printed, 1: Printed • Bit 7: MSB related application
5842 002	Setting 2	*CTL	Selects the stamp type for the log of Net File Application Analysis. Bit switches: • Bit 0 to 6: Not used. • Bit 7 0: Minute/second/micro second 1: Date/hour/minute/second

5844	[USB]		
5844 001	Transfer Rate	*CTL	Adjusts the USB transfer rate. [0001 or 0004 / **0004** / -] 0001: Full speed, 0004: Auto Change
5844 002	Vendor ID	*CTL	Displays the vendor ID.
5844 003	Product ID	*CTL	Displays the product ID.
5844 004	Device Release Num	*CTL	Displays the device release version number.
5844 005	Fixed USB Port	*CTL	[0 to 2 / **0** / 1 /step]
	Selects the fixed USB port mode. 0: OFF, 1: Level 1 (No requirement of printer driver installation for the same model) 2: Level 2 (No requirement of printer driver installation for the specified models)		
5844 006	PnP Model Name		
	Inputs appropriate model name.		
5844 006	PnP Serial Number		
	Inputs appropriate serial number.		
5844 100	Notify Unsupport		
	Turn on or off the unsupported device message function. [0 or 1 / **1** / -] 0: Off (Not displayed), 1: On (Displayed)		

5845	[Delivery Srv] Delivery Server Setting		
5845 003	Retry Interval	*CTL	Specifies the retry interval. [60 to 900 / **300** / 1 second/step]
5845 004	No. of Retries	*CTL	Specifies the maximum number of retries. [0 to 99 / **3** / 1/step]

5845 022	Instant Trans Off	*CTL	Switches instant transmission off/on. [0 or 1 / **1** / -] 1: Off. Instant transmission not possible with network setting errors. 0: On. Instant transmission possible with network setting errors.
	Note • The machine will continue to transmit over the network, even if the network settings are incorrect. (This causes multiple errors, of course.) • With this SP off, the machine will stop communicating with the network if the settings are wrong. This reduces the amount of spurious network traffic caused by errors due to incorrect settings.		

5846	[UCS Setting]		
5846 010	LDAP Search TOut	*CTL	[1 to 255 / **60** / 1 /step]
	Sets the length of the timeout for the search of the LDAP server.		
5846 041	AddtB Acl Info	*CTL	
	This SP must be executed immediately after installation of an HDD unit in a basic machine that previously had no HDD. The first time the machine is powered on with the new HDD installed, the system automatically takes the address book from the NVRAM and writes it onto the new HDD. However, the new address book on the HDD can be accessed only by the system administrator at this stage. Executing this SP by the service technician immediately after power on grants full address book access to all users.		
5846 043	AddrB Media	*CTL	Displays the slot number where an address book data is in. [0 to 30 / **-** /1] 0: Unconfirmed 1: SD Slot 1 2: SD Slot 2 4: USB Flash ROM 20: HDD 30: Nothing

5846 047	Ini Local AddrB	*CTL	
	Clears the local address book information, including the user code.		
5846 049	Ini LDAP AddrB	*CTL	
	Clears the LDAP address book information, except the user code.		
5846 050	Init All AddrB	*CTL	Initializes all address information data except the administration account.
	Clears all directory information managed by UCS, including all user codes. Turn off and on the main power switch after executing this SP.		
5846 051	Bkup All AddrB	*CTL	
	Uploads all directory information to the SD card.		
5846 052	Restr All AddrB	*CTL	
	Downloads all directory information from the SD card.		
5846 053	Clear Backup Info	*CTL	
	Deletes the address book data from the SD card in the service slot. Deletes only the files that were uploaded from this machine. This feature does not work if the card is write-protected. **Note** • After you do this SP, go out of the SP mode, and then turn the power off. Do not remove the SD card until the Power LED stops flashing.		
5846 060	Search option	*CTL	
	This SP uses bit switches to set up the fuzzy search options for the UCS local address book. [0: Off or **1: On**] Bit: Meaning Bit0: Checks both upper/lower case characters Bit1 to 3: Japan Only Bit4 to 7: Not used		

5846 062	Compl Opt1	*CTL	[0 to 32 / **0** / 1 /step]
	Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to **upper case** and sets the length of the password. **Note** • This SP does not normally require adjustment. • This SP is enabled only after the system administrator has set up a group password policy to control access to the address book.		
5846 063	Compl Opt2	*CTL	[0 to 32 / **0** / 1 /step]
	Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to **lower case** and defines the length of the password. **Note** • This SP does not normally require adjustment. • This SP is enabled only after the system administrator has set up a group password policy to control access to the address book.		
5846 064	Compl Opt3	*CTL	[0 to 32 / **0** / 1 /step]
	Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to **numbers** and defines the length of the password. **Note** • This SP does not normally require adjustment. • This SP is enabled only after the system administrator has set up a group password policy to control access to the address book.		
5846 065	Compl Opt4	*CTL	[0 to 32 / **0** / 1 /step]
	Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to **symbols** and defines the length of the password. **Note** • This SP does not normally require adjustment. • This SP is enabled only after the system administrator has set up a group password policy to control access to the address book.		

5846 094	Encryption Stat	*CTL	[0 to 255 / - / 1 /step] No default
	Shows the status of the encryption function of the address book on the LDAP server. 0: No encryption 1: Encryption 2: Decrypting from encrypted data to plain data 3: Encrypting from plain data to encrypted data 4: Decrypted from encrypted data to plain data 5: Encrypted from plain data to encrypted data 6: Changing the encryption setting 7: Changing the encryption key is done. 8: Deleting the encryption key is done before changing the setting. 9: Changing the encryption setting is done.		

5848	[Web Service]		
5848 004	ac: UD	*CTL	Enables or disables the undirectory access limitation. 0000: Disabled, 0001: Enabled
5848 009	ac: Job Ctrl		Switches access control on and off. 0000: OFF, 0001: ON
5848 011	ac: Dev Mng	*CTL	
5848 022	ac:Uadmin	*CTL	
5848 210	LogType: Job 1	*CTL	Displays the log server settings. These can be adjusted with the Web Image Monitor.
5848 211	LogType: Job 2	*CTL	
5848 212	LogType: Access	*CTL	
5848 213	PrimarySrv	*CTL	
5848 214	SecondarySrv	*CTL	
5848 215	Start Time	*CTL	
5848 216	Interval Time	*CTL	[1 to 1000 / **1** / 1 hour/step]
	Specifies the interval of transmitting log information. This SP is activated only when the SP5848-217 is set to "2".		

5848 217	Timing	*CTL	[0 to 2 / **0** / 1 /step]
	Selects the method for transmitting log information. 0: Transmitting OFF, 1: Always Transmitting, 2: Interval Transmitting		

5849	[Installation Date]		
5849 001	Display	*CTL	Enables or disables the udirectory access limitation. 0000: Disabled, 0001: Enabled
5849 002	Print	*CTL	Determines whether the installation date is printed on the printout for the total counter. [0 or 1 / **1** / -] 0: No Print, 1: Print
5849 003	Total Counter	*CTL	

5851	[Bluetooth]		
5851 001	Mode	*CTL	Adjusts the Bluetooth setting. [0 or 1 / **0** / -] 0: Public, 1: Private

5856	[Remote ROM Update]		
5856 002	Local Port		Allows the technician to update the firmware using a parallel cable. [0 or 1 / **0** / 1/step] 0: Disable, 1: Enable

5857	[Debug Log Save]		
5857 001	ON/ OFF	*CTL	Enables Or Disables The Debug Log Saving Function. [0 or 1 / **0** / 1/Step] Alphanumeric 0: OFF, 1: ON

5857 002	Target 2:HDD 3:SD	*CTL	Sets the storage location for the debug log. [2 or 3 / **2** / 1/step] 2: HDD, 3: SD
5857 005	Save to HDD	*CTL	Sets the key number of the debug log.
5857 006	Save to SD Card	*CTL	Sets the key number of the debug log.
5857 009	HDD to SD Latest	*CTL	Copies the most recent 4 MB of the debug log from the hard disk to the SD card.
5857 010	HDD to SD Any	*CTL	Sets the key number of the debug log copied from the hard disk to the SD card.
5857 011	Erase HDD Debug	*CTL	Deletes the debug log from the hard disk.
5857 012	Erase SD Debug	*CTL	Deletes the debug log from the SD card.
5857 013	Dsply-SD Space	*CTL	Shows the free space on the SD card.
5857 014	SD to SD Latest	*CTL	Copies the most recent 4 MB of the debug log from an SD card to a different SD card.
5857 015	SD to SD Any	*CTL	Sets the key number of the debug log copied from an SD card to a different SD card.
5857 016	Make HDD Debug	*CTL	Makes a log file on the HDD to save debug logs. To save debug logs, the controller makes a log file first, then writes data in the file. This procedure can use much time. The user can switch off the main power switch before the log is written in the file. To prevent this possible problem, you can prepare a log file in advance. If you do this, the controller uses less time to save logs because the log file is prepared.
5857 017	Make SD Debug	*CTL	

5858	[Debug Log Save: SC]		
5858 001	Engine SC	*CTL	Collects debug logs when an engine-related SC code occurs. [0 or 1 / **0** / 1/step] 0: OFF, 1: ON

5858 002	Controller SC	*CTL	Collects debug logs when a controller-related SC code occurs. [0 or 1 / **0** / 1/step] 0: OFF, 1: ON
5858 003	Any SC	*CTL	Sets the SC code whose logs are collected. [00000 to 65535 / **0** / 1/step]
5858 004	Jam	*CTL	Collects debug logs when a paper jam occurs. [0 or 1 / **0** / 1/step] 0: OFF, 1: ON

