DEClaser 3500 Printer Service Guide

EK-D35PS-SG.A01

Digital Equipment Corporation
Maynard, Massachusetts

First Printing, June 1994

Federal Communications Commission Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult a dealer or an experienced radio or television technician for help.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved
by Digital Equipment Corporation may void the user's authority
to operate the equipment.

Cables

Connections to this device must be shielded cables with metallic RFI/EMI connector hoods in order to maintain compliance with
FCC Rules and Regulations.

この装置は，第二種情報装置(住宅地域又はその隣接した地域において使用されるべき情報装置)で住宅地域での電波障害防止を目的とした情報処理装置等電波障害自主規制協議会(VCCI)基準に適合しております。
しかし，本装置をラジオ，テレビジョン受信機に近接してご使用になると受信障害の原因となることがあります。
取扱説明書に従って正しい取り扱いをして下さい。

Canadian Notice

This equipment does not exceed the Class B limits for radio noise emissions as described in the Radio Interference Regulations of the Canadian Department of Communications.

Avis Canadien

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la Classe B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

Acoustics

Preliminary declared values per ISO 9296 and ISO 7779:

Sound Power Level		**Sound Pressure Level**	
L_{WAd}, B		L_{pAm}, dBA (bystander positions)	
Idle	**Operate**	**Idle**	**Operate**
5.4	6.6	37	50

1 B = 10 dBA

Current values for specific configurations are available from Digital representatives.

Laser Printer Safety Information

The following safety guidelines and information are provided to protect and inform you and ensure proper and safe operation of the printer.

- Do not modify or remove parts from the printer.
- Do not block the air vent with paper or another object. If the printer is used in a small room for many hours, be sure adequate ventilation is provided.
- Do not place anything on the printer. Liquid spilled on the printer could affect insulation, and may cause a hazardous situation.
- Do not allow metal objects (such as paper clips or staples) to fall into the printer.
- Do not open the printer cover during operation. This could cause a paper jam.
- Do not turn the power off while the printer is printing.
- Do not spray flammable substances near the printer.
- If the printer does not operate normally when the instructions are followed, or if the printer exhibits a distinct change in performance indicating a need for service, unplug the printer from the electrical outlet. Contact your Authorized Digital Reseller or Service Provider.
- Do not handle equipment if your hands are wet. In a nonemergency situation, if you must unplug the printer, turn the power off first. Then disconnect the power plug from the electrical outlet by pulling on the plug, not the power cord.
- Do not deviate from the specifications outlined in this guide.
- Be sure the power switch is off before inserting the power plug into an electrical outlet.

The printer complies with appropriate safety standards. With specific regard to the laser, this equipment complies with laser product performance standards set by governmental agencies as a Class 1 laser product. It does not emit hazardous light; the beam is totally enclosed during all modes of customer operation and maintenance.

Class 1 Laser Product

The printer is certified as a Class 1 laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968. This means that the printer does not emit hazardous laser radiation.
Since radiation emitted inside the printer is completely confined within protective housings and external covers, the laser beam cannot escape from the machine during any phase of user operation.

CLASS 3B
780nm
5mWmax

DANGER	INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
CAUTION	INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
PRECAUCIÓN	RADIACIÓN LASÉRICA INVISIBLE CUANDO SE ABRA Y ANULE EL INTERBLOQUEO. EVITE LA EXPOSICIÓN DIRECTA AL HAZ.

VARNING

OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRRAR ÄR URKOPPLADE. STRÅLEN ÄR FARLIG.

ADVARSEL

USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHETSLÅS BRYTES, UNNGÅ EKSPONERING FOR STRÅLEN.

ADVARSEL

USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.

VARO!

NÄKYMÄTÖN AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA LASERSÄTEILYLLE ÄLÄ KATSO SÄTEESEN.

VORSICHT!

UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET UND SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT. NICHT IN DER STRAHL BLICKEN.

ATTENTION

EMISSION DE RADIATION LASER INVISIBLE QUAND L'APPAREIL EST OUVERT ET LORSQUE LA SÉCURITÉ EST NEUTRALISÉE EVITER DE S'EXPOSER AU RAYON LASER.

WARNING: The label shown above is intended as a warning to persons disassembling the Raster Laser Scanner unit for internal alignment or repair purposes. It does not apply to any of the maintenance procedures specified in this manual.

WARNING: When servicing the machine or laser module, follow the procedures specified in the manual so that there are no hazards from the laser. The use of controls, adjustments, or performance of procedures other than those specified in this manual may result in hazardous laser radiation exposure.

VAROITUS! Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.
VARNING! Om apparaten används på annat sätt än i denna bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

CDRH Regulations

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration implemented regulations for laser products on August 1, 1976. These regulations apply to laser products marketed in the United States. The label on the printer indicates compliance with the CDRH regulations and must be attached to laser products marketed in the United States.

Modem Warning:

Caution: This modem card is intended to be installed in a CSA certified equipment in the field by the user in manufacturer's defined operator access area. Check the equipment operating/installation instructions and/or equipment manufacturer to verify/confirm if your equipment is suitable for user-installed application cards.

Attention: Cette carte modem est destinee a etre installee par l'utilisateur, sur place et a l'interieur de la zone definie par la fabricant, dans un appareil certifie CSA. Consulter le mode d'emploi ou le fabricant de l'appareil pour verifier our confirmer si l'utilisateur peut y installer lui-meme des cartes peripheriques.

Caution: Always disconnect the modem board (the one with the telephone jack/plug) from the telephone system when installing or when covers are removed from the host product.

Attention: Toujours debrancher la ligne telephonique de la carte modem (munie d'une prise ou d'une fiche) avant de proceder a l'installation dans l'appareil ou lorsque le couvercle de celui-ci est retire.

Chapter 1 : Printer Specifications

This chapter lists the specifications of the DEClaser 3500 printer and its options.

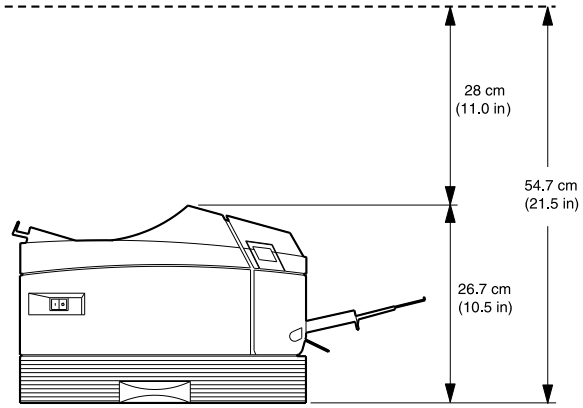
Product and Servicing Safety Notes

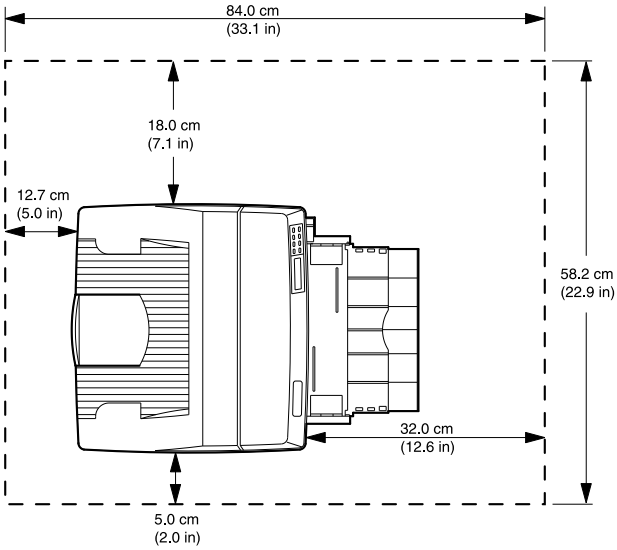
The DEClaser 3500 printer complies with all United States government safety regulations applicable to ozone gas emissions and laser beam light exposure.

Laser Safety: The DEClaser 3500 printer complies with 21 CFR Chapter 1, Subchapter J, as a Class 1 laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard, according to the Radiate Control for Health and Safety Act of 1968. The DEClaser 3500 printer does not emit hazardous light because the laser beam is totally enclosed during all modes of customer operation and maintenance.

Warning: Use of controls or adjustment procedures other than those specified in this manual may result in hazardous laser light exposure.

Minimum Space Requirements





Functional specifications

Printing method

Printing by xerographic process.

Exposure method

Scanning by semiconductor laser beam.

Fusing method

Fusing by heat and pressure.

Print speed

12 letter-sized pages per minute

Resolution

Print Enhancement Technology (PET) allows the following resolutions:

- 300 x 300 dpi
- 600 x 600 dpi

Maximum paper size

Legal 14" (8.5"x14” =215.9 mmx355.6mm)

Maximum paper held in output tray

150 sheets of letter–size paper.

Physical Specifications

	120 V	240 V
Power Supply		
Operating voltage	100/115 VAC Nominal	220/240 VAC
Operating current	4A Max	2A Max
Typical input standby power	23 W (factory configuration) 38 W (all options installed)	23 W (factory configuration) 38 W (all options installed)
Input peak power	450 W	500 W
Line frequency	50 - 60 Hz	50 - 60 Hz
Dimensions		
Width	14.4 in (36.6 cm)	14.4 in (36.6 cm)
Depth	16 in (40.6 cm)	16 in (40.6 cm)
Height	10.5 in (26.7 cm)	10.5 in (26.7 cm)
Weight	28.8 lb (13 kg)	28.8 lb (13 kg)
Temperature Range		
Operating	50 to 95°F (10 to 32°C)	50 to 95°F (10 to 32°C)
Nonoperating	-4 to 131°F (-20 to 55°C)	-4 to 131°F (-20 to 55°C)
Humidity Range		
Operating	15 to 85%	15 to 85%
Nonoperating	5 to 95%	5 to 95%
Altitude	Up to 10,000 ft.	Up to 10,000 ft.
Nonoperating	(3000 meters)	(3000 meters)
Noise		
While printing	<50 dB	<50 dB
Standby	37 dB	37 dB
Ozone Emissions	None measurable	None measurable

Media specifications

Paper is a critical item. Select, store and handle it properly to avoid paper jams and poor print quality. This section provides information on the following:

- Paper and print material specifications
- Paper storage requirements
- Envelope specifications

The paper should be of good quality, free of cuts, nicks, tears, spots, loose particles, dust, wrinkles, voids, and curled or bent edges. The use of good quality paper ensures good image transfer and toner fixing without excessive curl. It is recommended that you test a particular paper, prior to large purchases, to determine if the performance is acceptable. This section contains guidelines for you to follow when selecting print material to be used with your printer. Print material that does not meet the suggested guidelines may:

- Increase paper jams
- Cause unnecessary wear in the printer
- Degrade print quality
- Increase service costs

The printer uses plain paper in weights of 16 to 24 pound (60 to 90 g/m^2). For optimum printer performance, 20 pound or 75 g/m^2 paper is recommended. Use conventional white xerographic paper for most printing applications.

The printer can also use special print materials such as:

- Colored paper
- Predrilled paper
- Letterhead paper
- Preprinted forms
- Labels
- Transparencies
- Nonstandard sized paper (e.g. envelopes)
- Card stock

Colored Paper

Do not use paper with a colored coating that has been added after the paper is produced. Pigments used must be able to withstand temperatures of 392º Fahrenheit (200º Centigrade) without deterioration. Colored paper should also be of the same high quality as white paper.

Card Stock

For optimum performance, use card stock in weights from 16 to 32 pound (60 to 120 g/m^2). Card stock over 36 pound (135 g/m^2) may cause printer dysfunction.

NOTE: The paper industry uses the term "basis weight." When you see paper listed as 28 pound paper, you are being given a weight specification. In English units, basis weight refers to the weight in pounds of 500 sheets of 17 by 22 inch paper. Basis weight is measured on a metric scale as the weight, in grams, of one square meter of paper.

Preprinted Forms

Notify your supplier that the preprinted form is used with a laser printer. Forms must be printed with heat-resistant inks that will not melt, vaporize, or release hazardous emissions when subject to the fusing temperature of 392º Fahrenheit (200º Centigrade) for 0.1 second. Make sure the ink is completely dry before using the forms to prevent the ink from transferring to the printer rollers and contaminating internal printer mechanisms.

Labels

An adhesive label is paper with a pressure-sensitive adhesive backing. The three parts of label stock are:

Top or face sheet - The top sheet is the surface that the image is printed on. It is usually composed of photocopy paper.

Carrier or Backing Sheet - The backing sheet should be bleached sulfate stock and silicone-coated for easy release of the face sheet.

Adhesive - The adhesive should be stable at the 392º F (200º C) temperatures encountered in the fusing process and must not give off any emissions that exceed exposure levels or threshold limits established by regional or national safety agencies.

Adhesive should not come in direct contact with any part of the printer because it may stick to the print drum or rollers, causing toner offset or paper jams. No adhesive should be exposed between the labels.

Label Specifications

Label Properties	Specifications
Face Sheet	Must meet specifications in this chapter.
Fusing Compatibility	All adhesives, liners, facestocks and other materials used in label construction must be compatible with the heat and pressure of the fusing process. Materials must not discolor, melt, offset material or release hazardous emissions when heated to 392° F (200° C) for 0.1 seconds.
Construction	Total construction caliper must not exceed 0.0070 inches (0.18 millimeters).

Transparency Specifications

The following table summarizes specifications to consider when selecting transparencies.

Transparency Specifications

Properties	Specifications	
Thickness	0.110 mm	3.9 to 4.5 mils
Cutting Dimension Tolerance	+/- 0.7 mm	0.031 inch
Cutting Angle	90° +/- 0.2°	

Paper Specifications

Paper Specifications

Paper Properties	Specifications
Basis Weight	
Paper Card Stock	16 to 24 pound (60 to 90 g/m^2) 16 to 32 pound (60 to 120 g/m^2)
Moisture Content	4% to 6% by weight (4.5% nominal, 5.3% maximum)
Furnish (Composition)	100% chemical wood pulp and/or cotton fiber
Acid Content	5.5 pH minimum
Ash Content	Not to exceed 10%
Brightness	83% minimum
Caliper	3.0 to 7.0 mils
Curl	In ream: flat within 0.3 inch (8 mm) Printed: flat within 0.8 inch (20 mm)
Cut Edge Conditions	Cut with sharp blades with no visible fray
Electrical Properties	Surface Resistivity: 2.0 to 15 x 10^{10} ohms/sq. Volume Resistivity: 1.2 to 15 x 10^{11} ohms x cm (conditioned at 23°C and 50% relative humidity)
Finishing	Cut sheet to +/- 0.031 inch of nominal, +/- 0.2° square
Fusing Compatibility	Must not scorch, melt, offset or release hazardous emissions when heated to 200° C (392° F) for 0.1 second.
Grain	Long grain
Opacity	85% minimum
Packaging	Moisture-proof ream warp
Rag Content	25% cotton fiber or less
Smoothness	100 to 190 Sheffield, 120 to 240 Bendsten
Stiffness	1.6 to 7.5 machine direction/0.6 to 3.5 cross direction (Taber)
Storage	
Temperature Humidity	68°F to 76°F (20°C to 24.4°C) 35% to 55%
Surface Strength	12 minimum wax pick (Dennison)

Envelope Specifications

Envelope Properties	Specifications
Paper	Envelope construction must meet all of the specifications listed in this chapter.
Composition	100% chemical wood pulp and/or cotton fiber
Basis Weight (single layer)	20 to 24 pound (75 to 90 g/m^2)
Caliper	3.3 to 5.5 mils (0.084 to 0.14 mm) single layer thickness
Electrical Properties	Surface resistivity: 2.0 to 15 x 10^{10} ohm/sq. Volume resistance: 1.2 to 15 x 10^{11} ohm x cm (conditioned at 23° C and 50% relative humidity)
Fusing Compatibility	All inks, adhesives, and other materials of the envelope must be compatible with the heat and pressure of the fusing process. Materials must not discolor, melt, offset material, or release hazardous emissions when heated to 392° F (200° C) for 0.1 second.
Finishing	Envelopes must not have exposed adhesive. Each envelope must be accurately folded (+/- 0.04 inch) so there are no more than two thicknesses of paper along the leading edge. Folds must be sharply creased and construction must be tight (not baggy).
Curl	Envelopes must lie flat with no more than 0.25 inch (6 mm) curl across the entire surface.
Moisture Content	4% to 6% by weight
Smoothness	80 to 180 Sheffield

Printing accuracy

The DEClaser 3500 laser printer is designed to be accurate within the following print image parameters:

Lead Edge Registration: ±2.0mm

Side Edge Registration: ±2.5mm

Skew: ±1.7mm (at a width of 190mm)

Vertical Accuracy: ±0.82mm (at a height of 114.5mm)

Feeding Accuracy: ±0.7mm (at the height of 234mm)

Horizontal Accuracy: ±1.0mm (at a width of 190mm and a height of 234mm)

Chapter 2 : Printer Technical Description

This chapter provides a physical and functional description of the DEClaser 3500 printer and its options.

Product and Servicing Safety Notes

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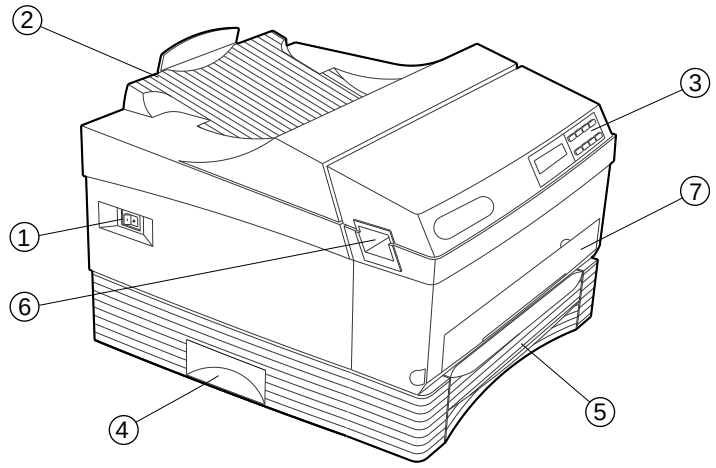
Warning: Use of controls or adjustment procedures other than those specified in this manual may result in hazardous laser light exposure.

Physical Description

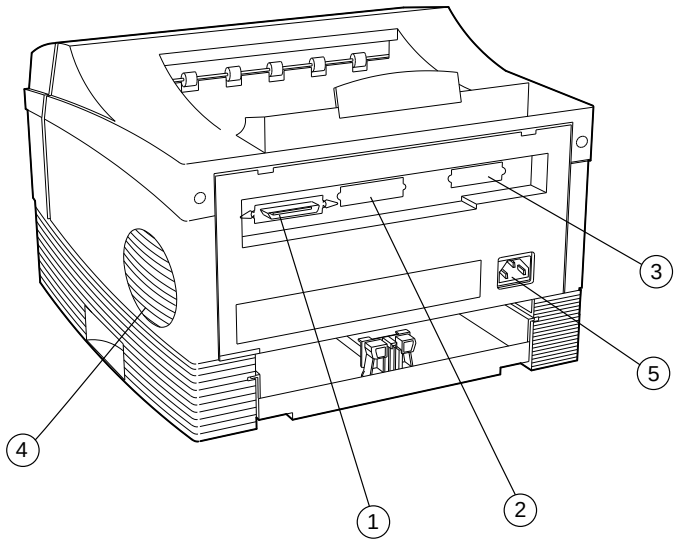
The following illustrations show the key components of the printer.

Front View of Printer



1 - On/off Switch
2 - Output Tray
3 - Control Panel
4 - Lift Handle (on both sides)
5 - Universal Paper Tray
6 - Front Cover Release Latch (on both sides)
7 - Multipurpose Feeder Slot

Rear View of Printer



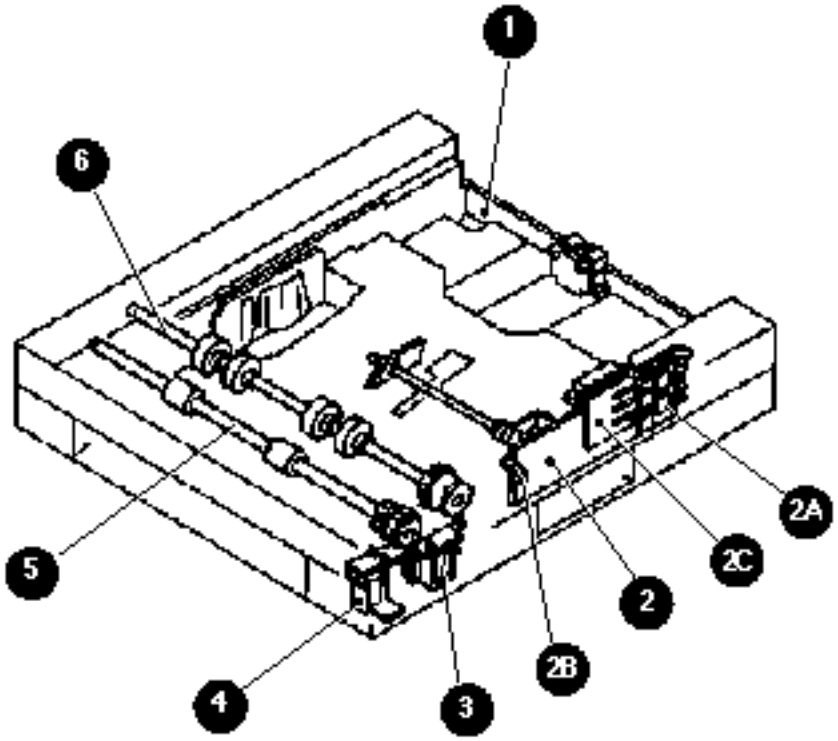
1 - Parallel port
2 - Slot for optional:
Fax Modem Board; AppleTalk Board;
Serial Board
3 - Slot for optional:
Ethernet Card; Fax Modem Board;
AppleTalk Board; Serial Board
4 - Air vent
5 - AC Power Plug

Function of Major Components

The following sections describe the major components of the printer.

- Paper Feed
- Paper Transportation
- Fusing and Paper Exit
- Drive and Xerographic Modules
- Electrical Module

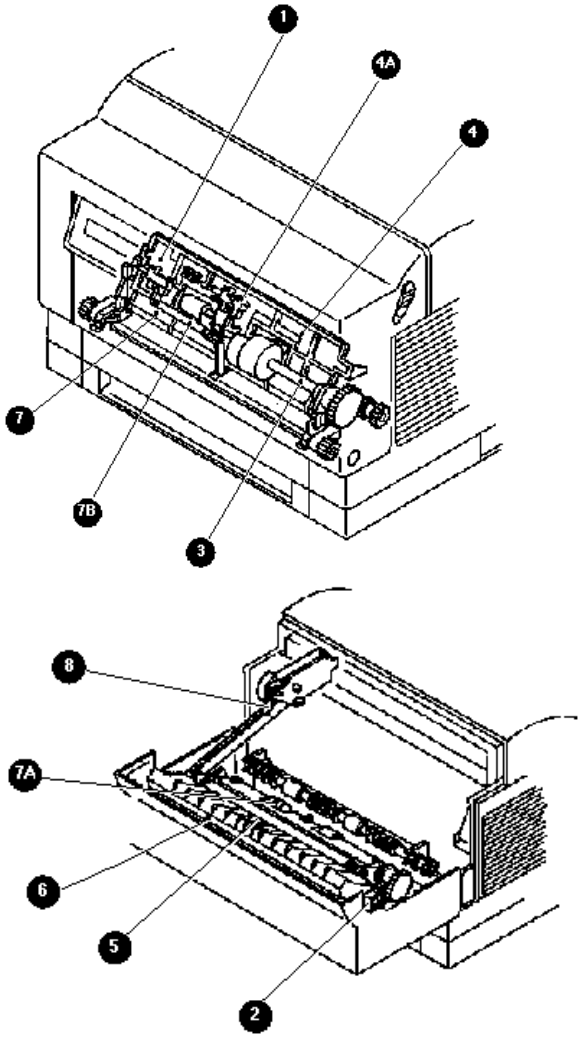
Paper Feed



Paper Feed

1	Paper Cassette	Holds assorted sizes of standard sheet paper. You adjust the cassette paper guide to accommodate different sizes. The adjustment changes the position of the Size Spring that actuates the Paper Size Switches. The Paper Cassette Assembly has a Pinch Roll that operates in unison with the Turn Roll in the Turn Roll Assembly.
2	Feeder PWB	Contains the Paper Size Switch (2a) and the No–Paper Sensor (2b). The Paper Size Switch is actuated by the Size Spring (2c).The switch detects if the Paper Cassette is loaded into the printer and that the correct size of paper is loaded into the Cassette. The No–Paper Sensor monitors the level of paper in the cassette. The switch is ON when the cassette is empty.
3	Feed Solenoid	Controls the start and stop of the Feed Roll Assembly.
4	Turn Solenoid	Controls the start and stop of the Turn Roll Assembly. The solenoid is actuated when the when the printer controller sends a /PRFD (prefeed) signal.
5	Feed Roll Assembly	Consists of the Feed Roll and the Feed Clutch Assembly. The Feed Roll feeds paper from the Cassette. Feed begins when the Feed Solenoid unlatches the Spring Clutch in the Feed Clutch Assembly, starting the rotation of the transmission gears in the Drive Assembly. After one revolution of the Feed Roll, the Feed Solenoid latches the Spring Clutch, which stops the rotation of the transmission gears and the Feed Roll.
6	Turn Roll Assembly	Pauses paper movement when the Turn Solenoid receives a /PRFD signal from the printer and just before a sheet reaches the Registration Sensor. Paper movement resumes when the printer controller sends a /START signal to the Turn Solenoid. The Turn Roll Assembly keeps moving paper if the printer controller does not send a /PRFD signal.

