KONICA MINOLTA

magicolor® 3300

Service Manual

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Introduction

1. About this manual

This manual is a standard service manual of Xerox International Partners containing information required for maintenance of this laser printer (standard specifications).

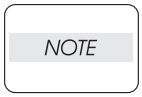
This manual is intended for use by OEMs under a contract with Xerox International Partners when they provide maintenance services for this laser printer or when they prepare maintenance data. It is prohibited to use this manual for other objects.

2. Marks giving caution

Maintenance operations requiring special cautions or additional information to descriptions of this manual are presented as “Warning”, “Caution”, or “Note”, according to their nature.

If instructions are not observed, death or serious injury may be caused.

If instructions are not observed, injuries of workers or physical damages to assets (including this laser printer) may result.



Particularly important essentials for procedures, steps, rules, and others.

Reference ***Incidental information to descriptions.***

3. Related documents

▼ Instruction manuals (standard manuals)
Describe operation and handling of this laser printer.

▼ Performance specifications
Describe in detail various specifications of this laser printer.
(In the event of discrepancy between this manual and the performance specifications, the performance specifications shall take preference.)

▼ Video interface specifications
Detailed video interface specifications for this laser printer

▼ Spare parts list
Information on maintenance parts (spare parts) for this laser printer

4. Safety

To prevent possible accidents during maintenance operation, you should observe strictly the “Warning” and “Caution” information in this manual.
Dangerous operations and operations out of range of this manual should be absolutely avoided.
Generally various processes not covered by this manual may be required in actual operation, which should be performed carefully always giving attention to safety.

4.1 Power source

Keep the power supply off during maintenance operation to prevent electric shock, burns and other damages. Keep the power plug disconnected during the maintenance operation.
If the power supply should be kept connected for measurement of voltage or other similar reasons, sufficient care should be given to prevent electric shock, by following the procedures of this manual.

WARNING

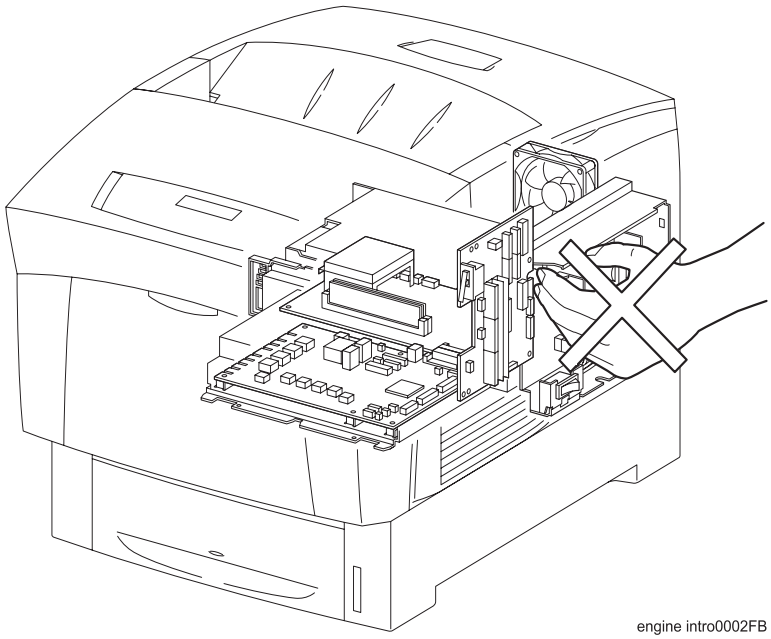
While the printer is ON, never touch live parts if not required absolutely.

WARNING

Power is supplied to the power switch / inlet (LVPS ASSY) even while the printer is off. Never touch its live components.

WARNING

Do not touch live parts unless otherwise specified.



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4.2 Driving units

When servicing gears or other driving units, be sure to turn them OFF and plug off. Drive them manually when required.

Never touch the gears or other driving units while the printer is running.

4.3 High-temperature units

When servicing high-temperature units (securing unit, etc.), be sure to turn them OFF to prevent burns, injuries and other troubles, remove the power plug and start service processes after they have cooled down enough.

Immediately after completion of operation, they are still hot. Start services after more than 40 minutes.

4.4 Laser beams

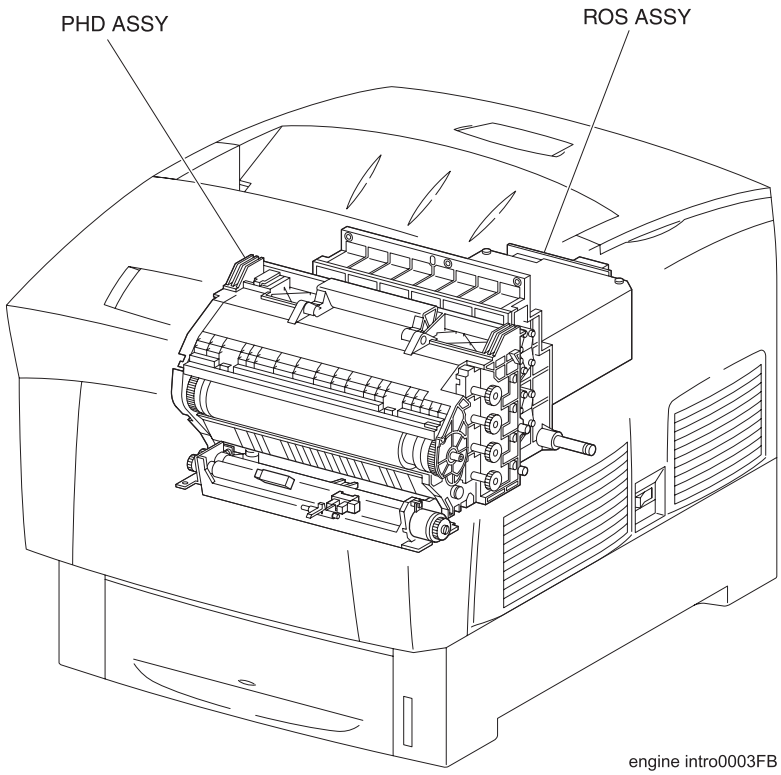
WARNING

•If your eyes are exposed to laser beams, you may lose your eyesight.
•Never open the cover if warning label for laser beams is attached there.
•Before disassembling and reassembling this laser printer, be sure to turn it OFF.
•When servicing this laser printer while it is running, be sure to follow the procedures specified in this manual.
•You should understand the features of the laser beams which are capable of having an injurious action on the human body, not to extend the danger over the workers as well as other people around the printer.

NOTE

Laser beams have features as follows:
•Frequencies are smaller in width than other beams (sun and electric bulbs) and phases are uniform so that high monochromatic and convergence performance can be obtained and thin beams of light can reach places at a long distance.
•Due to the high convergence, beams are concentrated in high density and high temperature, which is dangerous to human body.

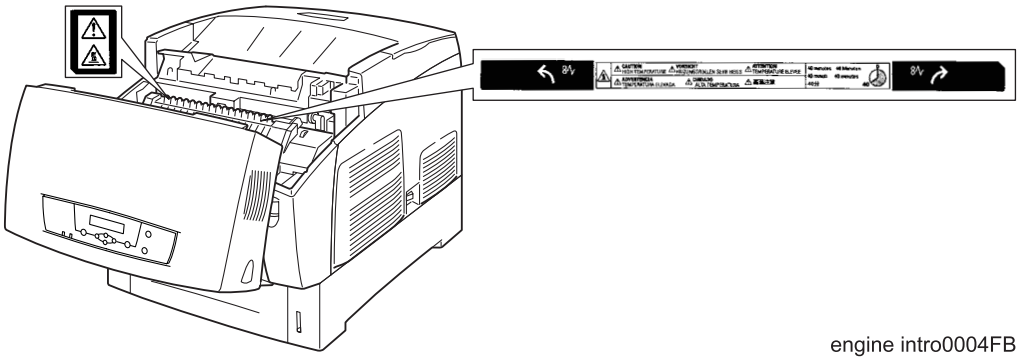
Reference: Laser beams of this laser printer is invisible rays which you cannot see.



4.5 Warning/caution labels

Warning labels and caution labels are attached to this laser printer to prevent accidents. Check those labels for their peeling or stain when servicing the printer.

4.5.1 Caution label for high-temperature units



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Cautions for operation

Contents of this document may be subjected to modification without previous notice.

Xerox International Partners will assume not any responsibilities for accidental or incidental damages resulting from technical or editorial errors or omission in this manual, issue of this manual, execution of description in this manual, or use of this manual.

Unpacking the Printer

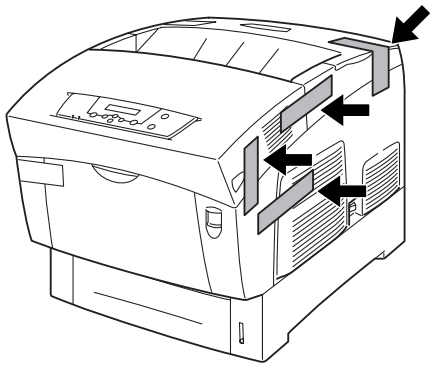
CAUTION

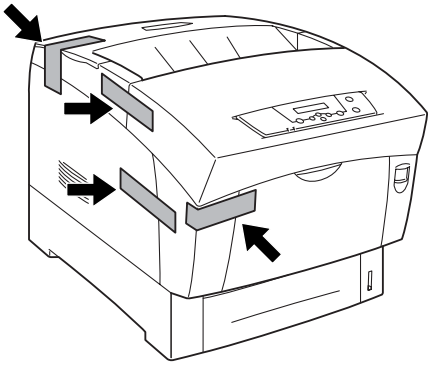
The printer must be carried horizontally with two or more persons.

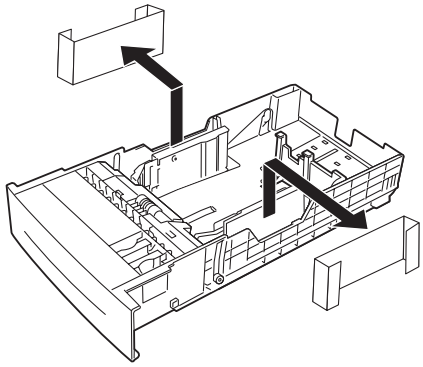
CAUTION

Extreme care must be taken to avoid personal injuries

Check visually the printer for evidence of any damages.
Peel all tapes off the printer.
Remove protection parts (2 pieces) from the paper tray.







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Contents

Chapter 1 Troubleshooting

NOTE

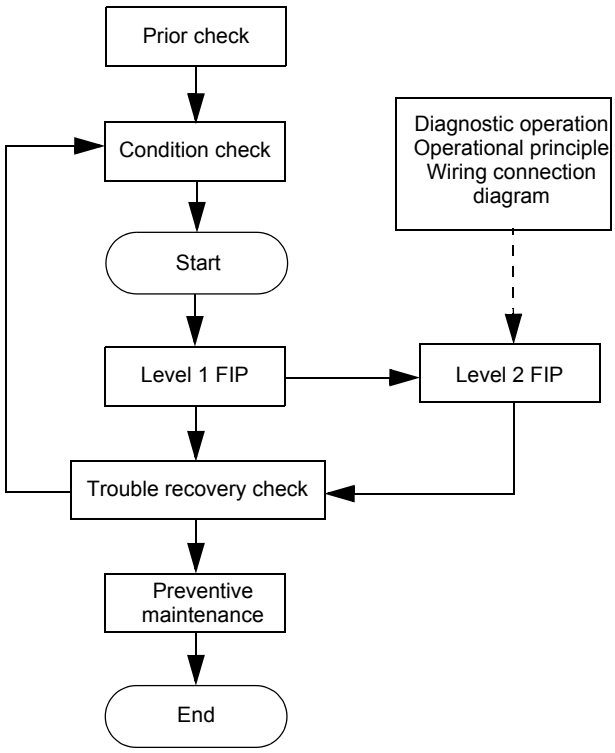
Troubleshooting in this manual assumes use of Diag. tools (maintenance tools). However, the troubleshooting allows for the case where the Diag tools are not used. You can correct troubles according to these troubleshooting procedures after understanding them well.

1. Progressing with the Troubleshooting

After making sure of actual condition of a trouble, proceed with the troubleshooting process efficiently making use of the Fault Isolation Procedure (FIP), Operation of Diag. tools (Chapter 2), Wire connecting diagram (Chapter 7), and Principle of operation (Chapter 6).

1.1 Flow of Troubleshooting

Flow of the troubleshooting is as follows:



1.2 Preparatory Requirements

Be sure to check the following items before starting the troubleshooting procedures:

1) Voltage of the power supply is within the specifications (measure the voltage at the electric outlet).

2) Power cord is free from breakage, short-circuit, disconnected wire, or incorrect connection in the power cord.

3) The laser printer is properly grounded.

4) The laser printer is not installed at a place subjected to too high temperature, too high humidity, too low temperature, too low humidity or rapid change of temperature.

5) The laser printer is not installed close to water service, humidifier, heat generating unit, or fire, in very dusty place, or a place exposed to air flow from the air conditioning system.

6) The laser printer is not installed in a place where volatile gas or inflammable gas is generated.

7) The laser printer is not installed under direct sunbeams.

8) The laser printer is installed in a well-ventilated place.

9) The laser printer is installed on a stout and stable plane.

10) Paper used meets specifications (standard paper is recommendable).

11) The laser printer is handled properly.

12) Parts which should be periodically replaced are replaced each time when specified number of sheets have been printed.

1.3 Cautions for Service Operations

1) Be sure to remove the power cord except when it is specifically required.

If the printer is kept ON, never touch the conductive parts while it is not specifically required.
The power switch/inlet of LVPS is live even while the power supply is cut off. Never touch the live parts.

2) When checking some parts with covers removed and with the interlock and safety and power switches ON, remove the connector (P/J151) on the ROS ASSY except when it is specifically required.

When checking some parts with covers removed and with the interlock and safety and power switches ON, laser beams may be irradiated from the ROS ASSY. Since it is dangerous, be sure to remove the connector (P/J151) while it is not required.

3) When checking some parts with the left cover removed and power ON, be sure to remove the connector (P/J5011) on the HVPS while it is not required.

When checking some parts with the left cover removed and power ON, high voltage may be applied by the HVPS. Be sure to remove the connector (P/J5011) on the HVPS. When connecting the connector (P/J5011) on the HVPS according to the instructions of the FIP, never touch the HVPS and parts of high voltage.

4) When using Diag. tools or other tools of high voltage, be sure to keep them covered except when otherwise specified.

When using Diag.Tool or other tools of high voltage, never touch parts of high voltage. When using Diag.Tool or other tools of high voltage, be sure to follow the procedure of this manual.

5)When operating the driving units using the Diag or other tools, be sure to keep them covered unless otherwise specified.

When operating the driving units using the Diag or other tools, never touch the driving units. When operating the driving units using Diag or other tools, be sure to observe the procedures in this manual.

6) When touching hot parts, be careful not to get burnt.

7) Workers should wear a wrist band or the like to remove static electricity from their body, grounding their body while working.

1.4 Cautions for FIP Use

1) It is assumed in the FIP that the printer controller (CONTROLLER PWB) is normally functioning. If any trouble cannot be corrected by troubleshooting, replace the printer controller with a normal one and check for proper operation again.
   If the trouble is not still corrected, replace the major parts and then related parts in succession and confirm according to the procedure of the “Initial check” and “Major check parts”.

2) When troubleshooting according to the FIP, normal HBN NCU PWB, PHD ASSY or other parts may be necessary for isolation of failed parts. Prepare them in advance.

3) In the initial check according to the FIP, check only items which can be simply checked.

4) In the initial check according to the FIP, check the constitutive parts of the major check parts and related parts, as well as major check parts.

5) When working with the printer, Be sure to remove the power cord except when required specifically. Never touch live parts if not required, while the power cord is connected.

6) Connector condition is denoted as follows:
   [P/J12]’Connector (P/J12) is connected.
   [P12]’Plug side with the connector (P/J12) removed (except when attached directly to the board).
   [J12]’Jack side with the connector (P/J12) removed (except when attached directly to the board).

7) [P/J1-2PIN <=> P/J3-4PIN] in the FIP means measurement with the plus side of the measuring instrument connected to [P/J1] and the minus side to [4PIN] of [P/J3].

8) [P/J<=>P/12] in the FIP means measurement for all terminals corresponding between [P/J1] and [P/J2] referring to “Wire connecting diagram”.

9) In [P/J1-2PIN <=> P/J3-4PIN] in the FIP where voltage is measured, [P/J3-4PIN] on the rear minus side is always at the AG (analog ground), SG (signal ground), or RTN (return).
   Therefore, after checking of proper continuity between AGs, SGs, or RTNs respectively, the rear minus side can be connected to the PIN of AG, SG or RTN instead of [P/J3-4PIN].
   However, care should be taken not to mistake since [AG], [SG], and [RTN] are not on the same level.

10) Measure the voltage of small connectors with the special tool. Handle the tool with care, as the leading edge of the tool is pointed.

11) When measuring the voltage, set the PDH ASSY, FUSER ASSY, BRT ASSY and paper tray, close the FRONT COVER ASSY and power ON if not required specifically.

12) Numerical values in the FIP are only for standard. If numerical values are approximate, they should be considered permissible.

13) Parts which are always removed to check as indicated in the FIP and procedures for that purpose are not specifically referred to here. They should be handled carefully.

14) “Replacement” in the FIP indicates replacement of parts which are considered to be the source of trouble to be checked after replacing those parts, assemblies containing them, or parts (HIGH ASSY).

15) In the FIP, the paper pick-up unit by means of the paper tray at the lower part of the printer is referred to as “try 1", the first level of the paper pick-up unit feeder unit as “try 2", and the second level as the “tray3”.

16) In the FIP, existence and non-existence of Diag tools (maintenance tools,) are distinguished in some cases. Correct troubles according to the instructions in the FIP.

17) In the FIP, procedures are differentiated depending on specifications. Correct troubles according to the instructions in the FIP.

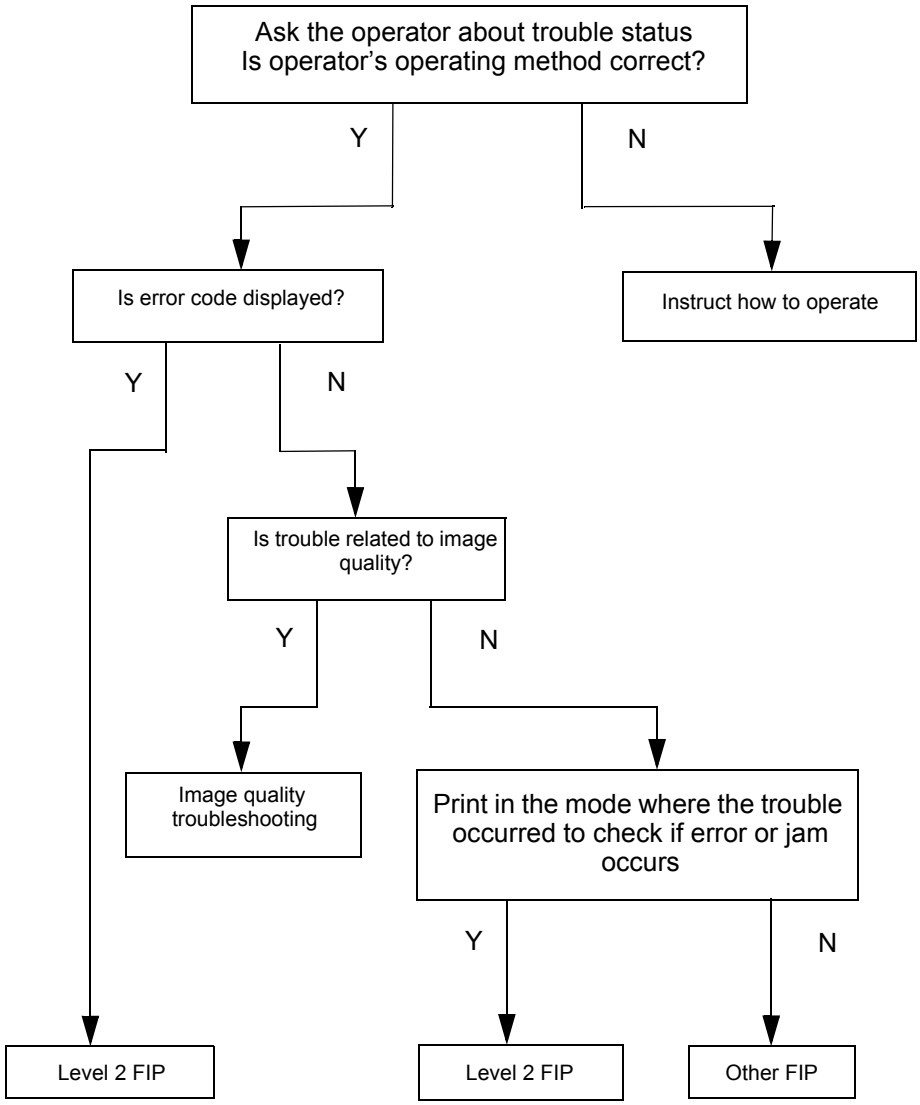
18) For optional parts, some troubleshooting procedure may follow the manual for those options, of which you should take note.
Keep those manuals for the optional parts when required.

2. Level 1 FIP

2.1 Level 1 FIP

The level 1 FIP is the first step for trouble diagnosis. The level 1 FIP isolates the presence of various troubles including error codes, and the level 2 FIP provides a guide for proceeding of the troubleshooting.

2.2 Flow of Level 1 FIP



3. Level 2 FIP

3.1 Level 2 FIP

The Level 2 FIP is the trouble diagnostic procedure to sort various troubles in addition to the error codes. In the troubleshooting, executing the steps given in the FIP or checking procedure allows you to find out a cause of trouble in a short time.

3.2 Error / Status Code List

This error / status cord list is based on the interface specifications.

NOTE

Since the error / status codes are represented by the printer controller on the printer, display on the printer is different from the one shown below.

Error / status code	Name of error Contents of error	Reference FIP
51h,C1h-status 1-0	Yellow Toner Cartridge Detached (Yellow Toner Cartridge Missing) Cartridge sensor detected no-toner cartridge.	FIP-1, page 40
51h,C1h-status 1-1	Magenta Toner Cartridge Detached (Magenta Toner Cartridge Missing) Cartridge sensor detected no-toner cartridge.	FIP-2, page 41
51h,C1h-status 1-2	Cyan Toner Cartridge Detached (Cyan Toner Cartridge Missing) Cartridge sensor detected no-toner cartridge.	FIP-3, page 42
51h,C1h-status 1-3	Black Toner Cartridge Detached (Black Toner Cartridge Missing) Cartridge sensor detected no-toner cartridge.	FIP-4, page 43
51h,C1h-status 1-4	PHD Detached (Imaging Unit Missing) Machine detected no-PHD ASSY.	FIP-5, page 44
51h,C1h-status 1-5	BTR Detached (Transfer Unit Missing) Machine detected no-BTR ASSY.	FIP-6, page 45
51h,C1h-status 1-6	Fuser Detached (Fuser Unit Missing) Machine detected no-FUSER ASSY.	FIP-7, page 46
51h,C1h-status 2-0	CRUM ID Error (TC-Y) (Call for Service CRUM Error Y TC) ASSY ID is not as recorded.	FIP-50, page 93
51h,C1h-status 2-1	CRUM ID Error (TC-M) (Call for Service CRUM Error M TC) ASSY ID is not as recorded.	FIP-50, page 93
51h,C1h-status 2-2	CRUM ID Error (TC-C) (Call for Service CRUM Error C TC) ASSY ID is not as recorded.	FIP-50, page 93
51h,C1h-status 2-3	CRUM ID Error (TC-K) (Call for Service CRUM Error K TC) ASSY ID is not as recorded.	FIP-50, page 93
51h,C1h-status 2-4	CRUM ID Error(PHD) (Invalid ID Imaging Unit) PHD ASSY ID is not as recorded.	FIP-8, page 47
51h,C1h-status 2-6	CRUM ID Error (Fuser) (Invalid ID Fuser Unit) Fuser ASSY ID is not as recorded.	FIP-51, page 94

Error / status code	Name of error Contents of error	Reference FIP
54h,C4h-0	Media Type Mismatch (Media Type Mismatch) 1. Plain paper was detected in the printing by selecting OHP. 2. OHP was detected in the printing by selecting plain paper. 3. Detected OHP while power is on or interlock is closed.	FIP-9, page 48
54h,C4h-1	Feed Jam (Media Feed Jam) Regi sensor cannot detect paper within specified time.	FIP-10, page 49
54h,C4h-2	Regi Jam (Media Jam Registration) 1. Regi sensor cannot detect passage of paper within specified time. 2. Regi Sensor detected a paper while power is on or interlock is closed.	FIP-11, page 52
54h,C4h-3	Fuser Jam (Media Jam Fuser) 1. Exit sensor cannot detect passage of paper within specified time. 2. Exit Sensor detected a paper while power is on or interlock is closed.	FIP-12, page 53
54h,C4h-4	Duplex Jam (Media Jam Duplex) 1. Duplex jam sensor cannot detect passage of paper within specified time. 2. Duplex Jam Sensor detected a paper while power is on or interlock is closed.	FIP-13, page 54
55h,C5h-status 1-0	ROS Failure (Call for Service ROS Motor) 1. Laser power down. 2. SOS signal not detected.	FIP-14, page 56
55h,C5h-status 1-1	Fuser Failure (Call for Service Fuser Failure) - Fuser Lamp kept lighting for 180 seconds or more. - Fuser Lamp keeps lighting for 7 seconds or more, and temperature of the edge of Roll doesn't change during lighting. - Detected 250 degrees or more at the edge of Roll. - Detected 110 degrees or less at the edge of Roll while printing. - Detected that a temperature sensor at the edge of Roll was disconnected. - Detected -20 degrees or less at the edge of Roll. - Detected 150 degrees or more at the side of Fuser. - Detected 245 degree or more at the midsection of Roll. - Detected that a temperature sensor at the midsection of Roll was disconnected. - Detected defection of a circuit which is for a temperature sensor at the midsection of Roll, and increases the potential difference. - [a temperature sensor at the midsection of Roll - a temperature sensor at the edge of Roll] detected 90 degrees or more. - [a temperature sensor at the edge of Roll - a temperature sensor at the midsection of Roll] detected 90 degree or more. - Detected [controlled temperature - 30 degrees] or less while printing. - After controlling Fuser was started, Fuser doesn't become ready in a specified amount of time. (Setting time changes depending on the temperature at the midsection of Roll when controlling Fuser was started. maximum is 70 seconds.) - Cool Down Mode was continued for 80 seconds or more.	FIP-15, page 57

Error / status code	Name of error Contents of error	Reference FIP
55h,C5h-status 1-2	NV-RAM Error (Call for Service NV-RAM Error) Error of NV-RAM	FIP-16, page 58
55h,C5h-status 1-3	CTD Sensor Error (Call for Service ADC Sensor Error) Power down of CTD sensor	FIP-17, page 59
55h,C5h-status 1-4	Fan Motor Failure (Call for Service Fan Motor Error) Failure of Fan Motor	FIP-18, page 60
55h,C5h-status 1-5	Low Density Error (Call for Service Low Density) Toner density is low.	FIP-19, page 62
55h,C5h-status 1-6	Firmware Error (Call for Service Firmware Error) Error of software	FIP-20, page 63
55h,C5h-status 1-7	Environment Sensor Error (Call for Service ENV Sensor Error) 1. The temperature over +100°C or below -20°C was detected. 2. The humidity over 100% was detected.	FIP-21, page 64
55h,C5h-status 2-0	CRUM Error (TC-Y) (Call for Service Invalid ID Y TC) CRUM (TC-Y) Communication Error	FIP-52, page 95
55h,C5h-status 2-1	CRUM Error (TC-M) (Call for Service Invalid ID M TC) CRUM (TC-M) Communication Error	FIP-52, page 95
55h,C5h-status 2-2	CRUM Error (TC-C) (Call for Service Invalid ID C TC) CRUM (TC-C) Communication Error	FIP-52, page 95
55h,C5h-status 2-3	CRUM Error (TC-K) (Call for Service Invalid ID x K TC) CRUM (TC-K) Communication Error	FIP-52, page 95
56h,C6h-0	Yellow Toner Empty (Yellow Toner Empty) Yellow toner emptied.	FIP-22, page 65
56h,C6h-1	Magenta Toner Empty (Magenta Toner Empty) Magenta toner emptied.	FIP-23, page 66
56h,C6h-2	Cyan Toner Empty (Cyan Toner Empty) Cyan toner emptied.	FIP-24, page 67
56h,C6h-3	Black Toner Empty (Black Toner Empty) Black toner emptied.	FIP-25, page 68
56h,C6h-4	PHD Life Over (Replace Imaging Unit) PHD ASSY life expired.	FIP-26, page 69
56h,C6h-5	BTR Life Over (Replace Transfer Unit) BTR ASSY life expired.	FIP-27, page 70
56h,C6h-6	Fuser Life Over (Replace Fuser Unit) FUSER ASSY life expired.	FIP-28, page 71
57h,C7h-0	Y Toner Tape Staying (Reinstall Y TC and Remove Seal) Y Toner Tape not Pulled out Error	FIP-53, page 96
57h,C7h-1	M Toner Tape Staying (Reinstall M TC and Remove Seal) M Toner Tape not Pulled out Error	FIP-53, page 96
57h,C7h-2	C Toner Tape Staying (Reinstall C TC and Remove Seal) C Toner Tape not Pulled out Error	FIP-53, page 96
57h,C7h-3	K Toner Tape Staying (Reinstall K TC and Remove Seal) K Toner Tape not Pulled out Error	FIP-53, page 96

Error / status code	Name of error Contents of error	Reference FIP
57h,C7h-6	CTD Sensor Dustiness (ADC Sensor Dustiness Error) CTD sensor signal level below specified value.	FIP-29, page 72
57h,C7h-7	Front Cover (Front Cover Open) Front cover open.	FIP-30, page 73
58h,C8h-0	Yellow Toner Near Empty (Yellow Toner Low) Yellow toner shortage.	FIP-31, page 74
58h,C8h-1	Magenta Toner Near Empty (Magenta Toner Low) Magenta toner shortage	FIP-32, page 75
58h,C8h-2	Cyan Toner Near Empty (Cyan Toner Low) Cyan toner shortage	FIP-33, page 76
58h,C8h-3	Black Toner Near Empty (Black Toner Low) Black toner shortage	FIP-34, page 77
58h,C8h-4	PHD Life Warning (Imaging Unit Life Low) PHD ASSY life running out.	FIP-35, page 78
58h,C8h-5	BTR Life Warning (Transfer Unit Life Low) BTR ASSY life running out.	FIP-36, page 79
58h,C8h-6	Fuser Life Warning (Fuser Life Low) Fuser life running out.	FIP-37, page 80
58h,C8h-7	CTD Sensor Dustiness (ADC Sensor Dustiness Warning) CTD sensor signal level below specified value.	FIP-38, page 81
59h,C9h-0	Paper Near Empty Paper in the paper cassette running out.	FIP-39, page 82
59h,C9h-1	Paper Empty (Put%s in%s Bin) Paper in the paper cassette exhausted.	FIP-40, page 83
59h,C9h-2	Upper Cassette Detached (Adjust Input Bin) Paper cassette dislocated.	FIP-41, page 84
5Ah,CAh-0	Full Stack (Output Bin Full) Delivery tray full of paper	FIP-42, page 85
5Bh,CBh-0	Yellow Toner Empty 2 (Yellow Toner Empty) Yellow toner emptied.	FIP-43, page 86
5Bh,CBh-1	Magenta Toner Empty 2 (Magenta Toner Empty) Magenta toner emptied.	FIP-44, page 87
5Bh,CBh-2	Cyan Toner Empty 2 (Cyan Toner Empty) Cyan toner emptied.	FIP-45, page 88
5Bh,CBh-3	Black Toner Empty 2 (Black Toner Empty) Black toner emptied.	FIP-46, page 89
5Bh,CBh-4	PHD Life Over 2 (Replace Imaging Unit) PHD ASSY life expired.	FIP-47, page 90
5Bh,CBh-5	BTR Life Over 2 (Replace Transfer Unit) BTR ASSY life expired.	FIP-48, page 91
5Bh,CBh-6	Fuser Life Over 2 (Replace Fuser Unit) FUSER ASSY life expired.	FIP-49, page 92

3.3 Operating / Clearing the Error / Status Code

NOTE

In the table below, “shutdown” means that control over motors, ROS ASSY, FUSER ASSY and so on is stopped after a certain time.

NOTE

In the table below, “print” means that printing is continued even if error / status code is generated.

Error / status code Diag Error Message (Display Error Message)	Operation
	Method of clear
51h,C1h-status 1-0 Yellow Toner Cartridge Detached (Yellow Toner Cartridge Missing	Shutdown
	Toner cartridge replacement
51h,C1h-status 1-1 Magenta Toner Cartridge Detached (Magenta Toner Cartridge Missing)	Shutdown
	Toner cartridge replacement
51h,C1h-status 1-2 Cyan Toner Cartridge Detached (Cyan Toner Cartridge Missing)	Shutdown
	Toner cartridge replacement
51h,C1h-status 1-3 Black Toner Cartridge Detached (Black Toner Cartridge Missing)	Shutdown
	Toner cartridge replacement
51h,C1h-status 1-4 PHD Detached (Imaging Unit Missing)	Shutdown
	PHD ASSY replacement
51h,C1h-status 1-5 BTR Detached (Transfer Unit Missing)	Shutdown
	BTR ASSY replacement
51h,C1h-status 1-6 Fuser Detached (Fuser Unit Missing)	Shutdown
	Power OFF/ON after replacing the FUSER ASSY
51h,C1h-status 2-0 CRUM ID Error (TC-Y) (Call for Service CRUM Error Y TC)	Shutdown
	Replace Toner Cartridge Y
51h,C1h-status 2-1 CRUM ID Error (TC-M) (Call for Service CRUM Error M TC)	Shutdown
	Replace Toner Cartridge M
51h,C1h-status 2-2 CRUM ID Error (TC-C) (Call for Service CRUM Error C TC)	Shutdown
	Replace Toner Cartridge C

Error / status code Diag Error Message (Display Error Message)	Operation
	Method of clear
51h,C1h-status 2-3 CRUM ID Error (TC-K) (Call for Service CRUM Error K TC)	Shutdown
	Replace Toner Cartridge K
51h,C1h-status 2-4 CRUM ID Error(PHD) (Invalid ID Imaging Unit)	Shutdown
	PHD ASSY replacement
51h,C1h-status 2-6 CRUM ID Error (Fuser) (Invalid ID Fuser Unit)	Shutdown
	Replace Fuser ASSY
54h,C4h-0 Media Type Mismatch (Media Type Mismatch)	Shutdown
	Power OFF/ON after removing the jam paper
54h,C4h-1 Feed Jam (Media Feed Jam)	Next paper is not picked up after a sheet of paper is delivered during operation
	Open and close the front cover after removing the jammed paper
54h,C4h-2 Regi Jam (Media Jam Registration)	Shutdown
	Open and close the front cover after removing the jammed paper
54h,C4h-3 Fuser Jam (Media Jam Fuser)	Shutdown
	Open and close the front cover after removing the jammed paper
54h,C4h-4 Duplex Jam (Media Jam Duplex)	Shutdown
	Open and close the front cover after removing the jammed paper
55h,C5h-status 1-0 ROS Failure (Call for Service ROS Motor)	Shutdown
	Power ON/OFF
55h,C5h-status 1-1 Fuser Failure (Call for Service Fuser Failure)	Shutdown
	Power ON/OFF
55h,C5h-status 1-2 NV-RAM Error (Call for Service NV-RAM Error)	Shutdown
	Power ON/OFF
55h,C5h-status 1-3 CTD Sensor Error (Call for Service ADC Sensor Error)	Shutdown
	Power ON/OFF
55h,C5h-status 1-4 Fan Motor Failure (Call for Service Fan Motor Error)	Shutdown
	Power ON/OFF
55h,C5h-status 1-6 Firmware Error (Call for Service Firmware Error)	Shutdown
	Power ON/OFF

Error / status code Diag Error Message (Display Error Message)	Operation
	Method of clear
55h,C5h-status 1-7 Environment Sensor Error (Call for Service ENV Sensor Error)	Shutdown
	Power ON/OFF
55h,C5h-status 2-0 CRUM Error (TC-Y) (Call for Service CRUM Error Y TC)	Shutdown
	Power ON/OFF
55h,C5h-status 2-1 CRUM Error (TC-M) (Call for Service CRUM Error M TC)	Shutdown
	Power ON/OFF
55h,C5h-status 2-2 CRUM Error (TC-C) (Call for Service CRUM Error C TC)	Shutdown
	Power ON/OFF
55h,C5h-status 2-3 CRUM Error (TC-K) (Call for Service CRUM Error K TC)	Shutdown
	Power ON/OFF
56h,C6h-0 Yellow Toner Empty (Yellow Toner Empty)	Shutdown
	Toner cartridge replacement
56h,C6h-1 Magenta Toner Empty (Magenta Toner Empty)	Shutdown
	Toner cartridge replacement
56h,C6h-2 Cyan Toner Empty (Cyan Toner Empty)	Shutdown
	Toner cartridge replacement
56h,C6h-3 Black Toner Empty (Black Toner Empty)	Shutdown
	Toner cartridge replacement
56h,C6h-4 PHD Life Over (Replace Imaging Unit)	Shutdown
	PHD ASSY replacement
56h,C6h-5 BTR Life Over (Replace Transfer Unit)	Shutdown
	BTR ASSY replacement
56h,C6h-6 Fuser Life Over (Replace Fuser Unit)	Shutdown
	Clearing the counter after replacing the FUSER ASSY
57h,C7h-0 Y Toner Tape Staying (Reinstall Y TC and Remove Seal)	Shutdown
	Pull out Tape

Error / status code Diag Error Message (Display Error Message)	Operation
	Method of clear
57h,C7h-1 M Toner Tape Staying (Reinstall M TC and Remove Seal)	Shutdown
	Pull out Tape
57h,C7h-2 C Toner Tape Staying (Reinstall C TC and Remove Seal)	Shutdown
	Pull out Tape
57h,C7h-3 K Toner Tape Staying (Reinstall K TC and Remove Seal)	Shutdown
	Pull out Tape
57h,C7h-6 CTD Sensor Dustiness (ADC Sensor Dustiness Error)	Print
	Open and close the front cover after cleaning the sensor
57h,C7h-7 Front Cover (Front Cover Open)	Shutdown
	Close the front cover
58h,C8h-0 Yellow Toner Near Empty (Yellow Toner Low)	Print
	Toner cartridge replacement
58h,C8h-1 Magenta Toner Near Empty (Magenta Toner Low)	Print
	Toner cartridge replacement
58h,C8h-2 Cyan Toner Near Empty (Cyan Toner Low)	Print
	Toner cartridge replacement
58h,C8h-3 Black Toner Near Empty (Black Toner Low)	Print
	Toner cartridge replacement
58h,C8h-4 PHD Life Warning (Imaging Unit Life Low)	Print
	PHD ASSY replacement
58h,C8h-5 BTR Life Warning (Transfer Unit Life Low)	Print
	BTR ASSY replacement
58h,C8h-6 Fuser Life Warning (Fuser Life Low)	Print
	Replace the FUSER ASSY and clear the counter
58h,C8h-7 CTD Sensor Dustiness (ADC Sensor Dustiness Error)	Print
	Clean the sensor and open and close the front cover
59h,C9h-0 Paper Near Empty	Print
	Replenish the paper

Error / status code Diag Error Message (Display Error Message)	Operation
	Method of clear
59h,C9h-1 Paper Empty (Put%s in%s Bin)	Print (Paper cannot be delivered from the cassette)
	Replenish the paper
59h,C9h-2 Upper Cassette Detached (Adjust Input Bin)	Print (Paper cannot be delivered from the cassette)
	Paper cassette replacement
5Ah,CAh-0 Full Stack (Output Bin Full)	Print
	Take out paper from the delivery tray
5Bh,CBh-0 Yellow Toner Empty 2 (Yellow Toner Empty)	Shutdown
	Toner cartridge replacement
5Bh,CBh-1 Magenta Toner Empty 2 (Magenta Toner Empty)	Shutdown
	Toner cartridge replacement
5Bh,CBh-2 Cyan Toner Empty 2 (Cyan Toner Empty)	Shutdown
	Toner cartridge replacement
5Bh,CBh-3 Black Toner Empty 2 (Black Toner Empty)	Shutdown
	Toner cartridge replacement
5Bh,CBh-4 PHD Life Over 2 (Replace Imaging Unit)	Shutdown
	PHD ASSY replacement
5Bh,CBh-5 BTR Life Over 2 (Replace Transfer Unit)	Shutdown
	BTR ASSY replacement
5Bh,CBh-6Fuser Life Over 2 (Replace Fuser Unit)	Shutdown
	Clearing the counter after replacing the FUSER ASSY

3.4 Error Code FIPs

FIP-1 Yellow Toner Cartridge Detached (Yellow Toner Cartridge Missing)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. Cartridge replacing condition SW TCRU ASSY (Y) replacing condition SW TCRU ASSY (Y) actuator replacing condition SW TCRU ASSY (Y) connector replacing condition	Replace the parts concerned	With tool Go to step [2] Without tool Go to step [3]
2	Checking SW TCRU ASSY Does SW TCRU ASSY function normally? Using diagnostic tool, check by Digital Input Test.	Replace PWBA MCU HBN	Go to step [3]
3	Checking PWBA DRV HBN for signal Is P/J51-13PIN <=> P/J51-14PIN 0VDC?	Go to step [7]	Go to step [4]
4	Checking SW TCRU ASSY (Y) for signal Is P/J342-5PIN<=>P/J342-4PIN 0VDC?	Go to step [6]	Go to step [5]
5	Checking SW TCRU ASSY (Y) for continuity Is P342-5PIN <=> P342-4PIN of SW TCRU ASSY (Y) continuous normally?	Go to step [6]	Replace PWBA CRUM READER
6	Checking HARNESS ASSY TNR4 for continuity Is J51 <=> J342 continuous normally?	Go to step [7]	Replace HARNESS ASSY TNR4
7	Checking PWBA DRV HBN for signal Is P/J42-4PIN<=>P/J42-14PIN 0VDC?	Go to step [8]	Replace PWB HBN DRV
8	Checking PWBA MCU HBN for signal Is P/J12-27PIN <=> P/J12-17PIN of PWBA MCU HBN 0VDC?	Replace PWBA MCU HBN	Go to step [9]
9	Checking HARNESS ASSY DRV2-2 for continuity Is J12 <=> J42 continuous normally?	Replace PWBA MCU HBN	Replace HARNESS ASSY DRV2-2

FIP-2 Magenta Toner Cartridge Detached (Magenta Toner Cartridge Missing)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. Cartridge replacing condition SW TCRU ASSY (M) replacing condition SW TCRU ASSY (M) actuator replacing condition SW TCRU ASSY (M) connector replacing condition	Replace the parts concerned	With tool Go to step [2] Without tool Go to step [3]
2	Checking SW TCRU ASSY Does SW TCRU ASSY function normally? Using diagnostic tool, check by Digital Input Test.	Replace PWBA MCU HBN	Go to step [3]
3	Checking PWBA DRV HBN for signal Is P/J51-13PIN <=> P/J51-15PIN 0VDC?	Go to step [7]	Go to step [4]
4	Checking SW TCRU ASSY(M) for signal Is P/J342-5PIN <=> P/J342-3PIN 0VDC?	Go to step [6]	Go to step [5]
5	Checking SW TCRU ASSY (M) for continuity Is P342-5PIN <=> P342-3PIN of SW TCRU ASSY (M) continuous normally?	Go to step [6]	Replace PWBA CRUM READER
6	Checking HARNESS ASSY TNR4 for continuity Is J51 <=> J342 continuous normally?	Go to step [7]	Replace HARNESS ASSY TNR4
7	Checking PWBA DRV HBN for signal Is P/J42-5PIN <=> P/J42-14PIN 0VDC?	Go to step [8]	Replace PWB HBN DRV
8	Checking PWBA MCU HBN for signal Is P/J12-26PIN <=> P/J12-17PIN of HBN MCU WITHCPU PWB 0VDC?	Replace PWBA MCU HBN	Go to step [9]
9	Checking HARNESS ASSY DRV2-2 for continuity Is J12 <=> J42 continuous normally?	Replace PWBA MCU HBN	Replace HARNESS ASSY DRV2-2

FIP-3 Cyan Toner Cartridge Detached (Cyan Toner Cartridge Missing)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. Cartridge replacing condition SW TCRU ASSY (C) replacing condition SW TCRU ASSY (C) actuator replacing condition SW TCRU ASSY (C) connector replacing condition	Replace the parts concerned	With tool Go to step [2] Without tool Go to step [3]
2	Checking SW TCRU ASSY Does SW TCRU ASSY function normally? Using diagnostic tool, check by Digital Input Test.	Replace PWBA MCU HBN	Go to step [3]
3	Checking PWBA DRV HBN for signal Is P/J51-13PIN <=> P/J51-16PIN 0VDC?	Go to step [7]	Go to step [4]
4	Checking SW TCRU ASSY (C) for signal Is P/J342-5PIN <=> P/J342-2PIN 0VDC?	Go to step [6]	Go to step [5]
5	Checking SW TCRU ASSY (C) for continuity Is P342-5PIN <=> P342-2PIN of SW TCRU ASSY (C) continuous normally?	Go to step [6]	Replace PWBA CRUM READER
6	Checking HARNESS ASSY TNR4 for continuity Is J51 <=> J342 continuous normally?	Go to step [7]	Replace HARNESS ASSY TNR4
7	Checking PWBA DRV HBN for signal Is P/J42-6PIN <=> P/J42-14PIN 0VDC?	Go to step [8]	Replace PWB HBN DRV
8	Checking PWBA MCU HBN for signal Is P/J12-25PIN <=> P/J12-17PIN of PWBA MCU HBN 0VDC?	Replace PWBA MCU HBN	Go to step [9]
9	Checking HARNESS ASSY DRV2-2 for continuity Is J12 <=> J42 continuous normally?	Replace PWBA MCU HBN	Replace HARNESS ASSY DRV2-2

FIP-4 Black Toner Cartridge Detached (Black Toner Cartridge Missing)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. Cartridge replacing condition SW TCRU ASSY (K) replacing condition SW TCRU ASSY (K) actuator replacing condition SW TCRU ASSY (K) connector replacing condition	Replace the parts concerned	With tool Go to step [2] Without tool Go to step [3]
2	Checking SW TCRU ASSY Does SW TCRU ASSY function normally? Using diagnostic tool, check by Digital Input Test.	Replace PWBA MCU HBN	Go to step [3]
3	Checking PWBA DRV HBN for signal Is P/J51-13PIN<=>P/J51-17PIN 0VDC?	Go to step [7]	Go to step [4]
4	Checking SW TCRU ASSY (K) for signal Is P/J342-5PIN<=>P/J342-1PIN 0VDC?	Go to step [6]	Go to step [5]
5	Checking SW TCRU ASSY (K) for continuity Is P342-5PIN <=> P342-1PIN of SW TCRU ASSY (K) continuous normally?	Go to step [6]	Replace PWBA CRUM READER
6	Checking HARNESS ASSY TNR4 for continuity Is J51 <=> J342 continuous normally?	Go to step [7]	Replace HARNESS ASSY TNR4
7	Checking PWBA DRV HBN for signal Is P/J42-3PIN <=> P/J42-14PIN 0VDC?	Go to step [8]	Replace PWB HBN DRV
8	Checking PWBA MCU HBN for signal Is P/J12-28PIN <=> P/J12-17PIN of PWBA MCU HBN 0VDC?	Replace PWBA MCU HBN	Go to step [9]
9	Checking HARNESS ASSY DRV2-2 for continuity Is J12 <=> J42 continuous normally?	Replace PWBA MCU HBN	Replace HARNESS ASSY DRV2-2

FIP-5 PHD Detached (Imaging Unit Missing)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. PHD ASSY replacing condition PWBA CRUM in PHD ASSY replacing condition	Replace the parts concerned	Go to step [2]
2	Checking PWBA CRUM Is PWBA CRUM connector connected to the harness connector normally?	Go to step [3]	Replace HARNESS ASSY CRUM
3	Checking HARNESS ASSY CRUM for continuity Is J170 <=> J71 continuous normally?	Go to step [4]	Replace HARNESS ASSY CRUM
4	Checking HARNESS ASSY EEPROM for continuity Is J17 <=> J140 continuous normally?	Go to step [5]	Replace HARNESS ASSY EEPROM
5	Checking PHD ASSY Replace new PHD ASSY, and check if an error occurs	Replace PWBA MCU HBN	End of work

FIP-6 BTR Detached (Transfer Unit Missing)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. BTR ASSY replacing condition SENSOR ADC ASSY replacing condition	Replace the parts concerned	Go to step [2]
2	Checking HARNESS ASSY CTD for connection Is HARNESS ASSY CTD connected to the SENSOR ADC ASSY normally?	Go to step [3]	Replace the parts concerned
3	Checking HARNESS ASSY CTD for continuity Is J136 <=> J1361 continuous normally?	Go to step [4]	Replace HARNESS ASSY CTD
4	Checking HARNESS ASSY FRONT1A for continuity Is J1361 <=> J13 continuous normally?	Go to step [5]	Replace HARNESS ASSY FRONT1A
5	Checking HARNESS ASSY FRONT1A for signal Is P/J136-5PIN <=> P/J136-3PIN 0VDC?	Replace SENSOR ADC ASSY	Go to step [6]
6	Checking BTR ASSY Replace new BTR ASSY, and check if an error occurs	Replace PWBA MCU HBN	End of work

FIP-7 Fuser Detached (Fuser Unit Missing)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. FUSER ASSY replacing condition	Replace the parts concerned	Go to step [2]
2	Checking FUSER ASSY Remove the FUSER and measure resistance value Is P232-A3PIN <=> P232-A5PIN less than 400KΩ?	Go to step [3]	Replace FUSER ASSY
3	Checking HARNESS ASSY FSR3 for continuity Is J232 <=> J138 continuous normally?	Go to step [4]	Replace HARNESS ASSY FSR3
4	Checking HARNESS ASSY FRONT 1A for continuity Is P138 <=> J13 continuous normally?	Replace PWBA MCU HBN	Replace HARNESS ASSY FRONT 1A

FIP-8 CRUM ID Error (PHD (Invalid ID Imaging Unit))

Step	Check	Remedy	
		Yes	No
1	Check the following for evidence of fault. PHD ASSY replacing condition PWBA CRUM in PHD ASSY replacing condition	Replace the parts concerned	Go to step [2]
2	Checking PWBA CRUM for connection Is PWBA CRUM connector connected to the harness connector normally?	Go to step [3]	Replace HARNESS ASSY CRUM
3	Checking HARNESS ASSY CRUM for continuity J170 <=> J71 continuous normally?	Go to step [4]	Replace HARNESS ASSY CRUM
4	Checking HARNESS ASSY EEPROM for continuity Is J17 <=> J140 continuous normally?	Go to step [5]	Replace HARNESS ASSY EEPROM
5	Checking PHD ASSY Replace new PHD ASSY, and check if an error occurs	Replace PWBA MCU HBN	End of work

FIP-9 Media Type Mismatch (Media Type Mismatch)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. SENSOR OHP replacing condition CHUTE ASSY REGI replacing condition	Replace the parts concerned	With tool Go to step [2] Without tool Go to step [3]
2	Checking SENSOR OHP Does SENSOR OHP function normally? Using diagnostic tool, check by Digital Input Test.	Replace PWBA MCU HBN	Go to step [3]
3	Checking PWBA MCU HBN for signal Is P/J32-2PIN <=> P/J32-1PIN 0VDC?	Go to step [4]	Go to step [5]
4	Checking PWBA MCU HBN for signal Make the paper approach to the SENSOR. Does P/J32-2PIN <=> P/J32-1PIN change from 0VDC to +3.3VDC?	Replace PWBA MCU HBN	Go to step [5]
5	Checking PWBA MCU HBN for signal Is P/J32-3PIN <=> P/J32-1PIN +5VDC?	Replace SENSOR OHP	Replace PWBA MCU HBN

FIP-10 Feed Jam (Media Feed Jam)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. Paper cassette replacing condition Paper condition in cassette Wear or damage of rolls and gears in FEEDER Paper dust or foreign substances in paper path SENSOR REGI replacing condition MAIN DRIVE ASSY replacing condition	Replace the parts concerned	With tool Go to step [2] Without tool Go to step [3]
2	Checking SENSOR REGI Does the SENSOR REGI function normally? Using diagnostic tool, check by Digital Input Test.	Go to step [6]	Go to step [3]
3	Checking REGI CLUTCH HARNESS for connection Is it connected normally to the SENSOR REGI?	Go to step [4]	Replace the parts concerned
4	Checking REGI CLUTCH HARNESS for continuity J181 <=> J18 continuous normally?	Go to step [5]	Replace CHUTE REGI
5	Checking PWBA MCU HBN for signal Is P/J18-3 <=> P/J18-2 0VDC?	Replace SENSOR REGI	Go to step [6]
6	Checking MAIN DRIVE MOTOR for operation Does the MAIN DRIVE MOTOR run when printing 1 sheet?	TRAY Go to step [16] MSI Go to step [28]	With tool Go to step [7] Without tool Go to step [8]
7	Checking MAIN DRIVE MOTOR Does the MAIN DRIVE MOTOR function normally? Using diagnostic tool, check by Digital Output Test. In the test, close the INTERLOCK SW.	Replace PWBA MCU HBN	Go to step [8]
8	Checking PWBA DRV HBN for signal Is P/J50-1PIN <=> P/J60-2PIN +24VDC?	Go to step [12]	Go to step [9]
9	Checking INTERLOCK SW Is the INTERLOCK SW pressed normally?	Go to step [10]	Replace the parts concerned
10	Checking INTERLOCK SW for signal Check the following if +24VDC is present. SW-1PIN <=> P/J60-2PIN SW-2PIN <=> P/J60-2PIN	Replace PWBA DRV HBN	Go to step [11]
11	Checking PWBA DRV HBN for power supply Is P/J60-1PIN <=> P/J60-2PIN +24VDC?	Replace PWBA DRV HBN	Go to FIP-DC
12	Checking PWBA DRV HBN for power supply Is P/J61-8PIN <=> P/J61-7PIN +5VDC?	Go to step [13]	Go to step [14]
13	Checking PWBA DRV HBN for power supply Is P/J61-6PIN <=> P/J61-5PIN +3.3VDC?	Go to step [15]	Go to step [14]
14	Checking HARNESS ASSY LVNC3 for continuity Is J61 <=> J165 continuous normally?	Go to FIP-DC	Replace HARNESS ASSY LVNC3
15	Checking HARNESS ASSY DRV1 for continuity Check the following for continuity. J41-30PIN <=> J11-11PIN J41-31PIN <=> J11-10PIN J41-33PIN <=> J11-8PIN	Replace PWBA MCU HBN	Replace HARNESS ASSY DRV1

Step	Check	Remedy	
		Yes	No
16	Checking CLUTCH ASSY TURN for operation Does the Turn Roll in the Feeder run when printing 1 sheet?	Go to step [22]	With tool Go to step [17] Without tool Go to step [18]
17	Checking CLUTCH ASSY TURN Does the CLUTCH ASSY TURN function normally? Using CLUTCH ASSY TURN diagnostic tool, check by Digital Output Test. In the test, close the INTERLOCK SW.	Check the CLUTH for slip, or the gear for damage.	Go to step [18]
18	Checking PWBA DRV HBN for signal Is P/J47-13PIN <=> P/J60-2PIN +24VDC?	Go to step [19]	Replace PWBA DRV HBN
19	Checking HARNESS ASSY FDR for continuity Check the following for continuity. J47-13PIN <=> P475-2PIN J47-14PIN <=> P475-1PIN	Go to step [20]	Replace HARNESS ASSY FDR
20	Checking CLUTCH ASSY TURN for resistance value Remove the CLUTCH connector J475 Is J475-1PIN <=> J475-2PIN less than 200Ω?	Go to step [21]	Replace CLUTCH ASSY TURN
21	Checking HARNESS ASSY DRV2-2 for continuity Is J12-9PIN <=> J42-22PIN continuous normally?	Replace PWBA MCU HBN	Replace HARNESS ASSY DRV2-2
22	Checking SOLENOID FEED for operation Does the Feed Gear in the Feeder run when printing 1 sheet?	Check parts for missing and change paper, if no problem	With tool Go to step [23] Without tool Go to step [24]
23	Checking SOLENOID FEED Does the SOLENOID FEED function normally? Using SOLENOID FEED diagnostic tool, check by Digital Output Test. In the test, close the INTERLOCK SW.	Check the spring and stopper of SOLENOID FEED for disengagement	Go to step [24]
24	Checking PWBA DRV HBN for signal Is P/J47-11PIN <=> P/J60-2PIN +24VDC?	Go to step [25]	Replace PWBA HBNDRV
25	Checking HARNESS ASSY FDR for continuity Check the following for continuity. J47-11PIN <=> P474-2PIN J47-12PIN <=> P474-1PIN	Go to step [26]	Replace HARNESS ASSY FDR
26	Checking SOLENOID FEED for resistance value Remove the SOLENOID connector J474 Is J474-1PIN <=> J474-2PIN less than 100Ω?	Go to step [27]	Replace SOLENOID FEED
27	Checking HARNESS ASSY DRV2-2 for continuity Is J12-10PIN <=> J42-21PIN continuous normally?	Replace PWBA MCU HBN	Replace HARNESS ASSY DRV2
28	Checking CLUTCH ASSY TURN MSI for operation Does the TURN ROLL in the MSI run when printing 1 sheet?	Go to step [31]	With tool Go to step [29] Without tool Go to step [30]

Step	Check	Remedy	
		Yes	No
29	Checking CLUTCH ASSY TURN MSI Does the CLUTCH ASSY TURN MSI function normally? Using CLUTCH ASSY TURN MSI diagnostic tool, check by Digital Output Test. In the test, close the INTERLOCK SW.	Check the CLUTCH for slip, or the gear for damage.	Go to step [30]
30	Checking CLUTCH ASSY MSI TURN for resistance value Remove the CLUTCH connector J19. Is J19-1PIN <=> J19-2PIN less than 200Ω?	Replace PWBA MCU HBN	Replace CLUTCH ASSY TURN MSI
31	Checking SOLENOID FEED MSI for operation Does the Feed Gear in the MSI run when printing 1 sheet?	Check parts for missing and change paper, if no problem	With tool Go to step [32] Without tool Go to step [33]
32	Checking SOLENOID FEED MSI Does the SOLENOID FEED TURN MSI function normally? Using SOLENOID FEED TURN MIS diagnostic tool, check by Digital Output Test. In the test, close the INTERLOCK SW.	Check the spring and stopper of SOLENOID FEED for disengagement	Go to step [33]
33	Checking SOLENOID FEED MSI for resistance value Remove the SOLENOID FEED MSI J132 Is J132-1PIN <=> J132-2PIN less than 100Ω?	Go to step [34]	Replace SOLENOID FEED MSI
34	Checking HARNESS ASSY FRONT2 for continuity Check the following for continuity. P132-1PIN <=> J139-11PIN P132-2PIN <=> J139-10PIN	Go to step [35]	Replace HARNESS ASSY FRONT2
35	Checking HARNESS ASSY FRONT1A for continuity Check the following for continuity. P139-1PIN <=> J13-11PIN P139-2PIN <=> J13-10PIN	Replace PWBA MCU HBN	HARNESS ASSY FRONT1A

FIP-11 Regi Jam (Media Jam Registration)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. SENSOR REGI actuator replacing condition CHUTE ASSY REGI replacing condition	Replace the parts concerned	With tool Go to step [2] Without tool Go to step [3]
2	Checking SENSOR REGI Does SENSOR REGI function normally? Using SENSOR REGI diagnostic tool, check by Digital Input Test.	Go to step [6]	Go to step [3]
3	Checking REGI CLUTCH HARNESS for connection Is it connected normally to the SENSOR REGI?	Go to step [4]	Replace the parts concerned
4	Checking REGI CLUTCH HARNESS for continuity Is J181 <=> J18 continuous normally?	Go to step [5]	Replace CHUTE REGI
5	Checking PWBA MCU HBN for signal Is P/J18-3 <=> P/J18-2 0VDC?	With tool Go to step [6] Without tool Go to step [7]	Replace SENSOR REGI
6	Checking CLUTCH REGI Does the CLUTCH REGI function normally? Using CLUTCH REGI diagnostic tool, check by Digital Output Test. In the test, close the INTERLOCK SW.	Go to step [9]	Go to step [7]
7	Checking CLUTCH REGI for resistance value Remove the CLUTCH connector J18. Is J18-4PIN <=> J18-5PIN less than 200Ω?	Go to step [8]	Replace CHUTE REGI
8	Checking PWBA MCU HBN for signal Close the INTERLOCK SW Is P18-4PIN <=> P18-2PIN +24VDC?	Go to step [9]	Replace PWBA MCU HBN
9	Checking CHUTE REGI Does the ROLL rotate smoothly by hand?	Replace the CHUTE REGI on the machine, and check the gears for meshing.	Replace CHUTE REGI

FIP-12 Fuser Jam (Media Jam Fuser)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. SENSOR EXIT actuator replacing condition FUSER ASY replacing condition FRONT COVER replacing condition CHUTE DUP IN replacing condition BTR ASSY replacing condition PHD ASSY replacing condition	Replace the parts concerned	Go to step [2]
2	Checking FUSER ASSY connector Remove the FUSER ASSY connector, and check for broken or curved pins.	With tool Go to step [3] Without tool Go to step [4]	Replace the parts concerned
3	Checking SENSOR EXIT Does SENSOR EXIT function normally? Using SENSOR EXIT diagnostic tool, check by Digital Input Test.	Go to step [9]	Go to step [4]
4	Checking HARNESS FSR2 for signal Push the paper in the FUSER ASSY Is P/J138-3PIN <=> P/J138-2PIN 0VDC?	Go to step [6]	Go to step [5]
5	Checking HARNESS FSR2 for continuity Is J232 <=> J138 continuous normally?	Go to step [6]	Replace HARNESS ASSY FSR3
6	Checking HARNESS ASSY FRONT 1A for continuity Is P138 <=> J13 continuous normally?	Go to step [7]	Replace HARNESS ASSY FRONT 1A
7	Checking FUSER ASSY Check if an error occurs though the FUSER ASSY was replaced with a new one.	Go to step [9]	End of work
8	Checking FUSER MOTOR for operation Does the FUSER MOTOR run when printing 1 sheet?	Check the gears for meshing	With tool Go to step [9] Without tool Go to step [10]
9	Checking FUSER MOTOR Does FUSER MOTOR function normally? Using FUSER MOTOR diagnostic tool, check by Digital Output Test.	Replace PWBA MCU HBN	Go to step [10]
10	Checking PWBA DRV HBN for signal Is P/J41-1PIN <=> P/J60-2PIN +24VDC?	Go to step [11]	Replace PWBA DRV HBN
11	Checking HARNESS ASSY DRV 1 for continuity Check the following for continuity. J11-12PIN <=> J41-29PIN J11-13PIN <=> J41-28PIN J11-14PIN <=> J41-27PIN J11-15PIN <=> J41-26PIN J11-16PIN <=> J41-25PIN	Go to step [12]	Replace HARNESS ASSYDRV 1
12	Checking FUSER MOTOR Replace a new FUSER MOTOR, and check if the FUSER MOTOR rotates when printing 1 sheet.	End of work	Replace PWBA MCU HBN

FIP-13 Duplex Jam (Media Jam Duplex)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. CHUTE ASSY EXIT replacing condition DUP MOTOR replacing condition SENSOR DUP JAM actuator replacing condition CHUTE ASSY OUT replacing condition	Replace the parts concerned	With tool Go to step [2] Without tool Go to step [3]
2	Checking SENSOR DUP JAM Does SENSOR DUP JAM function normally? Using SENSOR DUP JAM diagnostic tool, check by Digital Input Test.	Go to step [7]	Go to step [3]
3	Checking HARNESS ASSY FRONT2 for signal Push the SENSOR DUP JAM actuator by finger Is J139-3PIN <=> J139-2PIN 0VDC?	Go to step [5]	Go to step [4]
4	Checking HARNESS ASSY FRONT2 for continuity Is J133 <=> J139 continuous normally?	Go to step [5]	Replace HARNESS ASSY FRONT2
5	Checking HARNESS ASSY FRONT 1A for continuity Is P139 <=> J13 continuous normally?	Go to step [6]	Replace HARNESS ASSY FRONT 1A
6	Checking SENSOR DUP JAM Check if an error occurs though the SENSOR was replaced with a new one.	Go to step [7]	End of work
7	Checking DUP MOTOR for operation Check if the sheet is reversed when printing 1 sheet in the Duplex mode.	Go to step [13]	With tool Go to step [8] Without tool Go to step [9]
8	Checking DUP MOTOR Does DUP MOTOR function normally? Using DUP MOTOR diagnostic tool, check by Digital Output Test. In the test, close the INTERLOCK SW.	Go to step [13]	Go to step [9]
9	Checking PWBA DRV HBN for signal Is P/J50-1PIN <=> P/J60-2PIN +24VDC?	Go to step [10]	Replace PWBA DRV HBN
10	Checking HARNESS ASSY DUP2 for continuity Is J131 <=> J50 continuous normally?	Go to step [11]	Replace HARNESS ASSY DUP2
11	Checking HARNESS ASSY DRV2-2 for continuity Check the following for continuity. J12-5PIN <=> J42-26PIN J12-6PIN <=> J42-25PIN J12-7PIN <=> J42-24PIN J12-8PIN <=> J42-23PIN J12-29PIN <=> J42-2PIN	Go to step [12]	Replace HARNESS ASSY DRV2
12	Checking DUP MOTOR Check if an error occurs though the MOTOR was replaced with a new one.	Replace PWBA MCU HBN	End of work

Step	Check	Remedy	
		Yes	No
13	Does the EXIT ROLL rotate smoothly by hand?	Check the sheets for gear or skew	Check the gears for foreign substances

FIP-14 ROS Failure (Call for Service ROS Motor)

Step	Check	Remedy	
		Yes	No
1	Checking HARNESS ASSY ROSKA for continuity Is J15 <=> P151 continuous normally?	Replace ROS ASSY	Replace HARNESS ASSY ROSKA

FIP-15 Fuser Failure (Call for Service Fuser Failure)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. The assembled condition of FUSER ASSY  *Do not power On and Off while FUSER ASSY is removed.* *It will be in danger of getting a shock.*	Replace the parts concerned	Go to step [2]
2	Checking FUSER ASSY connector Disconnect the FUSER ASSY connector, and check for broken or curved pins.	Go to step [3]	Replace the parts concerned
3	Checking FUSER ASSY Check if an error occurs though the FUSER ASSY was replaced with a new one.	Replace PWBA MCU HBN	End of work

FIP-16 NV-RAM Error (Call for Service NV-RAM Error)

Step	Check	Remedy	
		Yes	No
1	Does the error still happen even after powering Off and On was done?	Go to step [2]	End of work
2	Remove following components once, and reinstall them correctly. PHD ASSY FUSER ASSY PWBA EEPROM PWBA MCU HBN Does the error still happen even after powering Off and On was done?	Go to step [3]	End of work
3	Replace PHD ASSY. Does the error still happen even after powering Off and On was done?	Go to step [4]	End of work
4	Replace FUSER ASSY. Does the error still happen even after powering Off and On was done?	Go to step [5]	End of work
5	Replace PWBA EEPROM. Does the error still happen even after powering Off and On was done?	Replace PWBA MCU HBN	End of work

FIP-17 CTD Sensor Error (Call for Service ADC Sensor Error)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. SENSOR ADC ASSY replacing condition	Replace the parts concerned	Go to step [2]
2	Checking HARNESS ASSY CTD for continuity Is J136 <=> J1361 continuous normally?	Go to step [3]	Replace HARNESS ASSY CTD
3	Checking HARNESS ASSY FRONT 1A for continuity Is J13 <=> P1361 continuous normally?	Go to step [4]	Replace HARNESS ASSY FRONT 1A
4	Checking SENSOR ADC ASSY Check if an error occurs though the SENSOR ADC ASSY was replaced with a new one.	Replace PWBA MCU HBN	End of work

FIP-18 Fan Motor Failure (Call for Service Fan Motor Error)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. FAN FUSER replacing condition FAN REAR replacing condition	Replace the parts concerned	Go to step [2]
2	Isolating faulty FAN Does the FAN REAR rotate when printing 1 sheet?	With tool Go to step [3] Without tool Go to step [4]	With tool Go to step [15] Without tool Go to step [16]
3	Checking FAN REAR Does FAN REAR function normally? Using FAN REAR diagnostic tool, check by Digital Output Test.	Replace PWBA MCU HBN	Go to step [4]
4	Checking LVPS for signal Print 1 sheet. Is P/J166-1PIN <=> P/J166-3PIN +24VDC?	Go to step [9]	Go to step [5]
5	Checking LVPS for signal Print 1 sheet. Is P/J165-6PIN <=> P/J165-2PIN 0VDC?	Go to step [6]	Replace LVPS
6	Checking PWBA DRV HBN for signal Print 1 sheet. Is P/J61-3PIN <=> P/J61-7PIN 0VDC?	Go to step [7]	Replace HARNESS ASSY LVNC3
7	Checking PWBA DRV HBN for signal Print 1 sheet. Is P/J42-12PIN <=> P/J42-14PIN 0VDC?	Go to step [8]	Replace PWBA DRV HBN
8	Checking PWBA MCU HBN for signal Print 1 sheet. Is P/J12-19PIN <=> P/J12-17PIN 0VDC?	Replace PWBA MCU HBN	Replace HARNESS ASSY DRV2-2
9	Checking FAN REAR Check if an error occurs though the Fan Rear was replaced with a new one.	Go to step [10]	End of work
10	Checking LVPS for signal Print 1 sheet. Is P/J166-2PIN <=> P/J166-3PIN +3.3VDC?	Replace FAN REAR	Go to step [11]
11	Checking LVPS for signal Print 1 sheet. Is P/J165-7PIN <=> P/J165-2PIN +3.3VDC?	Replace LVPS	Go to step [12]
12	Checking PWBA DRV HBN for signal Print 1 sheet. Is P/J61-2PIN <=> P/J61-7PIN +3.3VDC?	Replace HARNESS ASSY LVNC3	Go to step [13]
13	Checking PWBA DRV HBN for signal Print 1 sheet. Is P/J42-29PIN <=> P/J42-14PIN +3.3VDC?	Replace PWBA DRV HBN	Go to step [14]
14	Checking PWBA MCU HBN for signal Print 1 sheet. Is P/J12-2PIN <=> P/J12-17PIN +3.3VDC?	Replace HARNESS ASSY DRV2-2	Replace PWBA MCU HBN

Step	Check	Remedy	
		Yes	No
15	Checking FAN FUSER Does FAN FUSER function normally? Using FAN FUSER diagnostic tool, check by Digital Output Test.	Replace PWBA MCU HBN	Go to step [16]
16	Checking PWBA DRV HBN for signal Print 1 sheet. Is P/J50-7PIN <=> P/J50-9PIN +24VDC?	Go to step [19]	Go to step [17]
17	Checking PWBA DRV HBN for signal Print 1 sheet. Is P/J42-30PIN <=> P/J42-14PIN 0VDC?	Go to step [18]	Replace PWBA DRV HBN
18	Checking PWBA MCU HBN for signal Print 1 sheet. Is P/J12-1PIN <=> P/J12-17PIN 0VDC?	Replace PWBA MCU HBN	Replace HARNESS ASSY DRV2-2
19	Checking HARNESS ASSY DUP2 for continuity Is J50 <=> J137 continuous normally?	Go to step [20]	Replace HARNESS ASSY DUP2
20	Checking FAN FUSER Check if an error occurs though the FAN FUSER was replaced with a new one.	Go to step [21]	End of work
21	Checking PWBA DRV HBN for signal Print 1 sheet. Is P/J50-8PIN <=> P/J50-9PIN +3.3VDC?	Replace FAN FUSER	Go to step [22]
22	Checking PWBA DRV HBN for signal Print 1 sheet. Is P/J42-27PIN <=> P/J42-14PIN +3.3VDC?	Replace PWBA DRV HBN	Go to step [23]
23	Checking PWBA MCU HBN for signal Print 1 sheet. Is P/J12-4PIN <=> P/J12-17PIN +3.3VDC?	Replace HARNESS ASSY DRV2-2	Replace PWBA MCU HBN

FIP-19 Low Density Error (Call for Service Low Density)

Step	Check		
		Yes	No
1	Initial check Check the following for damage. Transfer Unit (BTR) condition SENSOR ADC ASSY condition Imaging Unit (PHD) condition Residual toner	Replace the parts concerned	Go to step [2]
2	Check HARNESS ASSY ADC for connection Is the HARNESS ASSY ADC connected to the SENSOR ADC ASSY normally?	Go to step [3]	Replace the parts concerned
3	Check HARNESS ASSY ADC for continuity J136 <=> J1361 check continuous?	Go to step [4]	Replace HARNESS ASSY ADC
4	Check HARNESS ASSY FRONT1A for continuity P1361 <=> J13 check continuous?	Go to step [5]	Replace HARNESS ASSY FRONT1A
5	Check Transfer Unit (BTR) Replace new Transfer Unit (BTR), and check if an error occurs.	Go to step [6]	End of work
6	Check Imaging Unit (PHD) Replace new Imaging Unit (PHD), and check if an error occurs.	Go to step [7]	End of work
7	Check SENSOR ADC ASSY Imaging Unit (PHD) Replace new SENSOR ADC ASSY, and check if an error occurs.	Replace PWBA HNB MCU	End of work

FIP-20 Firmware Error (Call for Service Firmware Error)

Step	Check	Remedy	
		Yes	No
1	Does the error still happen even after powering Off and On was done?	Go to step [2]	End of work
2	Check whether the value of NVM is correct. Is the value of NVM correct?	Replace PWBA MCU HBN	Correct the value of NVM.

FIP-21 Environment Sensor Error (Call for Service ENV Sensor Error)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. SENSOR HUM TEMP replacing condition	Replace the parts concerned	Go to step [2]
2	Checking HARNESS ASSY TMPA for signal Is P/J2361-1PIN <=> P/J2361-2PIN less than +3VDC or +0.1VDC?	Go to step [4]	Go to step [3]
3	Checking HARNESS ASSY TMPA for signal Is P/J2361-3PIN <=> P/J2361-2PIN more than +2.5VDC?	Go to step [4]	Replace PWBA MCU HBN
4	Checking HARNESS ASSY TMPA for signal Is P/J2361-4PIN <=> P/J2361-2PIN +5VDC?	Replace SENSOR HUM TEMP	Replace PWBA MCU HBN

FIP-22 Yellow Toner Empty (Yellow Toner Empty)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. SENSOR TONER LOW replacing condition TONER CARTRIDGE replacing condition TONER MOTOR replacing condition	Replace the parts concerned	Go to step [2]
2	Checking TONER CARTRIDGE Check if an error occurs though the TONER CARTRIDGE was replaced with a new one.	Go to step [3]	End of work
3	Checking PWBA DRV HBN for signal Is P/J51-7PIN <=> P/J51-8PIN less than +0.2VDC?	Go to step [6]	Go to step [4]
4	Checking HARNESS ASSY TNR4 for continuity Is J701 <=> J51 continuous normally?	Go to step [5]	Replace HARNESS ASSY TNR4
5	Checking SENSOR TONER LOW Check if an error occurs though the SENSOR TONER LOW was replaced with a new one.	Go to step [6]	End of work
6	Checking HARNESS ASSY DRV2-2 for continuity Is J12-23 <=> J42-8 continuous normally?	With tool Go to step [7] Without tool Go to step [8]	Replace HARNESS ASSY DRV2-2
7	Checking TONER MOTOR Does TONER MOTOR function normally? Using TONER MOTOR diagnostic tool, check by Digital Output Test. In the test, close the INTERLOCK SW.	Check the toner stirring AUGER or gear for damage	Go to step [8]
8	Checking PWBA DRV HBN for signal Is P/J51-21PIN <=> P/J60-2PIN +24VDC?	Go to step [9]	Replace PWBA DRV HBN
9	Checking HARNESS ASSY TNR4 for continuity Is J511 <=> J51 continuous normally?	Go to step [10]	Replace HARNESS ASSY TNR4
10	Checking TONER MOTOR Check if an error occurs though the TONER MOTOR was replaced with a new one.	Go to step [11]	End of work
11	Checking HARNESS ASSY DRV1 for continuity Check the following for continuity. J11-25 <=> J41-16 J11-26 <=> J41-15 J11-27 <=> J41-14 J11-28 <=> J41-13	Replace PWBA DRV HBN, and if still faulty, replace PWBA MCU HBN	Replace HARNESS ASSY DRV1

FIP-23 Magenta Toner Empty (Magenta Toner Empty)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. SENSOR TONER LOW replacing condition TONER CARTRIDGE replacing condition TONER MOTOR replacing condition	Replace the parts concerned	Go to step [2]
2	Checking TONER CARTRIDGE Check if an error occurs though the TONER CARTRIDGE was replaced with a new one.	Go to step [3]	End of work
3	Checking PWBA DRV HBN for signal Is P/J51-4PIN <=> P/J51-5PIN less than +0.2VDC?	Go to step [6]	Go to step [4]
4	Checking HARNESS ASSY TNR4 for continuity Is J702 <=> J51 continuous normally?	Go to step [5]	Replace HARNESS ASSY TNR4
5	Checking SENSOR TONER LOW Check if an error occurs though the SENSOR TONER LOW was replaced with a new one.	Go to step [6]	End of work
6	Checking HARNESS ASSY DRV2-2 for continuity Is J12-22 <=> J42-9 continuous normally?	With tool Go to step [7] Without tool Go to step [8]	Replace HARNESS ASSY DRV2-2
7	Checking TONER MOTOR Does TONER MOTOR function normally? Using TONER MOTOR diagnostic tool, check by Digital Output Test. In the test, close the INTERLOCK SW.	Check the toner stirring AUGER or gear for damage	Go to step [8]
8	Checking PWBA DRV HBN for signal Is P/J51-26PIN <=> P/J60-2PIN +24VDC?	Go to step [9]	Replace PWBA DRV HBN
9	Checking HARNESS ASSY TNR4 for continuity Is J512 <=> J51 continuous normally?	Go to step [10]	Replace HARNESS ASSY TNR4
10	Checking TONER MOTOR Check if an error occurs though the TONER MOTOR was replaced with a new one.	Go to step [11]	End of work
11	Checking HARNESS ASSY DRV1 for continuity Check the following for continuity. J11-29 <=> J41-12 J11-30 <=> J41-11 J11-31 <=> J41-10 J11-32 <=> J41-9	Replace PWBA DRV HBN, and if still faulty, replace PWBA MCU HBN	Replace HARNESS ASSY DRV1

FIP-24 Cyan Toner Empty (Cyan Toner Empty)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. SENSOR TONER LOW replacing condition TONER CARTRIDGE replacing condition TONER MOTOR replacing condition	Replace the parts concerned	Go to step [2]
2	Checking TONER CARTRIDGE Check if an error occurs though the TONER CARTRIDGE was replaced with a new one.	Go to step [3]	End of work
3	Checking PWBA DRV HBN for signal Is P/J51-1PIN <=> P/J51-2PIN less than +0.2VDC?	Go to step [6]	Go to step [4]
4	Checking HARNESS ASSY TNR4 for continuity Is J703 <=> J51 continuous normally?	Go to step [5]	Replace HARNESS ASSY TNR4
5	Checking SENSOR TONER LOW Check if an error occurs though the SENSOR TONER LOW was replaced with a new one.	Go to step [6]	End of work
6	Checking HARNESS ASSY DRV2-2 for continuity Is J12-21 <=> J42-10 continuous normally?	With tool Go to step [7] Without tool Go to step [8]	Replace HARNESS ASSY DRV2-2
7	Checking TONER MOTOR Does TONER MOTOR function normally? Using TONER MOTOR diagnostic tool, check by Digital Output Test. In the test, close the INTERLOCK SW.	Check the toner stirring AUGER or gear for damage	Go to step [8]
8	Checking PWBA DRV HBN for signal Is P/J51-31PIN <=> P/J60-2PIN +24VDC?	Go to step [9]	Replace PWBA DRV HBN
9	Checking HARNESS ASSY TNR4 for continuity Is J513 <=> J51 continuous normally?	Go to step [10]	Replace HARNESS ASSY TNR4
10	Checking TONER MOTOR Check if an error occurs though the TONER MOTOR was replaced with a new one.	Go to step [11]	End of work
11	Checking HARNESS ASSY DRV1 for continuity Check the following for continuity. J11-33 <=> J41-8 J11-34 <=> J41-7 J11-35 <=> J41-6 J11-36 <=> J41-5	Replace PWBA DRV HBN, and if still faulty, replace PWBA MCU HBN	Replace HARNESS ASSY DRV1

FIP-25 Black Toner Empty (Black Toner Empty)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. SENSOR TONER LOW replacing condition TONER CARTRIDGE replacing condition TONER MOTOR replacing condition	Replace the parts concerned	Go to step [2]
2	Checking TONER CARTRIDGE Check if an error occurs though the TONER CARTRIDGE was the replaced with a new one.	Go to step [3]	End of work
3	Checking PWBA DRV HBN for signal Is P/J51-10PIN <=> P/J51-11PIN less than +0.2VDC?	Go to step [6]	Go to step [4]
4	Checking HARNESS ASSY TNR4 for continuity Is J704 <=> J51 continuous normally?	Go to step [5]	Replace HARNESS ASSY TNR4
5	Checking SENSOR TONER LOW Check if an error occurs though the SENSOR TONER LOW was replaced with a new one.	Go to step [6]	End of work
6	Checking HARNESS ASSY DRV2 for continuity Is J12-24 <=> J42-7 continuous normally?	With tool Go to step [7] Without tool Go to step [8]	Replace HARNESS ASSY DRV2-2
7	Checking TONER MOTOR Does TONER MOTOR function normally? Using TONER MOTOR diagnostic tool, check by Digital Output Test. In the test, close the INTERLOCK SW.	Check the toner stirring AUGER or gear for damage	Go to step [8]
8	Checking PWBA DRV3 for signal Is P/J51-36PIN <=> P/J60-2PIN +24VDC?	Go to step [9]	Replace PWBA DRV HBN
9	Checking HARNESS ASSY TNR4 for continuity Is J514 <=> J51 continuous normally?	Go to step [10]	Replace HARNESS ASSY TNR4
10	Checking TONER MOTOR Check if an error occurs though the TONER MOTOR was replaced with a new one.	Go to step [11]	End of work
11	Checking HARNESS ASSY DRV1 for continuity Check the following for continuity. J11-37 <=> J41-4 J11-38 <=> J41-3 J11-39 <=> J41-2 J11-40 <=> J41-1	Replace PWBA DRV HBN, and if still faulty, replace PWBA MCU HBN	Replace HARNESS ASSY DRV1

FIP-26 PHD Life Over (Replace Imaging Unit)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. PHD ASSY replacing condition PWBA CRUM in PHD ASSY replacing condition	Replace the parts concerned	Go to step [2]
2	Checking PWBA CRUM for connection Is PWBA CRUM connector connected to the harness connector normally?	Go to step [3]	Replace HARNESS ASSY CRUM
3	Checking HARNESS ASSY CRUM for continuity Is J170 <=> J71continuous normally?	Go to step [4]	Replace HARNESS ASSY CRUM
4	Checking HARNESS ASSY EEPROM for continuity Is P71 <=> J140 continuous normally?	Go to step [5]	Replace HARNESS ASSY EEPROM
5	Checking PHD ASSY Replace new PHD ASSY, and check if an error occurs.	Replace PWBA MCU HBN	End of work

FIP-27 BTR Life Over (Replace Transfer Unit)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. BTR ASSY replacing condition SENSOR TONER FULL replacing condition	Replace the parts concerned	With tool Go to step [2] Without tool Go to step [3]
2	Checking SENSOR TONER FULL Does SENSOR TONER FULL function normally? Using SENSOR TONER FULL diagnostic tool, check by Digital Input Test.	Go to step [6]	Go to step [3]
3	Checking HARNESS ASSY TFLSNS for signal Remove the BTR ASSY Is P/J141-2PIN <=> P/J141-1PIN 0VDC?	Go to step [6]	Go to step [4]
4	Checking HARNESS ASSY TFLSNS for signal Is P/J141-3PIN <=> P/J141-1PIN +5VDC?	Go to step [5]	Replace HARNESS ASSY EEPROM
5	Checking HARNESS ASSY TFLSNS for continuity J141 <=> J142 continuous normally?	Replace SENSOR TONER FULL	Replace HARNESS ASSY TFLSNS
6	Checking BTR ASSY Replace new BTR ASSY, and check if an error occurs	Replace PWBA MCU HBN	End of work

FIP-28 Fuser Life Over (Replace Fuser Unit)

Step	Check	Remedy	
		Yes	No
1	Checking NVM Does the error occur even if the Fuser counter is cleared?	Go to step [2]	End of work
2	Replace FUSER ASSY. Does the error happen?	Replace PWBA MCU HBN	End of work

FIP-29 CTD Sensor Dustiness (ADC Sensor Dustiness Error)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. BTR ASSY replacing condition SENSOR ADC ASSY replacing condition	Replace the parts concerned	Go to step [2]
2	Checking HARNESS ASSY CTD for connection Is HARNESS ASSY CTD connected to the SENSOR ADC ASSY normally?	Go to step [3]	Replace the parts concerned
3	Checking HARNESS ASSY CTD for continuity Is J136 <=> J1361 continuous normally?	Go to step [4]	Replace HARNESS ASSY CTD
4	Checking HARNESS ASSY FRONT1A for continuity Is P1361 <=> J13 continuous normally?	Go to step [5]	Replace HARNESS ASSY FRONT1A
5	Checking HARNESS ASSY CTD for signal Is P/J1361-1PIN <=> P/J1361-3PIN 0VDC?	Replace SENSOR ADC ASSY	Replace PWBA MCU HBN

FIP-30 Front Cover (Front Cover Open)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. PWBA DRV HBN replacing condition Front Cover replacing condition Interlock SW actuator replacing condition	Replace the parts concerned	With tool Go to step [2] Without tool Go to step [3]
2	Checking Interlock SW Does Interlock SW function normally? Using Interlock SW diagnostic tool, check by Digital Input Test.	Replace PWBA MCU HBN	Go to step [3]
3	Checking PWBA DRV HBN for signal Close the FRONT COVER Is P/J41-35PIN <=> P/J41-22PIN 0VDC?	Replace PWBA MCU HBN	Replace PWBA DRV HBN

FIP-31 Yellow Toner Near Empty (Yellow Toner Low)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. SENSOR TONER LOW replacing condition TONER CARTRIDGE replacing condition TONER MOTOR replacing condition	Replace the parts concerned	Go to step [2]
2	Checking TONER CARTRIDGE Check if an error occurs though the TONER CARTRIDGE was replaced with a new one.	Go to step [3]	End of work
3	Checking PWBA DRV HBN for signal Is P/J51-7PIN <=> P/J51-8PIN less than +0.2VDC?	Go to step [5]	Go to step [4]
4	Checking HARNESS ASSY TNR4 for continuity Is J701 <=> J51 continuous normally?	Go to step [5]	Replace HARNESS ASSY TNR4
5	Checking HARNESS ASSY DRV2-2 for continuity Is J12-23 <=> J42-8 continuous normally?	Go to step [6]	Replace HARNESS ASSY DRV2-2
6	Checking PWBA DRV HBN for signal Is P/J51-21PIN <=> P/J60-2PIN +24VDC?	Go to step [7]	Replace PWBA DRV HBN
7	Checking HARNESS ASSY TNR4 for continuity Is J511 <=> J51 continuous normally?	Go to step [8]	Replace HARNESS ASSY TNR4
8	Checking TONER MOTOR Check if an error occurs though the TONER MOTOR was replaced with a new one.	Go to step [9]	End of work
9	Checking HARNESS ASSY DRV1 for continuity Check the following for continuity. J11-25 <=> J41-16 J11-26 <=> J41-15 J11-27 <=> J41-14 J11-28 <=> J41-13	Replace PWBA DRV HBN, and if still faulty, replace PWBA MCU HBN	Replace HARNESS ASSY DRV1

FIP-32 Magenta Toner Near Empty (Magenta Toner Low)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. SENSOR TONER LOW replacing condition TONER CARTRIDGE replacing condition TONER MOTOR replacing condition	Replace the parts concerned	Go to step [2]
2	Checking TONER CARTRIDGE Check if an error occurs though the TONER CARTRIDGE was replaced with a new one.	Go to step [3]	End of work
3	Checking PWBA DRV HBN for signal Is P/J51-4PIN <=> P/J51-5PIN less than +0.2VDC?	Go to step [5]	Go to step [4]
4	Checking HARNESS ASSY TNR4 for continuity Is J702 <=> J51 continuous normally?	Go to step [5]	Replace HARNESS ASSY TNR4
5	Checking HARNESS ASSY DRV2-2 for continuity Is J12-22 <=> J42-9 continuous normally?	Go to step [6]	Replace HARNESS ASSY DRV2-2
6	Checking PWBA DRV HBN for signal Is P/J51-26PIN <=> P/J60-2PIN +24VDC?	Go to step [7]	Replace PWBA DRV HBN
7	Checking HARNESS ASSY TNR4 for continuity Is J512 <=> J51 continuous normally?	Go to step [8]	Replace HARNESS ASSY TNR4
8	Checking TONER MOTOR Check if an error occurs though the TONER MOTOR was replaced with a new one.	Go to step [9]	End of work
9	Checking HARNESS ASSY DRV1 for continuity Check the following for continuity. J11-29 <=> J41-12 J11-30 <=> J41-11 J11-31 <=> J41-10 J11-32 <=> J41-9	Replace PWBA DRV HBN, and if still faulty, replace PWBA MCU HBN	Replace HARNESS ASSY DRV1

FIP-33 Cyan Toner Near Empty (Cyan Toner Low)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. SENSOR TONER LOW replacing condition TONER CARTRIDGE replacing condition TONER MOTOR replacing condition	Replace the parts concerned	Go to step [2]
2	Checking TONER CARTRIDGE Check if an error occurs though the TONER CARTRIDGE was replaced with a new one.	Go to step [3]	End of work
3	Checking PWBA DRV HBN for signal Is P/J51-1PIN <=> P/J51-2PIN less than +0.2VDC?	Go to step [5]	Go to step [4]
4	Checking HARNESS ASSY TNR4 for continuity Is J703 <=> J51 continuous normally?	Go to step [5]	Replace HARNESS ASSY TNR4
5	Checking HARNESS ASSY DRV2 for continuity Is J12-21 <=> J42-10 continuous normally?	Go to step [6]	Replace HARNESS ASSY DRV2-2
6	Checking PWBA DRV HBN for signal Is P/J51-31PIN <=> P/J60-2PIN +24VDC?	Go to step [7]	Replace PWBA DRV HBN
7	Checking HARNESS ASSY TNR4 for continuity Is J513 <=> J51 continuous normally?	Go to step [8]	Replace HARNESS ASSY TNR4
8	Checking TONER MOTOR Check if an error occurs though the TONER MOTOR was replaced with a new one.	Go to step [9]	End of work
9	Checking HARNESS ASSY DRV1 for continuity Check the following for continuity. J11-33 <=> J41-8 J11-34 <=> J41-7 J11-35 <=> J41-6 J11-36 <=> J41-5	Replace PWBA DRV HBN, and if still faulty, replace PWBA MCU HBN	Replace HARNESS ASSY DRV1

FIP-34 Black Toner Near Empty (Black Toner Low)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. SENSOR TONER LOW replacing condition TONER CARTRIDGE replacing condition TONER MOTOR replacing condition	Replace the parts concerned	Go to step [2]
2	Checking TONER CARTRIDGE Check if an error occurs though the TONER CARTRIDGE was replaced with a new one.	Go to step [3]	End of work
3	Checking PWBA DRV HBN for signal Is P/J51-10PIN <=> P/J51-11PIN less than +0.2VDC?	Go to step [5]	Go to step [4]
4	Checking HARNESS ASSY TNR4 for continuity Is J704 <=> J51 continuous normally?	Go to step [5]	Replace HARNESS ASSY TNR4
5	Checking HARNESS ASSY DRV2 for continuity Is J12-24 <=> J42-7 continuous normally?	Go to step [6]	Replace HARNESS ASSY DRV2-2
6	Checking PWBA DRV3 for signal Is P/J51-36PIN <=> P/J60-2PIN +24VDC?	Go to step [7]	Replace PWBA DRV HBN
7	Checking HARNESS ASSY TNR4 for continuity Is J514 <=> J51 continuous normally?	Go to step [8]	Replace HARNESS ASSY TNR4
8	Checking TONER MOTOR Check if an error occurs though the TONER MOTOR was replaced with a new one.	Go to step [9]	End of work
9	Checking HARNESS ASSY DRV1 for continuity Check the following for continuity. J11-37 <=> J41-4 J11-38 <=> J41-3 J11-39 <=> J41-2 J11-40 <=> J41-1	Replace PWBA DRV HBN, and if still faulty, replace PWBA MCU HBN	Replace HARNESS ASSY DRV1

FIP-35 PHD Life Warning (Imaging Unit Life Low)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. PHD ASSY replacing condition PWBA CRUM in PHD ASSY replacing condition	Replace the parts concerned	Go to step [2]
2	Checking PWBA CRUM for connection Is PWBA CRUM connector connected to the harness connector normally?	Go to step [3]	Replace HARNESS ASSY CRUM
3	Checking HARNESS ASSY CRUM for continuity Is J710 <=> J71 continuous normally?	Go to step [4]	Replace HARNESS ASSY CRUM
4	Checking HARNESS ASSY EEPROM for continuity Is P71 <=> J140 continuous normally?	Go to step [5]	Replace HARNESS ASSY EEPROM
5	Checking PHD ASSY Replace new PHD ASSY, and check if an error occurs	Replace PWBA MCU HBN	End of work

FIP-36 BTR Life Warning (Transfer Unit Life Low)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. BTR ASSY replacing condition SENSOR TONER FULL replacing condition	Replace the parts concerned	With tool Go to step [2] Without tool Go to step [3]
2	Checking SENSOR TONER FULL Does SENSOR TONER FULL function normally? Using SENSOR TONER FULL diagnostic tool, check by Digital Input Test.	Go to step [6]	Go to step [3]
3	Checking HARNESS ASSY TFLSNS for signal Remove the BTR ASSY Is P/J141-2PIN <=> P/J141-1PIN 0VDC?	Go to step [6]	Go to step [4]
4	Checking HARNESS ASSY TFLSNS for signal Is P/J141-3PIN <=> P/J141-1PIN +5VDC?	Go to step [5]	Replace HARNESS ASSY EEPROM
5	Checking HARNESS ASSY TFLSNS for continuity Is J142 <=> J142 continuous normally?	Replace SENSOR TONER FULL	Replace HARNESS ASSY TFLSNS
6	Checking BTR ASSY Replace new BTR ASSY, and check if an error occurs	Replace PWBA MCU HBN	End of work

FIP-37 Fuser Life Warning (Fuser Life Low)

Step	Check	Remedy	
		Yes	No
1	Checking NVM Does the error occur even if the Fuser counter is cleared?	Go to step [2]	End of work
2	Replace FUSER ASSY. Does the error happen?	Replace PWBA MCU HBN	End of work

FIP-38 CTD Sensor Dustiness (ADC Sensor Dustiness Warning)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. BTR ASSY replacing condition SENSOR ADC ASSY replacing condition	Replace the parts concerned	Go to step [2]
2	Checking HARNESS ASSY CTD for connection Is HARNESS ASSY CTD connected to the SENSOR ADC ASSY normally?	Go to step [3]	Replace the parts concerned
3	Checking HARNESS ASSY CTD for continuity Is J136 <=> J1361 continuous normally?	Go to step [4]	Replace HARNESS ASSY CTD
4	Checking HARNESS ASSY FRONT1A for continuity Is P1361 <=> J13 continuous normally?	Go to step [5]	Replace HARNESS ASSY FRONT1A
5	Checking HARNESS ASSY CTD for signal Is P/J1361-1PIN <=> P/J1361-3PIN 0VDC?	Replace SENSOR ADC ASSY	Replace PWBA MCU HBN

FIP-39 Tray 1 Paper Near Empty

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. SENSOR LOW PAPER replacing condition SENSOR actuator replacing condition	Replace the parts concerned	Go to step [2]
2	Does the error occur even if the paper is added?	With tool Go to step [3] Without tool Go to step [4]	End of work
3	Checking SENSOR LOW PAPER Does SENSOR LOW PAPER function normally? Using SENSOR LOW PAPER diagnostic tool, check by Digital Input Test.	Replace PWBA MCU HBN	Go to step [4]
4	Checking PWBA DRV HBN for signal Is P/J47-10 <=> P/J47-9 +3.3VDC?	Go to step [6]	Go to step [5]
5	Checking PWBA DRV HBN for signal Is P/J42-20 <=> P/J42-15 +3.3VDC?	Replace PWBA DRV HBN	Replace PWBA MCU HBN
6	Checking PWBA DRV HBN for signal Is P/J47-8 <=> P/J47-9 +3.3VDC?	Replace SENSOR LOW PAPER	Replace PWBA DRV HBN

FIP-40 Paper Empty (Put%s in%s Bin)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. SENSOR NO PAPER replacing condition SENSOR actuator replacing condition	Replace the parts concerned	TRAY 1 Go to step [2] MSI Go to step [7]
2	Does the error occur even if the paper is added?	With tool Go to step [3] Without tool Go to step [4]	End of work
3	Checking SENSOR NO PAPER Does SENSOR NO PAPER function normally? Using SENSOR LOW PAPER diagnostic tool, check by Digital Input Test.	Replace PWBA MCU HBN	Go to step [4]
4	Checking PWBA DRV HBN for signal Is P/J47-7 <=> P/J47-6 +3.3VDC?	Go to step [6]	Go to step [5]
5	Checking PWBA DRV HBN for signal Is P/J42-19 <=> P/J42-15 +3.3VDC?	Replace PWBA DRV HBN	Replace PWBA MCU HBN
6	Checking PWBA DRV HBN for signal Is P/J47-5 <=> P/J47-6 +3.3VDC?	Replace SENSOR NO PAPER	Replace PWBA DRV HBN
7	Does the error occur even if the paper is added?	With tool Go to step [8] Without tool Go to step [9]	End of work
8	Checking SENSOR NO PAPER Does SENSOR NO PAPER function normally? Using SENSOR LOW PAPER diagnostic tool, check by Digital Input Test.	Replace PWBA MCU HBN	Go to step [9]
9	Checking HARNESS ASSY FRONT2 for signal Is P/J139-7PIN <=> P/J139-8PIN +3.3VDC?	Go to step [11]	Go to step [10]
10	Checking HARNESS ASSY FRONT1A for continuity Check the following for continuity. P139-3PIN <=> J13-9PIN P139-4PIN <=> J13-8PIN P139-5PIN <=> J13-7PIN	Replace PWBA MCU HBN	Replace HARNESS ASSY FRONT1A
11	Checking HARNESS ASSY FRONT2 for signal Is P/J135-3PIN <=> P/J135-2PIN +3.3VDC?	Replace SENSOR NO PAPER	Replace HARNESS ASSY FRONT2

FIP-41 Upper Cassette Detached (Adjust Input Bin)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. SW ASSY SIZE replacing condition Actuator replacing condition PAPER CASSETTE replacing condition	Replace the parts concerned	With tool Go to step [2] Without tool Go to step [3]
2	Checking SW ASSY SIZE Does SW ASSY SIZE function normally? Using SW ASSY SIZE diagnostic tool, check by Digital Input Test.	Replace PWBA MCU HBN	Go to step [3]
3	Checking PWBA DRV HBN for signal Check the following, and does the result meet the combination table? P/J47-1PIN <=> P/J47-3PIN P/J47-2PIN <=> P/J47-3PIN P/J47-4PIN <=> P/J47-3PIN Refer to paper size control of operation principle	Go to step [4]	Replace SW ASSY SIZE
4	Checking PWBA DRV HBN for signal Check the following, and does the result meet the combination table? P/J42-16PIN <=> P/J42-15PIN P/J42-17PIN <=> P/J42-15PIN P/J42-18PIN <=> P/J42-15PIN	Replace PWBA MCU HBN	Replace PWBA DRV HBN

FIP-42 Full Stack (Output Bin Full)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. SENSOR FULL STACK replacing condition Actuator replacing condition	Replace the parts concerned	With tool Go to step [2] Without tool Go to step [3]
2	Checking SENSOR FULL STACK Does SENSOR FULL STACK function normally? Using SENSOR FULL STACK diagnostic tool, check by Digital Input Test.	Replace PWBA MCU HBN	Go to step [3]
3	Checking HARNESS ASSY FRONT2 for signal Is P/J139-6PIN <=> P/J139-5PIN +3.3VDC?	Replace PWBA MCU HBN	Go to step [4]
4	Checking HARNESS ASSY FRONT2 for signal Is P/J139-4PIN <=> P/J139-5PIN +3.3VDC?	Replace SENSOR FULL STACK	Replace HARNESS ASSY FRONT1A Replace PWBA MCU HBN

FIP-43 Yellow Toner Empty 2 (Yellow Toner Empty)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. SENSOR TONER LOW replacing condition TONER CARTRIDGE replacing condition TONER MOTOR replacing condition	Replace the parts concerned	Go to step [2]
2	Checking TONER CARTRIDGE Check if an error occurs though the TONER CARTRIDGE was replaced with a new one.	Go to step [3]	End of work
3	Checking PWBA DRV HBN for signal Is P/J51-7 <=> P/J51-8 less than +0.2VDC?	Go to step [6]	Go to step [4]
4	Checking HARNESS ASSY TNR4 for continuity Is J701 <=> J51 continuous normally?	Go to step [5]	Replace HARNESS ASSY TNR4
5	Checking SENSOR TONER LOW Check if an error occurs though the SENSOR TONER LOW was replaced with a new one.	Go to step [6]	End of work
6	Checking HARNESS ASSY DRV2-2 for continuity Is J12-23 <=> J42-8 continuous normally?	With tool Go to step [7] Without tool Go to step [8]	Replace HARNESS ASSY DRV2-2
7	Checking TONER MOTOR Does TONER MOTOR function normally? Using TONER MOTOR diagnostic tool, check by Digital Output Test. In the test, close the INTERLOCK SW.	Check the toner stirring AUGER or gear for damage	Go to step [8]
8	Checking PWBA DRV HBN for signal Is P/J51-21 <=> P/J60-2 +24VDC?	Go to step [9]	Replace PWBA DRV HBN
9	Checking HARNESS ASSY TNR4 for continuity Is J511 <=> J51 continuous normally?	Go to step [10]	Replace HARNESS ASSY TNR4
10	Checking TONER MOTOR Check if an error occurs though the TONER MOTOR was replaced with a new one.	Go to step [11]	End of work
11	Checking HARNESS ASSY DRV1 for continuity Check the following for continuity. J11-25 <=> J41-16 J11-26 <=> J41-15 J11-27 <=> J41-14 J11-28 <=> J41-13	Replace PWBA DRV HBN, and if still faulty, replace PWBA MCU HBN	Replace HARNESS ASSY DRV1

FIP-44 Magenta Toner Empty 2 (Magenta Toner Empty)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. SENSOR TONER LOW replacing condition TONER CARTRIDGE replacing condition TONER MOTOR replacing condition	Replace the parts concerned	Go to step [2]
2	Checking TONER CARTRIDGE Check if an error occurs though the TONER CARTRIDGE was replaced with a new one.	Go to step [3]	End of work
3	Checking PWBA DRV HBN for signal Is P/J51-4 <=> P/J51-5 less than +0.2VDC?	Go to step [6]	Go to step [4]
4	HARNESS ASSY TNR4 for continuity Is J702 <=> J51 continuous normally?	Go to step [5]	Replace HARNESS ASSY TNR4
5	Checking SENSOR TONER LOW Check if an error occurs though the SENSOR TONER LOW was replaced with a new one.	Go to step [6]	End of work
6	Checking HARNESS ASSY DRV2-2 for continuity Is J12-22 <=> J42-9 continuous normally?	With tool Go to step [7] Without tool Go to step [8]	Replace HARNESS ASSY DRV2-2
7	Checking TONER MOTOR Does TONER MOTOR function normally? Using TONER MOTOR diagnostic tool, check by Digital Output Test. In the test, close the INTERLOCK SW.	Check the toner stirring AUGER or gear for damage	Go to step [8]
8	Checking PWBA DRV HBN for signal Is P/J51-26PIN <=> P/J60-2PIN +24VDC?	Go to step [9]	Replace PWBA DRV HBN
9	Checking HARNESS ASSY TNR4 for continuity Is J512 <=> J51 continuous normally?	Go to step [10]	Replace HARNESS ASSY TNR4
10	Checking TONER MOTOR Check if an error occurs though the TONER MOTOR was replaced with a new one.	Go to step [11]	End of work
11	Checking HARNESS ASSY DRV1 for continuity Check the following for continuity. J11-29 <=> J41-12 J11-30 <=> J41-11 J11-31 <=> J41-10 J11-32 <=> J41-9	Replace PWBA DRV HBN, and if still faulty, replace PWBA MCU HBN	Replace HARNESS ASSY DRV1

FIP-45 Cyan Toner Empty 2 (Cyan Toner Empty)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. SENSOR TONER LOW replacing condition TONER CARTRIDGE replacing condition TONER MOTOR replacing condition	Replace the parts concerned	Go to step [2]
2	Checking TONER CARTRIDGE Check if an error occurs though the TONER CARTRIDGE was replaced with a new one.	Go to step [3]	End of work
3	Checking PWBA DRV HBN for signal Is P/J51-1PIN <=> P/J51-2PIN less than +0.2VDC?	Go to step [6]	Go to step [4]
4	Checking HARNESS ASSY TNR4 for continuity Is J703 <=> J51 continuous normally?	Go to step [5]	Replace HARNESS ASSY TNR4
5	Checking SENSOR TONER LOW Check if an error occurs though the SENSOR TONER LOW was replaced with a new one.	Go to step [6]	End of work
6	Checking HARNESS ASSY DRV2 for continuity Is J12-21 <=> J42-10 continuous normally?	With tool Go to step [7] Without tool Go to step [8]	Replace HARNESS ASSY DRV2-2
7	Checking TONER MOTOR Does TONER MOTOR function normally? Using TONER MOTOR diagnostic tool, check by Digital Output Test. In the test, close the INTERLOCK SW.	Check the toner stirring AUGER or gear for damage	Go to step [8]
8	Checking PWBA DRV HBN for signal Is P/J51-31 <=> P/J60-2 +24VDC?	Go to step [9]	Replace PWBA DRV HBN
9	Checking HARNESS ASSY TNR4 for continuity Is J513 <=> J51 continuous normally?	Go to step [10]	Replace HARNESS ASSY TNR4
10	Checking TONER MOTOR Check if an error occurs though the TONER MOTOR was replaced with a new one.	Go to step [11]	End of work
11	Checking HARNESS ASSY DRV1 for continuity Check the following for continuity. J11-33 <=> J41-8 J11-34 <=> J41-7 J11-35 <=> J41-6 J11-36 <=> J41-5	Replace PWBA DRV HBN, and if still faulty, replace PWBA MCU HBN	Replace HARNESS ASSY DRV1

FIP-46 Black Toner Empty 2 (Black Toner Empty)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. SENSOR TONER LOW replacing condition TONER CARTRIDGE replacing condition TONER MOTOR replacing condition	Replace the parts concerned	Go to step [2]
2	Checking TONER CARTRIDGE Check if an error occurs though the TONER CARTRIDGE was replaced with a new one.	Go to step [3]	End of work
3	Checking PWBA DRV HBN for signal Is P/J51-10 <=> P/J51-11 less than +0.2VDC?	Go to step [6]	Go to step [4]
4	Checking HARNESS ASSY TNR4 for continuity Is J704 <=> J51 continuous normally?	Go to step [5]	Replace HARNESS ASSY TNR4
5	Checking SENSOR TONER LOW Check if an error occurs though the SENSOR TONER LOW was replaced with a new one.	Go to step [6]	End of work
6	Checking HARNESS ASSY DRV2 for continuity Is J12-24 <=> J42-7 continuous normally?	With tool Go to step [7] Without tool Go to step [8]	Replace HARNESS ASSY DRV2-2
7	Checking TONER MOTOR Does TONER MOTOR function normally? Using TONER MOTOR diagnostic tool, check by Digital Output Test. In the test, close the INTERLOCK SW.	Check the toner stirring AUGER or gear for damage	Go to step [8]
8	Checking PWBA DRV HBN for signal Is P/J51-36 <=> P/J60-2 +24VDC?	Go to step [9]	Replace PWBA DRV HBN
9	Checking HARNESS ASSY TNR4 for continuity Is J514 <=> J51 continuous normally?	Go to step [10]	Replace HARNESS ASSY TNR4
10	Checking TONER MOTOR Check if an error occurs though the TONER MOTOR was replaced with a new one.	Go to step [11]	End of work
11	Checking HARNESS ASSY DRV1 for continuity Check the following for continuity. J11-37 <=> J41-4 J11-38 <=> J41-3 J11-39 <=> J41-2 J11-40 <=> J41-1	Replace PWBA DRV HBN, and if still faulty, replace PWBA MCU HBN	Replace HARNESS ASSY DRV1

FIP-47 PHD Life Over 2 (Replace Imaging Unit)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. PHD ASSY replacing condition PHD ASSY in PWBA CRUM replacing condition	Replace the parts concerned	Go to step [2]
2	Checking PWBA CRUM for connection Is PWBA CRUM connector connected to the harness connector normally?	Go to step [3]	Replace HARNESS ASSY CRUM
3	Checking HARNESS ASSY CRUM for continuity Is J710 <=> J71 continuous normally?	Go to step [4]	Replace HARNESS ASSY CRUM
4	Checking HARNESS ASSY EEPROM for continuity Is P71 <=> J140 continuous normally?	Go to step [5]	Replace HARNESS ASSY EEPROM
5	Checking PHD ASSY Replace new PHD ASSY, and check if an error occurs.	Replace PWBA MCU HBN	End of work

FIP-48 BTR Life Over 2 (Replace Transfer Unit)

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. BTR ASSY replacing condition SENSOR TONER FULL replacing condition	Replace the parts concerned	With tool Go to step [2] Without tool Go to step [3]
2	Checking SENSOR TONER FULL Does SENSOR TONER FULL function normally? Using SENSOR TONER FULL diagnostic tool, check by Digital Input Test.	Go to step [6]	Go to step [3]
3	Checking HARNESS ASSY TFLSNS for signal Remove the BTR ASSY Is P/J141-2PIN <=> P/J141-1PIN 0VDC?	Go to step [6]	Go to step [4]
4	Checking HARNESS ASSY TFLSNS for signal Is P/J141-3PIN <=> P/J141-1PIN +5VDC?	Go to step [5]	Replace HARNESS ASSY EEPROM
5	Checking HARNESS ASSY TFLSNS for continuity Is J142 <=> J142 continuous normally?	Replace SENSOR TONER FULL	Replace HARNESS ASSY TFLSNS
6	Checking BTR ASSY Replace new BTR ASSY, and check if an error occurs.	Replace PWBA MCU HBN	End of work

FIP-49 Fuser Life Over 2 (Replace Fuser Unit)

Step	Check	Remedy	
		Yes	No
1	Checking NVM Does the error occur even if the Fuser counter is cleared?	Go to step [2]	End of work
2	Replace FUSER ASSY. Does the error happen?	Replace PWBA MCU HBN	End of work

FIP-50 CRUM ID Error (TC-Y / TC-M / TC-C / TC-K) (Call for Service CRUM Error Y/M/C/K TC)

Step	Check	Remedy	
		Yes	No
1	Check the following for failure: Installation of Toner Cartridge Installation of PWB CRUM READER	Reinstall the appropriate part	Go to Step [2]
2	Check connection of PWB CRUM READER. Is the PWB CRUM READER Connector properly connected to the Harness Connector?	Go to Step [3]	Replace HARNESS ASSY
3	Check continuity of HARNESS ASSY RFID2 (J341-3411). Is continuity proper between J341<=>J3411?	Go to Step [4]	Replace HARNESS ASSY
4	Check continuity of HARNESS ASSY RFID (J34-3411). Is continuity proper between P3411<=>J34?	Go to Step [5]	Replace HARNESS ASSY
5	Check Toner Cartridge. Has Error occurred after installing the new Toner Cartridge?	Replace HBN MCU WITH CPU	End of work

FIP-51 CRUM ID Error(Fuser) (Invalid ID Fuser Unit)

Step	Check	Remedy	
		Yes	No
1	Check the following for failure: Installation of Fuser Assy. Installation of PWB EEPROM	Reinstall the appropriate part	Go to Step [2]
2	Check connection of PWB EEPROM. Is the PWB EEPROM Connector properly connected to the Harness Connector?	Go to Step [3]	Replace PWB EEPROM
3	Check continuity of HARNESS ASSY FSR32. Is continuity proper between J145 <=> J232?	Go to Step [4]	Replace HARNESS ASSY
4	Check continuity of HARNESS ASSY EEPROM (J140-P71/ J144/P141) Is continuity proper between J144 < = > J140?	Go to Step [5]	Replace HARNESS ASSY
5	Check Fuser Assy. Has Error occurred after installing the new Fuser Assy?	Replace HBN MCU WITH CPU	End of work

FIP-52 CRUM Error (TC-Y / TC-M / TC-C / TC-K) (Call for Service Invalid ID Y/M/C/K TC)

Step	Check	Remedy	
		Yes	No
1	Check the following for failure: Installation of Toner Cartridge. Color of Toner Cartridge. Installation of PWB CRUM READER	Reinstall the appropriate part	Go to Step [2]
2	Check connection of PWB CRUM READER. Is the PWB CRUM READER Connector properly connected to the Harness Connector?	Go to Step [3]	Replace HARNESS ASSY
3	Check continuity of HARNESS ASSY RFID2 (J341-3411). Is continuity proper between J341 <=> J3411?	Go to Step [4]	Replace HARNESS ASSY
4	Check continuity of HARNESS ASSY RFID (J34-3411) Is continuity proper between P3411 < = > J34?	Go to Step [5]	Replace HARNESS ASSY
5	Check Toner Cartridge. Has Error occurred after installing the new Toner Cartridge?	Replace HBN MCU WITH CPU	End of work

FIP-53 Y/M/C/K Toner Tape Staying (Reinstall Y/M/C/K TC and Remove Seal)

Step	Check	Remedy	
		Yes	No
1	Check Toner Tape for staying. Has Toner Tape been pulled out?	Pull out Toner Tape	Go to Step [2]
2	Reinstalling the Toner Cartridge. Has the Toner Cartridge been recovered after reinstalling?	End of work	Go to the FIP below. Y:FIP-22 M:FIP-23 C:FIP-24 K:FIP-25

3.5 Image Troubleshooting

NOTE

Description below assumes that the printer controller is normal. By testing the printing operation for the engine only, conditions can be isolated simply to determine whether the trouble exists on the printer controller side or engine side.

◆ When the test print with the engine only is correct, the printer controller is fault.

◆ When printing on the engine only is not correct, the engine is faulty.

When trouble is considered to be on the printer controller side, replace the printer controller with proper one and check for proper operation again.

If the trouble persists even after the replacement, check the host side using the image troubleshooting for each condition as described below for effective troubleshooting.

If print image quality trouble occurs, print on paper of A3 or A4 size in order to judge and understand the trouble precisely and take proper remedy steps. Utilize the image quality troubleshooting correction table depending on the trouble for efficient troubleshooting.

If the trouble cannot be corrected according to the image quality troubleshooting, check the trouble after replacing the “Major check parts” specified for the “Initial check” in the image quality troubleshooting in succession making use of the Specifications in Chapter 6.

Image quality troubleshooting describes the representative image quality troubles as follows:

- ✧ P1 “Light (Undertoned) Prints”
- ✧ P2 “Blank Prints”
- ✧ P3 “Black Prints”
- ✧ P4 “Vertical Band Deletions”
- ✧ P5 “Horizontal Band Deletions”
- ✧ P6 “Black (color) spots”
- ✧ P7 “Background”
- ✧ P8 “Skewed Image”
- ✧ P9 “Crease”
- ✧ P10 “Infused Image or Image Easily Rubs Off of Paper “
- ✧ P11 “White flake”
- ✧ P12 “Toner splash”
- ✧ P13 “Entire image has bluish tinge”

3.6 Roller Circumferences

Reference ***Rolls related with image quality troubles and interval appearing on prints are shown in the table below.***

Parts	Cycle
Magnet Roll	29 mm
Drum	63 mm
BTR	65 mm
Paddle	7.5 mm
RTC	25 mm
IDT 1	132 mm
IDT 2	132 mm
Heat Roll	82 mm

P1 “Light (Undertoned) Prints”

Condition / initial check		
∆The overall image density is too light. Initial check Parts of different specifications, improper installation, damage, deformation, dirt, foreign substance attached, etc. Major parts to be checked PHD ASSY, BTR ASSY, ROS ASSY, PWBA MCU HBN, S-HVPS		
Item	**Check**	**Remedy**
1	Faulty PHD ASSY Is the image quality improved if PHD ASSY is replaced?	Replace the PHD ASSY
2	Faulty ROS ASSY Is the image quality improved if ROS ASSY is replaced?	Replace the ROS ASSY
3	Faulty PWBA MCU HBN Is the image quality improved if PWBA MCU HBN is replaced?	Replace the PWBA MCU HBN
4	Faulty BTR ASSY Is the image quality improved if PHD ASSY is replaced?	Replace the BTR ASSY
5	Faulty S-HVPS Is the image quality improved if S-HVPS is replaced?	Replace the S-HVPS

P2 “Blank Prints”

Condition / initial check		
∆The entire image area is blank. Initial check Parts of different specifications, improper installation, damage, deformation, dirt, foreign substance attached, etc. ∇ Major parts to be checked ∇ PHD ASSY, FUSER ASSY, BTR ASSY, ROS ASSY, PWBA MCU HBN, HOLDER TCRU ASSY		
Item	**Check**	**Remedy**
1	Intercepted laser beam path Check if foreign substance or dirt is present in the laser beam path between ROS ASSY and Drum in PHD ASSY	Remove foreign substance or dirt
2	Faulty ROS ASSY Is the image quality improved if ROS ASSY is replaced?	Replace the ROS ASSY
3	Faulty charging or developing Is the image quality improved if PHD ASSY is replaced?	Replace the PHD ASSY
4	Faulty transfer Is the image quality improved if BTR ASSY is replaced?	Replace the BTR ASSY
5	Faulty PWBA MCU HBN Is the image quality improved if PWBA MCU HBN is replaced?	Replace the PWBA MCU HBN

P3 “Black Prints”

Condition / initial check		
∆ The entire image area is black. Initial check Parts of different specifications, improper installation, damage, deformation, dirt, foreign substance attached, etc. ∇ Major parts to be checked ∇ PHD ASSY, FUSER ASSY, BTR ASSY, ROS ASSY, PWBA MCU HBN		
Item	**Check**	**Remedy**
1	Faulty transfer Is the image quality improved if the laser beam exit window of ROS ASSY is shielded with a sheet?	Replace the PWBA MCU HBN
2	Faulty ROS ASSY Is the image quality improved if ROS ASSY is replaced?	Replace the ROS ASSY
3	Faulty PHD ASSY Is the image quality improved if PHD ASSY is replaced?	Replace the PHD ASSY

P4 “Vertical Band Deletions”

Condition / initial check		
∆There are areas of the image that are extremely light or are missing entirely. These missing areas from wide bands that run vertically along the page in the paper feeding direction. Initial check Parts of different specifications, improper installation, damage, deformation, dirt, foreign substance attached, etc. ∇ Major parts to be checked ∇ PHD ASSY, FUSER ASSY, BTR ASSY, ROS ASSY, PWBA MCU HBN, S-HVPS		
Item	**Check**	**Remedy**
1	Faulty PHD ASSY Is the image quality improved if PHD ASSY is replaced?	Replace the PHD ASSY
2	Faulty ROS ASSY Is the image quality improved if ROS ASSY is replaced?	Replace the ROS ASSY
3	Faulty FUSER ASSY Check the HEAT ROLL and NIP BELT for evidence of damage, dirt, or foreign substances.	Replace the FUSER ASSY
4	Faulty BTR ASSY Is the image quality improved if BTR ASSY is replaced?	Replace the BTR ASSY

P5 “Horizontal Band Deletions”

Condition / initial check		
∆ There are areas of the image that are extremely light or are missing entirely. These missing areas from wide bands that run horizontally across the page parallel with the paper feeding direction. Initial check Parts of different specifications, improper installation, damage, deformation, dirt, foreign substance attached, etc. ∇ Major parts to be checked ∇ PHD ASSY, FUSER ASSY, BTR ASSY, ROS ASSY, PWBA MCU HBN, S-HVPS		
Item	**Check**	**Remedy**
1	Faulty PHD ASSY Is the image quality improved if PHD ASSY is replaced?	Replace the PHD ASSY
2	Faulty ROS ASSY Is the image quality improved if ROS ASSY is replaced?	Replace the ROS ASSY
3	Faulty FUSER ASSY Check the HEAT ROLL and NIP BELT for evidence of damage, dirt, or foreign substances.	Replace the FUSER ASSY
4	Faulty BTR ASSY Is the image quality improved if BTR ASSY is replaced?	Replace the BTR ASSY
5	Checking the cyclicity Check if a trouble occurs cyclically. (See sheet 1-66)	Replace the parts concerned

P6 “Black (color) spots”

Condition / initial check		
Black (color) spots on print ∆ Toner spots are scatted disorderly on the entire paper. Initial check Parts of different specifications, improper installation, damage, deformation, dirt, foreign substance attached, etc. ∇ Major parts to be checked ∇ PHD ASSY, FUSER ASSY, BTR ASSY, ROS ASSY, PWBA MCU HBN, S-HVPS		
Item	**Check**	**Remedy**
1	Faulty PHD ASSY Is the image quality improved if PHD ASSY is replaced?	Replace the PHD ASSY
2	Faulty FUSER ASSY Check the HEAT ROLL and NIP BELT for evidence of damage, dirt, or foreign substances.	Replace the FUSER ASSY
3	Faulty BTR ASSY Is the image quality improved if BTR ASSY is replaced?	Replace the BTR ASSY

P7 “Background”

Condition / initial check		
Background ∆ The entire page or a part of paper is dirty (too light gray) with toner. Initial check Parts of different specifications, improper installation, damage, deformation, dirt, foreign substance attached, etc. ∇ Major parts to be checked ∇ PHD ASSY, FUSER ASSY, BTR ASSY, ROS ASSY, PWBA MCU HBN, S-HVPS		
Item	**Check**	**Remedy**
1	Faulty PHD ASSY Is the image quality improved if PHD ASSY is replaced?	Replace the PHD ASSY
2	Faulty ROS ASSY Is the image quality improved if ROS ASSY is replaced?	Replace the ROS ASSY
3	Faulty FUSER ASSY Check the HEAT ROLL and NIP BELT for evidence of damage, dirt, or foreign substances.	Replace the FUSER ASSY
4	Faulty BTR ASSY Is the image quality improved if BTR ASSY is replaced?	Replace the BTR ASSY
5	Faulty PWBA MCU HBN Is the image quality improved if PWBA MCU HBN is replaced?	Replace the PWBA MCU HBN

P8 “Skewed Image”

Condition / initial check		
Print skewing ∆ Image is printed in skewed position. Initial check Parts of different specifications, improper installation, damage, deformation, dirt, foreign substance attached, etc. ∇ Major parts to be checked ∇ PAPER FEEDER, CHUTE ASSY REGI, CHUTE ASSY OUT, BTR ASSY, PHD ASSY, FUSER ASSY, ROS ASSY		
Item	**Check**	**Remedy**
1	Faulty paper setting Check if paper or paper cassette is set normally.	Set the paper and paper cassette normally. (Ask customer for correct setting)
2	Faulty paper transfer path Check the paper transfer path for presence of burrs, foreign substances or dirt.	Clean or replace the parts concerned
3	Faulty paper feed rolls Check if the paper feed rolls feed the paper normally.	Clean or replace the parts concerned
4	Faulty paper transfer rolls Check the paper transfer rolls for evidence of foreign substances, dirt, deformation, or malfunction.	Clean or replace the parts concerned
5	Checking ROS ASSY for mounting Check if ROS ASSY for mounting	Replace the ROS ASSY
6	Faulty PHD ASSY Is the image quality improved if PHD ASSY is replaced	Replace the PHD ASSY

P9 “Crease”

Condition / initial check		
Crease on print ∆ Print on creased paper. Initial check Parts of different specifications, improper installation, damage, deformation, dirt, foreign substance attached, etc. ∇ Major parts to be checked ∇ PAPER FEEDER, CHUTE ASSY REGI, CHUTE ASSY OUT, BTR ASSY, PHD ASSY, FUSER ASSY		
Item	**Check**	**Remedy**
1	Wet paper Do the wrinkles disappear if the paper is replaced with newly unpacked paper?	Replace the paper (Ask the customer for storing the paper in a dry place)
2	Faulty FUSER ASSY Check the HEAT ROLL and NIP BELT for evidence of damage, dirt, or foreign substances.	Replace the FUSER ASSY
3	Paper skew feed Check if the paper is fed on the skew	Go to P8
4	Faulty paper transfer path Check the paper transfer path for presence of burrs, foreign substances or dirt.	Clean or replace the parts concerned
5	Faulty paper transfer rolls Check the paper transfer rolls for evidence of foreign substances, dirt, deformation, or malfunction.	Clean or replace the parts concerned

P10 “Unfused Image or Image Easily Rubs off of Page”

Condition / initial check		
The toner image is not completely fused to the paper. ∆ The image easily rubs off. Initial check Parts of different specifications, improper installation, damage, deformation, dirt, foreign substance attached, etc. ∇ Major parts to be checked ∇ FUSER ASSY		
Item	**Check**	**Remedy**
1	Wet paper Do the wrinkles disappear if the paper is replaced with newly unpacked paper?	Replace the paper (Ask the customer for storing the paper in a dry place)
2	Faulty FUSER ASSY Is the image quality improved if FUSER ASSY is replaced	Replace the FUSER ASSY

P11 “White flake”

Condition / initial check		
A part of image is missing and it becomes flake. Initial check Parts of different specifications, improper installation, damage, deformation, dirt, foreign substance attached, etc. ∇ Major parts to be checked ∇ BTR ASSY		
Item	**Check**	**Remedy**
1	Check paper Are recommended size and type of paper used?	Change paper Use the recommended size and type of paper. Check printer driver.
2	Check the transfer condition for duplex printing. Check the transfer condition specified by ESS.	Set the appropriate printing condition by ESS.

P12 “Toner splash”

Condition / initial check		
Toners around image splash. Initial check Parts of different specifications, improper installation, damage, deformation, dirt, foreign substance attached, etc. ∇ Major parts to be checked ∇ BTR ASSY		
Item	**Check**	**Remedy**
1	Check paper Are recommended size and type of paper used?	Change paper Use the recommended size and type of paper. Check printer driver.
2	Check the transfer condition for duplex printing. Check the transfer condition specified by ESS.	Set the appropriate printing condition by ESS.

P13 “Entire image has bluish tinge.”

Condition / initial check		
Entire image has bluish tinge. Initial check Parts of different specifications, improper installation, damage, deformation, dirt, foreign substance attached, etc. ∇ Major parts to be checked ∇ BTR ASSY		
Item	**Check**	**Remedy**
1	Check paper Are recommended size and type of paper used?	Change paper Use the recommended size and type of paper. Check printer driver.
2	Check the transfer condition for duplex printing. Check the transfer condition specified by ESS.	Set the appropriate printing condition by ESS.

3.7 Other FIP

Other FIP covers the power supply trouble FIP, except error code FIP and image quality FIP.