5859	[Debug Log Save Key]		
5859 001	Key 1	*CTL	Sets the key number of a specific event (see the note below) whose logs are saved in the specified storage place (see the note below). When multiple key numbers are assigned, the logs are collected in this order: Key 1, Key 2, ..., Key 9, Key 10. **Note** • The event is set with SP5-857-2. The storage is set with SP5-858. [0000000 to 9999999 / **0** / 1/step]
5859 002	Key 2	*CTL	
5859 003	Key 3	*CTL	
5859 004	Key 4	*CTL	
5859 005	Key 5	*CTL	
5859 006	Key 6	*CTL	
5859 007	Key 7	*CTL	
5859 008	Key 8	*CTL	
5859 009	Key 9	*CTL	
5859 010	Key 10	*CTL	

5860	[SMTP/ POP3/ IMAP4]		
5860 002	SMTP Srv Port No.	*CTL	Adjusts the number of the SMTP server ports. [1 to 65535 / **25** / 1/step]
5860 003	SMTP Auth.	*CTL	Enables or disables the SMTP authentication for mail transfers. [0 or 1 / **0** / 1/step] 0: Disable, 1: Enable

5860 006	SMTP Auth Encryp	*CTL	Encrypts or does not encrypt passwords for POP3/IMAP4 authentications. [0 to 2 / **0** / 1/step] 0: Automatic, 1: Not encrypt, 2: Encrypt
5860 007	POP before SMTP	*CTL	Enables or disables the authentication that is executed on the POP server before the communication is established with the SMTP server to transfer mails. [0 or 1 / **0** / 1/step] 0: Disable, 1: Enable
5860 008	POP to SMTP Wait	*CTL	Adjusts the waiting time to access the SMTP server after the authentication on the POP server. [0 to 10000 / **300** / 1 ms/step]
5860 009	Mail Receive Pro	*CTL	Sets the protocol of receiving e-mail. [1 to 3 / **1** / 1/step] 1: POP3, 2: IMAP4, 3: SMTP
5860 013	POP3/IMAP4 Auth.	*CTL	Encrypts or does not encrypt passwords for POP3/IMAP4 authentications. [0 to 2 / **0** / 1/step] 0: Automatic, 1: Not encrypt, 2: Encrypt
5860 014	POP3 Srvr Port No.	*CTL	Adjusts the port number of the POP server. [1 to 65535 / **110** / 1/step]
5860 015	IMAP4 Srv Port	*CTL	Adjusts the port number of the IMAP4 server. [1 to 65535 / **143** / 1/step]
5860 016	SMTP Rx Port No	*CTL	Adjusts the port number of the SMTP server. [1 to 65535 / **25** / 1/step]
5860 017	Mail Rx Interval	*CTL	Adjusts the interval of receiving an e-mail. [2 to 1440 / **3** / 1 minute/step]

5860 019	Mail Keep Setting	*CTL	Sets the way of keeping the e-mail in the server. [0 to 2 / **0** / 1/step] 0: Not keeping 1: Keeping All 2: Keeping the only error e-mail
5860 020	ParMail Rec TOut	*CTL	Adjusts the time for keeping the partial e-mails. If the partial e-mails are not received during the set time, these are deleted. [1 to 168 / **72** / 1 h/step]
5860 021	MDN Res RFC2298	*CTL	Determines whether RFC2298compliance is switched on for MDN reply mail. [0 or 1 / **1** / -] 0: No, 1: Yes
5860 022	SMTP Aut FileldRep	*CTL	Determines whether the FROM item of the mail header is switched to the validated account after the SMTP server is validated. [0 or 1 / **0** / 1/step] 0: No. “From” item not switched, 1: Yes. “From” item switched.
5860 025	SMTP Auth DirectSet	*CTL	Selects directly the way of SMTP authentication if all SMTP authentications fail due to the error in the SP5860-006. This SP is activated only when SP5860-003 is set to “Enable”. Bit switch 0: LOGIN Bit switch 1: PLAIN Bit switch 2: CRAM MD5 Bit switch 3: DIGEST MD Bit switch 4 - 7: Not used

5860 026	S/MIVE: MIME Header Setting	*CTL	Selects the MIME header type of an E-mail sent by S/MIME. [0 to 2 / **0** / 1] 0: Microsoft Outlook Express standard 1: Internet Draft standard 2: RFC standard

5866	[E-Mail Report]		
5866 001	Report Validity	*CTL	Disables and re-enables the email notification feature. [0 or 1/ **0** / 1/step] 0: Enable, 1: Disable
5866 005	Add DataFiled	*CTL	Enables or disables to add the date field on the alert notice e-mail. [0 or 1 / **0** / 1/step] 0: Off, 1: On

5869	[RAM Disk Setting]		
5869 001	Mail Function	*CTL#	Enables or disables the e-mail transfer function. This SP sets the RAM disk size for the e-mail transfer function. [0 or 1 / **0** / 1/step] 0: On, 1: Off

5870	[Common Key Info Writi] Common Key Information Writing		
5870 001	Writing	*CTL	Writes the authentication data (used for NRS) in the memory.
5870 003	Initialize	*CTL	Initializes the authentication data in the memory.

5873	[SD Card Appli Move]		
5873 001	Move Exec		See 'SD Card Appli Move'.
5873 002	Undo Exec		See 'SD Card Appli Move'.

5878	[Option Setup]		
5878 001	Data Overwrite Security		Executes the setup for the Data Overwrite Security Unit.
5878 002	HDD Encryption		Executes the setup for the HDD Encryption Unit.

5887	[SD Get Counter]
	This SP sends a text file to an SD card inserted in SD card Slot 2 . The operation stores. The file is stored in a folder created in the root directory of the SD card called SD_COUNTER. The file is saved as a text file (*.txt) prefixed with the number of the machine. 1. Insert the SD card in SD card Slot 2 (lower slot). 2. Select SP5887 then touch [EXECUTE]. 3. Touch [Execute] in the message when you are prompted.

5888*	[Personal Information Protect]
	Selects the protection level for logs. [0 to 1 / **0** / 1} 0: No authentication, No protection for logs 1: No authentication, Protected logs (only an administrator can see the logs)

5893	[SDK Application Counter]	*CTL	-
	Displays the counter name of each SDK application.		
001	SDK-1		
002	SDK-2		
003	SDK-3		
004	SDK-4		
005	SDK-5		
006	SDK-6		

5901	[High Humi. Mode] High Humid Paper Mode	*ENG	-

001	0:OFF 1:ON
	Turns on or off the high humid paper mode. [0 or 1 / **0** / 1 /step] 0: OFF, 1: ON
002	1:MD1 2:MD2 3:MD3
	Selects the mode for the high humid paper mode. This SP is activated only when the SP5901-001 is "1: ON". [1 to 3 / **1** / 1/step] 1: Mode 1 (Transfer current is increased to compensate for insufficient fusing.) 2: Mode 2 (Transfer current is increased and the machine executes the idle rotation for 30 seconds to compensate for small curl.) 3: Mode 3 (Transfer current is increased and the machine executes the idle rotation for 60 seconds to compensate for large curl.)

5902	[Mono Pri. Mode]	*ENG	-
001	0:OFF 1:ON		
	Turns on or off the monochrome printing priority mode. This SP can reduce color toner in the BW printing mode if this SP is set to "1: ON". 0: OFF (default), 1: ON		

5903	[Service Setting] **DFU**	*ENG	-
001	Special Ctl Mode		
002	EndCtl 0:OFF 1:ON		

5907	[Plug/ Play] Plug/Play Name Selection	
5907 001	*CTL	[0 to 8 / **0** / 1/step]

5930	[Meter Click Ch.] Meter Click Charge

5930 001	Meter Click Ch.	*EGB	Enables or disables the Meter Charge mode. When enabling the Meter Charge mode, the "Counter" menu is added to the user menu. [0 or 1 / **0** / -] 0: OFF, 1: ON
5930 002	Maint. Mode	*EGB	Displays or does not display the Supply End Option. This SP is activated only when the SP5930-001 is "1 (ON)". [0 or 1 / **0** / -] 0: Not displayed, 1: Displayed

5988	[ID Setting] **DFU**		
001	Maintenance ID	*EGB	Specifies the maintenance ID. [0 to 127 / - / 1/step]
002	Brand ID	*EGB	Specifies the brand ID. [0 to 127 / - / 1/step]

5990	[SP Print Mode]		
5990 001	All (Data List)	-	Does SP5-990-002, 004, 005, 006, and 007.
5990 002	SP (Mode Data List)	-	Prints an SMC report on all SP modes.
5990 004	Logging Data	-	Prints an SMC report on the SPs that save logs.
5990 005	Diagnosic Report	-	Prints the Self-Diagnostic Report.
5990 006	Non-Default	-	Prints an SMC report on the SPs that have settings, which are different from the defaults.
5990 007	NIB Summary	-	Prints the network configuration report.

Engine SP7-xxx

SP7-XXX (Data Log)

7002	[Total Cnt Disp] Total Counter Display		
001	Color Counter	*EGB	Displays the total counter of the color printing.
002	Mono Counter	*EGB	Displays the total counter of the black and white printing.

7304	[Total Cnt Disp] Total Counter Display		
001	Duplex Counter	*EGB	Displays the total counter of the duplex printing.