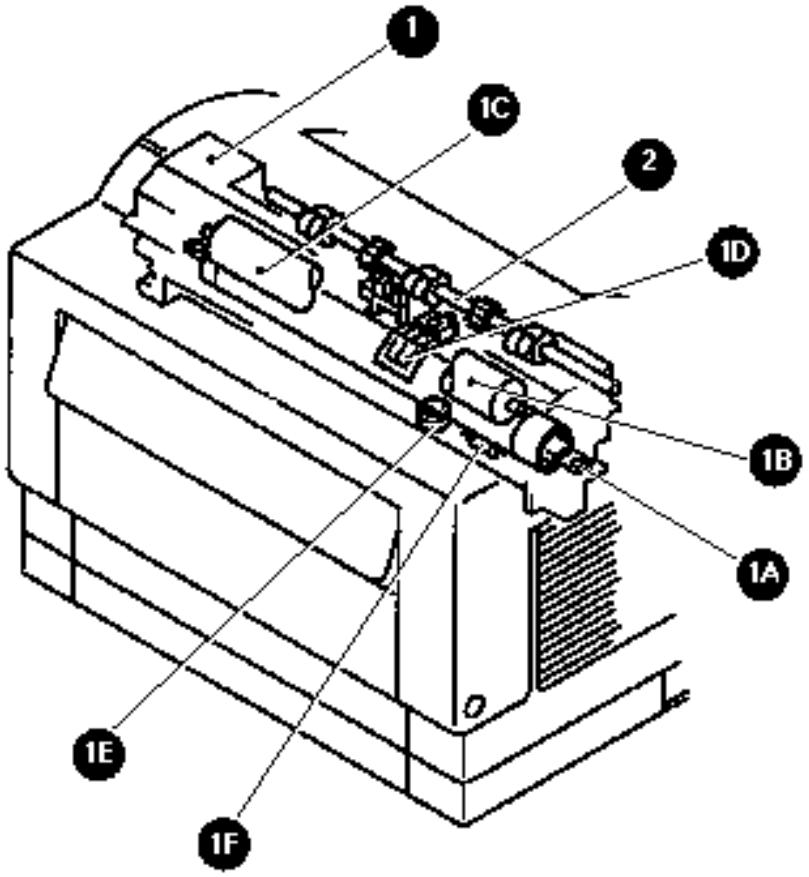
Paper Transportation



Paper Transportation

1	Multi-Sheet Bypass Feed (MBF) Sensor	Monitors the Front Tray Assembly. The MBF Sensor is ON when paper is loaded into the Front Tray Assembly.
2	Pick–Up Solenoid	Controls the start and stop of the Pick–Up Roll Assembly.
3	Pick–Up Roll Assembly	Feeds paper from the Front Tray Assembly. Paper feed begins when the Pick–Up Solenoid unlatches the Spring Clutch in the Feed Clutch Assembly, starting the rotation of the transmission gears in the Drive Assembly. The Pick–Up Roll Assembly cam converts the rotation to an up and down movement that is used by the Bottom Plate Assembly to feed paper from the Front Tray Assembly. After one revolution of the Pick–Up Roll, the Pick–Up Solenoid latches the Spring Clutch, which stops transmitting power to the Drive Assembly.
4	Inlet Chute Assembly	Has two major components: **Inlet Chute**: Made of metal and is electrically grounded, it discharges any static electricity that accumulates on the paper. **Registration Sensor (4a):** Monitors when paper passes through the Inlet Chute. The sensor is ON when a sheet of paper is present in the Chute.
5	BTR Assembly	The BTR Assembly transfers the toner image from the drum to the sheet of paper.
6	Transport Chute Assembly	The Eliminator component of the Transport Chute Assembly strips the sheet of paper from the drum surface. The Eliminator is electrically grounded, and helps discharge the static electricity the paper accumulates during a normal print cycle.
7	Lower Chute Assembly	Has two major components: **Take–Away Roll Assembly (7a):** Registers the paper with the toner image on the drum. **Retard Pad Assembly (7b):** Prevents the Pick–Up Roll Assembly from feeding two sheets of paper at a time out of the Paper Tray.
8	Link Assembly	Has two functions: **Safety device**: Actuates the LVPS interlock switch when the Front Transport Assembly is closed. When the Front Cover is opened, the Link Assembly deactuates the LVPS interlock switch, removing power from all printer components. **Drum Shutter**: Opens the drum shutter on the EP Cartridge when the Front Cover is closed. When the Front Cover is open, the Link Assembly closes the drum shutter, protecting the drum from exposure to light.

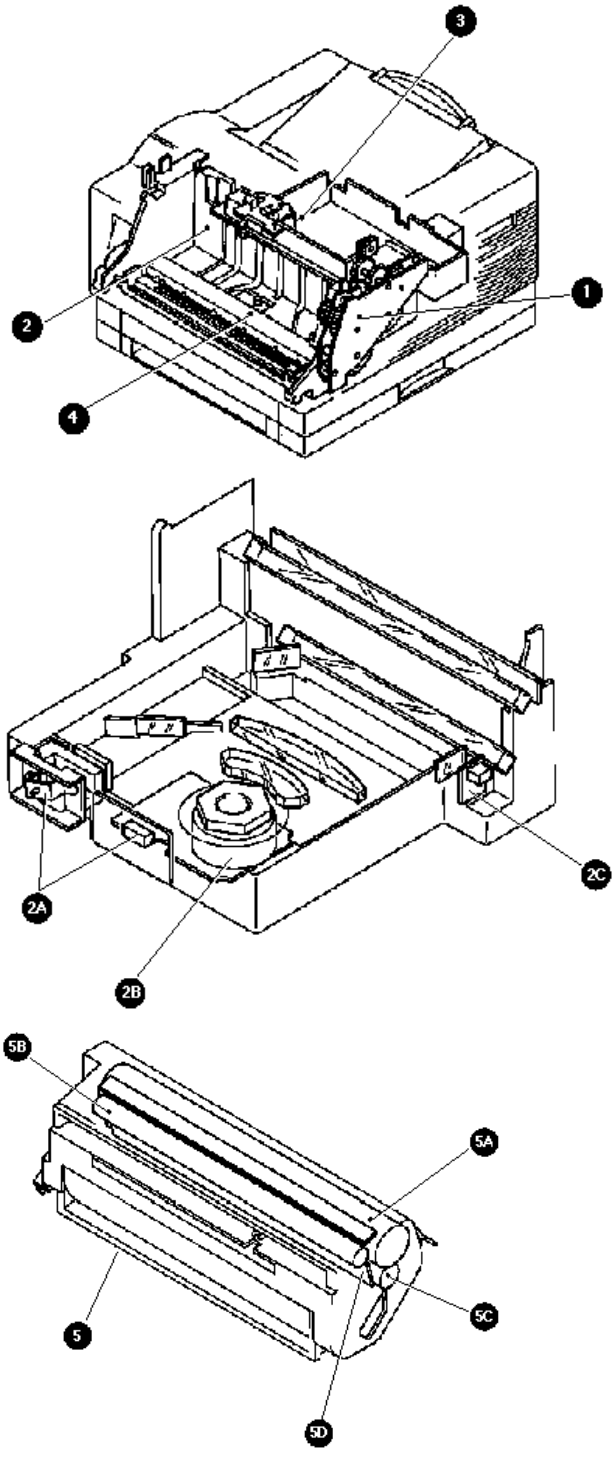
Fusing and Paper Exit



Fusing and Paper Exit

1	Fuser Assembly	Uses heat and pressure to permanently fix the toner image on a sheet of paper. The Fuser Assembly is made up of six major components: **Heat Rod (1a):** An electric coil that is sealed in a glass tube. The Heat Rod is located inside the Heat Roll and provides the heat necessary to melt the toner image on a sheet of paper. **Heat Roll (1b):** Transfers heat to a sheet of paper. **Pressure Roll (1c):** Presses the sheet of paper between itself and the Heat Roll. **Temperature Sensor Assembly (1d)**: Monitors the Heat Roll surface temperature. A thermistor rides the Heat Roll surface and controls power to the Heat Rod. The Temperature Sensor Assembly functions as first–stage, fuser overheating prevention. **Thermostat (1e):** Connected in series with the Heater Rod power supply, the Thermostat functions as the second-stage, fuser overheating prevention. If the first stage fails to prevent a fuser overheat, the Thermostat opens the circuit between the Heat Rod and the power supply. **Fuse (1f):** Connected in series with the Heater Rod power supply, the Fuse functions as the third–stage, fuser overheating prevention. If both first and second stages fail to prevent a fuser overheat, the fuse opens the circuit between the Heat Rod and the power supply.
2	Exit Sensor	Monitors when a sheet of paper passes the paper outlet.The sensor is ON when paper passes the outlet.

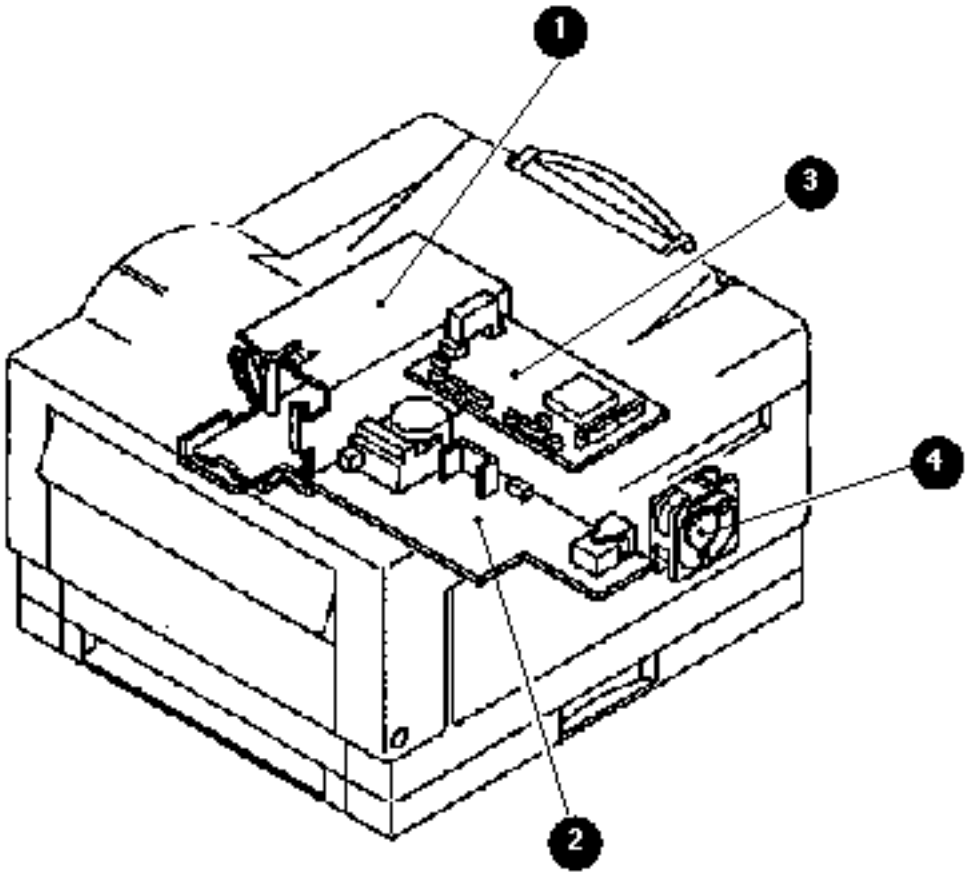
Drive and Xerographic Modules



Drive and Xerographic Modules

1	Drive Assembly	Consists of the Main Motor and gear cluster that generates and transmits the mechanical energy that runs the printer.
2	ROS Assembly	The Raster Output Scanner Assembly is the laser and the scanning hardware. The ROS is made up of three major components. **Laser Diode Assembly (2a)** (LD Assembly): Converts electrical signals into optical signals. The LD Assembly generates the laser beam and maintains the laser output power at a constant level. **Scanner Assembly (2b):** Routes the laser beam to the drum, and scans it across the drum surface. The Scanner Assembly consists of a six sided Polygon Mirror attached to the Scanner Motor. The Motor rotates at a constant speed. The spinning Polygon Mirror reflects the beam, through a series of lens and mirrors, onto the rotating drum surface. The movement of the spinning Polygon Mirror scans the beam from one side of the drum to the other; one scan line per mirror facet. This process repeats until the controller stops sending image data to the laser. **Start–Of–Scan PWB (SOS PWB) (2c)**: A sensor that is in-line with the scanned laser beam. The laser beam strikes the SOS PWB at the start of each scan to let the printer control circuity know that a new scan is beginning.
3	CRU PWB	The Customer Replaceable Unit PWB consists of the CRU Switch and the LD Switch. The CRU Switch is actuated when the CRU is installed. The LD Switch is actuated when the CRU is installed. The LD Switch is connected in series with the laser beam emitting circuit, and functions as a laser safety switch. The laser functions only when the CRU is installed.
4	Toner Sensor Assembly	Contains the Toner Sensor (a magnetic sensor) that monitors the toner level in the EP Cartridge. This sensor is ON when there is enough toner in the EP Cartridge to make a print.
5	EP Cartridge	The Electrical Photographics Cartridge consists of five major components: **Drum (5a):** An aluminum cylinder with a coating of photoconductive material on the surface. The photoconductive property of the drum allows the drum surface to hold an electrical charge in darkness, and discharge it when exposed to light. **Bias Charge Roll (BCR) (5b):** Places a uniform electrical charge on the drum surface. **Magnet Roll (5c):** Distributes toner to the drum surface. **Charge Metal Blade (CM Blade) (5d):** Spreads an even coating of toner on the Magnet Roll, and gives the Roll a static electric charge. **Cleaning Blade (5e):** Removes any residual toner left on the drum from the last print cycle.

Electrical Module



Electrical Module

1	LVPS Assembly	The Low Voltage Power Supply Assembly supplies AC power to the Heater Rod and 24VDC to the printer logic circuits. The LVPS Assembly includes the safety interlock switch and the Main Power Switch. When the Front Transport Assembly is open, the interlock opens the LVPS circuits, cutting all power except to the Fan circuit. The Main Power Switch controls AC wall power into the printer, and is used to turn the printer ON and OFF.
2	HVPS Assembly	The High Voltage Power Supply Assembly supplies power to the BCR, BTR, and Magnet Roll.
3	MCU PWB	The Main Control Unit PWB, with input from sensors, switches, and the printer controller, controls all printer operations. The MCU PWB has six major functions: 1. Communicate with the printer controller 2. Receive information from printer sensors and switches 3. Control the ROS, Fuser, and Drive Assemblies 4. Control the Console 5. Control the printing 6. Distribute power from the LVPS to other components
4	Fan	Ventilates the printer interior to prevent overheating.
5	ESS (Controller) (not shown)	The ESS is above and parallel to the MCU and HVPS PWBs.

Options

The following section describe the options available for the DEClaser 3500 printer.

Expansion Module

Printers are supplied with 3 megabytes of random access memory (RAM). Complex text pages and graphics may require more memory. Additional memory also increases performance in high-resolution mode and provides additional font storage.

- 4-MB Memory Expansion Kit LN14X-UD
- 8-MB Memory Expansion Kit LN14X-UE

Programmable Font Modules

This option expands the storage capacity of the printer for PostScript, TrueType, and bit-mapped PCL fonts.

- 2-MB Programmable Font Module LN14X-FB

Internal Fax Model for North America LN14X-FX

This fax modem receives and sends Group III and PostScript faxes. Eight MB of RAM are recommended.

External Fax Modem for outside North America

This fax modem receives and sends Group III and PostScript faxes. Eight MB of RAM are recommended.

- Germany LN14X-XG
- United Kingdon LN14X-ZK
- Australia LN14X-ZB
- Holland LN14X-XH

Ethernet Interface LN14X-NW

The network option card allows the following protocols:

- Novell NetWare
- EtherTalk
- TCP/IP
- LAT

Serial Interface LN14X-SI

With this option, you can connect the printer to the host through a serial port.

AppleTalk Interface LN14X-AT

The AppleTalk interface allows you to connect to a Macintosh system.

Additional Paper Trays and Feeders

Item	Part Number	Description
Paper Trays and Feeders		Not supported at this time.
250-Sheet Feeder with Universal Tray	n/a	Contains a 250-sheet feeder and 250-sheet Universal Tray. Besides the Universal Tray, the Feeder can house a 250-sheet Legal Tray or an Envelope Tray.
500-Sheet Feeder* with Letter Tray	LN14X-TF	Contains a 500-sheet feeder and a 500-sheet Letter (8.5 x 11 inch) Tray.
500-Sheet Feeder* with A4 Tray	LN14X-TG	Contains a 500-sheet feeder and a 500-sheet A4 (210 x 297 mm) Tray.
250-Sheet Universal Tray	LN14X-TU	Holds approximately 250 sheets of 20 lb (75 g/m²) paper in these sizes: Letter 8.5 x 11 inches A4 210 x 297 mm Executive 7.25 x 10.5 inches B5 182 x 257 mm A5 148 x 210 mm Folio 8.5 x 13 inches
250-Sheet Legal Tray	LN14X-TL	Holds approximately 250 sheets of 20 lb (75 g/m²) paper in these sizes: Legal 8.5 x 14 inches Folio 8.5 x 13 inches Letter 8.5 x 11 inches
500-Sheet A4 Tray	LN14X-TA	Holds approximately 500 sheets of A4 (210 x 297 mm) paper.
500-Sheet Letter Tray	LN14X-TC	Holds approximately 500 sheets of Letter (8.5 x 11 inch) paper.
30-Envelope Tray	LN14X-TE	Holds approximately 30 envelopes in these sizes: COM 10 4.125 x 9.5 inches Monarch 3.875 x 7.5 inches DL 110 x 220 mm C5 162 x 229 mm

***The 500-Sheet Feeder can house any of the 250-sheet or 500-sheet trays or the Envelope Tray.

Chapter 3 : Using the Control Panel

This chapter describes the menu structure of the control panel, the control panel key functions, and the functionality of the menu selections.

Control Panel Keys

Listed below is an overview of the control panel keys and their functions.

Key	During Printer and Network Operations	During Fax Operations	During Menu Operations
Online	Toggles the printer online and offline. In online mode, the printer receives data or commands from the host computer. When the printer is taken offline, pages that are currently printing are completed. If the current job is not complete, data and/or new jobs continue to be received until the buffer is full. When the **Online** key is pressed again, the printer returns to online mode and waiting print jobs print or printing continues where it left off.	If the printer is taken offline while receiving a fax, the page that is currently printing is completed. The remaining portion of the job is sent to the buffer until it is full. No new jobs are accepted. If the buffer is full, the fax modem disconnects, but the current job remains in the buffer. Printing completes when the **Online** key is pressed and the printer is toggled back to online mode. If the printer is taken offline while you are sending a fax, the current fax job continues to send, but no new fax jobs are started.	Returns the printer to online mode and printing continues where it left off.

Key	During Printer and Network Operations	During Fax Operations	During Menu Operations
Help	This key is active only when the printer is in offline mode and outside of the menu operations. **During printer idle -** Prints the menu map, and remains offline until **Online** is pressed. **During print operations -** The printer beeps once and returns to the online mode. The current job completes, then the menu map prints.	This key is active only when the printer is in offline mode and outside of the menu operations. The printer beeps once and returns to the online mode. The current fax job, either sending or receiving, completes, then the menu map prints.	No effect.
Reset	Flushes all current and pending print jobs. This key is active only when the printer is in offline mode and outside of the menu operations. "Resetting..." then "Flushing Job..." appears on the display. Once the printer is reset, it returns to the offline state.	Disconnects fax line, flushes all faxes, and flushes all pending print jobs. This key is active only when the printer is in offline mode and outside of the menu operations. "Resetting..." then "Flushing Job..." appears on the display. Once the printer is reset, it returns to the offline state.	No effect.
Form Feed	Ejects the last page of a PCL job. This key is only active when the printer is in offline mode and outside of the menu operations. "Form Feed..." appears on the display. Once the printer completes the form feed operation, it returns to the offline state.	No effect.	No effect.

Key	During Printer and Network Operations	During Fax Operations	During Menu Operations
Menu	Takes the printer offline and enables menu mode, thus activating these keys: **Select, Esc, Item, Value**. Also displays the highest level in the currently selected menu. Pages that are currently printing are completed. If the current job is not complete, data is received and processed until the buffer is full. New jobs are received until the buffer is full, but they are not processed.	If the printer is taken offline while receiving a fax, the page that is currently printing is finished. The remaining job is buffered to memory until resources are full. No new jobs are accepted. When the **Online** key is pressed, printing continues. If the printer is taken offline while you are sending a fax, the current fax job continues to send, but no new fax jobs are started.	No effect.
Select			From Level 1: Moves you to the next level. From Level 2: Selects a new default.
Esc			From Level 1: Exits menu mode and returns the printer to its previous state. From Level 2: Moves you back to Level 1.
Item ▲			Moves you backward through the menu items at the current level. This is a repetitive key.
Item ▼			Moves you forward through the menu items at the current level. This is a repetitive key.

Key	During Printer and Network Operations	During Fax Operations	During Menu Operations
Value ▲			From Level 1: No effect. From Level 2: Moves you backward through the options for the current item.
Value ▼			From Level 1: No effect. From Level 2: Moves you forward through the options for the current item.

Restoring Factory Defaults

To restore factory default settings, press the Online and Menu keys while turning the printer on (|).

Printing the Menu Map

Pressing the Help key when the printer is offline gives you a printout of the entire menu map. Using the printer control panel:

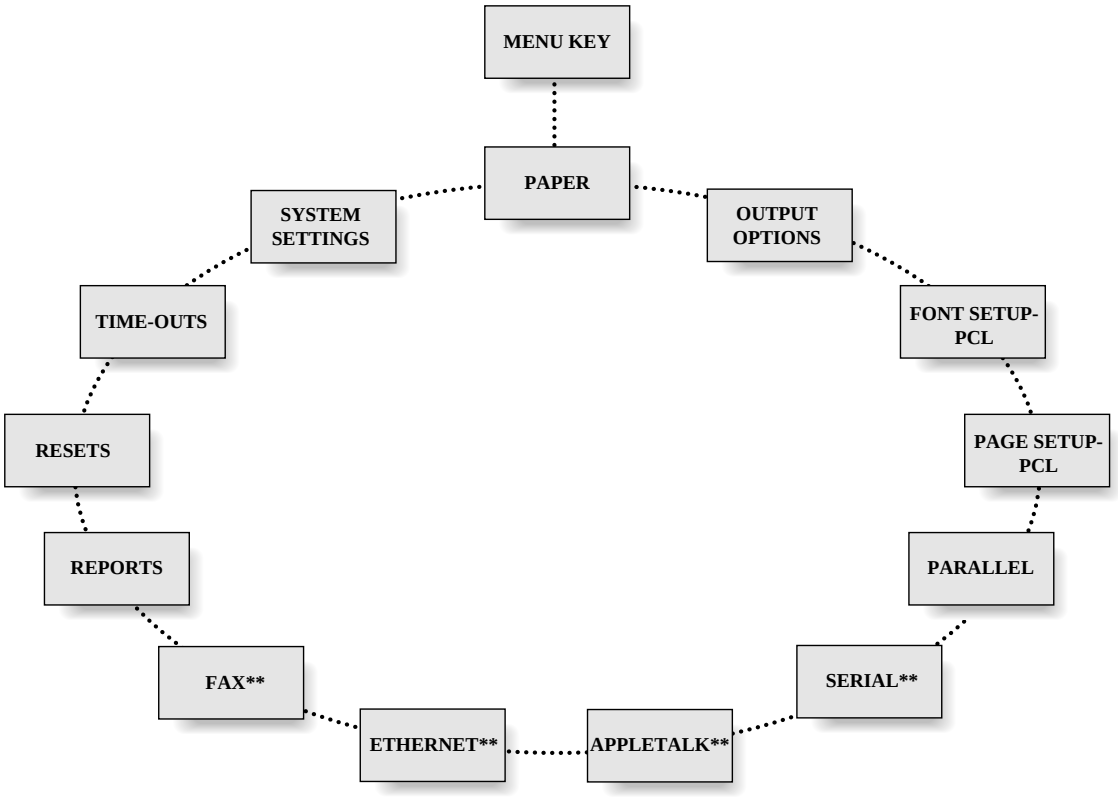
1. Press the **Online** key to place the printer offline.
2. Press **Help** to print the menu map.
3. After the menu map prints, press **Online** to place the printer back online.

