# Model MD-P1 Machine Code: M040/M041

**Field Service Manual** 

# **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.

# **MARNING**

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.

### **MARNING**

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

#### **AWARNING**

#### **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:**



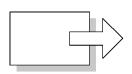


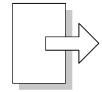
3b laser

# 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
Î	Screw
	Connector
Ç	Clamp
C	E-ring
SEF	Short Edge Feed
LEF	Long Edge Feed





Short Edge Feed (SEF)

Long Edge Feed (LEF)

#### Trademarks

 $Microsoft^{\otimes}$ ,  $Windows^{\otimes}$ , and  $MS\text{-DOS}^{\otimes}$  are registered trademarks of Microsoft Corporation in the United States and /or other countries.

 ${\sf PostScript}^{\circledR} \ is \ a \ registered \ trademark \ of \ Adobe \ Systems, \ Incorporated.$ 

 $\mathsf{PCL}^{\circledR}$  is a registered trademark of Hewlett-Packard Company.

 $\label{eq:thermat} \mbox{Ethernet}^{\mbox{$\mathbb{R}$}} \mbox{ is a registered trademark of Xerox Corporation}.$ 

 ${\sf PowerPC}^{\circledR} \ is \ a \ registered \ trademark \ of \ International \ Business \ Machines \ Corporation.$ 

Other product names used herein are for identification purposes only and may be trademarks of their respective companies. We disclaim any and all rights involved with those marks.

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# 1. Product Information

# **Specifications**

See "Appendices" for the "General Specifications".

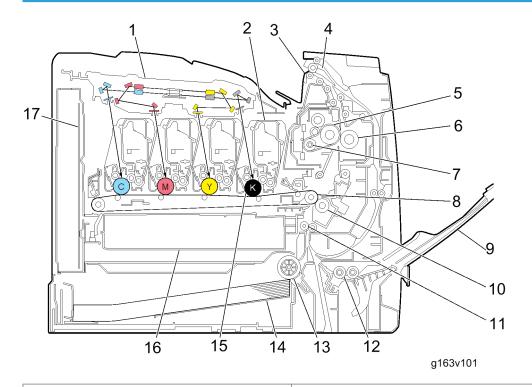
1

# **Supported Paper Sizes**

See "Appendixes" for the "Supported Paper Sizes".

# **Machine Overview**

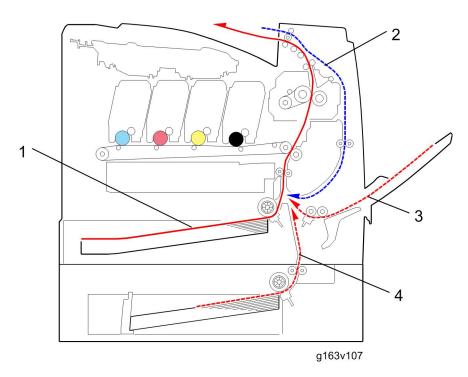
### **Component Layout**



- 1. Laser Optics Housing Unit
- 2. Print Cartridge (AIO)
- 3. Paper Exit
- 4. Inverter Path
- 5. Fusing Belt
- 6. Pressure Roller
- 7. Fusing Lamp
- 8. ITB (Image Transfer Belt) Unit
- 9. By-pass Tray

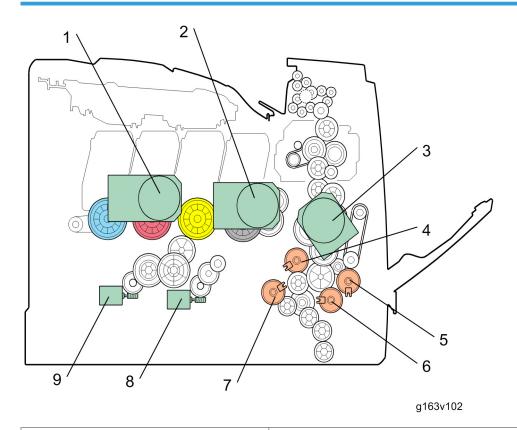
- 10. Transfer Roller
- 11. Registration Roller
- 12. By-pass Feed Roller
- 13. Paper Feed Roller
- 14. Tray 1
- 15. OPC (AIO)
- 16. Waste Toner Bottle
- 17. EGB/ Controller Board

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- 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 (P1d only)

- 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 (P1d only):

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:

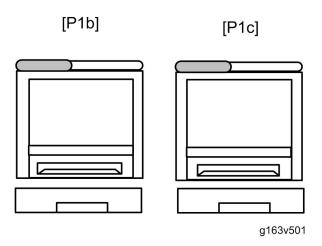
This moves the agitators in the waste toner bottle.

#### • ITB Contact Motor:

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

# **Machine Configuration**

# Model (M040/M041)



Models	Duplex Unit	Optional Memory	Optional Tray (G849)	PCL PS
MD-P1b (M040)	Manual	Y	500x1	Υ
MD -P1c (M041)	Auto	Y	500x1	Y

# Guidance for Those Who are Familiar with Predecessor Products

Machine M040/M041 is a similar model with Machine G165/G166/G167. If you have experience with those products, the following information will be of help when you read this manual.

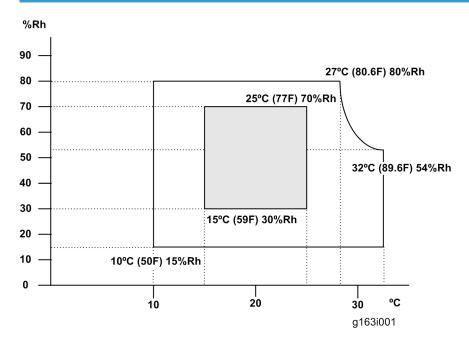
Different Points from Previous Products

	M040/M041	G165/G166/G167
Print Cartridge (AIO)	Longer life Print Cartridge (AIO)	-
Operation Panel	2 Lines LCD	No LCD
Paper Input Capacity	500 sheets (Mainframe)	250 sheets (Mainframe)
By-pass	100 sheets (automatic)	1 sheet (manual)
Waste Toner Bottle	55 K prints/bottle	25 K prints/bottle
Fusing	Belt Fusing	Roller Fusing
	Drawer Connection	Harness Connection
Tray Detection	Tray Set Sensor	No Tray Set Sensor

# 2. Installation

# **Installation Requirements**

#### **Environment**

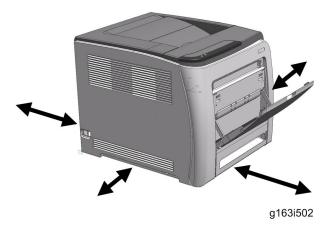


- 1. Temperature Range: 10°C to 32°C (50°F to 89.6°F)
- 2. Humidity Range: 15% to 80% RH
- 3. Ambient Illumination: Less than 2,000 lux (do not expose to direct sunlight)
- 4. Ventilation: 3 times/hr/person
- 5. Do not put the machine in areas that get sudden temperature changes. This includes:
  - · 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

## **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**

## **ACAUTION**

• 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**

### **ACAUTION**

- 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.

#### \_

# **Special Tools**

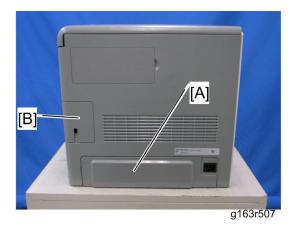
- PC: Windows 2000/XP/Vista, Windows Server 2003/2003 R2, or Mac OS X.
- USB cable or Crossover cable

# **Exterior Covers**

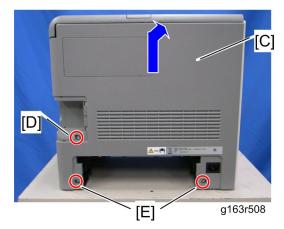
### **ACAUTION**

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

#### **Rear Cover**



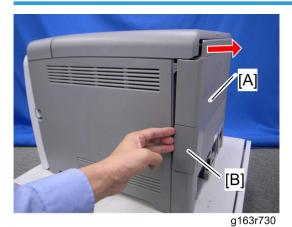
- 1. Rear tray cover [A] (hooks)
- 2. Interface cover [B] (hooks)



3. Rear cover [C] (screw x 3)



- After removing three screws from the rear cover, push up the rear cover and then pull it toward you.
- Upper screw [D]: "M3x8" x 1, Lower screws [E]: "M4x10" x 2



When reinstalling the rear cover [A], push the top of the cover first fully in, and then slide it down to ensure locking tabs are in correct position. Tighten screws in order shown below.



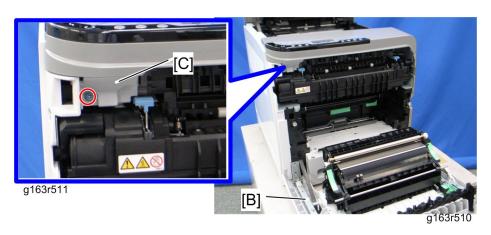
• If the top pops out after rear cover installation (possibly when opening the connector cover [A]), repeat the above procedure, taking extra care to ensure locking tabs are fully in position before tightening screws.

### **Operation Panel**



910

1. Open the top cover [A].



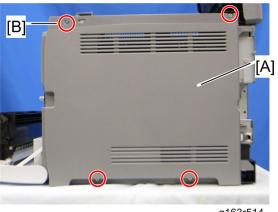
- 2. Open the front cover [B].
- 3. Front harness cover [C] (screw x 1)



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

# Right Cover

- 1. Rear cover (**p**.23)
- 2. Operation panel ( p.24)



g163r514

3. Right cover [A] (screw x 4)

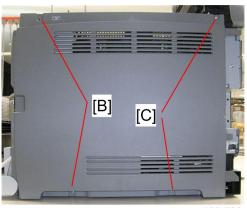


• Top front screw [B]: M3x8, others: M4x10

### When reinstalling the right cover



Tighten the two pairs of cover screws in the order shown below to prevent possible bulging of the right cover [A].

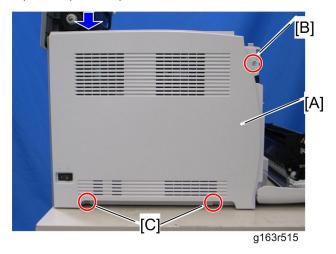


g163r733

- 1. First, tighten the 2 screws [B] at the front side of the right cover.
- 2. Then tighten the 2 screws [C] at the rear side of the right cover.

### Left Cover

- 1. Rear cover ( p.23)
- 2. Operation panel ( p.24)



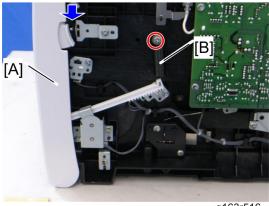
3. Left cover [A] (screw x 3, hook at arrow mark)



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

### Front Cover Unit

- 1. Rear cover (**p**.23)
- 2. Operation panel ( p.24)
- 3. Transfer unit ( p.48)
- 4. Right cover ( p.25)

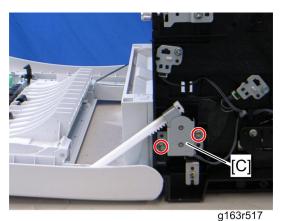


g163r516

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

# **ACAUTION**

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



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



- 8. Release the belt [D].
- 9. Front cover unit [E] (screw 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 Locations**

Caution decals are attached as shown below.

CAUTION VORSICHT



CAUTION-CLASS 3B INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO THE BEAM VORSICHT-UNSICHTBARE LASERSTRAHLUNG KLASSE 3B, WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETZEN



g163r519

# **MARNING**

• 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.

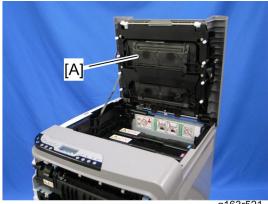
# Laser Optics Housing Unit

- 1. Rear cover ( p.23)
- 2. Controller box cover ( p.71)

4

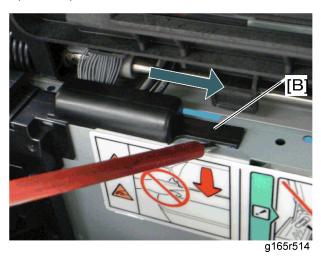


3. Disconnect the three harnesses from CN301, 302 and 303 on the EGB (connector x 3).

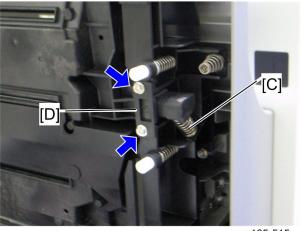


g163r521

4. Open the top cover [A].

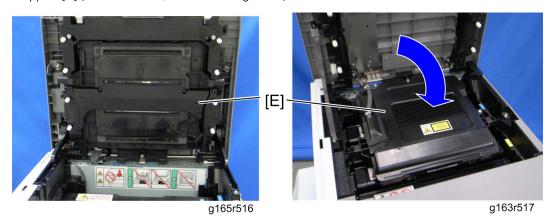


5. Lift up the hook of the harness guide [B] at the rear-left frame and slide the harness guide to the right.

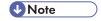


g165r515

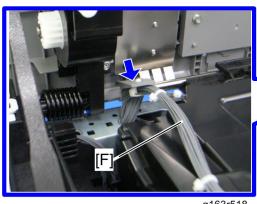
- 6. Remove the springs [C] (left side and right side).
- 7. Stoppers [D] (screw x 2 each; left side and right side)



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



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





- g163r518
- g163r517
- 9. Take out the harnesses [F] (clamp x 1).
- 10. Pull out the harnesses from the rear side.