7401	[Total SC Counter]		
001	Total SC Counter	*CTL	Displays the number of SC codes detected. [0 to 9999 / **0** / 1/step]

7403	[SC History]		
001	Latest	*CTL	Displays the SC codes detected. The 10 most recently detected SC Codes are displayed on the screen, and also can be seen on the SMC (logging) outputs.
002	Latest 1	*CTL	
003	Latest 2	*CTL	
004	Latest 3	*CTL	
005	Latest 4	*CTL	
006	Latest 5	*CTL	
007	Latest 6	*CTL	
008	Latest 7	*CTL	
009	Latest 8	*CTL	
010	Latest 9	*CTL	

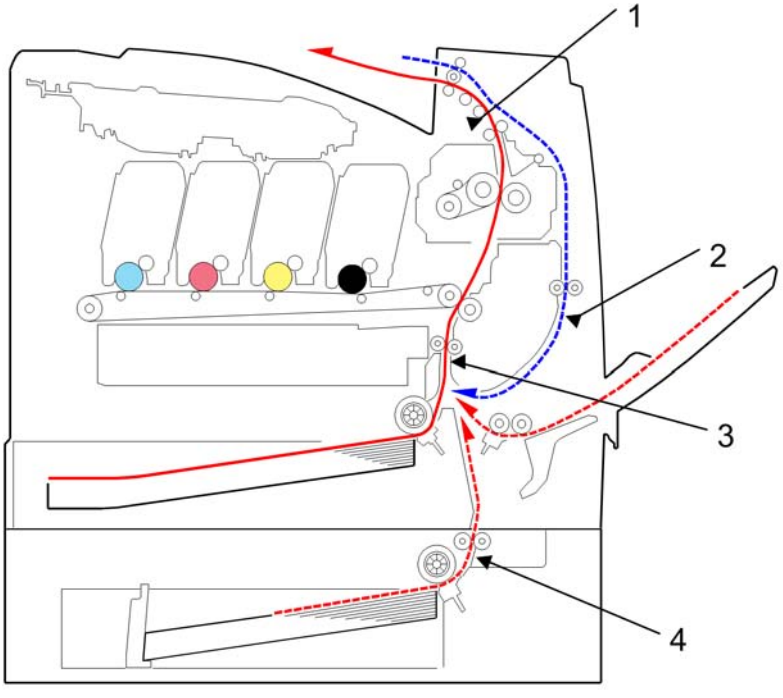
7404	[SC991 History]

001	Latest	*CTL	Displays the SC991 detected. The 10 most recently detected SC.
002	Latest 1	*CTL	
003	Latest 2	*CTL	
004	Latest 3	*CTL	
005	Latest 4	*CTL	
006	Latest 5	*CTL	
007	Latest 6	*CTL	
008	Latest 7	*CTL	
009	Latest 8	*CTL	
010	Latest 9	*CTL	

7502	[Counter-Paper Jam]		
7502 001	Counter-Paper Jam	*CTL	Displays the total number of jams detected. [0 to 9999 / **0** / 1 sheet/step]

7504	[Paper Jam/Loc] Paper Jam Location		
	Displays the number of jams according to the location where jams were detected.		
001	At Power On	*CTL	Paper is not fed at power on.
017	PFU: Relay On	*CTL	Paper does not reach the relay sensor of the PFU (option).
019	Regist On: Bypass	*CTL	Paper from the by-pass tray stays on the registration sensor.
020	Regist On: T1	*CTL	Paper from the tray1 stays on the registration sensor.
022	Regist On: PFU	*CTL	Paper from the PFU (option) stays on the registration sensor.
023	Regist On:Duplex	*CTL	Paper from the duplex path stays on the registration sensor.
024	Regist Off	*CTL	Paper does not reach the registration sensor.

025	Paper Exit On	*CTL	Paper stays on the paper exit sensor.
032	Paper Exit Off	*CTL	Paper does not reach the paper exit sensor.
052	Duplex On	*CTL	Paper stays on the duplex sensor.
054	Duplex Off	*CTL	Paper does not reach the duplex sensor.



m075v107a

1. Paper exit sensor
2. Duplex sensor
3. Registration sensor
4. Relay sensor

7506	[Paper Jam/Size]

006	A5 LEF	*CTL	Displays the number of jams according to the paper size. [0 to 9999 / **0** / 1 sheet/step]
044	HLT LEF	*CTL	
133	A4 SEF	*CTL	
134	A5 SEF	*CTL	
142	B5 SEF	*CTL	
164	LG SEF	*CTL	
166	LT SEF	*CTL	
172	HLT SEF	*CTL	
255	Others	*CTL	

7507	[Dsply-P Jam Hist] Paper Jam History Display		
001	Latest	*CTL	Displays the 10 most recently detected paper jams.
002	Latest 1	*CTL	
003	Latest 2	*CTL	
004	Latest 3	*CTL	
005	Latest 4	*CTL	
006	Latest 5	*CTL	
007	Latest 6	*CTL	
008	Latest 7	*CTL	
009	Latest 8	*CTL	
010	Latest 9	*CTL	

7801	[Memory/Version/PN] Memory Version and Part Number Display		
255	Memory/Version/ PN	*CTL	Displays the part number and version of all ROMs in the machine.

7803	[PM Counter] (Sheets or Rotations (%), Unit, [Color]) ITB Unit: Image Transfer Belt Unit, 2TR: Paper Transfer Unit		
	Displays the PM counter for each unit.		
001	Paper	*EGB	Displays the number of sheets printed for each current maintenance unit. [0 to 9999999 / **0** / 1 sheet/step]
009	ITB Unit Cnt	*EGB	
010	ITB Rotate DistA	*EGB	Displays the rotation distance of the fusing unit. [0 to 9999999 / **0** / 1 mm/step]
011	Fusing Cnt	*EGB	Displays the number of sheets printed for each current maintenance unit. [0 to 9999999 / **0** / 1 sheet/step]
012	Fusing RotateDist	*EGB	Displays the rotation distance of the fusing unit. [0 to 9999999 / **0** / 1 mm/step]
018	2TR CntA	*EGB	Displays the number of sheets printed for the paper transfer unit. [0 to 9999999 / **0** / 1 sheet/step]
019	2TR CntB	*EGB	
020	2TR DistA	*EGB	Displays the rotation distance of the paper transfer unit. [0 to 9999999 / **0** / 1 mm/step]
021	2TR DistB	*EGB	
028	Waste Toner Cnt	*EGB	Displays the number of sheets printed for the waste toner. [0 to 9999999 / **0** / 1 sheet/step]
045	ITB Rotate Dist%	*EGB	Displays the rotation rate printed for the ITB unit. [0 to 999 / **0** / 1 %/step]
060	ITB Rotate DistB	*EGB	Displays the rotation distance printed for the ITB unit. [0 to 999 / **0** / 1 mm/step]
100	TotalCnt Col&Mono	*EGB	Displays the total counter for all printing modes (color and BW). [0 to 9999999 / **0** / 1 sheet/step]

7804	[Unit Cnt Clear] Unit Counter Reset (Sheets, Unit, [Color]) ITB Unit: Image Transfer Belt Unit, 2TR: Paper Transfer Unit		
001	Paper		Clears the unit counter for each unit.
009	ITB Unit Cnt	-	
010	ITB Rotate DistA	-	
011	Fusing Cnt	-	
012	Fusing RotateDist	-	
016	Waste Oner Cnt	-	
020	2TR Dist&CntA	-	
021	2TR Dist&CntB	-	Clears the unit counter for each unit.
022	2TR Dist&CntA, B		
028	Waste Toner Cnt	-	
045	ITB Rotate Dist%	-	
060	ITB Rotate DistB	-	
100	Engine All Init	-	

7805	[Unit Cnt Restore] Unit Counter Restore 2TR: Paper Transfer Unit		
022	ITB Unit Cnt	-	Recalls the previous counter of the paper transfer unit.

7807	[Reset-SC/ Jam]		
001	Reset-SC/ Jam	-	Clears the all counters related to SC codes and paper jams.

7810	[Unit Cnt Clear] Unit Counter Reset		
001	Engine Cnt Init	-	Clears the all Engine counters other than the total counter (SP7812).

7812	[Total Cnt Clear] Total Counter Reset		
001	Color Counter	-	Clears the total color counter.
002	Mono Counter	-	Clears the total black counter.
003	Duplex Counter	-	Clears the total duplex counter.
100	Color & Mono	-	Clears the total all counter.

7832	[Display-Self-Diag] Display Self-Diagnostic Result		
001	Display-Self-Diag	-	Displays the result of the diagnostics. To scroll the return codes, press the up-arrow key or the down-arrow key.

7836	[Resident Memory]		
001		-	Shows the total storage size.

