FRESA WIN+

(Machine Code: G047/G048)

SERVICE MANUAL

[Engine]

⚠IMPORTANT SAFETY NOTICES

PHYSICAL INJURY PREVENTION

1. Before disassembling or assembling parts of the printer and peripherals, make sure that the power cord is unplugged.
2. The wall outlet should be near the printer and easily accessible.
3. Note that some printer components are supplied with electrical voltage even if the main switch is turned off.
4. If an adjustment or operation check must be made requiring the removal or opening of the exterior covers while the main switch is on, keep hands away from electrified or mechanically driven components.
5. The printer drives some of its components when it completes the warm-up period. Keep hands away from mechanical and electrical components when the printer starts operation.
6. The interior and metal parts for the fusing unit become extremely hot while the printer is operating. Do NOT touch these components with bare hands.

HEALTH SAFETY CONDITIONS

1. Never operate the printer without ozone filters installed.
2. Always replace the ozone filters with the specified replacement at the specified maintenance intervals.
3. Toner is non-toxic, but if it gets in your eyes by accident, it may cause temporary eye discomfort. Remove it with eye drops or flush eyes with water. If this is unsuccessful, get medical attention immediately.

SAFETY AND ECOLOGICAL NOTES FOR DISPOSAL

1. Do NOT incinerate toner cartridges, development toner magazine (DTM) or used toner. Toner dust may ignite suddenly when exposed to an open flame.
2. Dispose of used toner bottle and photoconductor unit (PCU) in accordance with local regulations. (These are non-toxic supplies.)
3. Dispose of replaced parts in accordance with local regulations.

LASER SAFETY

The Center for Devices and Radiological Health (CDRH) prohibits the repair of laser-based optical units in the field. The optical unit can only be repaired in a factory or at a location with the requisite equipment. The laser subsystem is only replaceable in the field by a qualified Customer Engineer. The laser chassis is not field repairable. Customer engineers are therefore directed to return all chassis and laser subsystems to the factory or service depot when the optical subsystem requires replacement.

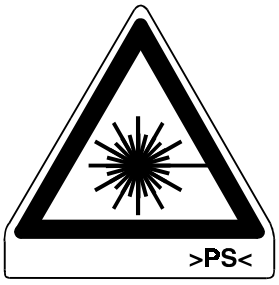
⚠WARNING

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

⚠WARNING

WARNING: Turn off the main switch before attempting any of the procedures in the Laser Unit section. Laser beams can seriously damage your eyes.

CAUTION MARKING:



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1. OVERALL MACHINE INFORMATION

1.1 SPECIFICATIONS

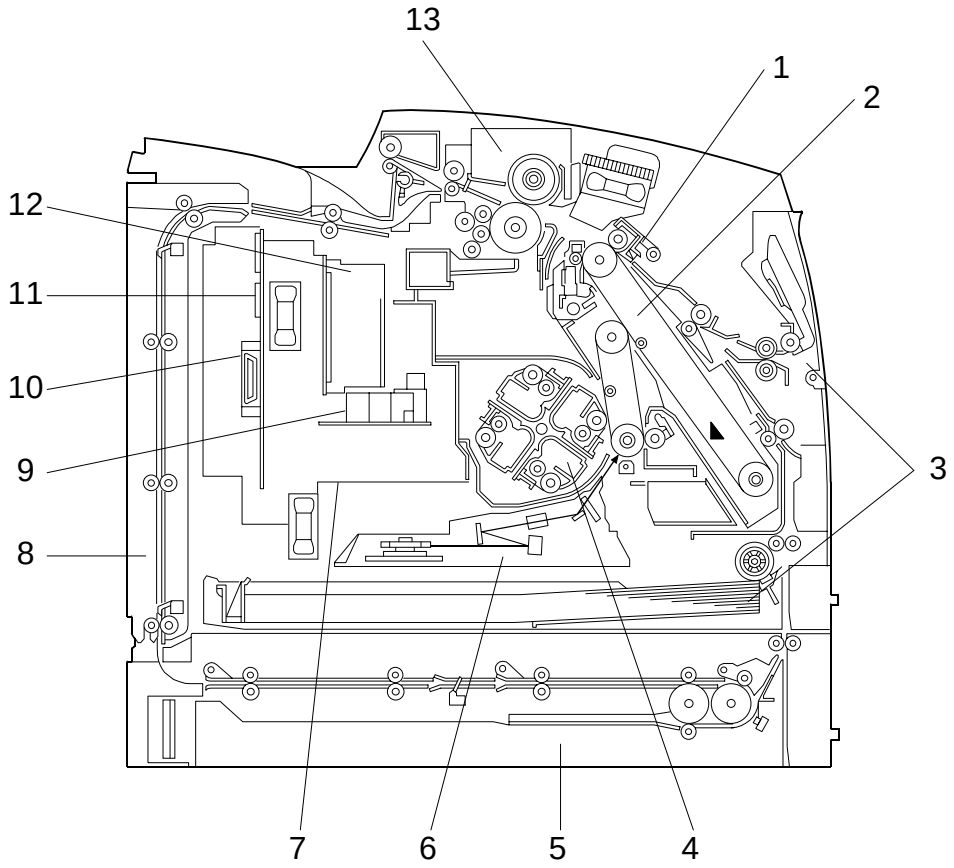
Configuration	Desk top
Print Process	Dry electrostatic transfer system
Resolution	600 dpi
Paper Size	Standard tray Short edge feed (SEF): A3, 11" x 17", 8 1/2" x 14", Others* (B4 JIS, 8" x 13", 8 1/4" x 13", 8 1/2" x 13") Long edge feed (LEF): A4, 8 1/2" x 11", 7 1/4" x 10 1/2", Others* (B5 JIS, A5, 5 1/2" x 8 1/2") By-pass feed tray* Short edge feed: A3, A6, B4 JIS, B6 JIS, 12" x 18",11" x 17", 8 1/2" x 14", 8" x 13", 8 1/4" x 13", 8 1/2" x 13" Long edge feed: A4, A5, B5 JIS, 8 1/2" x 11", 5 1/2" x 8 1/2", 7 1/4" x 10 1/2" Custom size paper (Length: 148 to 457.2 mm, Width: 90 to 297 mm) * Specify the paper size with the system menu (at the operation panel by the user).
Paper Weight	Standard and optional trays: 64 to 105 g/m^2 (17 to 28 lbs.) By-pass feed tray: 64 to 160 g/m^2 (17 lbs to 43 lbs) Plain paper mode: 64 to 105 g/m^2 Thick paper mode: 105 to 160 g/m^2, adhesive labels OHP transparency mode: OHP transparencies
First Printout Time	Color: Less than 26 seconds (A4 A4/8 1/2" x 11" LEF) Monochrome: Less than 13 seconds (A4 A4/8 1/2" x 11" LEF)
Print Speed	Simplex prints Color: 6 ppm (A4/8 1/2" x 11" LEF) Monochrome: 24 ppm (A4/8 1/2" x 11" LEF) Duplex prints Color: 5.5 ppm (A4/8 1/2" x 11" LEF) Monochrome: 21.7 ppm (A4/8 1/2" x 11" LEF)
Warm-up Time	Less than 380 seconds (at 23°C/73°F)
Paper Capacity	Standard tray: 250 sheets (80 g/m^2, 20 lbs.) By-pass feed tray: 50 sheets (80 g/m^2, 20 lbs.) Optional trays: 500 sheets (80 g/m^2, 20 lbs.)

Paper Output Capacity	250 sheets (A4/8 1/2" x 11" or less) 100 sheets (More than A4/8 1/2" x 11")
Output Method	Face down
Power Supply	120 V, 60 Hz, 10 A 220 to 240 V, 50/60 Hz, 5.2 A
Power Consumption	Maximum: Less than 1,200 W Average during printing: Less than 750 W Stand-by mode: Less than 150 W Energy saver mode: Less than 45 W
Noise Emission (Sound Power Level)	Stand-by: Less than 43 dB Operating: Less than 65 dB
Dimensions	Simplex model (G047) 660 x 575 x 475 mm (26” x 22.6” x 18.7”) (without paper tray) Auto duplex model (G048) 660 x 652 x 610 mm (26” x 25.7” x 24”) (without paper tray)
Weight	Simplex model (G047)Approximately 62 kg (136.7 lbs.) (including consumables) Auto-Duplex model (G048) Approximately 82 kg (180.8 lbs.) (including consumables)
Option	Paper Feed Unit Type 305 (Paper Tray Unit) – up to two of these units can be installed

1.2 MECHANICAL OVERVIEW

Same as base model (G024)
Refer to the Section 1-2 of base model manual.

1.3 MAIN UNIT LAYOUT



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1. Paper Transfer Unit
2. Photoconductor Unit (PCU)
3. Paper Tray/Paper Feed Mechanism
4. Development Unit (DTM)
5. Duplex Unit
6. Optical Housing Unit
7. Main Control Unit (MCU)
8. Vertical Transport Unit
9. High Voltage Supply Unit
10. DC Supply Unit
11. Controller Board
12. Power Supply Unit
13. Fusing Unit

(1) Optical Housing Unit
- Optical system: 6-sided polygon mirror, F-theta mirror, BTL
- Resolution: 600 dpi
- Modulation method: PM+PWM

(2) MCU
- CPU: XC68334 GFC16
- Engine system control
- Process control
- Video interface

(3) Vertical Transport Unit (Auto-duplex Model Only)
- Paper feeding for duplex printing by rollers

(4) High Voltage Supply Unit
- Constant current: Paper transfer, charge corona wire
- Constant voltage: Charge corona grid, belt transfer, supply roller, development blade

(5) DC Supply Unit (Auto-duplex Model Only)
- Outputs: +24 VDC supply for duplex unit

(6) Controller Board
- Host interface
- Video interface
- Image processing
- Operation panel control

(7) Power Supply Unit
- Outputs: +5 VDC, +24 VDC, 120/230 VAC

(8) Fusing Unit
- Fusing method: Hot roller method
- Oil application: Application roller method
- Cleaning: Cleaning roller method
- Temperature detection: Thermistor
- Safety precaution: Thermofuse

(9) Paper Transfer Unit
- Transfer: Transfer roller method

(10) PCU

A unit consisting of the OPC belt and the primary (belt) transfer section.
- OPC belt: 93-mm diameter
- Charging: Single scorotron charge corona wire
- Primary transfer: Transfer belt
- Cleaning: Counter blade
- Lubricant: Zinc stearate

(11) Tray/Transport

- Standard tray: Universal tray, friction pad separation
  By-pass tray: FRR method

(12) Development Unit

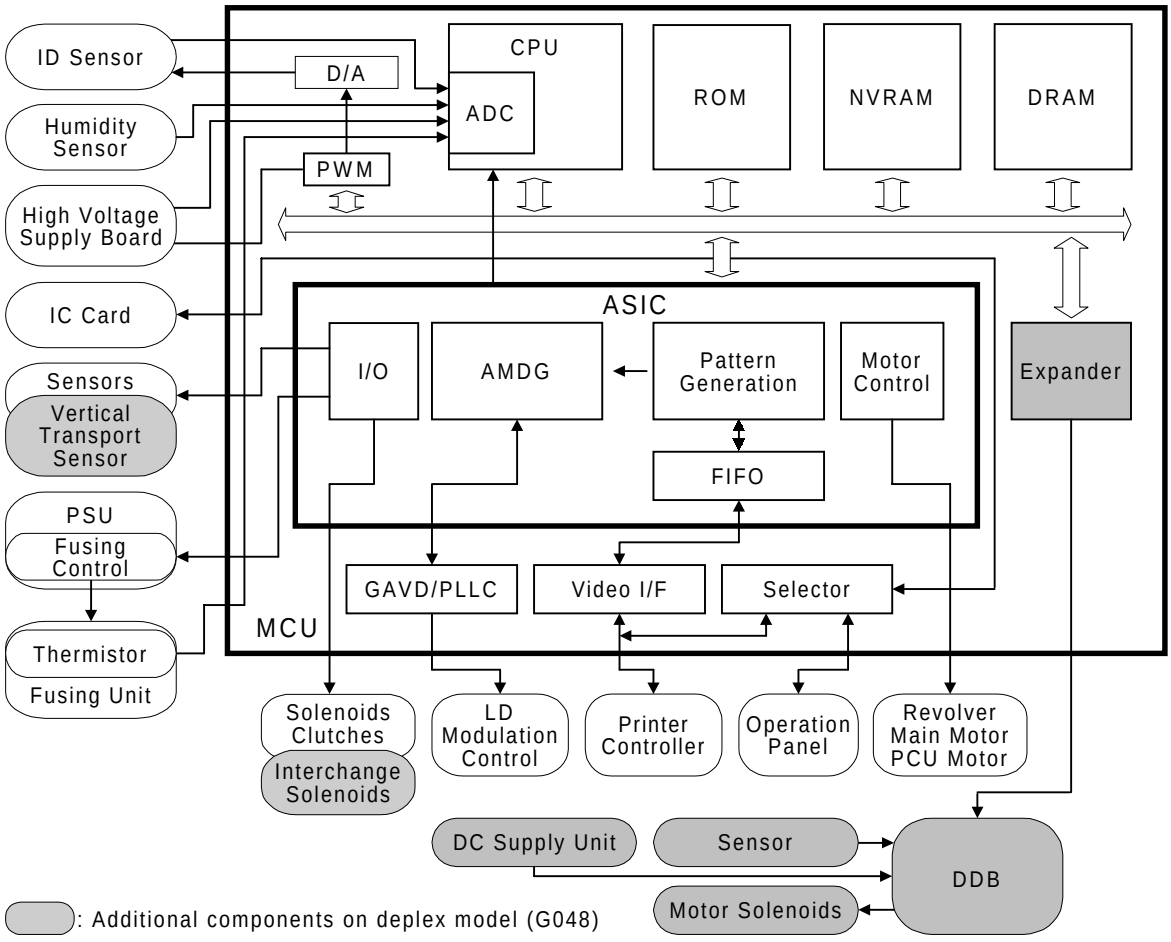
- Development method: Monocomponent non-magnetic toner
- Development unit changeover: Revolver method
- Toner replenishment: DTM change

(13) Duplex Unit

- Stack-less
- Paper side edge jogging

1.4 SYSTEM BLOCK

1.4.1 BLOCK DIAGRAM



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2. DETAILED SECTION DESCRIPTIONS

2.1 DIFFERENT POINTS FROM BASE MODEL (G024)

2.1.1 OVERVIEW

The following points are different from the base model (G024).

1. Duplex printing
   The following units were added to the Auto-duplex model (G048)

Paper Exit Unit	Switching the paper path to the exit or to the duplex unit after fusing.
Vertical Transport Unit	For duplex printing, feeding a sheet to duplex unit after fusing. This unit is located behind the main-body.
Duplex Unit	This unit is located at the bottom of the main-body. In this unit, a sheet is turned, jogged and then fed to the main-body again. Sheets are fed into this unit one-by-one.

   Interleaf control is used for this model to increase the printing speed.

2. Printing Speed

Printing Speed	G047/G048	Base Model (G024)
Black & White mode	24 ppm	17 ppm
Color mode	6 ppm	5 ppm

First Print	G047/G048	Base Model (G024)
Black & White mode	13 sec.	14 sec.
Color mode	26 sec.	30 sec.

3. Image Quality Improvement
   Increasing the line frequency in photograph and text mode improves the quality of the image. A new laser optical unit is used to increase the line frequency.

Line Frequency	G047/G048	Base Model (G024)
Photograph	180 lpi	106 lpi
Graphics	106 lpi	106 lpi
Text	268 lpi	211 lpi

2.1.2 FUSING UNIT

The followings differ from the base model (G024) in the Fusing unit.

1. Pressure Roller
   For the duplex printing, The material used to make the pressure roller was changed from Teflon to Silicon rubber to improve duplex printing performance.
2. Heat Isolation
   To maintain the fusing roller temperature, heat isolation bushings are mounted between the fusing roller bushing and drive gear.
3. Connector
   All of the drawer connectors were replaced with harness connectors.
4. Exit Cover Switch (Auto-duplex model only)
   The location of paper exit cover switch was moved to the main-body of the machine from the fusing unit..

2.1.3 OPTICAL UNIT

The following optical unit items differ from the previous model.

1. Polygonal Mirror Motor
   The speed of the polygonal mirror motor was increased to increase the printing speed.

	G047/G048	**Base Model (G024)**
Paper feed speed	121.54 mm/sec	101.27 mm/sec.
Mirror motor revolution speed	28,706 rpm	23,922 rpm

2. LD Unit
   To improve the image quality, the diameter of the beam was decreased and the power of the beam was increased.

	G047/G048	**Base Model (G024)**
Diameter of Beam	69 μm x 76 μm	76 μm x 76 μm
LD Power	1.91 mW	1.58 mW

3. Dust Prevention
   To prevent the polygonal mirror and polygon mirror motor from collecting dust, two sponges were added to the optical housing. One is above the polygon mirror motor and the other is on the side of the housing unit.

2.1.4 PAPER FEEDING AND REGISTRATION

1. Paper size detection of bypass tray
   Paper width detection mechanism on the bypass tray is not available.
2. Pick-up roller
   The material of pick-up roller is changed to Silicone rubber for duplex printing from the bypass tray.

2.1.5 PROCESS CONTROL

1. K-DTM Initialization
   The image density target level was lowered.

	G047/G048	Base Model (G024)
ID on sheet	1.6	1.7
Volume of toner	0.56 mg/cm^2	0.60 mg/cm^2

2. Color-DTMs Initialization
   The image density target level was changed.

	G047/G048	Base Model (G024)
ID on sheet	1.4	1.5
Volume of toner (C)	0.56 mg/cm^2	0.55 mg/cm^2
Volume of toner (Y)	0.54 mg/cm^2	0.55 mg/cm^2
Volume of toner (M)	0.62 mg/cm^2	0.60 mg/cm^2

3. Charge Grid Bias Compensation
   Compensation control was changed because the number of lines in photo mode was changed from 106 to 180.

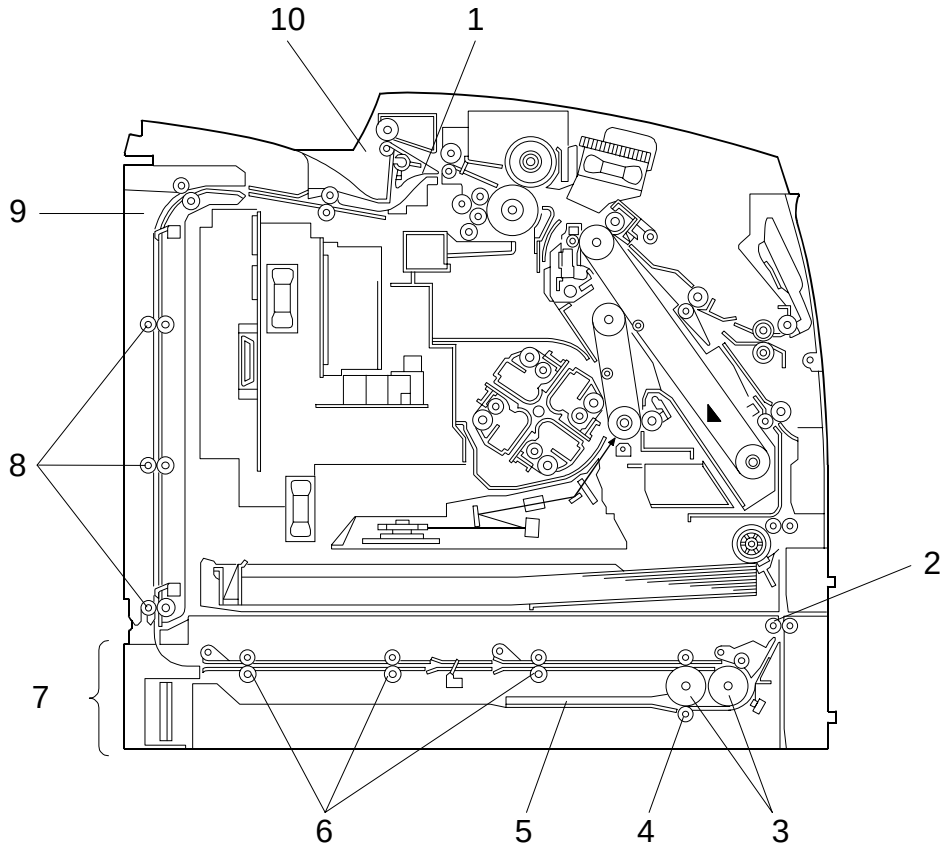
2.1.6 ELECTRICAL COMPONENTS

1. Main Motor
   The main motor was changed to increase the print speed.
   The PCU motor was not changed but the clock rate was changed.
2. MCU
   The MCU was changed to improve the efficiency of duplex printing by adding new electrical components.
3. PSU
   A different PCU was used to increase the current level.
   A DC supply unit was added for Auto-duplex models only.

