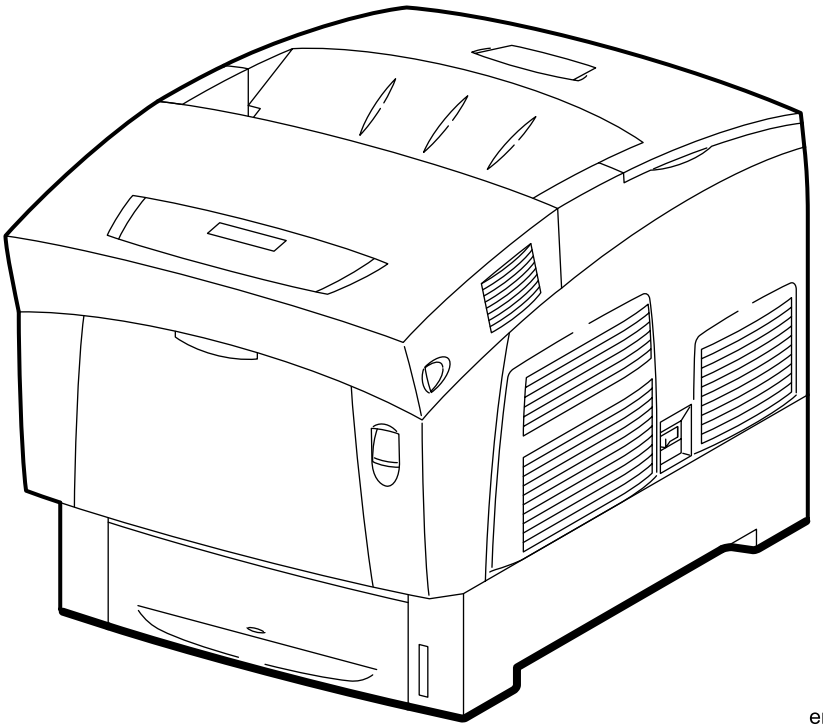
HIBANA
Laser Printer
Base Engine Technical Manual



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Version 1.0

Cautions for operation

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

Fuji Xerox 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.

1. About this manual

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

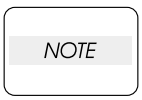
This manual is intended for use by OEMs under a contract with Fuji Xerox when they provide maintenance services for this laser printer or when they prepare maintenance data. It is prohibited to use this manual for other objects.

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

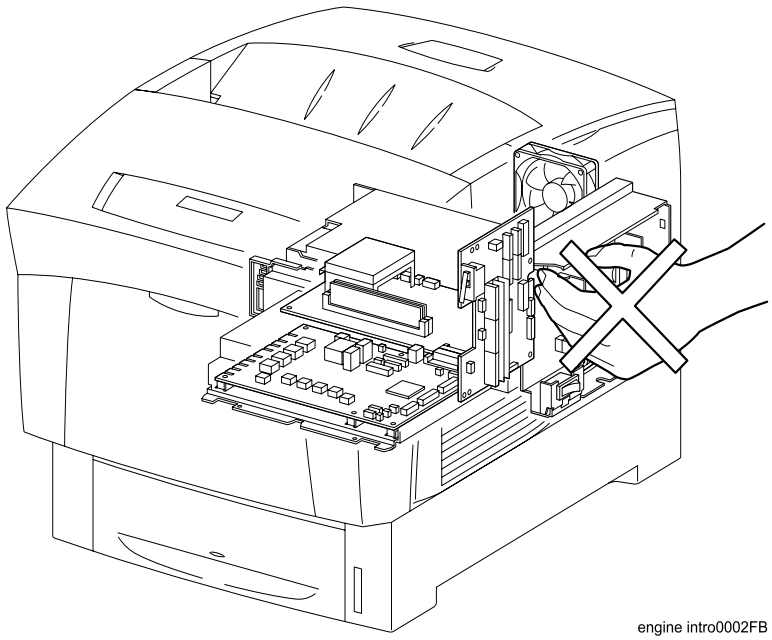
While the printer is ON, never touch live parts if not required absolutely.

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

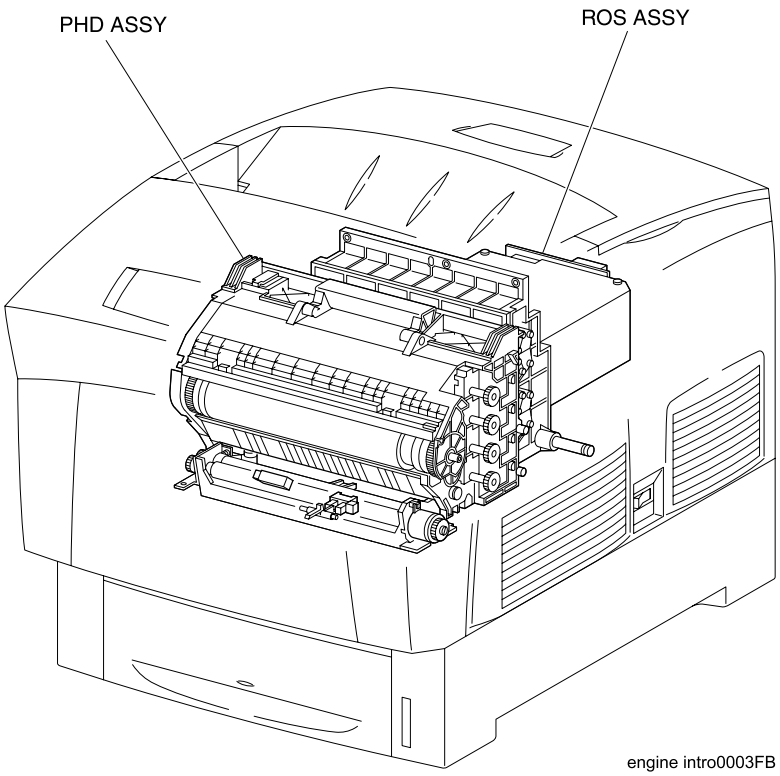
- ***If your eyes are exposed to laser beams, you may lose your eyesight.***
- ***Never open the cover if warning label for laser beams is attached there.***
- ***Before disassembling and reassembling this laser printer, be sure to turn it OFF.***
- ***When servicing this laser printer while it is running, 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.



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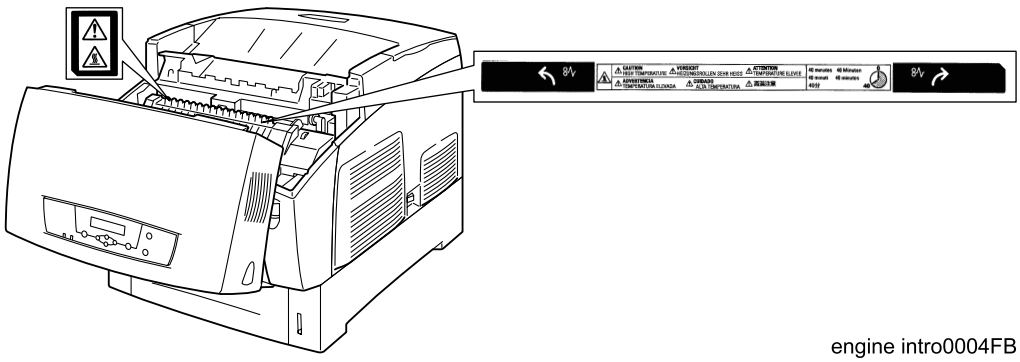
4.5 Warning/caution labels

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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Unpacking the Printer

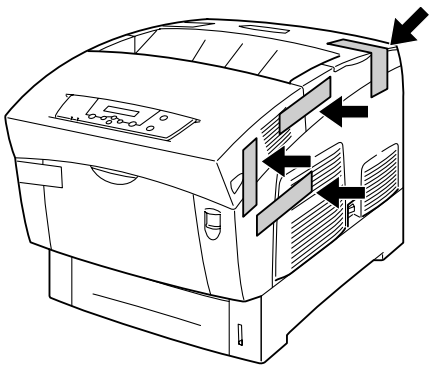
CAUTION

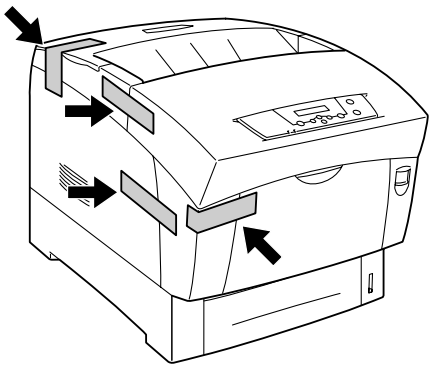
The printer must be carried horizontally with two or more persons.

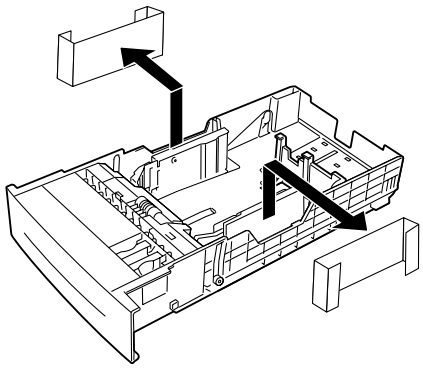
CAUTION

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 CONTENTS

NOTE

This manual is based on the standard specifications of Fuji Xerox on the assumption that the printer controller is working properly.
When the printer controller controls operation directly or any OEM has its unique specifications, the operation may be different from description in this manual.

NOTE

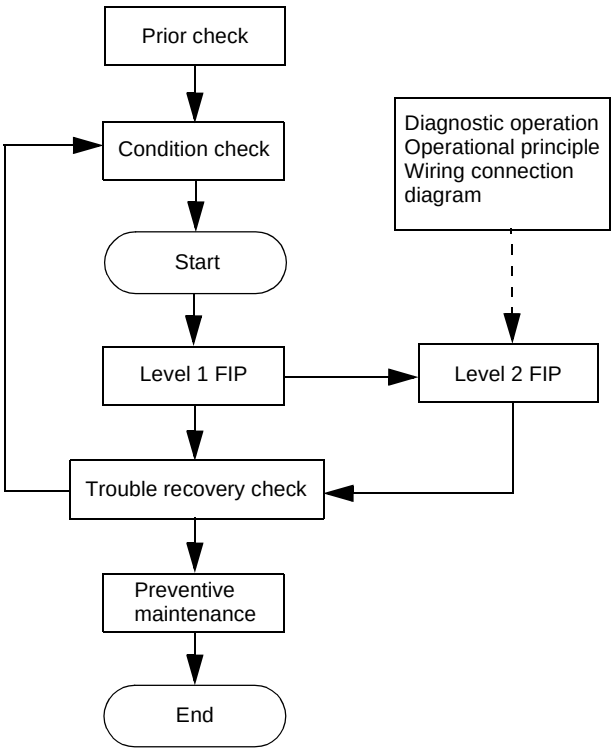
Troubleshooting in this manual assumes use of Diag. tools (maintenance tools). However, the troubleshooting allows for the case where the Diag tools are not used. You can correct troubles according to these troubleshooting procedures after understanding them well.

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.

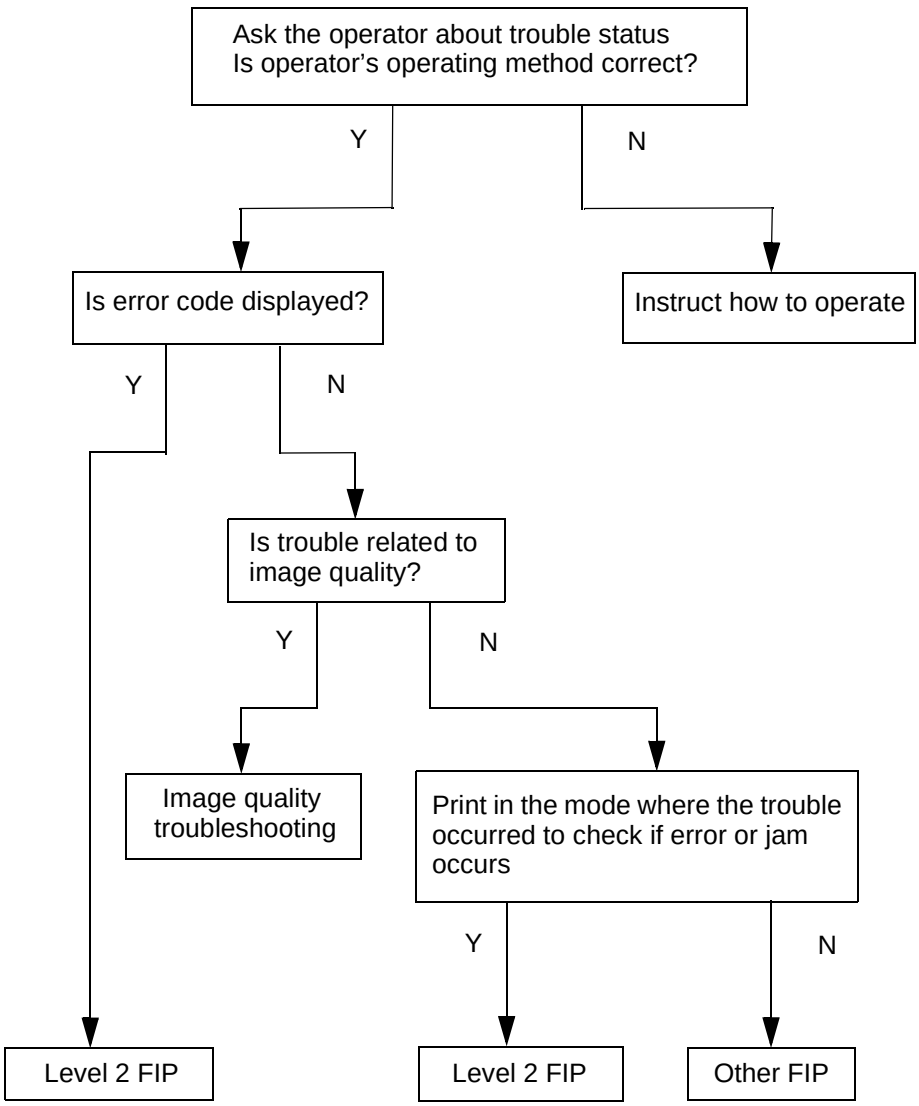
18) For optional parts, some troubleshooting procedure may follow the manual for those options, of which you should take note.
Keep those manuals for the optional parts when required.

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 Cartridge sensor detected no-toner cartridge.	1
51h,C1h-status 1-1	Magenta Toner Cartridge Detached Cartridge sensor detected no-toner cartridge.	2
51h,C1h-status 1-2	Cyan Toner Cartridge Detached Cartridge sensor detected no-toner cartridge.	3
51h,C1h-status 1-3	Black Toner Cartridge Detached Cartridge sensor detected no-toner cartridge.	4
51h,C1h-status 1-4	PHD Detached Machine detected no-PHD ASSY.	5
51h,C1h-status 1-5	BTR Detached Machine detected no-BTR ASSY.	6
51h,C1h-status 1-6	Fuser Detached Machine detected no-FUSER ASSY.	7
51h,C1h-status 2-0	CRUM ID Error (TC-Y) ASSY ID is not as recorded.	50
51h,C1h-status 2-1	CRUM ID Error (TC-M) ASSY ID is not as recorded.	50
51h,C1h-status 2-2	CRUM ID Error (TC-C) ASSY ID is not as recorded.	50
51h,C1h-status 2-3	CRUM ID Error (TC-K) ASSY ID is not as recorded.	50
51h,C1h-status 2-4	CRUM ID Error(PHD) ID of PHD ASSY is different from the recorded ID.	8
51h,C1h-status 2-6	CRUM ID Error (Fuser) Fuser ASSY ID is not as recorded.	51
54h,C4h-0	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.	9
54h,C4h-1	Feed Jam Regi sensor cannot detect paper within specified time.	10
54h,C4h-2	Regi Jam Regi sensor cannot detect passage of paper within specified time.	11
54h,C4h-3	Fuser Jam Exit sensor cannot detect passage of paper within specified time.	12

Error / status code	Name of error Contents of error	Reference FIP
54h,C4h-4	Duplex Jam Duplex jam sensor cannot detect passage of paper within specified time.	13
55h,C5h-status 1-0	ROS Failure 1. Laser power down. 2. SOS signal not detected.	14
55h,C5h-status 1-1	Fuser Failure 1. Temperature exceeding 235°C detected consecutively 4 times. 2. Temperature below 120°C detected consecutively 4 times. 3. Resistance value of STS sensor over 2437KW detected consecutively 4 times. 4. Target temperature is not reached more than 60 seconds after the fuser lamp lighted up. 5. After the target temperature is reached, the fuser lamp was kept ON for more than specified time. 6. Value of the STS sensor does not change after the lamp lights up. 7. Temperature exceeding 230°C detected during printing process consecutively twice.	15
55h,C5h-status 1-2	NV-RAM Error Error of NV-RAM	16
55h,C5h-status 1-3	ADC Sensor Error Power down of ADC sensor	17
55h,C5h-status 1-4	Fan Motor Failure Failure of Fan Motor	18
55h,C5h-status 1-5	Low Density Error Toner density is low.	19
55h,C5h-status 1-6	Firmware Error Error of software	20
55h,C5h-status 1-7	Environment Sensor Error 1. The temperature over +100°C or below -20°C was detected. 2. The humidity over 100% was detected.	21
55h,C5h-status 2-0	CRUM Error (TC-Y) CRUM (TC-Y) Communication Error	52
55h,C5h-status 2-1	CRUM Error (TC-M) CRUM (TC-M) Communication Error	52
55h,C5h-status 2-2	CRUM Error (TC-C) CRUM (TC-C) Communication Error	52
55h,C5h-status 2-3	CRUM Error (TC-K) CRUM (TC-K) Communication Error	52
56h,C6h-0	Yellow Toner Empty Yellow toner emptied.	22
56h,C6h-1	Magenta Toner Empty Magenta toner emptied.	23
56h,C6h-2	Cyan Toner Empty Cyan toner emptied.	24
56h,C6h-3	Black Toner Empty Black toner emptied.	25

Error / status code	Name of error Contents of error	Reference FIP
56h,C6h-4	PHD Life Over PHD ASSY life expired.	26
56h,C6h-5	BTR Life Over BTR ASSY life expired.	27
56h,C6h-6	Fuser Life Over FUSER ASSY life expired.	28
57h,C7h-0	Y Toner Tape Staying Y Toner Tape not Pulled out Error	53
57h,C7h-1	M Toner Tape Staying M Toner Tape not Pulled out Error	53
57h,C7h-2	C Toner Tape Staying C Toner Tape not Pulled out Error	53
57h,C7h-3	K Toner Tape Staying K Toner Tape not Pulled out Error	53
57h,C7h-6	CTD Sensor Dustiness CTD sensor signal level below specified value.	29
57h,C7h-7	Front Cover Front cover open.	30
58h,C8h-0	Yellow Toner Near Empty Yellow toner shortage.	31
58h,C8h-1	Magenta Toner Near Empty Magenta toner shortage	32
58h,C8h-2	Cyan Toner Near Empty Cyan toner shortage	33
58h,C8h-3	Black Toner Near Empty Black toner shortage	34
58h,C8h-4	PHD Life Warning PHD ASSY life running out.	35
58h,C8h-5	BTR Life Warning BTR ASSY life running out.	36
58h,C8h-6	Fuser Life Warning Fuser life running out.	37
58h,C8h-7	ADC Sensor Dustiness ADC sensor signal level below specified value.	38
59h,C9h-0	Paper Near Empty Paper in the paper cassette running out.	39
59h,C9h-1	Paper Empty Paper in the paper cassette exhausted.	40
59h,C9h-2	Upper Cassette Detached Paper cassette dislocated.	41
5Ah,CAh-0	Full Stack Delivery tray full of paper	42
5Bh,CBh-0	Yellow Toner Empty 2 Yellow toner emptied.	43
5Bh,CBh-1	Magenta Toner Empty 2 Magenta toner emptied.	44

Error / status code	Name of error Contents of error	Reference FIP
5Bh,CBh-2	Cyan Toner Empty 2 Cyan toner emptied.	45
5Bh,CBh-3	Black Toner Empty 2 Black toner emptied.	46
5Bh,CBh-4	PHD Life Over 2 PHD ASSY life expired.	47
5Bh,CBh-5	BTR Life Over 2 BTR ASSY life expired.	48
5Bh,CBh-6	Fuser Life Over 2 FUSER ASSY life expired.	49

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	Operation Method of clear
51h,C1h-status 1-0	Shutdown
	Toner cartridge replacement
51h,C1h-status 1-1	Shutdown
	Toner cartridge replacement
51h,C1h-status 1-2	Shutdown
	Toner cartridge replacement
51h,C1h-status 1-3	Shutdown
	Toner cartridge replacement
51h,C1h-status 1-4	Shutdown
	PHD ASSY replacement
51h,C1h-status 1-5	Shutdown
	BTR ASSY replacement
51h,C1h-status 1-6	Shutdown
	Power OFF/ON after replacing the FUSER ASSY
51h,C1h-status 2-0	Shutdown
	Replace Toner Cartridge Y
51h,C1h-status 2-1	Shutdown
	Replace Toner Cartridge M
51h,C1h-status 2-2	Shutdown
	Replace Toner Cartridge C
51h,C1h-status 2-3	Shutdown
	Replace Toner Cartridge K
51h,C1h-status 2-4	Shutdown
	PHD ASSY replacement
51h,C1h-status 2-6	Shutdown
	Replace Fuser ASSY
54h,C4h-0	Shutdown
	Power OFF/ON after removing the jam paper
54h,C4h-1	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	Shutdown
	Open and close the front cover after removing the jammed paper
54h,C4h-3	Shutdown
	Open and close the front cover after removing the jammed paper
54h,C4h-4	Shutdown
	Open and close the front cover after removing the jammed paper
55h,C5h-status 1-0	Shutdown
	Power ON/OFF

Error / status code	Operation Method of clear
55h,C5h-status 1-1	Shutdown
	Power ON/OFF
55h,C5h-status 1-2	Shutdown
	Power ON/OFF
55h,C5h-status 1-3	Shutdown
	Power ON/OFF
55h,C5h-status 1-4	Shutdown
	Power ON/OFF
55h,C5h-status 1-6	Shutdown
	Power ON/OFF
55h,C5h-status 1-7	Shutdown
	Power ON/OFF
55h,C5h-status 2-0	Shutdown
	Power ON/OFF
55h,C5h-status 2-1	Shutdown
	Power ON/OFF
55h,C5h-status 2-2	Shutdown
	Power ON/OFF
55h,C5h-status 2-3	Shutdown
	Power ON/OFF
56h,C6h-0	Shutdown
	Toner cartridge replacement
56h,C6h-1	Shutdown
	Toner cartridge replacement
56h,C6h-2	Shutdown
	Toner cartridge replacement
56h,C6h-3	Shutdown
	Toner cartridge replacement
56h,C6h-4	Shutdown
	PHD ASSY replacement
56h,C6h-5	Shutdown
	BTR ASSY replacement
56h,C6h-6	Shutdown
	Clearing the counter after replacing the FUSER ASSY
57h,C7h-0	Shutdown
	Pull out Tape
57h,C7h-1	Shutdown
	Pull out Tape
57h,C7h-2	Shutdown
	Pull out Tape
57h,C7h-3	Shutdown
	Pull out Tape
57h,C7h-6	Print
	Open and close the front cover after cleaning the sensor
57h,C7h-7	Shutdown
	Close the front cover

Error / status code	Operation
	Method of clear
58h,C8h-0	Print
	Toner cartridge replacement
58h,C8h-1	Print
	Toner cartridge replacement
58h,C8h-2	Print
	Toner cartridge replacement
58h,C8h-3	Print
	Toner cartridge replacement
58h,C8h-4	Print
	PHD ASSY replacement
58h,C8h-5	Print
	BTR ASSY replacement
58h,C8h-6	Print
	Replace the FUSER ASSY and clear the counter
58h,C8h-7	Print
	Clean the sensor and open and close the front cover
59h,C9h-0	Print
	Replenish the paper
59h,C9h-1	Print (Paper cannot be delivered from the cassette)
	Replenish the paper
59h,C9h-2	Print (Paper cannot be delivered from the cassette)
	Paper cassette replacement
5Ah,CAh-0	Print
	Take out paper from the delivery tray
5Bh,CB-0	Shutdown
	Toner cartridge replacement
5Bh,CB-1	Shutdown
	Toner cartridge replacement
5Bh,CB-2	Shutdown
	Toner cartridge replacement
5Bh,CB-3	Shutdown
	Toner cartridge replacement
5Bh,CB-4	Shutdown
	PHD ASSY replacement
5Bh,CB-5	Shutdown
	BTR ASSY replacement
5B,CB-6	Shutdown
	Clearing the counter after replacing the FUSER ASSY

3.4 Error Code FIP

FIP-1 Yellow Toner Cartridge Detached

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 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 HBN MCU	Go to step [3]
3	Checking PWBA HBN DRV 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 SW TCRU ASSY (Y)
6	Checking HARNESS ASSY TNR for continuity Is J51 <=> J342 continuous normally?	Go to step [7]	Replace HARNESS ASSY TNR
7	Checking PWBA HBN DRV for signal Is P/J42-4PIN<=>P/J42-14PIN 0VDC?	Go to step [8]	Replace PWB HBN DRV
8	Checking PWBA HBN MCU for signal Is P/J12-27PIN <=> P/J12-17PIN of PWBA HBN MCU 0VDC?	Replace PWBA HBN MCU	Go to step [9]
9	Checking HARNESS ASSY DRV2 for continuity Is J12 <=> J42 continuous normally?	Replace PWBA HBN MCU	Replace HARNESS ASSY DRV2

FIP-2 Magenta Toner Cartridge Detached

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 HBN MCU	Go to step [3]
3	Checking PWBA HBN DRV 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 (Y) for continuity Is P342-5PIN <=> P342-3PIN of SW TCRU ASSY (Y) continuous normally?	Go to step [6]	Replace SW TCRU ASSY (M)
6	Checking HARNESS ASSY TNR for continuity Is J51 <=> J342 continuous normally?	Go to step [7]	Replace HARNESS ASSY TNR
7	Checking PWBA HBN DRV for signal Is P/J42-5PIN <=> P/J42-14PIN 0VDC?	Go to step [8]	Replace PWB HBN DRV
8	Checking PWBA HBN MCU for signal Is P/J11-26PIN <=> P/J11-17PIN of HBN MCU WITHCPU PWB 0VDC?	Replace PWBA HBN MCU	Go to step [9]
9	Checking HARNESS ASSY DRV2 for continuity Is J12 <=> J42 continuous normally?	Replace PWBA HBN MCU	Replace HARNESS ASSY DRV2

FIP-3 Cyan Toner Cartridge Detached

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 HBN MCU	Go to step [3]
3	Checking PWBA HBN DRV 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 SW TCRU ASSY (C)
6	Checking HARNESS ASSY TNR for continuity Is J51 <=> J342 continuous normally?	Go to step [7]	Replace HARNESS ASSY TNR
7	Checking PWBA HBN DRV for signal Is P/J42-6PIN <=> P/J42-14PIN 0VDC?	Go to step [8]	Replace PWB HBN DRV
8	Checking PWBA HBN MCU for signal Is P/J12-25PIN <=> P/J12-17PIN of PWBA HBN MCU 0VDC?	Replace PWBA HBN MCU	Go to step [9]
9	Checking HARNESS ASSY DRV2 for continuity Is J12 <=> J42 continuous normally?	Replace PWBA HBN MCU	Replace HARNESS ASSY DRV2

FIP-4 Black Toner Cartridge Detached

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 HBN MCU	Go to step [3]
3	Checking PWBA HBN DRV 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 SW TCRU ASSY (K)
6	Checking HARNESS ASSY TNR for continuity Is J51 <=> J342 continuous normally?	Go to step [7]	Replace HARNESS ASSY TNR
7	Checking PWBA HBN DRV for signal Is P/J42-3PIN <=> P/J42-14PIN 0VDC?	Go to step [8]	Replace PWB HBN DRV
8	Checking PWBA HBN MCU for signal Is P/J12-28PIN <=> P/J12-17PIN of PWBA HBN MCU 0VDC?	Replace PWBA HBN MCU	Go to step [9]
9	Checking HARNESS ASSY DRV2 for continuity Is J12 <=> J42 continuous normally?	Replace PWBA HBN MCU	Replace HARNESS ASSY DRV2

FIP-5 PHD Detached

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 HBN MCU	End of work

FIP-6 BTR Detached

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 HBN MCU	End of work

FIP-7 Fuser Detached

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-A4PIN <=> P232-A5PIN less than 400KΩ?	Go to step [3]	Replace FUSER ASSY
3	Checking HARNESS ASSY FSR2 for continuity Is J232 <=> J138 continuous normally?	Go to step [4]	Replace HARNESS ASSY FSR2
4	Checking HARNESS ASSY FRONT 1A for continuity Is P138 <=> J13 continuous normally?	Replace PWBA HBN MCU	Replace HARNESS ASSY FRONT 1A

FIP-8 CRUM ID Error

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 HBN MCU	End of work

FIP-9 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 HBN MCU	Go to step [3]
3	Checking PWBA HBN MCU for signal Is P/J32-2PIN <=> P/J32-1PIN 0VDC?	Go to step [4]	Go to step [5]
4	Checking PWBA HBN MCU for signal Make the paper approach to the SENSOR. Does P/J32-2PIN <=> P/J32-1PIN change from 0VDC to +3.3VDC?	Replace PWBA HBN MCU	Go to step [5]
5	Checking PWBA HBN MCU for signal Is P/J32-3PIN <=> P/J32-1PIN +5VDC?	Replace SENSOR OHP	Replace PWBA HBN MCU

FIP-10 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 HBN MCU 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 HBN MCU	Go to step [8]
8	Checking PWBA HBN DRV 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 HBN DRV	Go to step [11]
11	Checking PWBA HBN DRV for power supply Is P/J60-1PIN <=> P/J60-2PIN +24VDC?	Replace PWBA HBN DRV	Go to FIP-DC
12	Checking PWBA HBN DRV for power supply Is P/J61-8PIN <=> P/J61-7PIN +5VDC?	Go to step [13]	Go to step [14]
13	Checking PWBA HBN DRV for power supply Is P/J61-6PIN <=> P/J61-5PIN +3.3VDC?	Go to step [15]	Go to step [14]
14	Checking HARNESS ASSY LVNC for continuity Is J61 <=> J165 continuous normally?	Go to FIP-DC	Replace HARNESS ASSY LVNC
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 HBN MCU	Replace HARNESS ASSY DRV1
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]

Step	Check	Remedy	
		Yes	No
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 HBN DRV for signal Is P/J47-13PIN <=> P/J60-2PIN +24VDC?	Go to step [19]	Replace PWBA HBN DRV
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 for continuity Is J12-9PIN <=> J42-22PIN continuous normally?	Replace PWBA HBN MCU	Replace HARNESS ASSY DRV2
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 HBN DRV 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 for continuity Is J12-10PIN <=> J42-21PIN continuous normally?	Replace PWBA HBN MCU	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]
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 HBN MCU	Replace CLUTCH ASSY TURN MSI

Step	Check	Remedy	
		Yes	No
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 HBN MCU	HARNESS ASSY FRONT1A

FIP-11 Regi Jam

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 HBN MCU 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 HBN MCU for signal Close the INTERLOCK SW Is P18-4PIN <=> P18-2PIN +24VDC?	Go to step [9]	Replace PWBA HBN MCU
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

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 FSR2
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 HBN MCU	Go to step [10]
10	Checking PWBA HBN DRV for signal Is P/J52-1PIN <=> P/J60-2PIN +24VDC?	Go to step [11]	Replace PWBA HBN DRV
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 HBN MCU

FIP-13 Duplex Jam

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 J319-3PIN <=> J319-2PIN 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 HBN DRV for signal Is P/J50-1PIN <=> P/J60-2PIN +24VDC?	Go to step [10]	Replace PWBA HBN DRV
10	Checking HARNESS ASSY DUP for continuity Is J131 <=> J50 continuous normally?	Go to step [11]	Replace HARNESS ASSY DUP
11	Checking HARNESS ASSY DRV2 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 HBN MCU	End of work
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

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

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. FUSER ASY replacing condition	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 HBN MCU	End of work

FIP-16 NV-RAM Error

Step	Check	Remedy	
		Yes	No
1	Does an error occur even if the power is turned off and on?	Replace PWBA HBN MCU	If the error recurs, replace PWBA HBN MCU

FIP-17 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 HBN MCU	End of work

FIP-18 Fan Motor Failure

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 HBN MCU	Go to step [4]
4	Checking LVPS STD for signal Print 1 sheet. Is P/J166-1PIN <=> P/J166-3PIN +24VDC?	Go to step [9]	Go to step [5]
5	Checking LVPS STD for signal Print 1 sheet. Is P/J165-6PIN <=> P/J165-2PIN 0VDC?	Go to step [6]	Replace LVPS STD
6	Checking PWBA HBN DRV for signal Print 1 sheet. Is P/J61-3PIN <=> P/J61-7PIN 0VDC?	Go to step [7]	Replace HARNESS ASSY LVNC
7	Checking PWBA HBN DRV for signal Print 1 sheet. Is P/J42-12PIN <=> P/J42-14PIN 0VDC?	Go to step [8]	Replace PWBA HBN DRV
8	Checking PWBA HBN MCU for signal Print 1 sheet. Is P/J12-19PIN <=> P/J12-17PIN 0VDC?	Replace PWBA HBN MCU	Replace HARNESS ASSY DRV2
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 STD for signal Print 1 sheet. Is P/J166-2PIN <=> P/J166-3PIN +3.3VDC?	Replace FAN REAR	Go to step [11]
11	Checking LVPS STD for signal Print 1 sheet. Is P/J165-7PIN <=> P/J165-2PIN +3.3VDC?	Replace LVPS STD	Go to step [12]
12	Checking PWBA HBN DRV for signal Print 1 sheet. Is P/J61-2PIN <=> P/J61-7PIN +3.3VDC?	Replace HARNESS ASSY LVNC	Go to step [13]
13	Checking PWBA HBN DRV for signal Print 1 sheet. Is P/J42-29PIN <=> P/J42-14PIN +3.3VDC?	Replace PWBA HBN DRV	Go to step [14]
14	Checking PWBA HBN MCU for signal Print 1 sheet. Is P/J12-2PIN <=> P/J12-17PIN +3.3VDC?	Replace HARNESS ASSY DRV2	Replace PWBA HBN MCU
15	Checking FAN FUSER Does FAN FUSER function normally? Using FAN FUSER diagnostic tool, check by Digital Output Test.	Replace PWBA HBN MCU	Go to step [16]

Step	Check	Remedy	
		Yes	No
16	Checking PWBA HBN DRV for signal Print 1 sheet. Is P/J50-7PIN <=> P/J50-9PIN +24VDC?	Go to step [19]	Go to step [17]
17	Checking PWBA HBN DRV for signal Print 1 sheet. Is P/J42-30PIN <=> P/J42-14PIN 0VDC?	Go to step [18]	Replace PWBA HBN DRV
18	Checking PWBA HBN MCU for signal Print 1 sheet. Is P/J12-1PIN <=> P/J12-17PIN 0VDC?	Replace PWBA HBN MCU	Replace HARNESS ASSY DRV2
19	Checking HARNESS ASSY DUP for continuity Is J50 <=> J137 continuous normally?	Go to step [20]	Replace HARNESS ASSY DUP
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 HBN DRV for signal Print 1 sheet. Is P/J50-8PIN <=> P/J50-9PIN +3.3VDC?	Replace FAN FUSER	Go to step [22]
22	Checking PWBA HBN DRV for signal Print 1 sheet. Is P/J42-27PIN <=> P/J42-14PIN +3.3VDC?	Replace PWBA HBN DRV	Go to step [23]
23	Checking PWBA HBN MCU for signal Print 1 sheet. Is P/J12-4PIN <=> P/J12-17PIN +3.3VDC?	Replace HARNESS ASSY DRV2	Replace PWBA HBN MCU

FIP-19 Low Density 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 PHD ASSY replacing condition Residual toner	Replace the parts concerned	Go to step [2]
2	Checking HARNESS ASSY CTD for connection Is the 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 BTR ASSY Replace new BTR ASSY, and check if an error occurs.	Go to step [6]	End of work
6	Checking PHD ASSY Replace new PHD ASSY, and check if an error occurs.	Go to step [7]	End of work
7	Checking SENSOR ADC ASSY PHD ASSY Replace new SENSOR ADC ASSY, and check if an error occurs.	Replace PWBA HBN MCU	End of work

FIP-20 Firmware Error

Step	Check	Remedy	
		Yes	No
1	Does an error occur even if the power is turned off and on?	Replace PWBA HBN MCU	If the error recurs, replace PWBA HBN MCU

FIP-21 Environment 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 HBN MCU
4	Checking HARNESS ASSY TMPA for signal Is P/J2361-4PIN <=> P/J2361-2PIN +5VDC?	Replace SENSOR HUM TEMP	Replace PWBA HBN MCU

FIP-22 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 HBN DRV 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 TNR for continuity Is J701 <=> J51 continuous normally?	Go to step [5]	Replace HARNESS ASSY TNR
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 J12-23 <=> J42-8 continuous normally?	With tool Go to step [7] Without tool Go to step [8]	Replace HARNESS ASSY DRV2
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 HBN DRV for signal Is P/J51-21PIN <=> P/J60-2PIN +24VDC?	Go to step [9]	Replace PWBA HBN DRV
9	Checking HARNESS ASSY TNR for continuity Is J511 <=> J51 continuous normally?	Go to step [10]	Replace HARNESS ASSY TNR
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 HBN DRV, and if still faulty, replace PWBA HBN MCU	Replace HARNESS ASSY DRV1

FIP-23 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 HBN DRV 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 TNR for continuity Is J702 <=> J51 continuous normally?	Go to step [5]	Replace HARNESS ASSY TNR
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 J12-22 <=> J42-9 continuous normally?	With tool Go to step [7] Without tool Go to step [8]	Replace HARNESS ASSY DRV2
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 HBN DRV for signal Is P/J51-26PIN <=> P/J60-2PIN +24VDC?	Go to step [9]	Replace PWBA HBN DRV
9	Checking HARNESS ASSY TNR for continuity Is J512 <=> J51 continuous normally?	Go to step [10]	Replace HARNESS ASSY TNR
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 HBN DRV, and if still faulty, replace PWBA HBN MCU	Replace HARNESS ASSY DRV1

FIP-24 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 HBN DRV 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 TNR for continuity Is J703 <=> J51 continuous normally?	Go to step [5]	Replace HARNESS ASSY TNR
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
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 HBN DRV for signal Is P/J51-31PIN <=> P/J60-2PIN +24VDC?	Go to step [9]	Replace PWBA HBN DRV
9	Checking HARNESS ASSY TNR for continuity Is J513 <=> J51 continuous normally?	Go to step [10]	Replace HARNESS ASSY TNR
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 HBN DRV, and if still faulty, replace PWBA HBN MCU	Replace HARNESS ASSY DRV1

FIP-25 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 HBN DRV 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 TNR for continuity Is J704 <=> J51 continuous normally?	Go to step [5]	Replace HARNESS ASSY TNR
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
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 HBN DRV
9	Checking HARNESS ASSY TNR for continuity Is J514 <=> J51 continuous normally?	Go to step [10]	Replace HARNESS ASSY TNR
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 HBN DRV, and if still faulty, replace PWBA HBN MCU	Replace HARNESS ASSY DRV1

FIP-26 PHD Life Over

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 HBN MCU	End of work

FIP-27 BTR Life Over

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 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 HBN MCU	End of work

FIP-28 Fuser Life Over

Step	Check	Remedy	
		Yes	No
1	Checking NVM Does the error occur even if the Fuser counter is cleared?	Replace PWBA HBN MCU	End of work

FIP-29 ADC Sensor Dustiness

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 HBN MCU

FIP-30 Front Cover

Step	Check	Remedy	
		Yes	No
1	Initial setting Check the following for evidence of fault. PWBA HBN DRV 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 HBN MCU	Go to step [3]
3	Checking PWBA HBN DRV for signal Close the FRONT COVER Is P/J41-35PIN <=> P/J41-22PIN 0VDC?	Replace PWBA HBN MCU	Replace PWBA HBN DRV

FIP-31 Yellow Toner Near 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 HBN DRV 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 TNR for continuity Is J701 <=> J51 continuous normally?	Go to step [5]	Replace HARNESS ASSY TNR
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 J12-23 <=> J42-8 continuous normally?	With tool Go to step [7] Without tool Go to step [8]	Replace HARNESS ASSY DRV2
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 HBN DRV for signal Is P/J51-21PIN <=> P/J60-2PIN +24VDC?	Go to step [9]	Replace PWBA HBN DRV
9	Checking HARNESS ASSY TNR for continuity Is J511 <=> J51 continuous normally?	Go to step [10]	Replace HARNESS ASSY TNR
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 HBN DRV, and if still faulty, replace PWBA HBN MCU	Replace HARNESS ASSY DRV1

FIP-32 Magenta Toner Near 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 HBN DRV 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 TNR for continuity Is J702 <=> J51 continuous normally?	Go to step [5]	Replace HARNESS ASSY TNR
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 J12-22 <=> J42-9 continuous normally?	With tool Go to step [7] Without tool Go to step [8]	Replace HARNESS ASSY DRV2
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 HBN DRV for signal Is P/J51-26PIN <=> P/J60-2PIN +24VDC?	Go to step [9]	Replace PWBA HBN DRV
9	Checking HARNESS ASSY TNR for continuity Is J512 <=> J51 continuous normally?	Go to step [10]	Replace HARNESS ASSY TNR
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 HBN DRV, and if still faulty, replace PWBA HBN MCU	Replace HARNESS ASSY DRV1

FIP-33 Cyan Toner Near 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 HBN DRV 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 TNR for continuity Is J703 <=> J51 continuous normally?	Go to step [5]	Replace HARNESS ASSY TNR
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
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 HBN DRV for signal Is P/J51-31PIN <=> P/J60-2PIN +24VDC?	Go to step [9]	Replace PWBA HBN DRV
9	Checking HARNESS ASSY TNR for continuity Is J513 <=> J51 continuous normally?	Go to step [10]	Replace HARNESS ASSY TNR
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 HBN DRV, and if still faulty, replace PWBA HBN MCU	Replace HARNESS ASSY DRV1

FIP-34 Black Toner Near 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 HBN DRV 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 TNR for continuity Is J704 <=> J51 continuous normally?	Go to step [5]	Replace HARNESS ASSY TNR
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
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 HBN DRV
9	Checking HARNESS ASSY TNR for continuity Is J514 <=> J51 continuous normally?	Go to step [10]	Replace HARNESS ASSY TNR
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 HBN DRV, and if still faulty, replace PWBA HBN MCU	Replace HARNESS ASSY DRV1

FIP-35 PHD Life Warning

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 <=> 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 HBN MCU	End of work

FIP-36 BTR Life Warning

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 HBN MCU	End of work

FIP-37 Fuser Life Warning

Step	Check	Remedy	
		Yes	No
1	Checking NVM Does the error occur even if the Fuser counter is cleared?	Replace PWBA HBN MCU	End of work

FIP-38 ADC Sensor Dustiness

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 HBN MCU

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 HBN MCU	Go to step [4]
4	Checking PWBA HBN DRV for signal Is P/J47-10 <=> P/J47-9 +3.3VDC?	Go to step [6]	Go to step [5]
5	Checking PWBA HBN DRV for signal Is P/J42-20 <=> P/J42-15 +3.3VDC?	Replace PWBA HBN DRV	Replace PWBA HBN MCU
6	Checking PWBA HBN DRV for signal Is P/J47-8 <=> P/J47-9 +3.3VDC?	Replace SENSOR LOW PAPER	Replace PWBA HBN DRV

FIP-40 Paper Empty

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 HBN MCU	Go to step [4]
4	Checking PWBA HBN DRV for signal Is P/J47-7 <=> P/J47-6 +3.3VDC?	Go to step [6]	Go to step [5]
5	Checking PWBA HBN DRV for signal Is P/J42-19 <=> P/J42-15 +3.3VDC?	Replace PWBA HBN DRV	Replace PWBA HBN MCU
6	Checking PWBA HBN DRV for signal Is P/J47-5 <=> P/J47-6 +3.3VDC?	Replace SENSOR NO PAPER	Replace PWBA HBN DRV
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 HBN MCU	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 HBN MCU	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

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 HBN MCU	Go to step [3]
3	Checking PWBA HBN DRV 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 HBN DRV 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 HBN MCU	Replace PWBA HBN DRV

FIP-42 Full Stack

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 HBN MCU	Go to step [3]
3	Checking HARNESS ASSY FRONT2 for signal Is P/J139-6PIN <=> P/J139-5PIN +3.3VDC?	Replace PWBA HBN MCU	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 HBN MCU

FIP-43 Yellow Toner Empty 2

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 HBN DRV 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 TNR for continuity Is J701 <=> J51 continuous normally?	Go to step [5]	Replace HARNESS ASSY TNR
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 J12-23 <=> J42-8 continuous normally?	With tool Go to step [7] Without tool Go to step [8]	Replace HARNESS ASSY DRV2
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 HBN DRV for signal Is P/J51-21 <=> P/J60-2 +24VDC?	Go to step [9]	Replace PWBA HBN DRV
9	Checking HARNESS ASSY TNR for continuity Is J511 <=> J51 continuous normally?	Go to step [10]	Replace HARNESS ASSY TNR
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 HBN DRV, and if still faulty, replace PWBA HBN MCU	Replace HARNESS ASSY DRV1

FIP-44 Magenta Toner Empty 2

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 HBN DRV for signal Is P/J51-4 <=> P/J51-5 less than +0.2VDC?	Go to step [6]	Go to step [4]
4	HARNESS ASSY TNR for continuity Is J702 <=> J51 continuous normally?	Go to step [5]	Replace HARNESS ASSY TNR
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 J12-22 <=> J42-9 continuous normally?	With tool Go to step [7] Without tool Go to step [8]	Replace HARNESS ASSY DRV2
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 HBN DRV for signal Is P/J51-26PIN <=> P/J60-2PIN +24VDC?	Go to step [9]	Replace PWBA HBN DRV
9	Checking HARNESS ASSY TNR for continuity Is J512 <=> J51 continuous normally?	Go to step [10]	Replace HARNESS ASSY TNR
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 HBN DRV, and if still faulty, replace PWBA HBN MCU	Replace HARNESS ASSY DRV1

FIP-45 Cyan Toner Empty 2

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 HBN DRV 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 TNR for continuity Is J703 <=> J51 continuous normally?	Go to step [5]	Replace HARNESS ASSY TNR
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
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 HBN DRV for signal Is P/J51-31 <=> P/J60-2 +24VDC?	Go to step [9]	Replace PWBA HBN DRV
9	Checking HARNESS ASSY TNR for continuity Is J513 <=> J51 continuous normally?	Go to step [10]	Replace HARNESS ASSY TNR
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 HBN DRV, and if still faulty, replace PWBA HBN MCU	Replace HARNESS ASSY DRV1

FIP-46 Black Toner Empty 2

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 HBN DRV 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 TNR for continuity Is J704 <=> J51 continuous normally?	Go to step [5]	Replace HARNESS ASSY TNR
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
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/J51-36 <=> P/J60-2 +24VDC?	Go to step [9]	Replace PWBA HBN DRV
9	Checking HARNESS ASSY TNR for continuity Is J514 <=> J51 continuous normally?	Go to step [10]	Replace HARNESS ASSY TNR
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 HBN DRV, and if still faulty, replace PWBA HBN MCU	Replace HARNESS ASSY DRV1

FIP-47 PHD Life Over 2

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 J170 <=> 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 HBN MCU	End of work

FIP-48 BTR Life Over 2

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 HBN MCU	End of work

FIP-49 Fuser Life Over 2

Step	Check	Remedy	
		Yes	No
1	Checking NVM Does the error occur even if the Fuser counter is cleared?	Replace PWBA HBN MCU	End of work

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

Step	Check	Remedy	
		Yes	No
1	Check the following for failure: Installation of Toner Cartridge Installation of CRUM Reader PWB	Reinstall the appropriate part	Go to Step [2]
2	Check connection of CRUM Reader PWB. Is the CRUM Reader PWB 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)

Step	Check	Remedy	
		Yes	No
1	Check the following for failure: Installation of Fuser Assy. Installation of EEPROM PWB	Reinstall the appropriate part	Go to Step [2]
2	Check connection of EEPROM PWB. Is the EEPROM PWB Connector properly connected to the Harness Connector?	Go to Step [3]	Replace EEPROM PWB
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)

Step	Check	Remedy	
		Yes	No
1	Check the following for failure: Installation of Toner Cartridge. Color of Toner Cartridge. Installation of CRUM Reader PWB	Reinstall the appropriate part	Go to Step [2]
2	Check connection of CRUM Reader PWB. Is the CRUM Reader PWB 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

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 "Unfused Image or Image Easily Rubs Off of Paper "

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
HTC	23 mm
IDT 1	132 mm
IDT 2	132 mm
Heat Roll	82 mm

P1 "Light (Undertoned) Prints"

Condition / initial check
ΔThe 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 HBN MCU, 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 HBN MCU Is the image quality improved if PWBA HBN MCU is replaced?	Replace the PWBA HBN MCU
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
ΔThe 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 HBN MCU, 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 HBN MCU Is the image quality improved if PWBA HBN MCU is replaced?	Replace the PWBA HBN MCU

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 HBN MCU		
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 HBN MCU
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		
ΔThere 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 HBN MCU, 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 HBN MCU, 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 HBN MCU, 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 Δ 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 HBN MCU, 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 HBN MCU Is the image quality improved if PWBA HBN MCU is replaced?	Replace the PWBA HBN MCU

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

3.6 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 STD	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 STD AC power supply failure	Repair	Go to step [2]
2	Checking LVPS STD Disconnect the connectors J163, J165 and J164 from the LVPS STD, and turn the AC SW on. Is P163-1PIN <=> P163-2PIN +24VDC?	Go to step [3]	Replace LVPS STD
3	Checking LVPS STD Is P165-1PIN <=> P165-2PIN +5VDC?	Go to step [4]	Replace LVPS STD
4	Checking LVPS STD Is P165-3PIN <=> P165-4PIN +3.3VDC?	Go to step [5]	Replace LVPS STD
5	Checking HARNESS ASSY LV RPG Turn the AC SW off, and connect J164 to the LVPS STD, 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 LVNC Turn the AC SW off, and connect J165 to the LVPS STD, then turn the AC SW on. Is P/J165-1PIN <=> P/J165-2PIN +5VDC?	Go to step [7]	Check HARNESS ASSY LVNC for frame short
7	Checking HARNESS ASSY 24V Turn the AC SW off, and connect J163 to the LVPS STD, 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 irrespective of the major object of your visit 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 BRT ASSY, PHD ASSY, FUSER ASSY and paper delivery rolls and clean stain with a brush or dry cloth or the like.

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

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. 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 no trouble.

Chapter 2 Operation of Diagnostic CONTENTS

1. Diagnosis for Standalone Printer

1.1 General

The test print can be taken place on the standalone printer for 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 HBN MCU.

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

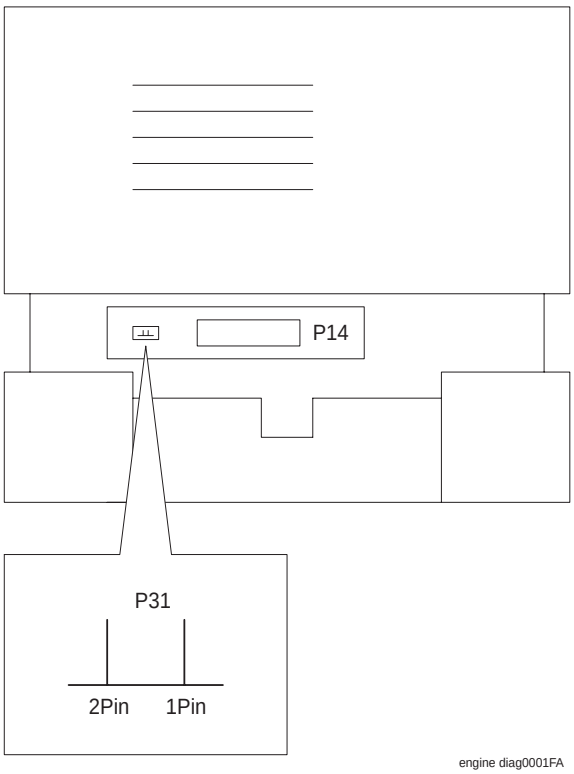
The paper is fed from the tray 1, and if no paper is set in the tray 1, printing is not carried out.

NOTE

The test print in a standalone printer has disregarded the cleaning cycle. Therefore, a blank paper will be outputted if it goes into a cleaning cycle while the pin shorts or shorts the pin in a cleaning cycle.

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

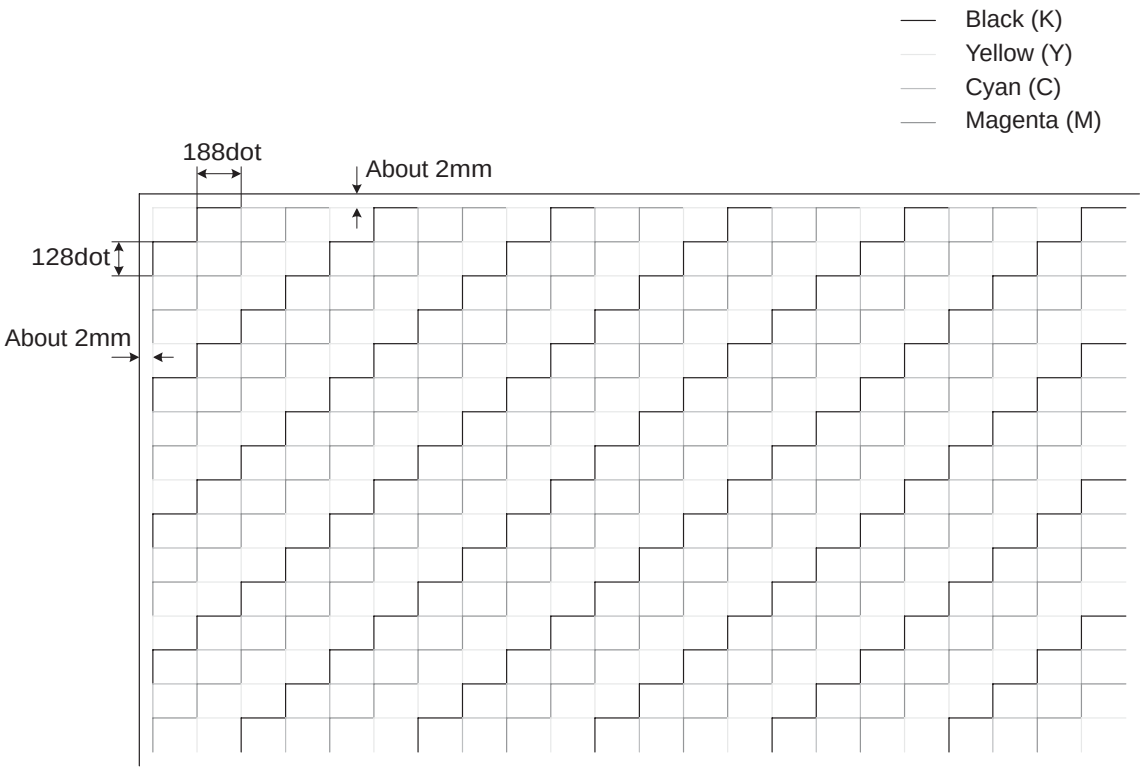
Reference: For the READY mode, see 6.2 Operation Modes in Section 6 Operational Principle.



engine diag0001FA

1.3 Test Print Pattern

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



engine diag0002FB

2. Diagnosis by Diagnostic Commander

2.1 General

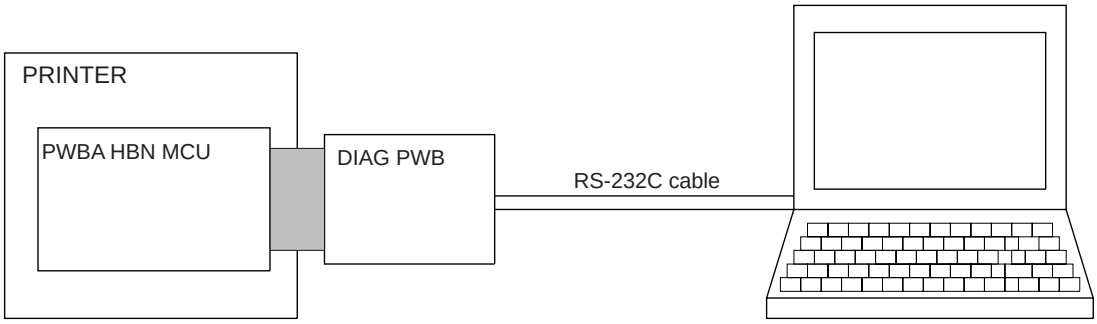
NOTE

Fundamentally, the contents of Diagnostic Commander are supported by the printer controller, and this section describes how to use the Diagnostic Commander for your reference.

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 HBN MCU (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 (how to supply is to be determined)***



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 HBN MCU 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 HBN MCU 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 standalone printer.

2.2 Preparation

2.2.1 Personal computer

Prepare the personal computer that has the following specifications:

Items	Description
CPU	Pentium 90 MHz (166 MHz or higher frequencies preferable)
Memory	48 MB (64 MB preferable)
Display	VGA (640 × 480)
OS	Windows 95 / Windows 98 / Windows Me
Communication port	RS-232C interface furnished
Operation check PC	CF-B5ER (Matsushita: Let's Note)

2.2.2 Installing Diagnostic Commander

[Steps]

1) Start the Windows.
2) Set the Diagnostic Commander installation disk in the drive.
3) Select [Run] from the [Start] menu.
4) Enter "X:Setup.exe" (X stands for the drive in which the installation disk is set), and click the [OK] button.
5) Hence, complete the installation following the instructions given on the personal computer.

2.2.3 Uninstalling Diagnostic Commander

[Steps]

1) Start the Windows, and select [Settings] from the [Start] menu, then select [Control Panel] from the [Settings].
2) Double-click the [Add/Remove Programs] icon in the [Control Panel] window.
3) Select Hibana Service Commander in the [Add/Remove Programs Properties] window, and click the [Add/Remove (R)] button.
4) Hence, complete the uninstallation following the instructions given on the personal computer.

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 HBN MCU.
3) Connect the DIAG PWB to the personal computer with the RS-232C cable.

NOTE

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

2.3 Operation of Diagnostic Commander

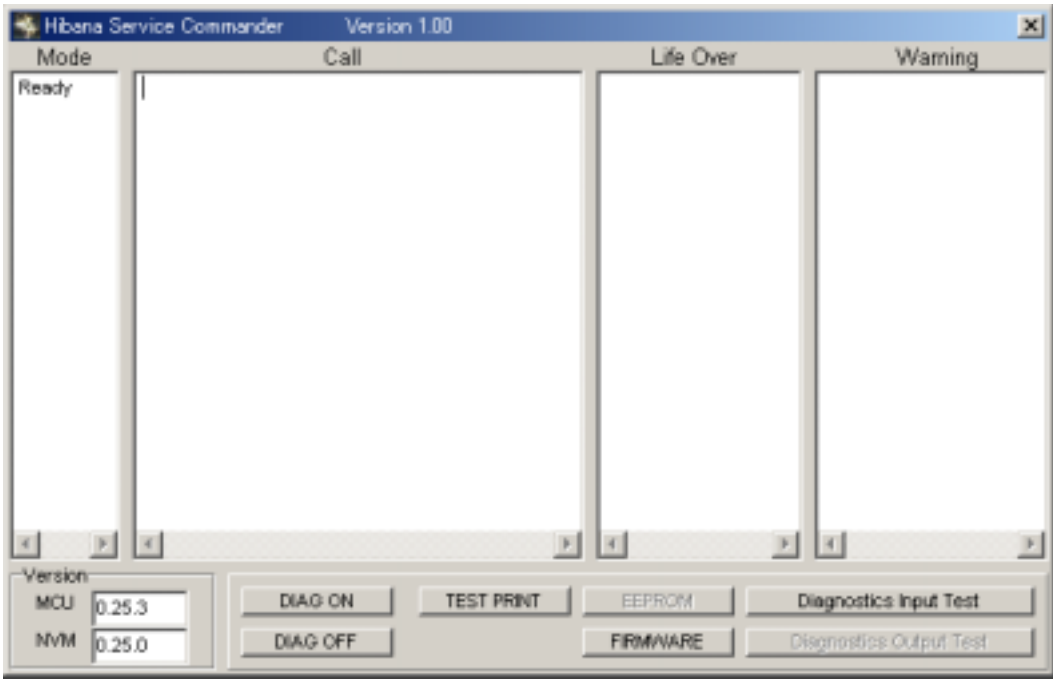
2.3.1 Starting Diagnostic Commander

[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

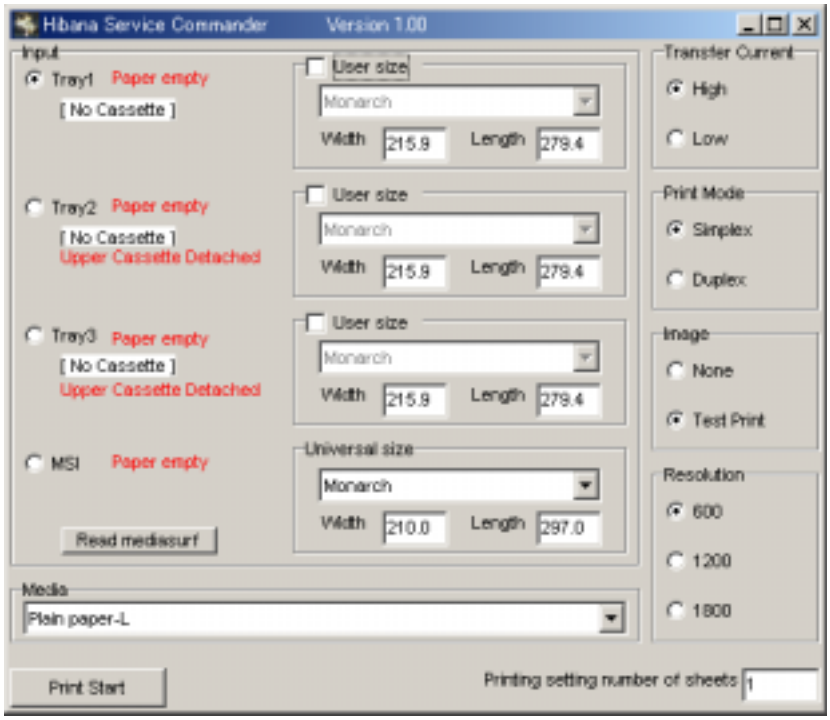
The Diagnostic Commander can record the data (commands and statuses) transmitted/received between printer controller and PWBA HBN MCU in the files. The following files are automatically created in the folder where the Diagnostic Commander has been installed.

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

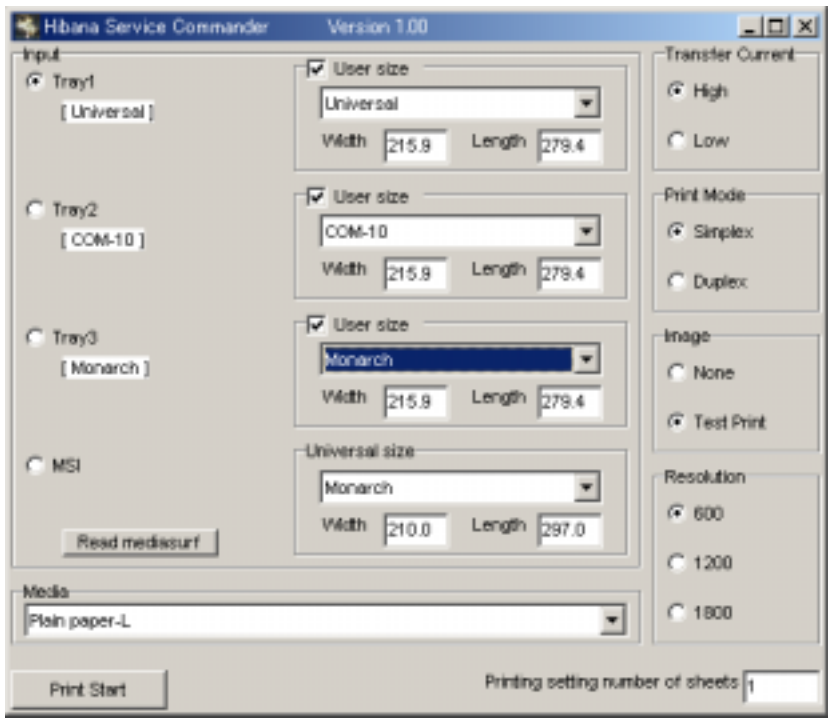
The data of one day are written to one file even if the Diagnostic Commander is started/exited repeatedly. Up to four files (namely, files for four days) are created, and the data of fifth day are overwritten in the oldest file.

2.4 Test Print

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



Cassette un-equipping



Cassette wearing

Set respective items displayed and click the [Print Start] button, and the printing will start under the set conditions.

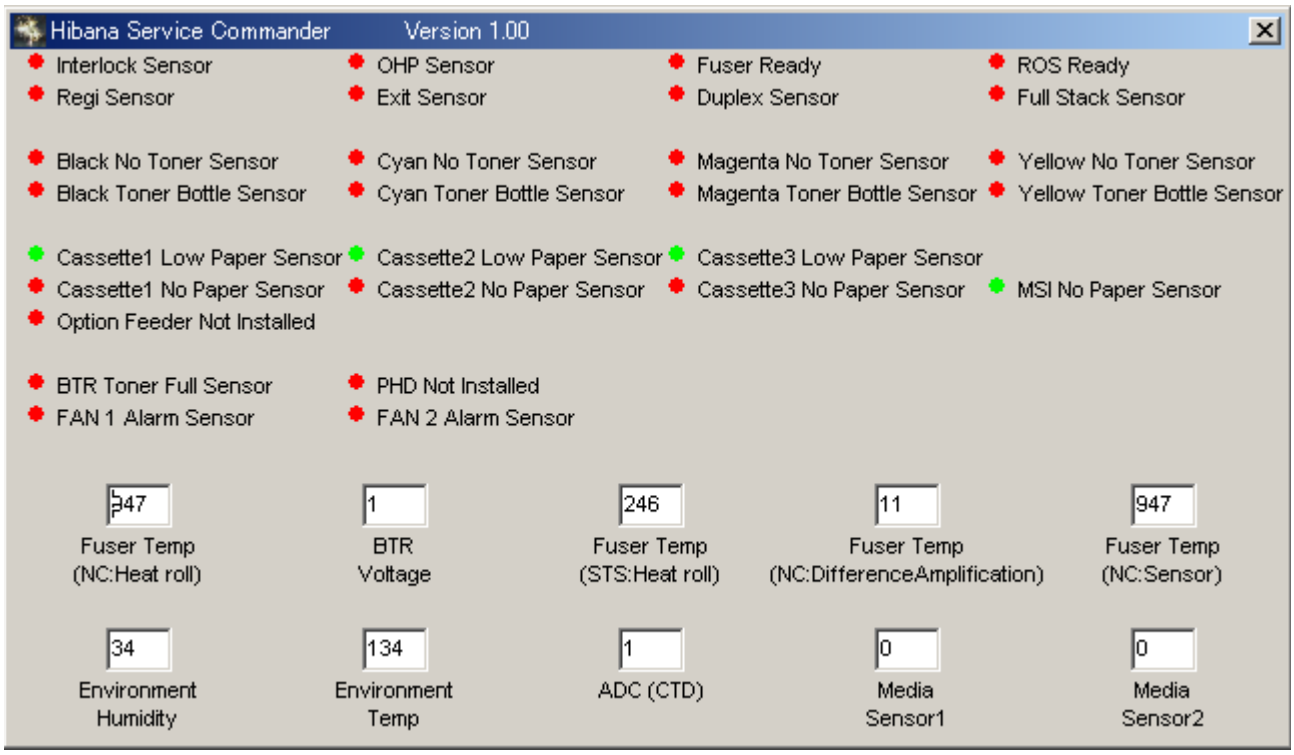
Parameter setting items are as listed below.

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 emnty / Paper near empty / Upper Cassette Detavhed 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	1800 dpi / 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 / ~~Thicker paper-L~~ / Heavier paper-L / Heavier paper-H / Envelope / Postcard / Transparency(=OHP)/ Label-H / Plain paper-L High Gloss / ~~Thicker 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 / ~~Thicker paper-H~~ / Plain paper-H High Gloss / ~~Thicker 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
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 HBN DRV is installed	Front cover open
OHP Sensor	OHP SENSOR ASSY	Paper present
Fuser Ready	–	Under printing
ROS Ready	–	Under printing
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

Name	Parts Name/Function	ON Condition
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 TNR FULL	Full toner
PHD Not Installed	Detect whether PHD ASSY is installed or not installed	PHD ASSY 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 temperafure
Environment Temp	SENSOR HUM TEMP	Inside temperature of printer
Environment Humidity	SENSOR HUM TEMP	Inside humidity of printer
BTR Voltage	BTR UNIT ASSY	Voltage which is flowing now BTR
Media Sensor1	MEDIA SENSOR	Media Sensor output value1 (Random reflection)
Media Sensor2	MEDIA SENSOR	Media Sensor output value2 (Correct reflection)

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

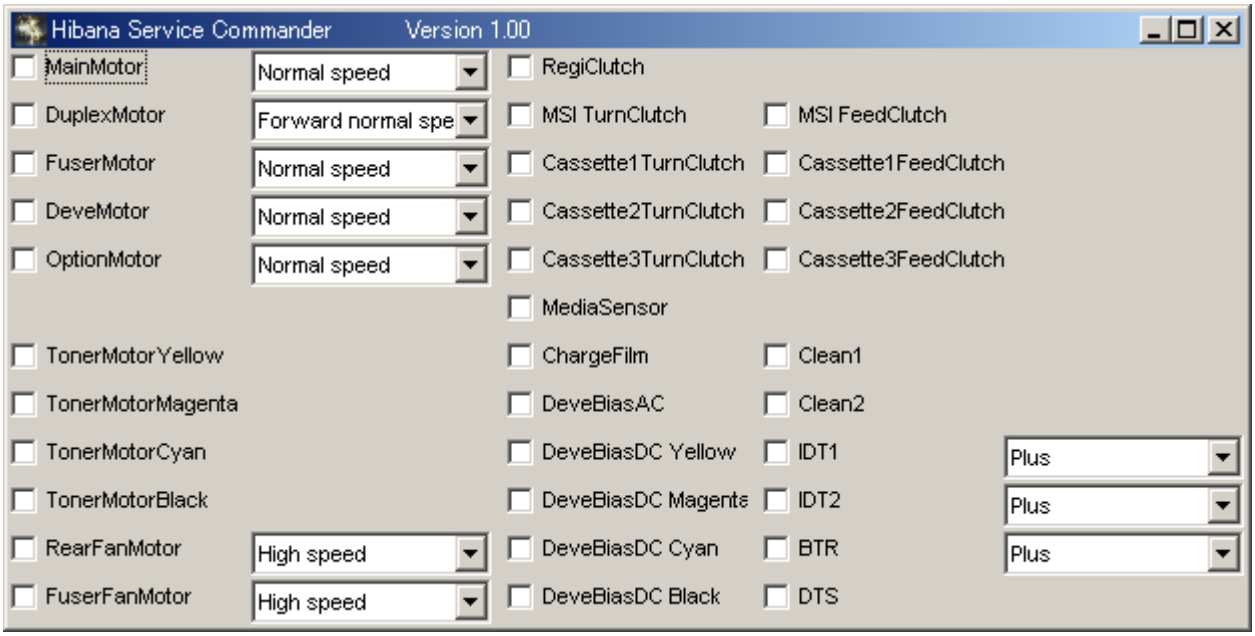
Before executing the output test, be sure to read the "Caution" and "Prohibition" described in the Output test Readme.txt file in the folder where the Diagnostic Commander has been installed

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

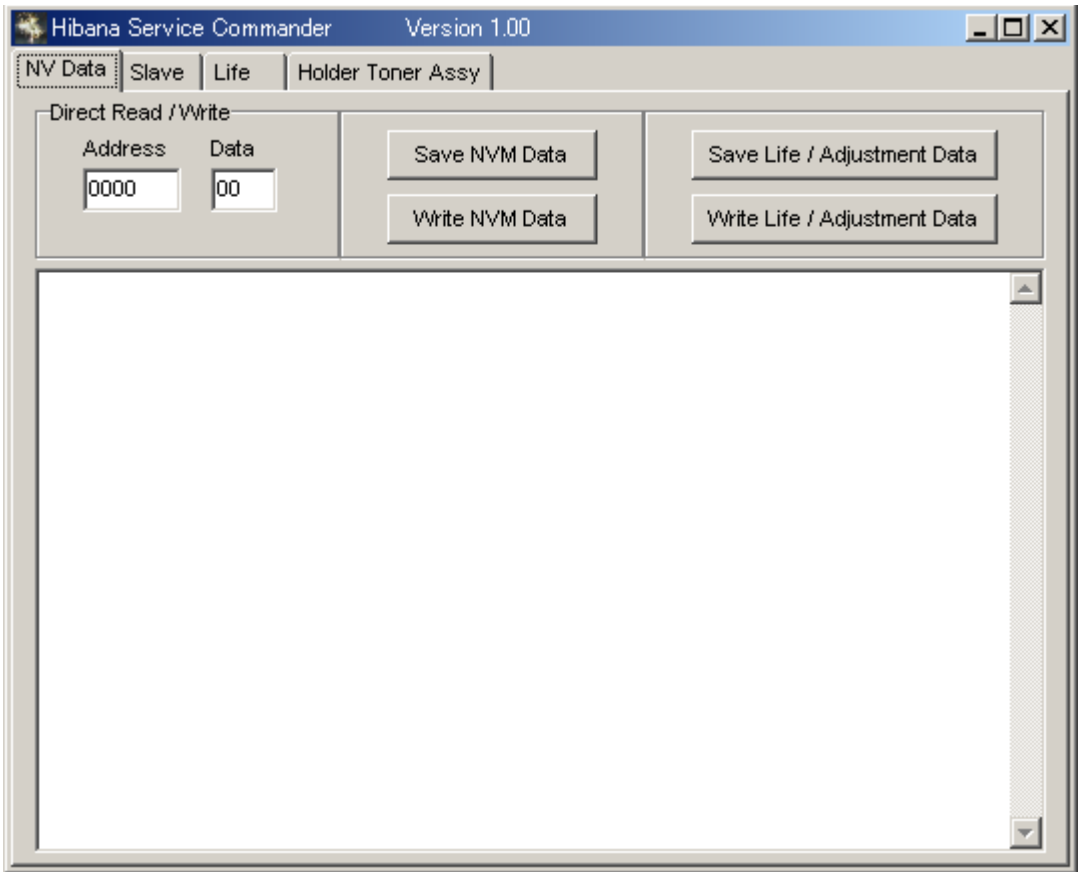
The output tests that can be checked are as listed below.

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	
		Slow Speed	
Duplex Motor	MOT ASSY DUP	Forward Normal Speed	
		Forward Half Speed	
		Forward Double Speed	
		Reverse Normal Speed	
		Reverse Half Speed	
		Reverse Double Speed	
Fuser Motor	FUSER DRIVE ASSY	Normal Speed	
		Half Speed	
		Slow Speed	
Deve Motor	DEVE DRIVE ASSY	Normal Speed	
		Half Speed	
		Slow Speed	
Option Motor	DRIVE ASSY FEEDER	Normal Speed	
		Half Speed	
Toner Motor Yellow	HOLDER TCRU ASSY (1)	–	
Toner Motor Magenta	HOLDER TCRU ASSY (2)	–	
Toner Motor Cyan	HOLDER TCRU ASSY (3)	–	
Toner Motor Black	HOLDER TCRU ASSY (4)	–	
Rear Fan Motor	FAN REAR	High Speed	
		Low Speed	
Fuser Fan Motor	FAN FUSER	High Speed	
		Low Speed	
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)	–	

Name	Parts Name/Function	Selectable items	Checking method
Charge Film	Charge DC voltage to HTC (PHD ASSY)	–	<Warning!> <Caution!> Don't check for a high-voltage output.
Deve Bias AC	Developing bias AC voltage (PHD ASSY)	–	
Deve Bias DC Yellow	Developing bias AC voltage (Y) (PHD ASSY)	–	
Deve Bias DC Magenta	Developing bias DC voltage (M) (PHD ASSY)	–	
Deve Bias DC Cyan	Developing bias DC voltage (C) (PHD ASSY)	–	
Deve Bias DC Black	Developing bias DC voltage (K) (PHD ASSY)	–	
Clean1	DC voltage to IDT1 Cleaner (PHD ASSY)	–	
Clean2	DC voltage to IDT2 Cleaner (PHD ASSY)	–	<Warning!> <Caution!> Don't check for a high-voltage output.
IDT1	DC voltage to IDT1 (PHD ASSY)	Plus	
		Minus	
IDT2	DC voltage to IDT2 (PHD ASSY)	Plus	
		Minus	
BTR	DC voltage to BTR (BTR UNIT ASSY)	Plus	
		Minus	
DTS	DC voltage to Detack Saw (BTR UNIT ASSY)	–	
Media Sensor LED	MEDIA SENSOR	–	The output of Media Sensor 1,2 is checked.

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 **For the addresses and data that can be designated, see "2.8 NVM List".**

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 termination Read: XXXX (Address) - XX (Data)
   Read inhibited area Read: 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 termination Write: XXXX (Address) - XX
   Read only Write: 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.

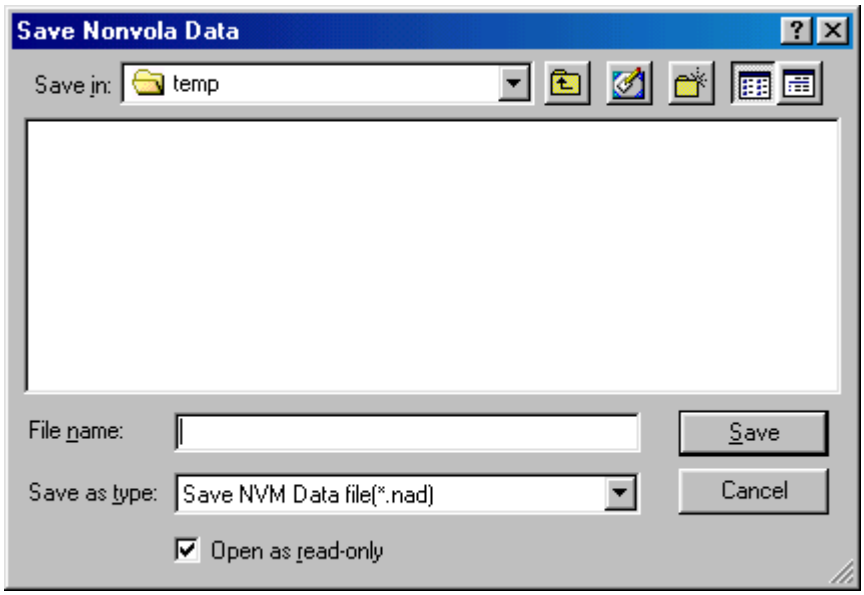
NOTE **Refer to the NVM Readme.txt file in the folder which installed the Diagnostic Commander for the relation between a text file and an extension.**

2.7.3 Save NVM Data

NVM data (stored in NHB MCU WITH CPU and PHD ASSY) 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

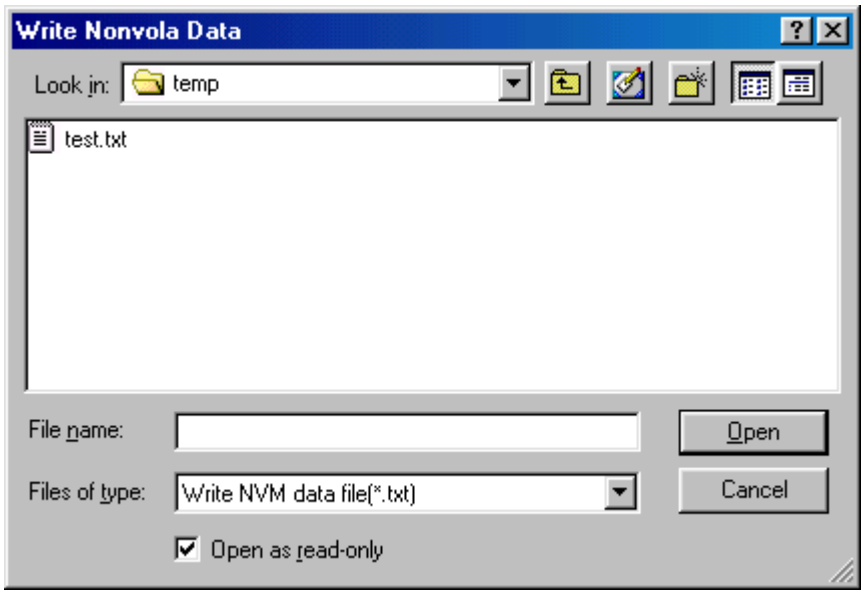
The data described in already prepared text file are written to the NVM. In the text file, a pair of address and data is described, same as in the file created in "2.7.3 Save NVM Data", and the data are written only to the addresses described in the file. (.TXT extension)

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.

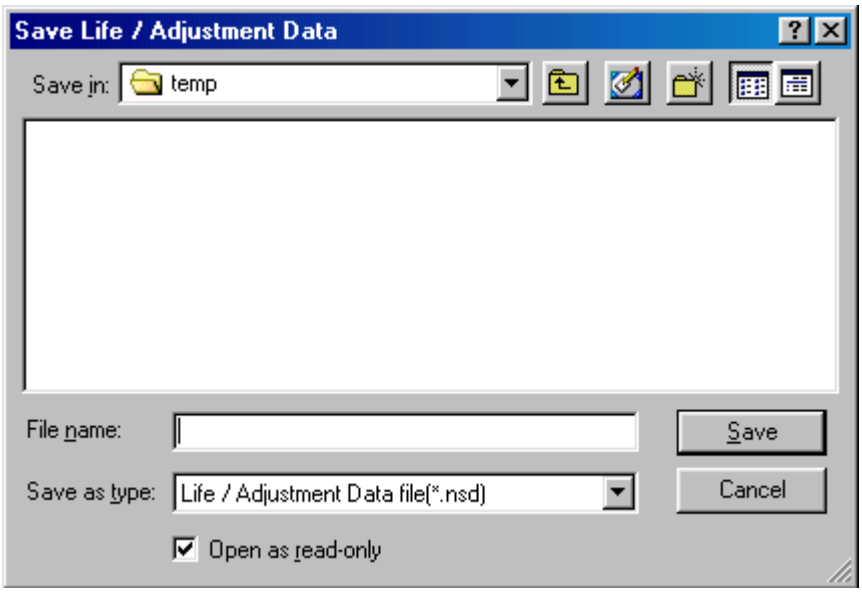
Reference: The contents of text file are written to the NVM sequentially, but if there is an address where data can't be written, the operation is terminated unsuccessfully and the subsequent file data are not written. You can confirm where unsuccessful termination occurred by referring to the data transmission/receiving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

2.7.5 Save Life / Adjustment Data

If the PWBA HBN MCU 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.**

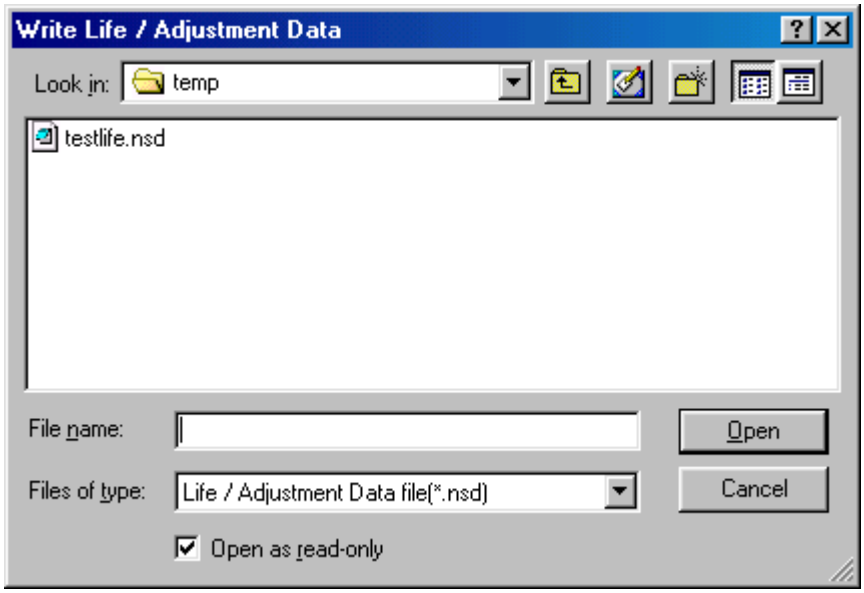
3) Click the [Save] button.

2.7.6 Write Life / Adjustment Data

After the PWBA HBN MCU 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

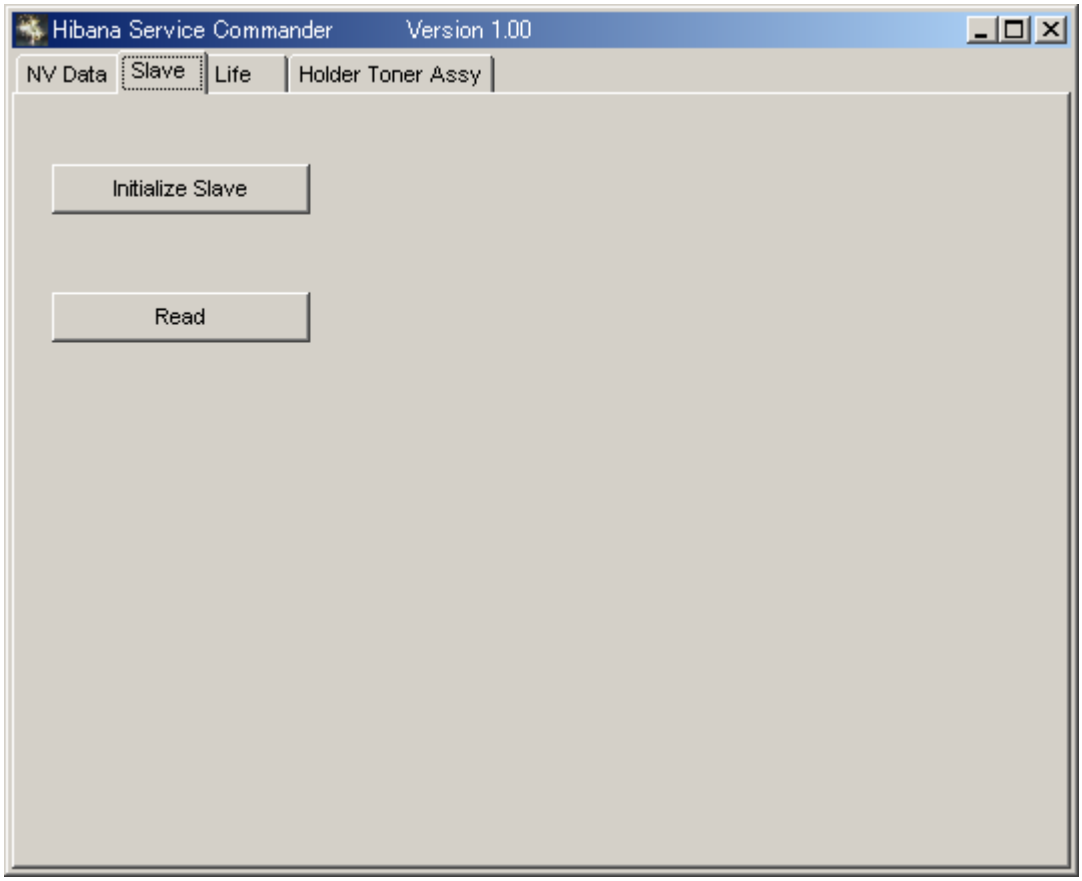
The printer has two NVM's for storing the following machine specific information. One NVM is called the Master, and another one is called the Slave.

- 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]

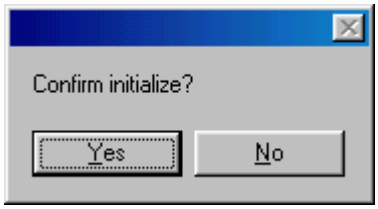
1) Press the [Read] button on the screen where the [Slave] tab is selected.
2) The contents of Slave are displayed.

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.

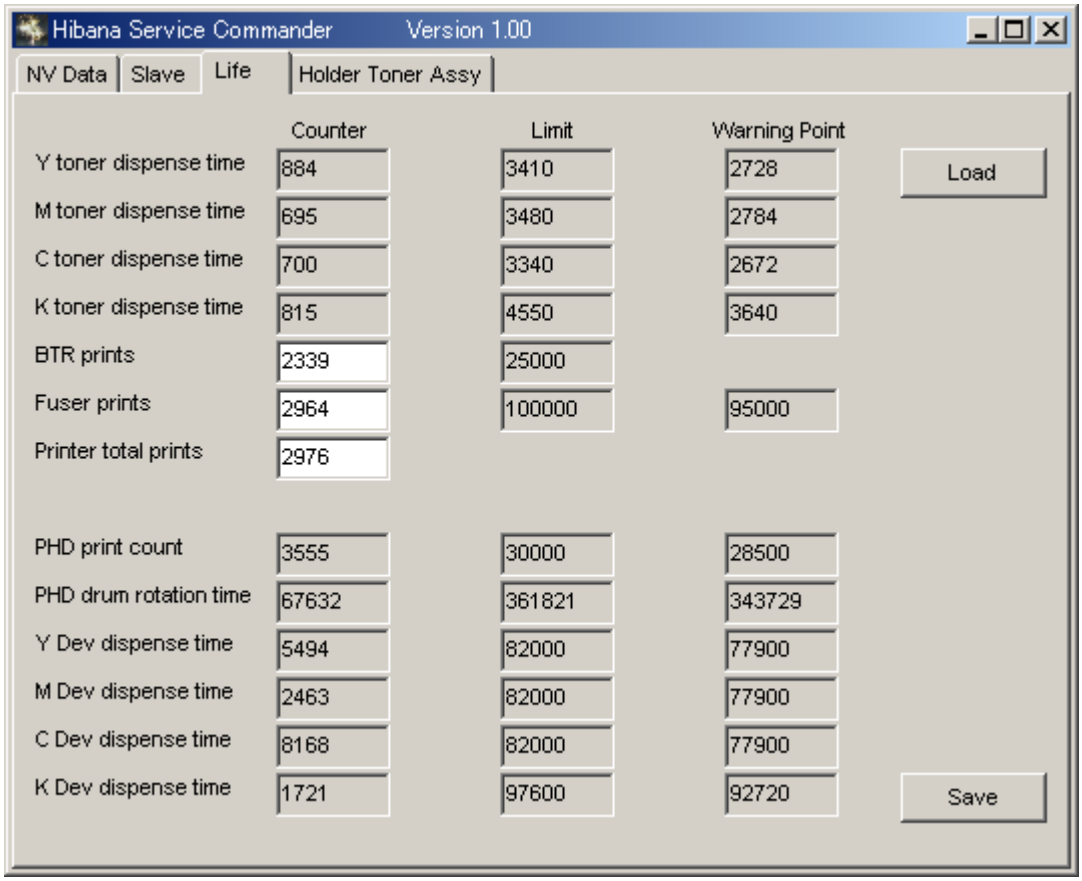
2.7.10 Life

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

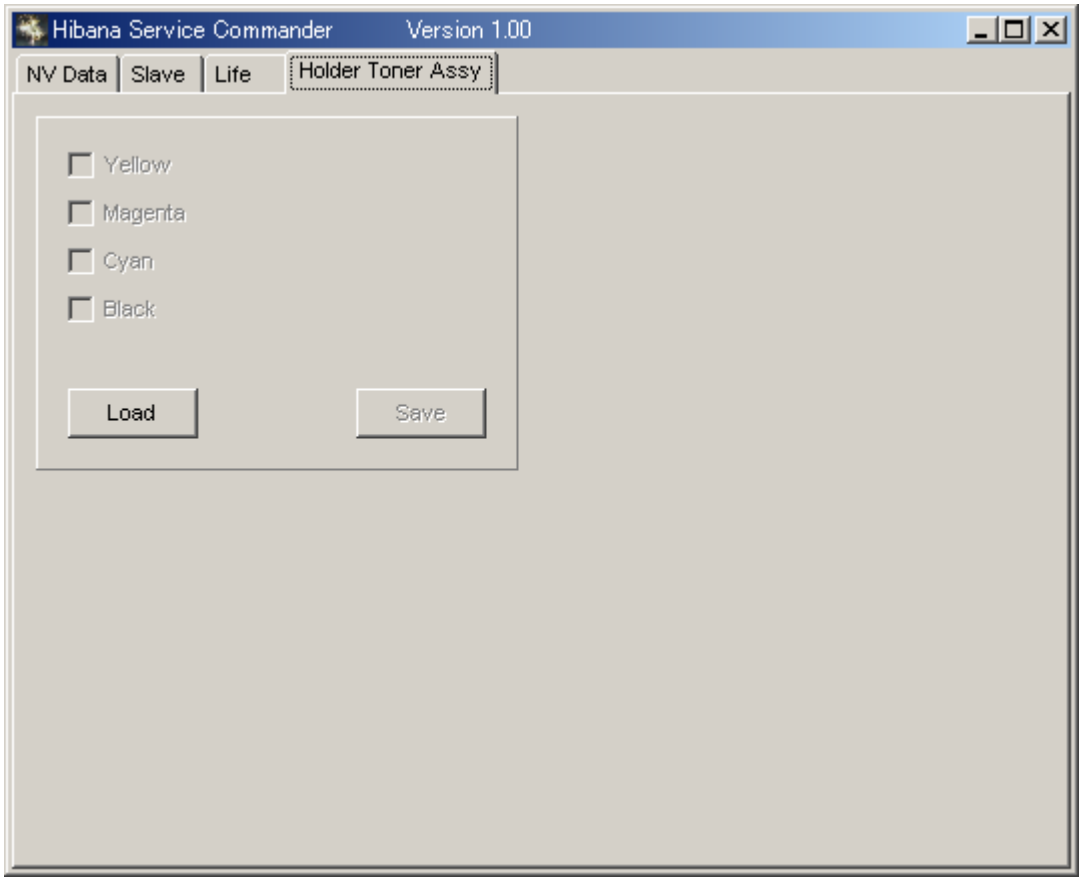
Toner Motor is turned at the time of a power supply injection, and NVM of the appointed area is rewritten to a setup which carries out toner filling operation to a dispense pipe.
It carries out, when Holder Toner Assy Y/M/C/K (part name : HOLDER ASSY Y/M/C/K) is exchanged.

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.
(It clicks and "√ " is displayed on a check box.)
4) Click the [Save] button.

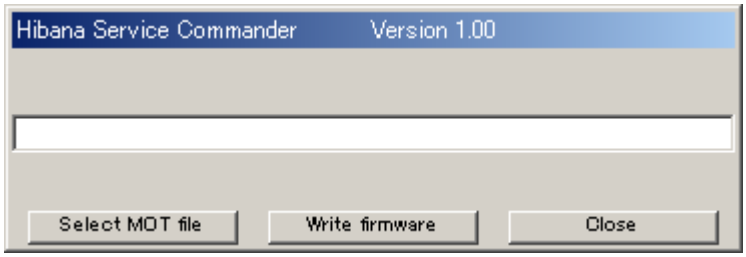
2.8 firmware

The firmware of IOT is upgraded.

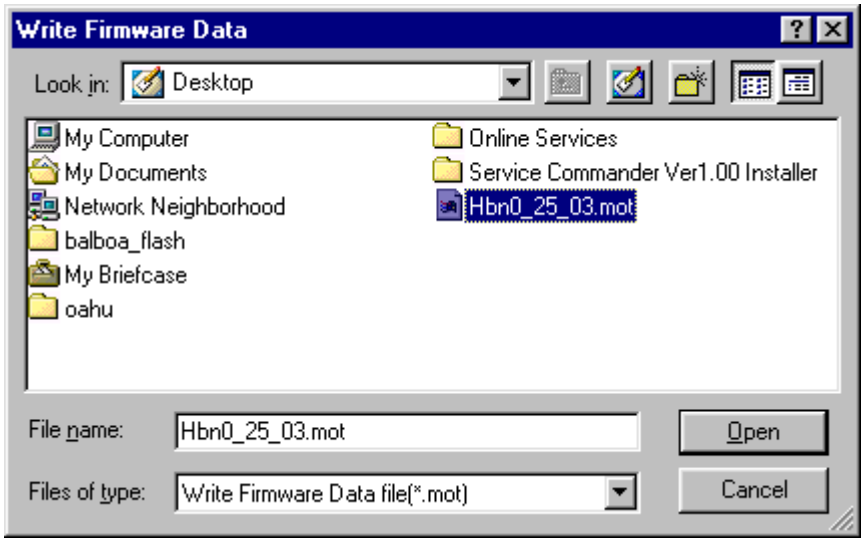
The contents of the firmware file already prepared are written in ROM on PWBA HBN MCU.