7853	[AIO Replace Cnt] AIO Replacement Counter Display		
005	High Yield K	*EGB	Displays the replacement counter for each high yield AIO. [0 to 255 / **0** / 1/step]
006	High Yield M	*EGB	
007	High Yield C	*EGB	
008	High Yield Y	*EGB	
009	Short Yield K	*EGB	Displays the replacement counter for each low yield AIO. [0 to 255 / **0** / 1/step]
010	Short Yield M	*EGB	
011	Short Yield C	*EGB	
012	Short Yield Y	*EGB	

7855	[Coverage Range]		
001	Coverage Range 1	*CTL	Specifies the threshold between the coverage counter 1 (SP8601-021) and 2 (SP8601-022). [0 to 100 / **5** / 1%/step]

002	Coverage Range 2	*CTL	Specifies the threshold between the coverage counter 2 (SP8601-022) and 3 (SP8601-023). [0 to 100 / **20** / 1%/step]

7901	[Assert Info]		
001	File Name	*CTL	Records the location where a problem is detected in the program. The data stored in this SP is used for problem analysis.
002	Number of Lines	*CTL	
003	Location	*CTL	

7906	[Pre.Unit Cnt Disp] Previous Unit Counter Display ITB Unit: Image Transfer Belt Unit, 2TR: Paper Transfer Unit		
008	ITB Unit Cnt	*EGB	Displays the number of sheets printed with the previous maintenance units. [0 to 9999999 / **0** / 1 sheet/step]
010	Fusing Cnt	*EGB	
019	2TR Cnt	*EGB	
020	2TR Dis	*EGB	Displays the number of sheets printed with the previous maintenance units. [0 to 9999999 / **0** / 1 mm/step]
034	ITB Rotate Dist%	*EGB	Displays the rotation rate of the ITB unit printed with the previous maintenance unit. [0 to 9999999 / **0** / 1%/step]
042	ITB Rotate Dist	*EGB	Displays the rotation distance printed with the previous maintenance unit. [0 to 9999999 / **0** / 1 mm/step]
043	Fusing RotateDist	*EGB	

7931	[K AIO Information] Black AIO Information

001	Machine Serial ID	-	Displays the information number for each category.
002	Cartridge Ver	-	
003	Brand ID	-	
004	Area ID	-	
005	Product Type ID	-	
006	Color ID	-	
007	Maintenance ID	-	
008	New Product Info.	-	
009	Recycle Count	-	Displays the recycle counter. [-128 to 128 / - / 1/step]
011	Manufacturing ID	-	Displays the information number for each category.
012	Remaining Amount	-	Displays the remaining toner rate. [0 to 100 / 100 / 1%/step]
013	EDP Code	-	Displays the EDP code.
014	End History	-	Displays the toner end status.
015	Refill Info.	-	Displays the total counter from the AIO installation. [0 to 255 / - / 1 /step]
016	Attach:TtlCounter	-	Displays the total counter from the AIO installation. [0x000000000 to 0xffffffffff / - / 1 sheet/step]
017	Attach:ClrCounter	-	Clears the total counter from the AIO installation. [0x000000000 to 0xffffffffff / - / 1 sheet/step]
018	End:Total Counter	-	Displays the total counter at the toner end. [0x000000000 to 0xffffffffff / - / 1 sheet/step]
019	End:Color Counter	-	Displays the color counter at the toner end. [0x000000000 to 0xffffffffff / - / 1 sheet/step]
022	Unit Counter	-	Displays the total counter for this AIO. [0x000000000 to 0xffffffffff / - / 1 sheet/step]

023	Size Counter	-	Displays the custom paper counter rate against the total counter. [0 to 255 / - / 1%/step]
024	Type Counter	-	Displays the low speed printing counter rate against the total counter. [0 to 255 / - / 1%/step]
025	SleepRec/Pon	-	Displays the counter for the power-on and recovery from the sleep mode.
026	Procon Result	-	Displays the process control execution counter (Hexadecimal Number).
027	MUSIC Result	-	Displays the MUSIC execution counter (Hexadecimal Number).
028	PconRotateDist	-	Displays the drum rotation distance. [0x000000000 to 0xfffffffff / - / 1 mm/step]
029	Forced Printing	-	Displays the number of paper for the forced printing. [0 to 255 / **50** / 1 sheet/step].
030	Env Paper Rate	-	Displays the low temperature printing counter rate against the total counter. [0 to 255 / - / 1 %/step]
031	Simp/Dup Rate	-	Displays the duplex counter rate against the unit counter.
032	RefMode Cnt	-	Displays the refresh mode counter against the total counter. [0 to 255 / - / 1 /step]
033	Consumed Amount	-	Displays the consumed toner amount. [0x000000000 to 0xfffffffff / - / 0.0001 mg/step]
034	Recovered Amount	-	Displays the collected toner amount. [0x000000000 to 0xfffffffff / - / 0.0001 mg/step]

035	Recycle A	-	Displays the recycle counter (drum rotation distance). [0 to 255 / - / 200 m/1 step]
036	Recycle B	-	
037	Recycle C	-	
038	Recycle D	-	
039	TotalPconRotateDis	-	Displays the total rotation distance counter of the drum. [0 to 255 / - / 1 mm/step]
040	Machine Serial No	-	Displays the serial number of the machine.

7932	[M AIO Information] Magenta AIO Information		
001	Machine Serial ID	-	Displays the information number for each category.
002	Cartridge Ver	-	
003	Brand ID	-	
004	Area ID	-	
005	Product Type ID	-	
006	Color ID	-	
007	Maintenance ID	-	
008	New Product Info.	-	
009	Recycle Count	-	Displays the recycle counter. [-128 to 128 / - / 1/step]
011	Manufacturing ID	-	Displays the information number for each category.
012	Remaining Amount	-	Displays the remaining toner rate. [0 to 100 / **100** / 1%/step]
013	EDP Code	-	Displays the EDP code.
014	End History	-	Displays the toner end status.
015	Refill Info.	-	Displays the total counter from the AIO installation. [0 to 255 / - / 1 /step]

016	Attach:TtlCounter	-	Displays the total counter from the AIO installation. [0x000000000 to 0xffffffffff / - / 1 sheet/step]
017	Attach:ClrCounter	-	Clears the total counter from the AIO installation. [0x000000000 to 0xffffffffff / - / 1 sheet/step]
018	End:Total Counter	-	Displays the total counter at the toner end. [0x000000000 to 0xffffffffff / - / 1 sheet/step]
019	End:Color Counter	-	Displays the color counter at the toner end. [0x000000000 to 0xffffffffff / - / 1 sheet/step]
022	Unit Counter	-	Displays the total counter for this AIO. [0x000000000 to 0xffffffffff / - / 1 sheet/step]
023	Size Counter	-	Displays the custom paper counter rate against the total counter. [0 to 255 / - / 1%/step]
024	Type Counter	-	Displays the low speed printing counter rate against the total counter. [0 to 255 / - / 1%/step]
025	SleepRec/Pon	-	Displays the counter for the power-on and recovery from the sleep mode.
026	Procon Result	-	Displays the process control execution counter (Hexadecimal Number).
027	MUSIC Result	-	Displays the MUSIC execution counter (Hexadecimal Number).
028	PconRotateDist	-	Displays the drum rotation distance. [0x000000000 to 0xffffffffff / - / 1 mm/step]
029	Forced Printing	-	Displays the number of paper for the forced printing. [0 to 255 / **50** / 1 sheet/step].
030	Env Paper Rate	-	Displays the low temperature printing counter rate against the total counter. [0 to 255 / - / 1 %/step]
031	Simp/Dup Rate	-	Displays the duplex counter rate against the unit counter.

032	RefMode Cnt	-	Displays the refresh mode counter against the total counter. [0 to 255 / - / 1 /step]
033	Consumed Amount	-	Displays the consumed toner amount. [0x000000000 to 0xfffffffff / - / 0.0001 mg/step]
034	Recovered Amount	-	Displays the collected toner amount. [0x000000000 to 0xfffffffff / - / 0.0001 mg/step]
035	Recycle A	-	Displays the recycle counter (drum rotation distance). [0 to 255 / - / 200 m/1 step]
036	Recycle B	-	
037	Recycle C	-	
038	Recycle D	-	
039	TotalPconRotateDis	-	Displays the total rotation distance counter of the drum. [0 to 255 / - / 1 mm/step]
040	Machine Serial No	-	Displays the serial number of the machine.

7933	[C AIO Information] Cyan AIO Information		
001	Machine Serial ID	-	Displays the information number for each category.
002	Cartridge Ver	-	
003	Brand ID	-	
004	Area ID	-	
005	Product Type ID	-	
006	Color ID	-	
007	Maintenance ID	-	
008	New Product Info.	-	
009	Recycle Count	-	Displays the recycle counter. [-128 to 128 / - / 1/step]

011	Manufacturing ID	-	Displays the information number for each category.
012	Remaining Amount	-	Displays the remaining toner rate. [0 to 100 / **100** / 1%/step]
013	EDP Code	-	Displays the EDP code.
014	End History	-	Displays the toner end status.
015	Refill Info.	-	Displays the total counter from the AIO installation. [0 to 255 / - / 1 /step]
016	Attach:TtlCounter	-	Displays the total counter from the AIO installation. [0x000000000 to 0xfffffffff / - / 1 sheet/step]
017	Attach:ClrCounter	-	Clears the total counter from the AIO installation. [0x000000000 to 0xfffffffff / - / 1 sheet/step]
018	End:Total Counter	-	Displays the total counter at the toner end. [0x000000000 to 0xfffffffff / - / 1 sheet/step]
019	End:Color Counter	-	Displays the color counter at the toner end. [0x000000000 to 0xfffffffff / - / 1 sheet/step]
022	Unit Counter	-	Displays the total counter for this AIO. [0x000000000 to 0xfffffffff / - / 1 sheet/step]
023	Size Counter	-	Displays the custom paper counter rate against the total counter. [0 to 255 / - / 1%/step]
024	Type Counter	-	Displays the low speed printing counter rate against the total counter. [0 to 255 / - / 1%/step]
025	SleepRec/Pon	-	Displays the counter for the power-on and recovery from the sleep mode.
026	Procon Result	-	Displays the process control execution counter (Hexadecimal Number).
027	MUSIC Result	-	Displays the MUSIC execution counter (Hexadecimal Number).

