



C5300/C5100

Color LED Page Printer

SERVICE MANUAL

2003-3-28 Rev.1

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PREFACE

This manual describes the procedures of the maintenance of the C5300/C5100 printers.

The document is produced for maintenance personnel use. For details on the procedures for handling the C5300/C5100 of printers, see its user documentation.

- Note!**
- The descriptions in this manual are subject to change without prior notice.
 - In preparing the document, efforts have been made to ensure that the information in it is accurate. However, errors may be crept into the document. Oki Data assumes no responsibility for any damage resulting from, or claimed to be the results of, those repairs, adjustments or modifications to the printers which are made by users using the manual.
 - The parts used for the printers are sensitive and, if handled improperly, may be damaged. It is strongly recommended that the products are maintained by maintenance men registered with Oki Data.

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1. SPECIFICATIONS

1.1 System Configuration

C5300

Figure 1-1-1 shows the system configuration of C5300.

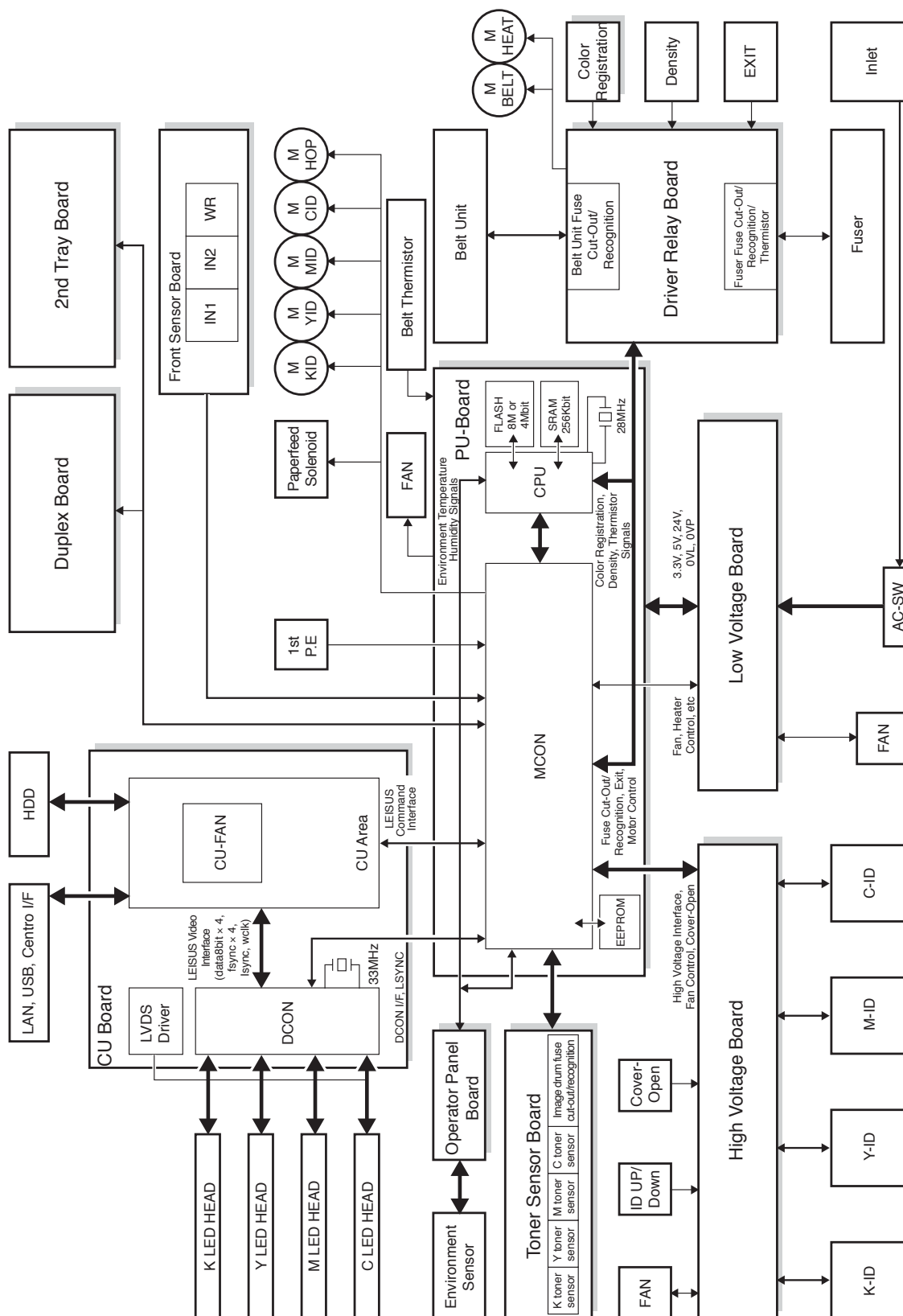


Figure 1-1-1

C5100

Figure 1-1-2 shows the system configuration of C5100.

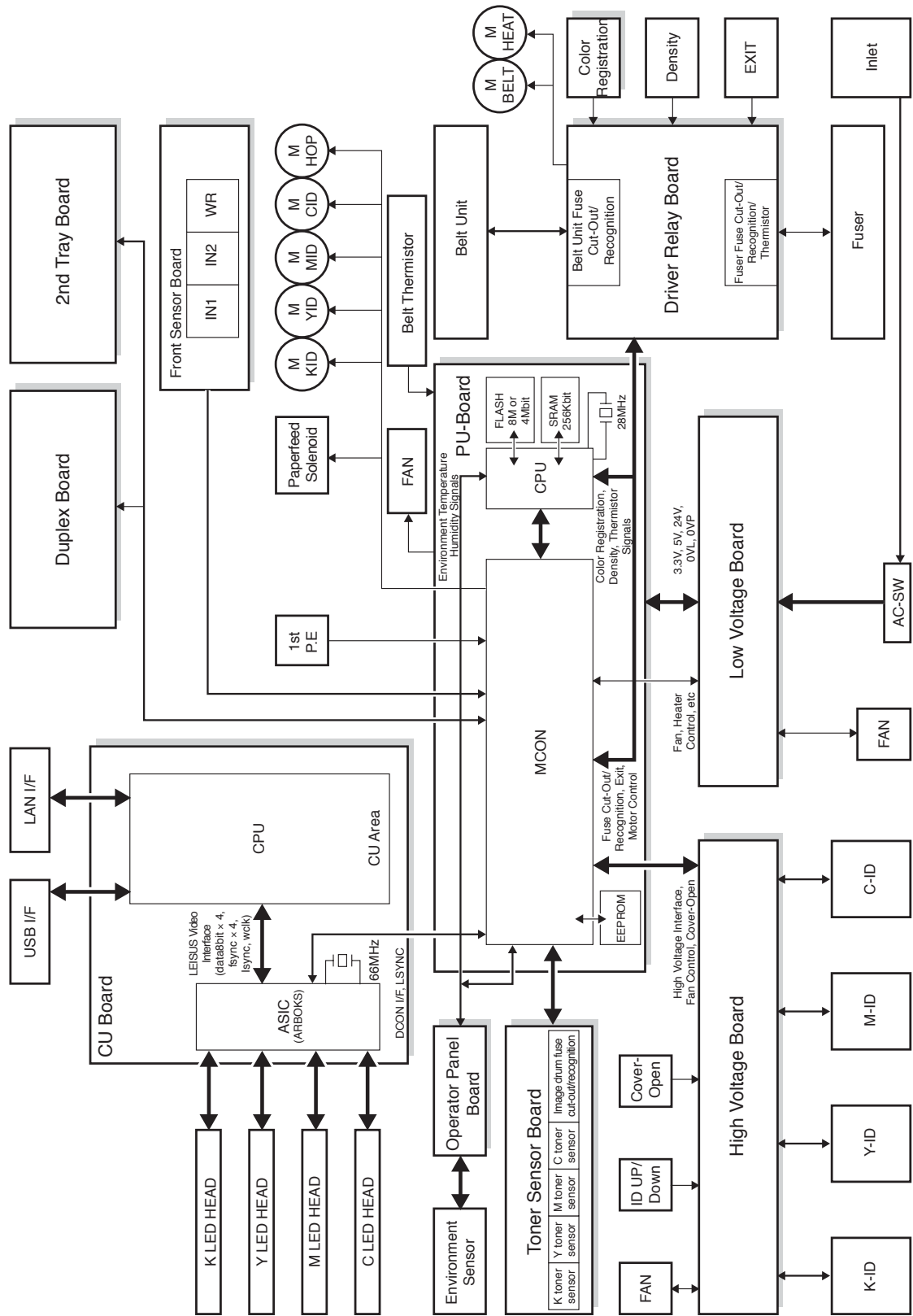


Figure 1-1-2

1.2 Printer Configuration

The inside of C5300 printers is composed of the following:

- Electrophotographic Processor
- Paper Paths
- Controller Block (CU and PU)
- Operator Panel
- Power Units (High Voltage Unit and Low Voltage Unit)

Figure 1-2-1 shows the configuration of each printer.

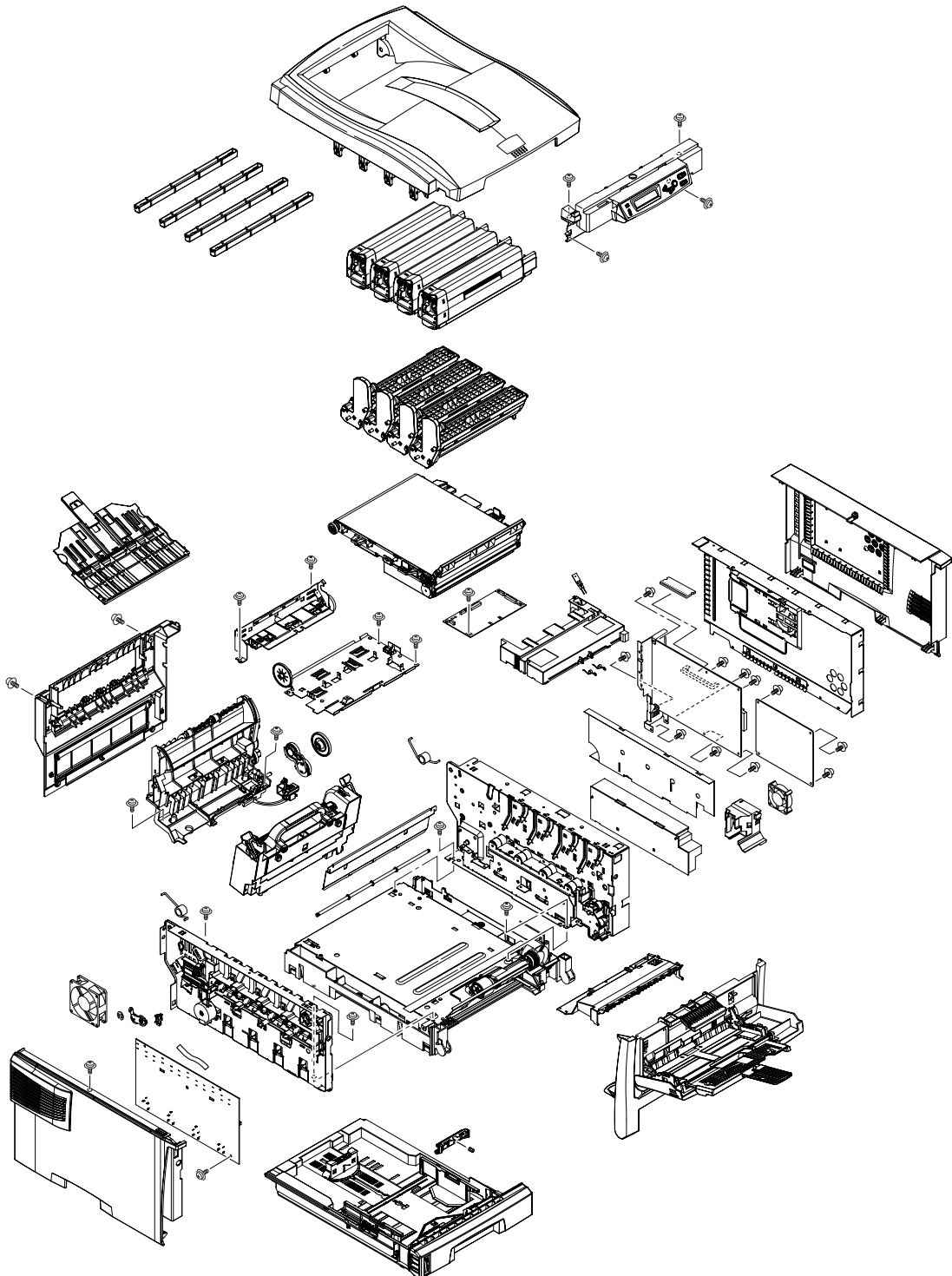


Figure 1-2-1

The inside of C5100 printers is composed of the following:

- Electrophotographic Processor
- Paper Paths
- Controller Block (CU and PU)
- Operator Panel
- Power Units (High Voltage Unit and Low Voltage Unit)

Figure 1-2-2 shows the configuration of each printer.

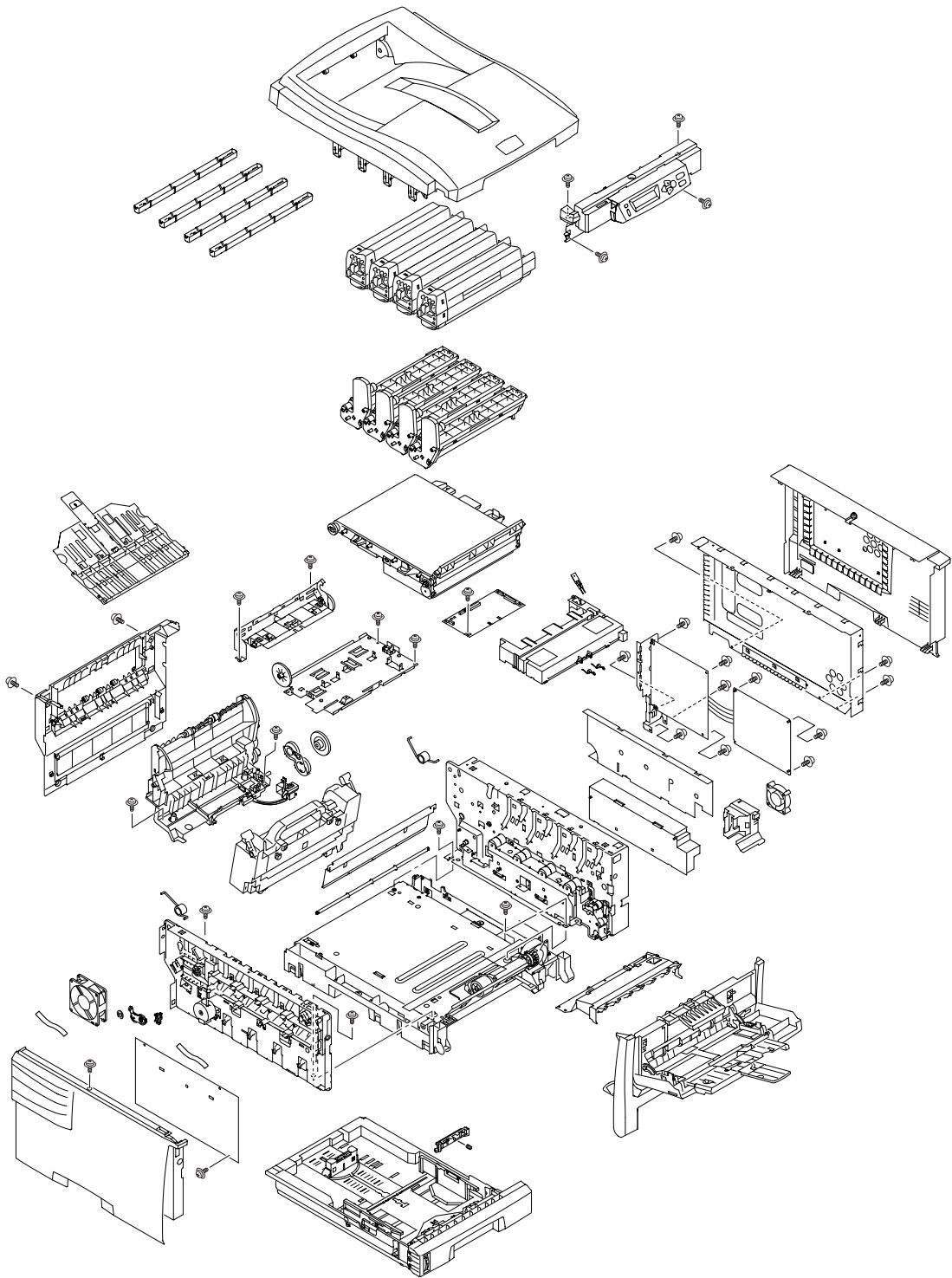
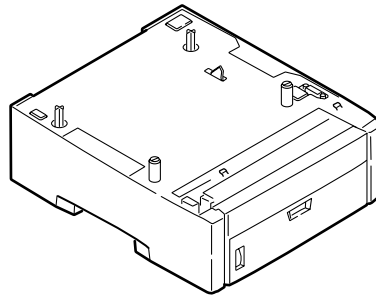


Figure 1-2-2

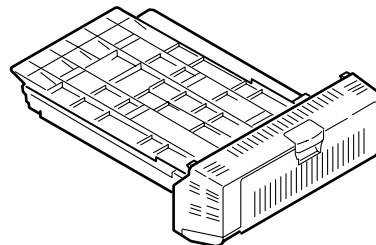
1.3 Option Configuration

The following options are available for C5300/C5100.

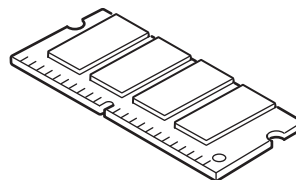
(1) 2nd Tray



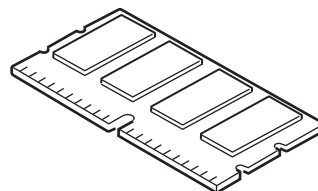
(2) Duplex Unit



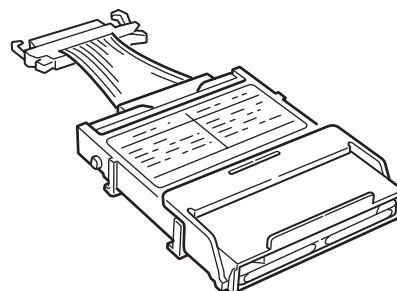
(3) Expansion Memory (ML5300) 64 MB



(4) Expansion Memory (ML5100) 64/256 MB



(5) Hard Disk (ML5300)



1.4 Specifications

- (1) External Dimensions
Height: 345 mm. Width: 422 mm. Length: 561 mm.
- (2) Weight
Approx. 20 kg (except consumables)
- (3) Paper
Type: Plain paper, Transparencies (Recommended: MLOHP01)
Size: Postal card, Legal 13" or 14", Executive, A4, A5, B5, A6 (A6 held in and fed from only 1st tray and front feeder)
Weight: 1st tray 55 kg to 103 kg (64 to 120 g/m²)
Front feeder 55 kg to 172 kg (64 to 203 g/ m²)
- (4) Print Speed
Color: 12 pages per minute (Transparencies: 6 pages per minute)
Monochrome: 20 pages per minute (Transparencies: 12 pages per minute)
Postal Cards, Labels, Thick Paper: 8 pages per minute
- (5) Resolution
600 × 1200 dots per inch
- (6) Power Input
100 VAC ±10%
- (7) Power Consumption
Peak: 850W
Normal Operating: 400W (5% duty)
Idle: 80W
Power Save Mode: 18W or less
- (8) Frequency
50Hz or 60Hz ± 2 Hz
- (9) Noise
Operating: 54 dB (Without duplex unit and 2nd tray)
Standby: 40 dB
Power Saving: Background noise
- (10) Consumable Life
Toner Cartridges: 5,000 pages (images) (5% duty, Each of Y, M, C and K)
Image Drums: 22,000 pages (images) (5% duty, Continuous printing, Each of Y, M, C and K)
- (11) Parts Replaced Periodically
Fuser Unit: Every 45,000 pages (prints)
Belt Unit: Equivalent of 50,000 pages (images) (3 pages/job)

(12) Temperature and Relative Humidity

Temperatures

Temperature condition

| <input type="checkbox"/> | Celsius <input type="checkbox"/> | Remarks <input type="checkbox"/> |
|--|---|---|
| Operating <input type="checkbox"/> <input type="checkbox"/> | 10 to 32 <input type="checkbox"/> <input type="checkbox"/> | 17 to 27 Celsius (Temperatures to assure full color print quality) <input type="checkbox"/> |
| Non-Operating <input type="checkbox"/> | 0 to 43 <input type="checkbox"/> | Power off <input type="checkbox"/> |
| Storage (Max. One Year) <input type="checkbox"/> | -10 to 43 <input type="checkbox"/> | With drum and toner <input type="checkbox"/> |
| Delivery (Max. One Month) <input type="checkbox"/> | -29 to 50 <input type="checkbox"/> | With drum and without toner <input type="checkbox"/> |
| Delivery (Max. One Month) | -29 to 50 | With drum and toner |

Humidities

Humidity condition

| <input type="checkbox"/> <input type="checkbox"/> | Relative Humidity (%) <input type="checkbox"/> | Max. Wet-Bulb Temperature (Celsius) <input type="checkbox"/> | Remarks <input type="checkbox"/> |
|--|---|--|--|
| Operating <input type="checkbox"/> <input type="checkbox"/> | 20 to 80 <input type="checkbox"/> <input type="checkbox"/> | 25 <input type="checkbox"/> <input type="checkbox"/> | 50 to 70% (for assurance of full color print quality) <input type="checkbox"/> |
| Non-Operating <input type="checkbox"/> | 10 to 90 <input type="checkbox"/> | 26.8 <input type="checkbox"/> | Power off |
| Storage <input type="checkbox"/> | 10 to 90 <input type="checkbox"/> | 35 <input type="checkbox"/> | |
| Delivery | 10 to 90 | 40 | |

(13) Printer Life

420,000 pages (on a A4-size basis) or five years

2. PARTS REPLACEMENT

This section describes the procedure for replacing the parts, assemblies and units in the field. The replacing procedure is given for detachment. To attach, use the reverse procedure.

2.1 Precautions in Replacing Parts

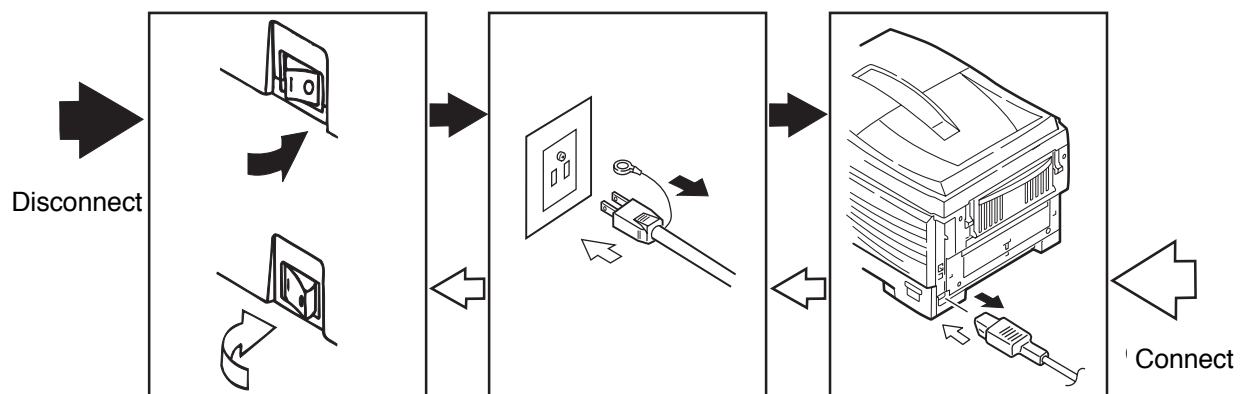
(1) Before replacing the parts, be sure to remove the AC cable and the interface cable.

(a) To remove the AC cable, always use the following procedure.

- i) Flip the power switch of the printer off (to "O").
- ii) Pull the AC inlet plug of the AC cable out of the AC receptable.
- iii) Remove the AC cable and the interface cable from the printer.

(b) To connect the printer again, always use the following procedure.

- i) Connect the AC cable and the interface cable to the printer.
- ii) Insert the AC inlet plug into the AC receptacle.
- iii) Flip the power switch of the printer on (to "I").



(2) Do not disassemble the printer so long as it operates properly.

(3) Minimize the disassembly. Do not detach parts other than those shown in the replacing procedure.

(4) For maintenance, use designated tools.

(5) Follow the order instructed to disassemble the printer. Incorrect order may damage the parts.

(6) Small parts such as screws and collars tend to get lost, so temporarily place and fix them in their original positions.






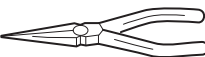
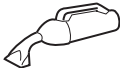

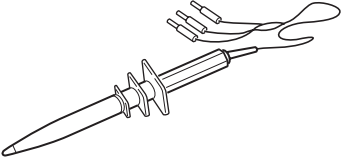
(7) When handling ICs and circuit boards such as microprocessors, ROMs and RAMs, do not use gloves that are likely to have static.

(8) Do not place the printed circuit boards directly on the printer or the floor.

[Maintenance Tools]

Table 2-1 lists tools necessary to replace the printed circuit boards and the units.

Table 2-1 Maintenance Tools

| No. | Service Tools | | Q' ty | Place of use | Remarks |
|-----|---|---|-------|-----------------|---------|
| 1 |  | No. 1-100 Philips screwdriver | 1 | 2~2.5 mm screws | |
| 2 |  | No. 2-200 Philips screwdriver, Magnetized | 1 | 3~5 mm screws | |
| 3 |  | No. 3-100 screwdriver | 1 | | |
| 4 |  | No. 5-200 screwdriver | 1 | | |
| 5 |  | Digital multimeter | 1 | | |
| 6 |  | Pliers | 1 | | |
| 7 |  | Handy cleaner | 1 | | |
| 8 |  | LED Head cleaner P/N 4PB4083-2248P001 | 1 | Cleans LED head | |
| 9 |  | High voltage probe | 1 | | |

2.2 Part Replacement Procedures

This section describes the procedures for replacing the parts and assemblies shown in the following disassembly chart:

2.2.1 Top Cover

- (1) Open the top cover assy.
- (2) Remove the eight screws 1 to detach the cable cover 2 and the top cover 3.

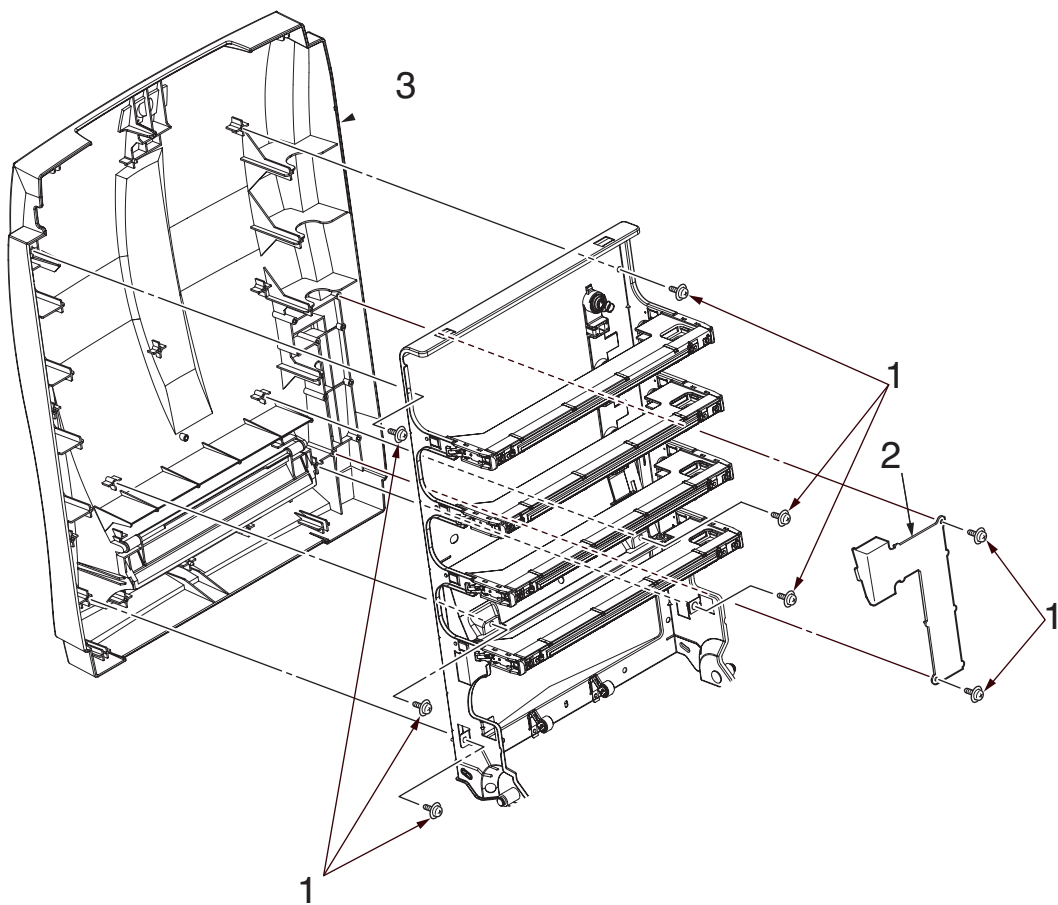


Figure 2-2-1 Top Cover

2.2.2 Left Side Cover

- (1) Open the top cover 1.
- (2) Open the feeder unit 2.
- (3) Remove the screw 3 to detach the left side cover 4.

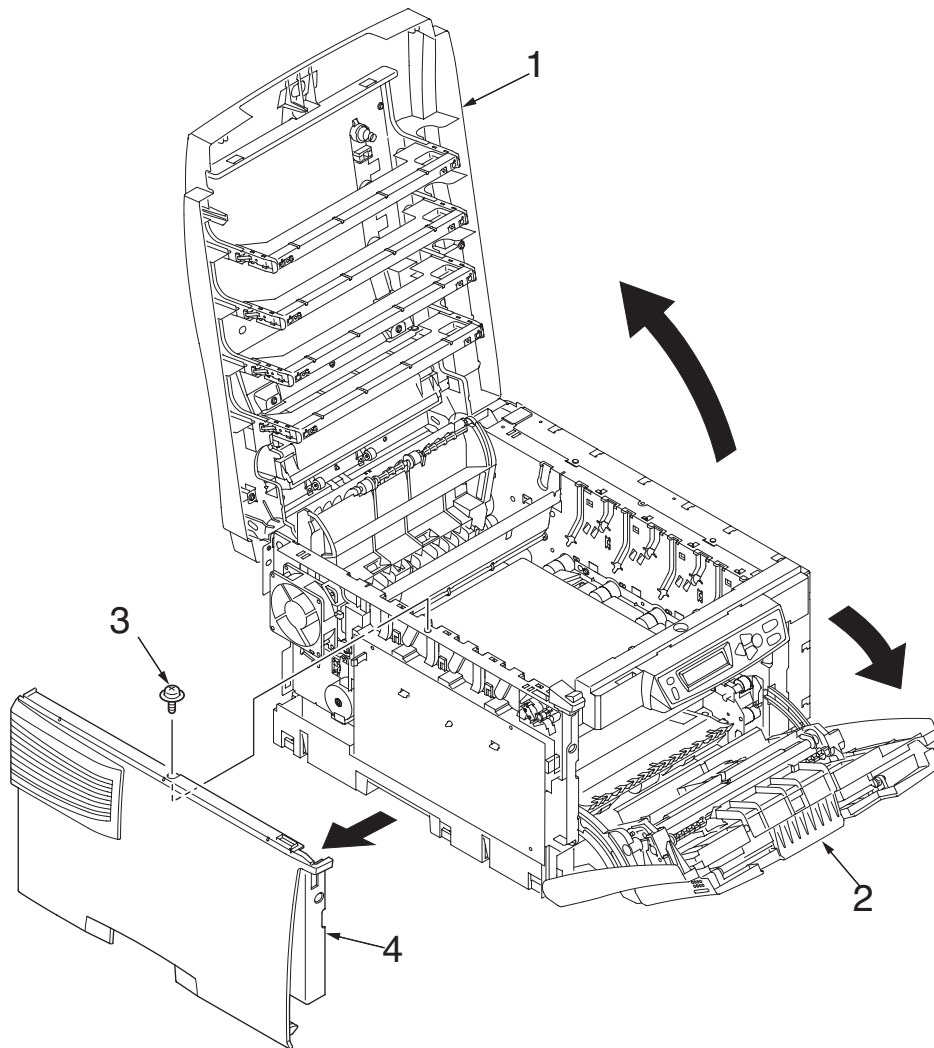


Figure 2-2-2 Left Side Cover

2.2.3 Right Side Cover

- (1) Open the top cover 1.
- (2) Open the feeder unit 2.
- (3) Loosen the screw 3 to detach the right side cover 4.

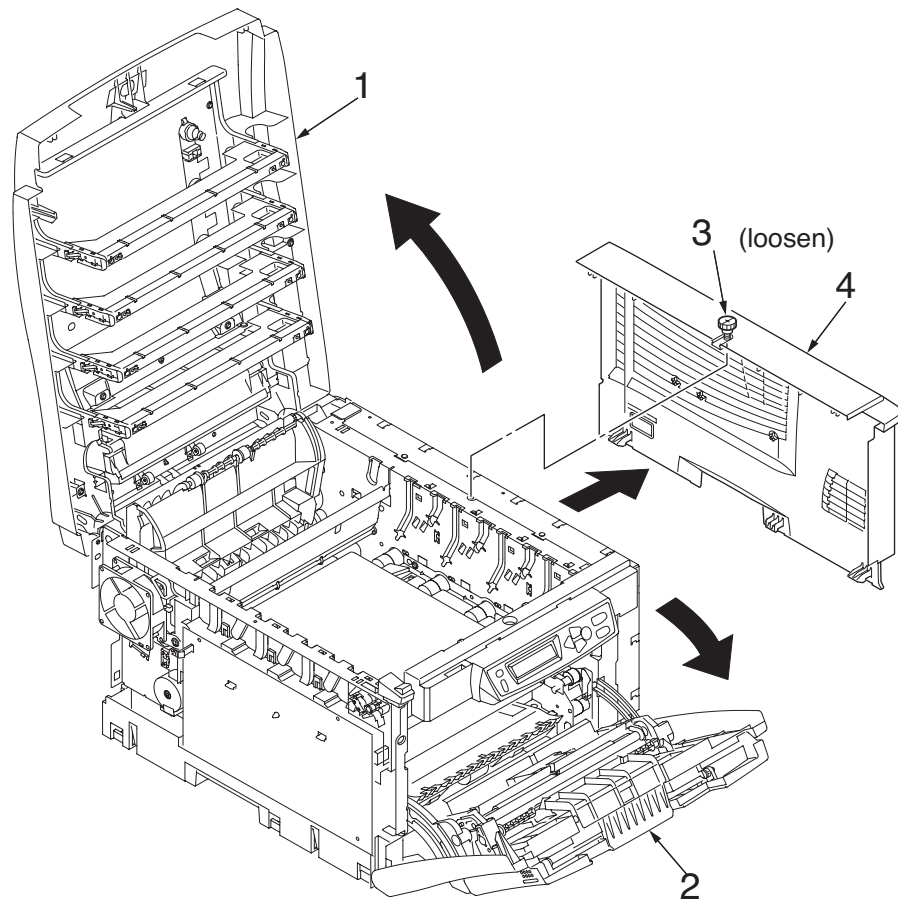


Figure 2-2-3 Right Side Cover

2.2.4 Face-Up Tray

- (1) Open the face-up tray 1 in the direction of the arrow, and disengage it at its two places to detach it.

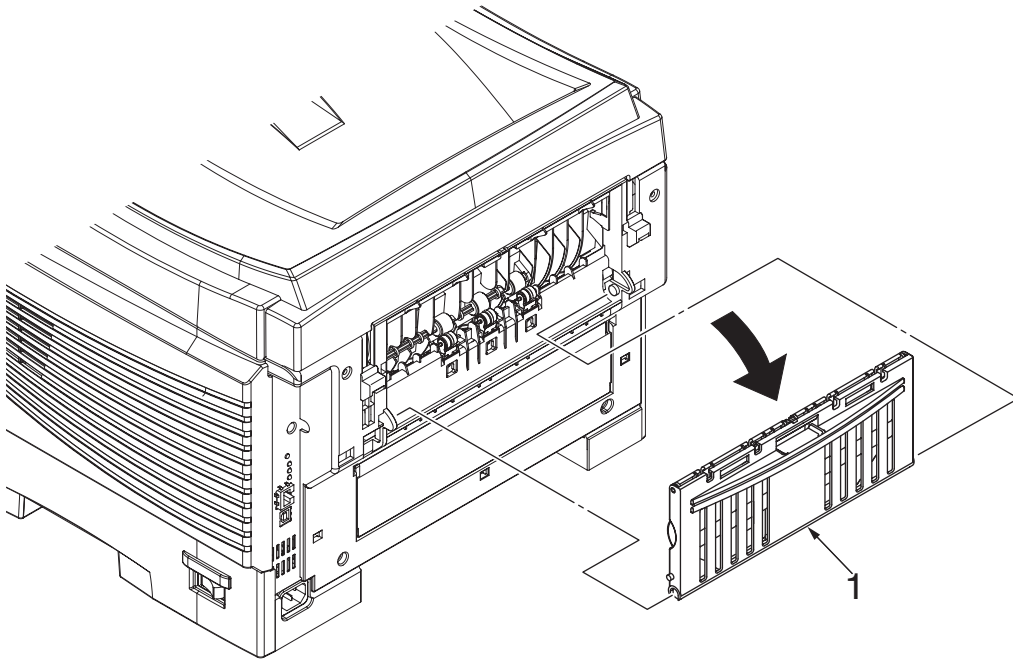


Figure 2-2-4 Face-Up Tray

2.2.5 Rear Cover

- (1) Remove the two screws 1 to detach the rear cover 2.

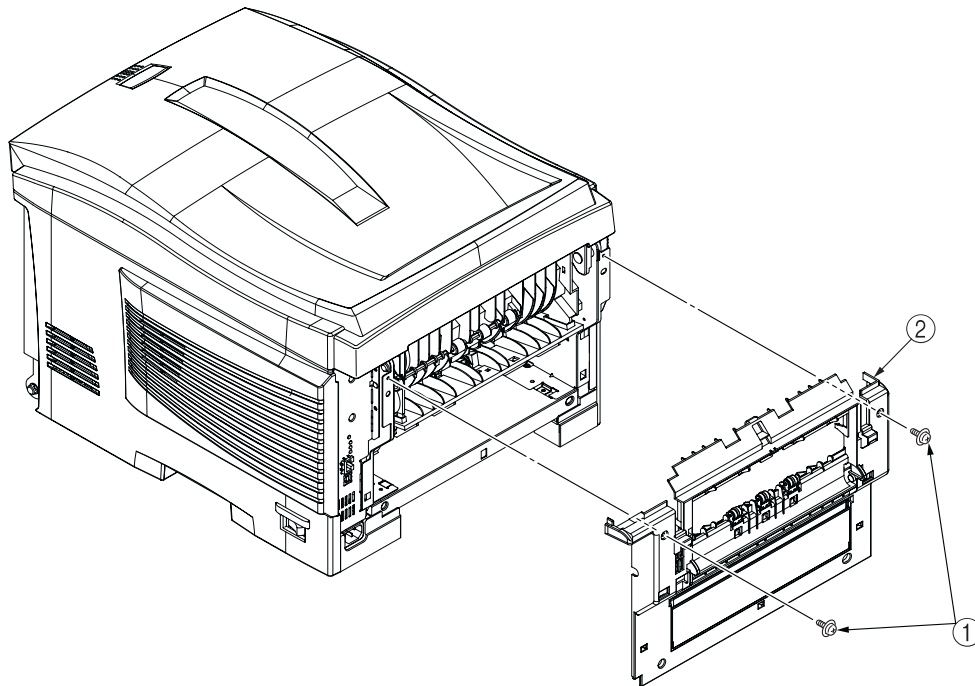


Figure 2-2-5 Rear Cover

2.2.6 LED Assy / LED Assy Springs

- (1) Open the top cover 1.
- (2) Remove the LED assy cable connection 4, and disengage the two hooks of the LED assy 2 to detach the assy (the two springs 3 are detached together with the LED assy 2).

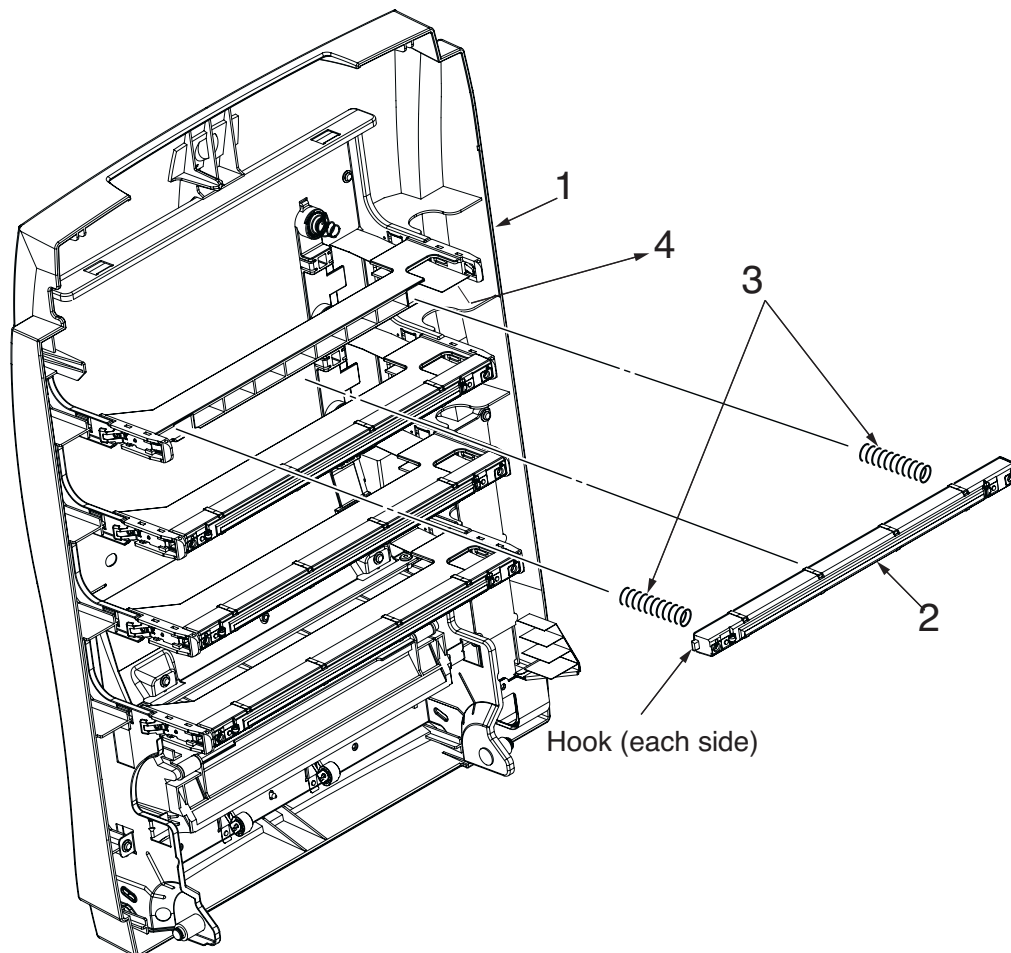


Figure 2-2-6 LED Assy / LED Assy Springs

2.2.7 Controller PWB

C5300

- (1) Remove the Print Engine Controller PWB (see section 2.2.8).
- (3) Remove the screw 1 and then the head cable 2.
- (4) Remove the eight screws 3, then detach the controller PWB 4.

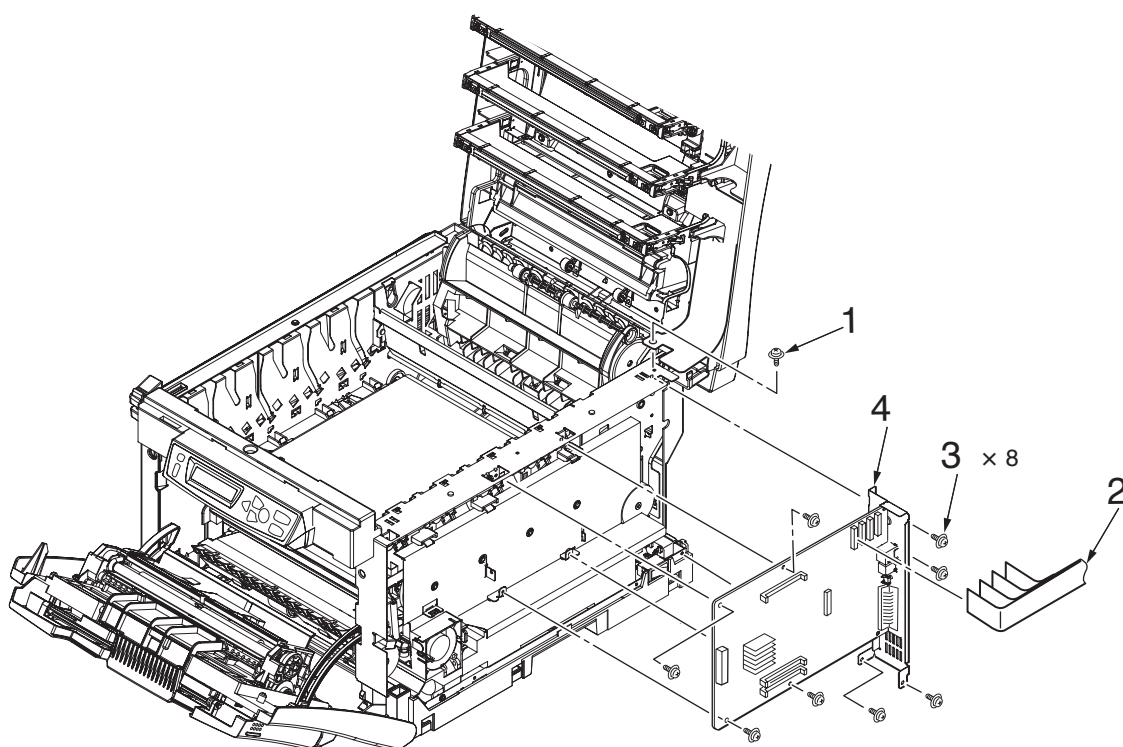


Figure 2-2-7-1 Controller PWB (C5300)

C5100

- (1) Open the top cover.
- (2) Remove the right side cover (see section 2.2.3).
- (3) Unscrew the three screws 1 to remove the plate-shield assy (GDI) 2.
- (4) Remove the screw 3 and then the head cable 4.
- (5) Remove the six screws 5 and the connector 6, then detach the controller PWB 7.