FIP-AC

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. Power Cord disconnection or loose connection Improper power supply voltage on the customer side	Repair	Go to step [2]
2	Check AC SW for continuity Disconnect the POWER CORD and wait for 10 seconds. With the POWER CORD disconnected, turn the AC SW on. Is J161-1PIN <=> J161-2PIN continuous normally?	Replace LVPS	Replace HARNESS ASSY AC SW

FIP-DC

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. Blown fuse in LVPS AC power supply failure	Repair	Go to step [2]
2	Checking LVPS Disconnect the connectors J163, J165 and J164 from the LVPS, and turn the AC SW on. Is P163-1PIN <=> P163-2PIN +24VDC?	Go to step [3]	Replace LVPS
3	Checking LVPS Is P165-1PIN <=> P165-2PIN +5VDC?	Go to step [4]	Replace LVPS
4	Checking LVPS Is P165-3PIN <=> P165-4PIN +3.3VDC?	Go to step [5]	Replace LVPS
5	Checking HARNESS ASSY LV RPG Turn the AC SW off, and connect J164 to the LVPS, then turn the AC SW on. Is P/J164-1PIN <=> P/J164-2PIN +3.3VDC?	Go to step [6]	Check HARNESS ASSY LV RPG for frame short
6	Checking HARNESS ASSY LVNC3 Turn the AC SW off, and connect J165 to the LVPS, then turn the AC SW on. Is P/J165-1PIN <=> P/J165-2PIN +5VDC?	Go to step [7]	Check HARNESS ASSY LVNC3 for frame short
7	Checking HARNESS ASSY 24V Turn the AC SW off, and connect J163 to the LVPS, then turn the AC SW on. Is P/J163-1PIN <=> P/J163-2PIN +24VDC?	End of work	Check HARNESS ASSY 24V for frame short

4. Preventive Maintenance

When you visit a customer, perform preventive maintenance services everytime you visit the customer to prevent possible troubles beforehand.

◆ Preventive maintenance procedure

1) Ask the customer how the laser printer is used.
2) Record the accumulated number of sheets printed.

NOTE

Replace the parts to be replaced periodically based on the No. of prints. If required, replace such parts at this time.

3) Print on several sheets of paper to check for no trouble.
4) Remove foreign substances on the BTR ASSY, PHD ASSY, FUSER ASSY and paper delivery rolls and clean any debris with a brush or dry cloth.

NOTE

If stain is serious, clean with wet cloth and then dry cloth. Be careful not to damage the parts.

5) Cleaning of fan exhaust port
   Remove the FRONT HEAD COVER and clean the FUSER FAN to remove dust deposited on it with a brush or toner vacuum. Remove the REAR COVER and clean the dust deposit on the fan.

NOTE

If the exhaust port or fan is clogged, temperature in this laser printer increases causing trouble.

6) Print on several sheets again to check for print quality.

Chapter 2 Operation of Diagnostics

1. Diagnosis for Stand-alone Printer

1.1 General

The test print can be used on the stand-alone printer for an operation check. For this purpose, the test print pattern stored in the printer is printed continuously at the continuous printing speed.

1.2 Printing Method

1) Remove the CONTROLLER BOARD. (See Disassembly and Assembly 12.3)
2) Set the paper, and turn the power on.

CAUTION

In the following steps, never touch the live parts and driving parts.

3) Short two pins of the test print connector (P31) on the PWBA MCU HBN.

Reference: To short two pins, make the screwdriver tip touch the two pins.

4) The printer transits to the READY mode, and starts the printing. (Printing is carried out continuously in the Duplex mode).
5) To stop the printing, remove the screwdriver to release the short of two pins.

NOTE

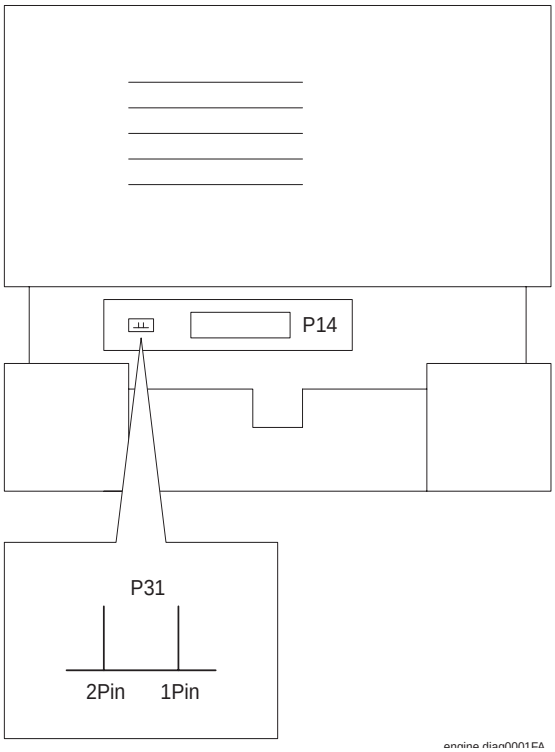
The paper is fed from the tray 1, and if no paper is set in the tray 1, printing is not carried out.

NOTE

The test print in a stand-alone printer disregards the cleaning cycle. Therefore, a blank sheet will be output if it goes into a cleaning cycle while the pin is shorted.

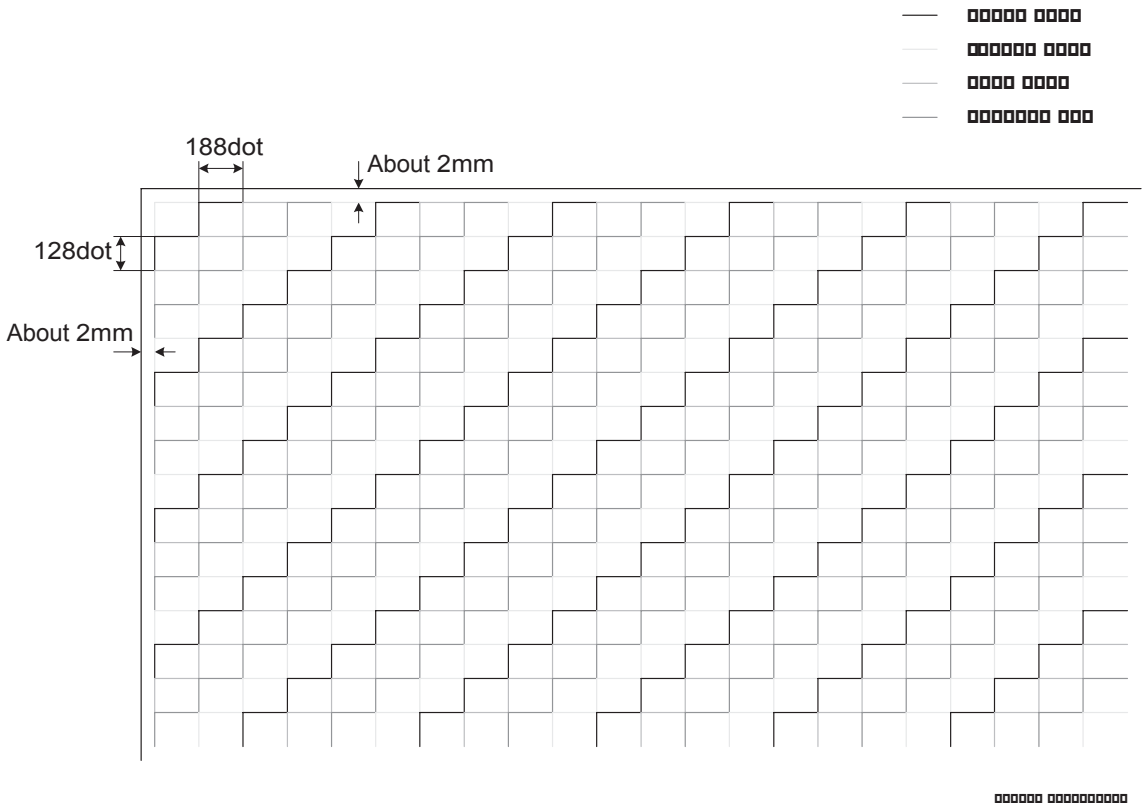
Reference: Printing will not start, if the printer is in an error status.

Reference: For the READY mode, see 6.2 Operation Modes in Section 6 Operational Principle.



1.3 Test Print Pattern

The test print pattern is a lattice pattern composed of black (K), cyan (C), magenta (M), and yellow (Y) patterns in the order of vertical 128 dots, and horizontal about 188 dots.



2. Diagnosis by Diagnostic Commander

2.1 General

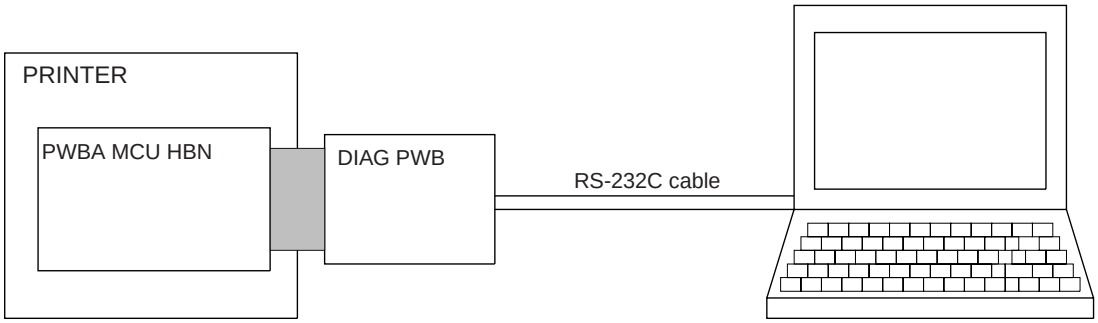
2.1.1 Configuration

The printer uses diagnostic tools (maintenance tools) to set/execute diagnostic functions.
The system configuration as shown in the figure is made to run the Diagnostic Commander (application software) on the personal computer to transmit the commands from DIAG PWB to the PWBA MCU HBN (main PWB in the printer) for the diagnosis.
Reference: The DIAG PWB, RS-232C cable, personal computer, and diagnostic commands to execute the diagnosis are altogether called diagnostic tools (maintenance tools).

Reference: The DIAG PWB, RS-232C cable, personal computer, and diagnostic commands to execute the diagnosis are altogether called diagnostic tools (maintenance tools).

Reference: The diagnostic tools supplied are as follows:

- ***DIAG PWB (board)***
- ***Diagnostic Commander (Installation Disk)***



engine diag0003FB

2.1.2 General description of Diagnostic Commander

The Diagnostic Commander sends and receives the data (commands and statuses) transferred between printer controller (CONTROLLER BOARD) and PWBA MCU HBN instead of the printer controller to control the printer.
It sends diagnostic commands when executing the diagnosis.

2.1.3 General description of DIAG PWB

The following parts are mounted on the board:

- Connector for PWBA MCU HBN connection
- RS-232C cable connector (D-Sub 9 pins)
- DIP switch (for RS-232C cross/straight switching)
- Switch (for Test print)

NOTE **The switch for a test print is equivalent to the test print of a stand-alone printer.**

2.2 Preparation

2.2.1 Supported configurations/platforms

The magicolor 3300 Diagnostics (Hibana Service Commander) program requires the following configurations/platforms:

Items	Description
CPU	Pentium 90 MHz (166 M Hz or higher preferable)
Memory	48 MB (64 MB preferable)
Display	VGA (640 × 480)
OS	Windows XP/2000/Me/98/95/NT
Communication port	RS-232C interface furnished

2.2.2 Installing magicolor 3300 Diagnostics (Hibana Service Commander)

[Steps]

1) Start Windows.
2) Insert the magicolor 3300 Computer-Based Training CD-ROM (which includes the magicolor 3300 Diagnostics [Hibana Service Commander] program) into your PC's CD-ROM drive.
3) After the CBT autoboots, close it.
4) From the [Start] menu choose [Run].
5) In the Run dialog box, type *x*:\commander\setup.exe" (where *x* is the letter of your CD-ROM drive), and click the [OK] button.
6) Follow the instructions on the screen to complete the installation.

2.2.3 Uninstalling magicolor 3300 Diagnostics (Hibana Service Commander)

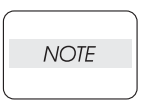
[Steps]

1) Start Windows.
2) From the [Start] menu choose [Settings], then choose [Control Panel].
2) In the Control Panel window, double-click the [Add or Remove Programs] icon.
3) In the Add or Remove Programs window, select Hibana Service Tool, and then click the [Change/ Remove] button.
4) Follow the instructions on the screen to complete the uninstallation.
5) Close the Add or Remove Programs window and the Control Panel window.

2.2.4 Connecting diagnostic tools

[Steps]

1) Remove the CONTROLLER BOARD. (See RRP12.3)
2) Connect the DIAG PWB to the interface connector (P14) of the PWBA MCU HBN.
3) Connect the DIAG PWB to the PC with the RS-232C cable.



The RS-232C cable used must be compatible with the DIP SW (cross/straight) setting and the connector of the DIAG PWB, and also it must be shielded properly and less than 6 ft (2 m) in length.

2.3 Operation of Diagnostic Commander

2.3.1 Starting Diagnostic Commander

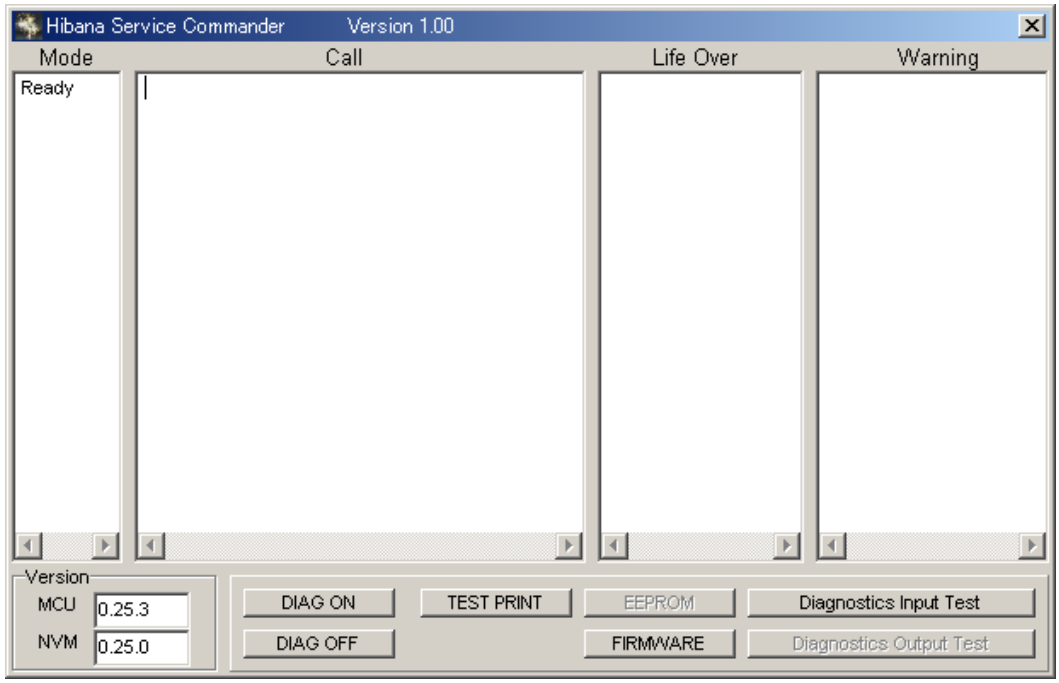
[Steps]

1) Turn on the power switch of the printer.
2) Start the Windows, and double-click the shortcut icon [Hibana Service Commander.] on the desktop.
3) To exit the Diagnostic Commander, click the Close button.

2.3.2 Description of initial screen

When the Diagnostic Commander started, the screen shown below appears.

This screen displays the printer conditions, and the versions of printer and NVM. Clicking the buttons on this screen allows various diagnostics to be executed.



The windows that show the printer conditions are as follows.

Window name	Description
Mode	Current operation mode is displayed. For the modes, refer to “6.2 Operation Modes in Section 6 Operational Principle”.
Call	The contents of errors in the ERROR mode are displayed. If any error is displayed here, the printer cannot perform printing operation. For the errors, refer to “Section 1 Troubleshooting”.
Life Over	The errors related to the lifetime in the ERROR mode are displayed. The printer can perform printing operation, if no error is displayed in the Call window but errors are displayed only in this window. For the errors, refer to “Section 1 Troubleshooting”.
Warning	Warnings for the printer are displayed. For the errors, refer to “Section 1 Troubleshooting”.

2.3.3 Executing/stopping the diagnosis

[Executing diagnosis]

At the time of Diagnostic-Commander starting, it is Ready mode, and [TEST PRINT], [FIRMWARE], and [Diagnostics Input Test] can perform it in this state.

Click the [DIAG ON] button, it will go into Diag mode and selection of [EEPROM] and the [Diagnostics Output Test] button will be attained.

[TEST PRINT] cannot be performed in Diag mode. [FIRMWARE] and [Diagnostics Input Test] can be performed irrespective of the mode.

[Stopping diagnosis]

Click the [DIAG OFF] button, and current diagnosis is stopped, it will return from Diag mode to Ready mode, and the [EEPROM], [Diagnostics Output Test] buttons on the initial screen become inactive. Moreover, selection of the [TEST PRINT] button is attained.

2.3.4 Kinds of diagnostic functions

Four kinds of diagnostic functions are provided.

Kinds	Description
Test Print	Execute a test printing of the patterns stored in the printer.
Input Test	Check the sensors and switches for condition.
Output Test	Operate the motors and solenoids.
EEPROM Read/Write	Read/write various data in EEPROM (Non-Volatile Memory).
firmware	The firmware of IOT is rewritten.

2.3.5 Communication log files

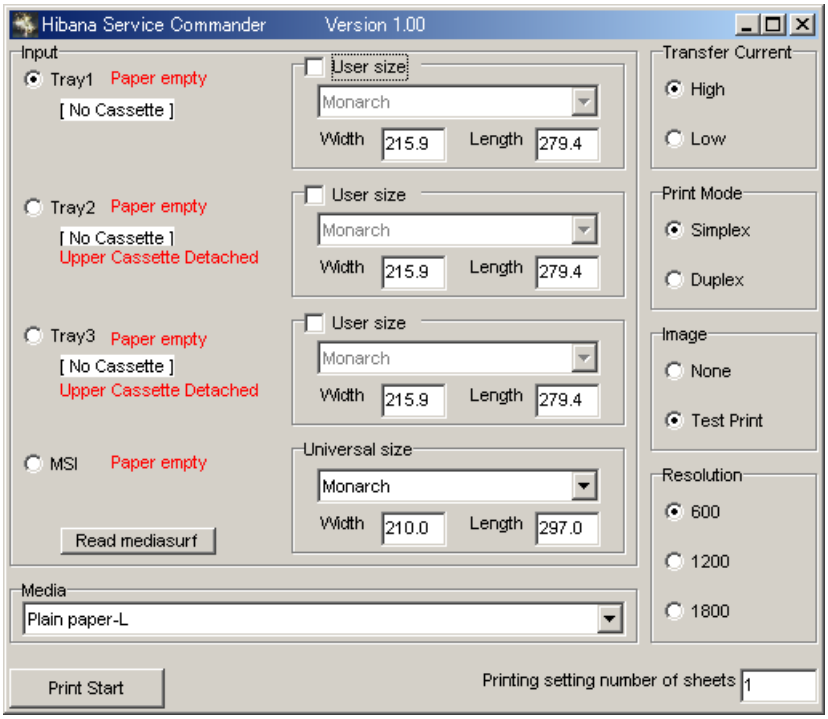
The Diagnostic Commander can record the data (commands and statuses) transmitted/received between printer controller and PWBA MCU HBN in the files. The following files are automatically created in the folder where the Diagnostic Commander has been installed.

log0.txt
log1.txt
log2.txt
log3.txt

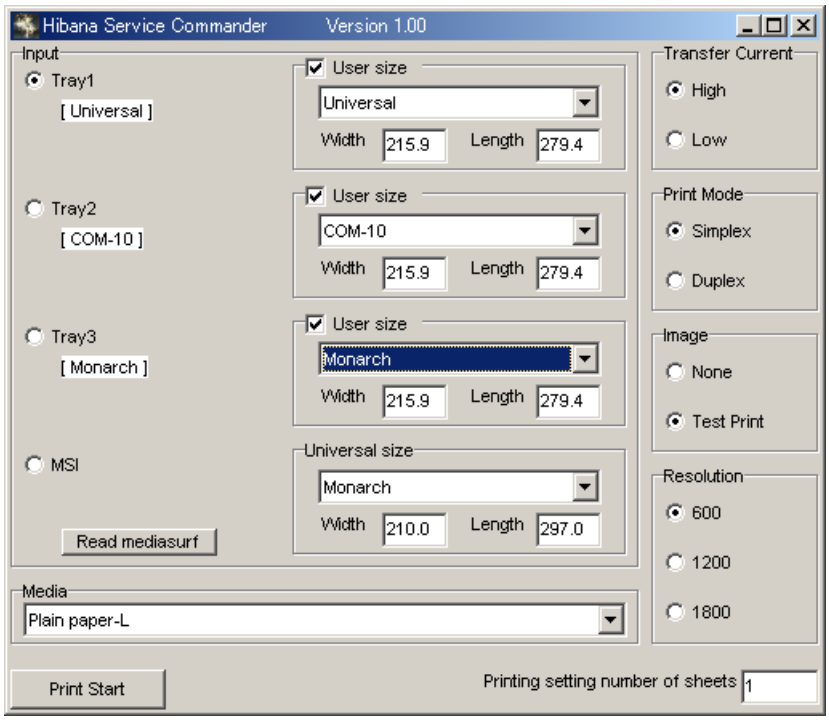
The data of one day are written to one file even if the Diagnostic Commander is started/exited repeatedly. Up to four files (namely, files for four days) are created, and the data of fifth day are overwritten in the oldest file.

2.4 Test Print

Clicking the [TEST PRINT] button causes the following screen to be displayed.



No Cassette



Cassette equipped

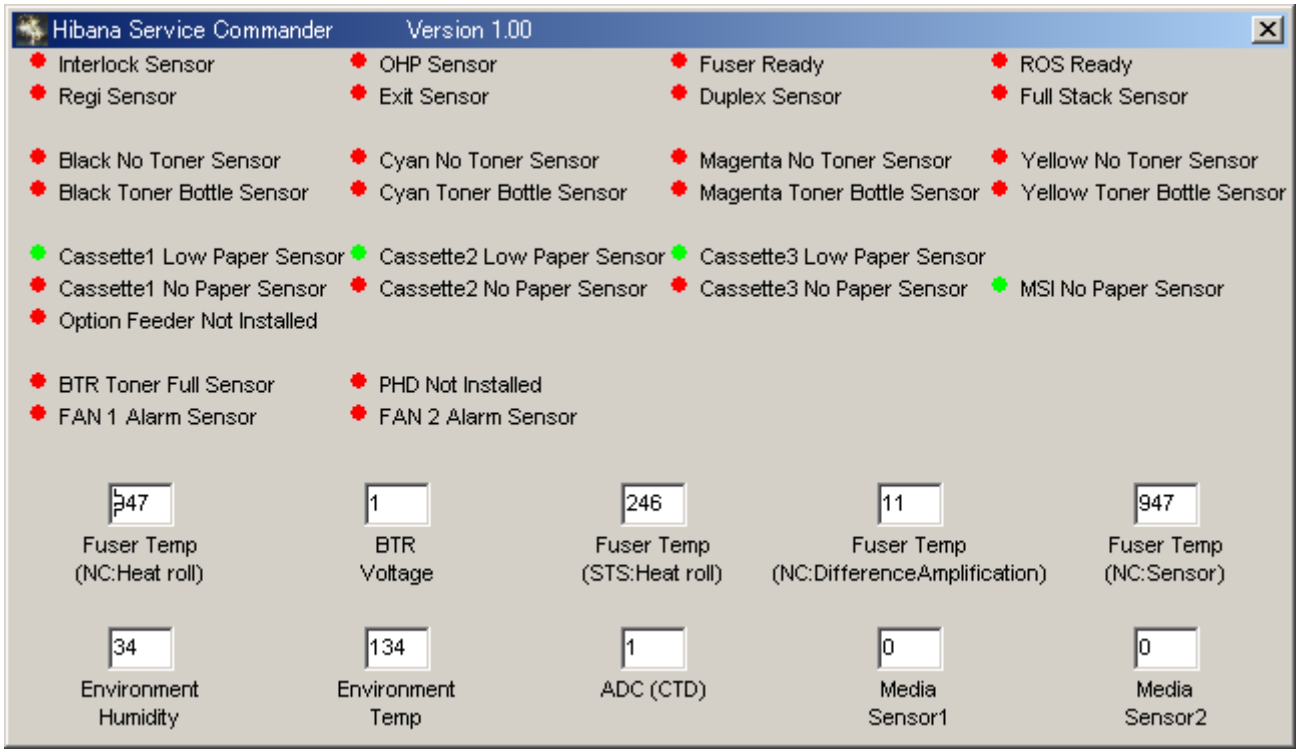
Set respective items displayed and click the [Print Start] button, and the printing will start under the set conditions. Parameter setting items are as listed below.

Setting items	Description
Input (Paper trays)	Tray1/Tray2/Tray3/MSI Paper size set in each tray is detected automatically and displayed. The state of each tray is also displayed. Paper empty / Paper near empty / Upper Cassette Detached If MSI is selected, select the paper size from the pull-down menu (give below): Monarch / Postcard / COM-10 / DL / Statement / A5 / C5 / B5 / Executive / Letter / A4 / Legal13 / Legal14 / Universal size
Read media surf	A click of this button detects and displays the paper kind of MSI. Unknown [no paper] / Rough[Plain] / Glossy[Coated] / Film[Transparency]
Print Mode	Duplex / Simplex
Transfer Current	High / Low
Resolution	1200 dpi / 600 dpi
Image (Print image)	None (white paper)/Test Print (IOT built-in pattern)
Media (Paper type)	Set the type of paper. Plain paper-L / Heavier paper-L / Heavier paper-H / Envelope / Postcard / Transparency(=OHP)/ Label-H / Plain paper-L High Gloss / Label-L / Heavier paper-L Back Face / Heavier paper-H Back Face / Envelope Back Face / Postcard Back Face / Plain paper-H / Plain paper-H High Gloss / Plain paper-L Super High Gloss / Plain paper-H Super High Gloss / Heavier paper-L Super High Gloss / Heavier paper-H Super High Gloss / Envelope Super High Gloss / Postcard Super High Gloss / Transparency(=OHP) Super High Gloss / Label-H Super High Gloss / Label-L Super High Gloss / Heavier paper-L Super High Gloss Back Face / Heavier paper-H Super High Gloss Back Face / Envelope Super High Gloss Back Face / Postcard Super High Gloss Back Face / Plainpaper-L Back Face /Plainpaper-L High Gloss Back Face /Plainpaper-L Super High Gloss Back Face
User size	If a User size check box is checked, automatic detection of paper size will become invalid and the paper size chosen from the pull down menu (the following item) will become effective. Monarch / Postcard / COM-10 / DL / Statement / A5 / C5 / B5 / Executive / Letter / A4 / Legal13 / Legal14 / Universal size Moreover, setting up Width (paper width) and Length (paper length) numerically has come out for every paper size. The set-up value is written in NVM, and when the paper size is chosen next time, it is read.
Universal size	Paper size is chosen from a pull down menu (the following item) when MSI is chosen by Input. Monarch / Postcard / COM-10 / DL / Statement / A5 / C5 / B5 / Executive / Letter / A4 / Legal13 / Legal14 / Universal size When paper size is set as Universal size, Width (paper width) and Length (paper length) are set up numerically.
Printing setting number of sheets	Set the print count.

2.5 Input Test

2.5.1 Executing input test

Click the [Diagnostic Input Test] button, and the following screen will appear.



The screen will vary according to the conditions of the sensors and switches.
The ON or OFF condition of digital sensors and switches can be checked from the color of indicators on the side of each name.

ON: Green OFF: Red

For analog devices, A/D converted values are displayed.

NOTE

For the relation between A/D converted values and data, refer to the Input test Readme.txt file in the folder where the Diagnostic Commander has been installed.

2.5.2 Type of input test

Two types, digital input test and analog input test, are provided.
The digital input tests that can be checked are as listed below.

Name	Parts Name/Function	ON Condition
Inter Lock Sensor	PWBA DRV HBN is installed	Front cover open
OHP Sensor	KIT SENSOR OHP	Paper present
Fuser Ready	–	Under printing
ROS Ready	–	Under printing

Name	Parts Name/Function	ON Condition
Regi Sensor	SENSOR PHOTO (Regi Sensor)	Paper present
Exit Sensor	Contained in FUSER ASSY	Paper present
Duplex Sensor	SENSOR PHOTO (Dup Jam Sensor)	Paper present
Full Stack Sensor	SENSOR PHOTO (Full Stack Sensor)	Full stack
Black No Toner Sensor	SENSOR NO TONER (K)	No toner (K)
Cyan No Toner Sensor	SENSOR NO TONER (C)	No toner (C)
Magenta No Toner Sensor	SENSOR NO TONER (M)	No toner (M)
Yellow No Toner Sensor	SENSOR NO TONER (Y)	No toner (Y)
Black Toner Bottle Sensor	PWBA CRUM READER	No toner bottle (K)
Cyan Toner Bottle Sensor	PWBA CRUM READER	No toner bottle (C)
Magenta Toner Bottle Sensor	PWBA CRUM READER	No toner bottle (M)
Yellow Toner Bottle Sensor	PWBA CRUM READER	No toner bottle (Y
Cassette1 Low Paper Sensor	SENSOR PHOTO (Low Paper Sensor)	Low paper
Cassette2 Low Paper Sensor	SENSOR PHOTO (Low Paper Sensor2)	Low paper
Cassette3 Low Paper Sensor	SENSOR PHOTO (Low Paper Sensor3)	Low paper
Cassette1 No Paper Sensor	SENSOR PHOTO (No Paper Sensor)	No paper
Cassette2 No Paper Sensor	SENSOR PHOTO (No Paper Sensor2)	No paper
Cassette3 No Paper Sensor	SENSOR PHOTO (No Paper Sensor3)	No paper
MSI No Paper Sensor	SENSOR PHOTO (MSI No Paper Sensor)	No paper
Option Feeder Not Installed	Detect whether Option Feeder is installed or not installed	Option Feeder is not installed
BTR Toner Full Sensor	SENSOR TONER FULL	Full toner
PHD Not Installed	Detect whether PHD ASSY PKG is installed or not installed	PHD ASSY PKG is not installed
FAN 1 Alarm Sensor	FAN FUSER	Detect FAN FUSER alarm
FAN 2 Alarm Sensor	FAN REAR	Detect FAN REAR alarm

The analog input tests that can be checked are as listed below.

Name	Parts Name	Contents of display
ADC(CTD)	SENSOR ADC ASSY	Toner density on BTR surface
Fuser Temp.(NC:Heat roll)	FUSER ASSY	Heat roll surface temperature (Center) Fuser NCS sensor output value1
Fuser Temp.(STS:Heat roll)	FUSER ASSY	Heat roll surface temperature (Edge)
Fuser Temp. (NC:DifferenceAmplification)	FUSER ASSY	Heat roll surface temperature (Center) Fuser NCS sensor output value2
Fuser Temp.(NC:Sensor)	FUSER ASSY	Heat roll surface temperature (Center) Fuser NCS sensor temperature
Environment Temp	SENSOR HUM TEMP	Inside temperature of printer
Environment Humidity	SENSOR HUM TEMP	Inside humidity of printer
BTR Voltage	BTR Assy	Voltage which is flowing now BTR

2.6 Output Test

WARNING

Never touch the high voltage output parts and live parts when high voltage is outputted.

WARNING

Never touch the driving parts when the driving parts are operating.

NOTE

If it continues turning on Toner Motor (Yellow/Magenta/Cyan/Black), since a toner will continue being supplied, don't turn on for a long time.

CAUTION

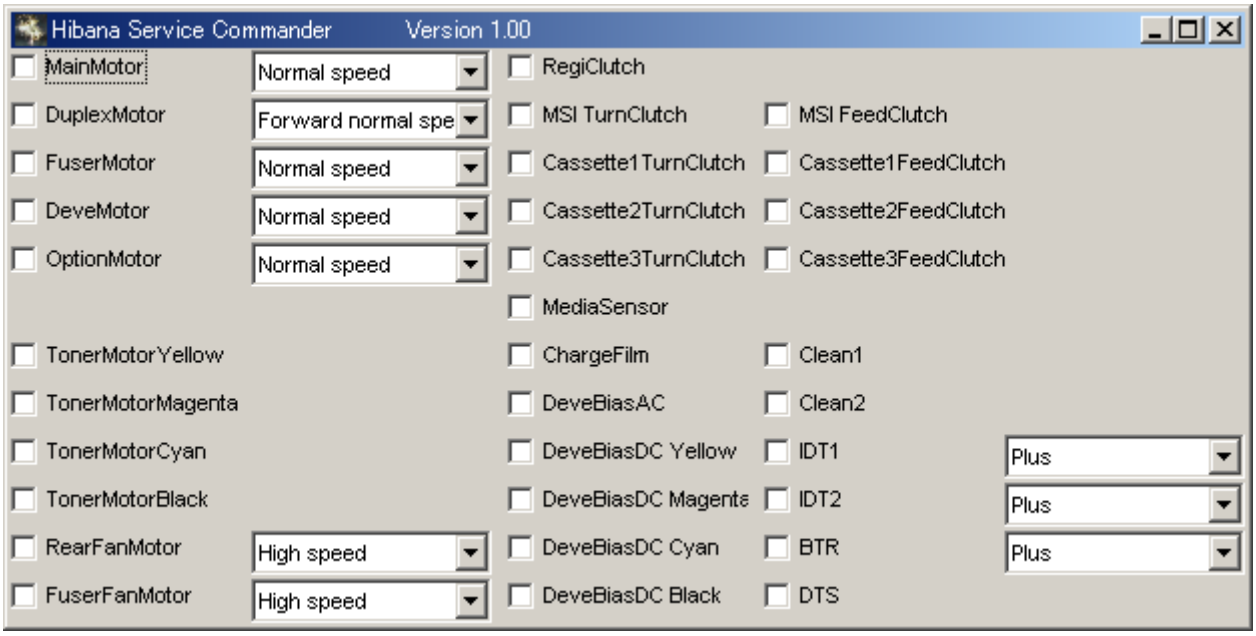
Before executing the output test, be sure to read the "Caution" and "Prohibition" described in the Output test Readme.txt file in the folder where the Diagnostic Commander has been installed

WARNING

For the items attached with <Warning!> or <Caution!> in the checking method, refer to the "WARNING" and "CAUTION" mentioned above to prevent problems.

2.6.1 Executing output test

Click the [Diagnostics Output Test] button, and the following screen will appear.



Click the check box on the left side of the item to be operated, and "√ "is displayed in the check box and the operation starts.

If clicking again the check box, the check is cancelled and the operation stops. However, some parts will stop automatically when the specified time elapsed.

For the items that have the pull-down menu, select the menu to be executed.

2.6.2 Type of output test

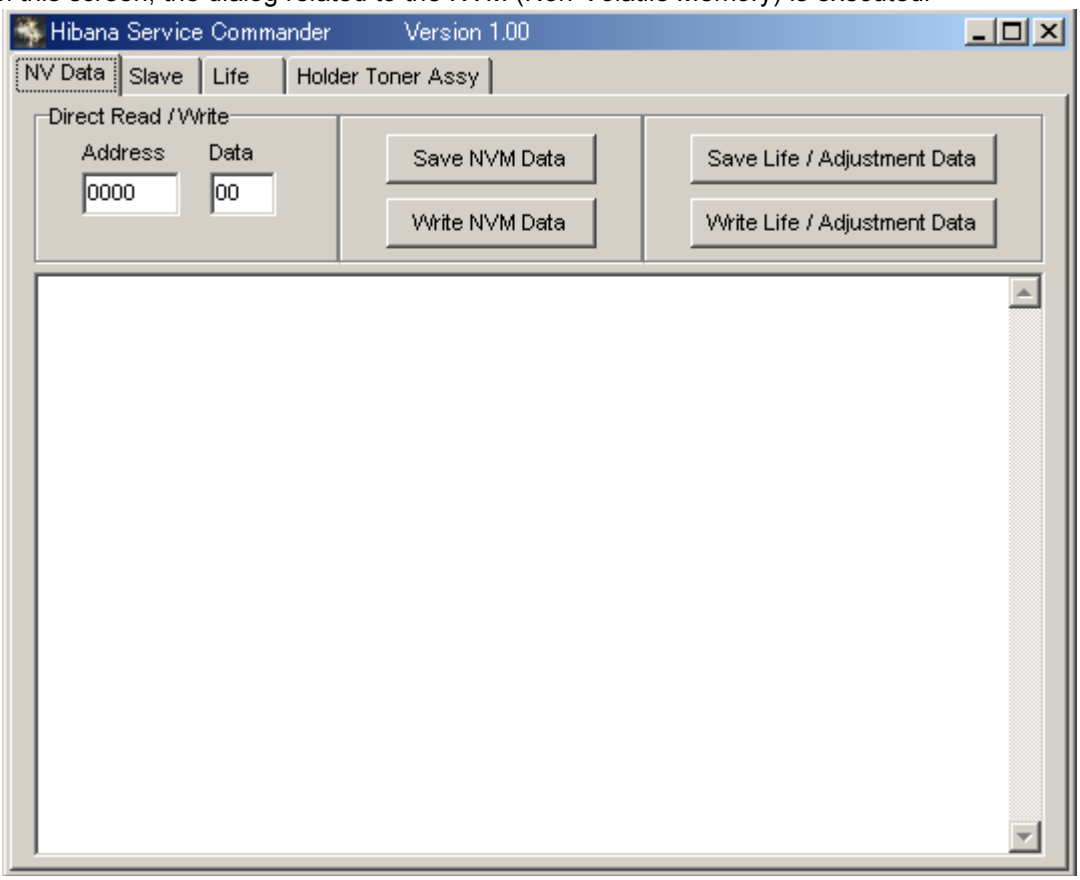
The output tests that can be checked are as listed below.

Name	Parts Name/Function	Selectable items	Checking method
Main Motor	MAIN DRIVE ASSY	Normal Speed	<Warning!> <Caution!> The rotation state of a motor is checked by sound of operation or viewing.
		Half Speed	
		1/3 Speed	
Duplex Motor	MOTOR ASSY DUP	Forward Normal Speed	
		Forward Half Speed	
		Forward Double Speed	
		Reverse Normal Speed	
		Reverse Half Speed	
		Reverse Double Speed	
		Forward 1/3 Speed	
		Reverse 1/3 Speed	
Fuser Motor	FUSER DRIVE ASSY	Normal Speed	
		Half Speed	
		1/3 Speed	
Deve Motor	DEVE DRIVE ASSY	Normal Speed	
		Half Speed	
		1/3 Speed	
Option Motor	DRIVE ASSY FEEDER	Normal Speed	
		Half Speed	
Toner Motor Yellow	HOLDER ASSY TONER HBN (Y)	–	
Toner Motor Magenta	HOLDER ASSY TONER HBN (M)	–	
Toner Motor Cyan	HOLDER ASSY TONER HBN (C)	–	
Toner Motor Black	HOLDER ASSY TONER HBN (K)	–	
Rear Fan Motor	FAN REAR	High Speed	
		Low Speed	
Fuser Fan Motor	FAN FUSER	High Speed	
		Low Speed	

Name	Parts Name/Function	Selectable items	Checking method
Regi Clutch	CHUTE REGI ASSY	–	It checks that a clutch operates to a sound of operation.
MSI Turn Clutch	CLUTCH TURN (MSI)	–	
MSI Feed Clutch	SOLENOID FEED MSI	–	
Cassette1 Turn Clutch	CLUTCH ASSY TURN (Tray1)	–	
Cassette1 Feed Clutch	SOLENOID FEED (Tray1)	–	
Cassette2 Turn Clutch	CLUTCH ASSY TURN (Tray2)	–	
Cassette2 Feed Clutch	SOLENOID FEED (Tray2)	–	
Cassette3 Turn Clutch	CLUTCH ASSY TURN (Tray3)	–	
Cassette3 Feed Clutch	SOLENOID FEED (Tray3)	–	
Charge Film	Charge DC voltage to RTC (PHD ASSY PKG)	–	<Warning!> <Caution!> Don't check for a high-voltage output.
Deve Bias AC	Developing bias AC voltage (PHD ASSY PKG)	–	
Deve Bias DC Yellow	Developing bias AC voltage (Y) (PHD ASSY PKG)	–	
Deve Bias DC Magenta	Developing bias DC voltage (M) (PHD ASSY PKG)	–	
Deve Bias DC Cyan	Developing bias DC voltage (C) (PHD ASSY PKG)	–	
Deve Bias DC Black	Developing bias DC voltage (K) (PHD ASSY PKG)	–	
Clean1	DC voltage to IDT1 Cleaner (PHD ASSY PKG)	–	
Clean2	DC voltage to IDT2 Cleaner (PHD ASSY PKG)	–	<Warning!> <Caution!> Don't check for a high-voltage output.
IDT1	DC voltage to IDT1 (PHD ASSY PKG)	Plus	
		Minus	
IDT2	DC voltage to IDT2 (PHD ASSY PKG)	Plus	
		Minus	
BTR	DC voltage to BTR (BTR Assy)	Plus	
		Minus	
DTS	DC voltage to Detack Saw (BTR Assy)	–	

2.7 Operation of EEPROM

Click the [EEPROM] button, and the screen will appear where [NV Data] tab is selected.
From this screen, the dialog related to the NVM (Non-Volatile Memory) is executed.



2.7.1 Direct Read/Write

The [Address] field and [Data] field are displayed on the screen where [NV Data] tab is selected. Entering address and data here allows you to directly read/write the desired NVM area.

NOTE

This file is intended to be used by a KONICA MINOLTA PRINTING SOLUTIONS Level 3 Technical Support Engineer to diagnose problems with data in the NVRAM. Refer to the NVM Readme.txt file in the folder where the Hibana Service Commander was installed.

Direct Read

1) Enter arbitrary address in the Address field, and press the [Enter] key.
2) The result is displayed in the information display area.
   Successful terminationRead: XXXX (Address) - XX (Data)
   Read inhibited areaRead: XXXX (Address) - The address does not exist.

Direct Write

1) Enter arbitrary address in the Address field, and desired data in the Data field, then press the [Enter] key.
2) The result is displayed in the information display area.
   Successful terminationWrite: XXXX (Address) - XX
   Read onlyWrite: XXXX (Address) - It is a write-in prohibition address.

NOTE

The address and data to be entered are hexadecimal numbers. The result is displayed also with hexadecimal numbers.

2.7.2 Text File

"2.7.3 Save NVM Data", "2.7.4 Write NVM Data", "2.7.5 Save Life / Adjustment Data", and "2.7.6 Write Life / Adjustment Data" use the text files for reading/writing the NVM data.

These text files are created in the same format. They are composed of the number of lines that correspond to the NVM data to be read/written, one line consisting of address (4-digit hex number), space, and data (2-digit hex number).

However, the extension of each text file is different so that it may turn out whether to be the text file used by which test.

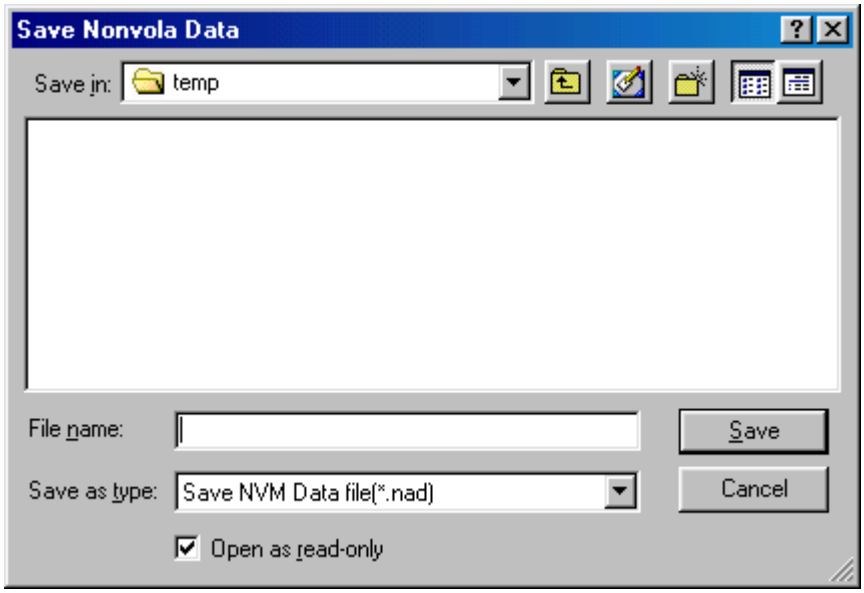
NOTE **Refer to the NVM Readme.txt file in the folder which installed the Diagnostic Commander for the relation between a text file and an extension.**

2.7.3 Save NVM Data

NVM data (stored in PWBA MCU HBN and PHD ASSY PKG) of the printer are read and saved in the text file. (.NAD extension)

[Steps]

1) Click the [Save NVM Data] button, and the following screen will appear.



2) Enter the file name in the [File Name] field where the read NVM data are written.

NOTE **Warning will be displayed, if the file of the same file name already exists.**

3) Click the [Save] button.

2.7.4 Write NVM Data

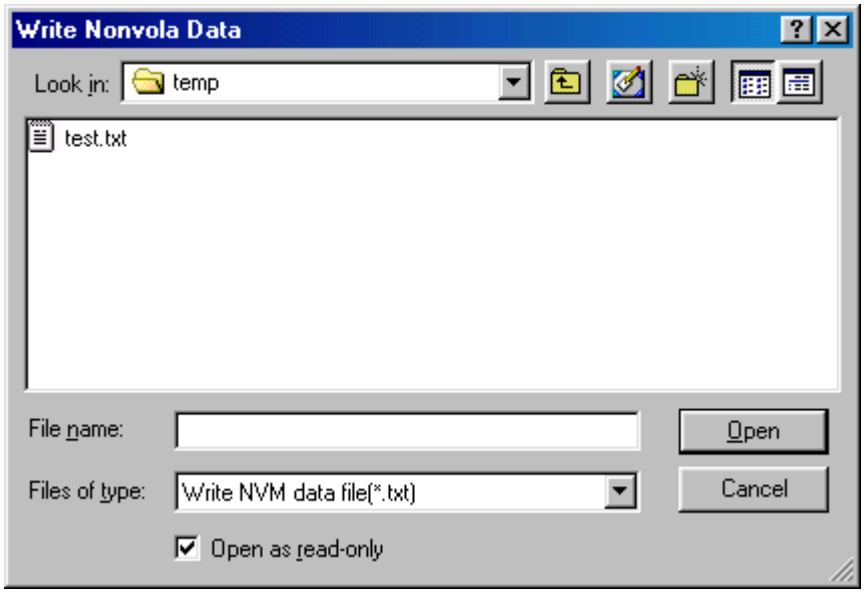
The data described in already prepared text file are written to the NVM. In the text file, a pair of address and data is described, same as in the file created in “2.7.3 Save NVM Data”, and the data are written only to the addresses described in the file. (.TXT extension)

NOTE

If the printer version is updated, the NVM initial values may have to be changed. In such a case, rewrite the NVM data using this function.

[Steps]

1) Click the [Write NVM Data] button, and the following screen will appear.



2) The text file NVM data to write in is described to be is chosen.

NOTE

A text file is saving at the temp folder under the folder which installed the Diagnostic Commander.

3) Click the [Open] button.

4) Upon completion of writing, the message is displayed.
Successful termination: completed.
Unsuccessful termination:Write - in operation of a nenvolatile memory was not completed normally.

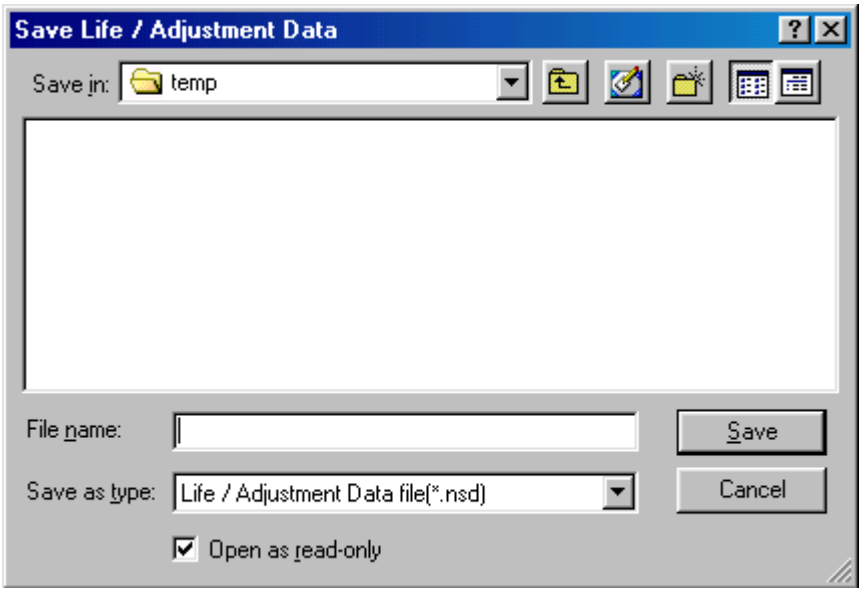
Reference: ***The contents of text file are written to the NVM sequentially, but if there is an address where data can’t be written, the operation is terminated unsuccessfully and the subsequent file data are not written. You can confirm where unsuccessful termination occurred by referring to the data transmission/receiving records in the communication log file.***

2.7.5 Save Life / Adjustment Data

If the PWBA MCU HBN is replaced, only the NVM data to be succeeded to new PWB are read and saved in the text file. (.NSD extension)

[Steps]

1) Click the [Save Life / Adjustment Data] button, and the following screen will appear.



2) Enter the file name in the [File Name] field where the read NVM data are written.

NOTE **Warning will be displayed, if the file of the same file name already exists.**

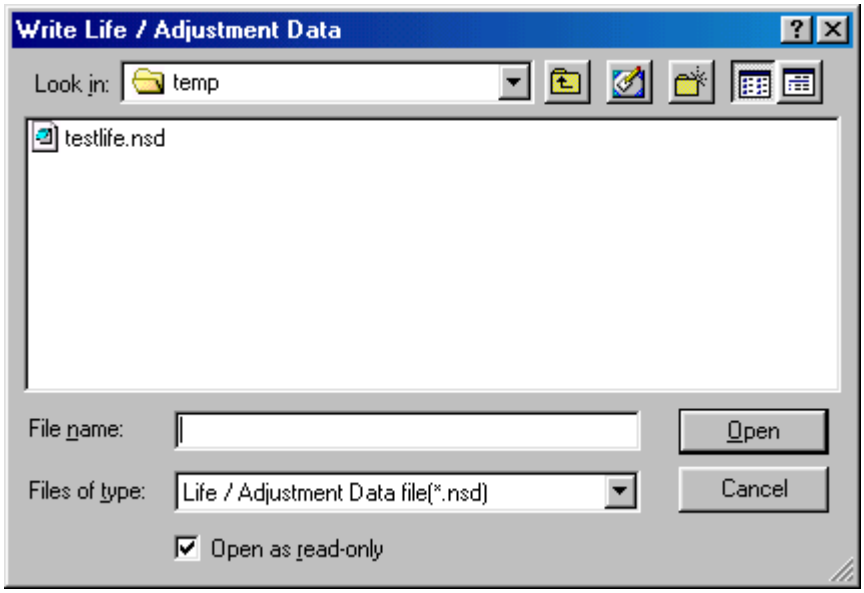
3) Click the [Save] button.

2.7.6 Write Life / Adjustment Data

After the PWBA MCU HBN was replaced, the NVM data read from the PWB before replacement and saved in the text file are written to new PWB. For this purpose, the text file created in “2.7.5 Save Life / Adjustment Data” is used. (.NSD extension)

[Steps]

1) Click the [Write Life / Adjustment Data] button, and the following screen will appear.



2) Enter the file name of the text file created in “2.7.5 Save Life / Adjustment Data” where the NVM data to be written are saved in the [File Name] field.
3) Click the [Open] button.
4) Upon completion of writing, the message is displayed.
   Successful termination: completed.
   Unsuccessful termination:Write - in operation of a nenvolatile memory was not completed normally.

Reference: ***The contents of text file are written to the NVM sequentially, but if there is an address where data can’t be written, the operation is terminated unsuccessfully and the subsequent file data are not written. You can confirm where unsuccessful termination occurred by referring to the data transmission/receiving records in the communication log file.***

2.7.7 Slave

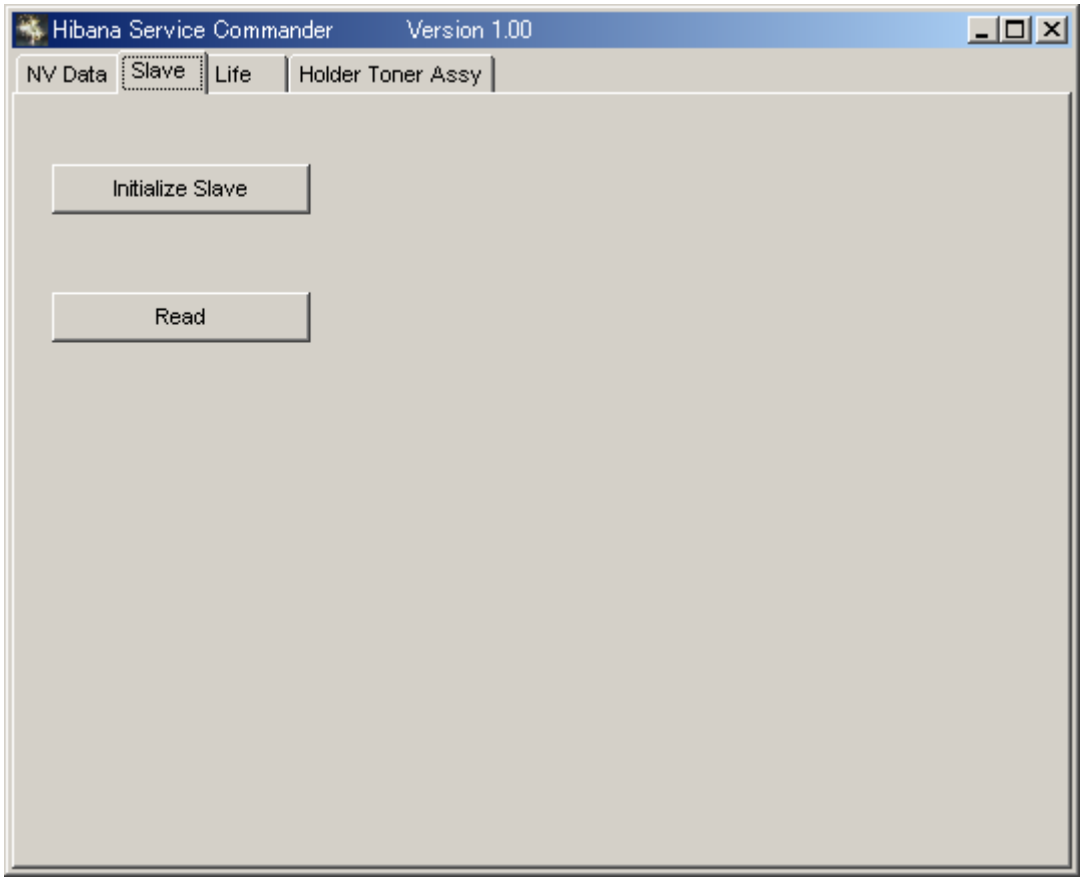
The printer has two NVM's for storing the following machine specific information. One NVM is called the Master, and another one is called the Slave.

- Product No.
- Serial No.
- Maker Code No.
- Data (Controller setting data)

NOTE

Refer to the Slave Readme.txt file in the folder which installed the Diagnostic Commander about Slave.

Click the [Slave] tab, and the following screen will appear.



2.7.8 Read Slave

[Steps]

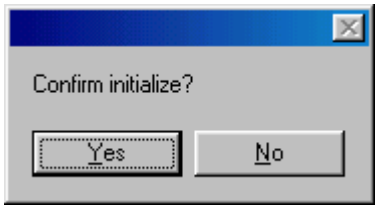
1) Press the [Read] button on the screen where the [Slave] tab is selected.
2) The contents of Slave are displayed.

2.7.9 Initialize Slave

The data of Slave is initialized.

[Steps]

1) Click the [Initialize Slave] button, and the following screen will appear.



2) Click the [Yes] button to initialize Slave.
3) The message is displayed that initialization of Slave is completed.
   Successful termination: Initialization of Slave was completed.
   Unsuccessful termination:Initialization of Slave was not completed.

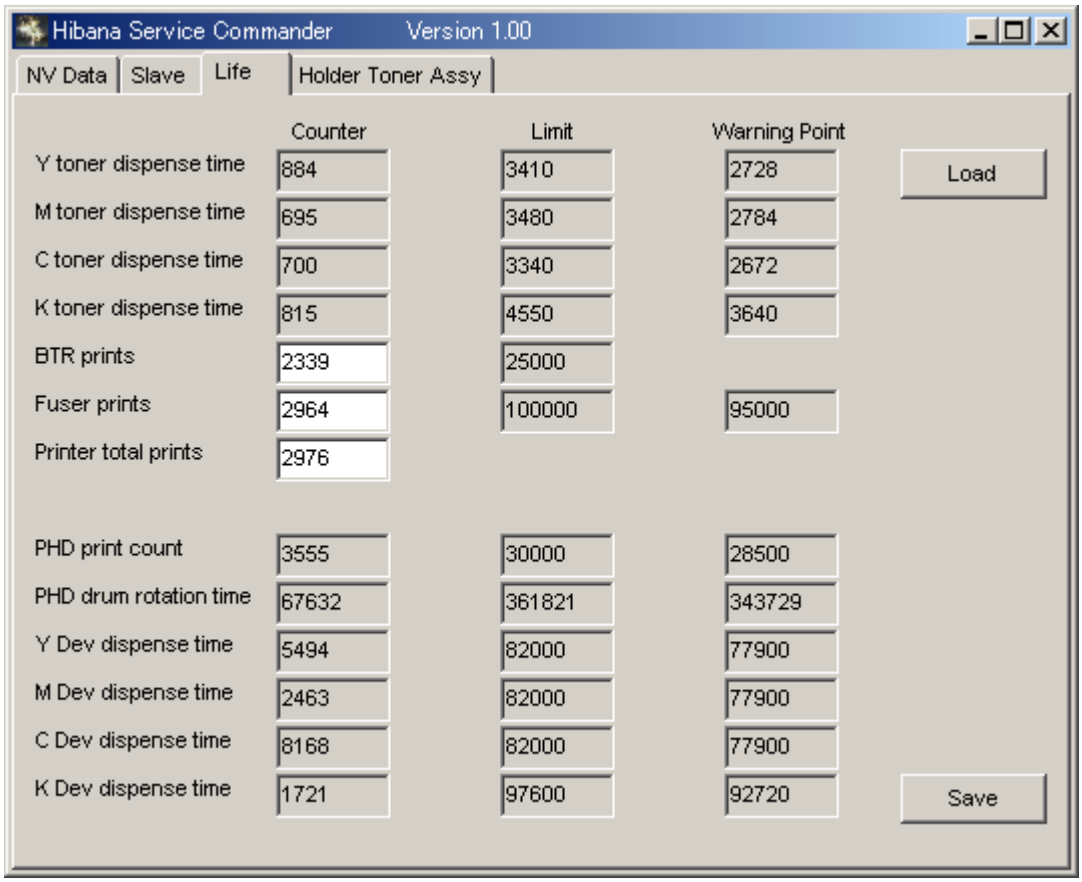
2.7.10 Life

The life counters stored in the NVM are displayed. Some life counters are rewritable.

When the [Life] tab is clicked, a life counter display screen is displayed. At this time, a counter value is not displayed yet.

[Read]

Click the [Load] button, and current life counters are read and the following screen appears.



[Write]

Enter a value in the counter field to be changed, and click the [Save] button.

NOTE **Do not change the counters, except there is unavoidable reason.**

Writing is disabled on the screen for the non-rewritable counters.

2.7.11 Holder Toner Assy

Toner Motor is turned at the time of a power supply injection, and NVM of the appointed area is rewritten to a setup which carries out toner filling operation to a dispense pipe.

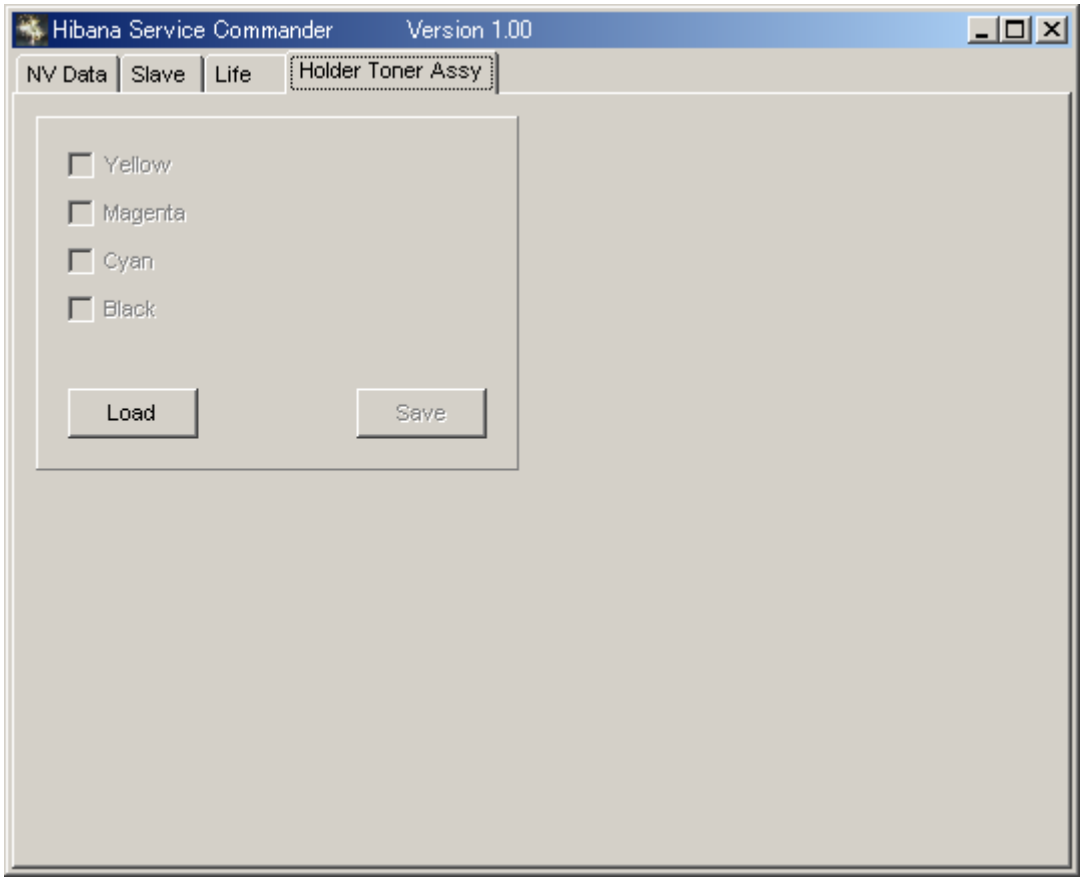
It carries out, when Holder Toner Assy Y/M/C/K (part name: HOLDER ASSY TONER HBN Y/M/C/K) is exchanged.

NOTE

After the toner filling operation implementation at the time of a power supply injection, automatically, rewritten NVM is again written to a setup which does not carry out toner filling operation, and is replaced.

[Steps]

1) Click the [Holder Toner Assy] tab
2) Click the [Load] button, and the following screen will appear.



3) Click the check box of the color of exchanged HOLDER ASSY TONER HBN.
(It clicks and "√ "is displayed on a check box.)
4) Click the [Save] button.

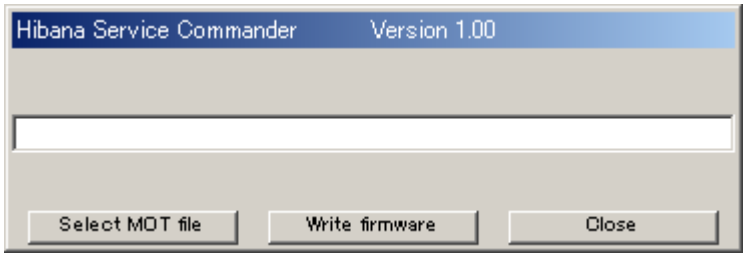
2.8 Firmware

The firmware of IOT is upgraded.

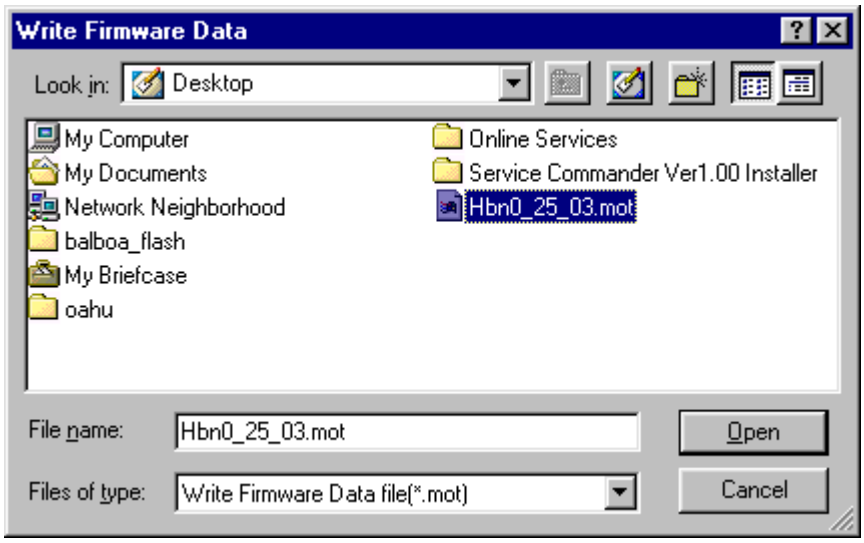
The contents of the firmware file already prepared are written in ROM on PWBA MCU HBN.

[Steps]

1) Click the [FIRMWARE] button, and the following screen will appear.

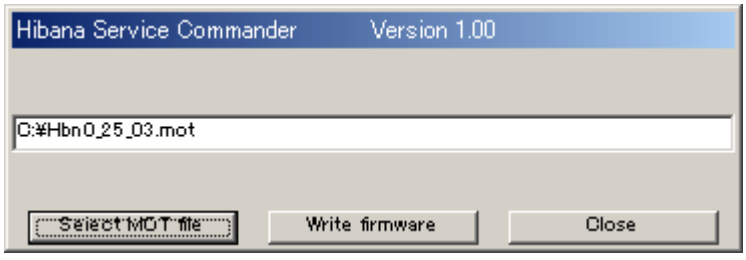


2) Click the [Select MOT file] button, and the following screen will appear.

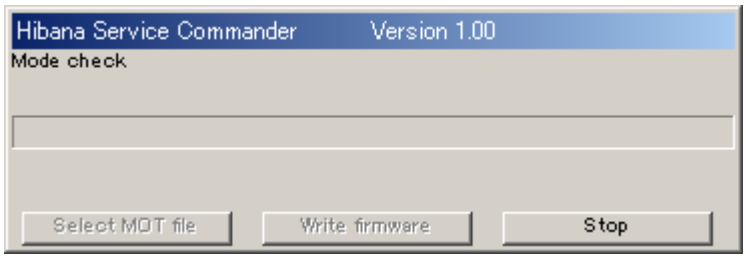


3) A firmware file to write in is chosen.

4) Click the [Open] button, and the following screen will appear.

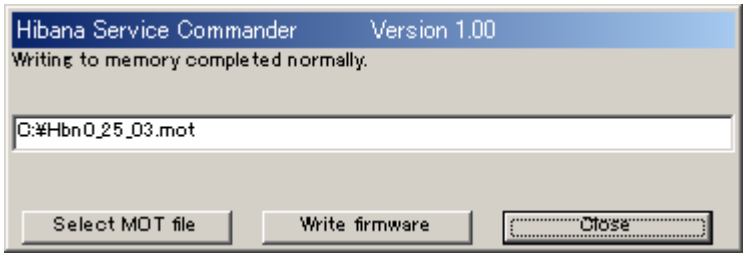


5) Click the [Write firmware] button, and the following screen will appear, and writing will be started.



6) The message on a screen changes as follows.
   Mode check.
   Erasing MAIN memory area.
   Writing to memory.
   Rebooting printer. Please wait.
   At this time, if the [Stop] button is clicked, it can be interrupted.

7) An end of writing reboots IOT.
   Completion of communication displays the following screens.



Chapter 3 Removal and Replacement Procedures

1. Removal and Replacement Procedures

Parts removal and replacement procedures are described in major 12 items which correspond to classification of parts list.

- ✲ RRP 1 COVERS
- ✲ RRP 2 PAPER CASSETTE
- ✲ RRP 3 PAPER FEEDER
- ✲ RRP 4 HOUSING ASSY RETARD
- ✲ RRP 5 CHUTE ASSY IN
- ✲ RRP 6 CHUTE ASSY OUT
- ✲ RRP 7 CHUTE ASSY EXIT
- ✲ RRP 8 BTR ASSY & FUSER
- ✲ RRP 9 XEROGRAPHICS
- ✲ RRP 10 TCRU ASSY
- ✲ RRP 11 FRAME & DRIVE
- ✲ RRP 12 ELECTRICAL

NOTE **Parts are controlled as spare parts. When servicing for parts for which no procedures are described, observe their assembling condition before starting the service.**

NOTE **For optional parts, refer to the manual for them.**

NOTE **Though the optional parts are assumed to be removed, they may not be removed if not required for the purpose of service operation.**

1.1 Before starting service work

- Turn the power OFF and remove the power cord from the electric outlet.
- Remove the PHD ASSY PKG (PL9.1.3) before starting the disassembling process.
- Remove the TCRU ASSY as necessary, and perform disassembly process.
- When performing service operation for parts around the FUSER ASSY, start the service after the FUSER ASSY and parts around it have cooled down.
- Do not give forcible power to prevent damage of parts or functions.
- Since a wide variety of screws are used, be careful not to mistake their positions, to prevent crushing of the screw holes or other troubles.
- Wear a wrist band or the like as far as possible to remove static electricity of the human body.

1.2 Description of procedures

- ✧ “RRP X,Y “AAAAA” at the top of procedures represent the parts AAAAA are to be removed and replaced.
- ✧ “(PL X.Y.Z)” following the parts name in procedures represent that the parts are those of the plate (PL) “X.Y”, item “Z” in Chapter 5, Parts List. Their forms, replacing position or other conditions can be seen in Chapter 4, Parts List.
- ✧ In the procedures, directions are represented as follows.
  - ▼Front: Front when you are facing the front of this laser printer.
  - ▼Rear: Inner direction when you are facing the front of this laser printer.
  - ▼Left: Left hand when you are facing the front of this laser printer.
  - ▼Right: Right hand when you are facing the front of this laser printer.

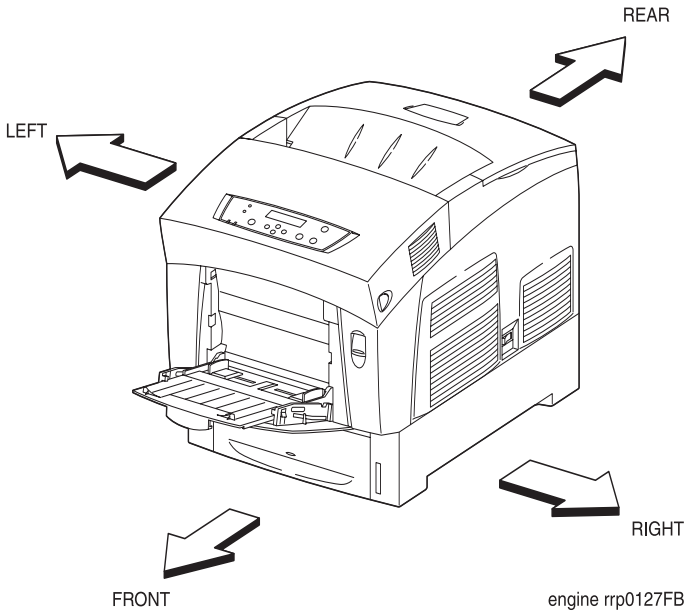


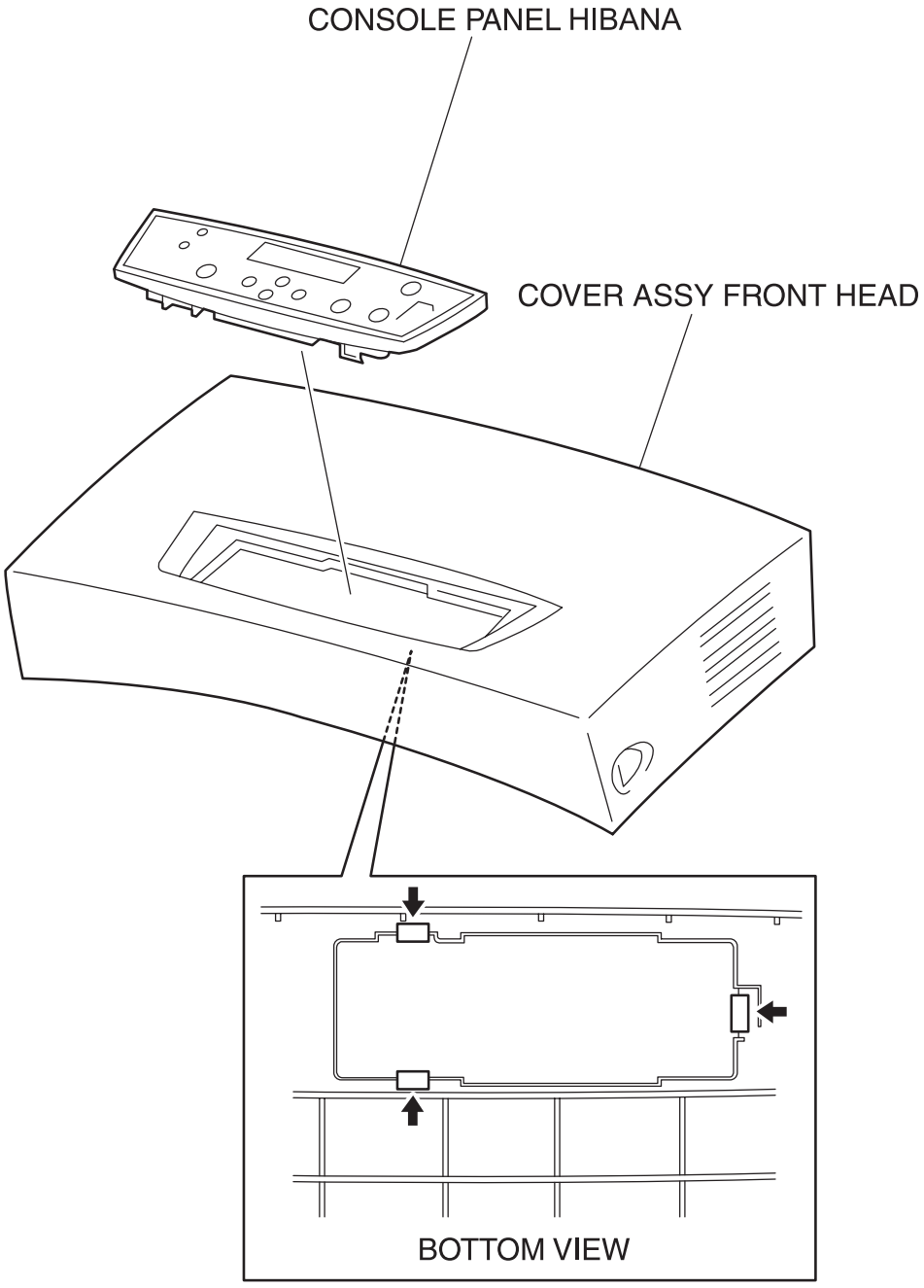
Figure: Definition of Printer Orientation

- ✧ “u In case of _____ specifications” in the procedures indicate that service operation should be provided only to laser printer of specified specifications (service operation should not be provided for laser printer of specifications not covered).
- ✧ “RRP X.Y” in the midst or at the end of sentences in the procedures indicate that work procedures related with the “RRP X.Y” are described.
- ✧ The screws in the illustrations should be removed using a plus (+) screwdriver unless otherwise specified.
- ✧ A black arrows in the illustrations indicate movement in the arrow mark direction.
  Numbered black arrows indicate movement in the order of the numbers.
- ✧ For the positions of the connectors (P/J), refer to Chapter 6, Electric wiring.

Blank Page

RRP1. COVERS

RRP1.1 CONSOLE PANEL HIBANA (PL1.1.1)



engine rrp0001FA

Figure: CONSOLE PANEL HIBANA Removal

Removal

1) Remove the COVER ASSY FRONT HEAD (PL1.1.2). (RRP1.2)
2) Release the hooks at 3 positions securing the CONSOLE PANEL HIBANA (PL1.1.1) to the COVER ASSY FRONT HEAD.
3) Remove the CONSOLE PANEL HIBANA from the COVER ASSY FRONT HEAD.

Replacement

Replace the components in the reverse order of removal.

RRP1.2 COVER ASSY FRONT HEAD (PL1.1.2)

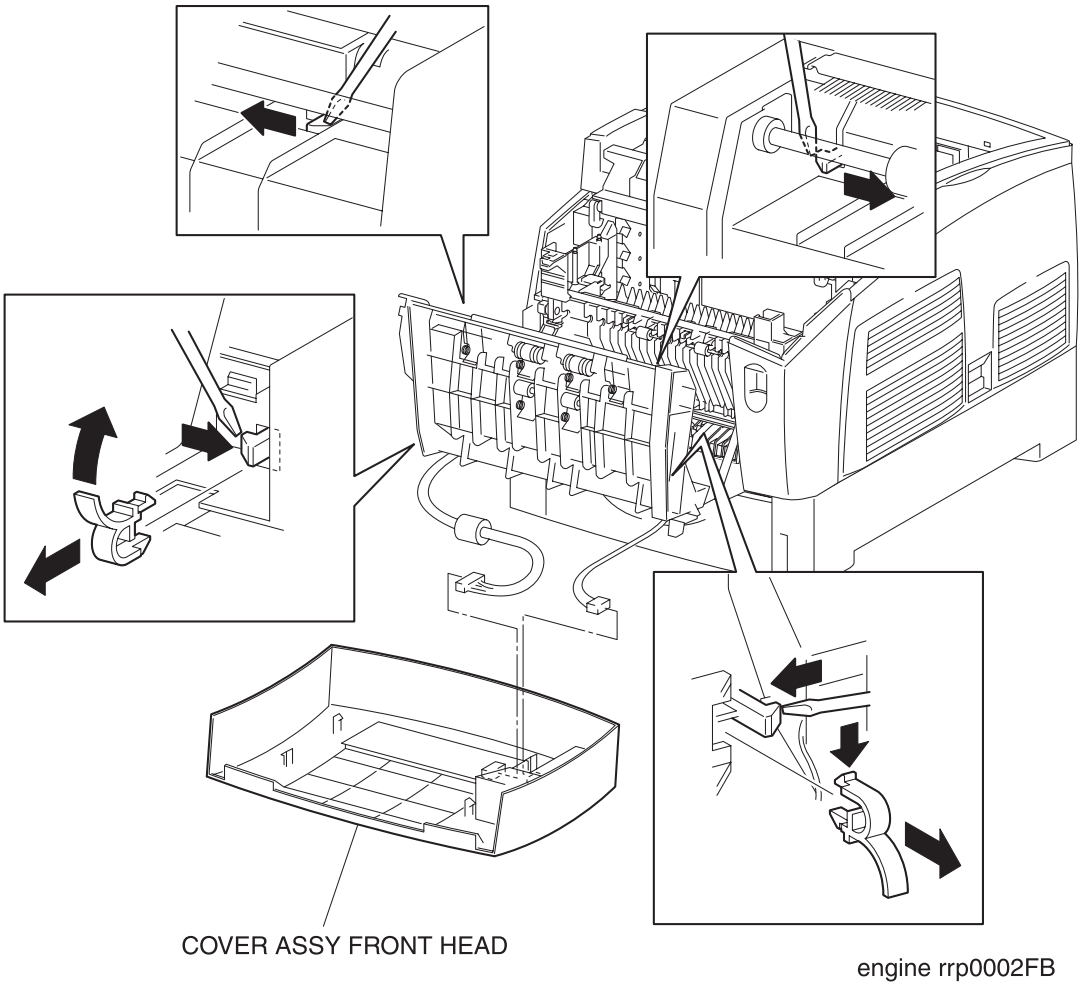


Figure: COVER ASSY FRONT HEAD Removal

Removal

1) Release the latch at B of the printer and open the CHUTE ASSY OUT (PL6.1.1).
2) Push the catch of the LEVER POP UP (PL1.1.32) (which holds the hook to the right side of the COVER ASSY FRONT HEAD) and then remove the LEVER POP (PL1.1.32) from the HOLDER LEVER OUT.
3) Pull up the handle of the LEVER POP UP (PL1.1.32) (which holds the hook to the side of the COVER ASSY FRONT HEAD) and then remove the LEVER POP UP (PL1.1.32) from the CHUTE ASSY OUT.
4) Release the hooks at 4 positions securing the COVER ASSY FRONT HEAD to the CHUTE ASSY OUT.

NOTE

Do not separate the CHUTE ASSY OUT and COVER ASSY FRONT HEAD too far in the following process since they are connected with a connector.

5) Separate the COVER ASSY FRONT HEAD a little from the CHUTE ASSY OUT.
6) Remove the connector (P/J220) on the CONSOLE PANEL HIBANA (PL1.1.1).
7) Remove the connector (P/J137) on the HOLDER LEVER OUT (PL1.1.4).
8) Remove the COVER ASSY FRONT HEAD from the CHUTE ASSY OUT.

Replacement

Replace the components in the reverse order of removal.

RRP1.3 FAN FUSER (PL1.1.7)

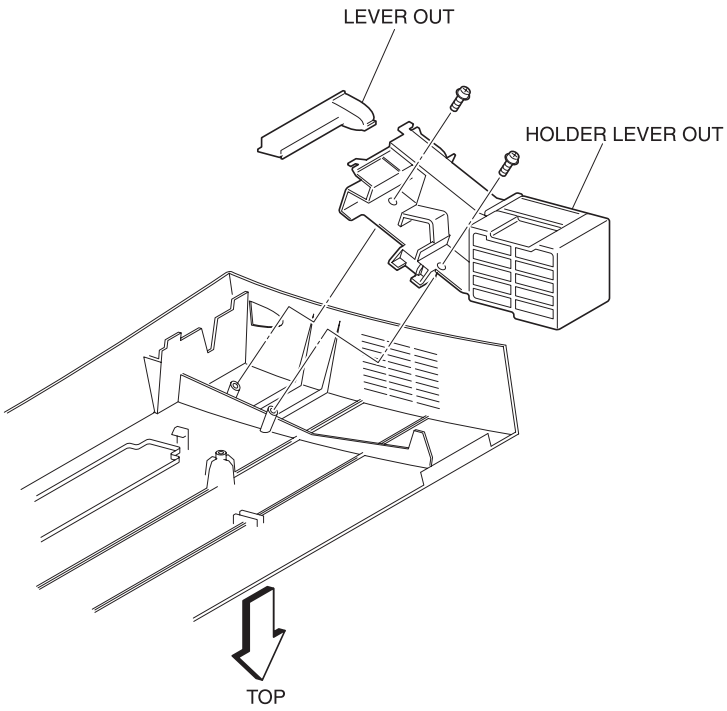


Figure: FAN FUSER Removal (1)

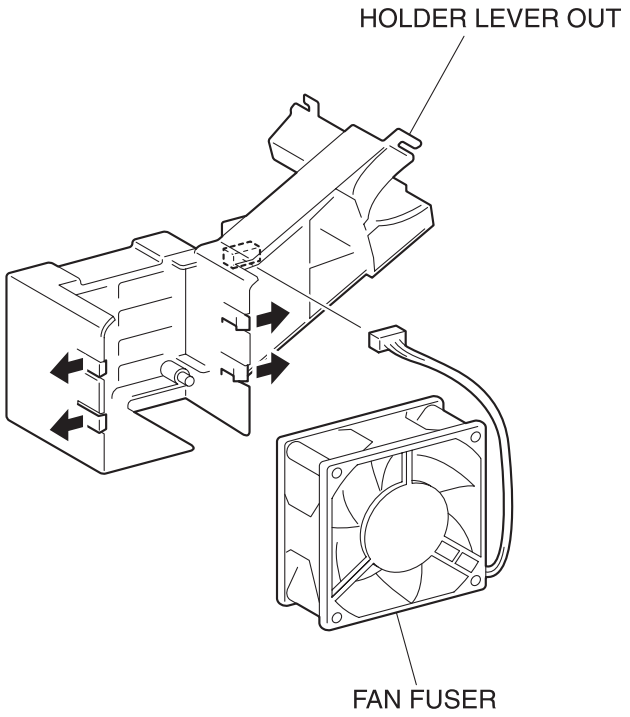


Figure: FAN FUSER Removal (2)

Removal

1) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
2) Remove 2 screws securing the HOLDER LEVER OUT (PL1.1.4) from the rear of the COVER ASSY FRONT HEAD.
3) Remove the HOLDER LEVER OUT (PL1.1.4) from the COVER ASSY FRONT HEAD together with the FAN FUSER, LEVER OUT (PL1.1.5).
4) Remove the LEVER OUT from the HOLDER LEVER OUT.
5) Remove the connector (P/J137) of the FAN FUSER.
6) Release the hooks securing the FAN FUSER at 4 positions to the HOLDER LEVER OUT.
7) Remove the FAN FUSER from the HOLDER LEVER OUT.

Replacement

Replace the components in the reverse order of removal.

NOTE

When mounting the FAN FUSER on the HOLDER LEVER OUT, consideration must be given to where to pull out the harness.

RRP1.4 COVER TOP MAIN (PL1.1.9)

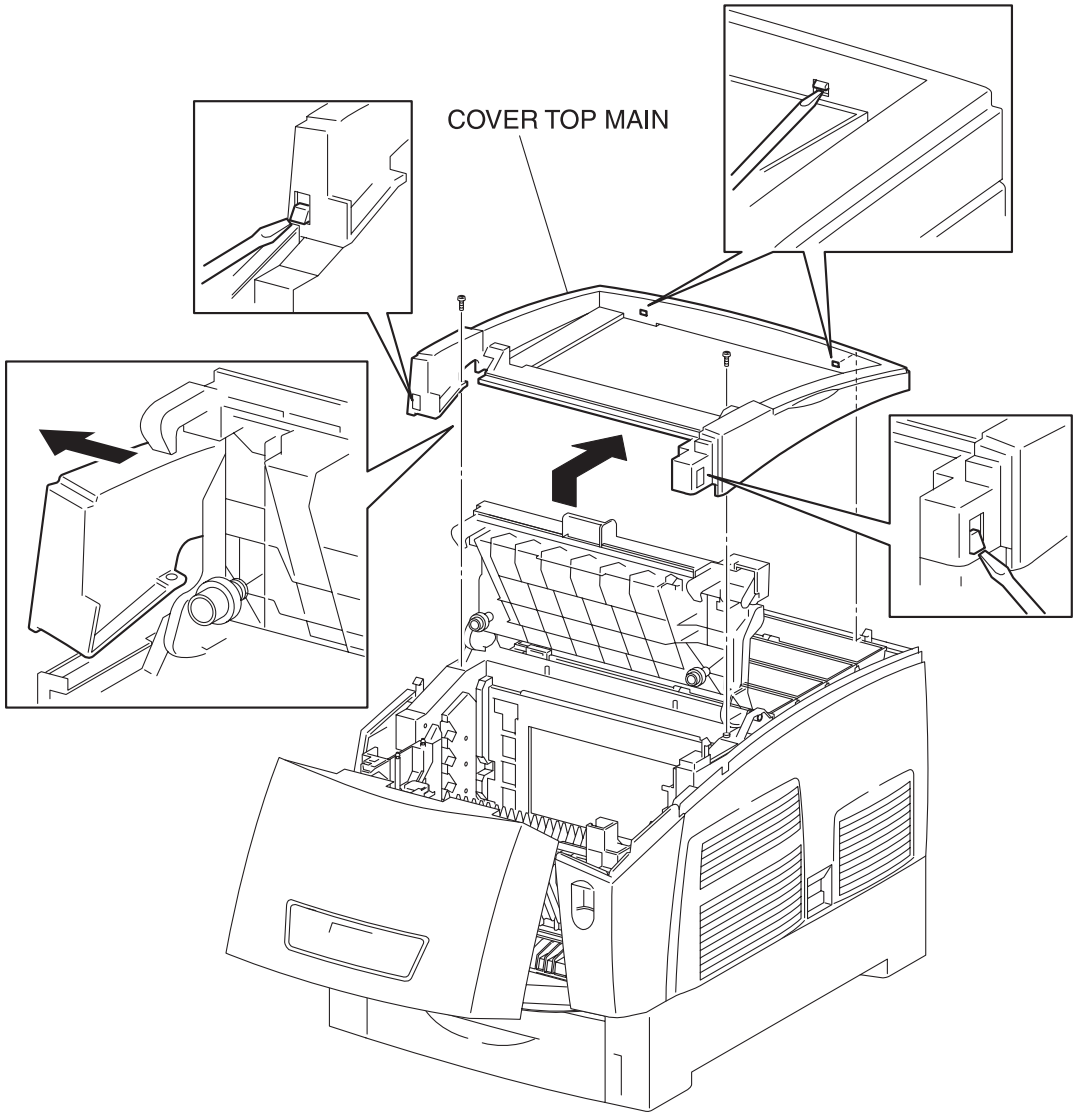


Figure: COVER TOP MAIN Removal

Removal

NOTE

Before removing the COVER TOP MAIN, remove the cartridge in advance to avoid the interference of it.

1) Remove the COVER TOP (PL1.1.8) from the printer.
2) Release the latch at B from the printer and open the CHUTE ASSY OUT (PL6.1.1).
3) Open the COVER ASSY TOP PHD (PL1.1.10) from the printer.
4) Remove 2 screws securing the COVER TOP MAIN (PL1.1.9) to the printer.
5) Release the hooks at 4 positions securing the rear of the COVER TOP MAIN to the printer.
6) Raise the COVER TOP MAIN slightly from the printer and extract the left front edge of the COVER TOP MAIN deflecting it leftward.
7) Remove the COVER TOP MAIN from the printer.

Replacement

Replace the components in the reverse order of removal.

RRP1.5 COVER ASSY TOP PHD (PL1.1.10)

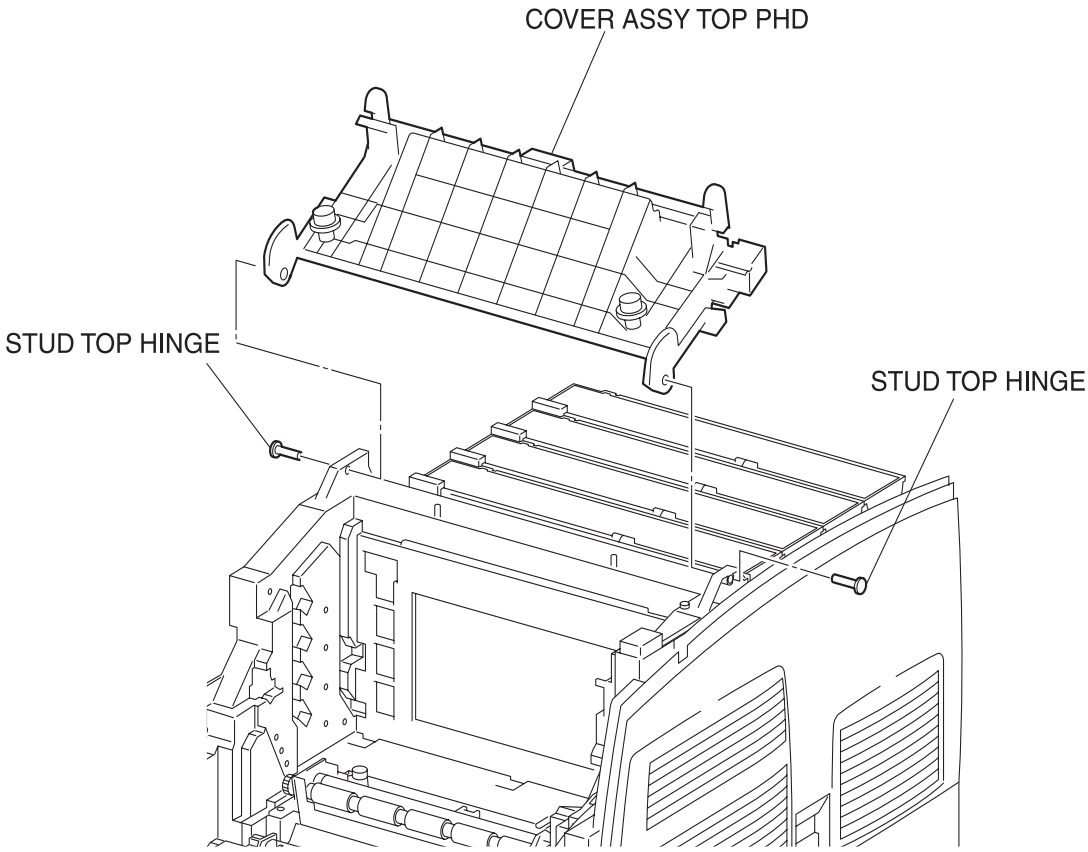


Figure: COVER ASSY TOP PHD Removal

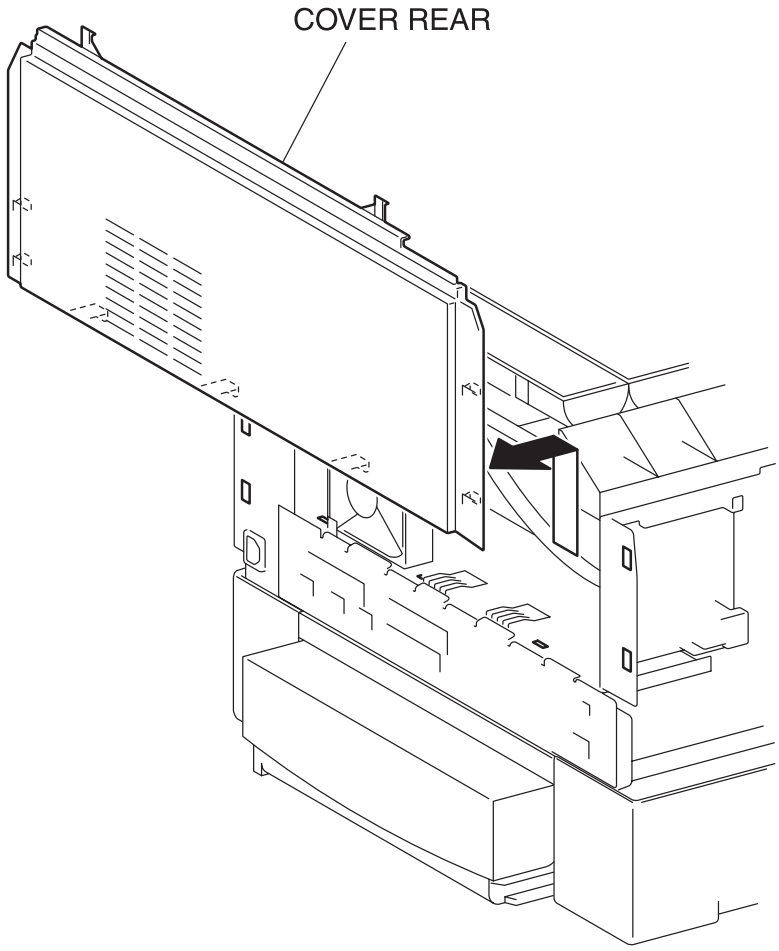
Removal

1) Remove the COVER MSI. (RRP1.11)
2) Remove the TRAY ASSY BASE. (RRP1.12)
3) Remove the COVER TOP MAIN. (RRP1.4)
4) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
5) Remove the COVER ASSY FRONT. (RRP1.13)
6) Remove the COVER SIDE L. (RRP1.14)
7) Open the COVER ASSY TOP PHD from the printer.
8) Extract the right and left STUD TOP (PL1.1.21) securing the COVER ASSY TOP PHD from the printer.
9) Remove the COVER ASSY TOP PHD from the printer.

Replacement

Replace the components in the reverse order of removal.

RRP1.6 COVER REAR (PL1.1.20)



engine rrp0007FB

Figure: COVER REAR Removal

Removal

1) Remove the COVER TOP MAIN. (RRP1.4)
2) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
3) Remove the COVER MSI. (RRP1.11)
4) Remove the TRAY ASSY BASE. (RRP1.12)
5) Remove the COVER ASSY FRONT. (RRP1.13)
6) Remove the COVER ASSY FRONT IN. (RRP1.10)
7) Remove the COVER SIDE L. (RRP1.14)
8) Remove the COVER SIDE R. (RRP1.9)
9) Raise the COVER REAR slightly above the printer, pull it out toward the front and remove.

Replacement

Replace the components in the reverse order of removal.

RRP1.7 LINK:L (PL1.1.23)

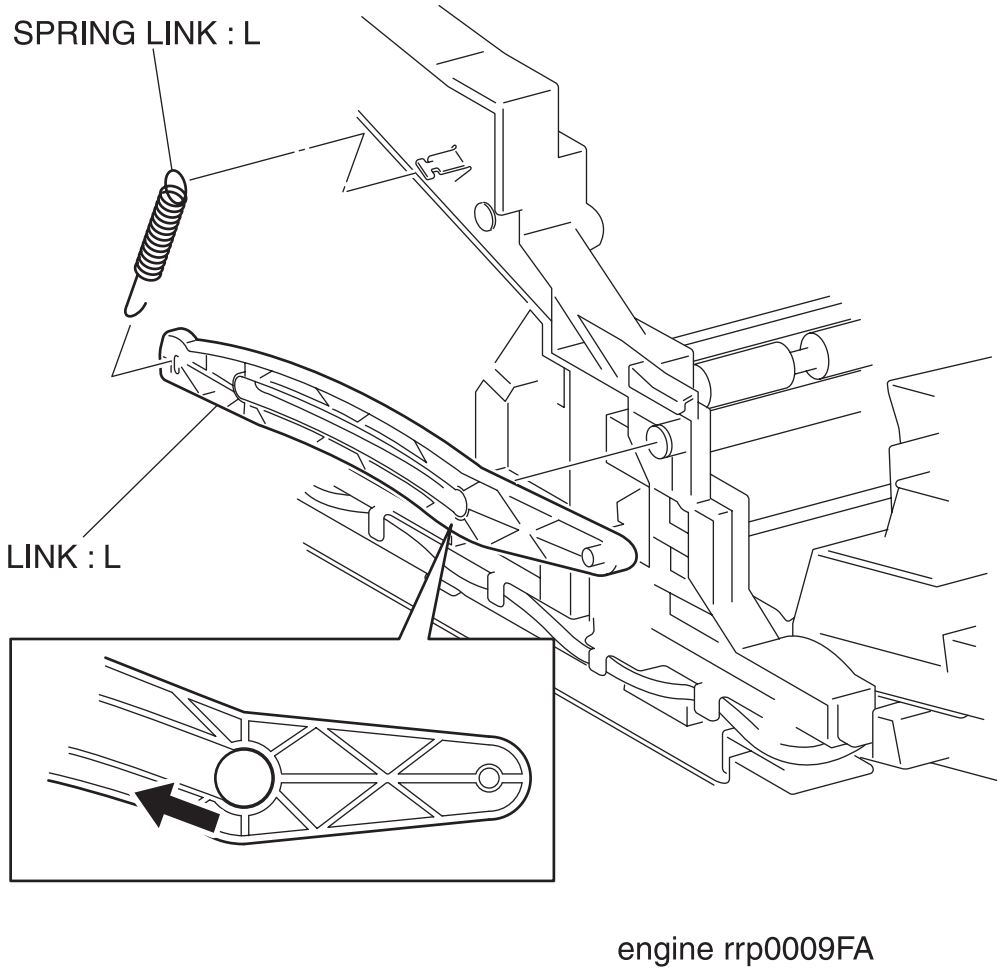


Figure: LINK:L Removal

Removal

1) Remove the COVER TOP MAIN. (RRP1.4)
2) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
3) Remove the COVER MSI. (RRP1.11)
4) Remove the TRAY ASSY BASE. (RRP1.12)
5) Remove the COVER ASSY FRONT. (RRP1.13)
6) Remove the COVER SIDE L. (RRP1.14)
7) Remove the upper hook of the SPRING LINK:L (PL1.1.22) from the projection on the left side of the printer.
8) Slide the LINK:L rearward from the printer and align the shaft of the printer and hole of the LINK:L.
9) Remove the LINK:L from the printer together with the SPRING LINK:L.
10) Remove the SPRING LINK:L from the LINK:L.

Replacement

Replace the components in the reverse order of removal.

RRP1.8 LINK:R (PL1.1.23)

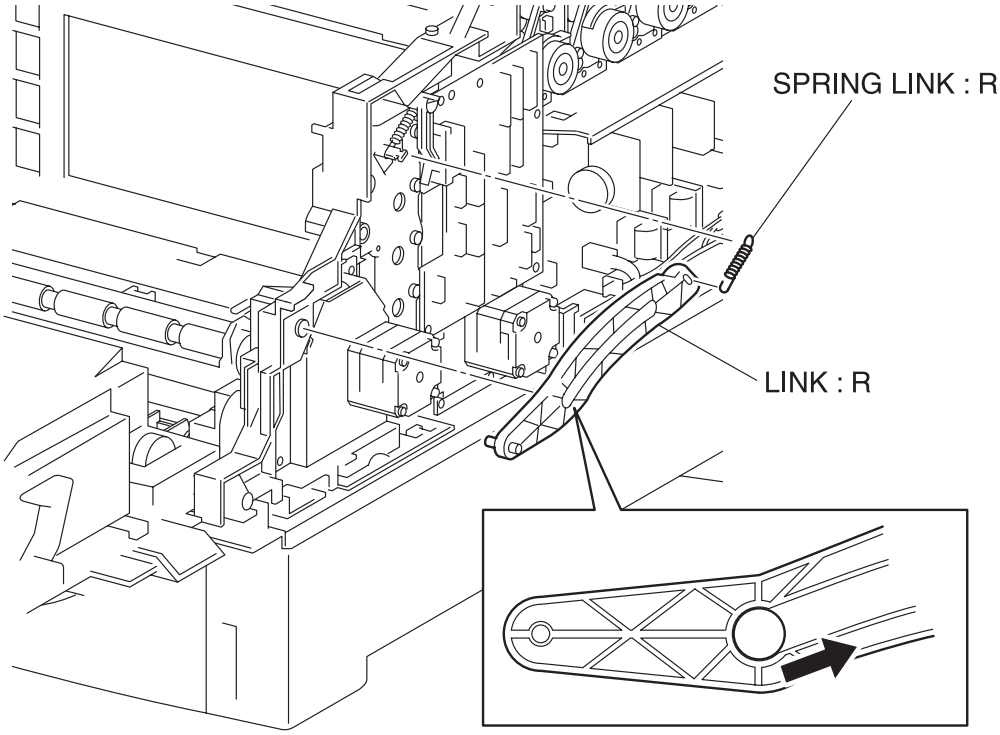


Figure: LINK:R Removal

Removal

1) Remove the COVER TOP MAIN. (RRP1.4)
2) Remove the COVER ASSY FRONT IN. (RRP1.10)
3) Remove the COVER SIDE R. (RRP1.9)
4) Extract the upper hook of the SPRING LINK:R (PL1.1.22) from the projection on the right side of the printer.
5) Slide the LINK:R rearward from the printer and align the shaft of the printer and the hole of the LINK:R.
6) Remove the LINK:R from the printer together with the SPRING LINK:R.
7) Remove the SPRING LINK:R from the LINK:R.

Replacement

Replace the components in the reverse order of removal.

RRP1.9 COVER SIDE R (PL1.1.24)

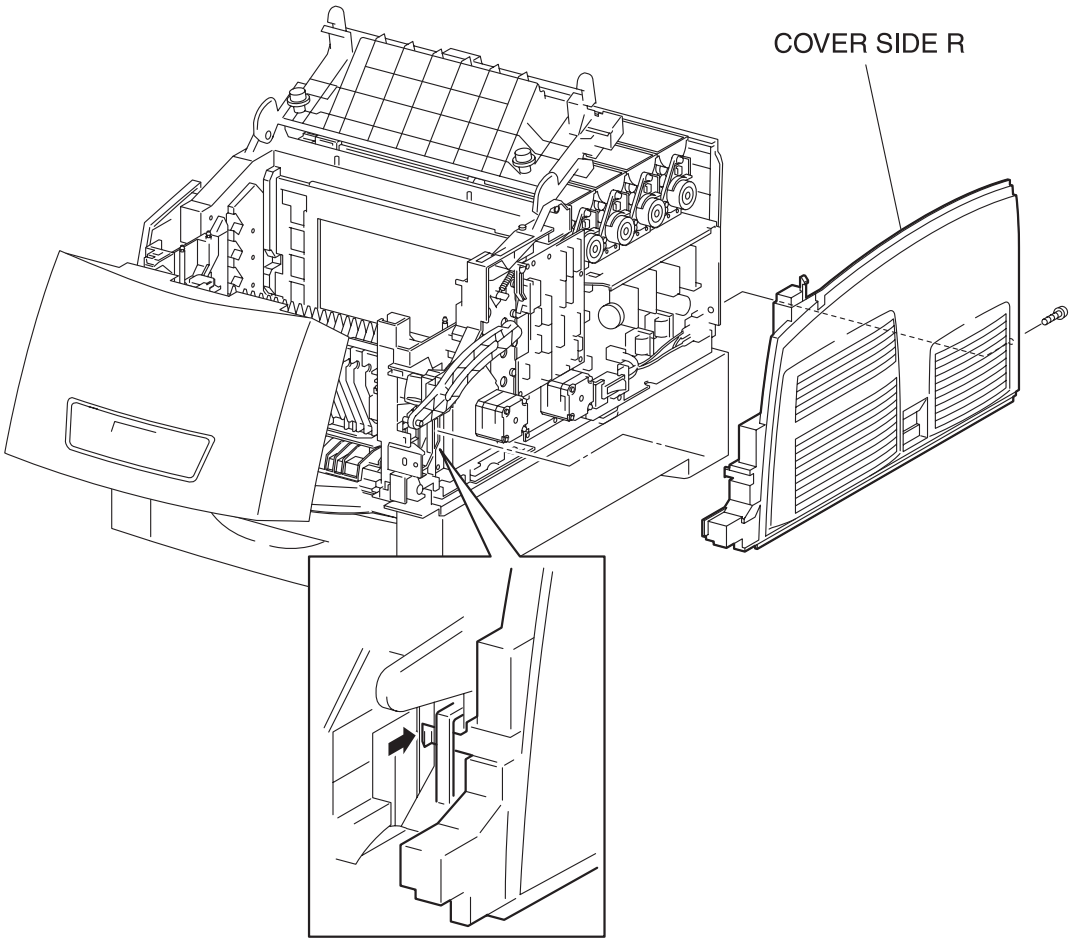


Figure: COVER SIDE R Removal

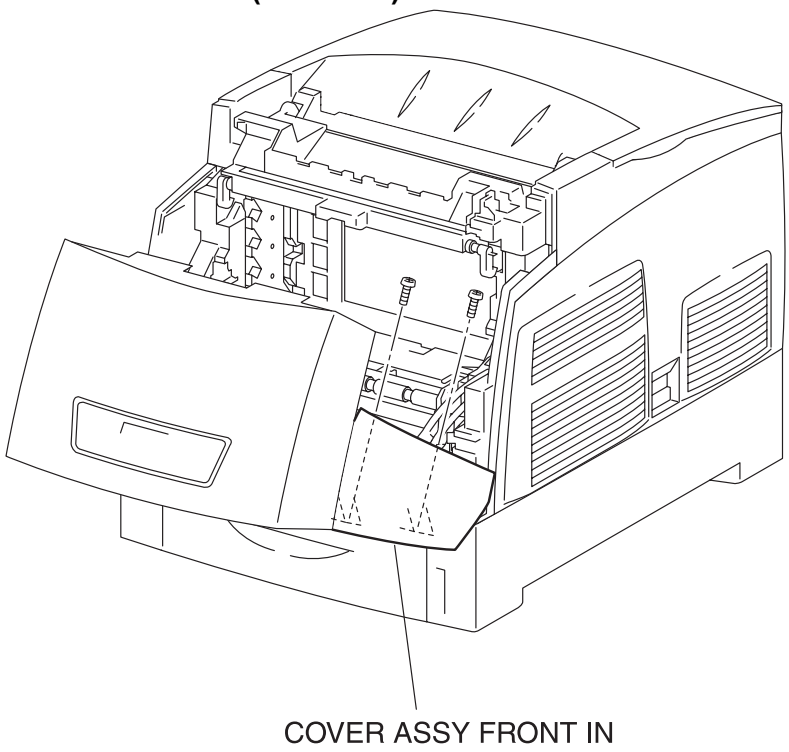
Removal

1) Remove the COVER TOP MAIN. (RRP1.4)
2) Remove the COVER ASSY FRONT IN. (RRP1.10)
3) Remove 1 screw securing the COVER SIDE R to the printer.
4) Release a hook securing the COVER SIDE R at 1 position at the front end to the printer.
5) Remove the COVER SIDE R from the printer.

Replacement

Replace the components in the reverse order of removal.

RRP1.10 COVER ASSY FRONT IN (PL1.1.25)



engine rrp0011FB

Figure: COVER ASSY FRONT IN Removal (1)

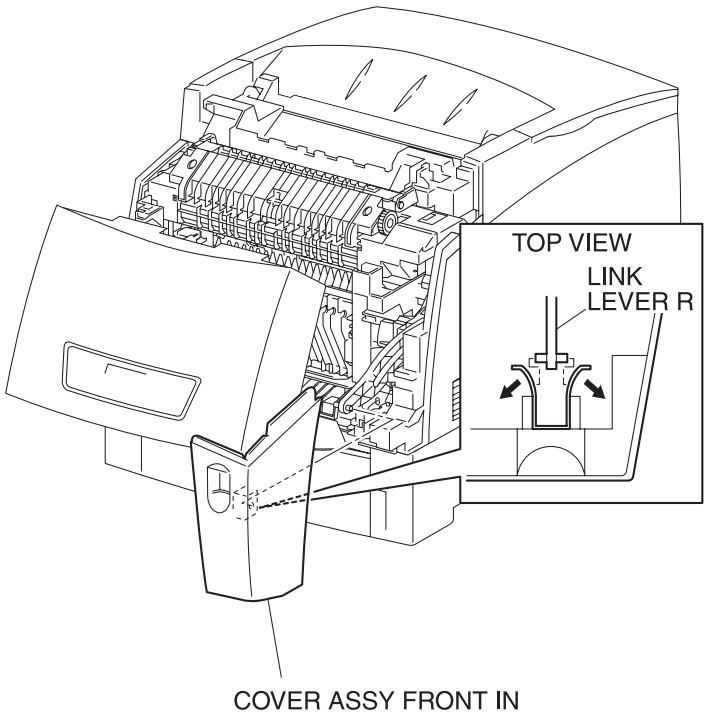


Figure: COVER ASSY FRONT IN Removal (2)

Removal

1) Release the latch at A from the printer and open the CHUTE ASSY IN (PL5.1.1) together with the CHUTE ASSY OUT (PL6.1.1).
2) Remove 2 screws securing the COVER ASSY FRONT IN to the CHUTE ASSY IN.
3) Release the latch at B from the printer and open the CHUTE ASSY OUT.

NOTE

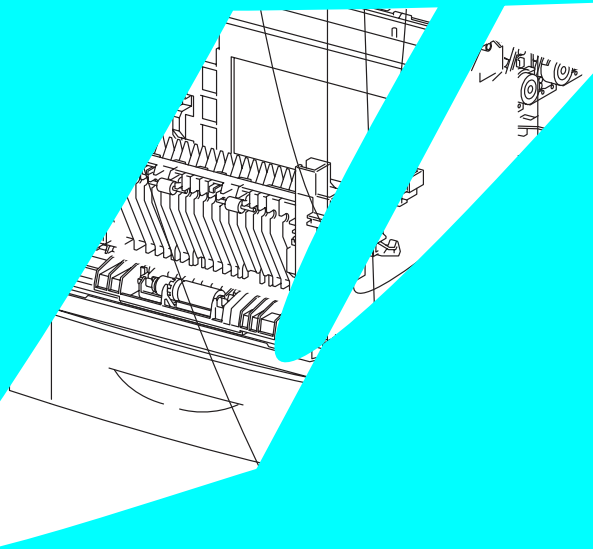
In the following process, do not separate the COVER ASSY FRONT IN and LINK:R too far since they are connected.

4) Pull out the COVER ASSY FRONT IN slightly from the CHUTE ASSY IN.
5) Shift the boss at the end of the LINK:R from the leaf spring at the back of the COVER ASSY FRONT IN and remove the COVER ASSY FRONT IN.

Replacement

Replace the components in the reverse order of removal.

RRP1.11 COVER



Figure

Removal

1) Open the COVER MSI (PL1.1.26) from the front of the printer.
2) Deflecting the left side of the TRAY ASSY BASE (PL1.1.28) inward from the long hole on the left side of the COVER MSI, extract the boss of the TRAY ASSY BASE from the long hole.
3) Extract the right side boss of the TRAY ASSY BASE from the right long hole of the COVER MSI.
4) Lowering the tip of the COVER MSI down the printer, pull out the COVER MSI forward and remove.

Replacement

Replace the components in the reverse order of removal.

RRP1.12 TRAY ASSY BASE (PL1.1.28)

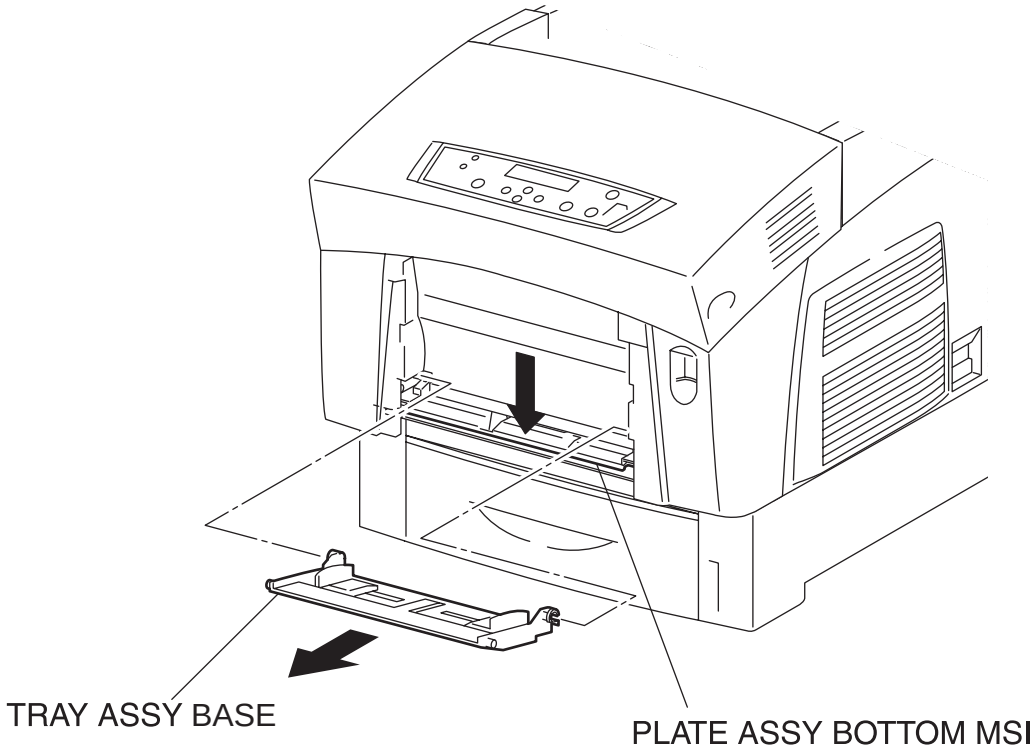


Figure: TRAY ASSY BASE Removal

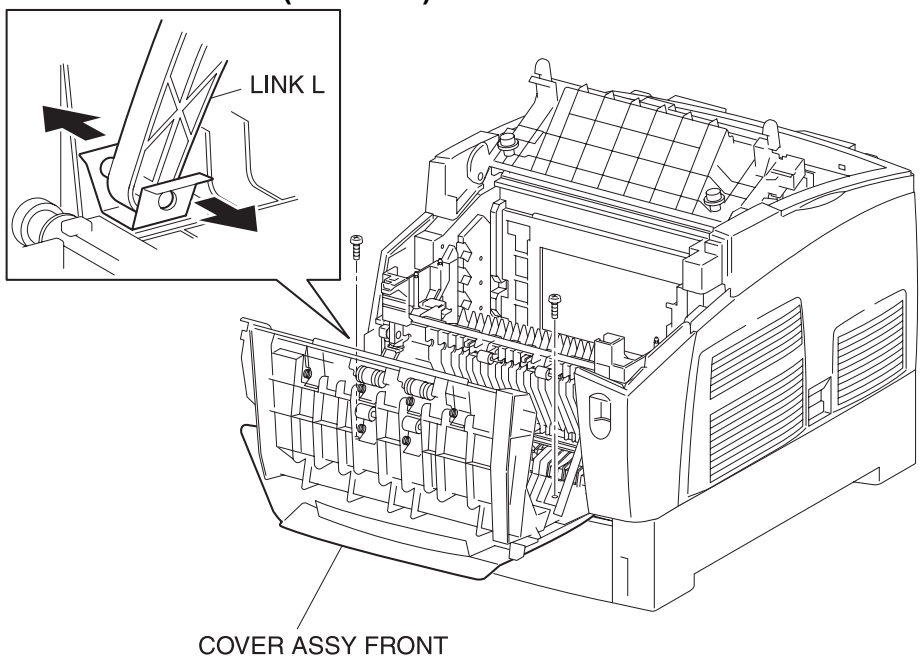
Removal

1) Open the COVER MSI (PL1.1.26) from the printer.
2) Remove the COVER MSI. (RRP1.11)
3) Check that the PLATE ASSY BOTTOM MSI is shifted down.
4) Open the TRAY ASSY BASE, raise it pushing inward, and pull it out toward the front.

Replacement

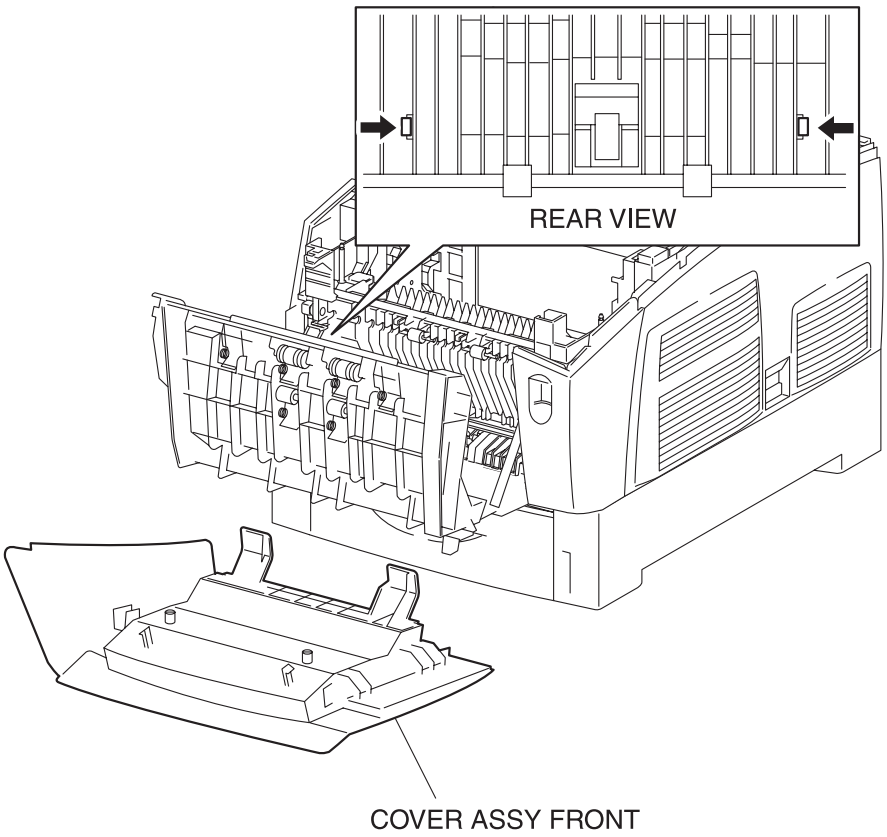
Replace the components in the reverse order of removal.

RRP1.13 COVER ASSY FRONT (PL1.1.29)



engine rrp0015FB

Figure: COVER ASSY FRONT Removal (1)



engine rrp0016FB

Figure: COVER ASSY FRONT Removal (2)

Removal

1) Remove the COVER MSI. (RRP1.11)
2) Remove the TRAY ASSY BASE. (RRP1.12)
3) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
4) Release the latch at B from the printer and open the CHUTE ASSY OUT.
5) Shift the boss at the tip of the LINK:L (PL1.1.23) from the leaf spring at the back of the COVER ASSY FRONT.
6) Remove 2 screws securing the COVER ASSY FRONT to the CHUTE ASSY OUT (PL6.1.1).
7) Release the hooks securing the COVER ASSY FRONT at 2 positions to the CHUTE ASSY OUT.
8) Remove the COVER ASSY FRONT from the CHUTE ASSY OUT.

Replacement

Replace the components in the reverse order of removal.

RRP1.14 COVER SIDE L (PL1.1.30)

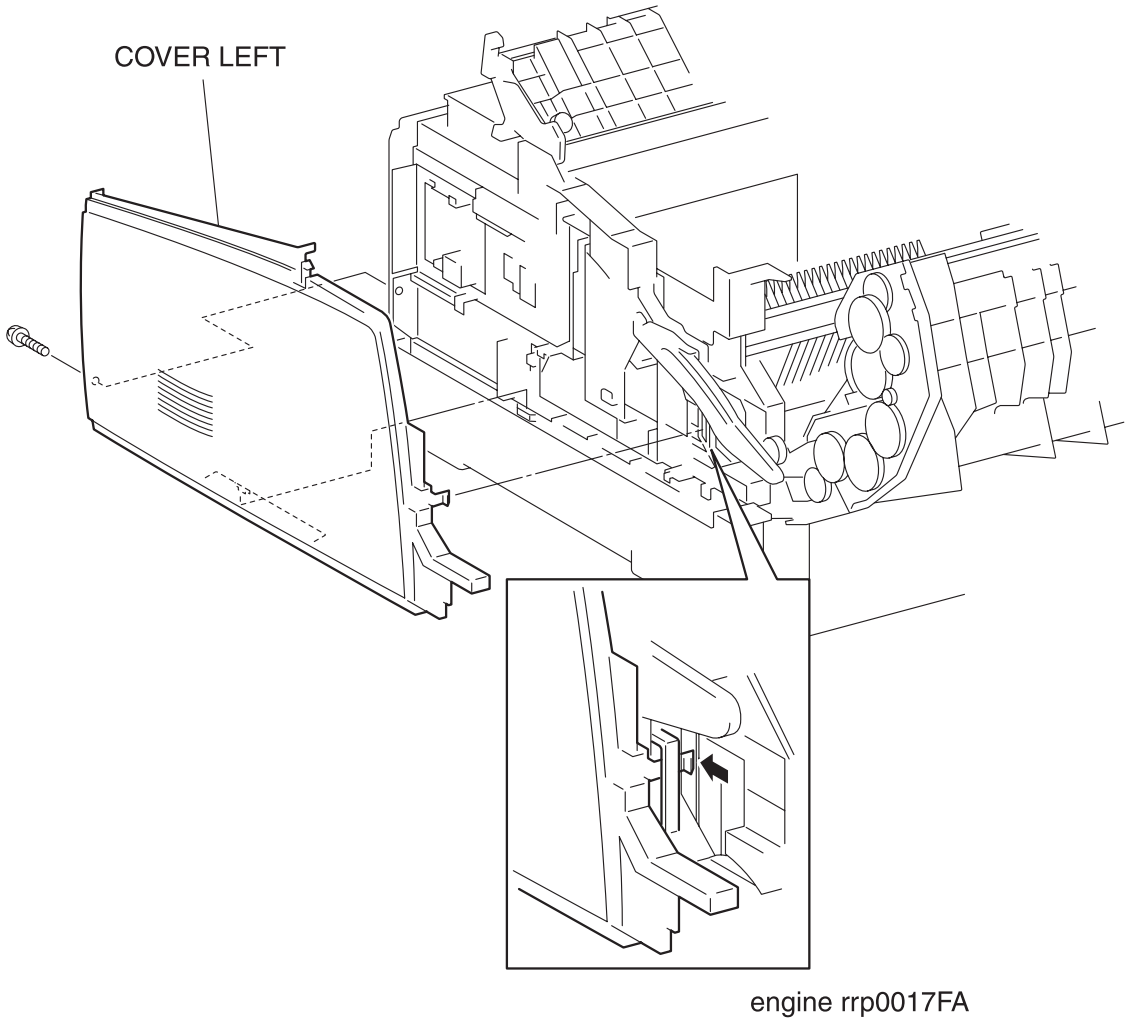


Figure: COVER SIDE L Removal

Removal

1) Remove the COVER TOP MAIN. (RRP1.4)
2) Remove the COVER ASSY FRONT. (RRP1.13)
3) Remove 1 screw securing the COVER SIDE L to the printer.
4) Release a hook securing the COVER SIDE L at 1 position at the front edge to the printer.
5) Remove the COVER SIDE L from the printer.

Replacement

Replace the components in the reverse order of removal.

RRP2. PAPER CASSETTE

RRP2.1 ROLL ASSY RETARD (PL2.1.2)

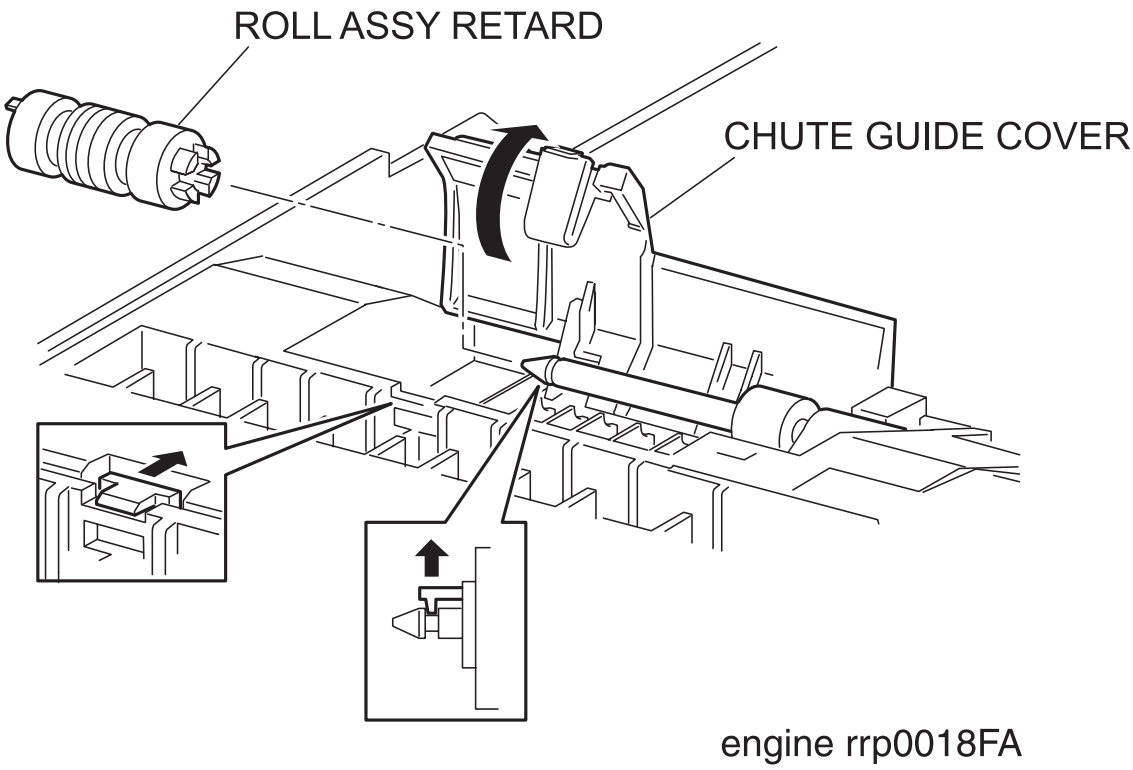


Figure: ROLL ASSY RETARD Removal

Removal

1) Pull out the CASSETTE from the printer.
2) Release the CHUTE GUIDE COVER secured to the CASSETTE at one point and open the CHUTE GUIDE COVER.
3) Release a hook securing the ROLL ASSY RETARD at 1 position to the SHAFT RETARD from the CASSETTE.
4) Pull out the ROLL ASSY RETARD from the SHAFT RETARD.