2.2 DUPLEX PRINTING (AUTO-DUPLEX MODEL ONLY)

2.2.1 OVERVIEW

Layout



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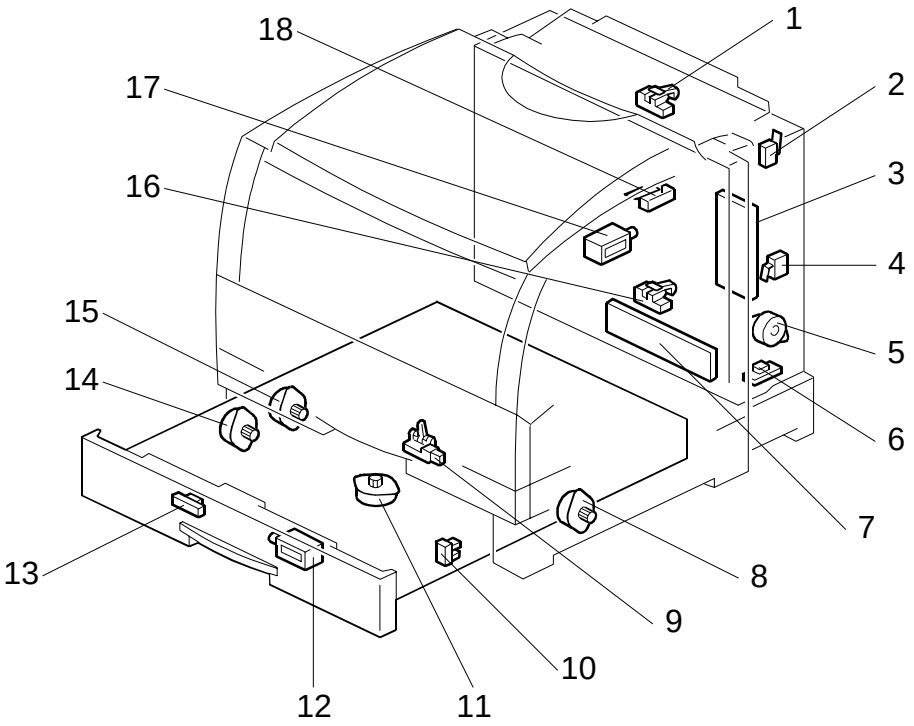
1. Junction Gate
2. Relay Roller
3. Duplex Roller
4. Duplex Pick-up Roller
5. Jogger Fence
6. Duplex Feed Roller
7. Duplex Unit
8. Vertical Transport Roller
9. Vertical Transport Unit
10. Exit Unit

Electrical Components



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1. Vertical Transport Entrance Sensor
2. Vertical Transport Cover Switch
3. Duplex DC Supply Unit
4. Vertical Transport Unit Switch
5. Vertical Transport Motor
6. Temp./Hum. Sensor
7. Duplex Driver Board
8. Relay Motor
9. Duplex Feed Sensor
10. Jogger HP Sensor
11. Jogger Motor
12. Reverse Solenoid
13. Reverse Sensor
14. Duplex Reverse Motor
15. Duplex Feed Motor
16. Vertical Transport Exit Sensor
17. Junction Gate Solenoid
18. Exit Cover Switch

Exit Unit
- A solenoid moves the junction gate.
- A micro-switch detects if the cover is open.

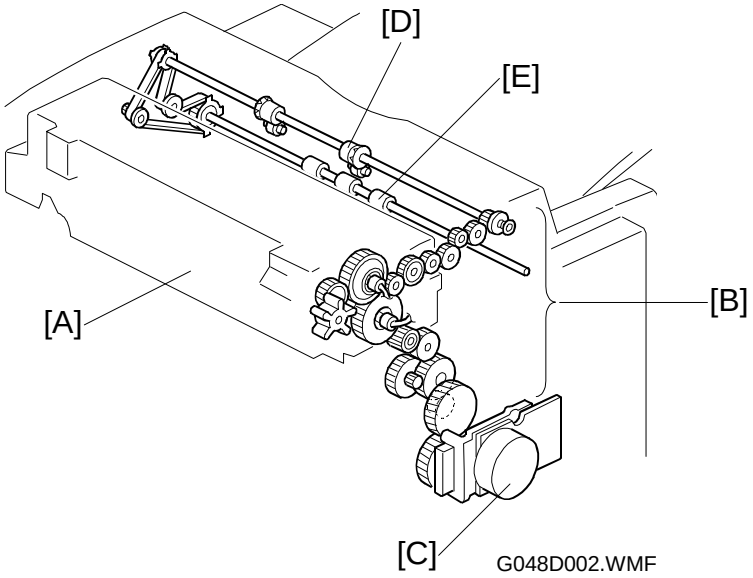
Vertical Transport Unit
- The vertical transport rollers driven by the vertical transport motor feed paper to the duplex unit.
- Two sensors detect paper fed in the entrance and out the exit of the unit.
- Two micro-switches detect whether the vertical transport unit and cover are open.

Duplex Unit

- The duplex, duplex transport and duplex pick-up rollers reverse the paper in the unit.
- The jogger fence prepares to feed paper into the main body after reversing it.
- The duplex, duplex pick-up, and relay rollers feed paper into the main body for reverse side printing.
- The duplex feed sensor and reverse sensor detect paper.

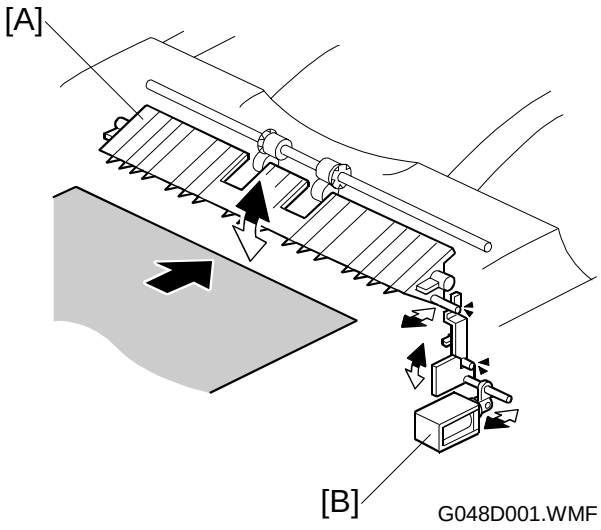
2.2.2 EXIT UNIT

Driving Mechanism



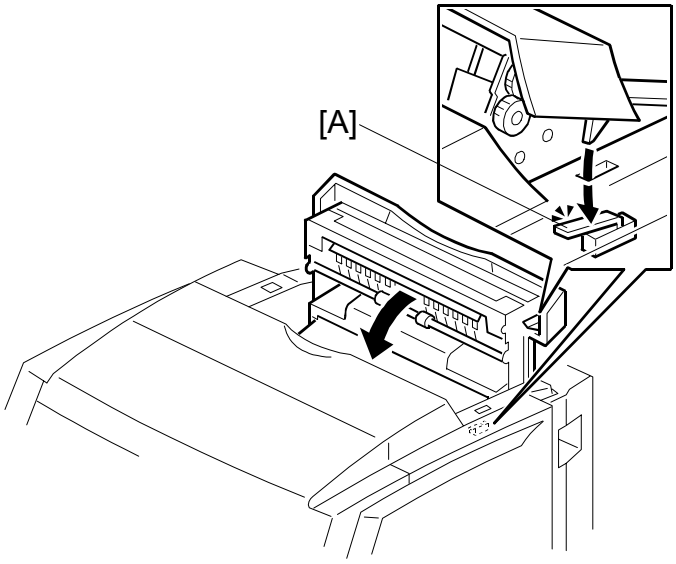
The fusing unit [A] and drive gears [B], powered by the main motor [C], drive the feed and exit rollers [D and E].

Junction Gate



The Junction gate [A] is located at the entrance of exit unit. Paper is fed to the exit tray or to the vertical transport unit by this gate. This gate is driven by solenoid [B]. When this solenoid activates, the paper is fed into the vertical transport unit.

Exit Cover Open Detection

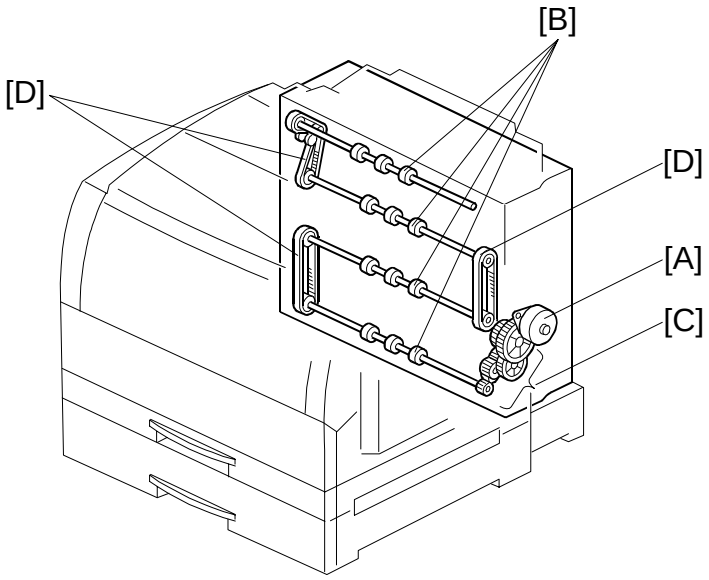


G048D003.WMF

The exit unit cover switch [A] is on the right side of the unit to detect whether the cover is open. This switch interrupts the 24VDC line to the main control board (PCB2).

2.2.3 VERTICAL TRANSPORT UNIT

Driving Mechanism



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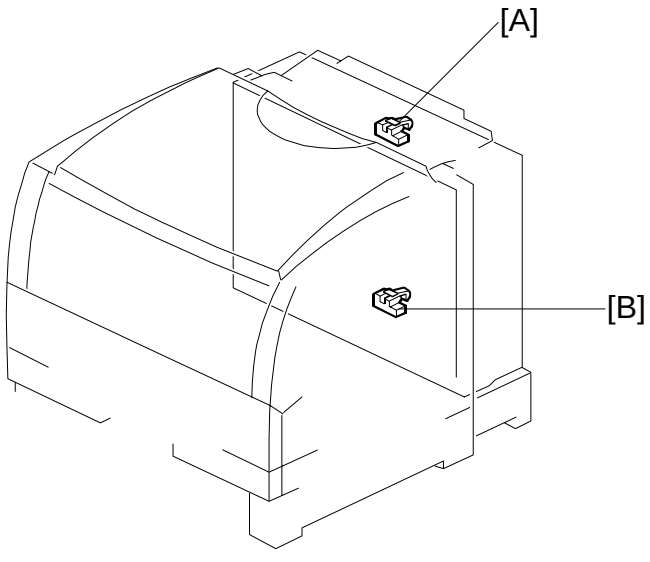
The vertical transport motor [A] drives the vertical transport rollers [B] using gears [C] and timing-belts [D].

Paper Feed Detection



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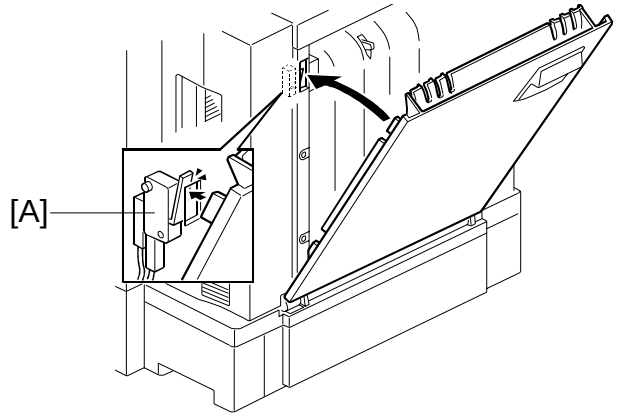
Two sensors (photo interrupters) detect paper: One is the entrance sensor [A] and the other is the exit sensor [B].

Vertical Transport Unit Cover Open Detection



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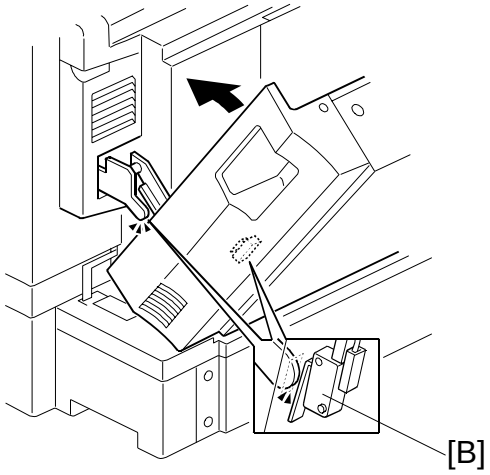

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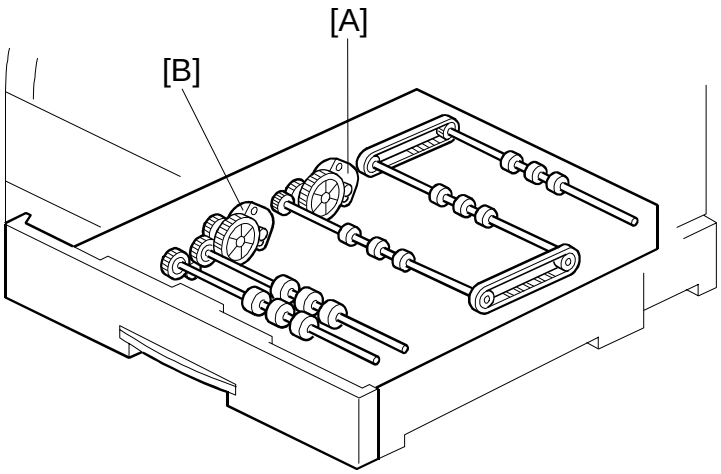
The interruption of the current for the vertical transport switches [A and B] determines whether the vertical transport unit or cover is open.

2.2.4 DUPLEX UNIT

Driving Mechanism



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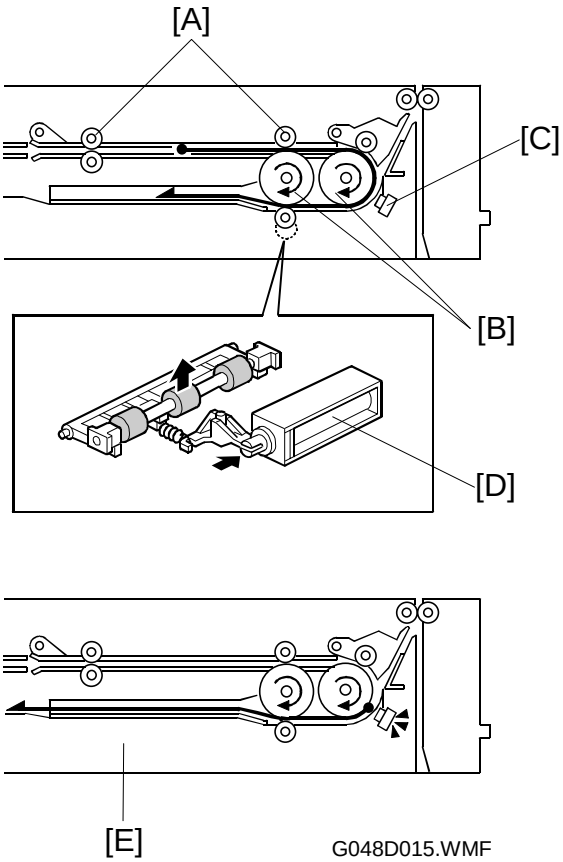
The duplex feed motor [A] feeds paper from the vertical transport unit up to the reverse tray. Then the duplex reverse motor [B] feeds the paper from the reverse tray to the relay rollers.

Reverse Mechanism

First, paper is fed by the duplex feed rollers [A] and then by the duplex rollers [B]. When the reverse sensor [C] detects the leading edge of paper, the reverse solenoid [D] activates and paper is fed into the duplex tray [E].
When the reverse sensor detects the trailing edge of paper, the reverse solenoid deactivates.



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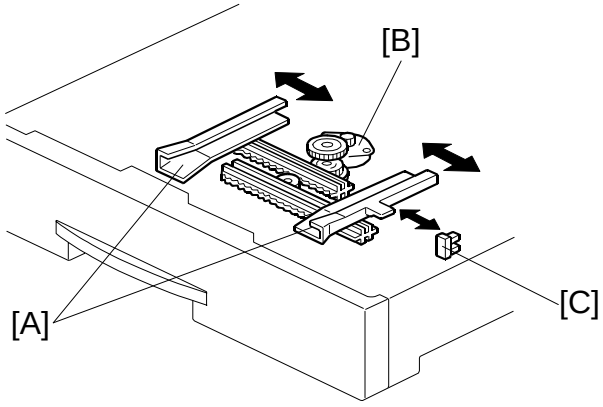
Jogging Mechanism

The standby position distance between jogger fences [A] is 10mm wider than the printed paper width while printing.
After the duplex roller stops, the jogger motor [B] slides the jogger fences so that they are 1mm narrower than the printed paper width.
After finishing all print jobs, the fences return to the home position, until the home position sensor [C] activates.



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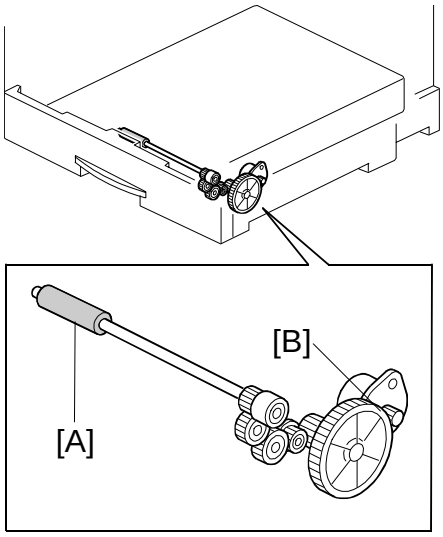
Feed-out

After jogging the paper, the duplex roller turns counter-clock wise and the reverse solenoid activates. This feeds paper to the relay roller [A], which is driven by the relay motor [B].