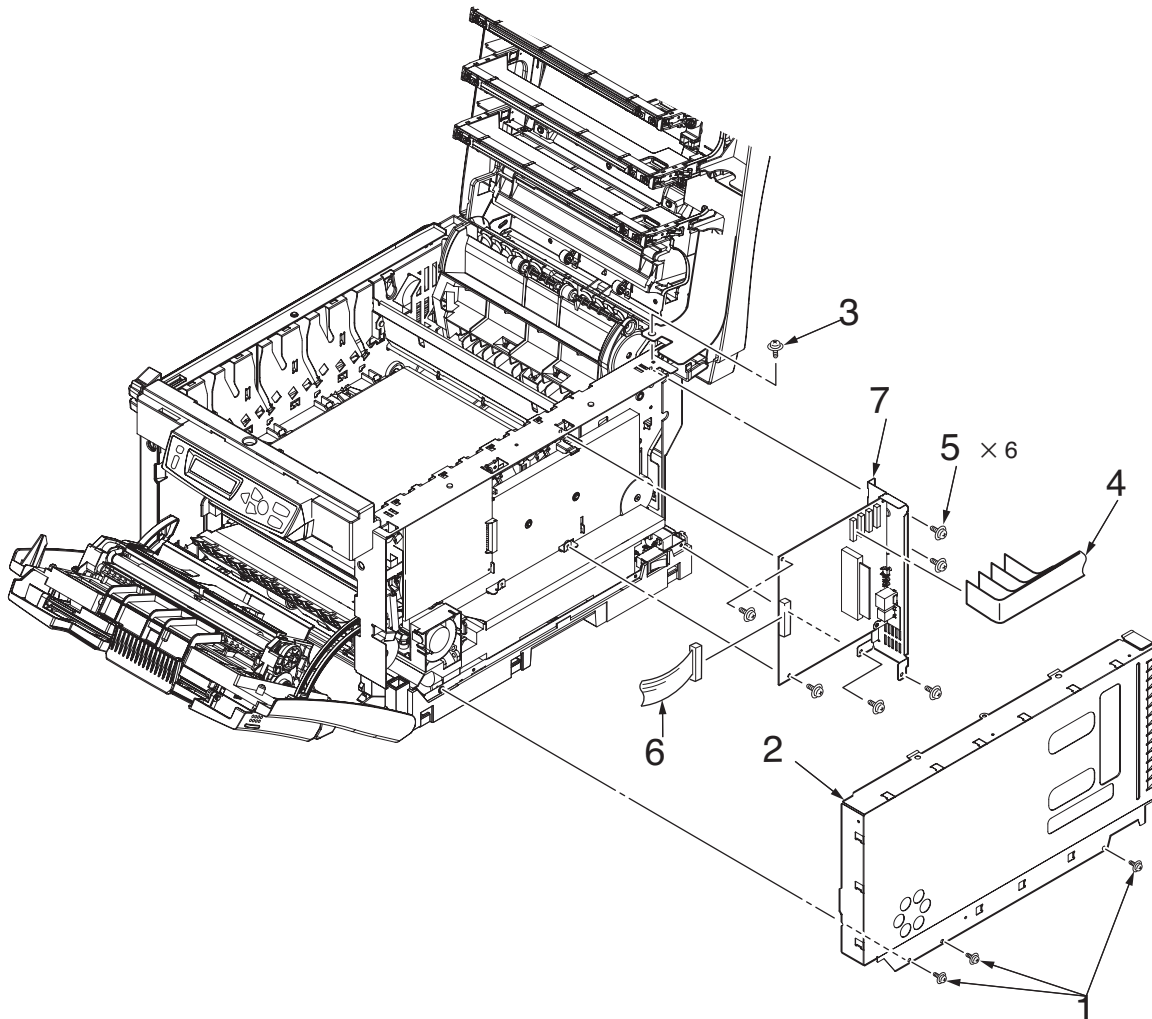


Figure 2-2-7-2 Controller PWB (C5100)

2.2.8 Print Engine Controller PWB

C5300

- (1) Open the top cover.
- (2) Remove the right side cover (see section 2.2.3).
- (3) Remove the connector 1, and disengage the two hooks 2 of to detach the FAN (CU) 3.
- (4) Remove the three screws 4 to detach the plate shield assy (PCL) 5.
- (5) Remove the three screws 6 and all the connectors to detach the print engine controller PWB 7.

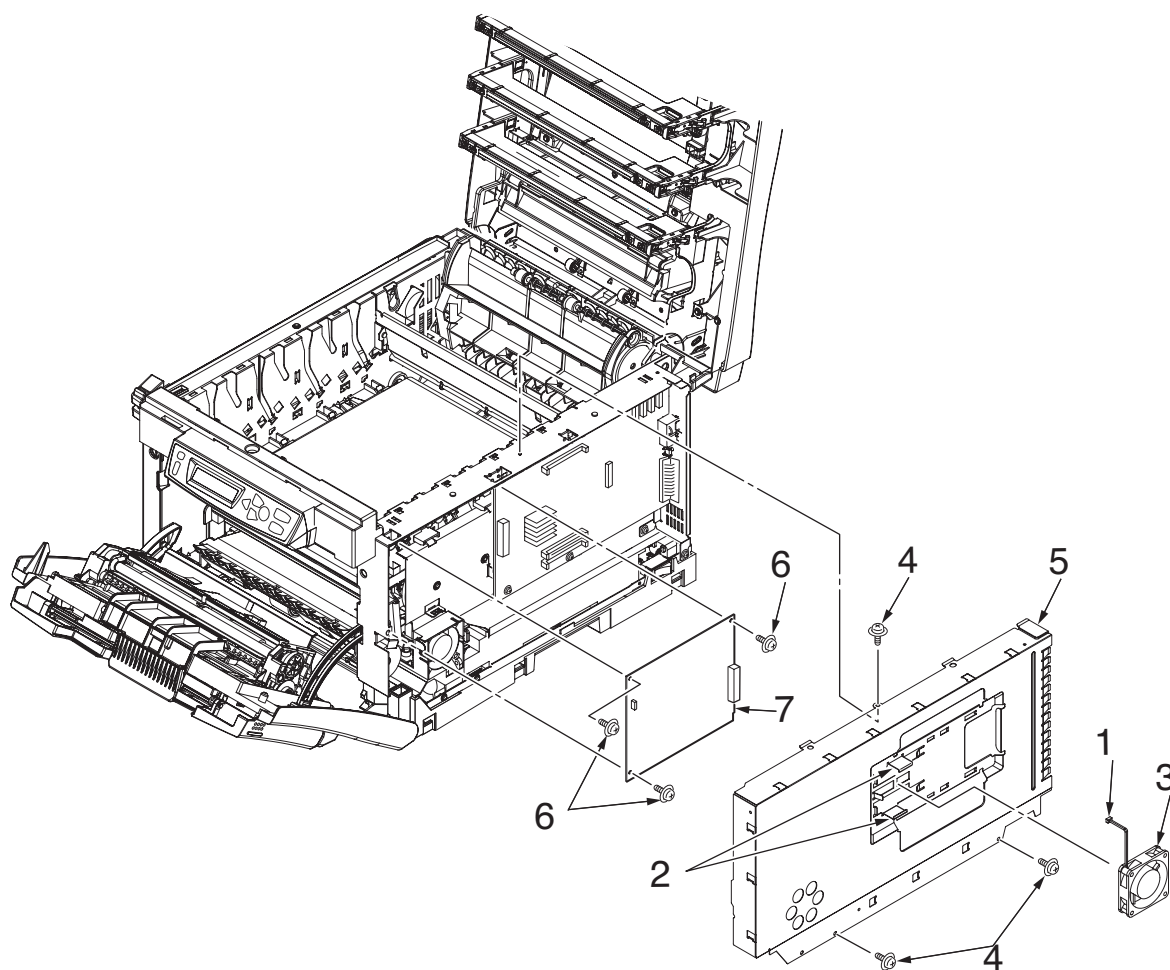


Figure 2-2-8-1 Print Engine Controller PWB (C5300)

C5100

- (1) Remove the plate shield assy (GDI) [see section 2.2.7, steps (1) to (3)].
- (2) Remove the three screws 1 and all the connectors to detach the print engine controller PWB 2.

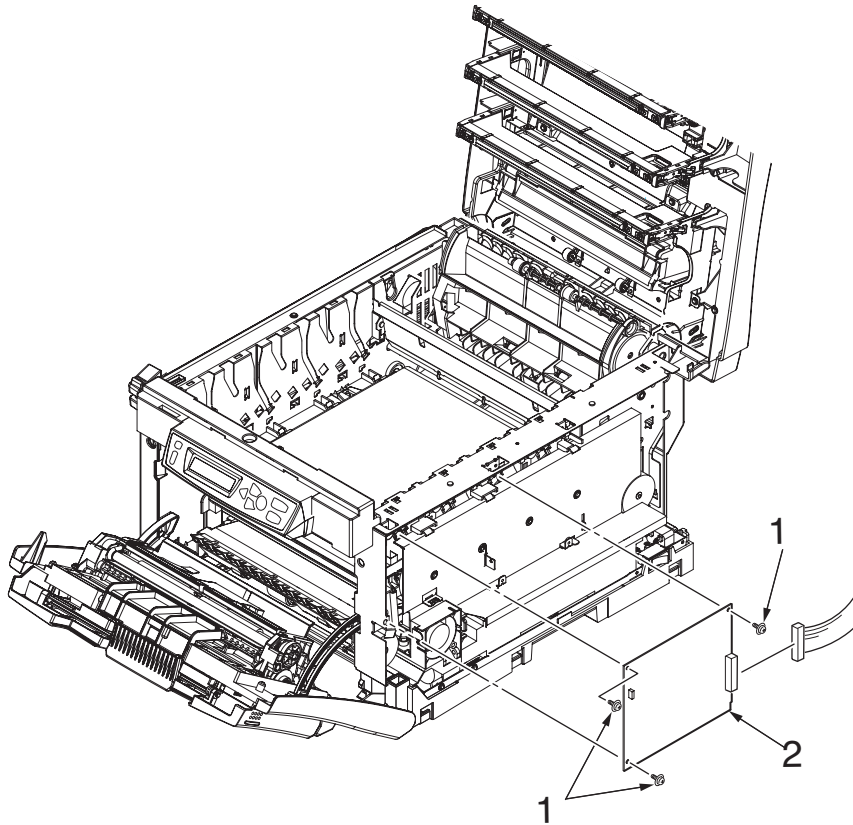


Figure 2-2-8-2 Print Engine Controller PWB (C5100)

2.2.9 Top Cover Unit.

- (1) Remove the top cover (see section 2.2.1).
- (2) Remove the left side cover (see section 2.2.2).
- (3) Remove the right side cover (see section 2.2.3).
- (4) Remove the rear side cover (see section 2.2.5).
- (5) Remove the plate-shield assy (GDI) [see section 2.2.7, step (2)].
- (6) Remove the two E-shaped rings 1 and the two springs - torsion 2, then detach the top cover unit 3.

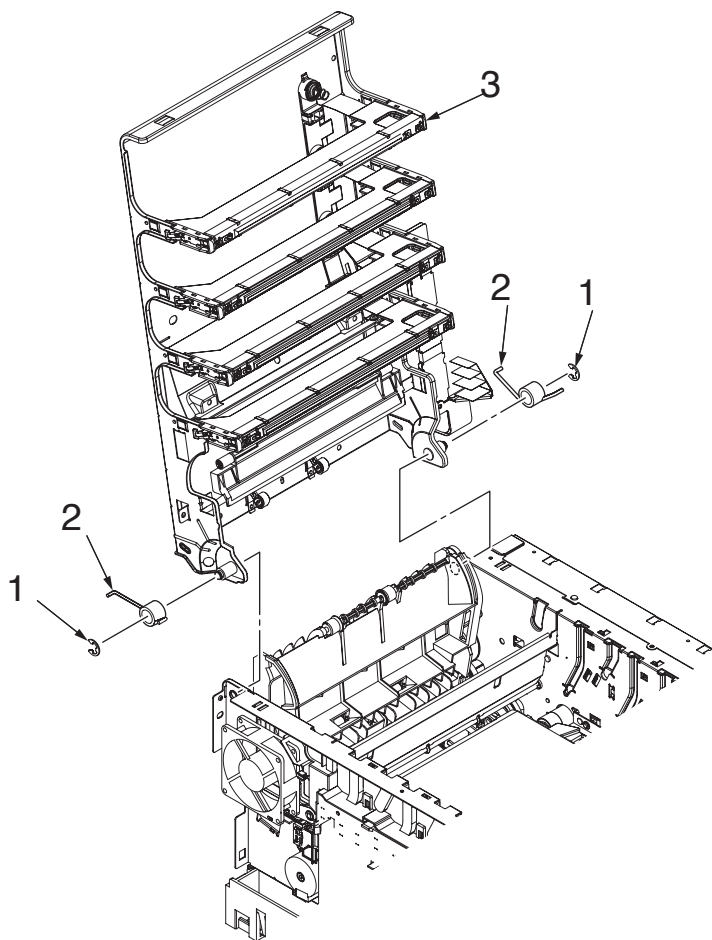


Figure 2-2-9 Top Cover Unit

2.2.10 Controller Panel Assy

- (1) Open the top cover.
- (2) Open the feeder unit.
- (3) Remove the right side cover (see section 2.2.3).
- (4) Remove the plate-shield assy (GDI) [see section 2.2.7, step (2)].
- (5) Make control panel assy connector removal (see section 2.2.10).
- (6) Remove the four screws 1, then detach the control panel assy 2.

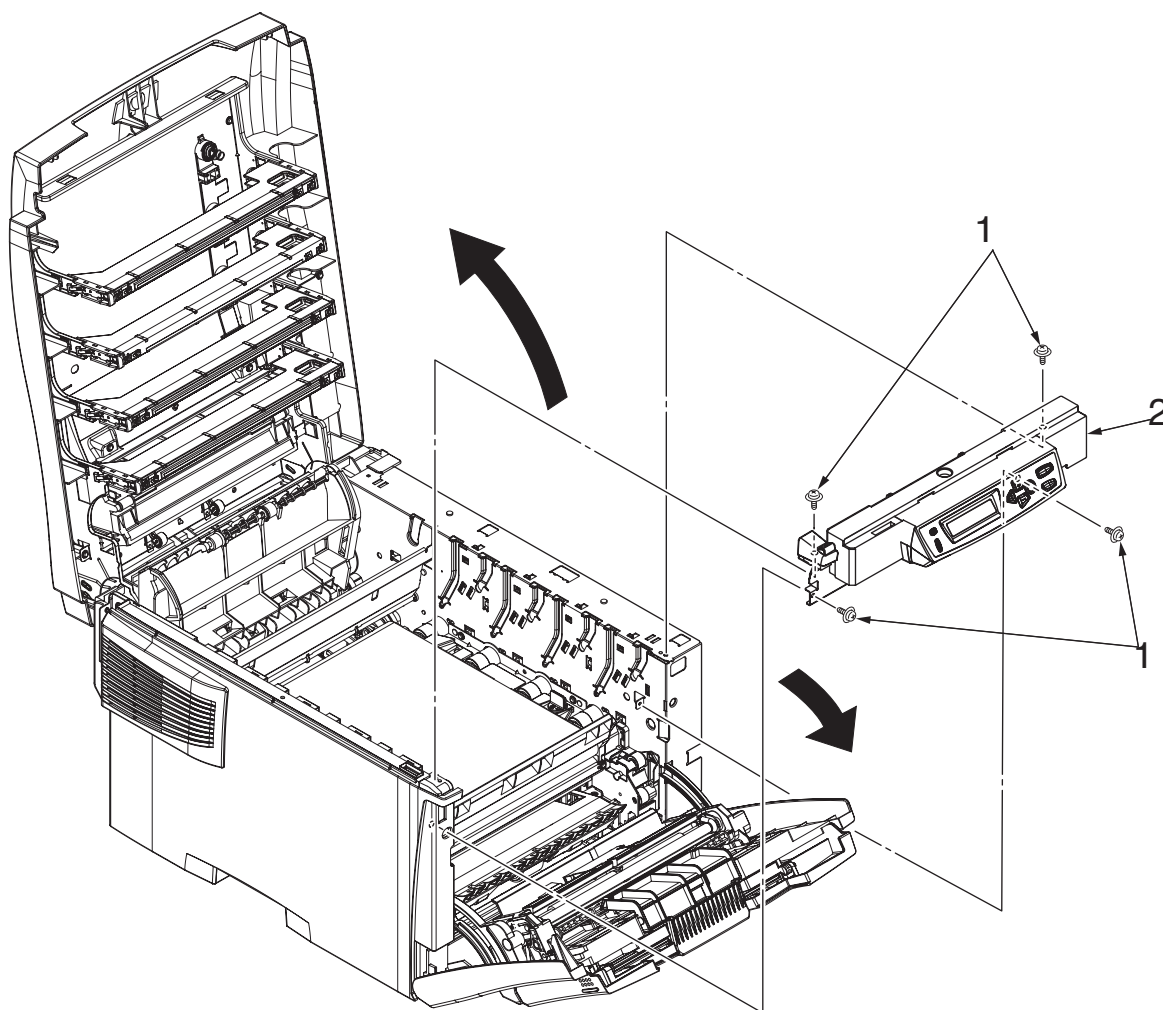


Figure 2-2-10 Control Panel Assy

2.2.11 Board RSP / Environment Sensor / Top Cover Handle

- (1) Remove the control panel assy (see section 2.2.10).
- (2) Disengage the two claws of the lever-lock 2 to remove the frame OP 1, and remove the lever-lock 2 and the spring-compression 3.
- (3) Disengage the two claws of the cover assy OP 4 to remove it, and remove the springs torsion 5.
- (4) Detach the board RSP 6, the environment sensor 7, the cable 8 and the harness 9.

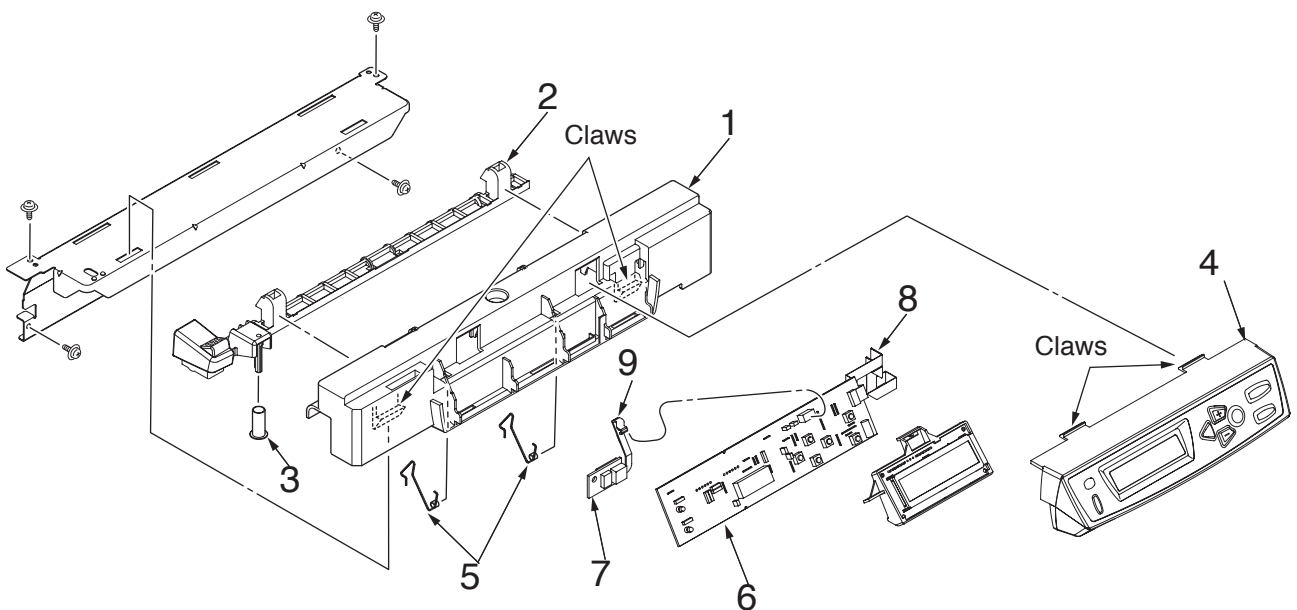


Figure 2-2-11 Board RSP / Environment Sensor / Top Cover Handle

2.2.12 Low Voltage Power Unit / FAN (ID) / FAN (PowL) / Hopping Motor / Fuser Motor

- (1) Remove the print controller PWB (see section 2.2.8).
- (2) Remove the controller PWB (see section 2.2.7).
- (3) Remove the film 1 and the frame duct 2 to remove the FAN (ID) 3.
- (4) Remove the two screws 4 and the four connectors to remove the POW unit 5.
- (5) Demount the FAN (PowL) 6 by releasing claw engagement.
- (6) Remove the two screws 7 and the connector to detach the hopping motor 8.
- (7) Remove the two screws 9 and the connector to detach the fuser motor 10.

Note! When reassembling the FAN (PowL) 6, check the attachment direction.

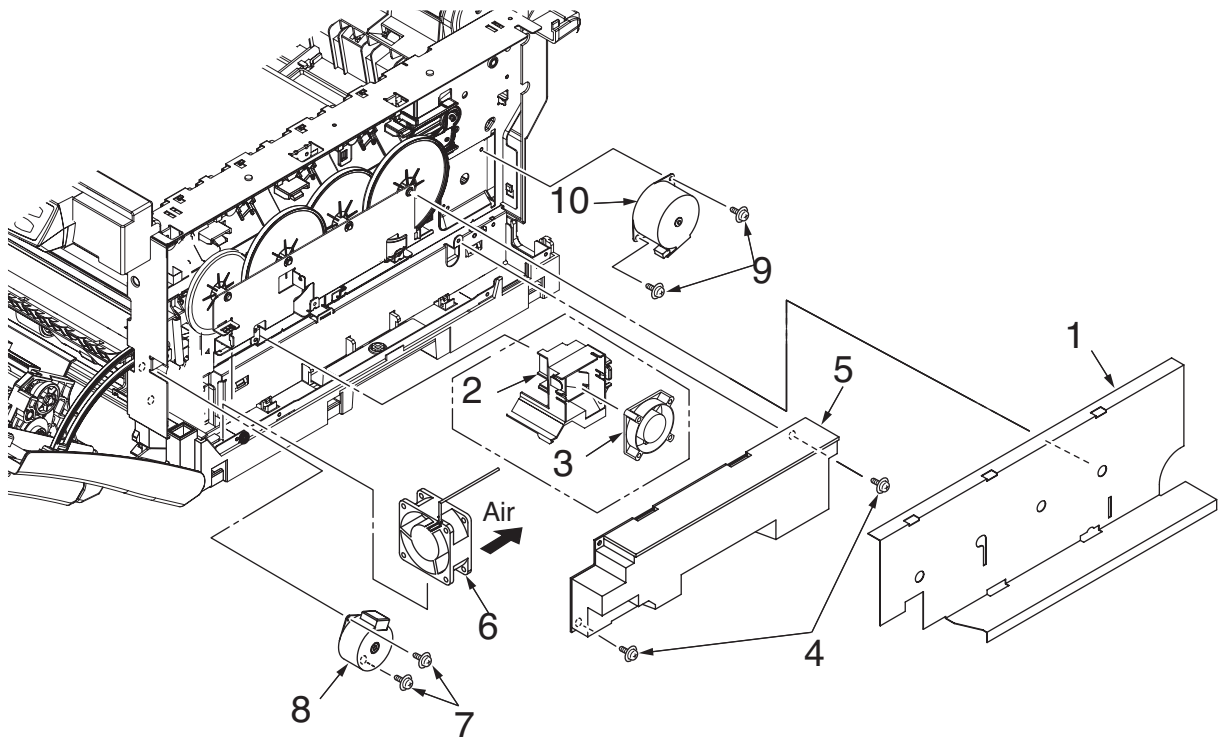


Figure 2-2-12 Low voltage Power Unit / FAN (ID) / FAN (PowL) / Hopping Motor / Fuser Motor

2.2.13 Board-PRD

- (1) Remove the right side cover (see section 2.2.3).
- (2) Remove the print engine controller PWB and the controller PWB (see sections 2.2.7 and 2.2.8).
- (3) Remove the film and the low voltage power unit (see section 2.2.12).
- (4) Remove the three screws 1 and the two E-shaped snaps 2 to remove the plate-outer 3.
- (5) Remove the gear-idle-ID - K 4, Y and C 5, each in one piece, and M 6, and the spring 7 of the solenoid.
- (6) Unlatch, and remove by sliding the guide assy - side R 8, the assy and detach the board-PRD 9 and the nine springs 10.

Note! When reassembling the board-PRD, do not forget to attach the spring of the solenoid 7.

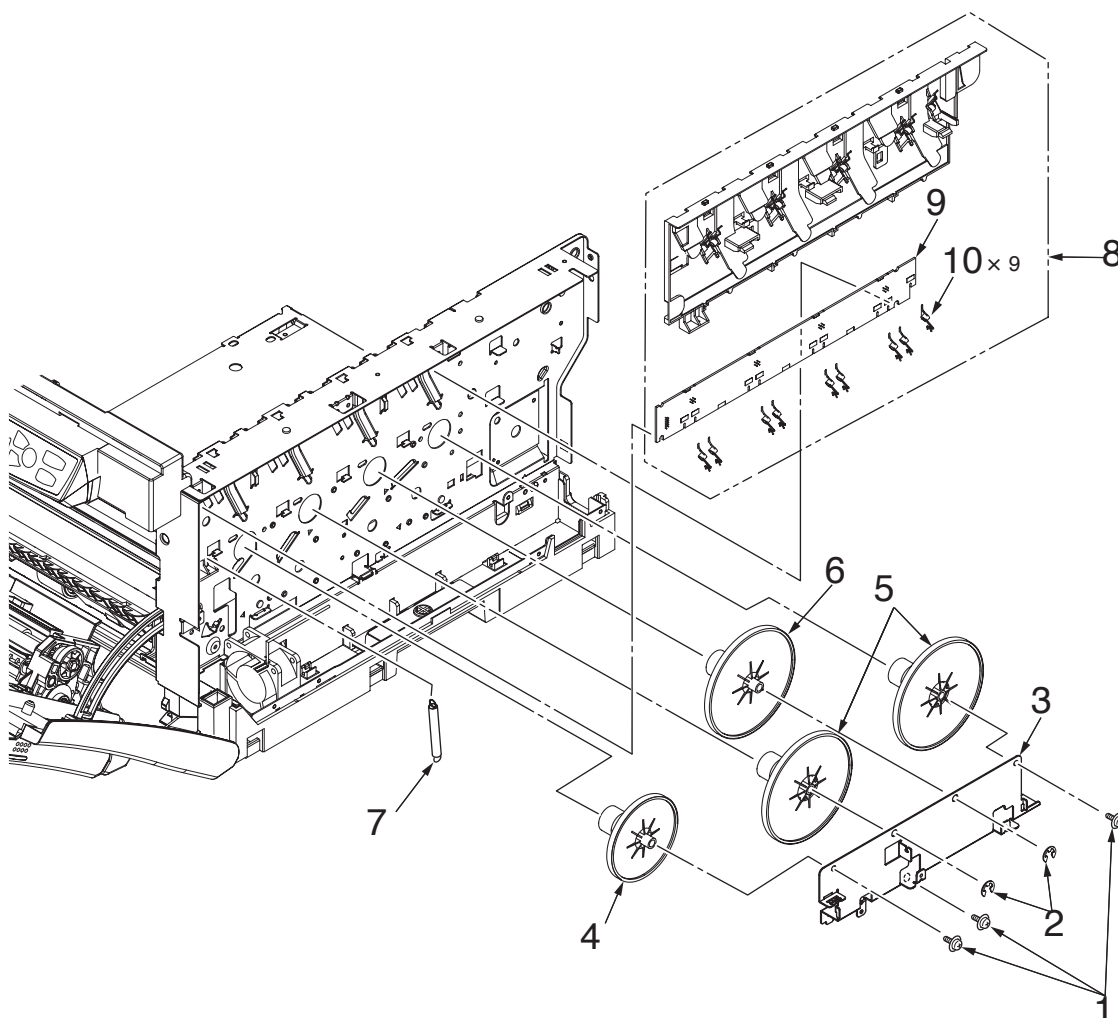


Figure 2-2-13 Board-PRD

2.2.14 Guide - Eject Assy / Color Registration Assy / Board-RSM

- (1) Remove the left side cover, the write side cover, the rear cover and the top cover unit (see sections 2.2.2, 2.2.3, 2.2.5 and 2.2.9).
- (2) Remove the engine controller PWB, the controller PWB and the film [see sections 2.2.7 and 2.2.8, and step (3) of section 2.2.12].
- (3) Unscrew the two screws 1 to remove the plate-heat 2.
- (4) Remove the two springs - torsion 3 and disengage the latches to remove the cover-driver 4.
- (5) Remove two-screw 5 and connector removal to detach the color registration assy 6.
- (6) Remove two-screw 7 and connector removal to detach the guide eject assy 8.
- (7) Remove screw 9 and connector removal to detach the board-RSM 10.

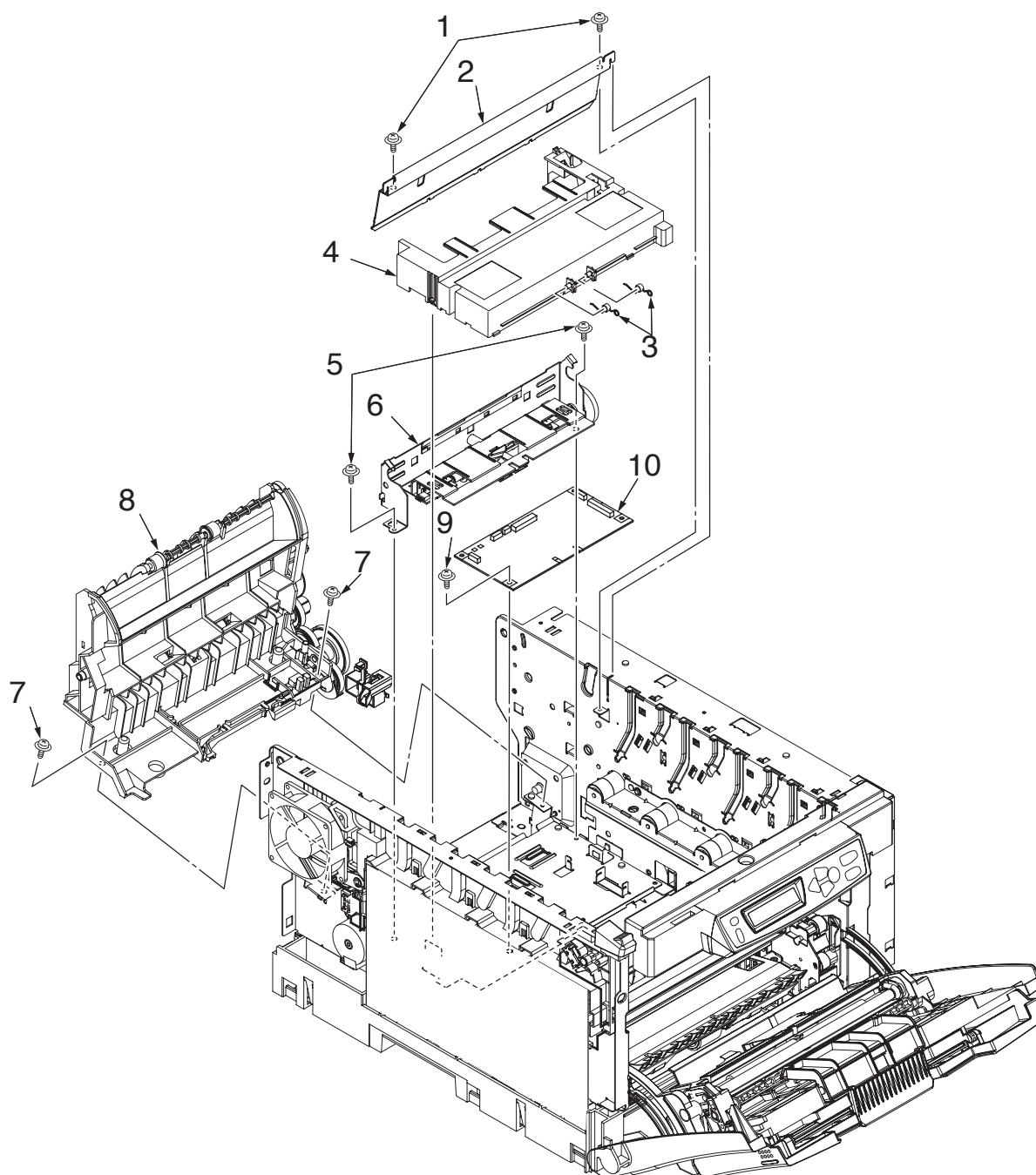


Figure 2-2-14 Guide - Eject Assy / Color Registration Assy / Board-RSM

2.2.15 FAN (Fuser) / Belt Motor / High Voltage Power Supply Board / Cover Open Switch / Image Drum Up/Down Sensor

- (1) Remove the left side cover (see section 2.2.2).
- (2) Remove screw 1 and connector removal to detach the belt motor 2.
- (3) Remove the screw 3, disengage the latch and make connector removal to detach the high voltage power supply board 4.
- (4) Remove the two screws 5 to remove the cover-rear 6.
- (5) Remove the connector and, turning the FAN (Fuser) 7, detach the FAN (Fuser) 7.
- (6) Remove the connector and unlatch the cover open switch 8 to detach the switch.
- (7) Remove the connector and pull out the lock-piece 9 to detach the image drum up/down sensor 10.

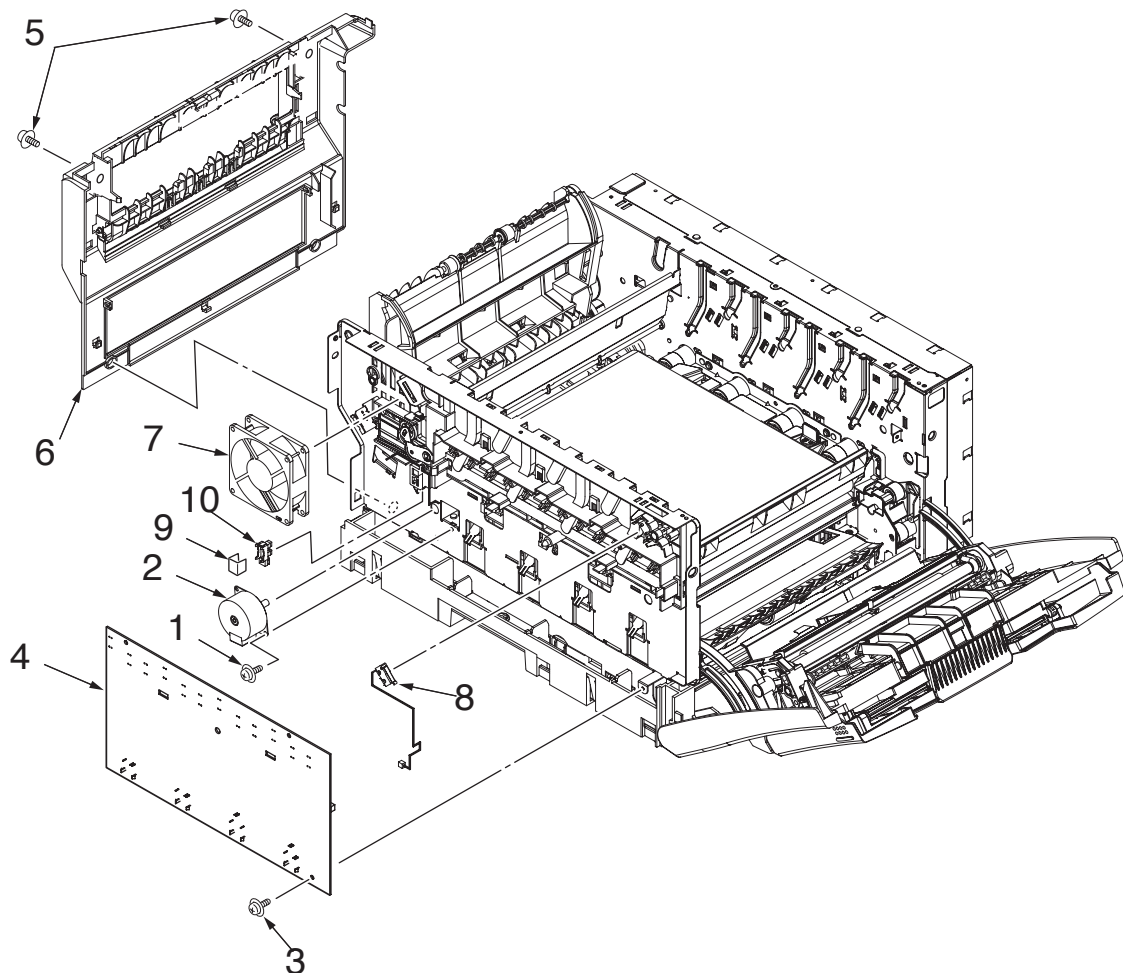


Figure 2-2-15 FAN (Fuser) / Belt Motor / High Voltage Power Supply Board / Cover Open Switch / Image Drum Up/Down Sensor

2.2.16 Multipurpose Tray (MPT) Assy

- (1) Open the MPT assy 1.
- (2) Remove the two stoppers and the two supports to detach the MPT assy 1.

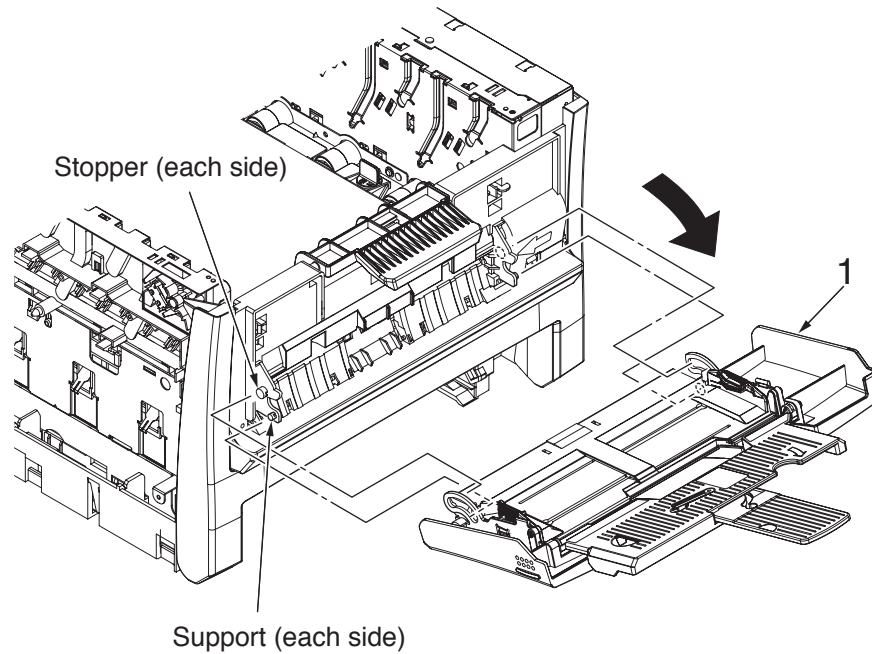


Figure 2-2-16 MPT Assy

2.2.17 Feeder Unit / Board-RSF / Multipurpose Tray (MPT) Hopping Roller / Multipurpose Tray (MPT) Frame Separator / Cover-Front

- (1) Open the top cover.
- (2) Remove the left side cover (see section 2.2.3).
- (3) Make plate-shield (GDI) and connector removal (see section 2.2.7).
- (4) Disengage the claws of the stay L 1 and the stay R 2, sliding the feeder unit 3, detach the feeder unit.
- (5) Remove the cover sensor 4 by releasing claw engagement.
- (6) Make connector removal to detach the board-RSF 5.
- (7) Remove the lever 6 by turning it until it is unlocked.
- (8) Remove the two front claws to detach the feed assy 7.
- (9) Remove the two lock shafts 8 and the two springs 9 and disengage the four claws to detach the hopping roller assy 10.
- (10) Remove the hopping roller shaft 11.
- (11) Remove the two supports to detach the MPT frame separator 12, and remove the spring 13.

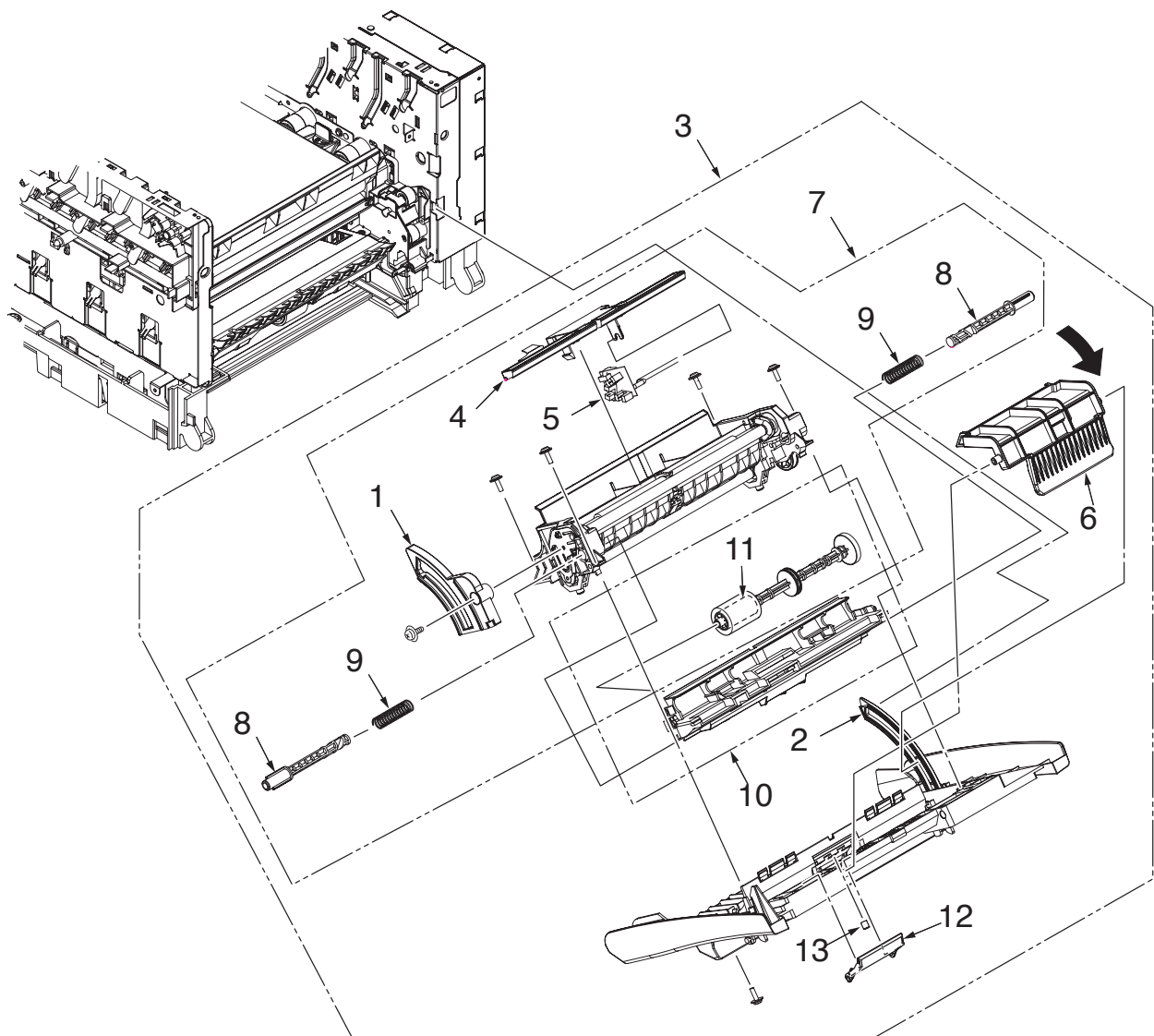


Figure 2-2-17 Feeder Unit / Board-RSF / MPT Hopping Roller / MPT Frame Separator / Cover-Front

2.2.18 Main Motors / Solenoid / Paper-End Sensor

- (1) Remove the left side cover, the right side cover, the rear side cover, the top cover unit and the feeder unit (see sections 2.2.2 , 2.2.3, 2.2.5, 2.2.9 and 2.2.17).
- (2) Remove the print engine controller PWB, the controller PWB and the film [see sections 2.2.7, 2.2.8 and 2.2.12 (3)].
- (3) Remove the fan (ID), the frame duct, the fan (Pow L) and the low voltage power unit (see section 2.2.12).
- (4) Remove the plate-heat, the eject assy, the cover-driver, the color-registration assy and the board-RSM (see section 2.2.14).
- (5) Unscrew the two screws 1 to remove the plate-driver 2.
- (6) Disengage the latch to remove the cover-hopping 3.
- (7) Remove the fan (fuser) and the image drum up/down sensor 4 (see section 2.2.15).
- (8) Disengage the latch to remove the gear assy - planet 5, the shaft 6 and the three rollers 7.
- (9) Unscrew the two screws 8 to remove the side plate R assy 9.
- (10) Remove the two screws 10 and the two E rings 11, then remove the plate-outer 12, the gear-idle K 13, and Y and C 14, and M 15.
- (11) Unscrew the three screws 16 to remove the plate-inner 17.
- (12) Remove the screws 18 (one screws each motor-ID 19) and the connectors, then uninstall the motors-ID 19.
- (13) Remove the screw 20 to remove the gear assy - hopping 21.
- (14) Remove the screw 22 to uninstall the solenoid 23.
- (15) Remove the spring 24, disengage the claw and remove the bushing 25, the hopping roller shaft 26 and the frame-hopping 27.
- (16) Detach the paper-end sensor 28 and the paper-end lever 29.

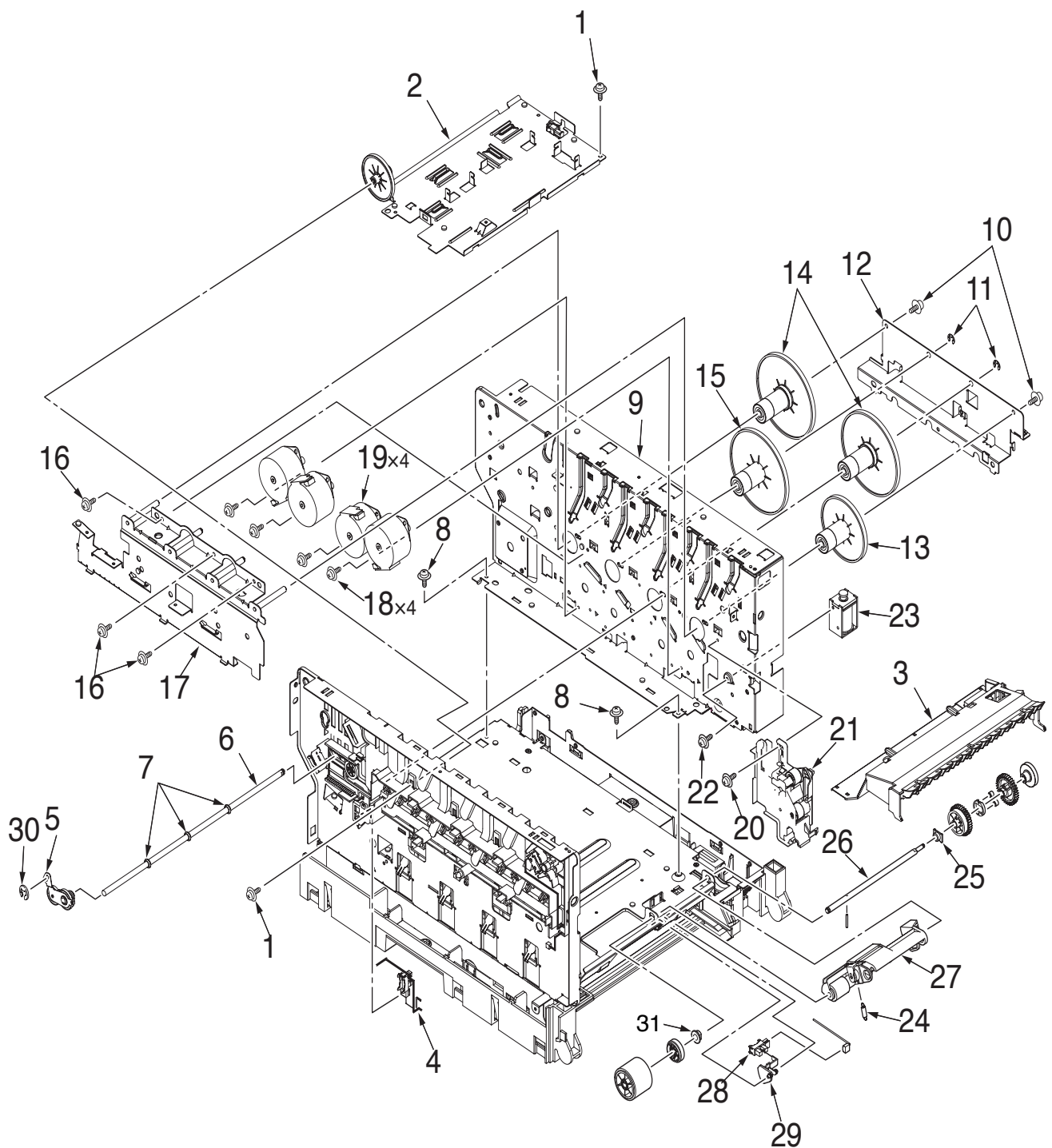


Figure 2-2-18 Main Motors / Solenoid / Paper-End Sensor

2.2.19 Feed Roller

- (1) Remove the cassette.
- (2) Unlatch and detach the feed roller 1.