# After replacing the laser optics housing unit

11. Remove the laser optics housing unit.



• Do the following step 4 with the front cover of the machine open.

- 4
- 1. Open the top cover and check the lot number [A] of the laser optics housing unit.
- Look for the lot number [A] attached to the new laser optics housing unit. Then look for this lot number on the information sheet (this sheet will be released separately, and will contain lists of input data for each lot number)

Input the data for this lot number from the information sheets with steps 3 to 7 below.

- 3. Open the front cover and turn on the machine.
- 4. Input the settings for the laser optics housing unit.
  - In the SOM utility, access "LSU Adjustment" inside the "SP Mode 2" tab.
    - Copy the corresponding LSU data inside the information sheet into the space provided in the SOM utility.
- 5. Close the front cover.



- 6. Execute "Color Registration" in the "SP Mode 2" tab.
- 7. Adjust the registration settings for each tray and for the front and rear sides of the paper with the "SP Mode 2" tab if necessary.

#### 4

## **AIO Cartridge**

### AIO Cartridge (All In One Cartridge)

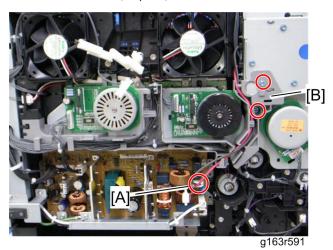
1. Open the top cover.



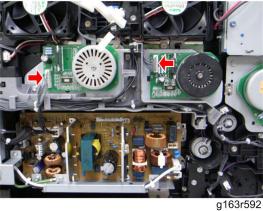
2. AIO cartridge [A]

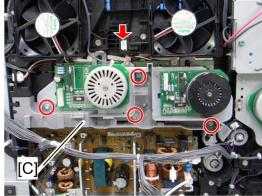
### **Black AIO Motor**

- 1. Left cover ( p.27)
- 2. Interlock switch base ( p.74)

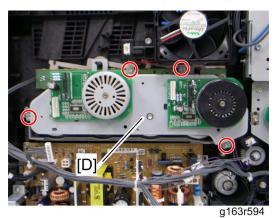


- 3. Disconnect the fusing connector [A].
- 4. Fusing harness guide [B] (screw x 2)

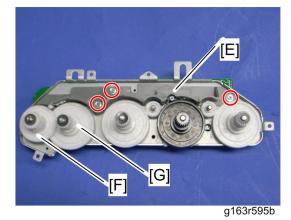




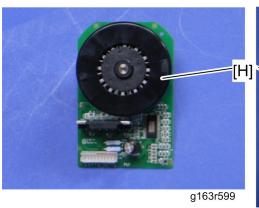
- g163r593
- 5. Disconnect the connectors pointed by arrows in the above picture and take aside all harnesses on the harness guide [C].
- 6. Harness guide [C] (screw x 4)
- 7. Remove the LSU fan base ( p.76 "ID Chip Board")

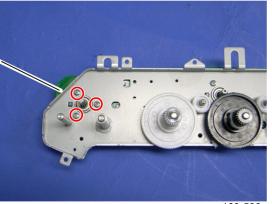


8. Drive unit [D] (screw x 4)



- 9. Drive unit guide [E] (screw x 3)
- 10. Image transfer unit gear [F] (washer x 1)
- 11. Black AIO gear [G] (washer x 1)



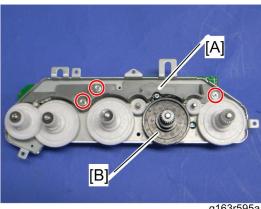


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12. Black AIO motor [H] (screw x 3)

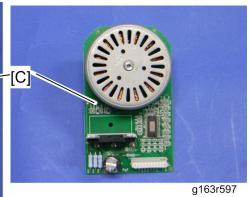
### **Color AIO Motor**

1. Drive unit ( p.35)



g163r595a

- 2. Drive unit guide [A] (screw x 3)
- 3. Color AIO gear [B] (washer x 1)



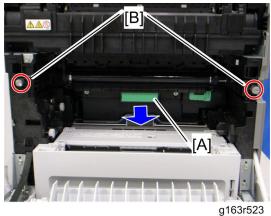
4. Color AIO motor [C] (screw x 3)

4

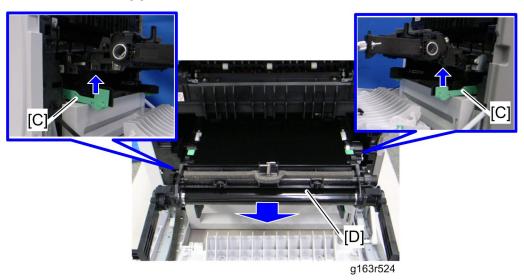
# **Image Transfer**

### Image Transfer Belt Unit

- 1. Remove all the AIO cartridges ( p.35).
- 2. Transfer unit ( p.48)



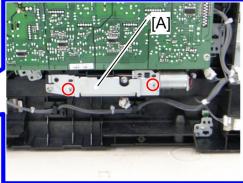
- 3. Remove the waste toner bottle [A].
- 4. Remove the two screws [B].



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

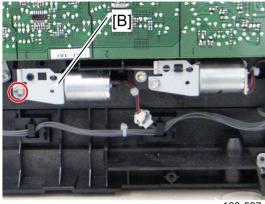
1. Right cover ( p.25)





g163r525

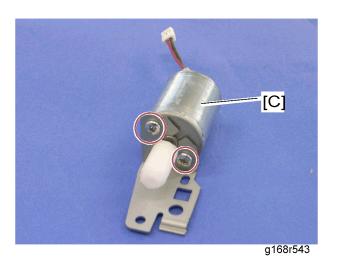
2. Motor bracket [A] (screw x 2)



g163r527

3. Agitator motor assembly [B] (screw  $x\ 1$ , connector  $x\ 1$ )

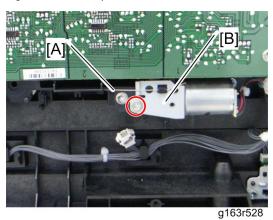
4



4. Agitator motor [C] (screw x 2)

### ITB (Image Transfer Belt) Contact Motor

1. Agitator motor ( p.40)



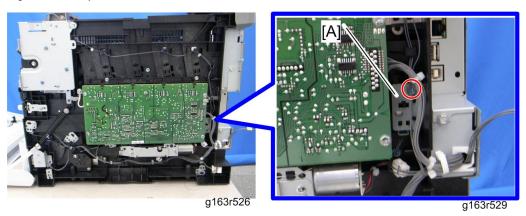
- 2. Release the wire [A].
- 3. ITB contact motor assembly [B] (screw x 1, connector x 1)



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

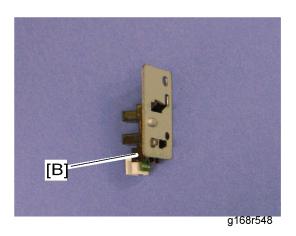
## ITB (Image Transfer Belt) Contact Sensor

1. Right cover ( p.25)



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





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.23)
- 5. Controller box cover ( p.71)



g163r530

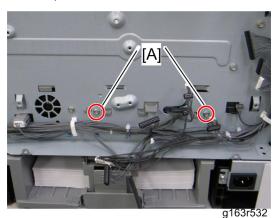
6. Disconnect CN306 on the EGB (clamp x 1).

g163r531

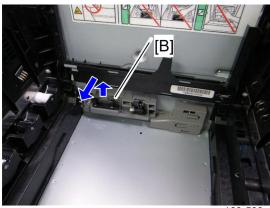
- 7. Harness cover [A] (hooks)
- 8. TM sensor base [B]

### Waste Toner Bottle Set Sensor

- 1. Remove all AIO cartridges. ( p.35)
- 2. Image transfer belt unit ( p.39)
- 3. EGB ( p.72)

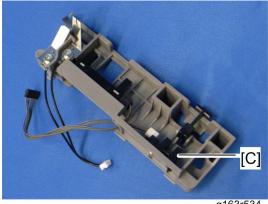


4. Remove two screws [A] for the waste toner sensor base.



g163r533

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



g 1631534

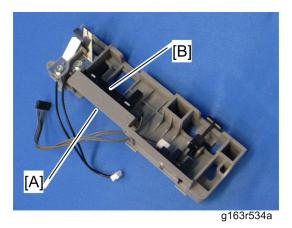
7. Waste toner bottle set sensor [C] (hooks, connector x 1)



• 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.39)
- 3. EGB ( EGB)
- 4. Waste toner sensor base ( p.44)



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



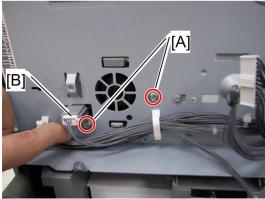
- Reattach this mylar after reinstalling the waste toner overflow sensor.
- 6. Waste toner overflow sensor [B] (hooks, connector x 1)



• 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.39)
- 3. EGB ( EGB)
- 4. Waste toner sensor base ( p.44)



g163r535

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

### 6. Disconnect the harness [B].



### 7. Air intake fan base [C]

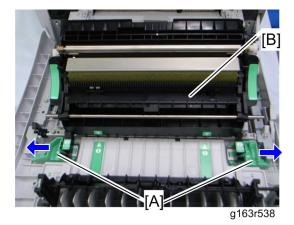


8. Air intake fan [D] (connector x 1)

# **Paper Transfer**

### Transfer Unit

1. Open the front cover.



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

### Transfer Roller

1. Transfer Unit ( p.48)

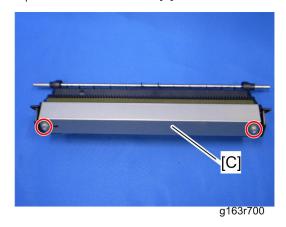


2. Release the two hooks [A] at both sides of the transfer unit.

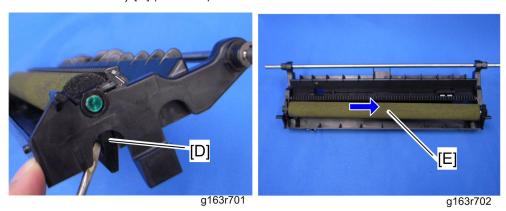
4



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

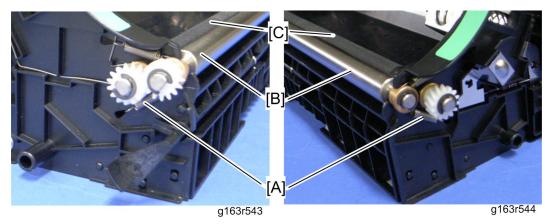


4. Transfer roller assembly [C] (screw x 2)



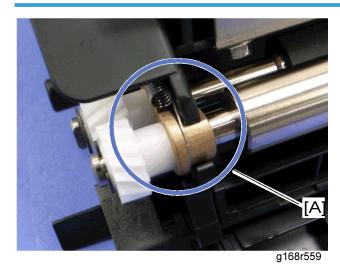
- 5. Release the holder [D] at the left side of the transfer roller unit (hook).
- 6. Transfer roller [E]

- 1. Transfer unit ( p.48)
- 2. Transfer roller unit ( p.48)



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

### Reassembling the registration roller unit



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].

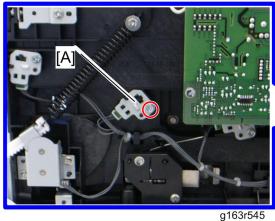
4

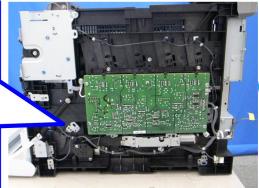
### **ACAUTION**

• Never fail to reassemble the registration idle motor in the right direction.

### **Registration Sensor**

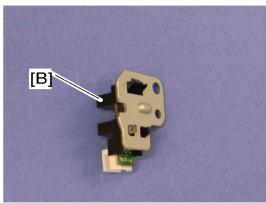
1. Right Cover ( p.25)





g163r526

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



g168r562

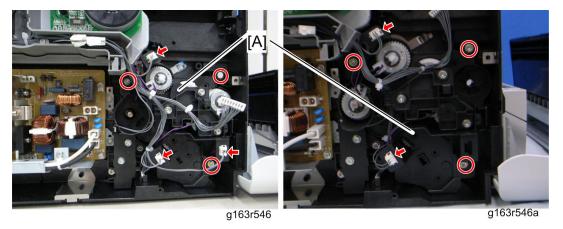
3. Registration sensor [B] (hooks)

### Registration and Duplex Clutch



• The duplex clutch is used only for the P1c model (M041). No duplex clutch is in the P1b model (M040).

- 1. Rear cover ( p.23)
- 2. Left cover ( p.27)
- 3. Paper feed clutch ( p.63)
- 4. Transport/Fusing motor (☞p.61)



5. Lower transport gear unit [A] (screw x 3, connector x 3 for P1c/connector x 2 for P1b)



- The picture on the left side shows the P1c model.
- The picture on the right side shows the P1b model (no duplex).



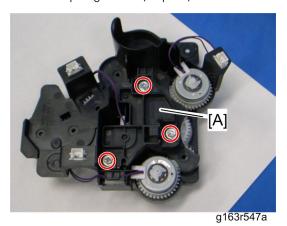
- 6. Registration clutch [B] (clip x 1, connector x 1)
- 7. Duplex clutch [C] (clip x 1, connector x 1)



• The picture above shows the P1c model. No duplex clutch is in the P1b model.