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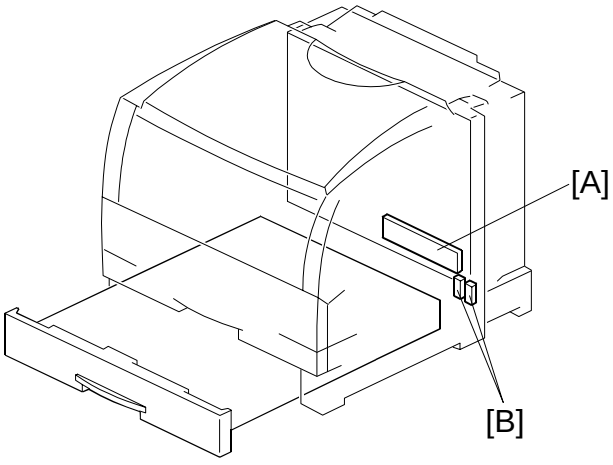
Reverse Tray Detection

The tray is connected to the duplex driver board [A] through drawer connectors [B] when the tray is pushed into the machine. This connection is monitored by a loop back signal to make sure that the tray is positioned properly in the machine.



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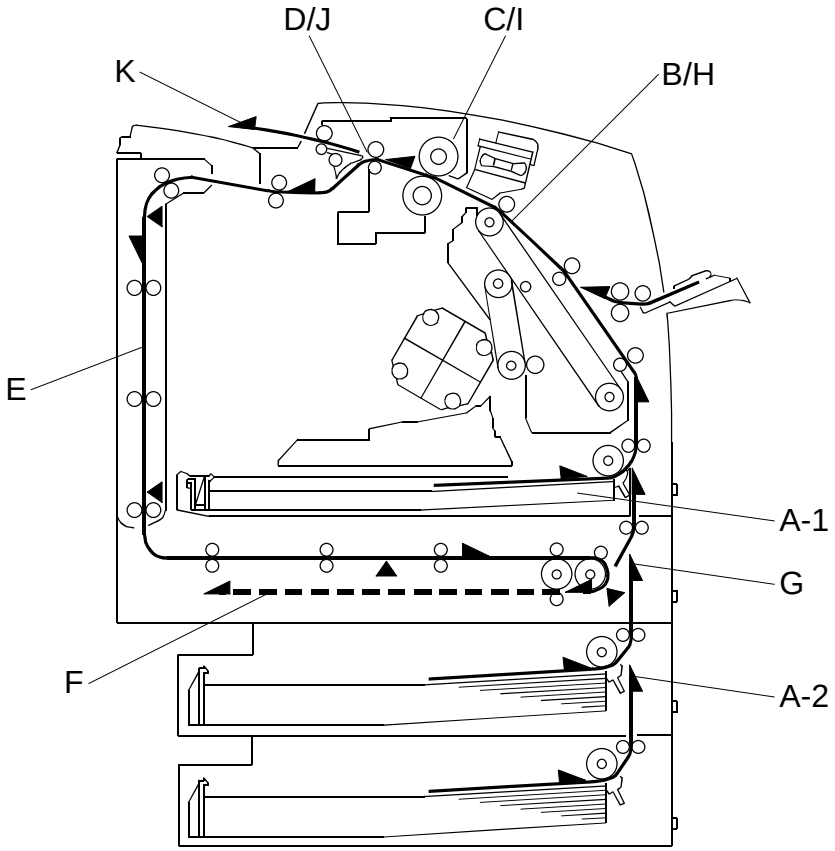
2.2.5 INTERLEAF

An interleaf mechanism was added to increase duplex printing performance in black & white print mode. Also, this model only prints face down.



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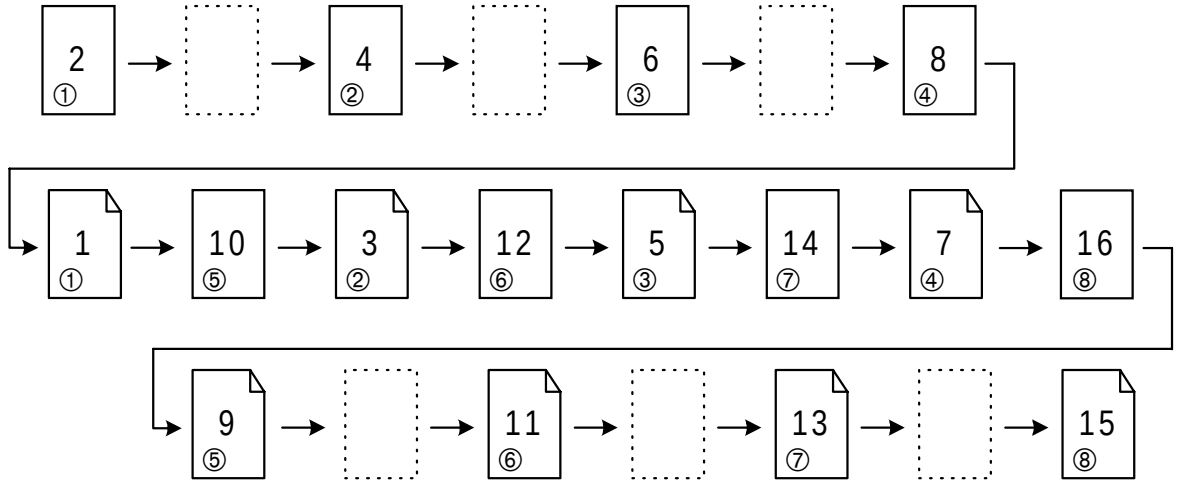
Paper Path for Duplex Printing

A: Paper feed for back-side print (-1: Standard tray -2: Optional tray)
B: Secondary transfer for back-side print
C: Fusing back-side print
D: Junction
E: Vertical transport
F: Reverse
G: Paper feed for front-side print
H: Secondary transfer for front-side print
I: Fusing for front-side print
J: Junction
K: Paper exit

Print Order for Duplex Black & White Printing

The following example shows what happens when printing 8 sheets of A4/LTR size in duplex black & white mode. 4 sheets of A4/LTR size paper can be kept inside the machine during this print mode.



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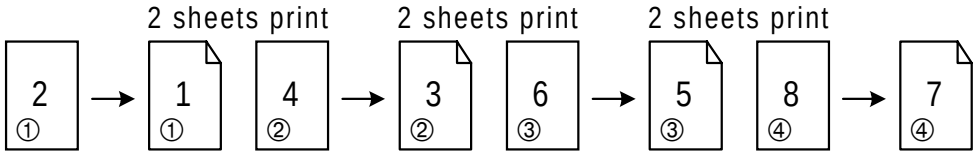
Print Order for Duplex Color Printing

The following example shows what happens when printing 8 sheets of A4/LTR size in duplex color mode.



G048D214.WMF

3. INSTALLATION PROCEDURE

Refer to the following materials.

- For the printer: Quick Installation Guide
- For options: Operating Instructions

If the customer has a service contract with a meter click system, set up the counter with an SP mode as follows:

1. Enter Controller SP mode (see 4.1.1 ENTERING AND EXITING CONTROLLER SP MODE in Service manual for controller).
2. Set “Meter Click” from the maintenance menu to the proper mode depending on the contract type (see 4.1.4 SP MODE DETAILS in Service manual for controller).
3. Exit SP mode, and then confirm that display of both “Color” and “Black” is 0 by executing “ Show Counter”

4. SP MODE

4.1 OVERVIEW

This printer has two SP modes:

1) Engine SP mode
2) Controller SP mode

The controller SP modes are described in the service manual for the controller.

These two modes contain different functions.

4.2 ENGINE SP MODE

4.2.1 OVERVIEW

To enter and exit engine SP mode

Same as the base model (G024)

Outline of the engine SP mode functions

The following table shows differences from the base model (G024)

Menu Item	Difference from the base model (G024)
1: Margin	Duplex printing menu and two adjustable items were added.
2: Parameter	The secondary transfer bias can be adjusted individually for printing on the front side and for the other side of paper.
3: Clear Memory	Same as the base model (G024)
4: Sensor Check	Eight more sensors were added to the vertical transport and duplex units.
5: Nip Width	Same as the base model (G024)
6: Reset SC	Same as the base model (G024)
7: Process Ctrl	Same as the base model (G024)
8: Test Print	Three menus were added for auto-duplex printing.
9: ID Sensor PWM	Same as the base model (G024)
10: Image Adjust	Same as the base model (G024)
11: Output Check	10 more components were added to the vertical transport and duplex units.
12: Hi-light	Same as the base model (G024)
13: Lub_Interval	Same as the base model (G024)
14: BLT-TR BIAS	Additional function to adjust the primary transfer bias.

4.2.2 MENU OPERATION/DISPLAY

Same as the base model (G024)

4.2.3 MARGIN (REGISTRATION ADJUSTMENT)

NOTE: Items in bold are additional ones for this model.

Layer 1	Layer 2	Layer 3	Layer 4
Maintenance 1: Margin	Margin Pattern Print	Margin: Print Std. Paper	Print: Std Tray 1 Tray 2 Tray 3 **(D) Tray 1** **(D) Tray 2** **(D) Tray 3** By-pass Tray
			(D) shows duplex printing.
		Margin: Print Thick Paper	Print: Thick By-pass Tray
		Margin: Print Transparency	Print: Trans By-pass Tray
	Margin Adjust	Margin: Adjust Tray1: Left	Tray1: Left X.X
		Margin: Adjust Tray1: Top: 1st	Tray1: Top: 1st X.X
			It can be adjusted for tray 2, tray 3, and the by-pass tray in the same way as for tray1.
		Margin: Adjust Trans: Top: 1st (For OHPs)	Trans: Top: 1st X.X
		Margin: Adjust Back: Left	**Back: Left X. X**
		Margin: Adjust Back: Top	**Back: Top X. X**

4.2.4 PARAMETER

NOTE: Items in bold are additional ones for this model.

Layer 1	Layer 2	Layer 3	Layer 4
Maintenance 2: Parameter	Parameter Std. Paper	Std. Paper Transfer Bias	Bias XXX%
		Std. Paper **(D) Transfer Bias**	**(D) Bias** **XXX%**
		Std. Paper Fusing Temp.	Temp. Low
			Temp. Normal
			Temp. High
	Parameter Thick Paper	Same as Std. Paper	Same as Std. Paper
	Parameter Transparency	Same as Std. Paper	Same as Std. Paper

4.2.5 CLEAR MEMORY

Same as the base model (G024)
NOTE: Counter values used for meter click are not cleared.

4.2.6 SENSOR CHECK

NOTE: Bolded items are additions to this model.

Sensor Name		Sensor Status	
Name	**Display**	**0**	**1**
Paper End Sensor (Tray 1)	P End-1st	Paper detected	Paper not detected
Paper End Sensor (By-pass Tray)	P End-By-pass	Paper detected	Paper not detected
Paper End Sensor (Tray 2)	P End-2nd	Paper detected	Paper not detected
Paper End Sensor (Tray 3)	P End-3rd	Paper detected	Paper not detected
Registration Sensor	Registration	Paper not detected	Paper detected
Exit Sensor	Exit	Paper detected	Paper not detected
Paper Size Switch (Tray 1)	P Size-1st	*1	*1
Paper Size Switch (Tray 2)	P Size-2nd	*1	*1
Paper Size Switch (Tray 3)	P Size-3rd	*1	*1
By-pass Paper Width Detection Board	P Size-By-pass	***2**	***2**
PCU Set Switch	PCU Set	Detected	Not detected
DTM Set Sensor	CTC Set	Detected	Not detected
Toner End Sensor	CTC Toner End	Not end	End
Door Safety Switch	Cvr Opn-F	Closed	Open
Exit Cover Switch	Cvr Opn-EX	Closed	Open
Oil End Sensor	Oil End	End	Not end
(Fusing Unit)	Fusing Set	Detected	Not detected
Used Toner Sensor	Used Toner	Not full	Full
(Tray 2)	Tray Set-2nd	Not detected	Detected
(Tray 3)	Tray Set-3rd	Not detected	Detected
PCU Reset Sensor	PCU Reset	Old	New
Revolver H.P. Sensor	Revolver H.P.	Home position	Not home position
Transfer Roller Position Sensor	Tfr Position	Release	Touch
Pull-out Sensor (Tray 2)	P Feed-2nd	Paper not detected	Paper detected
Pull-out Sensor (Tray 3)	P Feed-3rd	Paper not detected	Paper detected
ID Sensor	ID	*3	*3
Temperature/Humidity Sensor	Humidity	*4	*4
	Temp	*5	*5
DTM Cover Switch	Cvr Opn-S	Open	Closed
Pull-out Sensor (Main Body)	Pick-up	Paper detected	Paper not detected
Charger Corona Set Switch	Main Charger	Detected	Not detected
Vertical transport unit/cover switch	**Cvr Open-Duplex**	**Open *6**	**Closed *6**
Reverse sensor	**Reverse Sensor**	**Paper detected**	**Paper not detected**

Sensor Name		Sensor Status	
Name	**Display**	**0**	**1**
Duplex Feed sensor	**P Feed-Duplex**	**Paper not detected**	**Paper detected**
Jogger HP sensor	**Jogger H. P**	**Home position**	**Not home position**
Duplex unit connection signal	**Duplex-Unit Set**	**Not detected *7**	**Detected *7**
Duplex tray connection signal	**Duplex Tray Set**	**Not detected *8**	**Detected *8**
Vertical transport entrance sensor	**V feed P1**	**Paper detected**	**Paper not detected**
Vertival transport exit sensor	**V Feed P2**	**Paper detected**	**Paper not detected**

*1: "Paper size detection" in Section 2 explains the status of the paper size switches for paper size detection. (0: Pressed, 1: Not pressed)

***2: The indicated value is always "1f" as there is no paper size detection mechanism on this model.**

*3: The displayed value indicates the K sensor output when the LED in the ID sensor is turned on. The specified output value (reference for normal operation) is 2.7 ± 0.8 V.

*4: The detection results are shown in the XXX YYY format. XXX indicates absolute humidity, and YYY indicates relative humidity. (Reference for normal operation: YYY should be between 5 and 95.)

*5: The displayed value indicates the detected temperature. (Reference for normal operation: Between 8 and 42)

***6: If either the vertical transport unit or vertical transport cover is open, "0" (open) is indicated.**

***7: The connection signal in between the MCU and the duplex driver board is checked. (10th pin of the CN254 on the MCU)**

***8: Loop back signal for the duplex driver board is checked. (13th pin of the CN896 on the Duplex driver board)**

4.2.7 NIP WIDTH

Same as the base model (G024)

4.2.8 RESET SC

Same as the base model (G024)

4.2.9 PROCESS CTRL

Same as the base model (G024)

4.2.10 TEST PRINT

NOTE: Bolded items are additions to this model.

Layer 1	Layer 2	Layer 3	Layer 4
Maintenance 8: Test Print	Test Print Pattern 1	Pattern 1 Tray X	Printing Tray X
	Test Print Pattern 2	Same as Pattern 1	Same as Pattern 1
	Test Print Pattern 3	Same as Pattern 1	Same as Pattern 1
	Test Print Pattern 1(D)	**Same as Pattern 1**	**Same as Pattern 1**
	Test Print Pattern 2(D)	**Same as Pattern 1**	**Same as Pattern 1**
	Test Print Pattern 3(D)	**Same as Pattern 1**	**Same as Pattern 1**

4.2.11 ID SENSOR PWM (PULSE WIDTH MODULATION)

Same as the base model (G024)

4.2.12 IMAGE ADJUST

Same as the base model (G024)

4.2.13 OUTPUT CHECK

NOTE: Bolded items are additions to this model.

Name	Display	Operation
By-pass Feed Clutch	Bypass Feed Cl.	Operating for a certain time
Pull-out Clutch	Pick-up Cl.	Operating until instructed to turn OFF
Paper Feed Clutch	Feed Cl.	Operating for a certain time
Relay Roller Clutch	Transport Cl.	Operating until instructed to turn OFF
Registration Clutch	Regist. Cl.	Operating until instructed to turn OFF
Transfer Roller Clutch	Tr. Roller Cl.	Operating for a certain time
Development Drive Solenoid	Development Sol.	Operating until instructed to turn OFF
By-pass Feed Solenoid	Bypass Sol.	Operating for a certain time
Transfer Belt Cleaning Solenoid	Cleaning Sol.	Operating until instructed to turn OFF
Quenching Lamp	Quenching LED	Operating until instructed to turn OFF
PCU Motor	PCU Motor-slow	Operating until instructed to turn OFF
	PCU Motor-normal	Operating until instructed to turn OFF
	PCU Motor-fast	Operating until instructed to turn OFF
	PCU Motor-reverse	Operating until instructed to turn OFF
Main Motor	Main Mtr-normal	Operating until instructed to turn OFF
	Main Mtr-slow	Operating until instructed to turn OFF
Polygon Mirror Motor	Scanner Motor	Operating until instructed to turn OFF
Revolver Motor	Revolver Motor	Operating until instructed to turn OFF
Tray Main Motor (for tray 2)	OT1 Motor	Operating until instructed to turn OFF
Paper Feed Clutch (for tray 2)	OT1 Feed Clutch	Operating for a certain time
Tray Main Motor (for tray 3)	OT2 Motor	Operating until instructed to turn OFF
Paper Feed Clutch (for tray 3)	OT2 Feed Clutch	Operating for a certain time
Vertical Transport Motor	**V Feed motor**	**Operating until instructed to turn OFF**
Duplex Feed Motor	**Duplex Tray Mtr**	**Operating until instructed to turn OFF**
Duplex Reverse Motor ()	**Rvrs Mtr**	**Operating until instructed to turn OFF**

Name	Display	Operation
Duplex Reverse Motor ()	**Rvrs Mtr-rvrs**	**Operating until instructed to turn OFF**
Reverse Solenoid	**Press Roller Sol**	**Operating until instructed to turn OFF**
Jogger (for H.P.)	**Jogger HP**	**Operating for a certain time**
Jogger (for	**Jogger**	**Operating for a certain time**
Jogger (for	**Jogger reverse**	**Operating for a certain time**
Relay Motor	**Pull Out Motor**	**Operating until instructed to turn OFF**
Junction Gate Solenoid	**Divergence Sol.**	**Operating until instructed to turn OFF**

4.2.14 HIGHLIGHT ADJUSTMENT

Same as the base model (G024)

4.2.15 LUB_INTERVAL (BELT LUBRICATION INTERVAL ADJUSTMENT)

Same as the base model (G024)

4.2.16 PRIMARY BIAS ADJUSTMENT

Use this menu to adjust the primary bias (belt transfer bias).
The adjustment can be done in 100V steps between 800 V and 1,500 V.
The default value is 1,200 V.

Layer 1	Layer 2	Layer 3
Maintenance 14: BLT-TR BIAS	BLT-TR BIAS Cyan	Cyan XXX
	BLT-TR BIAS Magenta	Magenta XXX
	BLT-TR BIAS Yellow	Yellow XXX
	BLT-TR BIAS Black	Black XXX

5. PREVENTIVE MAINTENANCE

5.1 PM TASKS

5.1.1 REPLACEMENT

Replace the PM parts every 100 K printouts as shown in the PM table on the next page.

The fusing unit replacement interval is not determined in the same manner as the base machine. For details, see the note after the PM table.

- For the replacement procedures, refer to Chapter 6 “Replacement and Adjustment” in this manual and Chapter 3, “Replacement and Adjustment” in the manual for the optional 500-sheet paper tray.