If you take the printer offline during a print job to print the menu map, the printer beeps once, completes the current print job, then prints the menu map.

Level 1 Menu Map

The menu structure is circular.

1. Press **Menu** to access the menu map and hold down the **Item ▲** or **Item ▼** key to scroll through the menu selections.
2. Press **Select** to enter a menu or change a setting.
3. Press **Online** to leave the menu map.



**Appears only if the option is installed

Level 2 Menu Maps

After pressing Select to enter a menu, use Item keys to move through the menu's options. Use the Value keys to move through the selectable items of the menu's options. Value and Item keys are repetitive, and the delay time between display updates becomes shorter the longer the key is held down. Use the Select key to change a setting.

PAPER

Paper Source
One tray:
Tray [Paper Size]
Multipurpose

Two trays:
Upper [Paper Size]
Lower [Paper Size]
Multipurpose

Multi Paper Size
Legal
Letter
Folio
Executive
Statement
A4
A5
B5
COM10
Monarch
C5
DL

Auto Tray Swap
On
Off

OUTPUT OPTIONS

Print Resolution
600x600 dpi
300x300 dpi

Print Enhancement
Dark
Medium
Light
Off

Number of Copies
=1

FONT SETUP - PCL

Font Name
Courier-Medium
Courier-Bold
Courier-Italic
Line Printer
Times-Medium
Times-Bold
Times-Italic
Times-BldItalic
Univers-Medium
Univers-Bold
Univers-Italic
Univers-BldItl
UnvrsCd-Medium
UnvrsCd-Bold
UnvrsCd-Italic
UnvrsCd-BldItl
ZapfDingbats

Pitch
12 cpi
10 cpi

Point Size
=12.00

Symbol Set
Desktop
ECMA-94 Latin
ISO-2 IRV
.
.
Roman-8
.
Ventura Intl
Ventura US
Windows

Level 2 Menu Maps (continued)

OPTIONAL

PAGE SETUP-PCL

Orientation
***Portrait**
Landscape

Lines Per Page
=60

Line Wrap
On
***Off**

PARALLEL

Enable Interface
***On**
Off

Printer Type
***PS/PCL Sensing**
STD PostScript
PCL 5
BCP PostScript
Hex Dump Mode
TBCP PS

Bidirectional
***On**
Off

SERIAL

Enable Interface
***On**
Off

Printer Type
***PS/PCL Sensing**
STD PostScript
PCL 5
BCP PostScript
Hex Dump Mode
TBCP PS

Flow Control
***Xon/Xoff**
Robust Xon/Xoff
DTR

Baud Rate
38400
19200
***9600**
4800
2400
1200
600
300

Data Bits
***8**
7

Parity
Odd
Even
***None**

Stop Bits
2
***1**

DTR Polarity
***High**
Low

Level 2 Menu Maps (continued)

OPTIONAL

FAX

Enable Interface
***Send & Receive**
Send Only
receive Only
Disabled

Retry Count
= 0

Retry Interval
= 5 minutes

Resolution
***Fine**
Standard

Speaker Enable
***On**
Off

Header Enable
***On**
Off

Answer Ring
= 1

Answer Ring
***Upper [Paper Size]**
Lower [Paper Size]

Set Date
DEC xx xxxx
...
JAN xx xxxx
(Ex. JAN 01 1994)

Set Time
***= 00:00**

REPORTS

Font Report

Hardware Report

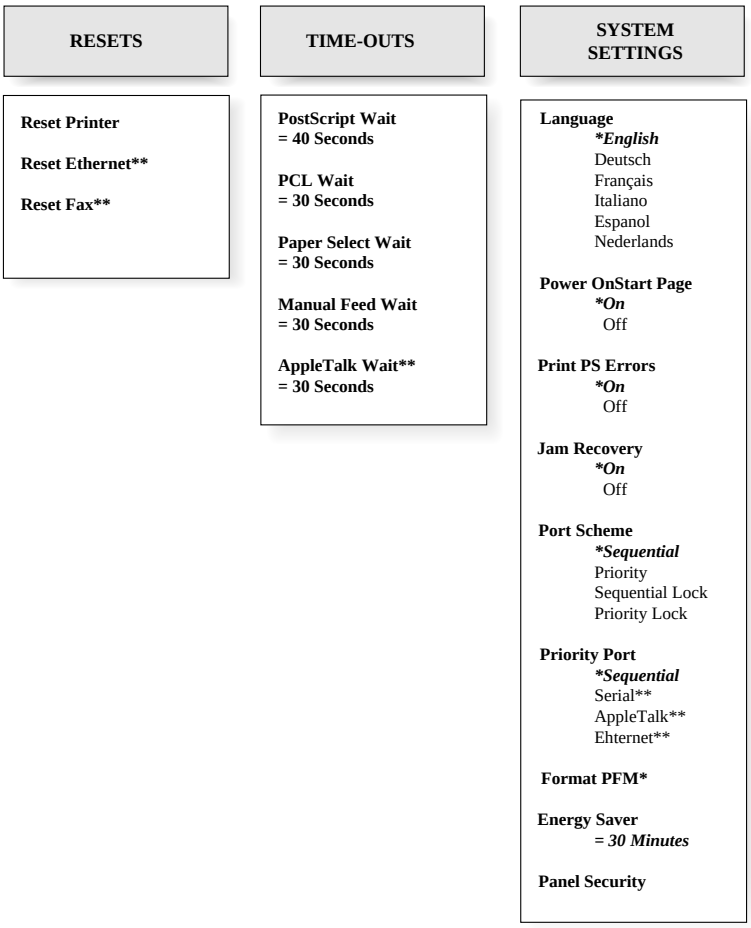
Error Report

AppleTalk Report**

Ethernet Report**

Fax Report**

****OPTIONAL**


RESETS
Reset Printer
Reset Ethernet**
Reset Fax**
TIME-OUTS
PostScript Wait
= 40 Seconds
PCL Wait
= 30 Seconds
Paper Select Wait
= 30 Seconds
Manual Feed Wait
= 30 Seconds
AppleTalk Wait**
= 30 Seconds
SYSTEM SETTINGS
Language
*English
Deutsch
Français
Italiano
Espanol
Nederlands
Power OnStart Page
*On
Off
Print PS Errors
*On
Off
Jam Recovery
*On
Off
Port Scheme
*Sequential
Priority
Sequential Lock
Priority Lock
Priority Port
*Sequential
Serial**
AppleTalk**
Ehternet**
Format PFM*
Energy Saver
= 30 Minutes
Panel Security

Troubleshooting Control Panel Messages

Overview

This section describes the messages that may appear on the front panel outside of the menu structure. The messages have been broken down into the following categories:

- Power On Self Test (POST) modes
- Status Messages
- Operational Warning modes
- Operational Error modes
- System Error modes
- System Failure modes
- Demo Mode, a special operating mode.

- **POST modes** can be invoked by pressing a button during power-up are presented.

- The **Status Messages** appear on the second line of the display during normal operation.

- **Operational Warning Modes** arise during normal operation. A service call is NOT necessary. If these modes are not remedied after a given number of pages, the printer enters an Operational Error Mode.

- **Operational Error Modes** arise during normal operation. A service call is NOT necessary. The system is unable to print any additional pages until the problem is resolved.

- **System Error Modes** arise when an error is detected. Normal operation is attempted, but the system may be crippled, depending on the error reported. A service call is necessary to get the printer running correctly.

- **System Failure Modes** arise when an error is detected. Normal operation is not attempted. A service call is necessary to get the printer up and running again.

- The **Demo Mode** is invoked by pressing a button during power. This mode is a special mode that the printer can be put into for marketing purposes.

Tables at the end of the section contain a summary of error information including Control Panel message, Error Log entry, and the broadcast message.

POST Modes

Overview

The following messages appear on the Control Panel in English. POST is unaware of the language selection and therefore defaults to English. This section does *not* attempt to show all the possible messages from POST.

Normal Mode

Power on the printer without pressing any button."Self-test" is displayed on the first line of the display. Once POST has completed, control is passed to the operating system.

Restore Factory Defaults Mode

Power on the printer while pressing the **<Online>** and **<Menu>** buttons. "Restore Factory Defaults" appears on the display. Once POST has completed, control is passed to the operating system, where the factory defaults are set.

Demo Mode

Power on the printer while pressing the **<Online>** and **<Select>** buttons. "Self-test" appears on the display. Once POST has completed, control is passed to the operating system and informed that Demo Mode has been invoked.

Extended (FIC) Mode

Power on the printer while pressing the **<Online>** and **<Form Feed>** buttons. "Extended Test" appears on the display. In the Extended (FIC) Mode, POST performs an extended RAM test in place of the DRAM Pattern Test that is invoked during normal operation. This test is performed on all installed DRAM. Once POST has completed, control is passed to the operating system with the indication that the Print Quality file should be printed after initialization.

Print Quality Mode

Power up the printer while pressing the **<Select>** and **<Esc>** buttons. "Print Quality" appears on the display. Once POST has completed, control is passed to the operating system with the indication that the Print Quality files (one at 300 DPI and one at 600 DPI) be printed after initialization.

Continuous RAM Test Mode

Power up the printer while pressing the **<Online>** and **<Help>** buttons. "Continuous Test" appears on the display. In the Continuous RAM Test Mode, POST attempts to detect the presence of dynamic faults in all of installed RAM. This test runs continuously until power is cycled, or until a failure occurs. Control is never passed to the operating system.

Extended RAM Test Mode

If the printer is powered up with the **<Item ▲>** and **<Item ▼>** buttons pressed, "Extended Test" appears on the display. In the Extended RAM Test Mode, POST performs an extended RAM test in place of the DRAM Pattern Test that is invoked during normal operation. This test is performed on all installed DRAM. Once POST has completed, control is passed to the operating system.

Status Messages

Overview

This section describes the status message that may appear on the second line of the display during normal operation. For these messages, either ONLINE or OFFLINE appears on the first line of the display.

Fax Connected

This message appears when the printer has successfully connected with another Fax machine, either incoming or outgoing.

Fax Dialing

This message appears when the printer invokes a call to send a Fax job.

Fax Ringing

This message appears when the printer's Fax line rings for an incoming Fax job.

Flushing Job

This message appears when the **<Reset>** button has been invoked. Initially the "Resetting..." message is displayed, followed by the "Flushing Job..." message.

Form Feed

This message appears when the **<Form Feed>** button has been invoked.

Idle

This message appears when the printer has no jobs to process.

Initializing

This message appears when the operating system is booting. This message should only display at power-up.

Printing

This message appears when the **<Help>** button has been invoked.

Processing

This message appears when the printer is processing an incoming job from one of the ports.

Receiving Fax

This message appears when the printer is receiving an incoming Fax.

Resetting

This message appears when the **<Reset>** button has been invoked. Following the "Resetting..." message, a "Flushing Job..." message indicates that the current job is being flushed.

Sending Fax

This message appears when the printer is sending a Fax.

Waiting

This message appears when the printer is waiting for additional data to complete a job from the current port.

Warming Up

This message appears when the printer is waiting for the fuser to warm up. Typically, this message is seen at power-up and when returning from Energy Saver mode.

Operational Warning Modes

Overview

Operational warning modes arise during normal operation. A service call is *not* necessary. The system continues operation until the specified number of pages are reached. At that time, the printer enters into an operational error mode. The warning appears on the second line of the display until the problem is resolved or the printer enters the operational error mode.

Toner Low

Description. A low toner condition is detected. The printer continues printing with the warning "TONER LOW" displayed for 100 pages. After 100 pages have printed, the printer enters an Operational Error Mode. Refer to the *Change Cartridge* message for additional information.

Detection. By the operating system**.**

Printer Response.
1) Sound beeper 5 times.
2) Continue with normal operation.
3) Display message until the cartridge has been changed or until 100 pages have printed.

Service Action Required.
None, but if cartridge is replaced and message does not go away, go to Section 6.2.12 *Toner (EP) Cartridge is Low on Toner.*

Operational Error Modes

Overview

Operational error modes. arise during normal operation of the printer. A service call is *not* necessary. The system is unable to print any additional pages until the problem is resolved. Once the problem is resolved, normal operation continues.

Change Cartridge

Description The "TONER LOW" warning appeared for 100 pages without being resolved. Operation does not continue until the cartridge is replaced.

Detection. The toner sensor continues to indicate low toner throughout the 100 pages.
Printer Response.
1) Save current job.
2) Sound beeper 5 times.
3) Hold present job until cartridge is changed.
4) Normal operation.

Service Action Required.
None, but if the cartridge is replaced and the message does not go away, go to Section 6.2.12 *Toner (EP) Cartridge Is Low on Toner.*

Close Cover

Description. The cover is detected as being open. Operation does not continue until the cover is closed.

Detection. By operating system.
Printer Response.
1) Save current job.
2) Sound beeper 5 times.
3) Hold present job until cover is closed.
4) Normal operation.

Service Action Required.
None, but if the cover is closed and the message does not go away go to Section 6.3.2. *LVPS Assembly Failure.*

Font Module Full

Description The Font Module is detected as being full.

Detection. The operating system determines that the PFM is full.

Printer Response.
1) Sound beeper 1 time.
2) Normal operation.

Service Action Required.
None, if the module is full, insert a new module or remove unwanted fonts.

Load <Paper Size>

Description The PageSize is set to 2 (PCL default is 2) and the requested paper does not reside in the printer. If the requested paper is not inserted prior to the Paper Select Wait time-out, the job prints as best it can from the default paper tray. Pressing the **<Select>** button prior to the Paper Select Wait time-out also prints the job as best it can from the default paper tray.

Detection. By the Operating System.
Printer Response.
1) Save current job.
2) Sound beeper 5 times.
3) Hold present job until correct paper size is inserted or time-out occurs.
4) **<Select>** uses the default tray and paper size.
5) Normal operation.
Service Action Required.
None, but if the message does not go away after proper paper has been loaded, go to Sections 6.3.9, 6.3.10, 6.2.11, and 6.2.13.

Lower Tray Empty

Description The lower paper tray is detected as being empty. Normal operation does not continue until the lower tray is replenished with paper. NOTE: This message only appears if an auxiliary tray is installed on the unit.

Detection. By the Operating System.
Printer Response.
1) Save current job.
2) Sound beeper 5 times.
3) Hold present job until paper is replenished.
4) Normal operation.
Service Action Required.
None, but if the message does not go away after paper has been added, go to Section 6.2.11 *Paper Cassette is out of Paper* and 6.3.10 *No Paper Sensor Failure.*

Lower Tray Out

Description The lower paper tray is detected as being out of the unit. Normal operation does not continue until the lower tray is replaced. NOTE: This message only appears if an auxiliary tray is installed on the unit.

Detection. By the Operating System.

Printer Response.
1) Save current job.
2) Sound beeper 5 times.
3) Hold present job until tray has been replaced.
4) Normal operation.
Service Action Required.
None, but if the message does not go away after paper tray has been added, go to Section 6.3.13 *Paper Size Switch Failure.*

Manual <Paper Size>

Description The manual feed feature is selected over the multi-purpose feeder selection. If the requested paper is not inserted into the multi-purpose feed and the **<Select>** button pressed for each page prior to the Manual Feed Wait time-out, the job is flushed.

Detection. By the Operating System.
Printer Response.
1) Save current job.
2) Sound beeper 5 times.
3) Hold present job until correct paper is inserted into the manual feed tray and **<Select>** being pressed, flush the job.
4) Normal operation.

Service Action Required.
None

Multi Tray Empty

Description The multi-purpose feeder paper tray is detected as being empty. Normal operation does not continue until the lower tray is replenished with paper.

Detection. By the Operating System.
Printer Response. By the Operating System.
1) Save current job.
2) Sound beeper 5 times.
3) Hold present job until paper is replenished.
4) Normal operation.

Service Action Required.
None, but if the message does not go away after paper has been added, go to Section 6.3.9 *MBF Sensor Failure.*

Need Cartridge

Description. No cartridge is detected in the unit. Operation does not continue until a cartridge is installed.

Detection. By the Operating System.
Printer Response.
1) Save current job.
2) Sound beeper 5 times.
3) Hold present job until cartridge is installed.
4) Normal operation.

Service Action Required.
None, but if the message does not go away after cartridge has been added, go to Section 6.2.8 *Toner (EP) Cartridge is not in Place.*

No Paper Trays

Description Both the upper and lower paper trays are detected as being out of the unit. Normal operation does not continue either of the trays is replaced. NOTE: This message only appears if an auxiliary tray is installed on the unit.

Detection. By the Operating System.
Printer Response.
1) Save current job.
2) Sound beeper 5 times.
3) Hold present job until either the upper or lower paper tray is installed.
4) Normal operation.

Service Action Required.
None, but if the message does not go away after paper trays have been added, go to Section 6.2.10 *Paper Cassette Is Not in Place.*

Paper Jam>Exit

Description. A paper jam occured at the exit. Normal operation does not continue until the jammed paper is removed.

Detection. By the Operating System.
Printer Response.
1) Save current job.
2) Sound beeper 5 times.
3) Save the number of pages and the error code, 540, to the error log.
4) Hold present job until the paper path is cleared.
5) Reprint the jammed page (if /ExitJamRecovery is set to true).
6) Normal operation.

Service Action Required.
None, but If the message does not go away after paper has been cleared, go to Section 6.2.5 *Paper Jam in Exit Area of Paper Path.*

Paper Jam>Fuser

Description. A paper jam occured at the fuser. Normal operation does not continue until the jammed paper is removed.

Detection. By the Operating System.
Printer Response.
1) Save current job.
2) Sound beeper 5 times.
3) Save the number of pages and the error code, 542, to the error log.
4) Hold present job until the paper path is cleared.
5) Reprint the jammed page.
6) Normal operation.

Service Action Required.
None, but If the message does not go away after paper has been cleared, go to Section 6.2.6 *Paper Jam Between Registration Sensor and Exit Sensor.*

Paper Jam>Tray

Description A paper jam occured at the paper tray. Normal operation does not continue until the jammed paper is removed.

Detection. By the Operating System.
Printer Response.
1) Save current job.
2) Sound beeper 5 times.
3) Save the number of pages and the error code, 544, to the error log.
4) Hold present job until the paper path is cleared.
5) Reprint the jammed page.
6) Normal operation.

Service Action Required.
None, but if the message does not go away after paper has been added, go to Section 6.2.7 *Paper Jam between Feeder and Registration Sensor.*

Tray Empty

Description. The main paper tray is detected as being empty. Normal operation does not continue until the main paper tray is replenished with paper. NOTE: This message only appears if an auxiliary tray is *not* installed on the unit.

Detection. By the Operating System.
Printer Response.
1) Save current job.
2) Sound beeper 5 times.
3) Hold present job until paper is replenished.
4) Normal operation.

Service Action Required.
None, but if the message does not go away after paper has been added, go to Section 6.2.11 *Paper Cassette is Out of Paper* and 6.3.10 *No Paper Sensor Failure.*

Tray Out

Description. The main paper tray is detected as being out of the unit. Normal operation does not continue until the main paper tray is replaced. NOTE: This message only appears if an auxiliary tray is *not* installed on the unit.

Detection. By the Operating System.
Printer Response.
1) Save current job.
2) Sound beeper 5 times.
3) Hold present job until tray has been replaced.
4) Normal operation.

Service Action Required.
None, but if the message does not go away after paper tray has been added, go to Section 6.2.10 *Paper Cassette is Not in Place* and 6.3.13 *Paper Size Switch Failure.*

Upper Tray Empty

Description The upper paper tray is detected as being empty. Normal operation does not continue until the upper tray is replenished with paper. NOTE: This message only appears if an auxiliary tray is installed on the unit.

Detection. By the Operating System.
Printer Response.
1) Save current job.
2) Sound beeper 5 times.
3) Hold present job until paper is replenished.
4) Normal operation.

Service Action Required.
None, but if the message does not go away after paper has been added, go to Section 6.2.11 *Paper Cassette is Out of Paper* and 6.3.10 *No Paper Sensor Failure.*

Upper Tray Out

Description The upper paper tray is detected as being out of the unit. Normal operation does not continue until the upper tray is replaced. NOTE: This message only appears if an auxiliary tray is installed on the unit.

Detection. By the Operating System.
Printer Response.
1) Save current job.
2) Sound beeper 5 times.
3) Hold present job until tray has been replaced.
4) Normal operation.

Service Action Required.
None, but if the message does not go away after paper tray has been added, go to Section 6.2.10 *Paper Cassette is Not in Place* and 6.3.13 *Paper Size Switch Failure.*

System Error Modes

Overview

System error modes occur when an error is detected, but the printer attempts to continue. The system may be crippled, but operation is attempted. A service call is necessary to remedy this problem. The tables at the end of the chapter list the error codes.

Cache RAM

Description. A cache RAM failure is detected during POST.

ERROR: 620, 621, or 622
CACHE RAM

The cache controller is disabled and operation is attempted. The system will run extremely slow with the cache controller disabled, but operation is possible until a service technician is available.

Detection. By the Operating System.
Printer Response.
1) Sound beeper 1 time.
2) Save the number of pages and the error code to the error log.
3) Disable the cache controller.
4) Normal operation.

Service Action Required: Replace the controller

EEPROM

Description. The operating system is unable to write successfully to the EEPROM (NVRAM) area.

ERROR: 608
EEPROM

The operating system attempts to operate with the factory defaults.

Detection. Operating system unable to successfully write to EEPROM area.

Printer Response.
1) Sound beeper 1 time.
2) Save the number of pages and the error code to the error log.
3) Use factory defaults.
4) Normal operation.

Service Action Required: Replace the controller

Font Module

Description. Writing to the Font Module is unsuccessful.

ERROR: 615
FONT MODULE

The file to be written to the font module is not written, and operation continues.

Detection. Operating system unable to successfully write to the Font Module.

Printer Response.
1) Sound beeper 1 time.
2) Save the number of pages and the error code to the error log.
3) Normal operation.

Service Action Required: Replace the Font Module.If that doesn't work, replace the controller

Hardware Configuration

Description. The checksum for POST's EEPROM area is incorrect.

ERROR: 609
HARDWARE CONFIG

Operation is attempted, but output may not look correct if the POST data is corrupted.

Detection. By the Operating System.
Printer Response.
1) Sound beeper 1 time.
2) Save the number of pages and the error code to the error log.
3) Normal operation.

Service Action Required: Replace the controller

Option Slot 0

Description. The interface to Option Slot 0 fails.

ERROR: 630, 631
OPTION SLOT 0

The option in slot 0 is disabled and operation is attempted.

Detection. By the Operating System.
Printer Response.
1) Sound beeper 1 time.
2) Save the number of pages and the error code to the error log.
3) Disable option slot 0.
4) Normal operation.

Service Action Required: Replace controller to use option slot 0.

Option Slot 1

Description. The interface to Option Slot 1 fails.

ERROR: 632, 633
OPTION SLOT 1

The option in slot 0 is disabled and operation is attempted.

