



LaserWriter 10/600 A3+

This printer is an Asia-only product.

Table of Contents

Section 1 Introduction

Section 2 Specifications

Section 3 Parts Lists

Section 4 Removal and Replacement Procedures (RRP)

Section 5 Principle of Operation

Section 6 General Procedures and Information

Section 7 Fault Isolation Procedures

Section 8 Installation and Removal

Section 1 Introduction

Section Contents

1. About This Manual

1.1 How This Manual Is Organized	1-1
1.2 Revision	1-2
1.3 Notational Conventions	1-2
1.4 OEM-Specific Specifications.	1-2
1.5 Abbreviations.	1-3

2. Associated Documents 1-3

3. Safety Information

3.1 Safety Components.	1-4
3.2 Laser Beam.	1-4
3.3 Power.	1-5
3.4 Driving Sections	1-5
3.5 High Temperature Sections	1-6
3.6 Warning / Caution Labels	1-6
3.6.1 Laser Warning Label	1-6
3.6.2 High Temperature Caution Label.	1-7
3.6.3 High Voltage Caution Label	1-7

1. ABOUT THIS MANUAL

This document serves as a standard service manual of Fuji Xerox Co., Ltd, which contains the knowledge and information for the maintenance of this printer.

This document was prepared for OEM customers of Fuji Xerox either as a service manual or as material for preparing their own service manuals of this printer. Other uses of this document are prohibited.

No portion of this document may be reproduced or used for other purposes without prior consent of Fuji Xerox.

1.1 How This Manual Is Organized

This manual has eight sections. The contents of the sections are briefly explained below;

Section 1 Introduction describes general information on this manual such as the organization of this manual, related documents, and safety information.

Section 2 Specifications describes the specifications of this printer, consumable, periodic replacement parts, and the optional devices.

Section 3 Parts List shows the exploded drawings of the printer with lists of the part names.

Section 4 Removal and Replacement Procedures (RRP) explains the procedures for the removal and replacement of parts.

Section 5 Principles of Operation describes the basic information of this printer such as print process and the functions of the major components of the printer.

Section 6 General Procedures and Information describes the functions for giving assistance in locating the cause of trouble and the operations for using them, and also provides useful information for troubleshooting such as the location of the connector (plug/jack) and electrical wiring.

Section 7 Fault Isolation Procedures explains the procedures for analysis of trouble to resolve it and the maintenance information.

Section 8 Installation and Removal explains the installation and removal of the printer.

1.2 Revision

The revision of this manual is made in the following manner, and the revised manual is sent when revisions are made.

(Method of Revision)

- s When the entire manual is subject to be revised, the issue number printed on the cover is increased as Issue 1, Issue 2, Issue 3 and so on.
- s Partial revision is made by pages.
- s Revised new pages replace old pages or are added to the manual. The modified, added or deleted parts on the revised pages are clearly indicated with a black bar called "change bar".
 - | :This mark is put at the left of the modified, added or deleted parts in the text.
- s When a previously revised page is revised again, the change bars of the previous revision are deleted, and the parts altered by the latest revision are indicated with new change bars.

1.3 Notational Conventions

The following terms are used to indicate the notes during maintenance or added information for the text.

Warning : Indicates an operating or maintenance procedure, if not strictly observed, it could result in injury or loss of life.

Caution : Appears before a procedure or work which, if not observed, could result in personal injury or destruction of equipment.

Note : Emphasizes specific procedure, work, rule, and so on.

Memo : Contains additional information set off from the text.

1.4 OEM-Specific Specification

The OEM customer specific specifications are described on separate pages added after the this manual.

1.5 Abbreviations

This manual contains general and other abbreviations specific for this manual as follows;

ASSY = Assembly	AUX = Auxiliary
BCR = Bias Charge Roll	BTR = Bias Transfer Roll
CM Blade = Charging & Metering Blade	CR = Charge Roll
CRU = Customer Replaceable Unit	CST = Cassette
DB = Development Bias	dpi = Dots per inch
DTS = Detack Saw	ELEC. = Electric
EP = Electrophotography	ESS = Electronic Subsystem
H/R = Heat Roll	HVPS = High Voltage Power Supply
I/F = Interface	LD = Laser Diode
LVPS = Low Voltage Power Supply	MCU = Machine Control Unit
MSI = Multi Sheet Inserter	N/F = Normal Force
N/P = No Paper	OPC = Organic Photo Conductor
P/H = Paper Handling	P/R = Pressure Roll
PPM = Prints Per Minute	PWB = Printed Wiring Board
REGI. = Registration	ROS = Raster Output Scanner
SOS = Start Of Scan	TEMP. = Temperature
TR = Transfer Roll	TRANS. = Transport

2. Associated Documents

There are documents associated with this manual as follows;

s **Operator Manual (Standard Manual)**

Describes the operation and handling of this printer.

s **Performance Specifications**

Contains the detailed specifications of this printer.

(If some contents of this manual do not agree with the Performance Specifications, follow the Performance Specifications.)

s **Video Interface Specifications**

Describes the video interface specifications of this printer.

s **Spare Parts List**

Provides the information on the spare parts of this printer.

3. Safety Information

To prevent an accident while working on the printer, strictly observe **warnings** and *cautions* described in this manual.

Never conduct dangerous operations or operations not in this manual.

There may be several dangerous things other than those described below, always work with extreme caution for safety reasons.

3.1 Safety Components

This printer has safety components to protect from accidents to occur (fuse, thermostat, interlock switches and so on) and safety component for user operation (cover, panel and so on). They must be kept in their operational state.

Never modify the printer (especially of the safety components).

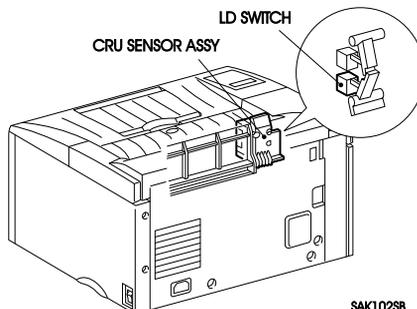
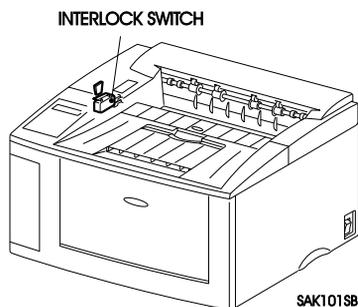
3.2 Laser Beam

To avoid exposure to the laser beam, this printer is equipped with the two safety switches; Interlock Switch and CRU Switch in the CRU Sensor Assembly. The Interlock Switch turns OFF when opening covers and stops supply of the power. The CRU Switch cuts the circuit when the EP Cartridge is removed and stops power supply to the circuit of the output of the laser beam.

- Caution :*
1. Direct eye exposure to the laser beam may cause eye injury or blindness.
 2. Never open the covers in which a warning label on the laser beam is sealed.
 3. Switch OFF the printer power when you perform removal and reinstallation of the printer.
 4. Be sure to follow the procedure described in this manual when you work on the printer during its operation.
 5. Remove the EP Cartridge before you press the Interlock Switch by hand or tools during maintenance operation. (Do not turn on the Interlock Switch and CRU Switch at the same time.)
 6. Recognize the character of the laser beam and the dangers that are involved that can inflict harm to the human body, and take precaution when handling the laser beam in order to avoid injury to you and those around you.

Note : The laser beam is characterized by a very small range of wave lengths and the similar phase of waves, in contrast with other light (the light of the sun and that of an electric lamp, for example). Therefore, the laser beam is monochromatic and has a high focusability, and can reach long distance in a thin beam. The thin laser beam has a very high energy density and high temperature and can inflict injury to the human body.

Memo : The laser beam used for this printer is invisible and you cannot see it.



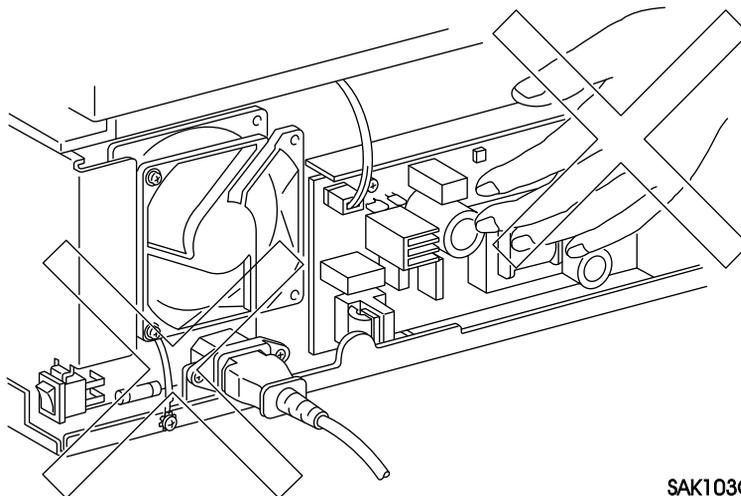
3.3 Power

When working on the printer, be sure to switch off the printer power and unplug the power cord to avoid electric shock, burn or injury.

When it is necessary to work with the power on such as when measuring the voltage, conduct the work with great care to avoid an electric shock and follow the procedures described in this manual.

Warning : Do not touch live parts other than those necessary to do so when working on the printer when power on.

The power switch/inlet section (LVPS Assembly) is supplied with power even if the power is switched OFF, therefore never touch the live parts.

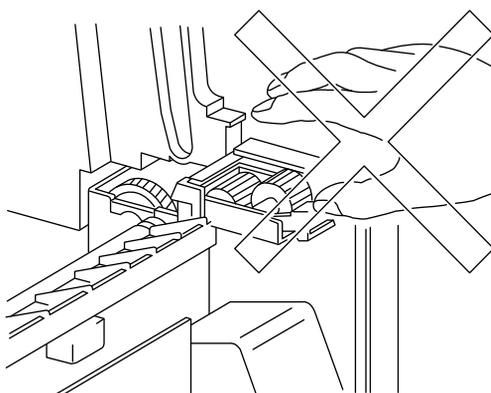


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3.4 Driving Sections

When working on the driving sections such as gears, to avoid injury, make sure to switch the power OFF, disconnect the power cord, and rotate gears by hand (hand crank).

Warning : Never touch the gears while the printer is in operation.

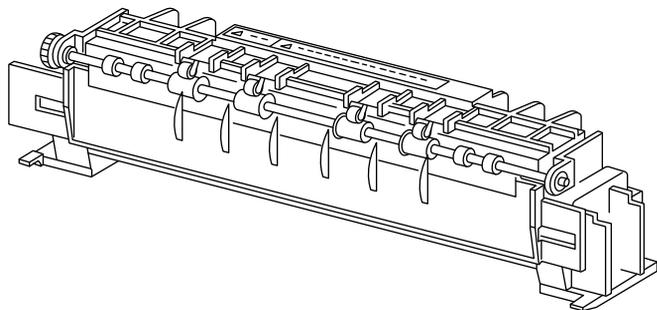


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3.5 High Temperature Sections

When working on the high temperature sections such as fuser component, to avoid burn or injury, make sure to switch the power OFF, disconnect the power cord, and begin to work after the temperature of the component has gone down significantly.

Caution : The temperature is high just after the printer operates, therefore begin to work after letting the component cool down.



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3.6 Warning / Caution Labels

Warning and caution labels are sealed on dangerous parts in the printer to warn and prevent accident.

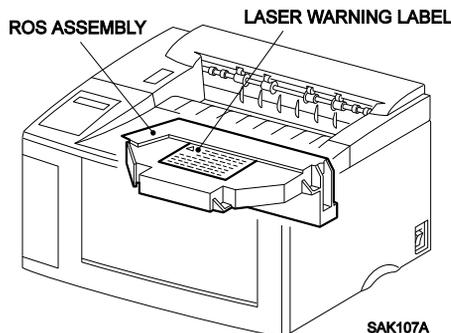
Check whether these labels are firmly sealed in place and are not soiled when performing maintenance or repair.

3.6.1 Laser Warning Label

To avoid direct exposure of the laser beam to the engineer, a laser warning label is sealed on top of the laser output unit (ROS Assembly).

<p>CLASS 3B 780nm 5mW</p>	<p>危険 開いたメインクローックを無検知する不正確なレーザー放射を受けます。無検知中に顔や手にレーザー光が当たると、目や皮膚が、さらけられること。</p>
	<p>DANGER INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.</p>
	<p>CAUTION INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.</p>
	<p>PRECAUCIÓN RADIACIÓN LASÉRICA INVISIBLE CUANDO SE ABRE Y ANULE EL INTERBLOQUEO. EVITE LA EXPOSICIÓN DIRECTA AL HAZ.</p>
	<p>VARNING OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRRAR ÄR URKOPPLADE. STRÅLEN ÄR FARLIG.</p>
<p>ADVARSEL USYNLIG LASERSTRÅLING NÄR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.</p>	
<p>ADVARSEL USYNLIG LASERSTRÅLING VED ÅBNING. NÅR SIKKERHEDSAFBRYDRE ER UDE AF FUNKTION. UNNGÅ UDSÆTTELSE FOR STRÅLING.</p>	
<p>VARO! NÄRKYÄTÖN AVATTAESSA JA SUOJALUKUTUS OHTETTAESSA OLET ALTTIINA LASERSÄTEILYLLÄ ÄLÄ KATSO SÄTEESEEN.</p>	
<p>VORSICHT! UNSICHTBARE LASERSTRÄHLUNG, WENN ABDECKUNG GEÖFFNET UND SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT. NICHT IN DER STRAHL BLICKEN.</p>	
<p>ATTENTION EMISSION DE RADIATION LASER INVISIBLE QUAND L'APPAREIL EST OUVERT ET LORSQUE LA SECURITE EST NEUTRALISEE. EVITER DE S'EXPOSER AU RAYON LASER.</p>	

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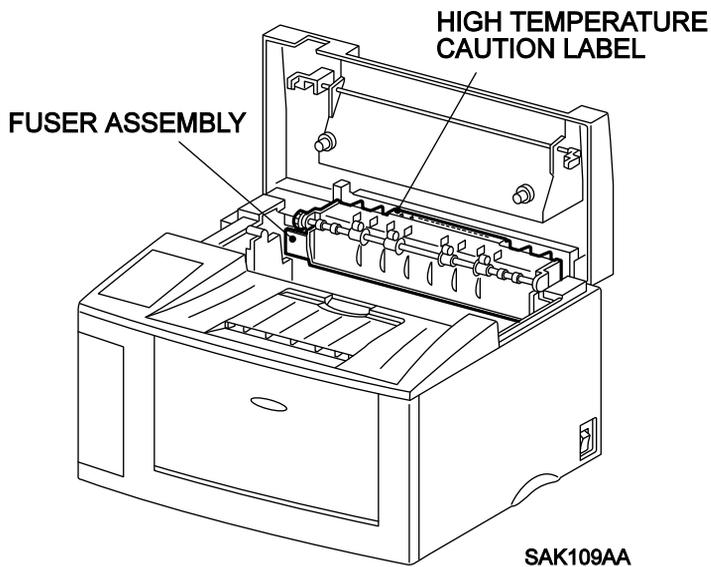


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3.6.2 High Temperature Caution Label

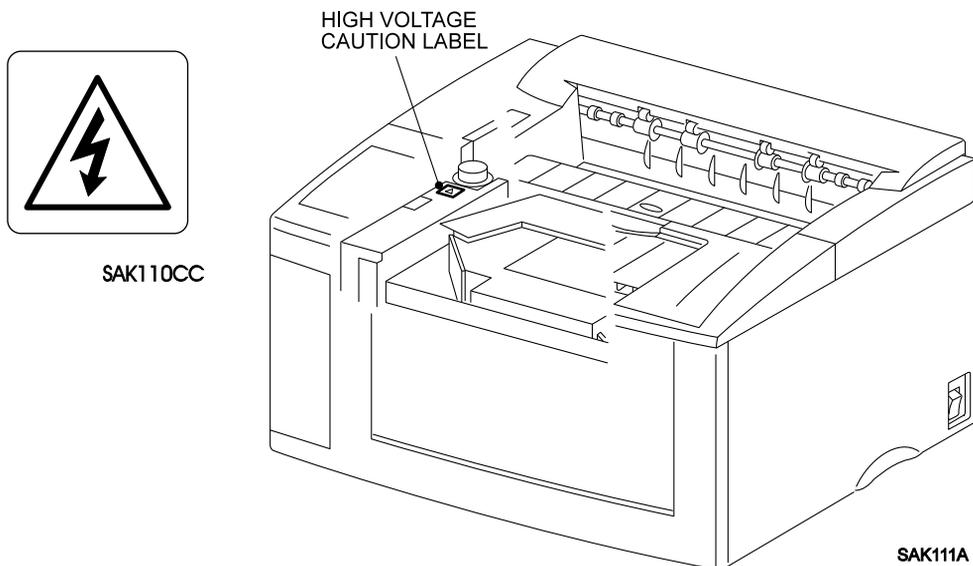
To avoid burn of customers, caution labels are sealed on top of the fuser unit (Fuser Assembly).

ATTENTION ! TEMPERATURE ELEVEE ADVERTENCIA ! TEMPERATURA EI



3.6.3 High Voltage Caution Label

To reduce the risk of electric shocks to the engineer, caution labels are sealed on top of the frame (Main Frame Assembly) which is on top of the high voltage power supply (HVPS)



Section Contents

1. Specifications

1.1 Configuration . . . . .	.2-1
1.1.1 Basic Configuration . . . . .	.2-1
1.1.2 Functional Configuration . . . . .	.2-1
1.2 Functional Specifications . . . . .	.2-2
1.2.1 Method of Printing . . . . .	.2-2
1.2.2 Method of Exposing . . . . .	.2-2
1.2.3 Method of Fusing . . . . .	.2-2
1.2.4 Continuous Printing Speed . . . . .	.2-2
1.2.5 Resolution. . . . .	.2-2
1.2.6 Warm-up Time . . . . .	.2-3
1.2.7 Maximum Paper Size . . . . .	.2-3
1.2.8 Maximum Printing Area . . . . .	.2-3
1.2.9 Maximum Paper held in Output Tray. . . . .	.2-3
1.2.10 Means for Feeding Paper . . . . .	.2-3
1.2.11 Maximum Sheets of Feeding Paper . . . . .	.2-3
1.2.12 Paper Weight Limitations . . . . .	.2-4
1.2.13 Types of Paper . . . . .	.2-4
1.2.14 Standard Paper . . . . .	.2-4
1.2.15 Paper Size . . . . .	.2-4
1.3 Electric Specifications . . . . .	.2-6
1.3.1 Power Source . . . . .	.2-6
1.3.2 Power Consumption . . . . .	.2-6
1.4 Mechanical Specifications . . . . .	.2-6
1.4.1 Dimensions and Weight. . . . .	.2-6
1.4.2 Space Requirements (Minimum Installation Space) . . . . .	.2-6
1.5 Operating Environment. . . . .	.2-7
1.5.1 Temperature & Humidity . . . . .	.2-7
1.5.2 Altitude . . . . .	.2-7
1.5.3 Horizontal Bias . . . . .	.2-7
1.5.4 Noise(when the front tray is closed) . . . . .	.2-7
1.6 Printing Accuracy. . . . .	.2-7

Section 2 Specifications

2. Consumable	2-8
3. Parts which require Periodical Replacement	2-8

1. Specifications

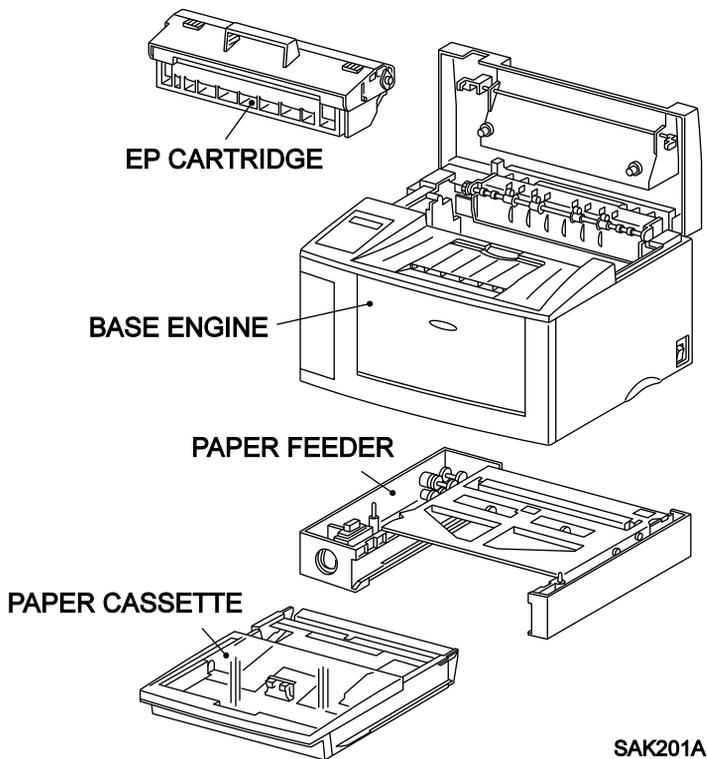
1.1 Configuration

1.1.1 Basic Configuration

The LaserWriter 10/600 A3+ laser printer has two types of configurations;

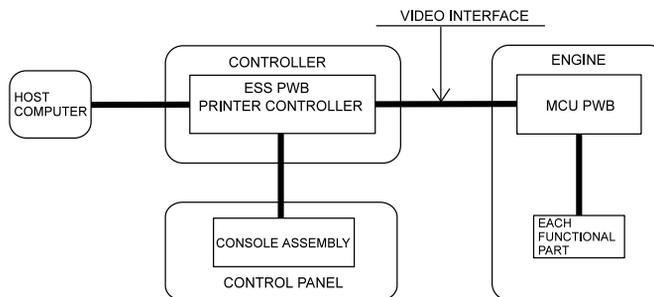
- Basic configuration 1 = Base engine + EP cartridge
- Basic configuration 2 = Base engine + EP cartridge + Paper feeder + Paper cassette

Note: The basic configuration 2 includes options.



1.1.2 Functional Configuration

Functional configuration of this printer consists of the engine, controller, and control panel.



1.2 Functional Specifications

1.2.1 Method of Printing

Electrophotographic printing

1.2.2 Method of Exposing

Scanning done by light beam of a semiconductor laser

1.2.3 Method of Fusing

Fusing by heat and pressure

1.2.4 Continuous Printing Speed

The speed of printing varies depending on the size of paper.

- LETTER(LEF), A4(LEF), EXECUTIVE(LEF), B5(LEF), A5(LEF), STATEMENT(LEF), Postcard(SEF), MONARCH(SEF) 10.3PPM
- A4(SEF), LETTER(SEF), B5(SEF), C5(SEF), COM-10(SEF), DL(SEF)..... 8.1PPM
- B4(SEF), LEGAL14"(SEF), LEGAL13"(SEF) 6.8PPM
- LEDGER(SEF), A3(SEF)..... 5.9PPM

- Nonstandard size

The speed of printing determined by the specification of the nonstandard size paper is as follows :

Nonstandard size 1 : 5.2PPM

Nonstandard size 2 : 3.0PPM

Note : 1. The specification for nonstandard size is determined by the OEM contract with Fuji Xerox.

The nonstandard size 1 is standard specification, and the nonstandard size 2 is a special optional specification which is usually not available.

2. *SEF is the abbreviation for Short Edge Feed which means feeding of paper with the short edge (side) facing the front, and LEF for Long Edge Feed which means feeding of paper with the long edge (side) facing the front.*

When neither SEF nor LEF is indicated, the orientation of paper is SEF.

Memo : PPM stands for Prints Per Minute, that is, the number of paper sheets the printer can print per minute.

1.2.5 Resolution

- 600 dpi (23.62 dot/mm)

Memo : "dpi" is the abbreviation of dots per inch, that is, the number of dots per inch.

1.2.6 Warm-up Time

The warm-up time consists of the time from when the printer power is turned on to when the printer is ready to print.

Within 65 seconds when the nominal voltage is applied.

Memo : The Main Motor will start to rotate when the warm-up begins and will stop when the warm-up is completed.

1.2.7 Maximum Paper Size

- For standard paper, maximum printable paper size is either LEDGER or A3.
- For nonstandard size paper, maximum printable paper size is selected by the specification as follows (provided that only printing operation is possible);

Nonstandard size 1 : Max. 297.0mm x 508.0 mm

Nonstandard size 2 : Max 297.0mm x 900.00mm

Note : The specification for nonstandard size is determined by the OEM contract with Fuji Xerox. The nonstandard size 1 is standard specification, and the nonstandard size 2 is special optional specification which is usually not available.

1.2.8 Maximum Printing Area

4.0 millimeters in from all four sides of the standard paper.

1.2.9 Maximum Paper held in Output Tray

250 sheets of A4 Fuji Xerox standard paper type L at the ambient temperature of 22 °C and humidity of 55%RH.

1.2.10 Means for Feeding Paper

This printer has two types of paper feeds :

- Front tray feeding
Multi-sheet manual feeding from the front tray at the front of the printer.
- Cassette feed (optional)
Feeding from paper cassette installed on the paper feeder.

Note : Maximum of two cassettes can be installed on the paper feeder. Feeding is available with maximum of three cassettes or trays.

1.2.11 Maximum Sheets of Feeding Paper

- Front tray feeding
Standard paper = 150 sheets, Postcard=75 sheets, Specified envelope=20 sheets
Specified label = 75 sheets, Specified OHP film(transparencies)=75 sheets
- Cassette feeding

- Universal Cassette
Standard paper = 250 sheets, Specified label = 20 sheets,
Specified OHP film (transparencies)=20 sheets

1.2.12 Paper Weight Limitations

- Front tray feeding
Normal paper 60~135g/m²
Postcards 190g/m²
- Cassette feeding
Normal paper 60~90g/m²

1.2.13 Types of Paper

Standard paper (cut sheets), postcards, specified envelopes, specified labels and specified OHP films (transparencies)

1.2.14 Standard Paper

Fuji Xerox L paper (size A4 and A3), XEROX 4024DP (Letter)

1.2.15 Paper Size

Available paper size is selected by the specification of standard paper and the nonstandard paper.

Specifications for standard size :

For front tray feeding, all specified paper sizes are available. Cassette feed can be used for up to eight types of paper.

- Front tray feeding (19 types of standard size + nonstandard size)
 - LEDGER(SEF), A3(SEF), B4(SEF), LEGAL14"(SEF), LEGAL13"(SEF), A4(SEF), LETTER(SEF), LETTER(LEF), A4(LEF), B5(SEF), EXECUTIVE(LEF), B5(LEF), A5(LEF), STATEMENT(LEF)
 - Postcard (SEF), C5(SEF), COM-10(SEF), DL(SEF), MONARCH(SEF)
 - Nonstandard size (See the "Specification for nonstandard size")
- Cassette feeding
 - Universal Cassette (8 types)
 - A3(SEF), B4(SEF), LEGAL14"(SEF), A4(SEF), LETTER(LEF), A4(LEF), B5(LEF), A5(LEF)

Memo : The dimensions for each paper type are shown below ; (unit : mm)

Standard paper : LEDGER [279.4 x 431.8], A3[297.0 x 420.0],
B4 [257.0 x 364.0], LEGAL14"[215.9 x 355.6],
LEGAL13"[215.9 x 330.2]
A4[210.0 x 297.0], LETTER[215.9 x 279.4]
EXECUTIVE [184.2 x 266.7], B5 [182.0 x 257.0]
A5[149.0 x 210.0], STATEMENT[139.7 x 215.9]

Postcard : Postal card [100.0 x 148.0]

Specifications for nonstandard size :

There are two specifications according to the combination of the nonstandard size 1 and 2, that is, "only nonstandard size 1" and "nonstandard size 1 and 2". The paper size for nonstandard is determined by the specifications.

- Nonstandard size 1 : Laser beam scanning direction : 86mm~305mm,
Paper feed direction : 90mm~508mm
- Nonstandard size 2 : Laser beam scanning direction : 86mm~305mm,
Paper feed direction : 90mm~900mm

Note : 1. The specification for nonstandard size is determined by the OEM contract with Fuji Xerox. The nonstandard size 1 is standard specification, and the nonstandard size 2 is a special optional specification which is usually not available.

2. This printer can print on nonstandard size paper, while the print quality and the reliability of feeding are out of the scope of the specification.

1.3 Electric Specifications

1.3.1 Power Source

Power supply specifications are listed below:

- 220V mode
Voltage : 220/240VAC (198~264VAC), Frequency : 50/60 Hz (47~63Hz)

1.3.2 Power Consumption

The maximum power consumption of the LaserWriter 10/600 A3+ laser printer (not including the Printer Controller and associated components) during printing and during the Sleep Mode (stops the power supply to the fuser) are as follows;

- Operating voltage 100VAC : Printing 550 watts or less
Sleep mode 15watts or less
- Operating voltage 120VAC: Printing 650 watts or less
Sleep mode 5 watts or less
- Operating voltage 240VAC: Printing TBD watts or less
Sleep mode TBD watts or less

1.4 Mechanical Specifications

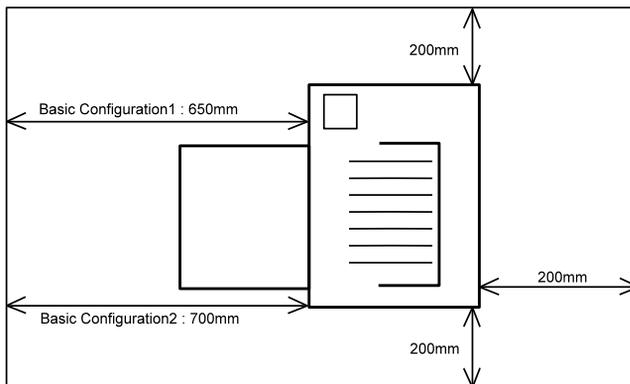
1.4.1 Dimensions and Weight

EP cartridge, Printer Controller, and their attached parts are not included.

- For Basic configuration 1(Only front tray feeding)
Width : 466 ± 5 mm,Depth : 386 ± 5 mm,Height : 257 ± 5 mm,Weight : 14 ± 1 Kg
- For Basic configuration 2 (with the 1st cassette feeding)
Width : 466 ± 5 mm,Depth : 497 ± 5 mm,Height : 324 ± 5 mm,Weight : 18.5 ± 1 Kg

1.4.2 Space Requirements (Minimum Installation Space)

400mm minimum overhead clearance



1.5 Operating Environment

1.5.1 Temperature & Humidity

5 ~ 35°C / 15 ~ 85%RH (with no dew condensation)

1.5.2 Altitude

0 ~ 2500m

1.5.3 Horizontal Bias

Less than 5°C off level

1.5.4 Noise (when the front tray is closed)

- Machine running : 49.8 dB
- Machine in standby : 32.0 dB

1.6 Printing Accuracy

Memo : For more information, read "How to read Printing Accuracy" in Section 6 of this manual.

- Lead Edge Registration : ± 2.0 mm or less
- Side Edge Registration : ± 2.5 mm or less
- Skew : ± 2.0 mm or less (at a width of 245mm)
- Vertical Accuracy : ± 1.3 mm or less (at a width of 210mm)
- Horizontal Accuracy : ± 2.0 mm or less
(at a width of 245mm and a height of height of 390mm)
- Linearity in the direction
of paper travel : ± 1.0 mm or less (at a width of 390mm)
- Magnification accuracy in
the direction of paper travel : $100 \pm 0.8\%$ or less (at a width of 390mm)

2. Consumable

Usually customers can replace consumable.

When a consumable causes a trouble, or when trouble is resolved by the replacement of a consumable, customer engineer may replace it.

- Paper
See paper specification mentioned in this section.
- EP cartridge
EP cartridge is an integrated unit which includes photoreceptor, black toner, charger, developer, and cleaner.

Note : EP cartridge has an average life of 6000 prints (A4 size (LEF) with 5% image coverage). The life varies depending on the sensitivity of the photoreceptor and the contents of the image.

3. Parts which require Periodical Replacement

To avoid trouble, the following units are recommended to be replaced when the printer reaches a specified number of prints.

- Fuser Assembly : Life=100000 prints (Standard paper of A4(LEF))
- Pick Up Roll : Life=100000 prints (Standard paper of A4(LEF))
- Retard Pad Assembly : Life=100000 prints (Standard paper of A4(LEF))

Note : The life is the number of the prints on standard paper of A4(LEF). Life may decrease by half when printing on nonstandard size paper or A3 paper.

*Memo : The following rollers and parts are considered to wear off with paper;
BTR Assembly, Trans. Chute Assembly, Feed Roll, Turn Roll Assembly*

Section 3 Parts Lists

Section Contents

1. Parts Lists

1.1 Notes on using Parts Lists	3-1
PL1 Covers	3-2
PL2 Fuser & Paper Exit	3-4
PL3 Paper Transportation	3-6
PL4 Multi Sheet Inserter	3-8
PL5 Drive & Xerographic	3-10
PL6 Electrical	3-12
PL7 250 Feeder.	3-14
PL9 250 Cassette	3-16
2. Parts Reference	3-18

1. Parts Lists

This printer is divided into 10 plates(PL) as shown below according to the specification. This section provides illustrations for assembly and corresponding part names.

- PL1 Cover
- PL2 Fuser & Paper Exit
- PL3 Paper Transportation
- PL4 Multi Sheet Inserter
- PL5 Drive & Xerographics
- PL6 Electrical
- PL7 250 Feeder
- PL9 250 Cassette

1.1 Notes on using Parts Lists

1. The numbers in illustration correspond to item numbers in the list to find the names of parts.
2. "PLX.Y" indicates that the part is shown as item Y in plate X.
3. The alphabet characters in the illustration represents types of screws or clips ,etc. as follows:
E=Ering, S=Screw ,N=Hexagonal nutt,K=KL clip.
4. The mark t represents the items of assembly parts in the illustration.
5. A circled alphabet character with a line in the illustration indicates the cut of the line at that point. It is connected to the point of the same alphabet character.
6. "With(2-5)", which is labeled on the assembly part in illustration or list, indicates it includes item 2,3,4,and 5 of the specific plate. "With(2-5),PL6.7" means it includes item 2,3,4,and 5 of the specific plate and item 7 of the plate 6.
7. Items with \$ are recommended parts(recommended spare parts)which principally can be supplied.(Other items need to be discussed to supply.)
8. Parts with * in the list have "note" or "memo" for reference described on the same page.
9. "(J1-J2,P3)" which is labeled on the harness or wire, etc., indicates one terminal of the harness or wire is the J1 of the connector and another terminal is jack 2 and plug 3 of the connector.
(For the location of connector (P/J),see"Section6.4.Connector Locations.")
10. "High Assembly" in the list indicates upper assembly parts which include the specific parts.

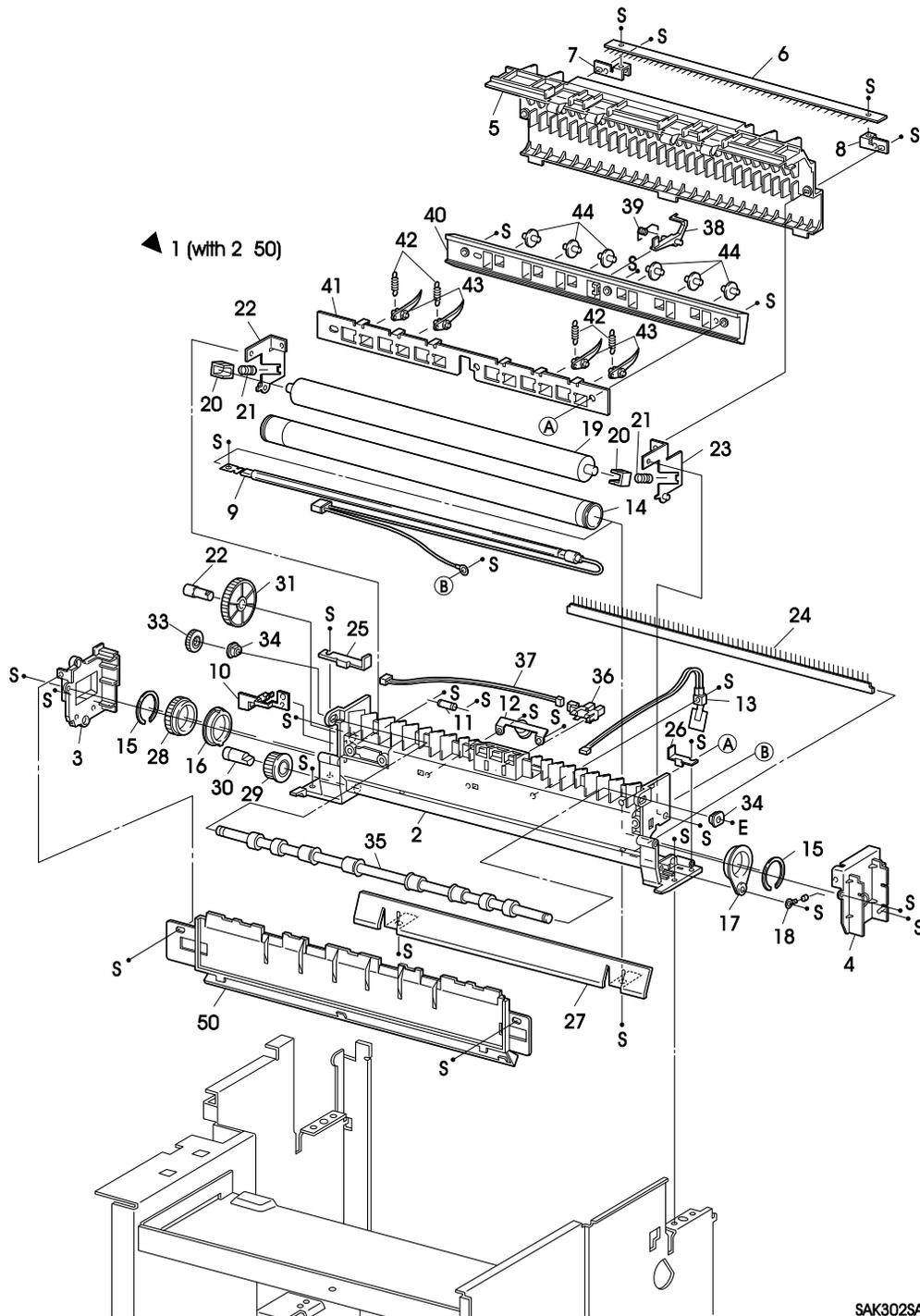
Note : 1. For information on spare parts, see "Spare parts lists" issued separately.

2. According to the specification of OEM, configuration may differ and some parts may not exist.(Especially for "PL5 Electrical", major difference may exist according to the specification.)

PL1 Covers

Item	Parts Name	High Assembly
1	REAR FRAME ASSEMBLY (with2-4)	----
2	REAR FRAME.....	PL1.1
3	PUSH LEVER.....	PL1.1
4	LEVER HOLDER.....	PL1.1
5	LEFT COVER.....	----
6	RIGHT COVER.....	----
10	POP UP ASSEMBLY (with11-17)	----
11	POP UP COVER.....	PL1.10
12	LATCH BUTTON.....	PL1.10
13	LATCH ASSEMBLY.....	PL1.10
14	LATCH SPRING.....	PL1.10
15	CRU STOPPER.....	PL1.10
16	STOPPER SPRING.....	PL1.10
17	POP UP SPRING.....	PL1.10
20	TOP COVER ASSEMBLY (with21,22)	----
21	TOP COVER.....	PL1.20
22	TOP TRAY.....	PL1.20
30	FRONT COVER ASSEMBLY (with31-33)	----
31	FRONT COVER.....	PL1.30
32	TRAY LATCH.....	PL1.30
33	GUIDE COVER.....	PL1.30
40	FRONT TRAY.....	----
\$ 50	CONSOLE ASSEMBLY.....	----

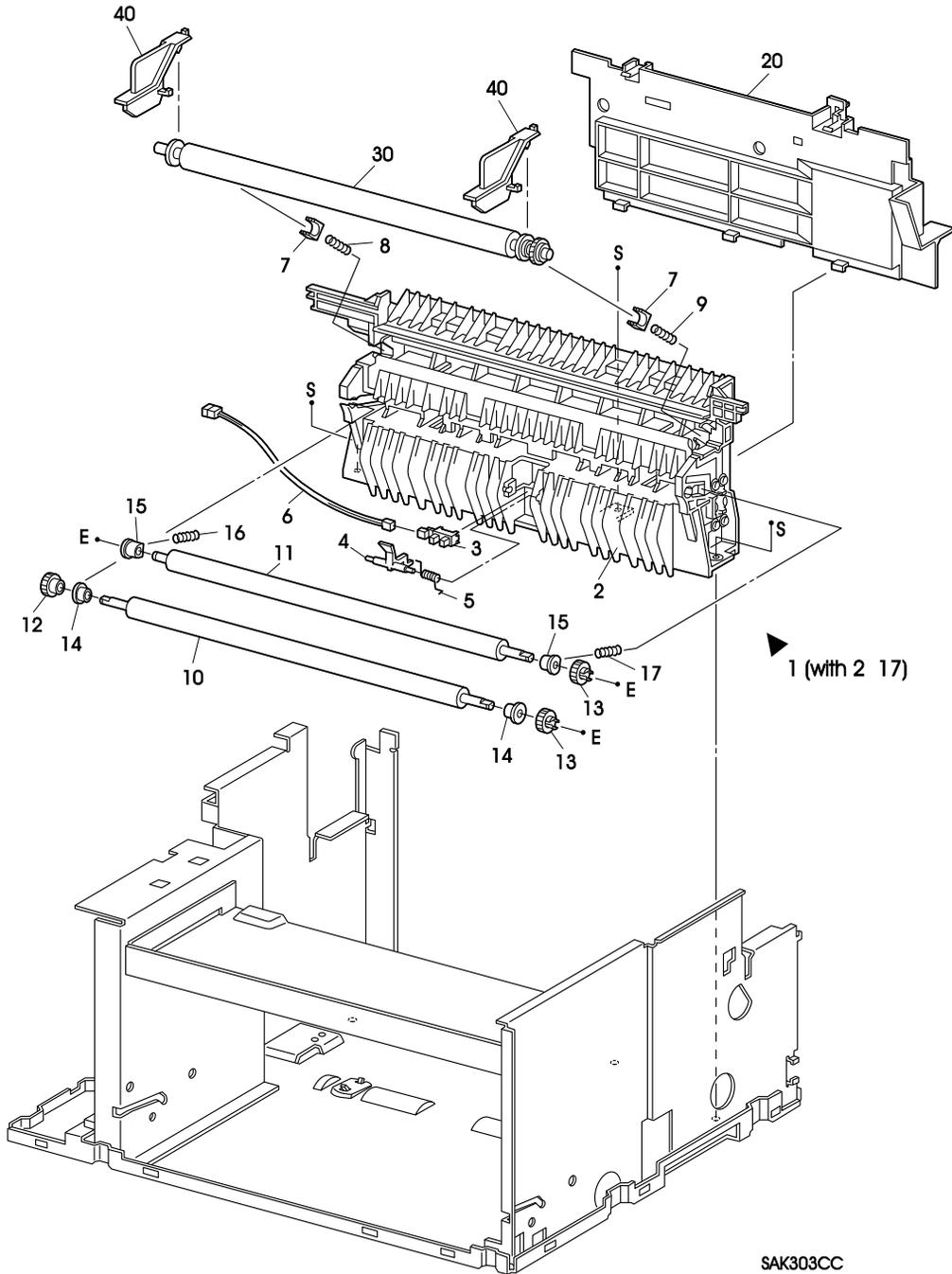
PL2 Fuser & Paper Exit



PL2 Fuser & Paper Exit

Item	Parts Name	High Assembly
1	FUSER ASSEMBLY (with2-50)*1	----
2	FUSER FRAME ASSEMBLY	PL2.1
3	FUSER COVER L.....	PL2.1
4	FUSER COVER R.....	PL2.1
5	FUSER TOP COVER ASSEMBLY	PL2.1
6	EXIT ELIMINATOR	PL2.1
7	ELIMINATOR BRACKET L	PL2.1
8	ELIMINATOR BRACKET R.....	PL2.1
9	HEATER ROD	PL2.1
10	LAMP GUIDE.....	PL2.1
11	THERMAL FUSE	PL2.1
12	THERMOSTAT	PL2.1
13	TEMPERATURE SENSOR ASSEMBLY	PL2.1
14	HEAT ROLL	PL2.1
15	H/R RING.....	PL2.1
16	H/R BEARING L	PL2.1
17	H/R BEARING R	PL2.1
18	H/R DIODE	PL2.1
19	PRESSURE ROLL.....	PL2.1
20	P/R BEARING	PL2.1
21	NIP SPRING.....	PL2.1
22	NIP LEVER L	PL2.1
23	NIP LEVER R	PL2.1
24	P/R ELIMINATOR	PL2.1
25	P/R EARTH PLATE L.....	PL2.1
26	P/R EARTH PLATE R.....	PL2.1
27	FUSER INLET CHUTE.....	PL2.1
28	H/R GEAR.....	PL2.1
29	H/R IDLER GEAR.....	PL2.1
30	H/R IDLER SHAFT	PL2.1
31	EXIT IDLER GEAR	PL2.1
32	EXIT IDLER SHAHT	PL2.1
33	EXIT GEAR	PL2.1
34	EXIT BEARING	PL2.1
35	EXIT ROLL ASSEMBLY	PL2.1
36	EXIT SENSOR.....	PL2.1
37	EXIT HARNESS (J152-J153).....	PL2.1
38	EXIT ACTUATOR	PL2.1
39	EXIT TORSION SPRING.....	PL2.1
40	EXIT CHUTE.....	PL2.1
41	FINGER BRACKET	PL2.1
42	FINGER SPRING.....	PL2.1
43	H/R FINGER	PL2.1
44	EXIT CHUTE ROLL	PL2.1
50	EXIT COVER.....	PL2.1

PL3 Paper Transportation

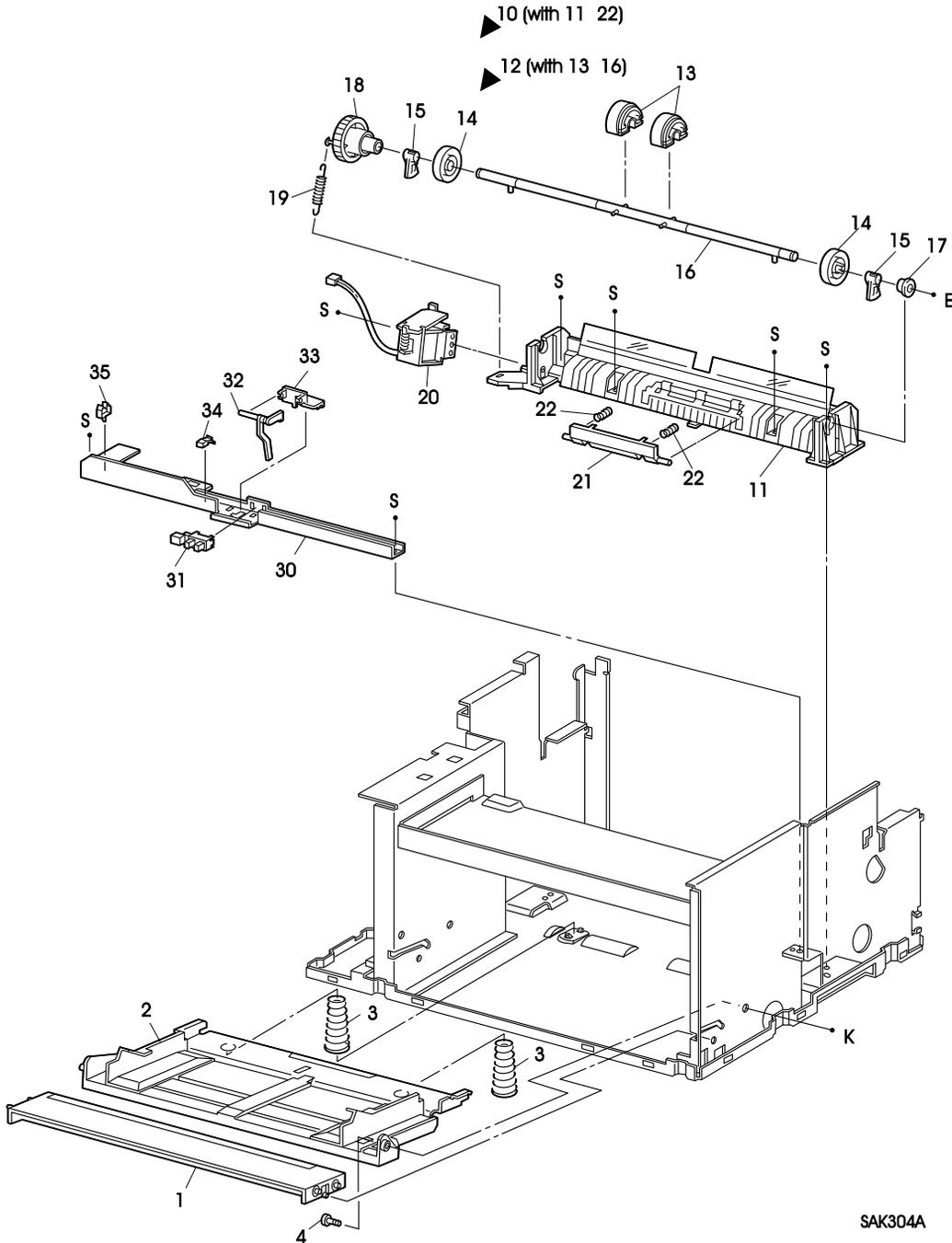


PL3 Paper Transportation

Item	Parts Name	High Assembly
\$ 1	TRANSPORT CHUTE ASSEMBLY (with2-17)	----
2	TRANSPORT SUB ASSEMBLY	PL3.1
3	REGISTRATION SENSOR	PL3.1
4	REGISTRATION ACTUATOR	PL3.1
5	REGISTRATION SPRING	PL3.1
6	REGISTRATION SENSOR HARNESS (P122-J123).....	PL3.1
7	BTR BEARING.....	PL3.1
8	BTR SPRING L.....	PL3.1
9	BTR SPRING R.....	PL3.1
10	RUBBER REGISTRATION ROLL.....	PL3.1
11	METAL REGISTRATION ROLL.....	PL3.1
12	REGISTRATION IN GEAR	PL3.1
13	REGISTRATION OUT GEAR.....	PL3.1
14	REGISTRATION FRONT BEARING	PL3.1
15	REGISTRATION BACK BEARING	PL3.1
16	REGISTRATION ROLL SPRING L.....	PL3.1
17	REGISTRATION ROLL SPRING R.....	PL3.1
20	CHUTE PLATE	----
\$ 30	BTR ASSEMBLY	----
40	BTR STOPPER *1	----

***1** : *This keeps the BTR ASSEMBLY attached with the Transport Sub Assembly during transportation. Remove it during installation.*

PL4 Multi Sheet Inserter



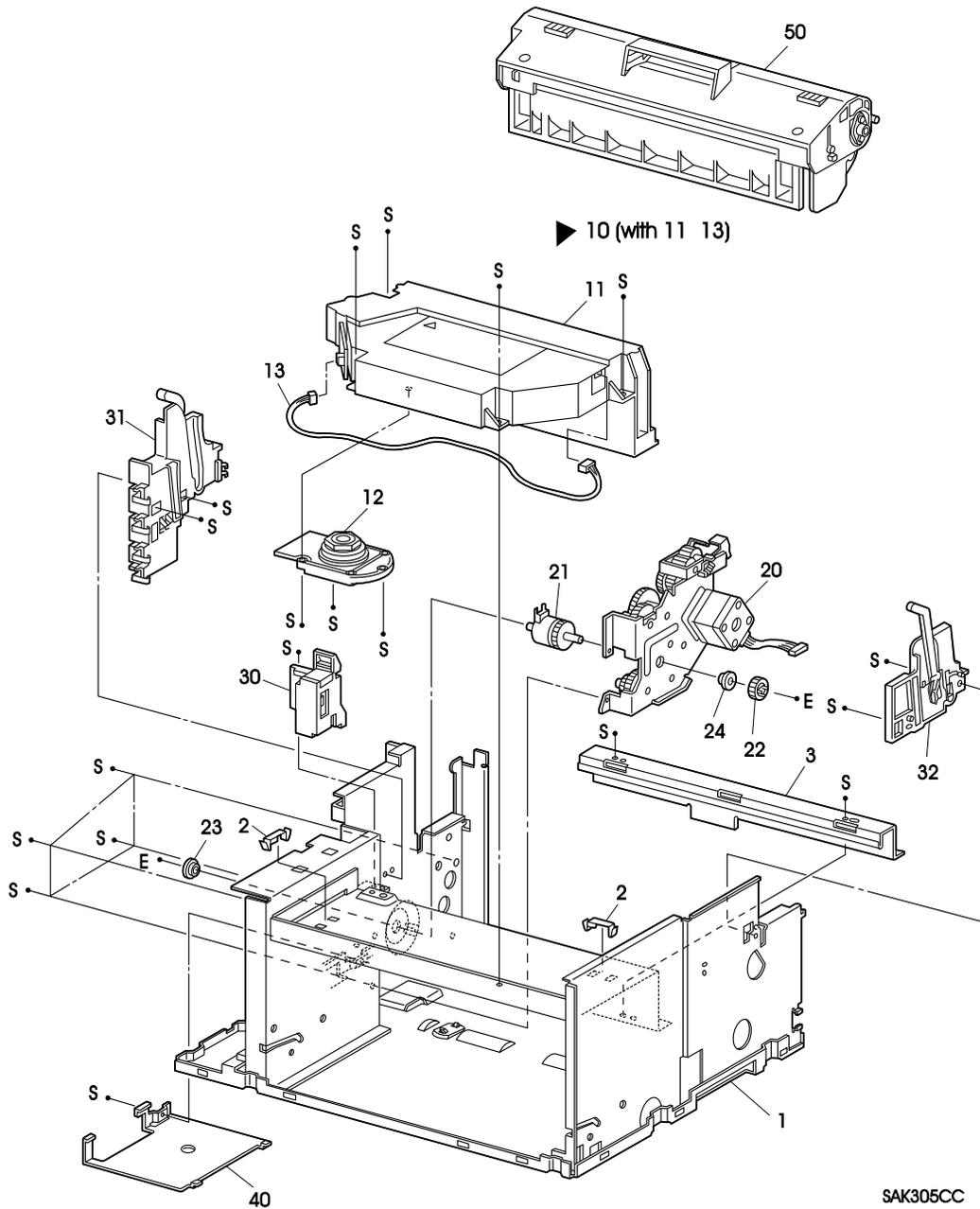
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PL4 Multi Sheet Inserter

Item	Parts Name	High Assembly
1	FRONT IN TRAY	---
2	FRONT BOTTOM TRAY	---
3	MSI N/F SPRING.....	---
4	BOTTOM TRAY STUD	---
\$ 10	MSI CHUTE ASSEMBLY (with11-22)	---
11	MSI CHUTE.....	PL4.10
12	PICK UP ROLL ASSEMBLY (with13-16)	PL4.10
\$ 13	PICK UP ROLL *1.....	PL4.12
14	CORE ROLL	PL4.12
15	PICK UP CAM.....	PL4.12
16	PICK UP SHAFT	PL4.12
17	TRANSPORT BEARING	PL4.10
18	PICK UP GEAR	PL4.10
19	PICK UP SPRING.....	PL4.10
20	PICK UP SOLENOID	PL4.10
\$ 21	RETARD PAD ASSEMBLY *1.....	PL4.10
22	RETARD SPRING	PL4.10
30	SENSOR BRACKET	---
\$ 31	MSI NO PAPER SENSOR.....	---
32	MSI N/P ACTUATOR	---
33	CLAMP S	---
35	CLAMP M.....	---

*1 : Periodic Replacement Parts

PL5 Drive & Xerographics



SAK305CC

PL5 Drive & Xerographics

Item	Parts Name	High Assembly
1	MAIN FRAME ASSEMBLY	---
2	CLAMP P	---
3	FRAME BRACKET	---
\$ 10	ROS ASSEMBLY (with 11-13)	---
11	ROS SUB ASSEMBLY	PL5.10
12	SCANNER ASSEMBLY	PL5.10
13	SOS HARNESS (J111-J113)	PL5.10
\$ 20	DRIVE ASSEMBLY	---
\$ 21	REGISTRATION CLUTCH ASSEMBLY	---
22	REGISTRATION DRIVE GEAR	---
23	DRIVE BEARING L	---
24	DRIVE BEARING R	---
\$ 30	CRU SENSOR ASSEMBLY	---
31	CRU GUIDE ASSEMBLY L	---
32	CRU GUIDE ASSEMBLY R	---
40	BASE PLATE *1	---
41	EP CARTRIDGE *2	---

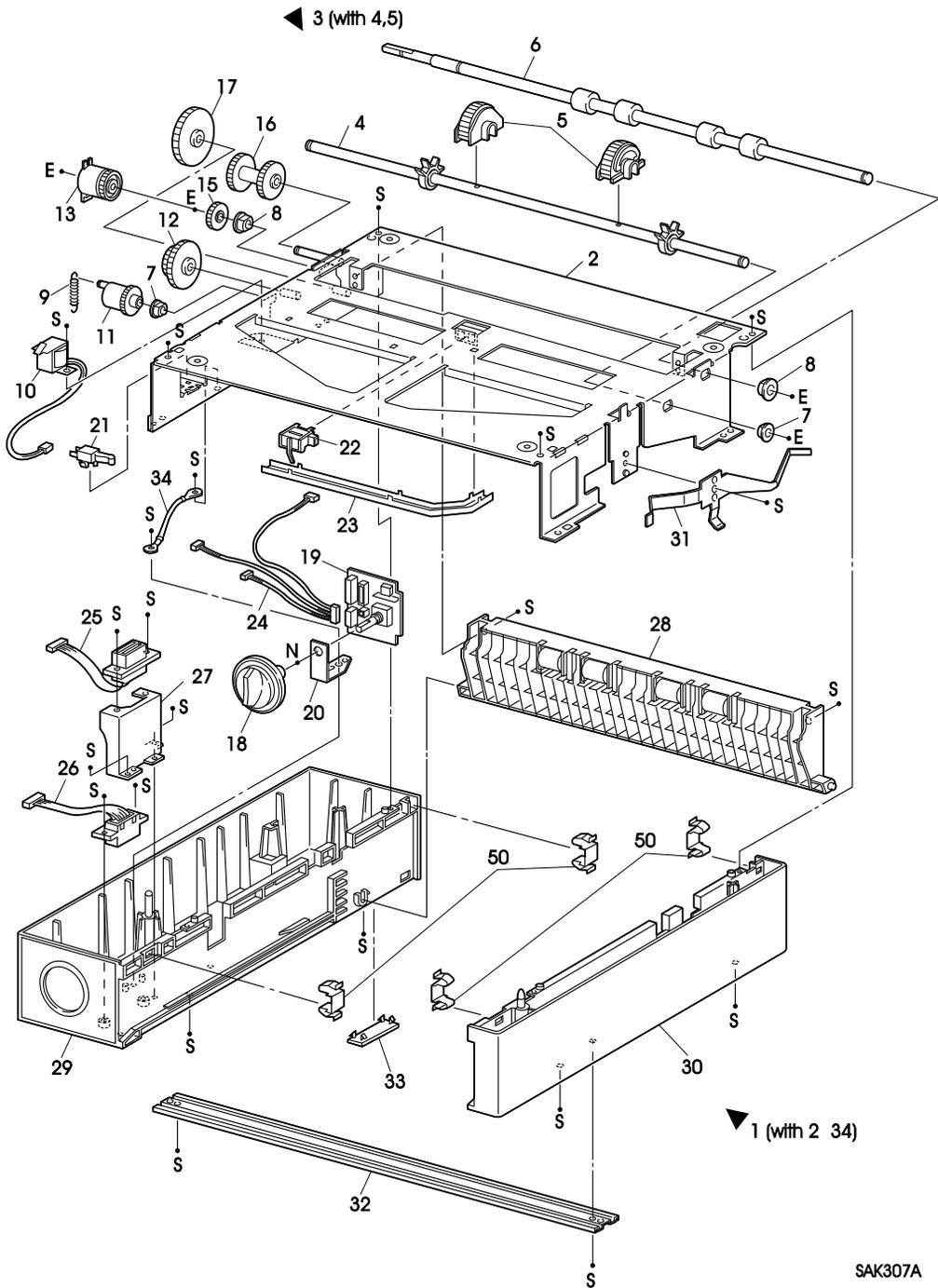
***1** : *This is only for basic configuration 1. This part is removed when Feeder 250 is installed for use.*

***2** : *Consumable*

PL6 Electrical

	Item	Parts Name	High Assembly
\$	1	LVPS ASSEMBLY	---
\$	2	HVPS	---
	3	KNOB VOLUME.....	---
\$	4	MCU PWB	---
\$	5	FAN	---
\$	6	INTERLOCK SWITCH	---
	10	LVPS HARNESS (J10-J101)	---
	11	HVPS HARNESS (J13-J131).....	---
	12	ROS HARNESS (J11-J112,J114).....	---
	13	FUSER HARNESS (J15-J151,J154)	---
	14	P/H HARNESS (J12-J121,J122,J124,P125)	---
	15	CRU HARNESS (J16-J161).....	---
	16	TRAY HARNESS (J17-J171).....	---
	17	HARNESS ASSEMBLY LED (J127-J128).....	---
	20	BUSH.....	---
	21	EDGE SADDLE.....	---
	22	CLAMP L	---
	23	CONNECTOR 2PW	---
	24	CONNECTOR 3PB	---
	30	HARNESS SHIELD.....	---
	31	ELECTRIC SHIELD	---
	32	REAR PANEL.....	---
	33	SHIELD ASSEMBLY (with34,35).....	---
	34	CONTROLLER SHIELD.....	PL6.33
	35	OPTION SHIELD	PL6.33
	36	ESS HARNESS (J106-J142)	---
	37	ESS PWB.....	---

PL7 250 Feeder

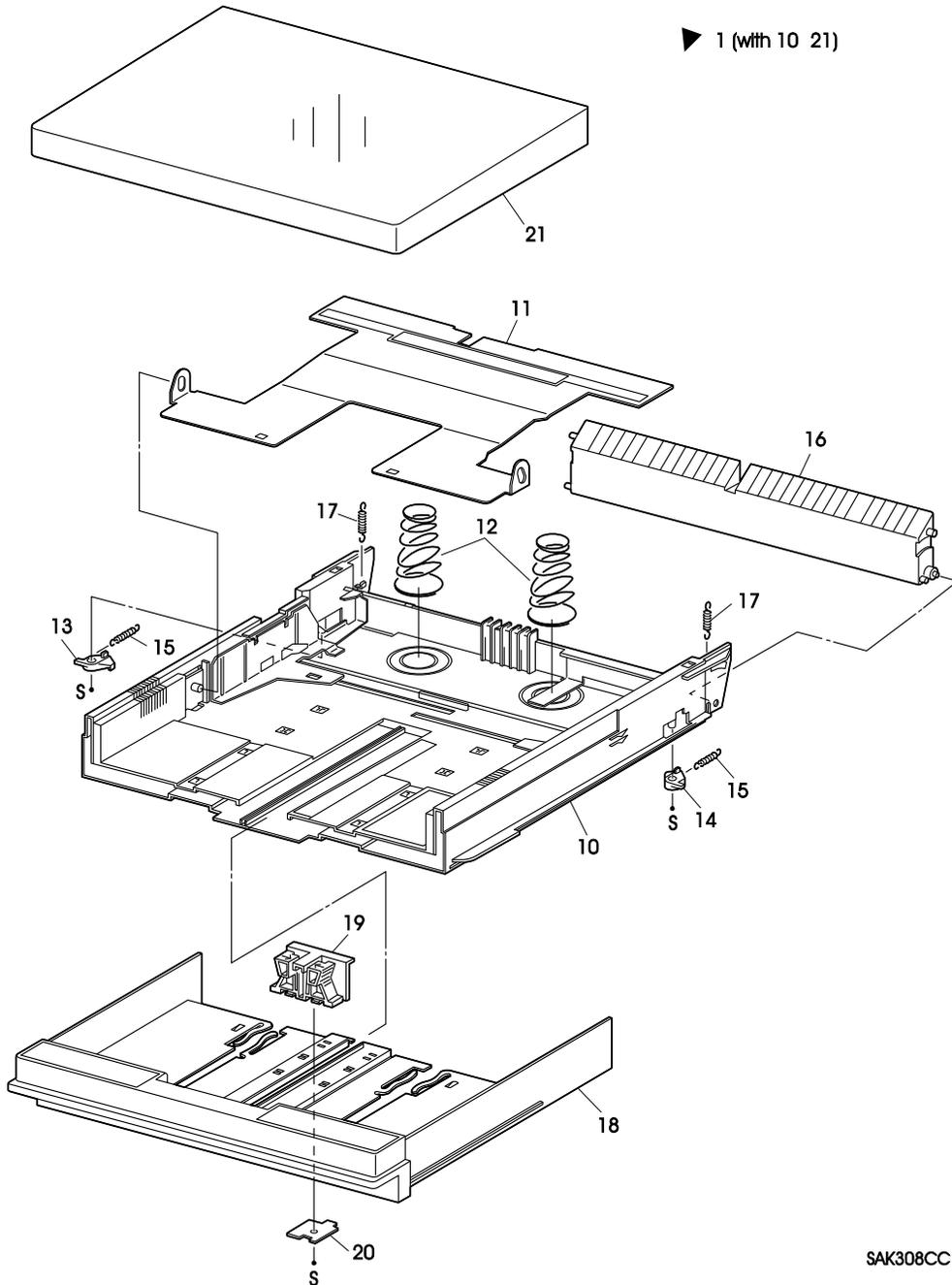


PL7 250 Feeder

Item	Parts Name	High Assembly
1	FEEDER ASSEMBLY 250 (with2-34).....	----
2	FEEDER FRAME 250	PL7.1
3	FEED ROLL ASSEMBLY (with4,5).....	PL7.1
4	FEED SHAFT ASSEMBLY	PL7.3
\$ 5	FEED ROLL.....	PL7.3
\$ 6	TURN ROLL ASSEMBLY.....	PL7.1
7	FEED BEARING	PL7.1
8	TRANSPORT BEARING	PL7.1
9	FEED SPRING	PL7.1
\$ 10	FEED SOLENOID	PL7.1
11	FEED GEAR	PL7.1
12	FEED IDLER GEAR.....	PL7.1
\$ 13	ELECTRIC CLUTCH	PL7.1
15	TURNTURN IDLER GEAR.....	PL7.1
16	IN GEAR	PL7.1
17	OUT GEAR	PL7.1
18	SIZE GEAR.....	PL7.1
\$ 19	FEEDER PWB	PL7.1
20	PWB BRACKET.....	PL7.1
\$ 21	CASSETTE SENSOR.....	PL7.1
\$ 22	CST NO PAPER SENSOR	PL7.1
23	HARNESS GUIDE.....	PL7.1
24	CASSETTE HARNESS (J175-J271,J272,J273).....	PL7.1
25	TRAY UPPER HARNESS (P171-J173).....	PL7.1
26	TRAY LOWER HARNESS (J174-J171).....	PL7.1
27	CONNECTOR BRACKET	PL7.1
\$ 28	OUTER CHUTE ASSEMBLY	PL7.1
29	FEED HOUSING L.....	PL7.1
30	FEED HOUSING R.....	PL7.1
31	FEEDER EARTH PLATE	PL7.1
32	FEEDER TIE PLATE	PL7.1
33	HOUSING CAP	PL7.1
34	FEEDER EARTH WIRE.....	PL7.1
50	FEEDER JOINT	----

PL9 250 Cassette

▶ 1 (with 10 21)



SAK308CC

PL9 250 Cassette

Item	Parts Name	High Assembly
1	UNIVERSAL CASSETTE (with10-21).....	PL9.1
10	CASSETTE HOUSING	PL9.1
11	BOTTOM PLATE ASSEMBLY.....	PL9.1
12	CST N/F SPRING	PL9.1
13	CST LATCH L	PL9.1
14	CST LATCH R.....	PL9.1
15	CST LATCH SPRING	PL9.1
16	INNER CHUTE.....	PL9.1
17	INNER SPRING.....	PL9.1
18	EXTENSION HOUSING.....	PL9.1
19	END GUIDE.....	PL9.1
20	END GUIDE LOWER	PL9.1
21	CASSETTE COVER.....	PL9.1

2. Parts Reference

[A]	END GUIDE..... PL 9.19	FUSER COVER R..... PL 2. 4
ACTUATOR HOLDER..... PL 4.33	END GUIDE LOWER..... PL 9.20	FUSER FRAME ASSEMBLY..... PL 2. 2
[B]	EP CARTRIDGE..... PL 5.50	FUSER HARNESS..... PL 6.13
BASE PLATE..... PL 5.40	ESS HARNESS..... PL 6.36	FUSER INLET CHUTE..... PL 2.27
BOTTOM PLATE ASSEMBLY..... PL 9.11	ESS PWB..... PL 6.37	FUSER TOP COVER
BOTTOM TRAY STUD..... PL 4. 4	EXIT ACTUATOR..... PL 2.38	ASSEMBLY..... PL 2. 5
BTR ASSEMBLY..... PL 3.30	EXIT BEARING..... PL 2.34	[G]
BTR BEARING..... PL 3. 7	EXIT CHUTE..... PL 2.40	GUIDE COVER..... PL 1.33
BTR SPRING L..... PL 3. 8	EXIT CHUTE ROLL..... PL 2.44	[H]
BTR SPRING R..... PL 3. 9	EXIT COVER..... PL 2.50	H/R BEARING L..... PL 2.16
BTR STOPPER..... PL 3.40	EXIT ELIMINATOR..... PL 2. 6	H/R BEARING R..... PL 2.17
BUSH..... PL 6.20	EXIT GEAR..... PL 2.33	H/R DIODE..... PL 2.18
[C]	EXIT HARNESS..... PL 2.37	H/R FINGER..... PL 2.43
CASSETTE COVER..... PL 9.21	EXIT IDLER GEAR..... PL 2.31	H/R GEAR..... PL 2.28
CASSETTE HARNESS..... PL 7.24	EXIT IDLER SHAFT..... PL 2.32	H/R IDLER GEAR..... PL 2.29
CASSETTE HOUSING..... PL 9.10	EXIT ROLL ASSEMBLY..... PL 2.35	H/R IDLER SHAFT..... PL 2.30
CASSETTE SENSOR..... PL 7.21	EXIT SENSOR..... PL 2.36	H/R RING..... PL 2.15
CHUTE PLATE..... PL 3.20	EXIT TORSION SPRING..... PL 2.39	HARNESS ASSEMBLY LED..... PL 6.17
CLAMP L..... PL 6.22	EXTENSION HOUSING..... PL 9.18	HARNESS GUIDE..... PL 7.25
CLAMP M..... PL 4.35	[F]	HARNESS SHIELD..... PL 6.30
CLAMP P..... PL 5. 2	FAN..... PL 6. 5	HEAT ROLL..... PL 2.14
CLAMP S..... PL 4.34	FEED BEARING..... PL 7. 7	HEATER ROD..... PL 2. 9
CONNECTOR 2PW..... PL 6.23	FEED GEAR..... PL 7.11	HOUSING CAP..... PL 7.33
CONNECTOR 3PB..... PL 6.24	FEED HOUSING L..... PL 7.29	HVPS..... PL 6. 2
CONNECTOR BRACKET..... PL 7.27	FEED HOUSING R..... PL 7.30	HVPS HARNESS..... PL 6.11
CONSOLE ASSEMBLY..... PL 1.50	FEED IDLER GEAR..... PL 7.12	[I]
CONTROLLER SHIELD..... PL 6.34	FEED ROLL..... PL 7. 5	IN GEAR..... PL 7.16
CORE ROLL..... PL 4.14	FEED ROLL ASSEMBLY..... PL 7. 3	INNER CHUTE..... PL 9.16
CRU GUIDE ASSEMBLY L..... PL 5.31	FEED SHAFT ASSEMBLY..... PL 7. 4	INNER SPRING..... PL 9.17
CRU GUIDE ASSEMBLY R..... PL 5.32	FEED SOLENOID..... PL 7.10	INTERLOCK SWITCH..... PL 6. 6
CRU HARNESS..... PL 6.15	FEED SPRING..... PL 7. 9	[K]
CRU SENSOR ASSEMBLY..... PL 5.35	FEEDER ASSEMBLY 250..... PL 7. 1	KNOB VOLUME..... PL 6. 3
CRU STOPPER..... PL 1.15	FEEDER EARTH PLATE..... PL 7.31	[L]
CST LATCH L..... PL 9.13	FEEDER EARTH WIRE..... PL 7.34	LAMP GUIDE..... PL 2.10
CST LATCH R..... PL 9.14	FEEDER FRAME 250..... PL 7. 2	LATCH ASSEMBLY..... PL 1.13
CST LATCH SPRING..... PL 9.15	FEEDER JOINT..... PL 7.50	LATCH BUTTON..... PL 1.12
CST N/F SPRING..... PL 9.12	FEEDER PWB..... PL 7.19	LATCH SPRING..... PL 1.14
CST NO PAPER SENSOR..... PL 7.22	FEEDER TIE PLATE..... PL 7.32	LEFT COVER..... PL 1. 5
[D]	FINGER BRACKET..... PL 2.41	LEVER HOLDER..... PL 1. 4
DRIVE ASSEMBLY..... PL 5.20	FINGER SPRING..... PL 2.42	LVPS ASSEMBLY..... PL 6. 1
DRIVE BEARING L..... PL 5.23	FRAME BRACKET..... PL 5. 3	LVPS HARNESS..... PL 6.10
DRIVE BEARING R..... PL 5.24	FRONT BOTTOM TRAY..... PL 4. 2	[M]
[E]	FRONT COVER..... PL 1.31	MAIN FRAME ASSEMBLY..... PL 5. 1
EDGE SADDLE..... PL 6.21	FRONT COVER ASSEMBLY..... PL 1.30	MCU PWB..... PL 6. 4
ELECTRIC CLUTCH..... PL 7.13	FRONT IN TRAY..... PL 4. 1	METAL REGISTRATION ROLL..... PL 3.11
ELECTRIC SHIELD..... PL 6.31	FRONT TRAY..... PL 1.40	MSI CHUTE..... PL 4.11
ELIMINATOR BRACKET L..... PL 2. 7	FUSER ASSEMBLY..... PL 2. 1	MSI CHUTE ASSEMBLY..... PL 4.10
ELIMINATOR BRACKET R..... PL 2. 8	FUSER COVER L..... PL 2. 3	

MSI N/F SPRING.....PL 4. 3	[R]	[S]
MSI N/P ACTUATOR .....PL 4.32	REAR FRAME.....PL 1. 2	SCANNER ASSEMBLY .....PL 5.12
MSI NO PAPER SENSOR .....PL 4.31	REAR FRAME ASSEMBLY .....PL 1. 1	SENSOR BRACKET .....PL 4.30
[N]	REAR PANEL .....PL 6.32	SHIELD ASSEMBLY .....PL 6.33
NIP LEVER L .....PL 2.22	REGISTRATION ACTUATOR.....PL 3. 4	SIZE HANDLE .....PL 7.18
NIP LEVER R .....PL 2.23	REGISTRATION BACK	SOS HARNESS .....PL 5.13
NIP LEVER SPRING.....PL 2.21	BEARING.....PL 3.15	STOPPER SPRING.....PL 1.16
[O]	REGISTRATION	[T]
OPTION SHIELD .....PL 6.35	CLUTCH ASSEMBLY .....PL 5.21	TEMPERATURE
OUT GEAR .....PL 7.17	REGISTRATION DRIVE GEAR .....PL 5.22	SENSOR ASSEMBLY .....PL 2.13
OUTER CHUTE ASSEMBLY .....PL 7.28	REGISTRATION	THERMAL FUSE.....PL 2.11
[P]	FRONT BEARING.....PL 3.14	THERMOSTAT .....PL 2.12
P/H HARNESS.....PL 6.14	REGISTRATION IN GEAR .....PL 3.12	TOP COVER .....PL 1.21
P/R BEARING .....PL 2.20	REGISTRATION OUTGEAR .....PL 3.13	TOP COVER ASSEMBLY .....PL 1.20
P/R EARTH PLATE L.....PL 2.25	REGISTRATION	TOP TRAY .....PL 1.22
P/R EARTH PLATE R .....PL 2.26	ROLL SPRING L.....PL 3.16	TRANSPORT BEARING .....PL 4.17
P/R ELIMINATOR.....PL 2.24	REGISTRATION ROLL	TRANSPORT BEARING .....PL 7. 8
PICK UP CAM.....PL 4.15	SPRING R.....PL 3.17	TRANSPORT CHUTE
PICK UP GEAR .....PL 4.18	REGISTRATION SENSOR .....PL 3. 3	ASSEMBLY .....PL 3. 1
PICK UP ROLL.....PL 4.13	REGISTRATION SENSOR	TRANSPORT SUB ASSEMBLY .....PL 3. 2
PICK UP ROLL ASSEMBLY .....PL 4.12	HARNESS.....PL 3. 6	TRAY HARNESS .....PL 6.16
PICK UP SHAFT .....PL 4.16	REGISTRATION SPRING .....PL 3. 5	TRAY LATCH.....PL 1.32
PICK UP SOLENOID .....PL 4.20	RETARD PAD ASSEMBLY .....PL 4.21	TRAY LOWER HARNESS .....PL 7.26
PICK UP SPRING.....PL 4.19	RETARD SPRING .....PL 4.22	TURN IDLER GEAR .....PL 7.15
POP UP ASSEMBLY .....PL 1.10	RIGHT COVER .....PL 1. 6	TURN ROLL ASSEMBLY .....PL 7. 6
POP UP COVER .....PL 1.11	ROS ASSEMBLY.....PL 5.10	[U]
POP UP SPRING.....PL 1.17	ROS HARNESS .....PL 6.12	UNIVERSAL CASSETTE .....PL 9. 1
PRESSURE ROLL .....PL 2.19	ROS SUB ASSEMBLY .....PL 5.11	
PUSH LEVER .....PL 1. 3	RUBBER REGISTRATION	
PWB BRACKET .....PL 7.20	ROLL.....PL 3.10	

Section 4

Removal and Replacement Procedures

Section Contents

1. Introduction

1.1 Before you start	4-1
1.2 Notations	4-1

RRP1 Covers

RRP1.1 Left Cover (PL1.4)	4-4
RRP1.2 Top Cover Assembly (PL1.20)	4-6
RRP1.3 Front Cover Assembly (PL1.30)	4-8
RRP1.4 Right Cover (PL1.6).	4-10
RRP1.5 Pop Up Assembly (PL1.10).	4-12
RRP1.6 Rear Frame Assembly (PL1.1)	4-14
RRP1.7 Front Tray (PL1.40).	4-16
RRP1.8 Console Assembly (PL1.50)	4-18

RRP2 Fuser & Paper Exit

RRP2.1 Fuser Assembly (PL2.1).	4-20
RRP2.2 Fuser Cover L (PL1.3)	4-22
RRP2.3 Fuser Cover R (PL1.4)	4-24
RRP2.4 Fuser Top Cover Assembly (PL2.5).	4-26
RRP2.5 Exit Chute (PL2.40).	4-28
RRP2.6 Exit Sensor (PL2.36)	4-30
RRP2.7 Exit Actuator (PL2.38)	4-32
RRP2.8 H/R Finger (PL2.43)	4-34
RRP2.9 Heater ROD (PL2.9)	4-36
RRP2.10 Thermostat (PL2.12).	4-38
RRP2.11 Temperature Sensor Assembly (PL2.13)	4-40
RRP2.12 Pressure Roll (PL2.19).	4-42
RRP2.13 Heat Roll (PL2.14).	4-44
RRP2.14 Exit Roll Assembly (PL2.35)	4-46

RRP3 Paper Transportation

RRP3.1 BTR Assembly (PL3.30)	4-48
RRP3.2 Transport Chute Assembly (PL3.1)	4-50
RRP3.3 Registration Actuator (PL3.4).	4-52
RRP3.4 Registration Sensor (PL3.3).	4-54

Section 4

Removal and Replacement Procedures

RRP4 Multi Sheet Inserter

RRP4.1 MSI N/P Actuator (PL4.32)	4-56
RRP4.2 MSI No Paper Sensor (PL4.31)	4-58
RRP4.3 Toner Sensor Assembly	4-60
RRP4.4 MSI Chute Assembly (PL4.10)	4-62
RRP4.5 Pick Up Roll (PL4.13)	4-64
RRP4.6 Pick Up Solenoid (PL4.20)	4-66
RRP4.7 Retard Pad Assembly (PL4.21)	4-68
RRP4.8 Front IN Tray (PL4.1)	4-70
RRP4.9 Front Bottom Tray(PL4.2)	4-72

RRP5 Drive & Xerographic

RRP5.1 CRU Sensor Assembly (PL5.30)	4-74
RRP5.2 ROS Assembly (PL5.10)	4-76
RRP5.3 Scanner Assembly (PL5.12)	4-78
RRP5.4 CRU Guide Assembly L (PL5.31)	4-80
RRP5.5 CRU Guide Assembly R (PL5.32)	4-82
RRP5.6 Drive Assembly (PL5.20), Registration Clutch Assembly (PL5.21)	4-84

RRP6 Electrical

RRP6.1 Rear Panel (PL6.32)	4-86
RRP6.2 Fan (PL6.5)	4-88
RRP6.3 LVPS Assembly (PL6.1)	4-90
RRP6.4 Shield Assembly (PL6.33)	4-92
RRP6.5 ESS PWB (PL6.37)	4-94
RRP6.6 Electric Shield (PL6.31)	4-96
RRP6.7 MCU PWB (PL6.4)	4-98
RRP6.8 HVPS (PL6.2)	4-100
RRP6.9 Interlock Switch (PL6.6)	4-102

RRP7 Feeder

RRP7.1 Feeder Assembly 250 (PL7.1)	4-104
RRP7.2 Feed Roll Assembly (PL7.3)	4-106
RRP7.3 Feed Roll (PL7.5)	4-108
RRP7.4 Turn Roll Assembly (PL7.6), Electric Clutch (PL7.13)	4-110

Section 4

Removal and Replacement Procedures

RRP7.5 Feed Solenoid (PL7.10)	4-112
RRP7.6 Feeder PWB (PL7.19)	4-114
RRP7.7 Cassette Sensor (PL7.21)	4-116
RRP7.8 CST No Paper Sensor (PL7.22)	4-118
RRP7.9 Feed Housing L (PL7.29)	4-120
RRP7.10 Feed Housing R (PL7.30)	4-122

1. Introduction

This section explains the removal and replacement procedures of the major parts of the printer, grouping the parts in the same order as the Parts List.