028	PconRotateDist	-	Displays the drum rotation distance. [0x000000000 to 0xfffffffff / - / 1 mm/step]
029	Forced Printing	-	Displays the number of paper for the forced printing. [0 to 255 / **50** / 1 sheet/step].
030	Env Paper Rate	-	Displays the low temperature printing counter rate against the total counter. [0 to 255 / - / 1 %/step]
031	Simp/Dup Rate	-	Displays the duplex counter rate against the unit counter.
032	RefMode Cnt	-	Displays the refresh mode counter against the total counter. [0 to 255 / - / 1 /step]
033	Consumed Amount	-	Displays the consumed toner amount. [0x000000000 to 0xfffffffff / - / 0.0001 mg/step]
034	Recovered Amount	-	Displays the collected toner amount. [0x000000000 to 0xfffffffff / - / 0.0001 mg/step]
035	Recycle A	-	Displays the recycle counter (drum rotation distance). [0 to 255 / - / 200 m/1 step]
036	Recycle B	-	
037	Recycle C	-	
038	Recycle D	-	
039	TotalPconRotateDis	-	Displays the total rotation distance counter of the drum. [0 to 255 / - / 1 mm/step]
040	Machine Serial No	-	Displays the serial number of the machine.

7934	[Y AIO Information] Yellow AIO Information

001	Machine Serial ID	-	Displays the information number for each category.
002	Cartridge Ver	-	
003	Brand ID	-	
004	Area ID	-	
005	Product Type ID	-	
006	Color ID	-	
007	Maintenance ID	-	
008	New Product Info.	-	
009	Recycle Count	-	Displays the recycle counter. [-128 to 128 / - / 1/step]
011	Manufacturing ID	-	Displays the information number for each category.
012	Remaining Amount	-	Displays the remaining toner rate. [0 to 100 / 100 / 1%/step]
013	EDP Code	-	Displays the EDP code.
014	End History	-	Displays the toner end status.
015	Refill Info.	-	Displays the total counter from the AIO installation. [0 to 255 / - / 1 /step]
016	Attach:TtlCounter	-	Displays the total counter from the AIO installation. [0x000000000 to 0xfffffffff / - / 1 sheet/step]
017	Attach:ClrCounter	-	Clears the total counter from the AIO installation. [0x000000000 to 0xfffffffff / - / 1 sheet/step]
018	End:Total Counter	-	Displays the total counter at the toner end. [0x000000000 to 0xfffffffff / - / 1 sheet/step]
019	End:Color Counter	-	Displays the color counter at the toner end. [0x000000000 to 0xfffffffff / - / 1 sheet/step]
022	Unit Counter	-	Displays the total counter for this AIO. [0x000000000 to 0xfffffffff / - / 1 sheet/step]

023	Size Counter	-	Displays the custom paper counter rate against the total counter. [0 to 255 / - / 1%/step]
024	Type Counter	-	Displays the low speed printing counter rate against the total counter. [0 to 255 / - / 1%/step]
025	SleepRec/Pon	-	Displays the counter for the power-on and recovery from the sleep mode.
026	Procon Result	-	Displays the process control execution counter (Hexadecimal Number).
027	MUSIC Result	-	Displays the MUSIC execution counter (Hexadecimal Number).
028	PconRotateDist	-	Displays the drum rotation distance. [0x000000000 to 0xffffffffff / - / 1 mm/step]
029	Forced Printing	-	Displays the number of paper for the forced printing. [0 to 255 / **50** / 1 sheet/step].
030	Env Paper Rate	-	Displays the low temperature printing counter rate against the total counter. [0 to 255 / - / 1 %/step]
031	Simp/Dup Rate	-	Displays the duplex counter rate against the unit counter.
032	RefMode Cnt	-	Displays the refresh mode counter against the total counter. [0 to 255 / - / 1 /step]
033	Consumed Amount	-	Displays the consumed toner amount. [0x000000000 to 0xffffffffff / - / 0.0001 mg/step]
034	Recovered Amount	-	Displays the collected toner amount. [0x000000000 to 0xffffffffff / - / 0.0001 mg/step]

035	Recycle A	-	Displays the recycle counter (drum rotation distance). [0 to 255 / - / 200 m/1 step]
036	Recycle B	-	
037	Recycle C	-	
038	Recycle D	-	
039	TotalPconRotateDis	-	Displays the total rotation distance counter of the drum. [0 to 255 / - / 1 mm/step]
040	Machine Serial No	-	Displays the serial number of the machine.

7952	[Life Period Set] **DFU**		
001	Transfer Unit	-	Specifies the end threshold of the image transfer unit. [0 to 100 / **100** / 1%/step]

7956	[Supply Near End]		
001	Detect.Timing Set	-	Selects the near end timing of AIO. [0 to 2 / **1** / 1/step] 0: Earlier, 1: Normal, 2: Later

Engine SP8-xxx

SP8-XXX (Data Log 2)

The counters in Data Log 2 are commonly used in multiple machines. Data Log 2 includes the counters of the functions or units that are not supported by Model MD-P2. The counters in Data Log 2 are cleared by SP5-801 (Memory Clear) or SP7-808 (Counter Reset).

Keys and abbreviations in Data Log 2

Program-related keys and abbreviations	
T:	The grand total of the counters of all application programs
P:	The counter of the printer application program excluding the events related to the document server
O:	The counter of other application programs including remote application programs

8001	[T: Total Jobs]	*CTL	Total jobs
8004	[P: Total Jobs]	*CTL	
	The number of times the application program starts a job [0 to 9999999/ 0 / 1]		

- The jobs interrupted by paper jams or some other errors are also counted.
- The jobs executed by SPs are not counted.

8061	[T: FIN Jobs]	*CTL	Finish, post-print processing jobs
8064	[P: FIN Jobs]	*CTL	
8067	[O: FIN Jobs]	*CTL	
	The number of times the application program uses the finisher [0 to 9999999/ 0 / 1]		
001	Sort	The number of times the application program starts the sort mode	

002	Stack	The number of times the application program starts the stack mode
003	Staple	The number of times the application program starts the staple mode
004	Booklet	The number of times the application program starts the booklet mode Note • The counter of the staple mode (003) can also increase.
005	Z-Fold	The number of times the application program starts the Z-fold mode Note • The booklet mode is not included.
006	Punch	The number of times the application program starts the punch mode Note • The counter of the printer application program (P:) can also increase.
007	Other	(Reserved)
008	Inside-Flod	Not used
009	Three-In-Fold	Not used
010	Three-OUT-Fold	Not used
011	Fout-Fold	Not used
012	KANNON-Fold	Not used
013	Perfect-Bind	Not used
014	Ring-Bind	Not used

8071	[T: Jobs/PGS]	*CTL	Jobs/ Pages
8074	[P: Jobs/PGS]	*CTL	
8077	[O: Jobs/PGS]	*CTL	

	The number of jobs that try to output a specific number of pages [0 to 9999999/ 0 / 1]		
-001	1 Page	-008	21 to 50 Pages
-002	2 Pages	-009	51 to 100 Pages
-003	3 Pages	-010	101 to 300 Pages
-004	4 Pages	-011	301 to 500 Pages
-005	5 Pages	-012	501 to 700 Pages
-006	6 to 10 Pages	-013	701 to 1000 Pages
-007	11 to 20 Pages	-014	1001 to Pages

- The jobs interrupted by paper jams or some other errors are also counted.
- If a job is suspended and restarted later, the job is seen as one job.

8381	[T: Total PrtPGS]	*CTL	Total print pages
8384	[P: Total PrtPGS]	*CTL	
8387	[O: Total PrtPGS]	*CTL	
	The number of sheets that the application program tries to print (excluding the pages printed in the SP mode) [0 to 9999999/ 0 / 1]		

The following pages are not counted as printed pages:

- Blank pages in a duplex printing job
- Blank pages inserted as document covers, chapter title sheets, and slip sheets
- Reports printed to confirm counts
- All reports done in the service mode (service summaries, engine maintenance reports, etc.)
- Test prints for machine image adjustment
- Error notification reports
- Partially printed pages as the result of a printer jam

8391	[LSize PrtPGS]

	A3 /DLT, Larger	*CTL	The number of sheets printed on A3/DLT and larger sizes [0 to 9999999/ 0 / 1]

8411	[Prints/Duplex]		
	Prints/Duplex	*CTL	The number of sheets used in duplex printing [0 to 9999999/ 0 / 1]

- The counter increases by +1 when both sides (front/back) are printed. The counter does not increase when one of the two sides is not printed (e.g., the last page of the documents that have three pages, five pages, seven pages, and so on).

8421	[T: PrtPGS/Dup Comb]	*CTL	Print pages/ Duplex printing combine
8424	[P: PrtPGS/Dup Comb]	*CTL	
8427	[O: PrtPGS/Dup Comb]	*CTL	
	The number of sheets used in binding and combining [0 to 9999999/ 0 / 1]		
001	Simplex> Duplex	*CTL	
004	Simplex Combine	*CTL	
005	Duplex Combine	*CTL	
006	2>	*CTL	2 pages on 1 side (2-Up)
007	4>	*CTL	4 pages on 1 side (4-Up)
008	6>	*CTL	6 pages on 1 side (6-Up)
009	8>	*CTL	8 pages on 1 side (8-Up)
010	9>	*CTL	9 pages on 1 side (9-Up)
011	16>	*CTL	16 pages on 1 side (16-Up)
012	Booklet	*CTL	
013	Magazine	*CTL	

- These counters are useful for the users who want to know how much paper they have saved.