Detection. By the Operating System.
Printer Response.
1) Sound beeper 1 time.
2) Save the number of pages and the error code to the error log.
3) Disable option slot 1.
4) Normal operation.

Service Action Required: Replace the controller to use option slot 1

System Failure Mode

Overview

System failure modes occur when an error is detected and printing cannot continue. A service call is necessary to remedy this problem. The tables at the end of the chapter list the error codes.

Controller

Description. The controller is detected as having a hardware problem. 'XXX' denotes error codes 800, 801, 802, 805, 806, 807, 820, 830, 840, 850, 851, 852, 853, 854, 855, 856, 857, 860, 861, 862

FAILURE: XXX
CONTROLLER

Operation is halted. A service technician must be called to remedy the problem.

Detection. By the Operating System.
Printer Response.
1) Sound beeper 5 times.
2) Save the number of pages and the error code to the error log.
3) Turn off the fuser.

Service Action Required: Replace the controller

DRAM Module A

Description. The DRAM Module in Slot A is detected as having a hardware problem.

FAILURE: 810, 811, 812
DRAM MODULE A

Operation is halted. If the user knows how to install DRAM, the user may be able to remedy this problem, otherwise, a service technician must be called to remedy the problem.

Detection. By the Operating System.
Printer Response.
1) Sound beeper 5 times.
2) Save the number of pages and the error code to the error log.
3) Turn off the fuser.

Service Action Required: Replace the SIMM. If that doesn't work, replace the controller to use module A.

DRAM Module B

Description. The DRAM Module in Slot B is detected as having a hardware problem.

FAILURE: 815, 816, 817.
DRAM MODULE B

Operation is halted. If the user knows how to install DRAM, the user may be able to remedy this problem, otherwise, a service technician must be called to remedy the problem.

Detection. By the Operating System.
Printer Response.
1) Sound beeper 5 times.
2) Save the number of pages and the error code to the error log.
3) Turn off the fuser.

Service Action Required.
Replace the SIMM. If that doesn't work, replace the controller to use module B.

Engine Controller PCB or Fuser

Description. A fault is detected with the engine controller board, such as the NVRAM, or the fuser has failed or is disconnected.

FAILURE: 910
ENGINE CTRL PCB

Operation is halted. A service technician must be called to remedy the problem.

Detection. By the Operating System.
Printer Response.
1) Sound beeper 5 times.
2) Save the number of pages and the error code to the error log.
3) Turn off the fuser.

Service Action Required: Replace the controller or fuser.

Fuser System

Description. A fault is detected with the fuser system.

FAILURE: 940
FUSER SYSTEM

Operation is halted. A service technician must be called to remedy the problem.

Detection. By the Operating System.
Printer Response.
1) Sound beeper 5 times.
2) Save the number of pages and the error code to the error log.
3) Turn off the fuser.

Service Action Required.
Replace the fuser.

Main Motor

Description. A fault is detected with the communication to the engine.

FAILURE: 900, 901
MAIN MOTOR

Operation is halted. A service technician must be called to remedy the problem.

Detection. By the Operating System.
Printer Response.
1) Sound beeper 5 times.
2) Save the number of pages and the error code to the error log.
3) Turn off the fuser.

Service Action Required: Replace the Main Motor.

Optical System

Description. A fault is detected with the optical system.

FAILURE: 930
OPTICAL SYSTEM

Operation is halted. A service technician must be called to remedy the problem.

Detection. By the Operating System.
Printer Response.
1) Sound beeper 5 times.
2) Save the number of pages and the error code to the error log.
3) Turn off the fuser.

Service Action Required. Replace the ROS or swap options.

Demo Mode

A Demo Mode is available on this printer for aid in the sales market. The Demo Mode can print eight different demonstration pages for the product; one for each key on the keypad.

Demo Mode is invoked by holding down both the **<Online>** and **<Select>** keys while powering-up the printer. This mode resides over power cycles. The user may return to normal printer operation by holding down the **<Online>** and **<Select>** buttons during power-up. Restore Factory Defaults also returns the user to normal printer operation.

A bit is passed via POST to PostScript to indicate that the mode has been 'toggled.' The operating system keeps track of which mode it is in: normal vs. demo mode. While in demo mode, none of the ports accept data. Only the front panel is active. If you press a button, the printer prints a ROM-resident job.

If you invoke Restore Factory Defaults before 'toggling' back to normal operation, the operating system clears demo mode and normal operation resumes.

As the Operating System boots into Demo Mode, the following appears on the display:

DEMO MODE
Initializing...

Once the unit is ready for printing, the following appears on the display:

DEMO MODE
Press any key

When you press a button, the following displays:

DEMO MODE
Printing...

When printing is complete, the display returns to:

DEMO MODE
Press any key

The error conditions work during this mode. For example, if an exit paper jam occurs, the following appears.

DEMO MODE
PAPER JAM>EXIT

Demo Mode uses the default language that was last set in the normal operation mode.

The Start-Up Page prints as it would in normal operation. If the last setting was ON, the start-up page prints in the demo mode. If the last setting was OFF, the start-up page does *not* print in the demo mode.

Output from Designated Buttons

The following reports print when you press specific buttons:

Press This Button...	To Print this Report...
<Online>	Start-Up Page
<Select>	Font Report
<Item ▲>	Hardware Report
<Value ▲>	Menu Maps
<Menu>	Start-Up Page
<Esc>	Font Report
<Item▼>	Hardware Report
<Value▼>	Menu Maps

Error Codes

The following tables display error codes and the type of fault they represent.

Errors:

540	Paper Jam - Exit
542	Paper Jam - Fuser
544	Paper Jam - Tray
608	EEPROM
609	Hardware Configuration - EEPROM Checksum Error
615	Font Module
620	Cache RAM - pattern read fault
621	Cache RAM - addressing fault
622	Cache RAM - coupled cells
630	Option Slot 0 - pattern read fault
631	Option Slot 0 - addressing fault
632	Option Slot 1 - pattern read fault
633	Option Slot 1 - addressing fault

Fauilures

800	Controller - Baseline DRAM on RAS 0, pattern read fault
801	Controller - Baseline DRAM on RAS 0, addressing fault
802	Controller - Baseline DRAM on RAS 0, coupled cells
805	Controller - Baseline DRAM on RAS 3, pattern read fault
806	Controller - Baseline DRAM on RAS 3, addressing fault
807	Controller - Baseline DRAM on RAS 3, coupled cells
810	DRAM Module A - RAS 2, pattern read fault
811	DRAM Module A - RAS 2, addressing fault
812	DRAM Module A - RAS 2, coupled cells
815	DRAM Module B - RAS 1, pattern read fault
816	DRAM Module B - RAS 1, addressing fault
817	DRAM Module B - RAS 1, coupled cells
820	Controller - Processor Fault
830	Controller - Cache Controller Fault
840	Controller - IROM Checksum Error
850	Controller - Video Buffer RAM, self-test time-out
851	Controller - Video Buffer RAM, self-test failed
852	Controller - Video Buffer RAM, autoclear time-out
853	Controller - Video Buffer RAM, autoclear failed
854	Controller - Video Pattern RAM, self-test time-out
855	Controller - Video Pattern RAM, self-test failed
856	Controller - Video Dot Modulation Register failure
857	Controller - Video Interface Signal (INTR, BD, PSYNC)
860	Controller - Decompression History RAM fault
861	Controller - Decompression fault, Bypass mode
862	Controller - Decompression fault
900	Main Motor - MCU Communications fault
901	Main Motor - Time-out waiting for PPRDY
910	Engine Controller PCB - MCU NVRAM Abnormality or fuser
920	Engine Fan
930	Optical System - MCU ROS Motor Abnormality
940	Fuser System - MCU Fuser Abnormality

The following table references control panel messages to the FRU FIPs or list the item to replace.

Control Panel Message	Error Log Information	Printer Response	Go to FIP
CHANGE CARTRIDGE	NA	1. Save Current job. 2. Beep 5 times. 3. Hold job until cartridge changes. 4. Resume normal operation.	Replace Toner Cartridge. 6.2.12
CLOSE COVER	NA	1. Save Current job. 2. Beep 5 times. 3. Hold job until cartridge changes. 4. Resume normal operation.	6.3.2
ERROR: 620 621 622 CACHE RAM	ERROR XXX: Cache RAM failure, Cache disabled	1. Beep once. 2. Save the # of pages and Error XXX to the error log. 3. Disable the Cache controller. 4. Resume normal operation.	Replace or reseat controller.
ERROR: 608 EEPROM	Error 608: EEPROM did not accept new data	1. Beep once. 2. Save the # of pages and Error XXX to the error log. 3. Use factory defaults 4. Resume normal operation.	Replace or reseat controller
ERROR: 615 FONT MODULE	Error 615: Font Module did not accept new data	1. Beep once. 2. Save the # of pages and Error XXX to the error log. 3. Resume normal operation.	Replace or reseat Font SIMM
ERROR: 609 HARDWARE CONFIG	Error 609: Hardware Configuration Failure	1. Beep once. 2. Save the # of pages and Error XXX to the error log. 3. Resume normal operation.	Replace or reseat controller
ERROR: 630 631 OPTION SLOT 0	Error XXX: Option Slot Failure, Option Slot 0 Disabled	1. Beep once. 2. Save the # of pages and Error XXX to the error log. 3. Disable Option Slot 0. 4. Resume normal operation.	Replace or reseat option

Control Panel Message	Error Log Information	Printer Response	Go to FIP
ERROR: 632 633 OPTION SLOT 1	Error XXX: Option Slot Failure, Option Slot 1 Disabled	1. Beep once. 2. Save the # of pages and Error XXX to the error log. 3. Disable Option Slot 1. 4. Resume normal operation.	Replace or reseat option
FAILURE: XXX CONTROLLER xxx=800-807, 820, 830, 840, 850, 851, 852, 853, 854, 855, 856, 857, 860, 861, 862	Failure XXX: Controller Board	1. Beep five times. 2. Save the # of pages and Error XXX to the error log. 3. Turn off the fuser.	Replace or reseat controller
FAILURE: 810 811 812 DRAM MODULE A	Failure XXX: DRAM Module A	1. Beep five times. 2. Save the # of pages and Error XXX to the error log. 3. Turn off the fuser.	Replace or reseat RAM SIMM
FAILURE: 815 816 817 DRAM MODULE B	Failure XXX: DRAM Module B	1. Beep five times. 2. Save the # of pages and Error XXX to the error log. 3. Turn off the fuser.	Replace or reseat RAM SIMM
FAILURE: 910 ENGINE CTRL PCB	Failure 910: Engine Control PCB or Fuser	1. Beep five times. 2. Save the # of pages and Error XXX to the error log. 3. Turn off the fuser.	6.2.3, Replace or reseat Fuser, MCU

Control Panel Message	Error Log Information	Printer Response	Go to FIP
FAILURE: 920	Failure 920: Engine Cooling Fan Stalled, System Shut Down	1. Beep five times. 2. Save the # of pages and Error XXX to the error log. 3. Turn off the fuser.	6.2.20
FAILURE: 940 FUSER SYSTEM	Failure 940: Fuser System	1. Beep five times. 2. Save the # of pages and Error XXX to the error log. 3. Turn off the fuser.	6.2.3 Replace or reseat Fuser, MCU
FAILURE: 900 901 MAIN MOTOR	Failure XXX: Main Motor	1. Beep five times. 2. Save the # of pages and Error XXX to the error log. 3. Turn off the fuser.	6.2.19
FAILURE: 930: OPTICAL SYSTEM	Failure 930: Optical System	1. Beep five times. 2. Save the # of pages and Error XXX to the error log. 3. Turn off the fuser.	6.3.11, 6.3.4
FONT MODULE FULL	NA	1. Beep once. 2. Resume normal operation.	NA
LOAD paper size	NA	1. Save current job. 2. Beep five times. 3. Save the current job until the correct paper size is inserted or a time out occurs. 4. Resume normal operation.	6.2.13
LOWER TRAY EMPTY	NA	1. Save current job. 2. Beep five times. 3. Save the current job until paper is inserted 4. Resume normal operation.	6.2.11
LOWER TRAY OUT	NA	1. Save current job. 2. Beep five times. 3. Save the current job until the lower tray is inserted 4. Resume normal operation.	6.2.10

Control Panel Message	Error Log Information	Printer Response	Go to FIP
MANUAL paper size	NA	1. Save current job. 2. Beep five times. 3. Save the current job until the user inserts paper into the manual feed tray and presses SELECT. 4. If a timeout occurs, flush the job. 5. Resume normal operation.	NA
MULTI TRAY EMPTY	NA	1. Save current job. 2. Beep five times. 3. Save the current job until paper is inserted. 4. Resume normal operation.	6.3.9
NEED CARTRIDGE	NA	1. Save current job. 2. Beep five times. 3. Save the current job until a new cartridge is inserted. 4. Resume normal operation.	6.2.8
NO PAPER TRAYS	NA	1. Save current job. 2. Beep five times. 3. Save the current job until a tray is inserted 4. Resume normal operation.	6.2.10
PAPER JAM> EXIT	Error 540: Paper Jam at exit rollers	1. Save current job. 2. Beep five times. 3. Save the # of pages and the Error XXX to the Error Log. 4. Hold the job until the user clears the path. 5. Reprint the jammed page (if Exit/JAM Recovery is enabled.) 6. Resume normal operation.	6.2.5

Control Panel Message	Error Log Information	Printer Response	Go to FIP
PAPER JAM> FUSER	Error 542: Paper Jam at fuser	1. Save current job. 2. Beep five times. 3. Save the # of pages and the Error XXX to the Error Log. 4. Hold the job until the user clears the path. 5. Reprint the jammed page 6. Resume normal operation.	6.2.6
PAPER JAM> TRAY	Error 544: Paper jam at cassette	1. Save current job. 2. Beep five times. 3. Save the # of pages and the Error XXX to the Error Log. 4. Hold the job until the user clears the path. 5. Reprint the jammed page 6. Resume normal operation.	6.2.7
TONER LOW	NA	1. Beep five times. 2. Continue with normal operation. 3. Display the message until the user changes the cartridge or a CHANGE CARTRIDGE error occurs.	6.2.12

Control Panel Message	Error Log Information	Printer Response	Go to FIP
TRAY EMPTY (This message is valid without the Aux Tray.)	NA	1. Save current job. 2. Beep 5 times. 3. Hold job until user inserts paper. 4. Resume normal operation.	6.2.11
TRAY OUT (This message is valid without the Aux Tray.)	NA	1. Save current job. 2. Beep 5 times. 3. Hold job until user inserts tray. 4. Resume normal operation.	6.2.10
UPPER TRAY EMPTY (This message is valid without the Aux Tray.)	NA	1. Save current job. 2. Beep 5 times. 3. Hold job until user inserts paper. 4. Resume normal operation.	6.2.11
UPPER TRAY OUT (This message is valid without the Aux Tray.)	NA	1. Save current job. 2. Beep 5 times. 3. Hold job until user inserts the tray. 4. Resume normal operation.	6.2.10

Chapter 4 : Troubleshooting and General Procedures

Use this troubleshooting or fault isolation procedure as the starting point in diagnosing the DEClaser 3500 printer.

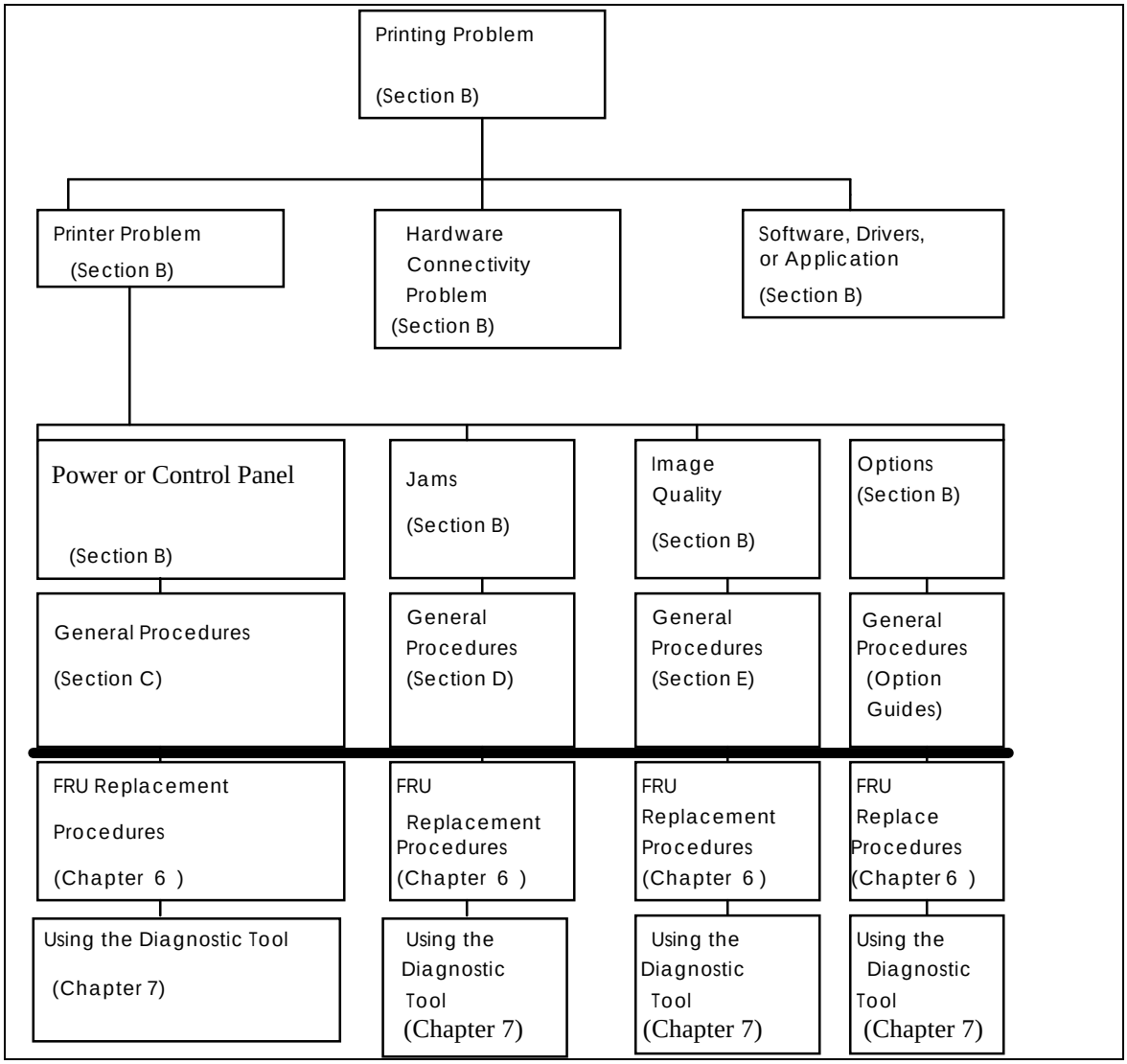
Because the DEClaser 3500 servicing strategy is based on Return to Digital (RTD), this troubleshooting procedure represents the basic procedure to determine if the customer should return the printer for servicing.

Determine the kind of problem that exists and diagnose the problem as soon as possible. Is the problem a printer problem, a known bug, or a non-printer problem? For example:

- A bad power supply requires RTD or on-site FRU replacement.
- The inability to print a hardware report from the front tray is a known bug or limitation of the printer, requiring no service
- Incorrect installation of hardware or software is a non-printer problem and requires no service action.

The general troubleshooting process begins by determining the symptoms and following a systematic approach. The following block diagram illustrates the systematic fault isolation procedure.

A. General Troubleshooting Block Diagram



Begin at the top of this diagram and work down. The phone support stops at the line in the middle where the problem is either corrected or repair is authorized. Below the line are hands-on repair techniques, which may involve the diagnostic tool, depending on the tool's availability. At the hands-on level, you can replace FRUs. It is highly desirable to have the diagnostic tool to isolate problems.

NOTE: This troubleshooting procedure does not explicitly troubleshoot problems with software, drivers, applications, and connectivity; nor does it address the printer's limitations. See the specific troubleshooting or informational techniques in the software, driver, applications or other printer documentation (see Tools in Appendix A). For example, the PostScript Windows driver has extensive on-line help, an error handler, and a troubleshooting section in the documentation.

B. Starting Fault Isolation Procedure

1. Determine the symptoms:
    - What are the hardware connections, software connections and software applications?
    - Did the printer operate at all previously? If so what change(s) occurred?
    - Does the printer work by itself?
        - Print hardware and error reports (see the user manual).
        - Print a start page.
    - Do you hear abnormal sounds (at power up or feeding paper)?
    - Is the control panel blank, garbled, or unresponsive to the online button?

    Refer to Section F *Normal Operations* to compare the normal actions of the printer to the symptoms.
3. Determine if the problem is printer hardware versus other problems.

If the Problem Is:	Refer to:
Software	Software documentation
Drivers	Driver documentation
Applications	Application documentation
Hardware Connectivity	Cabling and adapters in this chapter
Printer Hardware	Continue.If FRU repair is in order, replace all RTD references with FRU replacements in the FIP chapter.

3. Define the printer hardware symptoms.

If the Symptom Is:	Go To Section
An inoperable Printer or a control panel message	C
Jam or misfeed problems	D
Image quality problems	E

At the end of each major fault area (C, D, or E) is a list of components that may affect the problem. Some items overlap some sections, so they are repeated in these sections. Please review this list before returning the printer to Digital.

Before proceeding, make sure the paper trays are filled with paper and installed in the printer.

C. Inoperable Printer or Control Panel Message Problems

If	Go To Section
The printer is inoperable or the control panel does not function.	C1 *Inoperable Printer*
The printer control panel displays a message.	C2 *Control Panel Message Problems*

C1. Inoperable Printer

1. Isolate the printer (power off, remove cables, then power on).
2. Is there ANY indication of power? (Does the fan operate, motor sound and turn, LCD messages display or the ROS sound?)

No	Yes
Read below.	Go to the next step.

Perform the following analysis:

- Check the wall circuit for power.
- Check or try another AC plug.
- Check the interlock:
  - Make sure the link assembly moves in and out when you open and close the front cover.
  - If the link assembly is out of its spring hinge socket, pop it back in.
- Go back to the beginning of step 2. If the problem persists, RTD.

3. Does the fan operate?

No	Yes
Read below.	Go to the next step.

Perform the following analysis:

- Remove the controller (ESS) and try again.
  - If the fan does not operate, RTD.
- Reseat the controller (ESS) and try again.
- Go back to the beginning of step 3. If the problem persists, RTD.

4. Insert the cassette (the main motor will not move without the cassette in place). Does the main motor sound and move momentarily at power up?

No	Yes
Read Below.	Go to the next step.

- Remove the toner cartridge and try again.
  - If the motor operates momentarily after the front cover/door is closed, then try another toner cartridge.
    - If the problem goes away, go to step 6.
    - If the problem persists, continue with this step.
- Remove the controller (ESS) and try again.
  - If the motor does not operate momentarily after the front cover/door is closed, then RTD.
  - If the motor operates, continue with this step.
- Reseat the controller (ESS).
- Go back to the beginning of step 4. If the problem persists, RTD.

5. Does the fuser lamp light or feel warm?

No	Yes
Read below.	Go to the next step.

- Replace the toner cartridge and try again (the fuser will not operate without a toner cartridge).
  - If the problem goes away, go to step 6.
  - If the problems persists, continue with this step.
- Remove the controller (ESS) and try again.
  - If the fuser does not operate (get warm), RTD.
  - If the problem goes away, continue with this step.
- Reseat the controller (ESS).
- Go back to the beginning of step 5. If the problem persists, RTD.

6. Does the Start Page (if enabled) print and can reports be printed?

No	Yes
Read below.	Go to the next step.

- Remove the controller (ESS) and try the self test. Does the self test print?

No	Yes
RTD	Continue with this step.

- Reseat the controller (ESS) and try again.
  - Go back to the beginning of step 6. If the problem persists, RTD.

7. If options are present, are they listed on the hardware report?

No	Yes
Read below.	Go to the next step.

Perform the following analysis:

- Reseat the options.
- Go back to the beginning of step 7. If the problem persists, RTD.

C2. Control Panel Message Problems

Review the control panel messages in this chapter and in Chapter 3.

If you are replacing FRUs, see the Control Panel Message column and the references to FIPs.