- RRP1-Covers
- RRP2-Fuser and Paper Exit
- RRP3-Paper Transportation
- RRP4-Multi Sheet Inserter
- RRP5-Drive & Xerographics
- RRP6-Electrical
- RRP7-Feeder

Note : 1. Observe how parts are secured in place when removing the parts which are listed as spare parts by the removal procedures but are not explained in this section before you begin.

2. The procedure of the optional feeding unit (Feeder Assembly 500) is omitted because it follows the same procedures as "RRP7 Feeder". See "RRP7 Feeder" if necessary.

3. Though the optional units are assumed to have been removed beforehand as a rule, you may opt to have optional parts left installed if it is not necessary to remove them.

1.1 Before you start

- Switch off the printer power and disconnect the power cord from the wall outlet.
- Remove the EP Cartridge from the printer. Place the EP Cartridge away from exposure to direct sunlight.
- Do not use force to remove or install printer components.
- Use only the screw size and type designated in the text. A wrong screw could easily damage tapped hole.
- Wear a wrist strap to dissipate static electricity.

1.2 Notations

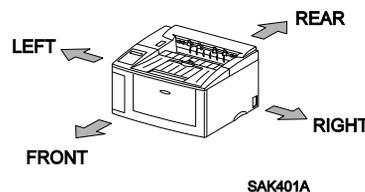
- The notation "RRP X.Y ZZZZ" in a RRP step indicates the name "ZZZZ" as a part to remove or replace.
- The notation "(PL X.Y)" after a part name indicates that the part is shown as Item Y in PL X in "Section 3 Parts Lists". The position of a part to replace or the types of screws can be known by referring the part list and drawing.
- The direction with respect to the printer are defined as follows;

Front : When you are facing the front side of the printer, the direction nearest you.

Rear : When you are facing the front side of the printer, the direction furthest away from you.

Left : When you are facing the front side of the printer, the direction to the left.

Right : When you are facing the front side of the printer, the direction to the right.



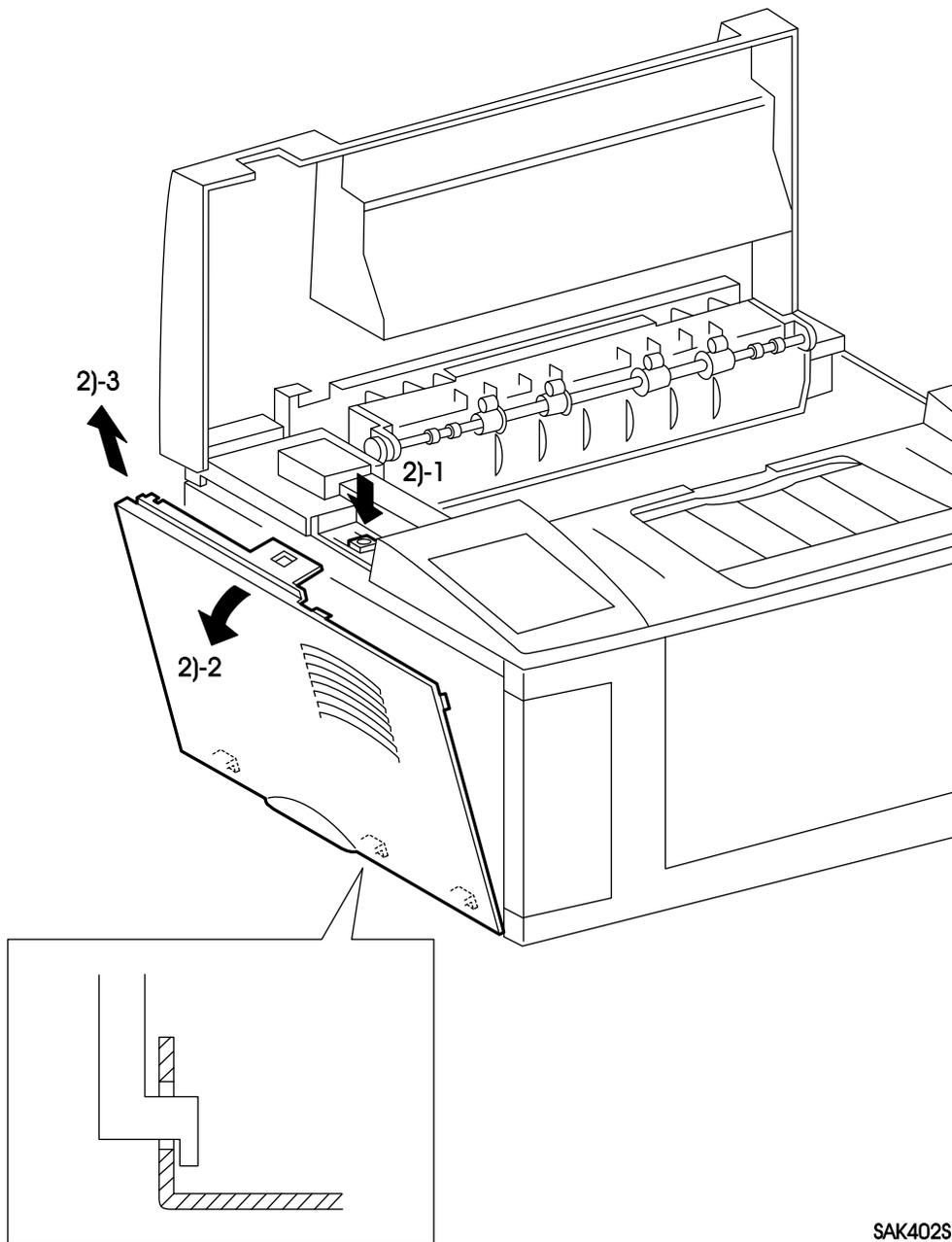
- The notation "screw(shape, color, and length of thread)" identifies individual screws.
- The notation "RRP X.Y" indicates that the removal procedure is explained in RRP X.Y.

- The notation "Figure X.Y" indicates that the figure X.Y is referred to for more information.
- A number followed by a bracket "Z)" in the illustration corresponds to a step "Z)" in the RRP text.
- Use a Phillips screwdriver for the screws shown in the illustrations unless otherwise indicated.
- Black arrows in the illustrations show the direction in the part may be moved. Follow the numerical order if the arrows are numbered. A white arrow(FRONT) indicates the front direction of the printer.
- For the location of connectors (P/J), see Section 6 4. Connector Location.

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RRP1. Covers

RRP1.1 Left Cover(PL1.4)



RRP1.1 Left Cover(PL1.4)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

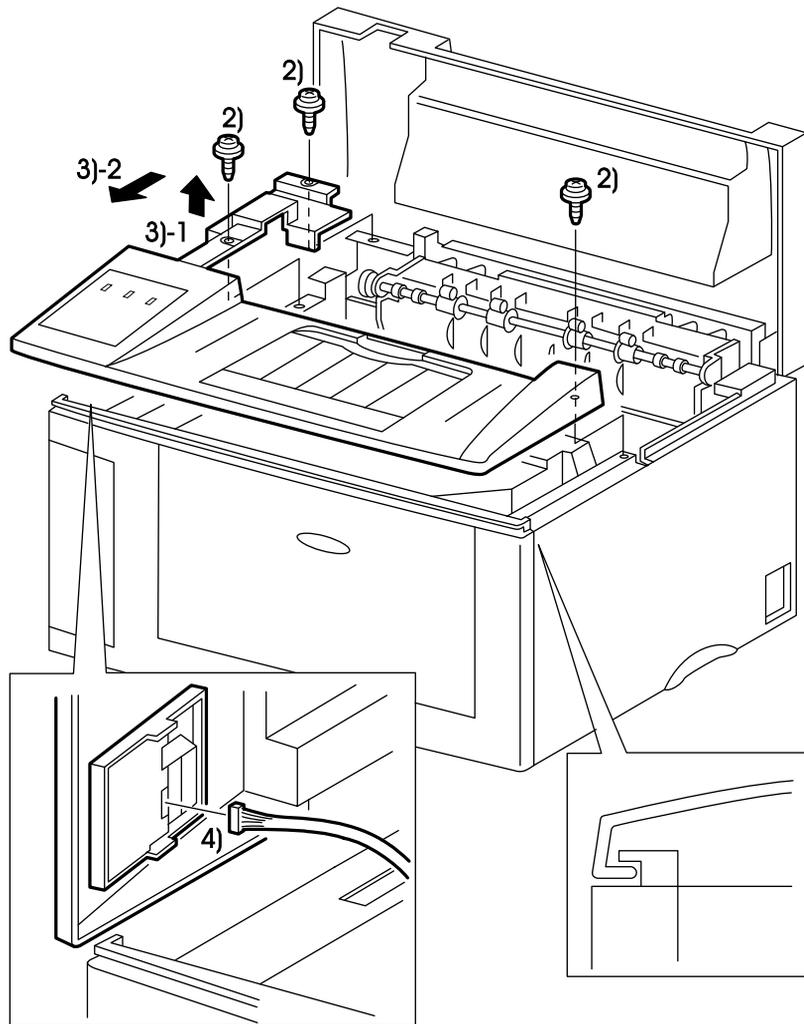
1. Press the Latch Button to open the Pop Up Cover.
2. Press the Top Cover button which latches it with the Left Cover, pull the upper side of the Left Cover to the left, then lift it up to remove the Left Cover.

Replacement

Reverse the removal procedures for reinstallation.

Note : Be sure to latch the hooks at the bottom of the Left Cover with the frame of the printer.

RRP1.2 Top Cover Assembly (PL1.20)



SAK403A

RRP1.2 Top Cover Assembly (PL1.20)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

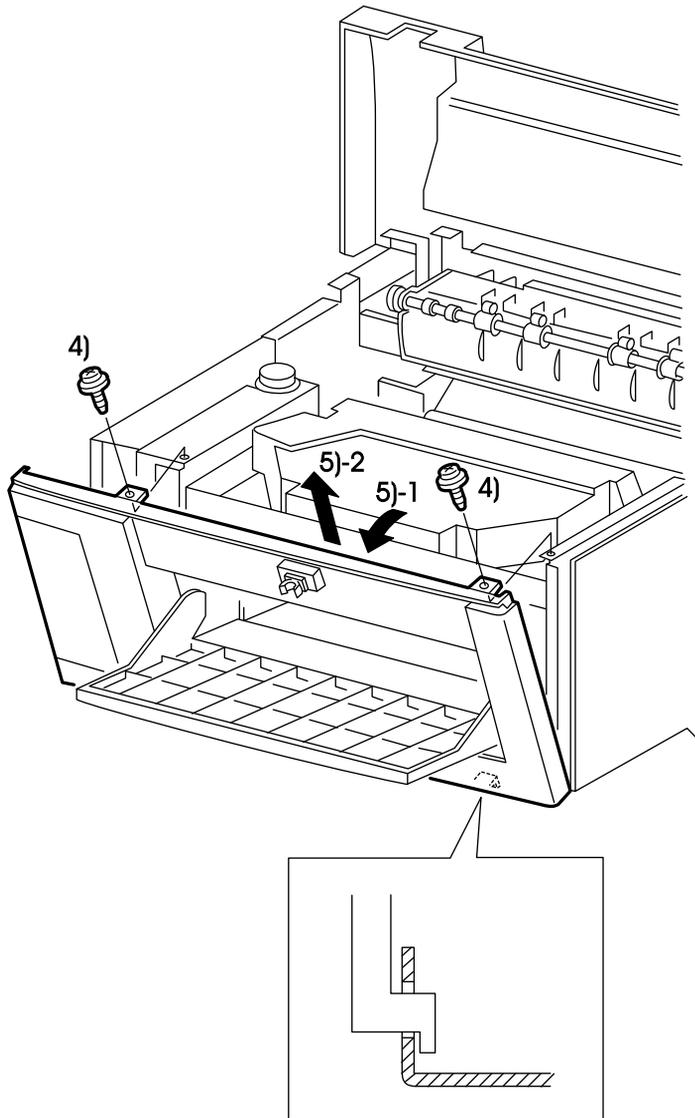
1. Remove the Left Cover. (RRP1.1)
2. Remove the three screws(silver, with brim, 8mm) securing the Top Cover Assembly to the base frame.
Note : In the next step, the Top Cover Assembly is still connected with the base frame by the harness. Be careful not to place the Top Cover Assembly too far from the printer.
3. Lift the rear part of the Top Cover, slide off the overall Top Cover Assembly to the front, then separate it from the printer.
4. Remove the connector(P/J127), and remove the Top Cover Assembly with the Console Assembly.
5. Remove the Console Assembly securing by hooks from the Top Cover Assembly. (RRP1.8).

Replacement

Reverse the removal procedures for reinstallation.

Caution : Be sure to latch the hooks at the front of the Top Cover with the Front Cover.

RRP1.3 Front Cover Assembly (PL1.30)



SAK404SC

RRP1.3 Front Cover Assembly (PL1.30)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Open the Front Tray.
4. Remove the two screws(silver, with brim, 8mm) securing the Front Cover Assembly.
5. While lifting and holding the Front Tray, open the upper part of the Front Cover, then lift it up to remove the Front Cover Assembly.

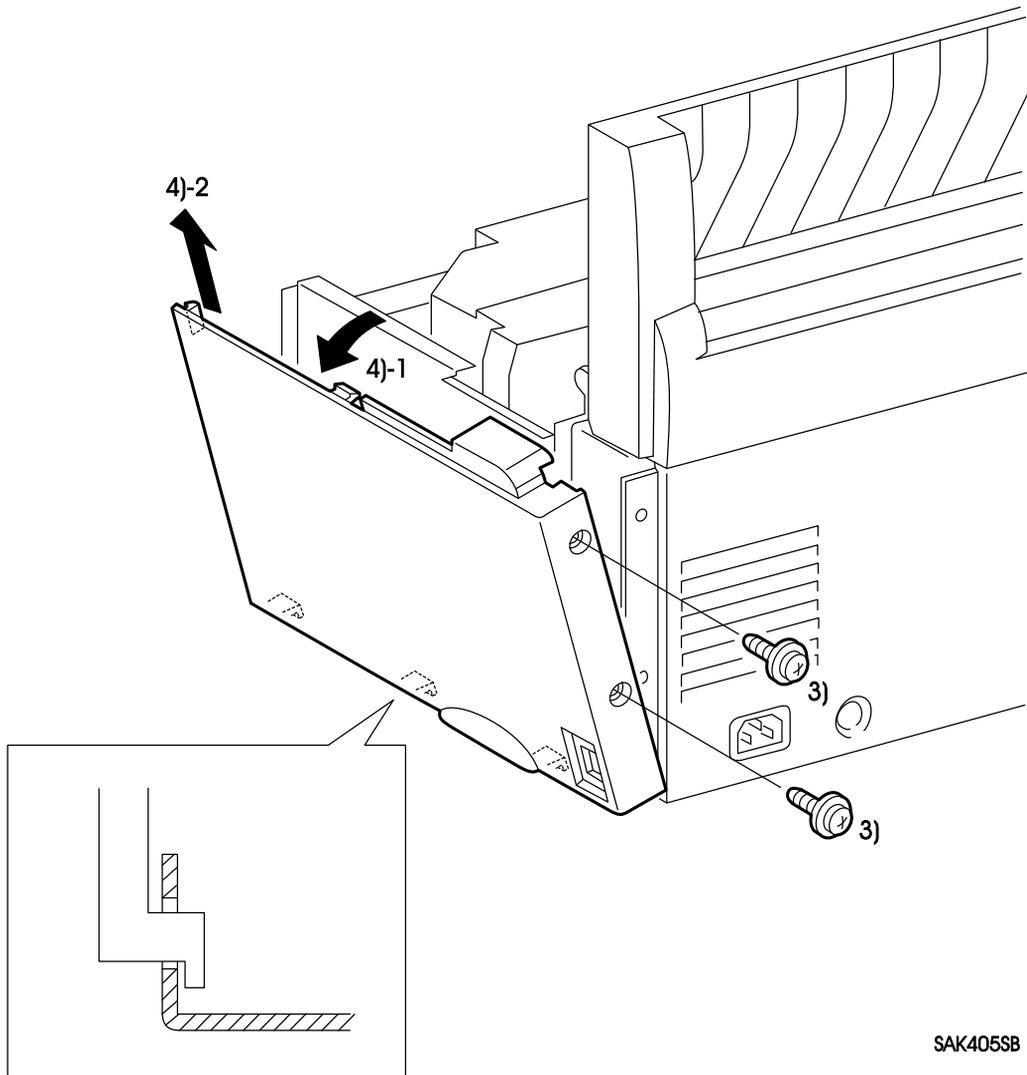
Replacement

Reverse the removal procedures for reinstallation.

Caution : Be sure to latch the hooks under the Front Cover with the frame.

Note : Be careful for the superposition of the Front Cover and the Right Cover.

RRP1.4 Right Cover (PL1.6)



SAK405SB

RRP1.4 Right Cover (PL1.5)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

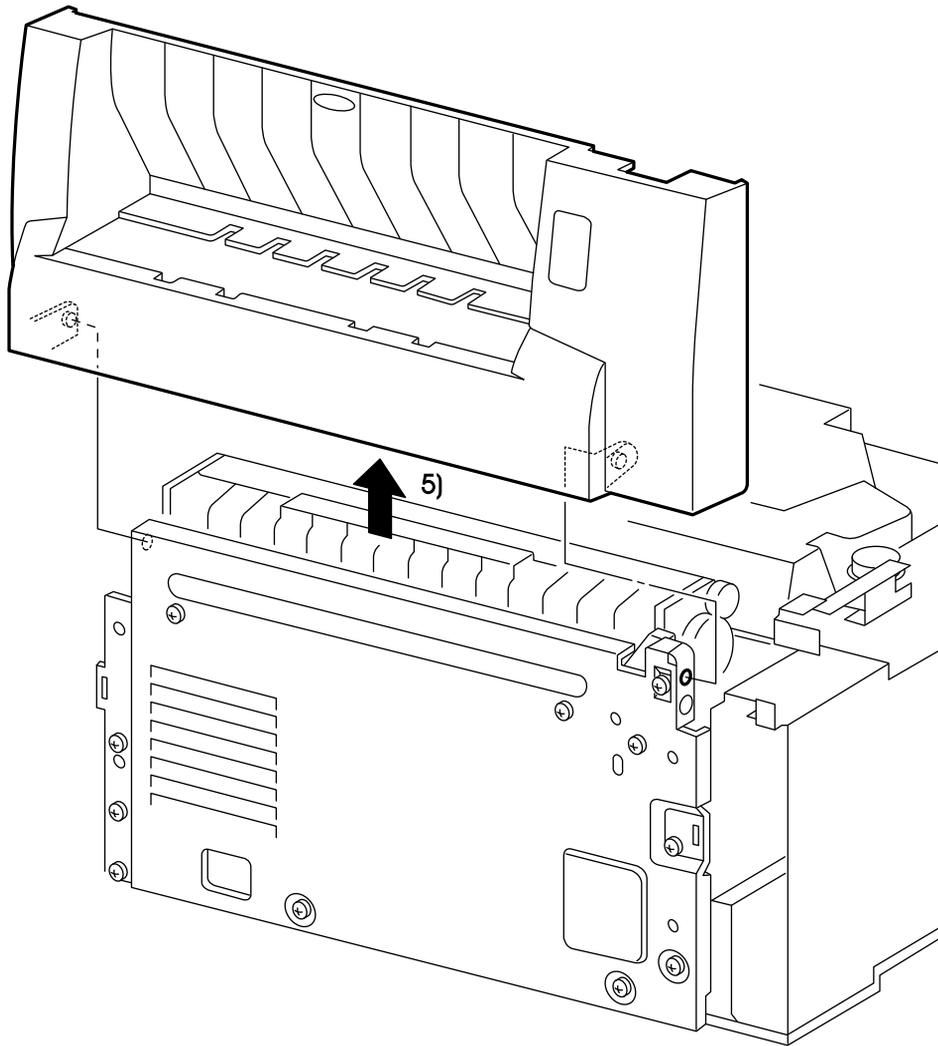
1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the two screws(silver, with brim, 8mm) securing the Right Cover.
4. Open the upper side of the Right Cover to the right and lift it up to remove the Right Cover.

Replacement

Reverse the removal procedures for reinstallation.

Caution : Be sure to latch the hooks under the Right Cover with the frame.

RRP1.5 Pop Up Assembly (PL1.10)



SAK406SC

RRP1.5 Pop Up Assembly (PL1.10)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Rear Panel. (RRP6.1)
5. Disengage the boss of the Pop Up Cover from the hole of the Rear Frame, then remove the Pop Up Assembly.

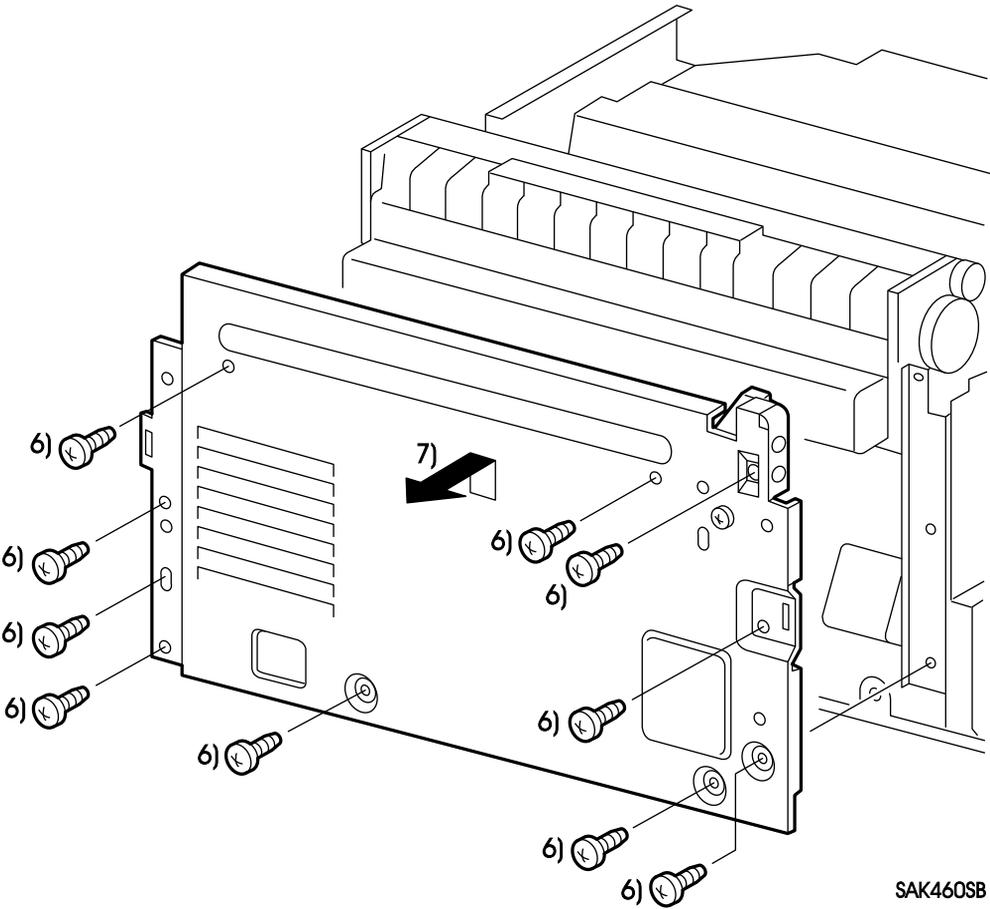
Memo : Disengage the left boss of the Pop Up Cover first for easy operation.

Replacement

Reverse the removal procedures for reinstallation.

Note : When installing the Pop Up Assembly on the Rear Frame, make sure the location of the hole for installation is correct (hole at the upper side).

RRP1.6 Rear Frame Assembly (PL1.1)



SAK460SB

RRP1.6 Rear Frame Assembly (PL1.1)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

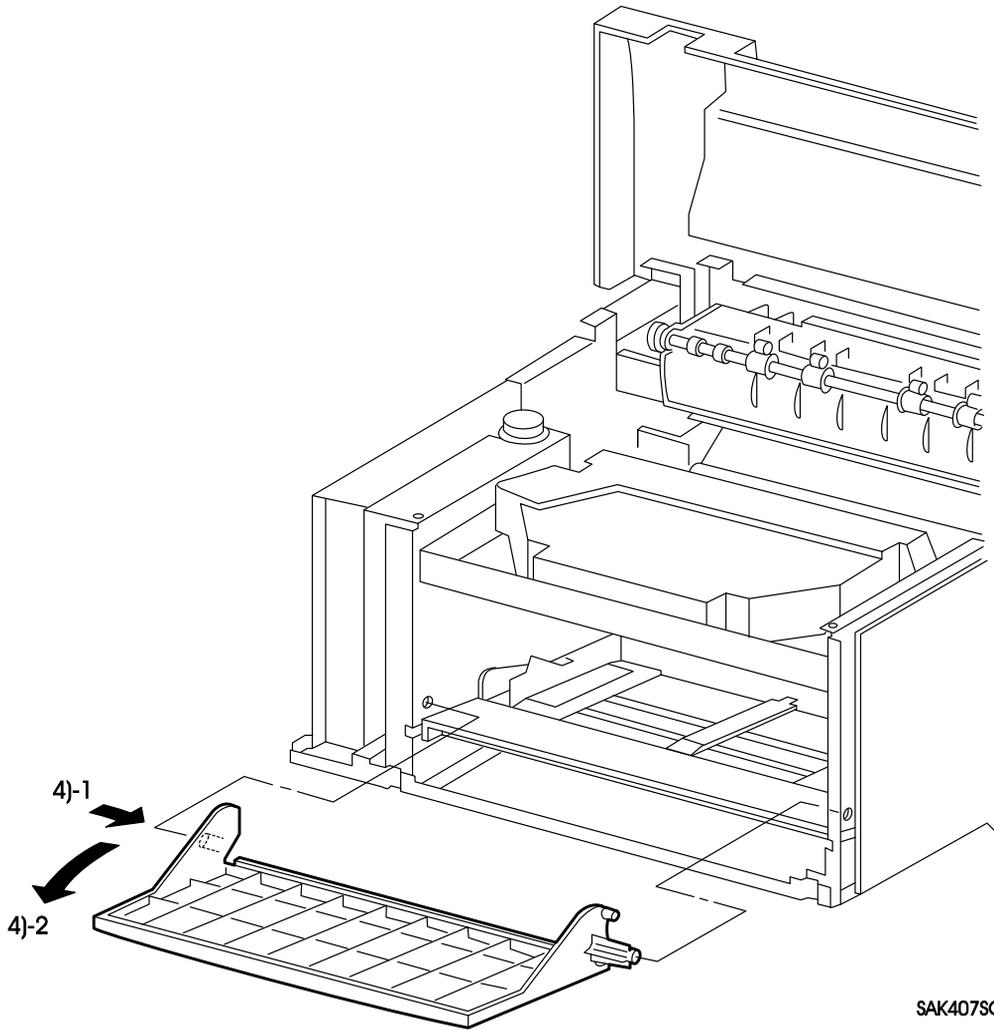
1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Pop Up Assembly. (RRP1.5)
6. Remove the ten screws(silver, 6mm) securing the Rear Frame.
7. Lift up the Rear Frame Assembly, and remove it backward.

Replacement

Reverse the removal procedures for reinstallation.

Note : Move the Push Lever upward when installing the Rear Frame Assembly.

RRP1.7 Front Tray (PL1.40)



RRP1.7 Front Tray (PL1.40)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

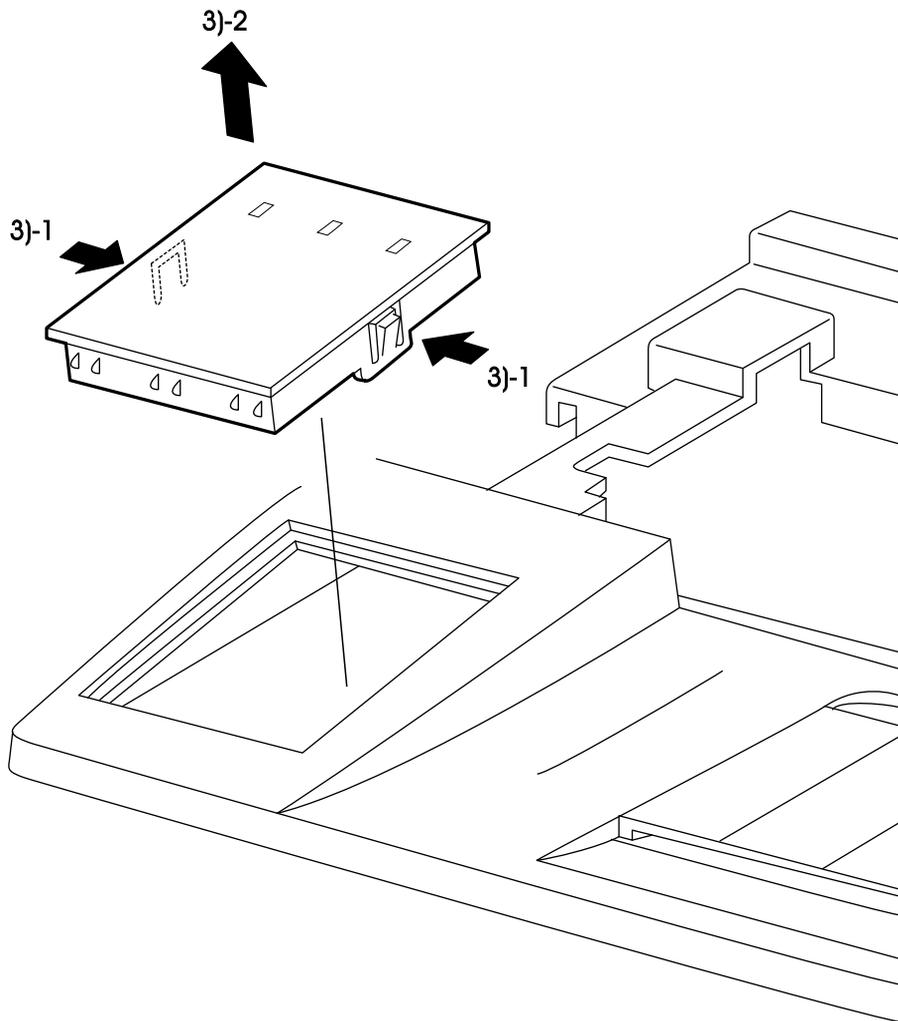
1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Front Cover Assembly. (RRP1.3)
4. Disengage the boss of the Front Tray from the hole of the frame and remove the Front Tray.

Memo : Disengage the left boss of the Front Tray first for easy operation.

Replacement

Reverse the removal procedures for reinstallation.

RRP1.8 Console Assembly (PL1.50)



SAK408A

RRP1.8 Console Assembly (PL1.50)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

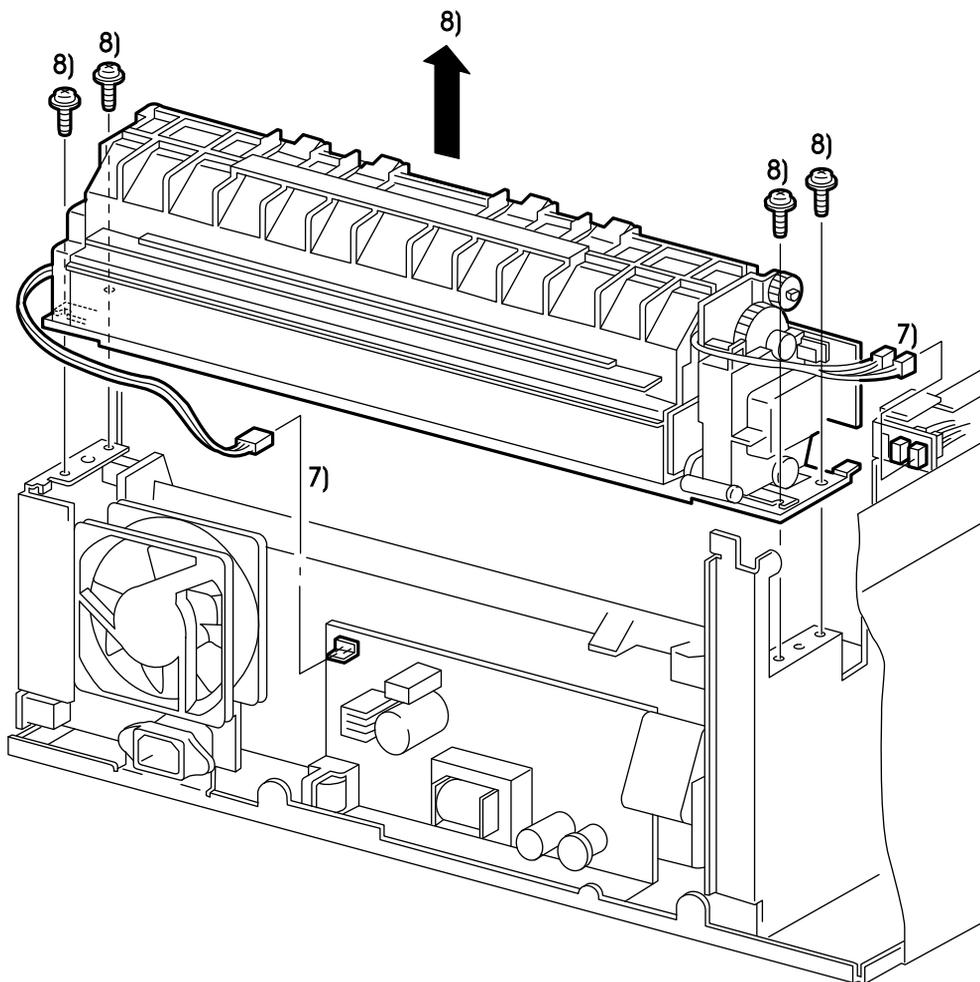
1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. While pressing down on the right and left hooks of the Console Assembly, raise and remove the Console Assembly.

Replacement

Reverse the removal procedures for reinstallation.

RRP2 Fuser & Paper Exit

RRP2.1 Fuser Assembly (PL2.1)



SAK409SC

RRP2.1 Fuser Assembly (PL2.1)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Caution : Perform the following procedure after the temperature of the Fuser Assembly has gone down sufficiently.

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Pop Up Assembly. (RRP1.5)
6. Remove the Rear Frame Assembly. (RRP1.6)
7. Remove the Heater Rod connector(P/J104) on the LVPS Assembly, and the two Exit Harness and Sensor Assembly connectors (P/J152 and P/J155) on the left frame.

Caution : In the next step, be careful not to touch the BTR Assembly.

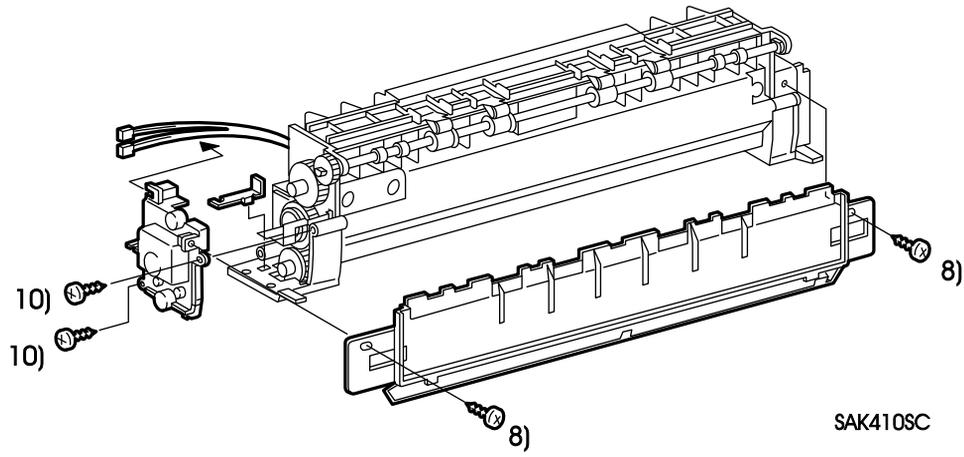
8. Remove the four screws(silver, with brim, 10mm) securing the Fuser Assembly, and lift up the Fuser Assembly to remove.

Replacement

Reverse the removal procedures for reinstallation.

Note : When securing the screws of the Fuser Assembly, fasten the screw so as to press down the P/R Earth Plate L and P/R Earth Plate R securely.

RRP2.2 Fuser Cover L (PL1.3)



RRP2.2 Fuser Cover L (PL1.3)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Caution : Perform the following procedure after the temperature of the Fuser Assembly has gone down sufficiently.

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Pop Up Assembly. (RRP1.5)
6. Remove the Rear Frame Assembly. (RRP1.6)
7. Remove the Fuser Assembly. (RRP2.1)
8. Remove the two screws(gold, tap, 8mm) securing the Exit Cover, and remove the Exit Cover.
9. Snap off the harness from the cut of Fuser Cover L and release it.

Note : In the next step, remove the P/R Earth Plate L, as it is no longer attached because of the removal of the Fuse Cover L.

10. Remove the two screws(gold, tap, 8mm) securing the Fuser Cover L, and remove the Fuser Cover L and P/R Earth Plate L.

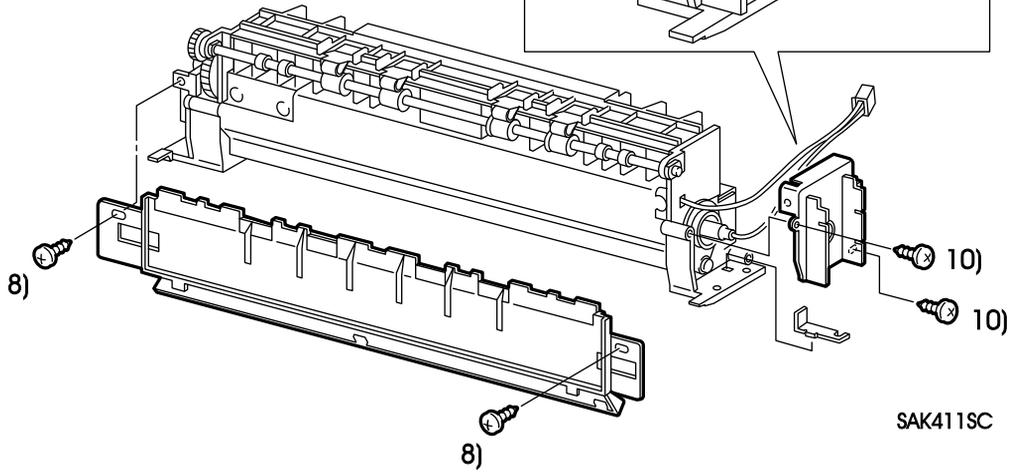
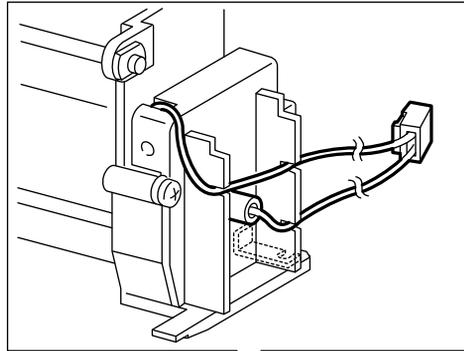
Note : Be careful not to lose or drop the H/R Idler Shaft and Exit Idler Shaft, as they are no longer attached due to the removal of the Fuser Cover L. Remove them as necessary.

Replacement

Reverse the removal procedures for reinstallation.

Note : Be sure to install the P/R Earth Plate L.

RRP2.3 Fuser Cover R (PL1.4)



SAK411SC

RRP2.3 Fuser Cover R (PL1.4)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Caution : Perform the following procedure after the temperature of the Fuser Assembly has gone down sufficiently.

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Pop Up Assembly. (RRP1.5)
6. Remove the Rear Frame Assembly. (RRP1.6)
7. Remove the Fuser Assembly. (RRP2.1)
8. Remove the two screws(gold, tap, 8mm) securing the Exit Cover, and remove the Exit Cover.
9. Snap off the wire from the cut of Fuser Cover R and release it.

Note : In the next step, remove the P/R Earth Plate R, as it will not be attached due to the removal of the Fuse Cover R.

10. Remove the two screws(gold, tap, 8mm) securing the Fuser Cover R, and remove the Fuser Cover R and P/R Earth Plate R.

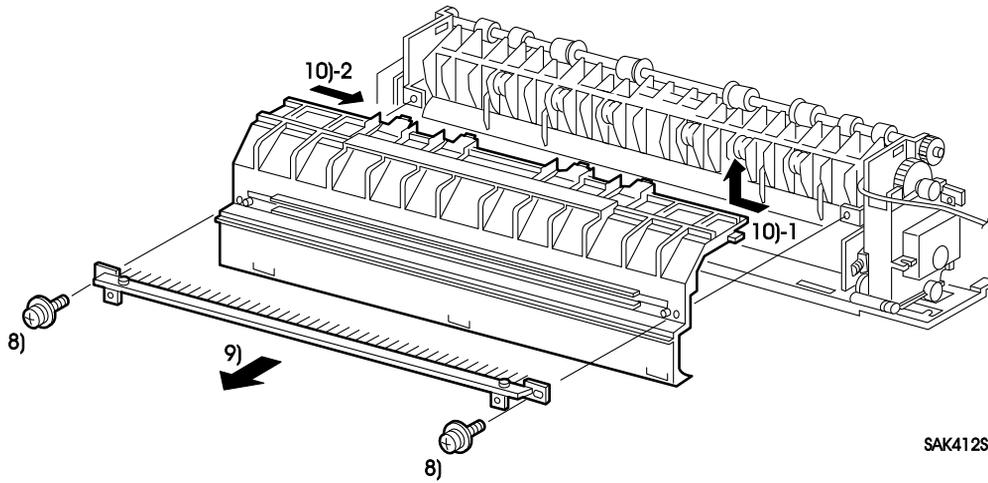
Caution : Be careful not to damage the Heater Rod due to the loss of support of one side from the removal of the Fuser Cover R.

Replacement

Reverse the removal procedures for reinstallation.

Note : Be sure to install the P/R Earth Plate R and to locate the edge of the F/R Diode under the P/R Earth Plate R.

RRP2.4 Fuser Top Cover Assembly (PL2.5)



RRP2.4 Fuser Top Cover Assembly (PL2.5)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Caution : Perform the following procedure after the temperature of the Fuser Assembly has gone down sufficiently.

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Pop Up Assembly. (RRP1.5)
6. Remove the Rear Frame Assembly. (RRP1.6)
7. Remove the Fuser Assembly. (RRP2.1)
8. Remove the two screws(gold, with washer, 8mm) securing the Fuser Top Cover Assembly with the Eliminator Bracket L and Eliminator Bracket R.
9. Remove the Exit Eliminator with the Eliminator Bracket L and the Eliminator Bracket R.
10. Remove the ribs of the Fuser Top Cover Assembly orderly from the holes of Fuser Frame Assembly, then remove the Fuser Top Cover Assembly.

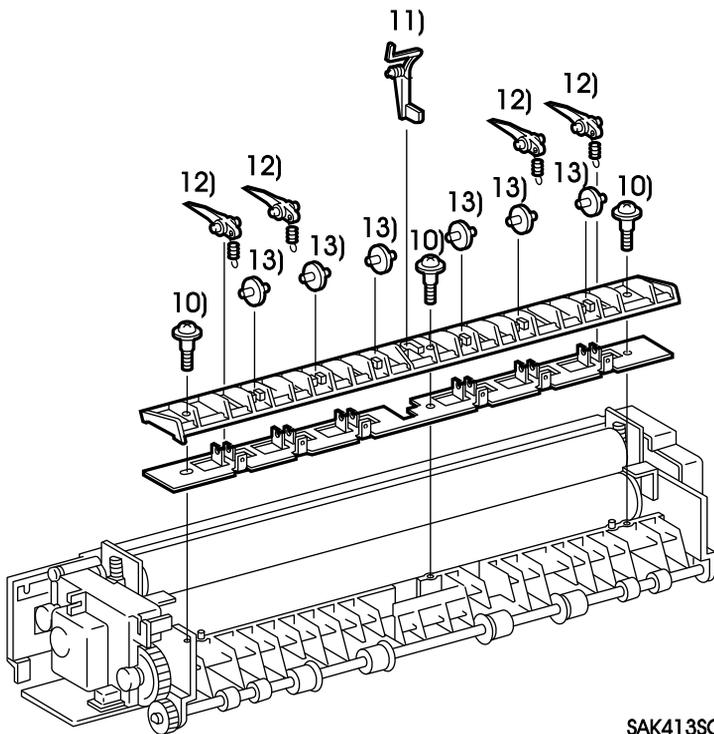
Replacement

Reverse the removal procedures for reinstallation.

Note : 1. Be sure to install the Exit Eliminator.

2. Put the static eliminate brush of the Exit Eliminator into the Fuser Assembly by using the mini-screwdriver etc.

RRP2.5 Exit Chute (PL2.40)



SAK413SC

RRP2.5 Exit Chute (PL2.40)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Caution : Perform the following procedure after the temperature of the Fuser Assembly has gone down sufficiently.

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Pop Up Assembly. (RRP1.5)
6. Remove the Rear Frame Assembly. (RRP1.6)
7. Remove the Fuser Assembly. (RRP2.1)
8. Remove the Fuse Top Cover Assembly. (RRP2.4)
9. Remove the harness passing through the edge of the Exit Chute from the edge and the cut of the Fuser Cover L and Fuser Frame Assembly.

Caution : Be careful not to damage the Heat Roll in the next step.

10. Remove the three screws(gold, with brim and shoulder, 9mm) securing the Exit Chute, and remove the Exit Chute with the Exit Actuator, the Finger Bracket, and the H/R Finger.

Note : The screw has a washer(spacer) with the thickness of 1.5mm for middle and 2mm for the left and right edges for the temporary specification. Be careful for the installed part.

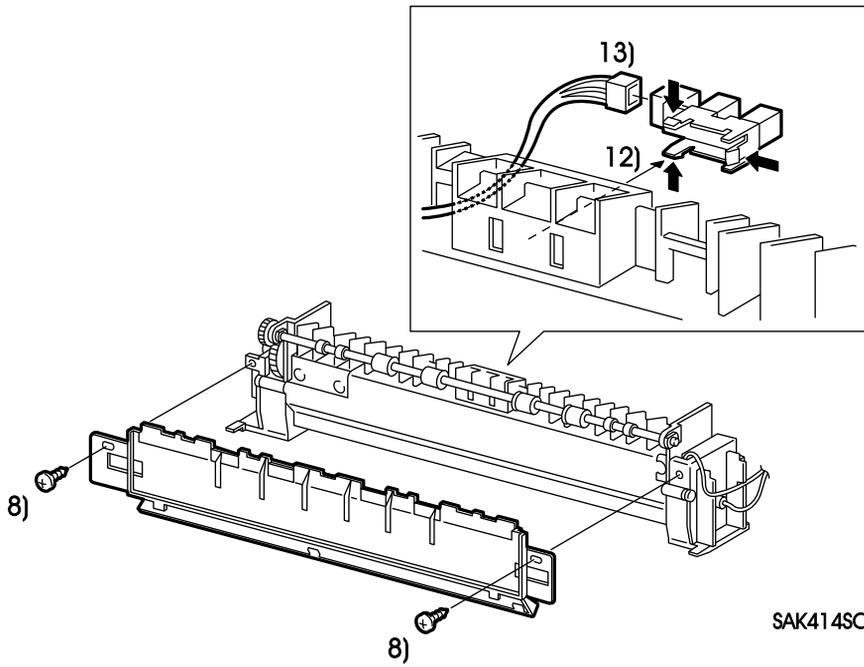
11. Remove the Exit Actuator with Exit Torsion Spring from Exit Chute. (RRP2.7)
12. Remove the four H/R Fingers with Finger Spring, and separate Finger Bracket from Exit Chute. (RRP2.8)
13. Remove the six Exit Chute Rolls from Exit Chute.

Replacement

Reverse the removal procedures for reinstallation.

Caution : Be careful not to damage the Heat Roll when installing.

RRP2.6 Exit Sensor (PL2.36)



RRP2.6 Exit Sensor (PL2.36)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Caution : Perform the following procedure after the temperature of the Fuser Assembly has gone down sufficiently.

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Pop Up Assembly. (RRP1.5)
6. Remove the Rear Frame Assembly. (RRP1.6)
7. Remove the Fuser Assembly. (RRP2.1)
8. Remove the two screws(gold, Tap, 8mm) securing the Exit Cover, and remove the Exit Cover.(Figure2.2)
9. Remove the Fuser Top Cover Assembly. (RRP2.4)
10. Remove the Exit Chute. (RRP2.5)

Caution : In the next step, be careful not to damage the Heat Roll in the next step.

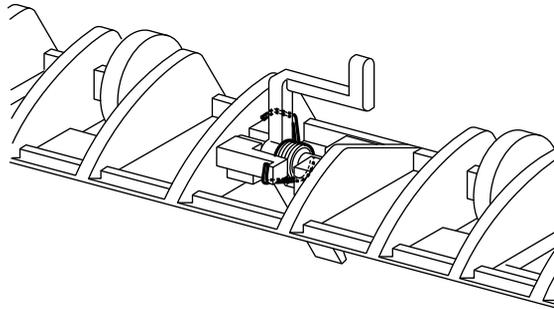
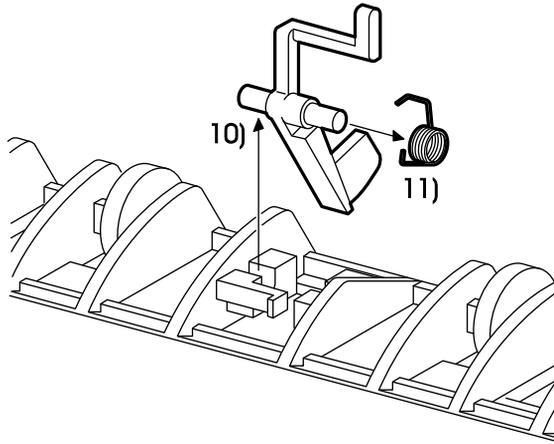
11. Snap off the harness of Exit Harness from the cut of the Fuser Cover L and Fuser Frame Assembly, and release it.
12. Unlatch the Exit Sensor hook from Fuser Frame Assembly, and remove the Exit Sensor and the Exit Harness.
13. Disconnect the connector of the Exit Sensor (P/J153), and remove the Exit Harness from Exit Sensor.

Replacement

Reverse the removal procedures for reinstallation.

Note : Pass the harness of the Exit Harness through the cuts of the Fuse Cover L and Fuser Frame Assembly.

RRP2.7 Exit Actuator (PL2.38)



SAK415SB

RRP2.7 Exit Actuator (PL2.38)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Caution : Perform the following procedure after the temperature of the Fuser Assembly has gone down sufficiently.

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Pop Up Assembly. (RRP1.5)
6. Remove the Rear Frame Assembly. (RRP1.6)
7. Remove the Fuser Assembly. (RRP2.1)
8. Remove the Fuser Top Cover Assembly. (RRP2.4)
9. Remove the Exit Chute with the Exit Actuator. (RRP2.5)
10. Unlatch the hook of the Exit Torsion Spring from the Exit Chute, then pull the Exit Actuator with the Exit Torsion Spring straight up and remove them.

Memo: Use the mini-screwdriver for easy operation.

11. Remove the Exit Torsion Spring from Exit Actuator.

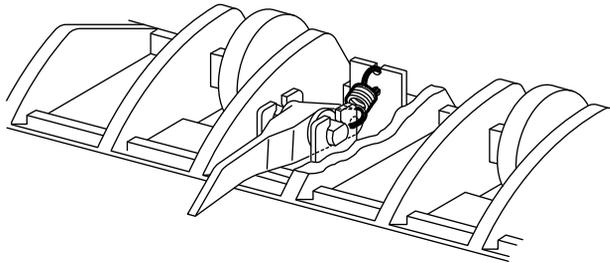
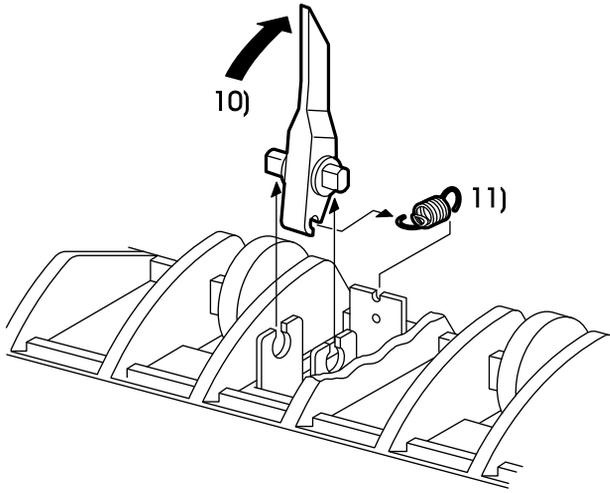
Note : Be careful not to lose or drop the Exit Torsion Spring.

Replacement

Reverse the removal procedures for reinstallation.

Note : Be sure to latch the hook of the Exit Torsion Spring with the Exit Actuator and Exit Chute to function normally.

RRP2.8 H/R Finger (PL2.43)



SAK416SB

RRP2.8 H/R Finger (PL2.43)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Caution : Perform the following procedure after the temperature of the Fuser Assembly has gone down sufficiently.

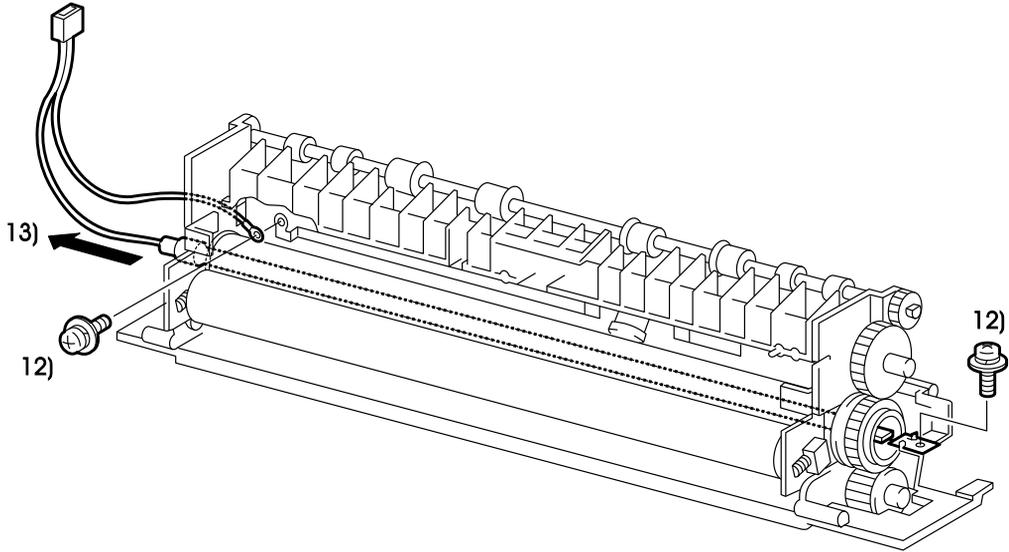
1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Pop Up Assembly. (RRP1.5)
6. Remove the Rear Frame Assembly. (RRP1.6)
7. Remove the Fuser Assembly. (RRP2.1)
8. Remove the Fuser Top Cover Assembly. (RRP2.4)
9. Remove the Exit Chute. with the H/R Finger. (RRP2.5)
10. Raise the H/R Finger at the degree of 90, and lift it from the slot of the Finger Bracket. Then, remove the H/R Finger with the Finger Spring.
11. Remove the Finger Spring from the H/R Finger.

Replacement

Reverse the removal procedures for reinstallation.

- Caution :*
1. Be careful not to damage the edge of the H/R Finger.
 2. Be careful not to damage the Heat Roll with the H/R Finger.

RRP2.9 Heater Rod (PL2.9)



SAK417SC

RRP2.9 Heater Rod (PL2.9)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Caution : Perform the following procedure after the temperature of the Fuser Assembly has gone down sufficiently.

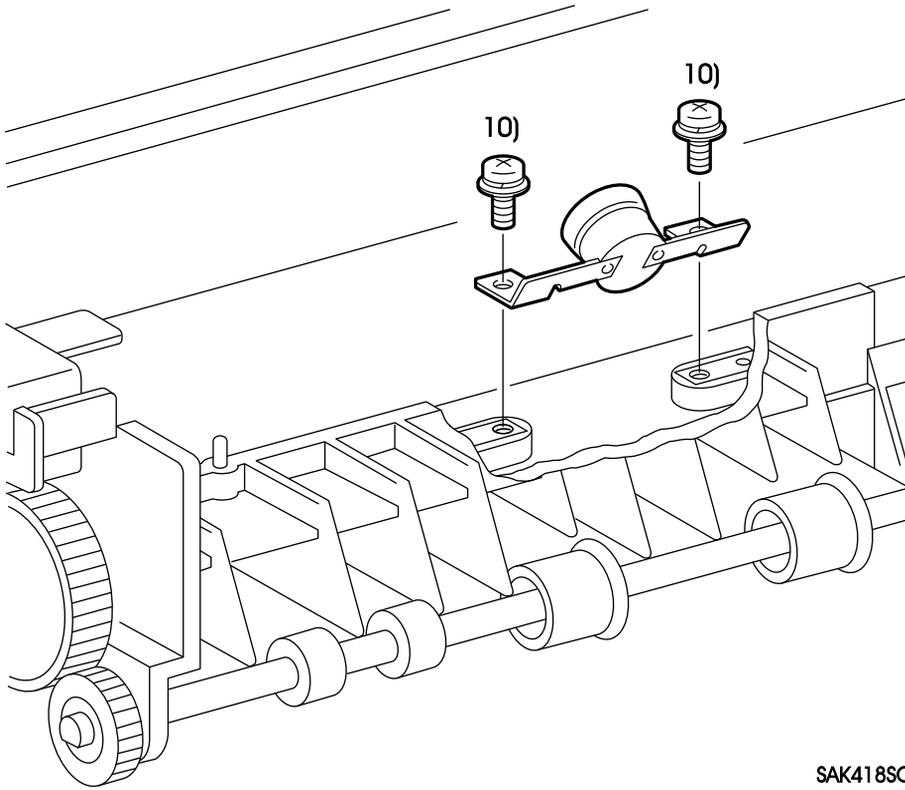
1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Pop Up Assembly. (RRP1.5)
6. Remove the Rear Frame Assembly. (RRP1.6)
7. Remove the Fuser Assembly. (RRP2.1)
8. Remove the Fuser Top Cover Assembly. (RRP2.4)
9. Remove the Exit Chute. (RRP2.5)
10. Remove the Fuser Cover L and P/R Earth Plate L. (RRP2.2)
11. Remove the Fuser Cover R and P/R Earth Plate R. (RRP2.3)
12. Remove the two screws(gold, with washer, 8mm) securing the Heater Rod.
13. Pull the Heater Rod to the right (to the side of wire) and remove it.

Note : Do not touch the glass of the Heater Rod. If touched, clean by using alcohol.

Replacement

Reverse the removal procedures for reinstallation.

RRP2.10 Thermostat (PL2.12)



SAK418SC

RRP2.10 Thermostat (PL2.12)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Note : Perform the following procedure after the temperature of the Fuser Assembly has gone down sufficiently.

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Pop Up Assembly. (RRP1.5)
6. Remove the Rear Frame Assembly. (RRP1.6)
7. Remove the Fuser Assembly. (RRP2.1)
8. Remove the Fuser Top Cover Assembly. (RRP2.4)
9. Remove the Exit Chute. (RRP2.5)

Caution : In the next step, place paper between the Heat Roll and the Thermostat or driver, to prevent the Heat Roll from damaging.

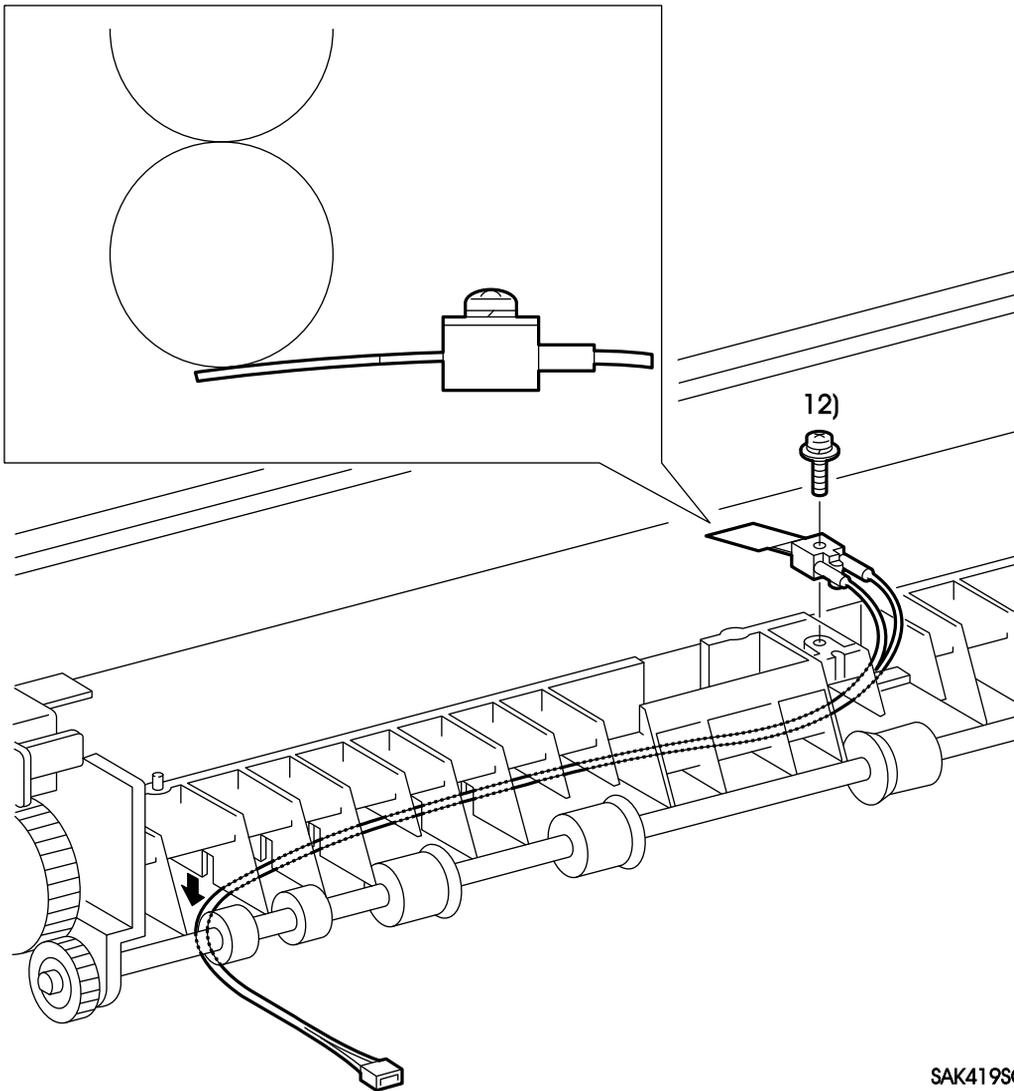
10. Remove the two screws(gold, with washer, 8mm) securing the Thermostat, and remove the Thermostat.

Replacement

Reverse the removal procedures for reinstallation.

Caution : Be careful not to damage the Heat Roll when installing.

RRP2.11 Temperature Sensor Assembly (PL2.13)



SAK4199C

RRP2.11 Temperature Sensor Assembly (PL2.13)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Caution : Perform the following procedure after the temperature of the Fuser Assembly has gone down sufficiently.

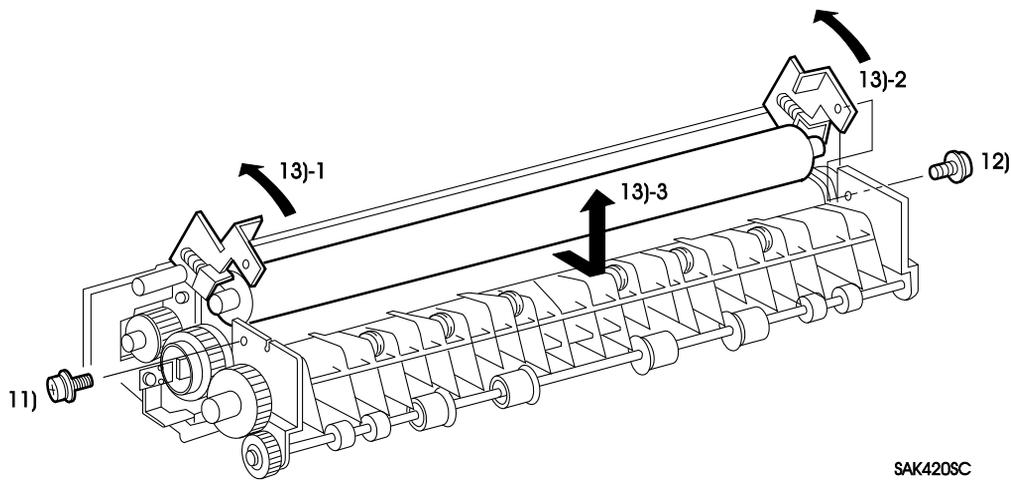
1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Pop Up Assembly. (RRP1.5)
6. Remove the Rear Frame Assembly. (RRP1.6)
7. Remove the Fuser Assembly. (RRP2.1)
8. Remove the two screws(gold, tap, 8mm) securing the Exit Cover, and remove the Exit Cover.(Figure2.2)
9. Remove the Top Cover Assembly. (RRP2.4)
10. Remove the Exit Chute. (RRP2.5)
11. Snap off the harness of the Temperature Sensor Assembly from the cuts of the Fuser Cover L and Fuser Frame Assembly and release it.
12. Remove the one screw(gold, with washer,10mm) securing the Temperature Sensor Assembly and remove the Temperature Sensor Assembly.

Replacement

Reverse the removal procedures for reinstallation.

Caution : Install the Temperature Sensor Assembly so that its thermistor (tape) face contacts the Heat Roll.

RRP2.12 Pressure Roll (PL2.19)



SAK420SC

RRP2.12 Pressure Roll (PL2.19)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Caution : Perform the following procedure after the temperature of the Fuser Assembly has gone down sufficiently.

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Pop Up Assembly. (RRP1.5)
6. Remove the Rear Frame Assembly. (RRP1.6)
7. Remove the Fuser Assembly. (RRP2.1)
8. Remove the Fuser Top Cover Assembly. (RRP2.4)

Caution : Be careful not to damage the Heat Roll in the following procedures.

9. Remove the Fuser Cover L and P/R Earth Plate L. (RRP2.2)
10. Remove the Fuser Cover R and P/R Earth Plate R. (RRP2.3)

Caution : In the following steps, be careful not to damage the Heater Rod in the following procedures.

Note: In the following steps, P/R Bearing, Nip Spring, Nip Lever L, Nip Lever R, and P/R Eliminator will not be fixed in place. Be careful not to lose or drop the parts. Remove them as necessary.

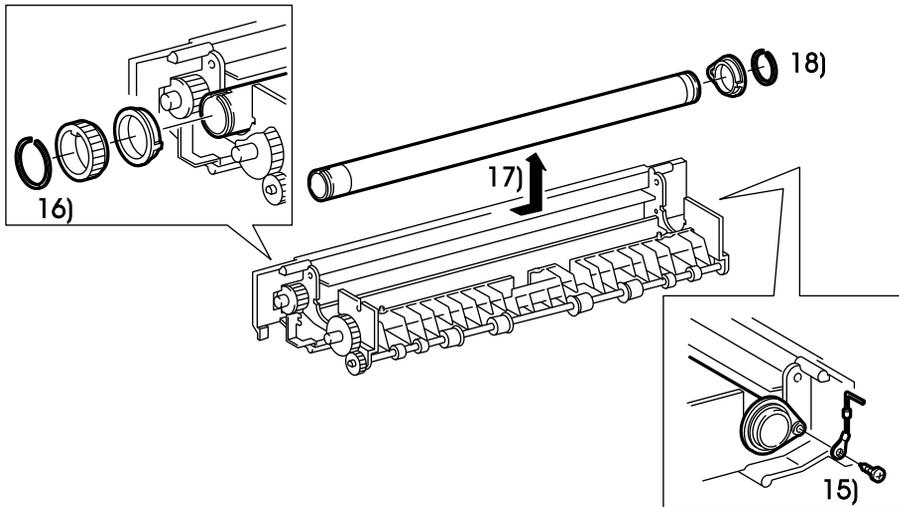
11. Remove the screw(gold, with washer, 8mm) securing the Nip Lever L.
12. Remove the screw(gold, with washer, 8mm) securing the Nip Lever R.
13. Lift up the Nip Lever L and Nip Lever R and Remove the Pressure Roll.

Replacement

Reverse the removal procedures for reinstallation.

Note : Be careful not to leave off the P/R Eliminator from the hole of the Fuser Frame Assembly.

RRP2.13 Heat Roll (PL2.14)



SAK421SC

RRP2.13 Heat Roll (PL2.14)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Caution : Perform the following procedure after the temperature of the Fuser Assembly has gone down sufficiently.

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Pop Up Assembly. (RRP1.5)
6. Remove the Rear Frame Assembly. (RRP1.6)
7. Remove the Fuser Assembly. (RRP2.1)
8. Remove the Fuser Top Cover Assembly. (RRP2.4)
9. Remove the Exit Chute. (RRP2.5)
10. Remove the Fuser Cover L and P/R Earth Plate L. (RRP2.2)
11. Remove the Fuser Cover R and P/R Earth Plate R. (RRP2.3)
12. Remove the Heater Rod. (RRP2.10)
13. Remove the Pressure Roll. (RRP2.12)
14. Remove the Nip Lever L, Nip Lever R, and P/R Eliminator.(Figure2.12)
15. Remove the screw(gold, Tap, 8mm) securing the H/R Diode, and remove the H/R Diode.
16. Remove the H/R Ring securing the left side of the Heat Roll, and remove the H/R Gear and H/R Bearing L.

Caution : In the next step, be careful not to damage the Heat Roll.
17. Slide the H/R Bearing R to the right to remove it from the Fuser Frame Assembly, then remove the Heat Roll with the right H/R Ring and H/R Bearing R.
18. Remove the right H/R Ring and H/R Bearing from the Heat Roll.

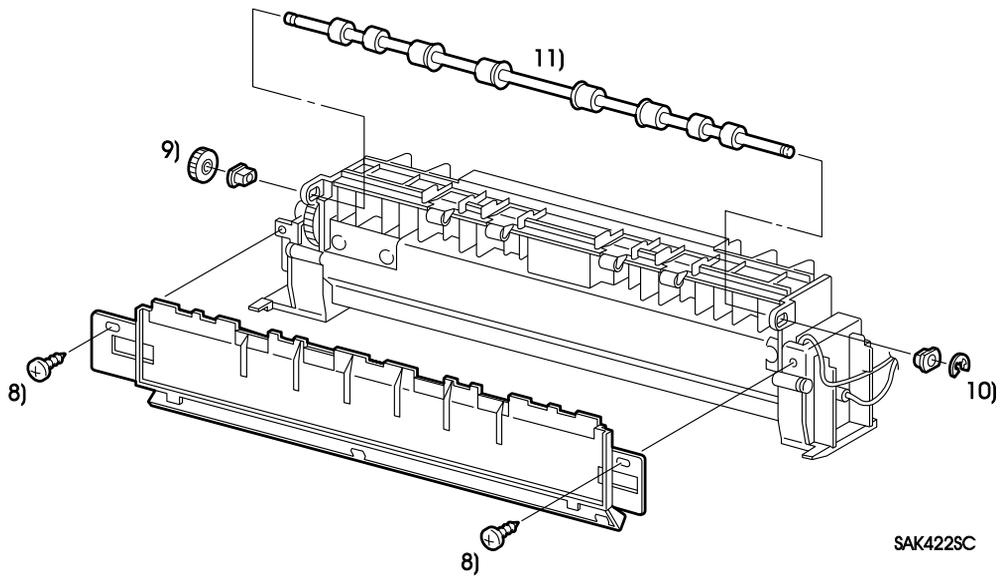
Replacement

Reverse the removal procedures for reinstallation.

Caution : Install the Temperature Sensor Assembly so that its thermistor (tape) face contacts the Heat Roll.

Note : Be sure to install the H/R Diode for the correct position.

RRP2.14 Exit Roll Assembly (PL2.35)



SAK422SC

RRP2.14 Exit Roll Assembly (PL2.35)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Caution : Perform the following procedure after the temperature of the Fuser Assembly has gone down sufficiently.

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Pop Up Assembly. (RRP1.5)
6. Remove the Rear Frame Assembly. (RRP1.6)
7. Remove the Fuser Assembly. (RRP2.1)
8. Remove the screw(gold, tap, 8mm) securing the Exit Cover, and remove the Exit Cover.(Figure 2.2)

Note : In the following step, be careful not to deform the earth plate at the Exit Bearing.

9. Pull out the Exit Gear which is attached to the Exit Roll Assembly by the hook, then remove the left Exit Bearing.
10. Pull the E Ring securing the Exit Roll Assembly and remove it. Remove the Exit Bearing on the right.

Caution : In the next step, be careful not to deform the plate spring attached with the pinch roll of the Fuser Top Cover Assembly.

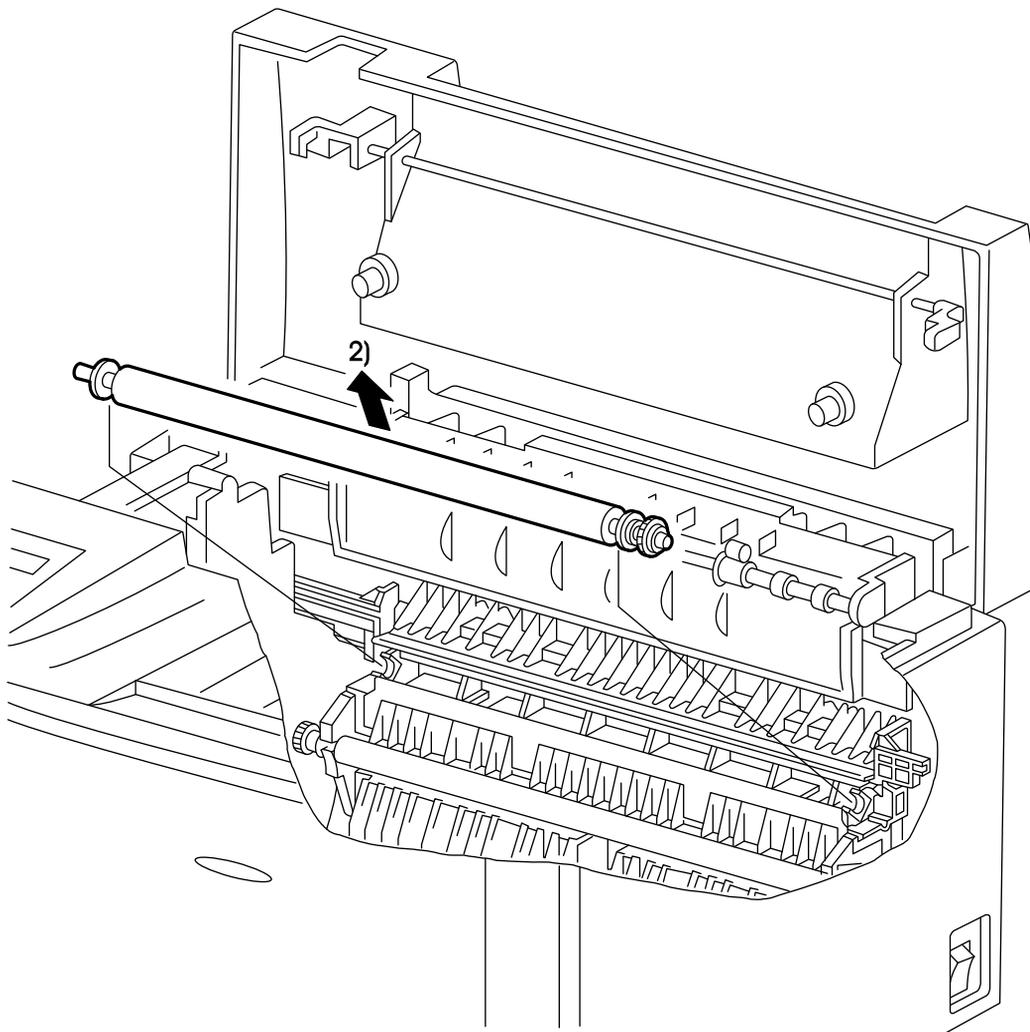
11. Move the Exit Roll Assembly to the left and right to remove it from the Fuser Frame Assembly.

Replacement

Reverse the removal procedures for reinstallation.

RRP3 Paper Transportation

RRP3.1 BTR Assembly (PL3.30)



SAK423SC

RRP3.1 BTR Assembly (PL3.30)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

1. Press the Latch Button to open the Pop Up Cover.
2. Hold the BTR with the gear of right edge and the shaft of the left edge, then lift it up approximately 45 degrees upward from the Transport Chute Assembly to remove the BTR Assembly.

Caution : 1. Do not touch the roll surface of the BTR Assembly, Detack Saw of the Transport Chute Assembly, and the window of the ROS Assembly (output part of the laser beam).