### By-pass Clutch

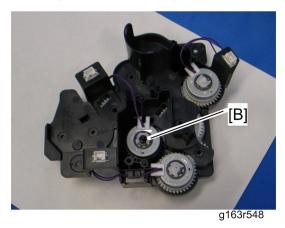
1. Lower transport gear unit ( p.51)



2. Cover [A] (screw x 3)



• The picture above shows the P1c model. No duplex clutch is in the P1b model.



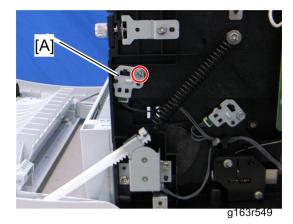
3. By-pass clutch [B] (clip x 1, connector x 1)



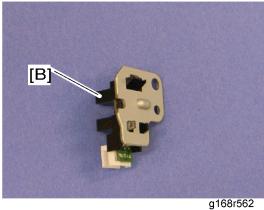
• The picture above shows the P1c model. No duplex clutch is in the P1b model.

### Front Cover Open Sensor

1. Right Cover ( p.25)



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



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

#### 4

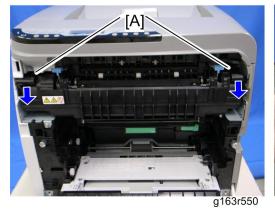
## **Image Fusing**

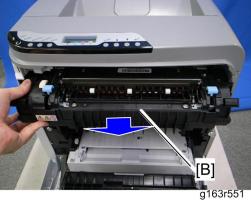
### **ACAUTION**

- 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.

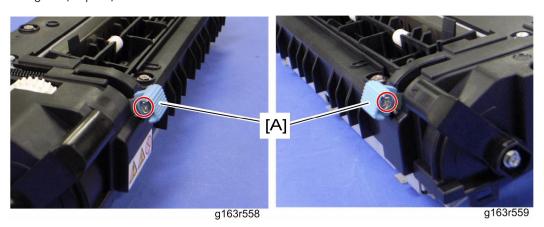


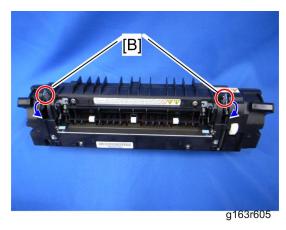


- 2. Release the fusing unit lock levers [A].
- 3. Fusing unit [B]

### **Fusing Lamp**

1. Fusing unit ( p.55)





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

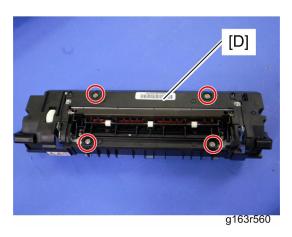
### **ACAUTION**

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

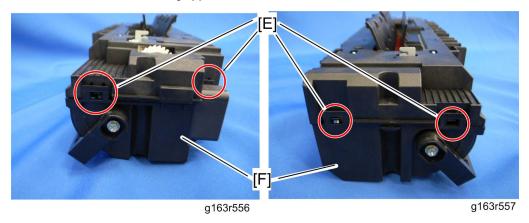


4. Remove two screws [C] at the left and right edge of the fusing unit.

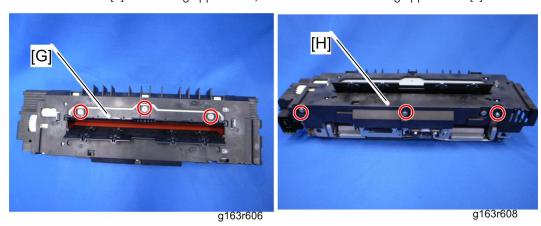
4



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



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



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

- 4
- 9. Remove two screws [I].
- 10. Fusing lamp right stay [J] (screw x 1)

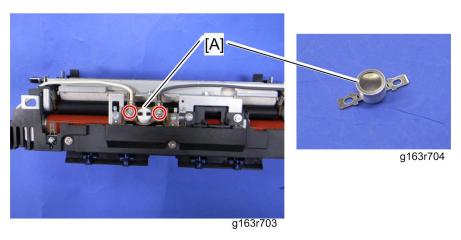


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11. Fusing lamp [K]

### Thermostat

- 1. Fusing unit ( p.55)
- 2. Fusing upper cover ( p.55 "Fusing Lamp")



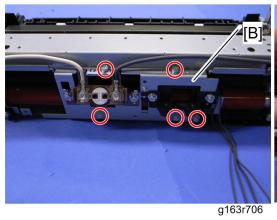
3. Thermostat [A] (screw x 2)

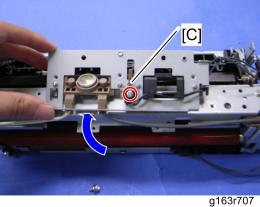
### **Thermistors**

- 1. Fusing unit ( p.55)
- 1. Fusing upper cover ( p.55 "Fusing Lamp")
- 2. Fusing lower cover ( p.55 "Fusing Lamp")

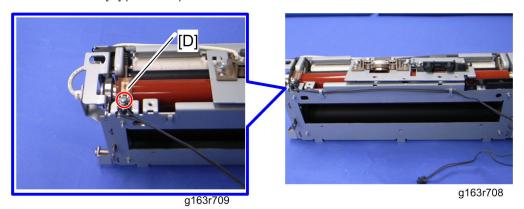


3. Disconnect the thermistor connector [A].



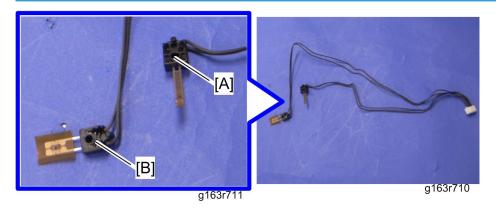


- 4. Thermostat bracket [B] (screw x 5)
- 5. Thermistor: center [C] (screw x 1)



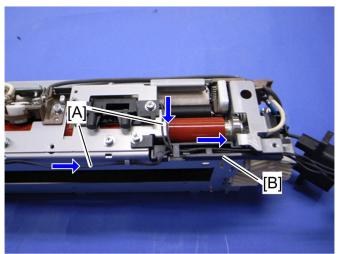
6. Thermistor: end [D] (screw x 1)

### When installing the thermistors: center and end



Do not mix up two thermistors;

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

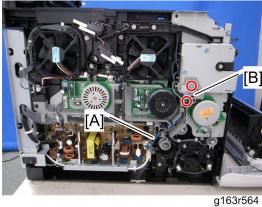


g163r712

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

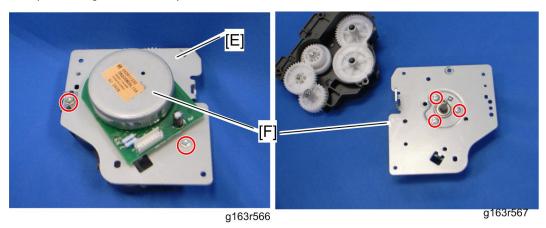
### Transport/Fusing Motor

- 1. Rear cover ( p.23)
- 2. Left cover ( p.27)



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

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



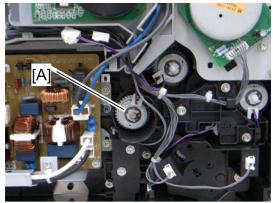
- 7. Motor bracket [E] (screw x 2, ground plate x 1)
- 8. Transport/Fusing motor [F] (screw x 3)

#### 4

# Paper Feed and Exit

### Paper Feed Clutch

- 1. Rear cover ( p.23)
- 2. Left cover ( p.27)

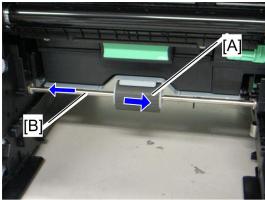


g163r568

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

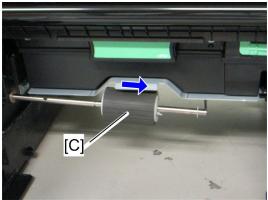
### Paper Feed Roller

- 1. Pull out the tray.
- 2. Open the front cover.
- 3. Transfer unit ( p.48)
- 4. Paper feed clutch ( p.63)



g163r569

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

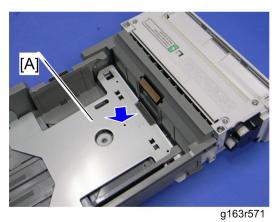


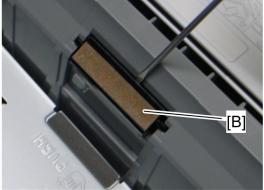
g163r570

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

### Separation Pad

1. Pull out the tray.

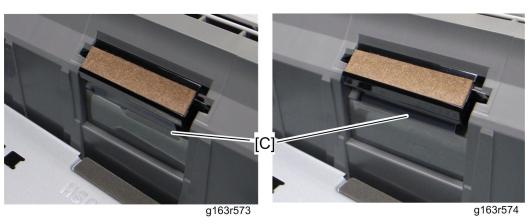




g163r572

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



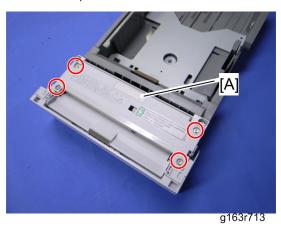




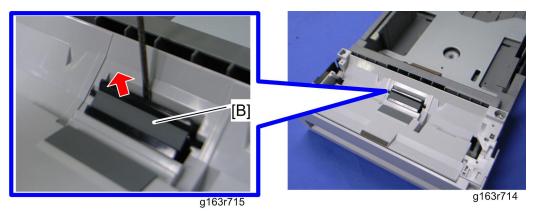
• When reinstalling the separation pad, make sure that the mylar [C] is not placed under the separation pad. The right side image above shows incorrect installation.

## By-pass Separation Pad

1. Pull out the tray 1.



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

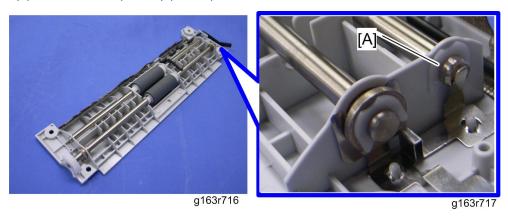


3. By-pass separation pad [B]

## By-pass Pick-up and Feed Rollers

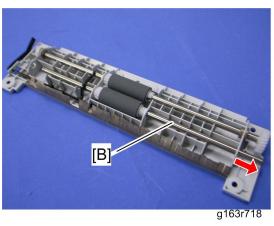
### By-pass Pick-up Roller

- 1. Pull out the tray 1.
- 2. By-pass feed unit ( p.65 "By-pass Separation Pad")



3. Remove the clip [A].



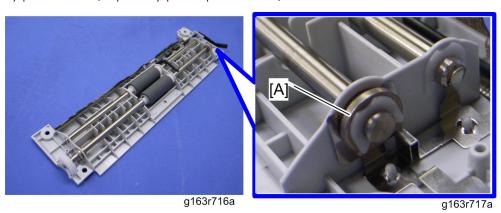




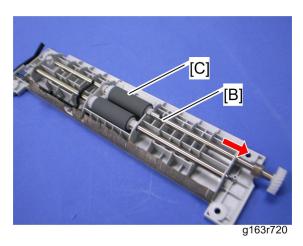
- 4. Pull out the by-pass pick-up roller shaft [B] (bushing x 1).
- 5. Pick-up roller [C]

### **By-pass Feed Roller**

- 1. Pull out the tray 1.
- 2. By-pass feed unit ( p.65 "By-pass Separation Pad")

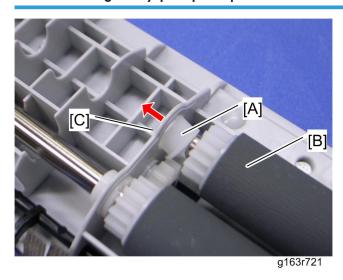


3. Bushing [A] at the by-pass feed roller shaft ( $clip \times 1$ ).



- 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

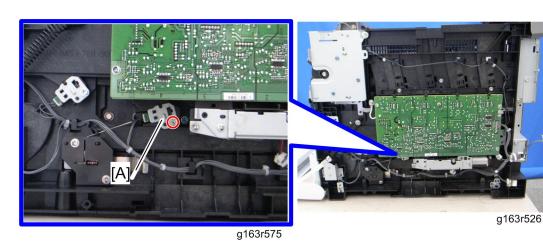


Make sure that the small plastic bushing [A] is correctly inserted between the pick-up or feed roller [B] and roller support plate [C].