⚠CAUTION
When replacing components, be aware that the fusing unit may be hot. Handle it with care.

5.1.2 CLEANING

Clean the printer components when visiting the customer site.

- See the PM table for the correct way to wipe components.

NOTE: Make sure that the charge corona unit cleaner is in the home position.

5.1.3 INSPECTION

Inspect the printer components when visiting the customer’s site.

- Visually inspect the components, and replace them if there is any damage.

⚠CAUTION
A high voltage is applied to bias electrodes. To inspect a bias electrode, ensure that the power switch is turned off.

5.2 PM TABLE

5.2.1 MAIN UNIT

C: Clean R: Replace I: Inspect

Item	EM	60K	100K	Note
Paper Feed Roller	C		R	Alcohol or water
Registration Roller	C			Alcohol or water
Friction Pad	C		R	Water
Bottom Plate Pad	C			Water
By-pass Feed Roller	C			Alcohol or water
By-pass Pick up Roller	C			Alcohol or water
By-pass Separation Roller	C			Alcohol or water
Charge Corona Unit	C*1			Cleaner in the PCU
Quenching Lamp	I			Blower brush (if dirty)
ID Sensor	C			Dry cloth
Dust Shield Glass	C*1			Cleaner brush (P/N: G0241533)
Fusing Unit		R*2		
Exit roller-Exit Unit	C			Auto-duplex model only
Feed roller-Exit Unit	C			Auto-duplex model only
Feed rollers-Duplex Unit	C			Auto-duplex model only
Vertical Transport Rollers	C			Auto-duplex model only
Duplex Rollers	C			Auto-duplex model only
Relay Roller	C			Auto-duplex model only

*1: This is a common item with user maintenance.

*2: Regardless of the meter-click setting, the number of pages that the counter counts depends on the paper size:

- A3 or larger: 2 counts
- Smaller than A3: 1 count
- When the fusing unit counter reaches 60 K a message is displayed on the LCD only if “No meter-click mode” is selected. However, printing can still continue.

NOTE: The following indication will NOT be shown on the display when one of the meter-click mode is selected even if the counter reaches the PM interval.
“Change Fusing Unit”
“Change PCU”
“Need Charger Unit”
The Charger unit and Fusing unit counter need to be manually cleared by “Maintenance” menu and controller SP mode (S4).

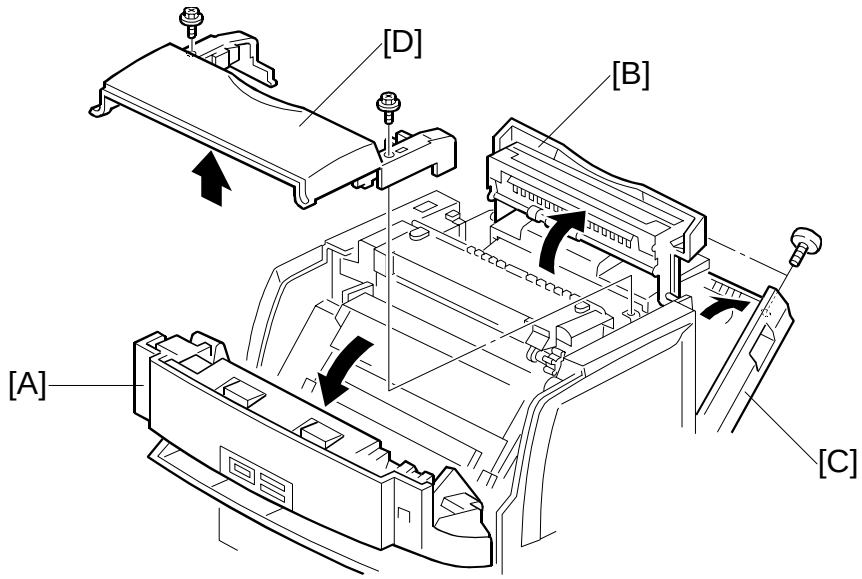
5.2.2 OPTIONAL PAPER FEED UNIT

See the manual for base model (G024)

6. REPLACEMENT AND ADJUSTMENT (AUTO-DUPLEX MODEL)

6.1 EXTERIOR

6.1.1 TOP OVER

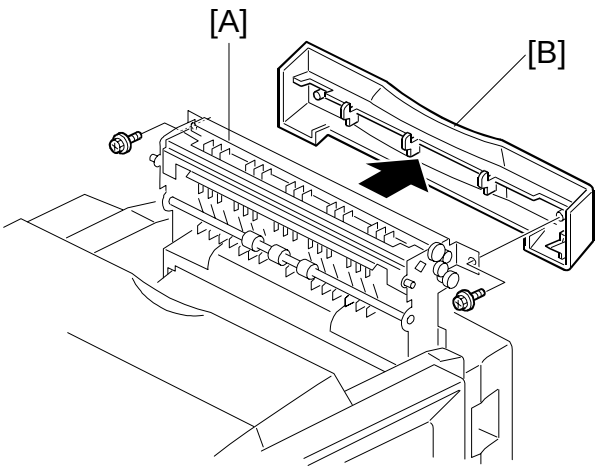


G048R810.WMF

1. Open the front cover [A] and paper exit unit [B].
2. Open the vertical transport unit [C] (2 screws).
3. Remove the top cover [D] (2 screws).

6.2 PAPER EXIT UNIT

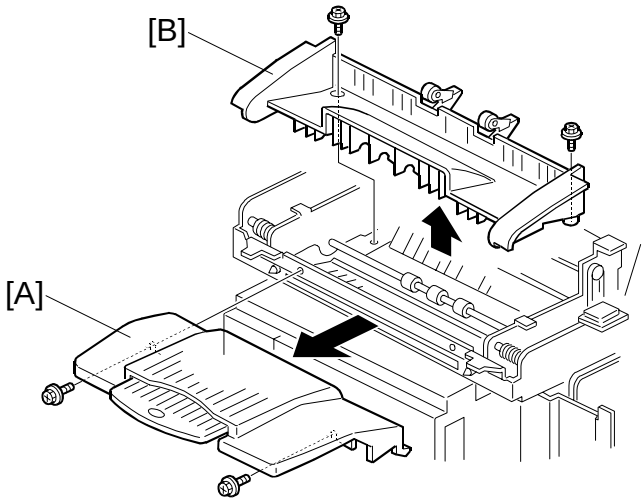
6.2.1 UPPER COVER



G048R829.WMF

1. Open the paper exit unit [A].
2. Remove upper cover [B] (2 screws)

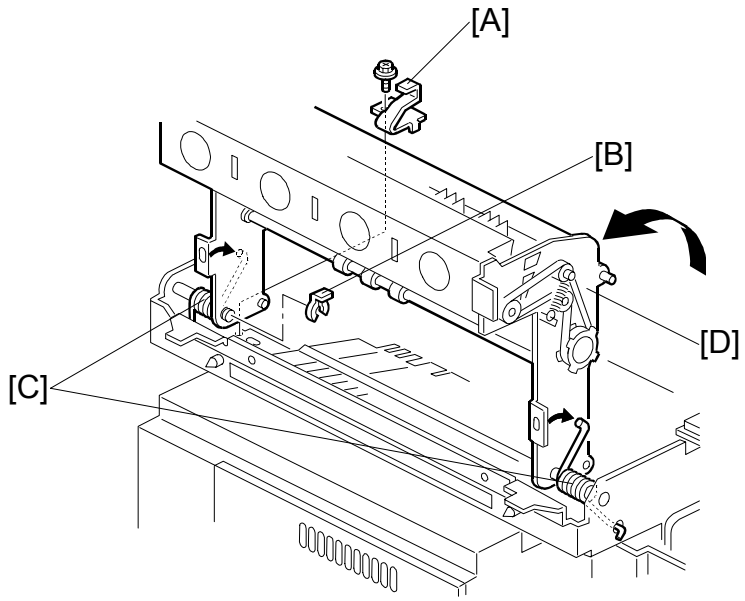
6.2.2 LOWER COVER



G048R830.WMF

1. Remove the upper cover. (Refer to section 6.2.1.)
2. Open the vertical transport unit.
3. Remove the paper exit tray [A] (2 screws).
4. Remove the lower cover [B] (2 screws).

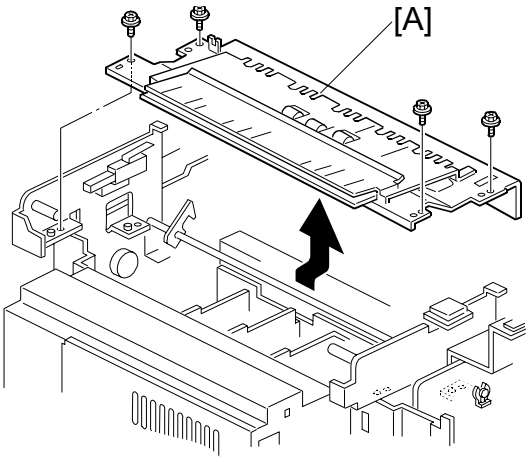
6.2.3 PAPER EXIT UNIT



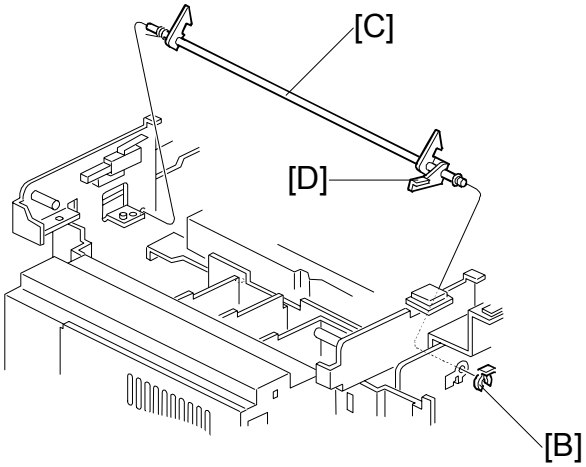
G048R824.WMF

1. Remove the top cover. (Refer to section 6.1.1.)
2. Remove the stopper plate [A] (1 screw).
   NOTE: Removing the stopper plate will allow this unit to tip fully back, so be careful.
3. Remove the lower cover. (Refer to section 6.2.2.)
4. Remove clips [B], springs [C] and the unit [D].

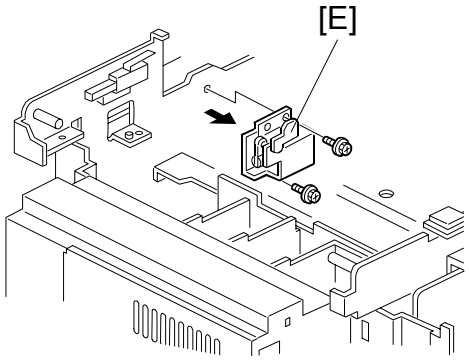
6.2.4 JUNCTION GATE SOLENOID



G048R827.WMF



G048R840.WMF



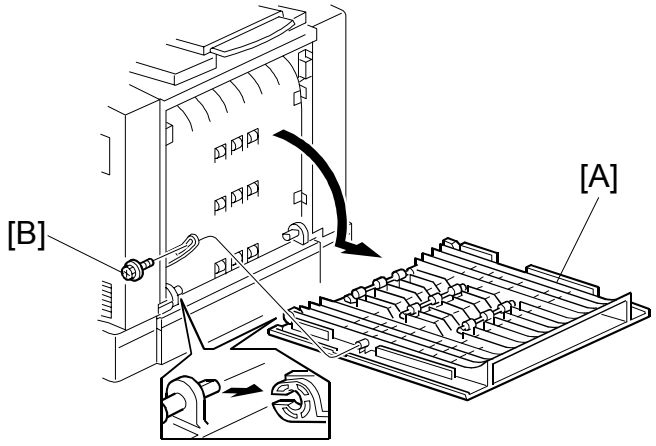
G048R825.WMF

1. Remove the fusing unit. (Refer to section 6.5.1.)
2. Remove the paper exit unit. (Refer to section 6.2.3.)
3. Remove the guide plate [A] (4 screws).
4. Remove the clip [B] and the locking bar [C] while releasing the spring [D].
5. Remove the solenoid [E] together with the bracket.
6. Remove the solenoid from the bracket.

NOTE: Be sure to note the locations of the screws securing the solenoid to the bracket.

6.3 VERTICAL TRANSPORT UNIT

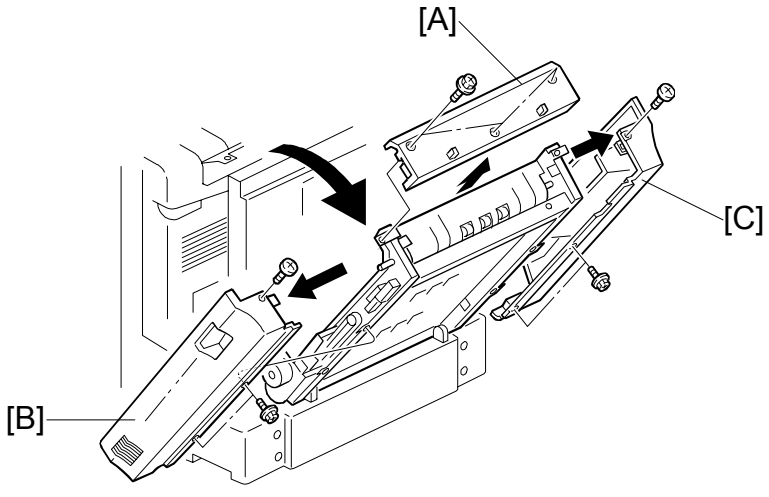
6.3.1 VERTICAL TRANSPORT UNIT COVER



G048R802.WMF

1. Open the vertical unit cover [A].
2. Remove a screw [B] at the joint arm and then remove the cover.

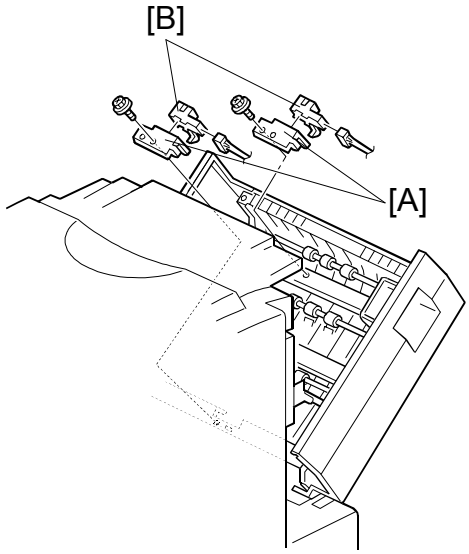
6.3.2 UPPER, LEFT AND RIGHT SIDE COVER



G048R803.WMF

1. Open the vertical transport unit (2 screws).
2. Remove the upper cover [A] (3 screws).
3. If present, open the vertical transport unit cover.
4. Remove the left side cover [B] (2 screws) and right side cover [C] (2 screws).

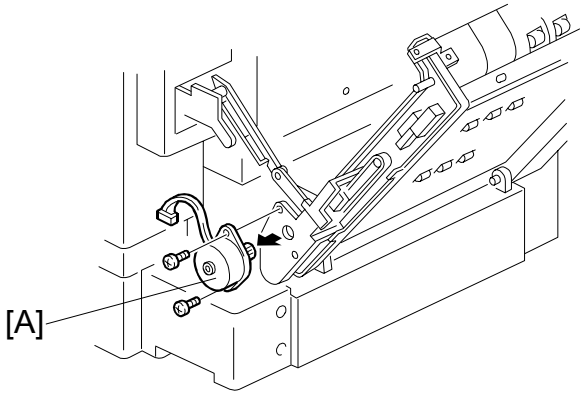
6.3.3 VERTICAL UNIT SENSORS



G048R801.WMF

1. Open the vertical transport unit
2. Remove the brackets [A] (1 screw each).
3. Remove the cables from the connectors, then remove the sensor [B].

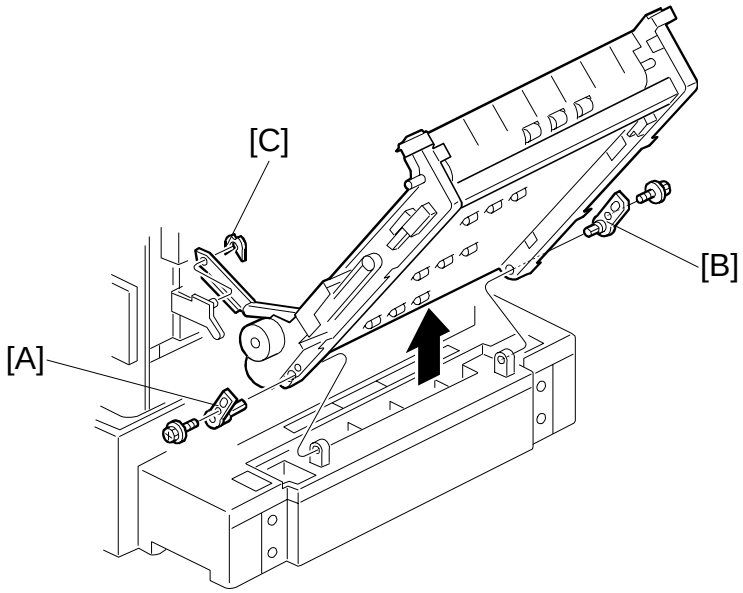
6.3.4 VERTICAL TRANSPORT MOTOR



G048R804.WMF

1. Remove the vertical transport cover. (Refer to section 6.3.1.)
2. Remove the upper and left side cover. (Refer to section 6.3.2.)
3. Remove the motor [A] (2 screws and 1 connector).

6.3.5 VERTICAL TRANSPORT UNIT

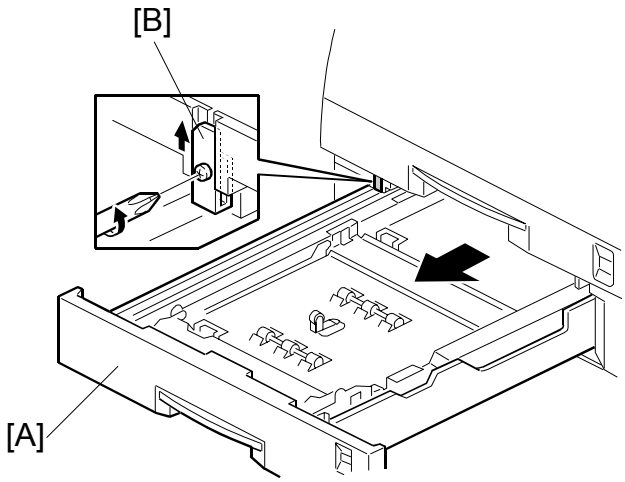


G048R823.WMF

1. Remove the vertical transport cover. (Refer to section 6.3.1.)
2. Remove the upper, left side, right side covers. (Refer to section 6.3.2.)
3. Remove connectors.
4. Remove the brackets on the left [A] and right side [B] (1 screw each).
   NOTE: The brackets on the left and right side differ from each other. The left side bracket has a longer pin than the other.
5. Remove the clip [C] at the joint.
   NOTE: Be sure that the harness for the vertical transport motor is removed beforehand so the harness is not damaged.