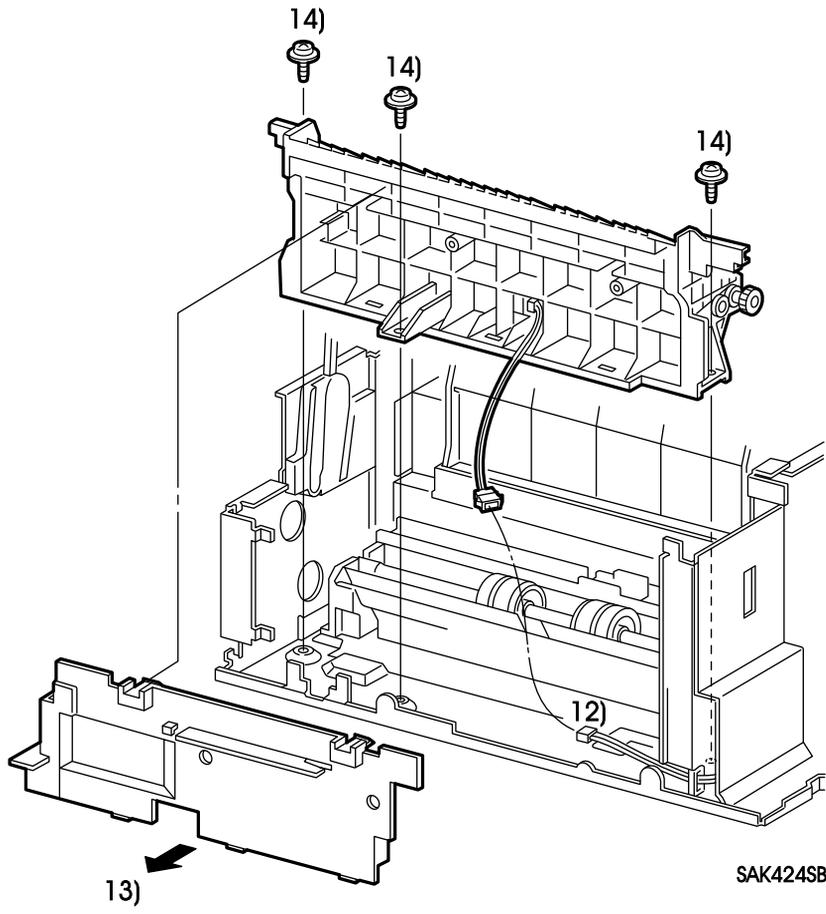
2. After removing the BTR Assembly, cover it with paper and place in safe area to avoid contamination or damage.

Replacement

Reverse the removal procedures for reinstallation.

Note : When installing the BTR Assembly, the right and left tracking roll should be located on the outside of the BTR Bearing.

RRP3.2 Transport Chute Assembly (PL3.1)



RRP3.2 Transport Chute Assembly (PL3.1)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

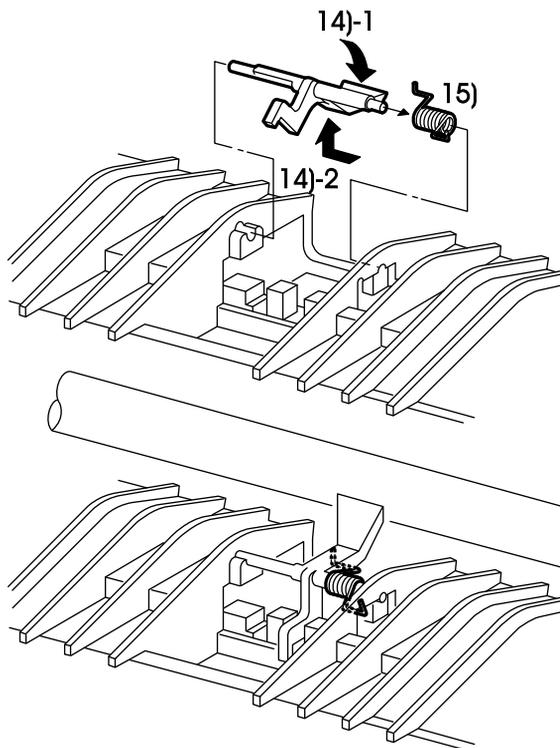
1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Pop Up Assembly. (RRP1.5)
6. Remove the Rear Frame Assembly. (RRP1.6)
7. Remove the Fuser Assembly. (RRP2.1)
8. Remove the BTR Assembly. (RRP3.1)
9. Remove the CRU Guide Assembly L. (RRP5.4)
10. Remove the Fan. (RRP6.2)
11. Remove the LVPS Assembly. (RRP6.3)
12. Disconnect the relay connector (P/J122) between the Registration Sensor Harness at the rear of the Transport Chute Assembly and the P/H Harness.
13. Remove the Chute Plate backward which is fixed with the Transport Chute Assembly by the hook.
Caution : Do not touch the Detack Saw of the Transport Chute Assembly in the next step. Be careful that the Transport Chute Assembly does not interfere with the Drive Assembly.
14. Remove the three screws(silver, with brim, 8mm) securing the Transport Chute Assembly. Lift up the Transport Chute Assembly to remove getting over the Drive Assembly.

Replacement

Reverse the removal procedures for reinstallation.

Note : Be careful for the mylar of the MSI Chute Assembly when installing.

RRP3.3 Registration Actuator (P3.4)



SAK425SB

RRP3.3 Registration Actuator (P3.4)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Pop Up Assembly. (RRP1.5)
6. Remove the Rear Frame Assembly. (RRP1.6)
7. Remove the Fuser Assembly. (RRP2.1)
8. Remove the BTR Assembly. (RRP3.1)
9. Remove the CRU Guide Assembly L. (RRP5.4)
10. Remove the Fan. (RRP6.2)
11. Remove the LVPS Assembly. (RRP6.3)
12. Remove the Transport Chute Assembly. (RRP3.2)
13. Unlatch the Registration Spring which latches the housing of the Transport Chute Assembly.
14. After locating the paper-contacting part of the Registration Actuator to the inside of the Transport Chute Assembly, move the Registration Actuator to the left to remove it from the supports of the Transport Chute Assembly. Then move the Registration Actuator to the right to remove it with the Registration Spring.
15. Remove the Registration Spring from the Registration Actuator.

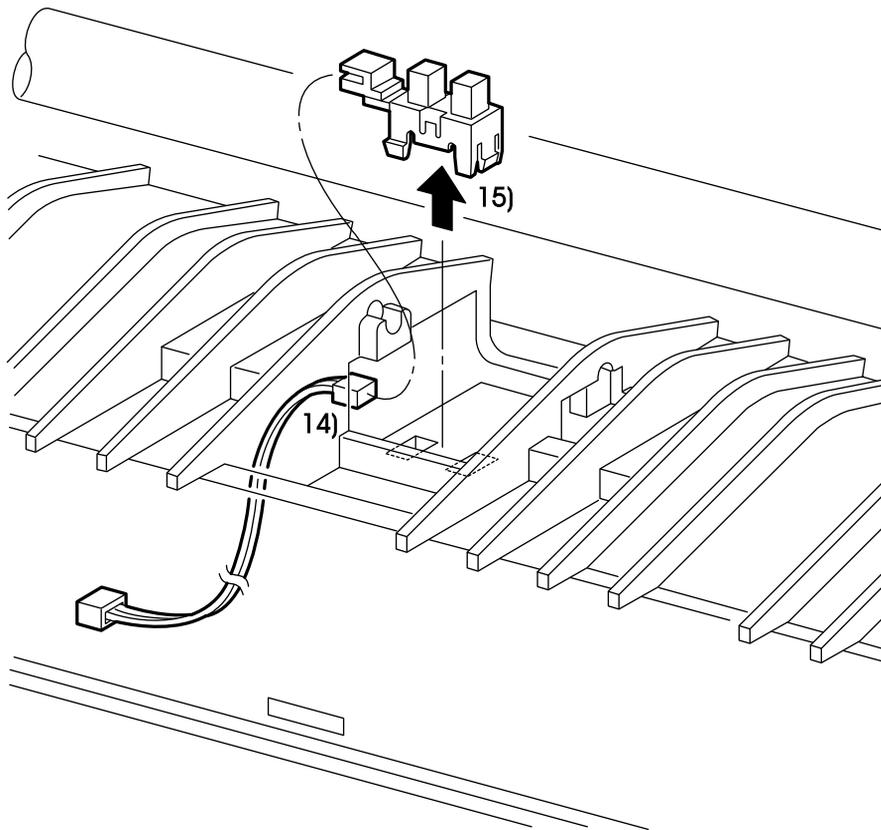
Note : Be careful not to lose or drop the Registration Spring

Replacement

Reverse the removal procedures for reinstallation.

Note: Be sure to latch the hook of the Registration Spring with the housing of the Registration Actuator and the Transport Chute Assembly.

RRP3.4 Registration Sensor (P3.3)



SAK426SB

RRP3.4 Registration Sensor (P3.3)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

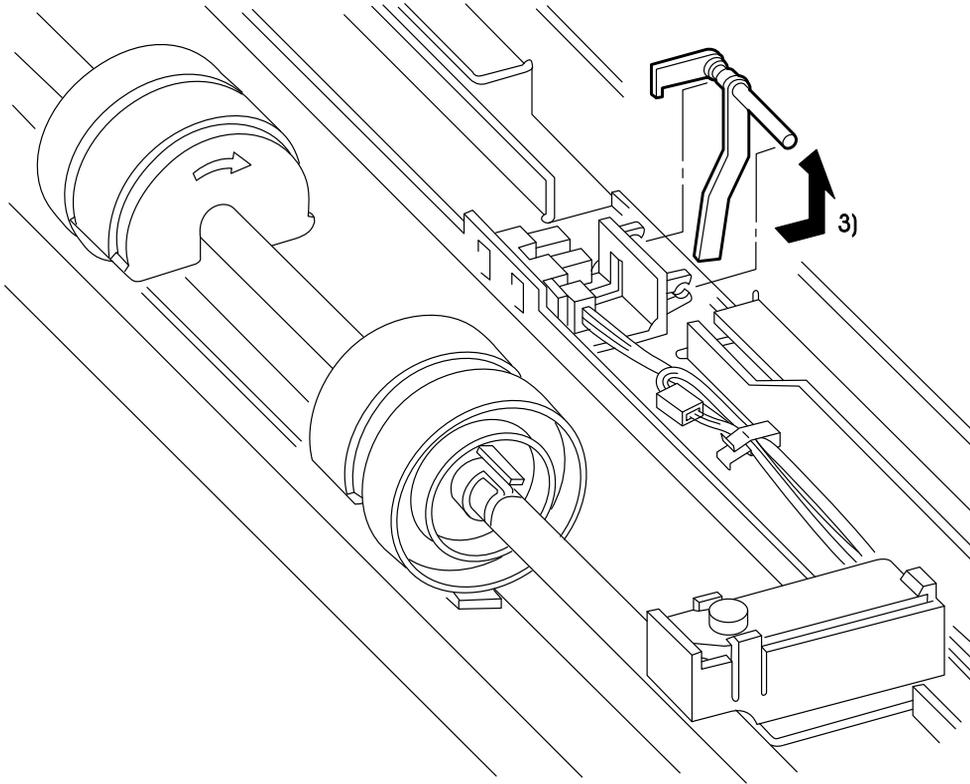
1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Pop Up Assembly. (RRP1.5)
6. Remove the Rear Frame Assembly. (RRP1.6)
7. Remove the Fuser Assembly. (RRP2.1)
8. Remove the BTR Assembly. (RRP3.1)
9. Remove the CRU Guide Assembly L. (RRP5.4)
10. Remove the Fan. (RRP6.2)
11. Remove the LVPS Assembly. (RRP6.3)
12. Remove the Transport Chute Assembly. (RRP3.2)
13. Remove the Registration Actuator. (RRP3.3)
14. After removing the Registration Sensor Harness from the clamp, disconnect the connector (P/J 123) and remove the Registration Sensor Harness.
15. Unlatch the hook of the Registration Sensor from housing of the Transport Chute Assembly to remove the sensor.

Replacement

Reverse the removal procedures for reinstallation.

RRP4 Multi Sheet Inserter

RRP4.1 MSI N/P Actuator (PL4.32)



SAK427CC

RRP4.1 MSI N/P Actuator (PL4.32)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

1. Open the Front Tray.

Caution : In the following steps, do not touch the Detack Saw of the Transport Chute Assembly and the window of the ROS Assembly (output part of the laser beam).

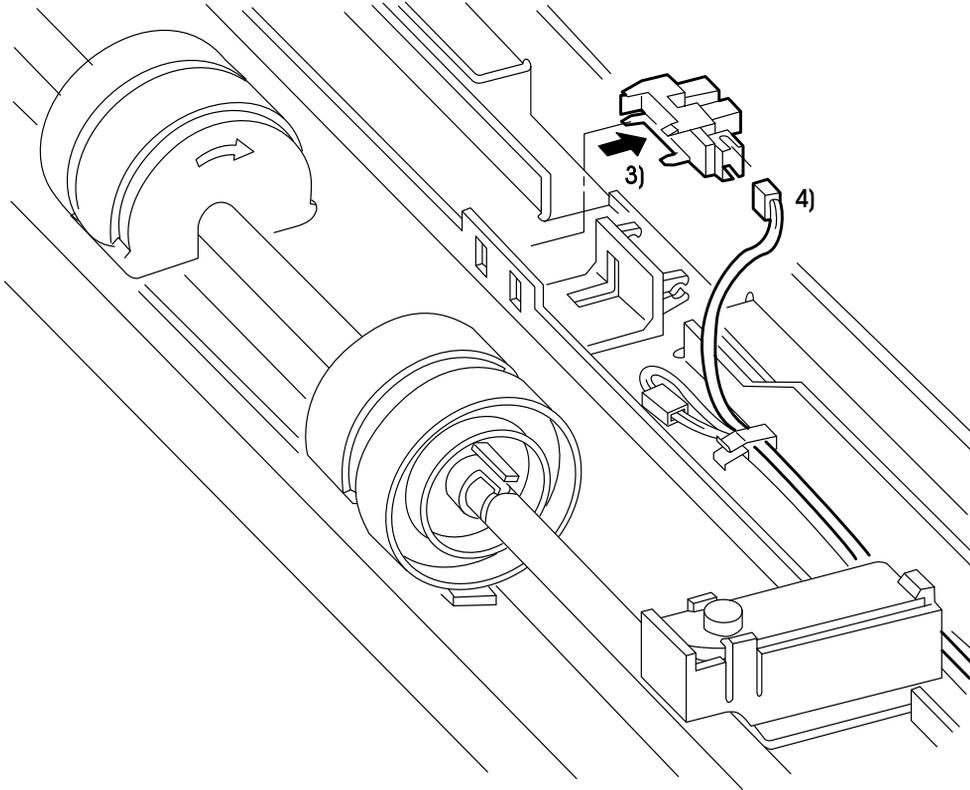
2. Remove the BTR Assembly. (RRP3.1)
3. Pull the MSI N/P Actuator by pulling it away (toward you) and up from the Actuator Holder.

Memo : Use the mini-screwdriver for easy operation.

Replacement

Reverse the removal procedures for reinstallation.

RRP4.2 MSI No Paper Sensor (PL4.31)



SAK428CC

RRP4.2 MSI No Paper Sensor (PL4.31)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Caution : In the following steps, do not touch the Detack Saw of the Transport Chute Assembly and the window of the ROS Assembly (output part of the laser beam)

1. Remove the BTR Assembly. (RRP3.1)
2. Remove the MSI N/P Actuator. (RRP4.1)

Caution : In the next step, the MSI No Paper Sensor is still connected with the base frame by the harness. Be careful not to place the MSI No Paper Sensor too far from the printer.

3. Unlatch the hook of the MSI No Paper Sensor from the Sensor Bracket and take off the MSI No Paper Sensor.
4. Disconnect the MSI No Paper Sensor connector(P/J124) and remove the MSI No Paper Sensor.

Memo : Use the mini-screwdriver for easy operation.

Replacement

Reverse the removal procedures for reinstallation.

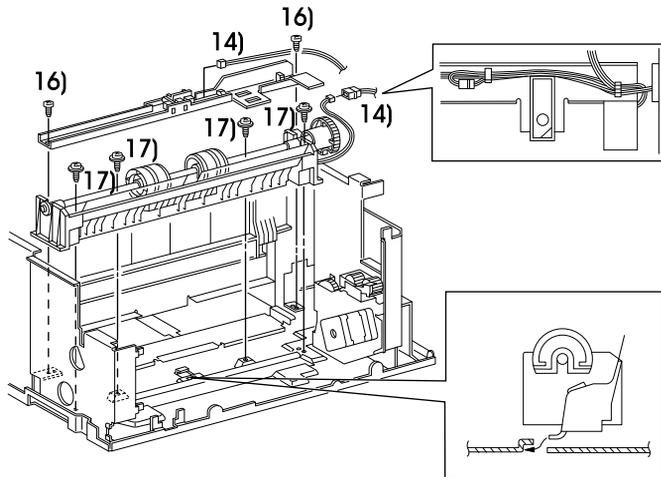
RRP4.3 Toner Sensor Assembly

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RRP4.3 Toner Sensor Assembly

Note: The Toner Sensor Assembly is not included in the basic configuration.

RRP4.4 MSI Chute Assembly (PL4.10)



SAK430SC

RRP4.4 MSI Chute Assembly (PL4.10)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Pop Up Assembly. (RRP1.5)
6. Remove the Rear Frame Assembly. (RRP1.6)
7. Remove the Fuser Assembly. (RRP2.1)

Caution : In the following steps, do not touch the Detack Saw of the Transport Chute Assembly and the window of the ROS Assembly (output part of the laser beam)

8. Remove the BTR Assembly. (RRP3.1)
9. Remove the CRU Guide Assembly L. (RRP5.4)
10. Remove the Fan. (RRP6.2)
11. Remove the LVPS Assembly. (RRP6.3)
12. Remove the Transport Chute Assembly. (RRP3.2)
13. Remove the Toner Sensor Assembly (RRP4.3)
14. Disconnect the MSI No Paper Sensor connectors (P/J124) and Pick Up Solenoid connector(P/J125).
15. Remove all the harnesses on the Sensor Bracket from the two clamps and release them.
16. Remove the two screws(silver,6mm) securing the Sensor Bracket, and remove the Sensor Bracket with the MSI No Paper Sensor and MSI N/P Actuator etc..
17. Remove the four screws(silver, with brim, 8mm) securing the MSI Chute Assembly. Press down on the Front Bottom Tray, remove the MSI Chute Assembly avoiding its interference with the frame and the Drive Assembly.

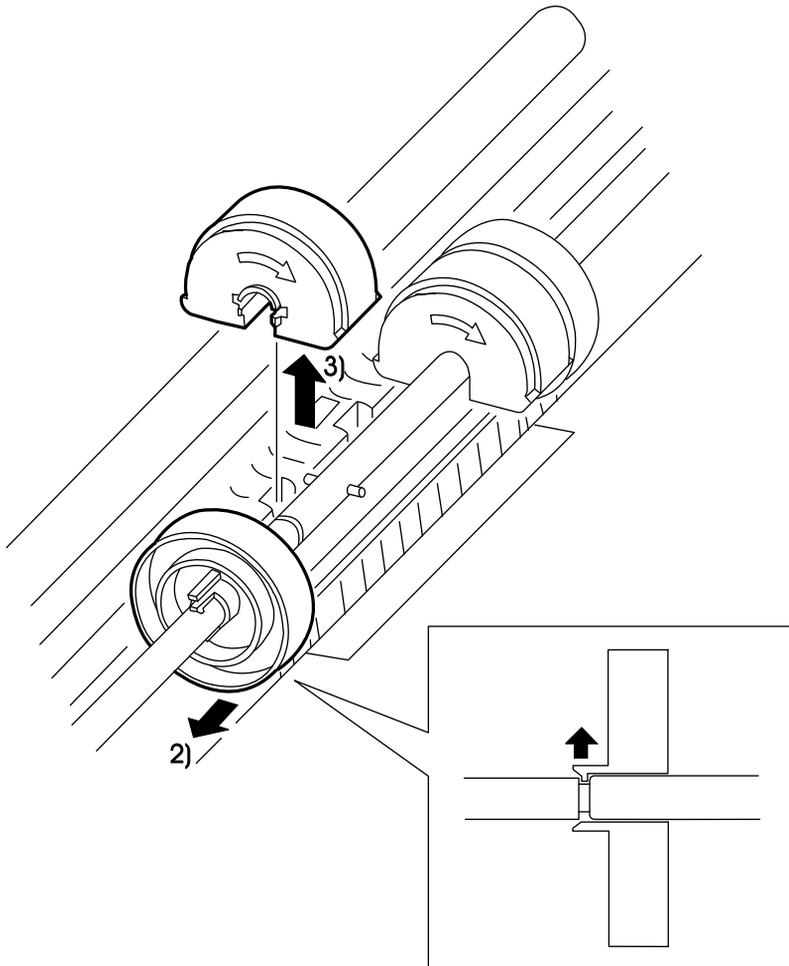
Memo : Adjust the location of the Pick Up Cam or Pick Up Gear of the MSI Chute Assembly for easy removal of the MSI Chute Assembly.

Replacement

Reverse the removal procedures for reinstallation.

- Note :*
1. Be sure that the convex part of the Pick Up Gear is stopped by the stopper of the Pick Up Solenoid (Pick Up Roll is in upper position and Pick Up Cam is in lower position).
 2. Be sure to latch the hooks at the middle lower part of the MSI Chute with the frame.

RRP4.5 Pick Up Roll (PL4.13)



SAK431CB

RRP4.5 Pick Up Roll (PL4.13)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Caution : In the following steps, do not touch the Detack Saw of the Transport Chute Assembly and the window of the ROS Assembly (output part of the laser beam).

1. Remove the BTR Assembly. (RRP3.1)

Caution : In the next step, be careful not to damage the hook of the Core Roll.

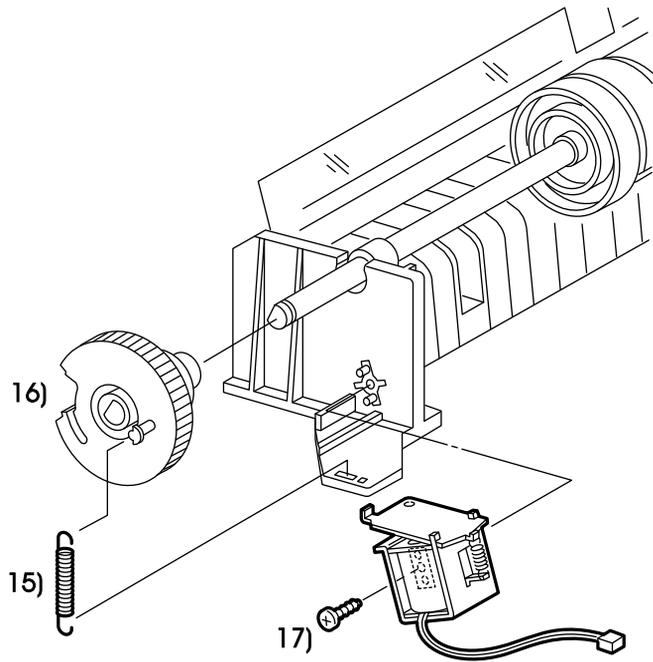
2. Unlatch the hook of the Core Roll from the Pick Up Shaft while pressing down on the Retard Pad Assembly, then move the Core Roll in the direction of the hook (not to the Pick Up Roll) for approximately 30mm.
3. Slide the Pick Up Roll to the Core Roll, then lift it up and take off the Pick Up Roll.

Replacement

Reverse the removal procedures for reinstallation.

- Note :*
1. Be sure to install the Pick Up Roll with arrow pointing to the front and with its surface in the reverse direction of the Pick Up Cam.
 2. Press down the Retard Pad Assembly when reinstalling the Core Roll to the original position.

RRP4.6 Pick Up Solenoid (PL4.20)



SAK432SC

RRP4.6 Pick Up Solenoid (PL4.20)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Pop Up Assembly. (RRP1.5)
6. Remove the Rear Frame Assembly. (RRP1.6)
7. Remove the Fuser Assembly. (RRP2.1)
8. Remove the BTR Assembly. (RRP3.1)
9. Remove the CRU Guide Assembly L. (RRP5.4)
10. Remove the Fan. (RRP6.2)
11. Remove the LVPS Assembly. (RRP6.3)
12. Remove the Transport Chute Assembly. (RRP3.2)
13. Remove the Toner Sensor Assembly (RRP4.3)
14. Remove the MSI Chute Assembly. (RRP4.4)
15. Remove the Pick Up Spring from the MSI Chute and the Pick Up Gear.

Caution : In the following steps, the Transport Bearing may come off from the MSI Chute and may deform the plate spring for grounding. Be careful that the Transport Bearing does not come off.

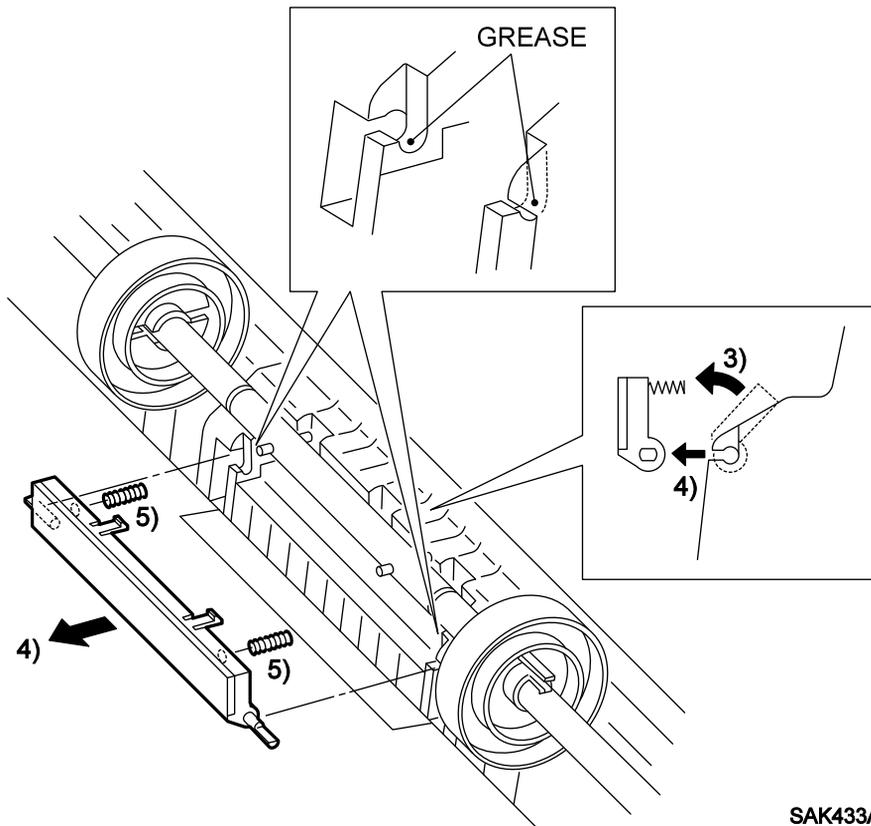
16. Unlatch the hook of the Pick Up Gear from the Pick Up Shaft, and remove the Pick Up Gear.
17. Remove the screw(gold, tap, 8mm) securing the Pick Up Solenoid, and remove the Pick Up Solenoid.

Replacement

Reverse the removal procedures for reinstallation.

- Note :*
1. When installing the Pick Up Solenoid, make the convex part of the Pick Up Gear mesh firmly with the stopper of the Pick Up Solenoid.
 2. When installing, be sure that the convex part of the Pick Up Gear is stopped by the stopper of the Pick Up Solenoid (Pick Up Roll is in upper position and Pick Up Cam is in lower position).

RRP4.7 Retard Pad Assembly (PL4.21)



SAK433A

RRP4.7 Retard Pad Assembly (PL4.21)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Note : Remove the MSI Chute Assembly (RRP4.4) if it is difficult to perform the following procedure.

Caution : In the following steps, do not touch the Detack Saw of the Transport Chute Assembly and the window of the ROS Assembly (output part of the laser beam).

1. Remove the BTR Assembly. (RRP3.1)

Note : In the following step, the left and right Core Rolls should be moved to the location where they are off the Retard Pad Assembly.

2. Remove the left and right Pick Up Roll. (RRP4.5)

Note : In the following procedure, the Retard Spring may come off. Be careful not to lose or drop it.

3. Turn the Retard Pad Assembly to the front, then unlatch the hook of the Retard Pad Assembly from the MSI Chute.

Note: Be careful not to attach any grease on the Retard Pad Assembly to the MSI Chute.

4. After locating the pad surface vertically, pull out the Retard Pad Assembly to the front with the Retard Spring.
5. Remove the two Retard Springs from the Retard Pad Assembly.

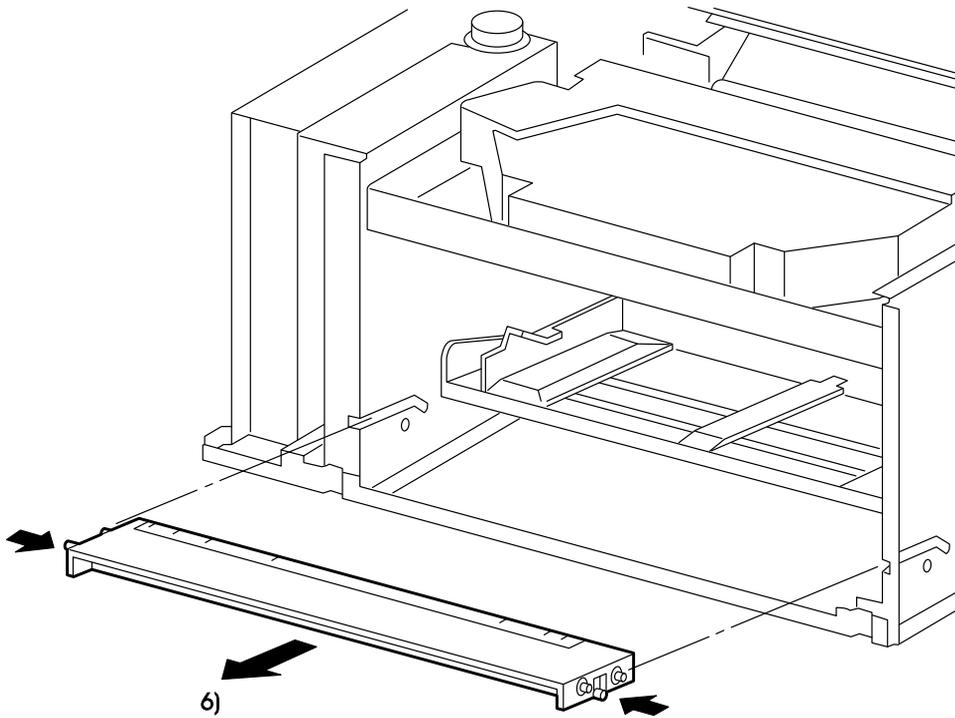
Replacement

Reverse the removal procedures for reinstallation.

Note : 1. Before installing the Retard Pad Assembly, coat with grease found packaged in the spare parts to the slot of the MSI Chute which is to be a support of the Retard Pad Assembly.(Use the edge of the mini-screwdriver.) Do not attach grease to other component.

2. After installation, align the position of the Retard Spring with the slot of MSI Chute by using a mini-screwdriver.

RRP4.8 Front In Tray (PL4.1)



SAK434CA

RRP4.8 Front In Tray (PL4.1)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Front Cover Assembly. (RRP1.3)
5. Remove the Front Tray. (RRP1.6)
6. Disengage the boss in the hole of the frame, and pull the Front In Tray to the front to remove it.

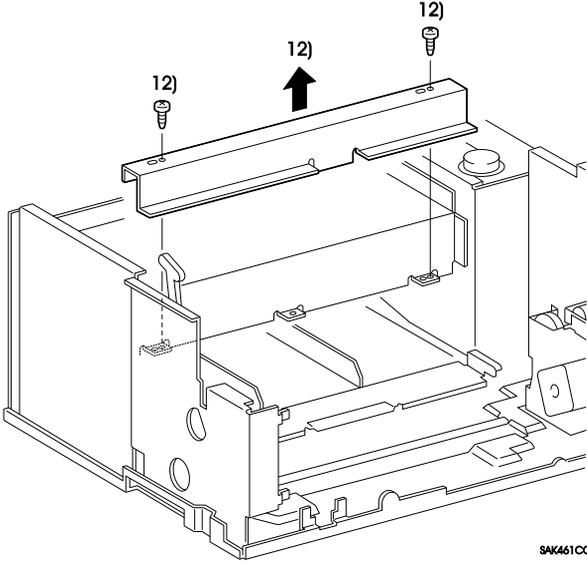
Memo : Use mini-screwdriver for easy operation.

Replacement

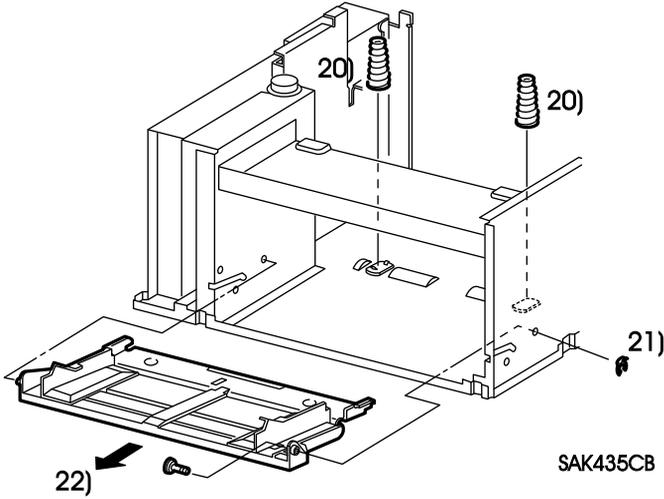
Reverse the removal procedures for reinstallation.

Note : Be sure to locate the paper size label inside the machine.

RRP4.9 Front Bottom Tray (PL4.2)



SAK461CC



SAK435CB

RRP4.9 Front Bottom Tray (PL4.2)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Front Cover Assembly. (RRP1.3)
5. Remove the Rear Panel. (RRP6.1)
6. Remove the Pop Up Assembly. (RRP1.5)
7. Remove the Rear Frame Assembly. (RRP1.6)
8. Remove the Fuser Assembly. (RRP2.1)
9. Remove the BTR Assembly. (RRP3.1)
10. Remove the CRU Sensor Assembly. (RRP5.1)
11. Remove the ROS Assembly. (RRP5.2)
12. Remove the two screws(silver, 6mm) securing the Frame Bracket, and remove the Frame Bracket(PL5.3).
13. Remove the CRU Guide Assembly L. (RRP5.4)
14. Remove the Fan. (RRP6.2)
15. Remove the LVPS Assembly. (RRP6.3)
16. Remove the Transport Chute Assembly. (RRP3.2)
17. Remove the Toner Sensor Assembly (RRP4.3)
18. Remove the MSI Chute Assembly. (RRP4.4)
19. Remove the Front In Tray. (RRP4.8)
20. With the Front Bottom Tray lifting up, remove the two MSI N/F Springs from the rear side.
21. Remove the KL clip securing the Bottom Tray STUD, then remove the Bottom Tray STUD.
22. Disengage the boss of Front Bottom Tray in the hole of the left frame, then pull the Front Bottom Tray to the front to remove it.

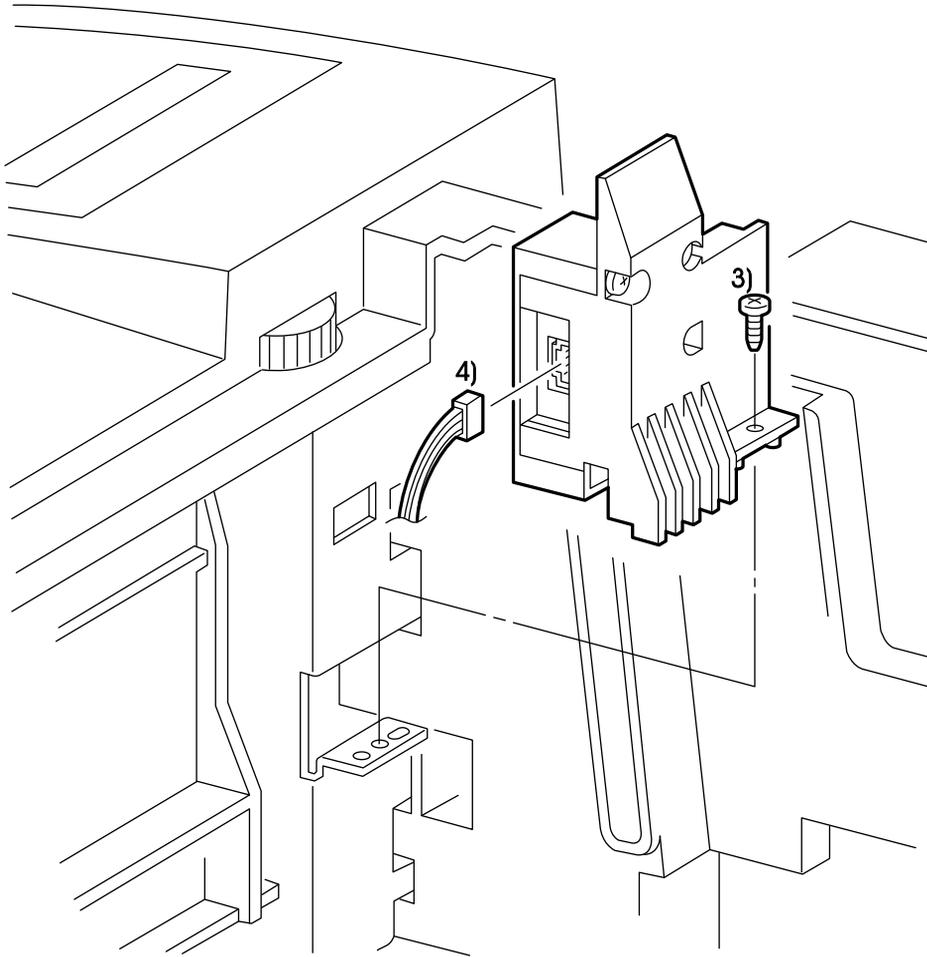
Replacement

Reverse the removal procedures for reinstallation.

Note : Be sure to latch the two MSI N/F Springs with the hook of the frame.

RRP5 Drive & Xerographics

RRP5.1 CRU Sensor Assembly (PL5.30)



SAK438SB

RRP5.1 CRU Sensor Assembly (PL5.30)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)

Caution : In the following procedures, do not touch the Detack Saw of the Transport Chute Assembly and the window of the ROS Assembly (output part of the laser beam)

3. Remove the BTR Assembly. (RRP3.1)

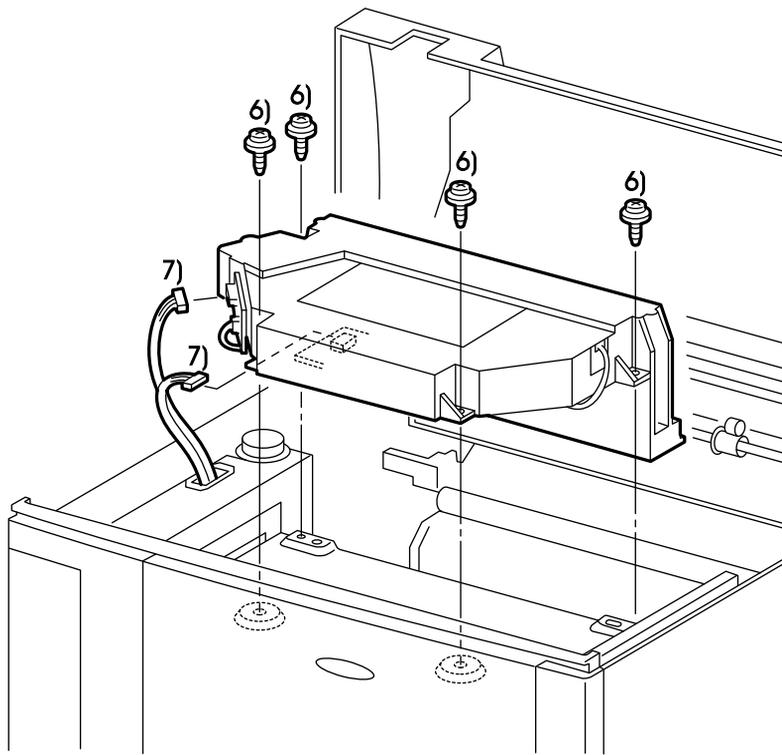
Caution : In the next step, the CRU Sensor Assembly is still connected with the base frame by the harness. Do not place the CRU Sensor too far from the printer.

4. Remove the screw(silver, 6mm) securing the CRU Sensor Assembly, and separate the CRU Sensor Assembly from the frame.
5. Disconnect CRU Sensor Assembly connector(P/J161), and remove the CRU Sensor Assembly.

Replacement

Reverse the removal procedures for reinstallation.

RRP5.2 ROS Assembly (PL5.10)



SAK436SA

RRP5.2 ROS Assembly (PL5.10)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)

Caution : In the following procedures, do not touch the Detack Saw of the Transport Chute Assembly and the window of the ROS Assembly (output part of the laser beam).

3. Remove the BTR Assembly. (RRP3.1)
4. Remove the CRU Sensor Assembly. (RRP5.1)

Caution : 1. In the following steps, do not touch the window of the ROS Assembly (output part of the laser beam), the motor pivot of the Scanner Assembly, and substrate.

2. In the next step, the ROS Assembly is still connected with the frame by the harness. Do not place the ROS Assembly too far from the printer.

5. Remove the SOS Harness and ROS Harness of the ROS Assembly from the clamps which presses them down.
6. Remove the four screws(silver, with brim, 8mm) securing the ROS Assembly, and separate the ROS Assembly from the frame.

Note : In the next step, be careful not to disconnect the SOS Harness connector.

7. Disconnect the two ROS Assembly connectors(P/J112, P/J114), and remove the ROS Assembly.

Note : Do not touch the variable volume on the substrate.

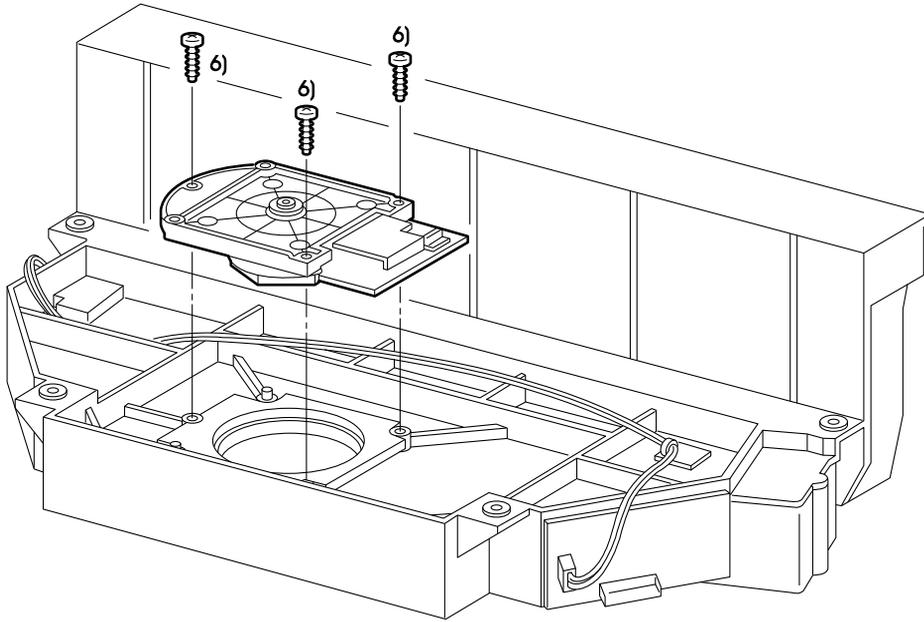
Replacement

Reverse the removal procedures for reinstallation.

Caution : Be careful not to pinch the SOS Harness, which is routed under the ROS Assembly, between the ROS Assembly and the frame.

Note : After installing the ROS Assembly, press the harness down to the frame with the clamp.

RRP5.3 Scanner Assembly (PL5.12)



SAK437CB

RRP5.3 Scanner Assembly (PL5.12)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)

Caution : In the following procedures, do not touch the Detack Saw of the Transport Chute Assembly and the window of the ROS Assembly (output part of the laser beam).

3. Remove the BTR Assembly. (RRP3.1)
4. Remove the CRU Sensor Assembly. (RRP5.1)

Caution : In the following procedures, be careful not to touch the window of the ROS Assembly (output part of the laser beam), motor shaft of the Scanner Assembly and the substrate.

Note : Do not touch the variable volume on the substrate.

5. Remove the ROS Assembly. (RRP5.2)
6. Place the ROS Assembly face down, and remove the three screws(silver, tap, 14mm) securing the Scanner Assembly, and remove the Scanner Assembly.

Note : Do not touch the mirror component of the Scanner Assembly.

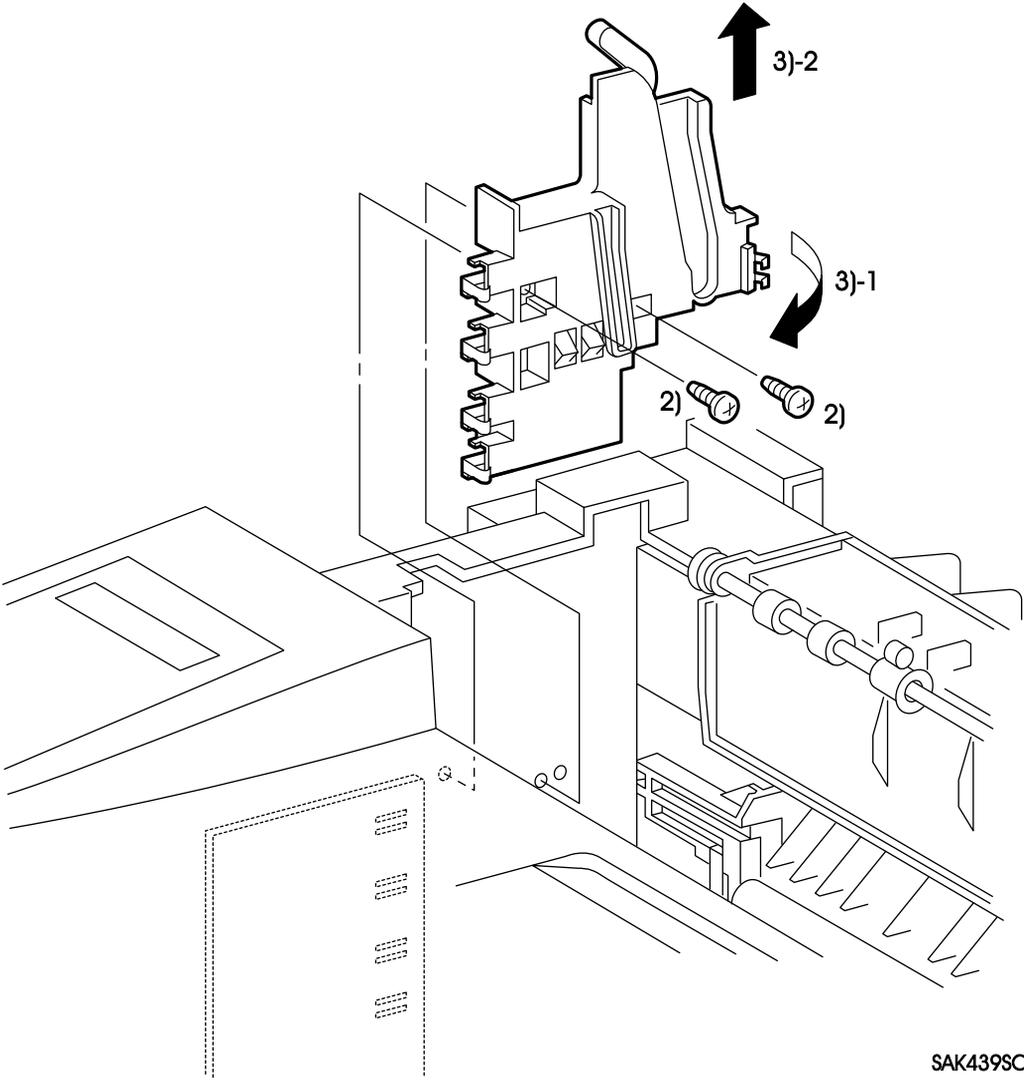
Replacement

Reverse the removal procedures for reinstallation.

Note : 1. Fasten the three screws uniformly to secure the Scanner Assembly.

2. After installation, perform the built-in print test to ensure the alignment of the image quality.

RRP5.4 CRU Guide Assembly L (PL5.31)



SAK4398C

RRP5.4 CRU Guide Assembly L (PL5.31)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Caution : Do not touch the Detack Saw of the Transport Chute Assembly and the window of the ROS Assembly (output part of the laser beam).

1. Remove the BTR Assembly. (RRP3.1)
2. Remove the two screws(silver, 6mm) securing the CRU Guide Assembly L.

Caution : In the next step, be careful not to deform the plate spring to supply high voltage (contacting part to the Transport Chute Assembly and HVPS).

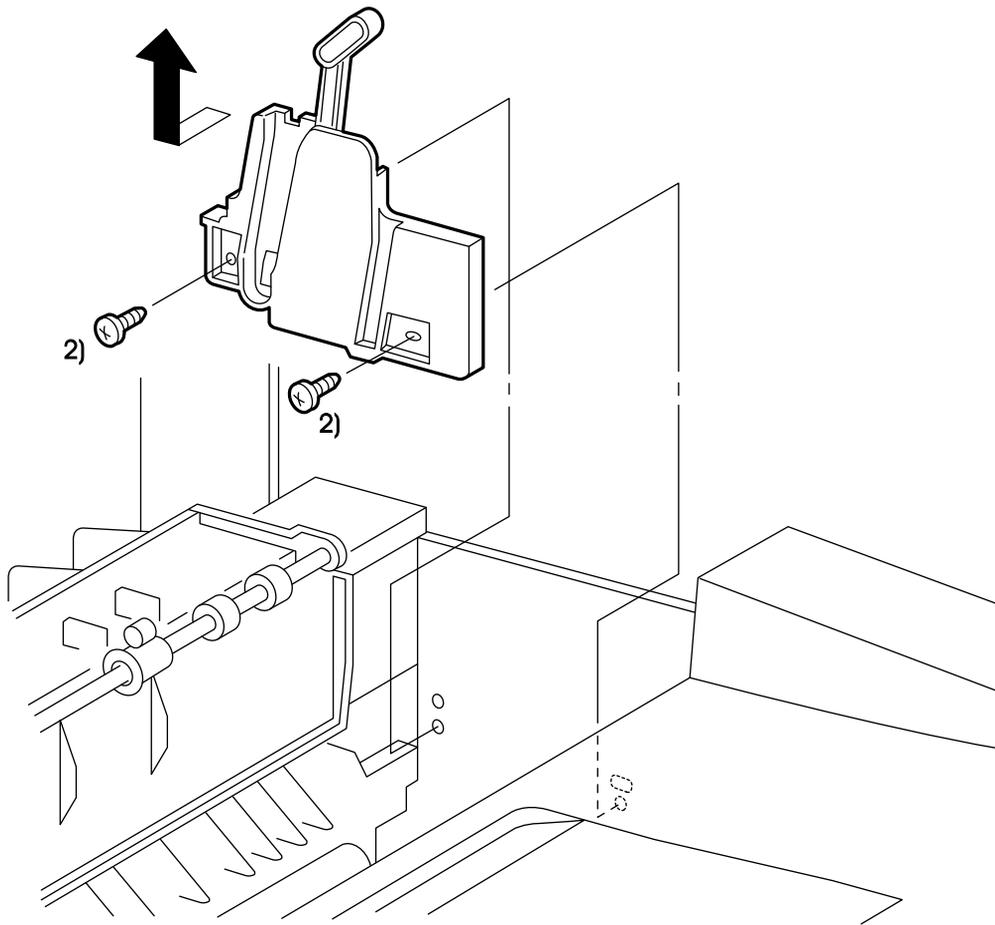
3. Remove the CRU Guide Assembly L by pulling it out to the right.

Note : After the removal of the CRU Guide Assembly L, be careful not to place it separately.

Replacement

Reverse the removal procedures for reinstallation.

RRP5.5 CRU Guide Assembly R (PL5.32)



SAK440SC

RRP5.5 CRU Guide Assembly R (PL5.32)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Caution : Do not touch the Detack Saw of the Transport Chute Assembly and the window of the ROS Assembly (output part of the laser beam).

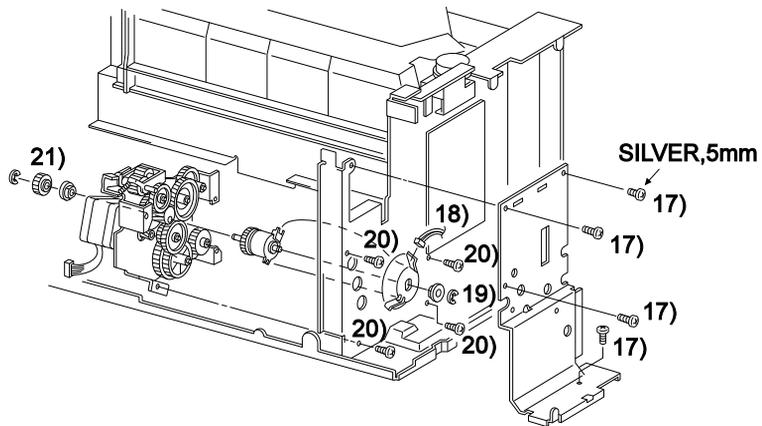
1. Remove the BTR Assembly. (RRP3.1)
2. Remove the two screws(silver, 6mm) securing the CRU Guide Assembly R and remove the CRU Guide Assembly R.

Note : After the removal of the CRU Guide Assembly R, be careful not to place it separately.

Replacement

Reverse the removal procedures for reinstallation.

RRP5.6 Drive Assembly (PL5.20), Registration Clutch Assembly (PL5.21)



SAK441A

RRP5.6 Drive Assembly (PL5.20), Registration Clutch Assembly (PL5.21)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Front Cover Assembly. (RRP1.3)
5. Remove the Rear Panel. (RRP6.1)
6. Remove the Pop Up Assembly. (RRP1.5)
7. Remove the Rear Frame Assembly. (RRP1.6)
8. Remove the Fuser Assembly. (RRP2.1)

Caution : Do not touch the Detack Saw of the Transport Chute Assembly and the window of the ROS Assembly (output part of the laser beam).

9. Remove the BTR Assembly. (RRP3.1)
10. Remove the CRU Guide Assembly L. (RRP5.4)
11. Remove the Fan. (RRP6.2)
12. Remove the LVPS Assembly. (RRP6.3)
13. Remove the Transport Chute Assembly. (RRP3.2)
14. Remove the Shield Assembly. (RRP6.4)
15. Remove the ESS PWB. (RRP6.5)
16. Remove the Electric Shield. (RRP6.6)
17. Remove the four screws(three : gold, 6mm one: silver, 5mm) securing the Harness Shield, and remove the Harness Shield(PL6.30)
18. Using a mini-screwdriver, disconnect the Registration Clutch connector(P/J121).
19. Remove the left E-ring securing the Registration Clutch Assembly, and remove the left Drive Bearing L.

Note : In the following steps, do not come off each gear of the Drive Assembly from the shaft.

20. Remove the four screws(silver, 6mm) securing the Drive Assembly. Pull out the Drive Assembly with the Registration Clutch Assembly from the frame and the Pick Up Gear to remove them.
21. Remove the E-ring securing the Registration Drive Gear with the Registration Clutch Assembly, and remove the Registration Drive Gear, the Drive Bearing R and the Registration Clutch Assembly from the Drive Assembly.

Replacement

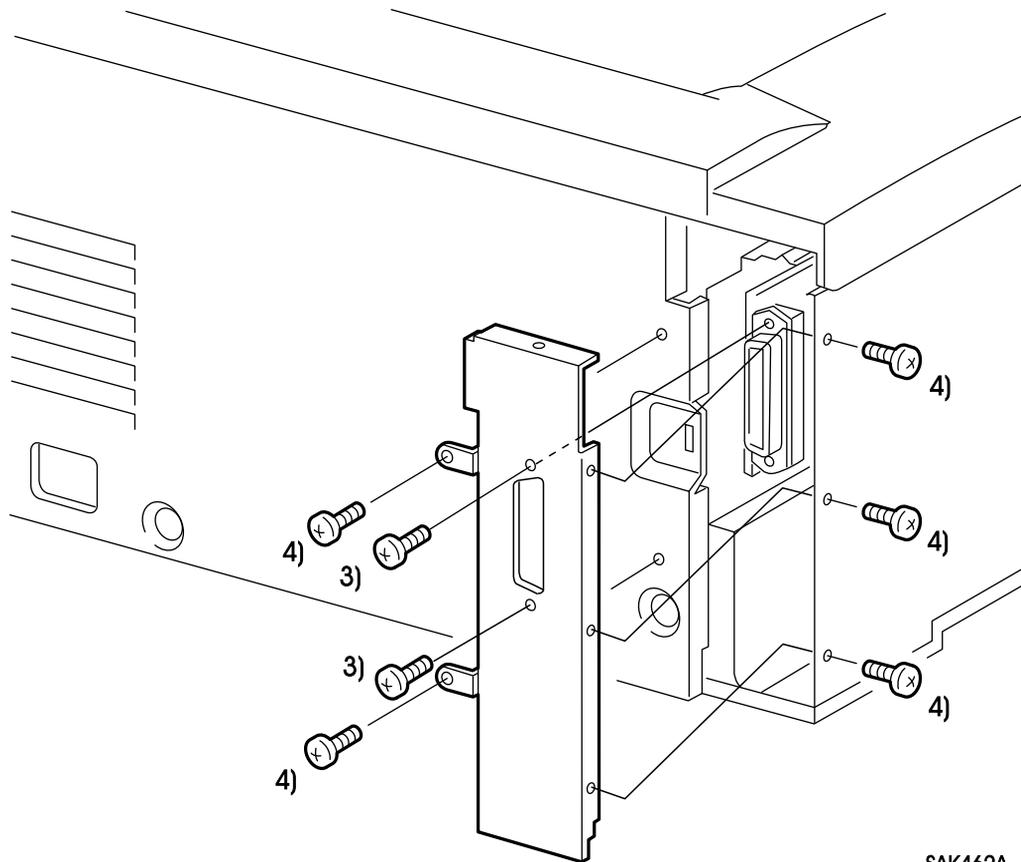
Reverse the removal procedures for reinstallation.

Note : Install the convex part of the frame into the concave part of the case in the Clutch Assembly.

Caution : For the screws fastening the Harness Shield, use the screw of 5mm thread length to fasten the rear side of the Interlock Switch. Otherwise the damage or failure of the lever in the CRU Guide Assembly L may occur.

RRP6 Electrical

RRP6.1 Rear Panel (PL6.32)



SAK462A

RRP6.1 Rear Panel (PL6.32)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

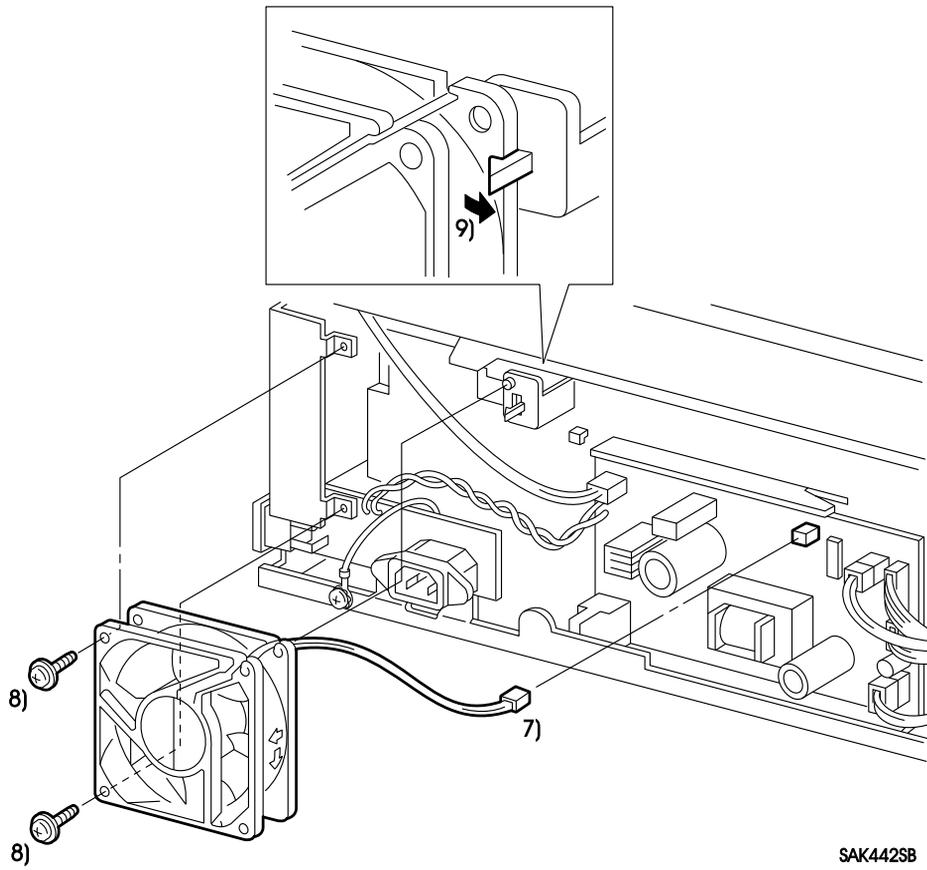
Removal

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the two screws securing the ESS PWB.
4. Remove the five screws(gold, 6mm) securing the Rear Panel, and remove the Rear Panel from the printer.

Replacement

Reverse the removal procedures for reinstallation.

RRP6.2 Fan (PL6.5)



RRP6.2 Fan (PL6.5)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Pop Up Assembly. (RRP1.5)
6. Remove the Rear Frame Assembly. (RRP1.6)
7. Disconnect the Fan connector (P/J 102) on the LVPS and release the harness.

Note : In the next step, the Fan is still installed on the Chute Plate.

8. Remove the two screws(silver, 8mm) securing the Fan.
9. Unlatch the Chute Panel hooks from the Fan to remove the Fan.

Replacement

Reverse the removal procedures for reinstallation.

Caution : Refer to the arrows on the Fan case, and be sure to install the Fan in the correct direction to exhaust the air in the printer (the maker label on the Fan will face outward).

RRP6.3 LVPS Assembly (PL6.1)

RRP6.3 LVPS Assembly (PL6.1)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Pop Up Assembly. (RRP1.5)
6. Remove the Rear Frame Assembly. (RRP1.6)
7. Remove the Fan. (RRP6.2)
8. Disconnect all of the connectors on the circuit substrate of the LVPS Assembly.

Caution : In the following steps, be careful not to place the circuit substrate of the LVPS Assembly too far from the power switch/inlet part (connection part to the power cord) because they are connected with a wire.

9. Remove the two screws(gold, flat, 6mm) securing the power switch/inlet part of the LVPS Assembly, and remove the screw(silver, with washer,6mm) securing the grounding wire. Then separate the power switch/inlet part of the LVPS Assembly from the frame.
10. Remove four screws(two of upper side, gold tap, 8mm: two of lower side, silver,6mm), then remove the LVPS Assembly.

Replacement

Reverse the removal procedures for reinstallation.

Caution : The two screws on the lower side, which secures the circuit substrate of the LVPS Assembly, are made of aluminum. Be careful not to damage the holes when fastening the screws.

Note : Be sure to install the grounding wire.

RRP6.4 Shield Assembly (PL6.33)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Disconnect the connector (P/J128), then remove the Console Harness.

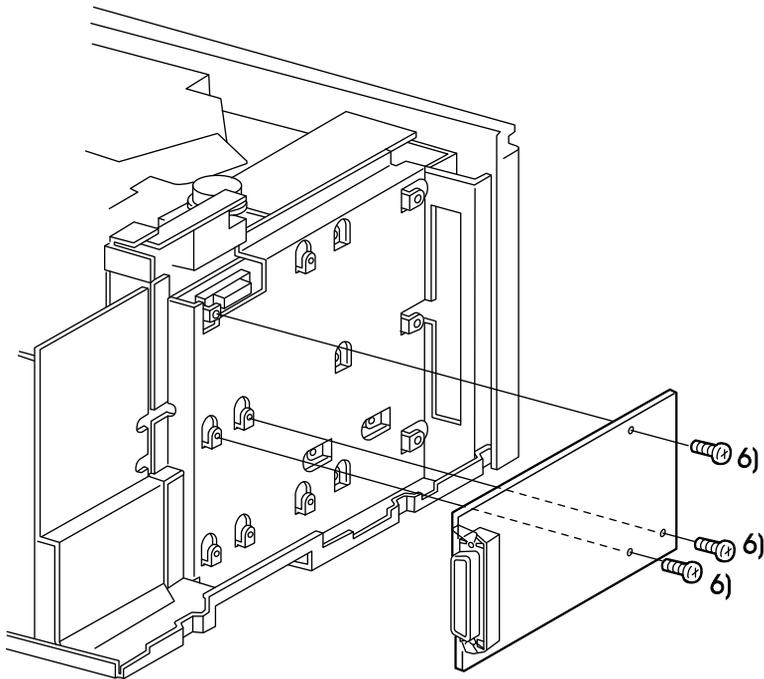
Caution : In the next step, the Rear Panel is still installed on the ESS PWB.

4. Remove three screws(gold, 6mm) securing the Rear Panel with the Shield Assembly.
5. Remove the nine screws(gold, 6mm) securing the Shield Assembly. Remove the Shield Assembly, while removing the Interlock Switch and the harness of the Fuser Harness from two clamps.

Replacement

Reverse the removal procedures for reinstallation.

RRP6.5 ESS PWB(PL6.37)



SAK445A

RRP6.5 ESS PWB(PL6.37)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

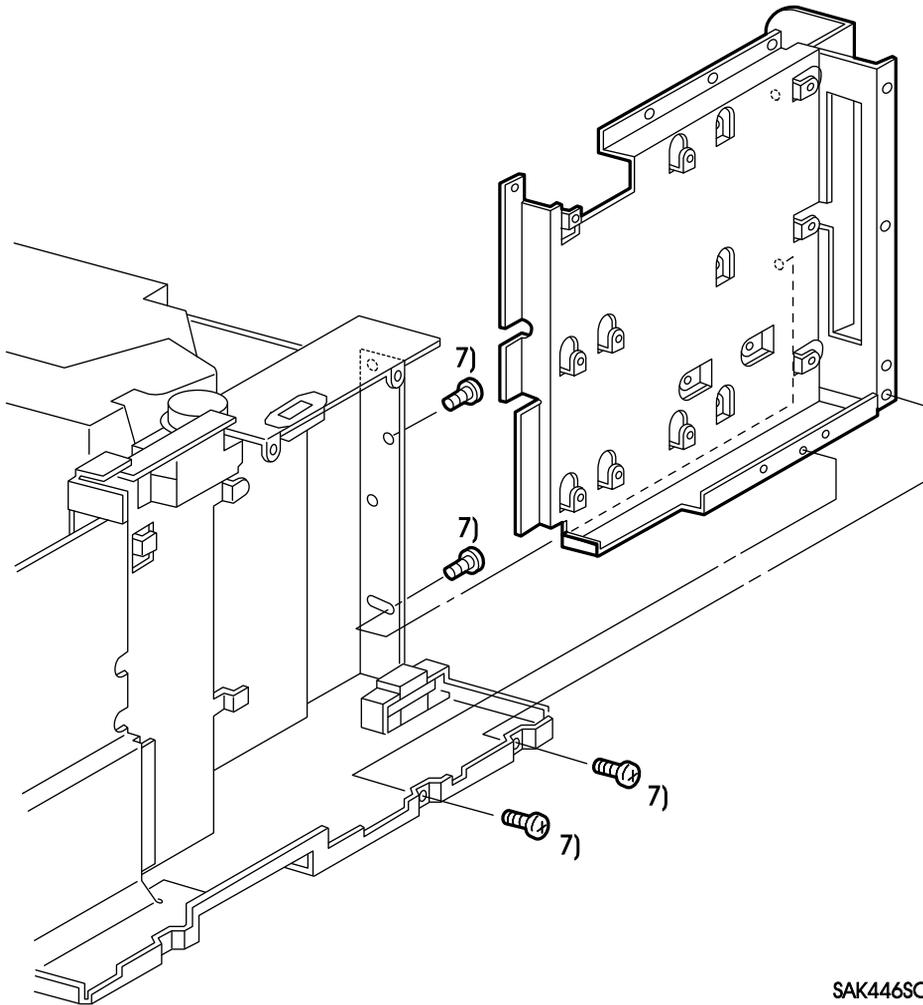
1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Rear Panel. (RRP6.1)
4. Remove the Shield Assembly. (RRP6.4)
5. Remove all the connector on the ESS PWS.
6. Remove the three screws(gold, 6mm) securing the ESS PWB, pull the ESS PWB to the left and remove it.

Memo : Due to the removal of the ESS PWB, the connector (P/J14), which connects the ESS PWB with the MCU PWB, will be disconnected.

Replacement

Reverse the removal procedures for reinstallation.

RRP6.6 Electric Shield (PL6.31)



SAK446SC

RRP6.6 Electric Shield (PL6.31)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

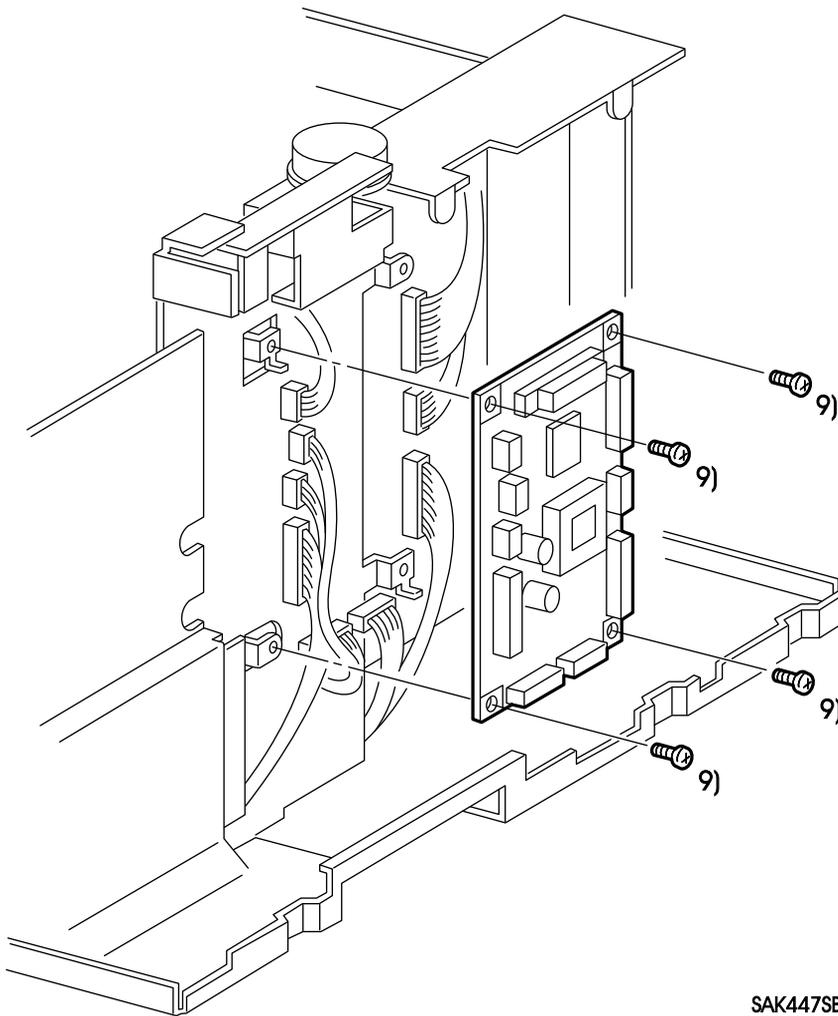
Removal

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Front Cover Assembly. (RRP1.3)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Shield Assembly. (RRP6.4)
6. Remove the ESS PWB. (RRP6.5)
7. Remove the four screws(gold, 6mm) securing the Electric Shield, and remove the Electric Shield.

Replacement

Reverse the removal procedures for reinstallation.

RRP6.7 MCU PWB(PL6.4)



RRP6.7 MCU PWB(PL6.4)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Front Cover Assembly. (RRP1.3)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Shield Assembly. (RRP6.4)
6. Remove the ESS PWB. (RRP6.5)
7. Remove Electric Shield. (RRP6.6)
8. Remove the all connectors on the MCU PWB.

Memo : For the connectors on the MCU PWB, [P18] and [P21] are not used.

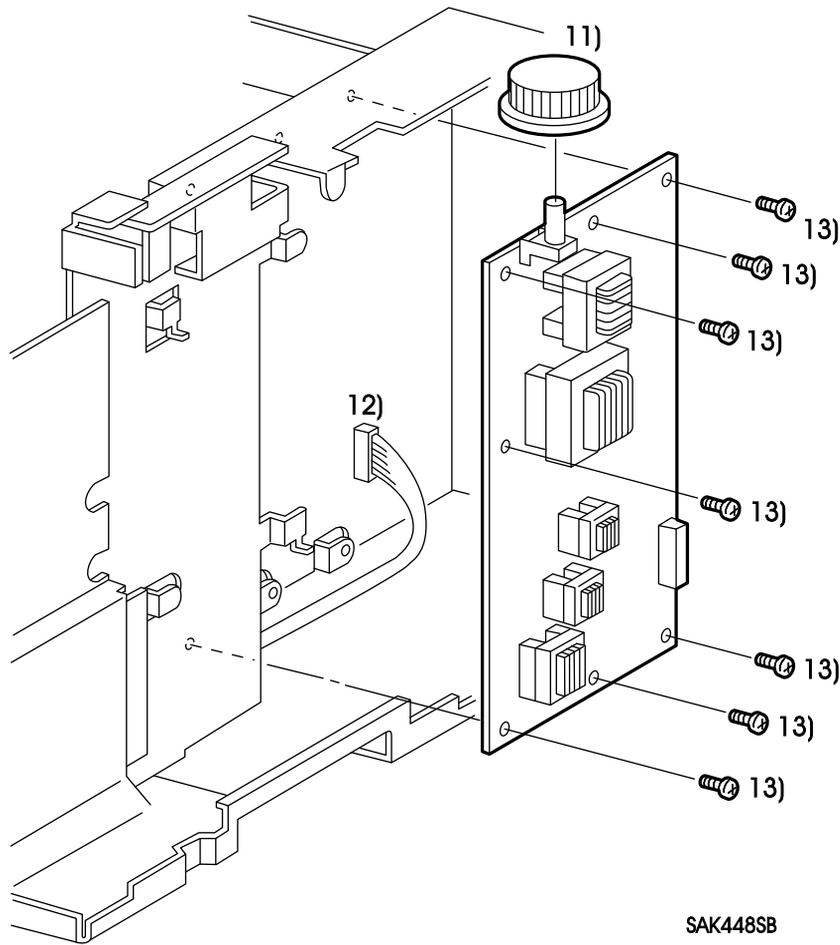
9. Remove the four screws(gold, 6mm) securing the MCU PWB, and remove the MCU PWB.

Replacement

Reverse the removal procedures for reinstallation.

Note : If the MCU PWB is replaced, be sure to set correct value for NV code data to meet specification. (Setting incorrect value may cause trouble.)

RRP6.8 HVPS(PL6.2)



SAK448SB

RRP6.8 HVPS(PL6.2)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Front Cover Assembly. (RRP1.3)
4. Remove the Rear Panel. (RRP6.1)
5. Remove the Shield Assembly. (RRP6.4)
6. Remove the ESS PWB. (RRP6.5)
7. Remove Electric Shield. (RRP6.6)
8. Remove the BTR Assembly. (RRP3.1)
9. Remove the CRU Guide Assembly L. (RRP5.4)
10. Remove the MCU PWB. (RRP6.7)
11. Pull up the Knob Volume and remove it from the HVPS.
12. Disconnect the connector (P/J131) on the HVPS.
13. Remove the seven screws(gold, 6mm) securing the HVPS, and take off the HVPS.

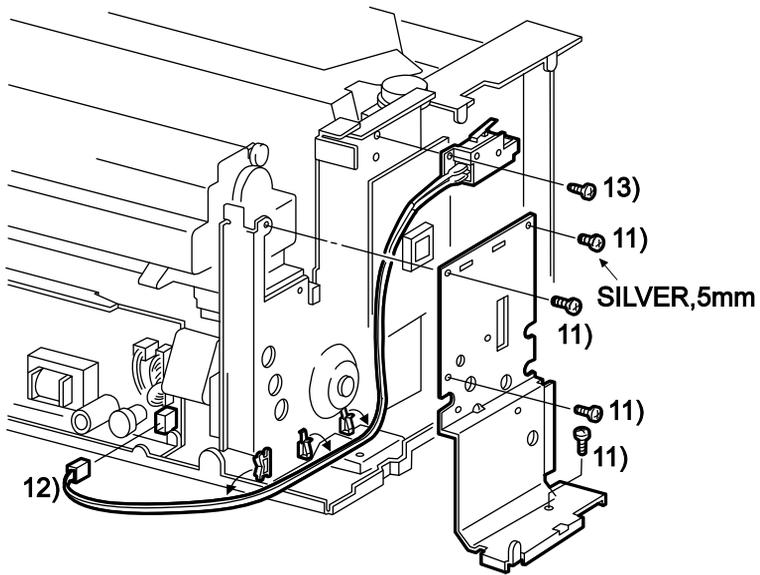
Note : Do not touch the variable volume on the HVPS.

Replacement

Reverse the removal procedures for reinstallation.

Note : Be sure that the output terminal of the high voltage of the HVPS firmly contacts the plate spring for the high-voltage supply of the CRU Guide Assembly L.

RRP6.9 Interlock Switch (PL6.6)



SAK449A

RRP6.9 Interlock(PL6.6)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

1. Remove the Left Cover. (RRP1.1)
2. Remove the Top Cover Assembly. (RRP1.2)
3. Remove the Right Cover. (RRP1.4)
4. Remove the Font Cover Assembly. (RRP 1.3)
5. Remove the Rear Panel. (RRP6.1)
6. Remove the Pop Up Assembly. (RRP1.5)
7. Remove the Rear Frame Assembly. (RRP1.6)
8. Remove the Shield Assembly. (RRP6.4)
9. Remove the ESS PWB. (RRP6.5)
10. Remove Electric Shield. (RRP6.6)
11. Remove the four screws(three of gold, 6mm one of silver, 5mm) securing the Harness Shield, and remove the Harness Shield. (PL6.30)
12. Disconnect the connector(P/J103) of the Interlock Switch on the circuit substrate of the LVPS Assembly. Remove the wire of the Interlock Switch from the clamp and release it.
13. Remove one screw(silver, 6mm) securing the Interlock Switch, and remove the Interlock Switch.

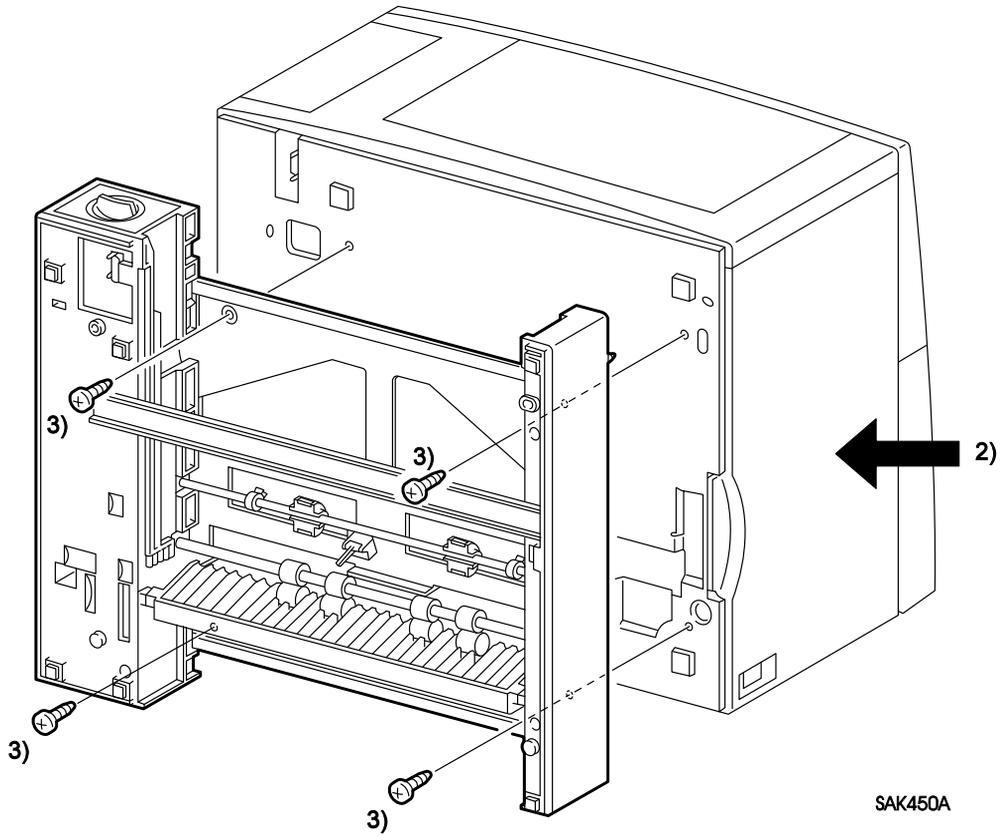
Replacement

Reverse the removal procedures for reinstallation.