Replacement

Replace the components in the reverse order of removal.

RRP2.2 HOLDER RETARD (PL2.1.4)

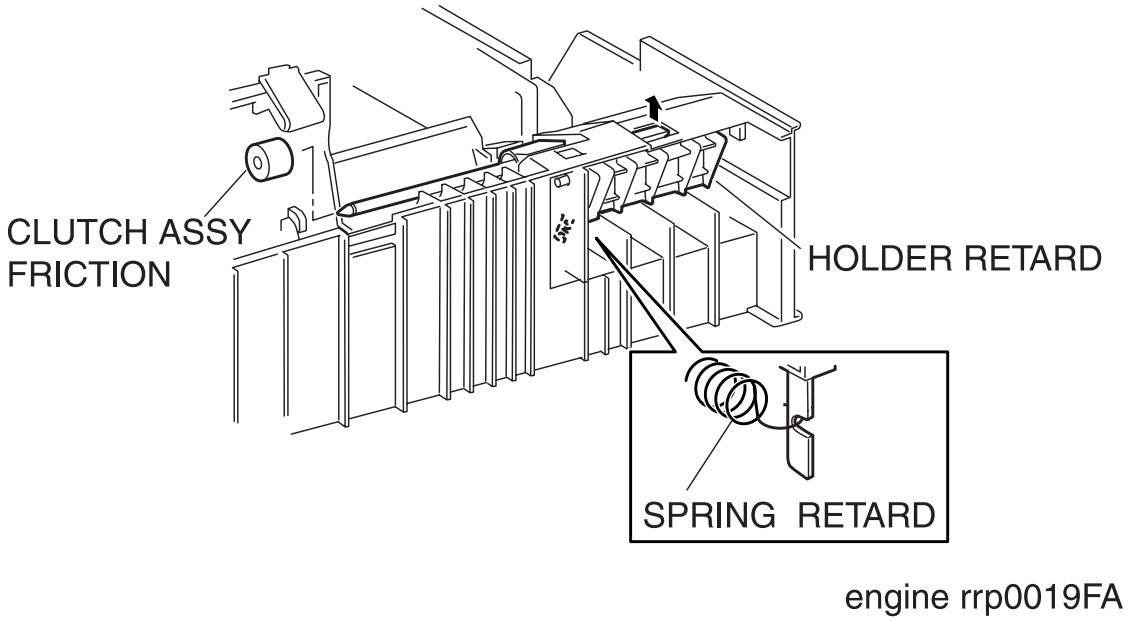


Figure: HOLDER RETARD Removal (1)

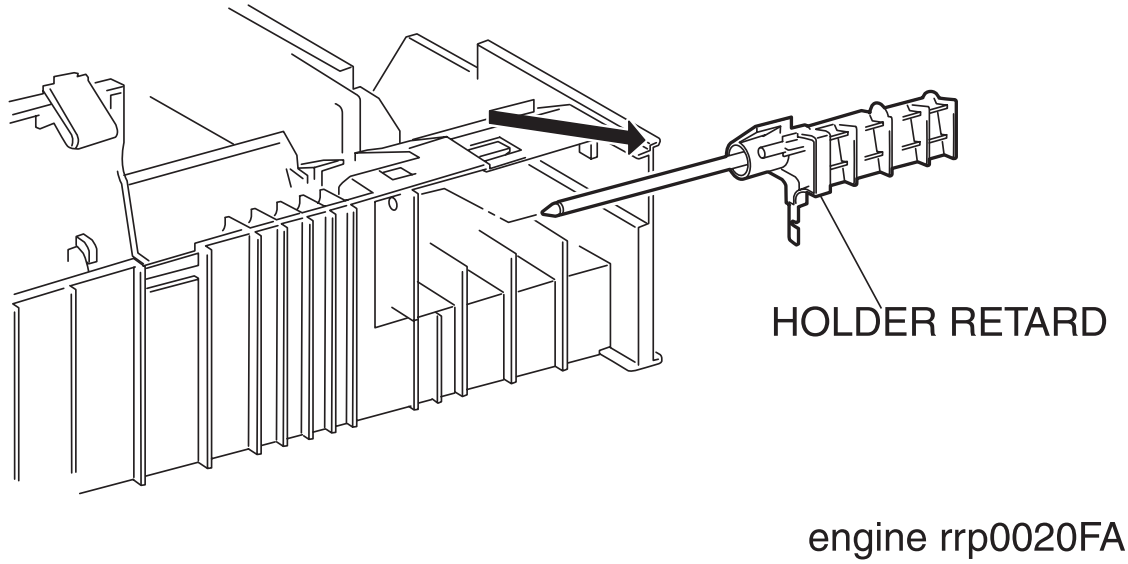


Figure: HOLDER RETARD Removal (2)

Removal

1) Pull out the CASSETTE from the printer.
2) Remove the CASSETTE ASSY FRONT. (RRP2.3)
3) Remove the ROLL ASSY RETARD. (RRP2.1)
4) Pull out the CLUTCH ASSY FRICTION (PL2.1.3) on the SHAFT RETARD from the CASSETTE.
5) Release the hook of the SPRING RETARD (2.1.4) hitched to the bottom groove of the HOLDER RETARD from the CASSETTE.
6) Release the hook at 1 position securing the top portion of the HOLDER RETARD from the CASSETTE and move the HOLDER RETARD leftward.
7) Pull out the right end of the HOLDER RETARD slightly from the CASSETTE and extract the HOLDER RETARD and remove.

Replacement

Replace the components in the reverse order of removal.

RRP2.3 CASSETTE ASSY FRONT (REFERENCE ONLY)

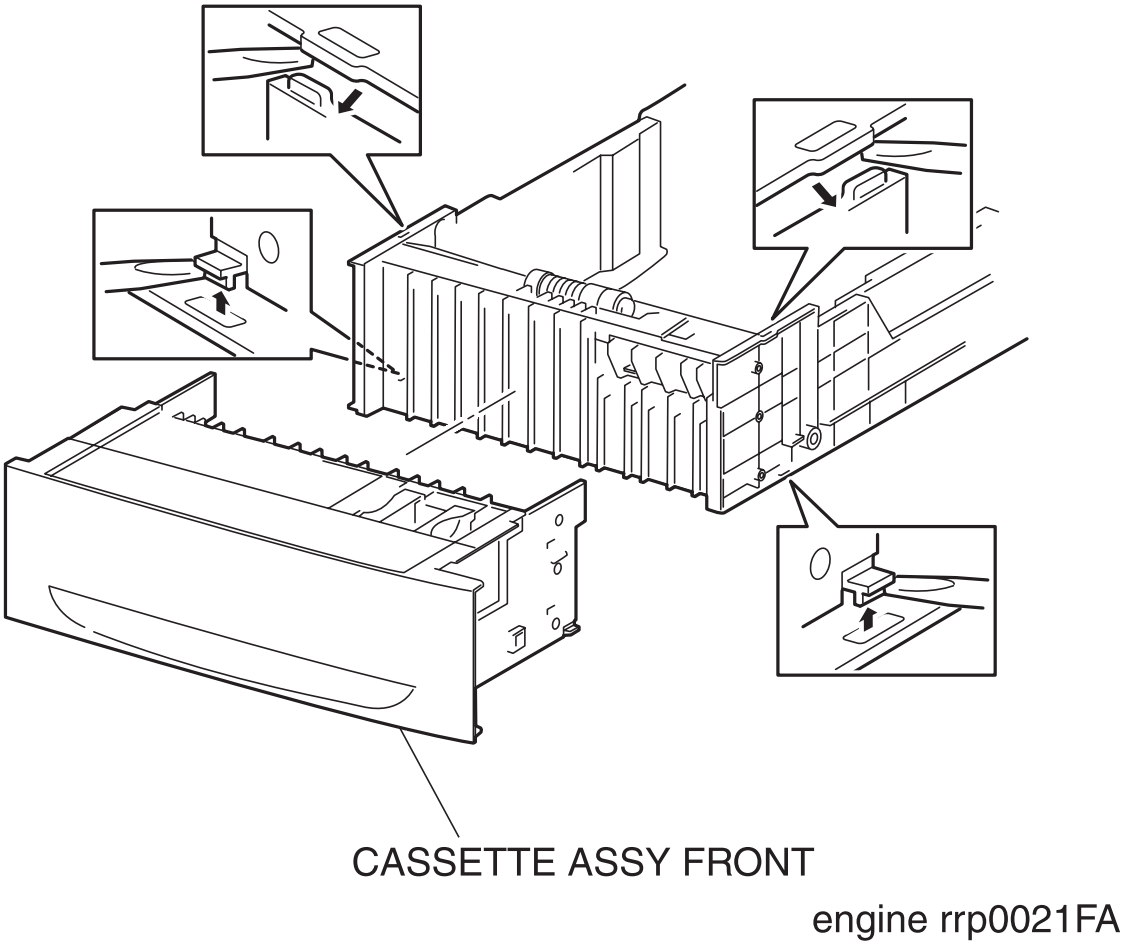


Figure: CASSETTE ASSY FRONT Removal

Removal

1) Pull out the CASSETTE from the printer.
2) Release the bottom and top hooks securing the CASSETTE ASSY FRONT from the right side of the CASSETTE using a mini screwdriver or the like.
3) Release the bottom and top hooks securing the CASSETTE ASSY FRONT from the left side of the CASSETTE using a mini screwdriver or the like.
4) Pull out the CASSETTE ASSY FRONT from the CASSETTE.

Replacement

Replace the components in the reverse order of removal.

RRP3. PAPER FEEDER

RRP3.1 CHUTE ASSY TURN (PL3.1.2)

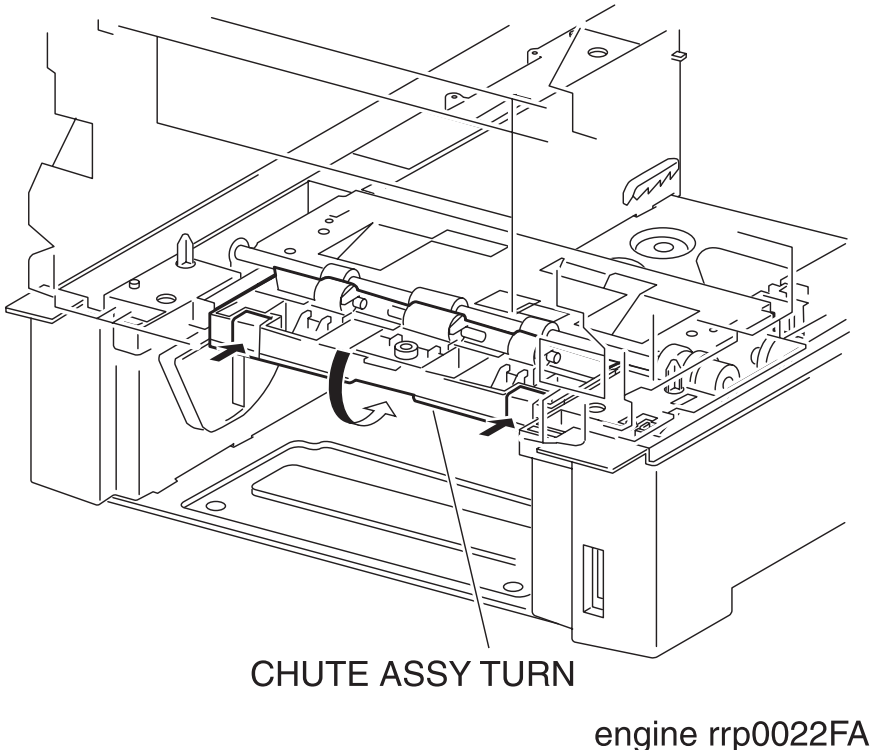


Figure: CHUTE ASSY TURN Removal (1)

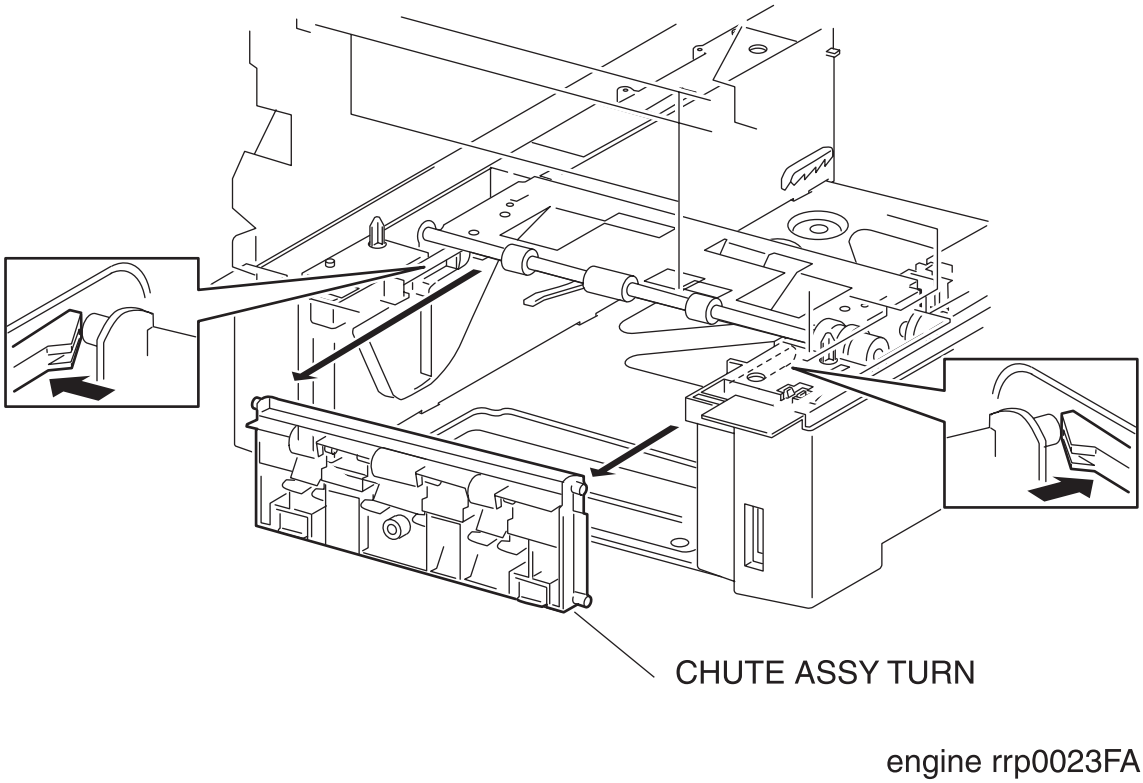


Figure: CHUTE ASSY TURN Removal (2)

Removal

1) Pull out the CASSETTE from the printer.
2) Release the hooks at 2 positions securing the CHUTE ASSY TURN to the printer FEEDER.
3) Turn the CHUTE ASSY 90 degrees rearward from the printer FEEDER.
4) Release the hook securing the right and left shaft of the CHUTE ASSY TURN to the printer FEEDER.
5) Pull out the CHUTE ASSY TURN from the printer FEEDER and remove.

Replacement

Replace the components in the reverse order of removal.

RRP3.2 COVER CST SLIDE (PL3.1.3)

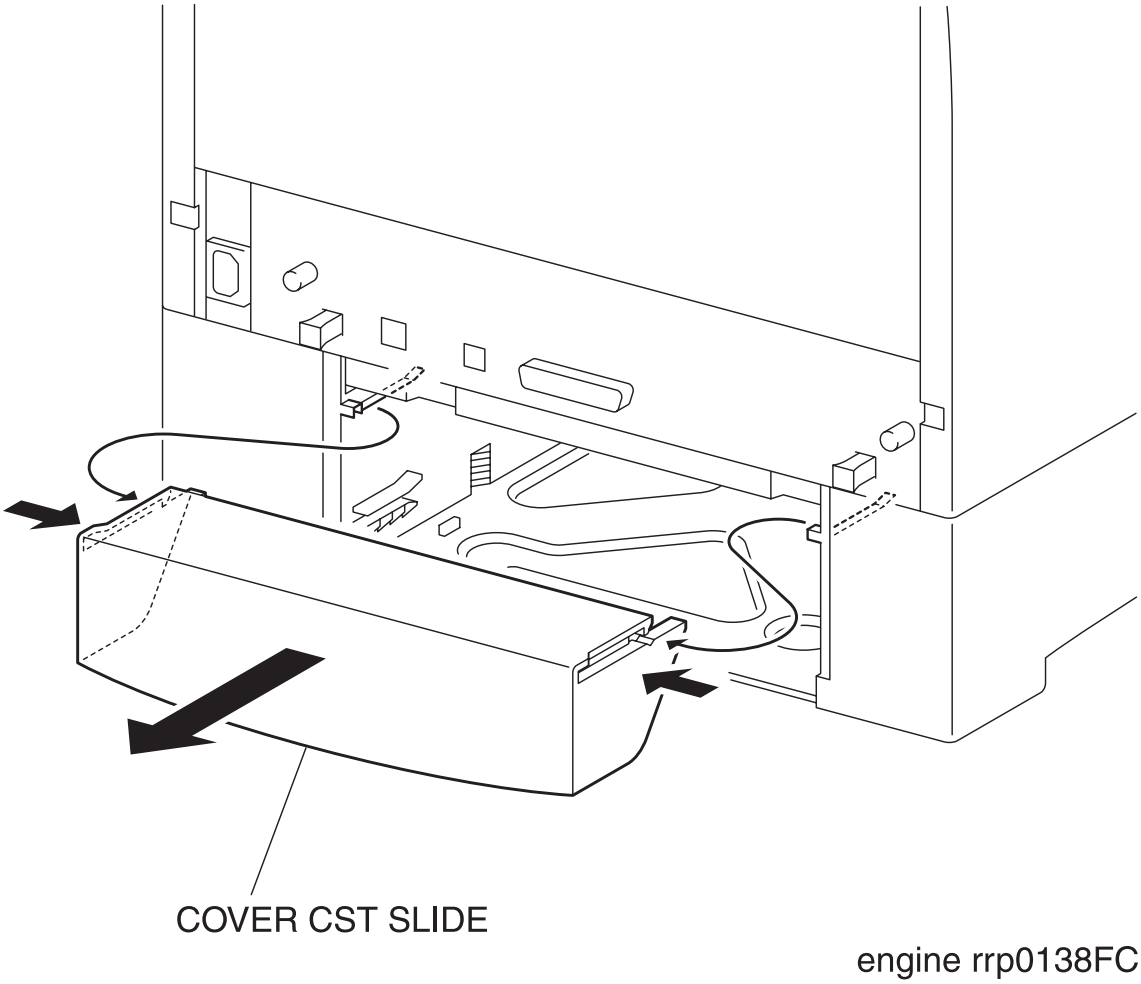


Figure: COVER CST SLIDE Removal

Removal

1) Remove the Cassette.
2) Right and left of COVER CST SLIDE are pushed, a claw on either side is removed from the projection of HOUSING FEEDER L and HOUSING FEEDER R, and COVER CST SLIDE is removed.

Replacement

Replace the components in the reverse order of removal.

RRP3.3 FEEDER ASSY UNIT (REFERENCE ONLY)

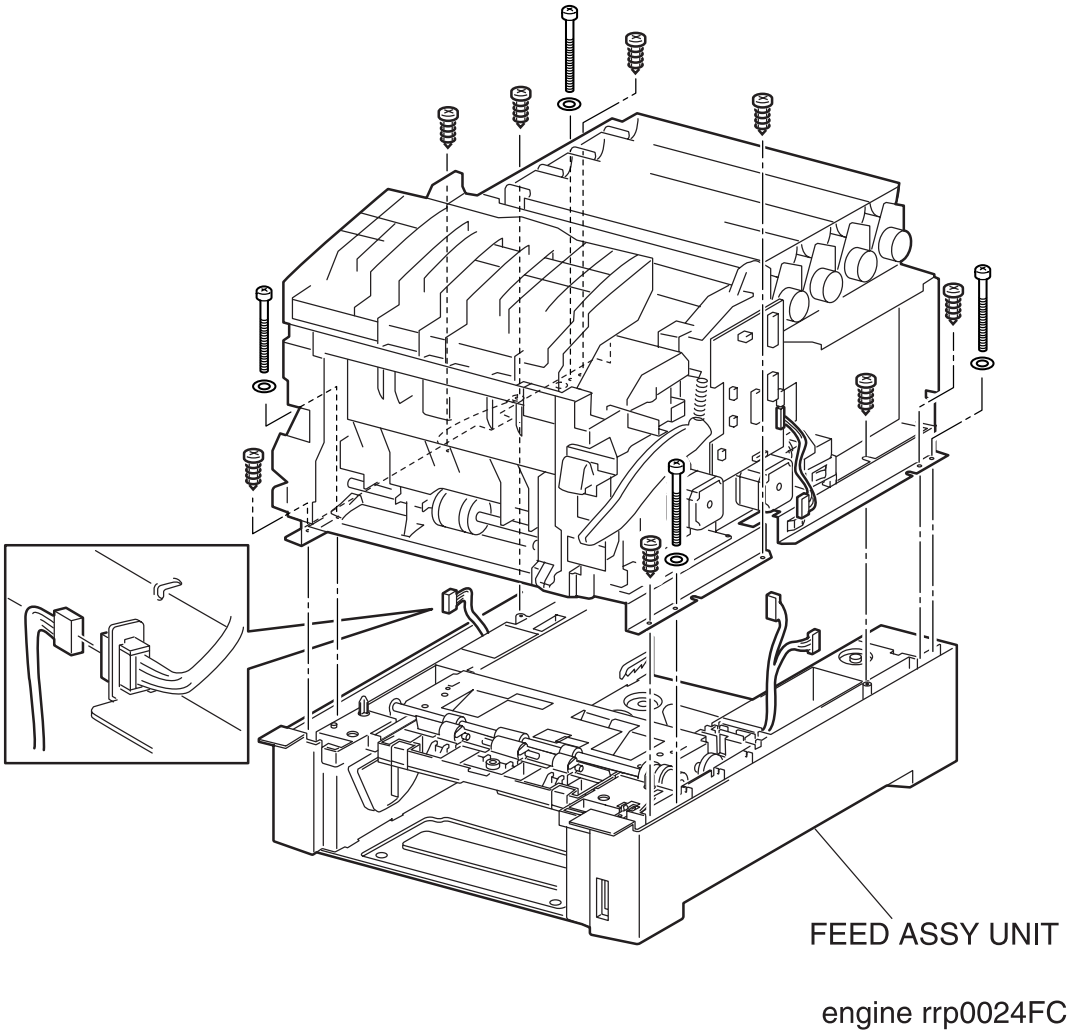
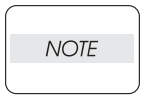


Figure: FEEDER ASSY UNIT Removal

Removal

1) Pull out the CASSETTE from the printer.
2) Remove the COVER TOP MAIN. (RRP1.4)
3) Remove the COVER SIDE L. (RRP1.14)
4) Remove the COVER SIDE R. (RRP1.9)
5) Remove the CHUTE ASSY TURN. (RRP3.1)
6) Remove the COVER CST SLIDE. (RRP3.2)
7) Deflect the shaft of the LINK ACTUATOR (PL3.3.6) secured to the ACTUATOR NO PAPER (PL3.3.5) from the printer FEEDER and shift the ACTUATOR NO PAPER from the shaft.
8) Pull out the LINK ACTUATOR from the hole on the printer FEEDER and remove.
9) Remove the connector (P/J2361) connecting the printer and FEEDER ASSY UNIT from the left side of the printer.
10) Remove the connector (P/J210) connecting the printer and FEEDER ASSY UNIT from the right side of the printer.
11) Remove the connector (P/J47) on the PWBA DRV HBN (PL12.1.12) from the right side of the printer.
12) Remove 8 screws securing the FEEDER ASSY UNIT to the printer.
13) Remove 4 long screws securing the FEEDER ASSY UNIT to the printer.
14) Release the connector (P/J2361) Harness from the bottom Plate slit under the Main Frame toward the FEEDER area.
15) Shift the harness of the connector (P/J24) from the square hole on the bottom plate at the lower part of the printer toward the FEEDER.
16) Shift the connector (P/J210) and the harness of the connector (P/J47) from the square hole on the bottom plate at the lower part of the printer toward the FEEDER.

The top unit of the printer should be raised up by more than two people.

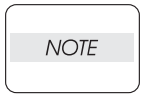


When removing the top unit of the printer from the FEEDER ASSY UNIT, be careful not to drop or damage the upper parts of the printer.

17) Raise the printer and separate it from the FEEDER ASSY UNIT.

Replacement

Replace the components in the reverse order of removal.



Take care not to pinch the harness on the FEEDER ASSY UNIT side, when replacing the printer top unit on the FEEDER ASSY UNIT.

RRP3.4 HOUSING ASSY FEEDER L (REFERENCE ONLY)

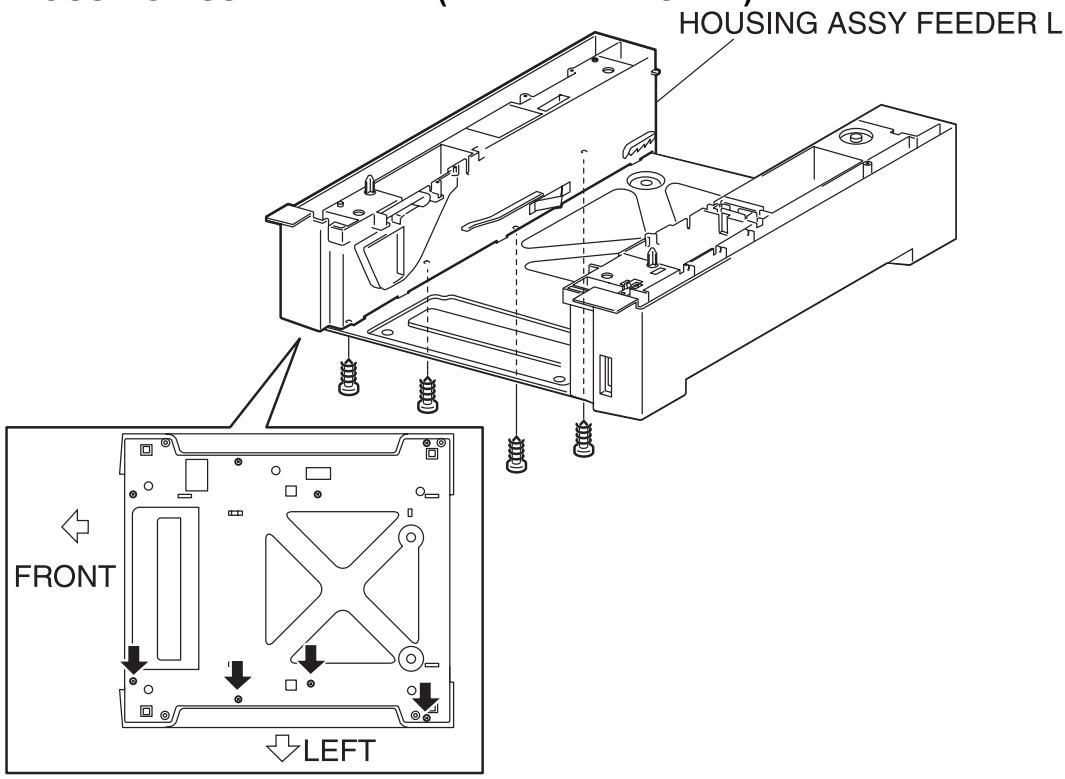


Figure: HOUSING ASSY FEEDER L Removal (1)

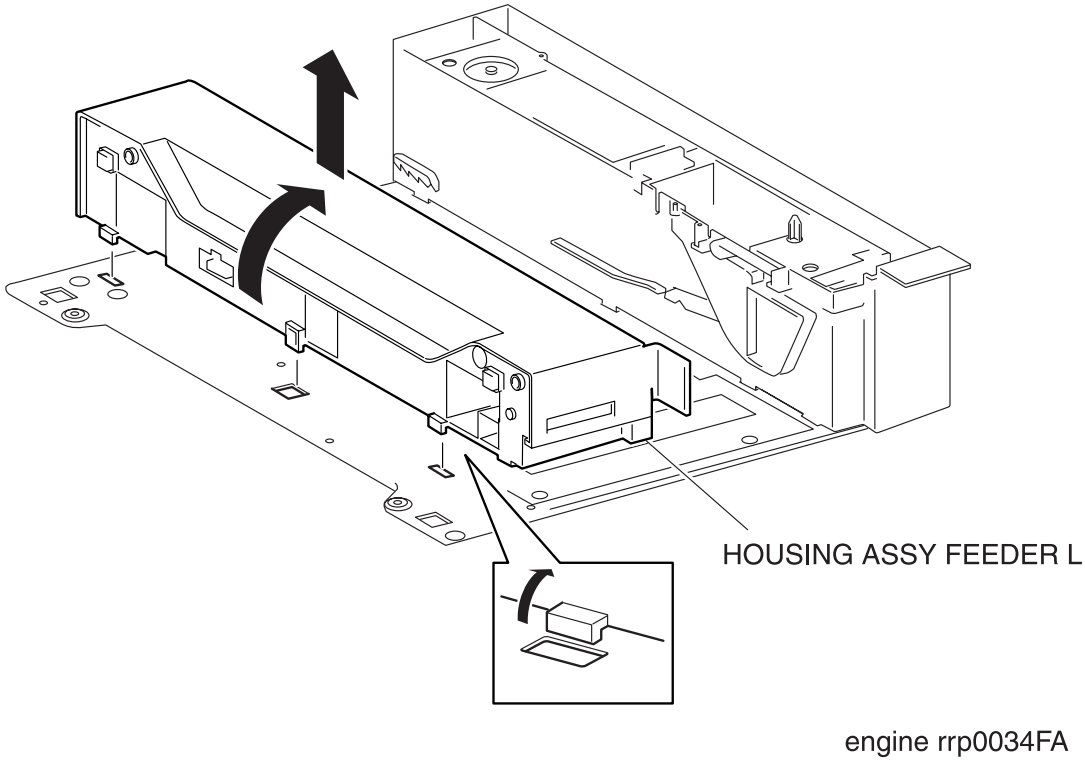


Figure: HOUSING ASSY FEEDER L Removal (2)

Removal

1) Pull out the CASSETTE from the printer.
2) Remove the COVER TOP MAIN. (RRP1.4)
3) Remove the COVER SIDE L. (RRP1.14)
4) Remove the COVER SIDE R. (RRP1.9)
5) Remove the CHUTE ASSY TURN. (RRP3.1)
6) Remove the COVER CST SLIDE. (RRP3.2)
7) Remove the FEEDER ASSY UNIT. (RRP3.3)
8) Remove the PICKUP ASSY. (RRP3.12)
9) Remove 4 screws securing the HOUSING ASSY FEEDER L to the PLATE BOTTOM.
10) Pull down the HOUSING ASSY FEEDER L inward and extract the hooks at 3 positions out of the hole at the PLATE BOTTOM.
11) Remove the HOUSING ASSY FEEDER L upward from the PLATE BOTTOM.

Replacement

Replace the components in the reverse order of removal.

RRP3.5 HOUSING ASSY FEEDER R (REFERENCE ONLY)

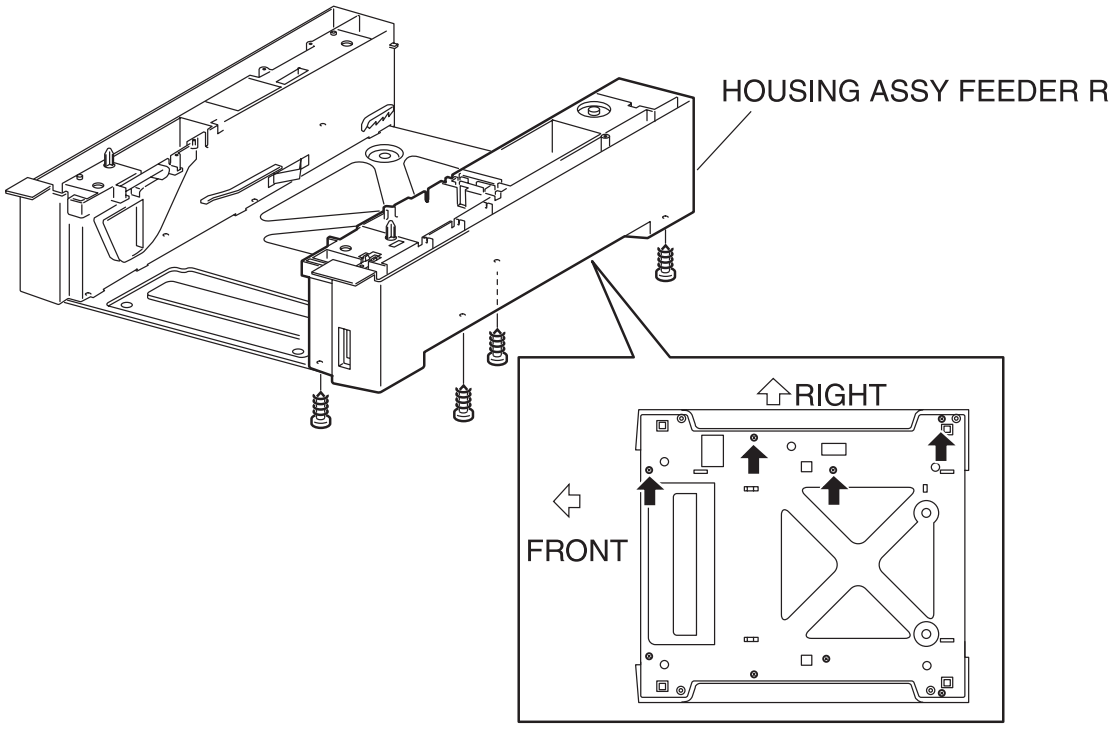


Figure: HOUSING ASSY FEEDER R Removal (1)

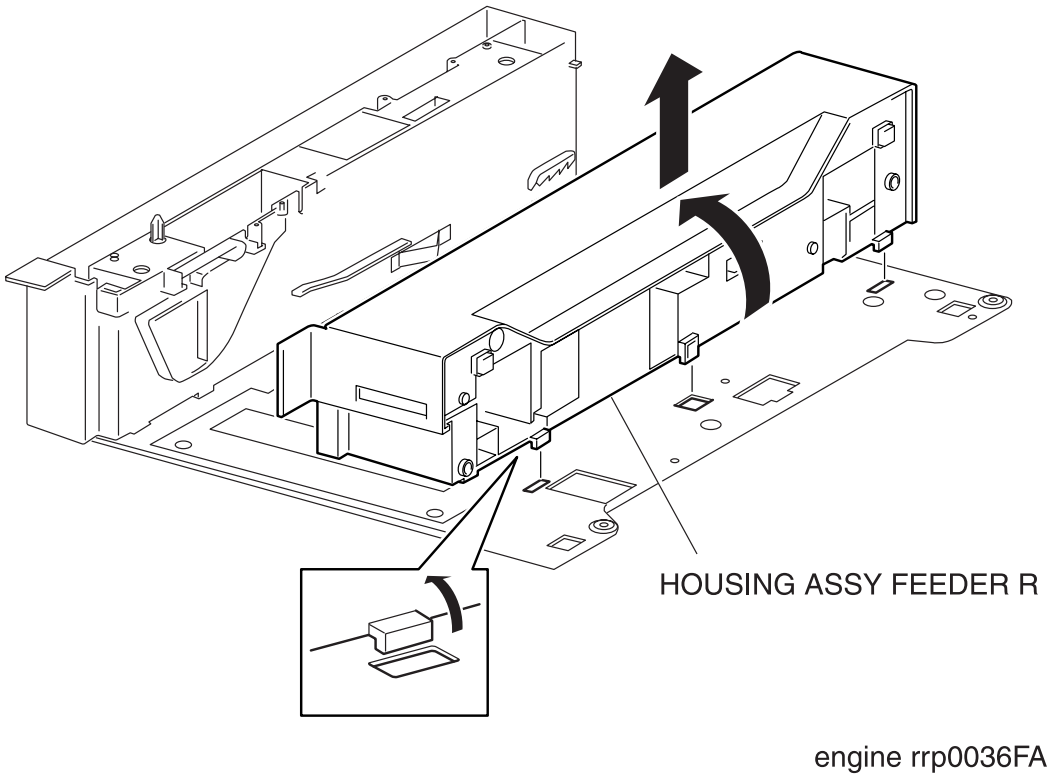


Figure: HOUSING ASSY FEEDER R Removal (2)

Removal

1) Pull out the CASSETTE from the printer.
2) Remove the COVER TOP MAIN. (RRP1.4)
3) Remove the COVER SIDE L. (RRP1.14)
4) Remove the COVER SIDE R. (RRP1.9)
5) Remove the CHUTE ASSY TURN. (RRP3.1)
6) Remove the COVER CST SLIDE. (RRP3.2)
7) Remove the FEEDER ASSY UNIT. (RRP3.3)
8) Remove the FEEDER ASSY. (RRP3.1)
9) Remove 4 screws securing the SUPPORT FEEDER LEFT to the PLATE BOTTOM.
10) Pull down the HOUSING ASSY FEEDER R inward and extract the hooks at 3 positions out of the hole at the PLATE BOTTOM.
11) Remove the HOUSING ASSY FEEDER R upward from the PLATE BOTTOM.

Replacement

Replace the components in the reverse order of removal.

RRP3.6 SENSOR HUM TEMP (PL3.2.2)

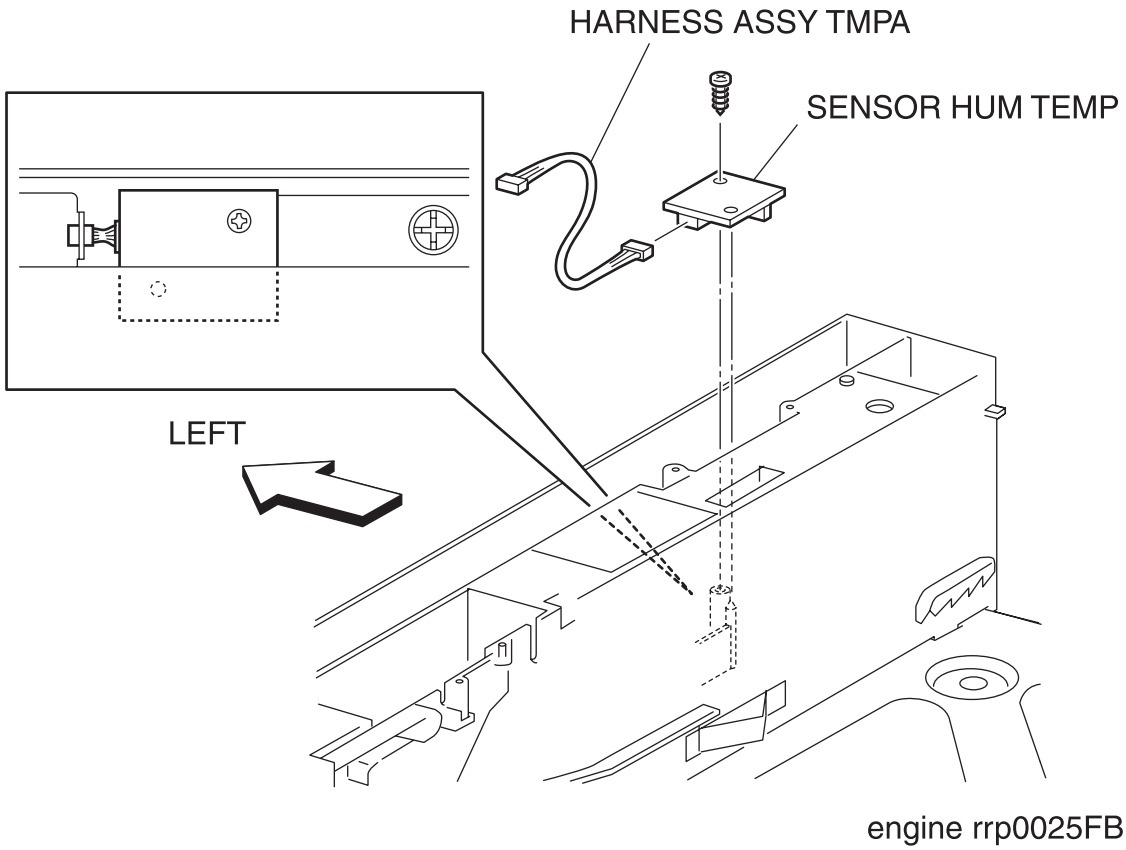


Figure: SENSOR HUM TEMP Removal

Removal

1) Remove the COVER TOP MAIN. (RRP1.4)
2) Remove the COVER SIDE L. (RRP1.14)
3) Remove the HARNESS ASSY TMPB.
4) Remove a screw securing the SENSOR HUM TEMP.

Replacement

Replace the components in the reverse order of removal.

RRP3.7 HARNESS ASSY OPFREC (PL3.2.3)

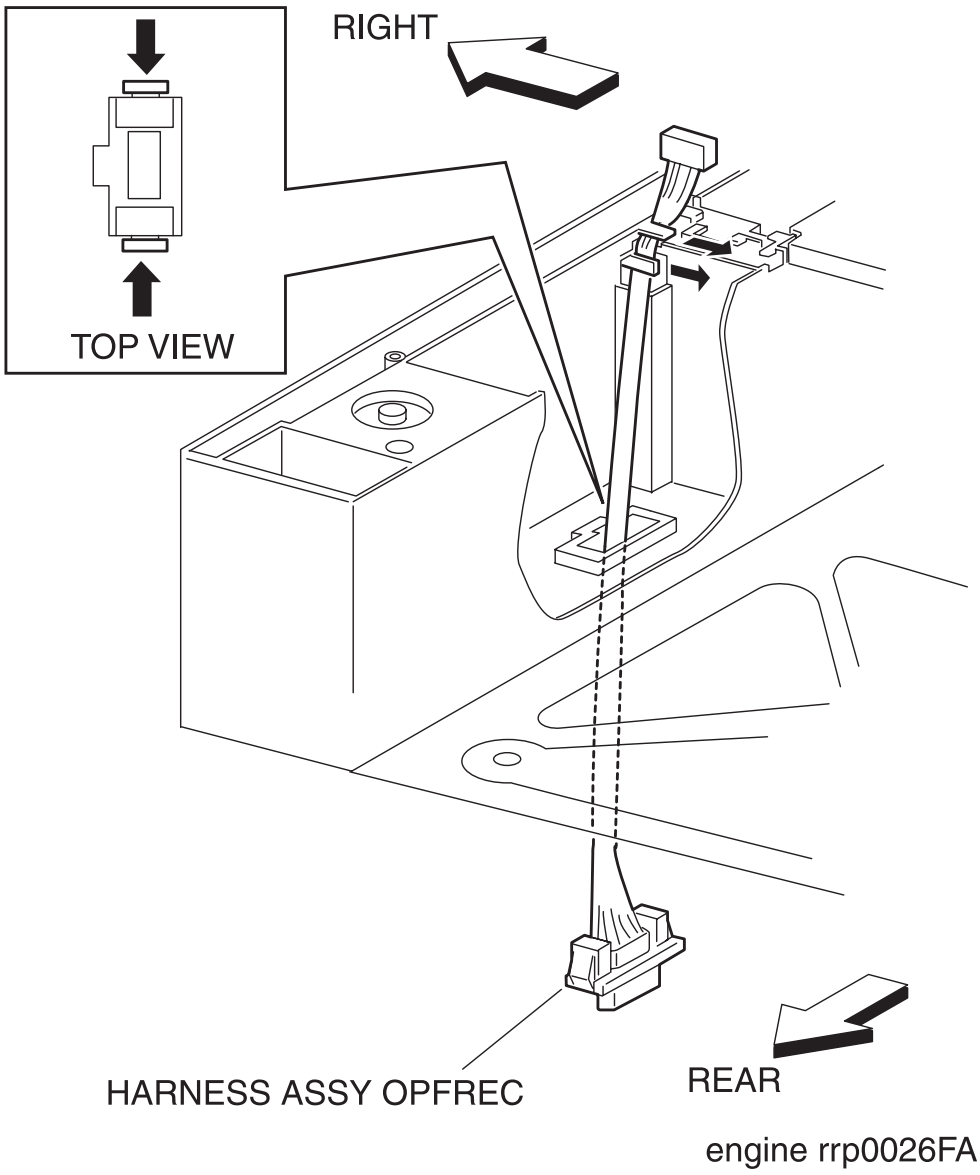


Figure: HARNESS ASSY OPFREC Removal

Removal

1) Pull out the CASSETTE from the printer.
2) Remove the COVER TOP MAIN. (RRP1.4)
3) Remove the COVER SIDE L. (RRP1.14)
4) Remove the COVER SIDE R. (RRP1.9)
5) Remove the CHUTE ASSY TURN. (RRP3.1)
6) Remove the LINK ACTUATOR (RRP 3.17).
7) Remove the COVER CST SLIDE. (RRP3.2)
8) Remove the FEEDER ASSY UNIT. (RRP3.3)
9) Shift the harness of the HARNESS ASSY OPFREC from the HOUSING ASSY FEEDER R of the FEEDER ASSY UNIT.
10) Release the hooks at 2 positions securing the HARNESS ASSY OPFREC to the HOUSING ASSY FEEDER R.
11) Pull out the HARNESS ASSY OPFREC downward from the HOUSING ASSY FEEDER R.

Replacement

Replace the components in the reverse order of removal.

RRP3.8 SWITCH ASSY SIZE (PL3.2.4)

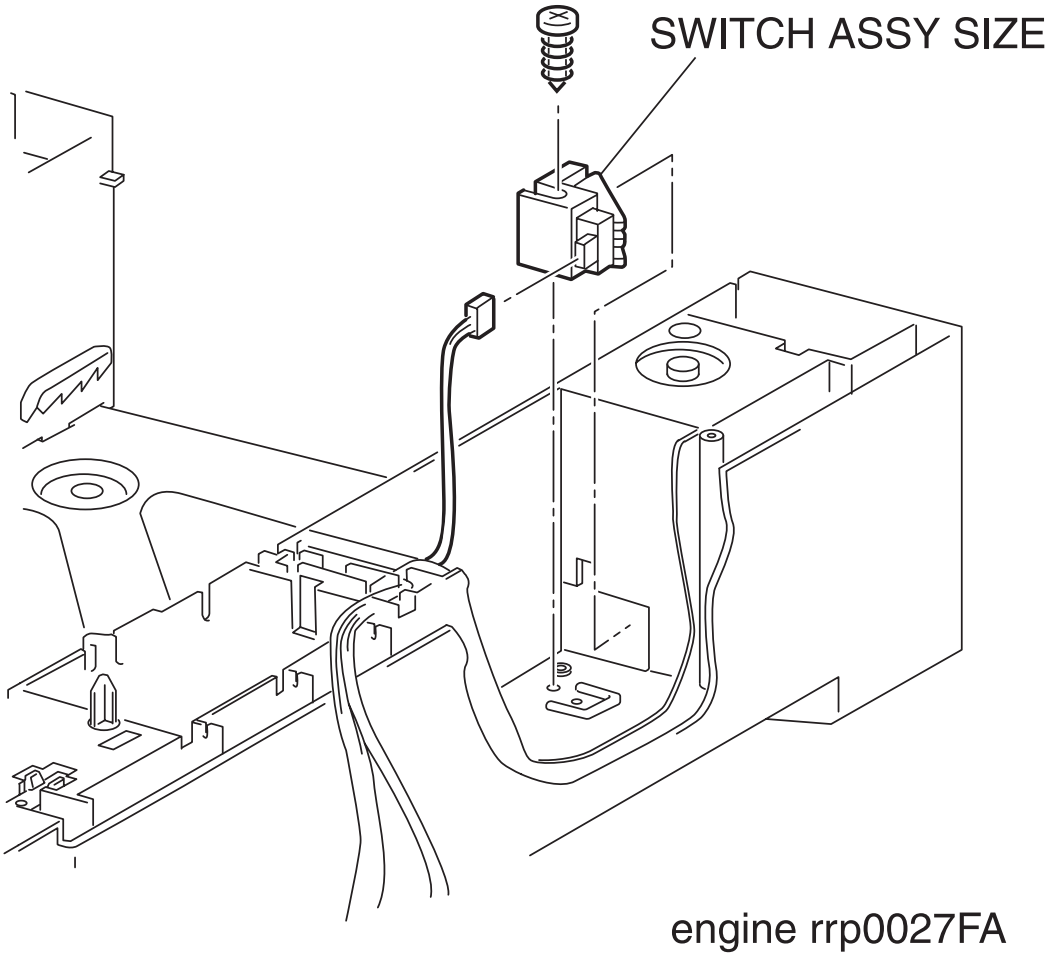


Figure: SWITCH ASSY SIZE Removal

Removal

1) Pull out the CASSETTE from the printer.
2) Remove the COVER TOP MAIN. (RRP1.4)
3) Remove the COVER SIDE L. (RRP1.14)
4) Remove the COVER SIDE R. (RRP1.9)
5) Remove the CHUTE ASSY TURN. (RRP3.1)
6) Remove the LINK ACTUATOR (RRP 3.17).
7) Remove the COVER CST SLIDE. (RRP3.2)
8) Remove the FEEDER ASSY UNIT. (RRP3.3)
9) Remove 1 screw securing the SWITCH ASSY SIZE from the HOUSING ASSY FEEDER R of the FEEDER ASSY UNIT.
10) Remove the connector (P/J471) on the SWITCH ASSY SIZE.
11) Remove the SWITCH ASSY SIZE from the HOUSING ASSY FEEDER R.

Replacement

Replace the components in the reverse order of removal.

RRP3.9 LEVER LOW PAPER (PL3.2.7)

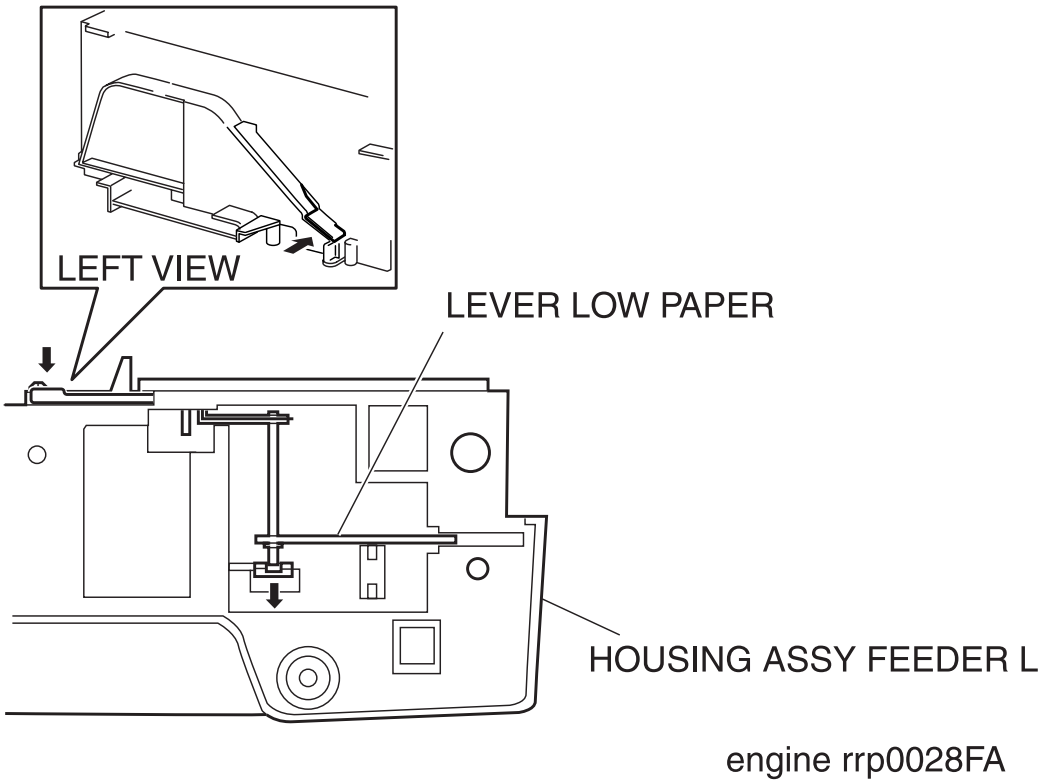


Figure: LEVER LOW PAPER Removal (1)

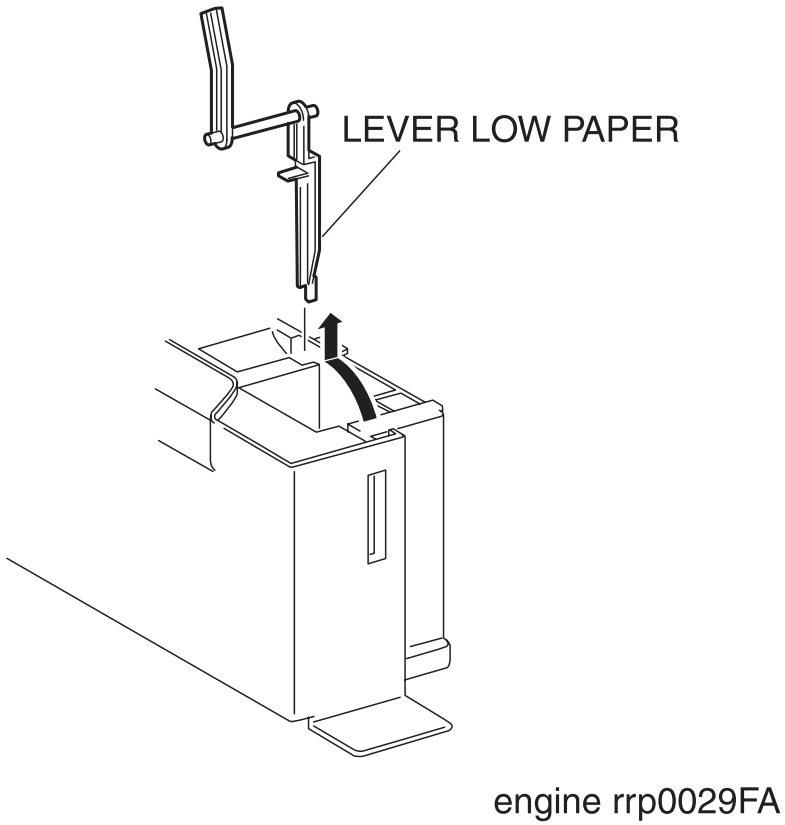


Figure: LEVER LOW PAPER Removal (2)

Removal

1) Pull out the CASSETTE from the printer.
2) Remove the COVER TOP MAIN. (RRP1.4)
3) Remove the COVER SIDE L. (RRP1.14)
4) Remove the COVER SIDE R. (RRP1.9)
5) Remove the CHUTE ASSY TURN. (RRP3.1)
6) Remove the LINK ACTUATOR (RRP 3.17).
7) Remove the COVER CST SLIDE. (RRP3.2)
8) Remove the FEEDER ASSY UNIT. (RRP3.3)
9) Remove the INDICATOR. (RRP3.10)
10) Remove the GUIDE INDECATOR. (RRP3.11)
11) Remove the HOUSING ASSY FEEDER R. (RRP3.5)
12) Deflecting the shaft of the HOUSING ASSY FEEDER R securing the right axis of the LEVER LOWER PAPER from the bottom surface of the HOUSING ASSY FEEDER R and shift the right axis.
13) Push in the actuator of the LEVER LOWER PAPER to the inside of the HOUSING ASSY FEEDER R from the left side of the HOUSING ASSY FEEDER R.
14) Raise the LEVER LOWER PAPER above perpendicularly above the HOUSING ASSY FEEDER R and pull it out upward.

Replacement

Replace the components in the reverse order of removal.

RRP3.10 INDICATOR (PL3.2.8)

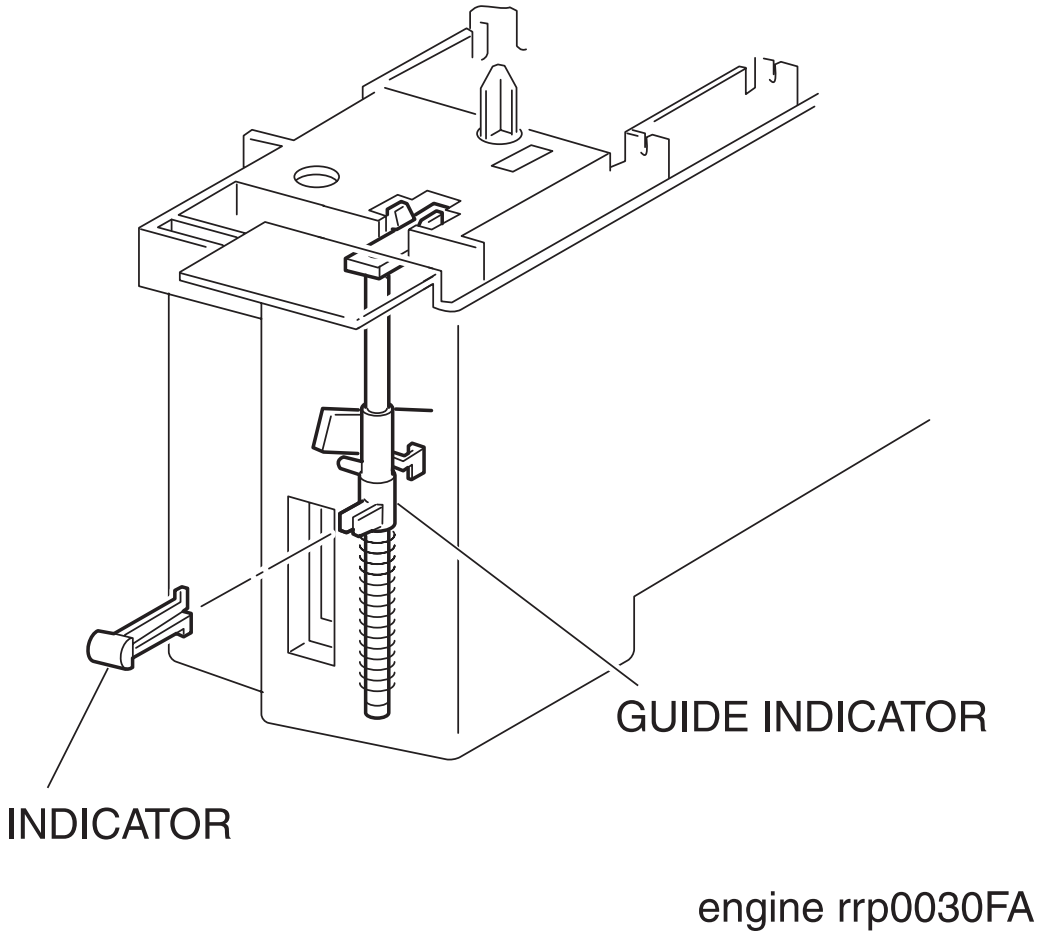


Figure: INDICATOR Removal

Removal

1) Pull out the CASSETTE from the printer.
2) Remove the COVER TOP MAIN. (RRP1.4)
3) Remove the COVER SIDE L. (RRP1.14)
4) Remove the COVER SIDE R. (RRP1.9)
5) Remove the CHUTE ASSY TURN. (RRP3.1)
6) Remove the LINK ACTUATOR (RRP 3.17).
7) Remove the COVER CST SLIDE. (RRP3.2)
8) Remove the FEEDER ASSY UNIT. (RRP3.3)
9) Hold the tip of the INDICATOR with radio pliers and pull the INDICATOR toward the front and remove from the HOUSING ASSY FEEDER R of the FEEDER ASSY UNIT.

Replacement

Replace the components in the reverse order of removal.

NOTE

Hold the GUIDE INDICATOR (PL3.2.10), when replacing the INDICATOR.

RRP3.11 GUIDE INDICATOR (PL3.2.10)

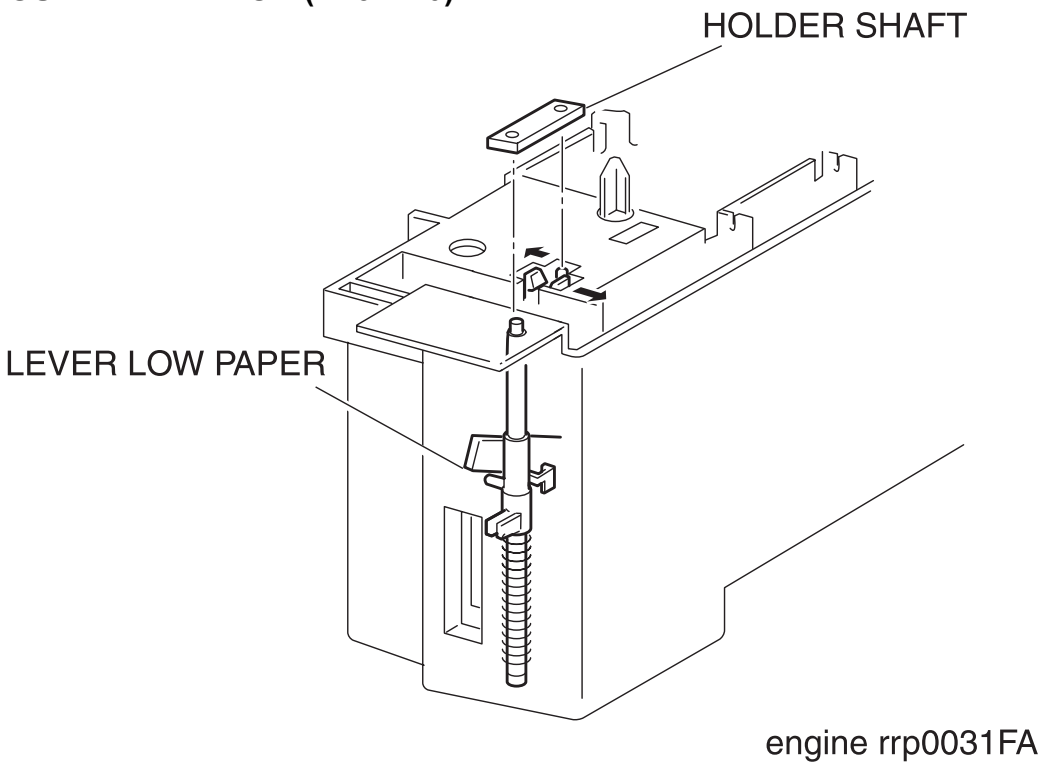


Figure: GUIDE INDICATOR Removal (1)

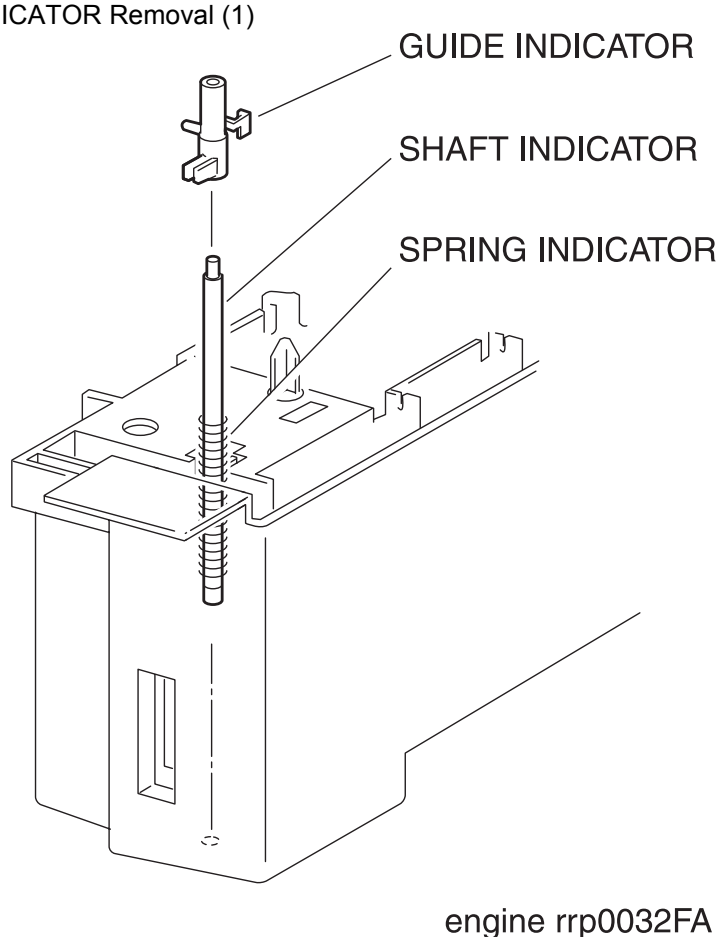


Figure: GUIDE INDICATOR Removal (2)

Removal

1) Pull out the CASSETTE from the printer.
2) Remove the COVER TOP MAIN. (RRP1.4)
3) Remove the COVER SIDE L. (RRP1.14)
4) Remove the COVER SIDE R. (RRP1.9)
5) Remove the CHUTE ASSY TURN. (RRP3.1)
6) Remove the LINK ACTUATOR (RRP 3.17).
7) Remove the COVER CST SLIDE. (RRP3.2)
8) Remove the FEEDER ASSY UNIT. (RRP3.3)
9) Release the hooks at 2 positions securing the HOLDER SHAFT INDICATOR (PL3.2.9) to the HOUSING ASSY FEEDER R of the FEEDER ASSY UNIT.
10) Pull out the GUIDE INDICATOR from the HOUSING ASSY FEEDER R together with the SPRING INDICATOR (PL3.2.11) and SHAFT INDICATOR (PL3.2.12).
11) Pull out the GUIDE INDICATOR from the SHAFT INDICATOR.

Replacement

Replace the components in the reverse order of removal.

NOTE

Put the leading end of LEVER LOW PAPER (PL3.2.7) on a left convex portion of the GUIDE INDICATOR, when replacing the GUIDE INDICATOR.

RRP3.12 PICKUP ASSY (PL3.3.1)

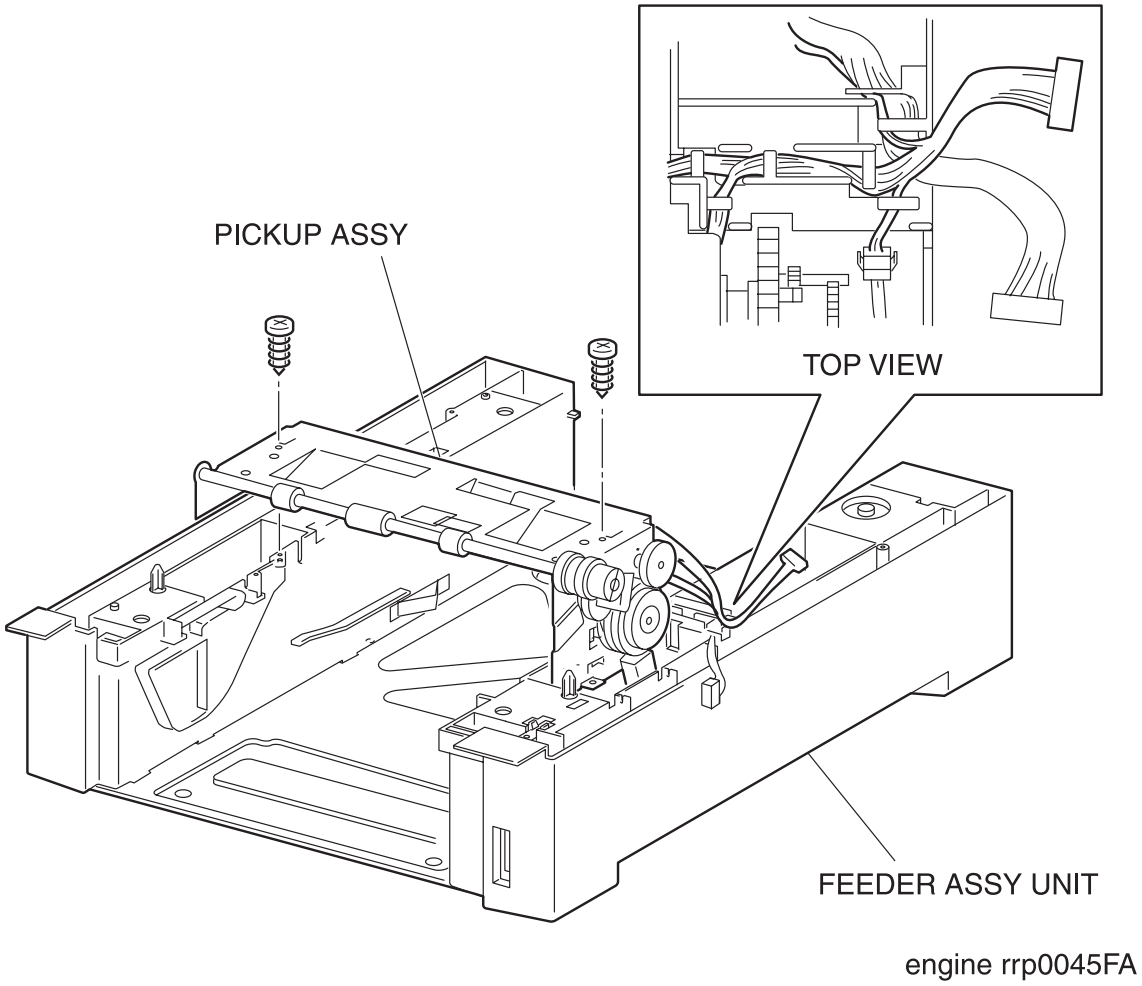


Figure: PICKUP ASSY Removal

Removal

1) Pull out the CASSETTE from the printer.
2) Remove the COVER TOP MAIN. (RRP1.4)
3) Remove the COVER SIDE L. (RRP1.14)
4) Remove the COVER SIDE R. (RRP1.9)
5) Remove the CHUTE ASSY TURN. (RRP3.1)
6) Remove the LINK ACTUATOR (RRP 3.17).
7) Remove the COVER CST SLIDE. (RRP3.2)
8) Remove the FEEDER ASSY UNIT. (RRP3.3)
9) Remove the SWITCH ASSY SIZE. (RRP3.8)
10) Shift the harness of the PICKUP ASSY from the right hook of the FEEDER ASSY UNIT.
11) Remove 2 screws securing the PICKUP ASSY from the FEEDER ASSY UNIT.
12) Raise the PICKUP ASSY from the FEEDER ASSY UNIT.

Replacement

Replace the components in the reverse order of removal.

RRP3.13 ROLL ASSY FEED (PL3.3.3)

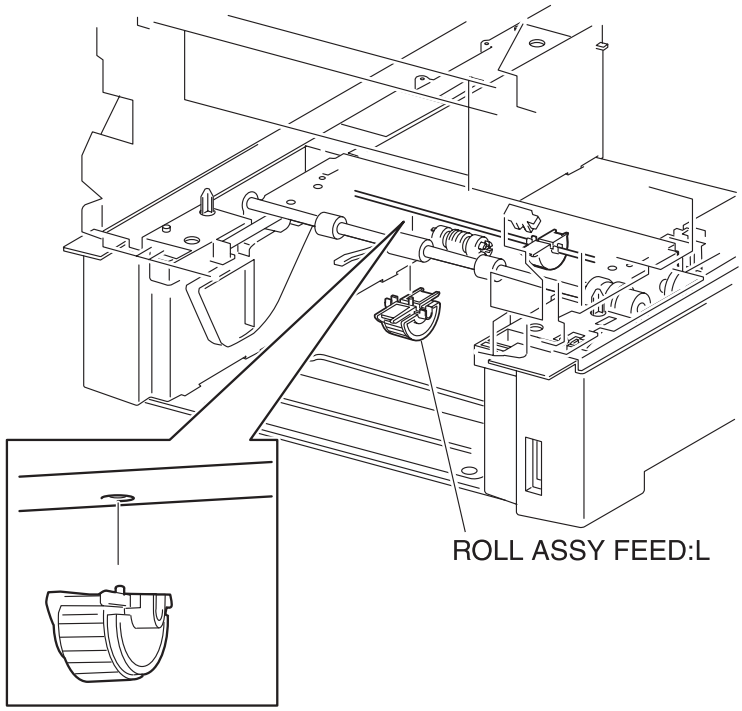


Figure: ROLL ASSY FEED Removal (1)

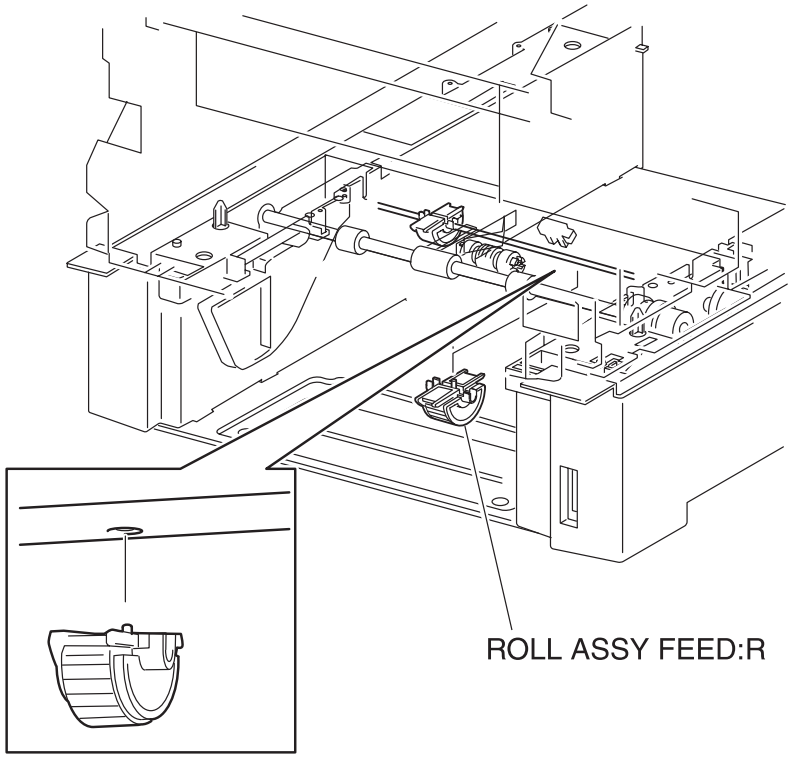


Figure: ROLL ASSY FEED Removal (2)

Removal

1) Pull out the CASSETTE from the printer.
2) Remove the CHUTE ASSY TURN. (RRP3.1)

NOTE

In the following steps, replace and remove the ROLL ASSY FEED, unilateral at a time, to confirm the replacing direction of the ROLL ASSY FEED.

3) Rotate the SHAFT FEED 1 (PL3.3.2) so that the rubber of the ROLL ASSY FEED faces downward from the printer FEEDER.
4) Release the hook securing the ROLL ASSY FEED to the SHAFT FEED 1 and remove the ROLL ASSY FEED.

Replacement

Replace the components in the reverse order of removal.

RRP3.14 SENSOR PHOTO:NO PAPER (PL3.3.4)

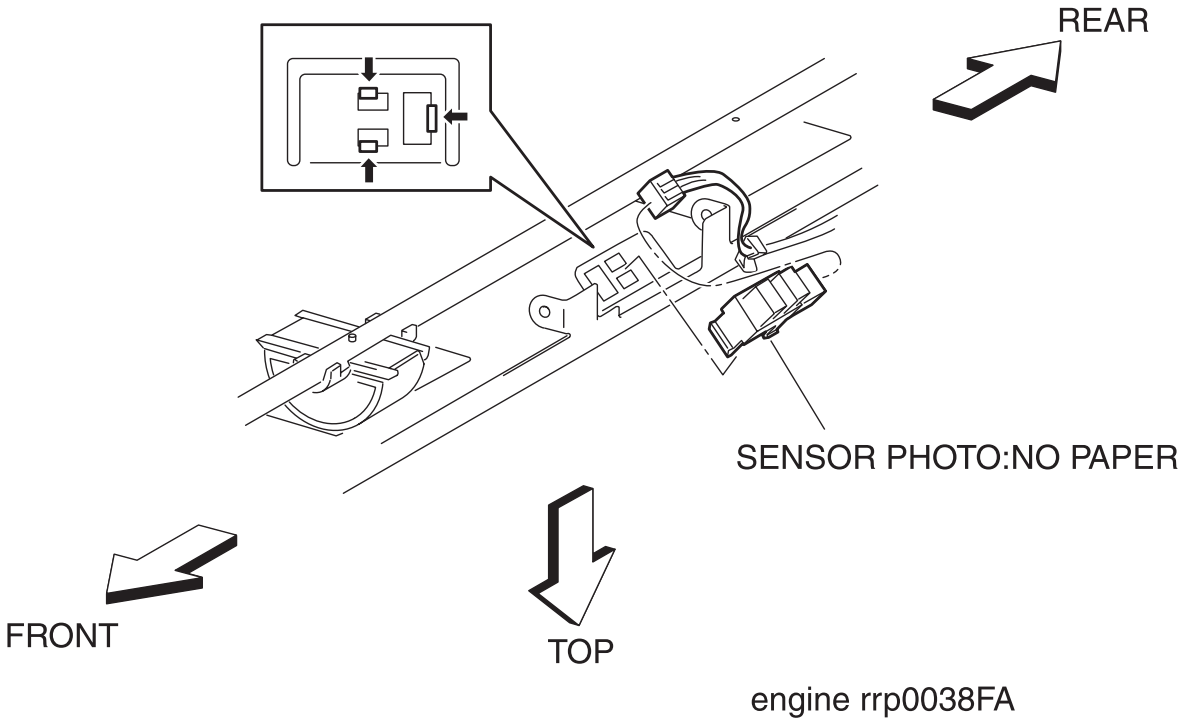


Figure: SENSOR PHOTO:NO PAPER Removal

Removal

1) Pull out the CASSETTE from the printer.
2) Remove the COVER TOP MAIN. (RRP1.4)
3) Remove the COVER SIDE L. (RRP1.14)
4) Remove the COVER SIDE R. (RRP1.9)
5) Remove the CHUTE ASSY TURN. (RRP3.1)
6) Remove the LINK ACTUATOR (RRP 3.17).
7) Remove the COVER CST SLIDE. (RRP3.2)
8) Remove the FEEDER ASSY UNIT. (RRP3.3)
9) Remove the PICKUP ASSY. (RRP3.12)
10) Turn up the PICKUP ASSY (PL3.3.1).
11) Remove the ACTUATOR NO PAPER. (RRP3.16)
12) Remove the right side of the ROLL ASSY FEED (PL3.3.3) from the PICKUP ASSY. (RRP3.13)
13) Remove the connector (P/J472) on the SENSOR PHOTO:NO PAPER.
14) Release the hooks at 3 positions securing the SENSOR PHOTO:NO PAPER to the PICKUP ASSY.
15) Remove the SENSOR PHOTO:NO PAPER from the PICKUP ASSY.

Replacement

Replace the components in the reverse order of removal.

RRP3.15 SENSOR PHOTO: LOW PAPER (PL3.3.4)

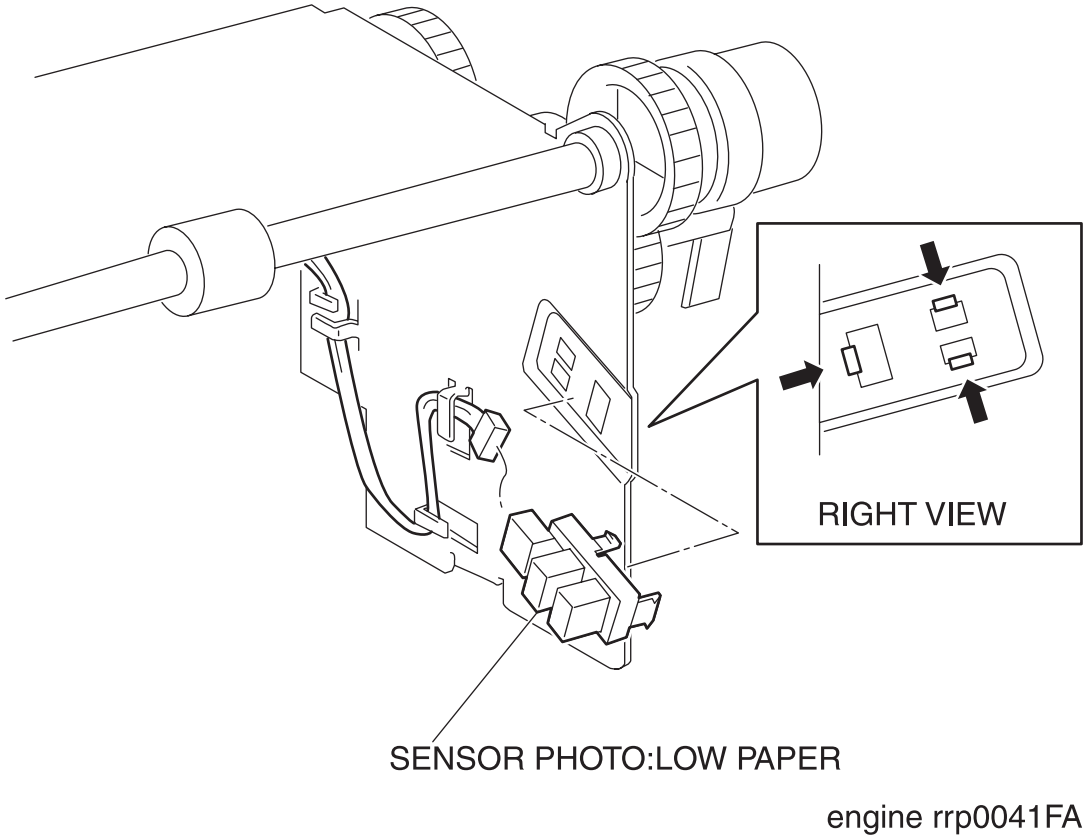


Figure: SENSOR PHOTO:LOW PAPER Removal

Removal

1) Pull out the CASSETTE from the printer.
2) Remove the COVER TOP MAIN. (RRP1.4)
3) Remove the COVER SIDE L. (RRP1.14)
4) Remove the COVER SIDE R. (RRP1.9)
5) Remove the CHUTE ASSY TURN. (RRP3.1)
6) Remove the LINK ACTUATOR (RRP 3.17).
7) Remove the COVER CST SLIDE. (RRP3.2)
8) Remove the FEEDER ASSY UNIT. (RRP3.3)
9) Remove the PICKUP ASSY. (RRP3.12)
10) Remove the connector (P/J473) on the SENSOR PHOTO:LOW PAPER.
11) Release the hooks at 3 positions securing the SENSOR PHOTO:LOW PAPER to the PICKUP ASSY (PL3.3.1).
12) Remove the SENSOR PHOTO:LOW PAPER from the PICKUP ASSY.

Replacement

Replace the components in the reverse order of removal.

RRP3.16 ACTUATOR NO PAPER (PL3.3.5)

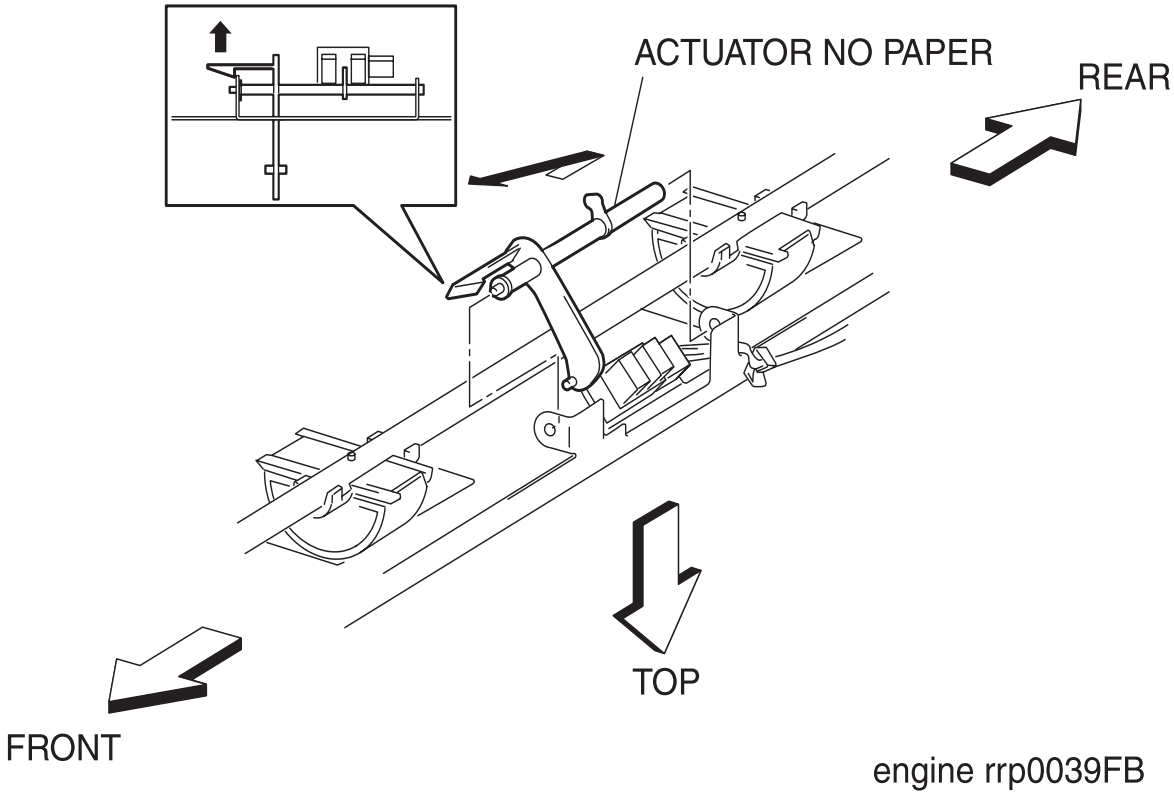


Figure: ACTUATOR NO PAPER Removal

Removal

1) Pull out the CASSETTE from the printer.
2) Remove the COVER TOP MAIN. (RRP1.4)
3) Remove the COVER SIDE L. (RRP1.14)
4) Remove the COVER SIDE R. (RRP1.9)
5) Remove the CHUTE ASSY TURN. (RRP3.1)
6) Remove the LINK ACTUATOR (RRP 3.17).
7) Remove the COVER CST SLIDE. (RRP3.2)
8) Remove the FEEDER ASSY UNIT. (RRP3.3)
9) Remove the PICKUP ASSY. (RRP3.12)
10) Turn up the PICKUP ASSY (PL3.3.1).
11) Release the hook at 1 position securing the ACTUATOR NO PAPER to the PICKUP ASSY and extract the left side shaft of the ACTUATOR NO PAPER.
12) Pull out the ACTUATOR NO PAPER left upward from the PICKUP ASSY.

Replacement

Replace the components in the reverse order of removal.

RRP3.17 LINK ACTUATOR (PL3.3.6)

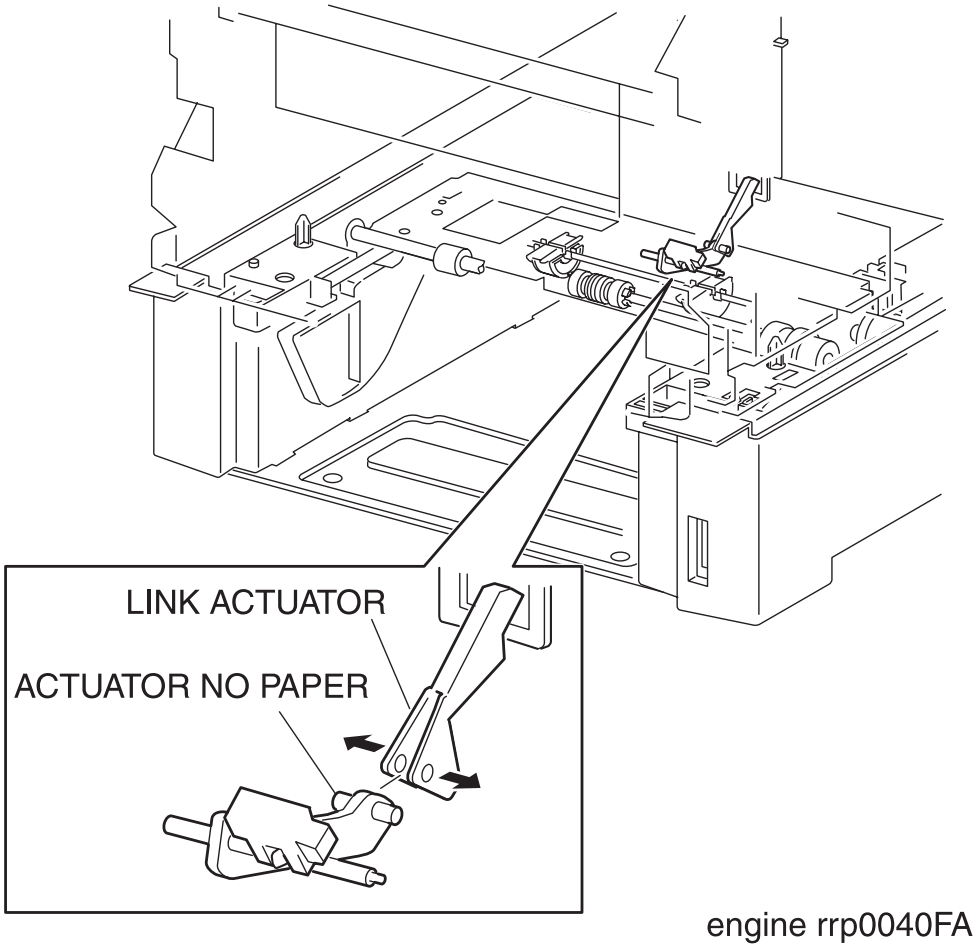


Figure: LINK ACTUATOR Removal

Removal

1) Pull out the CASSETTE from the printer.
2) Shift the bracket of the LINK ACTUATOR from the shaft of the ACTUATOR NO PAPER (PL3.3.5) of the printer.
3) Extract the actuator of the LINK ACTUATOR from the hole on the printer and remove the LINK ACTUATOR.

Replacement

Replace the components in the reverse order of removal.

RRP3.18 SOLENOID FEED (PL3.3.17)

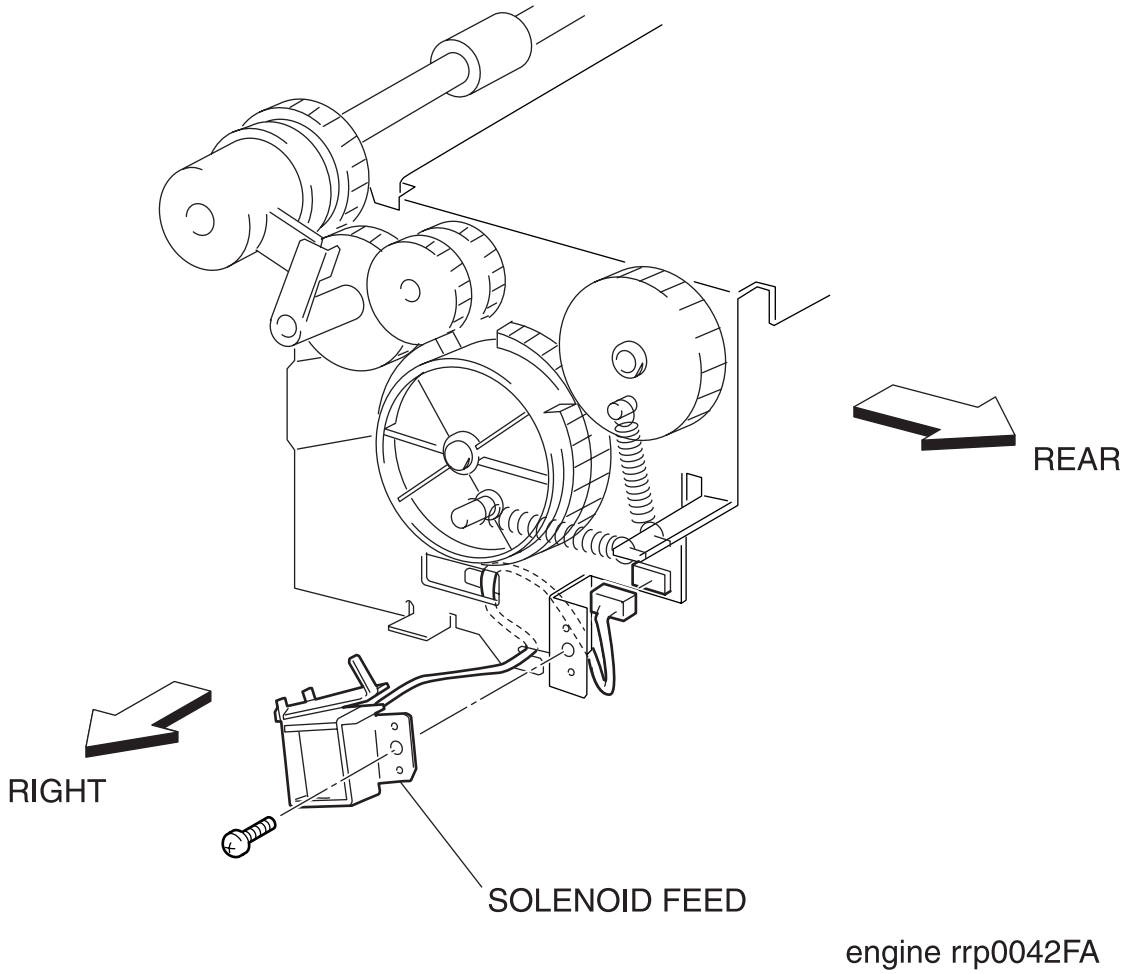


Figure: SOLENOID FEED Removal

Removal

1) Pull out the CASSETTE from the printer.
2) Remove the COVER TOP MAIN. (RRP1.4)
3) Remove the COVER SIDE L. (RRP1.14)
4) Remove the COVER SIDE R. (RRP1.9)
5) Remove the CHUTE ASSY TURN. (RRP3.1)
6) Remove the LINK ACTUATOR (RRP 3.17).
7) Remove the COVER CST SLIDE. (RRP3.2)
8) Remove the FEEDER ASSY UNIT. (RRP3.3)
9) Remove the PICKUP ASSY. (RRP3.12)
10) Remove 1 screw securing the SOLENOID FEED from the PICKUP ASSY (PL3.3.1).
11) Separate the SOLENOID FEED a little from the PICKUP ASSY and shift the harness of the SOLENOID FEED.
12) Remove the connector (P/J474) of the SOLENOID FEED from the PICKUP ASSY.

Replacement

Replace the components in the reverse order of removal.

RRP3.19 CLUTCH ASSY TURN (PL3.3.18)

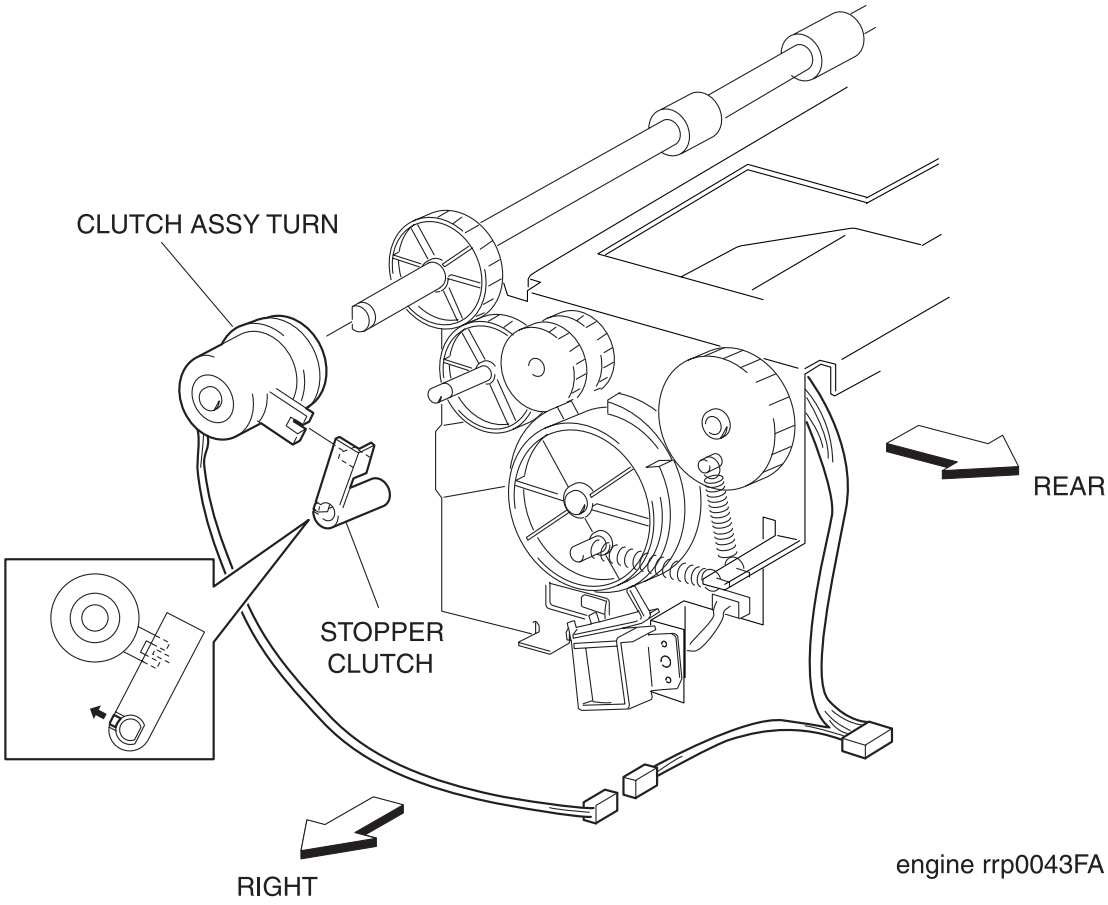


Figure: CLUTCH ASSY TURN Removal

Removal

1) Pull out the CASSETTE from the printer.
2) Remove the COVER TOP MAIN. (RRP1.4)
3) Remove the COVER SIDE L. (RRP1.14)
4) Remove the COVER SIDE R. (RRP1.9)
5) Remove the CHUTE ASSY TURN. (RRP3.1)
6) Remove the LINK ACTUATOR (RRP 3.17).
7) Remove the COVER CST SLIDE. (RRP3.2)
8) Remove the FEEDER ASSY UNIT. (RRP3.3)
9) Remove the PICKUP ASSY. (RRP3.12)
10) Release the hook at 1 position securing the STOPPER CLUTCH (PL3.3.16) to the shaft on the right side shaft of the PICKUP ASSY (PL3.3.1).
11) Pull out the STOPPER CLUTCH from the shaft of PICKUP ASSY.
12) Remove the connector (P/J475) of the CLUTCH ASSY TURN from the PICKUP ASSY.
13) Pull out the CLUTCH ASSY TURN from the shaft on the right side of the PICKUP ASSY.

Replacement

Replace the components in the reverse order of removal.

RRP3.20 ROLL ASSY TURN (PL3.3.20)

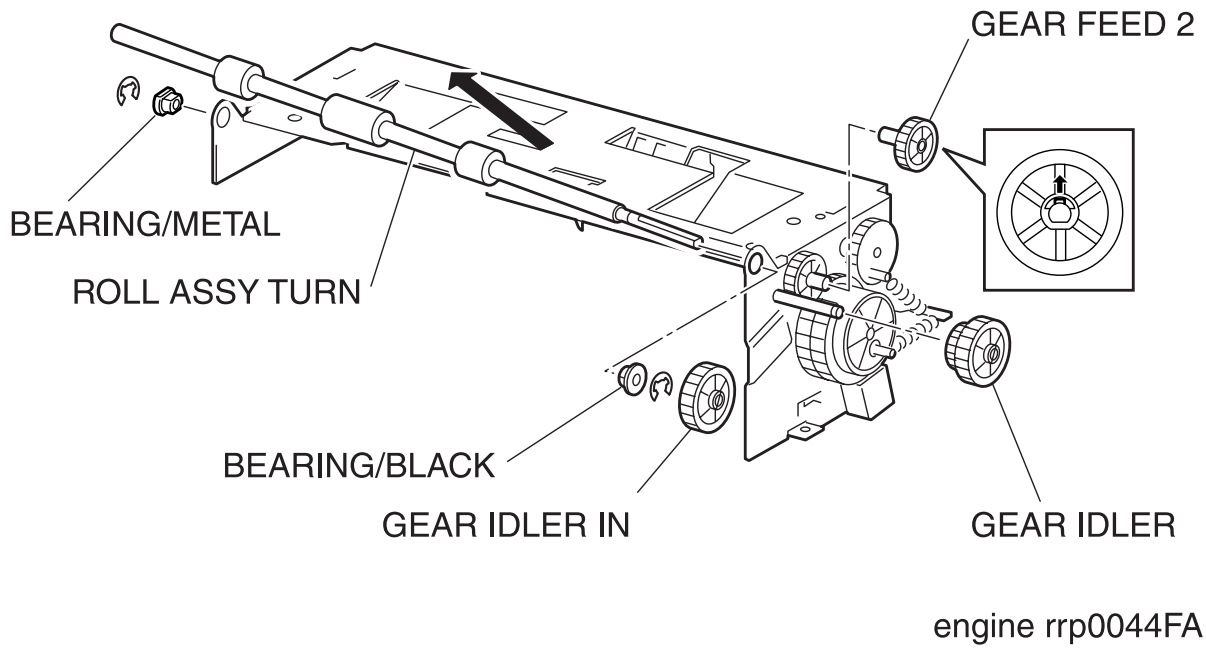


Figure: ROLL ASSY TURN Removal

Removal

1) Pull out the CASSETTE from the printer.
2) Remove the COVER TOP MAIN. (RRP1.4)
3) Remove the COVER SIDE L. (RRP1.14)
4) Remove the COVER SIDE R. (RRP1.9)
5) Remove the CHUTE ASSY TURN. (RRP3.1)
6) Remove the LINK ACTUATOR (RRP 3.17).
7) Remove the COVER CST SLIDE. (RRP3.2)
8) Remove the FEEDER ASSY UNIT. (RRP3.3)
9) Remove the PICKUP ASSY. (RRP3.12)
10) Remove the CLUTCH ASSY TURN. (RRP3.19)
11) Release the hook at 1 position securing the GEAR FEED 2 (PL3.3.13) to the shaft of the PICKUP ASSY (PL3.3.1) and pull out the GEAR FEED 2.
12) Pull out the GEAR IDLER (PL3.3.15) from the shaft of PICKUP ASSY.
13) Pull out the GEAR IDLER IN (PL3.3.19) from the shaft of the PICKUP ASSY.
14) Remove the right and left E rings securing the shaft of the ROLL ASSY TURN to the PICKUP ASSY.
15) Remove the BEARING/METAL (PL3.3.7) securing the right shaft of the ROLL ASSY TURN from the PICKUP ASSY.
16) Remove the BEARING/BLACK (PL3.3.21) securing the left shaft of the ROLL ASSY TURN from the PICKUP ASSY.
17) Slide the ROLL ASSY TURN from the PICKUP ASSY rightward, pull out the left edge of the ROLL ASSY TURN from the bearing bore and then pull out the ROLL ASSY TURN left upward.

Replacement

Replace the components in the reverse order of removal.

RRP3.21 ROLL ASSY (PL3.3.23)

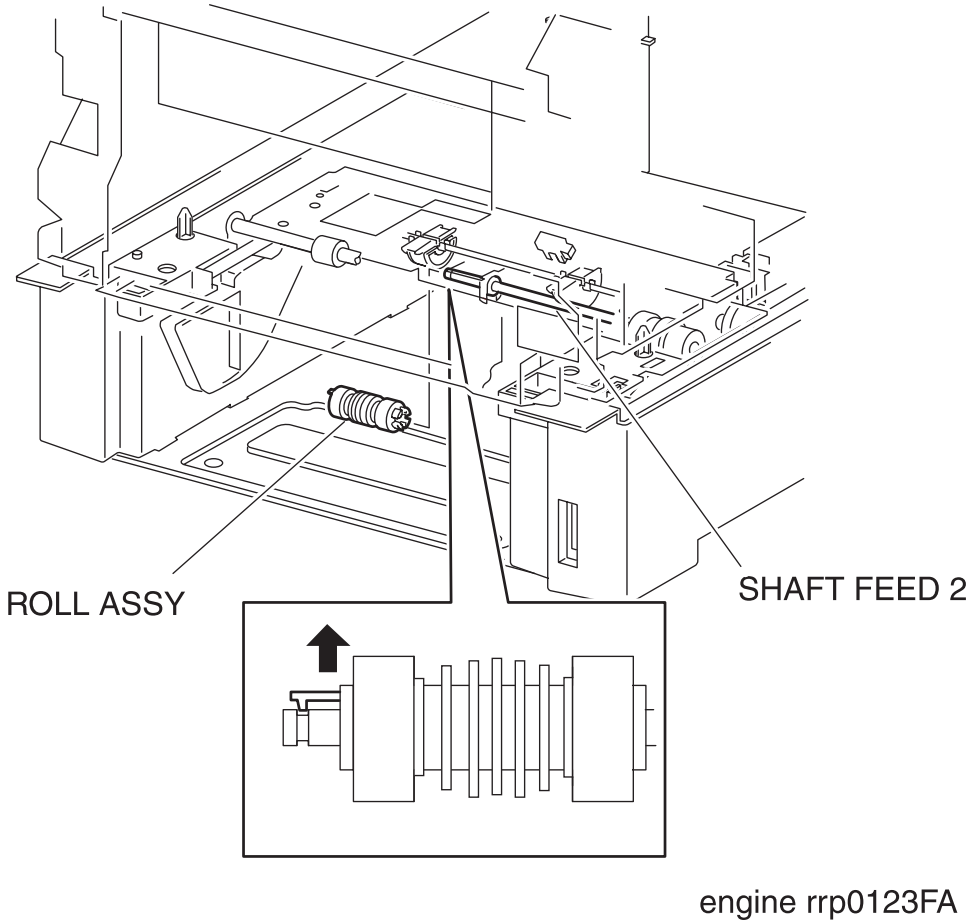


Figure: ROLL ASSY Removal

Removal

1) Pull out the CASSETTE from the printer.
2) Release the hook at 1 position securing the ROLL ASSY to the SHAFT FEED 2 (PL3.3.22) from the FEEDER of the printer.
3) Pull out the ROLL ASSY left side from the SHAFT FEED 2.

Replacement

Replace the components in the reverse order of removal.

RRP4. HOUSING ASSY RETARD

RRP4.1 HOUSING ASSY RETARD (PL4.1.1)

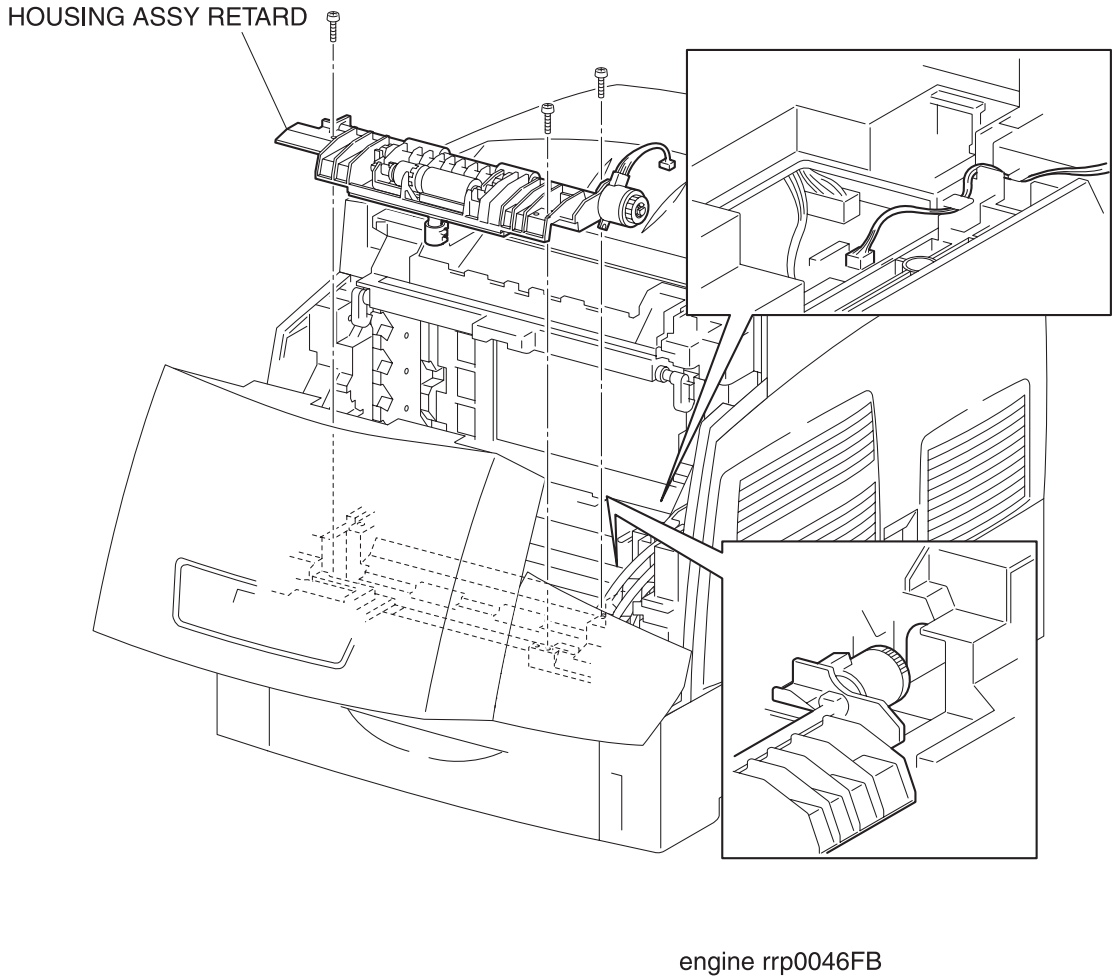


Figure: HOUSING ASSY RETARD Removal

Removal

1) Remove the CHUTE ASSY REGI. (RRP9.3)
2) Remove the connector (P/J19) of the CLUTCH TURN (PL4.1.9) from on the PWBA MCU HBN (PL12.1.1) of the printer.
3) Remove 3 screws securing the HOUSING ASSY RETARD to the printer.
4) Remove the HOUSING ASSY RETARD from the printer.

Replacement

Replace the components in the reverse order of removal.

RRP4.2 ROLL TURN (PL4.1.2)

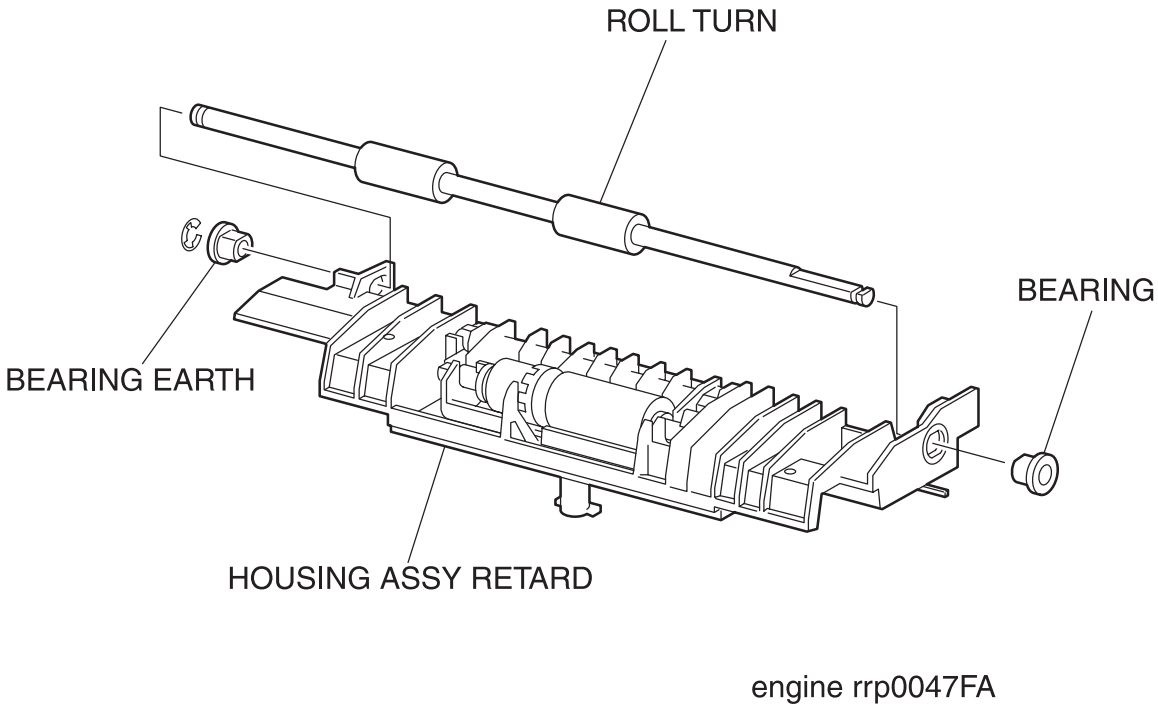


Figure: ROLL TURN Removal

Removal

1) Remove the CHUTE ASSY REGI. (RRP9.3)
2) Remove the HOUSING ASSY RETARD. (RRP4.1)
3) Remove the CLUTCH TURN. (RRP4.4)
4) Remove the left side of E-ring securing the ROLL TURN to the HOUSING ASSY RETARD (PL4.1.1).
5) Pull out the BEARING EARTH (PL4.1.13) securing left side of bearing of the ROLL TURN from the HOUSING ASSY RETARD.
6) Pull out the BEARING (PL4.1.8) securing the right side of bearing of the ROLL TURN from the HOUSING ASSY RETARD.
7) Slide the ROLL TURN from the HOUSING ASSY RETARD rightward, pull out the left side of bearing of the ROLL TURN from the bearing bore and pull out the ROLL TURN left upward.

Replacement

Replace the components in the reverse order of removal.

RRP4.3 ROLL ASSY RETARD MSI (PL4.1.5)

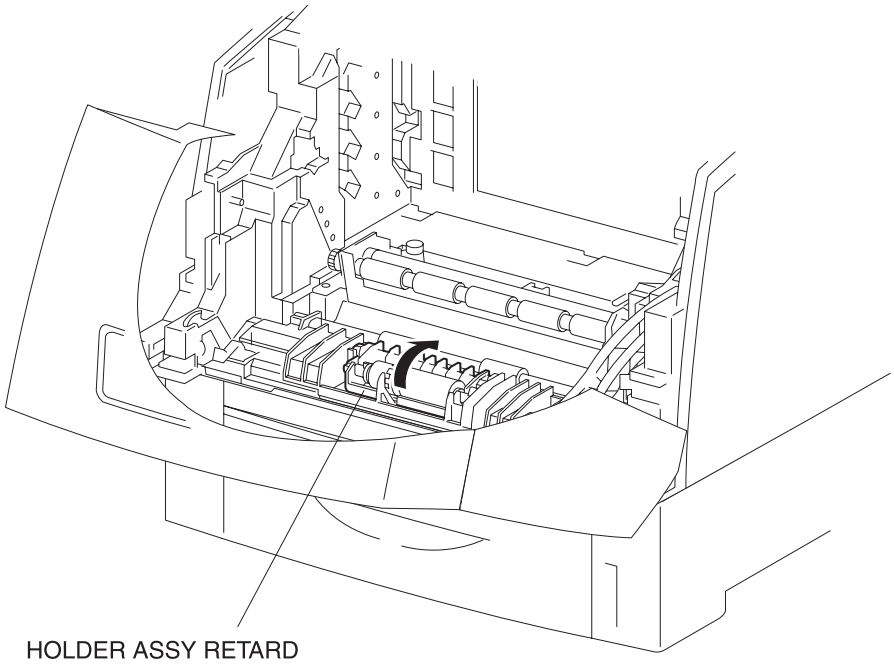


Figure: ROLL ASSY RETARD MSI Removal (1)

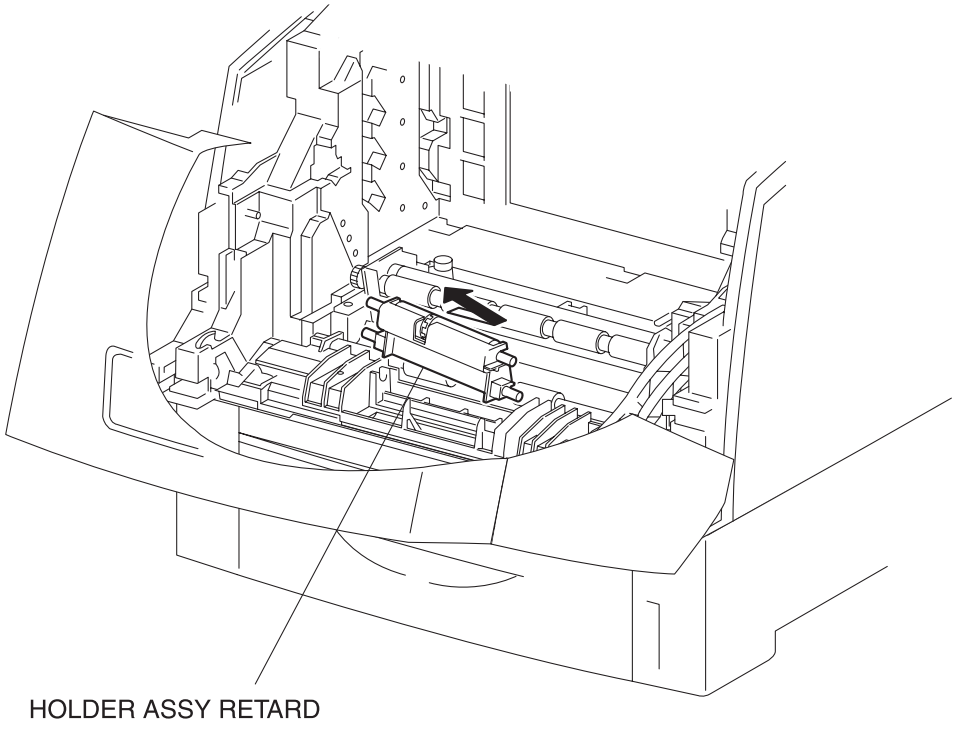


Figure: ROLL ASSY RETARD MSI Removal (2)

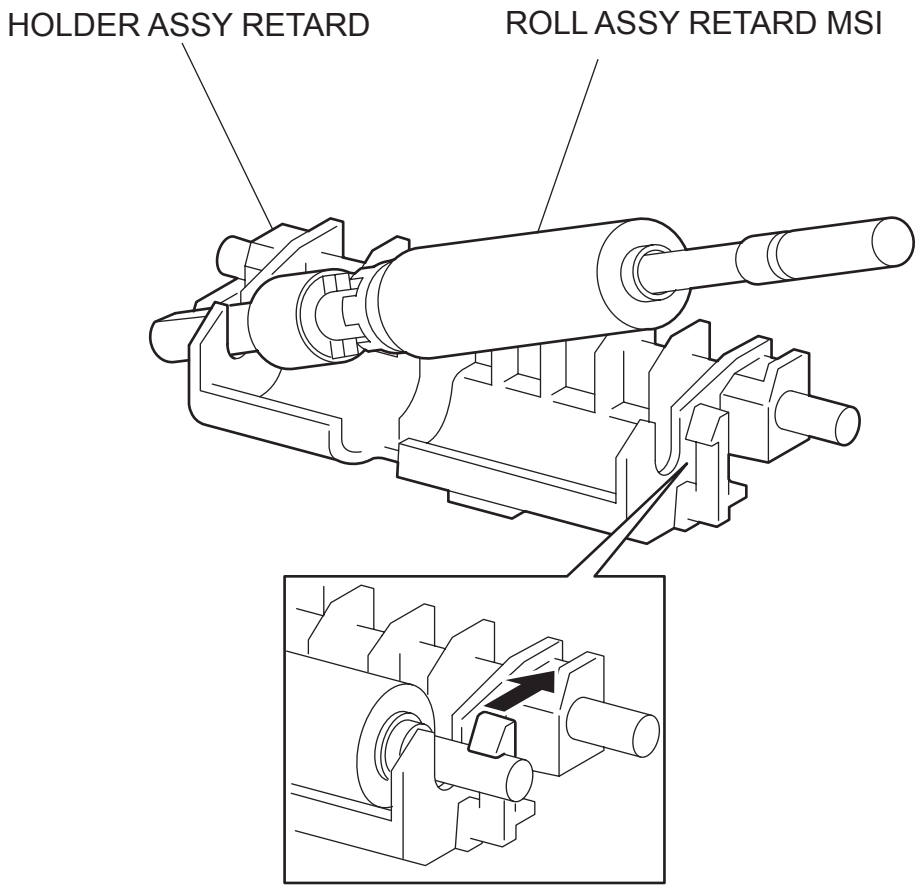


Figure: ROLL ASSY RETARD MSI Removal (3)

Removal

1) Release the latch at A from the printer and open the CHUTE ASSY IN(PL5.1.1).
2) Push back the rear edge of the HOLDER ASSY RETARD from the HOUSING ASSY RETARD (PL4.1.1) of the printer, and turn the HOLDER ASSY RETARD to the rear.
3) Sliding the HOLDER ASSY RETARD rightward, pull the left shaft of HOLDER ASSY RETARD out of the bearing bore in the HOUSING ASSY RETARD.
4) Pull out the HOLDER ASSY RETARD to left upward from the HOUSING ASSY RETARD.
5) Release the hook at 1 position securing the SHAFT RTD (PL4.1.3) to the HOLDER ASSY RETARD of the printer.
6) Raise the SHAFT RTD to right upward, and pull out the ROLL ASSY RETARD MSI.

Replacement

Replace the components in the reverse order of removal.

RRP4.4 CLUTCH TURN (PL4.1.9)

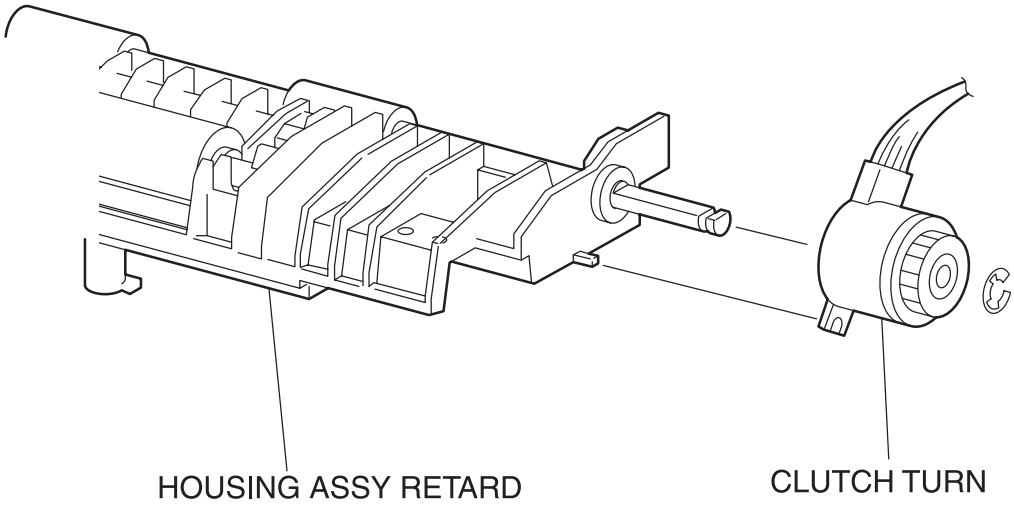


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Figure: CLUTCH TURN Removal

Removal

1) Remove the CHUTE ASSY REGI. (RRP9.3)
2) Remove the HOUSING ASSY RETARD. (RRP4.1)
3) Remove the E-ring securing the CLUTCH TURN to the shaft of the HOUSING ASSY RETARD (PL4.1.1).
4) Remove the CLUTCH TURN from the shaft of the HOUSING ASSY RETARD.

Replacement

Replace the components in the reverse order of removal.

RRP4.5 STUD RTD (PL4.1.10)

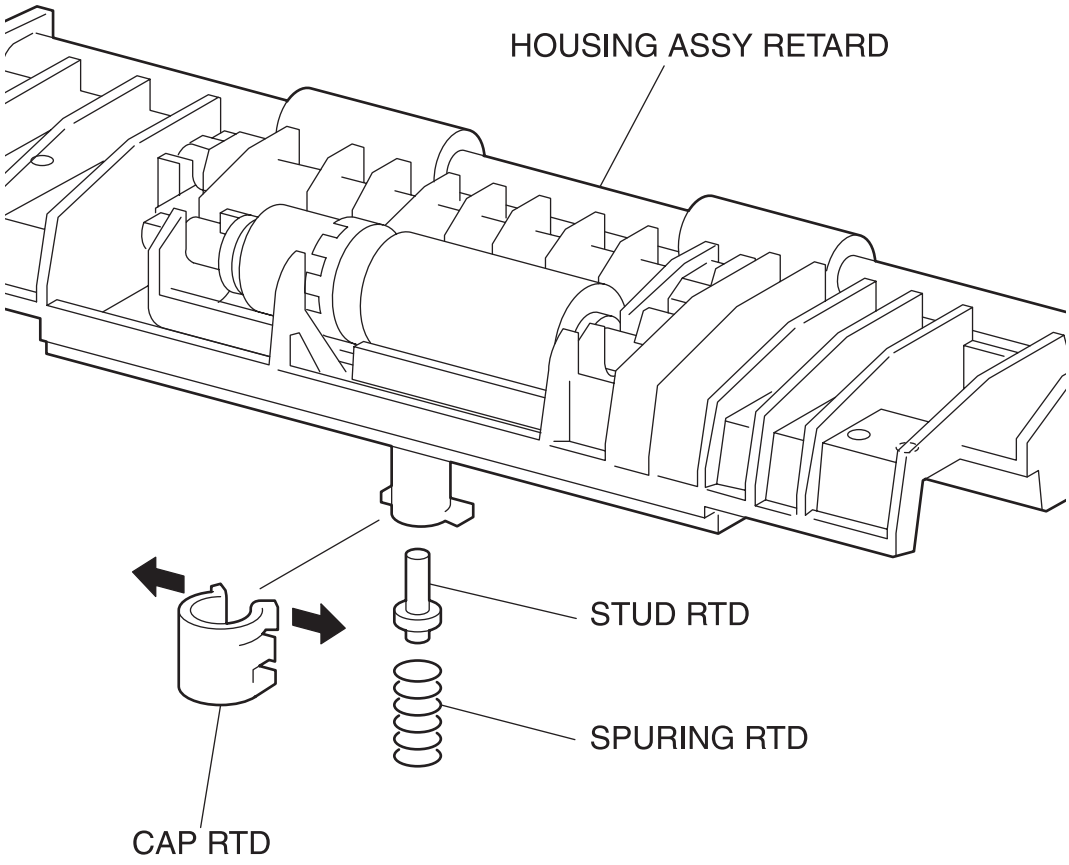


Figure: STUD RTD Removal

Removal

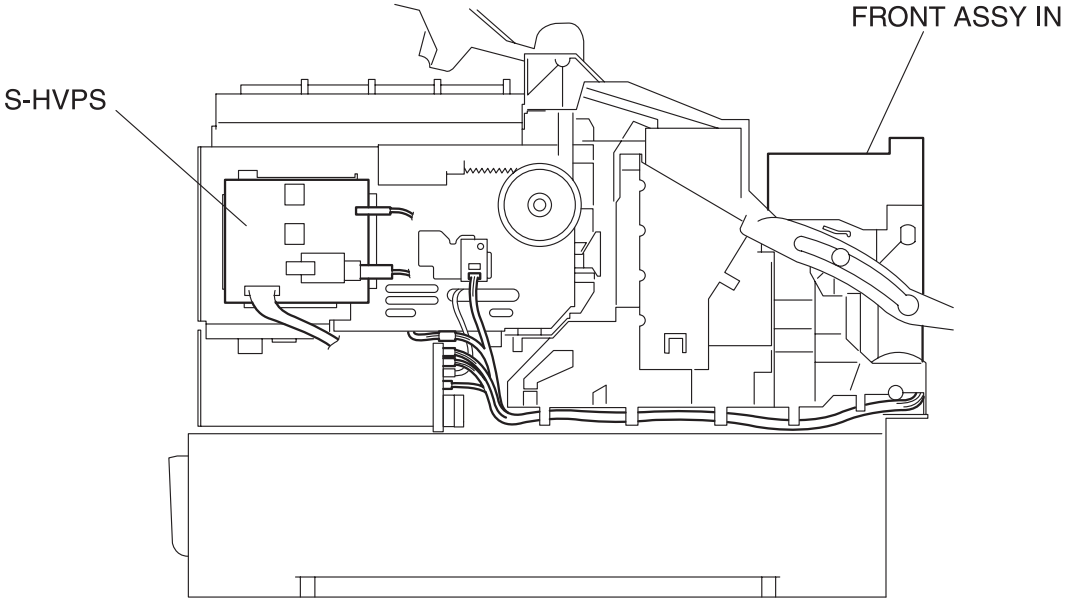
1) Remove the CHUTE ASSY REGI. (RRP9.3)
2) Remove the HOUSING ASSY RETARD. (RRP4.1)
3) Release the hooks at 2 positions securing the CAP RTD (PL4.1.12) to the convex portion at the lower part of the HOUSING ASSY RETARD (PL4.1.1).
4) Remove the CAP RTD from the HOUSING ASSY RETARD together with the STUD RTD and SPRING RTD 370 (PL4.1.11).
5) Remove the STUD RTD from the CAP RTD.