Try to reseat the following components:

- RAM SIMMS
- Font SIMMS
- Option Modules
- Controller (ESS)

Perform the steps again. If the options still do not appear on the hardware report, and the customer is receiving phone support, RTD. If you are replacing FRUs, continue to Chapter 6 *FRU Replacement and Fault Isolation Procedures.*

Review the following checklist before returning the printer to Digital:

Interlock	If there is no indication of power, check the plug and wall circuit. When closing the front cover, does the link assembly appear to work or has it popped out of the spring lock?
Control Panel	If messages are garbled or the control panal is blank, suspect the controller (ESS), because the controller feeds the messages to the control panel. The LVPS may also be at fault.
Controller	The controller operates the control panel. Reseat the controller and try the engine self test before assuming the controller or control panel has failed.
Noise	Check the take-away roller, BTR roller, inlet chute, toner cartridge, and Fuser. These may be ajar and cause noise and defects.
LVPS	(+5VDC) If the 5V circuit is loaded or defective, it would disable almost all electronics, including the control panel. Reseat the controller. (+24VDC) The 24V circuit controls the fan and ROS.
Drive	Try powering up with the toner (EP) cartridge removed.(If the problem goes away, try another cartridge. Check the AC plug, wall circuit and LVPS. Try the engine self test. If the fan still does not move, RTD.
Fan	There is no control panel message for this item. This is a 24V fan driven by the MCU. If the fan doesn't move, RTD.
ROS	The LD/CRU switch or toner cartridge may be defective. Try to power up without a toner cartridge, then try to power up with a new cartridge. A possible symptom is a wavy image. Try the engine self test
Fuser	If the control panel message is: "Failure: 910 Engine Ctrl PCB" suspect the fuser, not the MCU or NVRAM. Look for the fuser lamp to light or warm up Try reseating the fuser. Try the engine self test. Symptoms can be an unfused image, extreme heat, or image background.

The following table references control panel messages to the FRU FIPs or list the item to replace.

Control Panel Message	Error Log Information	Printer Response	Go to FIP
CHANGE CARTRIDGE	NA	1. Save Current job. 2. Beep 5 times. 3. Hold job until cartridge changes. 4. Resume normal operation.	Replace the toner cartridge. 6.2.12
CLOSE COVER	NA	1. Save Current job. 2. Beep 5 times. 3. Hold job until cartridge changes. 4. Resume normal operation.	6.3.2
ERROR: 620 621 622 CACHE RAM	ERROR XXX: Cache RAM failure, Cache disabled	1. Beep once. 2. Save the # of pages and Error XXX to the error log. 3. Disable the Cache controller. 4. Resume normal operation.	Replace or reseat controller.
ERROR: 608 EEPROM	Error 608: EEPROM did not accept new data	1. Beep once. 2. Save the # of pages and Error XXX to the error log. 3. Use factory defaults 4. Resume normal operation.	Replace or reseat controller
ERROR: 615 FONT MODULE	Error 615: Font Module did not accept new data	1. Beep once. 2. Save the # of pages and Error XXX to the error log. 3.. Resume normal operation.	Replace or reseat Font SIMM
ERROR: 609 HARDWARE CONFIG	Error 609: Hardware Configuration Failure	1. Beep once. 2. Save the # of pages and Error XXX to the error log. 3. Resume normal operation.	Replace or reseat controller
ERROR: 630 631 OPTION SLOT 0	Error XXX: Option Slot Failure, Option Slot 0 Disabled	1. Beep once. 2. Save the # of pages and Error XXX to the error log. 3. Disable Option Slot 0. 4. Resume normal operation.	Replace or reseat option

Control Panel Message	Error Log Information	Printer Response	Go to FIP
ERROR: 632 633 OPTION SLOT 1	Error XXX: Option Slot Failure, Option Slot 1 Disabled	1. Beep once. 2. Save the # of pages and Error XXX to the error log. 3. Disable Option Slot 1. 4. Resume normal operation.	Replace or reseat option
FAILURE: XXX CONTROLLER xxx=800-807, 820, 830, 840, 850, 851, 852, 853, 854, 855, 856, 857, 860, 861, 862	Failure XXX: Controller Board	1. Beep five times. 2. Save the # of pages and Error XXX to the error log. 3. Turn off the fuser.	Replace or reseat controller
FAILURE: 810 811 812 DRAM MODULE A	Failure XXX: DRAM Module A	1. Beep five times. 2. Save the # of pages and Error XXX to the error log. 3. Turn off the fuser.	Replace or reseat RAM SIMM
FAILURE: 815 816 817 DRAM MODULE B	Failure XXX: DRAM Module B	1. Beep five times. 2. Save the # of pages and Error XXX to the error log. 3. Turn off the fuser.	Replace or reseat RAM SIMM
FAILURE: 910 ENGINE CTRL PCB	Failure 910: Engine Control PCB or fuser	1. Beep five times. 2. Save the # of pages and Error XXX to the error log. 3. Turn off the fuser.	6.2.3, Replace or reseat Fuser, MCU

Control Panel Message	Error Log Information	Printer Response	Go to FIP
FAILURE: 920	Failure 920: Engine Cooling Fan Stalled, System Shut Down	1. Beep five times. 2. Save the # of pages and Error XXX to the error log. 3. Turn off the fuser.	6.2.20
FAILURE: 940 FUSER SYSTEM	Failure 940: Fuser System	1. Beep five times. 2. Save the # of pages and Error XXX to the error log. 3. Turn off the fuser.	6.2.3 Replace or reseat Fuser, MCU
FAILURE: 900 901 MAIN MOTOR	Failure XXX: Main Motor	1. Beep five times. 2. Save the # of pages and Error XXX to the error log. 3. Turn off the fuser.	6.2.19
FAILURE: 930: OPTICAL SYSTEM	Failure 930: Optical System	1. Beep five times. 2. Save the # of pages and Error XXX to the error log. 3. Turn off the fuser.	6.3.11, 6.3.4
FONT MODULE FULL	NA	1. Beep once. 2. Resume normal operation.	NA
LOAD paper size	NA	1. Save current job. 2. Beep five times. 3. Save the current job until the correct paper size is inserted or a time out occurs. 4. Resume normal operation.	6.2.13
LOWER TRAY EMPTY	NA	1. Save current job. 2. Beep five times. 3. Save the current job until paper is inserted 4. Resume normal operation.	6.2.11
LOWER TRAY OUT	NA	1. Save current job. 2. Beep five times. 3. Save the current job until the lower tray is inserted 4. Resume normal operation.	6.2.10

Control Panel Message	Error Log Information	Printer Response	Go to FIP
MANUAL paper size	NA	1. Save current job. 2. Beep five times. 3. Save the current job until the user inserts paper into the manual feed tray and presses SELECT. 4. If a timeout occurs, flush the job. 5. Resume normal operation.	NA
MULTI TRAY EMPTY	NA	1. Save current job. 2. Beep five times. 3. Save the current job until paper is inserted. 4. Resume normal operation.	6.3.9
NEED CARTRIDGE	NA	1. Save current job. 2. Beep five times. 3. Save the current job until a new cartridge is inserted. 4. Resume normal operation.	6.2.8
NO PAPER TRAYS	NA	1. Save current job. 2. Beep five times. 3. Save the current job until a tray is inserted 4. Resume normal operation.	6.2.10
PAPER JAM> EXIT	Error 540: Paper Jam at exit rollers	1. Save current job. 2. Beep five times. 3. Save the # of pages and the Error XXX to the Error Log. 4. Hold the job until the user clears the path. 5. Reprint the jammed page (if Exit/JAM Recovery is enabled.) 6. Resume normal operation.	6.2.5

Control Panel Message	Error Log Information	Printer Response	Go to FIP
PAPER JAM> FUSER	Error 542: Paper Jam at fuser	1. Save current job. 2. Beep five times. 3. Save the # of pages and the Error XXX to the Error Log. 4. Hold the job until the user clears the path. 5. Reprint the jammed page 6. Resume normal operation.	6.2.6
PAPER JAM> TRAY	Error 544: Paper jam at cassette	1. Save current job. 2. Beep five times. 3. Save the # of pages and the Error XXX to the Error Log. 4. Hold the job until the user clears the path. 5. Reprint the jammed page 6. Resume normal operation.	6.2.7
TONER LOW	NA	1. Beep five times. 2. Continue with normal operation. 3. Display the message until the user changes the cartridge or a CHANGE CARTRIDGE error occurs.	6.2.12

Control Panel Message	Error Log Information	Printer Response	Go to FIP
TRAY EMPTY (This message is valid without the Aux Tray.)	NA	1. Save current job. 2. Beep 5 times. 3. Hold job until user inserts paper. 4. Resume normal operation.	6.2.11
TRAY OUT (This message is valid without the Aux Tray.)	NA	1. Save current job. 2. Beep 5 times. 3. Hold job until user inserts tray. 4. Resume normal operation.	6.2.10
UPPER TRAY EMPTY (This message is valid without the Aux Tray.)	NA	1. Save current job. 2. Beep 5 times. 3. Hold job until user inserts paper. 4. Resume normal operation.	6.2.11
UPPER TRAY OUT (This message is valid without the Aux Tray.)	NA	1. Save current job. 2. Beep 5 times. 3. Hold job until user inserts the tray. 4. Resume normal operation.	6.2.10

D. Jam FIPs

No specific adjustments are required to maintain a jam-free process, other than common sense procedures, such as using specified media, cleaning and investigating the paper path, rollers and tray side guides. Also beware of incorrect page size setting due to mismatched ROM settings (control panel or driver selection) or size sensor. If the printer cannot be corrected, it should be returned for further repair investigation or refurbishment.

General Troubleshooting for paper jams or misfeeds

Definitions:

- Paper jams are caused by:
  - Paper damage
  - Obstructions in the paper path
  - Worn or contaminated components, such as worn rollers
- Misfeeds are caused when paper is late or early or never feeds out of or from a paper supply area.

Paper jam causes and effects

Under this Condition..	The Following Occurs...
Bent paper guides	The paper stops.
Small piece of paper left in the path	The paper stops.
Excessive, humidity, or improper loading	The paper hits the edge of the guide or misses the roller nip because of paper curl or damage.

Paper misfeed causes and effects

Under this condition...	The following occurs...
Worn rollers	The paper slips, sticks to the roller, or skews.
Dirty rollers	The paper slips, sticks to the roller, or skews.
Paper relative friction	Paper sticks to itself.
Critical timing in the printer	Paper is late or early getting to the next stage.

Troubleshooting methods

First, determine if it is a jam or a misfeed problem. A jam problem should be easier to remedy.

If the problem is a Jam	If the problem is a Misfeed
• Inspect hardware for obstructions. • Verify that type of paper used and environmental conditions are normal. • Is paper in output tray excessively curled? • Try turning paper over in the input tray. Try fanning the paper before printing and inspect the paper for bent, torn or folded corners • Check side guides to make sure they are close to the stack of paper • Check actual paper size versus programmed paper size by inspecting the mechanical setting and the control panel (or software driver) • Remember special media types (labels and transparencies) should be used in the front tray • Inspect the registration sensor by opening the front cover and removing the inlet chute assembly • Inspect the exit sensor by removing the top cover (3 screws) and verifying the actuator moves freely and there is no obstruction or debris in the sensor	• Inspect rollers, note if rollers are indeed worn or dirty and could cause problem. • High relative friction between paper will slow the feeding. If suspect paper, try other type. • Try fanning the paper before printing and inspect the paper for bent, torn or folded corners • Check side guides to make sure they are close to the stack of paper • Check actual paper size versus programmed paper size by inspecting the mechanical setting and the control panel (or software driver) • Remember special media types (labels and transparencies) should be used in the front tray • Inspect the registration sensor by opening the front cover and removing the inlet chute assembly • Inspect the exit sensor by removing the top cover (3 screws) and verifying the actuator moves freely and there is no obstruction or debris in the sensor

The following table lists components that may affect the jamming problems. Please review this list before returning the printer to Digital:

General	Try the front or another other tray and another cassette first. • Jams can be due to incorrect media types and specifications, wrong paper sizes, misadjustments, clogged paper sensors, stuck or defective paper actuators, defective solenoids, bad cassette size springs ,and problems with the cassette paper stack spring or feeder PWB. • Be careful of other problems that cause jams or misfeeds, such as worn or dirty rollers; a nonfunctioning motor, take-away roller, or BTR roller;or an inlet chute that popped out of snap bearings. **jam in the exit area** • Control panel message = Paper Jam>Exit • This occurs if exit actuator opens for paper passage then sticks open or is open during the cleaning or recovery process. **jam between the registration sensor and the exit sensor** • Control panel message = Paper Jam>Fuser • This occurs if the registration sensor is open or actuator engaged (outside of sensor) at power up, recovery, or cleaning. **jam between the feeder and the registration sensor** • Control panel message = Paper Jam>Tray • This occurs if the exit sensor is blocked with debris, doesn't actuate, or is disconnected, or if paper doesn't reach it.
Cassette	**Control panel message = Tray out** This occurs if a cassette tray is out, a bad spring is in the tray bottom, or the paper switch is bad. Try another tray and cassette first **Control panel message = Tray Empty, Multi Tray Empty** This occurs if paper not loaded correctly or the paper sensor (and/or actuator) has a problem. Try another tray and cassette first. Inspect the mechanics; the tray may be down due to a malfunctioned spring **Paper size problem** Inspect the mechanical rotary shaft. Do the side guides turn the mechanical indicator? Feel the spring for contact with the PWB contacts. The control panel message may be “Paper Jam” for a ROM problem (the paper size is not what is programmed) Try another tray and cassette first.
Noise	The take-away roller, inlet chute, BTR roller, toner (EP) cartridge and fuser will make noise if not seated correctly. Look for obstructions when you close the front door.
Front Cover	Damaged prints Make sure the BTR and inlet chute haven't popped out of their bearings and the toner (EP) cartridge and fuser are seated properly.

E. Image Quality FIPs

If you experience an image quality problem, first try another toner cartridge (EP cartridge).The majority of process quality is built into this unit.

There are no specific adjustments that can be made to correct problems, other than common sense procedures, such as using specified media and cleaning and investigating the paper path, rollers and tray side guides. Also beware of incorrect page size setting due to mismatched ROM settings (control panel or driver selectionor size sensor). If the printer cannot be fixed, return for further repair investigation or refurbishment.

Image Analysis:

- Determine if the problem is accuracy (skew, registration, etc.) or image (light, etc.).
- If the toner is not being fused, RTD. (If you are working on-site or at a depot, go to Chapter 6 *FRU Replacement Fault Isolation Procedures*)
- If the image is skewed, check the paper guides; re-adjust the guides and try again
    - Check the paper path for obstructions and clean the path (see *Maintenance* in this chapter).
    - Try another tray to see if the problem is related to one input source.
    - Try another type of paper with correct specifications and try a new ream.
    - Check that the paper size corresponds with the driver.
    - RTD. (If you are on-site or ata depot go to Chapter 6 *FRU Replacement Fault Isolation Procedures*.)
- if image quality is suspect, see the following table for possible solutions.

The following table lists components that may affect image quality. Please review this list before returning the printer to Digital:

HVPS or image	Try another toner cartridge. If the front door has been opened or if a new toner cartridge is used, run several prints to see if the image defect disappears. Unplug the printer and try cleaning the earth plate contacts. The following symptoms may indicate problems with the following components: • Faded or light prints — transfer charge • Black prints — charge roller bias • Blank prints — dev bias • Vertical band deletions — BTR • Vertical linear deletions — BTR or paper path contamination • Vertical streaks — BTR, fuser or paper path contamination • Horizontal streaks or band deletions — BTR, fuser, or drive gears • Spots or spot deletions — BTR, fuser, or paper path contamination • Residual image — BTR, fuser, or paper path contamination or ghosting (a phenomenon that occurs in extreme gray tones and diminishes with toner use) • Background — BTR, fuser, or drive gears • Unfused image — fuser • Damaged prints — take-away roller, inlet chute, toner (EP) Cartridge or Fuser not seated properly
Printing accuracy	• Skewed image: Make sure the feeder side guides are tight against the input stack of paper and check the registration sensor on the inlet chute. • Same for these other printing accuracy specifications Lead edge registration Side edge registration Skew Vertical accuracy Feeding accuracy Horizontal accuracy • Damaged prints: Make sure the BTR, turn roller, or inlet chute has not popped out of its bearings.
Fan	There is no control panel message for this item. This is a 24V fan driven by the MCU. If the fan doesn't move, RTD.
ROS	The problem may be a defective LD/CRU switch or toner (EP) cartridge. Power up without a toner (EP) Cartridge; then power up again with a new cartridge. A possible symptom is a wavy image. Try the engine self test.
Fuser	If the control panel message = Failure: 910 Engine Ctrl PCB, suspect the fuser, not the MCU or NVRAM. Look for the fuser lamp to light or warm up. Try reseating the fuser. Try the engine self test. Symptoms can be and unfused image, extreme heat, or image background

Toner (EP-Cartridge)	• Inspect the operation of the shutter; does it open as you close the front cover? • Try another toner (EP) cartridge. • The problem may be a defective LD/CRU switch or toner (EP) cartridge.Try to power up without a toner (EP) Cartridge; then again with a new one • Control panel message = Need Cartridge or Toner Low • The tab is broken on the toner (EP) cartridge or the cartridge was forced into the wrong position. • Try another cartridge. If the toner sensor is disconnected (P/J 21), toner is never recognized as being low.

F General Printer Operations

Below is important information to know concerning:

- Normal power-up sequence
- Cleaning process
- Recovery sequence
- Engine self test
- Reporting process, such as the start page and error and hardware reports

The printer normal power-up sequence (about 50 seconds)

- The fan operates continuously upon power up.
- The motor runs for about 3 to 13 seconds, moving the drive gears. The rollers turn and reach an initial position. (The cassette must be in.)
- The fuser warms up (The lamp lights about 3 seconds after power on.)
- The control panel LCD displays the following sequence of messages:

  Self-Test

  ONLINE
  Initializing . . .

  ONLINE
  Warming Up . . .

  ONLINE
  Idle

The Start page is printed from selected tray (if enabled). If the tray is missing, the start page does not print.

The print engine normal cleaning process

The printer starts the cleaning routine when:

- Power is switched on
- The interlock is activated
- The CRU switch is switched on (and the toner (EP) Cartridge is installed
- Between printing cycles (except during continuous printing)

During the cleaning routine, the main motor and HVPS are on.

There are two types of Cleaning Routines:

Warm up cleaning	Starts when the main power and CRU switch are switched on. The printer is ready when warm up cleaning is finished and the fuser is at operating temperature.
Cycle out cleaning	Starts at the end of each print cycle.

You can stop the cleaning routine by deactivating the interlock switch, removing the paper cassette, or actuating the exit sensor. To restart the cleaning, see the recovery sequence below.

The print engine recovery sequence

The recovery routine allows the printer to return to normal operation after a print cycle interruption. The routine switches ON the main motor and signals the HVPS to switch ON CR (DC) and TR (AC) voltages for the charge and transfer rolls respectively.
The printer uses the recovery routine after the following interruptions:

- Interlock switch deactuation
- Paper cassette removal
- Exit sensor actuation

The printer does not perform the recovery routine if either the exit sensor or the registration sensor are actuated when you actuate the interlock switch, install the paper cassette, or switch ON the power.

The Engine Self Test

An engine self test is available when the controller is removed, so remove the controller before attempting to use the engine self test.

The self test will print a grid test pattern from the standard cassette tray. The self test only uses the standard cassette tray so it must be installed and loaded with paper. Since the ESS (controller) controls the control panel (LCD etc.) there are no messages.
Use the self test to determine if the controller is at fault. Perform the self test before replacing the controller. The self test can also be used for printing accuracy and ROUGH print quality.

The engine self test is affected by connecting pin 2 of P/J52 to ground. You can complete the short by using a wire or paper clip placed into a hole in the rear of the printer. To locate the hole open the rear cover. The hole is 1.75 inches directly below the right edge of the parallel port connector (if there is a label covering the hole: feel around and poke a hole through the label. You may need to clear some of the label around the hole so the metal chassis is exposed to use as a connection point to pin 2. Pin 1 of P/J 52 is ground so shorting pins 1 and 2 will also affect the connection and the self test page. The wire should not go any further than .375 inches inside the hole. It may take a few tries to get the short to occur.

Generating printer data = start page, error and hardware report

If possible, print the start page and error and hardware reports at the beginning of troubleshooting. The start page will print upon power up if it has not been disabled. You can print the reports by entering menu mode.Select REPORTS and move down the menu until you see ERROR or HARDWARE. Select either option. The reports print from the standard cassette tray.

Paper transport timing errors

During a print cycle, paper should move through the printer at a specific speed. A paper jam occurs if the paper moves too slow or too fast. The following tables show E2, E3, and E4 paper jams and the time windows required to create those jams. There are only two sensors: the registration sensor and the exit sensor, for determining the jam status. The off or unused state is with the actuators blocking the LED sensor circuit.

At power up or recovery	Control Panel Message:
if the exit sensor only is on	Paper Jam>Exit
if the registration sensor only is on	Paper Jam>Fuser
if the registration sensor remains off	Paper Jam>Fuser
if both the exit and registration sensors are on	Paper Jam>Fuser
if the exit sensor remains off while printing	Paper Jam>Tray

E2 paper jam timing (Control Panel message=Paper Jam>Tray)

Paper transport time needed to create an E2-1 jam
(Early paper feed - registration sensor shouldn't be actuated)

Tray 1	1.45~1.54 sec
Tray 2	2.48~2.58 sec
MBF0	.41 sec

Paper transport time needed to create an E2-2 jam
(Paper misfeed - registration sensor should be actuated)

Tray 1	1.92
Tray 2	2.95 sec
MBF	0.73 sec

E3 paper jam timing (Control Panel message=Paper Jam>Fuser)

Paper transport time needed to create an E3 jam: 3.03 seconds

E4 paper jam timing (Control Panel message=Paper Jam>Exit)

Paper transport time needed to create an E4 jam:

Paper Size	Transport Time (in Seconds)
Smaller than LTR (SEF)	7.60
Smaller than A4	7.87
Legal 13” and 14”	8.79

Maintenance

Perform the following maintenance when you repair the printer.

- Remove right cover: Clean the fan and the area around the exhaust.
- Remove the transportation chute assembly: Use a brush to clean the static eliminator.
- Use a brush or dry cloth to clean the paper path and the paper rolls.

Do not change the engine factory defaults, such as laser density settings, unless a FRU replacement requires an adjustment.