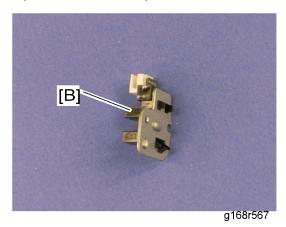
### Paper End Sensor

- 1. Rear cover ( p.23)
- 2. Right cover ( p.25)





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



4. Paper end sensor [B] (hooks)

### Paper Exit Sensor

1. Operation panel ( p.24)

g163r576

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

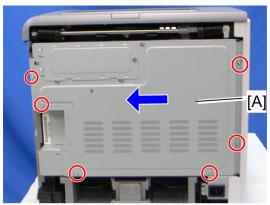
4

#### 4

## **Electrical Components**

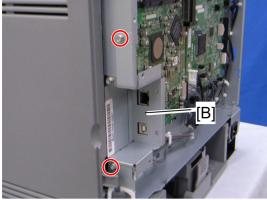
## **Controller Board**

1. Rear cover ( p.23)



g163r577

2. Controller box cover [A] (screw x 6)



g163r578

3. Interface bracket [B] (screw x 2)

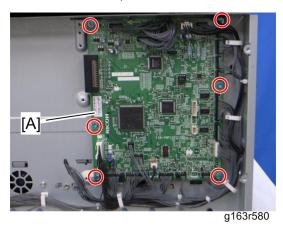


g163r579a

4. Controller board [C] (screw x 6)

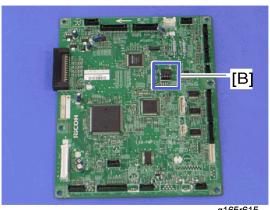
## EGB (Engine Board)

- 1. Rear cover (**p**.23)
- 2. Controller board ( p.71)



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



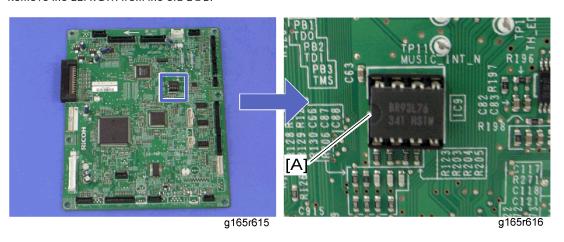


g165r615

4. EEPROM [B]

### When installing the new EGB

1. Remove the EEPROM from the old EGB.



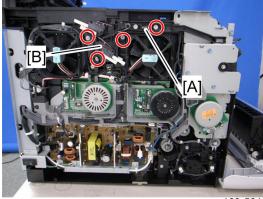
- 2. Install the removed EEPROM on the new EGB with the mark [A] pointing to the left side of the board after you replace the EGB.
- 3. Replace the EEPROM if the EEPROM on the old EGB is defective.

### **ACAUTION**

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

### Interlock Switches

- 1. Operation panel ( p.24)
- 2. Rear cover ( p.23)
- 3. Left cover ( p.27)

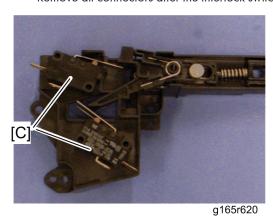


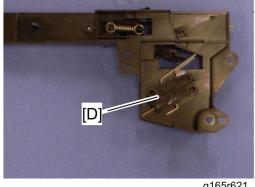
g163r581

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



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





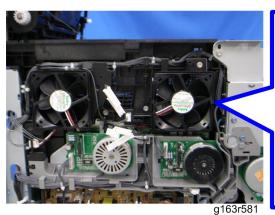
g165r621

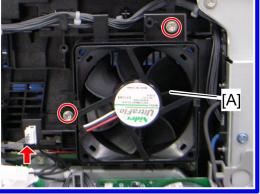
6. Two interlock switches [C] at the outside of the base and one interlock switch [D] at the inside of the base (hooks)

## **Fusing Fan Motor**

1. Operation panel ( p.24)

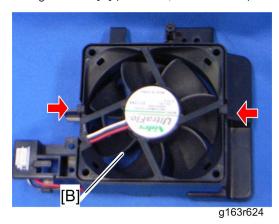
- 2. Rear cover ( p.23)
- 3. Left cover ( p.27)
- 4. Interlock switch base ( p.74)





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



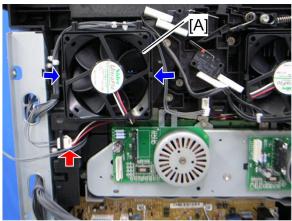
6. Fusing fan motor [B] (hooks, connector x 1)

## **ACAUTION**

- 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.24)
- 2. Rear cover ( p.23)
- 3. Left cover ( p.27)



g163r607

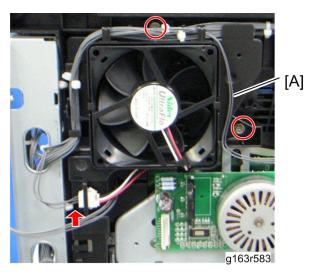
4. LSU fan motor [A] (hooks, connector x 1)

### **ACAUTION**

- 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.24)
- 2. Rear cover ( p.23)
- 3. Left cover ( p.27)
- 4. Controller box cover ( p.71)
- 5. Disconnect the connector (CN305) on the EGB (clamp x 1).
- 6. Interlock switch base ( p.74)
- 7. Fusing fan base ( p.74)



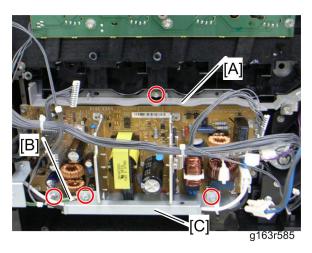
- 8. Take the harnesses aside around the LSU fan base [A].
- 9. LSU fan base [A] (screw x 2, connector x 1)
- 10. Drive unit ( p.35)



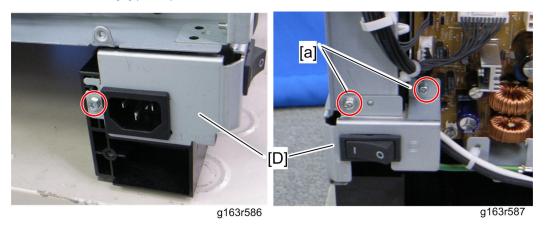
11. ID Chip Board [B] ( $\mathscr{F} \times 3$ , connector x 1)

## PSU

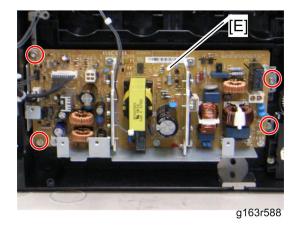
- 1. Operation panel ( p.24)
- 2. Rear cover ( p.23)
- 3. Left cover ( p.27)
- 4. Drive unit ( p.35)
- 5. LSU fan base ( p.75)



- 6. PSU guide [A] (screw x 1)
- 7. Ground cable [B] (screw x 1)
- 8. Power cord bracket [C] ( $\mathscr{F} \times 2$ )

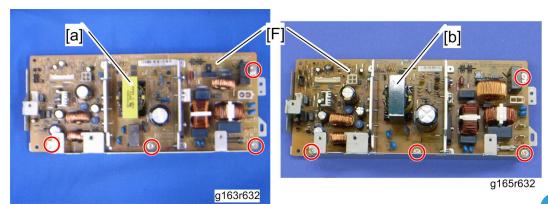


9. Power switch assembly [D] (washer screw [a] x 2, screw x 1, connector x 2)



### 4

#### 10. PSU assembly [E] (screw x 4, all connectors)



#### 11. PSU [F] (screw x 4)



- There are two types of PSUs for this model. Do not install a wrong PSU in the machine.
- PSU has yellow [a] on the transistor is for NA models and PSU has green [a] on the transistor is for EU models.

#### **Fuse**

There is the removable fuse on the PSU.

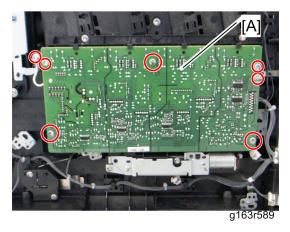
Fuse No.	Rating
FU101: NA	15 A, 125V
FU101: EU, ASIA	6.3A, 250V

## **ACAUTION**

- 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

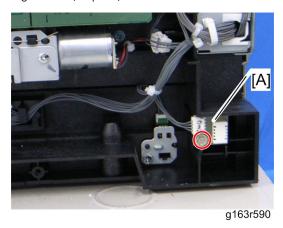
- 1. Remove all AIO cartridges.
- 1. Operation panel ( p.24)
- 2. Rear cover ( p.23)
- 3. Right cover (**☞**p.25)



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

## Temperature/Humidity Sensor

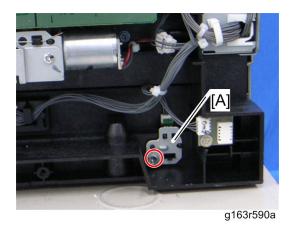
- 1. Operation panel ( p.24)
- 2. Rear cover (**p**.23)
- 3. Right cover ( p.25)



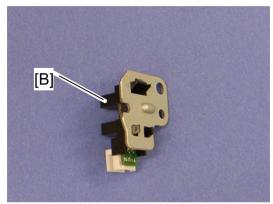
4. Temperature/Humidity sensor [A] (screw x 1, connector x 1)

### **Tray Set Sensor**

- 1. Operation panel ( p.24)
- 2. Rear cover ( p.23)
- 3. Right cover ( p.25)



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



g168r562a

5. Tray set sensor [B] (hooks)

#### **EEPROM**



• Replacement and Reinstallation procedures for the EEPROM are included in the "EGB (Engine Board)" replacement procedure. Refer to "EGB (Engine Board)" for details.

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

#### **EEPROM Setting**



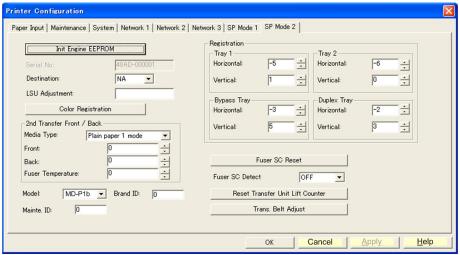
• Do the following steps 1 to 11 with the front cover of the machine open. After completing these steps, turn off the machine.

4

1. Open the front cover and turn on the machine.



• The machine may issue an error code (because the cover is open), but continue this procedure.



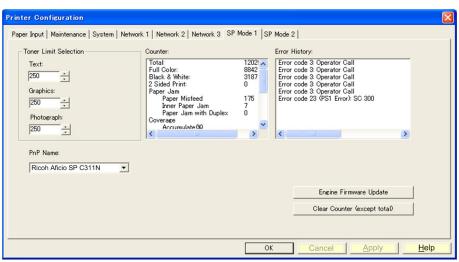
g163s511

- 2. Access the "SP Mode 2" tab.
- 3. Click the "Init Engine EEPROM" button to initialize the EEPROM.
- 4. Input the serial number in the "Serial No." box.



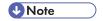
- Ask your supervisor about how to input the serial number in its box.
- 5. Select a destination from the "Destination" box.
- 6. Select a model from the "Model" box.
- 7. Click the "SP Mode 1" tab.





g163s510

- 8. Select a plug and play name from the "PnP Name" box.
- 9. Click the "SP Mode 2" tab.
- 10. Input the LSU (laser optics housing unit) setting values in the "LSU Adjustment" box.
- 11. Turn off the machine.
- 12. Turn on the machine with the front cover open.
- 13. Enter SP Mode 2.
- 14. Close the front cover.
- 15. Click "Trans. Belt Adjust" to adjust the ITB (Image Transfer Belt) unit.
- 16. Select "ON" or "OFF" for the consecutive fusing jam detection with the "Fuser SC Detect" box.



- The default setting is "OFF". Select "ON" only if the customer wants to use this feature.
- 17. Adjust the registration for each direction (vertical and horizontal) and trays with the "Registration" boxes if necessary.
- 18. Adjust the transfer roller bias and the temperature reduction of the fusing unit for each paper type and for the front and back sides with the "2nd Transfer Front/Back" boxes. The default settings for normal operation are all '0'.
- 19. Exit the "SP Mode".

## 5. System Maintenance Reference

## **Service Program**

See "Appendices" for "Smart Organizing Monitor" or "Service Program with Operation Panel"

#### Overview

There are two ways to execute the service program. One is to launch the SOM (Smart Organizing Monitor), which is provided with the printer driver, from your computer. The other is to execute the service program with the operation panel. For details, refer to the "Appendices" for the "Smart Organizing Monitor" or "Service Program with Operation Panel".

## **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 "Stop/Start" key, and then turn on the main switch of the printer with holding down the "Stop/Start" key.
- 2. Keep holding down the "Stop/Start" key until the "Alert LED" is blinking.

#### 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".

#### To Print the Configuration Page from the SOM

- 1. Turn on the machine and the PC.
- 2. Start "Smart Organizing Monitor".
- 3. Select "Configuration Page" in "List/Test Print" on the "User Tools" tab.
- 4. Click "Print", and then "Yes".
- 5. The configuration page is printed.

#### **Error Log**

The Error Log on the configuration page has the error logs (SC codes) and the following information. However, the following error codes cannot be stored after turning off the machine.

Error Code	Description
	Paper misfeed
Code 3	Paper is not detected in the tray.
Code 3	The loaded paper size does not match the setting.
	Some unit(s) is not correctly installed.
Code 4	Print/Data Error
Code 5	A consumable supply has run out
Code 6	Warning; Toner near end, Waste toner bottle near full, TM sensor cleaning, Fusing belt near end or Transfer belt near end
Code 7	Alert; Diagnostic Error

## Counter and Coverage (Printer Model Only)

The configuration page for the printer models has the paper jam and coverage counters in the bottom line, but these counter names are not printed on the configuration page. These counters give the following information;

### 0.0.0/0.0.0/0.0.0.0

Left three counters:	Feed jam counter, inner jam counter, duplex jam counter
Center four counters:	Recent coverage of K, C, M, Y
Right four counters:	Accumulated Coverage of K, C, M, Y

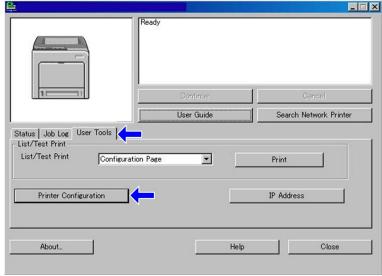
## Firmware Updating

### **ACAUTION**

• Do not turn off the main power of the machine during the firmware updating. If doing so, the engine board or controller board may be damaged.