Replacement

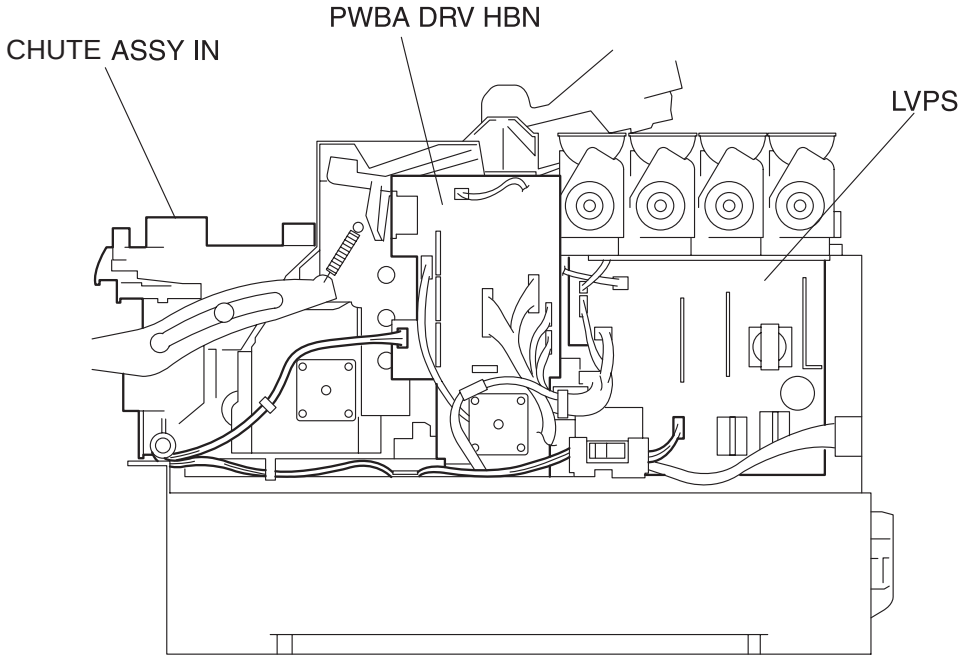
Replace the components in the reverse order of removal.

RRP5. CHUTE ASSY IN

RRP5.1 CHUTE ASSY IN (PL5.1.1)



LEFT SIDE VIEW



RIGHT SIDE VIEW

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Figure: CHUTE ASSY IN Removal (1)

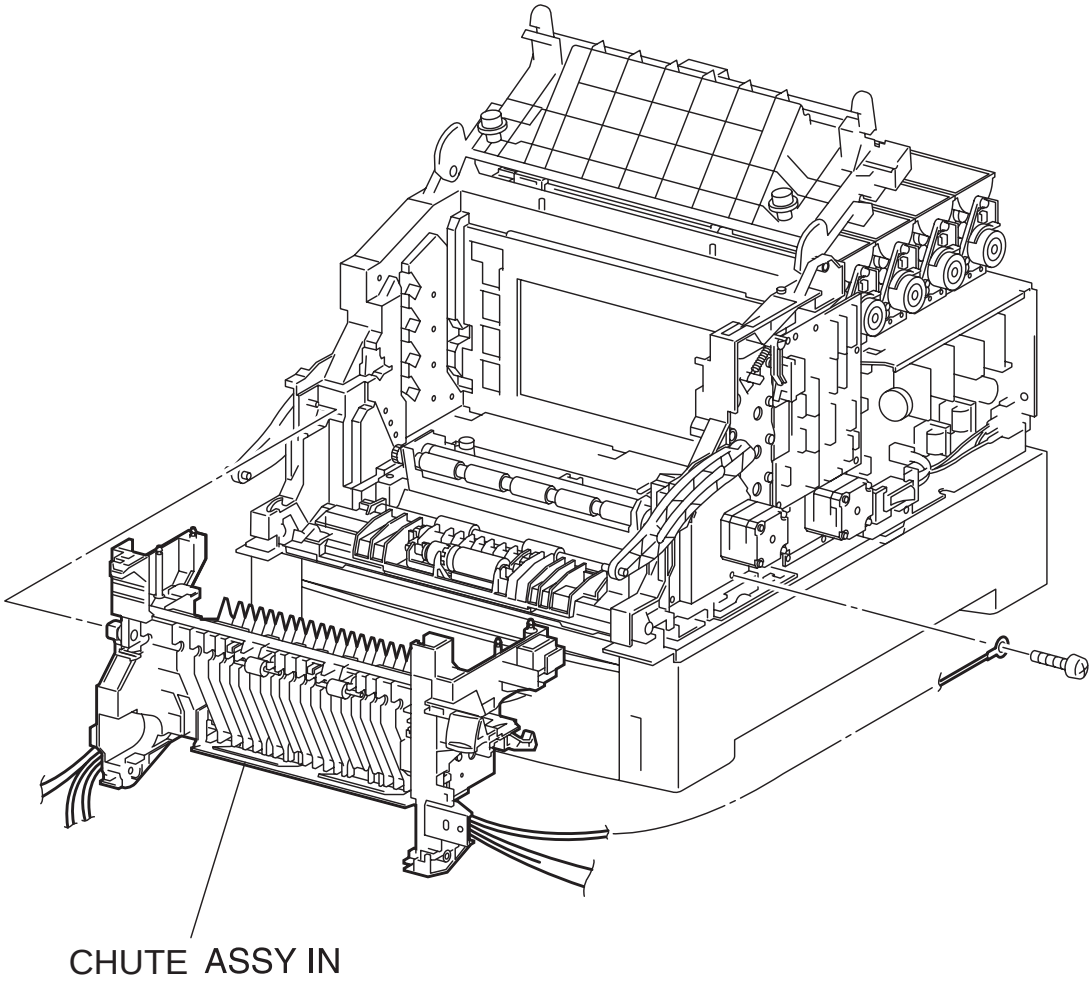

Figure: CHUTE ASSY IN Removal (2)

Removal

1) Remove the FUSER ASSY. (RRP8.1)
2) Remove the BTR UNIT ASSY. (RRP8.4)
3) Remove the COVER TOP MAIN. (RRP1.4)
4) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
5) Remove the COVER MSI. (RRP1.11)
6) Remove the TRAY ASSY BASE. (RRP1.12)
7) Remove the COVER ASSY FRONT. (RRP1.13)
8) Remove the COVER ASSY FRONT IN. (RRP1.10)
9) Remove the COVER SIDE L. (RRP1.14)
10) Remove the COVER SIDE R. (RRP1.9)
11) Remove the CHUTE ASSY OUT. (RRP6.1)

NOTE

In the following steps, lock the CHUTE ASSY IN to the printer with the latch at A to prevent the CHUTE ASSY IN from falling off.

12) Remove the connector (P/J5030) and connector (P/J5020) on the S-HVPS (PL10.1.15) from the left side of the printer.
13) Remove the connector (P/J141), connector (P/J1361), and connector (P/J138) from the connector bracket on the left side of the printer.
14) Disconnect the connector(P/J3262) of the HARNESS ASSY FSR3 (FSR32) (PL5.1.9) from the left-hand side of a printer.
15) Shift the harness of the connectors removed above from the bottom portion of the HSG ASSY BIAS (PL9.1.4) on the left side of the printer.
16) Remove the connector (P/J52) on the PWBA DRV HBN (PL12.1.12) on the right side of the printer.
17) Remove the connector (P/J162) on the LVPS (PL12.1.10) on the right side of the printer.
18) Remove 1 screw securing the WIRE ASSY FSR EARTH (PL5.1.20) on the right side of the printer.
19) Release the harness (P/J52) of the FUSER DRIVE ASSY (PL5.1.18) from the clamp on the MAIN DRIVE ASSY (PL11.1.14).
20) Shift the harness (P/J162) of the HARNESS ASSY FSR3(FSR32,FSR4) (PL5.1.9) from the hook of the housing on the right side of the printer.
21) Release the latch at A from the printer, and pull out the CHUTE ASSY IN toward the front and remove.

Replacement

Replace the components in the reverse order of removal.

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RRP5.2 SENSOR ADC ASSY (PL5.1.11)

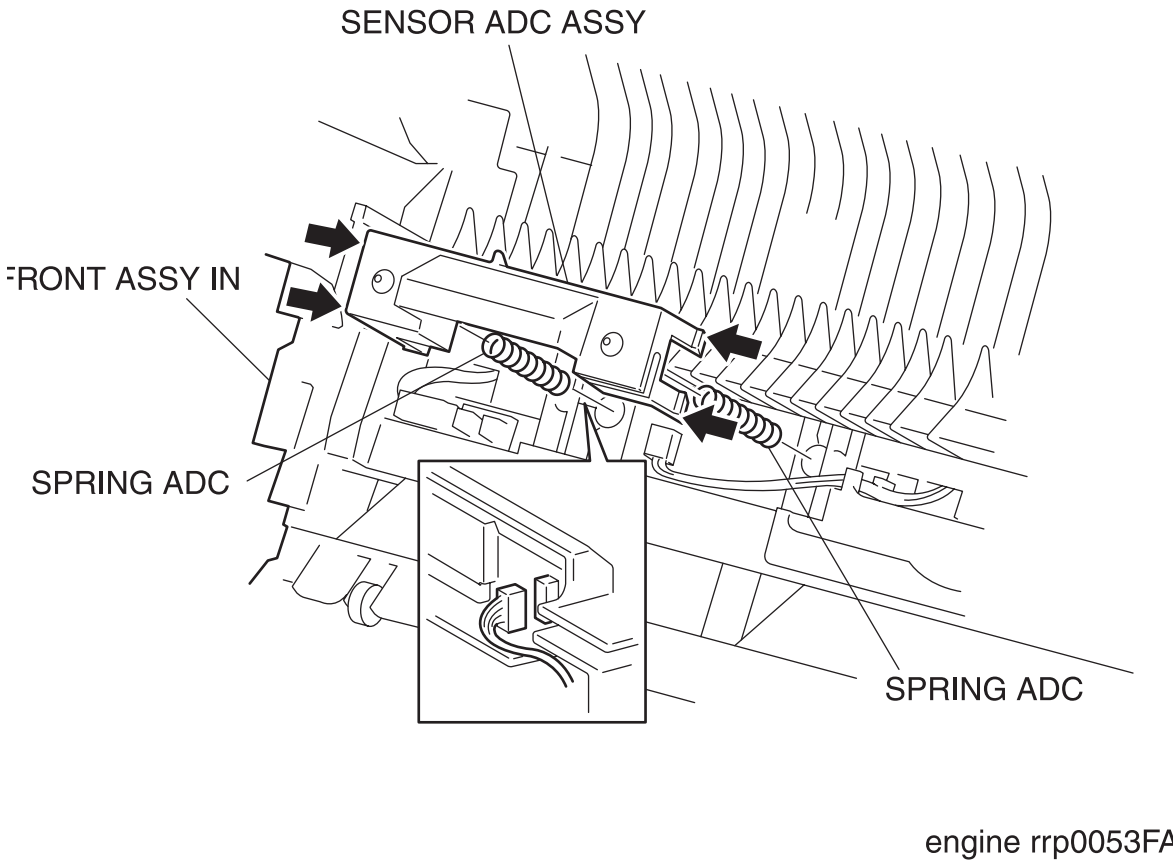


Figure: SENSOR CTD ASSY Removal

Removal

1) Release the latch at A from the printer and open the CHUTE ASSY IN (PL5.1.1).
2) Remove the BTR UNIT ASSY. (RRP8.4)
3) Release the hooks at 4 positions securing the SENSOR ADC ASSY to the CHUTE ASSY IN of the printer.
4) Raise the SENSOR ADC ASSY slightly from the CHUTE ASSY IN and pull out the connector (P/J136).
5) Remove the SENSOR ADC ASSY from the CHUTE ASSY IN together with the SPRING ADC (PL5.1.12).
6) Remove the SPRING ADC from the SENSOR ADC ASSY.

Replacement

Replace the components in the reverse order of removal.

RRP5.3 SENSOR TONER FULL (PL5.1.13)

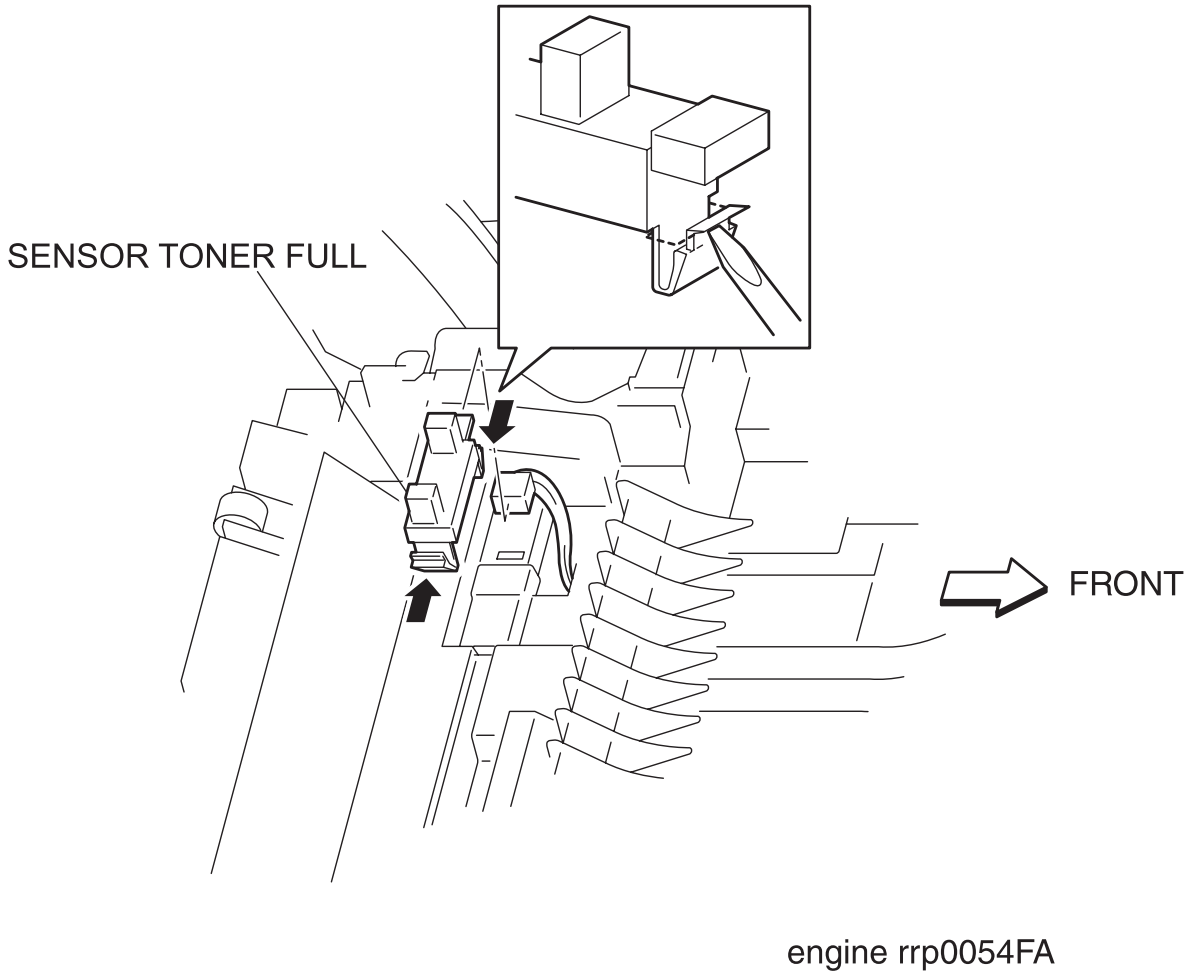


Figure: SENSOR TONER FULL Removal

Removal

1) Release the latch at A from the printer and open the CHUTE ASSY IN (PL5.1.1).
2) Remove the BTR UNIT ASSY. (RRP8.4)
3) Remove the connector (P/J142) on the SENSOR TONER FULL from the CHUTE ASSY IN of the printer.
4) Release the hooks at 2 positions securing the SENSOR TONER FULL to the CHUTE ASSY IN with a mini screwdriver or the like.
5) Remove the SENSOR TONER FULL from the CHUTE ASSY IN.

Replacement

Replace the components in the reverse order of removal.

RRP5.4 FUSER DRIVE ASSY (PL5.1.18)

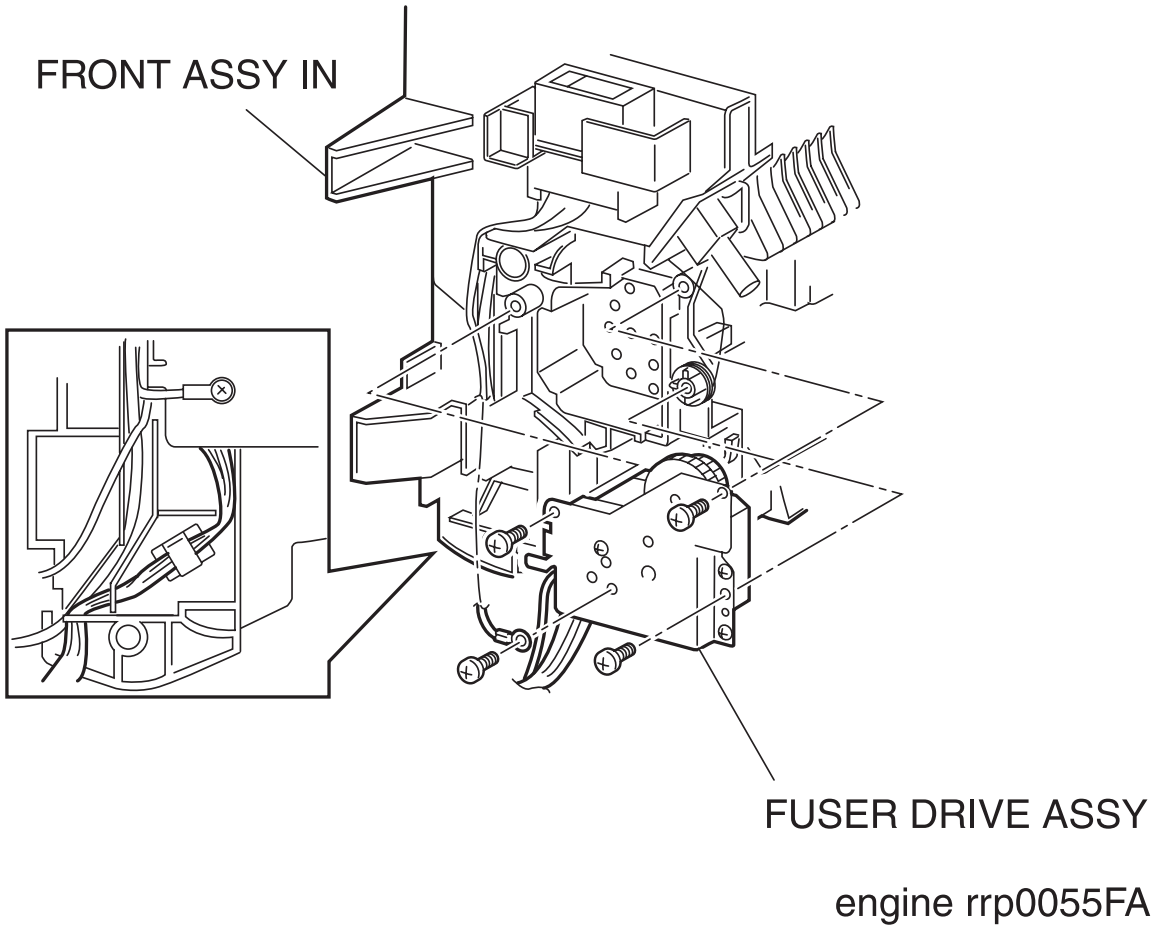


Figure: FUSER DRIVE ASSY Removal

Removal

1) Remove the FUSER ASSY. (RRP8.1)
2) Remove the BTR UNIT ASSY. (RRP8.4)
3) Remove the COVER TOP MAIN. (RRP1.4)
4) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
5) Remove the COVER MSI. (RRP1.11)
6) Remove the TRAY ASSY BASE. (RRP1.12)
7) Remove the COVER ASSY FRONT. (RRP1.13)
8) Remove the CHUTE ASSY EXIT. (RRP7.1)
9) Remove the COVER ASSY FRONT IN. (RRP1.10)
10) Remove the COVER SIDE L. (RRP1.14)
11) Remove the COVER SIDE R. (RRP1.9)
12) Remove the CHUTE ASSY OUT. (RRP6.1)
13) Remove the CHUTE ASSY IN. (RRP5.1)
14) Remove the LATCH R. (RRP5.5)
15) Remove a screw securing the earth (P/J233) of the HARNESS ASSY FSR (PL5.1.9) to the FUSER DRIVE ASSY of the CHUTE ASSY IN (PL5.1.1).
16) Remove a screw securing the edge (P/J235) of the EARTH WIRE of HARNESS ASSY FSR3(FSR32,FSR4) (PL5.1.9) to the MAIN DRIVE ASSY (PL11.1.14).
17) Shift the harness (P/J52) and earth (P/J235) of the FUSER DRIVE ASSY from the hook and housing, secured to the CHUTE ASSY IN (PL5.1.1).
18) Remove 3 screws securing the FUSER DRIVE ASSY to the CHUTE ASSY IN.
19) Remove the FUSER DRIVE ASSY from the CHUTE ASSY IN.

Replacement

Replace the components in the reverse order of removal.

RRP5.5 LATCH R (PL5.1.21)

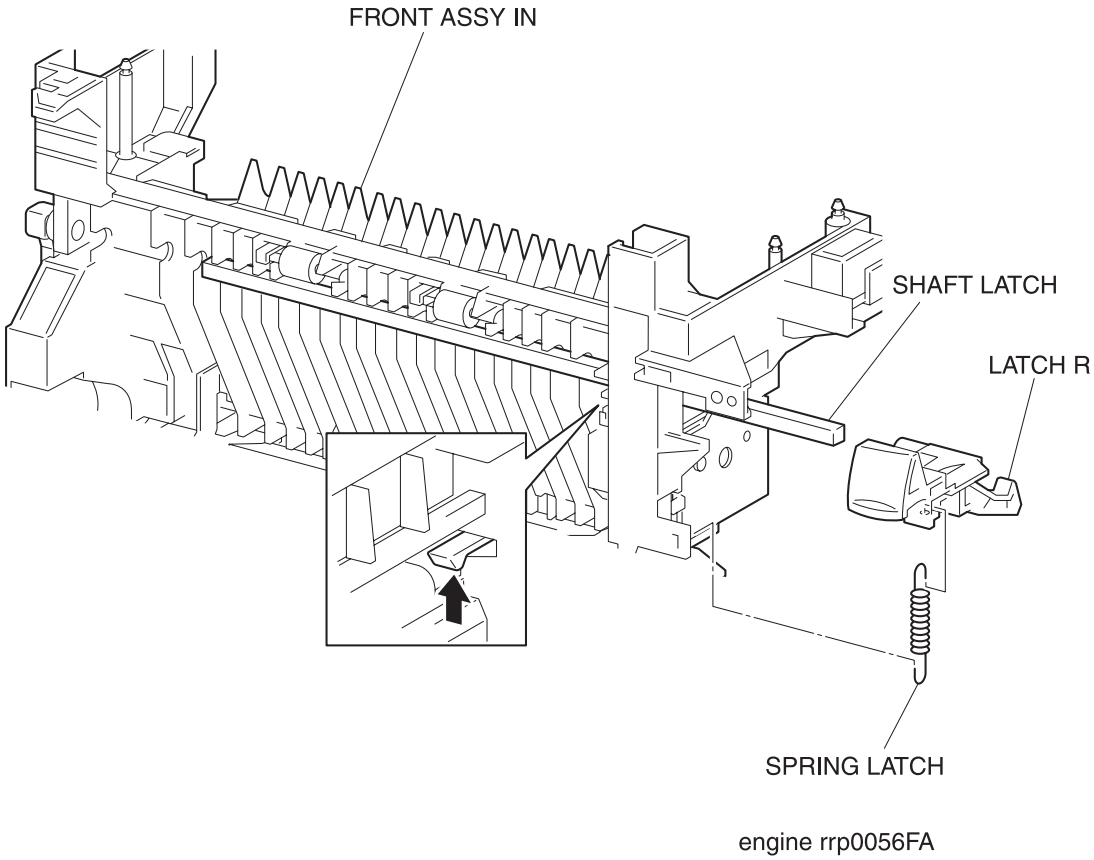


Figure: LATCH R Removal

Removal

1) Remove the FUSER ASSY. (RRP8.1)
2) Remove the COVER ASSY FRONT IN. (RRP1.10)
3) Release the latch at A from the printer and open the CHUTE ASSY IN (PL5.1.1).
4) Release the hook at the lower part of the SPRING LATCH 1.2kgf (PL5.1.22) securing it to the hole on the right side of the CHUTE ASSY IN.
5) Release the hook at 1 position securing the LATCH R (PL5.1.21) to the CHUTE ASSY IN.
6) Pull out the LATCH R from the CHUTE ASSY IN together with the SHAFT LATCH (PL5.1.23) and the SPRING LATCH 1.2kgf.
7) Remove the SPRING LATCH 1.2kgf from the LATCH R.
8) Pull out the SHAFT LATCH from the LATCH R.

Replacement

Replace the components in the reverse order of removal.

RRP5.6 LATCH L (PL5.1.30)

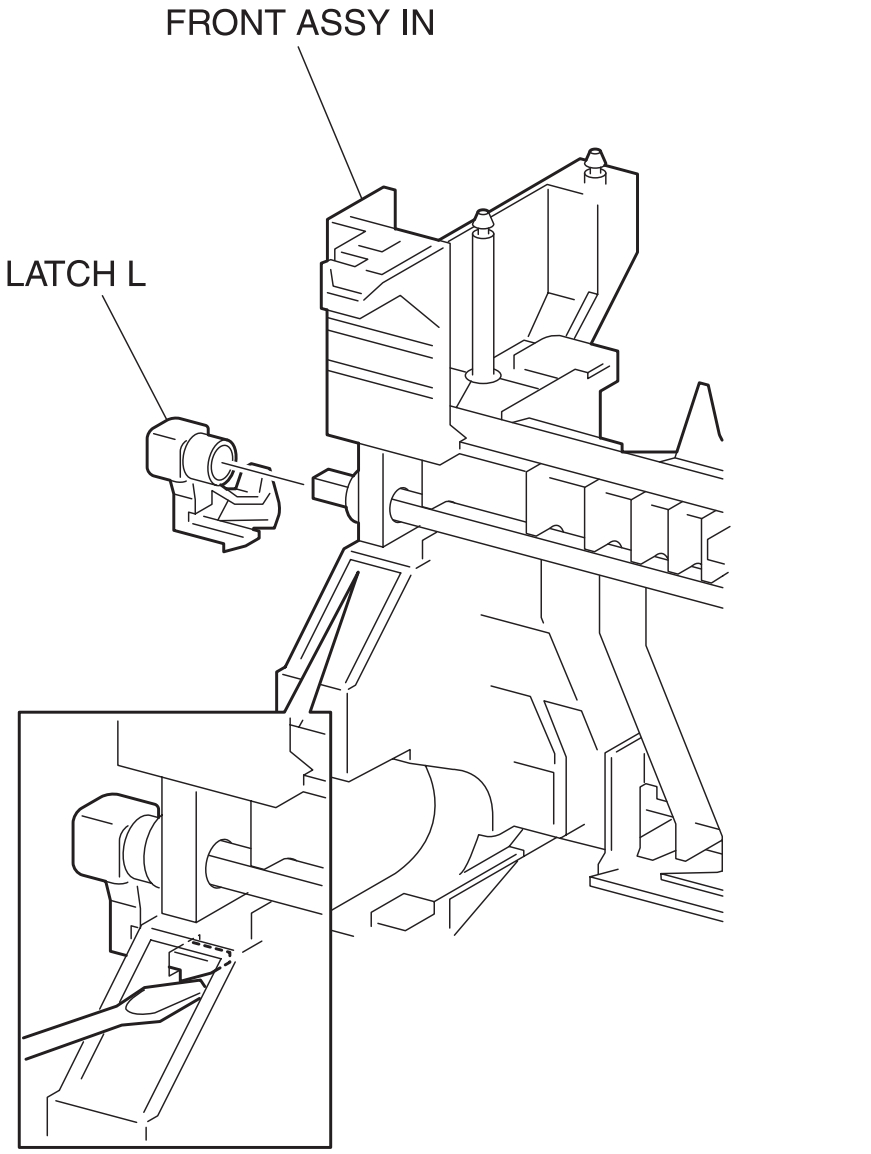


Figure: LATCH L Removal

Removal

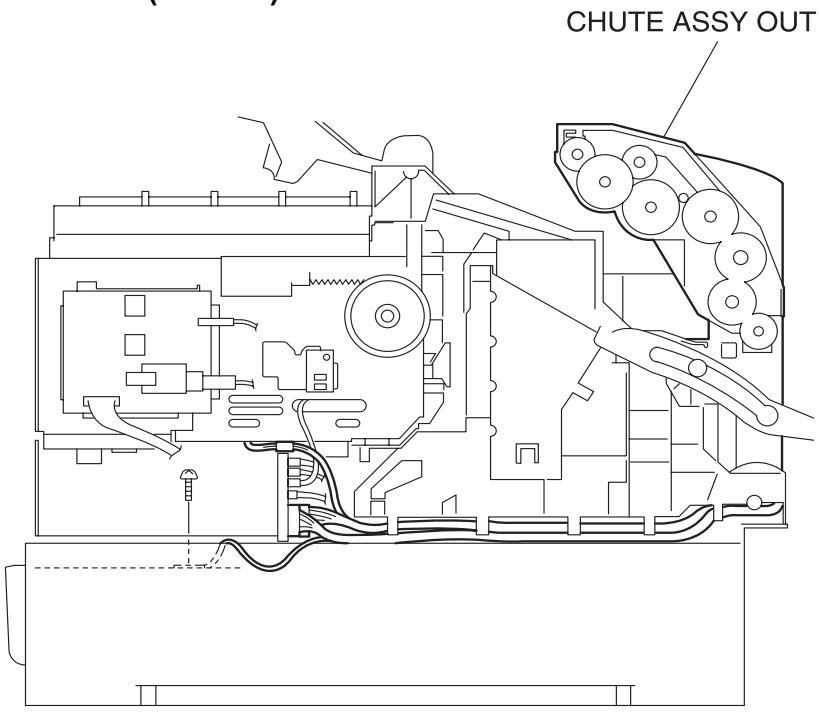
1) Remove the FUSER ASSY. (RRP8.1)
2) Remove the COVER ASSY FRONT IN. (RRP1.10)
3) Release the latch at A from the printer and open the CHUTE ASSY IN (PL5.1.1).
4) Release the hook at 1 position securing the LATCH L to the left side of the CHUTE ASSY IN.
5) Remove the LATCH L from the CHUTE ASSY IN.

Replacement

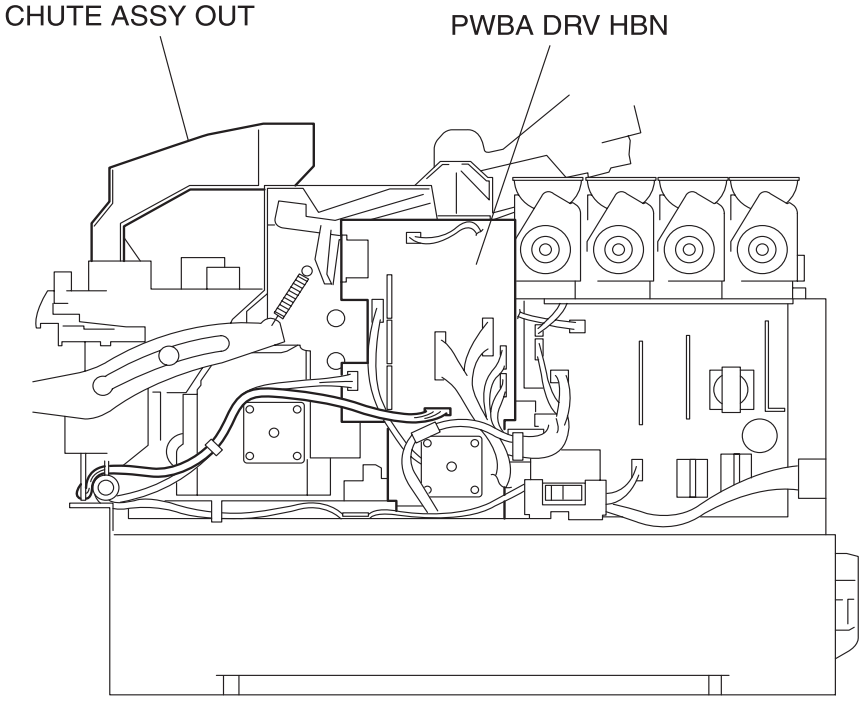
Replace the components in the reverse order of removal.

RRP6. CHUTE ASSY OUT

RRP6.1 CHUTE ASSY OUT (PL6.1.1)



LEFT SIDE VIEW



RIGHT SIDE VIEW

Figure: CHUTE ASSY OUT Removal (1)

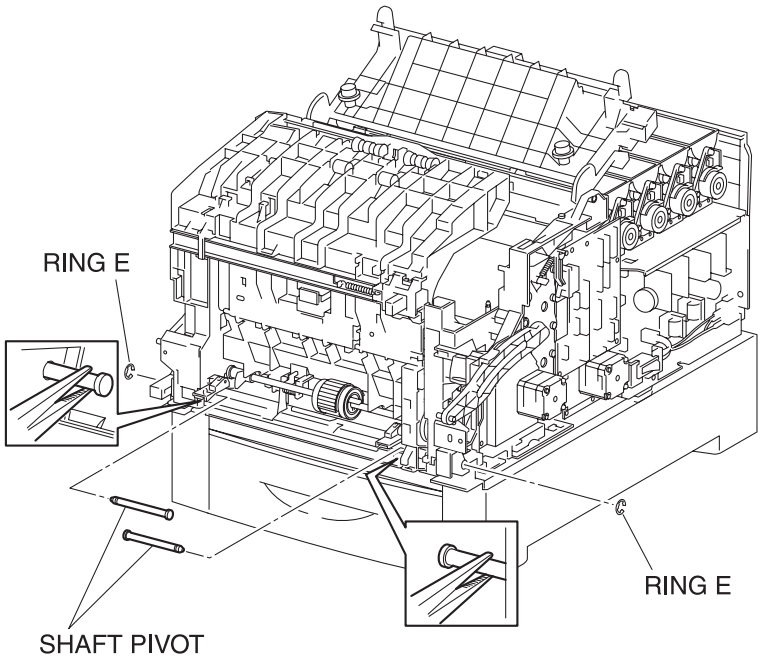


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Figure: CHUTE ASSY OUT Removal (2)

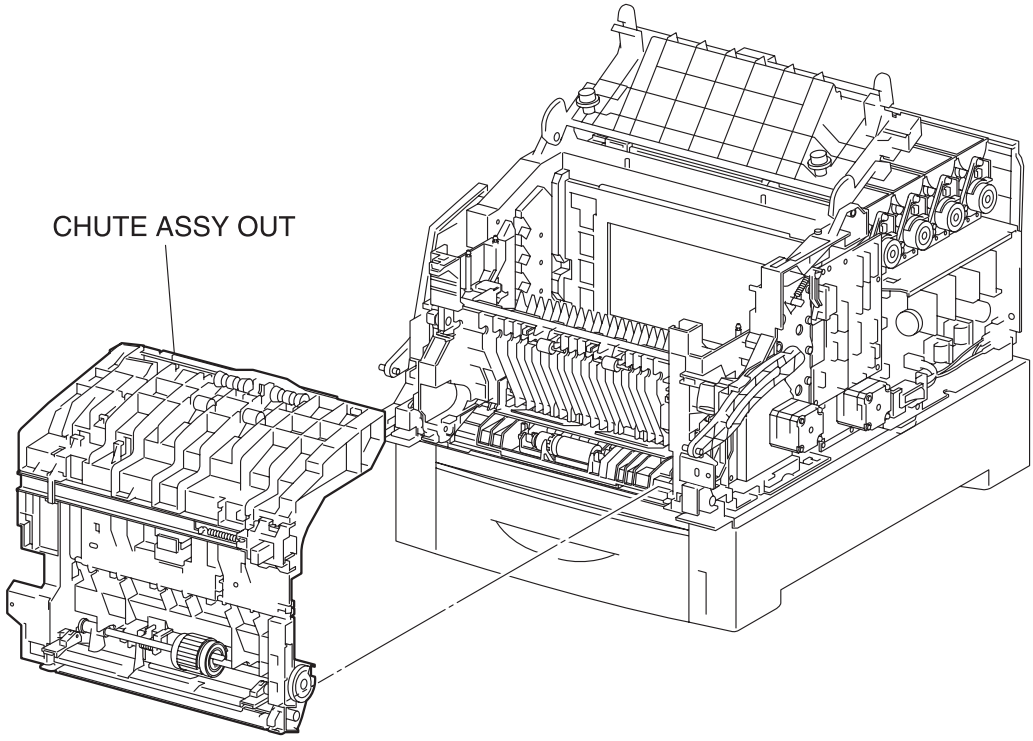

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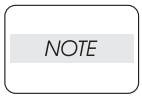
Figure: CHUTE ASSY OUT Removal (3)

Removal

1) Remove the FUSER ASSY. (RRP8.1)
2) Remove the COVER TOP MAIN. (RRP1.4)
3) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
4) Remove the COVER MSI. (RRP1.11)
5) Remove the TRAY ASSY BASE. (RRP1.12)
6) Remove the COVER ASSY FRONT. (RRP1.13)
7) Remove the COVER ASSY FRONT IN. (RRP1.10)
8) Remove the CHUTE ASSY EXIT. (RRP7.1)
9) Remove the COVER SIDE L. (RRP1.14)
10) Remove the COVER SIDE R. (RRP1.9)
11) Remove the STRAP. (RRP8.6)



In the following step, lock the CHUTE ASSY OUT and CHUTE ASSY IN (PL5.1.1) to the printer with the latches at A and B for drop off.

12) Remove the connector (P/J221) from the connector bracket on the left side surface of the printer.
13) Remove the connector (P/J139) from the connector bracket on the left side surface of the printer.
14) Remove 1 screw which is fixing the earth from the left-hand side of printer.
15) Shift the harness of the connector removed above from the bottom portion of the HSG ASSY BIAS (PL9.1.4) on the left side surface of the printer.
16) Remove the connector (P/J50) on the PWBA DRV HBN (PL12.1.12) on the right side surface of the printer.
17) Remove the harness (P/J50) of HARNESS ASSY DUP2 (PL6.1.23) from the clamp on MAIN DRIVE ASSY (PL11.1.14).
18) Remove the RING E (PL8.1.14) on the right and left SHAFT PIVOT (PL8.1.15) securing the bottom portion of the CHUTE ASSY OUT from the printer.

In the following steps, take care not to hurt your hand with burrs of the PLATE ASSY BOTTOM MSI (PL6.1.42).

19) Pull out the left SHAFT PIVOT from the CHUTE ASSY OUT inward with radio pliers.
20) Pull out the right SHAFT PIVOT from the CHUTE ASSY OUT inward with radio pliers.
21) Release the latch at B from the printer and pull out the CHUTE ASSY OUT toward the front and remove.

Replacement

Replace the components in the reverse order of removal.

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RRP6.2 SENSOR PHOTO:FULL STACK (PL6.1.4)

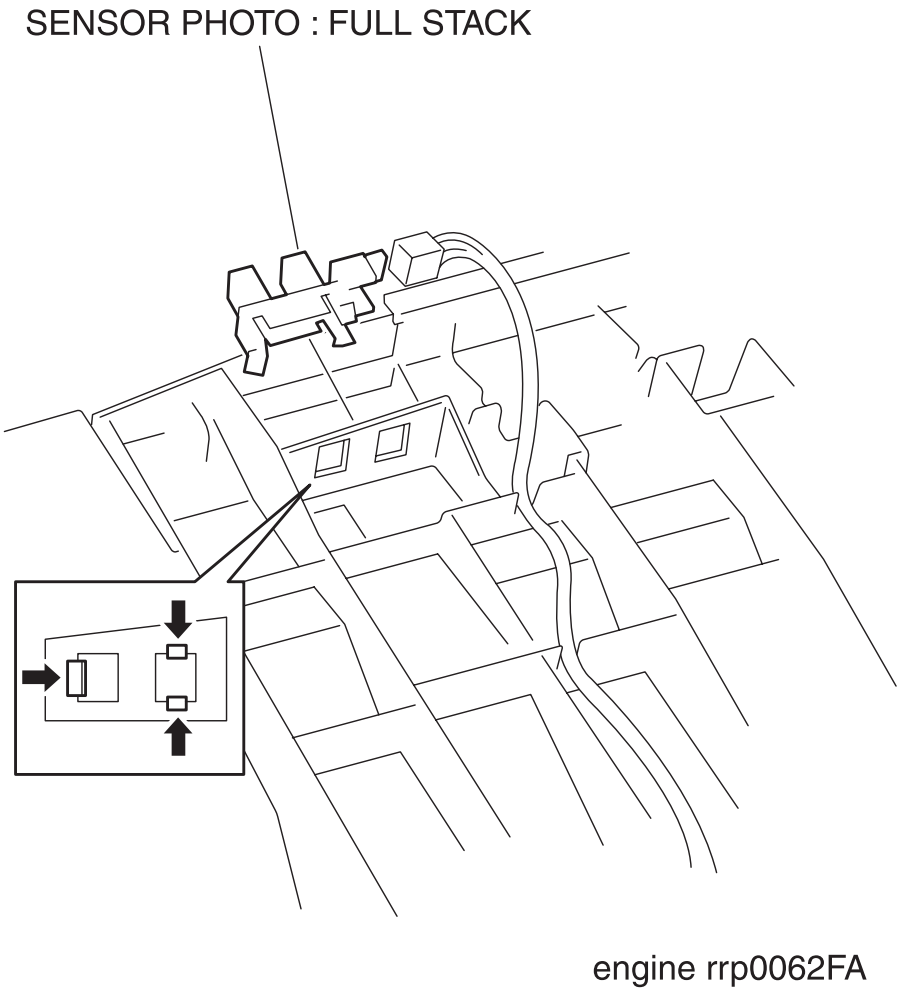

Figure: SENSOR PHOTO:FULL STACK Removal

Removal

1) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
2) Remove the ACTUATOR FULL. (RRP6.3)
3) Remove the connector (P/J134) on the SENSOR PHOTO: FULL STACK from top portion of the CHUTE ASSY OUT (PL6.1.1) of the printer.
4) Release the hooks at 3 positions securing the SENSOR PHOTO: FULL STACK to the CHUTE ASSY OUT.
5) Remove the SENSOR PHOTO:FULL STACK from the CHUTE ASSY OUT.

Replacement

Replace the components in the reverse order of removal.

RRP6.3 ACTUATOR FULL (PL6.1.5)

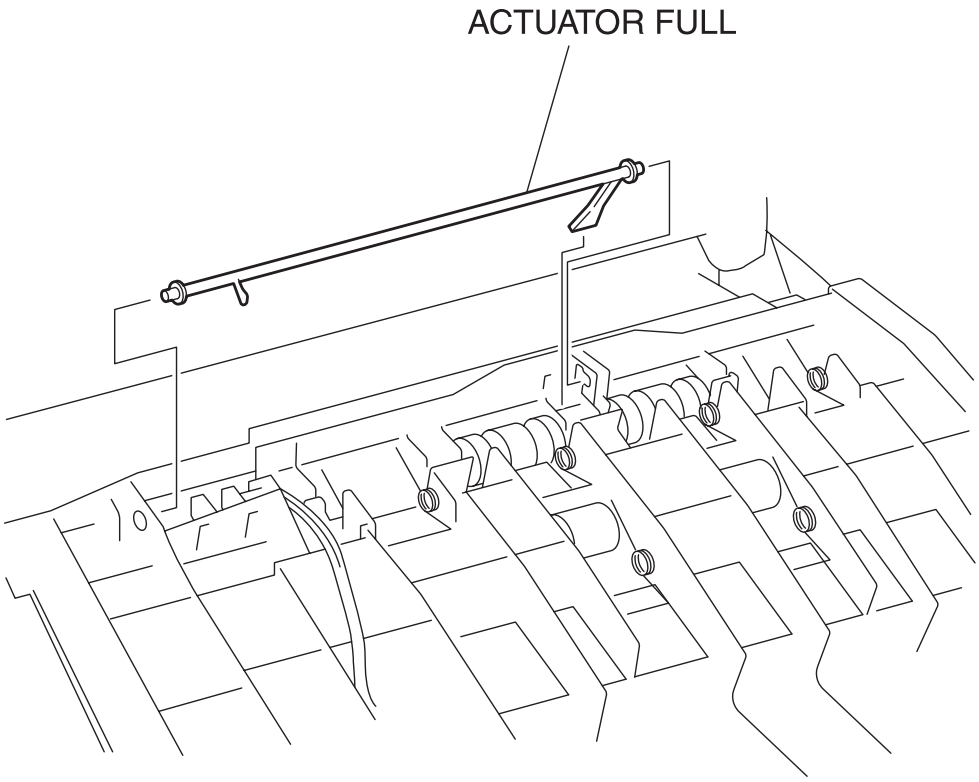

Figure: ACTUATOR FULL Removal

Removal

1) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
2) Deflect the shaft of the ACTUATOR FULL from top portion the CHUTE ASSY OUT (PL6.1.1) of the printer and extract the shaft of the ACTUATOR FULL from the bearing bore on the left side of the CHUTE ASSY OUT.
3) Shift the actuator of the ACTUATOR FULL from the hole at the center of the CHUTE ASSY OUT and pull up the ACTUATOR FULL from the CHUTE ASSY OUT.

Replacement

Replace the components in the reverse order of removal.

RRP6.4 SENSOR PHOTO:DUP (PL6.1.4)

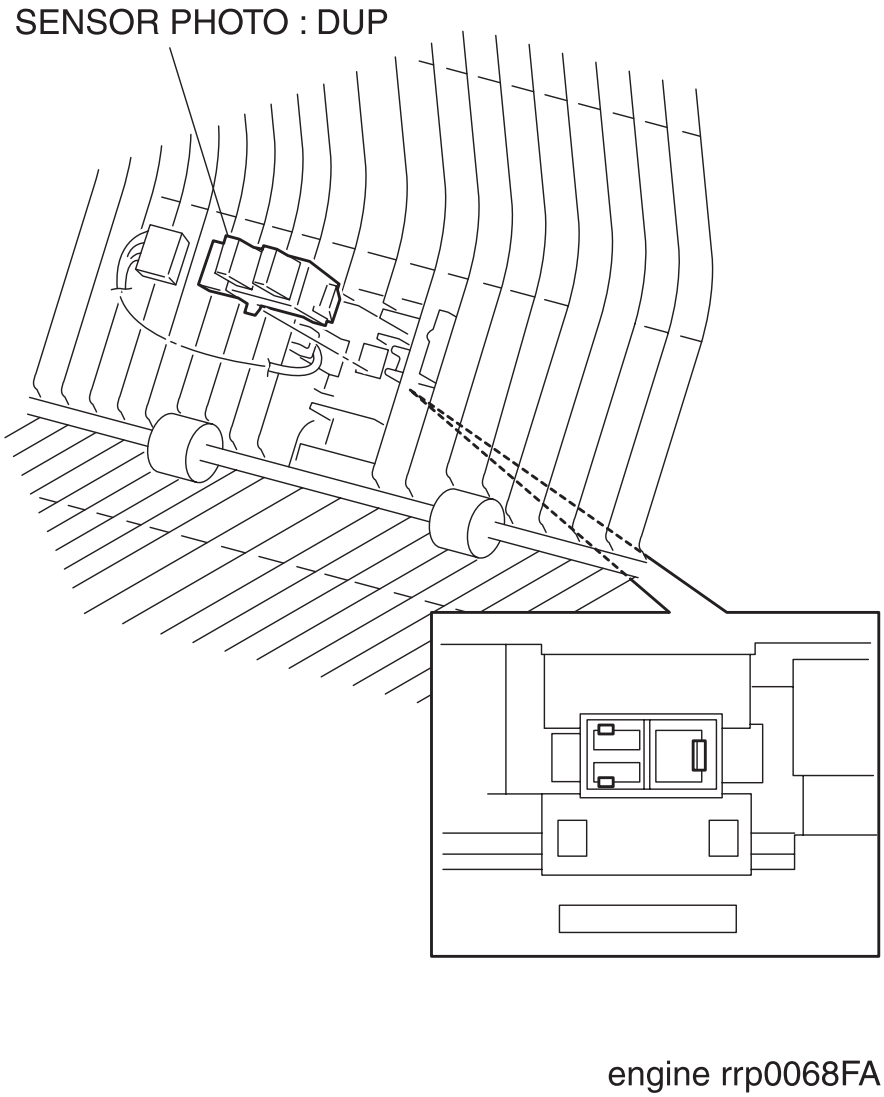

Figure: SENSOR PHOTO:DUP Removal

Removal

1) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
2) Remove the COVER MSI. (RRP1.11)
3) Remove the TRAY ASSY BASE. (RRP1.12)
4) Remove the COVER ASSY FRONT. (RRP1.13)
5) Remove the ACTUATOR DUP. (RRP6.8)
6) Release the hooks at 3 positions securing the SENSOR PHOTO:DUP to the CHUTE ASSY OUT (PL6.1.1)
7) Remove the SENSOR PHOTO:DUP from the CHUTE ASSY OUT and remove the connector (P/J133)

Replacement

Replace the components in the reverse order of removal.

RRP6.5 SENSOR PHOTO:MSI (PL6.1.4)

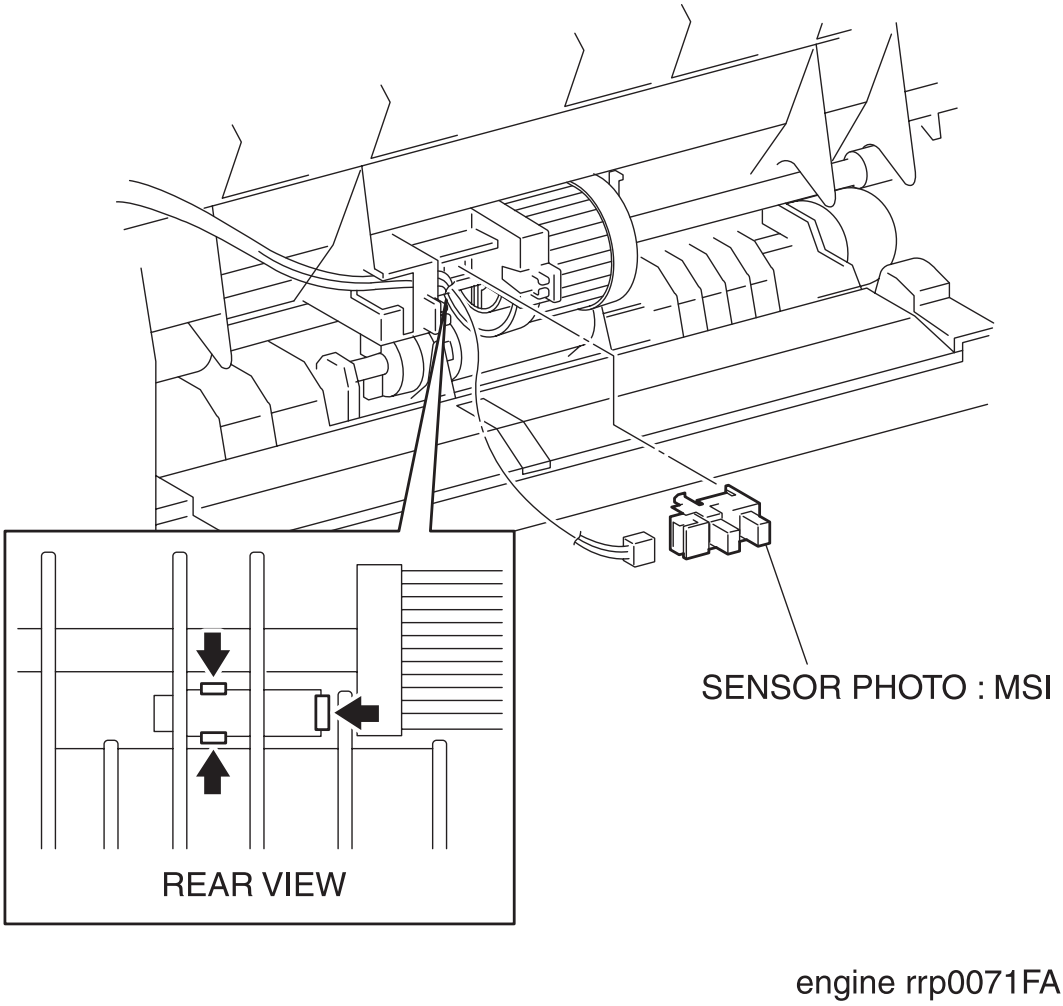

Figure: SENSOR PHOTO:MSI Removal

Removal

1) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
2) Remove the COVER MSI. (RRP1.11)
3) Remove the TRAY ASSY BASE. (RRP1.12)
4) Remove the COVER ASSY FRONT. (RRP1.13)
5) Remove the ACTUATOR MSI. (RRP6.11)
6) Remove the connector (P/J135) on the SENSOR PHOTO:MSI from the CHUTE ASSY OUT (PL6.1.1).
7) Release the hooks at 3 positions securing the SENSOR PHOTO:MSI to the CHUTE ASSY OUT.
8) Remove the SENSOR PHOTO:MSI from the CHUTE ASSY OUT.

Replacement

Replace the components in the reverse order of removal.

RRP6.6 BRACKET ASSY ELIMINATOR (PL6.1.9)

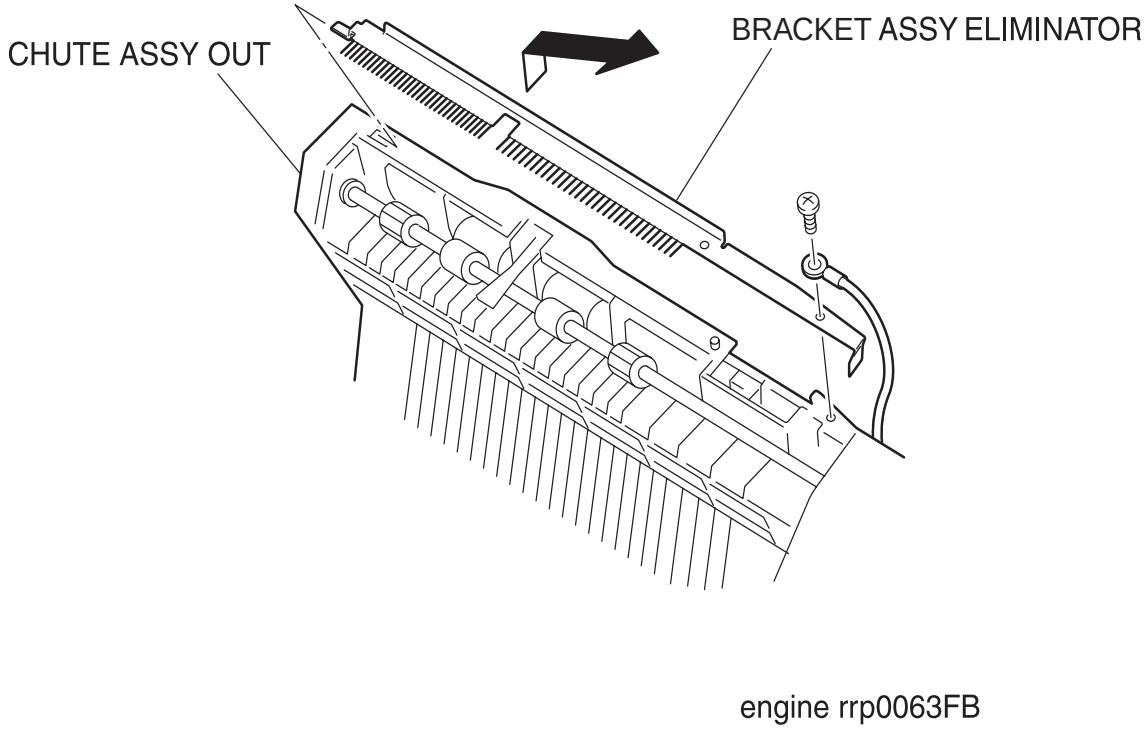

Figure: ELIMINATOR ASSY Removal

Removal

1) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
2) Remove the COVER MSI. (RRP1.11)
3) Remove the TRAY ASSY BASE. (RRP1.12)
4) Remove 1 screw securing the BRACKET ASSY ELIMINATOR to the CHUTE ASSY OUT (PL6.1.1).
5) Raising the left end of the BRACKET ASSY ELIMINATOR upward, pull out the BRACKET ASSY ELIMINATOR toward the left to remove from the CHUTE ASSY OUT.

Replacement

Replace the components in the reverse order of removal.

RRP6.7 ROLL DUP (PL6.1.12)

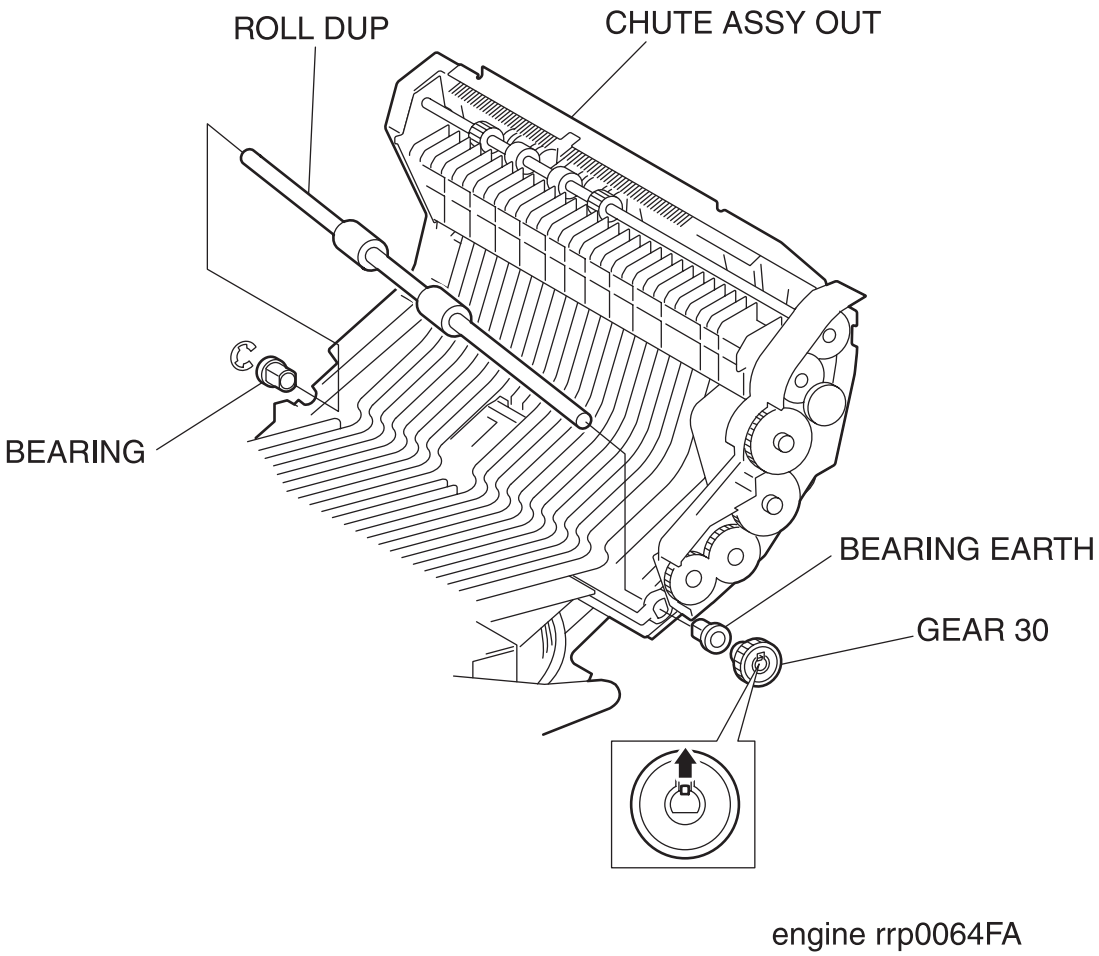

Figure: ROLL DUP Removal

Removal

1) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
2) Remove the COVER MSI. (RRP1.11)
3) Remove the TRAY ASSY BASE. (RRP1.12)
4) Remove the COVER ASSY FRONT. (RRP1.13)
5) Release the hook at 1 position of the GEAR 30 (PL6.1.10) secured to the shaft of the ROLL DUP from the CHUTE ASSY OUT (PL6.1.1) of the printer.
6) Remove the GEAR 30 from the shaft of the ROLL DUP.
7) Extract the BEARING EARTH (PL6.1.11) securing the left shaft of the ROLL DUP to the CHUTE ASSY OUT.
8) Remove the E-ring securing the right shaft of the ROLL DUP to the CHUTE ASSY OUT.
9) Extract the BEARING (PL6.1.16) securing the right shaft of the ROLL DUP to the CHUTE ASSY OUT.
10) Raise the right shaft of the ROLL DUP above the CHUTE ASSY OUT, shift it from the bearing bore and pull out the ROLL DUP.

Replacement

Replace the components in the reverse order of removal.

RRP6.8 ACTUATOR DUP (PL6.1.13)

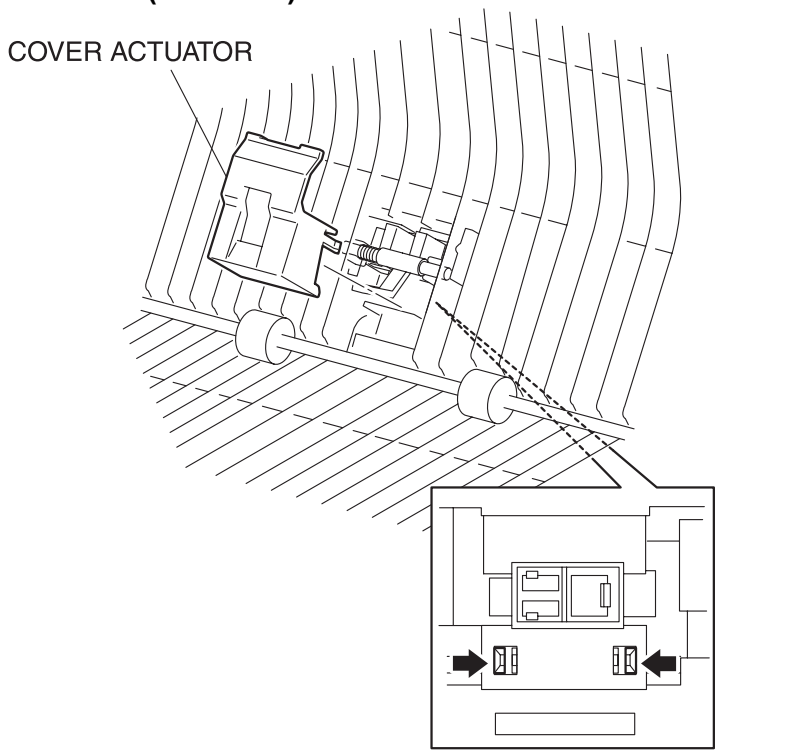

Figure: ACTUATOR DUP Removal (1)

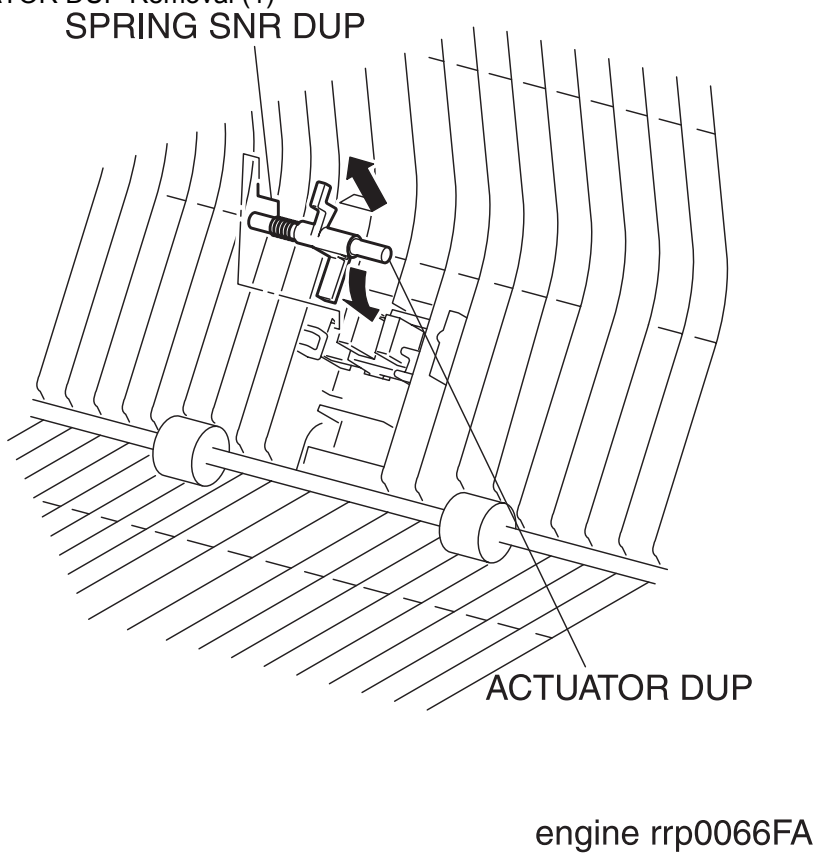

Figure: ACTUATOR DUP Removal (2)

Removal

1) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
2) Remove the COVER MSI. (RRP1.11)
3) Remove the TRAY ASSY BASE. (RRP1.12)
4) Remove the COVER ASSY FRONT. (RRP1.13)
5) Release the hooks at 2 positions securing the COVER ACTUATOR (PL6.1.14) to the CHUTE ASSY OUT (PL6.1.1) of the printer.
6) Remove the COVER ACTUATOR from the CHUTE ASSY OUT.
7) Pushing the actuator of the ACTUATOR DUP inward from the CHUTE ASSY OUT, slide the ACTUATOR DUP leftward and extract the right side shaft of the ACTUATOR DUP from the right side bearing.
8) Extract the ACTUATOR DUP from the CHUTE ASSY OUT together with the SPRING SNR DUP.
9) Remove the SPRING SNR DUP (PL6.1.15) from the ACTUATOR DUP.

Replacement

Replace the components in the reverse order of removal.

RRP6.9 LATCH OUT (PL6.1.18)

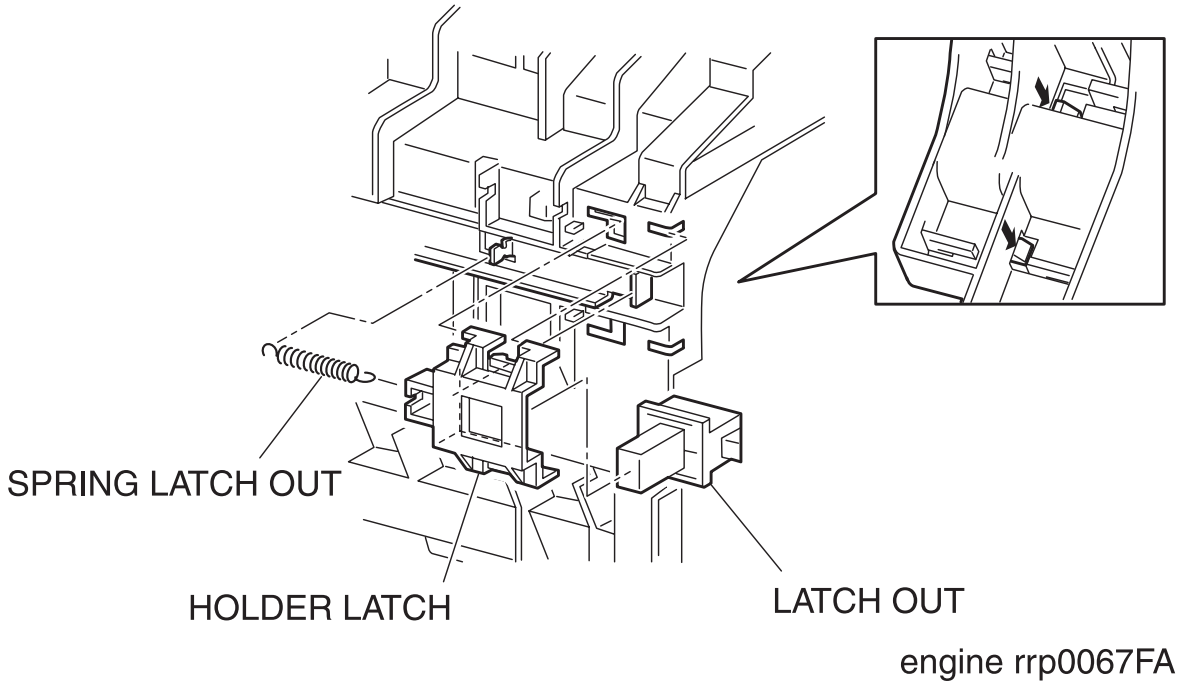

Figure: LATCH OUT Removal

Removal

1) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
2) Remove the COVER MSI. (RRP1.11)
3) Remove the TRAY ASSY BASE. (RRP1.12)
4) Remove the COVER ASSY FRONT. (RRP1.13)
5) Remove the SPRING LATCH OUT (PL6.1.20) from the CHUTE ASSY OUT (PL6.1.1) of the printer.
6) Release the hooks at 2 positions on the rear securing the HOLDER LATCH (PL6.1.19) to the CHUTE ASSY OUT.
7) Pull out the HOLDER LATCH rightward from the CHUTE ASSY OUT together with the LATCH OUT.
8) Remove the LATCH OUT from the HOLDER.

Replacement

Replace the components in the reverse order of removal.

RRP6.10 ROLL ASSY FEED MSI(PL6.1.27)

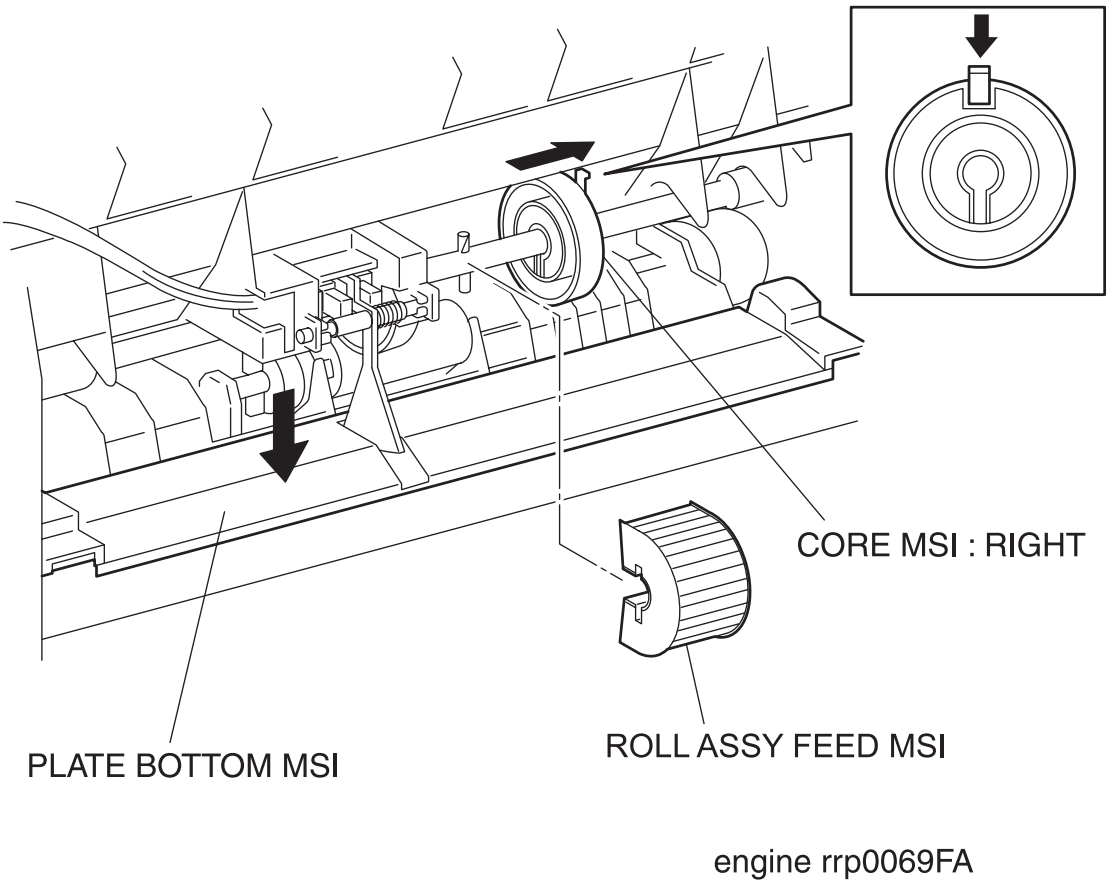

Figure: ROLL ASSY FEED MSI Removal

Removal

1) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
2) Remove the COVER MSI. (RRP1.11)
3) Remove the TRAY ASSY BASE. (RRP1.12)
4) Remove the COVER ASSY FRONT. (RRP1.13)
5) Release the hook at one position securing the ROLL CORE MSI: RIGHT (PL6.1.26) to the SHAFT MSI (PL6.1.28) on the CHUTE ASSY OUT (PL6.1.1) from the printer, and push down the PLATE ASSY BOTTOM MSI (PL6.1.42) slightly to release the nip with the ROLL ASSY FEED MSI (PL6.1.27).
6) From the printer, push down the PLATE ASSY BOTTOM MSI (PL6.1.42) on the CHUTE ASSY OUT and release the nip with the ROLL ASSY FEED MSI (PL6.1.27).
7) Slide the ROLL ASSY FEED MSI rightward from the SHAFT MSI and pull out the ROLL ASSY FEED MSI toward the front.

Replacement

Replace the components in the reverse order of removal.

RRP6.11 ACTUATOR MSI (PL6.1.37)

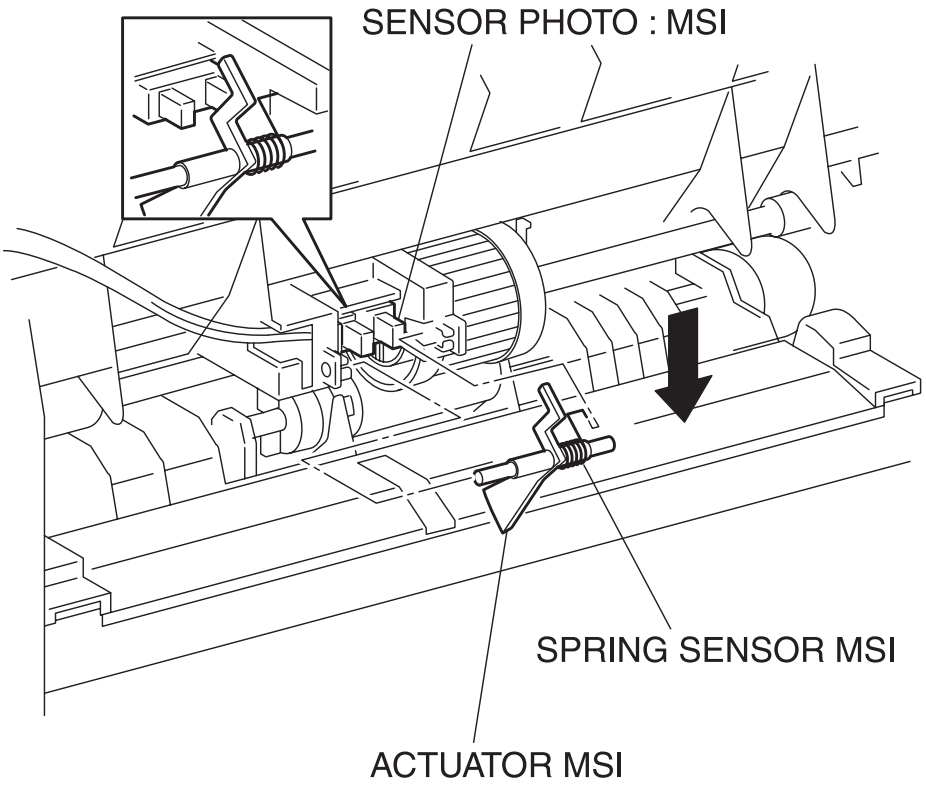

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Figure: ACTUATOR MSI Removal

Removal

1) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
2) Remove the COVER MSI. (RRP1.11)
3) Remove the TRAY ASSY BASE. (RRP1.12)
4) Remove the COVER ASSY FRONT. (RRP1.13)
5) Pushing down the PLATE ASSY BOTTOM MSI on the CHUTE ASSY OUT (PL6.1.1) from the printer, push the actuator of the ACTUATOR MSI inward.
6) Slide the ACTUATOR MSI leftward from the CHUTE ASSY OUI and extract the shaft on the right side of the ACTUATOR MSI.
7) Move the right shaft of the ACTUATOR MSI toward the front from the CHUTE ASSY OUT and extract the ACTUATOR MSI together with the SPRING SENSOR MSI (PL6.1.36).
8) Remove the SPRING SENSOR MSI from the ACTUATOR MSI.

Replacement

Replace the components in the reverse order of removal.

RRP6.12 SOLENOID FEED MSI (PL6.1.40)

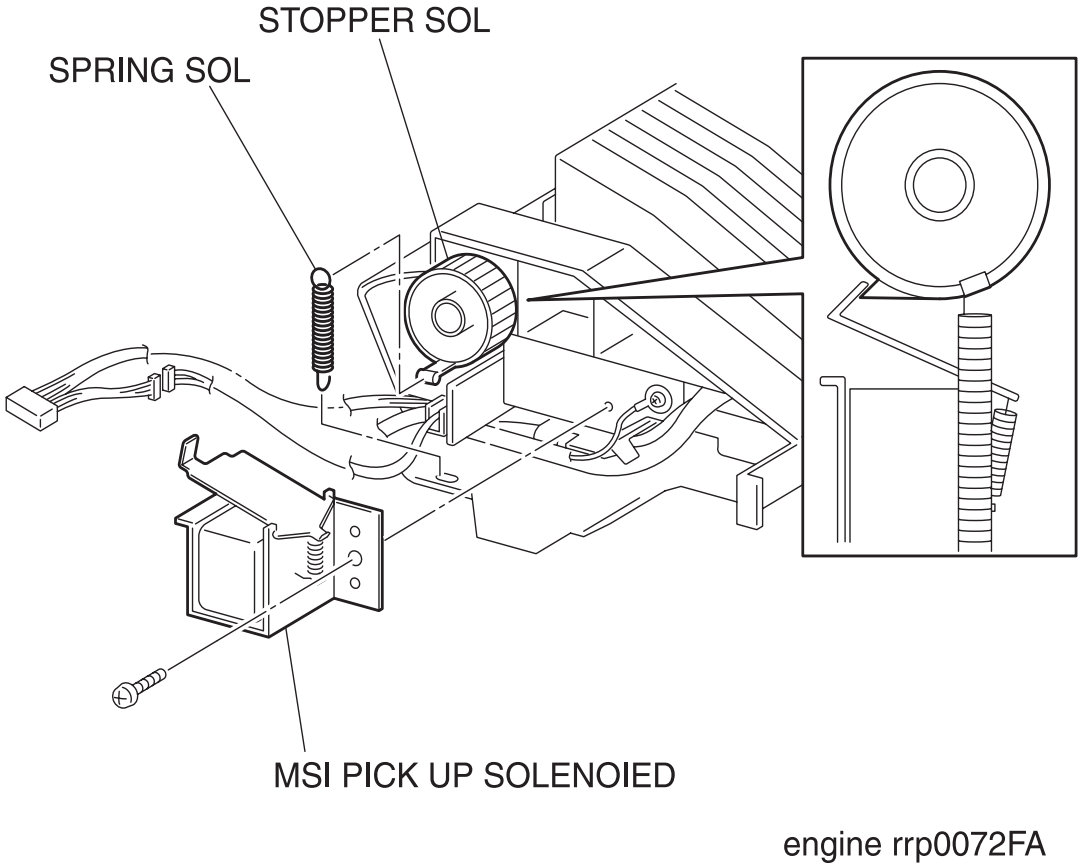

Figure: SOLENOID FEED MSI Removal

Removal

1) Remove the FUSER ASSY. (RRP8.1)
2) Remove the COVER TOP MAIN. (RRP1.4)
3) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
4) Remove the COVER MSI. (RRP1.11)
5) Remove the TRAY ASSY BASE. (RRP1.12)
6) Remove the COVER ASSY FRONT. (RRP1.13)
7) Remove the COVER ASSY FRONT IN. (RRP1.10)
8) Remove the CHUTE ASSY EXIT. (RRP7.1)
9) Remove the COVER SIDE L. (RRP1.14)
10) Remove the COVER SIDE R. (RRP1.9)
11) Remove the STRAP. (RRP8.6)
12) Remove the CHUTE ASSY OUT. (RRP6.1)
13) Release the hook of the SPRING SOL 0.5 (PL6.1.39) hitched on the convex portion on the STOPPER SOL (PL6.1.38) from the left side surface of the CHUTE ASSY OUT (PL6.1.1).
14) Remove the connector (P/J132) of the SOLENOID FEED MSI from the CHUTE ASY OUT.
15) Remove 1 screw securing the SOLENOID FEED MSI to the CHUTE ASSY OUT.
16) Remove the SOLENOID FEED MSI from the CHUTE ASSY OUT.

Replacement

Replace the components in the reverse order of removal.

RRP6.13 SHAFT ASSY ROLL FEED (REFERENCE ONLY)

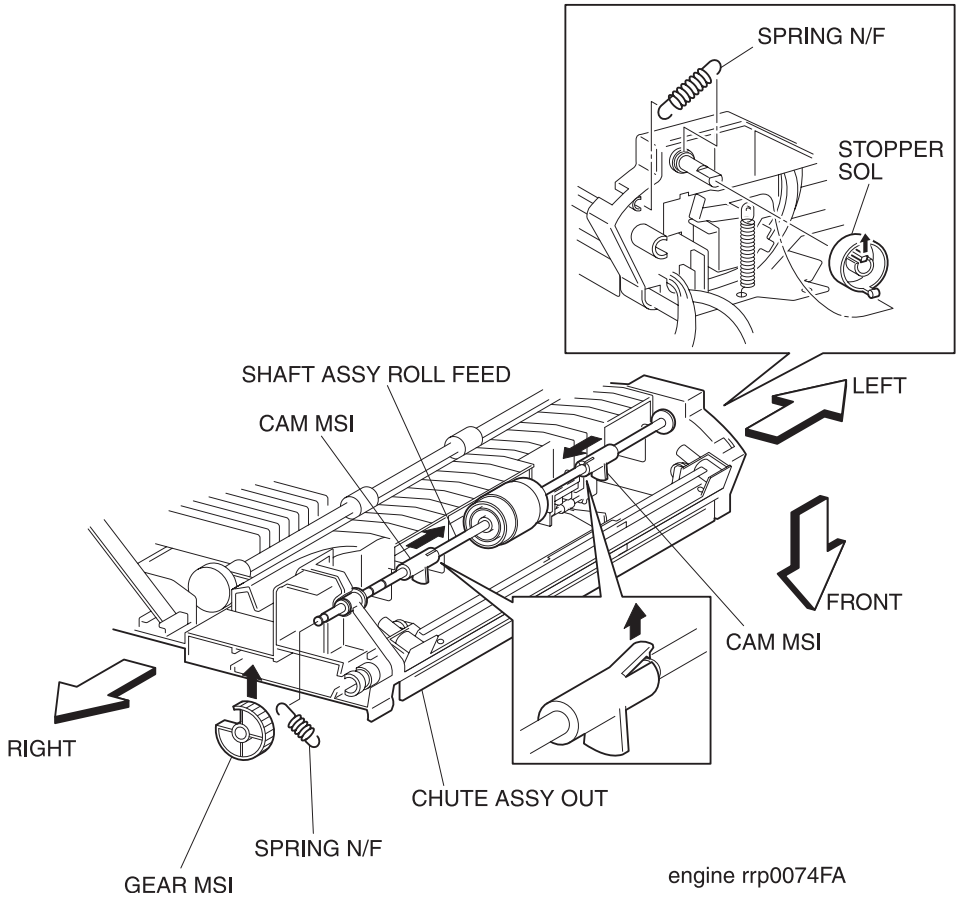

Figure: SHAFT ASSY ROLL FEED Removal (1)

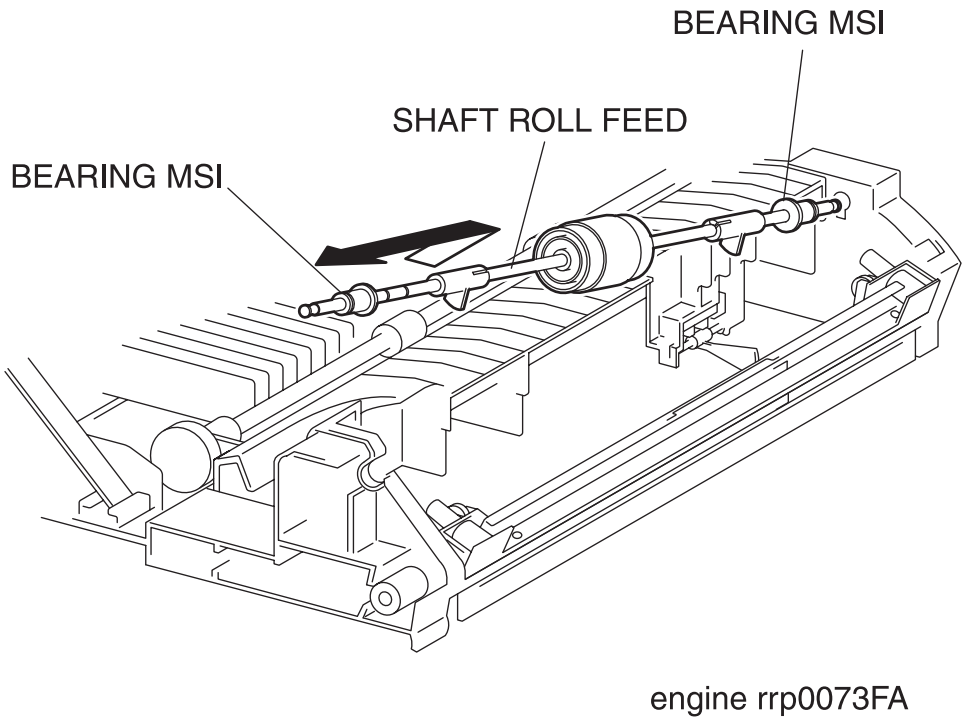

Figure: SHAFT ASSY ROLL FEED Removal (2)

Removal

1) Remove the FUSER ASSY. (RRP8.1)
2) Remove the COVER TOP MAIN. (RRP1.4)
3) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
4) Remove the COVER MSI. (RRP1.11)
5) Remove the TRAY ASSY BASE. (RRP1.12)
6) Remove the COVER ASSY FRONT. (RRP1.13)
7) Remove the COVER ASSY FRONT IN. (RRP1.10)
8) Remove the CHUTE ASSY EXIT. (RRP7.1)
9) Remove the COVER SIDE L. (RRP1.14)
10) Remove the COVER SIDE R. (RRP1.9)
11) Remove the STRAP. (RRP8.6)
12) Remove the CHUTE ASSY OUT. (RRP6.1)
13) Remove the SOLENOID FEED MSI. (RRP6.2)
14) Release a hook of the SPRING SOL 0.5 (PL6.1.39) from a convex portion on the STOPPER SOL (PL6.1.38) from the CHUTE ASSY OUT.
15) Release the hook at 1 position securing the STOPPER SOL to the left shaft of SHAFT MSI, and pull out the STOPPER SOL of the shaft from the CHUTE ASSY OUT.
16) Release the hook at 1 position securing the GEAR MSI (PL6.1.22) to the right shaft of SHAFT MSI, and pull the GEAR MSI out of the shaft from the CHUTE ASSY OUT.
17) Release the hooks of the SPRING N/F MSI 250gf (PL6.1.21) from the left and right shafts of SHAFT ASSY ROLL FEED from the CHUTE ASSY OUT.
18) Release the hook at 1 position securing the CAM MSI (PL6.1.25) to the SHAFT MSI (PL6.1.28), and move the CAM MSI inside from the CHUTE ASSY OUT (PL6.1.1).
19) Pull off the BEARING MSI (PL6.1.24) on the SHAFT MSI toward the inside from the bearing of the CHUTE ASSY OUT.
20) Raising the right end of the SHAFT ASSY ROLL FEED, pull out the SHAFT ASSY FEED from the CHUTE ASSY OUT.
21) After removing the SHAFT ASSY FEED, be sure to replace the CAM MSI. Do not leave the hook of the CAM MSI being raised.

Replacement

Replace the components in the reverse order of removal.

RRP6.14 PLATE ASSY BOTTOM MSI (PL6.1.42)

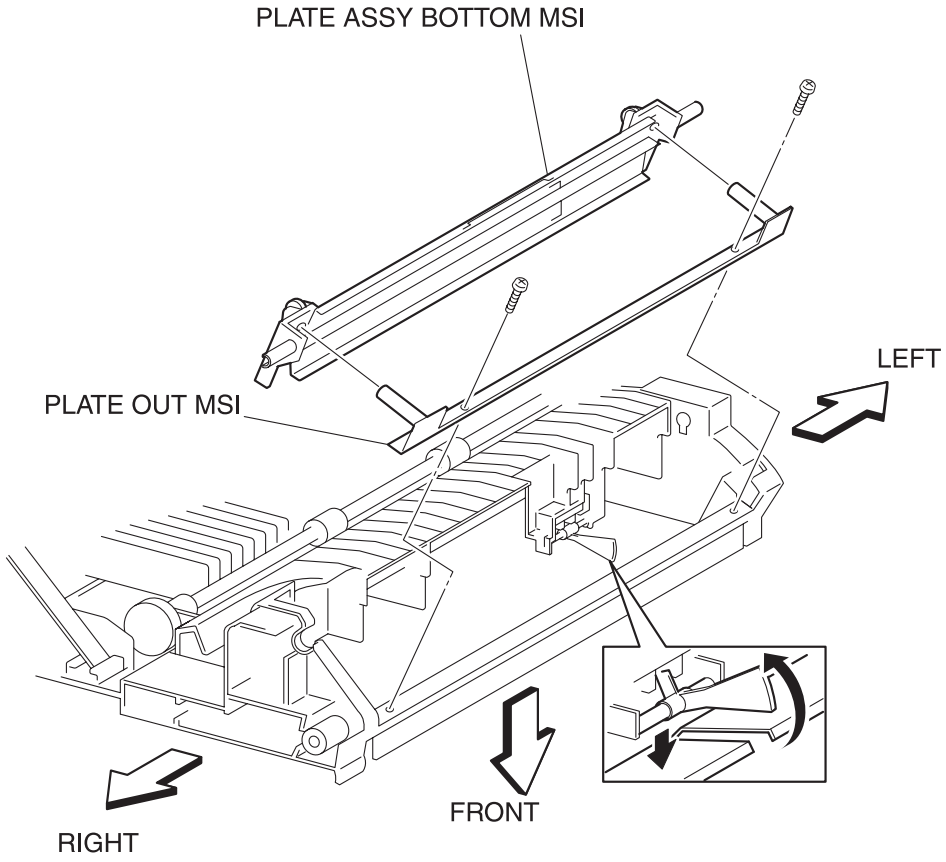

Figure: PLATE ASSY BOTTOM MSI Removal

Removal

1) Remove the FUSER ASSY. (RRP8.1)
2) Remove the COVER TOP MAIN. (RRP1.4)
3) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
4) Remove the COVER MSI. (RRP1.11)
5) Remove the TRAY ASSY BASE. (RRP1.12)
6) Remove the COVER ASSY FRONT. (RRP1.13)
7) Remove the COVER ASSY FRONT IN. (RRP1.10)
8) Remove the CHUTE ASSY EXIT. (RRP7.1)
9) Remove the COVER SIDE L. (RRP1.14)
10) Remove the COVER SIDE R. (RRP1.9)
11) Remove the STRAP. (RRP8.6)
12) Remove the CHUTE ASSY OUT. (RRP6.1)
13) Remove the SOLENOID FEED MSI. (RRP6.2)
14) Remove the SENSOR ASSY MEDIA. (RRP6.15)
15) Remove the SHAFT ASSY ROLL FEED. (RRP6.13)
16) Remove 2 screws securing the PLATE OUT MSI (PL6.1.35) to the CHUTE ASSY OUT (PL6.1.1).

NOTE

In the following steps, shift the actuator of the ACTUATOR MSI (PL6.1.37) from a bore in the PLATE ASSY BOTTOM MSI (PL6.1.42).

17) Remove the PLATE OUT MSI from the CHUTE ASSY OUT together with the PLATE ASSY BOTTOM MSI.
18) Remove the PLATE ASSY BOTTOM MSI from the PLATE OUT MSI.

Replacement

Replace the components in the reverse order of removal.

RRP7. CHUTE ASSY EXIT

RRP7.1 CHUTE ASSY EXIT (PL7.1.1)

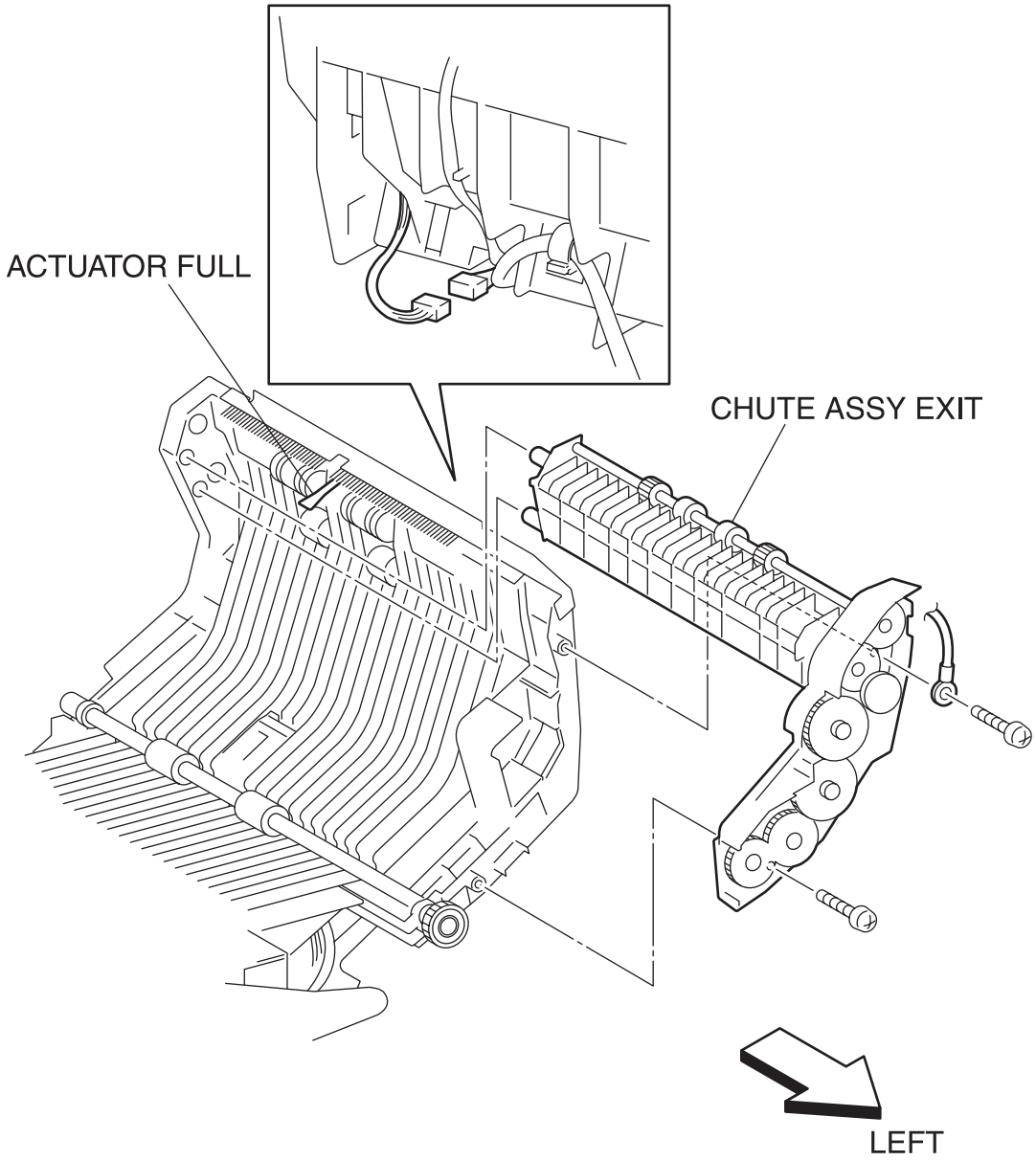

Figure: CHUTE ASSY EXIT Removal

Removal

1) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
2) Remove the COVER MSI. (RRP1.11)
3) Remove the TRAY ASSY BASE. (RRP1.12)
4) Remove the COVER ASSY FRONT. (RRP1.13)
5) Remove the connector (P/J131) of the MOTOR ASSY DUP (PL7.1.8) on the CHUTE ASSY OUT (PL6.1.1).
6) Shift the harness of the MOTOR ASSY DUP (PL7.1.8) to the CHUTE ASSY EXIT side from the CHUTE ASSY OUT.
7) Remove 2 screws securing the CHUTE ASSY EXIT to the CHUTE ASSY OUT.
8) Pull out the CHUTE ASSY EXIT from the left side surface of the CHUTE ASSY OUT.

Replacement

Replace the components in the reverse order of removal.

NOTE

When replacing the CHUTE ASSY EXIT, be careful to avoid the ACTUATOR FULL (PL6.1.5) on the CHUTE ASSY OUT to be inserted into the ROLL EXIT (PL7.1.4).

RRP7.2 ROLL EXIT (PL7.1.4)

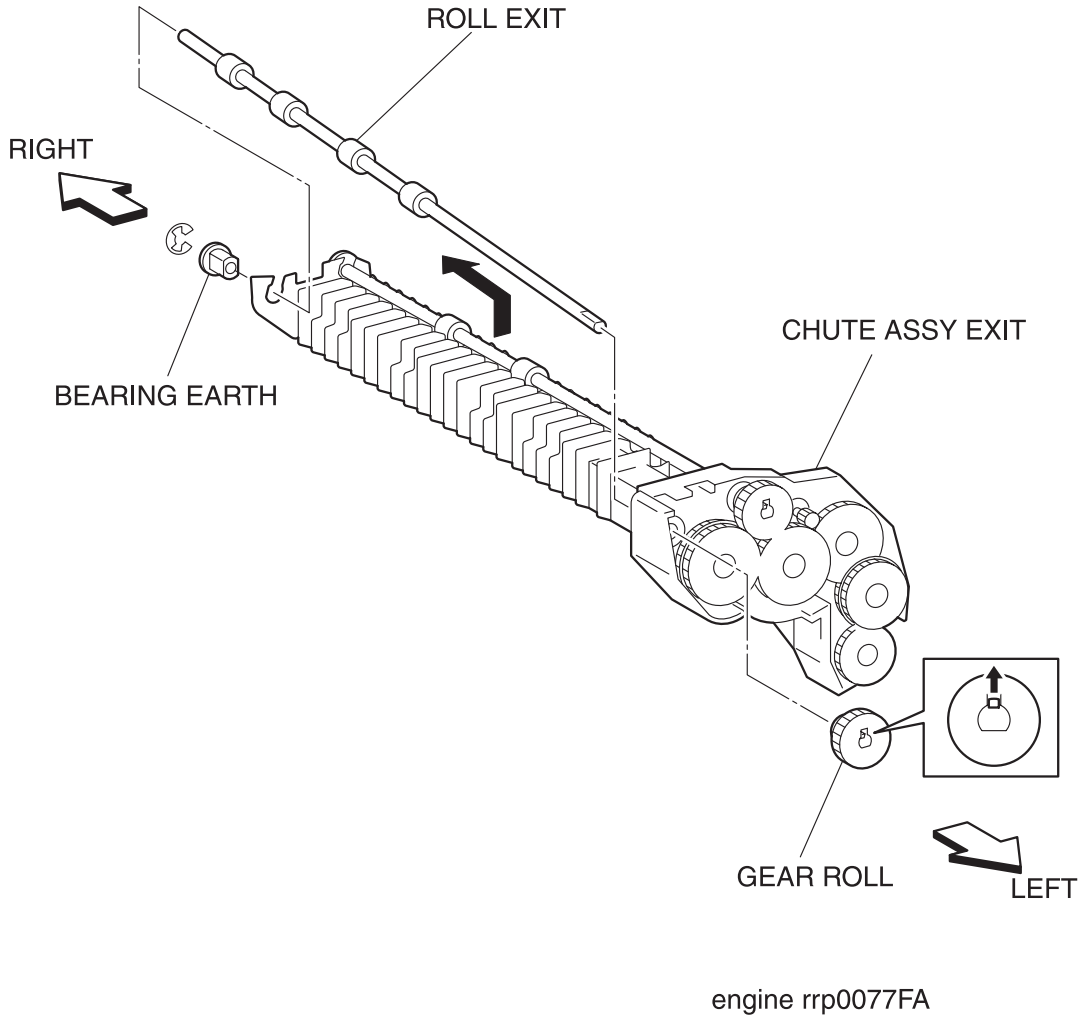

Figure: ROLL EXIT Removal

Removal

1) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
2) Remove the COVER MSI. (RRP1.11)
3) Remove the TRAY ASSY BASE. (RRP1.12)
4) Remove the COVER ASSY FRONT. (RRP1.13)
5) Remove the CHUTE ASSY EXIT. (RRP7.1)
6) Release the hook at 1 position securing the GEAR ROLL to the left shaft of the ROLL EXIT from the CHUTE ASSY EXIT (PL7.1.1).
7) Remove the GEAR ROLL (PL7.1.2) from the left shaft of the ROLL EXIT.
8) Extract the BEARING EARTH (PL7.1.3) from the left shaft of the ROLL EXIT of the CHUTE ASSY EXIT.
9) Remove the E-ring securing the right shaft of the ROLL EXIT to the CHUTE ASSY EXIT.
10) Extract the BEARING (PL7.1.7) from the right shaft of the ROLL EXIT.
11) Raise the right shaft of the ROLL EXIT from the CHUTE ASSY EXIT and pull out the ROLL EXIT right upward.

Replacement

Replace the components in the reverse order of removal.

RRP7.3 ROLL MID (PL7.1.5)

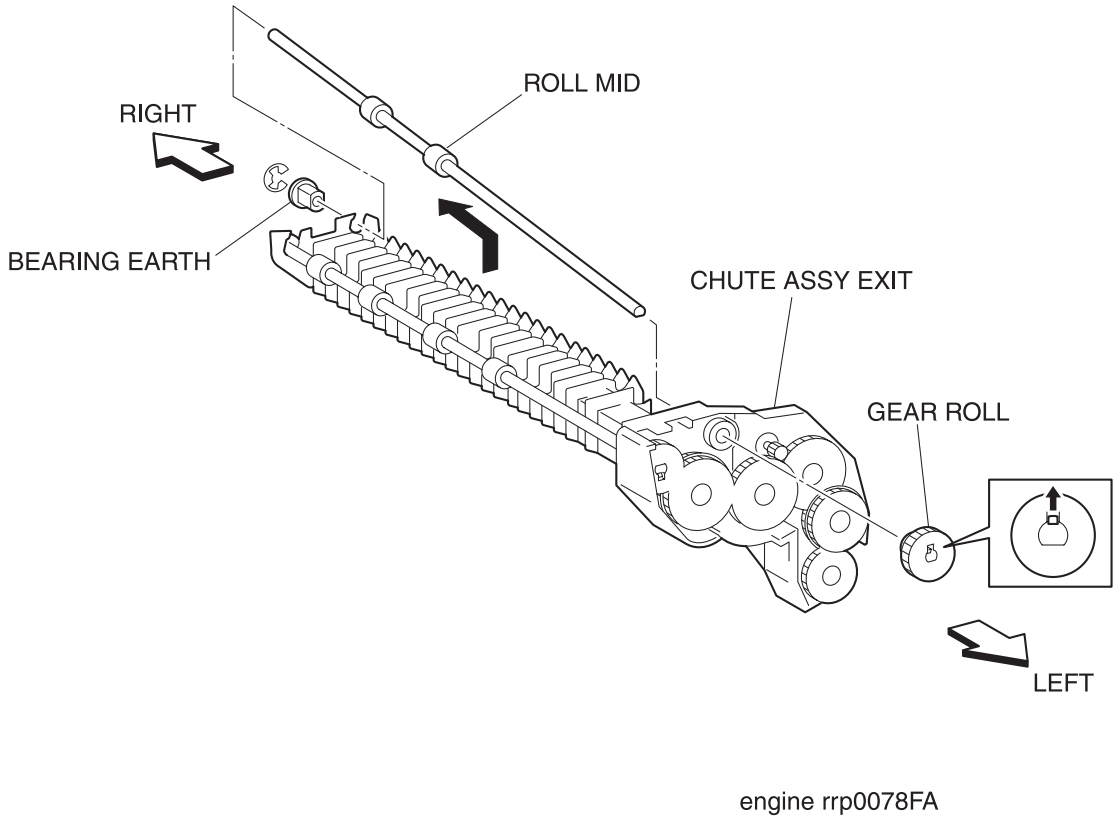

Figure: ROLL MID Removal

Removal

1) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
2) Remove the COVER MSI. (RRP1.11)
3) Remove the TRAY ASSY BASE. (RRP1.12)
4) Remove the COVER ASSY FRONT. (RRP1.13)
5) Remove the CHUTE ASSY EXIT. (RRP7.1)
6) Release the hook at 1 position securing the GEAR ROLL (PL7.1.2) to the left shaft of the ROLL MID from the CHUTE ASSY EXIT (PL7.1.1).
7) Remove the GEAR ROLL from the left shaft of the ROLL MID.
8) Extract the BEARING EARTH (PL7.1.3) from the left shaft of the ROLL MID of the CHUTE ASSY EXIT.
9) Remove the E-ring securing the right shaft of the ROLL MID to the CHUTE ASSY EXIT.
10) Extract the BEARING (PL7.1.7) from the right shaft of the ROLL MID.
11) Raise the right shaft of the ROLL MID from the CHUTE ASSY EXIT and pull out the ROLL EXIT right upward.

Replacement

Replace the components in the reverse order of removal.

RRP7.4 MOTOR ASSY DUP (PL7.1.8)

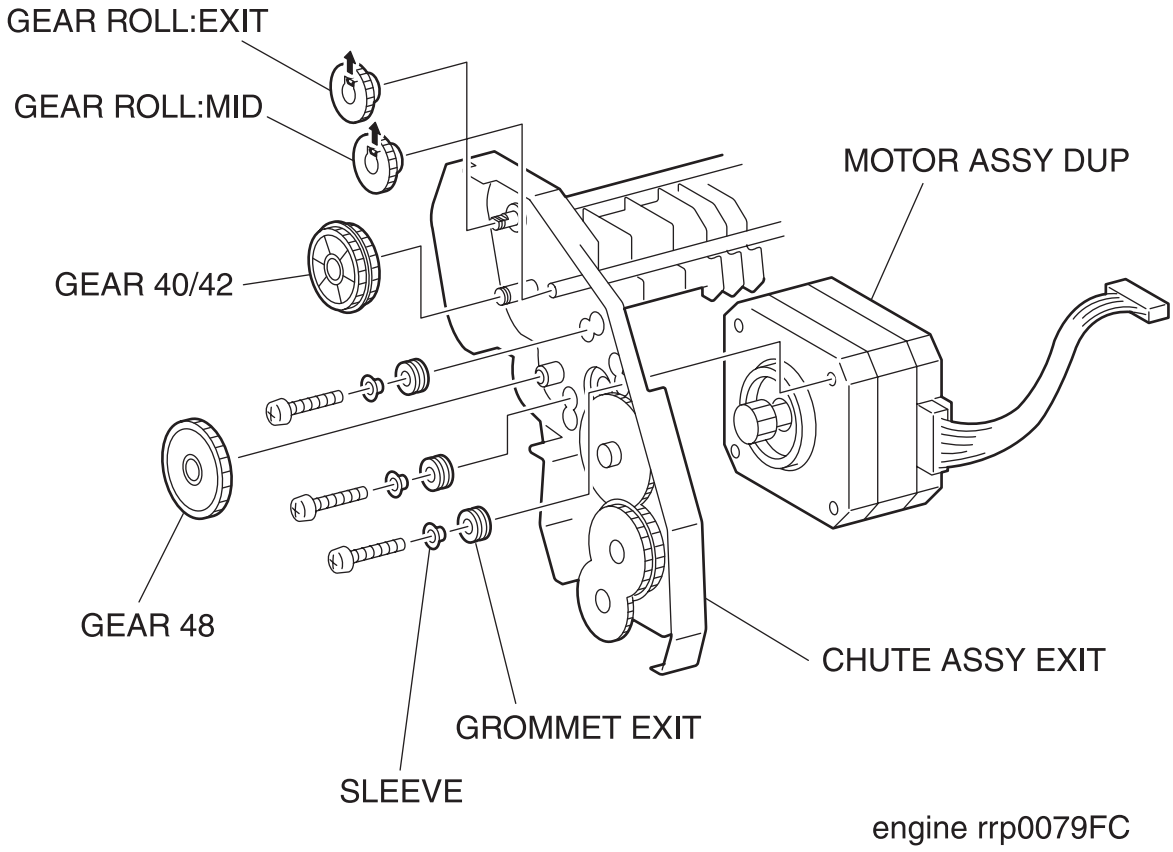

Figure: MOTOR ASSY DUP Removal

Removal

1) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
2) Remove the COVER MSI. (RRP1.11)
3) Remove the TRAY ASSY BASE. (RRP1.12)
4) Remove the COVER ASSY FRONT. (RRP1.13)
5) Remove the CHUTE ASSY EXIT. (RRP7.1)
6) Release the hook at 1 position securing the GEAR ROLL (PL7.1.2) to the left shaft of the ROLL EXIT (PL7.1.4) from the CHUTE ASSY EXIT (PL7.1.1).
7) Remove the GEAR ROLL from the left shaft of the ROLL EXIT.
8) Release the hook at 1 position securing the GEAR ROLL to the left shaft of the ROLL MID (PL7.1.5) from the CHUTE ASSY EXIT.
9) Remove the GEAR ROLL from the left shaft of the ROLL EXIT.
10) Remove the GEAR 40/42 (PL7.1.10) from the left side surface of the CHUTE ASSY EXIT.
11) Remove the GEAR 48 (PL7.1.11) from the left side surface of the CHUTE ASSY EXIT.
12) Remove 3 screws securing the MOTOR ASSY DUP to the CHUTE ASSY EXIT.
13) Remove the MOTOR ASSY DUP from the CHUTE ASSY EXIT.

Replacement

Replace the components in the reverse order of removal.

RRP8. BTR ASSY & FUSER

RRP8.1 FUSER ASSY (PL8.1.1)

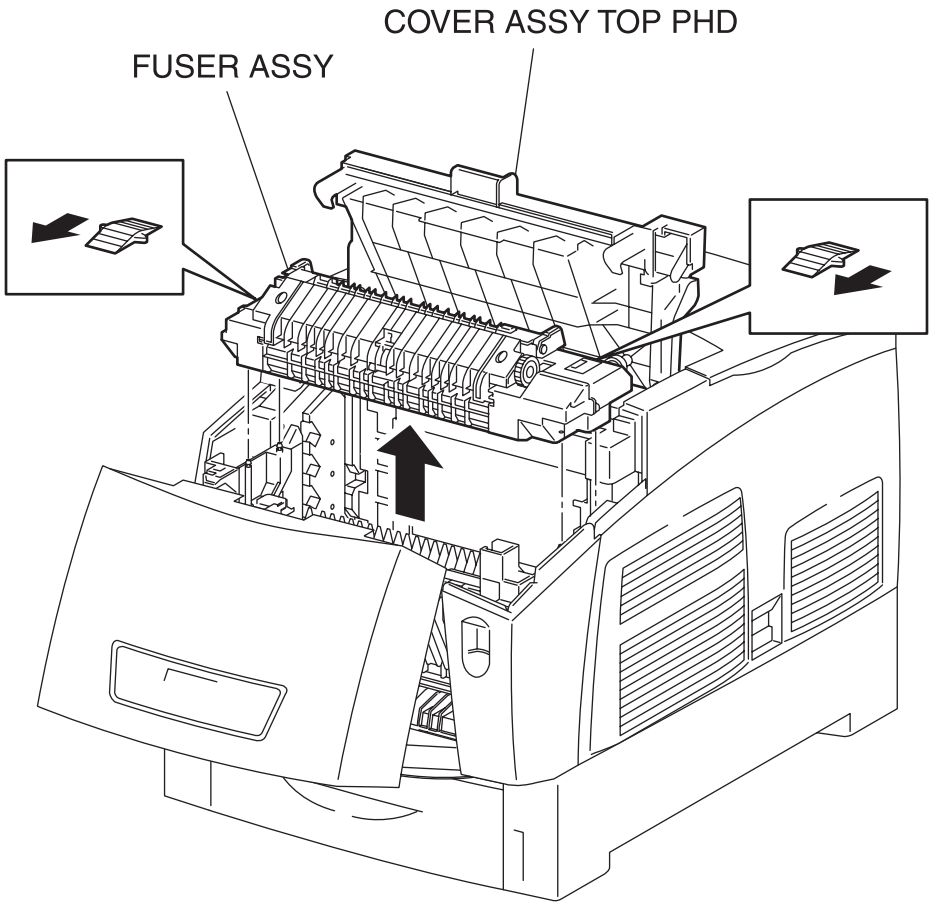

Figure: FUSER ASSY Removal

Removal

FUSER is high temperature after operation. Be careful when working it not to get burning.

1) Release the latch at the part B from the printer and open the CHUTE ASSY OUT. (PL6.1.1.)
2) Open the COVER ASSY TOP PHD (PL1.1.10) from the printer.
3) Remove the FUSER ASSY by operating the FUSER ASSY Lever.

Replacement

Replace the components in the reverse order of removal.

RRP8.2 ROLL ASSY EXIT (REFERENCE ONLY)

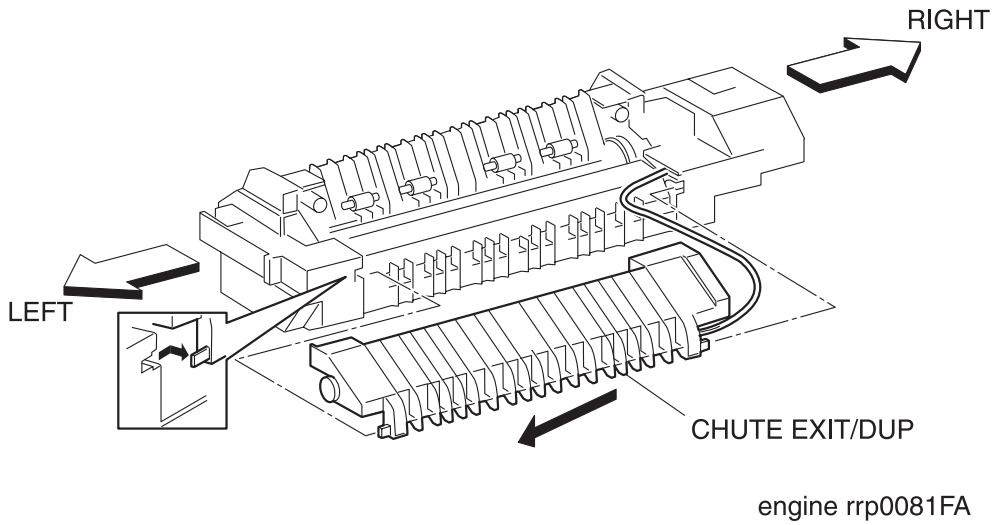

Figure: ROLL ASSY EXIT Removal (1)

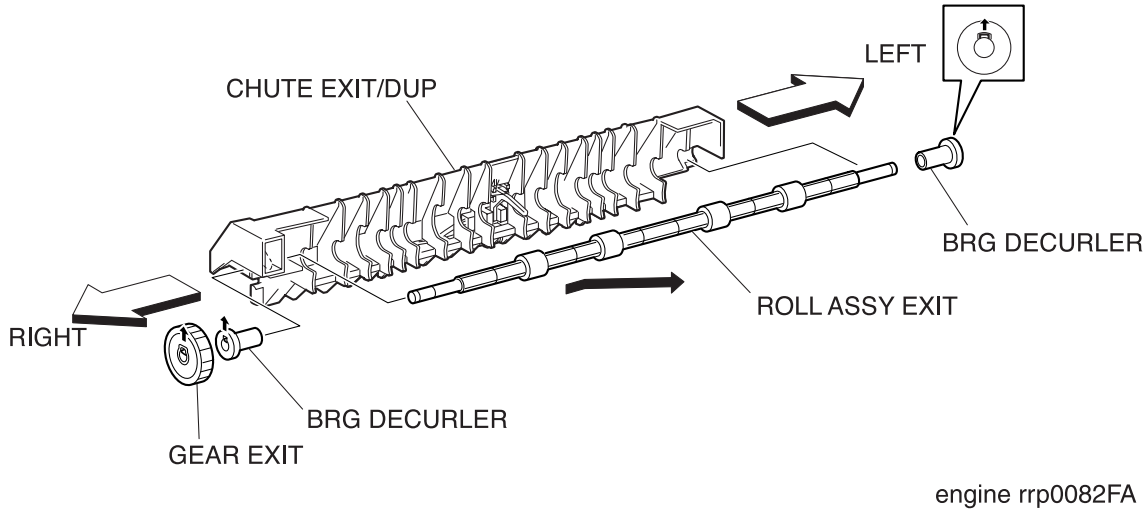

Figure: ROLL ASSY EXIT Removal (2)

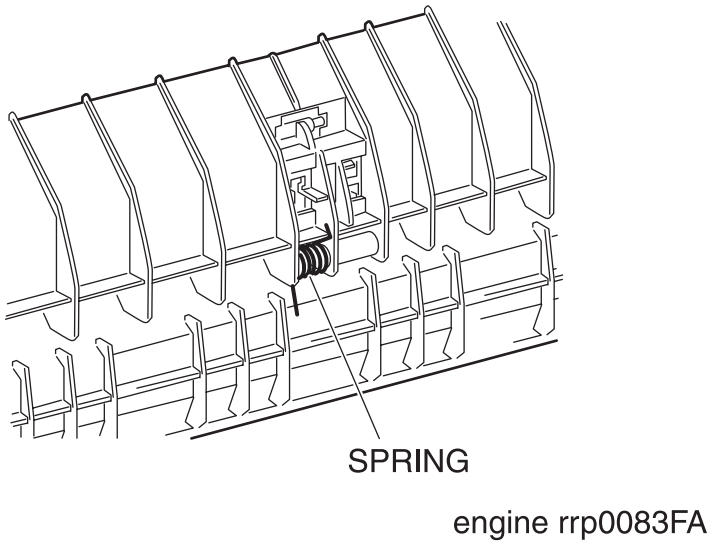

Figure: ROLL ASSY EXIT Replacement

Removal

WARNING

FUSER is high temperature after operation. Be careful when working it not to get burning.

1) Remove the FUSER ASSY. (RRP8.1)
2) Slide the CHUTE EXIT/DUP (REFERENCE ONLY) rightward from the FUSER ASSY (PL8.1.1) and align the left shaft of the CHUTE EXIT/DUP to the through hole of the FUSER ASSY.

NOTE

Do not separate the FUSER ASSY and CHUTE EXIT/DUP too far since they are connected with harness.

3) After extracting the left end of the CHUTE EXIT/DUP from the through hole of the FUSER ASSY, pull out the CHUTE EXIT/DUP leftward from the FUSER ASSY.
4) Release the hook at 1 position securing the ROLL EXIT (REFERENCE ONLY) to the right shaft of ROLL ASSY EXIT, and pull the ROLL EXIT off the shaft.
5) Release a hook each securing the BRG DECURLER (REFERENCE ONLY) from the right and left shafts of the ROLL ASSY EXIT and pull out the BRG DECURLER from the right and left shaft.
6) From the CHUTE EXIT/DUP, shift the left end of the ROLL ASSY EXIT from the bearing and pull out the ROLL ASSY EXIT left upward.

Replacement

Replace the components in the reverse order of removal.

NOTE

When installing the CHUTE EXIT/DUP to the FUSER ASSY, be careful not to allow the spring at the center of the CHUTE EXIT/DUP to be inserted in the FUSER ASSY.

RRP8.3 ACTUATOR EXIT (PL8.1.7)

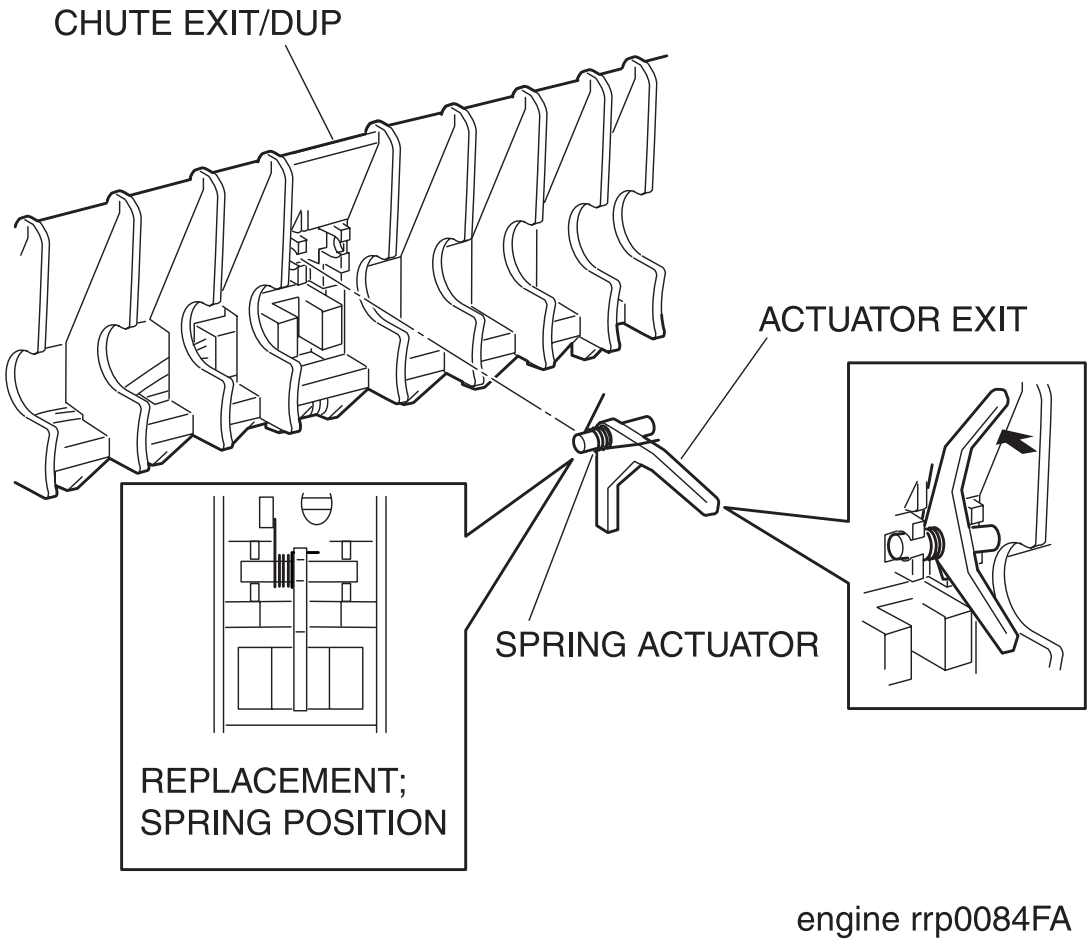

Figure: ACTUATOR EXIT Removal

Removal

FUSER is high temperature after operation. Be careful when working it not to get burning.

1) Remove the FUSER ASSY. (RRP8.1)
2) Remove the ROLL ASSY EXIT. (RRP8.2)
3) Holding the actuator of the ACTUATOR EXIT from the CHUTE EXIT/DUP of the FUSER ASSY, pull down the ACTUATOR EXIT rightward an extract the left shaft of the ACTUATOR EXIT.
4) Pull out the ACTUATOR EXIT from the CHUTE EXIT/DUP rightward together with the SPRING ACTUATOR (PL8.1.8).
5) Remove the SPRING ACTUATOR from the ACTUATOR EXIT.

Replacement

Replace the components in the reverse order of removal.

RRP8.4 BTR PKG 72 (PL8.1.12)

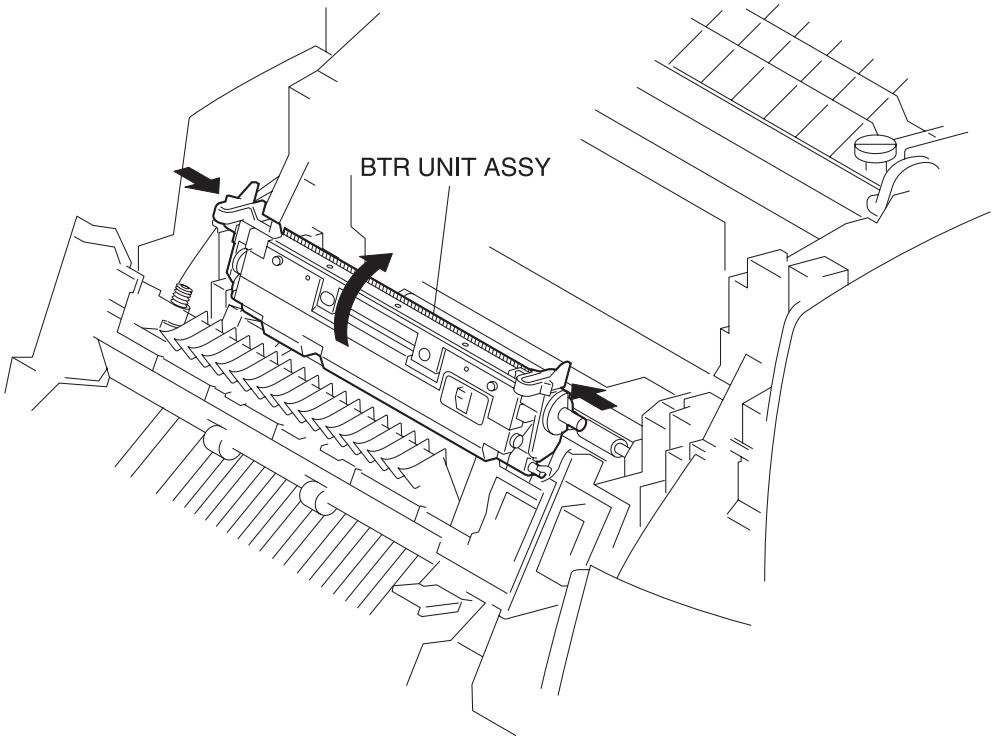

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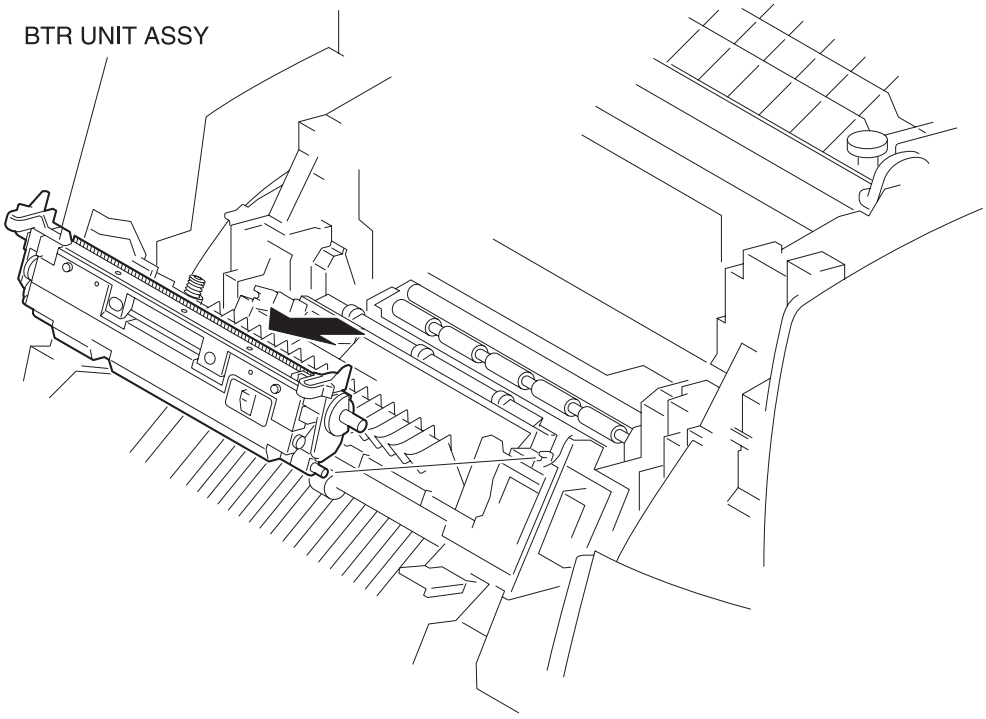
Figure: BTR UNIT ASSY Removal (1)



engine rrp0087FA

Figure: BTR UNIT ASSY Removal (2)

Removal

1) Release the latch at A from the printer and open the CHUTE ASSY IN (PL5.1.1).
2) Holding the right and left knobs securing the BRT PKG 72 (PL8.1.12) to the CHUTE ASSY IN of the printer, unlock and rotate the BTR UNIT ASSY rearward.
3) Extract the BTR UNIT ASSY toward the front from the CHUTE ASSY IN and remove.