Cables and Adapters

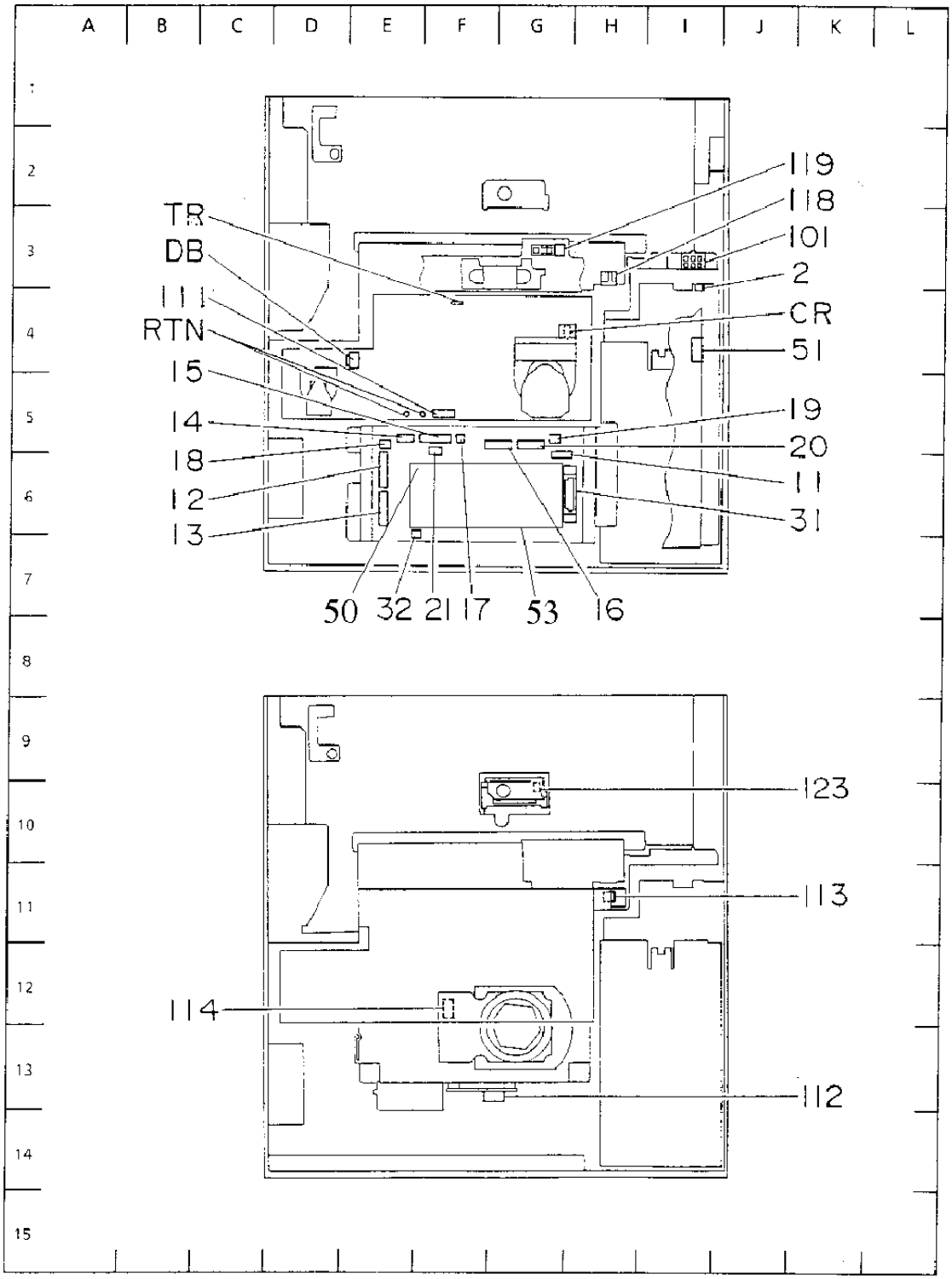
BCC46-06	6-ft Macintosh cable
H8575-E	RS232 MMJ adapter
BCI6E-10	10-ft DEC 423 MMJ cable
H8585-AD	High-speed serial port adapter (for DECserver connectivity) 25-pin male-to-8 pos MJ
BN26X-03	3-meter serial cable. 8-pin MP-to-8-pin MP
BN26X-7E	7.5 meter serial cable. 8-pin MP-to-8-pin MP
BC19M-06	6-ft parallel cable
BC19M 10	10 ft parallel cable

Chapter 5 : Wiring Diagrams

Use the following table to identify P/J connectors by their coordinate points. The points correlate to the grid in the two P/J Locator illustrations on the following pages.

P/J	Coordinate location	Location of P/J and its purpose
2	I3	LVPS. Signal from the Thermistor. Labeled as P12 on the LVPS board.
11	G6	MCU PWB. Low voltages from the LVPS.
12	E6	MCU PWB. Signals to/from the LD Drive and the Scanner Motor (ROS Assembly).
13	E6	MCU PWB. Signals to/from the Paper Feeder PWB.
14	E5	MCU PWB. Signals to/from the Main Motor.
15	F5	MCU PWB. Signals from the CRU. Switching signals to the HVPS.
16	F5	MCU PWB. Signals from the Exit Sensor, Registration Sensor, and MBF Sensor.
17	F5	MCU PWB. 24VDC signal to the Pickup Solenoid.
18	E5	MCU PWB. 24VDC to the Fan. (Pin 1 not connected)
19	G6	MCU PWB. 5VDC signal to the SOS (ROS Assembly).
20	G6	MCU PWB. NOT USED (For Diagnostic Tool Connection).
21	F6	MCU PWB. Signal from the Toner Sensor.
30	G7	MCU PWB. NOT USED (Used to connect to another controller).
31	G6	INTERCONNECT PWB. Connects to MCU PWB which allows signals to/from the ESS PWB.
32	E6	MCU PWB. Used for test printing. Shorting pins 1 & 2 cause engine self test (For Type D1 interface only).
50	F6	INTERCONNECT PWB. 5V signals to/from the console assembly (control panel)
51	I4	INTERCONNECT PWB. Low voltages from the LVPS which in turn go to the ESS PWB.
53	F-G 6	ESS PWB. All signals to/from print engine come from the Interconnect PWB
101	I3	FUSER ASSEMBLY. 110 or 220 VAC from the LVPS to the Fuser Heat Rod.
111	F5	HVPS. Signals to the HVPS. Connects to P/J 15 on the MCU.
112	F14	ROS ASSEMBLY. Signals to the Scanner Motor.

P/J	Coordinate location	P/J location and purpose
113	H11	ROS ASSEMBLY. 5 VDC signals to the SOS. Connects to P/J 19 on the MCU PWB.
114	F12	ROS ASSEMBLY. Scanner Motor 5VDC voltages and signals. Connects to P/J 12 on the MCU PWB.
115	E27	MACHINE FRAME. Signals to/from the Paper Feeder Assembly. Connects to P/J 13 on the MCU PWB.
115	E28	OPTIONAL PAPER FEEDER PWB. Signals to/from the Optional Paper Feeder. Connects to P/J116 on the Paper Feeder PWB.
116	E28	PAPER FEEDER PWB. Signals to/from the Optional Paper Feeder. Connects to P/J115 on the Optional Paper Feeder PWB.
118	H3	CRU SENSOR PWB. Signals from the CRU Sensor. Connects to P/J 15 on the MCU PWB.
119	G3	EXIT SENSOR PWB. Signals from the Exit Sensor. Connects to P/J 16 on the MCU PWB.
120	F20	REGISTRATION SENSOR PWB. Signals from the Registration Sensor. Connects to P/J 16 on the MCU PWB.
121	G20	MBF SENSOR. NoPaper signal to the MCU. Connects to P16 on the MCU PWB.
123	G10	TONER SENSOR. No toner signal to the MCU. Connects to P21 on the MCU PWB.
201	G28	FEEDER PWB. 24VDC signal to the Feed Solenoid.
201	G29	OPTIONAL FEEDER PWB. 24VDC signal to the Optional Feeder Solenoid.
202	G28	FEEDER PWB. 24VDC signal to the Turn Solenoid.
202	G29	OPTIONAL FEEDER PWB. 24 VDC signal to the Optional Turn Solenoid.
CR	G4	HVPS. Charge voltage to the BCR.
DB	E4	HVPS. Developer Bias and return to the Magnet Roll.
TR	F4	HVPS. Transfer voltage to the BTR.
RTN	E5	HVPS. Drum ground.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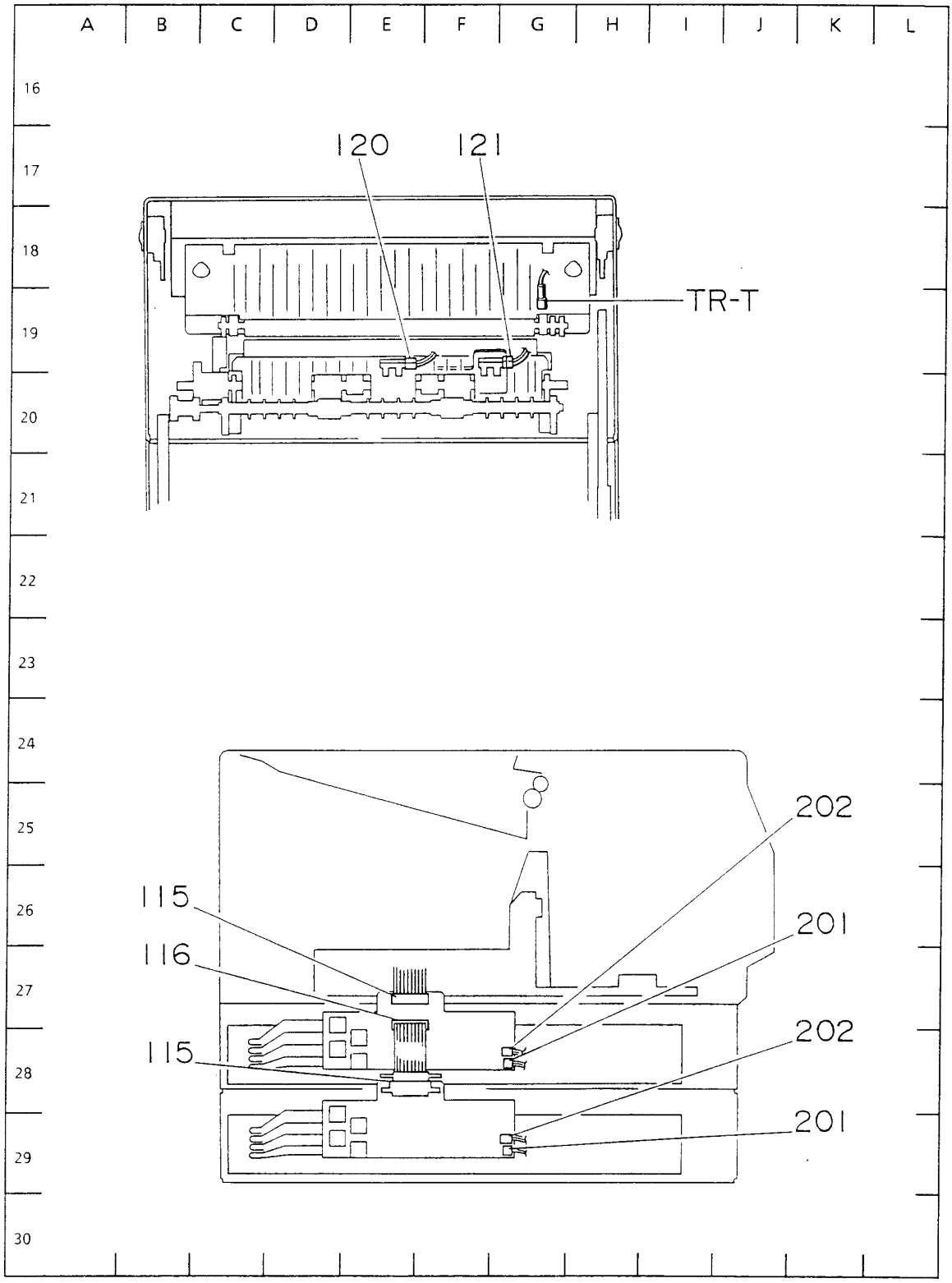
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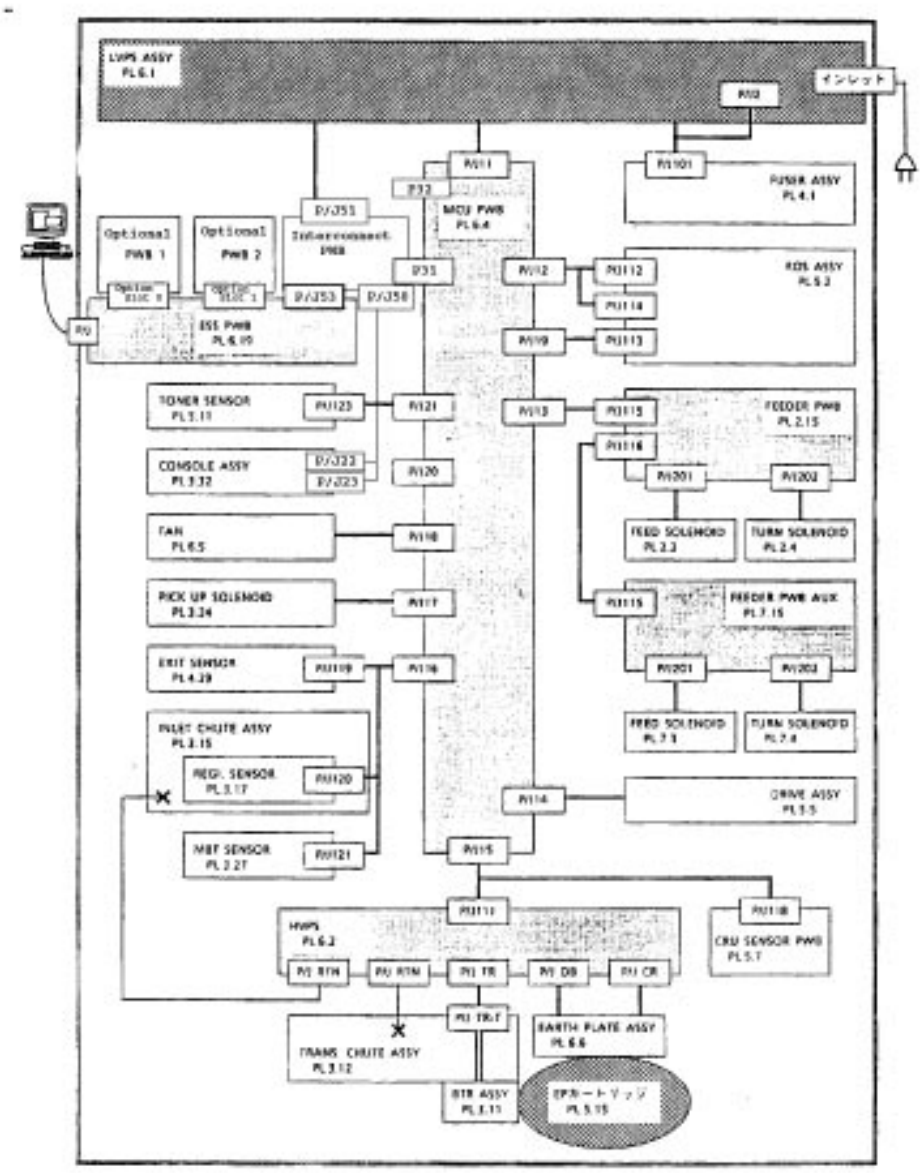
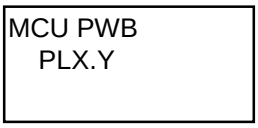
Component Connection and wiring diagrams



The Component Connection and Wiring diagrams use the following circuit notations to describe components and signal paths within the printer.

A MAJOR COMPONENT

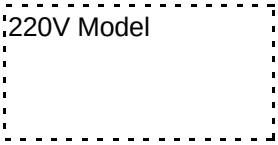


The top line is the name of the component. The second line is where you will find this component in the *Section 3 Parts List.*

A SUBCOMPONENT OF A MAJOR COMPONENT

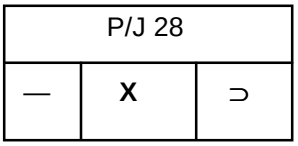
The top line is the name of the subcomponent.

THE MODEL TYPE



Shows that specifications differ between printer models. The top line is the name of the printer model.

A PLUG JACK



Shows the plug/jack number and the pins. The top line is the plug/jack number.

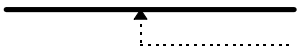
SYMBOLS:

– or P is a Plug

X is a Pin number

⊃ or J is a Jack

Wiring Is Different Depending On Printer Model



A Screw Securing A Component

A Cable Clamp

The Signal Name Of A Wire

24VDC

The Signal Value Of A Wire

L=Low. H=High

HEATER ROD ON(L) 4.2VDC

In this case, when the HEATER ROD signal is ON, the normal voltage of 4.2VDC drops to 0VDC.

SG	Signal Ground
FG	Frame Ground
RTN	RETURN There is continuity between SG and RTN. Continuity between FG and SG depends on circuit specifications.
5VDC	The voltage measured using a multimeter with the –lead grounded at SG.

Diagram blocks

The Master Connection and Wiring Diagram is divided into ten individual blocks to better illustrate the electrical relationship between components and assemblies within the printer.

LVPS Assembly and MCU PWB

The connections between the Low Voltage Power Supply Assembly and the MCU PWB

LVPS Assembly and the Fuser Assembly

The connections between the Low Voltage Power Supply Assembly and the Fuser Assembly

MCU PWB and the ROS Assembly

The connections between the MCU Assembly and the ROS Assembly

MCU PWB, Feeder PWB, Feeder PWB AUX, Feed Solenoid, and the Turn Solenoid

The connections between the MCU PWB and the Feeder PWB

The connections between the Feeder PWB and the Feeder PWB AUX

The connections between the Feeder PWB and the Feeder Solenoid

The connections between the Feeder PWB and the Turn Solenoid

The connections between the Feeder PWB AUX and the Feed Solenoid

The connections between the Feeder PWB AUX and the Turn Solenoid

MCU PWB and the Drive Assembly

The connections between the MCU PWB and the Drive Assembly

MCU PWB, HVPS, Earth Plate Assembly, Transportation Chute Assembly, Inlet Chute Assembly, MCU PWB, and the CRU Sensor PWB

The connections between the MCU PWB and the High Voltage Power Supply

The connections between the HVPS and the Earth Plate Assembly

The connections between the HVPS and the Transportation Chute Assembly

The connections between the HVPS and the Inlet Chute Assembly

The connections between the Transportation Chute Assembly and the BTR Assembly

The connections between the MCU PWB and the CRU Sensor PWB

MCU PWB, Exit Sensor, Registration Sensor, and the MBF Sensor

The connections between the MCU PWB and the Exit Sensor

The connections between the MCU PWB and the Registration Sensor

The connections between the MCU PWB and the MBF Sensor

MCU PWB, Pick-Up Solenoid, Fan, and the Toner Sensor

The connections between the MCU PWB and the Pick-Up Solenoid

The connections between the MCU PWB and the Pick-Up Fan

The connections between the MCU PWB and the Pick-Up Toner Sensor

MCU PWB, , Console Assembly, ESS PWB Wiring Diagram, and Interconnect PWB

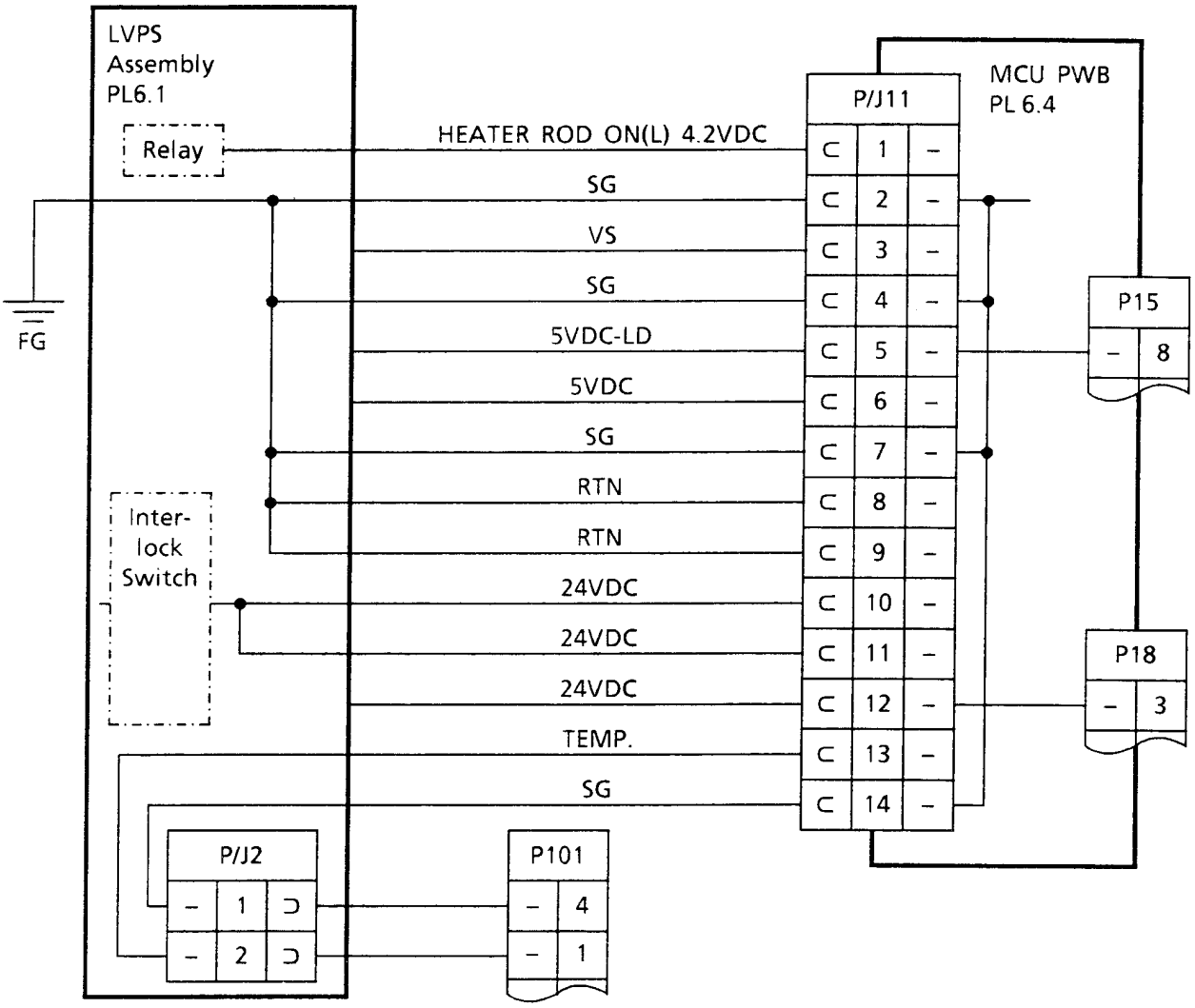
The connections between the MCU PWB and the Interconnect PWB
The connections between the ESS PWB and the Interconnect PWB
The connections between the Console Assembly and the Interconnect PWB.
The connections between the LVPS Assembly and the Interconnect PWB.
Note: P/J 54 is not used.

The following table provides information on the unconnected Plug/Jacks on the MCU PWB as well as signal names and descriptions of the Print Engine Self Test Jumper.

Pin #	Signal Name	Description
PJ 20	MCU PWB	Not Used (for Diagnostic Tool)
PJ 52	MCU PWB	Not Used (for Engine Self test)
1	Signal Ground	Ground
2	Test Print ON (L) 5VDC	Generates a test print when signal is (L)

LVPS Assembly and MCU PWB wiring diagram

The connections between the Low Voltage Power Supply Assembly and the MCU PWB.



LVPS Assembly and MCU PWB

Signal Line Name	Signal Line Description
5VDC-LC	Source power for the Laser Diode
VS	Voltage drop signal. 5VDC output voltage when the printer is switched OFF
TEMP	Thermistor data from the Temperature Sensor

The table below shows how source power recovers from or reacts to a short circuit or one of the following outputs:

Short-Circuit Voltage Output	**Output 5VDC-LD**	**Output 5VDC**	**Output TEMP**
5VDC-LD	A	C	C
5VDC	B	B	B
TEMP.	A	A	A

A Automatic recovery after short-circuit cancellation.

B Recovery at Power-ON after a few minutes from Power-OFF following a short-circuit cancellation.

C Continuous output on short-circuit.

X Intermittent output on short-circuit.