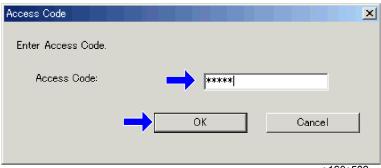
#### Controller Firmware

1. Start SOM.



g163s501

2. Click the "Printer Configuration" button on the "User Tools" tab.



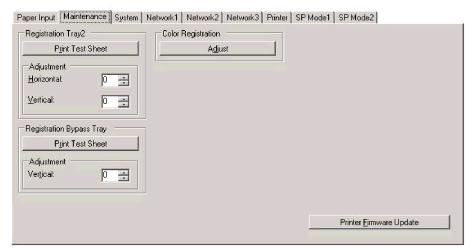
g168s502

3. Input the access code and click the "OK" button.



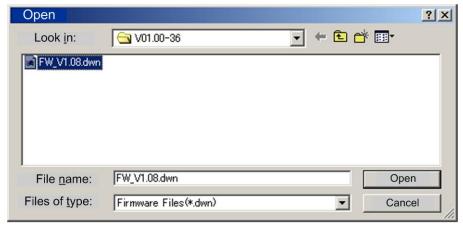


• Ask your supervisor for the access code.



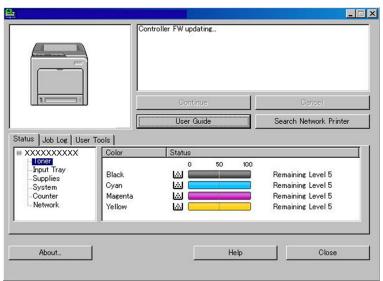
g165s504

4. Click the "Printer Firmware Update" button on the "Maintenance" tab.



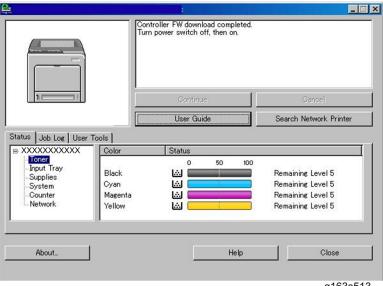
g165s512

5. Seek the location of the update file and select it, and then click the "Open" button.



g163s514

- 6. SOM shows "Controller FW updating..." and the Alert LED (red) on the printer starts blinking. (The Ready LED remains lit.)
- 7. Wait for a few minutes.



g163s513

8. When the update has finished, SOM shows "Controller FW download completed." and the Ready LED (green) on the printer starts blinking. (The Alert LED is still blinking.)



• If "Controller FW download completed" does not appear, the download failed. Try again. You can also switch from an Ethernet connection to a USB connection and see if that works. If you

still cannot download the firmware, it may be necessary to change the EGB and/or the controller board.

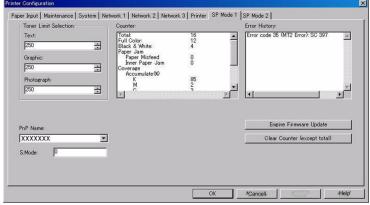
- If power failed during the download, try again. If you still cannot download the firmware, it may be necessary to change the EGB and/or the controller board.
- 9. Turn the printer off and on.

#### **Engine Firmware**

- 1. Start SOM.
- 2. Click the "Printer Configuration" button on the "User Tools" tab.
- 3. Input the access code and click the "OK" button.

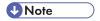


• Ask your supervisor for the access code.



g165s518

- 4. Click the "Engine Firmware Update" button in the "SP Mode 1" tab.
- 5. Seek the location of the update file and select it, and then click the "Open" button.
- 6. SOM shows "Engine FW updating..." and the Alert LED (red) on the printer starts blinking. (The Ready LED remains lit.)
- 7. Wait for a few minutes.
- 8. When the update has finished, SOM shows "Engine FW download completed." and the Ready LED (green) on the printer starts blinking. (The Alert LED is still blinking.)



If "Engine FW download completed" does not appear, the download failed. Try again. You can
also switch from an Ethernet connection to a USB connection and see if that works. If you still
cannot download the firmware, it may be necessary to change the EGB and/or the controller
board.

- If power failed during the download, try again. If you still cannot download the firmware, it may be necessary to change the EGB and/or the controller board.
- 9. Turn the printer off and on.

### **Boot Loader Firmware**

This is also listed on the configuration page, but this firmware is not updated in the field.

## 6. Troubleshooting

## **Troubleshooting Guide**

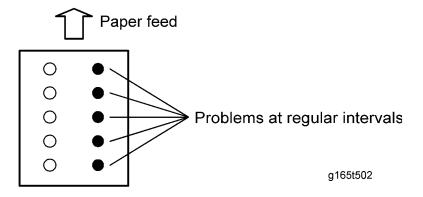
See "Appendices" for the following information:

- Error Messages
- Service Call Conditions

## **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).

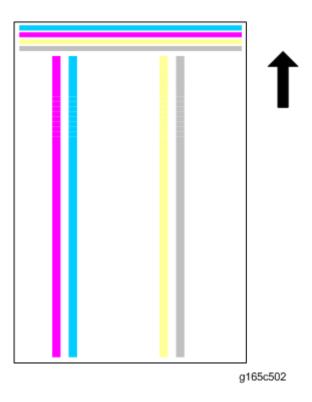


- · Abnormal image at 24-mm intervals: Image transfer belt unit
- Colored spots at 38-mm intervals: AIO cartridge (Development roller)
- Abnormal image at 60-mm intervals: Transfer roller
- Colored spots at 75-mm intervals: AIO cartridge (OPC drum)
- Abnormal image at 110-mm intervals: Fusing unit (Pressure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

### **Checking a Sample Printout**

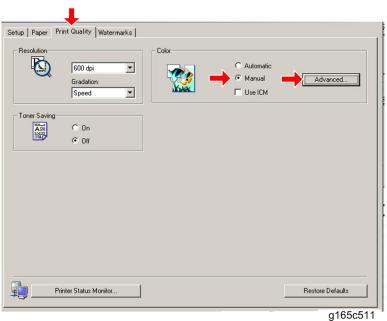
Print out a mono-color pattern (all K, C, M, or Y), which will clarify if the cause is a problem with one of the AIO cartridges, Image transfer belt, image transfer roller, or the fusing unit. A sample page is provided with the printer driver's CD. You can print the sample page from the printer driver's 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

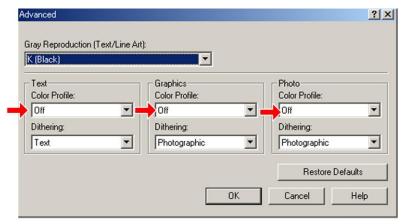


### Printer Driver Setting for Printing a Sample

1. Click "Properties" on the printer driver.



- 2. Click "Print Quality" tab.
- 3. Check "Manual" in the color setting.
- 4. Click "Advanced...".



g165c510

- 5. Select "Off" from the pull-down menu in the "Color Profile" of the "Text".
- 6. Select "Off" from the pull-down menu in the "Color Profile" of the "Graphics".
- 7. Select "Off" from the pull-down menu in the "Color Profile" of the "Photo".

# Model MD-P1 Machine Code: M040/M041

## **Appendices**

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## 1. Appendix: Specifications

## **General Specifications**

### Mainframe

MD-P1b: M040, MD-P1c: M041

Туре			Desktop	
Technology			Laser beam scanning and electro-photographic printing	
			Mono-component toner development	
			4-drum tandem method	
			600 x 600 dpi (Speed Mode)	
Resolution (dpi)			1200 x 600 dpi equivalent (Std Mode)	
			2400 x 600 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		LG, Exe	MD-P1b: Not supported MD -P1c: Auto	
Dimensions (W x D x H)			400 x 480 x 387 mm / 16.0 x 19.2 x 15.4 inch	
Weight			28.0 kg / 61.73 lb or less *Includes consumables.	

		Std Tray	500 sheets		
	Standard	Bypass tray	100 sheet		
Input capacity	Op. Paper Tray	Paper Feed Unit	MD-P1b/c: 500 sheets x 1		
	Max	1	Up to 1,100 sheets		
Output capacity	Standard Tray	Face down	Up to 150 sheets (A4/LT, 80g/m <sup>2</sup> or 20lb)		
	Standard Tr	ay	A4, B5, A5, Legal, Letter, Executive, Foolscap, Folio, F (8"x13"), 148mm x 210mm (5.8"x8.3")		
Input Paper Size	Bypass Tray		A4, B5, A5, Legal, Letter, HLT, Executive, Foolscap, Folio, F(8"x13"), B6, A6  Custom size: Min. 90mm x 148mm (3.6" x 5.8"), Max. 216mm x 356mm (8.64" x 14.24")		
	Op. Paper Tray		A4, Letter		
	Std.		Plain Paper, Recycle Paper, Pre-punched Paper, Thin Paper, Color Paper, Letterhead, Preprinted, Thinner Paper		
Media Type		Bypass Tray	Plain Paper, Recycled Paper, Application Paper, Envelope, Glossy, Thick Paper, Label, Thin Paper, Colo Paper, Letterhead, Preprinted, Thinner Paper		
		Op.Paper Feed Unit	Plain Paper, Recycled Paper, Pre-punched Paper, Thin Paper, Color Paper, Letterhead, Preprinted, Thinner Paper		
	Standard Tray		60-105g/m² (16-28lb)		
Paper Weight	Bypass tray		60-200g/m² (16-40lb)		
	Op. Paper Tray	Paper Feed Unit	60-105g/m² (16-28lb)		
Rating Power	NA version		120V, 60Hz		
Spec.	EU version		230V, 50/60Hz		

Power Consumption	NA	Max.	1300W or less
	version	Energy Saver	15 W or less
		Max.	1300W or less
	EU version	Energy Saver	15 W or less
Warm-up Time		,	30 sec or less (from power on)
	Sleep Mode		Adjustable
Energy Save Mode			(off/ 1 / 5 / 15 / 30 / 45 / 60 min.: default 15 min)
	Low Power Mode		10 sec (Uses approx 100W)

## Option

## **Paper Feed Unit**

Paper Tray (500x1)	Paper Size	A4,Letter		
	Paper Weight	60-105g/m² (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**

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

Туре		SEF/ Size					
			Std. Tray	Option PFU	Bypass Tray	Auto. Dup.	
	A4	SEF	210x297	Α	А	В	Y
	A4	LEF	297x210	N	N	N	Ν
	D.F.	SEF	182x257	А	N	В	Y
B5	БЭ	LEF	257x182	N	N	N	Ν
Dlain Dansan	A 5	SEF	148x210	А	N	В	Ν
riain raper	Plain Paper A5	LEF	210x148	N	N	N	Ν
	D.4	SEF	128x182	N	N	В	Ν
A6	БО	LEF	182x128	N	N	N	Ν
	A 4	SEF	105x148	N	N	В	N
	LEF	148x105	N	N	N	N	

		SEF/			Input Tray			
Тур	pe	LEF	Size	Std. Tray	Option PFU	Bypass Tray	Auto. Dup.	
	DLT	SEF	11" x 17"	N	N	N	N	
	Legal	SEF	8 1/2″x14″	А	N	В	Υ	
	1 - 11 - 1	SEF	8 1/2″x11″	А	Α	В	Y	
	Letter	LEF	11"x 8 1/2"	N	N	N	N	
	Half Letter	SEF	5 1/2" x 8 1/2"	N	N	С	N	
Plain Paper		SEF	7 1/4″x10 1/2″	А	N	В	Y	
	Executive	LEF	10 1/2″x7 1/4″	N	N	N	N	
	F	SEF	8" x 13"	В	N	В	N	
	Foolscap	SEF	8 1/2" x 13"	В	N	В	N	
	Folio	SEF	8 1/4" x 13"	В	N	В	N	
	8 Kai	SEF	267 x 390	N	N	N	N	
Plain Paper	16 Kai	SEF	195 x 267	С	N	С	N	
		LEF	267 x 195	N	N	N	N	
	Com10	SEF	4 1/8" x 9 1/2"	N	N	С	N	
Envelope	Monarch	SEF	3 7/8" x 7 1/2"	N	N	С	N	
Livelope	C6	SEF	114 x 162	N	N	С	N	
	C5	SEF	162 x 229	N	N	С	N	
	DL Env	SEF	110 x 220	N	N	С	N	

Туре		SEF/ LEF	Size	Input Tray			
				Std. Tray	Option PFU	Bypass Tray	Auto. Dup.
Custom		Width	90-148mm (3.6"x 5.8")	Z	Ν	С	N
			148-216mm (5.8" x 8.5")	С	Ν	С	N
		Length	148-210mm (3.6"x 5.8")	Z	Ν	С	N
			210-356mm (5.8"x 14.2")	С	Ν	С	N

# 2. Appendix: Preventive Maintenance

# **Preventive Maintenance**

# **User Replaceable Items**

ltem	Yield
Print Cartridge (AIO)	Starter/Short: Approx. 2.5 k prints/cartridge Long: 6.5 k for BK/ 6.0 k for CMY prints/cartridge
Maintenance Kit	Fusing Unit  Transfer Roller Unit  Approx. 90 k prints/ unit
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 yield 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 yield values may change depending on the circumstances and printing conditions.
- The yields 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-andwhite

# 3. Appendix: Troubleshooting Guide

# **Error Messages**

#### Overview

The error messages will be displayed in the GUI of SOM or on the LCD of the operation panel if the machine has a problem. These can be recovered by a customer.