[Steps]

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

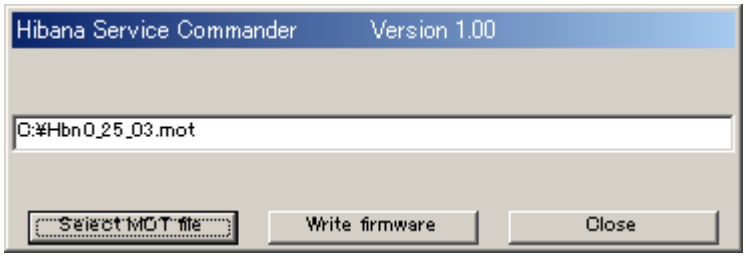


2) Click the [Select MOT file] button, and the following screen will appear.

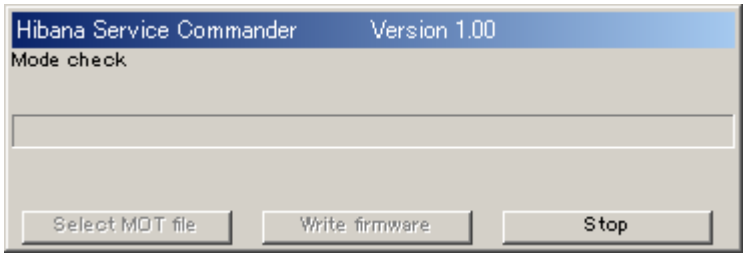


3) A firmware file to write in is chosen.

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

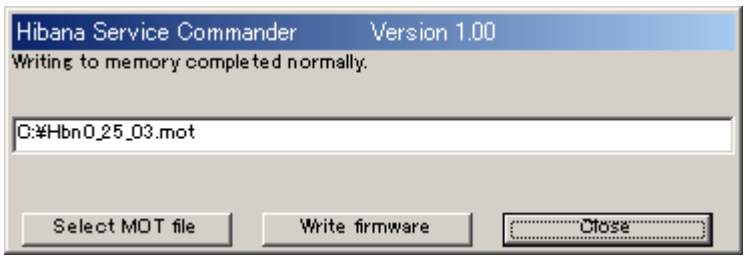


5) Click the [Wite firmware] button, and the following screen will appear, and writing will be started.



6) The message on a screen changes as follows.
   Mode check.
   Erasing MAIN memory area.
   Writing to memory.
   Rebooting printer. Plese 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.



2.9 NVM List

Never write the data to the NVM numbers not listed below, as they are for the system areas of the printer.

Since the item which the hatching attaches to the address is only for reading, don't write in by any means.

Address	Setting value			Description	
	Hex	Dec	Word/Long		
1200	00	0		Lead registration Between Paper-K(0.17mm)	
1201	00	0		Lead registration600dpi Between M-K(line)	
1202	00	0		Lead registration600dpi Between Y-K(line)	
1203	00	0		Lead registration600dpi Between C-K(line)	
1204	00	0		Lead registration1200dpi Between M-K(line)	
1205	00	0		Lead registration1200dpi Between Y-K(line)	
1206	00	0		Lead registration1200dpi Between C-K(line)	
1207	00	0		Lead registration1800dpi Between M-K(line)	
1208	00	0		Lead registration1800dpi Between Y-K(line)	
1209	00	0		Lead registration1800dpi Between C-K(line)	
120A	00	0		Side registration Between M-K	
120B	00	0		Side registration Between Y-K	
120C	00	0		Side registration Between C-K	
120D	00	0		Side registration Between Papers-K Duplex (0.17mm)	
120E	00	0		Side registration Between Paper-K MSI (0.17mm)	
120F	00	0		Side registration Between Papers-K TRAY1 (0.17mm)	
1210	00	0		Side registration Between Papers-K TRAY2 (0.17mm)	
1211	00	0		Side registration Between Papers-K TRAY3 (0.17mm)	
121A	00	0	0	BTR PV (L)	
121B	00	0		BTR PV (M)	
121C	00	0		BTR PV (H)	
1220	00	0	0	FUSER PV (L)	
1221	00	0		FUSER PV (M)	
1222	00	0		FUSER PV (H)	
1223	00	0	0	M/C PV (L)	
1224	00	0		M/C PV (M)	
1225	00	0		M/C PV (H)	
122E	00	0		The counter for long cleaning(H)	
122F	00	0		The counter for long cleaning(L)	
1230	00	0	0	BTR full detection PV1(H)	
1231	00	0		BTR full detection PV1(L)	
1232	00	0	0	BTR full detection PV2(H)	
1233	00	0		BTR full detection PV2(L)	
1234	00	0	0	BTR full detection DISP(H)	

Address	Setting value			Description	
	Hex	Dec	Word/Long		
1235	00	0		BTR full detection DISP(L)	
1236	80	128	80000	FUSER PV WARNING (L)	
1237	38	56		FUSER PV WARNING (M)	
1238	01	1		FUSER PV WARNING (H)	
1242	A8	168	25000	BTR PV LIMIT (L)	
1243	61	97		BTR PV LIMIT (M)	
1244	00	0		BTR PV LIMIT (H)	
1248	A0	160	100000	FUSER PV LIMIT (L)	
1249	86	134		FUSER PV LIMIT (M)	
124A	01	1		FUSER PV LIMIT (H)	
146D	05	5		Color-balance adjustment	Y
146E	05	5		Color-balance adjustment	M
146F	05	5		Color-balance adjustment	C
1470	05	5		Color-balance adjustment	K
1471	05	5		Density adjustment	YMCK
14ED	05	5		(Low speed) Color-balance adjustment	Y
14EE	05	5		(Low speed) Color-balance adjustment	M
14EF	05	5		(Low speed) Color-balance adjustment	C
14F0	05	5		(Low speed) Color-balance adjustment	K
14F1	05	5		(Low speed) Density adjustment	YMCK
1610	00	0		ROS Failure details1	
1611	00	0		ROS Failure details2	
1612	00	0		ROS Failure details3	
1613	00	0		Fuser Failure details(CPU) 1	
1614	00	0		Fuser Failure details(CPU) 2	
1615	00	0		Fuser Failure details(CPU) 3	
1616	00	0		Firmware Error details1	
1617	00	0		Firmware Error details2	
1618	00	0		Firmware Error details3	
1619	00	0		Fuser Failure details(ASIC) 1	
161A	00	0		Fuser Failure details(ASIC) 2	
161B	00	0		Fuser Failure details(ASIC) 3	
1680	00	0		0000KCMY:Dispense initialization operation	1:Un-ending 0:End
16B8	FF	255	16777215	FUSER LIMIT2 PV(L)	
16B9	FF	255		FUSER LIMIT2 PV(M)	
16BA	FF	255		FUSER LIMIT2 PV(H)	
184F	30	48		Cleaning interval 0 Full speed	
1850	30	48		Cleaning interval 1 Full speed	0 5120
1851	20	32		Cleaning interval 2 Full speed	5120 10240

Address	Setting value			Description		
	Hex	Dec	Word/Long			
1852	20	32		Cleaning interval 3 Full speed	10240	15360
1853	20	32		Cleaning interval 4 Full speed	15360	20480
1854	1A	26		Cleaning interval 5Full speed	20480	25600
1855	1A	26		Cleaning interval 6 Full speed	25600	30720
1856	1A	26		Cleaning interval 7 Full speed	30720	
186C	1C	28		Cleaning interval 0 Harf speed		
186D	1C	28		Cleaning interval 1 Harf speed		
186E	18	24		Cleaning interval 2 Harf speed		
186F	18	24		Cleaning interval 3 Harf speed		
1870	18	24		Cleaning interval 4 Harf speed		
1871	14	20		Cleaning interval 5 Harf speed		
1872	14	20		Cleaning interval 6 Harf speed		
1873	14	20		Cleaning interval 7 Harf speed		
1874	14	20		Cleaning interval 0 Low speed		
1875	14	20		Cleaning interval 1 Low speed		
1876	10	16		Cleaning interval 2 Low speed		
1877	10	16		Cleaning interval 3 Low speed		
1878	10	16		Cleaning interval 4 Low speed		
1879	0C	12		Cleaning interval 5 Low speed		
187A	0C	12		Cleaning interval 6 Low speed		
187B	0C	12		Cleaning interval 7 Low speed		
1C80	00	0		Plain paper-L		
1C81	00	0				
1C82	00	0				
1C83	00	0				
1C84	00	0		Heavier paper-L		
1C85	00	0		Heavier paper-H		
1C86	00	0		Envelope		
1C87	00	0		Postcard		
1C88	00	0		Transparency (=OHP)		
1C89	00	0		Label-H		
1C8A	00	0		Plain paper-L High Gloss		
1C8B	00	0				
1C8C	00	0		Label-L		
1C8D	00	0				
1C8E	00	0		Heavier paper-L Back Face		
1C8F	00	0		Heavier paper-H Back Face		
1C90	00	0		Envelope Back Face		
1C91	00	0		Postcard Back Face		
1C92	00	0		Plain paper-H		
1C93	00	0				

Address	Setting value			Description	
	Hex	Dec	Word/Long		
1C94	00	0		Plain paper-H High Gloss	
1C95	00	0			
1C96	00	0		Plain Paper-L Super High Gloss	
1C97	00	0		Plain Paper-H Super High Gloss	
1C98	00	0		Heavier paper-L Super High Gloss	
1C99	00	0		Heavier paper-H Super High Gloss	
1C9A	00	0		Envelope Super High Gloss	
1C9B	00	0		Postcard Super High Gloss	
1C9C	00	0		Transparency (=OHP) Super High Gloss	
1C9D	00	0		Label-H Super High Gloss	
1C9E	00	0		Label-L Super High Gloss	
1C9F	00	0		Heavier paper-L Super High Gloss Back Face	
1CA0	00	0		Heavier paper-H Super High Gloss Back Face	
1CA1	00	0		Envelope Super High Gloss Back Face	
1CA2	00	0		Postcard Super High Gloss Back Face	
1CC0	00	0		Plain paper-L Super High Gloss	Coated
1CC1	00	0			
1CC2	00	0			
1CC3	00	0			
1CC4	00	0		Heavier paper-L	Coated
1CC5	00	0		Heavier paper-H	Coated
1CC6	00	0		Envelope	Coated
1CC7	00	0		Postcard	Coated
1CC8	00	0		Transparency (=OHP)	Coated
1CC9	00	0		Label-H	Coated
1CCA	00	0		Plain paper-L High Gloss	Coated
1CCB	00	0			
1CCC	00	0		Label-L	Coated
1CCD	00	0			
1CCE	00	0		Heavier paper-L Back Face	Coated
1CCF	00	0		Heavier paper-H Back Face	Coated
1CD0	00	0		Envelope Back Face	Coated
1CD1	00	0		Postcard Back Face	Coated
1CD2	00	0		Plain paper-H	Coated
1CD3	00	0			
1CD4	00	0		Plain paper-H High Gloss	Coated
1CD5	00	0			
1CD6	00	0		Plain Paper-L Super High Gloss	Coated
1CD7	00	0		Plain Paper-H Super High Gloss	Coated
1CD8	00	0		Heavier paper-L Super High Gloss	Coated
1CD9	00	0		Heavier paper-H Super High Gloss	Coated
1CDA	00	0		Envelope Super High Gloss	Coated
1CDB	00	0		Postcard Super High Gloss	Coated

Address	Setting value			Description	
	Hex	Dec	Word/Long		
1CDC	00	0		Transparency (=OHP) Super High Gloss	Coated
1CDD	00	0		Label-H Super High Gloss	Coated
1CDE	00	0		Label-L Super High Gloss	Coated
1CDF	00	0		Heavier paper-L Super High Gloss Back Face	Coated
1CE0	00	0		Heavier paper-H Super High Gloss Back Face	Coated
1CE1	00	0		Envelope Super High Gloss Back Face	Coated
1CE2	00	0		Postcard Super High Gloss Back Face	Coated
2502	00	0		User Compensation Temperature Full Speed Plain-1 (0 deg.C)	Satting range: -6 - 6
2505	00	0		User Compensation Temperature Full Speed Plain-2 (0 deg.C)	Satting range: -6 - 6
2508	00	0		User Compensation Temperature Full Speed Plain-3 (0 deg.C)	Satting range: -6 - 6
250B	00	0		User Compensation Temperature Full Speed Plain-4 (0 deg.C)	Satting range: -6 - 6
2532	00	0		User Compensation Temperature Half Speed Plain-1 (0 deg.C)	Satting range: -6 - 6
2535	00	0		User Compensation Temperature Half Speed Plain-2 (0 deg.C)	Satting range: -6 - 6
2538	00	0		User Compensation Temperature Half Speed Plain-3 (0 deg.C)	Satting range: -6 - 6
253B	00	0		User Compensation Temperature Half Speed Plain-4 (0 deg.C)	Satting range: -6 - 6
254D	00	0		User Compensation Temperature Half Speed Label-1 (0 deg.C)	Satting range: -6 - 6
2550	00	0		User Compensation Temperature Half Speed Label-2 (0 deg.C)	Satting range: -6 - 6
2553	00	0		User Compensation Temperature Half Speed Heavier-1 (0 deg.C)	Satting range: -6 - 6
2556	00	0		User Compensation Temperature Half Speed Heavier-2 (0 deg.C)	Satting range: -6 - 6
2559	00	0		User Compensation Temperature Half Speed Transparency (0 deg.C)	Satting range: -6 - 6
255C	00	0		User Compensation Temperature Half Speed Envelope (0 deg.C)	Satting range: -6 - 6
255F	00	0		User Compensation Temperature Half Speed Postcard (0 deg.C)	Satting range: -6 - 6
2562	00	0		User Compensation Temperature Low Speed Plain-1 (0 deg.C)	Satting range: -6 - 6
2565	00	0		User Compensation Temperature Low Speed Plain-2 (0 deg.C)	Satting range: -6 - 6
2568	00	0		User Compensation Temperature Low Speed Plain-3 (0 deg.C)	Satting range: -6 - 6
256B	00	0		User Compensation Temperature Low Speed Plain-4 (0 deg.C)	Satting range: -6 - 6
257D	00	0		User Compensation Temperature Low Speed Label-1 (0 deg.C)	Satting range: -6 - 6

Address	Setting value			Description	
	Hex	Dec	Word/Long		
2580	00	0		User Compensation Temperature Low Speed Label-2 (0 deg.C)	Satting range: -6 - 6
2583	00	0		User Compensation Temperature Low Speed Heavier-1 (0 deg.C)	Satting range: -6 - 6
2586	00	0		User Compensation Temperature Low Speed Heavier-2 (0 deg.C)	Satting range: -6 - 6
2589	00	0		User Compensation Temperature Low Speed Transparency (0 deg.C)	Satting range: -6 - 6
258C	00	0		User Compensation Temperature Low Speed Envelope (0 deg.C)	Satting range: -6 - 6
258F	00	0		User Compensation Temperature Low Speed Postcard (0 deg.C)	Satting range: -6 - 6

Chapter 3 Removal and Replacement Procedures (RRPs) CONTENTS

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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.

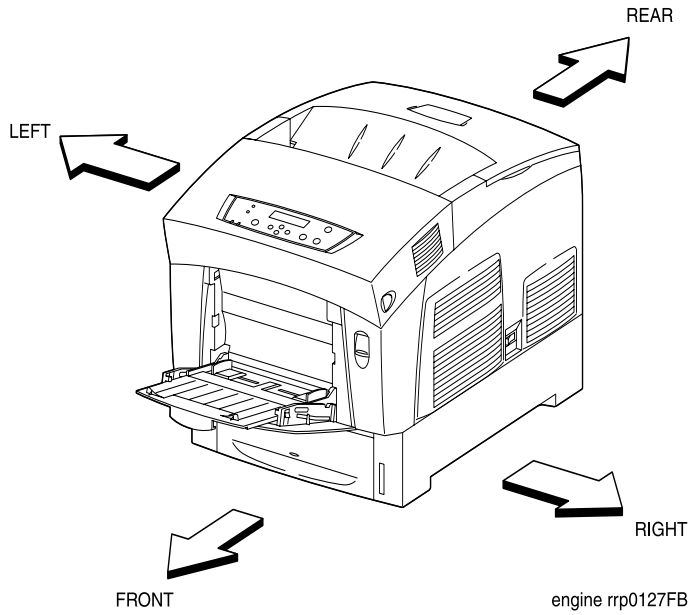

Figure: Definition of Printer Orientation

- ✧ “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.

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RRP1. COVERS

RRP1.1 CONSOLE PANEL HANABI (PL1.1.1)

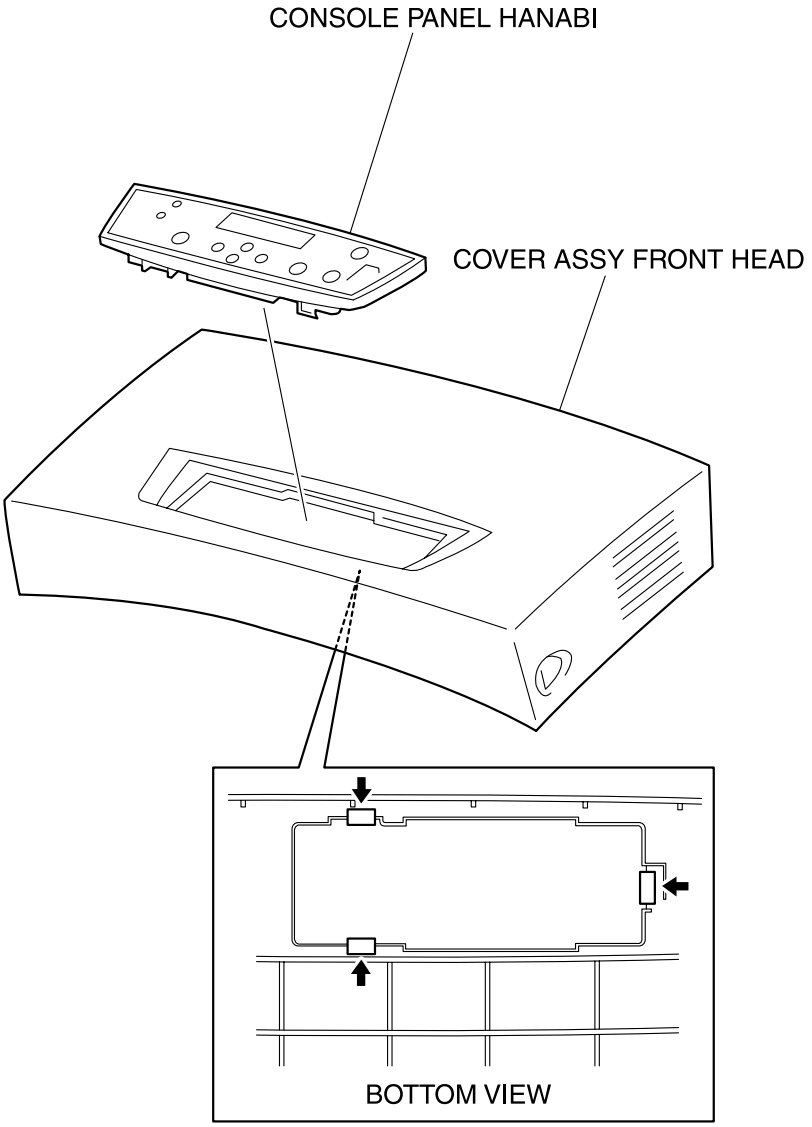

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Figure: CONSOLE PANEL HANABI Removal

Removal

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

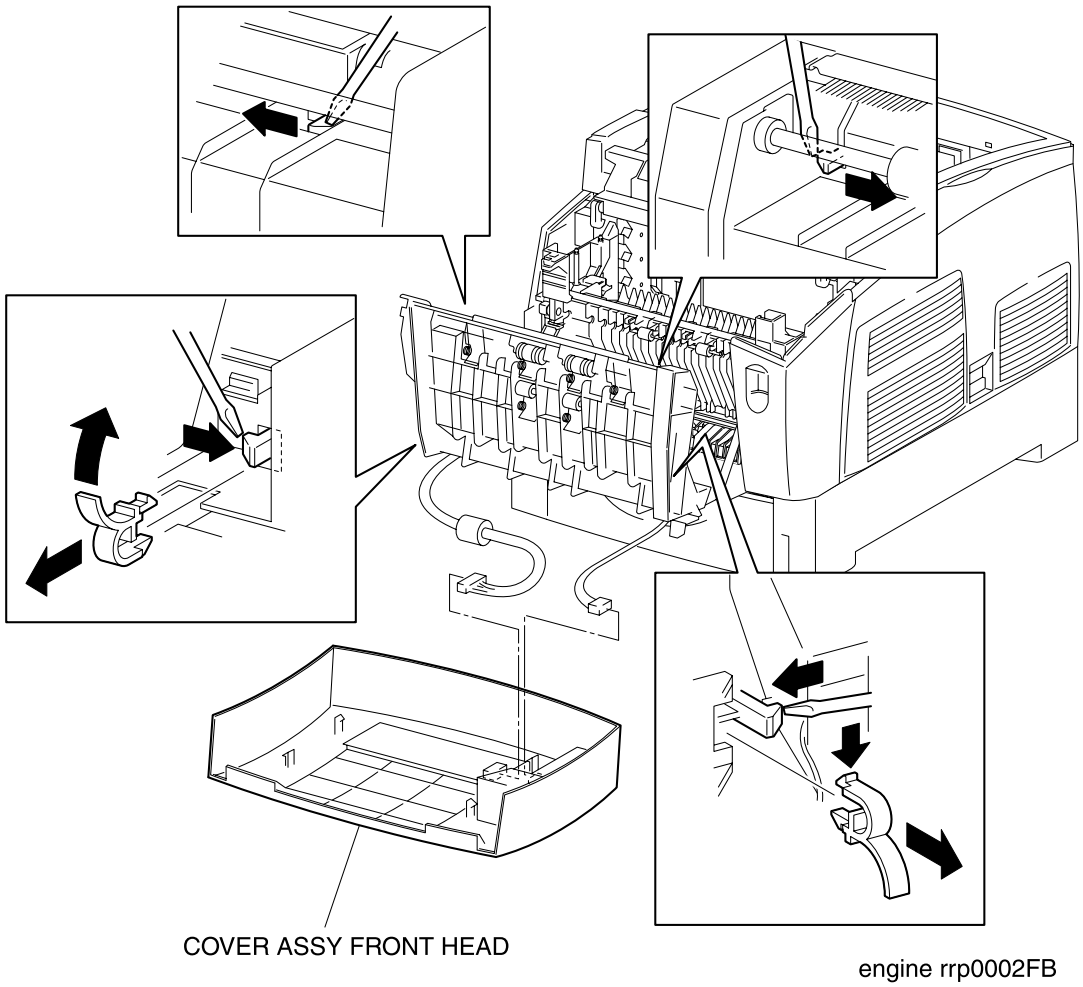

Figure: COVER ASSY FRONT HEAD Removal

Removal

1) Release the latch at B of the printer and open the CHUTE ASSY OUT (PL6.1.1).
2) The claw of the LEVER POP UP (PL1.1.32) top which is fixing the hook by the side of the forward right of COVER ASSY FRONT HEAD is pushed, and LEVER POP UP (PL1.1.32) is removed from HOLDER LEVER OUT.
3) The handle of LEVER POP UP (PL1.1.32) which is fixing the hook by the side of before COVER ASSY FRONT HEAD right and left is pulled to the up side, and it removes from LEVER POP UP(PL1.1.32) 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 HANABI (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)

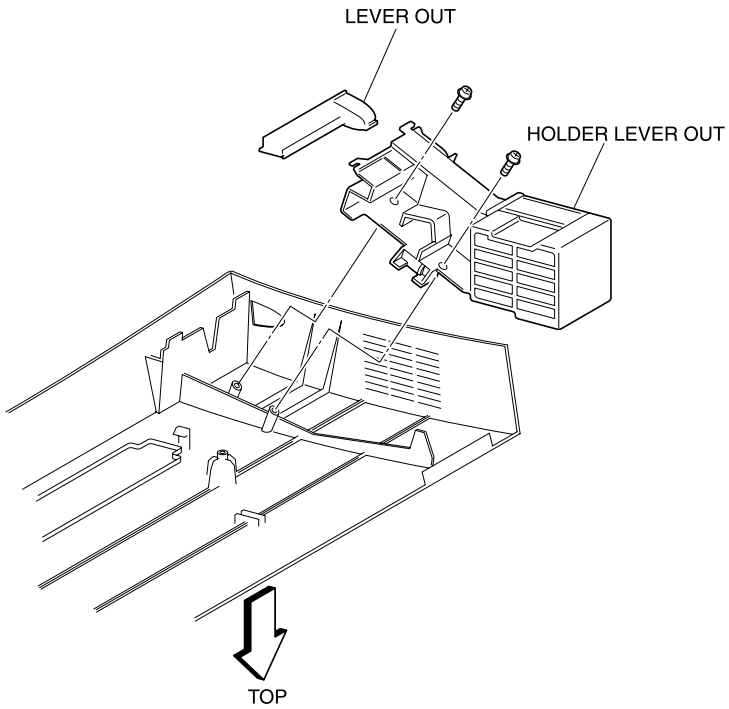

Figure: FAN FUSER Removal (1)

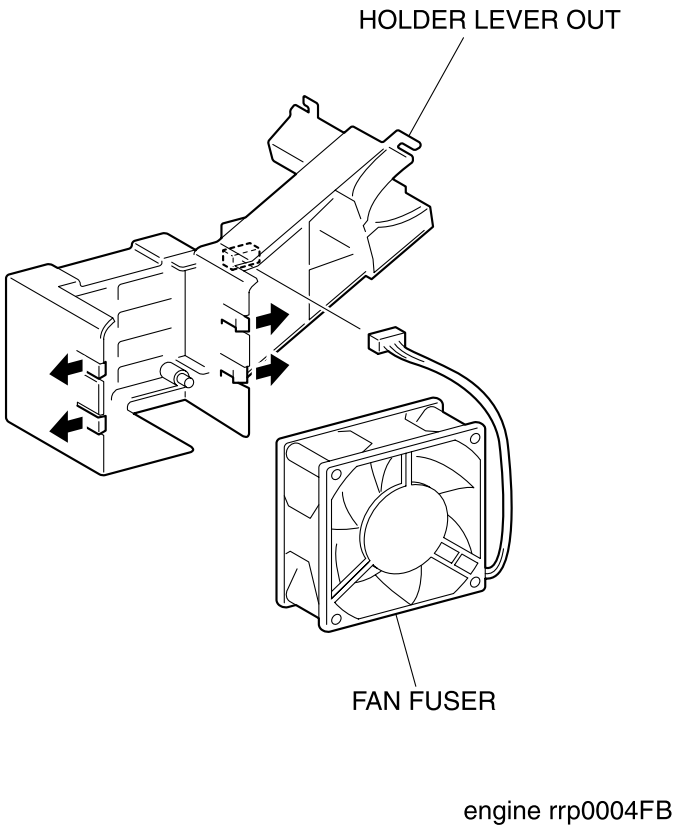

Figure: FAN FUSER Removal (2)

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)

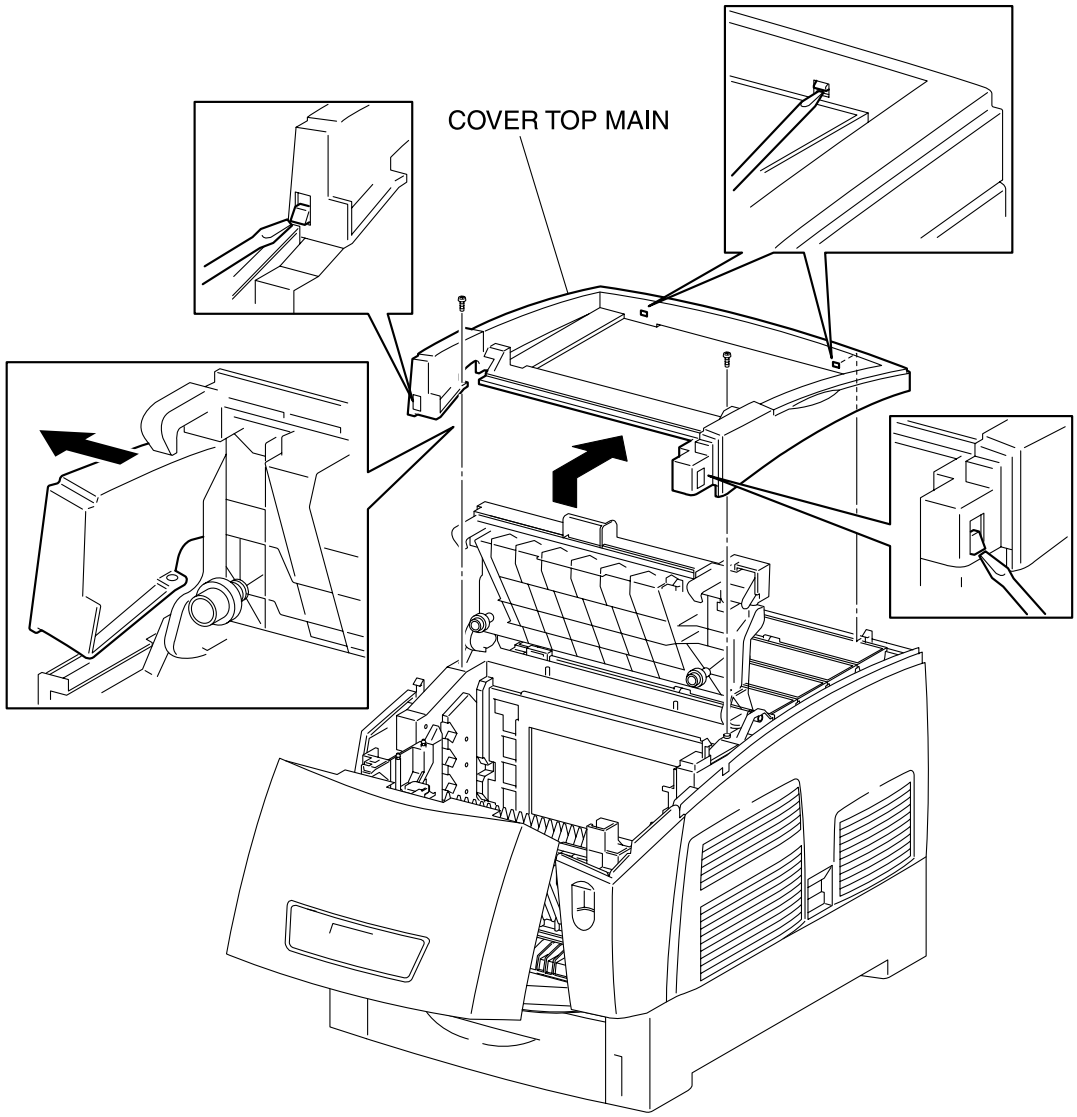

Figure: COVER TOP MAIN Removal

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)

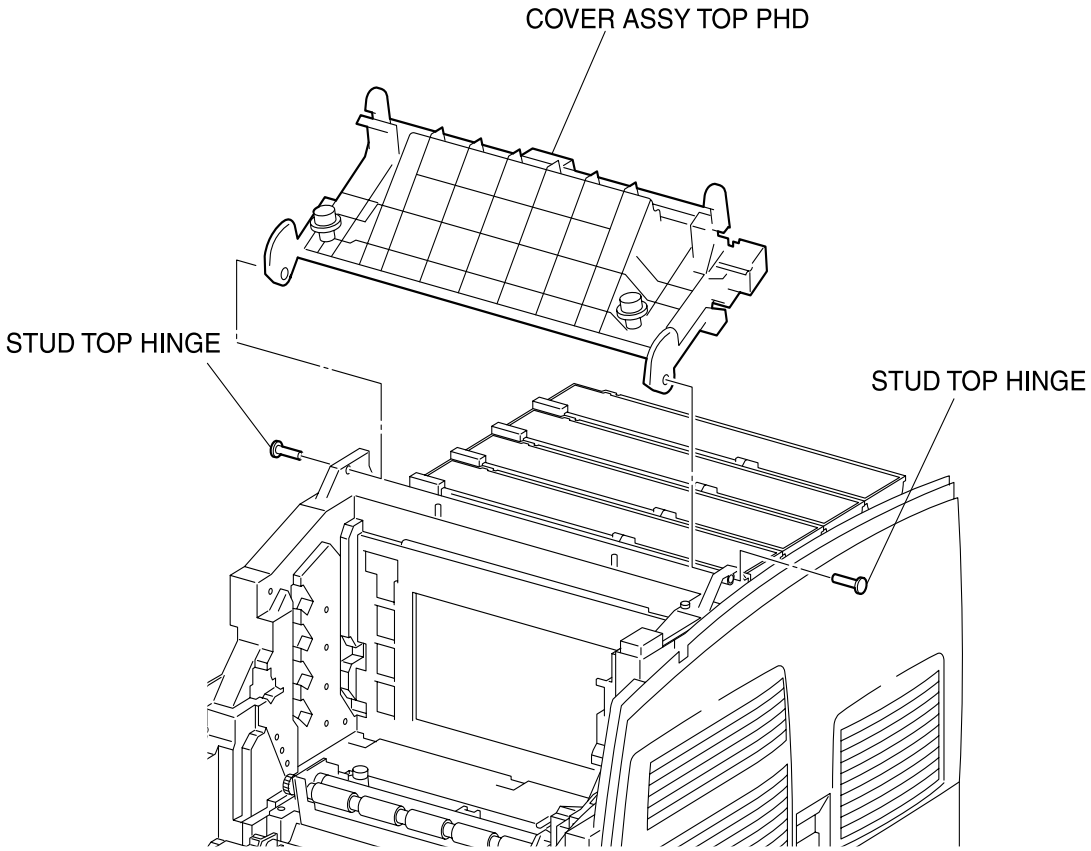

Figure: COVER ASSY TOP PHD Removal

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)

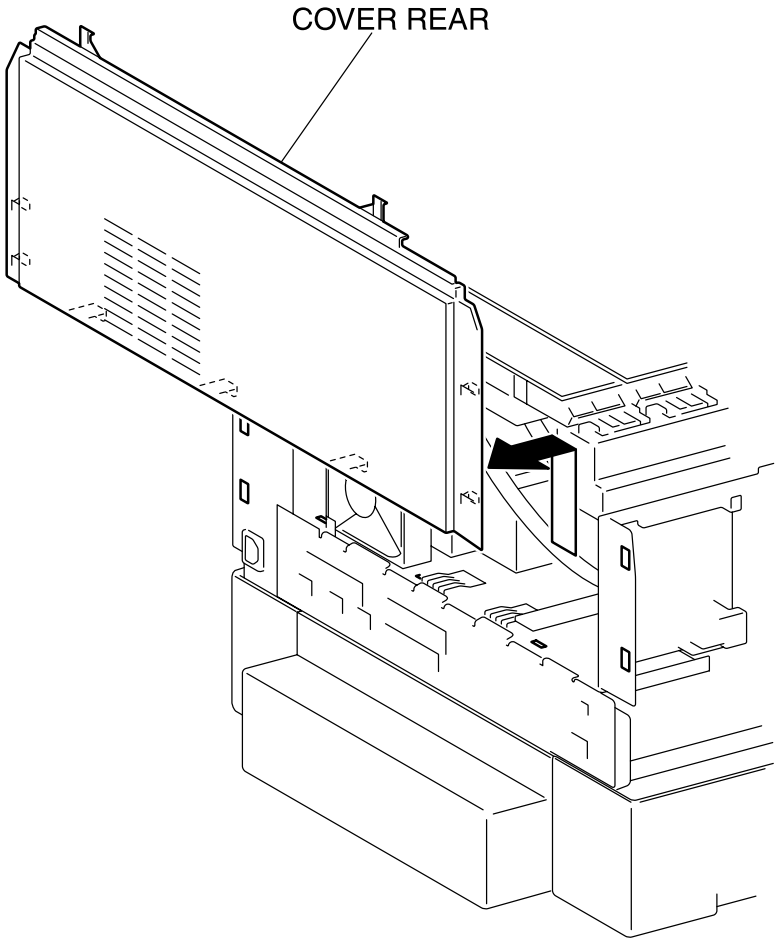

Figure: COVER REAR Removal

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 frontward and remove.

Replacement

Replace the components in the reverse order of removal.

RRP1.7 LINK:L (PL1.1.23)

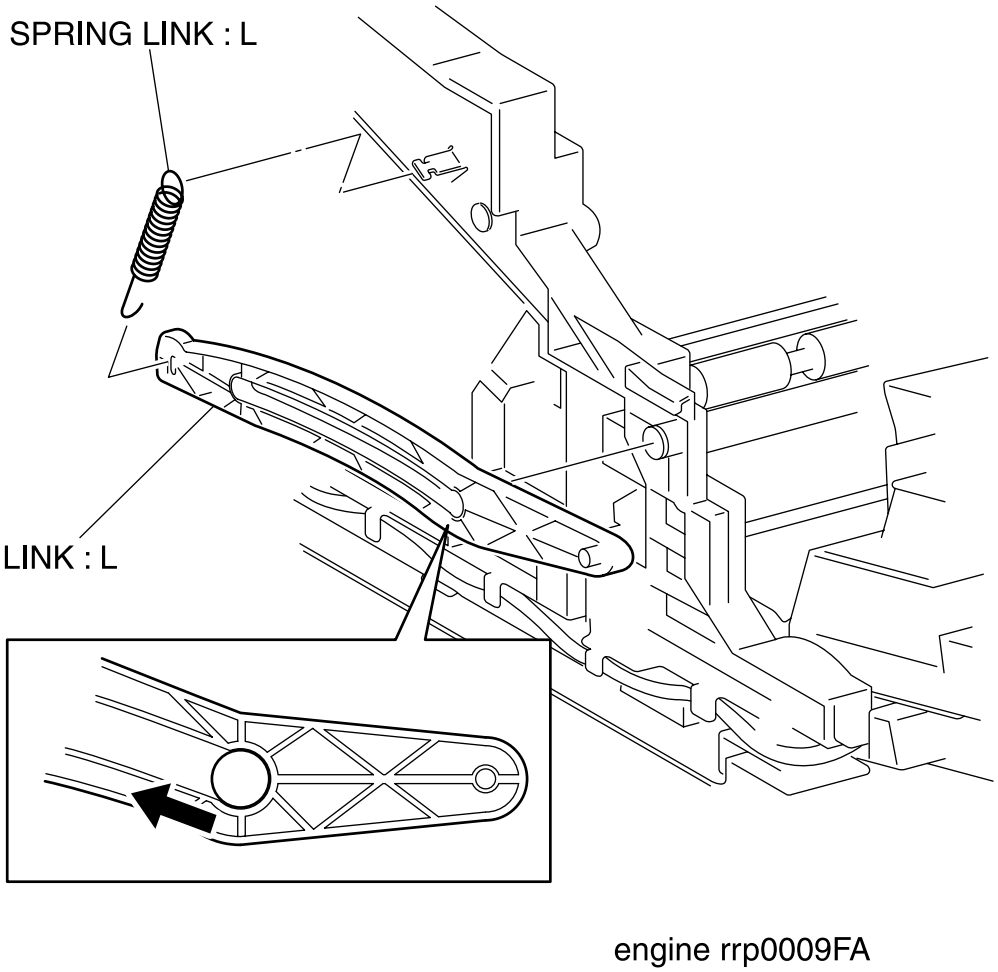

Figure: LINK:L Removal

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)

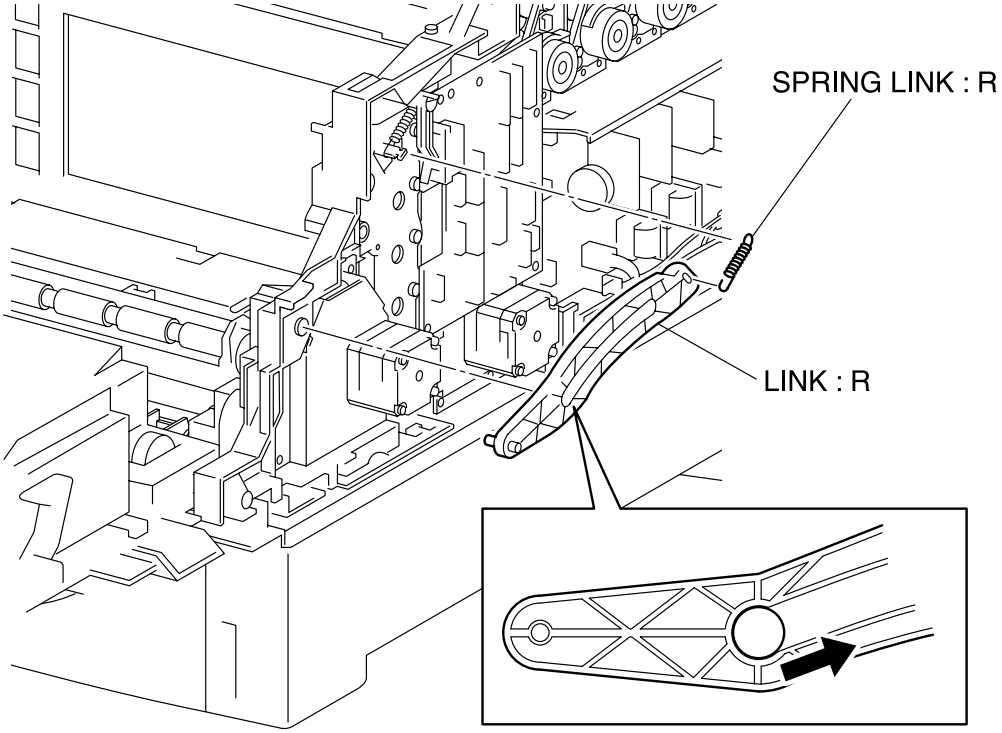

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Figure: LINK:R Removal

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)

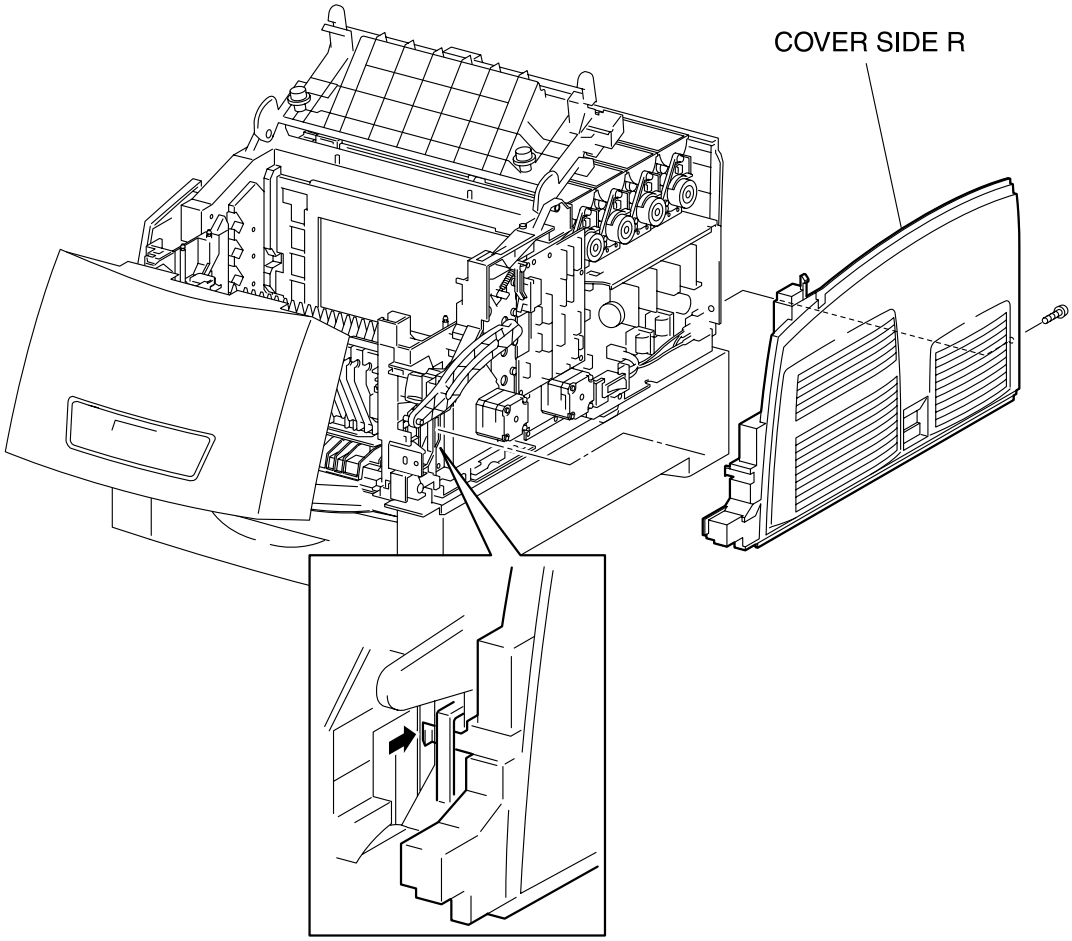

Figure: COVER SIDE R Removal

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)

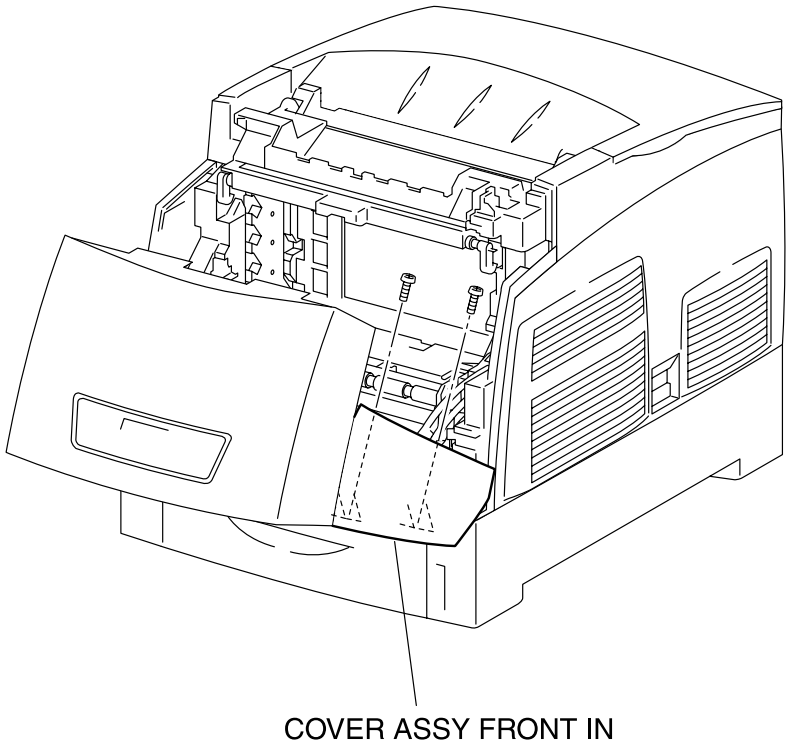

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Figure: COVER ASSY FRONT IN Removal (1)

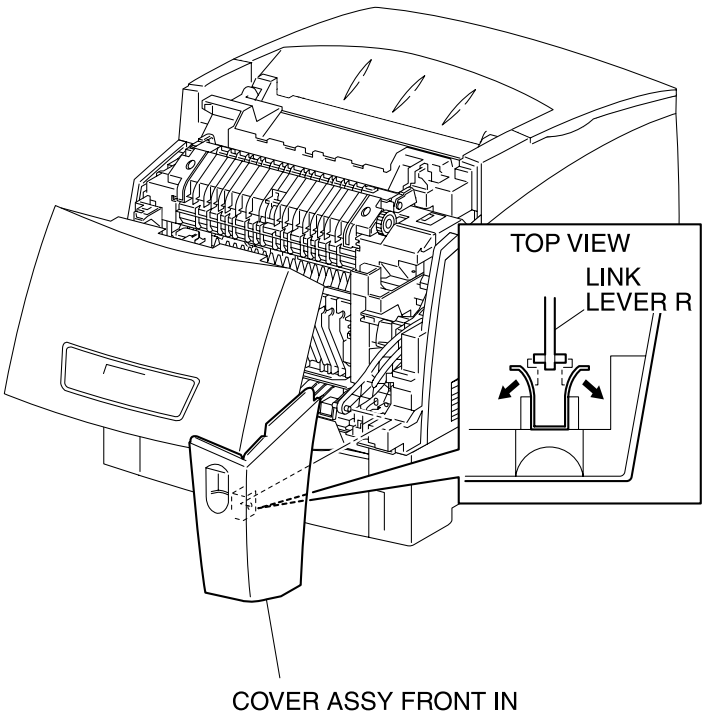

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Figure: COVER ASSY FRONT IN Removal (2)

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 MSI (PL1.1.26)

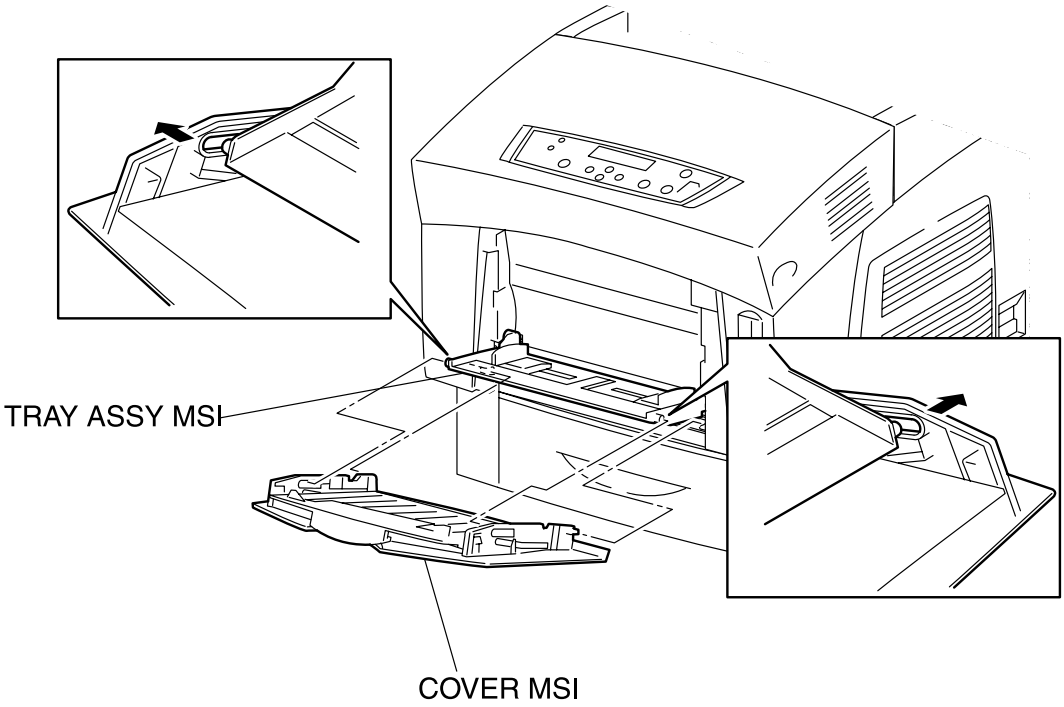


Figure: COVER MSI Removal

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)

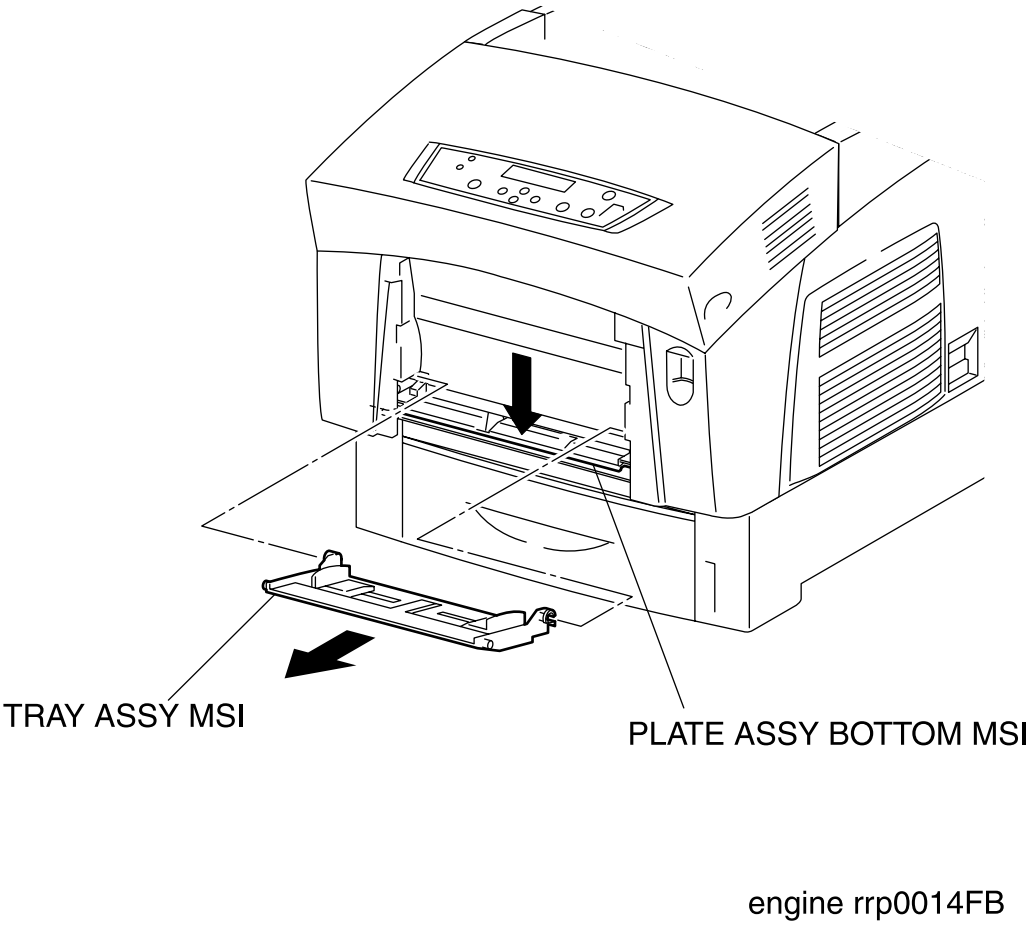


Figure: TRAY ASSY BASE Removal

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 frontward.

Replacement

Replace the components in the reverse order of removal.

RRP1.13 COVER ASSY FRONT (PL1.1.29)

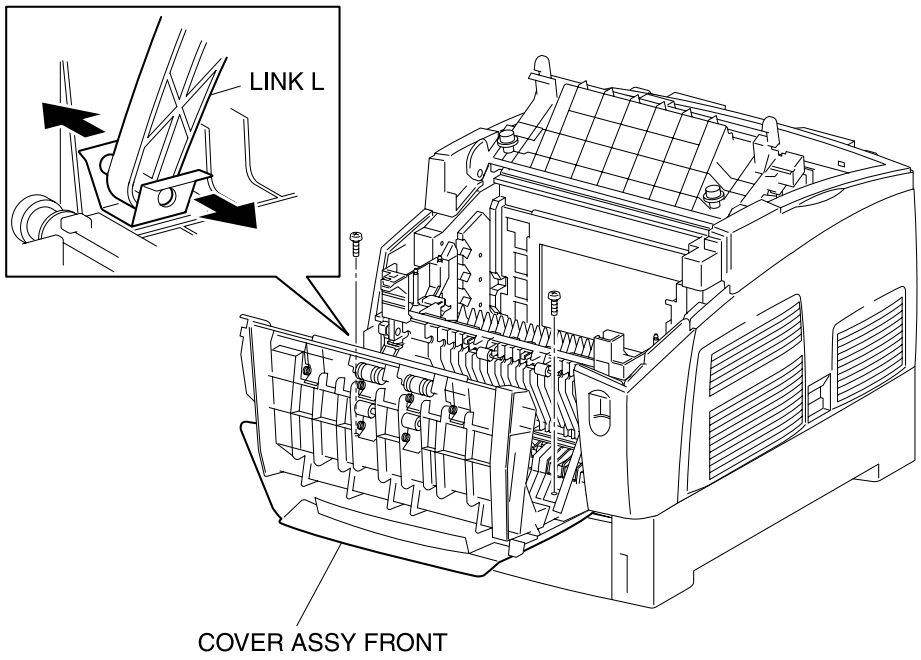


Figure: COVER ASSY FRONT Removal (1)

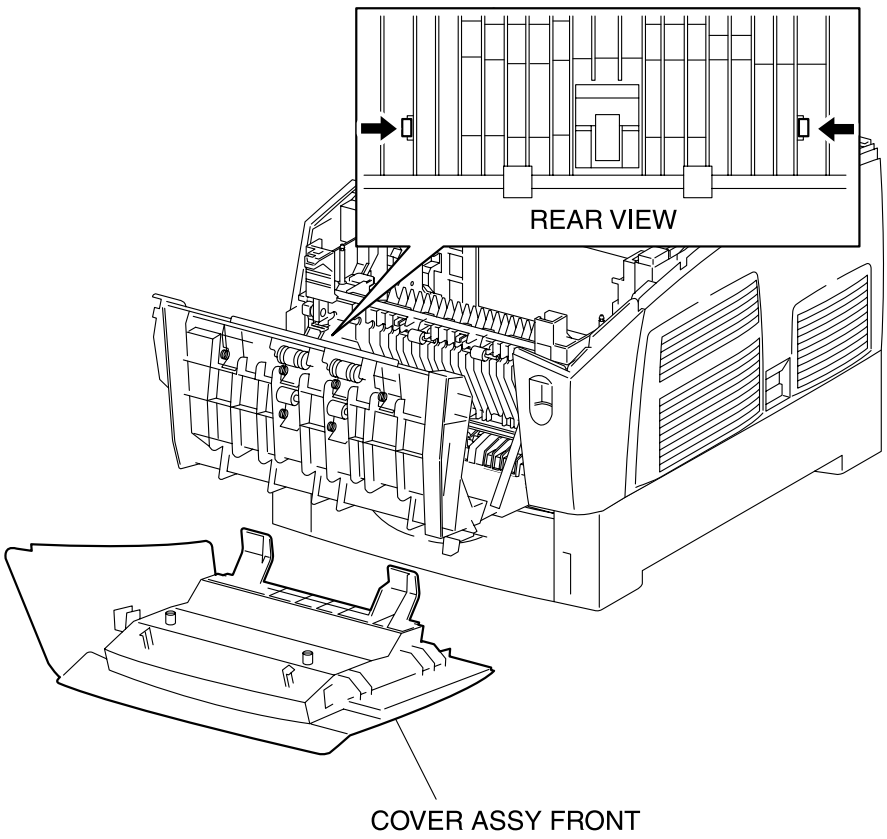


Figure: COVER ASSY FRONT Removal (2)

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)

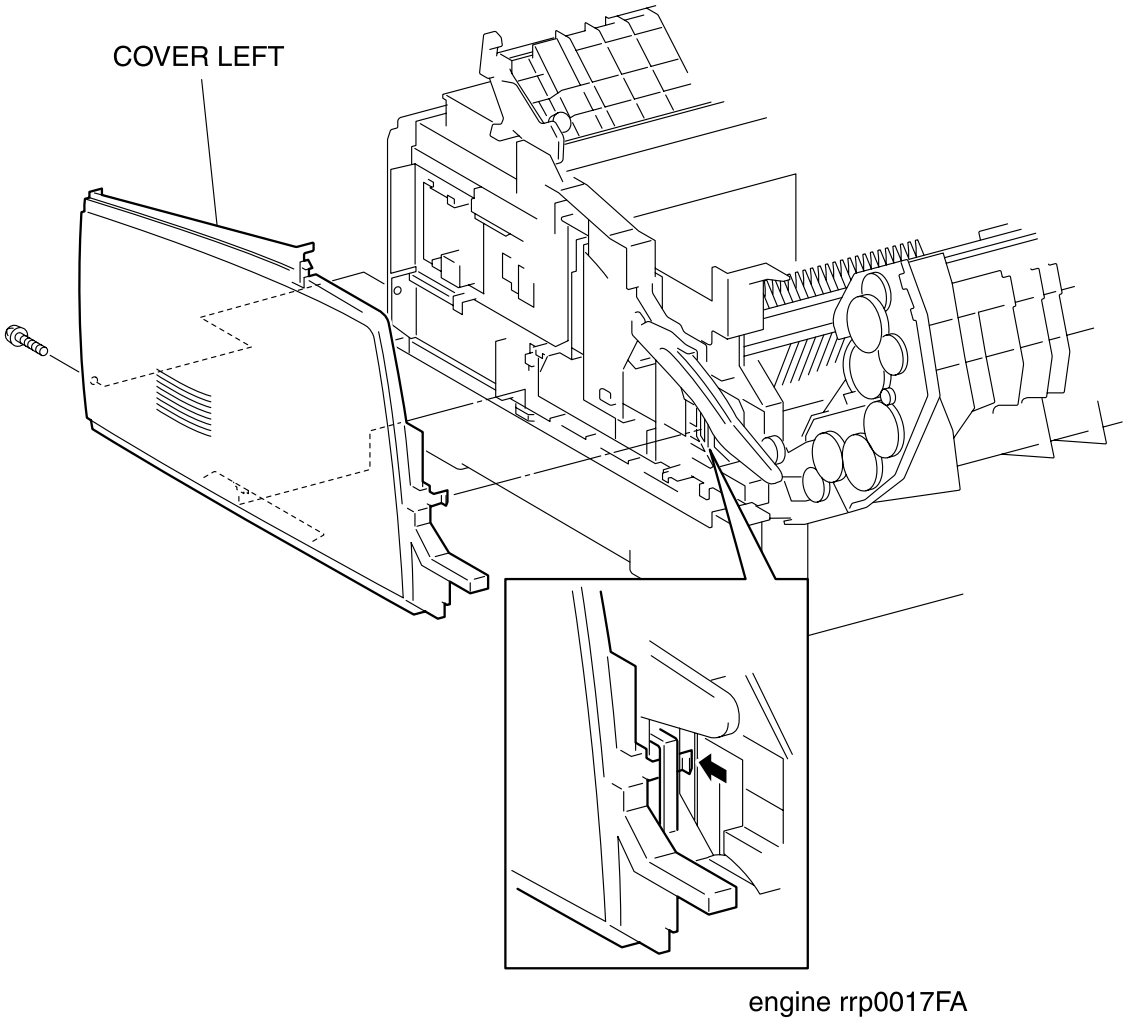


Figure: COVER SIDE L Removal

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 (PL2.1.2)

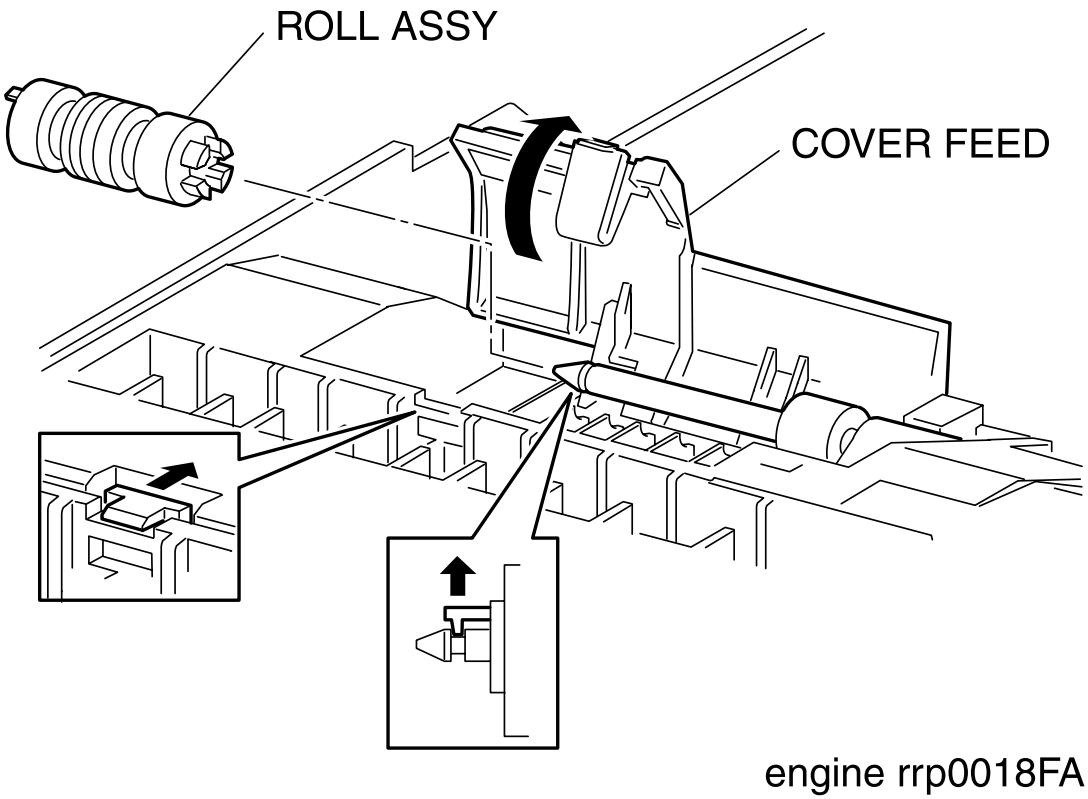


Figure: ROLL ASSY Removal

Removal

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

Replacement

Replace the components in the reverse order of removal.

RRP2.2 HOLDER RETARD (PL2.1.4)

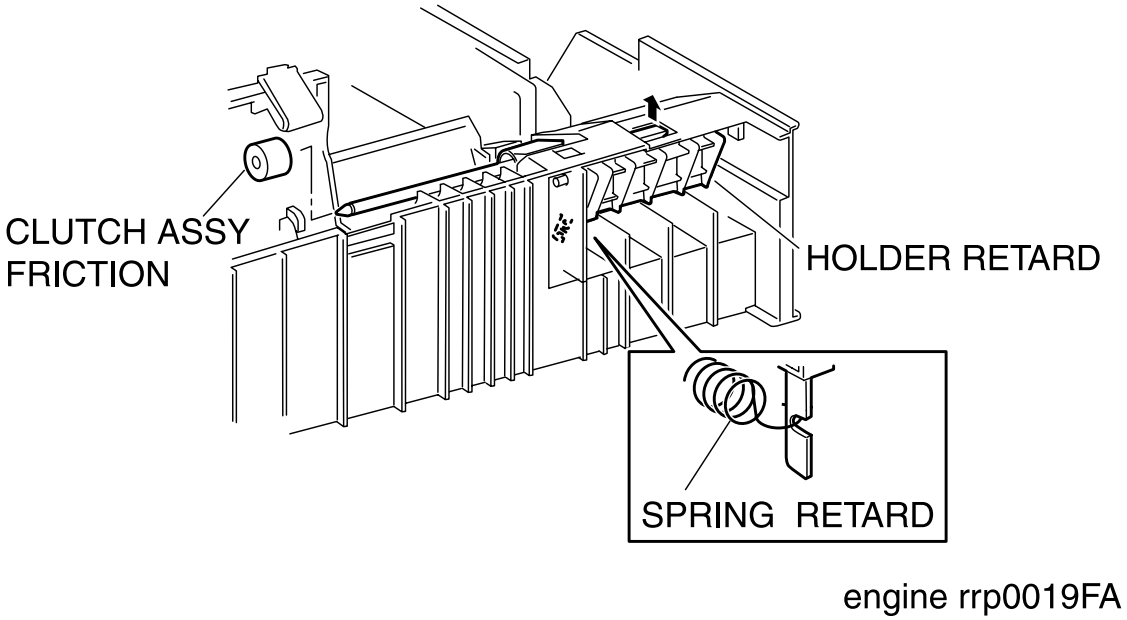


Figure: HOLDER RETARD Removal (1)

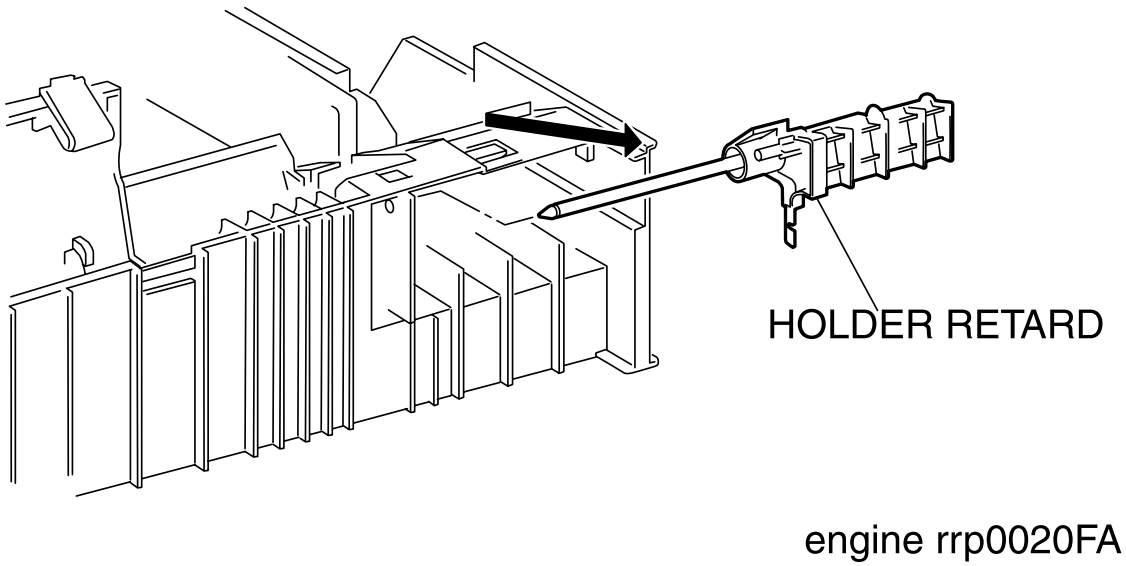


Figure: HOLDER RETARD Removal (2)

Removal

1) Pull out the CASSETTE from the printer.
2) Remove the CASSETTE ASSY FRONT. (RRP2.3)
3) Remove the ROLL ASSY. (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)

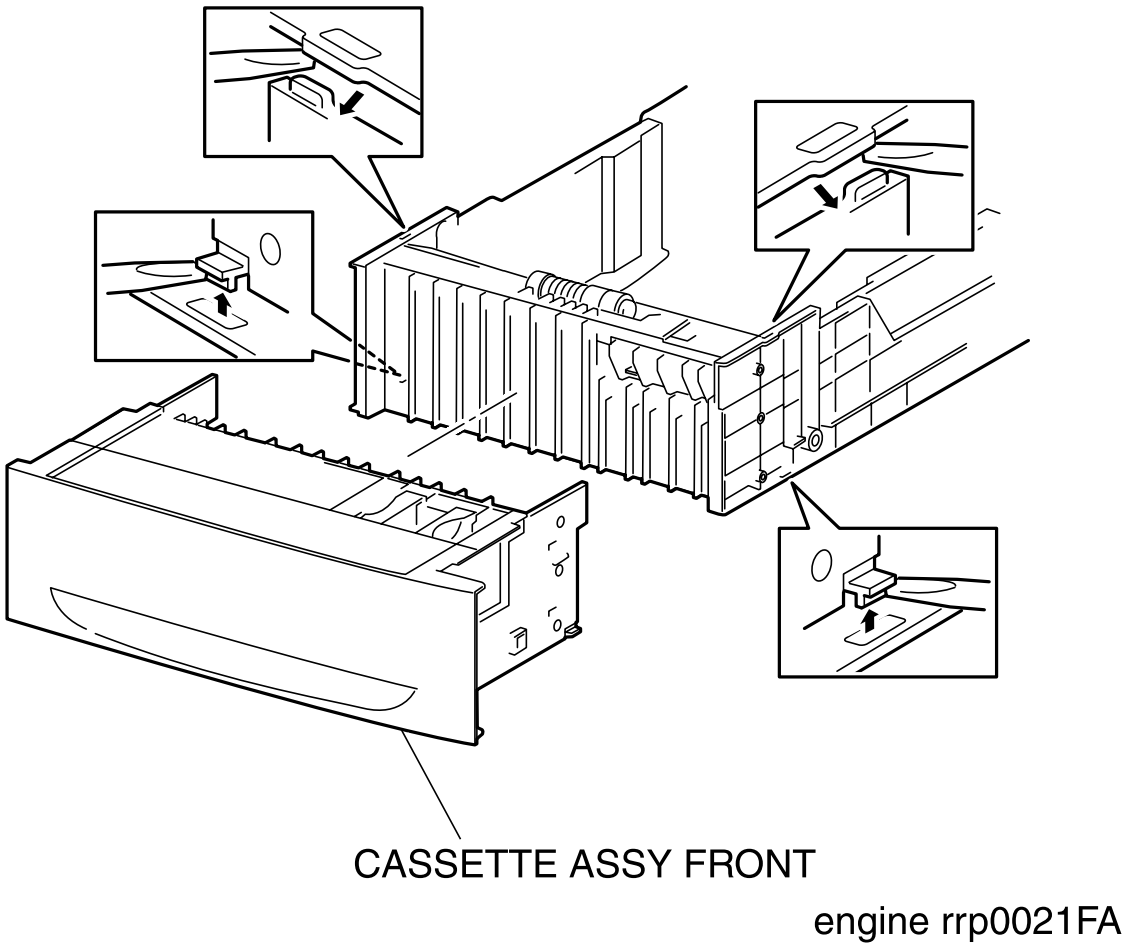


Figure: CASSETTE ASSY FRONT Removal

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)

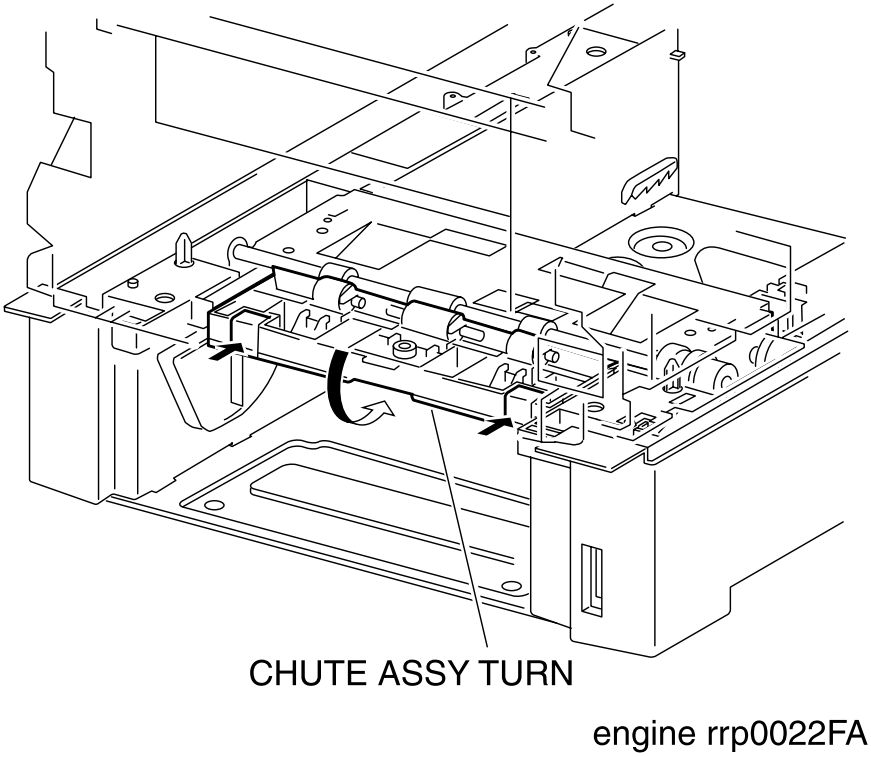


Figure: CHUTE ASSY TURN Removal (1)

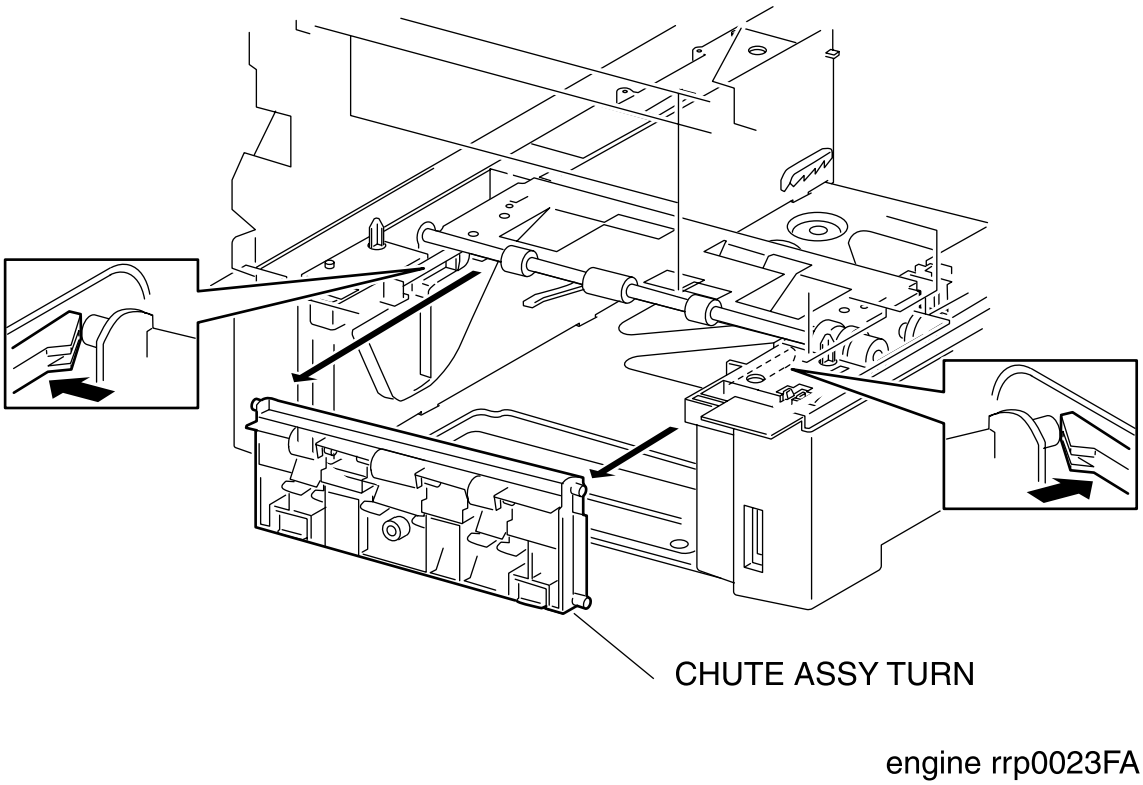


Figure: CHUTE ASSY TURN Removal (2)

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 CASSETTE (PL3.1.3)

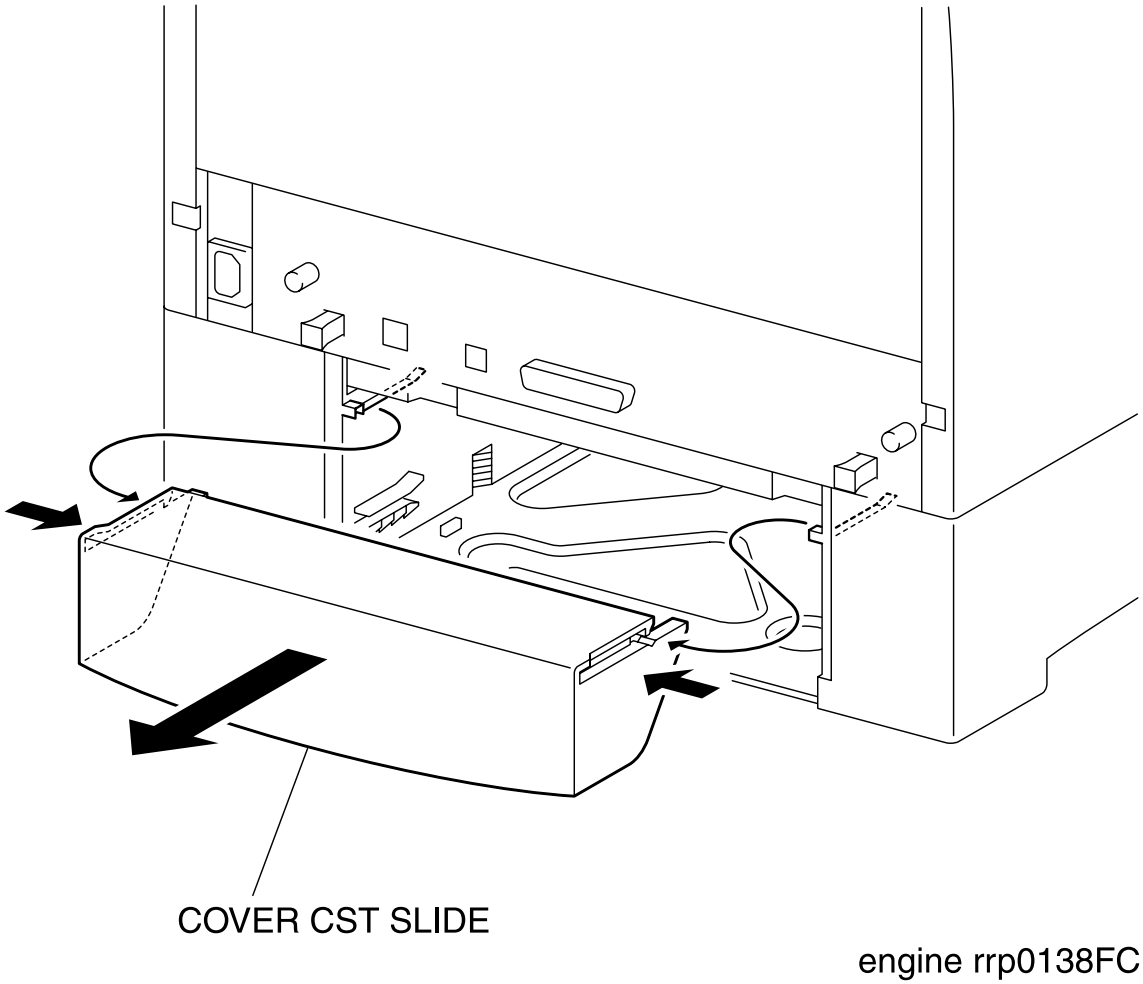


Figure: COVER CST SLIDE Removal

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)

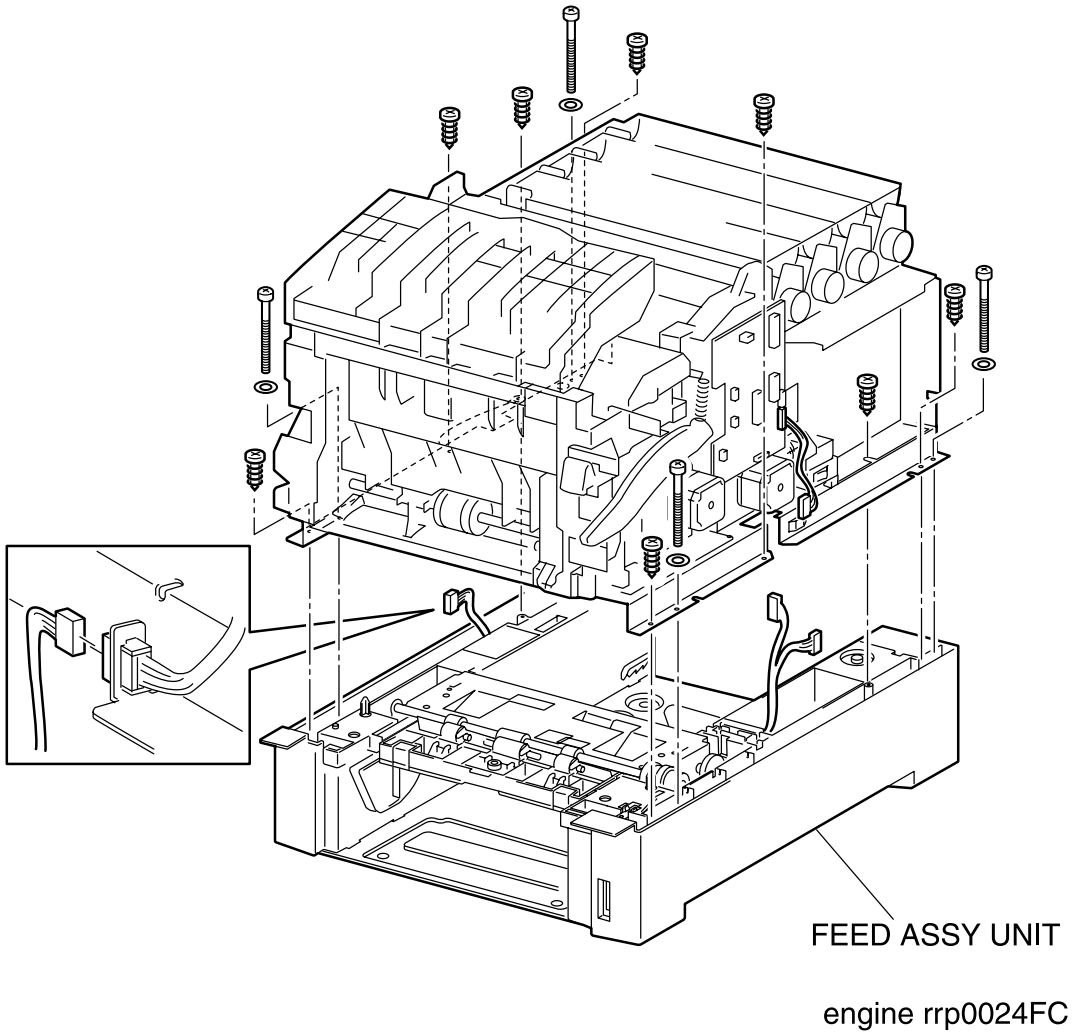


Figure: FEEDER ASSY UNIT Removal

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 HBN DRV (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.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.
15) 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.

CAUTION

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

NOTE

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.

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

Replacement

Replace the components in the reverse order of removal.