Replacement

Replace the components in the reverse order of removal.

RRP8.5 STRAP (PL8.1.13)

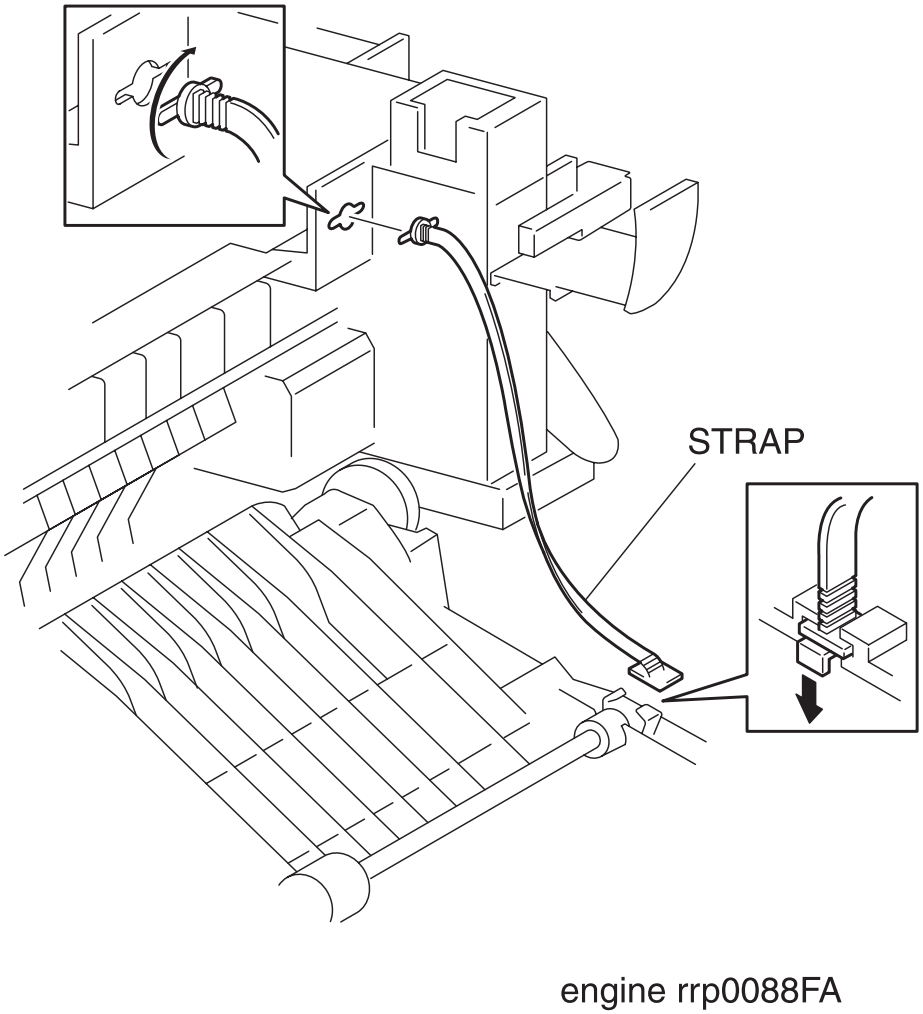


Figure: STRAP Removal

Removal

1) Release the latch at B from the printer and open the CHUTE ASSY OUT (PL6.1.1).
2) Release hooks that secure the bottom portion of STRAP, and slide the bottom portion of STRAP toward the right to remove from the CHUTE ASSY OUT.
3) Turning the top of STRAP secured to the upper right of the CHUTE ASSY IN (PL5.1.1), meet a convex portion with the key hole in the CHUTE ASSY IN and pull out the top of STRAP to remove the STRAP.

Replacement

Replace the components in the reverse order of removal.

RRP9. XEROGRAPHICS

RRP9.1 ROS ASSY (PL9.1.1)

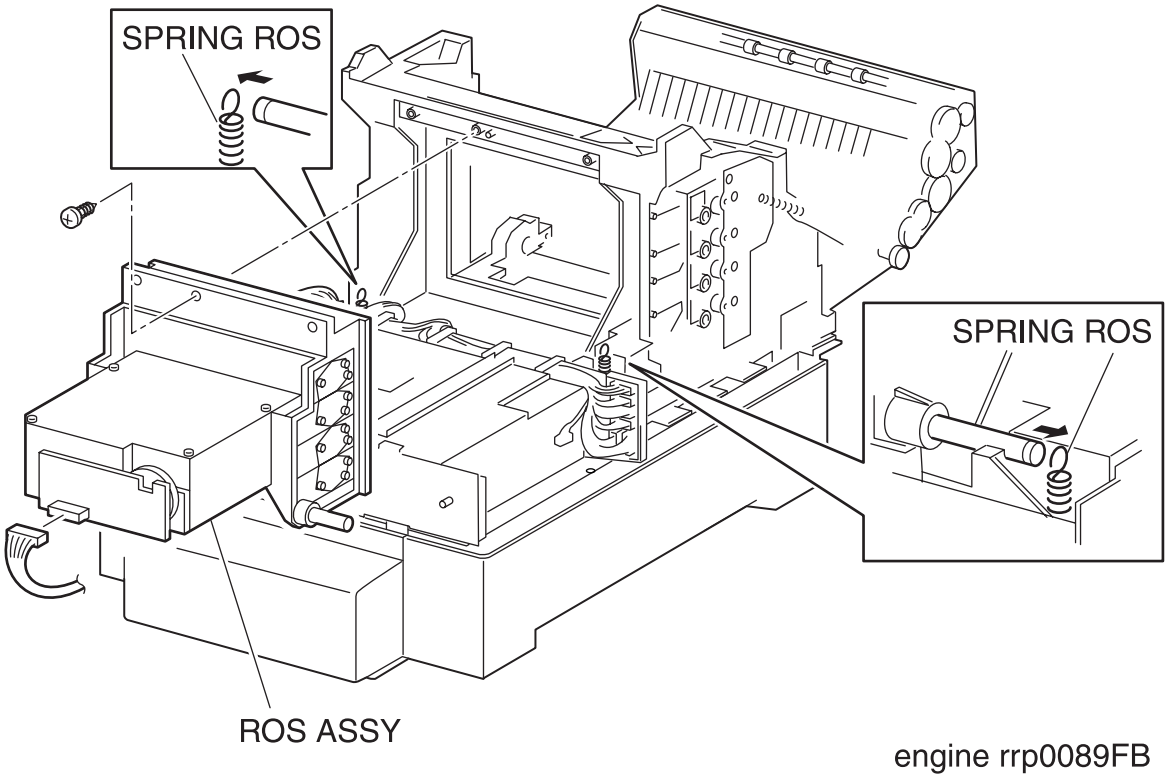


Figure: ROS ASSY Removal

Removal

1) Pull out the CASSETTE from the printer.
2) Remove the COVER TOP MAIN. (RRP1.4)
3) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
4) Remove the COVER ASSY FRONT. (RRP1.13)
5) Remove the COVER ASSY FRONT IN. (RRP1.10)
6) Remove the COVER SIDE L. (RRP1.14)
7) Remove the COVER SIDE R. (RRP1.9)
8) Remove the HOLDER ASSY TONER HBN UNIT. (RRP10.1)
9) Remove the LVPS. (RRP12.4)
10) Remove the connector (P/J151) on the ROS ASSY.
11) Release the hook of the SPRING ROS (PL9.1.2) securing the right and left shafts of the ROS ASSY from the printer.
12) Remove 1 screw securing the ROS ASSY to the printer.
13) Remove the ROS ASSY from the printer.

Replacement

1) Align the ROS ASSY with its replace position to the printer.
2) Secure the left and right shafts of the ROS ASSY to the printer with the hooks at the top of SPRING ROS (PL9.1.2).
3) Secure the ROS ASSY to the printer with 1 screw.
4) Replace the connector (P/J151) to the ROS ASSY.
5) Replace the LVPS. (RRP12.4)
6) Replace the HOLDER ASSY TONER HBN UNIT. (RRP10.1)
7) Replace the COVER SIDE R. (RRP1.9)
8) Replace the COVER SIDE L. (RRP1.14)
9) Replace the COVER ASSY FRONT IN. (RRP1.10)
10) Replace the COVER ASSY FRONT. (RRP1.13)
11) Replace the COVER ASSY FRONT HEAD. (RRP1.2)
12) Replace the COVER TOP MAIN. (RRP1.4)
13) Replace the CASSETTE to the printer.

RRP9.2 HSG ASSY BIAS (PL9.1.4)

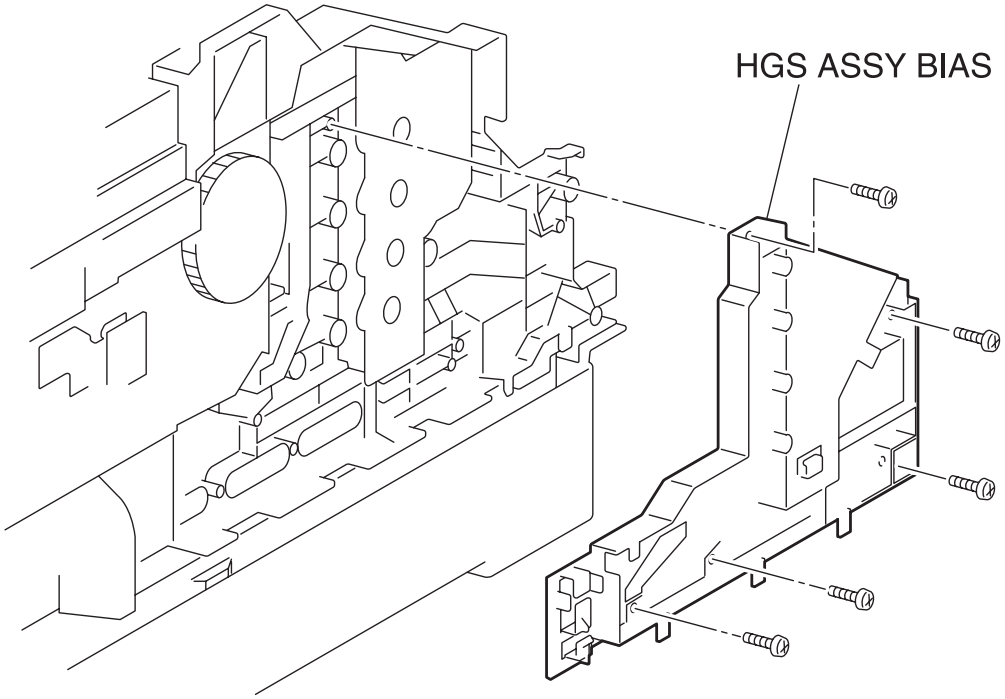


Figure: HSG ASSY BIAS Removal

Removal

1) Pull out the CASSETTE from the printer.
2) Remove the COVER TOP MAIN. (RRP1.4)
3) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
4) Remove the COVER ASSY FRONT. (RRP1.13)
5) Remove the COVER ASSY FRONT IN. (RRP1.10)
6) Remove the COVER SIDE L. (RRP1.14)
7) Remove the LINK:L. (RRP1.7)
8) Remove 5 screws securing the HSG ASSY BIAS (PL9.1.4) to the left side surface of the printer.
9) Remove the HSG ASSY BIAS from the printer.

Replacement

Replace the components in the reverse order of removal.

RRP9.3 CHUTE ASSY REGI (PL9.1.6)

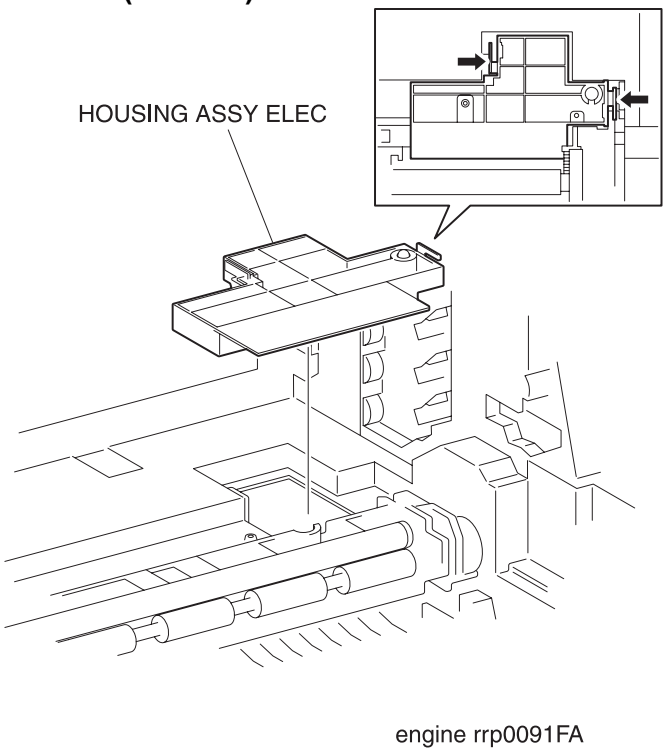


Figure: CHUTE ASSY REGI Removal (1)

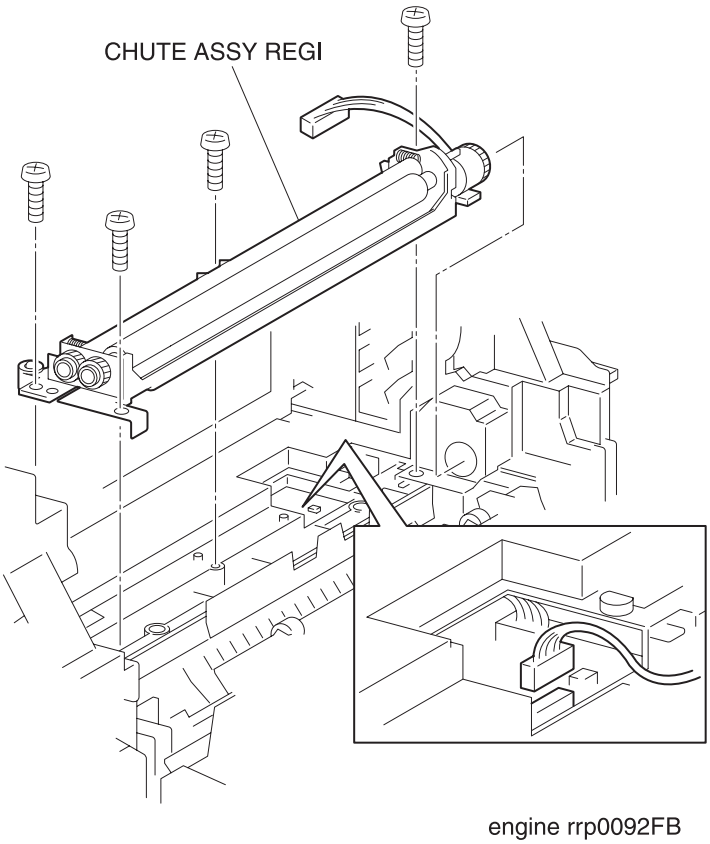


Figure: CHUTE ASSY REGI Removal (2)

Removal

1) Release the latch at A from the printer and open the CHUTE ASSY IN (PL5.1.1).
2) Release the hooks at 2 positions securing the HOUSING ASSY ELEC (PL9.1.11) to the printer and remove the HOUSING ASSY ELEC upward.
3) Remove the connector (P/J18) of the CHUTE ASSY REGI from the printer.

NOTE

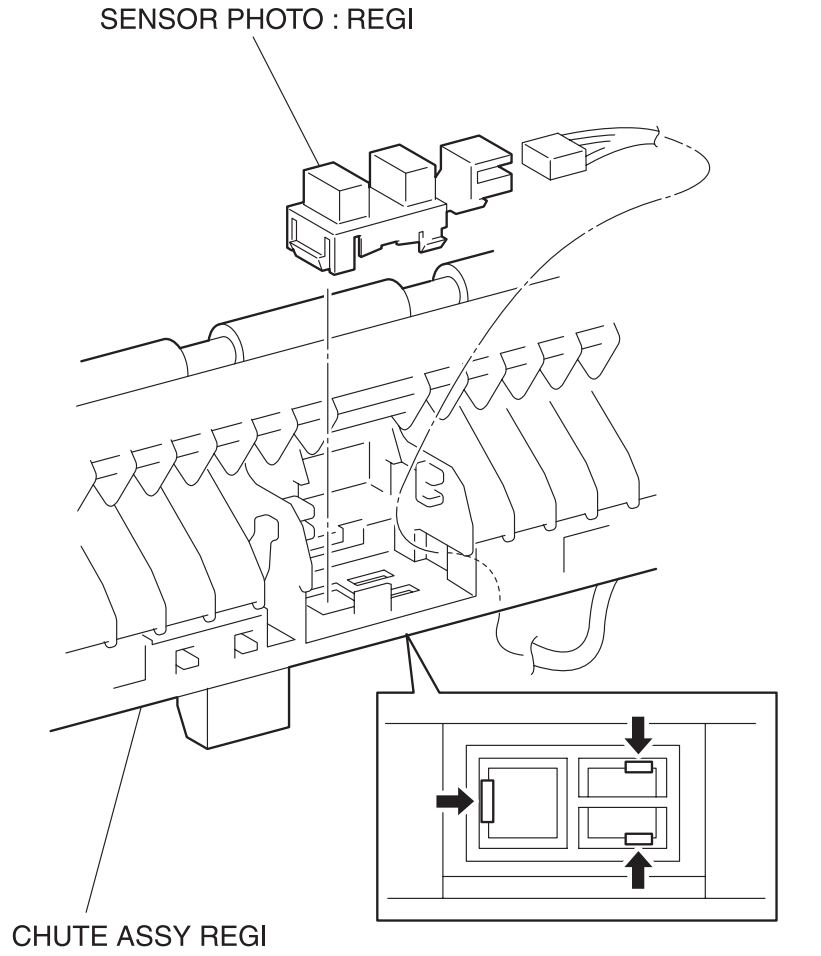
Remove the connector (P/J32) of the OHP SENSOR, if installed.

4) Remove 4 screws securing the CHUTE ASSY REGI to the printer.
5) Raise the left end of the CHUTE ASSY REGI and pull out the CHUTE ASSY REGI leftward from the printer.

Replacement

Replace the components in the reverse order of removal.

RRP9.4 SENSOR PHOTO:REGI (PL9.1.8)



engine rrp0094FA

Figure: SENSOR PHOTO:REGI Removal

Removal

1) Remove the CHUTE ASSY REGI. (RRP9.3)
2) Remove the ACTUATOR REGI. (RRP9.5)
3) Remove the connector (P/J181) on the SENSOR PHOTO:REGI from the CHUTE ASSY REGI (PL9.1.6).
4) Release the hooks at 3 positions securing the SENSOR PHOTO:REGI to the SHUTE ASSY REGI.
5) Remove the SENSOR PHOTO:REGI from the CHUTE ASSY REGI.

Replacement

Replace the components in the reverse order of removal.

RRP9.5 ACTUATOR REGI (PL9.1.9)

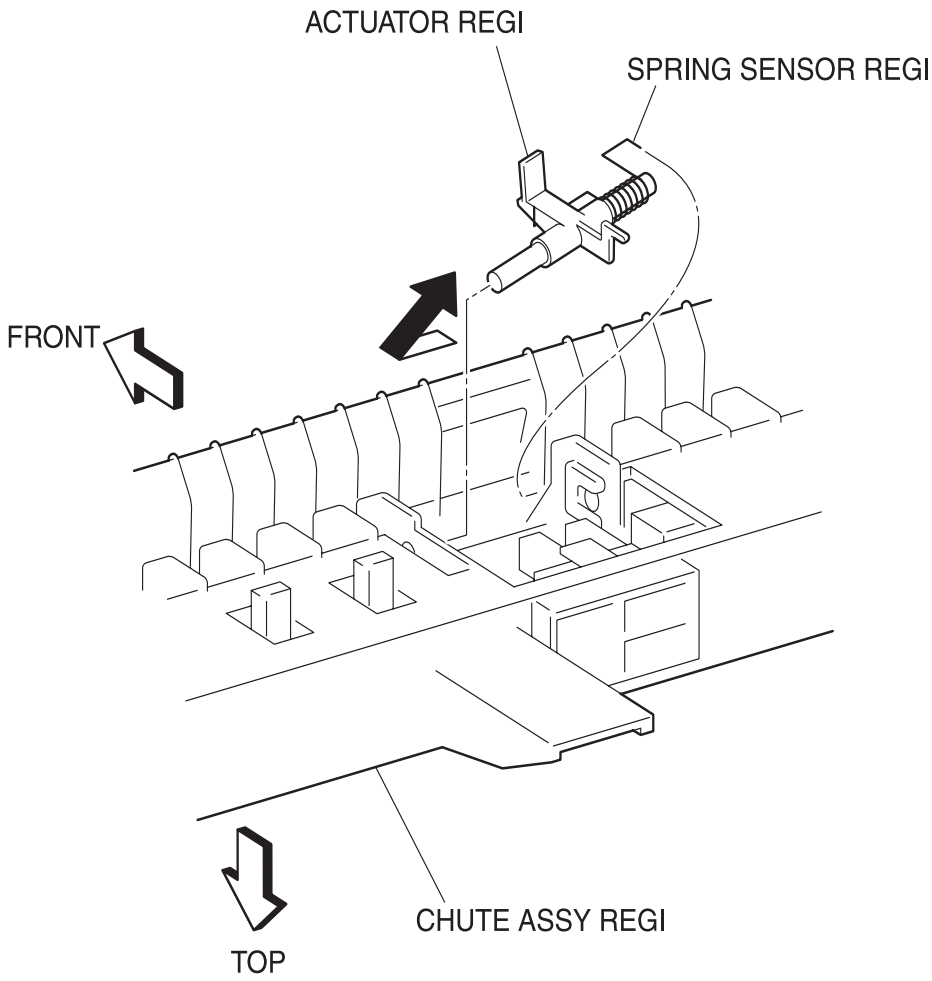


Figure: ACTUATOR REGI Removal

Removal

1) Remove the CHUTE ASSY REGI. (RRP9.3)
2) Holding the shielding portion of the ACTUATOR REGI from the CHUTE ASSY REGI (PL9.1.6), move the ACTUATOR REGI leftward and extract the right shaft of the ACTUATOR REGI from the bearing of the CHUTE ASSY REGI.
3) Pull out the ACTUATOR REGI from the CHUTE ASSY REGI together with the SPRING SENSOR REGI (PL9.1.10).
4) Remove the SPRING SENSOR REGI from the ACTUATOR REGI.

Replacement

Replace the components in the reverse order of removal.

RRP9.6 SENSOR PHOTO: OHP SENSOR (PL9.1.8)

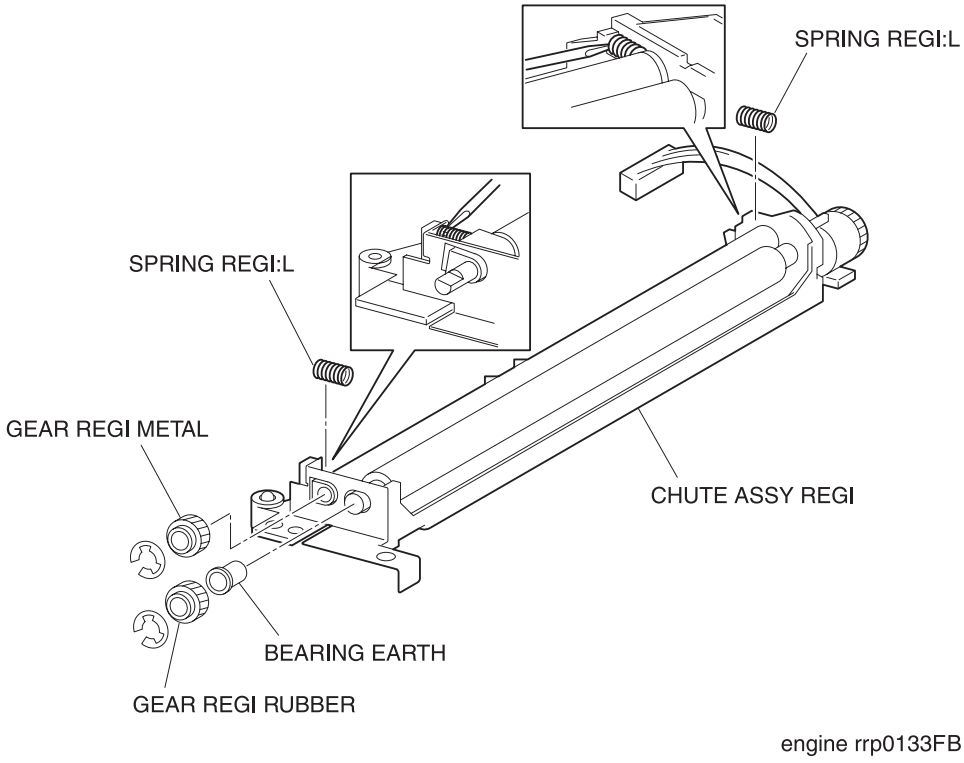


Figure: OHP SENSOR ASSY Removal (1)

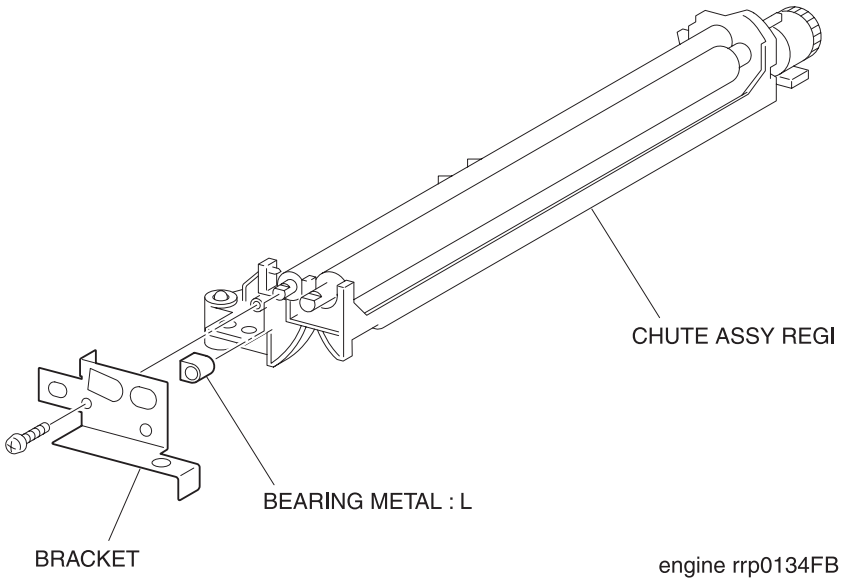


Figure: OHP SENSOR ASSY Removal (2)

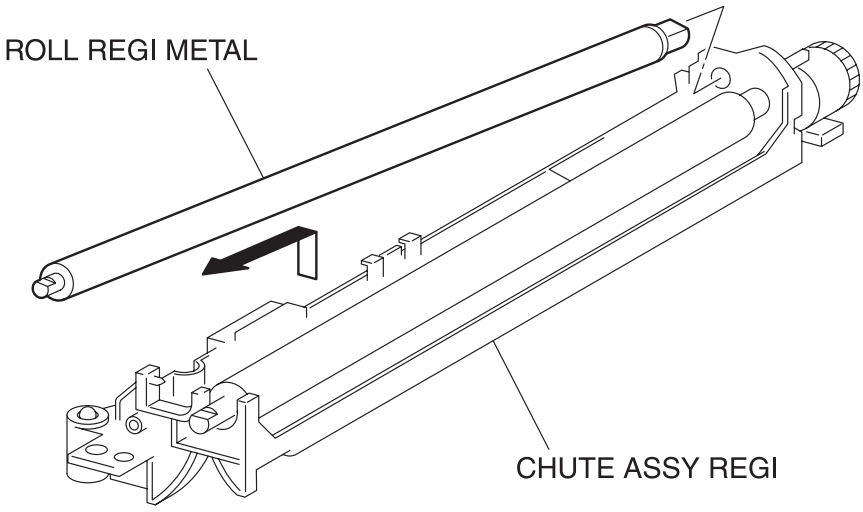


Figure: OHP SENSOR ASSY Removal (3)

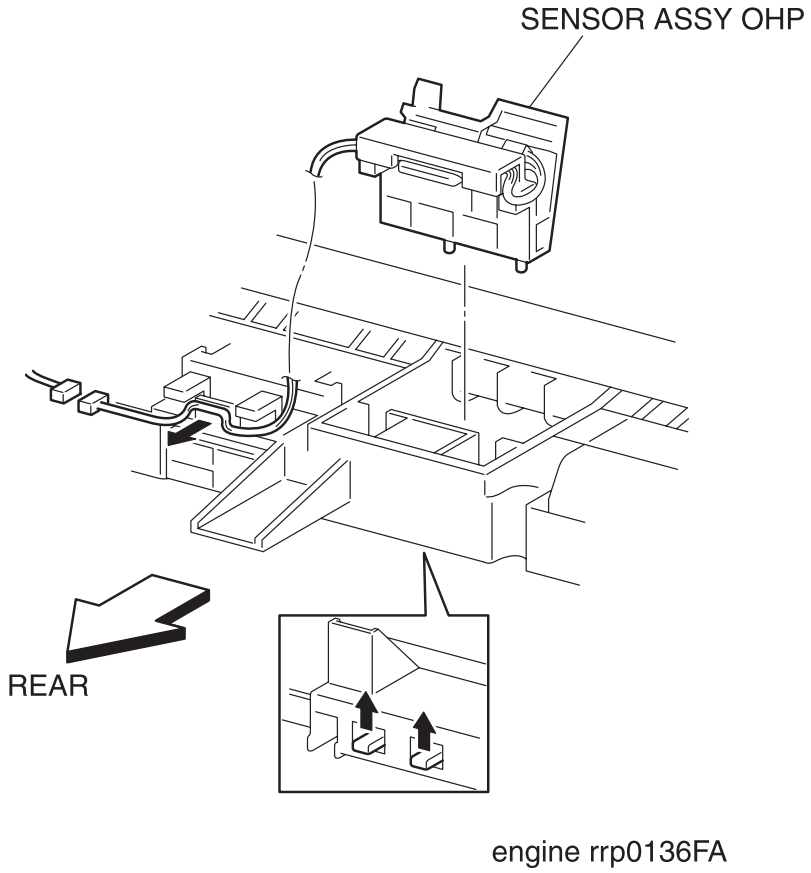


Figure: OHP SENSOR ASSY Removal (4)

Removal

1) Remove the CHUTE ASSY REGI. (RRP9.3)
2) Remove an E-ring that secures the GEAR REGI METAL from the CHUTE ASSY REGI (PL9.1.6), and pull out the GEAR REGI METAL of the left shaft of the ROLL REGI METAL.
3) Remove an E-ring that secures the GEAR REGI RUBBER from the CHUTE ASSY REGI, and pull out the GEAR REGI RUBBER of the left shaft of the ROLL REGI RUBBER.
4) Pull out the BEARING EARTH that secures the left shaft of the ROLL REGI RUBBER on the CHUTE ASSY REGI.

NOTE

In the following steps, take care not to lose the SPRING REGI:R and SPRING REGI:L as they will spring.

5) Remove the SPRING REGI:L from the right side of CHUTE ASSY REGI using a mini screwdriver.
6) From the left side surface of CHUTE ASSY REGI, remove a screw that secures the BRACKET ASSY.
7) Pull out the BEARING METAL L (black) that secures the left shaft of ROLL REGI METAL on the CHUTE ASSY REGI.
8) Raising the left shaft of ROLL REGI METAL, pull out the ROLL REGI METAL together with the BEARING METAL R (white) on the right shaft from the CHUTE ASSY REGI.
9) Release the hook at 2 position on the bottom of CHUTE ASSY REGI that secure the OHP SENSOR ASSY from the CHUTE ASSY REGI.
10) Remove the OHP SENSOR ASSY from the CHUTE ASSY REGI.

Replacement

Replace the components in the reverse order of removal.

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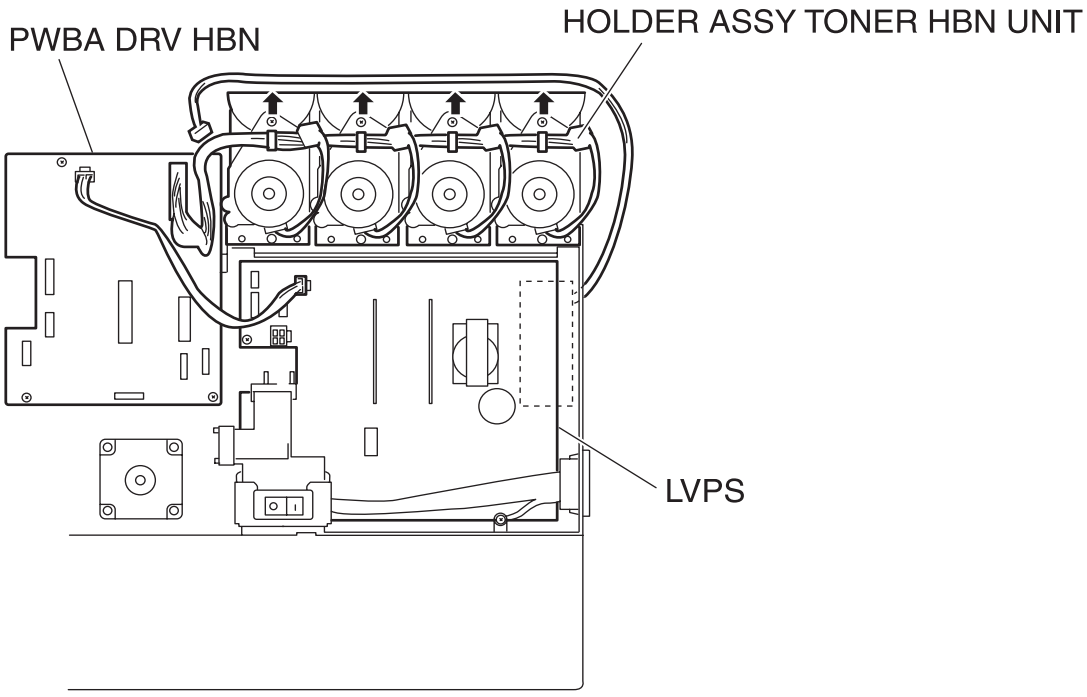
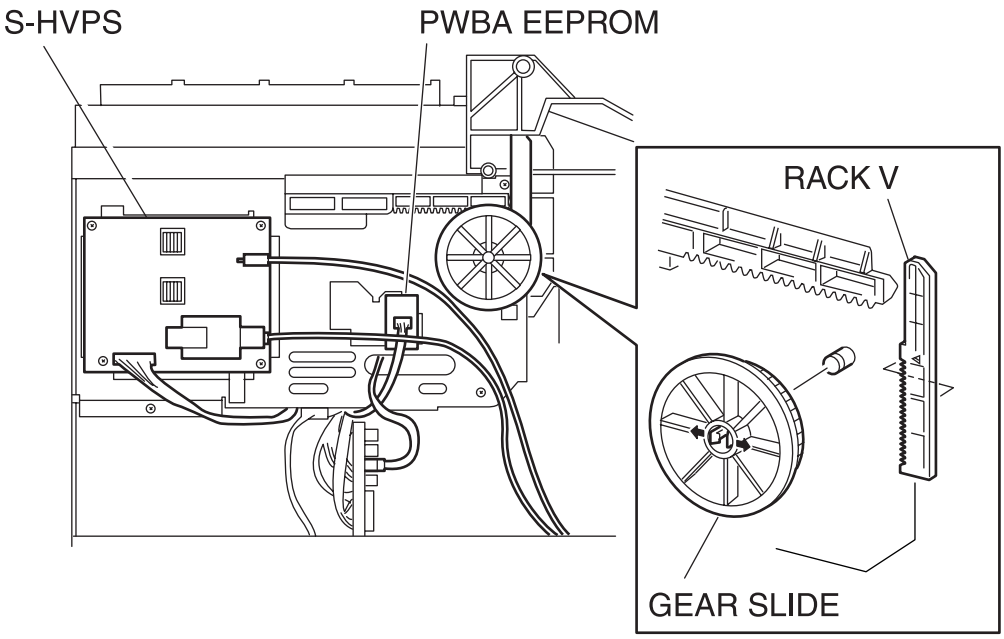
RRP10.TCRU ASSY

RRP10.1 HOLDER ASSY TONER HBN UNIT (REFERENCE ONLY)



engine rrp0100FC

Figure: HOLDER ASSY TONER HBN UNIT Removal (1)



engine rrp0101FA

Figure: HOLDER ASSY TONER HBN UNIT Removal (2)

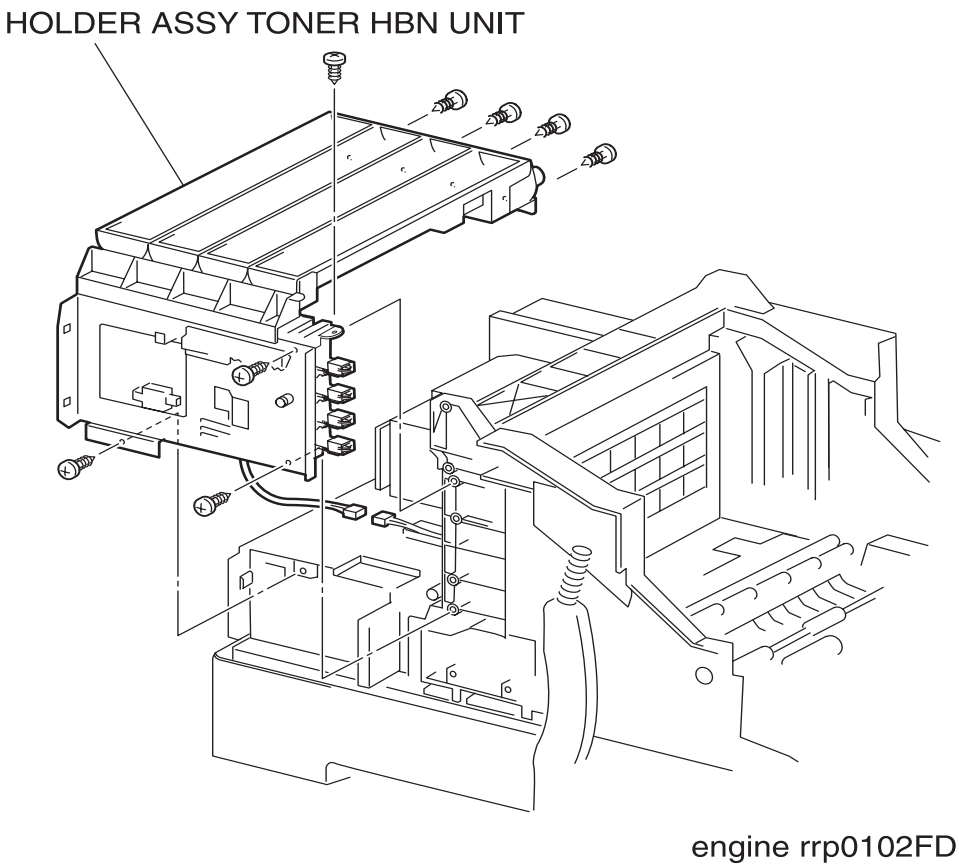


Figure: HOLDER ASSY TONER HBN UNIT Removal (3)

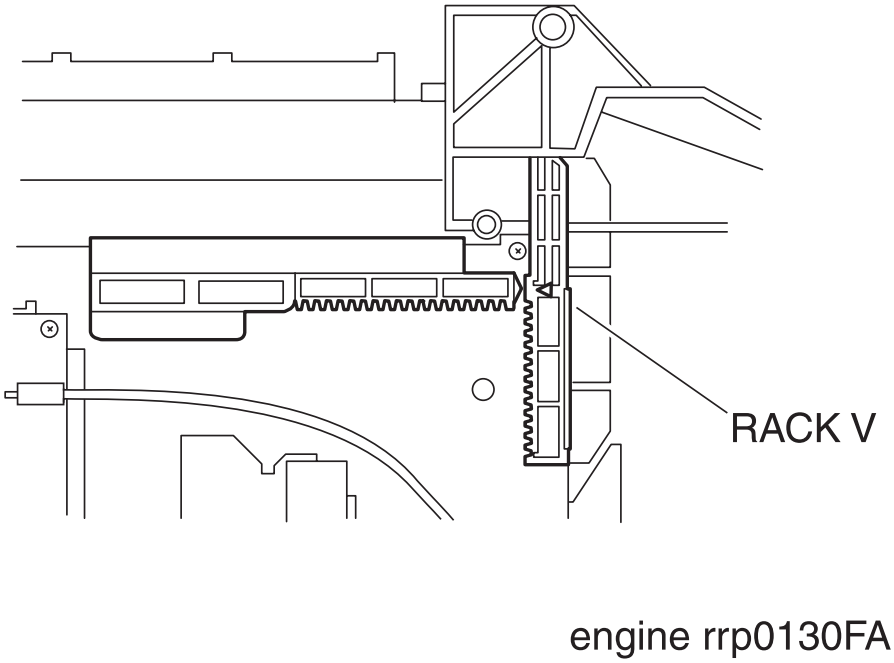


Figure: HOLDER ASSY TONER HBN UNIT Replacement

Removal

NOTE **When removing the HOLDER ASSY TONER HBN UNIT, remove the toner deposit on the HOLDER ASSY TONER HBN with a vacuum cleaner or the like before starting its removal process.**

NOTE **When removing toner deposits from the HOLDER ASSY TONER HBN with a vacuum cleaner, attach a ground between the vacuum cleaner and the engine chassis to avoid static discharge.**

NOTE **When removing the toner deposit on the HOLDER ASSY, be careful not to allow the toner to fly to the sensors on the HOLDER ASSY TONER HBN by the static electricity.**

NOTE **Do not touch the sensor face.**

1) Remove the FUSER ASSY. (RRP8.1)
2) Remove the BTR UNIT ASSY. (RRP8.4)
3) Remove the COVER TOP MAIN. (RRP1.4)
4) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
5) Remove the COVER MSI. (RRP1.11)
6) Remove the TRAY ASSY BASE. (RRP1.12)
7) Remove the COVER ASSY FRONT. (RRP1.13)
8) Remove the COVER ASSY FRONT IN. (RRP1.10)
9) Remove the COVER SIDE L. (RRP1.14)
10) Remove the COVER SIDE R. (RRP1.9)
11) Remove the COVER REAR. (RRP1.6)
12) Remove the connector (P/J166) of FAN REAR (PL12.1.2) on the LVPS (PL12.1.10) from the right side surface of the printer.
13) Shift the harness (P/J166) of the FAN REAR from the hook of the HOLDER ASSY TONER HBN(PL10.1.1, 2, 3, 4) on the right side surface of the printer.
14) Remove the connector (P/J51) on the PWBA DRV HBN (PL12.1.12) from the right side surface of the printer.
15) Remove the connector (P/J144) on the PWBA EFPROM STD (PL10.1.14) on the left side surface of the printer.
16) Remove the connector (P/J5020), connector (P/J5030), and connector (P/J5011) on the S-HVPS (PL10.1.15) on the left side surface of the printer.
17) From the printer, release the harness of the connector (P/J5011) from the clamp.
18) Remove the connector (P/J3411) of HARNESS ASSY RFID2 (PL10.1.19) from the backside of printer.
19) Release the hooks at 2 positions securing the GEAR SLIDE to the left side surface of the printer.
20) Remove the GEAR SLIDE from the printer.
21) Remove the RACK V from the printer.
22) Remove 8 screws securing the HOLDER ASSY TONER HBN UNIT to the printer.
23) Remove the HOLDER ASSY TONER HBN UNIT from the printer.

Replacement

Replace the components in the reverse order of removal.

NOTE

In replacing the GEAR SLIDE, meet the leading edge of gear rail on the left side with the vertex of a triangle mark on the RACK V.

NOTE

Execute the following diagnosis after having exchanged HOLDER ASSY TONER HBN UNIT.

2.7.11 Holder Toner Assy (Chapter 2 Operation of Diagnostic)

RRP10.2 HOLDER ASSY TONER HBN Y (PL10.1.1)

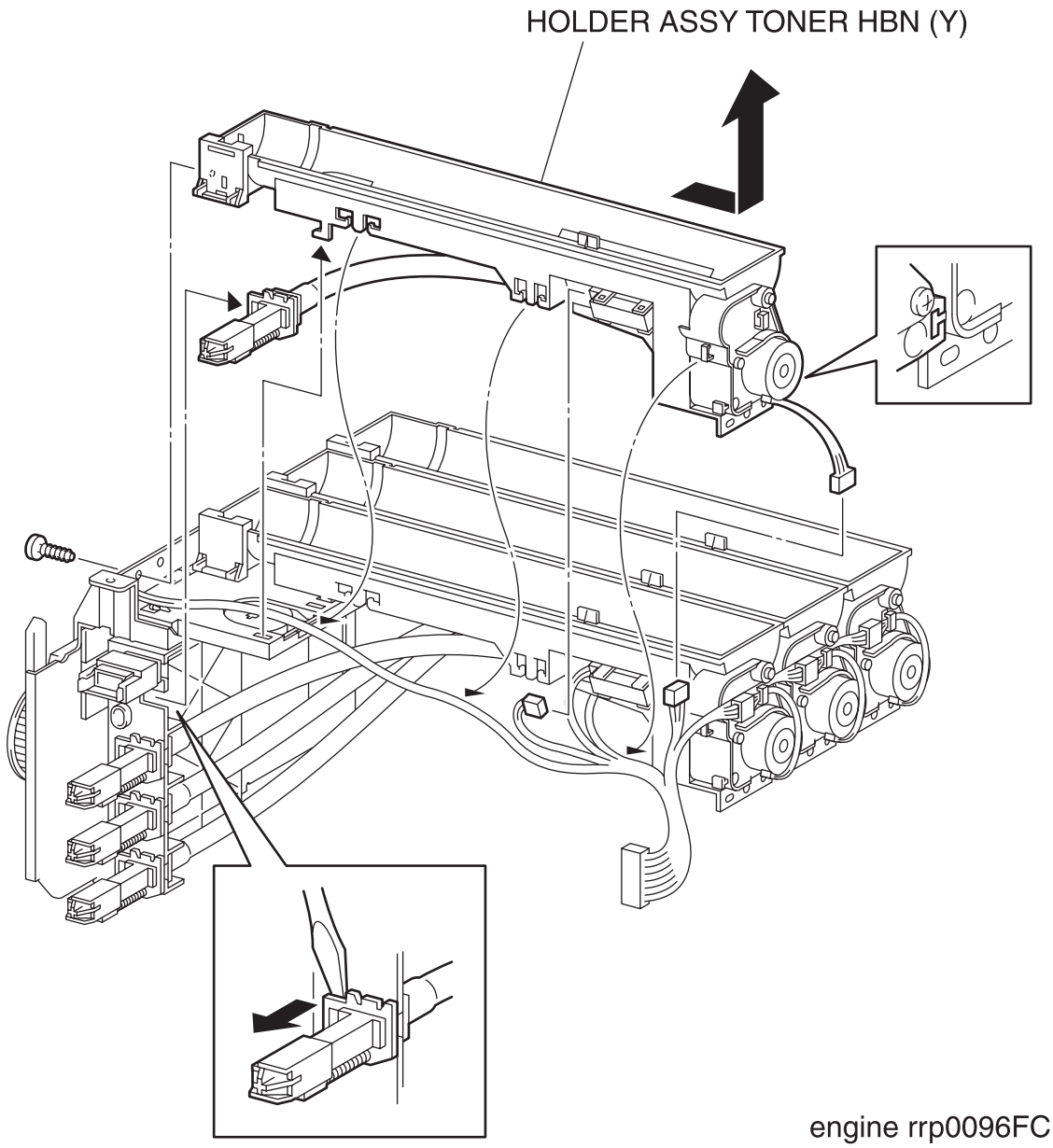


Figure: HOLDER ASSY TONER HBNY Removal

Removal

1) Remove the FUSER ASSY. (RRP8.1)
2) Remove the BTR UNIT ASSY. (RRP8.5)
3) Remove the COVER TOP MAIN. (RRP1.4)
4) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
5) Remove the COVER MSI. (RRP1.11)
6) Remove the TRAY ASSY BASE. (RRP1.12)
7) Remove the COVER ASSY FRONT. (RRP1.13)
8) Remove the COVER ASSY FRONT IN. (RRP1.10)
9) Remove the COVER SIDE L. (RRP1.14)
10) Remove the COVER SIDE R. (RRP1.9)
11) Remove the HOLDER ASSY TONER HBN UNIT. (RRP10.1)
12) From the HOLDER ASSY TONER HBN UNIT, release the hook securing the toner discharging unit of the HOLDER ASSY TONER HBNY on the PLATE ASSY DISPENSER L (PL10.1.13) with a mini screwdriver.
13) From the PLATE ASSY DISPENSER, pull out the toner discharging unit on the HOLDER ASSY TONER HBN Y rightward.
14) Extract the connector (P/J511) of the motor from the right side surface of the HOLDER ASSY TONER HBNY.
15) Disconnect the connector (P/J701) of SENSOR NO TONER (PL10.1.5) of HOLDER ASSY TONER HBN Y.
16) Shift the harness from the hook at the bottom portion of the HOLDER ASSY TONER HBN Y.

NOTE

In the following steps, do not separate the HOLDER ASSY TONER HBN UNIT and HOLDER ASSY TONER HBN M too far since they are connected with harness.

17) Remove the screws securing the HOLDER ASSY TONER HBN Y on the PLATE ASSY DISPENSER.
18) Slide the HOLDER ASSY TONER HBN Y to the upper right direction from the HOLDER ASSY TONER HBN UNIT to remove the HOLDER ASSY TONER HBN Y.

Replacement

Replace the components in the reverse order of removal.

NOTE

Execute the following diagnosis after having exchanged HOLDER ASSY TONER HBN (Y).

2.7.11 Holder Toner Assy (Chapter 2 Operation of Diagnostic)

RRP10.3 HOLDER ASSY TONER HBN M (PL10.1.2)

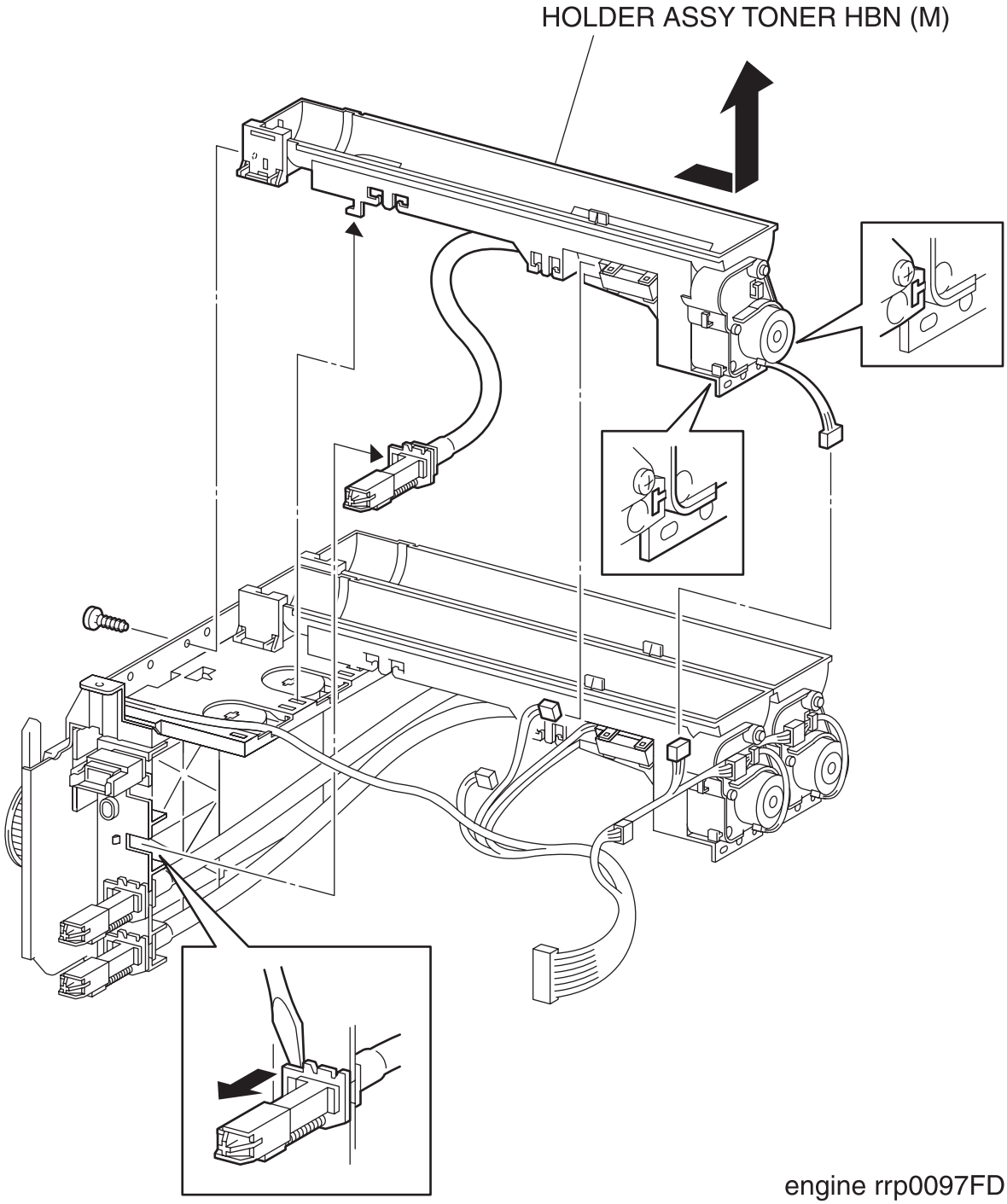


Figure: HOLDER ASSY TONER HBN M Removal

Removal

1) Remove the FUSER ASSY. (RRP8.1)
2) Remove the BTR UNIT ASSY. (RRP8.5)
3) Remove the COVER TOP MAIN. (RRP1.4)
4) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
5) Remove the COVER MSI. (RRP1.11)
6) Remove the TRAY ASSY BASE. (RRP1.12)
7) Remove the COVER ASSY FRONT. (RRP1.13)
8) Remove the COVER ASSY FRONT IN. (RRP1.10)
9) Remove the COVER SIDE L. (RRP1.14)
10) Remove the COVER SIDE R. (RRP1.9)
11) Remove the HOLDER ASSY TONER HBN UNIT. (RRP10.1)
12) Remove the HOLDER ASSY TONER HBN Y. (RRP10.2)
13) From the HOLDER ASSY TONER HBN UNIT, release the hook securing the toner discharging unit of the HOLDER ASSY TONER HBN M on the PLATE ASSY DISPENSER L (PL10.1.13) with a mini screwdriver.
14) From the PLATE ASSY DISPENSER, pull out the toner discharging unit on the HOLDER ASSY TONER HBN M rightward.
15) Release the hook securing the HOLDER ASSY TONER HBN M to the PLATE ASSY DISPENSER.

NOTE

In the following steps, do not separate the HOLDER ASSY TONER HBN UNIT and HOLDER ASSY TONER HBN M too far since they are connected by a harness.

16) After sliding the HOLDER ASSY TONER HBN M rightward from the HOLDER ASSY TONER HBN UNIT, raise the HOLDER ASSY TONER HBN M slightly.
17) Extract the motor connector (P/J512) from the right side surface of the HOLDER ASSY.
18) Disconnect the connector (P/J702) of SENSOR NO TONER (PL10.1.5) of HOLDER ASSY TONER HBN M.
19) Shift the harness from the hook at the lower part of the HOLDER ASSY TONER HBN M.

Replacement

Replace the components in the reverse order of removal.

NOTE

Execute the following diagnosis after having exchanged HOLDER ASSY TONER HBN M.

2.7.11 Holder Toner Assy (Chapter 2 Operation of Diagnostic)

RRP10.4 HOLDER ASSY TONER HBN C (PL10.1.3)

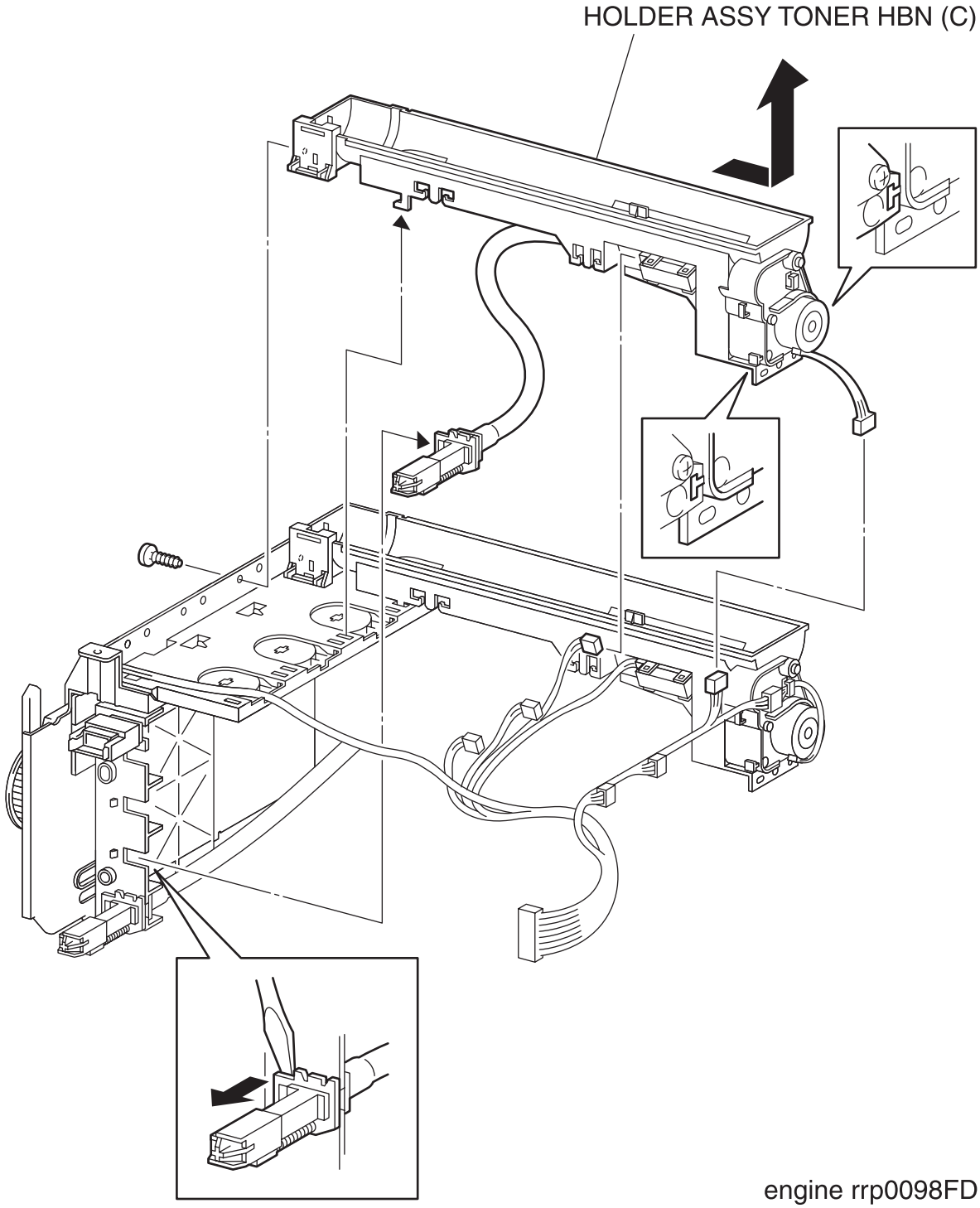


Figure: HOLDER ASSY TONER HBN C Removal

Removal

1) Remove the FUSER ASSY. (RRP8.1)
2) Remove the BTR UNIT ASSY. (RRP8.4)
3) Remove the COVER TOP MAIN. (RRP1.4)
4) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
5) Remove the COVER MSI. (RRP1.11)
6) Remove the TRAY ASSY BASE. (RRP1.12)
7) Remove the COVER ASSY FRONT. (RRP1.13)
8) Remove the COVER ASSY FRONT IN. (RRP1.10)
9) Remove the COVER SIDE L. (RRP1.14)
10) Remove the COVER SIDE R. (RRP1.9)
11) Remove the HOLDER ASSY TONER HBN UNIT. (RRP10.1)
12) Remove the HOLDER ASSY TONER HBN Y. (RRP10.2)
13) Remove the HOLDER ASSY TONER HBN M. (RRP10.3)
14) From the HOLDER ASSY TONER HBN UNIT, release the hook securing the toner discharging unit of the HOLDER ASSY TONER HBN C on the PLATE ASSY DISPENSER L (PL10.1.13) with a mini screwdriver.
15) From the PLATE ASSY DISPENSER, pull out the toner discharging unit on the HOLDER ASSY TONER HBN C rightward.
16) Release the hook securing the HOLDER ASSY TONER HBN C to the PLATE ASSY DISPENSER.

NOTE

In the following steps, do not separate the HOLDER ASSY TONER HBN UNIT and HOLDER ASSY TONER HBN C too far since they are connected by a harness.

17) After sliding the HOLDER ASSY TONER HBN C rightward from the HOLDER ASSY TONER HBN UNIT, raise the HOLDER ASSY TONER HBN C slightly.
18) Extract the motor connector (P/J513) from the right side surface of the HOLDER ASSY.
19) Disconnect the connector (P/J703) of SENSOR NO TONER (PL10.1.5) of HOLDER ASSY TONER HBN C.
20) Shift the harness from the hook at the bottom portion of the HOLDER ASSY TONER HBN C.

Replacement

Replace the components in the reverse order of removal.

NOTE

Execute the following diagnosis after having exchanged HOLDER ASSY TONER HBN C.

2.7.11 Holder Toner Assy (Chapter 2 Operation of Diagnostic)

RRP10.5 HOLDER ASSY TONER HBN K (PL10.1.4)

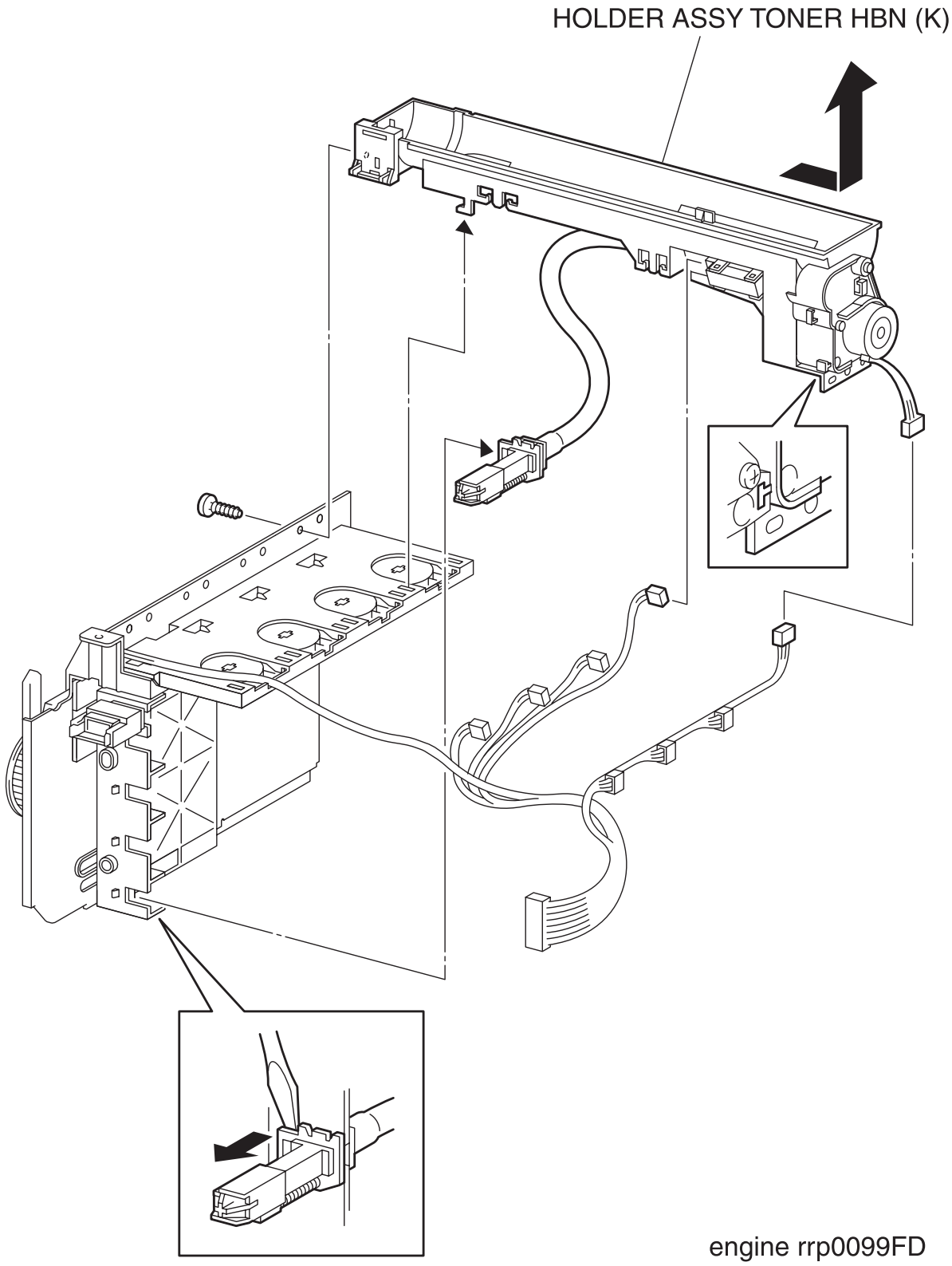


Figure: HOLDER ASSY TONER HBN K Removal

Removal

1) Remove the FUSER ASSY. (RRP8.1)
2) Remove the BTR UNIT ASSY. (RRP8.4)
3) Remove the COVER TOP MAIN. (RRP1.4)
4) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
5) Remove the COVER MSI. (RRP1.11)
6) Remove the TRAY ASSY BASE. (RRP1.12)
7) Remove the COVER ASSY FRONT. (RRP1.13)
8) Remove the COVER ASSY FRONT IN. (RRP1.10)
9) Remove the COVER SIDE L. (RRP1.14)
10) Remove the COVER SIDE R. (RRP1.9)
11) Remove the HOLDER ASSY TONER HBN UNIT. (RRP10.1)
12) Remove the HOLDER ASSY TONER HBN Y. (RRP10.2)
13) Remove the HOLDER ASSY TONER HBN M. (RRP10.3)
14) Remove the HOLDER ASSY TONER HBN C. (RRP10.4)
15) From the HOLDER ASSY TONER HBN UNIT, release the hook securing the toner discharging unit of the HOLDER ASSY TONER HBN K on the PLATE ASSY DISPENSER L (PL10.1.13) with a mini screwdriver.
16) From the PLATE ASSY DISPENSER, pull out the toner discharging unit on the HOLDER ASSY TONER HBN K rightward.
17) Release the hook securing the HOLDER ASSY TONER HBN K to the PLATE ASSY DISPENSER.

NOTE

In the following steps, do not separate the HOLDER ASSY TONER HBN UNIT and HOLDER ASSY TONER HBN K too far since they are connected by a harness.

18) After sliding the HOLDER ASSY TONER HBN K rightward from the HOLDER ASSY TONER HBN UNIT, raise the HOLDER ASSY TONER HBN K slightly.
19) Extract the motor connector (P/J514) from the right side surface of the HOLDER ASSY.
20) Disconnect the connector (P/J704) of SENSOR NO TONER (PL10.1.5) of HOLDER ASSY TONER HBN K.
21) Shift the harness from the hook at the bottom portion of the HOLDER ASSY TONER HBN K.

Replacement

Replace the components in the reverse order of removal.

NOTE

Execute the following diagnosis after having exchanged HOLDER ASSY TONER HBN K.

2.7.11 Holder Toner Assy (Chapter 2 Operation of Diagnostic)

RRP10.6 ACTUATOR TCRU ASSY (PL10.1.6)

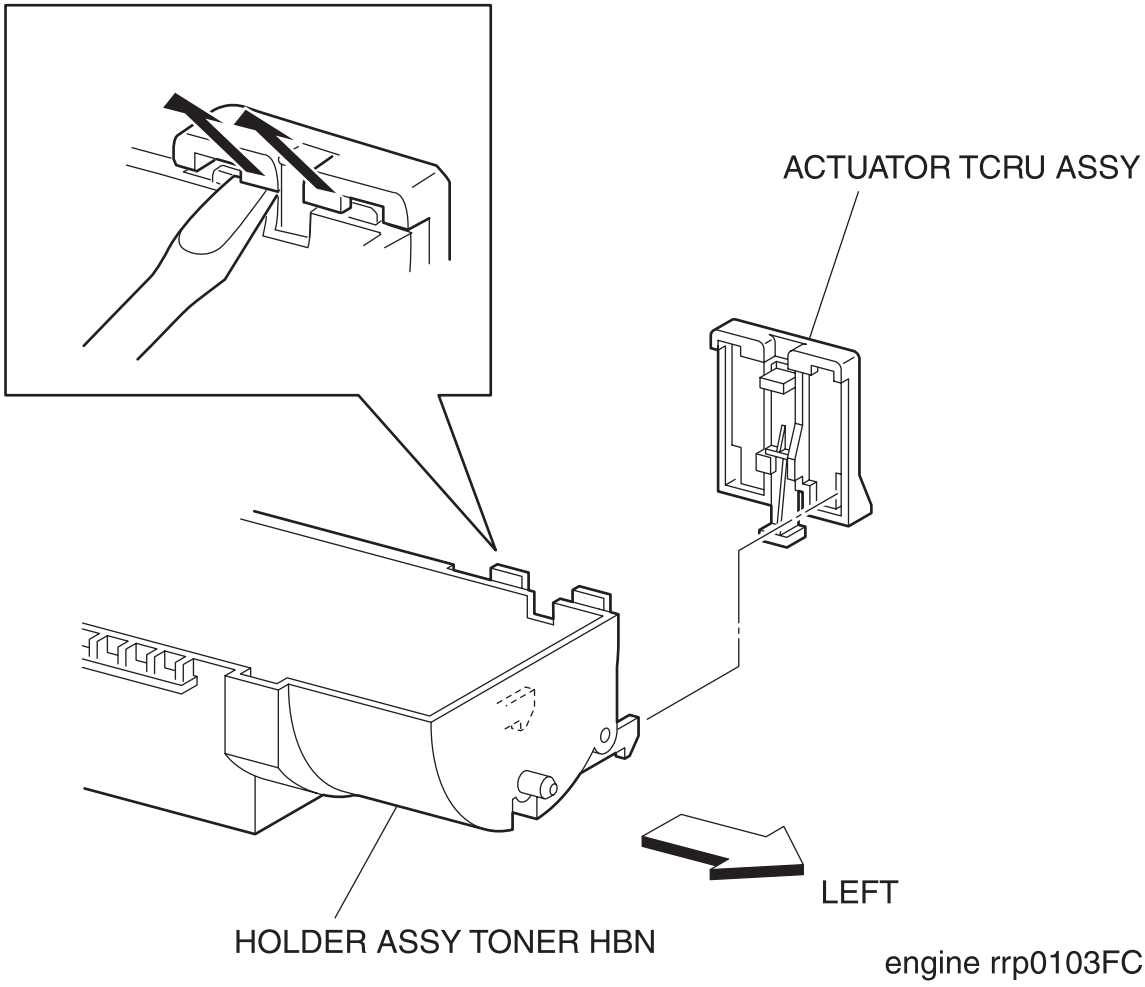


Figure: SWITCH TCRU ASSY Removal

Removal

1) Remove the FUSER ASSY. (RRP8.1)
2) Remove the BTR UNIT ASSY. (RRP8.4)
3) Remove the COVER TOP MAIN. (RRP1.4)
4) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
5) Remove the COVER MSI. (RRP1.11)
6) Remove the TRAY ASSY BASE. (RRP1.12)
7) Remove the COVER ASSY FRONT. (RRP1.13)
8) Remove the COVER ASSY FRONT IN. (RRP1.10)
9) Remove the COVER SIDE L. (RRP1.14)
10) Remove the COVER SIDE R. (RRP1.9)
11) Remove the HOLDER ASSY TONER HBN UNIT. (RRP10.1)
12) Remove the HOLDER ASSY TONER HBN. (RRP10.2, 3, 4, 5)
13) Release the hooks at 2 positions securing the ACTUATOR TCRU ASSY to the HOLDER ASSY TONER HBN (PL10.1.1, 2, 3, 4) with a mini screwdriver.
14) Remove the ACTUATOR TCRU ASSY from the HOLDER ASSY TONER HBN.

Replacement

Replace the components in the reverse order of removal.

RRP10.7 SENSOR NO TONER (PL10.1.5)

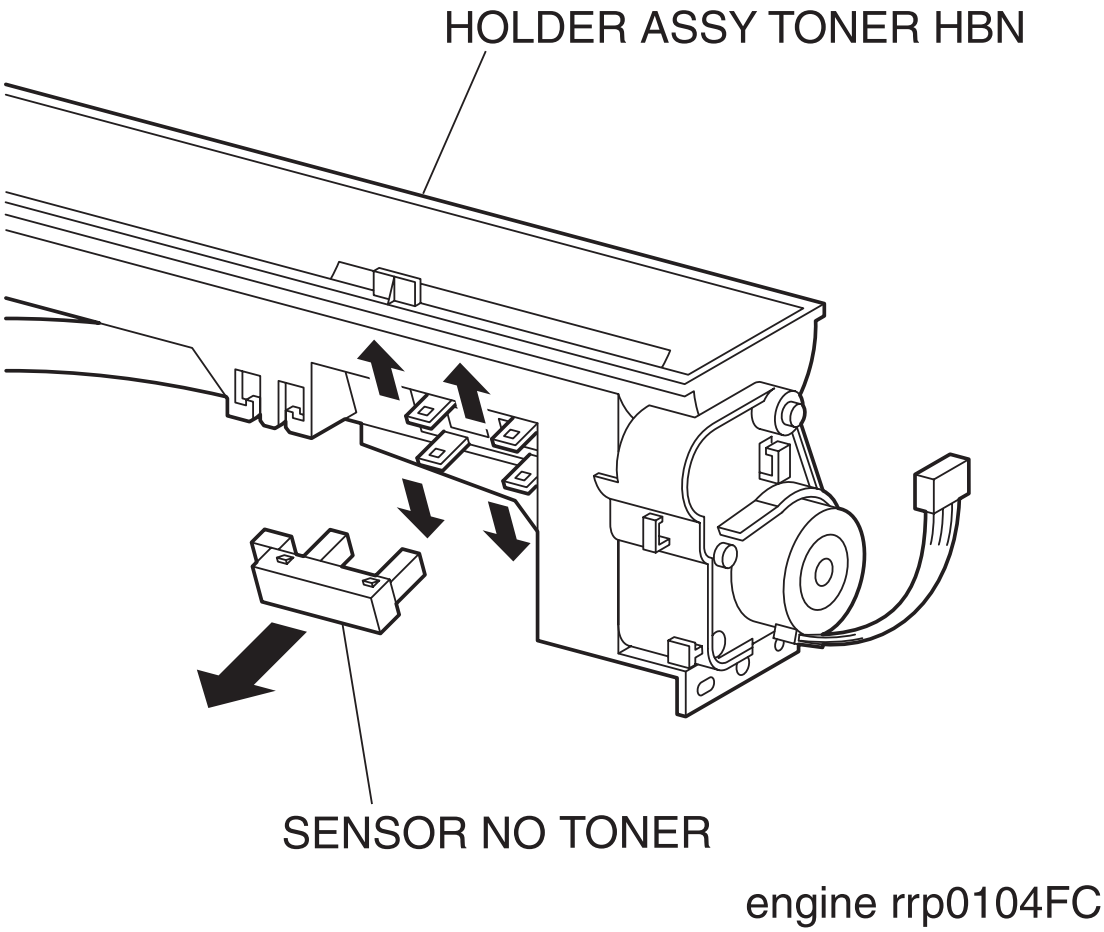


Figure: SENSOR NO TONER Removal

Removal

1) Remove the FUSER ASSY. (RRP8.1)
2) Remove the BTR UNIT ASSY. (RRP8.4)
3) Remove the COVER TOP MAIN. (RRP1.4)
4) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
5) Remove the COVER MSI. (RRP1.11)
6) Remove the TRAY ASSY BASE. (RRP1.12)
7) Remove the COVER ASSY FRONT. (RRP1.13)
8) Remove the COVER ASSY FRONT IN. (RRP1.10)
9) Remove the COVER SIDE L. (RRP1.14)
10) Remove the COVER SIDE R. (RRP1.9)
11) Remove the HOLDER ASSY TONER HBN UNIT. (RRP10.1)
12) Remove the HOLDER ASSY TONER HBN. (RRP10.2,3,4,5)
13) Remove the 4 hooks securing the SENSOR NO TONER to the HOLDER ASSY TONER HBN (PL10.1.1, 2, 3, 4).
14) Remove the SENSOR NO TONER from the HOLDER ASSY TONER HBN.

Replacement

Replace the components in the reverse order of removal.

RRP10.8 PWBA EEPROM (PL10.1.14)

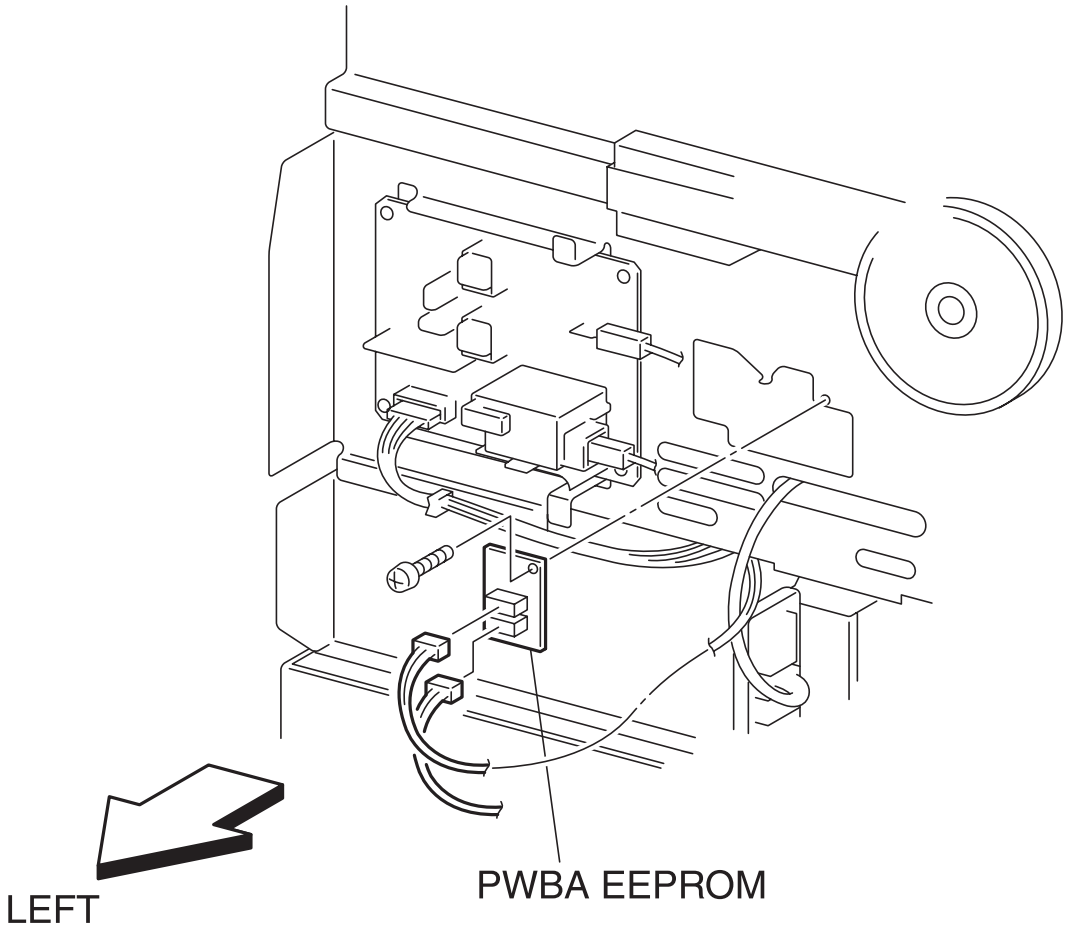


Figure: PWBA EEPROM STD Removal

Removal

1) Remove the FUSER ASSY. (RRP8.1)
2) Remove the BTR UNIT ASSY. (RRP8.4)
3) Remove the COVER TOP MAIN. (RRP1.4)
4) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
5) Remove the COVER MSI. (RRP1.11)
6) Remove the TRAY ASSY BASE. (RRP1.12)
7) Remove the COVER ASSY FRONT. (RRP1.13)
8) Remove the COVER ASSY FRONT IN. (RRP1.10)
9) Remove the COVER SIDE L. (RRP1.14)
10) Remove the connector (P/J144) on the PWBA EEPROM from the left side surface of the printer.
11) Remove 1 screw securing the PWBA EEPROM.
12) Remove the PWBA EEPROM from the printer.

Replacement

Replace the components in the reverse order of removal.

RRP10.9 S-HVPS (PL10.1.15)

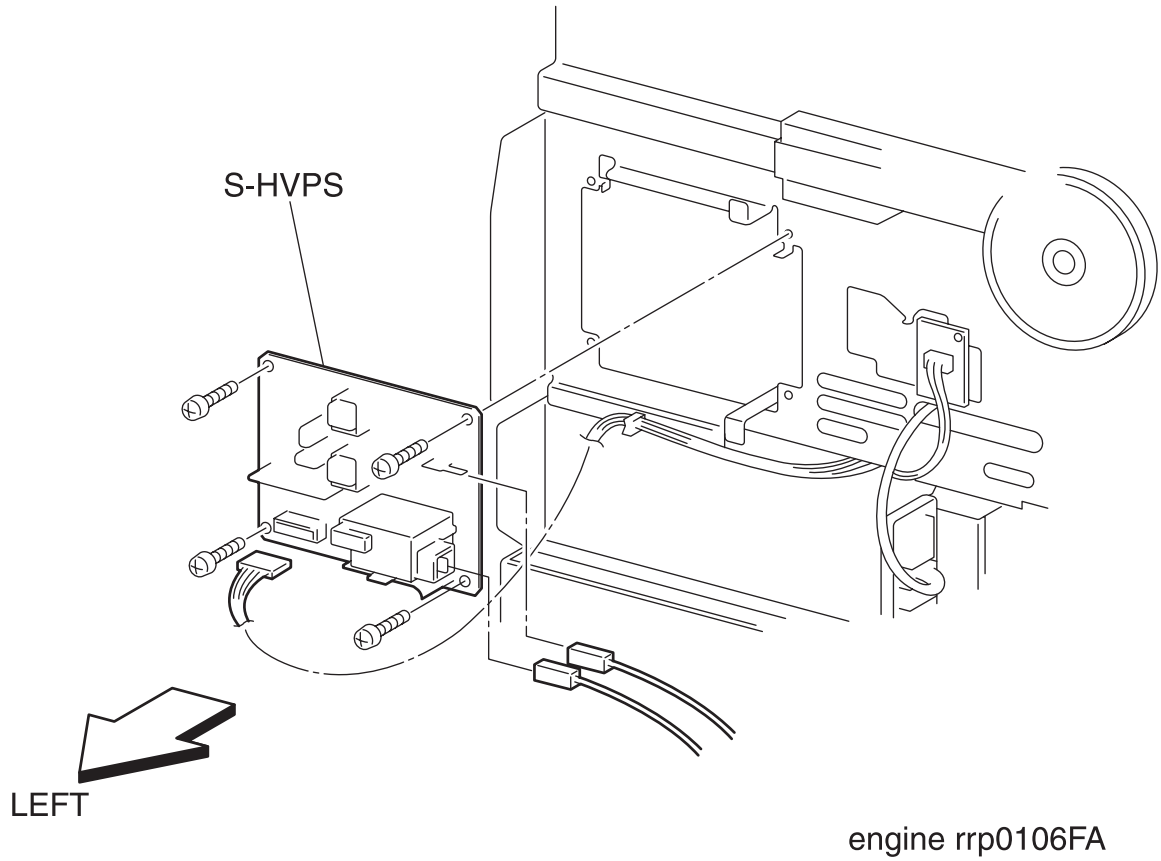


Figure: S-HVPS Removal

Removal

1) Remove the FUSER ASSY. (RRP8.1)
2) Remove the BTR UNIT ASSY. (RRP8.4)
3) Remove the COVER TOP MAIN. (RRP1.4)
4) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
5) Remove the COVER MSI. (RRP1.11)
6) Remove the TRAY ASSY BASE. (RRP1.12)
7) Remove the COVER ASSY FRONT. (RRP1.13)
8) Remove the COVER ASSY FRONT IN. (RRP1.10)
9) Remove the COVER SIDE L. (RRP1.14)
10) Remove the connector (P/J5011) on the S-HVPS (PL10.1.15) from the left side surface of the printer.
11) Remove the connector (P/J5030) on the S-HVPS.
12) Remove the connector (P/J5020) on the S-HVPS.
13) Remove 4 screws securing the S-HVPS.
14) Remove the S-HVPS from the printer.

Replacement

Replace the components in the reverse order of removal.

RRP10.10 BOX ASSY CRUM READER(PL10.1.21)

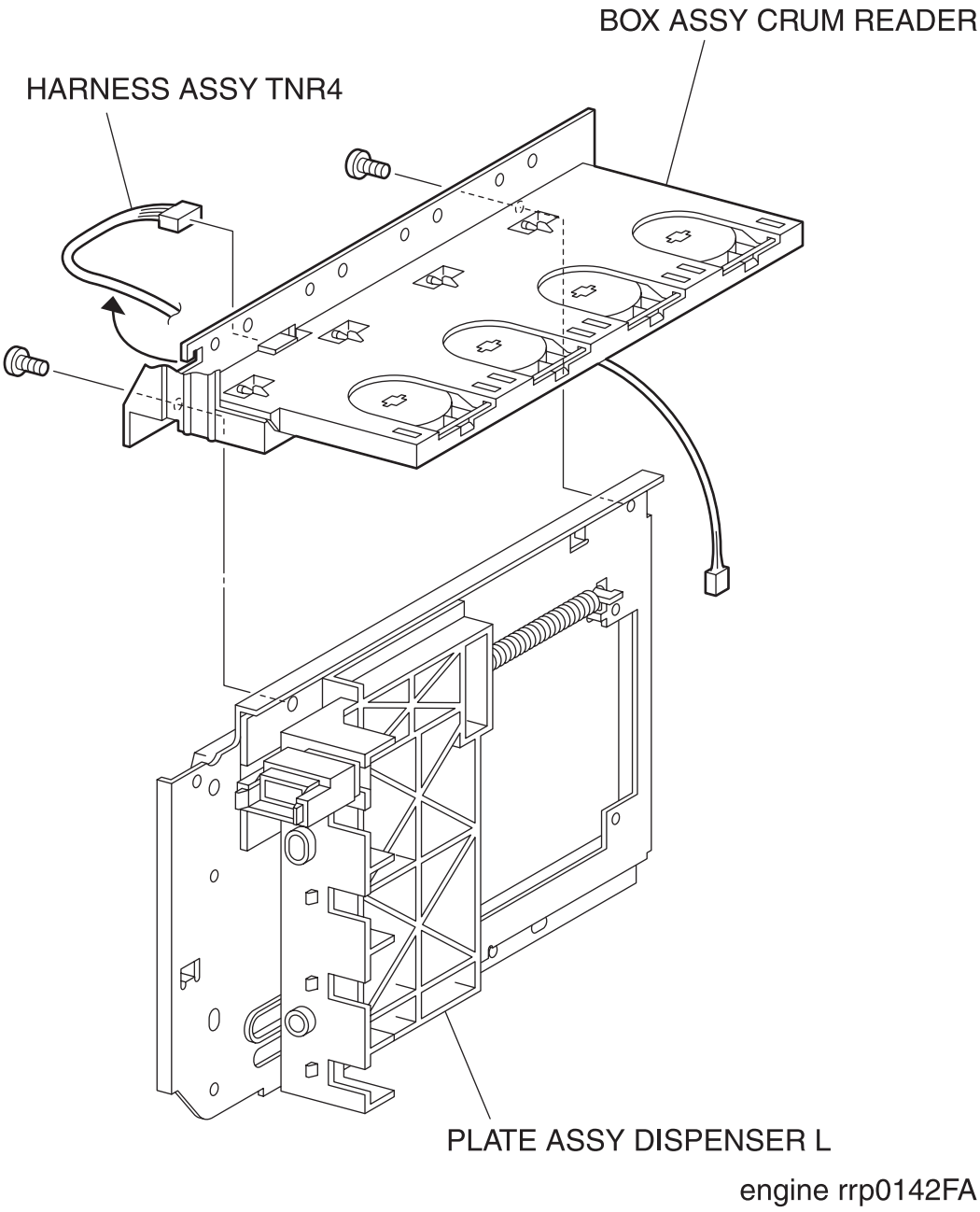


Figure: BOX ASSY CRUM READER Removal

Removal

1) Remove the FUSER ASSY. (RRP8.1)
2) Remove the BTR UNIT ASSY. (RRP8.4)
3) Remove the COVER TOP MAIN. (RRP1.4)
4) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
5) Remove the COVER MSI. (RRP1.11)
6) Remove the TRAY ASSY BASE. (RRP1.12)
7) Remove the COVER ASSY FRONT. (RRP1.13)
8) Remove the COVER ASSY FRONT IN. (RRP1.10)
9) Remove the COVER SIDE L. (RRP1.14)
10) Remove the COVER SIDE R. (RRP1.9)
11) Remove the HOLDER ASSY TONER HBN UNIT.(RRP10.1)
12) Remove the HOLDER ASSY TONER HBN.(RRP10.2,3,4,5)
13) Remove the connector (P/J342) on PWBA CRUM READER.(PL10.1.18)
14) Remove HARNESS ASSY TONER4 (PL10.1.11) from the opening of HSG BASE CRUM. (PL10.1.16)
15) Remove two screws which hold the BOX ASSY CRUM READER (PL10.1.21) to PLATE ASSY DISPENSER L.(PL10.1.13)
16) Remove BOX ASSY CRUM READER from PLATE ASSY DISPENSER L.

Replacement

Replace the components in the reverse order of removal.

RRP11.FRAME & DRIVE

RRP11.1 LEVER DRUM:L (PL11.1.4)

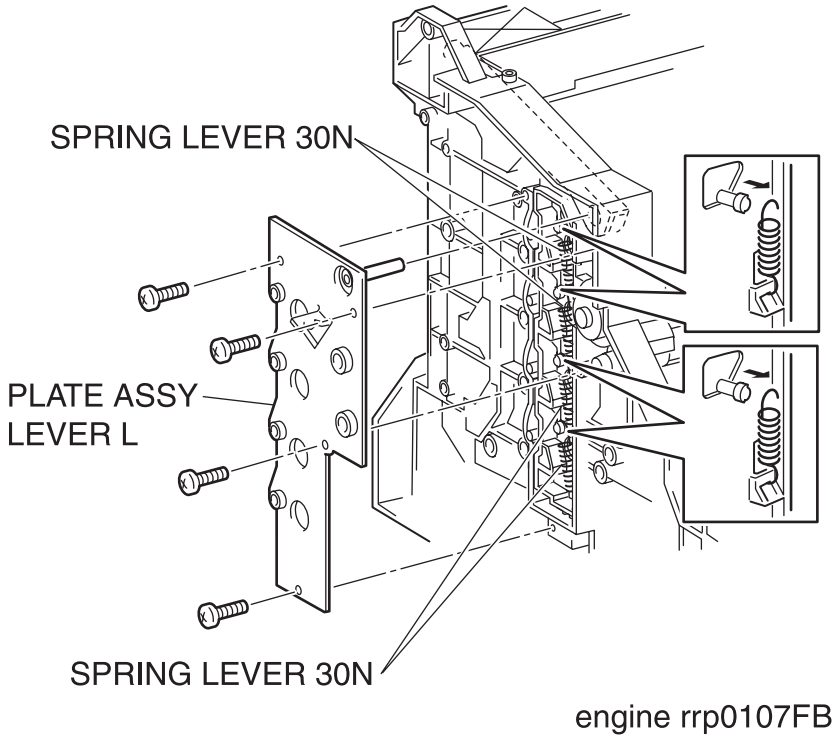


Figure: LEVER DRUM:L Removal (1)

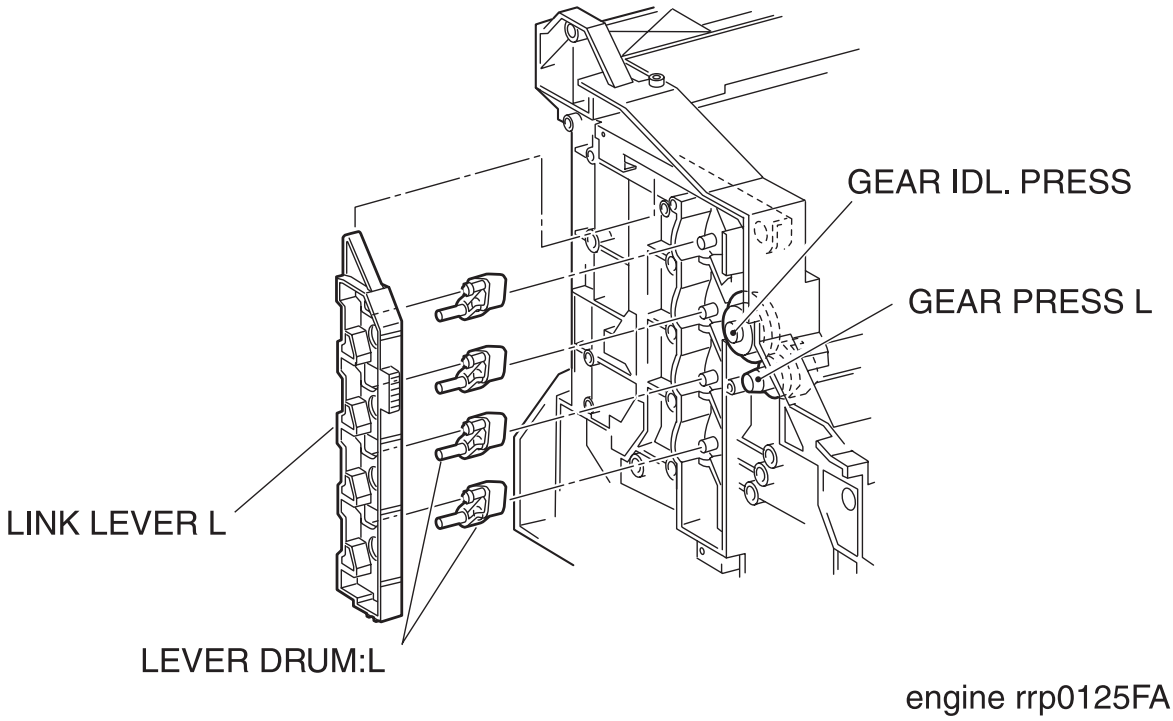


Figure: LEVER DRUM:L Removal (2)

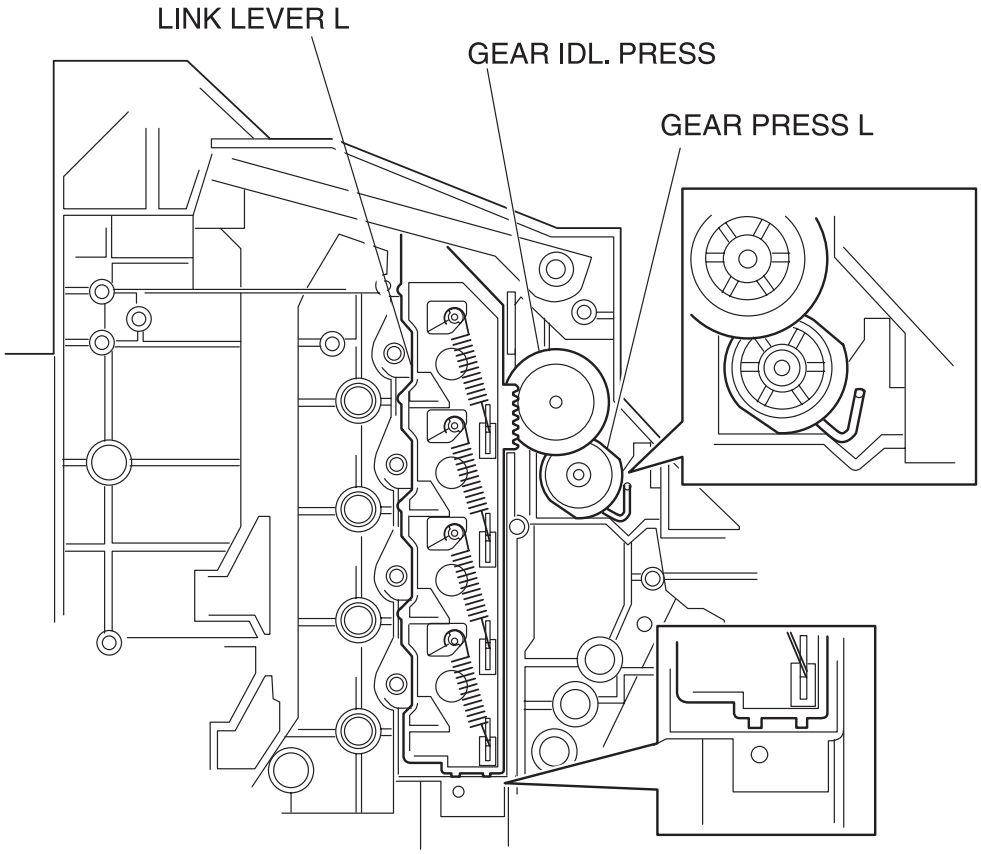


Figure: LEVER DRUM:L Replacement

Removal

1) Remove the COVER TOP MAIN. (RRP1.4)
2) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
3) Remove the COVER MSI. (RRP1.11)
4) Remove the TRAY ASSY BASE. (RRP1.12)
5) Remove the COVER ASSY FRONT. (RRP1.13)
6) Remove the COVER ASSY FRONT IN. (RRP1.10)
7) Remove the COVER SIDE L. (RRP1.14)
8) Remove the COVER ASSY TOP PHD. (RRP1.5)
9) Remove the LINK:L. (RRP1.7)
10) Remove the HSG ASSY BIAS. (RRP9.2)
11) Remove 4 screws securing the PLATE LEVER L (PL11.1.1) from the left side surface of the printer.
12) Remove the PLATE LEVER L from the printer.
13) Release the hook of the SPRING LEVER 30N (PL11.1.5) hitched over the convex portion of the 4 LEVER DRUM from the left side surface of the printer.
14) Remove the LINK LEVER L (PL11.1.3) from the printer together with the SPRING LEVER:30N
15) Remove the LEVER DRUM:L from the printer.

Replacement

Replace the components in the reverse order of removal.

NOTE

In replacing the LINK LEVER L (PL11.1.3), align the SPRING IDT L (PL11.1.17) and the bottom of LINK LEVER L with the positions shown in the figure (LEVER DRUM:L Replacement).

RRP11.2 LEVER DRUM:R (PL11.1.4)

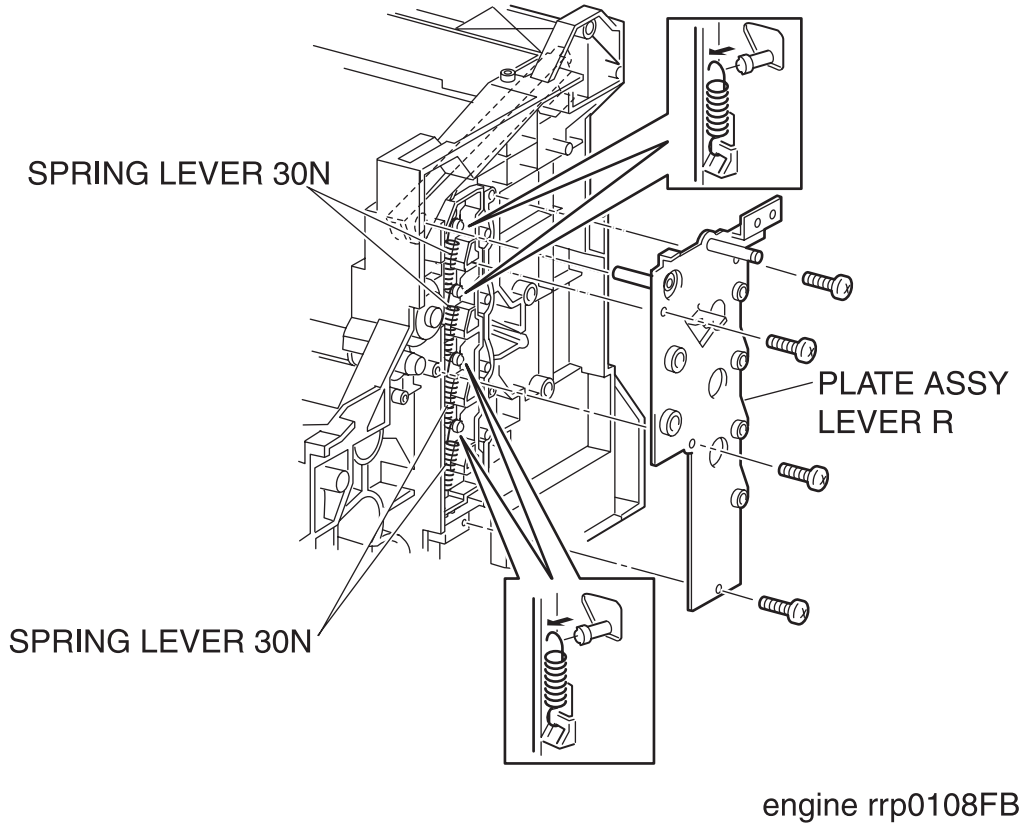


Figure: LEVER DRUM:R Removal (1)

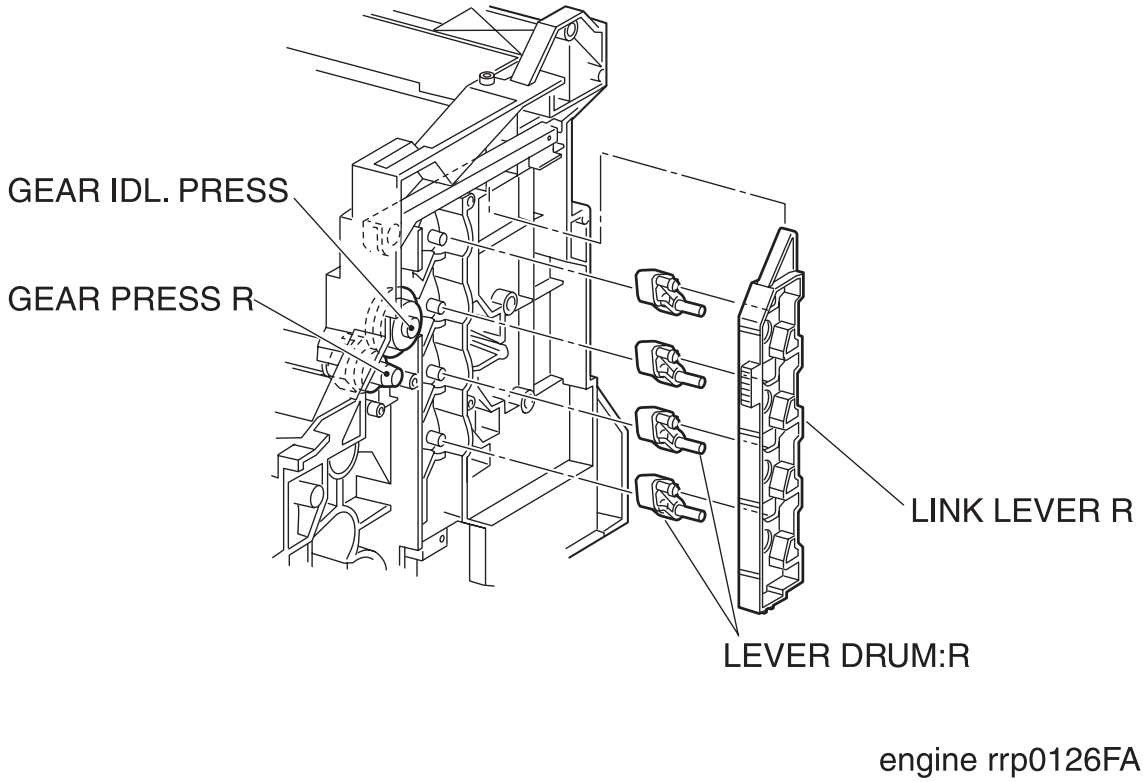


Figure: LEVER DRUM:R Removal (2)

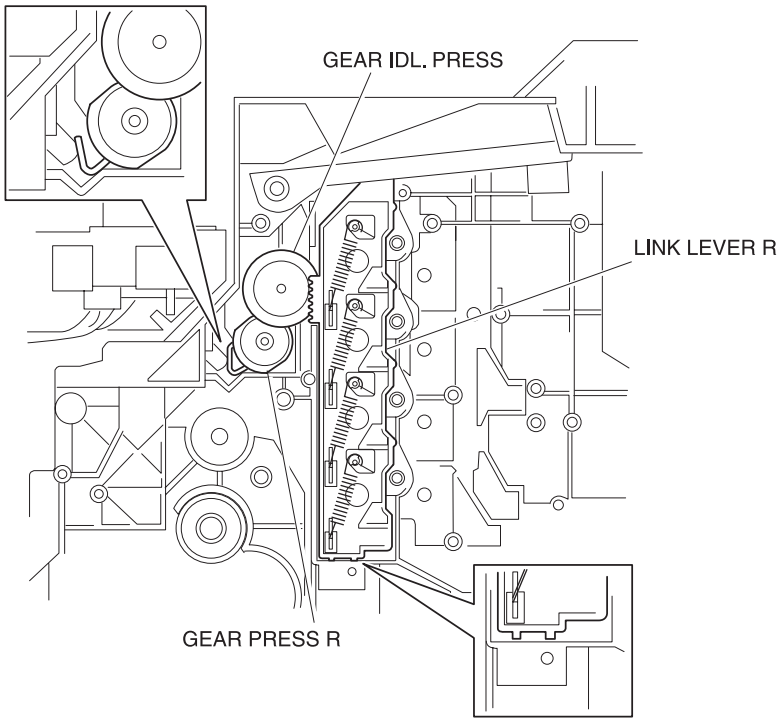


Figure: LEVER DRUM:R Replacement

Removal

1) Remove the COVER TOP MAIN. (RRP1.4)
2) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
3) Remove the COVER MSI. (RRP1.11)
4) Remove the TRAY ASSY BASE. (RRP1.12)
5) Remove the COVER ASSY FRONT. (RRP1.13)
6) Remove the COVER ASSY FRONT IN. (RRP1.10)
7) Remove the COVER SIDE L. (RRP1.14)
8) Remove the COVER SIDE R. (RRP1.9)
9) Remove the COVER ASSY TOP PHD. (RRP1.5)
10) Remove the LINK:R. (RRP1.8)
11) Remove the MAIN DRIVE ASSY. (RRP11.5)
12) Remove the DEVE DRIVE ASSY. (RRP11.4)
13) Remove the ACTUATOR I/R. (RRP11.3)
14) Remove 4 screws securing the PLATE LEVER R (PL11.1.7) from the right side surface of the printer.
15) Remove the PLATE LEVER R from the printer.
16) Release the hook of the SPRING LEVER 30N (PL11.1.5) hitched over the convex portion of the 4 LEVER DRUM:R from the right side surface of the printer.
17) Remove the LINK LEVER R (PL11.1.6) from the printer together with the SPRING LEVER 30N.
18) Remove the LEVER DRUM:R from the printer.

Replacement

Replace the components in the reverse order of removal.

NOTE

In replacing the LINK LEVER R (PL11.1.6), align the SPRING IDT R (PL11.1.12) and the bottom of LINK LEVER L with the positions shown in the figure (LEVER DRUM:L Replacement).

RRP11.3 ACTUATOR I/R (PL11.1.8)

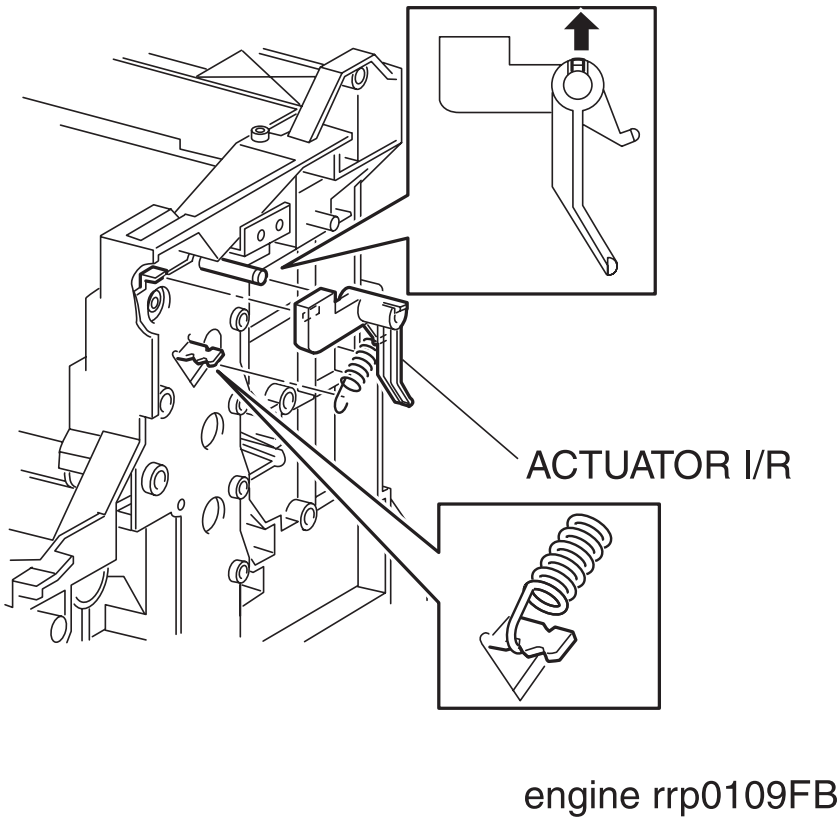


Figure: ACTUATOR I/R Removal

Removal

1) Remove the COVER TOP MAIN. (RRP1.4)
2) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
3) Remove the COVER MSI. (RRP1.11)
4) Remove the TRAY ASSY BASE. (RRP1.12)
5) Remove the COVER ASSY FRONT. (RRP1.13)
6) Remove the COVER ASSY FRONT IN. (RRP1.10)
7) Remove the COVER SIDE L. (RRP1.14)
8) Remove the COVER SIDE R. (RRP1.9)
9) Remove the COVER ASSY TOP PHD. (RRP1.5)
10) Remove the LINK:R. (RRP1.8)
11) Remove the MAIN DRIVE ASSY. (RRP11.5)
12) Remove the DEVE DRIVE ASSY. (RRP11.4)
13) From the right side surface of the printer, release the hook of the SPRING I/R (PL11.1.9) hitched over the convex portion of the PLATE LEVER R (PL11.1.7).
14) From the printer, release the hook at 1 position securing the ACTUATOR I/R to the shaft on the PLATE LEVER R.
15) Remove the ACTUATOR I/R from the PLATE LEVER R together with the SPRING I/R.
16) Remove the SPRING I/R from the ACTUATOR I/R.

Replacement

Replace the components in the reverse order of removal.

RRP11.4 DEVE DRIVE ASSY (PL11.1.13)

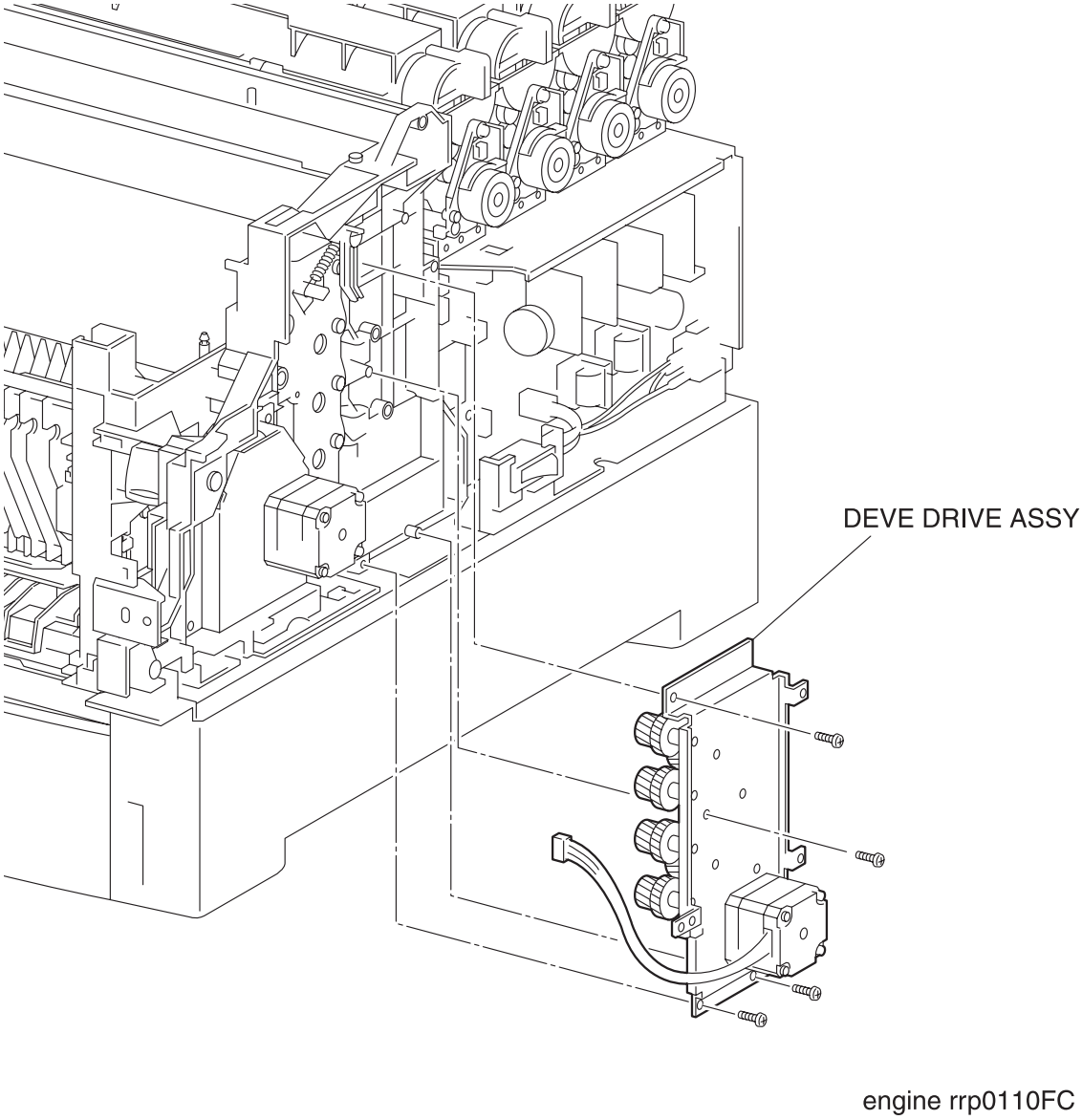


Figure: DEVE DRIVE ASSY Removal

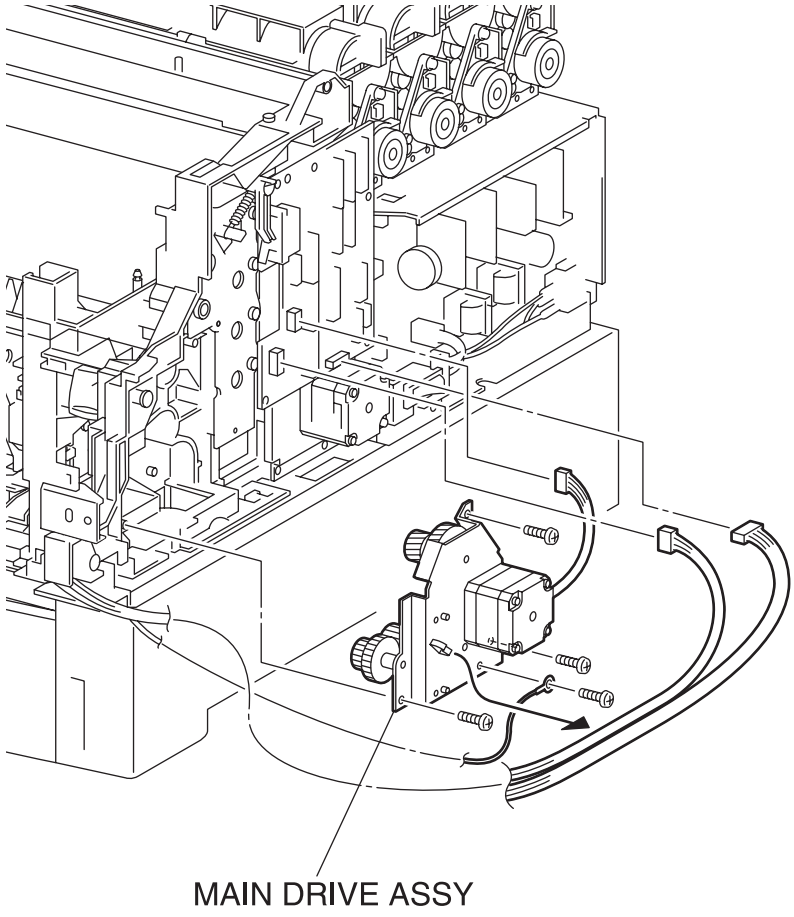
Removal

1) Remove the COVER TOP MAIN. (RRP1.4)
2) Remove the COVER ASSY FRONT IN. (RRP1.10)
3) Remove the COVER SIDE R. (RRP1.9)
4) Remove the PWBA DRV HBN. (RRP12.6)
5) Remove 5 screws securing the DEVE DRIVE ASSY from the right side surface of the printer.
6) Remove the DEVE DRIVE ASSY from the printer.

Replacement

Replace the components in the reverse order of removal.

RRP11.5 MAIN DRIVE ASSY (PL11.1.14)



engine rrp0111FC

Figure: MAIN DRIVE ASSY Removal

Removal

1) Remove the COVER TOP MAIN. (RRP1.4)
2) Remove the COVER ASSY FRONT IN. (RRP1.10)
3) Remove the COVER SIDE R. (RRP1.9)
4) Remove the LINK:R. (RRP1.8)
5) Remove the connector (P/J48) on the PWBA DRV HBN (PL12.1.12) from the right side surface of the printer.
6) Remove the connector (P/J52) on the PWBA DRV HBN.
7) Disconnect the connector (P/J50) on the PWBA DRV HBN.
8) Remove the screw securing the WIRE ASSY FSR EARTH (PL5.1.20) to the MAIN DRIVE ASSY at the right side of the Main Frame.
9) Remove 4 screws securing the MAIN DRIVE ASSY to the printer.
10) Remove the MAIN DRIVE ASSY from the printer.

Replacement

Replace the components in the reverse order of removal.

RRP11.6 PWBA ASSY EARTH (PL11.1.16)

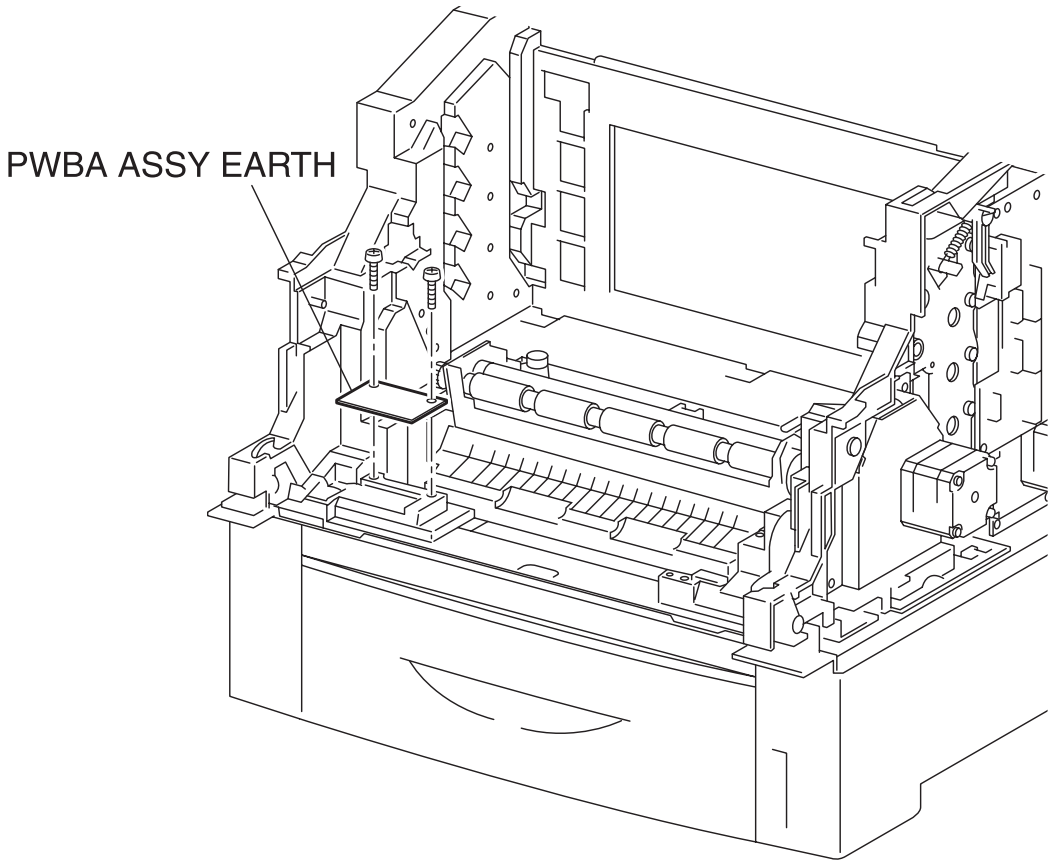


Figure: PWBA ASSY EARTH Removal

Removal

1) Remove the FUSER ASSY. (RRP8.1)
2) Remove the BTR UNIT ASSY. (RRP8.4)
3) Remove the COVER TOP MAIN. (RRP1.4)
4) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
5) Remove the COVER MSI. (RRP1.11)
6) Remove the TRAY ASSY BASE. (RRP1.12)
7) Remove the COVER ASSY FRONT. (RRP1.13)
8) Remove the CHUTE ASSY EXIT. (RRP7.1)
9) Remove the COVER ASSY FRONT IN. (RRP1.10)
10) Remove the COVER SIDE L. (RRP1.14)
11) Remove the COVER SIDE R. (RRP1.9)
12) Remove the CHUTE ASSY OUT. (RRP6.1)
13) Remove the CHUTE ASSY IN. (RRP5.1)
14) Remove 2 screws securing the PWBA ASSY EARTH to the printer.
15) Remove the PWBA ASSY EARTH from the printer.

Replacement

Replace the components in the reverse order of removal.

RRP12.ELECTRICAL

RRP12.1 PWBA MCU HBN (PL12.1.1)

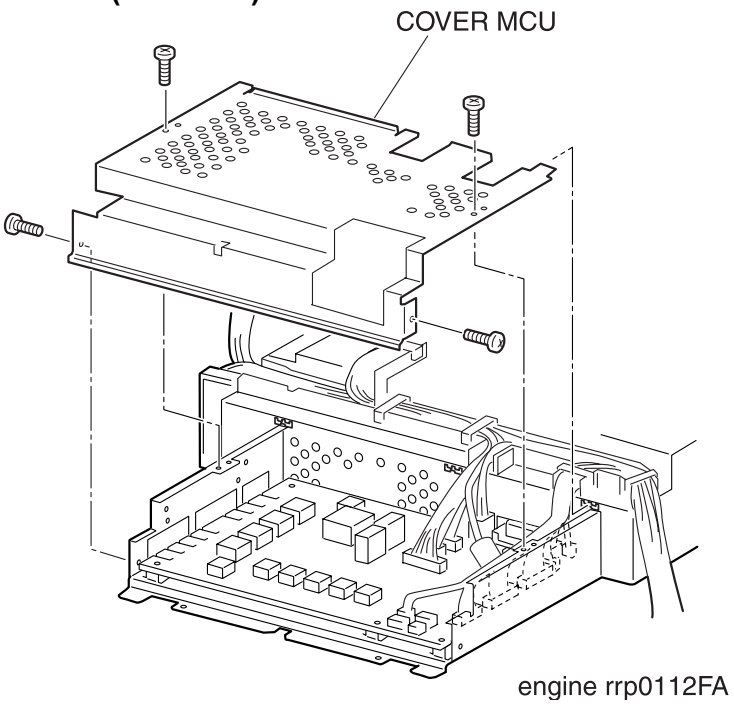


Figure: PWBA MCU HBN Removal (1)

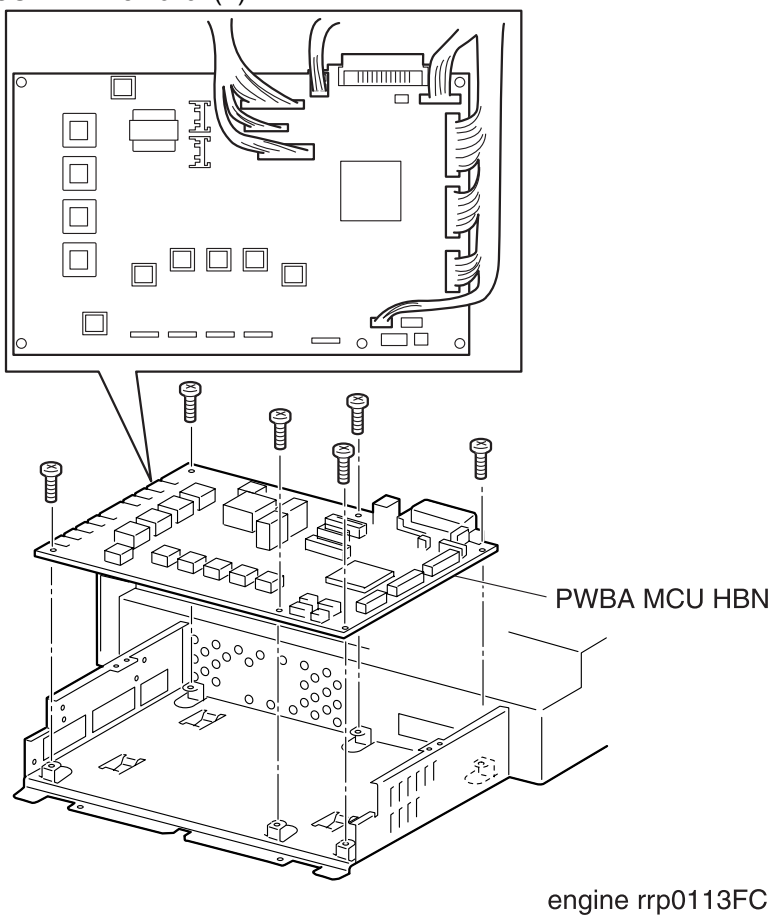


Figure: PWBA MCU HBN Removal (2)

Removal

1) Save the Life/Adjustment Data (Chapter 2 Operation of Diagnostic, 2.7.5)
2) Remove the CONTROLLER BOARD. (RRP12.3)
3) Remove the CHUTE ASSY REGI. (RRP9.3)
4) Remove the COVER TOP MAIN. (RRP1.4)
5) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
6) Remove the COVER MSI. (RRP1.11)
7) Remove the TRAY ASSY BASE. (RRP1.12)
8) Remove the COVER ASSY FRONT. (RRP1.13)
9) Remove the COVER ASSY FRONT IN. (RRP1.10)
10) Remove the COVER SIDE L. (RRP1.14)
11) Remove the HSG ASSY BIAS. (RRP9.2)
12) Remove the COVER SIDE R. (RRP1.9)
13) Remove the COVER ASSY TOP PHD. (RRP1.5)
14) Remove the COVER REAR. (RRP1.6)
15) Remove the HOLDER ASSY TONER HBN UNIT. (RRP10.1)
16) Remove the PWBA DRV HBN. (RRP12.6)
17) Remove the LVPS. (RRP12.4)
18) Remove the BOX ASSY MCU/ESS. (RRP12.7)
19) Remove the HOUSING ASSY CONTACT. (RRP12.8)
20) Remove 4 screws securing the COVER MCU to the BOX ASSY MCU/ESS.
21) Remove the COVER MCU from the BOX ASSY MCU/ESS.
22) Remove the all connectors on the PWBA MCU HBN from the BOX ASSY MCU/ESS.
23) Remove 6 screws securing the PWBA MCU HBN to the BOX ASSY MCU/ESS.
24) Remove the PWBA MCU HBN from the BOX ASSY MCU/ESS.