- Partially printed sheets are also counted as 1 page (e.g, the last page in the 4-Up mode is only partially printed when the documents have 5, 6, or 7 pages, 9, 10, or 11 pages, 13, 14, or 15 pages, and so on.).
- Here is a summary of how the counters work in the booklet and magazine modes.

Booklet		Magazine	
Original Pages	Count	Original Pages	Count
1	1	1	1
2	2	2	2
3	2	3	2
4	2	4	2
5	3	5	4
6	4	6	4
7	4	7	4
8	4	8	4

8431	[T: PrtPGS/ImgEdt]	*CTL	Print pages/ Image editing performed on the original with the copier GUI
8434	[P: PrtPGS/ImgEdt]	*CTL	
8437	[O: PrtPGS/ImgEdt]	*CTL	
	The number of pages that the application program handles in a specific way [0 to 9999999/ 0 / 1]		
001	Cover/Slip Sheet	*CTL	The number of cover sheets or slip sheets inserted **Note** • A duplex-printed cover is counted as two.
002	Series/Book	*CTL	The number of pages printed in series (one side) or in the booklet mode
003	User Stamp	*CTL	The number of pages where stamps were applied (including page numbering and date stamping)

8441	[T: PrtPGS/Ppr Size]	*CTL	Print pages/ Paper size
8444	[P: PrtPGS/Ppr Size]	*CTL	
8447	[O: PrtPGS/Ppr Size]	*CTL	
	The number of sheets of a specific paper size that the application program uses [0 to 9999999/ 0 / 1]		
001	A3	007	LG
002	A4	008	LT
003	A5	009	HLT
004	B4	010	Full Bleed
005	B5	254	Other (Standard)
006	DLT	255	Other (Custom)

These counters do not distinguish between LEF and SEF.

8451	[PrtPGS/Ppr Tray]	*CTL	Print pages/ Paper tray
	The number of sheets fed from a specific tray [0 to 9999999/ 0 / 1]		
001	Bypass Tray	*CTL	By-pass Tray
002	Tray 1	*CTL	Printer
003	Tray 2	*CTL	Paper Tray Unit (Optional)
004	Tray 3	*CTL	(Not used)
005	Tray 4	*CTL	(Not used)
006	Tray 5	*CTL	(Not used)
007	Tray 6	*CTL	(Not used)
008	Tray 7	*CTL	(Not used)
009	Tray 8	*CTL	(Not used)
010	Tray 9	*CTL	(Not used)
011	Tray 10	*CTL	(Not used)

012	Tray 11	*CTL	(Not used)
013	Tray 12	*CTL	(Not used)
014	Tray 13	*CTL	(Not used)
015	Tray 14	*CTL	(Not used)
016	Tray 15	*CTL	(Not used)

8461	[T: PrtPGS/Ppr Type]	*CTL	Print pages/ Paper type	
8464	[P: PrtPGS/Ppr Type]	*CTL		
	The number of sheets of specific paper types [0 to 9999999/ 0 / 1]			
001	Normal		005	Normal (Back)
002	Recycled		006	Thick (Back)
003	Special		007	OHP
004	Thick		008	Other

- These counters increase when the paper is output. On the other hand, the PM counter increases (to measure the service life of each feed roller) when the paper is fed.
- Blank sheets (covers, chapter covers, slip sheets) are also counted.
- During duplex printing, a sheet printed on two sides and a sheet printed on one side are both counted as 1.

8471	[PrtPGS/Mag]	*CTL	Print pages/ Magnification
	The number of pages magnified or reduced [0 to 9999999/ 0 / 1]		
8471 001	to 49%	8471 004	101% to 200%
8471 002	50% to 99%	8471 005	201% to
8471 003	100%		

- Some application programs (on the computer) can specify the magnification setting of the printer driver (e.g., MS Excel). In a case like this, SP8-471 recognizes the setting and increases the corresponding counter. Other application programs can magnify or reduce the print images on their

own. In a case like this, SP8-471 does not recognize the magnification setting of the application programs and increase the counter of 100%.

- Magnification adjustment conducted on the document server is not counted.
- Blank cover sheets and slip sheets are regarded as 100%.

8481	[T: PrtPGS/TonSave]	*CTL	Print pages/ Toner save
8484	[P: PrtPGS/TonSave]	*CTL	
	The number of pages printed with the toner save feature activated [0 to 9999999/ 0 / 1]		

- These counters display the same result.

8501	[T: PrtPGS/Col Mode]	*CTL	Print pages/ Color mode
8504	[P: PrtPGS/Col Mode]	*CTL	
8507	[O: PrtPGS/Col Mode]		
	The number of pages printed in a specific color mode [0 to 9999999/ 0 / 1]		
001	B/W	004	Single Color
002	Mono Color	005	Two Color
003	Full Color		

8511	[T: PrtPGS/Emul]	*CTL	Print pages/ Emulation
8514	[P: PrtPGS/Emul]	*CTL	
	The number of pages printed by the printer emulation mode [0 to 9999999/ 0 / 1]		
001	RPCS	008	RTIFF
002	RPDL	009	PDF
003	PS3	010	PCL5e/5c
004	R98	011	PCL XL
005	R16	012	IPDL-C

006	GL/GL2	013	BM-Links (for local models only)
007	R55	014	Other
-	-	015	IPDS

- These counters display the same result.

8521	[T: PrtPGS/FIN]	*CTL	Print pages/ Finish post-print processing
8524	[P: PrtPGS/FIN]	*CTL	
	The number of pages processed by the finisher [0 to 9999999/ 0 / 1]		
001	Sort	005	Z-Fold
002	Stack	006	Punch
003	Staple	007	Other
004	Booklet	008 - 014	Not Used

- Even if the pages are too many for the finisher to staple, all pages are counted (including unstapled pages).
- The counter of stapling (003) increases by +1 when the paper is transported from the printer to the tray of the finisher. Even if a paper jam occurs on this path, the counter (003) increases. If the same job is retried, the counter (003) increases once again.

8531	[Staples]	*CTL	Staples
	The number of staples [0 to 9999999/ 0 / 1]		

8551	[P:FIN Books]	*CTL	Booklet finishing
8554	[P:FIN Books]	*CTL	Booklet finishing
	Not used		

8581	[T: Counter]	*CTL	Total counter

	The number of outputs in a specific color mode [0 to 9999999/ 0 / 1]		
001	Total	016	Full Color GPC
002	Total: Full Colo	017	Twin Mode Print
003	B&W/Single Color	018	Full Color Print
004	Development: CMY	019	Mono Color Print
005	Development: K	020	Full Color Total
008	Print: Color	021	Mono Color Total
009	Print: B/W	022	Full Color Print
010	Total: Color	023	Eco Color Print
011	Total: B/W	024	Eco Color Print
012	Full Colour: A3	025	Total Color (Eco)
013	Full Colour: B4	026	Total B/W (Eco)
014	Full Colour Print	027	Total Color (Eco)
015	Mono Colour Print	-	-

8584	[P: Counter]	*CTL	Print counter
	The number of outputs in a specific color mode [0 to 9999999/ 0 / 1]		
8584 001	B/W	8584 004	Single Color
8584 002	Mono Color	8584 005	Two Color
8584 003	Full Color		

8591	[O: Counter]	*CTL	Other counter
	The number of A3/DLT, duplex printing, or staples [0 to 9999999/ 0 / 1]		
8591 001	A3/DLT	8591 002	Duplex

- Note that these counters are not for the printer application program.

8601	[CvgCounter]	*CTL	
	The coverage rate of B/W printing or Color printing/ The number of prints out in B/W printing or Color printing [0 to 9999999/ 0 / 1]		
8601 001	Cvg: BW %	8601 021	Cvg Counter 1
8601 002	Cvg: FC %	8601 022	Cvg Counter 2
8601 011	Cvg: BW Pages	8601 023	Cvg Counter 3
8601 012	Cvg: FC Pages		

8617	[SDK Apli Counter]	*CTL	
	The number of prints by each SDK application. [0 to 9999999/ 0 / 1]		
8601 001	SDK-1	8601 004	SDK-4
8601 002	SDK-2	8601 005	SDK-5
8601 003	SDK-3	8601 006	SDK-6

8771	[Dev Counter]	*CTL	Development counter
	The number of rotations of the development rollers [0 to 9999999/ 0 / 1]		
8771 001	Total	8771 004	M
8771 002	K	8771 005	C
8771 003	Y		

8781	[TonerBotolInfo] Toner Bottle Information

8781 001	Last [BK]	*EGB	The number of toner bottles (bottles) already replaced [0 to 9999999/ 0 / 1]
8781 002	Last [Y]	*EGB	
8781 003	Last [M]	*EGB	
8781 004	Last [C]	*EGB	

8801	[Toner Remain]	*CTL	Toner remain
8801 001	K	*CTL	The percentage of the remaining toner [0 to 100/ 0 / 1]
8801 001	Y	*CTL	
8801 001	M	*CTL	
8801 001	C	*CTL	

8851	[Cvr Cnt: 0-10%] Coverage Counter (Sheets, [Color]) S: Sheets		
	[0 to 9999999 / 0 / 1 sheet/step] (*EGB)		
8851 011	0 - 2%: BK	8851 031	5 - 7%: Bk
8851 012	0 - 2%: Y	8851 032	5 - 7%: Y
8851 013	0 - 2%: M	8851 033	5 - 7%: M
8851 014	0 - 2%: C	8851 034	5 - 7%: C
8851 021	3 - 4%: BK	8851 041	8 - 10%: Bk
8851 022	3 - 4%: Y	8851 042	8 - 10%: Y
8851 023	3 - 4%: M	8851 043	8 - 10%: M
8851 024	3 - 4%: C	8851 044	8 - 10%: C

8861	[Cvr Cnt: 11-20%] Coverage Counter (Sheets, [Color]) S: Sheets
8871	[Cvr Cnt: 21-30%] Coverage Counter (Sheets, [Color]) S: Sheets

8881	[Cvr Cnt: 31%-] Coverage Counter (Sheets, [Color]) S: Sheets		
001	[K]	*EGB	The number of printed sheets of a specific coverage ratio [0 to 9999999/ 0 / 1]
002	[Y]	*EGB	
003	[M]	*EGB	
004	[C]	*EGB	

- For example, SP8-851-001 displays the number of printed sheets whose black-coverage ratio is 0 percent through 10 percent. SP8-881-004 displays the number of scanned sheets whose cyan-coverage ratio is 31 percent or higher.