NOTE

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)

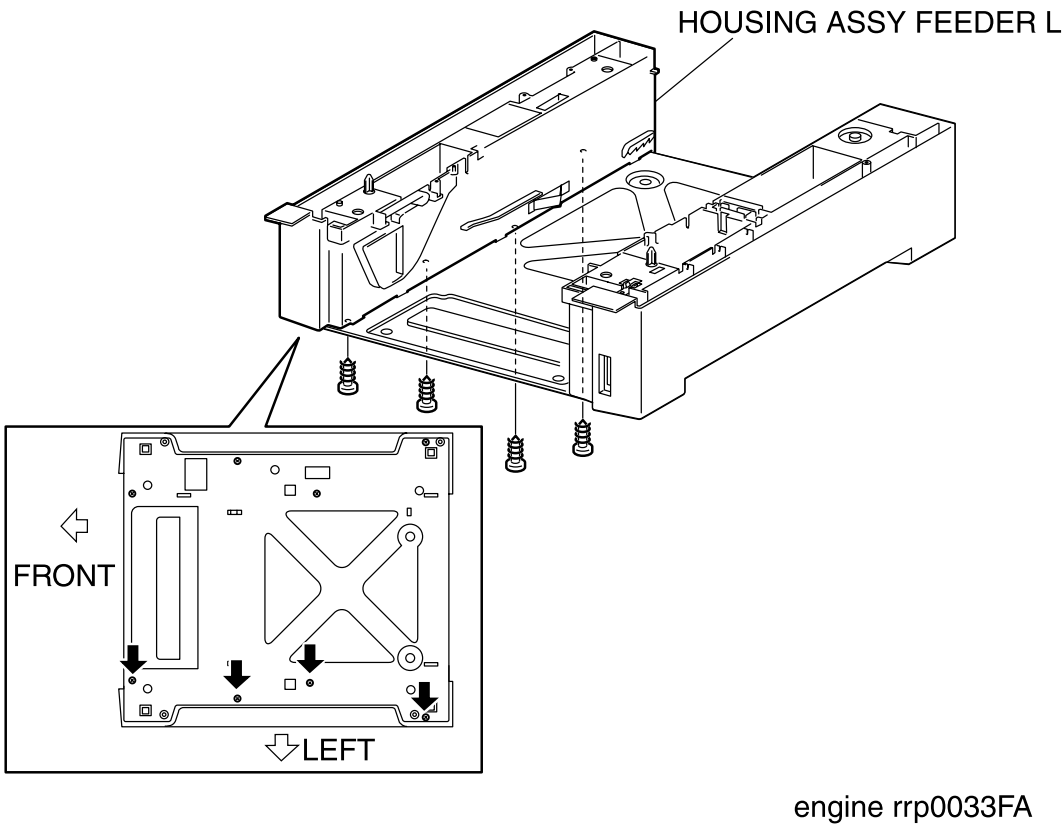


Figure: HOUSING ASSY FEEDER L Removal (1)

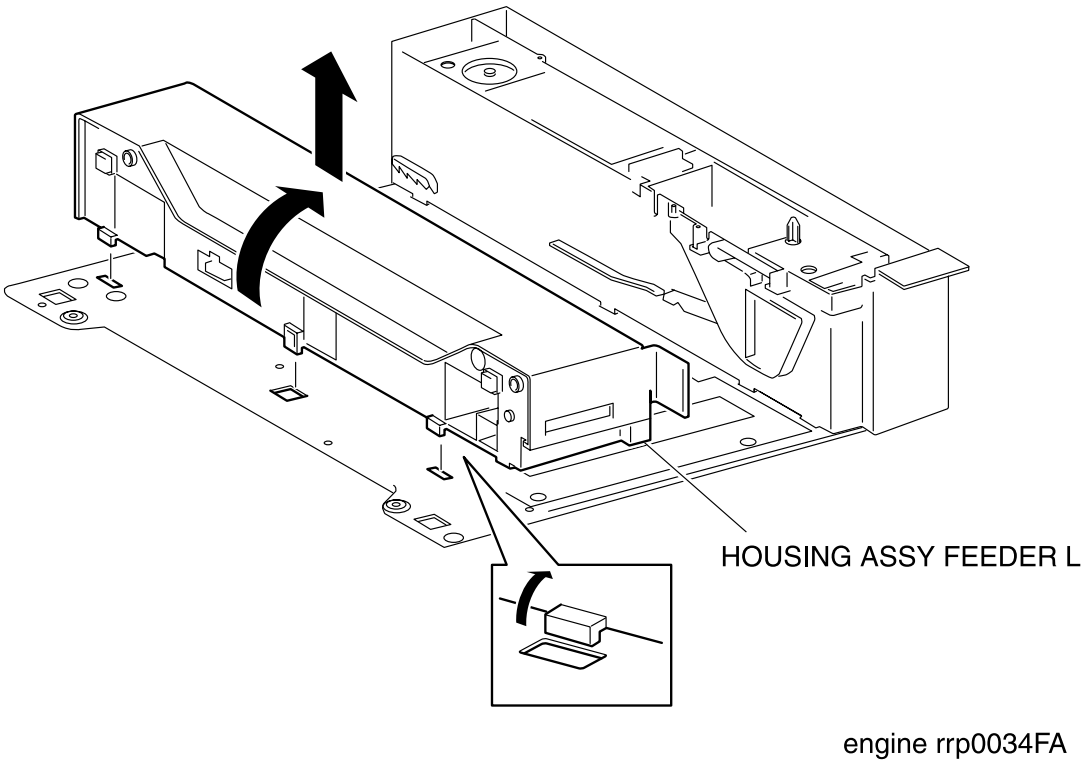


Figure: HOUSING ASSY FEEDER L Removal (2)

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)

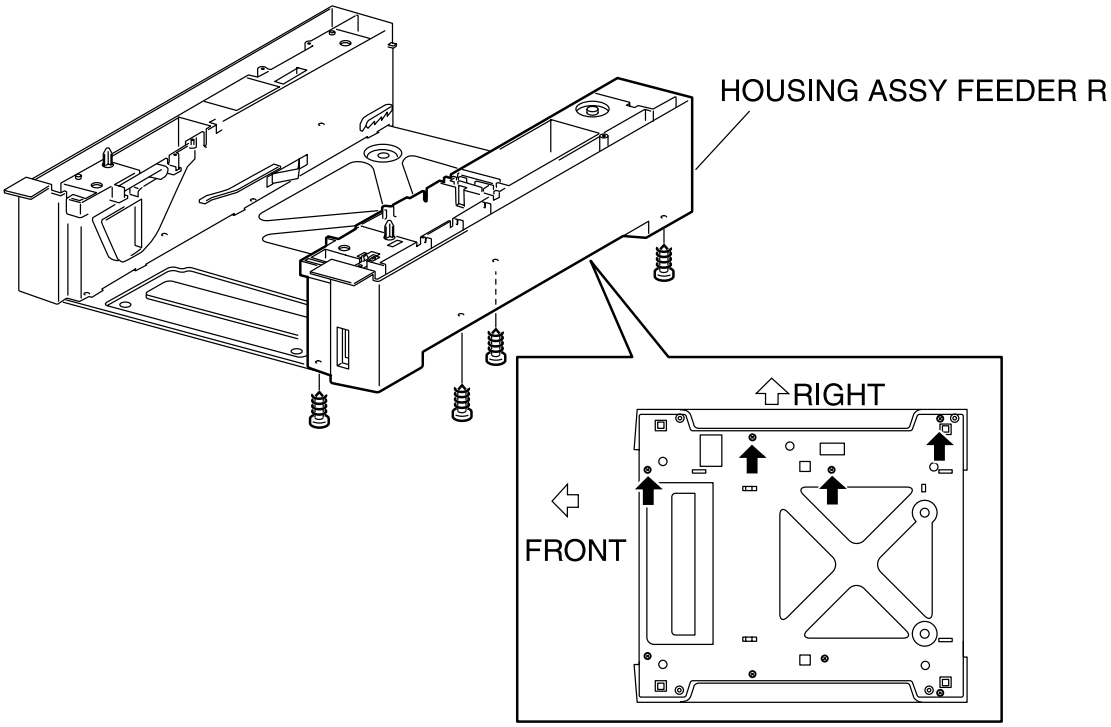


Figure: HOUSING ASSY FEEDER R Removal (1)

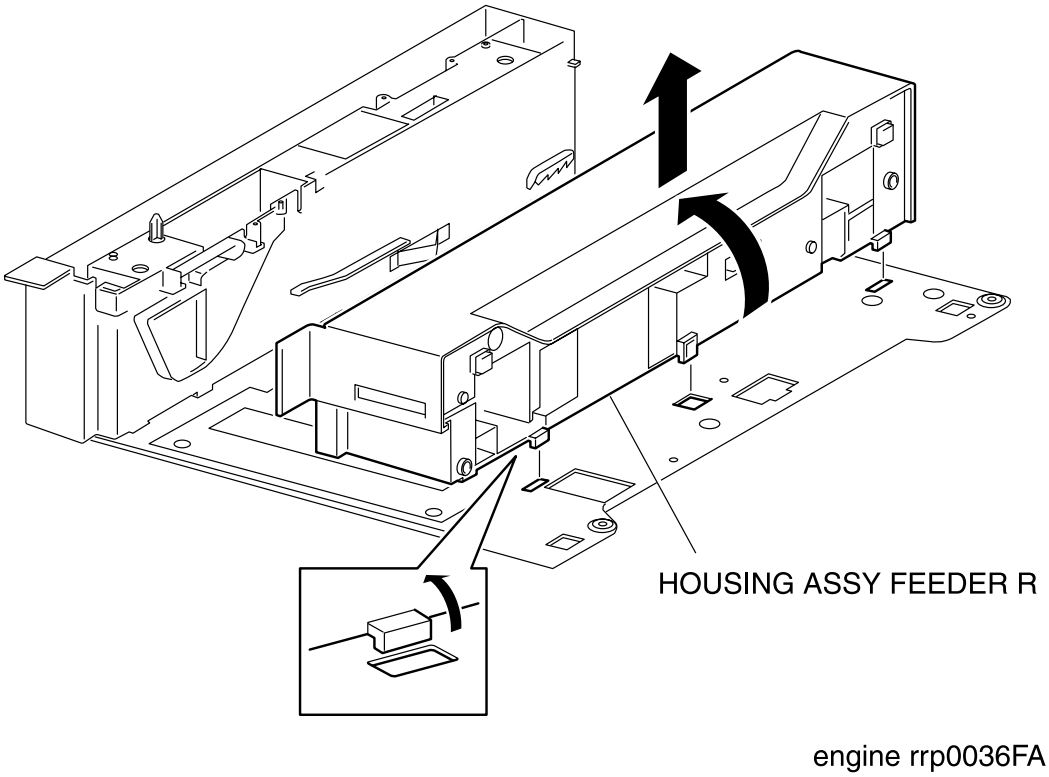


Figure: HOUSING ASSY FEEDER R Removal (2)

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)

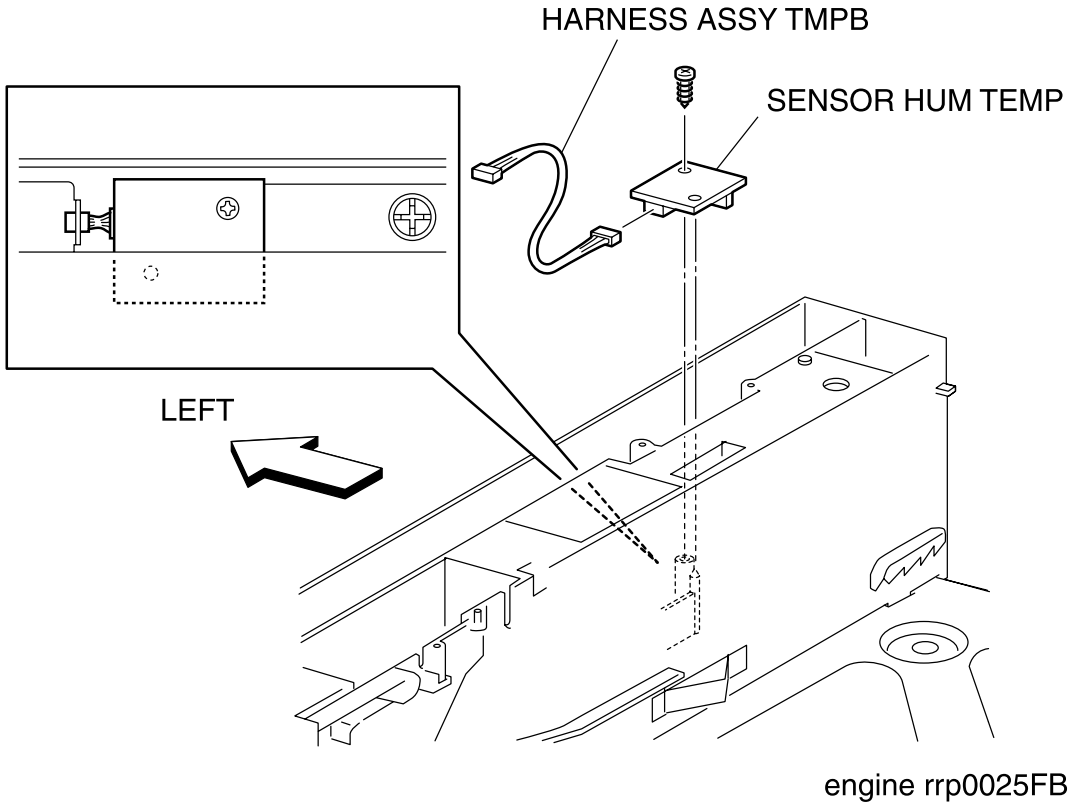


Figure: SENSOR HUM TEMP Removal

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)

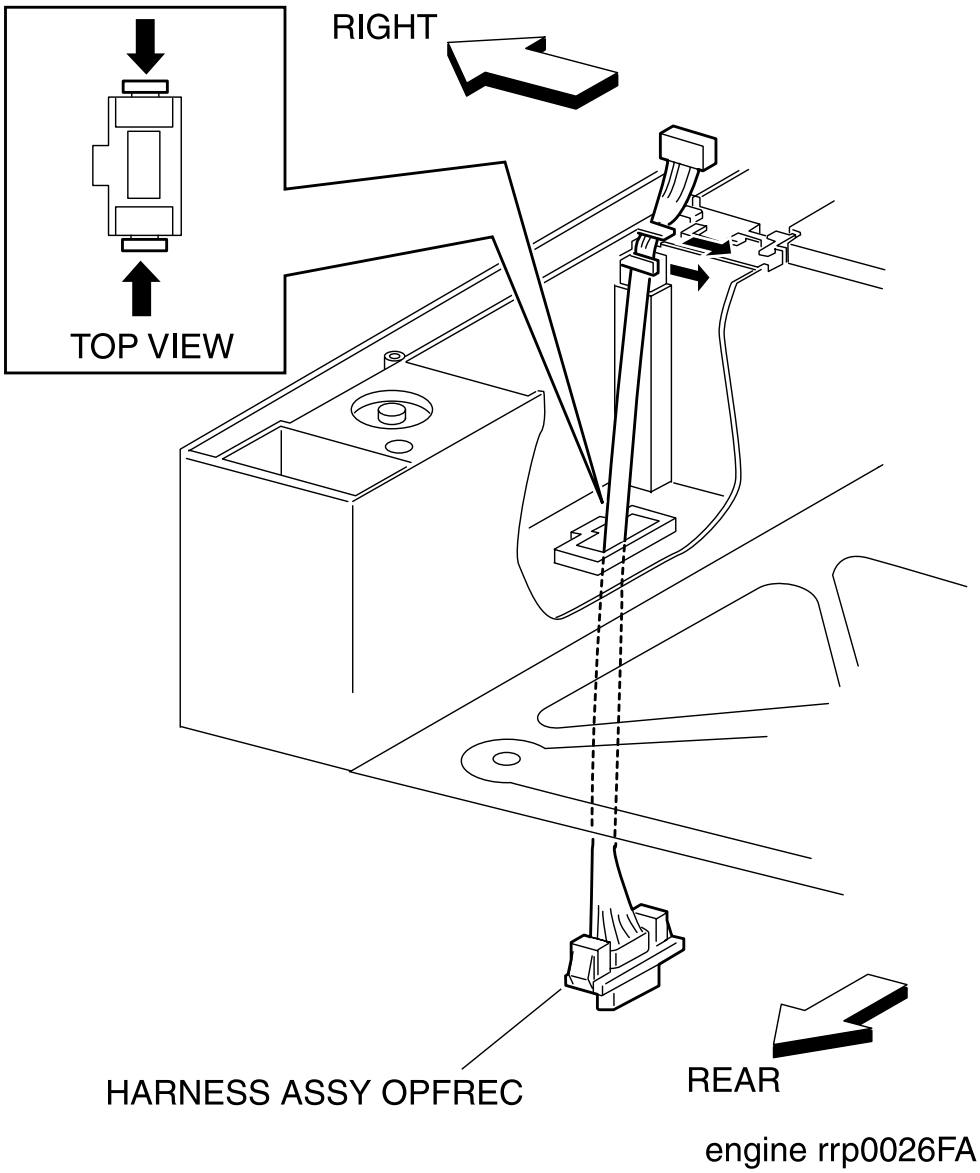


Figure: HARNESS ASSY OPFREC Removal

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)

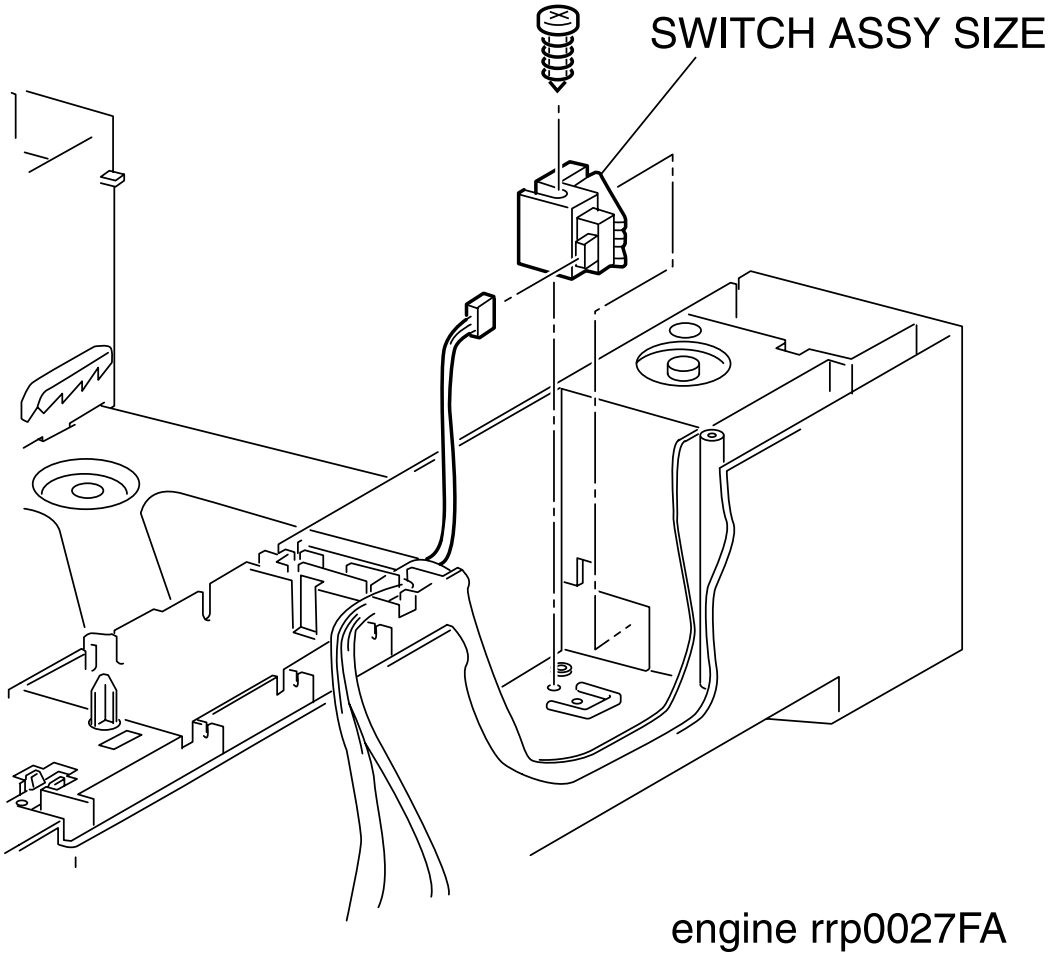


Figure: SWITCH ASSY SIZE Removal

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)

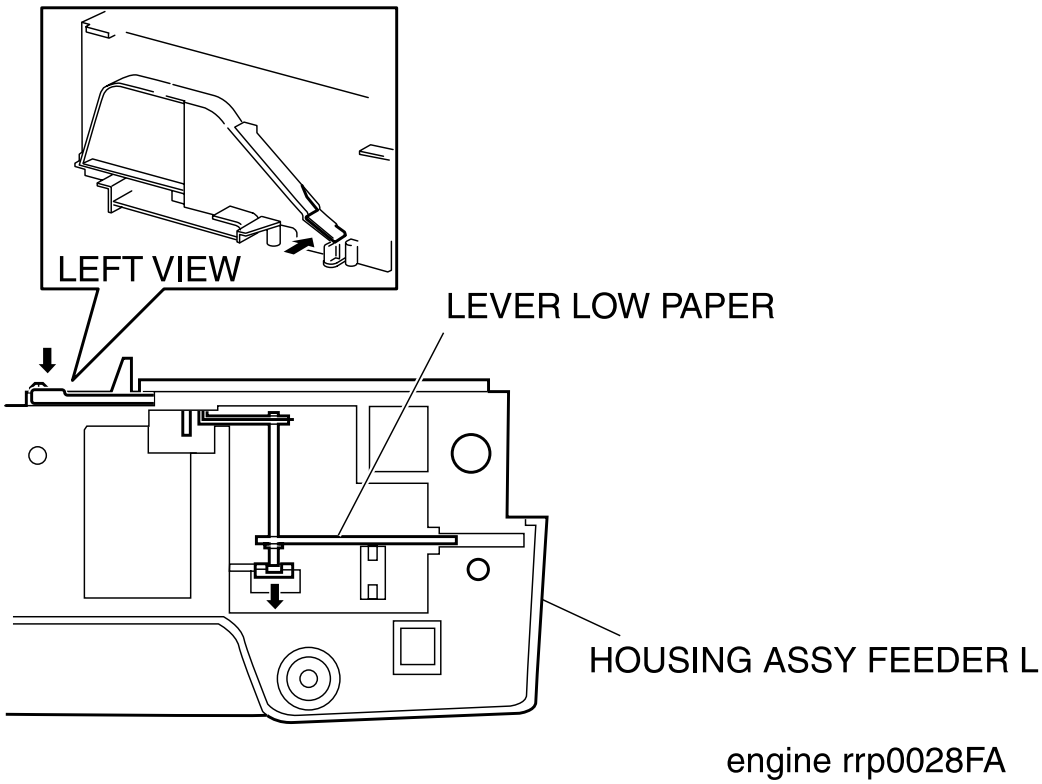


Figure: LEVER LOW PAPER Removal (1)

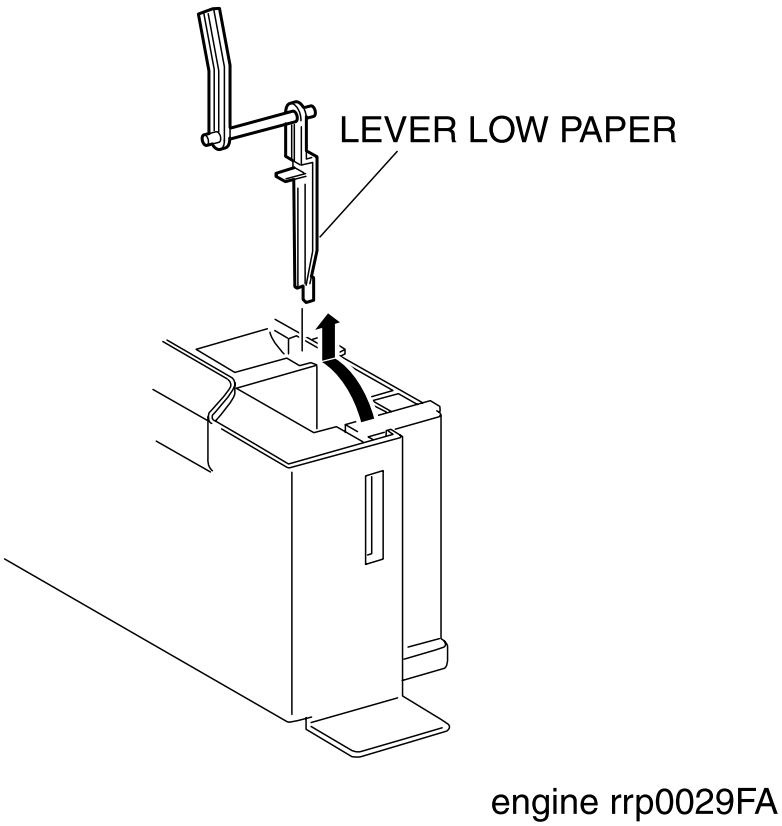


Figure: LEVER LOW PAPER Removal (2)

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)

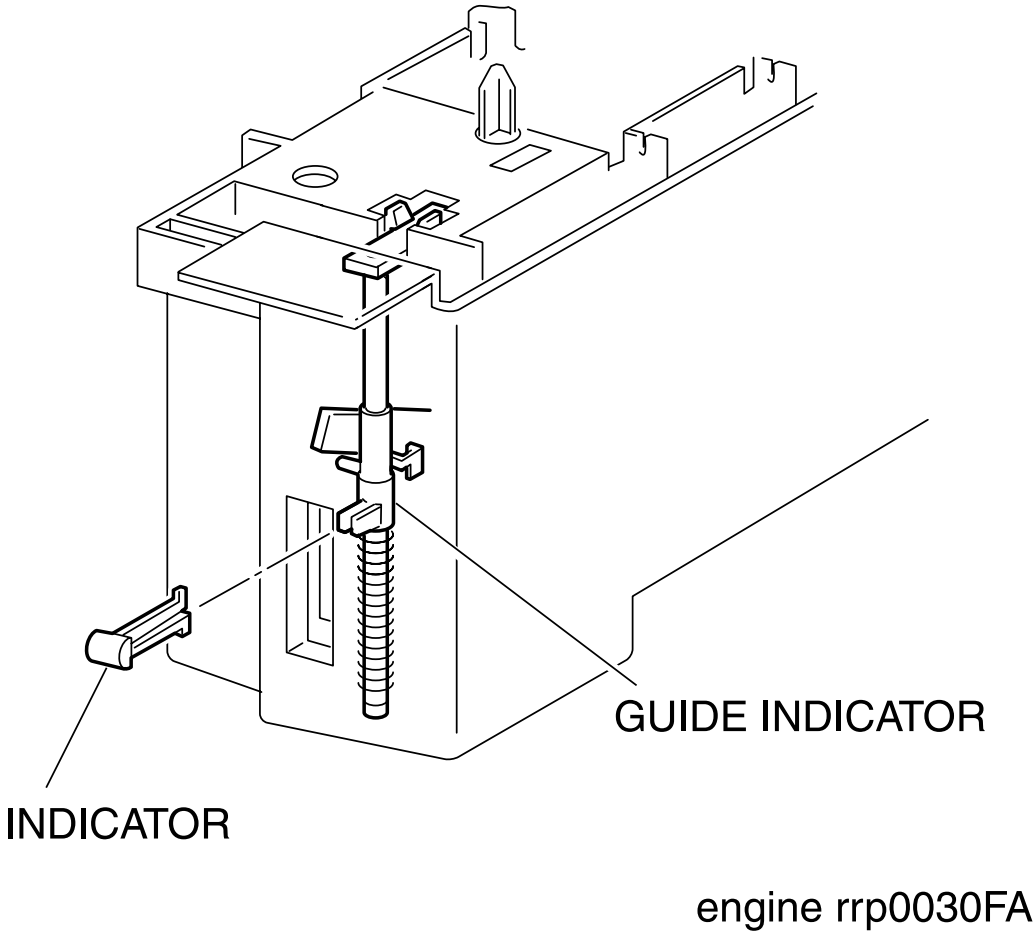


Figure: INDICATOR Removal

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 frontward 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)

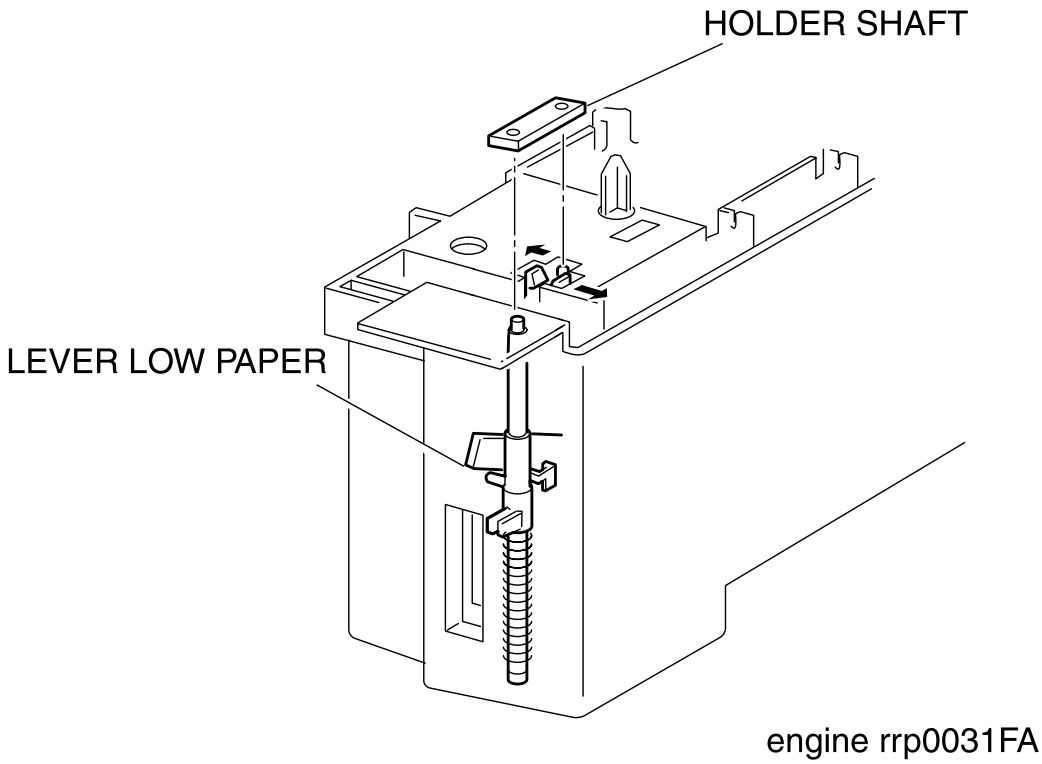


Figure: GUIDE INDICATOR Removal (1)

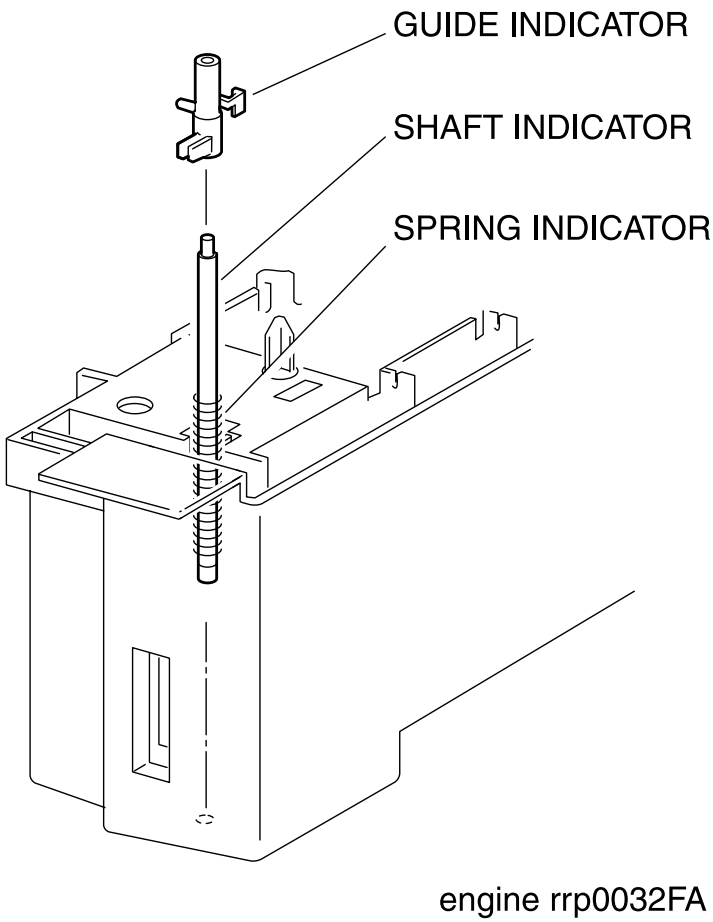


Figure: GUIDE INDICATOR Removal (2)

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)

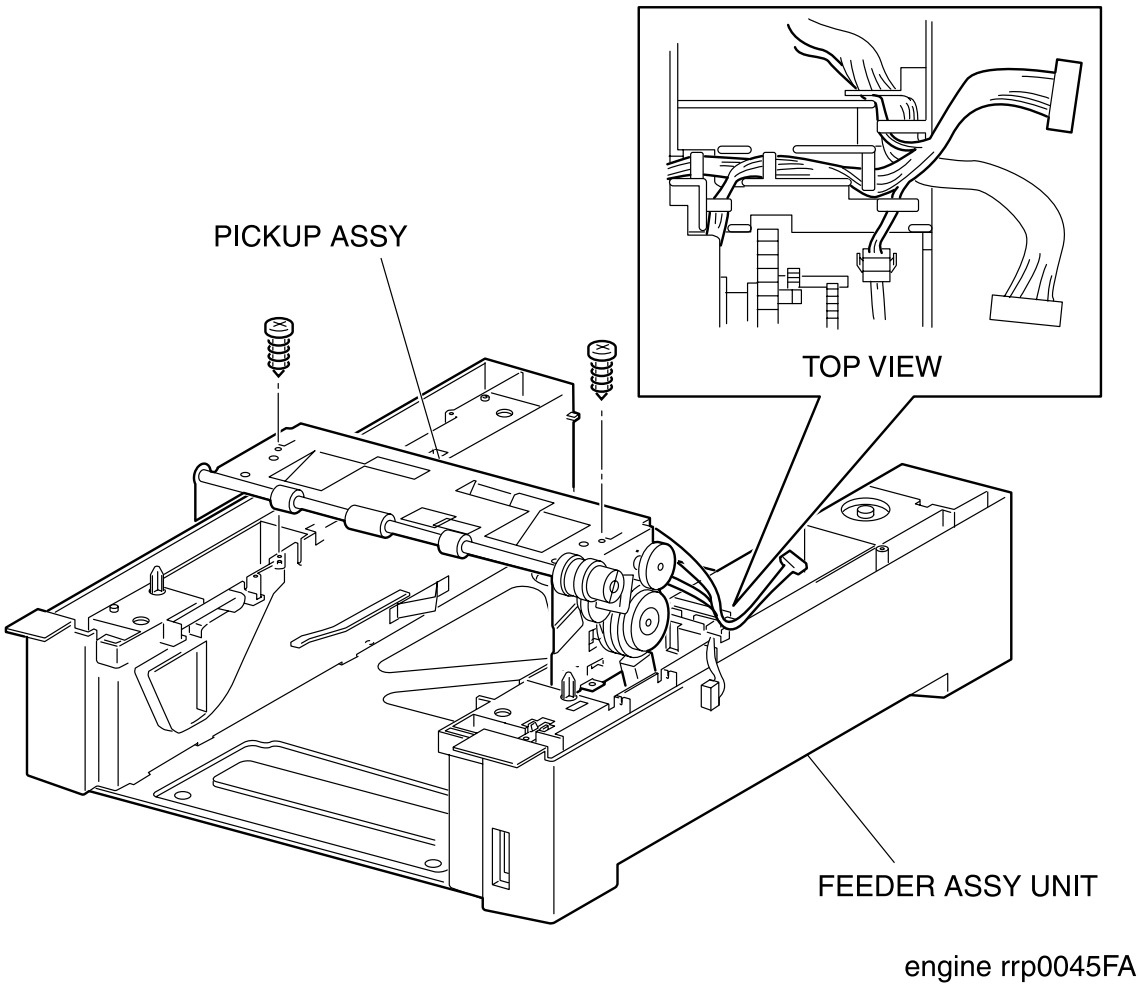


Figure: PICKUP ASSY Removal

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)

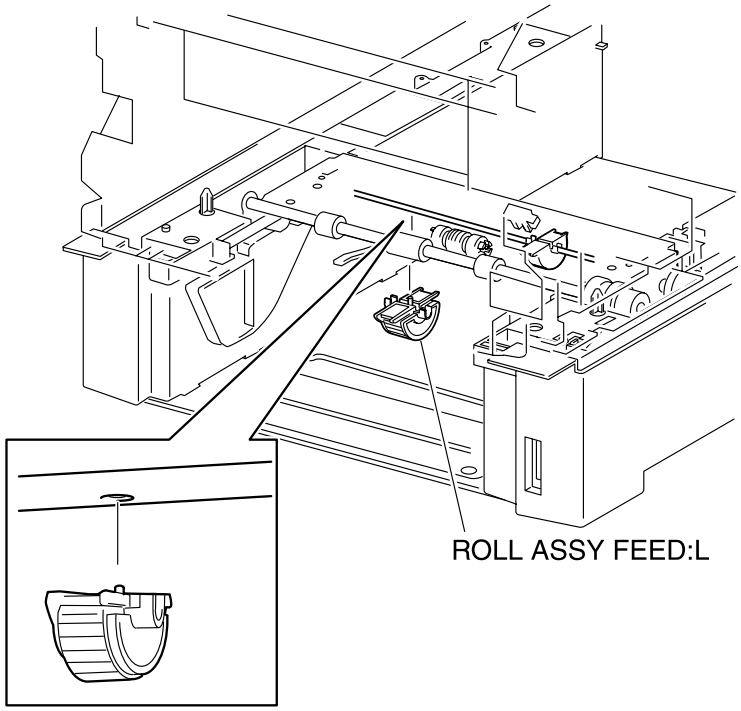


Figure: ROLL ASSY FEED Removal (1)

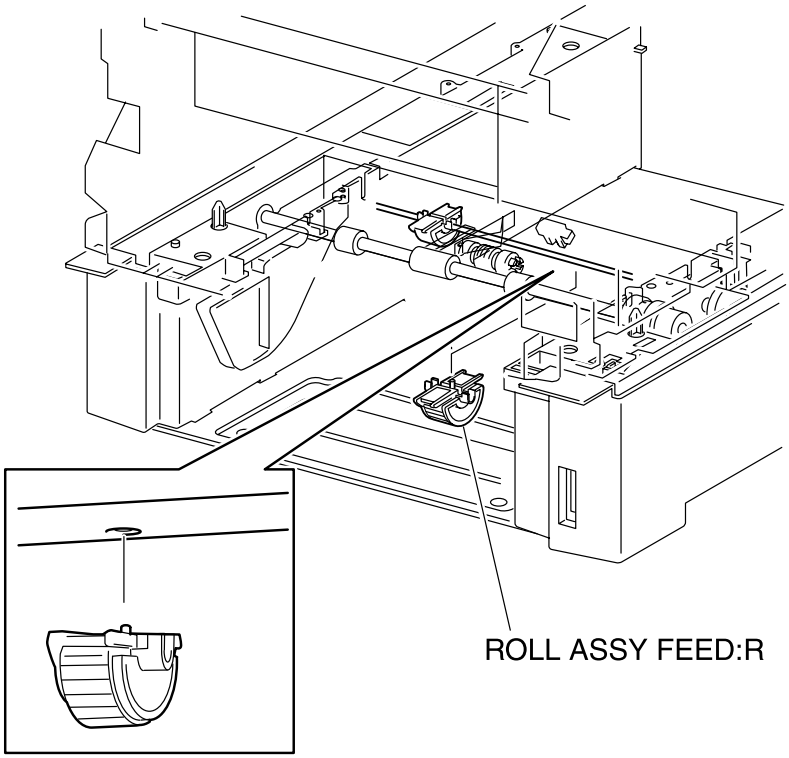


Figure: ROLL ASSY FEED Removal (2)

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)

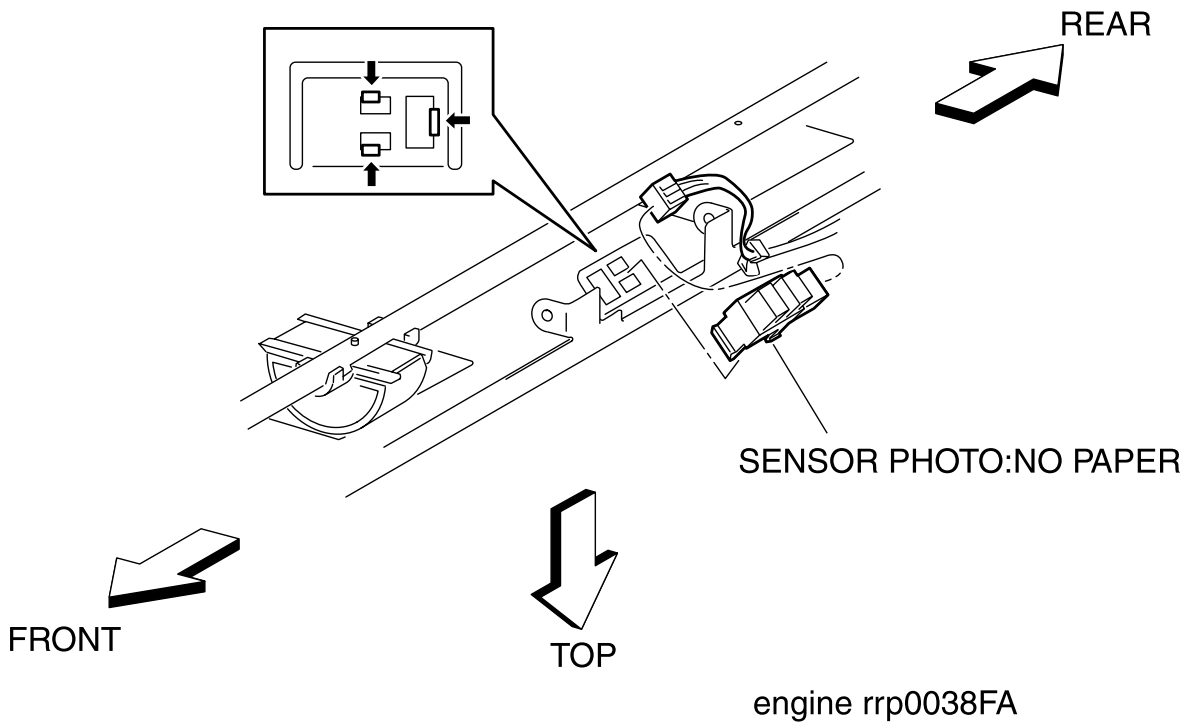


Figure: SENSOR PHOTO:NO PAPER Removal

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)

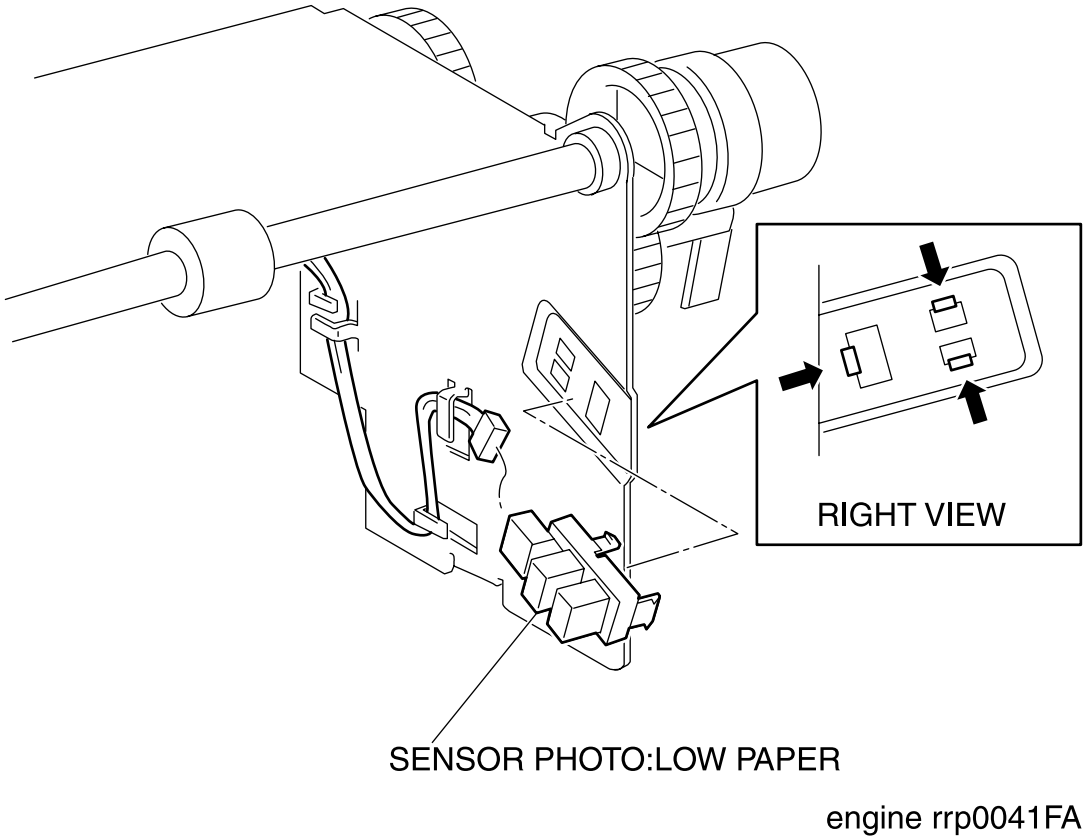


Figure: SENSOR PHOTO:LOW PAPER Removal

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)

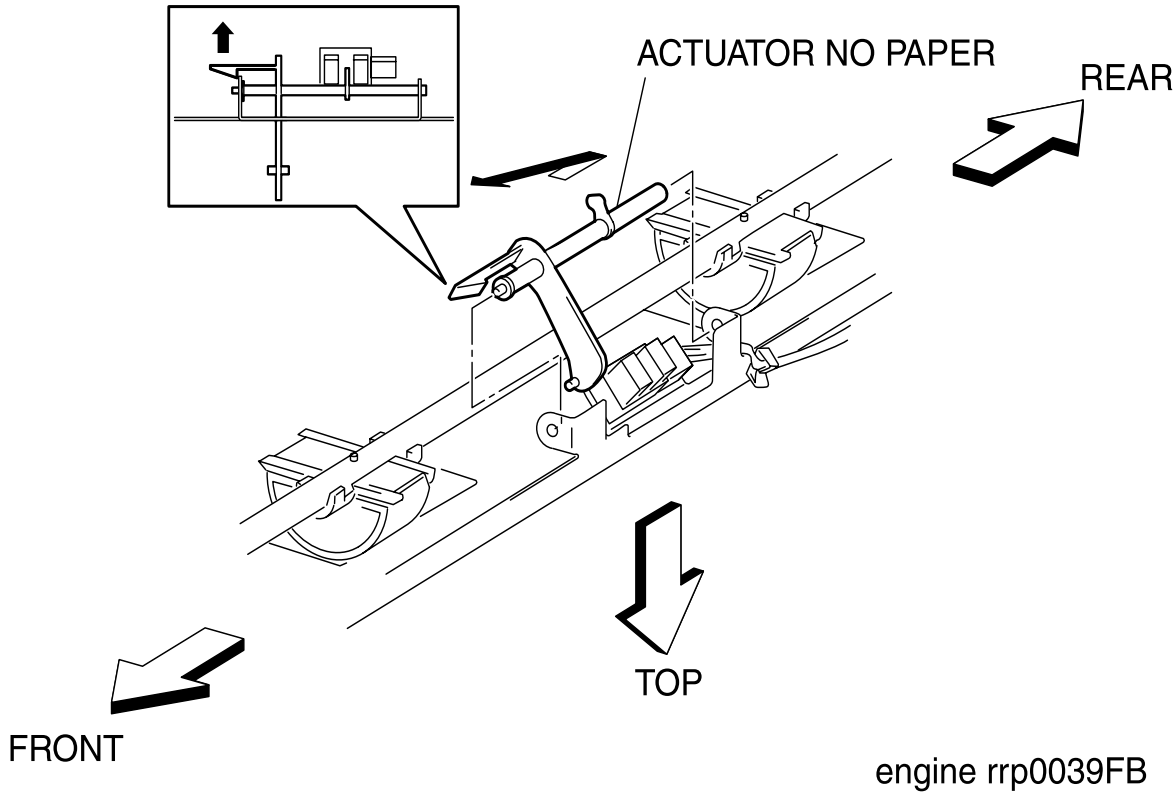


Figure: ACTUATOR NO PAPER Removal

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)

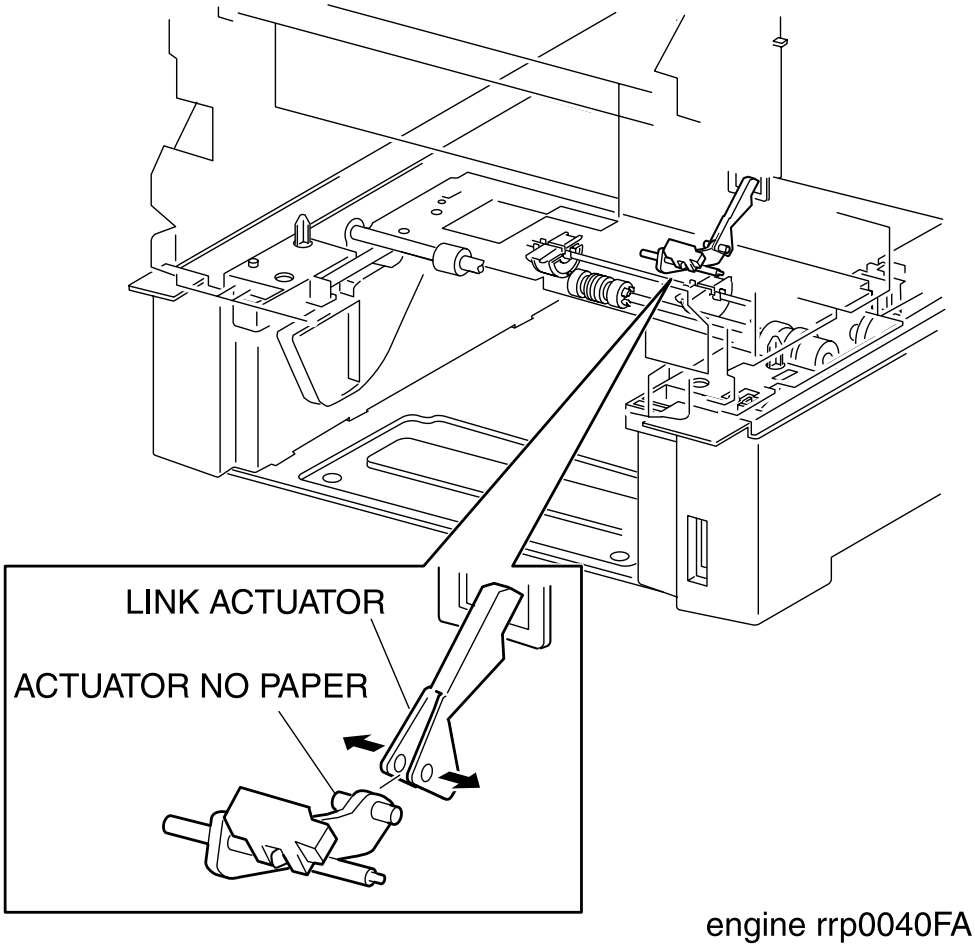


Figure: LINK ACTUATOR Removal

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)

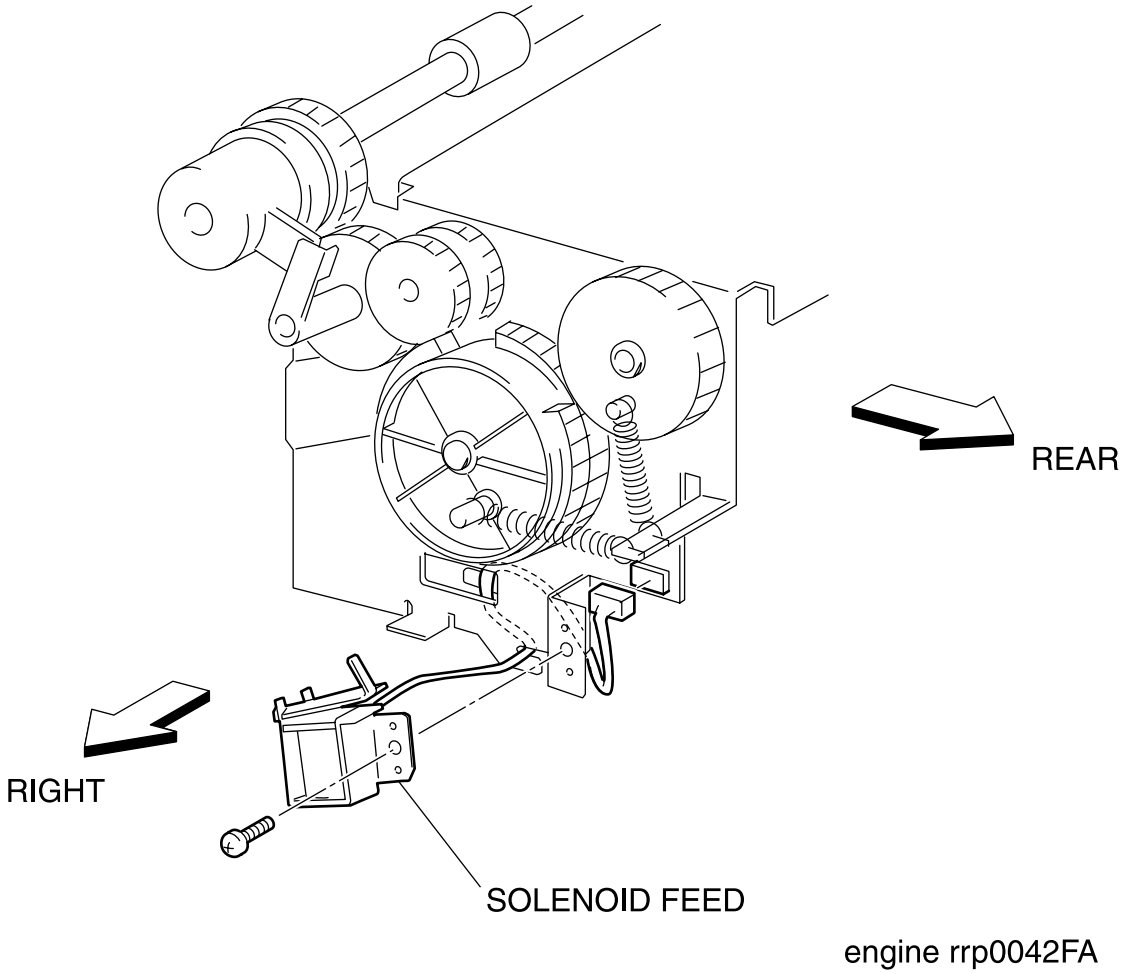


Figure: SOLENOID FEED Removal

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)

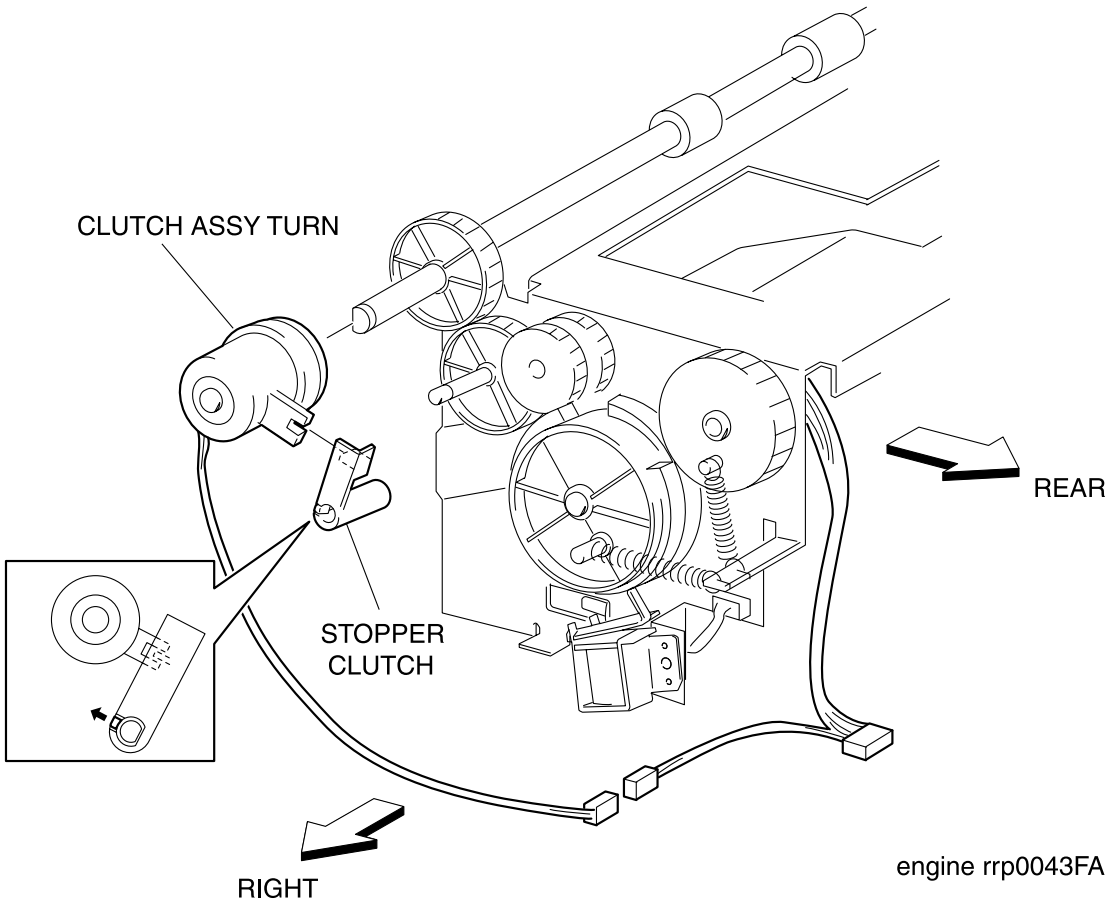


Figure: CLUTCH ASSY TURN Removal

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)

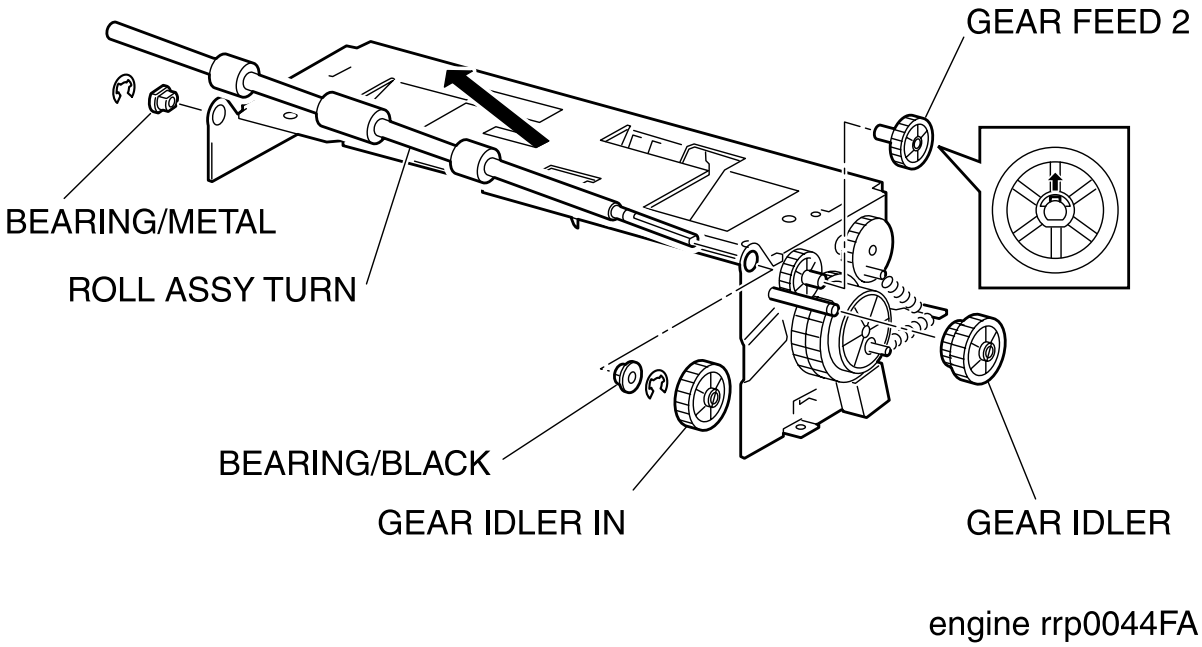


Figure: ROLL ASSY TURN Removal

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)

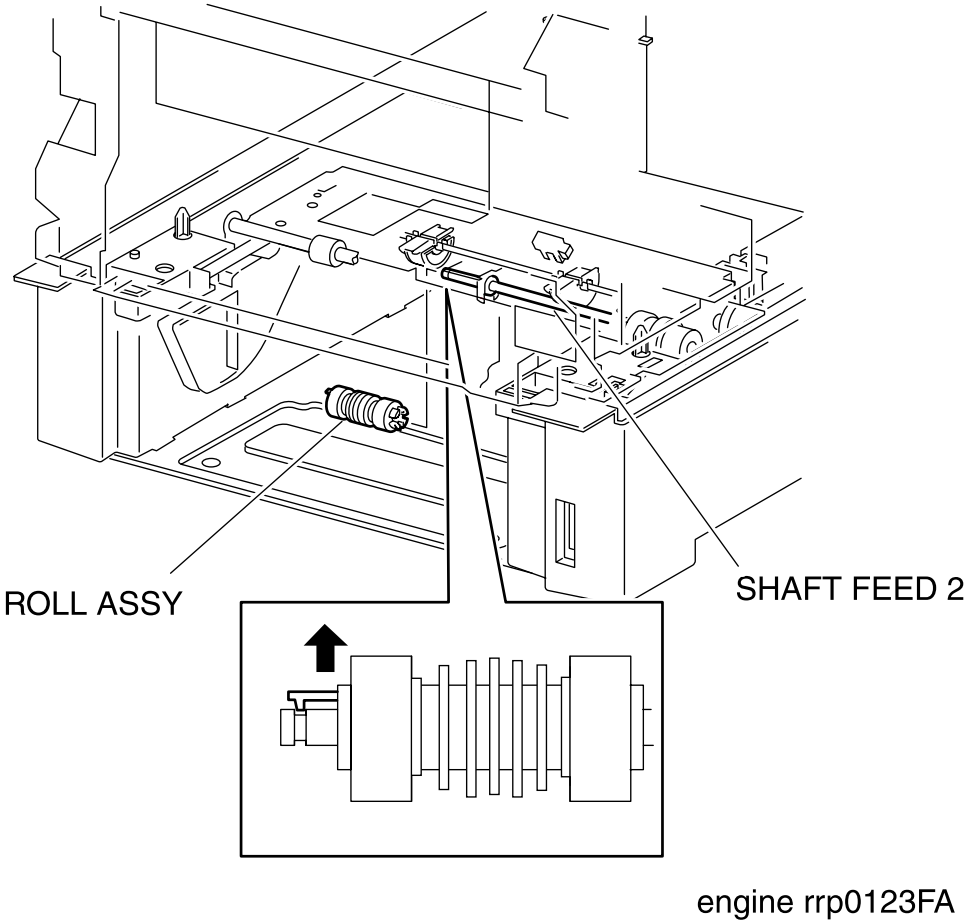


Figure: ROLL ASSY Removal

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)

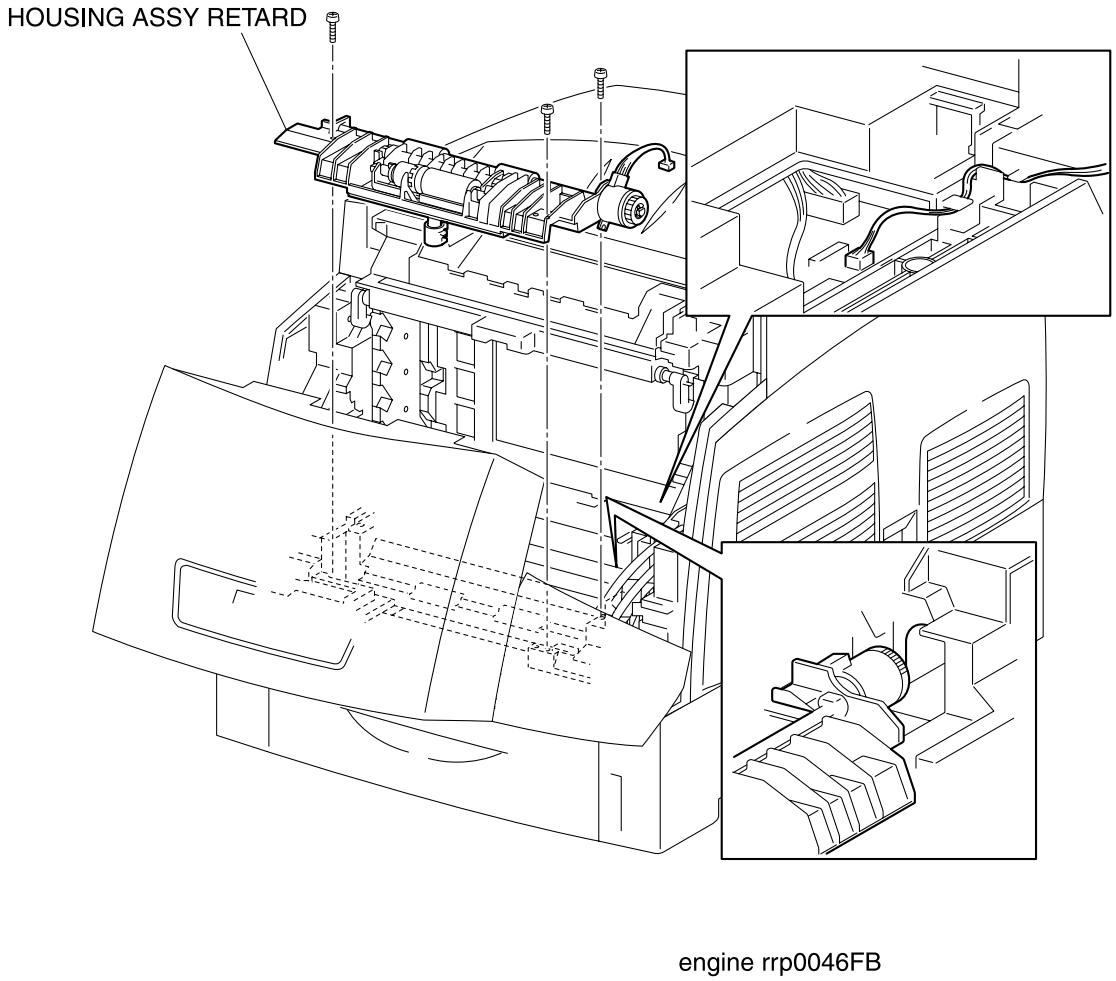


Figure: HOUSING ASSY RETARD Removal

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 HBN MCU (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)

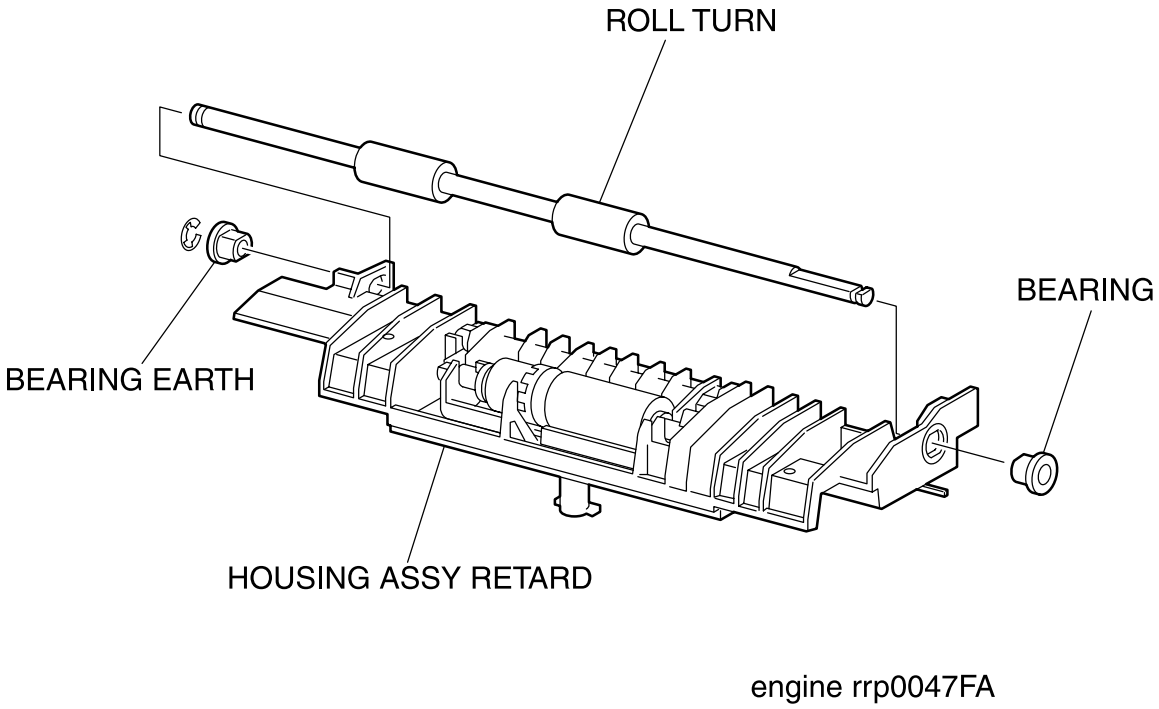


Figure: ROLL TURN Removal

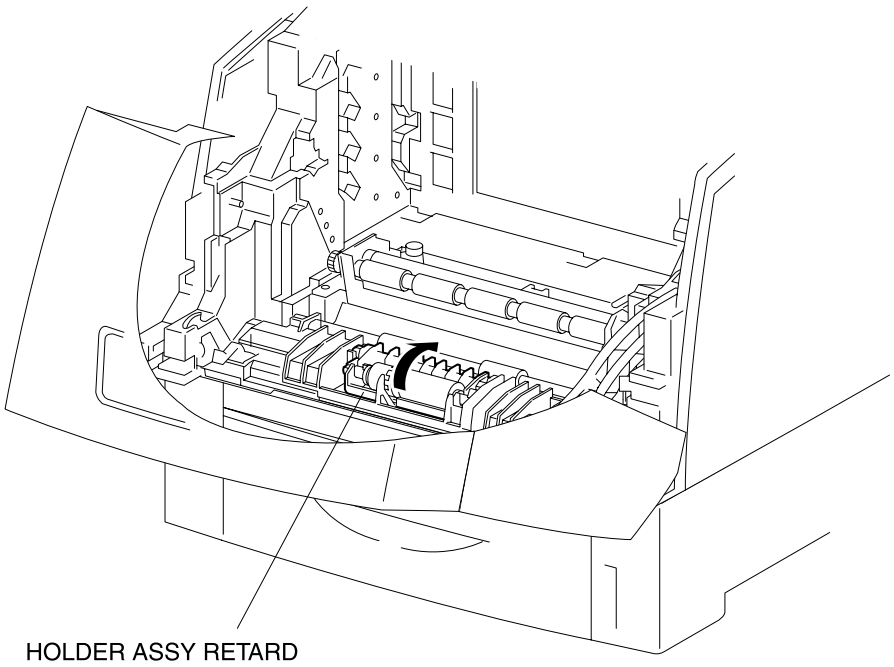
Removal

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

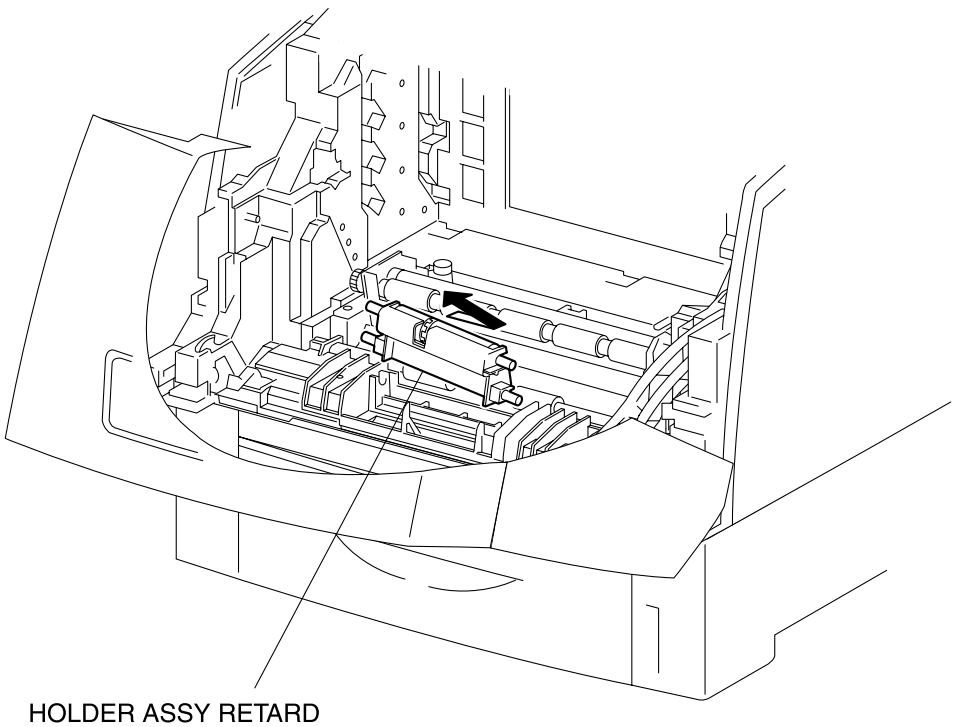
Replace the components in the reverse order of removal.

RRP4.3 ROLL ASSY RETARD (PL4.1.5)



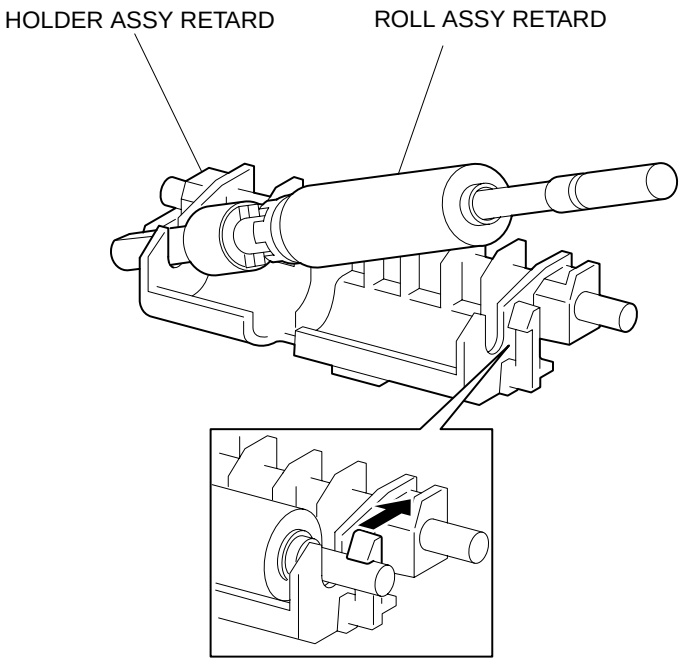
engine rrp0131FA

Figure: ROLL ASSY RETARD Removal (1)



engine rrp0132FA

Figure: ROLL ASSY RETARD Removal (2)



engine rrp0049FA

Figure: ROLL ASSY RETARD 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.

Replacement

Replace the components in the reverse order of removal.

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RRP4.4 CLUTCH TURN (PL4.1.9)

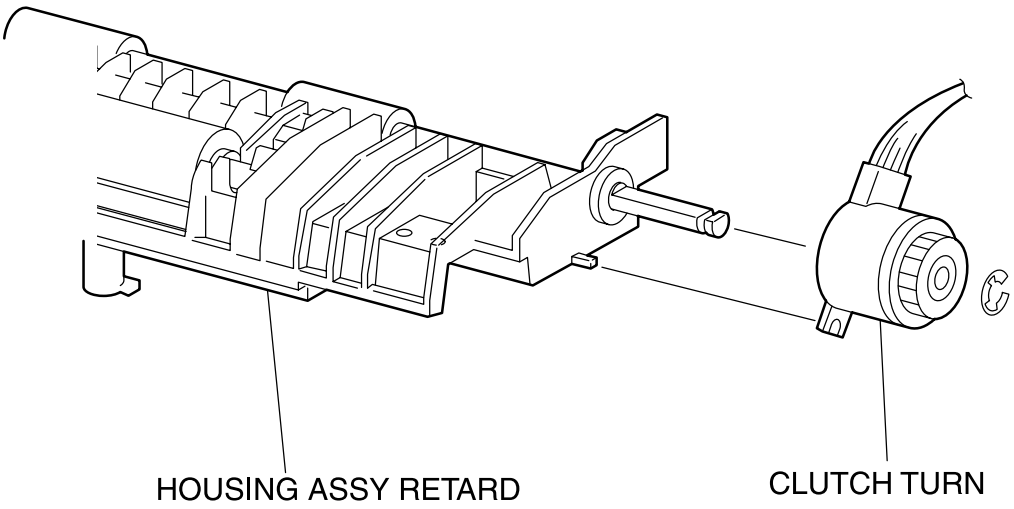


Figure: CLUTCH TURN Removal

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)

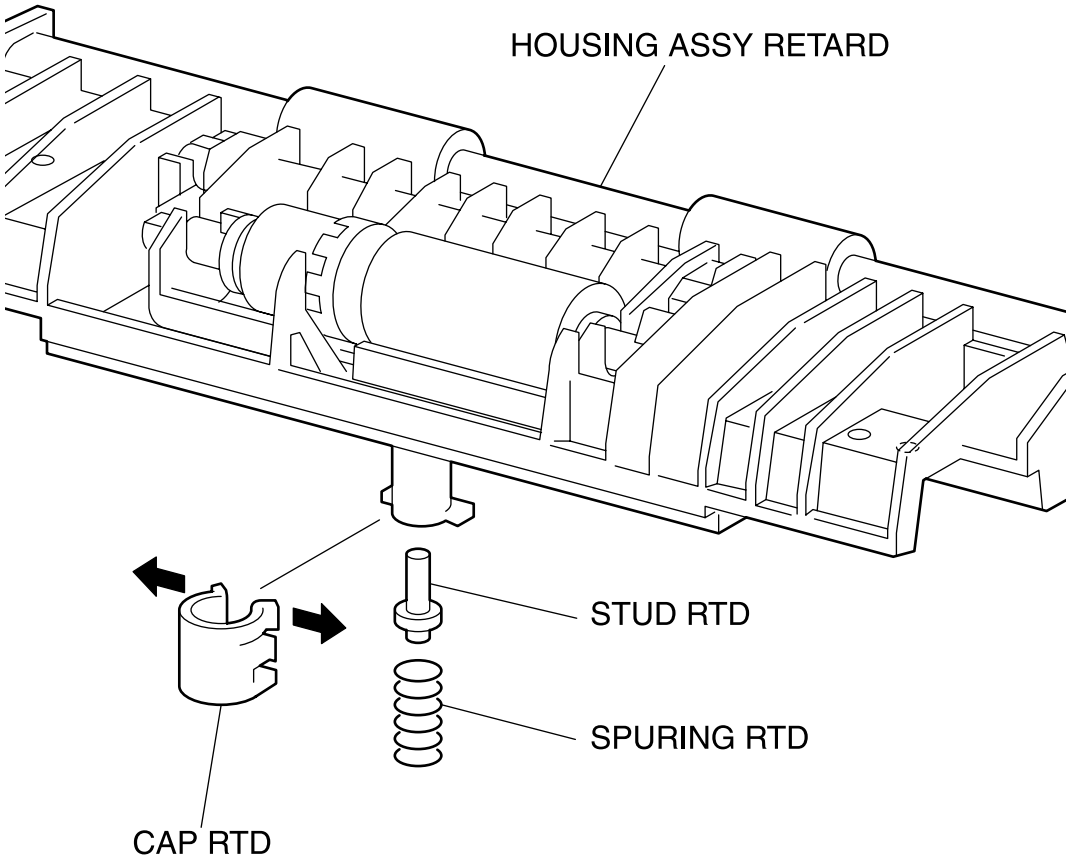


Figure: STUD RTD Removal

Removal

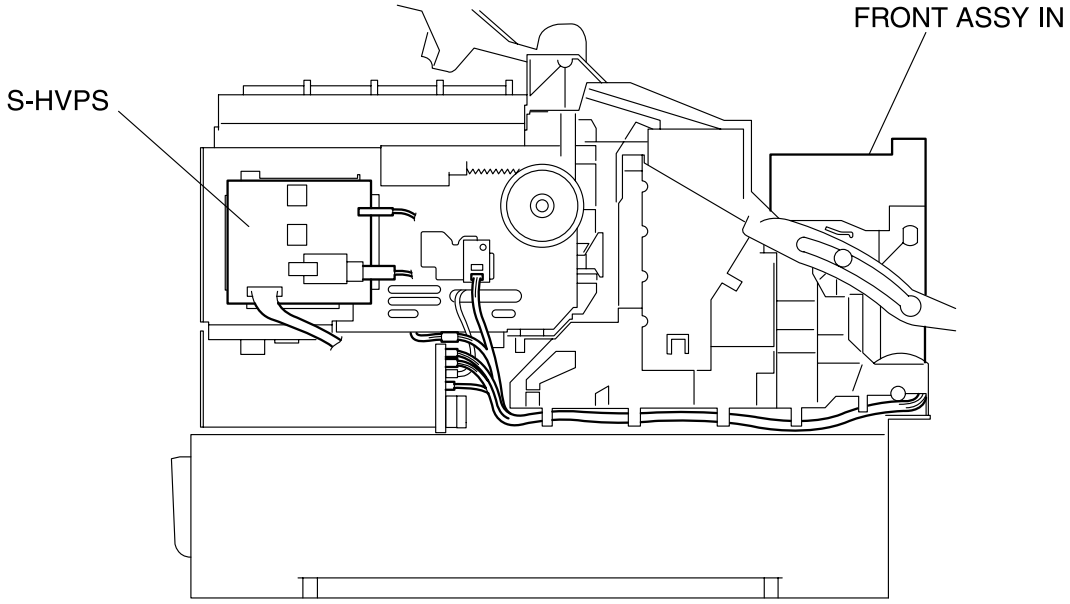
1) Remove the CHUTE ASSY REGI. (RRP9.3)
2) Remove the HOUSING ASSY RETARD. (RRP4.1)
3) Release the hooks at 2 positions securing the CAP RTD (PL4.1.12) to the convex portion at the lower part of the HOUSING ASSY RETARD (PL4.1.1).
4) Remove the CAP RTD from the HOUSING ASSY RETARD together with the STUD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

Replacement

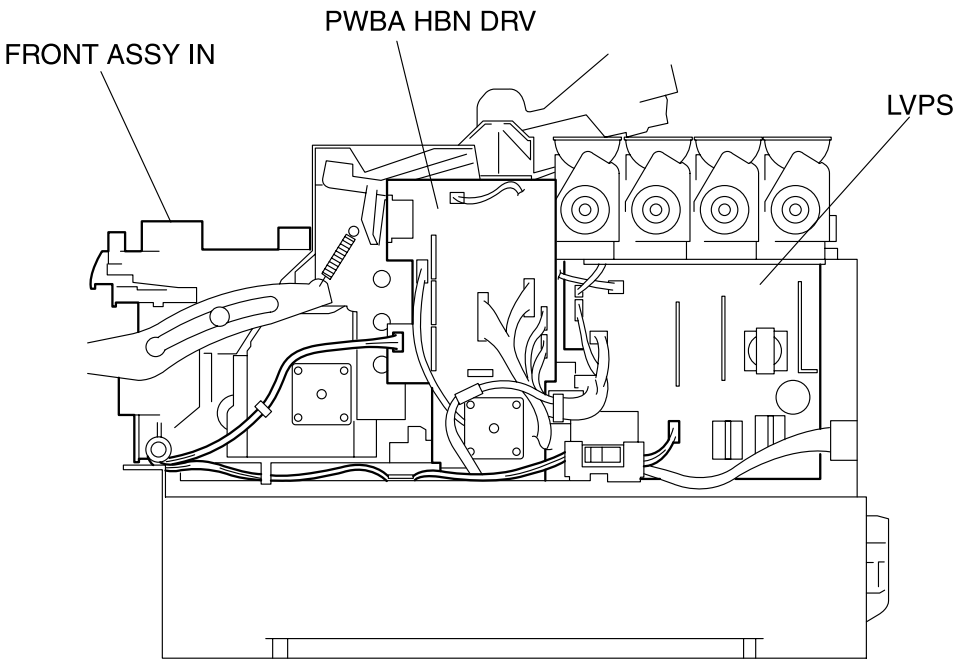
Replace the components in the reverse order of removal.

RRP5. CHUTE ASSY IN

RRP5.1 CHUTE ASSY IN (PL5.1.1)



LEFT SIDE VIEW



RIGHT SIDE VIEW

engine rrp0051FB

Figure: CHUTE ASSY IN Removal (1)

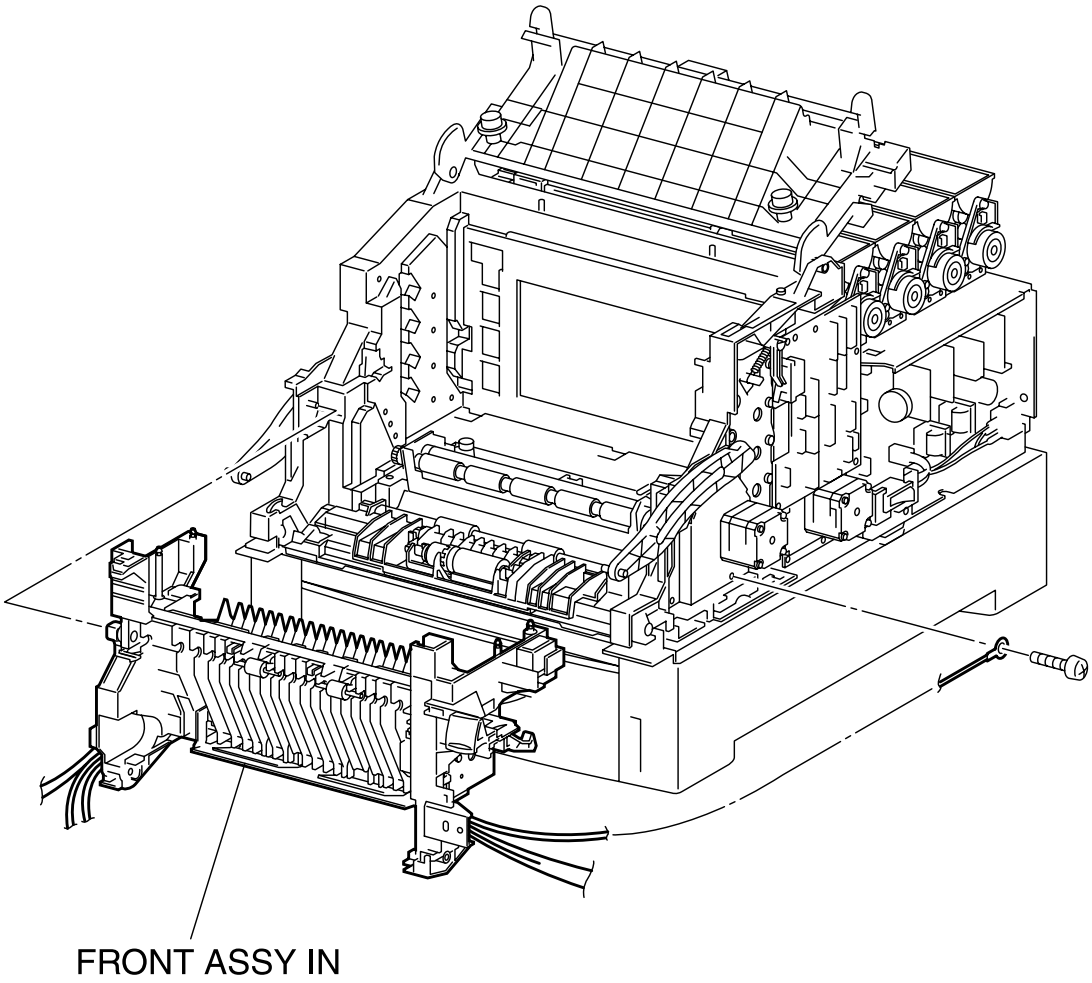


Figure: CHUTE ASSY IN Removal (2)

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 drop 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 HARNESS ASSY FSR3 (FSR32) (PL5.1.9) from the left-hand side 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 HBN DRV (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 frontward and remove.

Replacement

Replace the components in the reverse order of removal.

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RRP5.2 SENSOR ADC ASSY (PL5.1.11)

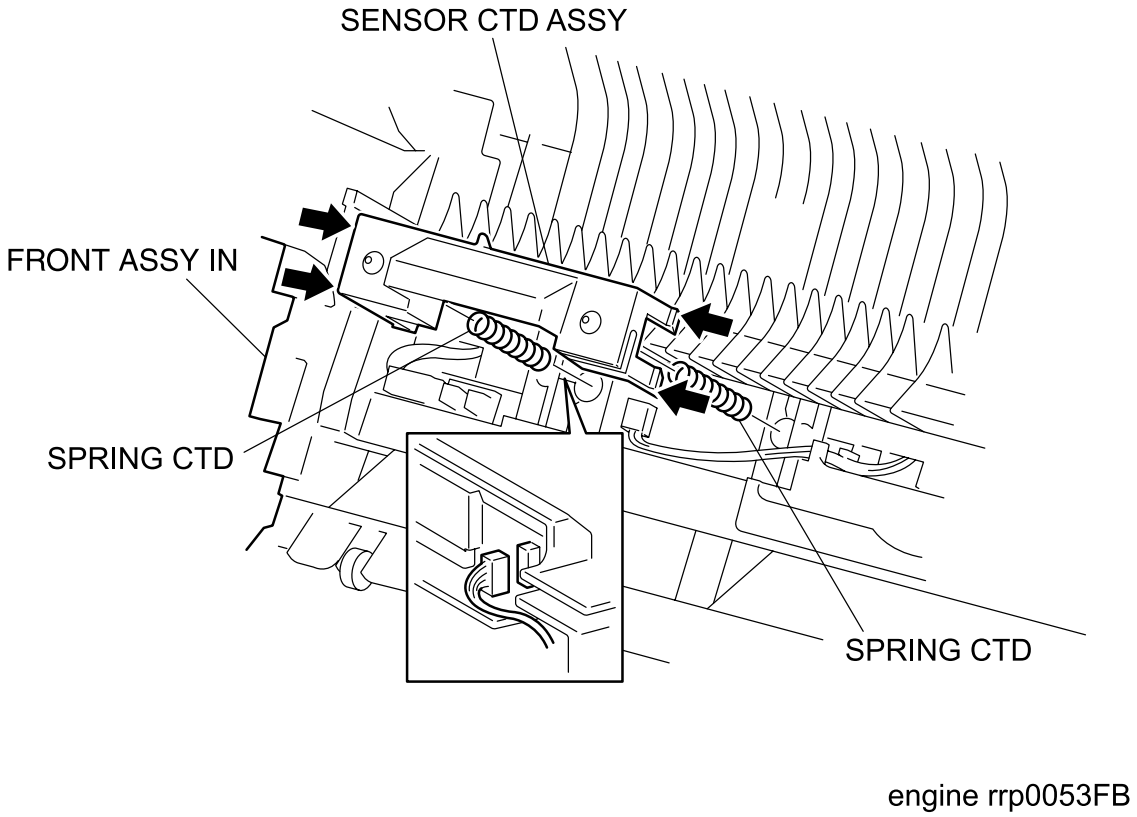


Figure: SENSOR CTD ASSY Removal

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 CTD ASSY to the CHUTE ASSY IN of the printer.
4) Raise the SENSOR CTD ASSY slightly from the CHUTE ASSY IN and pull out the connector (P/J136).
5) Remove the SENSOR CTD ASSY from the CHUTE ASSY IN together with the SPRING CTD (PL5.1.12).
6) Remove the SPRING CTD from the SENSOR CTD ASSY.

Replacement

Replace the components in the reverse order of removal.

RRP5.3 SENSOR TNR FULL (PL5.1.13)

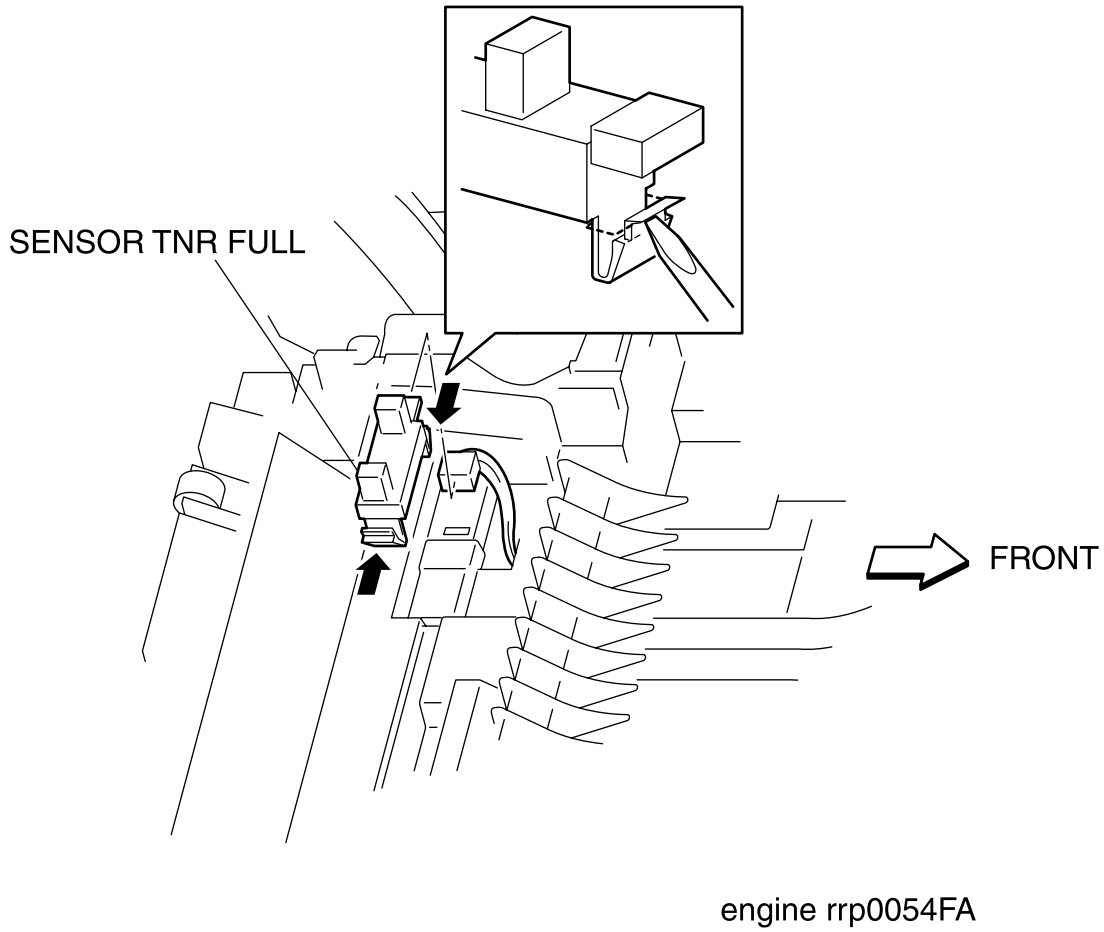


Figure: SENSOR TNR FULL Removal

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 TNR FULL from the CHUTE ASSY IN of the printer.
4) Release the hooks at 2 positions securing the SENSOR TNR FULL to the CHUTE ASSY IN with a mini screwdriver or the like.
5) Remove the SENSOR TNR FULL from the CHUTE ASSY IN.

Replacement

Replace the components in the reverse order of removal.

RRP5.4 FUSER DRIVE ASSY (PL5.1.18)

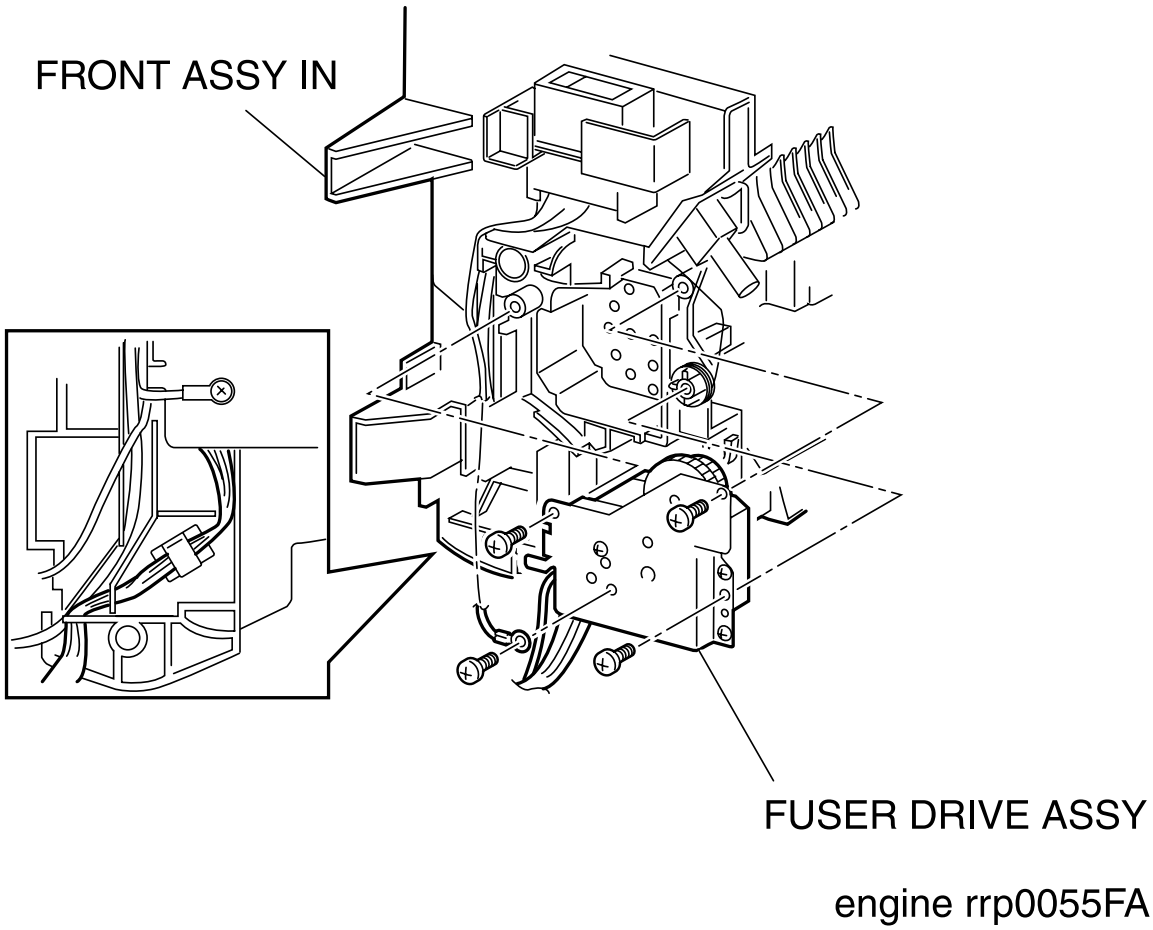


Figure: FUSER DRIVE ASSY Removal

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)

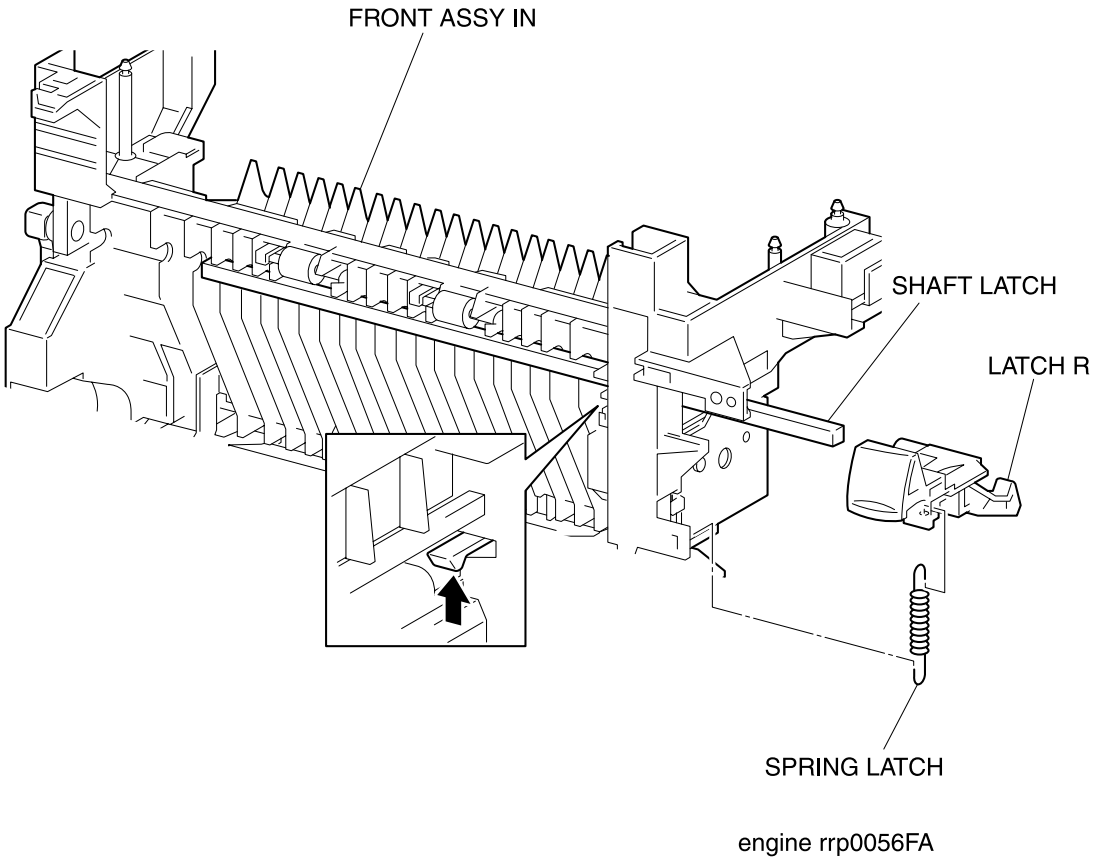


Figure: LATCH R Removal

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)

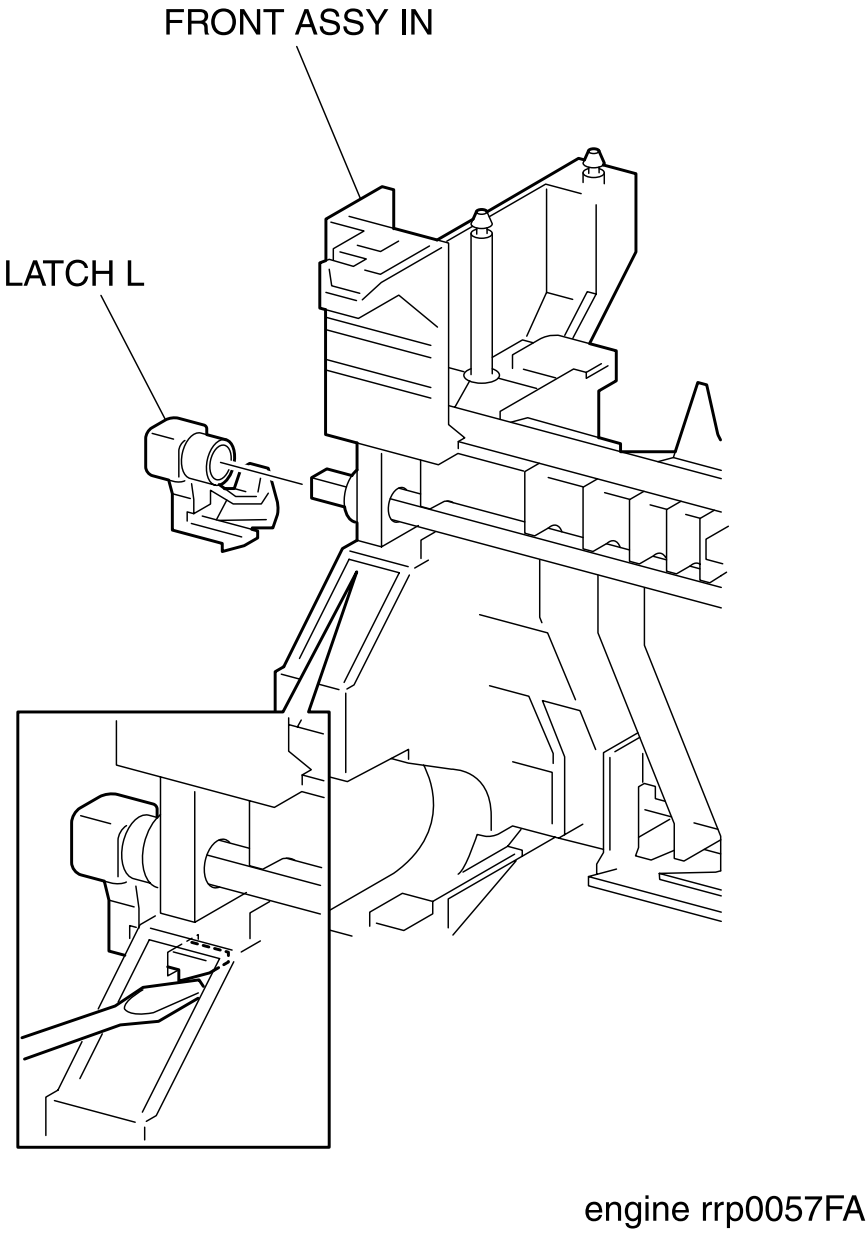


Figure: LATCH L Removal

Removal

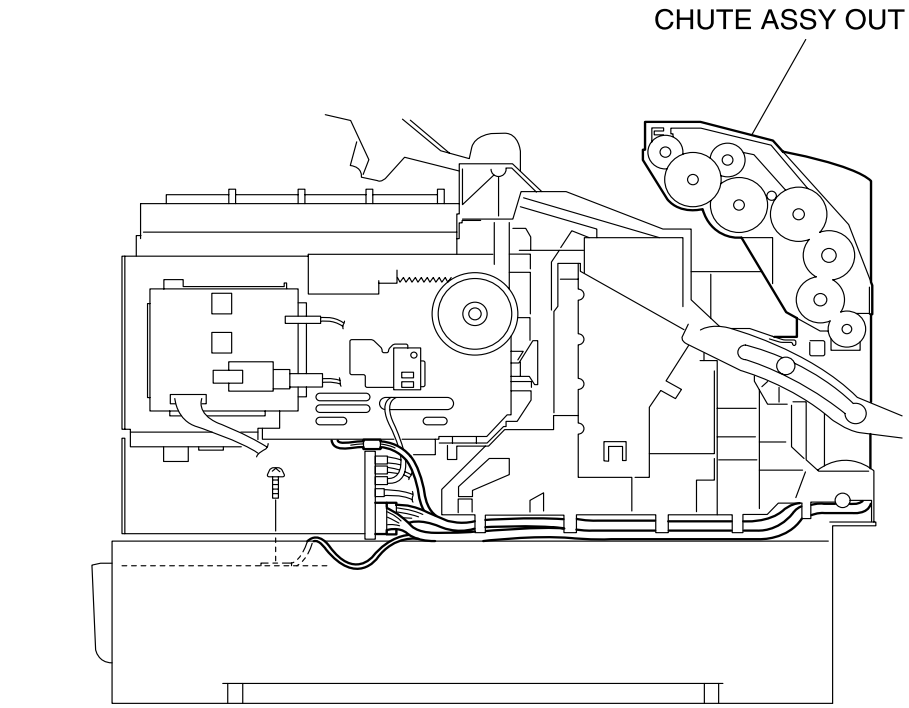
1) Remove the FUSER ASSY. (RRP8.1)
2) Remove the COVER ASSY FRONT IN. (RRP1.10)
3) Release the latch at A from the printer and open the CHUTE ASSY IN (PL5.1.1).
4) Release the hook at 1 position securing the LATCH L to the left side of the CHUTE ASSY IN.
5) Remove the LATCH L from the CHUTE ASSY IN.