- Caution :*
1. *Install the Interlock Switch firmly aligning the convex part of the frame for positioning.*
 2. *For the screws fastening the Harness Shield, use the screw of 5mm thread length to fasten the rear side of the Interlock Switch. Otherwise the damage or failure of the lever in the CRU Guide Assembly L may occur.*

RRP7 Feeder

RRP7.1 Feeder Assembly 250 (PL7.1)



RRP7.1 Feeder Assembly 250 (PL7.1)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Note : Remove optional feeding unit before performing the following procedure if it is installed.

1. Remove the Paper Cassette.

Note : In the next step, place paper under the machine to prevent the cover from damaging. Do not force on the housing of the feeding unit.

2. Lay the machine with the Right Cover facing down.

Note: Side 2) shown in the figure below.

3. Remove the four screws(silver, 6mm) securing the Feeder Assembly 250.
4. While laying the machine with the Right Cover face down, separate the Feeder Assembly 250 from the printer and remove it.

Caution : After the removal of the Feeder Assembly 250, the printer may fall down. Be sure to return the machine to the original position (installed with the bottom side of the printer facing down).

Memo : The connector (P/J171) will be removed when the Feeder Assembly 250 is separated from the printer.

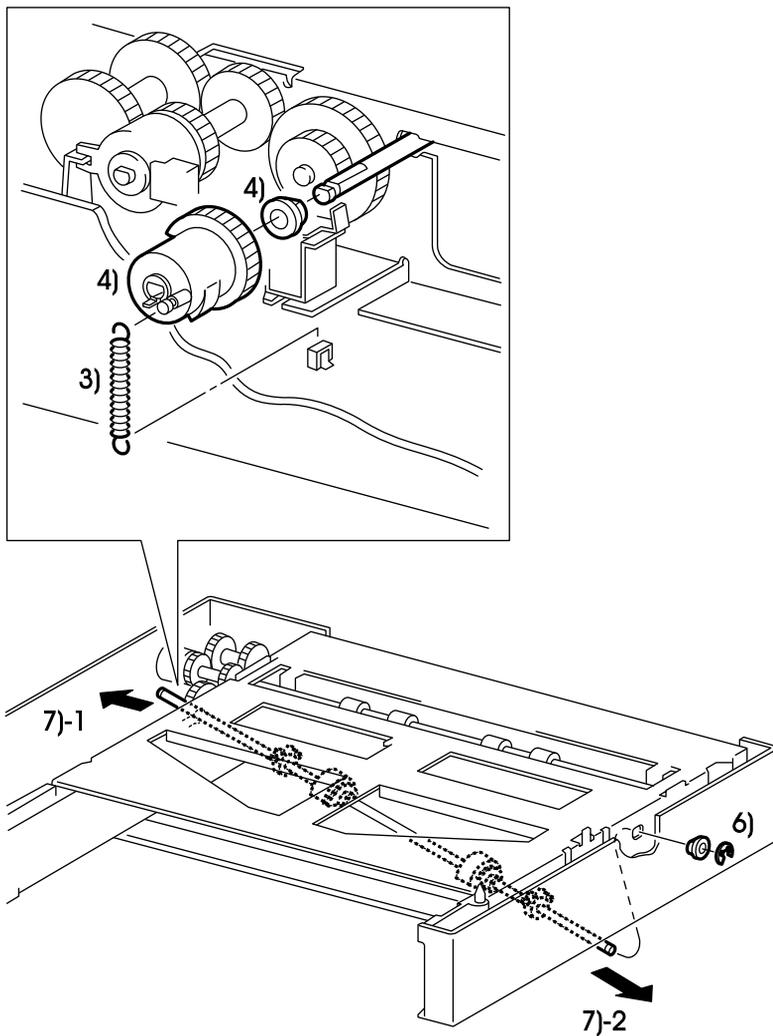
Replacement

Reverse the removal procedures for reinstallation.

Note : 1. When installing, be sure that the convex part of the Feed Gear is stopped by the stopper of the Feed Solenoid (the Feed Roll is in the upper position).

2. Align the position with reference to the convex part on the Feeder Assembly 250.

RRP7.2 Feed Roll Assembly(PL7.3)



SAK451CB

RRP7.2 Feed Roll Assembly(PL7.3)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Note : Remove optional feeding unit before performing the following procedure if it is installed.

1. Remove the Paper Cassette.
2. Remove the Feeder Assembly 250. (RRP7.1)
3. Remove the Feed Spring from the Feed Housing L and Feed Gear.
4. Remove the Feed Gear hooks from the Feed Shaft Assembly, and remove the Feed Gear and the left Feed Bearing.

Memo : Pass the cut of the Feed Gear through the stopper of the Feed Solenoid for easy operation.

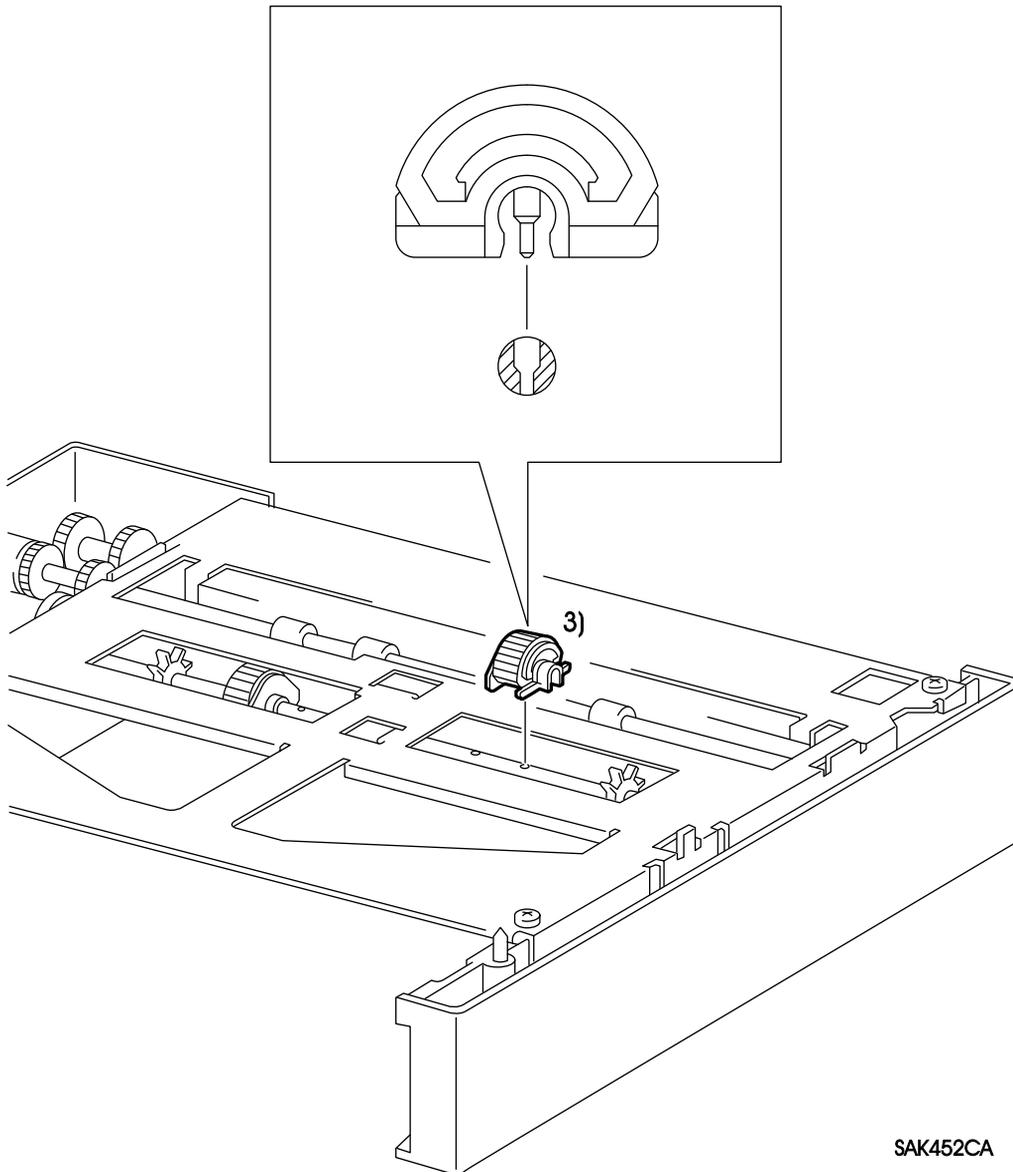
5. Move the Feeder Idler Gear in place to contact with the Feed Solenoid.
6. Remove the E-ring securing the Feed Roll Assembly, and remove the right Feed Bearing.
7. Slide the Feed Roll Assembly to the left, remove the right side of the shaft from the Feeder Frame 250. Then, move the Feed Roll Assembly in the lower right direction to remove it.

Replacement

Reverse the removal procedures for reinstallation.

Note : When installing, be sure that the convex part of the Feed Gear is stopped by the stopper of the Feed Solenoid (the Feed Roll is in the upper position).

RRP7.3 Feed Roll(PL7.5)



SAK452CA

RRP7.3 Feed Roll(PL7.5)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Note : Remove optional feeding unit before performing the following procedure if it is installed.

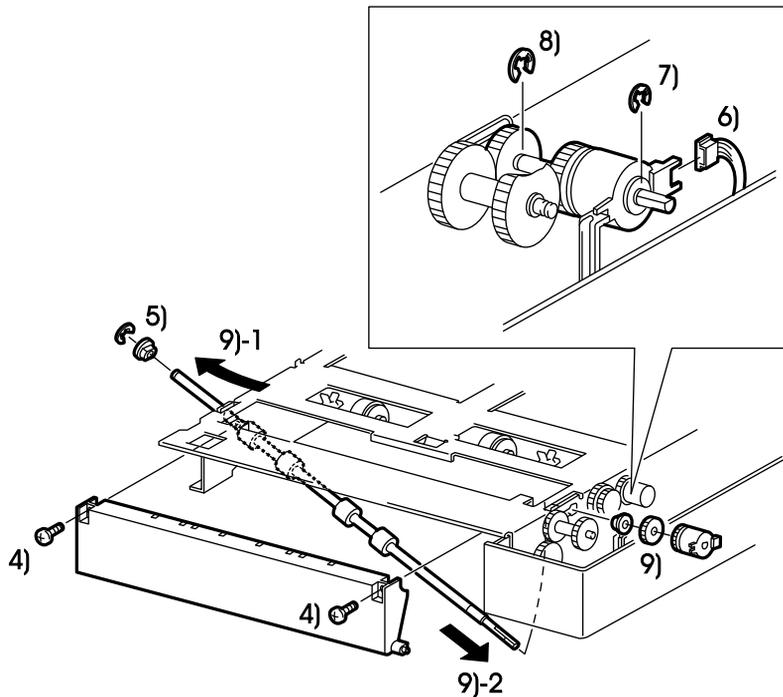
1. Remove the Paper Cassette.
2. Remove the Feeder Assembly 250. (RRP7.1)
3. While supporting the shaft of the Feed Roll Assembly, press down on the plastic plate, and remove the Feed Roll from the shaft.

Replacement

Reverse the removal procedures for reinstallation.

- Note :*
1. Install the Feed Roll aligning the hole of the shaft of the Feed Roll Assembly.
 2. After installing, be sure that the convex part of the Feed Gear is stopped by the stopper of the Feed Solenoid (the Feed Roll is in the upper position).

**RRP7.4 Turn Roll Assembly(PL7.6), Electric Clutch(PL7.13),
Turn Gear(PL7.14)**



SAK453A

RRP7.4 Turn Roll Assembly(PL7.6), Electric Clutch(PL7.13)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Note : 1. Remove optional feeding unit before performing the following procedure if it is installed.

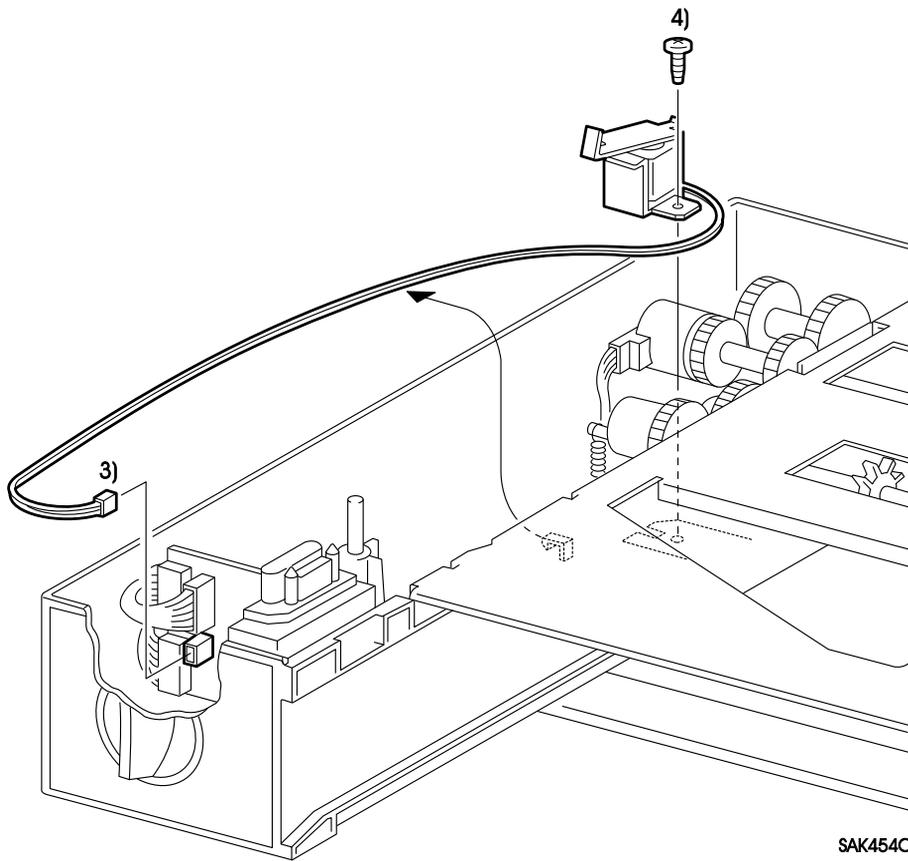
1. Remove the Paper Cassette.
2. Remove the Feeder Assembly 250. (RRP7.1)
3. Remove the Feed Housing R. (RRP7.10)
4. Remove the two screws(silver, 8mm) securing the Outer Chute Assembly, and remove the Outer Chute Assembly.
5. Remove the E-ring securing the right side of Turn Roll Assembly, and remove the right Transport Bearing
6. Disconnect the Electric Clutch connector (P/J273) by using the mini-screwdriver.
7. Remove the E-ring securing the Electric Clutch.
8. Remove the E-ring securing the Turn Idler Gear, and remove the left Transport Bearing from the Feeder Frame 250.
9. Slide the Turn Roll Assembly to the right, remove the left side of the shaft from the Feeder Frame, and remove each of the Electric Clutch, Turn Idler Gear, Transport Bearing. Then, slide the Turn Roll Assembly in the lower right direction to remove it.

Replacement

Reverse the removal procedures for reinstallation.

Note : Install the convex part of the Feed Housing L into the concave part of the case in the Electric Assembly.

RRP7.5 Feed Solenoid(PL7.10)



SAK454CB

RRP7.5 Feed Solenoid(PL7.10)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Note : Remove optional feeding unit before performing the following procedure if it is installed.

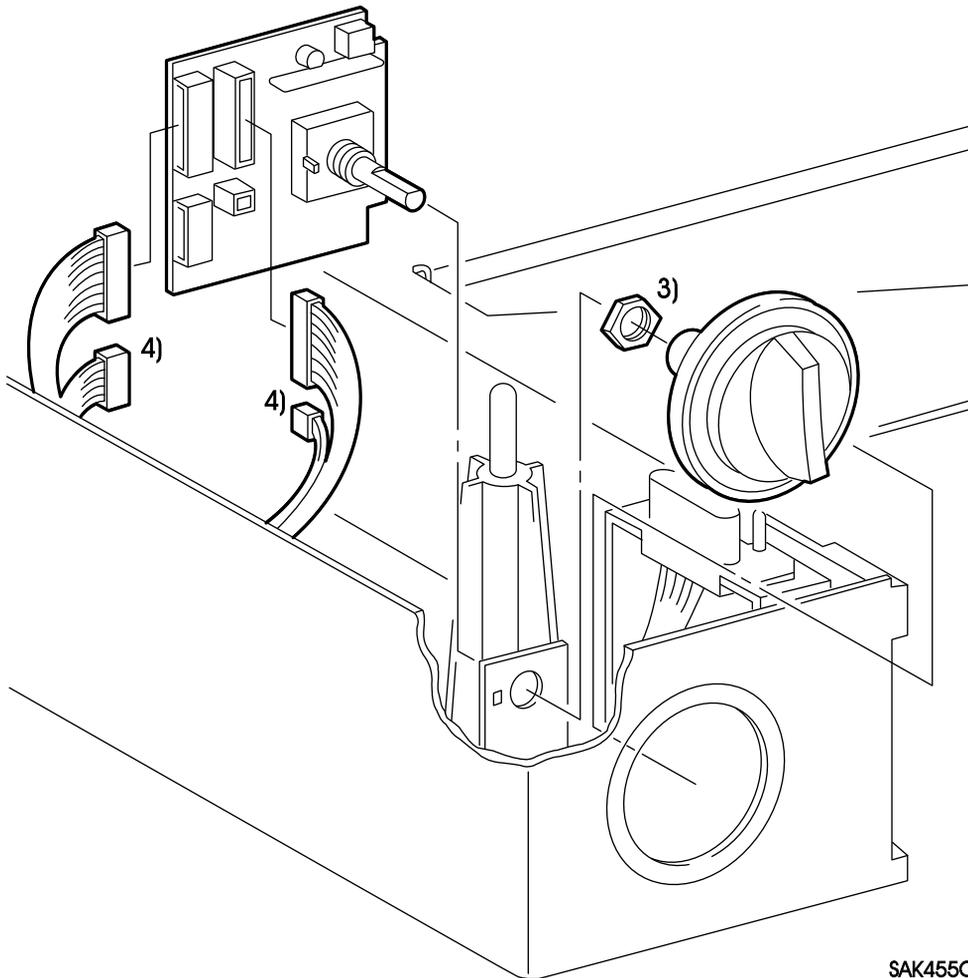
1. Remove the Paper Cassette.
2. Remove the Feeder Assembly 250. (RRP7.1)
3. Disconnect the Feed Solenoid connector (P/J176) on the Feeder PWB, and release the harness.
4. Remove the screw(silver, 8mm) securing the Feed Solenoid, and remove the Feed Solenoid.

Replacement

Reverse the removal procedures for reinstallation.

Note : After installing, be sure that the convex part of the Feed Gear is stopped by the stopper of the Feed Solenoid (the Feed Roll is in the upper position).

RRP7.6 Feeder PWB(PL7.19)



SAK455CC

RRP7.6 Feeder PWB(PL7.19)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Note : Remove optional feeding unit before performing the following procedure if it is installed.

1. Remove the Paper Cassette.
2. Remove the Feeder Assembly 250. (RRP7.1)

Caution : In the next step, the Feeder PWB is still connected with the harness. Be sure to place it too far from the Feed Housing L.

3. Remove the hexagonal nut securing the Feeder PWB, and remove the Feed PWB from Feed Housing L.

Note :

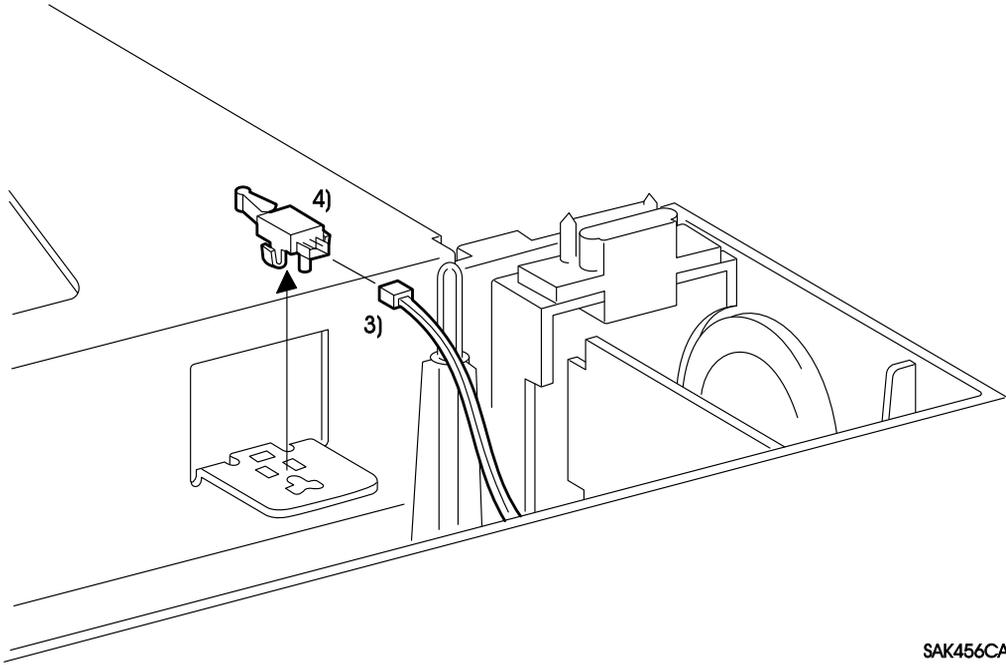
1. The Size Handle is also removed. Be careful not to lose or drop it.
2. Be careful not to lose the hexagonal nut.

4. Remove all the connector on the Feeder PWB, and remove the Feeder PWB.

Replacement

Reverse the removal procedures for reinstallation.

RRP7.7 Cassette Sensor(PL7.21)



SAK456CA

RRP7.7 Cassette Sensor(PL7.21)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Note : Remove optional feeding unit before performing the following procedure if it is installed.

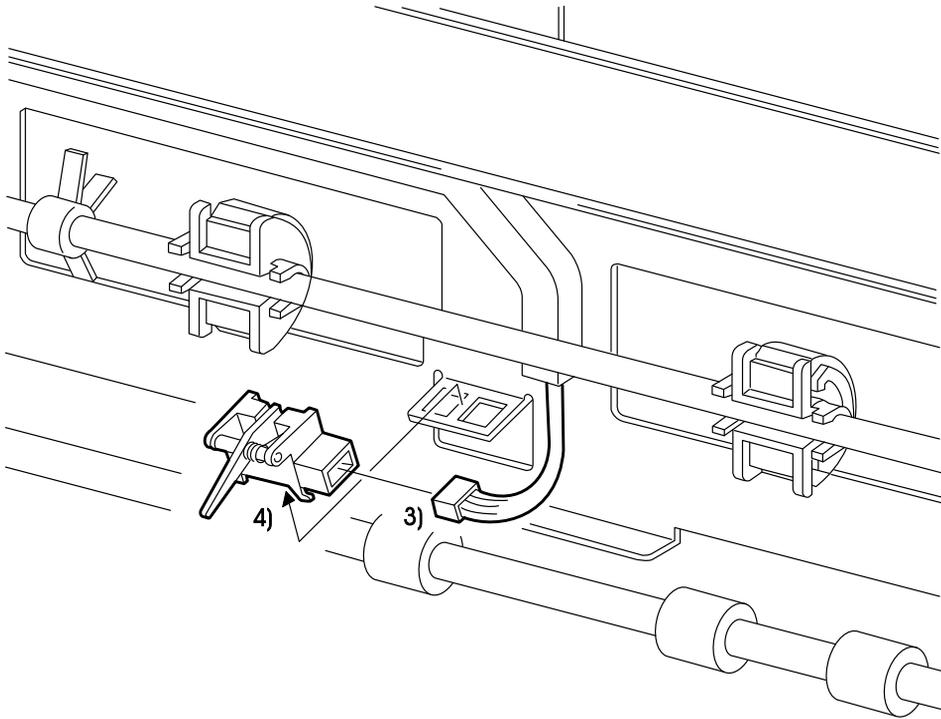
1. Remove the Paper Cassette.
2. Remove the Feeder Assembly 250. (RRP7.1)
3. Disconnect the Cassette Sensor connector(P/J272).
4. Remove the Cassette Sensor hooks from Feeder Frame 250, and take off the Cassette Sensor.

Memo : Use a mini-screwdriver for easy operation.

Replacement

Reverse the removal procedures for reinstallation.

RRP7.8 CST No Paper Sensor (PL7.22)



SAK457CB

RRP7.8 CST No Paper Sensor (PL7.22)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Note : Remove optional feeding unit before performing the following procedure if it is installed.

1. Remove the Paper Cassette.
2. Remove the Feeder Assembly 250. (RRP7.1)
3. Disconnect the CST No Paper Sensor connector(P/J271).
4. Unlatch the CST No Paper Sensor hooks from Feeder Frame 250, and take off the CST No Paper Sensor.

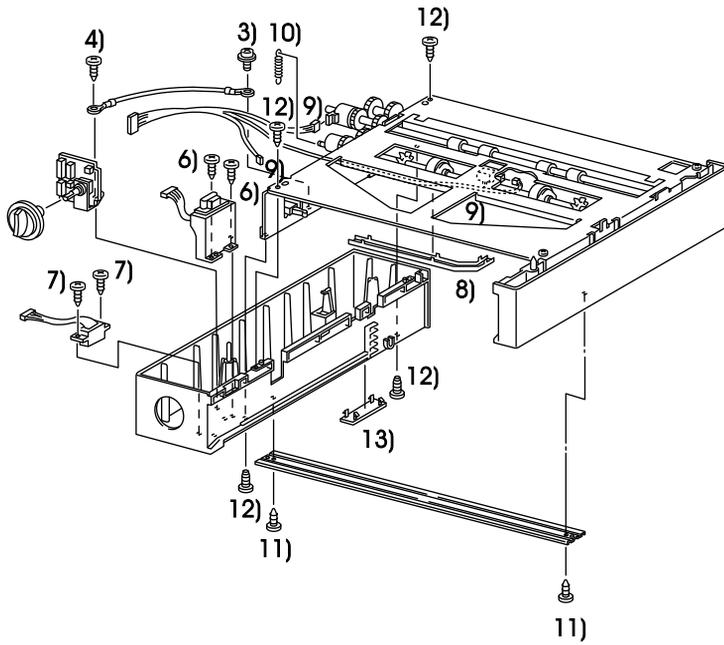
Memo : Use a mini-screwdriver for easy operation.

Replacement

Reverse the removal procedures for reinstallation.

Caution : Do not slacken the harness of the Cassette Harness when routing it so it doesn't come in contact with the paper cassette.

RRP7.9 Feed Housing L (PL7.29)



SAK458CC

RRP7.9 Feed Housing L (PL7.29)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Removal

Note : Remove optional feeding unit before performing the following procedure if it is installed.

1. Remove the Paper Cassette.
2. Remove the Feeder Assembly 250. (RRP7.1)
3. Remove the screw(silver, with brim, 12mm) securing the Feeder Earth Wire to the Feeder Frame 250.

Caution : In the next step, the Feeder PWB is still connected with the harness. Do not place it too far from the Feed Housing L.

4. Remove the screw(gold, tap, 8mm) securing the PWB Bracket and Feeder Earth Wire. Separate the PWB Bracket with the Feeder PWB from the Feed Housing L, and take off the Size Handle and the Feeder Earth Wire.
5. Disconnect the all connector on the Feeder PWB, and remove the Feeder PWB and PWB Bracket.
6. Remove the two screws(gold, tap, 8mm) securing the Connector Bracket, and remove the Connector Bracket and Tray Upper Harness.
7. Remove the two screws(gold, tap, 8mm) securing the Tray Lower Harness and remove the Tray Lower Harness.
8. Unlatch the Harness Guide hooks from the Feeder Frame 250, and take off the Harness Guide.

Note : In the next step, some connectors are not used according to the specification.

9. Disconnect the CST No Paper Sensor connector(P/J271), and the Cassette Sensor connector(P/J272), the Electric Clutch connector(P/J273), and remove the Cassette Harness.
10. Remove the Feed Spring from the Feed Housing L and Feed Gear.
11. Remove the two screws(gold, Tap, 8mm) securing the Feed Tie Plate, and remove the Feed Tie Plate.
12. Remove the four screws(two from the upper side; gold, tap, 8mm, two from the lower side: silver 8mm). Pull down the Feed Housing L with the Housing Cap and take them off.
13. Remove the Housing Cap secured by the hook from the Feed Housing.

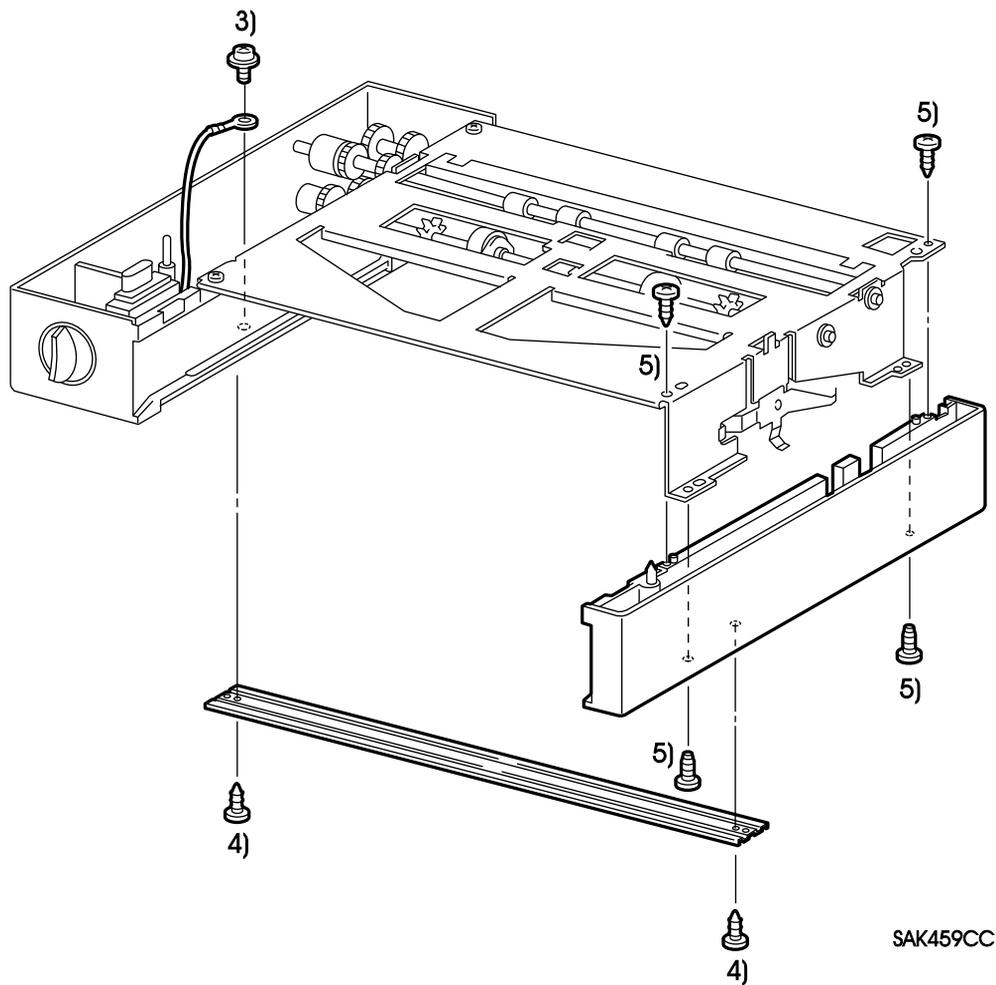
Replacement

Reverse the removal procedures for reinstallation.

Note : Install the convex part of the Feed Housing L into the concave part of the case in the Electric Clutch.

Caution : Do not slacken the harness of the Cassette Harness when routing it so it doesn't come in to contact with the paper cassette.

RRP7.10 Feed Housing R (PL7.30)



RRP7.10 Feed Housing R (PL7.30)

Warning : Turn power off, remove the EP Cartridge and disconnect the power cord before performing the following procedure.

Note : Remove optional feeding unit before performing the following procedure if it is installed.

Removal

1. Remove the Paper Cassette.
2. Remove the Feeder Assembly 250. (RRP7.1)
3. Remove the screw(silver, with brim,12mm) securing the Feed Earth Wire to the Feed Frame 250.
4. Remove the screw(gold, tap, 8mm) securing the Feed Tie Plate, and remove the Feed Tie Plate.

Note : In the next step, remove the Feeder Housing R, avoiding its interfere with the Feeder Earth Plate and its fixed screws.

5. Remove four screws(two from the upper side; gold, tap, 8mm: two from the lower side silver, 8mm). While pushing the Feeder Earth Plate into the Feed Housing R, pull down the Feeder Housing R and remove.

Replacement

Reverse the removal procedures for reinstallation.

Note : Be careful not to deform the Feeder Earth Plate.

Section 5

Principles of Operation

Section Contents

1. Print Process

1.1 Print Process Overview	5-1
1.2 Print Process Description	5-2

2. Flow of Image Data 5-8

3. Drive Force Transmission. 5-8

4. Paper Transport 5-9

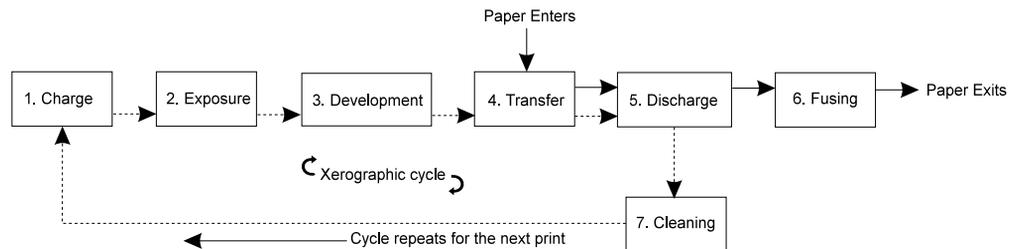
5. Function of Major Component. 5-10

5.1 Fuser and Paper Exit	5-10
5.1.1 Function [Fuser and Paper Exit]	5-10
5.1.2 Drawing [Fuser and Paper Exit]	5-11
5.2 Paper Transportation	5-12
5.2.1 Function [Paper Transportation]	5-12
5.2.2 Drawing [Paper Transportation]	5-13
5.3 Multi Sheet Inserter	5-14
5.3.1 Function [Multi Sheet Inserter]	5-14
5.3.2 Drawing [Multi Sheet Inserter]	5-15
5.4 Drive and Xerographics	5-16
5.4.1 Function [Drive and Xerographics]	5-16
5.4.2 Drawing [Drive and Xerographics]	5-17
5.5 Electrical	5-18
5.5.1 Function [Electrical]	5-18
5.5.2 Drawing [Electrical]	5-19
5.6 Feeder and Cassette	5-20
5.6.1 Function [Feeder and Cassette]	5-20
5.6.2 Drawing [Feeder and Cassette]	5-21

1. PRINT PROCESS

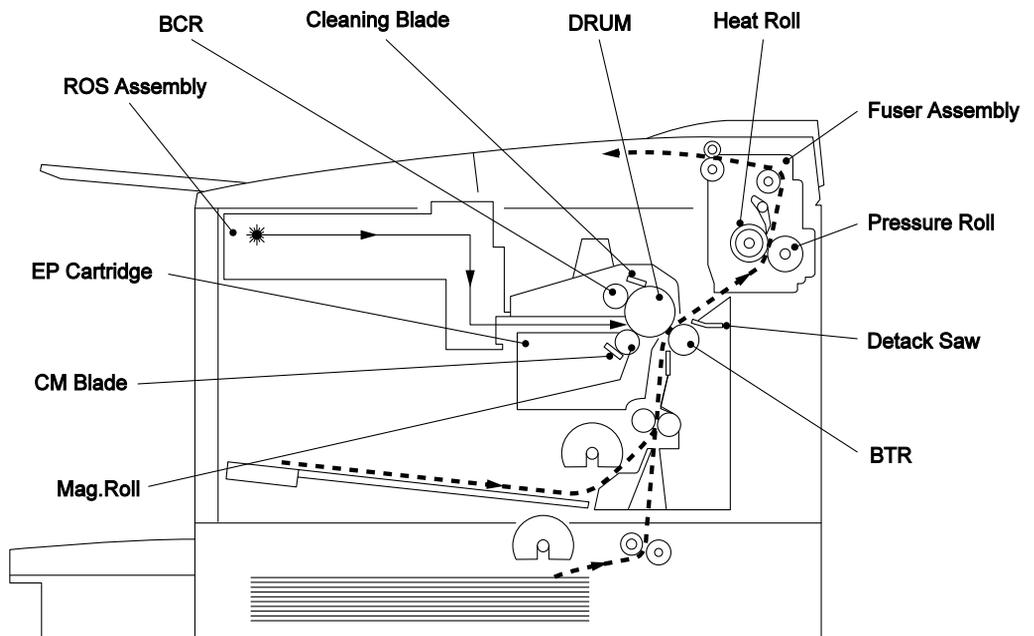
1.1 Print Process Overview

The print process consists of the seven steps as shown below which form a toner image on the drum surface, transfer the toner image to paper, and fix the transferred toner image to the paper. Each sheet of paper is passed through steps 4 to 6 while the drum surface is repeatedly passed through steps 1 to 5 and 7.



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[Diagram of Print Process]



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1.2 Print Process Description

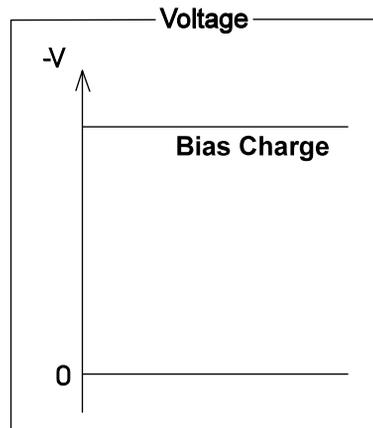
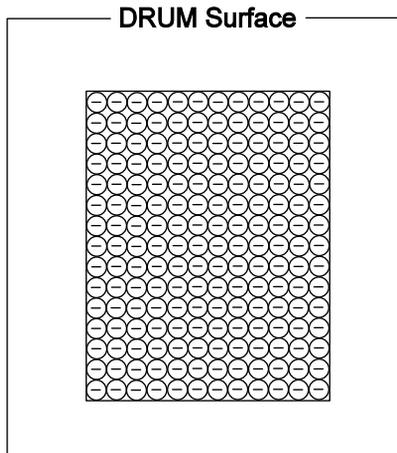
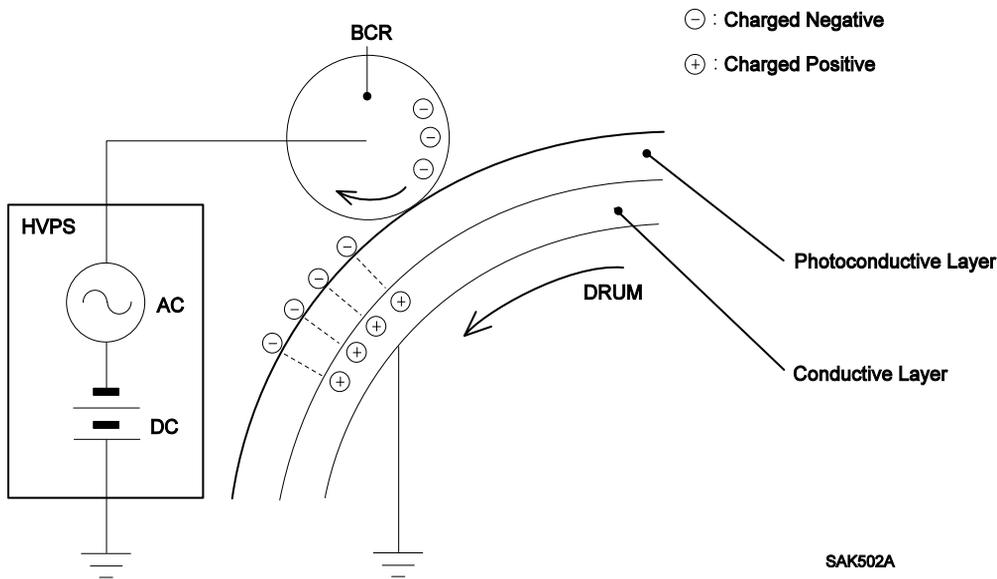
[Charge]

This step places a uniform density of negative electric charge on the drum surface (the outside surface of the photoconductor layer). The charge is imparted by the BCR (Bias Charge Roll) in the EP cartridge.

- The BCR is a conductive roll disposed in contact with the drum surface and supplied with a discharge voltage by the HVPS. The discharge occurs through very small gaps in the vicinity of the nip between the BCR and the drum. The discharge voltage is an AC voltage with a negative DC voltage superposed.

The drum surface, which is charged during the previous step of the print cycle, is discharged by applying AC current between the BCR and the drum. The drum surface is set to a uniform negative charge at the level of the DC bias voltage.

The drum surface is made of a photoconductive material and the inner part of the drum is made of a conductive material (aluminum cylinder).



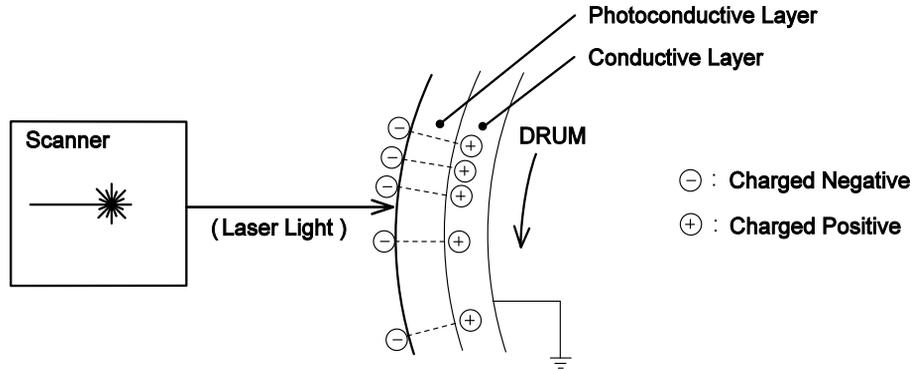
[Exposure]

This step scans the negatively charged drum surface with a laser beam to form an electrostatic latent image on the drum surface.

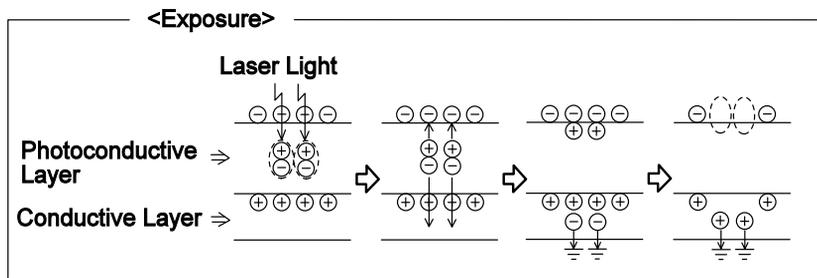
- Image data received from the print controller modulates the laser beam, turning on when it denotes a black pixel, and off when it denotes a white pixel point.

The laser beam, which is emitted by the laser diode in the Raster Output Scanner (ROS) Assembly, scans onto the drum surface from one side to the other by means of the rotated polygon mirror, stationary mirrors and lenses in the ROS.

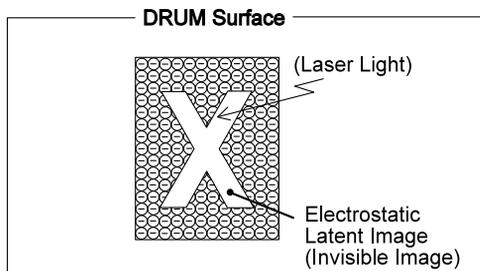
The laser beam shined onto the drum surface generates electron-hole pairs in the photoconductor layer, exciting electrons to the conduction band and thereby creating holes in the valence band. The electrons are attracted by the electric field and move toward the inner conductor of the drum to flow into it. The holes move toward the outside surface of the photoconductor layer and recombine with the negative charge (electrons) at the surface to decrease the negative charge there. The resultant less-negatively charged parts (parts whose potential with respect to the inner conductor have risen) in the drum surface form an invisible electrostatic latent image.



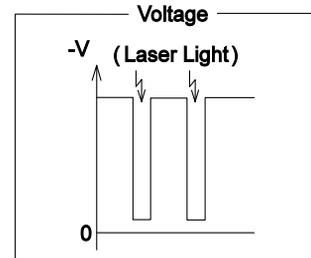
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[Development]

This step attracts the toner over the electrostatic latent image on the drum surface to form a visible toner image.

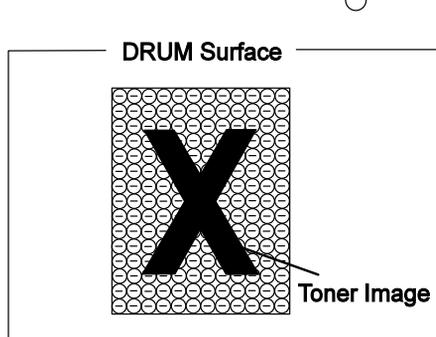
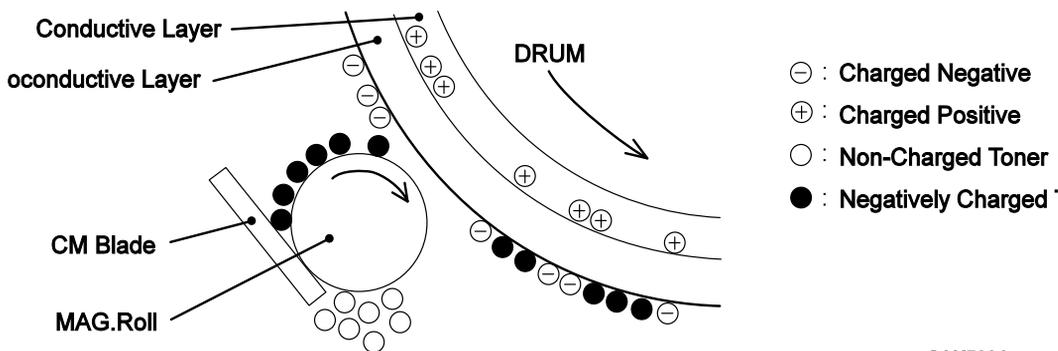
- This printer uses single component toner. The toner is supplied from the toner compartment to the Magnetic Roll closely disposed to the drum, in the EP Cartridge. Because of its slight magnetism, the toner is attracted to the surface of the Magnetic Roll and evenly made into a very thin layer by the Charging and Metering Blade(CMB).

The CMB is attached with rubber and upon contact with the toner, the toner is given a negative electric charge by the friction with the rubber.

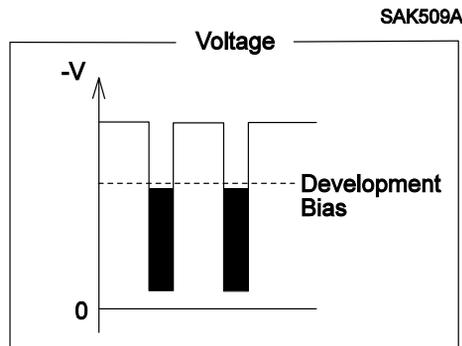
The Mag. Roll is covered with a thin conductive sleeve. A Development Bias(DB) voltage is applied to the Conductive Sleeve from the HVPS. The DB voltage is a negative DC voltage with an AC voltage superposed. Since the Mag. Roll is kept at a fixed negative potential with respect to the conductor layer of the drum, the parts of the drum surface with the full negative charge have a lower electric potential than the Mag. Roll, and the parts with decreased negative charge have a higher electrical potential than the Mag. Roll. The AC voltage agitates the toner particles on the Mag. Roll surface and makes it easier for them to fly off.

Therefore, the negatively charged toner is attracted from the Mag. Roll only to those parts with the decreased negative charge of the drum surface and a toner image is formed on the drum surface (since the attracting force of the positive charge on the conductor layer of the drum is greater than the repelling force of the negative charge).

As the toner adheres, the negative charge of those parts increases because of the negative charge of the toner, lowering the electrical potential and increasing the repelling force of those parts to decrease the resultant attracting force.



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[Transfer]

The toner image is transferred from the drum surface to the paper by the BTR(Bias Transfer Roll : Transfer roll) of the BTR Assembly.

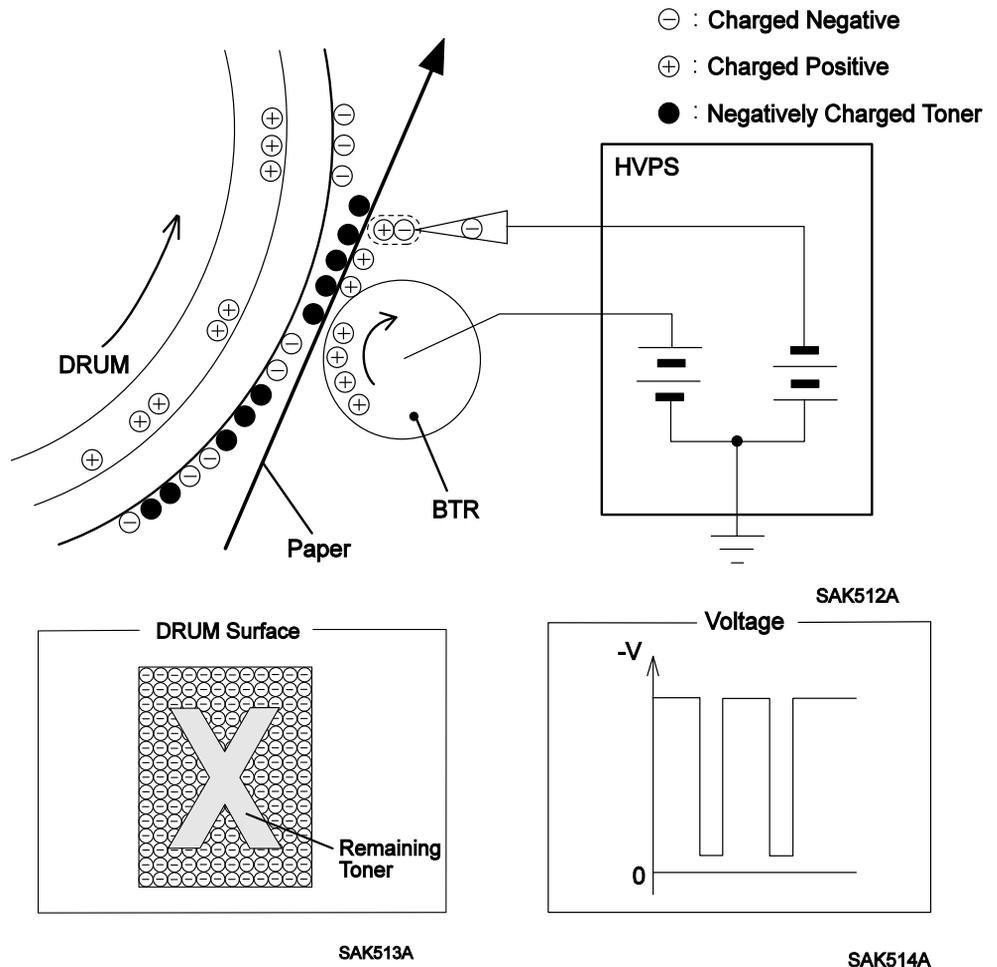
- The Bias Transfer Roll(BTR) is a conductive roller which contacts the drum and is supplied with high voltage from the HVPS. The BTR applies positive electric charge to the back side of the paper as the paper travels between the BTR and the drum. The toner image transfers from the drum surface to the front side of the paper, attracted by positive charge on the back side of the paper.

The paper is attracted by the negative electric charge induced in the inner conductor layer of the drum by the positive electric charge of the back side of the paper and sticks to the drum surface.

[Discharge]

The paper comes off the drum surface by the Detack Saw of the Transport Chute Assembly.

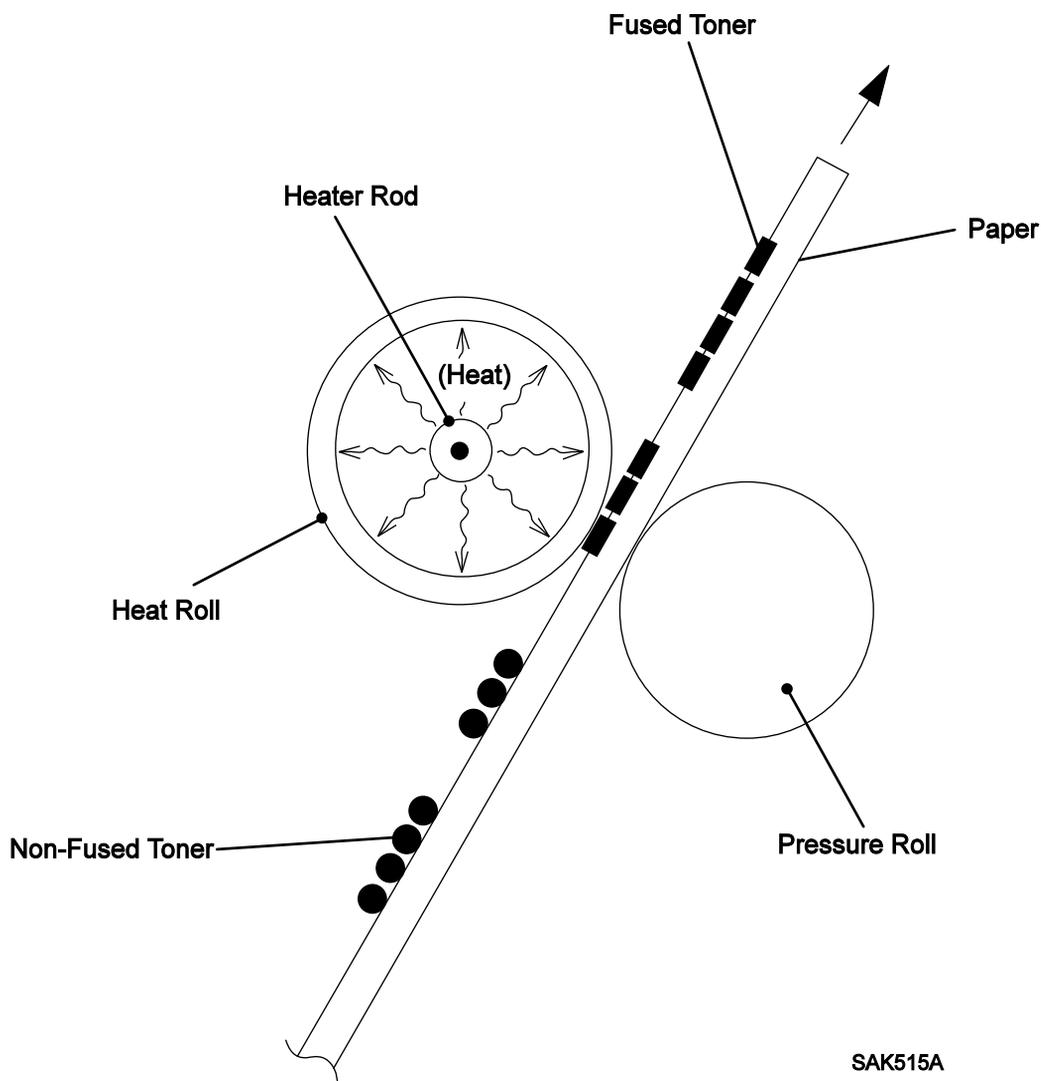
- With the high voltage applied from the HVPS, the Detack Saw applies a negative electric charge to the back side of the paper to neutralize the positive electric charge previously applied. The attractive force which causes the paper to stick to the drum surface disappears, and the paper comes off the drum because of its resilience.



[Fusing]

The Heat Roll melts the toner on the paper and the Heat Roll and the Pressure Roll bound it permanently to the paper.

- The toner image on the paper transferred from the drum surface is easily disturbed by a light touch with fingers. To fix the toner image to the paper, the paper is passed through the Fuser Assembly. The toner is fused by heat which are applied by the Heater Rod, and bonded to the paper by pressure which are applied by the Heat Roll and the Pressure Roll.



[Cleaning]

There are three cleaning steps; physical cleaning of the drum, electrical cleaning of the drum, and electrical cleaning of the BTR.

- Physical cleaning of the drum

Removes any toner remaining on the drum surface.

- The Cleaning Blade, as it contacts the surface of the drum, removes excess toner that has not been transferred to the paper during the Transfer process. The used toner is collected in a section of the EP cartridge. (EP cartridge also contains new toner in a separate section.)

- Electrical cleaning of the drum

Removes remaining charge on the drum and places a uniform charge to the surface.

- The drum surface, which is charged during the previous step of the print cycle, is discharged by applying AC current between the BCR and the drum. The drum surface is set to a uniform negative charge at the level of the DC bias voltage. (See the "Charge" step.)

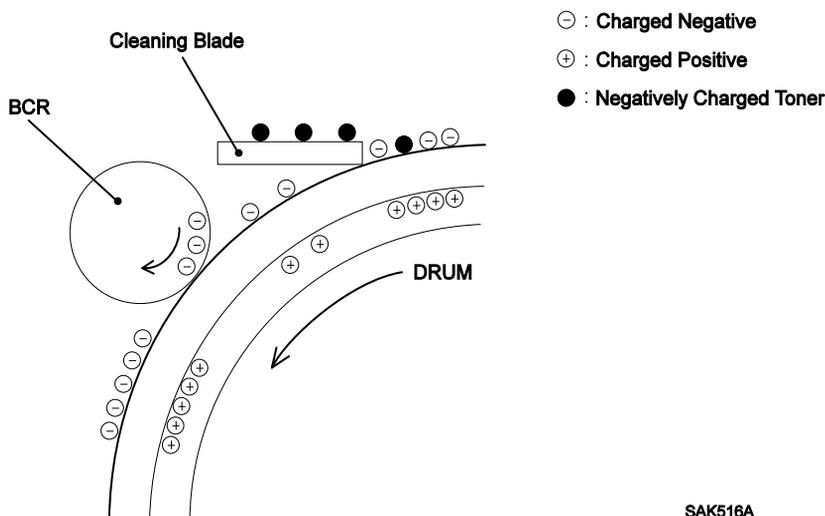
At the beginning of each print cycle (except while printing continuously and while the Scanner Motor in the ROS Assembly is rotating), the laser beam scans the drum to discharge and to set its surface to a uniformly charged level.

- At the beginning of each print cycle, by scanning with the laser beam over the drum, the charge remaining on the drum during the previous print cycle is discharged, and the drum surface is set to a uniformly charged level.

- Electrical cleaning of the BTR

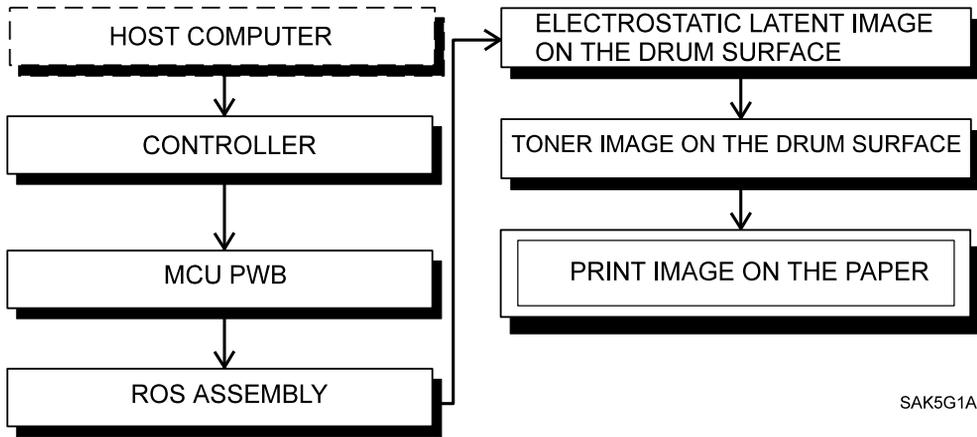
Transfers reversely any toner remaining on the BTR to the drum

- Before and after each print cycle, the negative high voltage (this is the reverse voltage used in the Transfer process) is applied to the BTR. This transfers any toner remaining on the BTR during the previous print cycle to the drum.



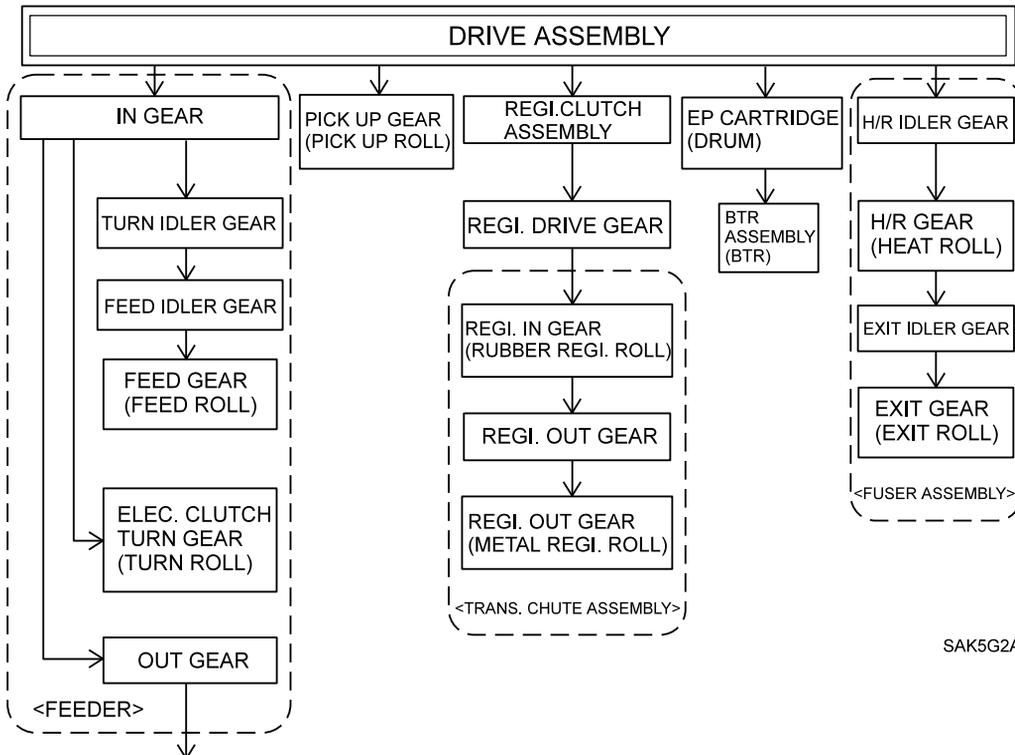
2. Flow of Image Data

The electric signal of image data is modulated from the Printer Controller, and passed through each section as shown below to create print image.



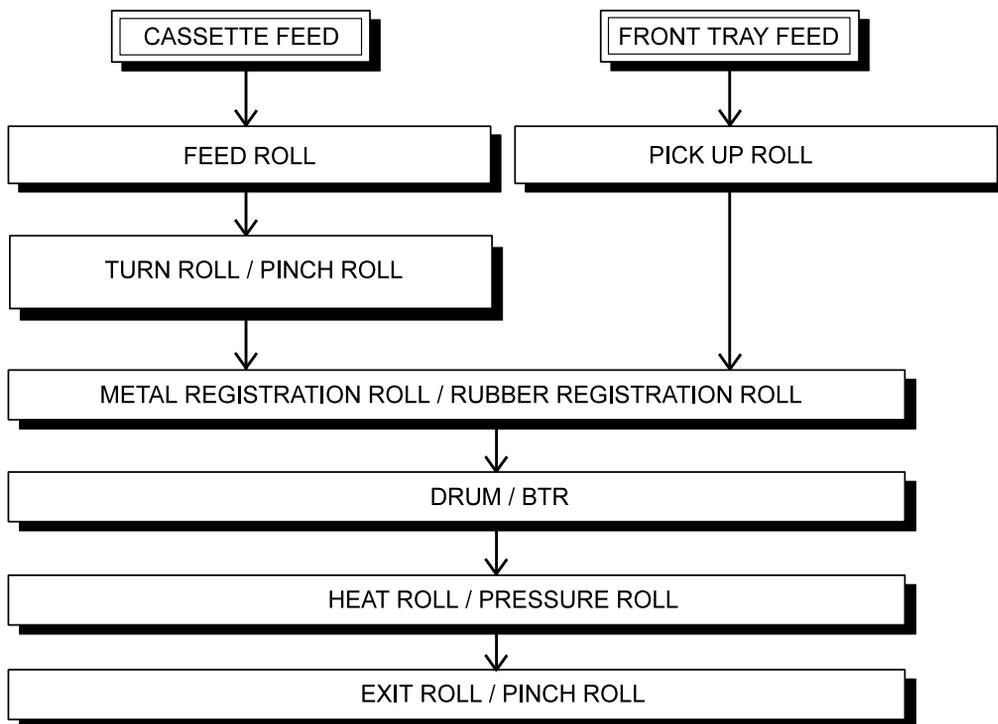
3. Drive Force Transmission

Drive force is generated by the rotation of Main Motor in the Drive Assembly, and transmitted via drive gears to each driving section. See the following diagram.



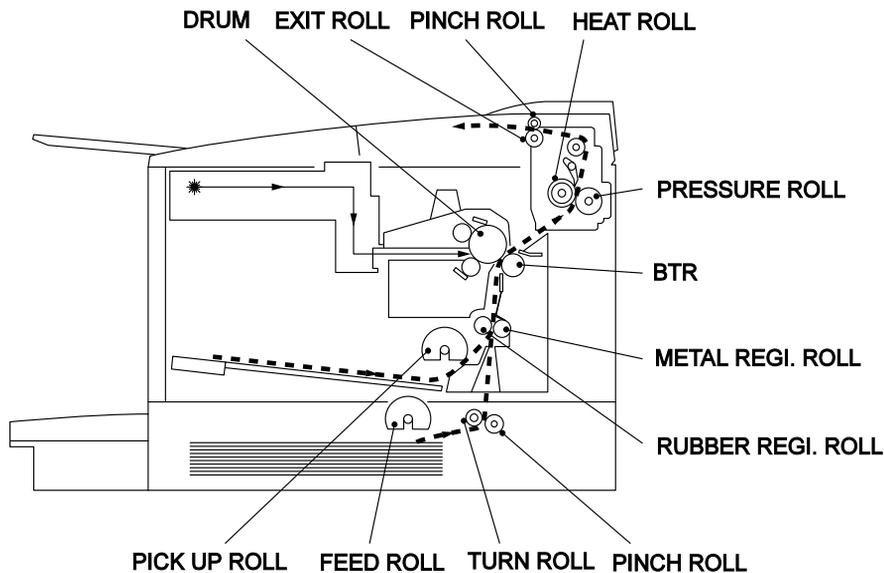
4. Paper Transport

The paper is transported as shown below.



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[Paper Path Diagram]



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5. Function of Major Components

The function of the major components of this printer is briefly described below with reference to the illustrations. The components of the printer are divided into the following six blocks so as to relate the parts lists.

5.1 Fuser and Paper Exit

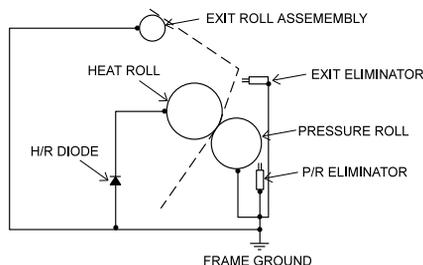
5.1.1 Function [Fuser and Paper Exit]

- Fuser Assembly

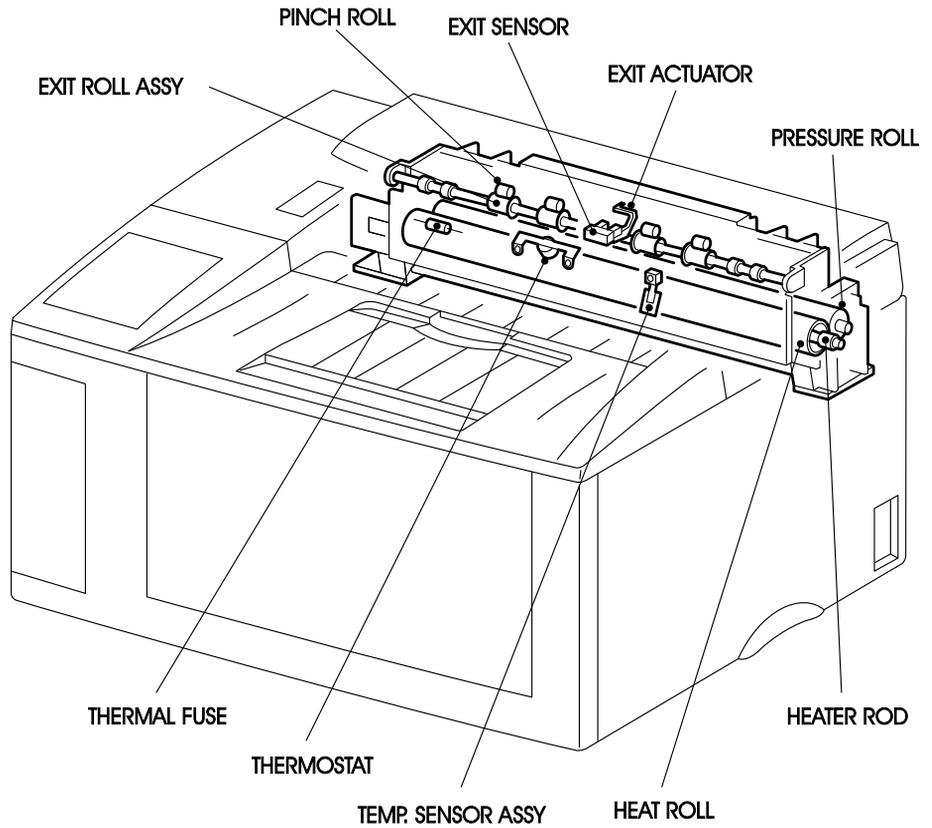
The Fuser Assembly consists of Heat Roll, Pressure Roll, Heater ROD, Temperature Sensor Assembly, Thermostat, Thermal Fuse, Exit Sensor, Exit Actuator, H/R Finger and F/R Diode. The Fuser Assembly bonds toner image which is not fixed on paper by pressure and heat, then outputs the paper.

The Fuser Assembly is referred as "Fuser" in this manual.

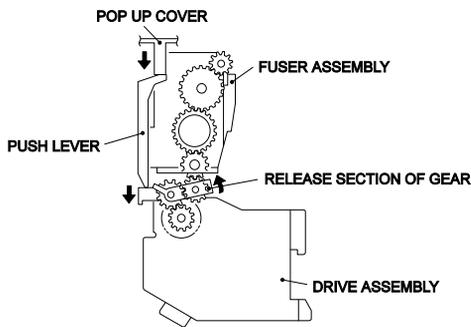
- Heat roll is a hollow metal roll with a surface coating, which applies heat for melting the toner and sticking it to paper.
- Pressure Roll is a rubber roll with a metal shaft inside and covered by a tube. It applies pressure for sticking melted toner on paper.
- Heater ROD is a lamp inside the Heat Roll and in which an airtight heater coil is contained. The Heater ROD rises the temperature of the Heat Roll.
- Temperature Sensor Assembly is a resistor of thermistor which reacts to the variation of the temperature. The Temperature Sensor is located in contact with the surface of the Heat Roll to detect its temperature. The power supply to the Heater ROD is switched on and off so that the temperature of the surface of the Heat Roll is kept constant (the first-stage overhear protection).
- Thermostat is connected in series with the Heater ROD. The Thermostat function as the second-stage overhear protections. If the first-stage overhear protection fails to prevent overhear and the Thermostat reaches predetermined temperature, the contacts of the Thermostat open to break the circuit between the Heater ROD and the power supply.
- Thermal Fuse is connected in series with the Heater ROD. The Thermal Fuse function as the third-stage overhear protection. If both of the first and second-stage overhear protection fail to prevent overhear and the Thermal Fuse reaches the predetermined temperature, then the Thermal Fuse will melt to open the circuit as the third-stage overhear protection.
- Exit Sensor is actuated by the change of location of Exit Actuator and detects paper passing through the paper exit. The Exit Sensor is ON when it detects paper.
- H/R Finger Detackes the edge of paper from the Heat Roll to prevent the paper from curling with the roll.
- H/R Diode prevents print image quality from deteriorating when fusing by the commutation of the diode.



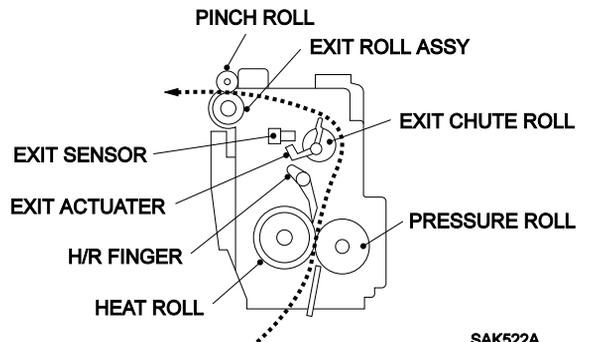
5.1.2 Drawing [Fuser and Paper Exit]



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5.2 Paper Transportation

5.2.1 Function [Paper Transportation]

- Transport Chute Assembly

Transport Chute Assembly consists of Metal Registration Roll, Rubber Registration Roll, Registration Sensor, Registration Actuator, BTR Bearing, and Detack Saw.

The Metal Registration Roll and Rubber Registration Roll transports paper between the drum and BTR Assembly so as to put the toner image on the drum and to locate accurately on paper.

The BTR Bearing transmits voltage for transfer, which is applied by the HVPS, to the BTR Assembly. The Detack Saw electrically neutralizes the paper after the transfer so it will easily peel away from the drum. The paper slipped off the drum is transported to the Fuser Assembly to fix the toner.

- The Registration Sensor detects a sheet of paper at the Metal Registration Roll and Rubber Registration Roll by the change of location of Registration Actuator.

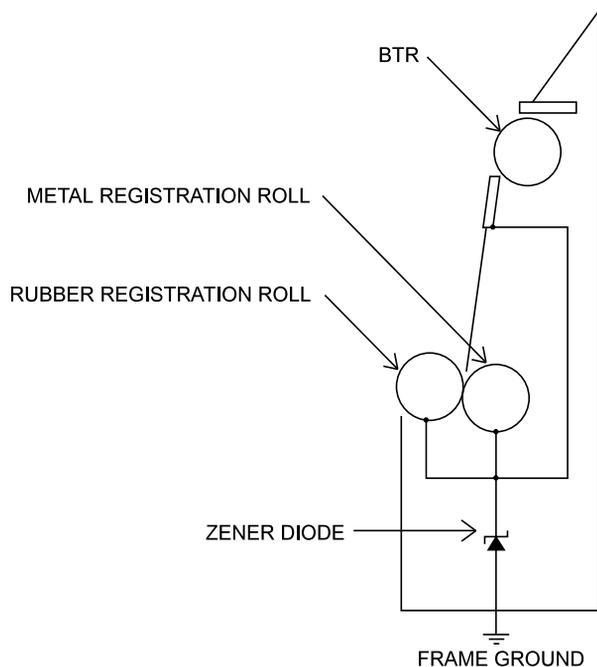
The Registration Sensor is ON when it detects paper.

- The zener diode attached with the Transport Chute Assembly prevents the direct earthing to the frame ground so as to avoid the deterioration of the print image during the transfer process.

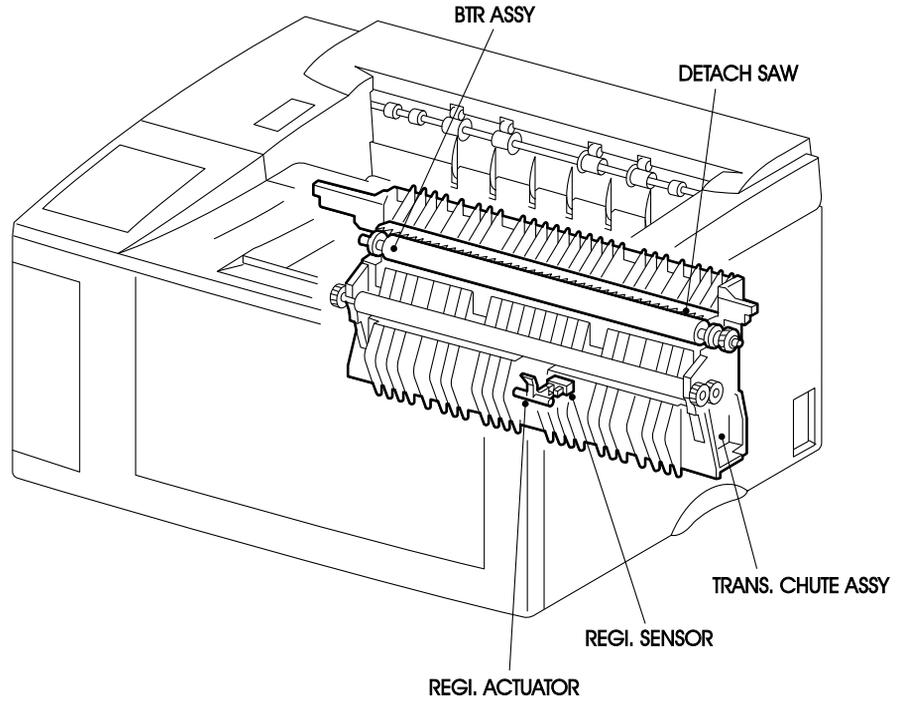
- BTR Assembly

The BTR in BTR Assembly contacts the drum in EP cartridge, and rotates as the drum rotates.

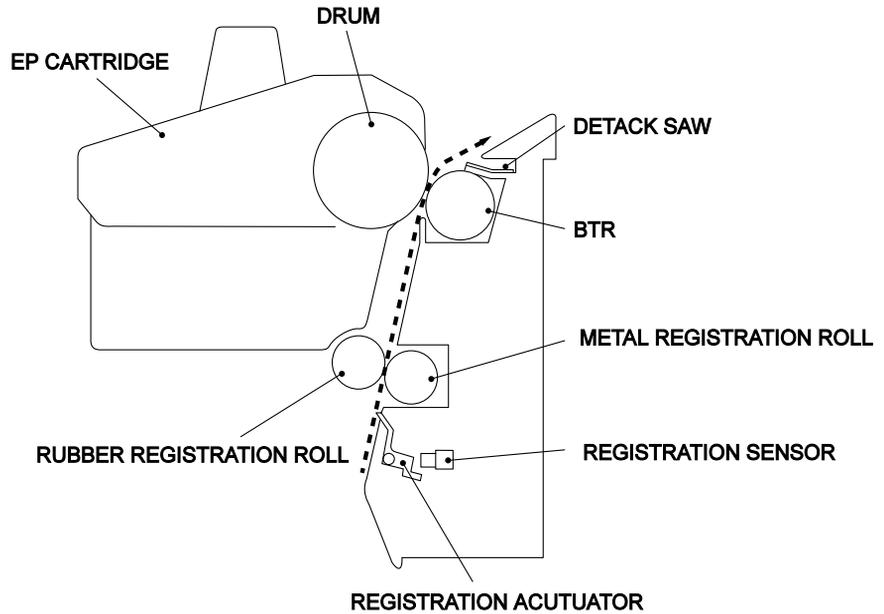
The BTR imparts positive charge to the back side of the paper, and transfers toner on the drum to paper, then feeds the paper to the Fuser Assembly.



5.2.2 Drawing [Paper Transportation]



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5.3 Multi Sheet Inserter

5.3.1 Function [Multi Sheet Inserter]

- Front Bottom Tray

The Front Bottom Tray feeds paper to the front tray. When no paper is feeding, the Front Bottom Tray is pressed down by the Pick Up Cam in the Pick Up Roll Assembly. When feed begins, the cam rotates and Front Bottom Tray is pushed up by the MSI N/F spring, then the Pick Up Roll and Front Bottom Tray pick up paper and apply it with the friction for paper transportation.