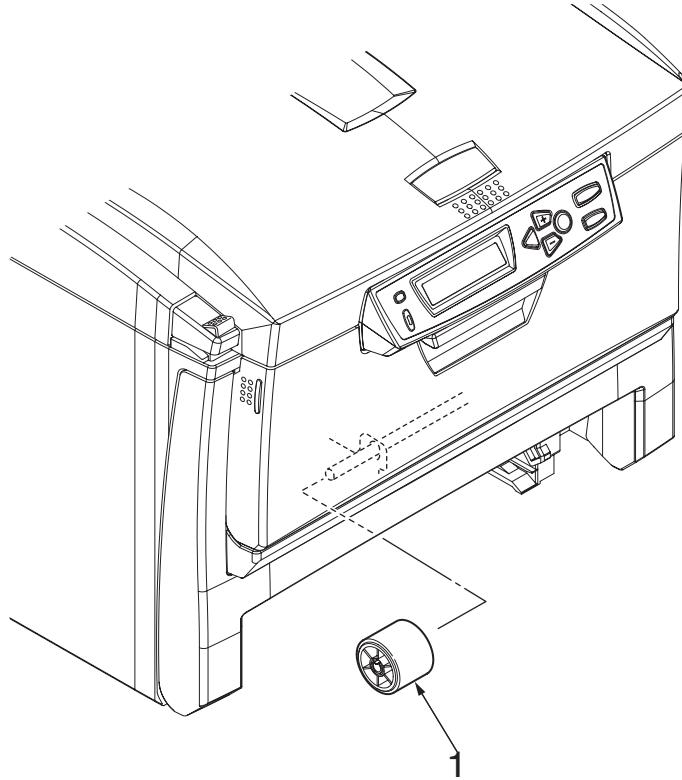


Figure 2-2-19 Feed Roller

2.2.20 Shaft Eject Assy (FU) / Shaft Eject Assy (FD) / Eject Sensor

- (1) Detach the eject assy 1.
- (2) Disengage the latch to separate the guide-eject-lower 2 and the guide-eject-upper 3.
- (3) Remove the gear-idle-eject 4, then detach the shaft assy - eject (FU) 5 and the shaft assy - eject (FD) 6.
- (4) Make connector and guide-cable R 7 removal.
- (5) Detach the lever - eject sensor 8 and then the eject sensor 9.

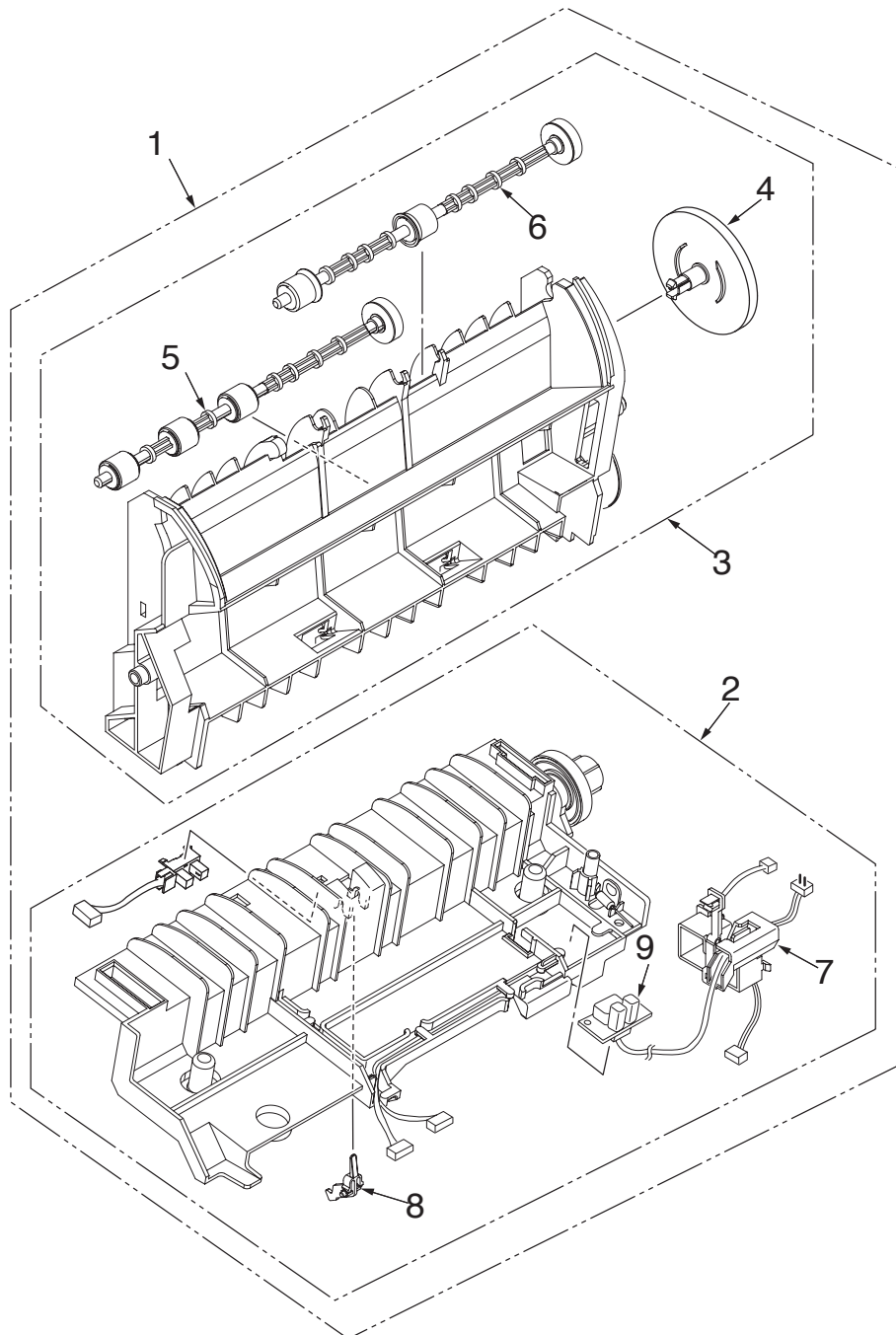


Figure 2-2-20 Shaft Eject Assy (FU) / Shaft Eject Assy (FD) / Eject Sensor

2.2.21 Fuser Unit

- (1) Open the top cover 1.
- (2) Raise the fuser unit lock levers (two blue portions) 2 in the directions of the arrows to detach the fuser unit 3.

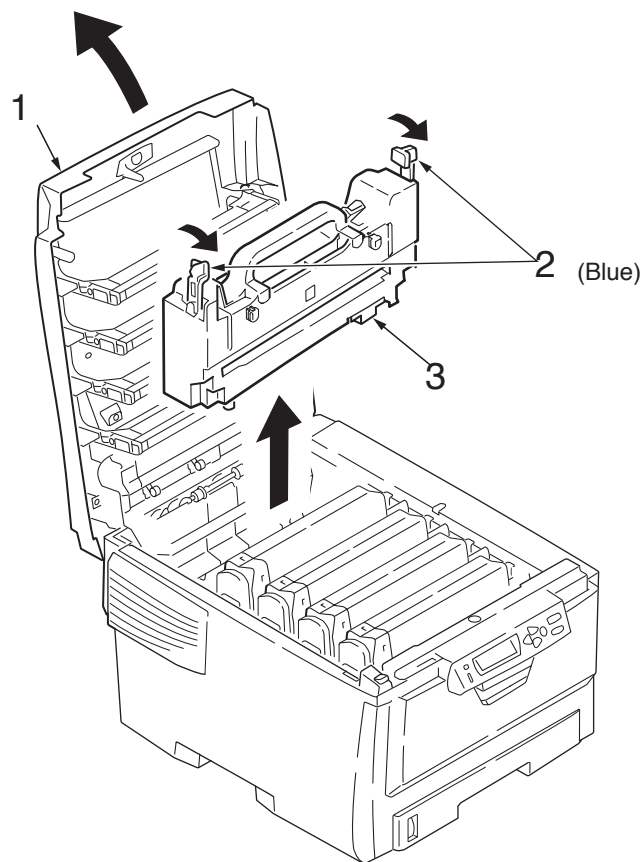



Figure 2-2-21 Fuser Unit

2.2.22 Belt Unit

- (1) Open the top cover 1.
- (2) Remove the image drum units.
- (3) Turn the lock levers (two blue portions) 2 in the direction of the arrow () and, grasping the lever (blue) 3, detach the belt unit 4.

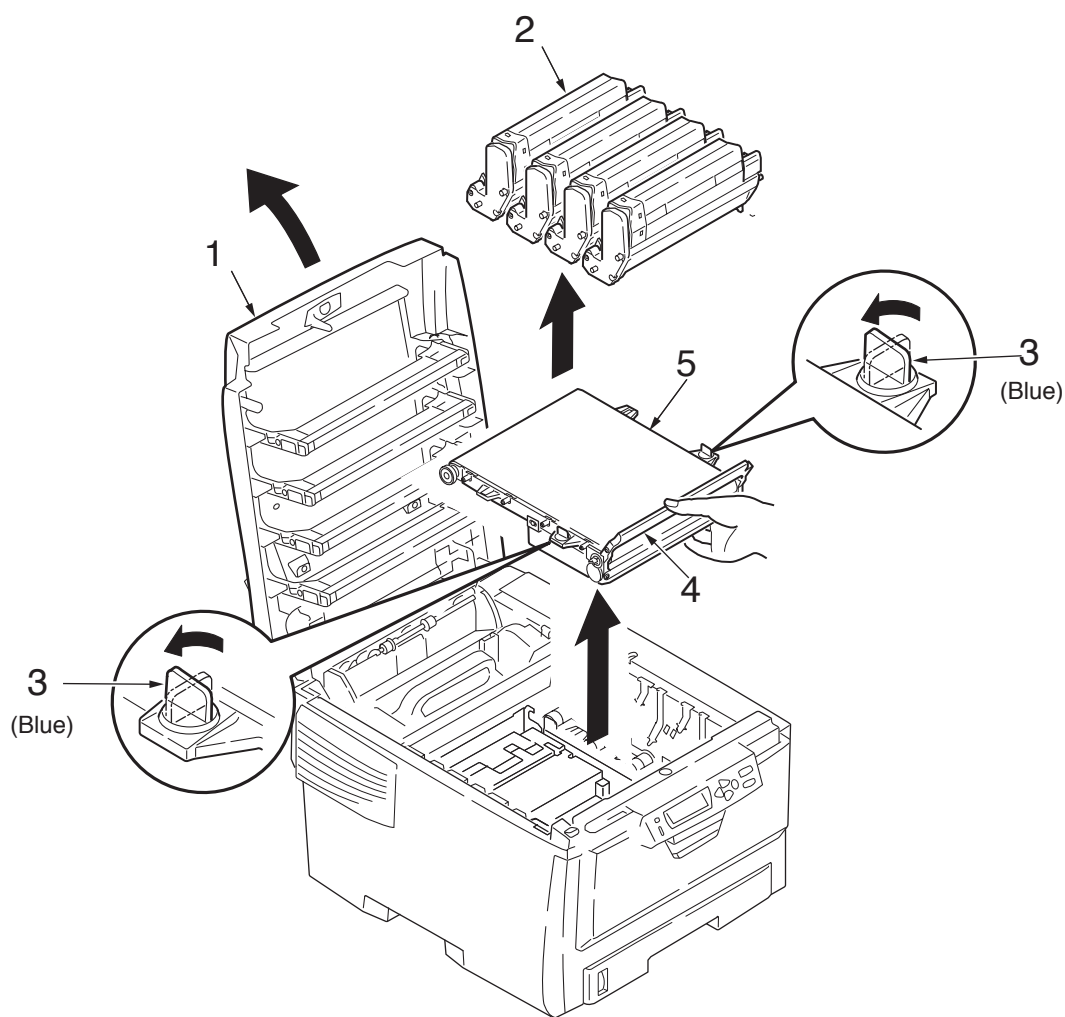


Figure 2-2-22 Belt unit

3. ADJUSTMENTS

Adjustments on C5100 printers are made by operator panel key entry. In addition to a standard menu, there is a maintenance menu in the display on the operator panel. The menu that serves the purpose of intended adjustment is to be selected.

3.0 System Maintenance Menu

Turning on printer power while holding the MENU+ and MENU- keys down activates System Maintenance menu. The menu is only displayed in English on a printer to any destination.

Note! System Maintenance menu, from which settings such as printer destinations can be changed, is hidden from users' view.

Table 3-0 Maintenance Menu Display Table

| Category | Operator Panel Display | | DF | Function |
|------------------|------------------------|--|----|---|
| | Item (Upper Display) | Value (Lower Display) | | |
| OKIUSER | OKIUSER | ODA OEL APS JP1 JPOEM1 OEMA OEML | * | Sets a destination. JPOEM1: Japan OEMs OEMA: A4 default, Overseas OEMs OEML: Letter default, Overseas OEMs With the selection of a destination, printer rebooting is performed. |
| ENG STATUS PRINT | ENG STATUS PRINT | EXECUTE | | Selected using the ENTER switch. Prints engine information after initialization, at the press of the ONLINE switch after the selection. |
| PAGE CNT PRINT | PAGE CNT PRINT | ENABLE DISABLE | * | Sets whether to show the total number of pages on print menu map. |
| FUSE KEEP MODE | PAGE KEEP MODE | EXECUTE | | Places the printer online with the issue of a command from the CU to the PU by the press of the ENTER switch. While printer power is on, replace consumable part(s) with new one(s) and check printer operation [without cutting the fuse(s) for the new part(s) and without counting the operation on the removed part(s)]. The check mode ends by turning off the power, and is disabled at next turning-on of the power. |
| NETWORK | | | | Reserved for expansion. No item or value display is provided at present. |
| ENGINE DIAG MODE | | | | Used to enter engine self-diagnostic mode. |

The switch operation and LCD display during an engine self-diagnostic mode, which are specified by engine firmware, differ from the controller firmware operating specifications. The engine self-diagnostic mode is enabled in a controller board removed configuration.

* Operation in such a configuration is not assured.

Refer to the engine block specification for C5100 for further details if necessary.

3.1 Maintenance Modes and Their Functions

3.1.1 Maintenance Menu

Maintenance menu is contained in a standard menu category. Items that can be set from Maintenance menu are as follows:

Maintenance Menu

Values in shaded areas are initial settings.

| Category | Operator Panel Display | | Function |
|------------------|--------------------------------|---------------------------|--|
| | Item (Upper Display) | Value (Lower Display) | |
| Maintenance Menu | RESET MENU | ENTER | Initializes menu settings. |
| | SAVE MENU SETTING(S) | ENTER | Stores current menu settings. |
| | RESTORE STORED MENU SETTING(S) | ENTER | Changes menu settings to stored ones. Displayed only when menu settings have been stored. |
| | POWER SAVING | ENABLE DISABLE | Sets Power Save mode enabled/disabled. Shift time to enable Power Save mode can be changed using "POWER SAVE SHIFT TIME" on "SYSTEM CONFIG. MENU". |
| | NORMAL PAPER BLACK SETTING | 0 +1 +2 -2 -1 | Corrects print nonuniformity due to temperature variation. With faded images, change the value. With scattering or snowing images in print output of high print density, decrement the value. With faded images in print output of high print density, increment the value. |
| | NORMAL PAPER COLOR SETTING | 0 +1 +2 -2 -1 | Corrects print nonuniformity due to temperature variation. With faded images, change the value. With scattering or snowing images in print output of high print density, decrement the value. With faded images in print output of high print density, increment the value. |
| | TRANSPARENCY BLACK SETTING | 0 +1 +2 -2 -1 | Corrects print nonuniformity due to temperature variation. With faded images on transparency sheets, change the value. With scattering or snowing images in print output of high print density, decrement the value. With faded images in print output of high print density, increment the value. |
| | TRANSPARENCY COLOR SETTING | 0 +1 +2 -2 -1 | Corrects print nonuniformity due to temperature variation. With faded images on transparencies, change the value. With scattering or snowing images in print output of high print density, decrement the value. With faded images in print output of high print density, increment the value. |

3.1.2 Engine Maintenance Mode

Engine Maintenance mode includes three modes, levels 1 to 3. The level 1 is intended for assistance in checking media transport systems and the basic operations of printing systems etc. The level 2, which sets consumable counters and tests color registration adjustment function, does not require relatively special knowledge. Working, including process parameter setting, with the level 3, which contains PU individual experimental elements, takes expertise. Basically items other than those in the level 1 must not be used.

3.1.2.1 Operator panel

Operating descriptions on self-diagnosis are premised on the following operator panel layout.

For ODA



For OEL/AOS



3.1.2.2 Normal self-diagnostic mode (level 1)

The following is the menu of a normal self-diagnostic mode.

- Switch Scan Test
- Motor and Clutch Test
- Test Pattern Execution
- Consumable Counter Display
- Consumable Counter Display - Continuous

3.1.2.2.1 Entering self-diagnostic mode (level 1)

1. While holding the MENU+ and MENU- keys down at the same time, turn the printer power on to enter System Maintenance mode.
2. Use MENU+ or MENU- key keystrokes until "ENGINE DIAG MODE" appears (a few keystrokes), and then press the ENTER key to display "DIAGNOSTIC MODE".

| | |
|-----------------|------------------|
| DIAGNOSTIC MODE | |
| XX.XX.XX | FACTORY/SHIPPING |

3. XX.XX.XX in the display indicates a ROM version. A factory working mode setting, which is usually set to S-MODE or SHIPPING, is at the right of the lower display.
4. Go to each self-diagnosis step by using the MENU+ or MENU- key (pressing the MENU+ or MENU- key rotates menu items).

3.1.2.2.2 Exiting self-diagnostic mode

1. Turn the printer power off and, after ten seconds, on again.

3.1.2.3 Switch scan test

This self-diagnosis is used when input sensor and switch checking is made.

1. Enter the normal diagnostic mode, and press the MENU+ or MENU- key until "SWITCH SCAN" is shown on the upper display (the MENU+ key increments a test item and the MENU- key decrements a test item).

| |
|-------------|
| SWITCH SCAN |
| |

2. Table 3-1 lists SWITCH SCAN numbers. Press and the MENU+ or MENU- key until the SWITCH SCAN number for unit(s) to be tested shows up on the upper display (the MENU+ key increments an item and the MENU- key decrements an item).
3. In response to the press of the ENTER key, the test on the unit(s), the SWITCH SCAN number begins blinking and, carrying the current status of the unit(s) being tested, the number(s) (1 to 4) corresponding to the unit(s) are displayed.

| |
|-----------------|
| SWITCH SCAN 00 |
| 1=H 2=L 3=H 4=L |

Operate the unit(s) (figure 3-1). Indications for each unit are provided in their portion of the LCD display (Indicated meanings vary with units (sensors etc). See table 3-1 for details).

4. When the CANCEL key is pressed, the SWITCH SCAN number goes back to an indication view (stops blinking).
5. Repeat steps 2 through 4 as necessary.
6. To end the test, press the BACK key (the display is restored to the view of step 1).

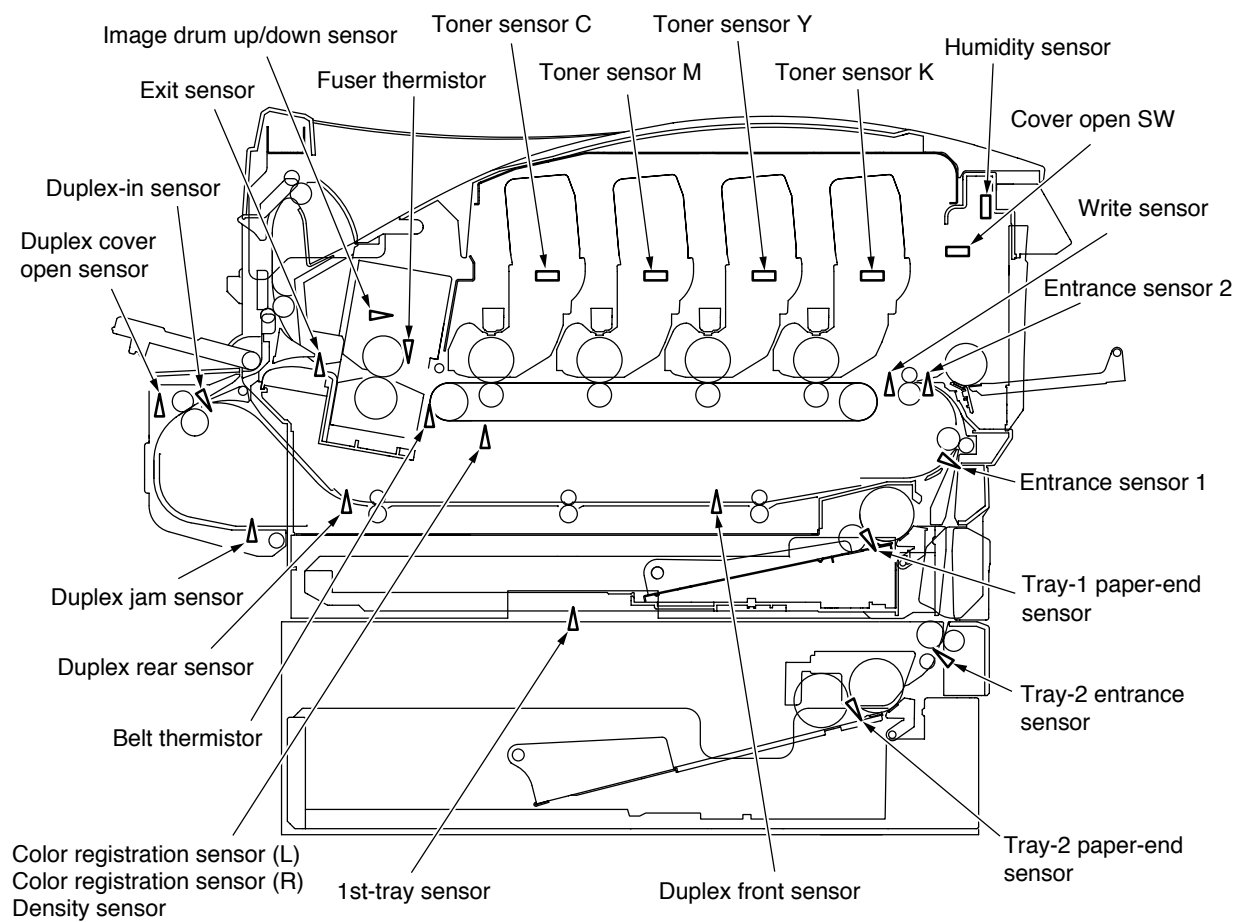


Figure 3-1 Switch Sensor Positions

Table 3-1 SWITCH SCAN Display Detail

| ROW SCAN NO. | 1 | Display | 2 | Display | 3 | Display | 4 | Display |
|-----------------------|----------------------------|---|----------------------------|---|--------------------------|---|---------------------|---|
| SWITCHSCAN00 | Tray-1 paper-end sensor | L: Paper present H: Paper absent | | | Entrance sensor 1 | L: Paper present H: Paper absent | Entrance sensor 2 | L: Paper present H: Paper absent |
| SWITCHSCAN01 | Write sensor | L: Paper present H: Paper absent | Exit sensor | L: Paper present H: Paper absent | | | | |
| SWITCHSCAN02 | Toner sensor K | L: Light reflected H: Light shielded | Toner sensor C | L: Light reflected H: Light shielded | Toner sensor M | L: Light reflected H: Light shielded | Toner sensor Y | L: Light reflected H: Light shielded |
| SWITCHSCAN03 | Cover open | L: Cover open H: Cover close | | | | | | |
| SWITCHSCAN04 | | | | | | | | |
| SWITCHSCAN05 | | | | | | | | |
| SWITCHSCAN06 | | | | | | | | |
| SWITCHSCAN07 | | | | | | | | |
| SWITCHSCAN08 | Color alignment sensor (L) | AD Value ***H | Color alignment sensor (R) | AD Value ***H | Density sensor | AD Value ***H | | |
| SWITCHSCAN09 | Fuser thermistor | AD Value ***H | | | | | | |
| SWITCHSCAN10 | Humidity sensor | AD Value ***H | Temperature sensor | AD Value ***H | Belt thermistor | AD Value ***H | | |
| SWITCHSCAN11 (Option) | Duplex-in sensor | L: Paper absent H: Paper present | Duplex rear sensor | L: Paper absent H: Paper present | Duplex cover open sensor | L: Cover open H: Cover close | Duplex front sensor | L: Paper absent H: Paper present |
| SWITCHSCAN12 (Option) | Duplex bottom sensor | L: Absence detected H: Presence detected | | | | | | |
| SWITCHSCAN13 (Option) | Tray-2 paper-end sensor | L: Paper absent H: Paper present | | | 1st-tray sensor | L: Paper absent H: Paper present | | |
| SWITCHSCAN14 (Option) | | | | | Tray-2 entrance sensor | L: Paper absent H: Paper present | | |
| SWITCHSCAN15 (Option) | | | | | | | | |
| SWITCHSCAN16 (Option) | | | | | | | | |
| SWITCHSCAN17 (Option) | | | | | | | | |
| SWITCHSCAN18 (Option) | | | | | | | | |
| SWITCHSCAN19 (Option) | | | | | | | | |
| SWITCHSCAN20 (Option) | | | | | | | | |
| SWITCHSCAN21 (Option) | | | | | | | | |
| SWITCHSCAN22 (Option) | | | | | | | | |
| SWITCHSCAN23 (Option) | | | | | | | | |
| SWITCHSCAN24 | | | | | | | | |
| SWITCHSCAN25 | Image drum up/down sensor | | | | | | | |

3.1.2.4 Motor and clutch test

This self-check routine is used for motor and clutch testing.

1. Go into the self-diagnostic (level 1) mode, press the MENU+ or MENU- key until upper display of "MOTOR & CLUTCH TEST" is brought up, and press the ENTER key (the MENU+ key increments a test item and the MENU- key decrements a test item).
2. The names of units to be tested are listed in table 3-2. Use the MENU+ or MENU- key until the name of a unit that is to be tested appears on the lower display (the MENU+ key increments an item and the MENU- key decrements an item).

| |
|---------------------|
| MOTOR & CLUTCH TEST |
| K - ID - ID MOTOR |

3. Pressing the ENTER key starts the test of the unit, blinking the displayed name of the unit. The unit is driven for 10 seconds (refer to figure 3-3).

Note! The view of step 2 is restored after the 10-second driving, and the unit is driven again with the press of the corresponding switch.

- Clutch solenoid on-off operations are repeated in normal printing driving (solenoids whose mechanical structures do not permit their single driving operate motors concurrently with them).

4. Use the CANCEL key to stop the drive of the unit (the display for the unit remains the same).
5. Repeat the cycle of steps 2 through 4 as needed.
6. Pressing the BACK key ends the test (the display is restored to step 1).

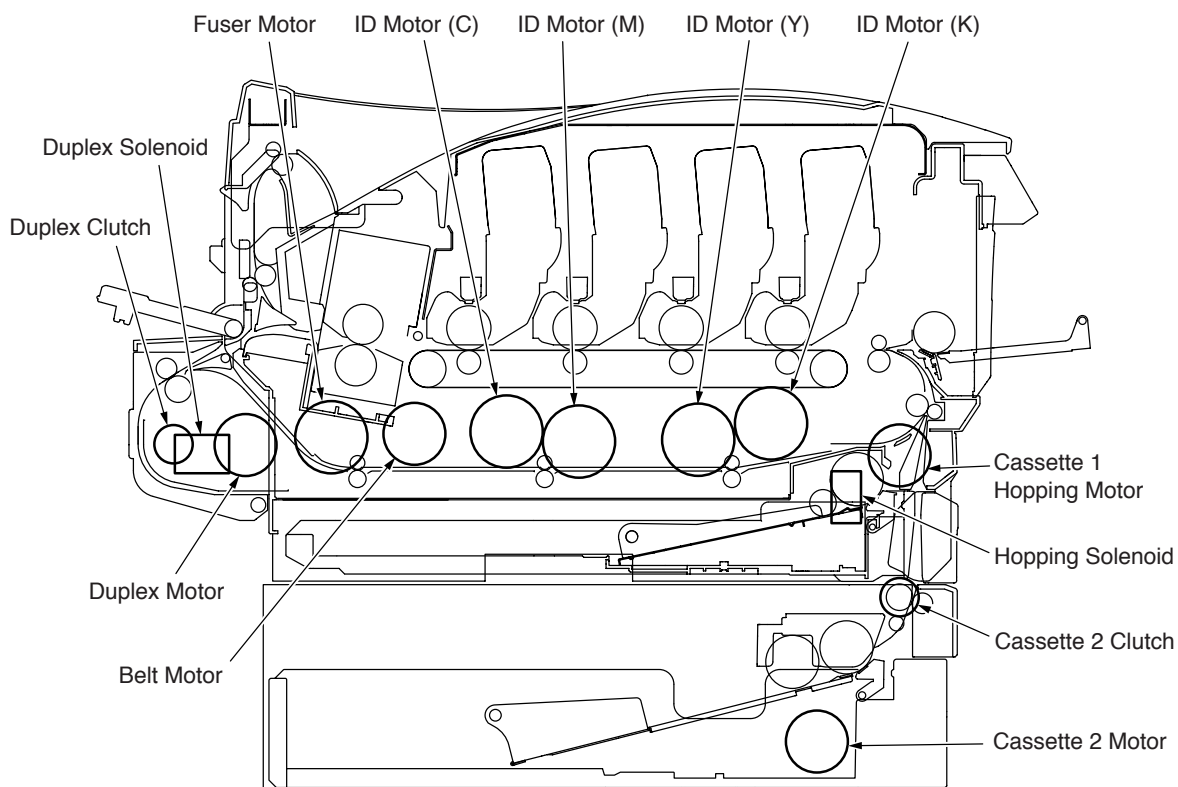


Figure 3-3

Table 3-2

| Unit Name | Description of Control for Unit Driving | Control for Unit Driving |
|------------------------------|--|--------------------------|
| ID Motor (K) | Remove all the image drums (black, yellow, magenta and cyan) to drive. | Removal of IDs |
| ID Motor (Y) | Remove all the image drums (black, yellow, magenta and cyan) to drive. | Removal of IDs |
| ID Motor (M) | Remove all the image drums (black, yellow, magenta and cyan) to drive. | Removal of IDs |
| ID Motor (C) | Remove all the image drums (black, yellow, magenta and cyan) to drive. | Removal of IDs |
| Belt Motor | Remove all the image drums (black, yellow, magenta and cyan) to drive. | Removal of IDs |
| Fuser Motor | — | — |
| Cassette 1 Hopping Motor | Remove the cassette 1 to drive. | Removal of Cassette 1 |
| Hopping Solenoid | — | — |
| Duplex Motor | — | — |
| Duplex Clutch | — | — |
| Duplex Solenoid | — | — |
| Cassette 2 Motor | Remove the cassette 2 to drive. | Removal of Cassette 2 |
| Cassette 2 Clutch | — | — |
| ID Up/Down | — | — |
| Fan1 Test (Power Supply Fan) | — | — |
| Fan2 Test (Fuser Fan) | — | — |

3.1.2.5 Test printing

This self-diagnostic routine is used when the PU-inside test patterns are printed. The other test patterns are in the controller's storage.

1. Go into the self-diagnostic (level 1) mode, press the MENU+ or MENU- key until "TEST PRINT" comes into view in the upper display, and press the ENTER key (the MENU+ key is for test item increment, and the MENU- key for test item decrement).
2. Items applied only to test printing are shown on the lower display. Press the MENU+ or MENU- key until an item to be set appears, and hit the ENTER key (the MENU+ key is for item increment, and the MENU- key for item decrement) [When items need not be set (must be left at their defaults), go to step 5].
3. Press the MENU+ or MENU- key and, when the item that has been set in step 2 is reached, press the Enter key. The item and its setting are displayed on the upper and lower panel, respectively. The setting is incremented by pressing the MENU+ key, and decremented by pressing the MENU- key (the last displayed setting is applied). Pressing the BACK key determines the setting, restoring the view of step 2. Repeat step 3 as necessary.

| |
|--------------|
| TEST PATTERN |
| 1 |

| Display | Set Value | Function |
|--------------------|---------------|---|
| PRINT EXECUTE □ | — □ | Starts printing at the press of the ENTER key, and ends the printing at the press of the CANCEL key. (Page basis) |
| TEST PATTERN□ □ | 0□ □ | 0: Prints a blank page. 1 to 7: (Print a pattern). 8 to 15: Print a blank page. |
| CASSET | TRAY1 | Selects a unit in which paper is to be loaded. |
| | TRAY2 | When the printer is not equipped with the tray 2, TRAY2 is not displayed.□ |
| | FF | |
| PAGE | 0000 | Sets the number of test pages printed. |
| COLOR | ON | Selects color or monochrome printing. |
| | OFF | |
| DUPLEX | 2 PAGES STACK | Performs two-page stack duplex printing. |
| | OFF | Establishes duplex-off printing. |
| | 1PAGES STACK | Performs one-page stack duplex printing. |

- Values in shaded areas are initial settings. Values established are applicable only to this test mode (they are not written into EEPROM).

Notes!

- PAGE Setting Should the ONLINE key be pressed after a digit is shifted by a touch of the MENU+ or MENU- key, the setting is incremented. In the event of the press of the CANCEL key after such a digit shift, the setting is decremented.
- COLOR Setting While the COLOR setting is set to ON, pressing the ENTER key displays the following on the panel.
- Print Setting for Colors ... The press of the MENU+ or MENU- key shifts a value. The ONLINE or CANCEL key is used for switching between ON and OFF. The BACK key restores original display.

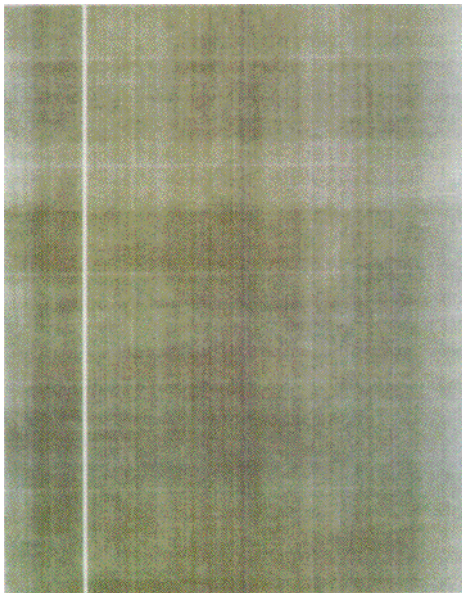
| | | |
|-------|---|-----------|
| COLOR | → | Y:ON M:ON |
| ON | | C:ON K:ON |

4. With "PRINT EXECUTE" on the lower display after step 2, when the ENTER key is pressed, test printing is executed using the values set in steps 2 and 3. Pressing the CANCEL key stops the test printing.

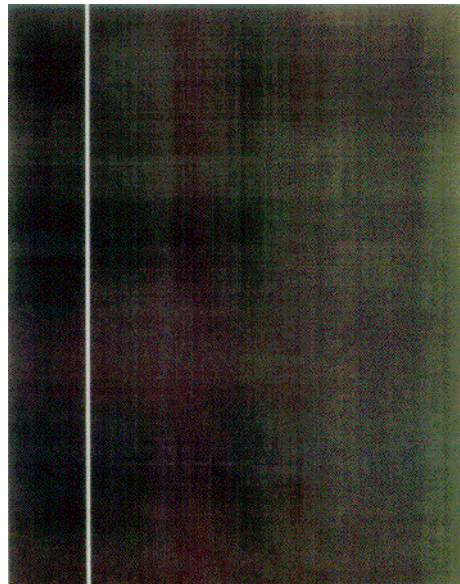
Any of the alarms shown in the table of operator panel display description (see below), which has been detected during the initiation or progression of test printing, appears on the panel display, suspending the printing (for the description of errors, see section 3.1.2.9 Operator Panel Display, which messages differ from those displayed in PU test printing).

Print Patterns

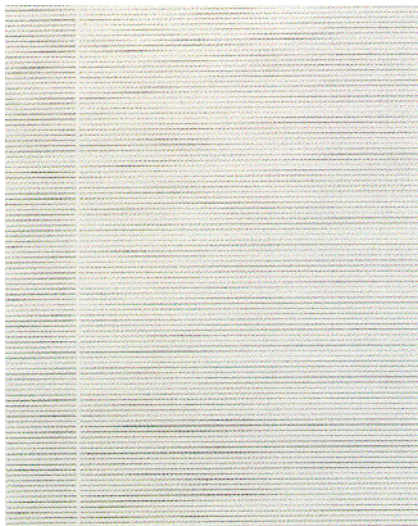
Patterns 0 and 8 to 15 ... print a blank page.



Pattern 1



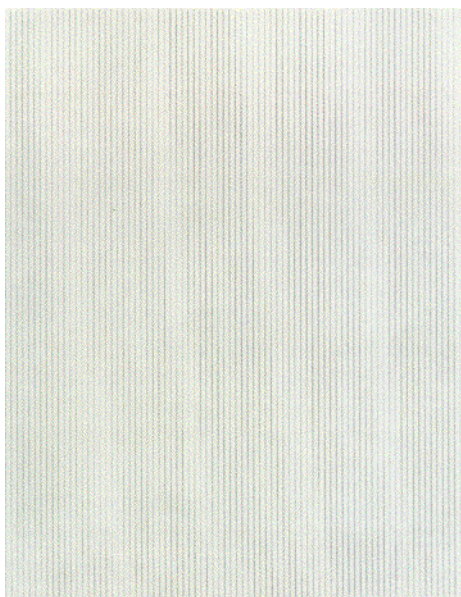
Pattern 2



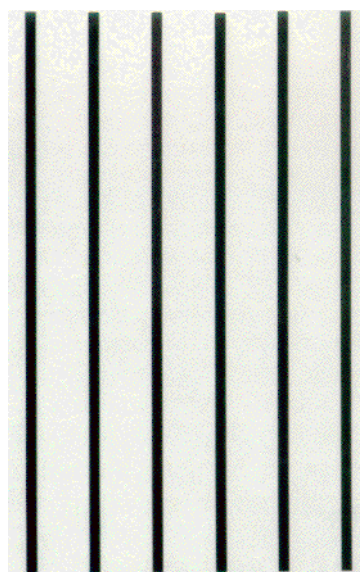
Pattern 3



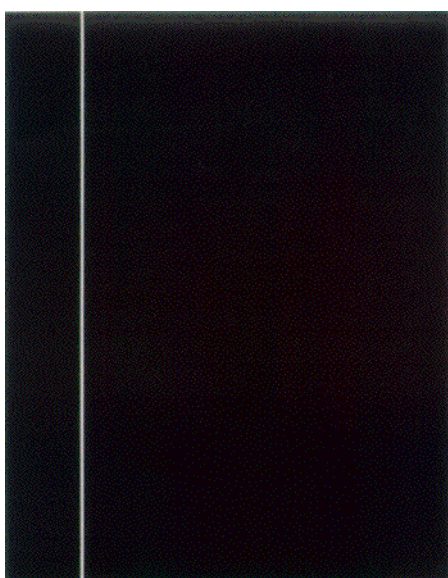
Pattern 4



Pattern 5



Pattern 6



Pattern 7

- The following messages are showing during printing.

| |
|-------|
| P=*** |
| W=*** |

P: Number of test pages printed (prints)

W: Wait time for printing (in seconds)

- Use the MENU+ key to change the display.

| |
|----------------------|
| T=*** U=*** [***] |
| H=***% B=*** [***] |

T: Environment temperature measurement (in Celsius)

U: Heater temperature measurement (in Celsius)

H: Environment humidity measurement (in percent)

B: Belt humidity measurement (in Celsius)

- With the press of the MENU+ key, the display is changed.

| |
|-----------------------|
| KTR=*.* ** YTR=*.* ** |
| MTR=*.* ** CTR=*.* ** |

YTR, MTR, CTR and KTR are colors' respective transfer voltage settings (in KV).

- Pressing the MENU+ key changes the display.

| |
|-----------------|
| KR=**** YR=**** |
| MR=**** CR=**** |

YR, MR, CR and KR are colors' respective image drum resistance values (in megohms).

- The display is switched by pressing the MENU+ key.

| |
|--------------------|
| ETMP=*** UTMP=*** |
| REG=**** EXIT=**** |

ETMP: Environment temperature measurement (in Celsius)

UTMP: Heater temperature measurement (in Celsius)

REG: Hopping motor speed setting

EXIT: Fuser motor speed setting

- The MENU+ key switches the display.

| |
|-----------------|
| KID=*** YID=*** |
| MID=*** CID=*** |

KID, YID, MID and CID are image drum motor speed settings.

- Pressing the MENU+ key changes the display.

| |
|-----------|
| BELT=**** |
| |

BELT: Belt motor speed setting

- With the press of the MENU+ key, the display is switched.

| |
|-----------------|
| HT:**** CH:**** |
| DB:**** |

HT, CH and DB are high-voltage table IDs.

- Pressing the MENU+ key changes the display.

| |
|-----------|
| TR1:***** |
| TR2:***** |

TR1 and TR2 are high-voltage table IDs.

5. Repeat steps 2 through 4 if necessary.

6. Press the CANCEL key to end the test (the display is restored to step 1).

3.1.2.6 Consumable counter display

The self-diagnosis is used to indicate consumable consumption status.

1. After entering the normal self-diagnostic mode, press the MENU+ or MENU- key until "CONSUMABLE STATUS" appears on the upper display, and hit the ENTER key (the MENU+ key is for test item increment, and the MENU- key for test item decrement).
2. By pressing the MENU+ or MENU- key, the consumption status of consumables comes into view item by item (the ONLINE and CANCEL keys are invalid).
3. Pressing the BACK key ends the test (the display of step 1 is restored).

| Item | Top Display | Bottom Display | Format | Unit | Details |
|-------------------|-----------------|----------------|--------------|------------|---|
| Fuser unit □ | FUSER UNIT | ***** PRINTS | Decimal □ | Print □ | Shows the number of pages printed (prints) after installation of a new fuser unit to date. |
| Belt unit | TR BELT UNIT | ***** IMAGES | Decimal □ | Image | Converts into a count on an A4-size-page basis at 3 pages per job, and shows, the number of pages impressed (images) after installation of a new belt unit to date. |
| ID unit - black | BLACK ID UNIT | ***** IMAGES | Decimal | Print | Convert the numbers of revolutions of image drum units after the installation of those units to date into counts on a letter- (A4-) size-page basis at 3 pages per job and show it. |
| ID unit - yellow | YELLOW ID UNIT | ***** IMAGES | Decimal | Print | |
| ID unit - magenta | MAGENTA ID UNIT | ***** IMAGES | Decimal | Print | |
| ID unit - cyan | CYAN ID UNIT | ***** IMAGES | Decimal □ | Print | |
| Toner - black | BLACK TONER | ***% | Decimal | % | Show the amounts of toner used. |
| Toner - yellow | YELLOW TONER | ***% | Decimal | % | |
| Toner - magenta | MAGENTA TONER | ***% | Decimal | % | |
| Toner - cyan | CYAN TONER | ***% | Decimal | % | |

3.1.2.7 Consumable counter display - continuous

The self-diagnosis is used to indicate the consumable life-cycle consumption status of a printer. The status means those count values for consumables which are not initialized even after replacement of the consumables, and is counted without break.