Replacement

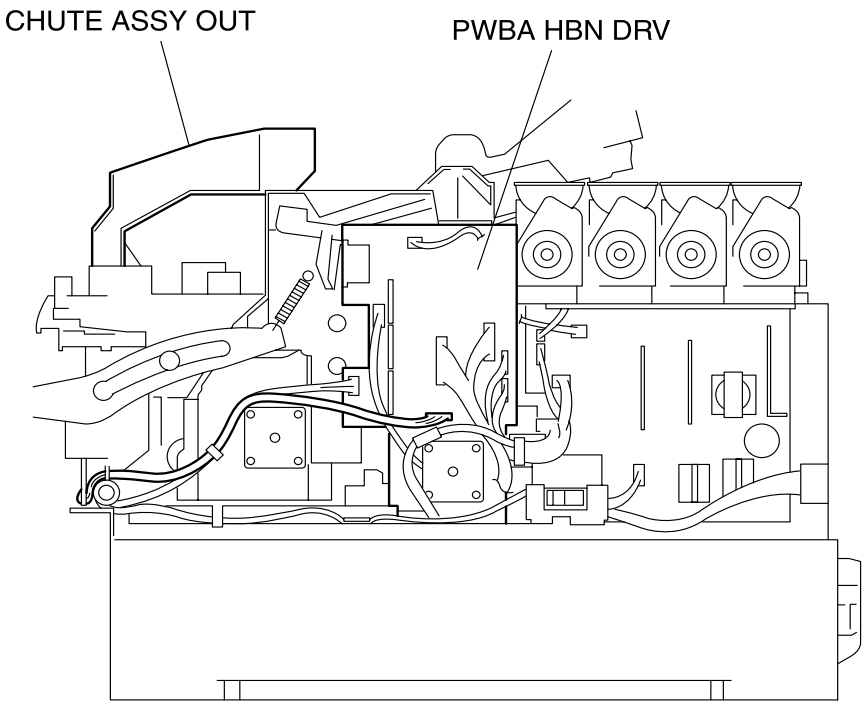
Replace the components in the reverse order of removal.

RRP6. CHUTE ASSY OUT

RRP6.1 CHUTE ASSY OUT (PL6.1.1)



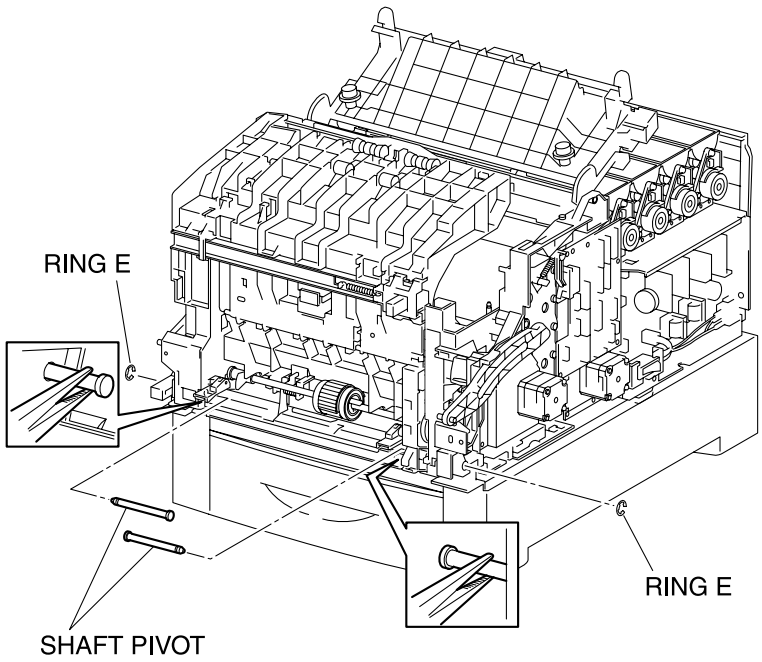
LEFT SIDE VIEW



RIGHT SIDE VIEW

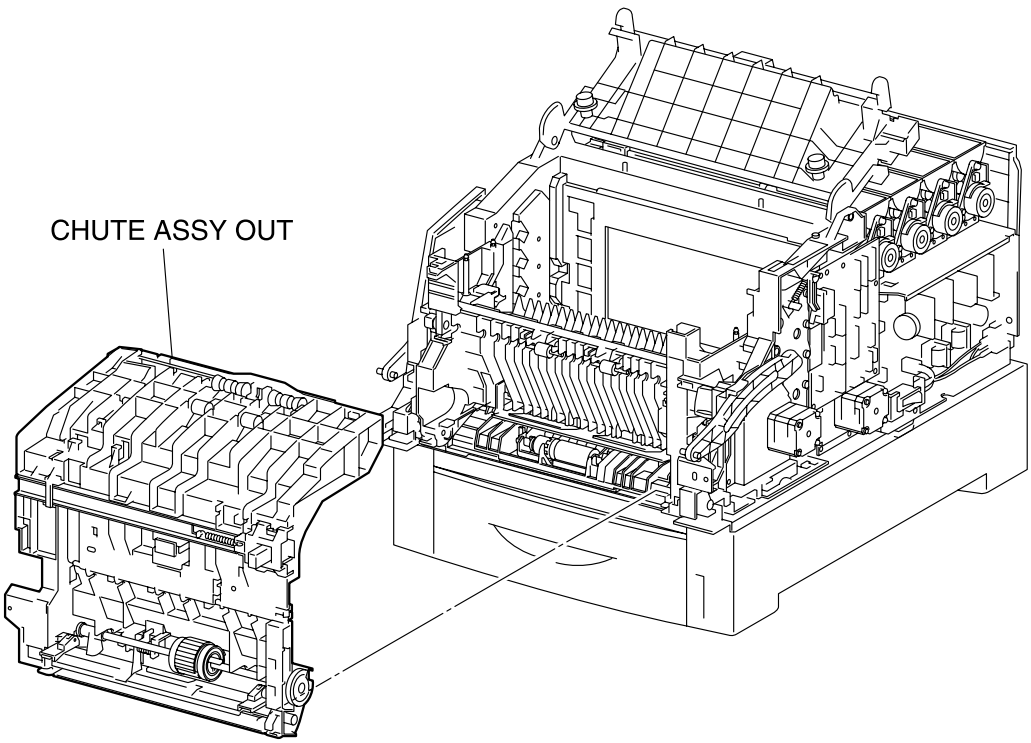
engine rrp0058FB

Figure: CHUTE ASSY OUT Removal (1)



engine rrp0059FA

Figure: CHUTE ASSY OUT Removal (2)



engine rrp0060FA

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)

NOTE

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 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 HBN DRV (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.

CAUTION

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 frontward 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)

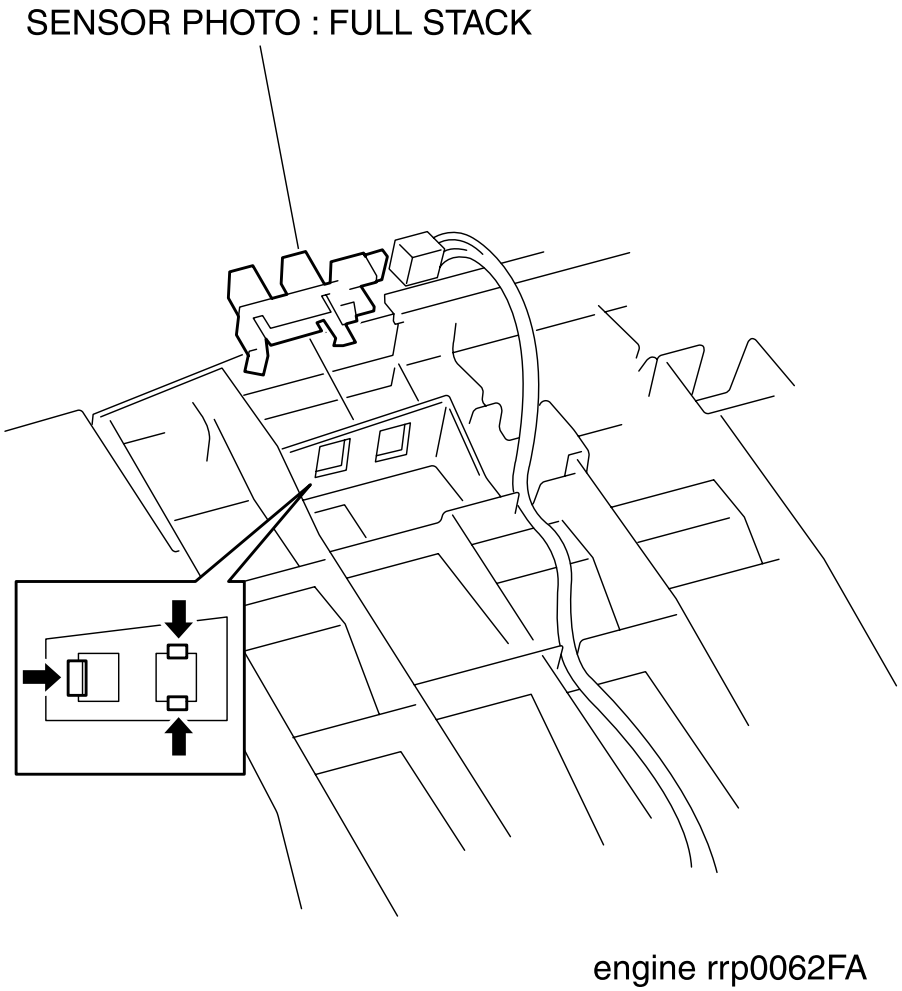

Figure: SENSOR PHOTO:FULL STACK Removal

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)

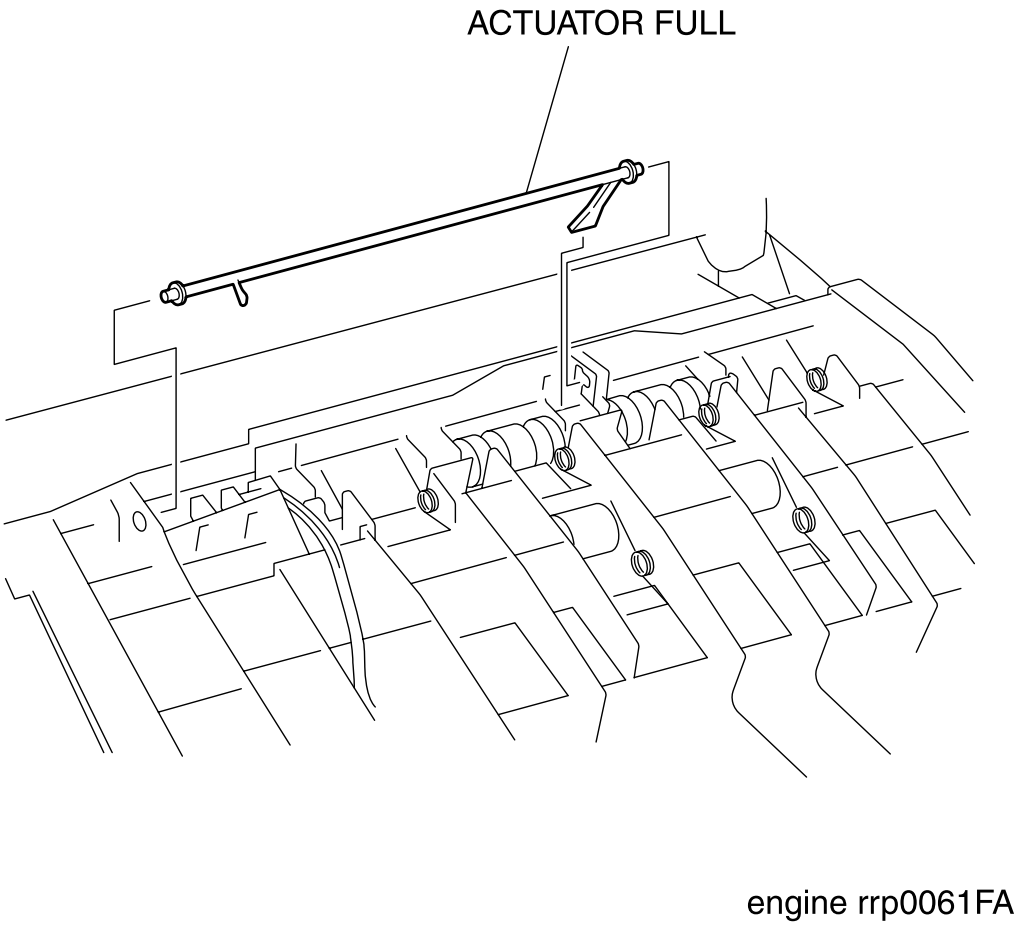

Figure: ACTUAOTR FULL Removal

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)

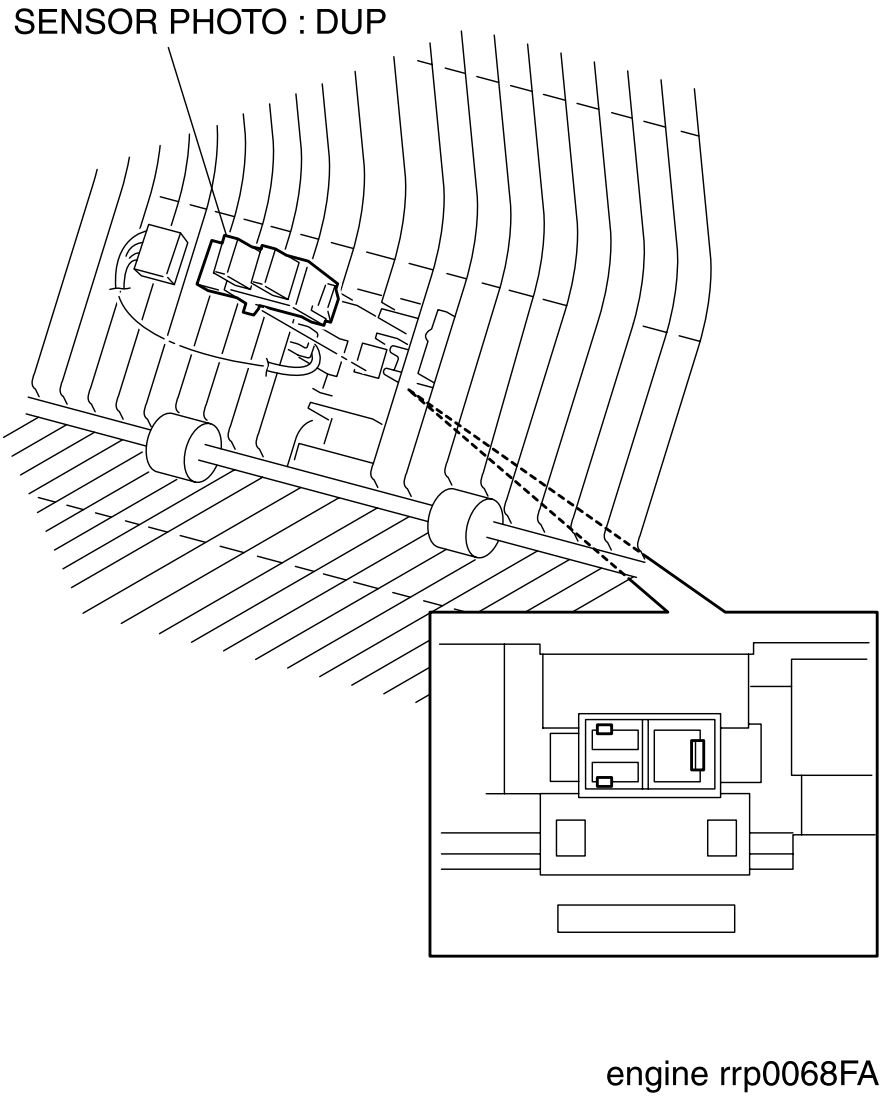

Figure: SENSOR PHOTO:DUP Removal

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)

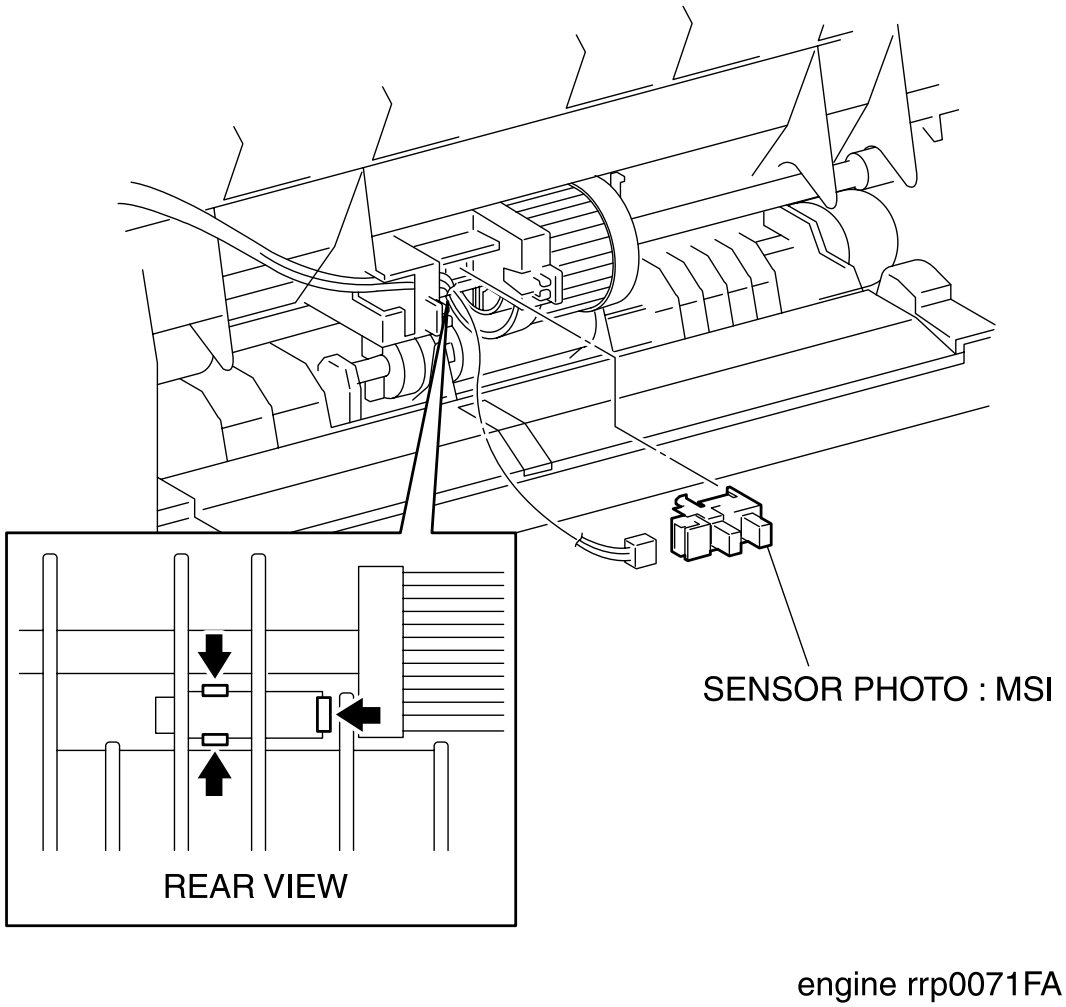

Figure: SENSOR PHOTO:MSI Removal

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)

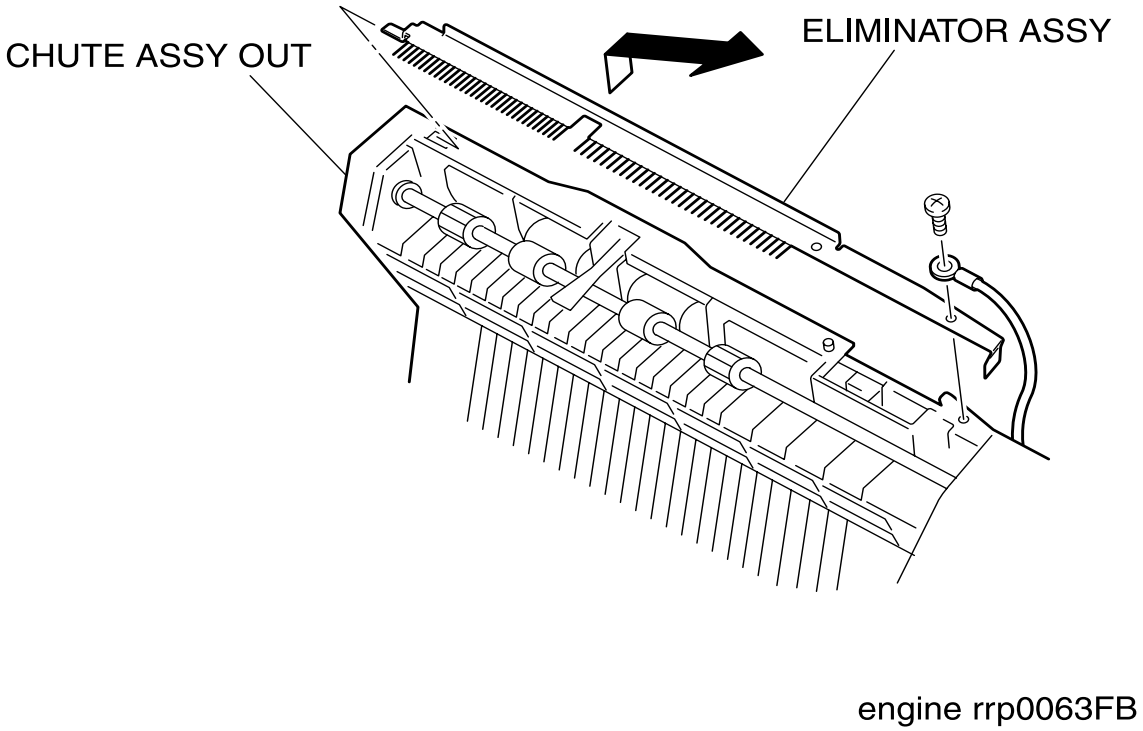

Figure: ELIMINATOR ASSY Removal

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 ELIMINATOR ASSY to the CHUTE ASSY OUT (PL6.1.1).
5) Raising the left end of the ELIMINATOR ASSY upward, pull out the ELIMINATOR ASSY 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)

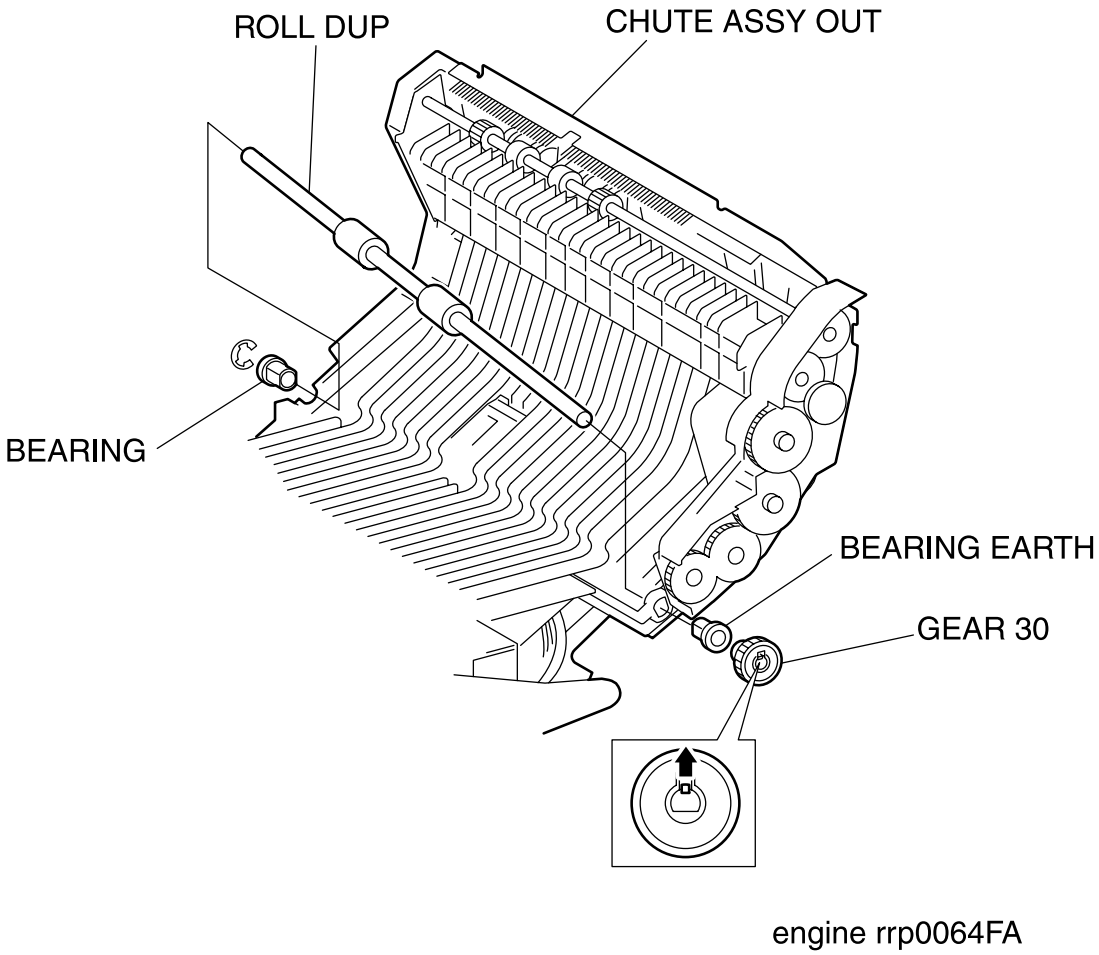

Figure: ROLL DUP Removal

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)

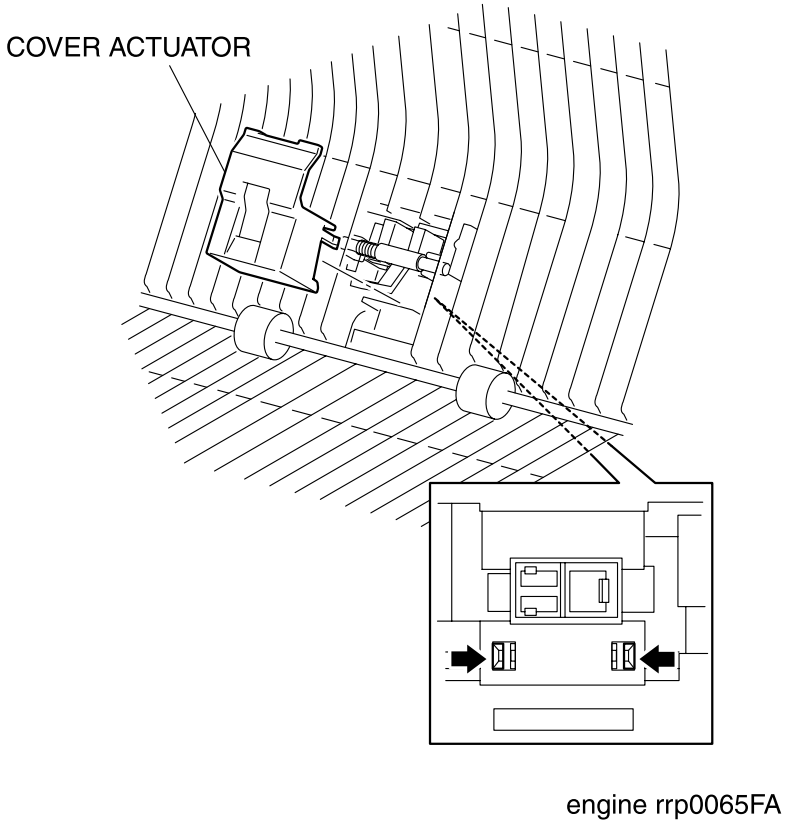

Figure: ACTUATOR DUP Removal (1)

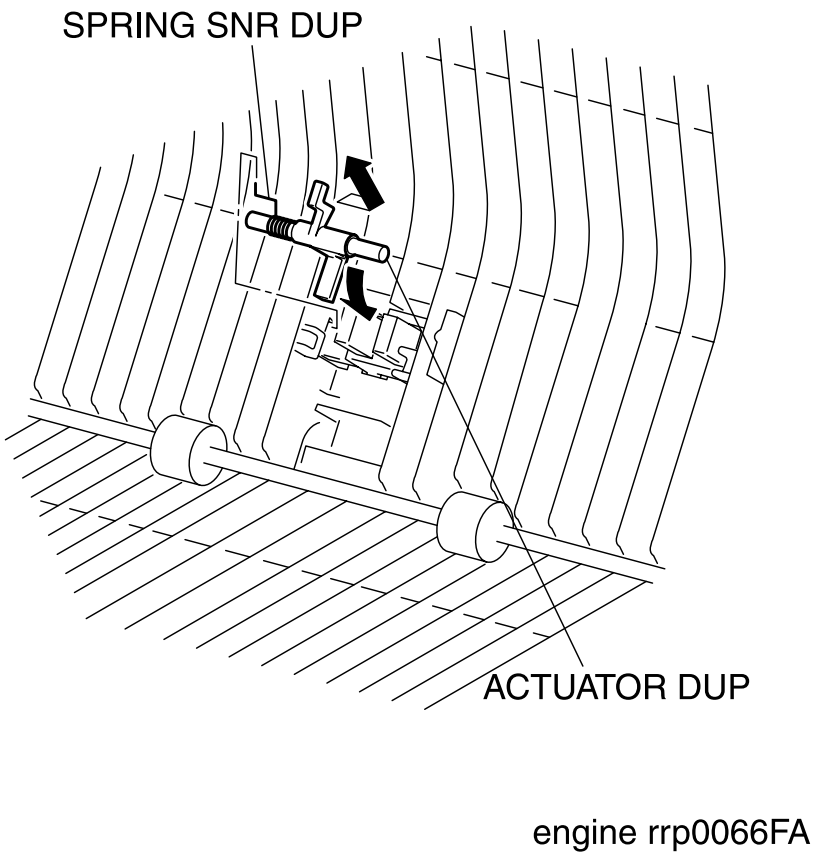

Figure: ACTUATOR DUP Removal (2)

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)

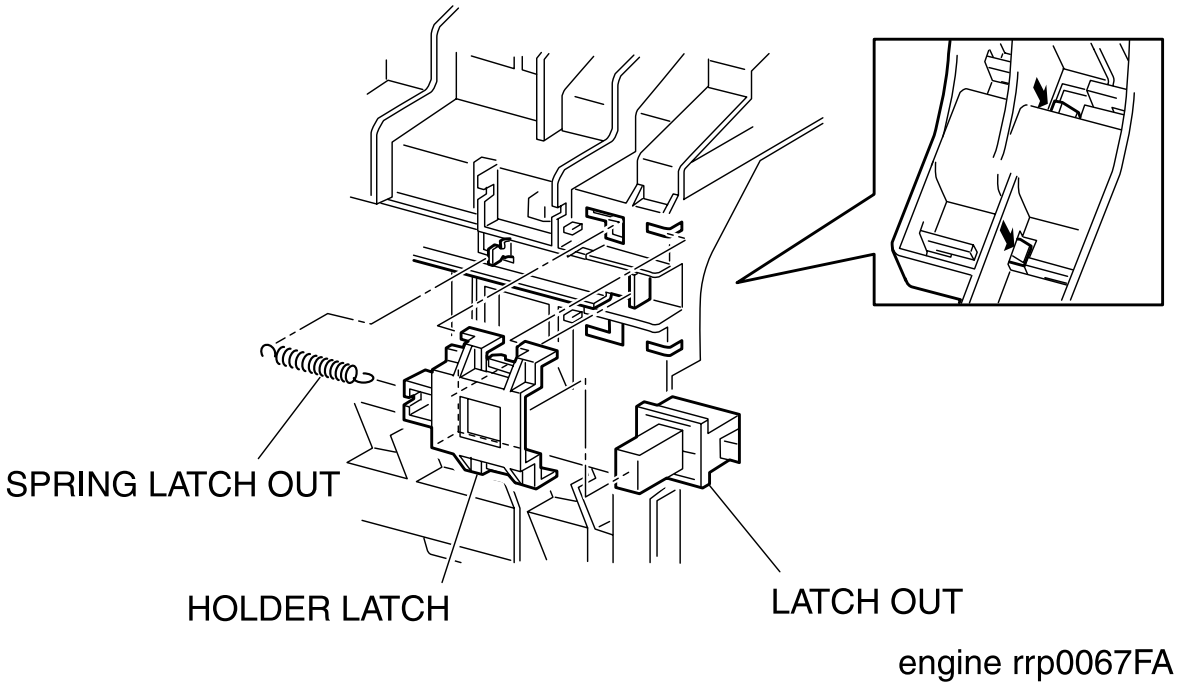

Figure: LATCH OUT Removal

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(PL6.1.27)

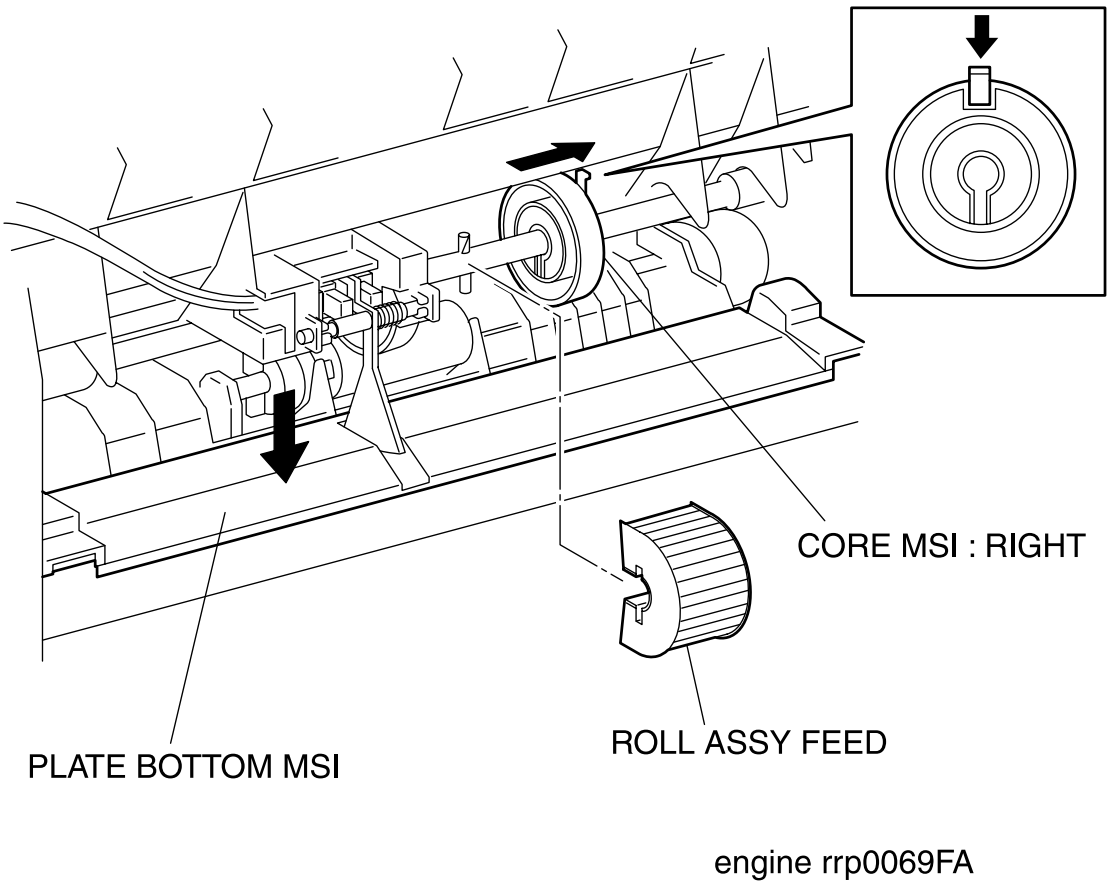

Figure: ROLL ASSY FEED Removal

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 (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 (PL6.1.27).
7) Slide the ROLL ASSY FEED rightward from the SHAFT MSI and pull out the ROLL ASSY FEED frontward.

Replacement

Replace the components in the reverse order of removal.

RRP6.11 ACTUATOR MSI (PL6.1.37)

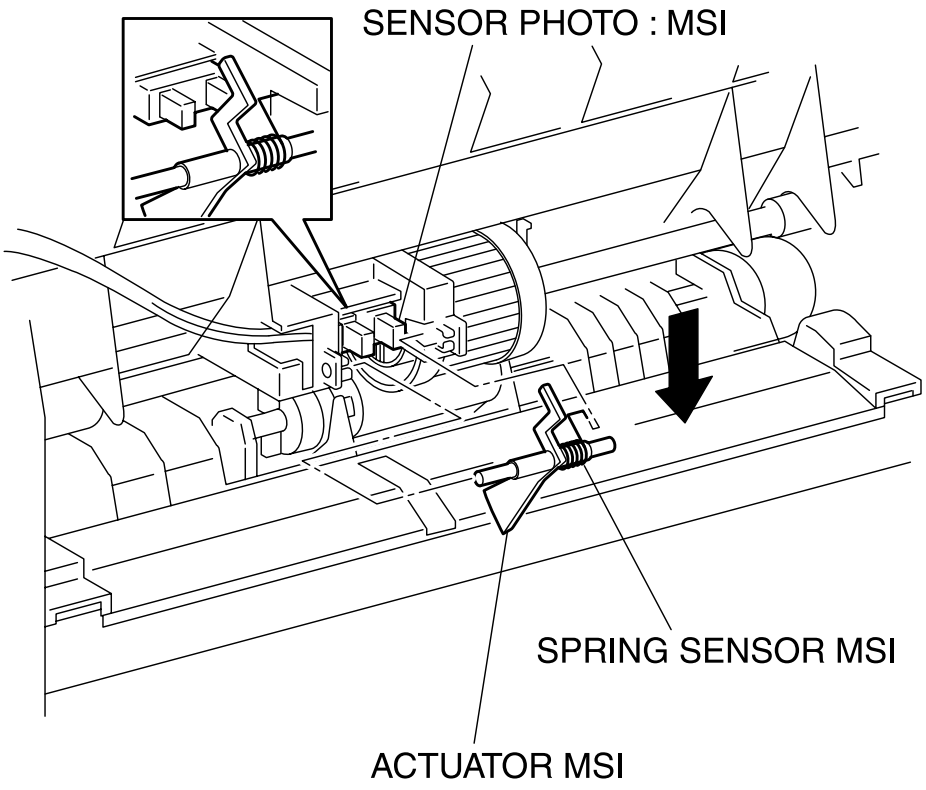

Figure: ACTUATOR MSI Removal

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 frontward 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)

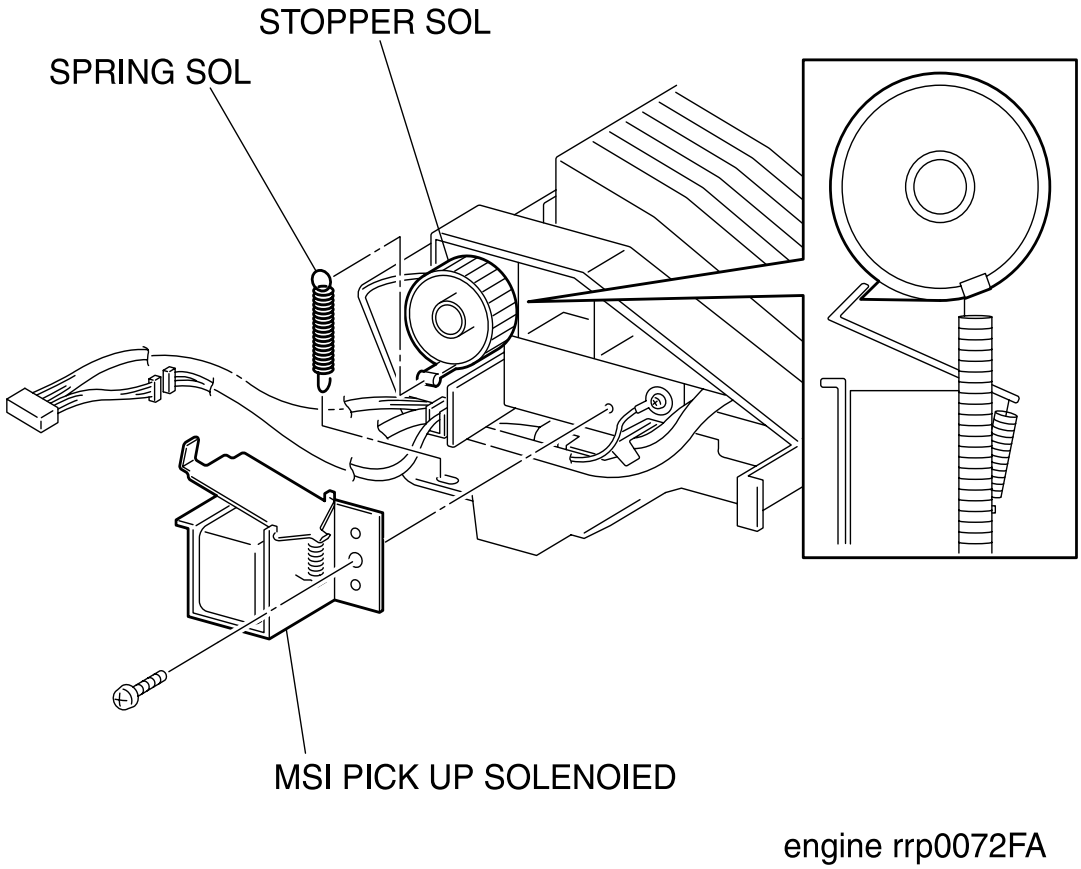

Figure: SOLENOID FEED MSI Removal

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)

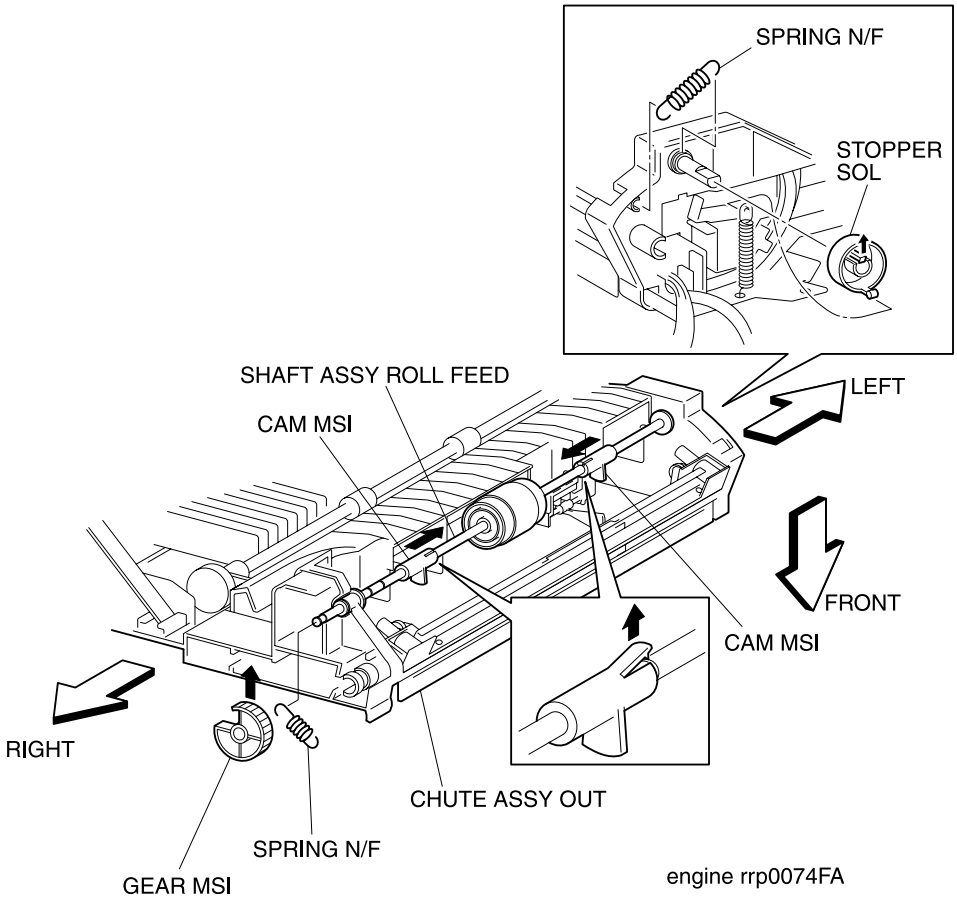

Figure: SHAFT ASSY ROLL FEED Removal (1)

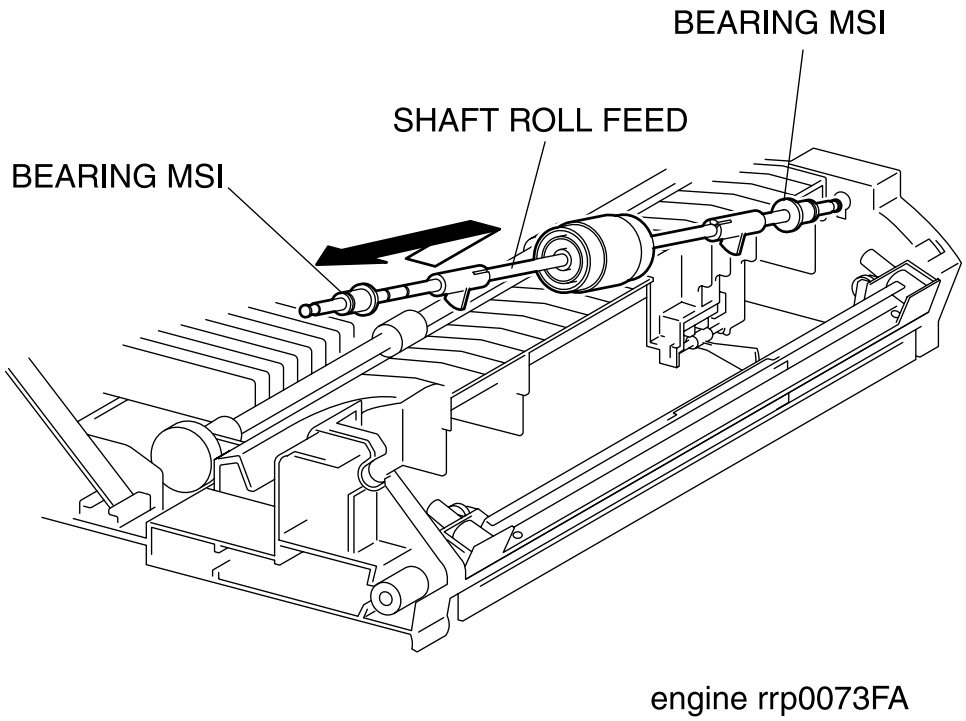

Figure: SHAFT ASSY ROLL FEED Removal (2)

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)

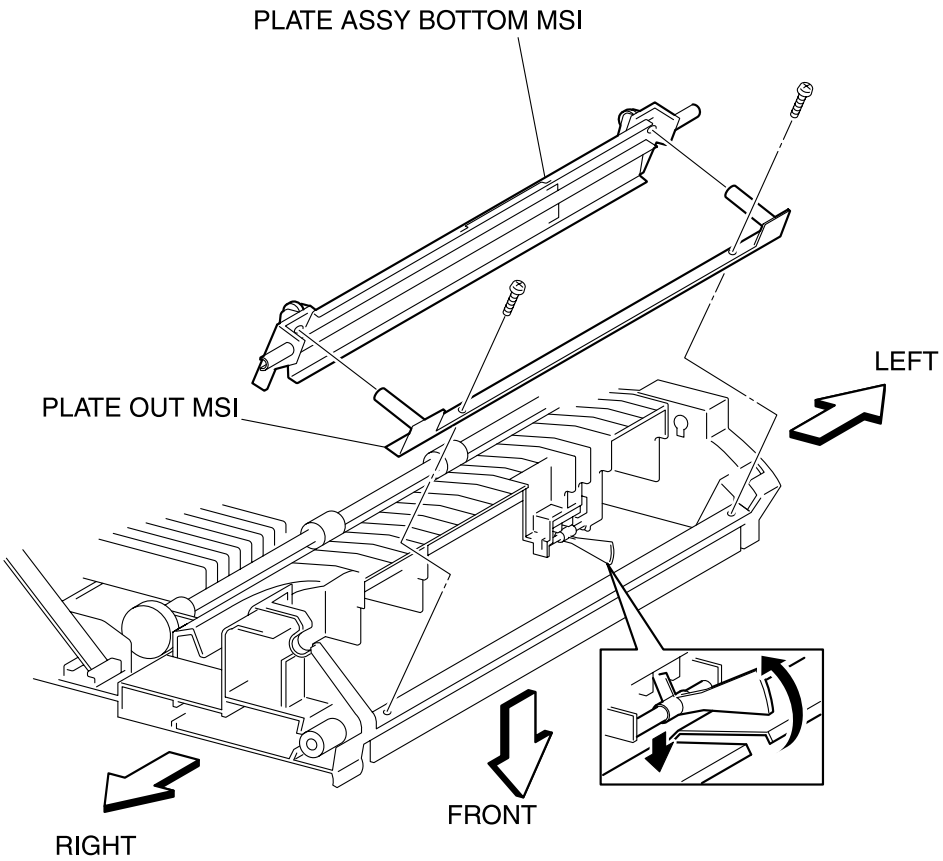

Figure: PLATE ASSY BOTTOM MSI Removal

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)

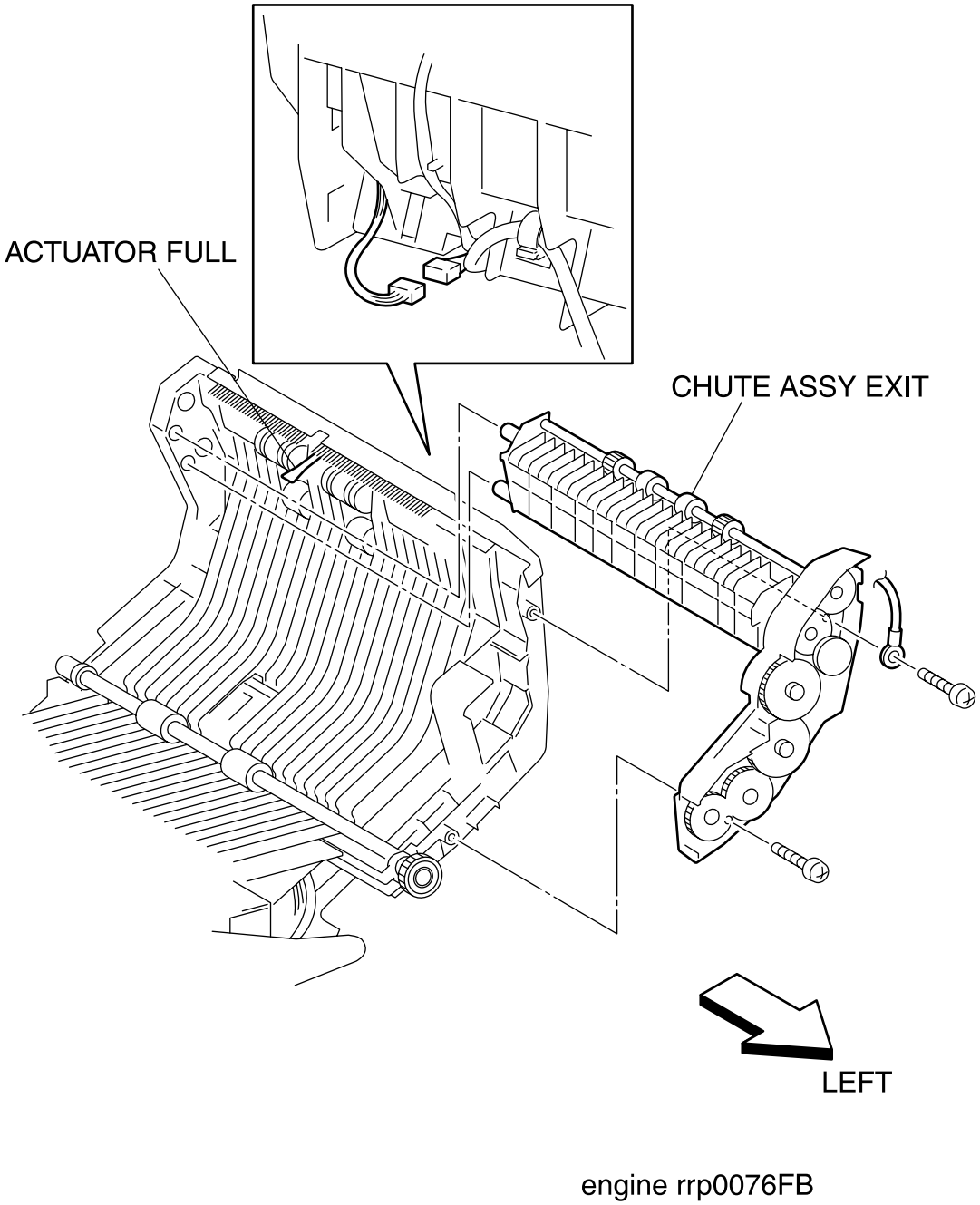

Figure: CHUTE ASSY EXIT Removal

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)

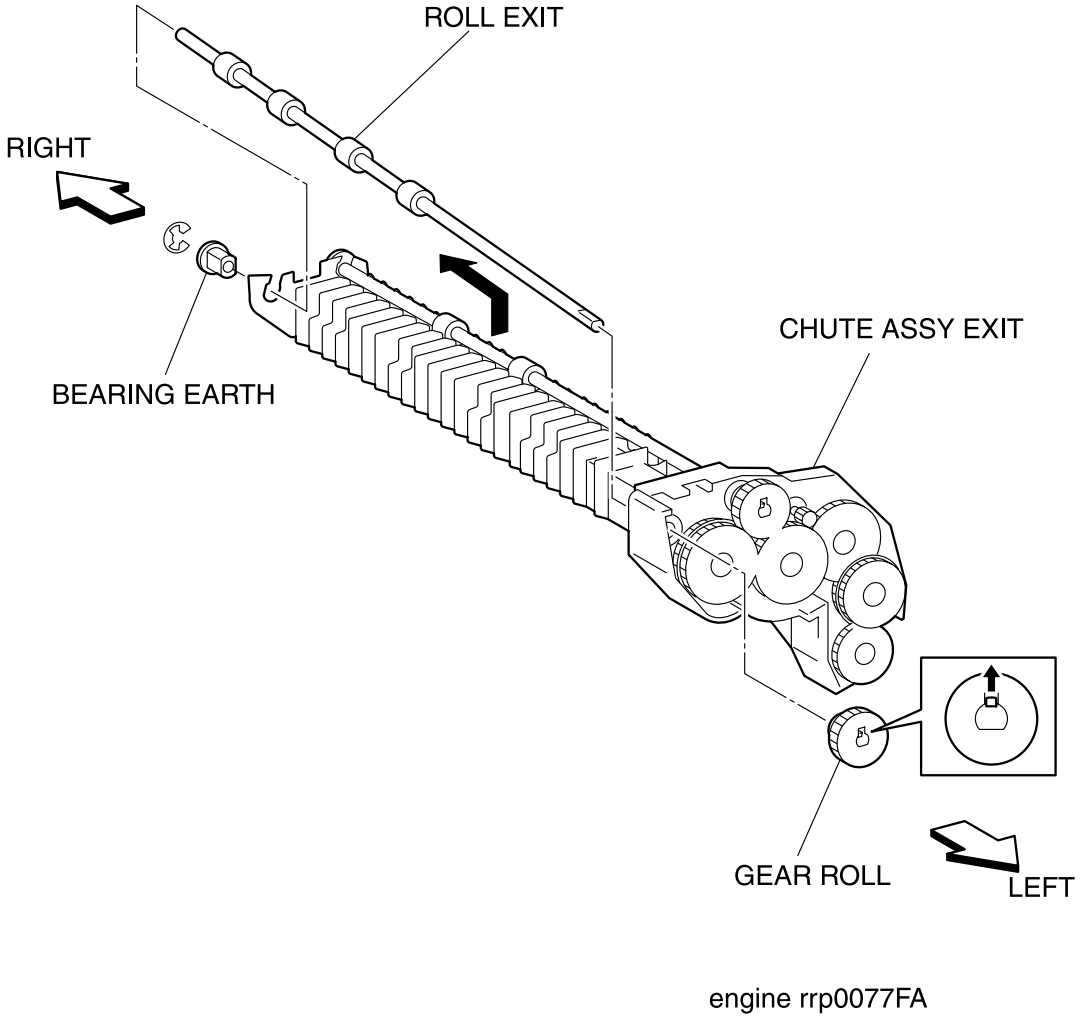

Figure: ROLL EXIT Removal

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)

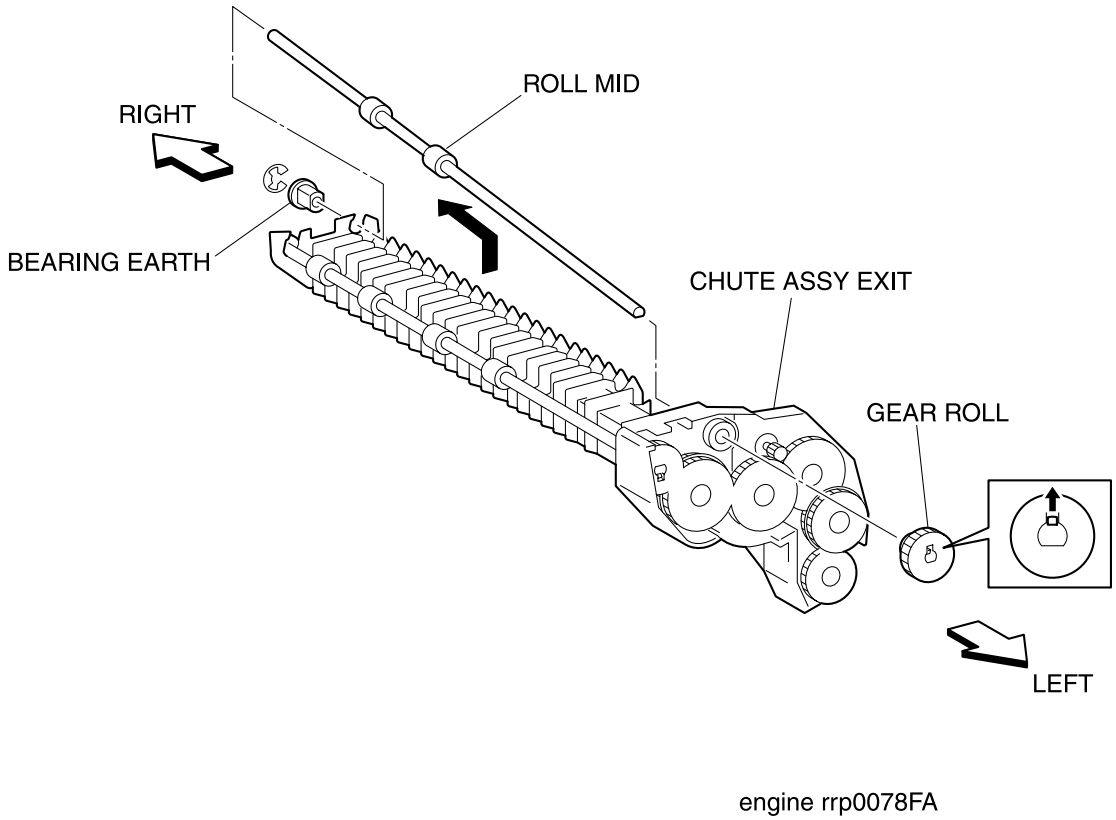

Figure: ROLL MID Removal

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)

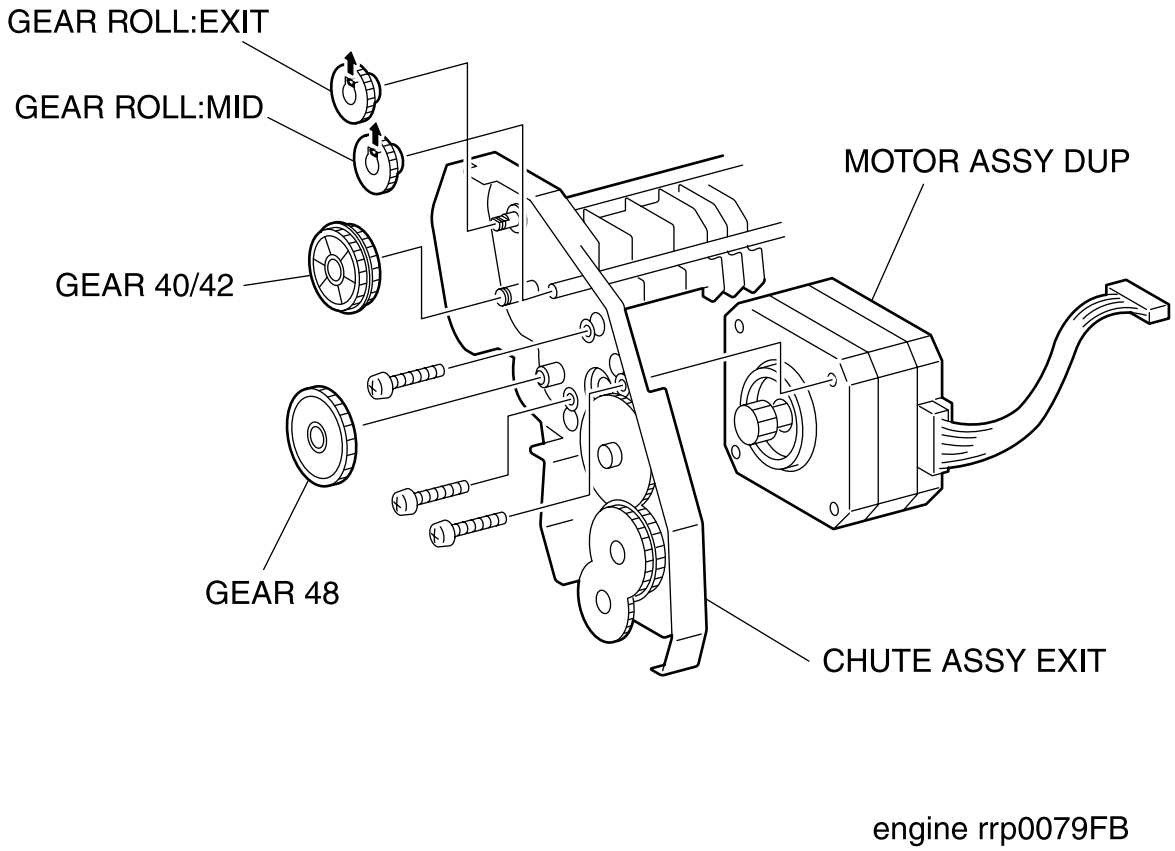

Figure: MOTOR ASSY DUP Removal

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)

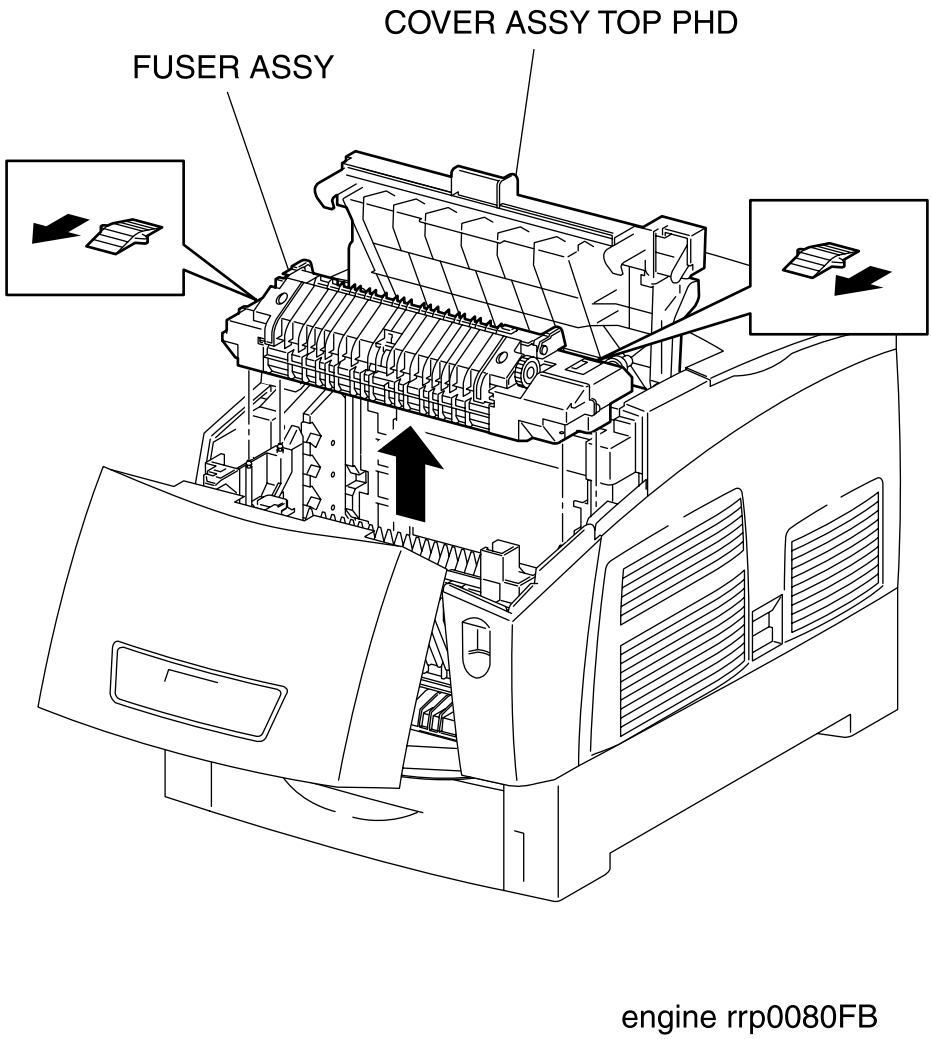

Figure: FUSER ASSY Removal

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)

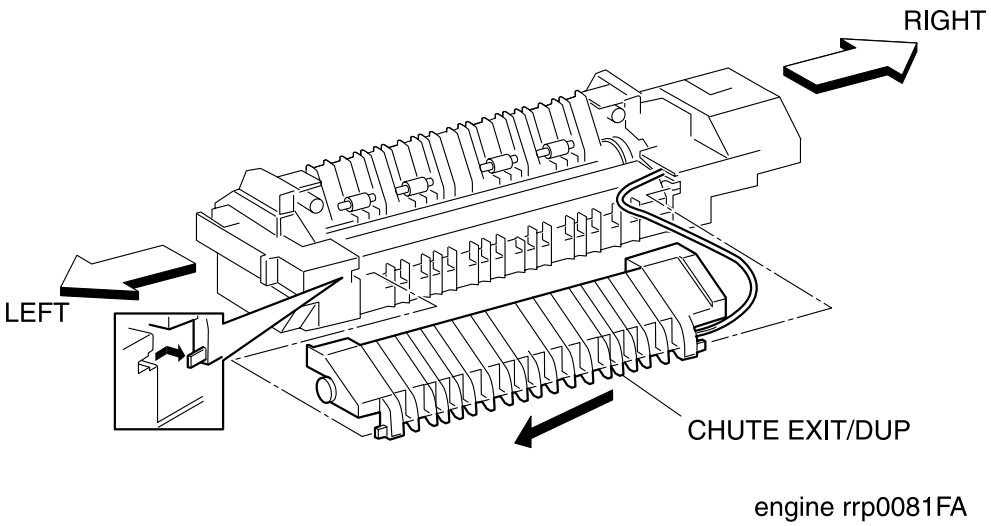

Figure: ROLL ASSY EXIT Removal (1)

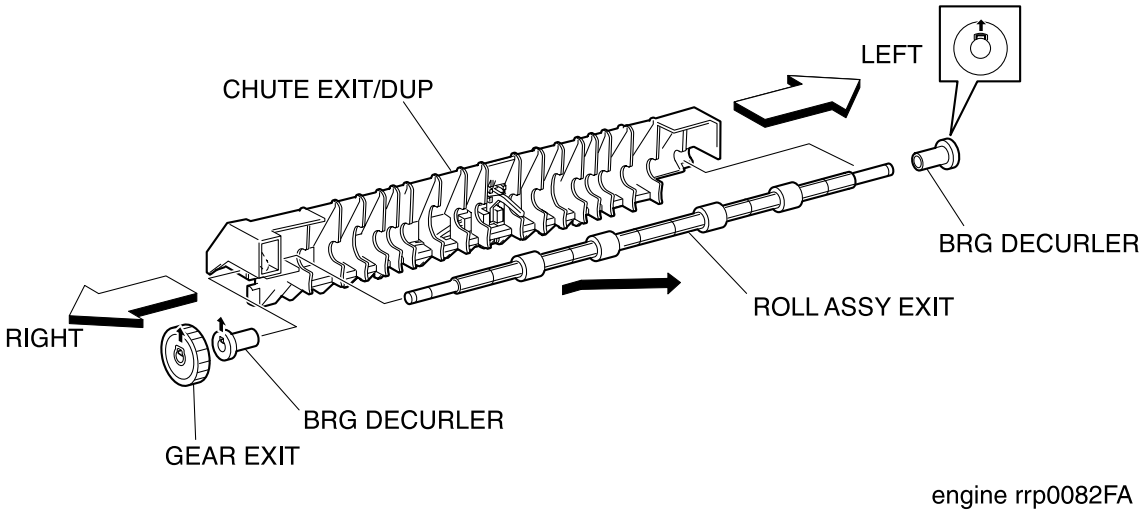

Figure: ROLL ASSY EXIT Removal (2)

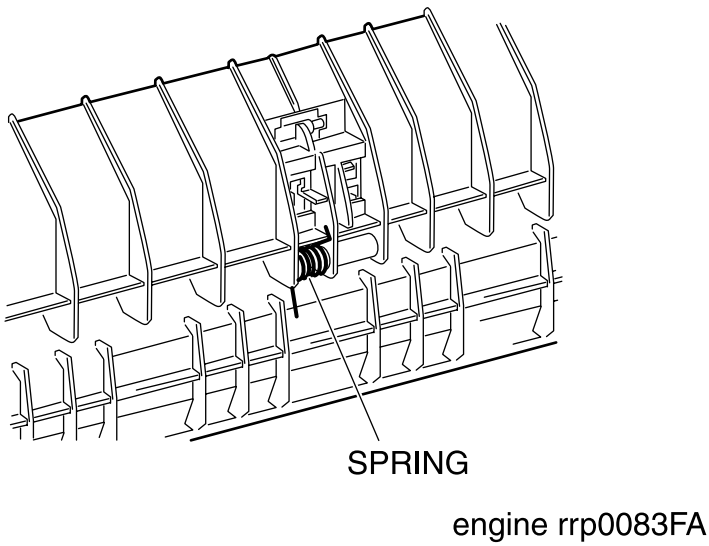

Figure: ROLL ASSY EXIT Replacement

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)

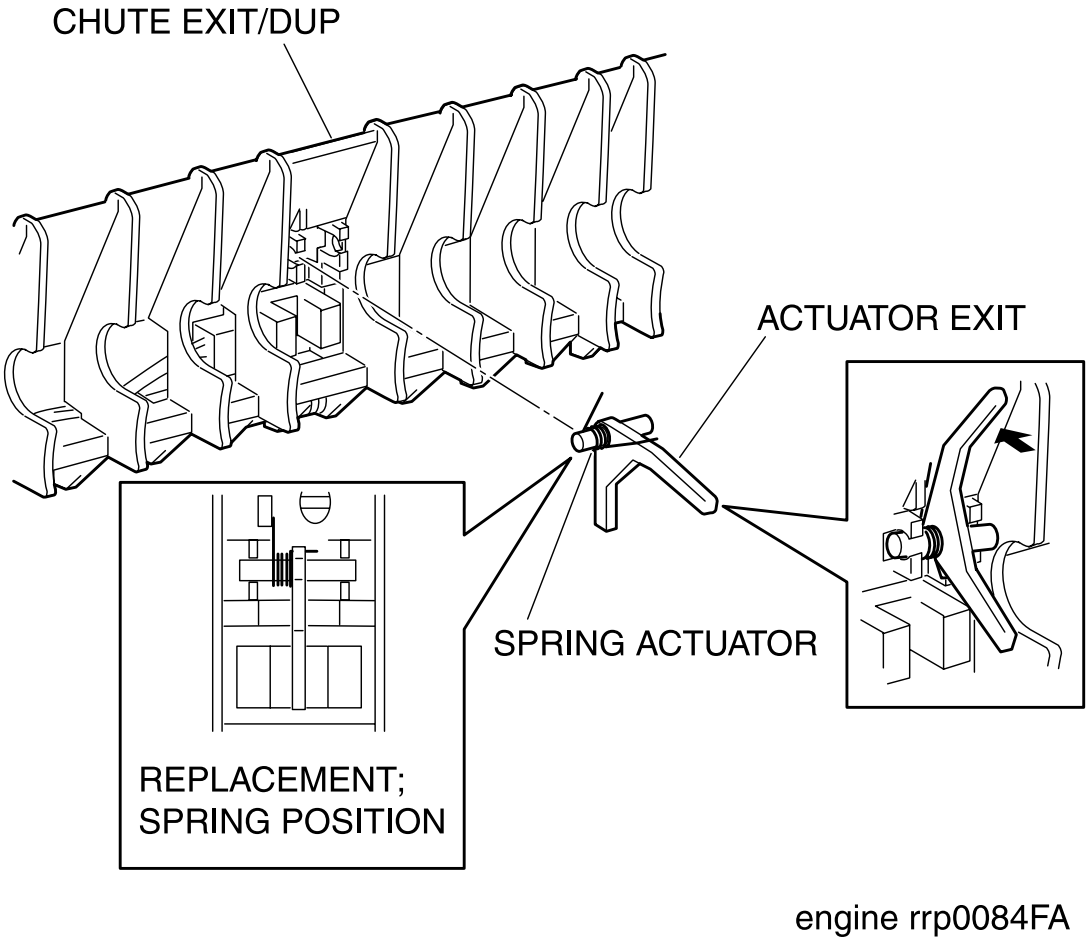

Figure: ACTUATOR EXIT Removal

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)

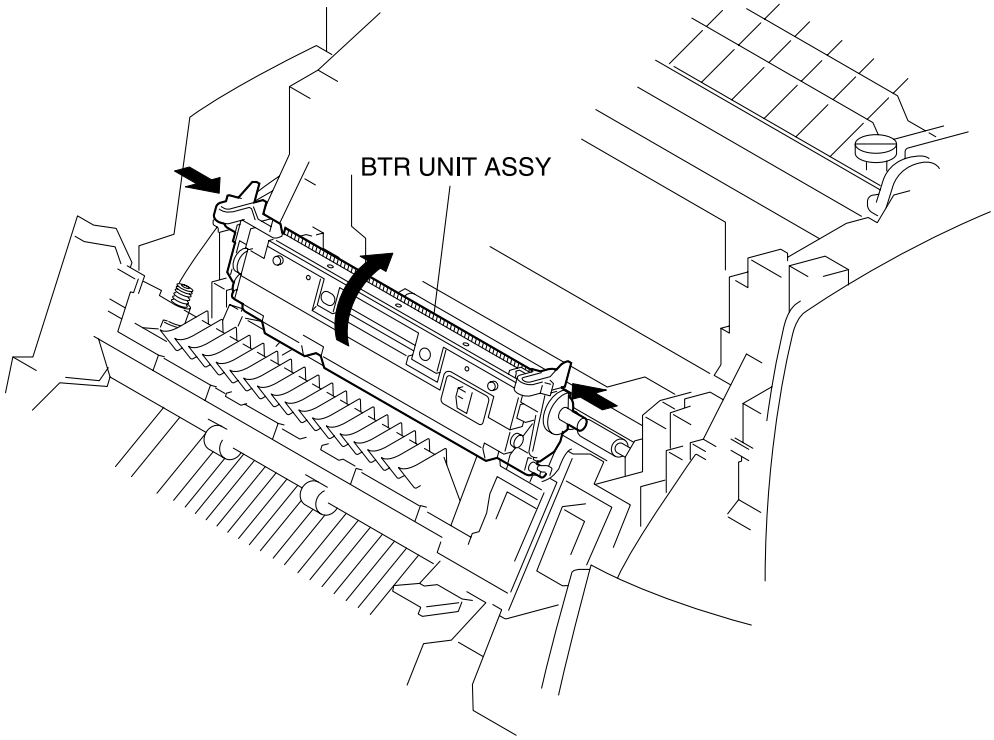

Figure: BTR UNIT ASSY Removal (1)

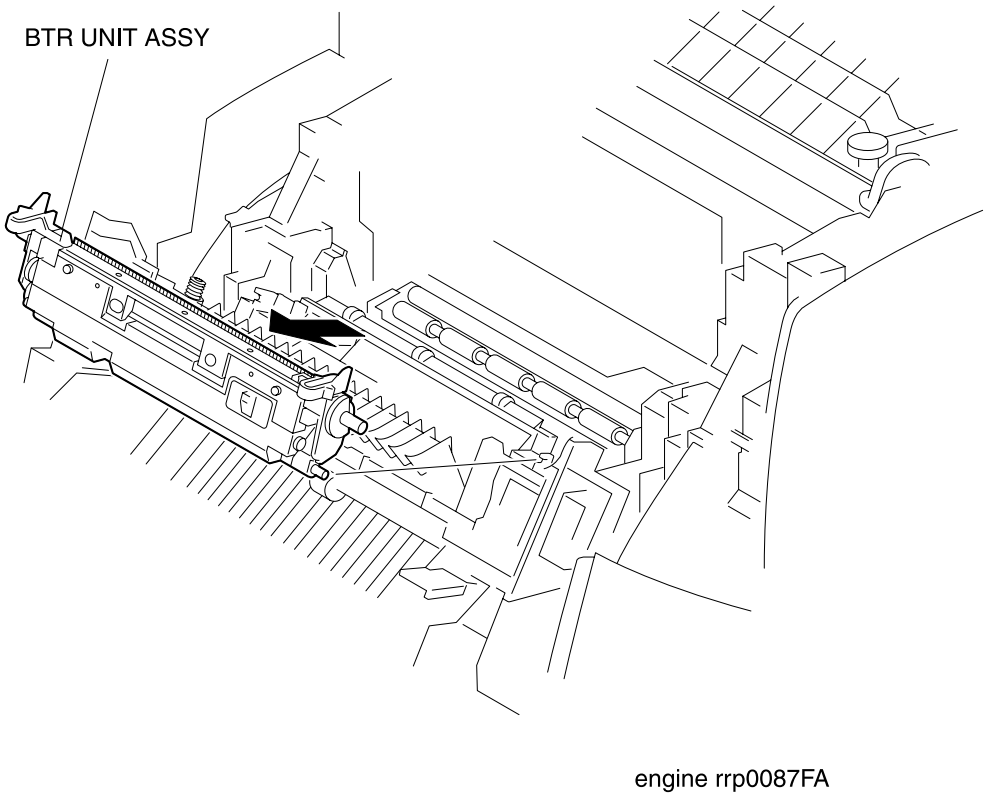

Figure: BTR UNIT ASSY Removal (2)

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 frontward from the CHUTE ASSY IN and remove.

Replacement

Replace the components in the reverse order of removal.

RRP8.5 STRAP (PL8.1.13)

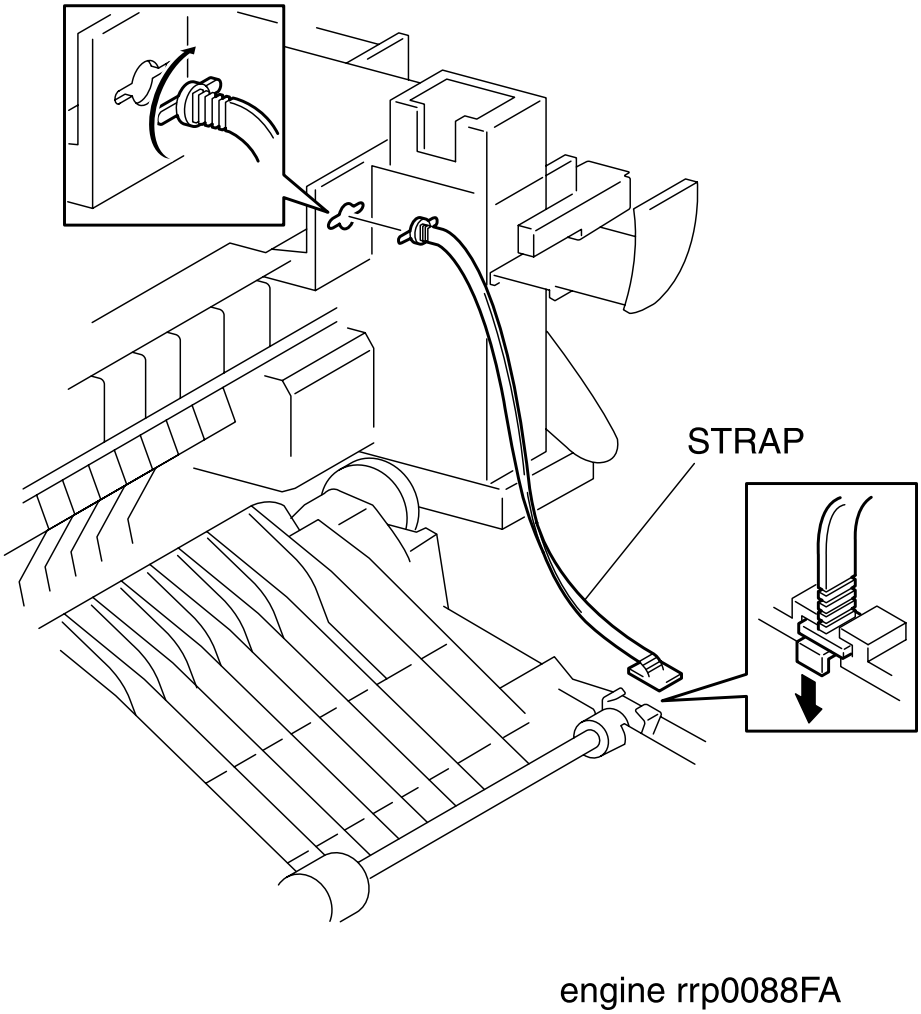

Figure: STRAP Removal

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)

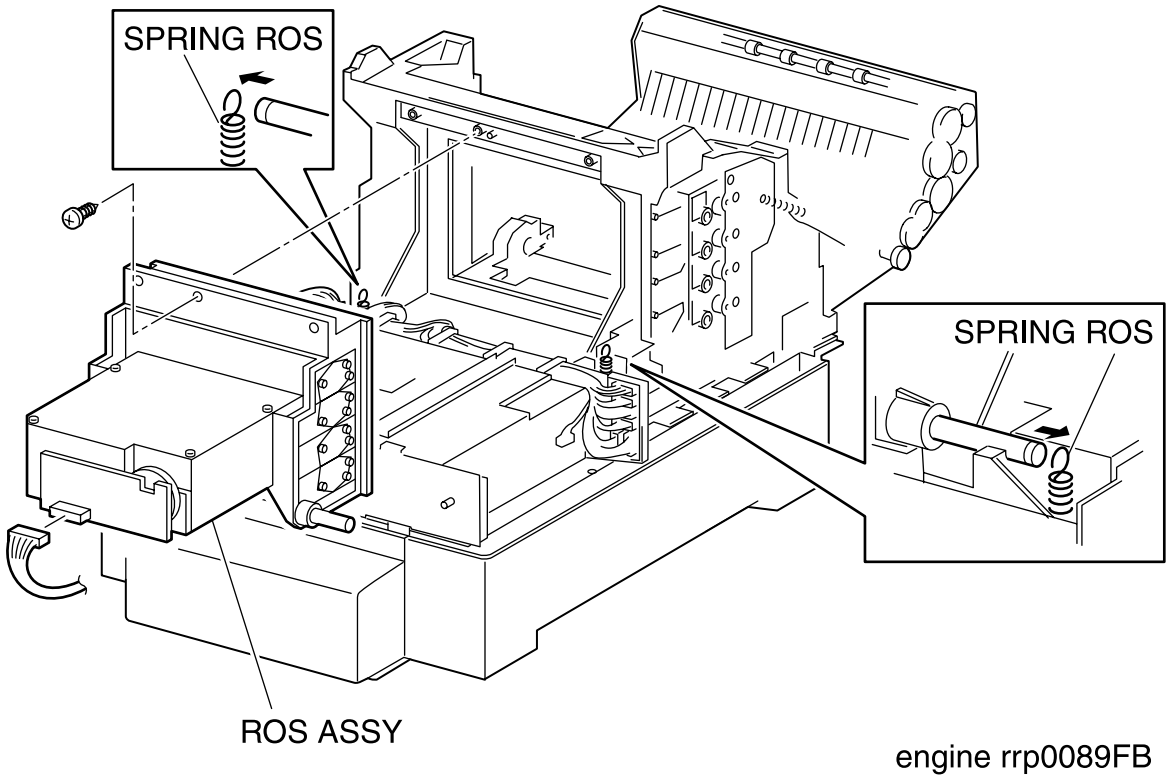

Figure: ROS ASSY Removal

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)

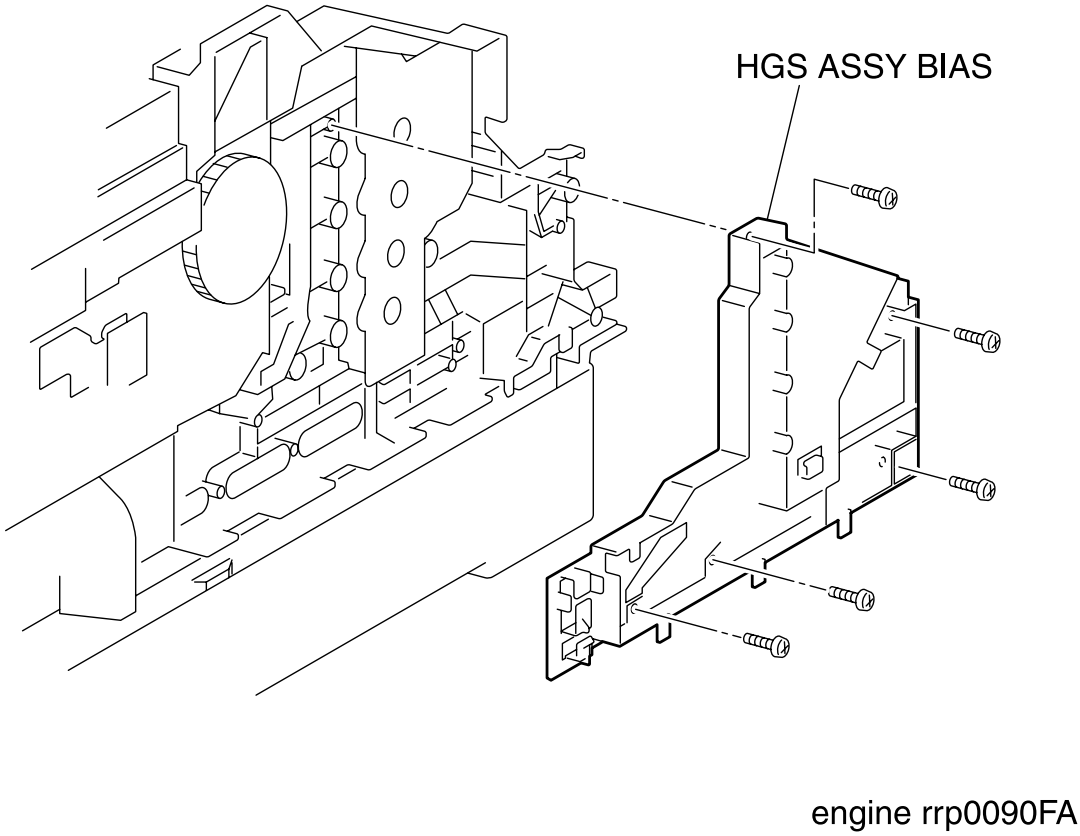

Figure: HSG ASSY BIAS Removal

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)

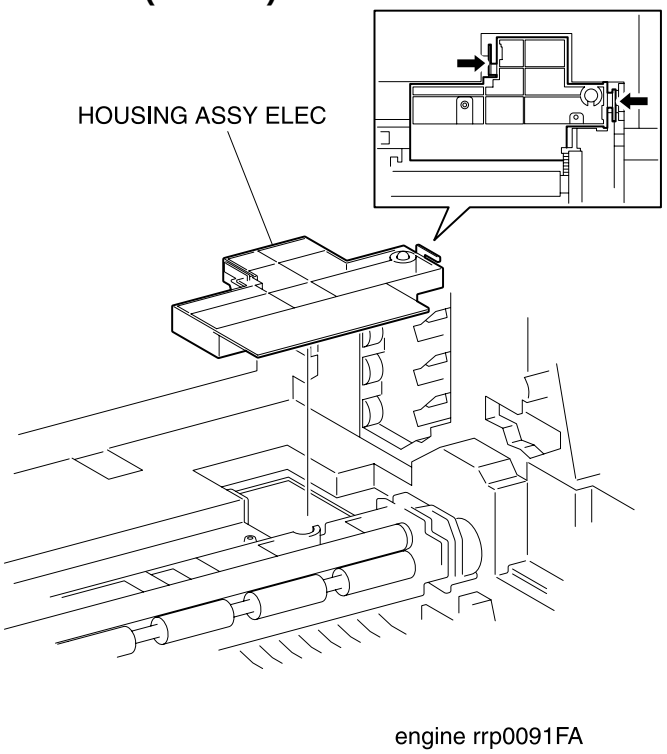

Figure: CHUTE ASSY REGI Removal (1)

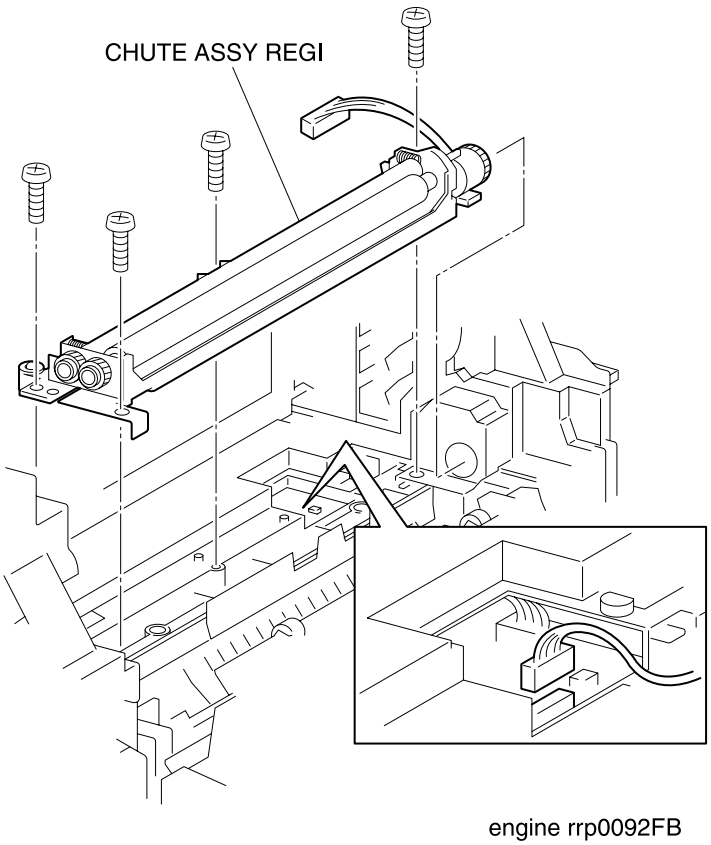

Figure: CHUTE ASSY REGI Removal (2)

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)

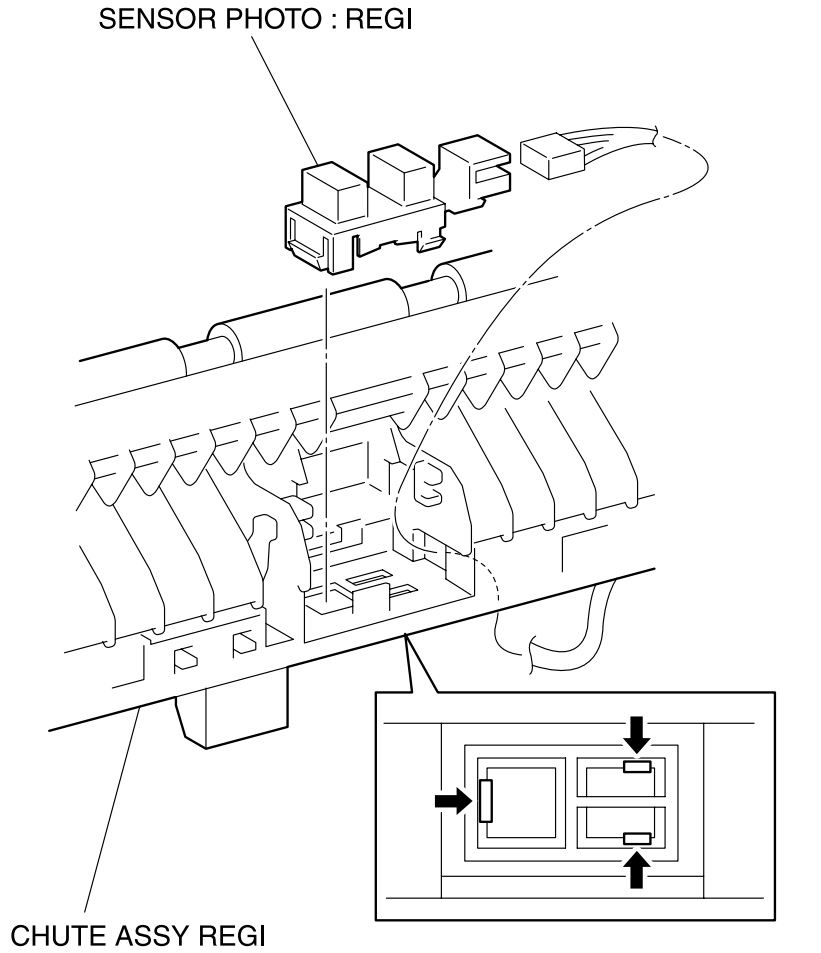

Figure: SENSOR PHOTO:REGI Removal

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)

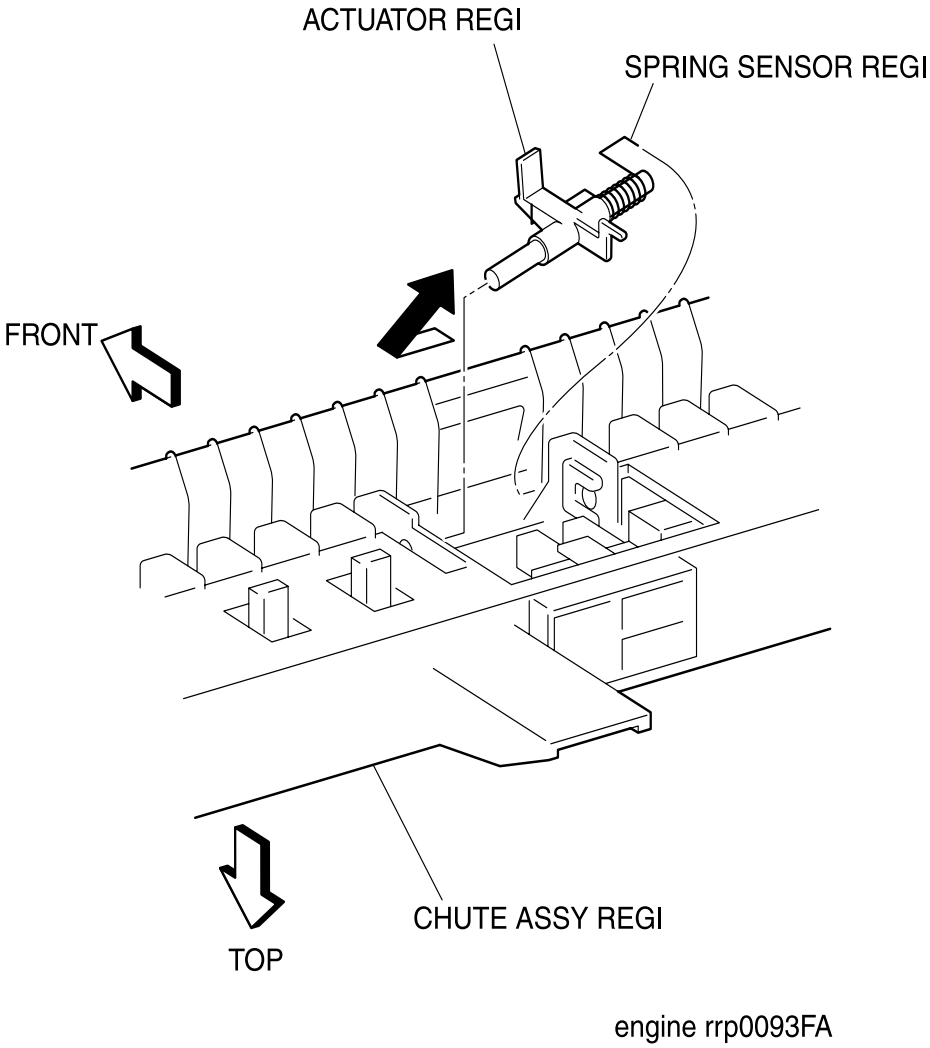

Figure: ACTUATOR REGI Removal

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)