# **Error Messages List**

000	Cover Open
	The front or top cover is open.
	Close the front or top cover.
	2. Replace the interlock switches or actuator mechanism.

010	AIO Set Error (Black)
011	AIO Set Error (Magenta)
012	AIO Set Error (Cyan)
013	AIO Set Error (Yellow)
	Black AIO not set     Defective connection of the ID chip terminal on the black AIO
	<ol> <li>Install the AIO (black, magenta, cyan or yellow).</li> <li>Reinstall or replace the AIO (black, magenta, cyan or yellow).</li> </ol>

#### Waste Toner Bottle Set Error

- Waste toner bottle not set
- Disconnected or defective harness of the waste toner bottle set sensor

014

- Defective waste toner bottle set sensor
- 1. Install the waste toner bottle.
- 2. Check or replace the harness of the waste toner bottle set sensor.
- 3. Replace the waste toner bottle set sensor.

## ITB (Image Transfer Belt) Unit Set Error

015

- ITB unit not set
- The machine does not detect any signal from the TM sensors while the ITB contact motor is initializing.

Install the ITB unit.

#### Fusing Unit Set Error

Fusing unit not set

016

- Disconnected or defective harness of the fusing unit
- 1. Install the fusing unit.
- 1. Check or replace the harness of the fusing unit
- 2. Replace the fusing unit.

#### Tray/Paper Selection Error

- No paper in the tray or tray not set in the machine
- Paper size requested by the job does not match the paper in the tray
- 1. Install the tray or put the correct size paper in the tray.
- 2. Check the paper setting in the SOM (Smart Organizing Monitor) for printer models or user menu mode for MF models.

Paper Selection Error: Feed and Exit

031

- Paper size requested by the job does not match the paper in the tray
- Selection error for the paper feed and paper exit location in duplex mode

Check the paper feed and exit location in the SOM (Smart Organizing Monitor) for printer models or user menu mode for MF models.

Jam Error: No Feed from Tray 1

050

Paper slipped

Remove the paper jam at tray 1.

Jam Error: No Feed from By-pass tray

051

- Paper slipped
- Defective by-pass solenoid

Remove the paper jam at by-pass tray.

Jam Error: No Feed from Optional Tray

052

• Paper slipped

Remove the paper jam at the optional tray (Tray 2).

Jam Error: No Feed from Duplex Path

054

• Paper slipped

Remove the paper jam at the duplex path.

Inner Jam Error: Registration/Paper Exit

A sheet of paper stays at the registration sensor or paper exit sensor.

055

- Paper slipped
- · Paper double feed

Remove the paper jam at the registration sensor or paper exit sensor.

056	Paper Exit Jam Error: Paper Exit/ Fusing Unit
	A sheet of paper stays at the paper exit sensor or winds around the rollers in the fusing unit.
	Paper slipped
	A sheet of paper is wound around the rollers in the fusing unit
	Remove the paper jam at the paper exit sensor or in the fusing unit.

Paper Exit Jam Error: Duplex

A sheet of paper stays at the duplex sensor or winds around the rollers in the duplex path.

• Paper slipped
• A sheet of paper is wound around the rollers in the duplex path.

Remove the paper jam at the paper exit sensor or in the duplex patht.

070	Printing Error: No Paper
	No paper in the tray
	Put paper in the tray.

080	Toner Near End: Black AIO
081	Toner End: Black AIO
	Black toner near-end or end
	Replace the black AIO.

082	Toner Near End: Magenta AIO
083	Toner End: Magenta AIO
	Magenta toner near-end or end
	Replace the magenta AIO.

084	Toner Near End: Cyan AIO
085	Toner End: Cyan AIO

	Cyan toner near-end or end
	Replace the Cyan AIO.

086	Toner Near End: Yellow AIO
087	Toner End: Yellow AIO
	Yellow toner near-end or end
	Replace the yellow AIO.

088	Waste Toner Bottle: Near Full
089	Waste Toner Bottle: Full
	Waste toner bottle near-full or full
	Replace the waste toner bottle.

090	ITB (Image Transfer Belt) Unit: Near End
091	ITB Unit: End
	ITB unit near end or end
	Replace the ITB unit.

	092	Fusing Unit: Near End	
Fusing unit near end  Replace the fusing unit.		Fusing unit near end	
		Replace the fusing unit.	

# Color Registration (MUSIC) Error Color registration (MUSIC) failure This error is not displayed even if this error occurs. It is just logged. This error is automatically recovered after the color registration (MUSIC) has been done successfully.

# **SC Conditions**

#### Summary

This machine issues an SC (Service Call) code if an error occurs on the machine. The error code can be seen with the SOM ( "p.27") or LCD on 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.
  - Enter SP mode.
  - Click "Fuser SC Reset" in SOM, and then turn the main power switch off and on.

# **Engine SC**

#### SC 1xx (Other Error)

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)

	Polygon motor error 1: ON timeout			
202	The polygon mirror motor does not reach the targeted operating speed within 5 sec. after turning on or changing speed			
	Polygon motor error 2: OFF timeout			
203	The polygon mirror motor does not leave the READY status within 3 sec. after the polygon motor switched off.			
	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			
	<ul> <li>Polygon motor/driver board defective</li> </ul>			
204	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).			

	Laser Synchronizing Detection Error: [K]/[Y]		
220	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.		
	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		
222	Defective laser synchronizing detector		
	Defective LDB		
	Defective EGB		
	1. Check the connectors.		
	2. Replace the laser optics unit.		
	3. Replace the EGB.		

#### LD error

The IPU (EGB) detects a problem at the LD unit.

240

- Worn-out LD
- Disconnected or broken harness of the LD.
- 1. Replace the laser optics unit.

# SC 3xx (Charge Error)

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.

#### 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.)

396

- Disconnected or defective motor harness.
- Motor slips due to excessive load
  - 1. Check the harness from the black drum motor. Replace it if necessary.

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.)

397

- 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)

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

445

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.

#### 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.

480

- Disconnected or defective harness
- Defective agitator motor
  - 1. Check or replace the harness.
  - 2. Replace the agitator motor.

## C 5xx (Motor and Fusing Error)

#### 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.)

500

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

#### 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.

#### 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.

531

- Disconnected or defective motor harness.
- Defective LSU fan motor
  - 1. Check or replace the motor harness.
  - 2. Replace the fusing fan motor.

#### 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.

532

- Disconnected or defective motor harness.
- Defective air intake fan motor
  - 1. Check or replace the motor harness.
  - 1. Replace the air intake fan motor.

#### Thermistor Error

The thermistor output is less than 0°C for 6 seconds.

- Disconnected thermistor
- Defective harness connection

541

- 1. Check the harness connection of the thermistor.
- 2. Replace the fusing unit.

## **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.

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.

# Mportant !

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.

#### 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.

543

- Defective I/O control (EGB)
- Defective EGB
  - 1. Replace the EGB

# Mportant !

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.

#### 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

545

- Defective fusing lamp
  - 1. Replace the fusing unit.
  - 2. Replace the fusing lamp.

## Mportant !

 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.

#### 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.

547

- Defective fusing lamp relay
  - 1. Turn the main power switch off and on.

# Mportant (

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.

#### Low Temperature Error

The center thermistor detects 90°C or less for 4 seconds.

- · Defective fusing lamp
- Defective thermistor

548

- 1. Replace the fusing unit.
- 2. Replace the fusing lamp.

#### **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.

#### 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.

## Mportant !

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.

#### 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.

559

557

- 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.

## **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 cannot be operated.

#### SC 6xx (Communication and Other Error)

#### **EEPROM Error**

An unexpected value exists in the initialization flag of the EEPROM

669

- EEPROM not initialized
- Defective EEPROM
  - 1. Initialize the EEPROM.
  - 2. Replace the EEPROM.
  - 3. Replace the EGB.

GAVD Communication Error

The ID of the GAVD is not identified during initialization.

690

The chip ID of the GAVD cannot be detected by the machine at power-on.

- Defective EGB
  - 1. Replace the EGB.

# Controller SC

#### SC8xx

#### Service Cycle Power

- Incorrect combination of EGB and controller board.
- An unexpected error occurs in the EEPROM on the controller board.

- Controller board defective
  - 1. Install the correct EGB and controller boards for this machine.
  - 2. Replace the controller board

# USB/ Network Device Error An interface error in the USB connection or NIB connection occurs. Controller board detective 1. Replace the controller board.

# EEPROM Error An EEPROM check error at power-on occurs. Controller board detective 1. Replace the controller board.

	On-Board Memory Check Error
827	An on-board memory check error at power-on occurs.
027	Controller board detective
	Replace the controller board.

	ROM Checksum Error	
828 A ROM checksum error at power-on occurs.		
	1. Replace the controller board.	

# 4. Appendix: SP Mode Tables

# **Smart Organizing Monitor**

#### Overview

SOM (Smart Organizing Monitor) is a utility which can check the status of a printer and set up a printer from a PC. This utility is executed from a printer driver.

#### Printer Driver Installation

- 1. Close all applications currently running.
- 2. Check the following:
  - The printer's USB cable is disconnected
  - The printer's main power switch is turned off
- 3. Insert the CD-ROM into the CD-ROM drive.

The installer starts.

- 4. Select the interface language, and then click [OK].
- 5. Click [PCL 6 Printer Driver].

The software license agreement appears.

- 6. After reading the agreement, click [I accept the agreement.], and then click [Next >].
- 7. In the [Method to install printer driver] dialog box, clear the [Search for network printers.] check box, select the [Connect a printer using a USB cable.] check box, and then click [Next >].
- 8. Select this printer, and then click [Next >].
  - A message appears, asking you to check that the USB cable is not connected and that the printer's main power switch is turned to off.
- 9. Check the USB cable and the printer status, and then click [Next >].
- 10. When the [<Auto-detect USB Port>] dialog box appears, connect this printer to the computer using a USB cable, and then turn the printer's main power switch on.
  - USB auto detection begins.
- 11. When the dialog box asking you to use this printer as the default printer appears, click either key.
- 12. When a message appears informing you that the installation was successfully completed, click [Finish].

# **Entering the Printer Configuration**

To enter the service system setting;

1. Launch the SOM utility.

Take one of the following steps (a) or (b).

(a)

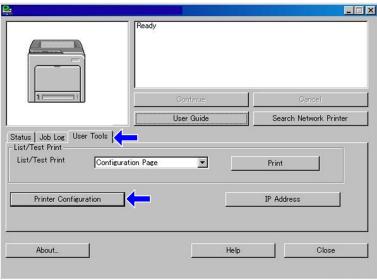
- Open the Properties of the printer driver.
- Click [Printing Preferences] on the Basic tab
- Click [Smart Organizing Monitor...] on the Printing Preferences tab.

(b)

- Open the Properties of the printer driver.
- Click [Smart Organizing Monitor...], on [Accessories], [Advanced Option] or [Paper Size Settings] tab.



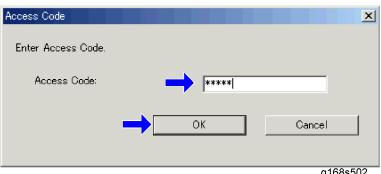
 To display the SOM dialog box automatically when any error occurs, check [Display Smart Organizing Monitor automatically] check box on [Advanced Options] tab.



g163s501

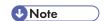
- 2. Click the "User Tools" tab.
- 3. Click "Printer Configuration".
- 4. The "Access Code" entry dialog appears.



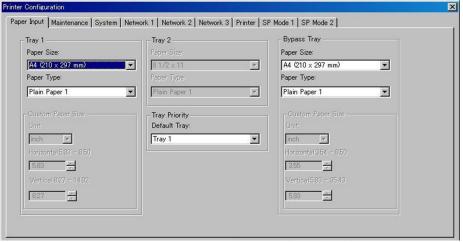


g168s502

5. Input the access code and click the "OK" button.



- Ask your supervisor for the access code.
- 6. Click the "OK" button.



g163s503

7. The "Printer Configuration" GUI appears.

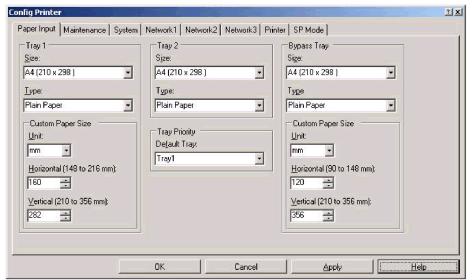
# **Printer Configuration Menu List**

The SOM has the following printer configuration menus. Each menu contains various setting items. The details of each setting item are explained in this section below.

Menu	Description	
Paper Input	Adjusts the paper type and size settings.	
Maintenance	Adjusts the image registration and executes the color registration adjustment.	

System	Adjusts the system settings of the machine.	
Network 1	Adjusts network settings (Information, Interface, TCP/IP).	
Network 2	Adjusts network settings (IPX, SMTP).	
Network 3 Adjusts network settings (SNMP, Apple Talk).		
Printer	Adjusts the printer driver settings (PCL, PS).	
SP mode 1 Adjusts and executes service program modes.		
SP mode 2	Adjusts and executes service program modes.	