- MSI Chute Assembly

MSI Chute Assembly consists of Pick Up Roll Assembly, Pick Up Solenoid, and Retard Pad Assembly. MSI Chute Assembly transports paper from the Front Bottom Tray to Transport Chute Assembly.

- Pick Up Roll Assembly includes Pick Up Roll, Core Roll, Pick Up Cam, and Pick Up Shaft. When the Pick Up Solenoid is actuated, by the force of Pick Up Spring, the Pick Up Gear engages the gear of the Drive Assembly, and starts rotating with the drive force from the Driving Assembly. Paper is fed from the Front Bottom Tray. After one revolution of the Pick Up Roll, the Pick Up Gear unlatches the gear of the Drive Assembly, stops the transmission of the drive force, and stops the rotation of the Pick Up Roll. Thus feeding one sheet of paper at a time.
- The Pick Up Solenoid controls the start(rotate) and stop of the Pick Up Roll Assembly.
- The Retard Pad Assembly prevents the Pick Up Roll Assembly from feeding two sheets of paper at a time.

- MSI No Paper Sensor

The MSI No Paper Sensor detects paper on the Front Bottom Tray by the change of location of MSI N/P Actuator.

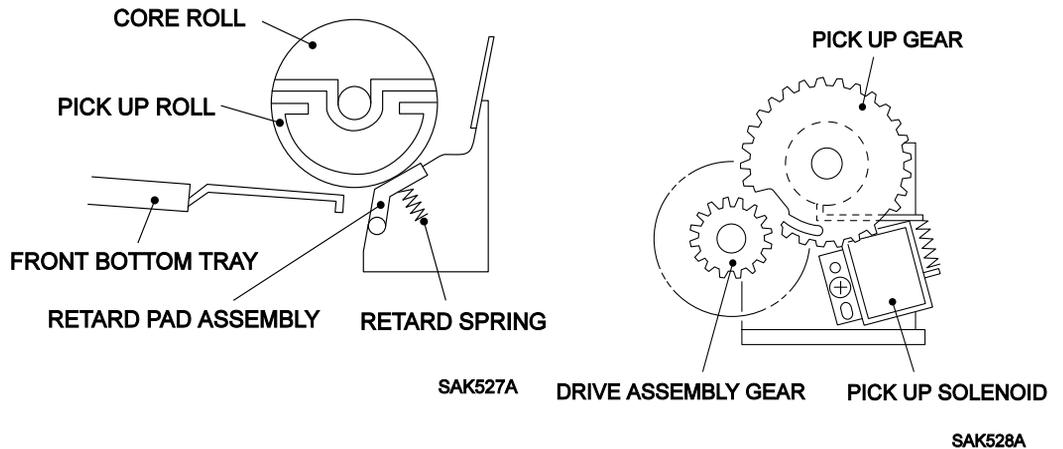
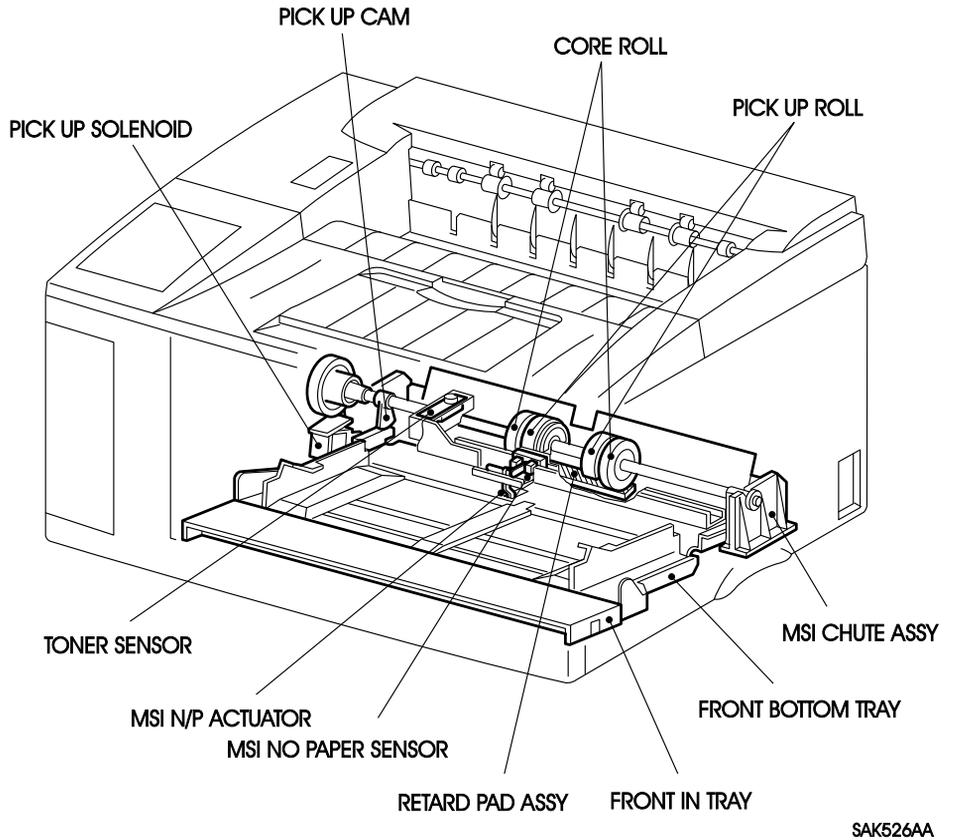
The sensor is ON when paper is loaded into the Front Bottom Tray.

- Toner Sensor

The Toner Sensor is a magnetic sensor to detect when the toner in the EP cartridge becomes low by sensing the magnetism of the toner.

The sensor is ON when toner is detected.

Drawing [Multi Sheet Inserter]



5.4 Drive and Xerographics

5.4.1 Function [Drive and Xerographics]

- ROS Assembly

The ROS Assembly includes the LD Assembly, Scanner Assembly, SOS PWB, lenses, mirrors, and windows. The ROS Assembly emits laser beam.

- The ROS Assembly is referred to "ROS" in this manual.

The LD Assembly emits a laser beam by converting electrical signals via laser diode. The laser diode output power (LD Power) is monitored and controlled at a constant level by the monitor circuit.

- The Scanner Assembly consists of a Scanner Motor, which rotates at a constant speed, and a six sided polygon mirror attached to the Scanner Motor.

The reflection degree of laser beam varies with the spin of the Polygon Mirror. The laser beam scans at one scan line per mirror facet (direction of drum shaft). The laser beam reflected from the Polygon Mirror hits the drum surface through a series of lenses, mirrors, and windows.

- When the laser beam strikes the SOS PWB, the laser beam is converted to an electric signal (SOS signal) and detects initial location of scanning for each line.

- Drive Assembly

The Drive Assembly consists of the Main Motor and drive gears that transmits the drive force to various parts of the printer. The Drive Assembly performs mechanical driving operation with the spin of the Main Motor.

- Registration Clutch Assembly

This is the electromagnetic clutch which operates after a specified time that the Registration Sensor detects paper. It transmits the drive force of the Drive Assembly to the Rubber Registration Roll and Metal Registration Roll of the Transport Cute Assembly.

- CRU Sensor Assembly

The CRU Sensor Assembly has two switches internally, CRU switch and LD Switch. Both switches turns ON via the actuator of the CRU Sensor Assembly by the projection of the EP Cartridge.

- The CRU Switch detects whether the EP Cartridge is installed or not.
- The LD switch is connected in series with the laser beam emitting circuitry, and functions as a laser safety switch.

- EP Cartridge

The EP Cartridge consists of Drum, BCR, Magnet Roll, CM Blade, and Cleaning Blade.

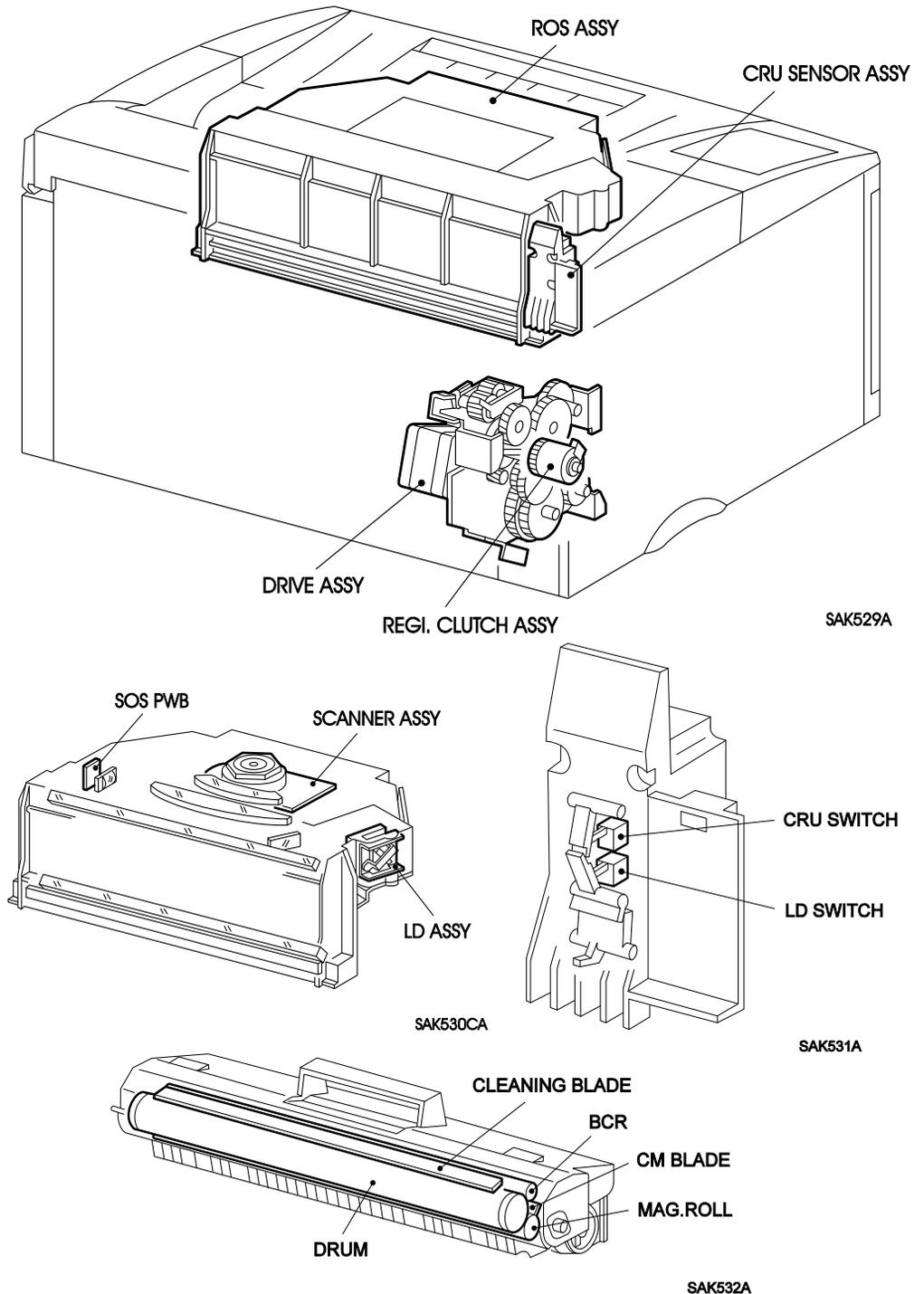
- Drum is an aluminum cylinder with a vapor-deposited photoconductor layer of OPC which holds an electrical charge when in darkness, and discharges it when exposed to light.

The electrostatic latent image, which becomes print image, is modulated by the potential difference on the drum surface.

- BCR places a uniform density of negative charge on the drum surface during "Charge" step of print cycle. Also, during "Cleaning" step, the BCR removes remaining charge on the drum surface by applying alternating bias on it.
- Magnet Roll distributes toner to the drum surface to develop electrostatic latent image on the drum surface.

- CM Blade spreads an even coating of toner on the Mag. Roll, and gives charge to the toner by its friction.
- Cleaning Blade scrapes the remaining toner off the drum surface.

5.4.2 Drawing [Drive and Xerographics]



5.5 Electrical

5.5.1 Function [Electrical]

- LVPS Assembly

The LVPS Assembly supplies AC power to the Heater Rod, while generating and supplying stabilized DC voltages to the printer logic circuits etc.

The LVPS Assembly includes power circuit, Fan control circuit, Heater Rod control circuit, inlet, and power switch.

- HVPS

The HVPS supplies power to the BCR, Magnet Roll, BTR, and Detack Saw to charge, develop, transfer and fuse during print process.

- KNOB VOLUME

The Knob Volume is print density adjustment control. The Knob Volume gives fine adjustment of print density by raising or lowering the DB (DC) output voltages (DC component of development bias) supplied by the HVPS.

Print density darkens when knob is turned clockwise.

- MCU PWB

The MCU PWB controls printer operations based on the communication with the printer controller and information received from the printer sensors and switches. The MCU PWB has five major functions as follows:

- Communicate with the printer controller
- Receive information from printer sensors and switches
- Control the ROS Assembly, Fuser Assembly, and Drive Assembly
- Control the printing sequence
- Distribute low DC voltage power from the LVPS Assembly to other components

- FAN

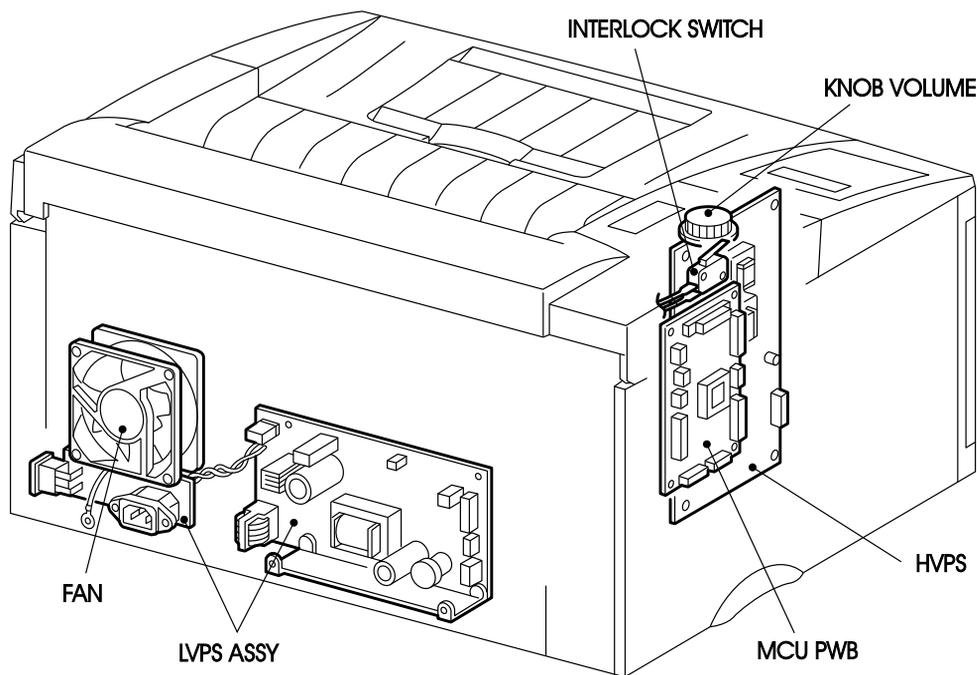
The fan forces the air out of the printer to prevent overheating.

- Interlock Switch

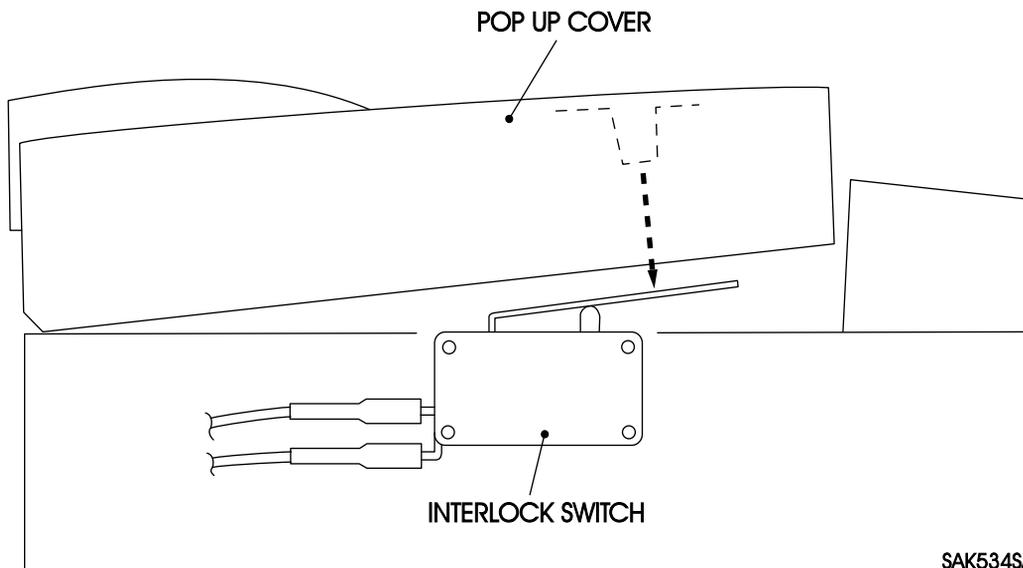
The Interlock Switch is a safety switch. When the Pop up Cover opens, the Interlock Switch turns OFF to stop the supply of low voltage DC power of 24 VDC (except for power of the fan) from LVPS Assembly to MCU PWB.

When the Pop up Cover is closed, the Interlock Switch turns ON to resume the power supply.

5.5.2 Drawing [Electrical]



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5.6 Feeder and Cassette

5.6.1 Function [Feeder and Cassette]

- Feed Roll Assembly

The Feed Roll Assembly consists of Feed Roll and Feed Shaft Assembly. When the Feed Solenoid is actuated, by the force of the Feed Spring, the Feed Gear engages the Feed Idler Gear, and starts rotating with the drive force from the Driving Assembly. Paper is fed from the paper cassette. After one revolution of the Feed Roll, the Feed Gear unlatches the Feed Idler Gear, stops the transmission of the drive force, and stops the rotation of the Feed Roll. Thus feeding one sheet of paper at a time.

- Feed Solenoid

The Feed Solenoid controls the start and stop of the Feed Roll Assembly.

- Turn Roll Assembly

According to the specification of <Pre-feed Function installed>, when the Turn Roll Assembly receives [/PRFD] signal and Electric Clutch stops, the drive force is not transmitted to the Turn Roll Assembly, thus paper transportation pauses. Paper waits just before the Registration Sensor. When the printer controller sends [/START] signal, the Electric Clutch resumes operation, starts rotation of the Turn Roll Assembly and transportation of waiting paper. If the printer controller does not send a [/PRFD] signal, the Electric Clutch keeps operating, transmitting the drive force from Drive Assembly to the Turn Roll Assembly, thus the Turn Roll Assembly keeps paper moving. According to the specification of <Pre-feed Function not installed>, the Turn Gear keeps transmitting the drive force from Drive Assembly to the Turn Roll Assembly, the Turn Roll Assembly keeps paper moving.

- Electric Clutch

The Electric Clutch is an electromagnetic clutch used for the specification of [Pre-feed feature ON]. It receives control signal ([/PRFD] signal and [/START] signal) from the printer controller, and controls the operation (rotate and stop) of the Turn Roll Assembly.

For the specification of [Pre-feed feature Off], the Turn Gear is used in replacement for the Electric Clutch.

- Feeder PWB

The Paper Size switch is mounted directly on the Feeder PWB. Paper size is determined according to the location of the switch. Also, the Feeder PWB relays the Main PWB and each component of the cassette feed.

- Cassette Sensor

Detects whether paper cassette is mounted or not.

The switch is ON when it detects the paper cassette.

- CST No Paper Sensor

Monitors the level of paper in the cassette.

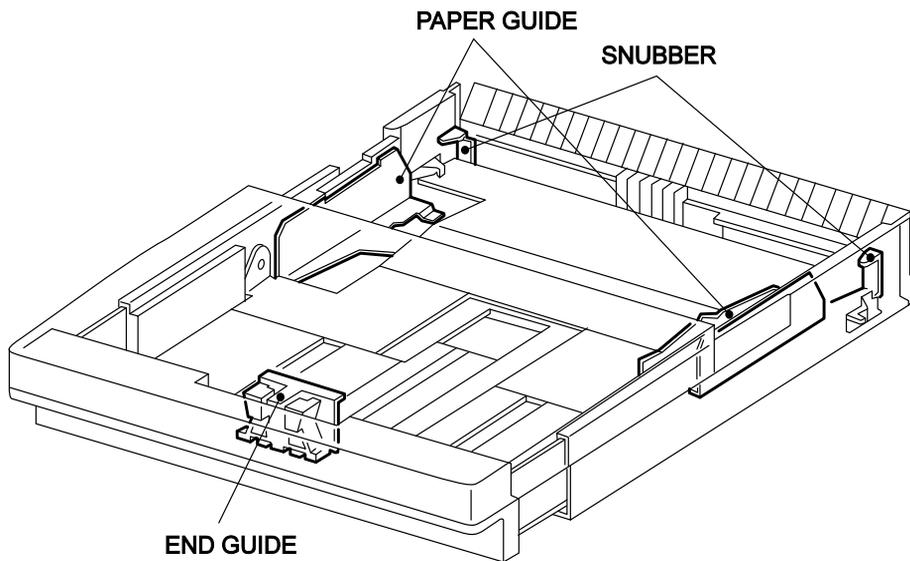
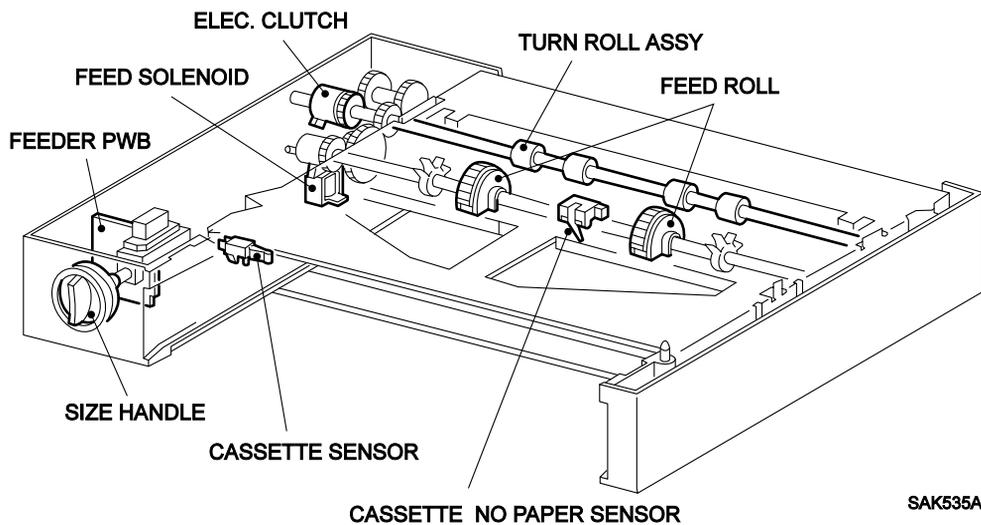
The switch is ON when there is paper.

- Universal Cassette

Holds cut sheets of plain paper.

By adjusting paper guides locating at left and right of the cassette to the edge of paper, snubber (claws to avoid duplex feeding of paper) automatically adjust to the paper size. The paper guide at the front of the cassette adjusts the front and back edge of the paper.

5.6.2 Drawing [Feeder and Cassette]



Section 6

General Procedures and Information

Section Contents

1. Operation Overview

1.1 Console Assembly	6-1
1.1.1 Standard Specification	6-1
1.1.2 Diagnostic Tools(Maintenance Tools)	6-1
1.2 Printer Modes	6-2
1.3 Online Mode	6-3
1.3.1 Function	6-3
1.3.2 To Enter Online Mode	6-4
1.3.3 To Select Front Tray Paper Size	6-5
1.3.4 Front Tray Size Selection by the Printer Controller	6-6
1.4 Test Print Mode	6-7
1.4.1 Function	6-7
1.4.2 To Enter Test Print Mode.	6-8
1.4.3 Operation	6-8
1.4.4 Test Print by the Printer Controller.	6-8
1.4.5 Test Print without Diagnostic Tool	6-9
1.5 Diagnostics Mode	6-10
1.5.1 Overview	6-10
1.5.2 Diagnostics Code Table	6-10
1.5.3 To Enter the Diagnostics Mode.	6-11
1.5.4 To Select Diagnostic Code	6-11
1.5.5 Accumulating Counter(DG 03).	6-11
1.5.6 Input Test (DG 02)	6-12
1.5.7 Output Test	6-15
1.5.8 Check Sum (DG 03)	6-20
1.5.9 Paper Size Data (DG 04)	6-21
1.5.10 Diagnostics by the Printer Controller	6-23

Section 6

General Procedures and Information

1.6 NV Setup Mode	6-24
1.6.1 Function	6-24
1.6.2 To Enter NV Setup Mode	6-24
1.6.3 NV Code Table	6-26
1.6.4 To Select NV Code	6-29
1.6.5 To Input Code Parameters	6-30
1.6.6 NV Code J// Test Print	6-30
1.6.7 Setting by the Printer Controller	6-31

2. Error and Status

2.1 Error and Status Code Table	6-32
2.2 Printer Conditions and Responses for Error/Status Codes	6-35
2.3 Status to the Printer Controller	6-39

3. Printer Controls

3.1 Paper Size Control	6-40
3.2 Paper Feeder Selection Control	6-41
3.3 ROS Controls	6-42
3.3.1 Scanner Motor Revolution	6-42
3.3.2 ROS Warmup	6-42
3.3.3 ROS Reference Values	6-43
3.4 Fuser Controls	6-44
3.4.1 Fuser Control	6-44
3.4.2 Heater Rod ON/OFF Control	6-44
3.4.3 Fuser Warmup	6-44
3.4.4 Thick Paper Mode	6-44
3.4.5 Fuser Temperature Table	6-44
3.4.6 Temperature Code Table	6-45
3.5 Erase Cycle	6-45

Section 6

General Procedures and Information

4. Connector [P(Plug)/J(Jack)] Locator

4.1 P/J Locator	6-49
4.2 P/J Location Table	6-51

5. Wiring Diagrams

5.1 General Diagram	6-53
5.2 Wiring for Connection between Parts	6-55
5.2.1 Organization	6-55
5.2.2 Wiring Diagram Notation	6-56

6. Printing Accuracy 6-73

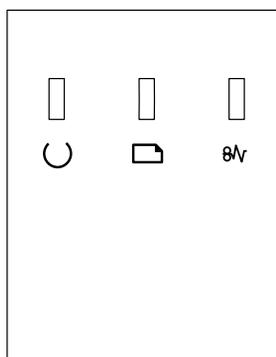
- Note :*
1. This manual describes standard specification of Fuji Xerox. If the printer controller directly controls the Console Assembly, or there is a unique specification for OEM customer, the specification differs according to that of OEM customer.
 2. This manual describes the operation and how the printer displays and works when using a diagnostic tool (maintenance tool).
 3. Only the items in these General Procedures and information covering resolutions of 600 dpi are valid. Descriptions using values for other levels of resolution do not apply as they are not included as standard specification.

1. Operation Overview

1.1 Console Assembly

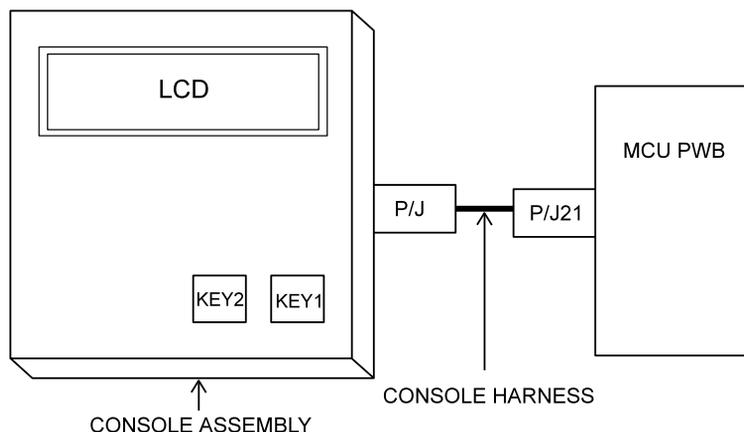
1.1.1 Standard Specification

The Console Assembly is displayed using three LEDs.



1.1.2 Diagnostic Tools (Maintenance Tools)

The Console Assembly of the diagnostic tool consists of a two line LCD with sixteen character per line to display messages and so on, and two key switches to input the printer.



Diagnostic tool means both the Console Assembly for the diagnostic tool and the Console Harness for the diagnostic tool.

*Caution : Connect the diagnostic tool to the connector P/J21 on the Main PWB.
Keep the Electric Shield and each cover attached as not specially indicated.*

1.2 Printer Modes

This printer has four modes of operation as follows;

- s Online Mode
- s Test Print Mode
- s Diagnostics Mode
- s NV Setup Mode

Note : You cannot shift between printer modes while the power switch ON. Switch the power OFF to exit the current mode.

1.3 Online Mode

1.3.1 Function

Online mode has the following two functions:

- s You can print by the order of the Printer Controller.
- s You can store the data of the paper sizes to be used for the Front Tray feeding to the nonvolatile memory.

<Setup of paper sizes for the Front Tray>

The paper size fed from the Front Tray is selected among the twenty types (twenty-one types for some specifications) of paper sizes. See table below.

Paper Size	Display on LCD	Katakana	LCD No.
Nonstandard size 1	NONSTANDARD	フテイケイ	1
LEDGER(SEF)	LEDGER(11X17")	レジャー (1 1 " x 1 7 ")	2
A3(SEF)	A3(SEF)	A 3 (タテ)	3
B4(SEF)	B4(SEF)	B 4 (タテ)	4
LEGAL14"	LEGAL(8.5"X14")	リーガル(8 . 5 " X 1 4 ")	5
LEGAL13"	LEGAL(8.5X13")	リーガル(8 . 5 " X 1 3 ")	6
A4(SEF)	A4(SEF)	A 4 (タテ)	7
LETTER(SEF)	LETTER(SEF)	レター (タテ)	8
B5(SEF)	B5(SEF)	B 5 (タテ)	9
COM-10(SEF)	ENVELOPE:COM-10	フウトウ : C O M - 1 0	10
C5(SEF)	ENVELOPE:C5	フウトウ : C 5	11
C5(SEF)	ENVELOPE:DL	フウトウ : D L	12
LETTER(LEF)	LETTER(LEF)	レター (ヨコ)	13
A4(LEF)	A4(LEF)	A 4 (ヨコ)	14
MONARCH(SEF)	ENVELOPE:MONARCH	フウトウ : モナーク	15
EXECUTIVE(LEF)	EXECUTIVE(LEF)	エクゼキューティブ (ヨコ)	16
B5(LEF)	B5(LEF)	B 5 (ヨコ)	17
A5(LEF)	A5(LEF)	A 5 (ヨコ)	18
Postcard	POSTCARD	ハカキ	19
Statement(LEF)	STATEMENT(LEF)	ステートメント (ヨコ)	20
Nonstandard size 2	*LONG(900mm)	* チョウシヤク (9 0 0 mm)	0

SAK6HCA.CDR

- * This size is determined to be selectable or not according to the "Nonstandard Specification" of NV code B of the nonvolatile memory on the Main PWB.

Note : SEF is the abbreviation for Short Edge Feed which means feeding of paper with the short edge (side) facing the front, and LEF for Long Edge Feed which means feeding of paper with the long edge (side) facing the front. When neither SEF nor LEF is indicated, the orientation of paper is SEF.

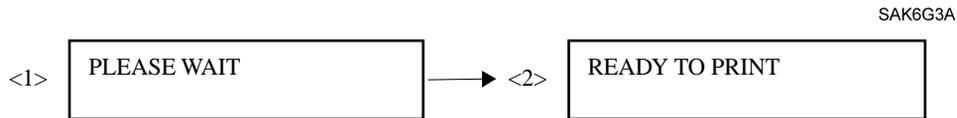
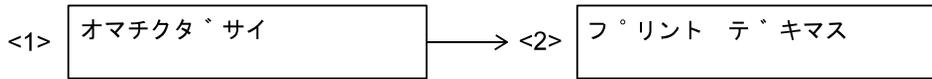
1.3.2 To Enter Online Mode

Switch on the printer power to enter the online mode.

The LCD displays the message <1> during the warm-up time, then displays the message <2> as shown below.

The Main Motor is running during the warm-up time.

Memo: Warm-up is a period of time until the printer can start printing



1.3.3 To Select Front Tray Paper Size

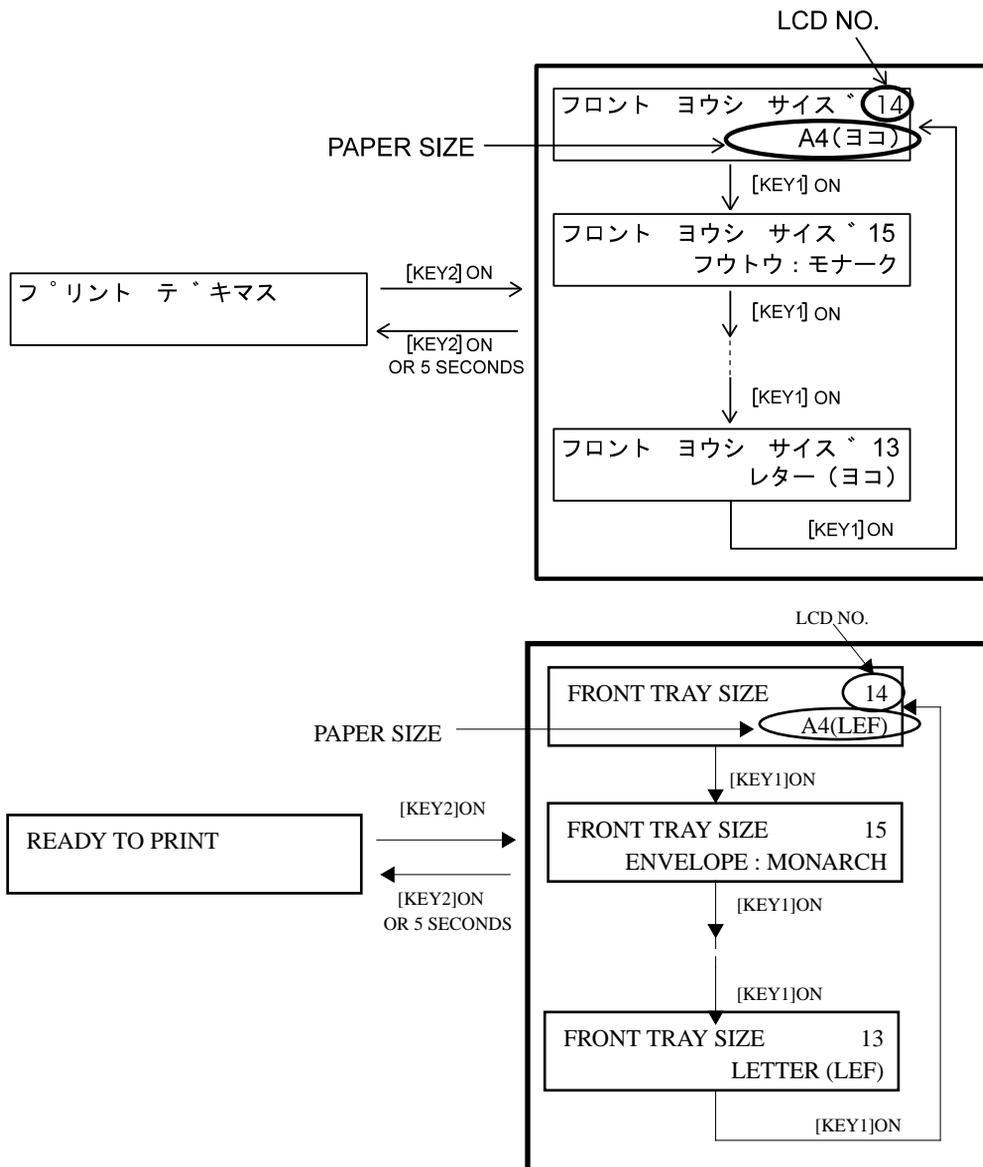
During the online mode and the Front Tray is not used for printing, press [KEY2] to enter the state where you select the Front Tray size option.

During this state, press [KEY1] to step through the Front Tray size options and to store a selected option to the nonvolatile memory at the same time.

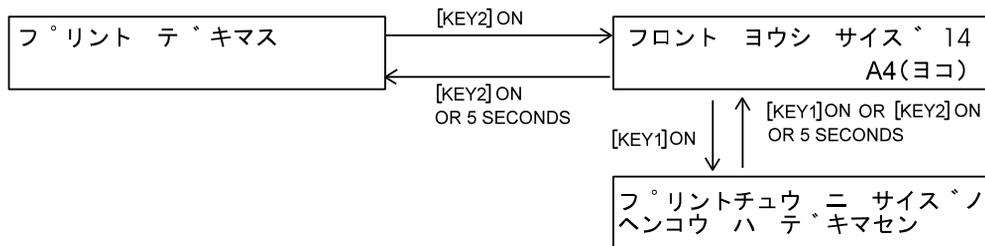
Every time you press [KEY1], the paper size is displayed in the descending order of the list on the previous page(1.3.1 Function). (When the highest number is reached, it returns to the lowest number). (The selected paper size is displayed at first.)

To exit the Front Tray select options, press [KEY2] or leave the printer for five minutes.

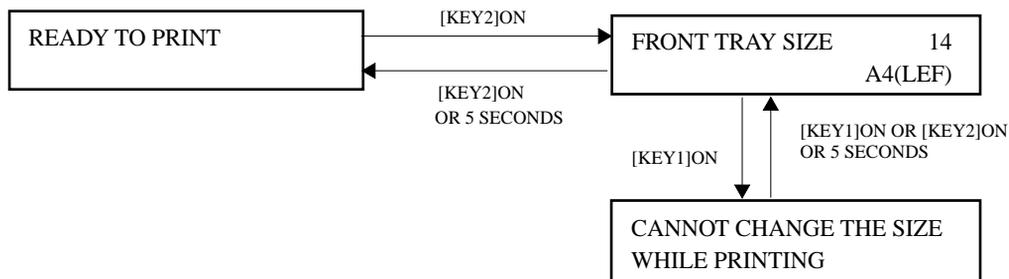
The LCD display is as follows:



Note : If the printer cannot enter the Front Tray size selection option, the LCD displays as follows:



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1.3.4 Front Tray Size Selection by the Printer Controller

The paper size fed from the Front Tray can be selected by the communication to the Printer Controller.

Note : See the "Interface Specification" for detail.

s Check

Command [STATUS 7 REQUEST (OEH)] → Status [STATUS 7]

s Change

Command [SET TRAY SIZE (5BH)] → Status [STATUS 0]

Command [SET TRAY SIZE (??H)] → Status [STATUS 0]

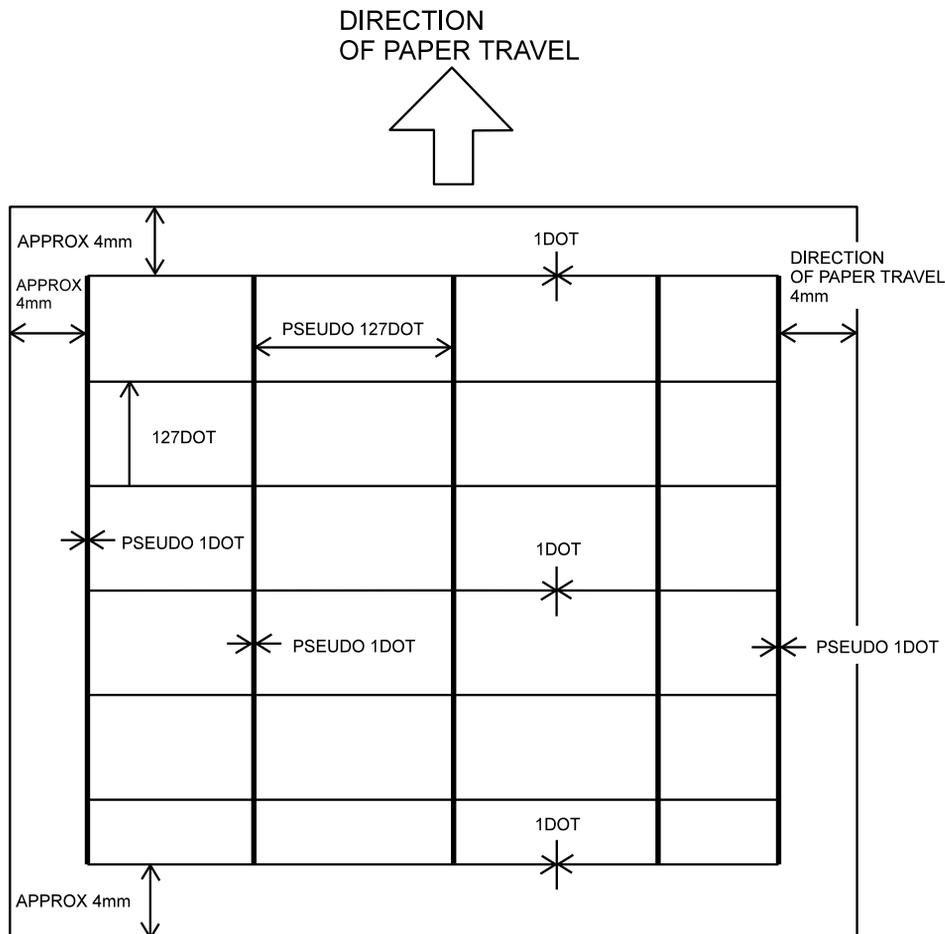
?? indicates the corresponding number of the paper size selected.

1.4 Test Print Mode

1.4.1 Function

The test print mode allows you to print a built-in test print (self-patterned print) at the continuous print speed of the printer.

The self-pattern of the test print is shown below:



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- s The black lines with one dot wide are spaced at 128 dot intervals running vertical to the direction of paper travel.
(Provided that the grid of the last end may not be at 128 dot intervals.)
- s The black line with pseudo1 dot wide are spaced at pseudo128 dot intervals running horizontal to the direction of paper travel.
(Provided that the grid of the left and right end may not be at pseudo128 dot intervals.)

Note : "Pseudo dot" is the dot vertical to the direction of paper travel. In the test print mode, the clock for the circuit of MCU PWB is used for the data transmission (dot width) vertical to the direction of paper travel. Therefore, the exact dot width is calculated by multiplying "pseudo dot" with the rate of change per resolution.

Also, the displacement (jitter) for the direction of paper travel becomes large, as the clock for the circuit of MCU PWB is used. Thus you cannot evaluate the image quality.

Resolution (dpi)	300	360	400	480	600	800
Change ratio (%)	Approx. 107.16	Approx. 154.25	Approx. 190.47	Approx 274.25	Approx. 428.58	Approx. 761.89

1.4.2 To Enter Test Print Mode

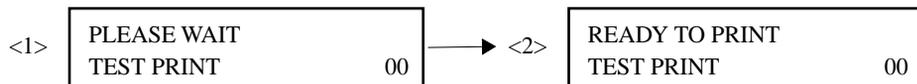
Switch the printer power ON while pressing down [KEY2] only, then release [KEY2].

Memo : The ROS Assembly Scanner Motor starts to spin when entering test print mode and continues to spin at a constant speed throughout the test.

The LCD displays the message<1> during the warm-up time, then displays the message<2> as shown below.



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The TEST PRINT message on the second line indicates that the printer is now in the test print mode. 00 indicates the accumulated number of output prints, which varies at 1 increment, after entering the test print mode.

Memo : The accumulated number is displayed in the decimal notation. When it reaches "99", it returns to "00".

1.4.3 Operation

- 1) Press [KEY1] after the warm-up time (when the printer displays the message <2>above). The printer starts printing and prints continuously.
- 2) Press [KEY1] again to stop the test print after the output of the print currently printing.
- 3) To resume printing, press [KEY1] while printer is not running.

Warning : Make sure all covers are fastened in place on the printer before you start printing.

1.4.4 Test Print by the Printer Controller

The test print, same as the test print mode, can be printed by the communication to the Printer Controller.

Note : See the "Interface Specification" for details.

- s Command [TEST PRINT (64H)] → Status [STATUS 0]

1.4.5 Test Print without Diagnostic Tool

The test print same as the test print mode can be printed by the printer itself without using the diagnostic tool.

Note : When the Printer Controller is connected, the test print may differ from that of the built-in, or the printer may continuously print.

Method of Printing

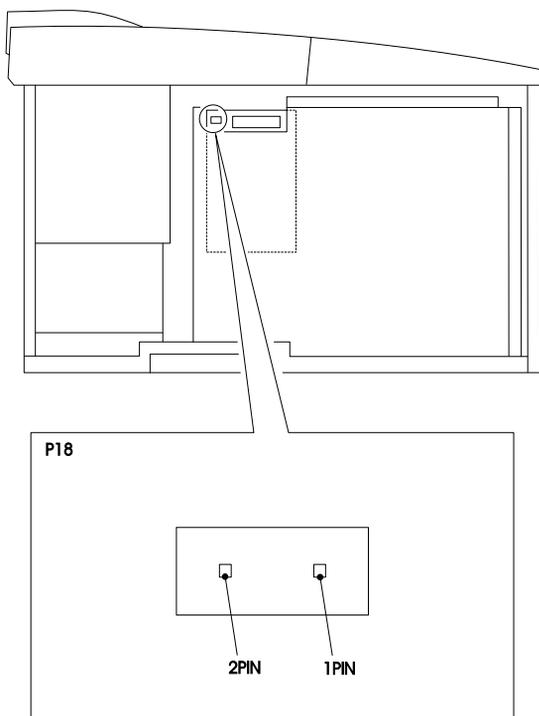
- 1) Remove the Left Cover. (See "RRP 1.1")
- 2) Remove Top Cover Assembly. (See "RRP 1.2")
- 3) Remove the Rear Panel. (See "RRP 6.1")
- 4) Remove the Shield Assembly. (See "RRP 6.4")
- 5) Remove the ESS PWB. (See "RRP 6.5")
- 6) Reinstall the Top Cover Assembly. (See "RRP 1.2")
- 7) Install the EP Cartridge, paper, and the power cord, then turn ON the printer power.
- 8) After the warm-up completes, connect the two pins of connector P18 on the MCU PWB for the test print, which you can see from the left side of the printer.

Note : To connect the pins, use an electric conductor such as the edge of the screwdriver. Be careful not to touch the device on the board with the edge of the screwdriver.

- 9) The printer starts printing and one sheet of test print is printed.

Memo : 1. When the printer is in error state, printer cannot start printing.

2. you want to print continuously, keep the two pins connected.



1.5 Diagnostics Mode

1.5.1 Overview

The diagnostics mode allows you to perform the various tests to examine the printer; the accumulated number of prints by the nonvolatile memory (accumulated counter), sensors and switches functions (input test), operation and functions of each component such as the Main Motor and HVPS (output test), the sum value of the ROM (check sum value), and Paper Size Switch data (paper size data).

1.5.2 Diagnostics Code Table

Note : On the following pages, the use of the term "Tray 1" refers to the first paper feeder unit, and the term "Tray 2" refers to the second paper feeder unit.

	DG Code	Display on LCD (Upper Line)	Katakana	Test Function
Total Print-Count	30	PRINT COUNTER	インシ [・] マイスウ コ [・] ウケイ	Show the total number of prints made.
Input Test	02	SENSOR CHECK	センサーテスト	Test and displays a sensor or switch function.
Output Test	07	FUSER TEMP. SET	フューサ [・] セットイ オント [・]	Show the temperature code corresponding to the fuser control temperature.
	08	FUSER TEMP.	フューサ [・] オント [・]	Show the temperature code corresponding to the actual temperature.
	80	SOLENOID FRONT	ソレノイト [・] / フロント	Test the Pick-Up Solenoid function.
	81	SOLENOID TRAY1	ソレノイト [・] / トレイ 1	Test the Feed Solenoid of Tray 1 function.
	86	SOLENOID TRAY2	ソレノイト [・] / トレイ 2	Test the Feed Solenoid of Tray 2 function.
	84	TURN ROLL CLUTCH	ターンロール クラッチ	Test the Electric Clutch of all trays function.
	82	REGI CLUTCH	レジストレーション クラッチ	Test the Registration Clutch Assembly function.
	90	MOTOR MAIN	メインモーター	Test the Main Motor of Drive Assembly function.
	91	CHARGE ROLL AC	チャージ [・] ロール AC	Test the output of CR(AC) of HVPS [AC constant current to the BCR].
	92	CHARGE ROLL DC	チャージ [・] ロール DC	Test the output of CR(DC) of HVPS [DC constant voltage to the BCR].
	93	DEV BIAS AC	ケ [・] ンソ [・] ウ ハ [・] イアス AC	Test the output of DB(AC) of HVPS [AC constant voltage to the Magnet Roll].
	94	DEV BIAS DC	ケ [・] ンソ [・] ウ ハ [・] イアス DC	Test the output of DB(DC) of HVPS [DC constant voltage to the Magnet Roll].
	95	T ROLL -	テンシャロール マイナス	Test the output of TR(-) of HVPS [negative DC constant voltage to the BTR].
	96	T ROLL +	テンシャロール プラス	Test the output of TR(+) of HVPS [positive DC constant voltage to the BTR].
	97	DETACK SAW	テ [・] タックソウ	Test the output of DTS of HVPS [negative DC constant voltage to Detack Saw].
98	FAN FAST	ファン コウソクカイテン	Test the high speed function of the Fan.	
00	EXIT DIAG	タ [・] イアク [・] オール オフ	Complete all the output tests.	
Check Sum	03	CHECK SUM	チェック サム	Show the ROM check sum.
Paper Size-Data	04	SIZE SWITCH	サイズ [・] スイッチ	Show the current data of Paper Size Switches for Tray 1 and Tray 2.

Note : Code 00 [EXIT DIAG] is not a code to execute the diagnostics but stops the diagnostics of the output test.

1.5.3 To Enter Diagnostics Mode

While pressing down on [KEY1] only, switch ON printer power to enter the diagnostics mode.

LCD displays as follows. "DG" on the lower line indicates that you are in the diagnostics mode. The two-digit number on the far right position of the lower line is the diagnostic code. The message on the upper line is the display corresponding to the diagnostic code.

インシ`マイスウコ`ウケイ セツテイ チュウ DG 30

PRINT COUNTER SELECTING DG 30

Memo : The printer can enter the diagnostics mode even if paper jam occurs when the printer power turns ON. However, the printer will not enter diagnostics mode if an error is found during the ROM/RAM check when the printer power is turned ON.

1.5.4 To Select Diagnostic Code

When the printer enters the diagnostics mode, DG30 is selected.

Each time you press [KEY2], diagnostic codes are displayed in the order they appear in the 1.5.2 Diagnostic Code Table on the previous page.

[DG30] → [KEY2] ON → [DG02] → → [DG04] → <[KEY2] ON> → [DG30]

Note : While executing the diagnostic code 02(input test), [KEY2] function can also be tested, thus you cannot select other diagnostic codes.

While executing output test, you cannot select a diagnostic code other than the output tests. (You cannot exit from the output test while an output test is executed.)

1.5.5 Accumulating Counter (DG30)

(1) Function

This test function displays the total number of prints produced by the printer, which is stored in the nonvolatile memory, in a six-figure decimal number.

Memo : The total print count is taken from the signals sent to the Pick Up Solenoid and Feed Solenoid. The total count increments even when paper jams occur.

(2) Operation

Enter the diagnostics mode and select diagnostic code 30 (DG30 is selected) by pressing [KEY2] if it is not displayed.

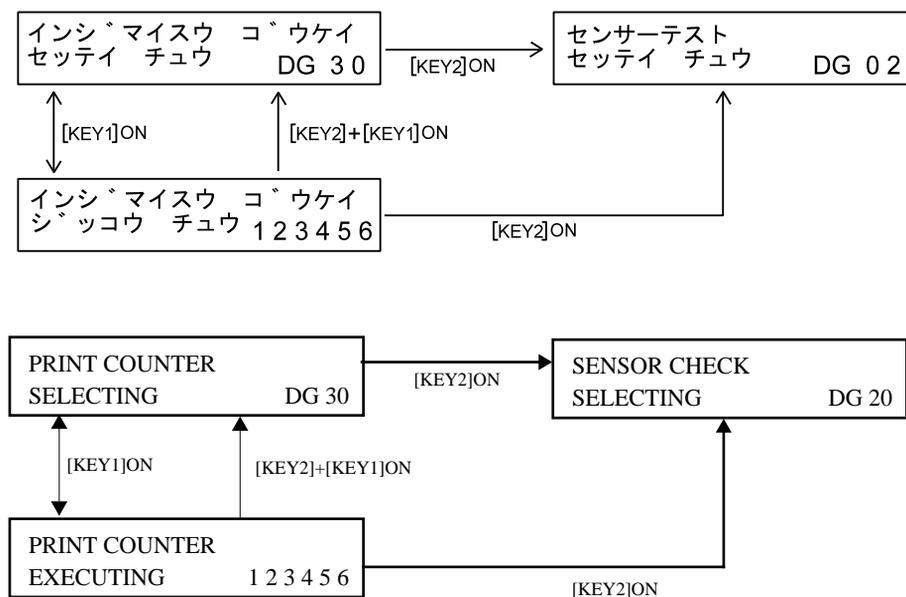
Press [KEY1] to display the print total.

Press [KEY1] again or press [KEY1] and [KEY2] at the same time to exit the DG 30. The printer returns the state in which the DG 30 is selected.

Press [KEY2] to exit DG 30 and select the DG 02.

(3) LCD Display

<Example: when total print is 123456>

**1.5.6 Input Test (DG 02)**

(1) Function

While this function is executed, the number displayed at the far right position on the lower line of LCD display (two digit decimal) increases by turning sensors or switches from OFF to ON.

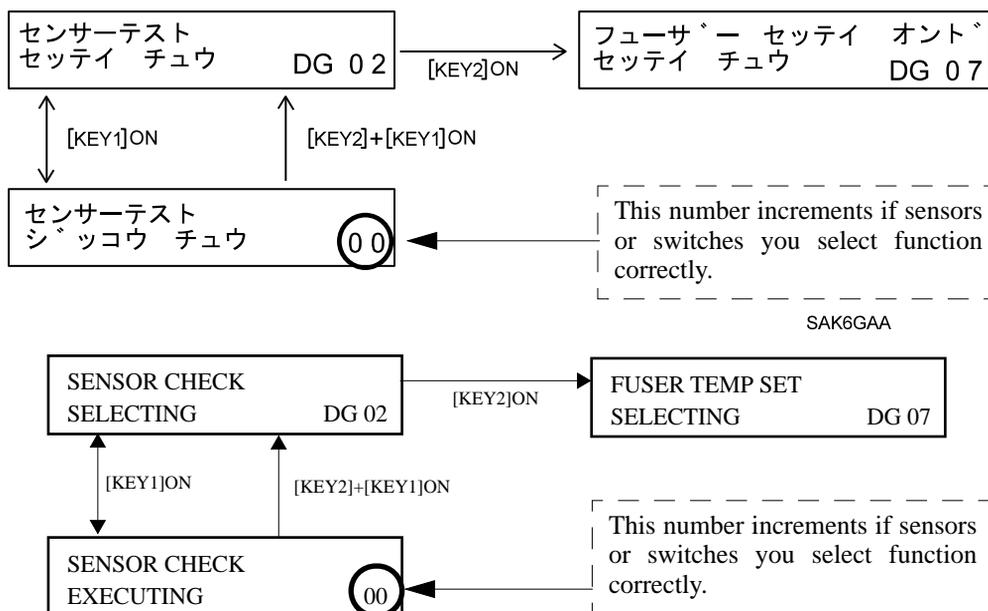
Therefore, the function of the sensors or switches are checked by the change of the number at the far right position on the lower line.

(2) Operation

Enter the diagnostics mode, and select DG 02 by using [KEY2]. Then press [KEY1] to execute the test. You can check the function of sensors and switches.

Press [KEY1] again or press [KEY1] and [KEY2] at the same time to exit the DG 02. The printer returns to the state in which the DG 02 is selected.

(3) LCD Display



(4) Check

Intentionally turn sensors or switches from OFF to ON and check the increment of the number at the far right position on the lower line of the LCD.

DG 02 checks the following sensors and switches:

- s Registration Sensor
- s Exit Sensor
- s MSI No Paper Sensor
- s CST No Paper Sensor
- s Cassette Sensor
- s Paper Size Switch on the Feeder PWB
- s Toner Sensor
- s [KEY2] on the Console Assembly of the diagnostic tool

- Warning :**
1. **Never touch live parts while printer power is ON.**
 Since the power switch/inlet part (LVPS Assembly) is in the live state even when the printer power is OFF, never touch the live part.
 2. **Never turn ON the Interlock Switch and LD switch of the CRU Sensor Assembly at the same time with the Pop Up Cover open, otherwise laser beam may be exposed.**
 Be sure to disconnect P/J11 on the MCU PWB or P/J112 on the ROS Assembly before turning ON the switches at the same time.

- Note :*
1. The Toner Sensor input test cannot be checked with the Interlock Switch OFF.
 2. Basically the number at the far right position on the lower line of LCD increments by one. However, the Paper Size Switch on the Feeder PWB may not increment by one because it is detecting the change of voltage for sensors or switches.

<Continued on next page>

<Continued>

Check Item	Method of Checking
Interlock Switch	Turn ON/OFF the Interlock Switch
CRU Switch on CRU Sensor Assembly	Disconnect P/J191 connector on the Toner Sensor, and install/remove the EP Cartridge.
Registration Sensor	Move the Registration Actuator with paper to perform unblock/block of the Registration Sensor.
Exit Sensor	Move the Exit Actuator with paper to perform unblock/block of the Exit Sensor.
MSI No Paper Sensor	Move the MSI N/P Actuator by hand to perform unblock/block of the MSI No Paper Sensor.
CST No Paper Sensor	Move the CST N/P Actuator by hand to perform unblock/block of the CST No Paper Sensor.
Cassette Sensor	Turn ON/OFF the Cassette Sensor switch.
Paper Size Switch on the Feeder PWB	Change the Paper Size Switch (rotary switch) on the Feeder PWB with the Cassette Sensor ON (with the paper cassette installed).
Toner Sensor	Disconnect P/J161 connector on the CRU Sensor Assembly, then install/remove the EP Cartridge with toner contained while the Interlock Switch is ON.
[KEY2] on the Console Assembly of the diagnostics tool	Turn ON/OFF [KEY2] on the Console Assembly of the diagnostics tool.

1.5.7 Output Test

(1) Function

The output test has two functions as follows:

- s Show the Fuser control temperature and current temperature
- s Test the operation of each output components

(2) Operation

Enter the diagnostics mode, and select the desired DG code using [KEY2]. Then press [KEY1] to execute the test.

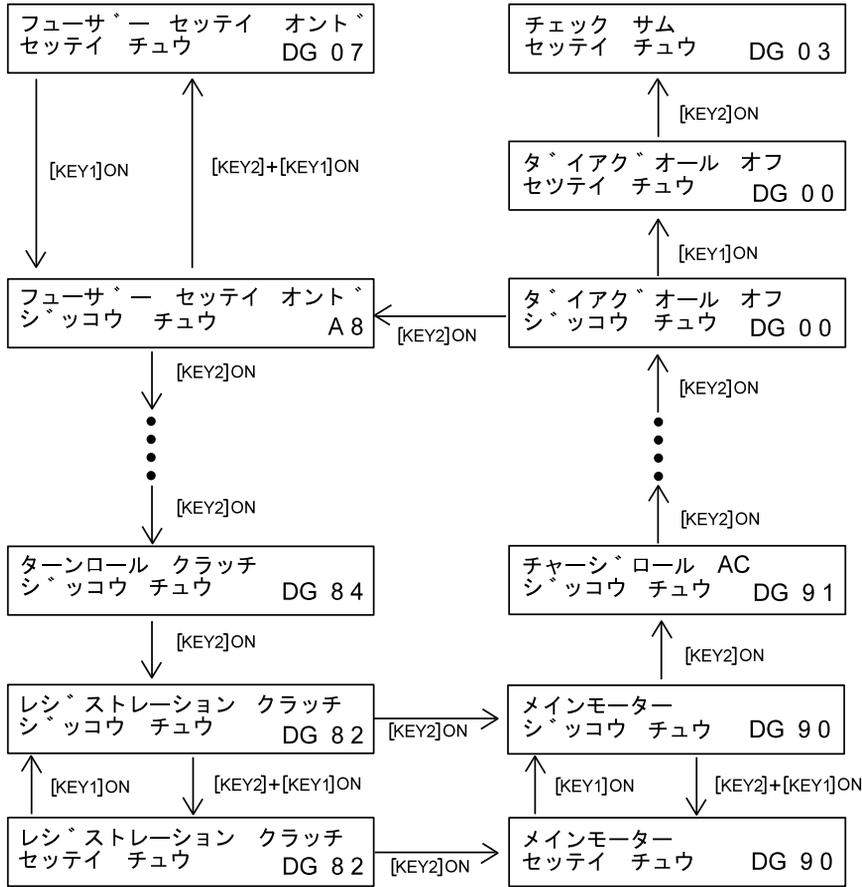
Press [KEY2] to select DG00 (EXIT DIAG) and press [KEY1] to exit the test. Also, pressing both [KEY1] and [KEY2] at the same time exits the test.

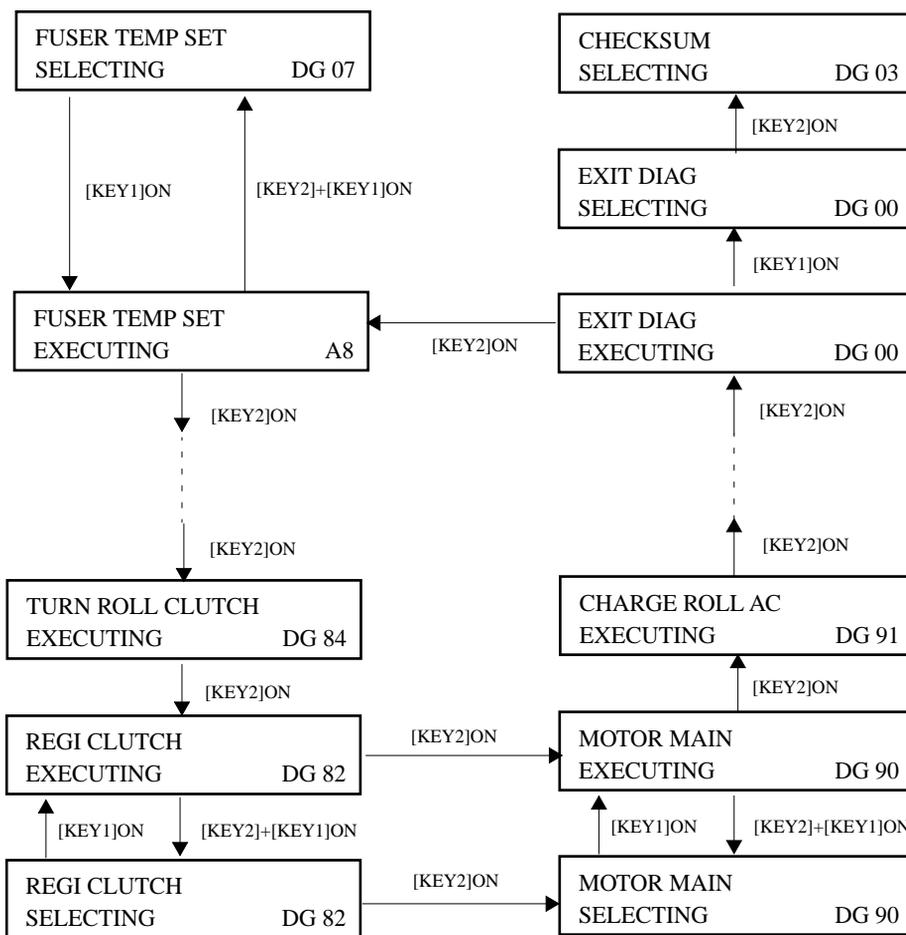
- Warning :**
- 1. Never touch live parts while the printer power is ON. Since the power switch/inlet part (LVPS Assembly) is in the live state even when the printer power is OFF, never touch the live part.**
 - 2. Never turn ON the Interlock Switch and LD switch of the CRU Sensor Assembly at the same time with the Pop Up Cover open, otherwise laser beam may be exposed. Be sure to disconnect P/J11 on the MCU PWB or P/J112 on the ROS Assembly before turning ON the switches at the same time.**
 - 3. DG 90 switches on the Main Motor of the Drive Assembly. Never detect the Drive Assembly when in DG 90.**
 - 4. When running the DG codes 91 to 97, a high voltage outputs from the HVPS to the printer. Never touch the areas supplied with high voltage. Follow this manual when using DG 91 through 97.**

Note : During output test, you cannot select a diagnostic code other than the output tests. (You cannot exit from the output test while the output test is in performance.)

- Memo :*
1. By turning the Interlock Switch OFF, diagnostic for printer counter is stopped.
 2. When DG 80, 81, or 86 is executed, the Solenoid is actuated for half a second, then automatically stops operation.
 3. You can run output test concurrently.
 4. DG 07 and 08 run(display) automatically when they are selected while any output tests are running.

(3) LCD Display





Warning : "EXECUTING" on the lower line of LCD is displayed when an output test is executed, and "SELECTING" is displayed when all of the tests stop. You may misunderstand which test is executed when "EXECUTING" is displayed. Make sure to stop the diagnostic first before executing other output test.

(4) Check

DG 07

This function checks a temperature code (two-figure hexadecimal number), which corresponds to the Fuser control temperature (running temperature with two types of normal temp. and high temp.), displayed at the far right position on the lower line of the LCD.

For the correspondence between the temperature code and nonvolatile code 9(See "1.6 NV Set Mode"), see table below

NV code 9 Data	Temperature Code [Normal Temp./High Temp.] (HEX)	Fuser Temperature [Normal Temp./High Temp.] (°C)
0	0C4 / AF	Approx.142 / Approx.157
1	C0 / AB	Approx.145 / Approx.160
2	BC / A7	Approx.148 / Approx.163
3	B8 / A3	Approx.151 / Approx.166
4	B4 / 9F	Approx.154 / Approx.169
5	B0 / 9B	Approx.157 / Approx.172
6	AC / 97	Approx.160 / Approx.175
7	A8 / 93	Approx.163 / Approx.178
8	A4 / 8F	Approx.166 / Approx.181
9	A0 / 8B	Approx.169 / Approx.184
A	9C / 87	Approx.171 / Approx.187
B	98 / 83	Approx.175 / Approx.190
C	94 / 7F	Approx.177 / Approx.193
D	90 / 7B	Approx.180 / Approx.196
E	8C / 77	Approx.183 / Approx.199
F	88 / 73	Approx.186 / Approx.202

DG 08

This function checks a temperature code (two-figure hexadecimal number), which corresponds to the current Fuser temperature, displayed at the far right position on the lower line of the LCD.

For the correspondence between the Fuser temperature and the temperature code, see "3.4.5 Temperature Code Table."

Memo : Fuser control is executed if printer is not in the error state when entering the diagnostics mode(3.4 Fuser Control). Therefore, the temperature code (corresponding to the current fuser temperature) displayed while running DG 08 may fluctuate.

DG 80, 81, and 86

These functions actuate their target solenoids, respectively. Check the operation of the solenoid actuated by the noise of operation (a small click) or check it by eyes that the corresponding shaft or roller is rotating when the power switches OFF/ON.

Warning : 1. **Never touch live parts while printer power is ON.**

Since the power switch/inlet part (LVPS Assembly) is in the live state even when the printer power is OFF, never touch the live part.

2. **Never turn ON the Interlock Switch and LD switch of the CRU Sensor Assembly at the same time with the Pop Up Cover open, otherwise laser beam may be exposed.**

Be sure to disconnect P/J11 on the MCU PWB or P/J112 on the ROS Assembly before turning ON the switches at the same time.

Note : After the test, make sure to stop the convex part of the corresponding gear with the stopper of the solenoid.

DG 84 and 82

These functions actuate their target clutches, respectively. Check the operation of the clutch by the noise of operation (a small click) or check it by rotating the roller (Rubber Registration Roll or Turn Roll), to which the driving force is transmitted with the actuation of clutch, by hands. Check that the roller is "from in the released state to in the connected state with the driving section".

Warning : 1. **Never touch live parts while printer power is ON.**

Since the power switch/inlet part (LVPS Assembly) is in the live state even when the printer power is OFF, never touch the live part.

2. **Never turn ON the Interlock Switch and LD switch of the CRU Sensor Assembly at the same time with the Pop Up Cover open, otherwise laser beam may be exposed.**

Be sure to disconnect P/J11 on the MCU PWB or P/J112 on the ROS Assembly before turning ON the switches at the same time.

3. **Never touch the Drive Assembly while it is in operation.**

DG 90

This function checks the Main Motor of the Drive Assembly by the noise or by eyes.

Warning : 1. **DG 90 switches on the Main Motor of the Drive Assembly. Never detect the Drive Assembly when in DG 90.**

2. **Never touch live parts while printer power is ON. Since the power switch/inlet part (LVPS Assembly) is in the live state even when the printer power is OFF, never touch the live part.**

3. **Never turn ON the Interlock Switch and LD switch of the CRU Sensor Assembly at the same time with the Pop Up Cover open, otherwise laser beam may be exposed.**

Be sure to disconnect P/J11 on the MCU PWB or P/J112 on the ROS Assembly before turning ON the switches at the same time.

DG 91 through 97

These functions switch on the HVPS high voltage supplies. Provided that the supply cannot be checked.

These tests are used for troubleshooting by the result of test when executed.

- Warning :**
- 1. Never touch live parts which is not necessary to do so while the printer power ON. Since the power switch/inlet part (LVPS Assembly) is in live state even when the printer power OFF, never touch the live part.**
 - 2. DG 91 through 97 switch on the HVPS high voltages. Never touch the live parts or output parts supplied with high voltages when running DG 91 through DG 97. Never perform the measurement of the output.**
 - 3. Never turn ON the Interlock Switch and LD switch of the CRU Sensor Assembly at the same time with the Pop Up Cover open, otherwise laser beam may be exposed.
Be sure to disconnect P/J11 on the MCU PWB or P/J112 on the ROS Assembly before turning ON the switches at the same time.**

DG 98

This diagnostic code tests the function of the fan at high speed with the noise and the pressure of the wind.

- Warning :**
- 1. Never touch the Fan while it is actuated.**
 - 2. Never touch live parts while printer power is ON.
Since the power switch/inlet part (LVPS Assembly) is in the live state even when the printer power is OFF, never touch the live part.**
 - 3. Never turn ON the Interlock Switch and LD switch of the CRU Sensor Assembly at the same time with the Pop Up Cover open, otherwise laser beam may be exposed.
Be sure to disconnect P/J11 on the MCU PWB or P/J112 on the ROS Assembly before turning ON the switches at the same time.**

1.5.8 Check Sum (DG 03)

(1) Function

This diagnostic code displays the check sum of the ROM in a four-figure hexadecimal number on the LCD. (The check sum varies with the specification of the printer.)

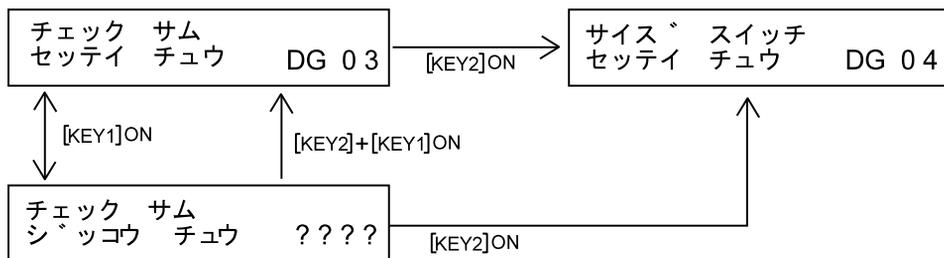
(2) Operation

Enter the diagnostics mode, and select DG 03 by using [KEY2]. Then press [KEY1] to display the check sum of the ROM.

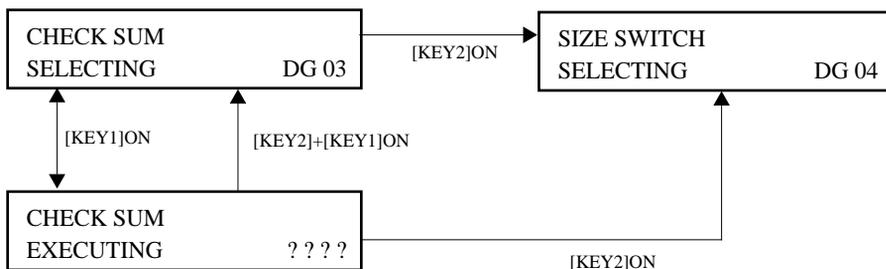
Press [KEY1] again or press both [KEY1] and [KEY2] at the same time to exit the DG 03. The printer returns the state in which the DG 03 is selected.

Press [KEY2] to exit the DG 03 and select DG 04.

(3) LCD Display



SAK6GCA



1.5.9 Paper Size Data (DG 04)

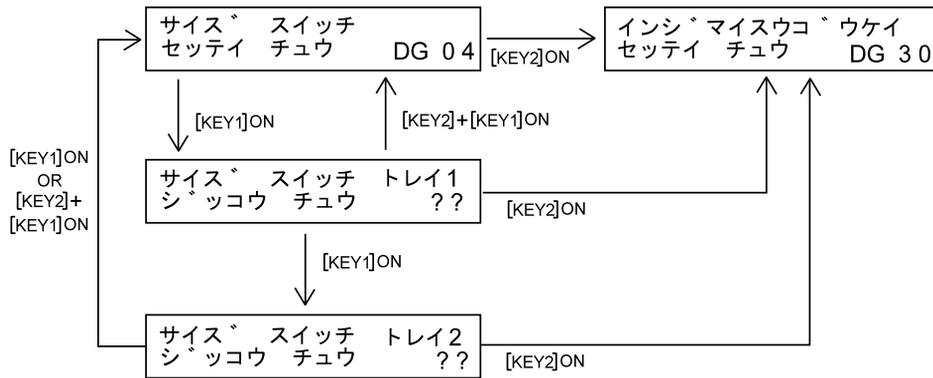
(1) Function

This diagnostic code displays the Paper Size Switch Data for Tray 1 and Tray 2 in a two-figure hexadecimal number on the LCD.
 Check whether the paper size of the set position of the Size Handle agrees with the paper size corresponding to the Paper Size Switch data displayed.
 (For the correspondence between the paper size and the Paper Size Switch data, see "3.1 Paper Size Control.")

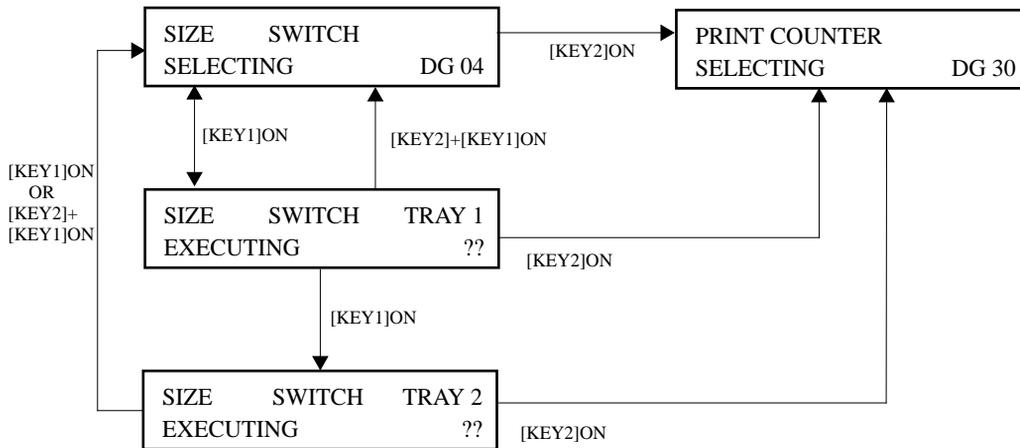
(2) Operation

Enter the diagnostics mode, and select DG 04 by using [KEY2]. Then press [KEY1] to display the Paper Size Switch data for Tray 1.
 Press [KEY1] again to display the Paper Size Switch data for Tray 2.
 Press [KEY1] to return the state in which the DG 04 is selected.
 Press [KEY1] and [KEY2] at the same time while executing the diagnostic, the printer returns the state in which the DG 04 is selected.
 Press [KEY2] to exit the DG 04 and select DG 30.

(3) LCD Display



SAK6GDA



1.5.10 Diagnostics by the Printer Controller

The communication to the Printer Controller performs the same tests as the diagnostics mode.

Note : See "Interface Specification" for details.

Printer Counter(DG 30)

Display the total prints made by the printer with [b19 - b0] of 20 bit.

- s Command [STATUS 26 REQUEST (34H)] → Status [STATUS 26] [b19, 18]
- s Command [STATUS 27 REQUEST (37H)] → Status [STATUS 27] [b17- b12]
- s Command [STATUS 28 REQUEST (38H)] → Status [STATUS 28] [b11- b6]
- s Command [STATUS 29 REQUEST (3BH)] → Status [STATUS 29] [b5- b0]

Output Test <Paper Size>(DG 04)

Check the paper size settings for Tray 1 and Tray 2.

- s Tray 1: Command [STATUS 5 REQUEST (OBH)] → Status [STATUS 5]
- s Tray 2: Command [STATUS 6 REQUEST (ODH)] → Status [STATUS 6]

Input Test and Output Test (except DG 04)

Enter the diagnostics mode by the Printer Controller and check each test.

- s Enter the diagnostics mode : Command [DIAG IN(76H)]
→ Status [STATUS 0]
- s Exit the diagnostics mode : Command [DIAG OUT(79H)]
→ Status [STATUS 0]

Enter the diagnostics mode and execute each diagnostic code.

- s Command [DIAG EXECUTE(7AH)] → Status [STATUS 0]
- s Command [DIAG EXECUTE(??H)] → Status [DIAG STATUS]

?? indicates the DG code to be checked.

DG Code	DIAG Code by the Printer Controller
02	01
07	02,03
08	04,05
80	0B
81	0C
86	0D
84	0E
82	0F
90	0A
91	10
92	11
93	12
94	13
95	14
93	15
97	16
98	17
00	00
03	06,07,08,09

1.6 NV Setup Mode

1.6.1 Function

The NV setup mode allows you to set and confirm the settings of the printer, such as the configuration of the printer, resolution, and registration adjustment, which are stored in the nonvolatile memory and are different according to specification. Also, test print is printed to check registration in the NV setup mode.

Note : 1. All of data stored in the nonvolatile memory are significantly related to the printer operation and function, thus incorrect data may cause a malfunction. Avoid careless settings and verify that the printer operates as expected each time settings are altered.

2. When you replace the MCU PWB, be sure to enter the correct data meeting the specification. (Incorrect data may cause malfunction.)

1.6.2 To Enter NV Setup Mode

- 1) Hold down both [KEY1] and [KEY2], and switch ON the printer power.
- 2) Release [KEY1] while holding down [KEY2].
The LCD displays as follows. The number on the lower line shifts one position to the right increasing by one increment per second.
- 3) When the number on the lower line advances to the number "3", release [KEY2] to enter the NV setup mode.

```

キー ヲ ハナシテ クタ`サイ
      0
    
```

```

RELEASE THE KEY
      0
    
```

The "NV" on the lower line of LCD means you are now in the NV setup mode. The first digit of the displayed two-digits number is the nonvolatile code (NV code), and the second digit is the parameter currently set for the displayed NV code.

```

キー ヲ ハナシテ クタ`サイ
      3
    
```

[KEY2] OFF

```

コンフィグレーション
セッテイ チュウ NV 00
    
```

← Parameter

← NV Code

```

RELEASE THE KEY
      3
    
```

[KEY2] OFF

```

CONFIGURATION
SELECTING NV 00
    
```

Note : If you release [KEY2] when the number other than "3" is displayed on the lower line of LCD, switch off the printer power and repeat operation again.