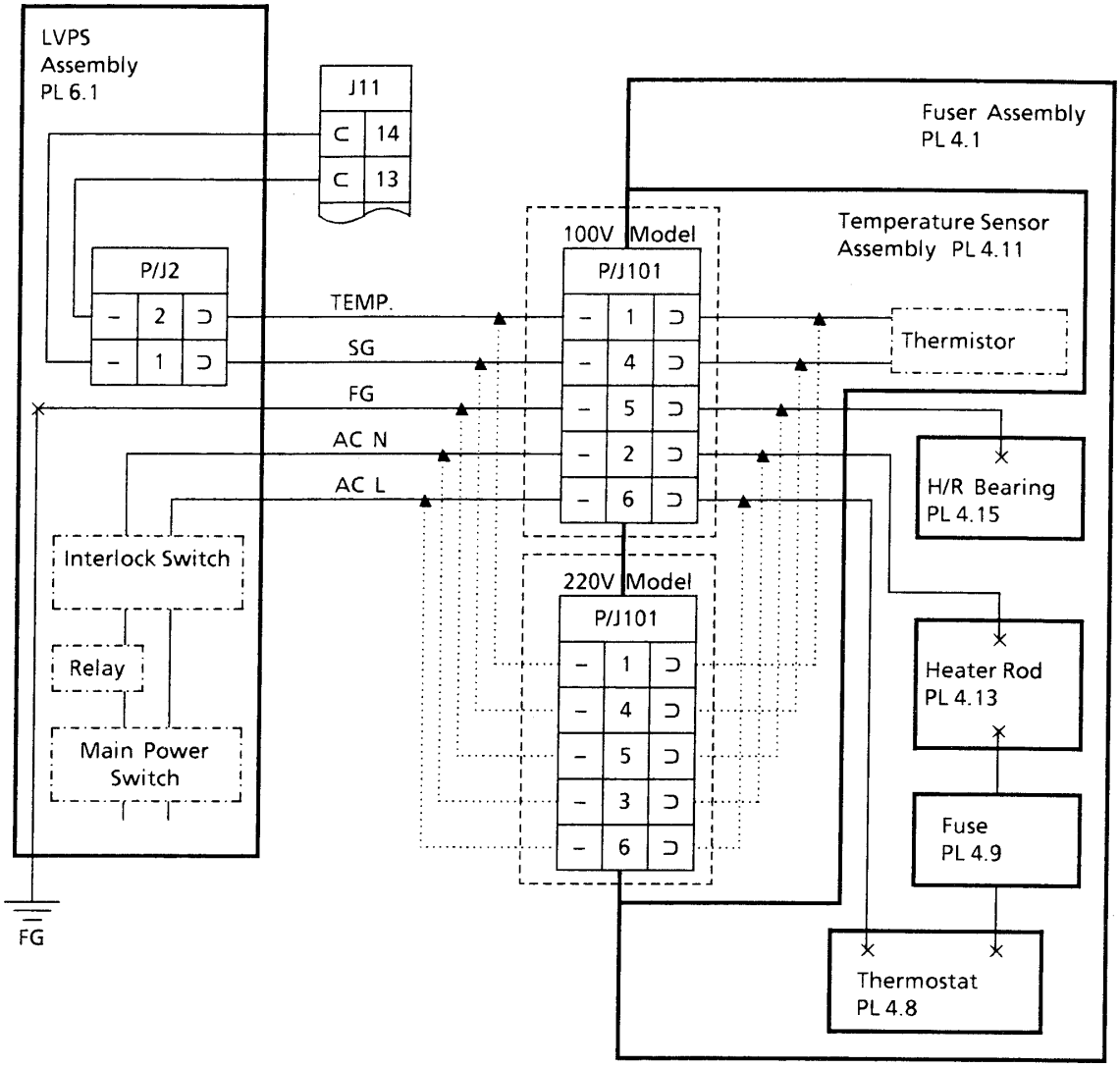
NOTE:Power output from the LVPS decreases to 0VDC after approximately one minute if power is switched ON with no load attached to the LVPS (unplug P/J 11 on the MCU PWB).

To restart the printer:

1. Switch OFF printer Main Power.
2. Reconnect P/J11 to the MCU PWB.
3. Wait five minutes.
4. Switch ON Main Power.

LVPS Assembly and the Fuser Assembly wiring diagram

The connections between the Low Voltage Power Supply Assembly and the Fuser Assembly



LVPS Assembly and the Fuser Assembly

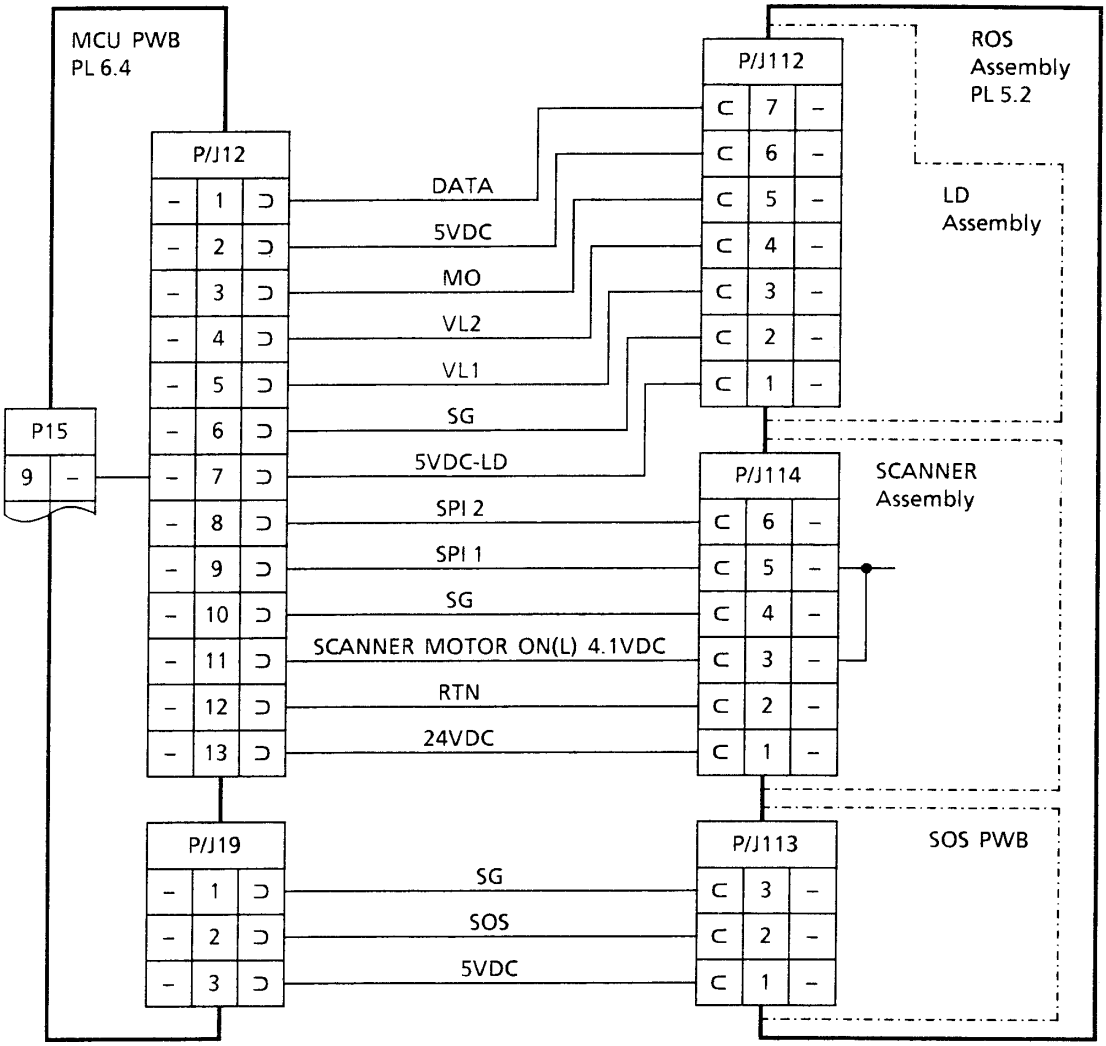
Signal Line Name	Signal Line Description
TEMP	Thermistor data from the Temperature Sensor
AC N	Neutral side of AC input from the AC power source
AC L	Line side of AC input from the AC power source

NOTE: Fuse (PL 4.9) opens at 141°C.
Thermostat (PL 4.8) opens at the point-of-contact temperature of 185°C.
The rated power of the Heater Rod is 280W ±14W (100V Model) and 350W ±17.5W (220V Model).
The following table shows the Thermistor resistance values at various temperatures.

Thermistor Temperature	10°C	20°C	30°C	150°C	160°C	170°C	180°C
Resistance in KΩ	348~526	223~327	146~209	2.9~3.4	2.3~2.6	1.8~2.1	1.4~1.7

MCU PWB and the ROS Assembly wiring diagram

The connections between the MCU Assembly and the ROS Assembly



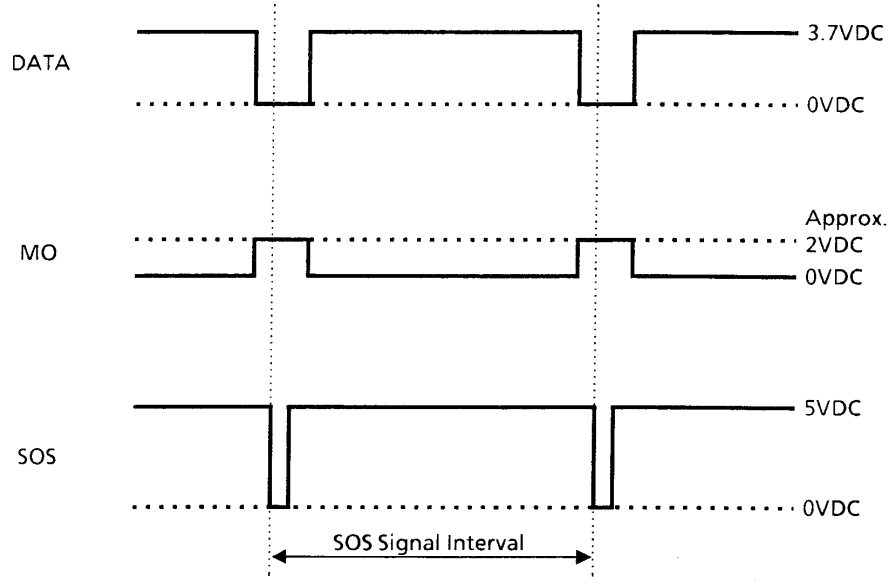
MCU PWB and the ROS Assembly

Signal Line Name	Signal Line Description
DATA	Command signal from the MCU PWB to the LD Assembly. (LD ON(L) 3.7VDC)
MO	Monitor signal that controls LD output
VL2, VL1	LD output control
5VDCLD	Power source for the LD Assembly
SPI2, SPI1	Rotation control for the Scanner Motor
SOS	Start of Scan reference signal sent to the Scanner Motor. The signal is sent when the laser beam strikes the SOS Sensor.

The table below shows the logic states of SPI 2 and SPI 1 when they are controlling the rotation of the Scanner Motor . H=High(4.1 VDC). L=LOW (0 VDC).

Print Resolution	SPI 2 Logic state	SPI 1 Logic state
600	H	H
300	L	H

The illustration below shows the waveforms of the signal lines DATA, MO, and SOS. The printer is in Printing Test Mode and the status is READY TO PRINT.



MCU PWB, Feeder PWB, Feeder PWB AUX, Feed Solenoid, and the Turn Solenoid wiring diagram

The connections between the MCU PWB and the Feeder PWB

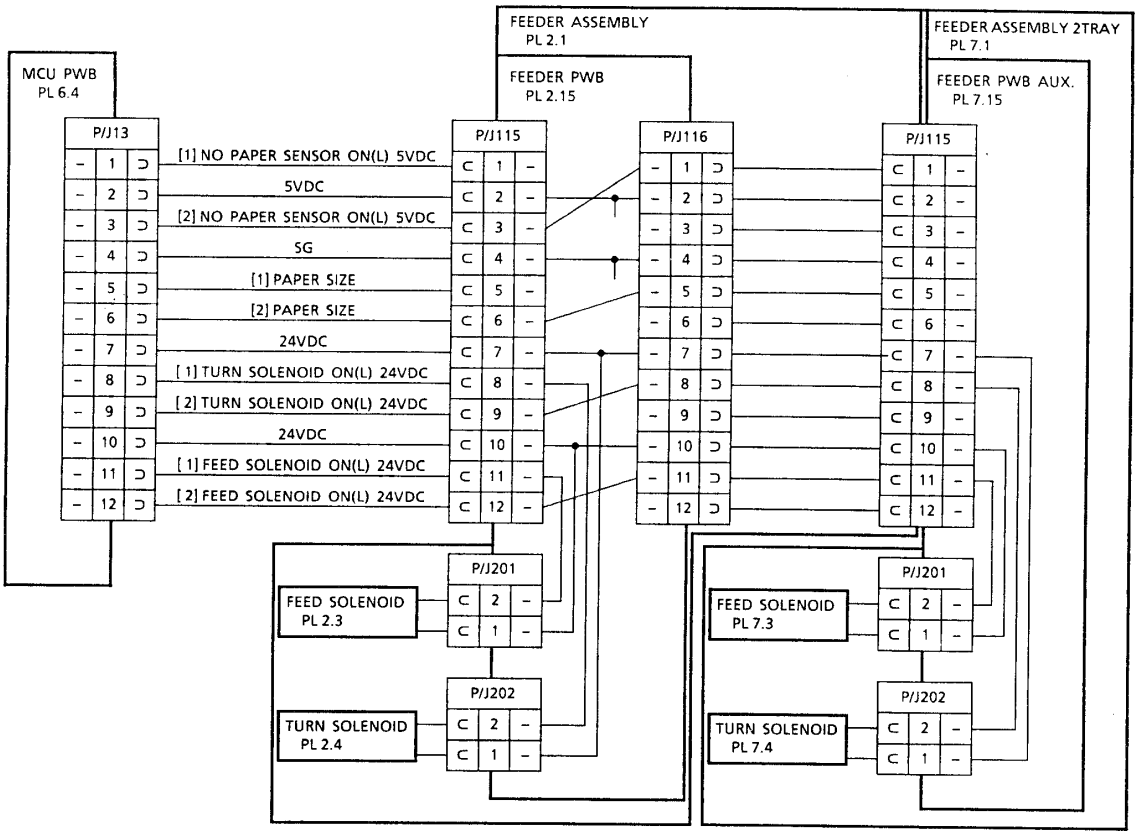
The connections between the Feeder PWB and the Feeder PWB AUX

The connections between the Feeder PWB and the Feeder Solenoid

The connections between the Feeder PWB and the Turn Solenoid

The connections between the Feeder PWB AUX and the Feed Solenoid

The connections between the Feeder PWB AUX and the Turn Solenoid



MCU PWB, Feeder PWB, Feeder PWB AUX, Feed Solenoid, and the Turn Solenoid

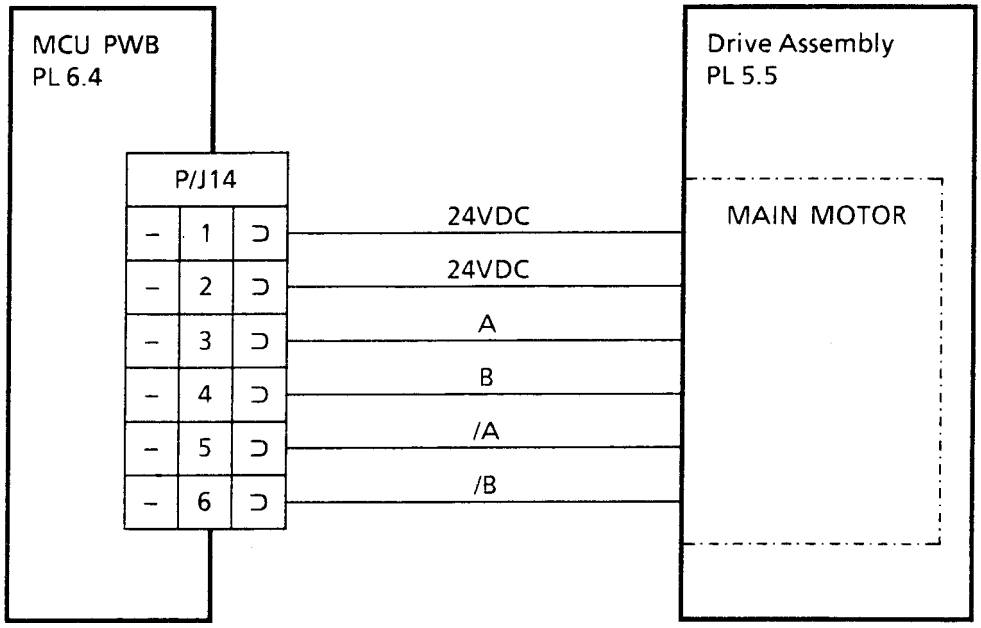
NOTE: Lines with signal names beginning with [1] are connected to Tray 1.
Lines with signal names beginning with [2] are connected to Tray 2.
The line with the signal name PAPER SIZE carries data for the Paper Size Switches
The FEED SOLENOID has a resistance of 120 ohms ±10% at 20°C
The TURN SOLENOID has a resistance of 220 ohms ±10% at 20°C

The following table provides information on the Paper Size Switches. 0 is OFF. 1 is ON

Sheet Size	SW1	SW2	SW3	SW4	HEX number	Signal Voltage
No Tray installed					00(00~07)	0.0 VDC
No Cassette installed	0	0	0	0	0F(08~15)	0.275~0.293 VDC
MONARCH	0	0	0	1	1E(16~24)	0.554~0.583 VDC
LEGAL 13"	0	0	1	0	2C(25~32)	0.834~0.871 VDC
POSTCARD	0	0	1	1	3B (33~41)	1.116~1.157 VDC
COM10	0	1	0	0	49 (42~4F)	1.396~1.445 VDC
A4 (SEF)	0	1	0	1	58 (50~5E)	1.680~1.730 VDC
C5	0	1	1	0	66 (5F~6D)	1.962~2.015 VDC
DL	0	1	1	1	75 (6E~7B)	2.248~2.298 VDC
EXECUTIVE (SEF)	1	0	0	0	83 (7C~8A)	2.530~2.584 VDC
B5(SEF)	1	0	0	1	91 (8B~98)	2.814~2.868 VDC
LEGAL 14"	1	0	1	0	A0(99~A7)	3.098~3.152 VDC
	1	0	1	1	AE(A8~B5)	3.385~3.433 VDC
	1	1	0	0	BD(B6~C4)	3.671~3.715 VDC
LETTER (SEF)	1	1	0	1	CB(C5~D3)	3.959~3.996 VDC
	1	1	1	0	D9(D4~E1)	4.247~4.276 VDC
A5(SEF)	1	1	1	1	E8(E2~FF)	4.537~4.554 VDC

MCU PWB and the Drive Assembly wiring diagram

The connections between the MCU PWB and the Drive Assembly



MCU PWB and the Drive Assembly

The MAIN MOTOR is a stepper motor that uses double_phase excitation.
The following table shows the excitation sequence of the MAIN MOTOR. X= Excitation

Phase	1	2	3	4
A			X	X
B		X	X	
/A	X	X		
/B	X			X

Note: The stepping angle is 7.5 ±0.75°.
The Frequency at Rated Speed of the 5 PPM model is 323 pulses per second.
The Frequency at Rated Speed of the 10 PPM model is 646 pulses per second.

MCU PWB, HVPS, Earth Plate Assembly, Transportation Chute Assembly, Inlet Chute Assembly, MCU PWB, and the CRU Sensor PWB wiring diagram

The connections between the MCU PWB and the High Voltage Power Supply

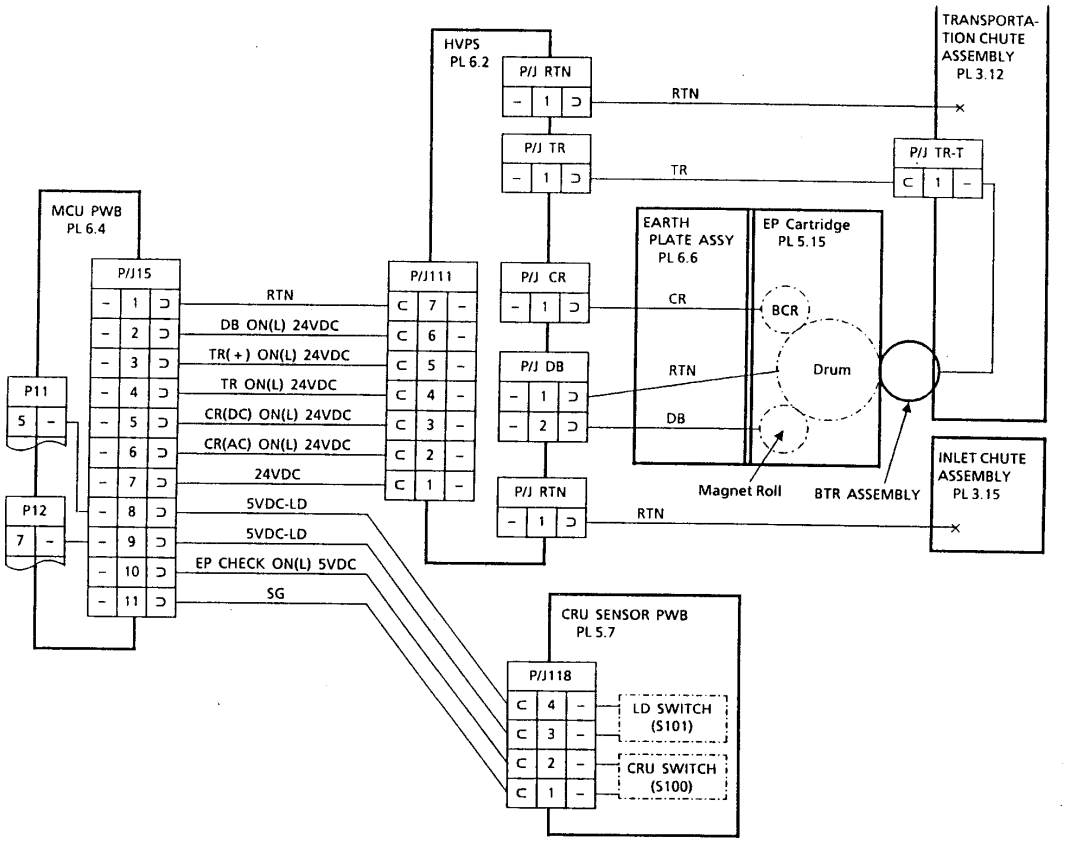
The connections between the HVPS and the Earth Plate Assembly

The connections between the HVPS and the Transportation Chute Assembly

The connections between the HVPS and the Inlet Chute Assembly

The connections between the Transportation Chute Assembly and the BTR Assembly

The connections between the MCU PWB and the CRU Sensor PWB



MCU PWB, HVPS, Earth Plate Assembly, Transportation Chute Assembly, Inlet Chute Assembly, MCU PWB, and the CRU Sensor PWB

The following table provides information on the signal names used in this section

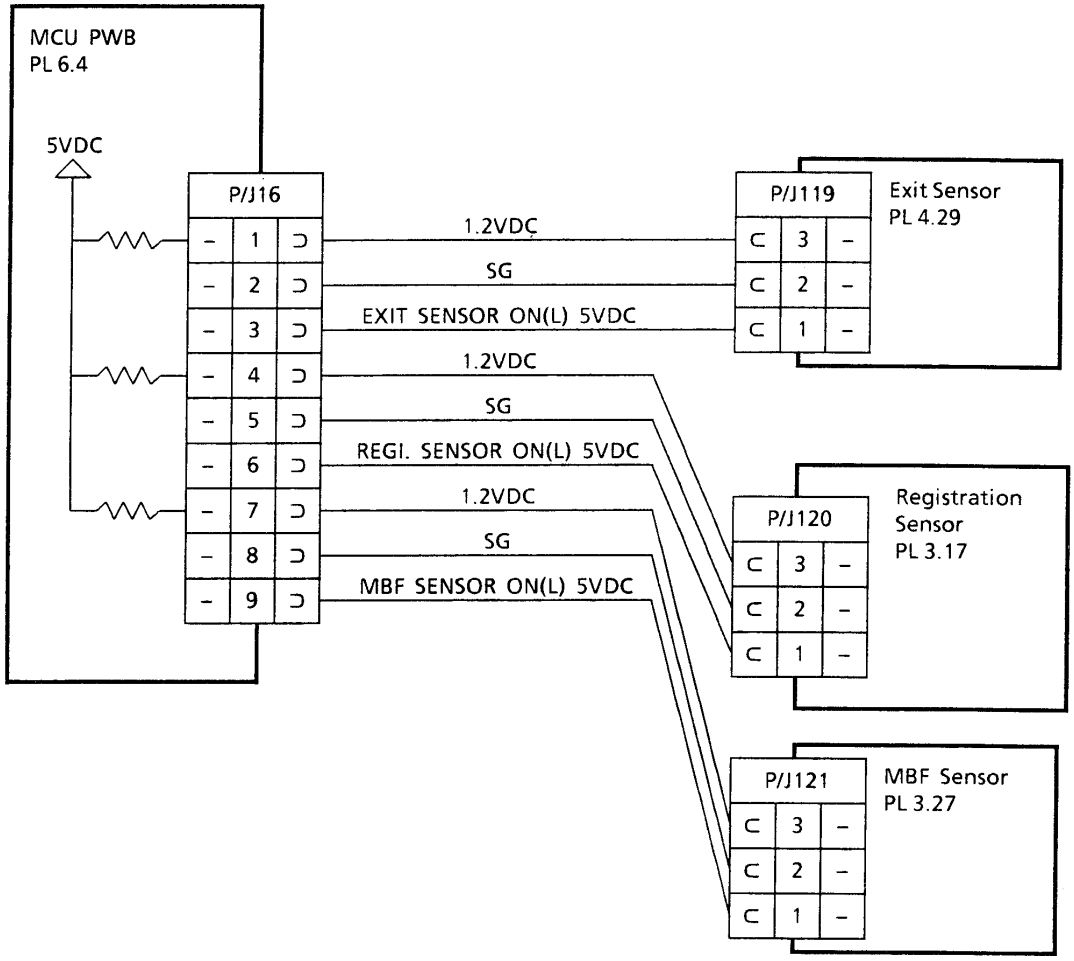
Signal Name	Description of Signal Name
DB ON(L) 24VDC	DB output signal for both AC and DC components
TR(+) ON(L) 24VDC	TR output signal at the + side
TR ON(L) 24VDC	TR output signal at both sides
CR(DC) ON(L) 24VDC	CR output signal; DC component
CR(AC) ON(L) 24VDC	CR output signal; AC component
5VDCLD	Source power for the LD Assembly
EP CHECK ON(L) 5VDC	Sensor signal for the EP Cartridge
CR	HVPS output to the BCR
DB	HVPS output to the Magnet Roll
TR	HVPS output to the BTR
RTN	Drum grounding at P/J DB1

The following table provides information on HVPS voltages used in this section.