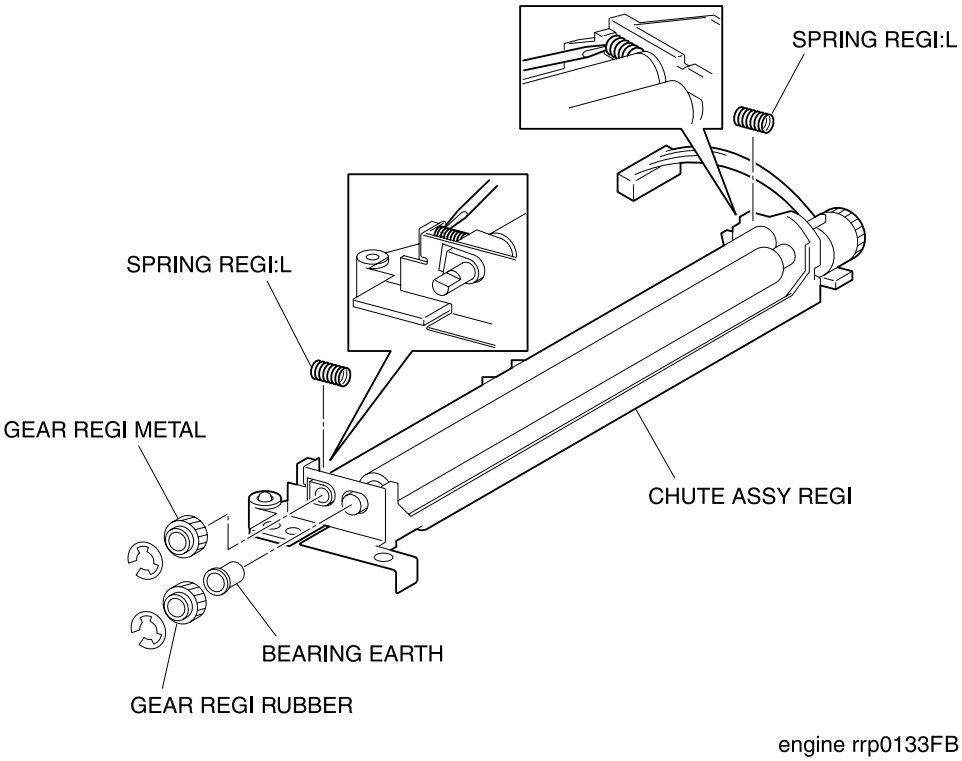

Figure: OHP SENSOR ASSY Removal (1)

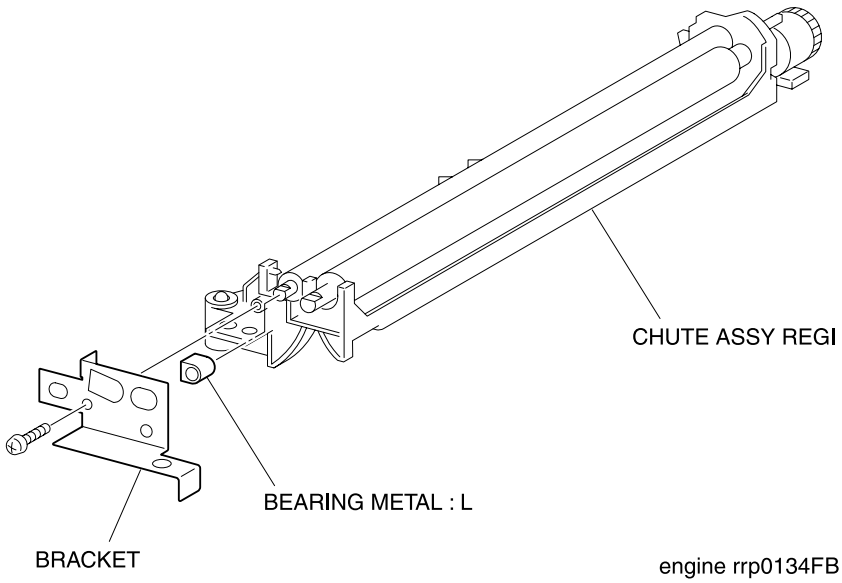

Figure: OHP SENSOR ASSY Removal (2)

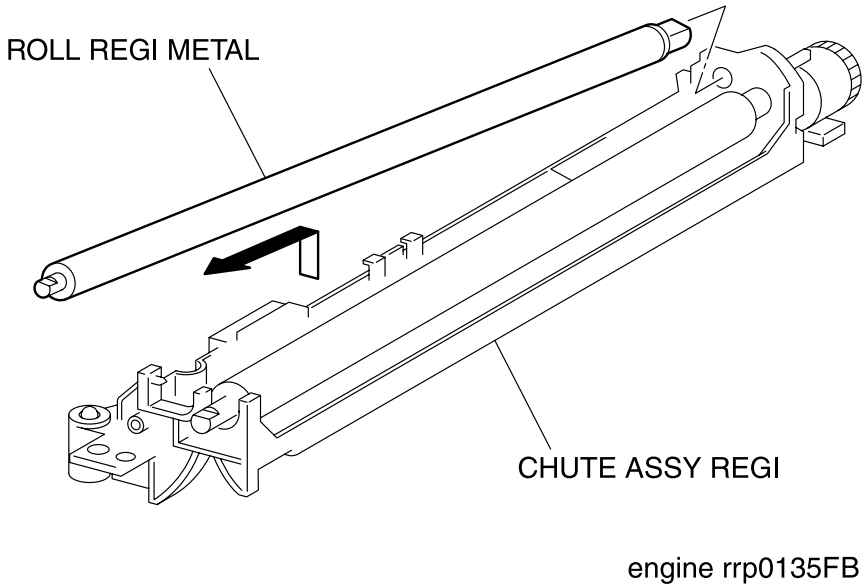

Figure: OHP SENSOR ASSY Removal (3)

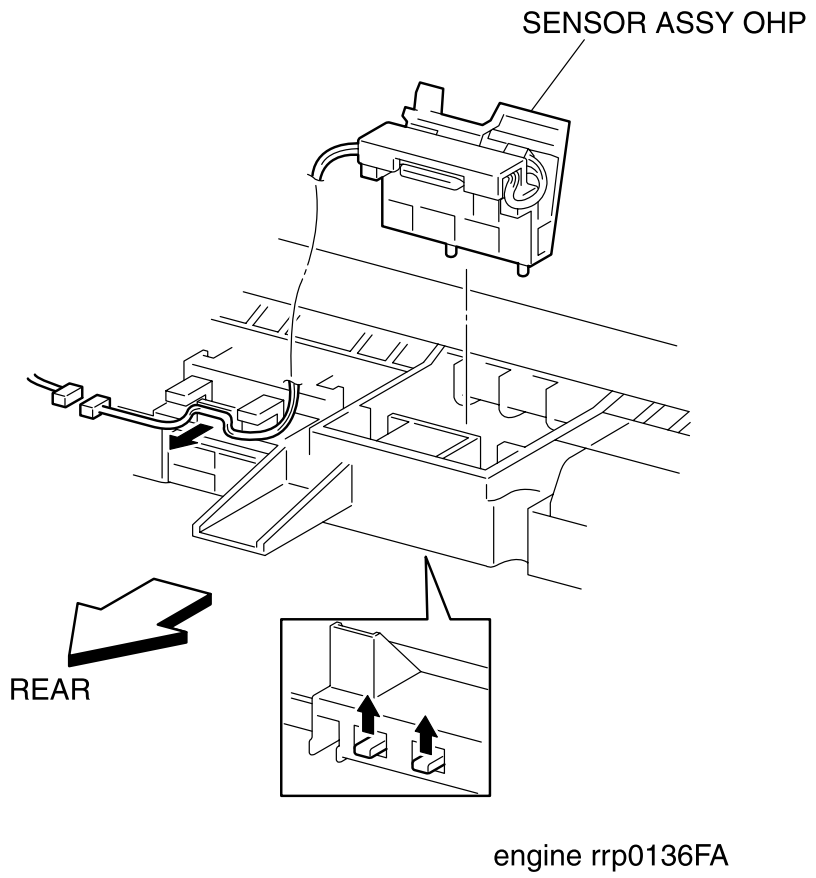

Figure: OHP SENSOR ASSY Removal (4)

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)

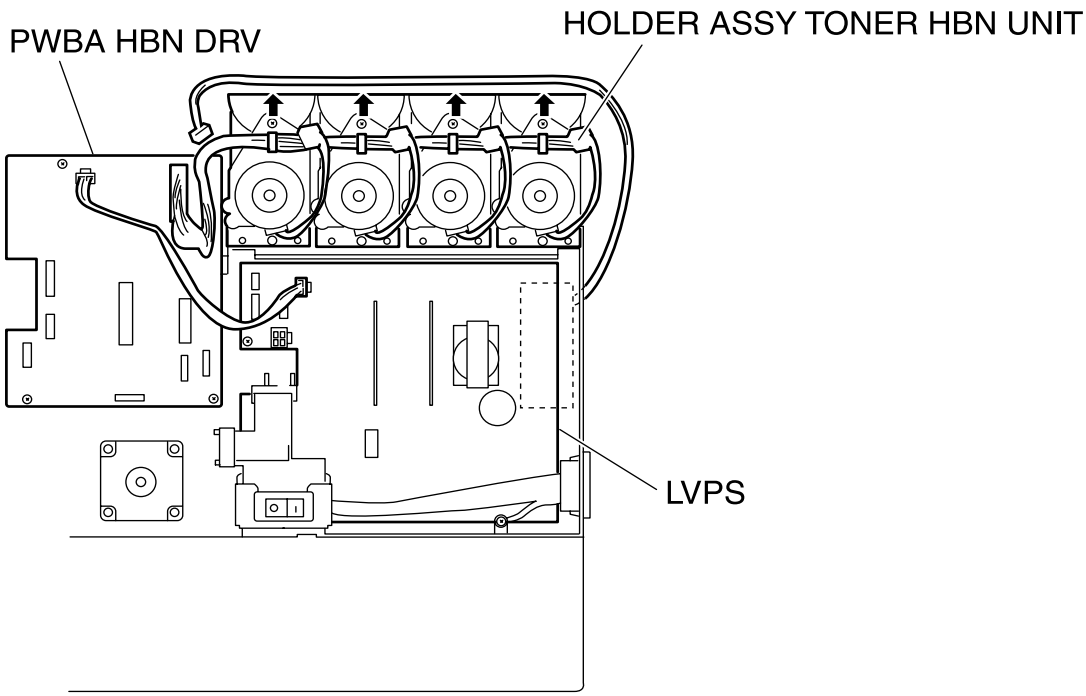

Figure: HOLDER ASSY TONER HBN UNIT Removal (1)

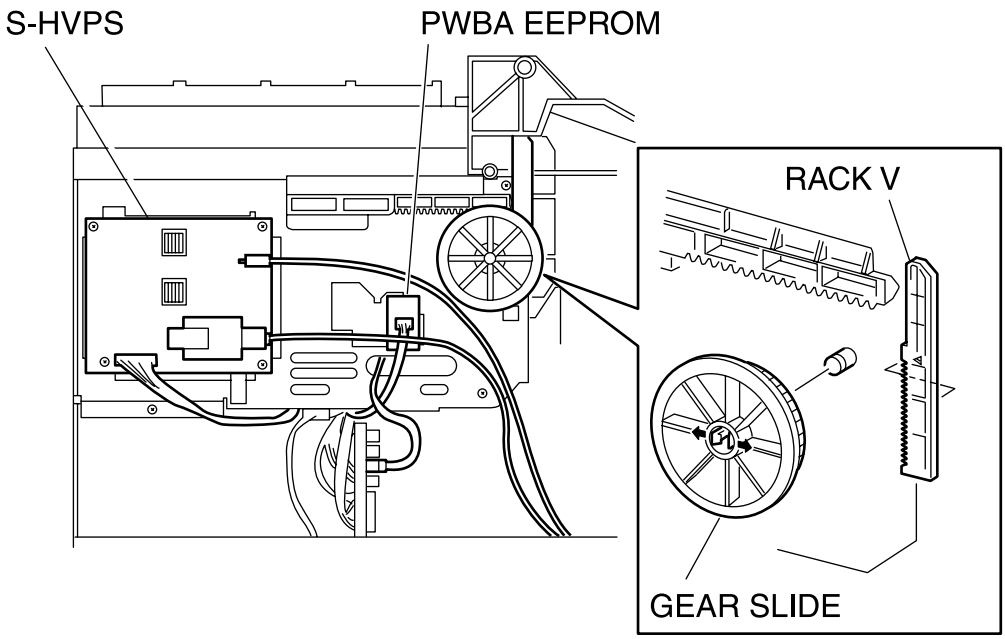

Figure: HOLDER ASSY TONER HBN UNIT Removal (2)

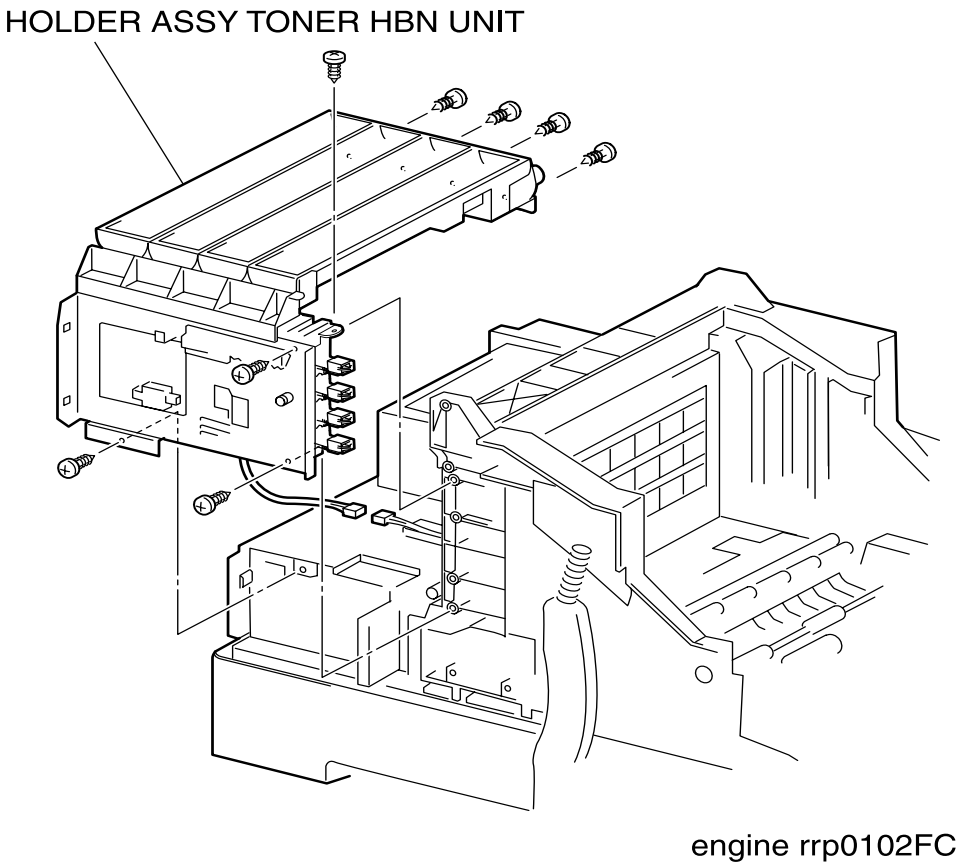

Figure: HOLDER ASSY TONER HBN UNIT Removal (3)

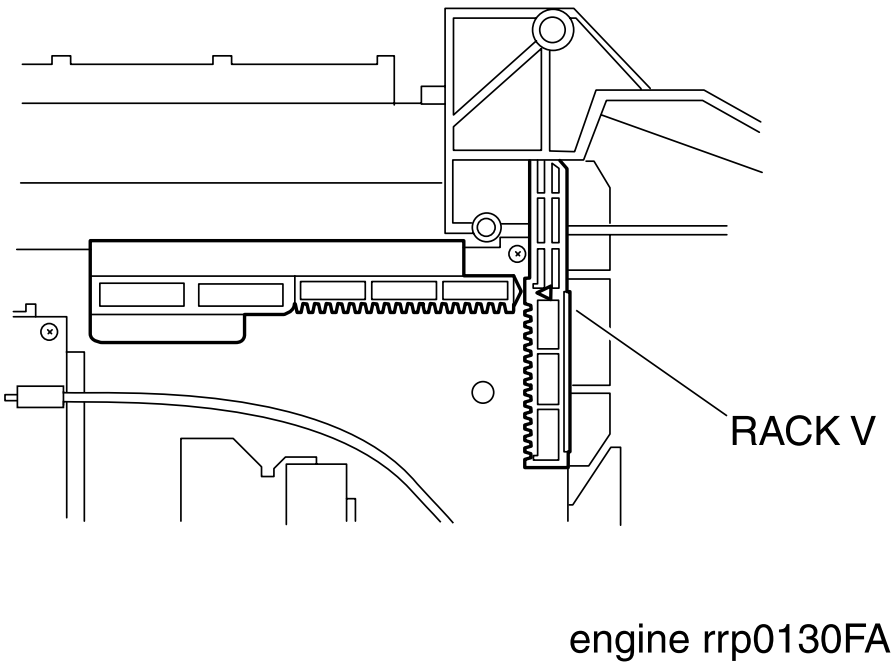

Figure: HOLDER ASSY TONER HBN UNIT Replacement

Removal

NOTE

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

NOTE

When removing the toner deposit on the HOLDER ASSY TONER HBNwith a vacuum cleaner, attach an earth code to the end of the cleaner to escape the static electricity.

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 HBNby 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 HBN DRV (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)

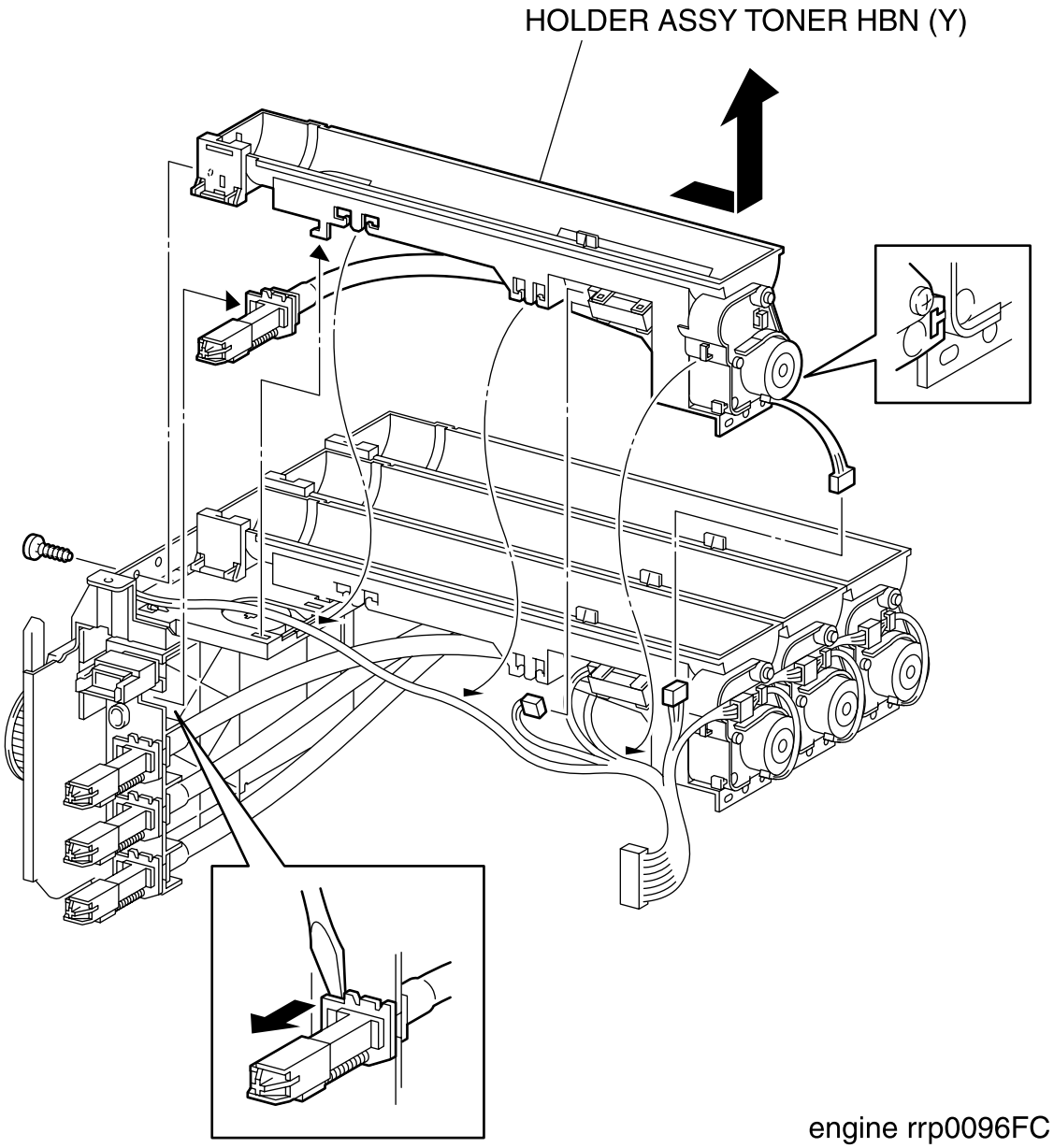

Figure: HOLDER ASSY TONER HBNY Removal

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 HBNY 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 TNR (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.
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)

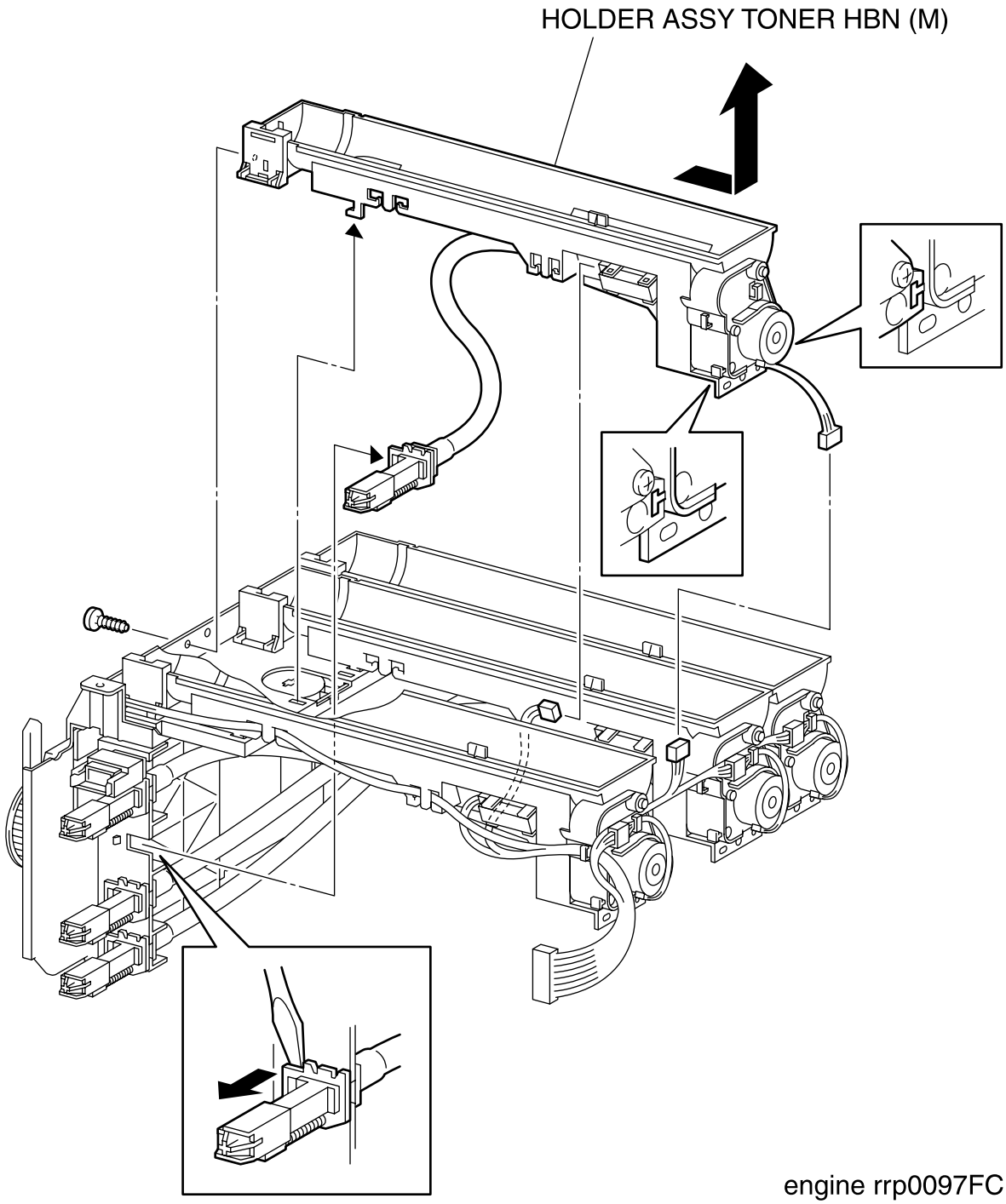

Figure: HOLDER ASSY TONER HBN M Removal

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) 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.
13) From the PLATE ASSY DISPENSER, pull out the toner discharging unit on the HOLDER ASSY TONER HBN M rightward.
14) 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 with harness.

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

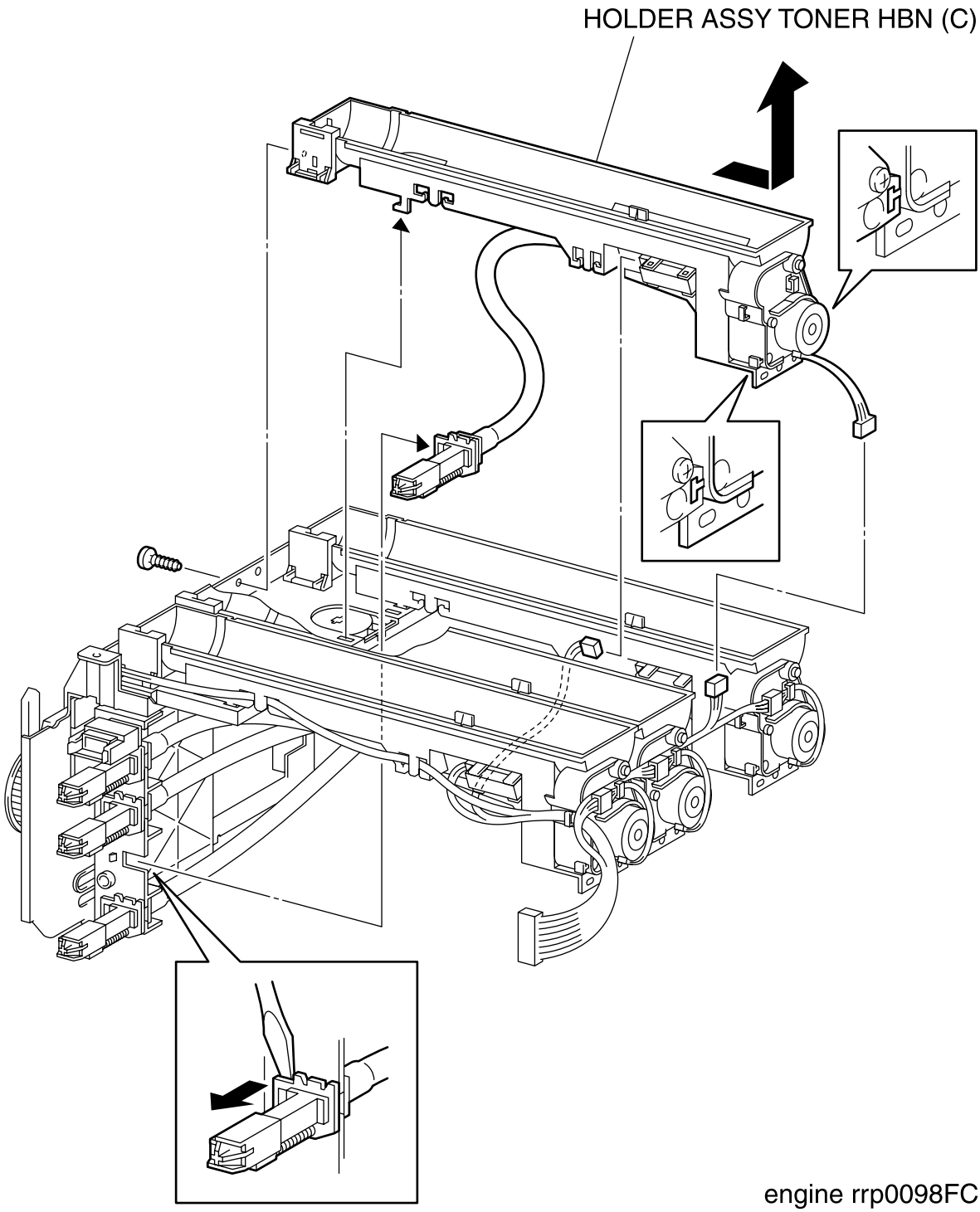

Figure: HOLDER ASSY TONER HBN C Removal

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) 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.
13) From the PLATE ASSY DISPENSER, pull out the toner discharging unit on the HOLDER ASSY TONER HBN C rightward.
14) 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 with harness.

15) After sliding the HOLDER ASSY TONER HBN C rightward from the HOLDER ASSY TONER HBN UNIT, raise the HOLDER ASSY TONER HBN C slightly.
16) Extract the motor connector (P/J513) from the right side surface of the HOLDER ASSY.
17) Disconnect the connector (P/J703) of SENSOR NO TNR (PL10.1.5) of HOLDER ASSY TONER HBN C.
18) 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)

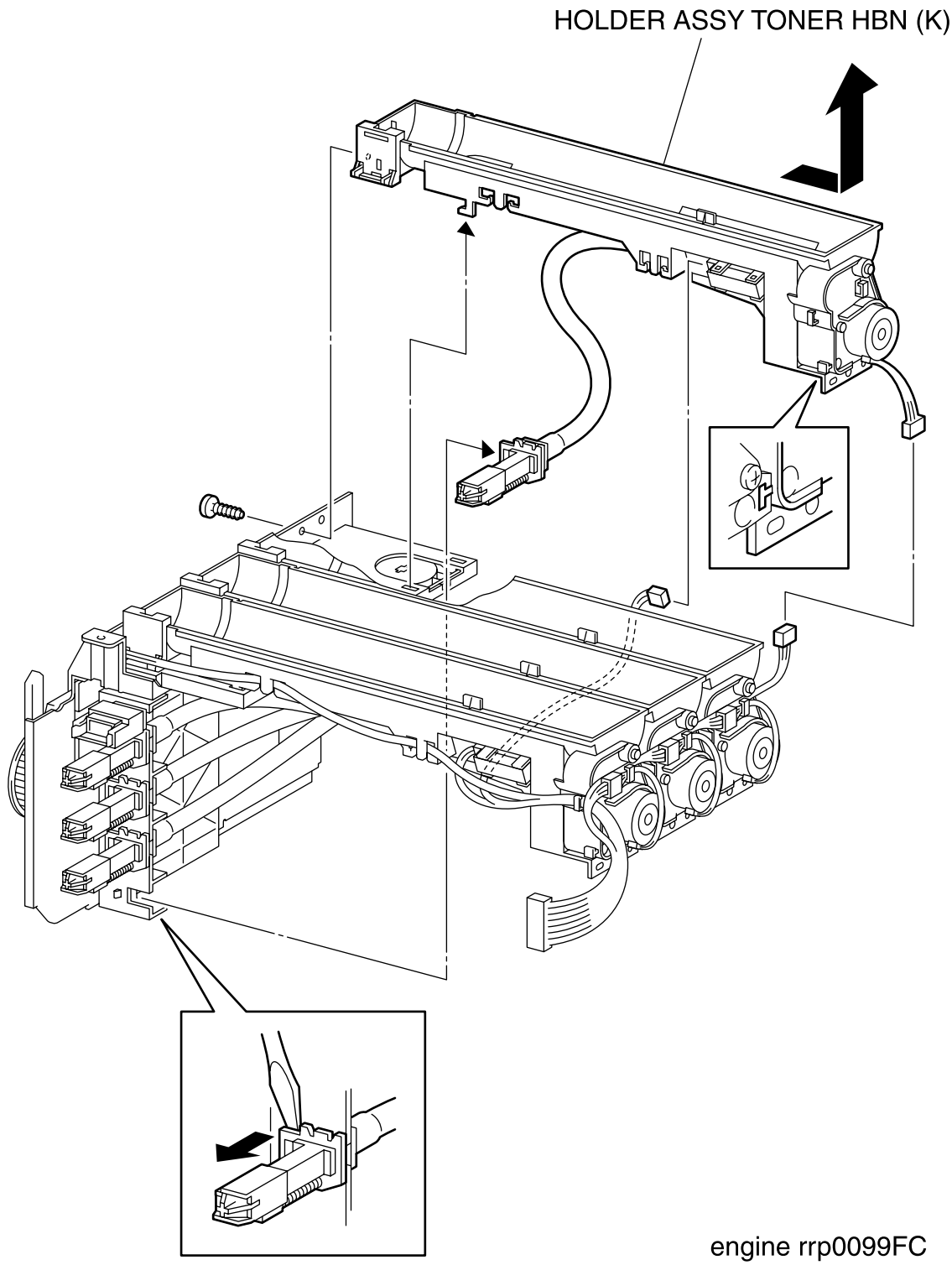

Figure: HOLDER ASSY TONER HBN K Removal

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) 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.
13) From the PLATE ASSY DISPENSER, pull out the toner discharging unit on the HOLDER ASSY TONER HBN K rightward.
14) 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 with harness.

15) After sliding the HOLDER ASSY TONER HBN K rightward from the HOLDER ASSY TONER HBN UNIT, raise the HOLDER ASSY TONER HBN K slightly.
16) Extract the motor connector (P/J514) from the right side surface of the HOLDER ASSY.
17) Disconnect the connector (P/J704) of SENSOR NO TNR (PL10.1.5) of HOLDER ASSY TONER HBN K.
18) 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 ACWATOR TCRU ASSY (PL10.1.6)

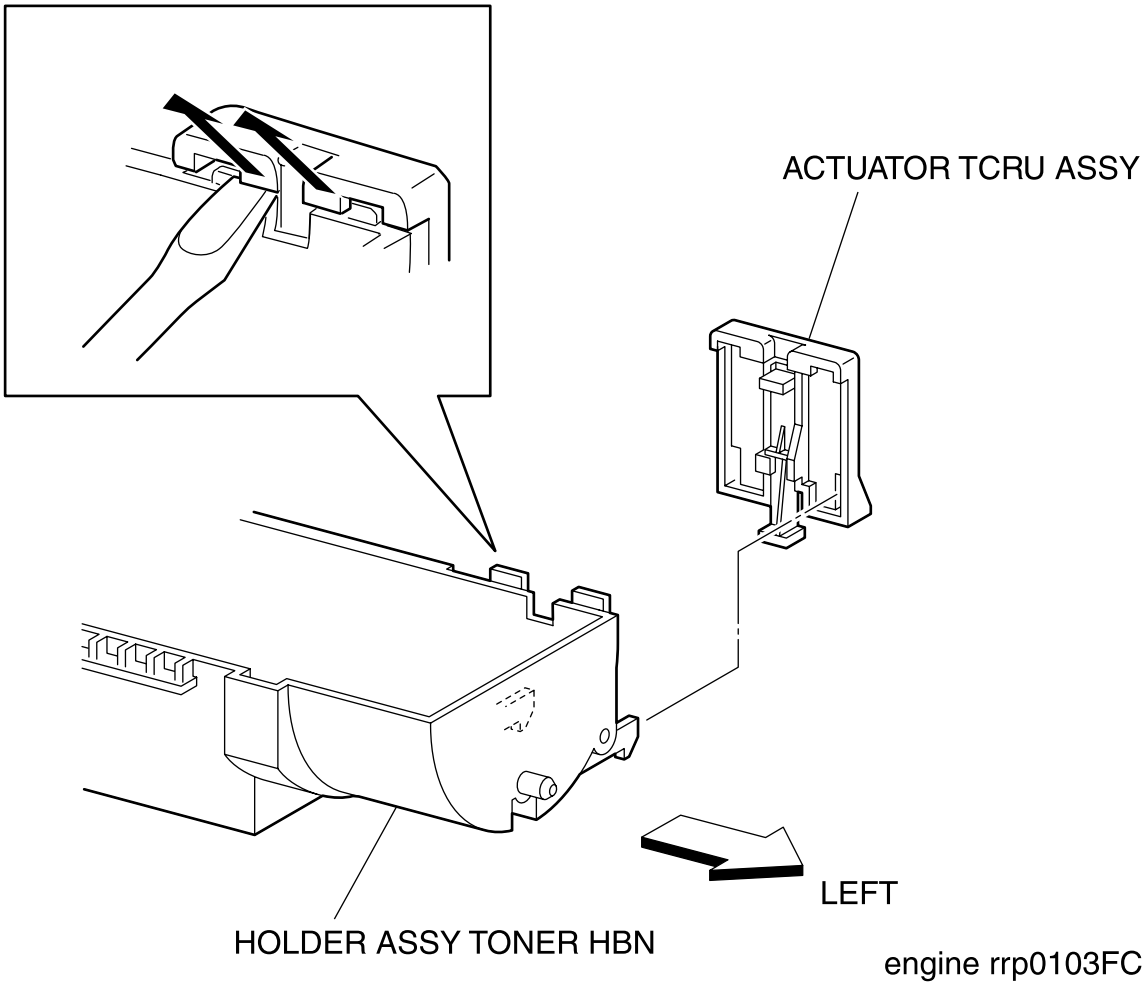

Figure: SWITCH TCRU ASSY Removal

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 SWITCH TCRU ASSY to the HOLDER ASSY TONER HBN (PL10.1.1, 2, 3, 4) with a mini screwdriver.
14) Remove the SWITCH 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)

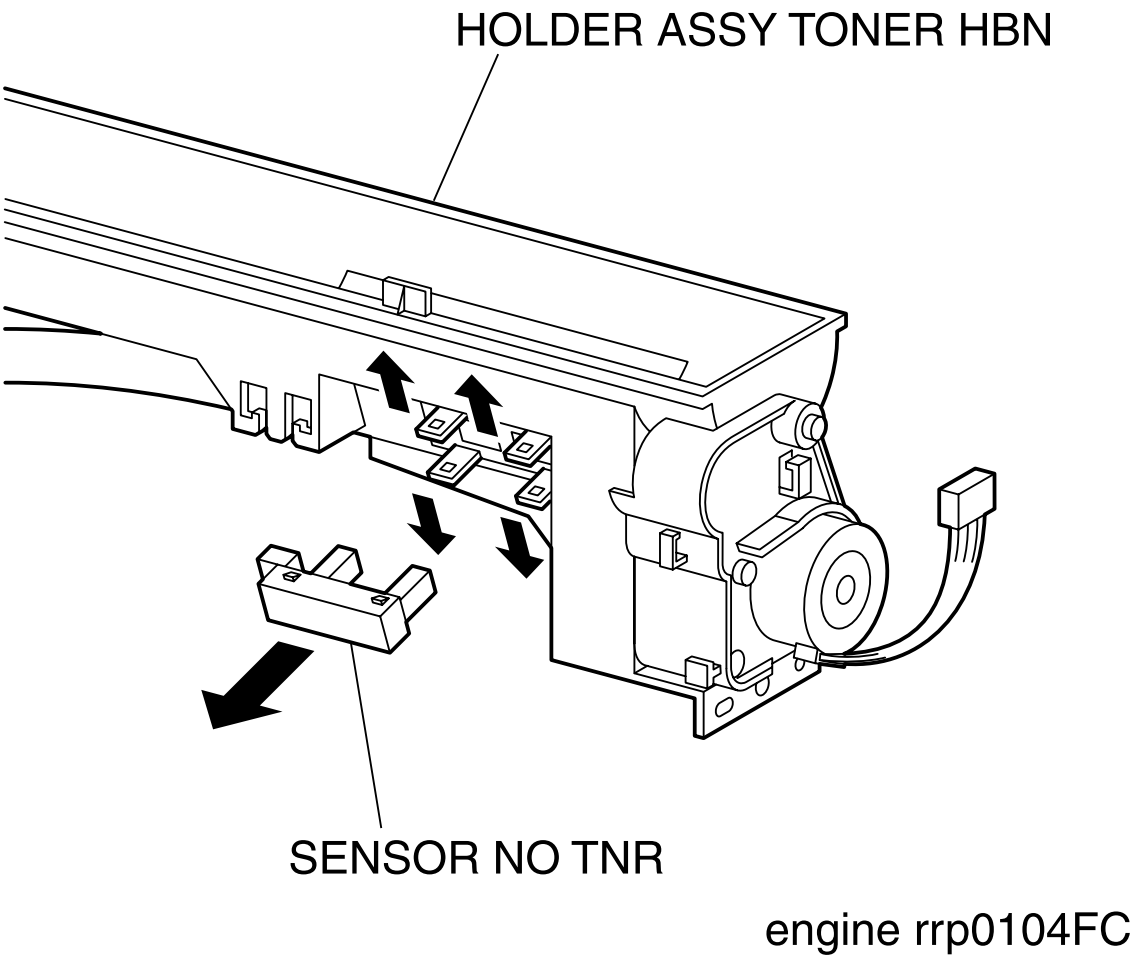

Figure: SENSOR TONER LOW Removal

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 on 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)

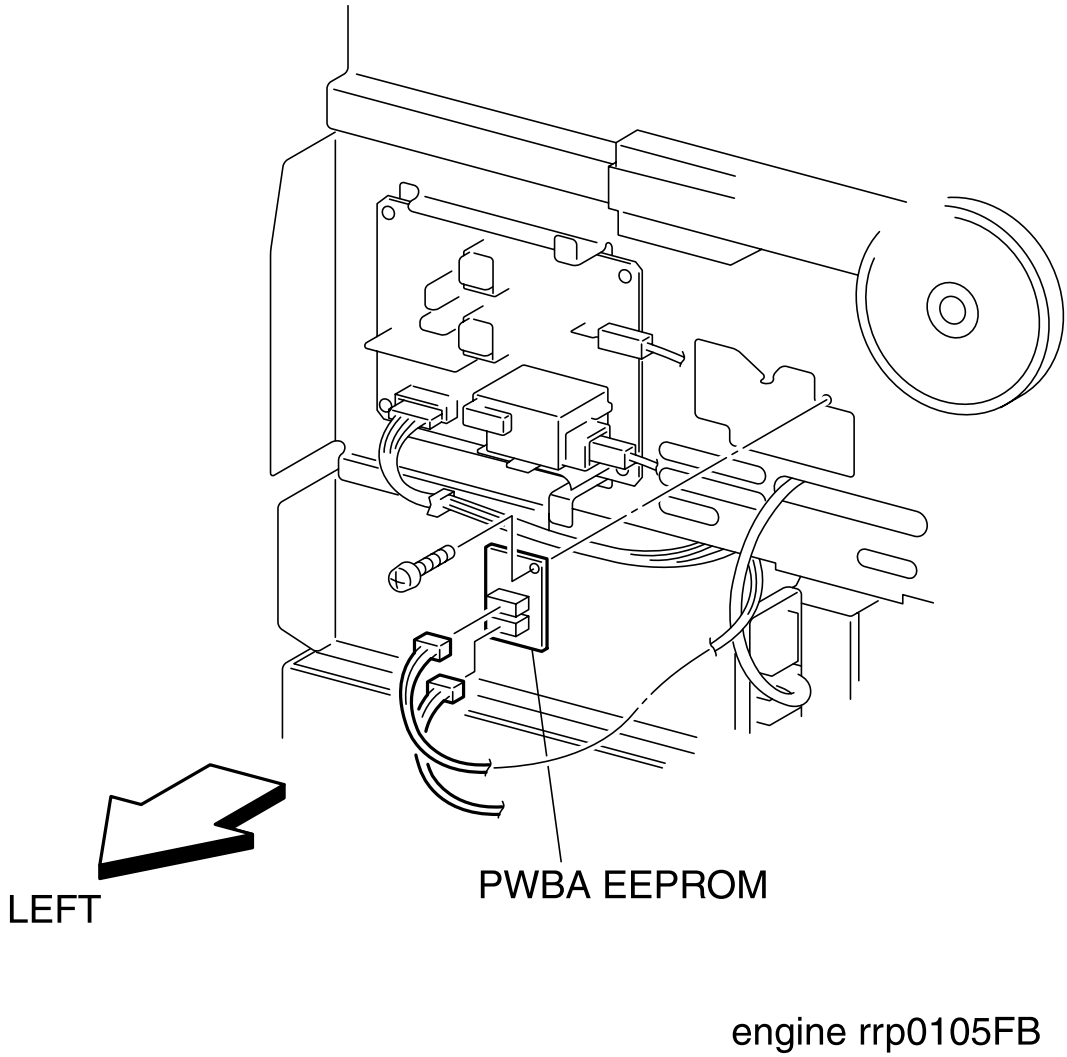

Figure: PWBA EEPROM STD Removal

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)

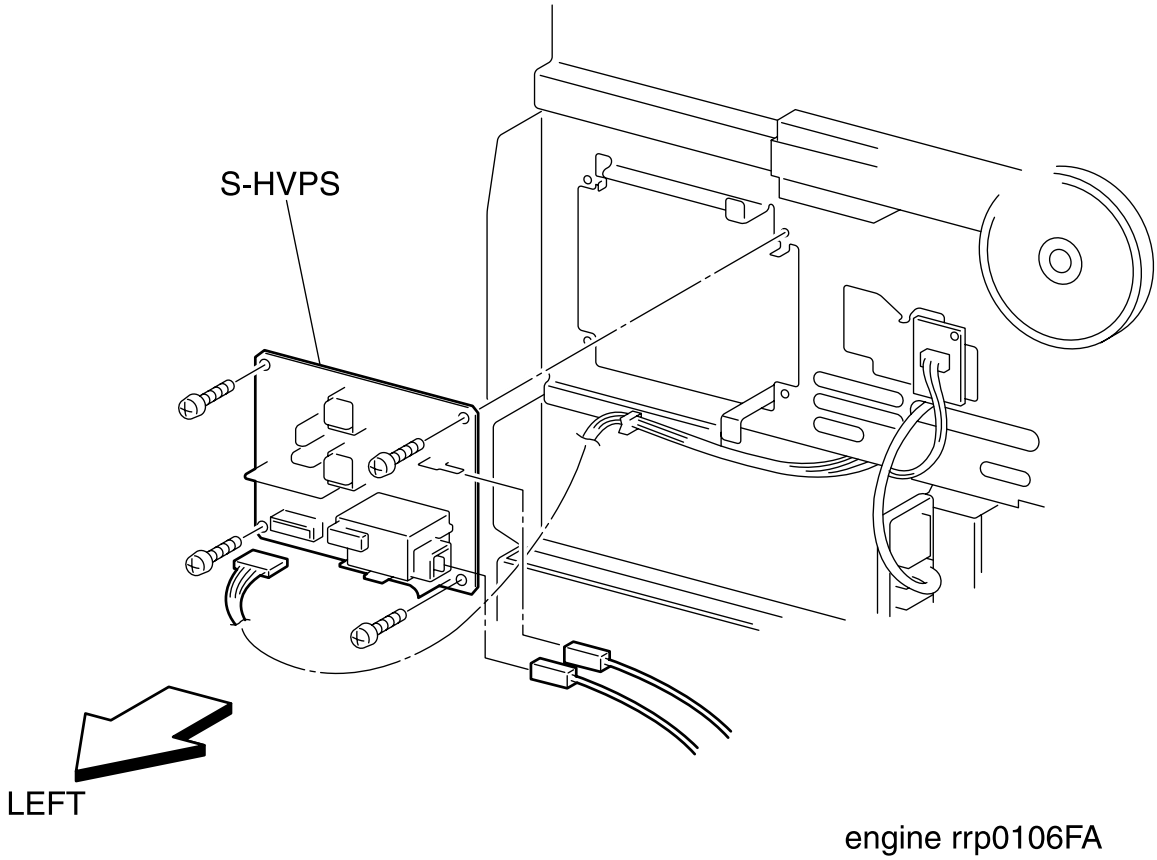

Figure: S-HVPS Removal

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)

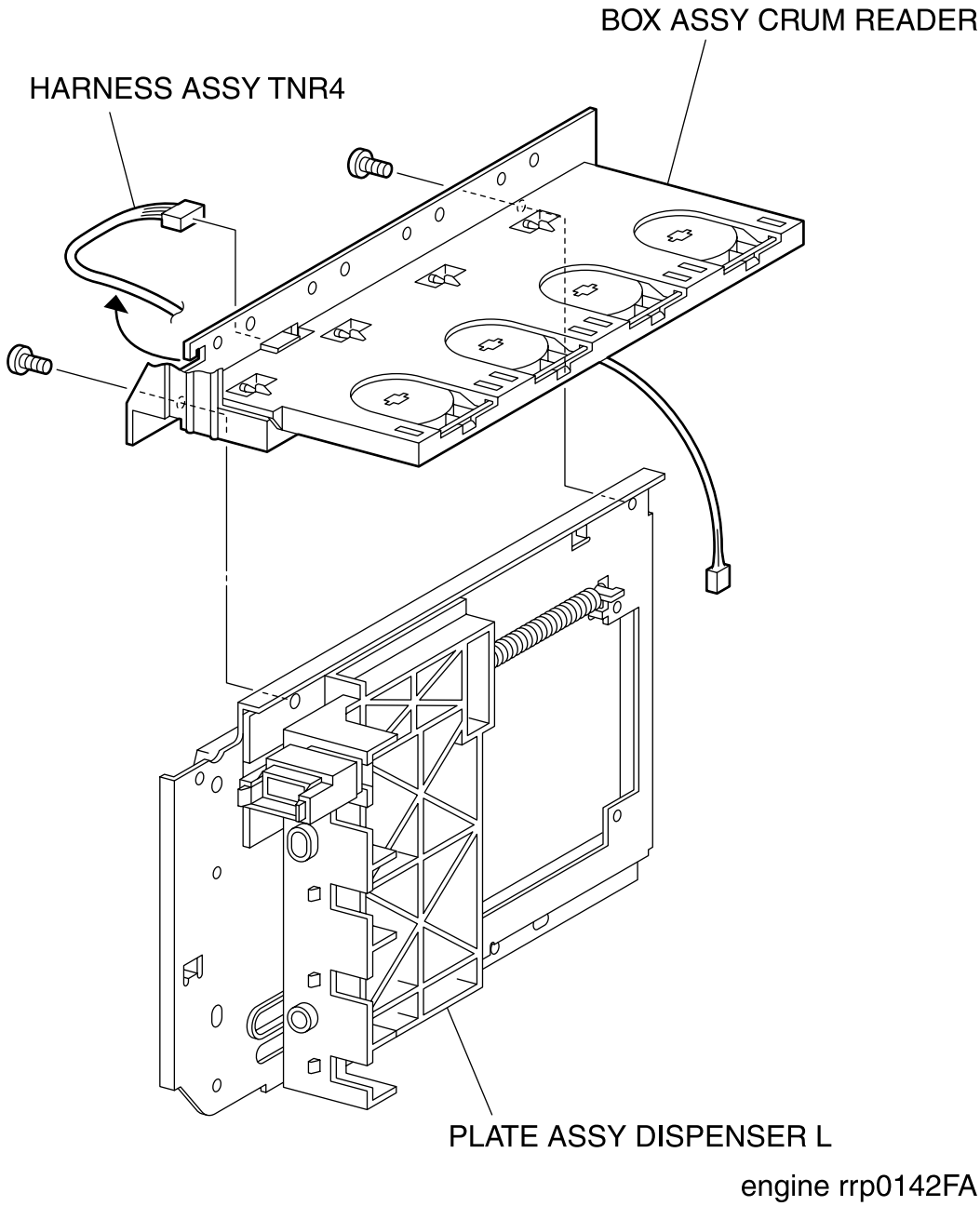

Figure: BOX ASSY CRUM READER Removal

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) Remove HARNESS ASSY TNR4 (PL10.1.11) from the slit part of HSG BASE CRUM. (PL10.1.16)
14) Remove two screws which are fixing BOX ASSY CRUM READER (PL10.1.21) to PLATE ASSY DISPENSER L .(PL10.1.13)
15) 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)

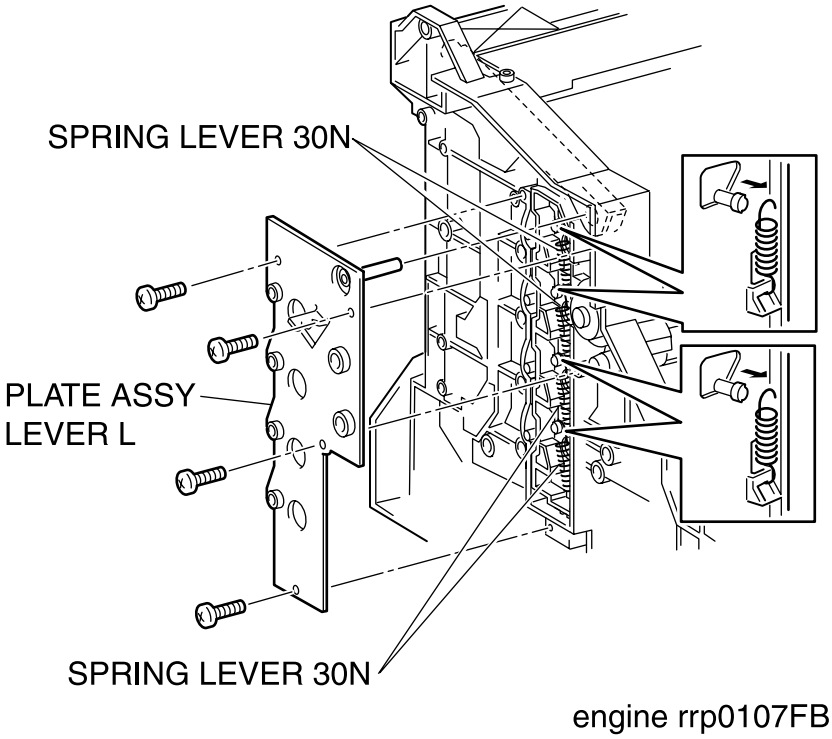

Figure: LEVER DRUM:L Removal (1)

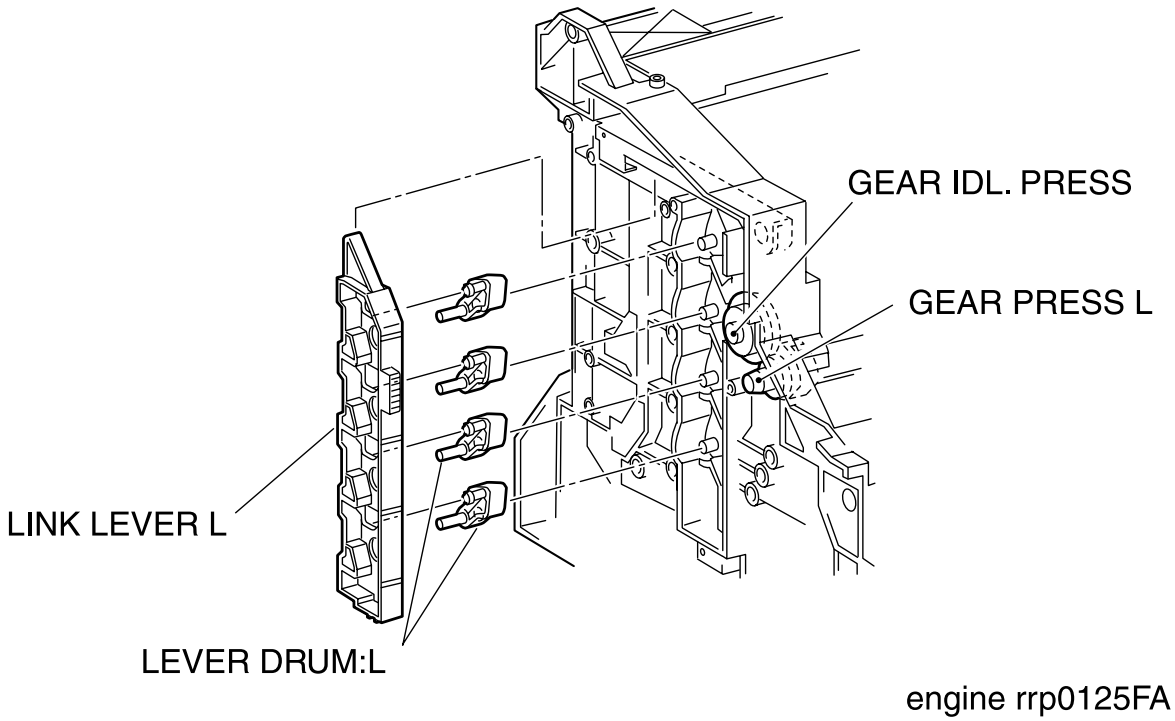

Figure: LEVER DRUM:L Removal (2)

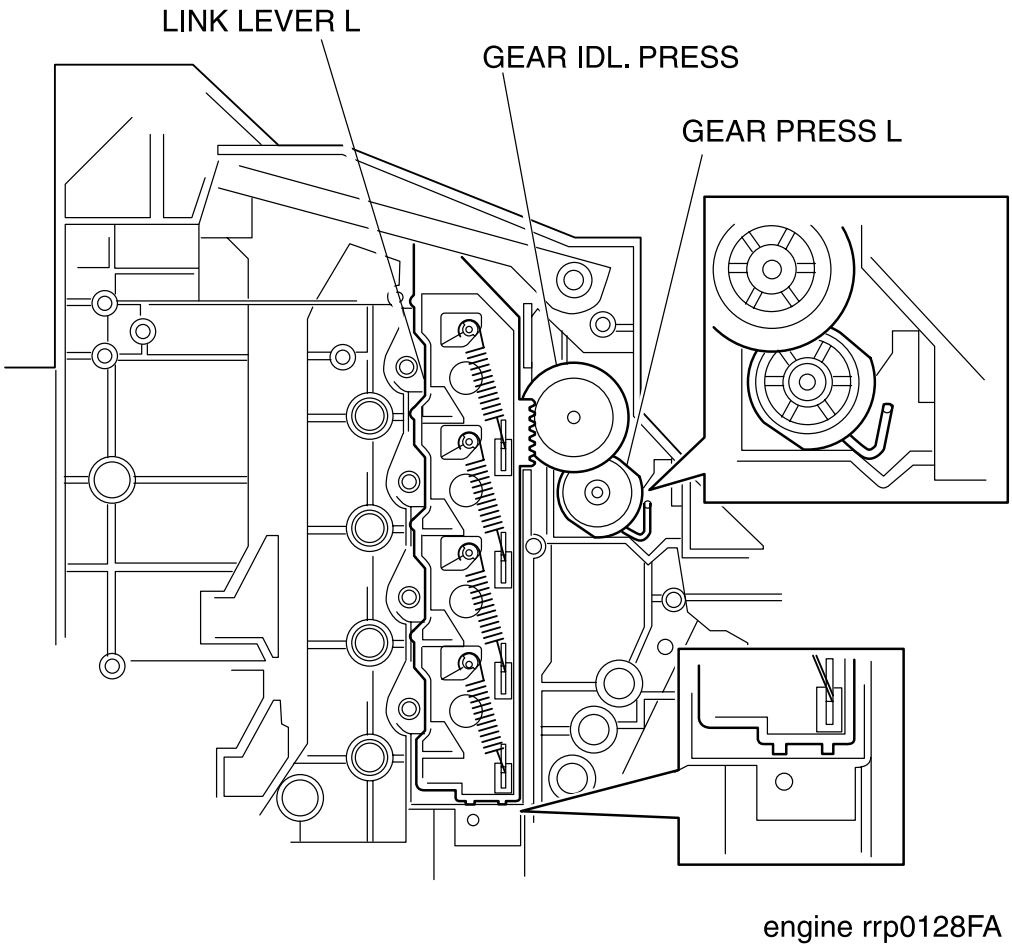

Figure: LEVER DRUM:L Replacement

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).

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

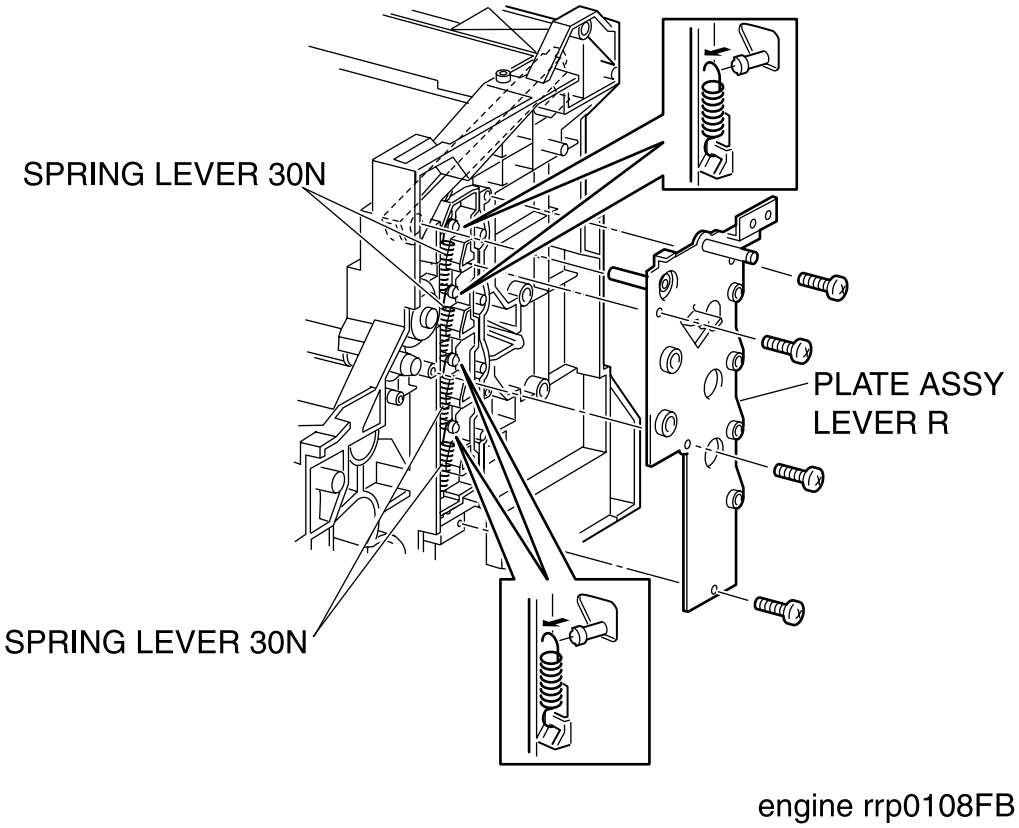

Figure: LEVER DRUM:R Removal (1)

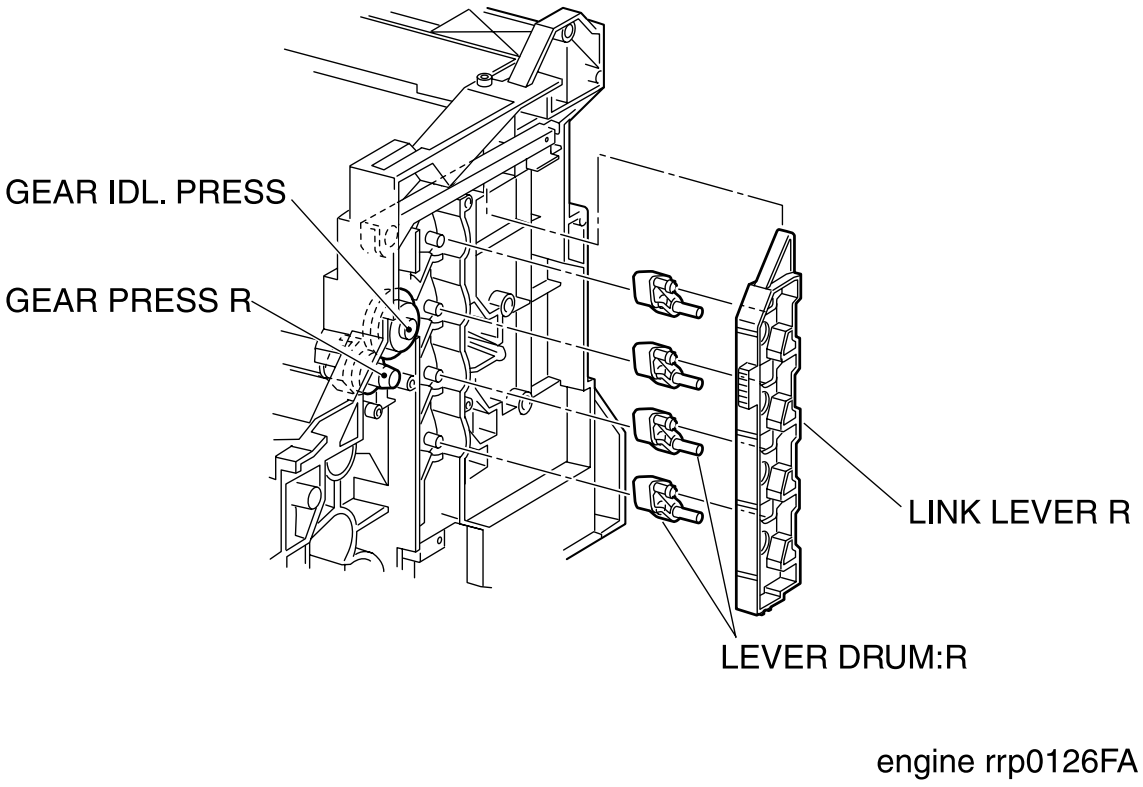

Figure: LEVER DRUM:R Removal (2)

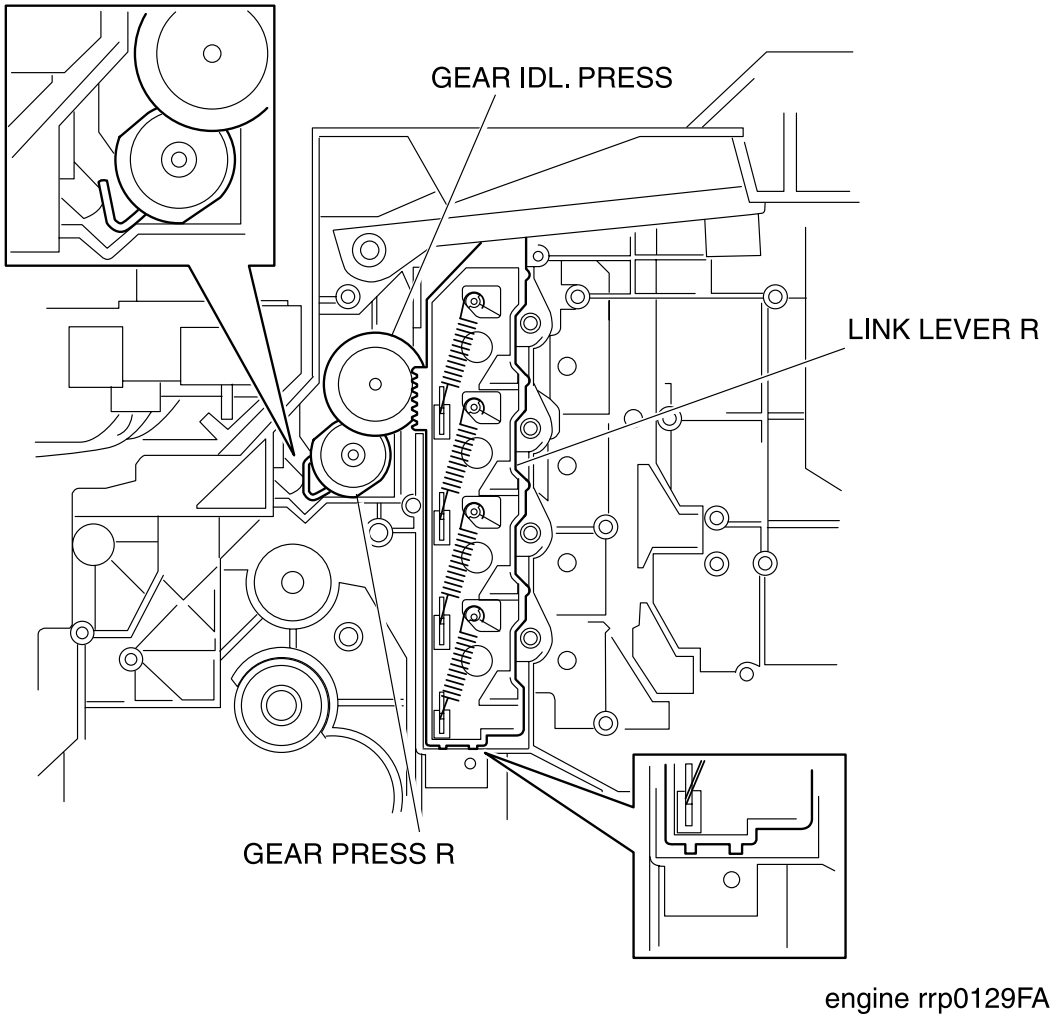

Figure: LEVER DRUM:R Replacement

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).

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

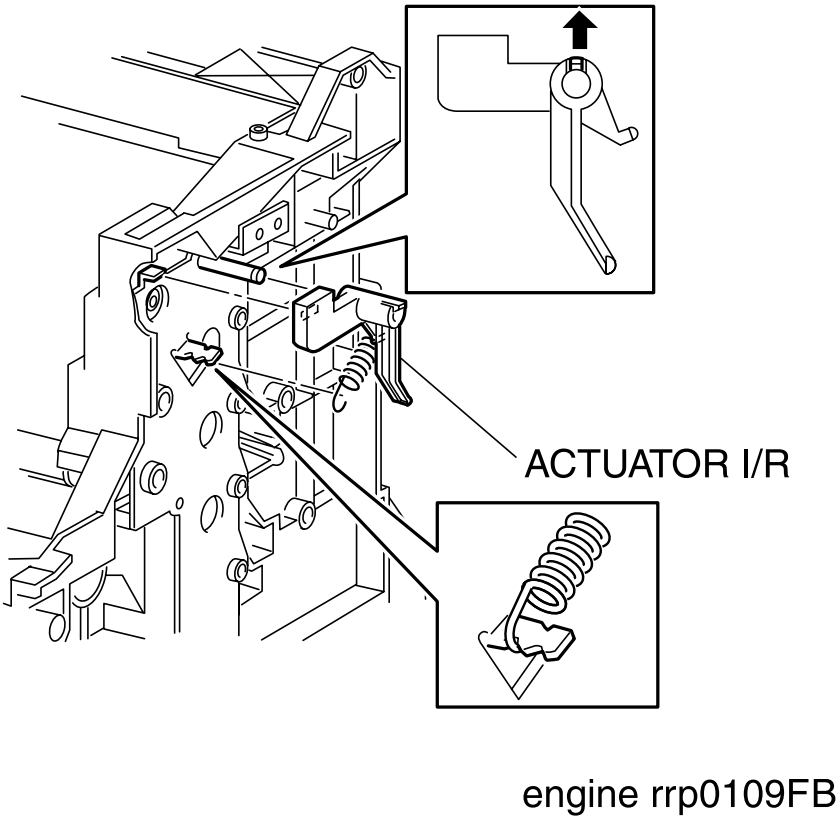

Figure: ACTUATOR I/R Removal

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)

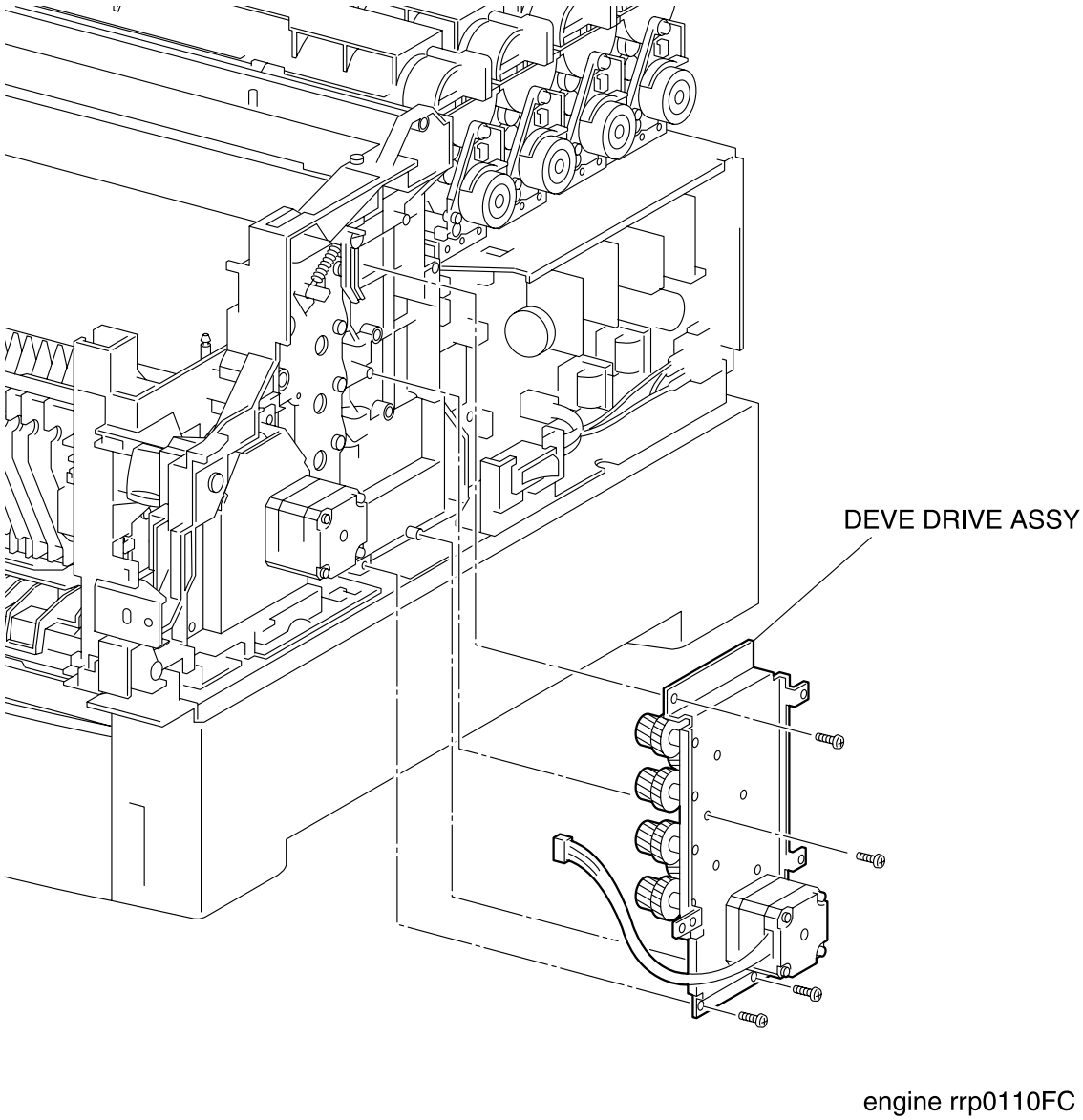

Figure: DEVE DRIVE ASSY Removal

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 HBN DRV. (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)

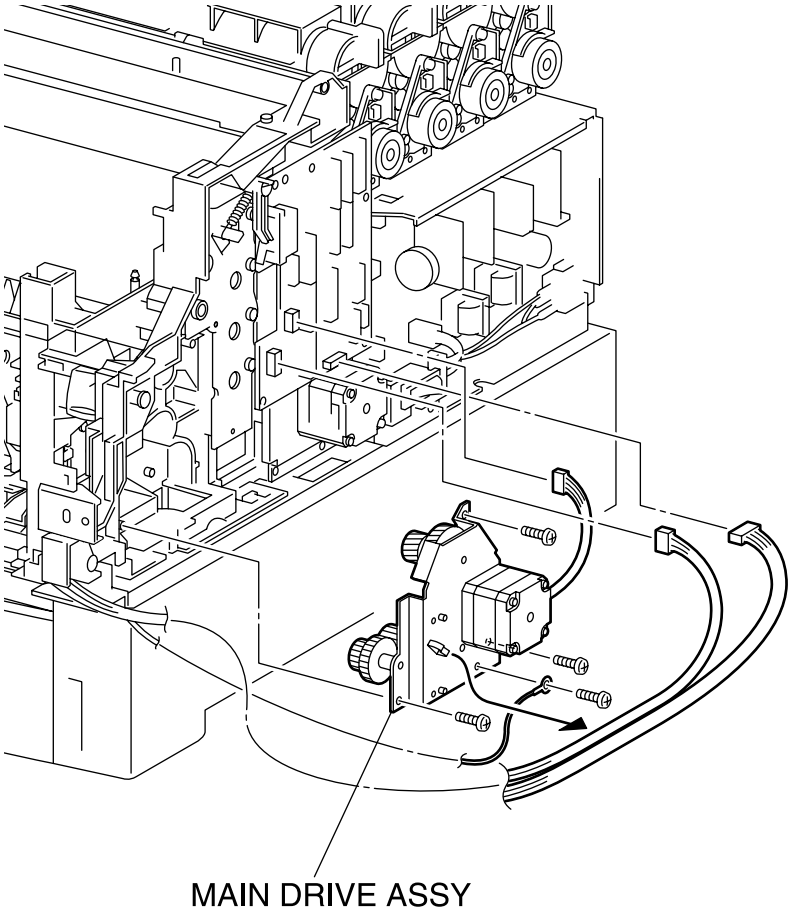

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Figure: MAIN DRIVE ASSY Removal

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 HBN DRV (PL12.1.12) from the right side surface of the printer.
6) Remove the connector (P/J52) on the PWBA HBN DRV.
7) Disconnect the connector (P/J50) on the PWBA HBN DRV.
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)

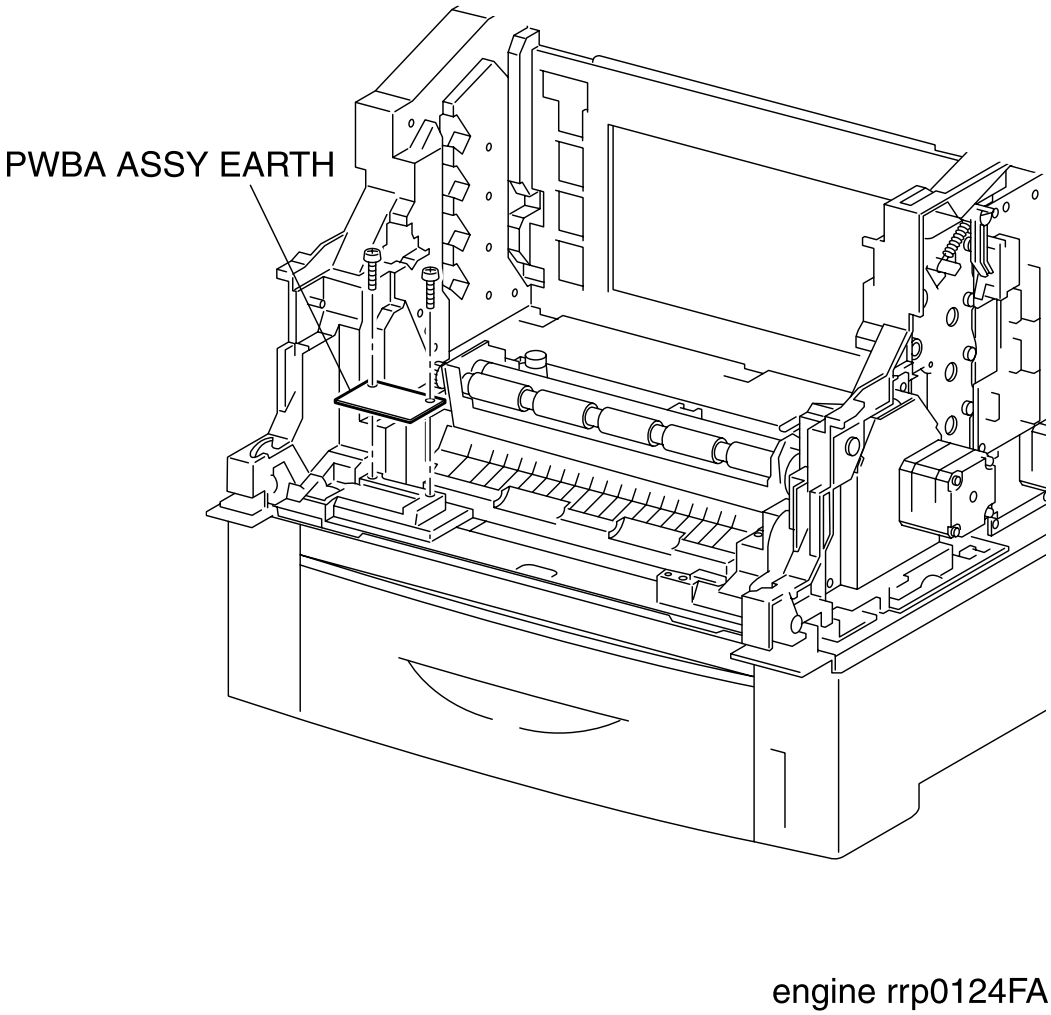


Figure: PWBA ASSY EARTH Removal

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 HBN MCU (PL12.1.1)

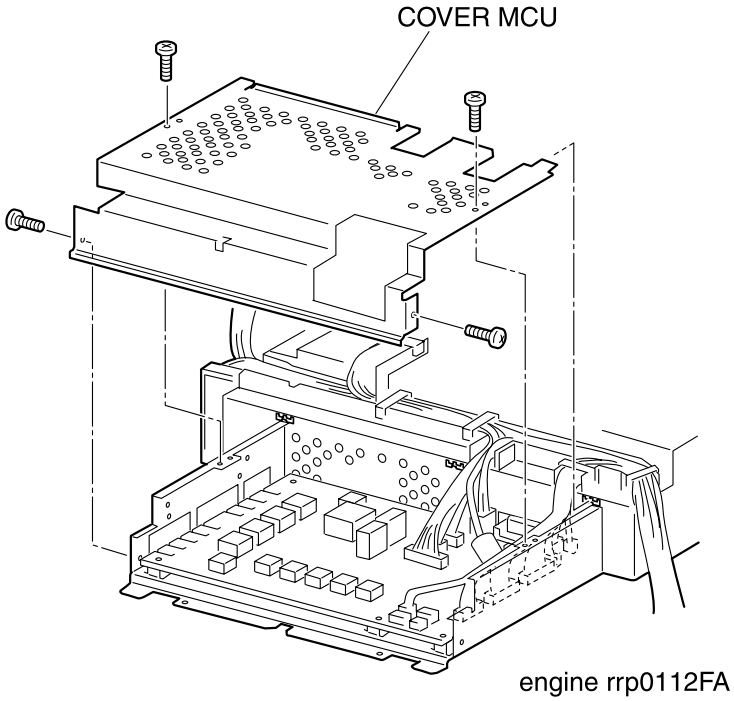


Figure: PWBA HBN MCU Removal (1)

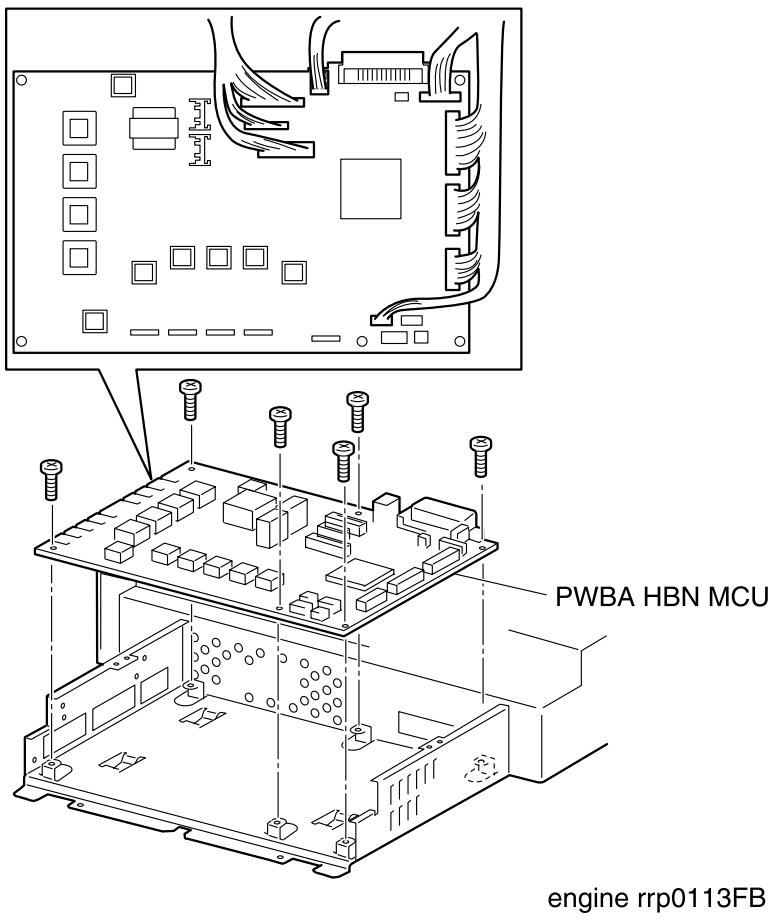


Figure: PWBA HBN MCU Removal (2)

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 HBN DRV. (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 HBN MCU from the BOX ASSY MCU/ESS.
23) Remove 6 screws securing the PWBA HBN MCU to the BOX ASSY MCU/ESS.
24) Remove the PWBA HBN MCU from the BOX ASSY MCU/ESS.

Replacement

Replace the components in the reverse order of removal.

NOTE

If the replacement PWBA HBN MCU 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)

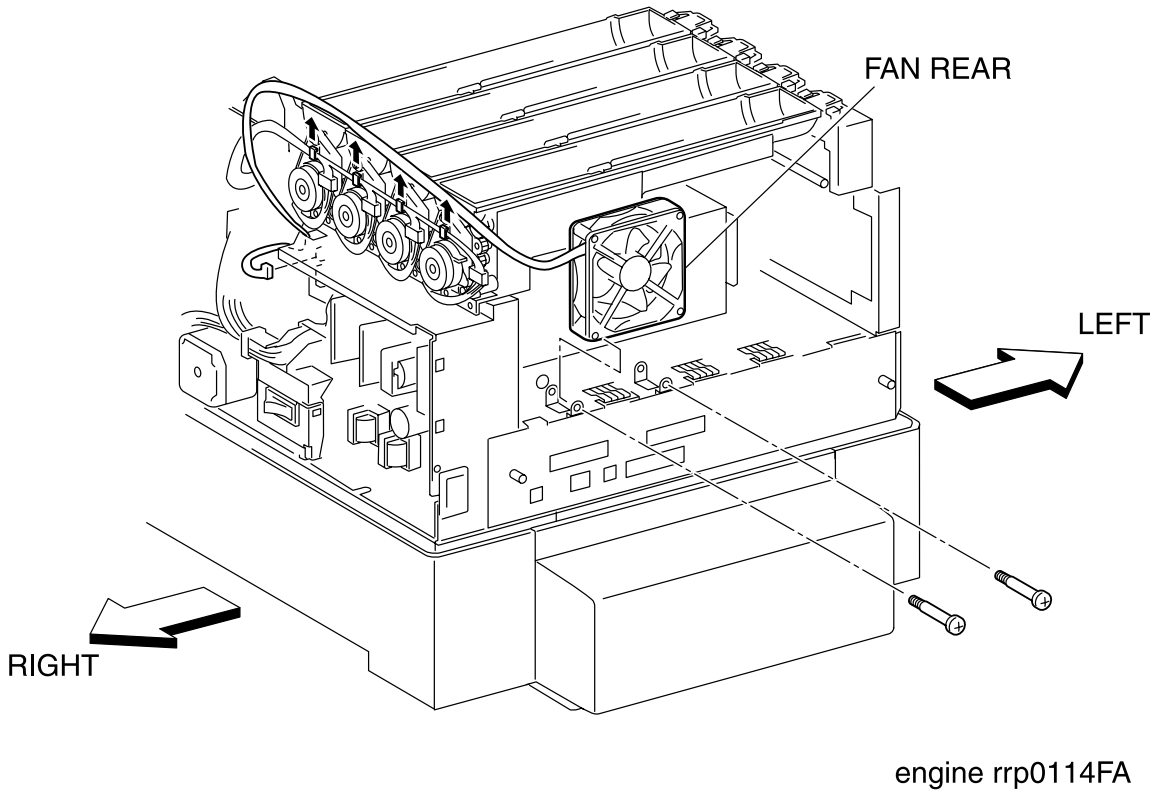


Figure: FAN REAR Removal

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)

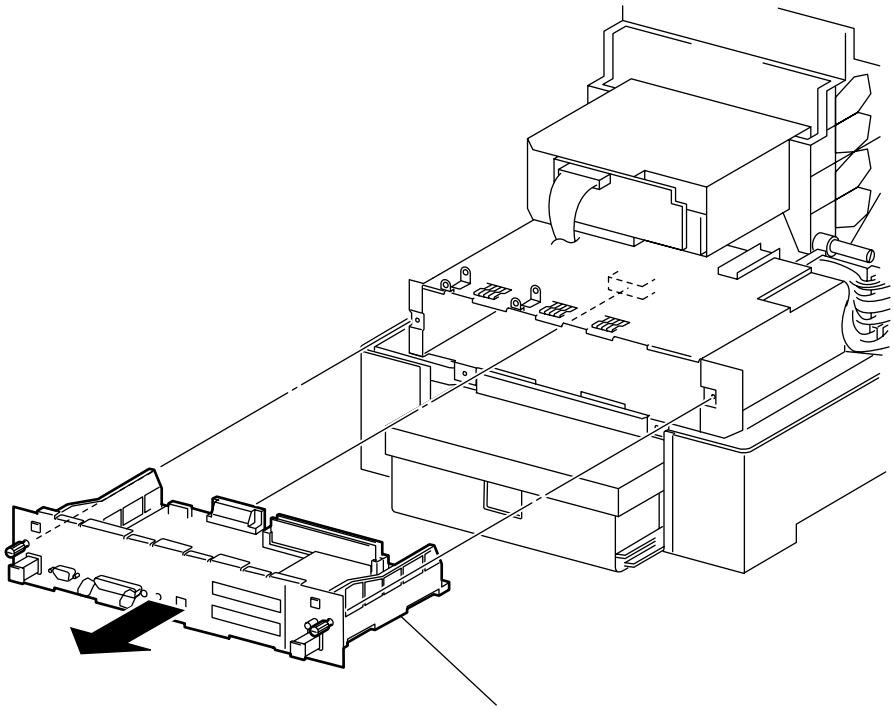


Figure: CONTROLLER BOARD Removal

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 HBN MCU (PL12.1.1).