1. Enter the normal self-diagnostic mode, press MENU+ or MENU- key until the upper display "PRINTER STATUS" appears, and press the Enter key (the MENU+ key is for item increment, and the MENU- key for item decrement).
2. When the MENU+ or MENU- key is pressed, the life-cycle consumption status of the consumables shows up item by item (the ONLINE and CANCEL keys are invalid).
3. Pressing the BACK key ends the test (flips the display back to step 1).

| Item | Top Display | Bottom Display | Format | Unit | Details |
|------------------|---------------------|----------------|---------|-------|---|
| Total sheets fed | TOTAL SHEETS FEED | ***** PRINTS | Decimal | Print | Shows the total number of sheets fed, including blank pages. |
| Print - black | BLACK IMPRESSIONS | ***** IMAGES | Decimal | Print | Show the numbers of pages (images) impressed using image drums. |
| Print - yellow | YELLOW IMPRESSIONS | ***** IMAGES | Decimal | Print | |
| Print - magenta | MAGENTA IMPRESSIONS | ***** IMAGES | Decimal | Print | |
| Print - cyan | CYAN IMPRESSIONS | ***** IMAGES | Decimal | Print | |

3.1.2.8 Operator panel display

Display

| Displayed Message | Description |
|-----------------------------|---|
| ONLINE .xxxx tttttt | Indicates the printer is on-line. |
| OFFLINE .xxxx tttttt | Indicates the printer is off-line. |
| FILE ACCESSING | Indicates a device access is being performed during charge system operation. |
| DATA ARRIVE .xxxx tttttt | Indicates data is being received and its processing does not start yet. Mainly displayed during non-character print data PJL processing, or during job spooling. |
| PROCESSING .xxxx | Indicates data is being received or being output. |
| DATA .xxxx | Indicates print data remains in the buffer. The printer is waiting for data followed. |
| PRINTING tttttt | Indicates the printer is printing. |
| PRINT DEMO PAGE | Indicates the printer is printing demonstration page. Not displayed for printing of user-added demo page(s) (PRINTING is displayed). |
| PRINT FONT | Indicates the printer is printing a font page. A common display of printing of all fonts (PCL, PSE, IBM PPR and EPSON FX fonts). (For C5300) |
| PRINT MENU MAP | Indicates the printer is printing menu map. |
| PRINT FILE LIST | Indicates the printer is printing a file list. (For C5300) |
| PRINT ERROR LOG. | Indicates the printer is printing an error log. (For C5300) |
| COLLATE COPY iii/jjj | Indicates multiple copies of a multiple-page document are being printed. iii shows the number of that copy of the multiple copies which is being printed, and jjj the number of copies of the document. When the number of the copies is set to the number 1, PRINTING shown during normal printing is displayed. |
| COPY kkkk/IIII | Indicates copies of a single-page document are being printed. kkkk shows the number of that copy of the copies which is being printed, and IIII the number of copies printed, which is set to the number 1, PRINTING shown during normal printing is displayed. |
| CANCELING JOB | Indicates the cancellation of a job was instructed and, until the job does not remain, data is being received but being discarded (it is requested that this message be displayed for not less than preset time of seconds because the cancellation is imperceptible due to display for a fraction of a second). |

| Displayed Message | Description |
|--------------------------------|--|
| CANCELING JOB (USER DENIED) | Indicates that, as unauthorized, printing was canceled (for job account management): 1. A job was received from a user unauthorized to perform printing. 2. A job was received from a user unauthorized to perform color printing. |
| CANCELING JOB (BUFFER FULL) | Indicates that, as log memory space internal of the printer was exhausted, a job was canceled. An operation to be specified in such a log full condition is "Job cancelled when log full occurs" (to "CANCEL JOB") (for job account management). |
| CANCELING JOB (JAM) | Indicates that, as a paper jam occurred with "JAM RECOVERY" set to OFF, in which case job cancellation is instructed, data is being received but being discarded until job completion. |
| WARMING UP | Indicates the printer is being warmed up. |
| OPTIMIZING TEMP | Indicates that, as an image drum stands at a high temperature, printing is temporarily suspended, or indicates a wait state for thermal control in switching paper width from a narrower value to a wider one. |
| POWER SAVE | Notifies that the printer became in its power save mode. Displayed in combination with another message on the upper display. |
| ADJUSTING COLOR | Indicates auto color registration adjustment operation is being processed. |
| ADJUSTING DENSITY | Indicates auto gradation adjustment operation is being processed. |
| ADJUSTING DENSITY | Indicates auto density adjustment operation is being processed. |
| | Indicates PU firmware is being downloaded (character strings displayed are output by the PU firmware). |
| ORDER * TONER | Notifies that the toner is low. Displayed in combination with another message on the upper display. Menu-set "LOW TONER=STOP" makes ATTENTION LED to blink, causing the printer to be placed off-line. With the press of the ONLINE switch, ATTENTION LED becomes illuminated and, until "TONER EMPTY" appears, can stay illuminated. Y M C K Also displayed when the printer is near full of the waste toner. |
| WASTE TONER FULL ORDER * TONER | Displayed when the cover is opened and closed, or when the printer is turned off and then on, after a waste toner full error (with the priority 25.2) appears once (does not occur with the black toner). Displayed in combination with another message on the upper display. While displayed, every time 50 pages are impressed, develops a waste toner full error, causing the printer to be placed off-line and stopped. Y M C |

| Displayed Message | Description |
|---------------------------------|--|
| PRESS ONLINE SW INVALID DATA | Prompts the operator to press the ONLINE switch to clear the warning message, as invalid data was received. Displayed when an unsupported PDL command is received or, without an HDD, a spool command is received. |
| PS3 EMULATION ERROR | Indicates that the interpreter detected an error for any of the following reasons, after which, until job termination, receive data is received and discarded. Automatically cleared upon job termination. <ul style="list-style-type: none"> - There is a grammatical error in the job. - A complicated page consumed VM. (For C5300) |
| ORDER * IMAGE DRUM | Notifies (warns) that the image drum is near end of its life. Displayed in combination of another message on the upper display. Y M C K |
| ORDER FUSER | Notifies (warns) that the fuser unit is near end of its life. |
| ORDER BELT | Notifies (warns) that the belt unit is near end of its life. |
| FUSER LIFE | Displayed by opening and closing the cover, or turning the printer on, after a first-time fuser life error. A fuser life error occurs again after 500 pages (prints) are printed. |
| BELT LIFE | Displayed by opening and closing the cover, or turning the printer on, after a first-time belt life error. A belt life error occurs again after 500 pages (images) are printed. |
| * TONER EMPTY | Displayed by opening and closing the cover, or turning the printer on, after a first-time TONER EMPTY error. A TONER EMPTY error occurs again after 50 A4 pages (50 images) are impressed with a 5% density. Y M C K |
| * DRUM LIFE | Displayed by opening and closing the cover, or turning the printer on, after a first-time image drum life error. An image drum life error occurs again after 500 pages (images) are impressed. Y M C K |
| BELT REFLEX ERROR | A belt reflectance check error, which does not occur at user level (when this occurs, switch the printer to Shipping mode). |
| DENSITY SHUTTER ERROR2 | Does not occur at user level (when this occurs, switch the printer to Shipping mode. Refer to an applicable maintenance manual). |
| DENSITY SHUTTER ERROR1 | Does not occur at user level (when this occurs, switch the printer to Shipping mode. Refer to an applicable maintenance manual). |

| Displayed Message | Description |
|---------------------------------|--|
| DENSITY COLOR CALIBRATION ERROR | Does not occur at user level (when this occurs, switch the printer to Shipping mode. Refer to an applicable maintenance manual). |
| DENSITY COLOR SENSOR ERROR | Does not occur at user level (when this occurs, switch the printer to Shipping mode. Refer to an applicable maintenance manual). |
| DENSITY BLACK CALIBRATION ERROR | Does not occur at user level (when this occurs, switch the printer to Shipping mode. Refer to an applicable maintenance manual). |
| DENSITY BLACK SENSOR ERROR | Does not occur at user level (when this occurs, switch the printer to Shipping mode. Refer to an applicable maintenance manual). |
| * IMAGE DRUM SMEAR ERROR | Does not occur at user level (when this occurs, switch the printer to Shipping mode. Refer to an applicable maintenance manual). For each of Y, M, C and K. |
| * LOW DENSITY ERROR | Does not occur at user level (when this occurs, switch the printer to Shipping mode. Refer to an applicable maintenance manual). For each of Y, M, C and K. |
| REGISTRATION ERROR 1 | A color registration adjustment error, which does not occur at user level (when this occurs, switch the printer to Shipping mode. Refer to an applicable maintenance manual). |
| SENSOR CALIBRATION ERROR | A sensor calibration error, which does not occur at user level (when this occurs, switch the printer to Shipping mode. Refer to an applicable maintenance manual). |
| REGISTRATION ERROR 2 | A gamma error, which does not occur at user level (when this occurs, switch the printer to Shipping mode. Refer to an applicable maintenance manual). |
| REGISTRATION ERROR 3 | A gamma error, which does not occur at user level (when this occurs, switch the printer to Shipping mode. Refer to an applicable maintenance manual). |
| REGISTRATION ERROR 4 | A gamma error, which does not occur at user level (when this occurs, switch the printer to Shipping mode. Refer to an applicable maintenance manual). |
| REGISTRATION ERROR 5 | A gamma error, which does not occur at user level (when this occurs, switch the printer to Shipping mode. Refer to an applicable maintenance manual). |
| REGISTRATION SENSOR ERROR 2 | A color registration adjustment sensor error, which does not occur at user level (when this occurs, switch the printer to Shipping mode. Refer to an applicable maintenance manual). |
| REGISTRATION SENSOR ERROR 3 | A color registration adjustment sensor error, which does not occur at user level (when this occurs, switch the printer to Shipping mode. Refer to an applicable maintenance manual). |
| REGISTRATION SENSOR ERROR 4 | A color registration adjustment sensor error, which does not occur at user level (when this occurs, switch the printer to Shipping mode. Refer to an applicable maintenance manual). |
| REGISTRATION SENSOR ERROR 5 | A color registration adjustment sensor error, which does not occur at user level (when this occurs, switch the printer to Shipping mode. Refer to an applicable maintenance manual). |

| Displayed Message | Description |
|--|--|
| ttttt EMPTY | <p>Indicates the tray 1 or 2 became empty of paper or is removed, and warns of it until printing is instructed; or</p> <p>Displayed when no paper was found in the multipurpose tray after one attempt to feed paper from it, and disappears by opening and closing the cover, or by turning the printer on again, upon termination of any job being printed.</p> <p>MP TRAY (Multipurpose Tray) TRAY1 (Tray 1) TRAY2 (Tray 2)</p> |
| DISK FILE SYSTEM FULL | Indicates a disk full condition occurred. A temporary warning, which is showing until job termination and then disappears. (For C5300) |
| WRITE PROTECTED DISK | Indicates an attempt to write data into a protected file was made. A temporary warning, which is showing until job termination and then disappears. (For C5300) |
| COLLATE ERROR | Indicates memory is full with MOPY data. |
| INVALID ID. JOB REJECTED | <p>Means printing was canceled as unauthorized (for job account management) at reception of any of the following. Cleared by pressing the ONLINE key.</p> <ol style="list-style-type: none"> 1. A job from a user unauthorized to perform printing. 2. A job from a user unauthorized to perform color printing. |
| LOG BUFFER FULL. JOB REJECTED | Indicates that, as log memory space internal of the printer was exhausted and the operation specified in such a log full condition is to "cancel job", a job has been canceled (in connection with JobAccount). Cleared by pressing the ON-LINE switch. |
| DISK OPERATION ERROR | Indicates a disk error other than the Nos. 29 and 30 occurred. Processing operation which does not use the disk can be performed. (For C5300) |
| | Indicates an error occurred during PU firmware reprogramming (does not occur in user environments). (Character strings displayed are output by PU firmware.) |
| LOAD mmm IN MP TRAY AND PRESS ONLINE SW | Indicates manual printing is requested, and prompts the operator for the manual insertion of the paper mmm. |

3.1.3 Printing on Printer Equipped with Controller

Menu Map Printing

Printer program versions and controller block configuration, and the other printer configurations and settings are printed.

Operation: (Pressing of Switches)

“MENU+” → “ENTER” → “ENTER”

Demo Printing

Demo patterns for destinations stored in ROM are printed.

Operation: (Pressing of Switches)

“MENU+” → “ENTER” → “MENU+” → “ENTER”

Self-Diagnostic Printing

Self-diagnosis is performed by pressing and holding the test switch of the Ethernet board for two seconds or more and the results of the self-diagnosis are printed.

3.2 Adjustments after Parts Replacement

Adjustments required after parts replacement are described below. The adjustment and correction of color registration must be performed without exception.

| Replaced Part | Adjustment |
|--|--|
| LED Head | Not required. |
| Image Drum Cartridge (Any of Y, M, C and K) | Not required. |
| Fuser Unit | Not required. |
| Belt Unit | Not required. |
| PU (RSN Board) | Copying of EEPROM data *Note |
| CU (ARC Board / OWL Board) | Copying of EEPROM data *Note |
| Shutter | Setting of correction value for density detection calibration chip |

Note: When a PU (RSN board) is replaced with a new one, data may not be read out of its EEPROM. In such cases, color balance must be adjusted.

3.2.1 Notes on Engine Controller Board Replacement

When the operator panel message SERVICE CALL 105 (an engine EEPROM error) appears, engine controller board replacement with a new one is required.

When replacing engine controller boards (RSN PWBs), version read (fuse cut-out) function is disabled. Mode switching by a PJL command from Factory to Shipping must be performed:

1. Enter System Maintenance mode by turning on printer power while holding the MENU+ and MENU- keys down concurrently.
2. User MENU+ key keystrokes until "DIAGNOSTIC MODE" is displayed (a few keystrokes), and press the ENTER key.
3. Press the MENU+ or MENU- key until "FACTORY MODE" is shown, and press the ENTER key.
4. While "FACTORY MODE" is being displayed, select a value by the MENU+ or MENU- key and press the ENTER key.
5. Selecting "SHIPPING MODE" (enables fuse cut-out) and, until the display stops blinking, concurrently pressing and holding the ONLINE and CANCEL keys store the value.

Notes! The life data of the parts, such as the belt, toner and image drum units, of a printer is cleared by its EEPROM replacement. Note that an error is introduced in each unit's life count until the unit is next replaced. The following are counts cleared by EEPROM replacement. Errors in counts other than the count of total sheets fed, which counts are cleared at the points where the units corresponding to the counts are replaced with new ones, are resolved at those points.

3.2.3 Destination Setting (Check Method: Printing demo page)

Destination setting is to be conducted at final setting after part installation in printers. The destination setting for each printer, which defaults to ODA, is to be set to the destination of the printer without exception at the time it is shipped.

Note! Destination settings are stored in ARC board / OWL board EEPROM.

1. Maintenance-use boards: Destination setting for maintenance-use boards to Japan indirect sales, ODA, OEL and APS is not performed. They are shipped with the destination settings set to their default.
2. Setting from operator panel: Each printer is booted in Maintenance mode and its destination is set.
 - While holding the MENU+ and MENU- keys down, turn on the printer.
 - After “MAINTENANCE MENU” appears, the display changes to “OKIUSER.”
 - Press the MENU+ key, select destination-setting “OKIUSER” and press the ENTER key.
 - “JP*” is shown on the lower display.
 - Press the ENTER key, select a destination using the MENU+ or MENU- key, and hit the ENTER key.
 - Press the BACK key to confirm the selection.
 - Re-starting the printer changes its destination.

3.3 Print Density Adjustment

Auto Density Adjustment mode is set to [AUTO] at printer shipment, which may cause print density to be out of its appropriate balance during printer operation. In such cases, the density is to be adjusted.

Notes! Print density adjustment is to be performed with printers at rest. Do not adjust print density during printer warming-up.

1. Press the MENU+ or MENU- key several times to show [COLOR MENU], and press the ENTER key.
2. Press the MENU+ or MENU- key to display [DENSITY ADJUSTMENT/ RESET].
3. Press the ENTER key.

Auto print density adjustment starts.

3.4 Print Density Adjustment (Calibration Chip)

Print Density Input to Print Density Detection Calibration Chip

1. Each PU is to be programmed with a calibration target correction value (the last two characters of barcode information, about which see the illustration shown below) that is a shutter label marking.

With shutter, sheet color, print density sensor or PU board replacement, correction value reprogramming must be performed.

Setting from operator panel:

- While holding the MENU+ and MENU- keys down, turn the printer on.
- After "MAINTENANCE MENU" appears, the display changes to "OKIUSER."
- Press the MENU+ key seven times to select "DIAGNOSTIC MODE."
- Press the MENU+ and ONLINE key. "ENGINE DIAG LEVEL2" is displayed.
- Press the MENU key two times to select "ENGINE PARAMETER SET."
- Press the ONLINE or CANCEL key to show "CHIP DISPERSION ADJUST 00H."
- Pressing the ENTER key blinks the first or second character of the display.
- Press the ONLINE or CANCEL key to set a correction setting.
- Press and hold the ONLINE or CANCEL key about two seconds to confirm the correction setting. The blinking correction setting becomes stay illuminated, bearing with an asterisk (*).
- The printer restarts and the correction setting takes effect.

1 Information written

From left: One asterisk (*) character

Four-digit date (ID barcode) system

One-digit year (only one-digit x of 200x)

One-digit month (X, Y and X, for Oct., Nov. and Dec.)

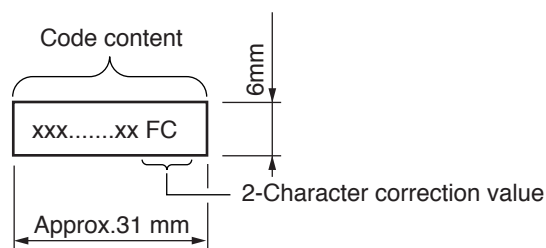
Two-digit day

Four digits Filled with zeros 0000

Two-digit correction value

(In the same format as that for data manually input to printer)

00 to 04, for 0 to 4. FF to FC, for -1 to -4.



4. REGULAR MAINTENANCE

4.1 Parts Replaced Regularly

Users are recommended to replace parts periodically according to the table below. (Print quality cannot be assured and damages may occur, when the parts are not replaced.)

| Part Name | Time of Replacement | Condition for Replacement | Adjustment (after replacement) |
|---|--|---|--|
| Toner cartridge <input type="checkbox"/> <input type="checkbox"/> | When [FILL TONER] is displayed. <input type="checkbox"/> | 5,000 pages are printed. <input type="checkbox"/> (5% duty) <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> |
| ID <input type="checkbox"/> <input type="checkbox"/> | When [DRUM LIFE] is displayed. <input type="checkbox"/> | 15,000 pages are printed. (3P/J) <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> |
| Fuser unit <input type="checkbox"/> <input type="checkbox"/> | When [FUSER LIFE] is displayed. <input type="checkbox"/> | 45,000 pages are printed. <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> |
| Belt unit | When [BELT LIFE] is displayed. | 50,000 pages are impressed. (3P/J) | |

Parts are replaced periodically by users.

4.2 Cleaning

Clean the internal and external sections of the printer with waste and a small vacuum cleaner as required.

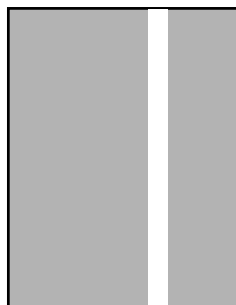
Note: Do not touch the image drum terminals, the LED lens array, and the LED head connector.

4.3 Cleaning the LED Lens Array

Clean the LED head array while white bands or lines (white-out, faint print) appear in the vertical direction on a printed page.

Note: Be sure to clean the LED lens array with the LED lens array cleaner. (the LED head cleaner is packed together with the toner cartridge.)

White band, white stripe
(Void or light printing)



4.4 Cleaning the Pick-up Roller

Clean the pick-up roller if lines appear in the vertical direction on the printed page.

Note: Use a soft cloth in order to avoid scratching the roller surface.

5. TROUBLESHOOTING PROCEDURES

5.1 Precautions before troubleshooting

- (1) Confirm the basic inspection items described in the user manual.
- (2) Obtain as much information regarding the problem from the user as possible.
- (3) Check the printer in a condition close to that upon generating the problem.

5.2 Precautions before handling an abnormal image

- (1) Confirm that the environment for using this printer is appropriate.
- (2) Confirm that consumables (toner, drum cartridge) are replaced appropriately.
- (3) Confirm that paper is accurate. Refer to paper specifications.
- (4) Confirm that the drum cartridge is set appropriately.

5.3 Precautions upon handling an abnormal image

- (1) Do not touch or allow foreign objects to contact the OPC drum surface.
- (2) Do not expose the OPC drum to direct sunlight.
- (3) Do not touch the fuser unit as it is heated significantly.
- (4) Do not expose the image drum to light for longer than five minutes in room temperature.

5.4 Preparing for Troubleshooting

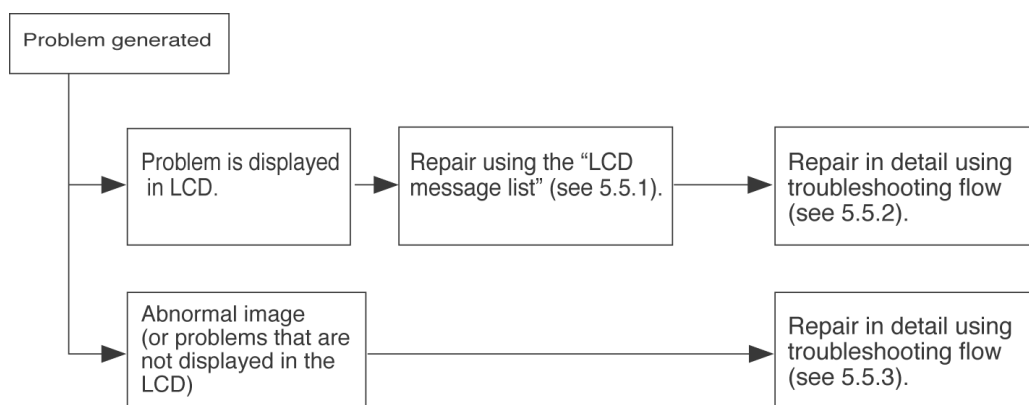
(1) Operator panel display

Problems that occur with the printer are indicated in the LCD.

Apply proper remedies according to the message indicated in the LCD.

5.5 Troubleshooting Procedure

Confirm the problem in the following method when the printer generates a problem.



5.5.1 LCD message list

When the printer detects a non-recoverable error, the following service call error is displayed in the LCD.

Service call
nnn: error

Note: nnn is an error code.

When [Service call] is displayed, error information that corresponds to the error code appears in the bottom line in the LCD. Error codes, their definitions and remedies are described in Table 5-1-1.

Table 5-1-1 Operator Alarm (1/5)

| Display on Operator Panel | Ready LED | Attention LED | Description | Code nnn |
|--|-----------|---------------|--|-------------------|
| LOAD mmm/ppp AND PRESS ONLINE SWITCH nnn:ttttt MEDIA MISMATCH | No light | Brinks | Indicates a mismatch occurred between the type of media in a tray and data to be printed. The loading of the paper mmm/ppp into the tray ttttt is prompted. MP TRAY (MP TRAY) TRAY1 (TRAY1) TRAY2 (TRAY2) | 460 461 462 |
| LOAD mmm/ppp AND PRESS ONLINE SWITCH nnn:ttttt SIZE MISMATCH | No light | Blinks | Indicates the size of, or both size and type of, media in a tray did not match data to be printed. The loading of the paper mmm/ppp into the tray ttttt is prompted. MP TRAY (MP TRAY) TRAY1 (TRAY1) TRAY2 (TRAY2) | 460 461 462 |
| NETWORK INITIAL WAIT A MOMENT | No light | Blinks | Indicates network initialization is being performed. | |
| LOAD mmm nnn:ttttt EMPTY | No light | Blinks | Indicates printing from the tray 1 or 2 that is empty of paper, or the tray 2 that has been removed is requested, and prompts the operator to replenish the paper mmm in the empty tray. TRAY1 (TRAY 1) TRAY2 (TRAY 2) | 491 492 |
| LOAD mmm AND PRESS ONLINE SWITCH nnn:MP TRAY EMPY | No light | Blinks | Indicates multipurpose-tray feed was attempted but paper could not be detected. Loading the paper mmm and pressing the ONLINE key perform printing. MP TRAY (MP TRAY) | 490 |
| INSTALL PAPER CASSETTE nnn:TRAY1 OPEN | No light | Blinks | The paper cassette of the tray is not installed. Install the cassette. | 440 |
| INSTALL PAPER CASSETTE nnn:TRAY1 MISSING | No light | Blinks | The paper cassette of the tray is not installed. Install the cassette. | 430 |
| ADD MORE MEMORY nnn:MEMORY OVERFLOW | No light | Blinks | Indicates a memory capacity overflow caused. Pressing the ONLINE key continues the processing. Expansion RAM must be mounted or the data amount must be reduced. | 420 |

Table 5-1-1 Operator Alarm (2/5)

| Display on Operator Panel | Ready LED | Attention LED | Description | Code nnn |
|---|-----------|---------------|---|--------------------------|
| REPLACE TONER nnn:* WASTE TONER FULL | No light | Blinks | Indicates waste toner of the color marked with an asterisk (*) is full. Y M C (No indicated the Black toner) Opening and closing the cover places the printer in the state of warning of such an event, enabling about 50 pages to be impressed. | 414 415 416 |
| HAVE YOU REPLACED * TONER? YÅÅENTER/N=CANCEL | No light | Blinks | When the top cover is opened with the printer being full of waste toner of the color marked with an asterisk (*), and then closed, this message is displayed. Y M C (No indicated the Black toner) When the toner of the color marked with an asterisk (*) has been replaced, press the "ENTER". When it has not been replaced, press the "CANCEL" switch. | |
| REPLACE TONER nnn:* TONER EMPTY | No light | Blinks | Indicates toner of the color marked with an asterisk (*) is out. Y M C K Opening and closing the cover places the printer in the state of warning of such an event, enabling about 50 A4 pages (50 images) to be impressed (such number of pages will be determined later). | 410 411 412 413 |
| CHECK TONER CARTRIDGE nnn:* TONER SENSOR ERROR | No light | Blinks | Notifies that something wrong with the toner sensor. When the engine is set to Factory mode, service call error display described later is provided. Y M C K | 540 541 542 543 |
| OPEN FRONT COVER nnn:PAPER SIZE ERROR | No light | Blinks | Notifies that paper of an inappropriate size was fed from the tray. Paper in the tray or whether multiple sheets were fed must be checked. By opening and closing the cover, the printer performs recovery printing and continues operating. | 400 |
| CHECK MP TRAY nnn:PAPER JAM | No light | Blinks | Indicates a paper jam occurred. MP TRAY (MP TRAY) | 390 |
| OPEN FRONT COVER nnn:PAPER JAM | No light | Blinks | Indicates a paper jam occurred. TRAY1 (TRAY 1) TRAY2 (TRAY 2) FEED DUPLEX | 391 392 380 372 |

Table 5-1-1 Operator Alarm (3/5)

| Display on Operator Panel | Ready LED | Attention LED | Description | Code nnn |
|--|-----------|---------------|--|--------------------------|
| OPEN TOP COVER nnn:PAPER JAM | No light | Blinks | Indicates a paper jam occurred in the paper path. Transport Exit Duplex Entry | 381 382 383 |
| OPEN DUPLEX COVER nnn:PAPER JAM | No light | Blinks | Indicates a paper jam occurred at about the duplex unit. Duplex Reversal Duplex Input | 370 371 |
| INSTALL DUPLEX UNIT nnn:DUPLEX UNIT OPEN | No light | Blinks | Displayed while the duplex unit is removed with paper jammed in the duplex unit. When the duplex unit is removed while paper is not jammed in the duplex unit, the service call error 181 occurs. | 360 |
| REPLACE IMAGE DRUM nnn:* DRUM LIFE | No light | Blinks | Indicates the image drum is at the end of its life. A cover opening and closing operation places the printer in the state of warning of the life end and, after 500 pages (images) are impressed, an image drum life error occurs again. Y M C K | 350 351 352 353 |
| REPLACE FUSER nnn:FUSER LIFE | No light | Blinks | Indicates the fuser is at the end of its life. A cover opening and closing operation places the printer in the state of warning of the life end and, after 500 pages (prints) are printed, a fuser life error occurs again. | 354 |
| REPLACE BELT nnn:BELT LIFE | No light | Blinks | Indicates the belt is at the end of its life. A cover opening and closing operation places the printer in the state of warning of the life end and, after 500 pages (prints) are printed, a belt life error occurs again. | 355 |
| REPLACE BELT nnn:BELT LIFE | No light | Blinks | Indicates the printer is full of waste toner. Only first-time cover opening and closing operation places the printer in the state of warning of such an event and, after 500 pages (images) are impressed, a waste toner full error occurs again. | 356 |
| CHECK IMAGE DRUM nnn:* DRUM MISSING | No light | Blinks | Indicates the image drum (Y, M or C) is not properly installed. Y M C | 340 341 342 |
| CHECK IMAGE DRUM & BELT LOCK nnn:K DRUM MISSING | No light | Blinks | Indicates the belt is not locked or the black drum is not properly installed. | 343 |
| CHECK BELT nnn:BELT MISSING | No light | Blinks | Indicates the belt unit is not properly installed. | 330 |
| CHECK FUSER nnn:FUSER MISSING | No light | Blinks | Indicates the fuser unit is not properly installed. | 320 |

Table 5-1-1 Operator Alarm (4/5)

| Display on Operator Panel | Ready LED | Attention LED | Description | Code nnn |
|--------------------------------------|-----------|---------------|--|------------|
| CLOSE COVER nnn:COVER OPEN | No light | Blinks | Indicates the cover is open. TOP FRONT (The sensor cannot identify the upper cover or the front cover. 310 and 311 toggle display appears while either of the covers, or both are open.) | 310 311 |
| CLOSE COVER nnn:DUPLEX COVER OPEN | No light | Blinks | Indicates the cover (of the duplex unit) is open. DUPLEX | 316 |
| DOWNLOAD MODE DATA RECEIVE | No light | Light | A download mode used while download data is received during normal operation, which indicates data to be downloaded is being received. | |
| DOWNLOAD MODE DATA RECEIVED OK | | | Indicates the completion of the reception of data to be downloaded. | |
| DOWNLOAD MODE REC DATA ERROR * | | | Indicates an error occurred during download data reception processing: 1 Size error 2 Dheck SUM error 3 Printer model No.error 4 Module I/F version error 5 FAT Version error | |
| DOWNLOAD MODE DATA WRITING | | | Indicates download data is being written. | |
| DOWNLOAD MODE DATA WRITTEN OK | | | Indicates the completion of download data writing. | |
| DOWNLOAD MODE DATA WRITE ERROR * | | | Indicates an error occurred during download data writing: 1 Memory allocation error 2 Download file error 3 Free device memory acquisition error 4 Insufficient free device memory error 5 File write error 6 CU-F/W mismatch error | |
| POWER OFF/ON nnn:NETWORK ERROR | No light | Blinks | Indicates a network error occurred. | 300 |
| REBOOTING d | No light | Light | Indicates the printer is being rebooted. "d", a decimal number (one digit), shows the cause of the rebooting: d = 0 Cause other than those described below = 1 PjL command = 2 Menu change = 3 Quit operator in PostScript = 4 Quit operator in Network | |

Table 5-1-1 Operator Alarm (5/5)

| Display on Operator Panel | Ready LED | Attention LED | Description | Code nnn |
|---|-----------|---------------|---|----------|
| POWER OFF/ON AND WAIT FOR A WHILE nnn:CONDENSING ERROR | No light | Blinks | (See the list of service calls) | Fa-tal |
| POWER OFF/ON nnn:FATAL ERROR | No light | Blinks | (See the list of service calls) | Fa-tal |
| SERVICE CALL nnn:¥◇∞ | No light | Blinks | (See the list of service calls) | Fa-tal |
| DOWNLOAD MODE | Light | No light | A download mode activated by turning on the printer while holding the ONLINE switch down, which shows a mode that performs downloading to the printer is established. | |
| DOWNLOAD MODE DATA RECEIVE | Light | No light | Indicates data to be downloaded is being received. | |
| DOWNLOAD MODE DATA RECEIVE OK | Light | No light | Indicates the completion of the reception of data to be downloaded. | |
| DOWNLOAD MODE REC DATA ERROR <No.***> | Light | Light | Indicates an error occurred during download data reception processing: 1 Size error 2 Dheck SUM error 3 Printer model No.error 4 Module I/F version error 5 FAT Version error | |
| DOWNLOAD MODE DATA WRITING | Blinks | No light | Indicates download data is being written. | |
| DOWNLOAD MODE DATA WRITTEN OK | Light | No light | Indicates the completion of download data writing. | |
| DOWNLOAD MODE DATA WRITE ERROR <No.***> | Light | Light | Indicates an error occurred during download data writing: 1 Memory allocation error 2 Download file error 3 Free device memory acquisition error 4 Insufficient free device memory error 5 File write error 6 CU-F/W mismatch error | |
| INITIALIZING | No light | No light | Indicates the controller end is being initialized. | |
| RAM CHECK ***** | No light | No light | Indicates RAM is being checked. An asterisk (*) shows up every after one sixteenth (1/16) of total RAM is checked. | |

5.5.2 Preparing for troubleshooting

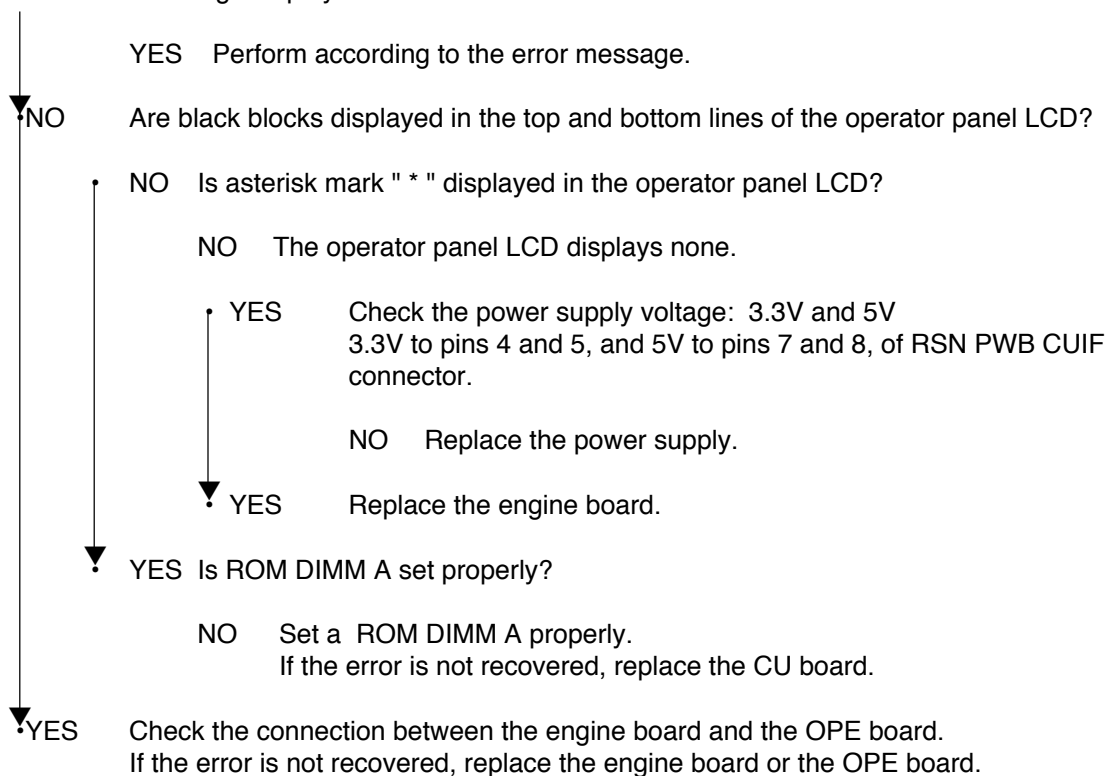
(1) Operator panel display

Problems that are generated in this device are indicated in the LCD.

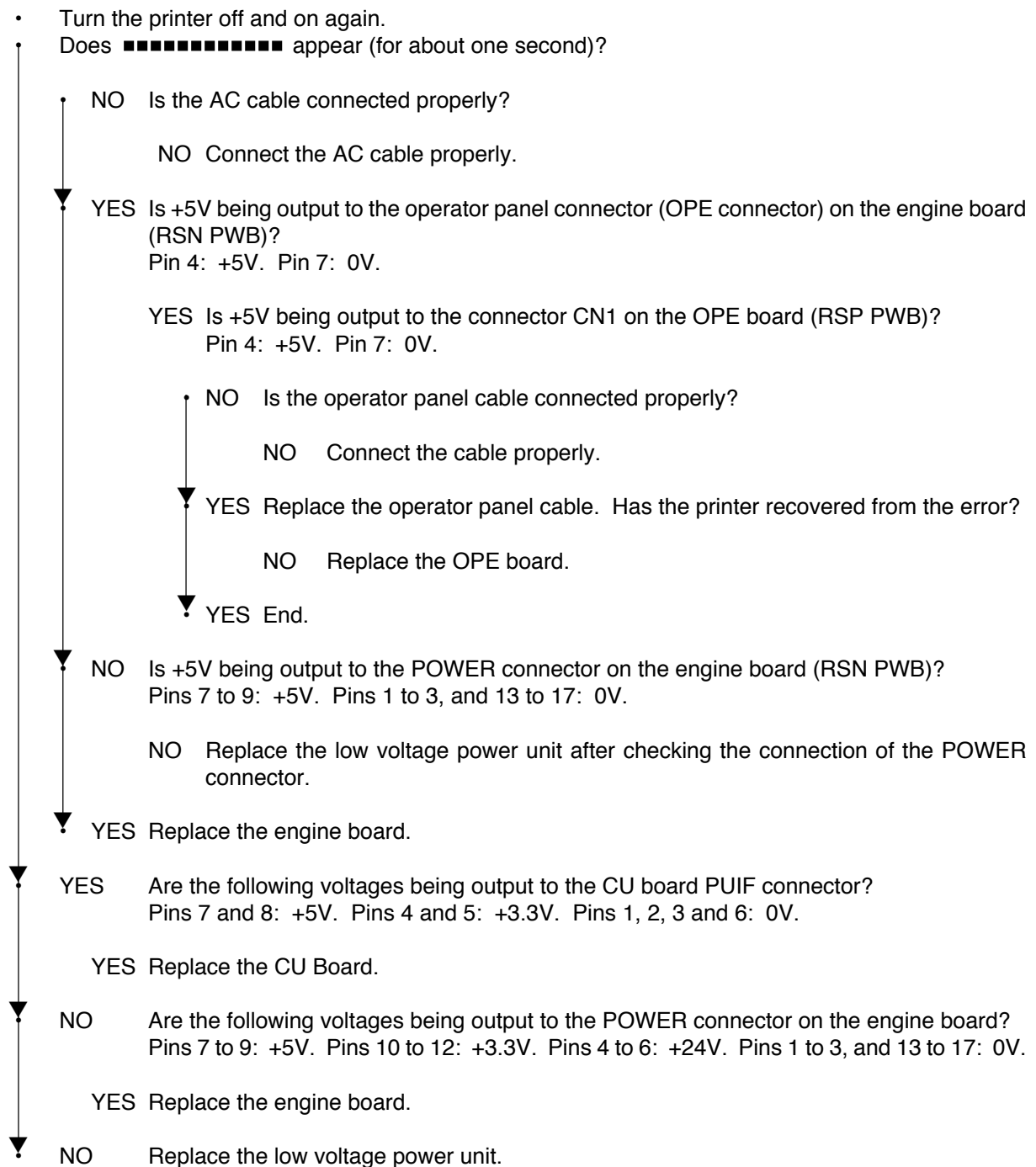
Apply proper measures according to the message displayed in the LCD.

| No. | Problem | Flow Chart No. |
|-----|---|---------------------------------|
| 1 | Printer Malfunction after Turn-on. | ① |
| 2 | Jam Errors Paper Loading Jam (1st tray) Paper Loading Jam (Multipurpose tray) Paper Feed Jam Paper Exit Jam Duplex Print Jam | ②-1 ②-2 ②-3 ②-4 ②-5 |
| 3 | Paper Size Error | ③ |
| 4 | Image Drum Up/Down Operation Error | ④ |
| 5 | Fuser Unit Error | ⑤ |
| 6 | Motor Fan Error | ⑥ |

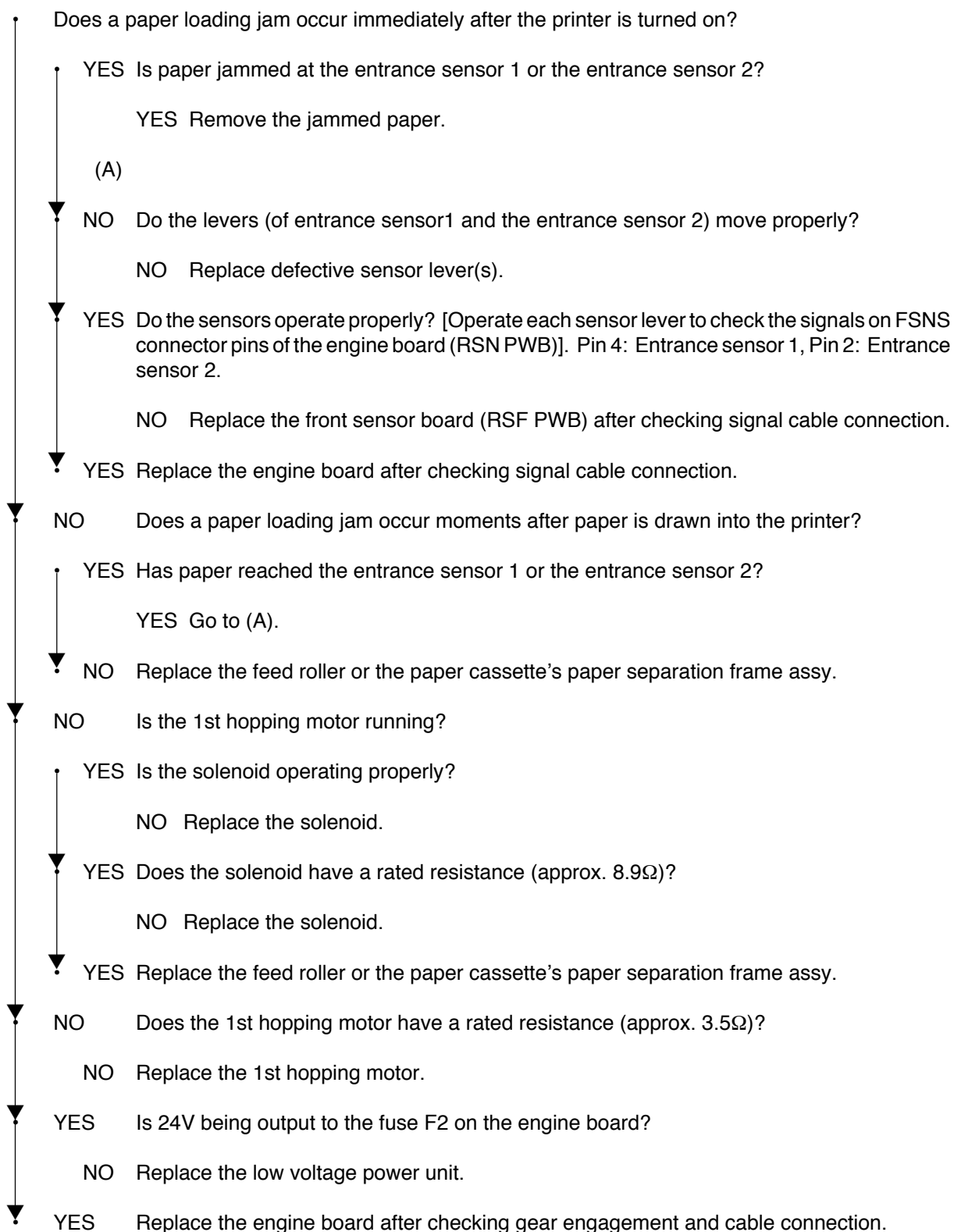
Is an error message displayed?



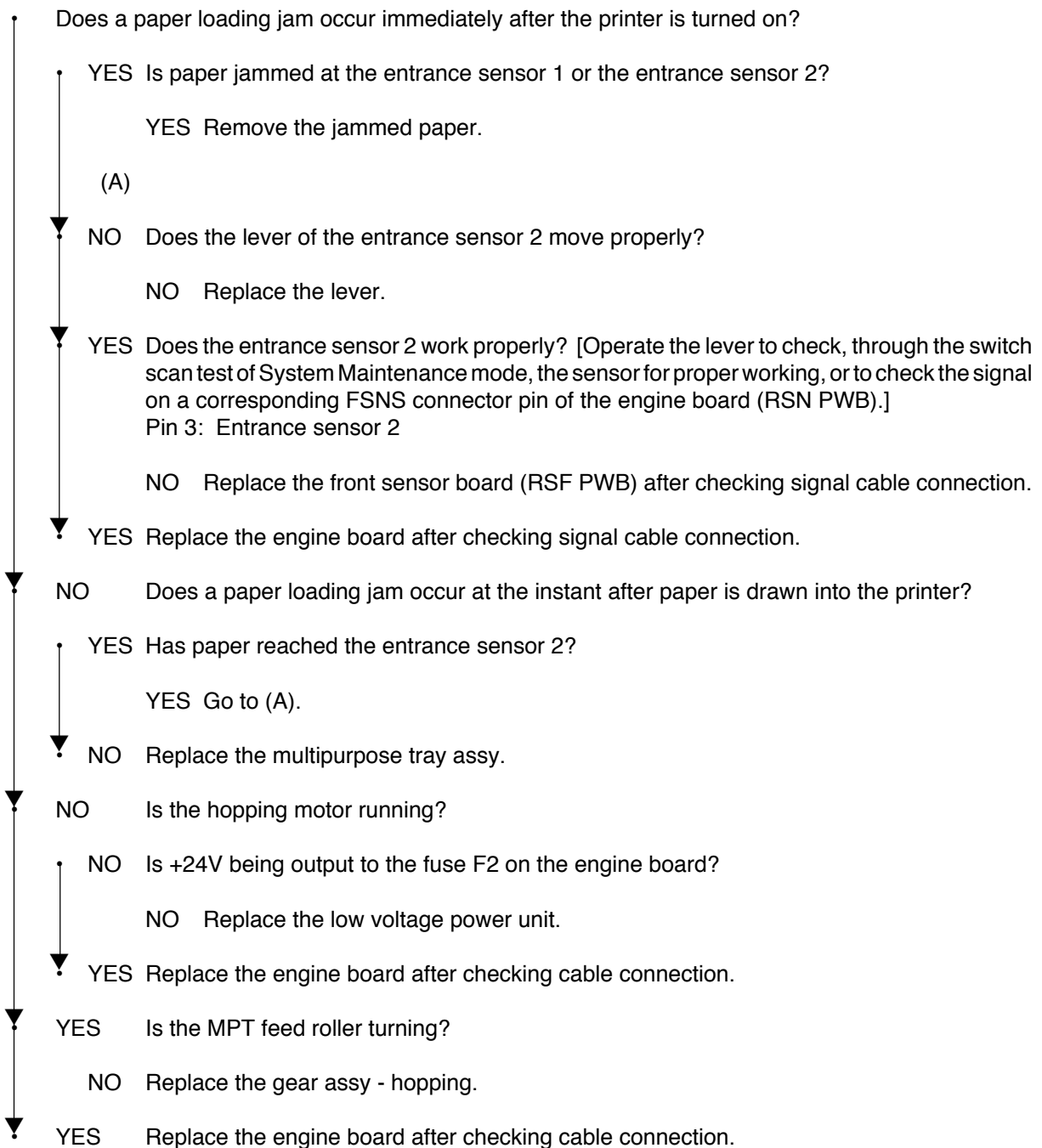
1 The printer does not operate properly after it is turned on.