Replacement

Replace the components in the reverse order of removal.

NOTE

If the replacement PWBA MCU HBN has been previously used in another printer, the Slave data must be initialized. Refer to **2.7.9 Initialize Slave (Chapter 2 Operation of Diagnostic)**

1) Restore the Life/Adjustment Data (Chapter 2 Operation of Diagnostic, 2.7.6)

RRP12.2 FAN REAR (PL12.1.2)

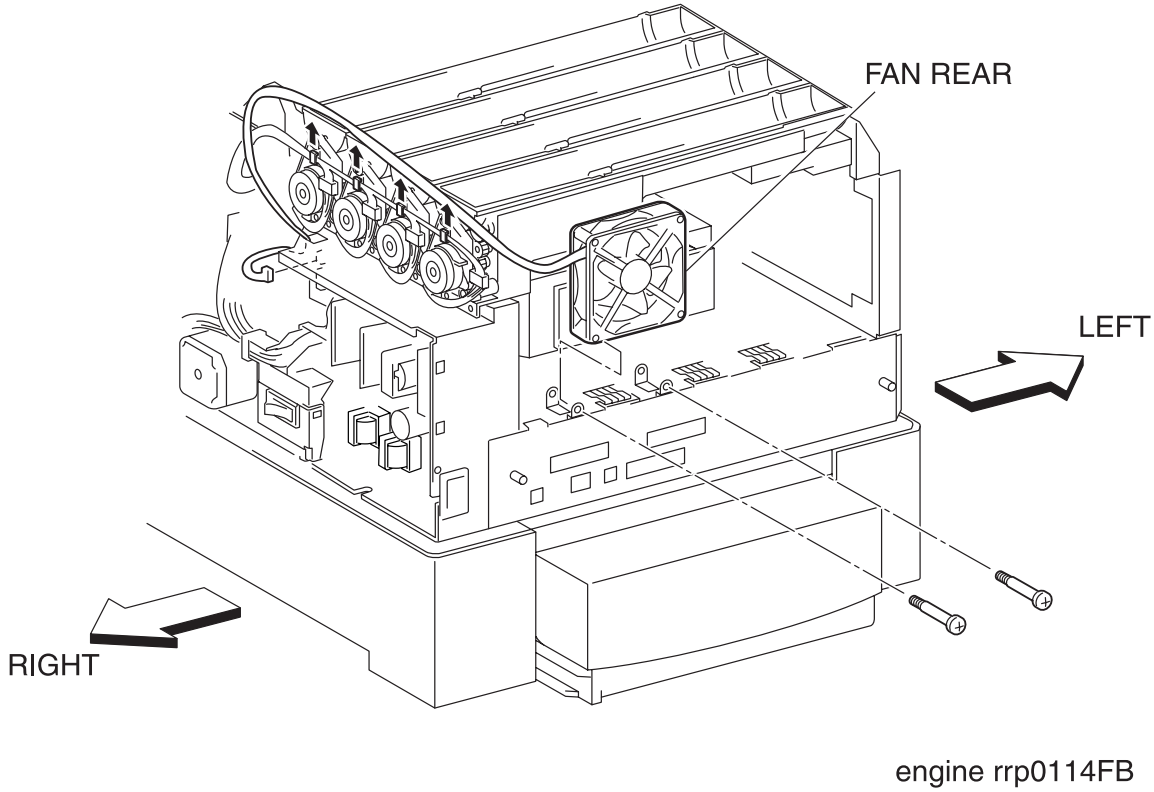


Figure: FAN REAR Removal

Removal

1) Remove the COVER TOP MAIN. (RRP1.4)
2) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
3) Remove the COVER MSI. (RRP1.11)
4) Remove the TRAY ASSY BASE. (RRP1.12)
5) Remove the COVER ASSY FRONT. (RRP1.13)
6) Remove the COVER ASSY FRONT IN. (RRP1.10)
7) Remove the COVER SIDE L. (RRP1.14)
8) Remove the COVER SIDE R. (RRP1.9)
9) Remove the COVER REAR. (RRP1.6)
10) Remove the connector (P/J166) on the LVPS from the right side surface of the printer.
11) Shift the harness (P/J166) of the FAN REAR from 3 hooks of the HOLDER ASSY TONER HBN of the printer.
12) Remove 2 screws securing the FAN REAR from the printer.
13) Remove the FAN REAR from the printer.

Replacement

Replace the components in the reverse order of removal.

RRP12.3 CONTROLLER BOARD (PL12.1.4)(TBD)

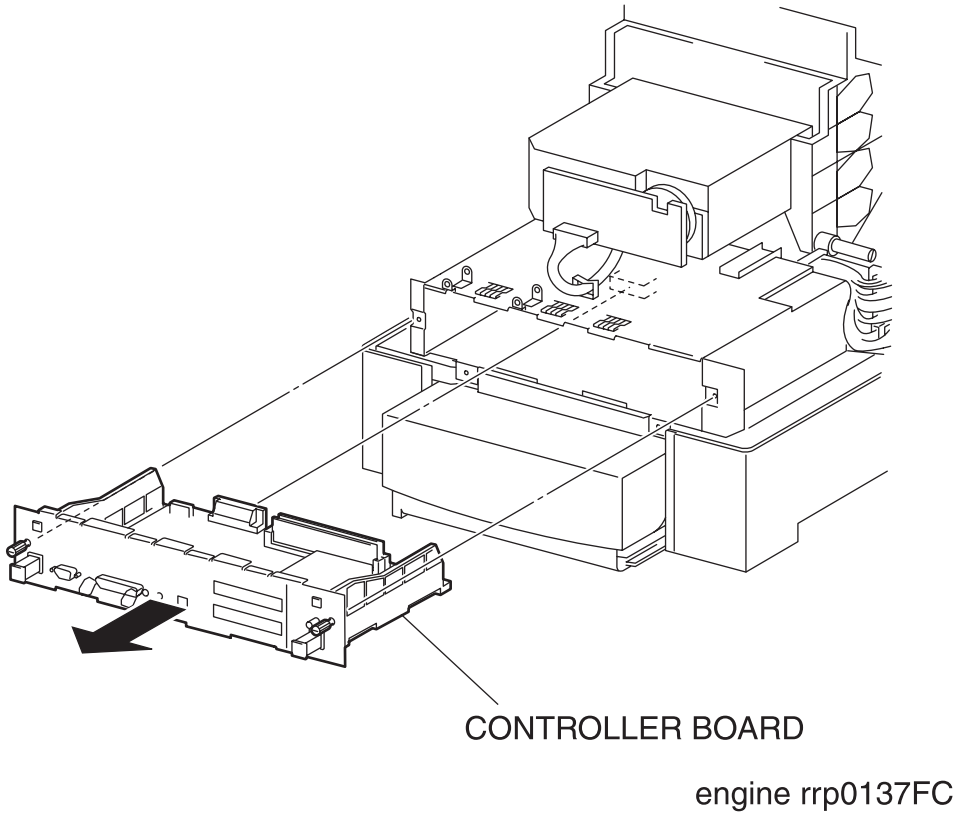


Figure: CONTROLLER BOARD Removal

Removal

1) Remove the COVER CST SLIDE. (RRP3.2)
2) From the rear side of the printer, loosen the screws that secure the CONTROLLER BOARD.
3) Holding the left and right knobs on the CONTROLLER BOARD, pull out the CONTROLLER BOARD of the printer.

Replacement

Replace the components in the reverse order of removal.

NOTE

In replacing the CONTROLLER BOARD on the printer, connect the connector at the leading end of CONTROLLER BOARD to the connector of the PWBA MCU HBN (PL12.1.1).

RRP12.4 LVPS (PL12.1.10)

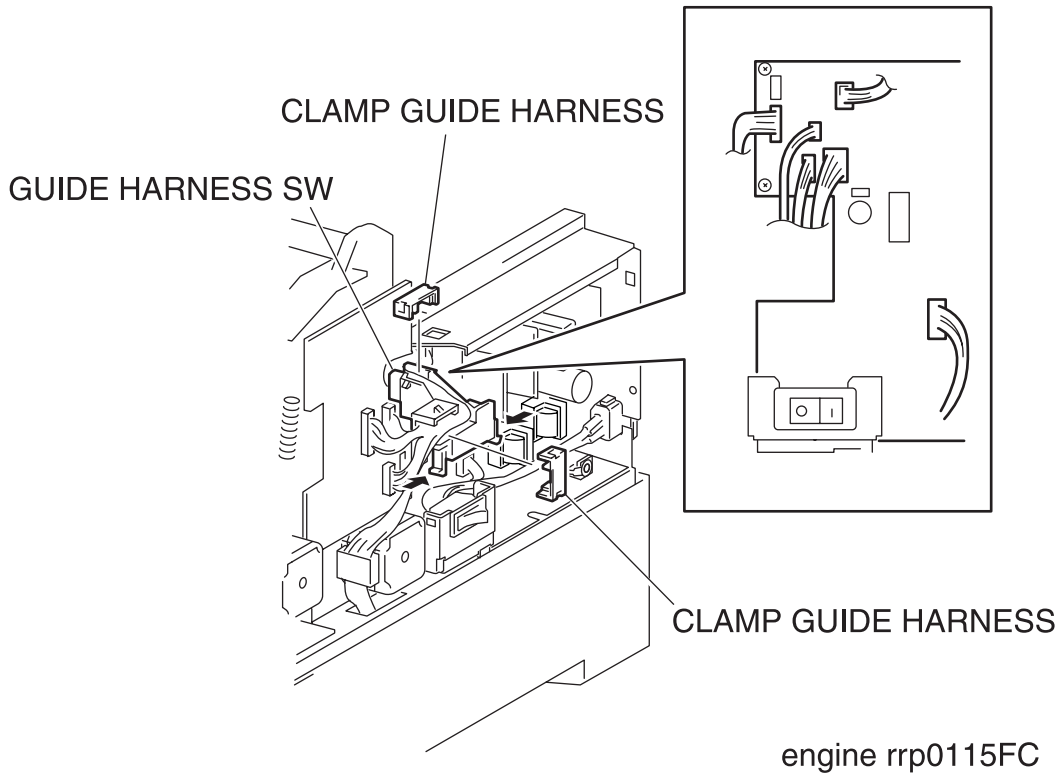


Figure: LVPS Removal (1)

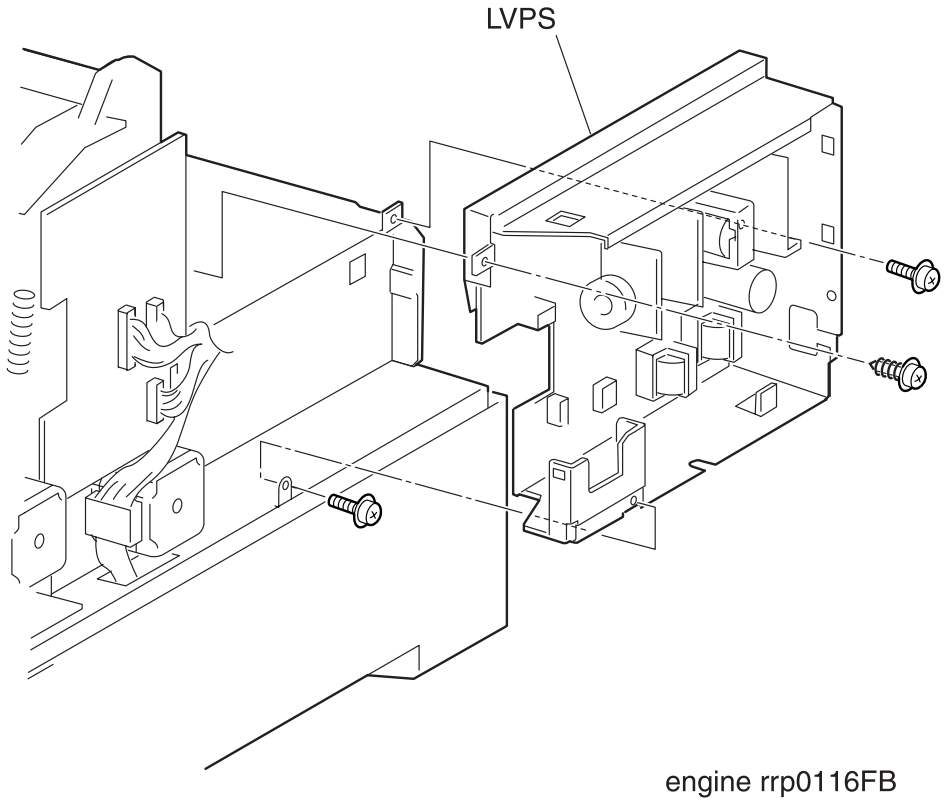


Figure: LVPS Removal (2)

Removal

1) Remove the FUSER ASSY. (RRP8.1)
2) Remove the CHUTE ASSY REGI. (RRP9.3)
3) Remove the COVER TOP MAIN. (RRP1.4)
4) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
5) Remove the COVER MSI. (RRP1.11)
6) Remove the TRAY ASSY BASE. (RRP1.12)
7) Remove the COVER ASSY FRONT. (RRP1.13)
8) Remove the COVER ASSY FRONT IN. (RRP1.10)
9) Remove the COVER SIDE L. (RRP1.14)
10) Remove the HSG ASSY BIAS. (RRP9.2)
11) Remove the COVER SIDE R. (RRP1.9)
12) Remove the COVER ASSY TOP PHD. (RRP1.5)
13) Remove the COVER REAR. (RRP1.6)
14) Remove the HOLDER ASSY TONER HBN UNIT. (RRP10.1)
15) Remove the PWBA DRV HBN. (RRP12.6)
16) Remove the CLAMP GUIDE HARNESS (PL12.1.3) at 2 positions secured on the GUIDE HARNESS SW of the LVPS.
17) Shift the harness from the GUIDE HARNESS SW.
18) Release the hooks at 2 positions securing the GUIDE HARNESS SW to the switch bracket on the LVPS.
19) Remove the GUIDE HARNESS ASSY from the LVPS.
20) Remove the HARNESS ASSY AC SW. (RRP12.5)
21) Remove the connector (P/J162), (P/J163), (P/J164), (P/J165) and (P/J167) on the LVPS.
22) Remove 3 screws securing the LVPS to the printer.
23) Remove the LVPS from the printer.

Replacement

Replace the components in the reverse order of removal.

RRP12.5 HARNESS ASSY AC SW (PL12.1.11)

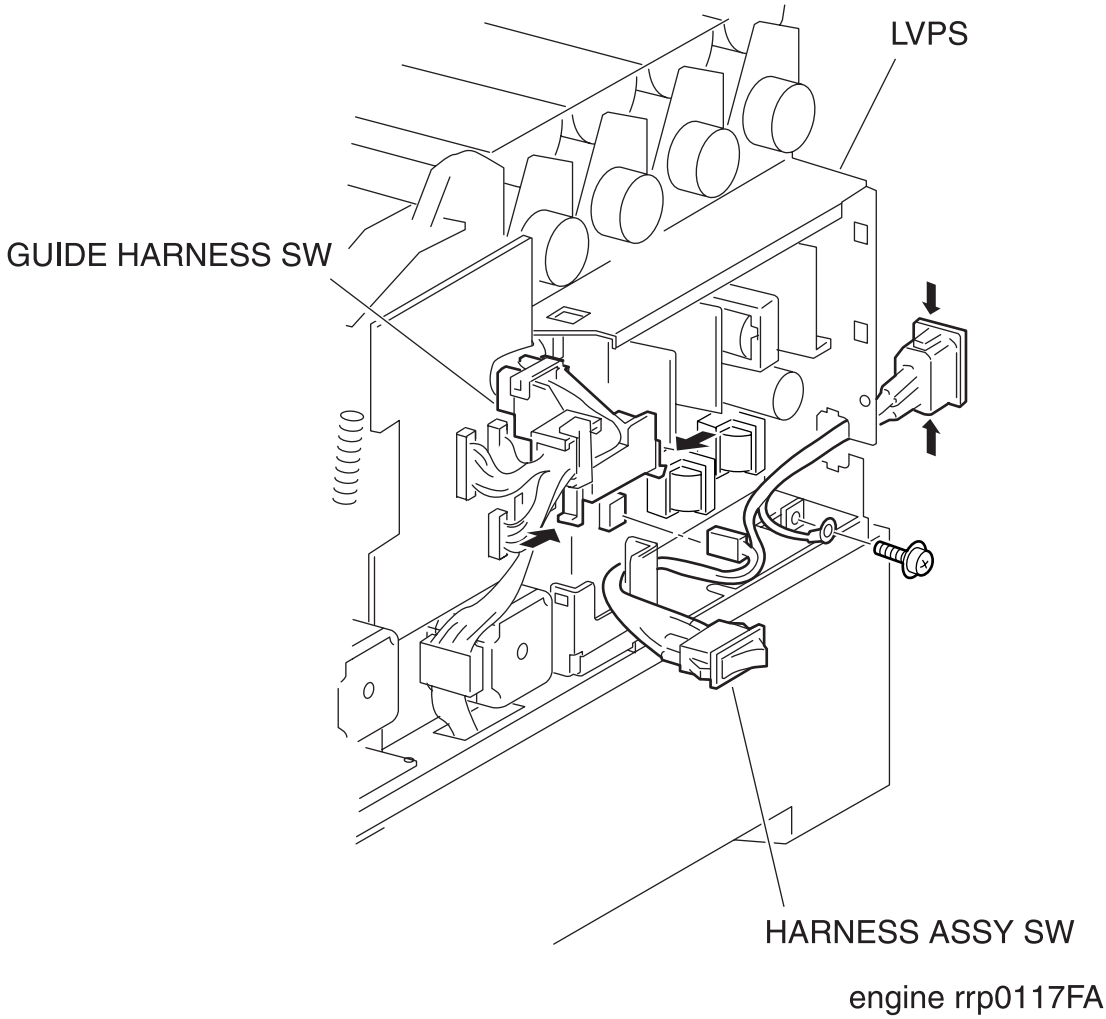


Figure: HARNESS ASSY AC SW Removal

Removal

1) Remove the COVER TOP MAIN. (RRP1.4)
2) Remove the COVER ASSY FRONT IN. (RRP1.10)
3) Remove the COVER SIDE R. (RRP1.9)
4) Remove 1 screw securing the earth of the HARNESS ASSY AC SW to the LVPS (PL12.1.10) from the printer.
5) From the printer, release the hooks at 2 positions securing the GUIDE HARNESS SW to the switch bracket on the LVPS and shift the GUIDE HARNESS SW upward.
6) Shift the switch of the HARNESS ASSY AC SW from the switch bracket of the LVPS.
7) Remove the connector (P/J161) on the LVPS.
8) Releasing the hooks at 2 positions securing the socket of the HARNESS ASSY AC SW to the rear of the LVPS and pull out the socket rearward.
9) Remove the HARNESS ASSY AC SW from the printer.

Replacement

Replace the components in the reverse order of removal.

RRP12.6 PWBA DRV HBN (PL12.1.12)

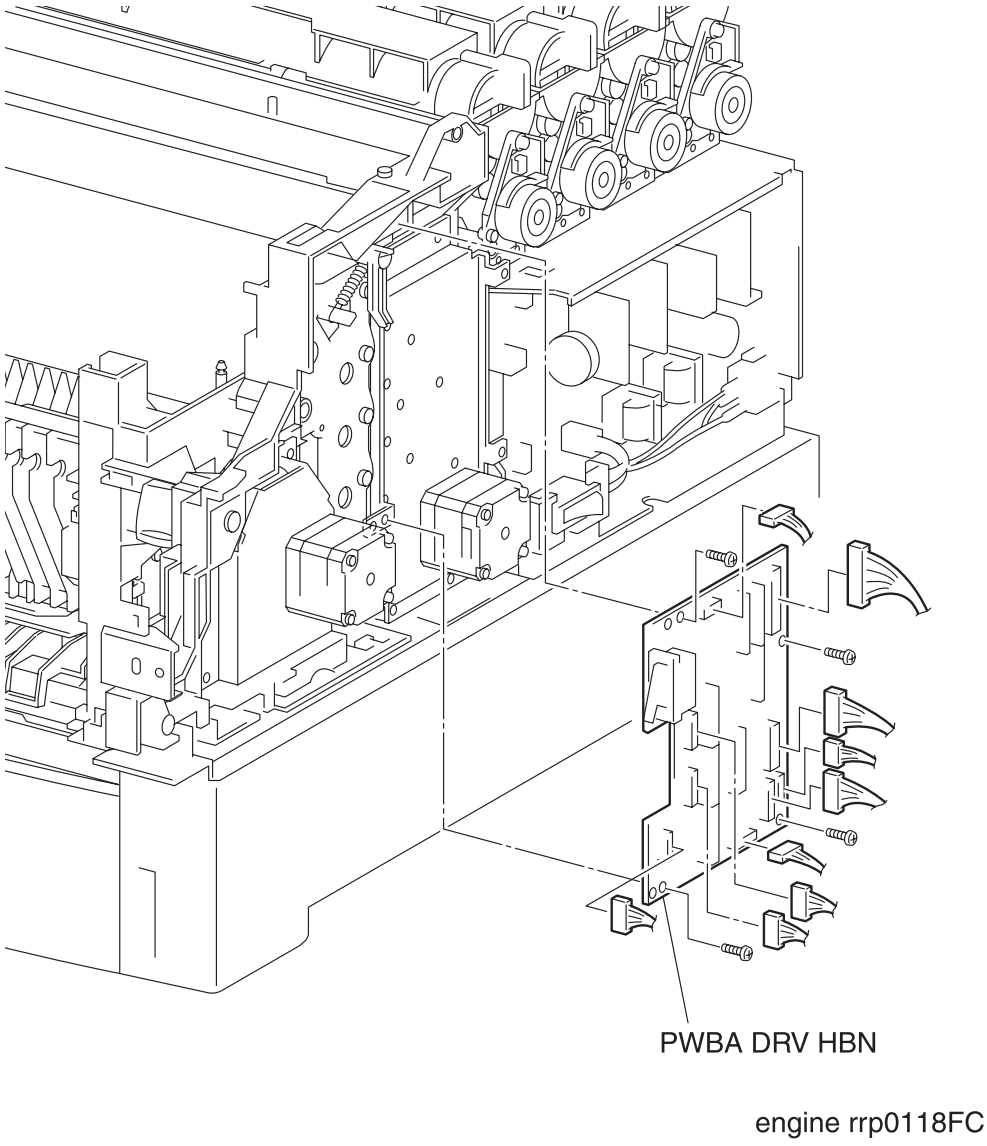


Figure: PWBA DRV HBN Removal

Removal

1) Remove the COVER TOP MAIN. (RRP1.4)
2) Remove the COVER ASSY FRONT IN. (RRP1.10)
3) Remove the COVER SIDE R. (RRP1.9)
4) Remove the all connectors on the PWBA DRV HBN from the right side surface of the printer.
5) Remove 4 screws securing the PWBA DRV HBN to the printer.
6) Remove the PWBA DRV HBN from the printer.

Replacement

Replace the components in the reverse order of removal.

RRP12.7 BOX ASSY MCU/ESS (REFERENCE ONLY)

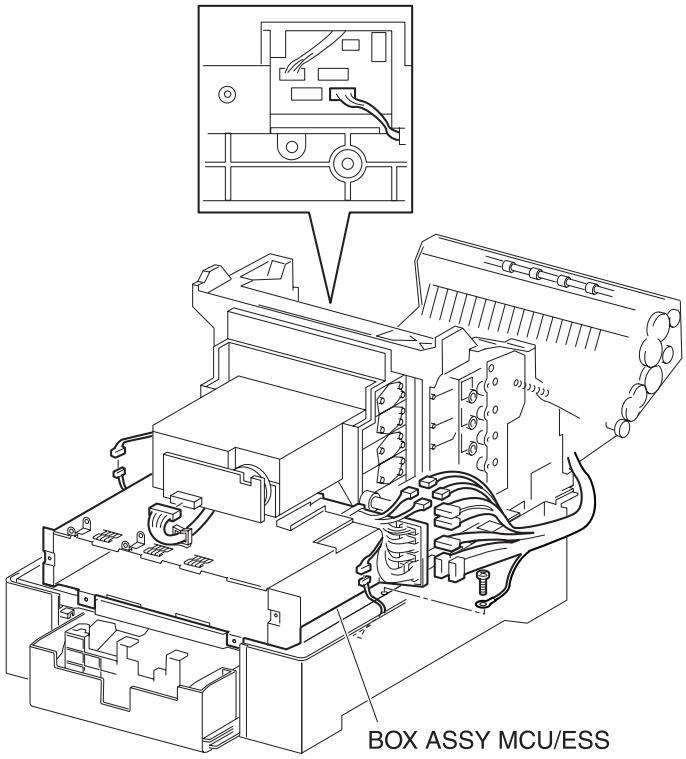


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Figure: BOX ASSY MCU/ESS Removal (1)

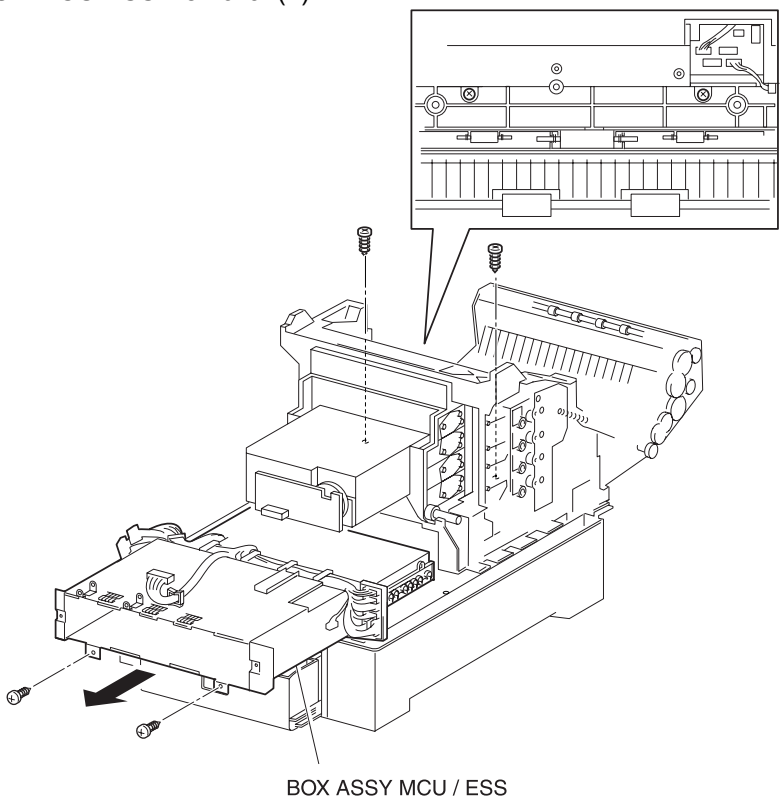

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Figure: BOX ASSY MCU/ESS Removal (2)

Removal

1) Remove the CONTROLLER BOARD. (RRP12.3)
2) Remove the CHUTE ASSY REGI. (RRP9.3)
3) Remove the COVER TOP MAIN. (RRP1.4)
4) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
5) Remove the COVER MSI. (RRP1.11)
6) Remove the TRAY ASSY BASE. (RRP1.12)
7) Remove the COVER ASSY FRONT. (RRP1.13)
8) Remove the COVER ASSY FRONT IN. (RRP1.10)
9) Remove the COVER SIDE L. (RRP1.14)
10) Remove the HSG ASSY BIAS. (RRP9.2)
11) Remove the COVER SIDE R. (RRP1.9)
12) Remove the COVER ASSY TOP PHD. (RRP1.5)
13) Remove the COVER REAR. (RRP1.6)
14) Remove the HOLDER ASSY TONER HBN UNIT. (RRP10.1)
15) Remove the PWBA DRV HBN. (RRP12.6)
16) Remove the LVPS. (RRP12.4)
17) Remove the connector (P/J210) connecting the printer and FEEDER from the right side surface of the printer.
18) Remove the connector (P/J151) on the ROS ASSY (PL9.1.1) from the right side surface of the printer.
19) Remove the connector (P/J2361) connecting the FEEDER to the printer from the left side surface of the printer.
20) Disconnect the connector (P/J3262) of the HARNESS ASSY FSR3 (FSR32) (PL5.1.9) from the left-hand side of the printer.
21) Remove the connector (P/J141), connector (P/J1361), connector (P/J138), connector (P/J221) and connector (P/J139) on the connector bracket from the left side surface of the printer.
22) Remove the connector (P/J19) on the PWBA MCU HBN (PL12.1.1) from the inside of the printer.
23) Remove 1 screw securing the earth cable from the left side surface of the printer.
24) Remove 4 screws securing the BOX ASSY MCU/ESS to the printer.
25) Pull out the BOX ASSY MCU/ESS rearward from the printer and remove it.

Replacement

Replace the components in the reverse order of removal.

RRP12.8 HOUSING ASSY CONTACT (PL12.1.14)

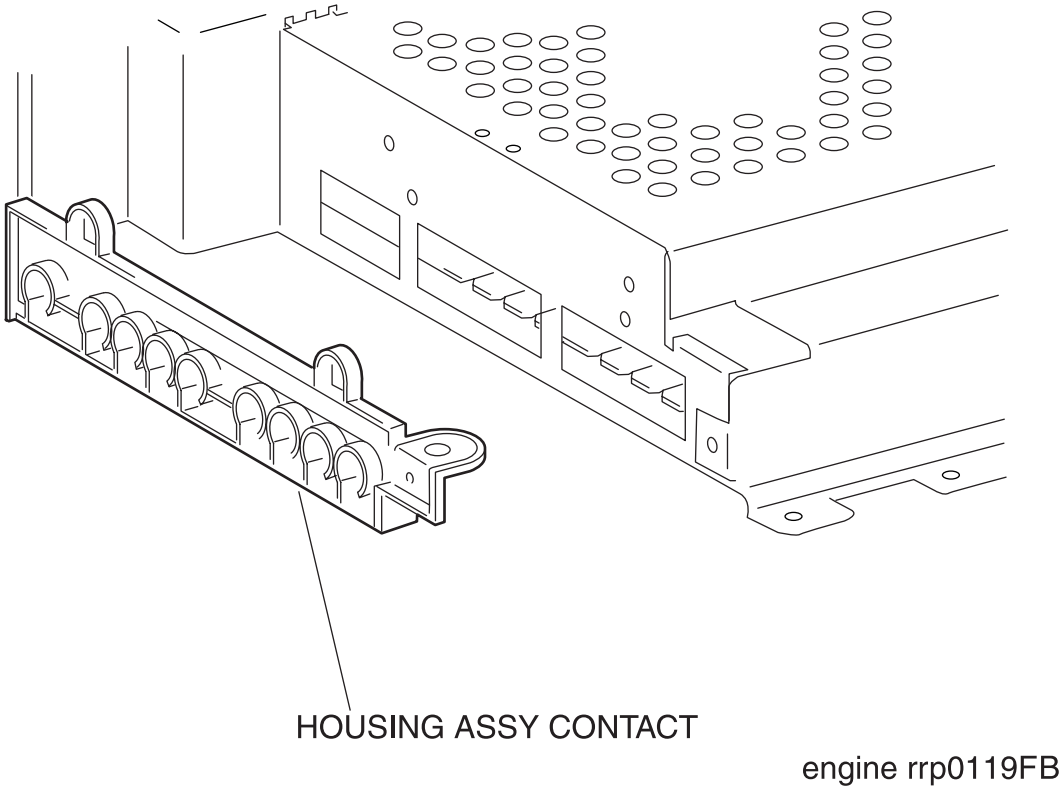


Figure: HOUSING ASSY CONTACT Removal

Removal

1) Remove the CONTROLLER BOARD. (RRP12.3)
2) Remove the CHUTE ASSY REGI. (RRP9.3)
3) Remove the COVER TOP MAIN. (RRP1.4)
4) Remove the COVER ASSY FRONT HEAD. (RRP1.2)
5) Remove the COVER MSI. (RRP1.11)
6) Remove the TRAY ASSY BASE. (RRP1.12)
7) Remove the COVER ASSY FRONT. (RRP1.13)
8) Remove the COVER ASSY FRONT IN. (RRP1.10)
9) Remove the COVER SIDE L. (RRP1.14)
10) Remove the HSG ASSY BIAS. (RRP9.2)
11) Remove the COVER SIDE R. (RRP1.9)
12) Remove the COVER ASSY TOP PHD. (RRP1.5)
13) Remove the COVER REAR. (RRP1.6)
14) Remove the HOLDER ASSY TONER HBN UNIT. (RRP10.1)
15) Remove the PWBA DRV HBN. (RRP12.6)
16) Remove the LVPS. (RRP12.4)
17) Remove the BOX ASSY MCU/ESS. (RRP12.7)
18) Remove the HOUSING ASSY CONTACT to the BOX ASSY MCU/ESS.
19) Pull out the HOUSING ASSY CONTACT from the BOX ASSY MCU/ESS and remove it.

Replacement

Replace the components in the reverse order of removal.

Chapter 4 Plug/Jack (P/J) Connector Locations

1. Connector [P (plug) / J (jack)]

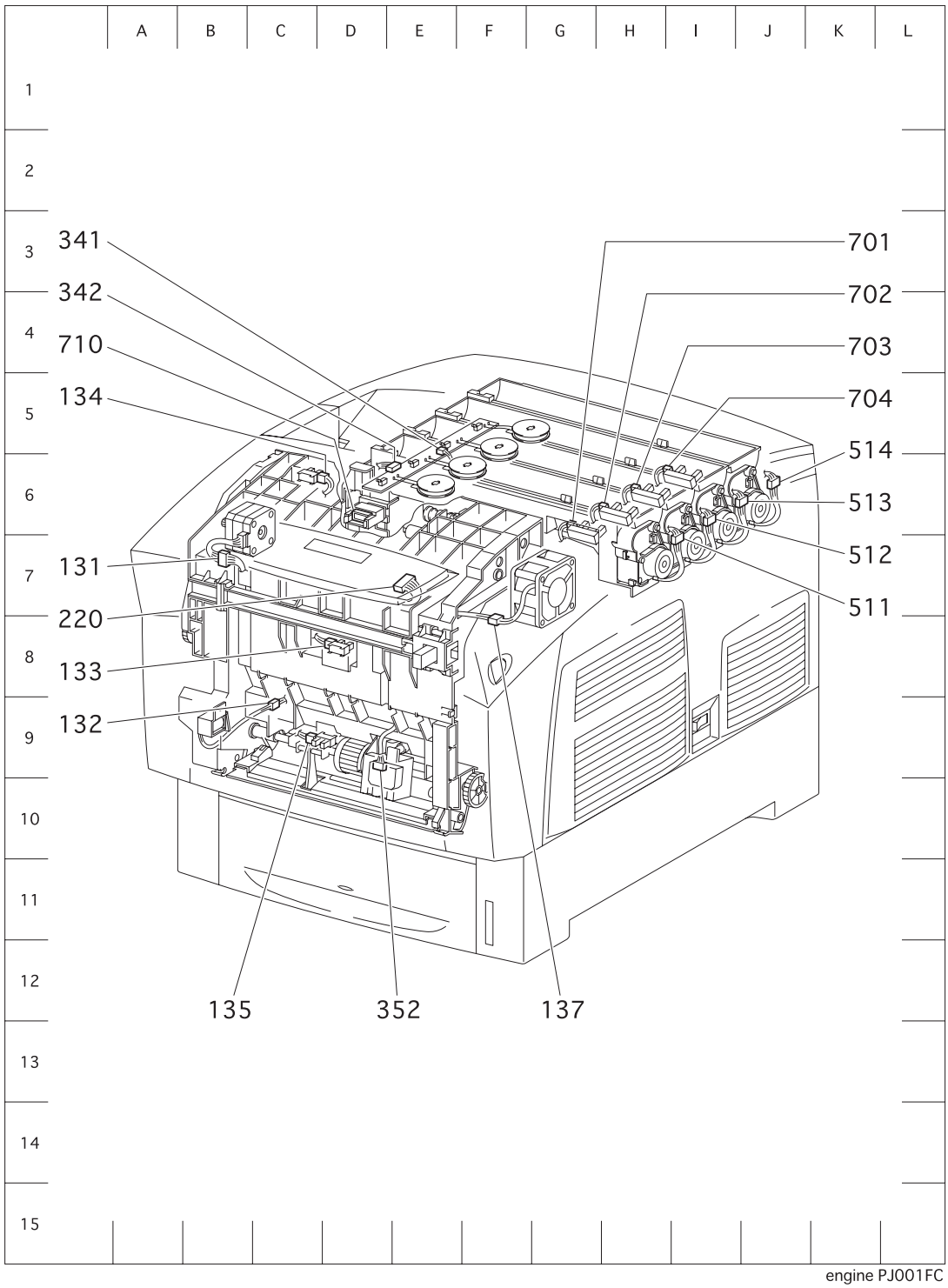
1.1 List of P/J

P/J	Coordinates	Remarks
1	I-37	Connects PWBA Font Card and Controller Board
11	J-43	Connects PWBA MCU HBN and PWBA DRV HBN
12	I-43	Connects PWBA MCU HBN and PWBA DRV HBN
13	H-43	Connects PWBA MCU HBN, S-HVPS, FSR3(FSR32) Harness Assembly, Front 2 Harness Assembly and ADC Harness Assembly
14	H-37	Connects PWBA MCU HBN and Controller Board
14	I-37	Connects Controller Board and PWBA Font Card
15	H-43	Connects PWBA MCU HBN and ROS Assembly
18	H-43	Connects PWBA MCU HBN and REGI Chute Assembly (REGI Clutch, REGI Sensor)
19	H-44	Connects PWBA MCU HBN and Retard Housing Assembly (TURN Clutch)
21	I-43	Connects PWBA MCU HBN and OPFREC Harness Assembly
22	J-43	Connects PWBA MCU HBN and OPEPANE BS Harness Assembly
23	I-43	Connects PWBA MCU HBN and LVPS STD Assembly
24	H-43	Connects PWBA MCU HBN, FSR3(FSR32) Harness Assembly and TMPA Harness Assembly
27	H-37	Connects Controller Board and PWBA MCU HBN
30	H-43	Flash-write
31	J-43	Test-print
32	H-43	Connects PWBA MCU HBN and OHP Sensor
34	H-42	Connects PWBA MCU HBN and RFID2 Harness Assembly
35	H-43	Not Connects
41	E-18	Connects PWBA DRV HBN and PWBA MCU HBN
42	E-17	Connects PWBA DRV HBN and PWBA MCU HBN
47	E-18	Connects PWBA DRV HBN, Pick Up Assembly (No Paper Sensor, Low Paper Sensor, Solenoid Feed, Clutch Assembly Turn) and Switch Assembly Size
48	D-18	Connects PWBA DRV HBN and Main Drive Assembly
49	D-17	Connects PWBA DRV HBN and DEVE Drive Assembly
50	E-18	Connects PWBA DRV HBN, Chute Assembly Exit (Motor Assembly DUP) and Cover Assembly Front Head (Fan Fuser)
51	E-16	Connects PWBA DRV HBN, Holder TCRU Assembly (No Toner Sensor, TNR Motor) and PWBA CRUM Reader
52	D-18	Connects PWBA DRV HBN and Chute Assembly IN (Fuser Drive Assembly)
60	E-17	Connects PWBA DRV HBN and LVPS STD Assembly
61	E-17	Connects PWBA DRV HBN and LVPS STD Assembly
71	B-32	Connects EEPROM Harness Assembly and Plate Assembly Dispenser L (CONN Assembly CRUM MC)
131	B-7	Connects Chute Assembly Exit (Motor Assembly DUP) and PWBA DRV HBN
132	C-9	Connects Chute Assembly Out (Solenoid Feed MSI) and Front 1A Harness Assembly
133	D-8	Connects Chute Assembly Out (DUP JAM Sensor) and Front 1A Harness Assembly
134	D-6	Connects Chute Assembly Out (Full Stack Sensor) and Front 1A Harness Assembly
135	C-9	Connects Chute Assembly Out (MSI No Paper Sensor) and Front 1A Harness Assembly

P/J	Coordinates	Remarks
136	C-23	Connects Front Assembly In (ADC Sensor Assembly) and Front 1A Harness Assembly
137	F-8	Connects Cover Assembly Front Head (Fan Fuser) and PWBA DRV HBN
138	B-32	Connects Front 1A Harness Assembly and Fuser Assembly
139	B-33	Connects Front 1A Harness Assembly and Chute Assembly Out (Solenoid Feed MSI, DUP JAM Sensor, Full Stack Sensor, MSI No Paper Sensor)
140	H-43	Connects PWBA MCU HBN, CRUM Harness Assembly, TFLSNS Harness Assembly and PWBA EEPROM STD
141	B-32	Connects EEPROM Harness Assembly and Chute Assembly In (TNR Full Sensor)
142	E-24	Connects Chute Assembly In (TNR Full Sensor) and EEPROM Harness Assembly
144	E-35	Connects PWBA EEPROM STD and PWBA MCU HBN
145	E-35	Not Connects
151	H-22	Connects ROS Assembly and PWBA MCU HBN
161	H-29	Connects LVPS STD Assembly and Power Cord
162	H-29	Connects LVPS STD Assembly and Fuser Assembly
163	H-27	Connects LVPS STD Assembly and PWBA DRV HBN
164	H-28	Connects LVPS STD Assembly and PWBA MCU HBN
165	H-28	Connects LVPS STD Assembly and PWBA DRV HBN
166	H-27	Connects LVPS STD Assembly and Fan
167	H-28	Connects LVPS STD Assembly and PWBA MCU HBN
168	H-28	Not Connects
181	E-38	Connects REGI Chute Assembly (REGI Sensor) and PWBA MCU HBN
210	H-24	Connects OPF Main Harness Assembly and Option Feeder
220	E-7	Connects Console Panel Hibana and OPEPANE AS Harness Assembly
221	B-33	Connects OPEPANE AS Harness Assembly and Console Panel Hibana
231	D-52	Connects Sensor HUM Temp and TMPNCS Harness Assembly
232	F-23	Connects Fuser Assembly, LVPS STD Assembly, Front 1A Harness Assembly and TMPNCS Harness Assembly
311	I-42	Connects PWBA MCU HBN and LVPS STD Assembly
341	E-5	Connects PWBA CRUM Reader and RFID Harness Assmbly
342	E-6	Connects PWBA CRUM Reader and PWBA DRV HBN
351	E-36	Not Connects
352	D-9	Not Connects
471	I-53	Connects Switch Assembly Size and PWBA DRV HBN
472	F-53	Connects No Paper Sensor and PWBA DRV HBN
473	F-54	Connects Low Paper Sensor and PWBA DRV HBN
474	G-54	Connects Solenoid Feed and PWBA DRV HBN
475	H-53	Connects Clutch Assembly Turn and PWBA DRV HBN
511	I-7	Connects Holder Assembly MQ-Y (TNR Motor) and PWBA DRV HBN
512	I-6	Connects Holder Assembly MQ-M (TNR Motor) and PWBA DRV HBN
513	J-6	Connects Holder Assembly MQ-C (TNR Motor) and PWBA DRV HBN
514	J-6	Connects Holder Assembly MQ-K (TNR Motor) and PWBA DRV HBN
701	G-6	Connects Holder Assembly MQ-Y (No Toner Sensor) and PWBA DRV HBN
702	H-6	Connects Holder Assembly MQ-M (No Toner Sensor) and PWBA DRV HBN
703	H-6	Connects Holder Assembly MQ-C (No Toner Sensor) and PWBA DRV HBN
704	H-6	Connects Holder Assembly MQ-K (No Toner Sensor) and PWBA DRV HBN

P/J	Coordinates	Remarks
710	D-6	Connects Plate Assembly Dispenser L (CONN Assembly CRUM MC) and EEPROM Harness Assembly
810	H-54	Connects Option Feeder and PWBA MCU HBN
1361	B-32	Connects Front 1A Harness Assembly and Chute Assembly In (ADC Sensor Assembly)
2361	E-37	Connects TMPNCS Harness Assembly and Sensor HUM Temp
2362	E-36	Connects TMPNCS Harness Assembly and Fuser Assembly
3411	G-36	Connects RFID Harness Assembly and PWBA CRUM Reader
5011	F-35	Connects S-HVPS and PWBA MCU HBN
5020	E-35	Connects S-HVPS and Chute Assembly In
5030	E-35	Connects S-HVPS and Chute Assembly In

1.2 P/J layout diagram



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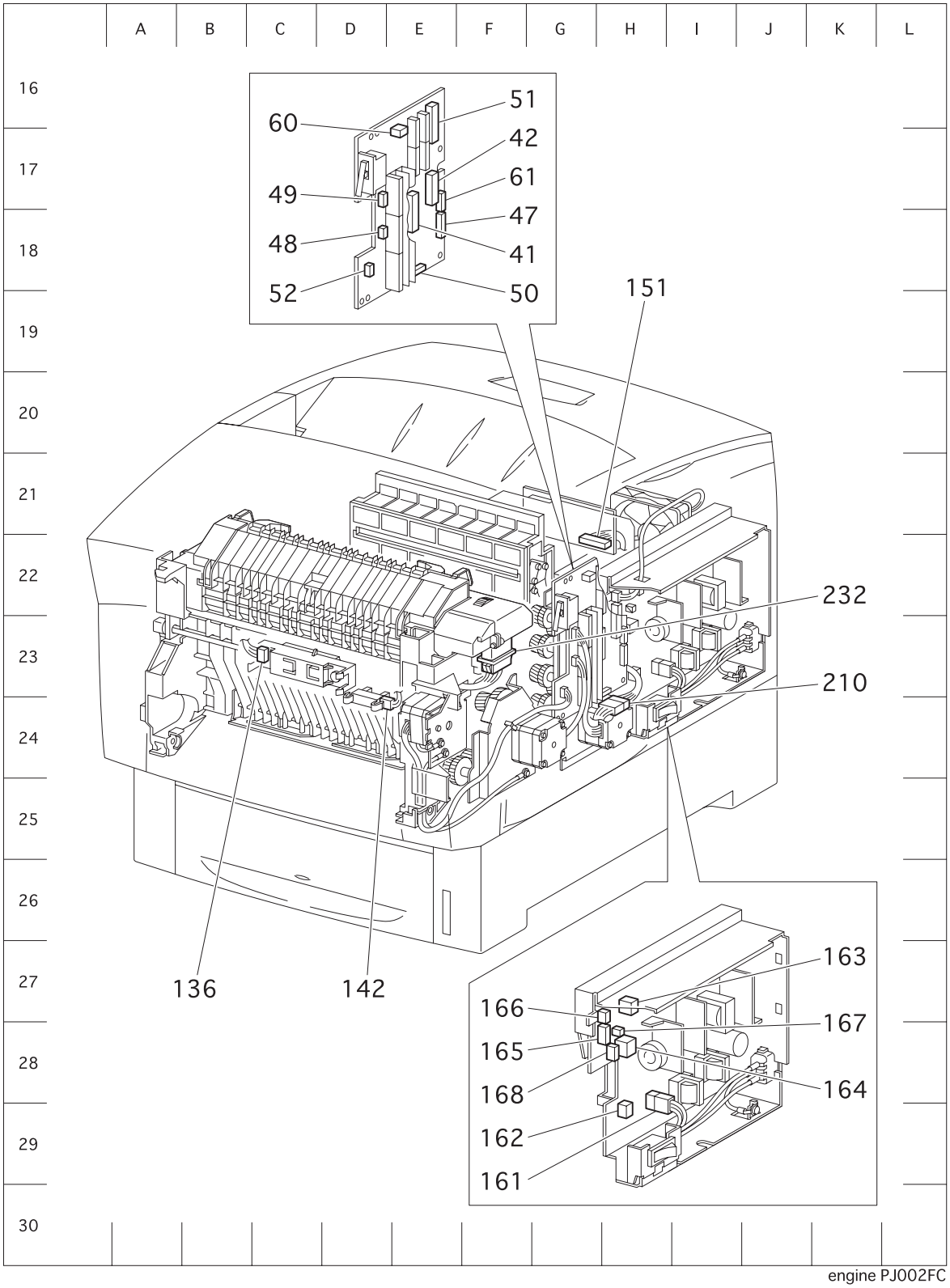
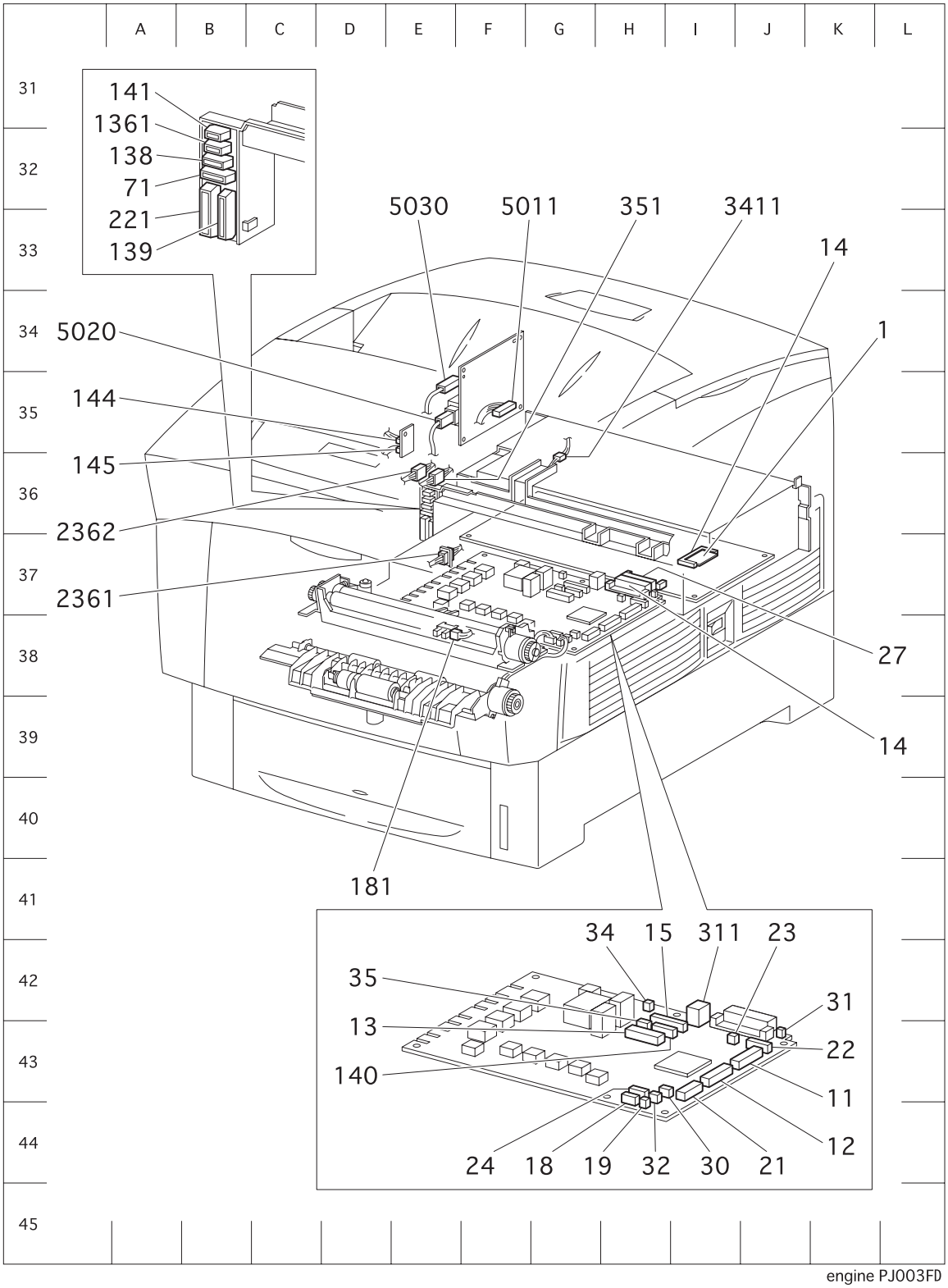


engine PJ002FC



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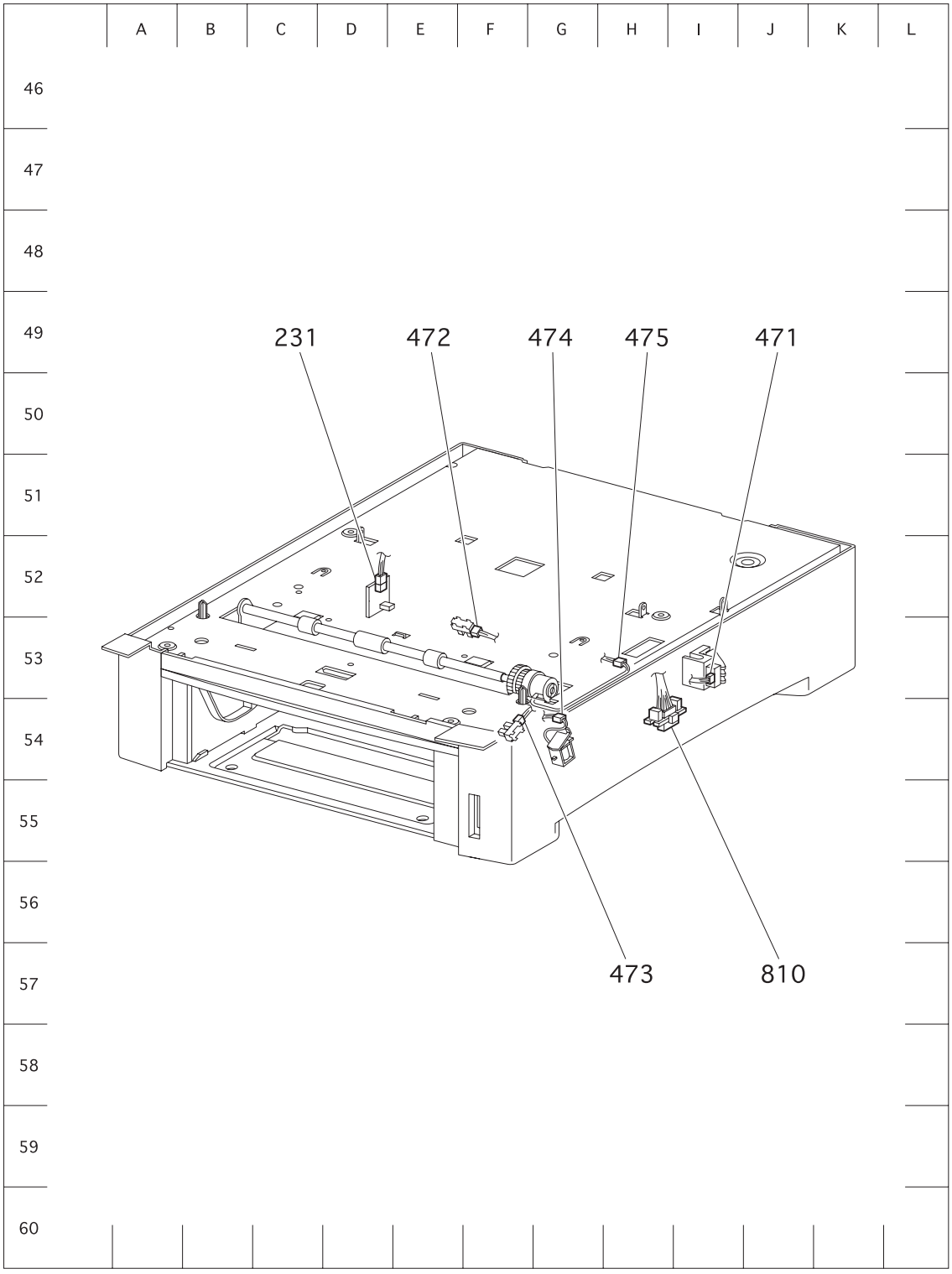

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Chapter 5 Parts List

1. Parts List

1.1 Caution for use of parts list

- The figures indicating the illustrations are the item No. in the list and present correspondence between the illustrations and parts.
- The notation of PL “X.Y.Z” is composed of the plate (PL), item “X.Y”, and parts “Z”.
- The alphabet characters in the illustrations represent screws and clips as follows:
  “S”: screw, “E”: E-ring, “KL”: KL clip, “C”: C-ring, and “N”: nut
- “▼” mark in the illustrations are attached to items indicating assembly parts in the illustrations.
- Encircled alphabetical figures in the illustrations indicate interrupted leader lines. Same characters in the illustrations represent lines to be connected.
- The mark “(with 2-5)” attached to assembly parts on the illustrations and lists represents that the items “2, 3, 4, and 5" of that plate are contained and the mark “(with 2-5, PL6.1.1.1) represent that the item “2, 3, 4, and 5" of that plate and the item “1” of the plate “6.1” are contained.
- The mark “[Same PLX.Y.Z]” attached to parts in the illustrations and lists resents that the parts is the same as the parts of the item “Z” of the plate “X.Y”.
- The mark “★” attached to the item in the list represents “recommended spare parts” which can be usually supplied. (Supply of other parts shall be examined separately.)
- The mark “⁎“attached to parts in the list represents “Note” or “Reference” about that parts is contained in the same page.
- “HIGH ASSY” in the list represent the high level assembly parts containing that parts.

NOTE

For spare parts, refer to the “Spare parts list” which is issued separately.

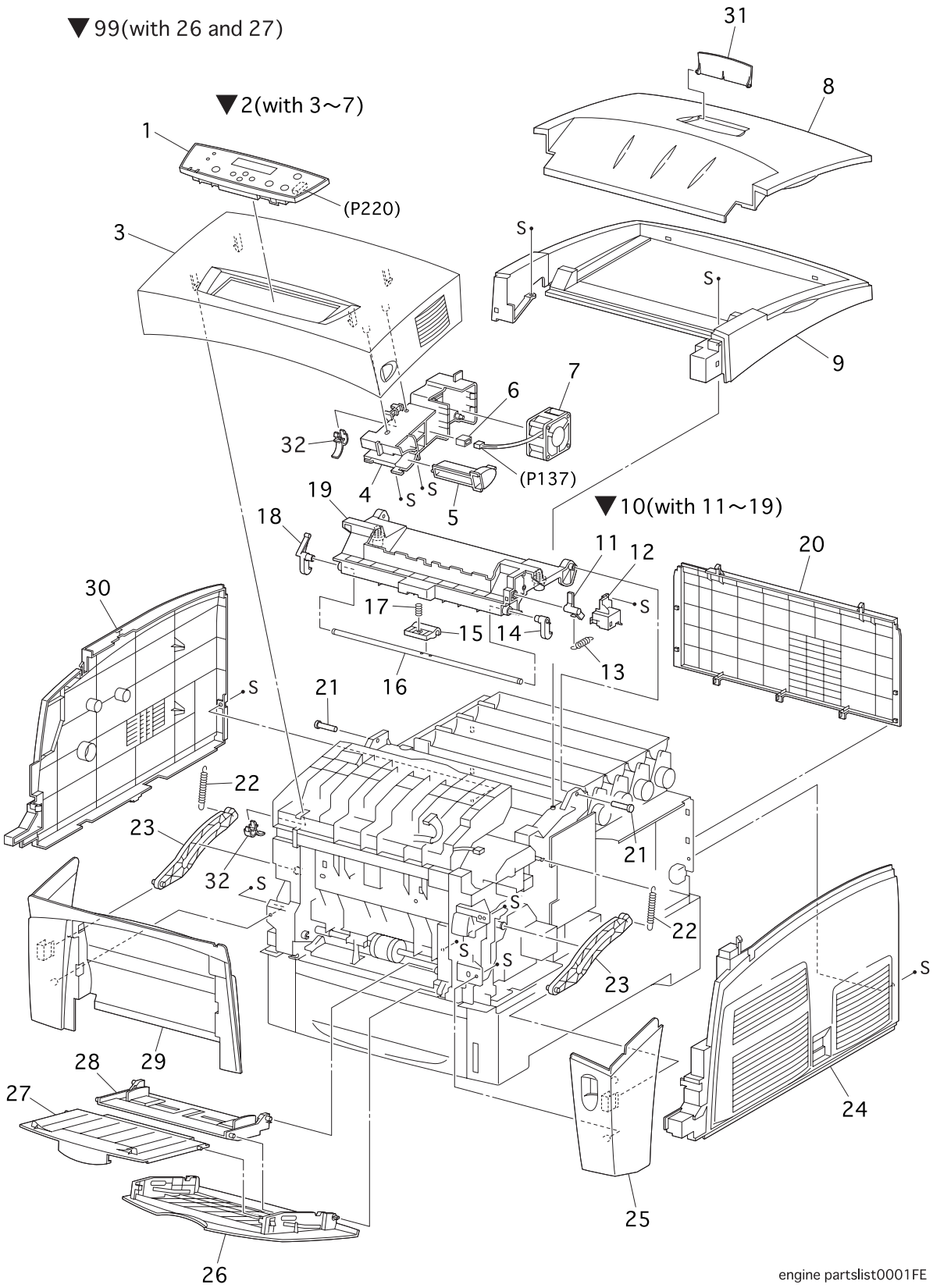
NOTE

For the connector (P/J), parts such as harness, wire, etc. in the list, refer to “Chapter 6, Electric wiring”

NOTE

It should be noted that configuration of parts may be different or some parts are not used depending on specifications of OEM.

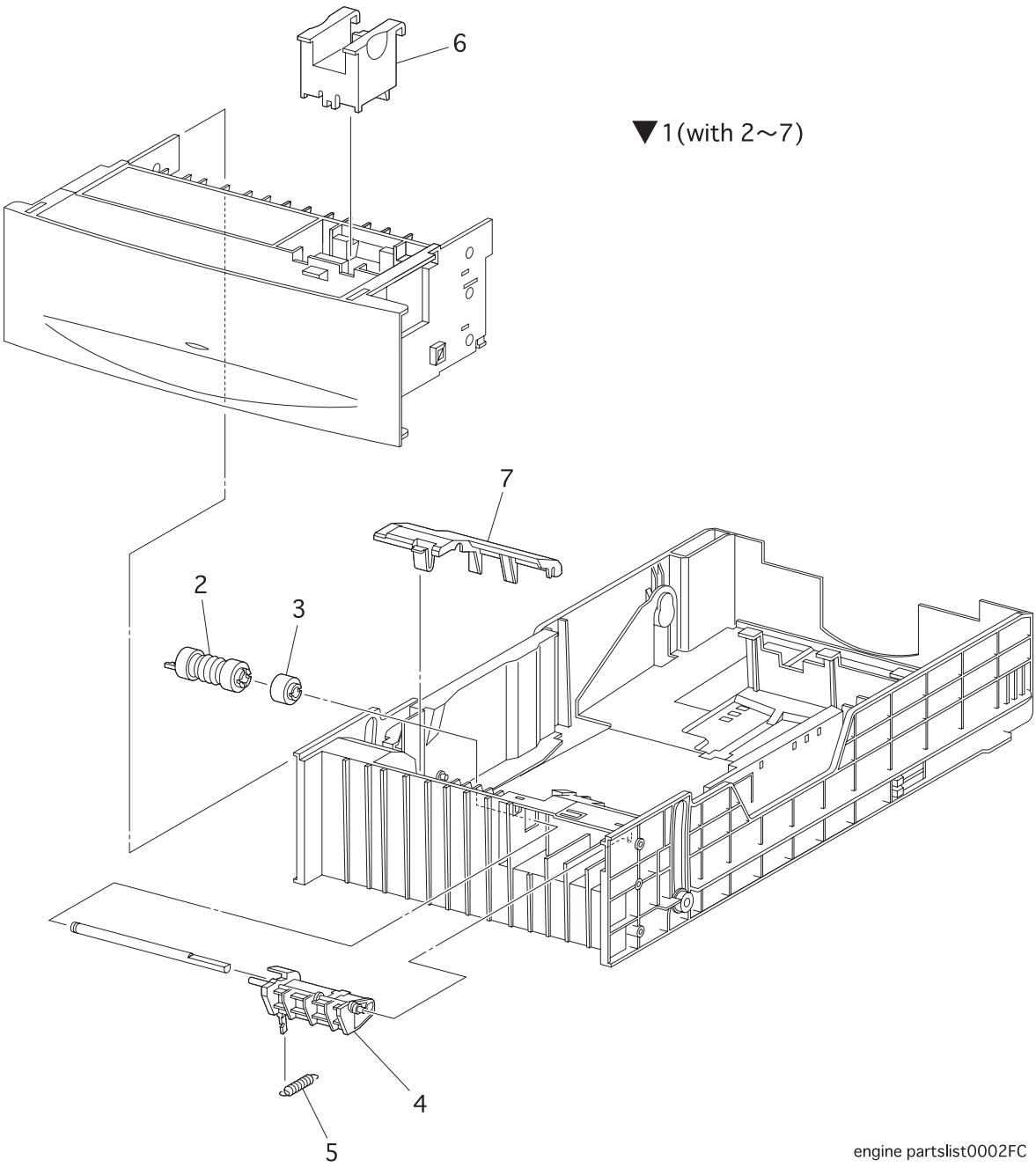
PL 1.1 Cover [Illustration]



PL 1.1 Cover [List]

Item	Parts name	
1	CONSOLE PANEL HIBANA	865802K52400
2	COVER ASSY FRONT HEAD (with 3~7)	865802K52170
3	COVER FRONT HEAD	Refer to Item 2
4	HOLDER LEVER OUT	865019E55310
5	LEVER OUT	865011E10690
6	CON.AMP 175694-3	Refer to Item 2
7	FAN FUSER	865127E82890
8	COVER TOP	865802E31150
9	COVER TOP MAIN	865802E53900
10	COVER ASSY TOP PHD(with 11~19)	865802K52180
11	CAM I/R	Refer to Item 10
12	COVER CAM	Refer to Item 10
13	SPRING CAM I/R	865809E28211
14	LATCH TOP R	865003E53230
15	HANDLE TOP	865003E56850
16	SHAFT LATCH TOP	Refer to Item 10
17	SPRING HANDLE	865809E28240
18	LATCH TOP L	865003E59460
19	COVER TOP PHD	Refer to Item 10
20	COVER REAR	865802E22930
21	STUD TOP	865026E76270
22	SPRING LINK	865809E28570
23	LINK	865012E10050
24	COVER SIDE R	865802E52300
25	COVER ASSY FRONT IN	865802K34280
26	COVER MSI	865050K44821
27	TRAY MSI SLIDE	865050E16900
28	TRAY ASSY BASE	865050K44611
29	COVER ASSY FRONT	865802K34291
30	COVER SIDE L	865802E22900
31	COVER TOP STOPPER	865802E32020
32	LEVER POP UP	865604K12880
98	FEED ROLL KIT(with 3X2pcs)	
99	TRAY ASSY LOW(with 26 and 27)	865050K44820

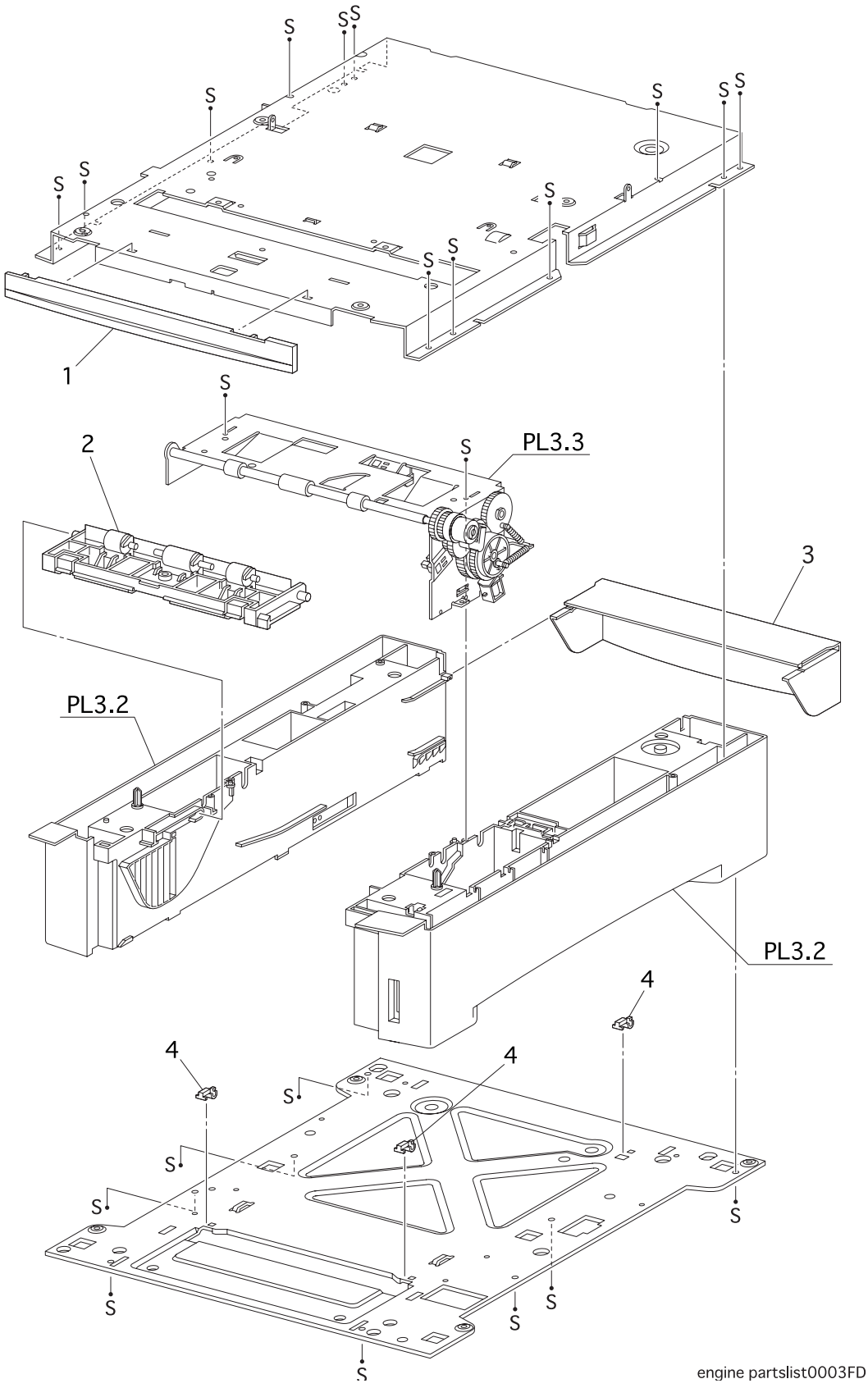
PL 2.1 Paper Cassette [Illustration]



PL 2.1 Paper Cassette [List]

Item	Parts name	
1	CASSETTE ASSY(with 2~7)	865084K12330
2	ROLL ASSY RETARD *1	865059K21730
3	CLUTCH ASSY FRICTION	865005K06270
4	HOLDER RETARD	865019E49231
5	SPRING RETARD	865809E40970
6	A5 BLOCK	
7	CHUTE GUIDE COVER	
	*1:Periodical Replacement Parts	

PL 3.1 Paper Feeder I [Illustration]

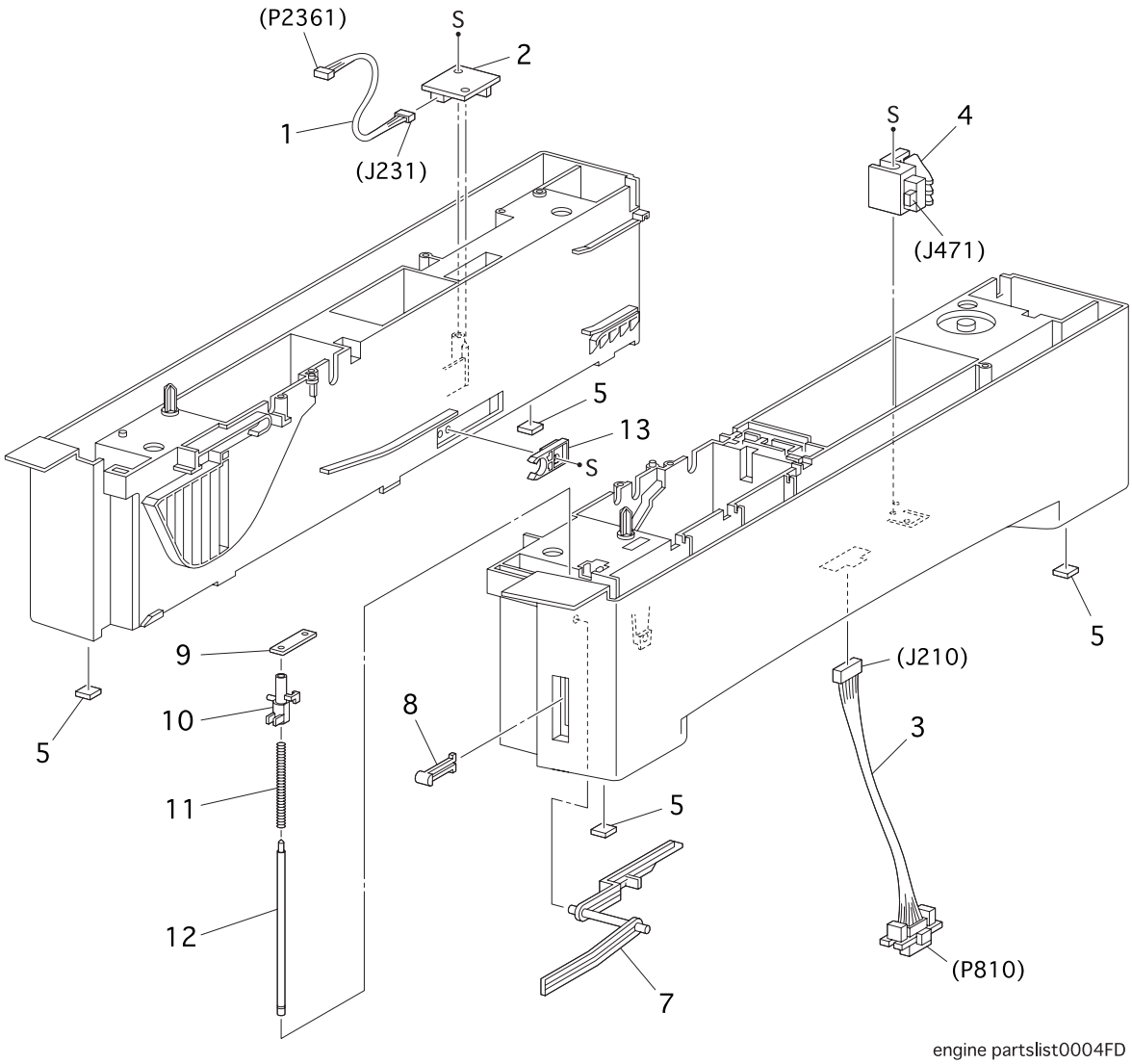


PL 3.1 Paper Feeder I [List]

Item	Parts name	
1	COVER FDR FRONT	865802E22810
2	CHUTE ASSY TURN *1	865054K18000
3	COVER CST SLIDE	865802E50440
4	BLOCK	865014E42121
5	--	

*1:Periodical Replacement Parts

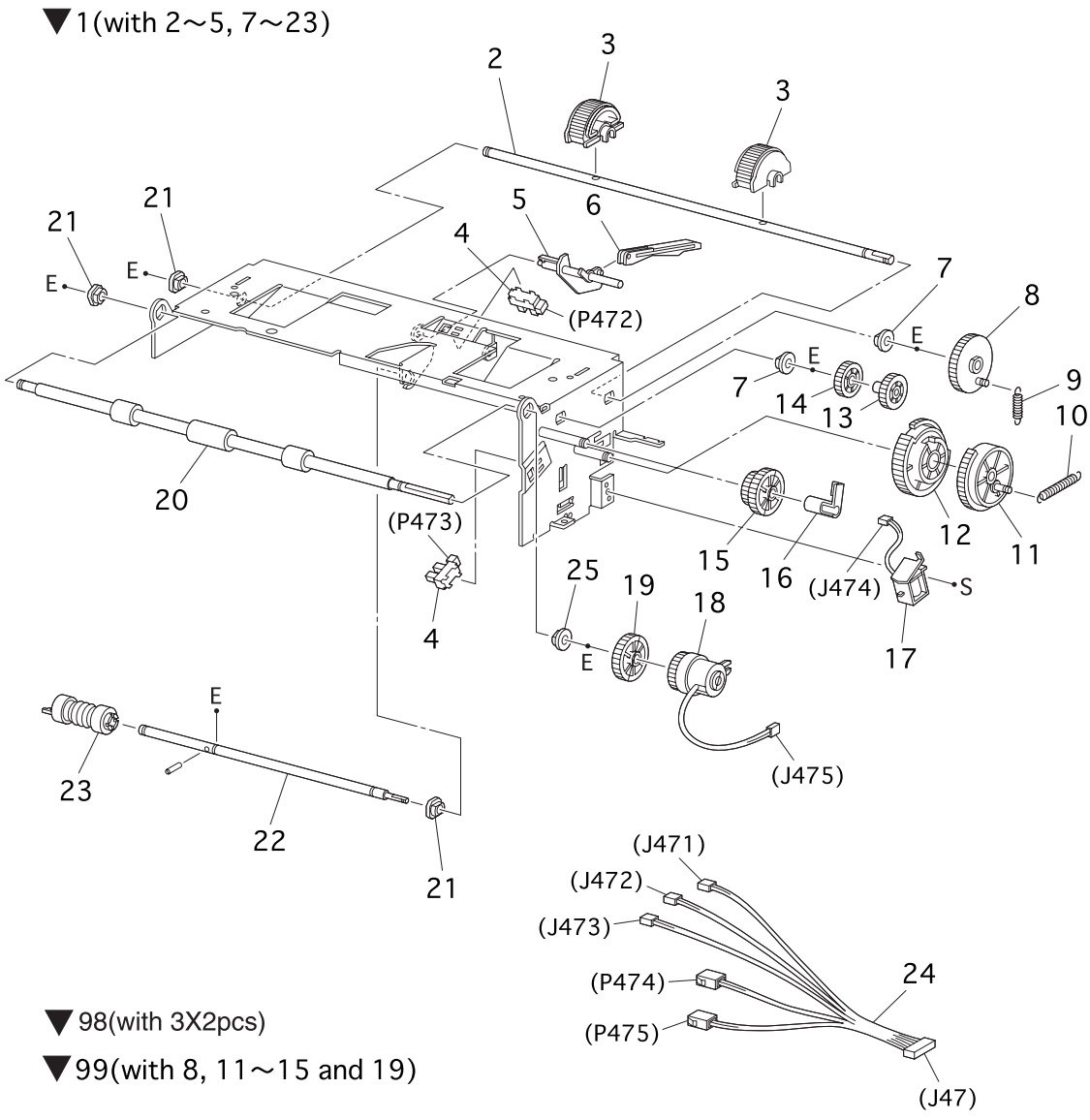
PL 3.2 Paper Feeder II [Illustration]



PL 3.2 Paper Feeder II [List]

Item	Parts name	
1	HARNESS ASSY TMPA(J231-J2361)	865162K69650
2	SENSOR HUM TEMP	865130K61530
3	HARNESS ASSY OPFREC(J210-P810)	865162K69700
4	SWITCH ASSY SIZE	865110K11240
5	FOOT	865017E96630
6	--	
7	LEVER LOW PAPER	865011E10680
8	INDICATOR	865123E91110
9	HOLDER SHAFT INDICATOR	865019E48400
10	GUIDE INDICATOR	865032E16070
11	SPRING INDICATOR	865809E28300
12	SHAFT INDICATOR	865006E71960
13	STOPPER CST	865003E56900

PL 3.3 Paper Feeder III [Illustration]



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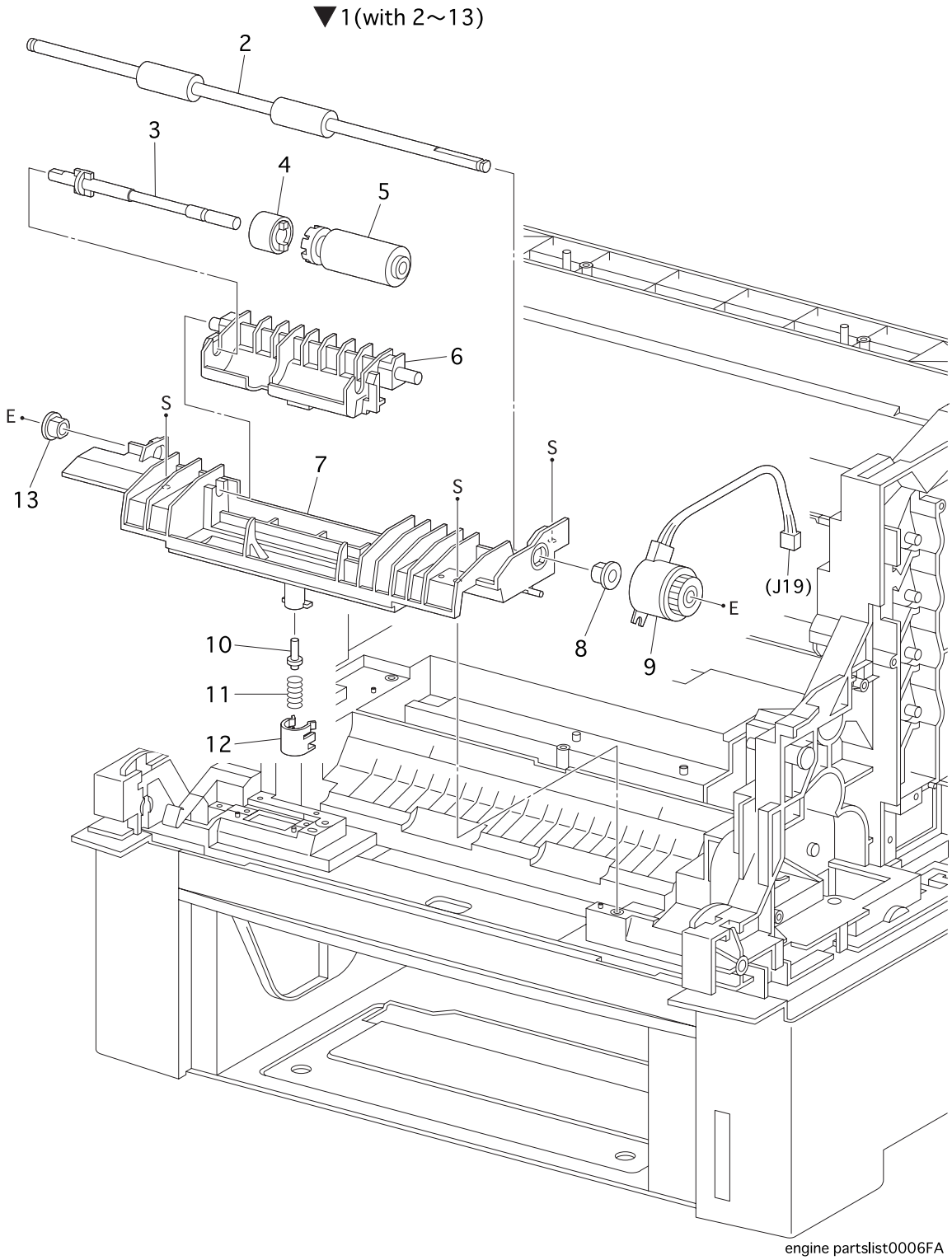
PL 3.3 Paper Feeder III [List]

Item	Parts name	
1	PICKUP ASSY(with 2~5, 7~23)	865001K73732
2	SHAFT FEED 1	865006E71970
3	ROLL ASSY FEED *1	865059K18240
4	SENSOR PHOTO	865130E82740
5	ACTUATOR NO PAPER	865120E18641
6	LINK ACTUATOR	865012E93212
7	BEARING (ø6×L8)/METAL	865413W75959
8	GEAR FEED 1	Refer to Item 1
9	SPRING FEED 1	865809E28310
10	SPRING FEED H	865809E28320
11	GEAR FEED H2	Refer to Item 1
12	GEAR FEED H1	Refer to Item 1
13	GEAR FEED 2	Refer to Item 1
14	GEAR IDLER FEED	Refer to Item 1
15	GEAR IDLER	Refer to Item 1
16	STOPPER CLUTCH	865003E53290
17	SOLENOID FEED	865121E87700
18	CLUTCH ASSY TURN	865005K06011
19	GEAR IDLER IN	Refer to Item 1
20	ROLL ASSY TURN	865059K18261
21	BEARING (ø6×L8)/BLACK	865413W11660
22	SHAFT FEED 2	865006E71980
23	ROLL ASSY	865059K21730
24	HARNESS ASSY FEEDER(J47-J471/J472/J473/P474/P475)	865162K69690
25	TURN ROLL BEARING METAL *1	
99	KIT GEAR FDR(with 8,11~15 and 19)	865604K02531

*1:Periodical Replacement Parts

*2:BEARING (ø6×L8)/METAL(PL3.3.7) is the same shape as TURN ROLL BEARING METAL(PL3.3.25),but it is not Periodical Replacement Parts.

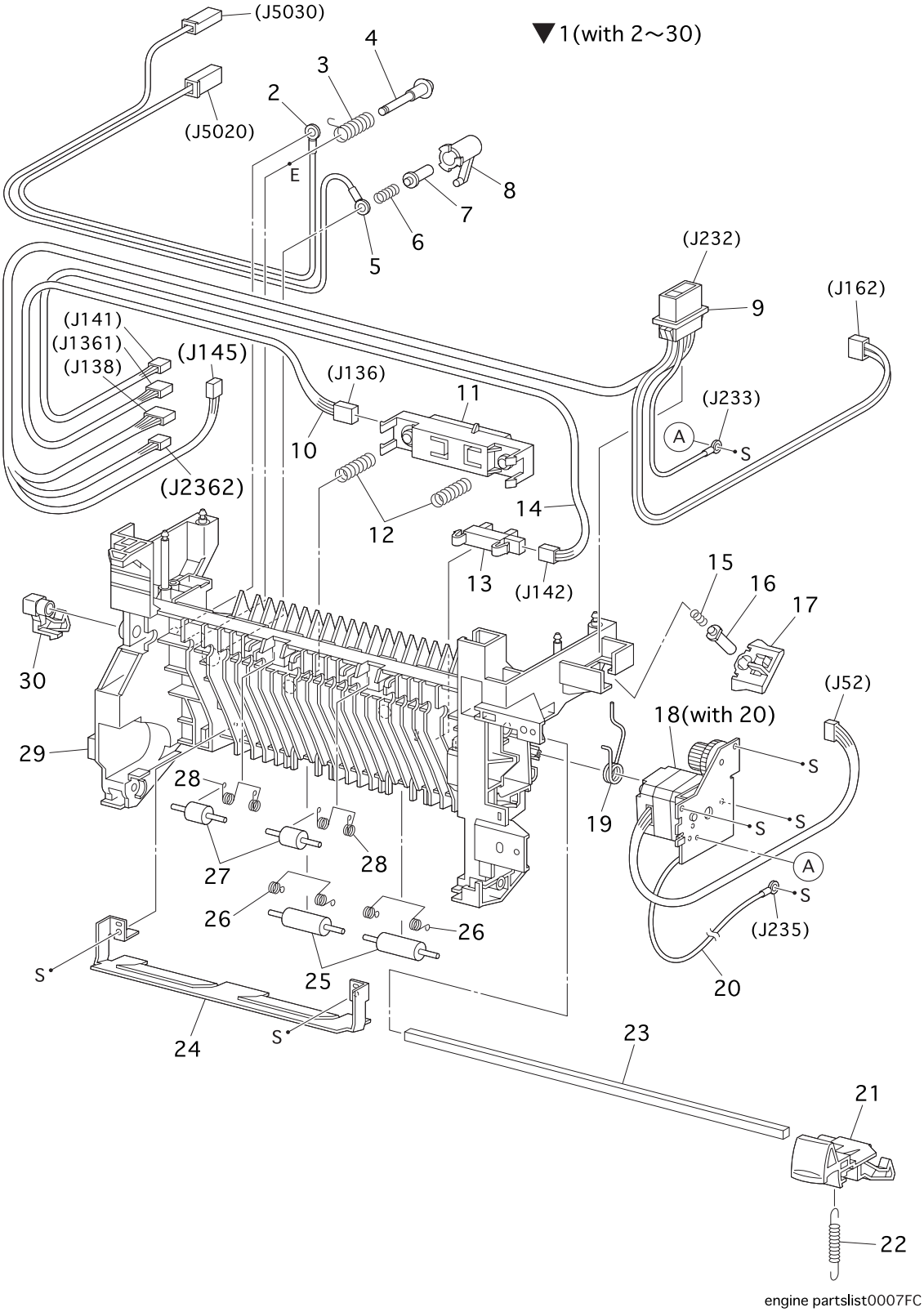
PL 4.1 Housing Assy Retard [Illustration]



PL 4.1 Housing Assy Retard [List]

Item	Parts name	
1	HOUSING ASSY RETARD(with 2~13)	865802K52290
2	ROLL TURN	865059K19940
3	SHAFT RTD	Refer to Item 1
4	CLUTCH ASSY FRICTION	865005K06280
5	ROLL ASSY RETARD MSI *1	865059K19950
6	HOLDER RETARD	Refer to Item 1
7	HOUSING RETARD	Refer to Item 1
8	BEARING	865013E18061
9	CLUTCH TURN	865121E89370
10	STUD RETARD	865026E77720
11	SPRING RETARD 370	865809E28671
12	CAP RETARD	865021E97470
13	BEARING EARTH	865016E19270
	*1:Periodical Replacement Parts	

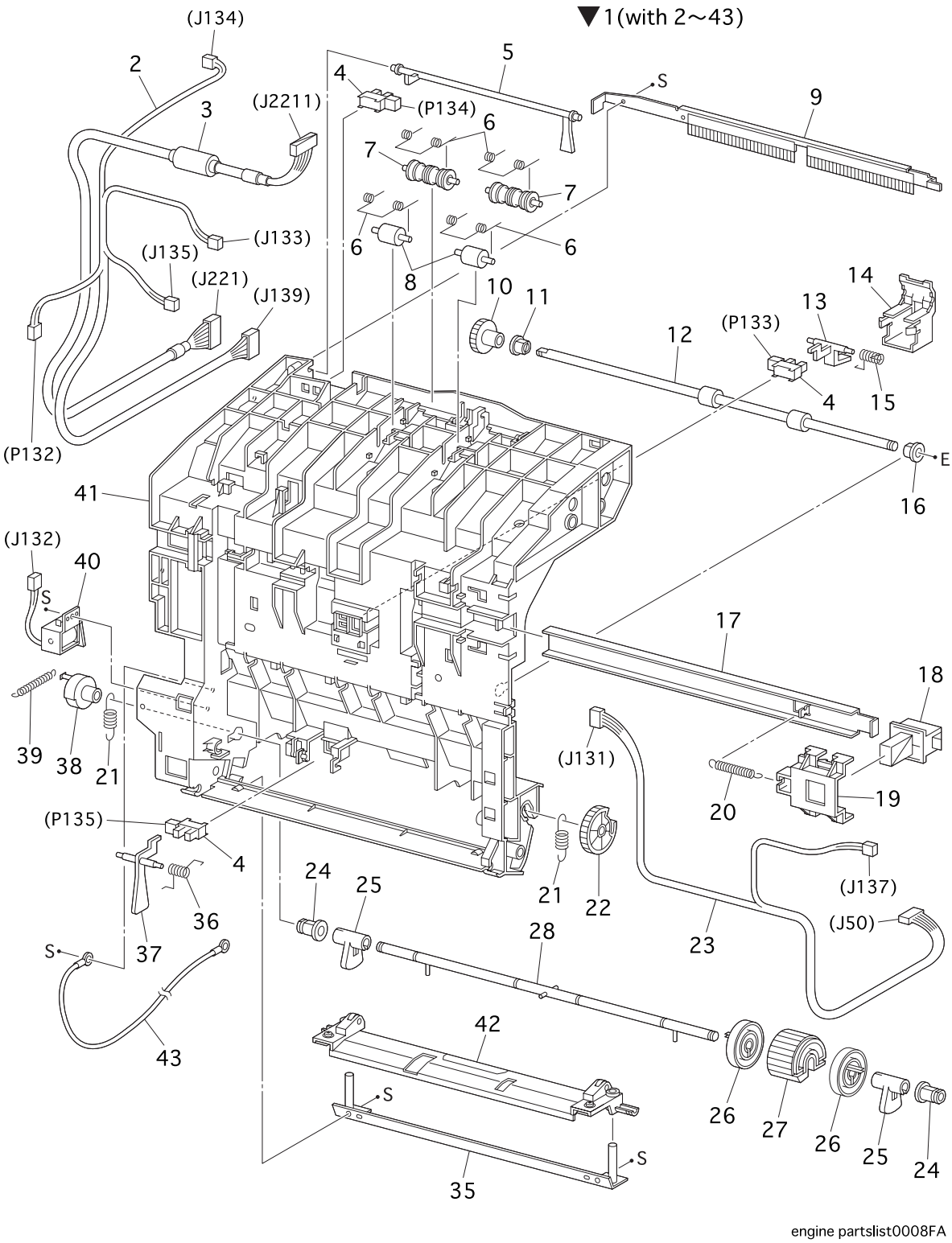
PL 5.1 Chute Assy In [Illustration]



PL 5.1 Chute Assy In [List]

Item	Parts name	
1A	CHUTE ASSY IN(120V)	865084K12170
1B	CHUTE ASSY IN(200V)	865084K12280
2	WIRE ASSY BTR2(J5020)	865117K34570
3	SPRING BTR R2	865809E35110
4	SHAFT BTR IN	Refer to Item 1 & 2
5	WIRE ASSY DTSK(J5030)	865117K34560
6	SPRING DTC 0.2	Refer to Item 1 & 2
7	STUD	Refer to Item 1 & 2
8	HOLDER SPRING BTR	Refer to Item 1 & 2
9A	HARNESS ASSY FSR4(100V/120V)(J232-J138/J162/J233)	865162K14730
9B	HARNESS ASSY FSR32(220V)(J232-J138/J162/J233)	865962K14740
10	HARNESS ASSY CTD(J136-J1361)	865162K69620
11	SENSOR ADC ASSY	865019K97900
12	SPRING ADC	865809E28620
13	SENSOR TONER FULL	865130E91010
14	HARNESS ASSY TFLSNS(J141-J142)	865162K69830
15	SPRING IDT 3kgf	Refer to Item 1 & 2
16	STUD IDT	Refer to Item 1 & 2
17	HOLDER IDT	Refer to Item 1 & 2
18	FUSER DRIVE ASSY(with 20)	865007K87970
19	SPRING BTR L 1.5	Refer to Item 1 & 2
20	WIRE ASSY FSR EARTH(J234-J235)	865117K34580
21	LATCH R	865003E58330
22	SPRING LATCH 1.2kgf	865809E28590
23	SHAFT LATCH	Refer to Item 1 & 2
24	PLATE IN T/R	Refer to Item 1 & 2
25	ROLL PINCH TURN	865059E95690
26	SPRING PINCH TURN	865809E28610
27	ROLL PINCH DUP	865059E95700
28	SPRING PINCH DUP	865809E28600
29	CHUTE DUP IN	Refer to Item 1 & 2
30	LATCH L	865003E53380

PL 6.1 Chute Assy Out [Illustration]



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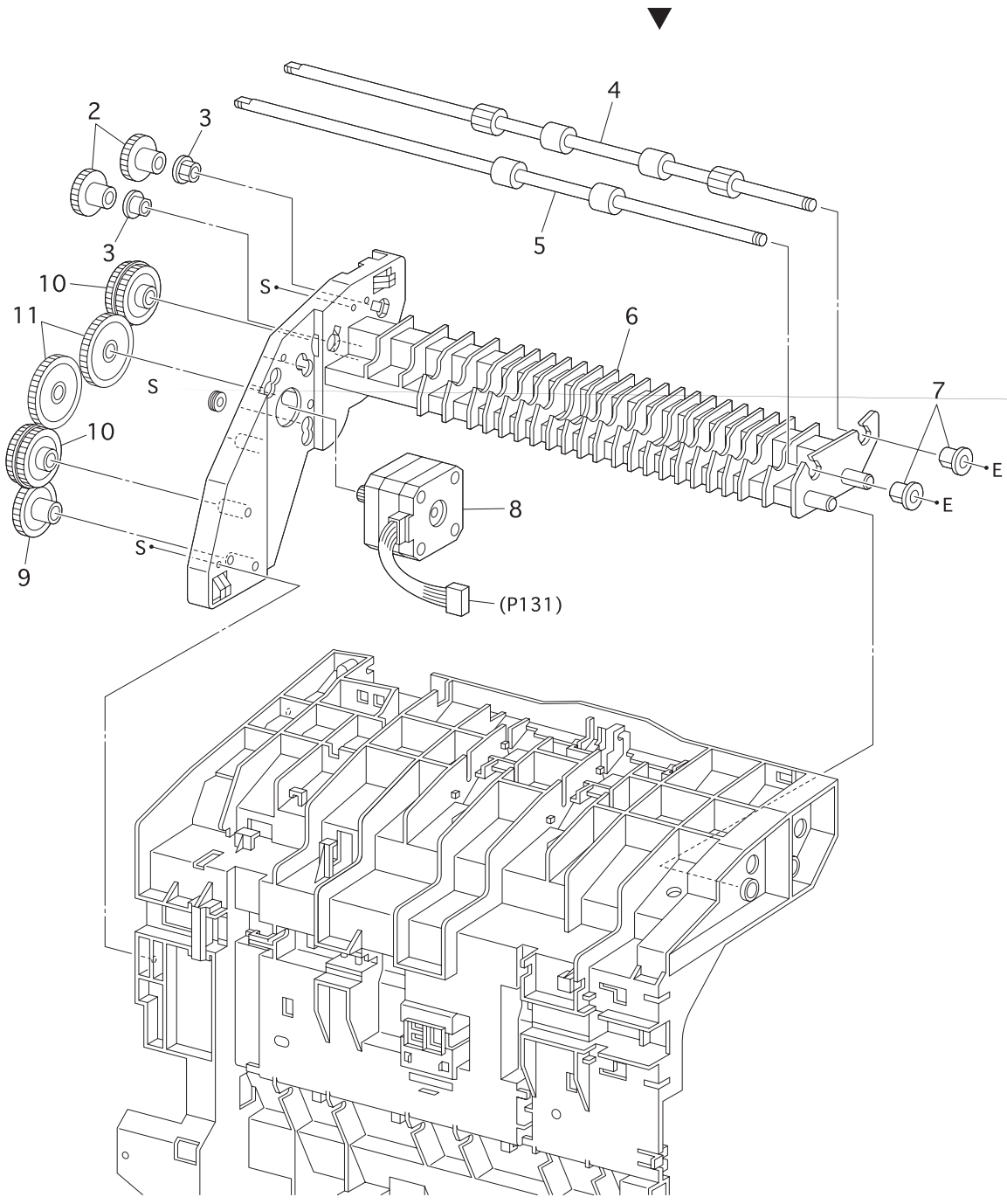
PL 6.1 Chute Assy Out [List]

Item	Parts name	
1	CHUTE ASSY OUT(with 2~43,PL7.1)	865084K12161
2	HARNESS ASSY FRONT 2(J139-P132/J133/J134/J135)	865162K69590
3	HARNESS ASSY OPEPANE BS(J221-J2211)	865162K69610
4	SENSOR PHOTO	865130E81970
5	ACTUATOR FULL	865120E18740
6	SPRING PINCH EXIT	865809E40770
7	ROLL PINCH EXIT	865059E95780
8	ROLL PINCH	865059E95760
9	BRACKET ASSY ELIMINATOR	Refer to Item 1
10	GEAR 30	865007E66672
11	BEARING EARTH	865013E19270
12	ROLL DUP	865059E95750
13	ACTUATOR DUP	865120E18750
14	COVER ACTUATOR	865802E23280
15	SPRING SNR DUP	865809E30110
16	BEARING	865013E19281
17	PLATE LATCH	Refer to Item 1
18	LATCH OUT	865003E53410
19	HOLDER LATCH	Refer to Item 1
20	SPRING LATCH OUT	865809E28730
21	SPRING N/F MSI 250gf	865809E28700
22	GEAR MSI	865007E65840
23	HARNESS ASSY DUP(J50-J131/J137)	865962K14710
24	BEARING MSI	Refer to Item 1
25	CAM MSI	865008E93880
26	ROLL CORE MSI	865059E95740
27	ROLL ASSY FEED	865059K19960
28	SHAFT MSI	Refer to Item 1
35	PLATE OUT MSI	Refer to Item 1
36	SPRING SENSOR MSI	865809E28720
37	ACTUATOR MSI	865120E18730
38	STOPPER SOL	865003E53400
39	SPRING SOL 0.5	865809E28690
40	SOLENOID FEED MSI	865121E88250
41	CHUTE DUP OUT	Refer to Item 1
42	PLATE ASSY BOTTOM MSI	865015K52791
43	WIRE ASSY DUP EARTH	Refer to Item 1

*1:Periodical Replacement Parts

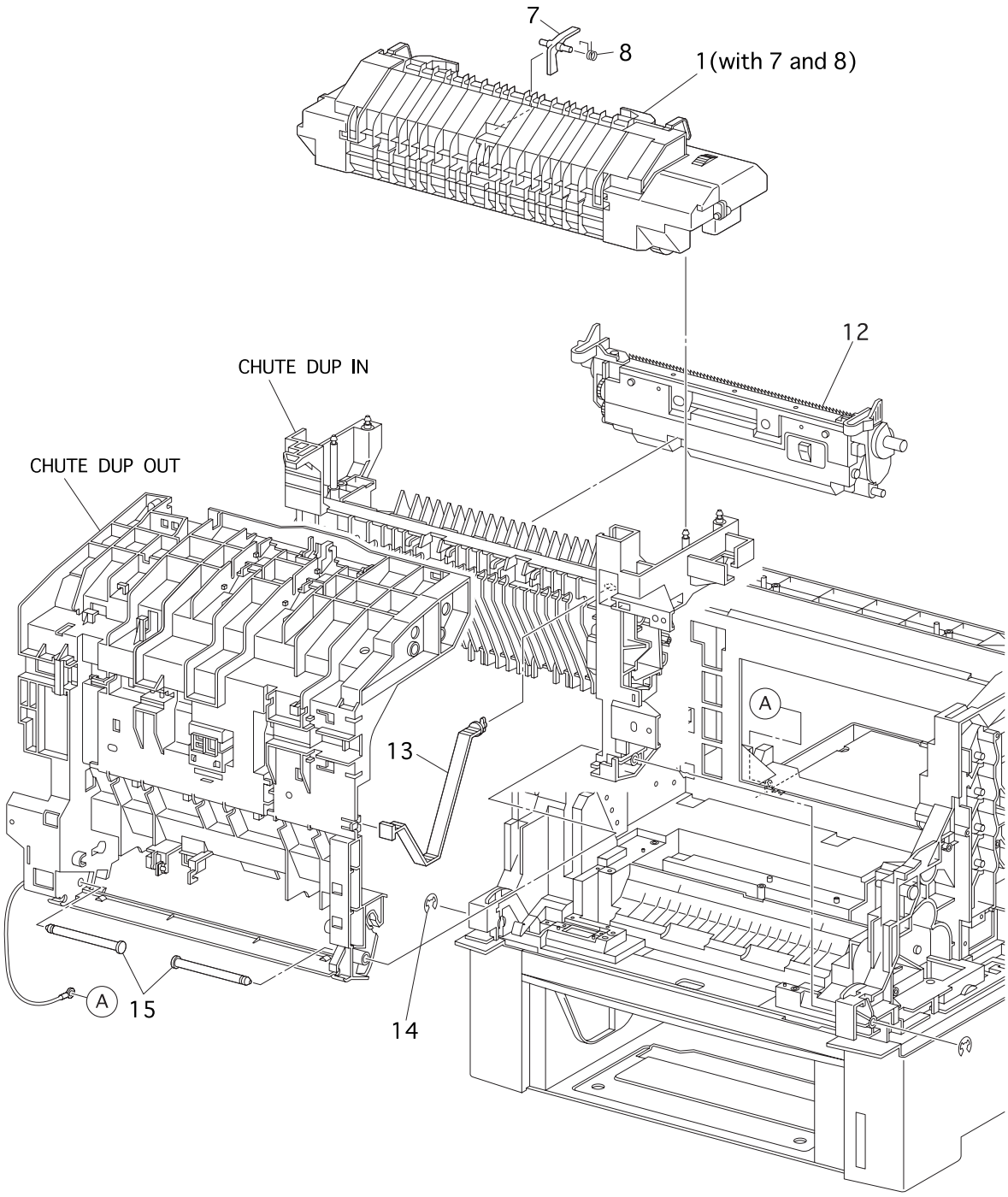
PL 7.1 Chute Assy Exit [Illustration]



PL 7.1 Chute Assy Exit [List]

Item	Parts name	
1	CHUTE ASSY EXIT(with 2~13)	865054K23260
2	GEAR ROLL	Refer to Item 1
3	BEARING EARTH	865013E19270
4	ROLL EXIT	865059E96430
5	ROLL MID	865059E95770
6	CHUTE EXIT LOWER	Refer to Item 1
7	BEARING	865013E19281
8	MOTOR ASSY DUP	865127K36491
9	GEAR 42	Refer to Item 1
10	GEAR 40/42	Refer to Item 1
11	GEAR 48	Refer to Item 1
12	GROMMET EXIT	
13	SLEEVE	
99	KIT BUSH(with 12X3pcs,13X3pcs)	

PL 8.1 BTR Assy & Fuser [Illustration]



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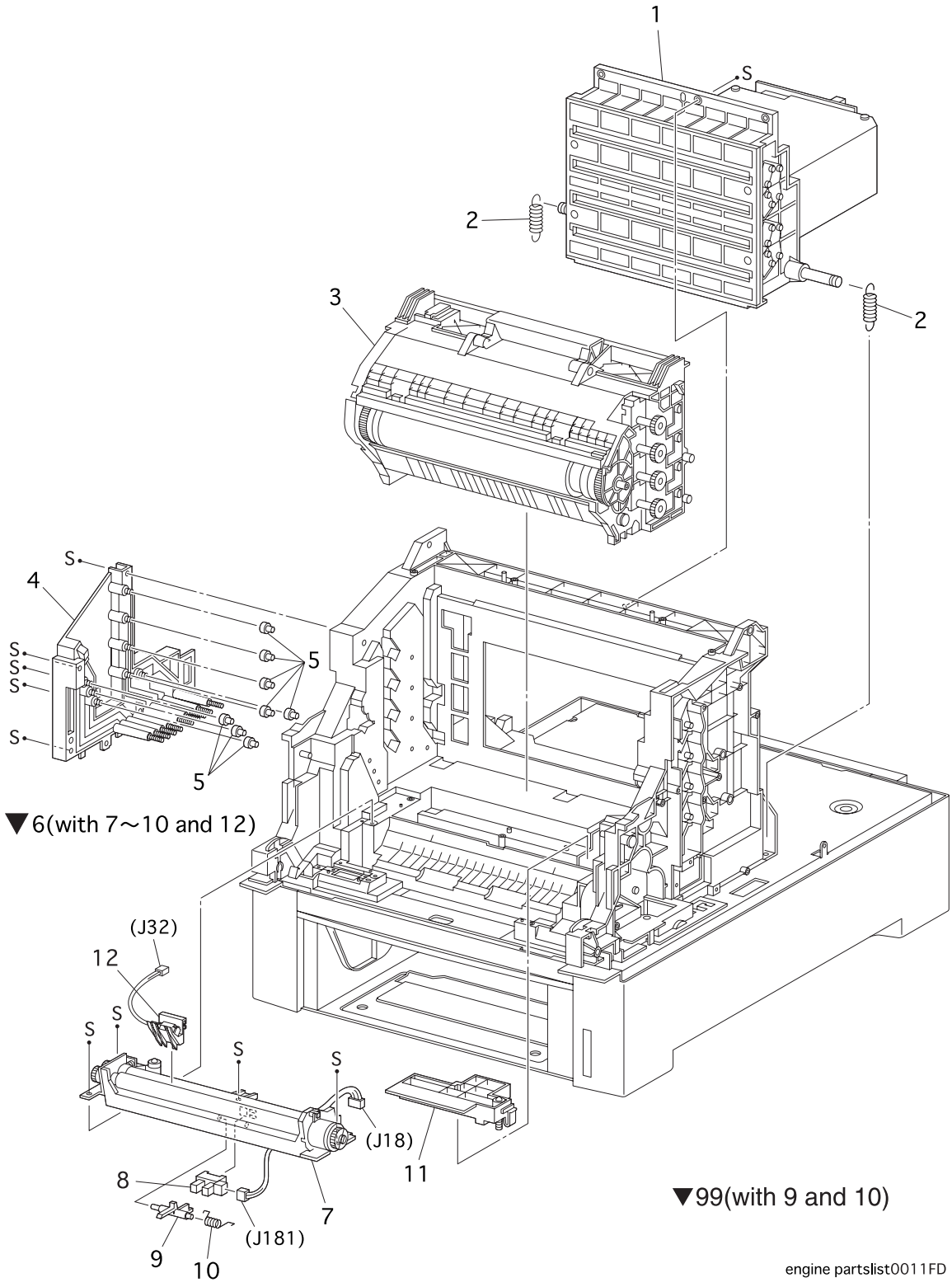
PL 8.1 BTR Assy & Fuser [List]

Item	Parts name	
1	FUSER ASSY(with 7 and 8)110V MQI	865NS080199A
	FUSER ASSY (with 7 and 8)220V MQI	865NS080199B
2	--	
3	--	
4	--	
5	--	
6	--	
7	ACTUATOR EXIT	865120E20790
8	SPRING ACTUATOR	865809E34550
9	--	
10	--	
11	--	
12	BTR PKG 72(TRANSFER UNIT)	1710494-001
13	STRAP	865003E53390
14	RING E	
15	SHAFT PIVOT	865006E72030
99B	FUSER KIT 110V MQI	1710555-001
99C	FUSER KIT 220V MQI	1710555-002
	*1:Periodical Replacement Parts	

PL 9.1 Xerographics [Illustration]



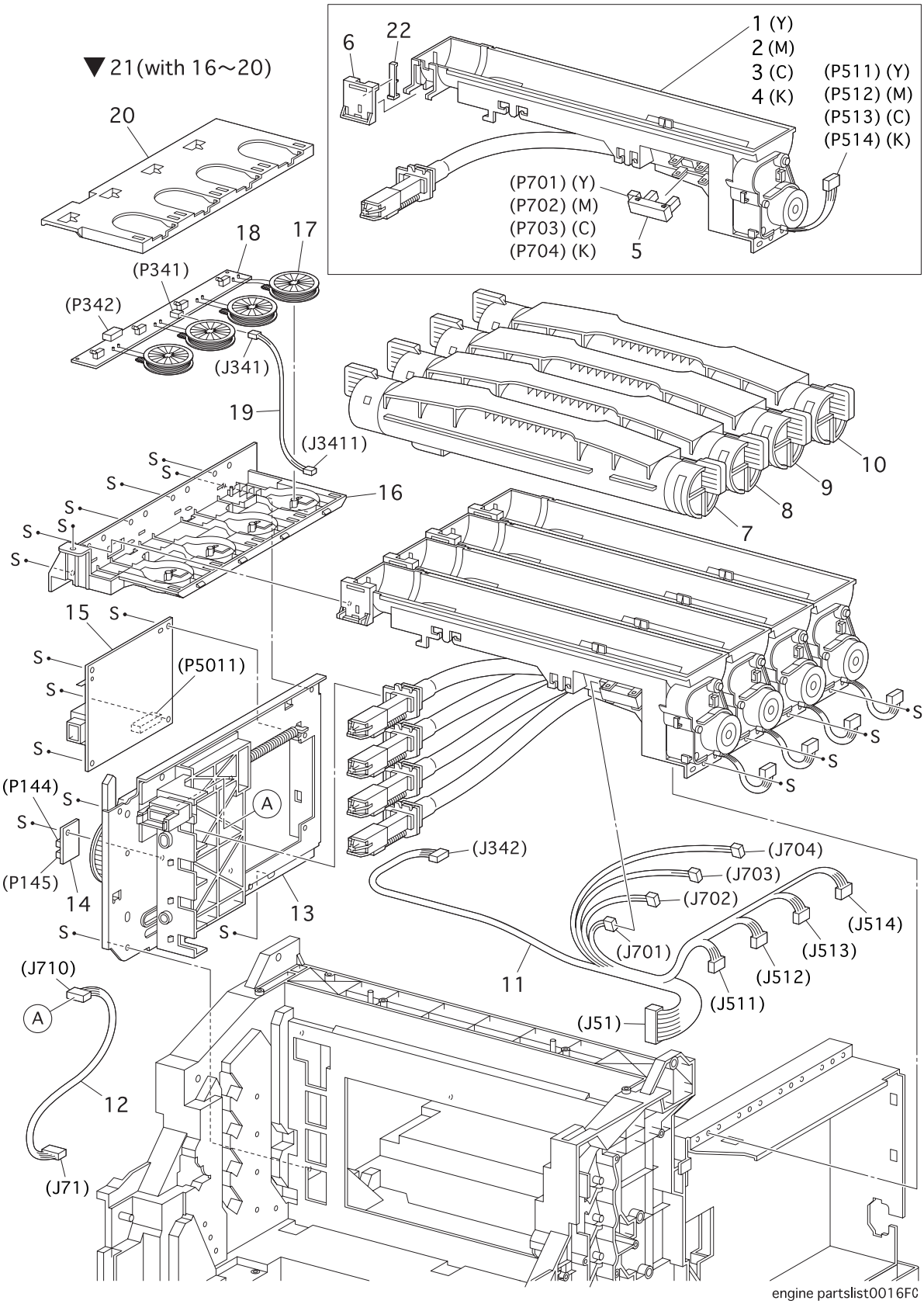
PL 9.1 Xerographics [List]

Item	Parts name	
1	ROS ASSY	865062K11810
2	SPRING ROS (18N)	
3	PHD ASSY PKG	1710552-001
4	HSG ASSY BIAS	865805K24822
5	STUD PLUNGER	865026E77670
6	CHUTE ASSY REGI(with 7~10 and 12)	865054K23250
7	CHUTE REGI ASSY *1	Refer to Item 1
8	SENSOR PHOTO	865130E82740
9	ACTUATOR REGI	865120E20680
10	SPRING SENSOR REGI	865809E34580
11	HOUSING ASSY ELEC	865802K24830
12	KIT SNR OHP(w/HARNESS)*	865604K02520
99	KIT ACTUATOR AND SPRING(with 9 and 10)	

*1:Periodical Replacement Parts

*2:Factory Option

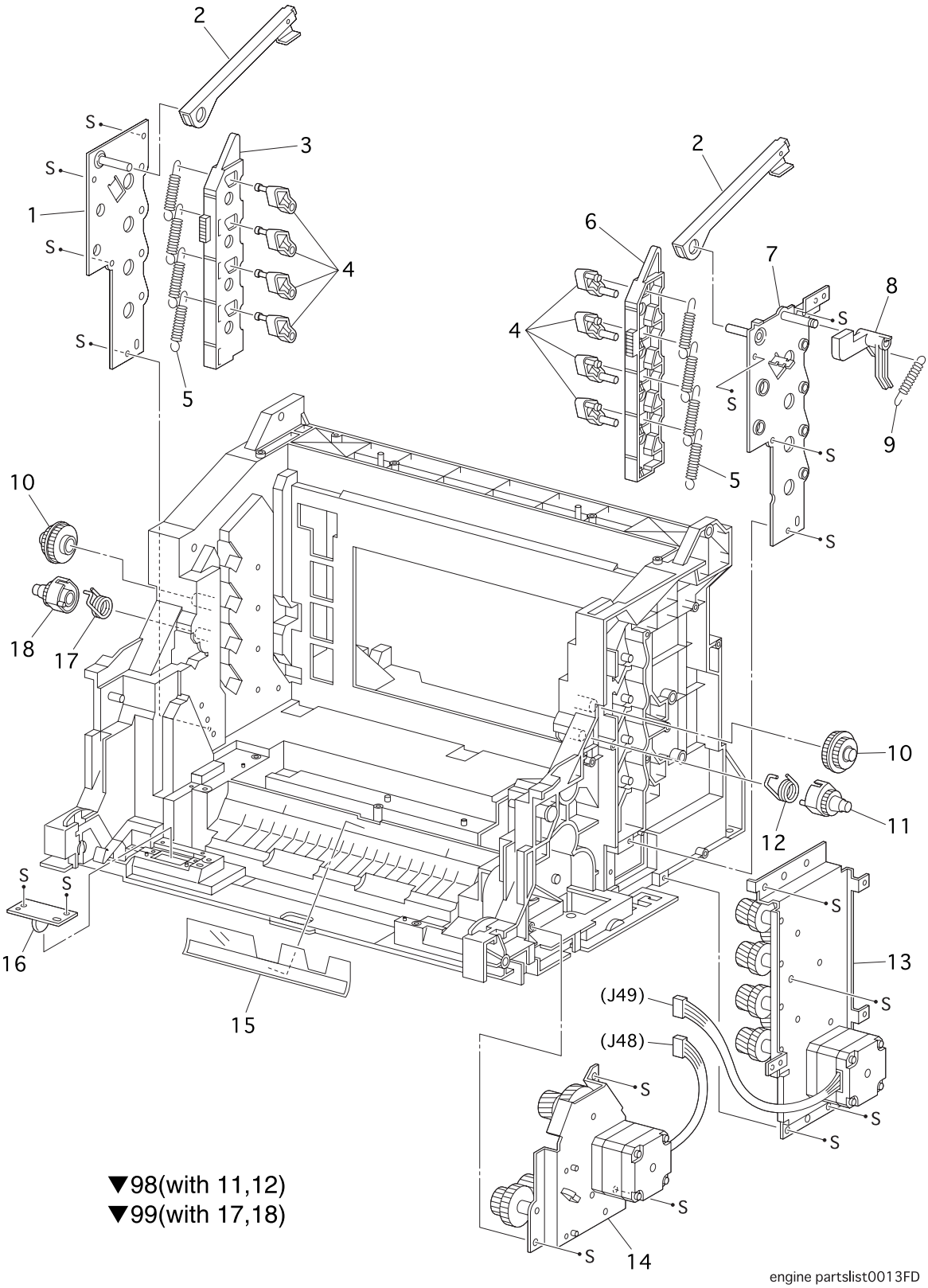
PL 10.1 TCRU Assy [Illustration]



PL 10.1 TCRU Assy [List]

Item	Parts name	
1	HOLDER ASSY TONER HBN (Y)	865113K03130
2	HOLDER ASSY TONER HBN (M)	865113K03140
3	HOLDER ASSY TONER HBN (C)	865113K82660
4	HOLDER ASSY TONER HBN (K)	865113K82670
5	SENSOR NO TONER	865130E85550
6	BRACKET SENSOR 2	
7	PKG TCRU Y	1710550-002
8	PKG TCRU M	1710550-003
9	PKG TCRU C	1710550-004
10	PKG TCRU K	1710550-001
11	HARNESS ASSY TNR4 (J51-J511/J432/J512/J513/J514/J701/J702/J703/J704/J342)	865962K14770
12	HARNESS ASSY CRUM(J71-J710)	865062K69680
13	PLATE ASSY DISPENSER HBN	865015K49550
14	PWBA EEPROM	865160K83190
15	S-HVPS	865105K19520
16	HSG BASE CRUM	
17	HSG ASSY COIL READER	
18	PWBA CRUM READER	
19	HARNESS ASSY RFID2(J341-3411)	
20	COVER HOLDER CRUM	
21	BOX ASSY CRUM READER(with 16~20)	865695K10970
22	ACTUATOR SENSOR 2	865020E36250
98	TONER VALUE KIT MQI	1710551-100
99	HOLDER TONER HI ASSY	865113K82680

PL 11.1 Frame & Drive [Illustration]



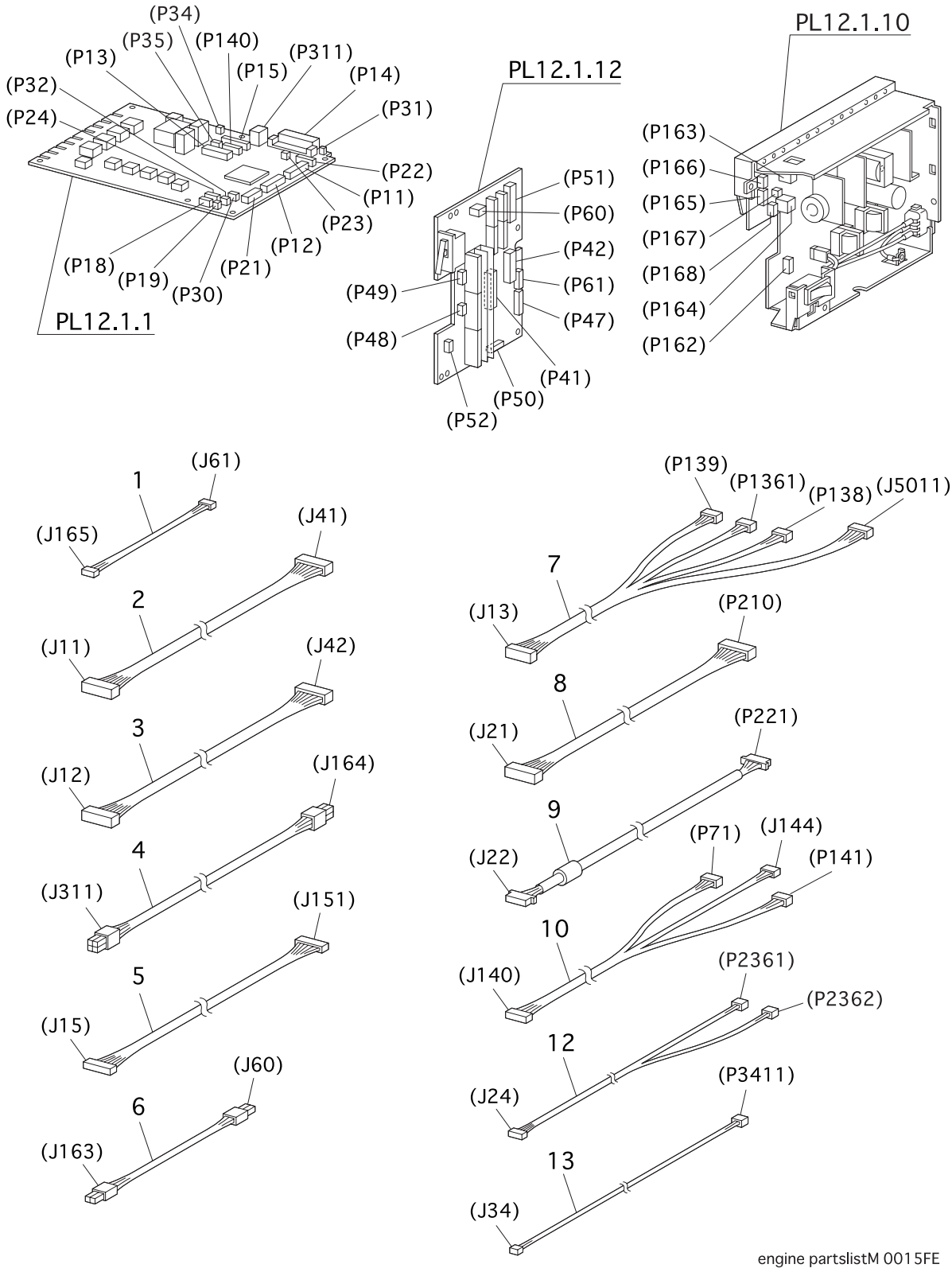
PL 11.1 Frame & Drive [List]

Item	Parts name	
1	PLATE LEVER L	
2	BRACKET LEVER	
3	LINK LEVER L	865012E10040
4	LEVER DRUM	865011E10730
5	SPRING LEVER 30N	865809E28430
6	LINK LEVER R	865012E10030
7	PLATE LEVER R	
8	ACTUATOR I/L	865120E18682
9	SPRING I/L	865809E28460
10	GEAR IDL. PRESS	865007E65810
11	GEAR PRESS R	865007E65791
12	SPRING IDT R	865809E28440
13	DEVE DRIVE ASSY	865007K87990
14	MAIN DRIVE ASSY	865007K87980
15	FILM REGI	865035E58130
16	PWBA ASSY EARTH	865160K70780
17	SPRING IDT L	865809E28450
18	GEAR PRESS L	865007E65801
98	GEAR ASSY PRESS R (with 11,12)	865007K87251
99	GEAR ASSY PRESS L (with 17,18)	865007K87261

PL 12.1 Electrical [List]

Item	Parts name	
1	PWBA HBN MCU	865160K93610
2	FAN REAR	865127E82900
3	CLAMP GUIDE HARNESS	865019E49010
4	CONTROLLER BOARD	865160K94530
5	PLATE REAR ESS	865015E75142
6	SPRING EARTH ESS	865809E29820
7	GUIDE R ESS	865032E17450
8	GUIDE L ESS	865032E17440
9	--	
10A	LVPS 100/120V	865105K20310
10B	LVPS 230V	865105K20320
11	HARNESS ASSY AC SW	865162K69582
12	PWBA DRV HBN	865160K93700
13	POWER CORD US	865673K80250
14	HOUSING ASSY CONTACT	865802K32500

PL 13.1 Harness [Illustration]



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PL 13.1 Harness [List]

Item	Parts name	
1	HARNESS ASSY LVNC3(J165-J61)	865962K14790
2	HARNESS ASSY DRV 1(J11-J41)	865162K69720
3	HARNESS ASSY DRV 2(J12-J42)	865962K14810
4	HARNESS ASSY LVRPG(J164-J311)	865162K69740
5	HARNESS ASSY ROSKA(J15-J151)	865962K14820
6	HARNESS ASSY 24V(J60-J163)	865162K69760
7	HARNESS ASSY FRONT 1A(J13-P139/P1361/P1381/J5011)	865162K69770
8	HARNESS ASSY OPF MAIN(J121-P210)	865162K69781
9	HARNESS ASSY OPEPANE AS(J22-P221)	865162K69790
10	HARNESS ASSY EEPROM(J140-P71/J144/P141)	865162K69810
11	--	
12	HARNESS ASSY TMPNCS(J24-J2361/P2362)	865962K14830
13	HARNESS ASSY RFID(J34-P3411)	865962K14800
14	HARNESS ASSY MDASNS1	865962K14840
99	KIT PEPACK IOT	865604K02930

Chapter 6 Principles of Operation

1. Printing Process

1.1 Summary of Printing Process

This printer is a “Full-color laser printer” which applies the principal of an electrophotographic recording system. The tandem system comprising a drum and developing unit respectively for each color of yellow, magenta, cyan and black (Y, M, C and K) places toner image of each color on paper producing full-color prints finally through 3 intermediate transfer units (IDT 1: 2, IDT 2: 1).