RRP12.4 LVPS (PL12.1.10)

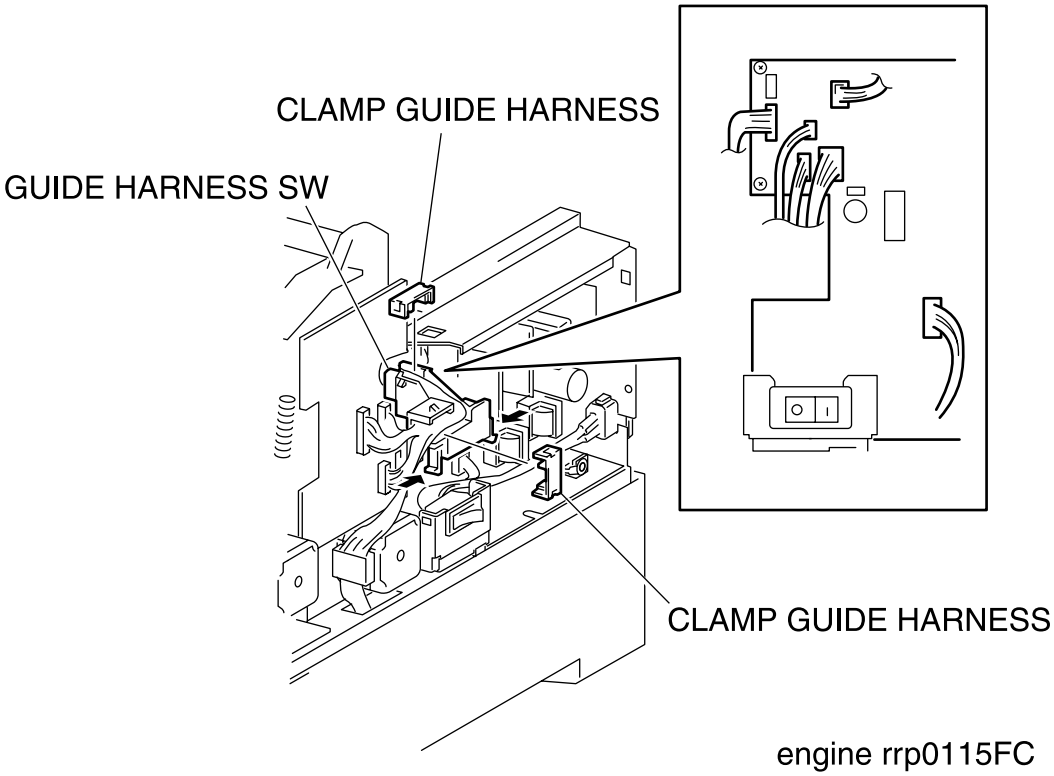


Figure: LVPS Removal (1)

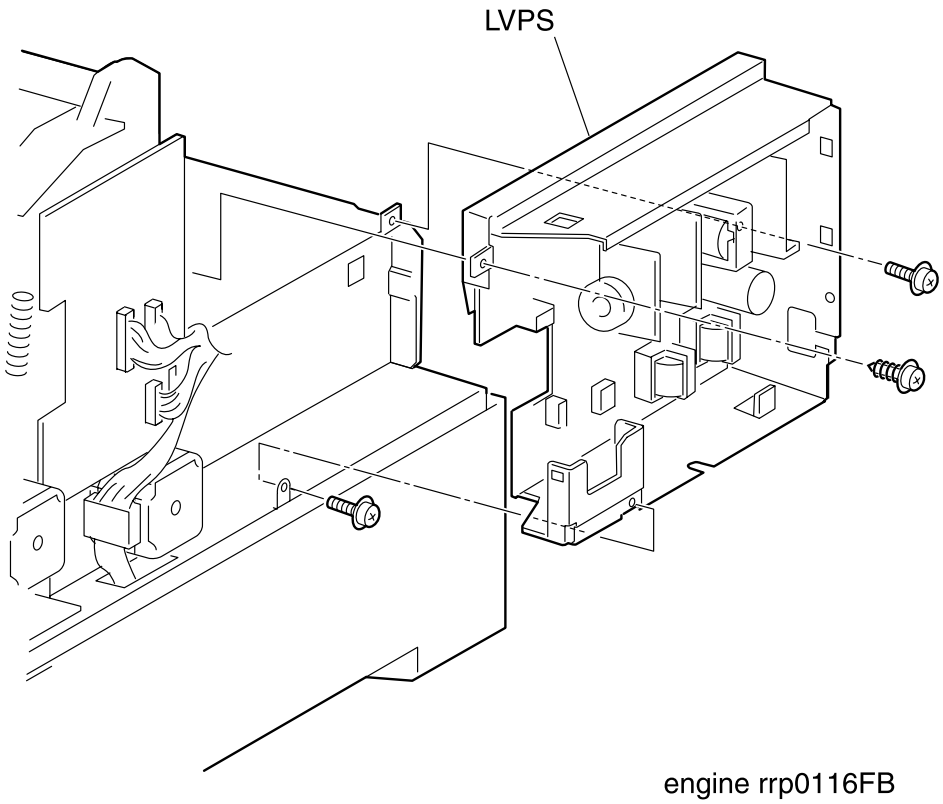


Figure: LVPS Removal (2)

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 HBN DRV. (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)

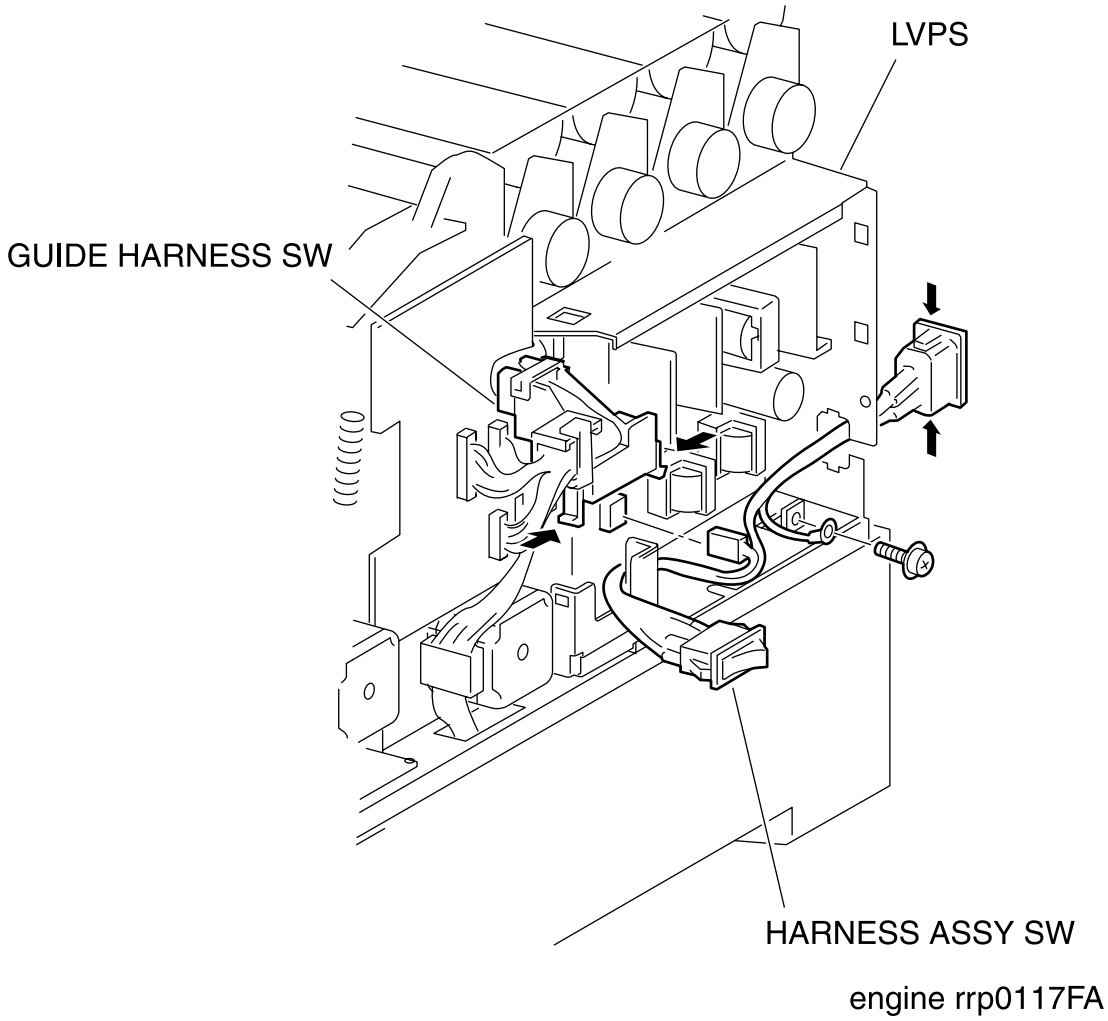


Figure: HARNESS ASSY AC SW Removal

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 HBN DRV (PL12.1.12)

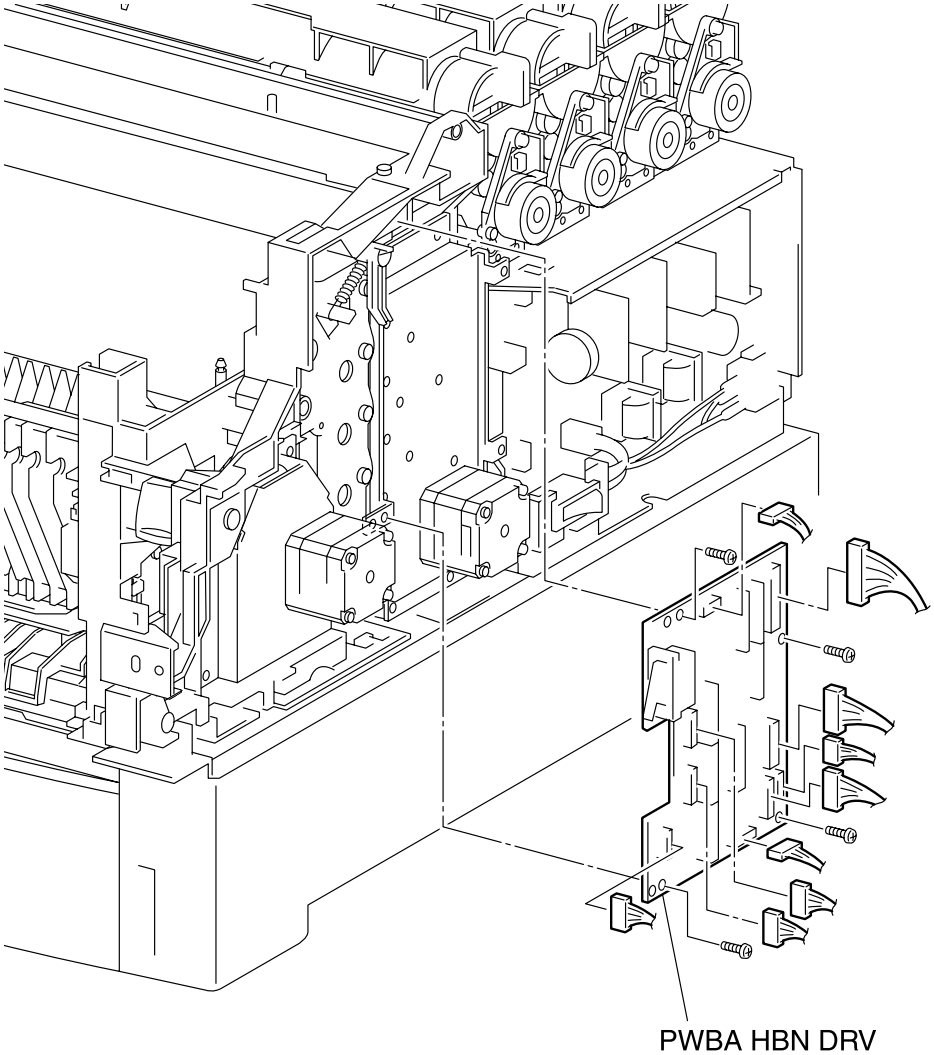


Figure: PWBA HBN DRV Removal

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 HBN DRV from the right side surface of the printer.
5) Remove 4 screws securing the PWBA HBN DRV to the printer.
6) Remove the PWBA HBN DRV from the printer.

Replacement

Replace the components in the reverse order of removal.

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

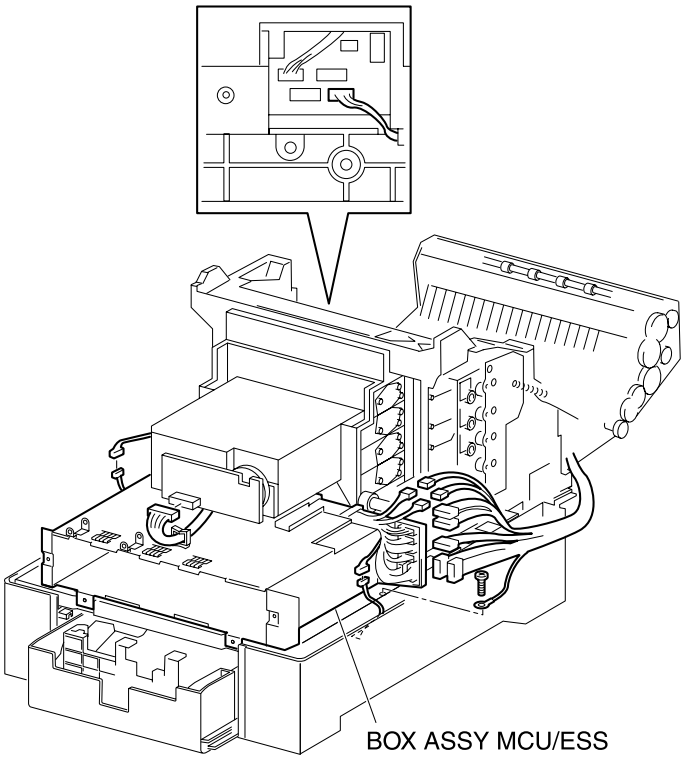


Figure: BOX ASSY MCU/ESS Removal (1)

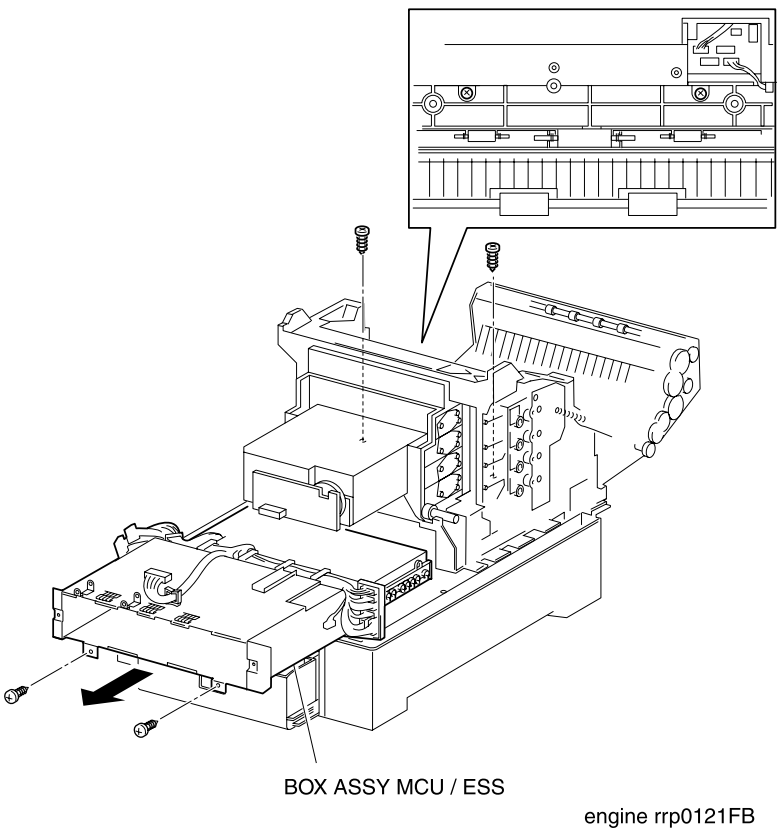


Figure: BOX ASSY MCU/ESS Removal (2)

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 HBN DRV. (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 HARNESS ASSY FSR3 (FSR32) (PL5.1.9) from the left-hand side side of a 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 HBN MCU (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.

Replacement

Replace the components in the reverse order of removal.

RRP12.8 HOUSING ASSY CONTACT (PL12.1.14)

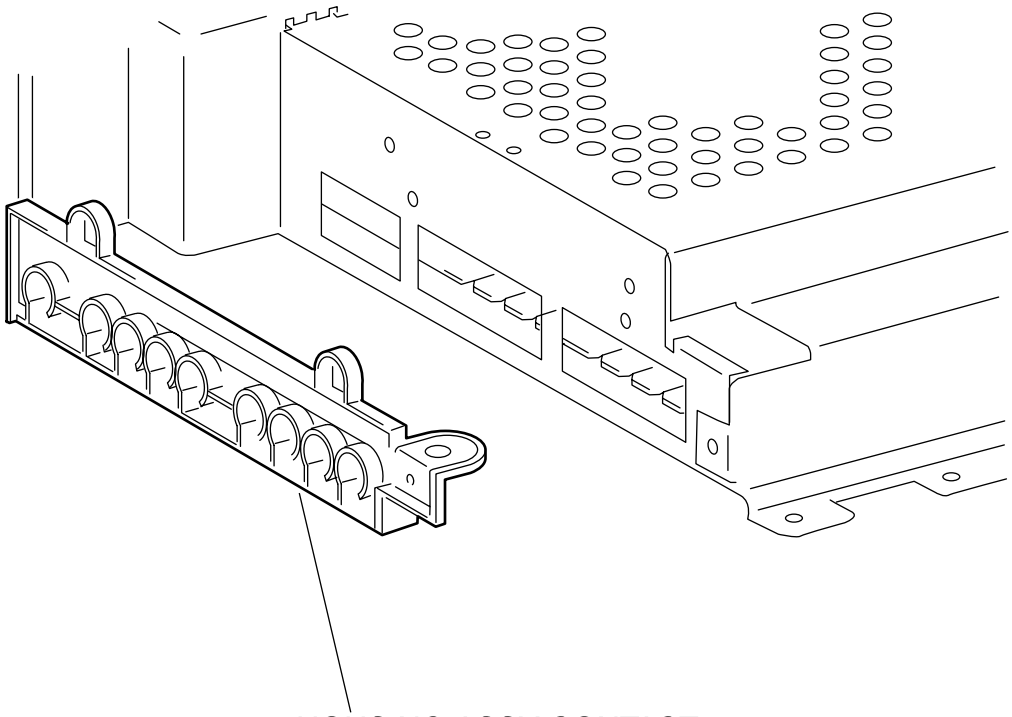


Figure: HOUSING ASSY CONTACT Removal

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 HBN DRV. (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 CONTENTS

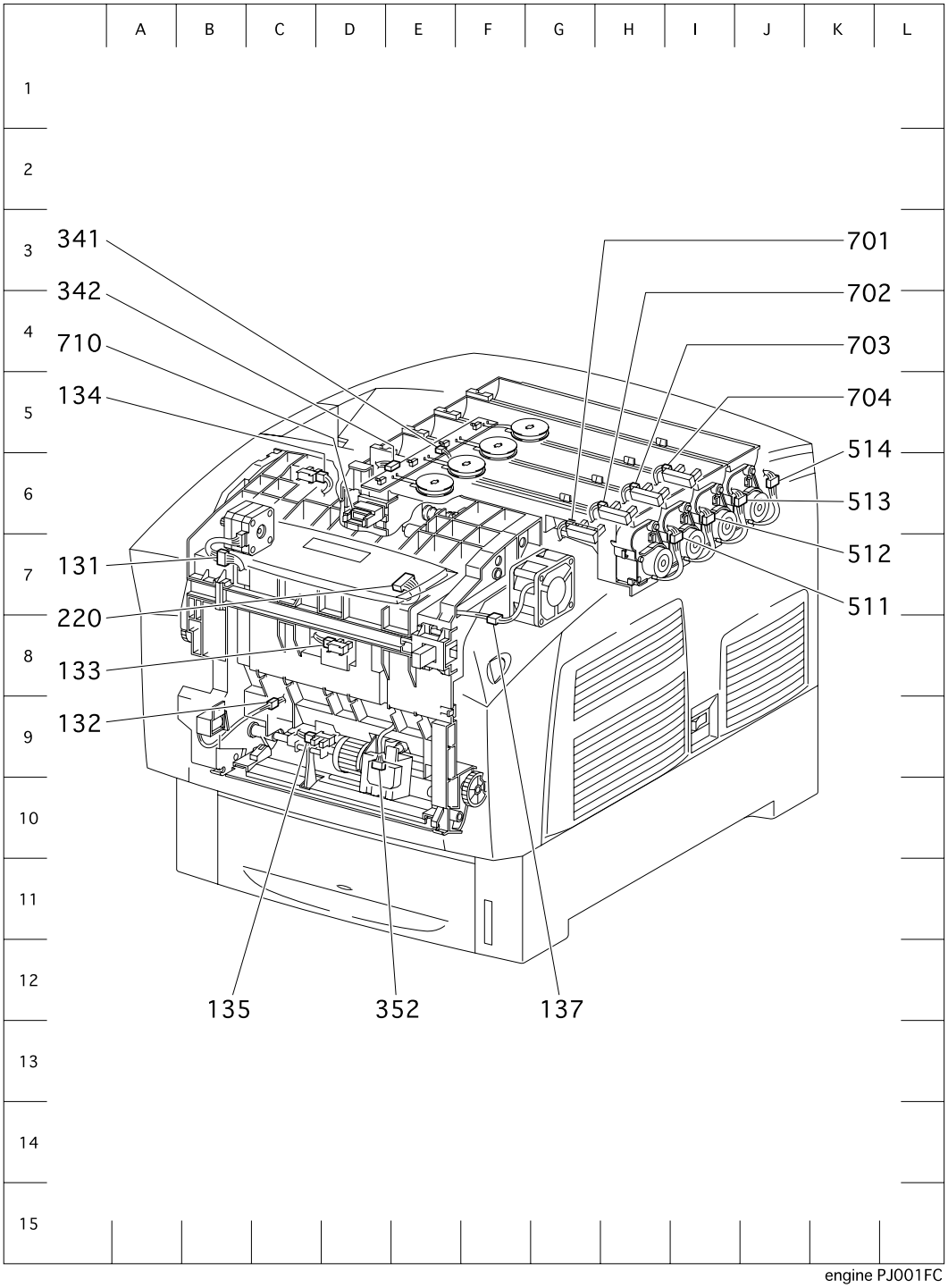
1. Connector [P (plug) / J (jack)]

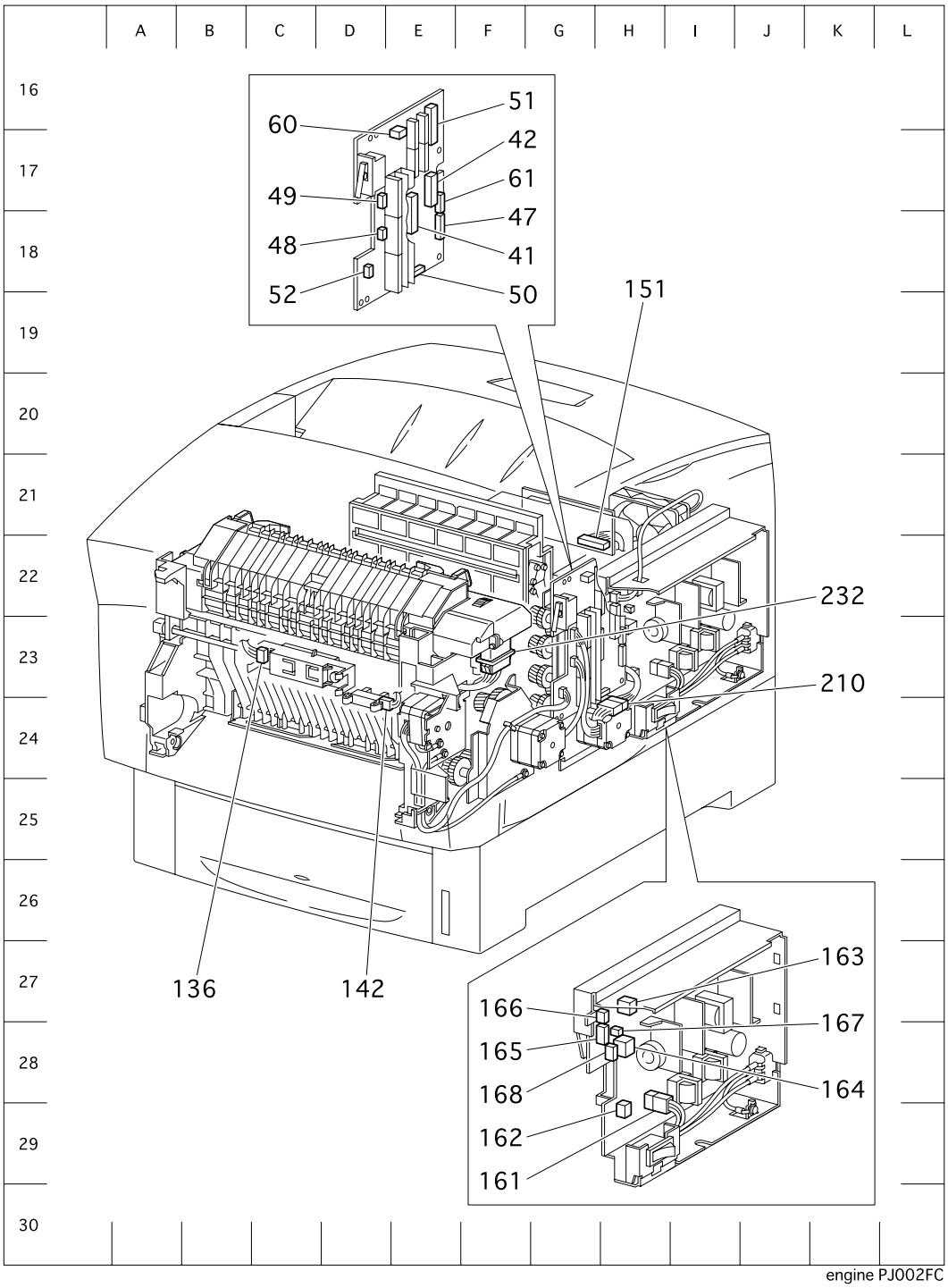
1.1 List of P/J

P/J	Coordiates	Remarks
11	J-43	Connects PWBA HBN MCU and PWBA HBN DRV
12	I-43	Connects PWBA HBN MCU and PWBA HBN DRV
13	H-43	Connects PWBA HBN MCU, S-HVPS, FSR3(FSR32) Harness Assembly, Front 2 Harness Assembly and CTD Harness Assembly
14	J-43	Connects PWBA HBN MCU and Controller Board
15	H-43	Connects PWBA HBN MCU and ROS Assembly
18	H-43	Connects PWBA HBN MCU and REGI Chute Assembly (REGI Clutch, REGI Sensor)
19	H-44	Connects PWBA HBN MCU and Retard Housing Assembly (TURN Clutch)
21	I-43	Connects PWBA HBN MCU and OPFREC Harness Assembly
22	J-43	Connects PWBA HBN MCU and OPEPANE BS Harness Assembly
23	I-43	Connects PWBA HBN MCU and LVPS STD Assembly
24	H-43	Connects PWBA HBN MCU , FSR3(FSR32) Harness Assembly and TMPA Harness Assembly
30	H-43	Flash-write
31	J-43	Test-print
32	H-43	Connects PWBA HBN MCU and OHP Sensor
34	H-42	Connects PWBA HBN MCU and RFID2 Harness Assembly
35	H-43	Not Connects
41	E-18	Connects PWBA HBN DRV and PWBA HBN MCU
42	E-17	Connects PWBA HBN DRV and PWBA HBN MCU
47	E-18	Connects PWBA HBN DRV, Pick Up Assembly (No Paper Sensor, Low Paper Sensor, Solenoid Feed, Clutch Assembly Turn) and Switch Assembly Size
48	D-18	Connects PWBA HBN DRV and Main Drive Assembly
49	D-17	Connects PWBA HBN DRV and DEVE Drive Assembly
50	E-18	Connects PWBA HBN DRV, Chute Assembly Exit (Motor Assembly DUP) and Cover Assembly Front Head (Fan Fuser)
51	E-16	Connects PWBA HBN DRV, Holder TCRU Assembly (No Toner Sensor, TNR Motor) and PWBA CRUM Reader
52	D-18	Connects PWBA HBN DRV and Chute Assembly IN (Fuser Drive Assembly)
60	E-17	Connects PWBA HBN DRV and LVPS STD Assembly
61	E-17	Connects PWBA HBN DRV 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 HBN DRV
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
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 HBN DRV
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)

P/J	Coordiates	Remarks
140	H-43	Connects PWBA HBN MCU, 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 HBN MCU
145	E-35	Not Connects
151	H-22	Connects ROS Assembly and PWBA HBN MCU
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 HBN DRV
164	H-28	Connects LVPS STD Assembly and PWBA HBN MCU
165	H-28	Connects LVPS STD Assembly and PWBA HBN DRV
166	H-27	Connects LVPS STD Assembly and Fan
167	H-28	Connects LVPS STD Assembly and PWBA HBN MCU
168	H-28	Not Connects
181	E-38	Connects REGI Chute Assembly (REGI Sensor) and PWBA HBN MCU
210	H-24	Connects OPF Main Harness Assembly and Option Feeder
220	E-7	Connects Console Panel Hanabi and OPEPANE AS Harness Assembly
221	B-33	Connects OPEPANE AS Harness Assembly and Console Panel Hanabi
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 HBN MCU and LVPS STD Assembly
341	E-5	Connects PWBA CRUM Reader and RFID Harness Assmbly
342	E-6	Connects PWBA CRUM Reader and PWBA HBN DRV
351	E-36	Not Connects
352	D-9	Not Connects
471	I-53	Connects Switch Assembly Size and PWBA HBN DRV
472	F-53	Connects No Paper Sensor and PWBA HBN DRV
473	F-54	Connects Low Paper Sensor and PWBA HBN DRV
474	G-54	Connects Solenoid Feed and PWBA HBN DRV
475	H-53	Connects Clutch Assembly Turn and PWBA HBN DRV
511	I-7	Connects Holder Assembly MQ-Y (TNR Motor) and PWBA HBN DRV
512	I-6	Connects Holder Assembly MQ-M (TNR Motor) and PWBA HBN DRV
513	J-6	Connects Holder Assembly MQ-C (TNR Motor) and PWBA HBN DRV
514	J-6	Connects Holder Assembly MQ-K (TNR Motor) and PWBA HBN DRV
701	G-6	Connects Holder Assembly MQ-Y (No Toner Sensor) and PWBA HBN DRV
702	H-6	Connects Holder Assembly MQ-M (No Toner Sensor) and PWBA HBN DRV
703	H-6	Connects Holder Assembly MQ-C (No Toner Sensor) and PWBA HBN DRV
704	H-6	Connects Holder Assembly MQ-K (No Toner Sensor) and PWBA HBN DRV
710	D-6	Connects Plate Assembly Dispenser L (CONN Assembly CRUM MC) and EEPROM Harness Assembly
810	H-54	Connects Option Feeder and PWBA HBN MCU
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 Assmbly
3411	G-36	Connects RFID Harness Assembly and PWBA CRUM Reader
5011	F-35	Connects S-HVPS and PWBA HBN MCU
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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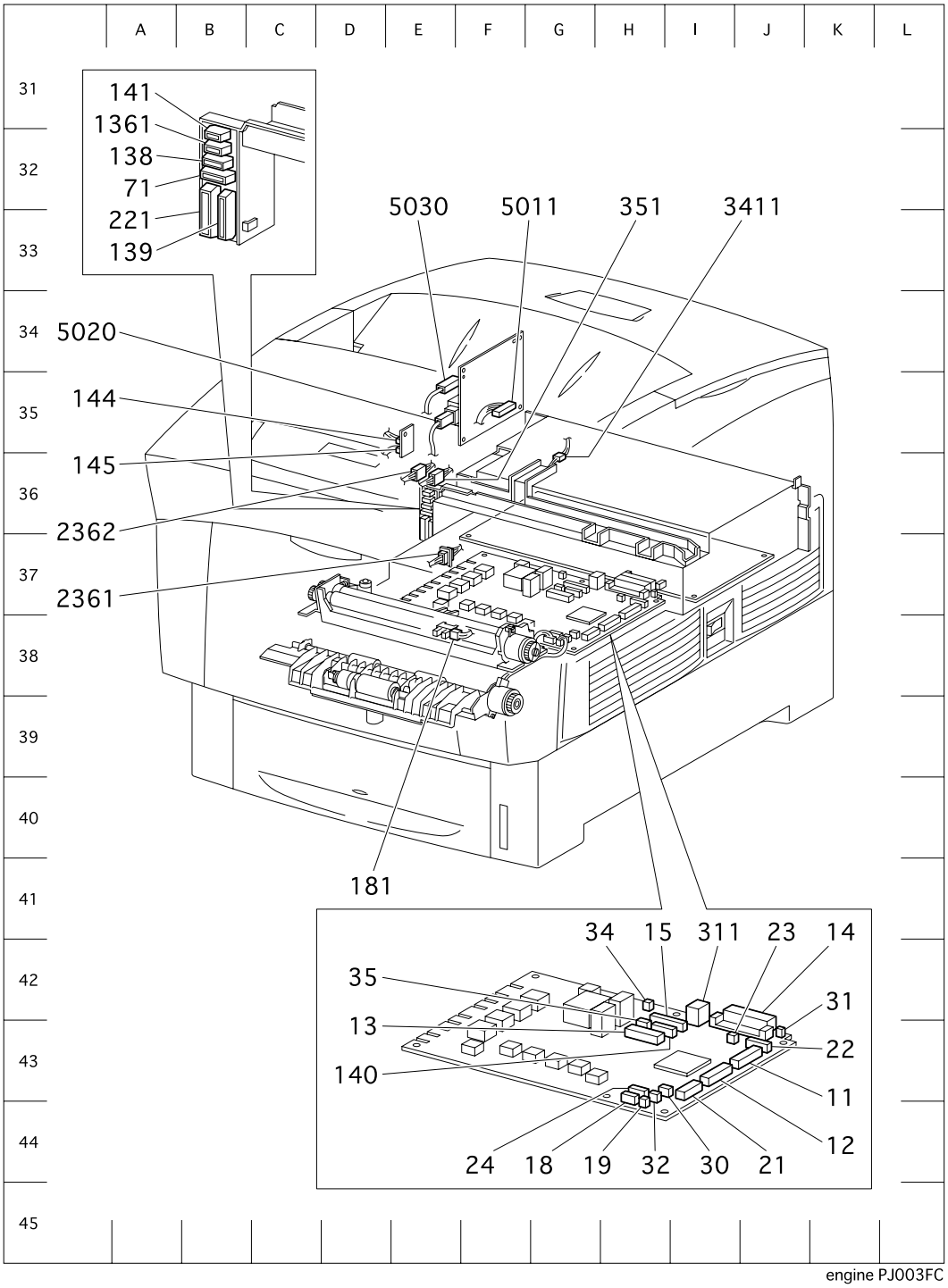

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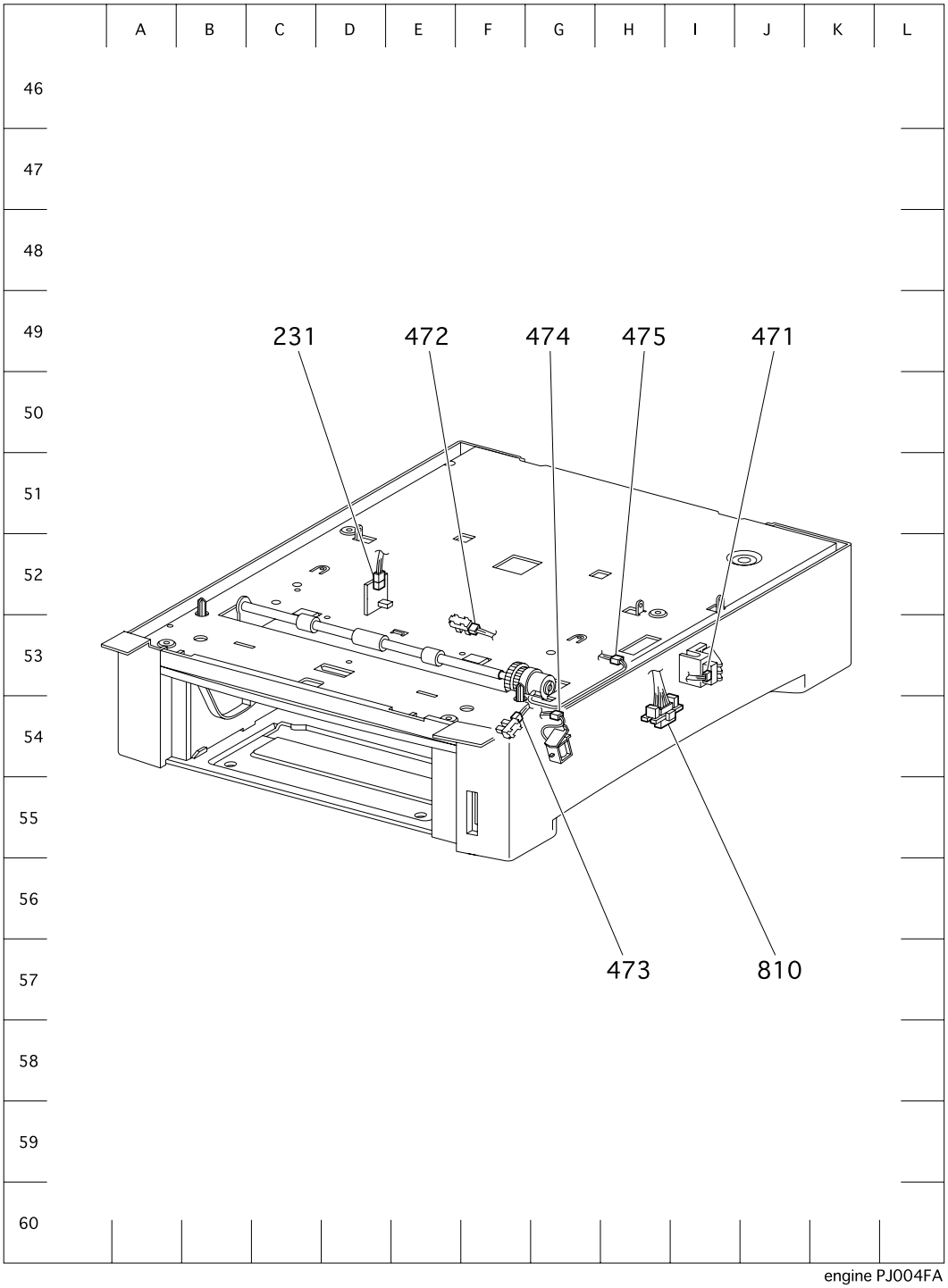
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engine PJ004FA

Chapter 5 Parts List CONTENTS

1. Parts List

1.1 Caution for use of parts list

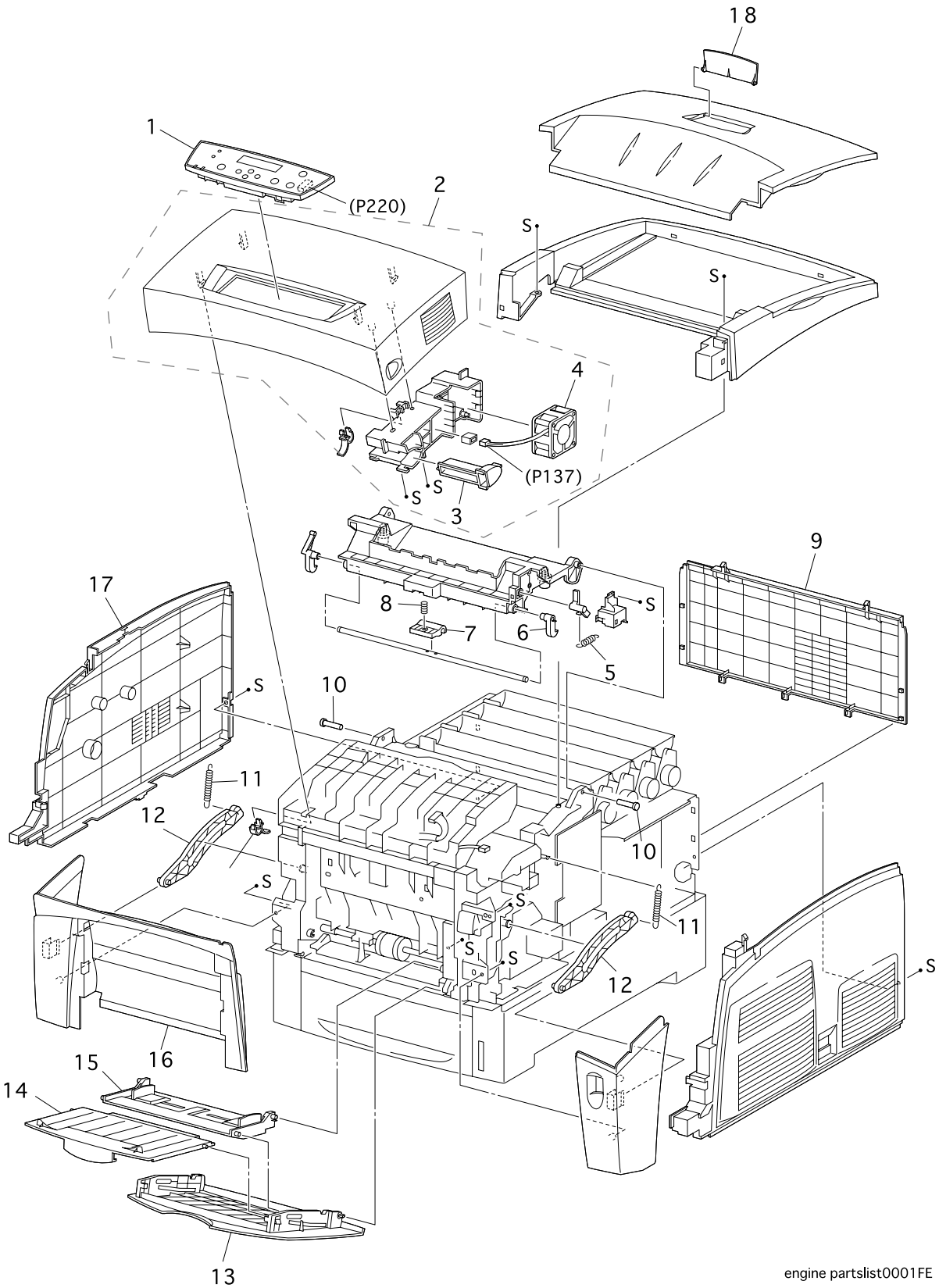
The figures indicating the illustrations are the item No. in the list and present correspondence between the illustrations and parts.
The notation of PL "X.Y.Z" is composed of the plate (PL), item "X.Y", and parts "Z".
The alphabet characters in the illustrations represent screws and clips as follows:
"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.**

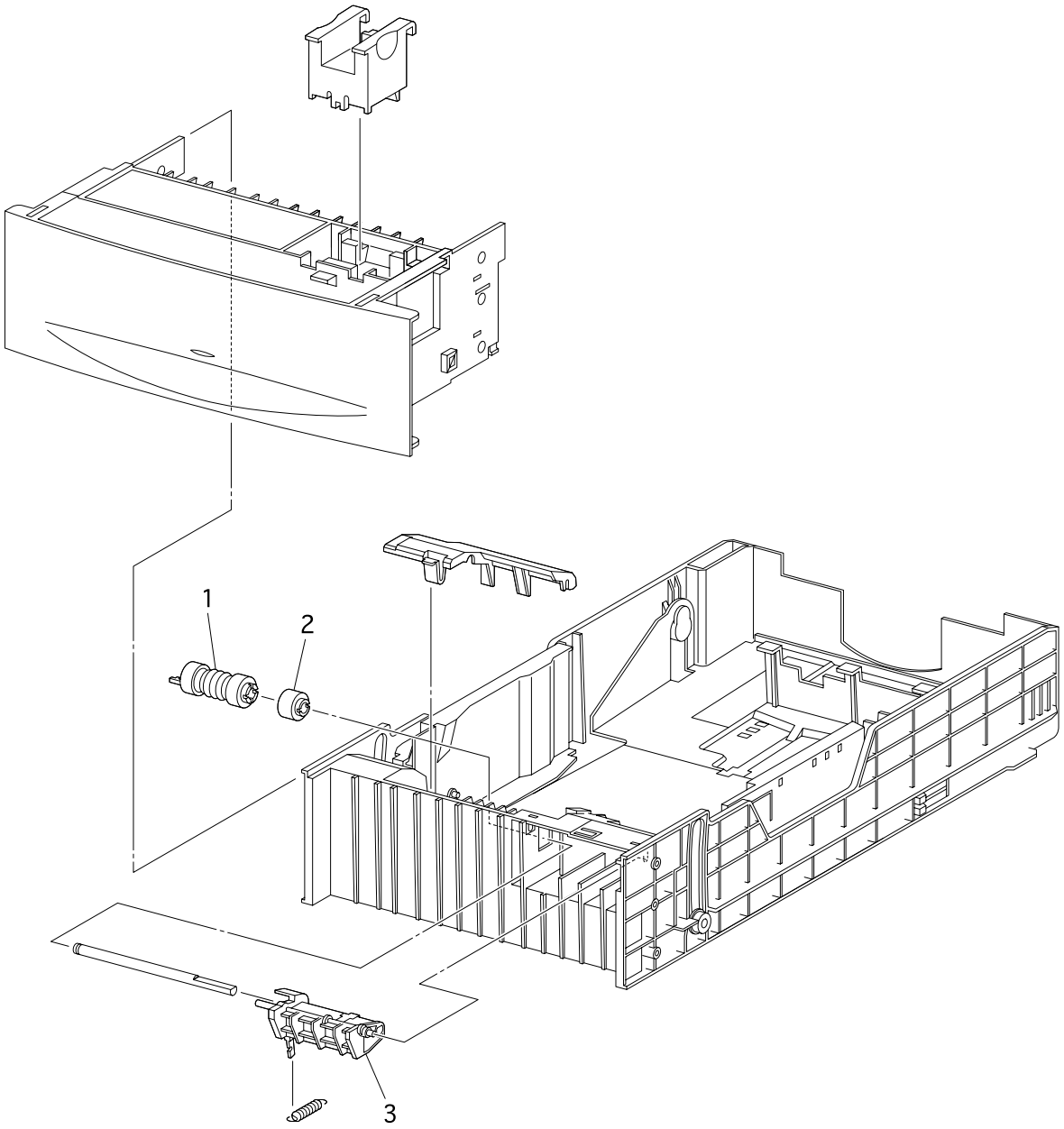
PL 1.1 Cover [Illustration]



PL 1.1 Cover [List]

Item	Parts name	
1	Console panel	865802K52400
2	Cover Front head	865802K52170
3	Lever out	865011E10690
4	Fan Fuser	865127E82890
5	Spring Cam I/R	865809E28210
6	Latch Top R	865003E53230
7	Handle Top	865003E56850
8	Spring Handle	865809E28240
9	Cover Rear	865802E22930
10	Stud Top	865026E76270
11	Spring Link	865809E28570
12	Link	865012E10050
13	Cover MSI	865050K44820
14	Tray MSI Slide	865050E16900
15	Tray Assy Base	865050K44610
16	Cover Assy Front	865802K34290
17	Cover Side L	865802E22900
18	over Top Stopper	865802E32020

PL 2.1 Paper Cassette [Illustration]



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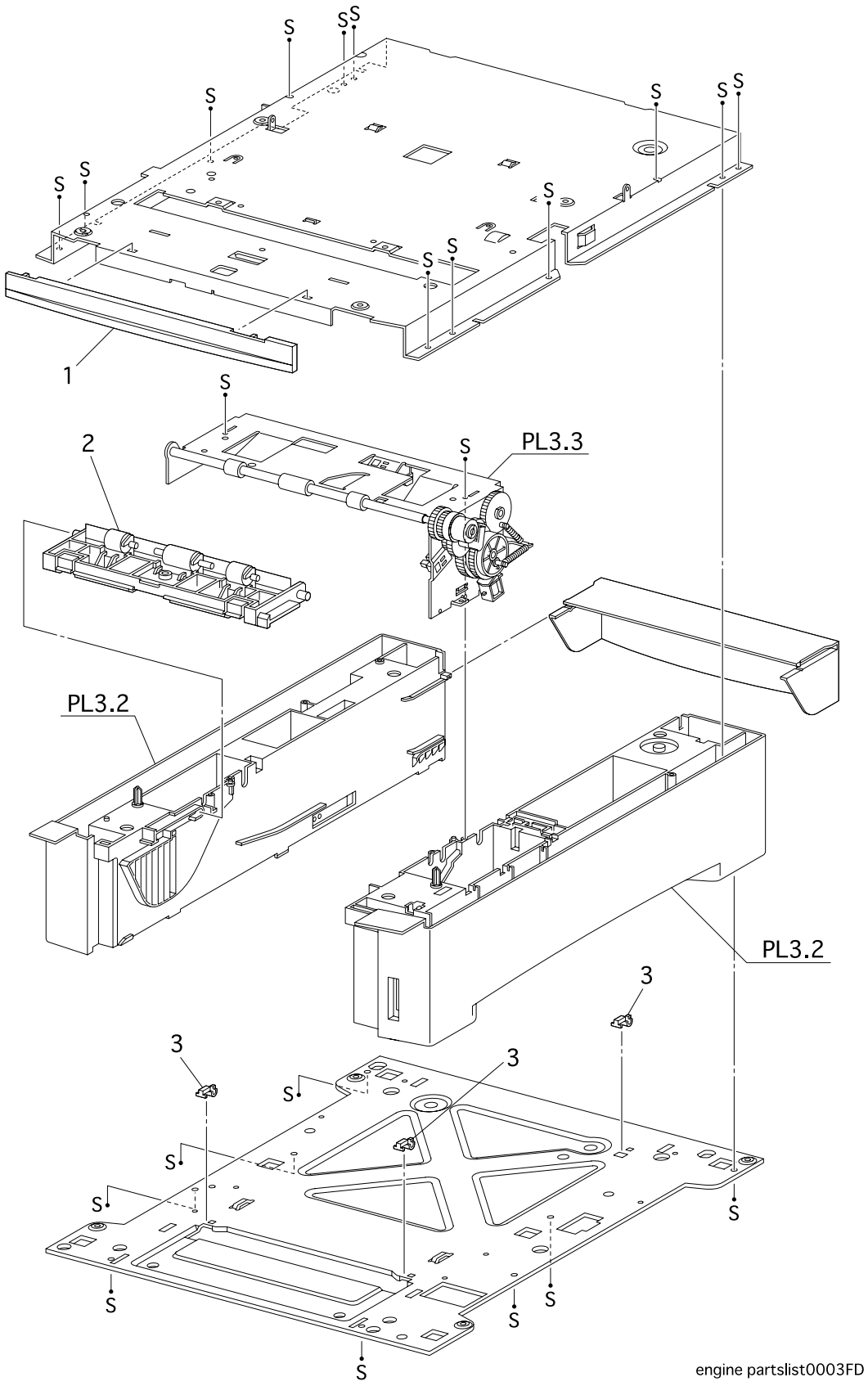
PL 2.1 Paper Cassette [List]

Item	Parts name	
1	Roll Assy	865059K21730
2	Clutch Assy Friction	865005K06270
3	Holder retard	865019E49231

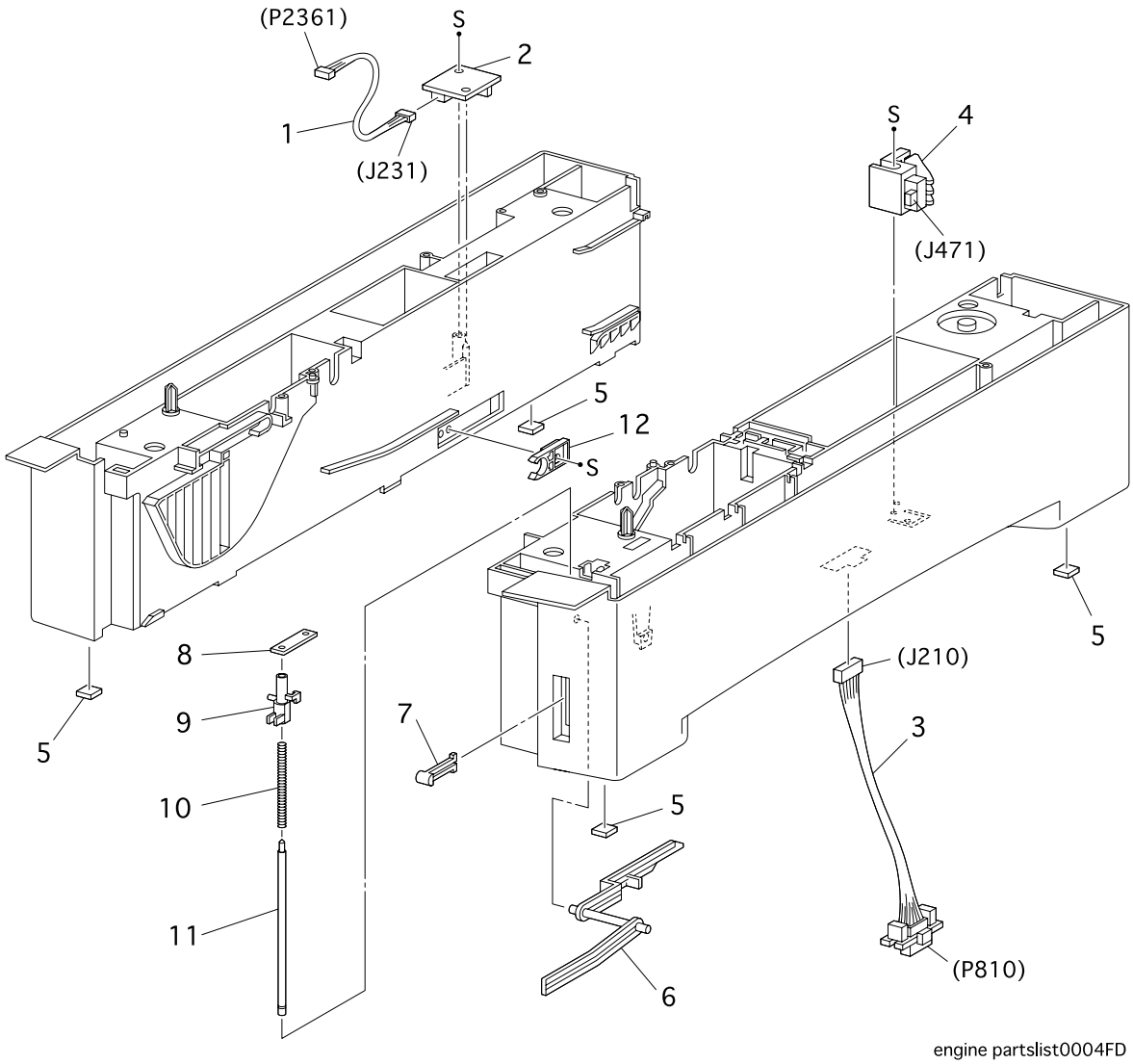
PL 3.1 Paper Feeder I [Illustration]



PL 3.1 Paper Feeder I [List]

Item	Parts name	
1	Cover FDR Front	865802E22810
2	Chute Assy Turn	865054K18000
3	Block	865014E42120

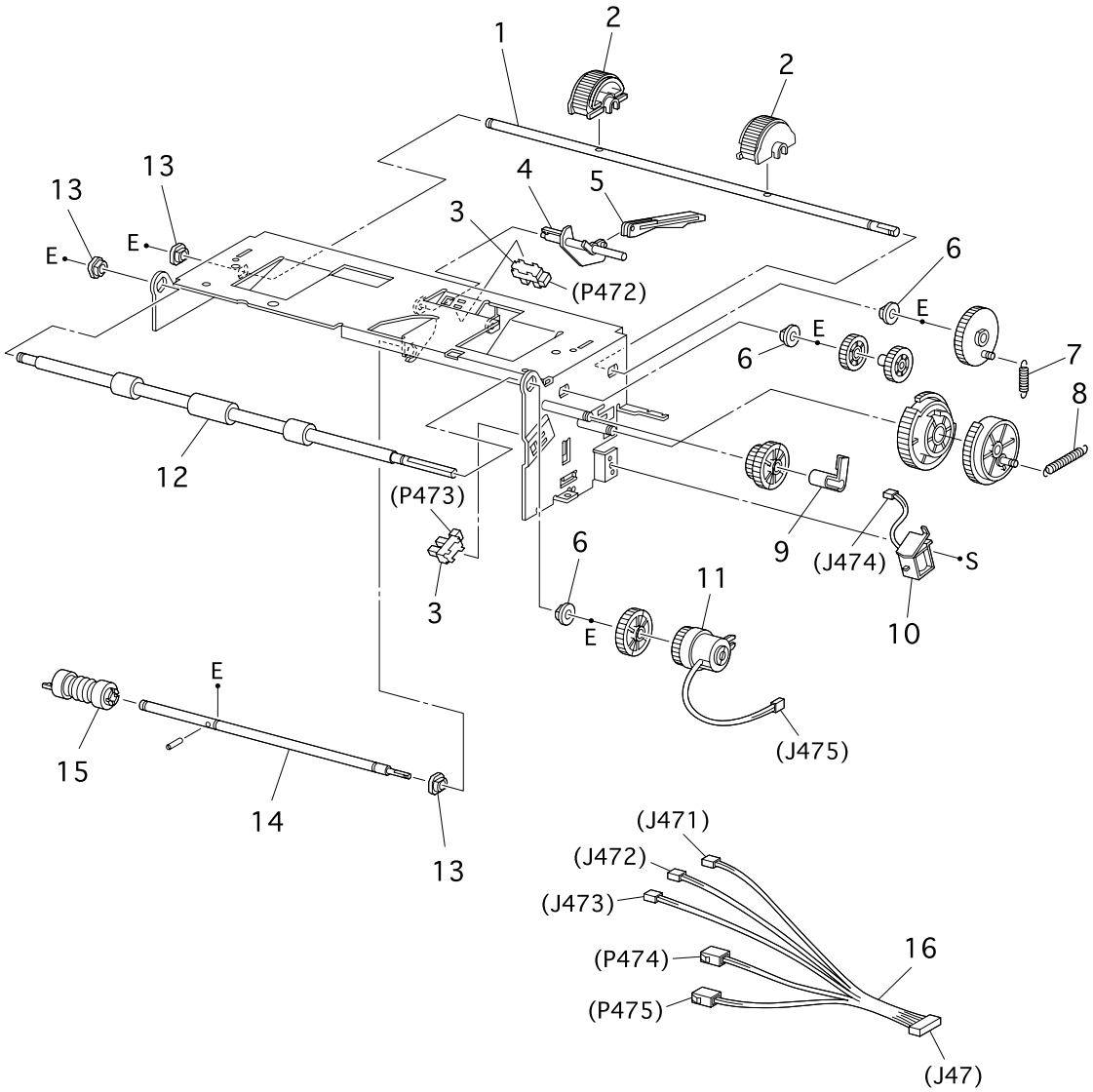
PL 3.2 Paper Feeder II [Illustration]



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	865017E92080
6	Lever Low Paper	865011E10680
7	Indicator	865123E91110
8	Holder Shaft indicator	865019E48400
9	Guide Indicator	865032E16070
10	Spring indicator	865809E28300
11	Shaft indicator	865006E71960
12	Stopper CST	865003E56900

PL 3.3 Paper Feeder III [Illustration]



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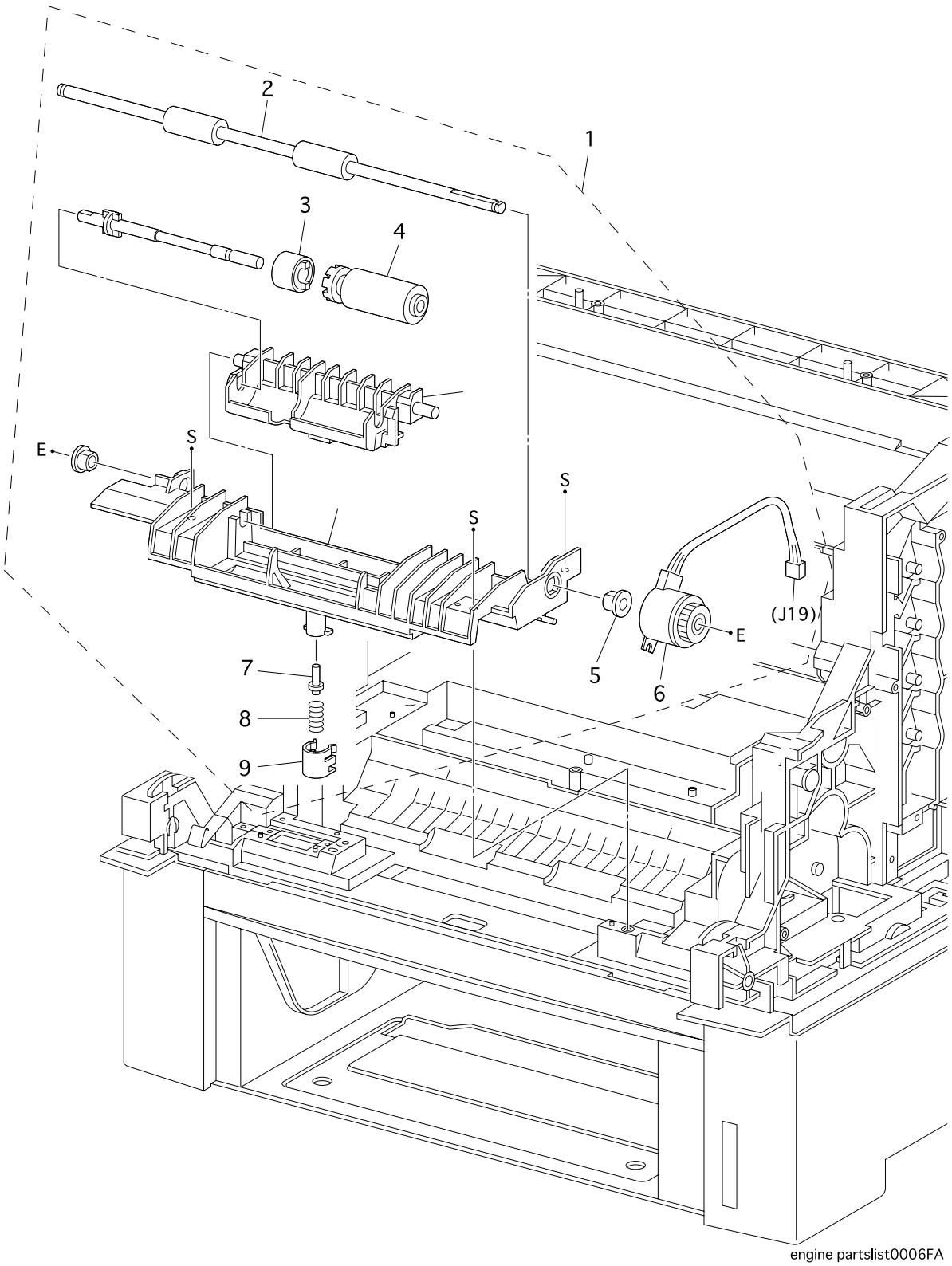
PL 3.3 Paper Feeder III [List]

Item	Parts name	
1	Shaft Feed 1	865006E71970
2	Roll Assy Feed	865059K18240
3	Sensor Photo	865130E82740
4	Actuator No Paper	865120E18640
5	Link Actuator	865012E93210
6	Bearing metal	865413W75959
7	Spring Feed 1	865809E28310
8	Spring Feed H	865809E28320
9	Stopper Clutch	865003E53290
10	Solenoid Feed	865121E87700
11	Clutch Assy Turn	865005K06011
12	Roll Assy Turn	865059K18261
13	Bearing Metal/Black	865413W11660
14	Shaft Feed 2	865006E71980
15	Roll Assy	865059K18250
16	Harness Assy Feeder (J47-J471/J472/J473/P474/P475)	865162K69690

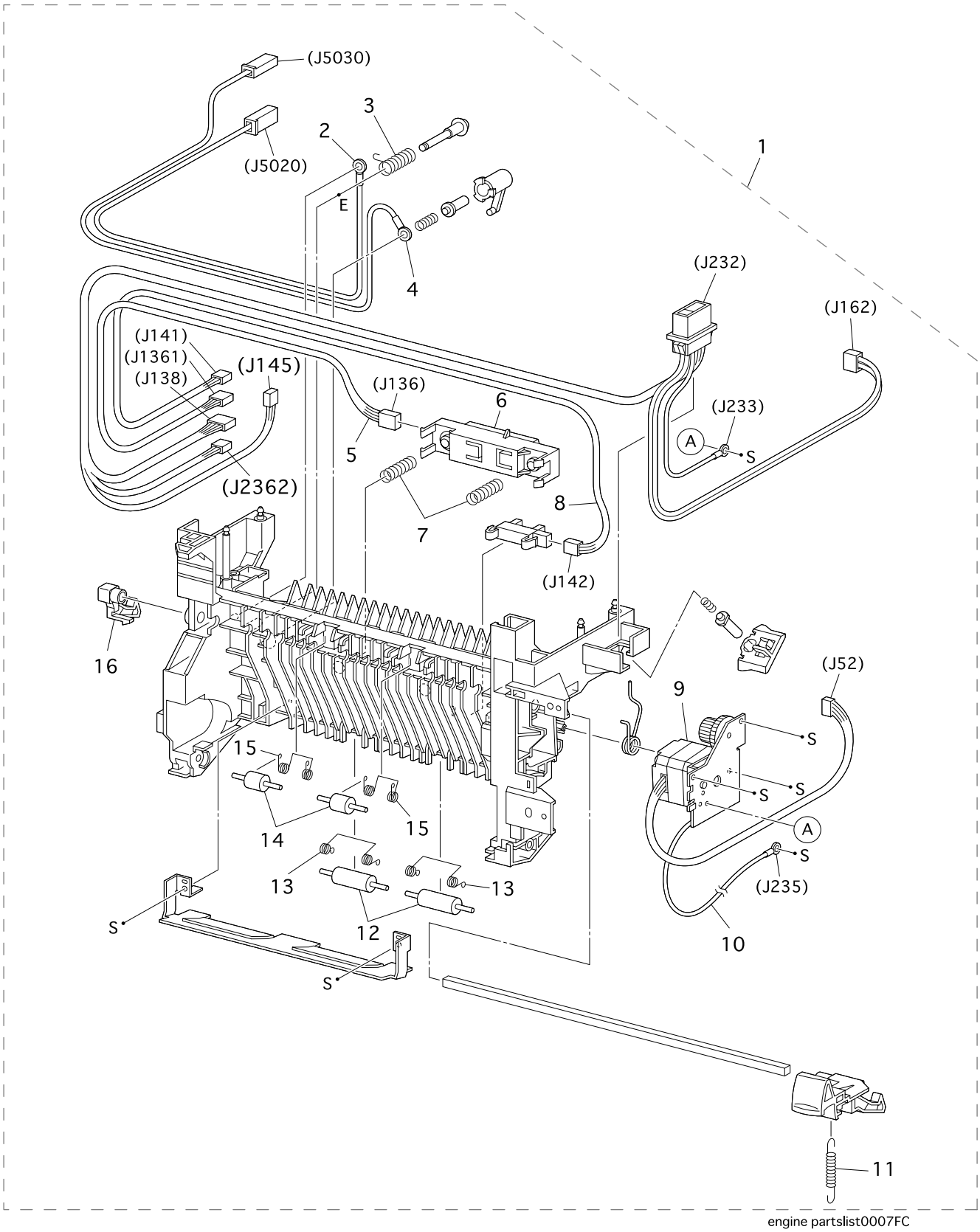
PL 4.1 Housing Assy Retard [Illustration]



PL 4.1 Housing Assy Retard [List]

Item	Parts name	
1	Housing Assy Retard	865802K24843
2	Roll Turn	865059K19940
3	Clutch Assy Friction	865005K06280
4	Roll Assy Retard	865059K19950
5	Bearing	865013E18061
6	Clutch Turn	865121E87710
7	Stud Retard	865026E77720
8	Spring Retard 370	865809E28671
9	Cap Retard	865021E97470

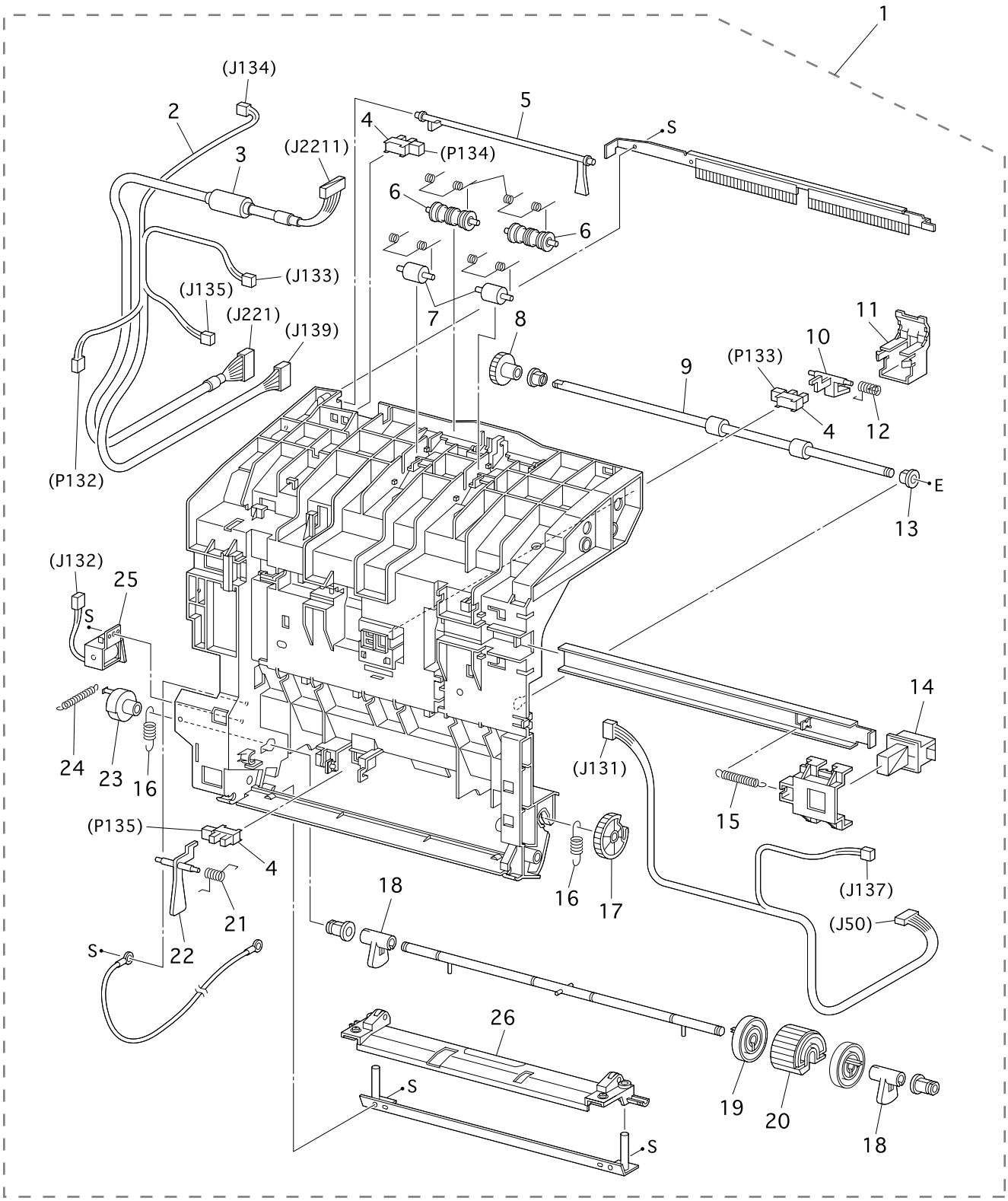
PL 5.1 Chute Assy In [Illustration]



PL 5.1 Chute Assy In [List]

Item	Parts name	
1	Cute Assy In (100V)	865084K12170
1	Cute Assy In (200V)	865084K12280
2	Wire Assy BTR2 (J5020)	865117K34570
3	Spring BTR R2	865809E35110
4	Wire Assy DTSK(J5030)	865117K34560
5	Harness Assy CTD(J136-J1361)	865162K69620
6	Sensor ADC Assy	865019K97900
7	Spring ADC	865809E28620
8	Harness Assy TFLSNS(J141-J142)	865162K69830
9	Fuser Drive Assy	865007K87970
10	Wire Assy FSR Earth(J234-J235)	865117K34580
11	Spring Latch	865809E28590
12	Roll Pinch Turn	865059E95690
13	Spring Pinch Turn	865809E28610
14	Roll Pinch Dup	865059E95700
15	Spring Pinch Dup	865809E28600
16	Latch L	865003E53380

PL 6.1 Chute Assy Out [Illustration]



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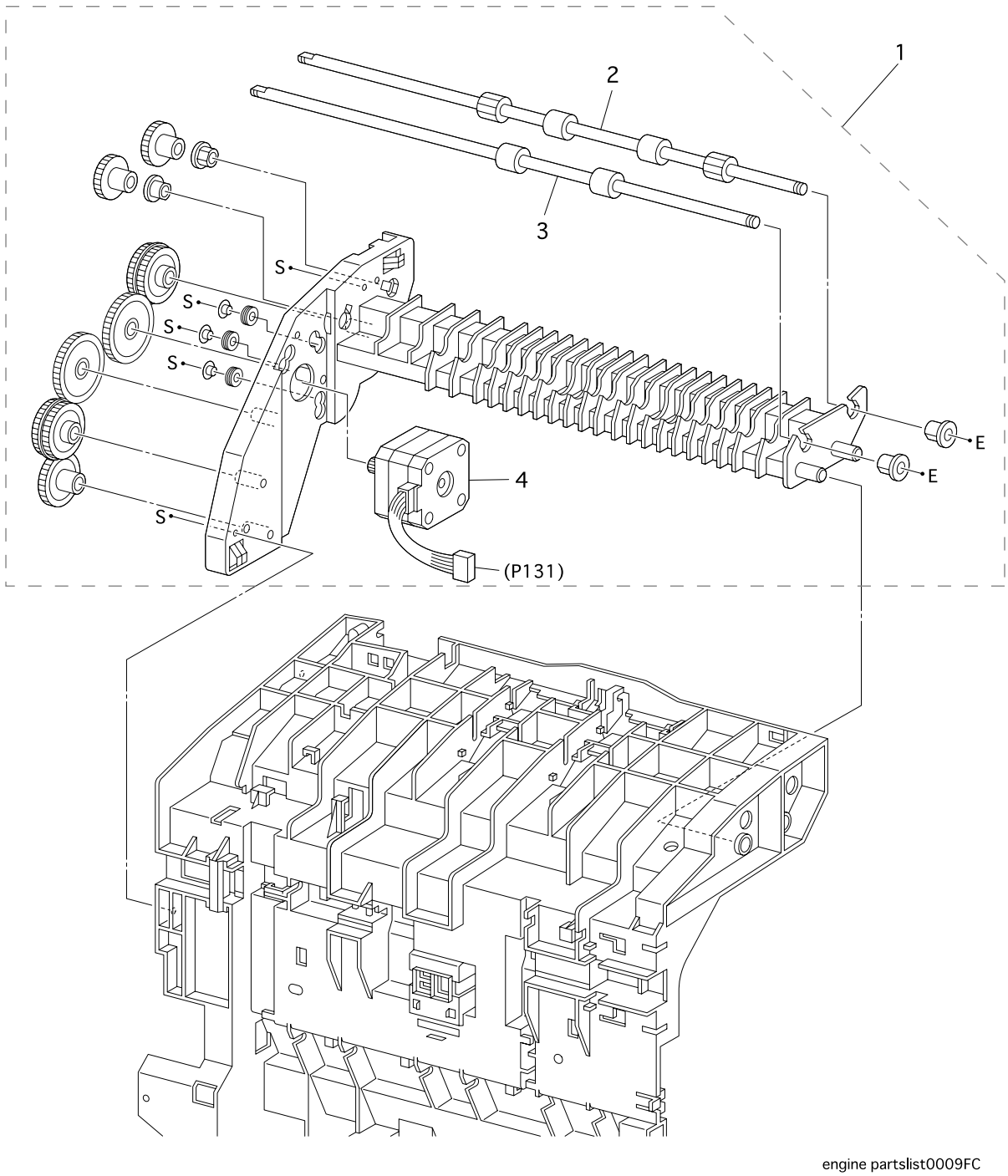
PL 6.1 Chute Assy Out [List]

Item	Parts name	
1	Cute Assy Out	865084K12161
2	Harness assy front 2 (J139-P132/J133/J134/J135)	865162K69590
3	Harness Assy Opepane BS(221-J2211)	865162K69610
4	Sensor Photo	865130E82740
5	Actuator Full	865120E18740
6	Roll Pinch Exit	865059E95780
7	Roll Pinch	865059E95760
8	Gear 30	865007E66672
9	Roll Dup	865059E95750
10	Actuator Dup	865120E18750
11	Cover Actuator	865802E23280
12	Spring SNR Dup	865809E30110
13	Bearing	865013E19281
14	Latch Out	865003E53410
15	Spring Latch Out	865809E28730
16	Spring N/F MSI 250gf	865809E28700
17	Gear MSI	865007E65840
18	Cam MSI	865008E93880
19	Roll Core MSI	865059E95740
20	Roll Assy Feed	865059K19960
21	Spring Sensor MSI	865809E28720
22	Actuator MSI	865120E18730
23	Stopper Sol	865003E53400
24	Spring Sol 0.5	865809E28690
25	Solenoid Feed MSI	865121E88250
26	PLate assy Bottom MSI	865015K52790

PL 7.1 Chute Assy Exit [Illustration]



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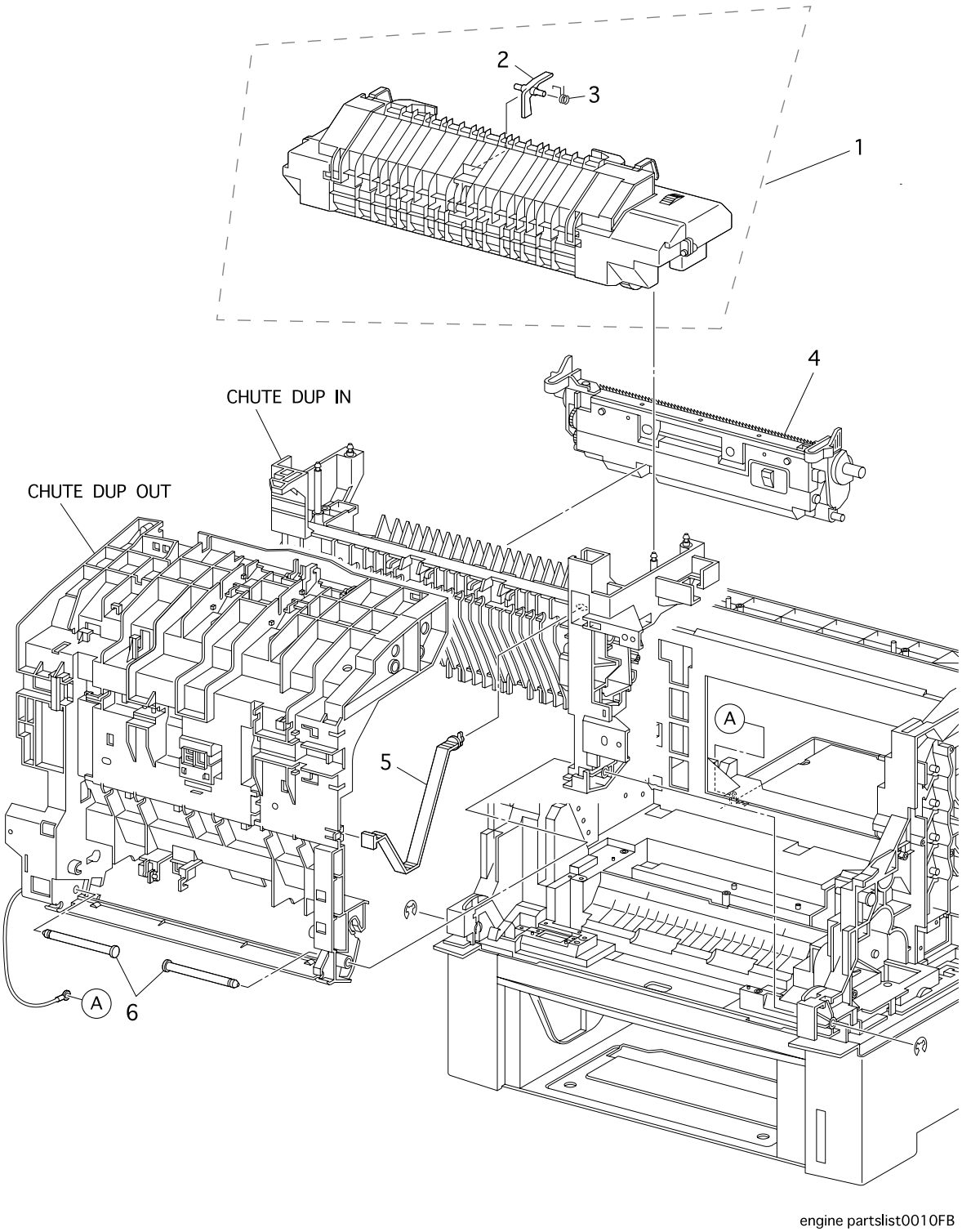
PL 7.1 Chute Assy Exit [List]

Item	Parts name	
1	Cute Assy Exit	865054K23260
2	Roll Exit	865059E96430
3	Roll Mid	865059E95770
4	Motor Assy Dup	865127K31710

PL 8.1 BTR Assy & Fuser [Illustration]



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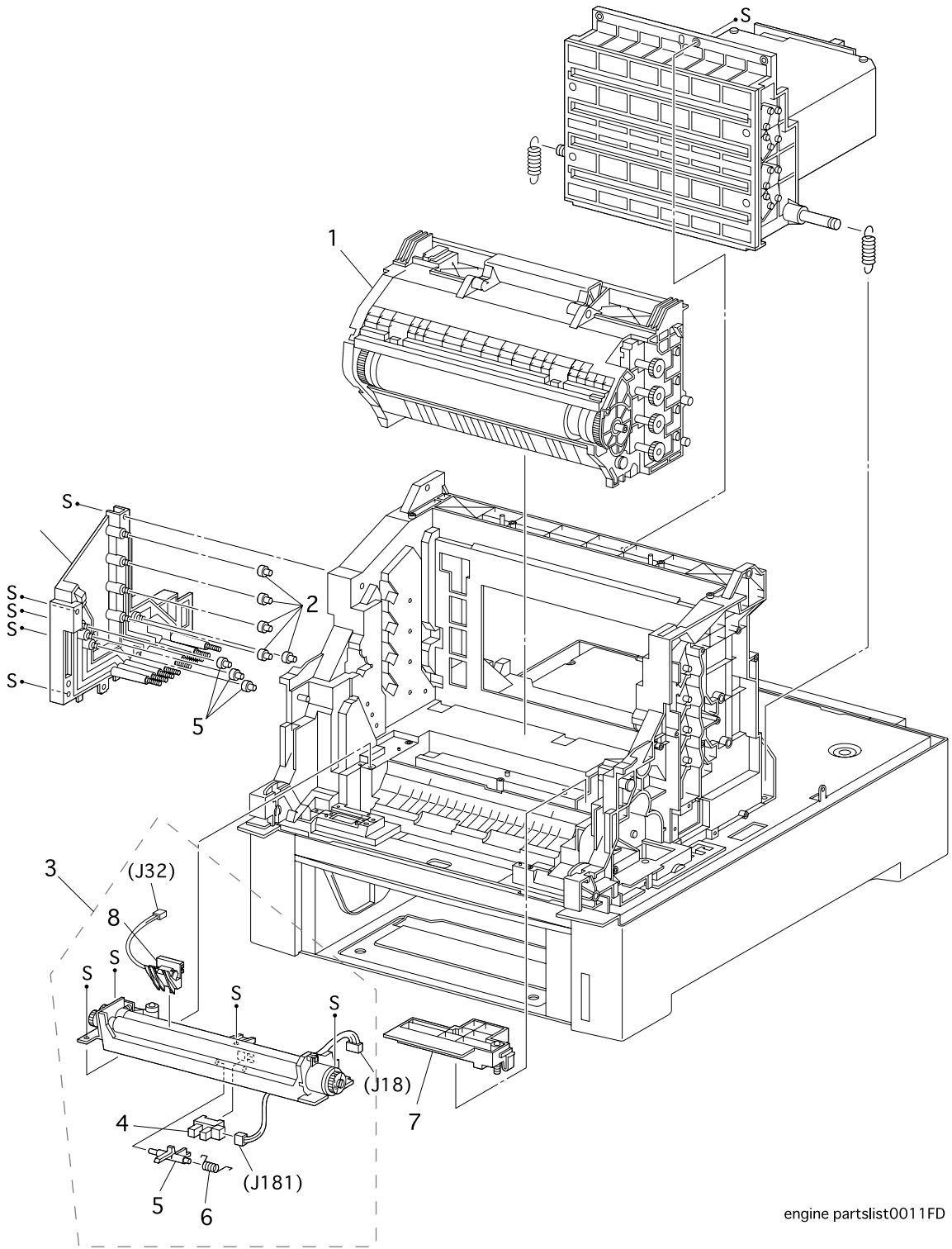
PL 8.1 BTR Assy & Fuser [List]

Item	Parts name	
1	Fuser Unit (220V)	1710555-002
2	Actuator Exit	865120E20790
3	Spring Actuator	865809E34550
4	BTR Kit	1710494-001
5	Strap	865003E53390
6	Shaft Pivot	865006E72030

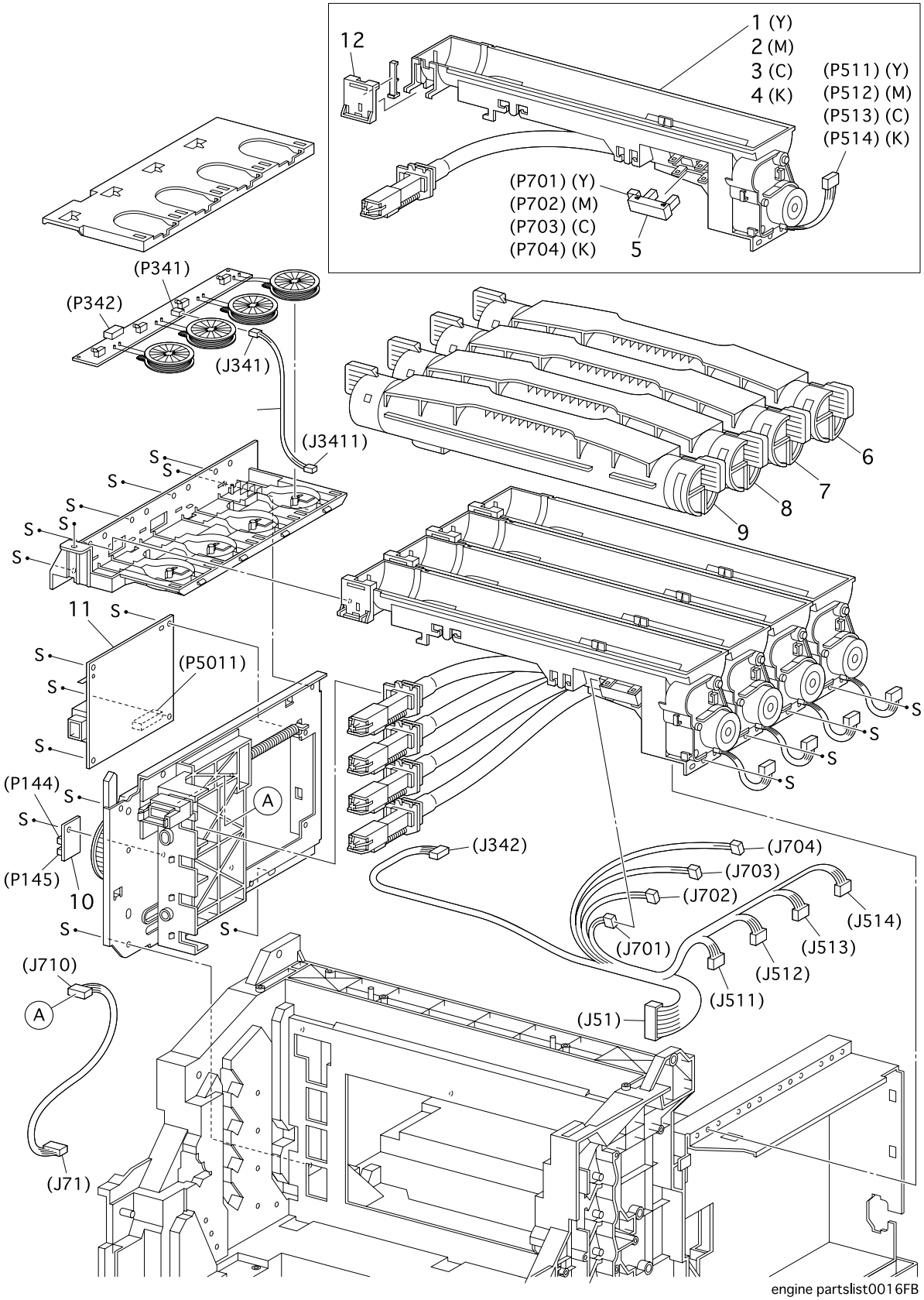
PL 9.1 Xerographics [Illustration]



PL 9.1 Xerographics [List]

Item	Parts name	
1	Print Head Unit	1710552-001
2	Stud Plunger	865026E77670
3	Chute Assy Reg	865054K23250
4	Sensor Photo	865130E82740
5	Actuator Regi	865120E20680
6	Spring Sensor Regi	865809E34580
7	Housing Assy Elec	865802K24830
8	Kit Snr OHP (w/Harness)	865604K02520

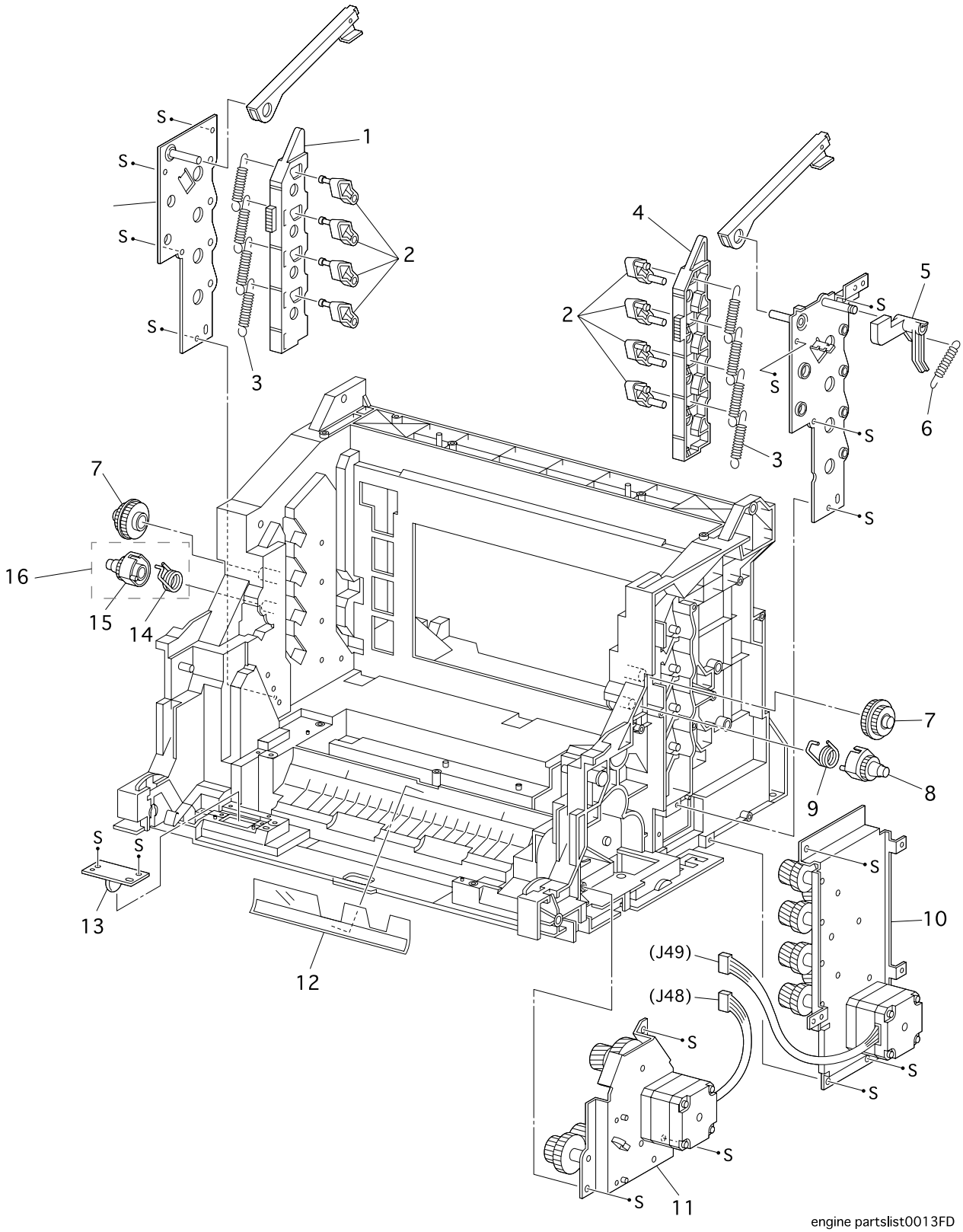
PL 10.1 TCRU Assy [Illustration]



PL 10.1 TCRU Assy [List]

Item	Parts name	
1	Holder Assy Y	865113K03130
2	Holder Assy M	865113K03140
3	Holder Assy C	865113K82660
4	Holder Assy K	865113K82670
5	Sensor Toner Low	865130E85200
6	Toner Cartridge Y	1710550-002
7	Toner Cartridge M	1710550-003
8	Toner Cartridge C	1710550-004
9	Toner Cartridge K	1710550-001
10	PWBA Eeprom	865160K83190
11	S-HVPS	865105K19520
12	Switch TCRU Assy	865110K11250

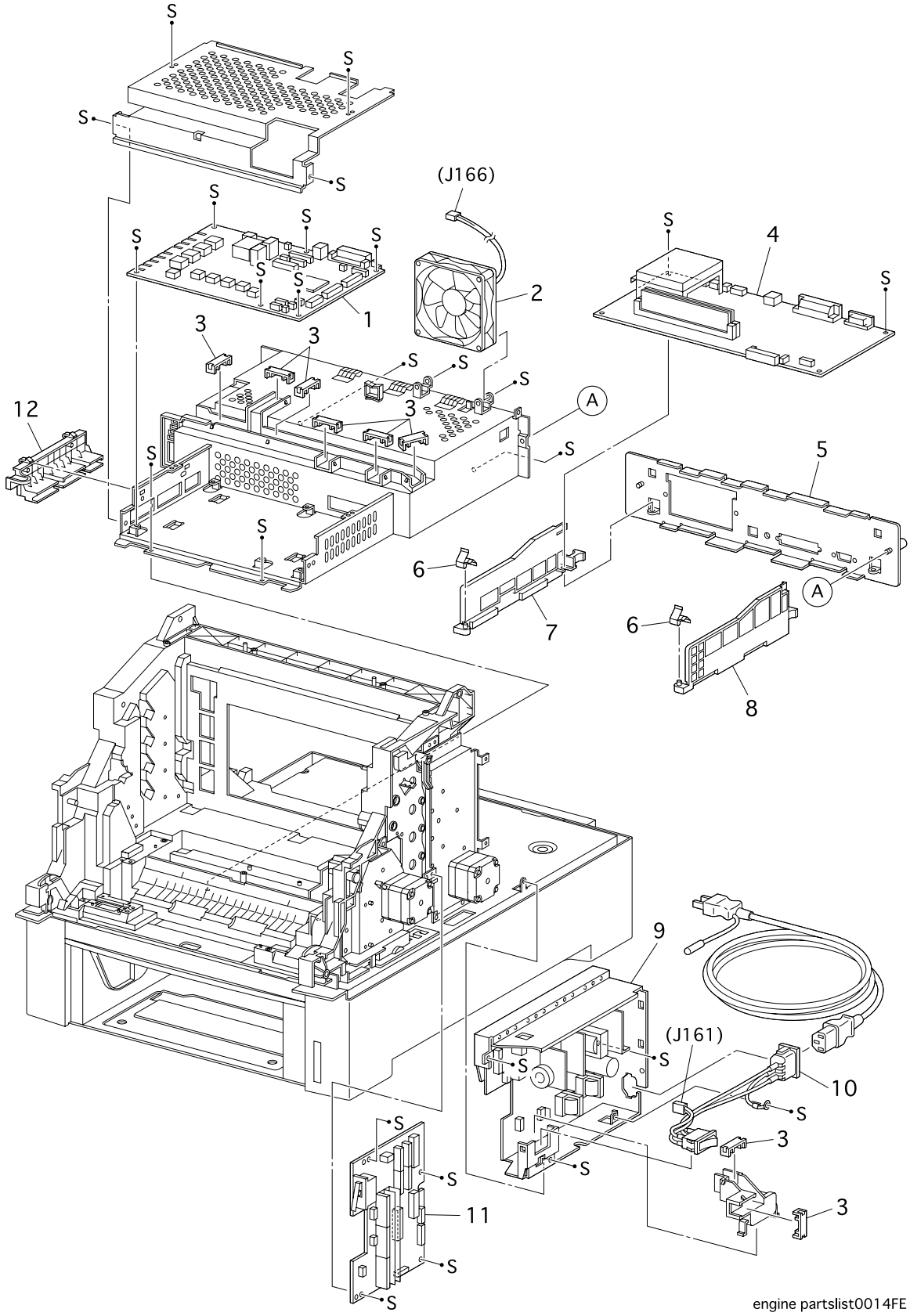
PL 11.1 Frame & Drive [Illustration]



PL 11.1 Frame & Drive [List]

Item	Parts name						
1	Link Lever L						865012E10040
2	Lever Drum						865011E10730
3	Spring Lever 30n						865809E28430
4	Link Lever R						865012E10030
5	Actuator I/L						865120E18682
6	Spring I/L						865809E28460
7	Gear IDL. Press						865007E65810
8	Gear Press R						865007K87251
9	Spring IDT R						865809E28440
10	Deve Drive Assy						865007K86681
11	Main Drive Assy						865007K87980
12	Film Regi						865035E58130
13	PWBA Assy Earth						865160K70780
14	Spring IDT L						865809E28450
15	Gear Press L						865007E65801
16	Gear Assy Press L						865007K87261

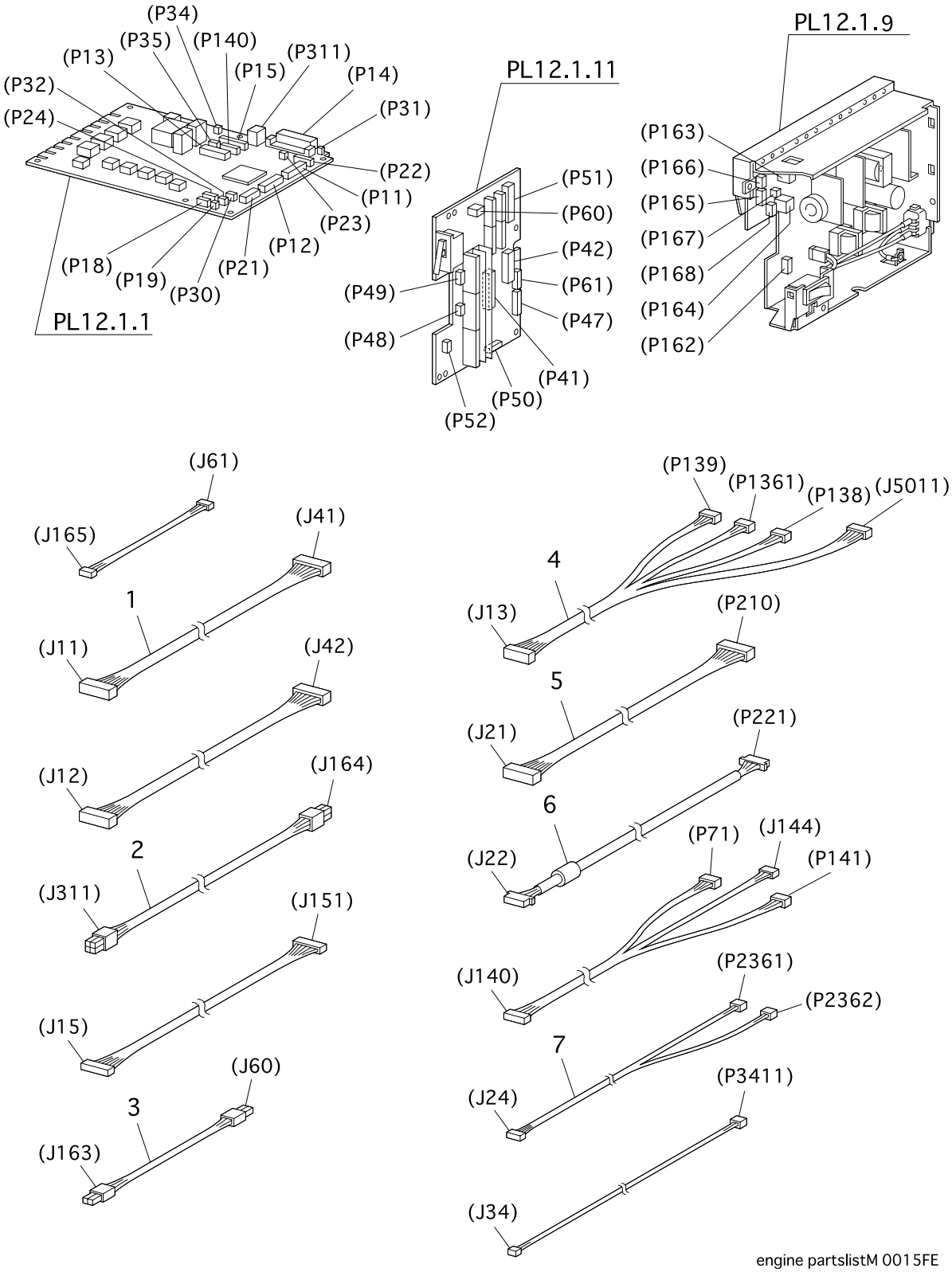
PL 12.1 Electrical [Illustration]



PL 12.1 Electrical [List]

Item	Parts name	
1	PWBA HNB MCU	865160K93610
2	Fan Rear	865127E82900
3	Clamp Guide Harness	865019E49010
4	Controller Board	865160K94530
5	Plate Rear Ess	865015E75141
6	Spring Earth Ess	865809E29820
7	Guide R Ess	865032E17450
8	Guide L Ess	865032E17440
9a	LVPS Std (230V)	865105K20320
9b	LVPS Std (100/120V)	865105K20310
10	Harness Assy AC SW	865162K69581
11	PWBA HNB DRV	865160K93700
12	Housing Assy Contact	865802K32500

PL 13.1 Harness [Illustration]



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PL 13.1 Harness [List]

Item	Parts name				
1	Harness Assy Drv (J11-J41)				865162K69720
2	Harness Assy LVRPG (J164-J311)				865162K69740
3	Harness Assy 24V (J60-J163)				865162K69760
4	Harness Assy Front 1A (J13-P139/P1361/P1381/J5011)				865162K69770
5	Harness Assy OPF Main (J121-P210)				865162K69781
6	Harness Assy Opepane as (J22-P221)				865162K69790
7	Harness Assy EEprom (J140-P71/J144/P141)				865162K69810

Chapter 6 Principles of Operation CONTENTS

Chapter 6 Principles of Operation CONTENTS

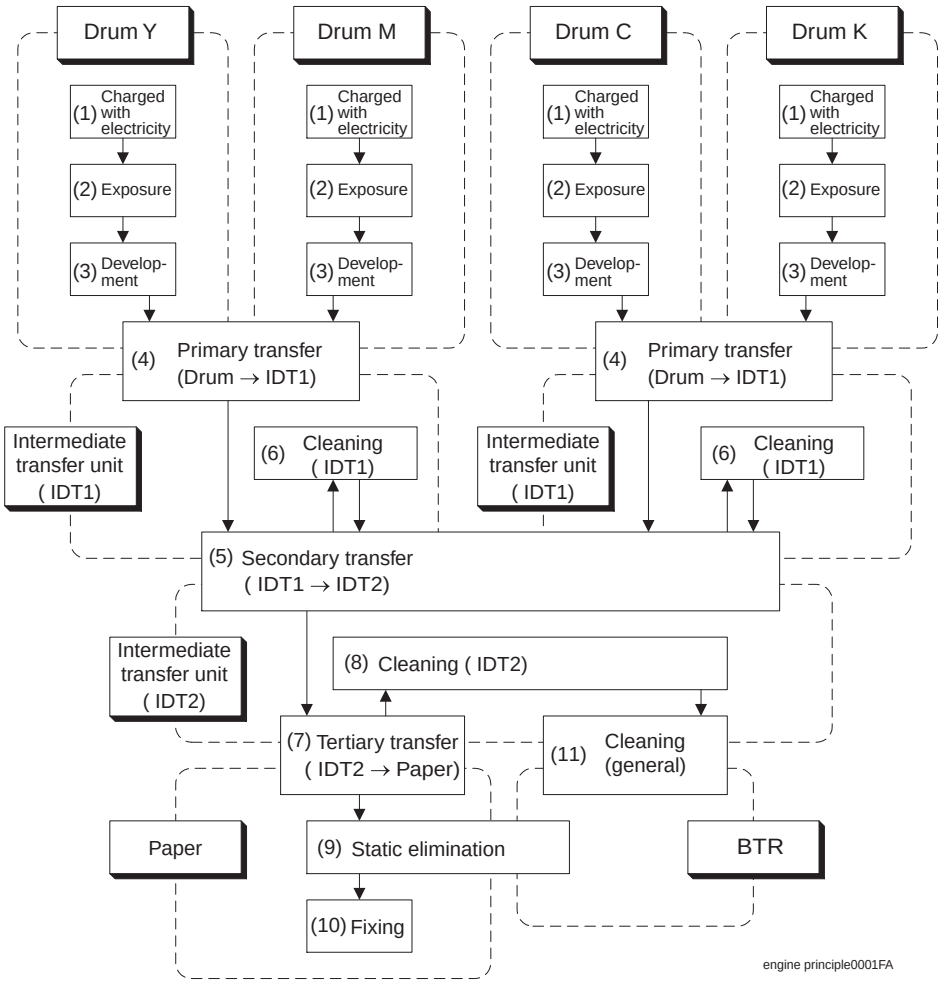
1. Printing Process

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).