# **Paper Input**



g165s503

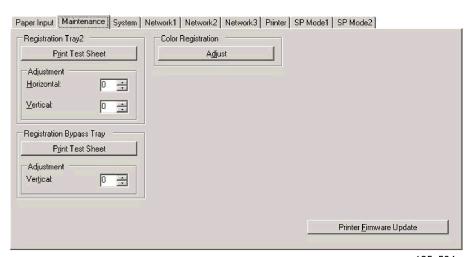
Item	Selections	Remarks
Tray 1 Paper Size (standard)	A4 */B5/A5/B6/A6/Legal/Letter*/Half Letter/Executive/8" x 13"/8.5" x 13"/Folio/Com10/Monarch/C5Env/C6Env/DLEnv/16K/Custom Paper/Postcard/Reply-paid Postcard/Any size	*: Default (NA: Letter, EU: A4)  The selectable paper sizes depend on the model.  For details, refer to the "Supported Paper Size List".

Item	Selections	Remarks
Tray 1 Paper type (standard)	Thin Paper(60-75g/m²)/ Plain Paper */ Plain Paper(90-105g/m²)/ Recycled/ Color/ Preprinted/ Prepunched/ Thick Paper (105-160g/m²)/ Letterhead/ Bond/ Cardstock/ Labels/ Envelope/ Any type	*: Default The selectable paper types depend on the model. For details, refer to the "Supported Paper Types" in the "Specifications" chapter.
Tray 2 Paper Size (optional)	A4 */ Letter *	*: Default (NA: Letter, EU: A4)
Tray 2 Paper type (optional)  Thin Paper(60-75g/m²)/ Plain*/ Plain Paper(90-105g/m²)/ Recycled/ Color/ Preprinted Paper/ Prepunched Paper/ Letterhead		-
Custom Size unit	Mm */ Inch *	If the paper size factory default is A4, then the custom size factory default unit is mm.  If the paper size factory default is Letter, then the custom size factory default unit is inch.
Custom Horizontal	90*-216mm	3.54 – 8.50 inch. Precision is two digits after the decimal point in inch or one digit after the decimal point in mm.  If an input value is more than the maximum value, then it will be treated as the maximum value is less than the minimum value, then it will be treated as the minimum value.

Item	Selections	Remarks
		5.83 – 14.02 inch. Precision is two digits after the decimal point in inch or one digit after the decimal point in mm.
Custom Vertical	148*-356mm	If an input value is more than the maximum value, then it will be treated as the maximum value.
		If an input value is less than the minimum value, then it will be treated as the minimum value.
	MPT	Not used
Priority Tray	Tray1 *	
	Tray2	-

<sup>&</sup>quot;\*" indicates the factory default value.

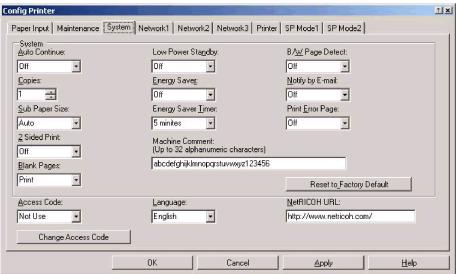
# Maintenance



g165s504

Group (Tab)	Item	Selections	Remarks
	Print Test Sheet button		Sends a command to the printer to print a test sheet.  It is disabled when tray 2 is not installed.
Registration Tray 2	Adjustment Horizontal	(-15 to +15) step	0.34 mm per step. Range is -5 mm to +5 mm.  If the machine settings are reset to the factory defaults, this value does not change.
	Adjustment Vertical	(-15 to +15) step	0.24 mm per step. Range is -3.6 mm to +3.6 mm  If the machine settings are reset to the factory defaults, this value does not change.
Registration	Print Test Sheet button		Sends a command to printer to print a test sheet.
Bypass Tray	Adjustment Vertical	(-15 to +15) step	0.24 mm per step. Range is -3.6 mm to +3.6 mm
	Adjust button		The engine will do color registration and density tuning automatically.
Color			The printer will warm up automatically after this setting is changed.
Registration			The "color registration" in User Tools includes only a "Fine Adjustment". In service support, never fail to use SP mode 2 including both fine and rough adjustment.
FW Update button	FW update		This button is for updating the controller firmware. The button for updating the engine firmware is located in the "SP Mode 1" tab.

<sup>&</sup>quot;\*" indicates the factory default value.



g165s505

Item	Selections	Remarks
Auto Continue	On/Off *	
Copies	1*-999	Default is 1.
Sub Paper Size	Off */ Auto	A4 Letter override
2 Sided Print	Off */ Short Edge Bind/ Long Edge Bind	
Blank Page Print	Print */ Not Print	"Manual Duplex/Cover" has higher priority than the "Blank Pages" setting.
Laur Dannan Standallau	On	
Low Power Standby	Off *	
E	On *	
Energy Saver	Off	

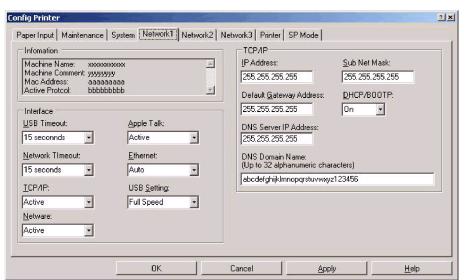
ltem	Selections	Remarks
	5min *	
- O - T-	15min	
Energy Saver Time	30min	
	60min	
D AM David Data at	On *	
B/W Page Detect	Off	
Ni at falla Farati	On	
Notify by E-mail	Off *	
D: . F D	On	
Print Error Page	Off *	
Machine Comment	Null string*	Up to 32 alphanumeric characters.
Widchine Commen		The factory default is 'null string'.
Restore to Factory Default button		Restores all settings to the factory default settings for the market area setting.

ltem	Selections	Remarks	
	English *		
	French		
	German		
	Italian		
	Spanish		
	Dutch		
	Danish		
	Swedish		
1	Norwegian	The factory setting is English if the market is	
Language	Portuguese	NA or EU or ASIA.	
	Polish		
	Czech		
	Hungarian		
	Finnish		
	Japanese		
	Simplified Chinese		
	Traditional Chinese		
	Russian		
	Used *		
Access Code	Not used		
Access code change button		Changes the access code. The button is grey if the Access code is set to "not used".	
NetRicoh URL edit box	http://www.netricoh.com/*		

<sup>&</sup>quot;\*" indicates the factory default value.

## 4

#### Network 1



g165s506

Group (Tab)	Item	Selections	Remarks
Information H	Machine Name		String length is 32
	Machine Comment		String length is 32
	Hardware Type		
	Mac Address		
	Active Protocol	TCP/IP, Netware, Apple Talk	List of 3 protocols when they are active.

Group (Tab)	Item	Selections	Remarks
TCP/IP	IP address	xxx.xxx.xxx	This setting is not available if DHCP is enabled.  If this setting is changed, the printer power must be turned off/on for the new setting to take effect.  The default setting is "192.0.0.192" when DHCP is off.
	Subnet mask	xxx.xxx.xxx	This setting is not available if DHCP is enabled. If this setting is changed, the printer power must be turned off/on for the new setting to take effect.  Will show all zero if network initialization is not finished. Any change will be ignored before the end of network initialization.  The default setting is "255.255.255.0" when DHCP is off.
TCP/IP	Default Gateway address	xxx.xxx.xxx	This setting is not available if DHCP is enabled. If this setting is changed, the printer power must be turned off/on for the new setting to take effect.  Will show all zero if network initialization is not finished. Any change will be ignored before the end of network initialization.  The default setting is "192.0.0.192" when DHCP is off.
TCP/IP	DHCP	On */ Off	If this setting is changed, the printer power must be turned off/on for the new setting to take effect.

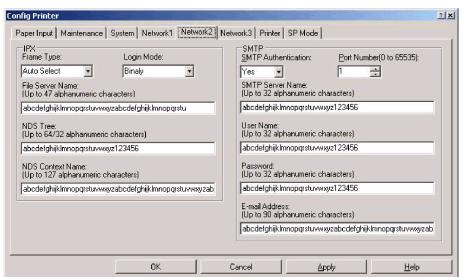
Group (Tab)	Item	Selections	Remarks
	DNS Server IP Address	xxx.xxx.xxx	Up to 32 alphanumeric characters. This setting is not available if DHCP is enabled.
			The default setting is "0.0.0.0" when DHCP is off.
TCP/IP			The setting when DHCP is changed from on to off is the previous setting when DHCP was on.
			If this setting is changed, the printer power must be turned off/on for the new setting to take effect.
	DNS Domain Name		Up to 32 alphanumeric characters. This setting is not available if DHCP is enabled. The default setting when DHCP is off is null string.
			The setting when DHCP is changed from on to off is the previous setting when DHCP was on.
			If this setting is changed, the printer power must be turned off/on for the new setting to take effect.

Group (Tab)	Item	Selections	Remarks
Interface  A	USB I/O Timeout	15 60 * 300	
	Network I/O Timeout	15 60 * 300	
	TCP/IP	Active* Not Active	If this setting is changed, the printer power must be turned off/on for the new setting to take effect.
	Netware	Active* Not Active	If this setting is changed, the printer power must be turned off/on for the new setting to take effect.
	Apple Talk	Active* Not Active	If this setting is changed, the printer power must be turned off/on for the new setting to take effect.
	Ethernet speed	Auto*  10M half  10M full  100M half  100M full	
	USB Setting	Full Speed Auto *	If this setting is changed, the printer power must be turned off/on for the new setting to take effect.

<sup>&</sup>quot;\*" indicates the factory default value.

#### 4

#### Network 2



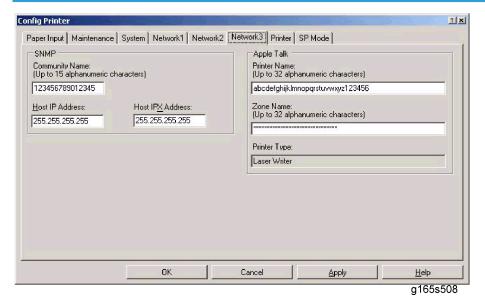
g165s507

Group (Tab)	Item	Selections	Remarks
	Frame Type	Auto Select*	If this setting is changed, the printer power must be turned off/on for the new setting to take effect.
		Ethernet II	
	Login Mode	Bindery	If this setting is changed, the printer power must be turned off/on for the new setting to take effect.
		Both	
		NDS*	
IPX	File Server Name	Null string*	Up to 47 alphanumeric characters.  The factory default is 'null string'.  If this setting is changed, the printer power must be turned off/on for the new setting to take effect.
	NDS Tree	Null string*	Up to 48 alphanumeric characters.  The factory default is 'null string'.  If this setting is changed, the printer power must be turned off/on for the new setting to take effect.
	NDS Context Name	Null string*	Up to 127 alphanumeric characters.  The factory default is 'null string'.  If this setting is changed, the printer power must be turned off/on for the new setting to take effect.

Group (Tab)	Item	Selections	Remarks
	SMTP Authentication	Yes*	
		No	
	SMTP Server Name	Null string*	Up to 64 alpha numeric characters.  The factory default is 'null string'.
	Port Number	25*	1 to 65535 The factory default is 25.
	User Name	Null string*	Up to 32 alphanumeric characters. The factory default is 'null string'.
	Password	Null string*	Up to 32 alphanumeric characters.  The factory default is 'null string'.  User-input characters and characters read back from the printer will show "*" in order to protect the user password.
	E-mail Address	Null string*	Up to 64 alphanumeric characters. (address for receiving e-mail) The factory default is 'null string'.
	Administrator e- mail address	Null string*	Up to 64 alphanumeric characters.  The factory default is 'null string'.
	SMTP server		

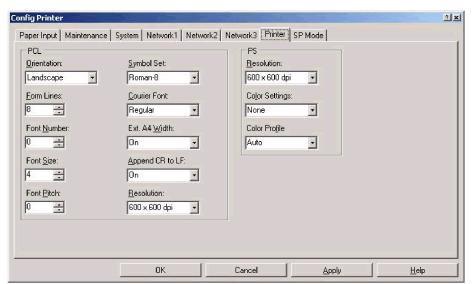
<sup>&</sup>quot;\*" indicates the factory default value.





Group (Tab)	Item	Selections	Remarks
	Community Name	Null string *	Up to 15 alphanumeric characters.  The factory default is 'null string'.
	Host IP Address	0.0.0.0 *	The factory default is 0.0.0.0  If this setting is changed, the printer power must be turned off/on for the new setting to take effect.
SNMP	Host IPX Address	"FFFFFFFFFFFFFF" *	String length is 20.  The factory default is 20 "F" characters.  Valid characters are:  "0123456789ABCDEFabcdef"; not case sensitive when setting but the capital character will change to lower case when reading.  If this setting is changed, the printer power must be turned off/on for the new setting to take effect.  A valid string length is 0 or 20. String lengths of 1 – 19 will cause the setting to be invalid. But SOM will not create an error message when the string length is in the range of 1 – 19. The invalid string can be saved at the printer side.
Apple Talk	Printer Name	"PublicWritter" *	String of maximum length 32.  The factory default string is "PublicWritter".  If this setting is changed, the printer power must be turned off/on for the new setting to take effect.
	Zone Name	п*п	Default is "*". Up to 32 in length.  The factory default string is "*".  If this setting is changed, the printer power must be turned off/on for the new setting to take effect.