Printing processes of this printer is composed of the basic steps as follows.

(1) Charging with electricity:Drum surface is charged with electricity.

(2) Exposure: ..... Image unit is exposed to laser beams.

(3) Development: ..... Image is developed with toner.

(4) Primary transfer: ..... Toner image is transferred to the intermediate transfer unit (IDT 1).

(5) Secondary transfer: ..... Toner image on the intermediate transfer (IDT 1) is transferred to the intermediate transfer unit (IDT 2).

(6) Cleaning: ..... The intermediate transfer (IDT 1) is cleaned.

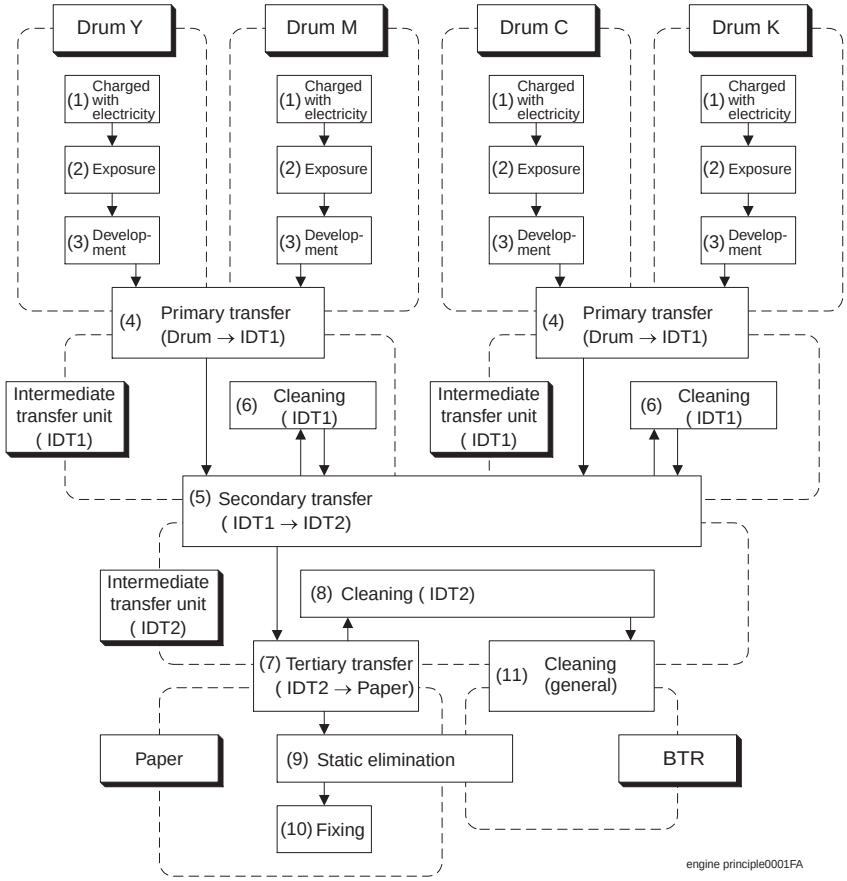
(7) Tertiary transfer: ..... Four-color finished toner image on the intermediate transfer unit (IDT 2) is transferred onto the paper.

(8) Cleaning: ..... Intermediate transfer unit (IDT 2) is cleaned.

(9) Static elimination: ..... Electric charge of the paper is eliminated.

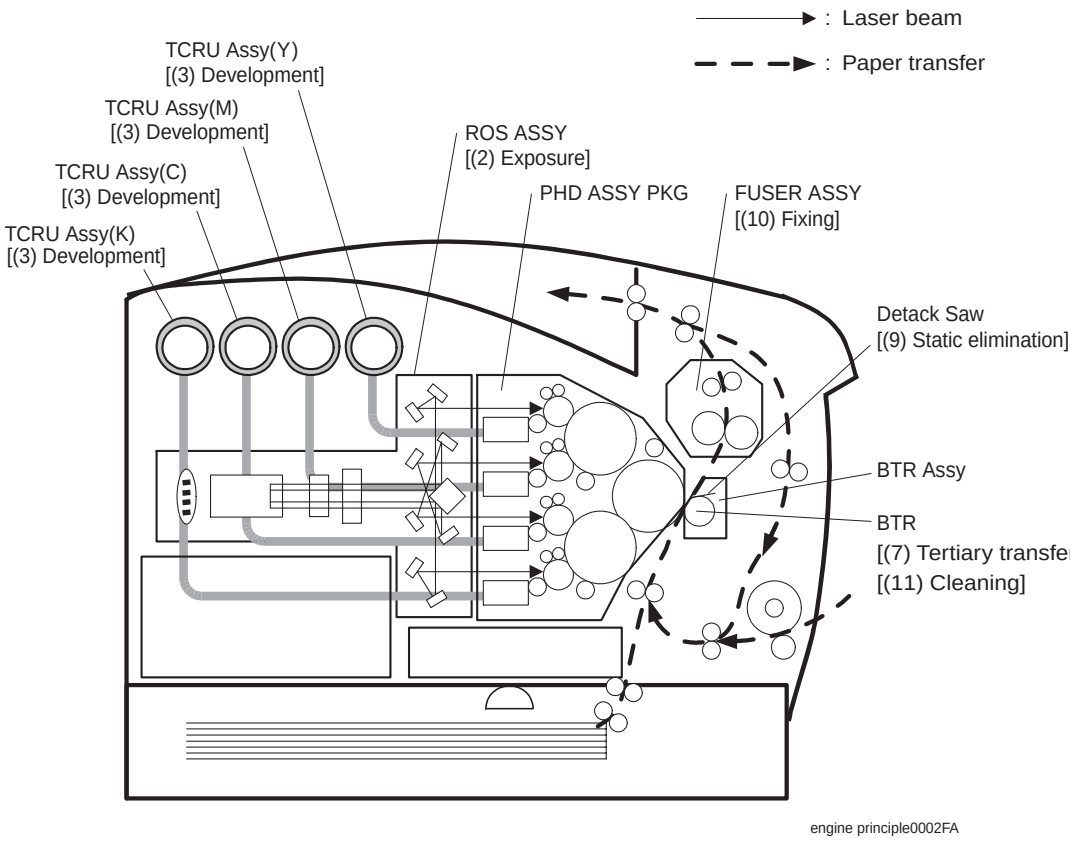
(10) Fixing: ..... Toner on the paper is fixed by heat and pressure.

(11) Cleaning: ..... Remaining toner on the drum and intermediate transfer units are collected.



1.2 Schematic Diagram for Printing Processes

Outline of printing processes is shown in the figures below.



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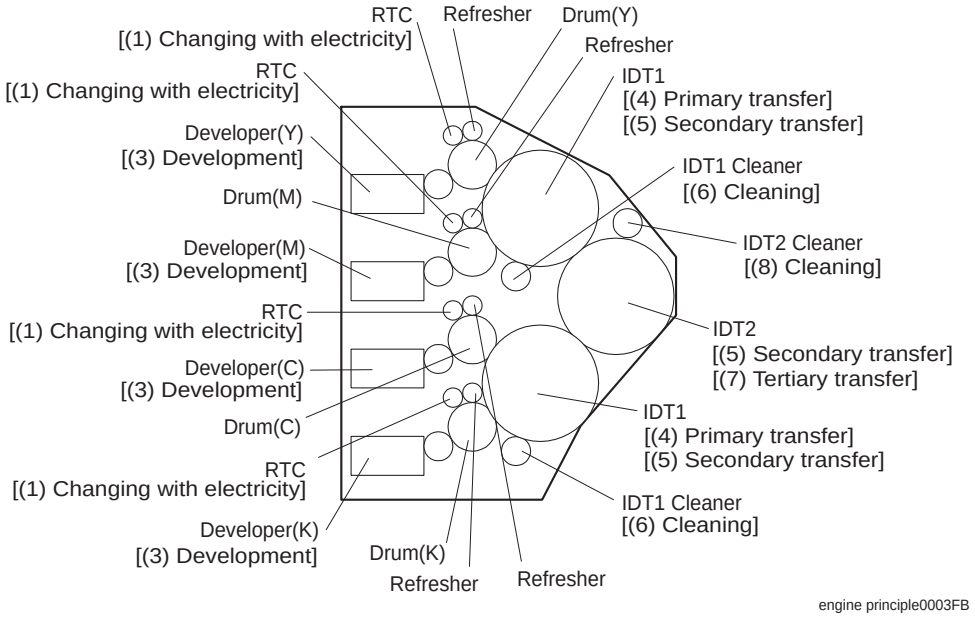
PHD ASSY PKG is integrated major units of printing processes. It is composed as follows.



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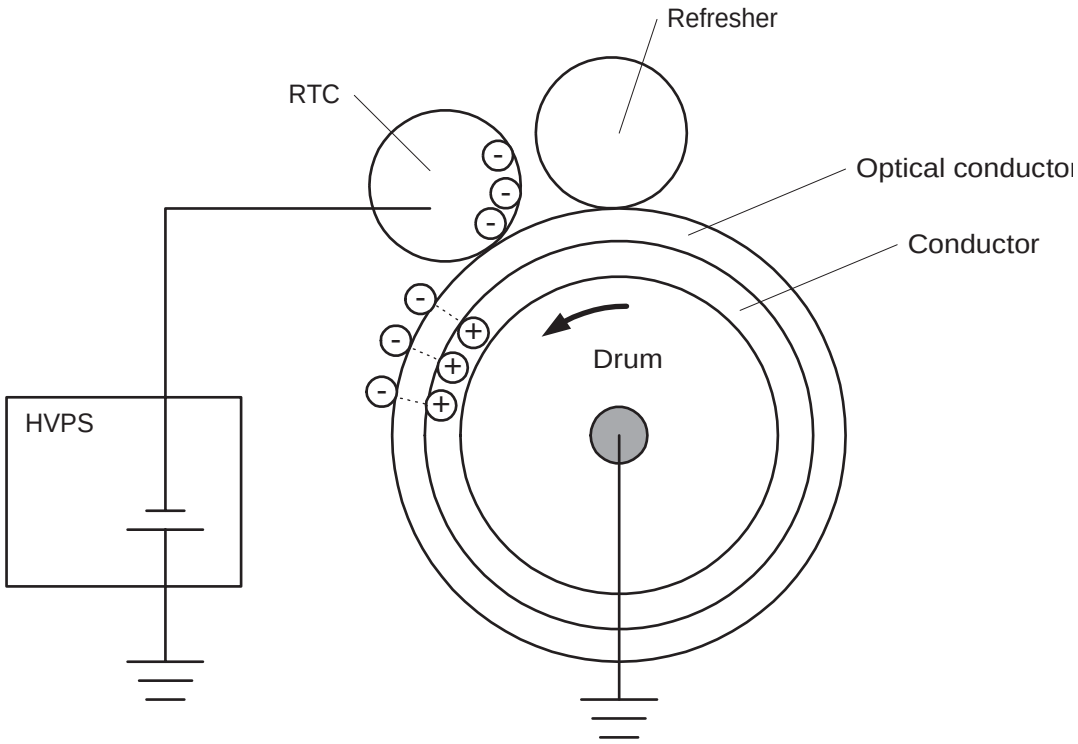
1.3 Description of Printing Process Techniques

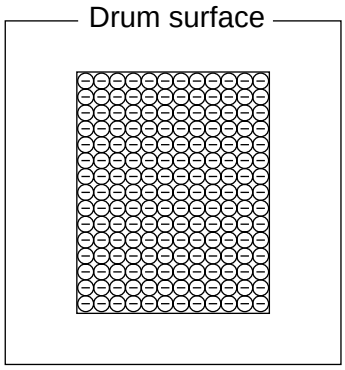
1.3.1 Charging with electricity

In the charging process, the drum surface rotating at a constant speed is charged uniformly with negative electricity by discharging of RTC (Rubber Tube Charge: Charged film).
This process is performed in parallel for yellow, magenta, cyan and black colors.

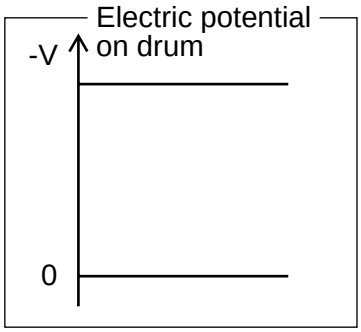
- ✧ The RTC is kept in contact with the drum and rotates following the rotations of the drum.
  RTC is a conductive roll, receives discharge voltage from HVPS and discharges at minus DC voltage.
- ✧ The drum surface is uniformly and negatively charged with DC bias voltage.
  The drum surface is optical conductor (which is insulator in a dark place and conductor when receiving light) and the drum inside is composed of conductor.
- ✧ The Refresher is a conductive brush, and it receives negative DC voltage from the HVPS to catch the toner of reverse polarity returned to the drum via IDT. Also, it removes discharge products.



engine principle0004FB



engine principle0005FA



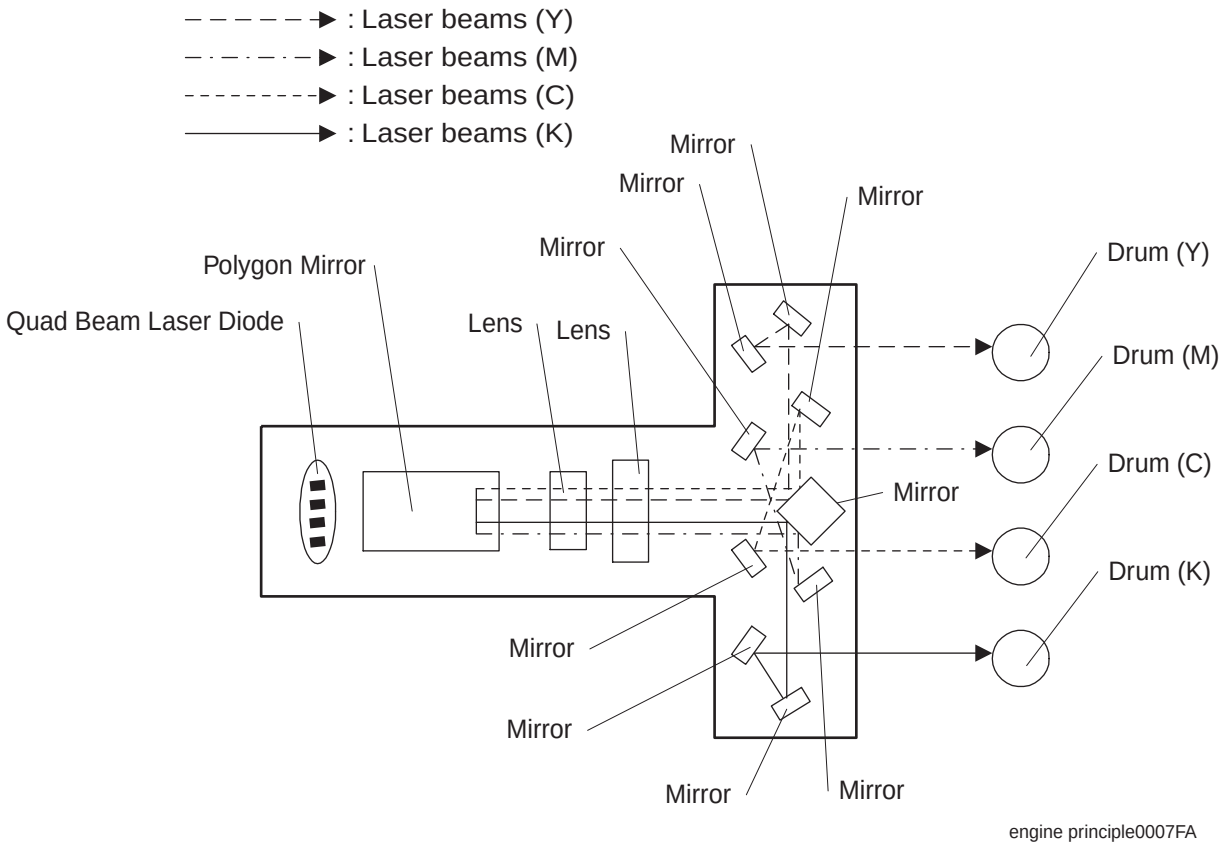
engine principle0006FA

1.3.2 Exposure

In the exposure process, the drum surface charged negatively is scanned by laser beams to form invisible electrostatic latent image on the drum surface.

This process is performed in parallel for yellow, magenta, cyan and black colors.

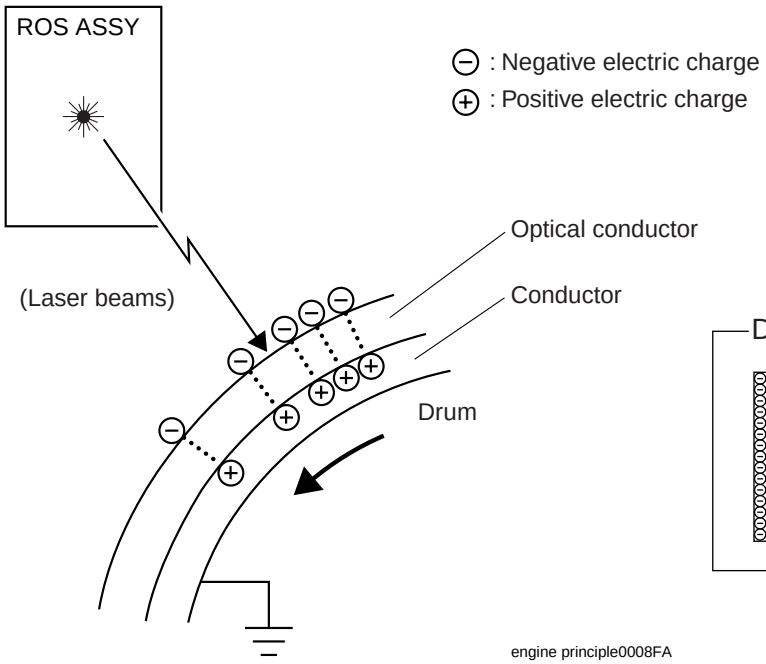
✧ Laser beams are emitted from the laser diode in the ROS ASSY. By the rotating polygon mirror, fixed mirror and lens attached to the scanner ASSY of the ROS ASSY, each color of drum surface is scanned from end to end in the axial direction.



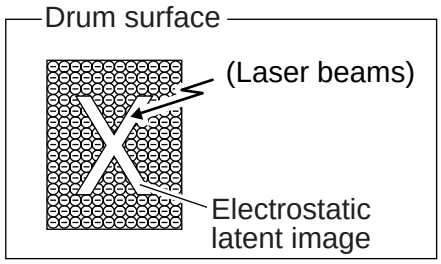
engine principle0007FA

✧ The laser beams are emitted based on the print data (image data) from the printer controller. When the print data instructs to print pixel points, laser beams are generated and when the print data instructs not to print, no laser beams are generated. (On the areas which are developed by toner, the laser beams light up and areas which are not developed by toner, laser beams go out.)

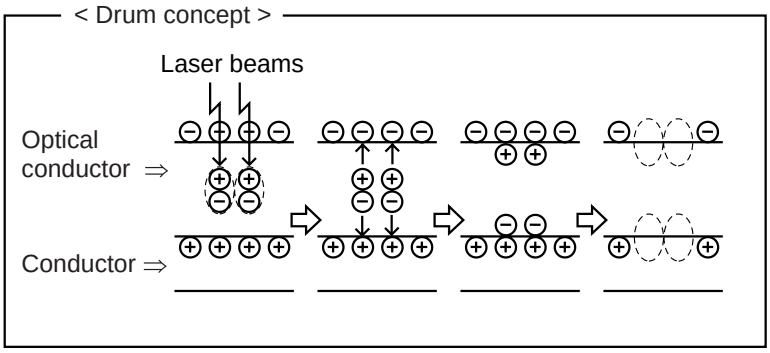
The laser beams emitted on the drum surface generate a pair (electron <=> hole) in the optical conductive layer. [Electrons are excited on the conductive zone, causing holes at the valence band.] Electrons are induced by the electric field, moved toward the inside metallic part and flow into it. The holes move toward the outer surface of the optical conductive layer, are combined with the minus charge (electron) on the outer surface again and decrease negative charge. As a result, on the drum surface where the electric potential increases, invisible static latent image (print image) is generated.



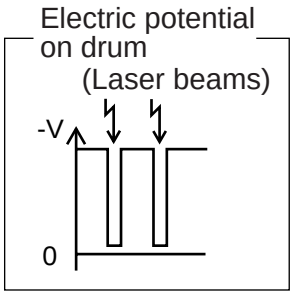
engine principle0008FA



engine principle0009FA



engine principle0011FA



engine principle0010FA

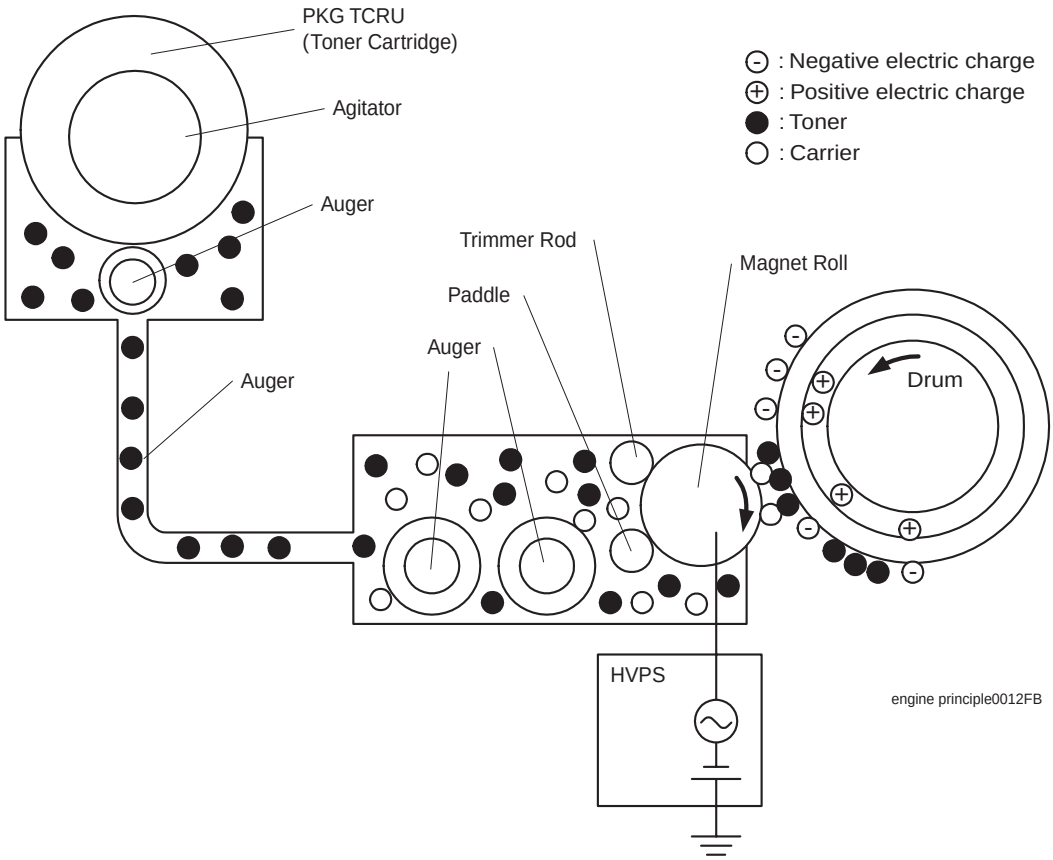
1.3.3 Development

In the development process, toner is electrically attached to the invisible statistic latent image on the drum surface to form visible toner image on the drum.
This process is performed in parallel for yellow, magenta, cyan and black color respectively.

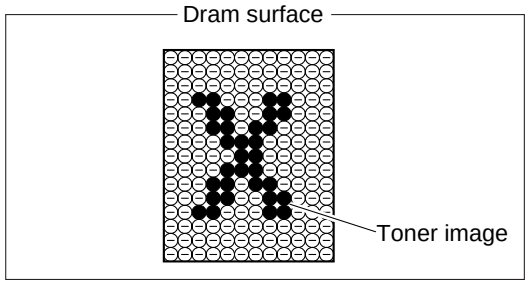
- ✧ The toner in the toner cartridge is agitated by the Agitator in the toner cartridge and fed into the toner holder. Further, the toner is fed to the developer by the Auger in the toner holder and the Auger in the tube that connects the toner holder and the developer. The Agitator and Auger are spiral agitating components and they are driven by the toner motor provided on the rear of toner cartridge. The toner to be consumed according to the print count is calculated and fed into the developer. This is called “toner dispensation”, which is controlled by two types of control, “PCDC” and “ADC”. For the PCDC and ADC, see 7.4 Process Control in this chapter.

- ✧ The toner fed into the developer and the carrier in the developer are agitated by the Auger, and supplied to the Magnet Roll arranged in the vicinity of the drum surface. The toner and carrier are charged by friction due to the agitation (toner in negative, carrier in positive), and they are absorbed each other electrically. As the carrier is a magnetic substance, it is attracted to the Magnet Roll having a magnetic force and a homogeneous layer is formed by the Trimmer Rod and the Paddle.

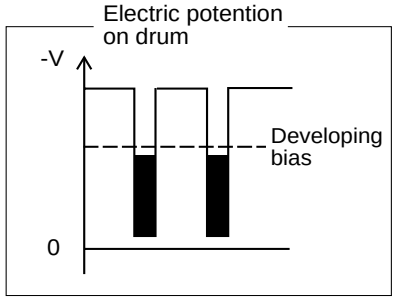
- ✧ The magnet roll is covered by a thin semi-conductive sleeve over the surface. DB (Developing Bias) voltage is supplied to this semiconductor sleeve from HVPS. DB voltage is negative DC voltage combined with AC voltage. The magnet roll is kept at constant negative voltage against the optical conducting layer of the drum by DC voltage. Therefore, at the area on the drum surface where the negative electric charge does not decrease, potential is lower than the magnet roll, while the potential is higher than the magnet roll at the area where the negative charge on the drum surface decreases. The AC voltage shakes the developer on the magnet roll surface pressing the toner to fly to the drum. Thus, the toner charged negatively is attracted only by the area where the minus charge has decreased on the drum surface from the magnet roll (static latent image) and the toner image is formed on the drum.
  When the toner is attached, minus charge at that portion increases, potential decreases, and force to attract the toner decreases.



engine principle0012FB



engine principle0013FA



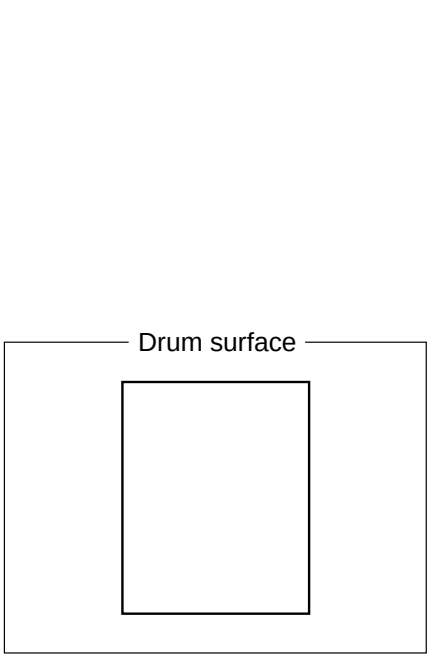
engine principle0014FA

1.3.4 Primary transfer (drum -> IDT 1)

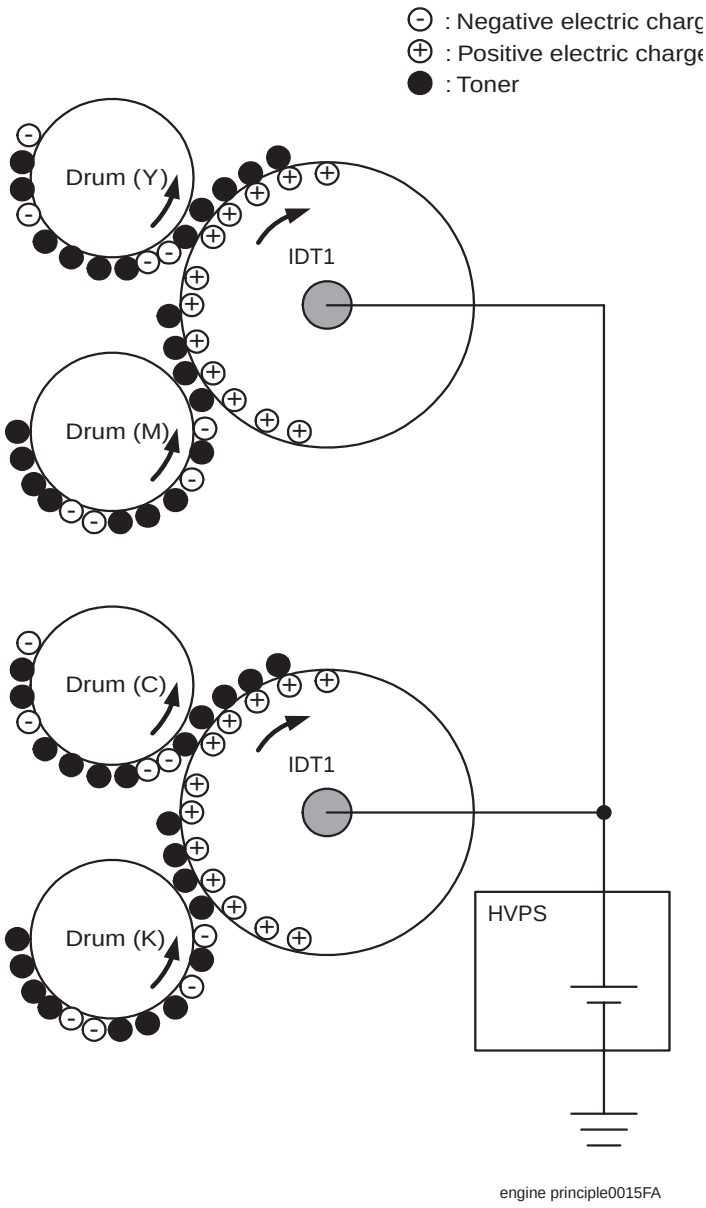
In the primary transfer process, toner image formed on the drum surface is transferred onto the surface of the IDT 1 (Intermediate Drum Transfer 1: intermediate transfer roll 1).

Two IDT 1 are provided: yellow and magenta, and cyan and black are respectively transferred to their IDT 1.

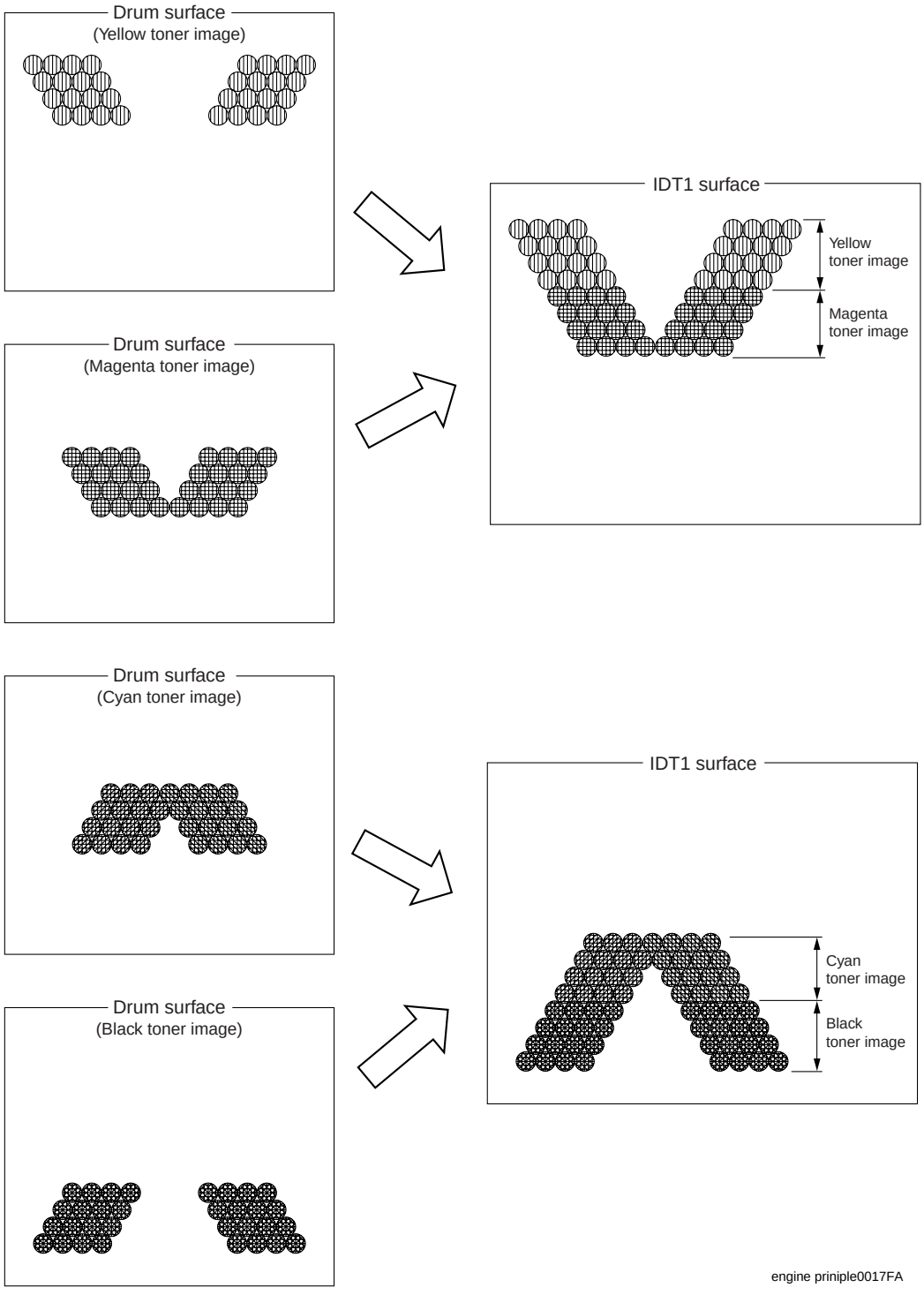
✧ IDT 1 is a conductive roll and receives supply of high positive voltage from HVPS.
The toner image (negatively charged) on the drum is attracted to the IDT1 positively charged, and transferred from the drum to the IDT1 surface.
At this time, electric charge of the drum surface is neutralized by the IDT1



engine principle0016FA



engine principle0015FA


Drum surface
(Yellow toner image)
Drum surface
(Magenta toner image)
IDT1 surface
Yellow
toner image
Magenta
toner image
Drum surface
(Cyan toner image)
Drum surface
(Black toner image)
IDT1 surface
Cyan
toner image
Black
toner image
engine priniple0017FA

1.3.5 Secondary transfer (IDT 1 -> IDT 2)

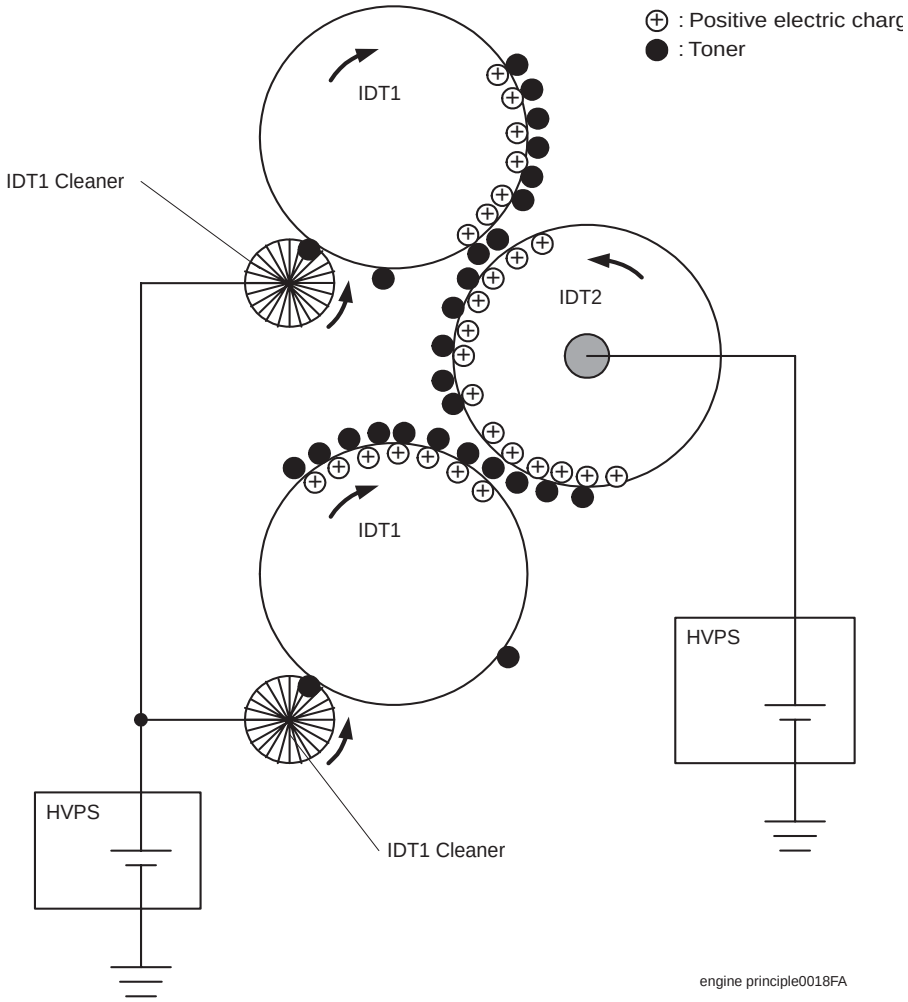
In the secondary transfer process, the toner image formed on the IDT 1 surface is transferred onto the surface of the IDT 2 (Intermediate Drum Transfer 1: intermediate transfer roll 2).
Two color toner image transferred onto the 2 IDT 1 is transferred to the IDT 2. Thus, 4 color toner image are compiled on the IDT 2 as finished toner image.

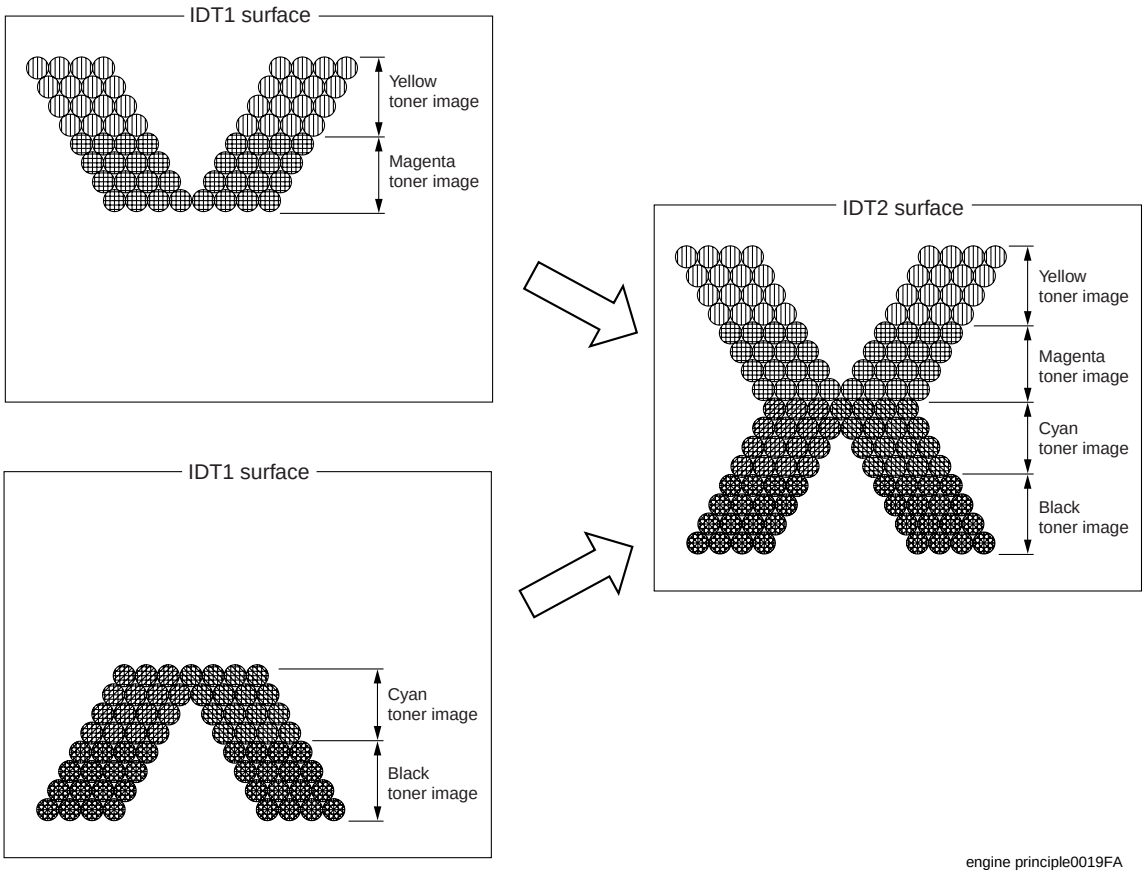
✧ IDT 2 is a conductive roll and receives supply of positive high voltage from HVPS.
Both the IDT 1 and IDT 2 are positively charged. Voltage is higher on the IDT 2 and toner image is attracted to the IDT 2 surface and transferred onto the IDT 2.

1.3.6 Cleaning (IDT 1)

In the cleaning process (IDT 1), toner remaining on the IDT 1 after the toner image is transferred to the IDT 2 is temporarily stored in the IDT 1 cleaner.

✧ The IDT 1 cleaner receives positive high voltage from the HVPS with a conductive roll brush.
The IDT 1 cleaner is placed in contact with the IDT 1 at the position through which it passes after the toner image having been transferred from the drum is transferred to the IDT 2. Toner remaining on the IDT 1 is electrically scraped and stored.
The toner stored is collected upon completion of printing or at the time of cleaning cycle. (Refer to 1.3.11 Cleaning (general).)





engine principle0019FA

1.3.7 Tertiary transfer (IDT 2 - paper)

In the tertiary transfer process, finished toner image formed on the IDT 2 surface is transferred onto the paper under the voltage supplied to the BTR (Bias Transfer Roll).

- ✧ BTR is composed in the BTR Assy.
  BTR is a conductive roll and receives positive high current from HVPS.
  When paper passes through between IDT2 and BTR, plus potential is given to the back side of the paper so that the toner on the IDT 2 is transferred onto the paper. At this time, potential on the BTR is higher than that on the IDT 2.

1.3.8 Cleaning (IDT 2)

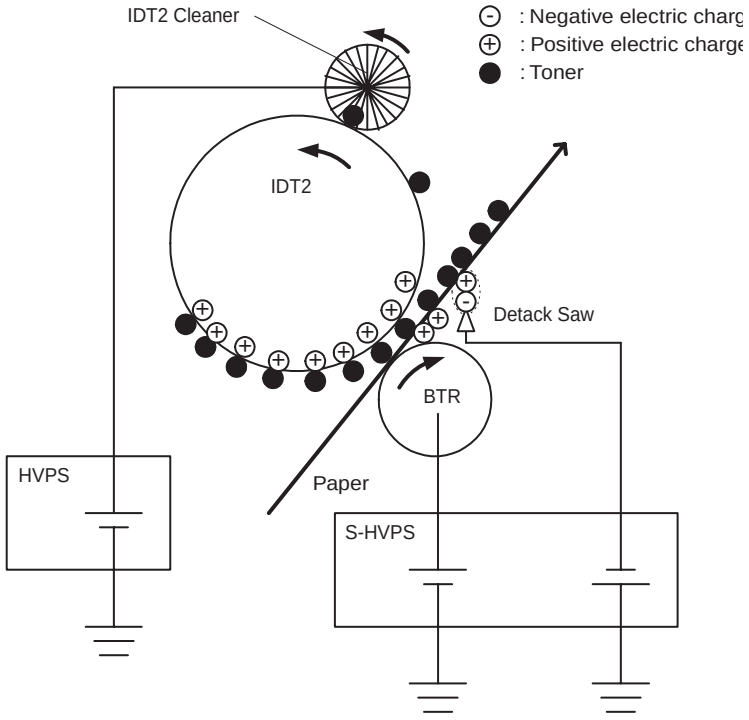
In the cleaning process, toner remaining on the IDT 2 after the toner image is transferred onto the paper is temporarily held at the IDT 2 cleaner.

- ✧ The IDT 2 cleaner is a conductive roll brush and receives positive high voltage from HVPS.
  The IDT 2 cleaner is placed in contact with the IDT 2 at a position through which it passes after the toner image having been transferred from IDT 1 is transferred onto the paper. Remaining toner on the IDT 2 is electrically scraped and held at the IDT 2 cleaner.
  The toner held is collected upon completion of printing or at the cleaning cycle. (Refer to 1.3.11 Cleaning (general).)

1.3.9 Static elimination

In the static elimination process, negative DC voltage is given to the back side of the paper from the Detack Saw (static elimination board) to neutralize and eliminate the charge of paper.

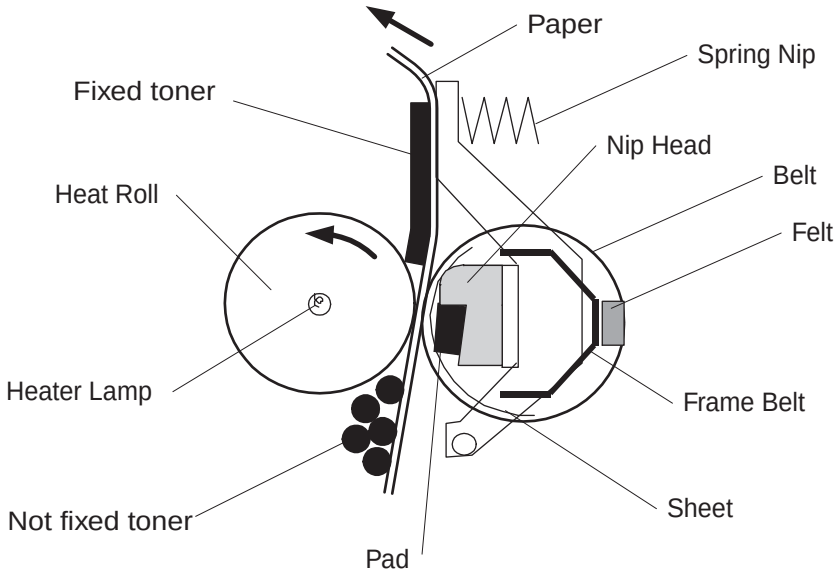
- ✧ The Detack Saw receives high voltage from S-HVPS.
  The positive charge caused in the tertiary transfer process generates image quality troubles by scattering toner. Static electricity of the paper is eliminated by discharge of the Detack Saw preventing those image quality troubles.



1.3.10 Fixing

In the fixing process, toner is fixed on the paper by heat and pressure.

✧ Finished toner image transferred from the belt is easily broken only by touching it with fingers. The toner image is fixed on the paper with the FUSER ASSY (fixing unit).
The toner melts by heat of the HEAT ROLL with the Heater lamp as the heat source and is deposited on the paper under pressure given by the belt opposed against the heat roll.



engine principle0021FA

1.3.11 Cleaning (general)

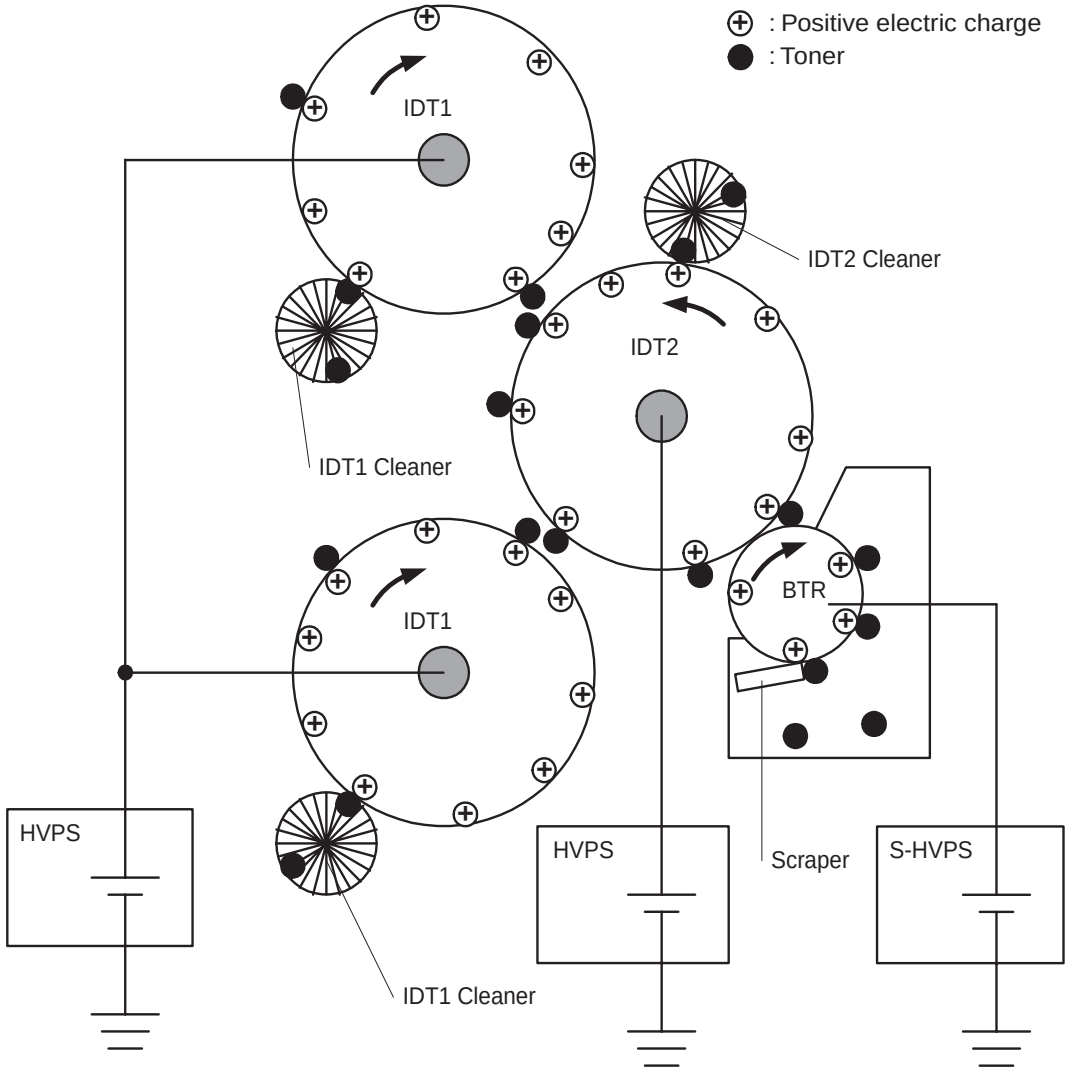
In the cleaning (general) process, toner stored in the IDT 1 cleaner and IDT 2 cleaner after the finished toner image is transferred onto the paper and the toner remaining on the BTR are removed.

✧ The toner not completely transferred in the “secondary transfer” and “tertiary transfer” processes is held temporarily in the IDT1 Cleaner and IDT2 Cleaner. Also, the toner of which polarity is reversed and returned to the drum is held in the Refresher. Further, the toner that passes the Refresher may stick to the RTC.

These toners are cleaned at the completion of the printing. The recovery method is different between the toner held in the IDT1 Cleaner and IDT2 Cleaner and the toner held in the Refresher and RTC.

(1) IDT1 Cleaner and IDT2 Cleaner

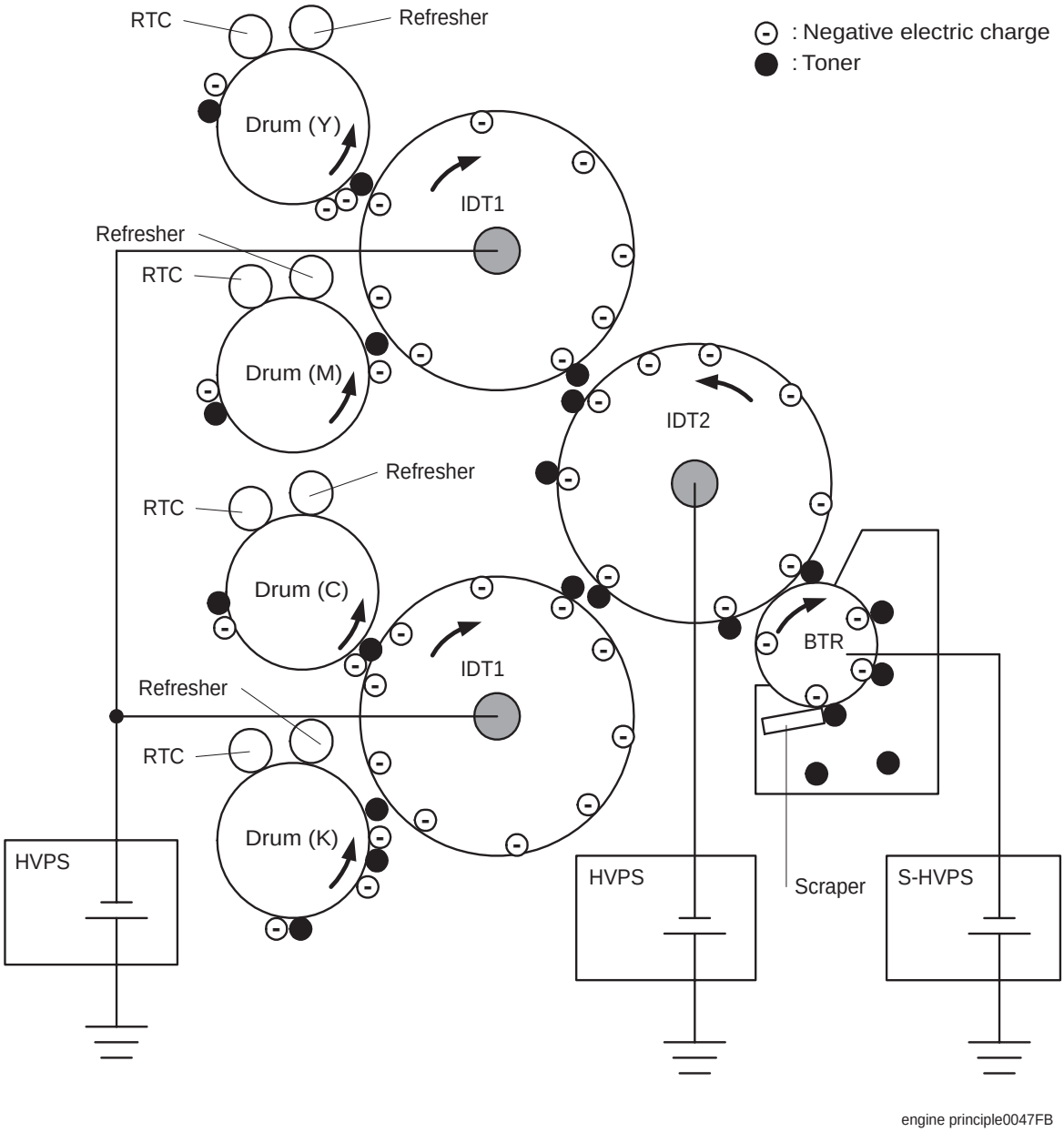
High voltage equivalent to the voltage at the printing transfer is applied to the IDT1, IDT2, and BTR. The toner (negative polarity) remaining in the IDT1 Cleaner and IDT2 Cleaner are moved to the IDT1 and IDT2 electrically by transforming the IDT1 Cleaner and IDT2 Cleaner to 0V. Then, in the same manner as in the printing transfer, the residual toner is collected to the BTR surface by potential difference between IDT1, IDT2, and BTR.



(2) Refresher and RTC

High voltage of the polarity (negative) reverse to that at the printing transfer is applied to the IDT1, IDT2, and BTR. At this time, the drum surface is charged negatively by negative voltage of the IDT1. The toner (positive polarity) remaining in the Refresher and RTC are move to the drum electrically by transforming the Refresher and HTC to 0V. Then, in the same manner as in the printing transfer, the residual toner is collected to the BTR surface by potential difference between IDT1, IDT2, and BTR.

✧ Toner attached to the surface of BTR is scraper off with the BTR cleaner which is in contact with the BTR and collected into the collection space in the BTR UNIT ASSY.

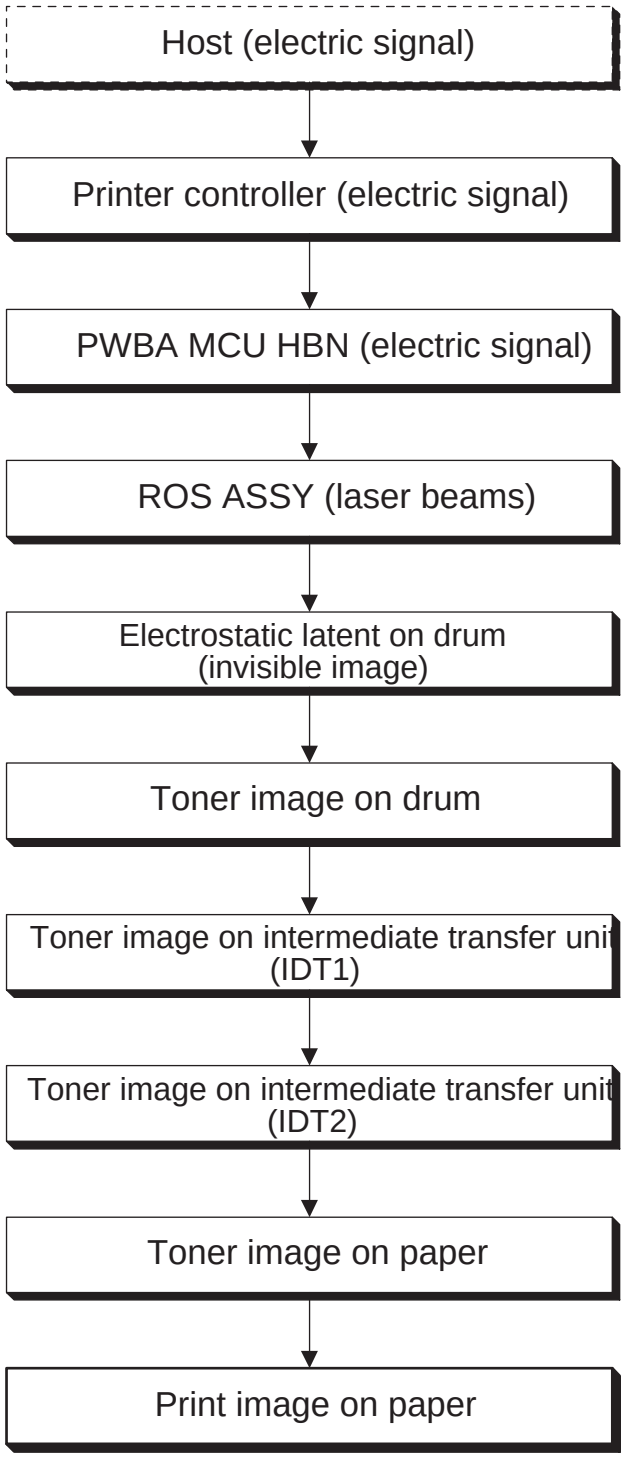


engine principle0047FB

2. Flow of Print Data

2.1 Data Flow

Print data (electric signal) from the printer controller flows as shown below to turn to the print image finally.

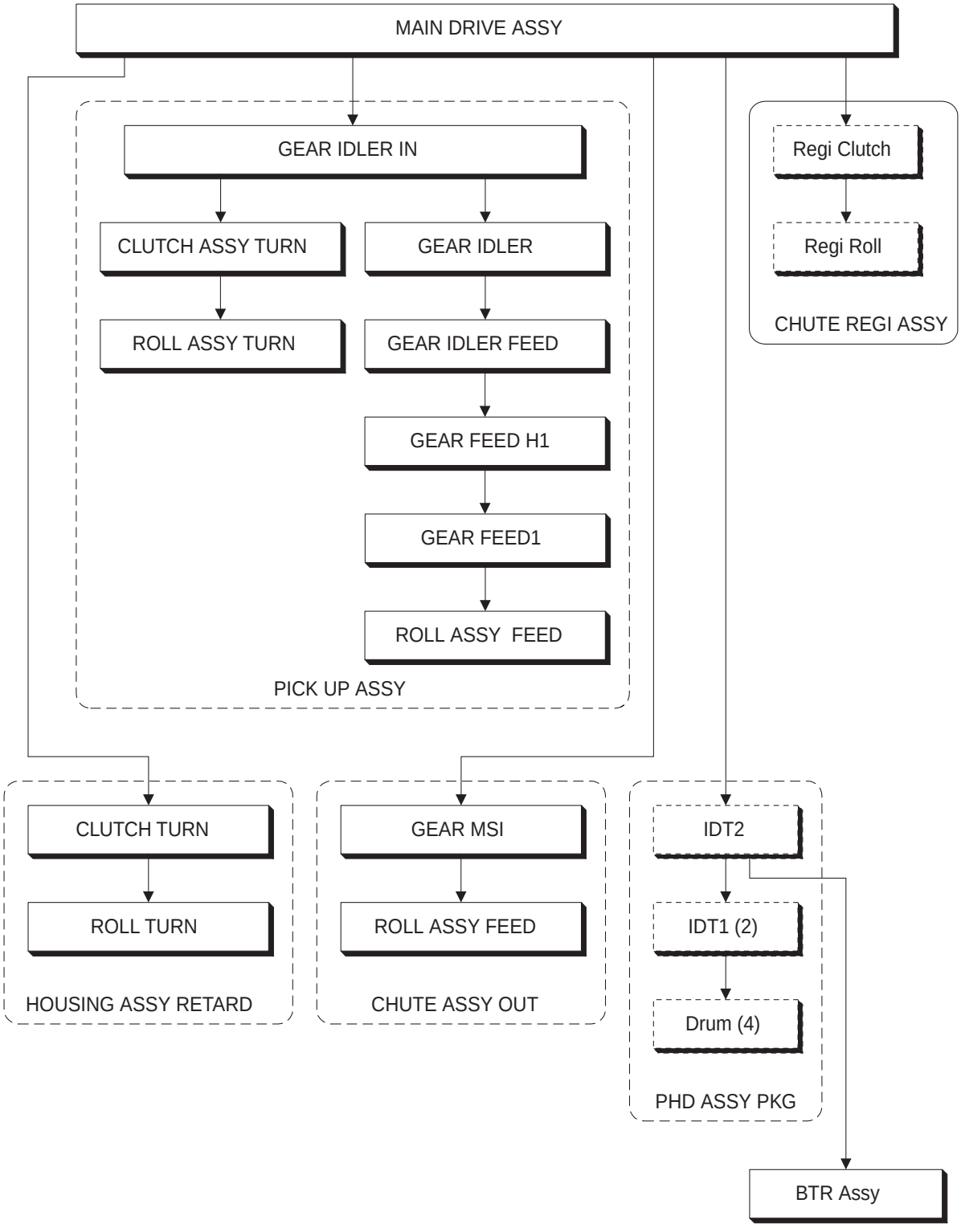


engine principle0023FB

3. Drive Transmission Route

3.1 MAIN DRIVE ASSY

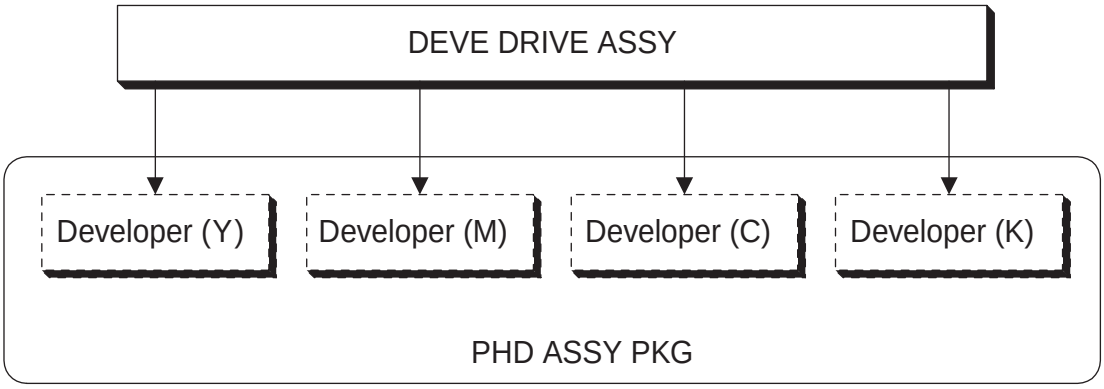
Rotary power of the MAIN DRIVE ASSY is transmitted through the route below.



engine principle0024FB

3.2 DEVE DRIVE ASSY

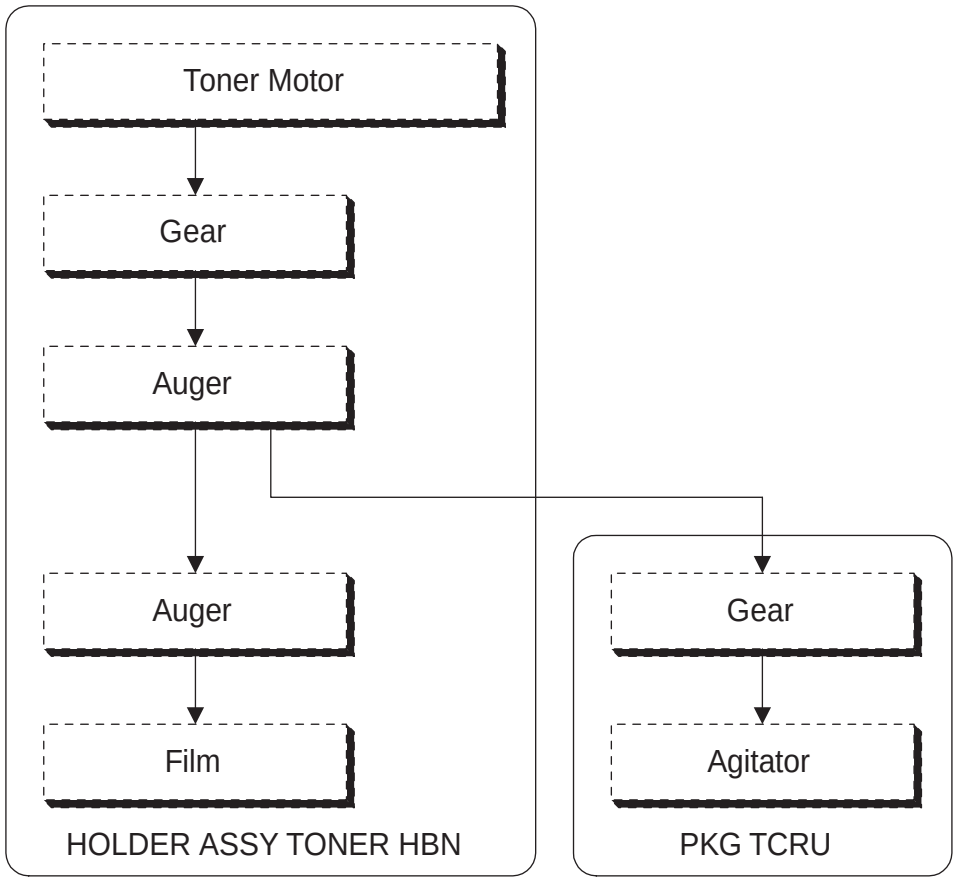
The rotary power of the DEVE DRIVE ASSY drives the developers of 4 colors in the PHD ASSY PKG.



engine principle0025FA

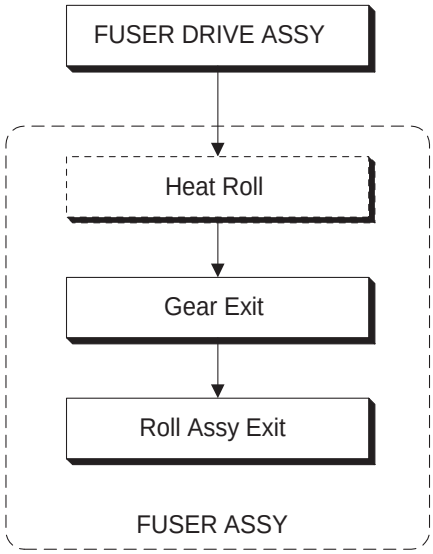
3.3 HOLDER ASSY TONER HBN (Y, M, C, K)

Rotary power of the toner motor in the HOLDER ASSY TONER HBN drives the agitator in the PKG TCRU (to supply toner from the PKG TCRU to HOLDER ASSY TONER HBN) and auger in the HOLDER ASSY TONER HBN (to supply toner to developer in the PHD ASSY PKG).
Four HOLDER ASSY TONER HBN, Y, M, C and K, operate respectively in the same way.



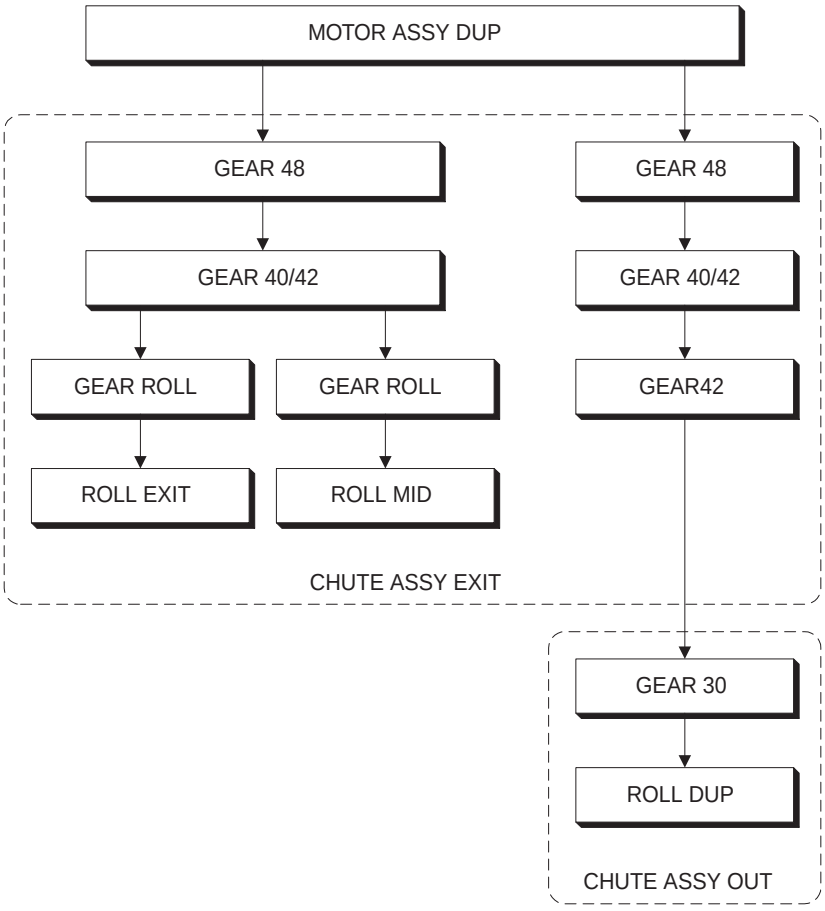
3.4 FUSER DRIVE ASSY

Rotary power of the FUSER DRIVE ASSY drives the FUSER ASSY.

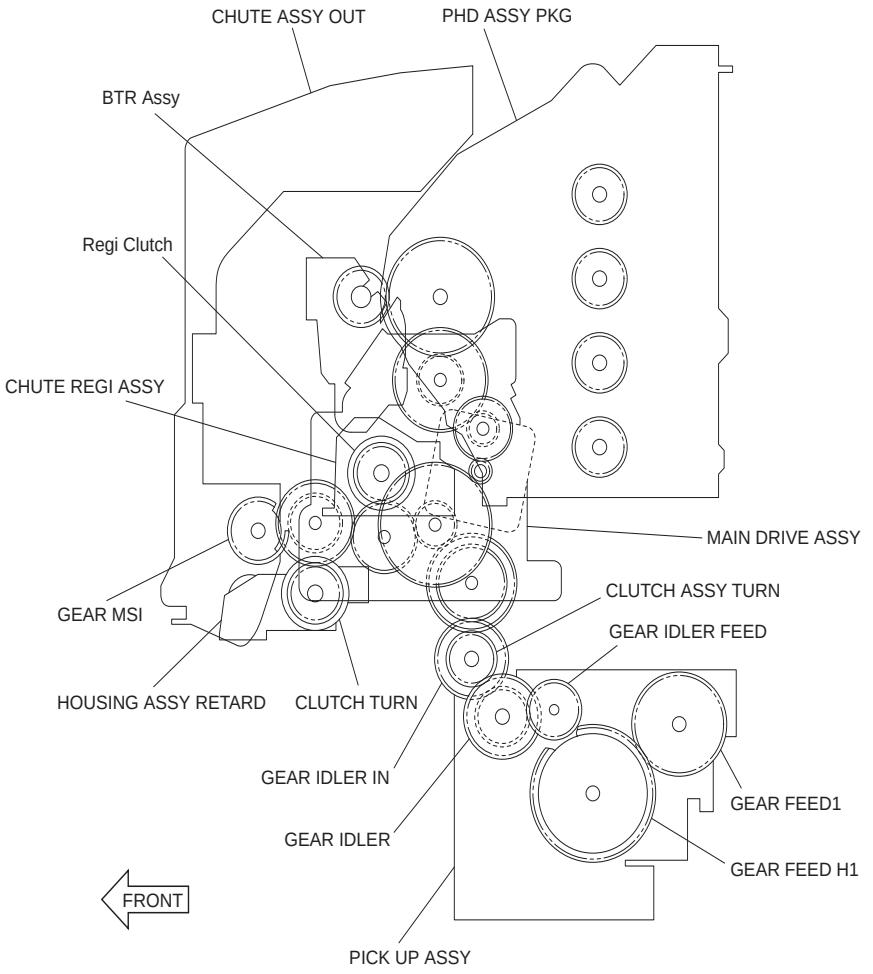


3.5 MOTOR ASSY DUP

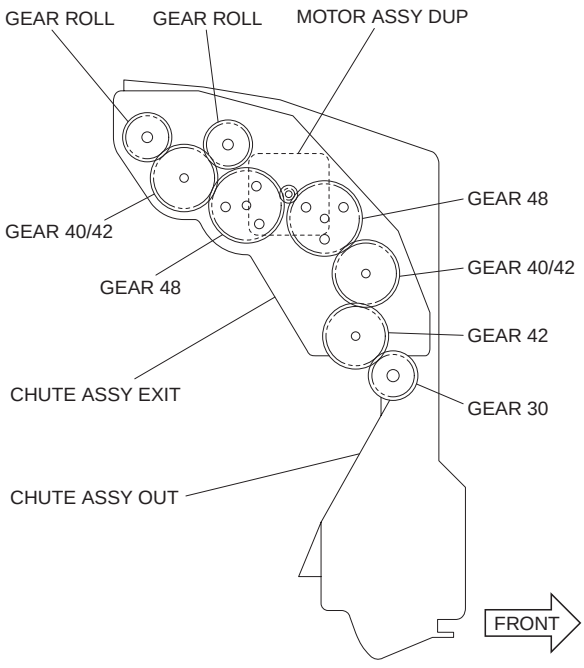
Rotary power of the MOTOR ASSY DUP is transmitted through the route below.



3.6 GEAR • LAYOUT



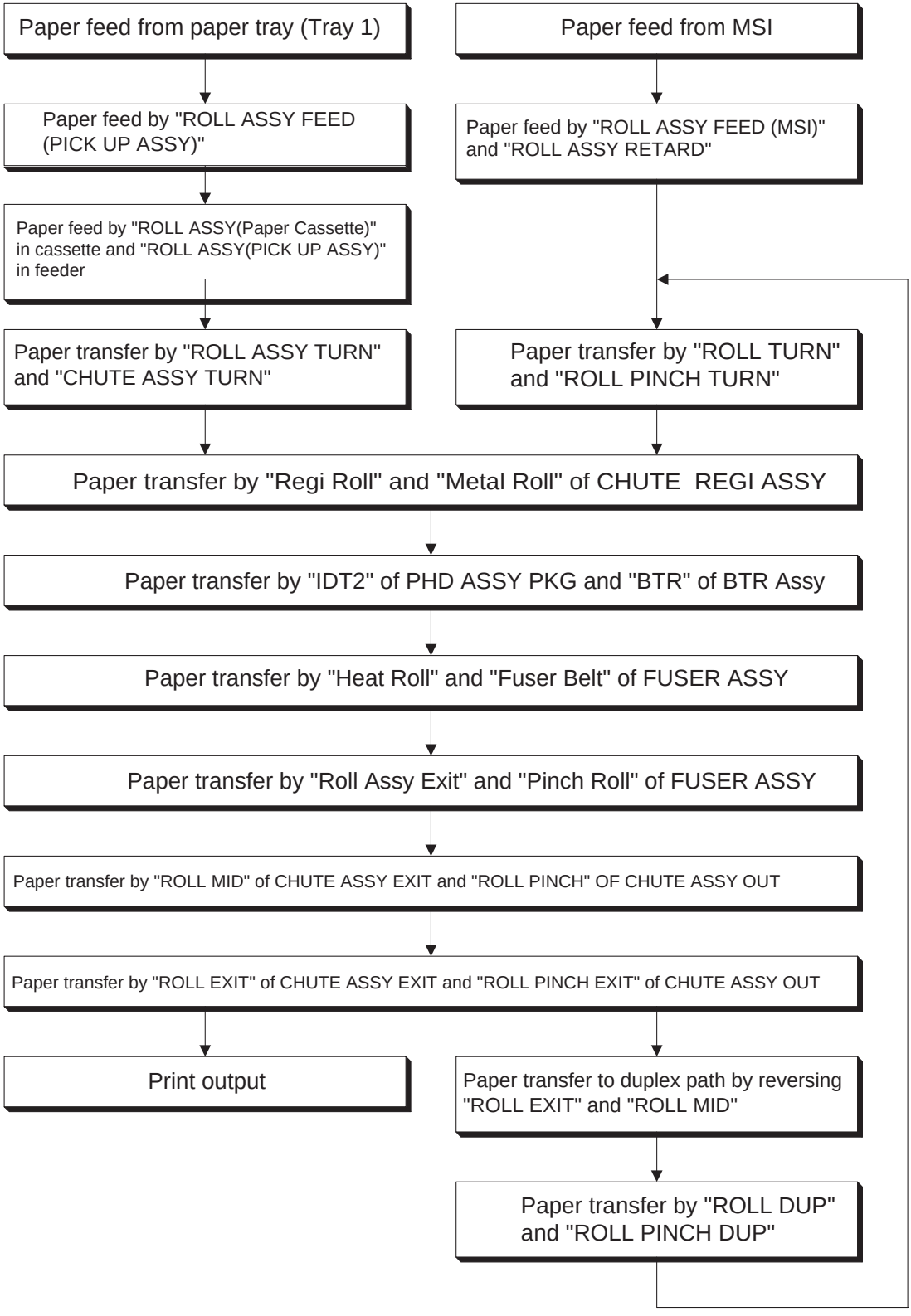
engine principle0029FA



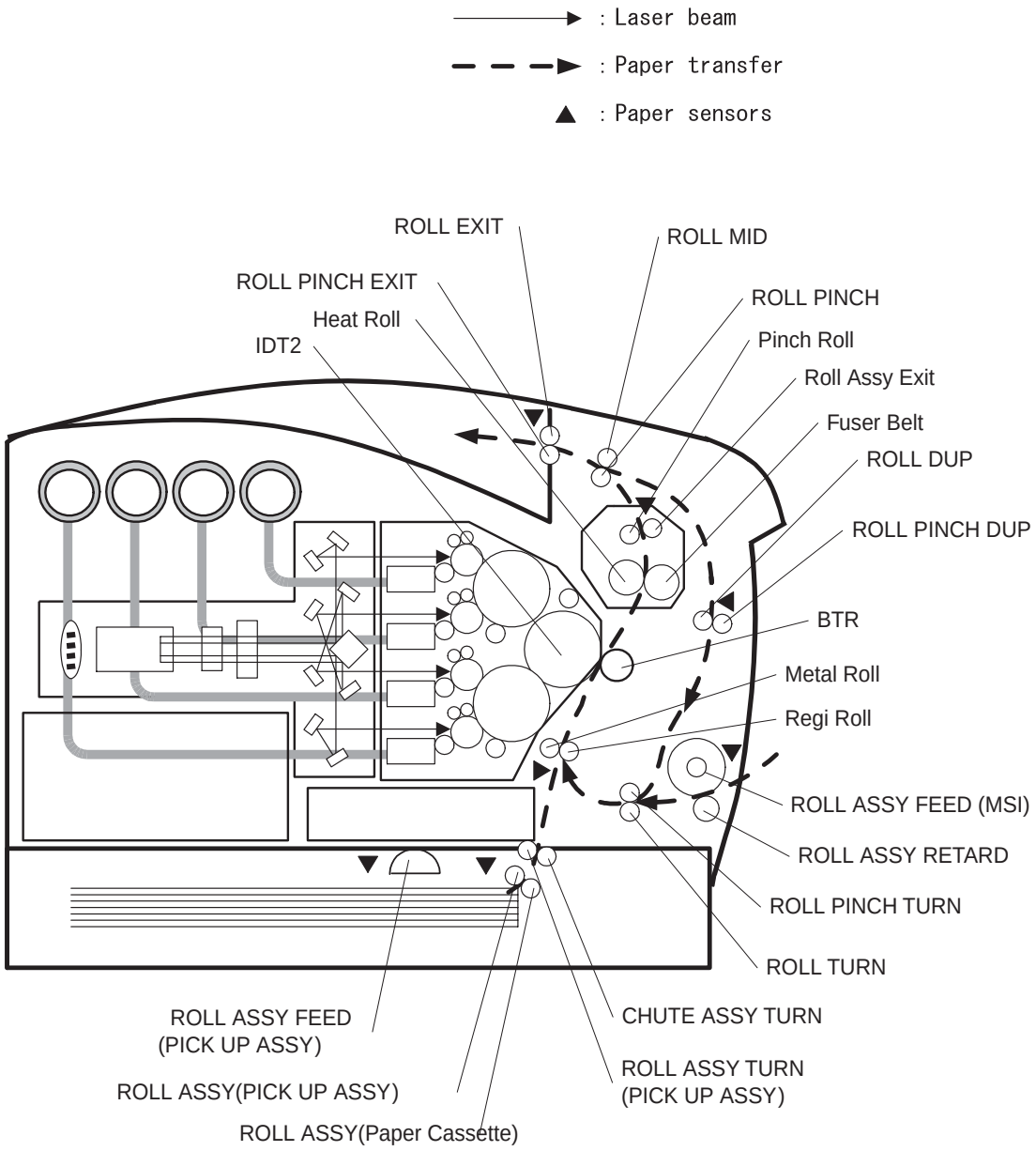
engine principle0043FA

4. Paper Transport

4.1 Paper Transport Route (without option)



4.2 Layout of Paper Transfer Route



engine principle0031FA

5. Functions of Major Functional Components

Major functional components comprising the printer are described below referring to their illustrations. Those components are classified into the following blocks based on the configuration of the printer.

- ☆ Paper Cassette
- ☆ Paper Feeder
- ☆ Housing Assy Retard
- ☆ Front Assy In
- ☆ Chute Assy Out
- ☆ Chute Assy Exit
- ☆ BTR Assy & Fuser
- ☆ Xerographics
- ☆ TCRU Assy
- ☆ Frame & Drive
- ☆ Electrical

5.1 Paper Cassette

5.1.1 Major functions

▼ Side Guide

The Side Guide can move at right angle to the paper transfer direction to align the paper width.

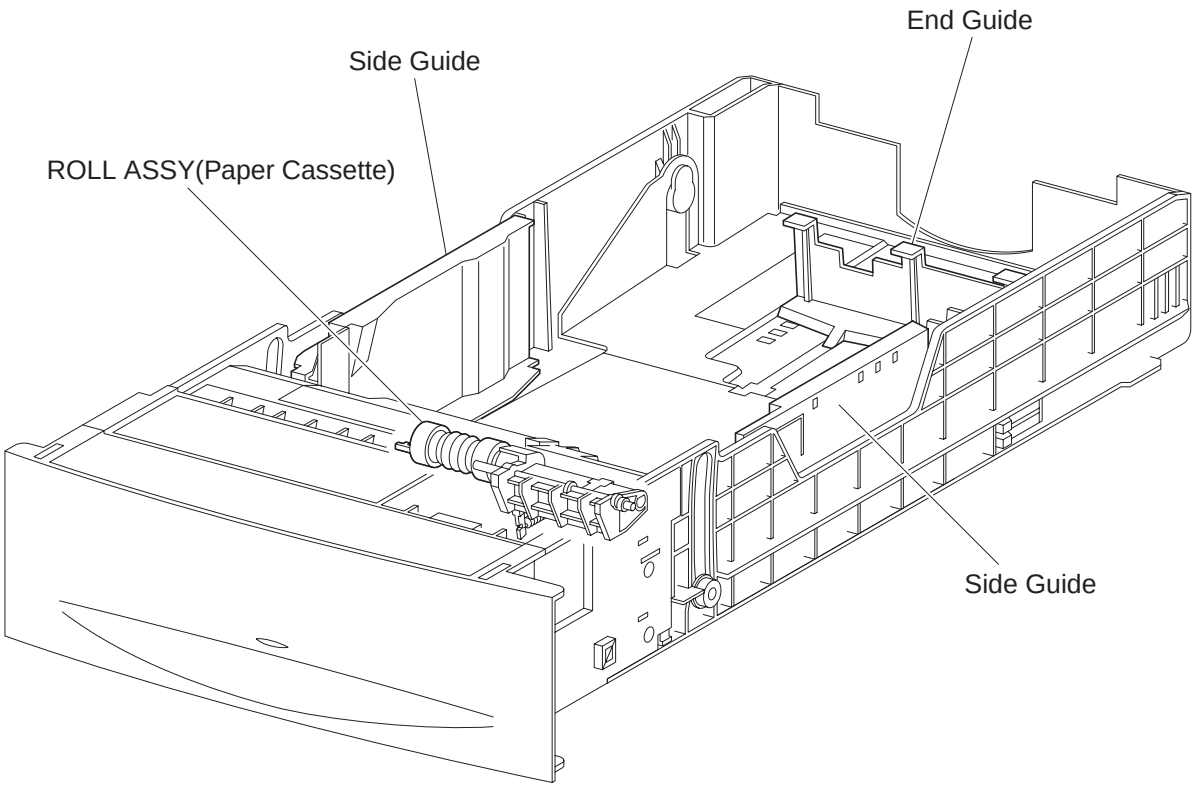
▼ End Guide

The End Guide can move in the paper transfer direction to determine the paper size. The ON/OFF of SWITCH ASSY SIZE (see 5.2 Paper Feeder) varies according to the End Guide position to detect the paper size.

▼ ROLL ASSY (Paper Cassette)

The ROLL ASSY (Paper Cassette) and the ROLL ASSY (PICK UP ASSY) (see 5.2 Paper Feeder) pinch the paper to feed.

5.1.2 Reference diagram



engine principle0032FA

5.2 Paper Feeder

5.2.1 Major functions

▼ SWITCH ASSY SIZE

SWITCH ASSY SIZE detects paper size and existence or non existence of the paper tray.

▼ SENSOR PHOTO (No Paper Sensor)

Detects existence or non existence of paper in the paper tray based on the position of ACTUATOR NO PAPER. (No paper: Sensor beam is intercepted)

▼ SENSOR PHOTO (Low Paper Sensor)

The actuator lowers according to how much paper remains in the paper tray. When the actuator lowers to certain extent, it intercepts the sensor beam to detect low paper quantity.
As the actuator position can be seen from the front side of paper tray, you can confirm approximate residual paper quantity.

▼ SOLENOID FEED

Controls operation (rotation/stop) of ROLL ASSY FEED by controlling the rotations of the GEAR FEED.

▼ CLUTCH ASSY TURN

Transmits the drive from the MAIN DRIVE ASSY to ROLL ASSY TURN.

▼ ROLL ASSY FEED (PICK UP ASSY)

When the SOLENOID FEED operates, the GEAR FEED and GEAR IDLER FEED are engaged by the force of the SPRING FEED. Under the drive from the MAIN DRIVE ASSY, the ROLL ASSY FEED (PICK UP ASSY)starts rotating and the ROLL ASSY (PICK UP ASSY) sends paper.
After having rotated one turn, the GEAR FEED and GEAR IDLER FEED are disengaged at the notch of the GEAR FEED, no drive is transmitted any more, and the ROLL ASSY FEED (PICK UP ASSY)stops rotating. Thus sheets of paper is sent out one by one.

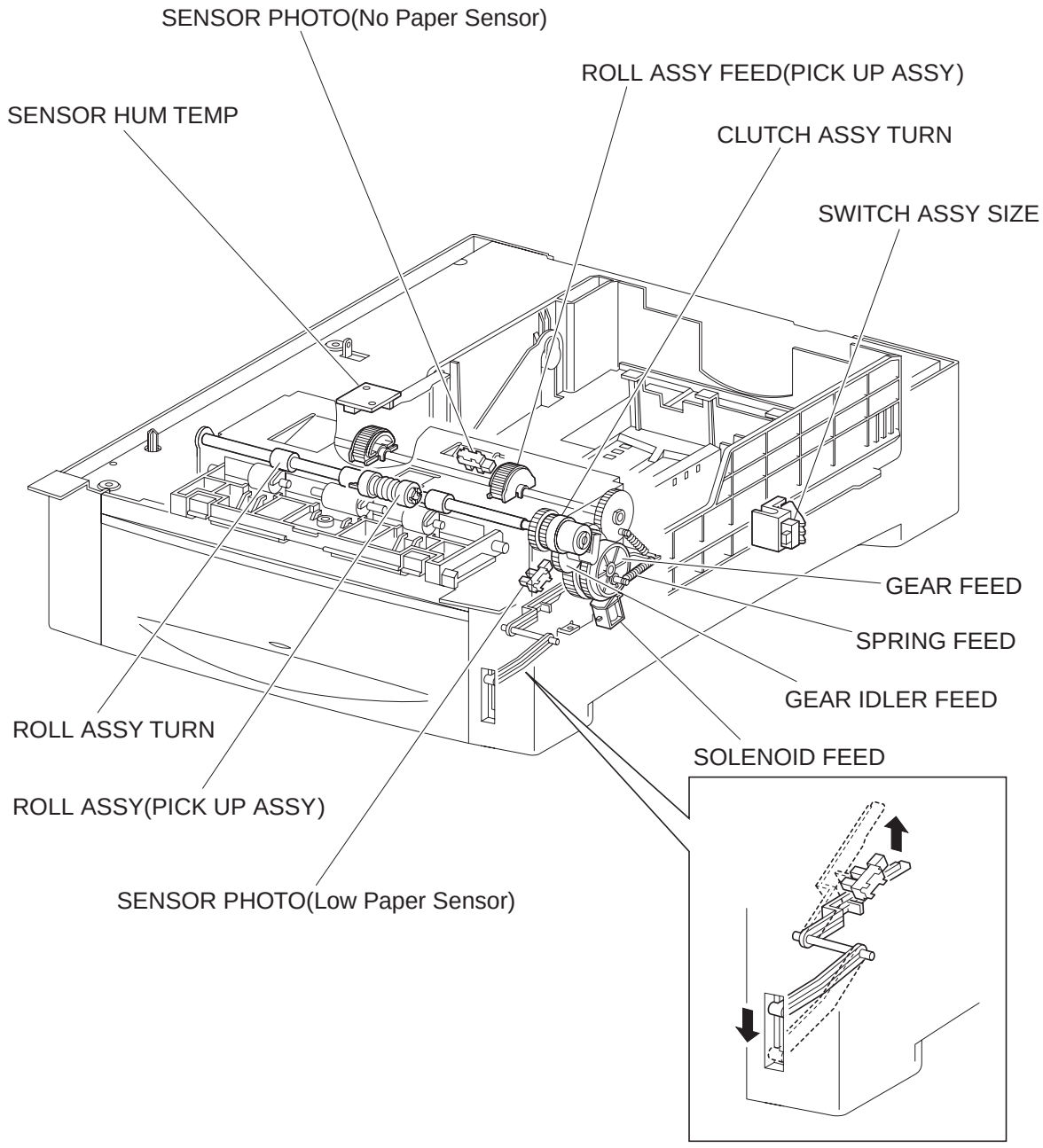
▼ ROLL ASSY TURN

The ROLL ASSY TURN rotates by the drive from the MAIN DRIVE ASSY through the CLUTCH ASSY TURN to feed the paper from the paper tray to CHUTE REGI ASSY (Regi Roll) ("refer to 5.8 Xerographics").

▼ SENSOR HUM TEMP

Detects temperature and humidity in the printer.
The printer corrects the charging voltage, the voltage supplied to the transfer rolls, and the developing bias based on the detected temperature and humidity.

5.2.2 Reference diagram



engine principle0033FA

5.3 Housing Assy Retard

5.3.1 Major functions

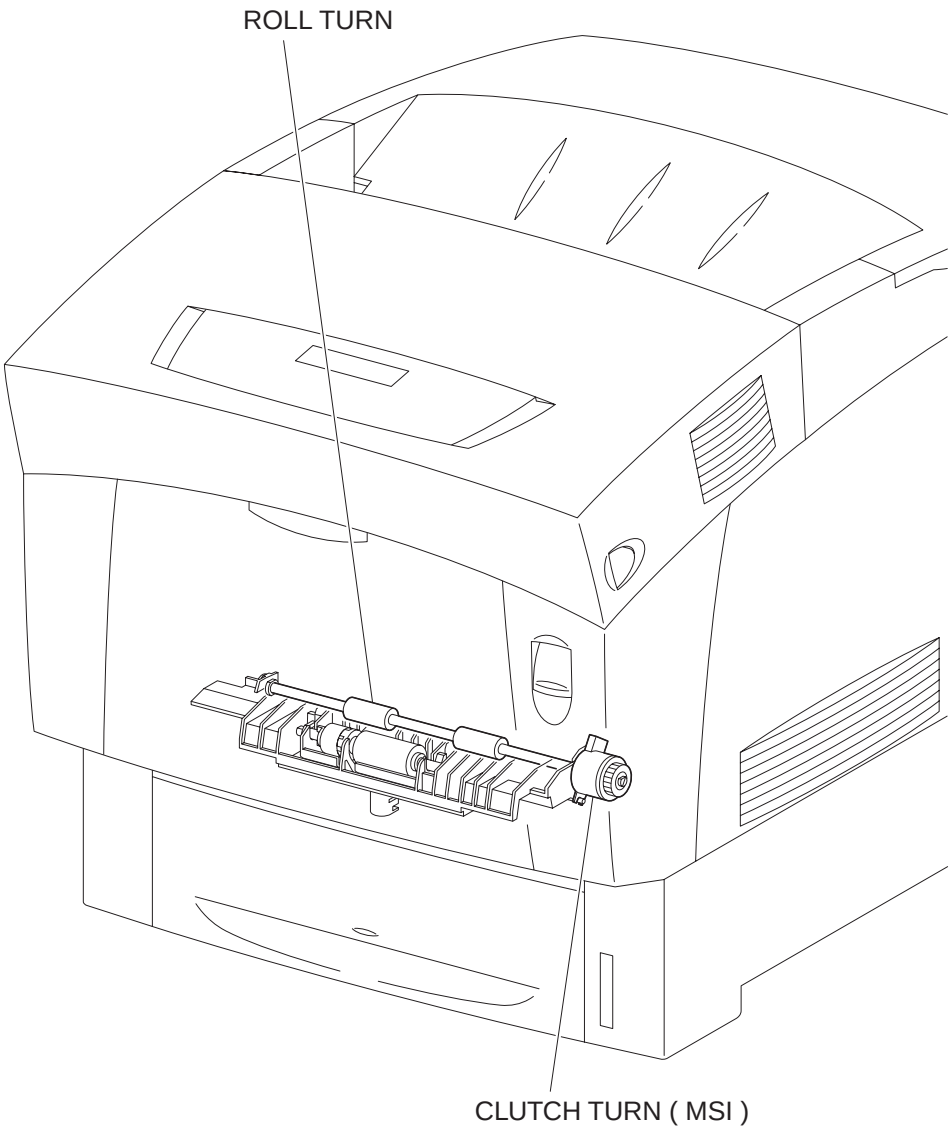
▼ CLUTCH TURN (MSI)

Transmits the drive from the MAIN DRIVE ASSY to the ROLL TURN.

▼ ROLL TURN

The ROLL TURN is rotated by the drive from the MAIN DRIVE ASSY through the CLUTCH TURN (MSI) to feed the paper from the manual feed tray to the CHUTE REGI ASSY(Regi Roll) (refer to "5.8 Xerographics").

5.3.2 Reference diagram



engine principle0034FA

5.4 Front Assy In

5.4.1 Major functions

▼ SENSOR ADC ASSY

Reads the density of the toner image prepared on the surface of BTR in the BTR PKG 72 (refer to "5.7 BTR Assy & Fuser") and feeds it back to the process control (refer to "7.4 Process Control").

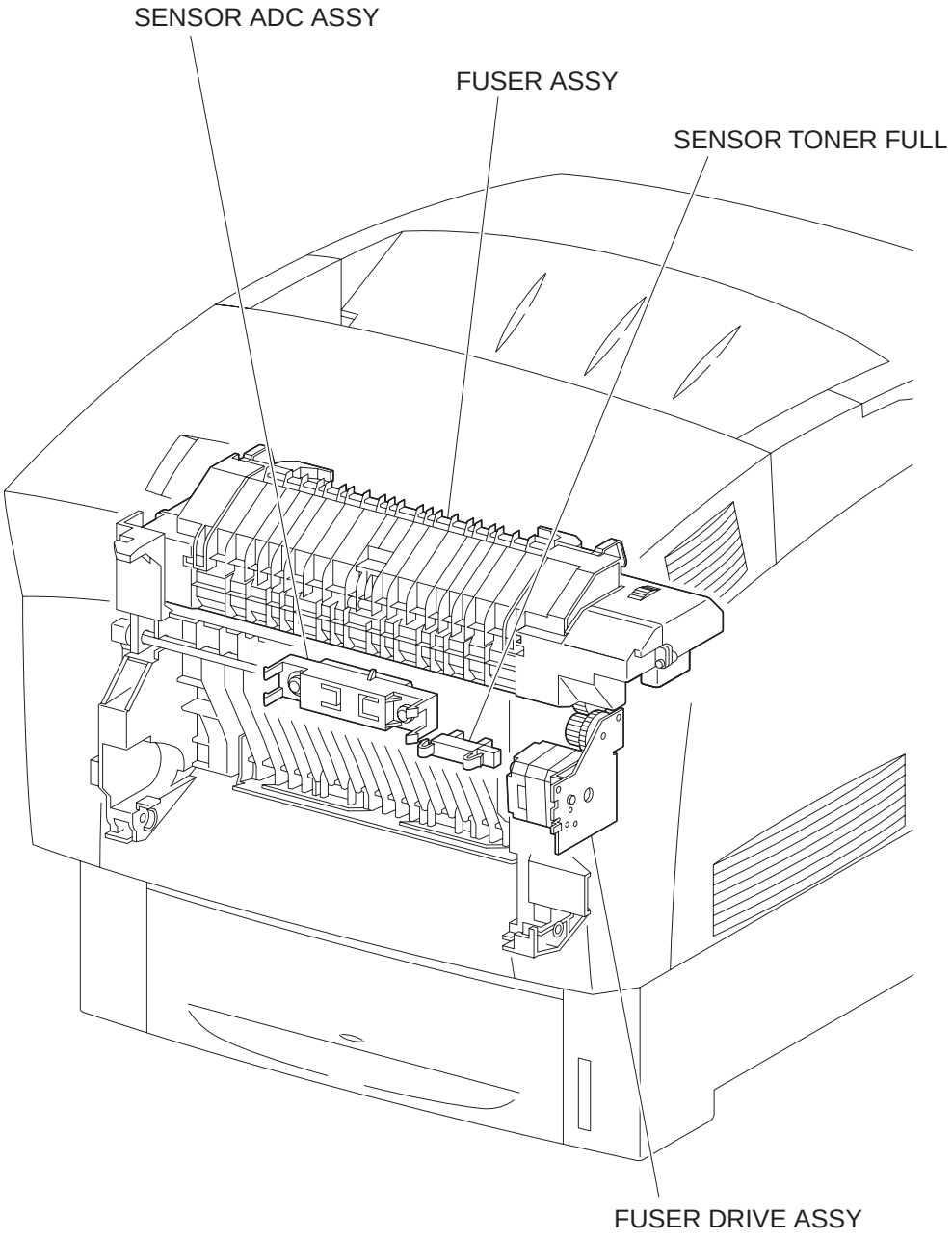
▼ SENSOR TONER FULL

Detects that the toner collect space in the BTR PKG 72 (refer to "5.7 BTR Assy & Fuser") has become full of waste toner to be collected.

▼ FUSER DRIVE ASSY

Supplies the drive to the FUSER ASSY (refer to "5.7 BTR Assy & Fuser").

5.4.2 Reference diagram



engine principle0035FA

5.5 Chute Assy Out

5.5.1 Major functions

▼ SENSOR PHOTO (Full Stack Sensor)

Detects that the prints discharged onto the top cover have accumulated more than specified number of sheets based on the change of position of the actuator.

(Full stack: Sensor beam is received)

▼ SENSOR PHOTO (Dug Jam Sensor)

Detects that paper has reached and passed through the ROLL DUP based on the change of position of the actuator.

(Paper present: Sensor beam is received)

▼ SENSOR PHOTO (MSI No Paper Sensor)

Detects existence or non existence of paper on the manual feed tray based on the change of position of the actuator.

(No paper: Sensor beam is intercepted)

▼ SOLENOID FEED MSI

Controls the operation (rotation/stop) of ROLL ASSY FEED (MSI) by controlling the rotations of the GEAR MSI.

▼ ROLL ASSY FEED (MSI)

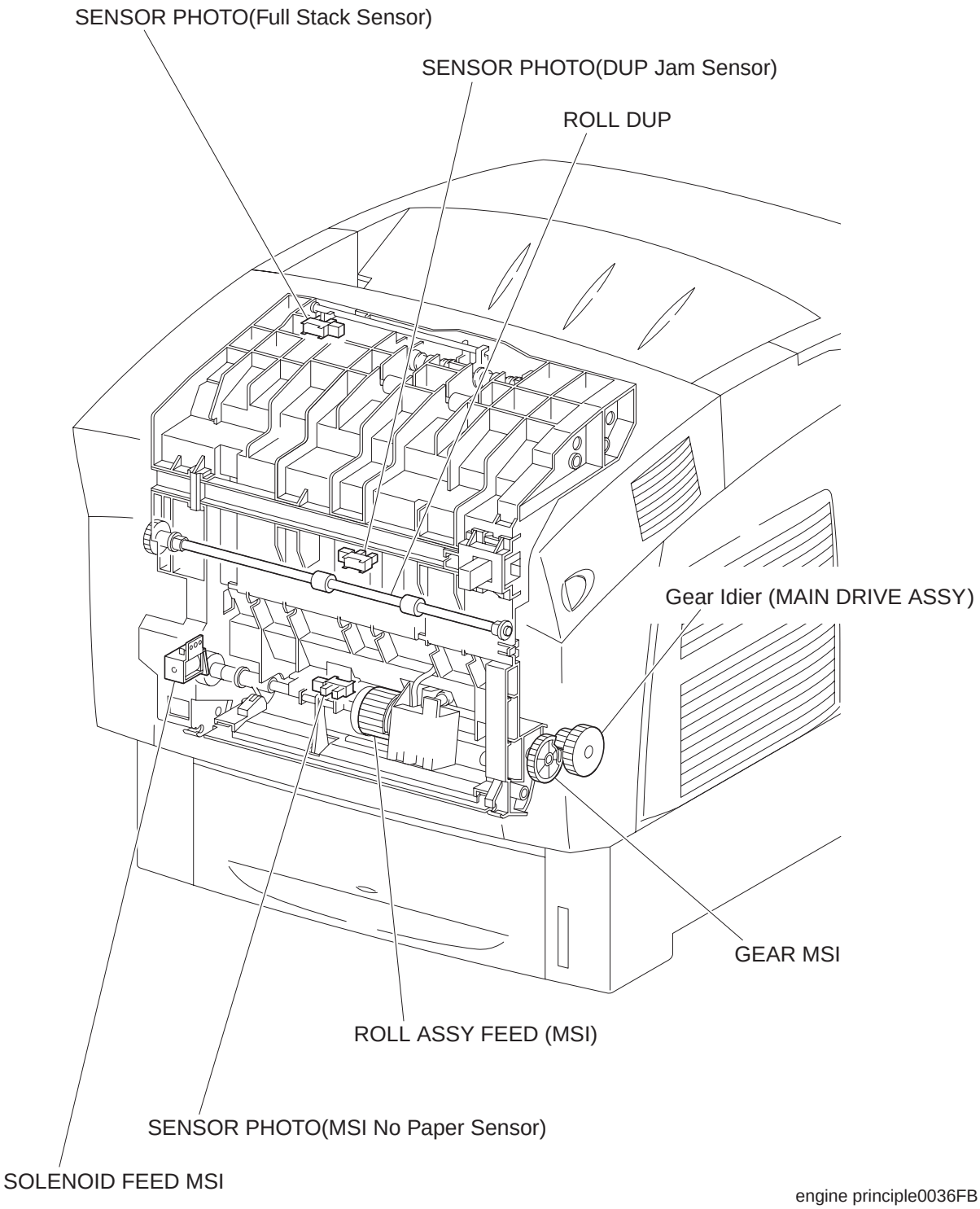
When the SOLENOID FEED MSI operates, the GEAR MSI and Gear Idier are engaged by the force of the SPRING SOL, the ROLL ASSY FEED (MSI) starts rotating under the drive from the MAIN DRIVE ASSY, and feeds paper from the manual feed tray.

After having rotated one turn, the GEAR MSI and Gear Idier are disengaged at the notch of the GEAR MSI, drive is not transmitted any more, and the ROLL ASSY FEED (MSI) stops rotating. Thus sheets of paper are fed one by one.

▼ ROLL DUP

The ROLL DUP rotates under the drive from the MOTOR ASSY DUP and feeds paper printed on simplex returned from the CHUTE ASSY EXIT to the ROLL TURN (refer to "5.3 Housing Assy Retard)".

5.5.2 Reference diagram



engine principle0036FB

5.6 Chute Assy Exit

5.6.1 Major functions

▼ MOTOR ASSY DUP

Supplies drive to the ROLL EXIST, ROLL MID, and ROLL DUP.

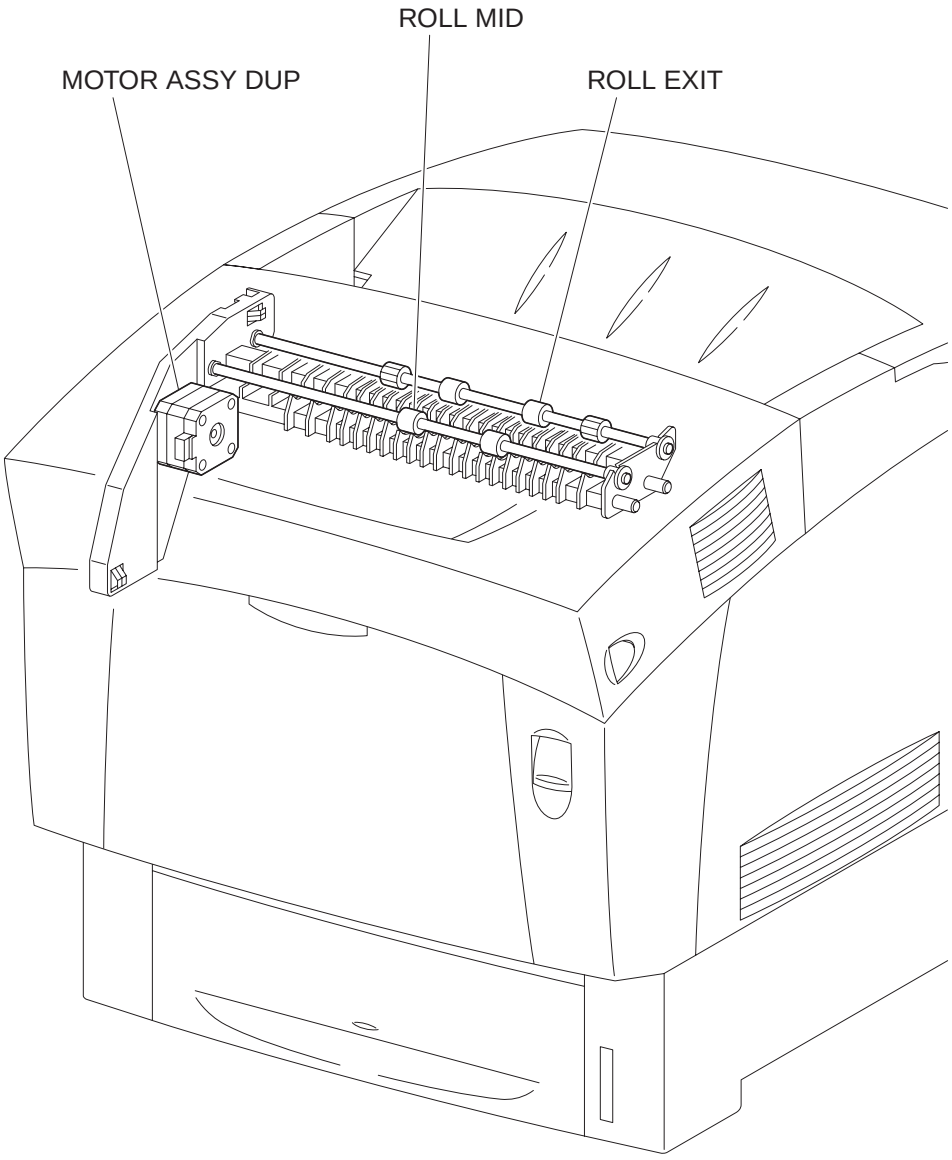
▼ ROLL EXIT

The ROLL EXIT rotates under the drive from the MOTOR ASSY DUP, and feeds fixed prints onto the top cover. It reverses in the duplex document mode and feeds the prints after fixed on simplex in the REGI direction.

▼ ROLL MID

The ROLL MID rotates under the drive from the MOTOR ASSY DUP, and feeds fixed prints onto the top cover. It reverses in the duplex document mode and feeds the prints after fixed on simplex in the REGI direction.

5.6.2 Reference diagram



engine principle0037FA

5.7 BTR Assy & Fuser

5.7.1 Major functions

▼ FUSER ASSY

The FUSER ASSY fixes toner which was transferred onto the paper but not fixed by the heat and pressure and feeds paper before and after being fixed.

The FUSER ASSY mainly consists of the following parts:

- Heat Roll• Belt Unit
- Heater Lamp• Roll Assy Exit
- Thermostat• Exit Sensor
- Temp Sensor• Fuser EEPROM
- Fuser NCS

▽ Exit Sensor

Detects passage of print after fixed based on the change of position of the actuator.

▼ BTR PKG 72

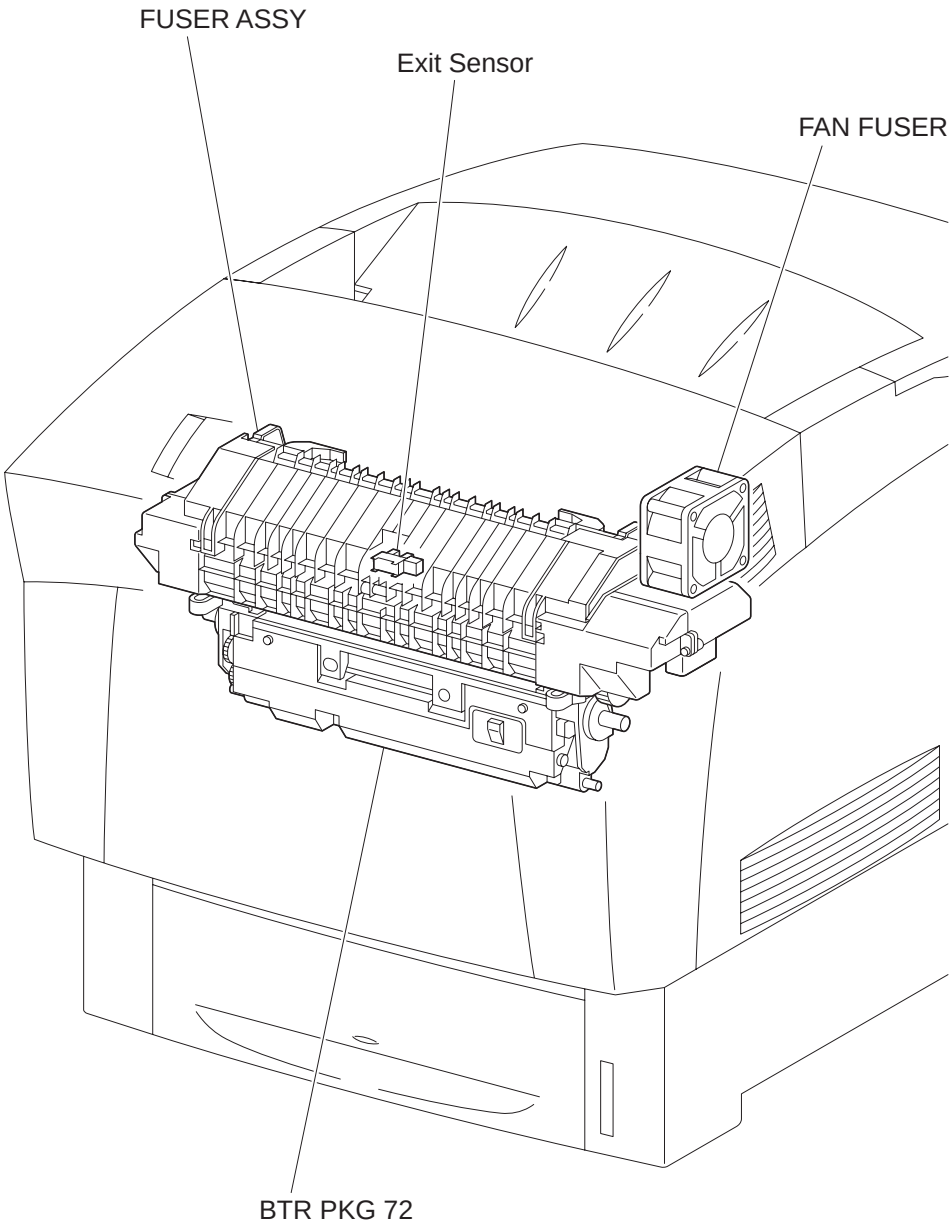
The BTR PKG 72 consists of a BTR (Bias Transfer Roll) and a waste toner recovery system.

The BTR (Bias Transfer Roll) is opposed to the IDT 2 in the PHD ASSY PKG and transfer the toner image on the IDT 2 onto the paper.

▼ FAN FUSER

The FAN FUSER exhausts the heat of FUSER ASSY to prevent inside temperature from overheating.

5.7.2 Reference diagram



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5.8 Xerographics

5.8.1 Major functions

▼ ROS ASSY

ROS ASSY (Raster Output Scanner Assembly) is an exposure unit to generate laser beams to form electrostatic latent image on the drum surface.

In this manual, the ROS ASSY is referred to as ROS ASSY.

The ROS ASSY mainly consists of the following parts:

- LD ASSY
- Scanner ASSY
- SOS PWB
- Lens
- Mirror
- Window

▼ PHD ASSY PKG

PHD ASSY PKG carries out a series of operation in the print process such as charging, developing and transfer.

PHD ASSY PKG mainly consists of the following parts.

- Drum (Y)• Developer (Y)
- Drum (M)• Developer (M)
- Drum (C)• Developer (C)
- Drum (K)• Developer (K)
- RTC (Y)• Refresher (Y)
- RTC (M)• Refresher (M)
- RTC (C)• Refresher (C)
- RTC (K)• Refresher (K)
- IDT 1 (2)• IDT 2
- IDT 1 cleaner (2)• IDT 2 Cleaner

▼ CHUTE REGI ASSY (Regi Clutch)

The CHUTE REGI ASSY is composed of the Regi Clutch, Regi Roll and Metal Roll.

Drive from the MAIN DRIVE ASSY is transmitted to the Regi Roll through the Regi Clutch. Feeds paper from the tray, MSI and duplex path in the PHD ASSY PKG direction. When the paper tip reaches the CHUTE REGI ASSY, the CHUTE REGI ASSYhas the paper make a loop until the Regi Roll starts rotating and correct the skew (feeding the paper in inclined condition) of the tip of the paper.

▼ SENSOR PHOTO (Regi Sensor)

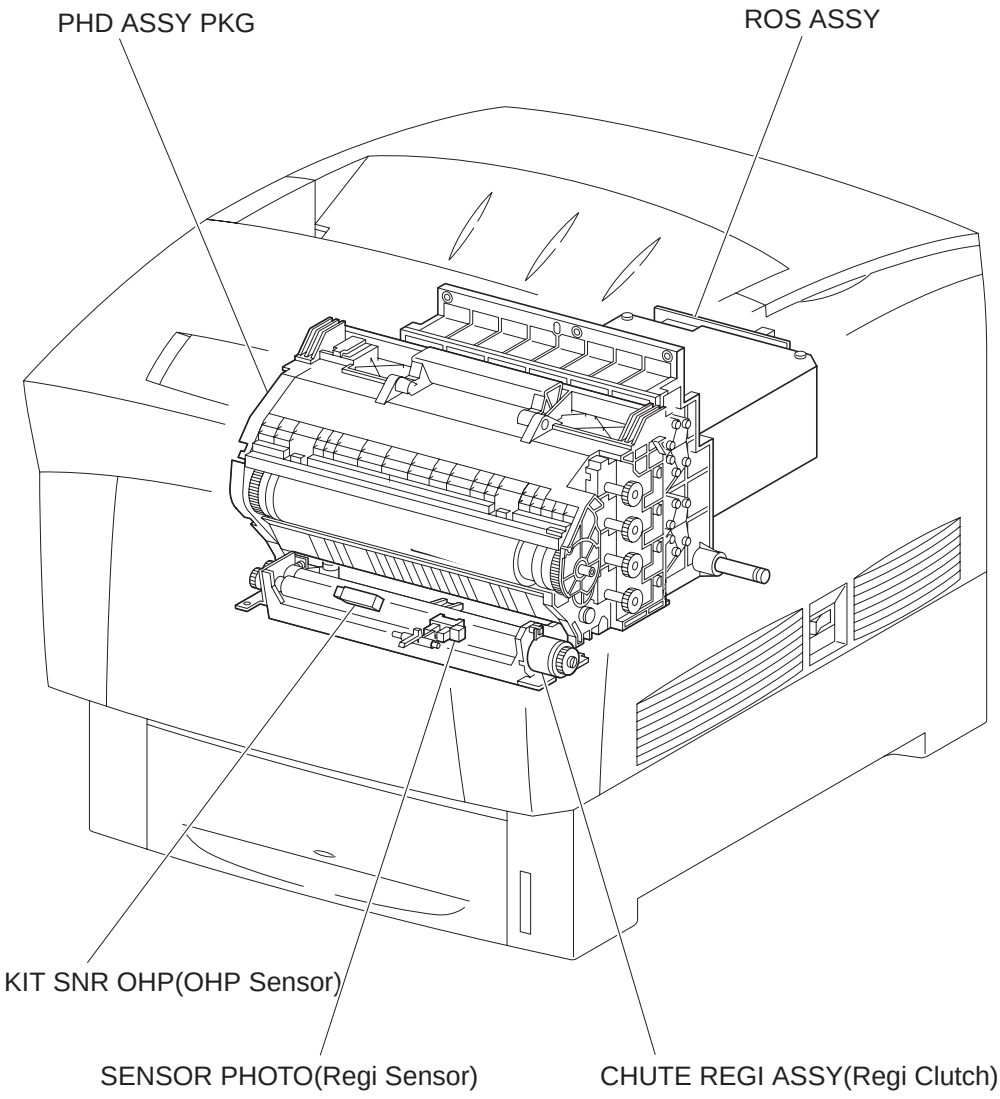
Detects that the paper tip has reached the CHUTE REGI ASSY.

(Paper present: Beam is received)

▼ KIT SNR OHP (OHP Sensor)

As plain paper scatters the radiated light, the OHP Sensor can capture the reflected light to detect the paper. The OHP paper scarcely scatters the radiated light, and therefore the OHP Sensor cannot capture the reflected light. Thus, whether the paper fed from MSI is plain paper or OHP paper is judged.

5.8.2 Reference diagram



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5.9 TCRU Assy

5.9.1 Major functions

▼ PWBA CRUM READER

The PWB consists of each color toner bottle switch and CRUM.

Toner bottle switch:

Detects whether PKG TCRU (toner bottle) of each color is installed or not.

CRUM:

Printer specific information is stored.

▼ SENSOR NO TONER (Y)
▼ SENSOR NO TONER (M)
▼ SENSOR NO TONER (C)
▼ SENSOR NO TONER (K)

Detects residual toner of each color.

▼ HOLDER ASSY TONER HBN (Y) (Toner Motor: Y)
▼ HOLDER ASSY TONER HBN (M) (Toner Motor: M)
▼ HOLDER ASSY TONER HBN (C) (Toner Motor: C)
▼ HOLDER ASSY TONER HBN (K) (Toner Motor: K)

The toner motor incorporated in the HOLDER ASSY TONER HBN of each color supplies the drive to the Agitator in the PKG TCRU of each color and to Auger in the HOLDER ASSY TONER HBN and supplies toner to the developer incorporated in the PHD ASSY PKG.

▼ PKG TCRU (Y)
▼ PKG TCRU (M)
▼ PKG TCRU (C)
▼ PKG TCRU (K)

Toner bottle containing toner of each color.

▼ PWBA EEPROM

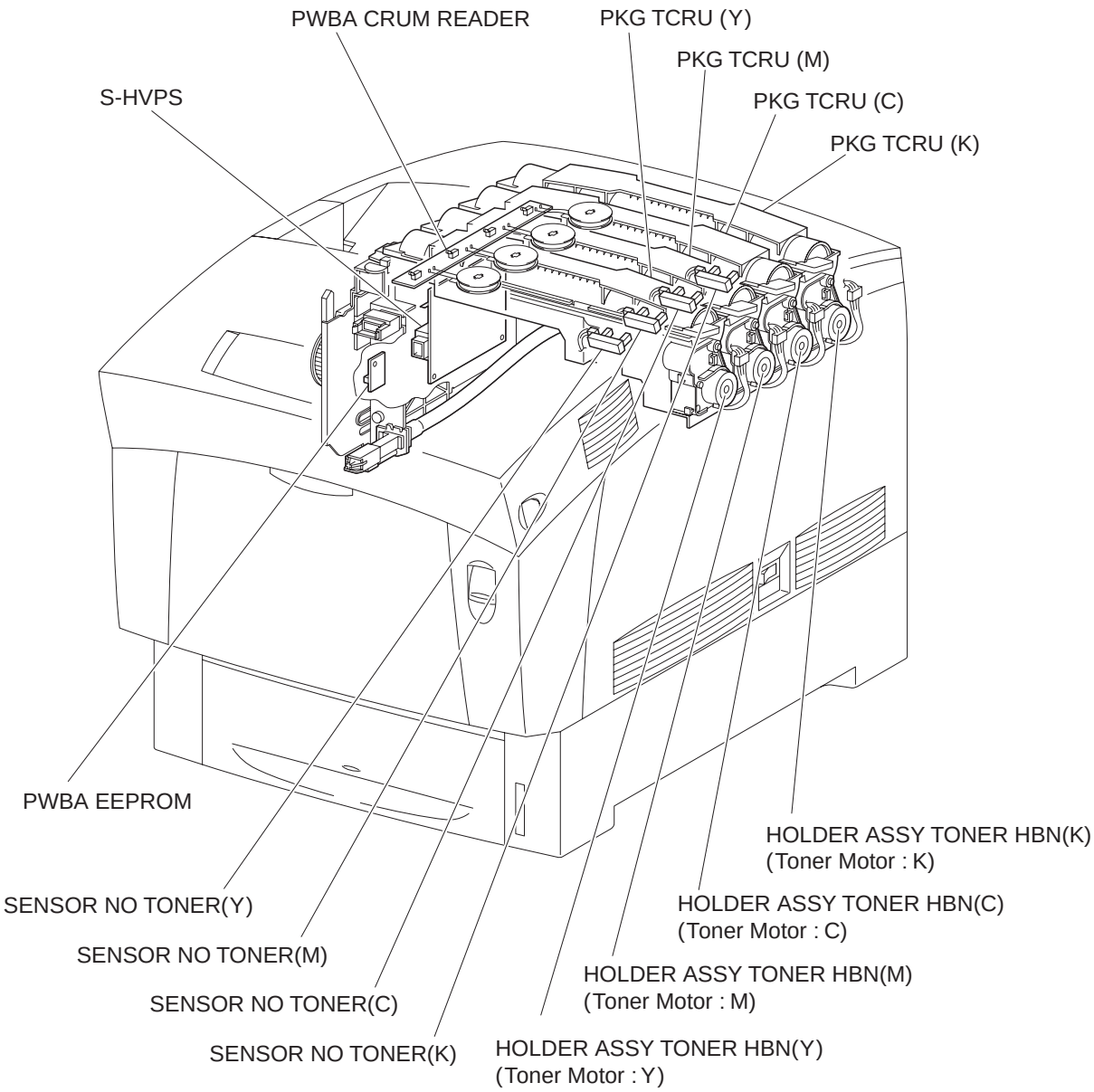
Printer specific information is stored.

▼ S-HVPS

Supplies high voltage to perform the “tertiary transfer” and “static elimination” of the print process to the following components.

- BTR in the BTR PKG 72.
- Detack Saw in the BTR PKG 72.

5.9.2 Reference diagram



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5.10 Frame & Drive

5.10.1 Major functions

▼ MAIN DRIVE ASSY

Supplies the drive to parts as follows.

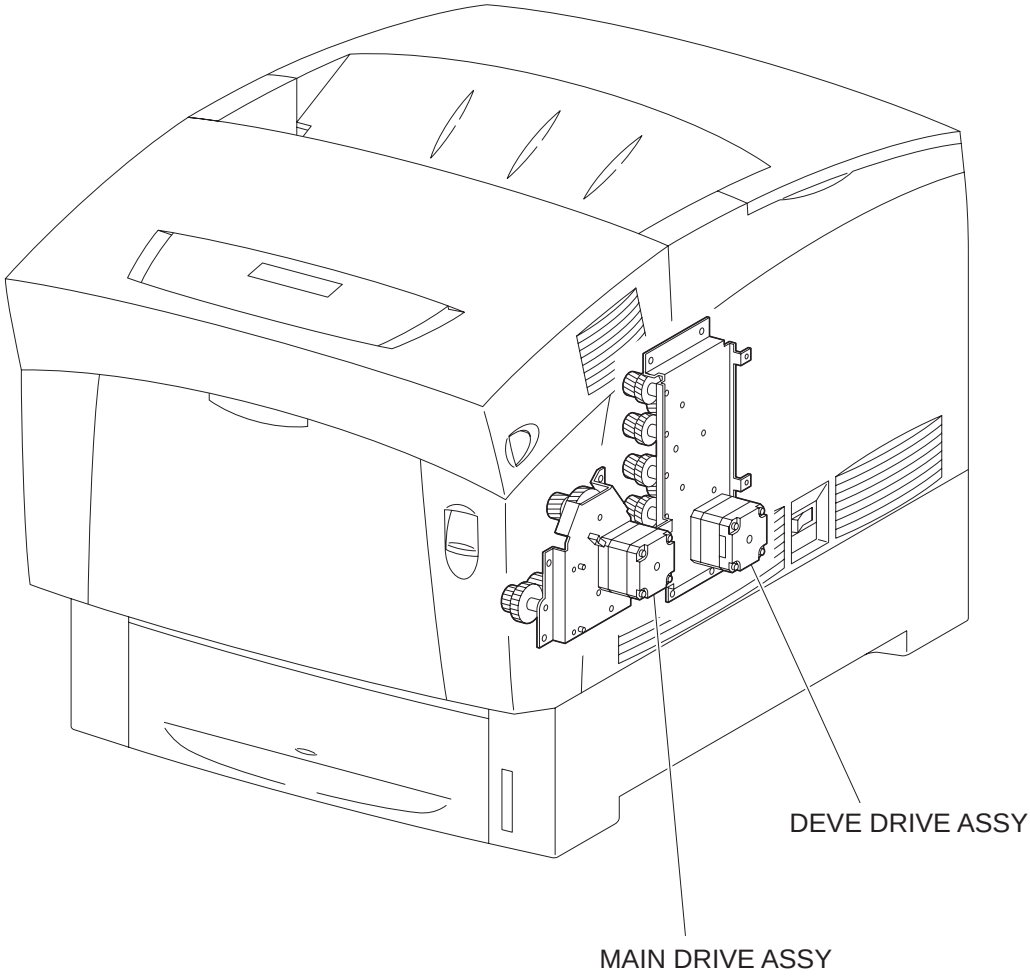
- PICK UP ASSY
- HOUSING ASSY RETARD
- CHUTE ASSY OUT (MSI position)
- CHUTE REGI ASSY
- PHD ASSY PKG (IDT 2, IDT 1, Drum)
- BTR Assy (BTR PKG 72)

▼ DEVE DRIVE ASSY

Supplies the drive to parts as follows.