6.4 DUPLEX UNIT

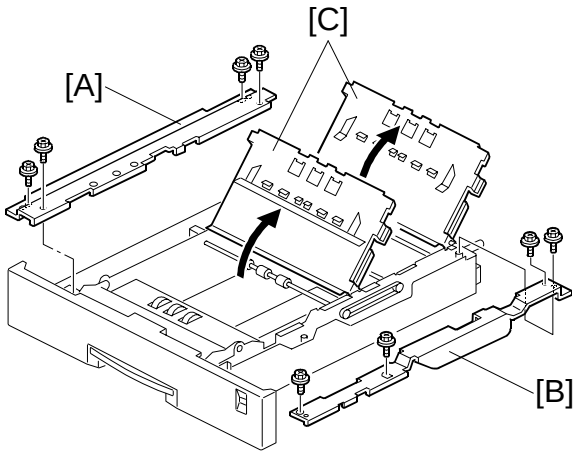
6.4.1 DUPLEX TRAY



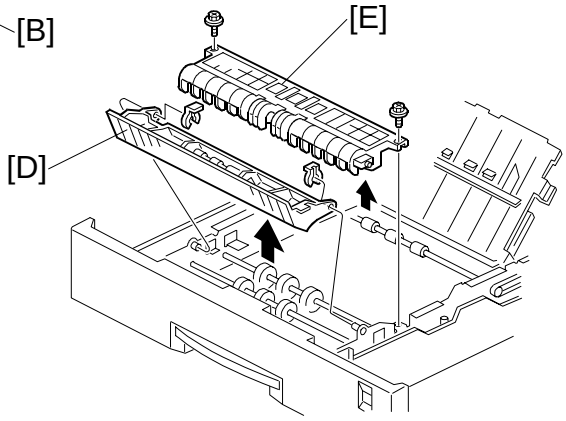
G048R828.WMF

1. Pull the tray [A] out about halfway.
2. Loosen the screw that holds the stopper plate [B].
3. Move the stopper plate up and pull out the tray.

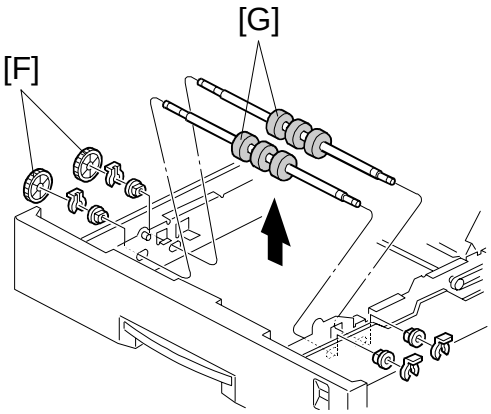
6.4.2 REVERSE ROLLER



G048R811.WMF



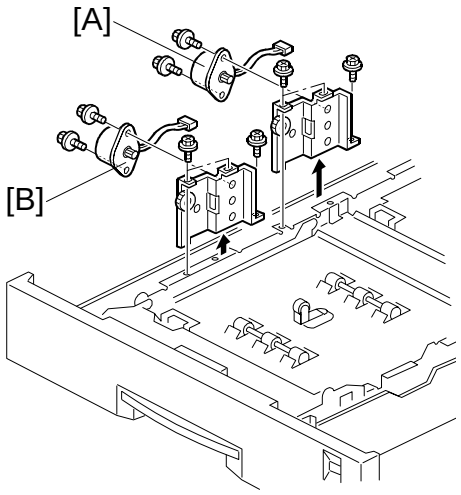
G048R813.WMF



G048R819.WMF

1. Pull the duplex tray out. (Refer to section 6.4.1.)
2. Remove the left [A] and right side covers [B] (4 screws each).
3. Open the upper and lower guide plate [C].
4. Remove the upper reverse plate [D] (2 clips).
5. Remove the lower reverse plate [E] (2 screws).
   NOTE: Be sure not to damage the Myler sheet on the lower plate while removing the plate.
6. Remove the reverse roller gears [F] and roller [G] (4 clips and 4 bushings).

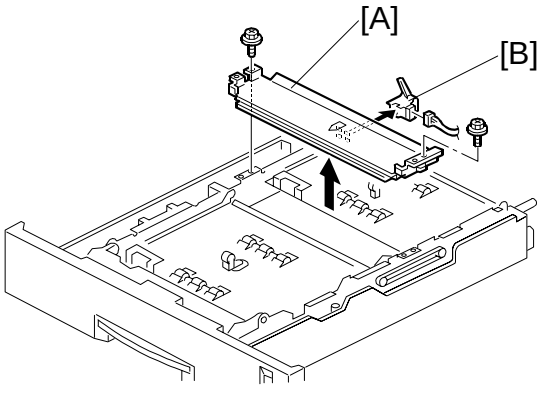
6.4.3 DUPLEX FEED MOTOR/REVERSE MOTOR



G048R815.WMF

1. Remove the duplex tray. (Refer to section 6.4.1.)
2. Remove the left and right side covers. (Refer to section 6.4.2.)
3. Remove the duplex feed motor [A] and duplex reverse motor [B] together with the brackets (3 screws).
4. Remove motors from brackets (2 screws and 1 connector each).

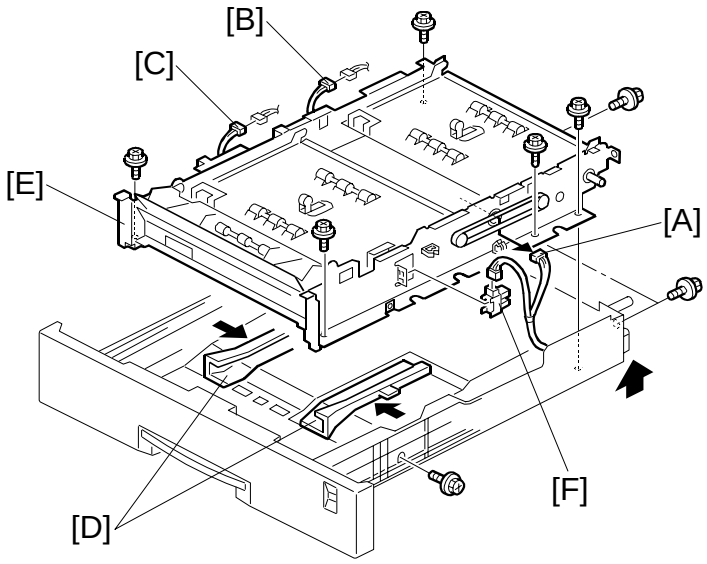
6.4.4 DUPLEX FEED SENSOR



G048R817.WMF

1. Remove the duplex tray. (Refer to section 6.4.1.)
2. Remove the left and right side covers. (Refer to section 6.4.2.)
3. Remove the center plate [A] (2 screws).
4. Remove the duplex feed sensor [B] (1 connector).
   NOTE: Be sure not to damage the Myler sheet while removing the plate and sensor.

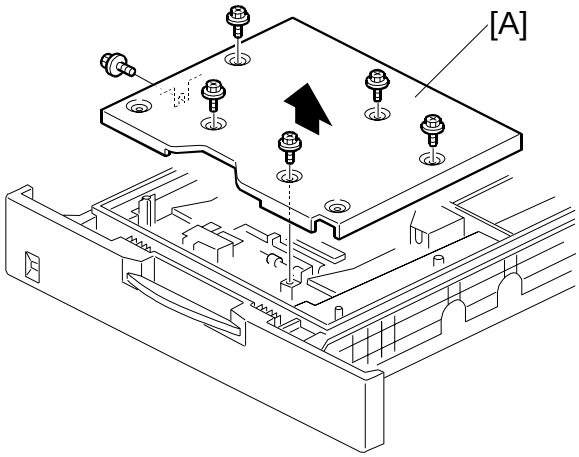
6.4.5 JOGER HOME POSITION SENSOR



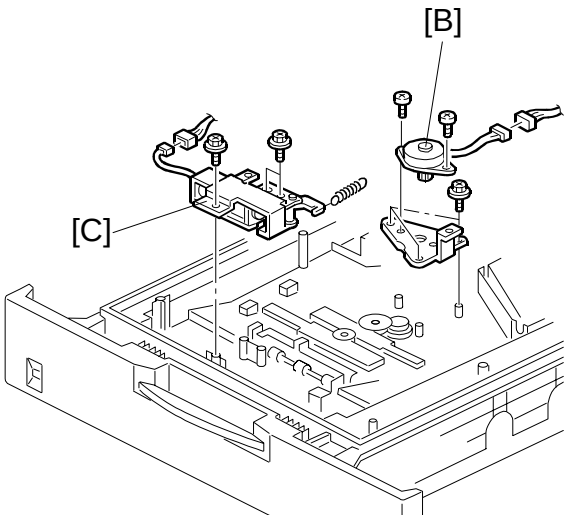
G048R812.WMF

1. Remove the duplex tray. (Refer to section 6.4.1.)
2. Remove the left and right side covers. (Refer to section 6.4.2.)
3. Remove the center plate and duplex feed sensor connector [A]. (Refer to section 6.4.4.)
4. Remove the feed [B] and reverse motor [C] connectors.
5. Open the upper and lower guide plates and slide the jogger fences [D] to the inside.
6. Remove the upper unit [E] (8 screws).
7. Remove the jogger H.P. sensor [F] (1 connector).

6.4.6 JOGGER MOTOR/REVERSE SOLENOID



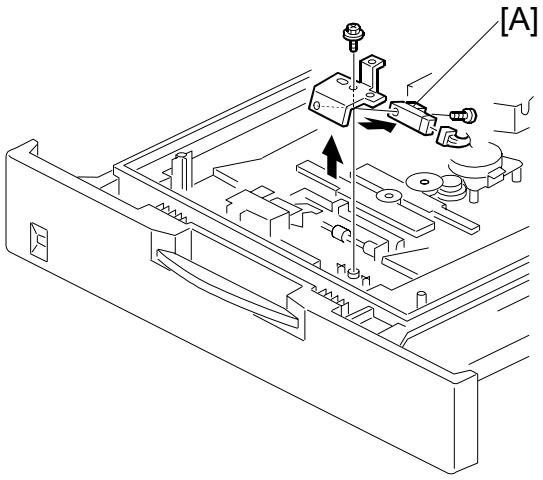
G048R814.WMF



G048R816.WMF

1. Remove the duplex tray. (Refer to section 6.4.1.)
2. Reverse the tray and remove the bottom cover [A] (6 screws).
3. Remove the jogger motor [B] together with bracket (3 screws).
4. Remove the motor from the bracket (2 screws and 1 connector).
5. Remove the reverse solenoid [C] (3 screws, 1 connector and 1 spring).

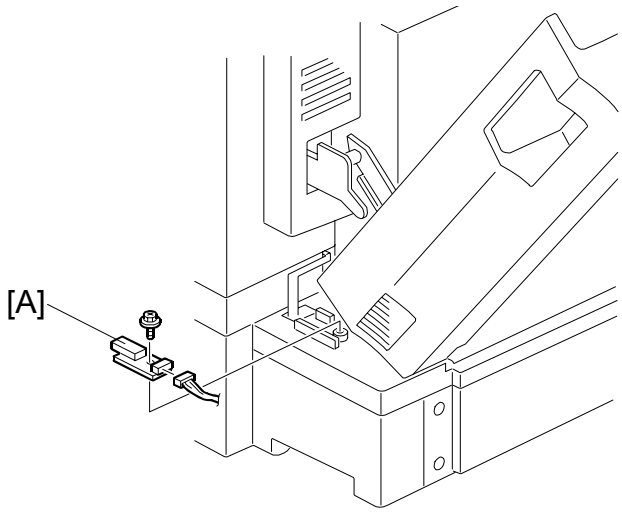
6.4.7 REVERSE SENSOR



G048R818.WMF

1. Remove the duplex tray. (Refer to section 6.4.1.)
2. Remove the bottom cover. (Refer to section 6.4.6.)
3. Remove the reverse sensor [A] together with bracket (1 screw).
4. Remove the sensor from the bracket (1 screw and 1 connector).

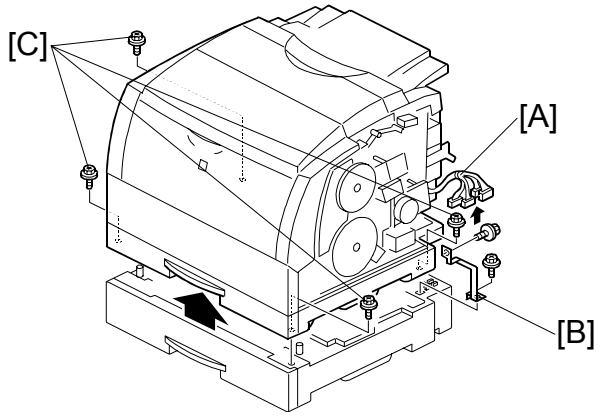
6.4.8 TEMPERATURE/HUMIDITY SENSOR



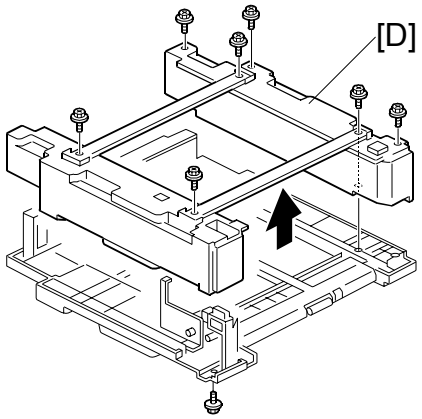
G048R808.WMF

1. Open the vertical transport unit.
2. Remove the temperature/humidity sensor [A] (1 screw and 1 connector).

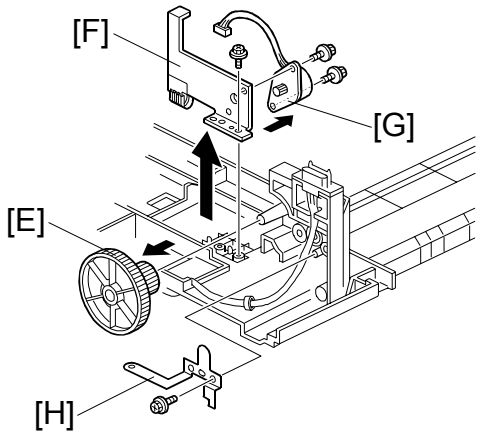
6.4.9 RELAY MOTOR/RELAY ROLLER



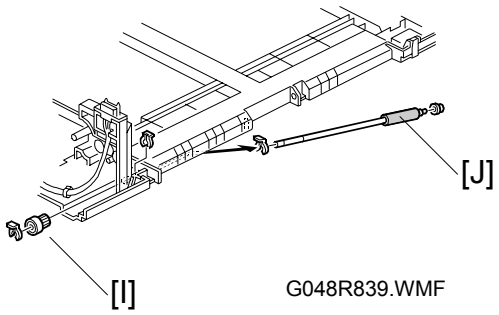
G048R836.WMF



G048R835.WMF



G048R834.WMF



G048R839.WMF

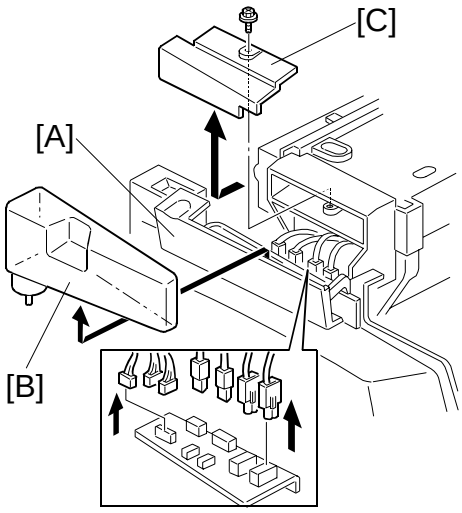
1. Remove the left and right side mainframe covers.
2. Remove the vertical transport unit. (Refer to section 6.3.5.)
3. Remove the connector [A] and the grounding plate [B].
4. Remove the 4 screws [C] that join the mainframe and the duplex unit, then separate them.
5. Remove the duplex tray. (Refer to section 6.4.1.)
6. Remove the temperature/humidity sensor. (Refer to section 6.4.8.)
7. Reverse the duplex unit and remove the unit frame [D] (8 screws).
8. Remove the gear [E] and motor bracket [F] (1 screw).
9. Remove the relay motor [G] (2 screws).
10. Remove the grounding plate [H] (1 screw).
11. Remove the relay roller drive gear [I] (1 clip)
12. Remove the relay roller [J] (2 clips and 2 bushings).

6.5 FUSING SECTION

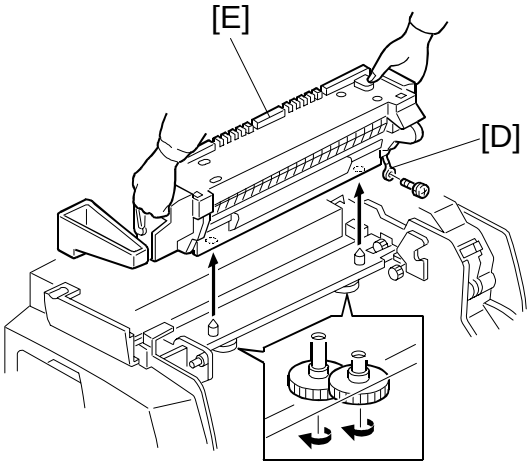
6.5.1 FUSING UNIT

⚠CAUTION

1. **The fusing unit is hot. Handle it with care.**
2. **Be careful not to spill silicone oil.**
3. **In the event of a fusing-related SC, replace the applicable components and execute "6: Reset SC" from the engine SP menu to remove the SC.**
4. **When the fusing unit has been replaced, execute "S3 Maintenance Clear" from the controller SP menu to reset the fusing counter.**



G048R831.WMF



G048R832.WMF

1. Remove the top cover of mainframe. (Refer to section 6.1.1.)
2. Open the front cover and paper exit unit.
3. Open the oil bottle cover [A] and remove the bottle [B].
4. Remove the harness cover [C] and all connectors.
5. Remove the grounding wire [D] (1 screw).
6. Remove the fusing unit [E] (3 dial screws).

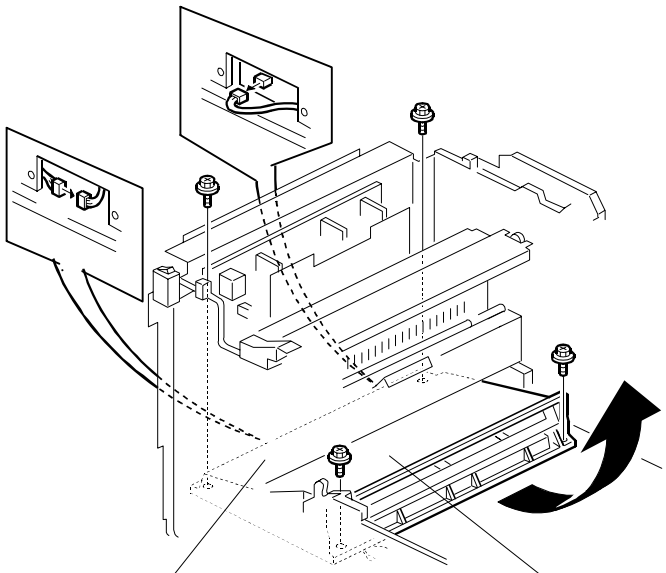
6.6 LASER SECTION

⚠WARNING

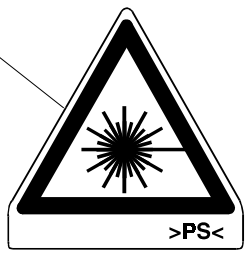
Turn off the main switch and unplug the machine before attempting any of the procedures in this section. Laser beams can seriously damage your eyes.