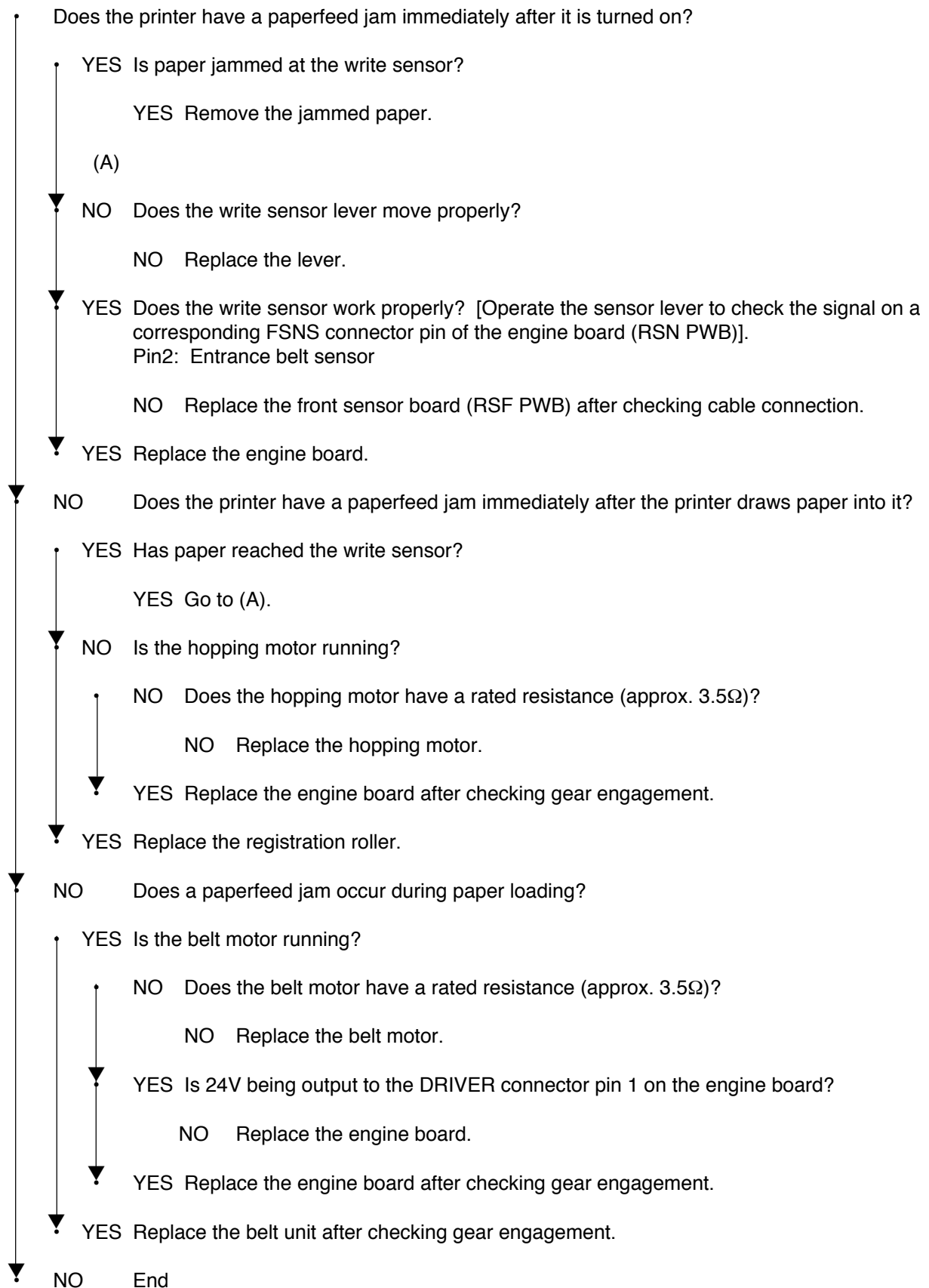
2-1 Paper Loading Jam (1st tray)



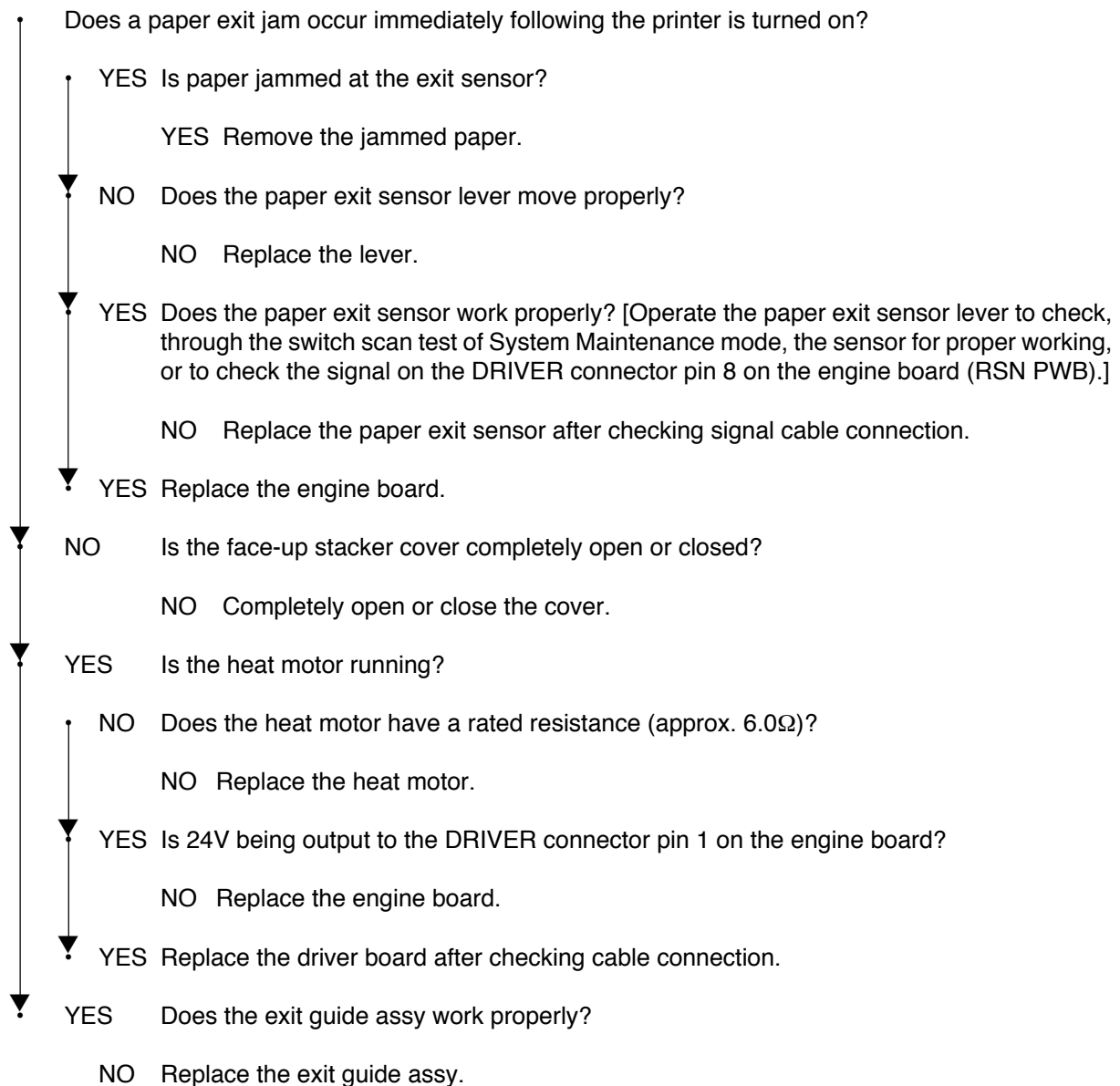
2-2 Paper Loading Jam (Multipurpose tray)



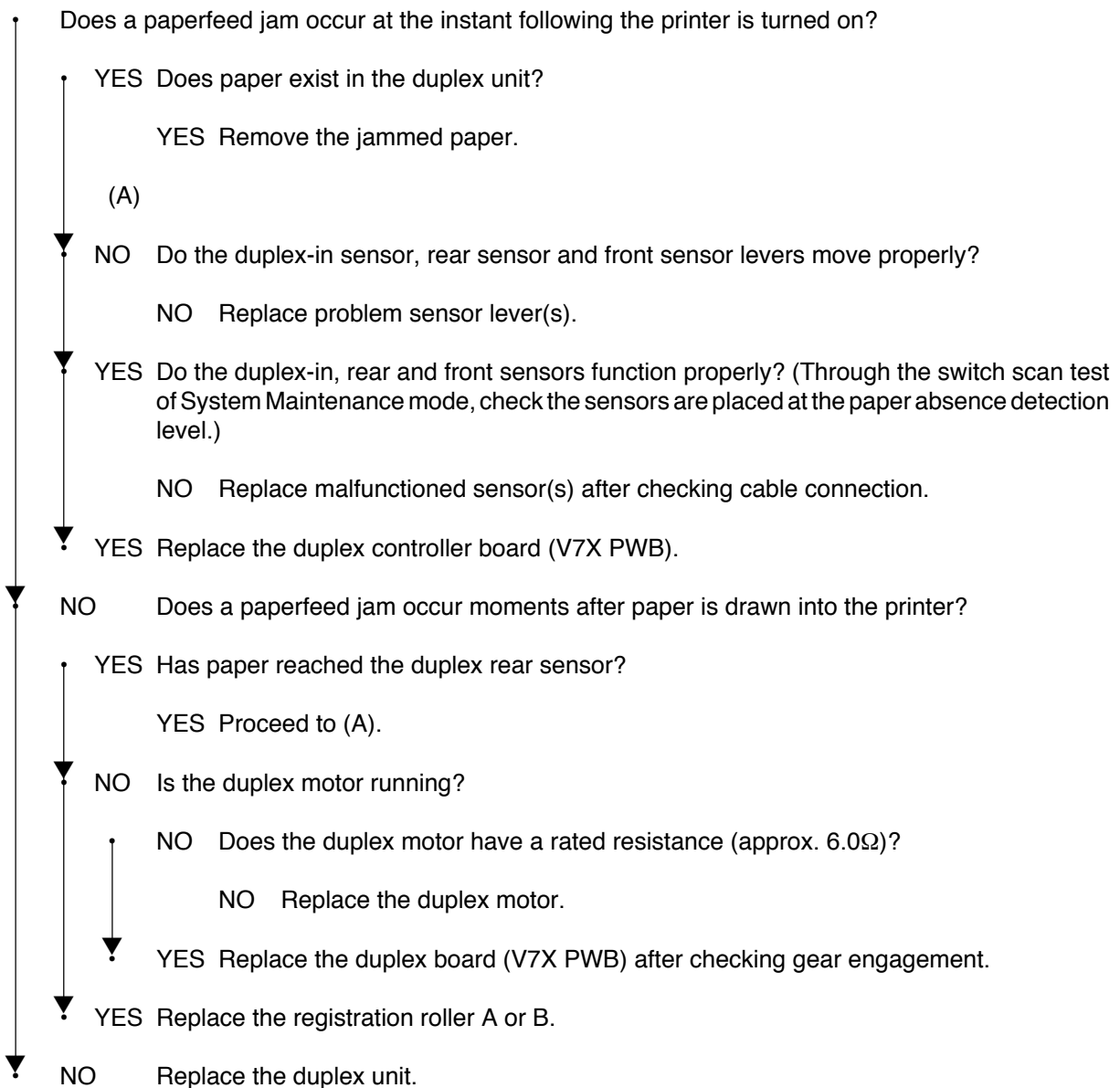
2-3 Paper Feed Jam



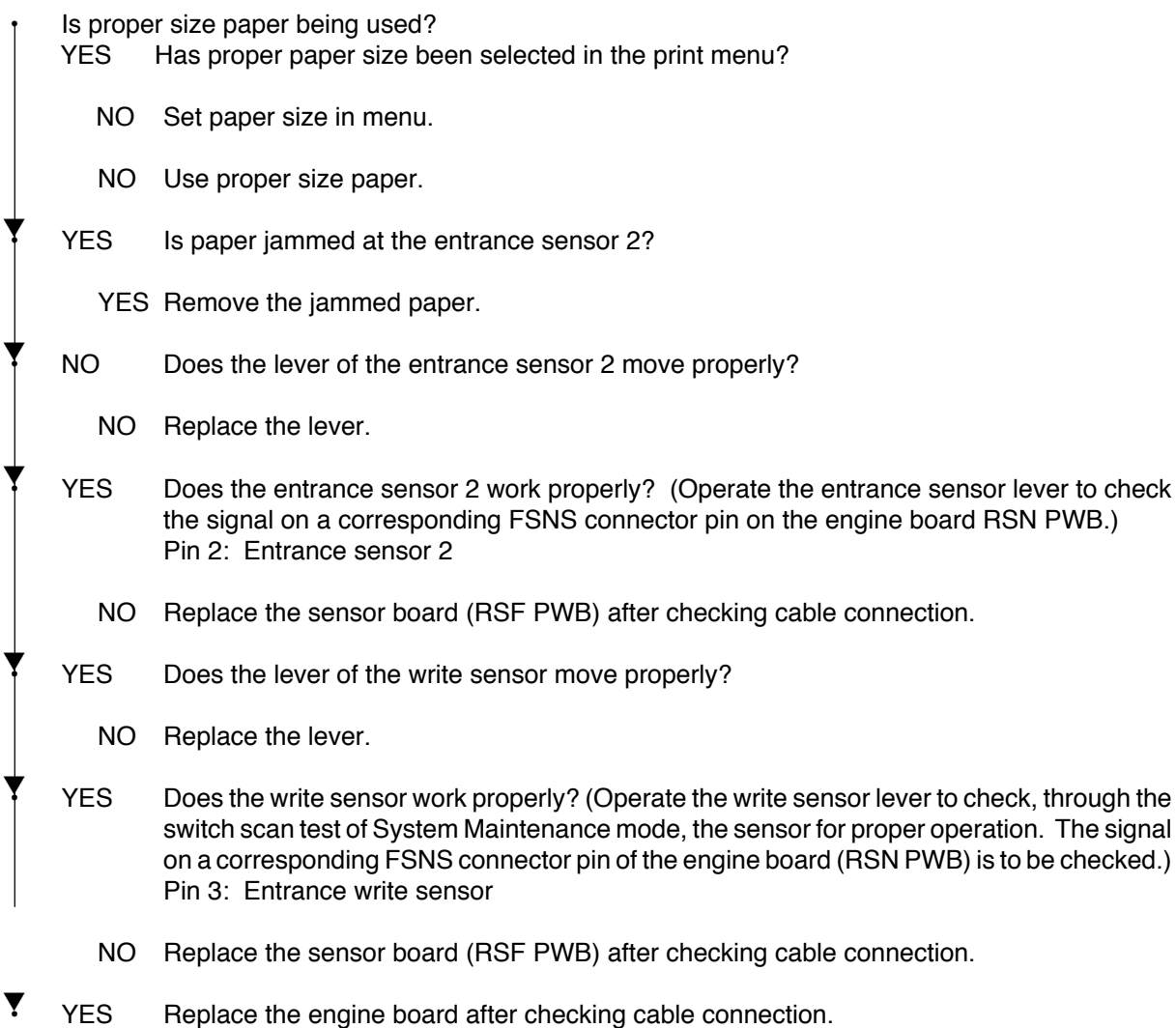
2-4 Paper Exit Jam



2-5 Duplex Print Jam



3 Paper Size Error



4 Image Drum Unit (ID) Up/Down Operation Error

- Power the printer off and, after a few seconds, on again.

• Are all the ID drums properly revolving during printing?

• NO Does the ID motor (C) have a rated resistance (approx. 3.5Ω)?

NO Replace the ID motor(C).

▼ YES Is 24V being output to the F1 of the engine board?

NO Replace the low voltage power unit.

▼ YES Replace the engine board after checking cable connection.

▼ YES Is ID up-and-down operation being performed (is the operation performed by ID UP/DOWN on motor and clutch testing)?

NO Replace the gear assys - planet L and R.

▼ YES Does the ID up/down sensor work properly? (Check the signals on the high voltage power unit CN3, pin 2.)
Are: 5V with the sensor light unshielded; and
0V with sensor light shielded
being output?

NO Replace the high voltage power unit.

▼ YES Replace the engine board after checking the cable connection between the high voltage power unit and the engine board (RSN PWB)

5 Fuser Unit Error

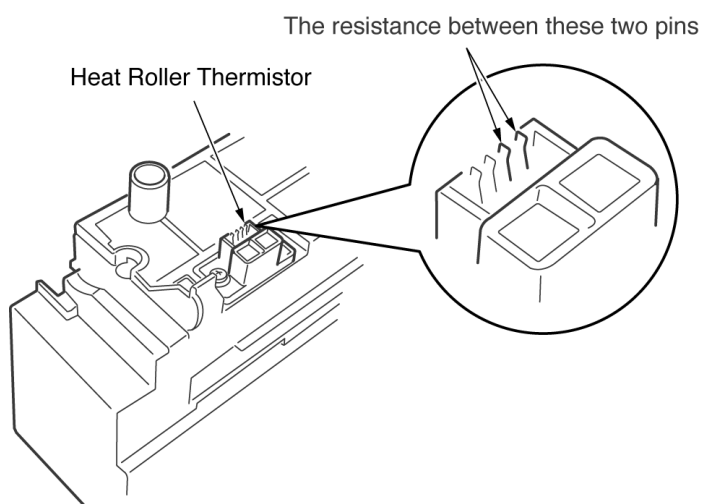
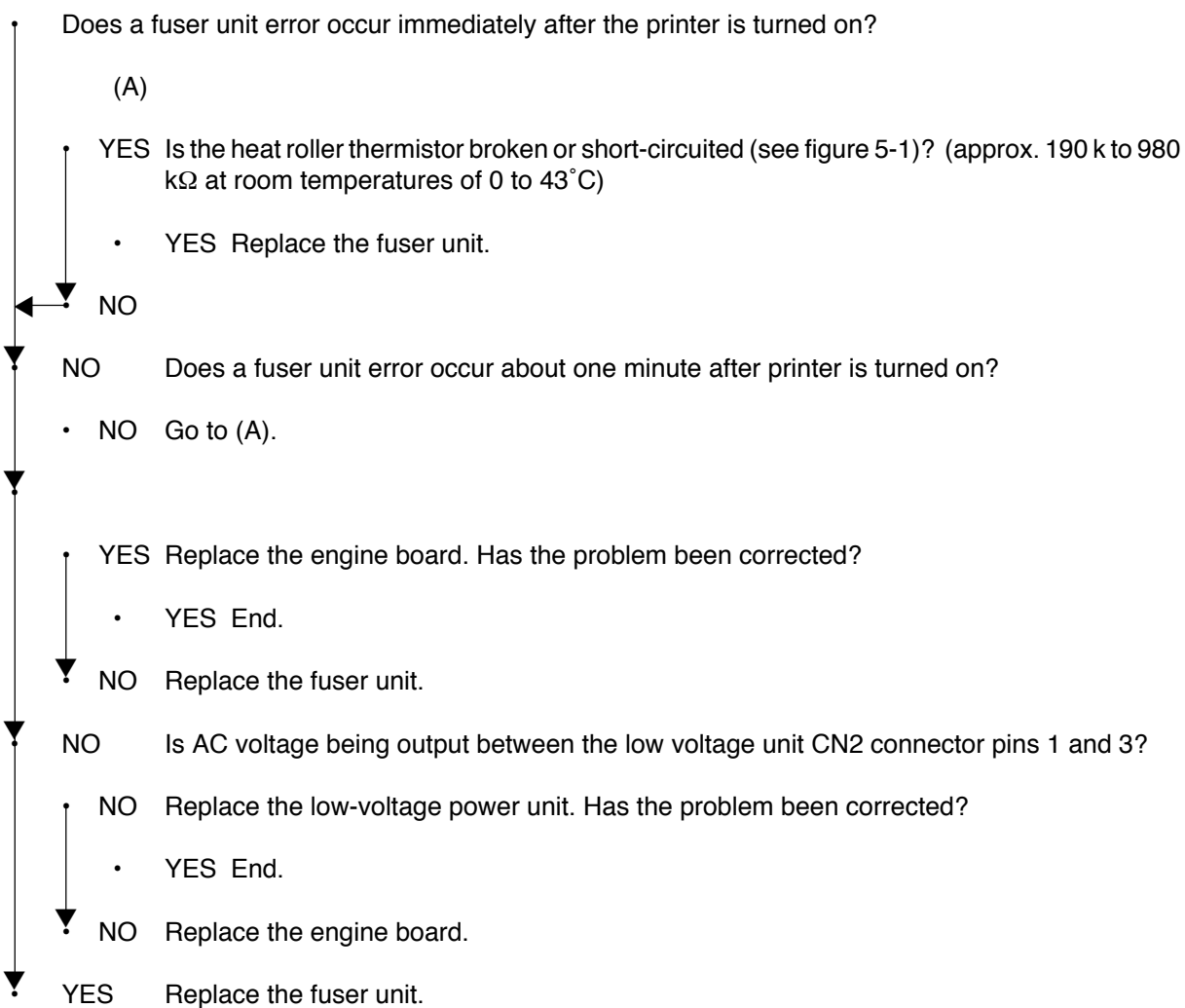
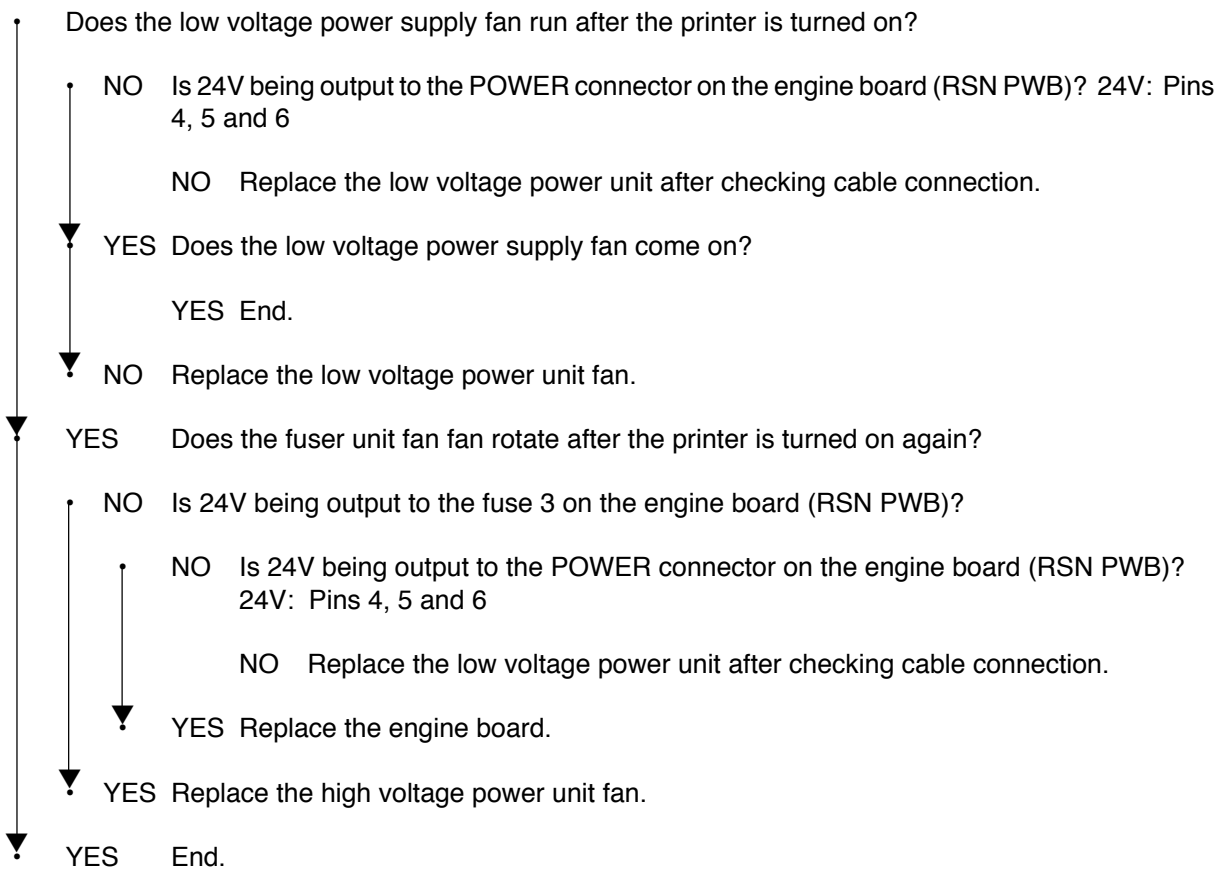


Figure 5.1

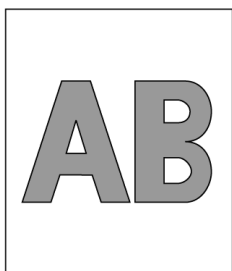
6 Motor Fan Error



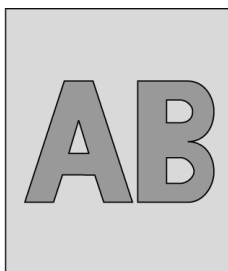
5.5.3 Image Problem Troubleshooting

When printout images are not satisfactory as illustrated below, follow the troubleshooting steps listed below.

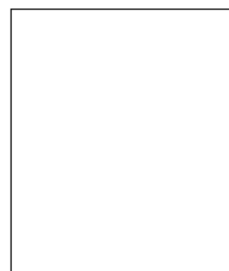
| Abnormal Image | Flowchart No. |
|--|---------------|
| Light or faded image, or color misalignment, on whole page (Figure 5.2- A) | 1 |
| Dirty background (Figure 5.2- B) | 2 |
| Blank page (Figure 5.2- C) | 3 |
| Vertical belt or line (black or color) (Figure 5.2- D) | 4 |
| Vertical belt or line (white or uneven-color) (Figure 5.2- E) | 5 |
| Poor fusing (ink spreads or peels when touched with fingers.) | 6 |
| Defective image of regular interval (Figure 5.2- F) | 7 |
| Missing image | 8 |
| Color misalignment | 9 |
| Color different from original one | 0 |



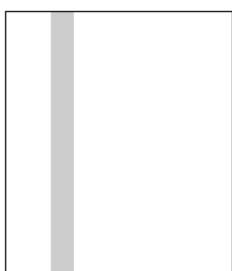
A Light or faded image on whole page



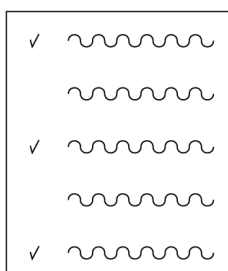
B Dirty Background



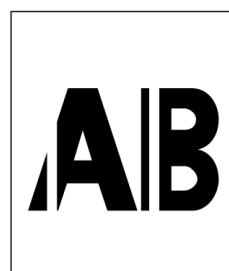
C Blank



D Vertical black belt or line

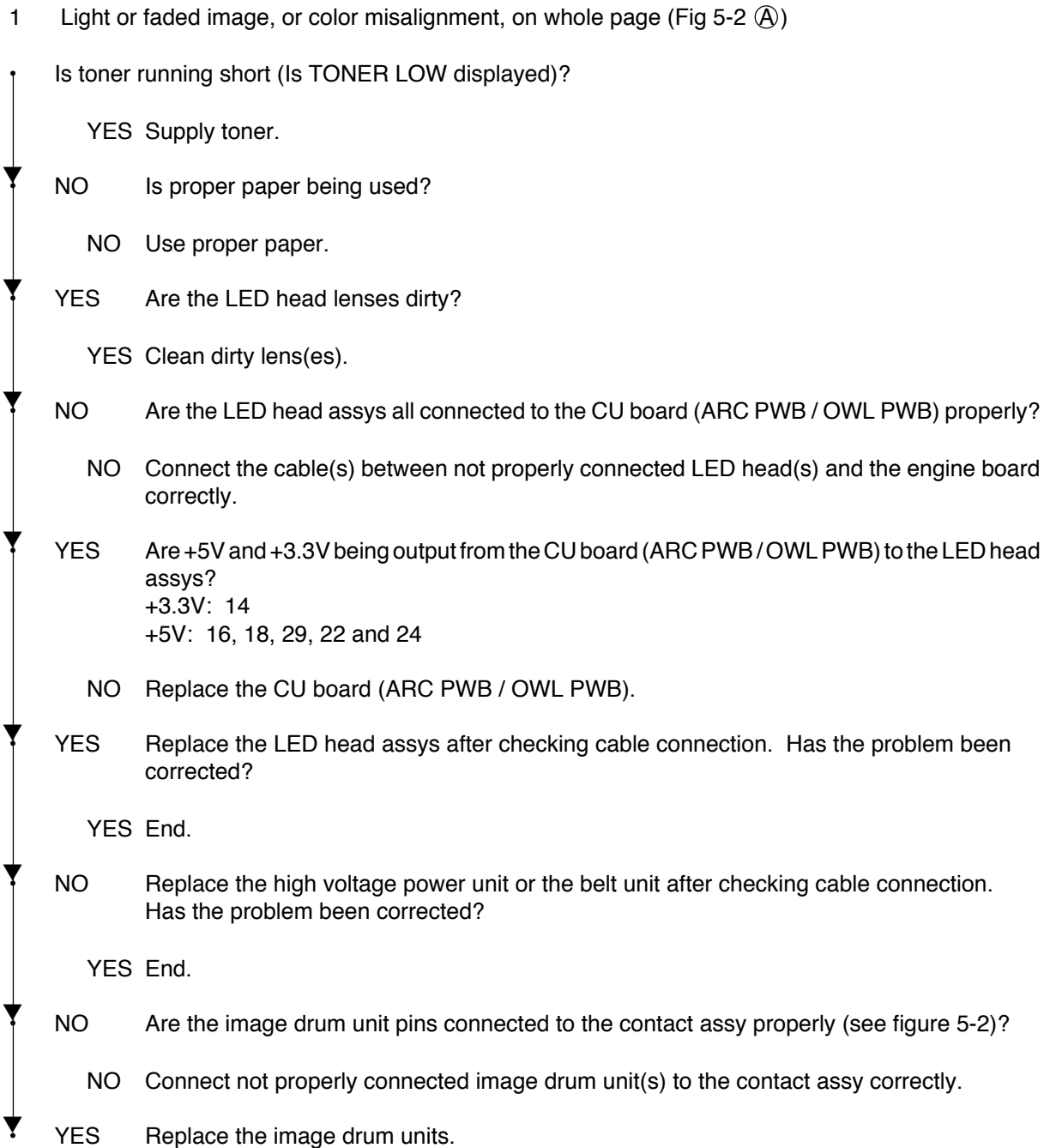


E Defective image of regular interval

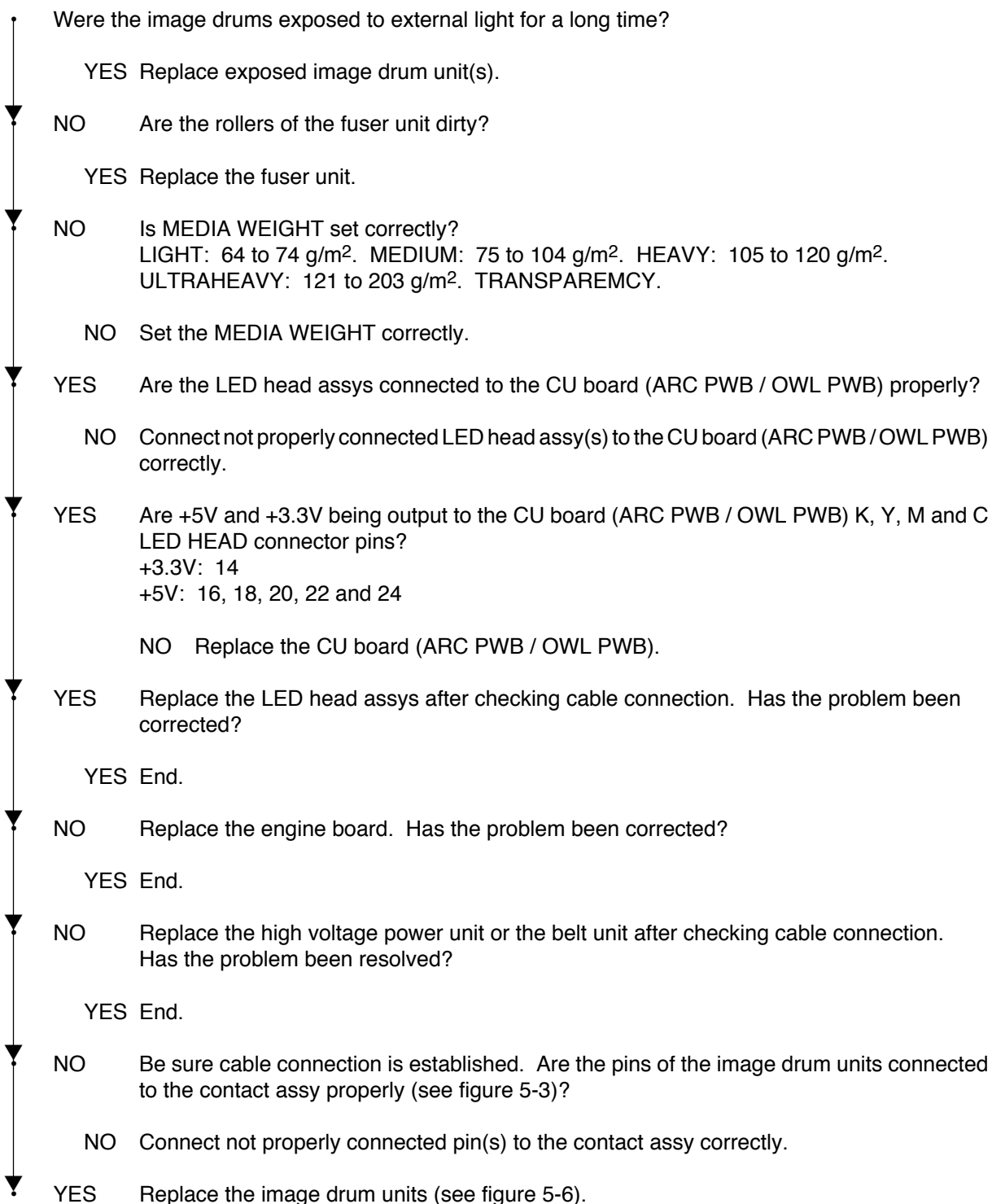


F Vertical white belt or line

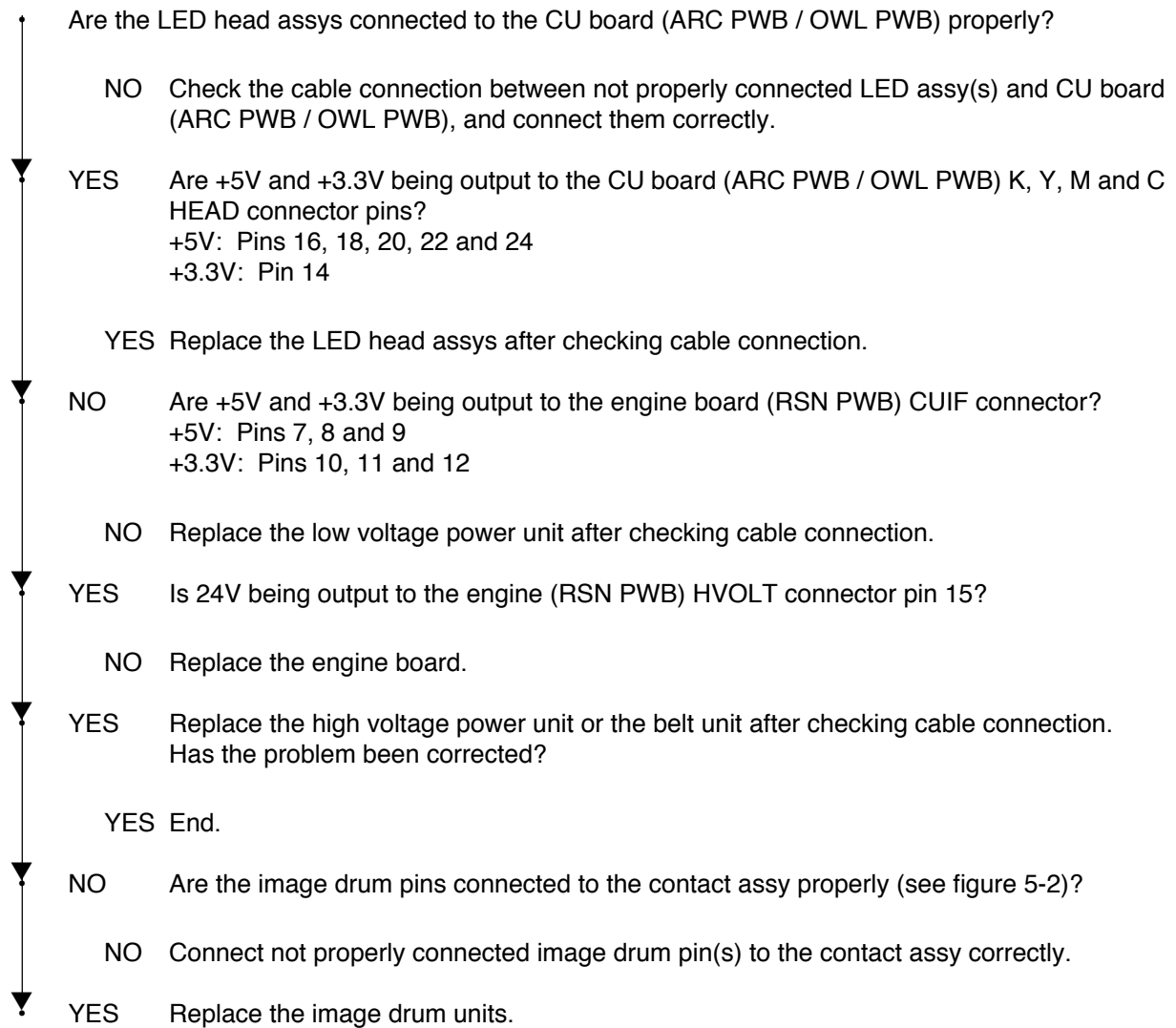
Figure 5.2



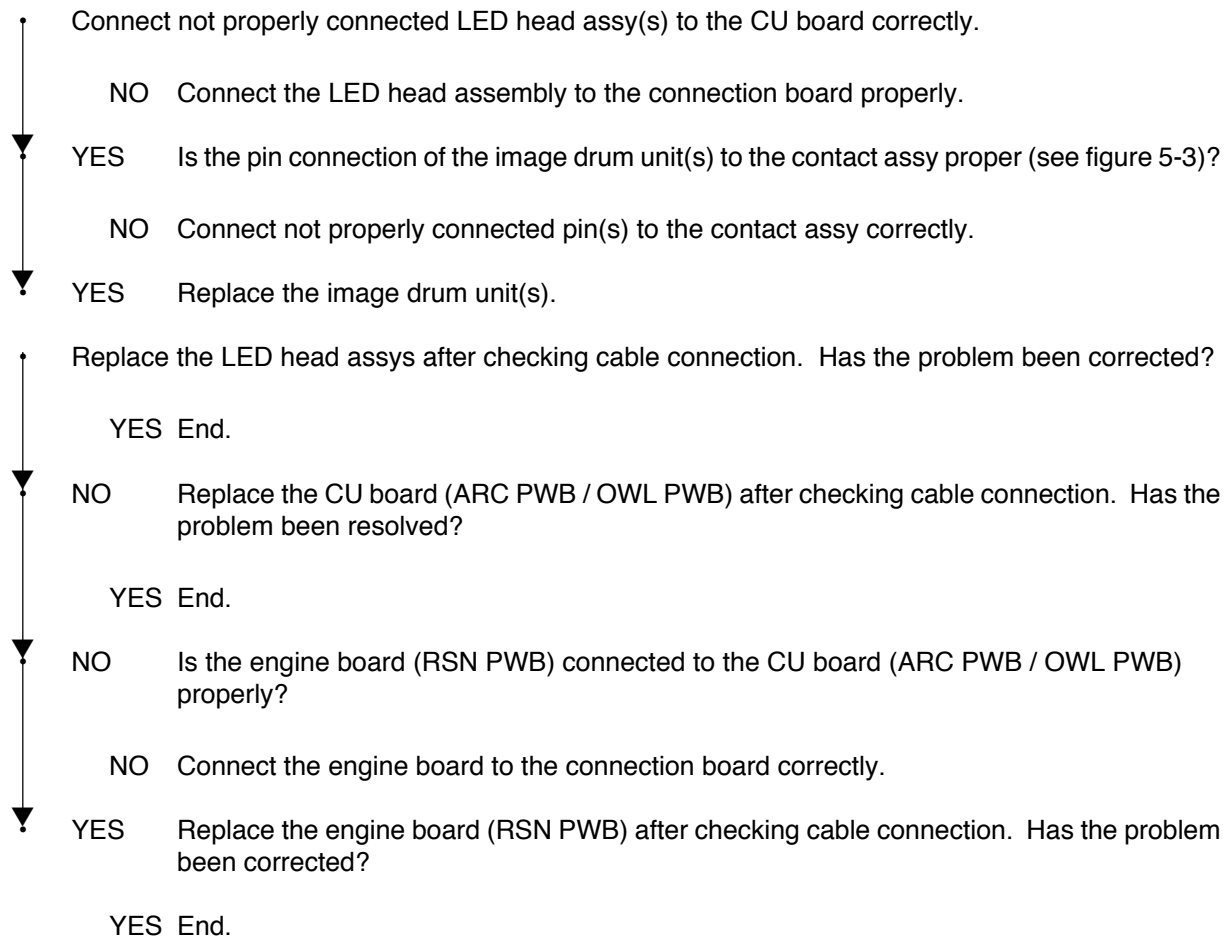
2 Dirty background (Fig. 5-2 ②)



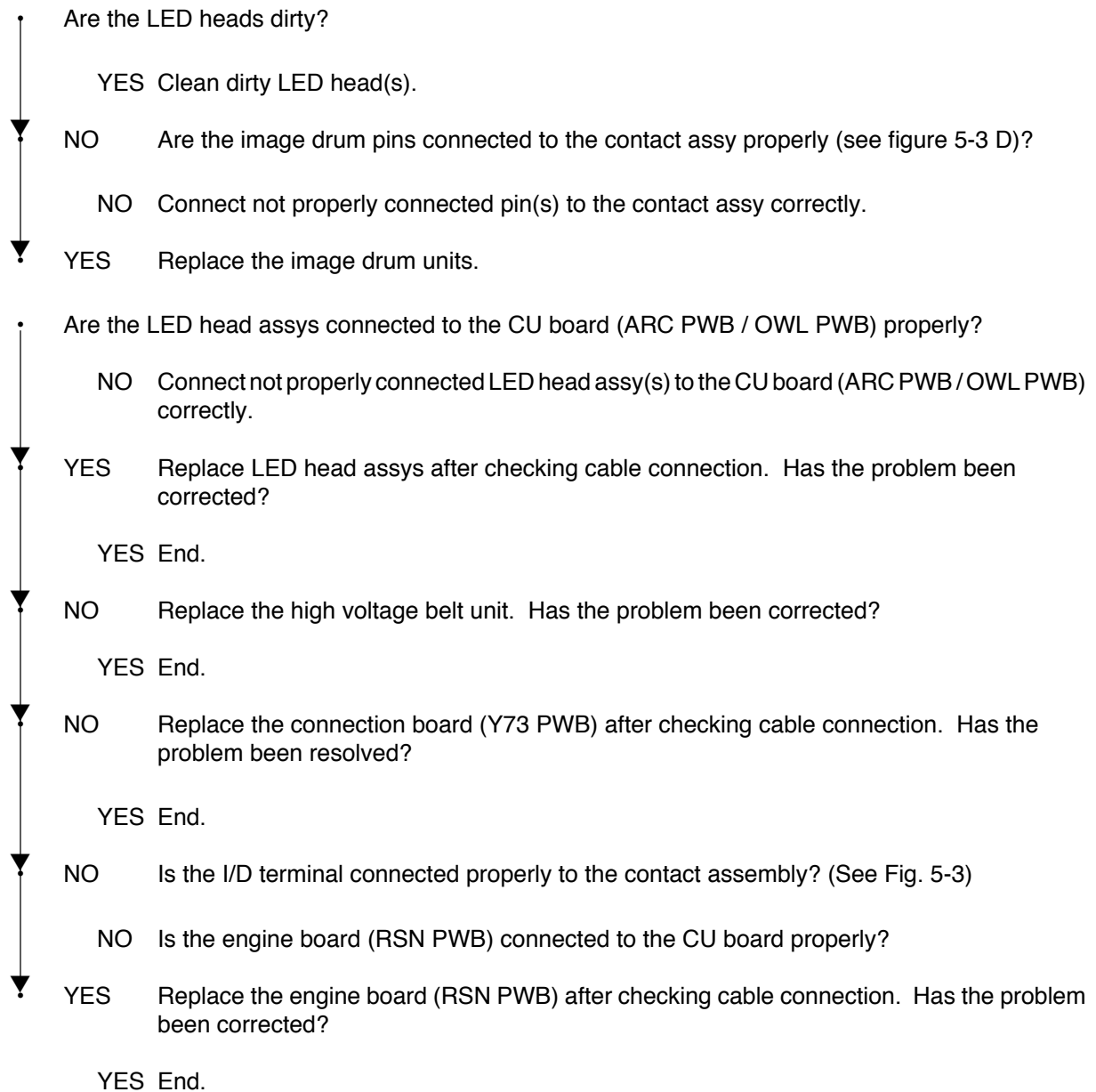
3 Blank page (Fig 5-2 ©)



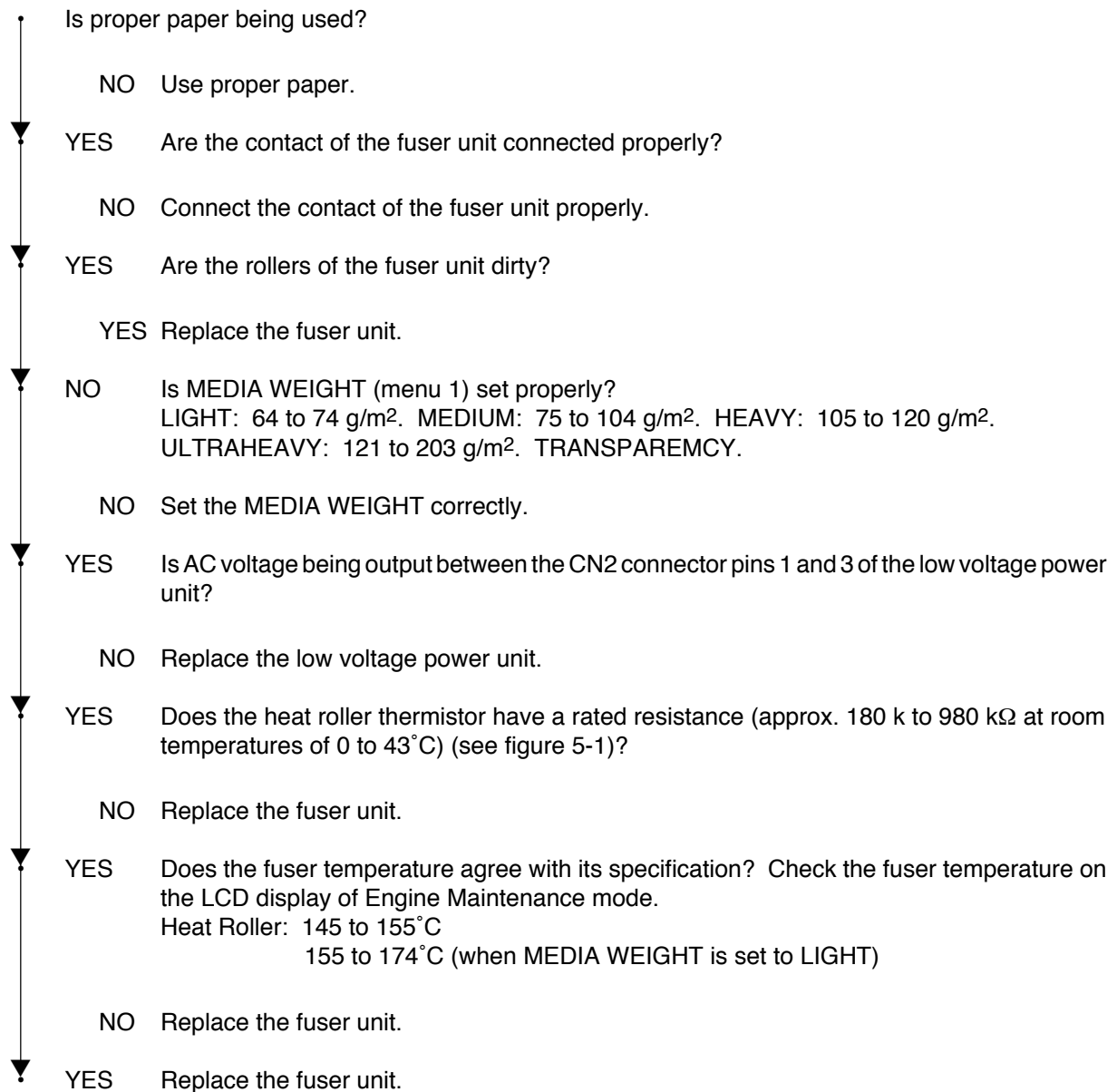
4 Vertical belt or line (black or color) (Fig. 5-2 ㉔)



5 Vertical belt or line (white or uneven-color) (Fig. 5-2 ㊦)



6 Poor fusing (Ink spreads or peels when touched lightly with fingers.)

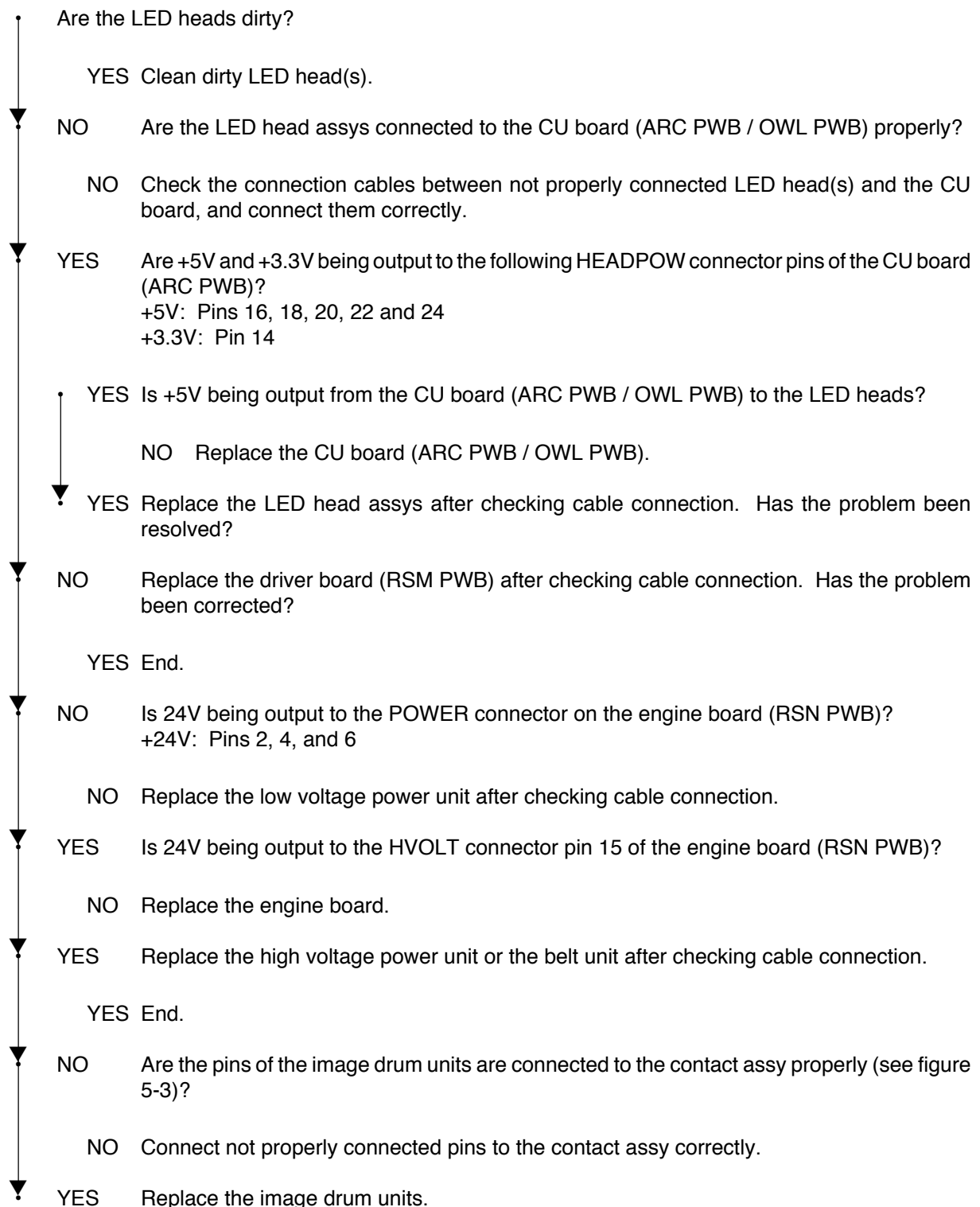


7 Defective image of regular interval (Figure 5.2-⑤)

| Interval | Problem | Troubleshooting |
|----------|-------------------------|------------------------------|
| 94.2 mm | Image Drum | Replace the image drum unit. |
| 50.24 mm | Developing Roller | Replace the image drum unit. |
| 47.10 mm | Toner Supply Roller | Replace the image drum unit. |
| 37.68 mm | Charging Roller | Replace the image drum unit. |
| 85.41 mm | Fuser Upper Roller | Replace the fuser unit. |
| 87.92mm | Fuser Lower Roller | Replace the fuser unit. |
| 50.24mm | Transfer Roller (K) | Replace the belt unit. |
| 43.96mm | Transfer Roller (Color) | Replace the belt unit. |

Note: The life counts of the image drum units, fuser unit and belt unit are automatically reset at their respective replacements.