- Memo : 1. If [KEY2] is continuously pressed after the number 3 is displayed, the number increases by one increment per second up to 9, then returns to 0 and the count is repeated.*
- 2. The printer can enter the NV setup mode even if paper jam occurs when the printer power turns ON. However, the printer will not enter the NV setup mode if an error is found during the ROM/RAM check when the printer power is turned ON.*

1.6.3 NV Code Table

NV Code	LCD Display Message (Upper Line)	Parameter (Factory Default)	Are changes possible?
	Function	Contents of the Parameter	
0	██████████ CONFIGURATION	0-F (16 steps) [Factory Default 1]	No (except the specification)
	Sets the printer configuration	When you convert the HEX notation 0-F to the binary values b0, b1, b2 and b3, the parameter mean: b0 = Pre-Feed Function (0 =Unavailable, 1 =Available) b1 = Unused(0), b2 = Unused(0) b3 = Toner Sensor Function (0 =Unavailable, 1 =Available)	
1	██████████ RESOLUTION	0-C (12 steps) [Factory Default 4]	No (except the specification)
	Sets the print resolution	0 = 300dpi, 1 = 360dpi, 2 = 400dpi 3 = 480dpi, 4 = 600dpi, 5 = 800dpi 6 = 600/300dpi Switching 7 = 600/360dpi Switching 8 = 600/400dpi Switching 9 = 600/480dpi Switching A = 800/400dpi Switching B = 480/400dpi Switching C = 800/600dpi Switching	
2	██████████ LD POWER	0-7 (8 steps) [Factory Default 4]	No (except the specification)
	Sets the intensity of the laser diode + output.	0 = Minimum laser output. Produces the lightest print density. 7 = Maximum laser output. Produces the darkest print density. ★ Change of this setting may cause an error.	
3	██████████████████ REGI.PROCESS 1	0-F (16 steps) [Factory Default 6]	Yes
	Sets the registration of the direction of paper travel for paper fed from Tray 1.	0 = Narrowest lead edge registration gap F = Widest lead edge registration gap ★ Approximately 0.50mm per step	

NV Code	LCD Display Message (Upper Line)	Parameter (Factory Default)	Are changes possible?
	Function	Contents of the Parameter	
4		0-F (16 steps) [Factory Default 6]	Yes
	REGI.PROCESS 2 Sets the registration of the direction of paper travel for paper fed from Tray 2.	0 = Narrowest lead edge registration gap F = Widest lead edge registration gap ★ Approximately 0.50mm per step	
5		0-F (16 steps) [Factory Default 6]	Yes
	REGI.PROCESS 3 Sets the registration of the direction of paper travel for paper fed from Front Tray.	0 = Narrowest lead edge registration gap F = Widest lead edge registration gap ★ Approximately 0.50mm per step	
6		0-8 (9 steps) [Factory Default 4]	Yes
	REGI.SCAN 1 Sets the registration vertical to the direction of paper travel for paper fed from Tray 1.	0 = Narrowest left side edge registration gap 8 = Widest left side registration gap ★ Approximately 0.50mm per step*	
7		0-8 (9 steps) [Factory Default 4]	Yes
	REGI.SCAN 2 Sets the registration vertical to the direction of paper travel for paper fed from Tray 2.	0 = Narrowest left side edge registration gap 8 = Widest left side registration gap ★ Approximately 0.50mm per step*	
8	サイト・エッシ・レシ・フロント	0-8 (9 steps) [Factory Default 4]	Yes
	REGI.SCAN 3 Sets the registration vertical to the direction of paper travel for paper fed from Front Tray.	0 = Narrowest left side edge registration gap 8 = Widest left side registration gap ★ Approximately 0.50mm per step*	

* The exact registration gap vertical to the direction of paper travel varies according to the resolution as follows:

Resolution	Change per Step0	Resolution	Change per Step0
300dpi	Approx. 0.544mm	480dpi	Approx. 0.435mm
360dpi	Approx. 0.544mm	600dpi	Approx. 0.544mm
400dpi	Approx. 0.484mm	800dpi	Approx. 0.484mm

NV Code	LCD Display Message (Upper Line)	Parameter (Factory Default)	Are changes possible?
	Function	Contents of the Parameter	
9	フューサー温度設定 FUSER TEMP.SET	0-F (16 steps) [Factory Default 7]	No (except the specification)
	Sets the rated fuser control temperature.	0 = Lowest rated temperature F = Highest rated temperature ★ Approximately 3__ per step, per four temperature codes	
A	フロントサイズ設定 FRONT TRAY SIZE	0-F (16 steps) [Factory Default B]	Yes
	Sets the sheet size for Front Tray Feeding(1/2) *1	★ See "3.1 Paper Size Control" for data contents.	
B	フロントサイズオプション FRONT TRAY SIZE OPTION	0-9 (10 steps) [Factory Default 4]	b0:Yes b1:Yes (when non-standard 2 can be used) b2,b3: No (except the specification)
	Sets the sheet size for Front Tray Feeding(2/2) *1 Sets specification of nonstandard size *2	When you convert the HEX notation 0-9 to the binary values b0, b1, b2 and b3, the parameter mean: b0 = Sheet size fed from Front Tray Feeding ★ See "3.1 Paper Size Control" for data contents. b1 = Nonstandard size fed from Front Tray Feeding (0=Nonstandard 1, 1=Nonstandard 2) ★ b2 and b3 determines whether nonstandard 2 can be used or cannot. b2/b3 = Specification of nonstandard size (0/1 = Only nonstandard 1 used, 1/0=Both nonstandard 1 and 2 used, 0/0=Not available, 1/1=Not available) ★ See section 2 "1.2.15 Paper Size" for details.	

*1 The setting for the paper size fed from the Front Tray is the same as that of online mode.

*2 The specification for nonstandard size is determined by the OEM contract with Fuji Xerox. The nonstandard size 1 is standard specification, and the nonstandard size 2 is a special optional specification which is usually not available.

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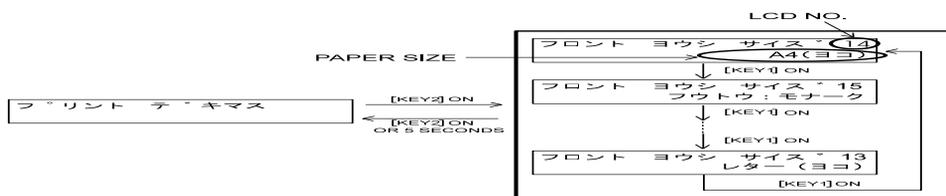
NV Code	LCD Display Message (Upper Line)	Parameter (Factory Default)	Are changes possible?
	Function	Contents of the Parameter	
C	カセット サイズ ` スイッチ PAPER SIZE SWITCH	0-3 (4 steps) [Factory Default 1]	No (except the specification)
	Sets the paper size for paper cassettes.	0=Group A 1=Group B 2=Group C 3=Group D ★ See section 2 "1.2.15 Paper Size" for details.	
D	インターフェイス オフ ` ション I/F OPTION	0-F (16 steps) [Factory Default 0]	No (except the specification)
	Sets the special specification of the interface.	When you convert the HEX notation 0-F to the binary values b0, b1, b2 and b3, the parameter mean: b0=Unused (0), b1=Unused (0) b2=Unused (0), b3=Unused (0)	
J	テスト フ ` リント TEST PRINT		
	Prints one sheet of test print you can use to check registrations.		

1.6.4 To Select NV Code

When the printer enters the NV setup mode, NV 0 is selected.

Each time you press [KEY2], NV codes are displayed in the order they appear on the NV Code Table on the previous pages.

The LCD message "SELECTING" on the lower line indicates that the NV code is now selected.



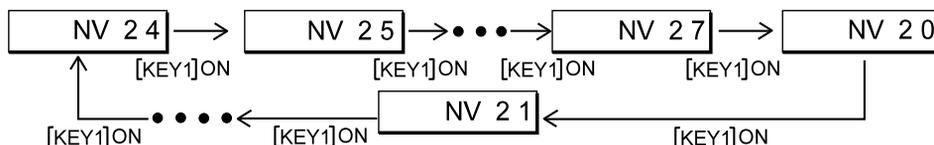
1.6.5 To Input Code Parameters

Press [KEY1] when the desired NV code is selected. "SELECTING" on the lower line of the LCD changes to "WRITING." The parameter increases by one, the new parameter is written to the nonvolatile memory.

Repeatedly press [KEY1] until the LCD displays the desired parameter.

Press [KEY1] when the maximum of parameter is displayed to return the parameter to its minimum value "0".

<Example : NV Code 2>



SAK6H2A

1.6.6 NV Code J/Test Print

The printer generates one sheet of test print, which is the same as that of the test print mode (self-patterned print), to check registrations.

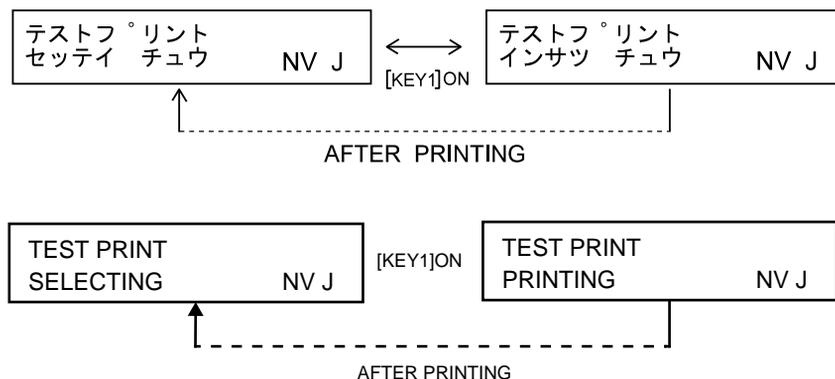
(1) Operation

Enter the NV setup mode, select NV code J using the [KEY2], then press [KEY1] to start printing.

After one sheet of test print is output, printer completes operation.

Warning : When printer operates, make sure the covers are installed normally.

(2) LCD Display



Note : If the printer detects an error when [KEY1] is pressed, the printer displays error status(See Error Status Code Table) for approximately two seconds and halts printing, then the printer returns the state in which NV code J is selected.

Also, during warmup, the printer does not start printing and returns to the state in which NV code J is selected.

1.6.7 Setting by the Printer Controller

You can check and change data stored in the nonvolatile memory same as NV setup mode by the communication to the Printer Controller.

Note :See "Interface Specification" for details.

Note : 1. All of the data stored in the nonvolatile memory are significantly related to the printer operation and function, thus incorrect data may cause a malfunction. Avoid careless settings and verify that the printer operates as expected each time settings are altered.

2. When you replace the MCU PWB, be sure to enter the correct data meeting the specification.(Incorrect data may cause malfunction.)

Enter the diagnostics mode by the Printer Controller, then check and change the data.

Start diagnostics mode : Command [DIAG IN(76H)] → Status [STATUS 0]

Exit diagnostics mode : Command [DIAG OUT(79H)] → Status [STATUS 0]

s Check

Check data(parameter) for each NV code after entering the diagnostics mode.

- Command [MEMORY READ(7CH)] → Status [STATUS 0]
- Command [MEMORY READ(??H)] → Status [DIAG STATUS]

?? indicates NV code to be checked.

s Change

Change data(parameter) for each NV code after entering the diagnostics mode.

- Command [MEMORY WRITE(7FH)] → Status [STATUS 0]
- Command [MEMORY WRITE(??H)] → Status [STATUS 0]

?? indicates NV code to be changed.

- Command [MEMORY WRITE(**H)] → Status [STATUS 0]

** indicates NV code to be set.

2. Error and Status

There are 21 types of error and status, which the printer can detect, to be displayed on the LCD in corresponding error and status codes.

2.1 Error and Status Code Table

Error/Status Code	Message displayed on LCD	Code Description
U6	U6 : テンケン スイッチ イテ キッテ クタサイ U6 : POWER OFF THEN ON AGAIN	A problem is detected in the nonvolatile ROM.
U2	U2 : テンケン スイッチ イテ キッテ クタサイ U2 : POWER OFF THEN ON AGAIN	A problem is detected in the ROS Assembly.
U4	U4 : テンケン スイッチ イテ キッテ クタサイ U4 : POWER OFF THEN ON AGAIN	A problem is detected in the Fuser.
UF	ファン カイシヨウ テス FAN ERROR	A problem is detected in Fan.
E5	カハ一ヲ トシテ クタサイ CLOSE COVER	The Pop Up Cover is open.
E4	E4 : カハ一ヲアケテ ヨウシヲ トリノソ イテ クタサイ E4 : OPEN COVERS CLEAR PAPER JAM	Paper jam is detected in the Exit Sensor (Exit Jam).
E3	E3 : カハ一ヲアケテ ヨウシヲ トリノソ イテ クタサイ E3 : OPEN COVERS CLEAR PAPER JAM	Paper jam is detected between the Registration Sensor and the Exit Sensor (Registration Jam).
E2	E2 : カハ一ヲアケテ ヨウシヲ トリノソ イテ クタサイ E2 : OPEN COVERS CLEAR PAPER JAM	Paper jam is detected between the Feeder Assembly and the Registration Sensor (Missfeed Jam).
E1	E1 : カハ一ヲアケテ ヨウシヲ トリノソ イテ クタサイ E1 : OPEN COVERS CLEAR PAPER JAM	There is a paper jam between the Feeder Assembly and the Registration Sensor (Too quick paper jam).

<<Continue on the next page>>

Error/Status Code	Message displayed on LCD	Code Description
J3	EPカートリッジを カクニンシテ クタ、サイ ↓ ↑ タタ、シイ EPカートリッジを セットシテ クタ、サイ EP CARTRIDGE NOT IN POSITION ↑ ↓ <Alternately displayed every five seconds> SET CORRECT EP CARTRIDGE	The EP Cartridge is not in place or correct EP Cartridge is not installed.
P1	タイキチュウ テ、ス WAITING	The printer received a Set Pause command during the online mode.
CX	ヨウシ ノ サイズ、ガ チカ、ッテイマス PAPER SIZE ERROR	The paper size fed from the tray does not agree with the size data set for the printer.
C3	カセットヲ セットシテクタ、サイ CASSETTE NOT IN PLACE	The paper cassette is not in place.
C3	トレイ1ニ カセットヲ セット シテクタ、サイ CASSETTE NOT IN PLACE(TRAY1)	The paper cassette is not in place for Tray 1.
C3	トレイ2ニ カセットヲ セット シテクタ、サイ CASSETTE NOT IN PLACE(TRAY2)	The paper cassette is not in place for Tray 2.
C5	フロントトレイニ ヨウシヲ ホキユウ シテクタ、サイ ADD PAPER TO FRONT TRAY	The Front Tray Assembly is empty.
C5	カセットニ ヨウシヲ ホキユウ シテクタ、サイ ADD PAPER TO PAPER CAS- SETTE	The paper cassette is empty.
C5	トレイ1ノ カセットニ ヨウシヲ ホキユウ シテクタ、サイ ADD PAPER INTO TRAY1 CAS- SETTE	Tray 1 is empty.

<<Continue on the next page>>

Error/Status Code	Message displayed on LCD	Code Description
C5	トレイ 2 ノ カセットニ ヨウシヨ ホキユウ シテクダサイ ADD PAPER INTO TRAY2 CAS- SETTE	Tray 2 is empty.
J5	EPカートリッジが コウカン シテクダサイ ↓ ↑ フォリント テキマス EP CARTRIDGE NEED TO REPLACE ↑ ↓ <Alternately displayed every five seconds> READY TO PRINT	The EP Cartridge is near the end of its life (toner in the EP Cartridge is low) for the printer with Toner Sensor function installed.

2.2 Printer Conditions and Responses for Error/Status Codes

Code	Conditions that caused the error	How the printer responds to the error	How to clear the LCD
U6	<ol style="list-style-type: none"> 1. A nonvolatile memory read error occurred when the printer power was switched ON. 2. A nonvolatile memory write error occurred when data was being written to the memory. 	Immediately,*1 s Main Motor control stops s ROS control stops s Fuser control stops	Switch OFF and ON the printer power
U2	<ol style="list-style-type: none"> 1. The SOS signal intervals are longer than the READY reference value after 20 seconds since the start of ROS warmup. 2. The laser diode output when emitting the laser beam is lower than the setting (nonvolatile memory data) after the start of ROS warmup. 3. The SOS signal intervals are longer than the FAIL reference value after the ROS warmup. (See 3.3 ROS Control for the reference value.)	Immediately,*1 s Main Motor control stops s ROS control stops s Fuser control stops	Switch OFF and ON the printer power
U4	<ol style="list-style-type: none"> 1. The Fuser temperature is below the LOW trouble temperature after the Fuser warmup. 2. The Fuser warmup takes longer than 110 seconds. 3. The Temperature Sensor Assembly detects an open circuit. 4. The Fuser temperature raises above the HIGH trouble temperature. 5. The Heater Rod actuates (Heater Rod lights) for more than 10 seconds after the completion of the Fuser warmup while the Main Motor stops. (See "3.4 Fuser Control" for the temperature.)	After the cycle down,*2 s Main Motor control stops s ROS control stops Immediately,*1 s Fuser control stops	Switch OFF and ON the printer power
UF	<ol style="list-style-type: none"> 1. The Fan abnormally stops. 	After the cycle down,*2 s Main Motor control stops s ROS control stops s Fuser control stops	Switch OFF and ON the printer power

*1 : For T seconds just after the solenoid is actuated, the Main Motor will not stop immediately even if paper jam occurs, but stop after the T seconds.
 (For Front Tray feeding: T=1.8 seconds, For cassette feeding : T=2.4 seconds.)

*2 : "Cycle down" indicates that the printer stops after the current print operation is completed.

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Code	Conditions that caused the error	How the printer responds to the error	How to clear the LCD
E5	1. The Interlock Switch is switched OFF.	Immediately, s Main Motor control stops s ROS control stops s Fuser control stops	Close the Pop Up Cover. (Switch ON the Interlock Switch.)
E4	1. The Exit Sensor is not turned OFF in the specified time after actuation of the Exit Sensor. 2. The Exit Sensor has already been ON when the printer is switched ON. 3. The Exit Sensor has already been ON when the Interlock Switch is switched ON. 4. The Exit Sensor has already been changed OFF to ON during warmup operation or the Erase cycle. (See "3.6 Paper Travel Specified Time" for the specified time.)	Immediately,*1 s Main Motor control stops s ROS control stops s Fuser control stops Provided that the Main Motor control will stop after the output of paper, if it is longer than that of the printer detected.	Open the Pop Up Cover, remove jammed paper, then close the Pop Up Cover.
E3	1. The Exit Sensor remains OFF in the specified time after actuation of the Registration Sensor. (See "3.6 Paper Travel Specified Time" for the specified time.)	Immediately,*1 s Main Motor control stops s ROS control stops s Fuser control stops	Open the Pop Up Cover, remove jammed paper, then close the Pop Up Cover.
E2	1. The Registration Sensor remains OFF in the specified time after the start of paper feed.(Misfeed Jam) (See "3.6 Paper Travel Specified Time" for the specified time.)	Immediately,*1 s Main Motor control stops s ROS control stops s Fuser control stops For the second and after print of continuous printing, after the cycle down of previous print,*2*3 s Main Motor control stops s ROS control stops s Fuser control stops	Open the Pop Up Cover, remove jammed paper, then close the Pop Up Cover.

*1 : For T seconds just after the solenoid actuated, the Main Motor will not stop immediately even if paper jam occurs, but stop after the T seconds.
(For Front Tray feeding: T=1.8 seconds, For cassette feeding : T=2.4 seconds.)

*2 : "Cycle down" indicates that the printer stops after the current print operation is completed.

*3 : When paper jam is detected, the Registration Clutch Assembly and Electric Clutch will be turned OFF until printer shuts down the Main Motor so as not that a detected jammed paper is fed.

<<Continue on the next page>>

Code	Conditions that caused the error	How the printer responds to the error	How to clear the LCD
E1	<p>1. The Registration Sensor is changed OFF to ON in the specified time after the start of paper feed.(Too quick jam)</p> <p>2. The Registration Sensor has already been ON when the printer is switched ON.</p> <p>3. The Registration Sensor has already been ON when the Interlock Switch is switched ON.</p> <p>4. The Registration Sensor has already been changed OFF to ON during warmup operation or the Erase cycle.</p> <p>(See "3.6 Paper Travel Specified Time" for the specified time.)</p>	<p>Immediately,*1</p> <ul style="list-style-type: none"> s Main Motor control stops s ROS control stops s Fuser control stops <p>For the second and after print of continuous printing, after the cycle down of previous print,*2*3</p> <ul style="list-style-type: none"> s Main Motor control stops s ROS control stops s Fuser control stops 	Open the Pop Up Cover, remove jammed paper, then close the Pop Up Cover.
J3	<p>1. The CRU Switch in the CRU Sensor Assembly has already been OFF when the printer power is switched ON or Interlock Switch is switched ON.</p>	<p>Immediately,</p> <ul style="list-style-type: none"> s Main Motor control stops s ROS control stops s Fuser control stops 	Install correct EP Cartridge.
P1	<p>1. The printer receives a Set Pause command and stops controlling the Fuser and ROS.</p>	<p>[When the printer is in operation] After printing,</p> <ul style="list-style-type: none"> s ROS control stops s Fuser control stops <p>[When the printer is not in operation] Immediately,</p> <ul style="list-style-type: none"> s ROS control stops s Fuser control stops 	Receive a Reset Pause command.

*1 : For T seconds just after the solenoid actuated, the Main Motor will not stop immediately even if paper jam occurs, but stop after the T seconds.
(For Front Tray feeding: T=1.8 seconds, For cassette feeding : T=2.4 seconds.)

*2 : "Cycle down" indicates that the printer stops after the current print operation is completed.

*3 : When paper jam is detected, the Registration Clutch Assembly and Electric Clutch will be turned OFF until printer shuts down the Main Motor so as not that a detected jammed paper is fed.

<<Continue on the next page>>

Code	Conditions that caused the error	How the printer responds to the error	How to clear the LCD
CX	<p>1. The paper size, which is detected by the period of time while Registration Sensor is actuated, is different than the preset size, which is stored in the Paper Size Switch data for cassette feeding or stored in nonvolatile memory for the Front Tray feeding.</p> <p>★ CX is not detected if the difference between paper sizes are 10mm or less in their length of the direction of paper travel because the periods of time while Registration Sensor is actuated are too close to identify.</p> <p>(ex) A4(LEF)<=>LETTER(LEF) B4(SEF)<=>LEGAL14"(SEF)</p> <p>★ CX is not detected if the nonstandard size is set to the printer.</p>	<p>[During the online mode]</p> <p>s Cycle down,*2 (Blank paper is output if next paper has already been fed.)</p> <p>[During modes other than the online mode]</p> <p>After cycle down,*2 printer can resume printing.</p>	<p>[During the online mode]</p> <p>Receive a Reset Misprint command.</p> <p>[During modes the other than online mode]</p> <p>Makes no difference between paper sizes and start printing.</p>
C3	<p>1. The Cassette Sensor has already been OFF for the selected cassette feeder.</p>	Cycle down*2	Install the Paper Cassette.
C5	<p>1. The selected paper feeder is empty.</p>	Cycle down*2	Load paper into the selected paper feeder.
J5	<p>1. The printer made ten prints since the Toner Sensor detected "no toner" for the printer which the Toner Sensor function is installed.</p>	The LCD intermittently displays the warning message only.	Replace the EP Cartridge.

*2: "Cycle down" indicates that the printer stops after the current print operation is completed.

2.3 Status to the Printer Controller

The Printer Controller can detect the error/status code detected by the printer by the communication to the Printer Controller.

See "Interface Specification" for details.

- s Error/Status Code U6 = Status [STATUS 2(02H)]
- s Error/Status Code U2 = Status [STATUS 2(10H)]
- s Error/Status Code U4 = Status [STATUS 2(40H)]
- s Error/Status Code UF = Status [STATUS 2(04H)]
- s Error/Status Code E5 = Status [STATUS 1(04H)]
- s Error/Status Code E4 = Status [STATUS 3(02H)]
- s Error/Status Code E3 = Status [STATUS 3(07H)]
- s Error/Status Code E2 = Status [STATUS 3(04H)]
- s Error/Status Code E1 = Status [STATUS 3(0DH)]
- s Error/Status Code J3 = Status [STATUS 1(40H)]
- s Error/Status Code P1 = Status [STATUS 8(04H)]
- s Error/Status Code CX = Status [STATUS 3(40H)]
- s Error/Status Code C3 = Status [STATUS 1(20H)]
- s Error/Status Code C5 = Status [STATUS 1(10H)]
- s Error/Status Code J5 = Status [STATUS 15(04H)]

3. Printer Controls

3.1 Paper Size Control

Note: The table below applies only to Group B specifications.

The table below shows the data of NV code A and [b0] data of NV Code B, and Paper Size Switch data of DG 04 in each NV code C(0 to 4) corresponding to each paper size.

Paper Size	Code A	[b0] of Code B	Paper Size Switch Data (Hex number)			
			Group A	Group B	Group C	Group D
No Cassette installed	-	-	EA - FF	EA - FF	EA - FF	EA - FF
Nonstandard1	0	0 or 1	-	-	7E - 99	-
LEDGER(SEF)	1	0 or 1	-	-	-	7E - 99
A3(SEF)	2	0 or 1	7E - 99	7E - 99	B7 - D3	-
B4(SEF)	3	0 or 1	9A - B6	9A - B6	2A - 45	-
LEGAL14"(SEF)	4	0 or 1	62 - 7D	46 - 61	62 - 7D	46 - 61
LEGAL13"(SEF)	5	0 or 1	-	62 - 7D	-	62 - 7D
A4(SEF)	6	0	46 - 61	-	-	-
LETTER(SEF)	6	1	-	-	-	2A - 45
B5(SEF)	7	0	-	-	-	-
LETTER(LEF)	A	0 or 1	0E - 29	0E - 29	0E - 29	0E - 29
A4(LEF)	B	0 or 1	D4 - E9	D4 - E9	D4 - E9	D4 - E9
EXECUTIVE(LEF)	D	1	-	-	-	9A - B6
B5(LEF)	D	0	B7 - D3	B7 - D3	46 - 61	-
A5(LEF)	E	0	2A - 45	2A - 45	9A - B6	-
STATEMENT(LEF)	E	1	-	-	-	B7 - D3
POSTCARD(SEF)	F	0 or 1	-	-	-	-
C5(SEF)	7	1	-	-	-	-
COM-10(SEF)	8	0 or 1	-	-	-	-
DL(SEF)	9	0 or 1	-	-	-	-
MONARCH(SEF)	C	0 or 1	-	-	-	-

The table below shows the location of the Paper Size Switch (numbered 1,2,3...8 clockwise) which sets the paper size when paper is fed from cassettes and the corresponding paper size settings for NV code C data.

Location of the Paper Size Switch	Paper Size			
	Group A	Group B	Group C	Group D
1	A3(SEF)	A3(SEF)	Nonstandard1	LEDGER(SEF)
2	B4(SEF)	B4(SEF)	A5(LEF)	EXECUTIVE(LEF)
3	B5(LEF)	B5(LEF)	A3(SEF)	STATEMENT(LEF)
4	A4(LEF)	A4(LEF)	A4(LEF)	A4(LEF)
5	LETTER(LEF)	LETTER(LEF)	LETTER(LEF)	LETTER(LEF)
6	A5(LEF)	A5(LEF)	B4(SEF)	LETTER(SEF)
7	A4(SEF)	LEGAL14"(SEF)	B5(LEF)	LEGAL14"(SEF)
8	LEGAL14"(SEF)	LEGAL13"(SEF)	LEGAL14"(SEF)	LEGAL13"(SEF)

3.2 Paper Feeder Selection Control

If the Printer Controller does not control the selection of paper feeder, a paper feeder is selected as follows when the printer power is switched ON:

- s Paper is not loaded in any of the paper feeders → Front Tray
- s Paper is loaded in the Front Tray → Front Tray
- s Paper is not loaded in the Front Tray, and paper is loaded in the Tray 1 (even if paper is loaded in Tray 2) → Tray 1
- s Paper is not loaded in the Front Tray and Tray 1 and paper is loaded in the Tray 2 → Tray 2

3.3 ROS Controls

3.3.1 Scanner Motor Revolution

The table below shows the status (ON/OFF control) of the scanner motor during all modes of operation.

Print Mode	Scanner Motor Status (ON/OFF of Revolution)
Online Mode (Setting Front Tray paper size)	The Motor is always OFF.
Online Mode (Except setting Front Tray paper size)	(The Motor is controlled by the Printer Controller.)
Test Print Mode	The Motor starts revolution at power-ON, and remains ON during this mode.
Diagnostics Mode	The Motor is always OFF.
NV Setup Mode	The Motor starts revolution at power-ON, and remains ON during this mode.

The table below shows the relationship between the speed of the revolution of the Scanner Motor and the image resolutions of the printer which are different according to the specification.

Print Resolution	Revolution Speed
300dpi	5905 rpm (98.42s^{-1})
360dpi	7087 rpm (118.12s^{-1})
400dpi	7874 rpm (131.23s^{-1})
480dpi	9449 rpm (157.48s^{-1})
600dpi	11811 rpm (196.85s^{-1})
800dpi	15748 rpm (262.47s^{-1})

dpi : dots per inch

rpm : revolutions per minute

Memo : The laser beam scans every mirror surface (allover the surface) on the Polygon Mirror.

3.3.2 ROS Warmup

The Scanner Motor starts to spin at the beginning of ROS warmup. ROS warmup ends (Scanner Motor spins at the constant speed) when the SOS signal intervals are shorter than READY reference value three times consecutively.

3.3.3 ROS Reference Values

ROS Reference Value	Contents
READY Reference Value	The SOS signal interval corresponding to 98% or more of specified numbers of revolutions of the Scanner Motor.
FAIL Reference Value	The SOS signal interval corresponding to 90% or less of specified numbers of revolutions of the Scanner Motor.

Memo : If the speed of the Scanner Motor exceeds rated speed by more than 1%, the laser beam will not reach the SOS sensor. The LCD then displays a U2 Fault Code.

3.4 Fuser Controls

3.4.1 Fuser Control

The printer controls ON/OFF of the Heater Rod according to the Fuser control temperature as a reference. The Fuser control temperature is the standby temperature when the Fuser is in the warmup process and the Main Motor is idle.

The running temperature is the Fuser control temperature when the Fuser is not in the warmup process and the Main Motor is operating (printing and Erase cycle).

3.4.2 Heater Rod ON/OFF Control

The control of ON/OFF for the Heater Rod is based on the rule as follows:

- s The Heater Rod turns ON when the temperature detected by thermistor reaches Fuser ON temperature or below (Fuser ON temperature is approximately -2°C or lower than the Fuser Control temperature)
- s The Heater Rod turns OFF when the temperature detected by thermistor reaches Fuser OFF temperature or above (Fuser OFF temperature is almost same as the Fuser Control temperature)

3.4.3 Fuser Warmup

The Heater Rod turns ON(lights) at the same time the fuser warmup begins. Fuser warmup ends when the Heat Roll surface temperature, which Temperature Sensor Assembly thermistor senses, has reached the Fuser control temperature (standby temperature). The Main Motor is operating during the fuser warmup.

3.4.4 Thick Paper Mode

To improve the fusibility of toner on thick paper such as envelopes, the printer selects NORMAL or HIGH temperature as running temperature while the Main Motor is operating [except warmup period] by executing command SET FUSER TEMP from the Printer Controller. The thick paper mode indicates the state that the HIGH temperature is selected.

*Note : If the printer senses the paper size as follows, the thick paper mode is automatically selected even if the NORMAL temperature has been selected.
Postcard, MONARCH, DL, C5, COM-10*

3.4.5 Fuser Temperature Table

	Temperature
High Trouble Temperature*1	Approx. 201°C (Standby temperature + Approx. 41°C)
Fuser OFF Temperature*1	Fuser control temperature $\pm 0^{\circ}\text{C}$
Fuser Control Temperature *1	[Standby temperature] 160°C [Running temperature] 163°C (NORMAL) / (HIGH: thick paper mode)
Fuser On Temperature*1	Fuser control temperature Approx. -2°C
Low Trouble Temperature *1	Approx. 125°C (Standby temperature Approx. -35°C)

*1 : The fuser temperature varies according to the data on nonvolatile memory. The temperature above indicate when NV code 9 is set to 7.

3.4.6 Temperature Code Table

Fuser Temperature	Temperature Code(HEX)
0°C	FF
~	~
10°C	FF
~	~
20°C	FF(FE~FF)
~	~
30°C	FE(FD~FE)
~	~
40°C	FD(FC~FD)
~	~
50°C	FC(FB~FC)
~	~
60°C	FA(F9~FB)
~	~
70°C	F7(F6~F8)
~	~
80°C	F4(F3~F5)
~	~
90°C	F0(FE~F1)
~	~
100°C	EA(E8~EC)
~	~
110°C	E3(E1~E6)
~	~
120°C	DB(D8~DE)
~	~
130°C	D1(CE~D4)
~	~

Fuser Temperature	Temperature Code(HEX)
140°C	C6(C2~C9)
~	~
145°C	C0(BC~C3)
~	~
150°C	B9(B6~BD)
~	~
155°C	B3(AF~B6)
~	~
160°C	AC(A8~AF)
~	~
165°C	A5(A1~A9)
~	~
170°C	9E(9A~A2)
~	~
175°C	97(92~9B)
~	~
180°C	8F(8B~94)
~	~
190°C	81(7C~86)
~	~
200°C	74(6E~79)
~	~
210°C	67(61~6C)
~	~
220°C	5B(55~60)
~	~
230°C	50(4A~55)

3.5 Erase Cycle

The Erase Cycle is automatically executed when the Interlock Switch is turned ON or the printer power is switched ON.

During the Erase Cycle, Main Motor operation, Electric Clutch operation, and output of HVPS CR(AC), CR(DC), DTS and TR(-) are performed.

Note : 1. The Erase Cycle will stop when the Interlock Switch is turned OFF or when the Registration Sensor or Exit Sensor is turned ON. To resume the Erase Cycle, switch ON the Interlock Switch or printer power.

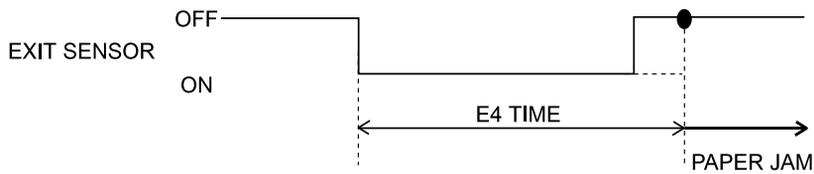
2. The Erase Cycle will not be executed if the Registration Sensor or Exit Sensor is turned ON when the Interlock Switch or printer power is switched ON.

3.6 Paper Transport Specified Time

The following table shows the specified time for the detection of paper jam.

(1) E4 paper jam timing

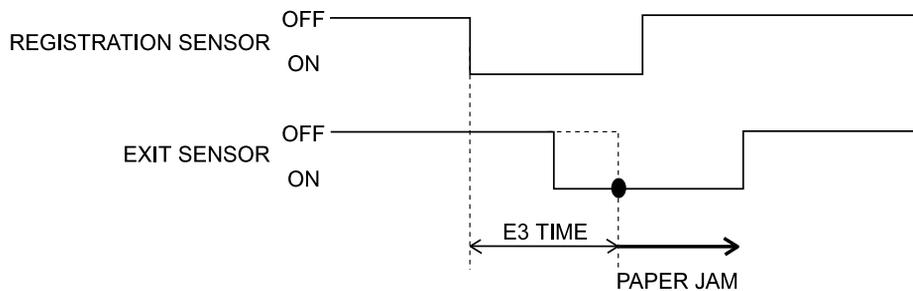
Paper Size	E4 Specified Time	
	Front Tray Feeding	Cassette Feeding
LETTER(LEF), A4(LEF), EXECUTIVE(LEF), B5(LEF), A5(LEF), STATEMENT(LEF), POSTCARD(SEF), MONARCH(SEF)	4.92 seconds	4.92 seconds
A4(SEF), LETTER(SEF), B5(SEF), C5(SEF), COM-10(SEF), DL(SEF)	6.54 seconds	6.54 seconds
B4(SEF), LEGAL14"(SEF), LEGAL13"(SEF)	7.88 seconds	7.88 seconds
LEDGER(SEF), A3(SEF)	9.24 seconds	9.24 seconds



SAK6H4A

(2) E3 paper jam timing

Paper Size	E3 Specified Time	
	Front Tray Feeding	Cassette Feeding
LETTER(LEF), A4(LEF), EXECUTIVE(LEF), B5(LEF), A5(LEF), STATEMENT(LEF), POSTCARD(SEF), MONARCH(SEF)	3.78 seconds	3.78 seconds
A4(SEF), LETTER(SEF), B5(SEF), C5(SEF), COM-10(SEF), DL(SEF)	3.78 seconds	3.78 seconds
B4(SEF), LEGAL14"(SEF), LEGAL13"(SEF)	3.78 seconds	3.78 seconds
LEDGER(SEF), A3(SEF)	3.78 seconds	3.78 seconds

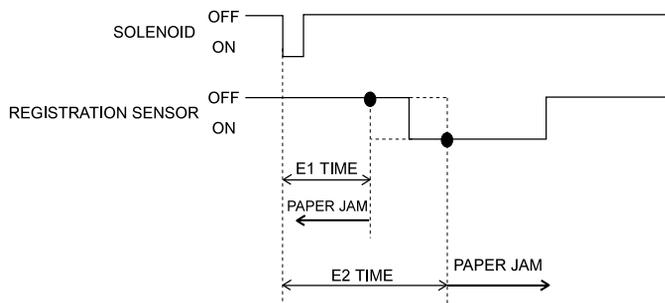


(3) E2 paper jam timing

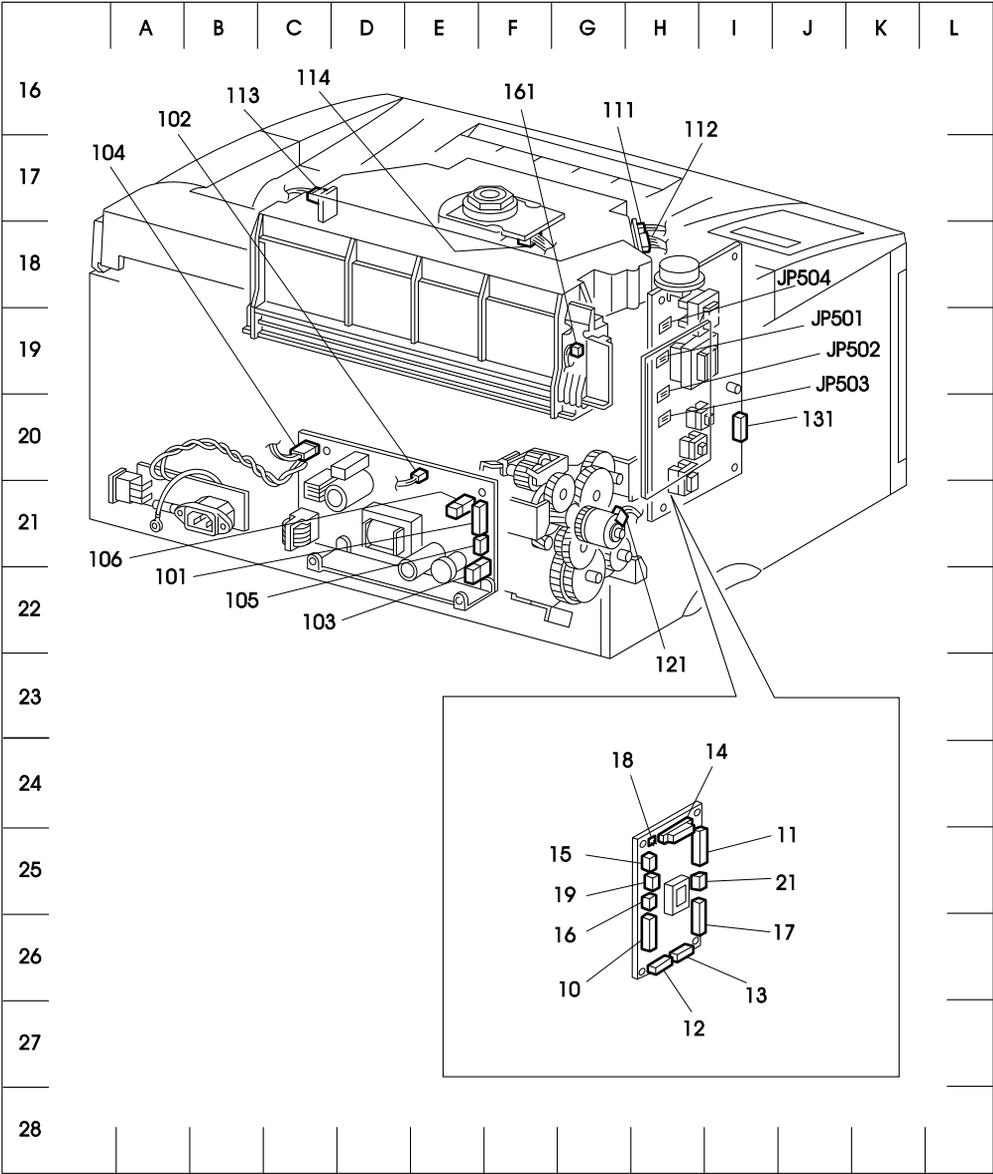
Paper Size	E2 Specified Time		
	Front Tray Feeding	Tray 1 Feeding	Tray 2 Feeding
LETTER(LEF), A4(LEF), EXECUTIVE(LEF), B5(LEF), A5(LEF), STATEMENT(LEF), POSTCARD(SEF), MONARCH(SEF)	1.83 seconds	3.06 seconds	4.48 seconds
A4(SEF), LETTER(SEF), B5(SEF), C5(SEF), COM-10(SEF), DL(SEF)	1.83 seconds	3.06 seconds	4.48 seconds
B4(SEF), LEGAL14"(SEF), LEGAL13"(SEF)	1.83 seconds	3.06 seconds	4.48 seconds
LEDGER(SEF), A3(SEF)	1.83 seconds	3.06 seconds	4.48 seconds

(4) E1 paper jam timing

Paper Size	E1 Specified Time		
	Front Tray Feeding	Tray 1 Feeding	Tray 2 Feeding
LETTER(LEF), A4(LEF), EXECUTIVE(LEF), B5(LEF), A5(LEF), STATEMENT(LEF), POSTCARD(SEF), MONARCH(SEF)	0.37 seconds	1.86 seconds	3.28 seconds
A4(SEF), LETTER(SEF), B5(SEF), C5(SEF), COM-10(SEF), DL(SEF)	0.37 seconds	1.86seconds	3.28 seconds
B4(SEF), LEGAL14"(SEF), LEGAL13"(SEF)	0.37 seconds	1.86seconds	3.28 seconds
LEDGER(SEF), A3(SEF)	0.37 seconds	1.86seconds	3.28 seconds



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4.2 P/J Location Table

The table below show the coordinate points which correlate to the grid in the 4.1 P/J Locator illustration on the previous pages.

	Coordinate Location	Description
10	H-26	Connection between MCU PWB and LVPS Harness
11	H-25	Connection between MCU PWB and ROS Harness
12	H-26	Connection between MCU PWB and P/H Harness
13	H-26	Connection between MCU PWB and HVPS Harness
14	H-25	Connection between MCU PWB and ESS PWB
15	H-25	Connection between MCU PWB and Fuser Harness
16	H-25	Connection between MCU PWB and CRU Harness
17	H-25	Connection between MCU PWB and Tray Harness
18	H-25	Plug(two pins) on the MCU PWB(for test print)
19	H-25	Connection between MCU PWB and Toner Sensor Harness
21	H-25	Connection between MCU PWB and Console Harness of diagnostic tool
101	E-21	Connection between LVPS Assembly and LVPS Harness
102	E-20	Connection between LVPS Assembly and Fan
103	E-22	Connection between LVPS Assembly and Interlock Switch
104	C-20	Connection between LVPS Assembly and Heater Rod
105	E-21	Connection between LVPS Assembly and Drive Assembly
106	E-21	Connection between LVPS Assembly and ESS Harness
111	H-18	Connection between ROS Assembly(LD Assembly) and SOS Harness
112	H-18	Connection between ROS Assembly(LD Assembly) and ROS Harness
113	C-17	Connection between ROS Assembly(SOS PWB) and SOS Harness
114	F-18	Connection between ROS Assembly(Scanner Assembly) and ROS Harness
121	G-21	Connection between Registration Clutch Assembly and P/H Harness
122	G-5	Connection between Registration Sensor Harness and P/H Harness
123	H-6	Connection between Registration Sensor and Registration Sensor Harness
124	F-6	Connection between MSI No Paper Sensor and P/H Harness
125	F-6	Connection between Pick Up Solenoid and P/H Harness
127	A-3	Connects Console Assembly and Harness Assembly PWB.
128	None	Connects ESS PWB and Harness Assembly PWB.
131	I-20	Connection between HVPS and HVPS Harness

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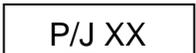
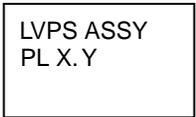
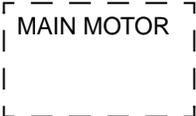
	Coordinate Location	Description
142	None	Connection between ESS PWB and ESS Harness
151	D-2	Connection between Connector 3PB and Fuser Harness
152	D-2	Connection between Connector 3PB and Exit Harness
153	G-3	Connection between Exit Sensor and Exit Harness
154	D-2	Connection between Connector 2PW and Fuser Harness
155	D-2	Connection between Temperature Sensor Assembly and Connector 2PW
161	G-19	Connection between CRU Sensor Assembly and CRU Harness
171	B-7,B-12	Connection between Tray Harness and Tray Upper Harness of Tray 1
171	B-13	Connection between Tray Lower Harness of Tray 1 and Tray Upper Harness of Tray 2
173	A-12	Connection between Feeder PWB and Tray Upper Harness
174	A-12	Connection between Feeder PWB and Tray Lower Harness
175	A-12	Connection between Feeder PWB and Cassette Harness
176	A-12	Connection between Feeder PWB and Feed Solenoid
180	A-12	Unused connector on PWB
191	E-5	Connection between Toner Sensor and Toner Sensor Harness
222	G-5	Connector in P/H Harness
225	F-6	Connector in P/H Harness
271	G-12	Connection between CST No Paper Sensor and Cassette Harness
272	C-12	Connection between Cassette Sensor and Cassette Harness
273	C-10	Connection between Electric Clutch and Cassette Harness
JP601	H-19	Connection between HVPS and CRU Guide Assembly L(power supply to the BCR)
JP502	H-20	Connection between HVPS and CRU Guide Assembly L(power supply to the Detach Saw)
JP503	H-20	Connection between HVPS and CRU Guide Assembly L(power supply to the BTR)
JP504	H-19	Connection between HVPS and CRU Guide Assembly L(power supply to the Magnet Roll)

Note : Be careful that the following 9 connectors exist both on Tray 1 and Tray 2. P/J171, P/J173, P/J174, P/J175, P/J176, P/J271, P/J272, and P/J273

5. Wiring Diagrams

5.1 General Diagram

The general diagram described on the following page uses the following circuit notations.

	Shows connection between parts with harness or wire
	Shows connection between parts with metal component such as plate spring.
	Shows a connector. The number inside the box indicates connector No.
	Shows a part. The name and Item Y of Plate(PL) Y of the part found in the Section 3 Parts List are described inside the box.
	Shows functional component in a part with the name of the component inside.
	Shows section described in "5.2 Wiring for Connection between Parts" and section number.

5.2 Wiring for Connection between Parts

5.2.1 Organization

The wiring diagram is divided into nine individual blocks to better illustrate connections between parts.

§1. MCU PWB ↔ LVPS Assembly ↔ Fan, Interlock Switch and Drive Assembly

- Connections between the MCU PWB and the LVPS Assembly
- Connections between the LVPS Assembly and the Fan
- Connections between the LVPS Assembly and the Interlock Switch
- Connections between the LVPS Assembly and the Drive Assembly

§2. MCU PWB ↔ Fuser Assembly ↔ and LVPS Assembly

- Connections between the MCU PWB and the Fuser Assembly
- Connections between the Fuser Assembly and the LVPS Assembly

§3. MCU PWB ↔ HVPS ↔ CRU Guide Assembly L ↔ Transport Chute Assembly ↔ and BTR Assembly

- Connections between the MCU PWB and the HVPS
- Connections between the HVPS and the CRU Guide Assembly L
- Connections between the CRU Guide Assembly L and the Transport Chute Assembly
- Connections between the Transport Chute Assembly and the BTR Assembly

§4. MCU PWB ↔ Registration Clutch Assembly, Registration Sensor, MSI No Paper Sensor, and Pick Up Solenoid

- Connections between the MCU PWB and the Registration Clutch Assembly
- Connections between the MCU PWB and the Registration Sensor
- Connections between the MCU PWB and the MSI No Paper Sensor
- Connections between the MCU PWB and the Pick Up Solenoid

§5. MCU PWB ↔ ROS Assembly and CRU Sensor Assembly

- Connections between the MCU PWB and the ROS Assembly
- Connections between the MCU PWB and the CRU Sensor Assembly

§6. MCU PWB ↔ and Toner Sensor

- Connections between the MCU PWB and the Toner Sensor

§7. MCU PWB ↔ Feeder PWB ↔ Feed Solenoid, CST No Paper Sensor, Cassette Sensor and Electric Clutch

- Connections between the MCU PWB and the Feeder PWB
- Connections between the Feeder PWB and the Feed Solenoid
- Connections between the Feeder PWB and the CST No Paper Sensor
- Connections between the Feeder PWB and the Cassette Sensor
- Connections between the Feeder PWB and the Electric Clutch

§8. ESS PWB ↔ and Console Assembly

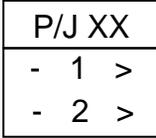
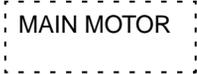
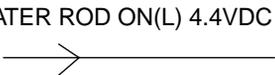
- Connections between the ESS PWB and Console Assembly

§9. MCU PWB ↔ ESS PWB ↔ and LVPS Assembly

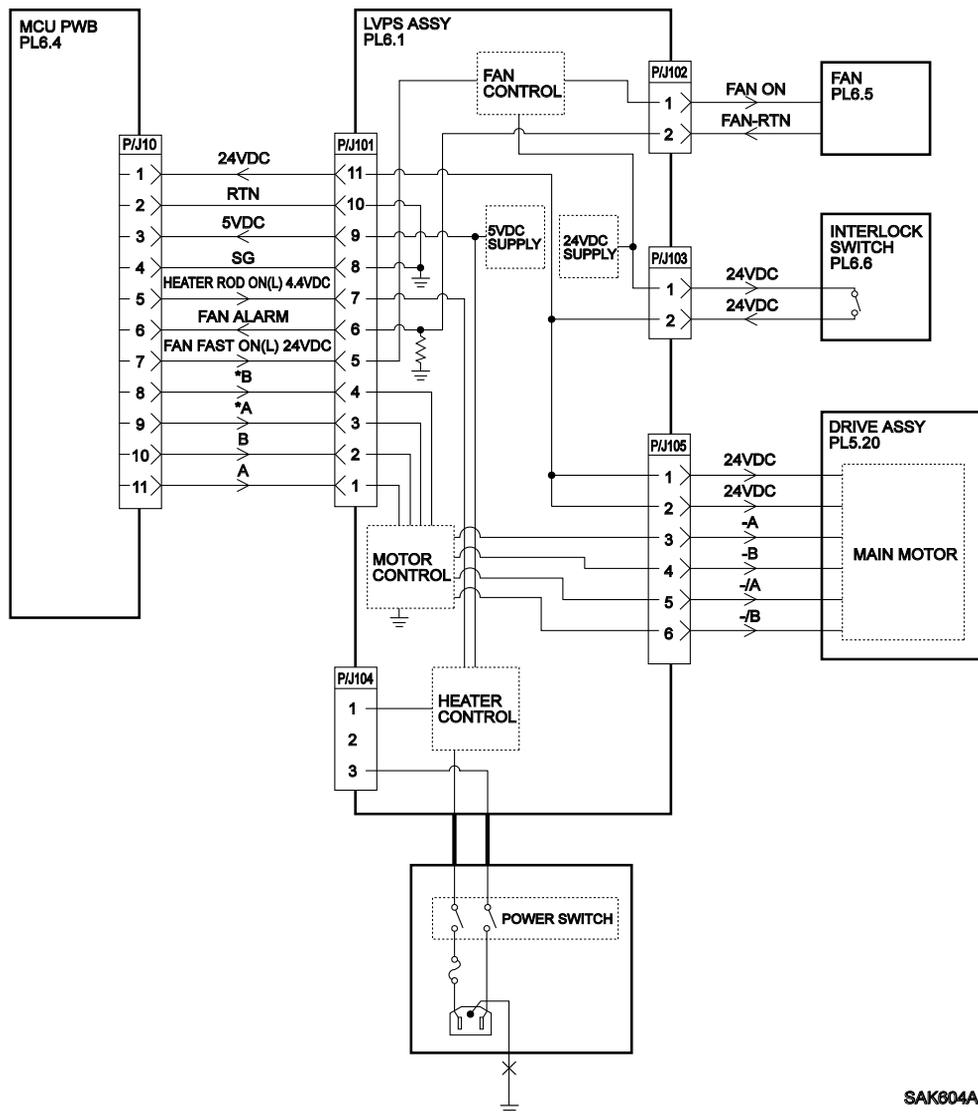
- Connections between the MCU PWB and ESS PWB
- Connections between the ESS PWB and LVPS Assembly

5.2.2 Wiring Diagram Notation

Use the following table to find notations for wiring diagrams between parts described on the following pages. Provided that the general symbols are omitted.

	<p>Shows a connector. The top line is the connector number, and lower line is the pin number. P1 : PLUG side of the connector J1 : JACK side of the connector</p>
	<p>Shows parts. The name and Item Y of Plate(PL) X of the part found in the Section 3 Parts List are described inside the box.</p>
	<p>Shows the functional component in a part with the name of the component inside.</p>
	<p>Shows connection between wiring.</p>
	<p>Shows connection by screws.</p>
	<p>Shows connection between parts by harness or wire with the signal line name or contents. Also "<" or ">" represents the direction of signals.</p>
	<p>Shows connection between parts by metal such as plate spring with the signal line name or contents. Also "<" or ">" represents the direction of signals.</p>
	<p>Represents function and signal logic value(Low : L, High : H) which actuate the function. Also indicates the voltage when the signal is high.</p>
	<p>Represents function and logic value of the signal (Low : L, High : H) when the function is in the detecting state. Also indicates the voltage when the signal is high.</p>
	<p>Indicates DC voltage measured when connecting the negative side with SG(signal ground).</p>
	<p>SG : Signal Ground RETURN : Return FG : Frame Ground Symbol : Frame Ground</p>
	<p>Indicates remarks related to the section.</p>

§1. MCU PWB ↔ LVPS Assembly ↔ Fan, Interlock Switch and Drive Assembly(1/2)



SAK804A

Signal Name	Description
HEATER ROD ON(L) 4.4DC	Heater Rod control signal to light ON or OFF
FAN ALARM	Fan detect signal for abnormal revolution(lock)
FAN FAST ON(L) 24VDC	Fan speed(high or low) control signal (High speed revolution at LOW level, and low speed revolution at HIGH level)
FAN ON	Power supply voltage also working as a Fan revolution control signal
FAN-RTN	Return signal also working as Fan detect signal for abnormal revolution
A, B, *A, *B	Main Motor control signal
-A, -B, -/A, -/B	Main Motor excitation signal

§1. MCU PWB ↔ LVPS Assembly ↔ Fan, Interlock Switch and Drive Assembly(2/2)

- Short-circuit protection of source power voltage from the LVPS Assembly(over current protection).

The source power voltage 5VDC and 24VDC stops all output when the printer is in the short-circuit state.

Printer will recover during power-on after a few minutes from power OFF following a cancellation of short-circuit.

- Stops output by LVPS Assembly in the no-load state (over voltage protection).

If 5VDC and 24VDC as source power voltage becomes in no-load state(all connectors on the LVPS Assembly are disconnected), the output will decrease after approximately one minute and stop.

The printer will recover during power-on after approximately five minutes from power OFF following applying load such as connecting connector.

- Stops output by switching OFF the Interlock Switch

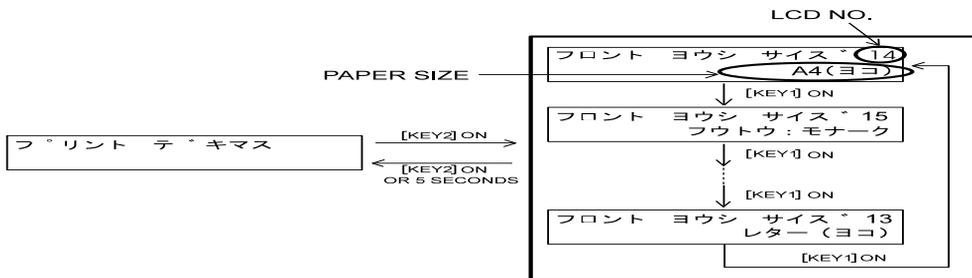
When the Interlock Switch is switched OFF, 24VDC output as source power voltage will stop. The 24VDC output as source power voltage supplies to the Fan even if the Interlock Switch is switched ON or OFF.

- Drive Assembly Main Motor Overview

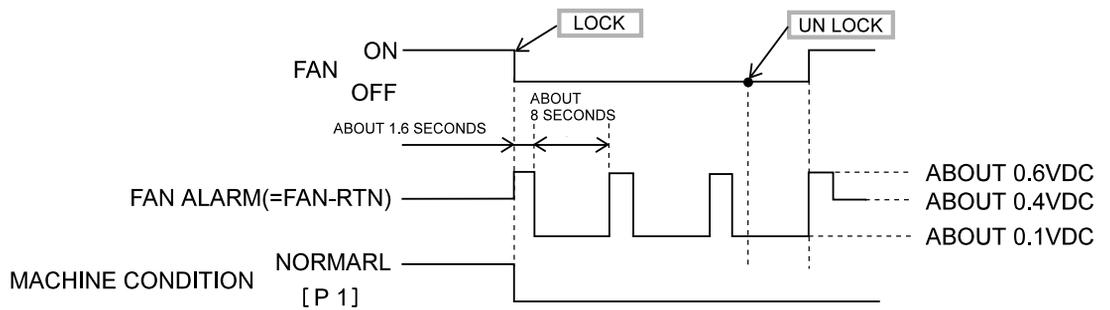
- The Main Motor is a stepping motor.
- Step angle of Main Motor : $1.8 \pm 0.09^\circ$
- Frequencies when the Main Motor is rotating at the rated speed : 1764pps(pps=pulses per second).
- Excitation sequence of the Main Motor : (* = Excitation)

Phase	Step (Double-phase Excitation)			
	1	2	3	4
-A			*	*
-B		*	*	
-/A	*	*		
-/B	*			*

- Fan Fast ON signal overview

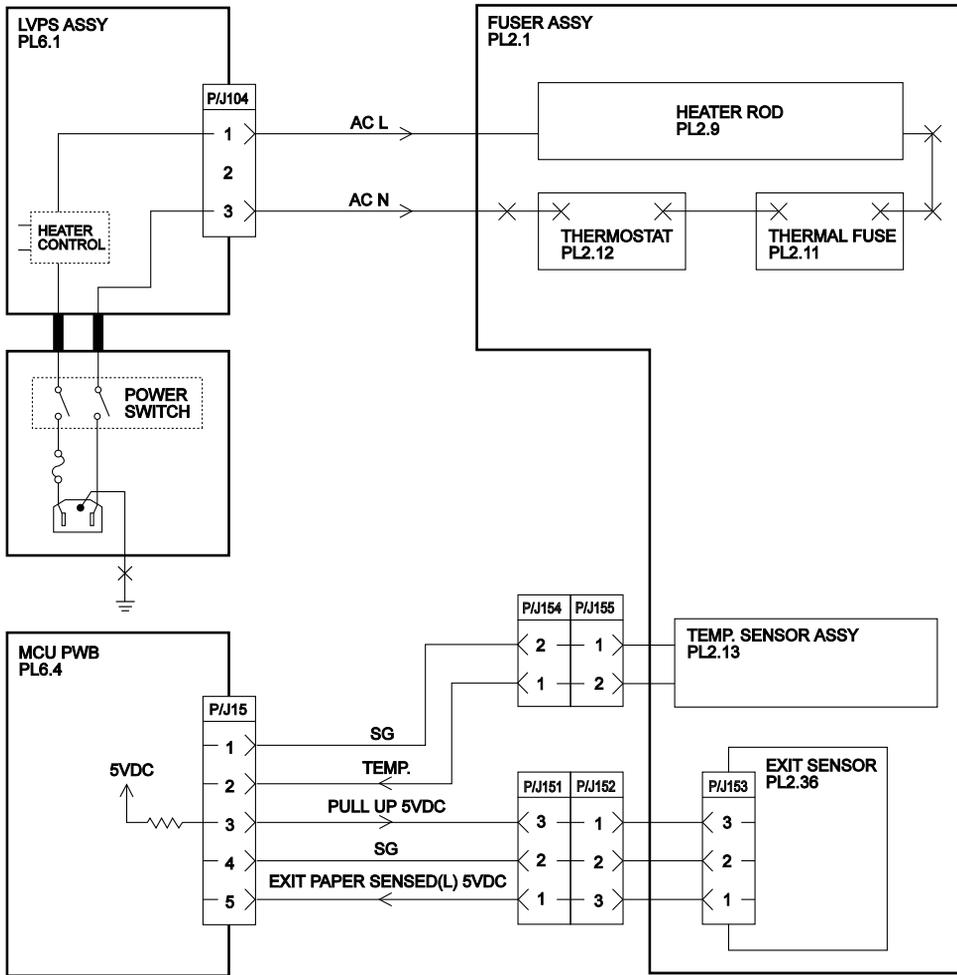


- Fan Alarm Overview(The Fan Alarm is actually controlled by locked rotor current. However, it is described at voltage level here for reference.)



SAK6HAA

§2. MCU PWB ↔ Fuser Assembly ↔ and LVPS Assembly

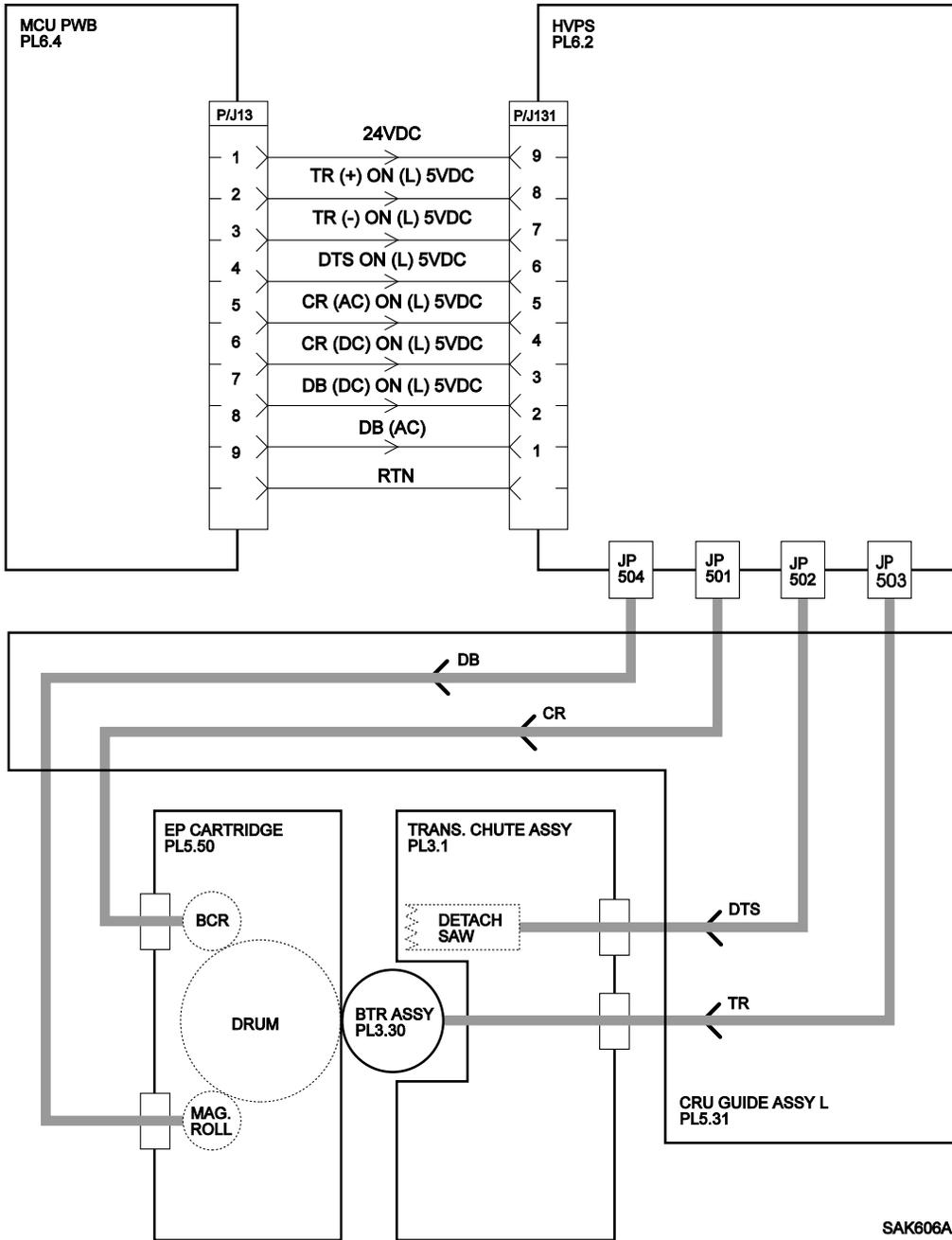


SAK605A

Signal Name	Description
AC L	Line side of AC input from the power source (source power voltage for Heater Rod)
AC N	Neutral side of AC input from the power source (source power voltage for Heater ROD)
TEMP.	Thermistor data from the Temperature Sensor Assembly
EXIT PAPER SENSED(L) 5VDC	Paper detect signal at output part by the Exit Sensor

- Thermal Fuse melting temperature : Specified temperature 169°C
- Thermostat surface open temperature : Surface temperature 150°C
- The rated power of Heater Rod :
 - 100V Model : 560 ± 28 W(115V)
 - 220V Model : TBD
- Temperature Sensor Assembly thermistor resistance values

§3. MCU PWB ↔ HVPS ↔ CRU Guide Assembly L ↔ Transport Chute Assembly ↔ and BTR Assembly(1/2)



§3. MCU PWB ↔ HVPS ↔ CRU Guide Assembly L ↔ Transport Chute Assembly ↔ and BTR Assembly(2/2)

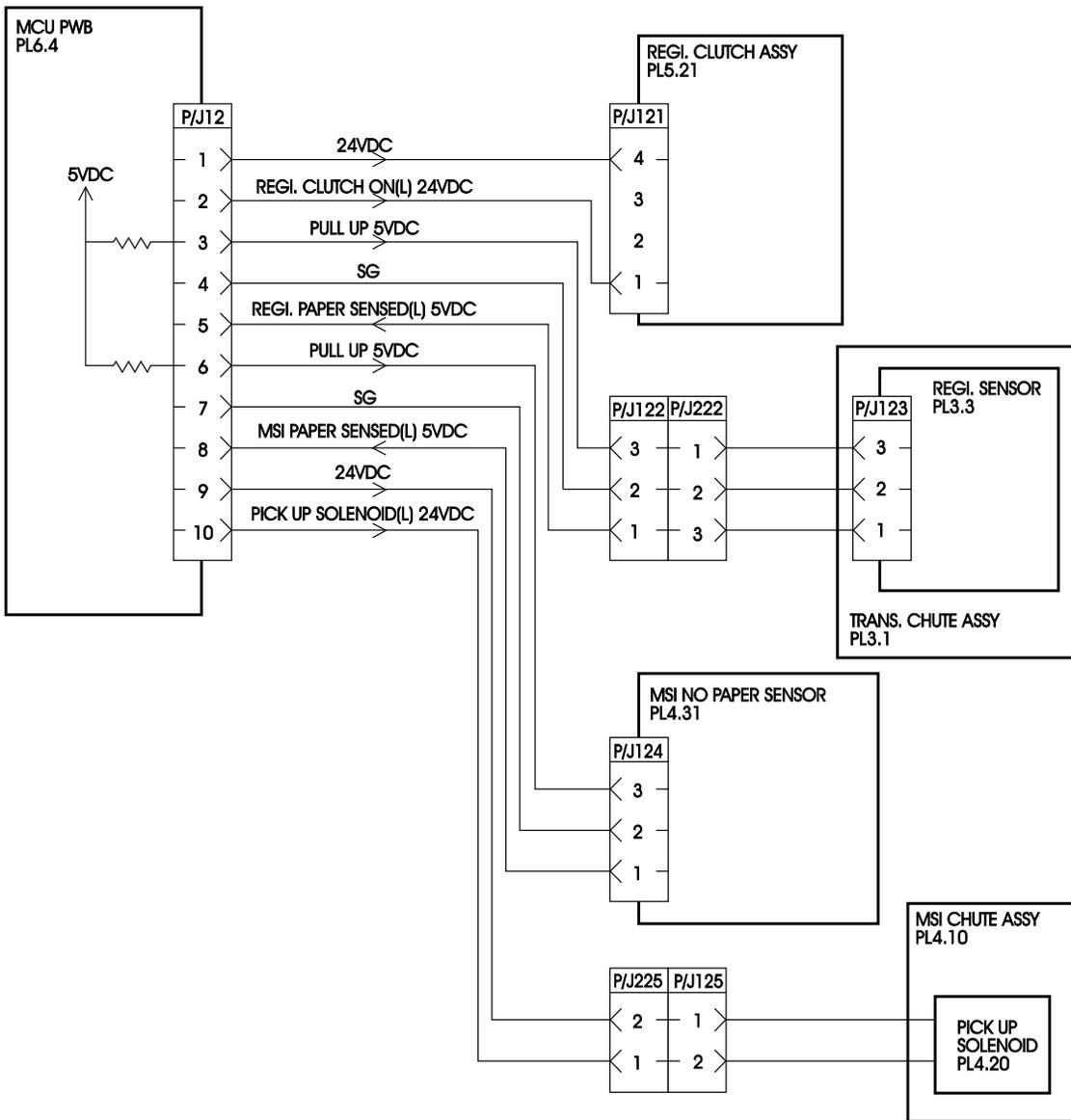
Signal Name	Description
TR(+) ON(L) 5VDC	TR(+) output control signal
TR(-) ON(L) 5VDC	TR(-) output control signal
DTS ON(L) 5VDC	DTS output control signal
CR(AC) ON(L) 5VDC	CR(AC) output control signal
CR(DC) ON(L) 5VDC	CR(DC) output control signal
DB(DC) ON(L) 5VDC	DB(DC) output control signal
DB(AC) ON(L) 5VDC	DB(AC) output control signal
DB	HVPS output to the Magnet Roll(Development Bias) •Output with superposed AC component [CR(AC)] on the DC component [DB(DC)]
CR	HVPS output to the BCR •Output with superposed AC component [CR(AC)] on the DC component [DB(DC)]
DTS	HVPS output to Detack Saw
TR	HVPS output to BTR •TR(+) is the output on transfer, TR(-) is the output on cleaning.

- Drum grounding is at CRU Guide Assembly R.
- HVPS rated output

Output Name	Rated Output
CR(AC)	540 μ A [f = 430Hz]
CR(DC)	- 410 VDC
DB(AC)	2.05 kV(P-P) [f = 2.4Hz]
DB(DC)	- 290 VDC
TR(+)	3.2 μ A
TR(-)	- 650 VDC
DTS	- 1.1 kDC

- ★ You can change DB(DC) output voltage by turning knob volume attached with HVPS to make fine adjustment of print density. Turn the knob clockwise for maximum output, the print density will be dark. Also by turning knob volume, the print image quality can be improved.

§4. MCU PWB ↔ Registration Clutch Assembly, Registration Sensor, MSI No Paper Sensor, and Pick Up Solenoid

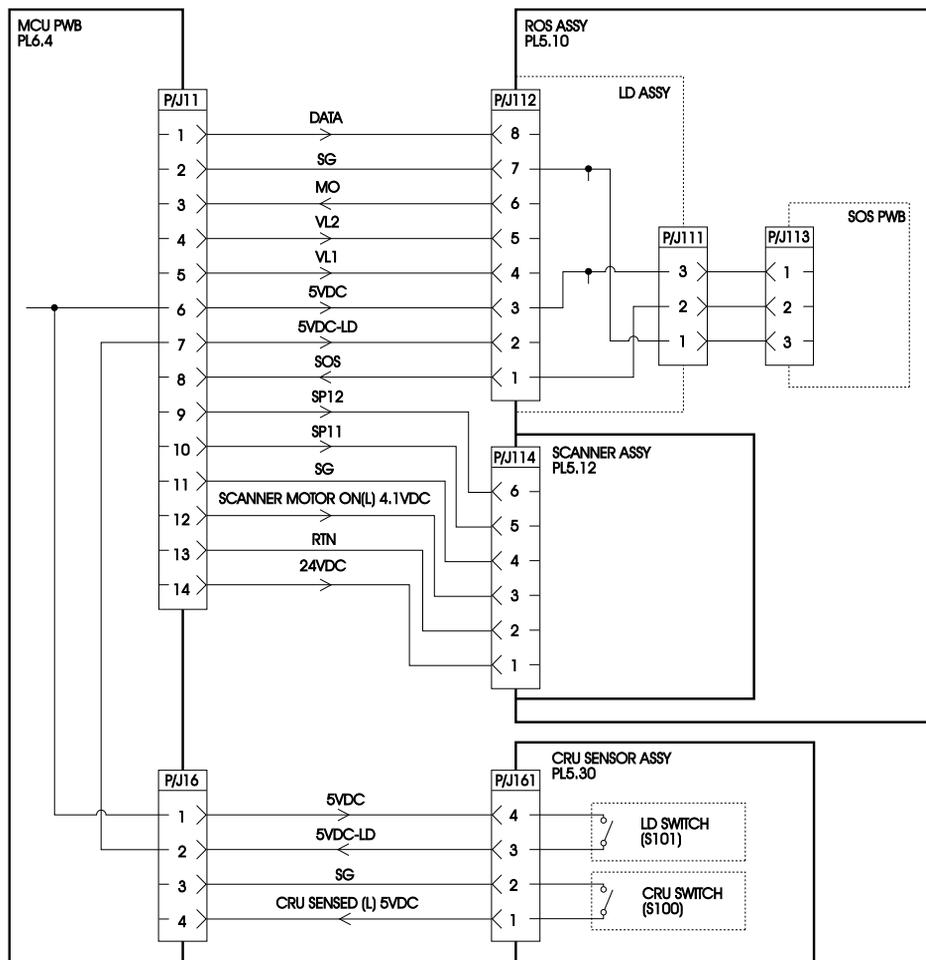


SAK607SB

Signal Name	Description
REGI.CLUTCH ON(L) 24VDC	Registration Clutch Assembly ON/OFF control signal
REGI. PAPER SENSED (L) 5VDC	Registration Sensor signal for monitoring paper at the Registration Roll
MSI PAPER SENSED (L) 5VDC	MSI No Paper Sensor signal for monitoring paper at the Front Tray
PICK UP SOLENOID ON(L) 24VDC	Pick Up Solenoid ON/OFF control signal

- Registration Clutch Assembly coil resistance : $115\Omega \pm 10\%$ (20 °C)
- Pick Up Solenoid coil resistance : $90\Omega \pm 10\%$ (20 °C)

§5. MCU PWB ↔ ROS Assembly and CRU Sensor Assembly(1/2)



SAK6085B

Signal Name	Description
DATA	Pixel data signal for Laser Beam output from the MCU PWB to LD Assembly. [LD ON(L) 3.7VDC]
MO	Monitor signal that controls LD output based on DATA (For adjustment of LD Power).
VL2, VL1	LD Power adjustment voltage.
5VDC-LD	LD power source voltage for LD Assembly.
SOS	Start of scan reference signal sent to the Scanner Motor of Scanner Assembly when the laser beam strikes the SOS Sensor of SOS PWB.
SPI2, SPI1	Number of revolutions control signal for Scanner Motor of Scanner Assembly.
SCANNER MOTOR ON(L) 4.1VDC	Control On/OFF signal for Scanner Motor of Scanner Assembly.
CRU SENSED (L) 5VDC	Signal for monitoring the presence of the EP Cartridge.

§5. MCU PWB ↔ ROS Assembly and CRU Sensor Assembly(2/2)

- Control of Scanner Motor revolution for SPI2 and SPI1 which differ according to the specification.

ROS Assembly for 480dpi, 400dpi, 360dpi and 300dpi

Resolution	SPI2	SPI1
480dpi	H	H
400dpi	L	L
360dpi	L	H
300dpi	H	L

ROS Assembly for 480/400dpi(default =*)

Resolution	SPI2	SPI1
480dpi*	H	H
400dpi	L	L

ROS Assembly for 600/300dpi(default =*)

Resolution	SPI2	SPI1
600dpi*	H	H
300dpi	H	L

ROS Assembly for 800/400dpi(default =*)

Resolution	SPI2	SPI1
800dpi*	H	H
400dpi	H	L

ROS Assembly for 600/360dpi(default =*)

Resolution	SPI2	SPI1
600dpi*	L	L
360dpi	H	L

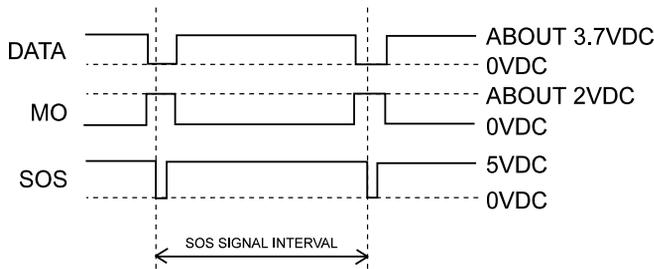
ROS Assembly for 800/600dpi(default =*)

Resolution	SPI2	SPI1
800dpi*	L	H
600dpi	H	L

ROS Assembly for 600/400dpi and 600/480dpi(default =*)

Resolution	SPI2	SPI1
600dpi*	L	H
400,480dpi	H	L

- Wave forms of signal lines DATA, MO and SOS(in Test Print Mode at the status the printer is ready)

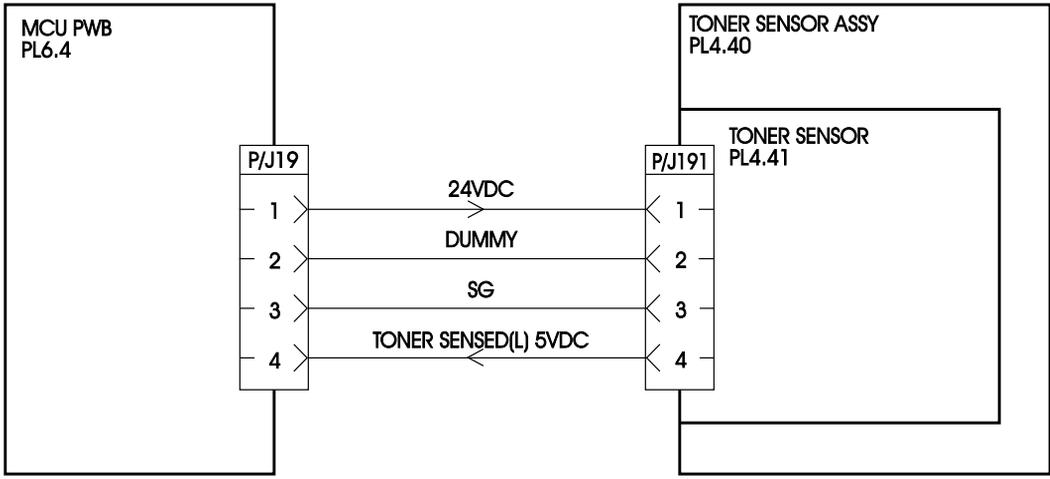


- Operation of CRU Sensor Assembly

The projection of the EP Cartridge pushes in the actuator inside the CRU Sensor Assembly and makes the CRU Switch and LD Switch turn ON.

Warning : LD Switch is a safety switch for the laser beam. To avoid exposure of the laser beam, never short-circuit the Interlock Switch and LD Switch concurrently (laser beam is emitted) when the EP cartridge is removed. Direct eye exposure to the laser beam may cause eye injury or blindness.
Be sure to follow the procedures as described in this manual working on the printer while in operation.