8891	[Page/Toner Bottle] (Sheets, [Color]) S: Sheets		
8891 001	[K]	*EGB	The number of printed sheets [0 to 9999999/ 0 / 1]
8891 002	[Y]	*EGB	
8891 003	[M]	*EGB	
8891 004	[C]	*EGB	

8901	[Page/Ink Prev1]		
8901 001	[K]	*EGB	The number of printed sheets with the previously replaced units [0 to 9999999/ 0 / 1]
8901 002	[Y]	*EGB	
8901 003	[M]	*EGB	
8901 004	[C]	*EGB	

8911	[Page/Ink Prev2]		
8911 001	[K]	*EGB	The number of printed sheets with the units that was replaced before the previous unit. [0 to 9999999/ 0 / 1]
8911 002	[Y]	*EGB	
8911 003	[M]	*EGB	
8911 004	[C]	*EGB	

8921	[Cvr Cnt/Total]	*CTL	Coverage Counter Total
8921 001	Coverage (%): Bk	*CTL	The amount of total coverage rate and printouts in each coverage rate [0 to 9999999/ 0 / 1]
8921 002	Coverage (%): Y	*CTL	
8921 003	Coverage (%): M	*CTL	
8921 004	Coverage (%): C	*CTL	
8921 011	Coverage/P: Bk	*CTL	
8921 012	Coverage/P: Y	*CTL	
8921 013	Coverage/P: M	*CTL	
8921 014	Coverage/P: C	*CTL	

8941	[Machine Status]	*CTL	Machine status
	The amount of time the machine spends in a specific mode [0 to 9999999/ 0 / 1]		
8941 001	Operation Time	*CTL	The engine is operating. The counter does not include the time when the data is being saved in the HDD (while engine is not operating).
8941 002	Standby Time	*CTL	The engine is not operating. The counter includes the time when the data is being saved in the HDD. The counter does not include the time when the machine is n the Energy Saver Mode, the Low Power Mode, or the Off Mode.
8941 003	Energy Save Time	*CTL	The machine is in the Energy Saver Mode. The counter includes the time when the background printing is being executed.
8941 004	Low Power Time	*CTL	The machine is in the Low Power Mode. The counter includes the time when the engine is on in the Energy Saver Mode. The counter also includes the time when the background printing is being executed.
8941 005	Off Mode Time	*CTL	The machine is in the Off Mode. The counter includes the time when the background printing is being executed. The counter does not include the time when the main power switch is off.

8941 006	SC	*CTL	The total downtime caused by SC codes
8941 007	PrtJam	*CTL	The total downtime caused by paper jams
8941 008	OrgJam	*CTL	The total downtime caused by original jams
8941 009	Supply PM Unit E	*CTL	The total downtime caused by toner ends

8999	[AdminCounter]	*CTL	Coverage Counter Total
8999 001	Total	*CTL	Displays the administrator counter in the UP mode. [0 to 9999999/ 0 / 1]
8999 006	Printer: FC	*CTL	
8999 007	Printer: FC	*CTL	
8999 008	Printer: OneC	*CTL	
8999 009	Printer: TwoC	*CTL	
8999 013	Duplex	*CTL	
8999 014	Cvg:FC %	*CTL	
8999 015	Cvg:BW %	*CTL	
8999 016	Cvg:FC Pges		
8999 017	Cvg:BW Pages		

Input and Output Check

Input Check Table

SP5803 -xxx	Input Check
001	Reserved1
	Not used
002	Reserved2
	Not used
003	Reserved3
	Not used
004	Reserved4
	Not used
005	Reserved5
	Not used
006	AIO Seri No K-001
	Displays the production year of the black AIO.
007	AIO Seri No K-002
	Displays the production month of the black AIO.
008	AIO Seri No K-003
	Displays the production number (1st and 2nd number) of the black AIO.
009	AIO Seri No K-004
	Displays the production number (3rd and 4th number) of the black AIO.
010	AIO Seri No K-005
	Displays the production number (5th and 6th number) of the black AIO.

011	AIO Seri No C-001
	Displays the production year of the cyan AIO.
012	AIO Seri No C-002
	Displays the production month of the cyan AIO.
013	AIO Seri No C-003
	Displays the production number (1st and 2nd number) of the cyan AIO.
014	AIO Seri No C-004
	Displays the production number (3rd and 4th number) of the cyan AIO.
015	AIO Seri No C-005
	Displays the production number (5th and 6th number) of the cyan AIO.
016	AIO Seri No M-001
	Displays the production year of the magenta AIO.
017	AIO Seri No M-002
	Displays the production month of the magenta AIO.
018	AIO Seri No M-003
	Displays the production number (1st and 2nd number) of the magenta AIO.
019	AIO Seri No M-004
	Displays the production number (3rd and 4th number) of the magenta AIO.
020	AIO Seri No M-005
	Displays the production number (5th and 6th number) of the magenta AIO.
021	AIO Seri No Y-001
	Displays the production year of the yellow AIO.
022	AIO Seri No Y-002
	Displays the production month of the yellow AIO.
023	AIO Seri No Y-003
	Displays the production number (1st and 2nd number) of the yellow AIO.

024	AIO Seri No Y-004
	Displays the production number (3rd and 4th number) of the yellow AIO.
025	AIO Seri No Y-005
	Displays the production number (5th and 6th number) of the yellow AIO.
026	TM Sensor R-PWM
	Displays the PWM value of the TM sensor right.
027	TM Sensor C-PWM
	Displays the PWM value of the TM sensor center.
028	TM Sensor L-PWM
	Displays the PWM value of the TM sensor left.
029	Dev. Bias K
	Displays the development bias for black.
030	Dev. Bias M
	Displays the development bias for magenta.
031	Dev. Bias C
	Displays the development bias for cyan.
032	Dev. Bias Y
	Displays the development bias for yellow.
033	LD Power K
	Displays the LD power of black.
034	LD Power M
	Displays the LD power of magenta.
035	LD Power C
	Displays the LD power of cyan.
036	LD Power Y
	Displays the LD power of yellow.

037	Charge Output K
	Displays the charge bias of black.
038	Charge Output Col
	Displays the charge bias of color.
039	S-Scan Reg Adj:M
	Displays the sub-scan correction value (line) for magenta.
040	S-Scan Reg Adj:C
	Displays the sub-scan correction value (line) for cyan.
041	S-Scan Reg Adj:Y
	Displays the sub-scan correction value (line) for yellow.
042	M-Scan Reg Adj:M
	Displays the main-scan correction value (dot) for magenta.
043	M-Scan Reg Adj:C
	Displays the main -scan correction value (dot) for cyan.
044	M-Scan Reg Adj:Y
	Displays the main -scan correction value (dot) for yellow.
045	M-Scan Reg SubA:M
	Displays the main-scan correction value (sub-dot) for magenta.
046	M-Scan Reg SubA:C
	Displays the main-scan correction value (sub-dot) for cyan.
047	M-Scan Reg SubA:Y
	Displays the main-scan correction value (sub-dot) for yellow.
048	M-MagA:M 0.001%
	Displays the main-magnification correction value for magenta.
049	M-MagA:C 0.001%
	Displays the main-magnification correction value for cyan.