- PHD ASSY PKG (Develper)

5.10.2 Reference diagram



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5.11 Electrical

5.11.1 Major functions

▼ FAN REAR

Discharges heat out of the printer to prevent too high temperature in the printer.

▼ HARNESS ASSY AC SW

Composed of the main switch and inlet and controls supply of AC power from the power source to LVPS.

▼ LVPS

The LVPS is provided with two types, 100/200V and 230V.

Supplies AC power from the power source to the FUSER ASSY heater and generates and supplies stable low voltage DC power used for the logic circuit, etc.

LVPS contains control circuit for the heater of the FUSER ASSY, in addition to the power circuit.

▼ PWBA MCU HBN

Controls printing operation based on the communication with the print controller and information from the sensor/switch. Incorporates functions of HVPS.

Major functions are as follows:

- Communication with the printer controller.
- Receive of information from the sensors or switches.
- Control of ROS ASSY

Supplies high voltage to parts in the PHD ASSY PKG to perform charging, development, primary transfer and secondary transfer of the print process to the following parts in the ASSY.

- RTC
- Refresher
- Developer
- IDT 1
- IDT2
- IDT 1 Cleaner
- IDT 2 Cleaner

▼ PWBA DRV HBN

Controls parts of motor and so on by the signal from the PWBA MCU HBN and sends information from the sensors and switches to PWBA MCU HBN. The power from the LVPS is supplied to the PWBA MCU HBN through this PWB. Also, the interlock switch is mounted on this PWB.

Major functions are as follows:

- Recive of information from the sensors or switches
- Control of Toner Motor in MAIN DRIVE ASSY, DEVE DRIVE ASSY, FUSER DRIVE ASSY, MOTOR ASSY DUP, and HOLDER ASSY TONER HBN.
- Distributing low voltage DC power outputted from LVPS to each component
- Cutting off the 24VDC circuit by the interlock switch

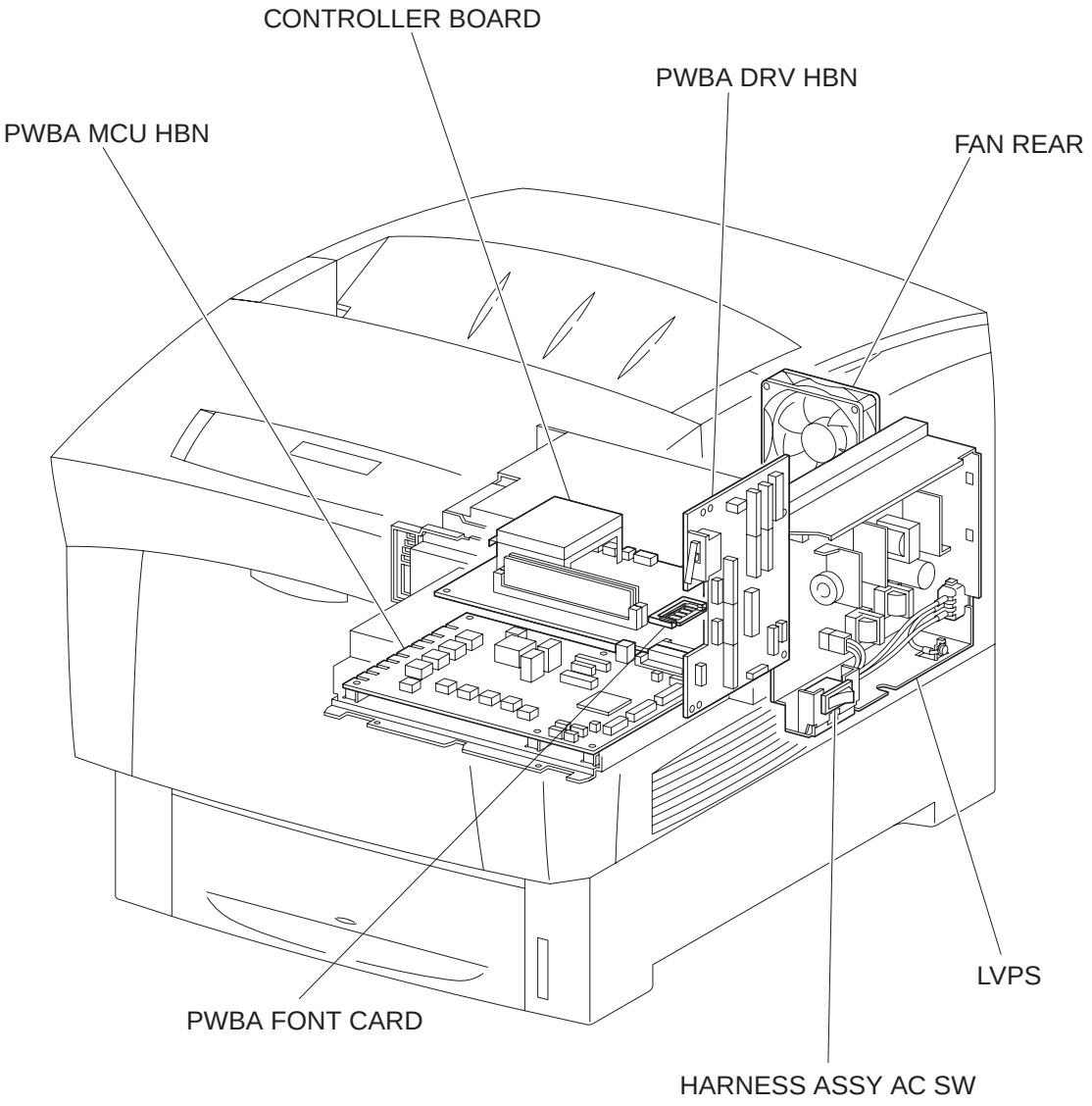
▼ CONTROLLER BOARD

Receives data from high-order unit (host), prints and controls the whole printer.

▼ PWBA FONT CARD

Records font information of printer.

5.11.2 Reference diagram



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6. MODES

6.1 Print Mode

The printer has four modes, Standard mode, Fine mode, High gross mode, and Super high gross mode.Modes are switched over under the instruction from the controller.

(1) Standard mode: used for printing with resolution 600dpi
(2) Fine mode: process direction resolution 1200dpi mode
(3) High gloss mode: thick paper, special paper, and high glossed plain paper
(4) Super high gloss mode: thick paper, special paper, and super high glossed plain paper

Relation between the resolution, process speed, print mode and paper mode is shown in the table below.

Paper mode			Resolution/Process speed			
			600dpi		1200dpi	
		Print mode	Simplex	Duplex	Simplex	Duplex
Plain paper		Standard mode	Full speed	Full speed	-	-
	Thick paper *1	Fine mode	-	-	Half speed	Half speed
		High gloss mode	Half speed	Half speed	-	-
		Super high gloss mode	1/3 speed	1/3 speed	-	-
Special paper *2		Fine mode	-	-	Half speed	Half speed
		High gloss mode	Half speed	Half speed	-	-
		Super high gloss mode	1/3 speed	1/3 speed	-	-

*1: Thick paper-L,Thick paper-H

*2: Label-L , Label-H, OHP, Envelope, Postcard

6.2 Operation Modes

For the operation of the printer, the following five modes are provided.

▼ DIAG TEST mode
The printer is ready for receiving diagnostic commands, or the printer diagnostic function is operating.

▼ WAIT mode
The printer is under the adjustment of print quality.

▼ READY mode
The printer is ready for printing.

▼ PRINTING mode
The printer is under printing.

▼ ERROR mode
Any error was detected in the printer.

▼Initializing mode
New parts have been just set to the printer (initializing with a new PHD).

▼Checking Unit mode
Printer is under checking consumable units.

7. Control

7.1 Control of Paper Size

"ON/OFF of Paper Size Switch of SWITCH ASSY SIZE" and "Diag Tool indication data" are shown in the table below.

NOTE **Paper Size Switches are indicated as SW1, SW2, and SW3 from the above one.**

Paper Size	Paper Size Switch			Diag indication data
	SW1	SW2	SW3	
LEGAL14" (SEF)	ON	ON	ON	00
LEGAL13" (SEF)	ON	ON	OFF	01
EXECUTIVE (SEF)	ON	OFF	ON	02
B5 (SEF)	ON	OFF	OFF	03
A4 (SEF)	OFF	ON	ON	04
LETTER (SEF)	OFF	OFF	ON	06
A5	OFF	ON	OFF	05
No cassette	OFF	OFF	OFF	07

7.2 Selective Control on Paper Pick-up Unit

When not controlled by the printer controller, paper pick-up unit selected at the time of turning ON are as follows.

NOTE **The paper feeder by the paper tray under the printer is called "Tray 1", and the first tray and the second tray in optional TRAY UNIT are called "Tray 2" and "Tray 3" respectively.**

7.3 ROS Light Quantity Control

The image data are entered to the laser diodes in the ROS ASSY as electric signals (data are expressed with high and low voltage values), and the laser diodes convert the image data from electric signals to optical signals (data are expressed with blinking laser beams).
Variations in light quantity of laser beams or variations in optical system (such as lenses) or drum sensitivity cannot attain proper electrostatic image, and accordingly the laser diodes monitor the light quantity of laser beams to control the light quantity so as to attain stable and proper electrostatic image.
The ROS in this printer has four laser diodes for yellow, magenta, cyan, and black respectively, and the light quantity is automatically adjusted for each color.

7.4 Process Control

For a stable printing, the parameters related to the image forming must be corrected as necessary. The control of entire printing process including parameter correction control is called “process control”. Mainly, the following two controls are made:

- Potential control
- Toner density control

To supplement these two controls, the following controls are provided:

- High Area Coverage Mode
- Admix Mode
- SENSOR ADC ASSY LED light quantity setting

7.4.1 Potential Control

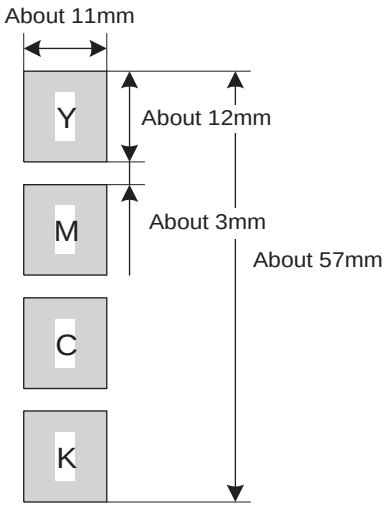
To attain stable printing image density, the drum charging voltage and the developing DC voltage are adjusted according to the developing capability of each color carrier that varies momentarily. The adjusted drum charging voltage and the developing DC voltage are fed back to keep the printing image density constant. The potential control is made immediately before the start of printing, if either of the following conditions is satisfied:

- At the first printing after the power on
- When cumulative print count after the power on exceeds 16
- When a cleaning cycle is executed during continuous printing

The outline of control is as follows.

1) The SENSOR HUM TEMP (temperature and humidity sensor) detects the temperature and humidity, and sets target values of drum charging voltage and developing DC voltage.

2) The patches of respective colors (yellow, magenta, cyan, and black) for the potential control are generated and transferred on the BTR. (For the shape of patches, see the following figure.)



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3) The SENSOR ADC ASSY (density sensor) detects the density of the area on BTR where no toner is present and the density of patches.

4) The density measured in step 3) is compared with target value set in step 1) to change the drum charging voltage and the developing DC voltage for each color according to a difference.

7.4.2 Toner Density Control

The toner density must be kept constant to attain stable printing image. To keep the toner density constant, the toner should be dispensed exactly by the quantity consumed for the printing. This system is the PCDC. However, the system with only the PCDC generates a difference from target toner density, thus requiring the system to correct this error. This is the toner density control by the SENSOR ADC ASSY. These two control systems are altogether called the toner density control.

1) PCDC (Pixel Count Dispense Control)

The toner quantity consumed in the developing process is calculated by counting the video signals entered to the ROS ASSY. The video signal counting is made by the charging and discharging of the capacitor in the CR circuit arranged in parallel to the video signal line. The consumed toner quantity is calculated by the toner dispense time. The Toner Motor in the HOLDER ASSY TONER HBN is driven by the amount of calculated toner dispense time to supply the toner into the developer.

2) ADC (Auto Density Control)

The patches of respective colors (yellow, magenta, cyan, and black) for the toner density control are generated under specified potential condition, and transferred on the BTR. The SENSOR ADC ASSY measures this density. The measured value is compared with reference value, and if the toner density is low, the toner dispense quantity is increased at the next printing, or if the toner density is high, the toner dispense quantity is reduced at the next printing. The toner dispense quantity is calculated by the toner dispense time. This calculation is made for each color.

ADC is made after the completion of printing, if either of the following conditions is satisfied:

- When cumulative print count after the power on exceeds 16
- When a cleaning cycle is executed during continuous printing

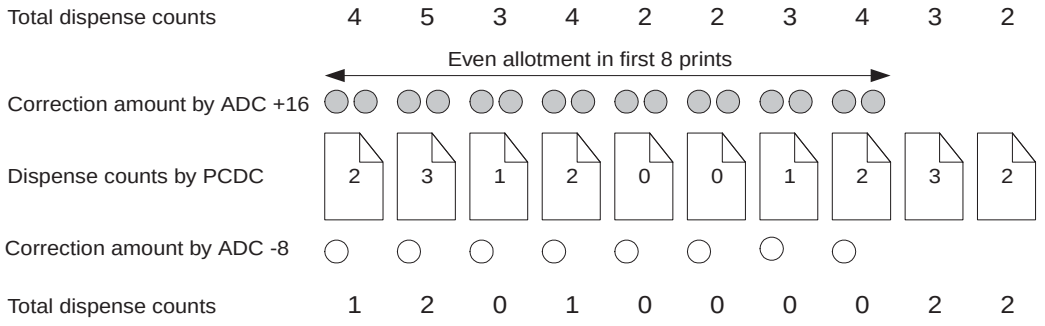
3) Example of toner dispensation

The Toner Motor revolves for the duration of the specified time per 1-time dispensation. The toner dispense time in 1) and 2) above is calculated with the number of revolutions of Toner Motor. In the following description, this is called the dispense count.

The dispense count calculated by the ADC is cancelled in the subsequent 8 prints.

If 16 dispense counts were calculated as a lack of toner by the ADC, the toner is dispensed additionally to the dispense count calculated by the PCDC by 2 counts (16(8=2) in the subsequent 8 prints.

Or, if 16 dispense counts were calculated as an excess of toner by the ADC, the toner is dispensed by subtracting from the dispense count calculated by the PCDC in the subsequent 8 prints. If the excess amount cannot be subtracted in 8 prints, the remainder is subtracted in 9 and subsequent prints.



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7.4.3 High Area Coverage Mode

A continuous printing of the image of area coverage exceeding the toner dispense capability causes the toner density in the developer to be lowered.

The High Area Coverage Mode extends the next page feed and dispenses the toner during this time, if the toner dispense time reached the specified value during a continuous printing.

7.4.4 Admix Mode

Even the High Area Coverage Mode may not be able to cope with the reduction of toner density in the developer. Also, if the machine used in high humidity environment is relocated to the place in low humidity environment, the reference value of toner density is different in respective environments, thus causing large discrepancy between measured value by SENSOR ADC ASSY and reference value of toner density.

The Admix Mode dispenses the toner immediately to prevent the reduction of toner density, if the patch density result measured by the SENSOR ADC ASSY is far lower than the reference value when the patches for toner density control are generated.

7.4.5 LED Light Quantity Control of SENSOR ADC ASSY

The SENSOR ADC ASSY is a reflection type density sensor that radiates the light to an objective from the LED in the sensor and detects the reflected light from the objective to output electric signal according to the light quantity. For exact density measurement, the sensor output value (reflected light quantity) must be the specified value when no toner is put on the BTR as an objective. The reflected light quantity varies depending on the BTR surface condition or dirty condition of SENSOR ADC ASSY surface. The light quantity emitted from the LED is controlled so that the reflected light quantity satisfies the specified value. This control is made in two ways; one to set the light quantity so that the reflected light quantity satisfies the specified value, and one to adjust the subsequent light quantity to be within the tolerance.

1) Light quantity setting

The reflected light quantity may vary largely, if the BTR Assy was replaced or the SENSOR ADC ASSY was cleaned. Assuming this fact, the light quantity is set when the power is turned on, or the front cover is opened and closed.

The light quantity of LED is increased gradually, and the set value is fixed when the output of SENSOR ADC ASSY exceeds the specified value. At this time, if the output of SENSOR ADC ASSY does not reach the specified value even though the light quantity is increased to the upper limit, the controller judges the sensor as dirty. Also, the controller judges the sensor as faulty in the event of extremely high output.

2) Light quantity adjustment

At the execution of ADC, the light quantity adjustment is made immediately before the patches for toner density control are generated.

The light is emitted from the LED with current setting of light quantity to check if the output value of the SENSOR ADC ASSY is within the specified range. If the output value is low, the light quantity is increased by the specified amount at the next ADC, or if high, the light quantity is reduced at the next ADC.

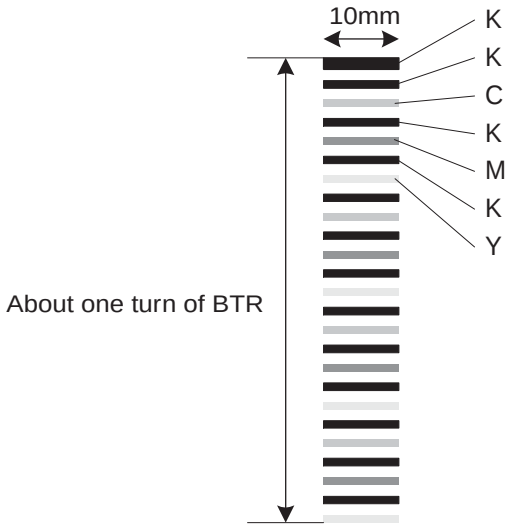
At this time, if the output value is less than the first lower limit, the controller judges the sensor as dirty and outputs the warning. Further, if less than the second lower limit, the controller judges the sensor as faulty and stops the printing.

7.5 Color Registration Control

The printer uses a tandem system where the drums and developers exclusively for yellow, magenta, cyan, and black are arranged respectively. The images are formed on the drums of respective colors and they are overlapped to form one image, and in this case a color shift may occur. The color registration control calculates how much the registration is shifted, and adjusts the ROS write timing.
The lateral registration control adjusts all of four colors in lateral directions.

The color registration control is made from a change in inside temperature and the print count at the execution of the process control.
The control is outlined below:

1) With no toner put on the BTR, the output value of SENSOR ADC ASSY is measured to determine the threshold value.
2) The patches for color registration control are generated on the BTR. These patches are composed of 10mm lines of K, C, K, M, K, and Y in this order by the amount of four dispense counts, led by a black trigger.



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3) The density of patches generated by the SENSOR ADC ASSY is read.
4) The adjusting amount of registration shift is calculated from the threshold value determined in 1) and the patch density measured in 3).
5) The ROS write timing is changed from the adjusting amount of registration shift.

7.6 BTR Assy Control

7.6.1 Detecting the Installation of BTR Assy

Whether the BTR Assy (BTR PKG 72) is installed is detected when the power is turned on, or the front cover is opened and closed. The sensor for detecting the installation is not provided, but judgment is made from the output of the SENSOR ADC ASSY.

The light is emitted from the LED of SENSOR ADC ASSY with the specified light quantity, and if the output of the SENSOR ADC ASSY is larger than the specified value, the controller judges as installation. If the operation stops by a jam, the toner image could be put on the BTR and in such a case, the sensor output is reduced, causing the controller to judge as uninstallation. To prevent this wrong detection, the BTR is rotated by a half turn if the output is less than the specified value. Then, when the output of the SENSOR ADC ASSY is larger than the specified value, the controller judges as installation, or if less than the specified value, the controller judges as uninstallation.

7.6.2 Detecting the Life of BTR Assy

The BTR Assy consists of a BTR and a waste toner recovery system. The life of the BTR Assy (BTR PKG 72) is detected when the toner recovery space has become full.

The full toner recovery space is detected by the SENSOR TONER FULL.

1) Check timing of full waste toner recovery space
   - When the power is turned on, or the front cover is opened and closed
   - When paper is outputted

2) Output of “BTR Life Warning”
   The "BTR Life Warning" is outputted when the SENSOR TONER FULL detects the full toner recovery space.

3) Output of “BTR Life Error”
   After the output of "BTR Life Warning", the print count and the toner dispense time are counted up, and if total counts exceed the specified value, the "BTR Life Error" is outputted.

4) Reset of “BTR Life Warning/”BTR Life Error”
   The "BTR Life Warning" and "BTR Life Error" are reset, if the SENSOR TONER FULL does not detect the full toner recovery space when the power is turned on, or the front cover is opened and closed.

7.7 Toner Control

Whether the toner bottle is installed is detected by the toner bottle switch in PWBA CRUM READER, and the presence of toner in the toner bottle is detected by the SENSOR NO TONER. These switches and sensors are provided for respective colors, and detection is made for each color.

7.7.1 SENSOR NO TONER

The SENSOR NO TONER is provided for each color.
The SENSOR NO TONER is attached to the HOLDER ASSY TONER HBN, and it detects the presence of toner dispensed by the Toner Motor from the toner bottle into the HOLDER ASSY TONER HBN.
Also, the SENSOR NO TONER could make a wrong detection if the toner sticks to the sensor surface. To prevent this, the film attached in the vicinity of the Auger in the HOLDER ASSY TONER HBN cleans the sensor surface when the toner is dispensed. This film rotates together with the Auger at the toner dispensation to scrape the toner off the SENSOR NO TONER surface. However, the sensor may detect the toner even if the toner is not present or may not detect the toner even if the toner is present, depending on the film position when the Toner Motor stopped. This is avoided by the printer internal control.

7.7.2 Toner presence control

The control is outlined below.

1) Check timing
   - When the power is turned on, or the front cover is opened and closed
   - Printing

2) Output of “Toner Empty Warning”
   Output "Toner Empty Warning" based on the counter on the PKG TCRU.

3) Output of “Toner Empty Error”
   Output "Toner Empty Error" when the SENSOR NO TONER properly detects TONER EMPTY.

4) Reset of “Toner Empty Warning/Toner Empty Error”
   When a new Toner Bottle is installed ("Toner Empty Error"not being generated), the machine executes Toner Dispense for 1.7 seconds to detect Toner. If SENSOR NO TONER detects Toner Full on checking "Toner Full"/"Uncontrolled Execution", "Toner Empty Warning/Toner Empty Error" will be disabled.
   However, the Unit inside still recognizes "Toner Empty" at this stage. The Unit recognizes "Toner Full" when the SENSOR NO TONER has detected "Toner Full" more than three times consecutively by executing Toner Dispense.

5) Outputting “Toner Tape not Removed Error”
   When the new Toner Bottle is installed ("Toner Empty Error" not being generated), the machine executes Toner Dispense for 1.7 seconds to detect Toner. If Toner Full is not detected, Toner Dispense will be executed for 1.7 sec again 5 seconds later. If Toner Full is not detected after executing Toner Dispense three times, and if Toner Bottle Dispense Time shows 0, "Tape not Removed Error" will be output.

7.8 Fuser Control

7.8.1 Fuser temperature control

As for the fuser temperature control, the target temperature is set, then the Heat Roll surface temperature is controlled so as to be the target temperature by turning on/off the Heater Lamp.

Temperature of individual area of the Heat Roll is detected by the Fuser Non-Contact Sensor (NCS) in the middle of the Heat Roll and the Temp Sensor at the edge of it. The Temp Sensor checks for open wire by detecting the temperature every 60ms and resistance every 20ms alternately. When the temperature detected every 80ms shows the figure higher than the target, the Heater Lamp will be turned OFF. When the result shows a lower figure, the Heater Lamp will be turned ON.

The target temperature set up varies depending on the time of Warm-up, Printing, or Process Control. The target temperature will be changed based on the interior temperature detected by the Sensor Hum Temp, the difference of temperature between the center and edge areas of the Heat Roll, Printing Mode, or the Input Power Voltage.

7.8.2 Cool down

As the printing continues, the distribution of temperature in the Heat Roll becomes uneven both in the paper feed and non-paper feed areas. Cooling Down is to provide a certain period of time without feeding paper so that the Heat Roll temperature can be distributed evenly.
Cooling down is performed for certain period of time after printing was completed.

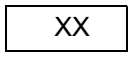
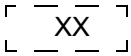
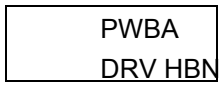
7.8.3 Sensor Warm-up

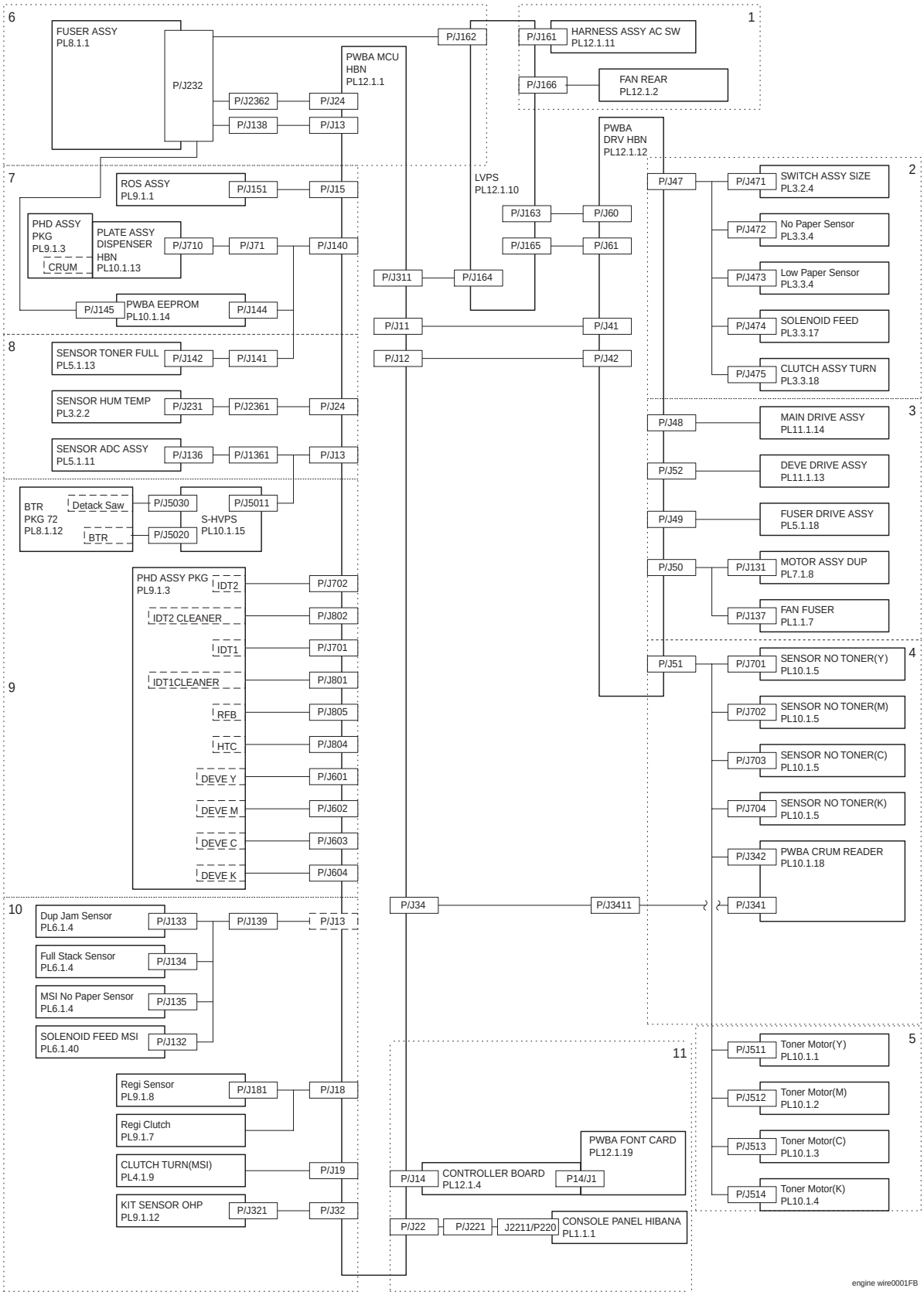
The Fuser NCS (Non Contact Sensor) at the center of the Heat Roll does not detect temperature when the temperature of the Sensor itself is below -5°C. Therefore, the Sensor will be warmed up when the temperature is below -5°C. This action is called Sensor Warm-up.

Chapter 7 Wiring Diagrams and Signal Information

1. General Wiring Diagram

The following describes the legend of the general wiring diagram shown on the next page.

Symbols	Description
	Denotes a connection between parts with harnesses and wires.
	A frame not having parts name inside denotes the connector (P/J). Numeric value inside implies the connector number.
	A frame of broken line denotes the connector (P/J) written in several places separately. Numeric value inside implies the connector number.
	A frame having parts name inside denotes the parts. PL X.Y.Z implies the item “Z” of plate (PL) “X.Y” in Chapter 5. Parts List.
	A frame of dotted line denotes the section in “2. Wiring Diagram between Parts”, and numeric value implies the section number.


6
FUSER ASSY
PL8.1.1
P/J232
P/J2362
P/J138
P/J162
PWBA MCU
HBN
PL12.1.1
P/J24
P/J13
1
P/J161
HARNESS ASSY AC SW
PL12.1.11
P/J166
FAN REAR
PL12.1.2
PWBA
DRV HBN
PL12.1.12
LVPS
PL12.1.10
P/J163
P/J165
P/J60
P/J61
7
ROS ASSY
PL9.1.1
P/J151
P/J15
PHD ASSY
PKG
PL9.1.3
CRUM
PLATE ASSY
DISPENSER
HBN
PL10.1.13
P/J710
P/J71
P/J140
P/J145
PWBA EEPROM
PL10.1.14
P/J144
P/J311
P/J164
P/J11
P/J12
P/J41
P/J42
2
P/J47
P/J471
SWITCH ASSY SIZE
PL3.2.4
P/J472
No Paper Sensor
PL3.3.4
P/J473
Low Paper Sensor
PL3.3.4
P/J474
SOLENOID FEED
PL3.3.17
P/J475
CLUTCH ASSY TURN
PL3.3.18
8
SENSOR TONER FULL
PL5.1.13
P/J142
P/J141
SENSOR HUM TEMP
PL3.2.2
P/J231
P/J2361
P/J24
SENSOR ADC ASSY
PL5.1.11
P/J136
P/J1361
P/J13
3
P/J48
MAIN DRIVE ASSY
PL11.1.14
P/J52
DEVE DRIVE ASSY
PL11.1.13
P/J49
FUSER DRIVE ASSY
PL5.1.18
P/J50
P/J131
MOTOR ASSY DUP
PL7.1.8
P/J137
FAN FUSER
PL1.1.7
BTR
PKG 72
PL8.1.12
Detack Saw
BTR
P/J5030
P/J5020
P/J5011
S-HVPS
PL10.1.15
9
PHD ASSY PKG
PL9.1.3
IDT2
IDT2 CLEANER
IDT1
IDT1CLEANER
RFB
HTC
DEVE Y
DEVE M
DEVE C
DEVE K
P/J702
P/J802
P/J701
P/J801
P/J805
P/J804
P/J601
P/J602
P/J603
P/J604
4
P/J51
P/J701
SENSOR NO TONER(Y)
PL10.1.5
P/J702
SENSOR NO TONER(M)
PL10.1.5
P/J703
SENSOR NO TONER(C)
PL10.1.5
P/J704
SENSOR NO TONER(K)
PL10.1.5
P/J342
PWBA CRUM READER
PL10.1.18
P/J34
P/J3411
P/J341
10
Dup Jam Sensor
PL6.1.4
P/J133
P/J139
P/J13
Full Stack Sensor
PL6.1.4
P/J134
MSI No Paper Sensor
PL6.1.4
P/J135
SOLENOID FEED MSI
PL6.1.40
P/J132
Regi Sensor
PL9.1.8
P/J181
P/J18
Regi Clutch
PL9.1.7
CLUTCH TURN(MSI)
PL4.1.9
P/J19
KIT SENSOR OHP
PL9.1.12
P/J321
P/J32
11
PWBA FONT CARD
PL12.1.19
P/J14
CONTROLLER BOARD
PL12.1.4
P14/J1
P/J22
P/J221
J2211/P220
CONSOLE PANEL HIBANA
PL1.1.1
5
P/J511
Toner Motor(Y)
PL10.1.1
P/J512
Toner Motor(M)
PL10.1.2
P/J513
Toner Motor(C)
PL10.1.3
P/J514
Toner Motor(K)
PL10.1.4
engine wire0001FB

2. Wiring Diagram between Parts

2.1 Configuration

The wiring diagram is separated into 11 sections to show detailed connection between parts.

§ 1 Power supply section
Connection between PWBA MCU HBN and LVPS
Connection between LVPS and PWBA DRV HBN
Connection between PWBA DRV HBN and PWBA MCU HBN
Connection between LVPS and FAN REAR
Connection between LVPS and HARNESS ASSY AC SW

§ 2 Cassette section
Connection between PWBA DRV HBN and SWITCH ASSY SIZE
Connection between PWBA DRV HBN and SENSOR PHOTO (No Paper Sensor)
Connection between PWBA DRV HBN and SENSOR PHOTO (Low Paper Sensor)
Connection between PWBA DRV HBN and SOLENOID FEED (Tray 1)
Connection between PWBA DRV HBN and CLUTCH ASSY TURN (Tray 1)
Connection between PWBA MCU HBN and PWBA DRV HBN

§ 3 Drive section
Connection between PWBA DRV HBN and MAIN DRIVE ASSY
Connection between PWBA DRV HBN and DAIV DRIVE ASSY
Connection between PWBA DRV HBN and FUSER DRIVE ASSY
Connection between PWBA DRV HBN and MOTOR ASSY DUP
Connection between PWBA DRV HBN and FAN FUSER
Connection between PWBA MCU HBN and PWBA DRV HBN

§ 4 Developer section 1
Connection between PWBA DRV HBN and PWBA CRUM READER
Connection between PWBA DRV HBN and SENSOR NO TONER (Y)
Connection between PWBA DRV HBN and SENSOR NO TONER (M)
Connection between PWBA DRV HBN and SENSOR NO TONER (C)
Connection between PWBA DRV HBN and SENSOR NO TONER (K)
Connection between PWBA MCU HBN and PWBA DRV HBN

§ 5 Developer section 2
Connection between PWBA DRV HBN and HOLDER ASSY TONER HBN (Y) (Toner Motor:Y)
Connection between PWBA DRV HBN and HOLDER ASSY TONER HBN (M)(Toner Motor:M)
Connection between PWBA DRV HBN and HOLDER ASSY TONER HBN (C)(Toner Motor:C)
Connection between PWBA DRV HBN and HOLDER ASSY TONER HBN (K) (Toner Motor:K)
Connection between PWBA MCU HBN and PWBA DRV HBN

§ 6 Fuser section

Connection between LVPS and FUSER ASSY
Connection between PWBA MCU HBN and FUSER ASSY
Connection between PWBA MCU HBN and PWBA DRV HBN
Connection between LVPS and HARNESS ASSY SW
Connection between LVPS and PWBA DRV HBN
Connection between FUSER ASSY and PWBA EEPROM

§ 7 ROS section

Connection between PWBA MCU HBN and ROS ASSY
Connection between PWBA MCU HBN and PWBA EEPROM
Connection between PWBA MCU HBN, PLATE ASSY DISPENSER HBN and PHD ASSY PKG (CRUM)

§ 8 Xerographics section 1

Connection between PWBA MCU HBN and SENSOR TONER FULL
Connection between PWBA MCU HBN and SENSOR HUM TEMP
Connection between PWBA MCU HBN and SENSOR ADC ASSY

§ 9 Xerographics section 2

Connection between PWBA MCU HBN, S-HVPS, PHD ASSY PKG and BTR PKG 72

§ 10 Paper feed section

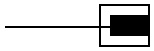
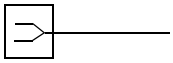
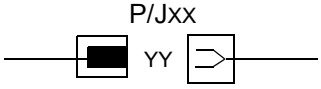
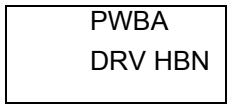
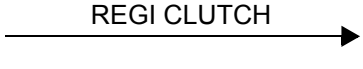
Connection between PWBA MCU HBN and SENSOR PHOTO (Dup Jam Sensor)
Connection between PWBA MCU HBN and SENSOR PHOTO (Full Stack Sensor)
Connection between PWBA MCU HBN and SENSOR PHOTO (MSI No Paper Sensor)
Connection between PWBA MCU HBN and SOLENOID FEED MSI
Connection between PWBA MCU HBN and SENSOR PHOTO (Regi Sensor)
Connection between PWBA MCU HBN and CHUTE REGI ASSY (Regi Clutch)
Connection between PWBA MCU HBN and CHUTE TURN (MSI)
Connection between PWBA MCU HBN and KIT SENSOR OHP

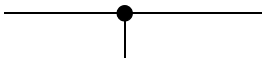
§ 11 Controller section

Connection between PWBA MCU HBN and CONTROLLER BOARD
Connection between PWBA MCU HBN and CONSOLE PANEL HIBANA
Connection between CONTROLLER BOARD and PWBA FONT CARD

2.2 Notes on Using the Wiring Diagram between Parts

The following describes the legend of the wiring diagrams between parts shown on the following pages.

Symbols	Description
	Denotes a plug.
	Denotes a jack.
	Denotes Pin yy and Jack yy of the connector Pxx and Jxx.
	Denotes the parts. PL X.Y.Z implies the item “Z” of plate (PL) “X.Y” in Chapter 5. Parts List.
	Denotes functional parts attached with functional parts name.
	Denotes the control and its outline in PWB.
	Denotes a connection between parts with harnesses or wires, attached with signal name/contents.
	Denotes the function, and logic value of the signal to operate the function (Low: L, High: H). The given voltage is for signal in high status. The arrow indicates the direction of signal.
	Denotes the function, and logic value of the signal when the function operated (Low: L, High: H). The given voltage is for signal in high status. The arrow indicates the direction of signal.

Symbols	Description
	Denotes a connection between wires.
I/L +24VDC	Denotes DC voltage when the interlock switch in PWBA MCU HBN turns on.
+5VDC +3.3VDC	Denotes DC voltage.
SG	Denotes signal ground.
AG	Denotes analog ground.
RTN	Denotes the return.

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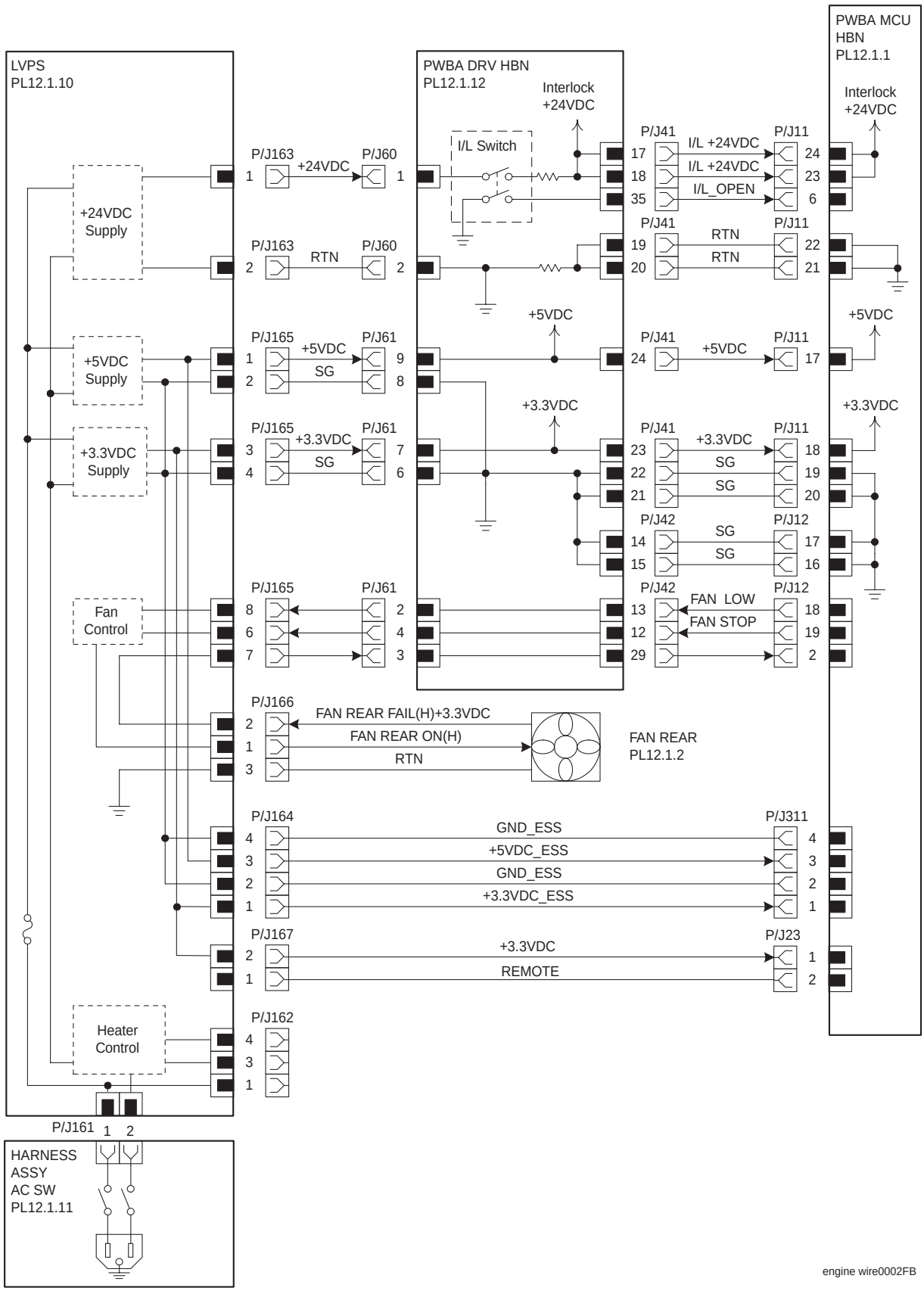
§ 1 Power supply section



Signal line name	Description
FAN LOW	FAN REAR drive control signals
FAN STOP	
FAN REAR FAIL(H)+3.3VDC	FAN REAR fail detection signal (High: Fail, Low: Normal)
FAN REAR ON(H)	FAN REAR ON/OFF control signal

♦ LVPS overcurrent protection circuit

This circuit stops all outputs, if the power supply voltage 24VDC, 5VDC, or 3.3VDC is shorted.
The circuit is reset, when after the cause of short was removed, the power is turned off, and then on again after certain time.

♦ LVPS overvoltage protection circuit

This circuit stops all outputs, if the power supply voltage 24VDC, 5VDC, or 3.3VDC exceeds the specified voltage respectively.
At this time, the operating point is 32VDC or less for 24VDC, 7VDC or less for 5VDC, or 6V or less for 3.3VDC.
The circuit is reset, when the power is turned off, and then on again after certain time.

♦ FAN output circuit

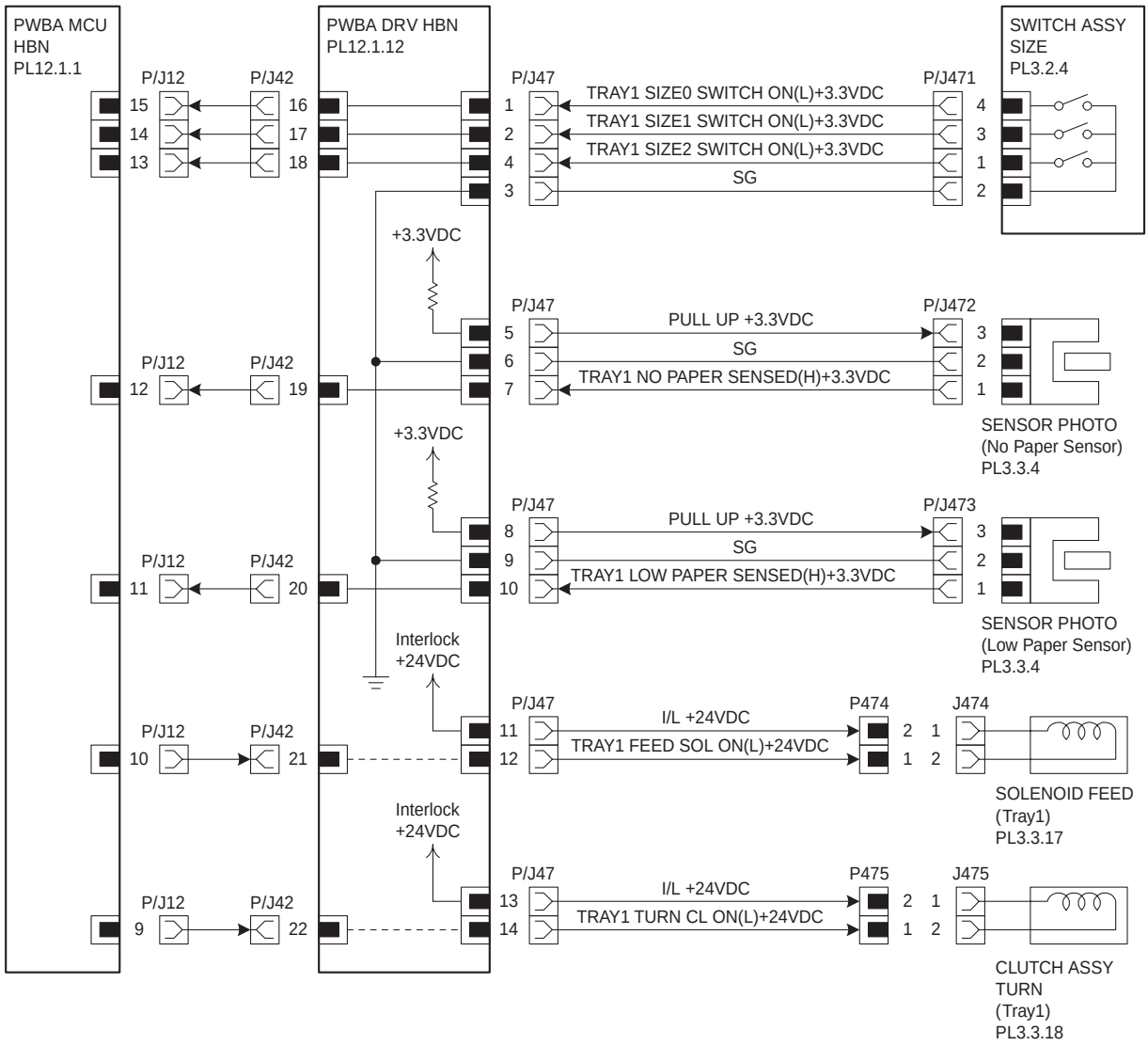
For the FAN REAR ON (H) signal, the output voltage varies depending on the status of FAN LOW signal and FAN STOP signal.

FAN LOW	FAN STOP	FAN REAR ON(H)
High	High	24V
Low	High	15V
High	Low	0V
Low	Low	0V

♦ Output stop by I/L Switch

Turning off the I/L Switch mounted on the PWBA DRV HBN causes the “I/L +24VDC” circuit to be shut off. Consequently, +24VDC supply to the PWBA MCU HBN and to the parts connected to the PWBA DRV HBN is stopped.

§ 2 Cassette section



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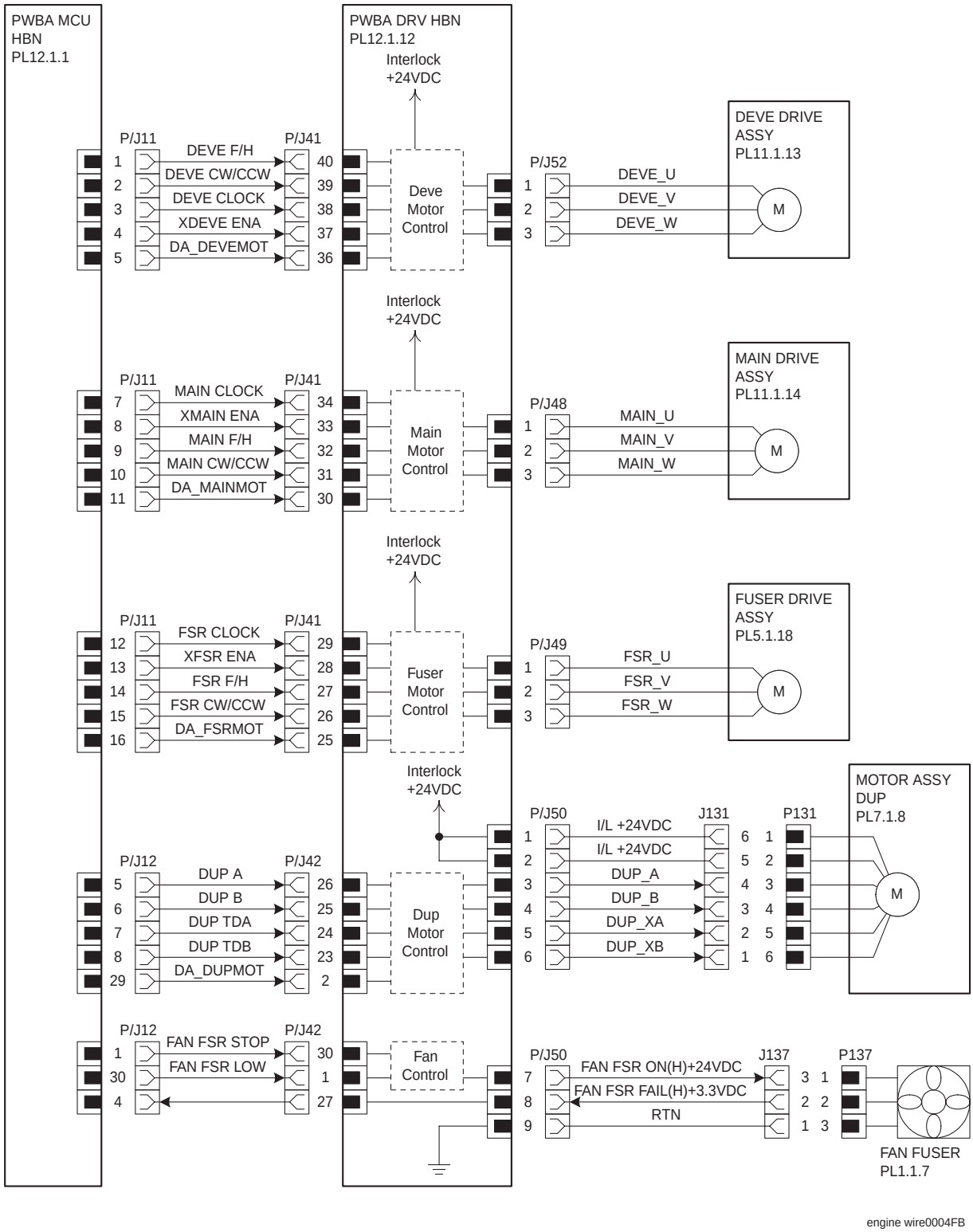
Signal line name	Description
TRAY1 SIZE0 SWITCH ON(L)+3.3VDC	ON/OFF detection signal of SWITCH ASSY SIZE upper SW
TRAY1 SIZE1 SWITCH ON(L)+3.3VDC	ON/OFF detection signal of SWITCH ASSY SIZE middle SW
TRAY1 SIZE2 SWITCH ON(L)+3.3VDC	ON/OFF detection signal of SWITCH ASSY SIZE lower SW
TRAY1 NO PAPER SENSED(H)+3.3VDC	Cassette paper detection signal by SENSOR PHOTO (No Paper Sensor) (High:no paper)
TRAY1 LOW PAPER SENSED(H)+3.3VDC	Cassette residual paper detection signal by SENSOR PHOTO (Low Paper Sensor) (High:little paper)
TRAY1 FEED SOL ON(L)+24VDC	ON/OFF control signal of SOLENOID FEED (Tray 1)
TRAY1 TURN CL ON(L)+24VDC	ON/OFF control signal of CLUTCH ASSY TURN (Tray 1)

♦ Outline of SWITCH ASSY SIZE

The paper size is determined by a combination of ON/OFF statuses of the upper, middle, and lower switches of SWITCH ASSY SIZE.

Paper size	Switches		
	Upper	Middle	Lower
LEGAL14” (SEF)	ON	ON	ON
LEGAL13” (SEF)	ON	ON	OFF
EXECUTIVE (SEF)	ON	OFF	ON
B5 (SEF)	ON	OFF	OFF
A4 (SEF)	OFF	ON	ON
LETTER (SEF)	OFF	OFF	ON
A5	OFF	ON	OFF
No cassette	OFF	OFF	OFF


PWBA MCU
HBN
PL12.1.1
PWBA DRV HBN
PL12.1.12
Interlock
+24VDC
P/J11
P/J41
DEVE F/H
DEVE CW/CCW
DEVE CLOCK
XDEVE ENA
DA_DEVEMOT
Deve
Motor
Control
P/J52
DEVE_U
DEVE_V
DEVE_W
DEVE DRIVE
ASSY
PL11.1.13
M
MAIN CLOCK
XMAIN ENA
MAIN F/H
MAIN CW/CCW
DA_MAINMOT
Main
Motor
Control
P/J48
MAIN_U
MAIN_V
MAIN_W
MAIN DRIVE
ASSY
PL11.1.14
FSR CLOCK
XFSR ENA
FSR F/H
FSR CW/CCW
DA_FSRMOT
Fuser
Motor
Control
P/J49
FSR_U
FSR_V
FSR_W
FUSER DRIVE
ASSY
PL5.1.18
P/J12
P/J42
DUP A
DUP B
DUP TDA
DUP TDB
DA_DUPMOT
Dup
Motor
Control
P/J50
J131
P131
I/L +24VDC
I/L +24VDC
DUP_A
DUP_B
DUP_XA
DUP_XB
MOTOR ASSY
DUP
PL7.1.8
FAN FSR STOP
FAN FSR LOW
Fan
Control
FAN FSR ON(H)+24VDC
FAN FSR FAIL(H)+3.3VDC
RTN
J137
P137
FAN FUSER
PL1.1.7
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Signal line name	Description
DEVE CLOCK,XDEVE ENA, DEVE F/H, DEVE CW/CCW, DA_DEVEMOT	DEVE DRIVE ASSY drive control signal
DEVE_U, DEVE_V, DEVE_W	DEVE DRIVE ASSY exciting signal
MAIN CLOCK, XMAIN ENA, MAIN F/H, MAIN CW/CCW, DA_MAINMOT	MAIN DRIVE ASSY drive control signal
MAIN_U, MAIN_V, MAIN_W	MAIN DRIVE ASSY exciting signal
FSR CLOCK, XFSR ENA, FSR F/H, FSR CW/CCW, DA_FSRMOT	FUSER DRIVE ASSY drive control signal
FSR_U, FSR_V, FSR_W	FUSER DRIVE ASSY exciting signal
DUP B,DUP TDB,DUP A, DUP TDA,DA_DUPMOT	MOTOR ASSY DUP drive control signal
DUP_A,DUP_B,DUP_XA,DUP_XB	MOTOR ASSY DUP exciting signal
FAN FSR STOP	FAN FSR drive control signal
FAN FSR LOW	
FAN FSR ON(H)+24VDC	FAN FSR ON/OFF control signal
FAN FSR FAIL(H)+3.3VDC	FAN FSR fail detection signal (High: Fail, Low: Normal)

♦ Outline of DEVE DRIVE ASSY

G Motor type: Hybrid stepping motor

G Stepping angle:3.75°

G Winding resistance:1.6Ω ± 10% / phase (25°C)

G Exciting sequence:(*: Exciting)

Phase	Step (3 phases)					
	1	2	3	4	5	6
DEVE_U	+	+		-	-	
DEVE_V	-		+	+		-
DEVE_W		-	-		+	+

♦ Outline of MAIN DRIVE ASSY

G Motor type: Hybrid stepping motor

G Stepping angle:3.75°

G Winding resistance:1.35Ω ± 10% / phase (25°C)

G Exciting sequence:(*: Exciting)

Phase	Step (3 phases)					
	1	2	3	4	5	6
MAIN_U	+	+		-	-	
MAIN_V	-		+	+		-
MAIN_W		-	-		+	+

♦ Outline of FUSER DRIVE ASSY

G Motor type: Hybrid stepping motor

G Stepping angle:3.75°

G Winding resistance:1.4Ω ± 10% / phase (25°C)

G Exciting sequence:(*: Exciting)

Phase	Step (3 phases)					
	1	2	3	4	5	6
FSR_U	+	+		-	-	
FSR_V	-		+	+		-
FSR_W		-	-		+	+

♦ Outline of MOTOR ASSY DUP

G Motor type: Hybrid stepping motor

G Stepping angle:1.8° ± 0.09°

G Winding resistance:5.5Ω ± 10% / phase (25°C)

G Exciting sequence:(*: Exciting)

Phase	Step (2 phases)							
	1	2	3	4	5	6	7	8
DUP_A					*	*	*	
DUP_XA			*	*	*			
DUP_B	*	*	*					
DUP_XB	*						*	*

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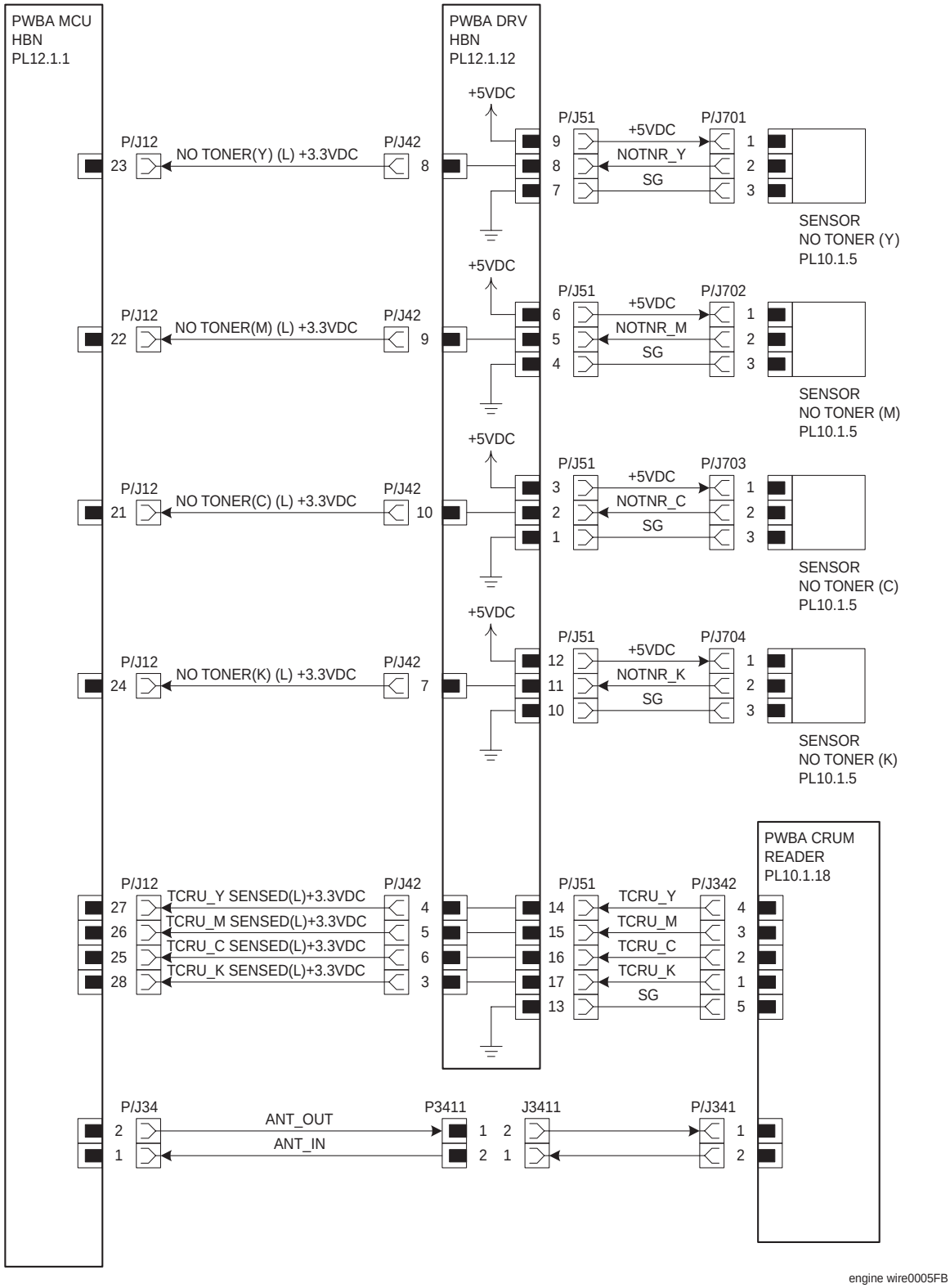
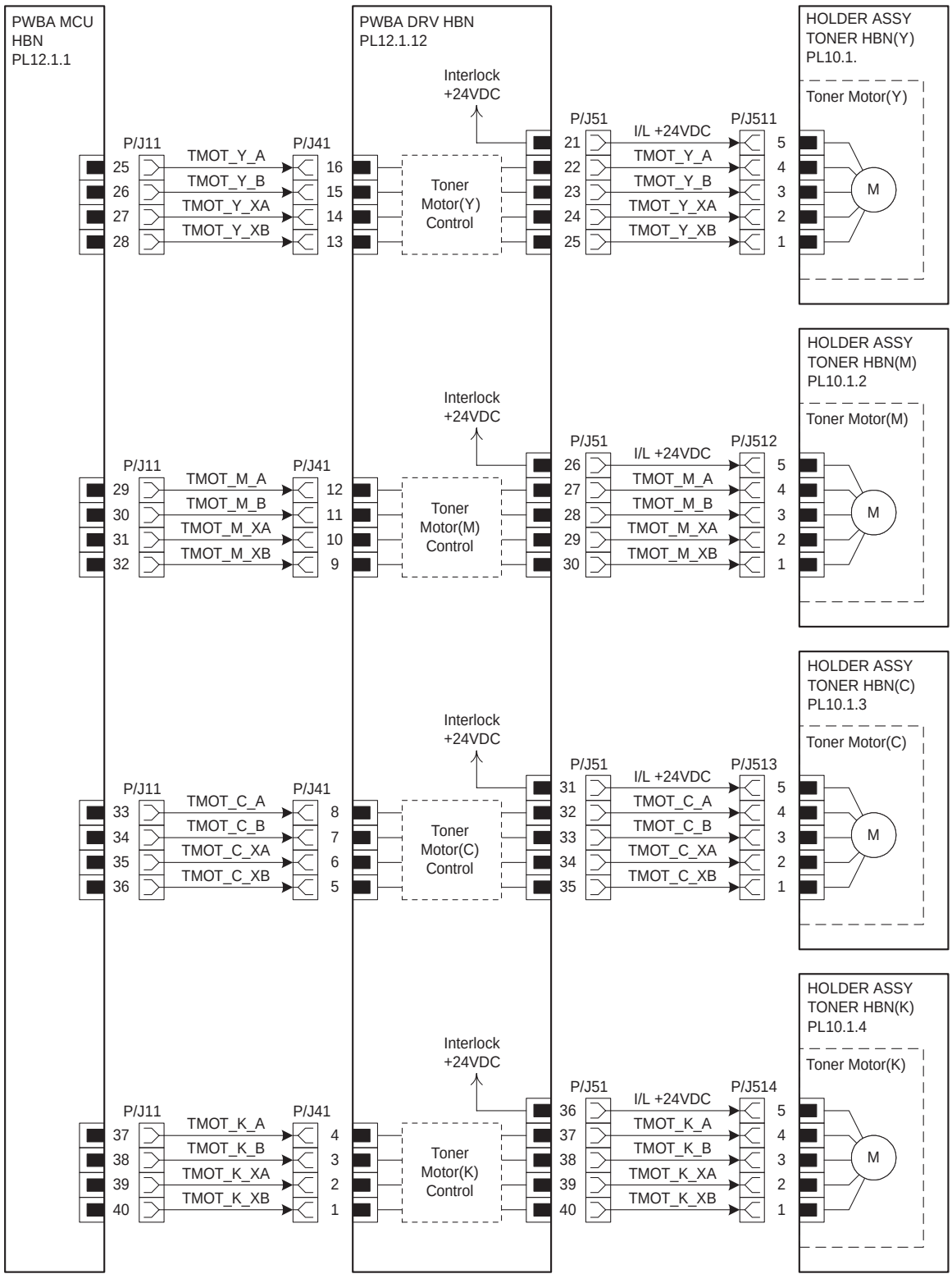
§ 4 Developer section 1



Signal line name	Description
NO TONER(Y)(L)+3.3VDC	Residual toner detection signal by SENSOR TONER LOW (Y) (High: No Toner, Low:Toner present)
NO TONER(M)(L)+3.3VDC	Residual toner detection signal by SENSOR TONER LOW (M) (High: No Toner, Low:Toner present)
NO TONER(C)(L)+3.3VDC	Residual toner detection signal by SENSOR TONER LOW (C) (High: No Toner, Low:Toner present)
NO TONER(K)(L)+3.3VDC	Residual toner detection signal by SENSOR TONER LOW (K) (High: No Toner, Low:Toner present)
TCRU_Y SENSED(L)+3.3VDC	PKG TCRU Y (toner bottle) detection signal (Low:Toner bottle present)
TCRU_M SENSED(L)+3.3VDC	PKG TCRU M (toner bottle) detection signal (Low:Toner bottle present)
TCRU_C SENSED(L)+3.3VDC	PKG TCRU C (toner bottle) detection signal (Low:Toner bottle present)
TCRU_K SENSED(L)+3.3VDC	PKG TCRU K (toner bottle) detection signal (Low:Toner bottle present)
ANT_OUT	PWBA MCU HBN and PWBA CRUM READER communication signal (PWBA MCU HBN output)
ANT_IN	PWBA MCU HBN and PWBA CRUM READER communication signal (PWBA CRUM READER output)

§ 5 Developer section 2



Signal line name	Description
TMOT_Y_A.TMOT_Y_B.TMOT_Y_XA.TMOT_Y_XB	Exciting signal of Toner Motor (Y) in HOLDER ASSY TONER HBN (Y)
TMOT_M_A.TMOT_M_B.MOT_M_XA.TMOT_M_XB	Exciting signal of Toner Motor (M) in HOLDER ASSY TONER HBN (M)
TMOT_C_A.TMOT_C_B.TMOT_C_XA.TMOT_C_XB	Exciting signal of Toner Motor (C) in HOLDER ASSY TONER HBN (C)
TMOT_K_A.TMOT_K_B.TMOT_K_XA.TMOT_K_XB	Exciting signal of Toner Motor (K) in HOLDER ASSY TONER HBN (K)

♦ Outline of Toner Motor

G Motor type: PM stepping motor

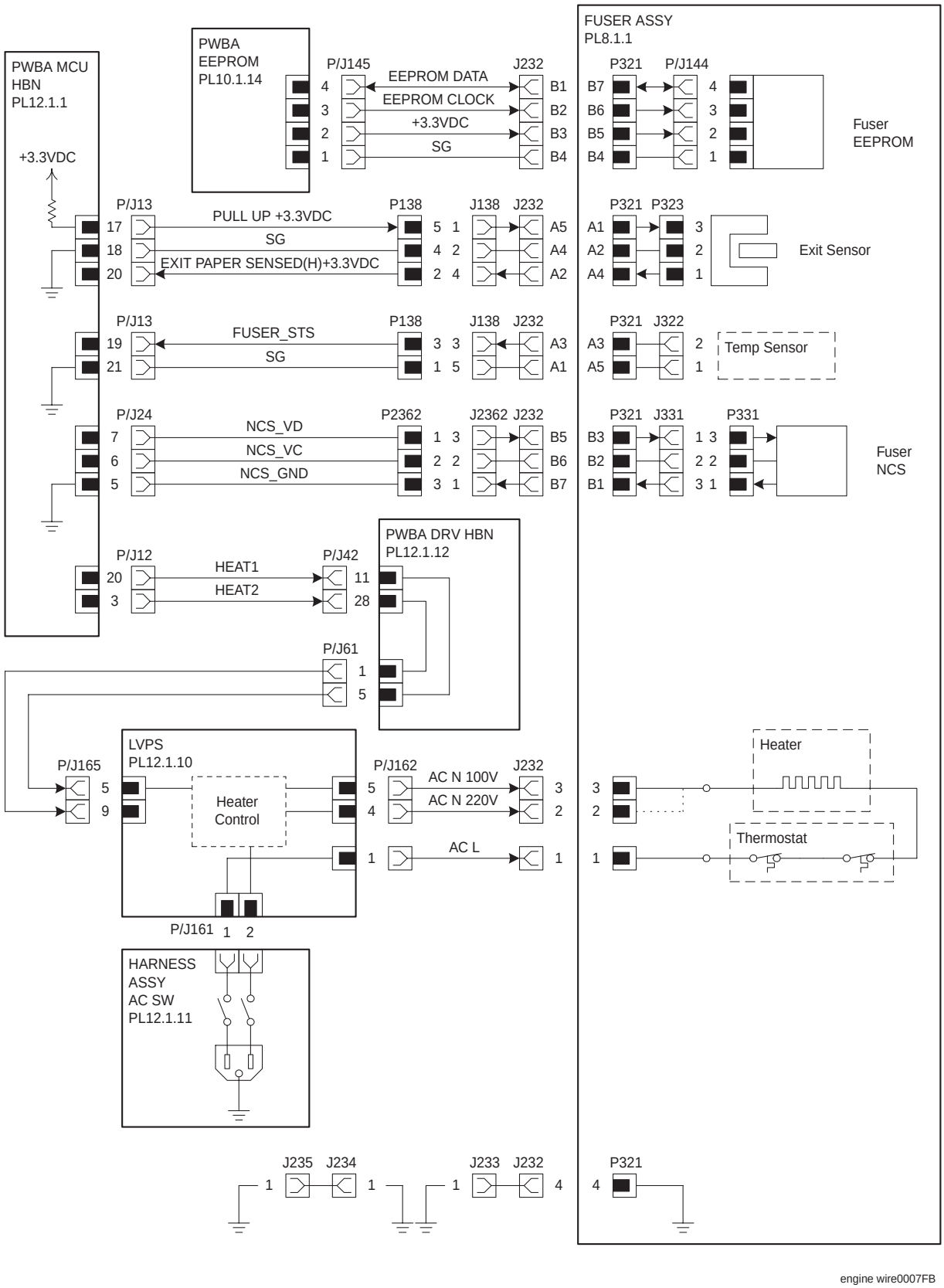
G Stepping angle:7.5° ± 0.5°

G Winding resistance:80Ω ± 10% / phase (20°C)

G Exciting sequence:(*: Exciting)

Phase	Step (2 phases)							
	1	2	3	4	5	6	7	8
A	*			*	*			*
XA		*	*			*	*	
B			*	*			*	*
XB	*	*			*	*		

§ 6 Fuser section



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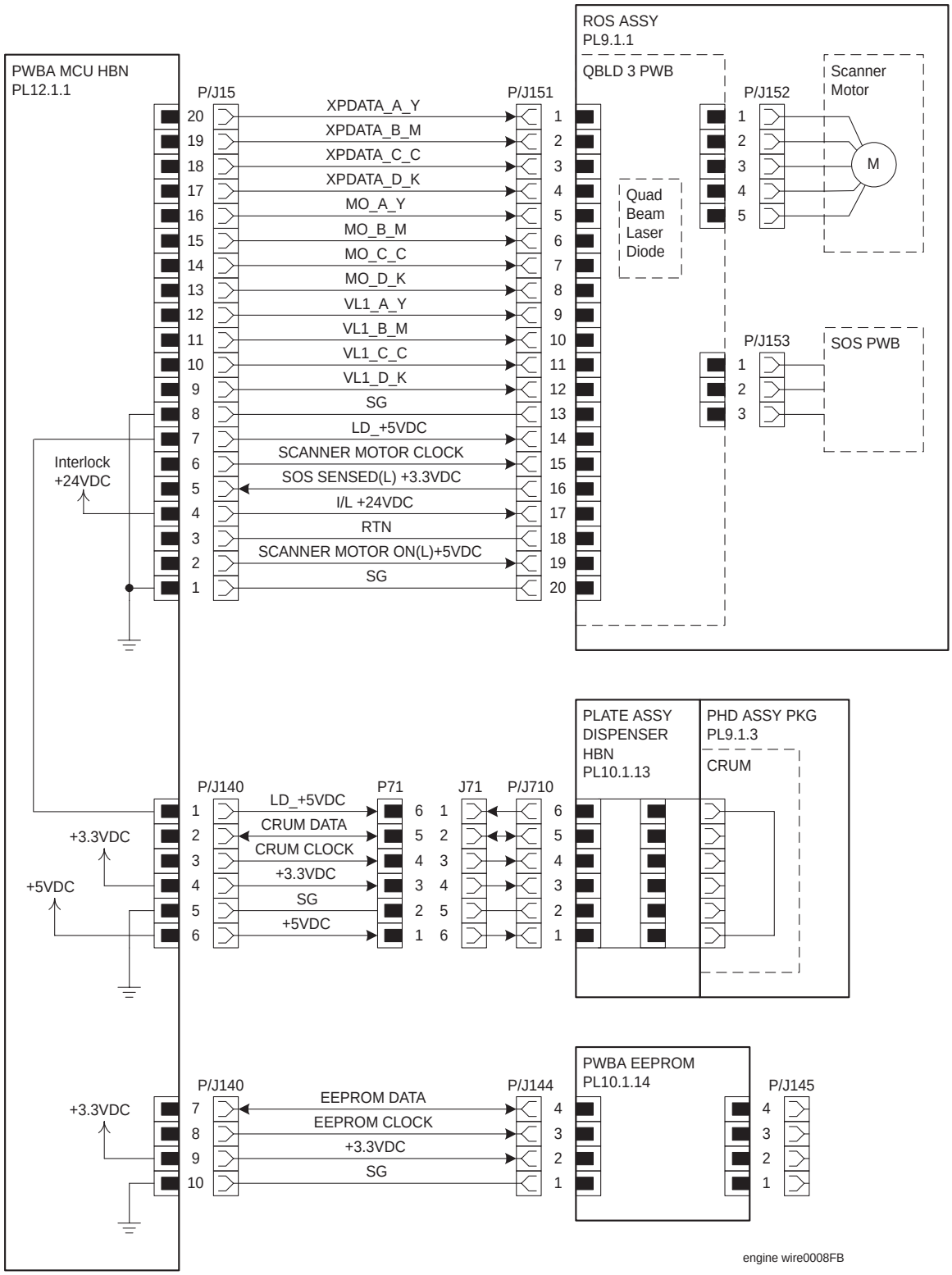
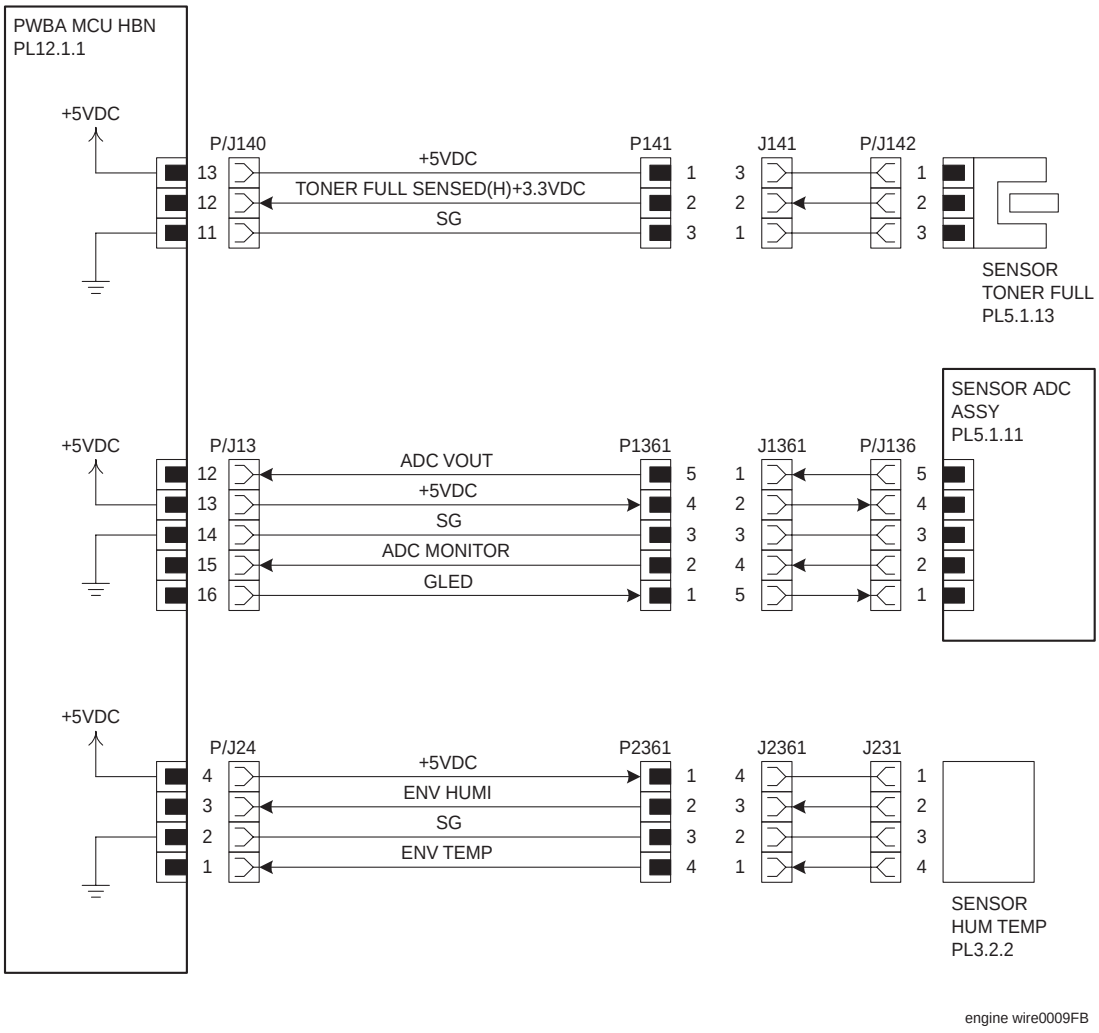
Signal line name	Description
EXIT PAPER SENSED(H)+3.3VDC	Paper detection signal in fuser by Exit Sensor in FUSER ASSY (High:paper present)
FUSER_STS	Heat Roll surface temperature data (analog value) measured by Temp Sensor to determine the fuser control temperature
HEAT1	Heater ON/OFF control signal HEAT1 signal and HEAT2 signal are reverse logic, and unless both of signals are turned on, Heater does not turn them on.
HEAT2	
AC N	Neutral side of AC input from power supply (Heater power supply voltage)
AC L	Line side of AC input from power supply (Heater power supply voltage)

♦ Heater rated power: 650 ± 30W 100V

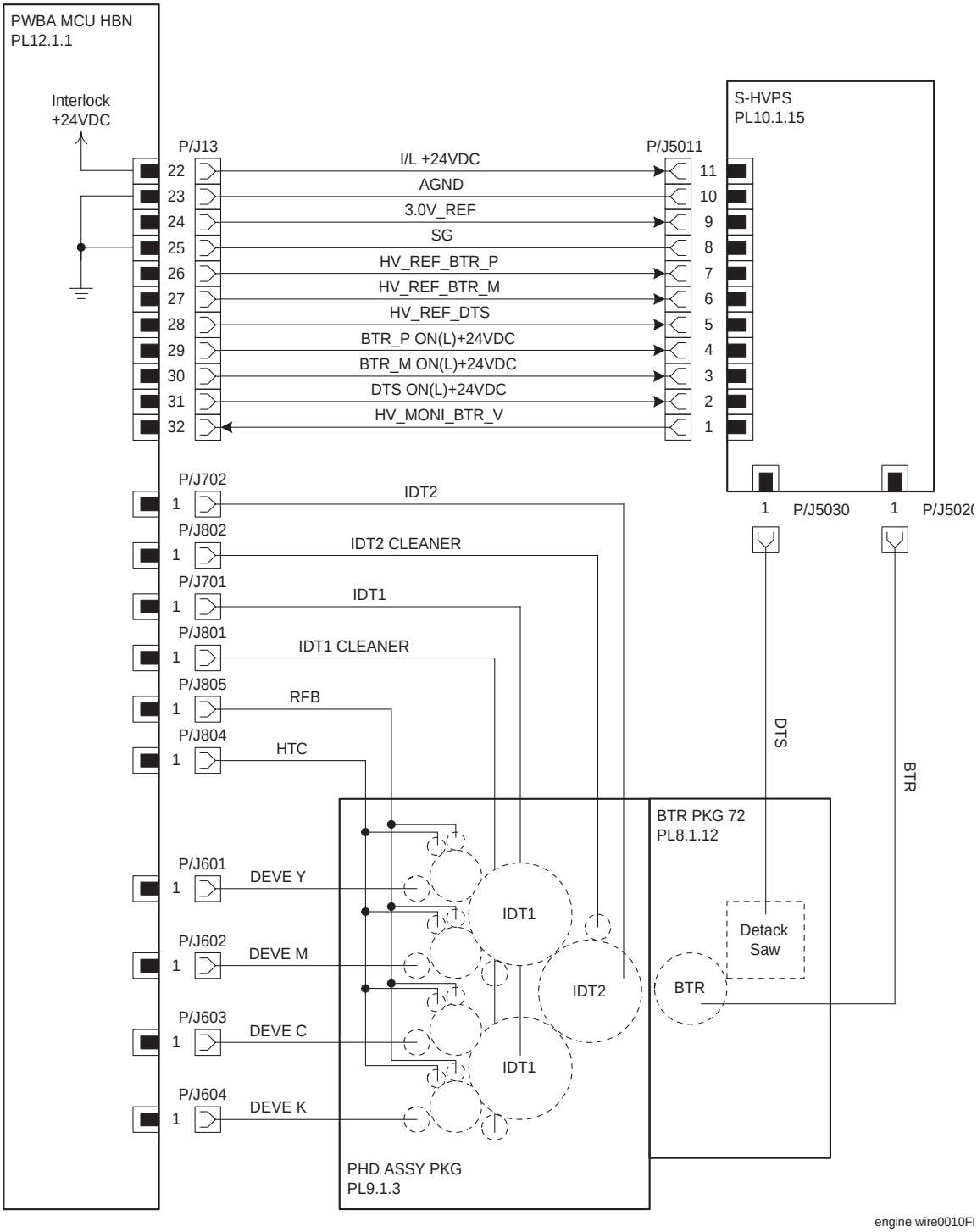
♦ Thermostat contact open temperature: 160°C ± 5°C


ROS ASSY
PL9.1.1
QBLD 3 PWB
Quad
Beam
Laser
Diode
Scanner
Motor
M
P/J152
P/J153
SOS PWB
PWBA MCU HBN
PL12.1.1
P/J15
P/J151
XPDATA_A_Y
XPDATA_B_M
XPDATA_C_C
XPDATA_D_K
MO_A_Y
MO_B_M
MO_C_C
MO_D_K
VL1_A_Y
VL1_B_M
VL1_C_C
VL1_D_K
SG
LD_+5VDC
SCANNER MOTOR CLOCK
SOS SENSED(L) +3.3VDC
I/L +24VDC
RTN
SCANNER MOTOR ON(L)+5VDC
SG
Interlock
+24VDC
PLATE ASSY
DISPENSER
HBN
PL10.1.13
PHD ASSY PKG
PL9.1.3
CRUM
P/J140
P71
J71
P/J710
LD_+5VDC
CRUM DATA
CRUM CLOCK
+3.3VDC
SG
+5VDC
+3.3VDC
+5VDC
PWBA EEPROM
PL10.1.14
P/J140
P/J144
P/J145
EEPROM DATA
EEPROM CLOCK
+3.3VDC
SG
+3.3VDC
engine wire0008FB

Signal line name	Description
XPDATA_A_Y,XPDATA_B_M,XPDATA_C_C,XPDATA_D_K	Pixel data signals to make Quad Beam Laser Diodes (laser diodes for 4 colors) in ROS ASSY emit the light
MO_A_Y,MO_B_M,MO_C_C,MO_D_K	Light quantity control signals for each color LD (laser diode)
VL1_A_Y,VL1_B_M,VL1_C_C,VL1_D_K	Voltages for adjusting light quantity of each color LD
LD_+5VDC	Line to provide ROS ASSY with +5VDC through from PWBA MCU HBN to PHD ASSY PKG.
SOS SENSED(L) +3.3VDC	Scanning start reference signal based on the input of laser beam to the SOS Sensor in PWBA SOS
POLYGON MOTOR ON(L)+5VDC	Polygon Motor ON/OFF control signal in ROS ASSY
EEPROM DATA	Write/read data to EEPROM PWB
EEPROM CLOCK	Clock signal to EEPROM PWB
CRUM DATA	Write/read data to CRU of PHD ASSY PKG
CRUM CLOCK	Clock signal to CRU of PHD ASSY PKG

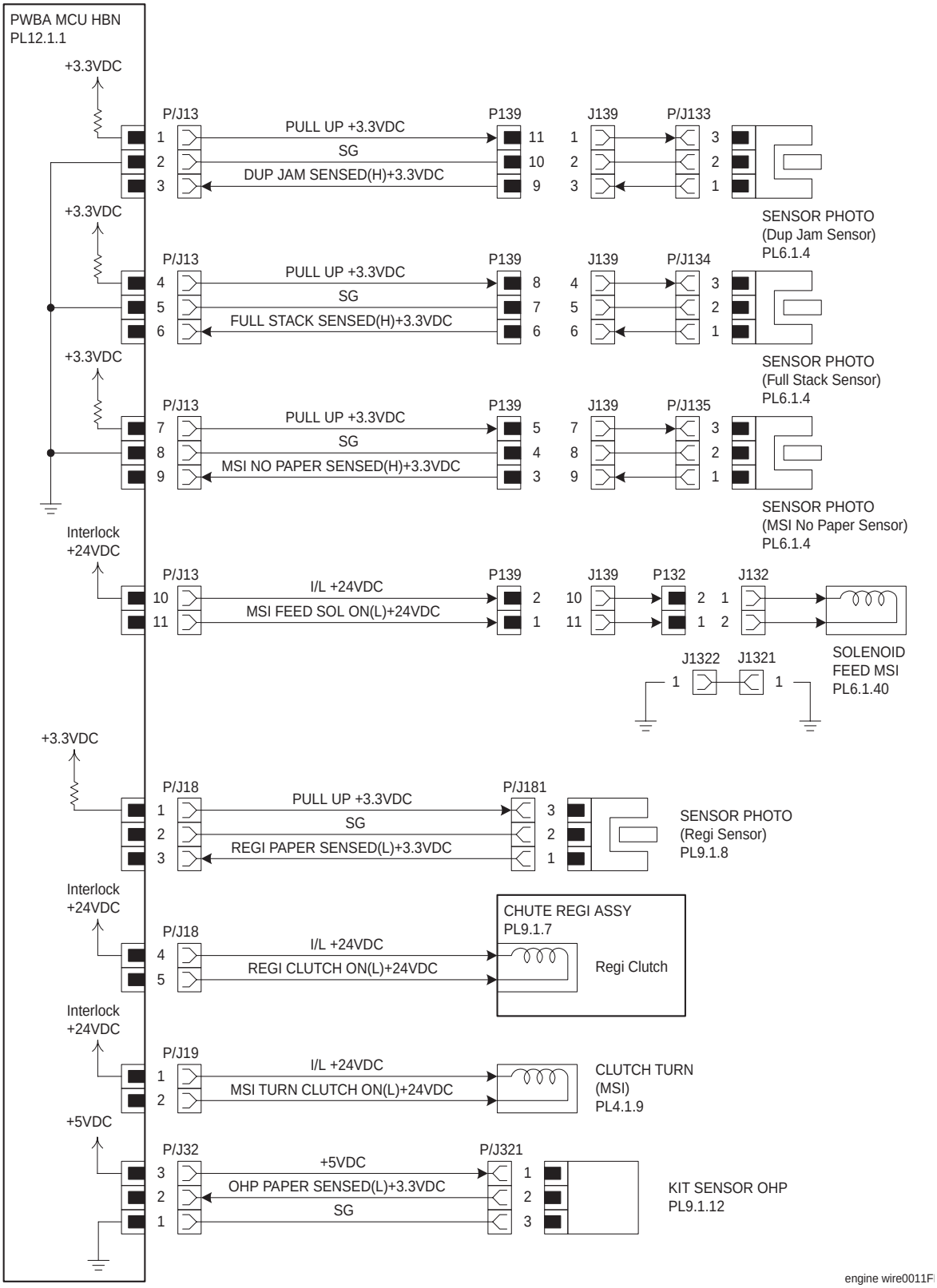

PWBA MCU HBN
PL12.1.1
+5VDC
P/J140
P141
J141
P/J142
13
12
11
+5VDC
TONER FULL SENSED(H)+3.3VDC
SG
1
2
3
3
2
1
1
2
3
SENSOR
TONER FULL
PL5.1.13
SENSOR ADC
ASSY
PL5.1.11
+5VDC
P/J13
P1361
J1361
P/J136
12
13
14
15
16
ADC VOUT
+5VDC
SG
ADC MONITOR
GLED
5
4
3
2
1
1
2
3
4
5
5
4
3
2
1
+5VDC
P/J24
P2361
J2361
J231
4
3
2
1
+5VDC
ENV HUMI
SG
ENV TEMP
1
2
3
4
4
3
2
1
1
2
3
4
SENSOR
HUM TEMP
PL3.2.2
engine wire0009FB

Signal line name	Description
TONER FULL SENSED(H)+3.3VDC	Waste toner recovery bottle full detection signal by SENSOR TONER FULL
ADC VOUT	Measured data (analog value) by ADC Sensor in SENSOR ADC ASSY
ADC MONITOR	Monitor output signal by ADC Sensor in SENSOR ADC ASSY
GLED	LED control signal (analog value) in SENSOR ADC ASSY
ENV HUMI	Environment temperature data (analog value) measured by SENSOR HUM TEMP
ENV TEMP	Environment temperature data (analog value) measured by SENSOR HUM TEMP

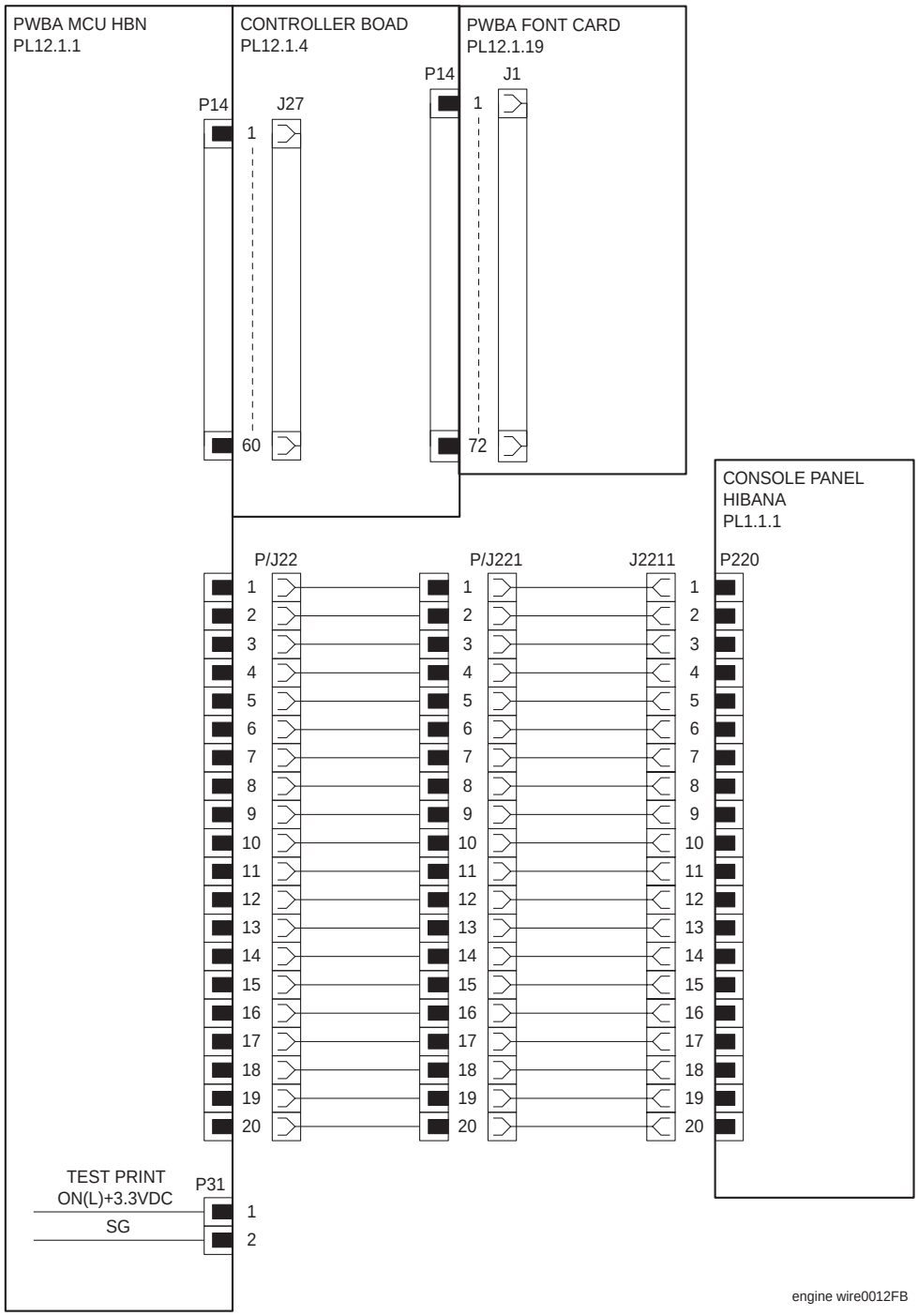

PWBA MCU HBN
PL12.1.1
Interlock
+24VDC
P/J13
22
23
24
25
26
27
28
29
30
31
32
I/L +24VDC
AGND
3.0V_REF
SG
HV_REF_BTR_P
HV_REF_BTR_M
HV_REF_DTS
BTR_P ON(L)+24VDC
BTR_M ON(L)+24VDC
DTS ON(L)+24VDC
HV_MONI_BTR_V
P/J5011
11
10
9
8
7
6
5
4
3
2
1
S-HVPS
PL10.1.15
1
P/J5030
1
P/J502(
P/J702
1
IDT2
P/J802
1
IDT2 CLEANER
P/J701
1
IDT1
P/J801
1
IDT1 CLEANER
P/J805
1
RFB
P/J804
1
HTC
DTS
BTR
BTR PKG 72
PL8.1.12
Detack
Saw
BTR
P/J601
1
DEVE Y
P/J602
1
DEVE M
P/J603
1
DEVE C
P/J604
1
DEVE K
IDT1
IDT2
IDT1
PHD ASSY PKG
PL9.1.3
engine wire0010FI

Signal line name	Description
HV_REF_BTR_P	Current control signal of BTR (+) output (analog value)
HV_REF_BTR_M	Voltage control signal of BTR (–) output (analog value)
HV_REF_DTS	Voltage control signal of DTS output (analog value)
BTR_P ON(L)+24VDC	Voltage monitor signal of BTR(+) output (analog value)
BTR_M ON(L)+24VDC	Voltage monitor signal of BTR(–) output (analog value)
DTS ON(L)+24VDC	ON/OFF control signal of DTS output
HV_MONI_BTR_V	Voltage monitor signal of BTR output (analog value)
IDT2	Secondary transfer output from HVPS in PWBA MCU HBN to IDT2
IDT2 CLEANER	Output from HVPS in PWBA MCU HBN to IDT2 Cleaner
IDT1	Primary transfer output from HVPS in PWBA MCU HBN to IDT1
IDT1 CLEANER	Output from HVPS in PWBA MCU HBN to IDT1 Cleaner
RFB	Output from HVPS in PWBA MCU HBN to Refresher
HTC	Charging output from HVPS in PWBA MCU HBN to HTC
DEVE Y	Output from HVPS in PWBA MCU HBN to Developer Y(Magnet Roll)
DEVE M	Output from HVPS in PWBA MCU HBN to Developer M(Magnet Roll)
DEVE C	Output from HVPS in PWBA MCU HBN to Developer C(Magnet Roll)
DEVE K	Output from HVPS in PWBA MCU HBN to Developer K(Magnet Roll)
DTS	Discharging output from S-HVPS to Detack Saw in BTR Assy
BTR	Third transfer output from S-HVPS to BTR in BTR Assy

§ 10 Paper feed section



Signal line name	Description
DUP JAM SENSED(H)+3.3VDC	Paper detection signal in Duplex section by SENSOR PHOTO (Dup Jam Sensor) (High:paper present)
FULL STACK SENSED(H)+3.3VDC	Full Stack detection signal in paper output tray by SENSOR PHOTO (Full Stack Sensor) (High:full)
MSI NO PAPER SENSED(H)+3.3VDC	Paper detection signal in MSI by SENSOR PHOTO (MSI No Sensor) (High:no paper)
MSI FEED SOL ON(L)+24VDC	SOLENOID FEED MSI ON/OFF control signal
REGI PAPER SENSED(L)+3.3VDC	Paper detection signal in Regi section by SENSOR PHOTO (Regi Sensor)
REGI CLUTCH ON(L)+24VDC	ON/OFF control signal of Regi Clutch in CHUTE REGI ASSY
MSI TURN CLUTCH ON(L)+24VDC	CLUTCH TURN (MSI) ON/OFF control signal
OHP PAPER SENSED(L)+3.3VDC	OHP paper detection signal by KIT SENSOR OHP (High: Plain paper present, Low: OHP paper present or no paper)


PWBA MCU HBN
PL12.1.1
CONTROLLER BOAD
PL12.1.4
PWBA FONT CARD
PL12.1.19
P14
J27
P14
J1
1
60
1
72
CONSOLE PANEL
HIBANA
PL1.1.1
P/J22
P/J221
J2211
P220
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
TEST PRINT
ON(L)+3.3VDC
SG
P31
1
2
engine wire0012FB

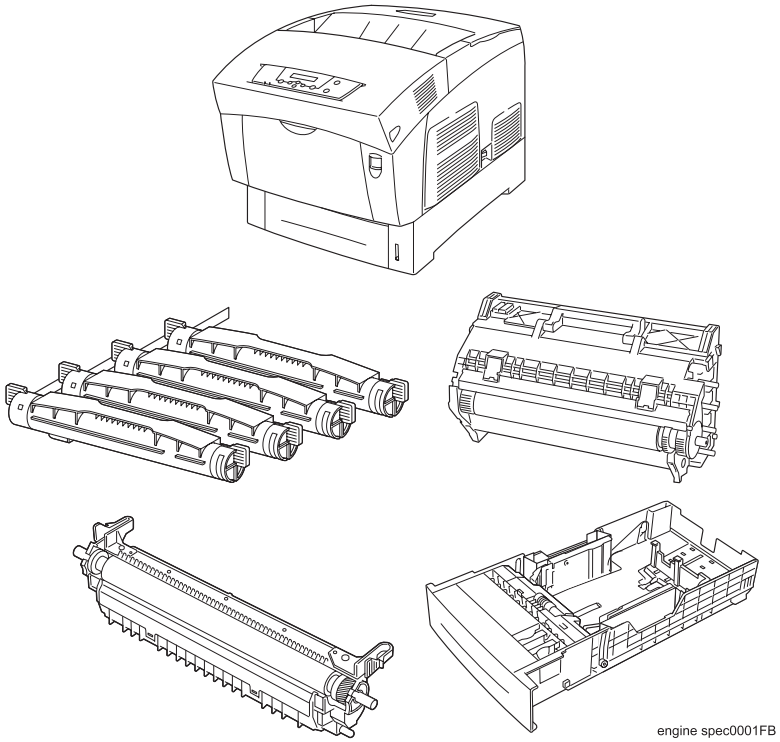
Signal line name	Description
TEST PRINT ON(L)+3.3VDC	Making this signal "Low" (connected to SG) enables the test printing of stored test patterns.

Chapter 8 Printer Specifications

1. Configuration of Printer

1.1 Basic Configuration

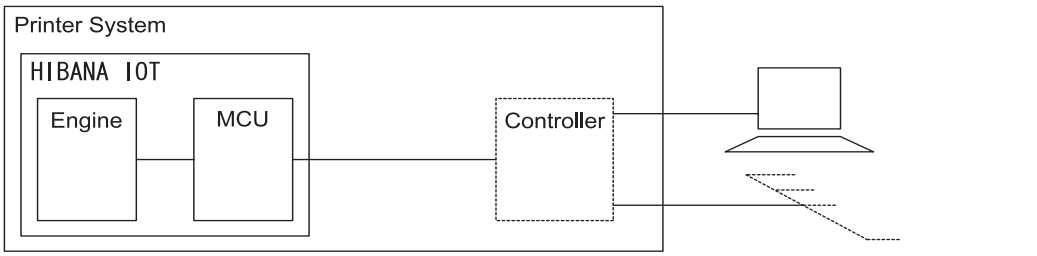
This printer basically consists of the print engine main unit, consumables (CRU), and standard universal paper tray (500 sheets).



engine spec0001FB

1.2 Functional Configuration

Functional configuration of this printer is shown below.



engine spec0010FA

2. Electrical Properties

2.1 Power Source

Two types of power source as follows are available for this printer, which are selected according to the specifications.

- ◆ 100V/120V printer:Voltage: 100-127VAC ±10% (90 ~ 140V), frequency: 50/60Hz ± 3Hz
- ◆ 220/240V printer:voltage: 220-240VAC ±10% (198 ~ 264V), frequency: 50/60Hz ± 3Hz

2.2 Power Consumption

Power consumption in each operation mode at rated voltage input

Operation mode	Average (Wh/h) *1	Max. power consumption
Printing mode (Running mode)	≤600W	≤ 900W (Fuser is on)
READY mode (Ready mode)	≤180W	≤ 900W (Fuser is on)
ENAGISTAR mode *2	-	≤ 45W (Controller is included)

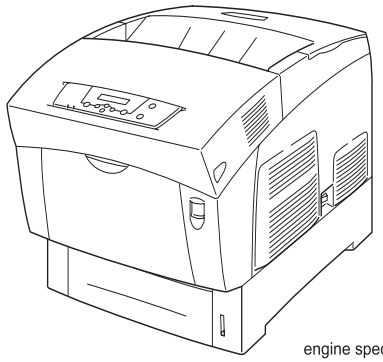
*1 At running mode : wattage per hour at printing continuously.
At ready mode : wattage per hour at the temperature of fuser ready.

*2 Fuser is in stop status.

3. Mechanical Properties

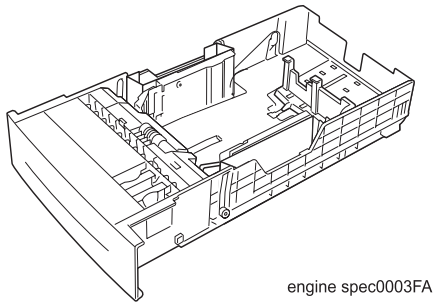
3.1 Dimensions/Mass of Printer

Width: 439mm ± 1%
Depth: 590mm ± 1% (with no cassette installed), 638mm ± 1% (with cassette installed)
Height: 445mm ± 1%
Mass
(No cassette installed + (No CRU):26.8 kg ± 1%
(No cassette installed + (CRU):32.5 kg ± 1%
(Cassette installed + (No CRU):29.2 kg ± 1%
(Cassette installed + CRU):34.9kg ± 1%


engine spec0002FB

3.2 Dimensions/Mass of Universal Paper Tray (standard paper supply - 500 sheets)

Width: 321mm ± 1%
Depth: 558mm ± 1%
Height: 97mm ± 1%
Mass: 2.5kg ± 1%

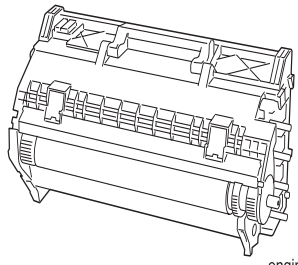

engine spec0003FA

3.3 Dimensions/Mass of Consumables (CRU)

3.3.1 Print head (PHD) cartridge

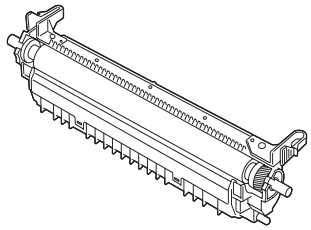
Width: 339mm ± 3mm
Depth: 146mm ± 3mm
Height: 179mm ± 3mm
Mass: 4.5kg ± 0.1kg

Reference: The print head cartridge has CRUM (CRU memory) to record information.


engine spec0004FA

3.3.2 Transfer roll (BTR) cartridge

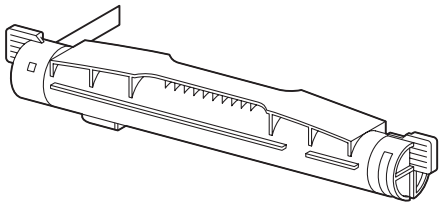
Width:	309mm ± 3mm
Depth:	85mm ± 3mm
Height:	60mm ± 3mm
Mass:	500g ± 10g



engine spec0005FA

3.3.3 Black toner cartridge

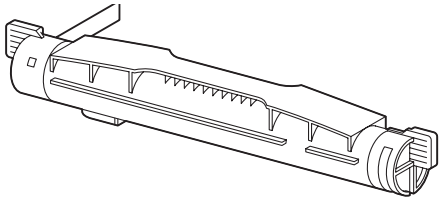
Width:	355mm ± 3mm
Depth:	51mm ± 3mm
Height:	55mm ± 3mm
Mass:	360g ± 10g



engine spec0006FB

3.3.4 Yellow toner cartridge

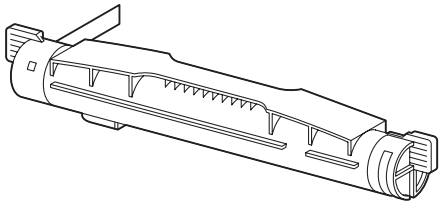
Width:	355mm ± 3mm
Depth:	51mm ± 3mm
Height:	55mm ± 3mm
Mass:	315g ± 10g



engine spec0006FB

3.3.5 Magenta toner cartridge

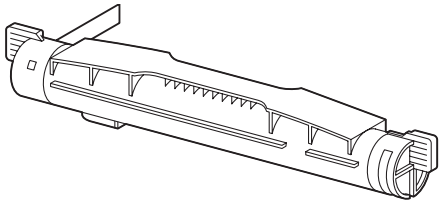
Width:	355mm ± 3mm
Depth:	51mm ± 3mm
Height:	55mm ± 3mm
Mass:	325g ± 10g



engine spec0006FB

3.3.6 Cyan toner cartridge

Width:	355mm ± 3mm
Depth:	51mm ± 3mm
Height:	55mm ± 3mm
Mass:	315g ± 10g

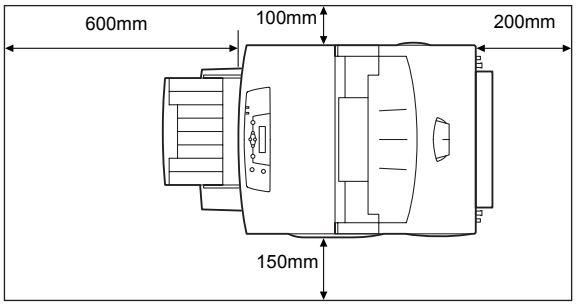


engine spec0006FB

3.4 Installation Space (min. installation space)

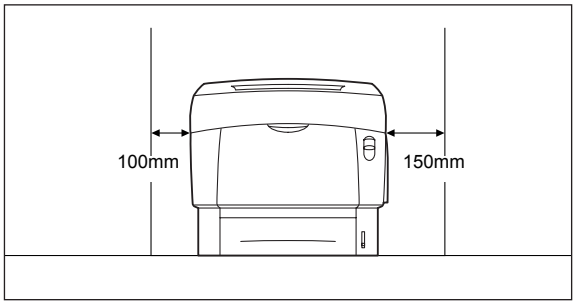
Minimum space as shown below is required to install the printer when it is used for normal objects. (Space occupied by the operator is not included.)

Top view



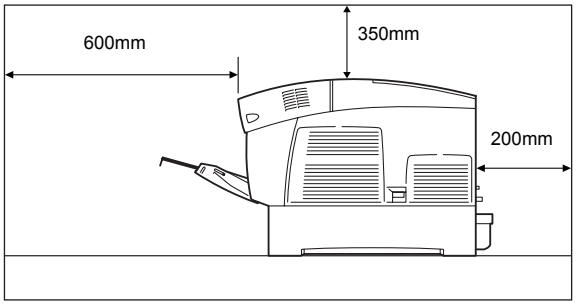
engine spec0007FB

Front view



engine spec0008FB

Side view



engine spec0009FB

4. Functions

4.1 Recording System

OPC drum, 4-tandem cartridges, electro-photographic system using intermediate transfer rolls

4.2 Exposure System

Semiconductor laser, simultaneous scanning by 4 beams

4.3 Development System

Development with dry type 2-component developer

4.4 Fixing System

Heat fusing of the free belt nip system

4.5 Resolution

Two types of resolutions can be switched. Printing speed is halved at 1200dpi

- ◆ Main scanning direction:600 dots/25.4mm (by video signal from controller)
  1200 dots/25.4mm (by video signal from controller) (Half speed)
- ◆ Sub scanning direction:600 dots/25.4mm (fixed)
  1200 dots/25.4mm (fixed) (Half speed)

4.6 Operation Mode

The printer can be operated in either of 2 operation modes. The modes are switched over by command from the printer controller or change of printer operation, etc.

◆ Running mode

State in running or recording operation

Fixing system:	Held at operating temperature.
Exposure system:	Operating status
Recording system:	Operating status
Fuser fan:	Operating at high speed
Rear fan:	Operating at high speed

◆ Ready mode

Ready state

Fixing system:	Stop status *1
Exposure system:	Stop status *2
Recording system:	Stop status
Fuser fan:	Stop status *3 (Half speed running)
Rear fan:	Stop status *3 (Half speed running)

*1: It can be changed to ready temperature status by a command from a controller.
(However, it needs to be back in a stop status within 2 hours.)

*2: It can be changed to operating status by a command from a controller.

*3: Fan status is changed depending on the state (temperature, etc.) of the fixing system.

4.7 Process Speed

The printer prints by switching three levels, Full speed (printing with the highest process speed of the printer), Half speed (printing with the half of process speed), and 1/3 speed (printing with 1/3 of process speed).The controller cannot instruct to change the process speed.

4.8 Print Mode

The printer has four modes, Standard mode, Fine mode, High gross mode, and Super high gross mode.Modes are switched over under the instruction from the controller.

(1) Standard mode: used for printing with resolution 600dpi
(2) Fine mode: process direction resolution 1200dpi mode
(3) High gross mode: thick paper, special paper, and high grossed plain paper
(4) Super high gross mode: thick paper, special paper, and super high grossed plain paper

4.9 Paper Mode

8 paper modes are available for this printer. Modes are switched over under the instruction from the controller.

Classification of paper mode

(1) Plain paper: Japanese plain paper such as FX-P, L, R, J/JD, and plain paper such as XC-4200 20lb, 24ibs RX-80, 90.
(2) Label-L mode: It is mainly selected to run on Japanese labels (V860 etc.).
(3) Label-H mode: It is mainly selected to run on labels (3R4469 etc.).
(4) Thick paper-L mode: it is selected to run on the papers whose thickness is 106-162gsm.
(5) Thick paper-H mode: It is selected to run on the papers whose thickness is 163-216gsm.
(6) OHP mode: It is selected to run on OHPs (JE-001 etc.).
(7) Envelop mode: It is selected to run on envelops.
(8) Postcard mode: It is selected to run on postcards.

Relation between the resolution, process speed, print mode and paper mode is shown in the table below.

Paper mode			Resolution/Process speed			
			600dpi		1200dpi	
		Print mode	Simplex	Duplex	Simplex	Duplex
Plain paper (1)		Standard mode	Full speed	Full speed	-	-
	Thick paper (4)-(5)	Fine mode	-	-	Half speed	Half speed
		High gross mode	Half speed	Half speed	-	-
		Super high gross mode	1/3 speed	1/3 speed	-	-
Special paper (2)-(3) (6)-(8)		Fine mode	-	-	Half speed	Half speed
		High gross mode	Half speed	Half speed	-	-
		Super high gross mode	1/3 speed	1/3 speed	-	-

4.10 Warm-up Time

When nominal voltage (100V,120V,220V) is applied, ready temperature (Fuser Stand-by) is reached within 30 seconds after command is given by the controller.

Reference: Measured at 22°C, 55% RH, nominal voltage.

4.11 FPOT (First Print Output Time)

FPOT time of the printer is shown in the table below.

The time required for the first sheet of paper to be delivered after the START command is given is calculated on the following conditions (rounded to one decimal place).

- IOT performance that the controller does not have IOT wait.
- This value is indicated by either of two described below depending on the status of Motor On and Fuser.
  1. ROS RDY t_{on}: ROS Motor Ready (steady-status rotation) and Fuser Ready
  2. ROS OFF t_{off}: ROS Motor Off (at stopping) and Fuser Ready temperature
- Paper is A4 SEF
- Except when process control is operating*1 / when Fuser Cool down*2
- Paper mode is plain paper mode.
- Paper feeding is Tray1 (paper tray which locates at the bottom of the printer)
- Measurement environment is at 22 °C / 55%RH rated voltage.

*1:Process controller operation is process controls such as TC control, electric potential control, cleaning cycle, registration control, and so on. Sometimes, the engine stops feeding papers for a certain period of time while continuous printing for these operations.

*2:The print may not start for a certain time after receiving the start command due to prior job running conditions.

Process speed	FPOT(sec)			
	In Simplex mode		In Duplex mode	
	ROS RDY t_{on}	ROS OFF t_{off}	ROS RDY t_{on}	ROS OFF t_{off}
Full speed	≤ 8.0	≤ 13.5	≤ 13.5	≤ 19.0
Half speed	≤ 14.5	≤ 20.0	≤ 24.5	≤ 30.0
1/3 speed	≤ 21.0	≤ 26.5	≤ 35.5	≤ 41.0

FPOT of paper fed from trays other than is added following values to above ROS RDY t_{on} and ROS OFF t_{off}.

Process speed	MSI	Option Feeder Unit(Tray2) *3	Option Feeder Unit (Tray3) *4
Full speed	-0.3 sec	+0.9 sec	+1.8 sec
Half speed	-0.6 sec	+1.8 sec	+3.5 sec
1/3 speed	-0.9 sec	+2.7 sec	+5.3 sec

*3 Tray2 : First tray of option Feeder

*4 Tray3 : Second tray of option Feeder

4.12 Continuous Printing Speed

Assuming the time until the trailing end of the 11th sheet is discharged after the trail end of the 1st sheet is discharged as t seconds, number of printed sheets for a minute given by the equation [60/t ×10] is shown in the table below, excluding, however, the time for which the process control is working and during the Fuse Cool Down are not contained.

NOTE

This function specifies the IOT performance when the controller did not have the × 2 feeders satisfy the following performance.
Refer to Chart 6 Operational Principal, for details of Process control.

Reference: Unit "PPM" stands for "prints per minute" indicating number of prints per minute. "ipm" is abbreviation of "Impression Per Min", and indicates "number of printed sides per minute" for Duplex.

Paper mode	Continuous printing speed					
	Full speed (600dpi)		Half speed (600/1200dpi)		1/3 speed (600dpi)	
	Simplex (ppm)	Duplex (ipm)	Simplex (ppm)	Duplex (ipm)	Simplex (ppm)	Duplex (ipm)
Plain paper (A4/LET SEF)	24/26	15.1/15.4	12/13	7.7/7.9	8/8.6	5.1/5.2
Thick paper(-162gsm)*1 (A4/LET SEF)	-	-	12/13	7.7/7.9	8/8.6	5.1/5.2
Thick paper(163-216gsm) /Label/OHP *1 (A4/LET SEF)	-	-	12/13	-	8/8.6	-
Envelop/Postcard	-	-	13	-	8.6	-

*1:In case of small size paper, printing speed is sometimes slowed down.

4.13 Printing Area

4.13.1 Usable paper size

Minimum and maximum paper size usable for this printer are as follows:

Minimum usable paper size:Width 88.9mm (3.5inch) × length 139.7mm (5.5 inch) (when using MSI)

Maximum usable paper size:Width 215.9mm (8.5 inch) × length 355.6mm (14 inch) (when using MSI).

4.13.2 Maximum printable area

For each printable size of paper, this printer masks 2.5mm within the left edge and right edge, 2.0mm from within edge and back edge as unprintable area, in order to prevent from that images exceed the size of printable area.

Maximum area where image can be printed is as follows:

Width: 210.9mm (8.3 inch) × length: 351.6mm (13.8 inch)

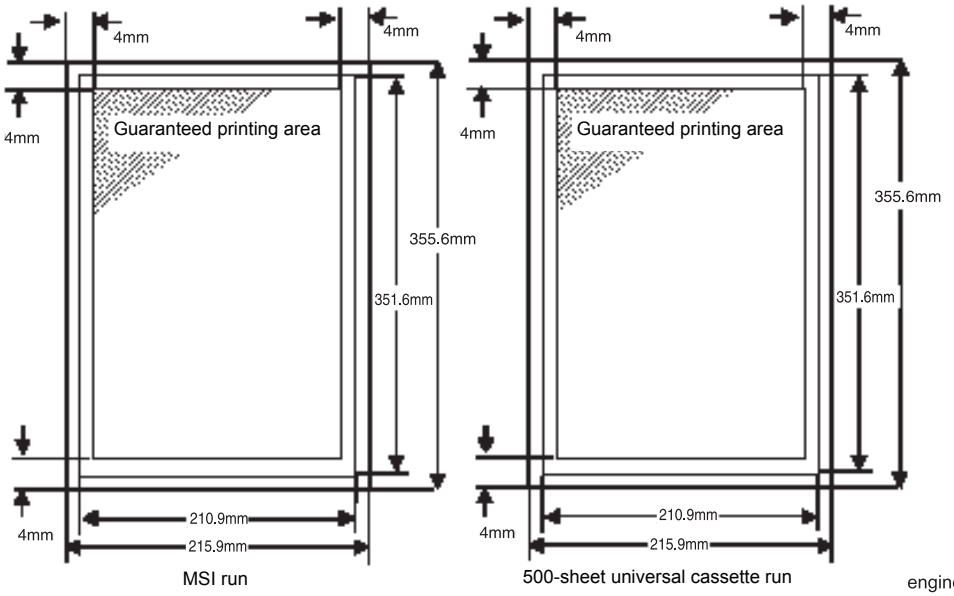
4.13.3 Guaranteed printing area

Area for which the image quality is guaranteed as follows:

Area except for 4mm (0.1575 inch) from edges of the paper.

Maximum area for which the image quantity is guaranteed as follows:

Width: 207.9mm (8.2 inch) × length: 347.6mm (13.7 inch)



4.14 Input Properties

4.14.1 Paper pick-up system

◆ Paper pick-up with paper tray
Feeding method of this printer is ARRF method.

◆ MSI paper pick-up
The MSI (Multi Sheet Inserter) is equipped as standard. Selection of MSI is designated from the controller.

◆ Duplex paper feeder unit
This unit is equipped as standard to enable the printing on duplex of paper. Selection of Duplex Feeder Unit is designated from the controller.

4.14.2 Paper pick-up capacity

◆ Paper pick-up with paper tray
500 sheets or below 56mm of standard paper

◆ MSI paper pick-up
100 sheets or below 10mm of standard paper

4.15 Output Properties

4.15.1 Paper delivery system

Paper can be delivered by the following method.

◆ FACE DOWN delivery

4.15.2 Paper delivery capacity

◆ FACE DOWN delivery
250 sheets (Letter/A4 standard paper)

4.15.3 Delivery paper size/mass

◆ FACE DOWN delivery
All paper sizes applicable to this printer

4.15.4 Full stack detection

◆ Height of paper to be fed
Detect when the height reached about 36mm.

4.16 Paper

4.16.1 Paper type

Paper which can be used with this printer is classified into standard paper, general paper and special paper.

◆ Standard paper

Using this type of paper is recommended. Reliability, operability and print image quality are the application range of the specifications.

Following paper is the standard paper.

* Xerox 4200 DP 20lb
* Xerox premier 80gsm

◆ General paper

General paper is plain paper except standard paper and special paper, and its reliability and running performance are within the specification, but the print image quality is out of the specification.

◆ Special paper

Special paper except for plain paper. Reliability and operability are the applicable range of specifications but the print image quality is out of the applicable range of specifications.

4.16.2 Paper mass

◆ Paper feed from paper tray

"60 to 105 gsm" (16 - 28 lb)

◆ Paper feed from MSI

"60 to 216 gsm" (16 - 80 lb)

4.16.3 Paper size

Paper size which can be set to each paper pick-up unit is shown in the table below.

Cassette	Paper size
500 Sheet Paper Universal Tray	A4 -SEF B5(JIS) -SEF A5 -SEF *1 EXECUTIVE -SEF LETTER -SEF LEGAL(13")-SEF LEGAL(14")-SEF
MSI Tray	Minimum size Width 88.9mm(3.5inch)×Length139.7mm(5.5inch) Maximum size Width 215.9mm(8.5inch)×Length 355.6mm(14inch)

*1:The end guide which is attached as standard needs to be installed when running on A5 size paper.The capacity of paper is 350 sheets, or 40mm or less.

5. Consumables

Consumables are usually replaced by costumers. In the event of recovery of failure attributable to consumables or isolation of failure, you may replace them.

5.1 Items of Consumables

◆ Print head (PHD) cartridge
Composed of photosensitive medium, development machine, intermediate transfer roll, etc.
◆ Transfer roll (BTR) cartridge
Composed of BTR, waste toner collection box, etc.
◆ Black toner cartridge
Cartridge to supply black toner to the development unit.
◆ Yellow toner cartridge
Cartridge to supply yellow toner to the development unit.
◆ Magenta toner cartridge
Cartridge to supply magenta toner to the development unit.
◆ Cyan toner cartridge
Cartridge to supply cyan toner to the development unit.

5.2 Consumable Life

◆ Print head (PHD) cartridge:equivalent to about 30,000 prints
◆ Transfer roll (BTR) cartridge:equivalent to about 25,000 prints
◆ Black toner cartridge:equivalent to about 9,000 prints
◆ Yellow toner cartridge:equivalent to about 6,000 prints
◆ Magenta toner cartridge:equivalent to about 6,000 prints
◆ Cyan toner cartridge:equivalent to about 6,000 prints

5.3 Parts Requiring Periodical Replacement

Following parts are replaced when a certain number of sheets are printed (life over) to prevent troubles.

◆ FUSE ASSY(PL8.1.1) : Equivalent to about 100.000 prints
◆ ROLL ASSY RETARD(PL2.1.2) : Equivalent to about 100,000 prints
◆ ROLL ASSY FEED MSI(PL6.1.27) : Equivalent to about 450,000 prints*1
◆ ROLL ASSY RETARD MSI(PL4.1.5) : Equivalent to about 450,000 prints*1
◆ CHUTE REGI ASSY(PL9.1.7) : Equivalent to about 300,000 prints
◆ ROLL ASSY FEED(PL3.3.3):Equivalent to about 300,000 prints
◆ TURN ROLL BEARING METAL(PL3.3.25) :Equivalent to about 300,000 prints*2
◆ CHUTE ASSY TURN(PL3.1.2) :Equivalent to about 300,000 prints

*1 Replacement life when converting with utilization ratio CST 85% and MSI 15%.
*2 BEARING(ø6×L8)/METAL(PL3.3.7) is the same shape as TURN ROLL BEARING METAL(PL3.3.25),but it is not Periodical Replacement Parts.

6. Operating Environment

6.1 Installation Temperature / Humidity

Installation temperature and humidity on the condition without condensation is as follows.
At operating: 5-32 °C, 15-85%RH
At stopping: minus 20-40 °C, 5-85%RH

6.2 Installation Altitude

0 to 3,100m

6.3 Installation Horizontal

Within inclination of 5 degrees

6.4 Ambient Lighting

3000 Lux or less (without no direct sun beams)

7. Safety / Environment Conditions

7.1 Safety Standard

◆ 100V / 120V system
UL1950 3rd Edition
CSA C22.2 No.950-M95

◆ 220V / 240V system
IEC60950 2nd Edition

7.2 Laser Safety Standard

◆ 100V / 120V system
FDA21CFR Chapter 1, Subchapter J, Section 1010, 1040

◆ 220V / 240V system
IEC60825 Class 1 Laser Product

7.3 EMI

◆ 100V system (JPN)
VCCI Class B

◆ 120V system (US)
FCC Part 15, Subpart B, Class B (ANSI C63.4)

◆ 220V / 240V system (EC)
EN55022 (CISPR Publication 22), Class B

7.4 Noise

Noise of printing (including simplex, duplex, with option) is as follows.

Process speed	Printer (simplex / duplex)		Option 1 Tray Feeder Unit (simplex / duplex)		Option Feeder Unit (simplex / duplex)	
	Sound pressure level (By Standard)	Sound power level	Sound pressure level (By Standard)	Sound power level	Sound pressure level (By Standard)	Sound power level
Full speed	55 dBA	6.7 B	55 dBA	6.8 B	55 dBA	6.9 B
Half speed	52 dBA	6.45 B	53 dBA	6.7 B	53 dBA	6.7 B
1/3 speed	52 dBA	6.45 B	53 dBA	6.7 B	53 dBA	6.7 B

Noise of ready mode is as follows.
Sound pressure level (By Standard) 36.5 dBA or less *1
Sound power level 4.95 B or less *1
*1 Both FUSER FAN and REAR FAN are on the status of half speed rotation. FAN stops depending on the status of Fuser, and the noise level at this time is the same as background noise.

8. Print image Quality

8.1 Image Quality Guarantee Conditions

The image quality is specified and guaranteed under the following conditions.

8.1.1 Environmental conditions

Environment condition for general office
Temperature: 15-28 °C
Humidity: 20-70%RH
Environment condition for evaluating image quality
Temperature: 10-32 °C
Humidity: 15-85%RH

8.1.2 Guaranteed paper

The print image quality specified here is guaranteed with standard paper fed from the paper tray. The evaluation is performed with A4 or letter size of paper.

- FX P paper A4
- Xerox 4200 DP Letter
- Xerox Premier 80gsm A4

8.1.3 Paper condition

The paper used is fresh paper immediately after unpacked, which has been left in the operating environment for 12 hours before unpacking.

8.1.4 Printer condition

The print image quality specified in this section is guaranteed with the printer in normal condition.

8.1.5 Image quality guaranteed area

The print image quality specified in this section is guaranteed in the guaranteed image quality area specified in this manual.

8.1.6 Criterion

The print image quality is guaranteed with the Spec. In rate = 95% (γ = 90%).

9. Option

9.1 Options to be Installed by Users

Users can install the following 2 types of units.

◆Feeder Unit

500 sheets × 2 feeder units (with 500 sheet universal cassette × 2)

◆ 1 Tray Feeder Unit

500 sheets × 1 feeder unit (with 500 sheet universal cassette × 1)

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