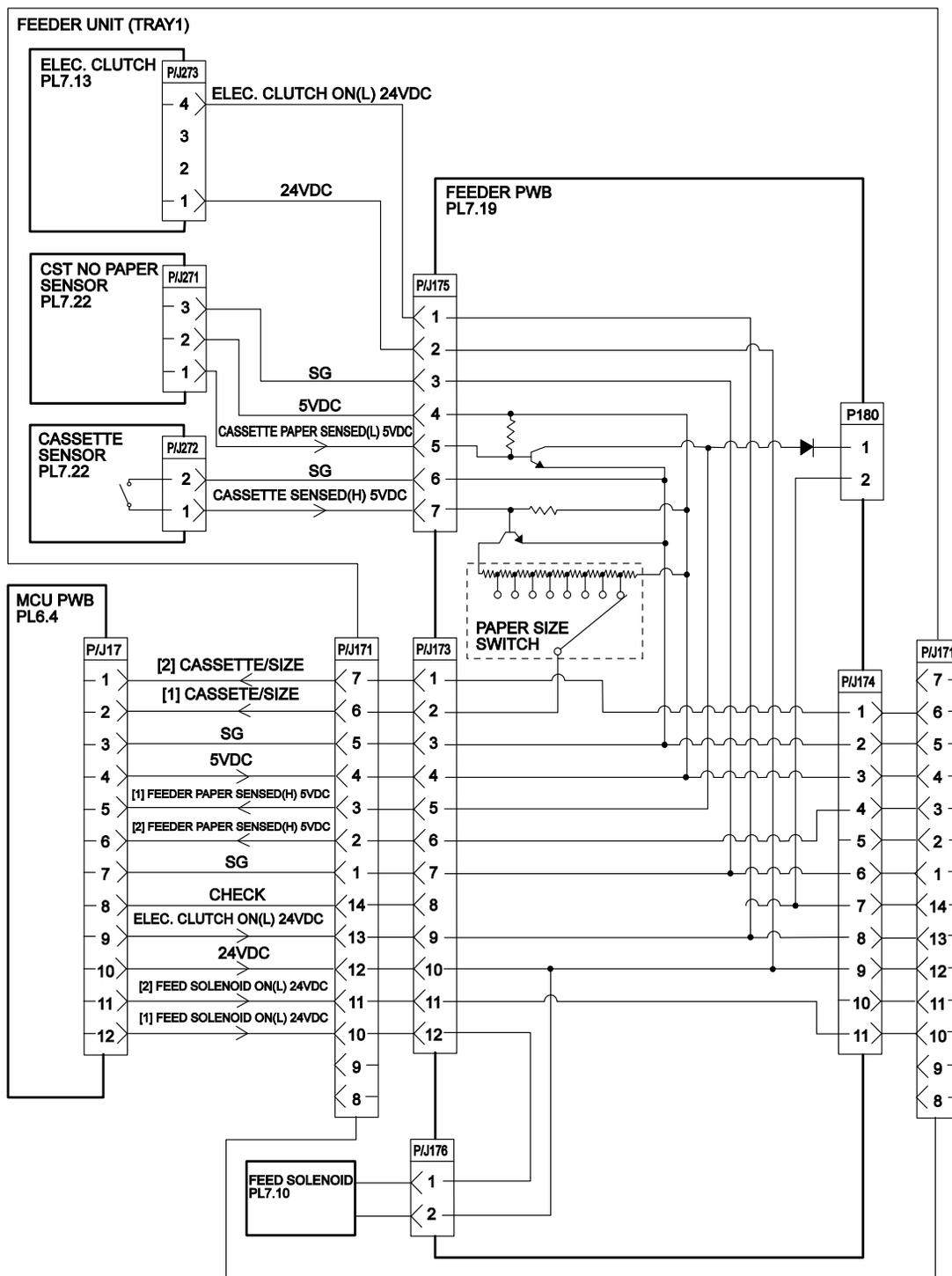
§6. MCU PWB ↔ and Toner Sensor



SAK609SC

Signal Name	Description
DUMMY	Dummy harness
TONER SENSED(L) 5VDC	Signal monitoring toner level in the EP Cartridge by the Toner Sensor

§7. MCU PWB ↔ Feeder PWB ↔ Feed Solenoid, CST No Paper Sensor, Cassette Sensor and Electric Clutch(1/2)



SAK617A

Note : The numbers [1] and [2] prior to signal line names are related to the Tray 1 and Tray 2 respectively.

§7. MCU PWB ↔ Feeder PWB ↔ Feed Solenoid, CST No Paper Sensor, Cassette Sensor and Electric Clutch(2/2)

Signal Name	Description
CASSETTE/SIZE	Signal from the Cassette Sensor and Paper Size Switch to monitor the presence of paper cassette and paper sizes.
FEEDER PAPER SENSED(H) 5VDC	Signal from the CST No Paper Sensor to monitor presence of paper in the paper cassette.
CHECK	Unused.
ELECTRIC CLUTCH ON(L) 24VDC	Electric Clutch ON/OFF control signal.
FEED SOLENOID ON(L) 24VDC	Feed Solenoid ON/OFF control signal.
CASSETTE PAPER SENSED (L) 5VDC	Signal from CST No Paper Sensor to monitor the presence of paper in the paper cassette.
CASSETTE SENSED (H) 5VDC	Signal from the Cassette Sensor to monitor the presence of paper cassette.

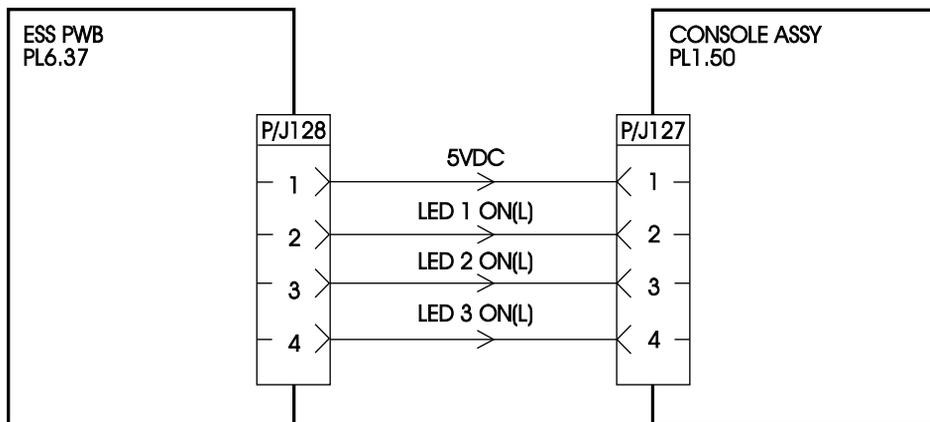
- Feed Solenoid coil resistance : $90\Omega \pm 10\%$ (20°C)
- Electric Clutch coil resistance : $120\Omega \pm 10\%$ (20°C)
- CASSETTE/SIZE signal related data

The following table shows the relationship for Paper Size Switch location(1,2,3,4...7,8 clockwise) to set paper size for cassette feeding, paper size setting for NV code C, Paper Size Switch data(region) for DG code 04, and CASSETTE/SIZE signal voltage(region).

Paper Size Switch Location	Paper Size				Paper Size Switch Data	CST/SIZE Signal Voltage (Unit : VDC)
	Group A	Group B	Group C	Group D		
1	A3(SEF)	A3(SEF)	Non-standard1	LEDGER (SEF)	7E ~ 99	2.451 ~ 2.998
2	B4(SEF)	B4(SEF)	A5(LEF)	EXECUTIVE(LEF)	9A ~ B6	2.998 ~ 3.564
3	B5(LEF)	B5(LEF)	A3(SEF)	STATEMENT(LEF)	B7 ~ D3	3.564 ~ 4.131
4	A4(LEF)	A4(LEF)	A4(LEF)	A4(LEF)	D4 ~ E9	4.131 ~ 4.561
5	LETTER(LEF)	LETTER(LEF)	LETTER(LEF)	LETTER (LEF)	0E ~ 29	0.264 ~ 0.811
6	A5(LEF)	A5(LEF)	B4(SEF)	LETTER (SEF)	2A ~ 45	0.811 ~ 1.357
7	A4(SEF)	LEGAL14" (SEF)	B5(LEF)	LEGAL14" (SEF)	46 ~ 61	1.357 ~ 1.904
8	LEGAL14" (SEF)	LEGAL13" (SEF)	LEGAL14" (SEF)	LEGAL13" (SEF)	62 ~ 7D	1.904 ~ 2.451
No Cassette installed	-	-	-	-	EA ~ FF	4.561 ~ 5.000
No Feeder Unit installed	-	-	-	-	00 ~ 0D	0.000 ~ 0.264

Note: Paper sizes apply only to Group B specifications.

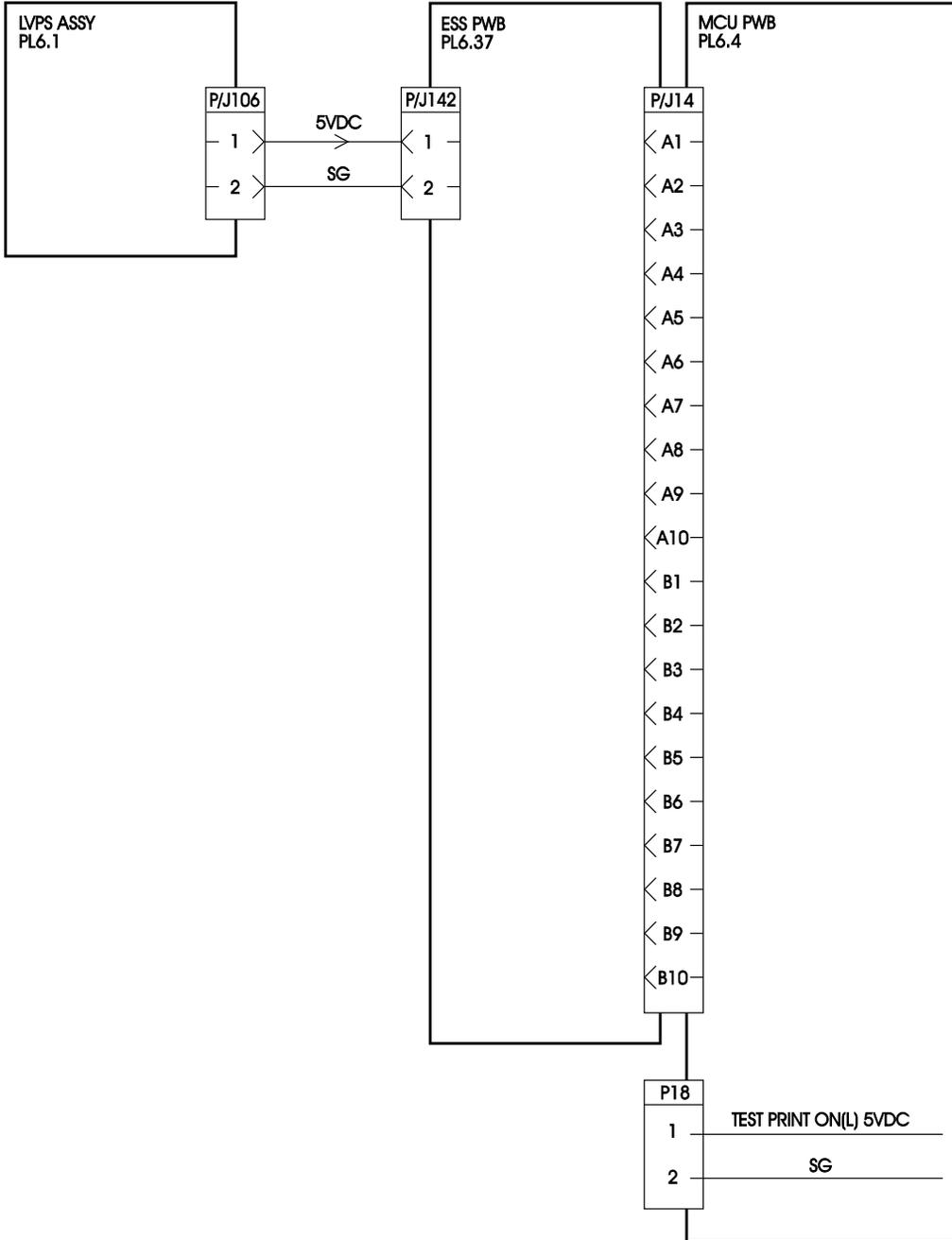
§8. ESS PWB ↔ and Console Assembly



SAK610A

Signal Name	Description
RS, E, DB4 - DB7	LCD display control signal
LED1 - LED4 ON(L)	Signals to detect whether KEY 1 to KEY 8 are pressed [LOW level is detected when pressing Key Switch.]
LED1 - LED4 ON(L)	Control signal for light ON/OUT of LED1 to LED 4. [LOW level indicates LED lights.]

§9. MCU PWB ↔ ESS PWB and LVPS Assembly



SAK6111A

Signal Name	Description
TEST PRINT ON(L) 5VDC	Select LOW level (connect to SG) to make built-in test print.

- See Interface Specification for P/J14 signal.

6. Printing Accuracy

This section describes ways to check simply for image accuracy using test print printed on standard paper (paper size : A3) during test print mode.

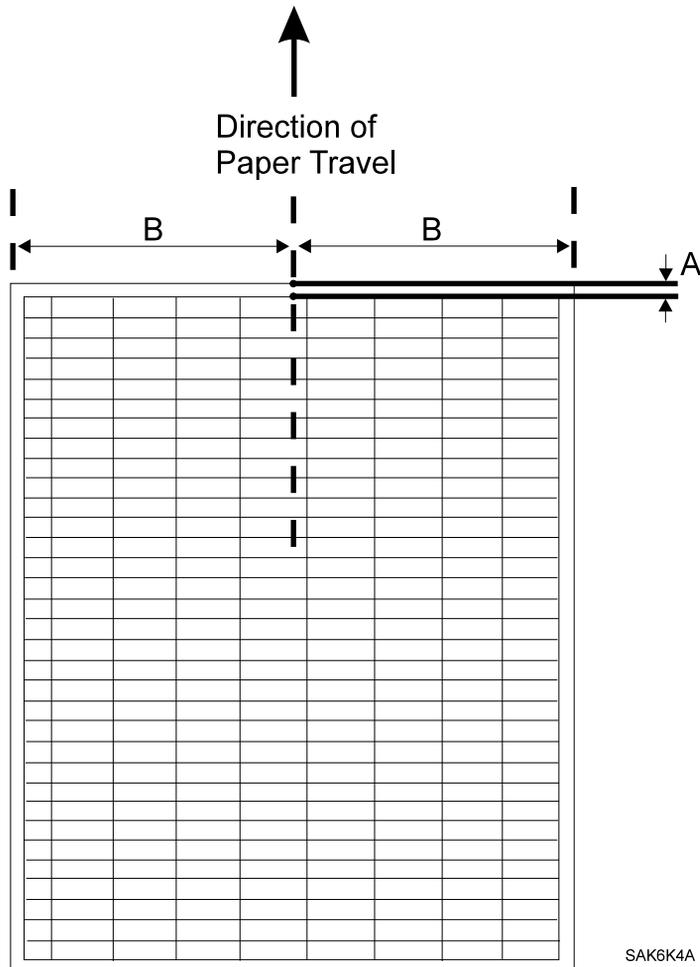
Allow newly opened paper to stand for 12 hours wrapped in the operating environment before using it for these tests.

Note : Be careful that the image quality cannot be evaluated by the test print printed during the test print mode.

- Lead Edge Registration

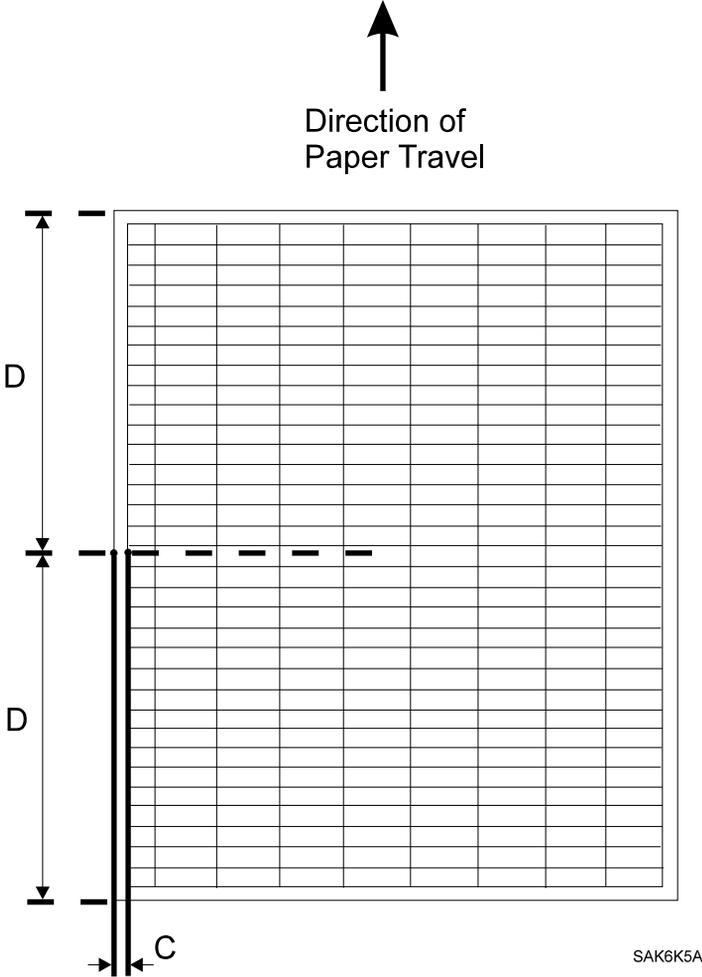
$$(4.0 - 2.0\text{mm}) \leq A \leq (4.0 + 2.0\text{mm})$$

$$B = B$$



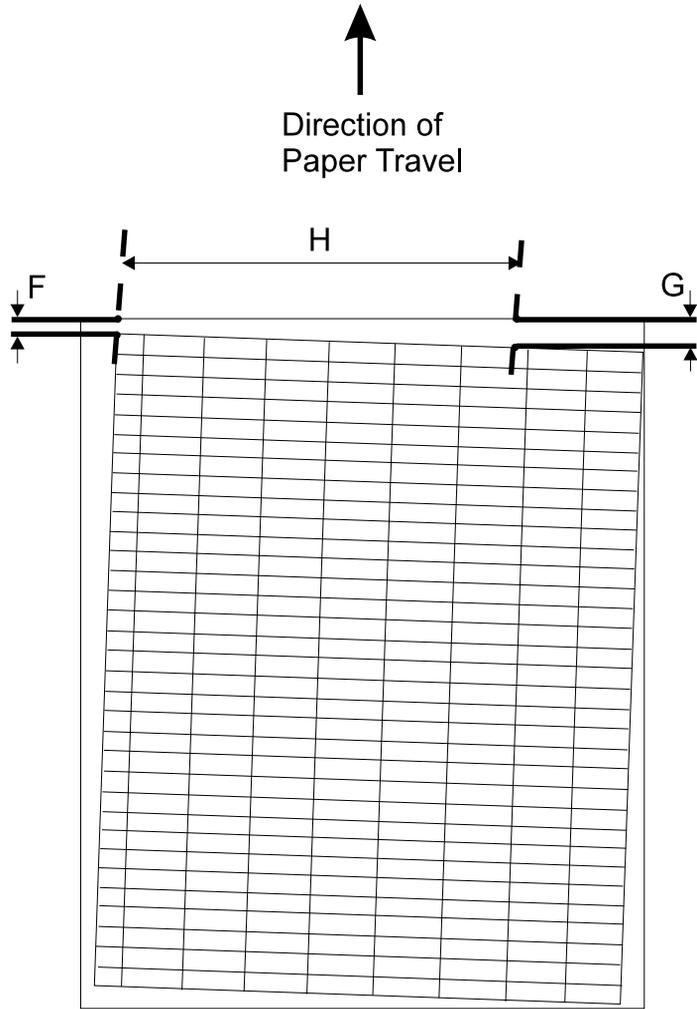
SAK6K4A

- Side Edge Registration
 $(4.0 - 2.5\text{mm}) \leq C \leq (4.0 + 2.5\text{mm})$
D = D



SAK6K5A

- Skew
 $(- 2.0\text{mm}) \leq E \leq (+ 2.0\text{mm})$
 $E = F - G$
 $H = 245\text{mm}$

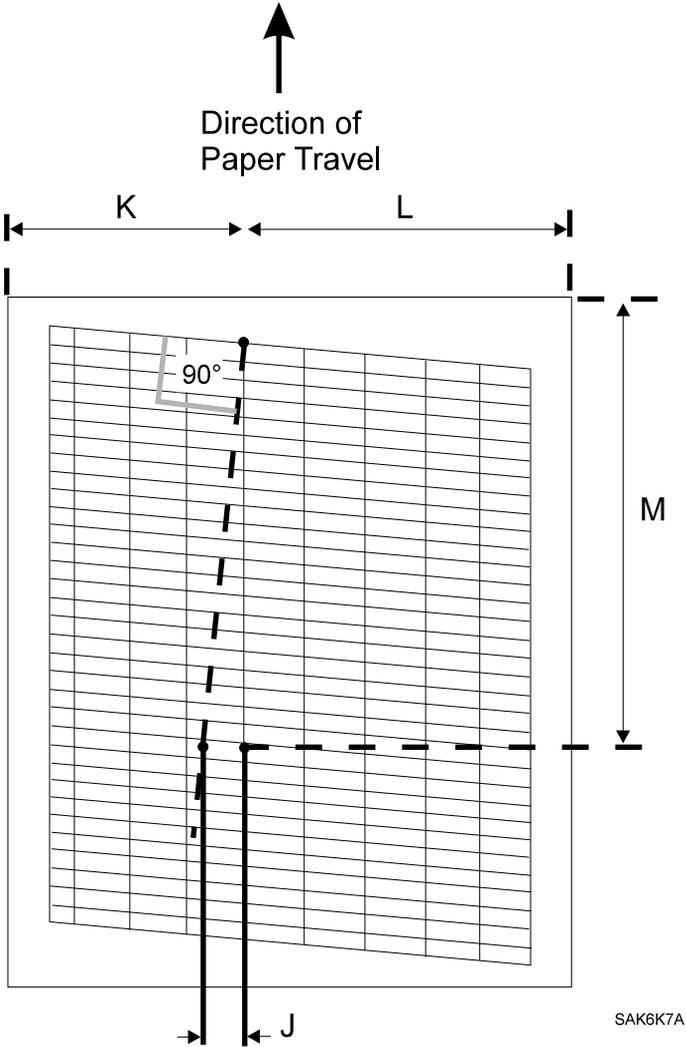


SAK6K6A

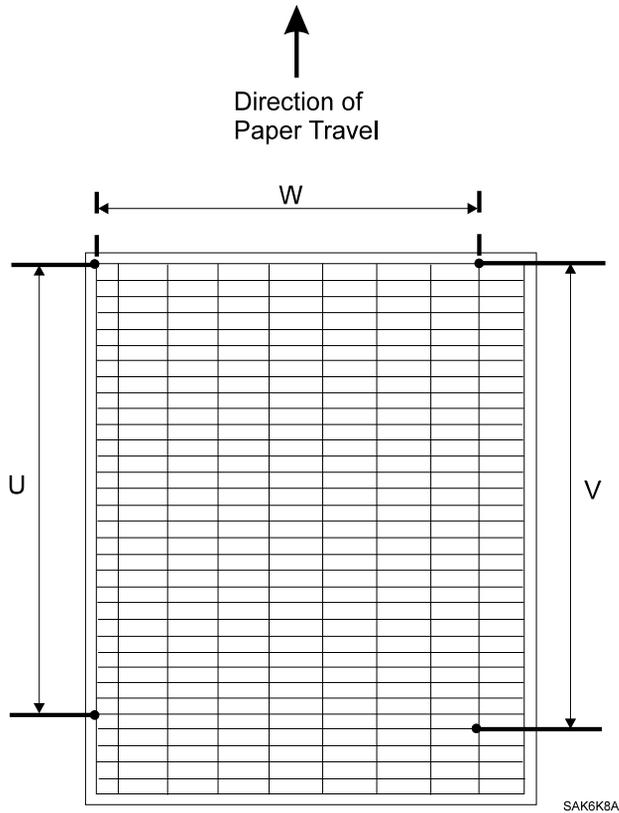
- Vertical Accuracy
 $(- 1.3\text{mm}) \leq J \leq (+ 1.3\text{mm})$

K L

M = 210mm



- Horizontal Accuracy
 $(- 2.0\text{mm}) \leq T \leq (+ 2.0\text{mm})$
 $T = U - V$
 $U \leq 390\text{mm}$
 $W \leq 245\text{mm}$



Section 7

Fault Isolation Procedures

Section Contents

1. HOW TO TROUBLESHOOT	7-1
1.1 Overview of troubleshooting process	7-1
1.2 Initial Verification	7-2
1.3 Precautions while troubleshooting	7-2
1.4 Notes on the use of FIP	7-3
2. LEVEL 1 Fault Isolation Procesures (FIP)	7-5
FIP-1.1 U6	7-6
FIP-1.2 U2	7-7
FIP-1.3 U4	7-8
FIP-1.4 UF	7-9
FIP-1.5 E5	7-10
FIP-1.6 E4 (1/2)	7-11
FIP-1.6 E4 (2/2)	7-12
FIP-1.7 E3 (1/3)	7-13
FIP-1.7 E3 (2/3)	7-14
FIP-1.7 E3 (3/3)	7-15
FIP-1.8 E2 (1/4)	7-16
FIP-1.8 E2 (2/4)	7-17
FIP-1.8 E2 (3/4)	7-18
FIP-1.8 E2 (4/4)	7-19
FIP-1.9 E1 (1/3)	7-20
FIP-1.9 E1 (2/3)	7-21
FIP-1.9 E1 (3/3)	7-22
FIP-1.10 J3.	7-23
FIP-1.11 P1.	7-24
FIP-1.12 CX	7-25
FIP-1.13 C3 (1/2).	7-26
FIP-1.13 C3 (2/2).	7-27
FIP-1.14 C5	7-28
FIP-1.15	7-29
FIP-1.16	7-30
FIP-1.17 No power.	7-31
FIP-1.18 LED malfunction.	7-32

Section 7

Fault Isolation Procedures

FIP-1.19	7-33
FIP-1.20 Erratic Printer Operation	7-34

3. LEVEL 2 Fault Isolation Procedures(FIP)

FIP-2.1 LVPS ASSEMBLY 5VDC failure.	7-35
FIP-2.2 SCANNER ASSEMBLY failure	7-36
FIP-2.3 ROS ASSEMBLY failure	7-37
FIP-2.4 HEATER ROD failure.	7-38
FIP-2.5 Thermistor failure.. . . .	7-39
FIP-2.6 EXIT SENSOR failure	7-40
FIP-2.7 REGISTRATION SENSOR failure	7-41
FIP-2.8 MSI NO PAPER SENSOR failure	7-42
FIP-2.9 CST NO PAPER SENSOR failure (1/2)	7-43
FIP-2.9 CST NO PAPER SENSOR failure (2/2)	7-44
FIP-2.10 CRU SENSOR ASSEMBLY failure	7-45
FIP-2.11 PAPER SIZE SWITCH failure.	7-46
FIP-2.12 REGISTRATION CLUTCH ASSEMBLY failure.	7-47
FIP-2.13 PICK UP SOLENOID failure	7-48
FIP-2.14 FEED SOLENOID failure	7-49
FIP-2.15 ELECTRIC CLUTCH failure	7-50
FIP-2.16 DRIVE ASSEMBLY failure (1/2)	7-51
FIP-2.16 DRIVE ASSEMBLY failure (2/2)	7-52
FIP-2.17	7-53
FIP-2.18 HVPS failure.	7-54
FIP-2.19 Noise (1/2)	7-55
FIP-2.19 Noise (2/2)	7-56

4. IMAGE QUALITY PROBLEMS.

P-1 Light prints.	7-58
P-2 Blank prints	7-59
P-3 Black prints	7-60
P-4 Vertical band deletions.	7-61
P-5 Horizontal band deletions (1/2)	7-62
P-5 Horizontal band deletions (2/2)	7-63
P-6 Vertical streaks	7-64

Section 7

Fault Isolation Procedures

P-8 Blank or faded spots	7-66
P-9 Black spots	7-67
P-10 Residual images	7-68
P-11 Dark background	7-69
P-12 Skewed image	7-70
P-13 Creased or wrinkled paper	7-71
P-14 Unfused image	7-72

5. PREVENTIVE MAINTENANCE 7-73

Note : 1. The information in this manual applies to printers meeting the standard specifications of the Fuji Xerox Corporation, and assumes normal operation of the printer controller.

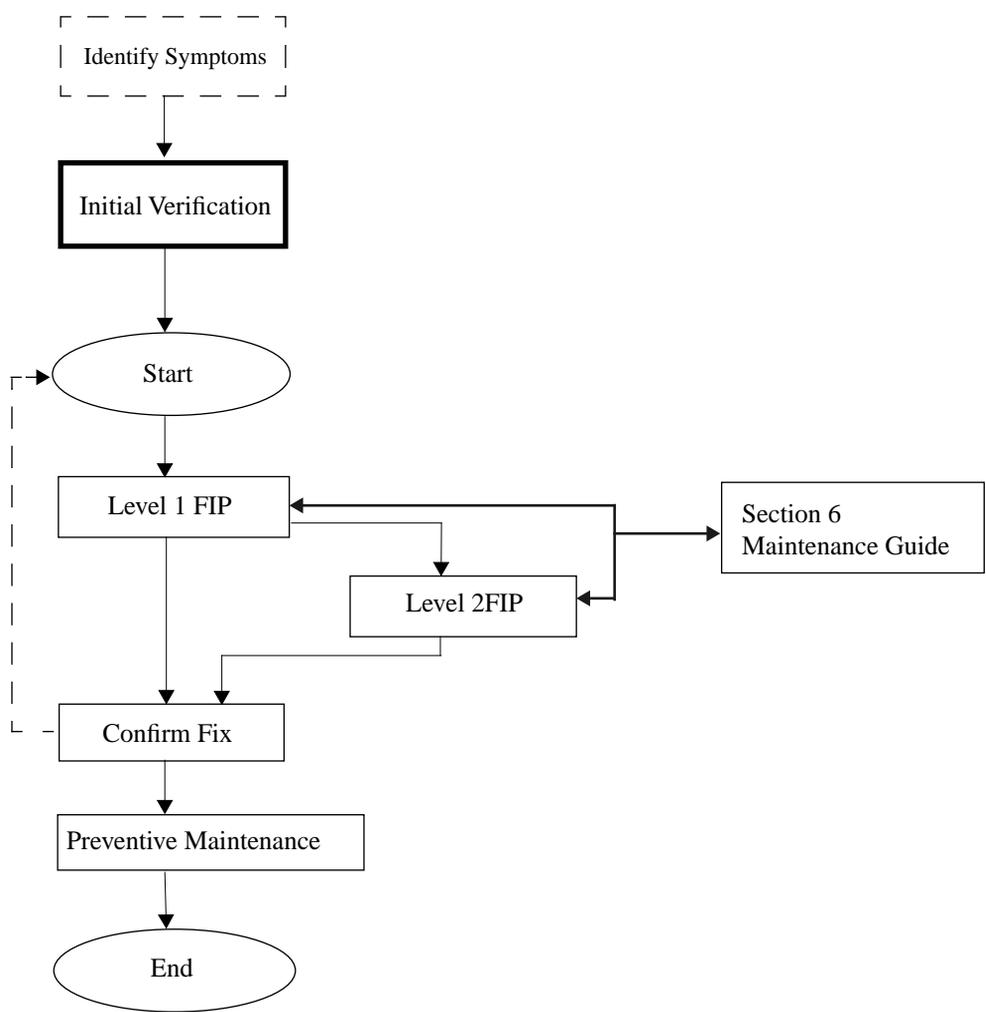
2. The troubleshooting procedures in this manual describe the operation, display, and response of the printer based on the use of the Diag Commander (diagnostic tool). However, the manual is organized to allow fault isolation in the absence of the Diag Commander. Read the directions carefully and understand the entire process before beginning troubleshoot.

1. HOW TO TROUBLESHOOT

Troubleshooting can be performed effectively by first identifying the symptom and verifying some basic items before attempting to locate the source of the problem using Fault Isolation Procedures (FIP) and the information provided in Section 6 Maintenance Guide.

1.1 Overview of troubleshooting process

Troubleshooting is performed following the flow shown below.



1.2 Initial Verification

Before starting to troubleshoot, verify the following:

- 1) The AC power supply voltage is within specified limits (measure the voltage at the wall outlet).
- 2) The power cord is neither damaged, shorted, nor cut, and the internal wires are properly connected.
- 3) The printer is properly grounded.
- 4) Avoid exposure to excessively high/low or abrupt changes in temperature and humidity.
- 5) Avoid installation near water outlets, humidifiers, heaters, sources of fire, and areas that are dusty or is exposed to air from ventilation ducts.
- 6) Avoid installation near volatile or inflammable gases.
- 7) Avoid exposure to direct sunlight.
- 8) Installation site is well ventilated.
- 9) Printer is installed on a stable, level surface.
- 10) Paper used is within specified limits (use of standard paper recommended)
- 11) Printer is not ill-handled.
- 12) Parts that need periodic replacement are replaced when the number of prints reaches the recommended level.

1.3 Precautions while troubleshooting

- 1) Always disconnect the power cord while troubleshooting unless instructed otherwise.

Caution : When the power is ON, do not touch any live electrical parts unless absolutely necessary. Be careful to avoid contact with the power supply (LVPS ASSEMBLY) area at all times, since it carries current even when the power is OFF.

- 2) When performing checks with the ELECTRIC SHIELD removed and the power ON, always disconnect Connector P/J13 from the MCU PWB unless otherwise instructed.

Caution : When performing checks with the ELECTRIC SHIELD removed and the power ON, always disconnect Connector P/J13 from the MCU PWB since high voltage may output from the HVPS. When connecting Connector P/J13 from the MCU PWB following the instructions in the FIP, never touch the HVPS or any high voltage areas.

- 3) When performing checks with the TOP COVER removed and the power ON, always disconnect Connector P/J12 from the ROS ASSEMBLY unless otherwise instructed.

Caution : When performing checks with the TOP COVER removed and the power ON, always disconnect one Connector P/J12 from the MCU PWB unless otherwise instructed since a laser beam may be emitted from the ROS ASSEMBLY.

- 4) When executing diagnostic codes 91~97, attach all covers and keep the Caution : POP UP COVER closed unless otherwise instructed.

Caution : Since high voltages are present, never touch high voltage output areas while diagnostic codes 91~97 are being executed. Strictly observe the procedures in this manual.

- 5) Take care not to get burnt when inspecting or removing hot parts.
- 6) Whenever possible, wear ground straps or use other means to discharge static electricity from the body.

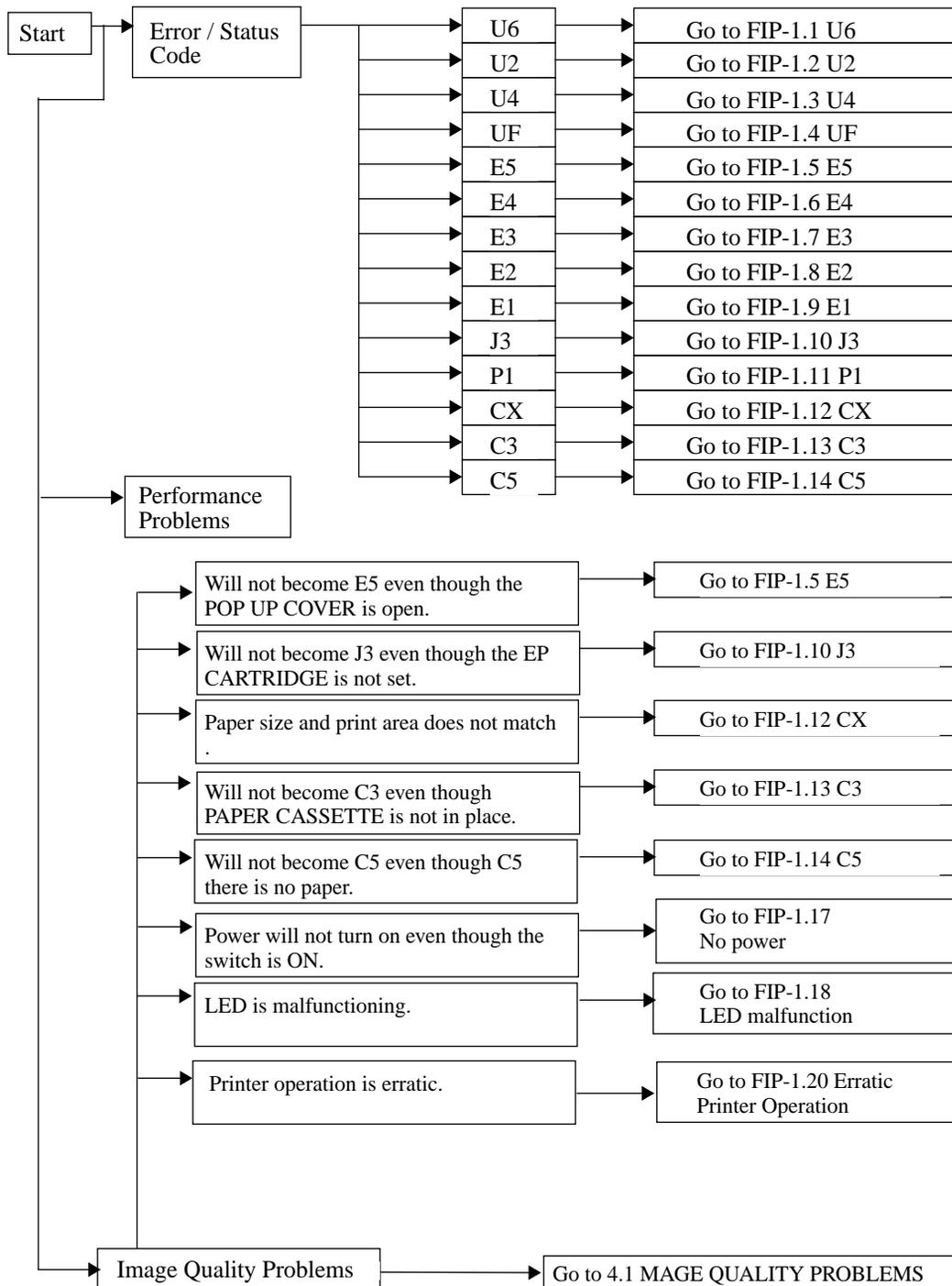
1.4 Notes on the use of FIP

- 1) The FIP assumes normal operation of the Printer Controller (ESS PWB). If a problem cannot be resolved by following the instructions described in the FIP, replace the Printer Controller. If the problems still persists, replace "major components to check" and related parts in turn.
- 2) In order to isolate faults using the FIP, a known good MCU PWB, EP cartridge, and other parts may be necessary.
- 3) In performing the initial verification step of the FIP, inspect not only the "major components to check" but also their constituent and associated components.
- 4) Always disconnect the power cord while troubleshooting unless instructed otherwise. If the cord is connected, do not touch any live electrical parts unless absolutely necessary.
- 5) Unless otherwise specified, "switching the power ON" in the FIP indicates entering Online Mode.
- 6) Notational conventions for connectors are as follows:
 - P/J12 Connector P/J12 is connected
 - P12 The plug side when Connector P/J12 is disconnected
(except when directly connected to the board)
 - J12 The jack side when Connector P/J12 is disconnected
(except when directly connected to the board)
- 7) "P/J1-2PIN ↔ P/J3-4PIN" in the FIP is measured with the positive probe of the multimeter on the 2 PIN of P/J1 and with the negative probe on the 4 PIN of P/J3.
- 8) "P/J1 ↔ P/J2" in the FIP indicates that measurements must be made between all terminals of P/J1 and P/J2, referring to the Wiring Diagrams in Section 6 Topic 5.
- 9) In measuring the voltage for "P/J1-2PIN ↔ P/J3-4PIN" in the FIP, the negative probe of the latter (P/J3-4PIN) is always a signal ground (SG) or a return (RTN). Therefore, since frame ground (FG) and signal ground (SG) are connection types, the negative probe may be connected to the pins or frame (FG) of other SG (or RTN) after verifying the continuity of FG and SG.
- 10) Make voltage measurements with the power ON, the EP cartridge and the paper cassette(s) installed, and the POP UP COVER closed (INTERLOCK SWITCH ON) unless otherwise instructed.
- 11) The values shown in the FIP are typical values only. Measured values close to these values may be considered normal.
- 12) Remove components as necessary to perform inspections or measurements as required by the FIP even though the removal of such components may not be specifically described in the FIP.
- 13) When the FIP calls for replacement of a part, that part is considered to be the cause of the problem. Confirm that the problem is fixed by replacing that part or the assembly that includes that part (HIGH Assembly).

- 14) The FIP refers to the first stage paper feeder unit as "Tray 1" and the second stage paper feeder unit as "Tray 2."
- 15) The FIP includes portions with separate instructions depending on whether or not the Diag Commander (diagnostic tool) is available. Follow the instructions specified for the appropriate case.

2. LEVEL 1 FIP

After performing Initial Verification, begin at START and follow the flow shown below to the appropriate FIP.



FIP-1.1 U6

Step	Check	Action	
		Yes	No
1	Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed? Major components to check MCU PWB	Replace or reinstall component.	Go to Step 2.
2	Does the error occur when the power is turned ON?	Tool available Go to Step 5. Tool unavailable Go to Step 8.	Go to Step 3.
3	Does the error occur when the power is turned OFF and then ON again?	Tool available Go to Step 5. Tool unavailable Go to Step 8.	Go to Step 4.
4	Does the error occur when the power is switched ON and OFF repeatedly several times?	Tool available Go to Step 5. Tool unavailable Go to Step 8.	Procedure complete.(*1)
5	Check MCU PWB Does it enter NV Set Mode?	Go to Step 6.	Replace MCU PWB.
6	Check Nonvolatile Memory Data Is the setting of each NV Code Data correct?	Go to Step 8.	Go to Step 7.
7	Check MCU PWB Does the error occur when switching the power ON again after setting the NV Code data to the correct values?	Go to Step 8.	Go to Step 4.
8	Check MCU PWB Replacement Does the error occur after replacing the MCU PWB?	Check Printer Controller.	Procedure complete.

*1 : The cause of this error is considered to be extraneous noise, but proceed to "FIP-2.19 Noise" to confirm.

Note : If U6 is still displayed after replacing the MCU PWB, proceed to "FIP-2.19 Noise" to check the cause of the problem.

FIP-1.2 U2

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed?</p> <p>Major components to check ROS ASSEMBLY, SCANNER ASSEMBLY, MCU PWB, CRU SENSOR ASSEMBLY, EP CARTRIDGE, ROS HARNESS, SOS HARNESS ASSEMBLY, CRU HARNESS, LVPS ASSEMBLY</p>	Replace or reinstall component.	<p>Tool available Go to Step 2.</p> <p>Tool unavailable Go to Step 3.</p>
2	<p>Check Nonvolatile Memory Data Is the NV Code 1 setting correct?</p>	Go to Step 3.	Set correct value for NV code 1.
3	<p>Check if engine or controller problem Is it possible to test print correctly using only the engine? (about 10 individual / consecutive prints each)</p>	Check Printer Controller. (Go to Step 4. if error occurs after replacement)	Go to Step 4.
4	<p>Check SCANNER ASSEMBLY of ROS ASSEMBLY (*1) Tool available SCANNER ASSEMBLY rotate when it enters. Test Print Mode? Tool unavailable When test printing using only the engine, does the SCANNER MOTOR in the SCANNER ASSEMBLY rotate? ★Listen for motor sounds before U2 error occurs.</p>	Go to Step 5.	Go to FIP-2.2 SCANNER ASSEMBLY failure.
5	<p>Check LD power of LD ASSEMBLY in the ROS ASSEMBLY (*2) Is P11-7PIN ↔ P11-2PIN at 5VDC?</p>	Go to FIP-2.3 ROS ASSEMBLY failure.	Go to Step 6.
6	<p>Check LD power of LD ASSEMBLY in the ROS ASSEMBLY (*2) Is P16-1PIN ↔ P/J10-4PIN at 5VDC?</p>	Go to FIP-2.10 CRU SENSOR ASSEMBLY failure.	Go to FIP-2.1 LVPS ASSEMBLY 5VDC failure.

*1 : If the sound of the SCANNER MOTOR rotation is hard to hear, remove the TOP COVER.

*2 : Perform this check with Connector P/J13 in MCU PWB disconnected and the POP UP COVER completely closed.

FIP1.3 U4

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed? Major components to check FUSER ASSEMBLY, HEATER ROD, TEMPERATURE SENSOR ASSEMBLY, MCU PWB, LVPS ASSEMBLY, LVPS HARNESS, FUSER HARNESS</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check if engine or controller problem Is it possible to test print correctly using only the engine? (about 10 individual / consecutive prints each)</p>	Check Printer Controller. (Go to Step 3. if error occurs after replacement).	Go to Step 3.
3	<p>Check thermistor in TEMPERATURE SENSOR ASSEMBLY(*1) Does this occur immediately when power is turned ON?</p>	Go to FIP-2.5 Thermistor failure.	Go to Step 4.
4	<p>Check HEATER ROD Does the HEATER ROD light when power is turned ON with the FUSER ASSEMBLY in a cooled state?</p>	Go to Step 5.	Go to FIP-2.4 Heater Rod failure.
5	Does it occur while the FUSER is warming up? (*2)	Go to FIP-2.5 Thermistor failure.	Go to Step 6.
6	Does the HEATER ROD flicker ON/OFF after the FUSER is warmed up? (*2)	Go to FIP-2.5 Thermistor failure.	Go to Step 7.
7	<p>Check LVPS HARNESS Is there proper continuity between J10 ↔ J101?</p>	Go to Step 8.	Replace LVPS HARNESS.
8	<p>Check LVPS ASSEMBLY Is J10-5PIN ↔ J10-4PIN at 4.4VDC?</p>	Go to Step 9.	Replace LVPS ASSEMBLY.
9	<p>Check HEATER ROD ON signal(*2, *3) Is P/J10-5PIN ↔ P/J10-4PIN at 0VDC during FUSER warm-up, then go from 0VDC to 4.4VDC when the FUSER completes warm-up?</p>	Replace LVPS ASSEMBLY.	Replace MCU PWB.

*1 : FUSER warm-up may occur momentarily, but this case will also be considered to have occurred immediately.

*2 : Verify FUSER warm-up by checking the ON/OFF of the HEATER ROD and the movement of the MAIN MOTOR.

*3 : Perform check with Connector P/J112 of the ROS ASSEMBLY and Connector P/J13 of the MCU PWB disconnected.

FIP-1.4 UF

Step	Check	Action	
		Yes	No
1	<p>Initial Analysis Are there any components that are incompatible, incorrectly installed, damaged, or deformed?</p> <p>Major components to check FAN, LVPS ASSEMBLY, MCU PWB, LVPS HARNESS</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check FAN (*1) Does the fan rotate after the power is turned ON?</p>	Go to Step 3.	Go to Step 6.
3	<p>Check FAN ALARM signal (*1) Is P/J101-6PIN↔P/J101-8PIN stable at 0.4VDC?</p>	Go to Step 4.	Go to Step 5.
4	<p>Check LVPS HARNESS Is there continuity between J10 ↔ J101?</p>	Replace MCU PWB.	Replace LVPS HARNESS.
5	<p>Check FAN RTN signal (*2) Is P/J102-2PIN↔P/J101-8PIN stable at 0.4VDC?</p>	Replace LVPS ASSEMBLY.	Replace FAN.
6	<p>Check FAN power (*2) Is J102-1PIN↔P/J101-8PIN at 24VDC?</p>	Go to Step 7.	Replace LVPS ASSEMBLY.
7	<p>Check LVPS ASSEMBLY Is there continuity at J102-2PIN↔J101-8PIN?</p>	Replace FAN.	Replace LVPS ASSEMBLY.

*1 : FAN has two speeds of rotation (low and high) but normally rotates in low speed mode when power is turned ON.

*2 : Verify using Online Mode with the POP UP ASSEMBLY and EP Cartridge removed.

FIP-1.5 E5

Step	Check	Action	
		Yes	No
1	<p>Initial Analysis Are there any components that are incompatible, incorrectly installed, damaged, or deformed?</p> <p>Major components to check MCU PWB, LVPS ASSEMBLY, INTERLOCK SWITCH, POP UP ASSEMBLY, LVPS HARNESS</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check if engine or controller problem Is it possible to test print correctly using only the engine? (about 10 individual / consecutive prints each)</p>	Check Printer Controller. (Go to Step 3. if error occurs after replacement.)	Go to Step 3.
3	<p>Check depression of INTERLOCK SWITCH Does the INTERLOCK SWITCH turn ON when the POP UP ASSEMBLY is closed, and OFF when the POP UP ASSEMBLY is open?</p>	<p>Tool available Go to Step 4.</p> <p>Tool unavailable Go to Step 5.</p>	Replace obstructing components.
4	<p>Check INTERLOCK SWITCH Does the INTERLOCK SWITCH MCU PWB function properly? ★ Verify with Diagnostic Code 02.</p>	Replace MCU PWB.	Go to Step 5.
5	<p>Check INTERLOCK SWITCH Does J103-1PIN↔J103-2PIN have continuity when the INTERLOCK SWITCH is ON and have no continuity when it is OFF?</p>	Go to Step 6.	Replace INTERLOCK SWITCH.
6	<p>Check LVPS HARNESS Is there continuity between J10 ↔ J101?</p>	Go to Step 7.	Replace LVPS HARNESS.
7	<p>Check INTERLOCK SWITCH(*1) Is P/J10-1PIN↔P/J10-2PIN at 24VDC with the INTERLOCK SWITCH ON and at 0VDC with the INTERLOCK SWITCH OFF?</p>	Replace MCU PWB.	Replace LVPS ASSEMBLY.

*1 : Perform check with Connector P/J112 of the ROS ASSEMBLY and Connector P/J13 of the MCU PWB disconnected.

FIP-1.6 E4 (1/2)

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed, or have any foreign objects stuck to it?</p> <p>Major components to check FUSER ASSEMBLY, EXIT SENSOR, EXIT ACTUATOR, MCU PWB, PAPER CASSETTE, FEEDER UNIT, LVPS ASSEMBLY, EXIT HARNESS, FUSER HARNESS</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check if engine or controller problem Is it possible to test print correctly using only the engine? (about 10 individual / consecutive prints each)</p>	Check Printer Controller. (Go to Step 3. if error occurs after replacement.)	Go to Step 3.
3	Does the error occur immediately when the power is turned ON?	Go to Step 4.	Go to Step 5.
4	Is there any paper in the EXIT ACTUATOR?	Remove the Paper.	Go to Step 11.
5	<p>Check rotation of EXIT ROLL ASSEMBLY Does the EXIT ROLL ASSEMBLY of the FUSER ASSEMBLY and the PINCH ROLL of the FUSER TOP COVER ASSEMBLY rotate properly? ★Turn power ON and inspect visually during warm-up.</p>	Go to Step 6.	Replace FUSER ASSEMBLY.
6	<p>Check paper entry into EXIT ROLL Does the paper enter properly between the EXIT ROLL ASSEMBLY of the FUSER ASSEMBLY and the PINCH ROLL of the FUSER TOP COVER ASSEMBLY? ★Execute test print and inspect visually.</p>	Go to Step 7.	Replace FUSER ASSEMBLY.
7	Is the paper fed from the front tray?	Go to Step 8.	Go to Step 9.

FIP-1.6 E4 (2/2)

Step	Check	Action	
		Yes	No
8	Check paper size (*1) Does the paper size set by the Controller or the size specified in the "Front Tray Paper Size Setting" match the size of paper loaded into the Front Tray?	Go to Step 11.	Match size setting with actual size of paper.
9	Check paper size (*1) (*2) Does the paper size specified by the SIZE HANDLE of the FEEDER UNIT match the size of paper loaded into the PAPER CASSETTE?	Go to Step 10.	Match size setting with actual size of paper.
10	Check paper size (*1) (*2) Does the paper size specified by the SIZE HANDLE of the FEEDER UNIT match the data for PAPER SIZE SWITCH of Diagnostic Code 04?	Go to Step 11.	Go to FIP-2.11 PAPER SIZE SWITCH failure.
11	Check EXIT ACTUATOR In a smooth motion, does the EXIT ACTUATOR retract from the sensing portion of the EXIT SENSOR when there is paper, and block that portion when there is no paper?	Tool available Go to Step 12. Tool unavailable Go to FIP-2.6 EXIT SENSOR failure.	Replace FUSER ASSEMBLY or EXIT ACTUATOR.
12	Check EXIT SENSOR Does the EXIT SENSOR function properly? ★ Verify with Diagnostic Code 02.	Replace MCU PWB.	Go to FIP-2.6 EXIT SENSOR failure.

*1 : An E4 error can occur when paper is fed whose length in the direction of paper transport is longer than the size set for the printer.

*2 : Applies to both Tray 1 and Tray 2. Verify as necessary.

FIP-1.7 E3 (1/3)

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed, or have any foreign objects stuck to it?</p> <p>Major components to check FUSER ASSEMBLY, EXIT SENSOR, EXIT ACTUATOR, MCU PWB, DRIVE ASSEMBLY, REGISTRATION CLUTCH ASSEMBLY, TRANSPORT CHUTE ASSEMBLY, BTR ASSEMBLY, EP CARTRIDGE, REAR FRAME ASSEMBLY, LVPS ASSEMBLY, EXIT HARNESS, FUSER HARNESS, P/H HARNESS</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check if engine or controller problem Is it possible to test print correctly using only the engine? (about 10 individual / consecutive prints each)</p>	Check Printer Controller. (Go to Step 3. if error occurs after replacement.)	Go to Step 3.
3	Is warped paper being used?	Use paper that is not warped.	Go to Step 4.
4	Is there paper covering the EXIT ACTUATOR when the error occurs?	Go to Step 15.	Go to Step 5.
5	<p>Check paper size (*1) Does the paper conform to the specified paper sizes?</p>	Go to Step 6.	Use paper conforming to specifications.
6	<p>Check DRIVE ASSEMBLY Does each gear of the DRIVE ASSEMBLY driving the REGISTRATION CLUTCH ASSEMBLY, EP CARTRIDGE, and H/R IDLER GEAR of the FUSER ASSEMBLY rotate properly? ★ With the FUSER ASSEMBLY and the EP CARTRIDGE removed, rotate backwards the gears located behind the top of the DRIVE ASSEMBLY by hand and inspect visually.</p>	Go to Step 7.	Replace DRIVE ASSEMBLY.

*1 : Paper not conforming to specifications whose length in the direction of paper transport is less than 90mm will become jammed since the rolls will not be able to apply transport motion.

FIP-1.7 E3 (2/3)

Step	Check	Action	
		Yes	No
7	<p>Check REGISTRATION ROLL Do RUBBER REGISTRATION ROLL and METAL REGISTRATION ROLL rotate properly? ★With the POP UP COVER open and the EP CARTRIDGE removed, rotate the REGISTRATION ROLL by hand and verify.</p>	Go to Step 8.	Replace TRANSPORT CHUTE ASSEMBLY.
8	<p>Check REGISTRATION CLUTCH ASSEMBLY (*2) Tool available Does the REGISTRATION CLUTCH ASSEMBLY function properly? ★With the POP UP COVER open and the EP CARTRIDGE removed, turn INTERLOCK SWITCH ON and inspect visually while executing Diagnostic Code 82. Tool unavailable Has the tip of the paper passed the REGISTRATION ROLL at the time of error? ★Check if the REGISTRATION CLUTCH ASSEMBLY functioned properly by inspecting where the paper stopped.</p>	Go to Step 9.	Go to FIP-2.12 REGISTRATION CLUTCH ASSEMBLY failure.
9	<p>Check TRANSPORT CHUTE ASSEMBLY Does the TRANSPORT CHUTE ASSEMBLY press the BTR ASSEMBLY against the drum evenly? ★With the FUSER ASSEMBLY removed place the EP CARTRIDGE and verify by placing a sheet of paper between the BTR ASSEMBLY and the drum.</p>	Go to Step 10.	Replace TRANSPORT CHUTE ASSEMBLY.
10	<p>Check rotation of BTR drum At the time of error, has the tip of the paper passed the location where the BTR and the drum touches? ★Check if the BTR and drum rotate properly by inspecting the location where the paper stops.</p>	Go to Step 11.	Replace BTR ASSEMBLY, EP CARTRIDGE, or TRANSPORT CHUTE ASSEMBLY.

*2 : Observe caution when inspecting not to touch any high voltage areas or the drive mechanism.

FIP-1.7 E3 (3/3)

Step	Check	Action	
		Yes	No
11	<p>Check DETACK SAW on TRANSPORT CHUTE ASSEMBLY Is the DETACK SAW of the TRANSPORT CHUTE ASSEMBLY dirty, covered with dust, or deformed?</p>	Replace TRANSPORT CHUTE ASSEMBLY	Go to Step 12.
12	<p>Check rotation of HEAT ROLL/PRESSURE ROLL Do the HEAT ROLL and PRESSURE ROLL of the FUSE ASSEMBLY rotate properly? ★With the FUSER ASSEMBLY removed, rotate the H/R IDLER GEAR by hand and inspect visually.</p>	Go to Step 13.	Replace FUSER ASSEMBLY.
13	<p>Check gear release mechanism of the DRIVE ASSEMBLY With the POP UP COVER pushing the PUSH LEVER in place and the PUSH LEVER pushing the DRIVE ASSEMBLY plate, is the gear raised? ★With the FUSER ASSEMBLY and EP CARTRIDGE removed, and the REAR FRAME ASSEMBLY and POP UP ASSEMBLY in place, inspect visually while closing.</p>	Go to Step 14.	Replace DRIVE ASSEMBLY or faulty component
14	<p>Check paper entry into EXIT ROLL Does the paper enter between the EXIT ROLL ASSEMBLY of the FUSER ASSEMBLY and the pinch roll of the FUSER TOP COVER ASSEMBLY properly?</p>	Go to Step 15.	Replace FUSER ASSEMBLY.
15	<p>Check EXIT ACTUATOR In a smooth motion, does the EXIT ACTUATOR retract from the sensing portion of the EXIT SENSOR when there is paper, and block that portion when there is no paper?</p>	<p>Tool available Go to Step 1.6 Tool unavailable Go to FIP-2.6 EXIT SENSOR Failure.</p>	Replace FUSER ASSEMBLY or EXIT ACTUATOR.
16	<p>Check EXIT SENSOR Does the EXIT SENSOR function properly? ★Verify with Diagnostic Code 02.</p>	Replace MCU PWB.	Go to FIP-2.6 EXIT SENSOR Failure.

FIP-1.8 E2 (1/4)

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed, or have any foreign objects stuck to it?</p> <p>Major components to check TRANSPORT CHUTE ASSEMBLY, REGISTRATION SENSOR, REGISTRATION ACTUATOR, MSI NO PAPER SENSOR, MSI N/P ACTUATOR, MSI CHUTE ASSEMBLY, PICK UP SOLENOID, PICK UP ROLL, RETARD PAD ASSEMBLY, FRONT BOTTOM TRAY, FEEDER UNIT, CST NO PAPER SENSOR, FEED SOLENOID, ELECTRIC CLUTCH FEED ROLL, TURN ROLL ASSEMBLY, FEEDER PWB OUTER CHUTE ASSEMBLY, PAPER CASSETTE, DRIVE ASSEMBLY, MCU PWB, LVPS ASSEMBLY, P/H HARNESS, TRAY HARNESS, LVPS HARNESS</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check if engine or controller problem Is it possible to test print correctly using only the engine? (about 10 individual / consecutive prints each)</p>	Check Printer Controller. (Go to Step 3. if error occurs after replacement)	Go to Step 3.
3	Is warped paper being used?	Use paper that is no warped.	Go to Step 4.
4	<p>Check paper size Does the paper size being used conform to specifications?</p>	Go to Step 5.	Use paper conforming to Specifications.
5	Does not C5 error (out of paper) occur even though there is no paper?	Go to FIP-1.14 C5.	Go to Step 6.
6	<p>Check MAIN MOTOR Does the MAIN MOTOR rotate properly? ★ Verify by listening to the sound of rotation or by the rotation of the EXIT ROLL ASSEMBLY while warming up after power is turned ON.</p>	Go to Step 7.	Go to FIP-2.16 DRIVE ASSEMBLY failure.

FIP-1.8 E2 (2/4)

Step	Check	Action	
		Yes	No
7	<p>Check DRIVE ASSEMBLY Does each gear in the DRIVE ASSEMBLY rotate properly? ★ With the FUSER ASSEMBLY and the EP CARTRIDGE removed, rotate the gears located behind the top of the DRIVE ASSEMBLY by hand and inspect visually.</p>	Go to Step 8.	Replace DRIVE ASSEMBLY.
8	Is paper fed from the front tray?	Go to Step 9.	Go to Step 13.
9	<p>Check PICK UP ROLL/ RETARD PAD ASSEMBLY Does the paper get fed properly during printing? (Are there any slippage between the paper and the PICK UP ROLL?) ★ While test printing, visually inspect from the front tray area.</p>	Go to Step 21.	Go to Step 10.
10	<p>Check FRONT BOTTOM TRAY Does the FRONT BOTTOM TRAY lift up properly during printing? ★ While test printing, visually inspect from the front tray area</p>	Go to Step 11.	Replace faulty part.
11	<p>Check MSI CHUTE ASSEMBLY Do the PICK UP ROLL and PICK UP CAM of the MSI CHUTE ASSEMBLY rotate once properly? ★ While test printing, visually inspect from the front tray area.</p>	Replace or clean the PICK UP ROLL or RETARD PAD ASSEMBLY.	Go to Step 12.
12	<p>Check PICK UP SOLENOID Does the PICK UP SOLENOID function properly? ★ While test printing, visually inspect the PICK UP SOLENOID which is barely visible from the front tray area</p>	Replace MSI CHUTE ASSEMBLY.	Go to FIP-2.13 PICK UP SOLENOID failure.
13	<p>Check FEED ROLL (*1) Does the paper get fed properly during printing? (Is there any slippage between the paper and the FEED ROLL?) ★ With the CASSETTE COVER removed, execute a test print and visually inspect the PAPER CASSETTE.</p>	Go to Step 17.	Go to Step 14.

*1 : Applies to both Tray 1 and Tray 2. Verify as needed.

FIP-1.8 E2 (3/4)

Step	Check	Action	
		Yes	No
14	<p>Check PAPER CASSETTE (*1) Is the BOTTOM PLATE ASSEMBLY properly lifted when the PAPER CASSETTE is removed?</p>	Go to Step 15.	Replace PAPER CASSETTE.
15	<p>Check rotation of FEED ROLL(*1) Does the FEED ROLL rotate once properly? ★ With the PAPER CASSETTE removed, execute a test print with the CASSETTE SENSOR ON (PAPER CASSETTE present) and visually inspect from the PAPER CASSETTE area.</p>	Replace FEED ROLL or PAPER CASSETTE.	Go to Step 16.
16	<p>Check FEED SOLENOID (*1) Tool available Does the FEED SOLENOID function properly? ★ Verify with Diagnostic Code 81 or 86. Tool unavailable Is it possible to verify the sound of proper movement of the FEED SOLENOID? ★ While test printing, verify from the left side of the FEEDER UNIT.</p>	Replace component obstructing rotation of FEED ROLL or the FEEDER UNIT	Go to FIP-2.14 FEED SOLENOID failure.
17	<p>Check TURN ROLL ASSEMBLY Does the paper get transported properly by the TURN ROLL ASSEMBLY? (Is there any slippage between the paper and the TURN ROLL?) ★ With the CASSETTE COVER removed, execute a test print and visually inspect from the PAPER CASSETTE area.</p>	Go to Step 21.	Go to Step 18.
18	<p>Check OUTER CHUTE ASSEMBLY(*1) Does the pinch roll of the OUTER CHUTE ASSEMBLY contact the TURN ROLL and rotate smoothly?</p>	Go to Step 19.	Replace OUTER CHUTE ASSEMBLY.

*1 : Applies to both Tray 1 and Tray 2. Verify as needed.

FIP-1.8 E2 (4/4)

Step	Check	Action	
		Yes	No
19	<p>Check rotation of TURN ROLL ASSEMBLY (*1) Does the TURN ROLL ASSEMBLY rotate properly? ★ With the PAPER CASSETTE removed, execute a test print with the CASSETTE SENSOR ON (PAPER CASSETTE present) and visually inspect from the PAPER CASSETTE attachment area.</p>	Replace TURN ROLL ASSEMBLY.	Go to Step 20.
20	<p>Check ELECTRIC CLUTCH (*1) Tool available Does the ELECTRIC CLUTCH function properly? ★ Verify with Diagnostic Code 84. Tool unavailable Is there a problem inside the FEEDER UNIT in the driving power transmission path to the ELECTRIC CLUTCH? ★ Using the FEEDER UNIT by itself, inspect by rotating the gears manually.</p>	Replace component obstructing rotation of TURN ROLL ASSEMBLY or the FEEDER UNIT.	Go to FIP-2.15 ELECTRIC CLUTCH failure.
21	<p>Check REGISTRATION ACTUATOR In a smooth motion, does the REGISTRATION ACTUATOR retract from the sensing portion of the REGISTRATION SENSOR when there is paper, and block that portion when there is no paper?</p>	<p>Tool available Go to Step 2.2 Tool unavailable Go to FIP-2.7 REGISTRATION SENSOR failure.</p>	Replace TRANSPORT CHUTE ASSEMBLY.
22	<p>Check REGISTRATION SENSOR Does the REGISTRATION SENSOR function properly? ★ Verify with Diagnostic Code 02.</p>	Replace MCU PWB.	Go to FIP-2.7 REGISTRATION SENSOR failure.

*1 : Applies to both Tray 1 and Tray 2. Verify as needed.

FIP-1.9 E1 (1/3)

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed, or have any foreign objects stuck to it?</p> <p>Major components to check TRANSPORT CHUTE ASSEMBLY, REGISTRATION SENSOR, REGISTRATION ACTUATOR, MSI CHUTE ASSEMBLY, PICK UP SOLENOID, PICK UP ROLL, RETARD PAD ASSEMBLY, FEEDER UNIT, FEED SOLENOID, FEED ROLL, TURN ROLL ASSEMBLY, FEEDER PWB, PAPER CASSETTE, DRIVE ASSEMBLY, MCU PWB, LVPS ASSEMBLY, P/H HARNESS, TRAY HARNESS</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check if engine or controller problem Is it possible to test print correctly using only the engine? (about 10 individual / consecutive prints each)</p>	Check Printer Controller. (Go to Step 3. if error occurs after replacement.)	Go to Step 3.
3	<p>Check paper size Does the paper size being used conform to specifications?</p>	Go to Step 4.	Use paper conforming to Specifications.
4	Does the error occur immediately after power is turned ON?	Go to Step 5.	Go to Step 6.
5	Is there paper around the REGISTRATION ACTUATOR?	Remove the Paper.	Go to Step 15.
6	<p>Check MAIN MOTOR Does the MAIN MOTOR rotate properly? ★ Verify by listening to the sound of rotation or by the rotation of the EXIT ROLL ASSEMBLY while warming up after power is turned ON.</p>	Go to Step 7.	Go to FIP-2.16 DRIVE ASSEMBLY failure.
7	Is paper fed from the front tray?	Go to Step 8.	Go to Step 11.
8	<p>Check paper size (*1) Does the paper size set by the Controller or the size specified in the "Front Tray Paper Size Setting" match the size of paper loaded into the Front Tray?</p>	Go to Step 9.	Match size setting with actual size of paper.

*1 : An E4 error may occur if the length of the paper in the direction of paper transport is longer than the set paper size.

FIP-1.9 E1 (2/3)

Step	Check	Action	
		Yes	No
9	<p>Check MSI CHUTE ASSEMBLY Do the PICK UP ROLL and PICK UP CAM of the MSI CHUTE ASSEMBLY rotate only while printing? ★ While test printing, visually inspect from the front tray area.</p>	Go to Step 15.	Go to Step 10.
10	<p>Check PICK UP SOLENOID Does the PICK UP SOLENOID function properly? ★ While test printing, visually inspect the PICK UP SOLENOID which is barely visible from the front tray.</p>	Replace MSI CHUTE ASSEMBLY.	Go to FIP-2.13 PICK UP SOLENOID failure.
11	<p>Check paper size (*1) (*2) Does the paper size specified by the SIZE HANDLE of the FEEDER UNIT match the size of paper loaded into the PAPER CASSETTE?</p>	Go to Step 12.	Match size setting with actual size of paper
12	<p>Check paper size (*1) (*2) Does the paper size specified by the SIZE HANDLE of the FEEDER UNIT match the data for PAPER SIZE SWITCH of Diagnostic Code 04?</p>	Go to Step 13.	Go to FIP-2.11 PAPER SIZE SWITCH failure.
13	<p>Check rotation of FEED ROLL Does the FEED ROLL rotate only while printing? ★ With the PAPER CASSETTE removed, execute a test print with the CASSETTE SENSOR ON (PAPER CASSETTE present) and visually inspect from the PAPER CASSETTE attachment area.</p>	Go to Step 15.	Go to Step 14.
14	<p>Check FEED SOLENOID (*1) Tool available Does the FEED SOLENOID function properly?★ Verify with Diagnostic Code 81 or 86. Tool unavailables it possible to verify the sound of proper movement of the FEED SOLENOID? ★ While test printing, verify from the left side of the FEEDER UNIT.</p>	Replace component obstructing rotation of FEED ROLL or the FEEDER UNIT.	Go to FIP-2.14 FEED SOLENOID failure.

*1 : An E4 error can occur when paper is fed whose length in the direction of paper transport is longer than the size set for the printer.

*2 : Applies to both Tray 1 and Tray 2. Verify as necessary.

FIP-1.9 E1 (3/3)

Step	Check	Action	
		Yes	No
15	Check REGISTRATION ACTUATOR In a smooth motion, does the REGISTRATION ACTUATOR retract from the sensing portion of the REGISTRATION SENSOR when there is paper, and block that portion when there is no paper?	Tool available Go to Step 16 Tool unavailable Go to FIP-2.7 REGISTRATION SENSOR failure	Replace TRANSPORT CHUTE ASSEMBLY
16	Check REGISTRATION SENSOR Does the REGISTRATION SENSOR function properly? ★ Verify with Diagnostic Code 02.	Replace MCU PWB.	Go to FIP-2.7 REGISTRATION SENSOR failure.

FIP-1.10 J3

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed?</p> <p>Major components to check CRU SENSOR ASSEMBLY, MCU PWB, EP CARTRIDGE, CRU HARNESS, LVPS ASSEMBLY.</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check if engine or controller problems it possible to test print correctly using only the engine? (about 10 individual / consecutive prints each)</p>	<p>Check Printer Controller. (Go to FIP-2.10 CRU SENSOR ASSEMBLY failure, if error occurs after replacement.)</p>	<p>Tool available Go to Step 3.</p> <p>Tool unavailable Go to FIP-2.10 CRU SENSOR ASSEMBLY failure.</p>
3	<p>Check CRU SENSOR ASSEMBLY Does the CRU SWITCH of the CRU SENSOR ASSEMBLY function properly?</p>	Replace MCU PWB.	Go to FIP-2.10 CRU SENSOR ASSEMBLY failure.

FIP-1.11 P1

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed?</p> <p>Major components to check MCU PWB</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check Printer Controller With the Printer Controller removed, does the engine warm up properly when the power is turned ON?</p>	Check Printer Controller. (Check host side if error occurs after replacement.)	Replace MCU PWB.

FIP-1.12 CX

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, deformed, or have any foreign objects stuck to it?</p> <p>Major components to check TRANSPORT CHUTE ASSEMBLY, REGISTRATION SENSOR, REGISTRATION ACTUATOR, FEEDER UNIT, FEEDER PWB, MCU PWB, P/H HARNESS, TRAY HARNESS</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check if engine or controller problem Is it possible to test print correctly using only the engine? (about 10 individual / consecutive prints each)</p>	Check Printer Controller. (Go to Step 3. if error occurs after replacement.)	Go to Step 3.
3	<p>Check paper size Does the paper size conform to specifications?</p>	Go to Step 4.	Use paper conforming to specifications.
4	Is the paper fed from the front tray?	Go to Step 5.	Go to Step 6.
5	<p>Check paper size Does the paper size set by the Controller or the size specified in the "Front Tray Paper Size Setting" match the size of paper loaded into the Front Tray?</p>	Go to Step 8.	Match size setting with actual size of paper.
6	<p>Check paper size (*1) Does the paper size specified by the SIZE HANDLE of the FEEDER UNIT match the size of paper loaded into the PAPER CASSETTE?</p>	Go to Step 7.	Match size setting with actual size of paper.
7	<p>Check paper size (*1) Does the paper size specified by the SIZE HANDLE of the FEEDER UNIT match the data for PAPER SIZE SWITCH of Diagnostic Code 04?</p>	Go to Step 8.	Go to FIP2.11 PAPER SIZE SWITCH failure.
8	<p>Check REGISTRATION ACTUATOR In a smooth motion, does the REGISTRATION ACTUATOR retract from the sensing portion of the REGISTRATION SENSOR when there is paper, and block that portion when there is no paper?</p>	<p>Tool available Go to Step 9.</p> <p>Tool unavailable Go to FIP-2.7 REGISTRATION SENSOR failure.</p>	Replace TRANSPORT CHUTE ASSEMBLY.
9	<p>Check REGISTRATION SENSOR Does the REGISTRATION SENSOR function properly? ★Verify with Diagnostic Code 02.</p>	Replace MCU PWB.	Go to FIP-2.7 REGISTRATION SENSOR failure.

*1 : Applies to both Tray 1 and Tray 2. Verify as necessary.

FIP-1.13 C3 (1/2)

Step	Check	Action	
		Yes	No
1	<p>Initial Check</p> <p>Are there any components that are incompatible, incorrectly installed, damaged, deformed, or have any foreign objects stuck to it?</p> <p>Major components to check</p> <p>CASSETTE SENSOR, FEEDER PWB, FEEDER UNIT, PAPER CASSETTE, MCU PWB, CASSETTE HARNESS, TRAY HARNESS, TRAY UPPER HARNESS, TRAY LOWER HARNESS</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check if engine or controller problem</p> <p>Is it possible to test print correctly using only the engine? (about 10 individual / consecutive prints each)</p>	Check Printer Controller. (Go to Step 3. if error occurs after replacement.)	Go to Step 3.
3	<p>Check PAPER CASSETTE (*1)</p> <p>Does the PAPER CASSETTE depress the CASSETTE SENSOR's actuator?</p>	<p>Tool available</p> <p>Go to Step 4.</p> <p>Tool unavailable</p> <p>Go to Step 5.</p>	Replace PAPER CASSETTE.
4	<p>Check CASSETTE SENSOR</p> <p>Does the CASSETTE SENSOR function properly? ★ Verify with Diagnostic Code 02.</p>	Replace MCU PWB.	Go to Step 5.
5	<p>Check CASSETTE/SIZE signal(*1)</p> <p>Is the voltage of P/J17-2PIN[1PIN] ↔ P/J17-3PIN at 4.8VDC with the PAPER CASSETTE removed, and at the level specified by the SIZE HANDLE for the corresponding paper size with the PAPER CASSETTE in place? ★ Refer to Section 6 Maintenance Guide for the voltage levels that correspond to each paper size.</p>	Replace MCU PWB.	Go to Step 6.
6	<p>Check CASSETTE SENSOR(*1)</p> <p>Is there continuity at J175-7PIN ↔ J175-6PIN with the PAPER CASSETTE removed, and no continuity when the PAPER CASSETTE is in place? ★ Verify with the FEEDER UNIT removed and with P/J175 disconnected.</p>	Go to Step 8.	Go to Step 7.

*1 : Applies to both Tray 1 and Tray 2. Verify as necessary. In cases where a distinction is made between Tray 1 and Tray 2, the content related to Tray 2 is enclosed in "[]".

FIP-1.13 C3 (2/2)

Step	Check	Action	
		Yes	No
7	Check CASSETTE HARNESS(*1) Is there proper continuity at J175 ↔ J272?	Replace CASSETTE SENSOR.	Replace CASSETTE HARNESS.
8	Check TRAY HARNESS (*1) Is there proper continuity at J17 ↔ H171>	Go to Step 9.	Replace TRAY HARNESS.
9	Check TRAY UPPER HARNESS (*1) Is there proper continuity at P171 ↔ J173?	Go to Step 10.	Replace TRAY UPPER HARNESS
10	Check TRAY LOWER HARNESS (*1) Is there proper continuity at P174 ↔ J171?	Replace FEEDER PWB	Replace TRAY LOWER HARNESS

***1** : Applies to both Tray 1 and Tray 2. Verify as necessary. In cases where a distinction is made between Tray 1 and Tray 2, the content related to Tray 2 is enclosed in "[]".

FIP-1.14 C5

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, deformed, or have any foreign objects stuck to it?</p> <p>Major components to check MSI NO PAPER SENSOR, MSI N/P ACTUATOR, FEEDER UNIT, CST NO PAPER SENSOR, FEEDER PWB, MCU PWB, LVPS ASSEMBLY, P/H HARNESS, TRAY HARNESS, LVPS HARNESS, TRAY UPPER HARNESS, TRAY LOWER HARNESS</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check if engine or controller problem Is it possible to test print correctly using only the engine? (about 10 individual / consecutive prints each)</p>	Check Printer Controller. (Go to Step 3. if error occurs after replacement.)	Go to Step 3.
3	Is the paper fed from the front tray?	Go to Step 4.	Go to Step 6.
4	<p>Check MSI N/P ACTUATOR In a smooth motion, does the MSI N/P ACTUATOR retract from the sensing portion of the MSI NO PAPER SENSOR when there is paper, and block that portion when there is no paper?</p>	<p>Tool available Go to Step 5.</p> <p>Tool unavailable Go to FIP-2.8 MSI NO PAPER SENSOR failure.</p>	Replace MSI N/P ACTUATOR.
5	<p>Check MSI NO PAPER SENSOR Does the MSI NO PAPER SENSOR function properly? ★Verify with Diagnostic Code 02.</p>	Replace MCU PWB.	Go to FIP-2.8 MSI NO PAPER SENSOR failure.
6	<p>Check PAPER CASSETTE (*1) Is the BOTTOM PLATE ASSEMBLY raised properly when the PAPER CASSETTE is removed? ★Verify with Diagnostic Code 02.</p>	Go to Step 7.	Replace PAPER CASSETTE.
7	<p>Check NO PAPER SENSOR (*1) In a smooth motion, does the actuator of the CST NO PAPER SENSOR retract from the sensing portion of the sensor when there is paper, and block that portion when there is no paper?</p>	<p>Tool available Go to Step 8.</p> <p>Tool unavailable Go to FIP-2.9 CST NO PAPER SENSOR failure.</p>	Replace CST NO PAPER SENSOR.
8	<p>Check CST NO PAPER SENSOR (*1) Does the CST NO PAPER SENSOR function properly? ★Verify with Diagnostic Code 02.</p>	Replace MCU PWB.	Go to FIP-2.9 CST NO PAPER SENSOR failure.

*1 : Applies to both Tray 1 and Tray 2. Verify as necessary.

FIP-1.15 J5

As items corresponding to FIP-1.15 are not standard specification, this page is intentionally left blank.

FIP-1.16 J5 not displayed

As items corresponding to FIP-1.16 are not standard specification, this page is intentionally left blank.