8 Missing image



Note: When replacing the engine board (RSN PWB), extract EEPROM data from it and copy the data onto a new engine board.

9 Color misalignment

• “TONER LOW” is showing on the display.

YES Supply toner. Has the problem been resolved?

YES End.



NO Conduct a color registration test of Engine Maintenance mode.
Procedure: Enter the self-diagnostic mode (level 1) of Engine maintenance mode.

| |
|-----------------|
| DIAGNOSTIC MODE |
| XX.XX.XX |

Pressing the MENU+ or MENU- key three times displays “REG ADJUST TEST.”

| |
|-----------------|
| REG ADJUST TEST |
| |

Press the ENTER key once to show “REG ADJUST EXECUTE.”

| |
|--------------------|
| REG ADJUST EXECUTE |
| |

Press the ENTER key to execute auto color registration adjustment (the motor starts running and color registration adjustment is performed).



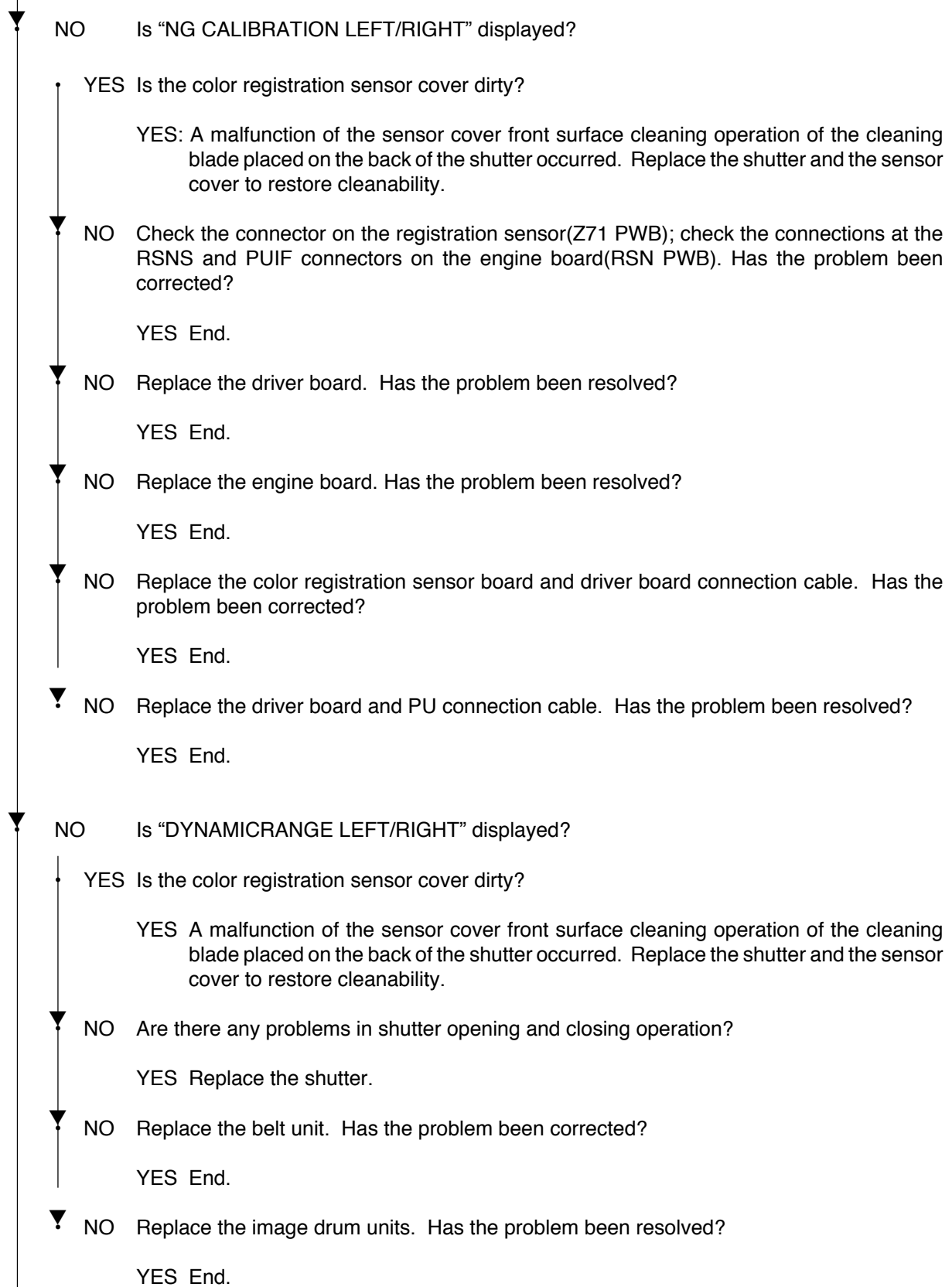
Does "OK" appear, even though the motor hasn't started running?

YES An other-than-color-misalignment error occurred. Correct the error. Has the color misalignment resolved?

YES End.

(A)

(A)

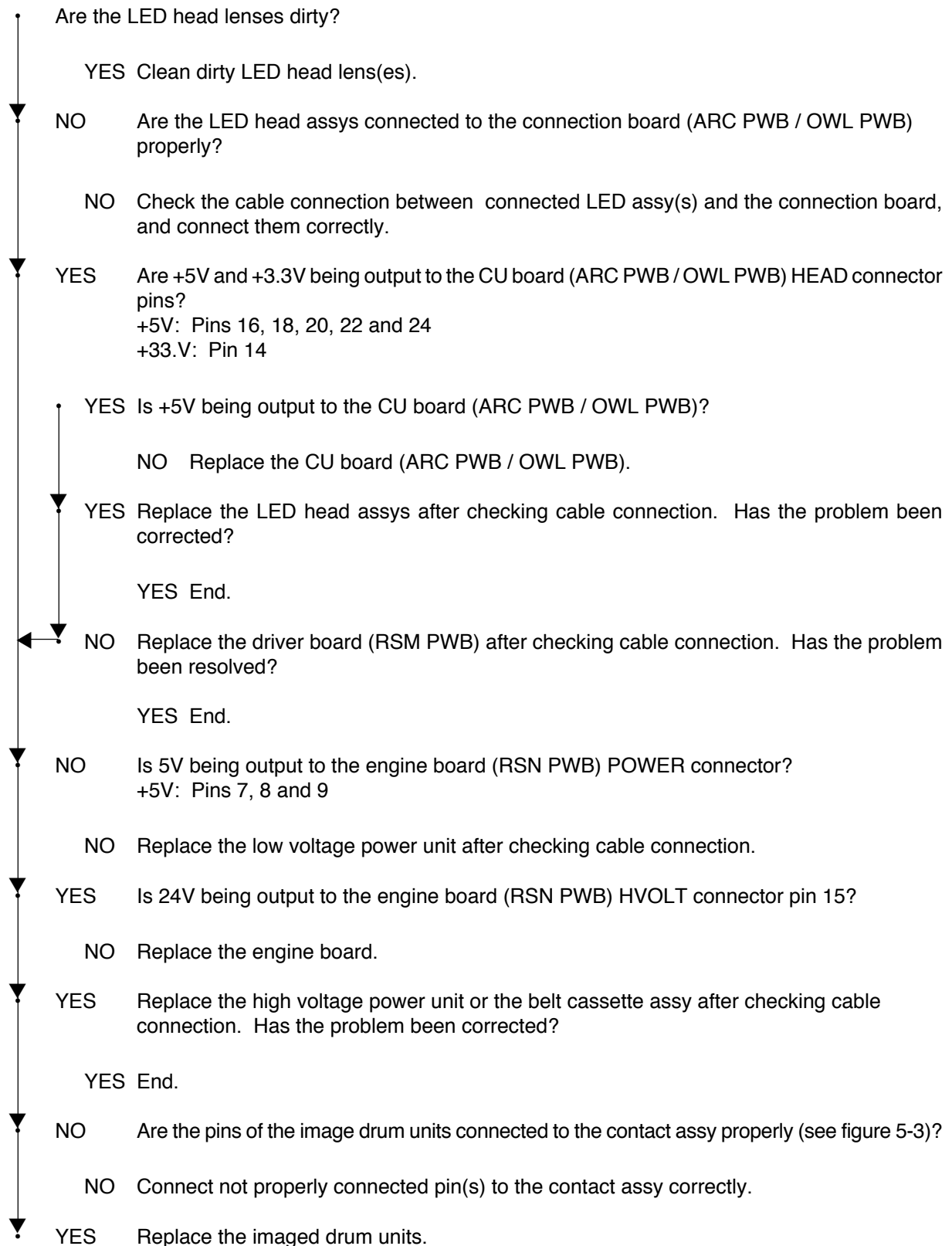


(B)

(B)

- [Is “YELLOW/MAGENTA/CYAN LEFT/RIGHT/HORIZONTAL” displayed?
 - YES Replace the belt unit. Has the problem been corrected?
 - YES End.
 - ▼ NO Replace the image drum unit. Has the problem been resolved?
 - YES End.
 - ▼ NO Are there any problems in the gear assys of the image drums, multipurpose tray, belt unit, belt motor etc.?
 - YES Replace damaged gear assy(s).
 - ▼ NO Replace the driver board. Has the problem been corrected?
 - YES End.
 - ▼ NO Are the LED head units connected to the CU board (ARC PWB / OWL PWB) properly?
 - NO Connect not properly connected LED head unit(s) to the connection board correctly.
 - ▼ YES Replace the LED head assys after checking cable connection. Has the problem been resolved?
 - YES End.
 - ▼ NO Replace the CU board (ARC PWB / OWL PWB) after checking cable connection. Has the problem been corrected?
 - YES End.
 - ▼ NO Is the engine board (RSN PWB) connected to the CU board (ARC PWB / OWL PWB) properly?
 - NO Connect the engine board to the connection board correctly.
 - ▼ NO Replace the engine board. Has the problem been resolved?
 - YES End.
 - ▼ NO Are the pins of the image drum units connected to the contact assy properly (see figure 5-3)?
 - NO Connect not properly connected pins to the contact assy correctly.
 - ▼ YES Replace the image drum units.

0 Color different from original one



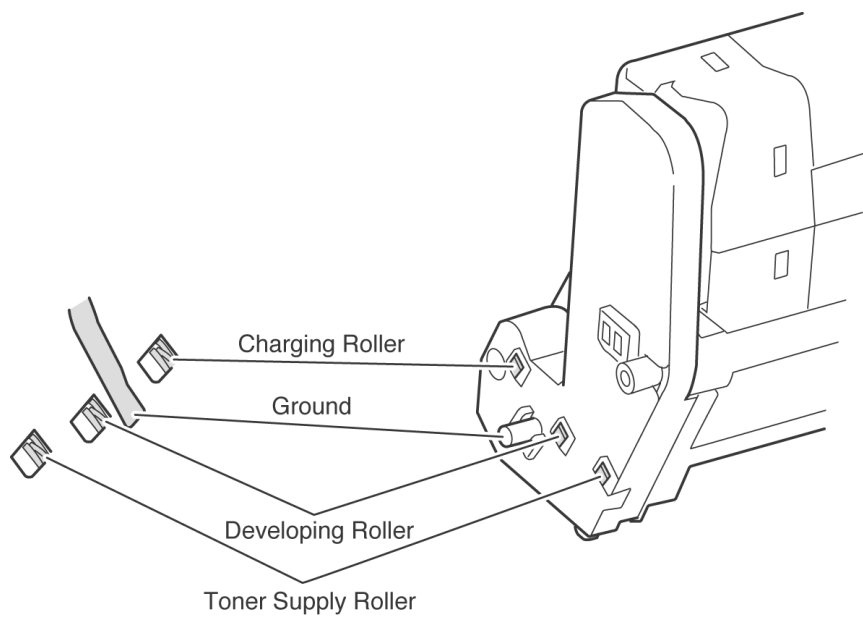


Figure 5.3

5.6 Fuse Checking

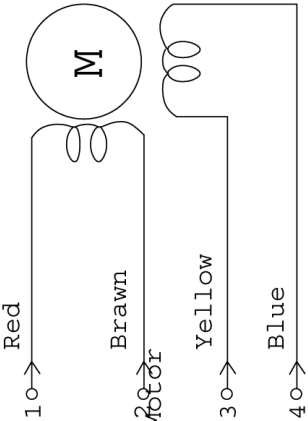
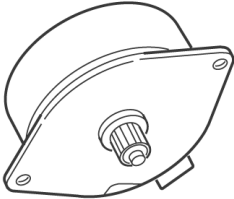
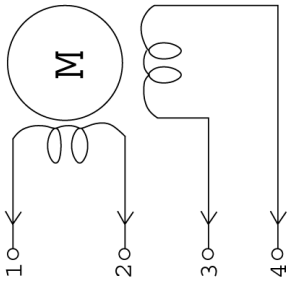
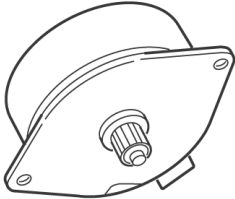
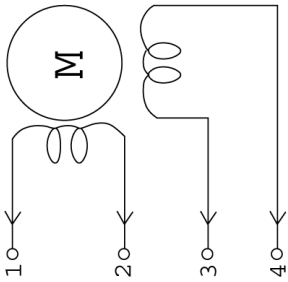
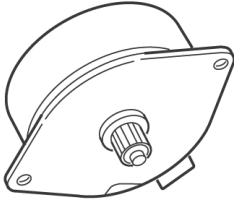
When the following errors occur, the fuses on the engine board which is associated with each error is to be checked (see table 5-6).

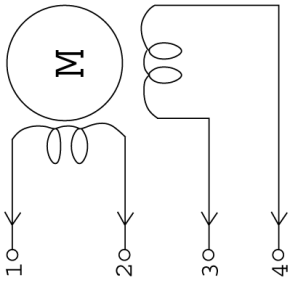
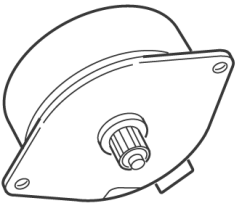
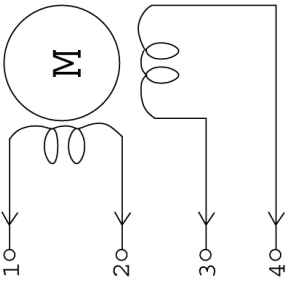
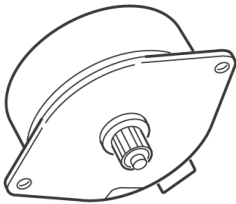
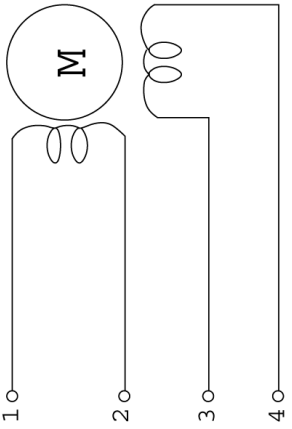
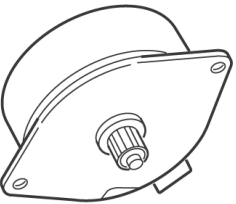
Table 5-6 Fuse Error

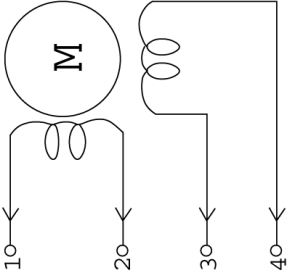
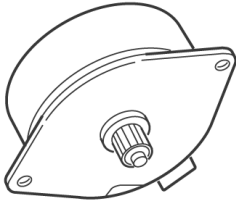
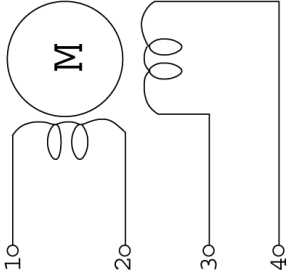
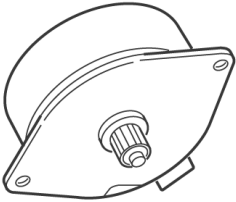
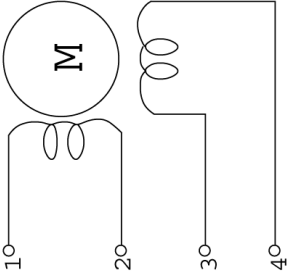
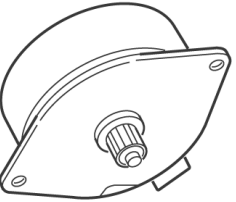
| Fuse Name | | Error Description | Insert Point |
|---------------------------|-------|-----------------------------------|--|
| Engine Board (RSN PWB) | F1 | M or C toner sensor error | M-ID and C-ID motor 24V |
| | F2 | K toner sensor error | Hop and K-ID motor 24V |
| | F3 | Cover open error | High voltage, fan, Ver and Y-ID 24V |
| | F4 | 2nd tray or duplex unit paper jam | 2nd tray and duplex 24V |
| | F5 | Paper jam during printing | Belt fuser motor 24V |
| | F6 | No operator panel display | 5V sensor system |
| High Voltage Board | IP102 | Cover open error | High voltage 24V |

6. CONNECTION DIAGRAM

6.1 Resistance Checks

| Unit | Circuit Diagram | Illustration | Resistance |
|----------------------|---|--|--|
| Transport Belt Motor |  |  | Between pins 1 and 2: Between pins 3 and 4: |
| Main Motor (Y) |  |  | Between pins 1 and 2: Between pins 3 and 4: |
| Main Motor (M) |  |  | Between pins 1 and 2: Between pins 3 and 4: |

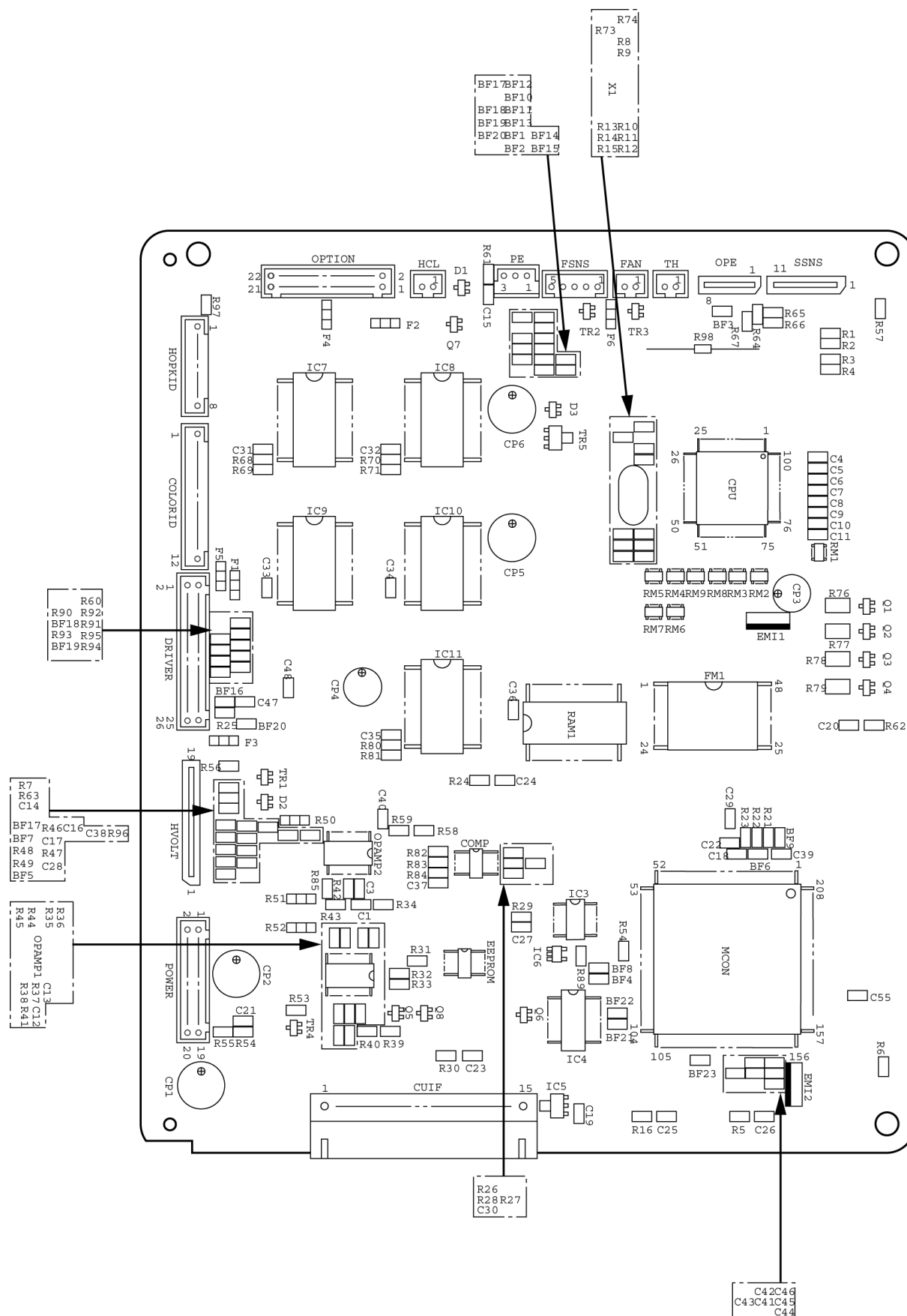
| Unit | Circuit Diagram | Illustration | Resistance |
|----------------|---|--|---|
| Main Motor (C) |  |  | <p>Between pins 1 and 2:</p> <p>Between pins 3 and 4:</p> |
| Main Motor (K) |  |  | <p>Between pins 1 and 2:</p> <p>Between pins 3 and 4:</p> |
| Fuser Motor |  |  | <p>Between pins 1 and 2:</p> <p>Between pins 3 and 4:</p> |

| Unit | Circuit Diagram | Illustration | Resistance |
|-----------------------|---|--|---|
| Feeder Motor |  |  | <p>Between pins 1 and 2:</p> <p>Between pins 3 and 4:</p> |
| Duplex Motor |  |  | <p>Between pins 1 and 2:</p> <p>Between pins 3 and 4:</p> |
| 2nd tray Feeder Motor |  |  | <p>Between pins 1 and 2:</p> <p>Between pins 3 and 4:</p> |

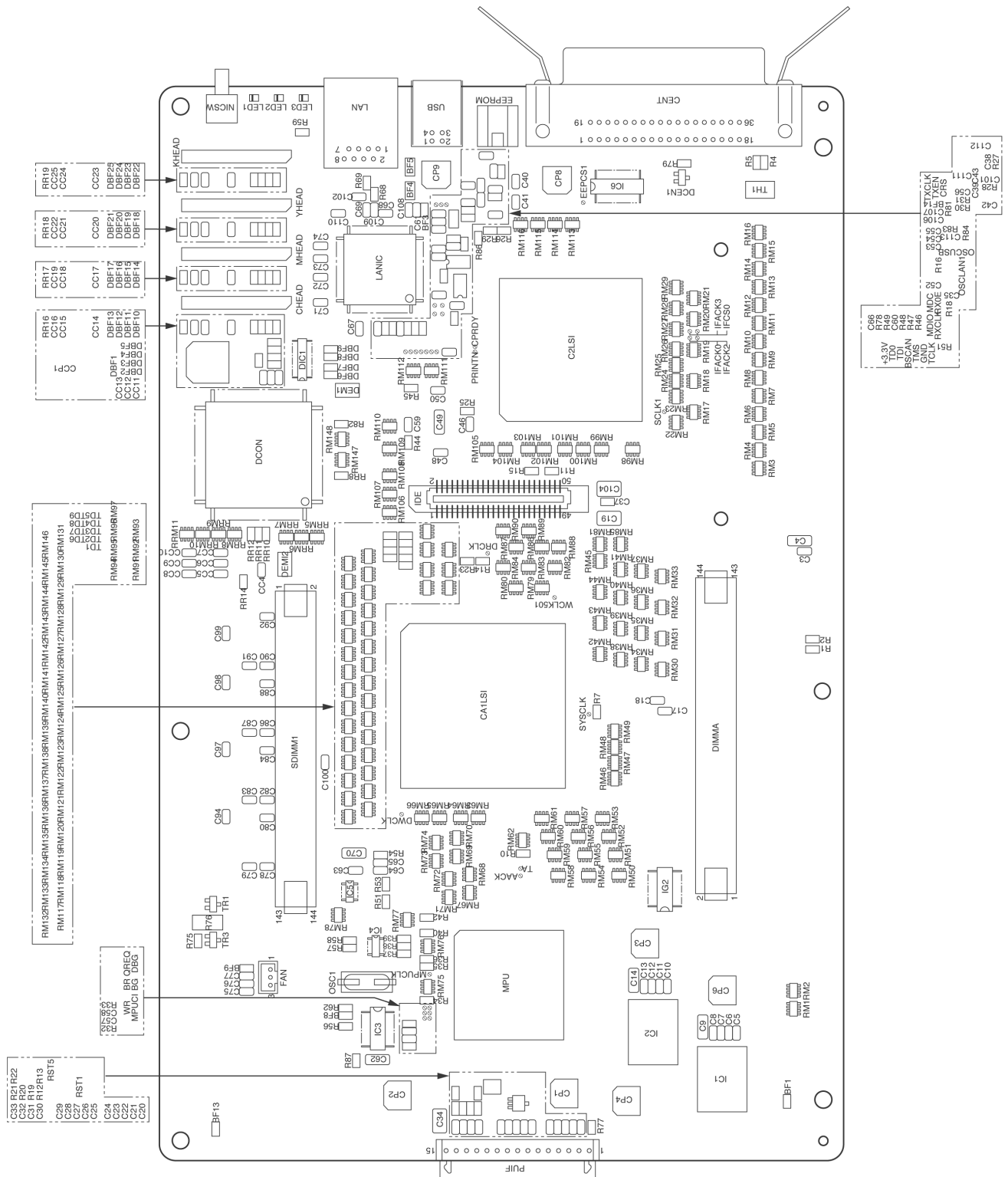
| Unit | Circuit Diagram | Illustration | Resistance |
|------------|--|--------------|--|
| Fuser Unit | <p>① Upper roller Heater a o Thermostat b o Thermistor c o d o e o f o</p> | | <p>1. Upper Roller Side Between pins "a" and "b": Between pins "c" and "d": Between pins "e" and "f":</p> |

6.2 Program/Font ROM Layouts

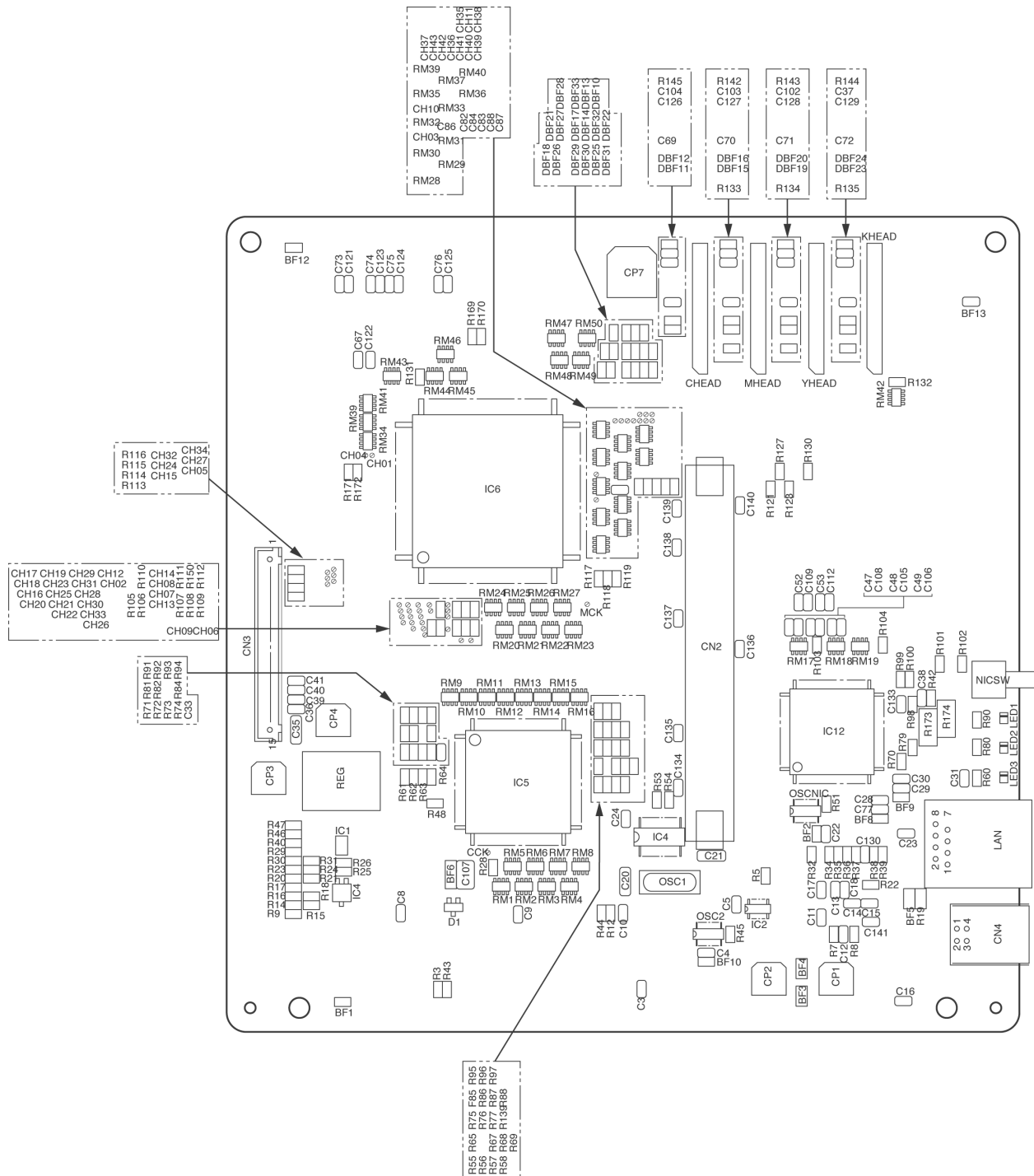
(1) Print Engine Controller PWB (RSN-1 PWB)



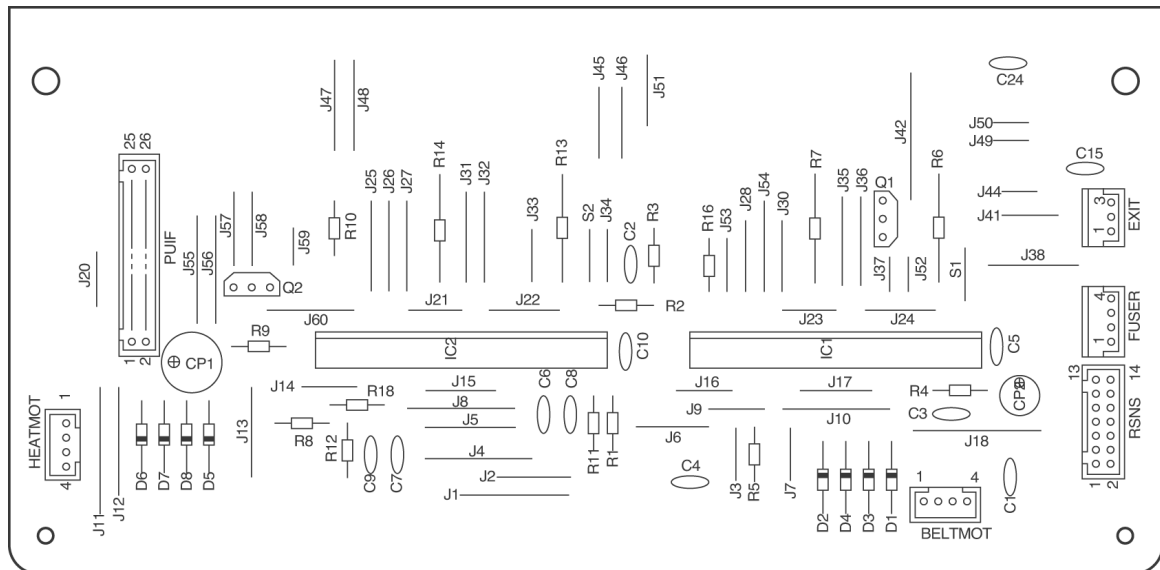
(2) Main Controller PWB (OWL PWB) (For C5300)



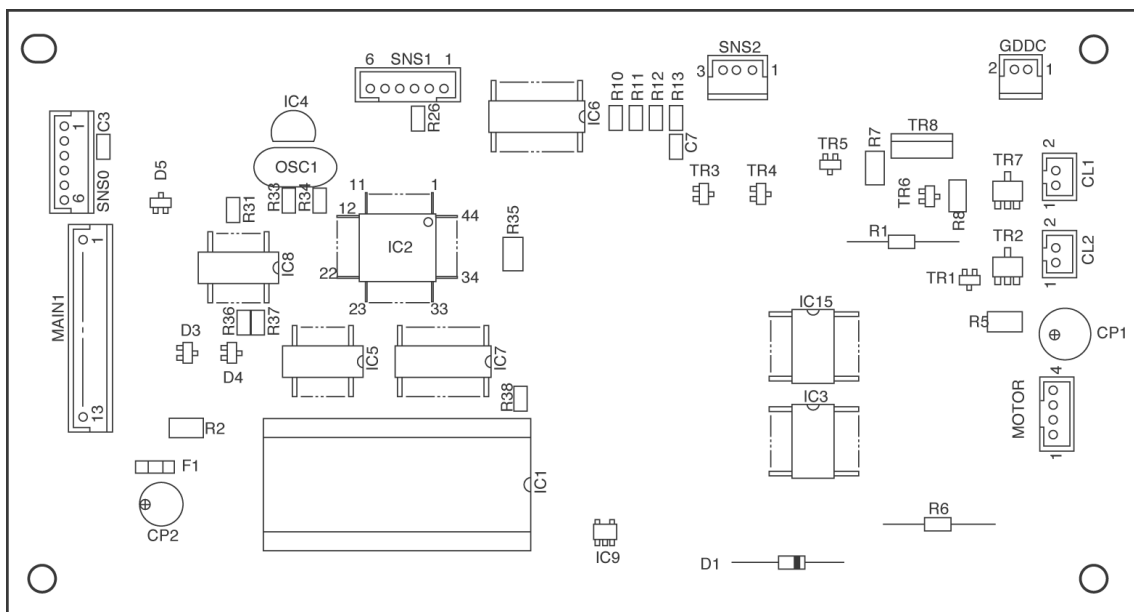
(3) Main Controller PWB (ARC PWB) (For C5100)



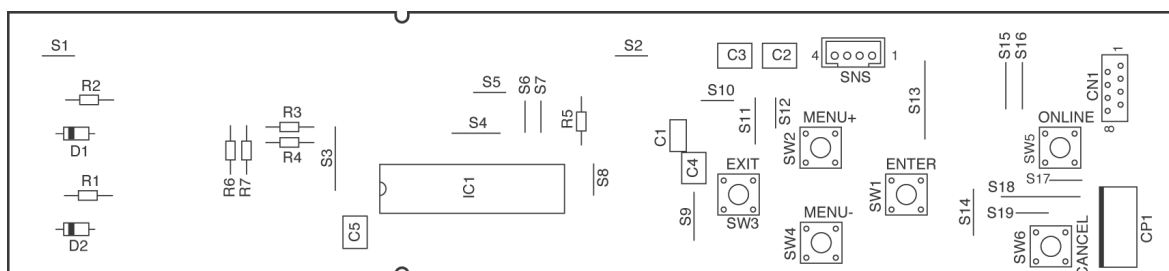
(4) Driver PWB (RSM PWB)



(5) Duplex Controller PWB (V7X PWB)



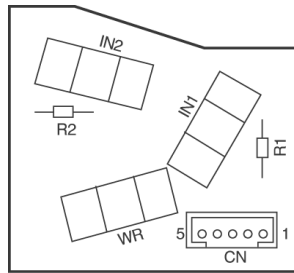
(6) Control Panel PWB (RSP PWB)



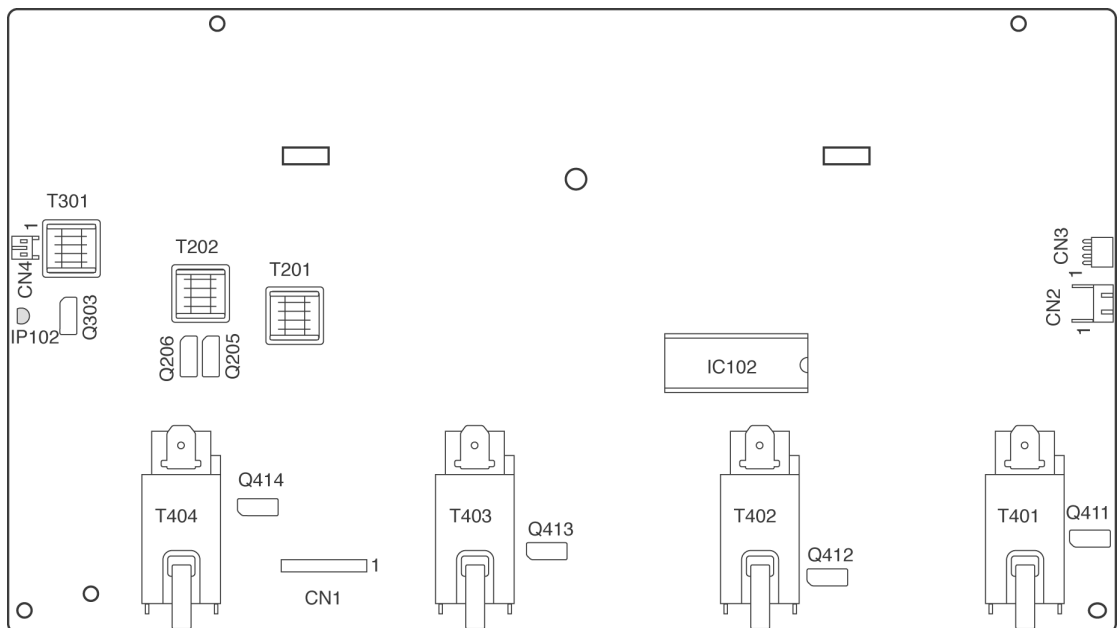
(7) Toner Low Sensor PWB (PRD-PWB)



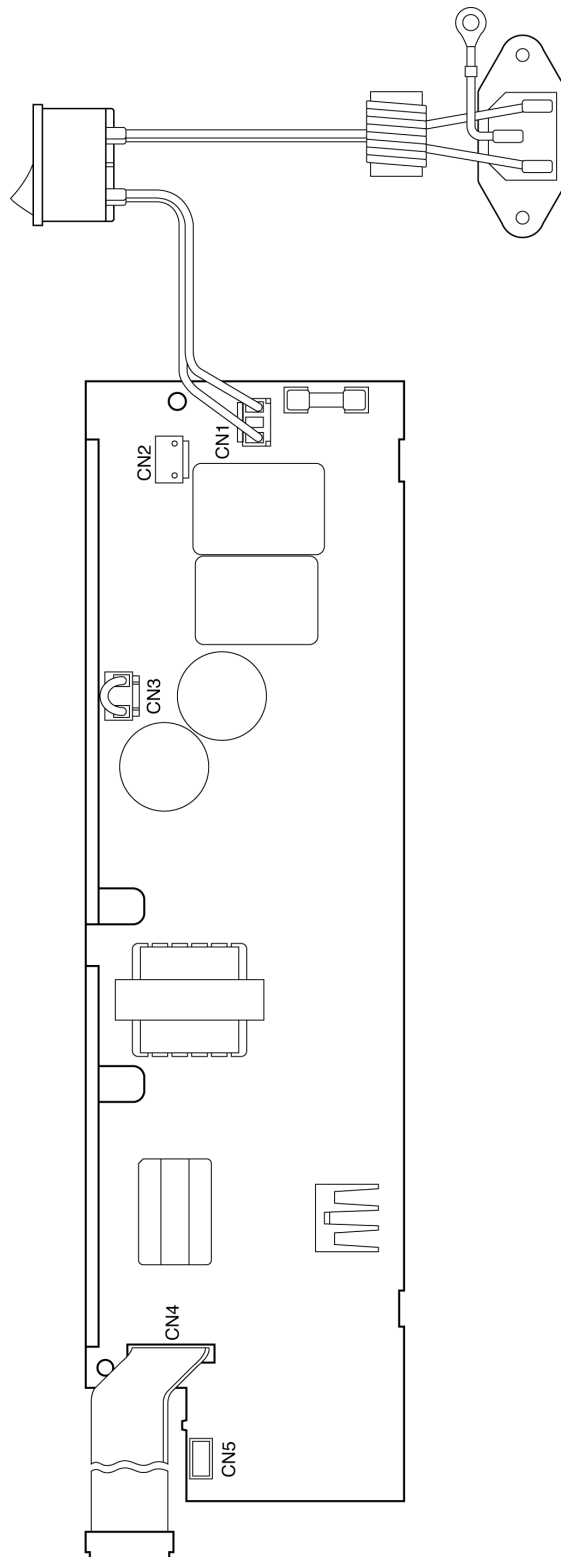
(8) Entrance Sensor PWB (RSF PWB)