6.6.1 CAUTION DECAL LOCATIONS

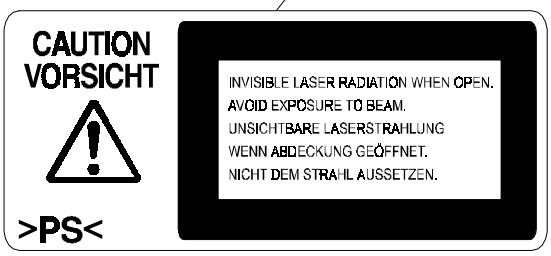
Two caution decals are located in the laser section as shown below.



G048R504A.WMF

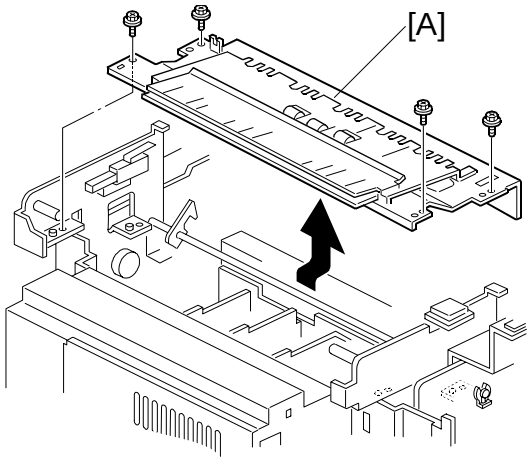


LASER_PS1.WMF

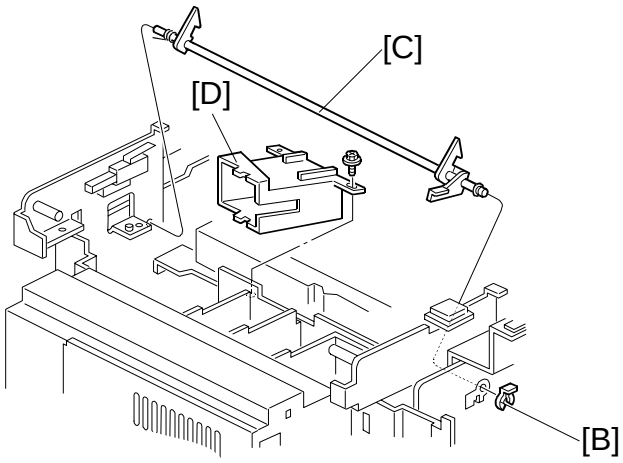


LASER_PS2.WMF

6.6.2 OPTICAL HAUSING UNIT



G048R827.WMF



G048R826.WMF

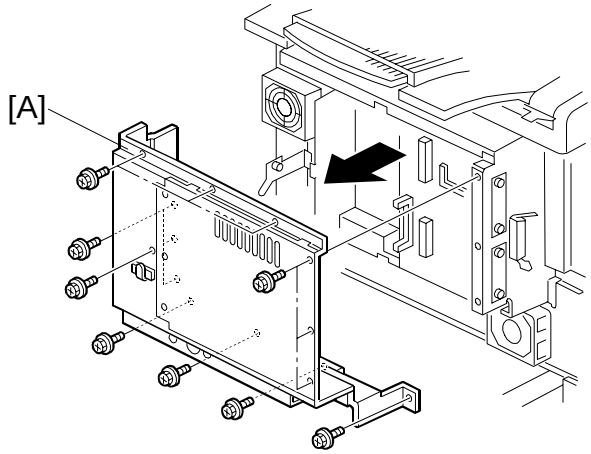
The procedure for removing the screws on the front side is the same as the base model (G024). The following section explains how to remove the screws on the back side.

1. Remove the top cover. (Refer to section 6.1.1.)
2. Remove the paper exit unit. (Refer to section 6.2.3.)
3. Remove the guide plate [A] (4 screws).
4. Remove the clip [B] and the locking bar [C] with releasing the spring.
5. Remove the duct [D] (1 screw).
6. Remove 2 screws fixing the unit at backside.

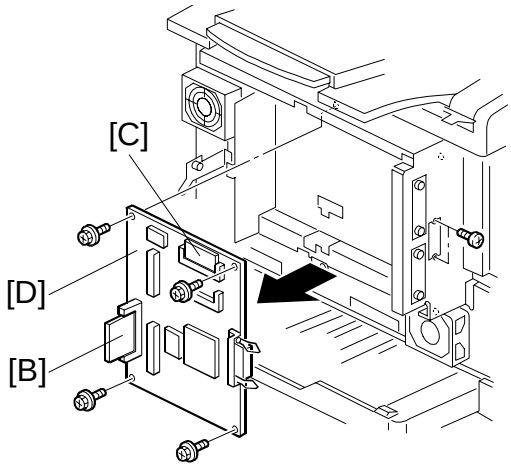
6.7 ELECTRICAL COMPONENTS

6.7.1 CONTROLLER BOARD

NOTE: Before replacing the controller, print the list of settings whenever possible. In the event of NV-RAM damage, it is necessary to configure all settings according to this list.



G048R805.WMF



G048R806.WMF

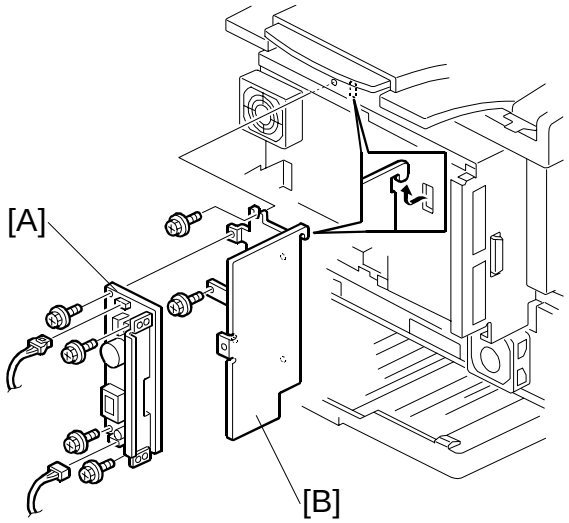
1. Remove the top, left and right side covers.
2. Remove the vertical transport unit. (Refer to section 6.3.5.)
3. Remove the controller board cover [A] (14 screws).
4. Remove the RPS module [B] and RAM module [C].
5. Remove the controller board [D] (6 screws and 1 connector).

NOTE: 1) If the customer has added optional expansion memory or a NIC, remove it before replacing the controller. Remember to install the memory or NIC on the new controller board.
2) To replace the controller boards, remove the NVRAM chip (IC23) on the old board, install it on the new board, then install the new board. The NVRAM chip stores user settings and service records. These settings will be lost if the NVRAM chip is not transferred.

6.7.2 DUPLEX DC SUPPLY UNIT

⚠WARNING

To avoid an electric shock, unplug the power cable before replacing the power supply unit.



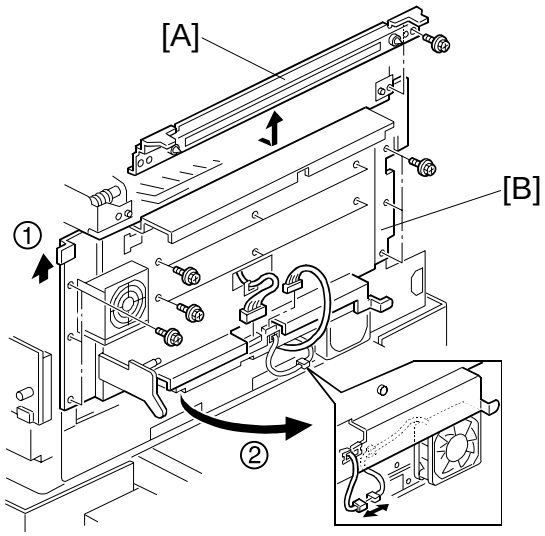
G048R807.WMF

1. Remove the controller board cover. (Refer to section 6.7.1.)
2. Remove the duplex dc supply unit [A] together with the bracket [B] (2 screws and 2 connectors).
3. Remove the dc supply unit from the bracket (4 screws).

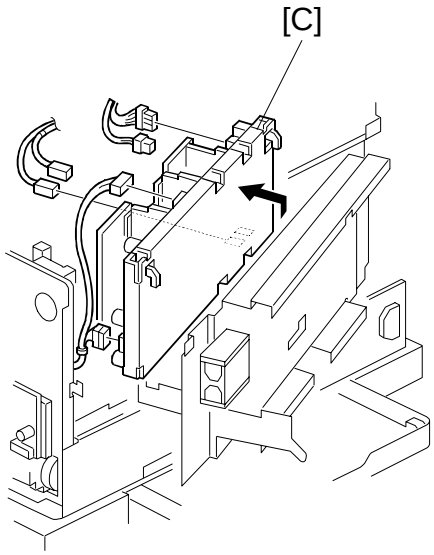
6.7.3 POWER SUPPLY UNIT

⚠WARNING

To avoid an electric shock, unplug the power cable before replacing the power supply unit.



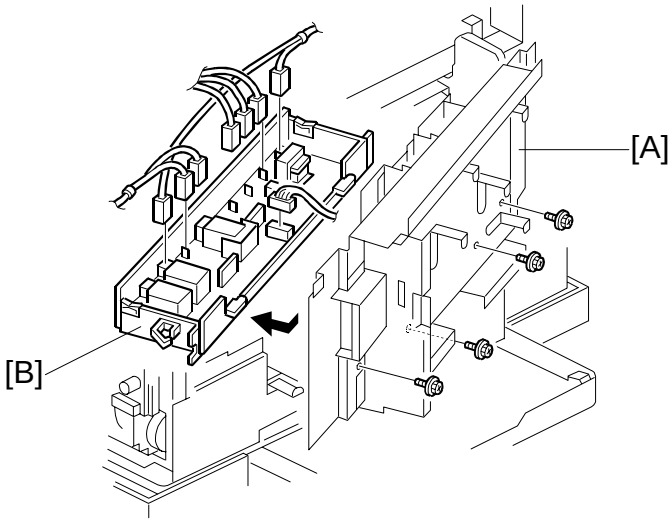
G048R820.WMF



G048R821.WMF

1. Remove the controller board. (Refer to section 6.7.1.)
2. Remove the duplex dc supply unit. (Refer to section 6.7.2.)
3. Remove the stay for the paper exit tray [A] (2 screws).
4. Remove the 6 screws holding the electrical wiring box [B], unplug 4 connectors, and release 2 hooks. Lift the left side of the electrical wiring box [B] upwards ① to swing it out ②.
5. Remove the power supply unit [C] (6 screws, 6 connectors and 2 hooks).

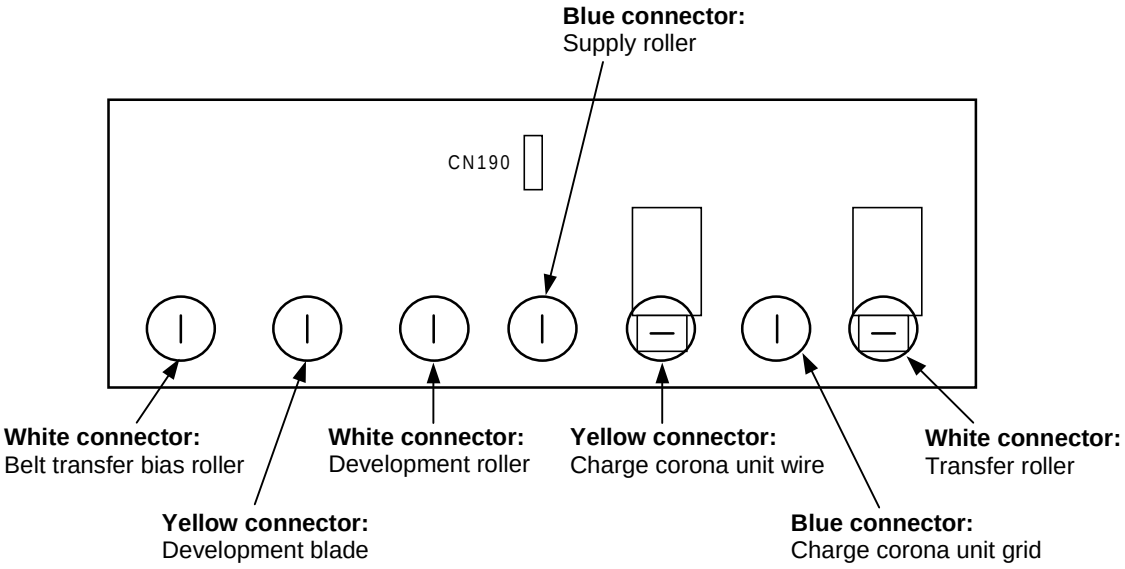
6.7.4 HIGH VOLTAGE SUPPLY UNIT



G048R255.WMF

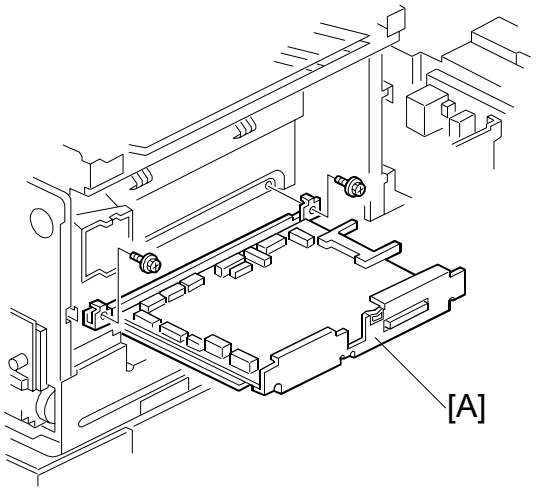
1. Swing the electrical wiring box [A] out. (Refer to section 6.7.3.)
2. Remove the high voltage supply unit [B] (4 screws, 8 connectors and 2 hooks).

⚠WARNING
Carefully connect the high-voltage wires as shown in the diagram below.



G048R512.WMF

6.7.5 MCU

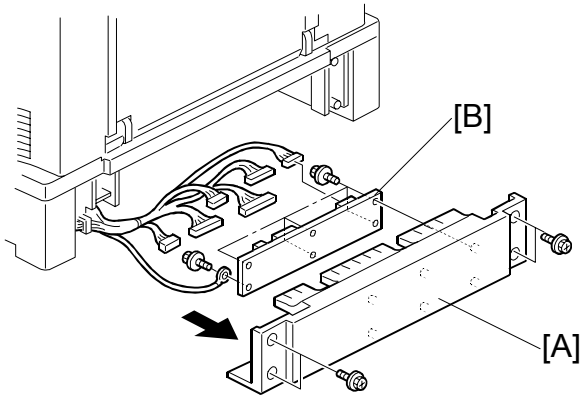


G048R822.WMF

1. Swing the electrical wiring box out. (Refer to section 6.7.3.)
2. Remove the MCU [A] (2 screws and all connectors).

NOTE: When replacing an MCU, remove the NVRAM chip (IC106) from the old board, install it on the new board, and then install the new board.
In the event of NVRAM damage, install a new NVRAM chip, and contact your supervisor for additional steps. A forced process control will also be necessary (Engine SP mode 7: Process Control – Initialize).

6.7.6 DUPLEX DRIVE BOARD



G048R833.WMF

1. Remove the duplex backside cover [A] (4 screws).
2. Remove all connectors from the board.
3. Remove the duplex drive board [B] (6 screws, 1 ground wire).

7. TROUBLESHOOTING

7.1 SC TABLES

7.1.1 TYPES OF SERVICE CALL

For this printer engine, service calls and process control errors are classified into three types:

Service Call Type	Results
TYPE 1: Safety warning and immediate shutdown (Fusing unit errors)	The printer stops immediately and the LCD displays an SC error message. The error is logged.
TYPE 2: Immediate shutdown	The printer stops immediately and the LCD displays an SC error message. The error is logged.
TYPE 3: Log only (Process control errors)	The printer does not stop. No SC error message is displayed. The error is only logged.

NOTE: In this section, additional or different codes from the base model (G024) are marked with an asterisk "*".

Fusing Unit SC Errors

Fusing unit SC errors (Type 1 errors) can be released by executing the Reset SC item in the engine SP mode menu. They cannot be released by turning the main power switch off and on.

7.1.2 SC ERROR LIST

NOTE: The errors marked with an asterisk "*" are additional or changed codes for this model.

SC No.	Type	Name	Occurrence conditions	Detection conditions	Cause
20	Type 2	Optional tray unit error	The detection signal for the 500-sheet paper tray unit is abnormal.	Always monitored	The optional tray unit connector has a bad connection.
21	Type 1	Pressure roller thermistor error	The roller temperature has been at 0°C for five seconds.	No detection in the event of a jam/door open, SC, unit absence, energy-saving mode, or lack of fusing unit	Pressure roller thermistor, MCU
22	Type 1	High pressure roller temperature	The roller temperature has been at 190°C or higher for three seconds.	No detection in the event of SC or lack of fusing unit	Pressure roller thermistor, MCU
23	Type 1	Low pressure roller temperature	Reheating has been done and the motor is not running, or 60 seconds have passed after the main motor halted. Then, the roller temperature has been below 130°C for 60 seconds	No detection in the event of a jam/door open, SC, unit absence, energy-saving mode, or lack of fusing unit	Pressure roller thermistor, MCU, pressure roller lamp connector
24	Type 1	Hot roller thermistor error	The roller temperature has been 0°C for five seconds.	No detection in the event of a jam/door open, SC, unit absence, energy-saving mode, or lack of fusing unit	Hot roller thermistor, MCU
25	Type 1	High hot roller temperature	The roller temperature has been 190°C or higher for three seconds.	No detection in the event of SC or fusing unit absence	Hot roller thermistor, MCU
26	Type 1	Low hot roller temperature	Reheat has been done and the motor is not running, or 60 seconds have passed after main motor halt. Then, the roller temperature has been below 130°C for 60 seconds	No detection in the event of a jam/door open, SC, unit absence, energy-saving mode, or fusing unit absence	Hot roller thermistor, MCU, hot roller lamp connector
* 27	Type 2	Zero-cross cycle detection error	50 Hz AC The number of zero-cross is detected less than 89 times or more than 111 times in one second for continuous 5 seconds. 60 Hz AC The number of zero-cross is detected less than 109 times or more than 131 times in one second for continuous 5 seconds.	No detection in the event of a jam/door open, SC, unit absence, energy-saving mode, or fusing unit absence	Frequency of the commercial AC power