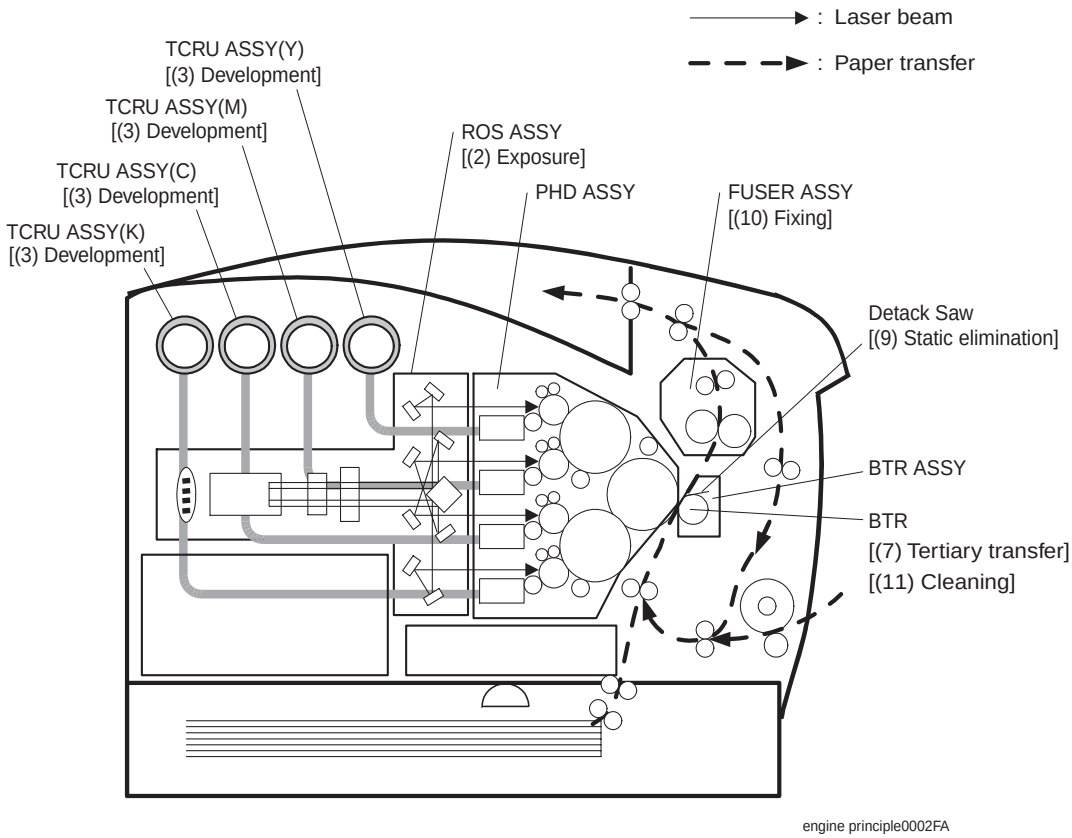
Printing processes of this printer is composed of the basic steps as follows.

(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.

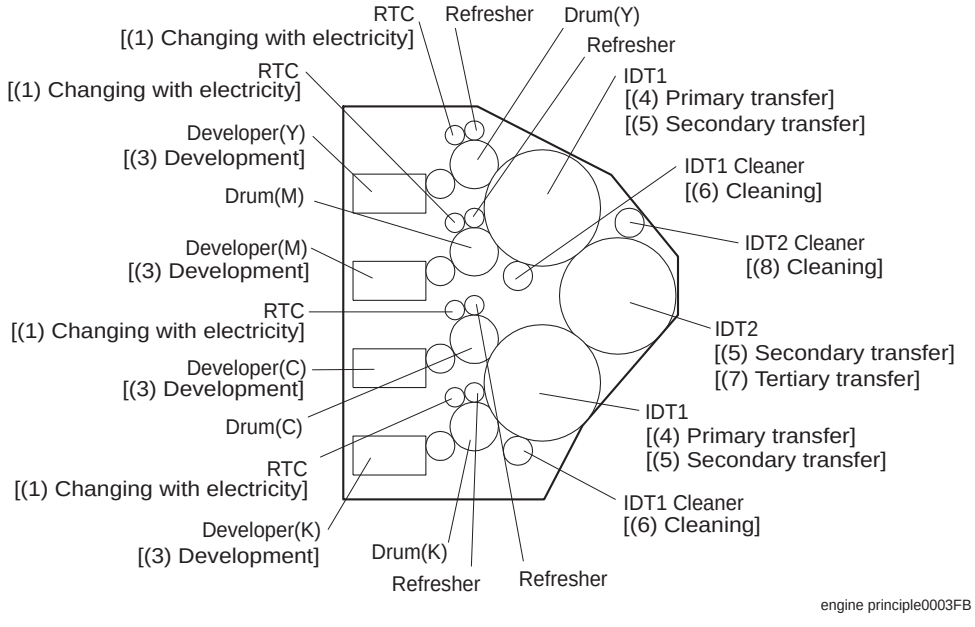


1.2 Schematic Diagram for Printing Processes

Outline of printing processes is shown in the figures below.



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

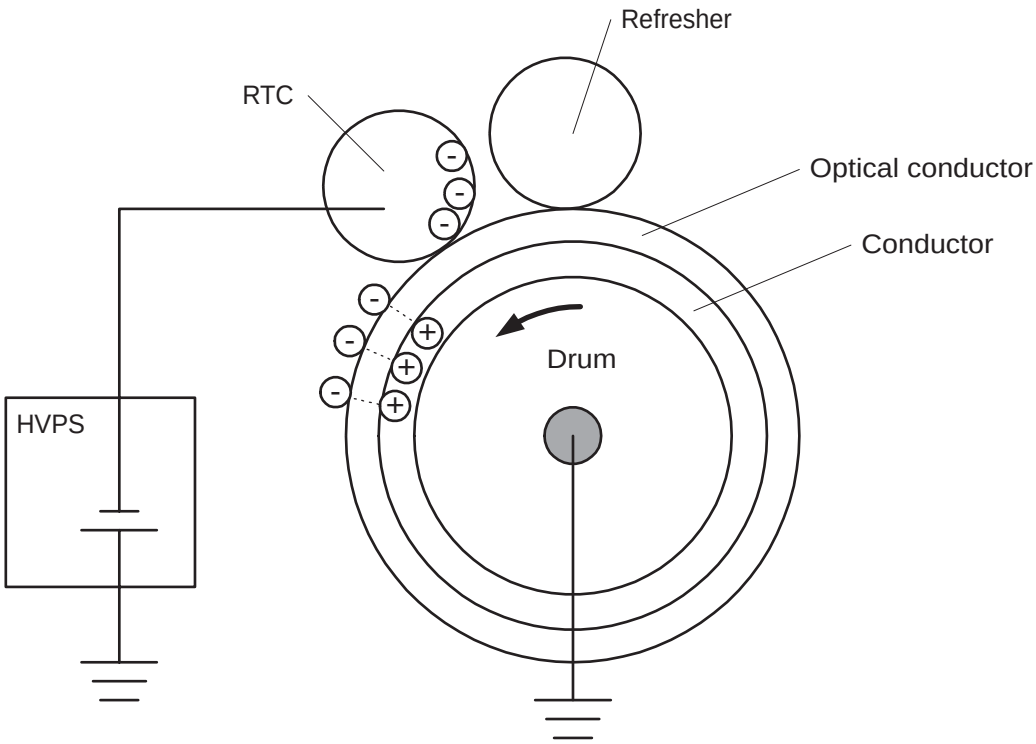


1.3 Description of Printing Process Techniques

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 (High Volume Power Supply) 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.



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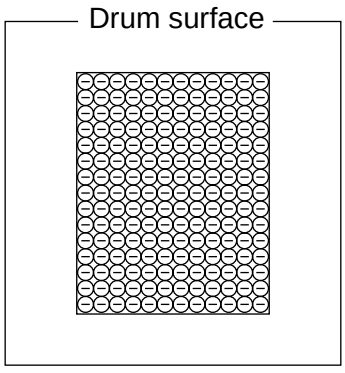

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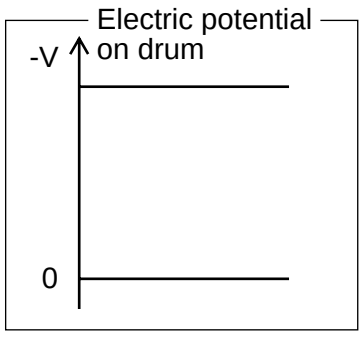

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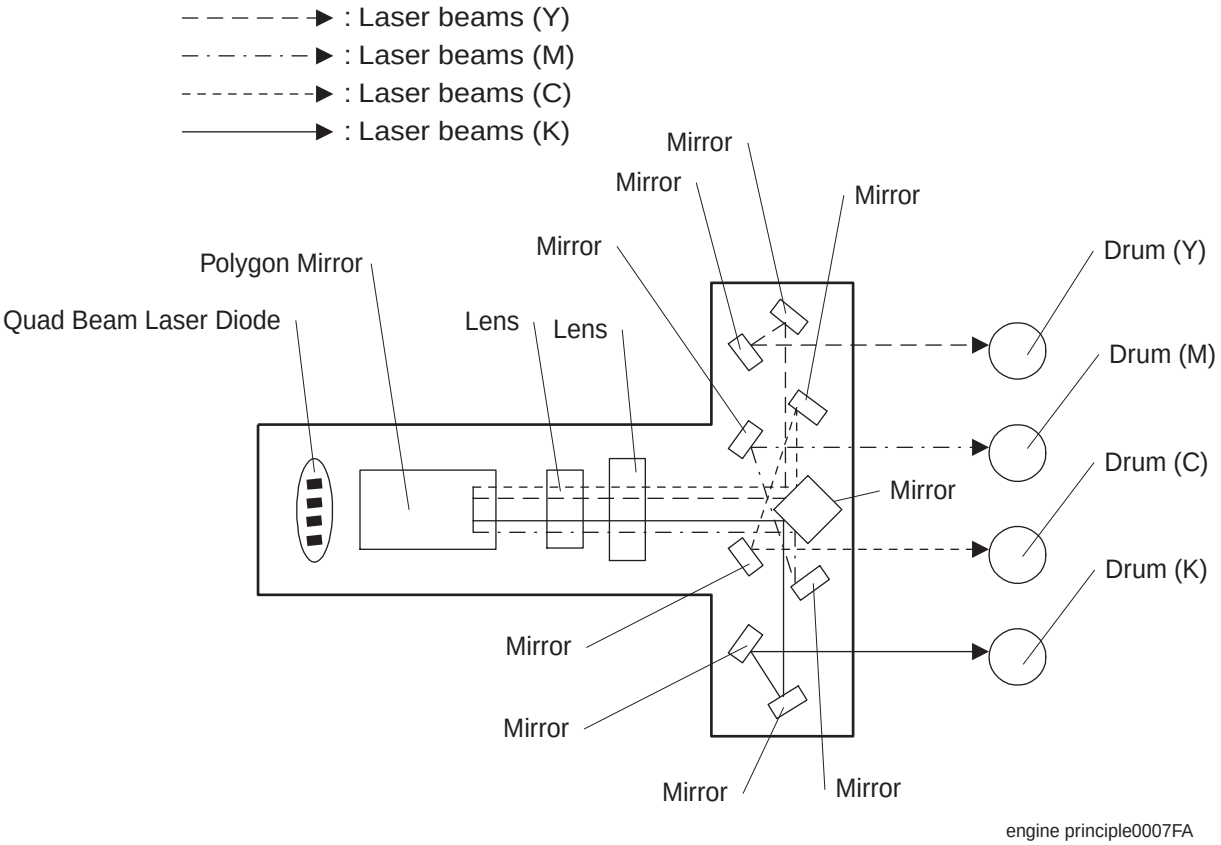
1.3.2 Exposure

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.



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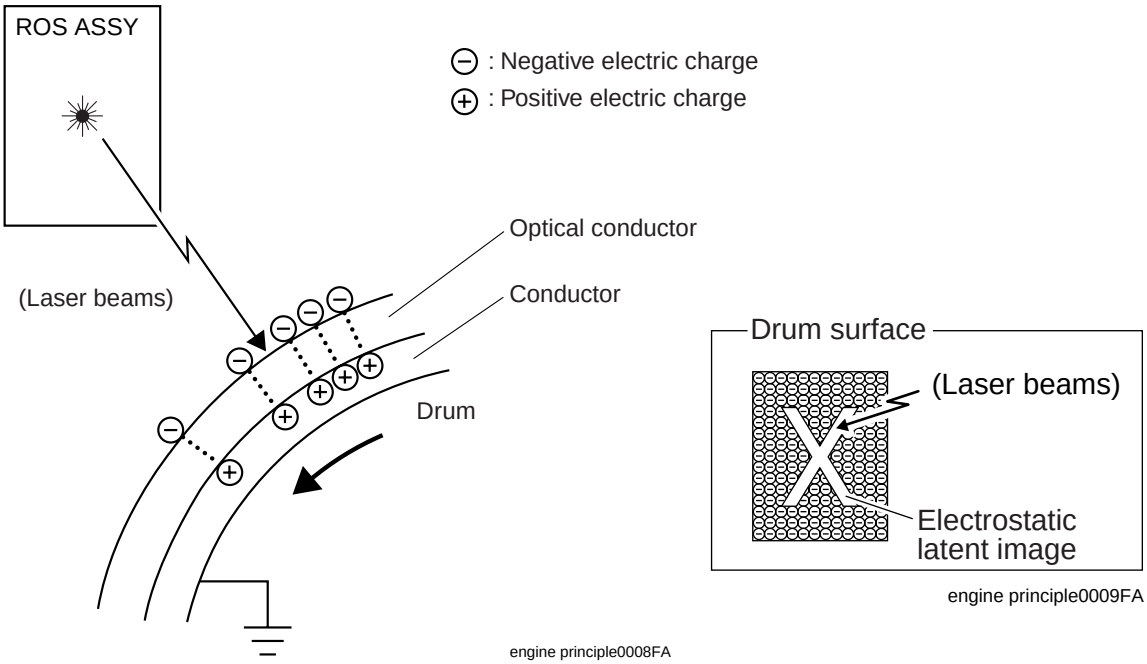
✧ The laser beams are emitted based on the print data (image data) from the printer controller. When the print data instructs to print pixel points, laser beams are generated and when the print data instructs not to print, no laser beams are generated. (On the areas which are developed by toner, the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



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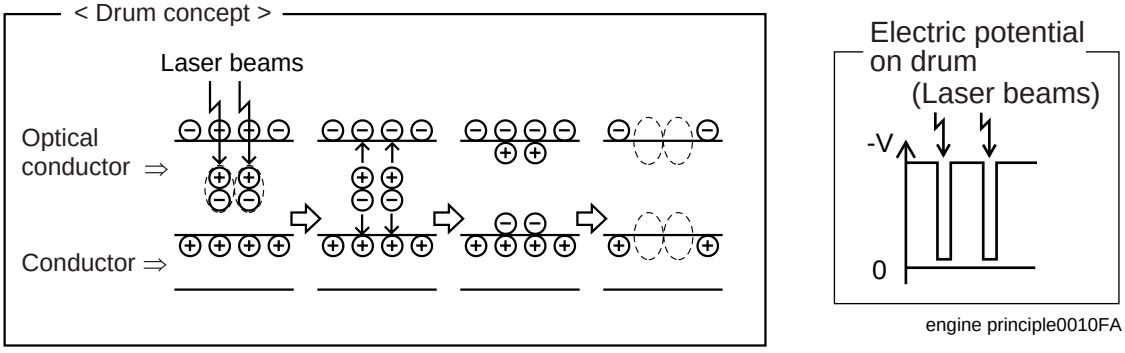

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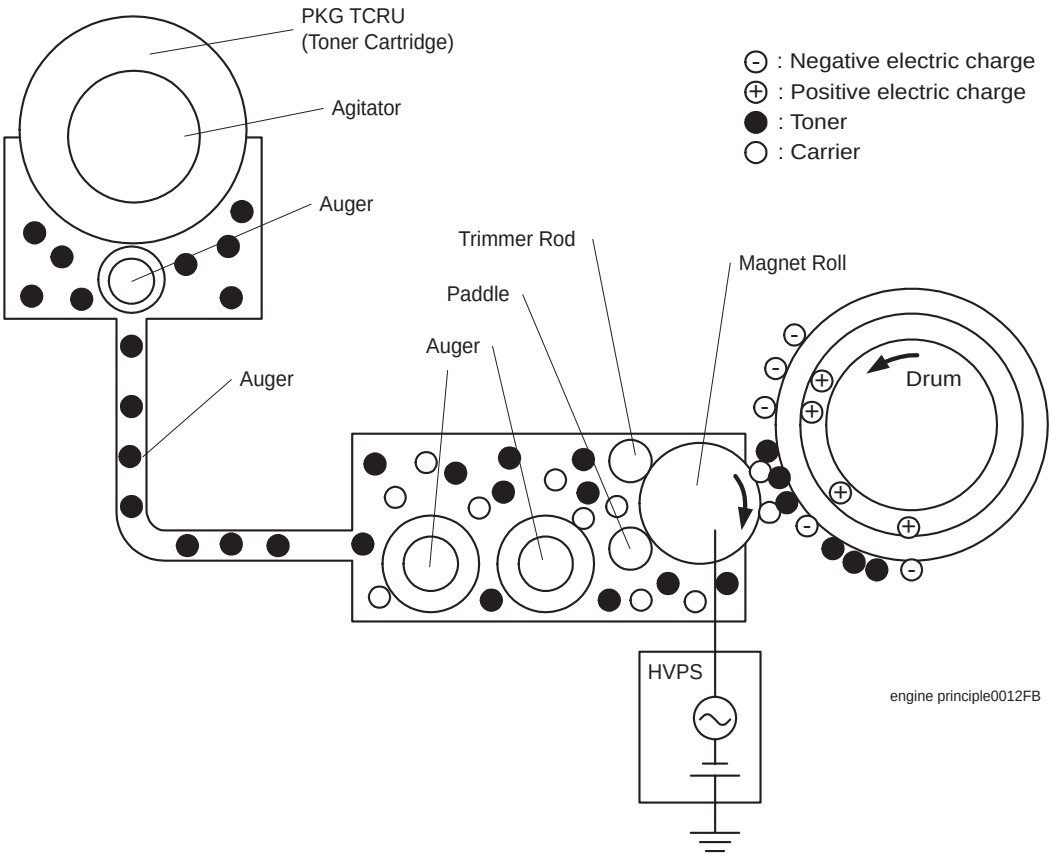
1.3.3 Development

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.



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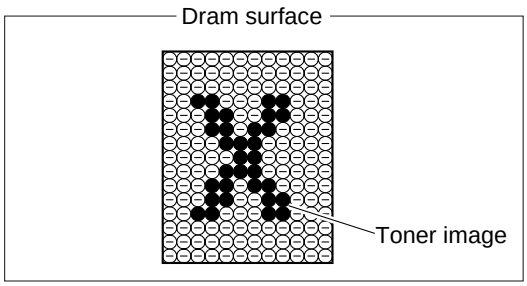
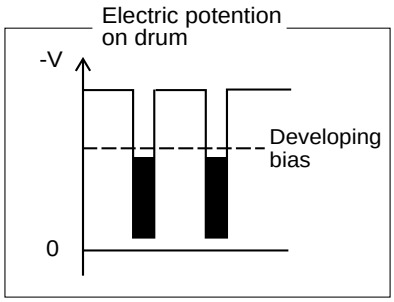


engine principle0013FA



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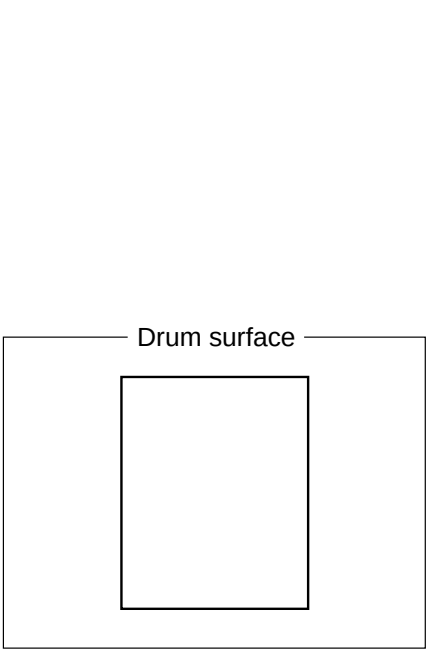
1.3.4 Primary transfer (drum -> IDT 1)

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



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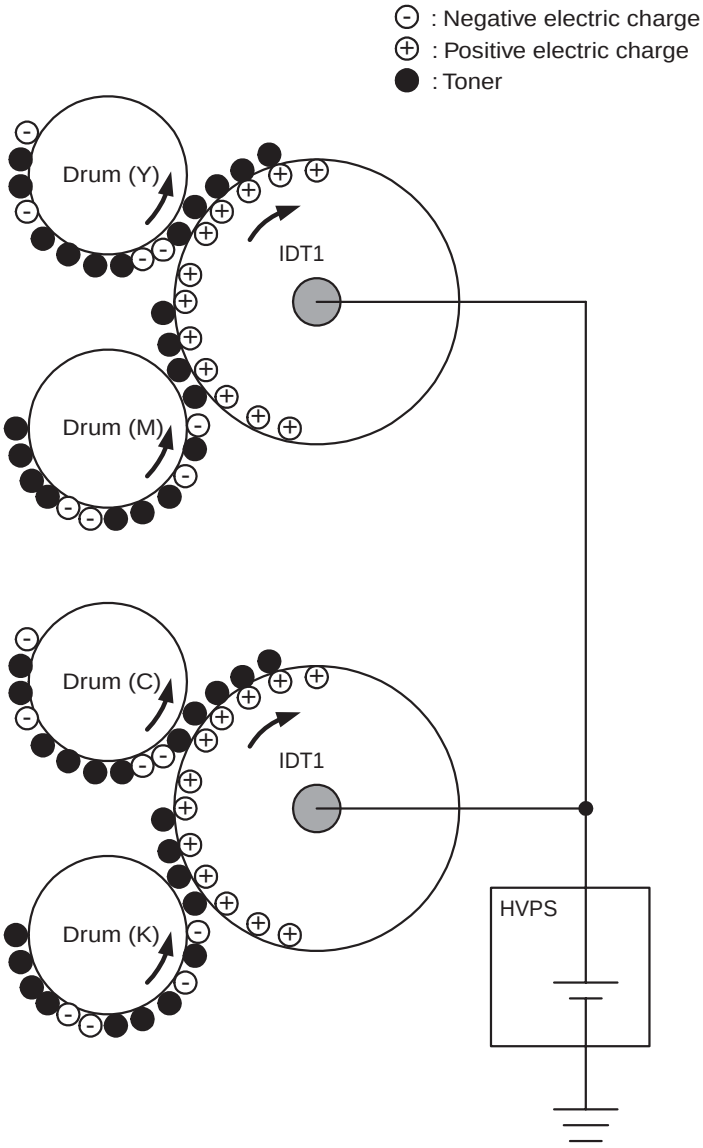

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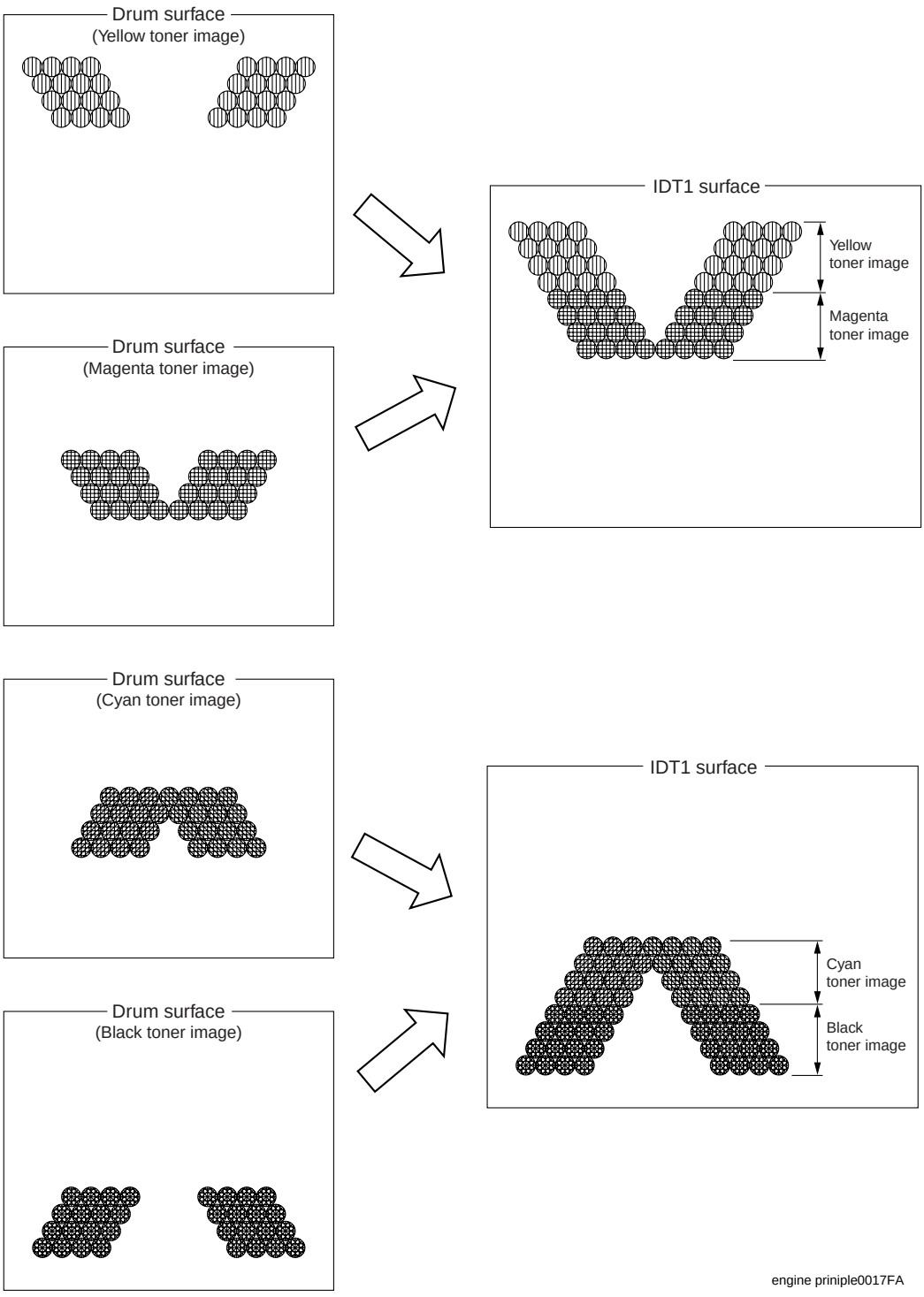

Drum surface
(Yellow toner image)
Drum surface
(Magenta toner image)
IDT1 surface
Yellow
toner image
Magenta
toner image
Drum surface
(Cyan toner image)
Drum surface
(Black toner image)
IDT1 surface
Cyan
toner image
Black
toner image
engine priniple0017FA

1.3.5 Secondary transfer (IDT 1 -> IDT 2)

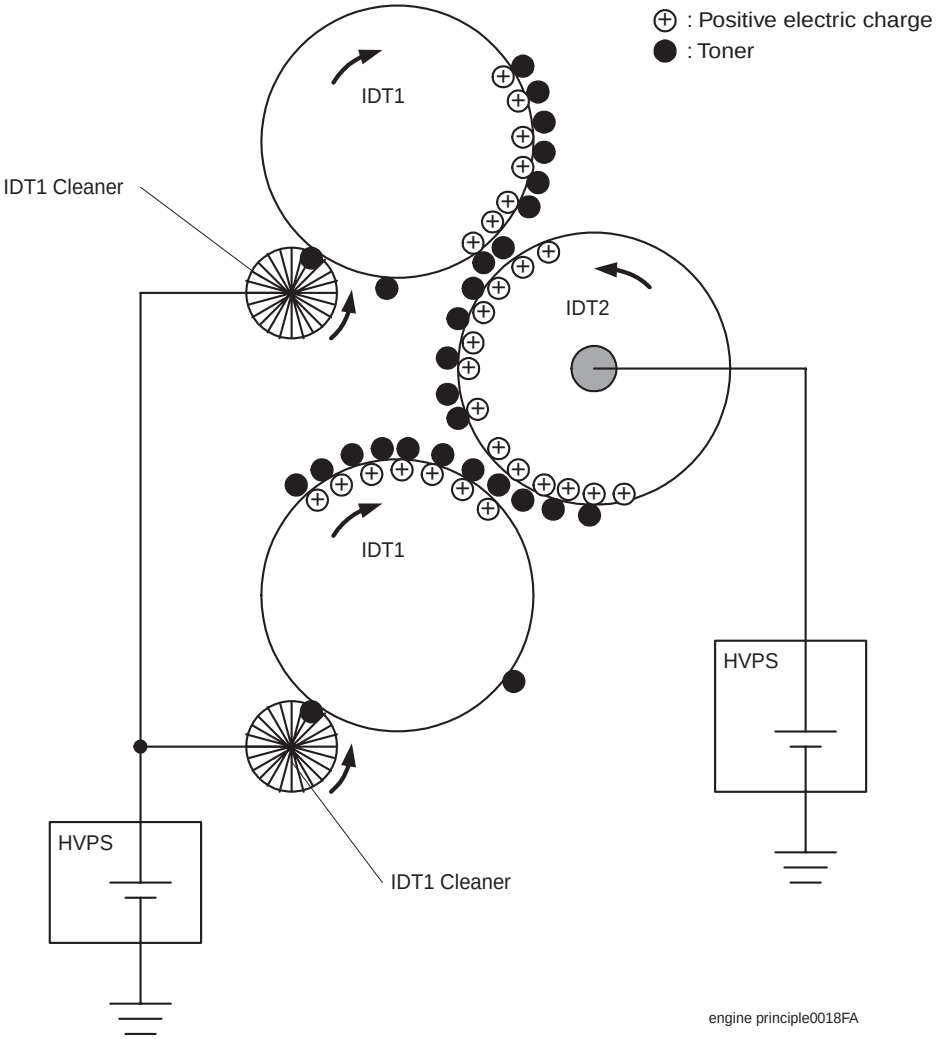
In the secondary transfer process, the toner image formed on the IDT 1 surface is transferred onto the surface of the IDT 2 (Intermediate Drum Transfer 1: intermediate transfer roll 2).
Two color toner image transferred onto the 2 IDT 1 is transferred to the IDT 2. Thus, 4 color toner image are compiled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

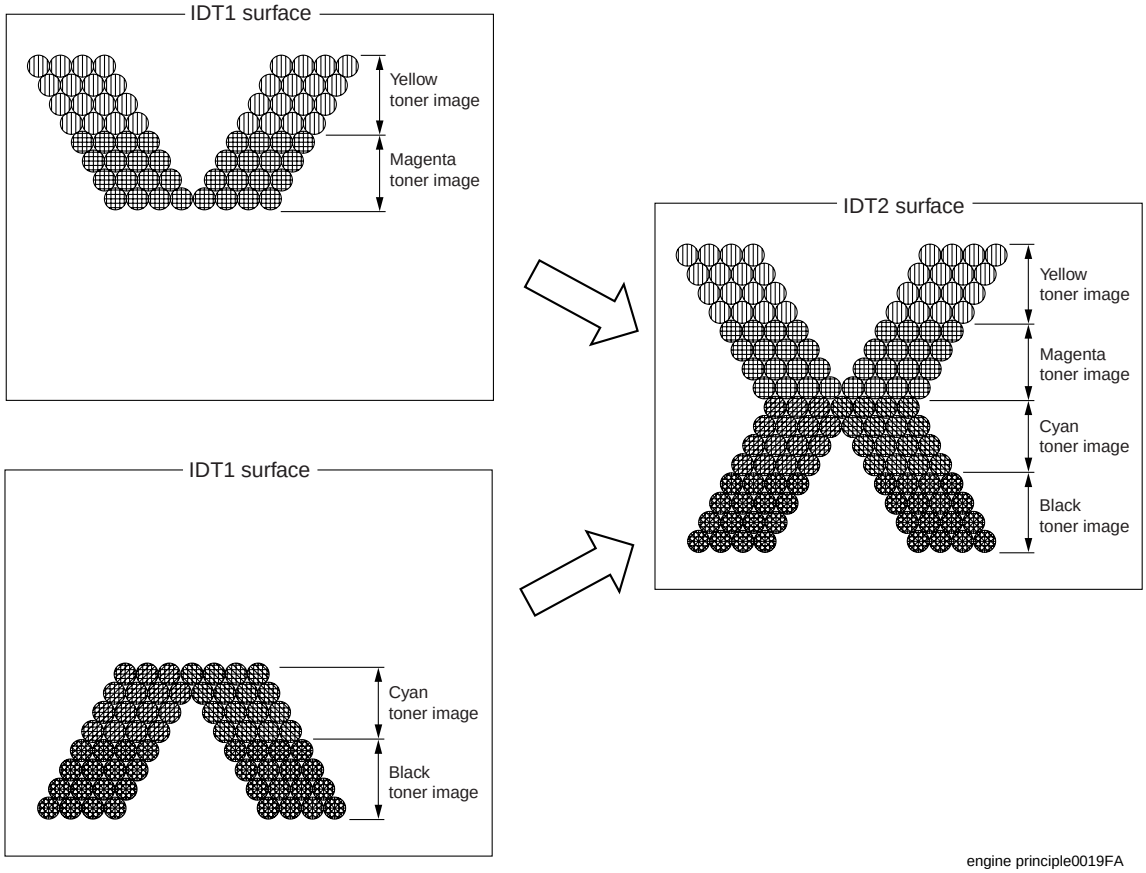
- ✧ IDT 2 is a conductive roll and receives supply of positive high voltage from HVPS.
  Both the IDT 1 and IDT 2 are positively charged. Voltage is higher on the IDT 2 and toner image is attracted to the IDT 2 surface and transferred onto the IDT 2.

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)

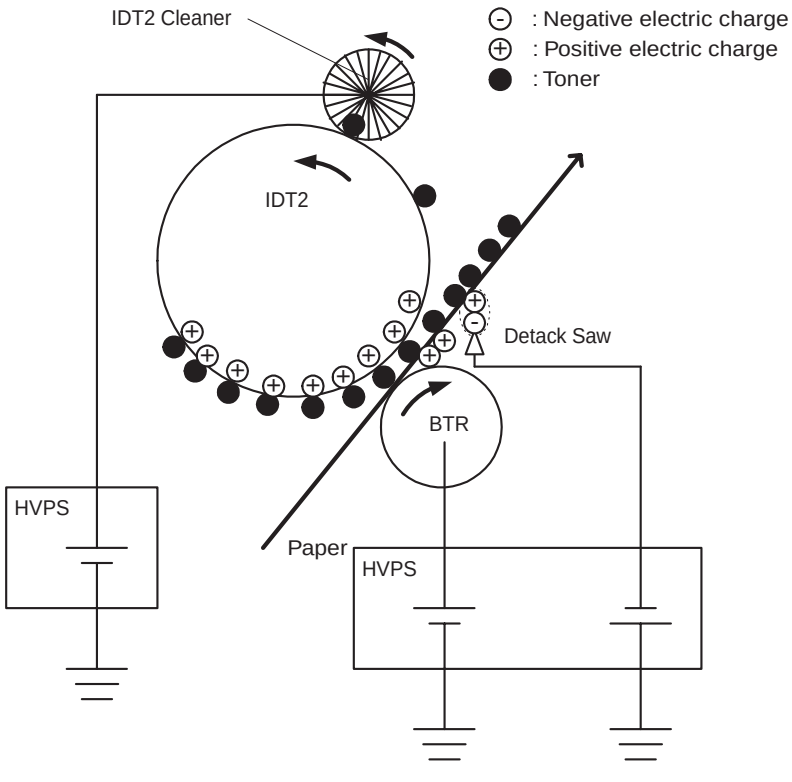
In the cleaning process, toner remaining on the IDT 2 after the toner image is transferred onto the paper is temporarily held at the IDT 2 cleaner.

- ✧ 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 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.

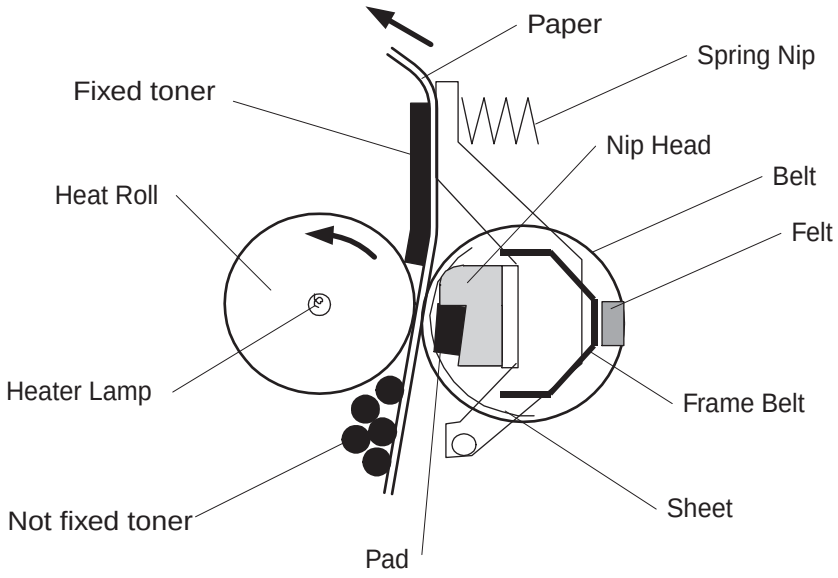


engine principle0020FA

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.



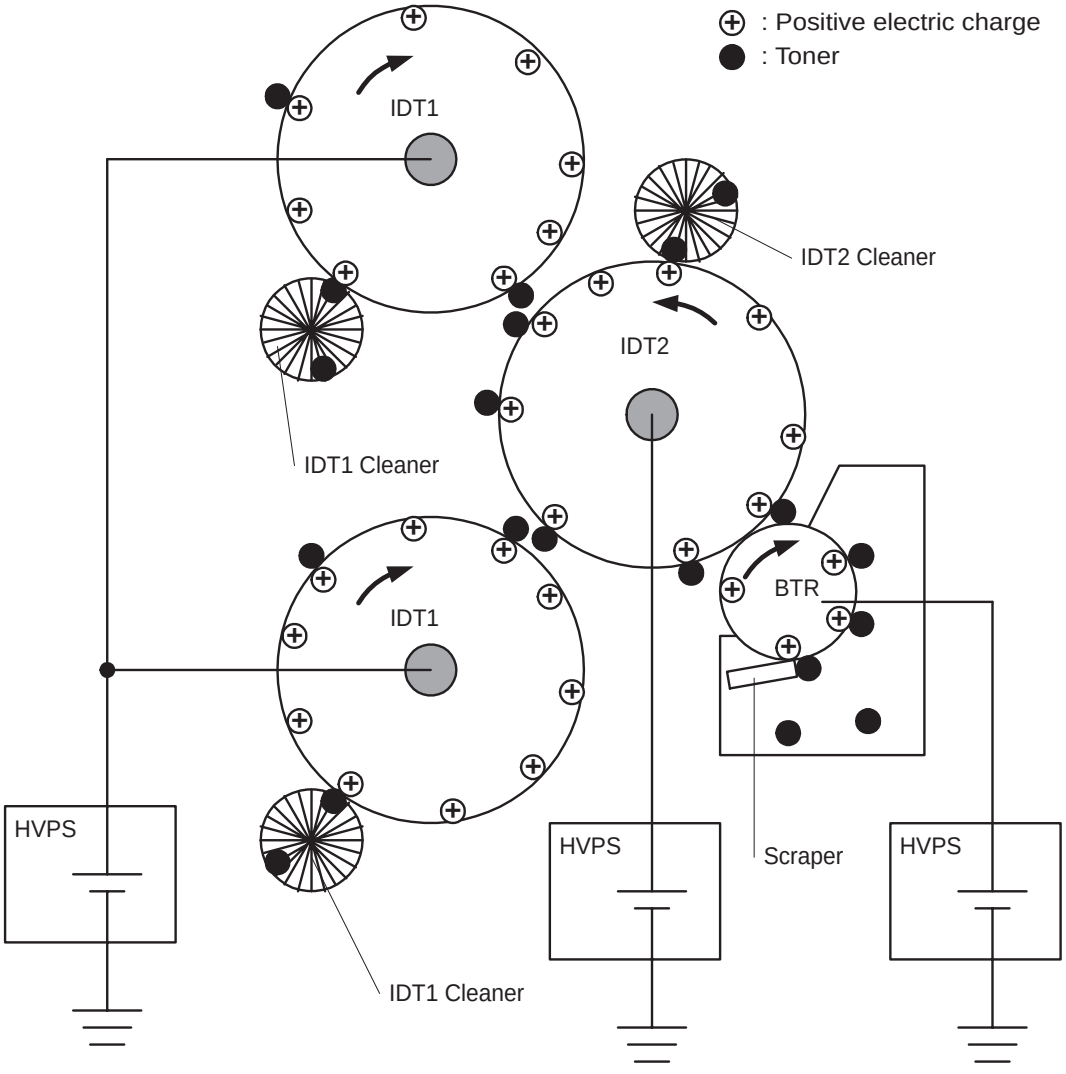
engine principle0021FA

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.

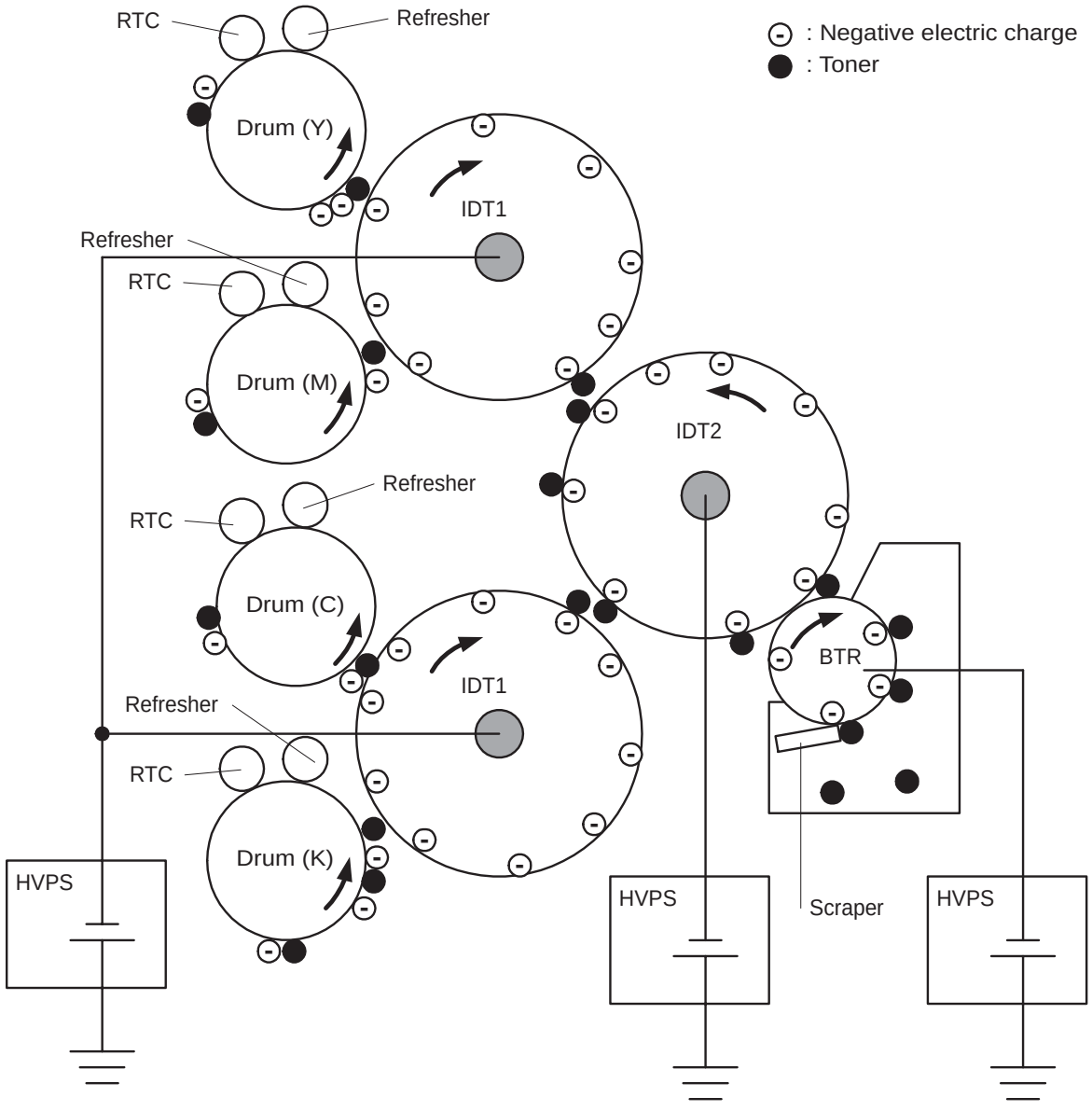


engine principle0022FB

(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.

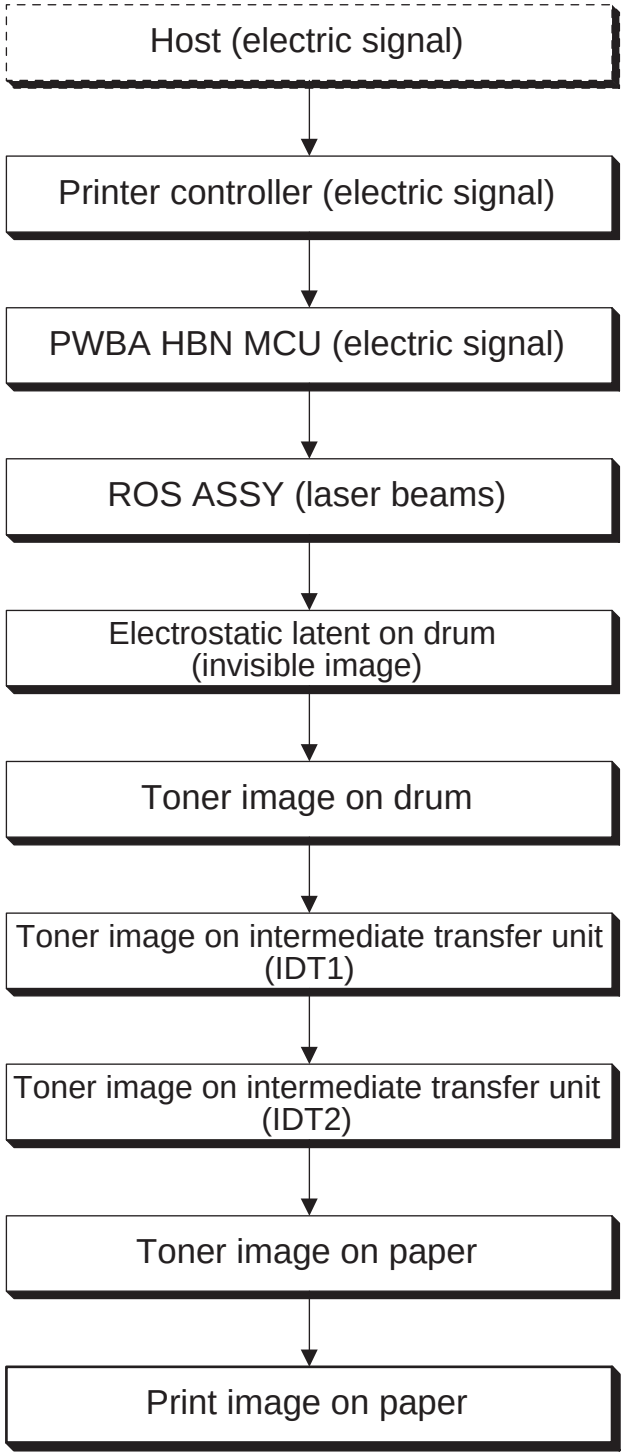


engine principle0047FB

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.

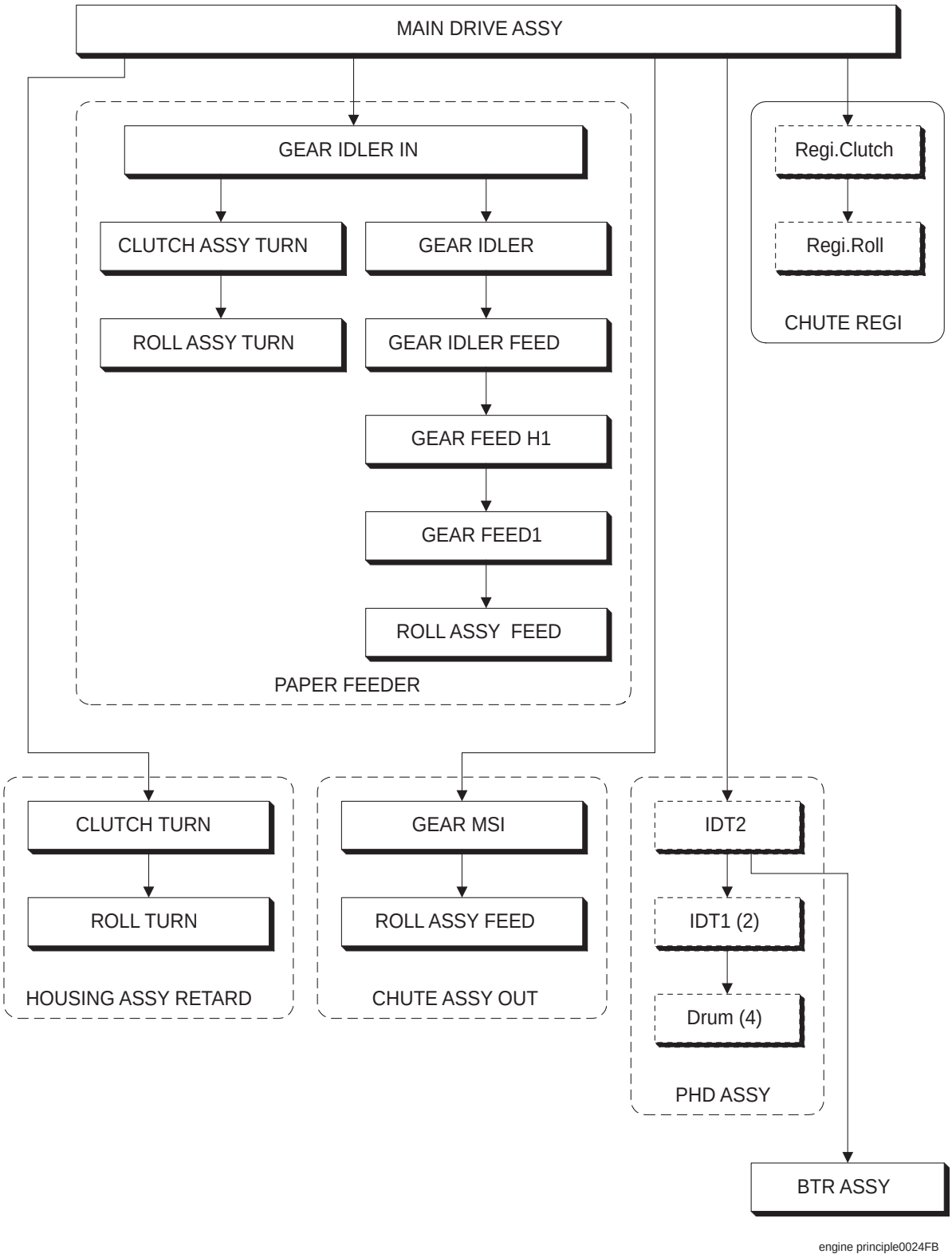


engine principle0023FB

3. Drive Transmission Route

3.1 MAIN DRIVE ASSY

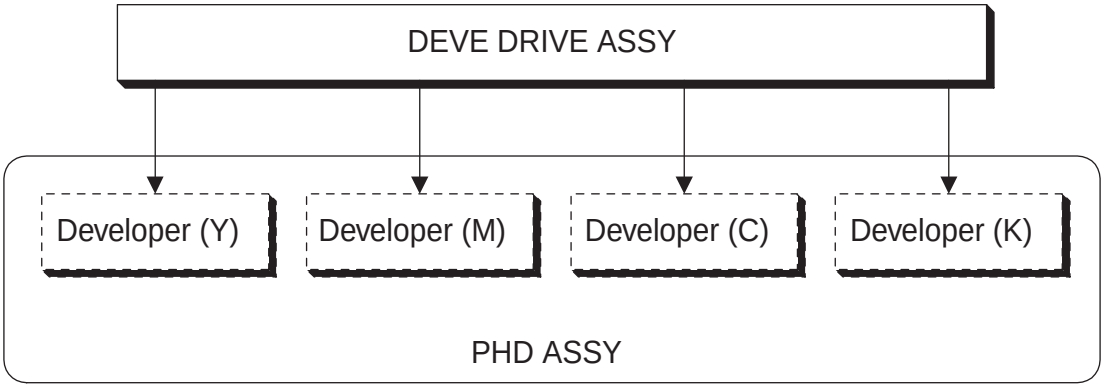
Rotary power of the MAIN DRIVE ASSY is transmitted through the route below.



engine principle0024FB

3.2 DEVE DRIVE ASSY

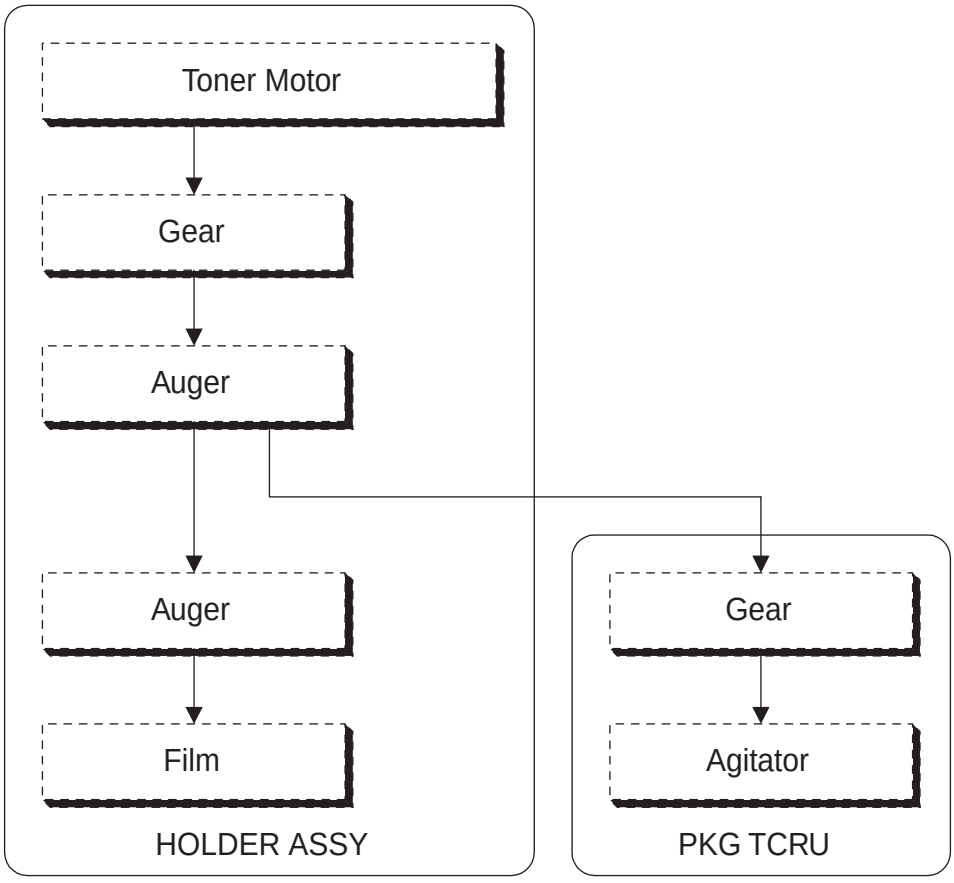
The rotary power of the DEVE DRIVE ASSY drives the developers of 4 colors in the PHD ASSY.



engine principle0025FA

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

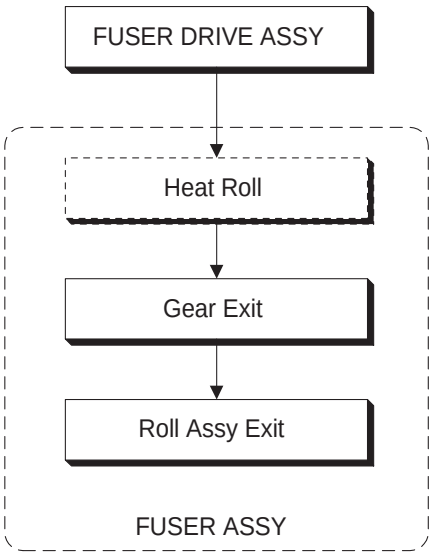
Rotary power of the toner motor in the HOLDER ASSY drives the agitator in the PKG TCRU (to supply toner from the PKG TCRU to HOLDER ASSY) and auger in the HOLDER ASSY (to supply toner to developer in the PHD ASSY).
Four HOLDER ASSY, Y, M, C and K, operate respectively in the same way.



engine principle0028FB

3.4 FUSER DRIVE ASSY

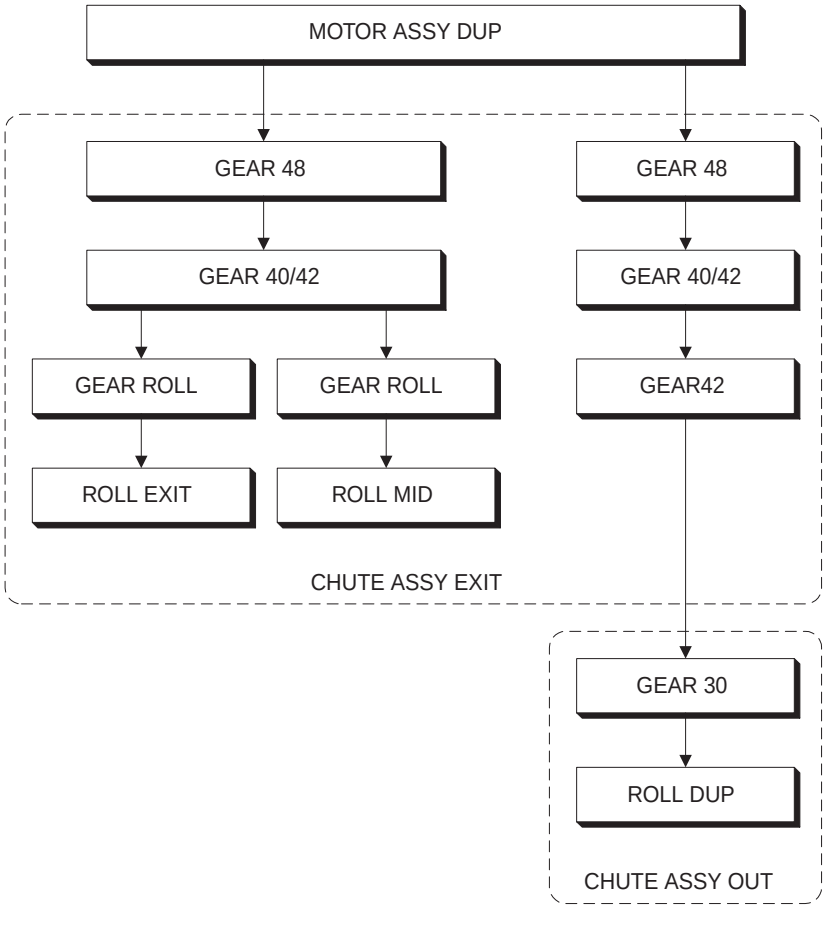
Rotary power of the FUSER DRIVE ASSY drives the FUSER ASSY.



engine principle0026FA

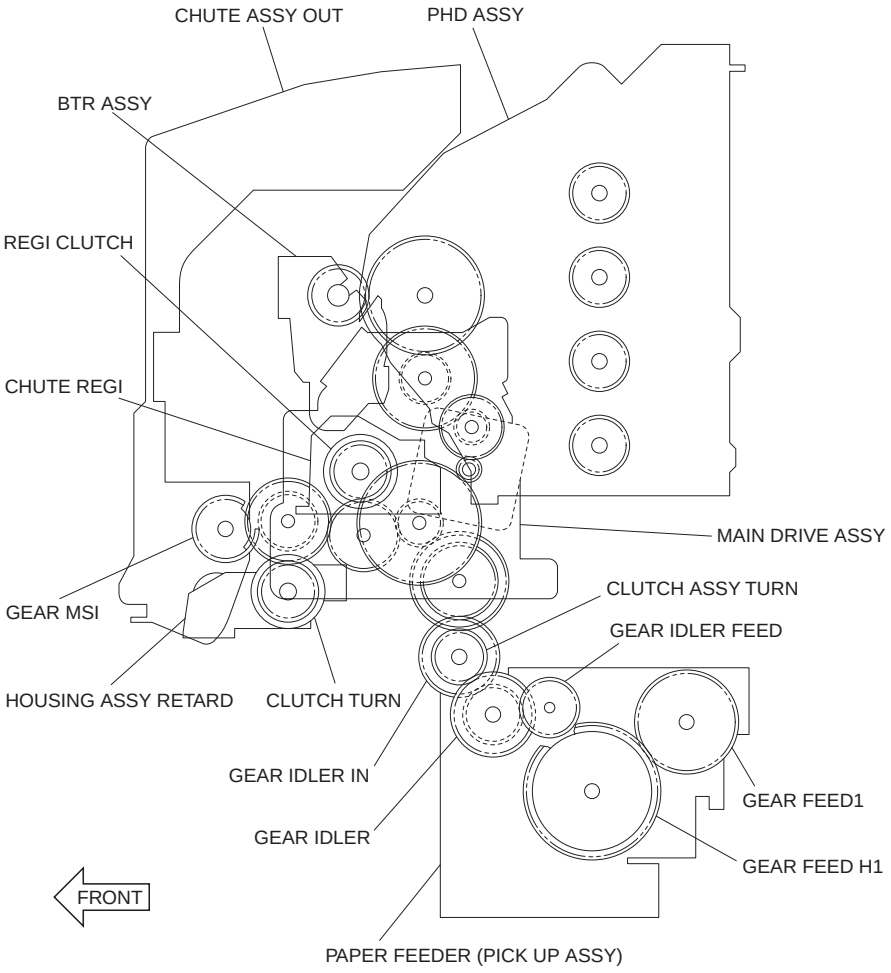
3.5 MOTOR ASSY DUP

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

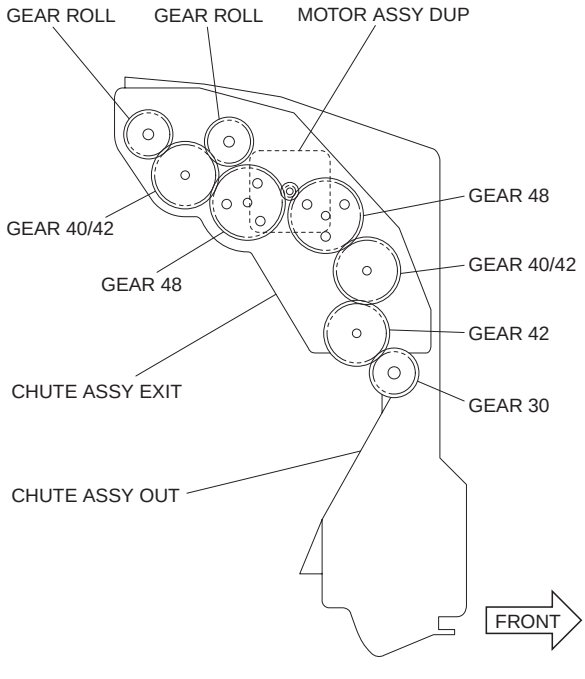


engine principle0027FA

3.6 GEAR • LAYOUT



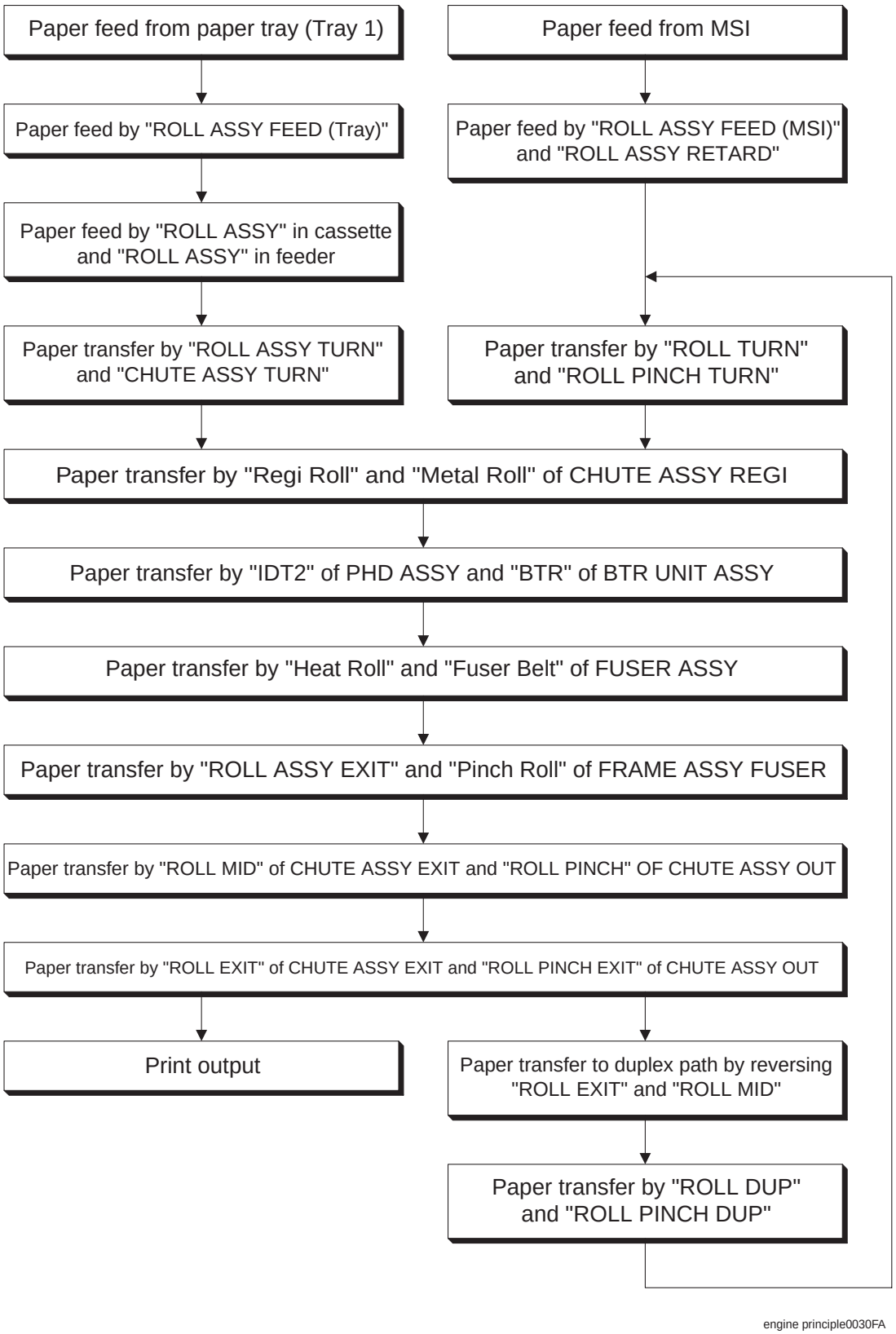
engine principle0029FA



engine principle0043FA

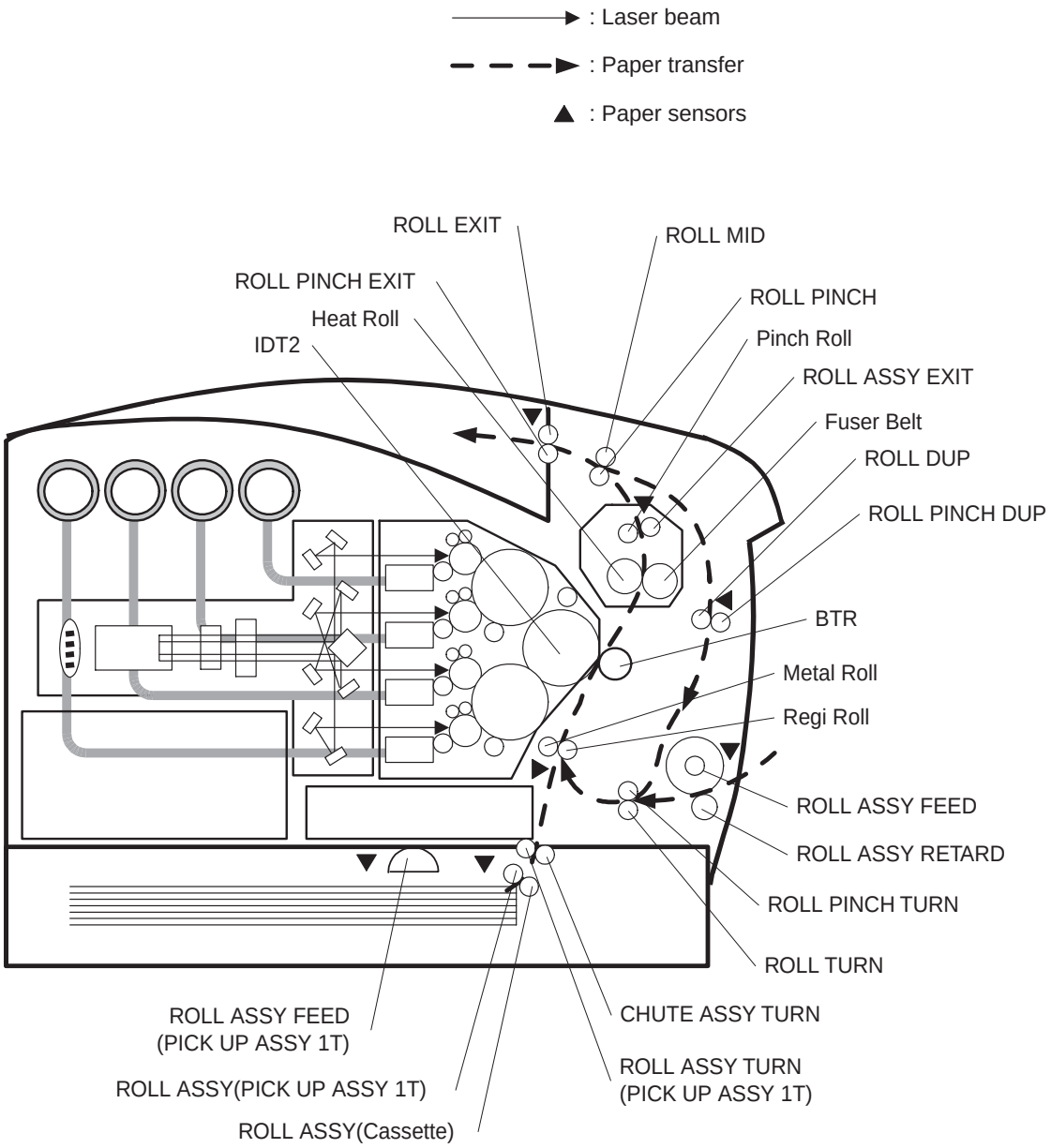
4. Paper Transfer

4.1 Paper Transfer Route (without option)



engine principle0030FA

4.2 Layout of Paper Transfer Route



engine principle0031FA

BLank Page

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.

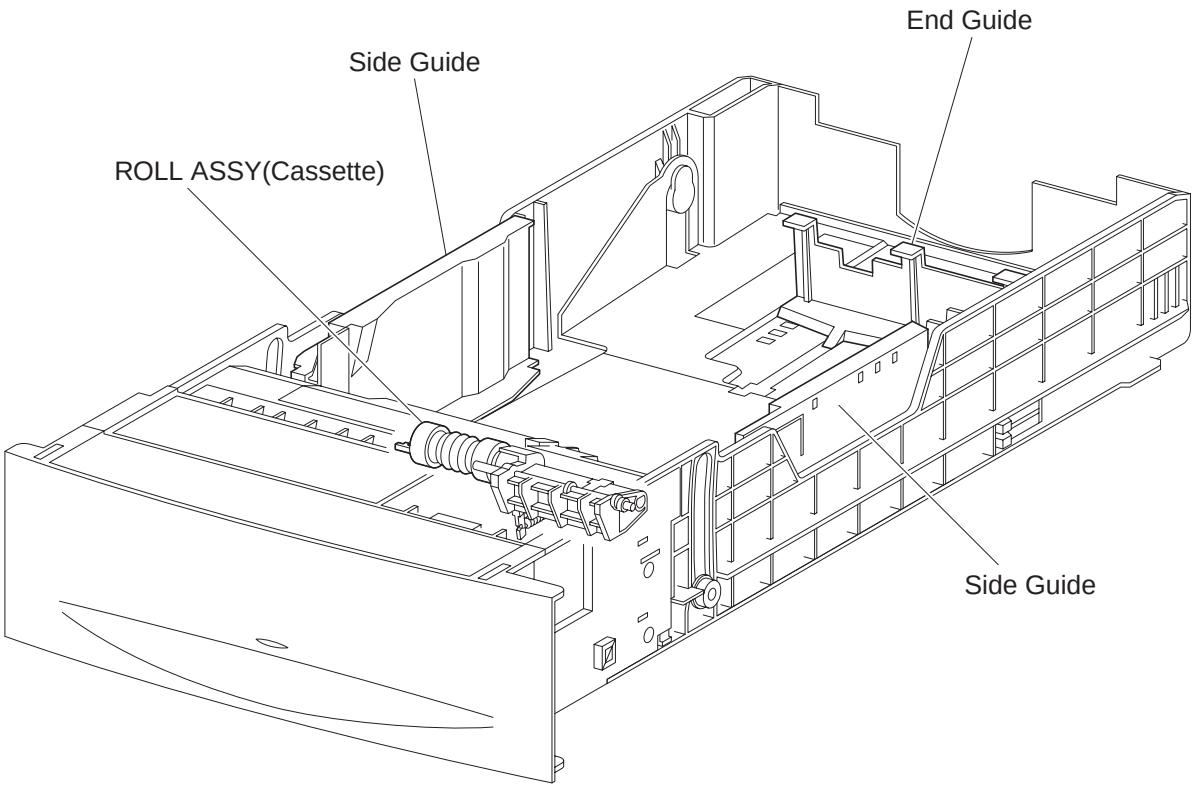
▼ End Guide

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 (Cassette)

The ROLL ASSY (Cassette) and the ROLL ASSY (PICK UP ASSY T1) (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

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 starts rotating and the ROLL ASSY (PICK UP ASSY T1) 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 stops rotating. Thus sheets of paper is sent out one by one.

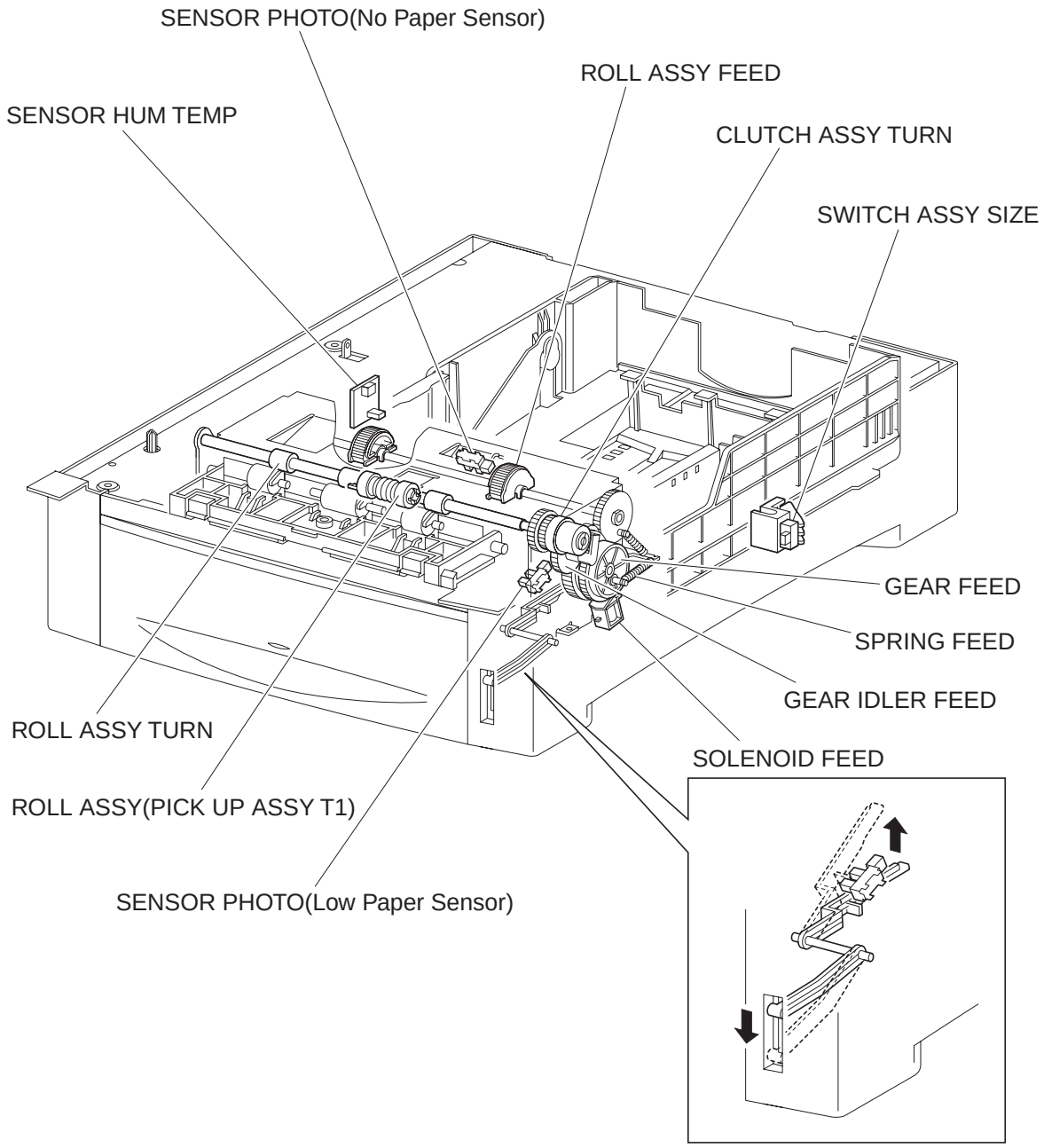
▼ ROLL ASSY TURN

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 (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

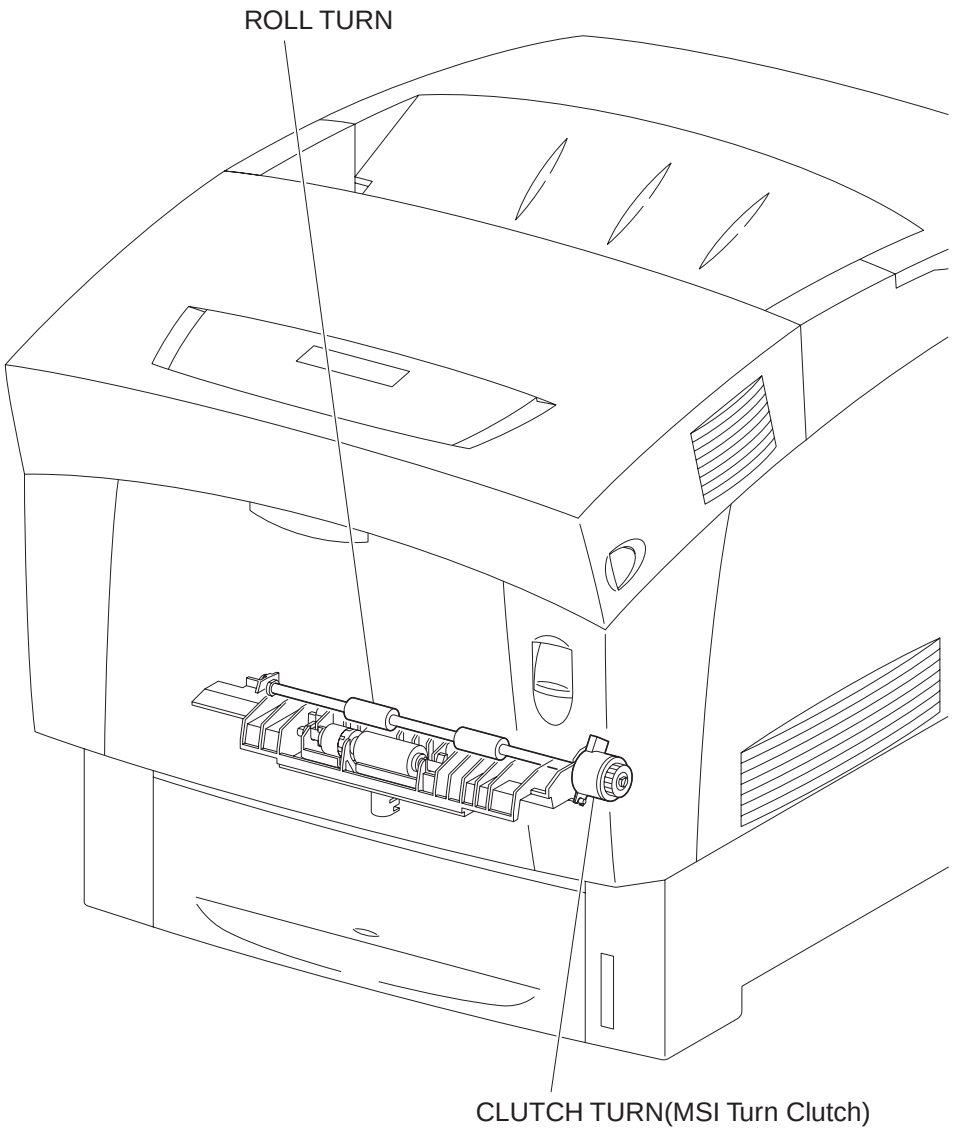
5.3 Housing Assy Retard

5.3.1 Major functions

▼ CLUTCH TURN (MSI Turn Clutch)
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 Turn Clutch) to feed the paper from the manual feed tray to the CHUTE REGI (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").

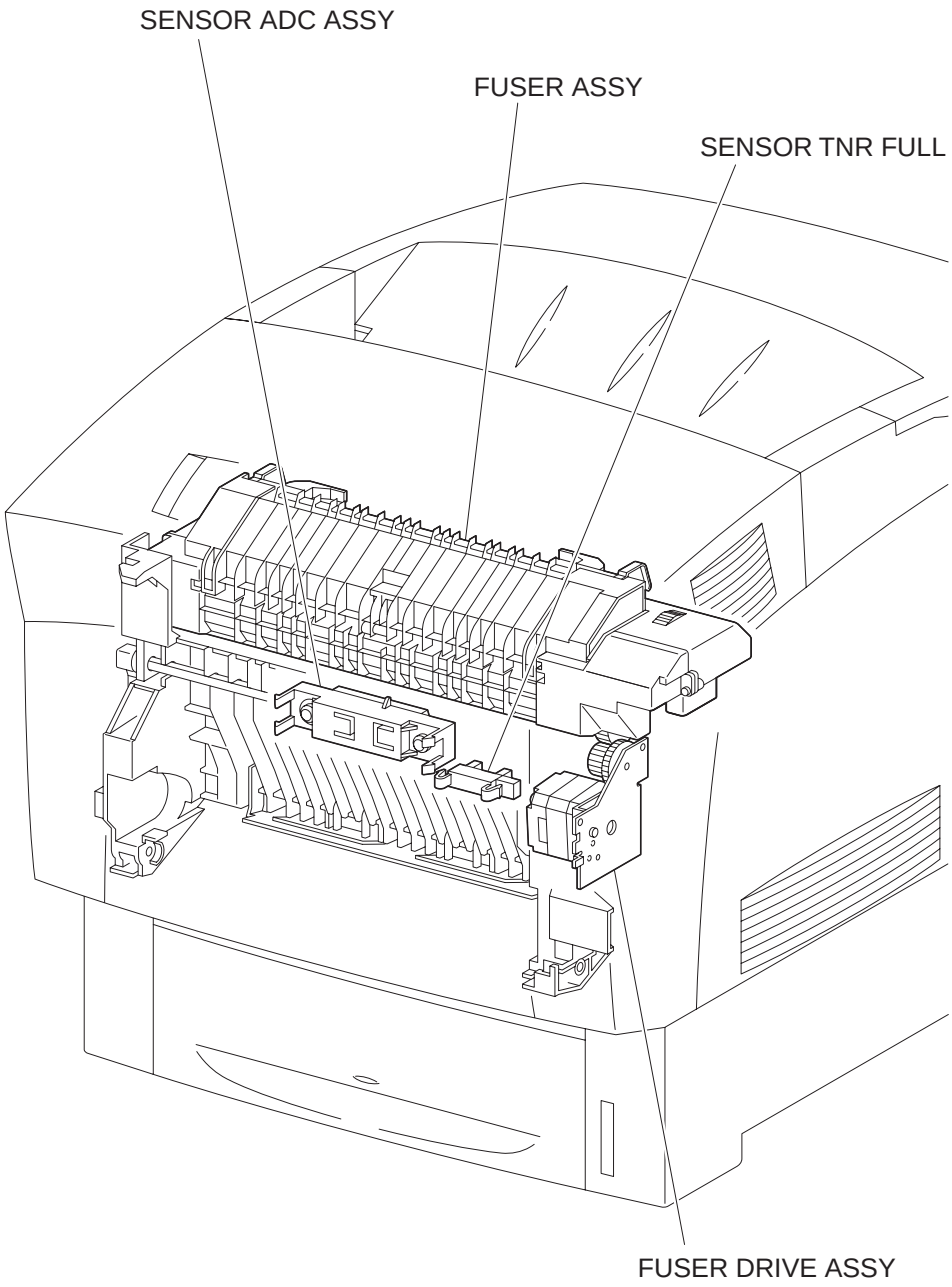
▼ SENSOR TNR FULL

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)

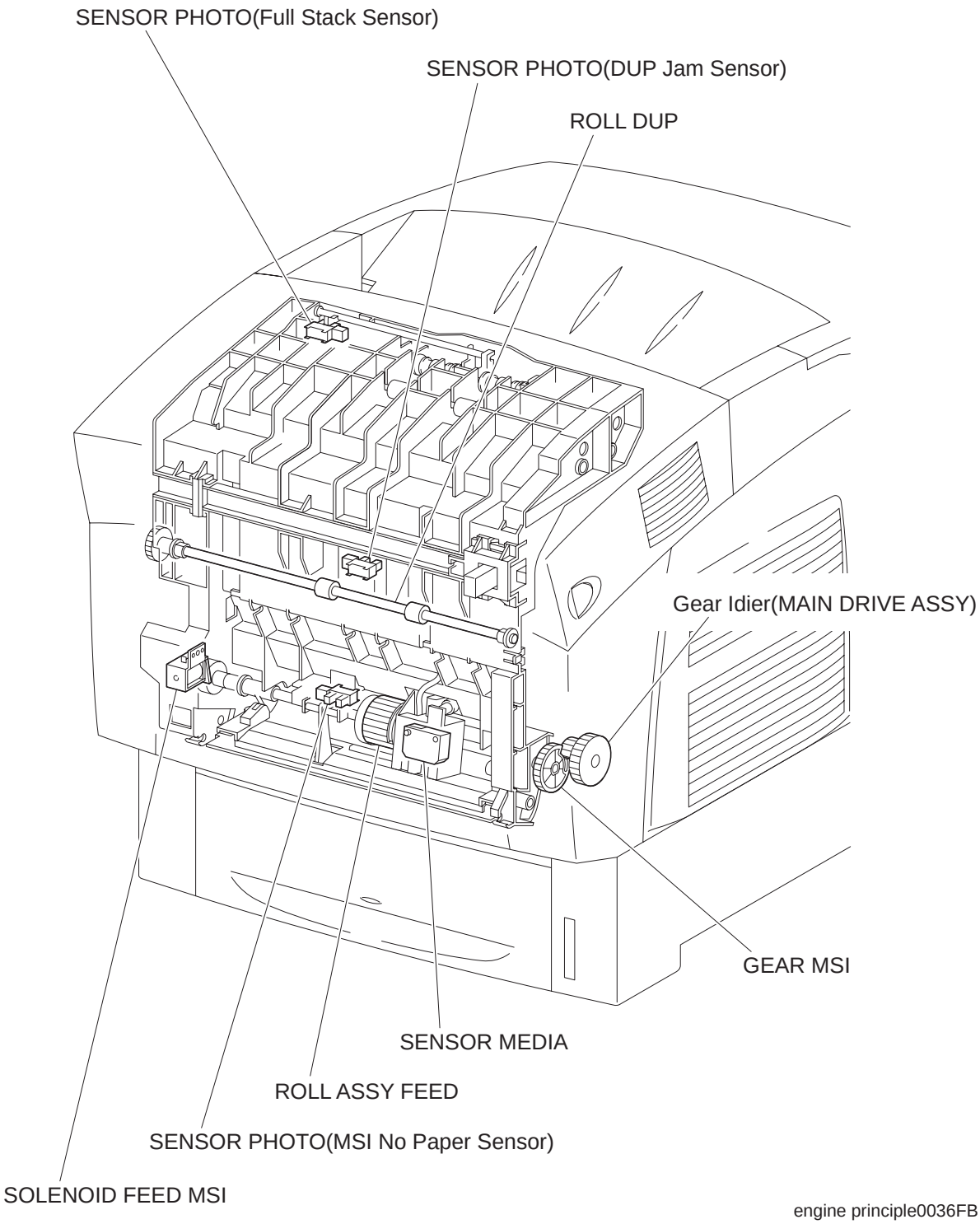
▼ SOLENOID FEED MSI
Controls the operation (rotation/stop) of ROLL ASSY FEED by controlling the rotations of the GEAR MSI.

▼ ROLL ASSY FEED
When the SOLENOID FEED MSI operates, the GEAR MSI and GEAR IDLER are engaged by the force of the SPRING SOL, the ROLL ASSY FEED 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 IDLER are disengaged at the notch of the GEAR MSI, drive is not transmitted any more, and the ROLL ASSY FEED 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)".

▼ SENSOR MEDIA
Make the edge of the sensor contact to the paper by the dead load, and then measure quantity of reflected ray and scattered ray from the surface of the paper.
Therefore you can identify the paper quality (paper/ glossy paper / Transparency).

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.