(9) High voltage power supply PWB

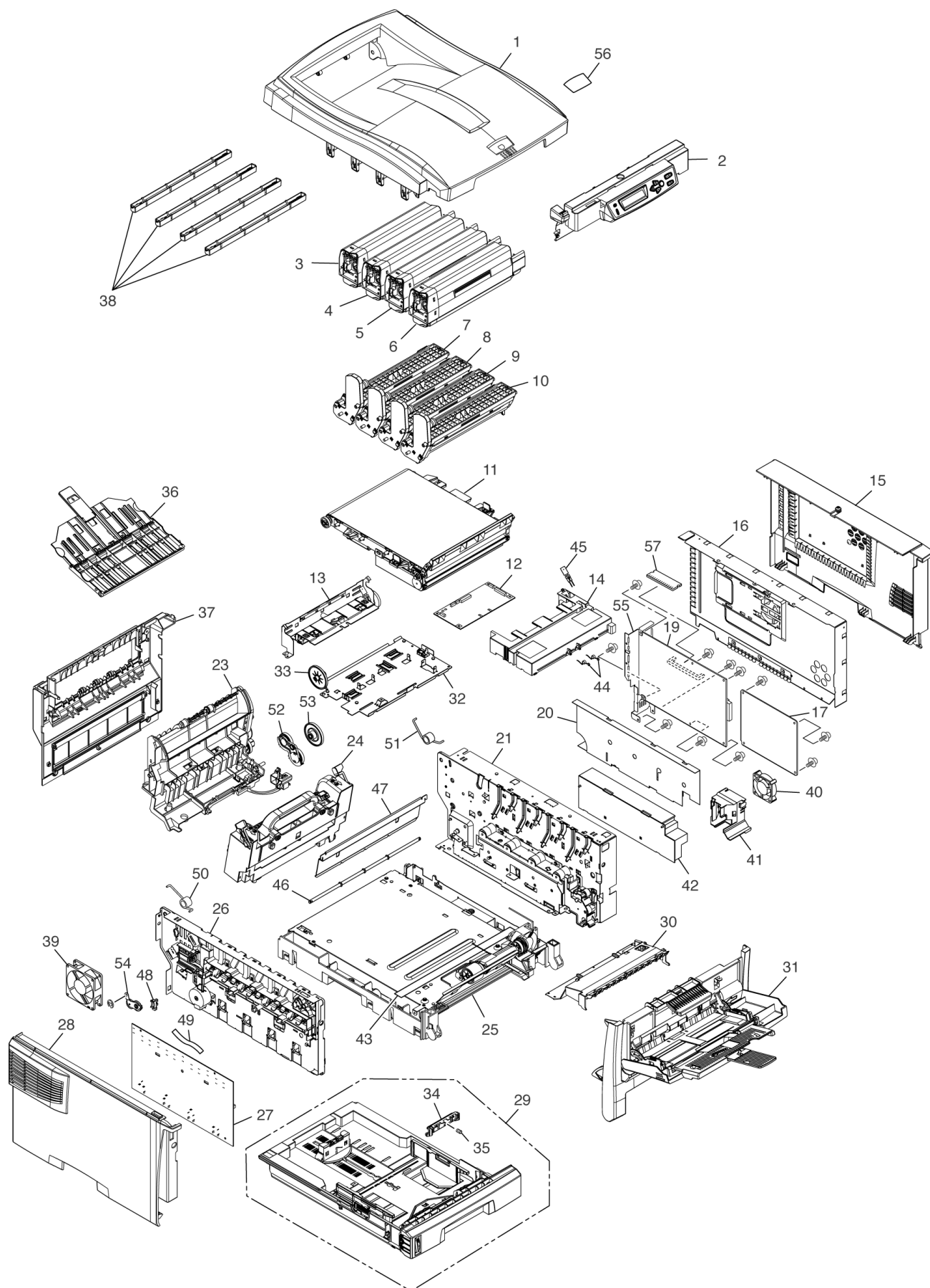


(10) Low voltage power supply PWB



7. PARTS LIST

C5300



C5100

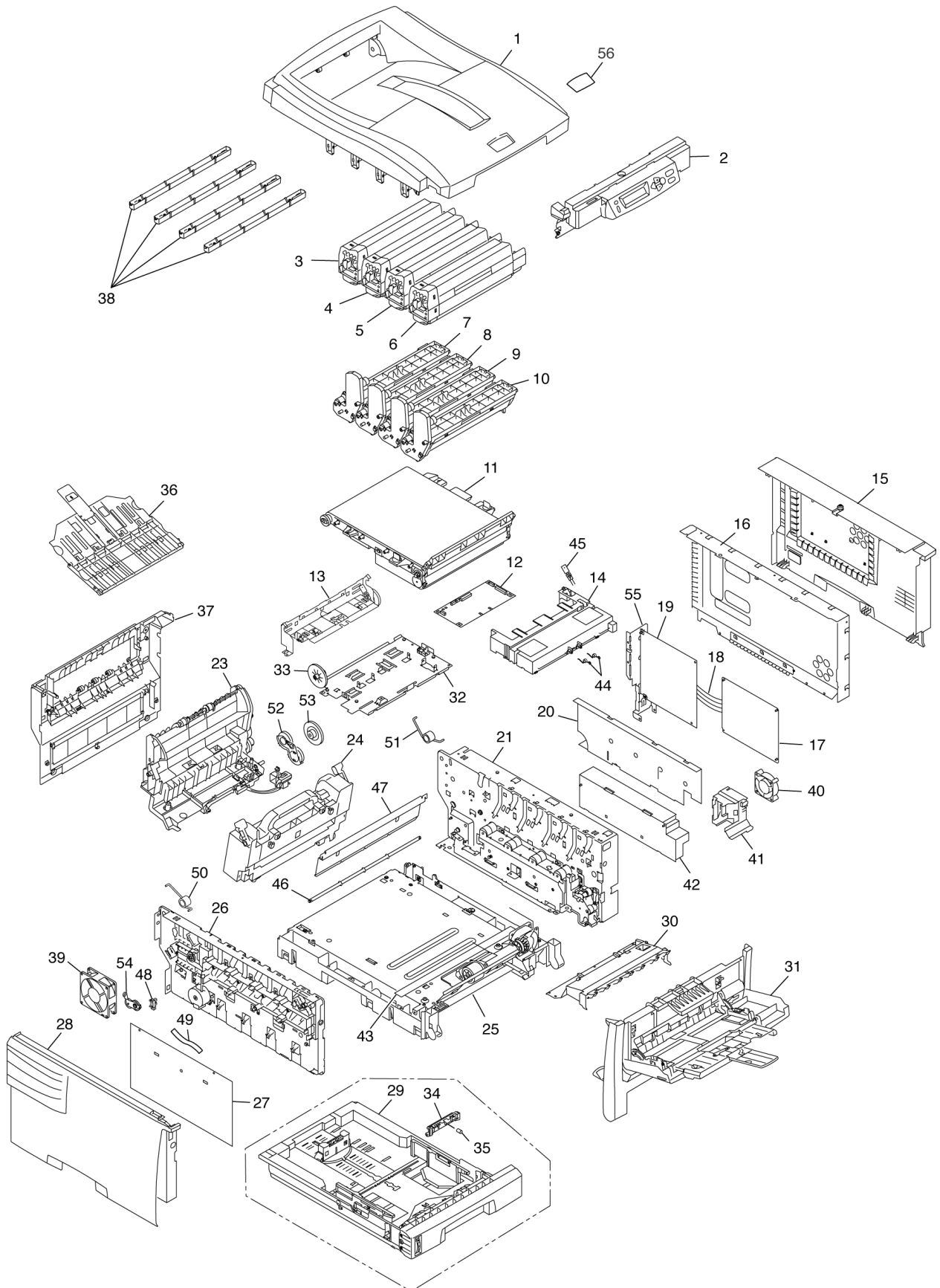


Figure 7-1-2 Parts Layout (C5100)

Table 7-1 (1/3)

Parts_Layout

| No. | Parts No. | Name | Q'ty /Unit | Remarks |
|-----|-----------|--------------------------|------------|----------------|
| 1 | 42074501 | Top Cover Assy | 1 | |
| 2 | 42067501 | Control Panel Assy | 1 | |
| 3 | 42127415 | Toner-C | 1 | Packed in box. |
| | 42127403 | Toner-C (ODA) | 1 | Packed in box. |
| 4 | 42127414 | Toner-M | 1 | Packed in box. |
| | 42127402 | Toner-M (ODA) | 1 | Packed in box. |
| 5 | 42127413 | Toner-Y | 1 | Packed in box. |
| | 42127401 | Toner-Y (ODA) | 1 | Packed in box. |
| 6 | 42127416 | Toner-K | 1 | Packed in box. |
| | 42127404 | Toner-K (ODA) | 1 | Packed in box. |
| 7 | 42126615 | ID-C | 1 | Packed in box. |
| | 42126603 | ID-C (ODA) | 1 | Packed in box. |
| 8 | 42126614 | ID-M | 1 | Packed in box. |
| | 42126602 | ID-M (ODA) | 1 | Packed in box. |
| 9 | 42126613 | ID-Y | 1 | Packed in box. |
| | 42126601 | ID-Y (ODA) | 1 | Packed in box. |
| 10 | 42126616 | ID-K | 1 | Packed in box. |
| | 42126604 | ID-K (ODA) | 1 | Packed in box. |
| | 42126608 | ID-K (OEL) | 1 | Packed in box. |
| | 42126612 | ID-K (AOS) | 1 | Packed in box. |
| 11 | 42158704 | Belt-Unit | 1 | Packed in box. |
| | 42158701 | Belt-Unit (ODA) | 1 | Packed in box. |
| 12 | 42135601 | Board-RSM | 1 | |
| 13 | 42065101 | Sensor-Assy-Color-Regist | 1 | |
| 14 | 42066901 | Cover-Driver | 1 | |

Table 7-1 (2/3)

Parts_Layout

| No. | Parts No. | Name | Q'ty /Unit | Remarks |
|-----|--------------|-----------------------------|------------|----------------|
| 15 | 42079601 | Cover-Assy-SideR | 1 | |
| 16 | 42294101 | Plate-Assy-Shield (GDI) | 1 | C5100 |
| | 42079101 | Plate-Assy-Shield (PCL) | 1 | C5300 |
| 17 | 42135501 | Print Engine Controller PWB | 1 | Board PU |
| 18 | 42141601 | CONN Cord | 1 | PU-CU C5100 |
| 19 | 42373501 | Controler Board CU (GDI) | 1 | Board CU C5100 |
| | 42373401 | Controler Board CU (PCL) | 1 | Board CU C5300 |
| 20 | 42078701 | Film-Insulation | 1 | |
| 21 | 42053501 | Plate-Assy-Side-R | 1 | |
| 22 | | | 1 | |
| 23 | 42063001 | Eject-Assy | 1 | |
| 24 | 42158605 | Fuser-Unit | 1 | Packed in box. |
| | 42158601 | Fuser-Unit (ODA 120V) | 1 | Packed in box. |
| | 42158602 | Fuser-Unit (ODA 230V) | 1 | Packed in box. |
| 25 | 42049501 | Base-Assy | 1 | |
| 26 | 42060001 | Plate-Assy-Side-L | 1 | SA9-1125 |
| 27 | 41978801 | Power Unit High Voltage | 1 | |
| 28 | 42465401 | Cover-SideL | 1 | SA9-1287 |
| | 42465402 | Cover-SideL | 1 | |
| 29 | 42087001 | Cassette Assy | 1 | |
| 30 | 42061501 | Cover Assy-Hopping | 1 | |
| 31 | 42069001 | Feeder-Unit | 1 | |
| 32 | 42062101 | Plate-Driver | 1 | |
| 33 | 42062401 | Gear-Idle-Belt | 1 | |
| 34 | 42088801 | Friction Pad Assy | 1 | |
| 35 | 42089001 | Friction Pad Assy-Springs | 1 | |
| 36 | 42078301 | Cover Assy Face Up | 1 | |
| 37 | 42077601 | Cover Sub Assy Rear | 1 | |
| 38 | 42143101 | LED HEAD Unit 51MXE | 4 | 600DPI |
| 39 | 42489901 | Electrical Cooling FAN (80) | 1 | Fuser SA9-1247 |
| | 42396101 | Electrical Cooling FAN (80) | 1 | Fuser SA9-1238 |
| 40 | 42295501 | Electrical Cooling FAN (ID) | 1 | |
| 41 | 42295401 | Frame Duct | 1 | |
| 42 | 41992701 | Power Unit (LOW Voltage) | 1 | 100-120V |
| | 42408601 | Power Unit (LOW Voltage) | 1 | 230V |
| 43 | 2381031P0003 | TW VF 19-01X06-460 | 1 | FFC High Volt. |
| 44 | 42067001 | Spring Belt Fuse | 2 | |
| 45 | 42303301 | Thermistor | 1 | |
| 46 | 42066001 | Shaft Lift Up | 1 | |

Table 7-1 (3/3)

Parts_Layout

| No. | Parts No. | Name | Q'ty /Unit | Remarks |
|-----|-----------|--------------------------|------------|------------|
| 47 | 42067101 | Plate Heart | 1 | |
| 48 | 40135301 | Photo Interrupter | 1 | |
| 49 | 42141103 | CONN CORD AMP3P-AMP3P | 1 | ID Up/Down |
| 50 | 42076901 | Spring Torsion (L) | 1 | |
| 51 | 42077001 | Spring Torsion (R) | 1 | |
| 52 | 42063701 | Gear Assy Planet | 1 | |
| 53 | 42064101 | Gear Idle Heat (Z14-102) | 1 | |
| 54 | 42066501 | Gear Assy Planet L | 1 | |
| 55 | 42134901 | Plate Shield CU (GDI) | 1 | C5100 |
| | 42078801 | Plate Shield CU (PCL) | 1 | C5300 |
| 56 | 42076502 | Plate-Logo | 1 | C5100 |
| | 42076501 | Plate-Logo | 1 | C5100 |
| | 42076504 | Plate-Logo | 1 | C5300 |
| | 42076503 | Plate-Logo | 1 | C5300 |
| 57 | 42343002 | ROM DIMM | 1 | C5300 |

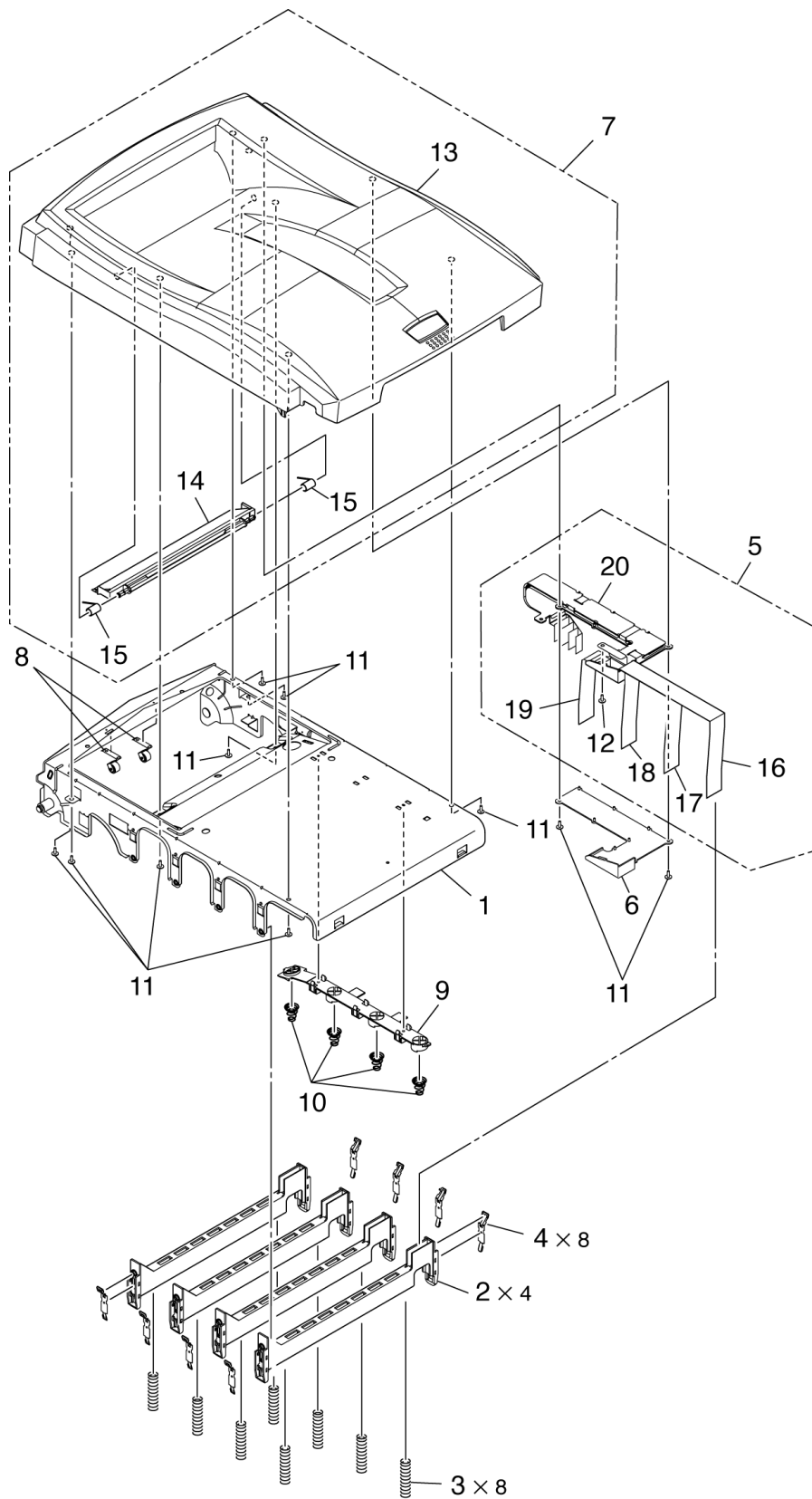


Figure 7-2 Top_Cover_Assy

Table 7-2

Top_Cover_Assy

| No. | Parts No. | Name | Q'ty /Unit | Remarks |
|-----|-----------|-------------------------|------------|----------|
| 1 | 42074601 | Plate-Inner (Caulking) | 1 | |
| 2 | 42075001 | Holder-Head | 4 | |
| 3 | 42075101 | Spring-Head | 8 | |
| 4 | 42075301 | Plate-FG-Head | 8 | |
| 5 | 42075501 | Cable-Assy.-Head | 1 | |
| 6 | 42076201 | Cover-Cable | 1 | |
| 7 | 42076301 | Cover-Ass.-Top (Sub) | 1 | |
| 8 | 42076601 | Roller Assy.-Idle (FD) | 2 | |
| 9 | 42373601 | Holder-SP (Inner) | 1 | SP7-1352 |
| 10 | 42392501 | Spring-Compression (ID) | 4 | |
| 13 | 42076401 | Top Cover | 1 | |
| 14 | 42115701 | Cover Top Sub | 1 | |
| 15 | 42293101 | Spring Torsion (Sub) | 2 | |
| 16 | 42075601 | LED Harness K | 1 | |
| 17 | 42075701 | LED Harness Y | 1 | |
| 18 | 42075801 | LED Harness M | 1 | |
| 19 | 42075901 | LED Harness C | 1 | |
| 20 | 42076101 | Film FG | 1 | |

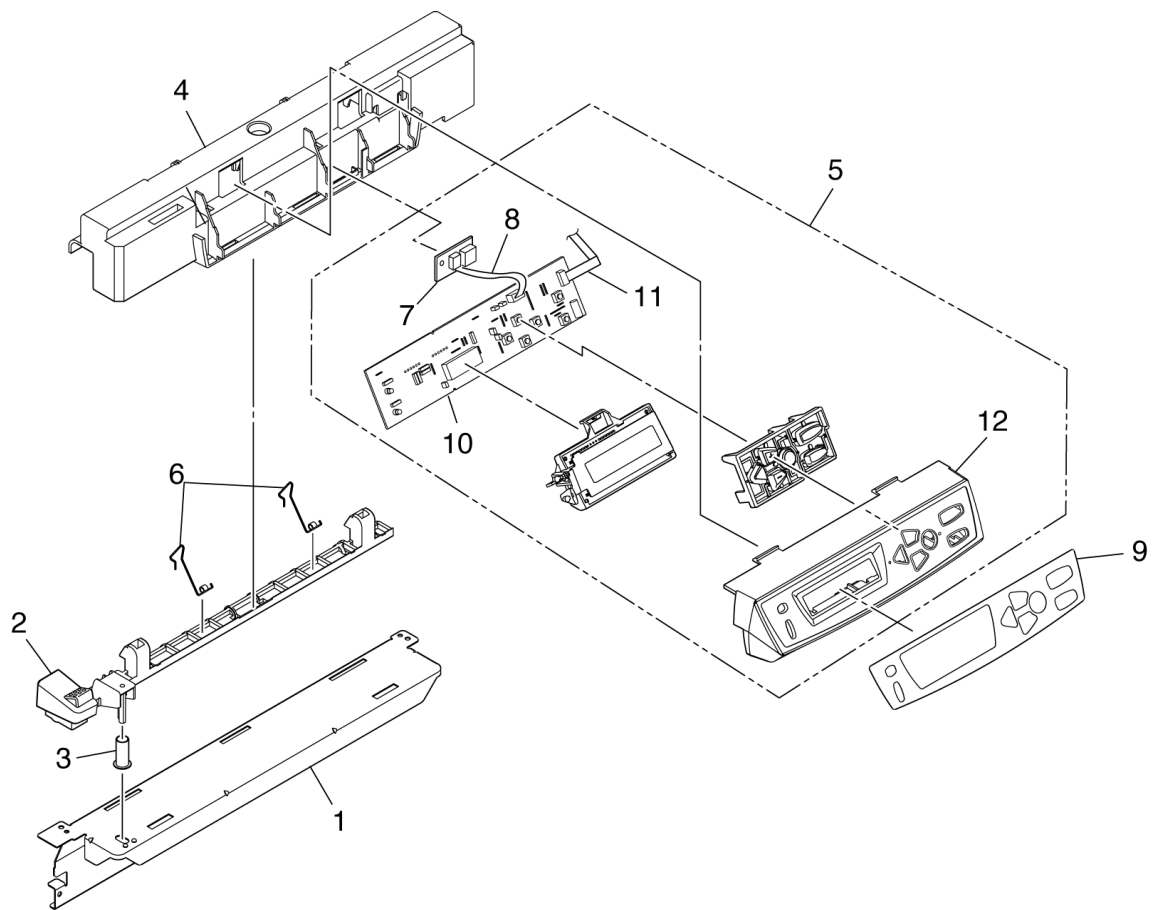


Figure 7-3 Frame_Assy-OP

Table 7-3

Frame_Assy-OP

| No. | Parts No. | Name | Q'ty /Unit | Remarks |
|-----|-----------|---------------------------|------------|-------------------|
| 1 | 42067601 | Plate-Front | 1 | |
| 2 | 42067701 | Lever-Lock (Top) | 1 | |
| 3 | 42067801 | Spring-Compression (Lock) | 1 | |
| 4 | 42067901 | Frame-OP panel | 1 | |
| 5 | 42068001 | Cover-Assy. -OP | 1 | |
| 6 | 42293201 | Spring-Torsion (FG) | 2 | |
| 7 | | SENSOR-Temp | 1 | |
| 8 | 42141703 | CONN CORD JST4P-JST4P | 1 | OP-Temp |
| 9 | 42068403 | Control Panel Sheet | 1 | Domestic |
| | 42068401 | Control Panel Sheet | 1 | ODA |
| 10 | 42290901 | Board RSP | 1 | Control Panel |
| 11 | | TW VF 8-01X06-230 | 1 | FFC Control Panel |
| 12 | 42068101 | Cover-OP-Panel | 1 | |

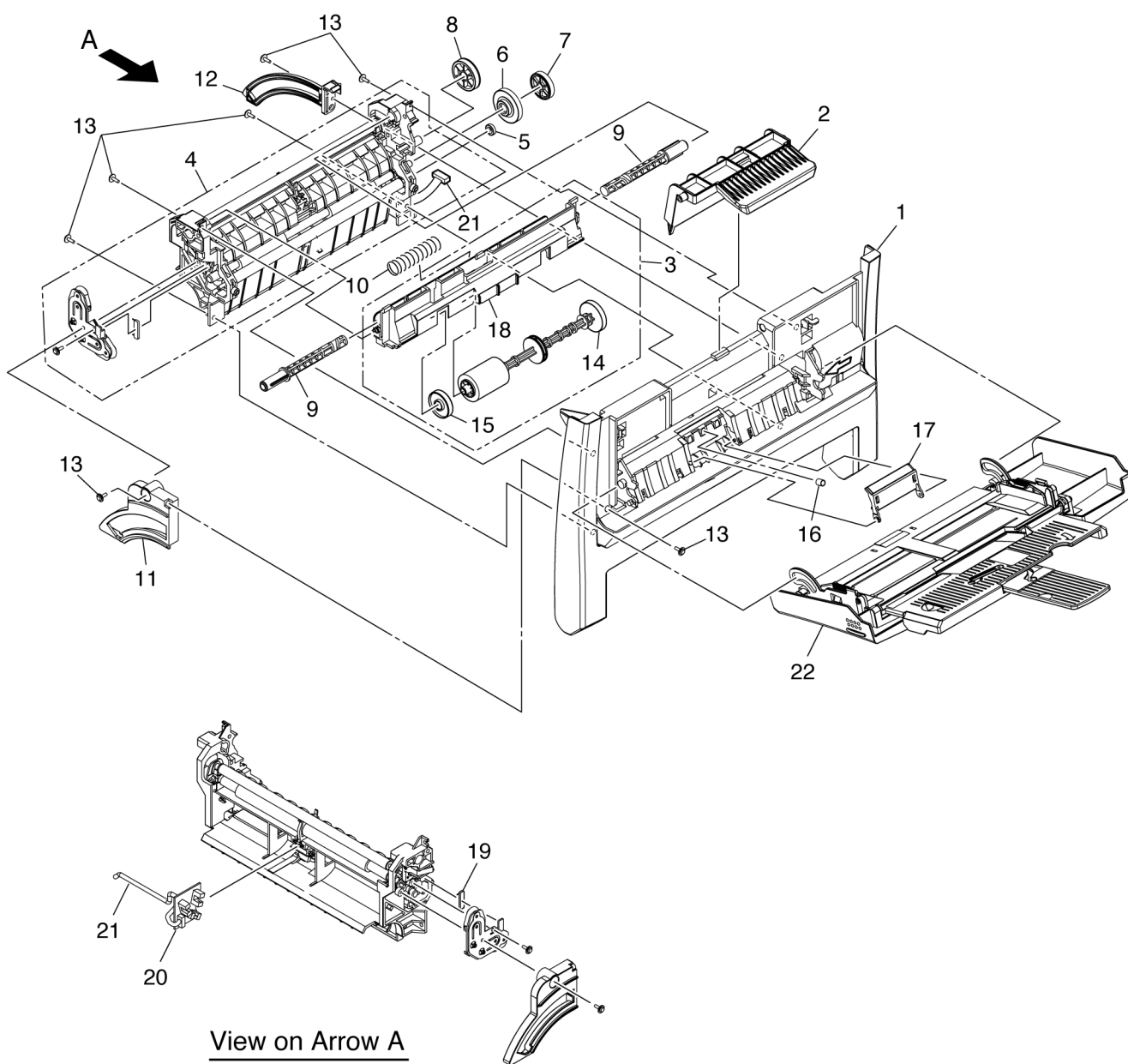


Figure 7-4 Feeder_Unit

Table 7-4

Feeder_Unit

| No. | Parts No. | Name | Q'ty /Unit | Remarks |
|-----|-----------|-----------------------|------------|---------|
| 1 | 42069201 | Cover Assy-Front | 1 | |
| 2 | 42069601 | Lever-Release-F | 1 | |
| 3 | 42070001 | Guide-Assy-Top | 1 | |
| 4 | 42070501 | Feeder-Assy-Resist | 1 | |
| 5 | 42072201 | Gear-Puressure | 1 | |
| 6 | 42072401 | Gear-Regist-L (24-54) | 1 | |
| 7 | 42057601 | Gear-Z42 | 1 | |
| 8 | 42072501 | Gear-Idle-MPT (26-50) | 1 | |
| 9 | 42072701 | Post-Slide | 2 | |
| 10 | 42072801 | Spring-Release-F | 2 | |
| 11 | 42074001 | Stay-Front-L | 1 | |
| 12 | 42074101 | Stay-Front-R | 1 | |
| 13 | | Tapping Screw B2 | 7 | |
| 14 | 42070301 | Shaft Assy MPT | 1 | |
| 15 | 42299701 | Roller Guide | 1 | |
| 16 | 42069901 | Spring Separator | 1 | |
| 17 | 42069701 | Frame Separator | 1 | |
| 18 | 42070101 | Guide Sheet Top | 1 | |
| 19 | | MRH100MK | 1 | |
| 20 | 42135801 | Board RSF | 1 | |
| 21 | 42141001 | CONN Cord JST5P-JST5P | 1 | RSF-PU |
| 22 | 42072901 | MPT Cover Assy | 1 | |

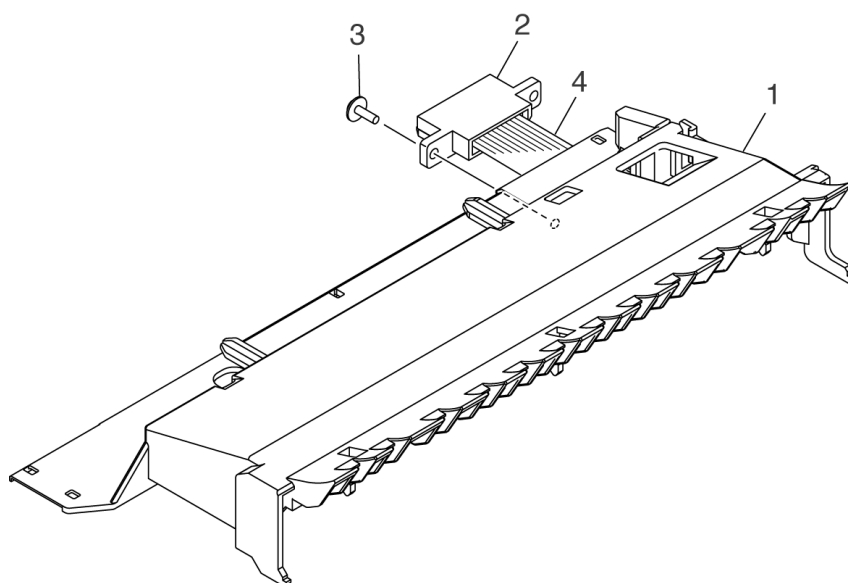


Figure 7-5 Cover_Assy-Hopping

Table 7-5

Cover_Assy-Hopping

| No. | Parts No. | Name | Q'ty /Unit | Remarks |
|-----|-----------|-------------------------|------------|---------|
| 1 | 42061601 | Cover Hopping | 1 | |
| 2 | | Connector (9715B-11Z02) | 1 | |
| 3 | | TAPPING SCREW B2 | 1 | |
| 4 | 42141201 | CONN Cord | 1 | Dup-PU |

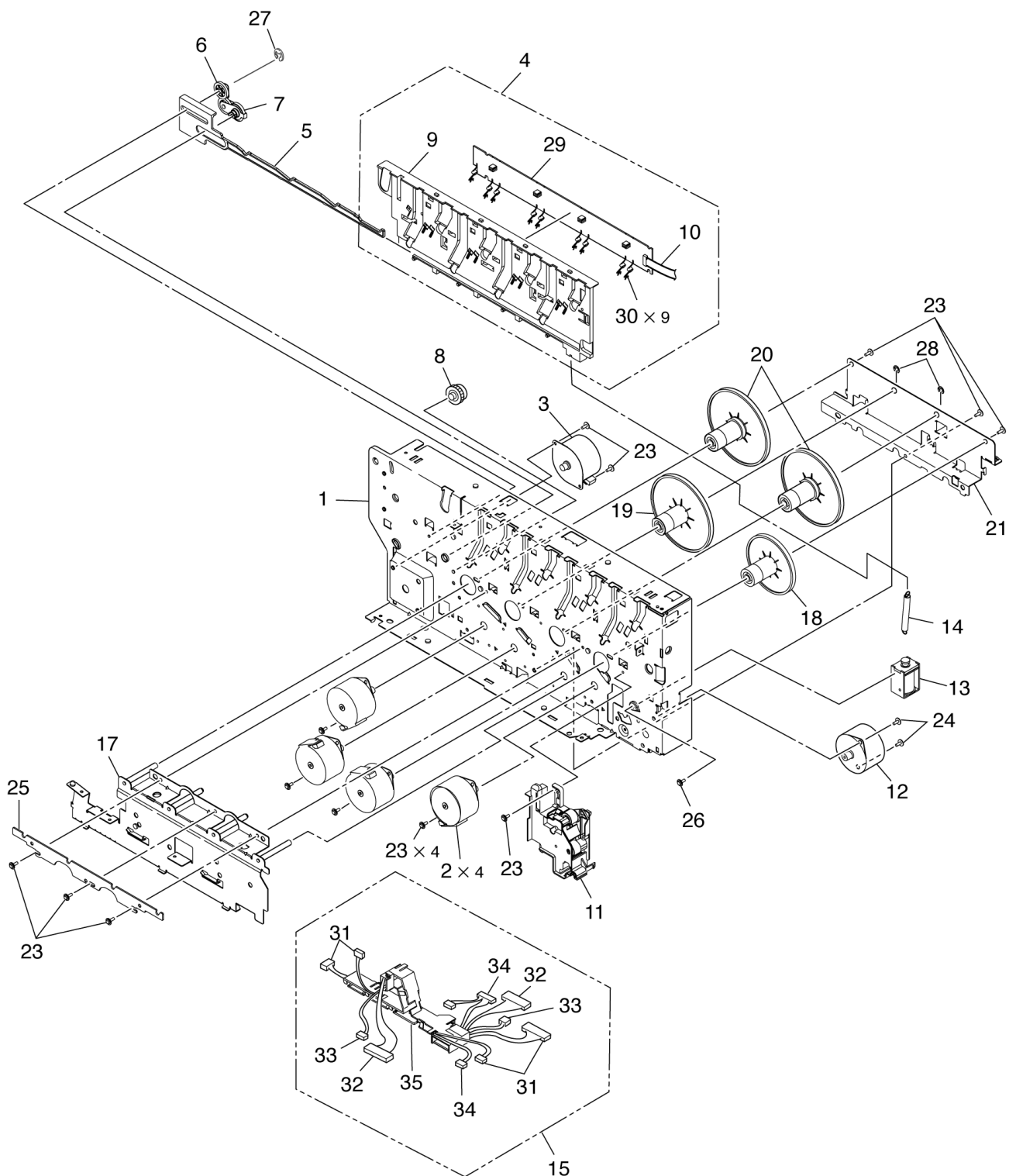


Figure 7-6 Plate_Assy-Side_R

Table 7-6

Plate_Assy-Side_R

| No. | Parts No. | Name | Q'ty /Unit | Remarks |
|-----|-----------|--------------------------|------------|--------------------|
| 1 | 42053801 | Plate-Side-R (Caulking) | 1 | |
| 2 | 42054501 | Motor-Pulse-ID (K) | 4 | |
| 3 | 42054801 | Motor-Pulse-Fuser | 1 | |
| 4 | 42054901 | Guide Assy-Side-R | 1 | |
| 5 | 42055501 | Link-Liftup-R | 1 | |
| 6 | 42055701 | Gear-Planet | 1 | |
| 7 | 42055901 | Gear Assy-Planet-R | 1 | |
| 8 | 42057101 | Gear-Idle-Liftup | 1 | |
| 9 | 42055101 | Cover-Plate-R | 1 | |
| 10 | | TW-VF-11-01X06-80 | 1 | PRD-PU |
| 11 | 42057301 | Gear Assy-HP | 1 | |
| 12 | 42058201 | Motor-Resist | 1 | |
| 13 | 42058303 | Solenoid | 1 | SA9-1121 |
| 14 | 42058401 | Spring-Solenoid | 1 | |
| 15 | 42293401 | Guide Assy-Cable-F | 1 | |
| 16 | | | | |
| 17 | 42058601 | Bracket-Inner (Caulking) | 1 | |
| 18 | 42059001 | Gear-Idle-Drum-K | 1 | |
| 19 | 42059101 | Gear-Idle-Drum-M | 1 | |
| 20 | 42059201 | Gear-Idle-Drum-YC | 2 | |
| 21 | 42059301 | Bracket-Outer | 1 | |
| 22 | | | | |
| 23 | | Cup Screw A | 13 | |
| 24 | | Tapping Screw B2 | 4 | |
| 25 | 42437301 | Plate-Lockout-ID | 1 | SA9-0971 |
| 26 | PSW3-4C | Screw | 1 | SA9-0992 |
| 27 | RE3-SK | Ring | 1 | |
| 28 | RE4-SK | Ring | 2 | |
| 29 | 42135701 | Board-PRD | 1 | |
| 30 | 42055201 | Spring-Contact-TL | 9 | |
| 31 | 42141401 | CONN Cord-JST12P-JST4PX3 | 1 | PU-Y.M.C motor |
| 32 | 42141501 | CONN Cord-JST26P-JST26P | 1 | PU-RSM |
| 33 | 42303501 | CONN Cord-JST2P-JST2P | 1 | PU-BELT Thermistor |
| 34 | 42141301 | CONN Cord-JST8P-JST4PX2 | 1 | PU-HOP, K motor |
| 35 | 42058501 | Guide-Cable F | 1 | |

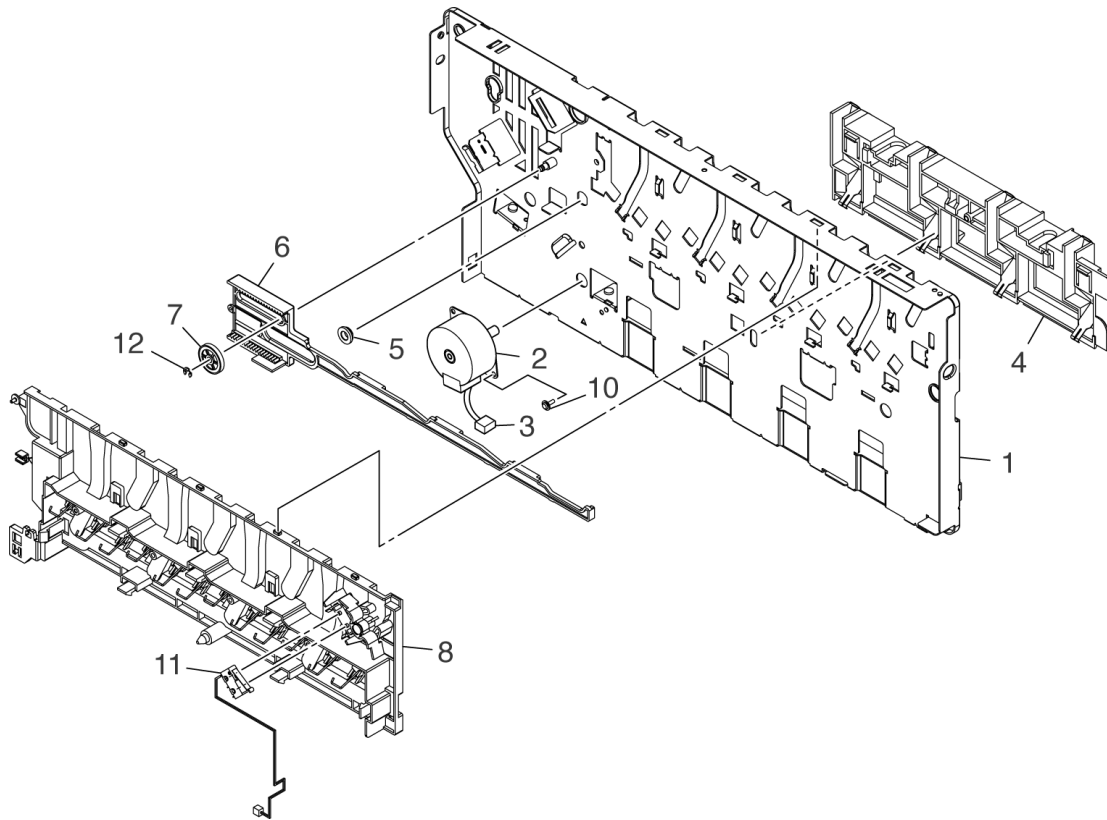


Figure 7-7 Plate_Assy-Side_L

Table 7-7

Plate_Assy-Side_L

| No. | Parts No. | Name | Q'ty /Unit | Remarks |
|-----|-----------|-------------------------|------------|---------|
| 1 | 42060101 | Plate-Side-L (Caulking) | 1 | |
| 2 | 42054601 | Motor-Pulse-ID-Belt | 1 | |
| 3 | 42141701 | CONN Cord-JST4P-JST4P | 1 | |
| 4 | 42060401 | Contact-Assy | 1 | |
| 5 | 42060701 | Bush | 1 | |
| 6 | 42060801 | Link-Liftup-L | 1 | |
| 7 | 42055701 | Gear-Planet | 1 | |
| 8 | 42060901 | Guide Assy-Side-L | 1 | |
| 9 | | | | |
| 10 | | Cup Screw A | 1 | |
| 11 | 42025701 | Micro switch-Assy | 1 | |
| 12 | RE3-SK | Ring | 1 | |

C5300

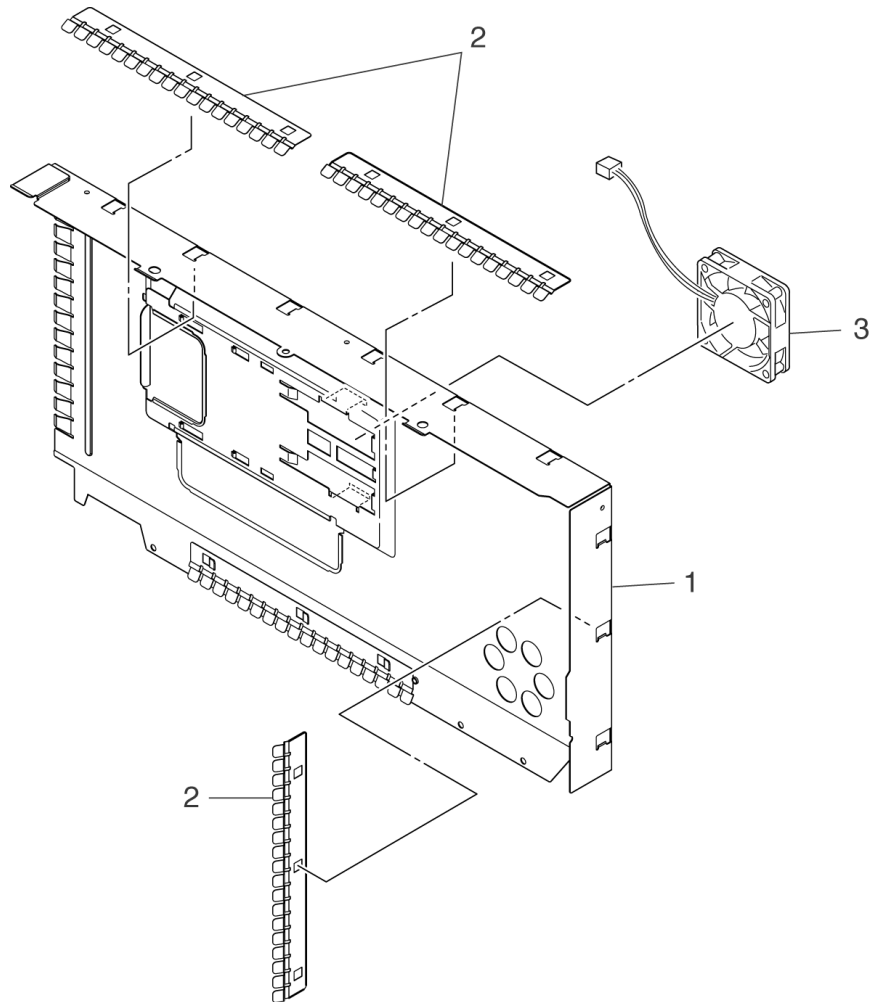


Figure 7-8-1 Plate_Assy-Shield (C5300)

C5100

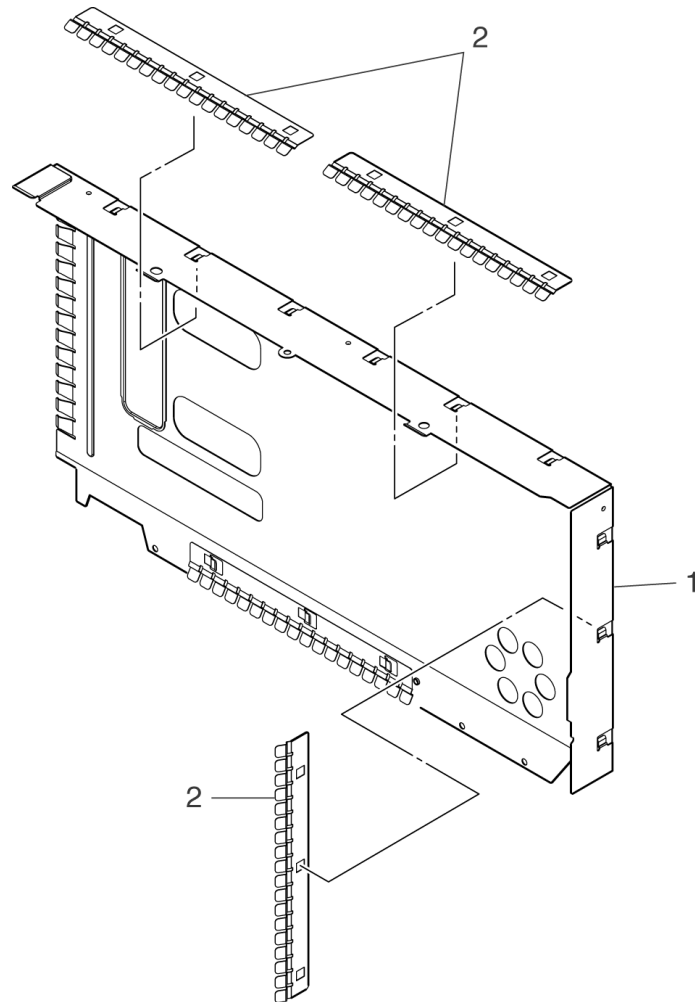


Figure 7-8-2 Plate_Assy-Shield (C5100)

Table 7-8

Plate_Assy-Shield

| No. | Parts No. | Name | Q'ty /Unit | Remarks |
|-----|-----------|-----------------------------|------------|----------------|
| 1 | 42466301 | Plate-Side (PCL) | 1 | C5300 |
| | 42466401 | Plate-Side (GDI) | 1 | SA9-1130 C5100 |
| 2 | 42079301 | Plate_Contact-Shield | 3 | |
| 3 | 41410201 | Electrical Cooling FAN (60) | 1 | CU Board |

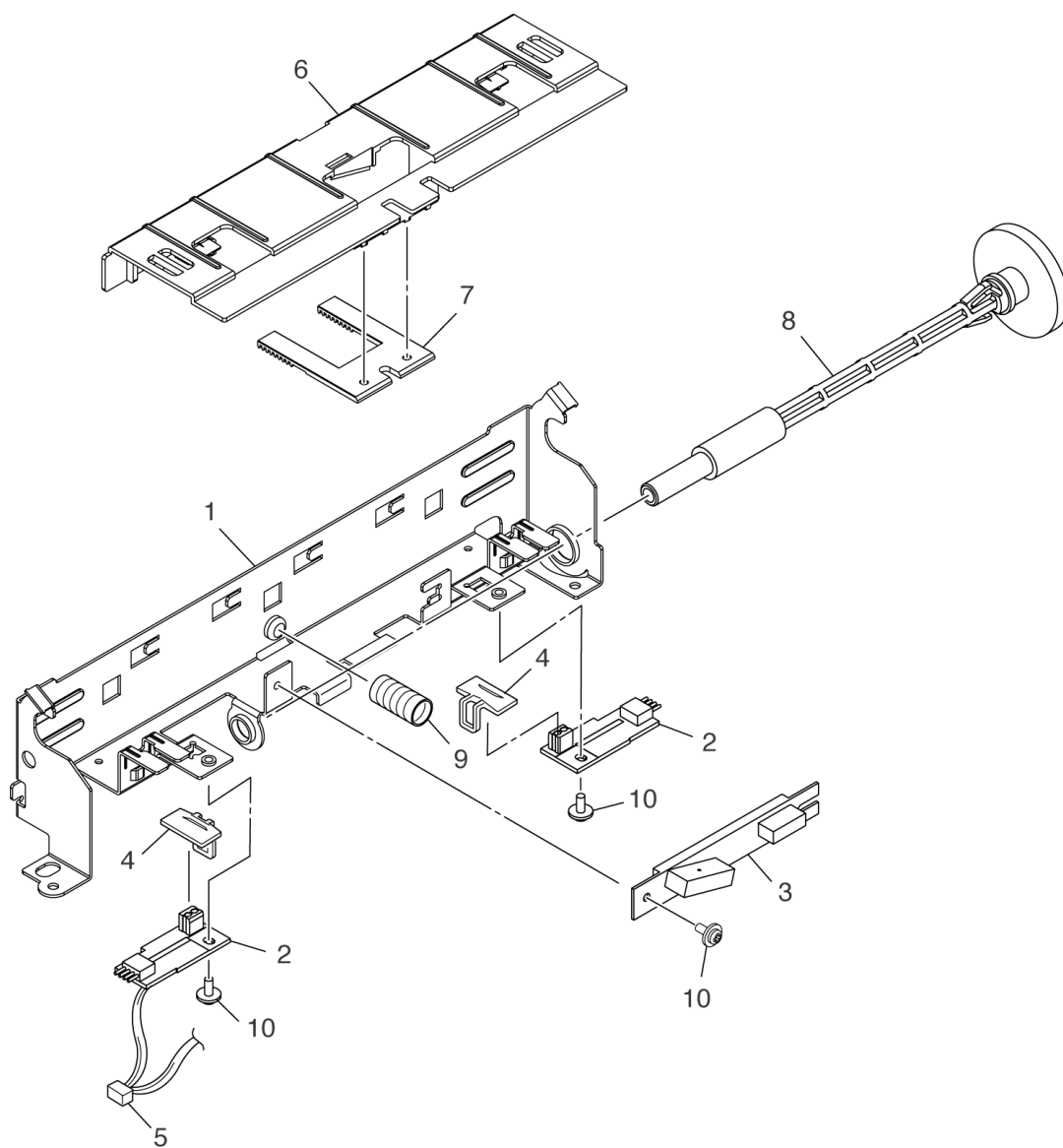


Figure 7-9 Sensor_Assy-Regist

Table 7-9

Sensor_Assy-Color_Regist

| No. | Parts No. | Name | Q'ty /Unit | Remarks |
|-----|-----------|------------------------------------|------------|---|
| 1 | 42065201 | Plate-Sensor-C Regist | 1 | |
| 2 | 41258601 | Board-Z71 | 1 | Color Regist |
| 3 | | GP2TCS SENSOR-Density | 1 | Density |
| 4 | 42220901 | Plate_Guard-sensor | 2 | |
| 5 | 42141801 | CONN Cord-JST14P MOLEX5PJST4PX2 | 1 | RSM-Color Registration and Density SNSs |
| 6 | 42065301 | Cover-C.Resist (Adhesive) | 1 | |
| 7 | 42065701 | Gear-Cover-Sensor (Rack) | 1 | |
| 8 | 42065801 | Shaft-Cover-Sensor | 1 | |
| 9 | 42065901 | Spring-Cover-Sensor | 1 | |
| 10 | | Cup Screw A | 3 | |