SC No.	Type	Name	Occurrence conditions	Detection conditions	Cause
28	Type 2	Paper transfer positive bias release error	The PWM duty has been 50% or higher for 240 ms. Or, the paper transfer roller clutch does not operate.	Detection starts 60 ms after control starts for this component.	There is a disconnection in the paper transfer bias supply circuit. (Deformation of terminals or springs, dirty bearings) When the contact/separation lever is normal: Bad transfer roller position sensor, harness, or MCU When the contact/separation lever is faulty: Bad transfer roller clutch or MCU
29	Type 2	Primary transfer bias open	The PWM duty has been 50% or higher for 240 ms.	Detection starts 60 ms after control starts for this component.	There is a disconnection in the primary transfer bias supply circuit. (Dirty or deformed electrodes)
31	Type 2	Supply bias error	The voltage has been higher than the appropriate control voltage for the target voltage for 240 ms. However, detection is disabled when the calculated control voltage is 5 V or higher.	Detection starts 60 ms after control starts for this component.	There is a short circuit in the supply bias supply circuit (due to deformed terminals or electrodes or conductive foreign matter)
32	Type 2	Blade bias error	The voltage has been higher than the appropriate control voltage for the target voltage for 240 ms. However, detection is disabled when the calculated control voltage is 5 V or higher.	Detection starts 60 ms after control starts for this component.	There is a short circuit in the blade bias supply circuit.
33	Type 2	Charge corona unit bias open	The PWM duty has been 50% or higher for 240 ms.	Detection starts 60 ms after control starts for this component.	There is disconnection in the charge corona unit bias supply circuit. (Dirty or deformed electrodes)
34	Type 2	Charge corona unit grid bias error	The voltage has been higher than the appropriate control voltage for the target voltage for 240 ms. However, detection is disabled when the calculated control voltage is 5 V or higher.	Detection starts 60 ms after control starts for this component.	There is a short circuit in the charge corona unit grid bias supply circuit (due to deformed terminals or electrodes or conductive foreign matters).
35	Type 2	Main motor error	Continuous unlock for two seconds		Main motor, MCU
36	Type 2	PCU motor error	Continuous unlock for two seconds		PCU motor, MCU

SC No.	Type	Name	Occurrence conditions	Detection conditions	Cause
38	Type 2	Revolver motor error	Movement to the home position took four or more seconds. For black, movement to the home position took one second or longer.		Revolver motor, MCU, or incorrect installation of color development unit
39	Type 2	Polygon mirror motor error	Continuous unlock for two seconds		Polygon mirror motor, MCU
40	Type 2	ID sensor error	The ID sensor output voltage is not between 0.1 V and 1.1 V while the ID sensor LED is off.	ID sensor calibration	ID sensor
41	Type 2	Transfer belt H.P. sensor error	No mark has been detected for 500 ms during PCU motor operation.		Transfer belt H.P. sensor, MCU
42	Type 2	Laser diode error	LD error (abnormal laser power output)		LD, LD control board
43	Type 2	Synchronization detection error	Synchronization detection error of the optical unit	During polygon mirror motor revolution	Synchronization detection board, LD control board
45	Type 2	Charge bias short	A/D converted voltage has been 4.8 V or more for 240 ms.	Detection starts 60 ms after control starts for this component.	There is a short circuit in the charge bias supply circuit (due to deformed terminals or electrodes or conductive foreign matter)
46	Type 2	Paper transfer positive current error	A/D converted voltage has been 0.2 V or less for 240 ms.	Detection starts 60 ms after control starts for this component.	There is a short circuit in the paper transfer bias supply circuit (due to deformed terminals or electrodes or conductive foreign matter)
47	Type 2	Paper transfer negative bias open	The PWM duty has been 50% or greater for 240 ms.	Detection starts 60 ms after control starts for this component.	There is disconnection in the paper transfer bias supply circuit. (Dirty or deformed electrodes)
48	Type 2	Paper transfer negative current error	A/D converted voltage has been 4.8 V or more for 240 ms.	Detection starts 60 ms after control starts for this component.	There is a short circuit in the paper transfer bias supply circuit (due to deformed terminals or electrodes or conductive foreign matter)
49	Type 1	Pressure roller reheat timeout	When reheating, the roller temperature does not reach the reheat start temperature (target temperature –20°C) within five minutes.	During re-heating	Pressure roller thermistor, pressure roller lamp connector, MCU

SC No.	Type	Name	Occurrence conditions	Detection conditions	Cause
50	Type 1	Hot roller reheat timeout	When reheating, the roller temperature does not reach the reheat start temperature (target temperature –10°C) within five minutes.	During reheating	Hot roller thermistor, hot roller lamp connector, MCU
51	Type 1	Pressure roller lamp full-power operation error	When full-power operation occurs during reheating, the main motor is not running and the difference between the current temperature and that of 60 seconds ago is 18°C or less.	No detection in the event of a jam/door open, SC, unit absence, energy-saving mode, or fusing unit absence.	Pressure roller thermistor, pressure roller lamp connector, MCU
52	Type 1	Hot roller lamp full-power operation error	When full-power operation occurs during reheating, the main motor is not running and the difference between the current temperature and that of 60 seconds ago is 18°C or less.	No detection in the event of a jam/door open, SC, unit absence, energy-saving mode, or fusing unit absence.	Hot roller thermistor, hot roller lamp connector, MCU
57	Type 2	Print command error	When an abnormal combination of print commands is received.		
59	Type 2	Temperature sensor error	5 V (4.75 V) or more has continuously been detected for five seconds.	When the power is on, or the AC development bias is off.	Temperature sensor
60	Type 2	Humidity sensor error	5 V (4.75 V) or more has continuously been detected for five seconds.	When the power is on, or the AC development bias is off.	Humidity sensor
*61	Type 2	Paper Transfer roller error	Paper transfer position sensor does not detect the movement of roller.	When the contact and separation of the roller need to be detected.	Transfer roller position sensor MCU Harness Transfer roller clutch
*62	Type 2	Auto-Duplex unit detection error.	Auto-duplex unit is detected on the manual-duplex model.	When the power is on	MCU
*63	Type 2	Jogger movement error	Jogger home position sensor does not turn on.	During duplex printing	Jogger motor Jogger HP sensor MCU DDB

7.1.3 PROCESS CONTRL ERROR LIST

PE No.	Type	Name	Occurrence conditions	Detection conditions	Cause
103	Type 3	K ID sensor error	While the LED is off, the ID sensor output does not meet the standard voltage (between 0.05 V and 1.5 V).	ID sensor (K) calibration	When the output meets the standard voltage: *MCU, harness* When the output does not meet the standard: *K ID sensor*
104	Type 3	ID sensor output error (rough adjustment)	The difference in ID sensor outputs when the transfer belt is read and when the LED is off does not meet the standard voltage (Vbkcal ± 0.4 V).	ID sensor (K) calibration	K ID sensor, MCU, transfer belt error, transfer belt surface unevenness, incorrect ID sensor installation
105	Type 3	ID sensor output error (fine adjustment)	The difference in ID sensor outputs when the transfer belt is read and when the LED is off does not meet the standard voltage (Vbkcal ± 0.1 V).	ID sensor (K) calibration	K ID sensor, MCU, transfer belt error, transfer belt surface unevenness
110	Type 3	ID sensor pattern error (Cyan)	The slope γM of the line representing the relationship between the C development bias and attached toner amount is not between –0.01 and –0.0005.	Color DTM initialization	Incorrect color DTM installation, incorrect PCU installation, development bias error, MCU, LD control malfunction, loss of synchronization
111	Type 3	ID sensor pattern error (Magenta)	The slope γM of the line representing the relationship between the M development bias and attached toner amount is not between –0.01 and –0.0005.	Color DTM initialization	Incorrect color DTM installation, incorrect PCU installation, development bias error, MCU, LD control malfunction, loss of synchronization
112	Type 3	ID sensor pattern error (Yellow)	The slope γM of the line representing the relationship between the Y development bias and attached toner amount is not between –0.01 and –0.0005.	Color DTM initialization	Incorrect color DTM installation, incorrect PCU installation, development bias error, MCU, LD control malfunction, loss of synchronization
116	Type 3	ID sensor pattern error (K)	The slope γM of the line representing the relationship between the K development bias and attached toner amount is not between –0.01 and –0.001.	Color DTM initialization	Incorrect K DTM installation, incorrect PCU installation, development bias error, MCU, LD control malfunction, loss of synchronization

PE No.	Type	Name	Occurrence conditions	Detection conditions	Cause
118	Type 3	ID sensor pattern read error (K)	The difference in ID sensor outputs when the ID sensor pattern is read and when the background surface of the transfer belt is read is 0.8 V or less.	K-DTM bias initialization	Incorrect DTM installation, incorrect PCU installation, development bias error, MCU, LD control malfunction, loss of synchronization
123	Type 3	ID sensor pattern error (K)	The slope γM of the line representing the relationship between the DTM bias and attached toner amount is not between –0.01 and –0.001.	K-DTM bias control	Incorrect DTM installation, incorrect PCU installation, development bias error, MCU, LD control malfunction, loss of synchronization

7.2 USER ERROR LIST

This table only shows additional and different items from the base model (G024).

Error	Operation after error	Detection conditions	Release method	Remarks
Add Toner: xx	Printing stops.	The PCU counter is increased to 100 after toner near-end is detected.	Replace the DTM.	This error is shown when “Stop” is selected in the Toner Empty menu.
Low on : x,x,x	Printing can be done.	Toner near-end detection is enabled two seconds after the development drive solenoid turns on until it turns off. The toner near-end message is displayed when toner end is detected five times.	Replace the DTM.	When near-end is detected, closing the front cover initiates recovery. If the toner near-end status is cleared, it is not detected during recovery. In single-color (black-and-white) continuous output, toner near-end is detected during process control.
Change PCU	Printing can be done.	The CPU counter reaches 72,000.	Replace the PCU to reset the counter.	Counting (upon exit) A3/DLT or smaller **K single-color**: Plus 1 **Full color**: Plus 4 For sizes larger than A3/DLT, counting doubles. This is not shown if meter-click mode is selected.
Change Fusing Unit	Printing can be done.	The fusing unit counter reaches 60,000.	Manually release the message using ‘Maintenance Clear’ in controller SP mode.	A3 or larger: Number of sheets that have passed x 2 Smaller than A3: Number of sheets that have passed This is not shown if meter-click mode is selected.
Need Charger	Printing can be done.	Charger counter reaches 24 K.	Replace charger unit and reset the charger counter.	This is not shown if meter-click mode is selected.
Vertical Transport Unit Cover Open	Printing is disabled.	Always monitored	Close the cover.	

Error	Operation after error	Detection conditions	Release method	Remarks
Duplex-tray Jam	Printing is disabled.	<Case 1> The duplex feed sensor does not detect paper 3.2 seconds after the vertical transport exit sensor detects paper. <Case 2> The reverse sensor does not detect paper 3.2 seconds after the duplex feed sensor detects paper. <Case 3> The reverse sensor does not detect paper 0.5 seconds after the duplex reverse motor turns on.	Remove the jammed paper.	
Vertical Transport Unit Jam	Printing is disabled.	The vertical transport entrance sensor does not detect paper 3.2 seconds after the paper exit sensor in fusing unit detects paper. Or The vertical transport exit sensor does not detect paper 2.8 seconds after the vertical entrance sensor detects paper.	Remove the jammed paper by opening the vertical transport unit.	
Duplex Unit Exit Jam	Printing is disabled.	The pull-out sensor for the main frame does not detect paper 0.9 seconds after the relay motor turns on.		

Point to Point Diagram (G047/G048)

Power Supply Unit PCB1

Power Cord, LINE, NUTRAL, Inlet, T108, T109, T101, T102, Ground
FU1 250V 15A
Power Relay
DC Voltage Generator
Heater Control Circuit
CN102-1 CN102-2 CN102-3 CN102-4 → CN1, CN2-2, CN3, CN4-2

TF1 Hot Roller Thermofuse, T105 T106, L1 Hot Roller Lamp
TF2 Pressure Roller Thermofuse, T107 T108, L2 Pressure Roller Lamp

Fusing Unit
TF1 Pressure Roller Thermisotr (CN807)
TF2 Hot Roller Thermistor (CN808)
S19 Exit Sensor (CN809, CN888)
S16 DTM Set Sensor (CN811)

Main Switch T115 T116 T113 T112
CN105-6 CN105-3 CN105-1 CN105-4

CN101-1 Vcc (5.1V)
CN101-2 Vcc (5.1V)
CN101-3 Vaa (24V)
CN101-4 Vaa (24V)
CN101-5 GND (COM1) (Vcc)
CN101-6 GND (COM1) (Vcc)
CN101-7 GND (COM3) (Vaa)
CN101-8 GND (COM3) (Vaa)

CN201 CN202 CN203

CN802-1 CN802-2 CN801-2 CN801-1 Door Safety Switch
CN805-1 CN805-2 CN803-2 CN803-1 Exit Cover Switch
CN804-1 CN804-2 DTM Cover Switch

CN204: 5V, 5V INT, 24V, 24V INTR, 24V INR, 24V INTS
CN250: 24V DB, 24V DBSW

XFIXRA2 (▼24) XFIXRAI (▼24) XPWRRL (▼24) ZCROSS (▼5 → 0/5) GND (COM2) 24 V INT
GND (COM4) XFTFRM2 (▼5 → 0 to 5) GND (COM4) XFTHRM1 (▼5 → 0 to 5) GND (COM2) XPAPOUT (▼5) 5V GND (COM1) XFSET (▼5) 5V

CN211:
24V XBPFEDSL (▼24) → CN832 → SOL1 By-pass Feed Solenoid
24V XRRMLED (▼24) → CN877 → L3 Quenching Lamp
24V XFMSTAT2 (▼24) → CN834 → FM1 Transport Fan
24V XFMSTAT1 (▼24) → CN835 → FM2 Exhaust Fan
24V XFMSTAT3 (▼24) → CN876, CN875 → FM5 Charge Inlet Fan
24V XFMSTAT4 (▼24) → CN833 → FM3 Transport Fan
24V XFMSTAT5 (▼24) → CN678 → FM4 Inlet Fan

CN214:
24V INT REVMOBB (▼24 → 0/24) REVMOB (▼24 → 0/24) 24V INT REVMOAB (▼24 → 0/24) REVMOA (▼24 → 0/24) → M1 Revolver Motor

CN215 → CN849:
24V INT, 5V, GND (COM3), GND (COM2), XBMLOCK (▼24), BMOCLK(▼24 → 0/24), BMSPEED (▼24), BMFF (▼24), BMFR (▼24), XBMSTART (▼24) → M2 PCU Motor

CN213 → CN845:
XDPINI (▼5), 5V, GND (COM2) → PCB4 Laser Synchronization Detector Board

CN213 → CN847 → CN846:
24V, GND (COM3), XPMSTART (▼24), XSCRDY (▼24), PMCLK (▼24 → 0/24) → M3 Polygon Mirror Motor

CN216 → CN850:
24V INT, 24V INT, GND (COM3), GND (COM3), XMMLOCK (▼24), MMSTART (▼24), MMSPEED (▼24) → M4 Main Motor

High Voltage Supply Board: C, G, TB, TP
PCB3
Development: BL, B, SP

CN190 → CN205:
GND (COM3)
24V INT
5V
GND (COM4)
FB VBL (▼5→0 to 5)
FB VSP (▼5 → 0 to 5)
FB ITP (▼5 → 0 to 5)
FB VTB (▼5 → 0 to 5)
FB VG (▼5 → 0 to 5)
FB IC (▼5 → 0 to 5)
PWM C (▲5 → 0/5)
PWM G (▲5 → 0/5)
PWM TB (▲5 → 0/5)
PWM TP+ (▲5 → 0/5)
PWM SP (▲5 → 0/5)
PWM BL (▲5 → 0/5)
PWM TP– (▲5 → 0/5)
TRG G (▼5)
TRG AC (▼5)
TRG B (▼5)

Main Control Board PCB2

CN212:
By-pass Feed Clutch CL1 (CN836): 24V XBPFEDCL (▼24)
Paper Feed Clutch CL2 (CN837): 24V XPAPEOCL (▼24)
Relay Roller Clutch CL3 (CN838): 24V XTRNROCL (▼24)
Registration Clutch CL4 (CN839): 24V XREGICL (▼24 → 0/24)
Transfer Belt Cleaning Solenoid SOL2 (CN840): 24V XTRCBESL (▼24 → 0/24)
Development Drive Solenoid SOL3 (CN841): 24V XDEVSLC (▼24 → 0/24)
Pull-out Clutch CL5 (CN843): 24V XPIUPCL (▼24 → 0/24)
Transfer Roller Clutch CL6 (CN844): 24V XTRCROCL (▼24)

CN207:
PCU Set Switch S1 (CN815): GND (COM2) XTNBTS (▼5)
Used Toner Sensor S2 (CN813): GND (COM2) XTNFULS (▼5) 5V
Charge Corona Set Switch S3 (CN822): GND (COM2) XINPUT (▼5)
PCU Reset Sensor S4 (CN827): GND (COM2) XPCUNOS (▼5) 5V
Paper End Sensor S5 (CN818, CN872): GND (COM2) XPAPEND (▼5) 5V
Pull-out Sensor S6 (CN823): GND (COM2) XPICKS (▼5) 5V

CN208:
Paper Size Switch S7 (CN824): XNOB0 (▲5) XNOB1 (▲5) GND (COM2) XNOB2 (▲5)
ID Sensor S8 (CN820, CN871): LEDIN (▼5 → 0 to 4) VOUT1 (▼5 → 0 to 5) VOUT2 (▼5 → 0 to 5) GND (COM2) 5V
Temperature Humidity Sensor S9 (CN814): XTHREMO (▼5 → 0 to 5) GND (COM4) GND (COM4) XHUMIDS (▼5 → 0 to 5) N.C. 5V

CN209:
By-pass Paper End Sensor S10 (CN817): GND (COM2) XBPFEDS (▼5) 5V
Transfer Roller Position Sensor S11 (CN826): GND (COM2) XTRCRLS (▼5) 5V
Toner End Sensor S12 (CN821): GND (COM2) XCOLEND (▼5) 5V
Revolver H.P. Sensor S13 (CN874): GND (COM2) XDTMS (▼5) 5V

CN210:
Transfer Belt H.P. Sensor S14 (CN830): GND (COM2) MARKSEN (▼5) 5V
Registration Sensor S15 (CN831): GND (COM2) XREGIST (▼5) 5V
Oil End Sensor S17 (CN828): GND (COM2) XOILEND (▼5) 5V

CN217		CN851
1	5VINT	25
3	GND (COM2)	23
5	5VINT	21
7	GND (COM2)	19
9	GND (COM2)	17
11	LDOFF (▲5)	15
13	XLDERR (▼5)	13
15	LDCLK (▼5) P	11
17	XLD7 (▼5) P	9
19	XLD5 (▼5) P	7
21	XLD3 (▼5) P	5
23	XLD1 (▼5) P	3
25	GND (COM2)	1

CN217		CN851
2	5VINT	26
4	GND (COM2)	24
6	5VINT	22
8	GND (COM2)	20
10	LDMODE (▼5)	18
12	LEVEL (▲5)	16
14	XLDON (▼5)	14
16	LDS (▲5)	12
18	XLD6 (▼5) P	10
20	XLD4 (▼5) P	8
22	XLD2 (▼5) P	6
24	XLD0 (▼5) P	4
26	GND (COM2)	2

CN221		CN855
1	LED2 (▼5)	23
3	LED4 (▼5)	21
5	SW2 (▼5)	19
7	SW4 (▼5)	17
9	SW6 (▼5)	15
11	SW8 (▼5)	13
13	5V	11
15	GND (COM2)	9
17	E (▲5)	7
19	DB4 (▲5)	5
21	DB6 (▲5)	3
23		1

CN221		CN855
2	LED1 (▼5)	24
4	LED3 (▼5)	22
6	SW1 (▼5)	20
8	SW3 (▼5)	18
10	SW5 (▼5)	16
12	SW7 (▼5)	14
14	5V	12
16	GND (COM2)	10
18	OPRXW (▼5)	8
20	RS (▲5)	6
22	DB5 (▲5)	4
24	DB7 (▲5)	2