<sup>&</sup>quot;\*" indicates the factory default value.



g165s509

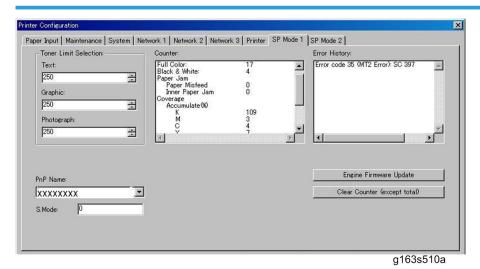
Group (Tab)	Item	Selections	Remarks
	Orientation	Portrait *	
	Orientation	Landscape	
PCL	Form Lines	5 to 128 by 1	If the machine settings are reset to the factory defaults, this value does not change.
TCL	Font Number	0*-89	The factory default value is 0.
	Font Size	4 to 999.75 by 0.25 (12 *)	The factory default value is 12.
	Font Pitch	0.44 to 99.99 by 0.01 (10 *)	The factory default value is 10.

Group (Tab)	Item	Selections	Remarks
Group (Tab)	Item	Roman-8*, Roman-9, ISO L1, ISO L2, ISO L5, PC-8, PC-8 D/N, PC-850, PC-852, PC-858, PC-8 TK, Win L1, Win L2, Win L5, Desktop, PS Text, VN Intl,	Remarks
PCL	Symbol Set	VN US, MS Publ, Math-8, PS Math, VN Math, Pi Font, Legal, ISO 4, ISO 6, ISO 11, ISO 15, ISO 17, ISO 21, ISO 60, ISO 69, Win 3.0, MC Text, ISO L6, ISO L9, PC-775, PC-1004,	
	Courier Font	Regular*	
	Ext. A4 Width	Off*	
PCL	Append CR to	Off On *	
	Resolution	600x600dpi 1bit*	
		600x600dpi 4bits	

Group (Tab)	Item	Selections	Remarks
	Resolution	600 x 600 dpi*	
		600 x 600 dpi 2bits	
		600 x 600 dpi 4bits	
PS	Color Profile	Off	
		Solid color *	
		Presentation	
		Photographic	

<sup>&</sup>quot;\*" indicates the factory default value.

#### SP Mode 1



 Item
 Selections
 Remarks

 Text
 This means "toner limit". Should by text/graphic/image.

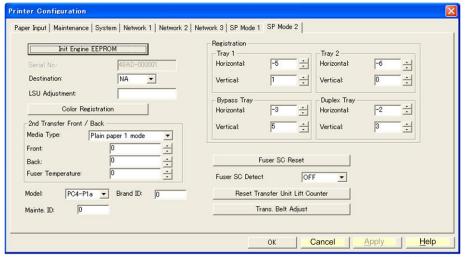
 Image
 [200 to 400 / 250 (default) / 10/step]

Item	Selections	Remarks	
	Total	Total printed page counter	
	Color	Total printed color page counter	
	B/W	Total printed mono page counter	
	Duplex	Total printed duplex page counter.	
	Paper Jam - Misfeed	Misfeed jam counter [0 to 128]	
	Paper Jam - Inner	Counter for jams inside the machine [0 to 128]	
Print Side Volume	Paper Jam - Duplex	Duplex jam counter [0 to 128] Always 0 if the printer does not have a duplex unit.	
	Recent K, M, C, Y coverage	Recent K coverage = K data got from the engine (the unit is 1024 dots) / A4 full coverage dot number (the unit is 1024 dots).	
		A4 full coverage dot number in units of 1024 dots is 4961*7016/1024.	
		Recent M, C, Y coverage uses the same equation as K, using the M, C, Y data from the engine.	
	Accumulate K, M, C, Y coverage	Added from recent coverage. Stored in the EEPROM.	
		Maximum 16 error codes.	
Error History	Error code listing	There is nothing displayed if there is no error code. If there is only one error code, then only one error code string is displayed.	
		Select a Plug in Play name from the dropdown list.	
PnP Name		The modified setting will only take effect after the printer power is turned off/on.	
		The printer will warm up automatically after this setting is changed.	

ltem	Selections	Remarks
S. Mode [0 to 7F]		This adjusts the M/A of toner.  Ox00: Normal (Default: no reduction)  0x06: 20% reduction  0x07: 10% reduction
Engine Firmware update button		Engine firmware update button
Clear Counter (except total)		This is used by Service. This clears all counters (except Total Counter).

<sup>&</sup>quot;\*" indicates the factory default value.

#### SP Mode 2



g165s511

ltem	Selections	Remarks
		This clears all counters except "Full Color" and "Black and White" in the total counter.
Init Engine EEPROM		When you click the [Init Engine EEPROM] button, the engine EEPROM is initialized.
		Turn the machine power off/on after you change this setting.

Item	Selections	Remarks	
Serial No.	11 characters	Displays and changes a serial number. (Character: alphanumeric, input length: 11 bytes) The printer will warm up automatically after this setting is changed.	
	1 byte.	Displays and changes a destination. It may damage the printer if you change this setting.  Turn the machine power off/on after you	
Destination	0:DOM (JPN), 1:NA, 2:EU,	change this setting.	
	3:China, 4:Taiwan, 5:AP, 6:LA	The printer will warm up automatically after this setting is changed.	
		SOM will show a blank space if the printer destination setting is unknown.	
LSU Adjustment	Input 160 bytes setting.	Character: alphanumeric "0-9", "a-f", "A-F", only valid data can be input.	
'	, ,	Input length: 160 bytes	
Color Registration		The engine will do color registration and density tuning automatically.	
button		The printer will warm up automatically after this setting is changed.	
2nd Transfer Front / Bac	ck		
	Display string only		
	0: Plain paper 1 mode		
	1: Plain paper 2 mode		
	2: Plain paper 3 mode		
	3: Reserved (not display)		
Media type	4: Thick stock 1 mode	Please select the media type.	
	5: Thick stock 2 mode		
	6: Thick stock 3 mode (Not used)		
	7: Thick stock 4 mode		
	8: Envelope 1 mode		

Item	Selections	Remarks		
		This adjusts the transfer roller current, based on the default value.		
Front	(-15 to +15)	The range of adjustment is from -15 [ $\mu$ A] to +15 [ $\mu$ A], in units of 1.		
		The printer will warm up automatically after this setting is changed.		
		This adjusts the transfer roller current, based on the default value.		
Back	(-15 to +15)	The range of adjustment is from -15 $[\mu A]$ to +15 $[\mu A]$ , in units of 1.		
		The printer will warm up automatically after this setting is changed.		
Fuser Temperature	(-15 to 0)	This adjusts the temperature of the fusing unit, based on the default value. The range of adjustment is from -15 [°C] to 0[°C], the unit is 2.		
		The printer will warm up automatically after this setting is changed. *2		
	Display string only	Displays the current model in a dropdown list.		
Model	2: MD-P1b 3: MD-P1c	Do not change this setting (Designed for Factory Use).		
		Displays the current brand ID number.		
Brand ID	00* - 7F	Do not change this setting (Designed for Factory Use).		
Mainte. ID	004 75	Displays the current maintenance ID number.		
Maine. ID	00* - 7F	Do not change this setting (Designed for Factory Use).		
Registration	Registration			

Item	Selections	Remarks
		1.32mm per step. Range is -15mm to +15mm.
	Horizontal	If the machine settings are reset to the factory defaults, this value does not change.
T 1		The printer will exit the energy saver state after this setting is changed.
Tray1		0.24mm per step. Range is -3.6mm to +3.6mm.
	Vertical	If the machine settings are reset to the factory defaults, this value does not change.
		The printer will exit the energy saver state after this setting is changed.
		1.32mm per step. Range is -5mm to +5mm.
	Horizontal (-15 to +15) step	If the machine settings are reset to the factory defaults, this value does not change.
		The printer will exit the energy saver state after this setting is changed.
Tray2	Vertical (-15 to +15) step	0.24mm per step. Range is -3.6mm to +3.6mm.
		If the machine settings are reset to the factory defaults, this value does not change.
		The printer will exit the energy saver state after this setting is changed.
		1.32mm per step. Range is -5mm to +5mm.
	Horizontal	If the machine settings are reset to the factory defaults, this value does not change.
		The printer will exit the energy saver state after this setting is changed.
Bypass Tray		0.24mm per step. Range is -3.6mm to +3.6mm.
	Vertical	If the machine settings are reset to the factory defaults, this value does not change.
		The printer will exit the energy saver state after this setting is changed.

Item Selections		Remarks	
	Horizontal (-15 to +15) step	1.32mm per step. Range is -5mm to +5mm.  If the machine settings are reset to the factory defaults, this value does not change.  The printer will exit the energy saver state after this setting is changed.	
Duplex Tray	Vertical (-15 to +15) step	0.24mm per step. Range is -3.6mm to +3.6mm.  If the machine settings are reset to the factory defaults, this value does not change.  The printer will exit the energy saver state after this setting is changed.	
Fuser SC Reset		This button is for resetting an SC related with the fusing errors.	
Fuser SC Detect	On/Off	If On, the engine detects SC559. If Off, the engine does not detect "Fusing SC Reset".	
Reset Transfer Unit Life Counter		Resets the transfer unit life counter.	
Trans. Belt Adjust		When you click the [Trans. Belt Adjust] button, the transfer belt adjustment is done. This calibrates the motor speed to match the length of the new transfer belt.	

<sup>&</sup>quot;\*" indicates the factory default value.

# Service Program with Operation Panel

#### Overview

This machine has a LCD on the operation panel. Therefore, you can directly execute the service program with the operation panel instead of the SOM.



• Ask your supervisor for entering or exiting the service mode with the operation panel.

# Service Mode Menu Items on LCD

The wording and menu structures are described as shown below.

#### Service Menu (2nd Menu)

1st Menu	2nd Menu	3rd Menu	4th Menu
	Service Menu	Toner Limit	Text
Service Mode			Graphics
			Photograph

[200 to 400]

Step by 10, Default is 250

### Engine Maintenance (2nd Menu)

1 st Menu	2nd Menu	3rd Menu	4th Menu
Service Mode	Engine Maintenance	Brand	-
0: Ricoh/ 1: SP/ 2: NRG/ 3: Lanier			

1 st Menu	2nd Menu	3rd Menu	4th Menu
Service Mode	Engine Maintenance	Destination	-
[0 to 6] <b>DFU</b>			

4

1 st Menu	2nd Menu	3rd Menu	4th Menu
Service Mode	Engine Maintenance	2nd Transfer	Front
			Back

[-15 to +15/1 step]

This adjusts the transfer roller current, based on the default value.

The range of adjustment is from -15 [ $\mu$ A] to +15 [ $\mu$ A], in units of 1.

The printer will warm up automatically after this setting is changed.

1st Menu	2nd Menu	3rd Menu	4th Menu
Service Mode	Engine Maintenance	2nd Transfer	Fuser Temp

[0 to -30/1 step]

This adjusts the offset temperature of the fusing unit, based on the default value. The range of adjustment is from -30 [ $^{\circ}$ C] to 0[ $^{\circ}$ C], the unit is 2.

The printer will warm up automatically after this setting is changed. \*2

1 st Menu	2nd Menu	3rd Menu	4th Menu
Service Mode	Engine Maintenance	Registration	Tray 1
			Tray 2
			By-pass
			Duplex

#### 5th Menu

- Vertical
- Horizontal

[-15 to +15/0.33 mm/1 step]

This adjusts the vertical and horizontal registration for each tray.

If the machine settings are reset to the factory defaults, this value does not change.

# Clear Log (2nd Menu)

This resets all log data.

# 5. 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

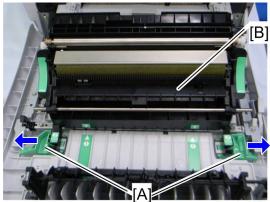
• Print the configuration page using "Smart Organizing Monitor".

# When the substitute machine gets to the customer site

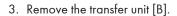
- 1. Remove the four print cartridges (AIO) from the problem machine.
- 2. Install the four print cartridges (AIO) into the substitute machine.
- 3. Input the customer settings which are printed on the configuration page by using "Smart Organizing Monitor".
- 4. Send back the problem machine to the repair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

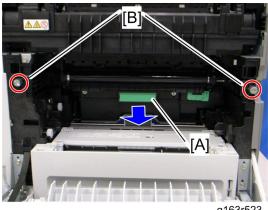
# Cleaning Points after Machine Arrival at Depot

1. Open the front cover.

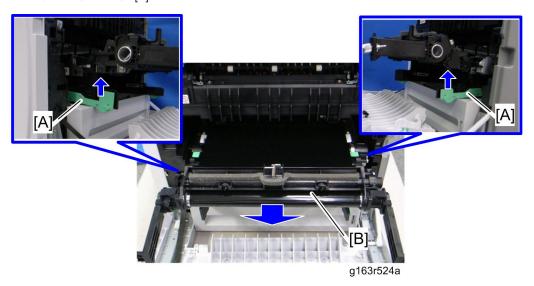


a163r538

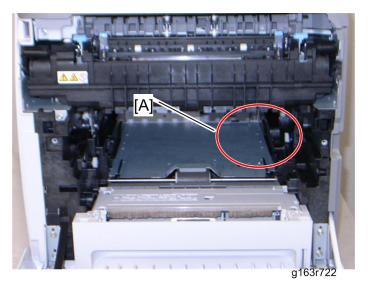




- g163r523
- 4. Remove the waste toner bottle [A].
- 5. Remove the two screws [B].

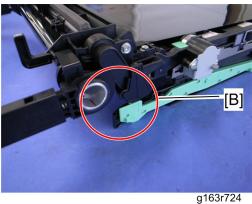


- 6. Grab the handles [A], and then pull out the image transfer belt unit [B].
- 7. Remove the waste toner bottle.



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.