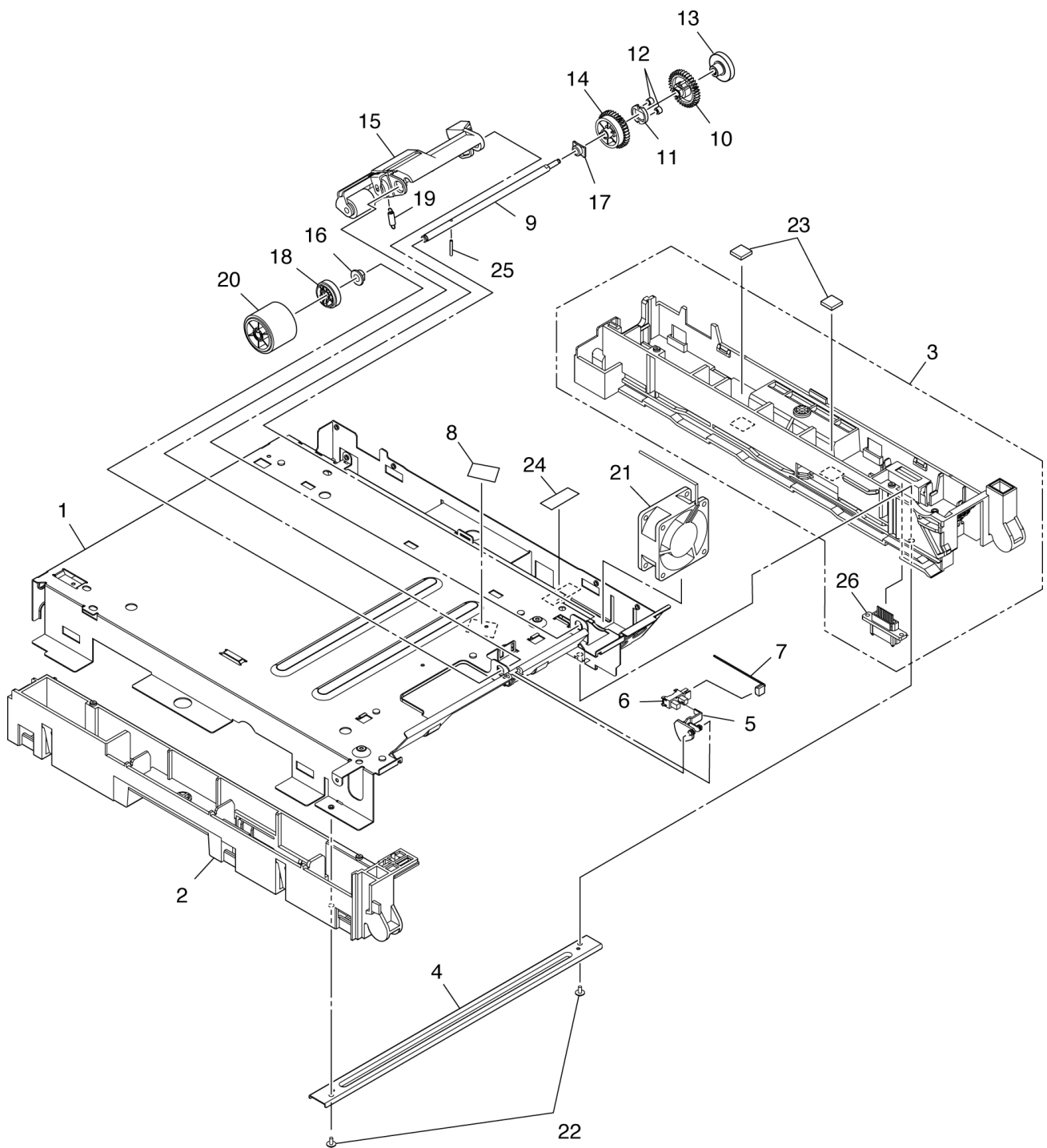


Figure 7-10 Plate_Assy-Base

Table 7-10

Plate_Assy-Base

| No. | Parts No. | Name | Q'ty /Unit | Remarks |
|-----|-----------|-------------------------|------------|--------------------|
| 1 | 42049601 | Plate-Base | 1 | |
| 2 | 42049701 | Guide Assy.-Cassette-L | 1 | |
| 3 | 42050101 | Guide Assy.-Cassette-R | 1 | |
| 4 | 42050301 | Plate-Beam | 1 | |
| 5 | 42050401 | Lever-End | 1 | |
| 6 | 40135301 | Photo-Interrupter | 1 | SNS-END |
| 7 | 42141101 | CONN Cord-AMP3P-AMP3P | 1 | PU-P-END |
| 8 | | Tape | 1 | L=30mm |
| 9 | 42050701 | Shaft-Hopping | 1 | |
| 10 | 42050801 | Stopper-HP | 1 | |
| 11 | 42050901 | Holder-Planet-HP | 1 | |
| 12 | 42051001 | Gear-Planet (Z12)-HP | 2 | |
| 13 | 42051101 | Gear-Z24-50-HP | 1 | |
| 14 | 42051201 | Stopper-Z45-48-HP | 1 | |
| 15 | 42051401 | Bracket-Assy.-Sub | 1 | |
| 16 | 41513401 | Bearing-Metal | 1 | |
| 17 | | BEARING A | 1 | |
| 18 | 42052301 | Gear-Hopping (Z38)-HP | 1 | |
| 19 | 42052501 | Spring-Sub | 1 | |
| 20 | 42052601 | Roller Assy.-Hopping | 1 | |
| 21 | 42368501 | Motor-Fan (60)PowL | 1 | SA9-1016 |
| 22 | | Cup Screw A | 2 | |
| 23 | 42423301 | Plate-Patch | 2 | SA9-0926 |
| 24 | 42104603 | Tape AL Film | 1 | L=35mm SA9-0980 |
| 25 | | Pin | 1 | |
| 26 | | Connector (9715B-10Z02) | 1 | 2nd Tray |

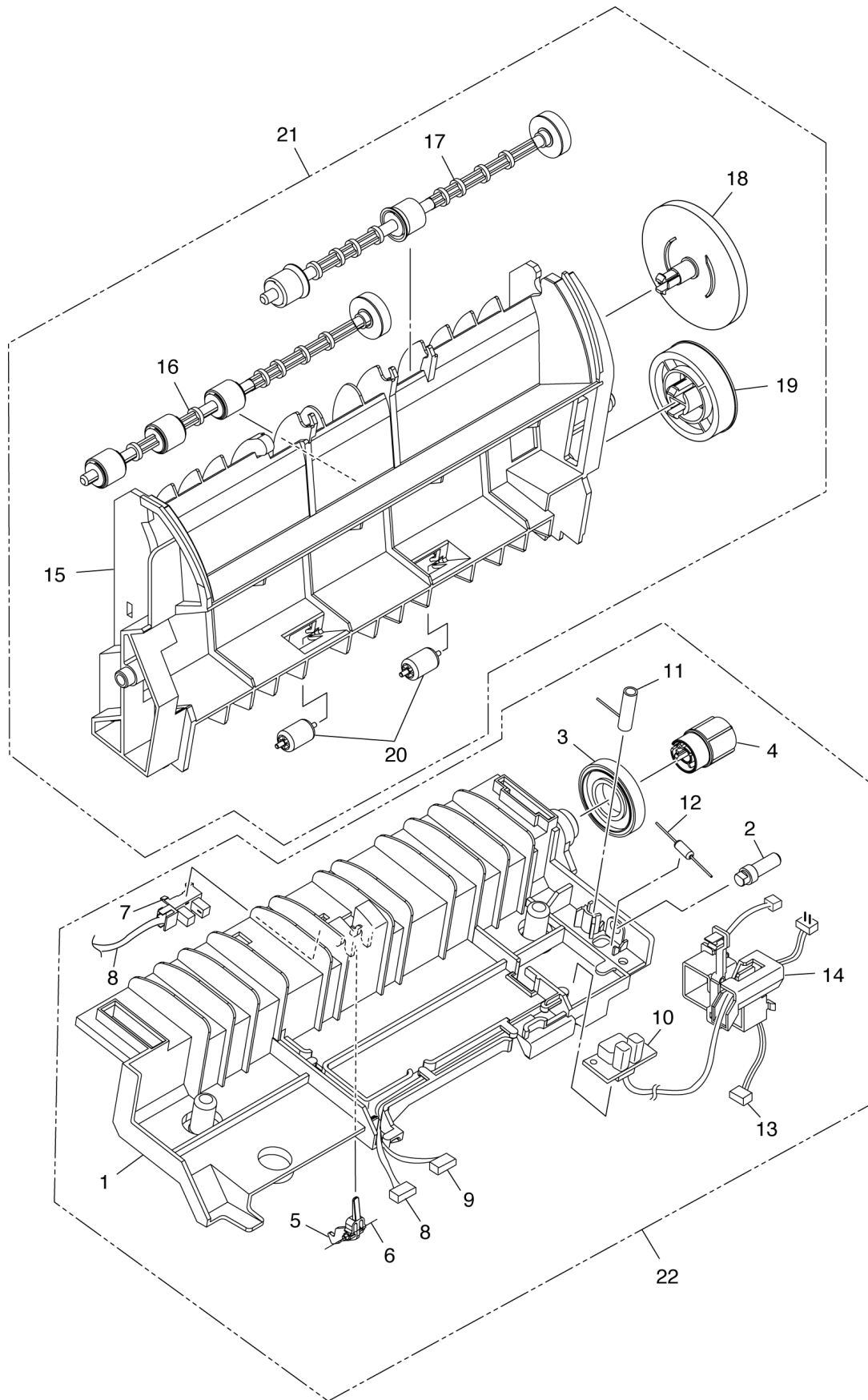


Figure 7-11 Eject_Assy

Table 7-11

Guide_Assy-Eject-L

| No. | Parts No. | Name | Q'ty /Unit | Remarks |
|-----|-----------|---------------------------------------|------------|-----------------|
| 1 | 42063201 | Guide-Eject-Lower | 1 | |
| 2 | 42278501 | Post-Gear-Idle-Heat | 1 | |
| 3 | 42063801 | Gear-Idle-Exit (Z33) | 1 | |
| 4 | 42221001 | Post-G.E.L.-Z33 | 1 | |
| 5 | 42063301 | Lever-Eject-Sensor | 1 | |
| 6 | 40386501 | Spring-SNS (F/R) | 1 | |
| 7 | 40135301 | Photo-Interrupter | 1 | |
| 8 | 42141101 | CONN Cord-AMP3P-AMP3P | 1 | RSM-Exit |
| 9 | 42142001 | CONN Cord-AMP4P-AMP4P | 1 | RSM-Fuse |
| 10 | 42142101 | CONN Cord-AMP2P-JST3P | 1 | Fuse-Low Vol |
| 11 | 42063601 | Spring-FG | 1 | |
| 12 | | GS1/2A100MWK-T52 RES-MET solid - Q | 1 | |
| 13 | 42141702 | CONN Cord-JST4P-JST4P | 1 | PU-Heater Motor |
| 14 | 42059401 | Guide-Cable-R | 1 | |
| 15 | 42064401 | Guide-Eject-Upper | 1 | |
| 16 | 42308001 | Shaft Assy-Eject (FU) | 1 | |
| 17 | 42308101 | Shaft Assy-Eject (FD) | 1 | |
| 18 | 42064501 | Gear-Idle-Exit (Z58) | 1 | |
| 19 | 42064701 | Gear-Idle-Exit (Z41) | 1 | |
| 20 | 42278301 | Roller-Sub-G.E.U. | 2 | |
| 21 | 42064301 | Guide-Assy-Eject-U | 1 | |
| 22 | 42063101 | Guide-Assy-Eject-L | 1 | |

APPENDIX A INTERFACE SPECIFICATIONS

1. Parallel Interface Specifications (C5300)

1.1 Parallel Interface

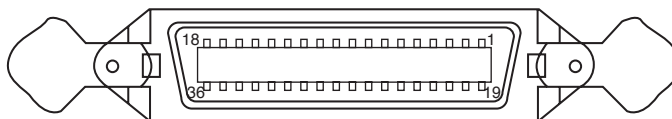
| Item | Description |
|-----------------|---|
| Mode | Compatibility mode, Nibble mode, ECP mode |
| Data bit length | 8 bits: Compatibility mode, 4bits: Nibble mode,9 bits: ECP mode |

1.2 Parallel Interface Connector and Cable

1) Connector

Printer side: 36-pin receptacle
Type 57LE-40360-12 (D56) (made by Daiichi Denshi) or equivalent

Cable side: 36-pin plug
Type 57FE-30360-20N (D8) (made by Daiichi Denshi) or equivalent



Connector Pin Arrangement Viewed from Cable Side

2) Cable

Cable length: 1.8 m max.

(A shielded cable composed of twisted pair wires is recommended for noise prevention.)

1.3 Parallel Interface Level

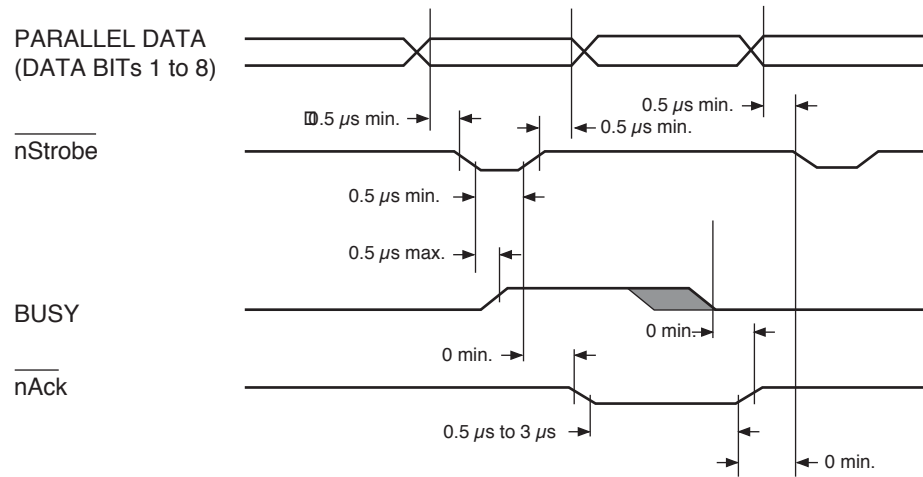
LOW: 0 V to +0.8 V

HIGH: +2.4 V to 5.0 V

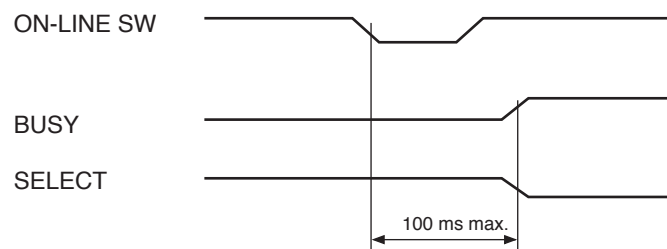
1.4 Timing Charts

Compatible mode

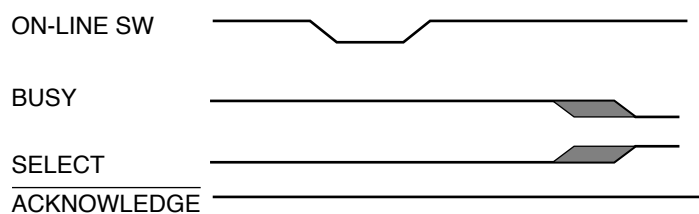
a) Data receiving timing



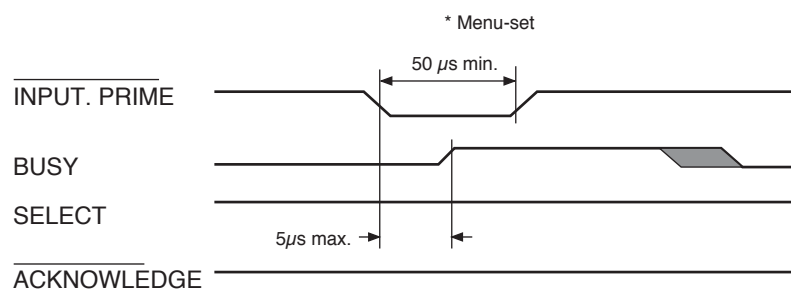
b) On-line (off-line switching timing by ON-LINE SW)



c) Off-line (on-line switching timing by ON-LINE SW)



d) nlnit timing (invalid by default)



1.5 Parallel I/F Signals

Table 8-1 shows interface signal names and pin numbers.

Table 8-1 Signals

| Pin No. | Signal Name | Signal Direction | Functions |
|---------|---------------------------------|------------------|--|
| 1 | Nstrobe (HostClk) | →PR | Pulse for reading data in at trailing edge. |
| 2 | DATA 1 | →PR | 8-bit parallel data. Each signal is HIGH when data is logical 1 and LOW when it is logical 0. |
| 3 | DATA 2 | | |
| 4 | DATA 3 | | |
| 5 | DATA 4 | | |
| 6 | DATA 5 | | |
| 7 | DATA 6 | | |
| 8 | DATA 7 | | |
| 9 | DATA 8 | | |
| 10 | nAck (PtrClk) | ←PR | Indicates the completion of data reception. |
| 11 | Busy (PtrBusy) | ←PR | Indicates whether the printer is ready for receiving data. Data cannot be received while the signal is HIGH. |
| 12 | PError (AckDataReq) | ←PR | Indicates paper error when held HIGH. |
| 13 | Select (Xflag) | ←PR | HIGH without exception when the parallel interface is enabled. |
| 14 | NAutoFd (HostBusy) | →PR | Used in bidirectional communication. |
| 15 | - | - | Unassigned. |
| 16 | GND | - | Signal ground. |
| 17 | FG | - | Chassis ground. |
| 18 | +5V | ←PR | Used for supplying +5V. Power cannot be supplied to the outside of the printer. |
| 19 | GND | - | Signal ground. |
| ~ | | | |
| 30 | | | |
| 31 | Ninit (nInit) | →PR | Initializes the printer when held LOW. |
| 32 | NFault (nDataAvail) | ←PR | LOW during alarm. |
| 33 | GND | - | Signal ground. |
| 34 | - | - | Unassigned. |
| 35 | HILEVEL | ←PR | Pulled up to +5V at 3.3KΩ inside the printer. |
| 36 | Nselectin (IEEE 1284 active) | →PR | Used in bidirectional communication. Low without exception in compatible mode. |

Note: Parenthesized signal names are used in nibble mode.

Only functions in compatible mode are listed.

This printer supports the IEEE std 1284-1994 nibble mode. Note that, when used with personal computers or cables that do not comply with the standards, the printers may exhibit unpredictable behavior.

2. Universal Serial Bus (USB) Interface Specifications

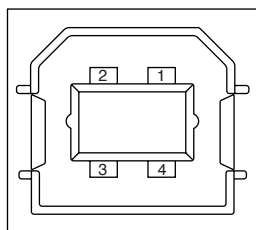
2.1 USB Interface

- (1) Basic specifications
Conforms to USB specification, revision 1.1.
- (2) Transmission mode
Full speed (max. 12 Mbps + 0.25%)
- (3) Power Control
Self-power device

2.2 USB Interface Connector and Cable

- (1) Connector
Printer side: Type B receptacle
Upstream port
USB-4R-D14T-1 (made by JST) or equivalent

Connector pin layout



Cable side: Type B plug

- (2) Cable
Cable length: 5 m max. (cable compliant with USB specification, revision 1.1)
(A shielded cable must be used.)

2.3 USB Interface Signals

| | R1 | Function |
|-------|--------|---------------------------|
| 1 | Vbus | Power Supply (+5V) (red) |
| 2 | D - | Data transmission (white) |
| 3 | D + | Data transmission (green) |
| 4 | GND | Signal ground (black) |
| Shell | Shield | |

3 Network Interface Specifications

3.1 Network Interface

(1) Basic specifications

Network protocol

TCP/IP Specification

Network layer

ARP, RARP, IP, ICMP

Transport layer

TCP, UDP

Application layer

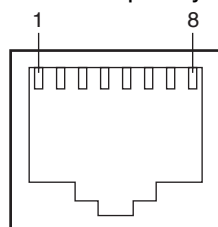
LPR, FTP, TELNET, HTTP, BOOTP, SMTP

3.2 Network Interface Connector and Cable

(1) Connector

100 BASE-TX / 10 BASE-T

Connector pin layout



(2) Cable

RJ-45 anti-Shield twist pair cable with connector (Category 5 recommended)

3.3 Network Interface Signals

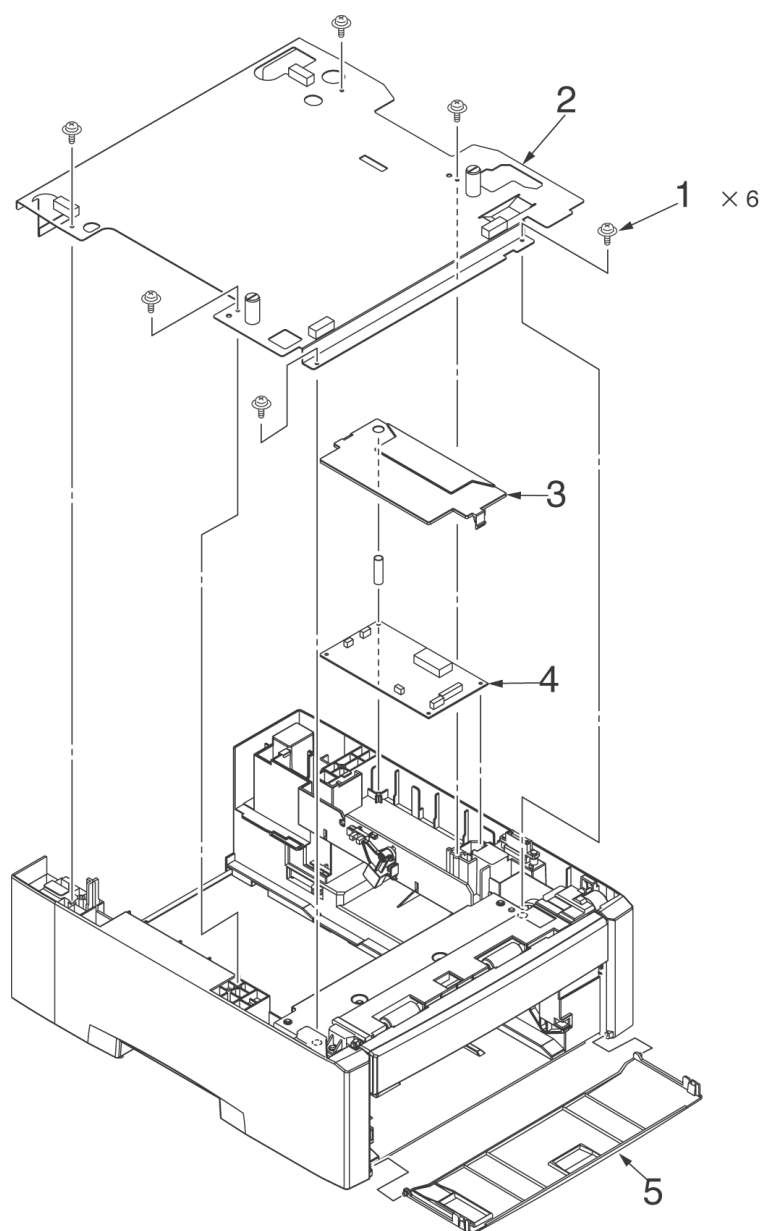
| Pin No. | Signals | Signal Direction | Functions |
|---------|---------|------------------|-----------------|
| 1 | TXD+ | FROM PRINTER | Send Data + |
| 2 | TXD- | FROM PRINTER | Send Data - |
| 3 | RXD+ | TO PRINTER | Received Data + |
| 4 | - | - | Unassigned |
| 5 | - | - | Unassigned |
| 6 | RXD- | TO PRINTER | Received Data - |
| 7 | - | - | Unassigned |
| 8 | - | - | Unassigned |

APPENDIX B 2ND TRAY MAINTENANCE

1. Parts Replacement

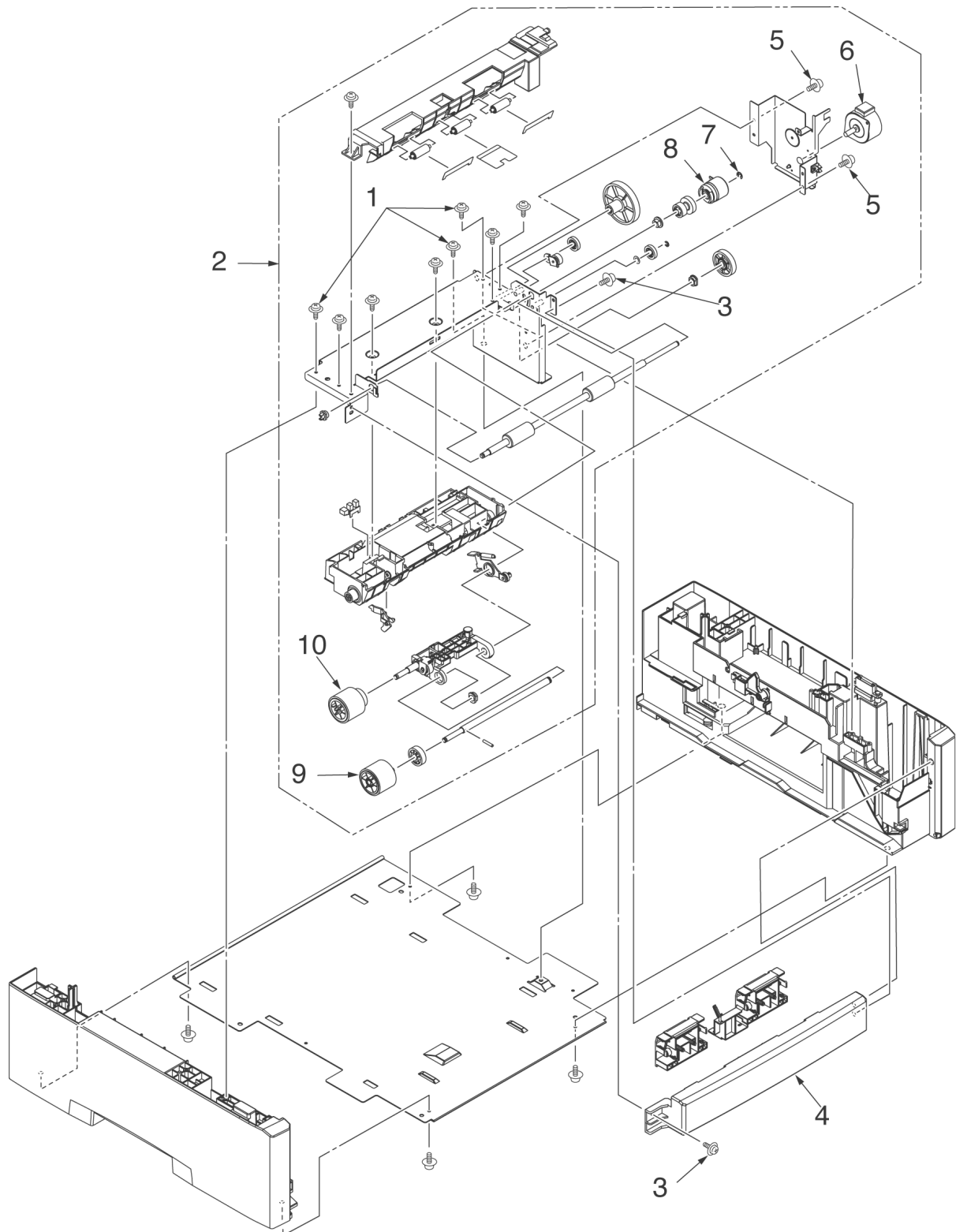
1.1 PCB

- (1) Unscrew the six screws 1 to remove the plate-top 2.
- (2) Remove the cover-side R 3.
- (3) Remove the connectors (at five places), then uninstall the board 4.
- (4) Remove the cover - 2nd tray 5.

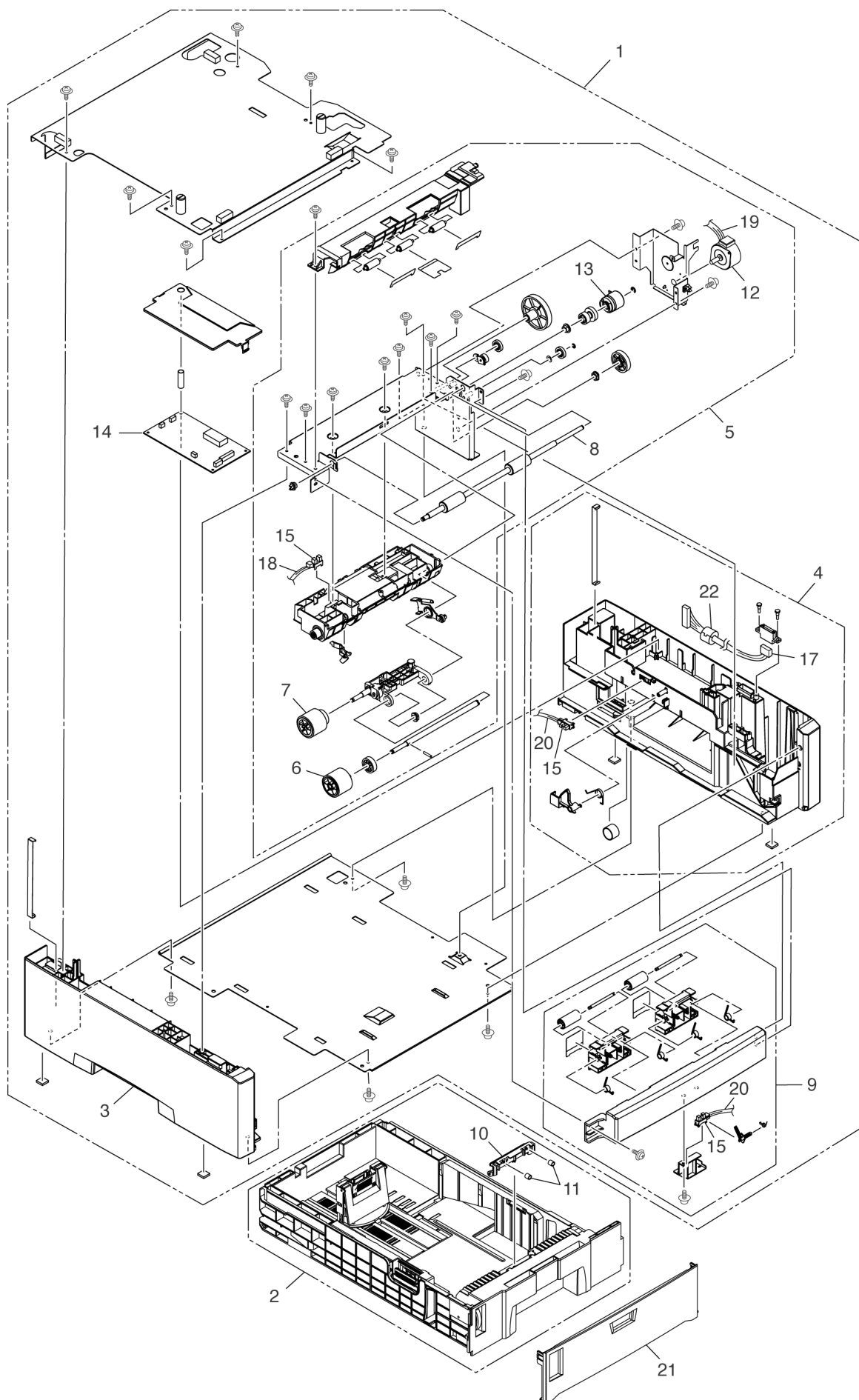


1.2 Frame Assy- Hopping

- (1) Remove the PCB (see section 1.1).
- (2) Remove the three screws 1 to uninstall the hopping assy 2.
- (3) Unscrew the two screws 3 to remove the cover assy - front 4.
- (4) Unscrew the two screws 5 to remove the motor 6.
- (5) Remove the E ring 7 to remove the clutch 8.
- (6) Remove the roller assy - hopping 9.
- (7) Remove the roller assy - feed 10.



2. PARTS LIST



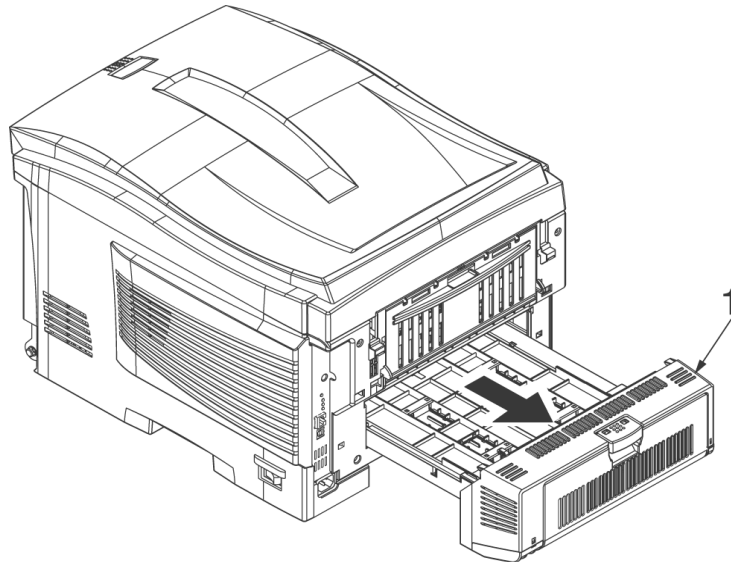
| No. | Parts No. | Name | Q'ty /Unit | Remarks |
|-----|-----------|------------------------|------------|------------------------------------|
| 1 | 42158504 | Second Tray Unit | 1 | Packed in box. |
| | 42158501 | Second Tray Unit (ODS) | 1 | Packed in box. |
| | 42158502 | Second Tray Unit (OEL) | 1 | Packed in box. |
| | 42158503 | Second Tray Unit (AOS) | 1 | Packed in box. |
| 2 | 42139801 | Cassette Assy | 1 | |
| 3 | 42136601 | Guide Assy-Cassette-L | 1 | |
| 4 | 42136801 | Guide Assy-Cassette-R | 1 | |
| 5 | 42137101 | Frame Assy-Hopping | 1 | |
| 6 | 42052601 | Roller Assy-Hopping | 1 | |
| 7 | 40313201 | Roller Assy-Feed | 1 | |
| 8 | 41400001 | Shaft-Roller | 1 | |
| 9 | 42138601 | Cover-Assy-Front | 1 | |
| 10 | 41438401 | Frame-Separation Assy | 1 | SA2-0088 |
| 11 | 41439401 | Spring-Separation | 2 | |
| 12 | 42058201 | Motor-Registration | 1 | |
| 13 | 42197702 | Feeder Cluch | 1 | |
| 14 | 41780308 | Board-V7X | 1 | |
| 15 | 40135301 | Photo Interrupter | 3 | |
| 16 | | Connector-Plug | 1 | V7X-Plug |
| 17 | 42142201 | Connection Cord | 1 | V7X-P-End |
| 18 | 42141102 | Connection Cord | 1 | V7X-Motor |
| 19 | 42141704 | Connection Cord | 1 | SA2-0072 |
| 20 | 42142802 | Connection Cord | 1 | V7X-Paper Loading and 1st-Tray SNS |
| 21 | 42145401 | Cover-2nd Tray | 1 | |
| 22 | | Core | 1 | SA2-0087 |

APPENDIX C DUPLEX UNIT MAINTENANCE

1. Parts Replacement

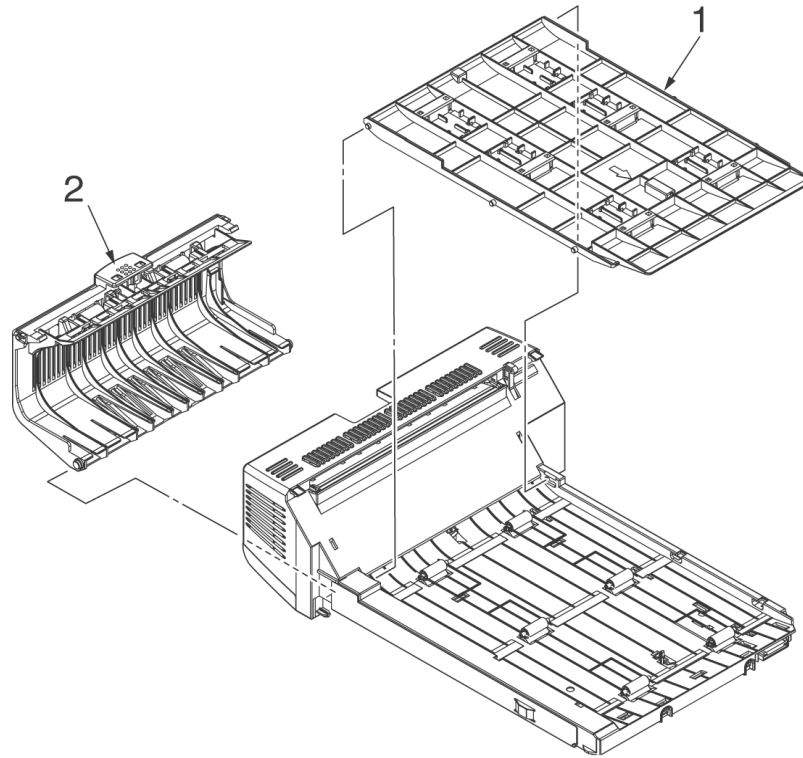
1.1 Duplex Unit

- (1) Slide out the duplex unit 1.



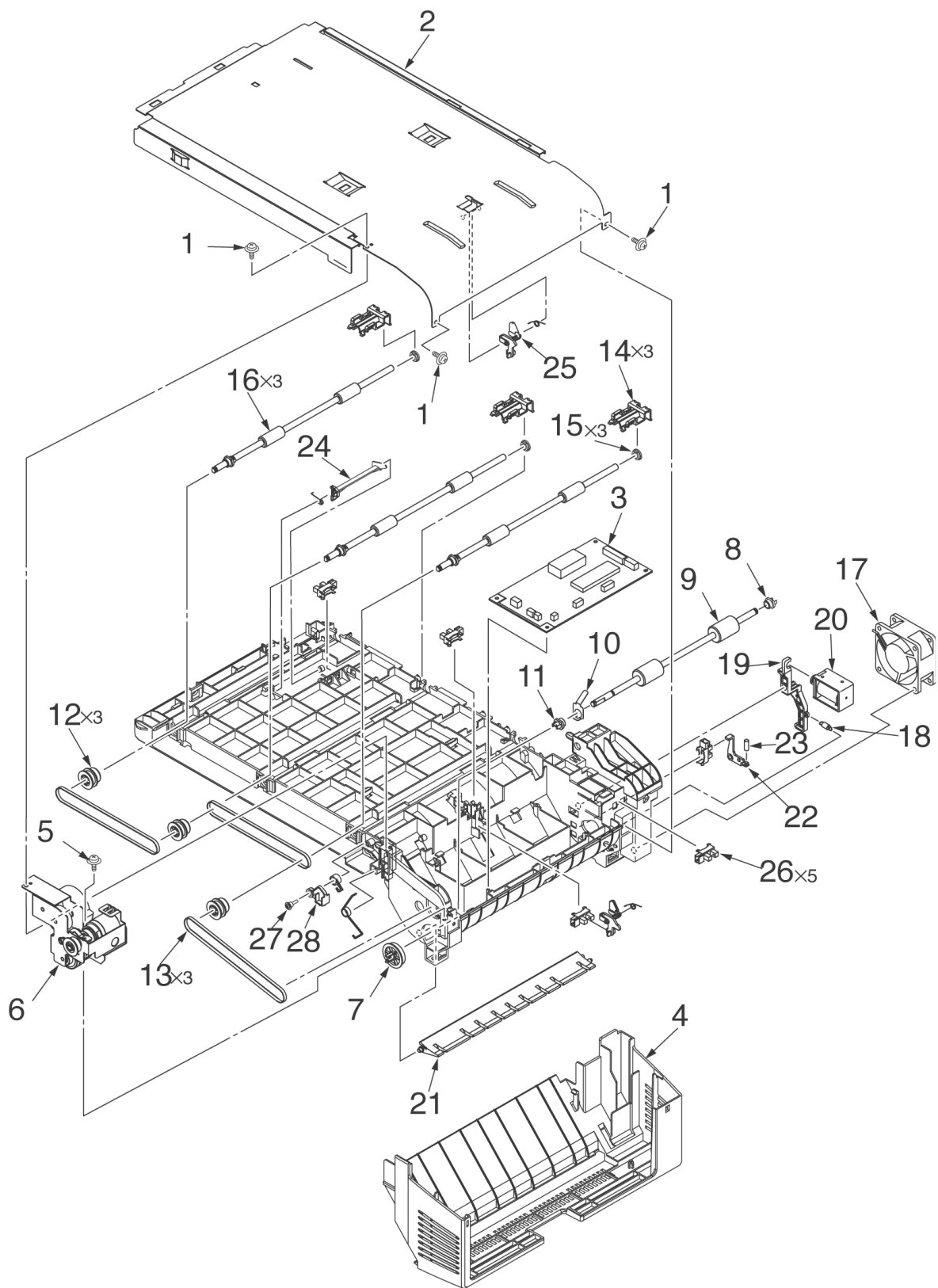
1.2 Upper Assy / Rear Assy

- (1) Remove the duplex unit (see section 2.2.20).
- (2) Warming the upper assy 1, detach it.
- (3) Warming the rear assy 2, detach it.

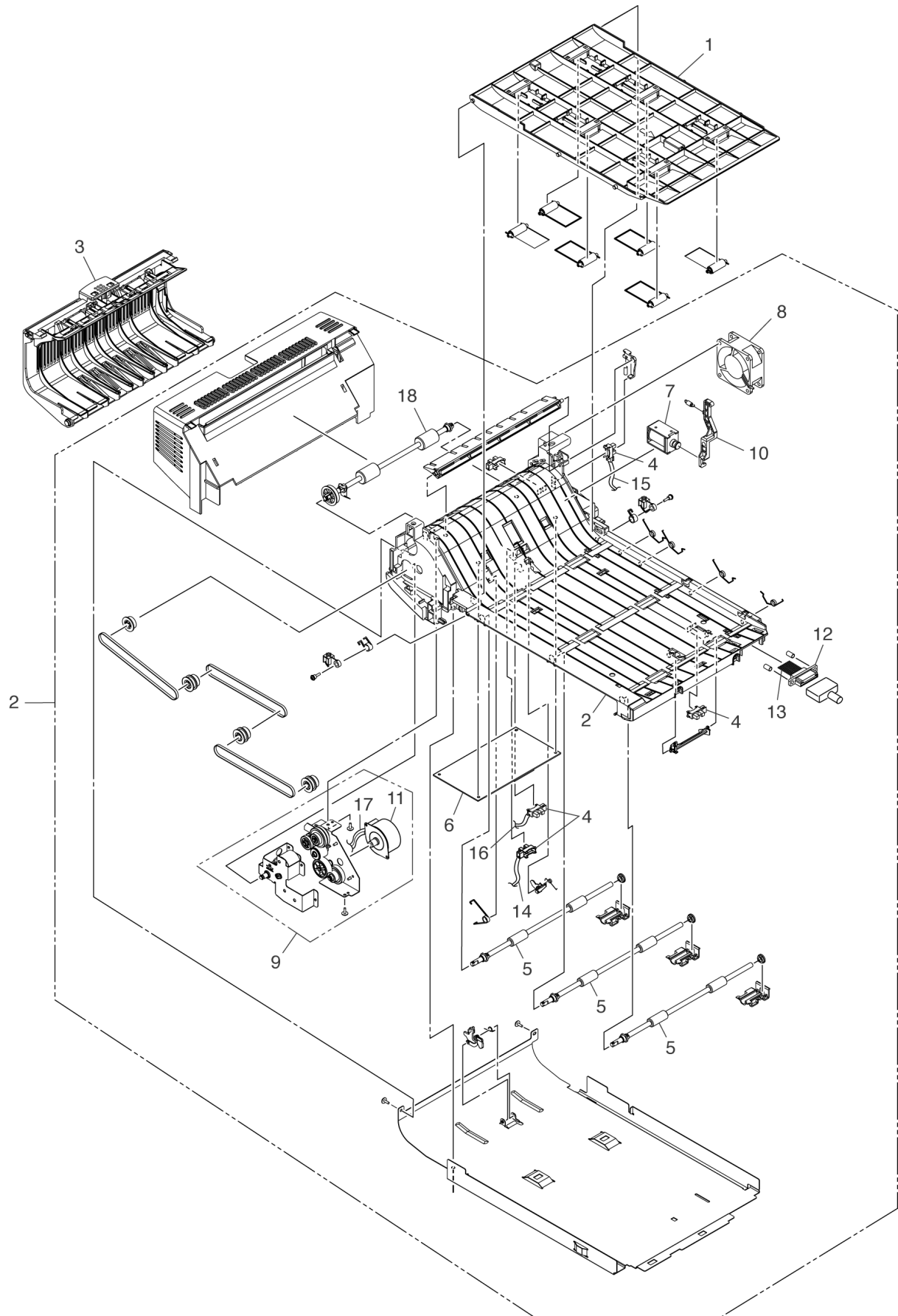


1.3 Duplex Transport Assy

- (1) Turn over the duplex transport assy.
- (2) Unscrew the three screws 1 to remove the plate 2.
- (3) Make connector removal and claw disengagement to remove the PCB-V7X 3.
- (4) Disengage and remove the cover 4.
- (5) Unscrew the screw 5 to remove the motor assy 6.
- (6) Remove the gear 7 and the bushing 8 to remove the roller 9. Then the earth 10 and the bushing 11 become detached.
- (7) Remove the pulleys 12. The mini-pitch belts 13 become detached together with the pulley.
- (8) Remove the holders 14 and the bushings 15 to remove the rollers 16. The earth spring becomes detached together with each roller.
- (9) Remove the fan 17.
- (10) Remove the spring 18 to remove the solenoid 19.
- (11) Release claw engagement to remove the solenoid 20.
- (12) Remove the lever 21. The lever 22 and the spring 23 become detached together with the lever 21.
- (13) Remove the actuators 24 and 25.
- (14) Remove cable connection and then, by claw warping, detach the five transport sensors 26.
- (15) Unscrew the screw 27 to remove the lock lever 28. Then the spring becomes detached.



2. PARTS LIST



| No. | Parts No. | Name | Q'ty /Unit | Remarks |
|-----|-----------|-------------------|------------|------------------------|
| 1 | 42160301 | Frame-Assy-Upper | 1 | |
| 2 | 42160401 | Frame-Assy-Lower | 1 | |
| 3 | 42160501 | Frame-Assy-Rear | 1 | |
| 4 | 40135301 | Photo-Interrupter | 5 | |
| 5 | 42194801 | Roller-Feed (H) | 3 | |
| 6 | 41780309 | Board-V7X | 1 | |
| 7 | 42058302 | Solenoid | 1 | |
| 8 | 42396201 | Motor-Fan | 1 | |
| 9 | 42160601 | Gear-Assy | 1 | |
| 10 | 42162001 | Gear-Assy-Clutch | 1 | |
| 11 | 42058201 | Motor-Regist | 1 | |
| 12 | | Connector-Plug | 1 | |
| 13 | 42142601 | Connection-Cord | 1 | V7X-Plug |
| 14 | 42142801 | Connection-Cord | 1 | V7X-Front and Rear SNS |
| 15 | 42142701 | Connection-Cord | 1 | V7X-In and Cover SNS |
| 16 | 42141104 | Connection-Cord | 1 | V7X-Bottom SNS |
| 17 | 42141705 | Connection-Cord | 1 | V7X-Motor |
| 18 | 42194701 | Roller-Feed (Rv) | 1 | |