CN218		CN852
A1	SPS0 (▼5)	P11
A2	SPS1 (▼5)	P10
A3	SPS2 (▼5)	P9
A4	SPEND (▼5)	P8
A5	SPSEN (▼5)	P7
A6	XSPST0 (▼5)	P6
A7	XSPST1 (▼5)	P5
A8	SPSEL (▲5)	P4
A9	SNDFD0 (▲5)	P3
A10	SNDCL0 (▲5)	P2
A11	SNDCK0 (▲5) P	P1

CN218		CN852
B1	5V	P22
B2	GND (COM2)	P21
B3	SDDFD1 (▲5)	P20
B4	SNDCL1 (▲5)	P19
B5	SNDK1 (▲5) P	P18
B6	24V	P17
B7	24V	P16
B8	24V	P15
B9	GND (COM3)	P14
B10	GND (COM3)	P13
B11	GND (COM3)	P12

CN217 → CN851 (26) → **Laser Diode (LD) Unit** PCB5

CN221 → CN855 (24) → **Operation Panel** PCB7

CN218 → CN852 (22) → CN860 860-2 → CN863:
(Option) Paper Fedd Unit
(Option) Paper Feed Unit

CN852	CN860 860-2		CN863
P11	J11	SPS0	P1
P10	J10	SPS1	P2
P9	J9	SPS2	P3
P8	J8	SPEND	P4
P7	J7	SPSEN	P5
P6	J6	XSPST0	P6
P5	J5	XSPST1	P7
P4	J4	SPSEL	P8
P3	J3	XSNDFD0	P9
P2	J2	XSNDCL0	P10
P1	J1	XSNDCK0	P11

CN852	CN860 860-2		CN863
P22	J11	5V	P22
P21	J10	GND (COM2)	P21
P20	J9	XSNDFD1	P20
P19	J8	XSNDCL1	P19
P18	J7	XSNDCK1	P18
P17	J6	24V	P17
P16	J5	24V	P16
P15	J4	24V	P15
P14	J3	GND (COM3)	P14
P13	J2	GND (COM3)	P13
P12	J1	GND (COM3)	P12

CN223 (80 pins)
CN1 (72 pins):
TXD, GND (COM2), XOFGATE, GND (COM2), 5V, 5V, 5V, XILSYNC, GND (COM2), ICLOCK, GND (COM2), XVDATA7, GND (COM2), XVDATA5, GND (COM2), XVDATA3, GND (COM2), XVDATA1, GND (COM2), N.C., GND (COM2), XS, GND (COM2), N.C., GND (COM2), RSEL, GND (COM2), D(7), GND (COM2), D(5), GND (COM2), LED1ON, LED2ON, 5V, 5V, SW3ON, SW4ON, SW7ON, SW8ON, RXD, GND (COM2), XOLSYNC, GND (COM2), OCLOCK, GND (COM2), XIFGATE, GND (COM2), 5V, 5V, 5V, 5V, XVDATA6, GND (COM2), XVDATA4, GND (COM2), XVDATA2, GND (COM2), XVDATA0, GND (COM2), 5V, 5V, 5V, GND (COM2), ENABLE, GND (COM2), OPR_W, GND (COM2), D(6), GND (COM2), D(4), GND (COM2), LED3ON, LED4ON, SW1ON, SW2ON, SW5ON, SW6ON, NC, NC

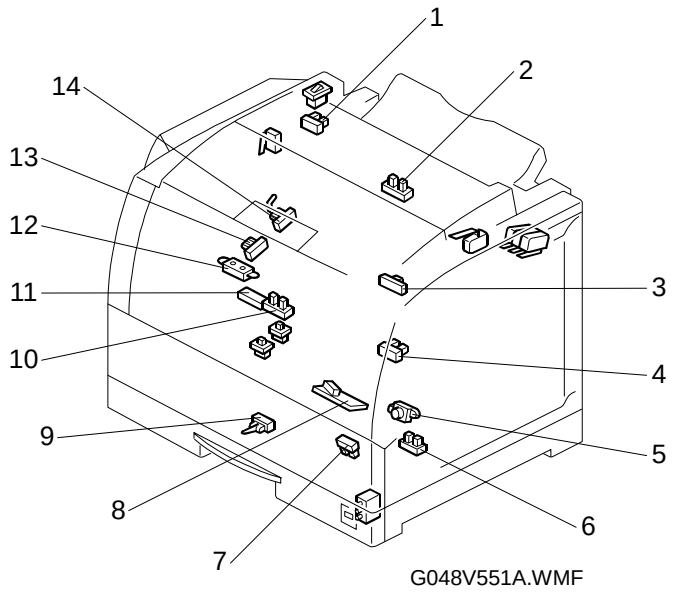
Controller Board WIN PCB8

Option Board
(Option) Network Interface Board
(Option) IEEE 1284 Parallel Interface
(Option) 16 MB/32 MB Memory
(Option) 16 MB/32 MB Memory
(Option) Ricoh-script 2

AC
DC
,P Pulse
Signal Direction
Active High
Active Low
( ) Voltage

ELECTRICAL COMPONENT LAYOUT

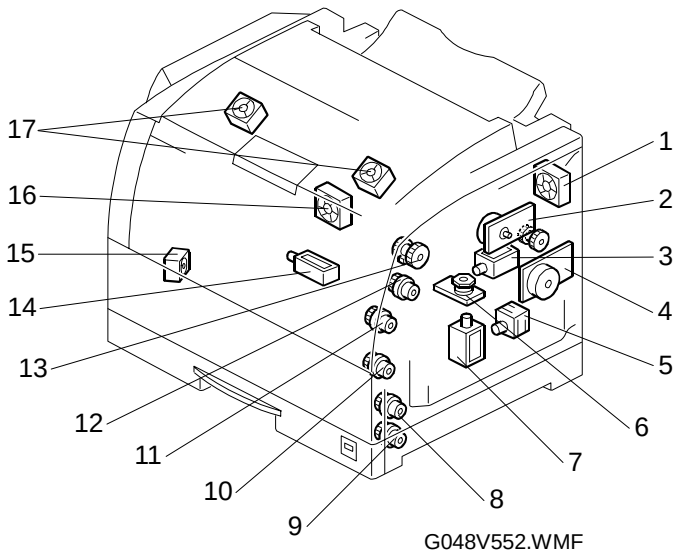
SENSORS



G048V551A.WMF

Index No.	Description	Symbol	P-to-P
1	Exit Sensor	S19	B7
2	Oil End Sensor	S17	J1
3	Transfer Belt H.P. Sensor	S14	I2
4	Transfer Roller Position Sensor	S11	H2
5	Used Toner Sensor	S2	F1
6	PCU Reset Sensor	S4	F1
7	Paper End Sensor	S5	G2
8	ID Sensor	S8	G1
9	Pull-out Sensor	S6	G1
10	By-pass Paper End Sensor	S10	H1
11	Registration Sensor	S15	I1
12	Toner End Sensor	S12	I2
13	Revolver H.P. Sensor	S13	I1
14	DTM Set Sensor	S16	B6

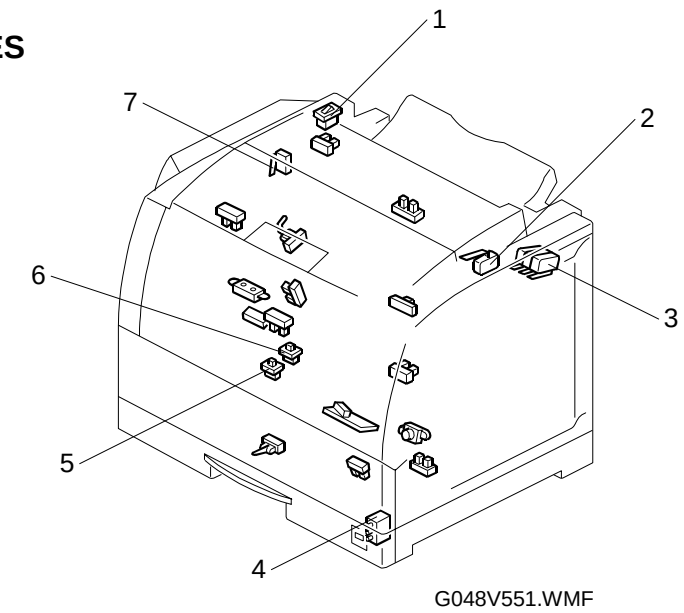
MOTORS, CLUTCHES, AND SOLENOIDS



G048V552.WMF

Index No.	Description	Symbol	P-to-P
1	Exhaust Fan	FM2	C8
2	PCU Motor	M2	D8
3	Transfer Belt Cleaning Solenoid	SOL2	E2
4	Main Motor	M4	F8
5	Revolver Motor	M1	D8
6	Polygon Mirror Motor	M3	E8
7	Development Drive Solenoid	SOL3	E1
8	Pull-out Clutch	CL5	F2
9	Paper Feed Clutch	CL2	E1
10	Relay Roller Clutch	CL3	E2
11	By-pass Feed Clutch	CL1	E2
12	Registration Clutch	CL4	E1
13	Transfer Roller Clutch	CL6	F1
14	By-pass Feed Solenoid	SOL1	B8
15	Charge Inlet Fan	FM5	C8
16	Inlet Fan	FM4	C8
17	Transport Fans	FM1, FM3	C7

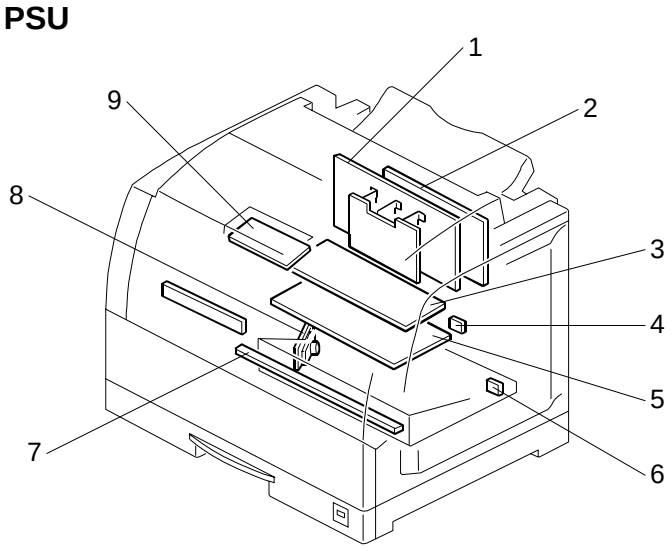
SWITCHES



G048V551.WMF

Index No.	Description	Symbol	P-to-P
1	Main Switch	SW1	B3
2	Exit Cover Switch	SW2	C2
3	Door Safety Switches	SW3	B2
4	Paper Size Switch	S7	G2
5	PCU Set Switch	S1	F2
6	Charge Corona Unit Set Switch	S3	F2
7	DTM Cover Switch	SW4	C2

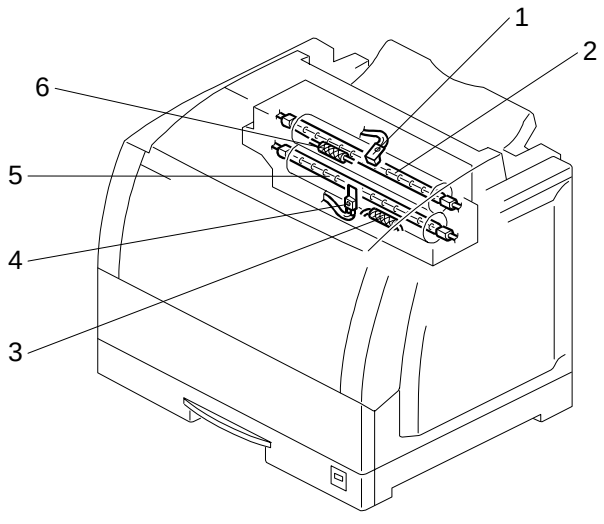
PCBS AND PSU



G048V111.WMF

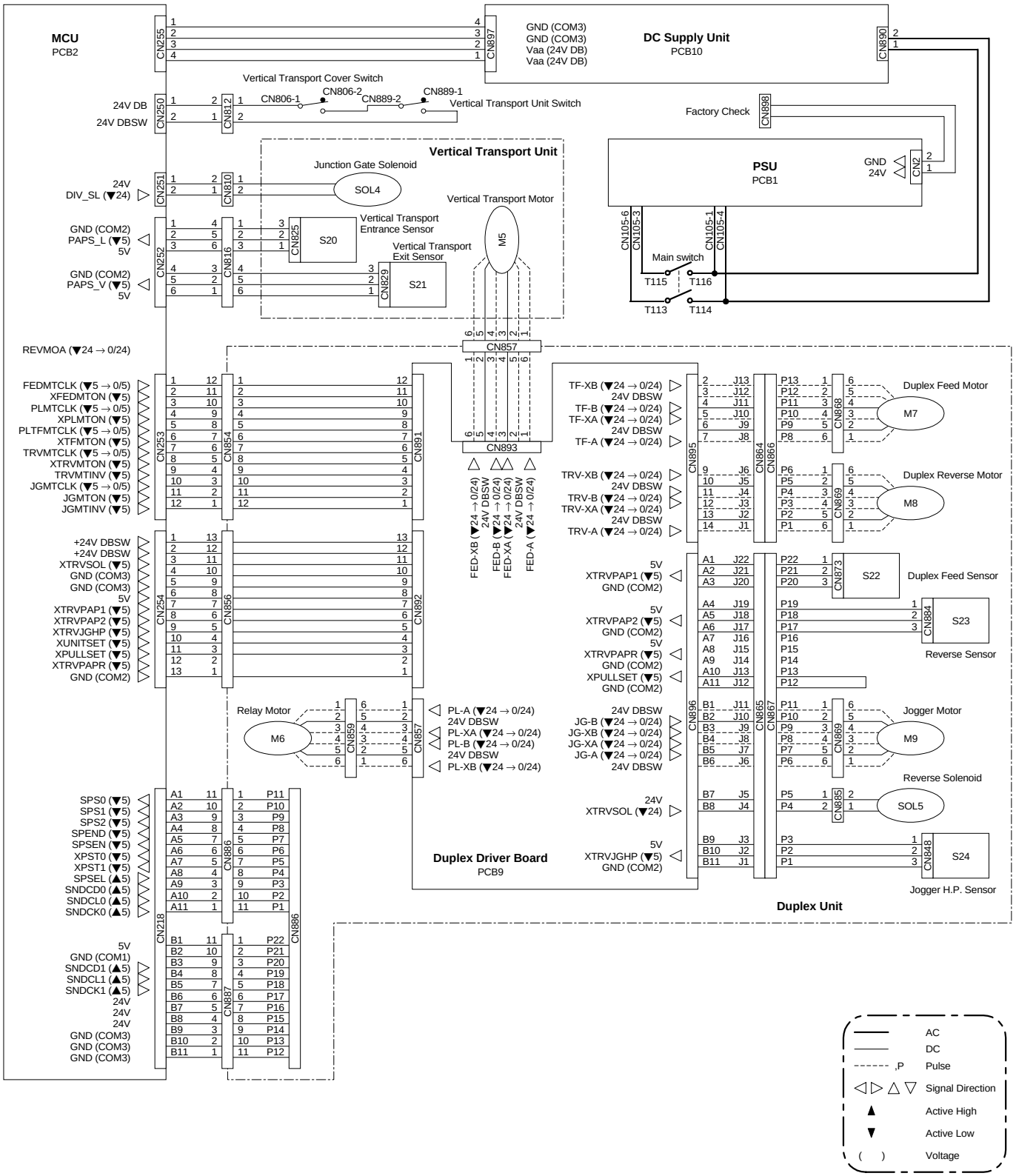
Index No.	Description	Symbol	P-to-P
1	Power Supply Unit (PSU)	PCB1	A3-A5
2	Controller Board	PCB8	J3-J7
3	High Voltage Supply Board	PCB3	D2
4	Temperature/Humidity Sensor	S9	H2
5	Main Control Unit (MCU)	PCB2	C3-I6
6	Laser Synchronization Detector Board	PCB4	E8
7	Quenching Lamp	L3	C7
8	Laser Diode (LD) Unit	PCB5	F7
9	Operation Panel	PCB7	G7

THERMISTORS, HEATERS, AND FUSES



G048V111.WMF

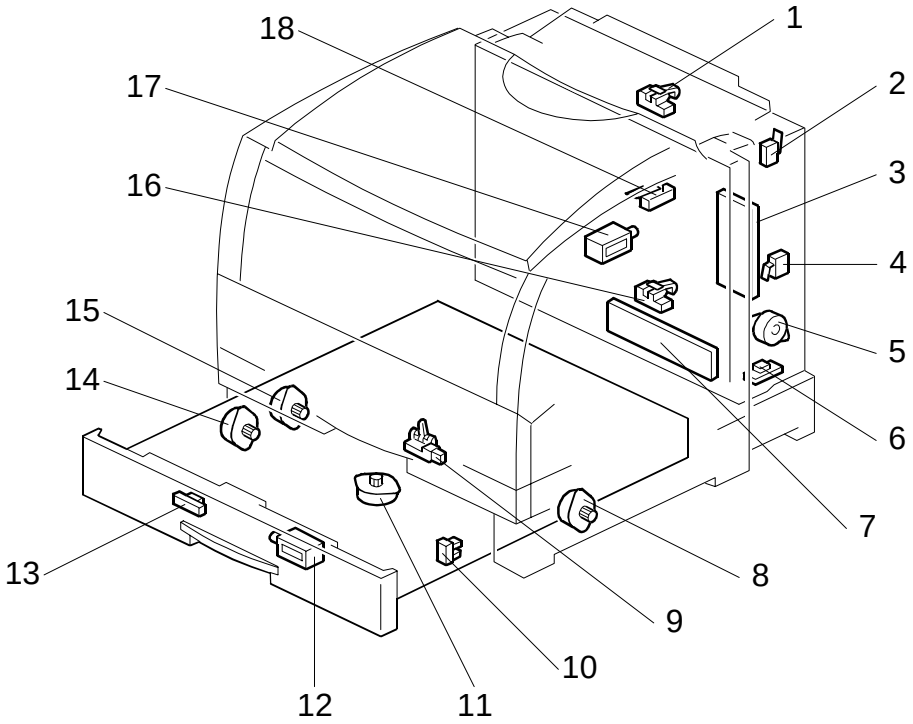
Index No.	Description	Symbol	P-to-P
1	Pressure Roller Thermistor	TH1	B7
2	Pressure Roller Lamp	L2	A7
3	Hot Roller Thermofuse	TF1	A7
4	Hot Roller Thermistor	TH2	B8
5	Hot Roller Lamp	L1	A7
6	Pressure Roller Thermofuse	TF2	A7



Point to Point Diagram (G048)

ELECTRICAL COMPONENT LAYOUT

Duplex



G048D103.WMF

Index No.	Description	Symbol	P-to-P
1	Vertical Transport Entrance Sensor	S20	D3
2	Vertical Transport Cover Switch	SW5	C3
3	Duplex DC Supply Unit	PCB10	B4-B7
4	Vertical Transport Unit Switch	SW6	C4
5	Vertical Transport Motor	M5	D4
6	Duplex Driver Board	PCB9	E4-H6
7	Relay Motor	M6	G3
8	Duplex Feed Sensor	S22	F7
9	Jogger H.P. Sensor	S24	H8
10	Jogger Motor	M9	G7
11	Reverse Solenoid	SOL5	G7
12	Reverse Sensor	S23	F8
13	Duplex Reverse Motor	M8	E7
14	Duplex Feed Motor	M7	E7
15	Vertical Transport Exit Sensor	S21	D4
16	Junction Gate Solenoid	SOL4	C3