FIP-1.17 No power

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed?</p> <p>Major components to check ROS ASSEMBLY, SCANNER ASSEMBLY, MCU PWB, CRU SENSOR ASSEMBLY, EP CARTRIDGE, ROS HARNESS, SOS HARNESS, CRU HARNESS, LVPS ASSEMBLY</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check CONSOLE ASSEMBLY (*1) Does the fan rotate if the CONSOLE ASSEMBLY is removed and the power turned ON 2-3 minutes later?</p>	Replace CONSOLE ASSEMBLY.	Go to Step 3.
3	<p>Check Printer Controller (*1) Does the fan rotate if the Printer Controller is removed and the power turned ON 2-3 minutes later?</p>	Check Printer Controller	Go to Step 4.
4	Does the fan rotate if the P/J10 connector on MCU PWB is removed and the power turned ON 2-3 minutes later? (*1)	Go to Step 5.	Go to Step 6.
5	<p>Check power supply voltage shorts (*1) Disconnect the connectors on MCU PWB one by one in turn. Does the fan rotate if the power is turned ON 2-3 minutes after each connector is disconnected? ★ Verify each component for short-circuiting the power supply voltage.</p>	Replace the component causing the short.	Replace MCU PWB.
6	<p>Check DRIVE ASSEMBLY (*1) Does the fan turn if the P/J105 connector on the DRIVE ASSEMBLY is removed and the power turned ON 2-3 minutes later?</p>	Replace DRIVE ASSEMBLY.	Replace LVPS ASSEMBLY.

*1 : Exercise caution while verifying to avoid coming in contact with the power supply, any high voltage outputs, or the drive mechanism.

FIP-1.18 LED malfunction

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed? Major components to check CONSOLE ASSEMBLY, HARNESS ASSEMBLY LED, LVPS ASSEMBLY</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check Printer Controller Does the error occur even after the Printer Controller is replaced?</p>	Go to Step 3.	Procedure complete.
3	<p>Check power for LED in CONSOLE ASSEMBLY Is there 5VDC between the following pins? P128-1PIN ↔ P142-2PIN</p>	Go to Step 4.	Go to FIP-2.1 LVPS ASSEMBLY 5VDC failure.
4	<p>Check HARNESS ASSEMBLY LED Is there proper continuity at J127 ↔ J128?</p>	Replace CONSOLE ASSEMBLY.	Replace HARNESS ASSEMBLY LED.

FIP-1.19 Inoperative KEY SWITCHES

As items corresponding to FIP-1.19 are not standard specification, this page is intentionally left blank.

FIP-1.20 Erratic Printer Operation

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed? Major components to check MCU PWB, HVPS, LVPS ASSEMBLY</p>	Replace or reinstall component.	Go to Step 2.
2	No printer operation at all?	Go to Step 3.	Go to Step 4.
3	<p>Check if engine or controller problem Is it possible to test print correctly using only the engine? (about 10 individual / consecutive prints each)</p>	Check Printer Controller. (Go to Step 5. if error occurs after replacement.)	Go to FIP-2.1 LVPS ASSEMBLY 5VDC failure.
4	Does the printer reset while printing?	Go to FIP-2.19 Noise.	Go to Step 5.
5	<p>Check replacement MCU PWB Does the error occur even after replacing the MCU PWB?</p>	Go to Step 6.	Procedure complete.
6	<p>Check interface cables (*2) Does the error occur even after replacing the interface cables?</p>	Check host side for problems.	Procedure complete.

3. LEVEL 2 FIP

FIP-2.1 LVPS ASSEMBLY 5VDC failure

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed?</p> <p>Major components to check LVPS ASSEMBLY, MCU PWB, LVPS HARNESS, ESS HARNESS</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check LVPS ASSEMBLY Is there 5VDC between the following pins? P101-9PIN ↔ P101-8PIN P106-1PIN ↔ P106-2PIN</p>	Go to Step 3.	Replace LVPS ASSEMBLY.
3	<p>Check LVPS HARNESS Is there proper continuity at J10 ↔ J101?</p>	Go to Step 4.	Replace LVPS HARNESS.
4	<p>Check ESS HARNESS Is there proper continuity at J106 ↔ J142?</p>	Replace MCU PWB.	Replace ESS HARNESS.

FIP-2.2 SCANNER ASSEMBLY failure

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed?</p> <p>Major components to check ROS ASSEMBLY, SCANNER ASSEMBLY, MCU PWB, ROS HARNESS</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check SCANNER ASSEMBLY power(*1) Is P/J11-14PIN ↔ P/J11-13PIN at 24VDC?</p>	Go to Step 3.	Replace MCU PWB.
3	<p>Check SCANNER MOTOR ON signal (*1) Tool available Does P/J11-12PIN ↔ P/J11-11PIN start at 0VDC when the printer enters test print mode, and go to 4.1VDC after Error U2 occurs?</p> <p>Tool unavailable Does P/J11-12PIN ↔ P/J11-11PIN start at 0VDC when test print is executed with the engine by itself, and go to 4.1VDC after Error U2 occurs?</p>	Replace SCANNER ASSEMBLY.	Go to Step 4.
4	<p>Check SCANNER MOTOR ON signal (*1) Is P/J11-12PIN ↔ P/J11-11PIN at 4.1VDC when the power is turned ON?</p>	Replace MCU PWB.	Go to Step 5.
5	<p>Check LVPS HARNESS Is there proper continuity at J11 ↔ J114?</p>	Replace SCANNER ASSEMBLY.	Replace ROS HARNESS.

*1 : Verify with Connector P/J13 on MCU PWB disconnected and with the POP UP COVER completely closed.

FIP-2.3 ROS ASSEMBLY failure

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed? Major components to check ROS ASSEMBLY, MCU PWB, ROS HARNESS, SOS HARNESS, LVPS ASSEMBLY</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check power of LD ASSEMBLY in the ROS ASSEMBLY (*1) Is there 5VDC between the following pins? P/J11-6PIN ↔ P/J11-2PIN/P/J11-7PIN ↔ P/J11-2PIN</p>	Go to Step 3.	Go to FIP-2.1 LVPS ASSEMBLY 5VDC failure.
3	<p>Check the rotation control signal of the SCANNER MOTOR (*1), (*2) Does the HIGH (4.1VDC)/ LOW (0VDC) combination of P11-9PIN ↔ P11-11PIN and P11-10PIN ↔ P11-11PIN correspond to the resolution of the system?</p>	Go to Step 4.	Replace MCU PWB.
4	<p>Check power on SOS PWB of the ROS ASSEMBLY (*1) Is P/J111-3PIN ↔ P/J111-1PIN at 5VDC when the power is turned ON?</p>	Go to Step 5.	Replace ROS ASSEMBLY.
5	<p>Check ROS HARNESS Is there proper continuity at J11 ↔ J112 and at J11 ↔ J114?</p>	Go to Step 6.	Replace ROS HARNESS
6	<p>Check MCU PWB replacement Does the error occur even after the MCU PWB is replaced?</p>	Replace ROS ASSEMBLY.	Procedure complete.

*1 : Perform check with Connector P/J13 of the MCU PWB disconnected.

*2 : Refer to Section 6 Maintenance Guide for information regarding the HIGH(4.1VDC) / LOW (0VDC) combination and the corresponding resolution of the system.

Note : If Error U2 persist even after replacing the ROS ASSEMBLY, proceed to FIP-2.19 Noise and verify.

FIP-2.4 HEATER ROD failure

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed?</p> <p>Major components to check FUSER ASSEMBLY, HEATER ROD, TEMPERATURE SENSOR ASSEMBLY, MCU PWB, LVPS ASSEMBLY, LVPS HARNESS, FUSER HARNESS</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check HEATER ROD Is there proper continuity at J104-1PIN ↔ J104-3PIN?</p>	Go to Step 3.	Go to Step 6.
3	<p>Check LVPS HARNESS Is there proper continuity at J10 ↔ J101?</p>	Go to Step 4.	Replace LVPS HARNESS.
4	<p>Check LVPS ASSEMBLY (*1) Is J10-5PIN ↔ J10-4PIN at 4.4VDC?</p>	Go to Step 5.	Replace LVPS ASSEMBLY.
5	<p>Check HEATER ROD ON signal(*1) Is P/J10-5PIN ↔ P/J10-4PIN at 0VDC with the INTERLOCK SWITCH ON and at 4.4VDC with the INTERLOCK SWITCH OFF? ★Verify by opening and closing the POP UP COVER before the FUSER ASSEMBLY warms up.</p>	Replace LVPS ASSEMBLY.	Go to FIP-2.5 Thermistor failure.
6	<p>Check HEATER ROD Is there proper continuity between the J104-1PIN and the right most part of the HEATER ROD, and also between both ends of the J104-3PIN wire?</p>	Go to Step 7.	Replace HEATER ROD.
7	<p>Check THERMOSTAT/THERMAL FUSE Is there an open in the THERMOSTAT? Does the THERMAL FUSE melt?</p>	In order to determine the cause of the THERMOSTAT open or of the THERMAL FUSE melting, proceed to FIP-1.3 and verify after replacing the FUSER ASSEMBLY. (*2)	Replace FUSER ASSEMBLY.

*1 : Perform check with Connector P/J112 of the ROS ASSEMBLY and Connector P/J13 of the MCU PWB disconnected.

*2 : If no problem is found after proceeding to FIP-1.3, carefully observe the operation of the machine. If the THERMOSTAT opens or the THERMAL FUSE melts again, replace related parts such as the LVPS ASSEMBLY and the MCU PWB. If the problem no longer occurs, it is possible that the replaced FUSER ASSEMBLY was defective or the THERMOSTAT was not functioning properly.

FIP-2.5 Thermistor failure

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed?</p> <p>Major components to check FUSER ASSEMBLY, TEMPERATURE SENSOR ASSEMBLY, MCU PWB, FUSER HARNESS</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check thermistor in TEMPERATURE SENSOR ASSEMBLY Is there any dirt or foreign matter on the sensing portion of the thermistor?</p>	Replace or clean TEMPERATURE SENSOR ASSEMBLY.	Go to Step 3.
3	<p>Check FUSER HARNESS Is there proper continuity at J15 ↔ J154?</p>	Go to Step 4.	Replace FUSER HARNESS.
4	<p>Check thermistor in TEMPERATURE SENSOR ASSEMBLY Is the resistance of J155-1PIN ↔ J155-2PIN at 200~350kΩ when the FUSER ASSEMBLY is left at room temperature (18~20°C)? ★ Verify before the FUSER ASSEMBLY warms up.</p>	Go to Step 5.	Replace TEMPERATURE SENSOR ASSEMBLY.
5	<p>Check MCU PWB replacement Does the error occur even after the MCU PWB is replaced?</p>	Replace FUSER ASSEMBLY.	Procedure complete.

FIP-2.6 EXIT SENSOR failure

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed, or have any foreign objects stuck to it?</p> <p>Major components to check EXIT SENSOR, FUSER ASSEMBLY, MCU PWB, EXIT HARNESS, FUSER HARNESS, LVPS ASSEMBLY</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check EXIT SENSOR power (*1) Is P15-3PIN ↔ P15-4PIN at 5VDC?</p>	Go to Step 3.	Go to FIP-2.1 LVPS ASSEMBLY 5VDC failure.
3	<p>Check EXIT PAPER SENSE signal power (*1) Is P15-5PIN ↔ P15-4PIN at 5VDC?</p>	Go to Step 4.	Replace MCU PWB.
4	<p>Check EXIT PAPER SENSE signal (*1) Is P/J15-5PIN ↔ P/J15-4PIN at 0VDC when the sensing portion of the EXIT SENSOR is not blocked (paper present) and at 5VDC when it is blocked (paper not present)?</p>	Go to Step 5.	Replace MCU PWB.
5	<p>Check EXIT HARNESS Is there proper continuity at J152 ↔ J153?</p>	Go to Step 6.	Replace EXIT HARNESS.
6	<p>Check FUSER HARNESS Is there proper continuity at J15 ↔ J151?</p>	Replace EXIT SENSOR.	Replace FUSER HARNESS.

*1 : Perform check with Connector P/J112 of the ROS ASSEMBLY and Connector P/J13 of the MCU PWB disconnected.

FIP-2.7 REGISTRATION SENSOR failure

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed, or have any foreign objects stuck to it?</p> <p>Major components to check REGISTRATION SENSOR, TRANSPORT CHUTE ASSEMBLY, MCU PWB, REGISTRATION SENSOR HARNESS, P/H HARNESS, LVPS ASSEMBLY</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check REGISTRATION SENSOR power (*1) Is P12-3PIN ↔ P12-4PIN at 5VDC?</p>	Go to Step 3.	Go to FIP-2.1 LVPS ASSEMBLY 5VDC failure.
3	<p>Check REGISTRATION PAPER SENSE signal power (*1) Is P12-5PIN ↔ P12-4PIN at 5VDC?</p>	Go to Step 4.	Replace MCU PWB.
4	<p>Check REGISTRATION PAPER SENSE signal (*1) Is P/J12-5PIN ↔ P/J12-4PIN at 0VDC when the sensing portion of the REGISTRATION SENSOR is not blocked (paper present) and at 5VDC when it is blocked (paper not present)?</p>	Go to Step 5.	Replace MCU PWB.
5	<p>Check REGISTRATION SENSOR HARNESS Is there proper continuity at J123 ↔ P122?</p>	Go to Step 6.	Replace REGISTRATION SENSOR HARNESS.
6	<p>Check P/H HARNESS Is there proper continuity at J12 ↔ J122?</p>	Replace REGISTRATION SENSOR.	Replace P/H HARNESS.

***1 :** Perform check with Connector P/J112 of the ROS ASSEMBLY and Connector P/J13 of the MCU PWB disconnected.

FIP-2.8 MSI NO PAPER SENSOR failure

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed, or have any foreign objects stuck to it?</p> <p>Major components to check MSI NO PAPER SENSOR, MCU PWB, P/H HARNESS, LVPS ASSEMBLY</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check MSI NO PAPER SENSOR power (*1) Is P12-6PIN ↔ P12-7PIN at 5VDC?</p>	Go to Step 3.	Go to FIP-2.1 LVPS ASSEMBLY 5VDC failure.
3	<p>Check MSI PAPER SENSE signal power (*1) Is P12-8PIN ↔ P12-7PIN at 5VDC?</p>	Go to Step 4.	Replace MCU PWB.
4	<p>Check MSI PAPER SENSE signal (*1) Is P/J12-5PIN ↔ P/J12-4PIN at 0VDC when the sensing portion of the MSI NO PAPER SENSOR is not blocked (paper present) and at 5VDC when it is blocked (paper not present)?</p>	Go to Step 5.	Replace MCU PWB.
5	<p>Check P/H HARNESS Is there proper continuity at J12 ↔ J124?</p>	Replace MSI NO PAPER SENSOR.	Replace P/H HARNESS.

*1 : Perform check with Connector P/J112 of the ROS ASSEMBLY and Connector P/J13 of the MCU PWB disconnected.

FIP-2.9 CST NO PAPER SENSOR failure(1/2)

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed, or have any foreign objects stuck to it?</p> <p>Major components to check CST NO PAPER SENSOR, FEEDER PWB, MCU PWB, LVPS ASSEMBLY, FEEDER UNIT, CASSETTE HARNESS, TRAY HARNESS, TRAY UPPER HARNESS, TRAY LOWER HARNESS</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check FEEDER PAPER SENSE signal power (*1), (*2) Is P17-5PIN[6PIN] ↔ P17-7PIN at 5VDC?</p>	Go to Step 3.	Go to FIP-2.1 LVPS ASSEMBLY 5VDC failure.
3	<p>Check FEEDER PAPER SENSE signal (*1), (*2) Is P/J17-5PIN[6PIN] ↔ P/J17-7PIN at 0VDC when the sensing portion of the CST NO PAPER SENSOR is not blocked (paper present) and at 5VDC when it is blocked (paper not present)?</p>	Replace MCU PWB.	Go to Step 4.
4	<p>Check TRAY HARNESS (*1) Is there proper continuity at J17 ↔ J171?</p>	Go to Step 5.	Replace TRAY HARNESS.
5	<p>Check CASSETTE HARNESS (*1) Is there proper continuity at J175 ↔ J272?</p>	Go to Step 6.	Replace CASSETTE HARNESS.
6	<p>Check TRAY UPPER HARNESS (*1) Is there proper continuity at P171 ↔ J173?</p>	Go to Step 7.	Replace TRAY UPPER HARNESS.
7	<p>Check TRAY LOWER HARNESS (*1) Is there proper continuity at J174 ↔ J171?</p>	Go to Step 8.	Replace TRAY-LOWER HARNESS.
8	<p>Check FEEDER PWB (*1) Is there proper continuity at P173-4PIN ↔ P175-4PIN and at P173-7PIN ↔ P175-3PIN?</p>	Go to Step 9.	Replace FEEDER PWB.

*1: Applies to both Tray 1 and Tray 2. Verify as necessary. In cases where a distinction is made between Tray 1 and Tray 2, the contents relating to Tray 2 is enclosed in square brackets " []".

FIP-2.9 CST NO PAPER SENSOR failure(2/2)

Step	Check	Action	
		Yes	No
9	<p>Check CST PAPER SENSE signal (*1), (*2) Is P/J175-5PIN ↔ P/J175-3PIN at 0VDC when the sensing portion of the CST NO PAPER SENSOR is not blocked (paper present) and at 5VDC when it is blocked (paper not present)?</p> <p>★ With the FEEDER UNIT removed, verify with the TRAY HARNESS and TRAY UPPER HARNESS (Connector P/J171) connected.</p>	Replace CST NO PAPER SENSOR.	Replace FEEDER PWB.

*1 : Applies to both Tray 1 and Tray 2. Verify as necessary. In cases where a distinction is made between Tray 1 and Tray 2, the contents relating to Tray 2 is enclosed in square brackets " []" .

*2 : Perform check with Connector P/J112 of the ROS ASSEMBLY and Connector P/J13 of the MCU PWB disconnected.

FIP-2.10 CRU SENSOR ASSEMBLY failure

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed, or have any foreign objects stuck to it?</p> <p>Major components to check CRU SENSOR ASSEMBLY, EP CARTRIDGE, CRU HARNESS, MCU PWB, LVPS ASSEMBLY</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check EP CARTRIDGE Does the protrusion from the EP CARTRIDGE that drives the CRU SENSOR ASSEMBLY actuator appear normal?</p>	Go to Step 3.	Replace EP CARTRIDGE.
3	<p>Check CRU SENSOR ASSEMBLY Do J16-1PIN ↔ J16-2PIN and J16-3PIN ↔ J16-4PIN have continuity when the LD SWITCH/CRU SWITCH is turned ON, and have no continuity when it is turned OFF? ★ Verify by removing and attaching the EP CARTRIDGE.</p>	Go to FIP-2.1 LVPS ASSEMBLY 5VDC failure.	Go to Step 4.
4	<p>Check CRU HARNESS Is there proper continuity at J16 ↔ J161?</p>	Replace CRU SENSOR ASSEMBLY.	Replace CRU HARNESS.

FIP-2.11 PAPER SIZE SWITCH failure

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed, or have any foreign objects stuck to it?</p> <p>Major components to check FEEDER PWB, MCU PWB, FEEDER UNIT, TRAY HARNESS, TRAY UPPER HARNESS, TRAY LOWER HARNESS, LVPS ASSEMBLY</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check FEEDER PWB power(*1) P17-4PIN ↔ P17-3PIN at 5VDC?</p>	Go to Step 3.	Go to FIP-2.1 LVPS ASSEMBLY 5VDC failure.
3	<p>Check CASSETTE/SIZE signal (*1), (*2) Is P/J17-2PIN[1PIN] ↔ P/J17-3PIN at 4.8VDC with the PAPER CASSETTE removed, and at the proper voltage level corresponding to the paper size specified by the SIZE HANDLE of the FEEDER UNIT with the PAPER CASSETTE in place? ★ Refer to Section 6 Maintenance Guide for the proper voltage level that corresponds to each paper size</p>	Replace MCU PWB.	Go to Step 4.
4	<p>Check TRAY HARNESS (*2) Is there proper continuity at J17 ↔ J171?</p>	Go to Step 5.	Replace TRAY HARNESS.
5	<p>Check TRAY UPPER HARNESS (*2) Is there proper continuity at P171 ↔ J173?</p>	Go to Step 6.	Replace TRAY UPPER HARNESS.
6	<p>Check TRAY LOWER HARNESS (*2) Is there proper continuity at J174 ↔ J171?</p>	Replace FEEDER PWB.	Replace TRAY LOWER HARNESS.

*1 : Perform check with Connector P/J112 of the ROS ASSEMBLY and Connector P/J13 of the MCU PWB disconnected.

*2 : Applies to both Tray 1 and Tray 2. Verify as necessary. In cases where a distinction is made between Tray 1 and Tray 2, the contents relating to Tray 2 is enclosed in square brackets” []”.

FIP-2.12 REGISTRATION CLUTCH ASSEMBLY failure

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed, or have any foreign objects stuck to it?</p> <p>Major components to check REGISTRATION CLUTCH ASSEMBLY, MCU PWB, P/H HARNESS</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check REGISTRATION CLUTCH ASSEMBLY power (*1) Is P/J12-1PIN ↔ P/J10-2PIN at 24VDC?</p>	<p>Tool available Go to Step 3.</p> <p>Tool unavailable Go to Step 4.</p>	Replace MCU PWB.
3	<p>Check REGISTRATION CLUTCH ON signal (*1) Is P/J12-2PIN ↔ P/J10-2PIN at 0VDC with the REGISTRATION CLUTCH ON and at 24VDC with it OFF? ★ Verify with Diagnostic Code 82.</p>	Replace REGISTRATION CLUTCH ASSEMBLY.	Go to Step 4.
4	<p>Check REGISTRATION CLUTCH ASSEMBLY Is there continuity (approximately 115kΩ) at J12-1PIN ↔ J12-2PIN?</p>	Replace MCU PWB.	Go to Step 5.
5	<p>Check P/H HARNESS Is there proper continuity at J12 ↔ J121?</p>	Replace REGISTRATION CLUTCH ASSEMBLY.	Replace P/H HARNESS.

*1 : Perform check with Connector P/J112 of the ROS ASSEMBLY and Connector P/J13 of the MCU PWB disconnected.

FIP-2.13 PICK UP SOLENOID failure

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed, or have any foreign objects stuck to it?</p> <p>Major components to check PICK UP SOLENOID, MSI CHUTE ASSEMBLY, MCU PWB, P/H HARNESS</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check PICK UP SOLENOID power (*1) Is P/J12-9PIN ↔ P/J10-2PIN at 24VDC?</p>	<p>Tool available Go to Step 3.</p> <p>Tool unavailable Go to Step 4.</p>	Replace MCU PWB.
3	<p>Check PICK UP SOLENOID ON signal (*1)(*2) ON signals P/J12-10PIN ↔ P/J10-2PIN at 0VDC with the PICK UP SOLENOID ON and at 24VDC with it OFF? ★ Verify with Diagnostic Code 80</p>	Replace PICK UP SOLENOID.	Go to Step 4.
4	<p>Check PICK UP SOLENOID Is there continuity (approximately 905kΩ) at J12-9PIN ↔ J12-10PIN?</p>	Replace MCU PWB.	Go to Step 5.
5	<p>Check P/H HARNESS Is there proper continuity at J12 ↔ P125?</p>	Replace PICK UP SOLENOID.	Replace P/H HARNESS.

*1 : Perform check with Connector P/J112 of the ROS ASSEMBLY and Connector P/J13 of the MCU PWB disconnected.

*2 : Note that the PICK UP SOLENOID will stay ON for only 0.5 seconds when executing Diagnostic Code 80.

FIP-2.14 FEED SOLENOID failure

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed, or have any foreign objects stuck to it?</p> <p>Major components to check FEED SOLENOID, FEEDER PWB, MCU PWB, FEEDER UNIT, TRAY HARNESS, TRAY UPPER HARNESS, TRAY LOWER HARNESS</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check PICK UP SOLENOID power (*1) Is P/J17-10PIN ↔ P/J10-2PIN at 24VDC?</p>	<p>Tool available Go to Step 3.</p> <p>Tool unavailable Go to Step 4.</p>	Replace MCU PWB.
3	<p>Check FEED SOLENOID ON signal (*1), (*2), (*3) Is P/J17-12[11]PIN ↔ P/J10-2PIN at 0VDC with the FEED SOLENOID ON and at 24VDC with it OFF? ★ Verify with Diagnostic Code 81 or 86</p>	Replace FEED SOLENOID.	Go to Step 4.
4	<p>Check PICK UP SOLENOID (*2) Is there continuity (approximately 1205kΩ) at J17-12 [11]PIN ↔ J17-10PIN?</p>	Replace MCU PWB.	Go to Step 5.
5	<p>Check TRAY HARNESS (*2) Is there proper continuity at J17 ↔ J171?</p>	Go to Step 6.	Replace TRAY HARNESS.
6	<p>Check TRAY UPPER HARNESS (*2) Is there proper continuity at P171 ↔ J173?</p>	Go to Step 7.	Replace TRAY UPPER HARNESS.
7	<p>Check TRAY LOWER HARNESS (*2) Is there proper continuity at J174 ↔ J171?</p>	Go to Step 8.	Replace TRAY LOWER HARNESS.
8	<p>Check FEEDER PWB (*2) Is there proper continuity at P173 ↔ P176 and at P173 ↔ P174?</p>	Replace FEED SOLENOID.	Replace FEEDER PWB.

- *1 : Perform check with Connector P/J112 of the ROS ASSEMBLY and Connector P/J13 of the MCU PWB disconnected.
- *2 : Applies to both Tray 1 and Tray 2. Verify as necessary. In cases where a distinction is made between Tray 1 and Tray 2, the contents relating to Tray 2 is enclosed in square brackets “[]”.
- *3 : Note that the PICK UP SOLENOID will stay ON for only 0.5 seconds when executing Diagnostic Codes 81 and 86.

FIP-2.15 ELECTRIC CLUTCH failure

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed, or have any foreign objects stuck to it?</p> <p>Major components to check ELECTRIC CLUTCH, FEEDER PWB, MCU PWB, FEEDER UNIT, TRAY HARNESS, CASSETTE HARNESS, TRAY UPPER HARNESS, TRAY LOWER HARNESS</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check ELECTRIC CLUTCH power(*1) Is P/J17-9PIN ↔ P/J10-2PIN at 24VDC?</p>	<p>Tool available Go to Step 3.</p> <p>Tool unavailable Go to Step 4.</p>	Replace MCU PWB.
3	<p>Check ELECTRIC CLUTCH signal (*1), (*2) Is P/J17-9PIN ↔ P/J10-2PIN at 0VDC with the ELECTRIC CLUTCH ON and at 24VDC with it OFF? ★ Verify with Diagnostic Code 84</p>	Replace ELECTRIC CLUTCH.	Go to Step 4.
4	<p>Check TRAY HARNESS (*2) Is there proper continuity at J17 ↔ J171?</p>	Go to Step 5.	Replace TRAY HARNESS.
5	<p>Check ELECTRIC CLUTCH (*2) Is there continuity (approximately 1155kΩ) at P273-1PIN ↔ P273-4PIN?</p>	Go to Step 6.	Replace ELECTRIC CLUTCH.
6	<p>Check CASSETTE HARNESS(*2) Is there proper continuity at J175 ↔ J273?</p>	Go to Step 7.	Replace CASSETTE HARNESS.
7	<p>Check TRAY UPPER HARNESS (*2) Is there proper continuity at P171 ↔ J173?</p>	Go to Step 8.	Replace TRAY UPPER HARNESS.
8	<p>Check TRAY LOWER HARNESS (*2) Is there proper continuity at J174 ↔ J171?</p>	Go to Step 9.	Replace TRAY LOWER HARNESS.
9	<p>Check FEEDER PWB (*2) Is there proper continuity at P173 ↔ P175 and at P173 ↔ P174?</p>	Replace MCU PWB.	Replace FEEDER PWB.

*1 : Perform check with Connector P/J112 of the ROS ASSEMBLY and Connector P/J13 of the MCU PWB disconnected.

*2 : Applies to both Tray 1 and Tray 2. Verify as necessary. In cases where a distinction is made between Tray 1 and Tray 2, the contents relating to Tray 2 is enclosed in square brackets” []”.

FIP-2.16 DRIVE ASSEMBLY failure(1/2)

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed, or have any foreign objects stuck to it?</p> <p>Major components to check DRIVE ASSEMBLY, MCU PWB, LVPS ASSEMBLY, TRANSPORT CHUTE ASSEMBLY, EP CARTRIDGE, FEEDER UNIT, LVPS HARNESS</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check MAIN MOTOR power Are P105-1PIN ↔ P/J101-10PIN and P105-2PIN ↔ P/J101-10PIN at 24VDC? ★ Verify with the EP CARTRIDGE removed and the INTERLOCK SWITCH ON.</p>	Go to Step 3.	Replace LVPS ASSEMBLY.
3	<p>Check MAIN MOTOR Do the following connections have continuity (approximately 5~85kΩ)? J105-1PIN ↔ J105-3PIN J105-1PIN ↔ J105-5PIN J105-2PIN ↔ J105-4PIN J105-2PIN ↔ J105-6PIN</p>	Go to Step 4.	Replace DRIVE ASSEMBLY.
4	<p>Check LVPS HARNESS Is there proper continuity at J10 ↔ J101?</p>	Go to Step 5.	Replace LVPS HARNESS.
5	<p>Check DRIVE ASSEMBLY Does each gear in the DRIVE ASSEMBLY rotate smoothly? ★ With the FUSER ASSEMBLY and the EP CARTRIDGE removed, rotate backwards the gears located behind the top of the DRIVE ASSEMBLY by hand and inspect visually.</p>	Go to Step 6.	Go to Step 10.
6	<p>Check FUSER ASSEMBLY Does each gear and roll of the FUSER ASSEMBLY rotate smoothly? ★ With the FUSER ASSEMBLY removed, rotate the H/R IDLER GEAR by hand and inspect visually.</p>	Go to Step 7.	Replace FUSER ASSEMBLY.
7	<p>Check TRANSPORT CHUTE ASSEMBLY Does each REGISTRATION ROLL rotate smoothly? ★ Verify by rotating the RUBBER REGISTRATION ROLL by hand.</p>	Go to Step 8.	Replace TRANSPORT CHUTE ASSEMBLY.

FIP-2.16 DRIVE ASSEMBLY failure(2/2)

Step	Check	Action	
		Yes	No
8	<p>Check EP CARTRIDGE Does the EP CARTRIDGE drum rotate smoothly? ★ Verify by rotating the gears on the drum by hand and inspect visually.</p>	Go to Step 9.	Replace EP CARTRIDGE.
9	<p>Check MCU PWB replacement Does the error occur even after the MCU PWB is replaced?</p>	Replace DRIVE ASSEMBLY.	Procedure complete.
10	<p>Check FEEDER UNIT (*1) Does each gear type rotate smoothly when the FEEDER UNIT's IN GEAR is rotated? ★ With the FEEDER UNIT removed, verify by rotating the IN GEAR by hand.</p>	Replace DRIVEASSEMBLY.	Replace FEEDER UNIT.

*1 : Applies to both Tray 1 and Tray 2. Verify as necessary.

FIP-2.17 TONER SENSOR failure

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed, or have any foreign objects stuck to it?</p> <p>Major components to check TONER SENSOR ASSEMBLY, TONER SENSOR HARNESS, MCU PWB</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check TONER SENSOR power (*1) Is P19-1PIN ↔ P19-3PIN at 24VDC? ★ Verify with Connector P/J16 of the MCU PWB disconnected and with the INTERLOCK SWITCH ON.</p>	Go to Step 3.	Replace MCU PWB.
3	<p>Check TONER SENSE signal(*1) Is P19-4PIN ↔ P19-3PIN at 5VDC?</p>	Go to Step 4.	Replace MCU PWB.
4	<p>Check TONER SENSE signal(*1) Is P/J19-4PIN ↔ P/J19-3PIN at 0VDC with the EP CARTRIDGE in place (toner available) and at 5VDC when it is not in place (toner not available)? ★ Verify with Connector P/J16 of the MCU PWB disconnected and with the INTERLOCK SWITCH ON.</p>	Replace MCU PWB.	Go to Step 5.
5	<p>Check TONER SENSOR HARNESS Is there proper continuity at J19 ↔ J191?</p>	Replace TONER SENSOR.	Replace TONER SENSOR HARNESS.

*1 : Perform check with Connector P/J112 of the ROS ASSEMBLY and Connector P/J13 of the MCU PWB disconnected.

FIP-2.18 HVPS failure

Step	Check	Action	
		Yes	No
1	<p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, or deformed, or have any foreign objects stuck to it?</p> <p>Major components to check HVPS, MCU PWB, CRU GUIDE ASSEMBLY L, TRANSPORT CHUTE ASSEMBLY, HVPS HARNESS</p>	Replace or reinstall component.	Go to Step 2.
2	<p>Check CRU GUIDE ASSEMBLY L power Does the plate spring terminal of the CRU GUIDE ASSEMBLY L make proper contact with the HVPS and TRANSPORT CHUTE ASSEMBLY terminals? Is the area that contacts the EP CARTRIDGE free of deformation and other problems?</p>	Go to Step 3.	Replace CRU GUIDE ASSEMBLY L.
3	<p>Check TRANSPORT CHUTE ASSEMBLY Is there proper continuity in the high voltage path inside the TRANSPORT CHUTE ASSEMBLY?</p>	Go to Step 4.	Replace TRANSPORT CHUTE ASSEMBLY.
4	<p>Check HVPS HARNESS Is there proper continuity at J13 ↔ J131?</p>	Go to Step 5.	Replace HVPS HARNESS.
5	<p>Check MCU PWB replacement Does the error occur even after the MCU PWB is replaced?</p>	Replace HVPS.	Procedure complete.

FIP-2.19 Noise(1/2)

Step	Check	Action	
		Yes	No
1	<p>Initial Check</p> <p>Are there any components that are incompatible, incorrectly installed, damaged, or deformed, or have any foreign objects stuck to it?</p> <p>Major components to check</p> <p>HVPS, CRUU GUIDE ASSEMBLY L, CRU GUIDE ASSEMBLY R, MCU PWB, LVPS ASSEMBLY, EP CARTRIDGE, FUSER ASSEMBLY, HEATER ROD, TRANSPORT CHUTE ASSEMBLY</p>	Replace or reinstall component.	Go to Step 2.
2	Has the printer been securely grounded?	Go to Step 3.	Ground securely.
3	Is there any equipment nearby which generates noise?	Move either the printer or the noise-generating equipment.	Go to Step 4.
4	<p>Check LVPS ASSEMBLY</p> <p>Is the ground wire from the power switch/inlet section of the LVPS ASSEMBLY secured properly?</p>	Go to Step 5.	Secure ground wire.
5	<p>Check CRU GUIDE ASSEMBLY L</p> <p>Does the plate spring terminal of the CRU GUIDE ASSEMBLY L make proper contact with the HVPS and TRANSPORT CHUTE ASSEMBLY terminals?</p> <p>Is the area that contacts the EP CARTRIDGE free of deformation and other problems?</p>	Go to Step 6.	Replace CRU GUIDE ASSEMBLY L.
6	<p>Check CRU GUIDE ASSEMBLY R</p> <p>Is the EP CARTRIDGE contact area of the plate spring terminal of the CRU GUIDE ASSEMBLY R free of deformation and other problems?</p>	Go to Step 7.	Replace CRU GUIDE ASSEMBLY R.
7	<p>Check TRANSPORT CHUTE ASSEMBLY</p> <p>Is there proper continuity in the electrical path inside the TRANSPORT CHUTE ASSEMBLY?</p>	Go to Step 8.	Replace TRANSPORT CHUTE ASSEMBLY.
8	<p>Check HEATER ROD</p> <p>Is the J104-1PIN wire of the HEATER ROD secured properly?</p>	Go to Step 9.	Secure wire.
9	<p>Check EP CARTRIDGE replacement</p> <p>Does the error occur even after the EP CARTRIDGE is replaced?</p>	Go to Step 10.	Procedure complete.

FIP-2.19 Noise(2/2)

Step	Check	Action	
		Yes	No
10	Check HVPS replacement With Connector P/J13 of the MCU PWB disconnected, is it possible to test print correctly using the engine by itself? (about 10 individual/ consecutive prints each)	Replace HVPS.	Go to Step 11.
11	Check MCU PWB replacement Does the error occur even after the MCU PWB is replaced?	Go to Step 12.	Procedure complete.
12	Is the ground for each internal section of the printer properly secured?	Go to Step 13.	Ground securely.
13	Re-inspect the Major components to check in the Initial Check step and related parts to see if there are any problems	Replace or reinstall component.	Procedure complete.(*1)

*1 : Since the cause is considered to be extraneous noise, wait and see what happens.

4. IMAGE QUALITY PROBLEMS

Note : This manual assumes that the Printer Controller is functioning properly. However, with the exception of problems that cannot be verified by test printing, a determination of whether the Printer Controller or the printing engine is at fault can easily be made by executing a test print using the engine by itself.

- *If the test print using the engine by itself is normal Printer Controller is at fault.*
- *If the test print using the engine by itself has a problem..... Engine is at fault.*

If it appears to be a Printer Controller problem, verify by replacing either the Printer Controller or the interface cables with a known good part. If the problem persists, check the host side and then troubleshoot efficiently using the symptom-based image quality troubleshooting table that follows.

If a problem with image quality occurs, print an image on A4 or A3 size paper to correctly identify the problem symptoms so that the trouble shooting tables can be used effectively to determine the proper course of action.

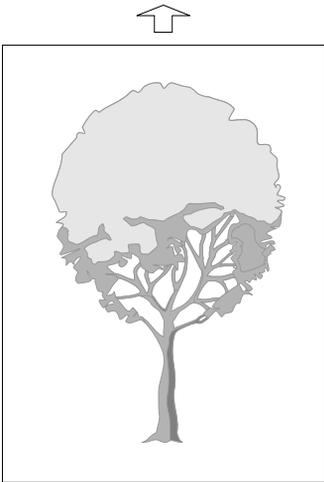
If the problem cannot be resolved using the image quality troubleshooting tables, re-verify using the tables and then replace, in turn, each part listed under Major components to check the Initial Check section of the appropriate image quality problem table, or consult Section 6 Maintenance Guide.

The image quality troubleshooting tables cover the following 16 types of common problems:

- P-1 Light prints
- P-2 Blank prints
- P-3 Black prints
- P-4 Vertical band deletions
- P-5 Horizontal band deletions
- P-6 Vertical streaks
- P-7 Horizontal streaks
- P-8 Blank or faded spots
- P-9 Black spots
- P-10 Residual images
- P-11 Dark background
- P-12 Skewed image
- P-13 Creased or wrinkled paper
- P-14 Unfused image

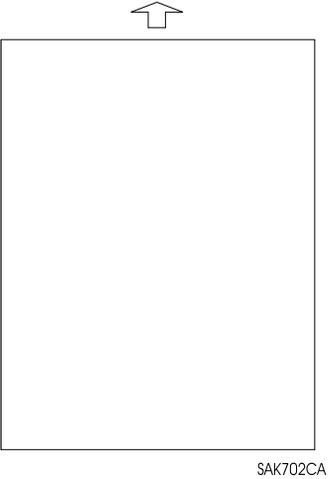
Note : Vertical refers to the direction of paper transport. Horizontal refers to the direction perpendicular to the direction of paper transport.

P-1 Light prints

P-1	Symptom / Initial Check	Print Sample
	<p>Light prints The overall print image density is lighter than normal.</p> <p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, deformed, dirty, or have any foreign objects stuck to it?</p> <p>Major components to check EP CARTRIDGE, HPVS, CRU GUIDE ASSEMBLY L, CRU GUIDE ASSEMBLY R, BTR ASSEMBLY, TRANSPORT CHUTE ASSEMBLY, ROS ASSEMBLY, MCU PWB, FUSER ASSEMBLY, LVPS ASSEMBLY, HVPS HARNESS, POP UP ASSEMBLY</p>	 <p style="text-align: right;">SAK701 CA</p>

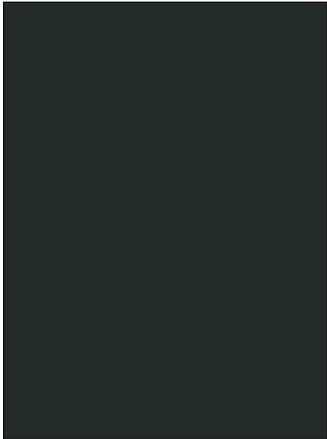
Step	Check	Action (if problem found)
1	<p>KNOB VOLUME (print density control) adjustment Is the problem resolved by adjusting the position of the KNOB VOLUME (print density control)?</p>	Adjust print density. (Advise the customer to adjust print density)
2	<p>Paper moisture, wrinkles Is the problem resolved by using new paper?</p>	Replace paper. (Advise customer to store paper in a dry location.)
3	<p>Drum ground failure Is the EP CARTRIDGE drum grounded securely? H Ground path Drum > drum shaft pin > CRU GUIDE ASSEMBLY R frame.</p>	Make sure the ground path has continuity.
4	<p>Laser beam path cut Are there any foreign objects or dirt obstructing the laser beam path from the ROS ASSEMBLY to the drum?</p>	Remove all foreign objects and dirt obstructing the laser beam path from the ROS ASSEMBLY to the drum.
5	<p>BTR ASSEMBLY failure Are there any foreign objects or dirt on the BTR of the BTR ASSEMBLY?</p>	Replace BTR ASSEMBLY.
6	<p>Charging and image development failure Is the toner image on the drum developed normally? H Turn OFF the power while image transfer is in progress and visually inspect the drum (area before the image transfer).</p>	Check FIP-2.18 HVPS failure.
7	<p>Image transfer failure Is the toner image on the drum transferred properly to the paper? H Turn OFF the power while image transfer is in progress and visually inspect the drum.</p>	Check FIP-2.18 HVPS failure.
8	<p>EP CARTRIDGE failure Is the problem resolved by replacing the EP CARTRIDGE?</p>	Replace EP CARTRIDGE

P-2 Blank prints

P-2	Symptom / Initial Check	Print Sample
	<p>Blank prints (white paper) No image is printed at all, and the entire paper is blank.</p> <p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, deformed, dirty, or have any foreign objects stuck to it?</p> <p>Major components to check EP CARTRIDGE, HPVS, CRU GUIDE ASSEMBLY L, CRU GUIDE ASSEMBLY R, BTR ASSEMBLY, TRANSPORT CHUTE ASSEMBLY, ROS ASSEMBLY, MCU PWB, FUSER ASSEMBLY, LVPS ASSEMBLY, HVPS HARNESS, POP UP ASSEMBLY</p>	

Step	Check	Action (if problem found)
1	<p>Drum ground failure Is the EP CARTRIDGE drum grounded securely? H Ground path Drum → drum shaft pin → CRU GUIDE ASSEMBLY R → frame</p>	Make sure the ground path has continuity.
2	<p>Laser beam path cut Are there any foreign objects or dirt obstructing the laser beam path from the ROS ASSEMBLY to the drum?</p>	Remove all foreign objects and dirt obstructing the laser beam path from the ROS ASSEMBLY to the drum.
3	<p>BTR ASSEMBLY failure Are there any foreign objects or dirt on the BTR of the BTR ASSEMBLY?</p>	Replace BTR ASSEMBLY.
4	<p>Charging and image development failure Is the toner image on the drum developed normally? H Turn OFF the power while image transfer is in progress and visually inspect the drum (area before the image transfer).</p>	Check FIP-2.18 HVPS failure.
5	<p>Image transfer failure Is the toner image on the drum transferred properly to the paper? H Turn OFF the power while image transfer is in progress and visually inspect the drum.</p>	Check FIP-2.18 HVPS failure.
6	<p>EP CARTRIDGE failure Is the problem resolved by replacing the EP CARTRIDGE?</p>	Replace EP CARTRIDGE.

P-3 Black prints

P-3	Symptom / Initial Check	Print Sample
	<p>Black prints The entire paper is black</p> <p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, deformed, dirty, or have any foreign objects stuck to it?</p> <p>Major components to check EP CARTRIDGE, HPVS, CRU GUIDE ASSEMBLY L, ROS ASSEMBLY, MCU PWB, HVPS HARNESS</p>	<p style="text-align: center;">↑</p>  <p style="text-align: right;">SAK703CA</p>

Step	Check	Action (if problem found)
1	<p>Charging failure Does the failure occur even if a sheet of paper is used to cover the WINDOW of the ROS ASSEMBLY (opening through which the laser beam is emitted) while printing?</p>	Check FIP-2.18 HVPS failure.
2	<p>ROS ASSEMBLY failure Does the failure occur even if a sheet of paper is used to cover half of the WINDOW of the ROS ASSEMBLY (opening through which the laser beam is emitted) while printing?</p>	Check FIP-2.3 ROS ASSEMBLY failure.
3	<p>EP CARTRIDGE failure Is the problem resolved by replacing the EP CARTRIDGE?</p>	Replace EP CARTRIDGE.

P-4 Vertical band deletions

P-4	Symptom / Initial Check	Print Sample
	<p>Blank strips appear on the print Print image contains blank or faded strips in the direction of paper transport.</p> <p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, deformed, dirty, or have any foreign objects stuck to it?</p> <p>Major components to check EP CARTRIDGE, BTR ASSEMBLY, TRANSPORT CHUTE ASSEMBLY, ROS ASSEMBLY, MCU PWB, FUSER ASSEMBLY, HEAT ROLL, PRESSURE ROLL</p>	 <p style="text-align: right;">SAK704CA</p>

Step	Check	Action (if problem found)
1	<p>Paper moisture, wrinkles Is the problem resolved by using new paper?</p>	<p>Replace paper. (Advise customer to store paper in a dry location.)</p>
2	<p>Laser beam path cut Are there any foreign objects or dirt obstructing the laser beam path from the ROS ASSEMBLY to the drum?</p>	<p>Remove all foreign objects and dirt obstructing the laser beam path from the ROS ASSEMBLY to the drum.</p>
3	<p>BTR ASSEMBLY failure Are there any foreign objects or dirt on the BTR of the BTR ASSEMBLY?</p>	<p>Replace BTR ASSEMBLY.</p>
4	<p>HEAT ROLL/PRESSURE ROLL failure Are there any scratches, dirt, or foreign objects in the circumferential direction of the HEAT ROLL or PRESSURE ROLL?</p>	<p>Remove all foreign objects or dirt from the HEAT ROLL and PRESSURE ROLL, or replace the components.</p>
5	<p>Paper transport path problem Are there any burrs, dirt, or foreign objects obstructing the path of paper transport?</p>	<p>Remove the obstruction or replace component.</p>
6	<p>EP CARTRIDGE failure Is the problem resolved by replacing the EP CARTRIDGE?</p>	<p>Replace EP CARTRIDGE.</p>
7	<p>Paper size out of specification If the problem occurs even after replacing the EP CARTRIDGE, does the problem continue if the EP CARTRIDGE is exchanged one more time and standard paper is used? H If using acidic paper, this symptom may occur due to the characteristics of the paper material.</p>	<p>Replace paper with standard paper. (Advise the customer to use standard paper)</p>

P-5 Horizontal band deletions (1/2)

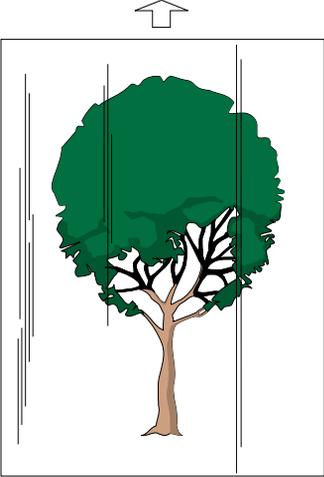
P-5	Symptom / Initial Check	Print Sample
	<p>Blank strips appear on the print Print image contains blank or faded strips perpendicular to the direction of paper transport.</p> <p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, deformed, dirty, or have any foreign objects stuck to it?</p> <p>Major components to check EP CARTRIDGE, HPVS, CRU GUIDE ASSEMBLY L, CRU GUIDE ASSEMBLY R, BTR ASSEMBLY, TRANSPORT CHUTE ASSEMBLY, ROS ASSEMBLY, MCU PWB, FUSER ASSEMBLY, HEAT ROLL, PRESSURE ROLL</p>	 <p style="text-align: right;">SAK705CA</p>

Step	Check	Action (if problem found)
1	<p>Paper moisture, wrinkles Is the problem resolved by using new paper?</p>	<p>Replace paper. (Advise customer to store paper in a dry location.)</p>
2	<p>DRIVE ASSEMBLY failure Does each gear of the DRIVE ASSEMBLY rotate properly? H With the FUSER ASSEMBLY and the EP CARTRIDGE removed, rotate backwards the gears located behind the top of the DRIVE ASSEMBLY by hand and inspect visually.</p>	<p>Replace DRIVE ASSEMBLY.</p>
3	<p>TRANSPORT CHUTE ASSEMBLY failure Do the RUBBER REGISTRATION ROLL and METAL REGISTRATION ROLL rotate properly? H With the POP UP COVER open and the EP CARTRIDGE removed, rotate the REGISTRATION ROLL by hand and verify.</p>	<p>Replace TRANSPORT CHUTE ASSEMBLY.</p>
4	<p>FUSER ASSEMBLY failure Do the HEAT ROLL, PRESSURE ROLL, and each gear of the FUSER ASSEMBLY rotate properly? H With the FUSER ASSEMBLY removed, rotate the H/R IDLER GEAR by hand and inspect visually.</p>	<p>Replace FUSER ASSEMBLY.</p>
5	<p>BTR ASSEMBLY failure Are there any foreign objects or dirt on the BTR of the BTR ASSEMBLY?</p>	<p>Replace BTR ASSEMBLY.</p>
6	<p>Charging and image development failure Is the toner image on the drum developed normally? H Turn OFF the power while image transfer is in progress and visually inspect the drum (area before the image transfer).</p>	<p>Check FIP-2.18 HVPS failure.</p>

P-5 Horizontal band deletions (2/2)

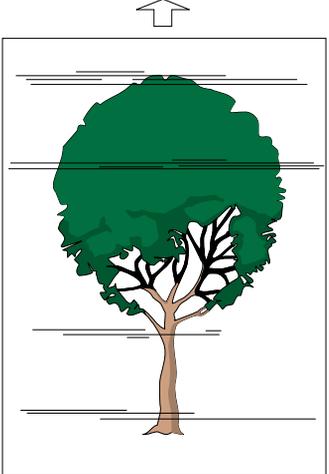
Step	Check	Action (if problem found)
7	<p>Image transfer failure Is the toner image on the drum transferred properly to the paper? H Turn OFF the power while image transfer is in progress and visually inspect the drum.</p>	<p>Check FIP-2.18 HVPS failure.</p>
8	<p>HEAT ROLL/PRESSURE ROLL failure Are there any scratches, dirt, or foreign objects in the axial direction of the HEAT ROLL or PRESSURE ROLL?</p>	<p>Remove all foreign objects or dirt from the HEAT ROLL and PRESSURE ROLL, or replace the components.</p>
9	<p>EP CARTRIDGE failure Is the problem resolved by replacing the EP CARTRIDGE?</p>	<p>Replace EP CARTRIDGE.</p>

P-6 Vertical streaks

P-6	Symptom / Initial Check	Print Sample
	<p>Black strips appear on the print Print image contains black strips in the direction of paper transport.</p> <p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, deformed, dirty, or have any foreign objects stuck to it?</p> <p>Major components to check EP CARTRIDGE, HVPS, CRU GUIDE ASSEMBLY L, CRU GUIDE ASSEMBLY R, BTR ASSEMBLY, TRANSPORT CHUTE ASSEMBLY, ROS ASSEMBLY, MCU PWB, FUSER ASSEMBLY, HEAT ROLL, PRESSURE ROLL</p>	 <p style="text-align: right;">SAK706CA</p>

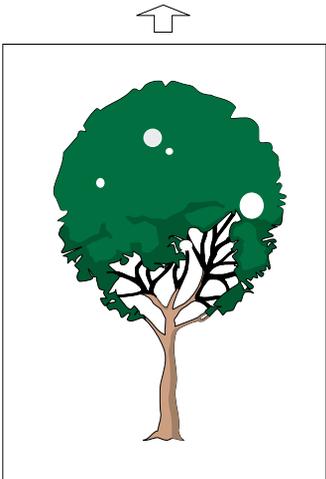
Step	Check	Action (if problem found)
1	<p>Laser beam path cut Are there any foreign objects or dirt obstructing the laser beam path from the ROS ASSEMBLY to the drum?</p>	Remove all foreign objects and dirt obstructing the laser beam path from the ROS ASSEMBLY to the drum.
2	<p>ROS ASSEMBLY failure Does the failure stop occurring if a sheet of paper is used to cover the WINDOW of the ROS ASSEMBLY (opening through which the laser beam is emitted) while printing?</p>	Replace ROS ASSEMBLY failure.
3	<p>BTR ASSEMBLY failure Are there any foreign objects or dirt on the BTR of the BTR ASSEMBLY?</p>	Replace BTR ASSEMBLY.
4	<p>HEAT ROLL/PRESSURE ROLL failure Are there any scratches, dirt, or foreign objects in the circumferential direction of the HEAT ROLL or PRESSURE ROLL?</p>	Remove all foreign objects or dirt from the HEAT ROLL and PRESSURE ROLL, or replace the components.
5	<p>Paper transport path problem Are there any burrs, dirt, or foreign objects obstructing the path of paper transport?</p>	Remove the obstruction or replace component.
6	<p>EP CARTRIDGE failure Is the problem resolved by replacing the EP CARTRIDGE?</p>	Replace EP CARTRIDGE.

P-7 Horizontal streaks

P-7	Symptom / Initial Check	Print Sample
	<p>Horizontal streaks Print image contains black strips perpendicular to the direction of paper transport.</p> <p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, deformed, dirty, or have any foreign objects stuck to it?</p> <p>Major components to check EP CARTRIDGE, HPVS, CRU GUIDE ASSEMBLY L, CRU GUIDE ASSEMBLY R, BTR ASSEMBLY, TRANSPORT CHUTE ASSEMBLY, ROS ASSEMBLY, MCU PWB, FUSER ASSEMBLY, HEAT ROLL, PRESSURE ROLL, LVPS ASSEMBLY</p>	 <p style="text-align: right; font-size: small;">SAK707CA</p>

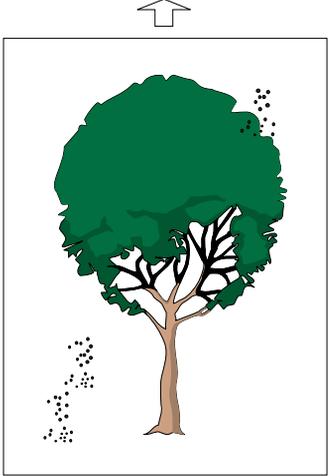
Step	Check	Action (if problem found)
1	<p>Drum ground failure Is the EP CARTRIDGE drum grounded securely? H Ground path Drum > drum shaft pin >CRU GUIDE ASSEMBLY R >frame</p>	Make sure the ground path has continuity.
2	<p>Charging failure Does the failure occur even if a sheet of paper is used to cover the WINDOW of the ROS ASSEMBLY (opening through which the laser beam is emitted) while printing?</p>	Check FIP-2.18 HVPS failure.
3	<p>Charging and image development failure Is the toner image on the drum developed normally? H Turn OFF the power while image transfer is in progress and visually inspect the drum (area before the image transfer).</p>	Check FIP-2.18 HVPS failure.
4	<p>BTR ASSEMBLY failure Are there any foreign objects or dirt on the BTR of the BTR ASSEMBLY?</p>	Replace BTR ASSEMBLY.
5	<p>HEAT ROLL/PRESSURE ROLL failure Are there any scratches, dirt, or foreign objects in the axial direction of the HEAT ROLL or PRESSURE ROLL?</p>	Remove all foreign objects or dirt from the HEAT ROLL and PRESSURE ROLL, or replace the components.
6	<p>EP CARTRIDGE failure Is the problem resolved by replacing the EP CARTRIDGE?</p>	Replace EP CARTRIDGE
7	<p>Noise</p>	Check FIP-2.19 Noise.

P-8 Blank or faded spots

P-8	Symptom / Initial Check	Print Sample
	<p>Blank or faded spots Print image contains blank or fades spots.</p> <p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, deformed, dirty, or have any foreign objects stuck to it?</p> <p>Major components to check EP CARTRIDGE, HPVS, BTR ASSEMBLY, TRANSPORT CHUTE ASSEMBLY, ROS ASSEMBLY, FUSER ASSEMBLY, HEAT ROLL, PRESSURE ROLL</p>	

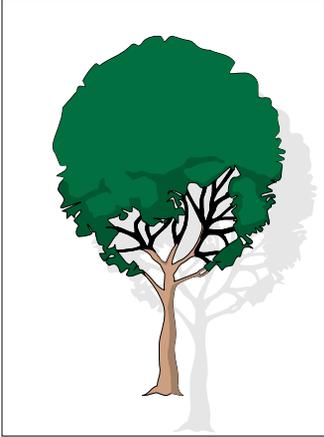
Step	Check	Action (if problem found)
1	<p>Paper moisture, wrinkles Is the problem resolved by using new paper?</p>	<p>Replace paper. (Advise customer to store paper in a dry location.)</p>
2	<p>Charging and image development failure Is the toner image on the drum developed normally? H Turn OFF the power while image transfer is in progress and visually inspect the drum (area before the image transfer).</p>	<p>Check FIP-2.18 HVPS failure.</p>
3	<p>BTR ASSEMBLY failure Are there any foreign objects or dirt on the BTR of the BTR ASSEMBLY?</p>	<p>Replace BTR ASSEMBLY.</p>
4	<p>HEAT ROLL/PRESSURE ROLL failure Are there any scratches, dirt, or foreign objects on the HEAT ROLL or PRESSURE ROLL?</p>	<p>Remove all foreign objects or dirt from the HEAT ROLL and PRESSURE ROLL, or replace the components.</p>
5	<p>EP CARTRIDGE failure Is the problem resolved by replacing the EP CARTRIDGE?</p>	<p>Replace EP CARTRIDGE.</p>

P-9 Black spots

P-9	Symptom / Initial Check	Print Sample
	<p>Black spots Print image contains black spots.</p> <p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, deformed, dirty, or have any foreign objects stuck to it?</p> <p>Major components to check EP CARTRIDGE, HPVS, BTR ASSEMBLY, TRANSPORT CHUTE ASSEMBLY, ROS ASSEMBLY, FUSER ASSEMBLY, HEAT ROLL, PRESSURE ROLL</p>	 <p style="text-align: right;">SAK709CA</p>

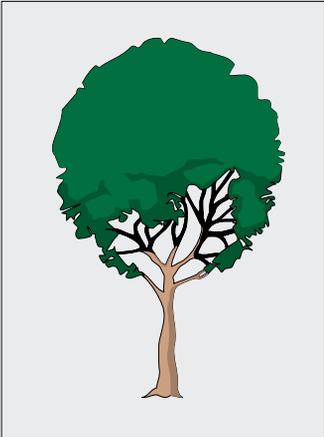
Step	Check	Action (if problem found)
1	<p>Paper moisture, wrinkles Is the problem resolved by using new paper?</p>	<p>Replace paper. (Advise customer to store paper in a dry location.)</p>
2	<p>Charging and image development failure Is the toner image on the drum developed normally? H Turn OFF the power while image transfer is in progress and visually inspect the drum (area before the image transfer).</p>	<p>Check FIP-2.18 HVPS failure.</p>
3	<p>BTR ASSEMBLY failure Are there any foreign objects or dirt on the BTR of the BTR ASSEMBLY?</p>	<p>Replace BTR ASSEMBLY.</p>
4	<p>HEAT ROLL/PRESSURE ROLL failure Are there any scratches, dirt, or foreign objects on the HEAT ROLL or PRESSURE ROLL?</p>	<p>Remove all foreign objects or dirt from the HEAT ROLL and PRESSURE ROLL, or replace the components.</p>
5	<p>EP CARTRIDGE failure Is the problem resolved by replacing the EP CARTRIDGE?</p>	<p>Replace EP CARTRIDGE.</p>

P-10 Residual images

P-10	Symptom / Initial Check	Print Sample
	<p>Residual images Print contains residual images from the previous print.</p> <p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, deformed, dirty, or have any foreign objects stuck to it?</p> <p>Major components to check EP CARTRIDGE, HPVS, CRU GUIDE ASSEMBLY L, CRU GUIDE ASSEMBLY R, BTR ASSEMBLY, TRANSPORT CHUTE ASSEMBLY, ROS ASSEMBLY, MCU PWB, FUSER ASSEMBLY, HEAT ROLL, PRESSURE ROLL</p>	<p style="text-align: center;">↑</p>  <p style="text-align: right;">SAK710CA</p>

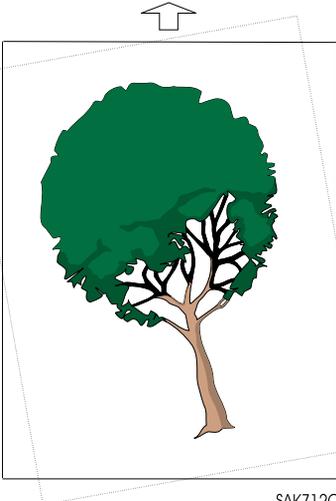
Step	Check	Action (if problem found)
1	<p>Paper moisture Is the problem resolved by using new paper?</p>	<p>Replace paper. (Advise customer to store paper in a dry location.)</p>
2	<p>Charging failure Does the problem occur only when printing in succession?</p>	<p>Check FIP-2.18 HVPS failure. Since this symptom may appear if the same image is printed continuously, advise the customer to suspend printing for a while before restarting.</p>
3	<p>BTR ASSEMBLY failure Are there any foreign objects or dirt on the BTR of the BTR ASSEMBLY?</p>	<p>Replace BTR ASSEMBLY.</p>
4	<p>HEAT ROLL/PRESSURE ROLL failure Are there any scratches, dirt, or foreign objects on the HEAT ROLL or PRESSURE ROLL?</p>	<p>Remove all foreign objects or dirt from the HEAT ROLL and PRESSURE ROLL, or replace the components.</p>
5	<p>EP CARTRIDGE failure Is the problem resolved by replacing the EP CARTRIDGE?</p>	<p>Replace EP CARTRIDGE.</p>
6	<p>Is the problem resolved by changing either the printed image or the vertical/horizontal orientation of the image?</p>	<p>This symptom is inevitable; advise the customer to change the image or the print orientation.</p>

P-11 Dark background

P-11	Symptom / Initial Check	Print Sample
	<p>Dark background Toner contamination appears on all or part of the paper.</p> <p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, deformed, dirty, or have any foreign objects stuck to it?</p> <p>Major components to check EP CARTRIDGE, HPVS, CRU GUIDE ASSEMBLY L, CRU GUIDE ASSEMBLY R, ROS ASSEMBLY, MCU PWB, TRANSPORT CHUTE ASSEMBLY, FUSER ASSEMBLY</p>	<p style="text-align: center;">↑</p>  <p style="text-align: right;">SAK711CA</p>

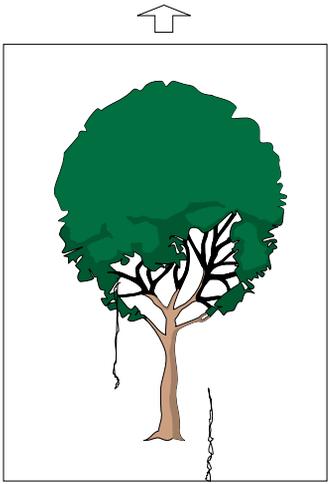
Step	Check	Action (if problem found)
1	<p>KNOB VOLUME (print density control) adjustment Is the problem resolved by adjusting the position of the KNOB VOLUME (print density control)?</p>	Adjust print density. (Advise the customer to adjust print density)
2	<p>Charging and image development failure Is the toner image on the drum developed normally? H Turn OFF the power while image transfer is in progress and visually inspect the drum (area before the image transfer).</p>	Check FIP-2.18 HVPS failure.
3	<p>TRANSPORT CHUTE ASSEMBLY ground failure Is the TRANSPORT CHUTE ASSEMBLY grounded securely?</p>	Secure ground.
4	<p>FUSER ASSEMBLY ground failure Is the FUSER ASSEMBLY grounded securely?</p>	Secure ground.
5	<p>EP CARTRIDGE failure Is the problem resolved by replacing the EP CARTRIDGE?</p>	Replace EP CARTRIDGE.

P-12 Skewed image

P-12	Symptom / Initial Check	Print Sample
	<p>Print skew Image is printed with a crooked orientation.</p> <p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, deformed, dirty, or have any foreign objects stuck to it?</p> <p>Major components to check EP CARTRIDGE, BTR ASSEMBLY, TRANSPORT CHUTE ASSEMBLY, FUSER ASSEMBLY, MSI CHUTE ASSEMBLY, PICK UP ROLL, FRONT BOTTOM TRAY, FEEDER UNIT, FEED ROLL, PAPER CASSETTE, ROS ASSEMBLY</p>	

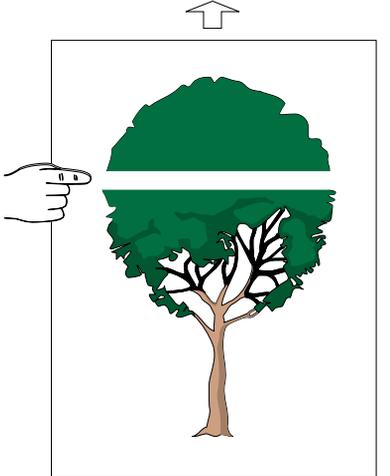
Step	Check	Action (if problem found)
1	<p>Paper loading failure Is the paper loaded correctly, or is the PAPER CASSETTE installed properly?</p>	<p>Re-load paper or reinstall PAPER CASSETTE properly. (Advise customer to set properly.)</p>
2	<p>Paper transport path problem Are there any burrs, dirt, or foreign objects obstructing the path of paper transport?</p>	<p>Remove the obstruction or replace component.</p>
3	<p>Paper feeder roll problem Do the rolls feed paper properly?</p>	<p>Replace component.</p>
4	<p>Paper transport roll problem Are there any foreign objects, dirt, deformation, or a malfunction of the paper transport rolls?</p>	<p>Remove the obstruction or replace component.</p>
5	<p>EP CARTRIDGE failure Is the problem resolved by replacing the EP CARTRIDGE?</p>	<p>Replace EP CARTRIDGE.</p>

P-13 Creased or wrinkled paper

P-13	Symptom / Initial Check	Print Sample
	<p>Creased or wrinkled paper Paper becomes creased or wrinkled when printing.</p> <p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, deformed, dirty, or have any foreign objects stuck to it?</p> <p>Major components to check FUSER ASSEMBLY, HEAT ROLL, PRESSURE ROLL, MCU PWB, TRANSPORT CHUTE ASSEMBLY, EP CARTRIDGE, BTR ASSEMBLY, MSI CHUTE ASSEMBLY, PICK UP ROLL, FEEDER UNIT, FEED ROLL, PAPER CASSETTE</p>	 <p style="text-align: right;">SAK713CA</p>

Step	Check	Action (if problem found)
1	<p>Paper moisture Is the problem resolved by using new paper?</p>	<p>Replace paper. (Advise customer to store paper in a dry location.)</p>
2	<p>HEAT ROLL/PRESSURE ROLL failure Are there any scratches, dirt, or foreign objects on the HEAT ROLL or PRESSURE ROLL?</p>	<p>Remove all foreign objects or dirt from the HEAT ROLL and PRESSURE ROLL, or replace the components.</p>
3	<p>Skew Is the paper being fed skewed?</p>	<p>Check P-13 Skew.</p>
4	<p>Paper transport path problem Are there any burrs, dirt, or foreign objects obstructing the path of paper transport?</p>	<p>Remove the obstruction or replace component.</p>
5	<p>Paper transport roll problem Are there any foreign objects, dirt, deformation, or a malfunction of the paper transport rolls?</p>	<p>Remove the obstruction or replace component.</p>
6	<p>Tool available Non-volatile memory data error Is the setting of Non-Volatile Memory Code 9 correct?</p>	<p>Tool available Set correct value.</p>

P-14 Unfused image

P-14	Symptom / Initial Check	Print Sample
	<p>Unfused image Print image is not fully fused to the paper and may rub off easily if touched.</p> <p>Initial Check Are there any components that are incompatible, incorrectly installed, damaged, deformed, dirty, or have any foreign objects stuck to it?</p> <p>Major components to check FUSER ASSEMBLY, HEAT ROLL, PRESSURE ROLL, MCU PWB, LVPS ASSEMBLY</p>	 <p style="text-align: right;">SAK714CA</p>

Step	Check	Action (if problem found)
1	<p>Paper moisture Is the problem resolved by using new paper?</p>	<p>Replace paper. (Advise customer to store paper in a dry location.)</p>
2	<p>HEAT ROLL/PRESSURE ROLL failure Are there any scratches, dirt, or foreign objects on the HEAT ROLL or PRESSURE ROLL?</p>	<p>Remove all foreign objects or dirt from the HEAT ROLL and PRESSURE ROLL, or replace the components.</p>
3	<p>FUSER ASSEMBLY failure Is there proper pressure between the HEAT ROLL and the PRESSURE ROLL?</p>	<p>Replace FUSER ASSEMBLY.</p>
4	<p>Tool available Non-volatile memory data error Is the setting of Non-Volatile Memory Code 9 correct?</p>	<p>Tool available Set correct value.</p>

5. PREVENTIVE MAINTENANCE

When visiting a customer, perform preventive maintenance in order to avoid having failures not related to the main purpose of the visit.

Preventive maintenance procedures

- 1) Verify printer use status with the customer.
- 2) Record the print count of the system.

Note : The print count serves as a guide to when recommended parts should be replaced.

- 3) Print several pages and verify that there are no problems.
- 4) Remove foreign matter from the DETACK SAW of the TRANSPORT CHUTE ASSEMBLY, PAPER TRANS ASSEMBLY port path, and paper transport rolls and clean any dirt with a brush or a dry cloth.

Note : 1. If the dirt is excessive, clean with a wet cloth and then wipe dry with a dry cloth. Take care to avoid damaging the area being cleaned.

2. Do not clean the BTR surface of the BTR ASSEMBLY. If the surface is dirty, blow away the dirt with a blower (Dust Flyer), or allow the printing motion to clean it.

- 5) Cleaning the fan outlet
Remove the REAR FRAME ASSEMBLY and clean any dirt from the FAN and the rear FRAME with a brush.

Note : If the outlet becomes clogged, the internal temperature of the system will rise which may cause failures.

- 6) Print several pages again and verify that there are no problems.

Section 8

Installation and Removal

Section Contents

1. Installation

1.1 Printer Power	8-1
1.2 Grounding	8-1
1.3 Printer Space Requirements	8-1
1.4 Unpacking	8-2
1.4.1 Unpack the Printer	8-2
1.4.2 Unpack and Unwrap the EP Cartridge	8-3
1.5 Installation Procedure	8-4

2. Removal

2.1 Removal Procedure.	8-5
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3. Install the Optional Feeder Unit. 8-5

1. Installation

1.1 Printer Power

Use the wall outlet specially for this printer and avoid connecting the printer together with many other machines to the one electrical outlet. Make sure the power source meets the specification. (See Section 2 "1.3.1 Power Source")

1.2 Grounding

Make sure to ground the printer.

Caution : Do not ground the printer to:

- Gas pipes
- Telephone grounding terminal
- A conduit with plastic joints

1.3 Printer Space Requirements

- Allow enough space around the printer for maintenance. (See Section 2 "1.4.2 Space Requirements")
- Avoid places where temperature and humidity is outside the recommended range, or places where temperature rapidly fluctuates.
- Avoid places near running water, steam, electric heaters or flame.
- Avoid places where printer is exposed to dust or direct airflow from the air-conditioned.
- Avoid places that are volatile to flammable gas.
- Avoid places where printer is exposed to direct sunlight.
- Avoid poorly ventilated areas.
- Set up printer on safe and stable surface.
- Set up printer on a leveled surface.

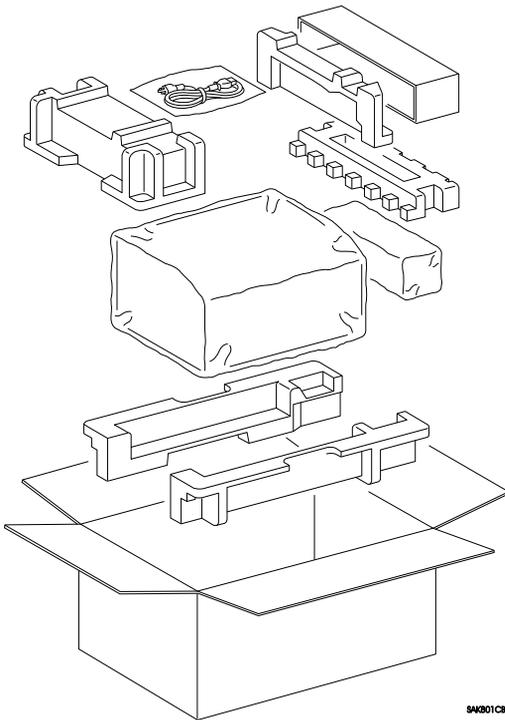
1.4 Unpacking

1.4.1 Unpack the Printer

Unpack printer from the shipping box and check the appearance of the machine, the contents in the box.

- 1) Base Engine
- 2) EP Cartridge
- 3) Power Cord

Basic Configuration 1

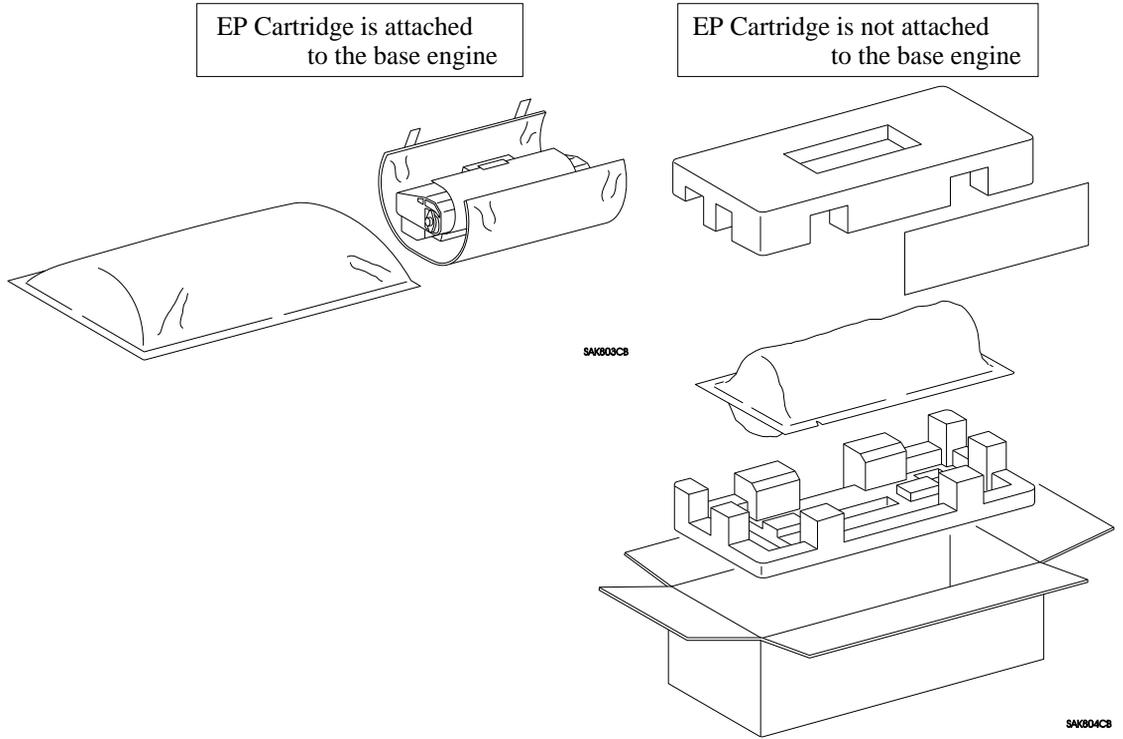


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1.4.2 Unpack and Unwrap the EP Cartridge

Unpack and unwrap the EP Cartridge and check the appearance.

- 1) EP Cartridge
- 2) Operation Manual (only for the "EP Cartridge is attached to the base engine")



1.5 Installation Procedure

See "Operation Manual" for details.

- 1) Unpack printer, remove the packing materials and install the printer in the appropriate place.
- 2) Press the button on the upper side of the printer, and lift open the upper cover (Pop Up Cover).
- 3) Remove the white cardboard box, used as the stopper of the Pick Up Cam, from the left side of MSI Chute Assembly.

Note : Keep the cardboard box for reuse when moving the printer after installation.

- 4) Remove the right and the left orange stoppers (BTR stopper) which support the BTR Assembly.

Note : Keep the two stoppers for reuse when moving the printer after installation.

- 5) Unwrap the EP Cartridge, shake it seven to eight times, and pull the toner tape.

Note : 1. Shake the EP Cartridge sufficiently, otherwise any failures such as damages or noise may occur.

2. Pull the toner tape straight out, otherwise it may tear in half.

- 6) Install the EP Cartridge and close the upper cover firmly.

Note : Make sure to latch the right and left side of upper cover.

- 7) If you load paper in the Front Tray, open the front cover (Front Tray).

- 8) Load paper in the Front Tray or in the paper cassette.

Note : Note the following points when loading paper:

- *For Front Tray*

- *Even out all edges of paper before loading.*

- *Place the lead edge of the paper so as to touch the back side of the paper cassette.*

- *Adjust the paper guide to the paper size.*

- *For Paper Cassette*

- *Even out all edges of paper before loading.*

- *Position the paper under the right and left claws at the front of the paper cassette.*

- *Adjust the paper guide to the paper size.*

- 9) For the Basic Configuration 2 and when the optional feeding unit is installed, install the paper cassette to the printer.

Note : Printer may operate even if the paper cassette is not installed completely. Be sure to install the paper cassette completely to avoid troubles of paper jamming or print image quality.

- 10) Connect the power cord.

- 11) Turn the printer switch ON.

- 12) Run a few test prints to make sure the printer is working correctly.

2. Removal

2.1 Removal Procedure

See "Operation Manual" for details.

Reverse the installation procedure for removal.

Note : 1. Remove the EP Cartridge before removal.

2. Put the right and left stoppers for the BTR Assembly (BTR Stopper) firmly in place.

3. Place the cardboard box as a stopper of the Pick Up Cam at the left side of the MSI Chute Assembly.

4. Check the contents of the attachment.

5. Put the packing materials firmly in place.

3. Install the Optional Feeder Unit

See "Operation Manual" packed with optional feeder unit for details.

<Installation procedure for Basic Configuration 1>

- 1) Switch OFF the main power and disconnect the power cord.
- 2) Unpack the optional feeder unit from the shipping box, and place the rubber side of the feeder roll upwards.

Note : Step 3 to 5 are necessary if the printer is installed with the protect plate.

- 3) Remove the Left Cover. (See Section 4 1.1)
- 4) Remove the screw, which secures the protect plate (Base Plate) from the bottom of the printer, and remove the protect plate.
- 5) Install the Left Cover of the printer.

Note : In the next step, place paper under the printer so as not to damage the cover or operating side.

- 6) Lay the printer on its side with the Right Cover down.
- 7) Place the optional feeder unit on the printer and fix it with the four screws.

Caution : Be careful for the printer not to fall down.

Note : 1. Align the edges of printer with the edges of the feeder unit to fix them.

2. Make sure the printer and optional feeder unit are fixed without excess gap between them.

- 8) Set the printer in an appropriate place, and install the paper cassette filled with paper.
- 9) Run a few test prints feeding from the optional feeder unit to make sure the printer is working correctly.

<Installation procedure for Basic Configuration 2>

- 1) Switch OFF the main power and disconnect the power cord.
- 2) Remove the paper cassette.
- 3) Unpack the optional feeder unit from the shipping box, and place it in the appropriate place.
- 4) Place the rubber side of the feeder roll upwards.

Note : Step 5 is necessary if the printer is installed with the Housing Cap.

- 5) Unlatch the hook of the Housing Cap attached with the bottom of feeder unit (Feeding L).
- 6) Lift printer up using both hands, and place it on top of the optional feeder unit.

Caution : Be careful for your hands not to be caught between the printer and the feeder unit.

Note : 1. Align the edges of printer with the edges of the feeder unit to fix them.

2. Make sure the printer and optional feeder unit are fixed without excess space between them.

- 7) Securely mount four clips (Feeder Joints) packed with the feeder unit on the four inside corners where the feeder units are tangent. You can see them from the paper cassette attachment area.
- 8) Install the printer in an appropriate place, and install the paper cassette with the paper loaded.
- 9) Run a few test prints feeding from the optional feeder unit to make sure the printer is working correctly.