050	M-MagA:Y 0.001%
	Displays the main-magnification correction value for yellow.
051	Skew: K
	Displays the skew correction value for black.
052	Skew: M
	Displays the skew correction value for magenta.
053	Skew: C
	Displays the skew correction value for cyan.
054	Skew: Y
	Displays the skew correction value for yellow.
055	Consumed Amount K
	Displays the amount of the toner consumption for black.
056	Consumed Amount M
	Displays the amount of the toner consumption for magenta.
057	Consumed Amount C
	Displays the amount of the toner consumption for cyan.
058	Consumed Amount Y
	Displays the amount of the toner consumption for yellow.
101	WasteToner Detect
	Displays the status of the waste toner overflow sensor. 0: Not full, 1: Full
102	WTBottle Detect
	Displays the status of the waste toner bottle set sensor 0: Not set, 1: Set

104	PFU Set Detect
	Displays the status of the PFU option. 0: Not set, 1: Set
105	PFU Paper Sensor
	Displays the status of the PFU paper end sensor. 0: No paper detected, 1: Paper detected
106	PFU Reply Sensor
	Displays the status of the PFU relay sensor. 0: No paper detected, 1: Paper detected
107	Main Paper Set Sn
	Displays the status of the paper end sensor (main). 0: No paper detected, 1: Paper detected
108	Regist Sensor
	Displays the status of the registration sensor. 0: No paper detected, 1: Paper detected
109	Paper Exit Sn
	Displays the status of the paper exit sensor. 0: No paper detected, 1: Paper detected
110	Bypass PaperEndSn
	Displays the status of the by-pass paper end sensor. 0: No paper detected, 1: Paper detected
111	Duplex Sensor
	Displays the status of the duplex sensor. 0: No paper detected, 1: Paper detected
114	Tray Set Detect
	Displays the status of the duplex sensor. 0: Not set, 1: Set

115	Door Open Detect
	Displays the status of the interlock switches. 0: Door close, 1: Door open

Output Check Table

5804	Output Check	
001	BK Motor:1/1	Black AIO motor: Normal speed
002	BK Motor:1/2	Black AIO motor: Half speed
003	BK Motor:1/2.5	Black AIO motor: Quarter speed
004	Color Motor:1/1	Color AIO motor: Normal speed
005	Color Motor:1/2	Color AIO motor: Half speed
006	Color Motor:1/2.5	Color AIO motor: Quarter speed
007	Fusing Mtr:1/1	Transport/Fusing motor: Normal speed
008	Fusing Mtr:1/2	Transport/Fusing motor: Half speed
009	Fusing Mtr:1/2.5	Transport/Fusing motor: Quarter speed
010	ITB Contact Motor	ITB Contact motor: Normal speed
011	Agitator M:Intl	Agitator motor: Initial operation speed
012	Agitator M:Print	Agitator motor: Print operation speed
013	Duplex:Fwd/Normal	Not used
014	Duplex:Fwd/Low	Not used
015	Duplex:Rev/Normal	Not used
016	Duplex:Rev/Low	Not used
017	LSU Fan:Normal	LSU fan motor: Normal speed
018	LSU Fan:Low	LSU fan motor: Low speed
019	Fusing Fan:Normal	Fusing fan motor: Normal speed
020	Fusing Fan:Low	Fusing fan motor: Low speed

021	Air In Fan:Normal	Air intake fan: Normal speed
022	PSU Fan:Normal	PSU Fan: Normal speed
023	Regist Clutch	Registration clutch
024	PFU P-Feed Clutch	PFU paper feed clutch (option)
025	PFU Relay Clutch	PFU relay clutch (option)

4. Appendix: Machine Swap

Exchange and Replace Procedure

If the machine exchange and replacement is required, arrange to send a machine without the four print cartridges (AIO) to the customer site.

Instruction

Instruct the customer to do the following procedure.

Before the substitute machine gets to the customer site

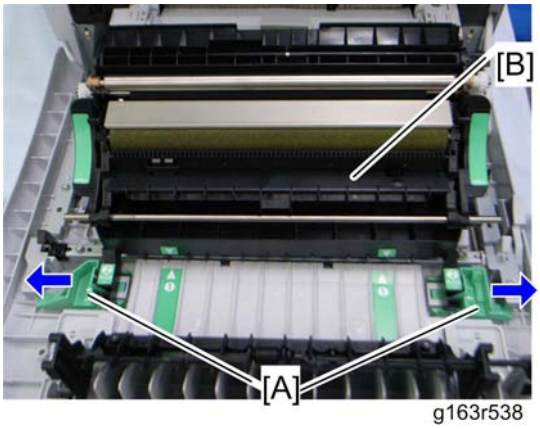
- Print the configuration page.

When the substitute machine gets to the customer site

1. Remove the four print cartridges (AIO) from the problem machine.
2. Install the four print cartridges (AIO) into the substitute machine.
3. Input the customer settings which are printed on the configuration page by using the "Menu" on the operation panel.
4. Send back the problem machine to the repair center.

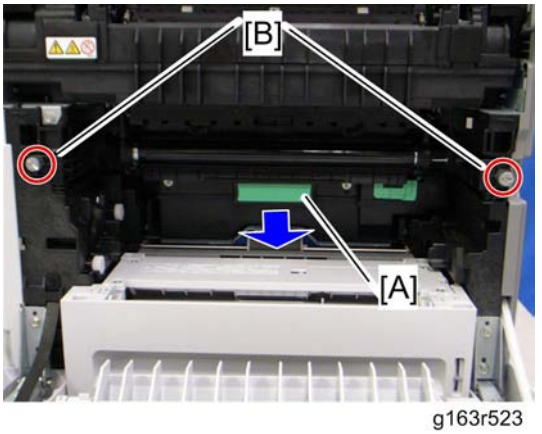
Cleaning Points after Machine Arrival at Depot

1. Open the front cover.



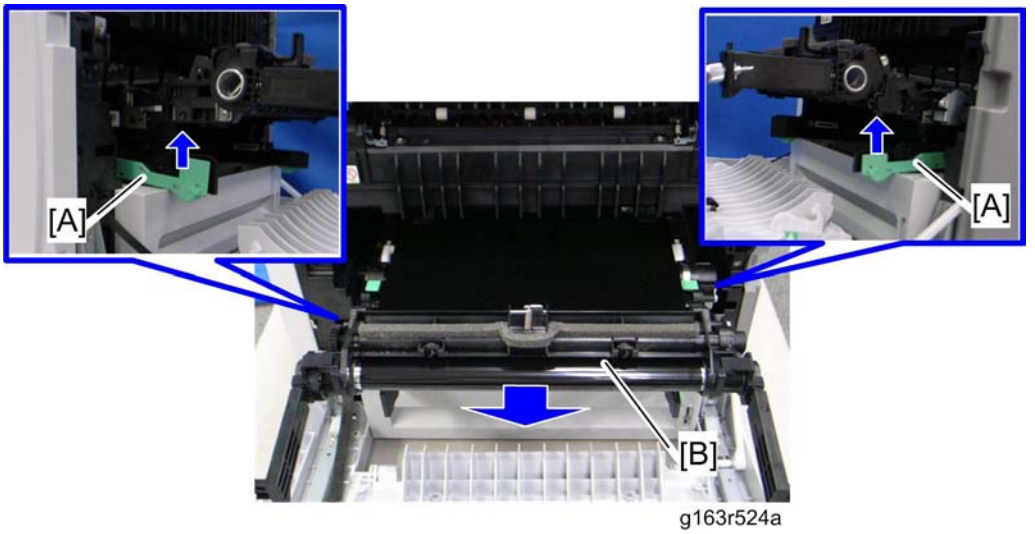
g163r538

2. Release the locks [A].
3. Remove the transfer unit [B].



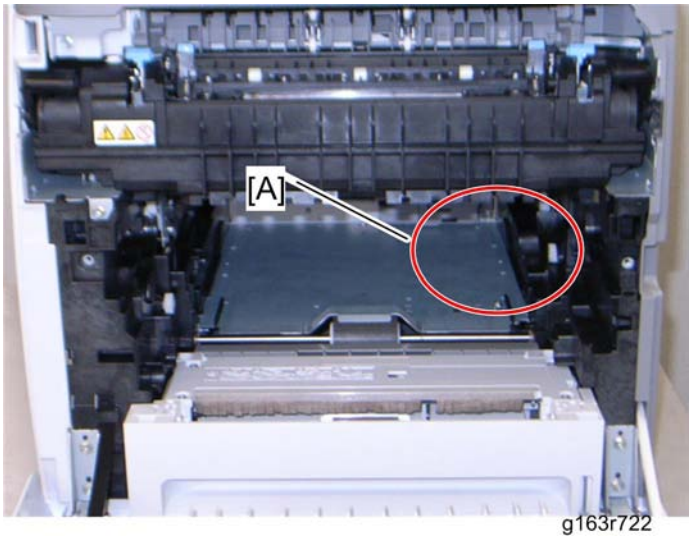
g163r523

4. Remove the waste toner bottle [A].
5. Remove the two screws [B].

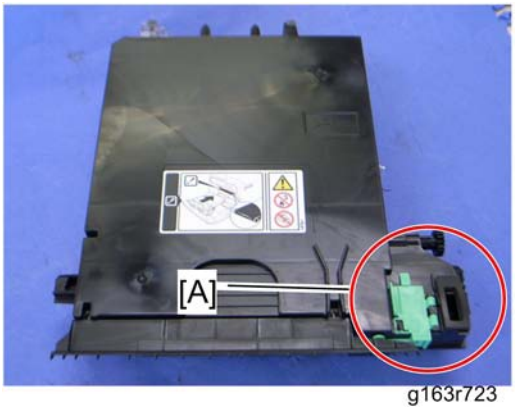


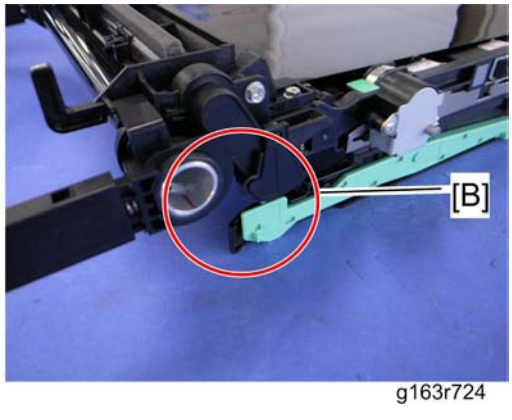
g163r524a

6. Grab the handles [A], and then pull out the image transfer belt unit [B].
7. Remove the waste toner bottle.



8. Clean inside the machine, especially around the circled area [A].





9. Clean the circled area at the waste toner bottle [A] and circled area [B] at image transfer belt unit.
10. Reassemble the machine.

MEMO

MEMO

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