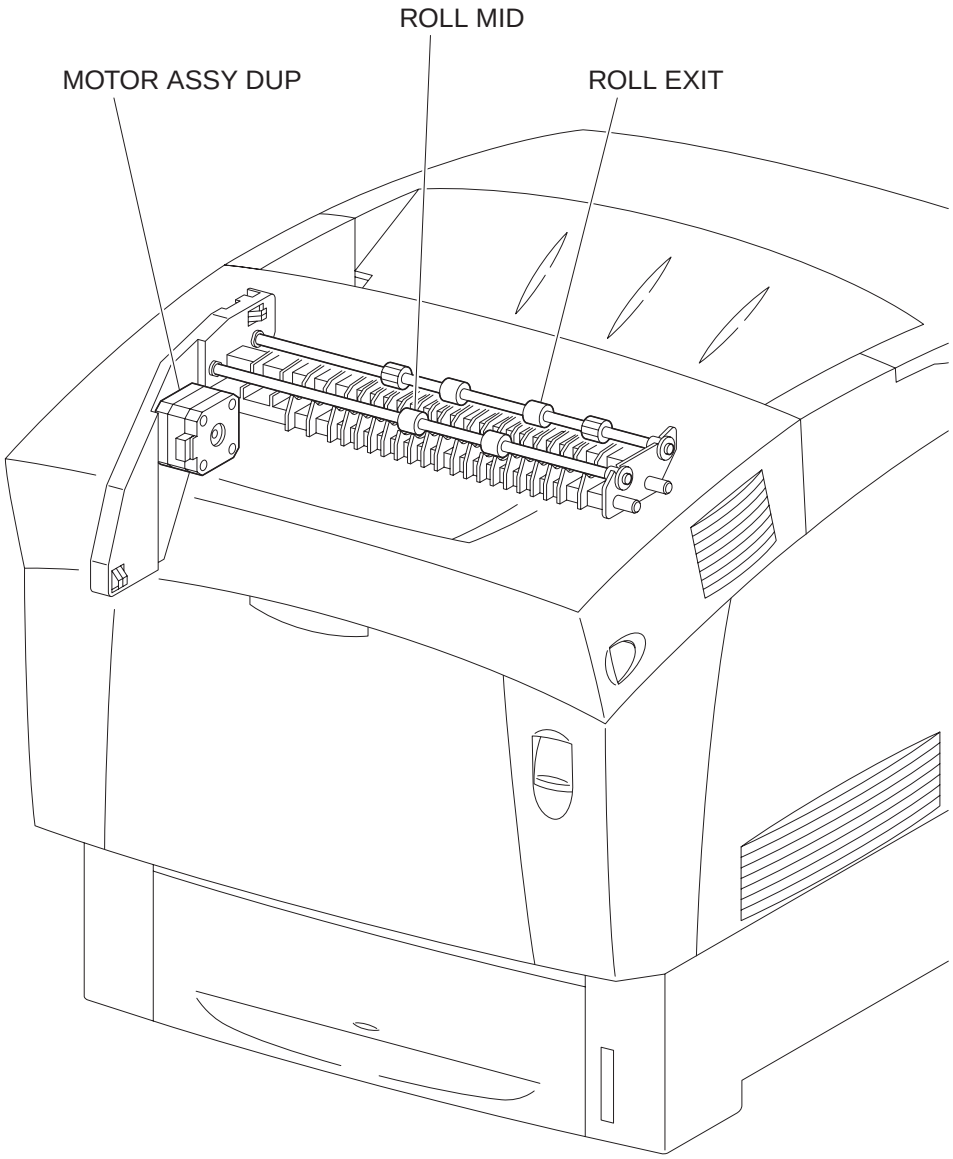
▼ ROLL EXIT

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

∇ Exit Sensor

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

▼ BTR PKG 72

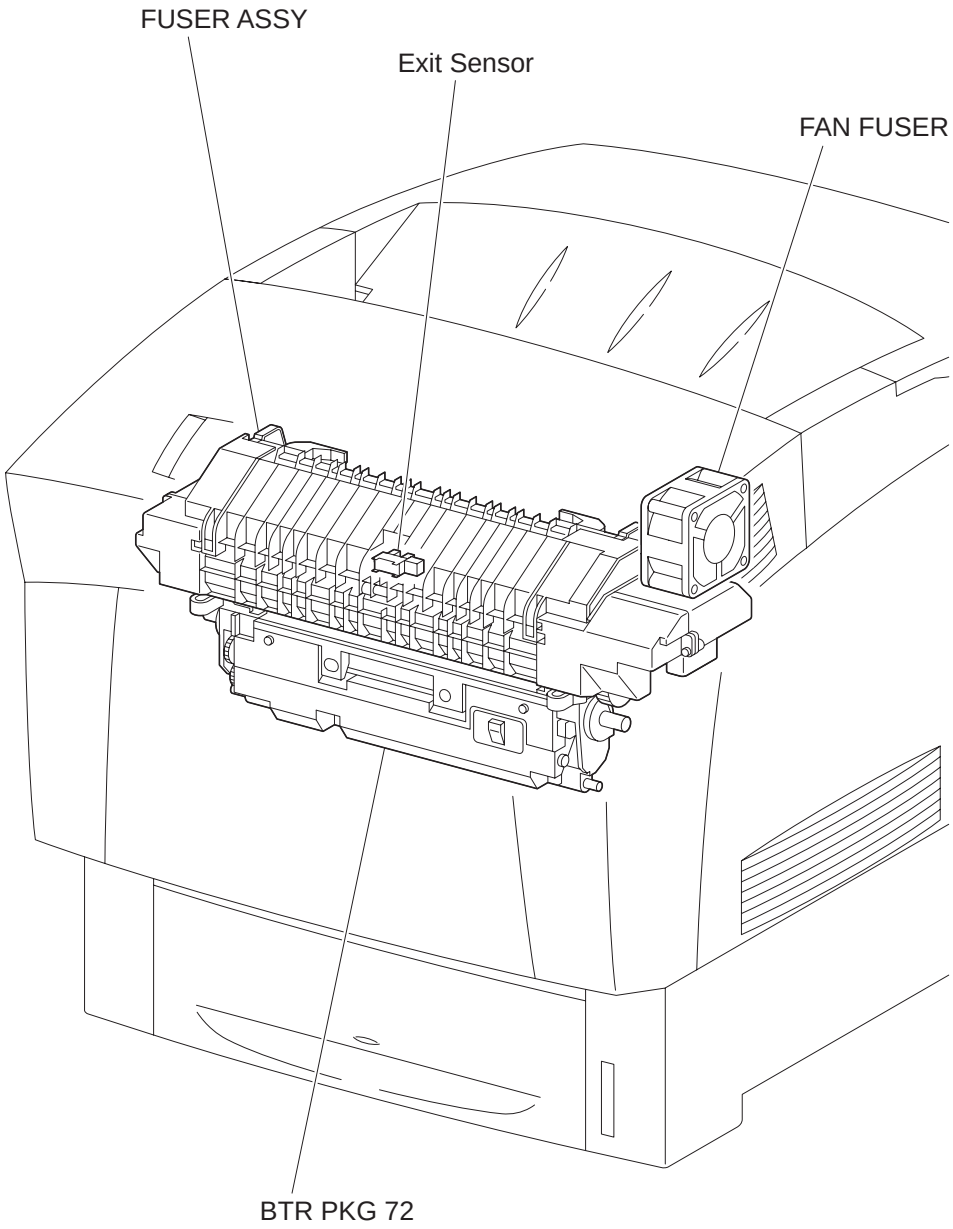
The BTR PKG 72 consists of a BTR (Bias Transfer Roll) and a waste toner recovery system.

The BTR (Bias Transfer Roll) is opposed to the IDT 2 in the PHD ASSY 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



engine principle0038FB

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 (Print Head Assembly) carries out a series of operation in the print process such as charging, developing and transfer.

PHD ASSY mainly consists of the following parts.

- Drum (Y)
- Drum (M)
- Drum (C)
- Drum (K)
- RTC (Y)
- RTC (M)
- RTC (C)
- RTC (K)
- IDT 1 (2)
- IDT 1 cleaner (2)
- Developer (Y)
- Developer (M)
- Developer (C)
- Developer (K)
- Refresher (Y)
- Refresher (M)
- Refresher (C)
- Refresher (K)
- IDT 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 direction. When the paper tip reaches the CHUTE REGI ASSY, the CHUTE REGI has 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)

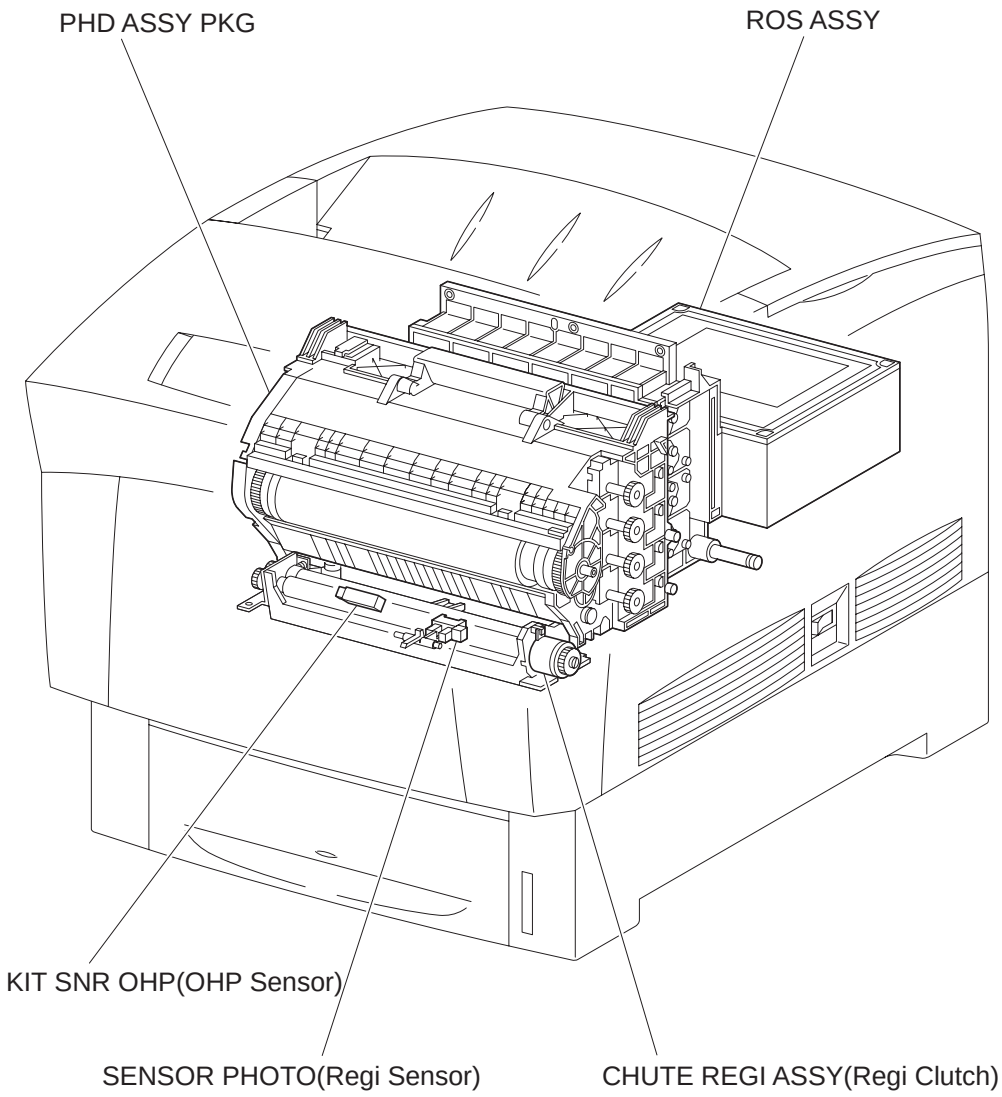
Detects that the paper tip has reached the CHUTE REGI ASSY.

(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



engine principle0039FB

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 swotch:

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

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

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

Toner bottle containing toner of each color.

▼ PWBA EEPROM

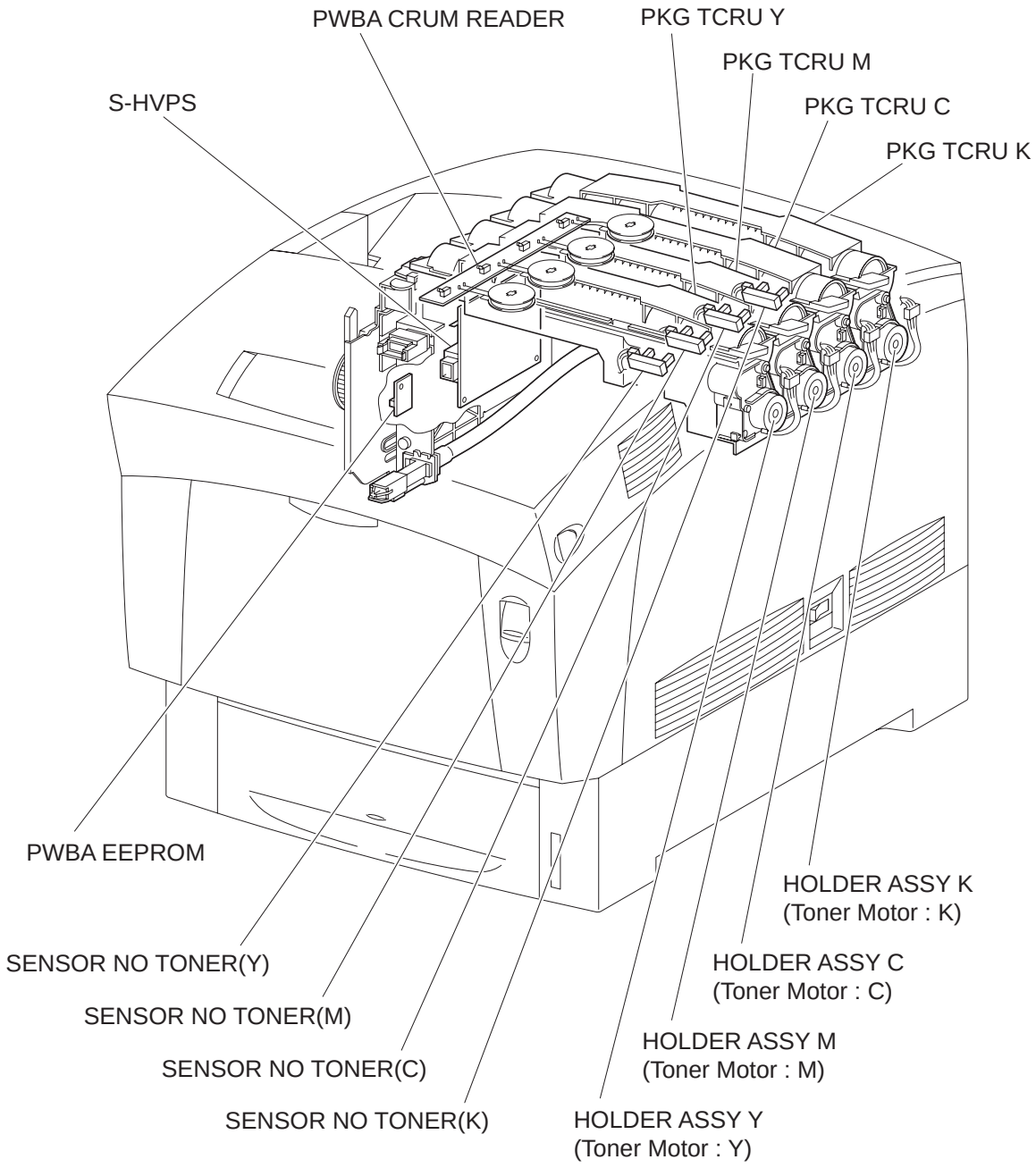
Printer specific information is stored.

▼ 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



engine principle0040FB

5.10 Frame & Drive

5.10.1 Major functions

▼ MAIN DRIVE ASSY

Supplies the drive to parts as follows.

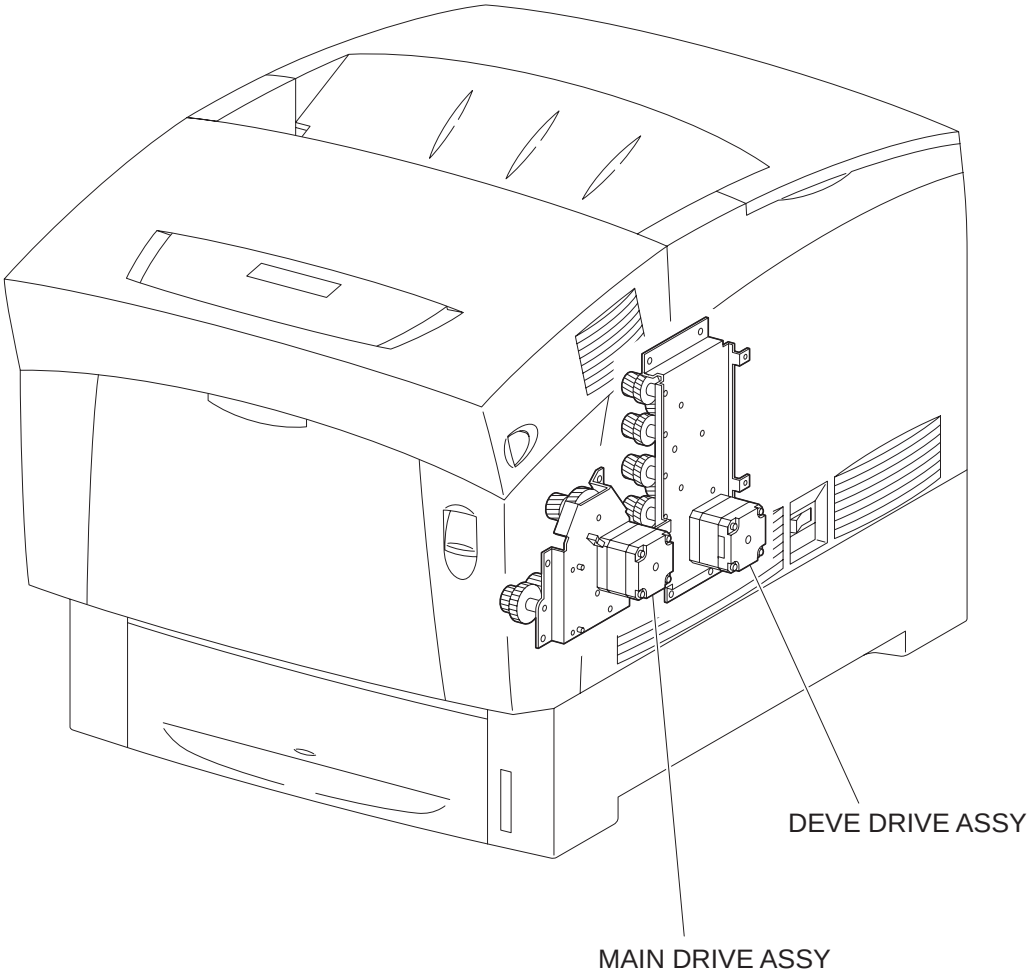
- PAPER FEEDER
- HOUSING ASSY RETARD
- CHUTE ASSY OUT (MSI position)
- CHUTE REGI ASSY
- PHD ASSY PKG (IDT 2, IDT 1, Drum)
- BTR PKG 72

▼ DEVE DRIVE ASSY

Supplies the drive to parts as follows.

- PHD ASSY PKG (Develper)

5.10.2 Reference diagram



engine principle0041FA

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 HBN MCU

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 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 HBN DRV

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

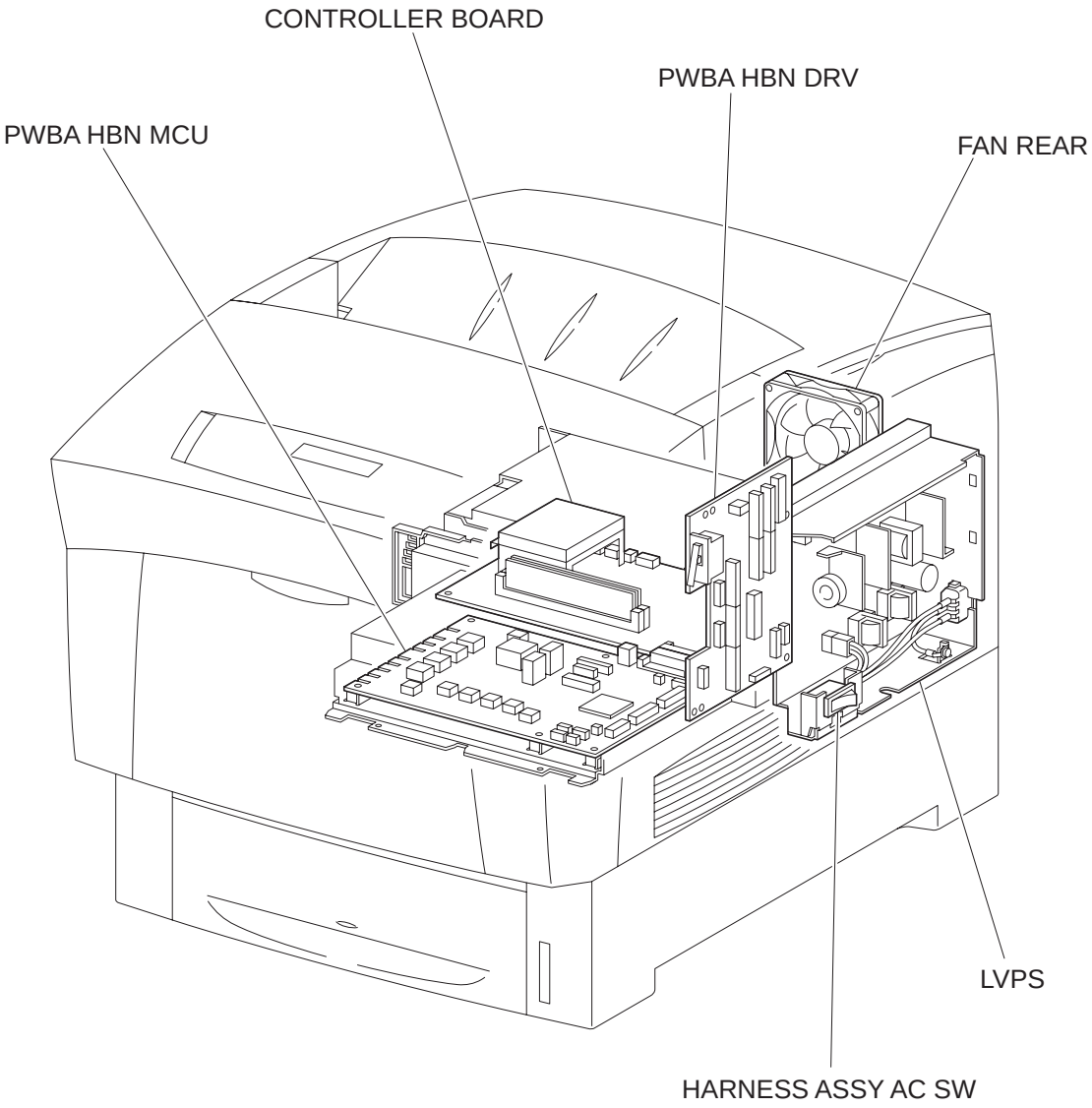
Major functions are as follows:

- 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.
- 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.

5.11.2 Reference diagram



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6. MODES

6.1 Print Mode

There are three types of print modes, standard mode, fine mode, and high gloss mode. These are discriminated by the resolution (600dpi/1200dpi) and process speed (full speed/half speed).
Setting the process speed to half speed and the video data transfer speed to ROS to twice the speed at 600dpi attains the resolution of 1200dpi.

1. Standard mode Used for printing with the resolution 600dpi
2. Fine mode Used for printing on plain paper with the resolution 1200dpi
3. High Gloss mode Gloss is raised by setting half speed with plain paper 600dpi

The relation between resolution, process speed, paper, and print mode is shown below.

Paper	Print mode	Resolution/Process speed			
		600dpi		1200dpi	
		Simplex	Duplex	Simplex	Duplex
Plain paper	Standard	Full speed	Full speed	–	–
	Fine	–	–	Half speed	Half speed
	High Gloss	Half speed	Half speed	–	–
Special paper *1	Standard	Half speed	–	–	–
	Fine	–	–	Half speed	–

*1: Thick paper, Label, 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.

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	ON	
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

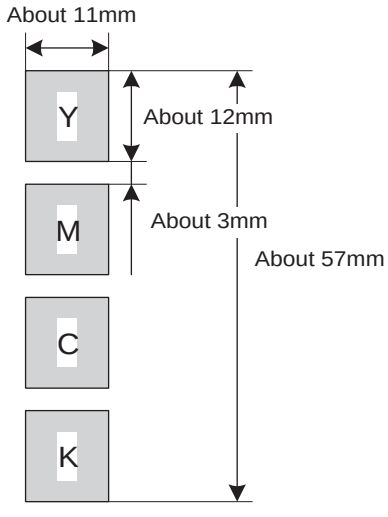
To attain stable printing image density, the drum charging voltage and the developing DC voltage are adjusted according to the developing capability of each color carrier that varies momentarily. The adjusted drum charging voltage and the developing DC voltage are fed back to keep the printing image 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 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

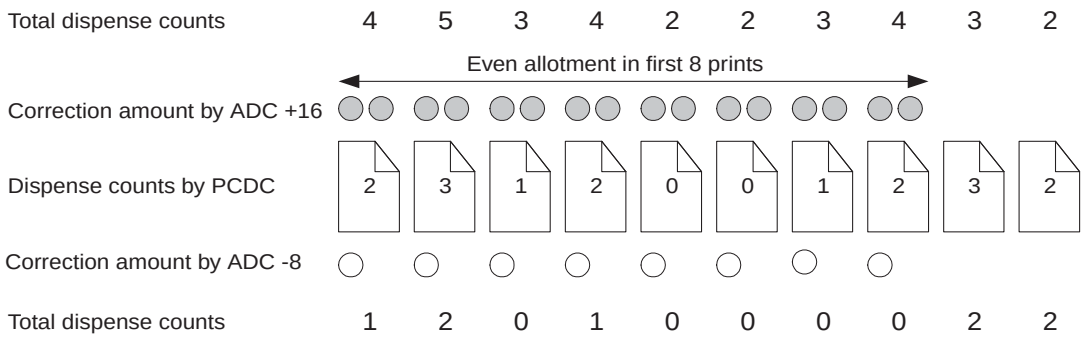
3) Example of toner dispensation

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.

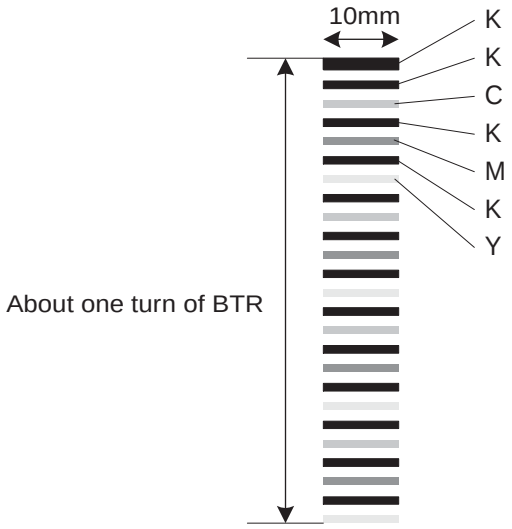
At this time, if the output value is less than the first lower limit, the controller judges the sensor as dirty and outputs the warning. Further, if less than the second lower limit, the controller judges the sensor as faulty and stops the printing.

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 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 UNIT 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 TNR 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 TNR 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 TNR 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, and it detects the presence of toner dispensed by the Toner Motor from the toner bottle into the HOLDER ASSY.

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 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 PWBA CRUM READER.

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, "Label 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.
The Cooling Down is performed for a certain period of time before printing.

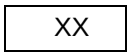
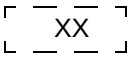
7.8.3 Sensor Warm-up

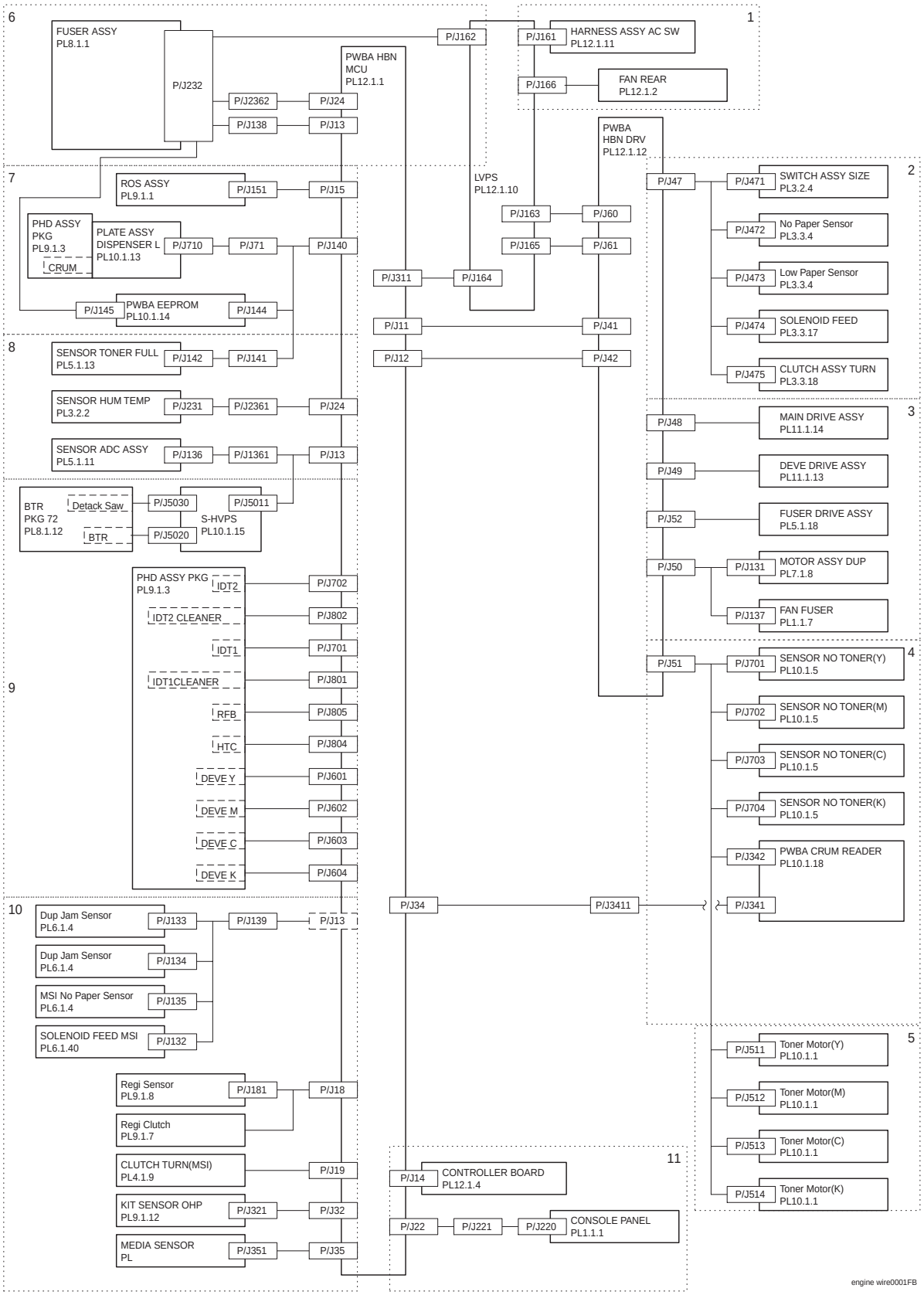
The Fuser NCS (Non Contact Sensor) at the center of the Heat Roll does not detect temperature when the temperature of the Sensor itself is below -5°C. Therefore, the Sensor will be warmed up when the temperature is below -5°C. This action is called Sensor Warm-up.

Chapter 7 Wiring Diagrams and Signal Information CONTENTS

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/J24
P/J138
P/J13
PWBA HBN
MCU
PL12.1.1
P/J162
1
P/J161
HARNESS ASSY AC SW
PL12.1.11
P/J166
FAN REAR
PL12.1.2
PWBA
HBN DRV
PL12.1.12
LVPS
PL12.1.10
7
ROS ASSY
PL9.1.1
P/J151
P/J15
PHD ASSY
PKG
PL9.1.3
CRUM
PLATE ASSY
DISPENSER L
PL10.1.13
P/J710
P/J71
P/J140
P/J145
PWBA EEPROM
PL10.1.14
P/J144
P/J163
P/J60
P/J165
P/J61
P/J311
P/J164
P/J11
P/J41
P/J12
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/J49
DEVE DRIVE ASSY
PL11.1.13
P/J52
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/J341
P/J34
P/J3411
10
Dup Jam Sensor
PL6.1.4
P/J133
P/J139
P/J13
Dup Jam Sensor
PL6.1.4
P/J134
MSI No Paper Sensor
PL6.1.4
P/J135
SOLENOID FEED MSI
PL6.1.40
P/J132
5
P/J511
Toner Motor(Y)
PL10.1.1
P/J512
Toner Motor(M)
PL10.1.1
P/J513
Toner Motor(C)
PL10.1.1
P/J514
Toner Motor(K)
PL10.1.1
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
MEDIA SENSOR
PL
P/J351
P/J35
11
P/J14
CONTROLLER BOARD
PL12.1.4
P/J22
P/J221
P/J220
CONSOLE PANEL
PL1.1.1
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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 HBN MCU and LVPS
Connection between LVPS and PWBA HBN DRV
Connection between PWBA HBN DRV and PWBA HBN MCU
Connection between LVPS and FAN REAR
Connection between LVPS and HARNESS ASSY AC SW

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

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

§ 4 Developer section 1
Connection between PWBA HBN DRV and SWITCH TCRU ASSY (Y)
Connection between PWBA HBN DRV and SWITCH TCRU ASSY (M)
Connection between PWBA HBN DRV and SWITCH TCRU ASSY (C)
Connection between PWBA HBN DRV and SWITCH TCRU ASSY (K)
Connection between PWBA HBN DRV and SENSOR TONER LOW (Y)
Connection between PWBA HBN DRV and SENSOR TONER LOW (M)
Connection between PWBA HBN DRV and SENSOR TONER LOW (C)
Connection between PWBA HBN DRV and SENSOR TONER LOW (K)
Connection between PWBA HBN MCU and PWBA HBN DRV

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

§ 6 Fuser section
Connection between LVPS and FUSER ASSY
Connection between PWBA HBN MCU and FUSER ASSY
Connection between PWBA HBN MCU and PWBA HBN DRV
Connection between LVPS and HARNESS ASSY SW

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

§ 8 Xerographics section 1
Connection between PWBA HBN MCU and SENSOR TNR FULL
Connection between PWBA HBN MCU and SENSOR HUM TEMP
Connection between PWBA HBN MCU and SENSOR ADC ASSY

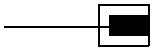
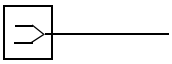
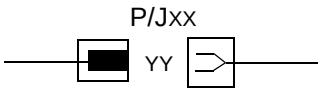
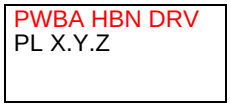
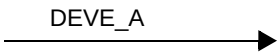
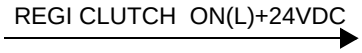
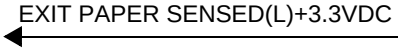
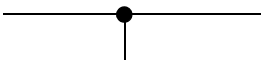
§ 9 Xerographics section 2
Connection between PWBA HBN MCU and S-HVPS

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

§ 11 Controller section
Connection between PWBA HBN MCU and CONTROLLER BOARD
Connection between PWBA HBN MCU and CONSOLE PANEL HIBANA

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.
	Denotes a connection between wires.

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

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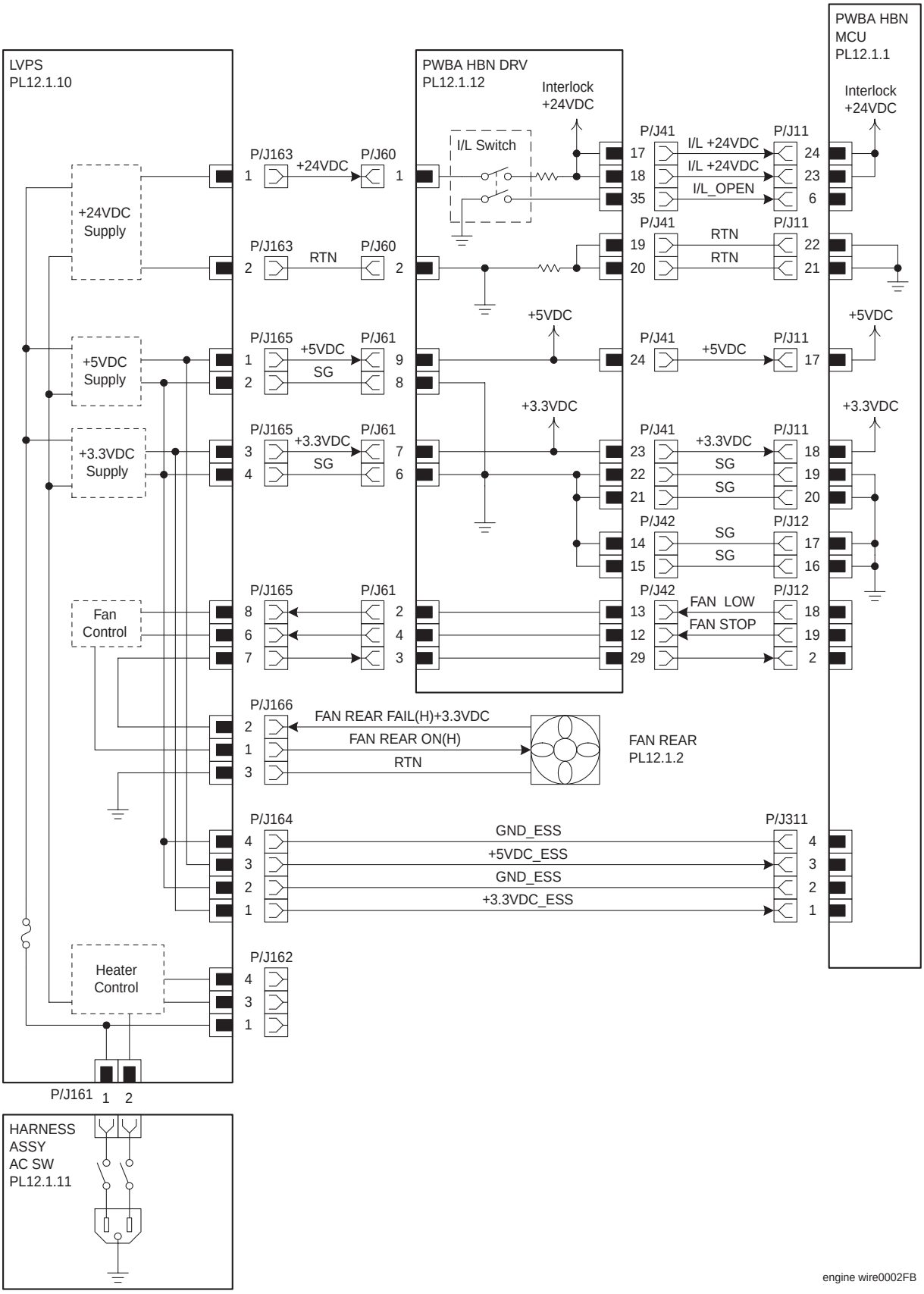
§ 1 Power supply section



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

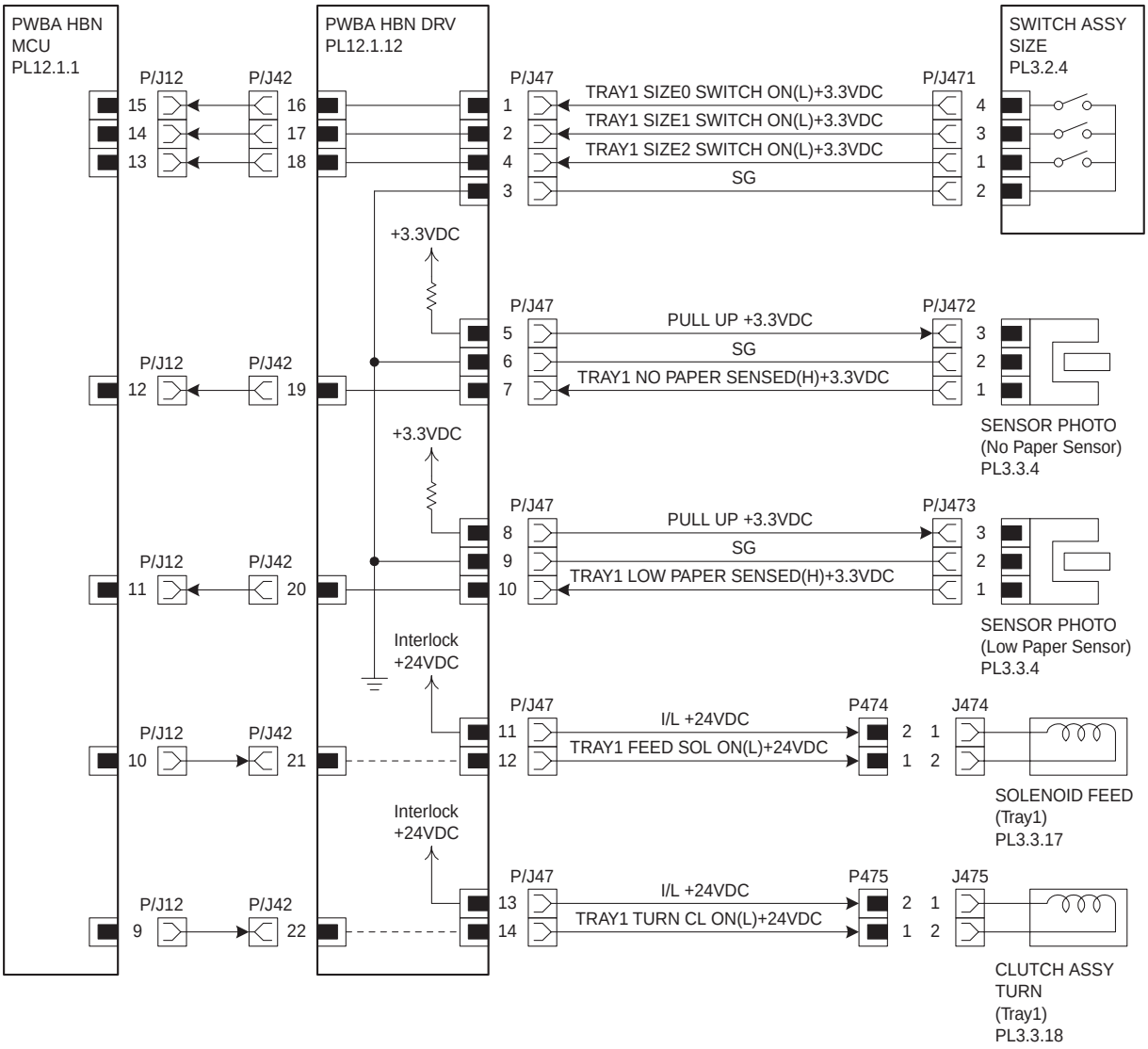
For the FAN REAR ON (H) signal, the output voltage varies depending on the status of FAN LOW signal and FAN STOP signal.

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 HBN DRV causes the "I/L +24VDC" circuit to be shut off. Consequently, +24VDC supply to the PWBA HBN MCU and to the parts connected to the PWBA HBN DRV is stopped.

§ 2 Cassette section



engine wire0003FB

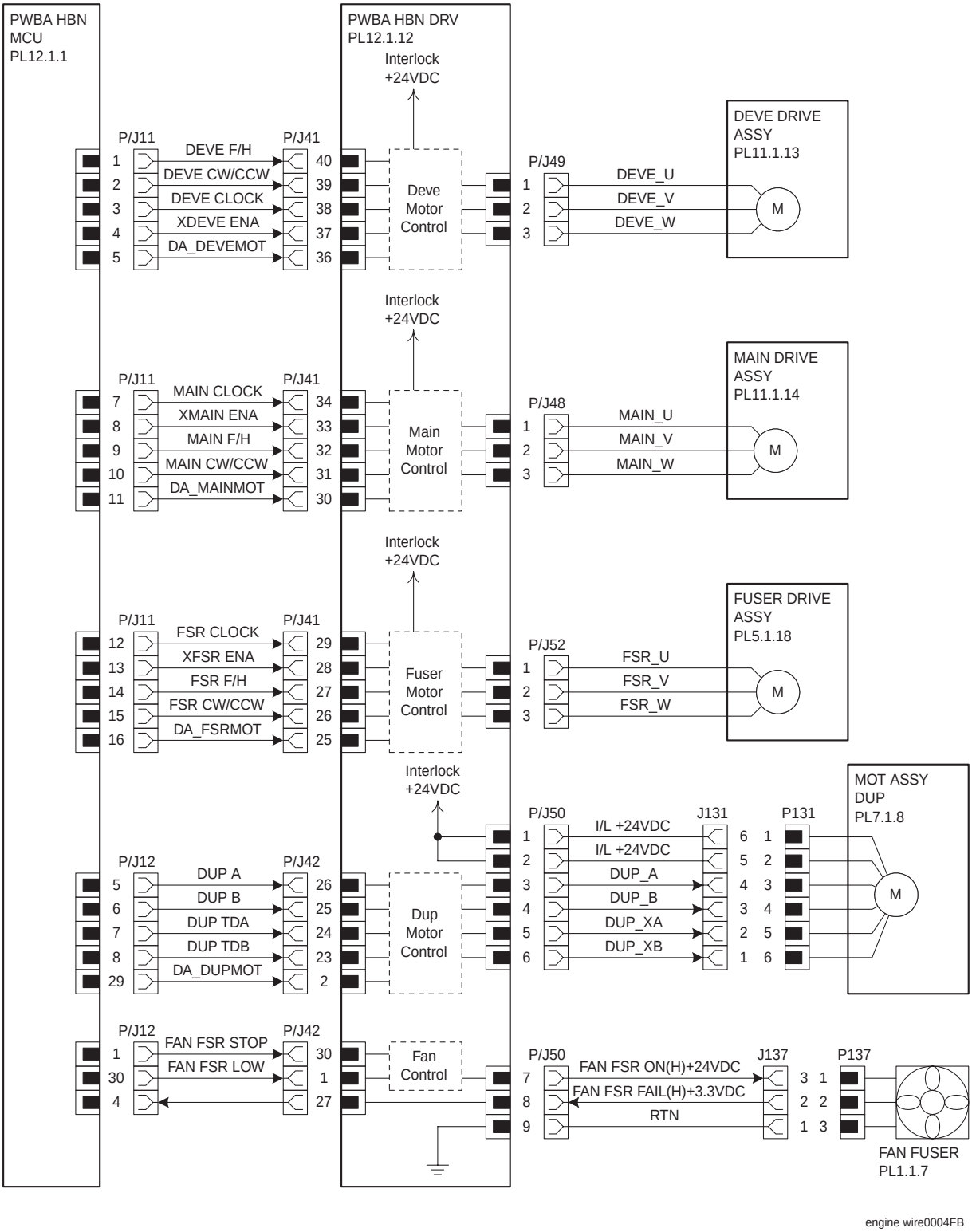
Signal line name	Description
TRAY1 SIZE0 SWITCH ON(L)+3.3VDC	ON/OFF detection signal of SWITCH ASSY SIZE upper SW
TRAY1 SIZE1 SWITCH ON(L)+3.3VDC	ON/OFF detection signal of SWITCH ASSY SIZE middle SW
TRAY1 SIZE2 SWITCH ON(L)+3.3VDC	ON/OFF detection signal of SWITCH ASSY SIZE lower SW
TRAY1 NO PAPER SENSED(L)+3.3VDC	Cassette paper detection signal by SENSOR PHOTO (No Paper Sensor)
TRAY1 LOW PAPER SENSED(L)+3.3VDC	Cassette residual paper detection signal by SENSOR PHOTO (Low Paper Sensor)
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	ON
No cassette	OFF	OFF	OFF

§ 3 Drive section



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 signa
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	MOT ASSY DUP drive control signal
DUP_A,DUP_B,DUP_XA,DUP_XB	MOT 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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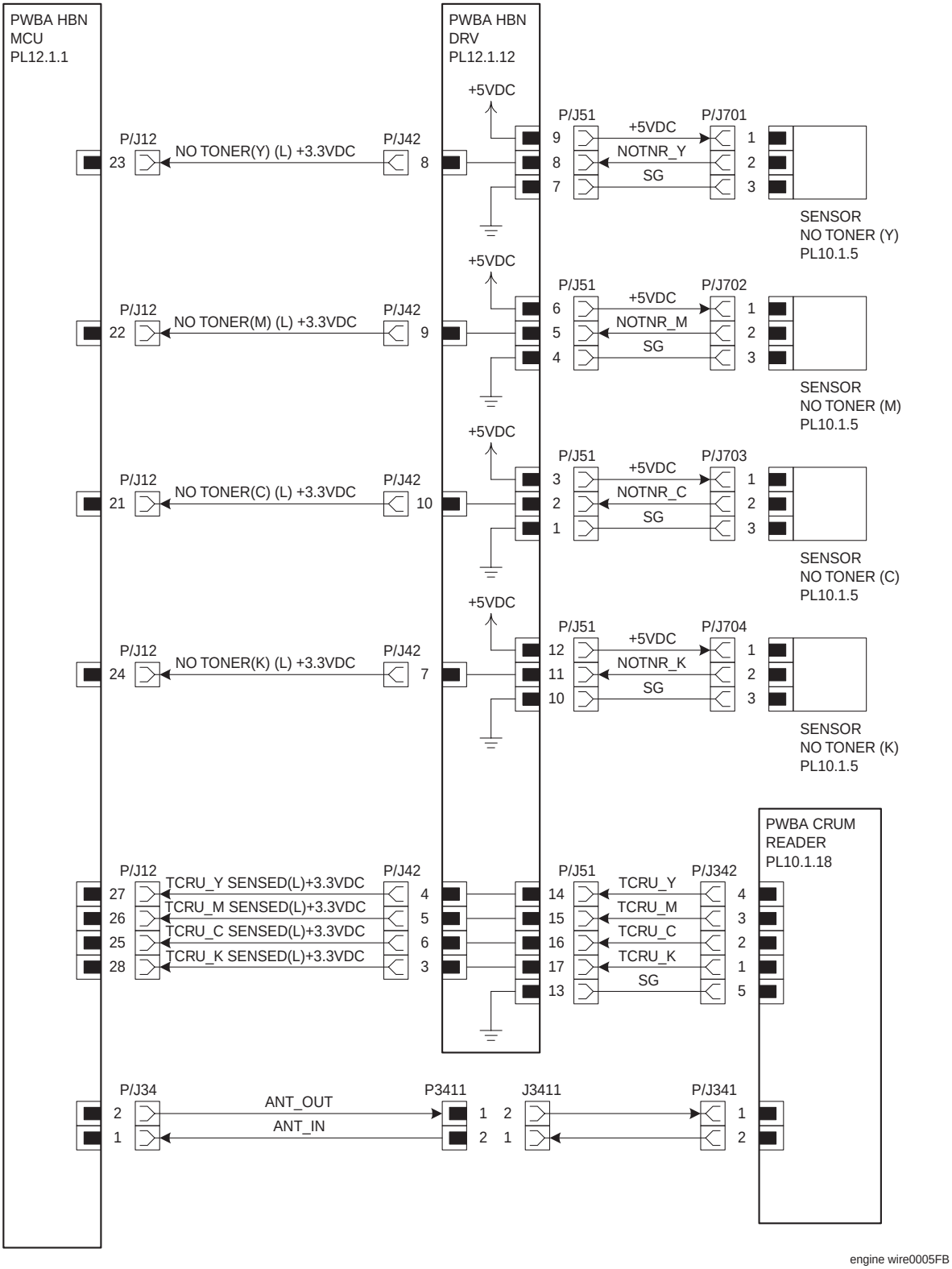
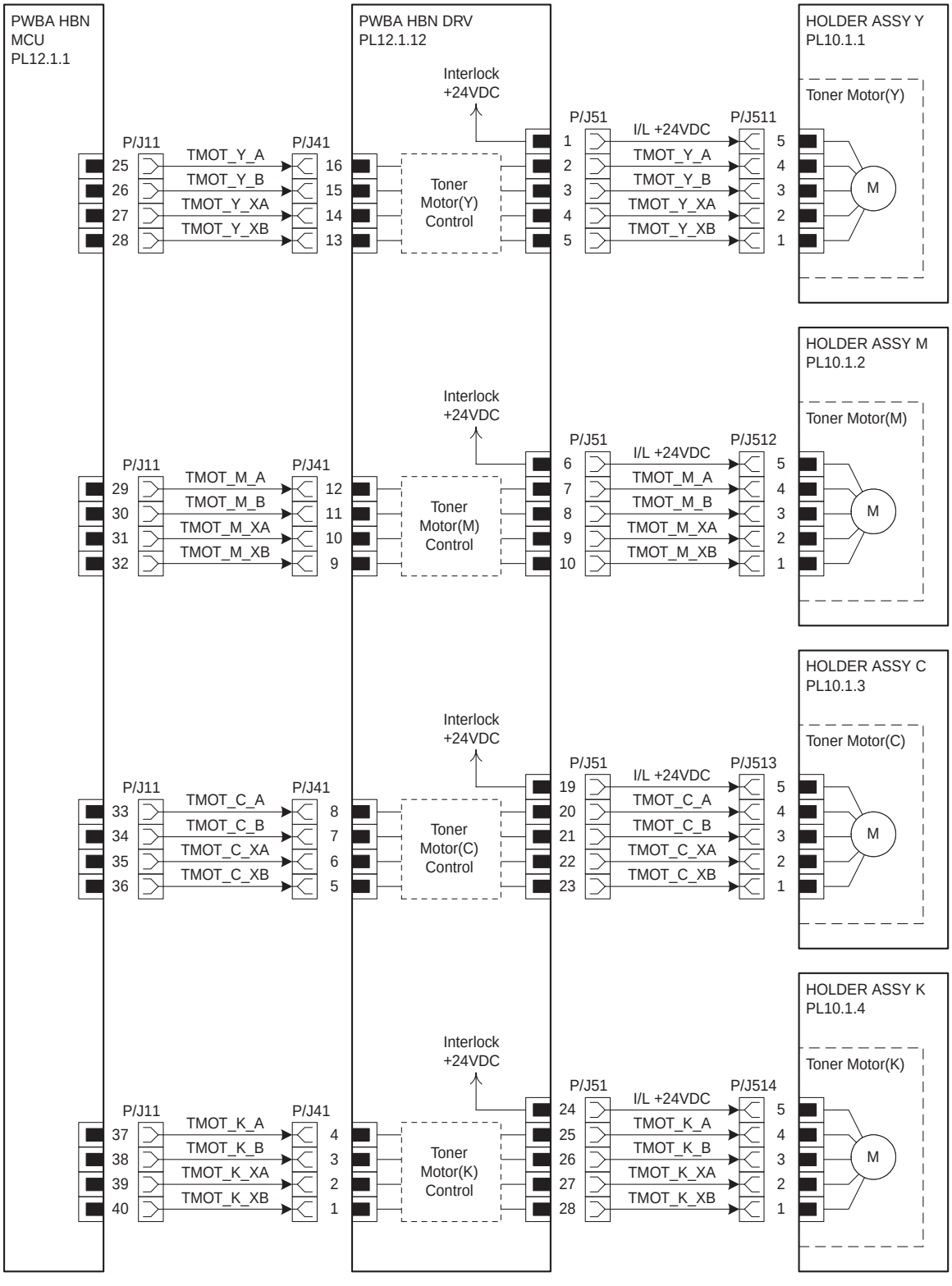
§ 4 Developer section 1



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 HBN MCU and Radio CRUM communication signal (PWBA HBN MCU output)
ANT_IN	PWBA HBN MCU and Radio CRUM communication signal (Radio CRUM output)

§ 5 Developer section 2



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Signal line name	Description
TMOT_Y_A.TMOT_Y_B.TMOT_Y_XA.TMOT_Y_XB	Exciting signal of Toner Motor (Y) in HOLDER TCRU ASSY (1)
TMOT_M_A.TMOT_M_B.MOT_M_XA.TMOT_M_XB	Exciting signal of Toner Motor (M) in HOLDER TCRU ASSY (2)
TMOT_C_A.TMOT_C_B.TMOT_C_XA.TMOT_C_XB	Exciting signal of Toner Motor (C) in HOLDER TCRU ASSY (3)
TMOT_K_A.TMOT_K_B.TMOT_K_XA.TMOT_K_XB	Exciting signal of Toner Motor (K) in HOLDER TCRU ASSY (1)

♦ Outline of Toner Motor

G Motor type: PM stepping motor

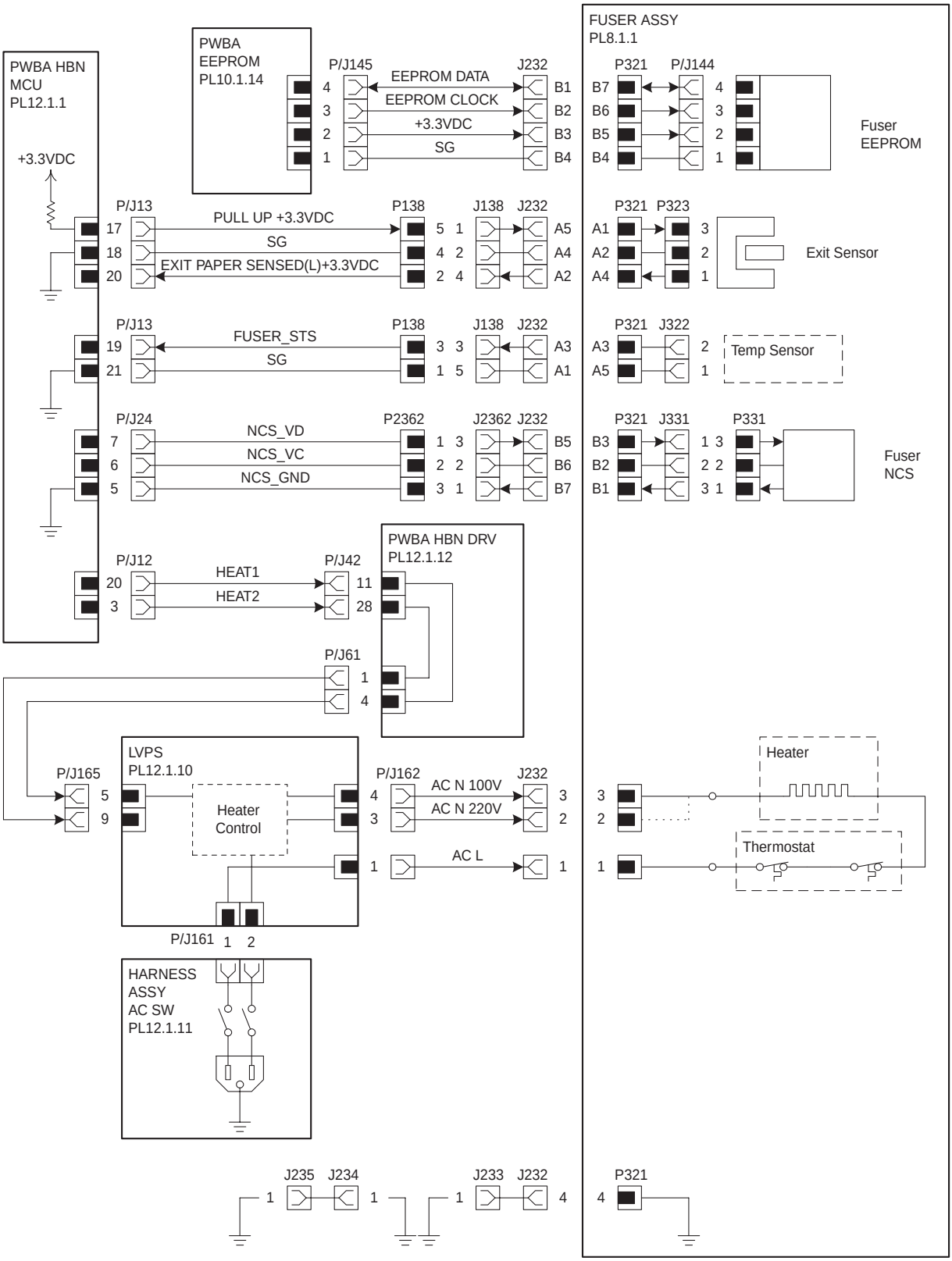
G Stepping angle: 7.5° ± 0.5°

G Winding resistance: 6.2Ω ± 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



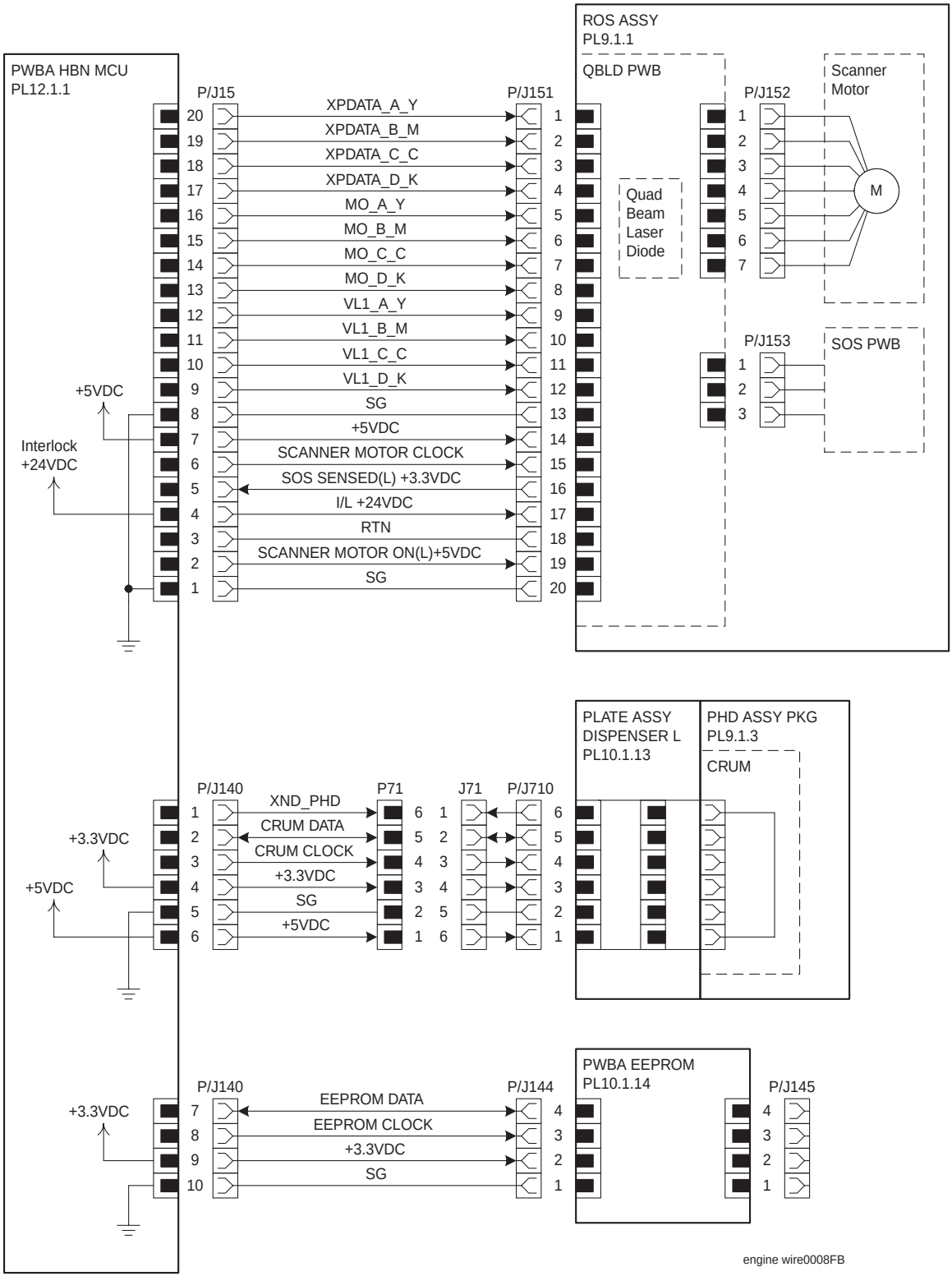
engine wire0007FB

Signal line name	Description
EXIT PAPER SENSED(L)+3.3VDC	Paper detection signal in fuser by Exit Sensor in FUSER ASSY
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: 600 ± 30W 100V

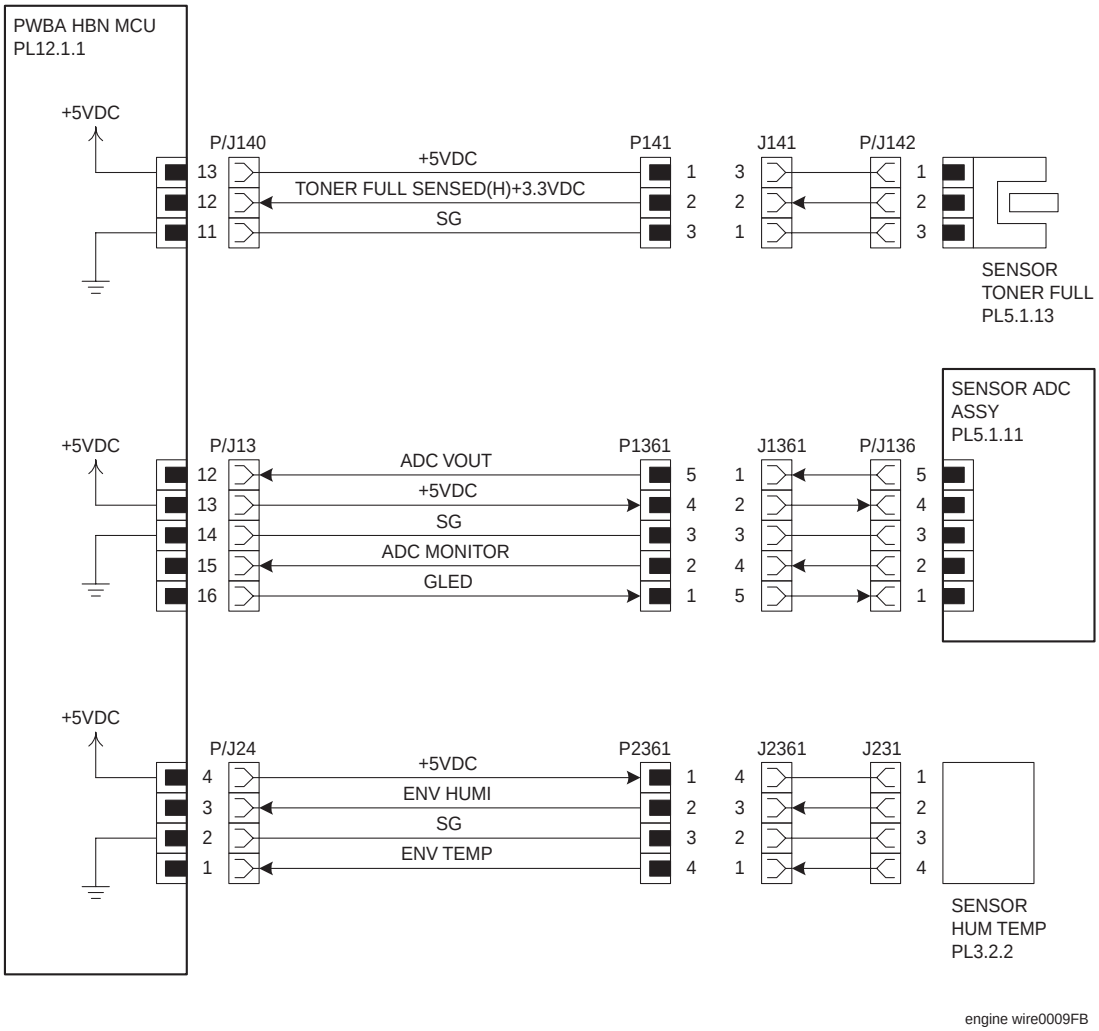
♦ Thermostat contact open temperature: 160°C ± 5°C

§ 7 ROS section



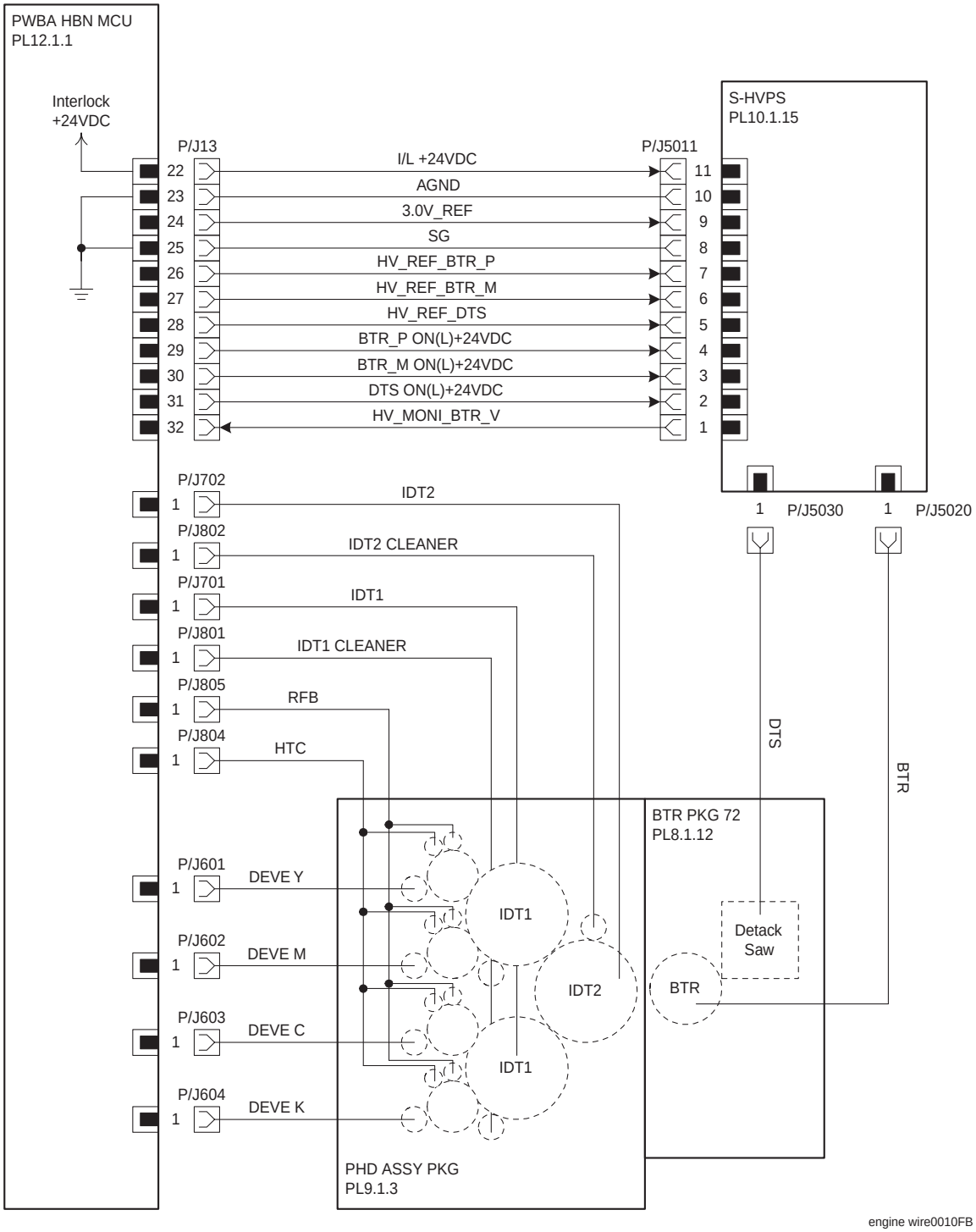
Signal line name	Description
XPDATA_A_Y,XPDATA_B_M,XPDATA_C_C,XPDATA_D_K	Pixel data signals to make Quad Beam Laser Diodes (laser diodes for 4 colors) in ROS ASSY emit the light
MO_A_Y,MO_B_M,MO_C_C,MO_D_K	Light quantity control signals for each color LD (laser diode)
VL1_A_Y,VL1_B_M,VL1_C_C,VL1_D_K	Voltages for adjusting light quantity of each color LD
XND_PHD	PHD Assy detection signal (High:PHD Assy present)
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
CRUM CLOCK	Clock signal to CRU of PHD ASSY

§ 8 Xerographics 1



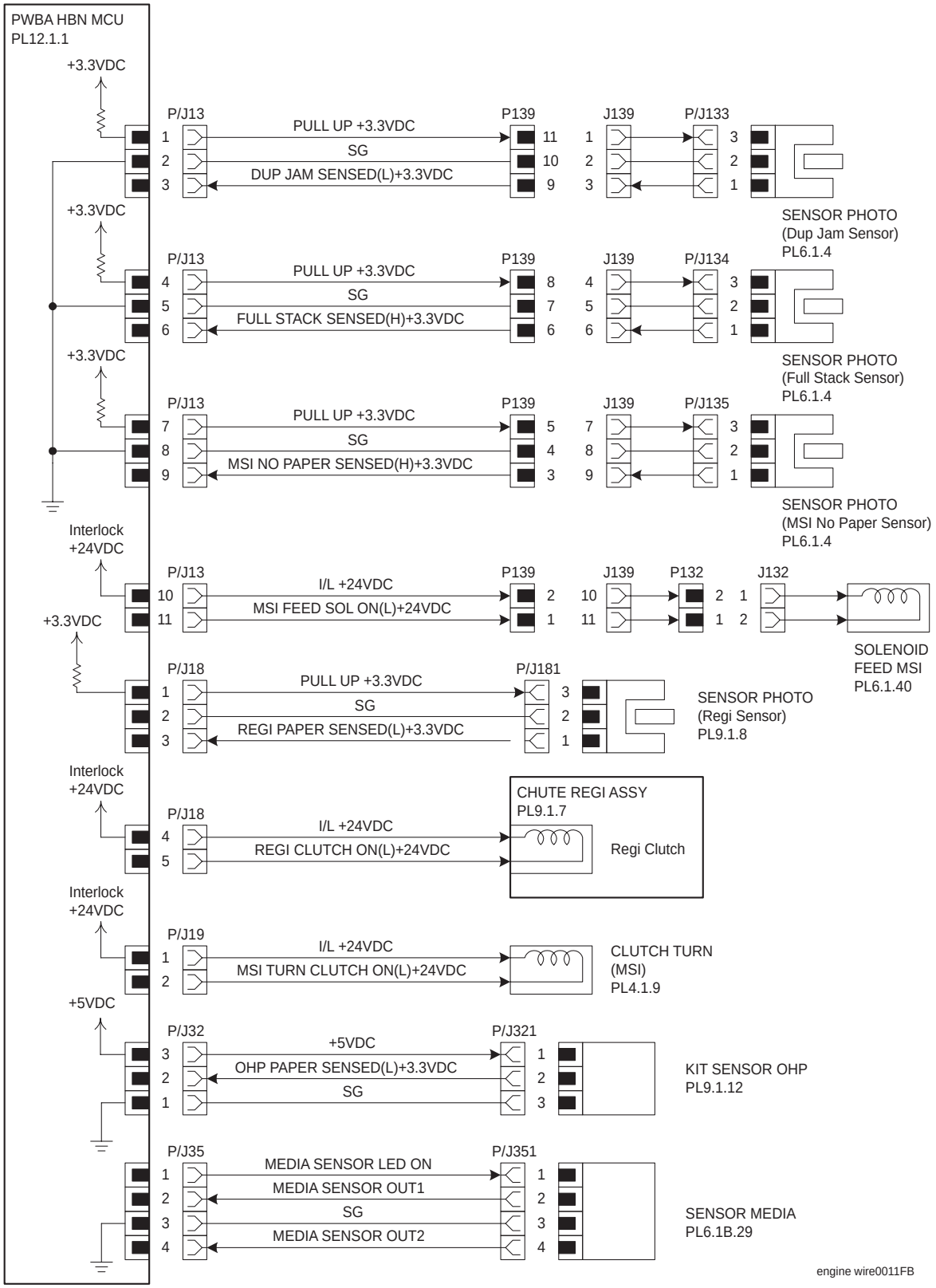
Signal line name	Description
TONER FULL SENSED(H)+3.3VDC	Waste toner recovery bottle full detection signal by SENSOR TONER FULL
ADC VOUT	Measured data (analog value) by ADC Sensor in SENSOR ADC ASSY
ADC MONITOR	Monitor output signal by ADC Sensor in SENSOR ADC ASSY
GLED	LED control signal (analog value)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

§ 9 Xerographics 2



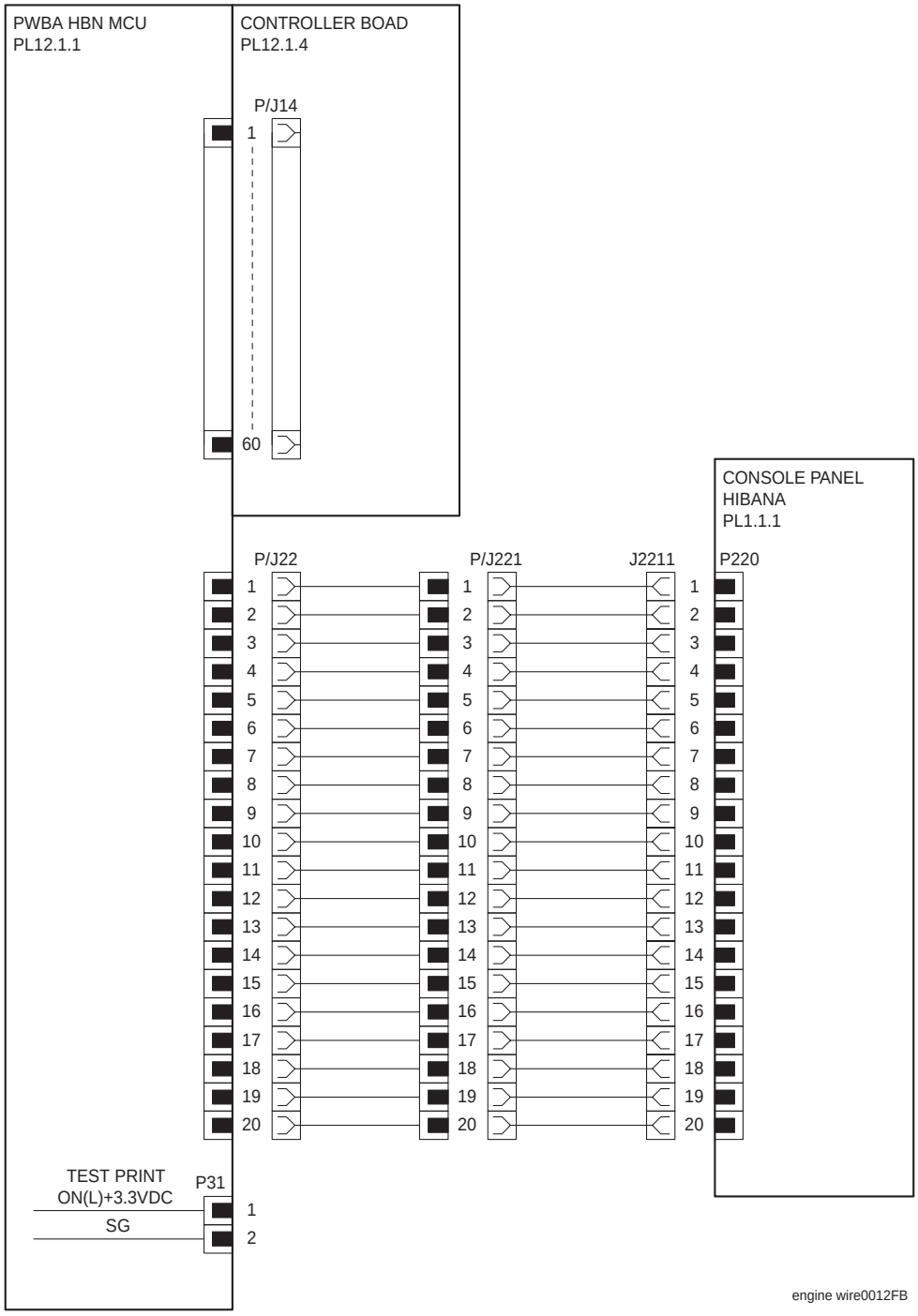
Signal line name	Description
HV_REF_BTR_P	Current control signal of BTR (+) output (analog value)
HV_REF_BTR_M	Voltage control signal of BTR (–) output (analog value)
HV_REF_DTS	Voltage control signal of DTS output (analog value)
BTR_P ON(L)+24VDC	Voltage monitor signal of BTR(+) output (analog value)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

§ 10 Paper feed section



Signal line name	Description
DUP JAM SENSED(L)+3.3VDC	Paper detection signal in Duplex section by SENSOR PHOTO (Dup Jam Sensor)
FULL STACK SENSED(L)+3.3VDC	Full Stack detection signal in paper output tray by SENSOR PHOTO (Full Stack Sensor)
MSI NO PAPER SENSED(H)+3.3VDC	Paper detection signal in MSI by SENSOR PHOTO (MSI No Sensor)
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
MSI TURN CLUTCH ON(L)+24VDC	CLUTCH TURN (MSI) ON/OFF control signal
OHP PAPER SENSED(L)+3.3VDC	OHP paper detection signal by OHP SENSOR ASSY (High: Plain paper present, Low: OHP paper present or no paper)
MEDIA SENSOR LED ON +5VDC	Media sensor power supply signal LED is turned on only at the time of output signal reading of Media Sensor.
MEDIA SENSOR OUT1	Media sensor analog output signal1 The kind of paper is distinguished by the ratio of the output signals 1 and 2.
MEDIA SENSOR OUT2	Media sensor analog output signal2

§ 11 Controller section



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.

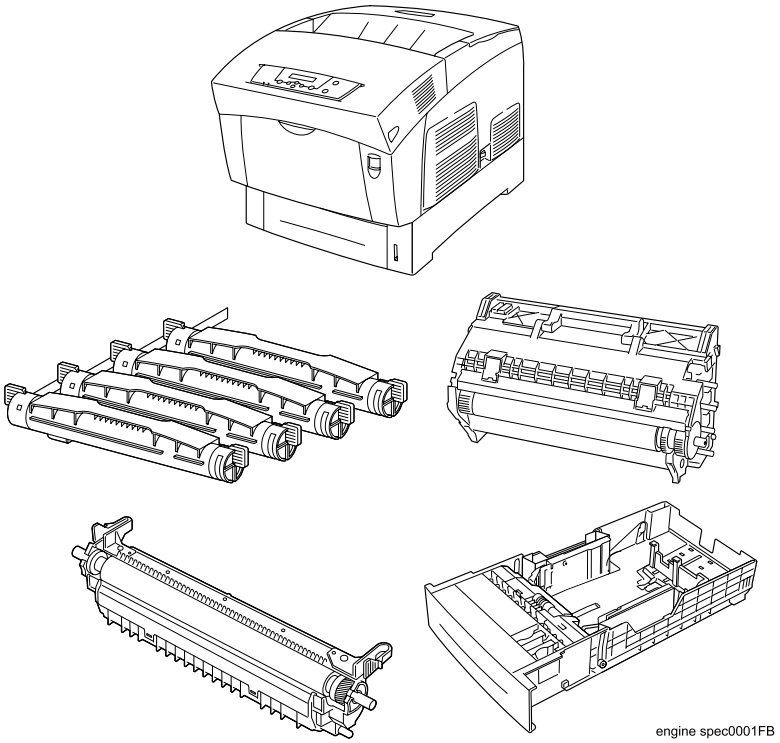
Chapter 8 Printer Specifications CONTENTS

Chapter 8 Printer Specifications CONTENTS

1. Configuration of Printer

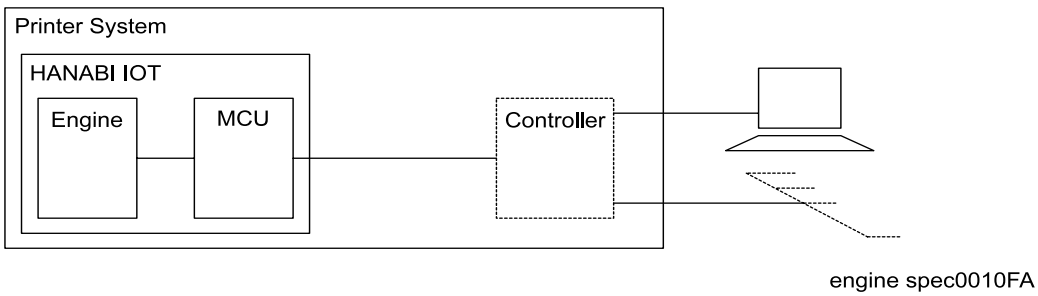
1.1 Basic Configuration

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



1.2 Functional Configuration

Functional configuration of this printer is shown below.



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 printer: ..... Voltage: 100-12VAC ±10% (90 ~ 140V), frequency: 50/60Hz ± 3Hz
- ◆ 115/120V printer: ..... Same power source as that for 100V printer.
- ◆ 220/240V printer: ..... voltage: 220-240VAC ±10% (198 ~ 264V), frequency: 50/60Hz ± 3Hz

2.2 Power Consumption

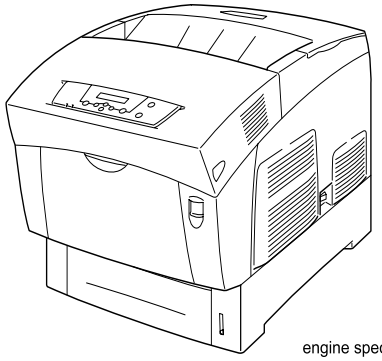
Power consumption in each operation mode at rated voltage input

Operation mode	Condition	Input voltage		
		100VAC	115VAC	240VAC
Printing mode (Running mode)	Max. power consumption condition	900W or less	900W or less	900W or less
READY mode (Ready mode)	Fuser ON	180W or less	180W or less	180W or less
	Fuser OFF	45W or less	45W or less	45W or less

3. Mechanical Properties

3.1 Dimensions/Mass of Printer

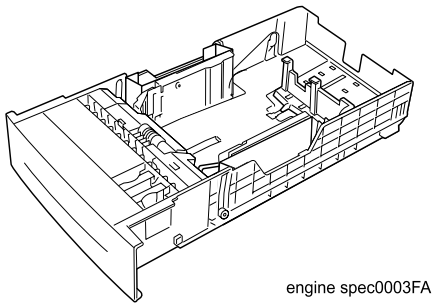
Width: 439mm ± 1%
Depth: 590mm ± 1% (with no cassette installed), 638mm ± 1% (with cassette installed)
Height: 445mm ± 1%
Mass
(No cassette installed + (No CRU): 27 kg ± 1%
(No cassette installed + (CRU): 34 kg ± 1%
(Cassette installed + (No CRU): 29.5 kg ± 1%
(Cassette installed + CRU): 36.5kg ± 1%



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: 2.6kg ± 1%



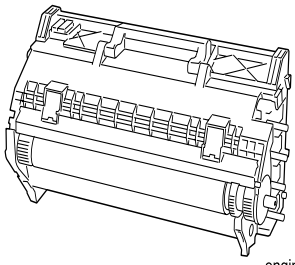
engine spec0003FA

3.3 Dimensions/Mass of Consumables (CRU)

3.3.1 Print head (PHD) cartridge

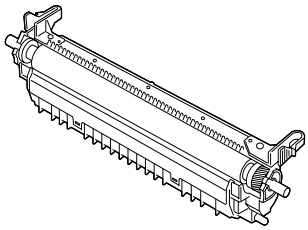
Width: 339mm ± 3mm
Depth: 146mm ± 3mm
Height: 179mm ± 3mm
Mass: 4.6kg ± 0.1kg

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


engine spec0004FA

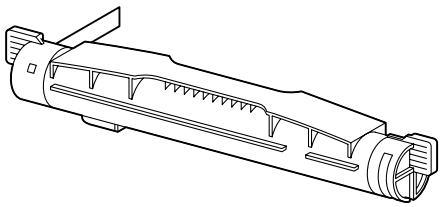
3.3.2 Transfer roll (BTR) cartridge

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


engine spec0005FA

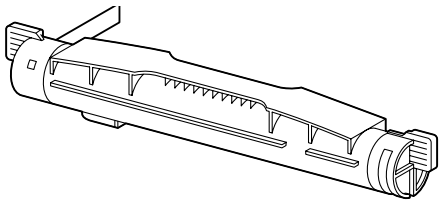
3.3.3 Black toner cartridge

Width: 355mm ± 3mm
Depth: 51mm ± 3mm
Height: 55mm ± 3mm
Mass: 340g ± 10g


engine spec0006FB

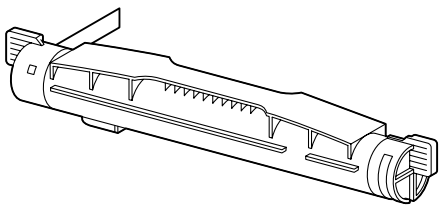
3.3.4 Yellow toner cartridge

Width: 355mm ± 3mm
Depth: 51mm ± 3mm
Height: 55mm ± 3mm
Mass: 285g ± 10g


engine spec0006FB

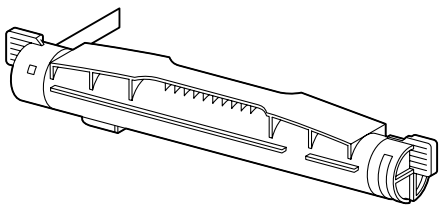
3.3.5 Magenta toner cartridge

Width: 355mm ± 3mm
Depth: 51mm ± 3mm
Height: 55mm ± 3mm
Mass: 285g ± 10g


engine spec0006FB

3.3.6 Cyan toner cartridge

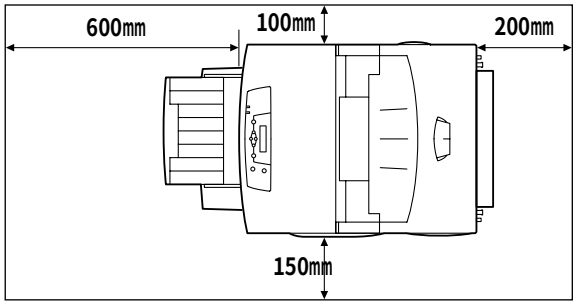
Width: 355mm ± 3mm
Depth: 51mm ± 3mm
Height: 55mm ± 3mm
Mass: 285g ± 10g


engine spec0006FB

3.4 Installation Space (min. installation space)

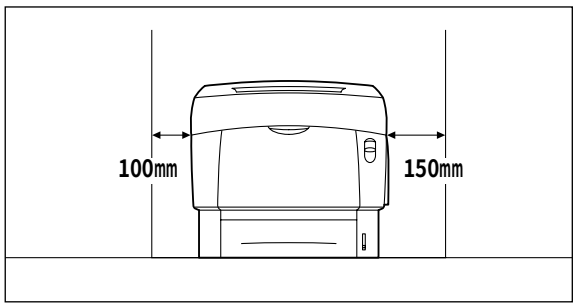
Minimum space as shown below is required to install the printer when it is used for normal objects. (Space occupied by the operator is not included.)

Top view



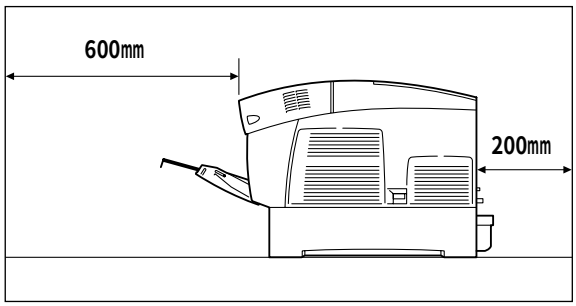
engine spec0007FB

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 mode)
- ◆ Sub scanning direction: 600 dots/25.4mm (fixed)
  1200 dots/25.4mm (fixed) (half speed mode)

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: Can be changed ready temperature status from the controller.

*2: Can be changed operation status from the controller.

*3: Fan status is changed depending on the state (temperature, etc.) of the fixing system.

4.7 Speed Mode

Speed mode of the printer san be switched over between full-speed mode (printing at the highest processing speed of the printer) and half-speed mode (printing at the half-speed processing mode). The controller cannot instruct to change the speed mode.

4.8 Print Mode

Standard mode, fine mode and high gross mode are available for the printer. Mode is switched by the instruction from the controller. The high gross mode can be selected only for the plain paper, 600psi.

4.9 Paper Mode

11 paper modes are available for this printer. Modes are switched over under the instruction from the controller.

Classification of paper mode

(1) Plain paper L mode
(2) Plain paper H mode
(3) Woodfree paper L mode
(4) Woodfree paper H mode
(5) Thick paper L mode
(6) Thick paper H mode
(7) Label L mode
(8) Label H mode
(9) OHP mode
(10) Envelope mode
(11) Postcard mode

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

Paper mode		**Resolution/Speed mode**			
		600dpi		**1200dpi**	
	Print mode	**Simplex**	**Duplex**	**Simplex**	**Duplex**
Plain paper (1) to (4)	Standard	Full speed	Full speed	–	–
	Fine	–	–	Half speed	Half speed
	High Gloss	Half speed	Half speed	–	–
Special paper (5) to (11)	Standard	Half speed	–	–	–
	Fine	–	–	Half speed	–

4.10 Warm-up Time

When nominal voltage (100V, 115V, 220V) is applied, ready temperature (Feser 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.
- Theoretical value with the ROS motor ON, Fuser Stand-by.
- A4 SEF paper
- When process control is acting, excluding *2 in the event of *1/Fuser Cool Down.
- Plain paper mode
- Paper sent from the 1st tray and MGI.

1: Process control means TC control, potential control, cleaning cycle, REGI control and that the engine stops paper feeding for a certain time during the continuous printing operation.

2: The print may not start for a certain time after receiving the start command due to prior job running conditions.

Speed mode	FPOT(sec)	
	In Simplex mode FPOT t_S(sec)	In Duplex mode FPOT t_d(sec)
Full speed	≤ 9.5	≤ 18.0
Half speed	≤ 19.0	≤ 34.0

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*1 and during the Fuse Cool Down* 2 are not contained.

NOTE

This function specifies the IOT performance when the controller did not have the × 2 feeders satisfy the following performance.

1: Process control means TC control, potential control, cleaning cycle, REGI control and that the engine stops paper feeding for a certain time during the continuous printing operation.

2: The print may not start for a certain time after receiving the start command due to prior job running conditions.

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.

Paper mode	Continuous printing speed					
	Standard mode (600dpi)		Fine mode (1200dpi)		High gross mode (600dpi)	
	Simplex (ppm)	Duplex (ipm)	Simplex (ppm)	Duplex (ipm)	Simplex (ppm)	Duplex (ipm)
Plain paper/Woodfree paper mode (A4/LET SEF)	16	10	8	5	8	5
Thick aper/Label mode (A4/LET SEF)	8	–	8	–	–	–
OHP mode	8	–	8	–	–	–
Envelop/Postcard mode	8	–	8	–	–	–

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

Maximum area where image can be printed is as follows:

Width: 210.9mm (8.3 inch) × length: 351.6mm (13.8 inch)

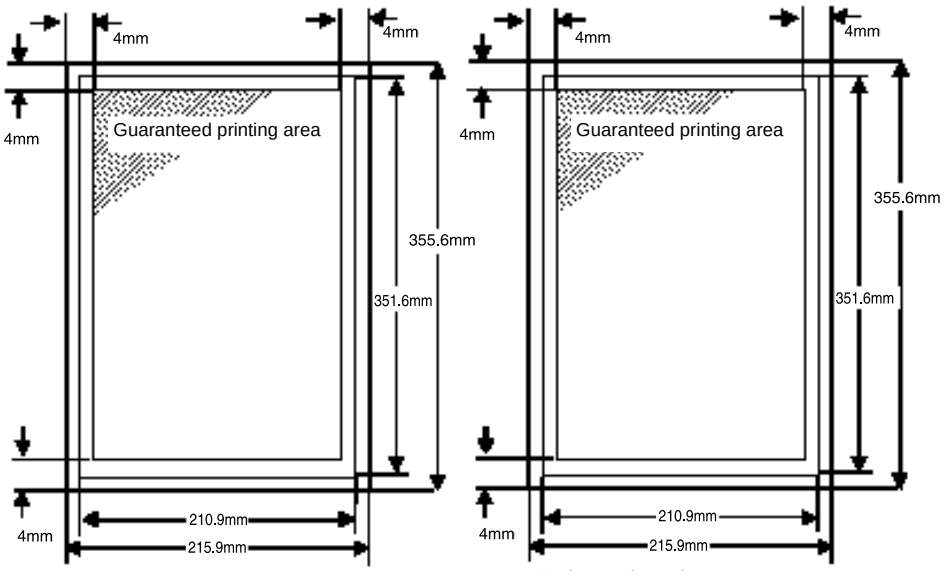
4.13.3 Guaranteed printing area

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
A paper feed system normally used by this printer.

◆ 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

◆ Duplex paper feeder unit

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

4.16 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" or "16 - 28 lb"

◆ Paper feed from MSI

"60 to 216 gsm" or "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	
	JPN/Europe	U.S.
500 Sheet Paper Universal Tray	A4 -SEF B5 -SEF EXECUTIVE -SEF LETTER -SEF LEGAL(13")-SEF LEGAL(14")-SEF	A4 -SEF B5 -SEF EXECUTIVE -SEF LETTER -SEF LEGAL(13")-SEF LEGAL(14")-SEF
MSI Tray	A4 -SEF B5 -SEF A5 -SEF EXECUTIVE -SEF LETTER -SEF LEGAL(13")-SEF LEGAL(14")-SEF Postcard -SEF Envelope-SEF Free size	A4 -SEF B5 -SEF A5 -SEF EXECUTIVE -SEF LETTER -SEF LEGAL(13")-SEF LEGAL(14")-SEF Postcard -SEF Envelope-SEF Free size

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 20,000 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: Equivalent to about 100.000 prints
◆ RETARD ROLL: Equivalent to about 100,000 prints

6. Operating Environment

6.1 Installation Temperature / Humidity

Operated at: 5 to 32°C / 15 to 85% RH

6.2 Installation Altitude

0 to 3,100m

6.3 Installation Horizontality

Before and after the installation surface: within 5mm in 646mm
Right and left of installation surface: within 10mm in 560mm

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
VCCI Class B

◆ 100V / 120V system
FCC Part 15, Subpart B, Class B (ANSI C63.4)

◆ 220V / 240V system
EN55022 (CISPR Publication 22), Class B

7.4 Noise

◆ READY mode:..... 35.0dB(A) or less
◆ PRINTING mode (full-speed):.... 54.0dB(A) or less
◆ PRINTING mode (half-speed):... 55.0dB(A) or less

8. Print image Quality

Note 1: Refer to Performance specifications for details.

8.1 Image Quality Guarantee Conditions

The image quality is specified and guaranteed under the following conditions.

8.1.1 Environmental conditions

Temperature: 10 to 32°C

Humidity: 15 to 85%RH (85%RH is at 28°C. No condensation allowed)

8.1.2 Guaranteed paper

The print image quality specified here is guaranteed with standard paper fed from the paper tray.

Reference: Evaluation is made with A4 or Letter size paper shown below.

- ***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.

◆ OPTION FEEDER

Two layers of UNIVERSAL TRAY can be added under the printer. This is a paper -pickup unit to pick up paper from each tray.

◆ Earthquake kit (EARTHQUAKE KIT)

Kit of fixing parts fix the printer as anti-earthquake provision.