Output Name	**Output Voltage 12 PPM**
CR (AC)	430µA (rms)@ 400 Hz
CR (DC)	-350 VDC
TR(+)	3.0 µA
TR(-)	-600 VDC
DB(AC)	1.9KV p-p@2.4KHz
DB(DC)	-250 VDC

MCU PWB, Exit Sensor, Registration Sensor, and the MBF Sensor Wiring Diagram

The connections between the MCU PWB and the Exit Sensor
The connections between the MCU PWB and the Registration Sensor
The connections between the MCU PWB and the MBF Sensor



MCU PWB, Exit Sensor, Registration Sensor, and the MBF Sensor

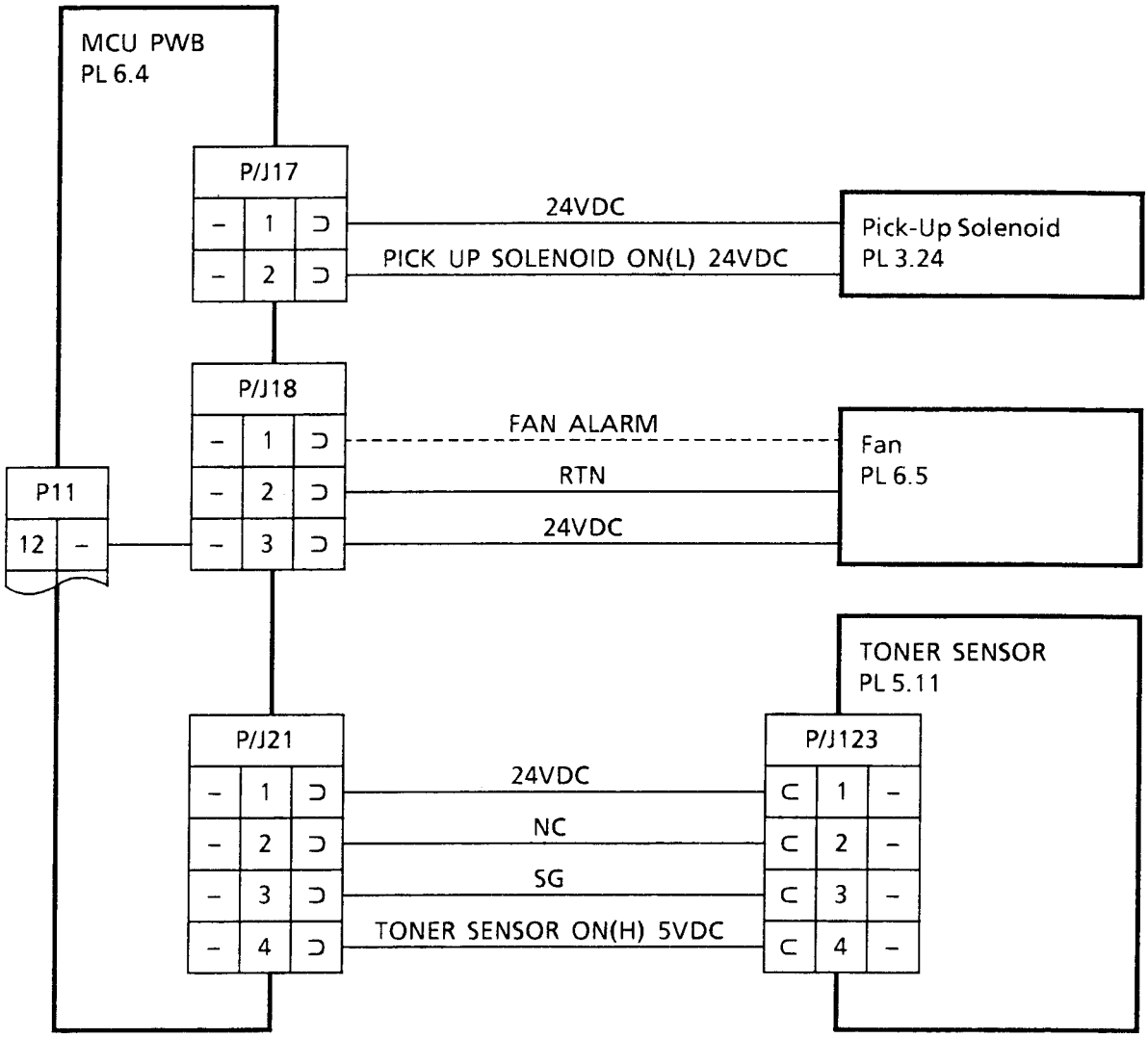
The following table provides information on the signal names used in this section.

Signal Name	Description
Exit Sensor ON(L) 5VDC	Signal for monitoring paper at the Exit Sensor. (L) = no paper at the sensor. (H) = paper at the sensor.
Registration sensor (ON(L) 5VDC	
	Signal for monitoring paper at the inlet chute. (L) = no paper at the sesor. (H) = paper at the sensor.
MBF Sensor ON(L) 5VDC	Signal for monitoring paper at the Front Tray Assembly. (L) = no paper at the sensor. (H) = paper at the sensor.

Note: Resistance between the LVPS and the MCU PWB reduces voltage to the sensors to approximately 1.2VDC.

MCU PWB, Pick-Up Solenoid, Fan, and the Toner Sensor Wiring Diagram

The connections between the MCU PWB and the Pick-Up Solenoid
The connections between the MCU PWB and the Fan
The connections between the MCU PWB and the Toner Sensor



MCU PWB, Pick-Up Solenoid, Fan, and the Toner Sensor Wiring Diagram

The following table provides information on the signal names used in this section

Signal Name	Description
Fan Alarm	NA
NC	No connection
Toner Sensor ON(H) 5VDC	Signal for monitoring toner level in the EP Cartridge (L)=toner available (H)=cartridge empty

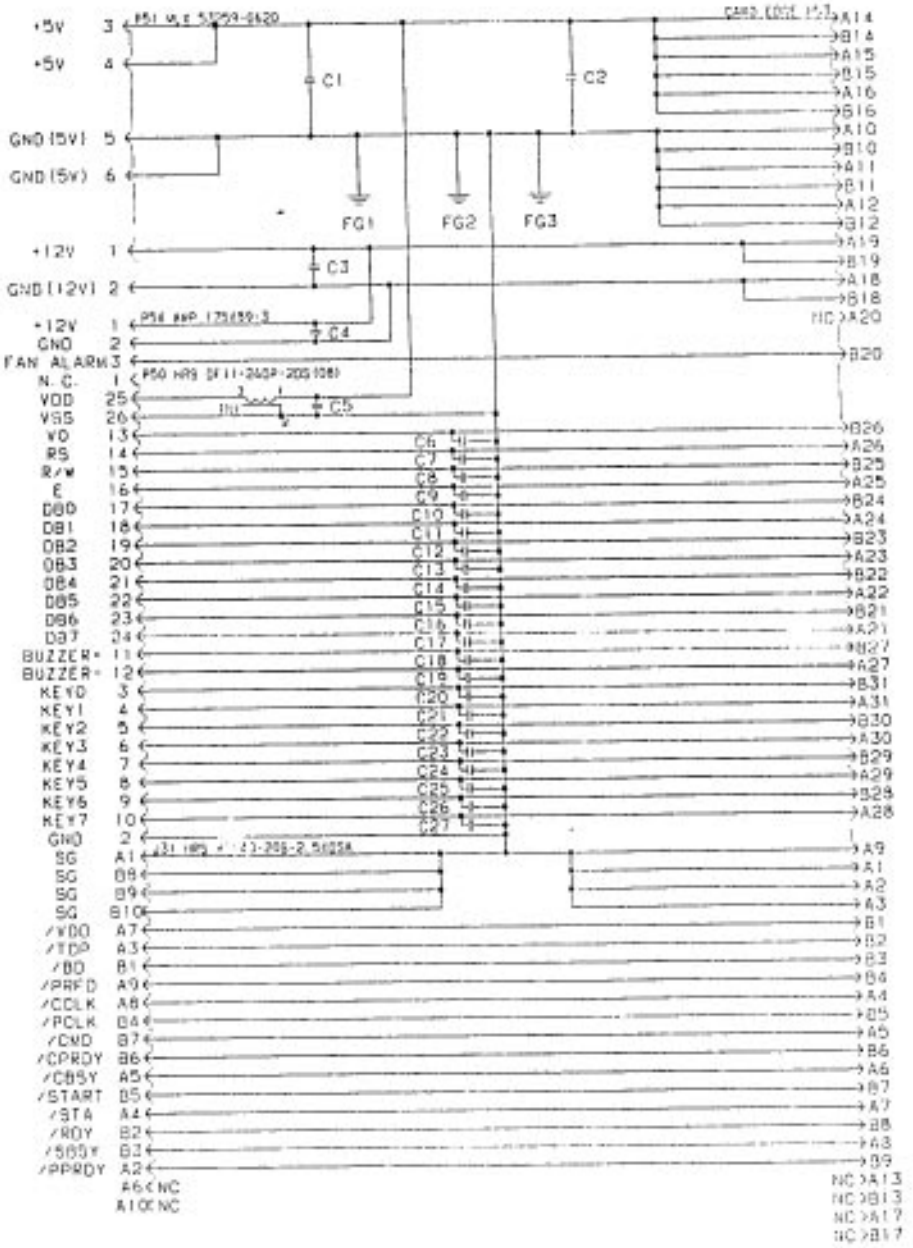
Note: The resistance of the Pick-Up Solenoid is 120 ohms ±10% at 20ºC.

MCU PWB, , Console Assembly, ESS PWB Wiring Diagram, and Interconnect PWB

The connections between the MCU PWB and the Interconnect PWB (P/J 31).
The connections between the ESS PWB and the Interconnect PWB (P/J 53).
The connections between the Console Assembly and the Interconnect PWB (P/J 50).
The connections between the LVPS Assembly and the Interconnect PWB (P/J 51).
Note: P/J 54 is not used.

The following table provides information on the Plug/Jack number and assembly names used in this section

P/J 51	LVPS Assembly	Interconnect PWB
P/J 50	Console Assembly	Interconnect PWB
P/J 31	MCU PWB	Interconnect PWB
P/J 54	Not Used	Interconnect PWB
P/J 53	ESS PWB	Interconnect PWB (Card Edge Fingers)


+5V 3
+5V 4
GND(5V) 5
GND(5V) 6
+12V 1
GND(12V) 2
+12V 1
GND 2
FAN ALARM 3
N.C. 1
VDD 25
VSS 26
VO 13
RS 14
R/W 15
E 16
DB0 17
DB1 18
DB2 19
DB3 20
DB4 21
DB5 22
DB6 23
DB7 24
BUZZER+ 11
BUZZER- 12
KEY0 3
KEY1 4
KEY2 5
KEY3 6
KEY4 7
KEY5 8
KEY6 9
KEY7 10
GND 2
SG A1
SG B9
SG B9
SG B10
/VDD A7
/TDP A3
/BD B1
/PRFD A9
/CCLK A8
/PCLK B4
/CMD B7
/CPRDY B6
/CBSY A5
/START B5
/STA A4
/RDY B2
/SBSY B3
/PPRDY A2
A6 NC
A10 NC
C1
C2
C3
C4
C5
FG1
FG2
FG3
NC A20
NC A13
NC B13
NC A17
NC B17

Chapter 6 : FRU Replacement and Fault Isolation Procedures

The printer troubleshooting path

This chapter is for on-site or depot repair, where tools and replacement FRUs are available. When directed to the Level 1 or Level 2 procedures, read the notes before beginning the procedure. The initial analysis of each FIP lists the possible FRU failures

What Fault Codes Mean

Fault codes, such as “Fault Code U2,” are messages that indicate a printer problem. The fault codes do not display on the front panel of the printer; rather they are displayed on the LCD of the Diagnostic tool. If you do not have a Diagnostic tool, these messages do not apply.

What “DG*xx*” Means

In the following sections, you will see such instructions as:

`Use DG02 to check the exit sensor.`

DG02 is a test you can perform using the Diagnostic tool. If you do not have a Diagnostic tool, read the notes at the beginning of the FIP for other methods of diagnosing the problem

What “Notes” Mean

The notes at the beginning of the FIP contain the following information:

1. Instructions for instances where the Diagnostic Tool is not available
2. Pointers to any control panel messages
3. Other reasons why this FIP should be employed
4. General comments

Using Level 1 FIPs

Level 1 FIPs start at Section 6.2.1 *Problem in Nonvolatile RAM: Fault/Status Code U6*, and run through Section 6.4.1. *Image Quality Problems*. The flow chart directs you through the troubleshooting process.

6.2.1 Problem in MCU Nonvolatile RAM: Fault code U6

There is a problem in the nonvolatile ROM.

Notes:

1. Without the diagnostic tool, this FIP is not usable.
2. There is no corresponding control panel message for this item.
3. If the printer cannot be diagnosed further, replace the MCU.
4. If the print engine powers up with a cleaning routine, but the control panel does not display the normal power-up sequence, try swapping the controller.

1. INITIAL ANALYSIS

Inspect the MCU PWB. Is it compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Yes	No
Go to Step 2.	Replace the MCU PWB. (If U6 remains, go to Section 6.3.22 *Noise*)

2. Does fault code U6 appear when you switch ON Main Power?

Yes	No
Go to Step 3.	Problem corrected.

3. Repeat switching Main Power ON and OFF. Does fault code U6 appear?

Yes	No
Go to Step 4.	Problem corrected.

4. MCU PWB ANALYSIS. Can you enter Configuration Mode?

Yes	No
Go to Step 5.	Replace the MCU PWB (If U6 remains, go to Section 6.3.22 *Noise*).

5. ROM DATA ANALYSIS. Are the Configuration Mode parameters correct?

Yes	**No**
Replace the MCU PWB (If U6 remains, go to Section 6.3.22 *Noise*).	Go to Step 6.

6. MCU PWB ANALYSIS

Change the incorrect parameters and switch OFF Main Power.

Does fault code U6 still appear when you switch ON Main Power?

Yes	No
Replace the MCU PWB (If U6 remains, go to Section 6.3.22 *Noise*).	Go to Step 3.

6.2.2 ROS Assembly Problem: Fault Code U2

There is a problem in the ROS Assembly.

Notes:

1. Without the diagnostic tool, skip step 2 and continue.
2. There is no corresponding control panel message for this item.
3. This FIP can also be used to fix a wavy image.
4. Try the engine self test.

1. INITIAL ANALYSIS

Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

ROS Assembly
LVPS Assembly
EP Cartridge
CRU Sensor
MCU PWB
ROS Harness Assembly
CRU Actuator Assembly
HVPS Harness Assembly

Yes	No
Go to Step 2.	Replace the problem components.

2. ROM DATA ANALYSIS

Is the Configuration Mode NV1 (Resolution) parameter correct?

Yes	No
Go to Step 3.	Correct the parameter to read NV11 (300 dpi).

3. ROS SCANNER ASSEMBLY ANALYSIS

Is the Scanner Motor running after you enter Printing Test Mode? If you cannot hear the Scanner Motor over the noise from the Main Motor, disconnect P/J 14 on the MCU PWB.

Yes	No
Go to Step 4.	Go to Section 6.3.3 *Scanner Assembly Failure.*

4. ROS LASER DIODE ASSEMBLY ANALYSIS

Disconnect P/J 111 on HVPS. Perform this check within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down, due to a no-load condition. Is there +5VDC between P/J12–7 and P/J12–6 on the MCU PWB?

Yes	No
Go to Section 6.3.4 *ROS Assembly Failure*.	Go to Step 5.

6.2.2 ROS Assembly Problem: Fault Code U2 Continued

5. ROS LASER DIODE ASSEMBLY ANALYSIS

Disconnect P/J 111 on HVPS. Perform this check within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down, due to a no-load condition. Is there +5VDC between P/J15–8 and P/J11–2 on the MCU PWB?

Yes	No
Go to Section 6.3.11 *Laser Diode Switch Failure.*	Go to Section 6.3.1 *LVPS Assembly Failure (+5VDC).*

6.2.3 Fuser Assembly Problem: fault code U4

There is a problem with the Fuser Assembly.

Notes:

1. Without the diagnostic tool, skip steps 2 and 4 and continue.
2. Corresponding Control Panel Messages may be:
   - Failure: 940 Fuser System
   - If the message is "Failure: 910 Engine Ctrl PCB," suspect the fuser, not the MCU.
   - If the message is "Failure: 910 Engine Ctrl PCB" suspect a missing or unseated fuser or bad temperature sensor on the fuser, not the NVRAM.
3. This FIP may also fix Images that do not fuse.
4. Try reseating the fuser, look for the fuser lamp to light, and try the engine self test.

1. INITIAL ANALYSIS

Inspect the following components. Are they are compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Fuser Assembly
Heater Rod
Temperature Sensor Assembly
MCU PWB
LVPS Assembly

Yes	No
Go to Step 2.	Replace the problem components.

2. TEMPERATURE SENSOR ANALYSIS

Does fault code U4 appear after POWER–ON?

Yes	No
Go to Section 6.3.6 *Temperature Sensor Assembly Failure.*	Go to Step 3.

3. HEATER ROD ANALYSIS

Let the Heater Rod cool down. Does the Heater Rod glow when power is switched ON?

Yes	No
Go to Step 4.	Go to Section 6.3.5 *Heater Rod Assembly Failure.*

4. Does fault code U4 appear during Power–On Sequence?

Yes	No
Go to Step 5.	Go to Step 6.

6.2.3 Fuser Assembly Problem: Fault code U4 continued

5. HEATER ROD ANALYSIS

Disconnect P/J 111 on the HVPS. Check the following voltages before fault code U4 appears during the Power–On Sequence: Is there line voltage (90 VAC to 132 VAC or 200 VAC to 240 VAC) between P/J 101–2 and P/J 101–6 in the Fuser Assembly?

Yes	No
Go to Section 6.3.6 *Temperature Sensor Assembly Failure.*	Replace the LVPS Assembly.

6. Does the Heater Rod switch ON and OFF after Power–On Sequence?

Yes	No
Go to Section 6.3.6 *Temperature Sensor Assembly Failure.*	Go to Step 7.

7. LVPS ASSEMBLY ANALYSIS

Disconnect P/J 111 on the HVPS. Perform this check within 30 seconds after switching power ON. After 30 seconds, the LVPS shuts down due to the no–load condition.

Is there +4.2VDC between P/J11–1 and P/J11–2 on the MCU PWB?

Yes	No
Go to Step 8.	Replace the LVPS Assembly

.

8. HEATER ROD ACTUATOR SIGNAL ANALYSIS

Disconnect P/J 111 on the HVPS. Perform this check within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down, due to a no-load condition.

Is there 0VDC between P/J 11–1 and P/J 11–2 on the MCU PWB during Power–ON sequence, and does the voltage rise to +4.2VDC when the sequence has finished?

Yes	No
Replace the LVPS Assembly.	Replace the MCU PWB.

6.2.4 Interlock Switch Not Actuated: Fault code E5 (Close Front Cover)

The Interlock Switch is not actuated.

Notes:

1. Without the diagnostic tool, perform step 2 and then go to Section 6.3.2 *LVPS Assembly Failure 24V*
2. The corresponding control panel message may be "Close Cover."
3. This FIP may also be used to fix a blown fuse.
4. Try closing the interlock with a screwdriver.

INITIAL ANALYSIS

Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

- LVPS Assembly
- MCU PWB
- Link Assembly

Yes	No
Go to Step 2.	Replace the problem components.

2. LINK ASSEMBLY ANALYSIS

Does the LINK ASSEMBLY actuate the Interlock Switch on the LVPS Assembly when you close the Front Transport Assembly?

Yes	No
Go to Step 3.	Replace the Link Assembly.

3. INTERLOCK SWITCH ANALYSIS

Use the Diagnostic tool test DG02 to check the Interlock Switch function.
Does the Interlock Switch function correctly and increment the DG02 number each time you actuate it?

Yes	No
Replace the MCU PWB	Go to Section 6.3.2 *LVPS Assembly Failure (+24VDC)*

6.2.5 Paper Jam in Exit Area of Paper Path: Fault code E4

There is a paper jam in the exit area of the paper path.

Notes:

1. Without the diagnostic tool, skip the portions of the steps that include Diagnostic tool DG tests. Continue with the rest of the instructions in each step.
2. The control panel message may be "Paper Jam>Exit" if the actuator opens for paper passage then sticks open or is open during cleaning or recovery.
3. Be careful of other problems that cause this symptom, such as worn rollers, motor, motor cable, take-away roller, or inlet chute popped out of snap bearings etc.
4. Try another toner (EP) Cartridge.

INITIAL ANALYSIS

Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Exit Sensor
Exit Actuator
Drive Assembly
Top Cover Assembly
Feeder Assembly
Fuser Assembly
MCU PWB
Paper Cassette
LVPS Assembly
Optional Feeder Assembly

Inspect the printer paper path. Is it clear of foreign matter such as staples, paper clips, or paper scraps?

Yes	No
Go to Step 2.	Replace the problem components, or clean the paper path of obstructions.

2. Does fault code E4 appear after POWER-ON?

Yes	No
Go to Step 9.	Go to Step 3.

3. DRIVE ASSEMBLY ANALYSIS

Use Diagnostic Tool test DG90 to check the Drive Assembly.

Do the transmission gears rotate when meshed with the Gear Idler of the Fuser Assembly?

Yes	No
Go to Step 4.	Replace the Drive Assembly.

6.2.5 Paper Jam in Exit Area of Paper Path: Fault code E4 continued

4. EXIT ROLL ASSEMBLY ANALYSIS
Use Diagnostic Tool test DG90 to check the Exit Roll Assembly.
Do the Exit Roll and Pinch Roll rotate together?

Yes	No
Go to Step 5.	Replace the Fuser Assembly.

5. Is the printer equipped with MBF?

Yes	No
Go to Step 6.	Go to Step 7.

6. ROM DATA ANALYSIS
(E4 appears only when Legal 13" or 14" paper is used)
Does the parameter for Configuration Code A represent the size of the sheets used in the Front Tray Assembly?

Yes	No
Go to Step 10.	Correct the parameter.

7. ROM DATA ANALYSIS
(E4 appears only when Legal 13" or 14" paper is used.). Make sure the paper guide is properly adjusted.
Does the parameter for DG00 SIZE SENSOR represent the actual size of the sheets used in the Paper Cassette?

Yes	No
Go to Step 10.	Go to Step 8.

8. ROM DATA ANALYSIS
Make sure the paper guide is properly adjusted.
Do the paper size switches of Feeder PWB or Feeder PWB AUX show the correct switch combination for the paper size present in the cassette?

Yes	No
Go to Section 6.3.13 *Paper Size Switch Failure.*	Replace the Paper Cassette.

6.2.5 Paper Jam in Exit Area of Paper Path: Fault code E4 continued

9. Is something causing the Exit Actuator to bind or stick?

Yes	No
Remove whatever is interfering with the actuator.	Go to Step 10.

10. EXIT ACTUATOR ANALYSIS
Does the Exit Actuator clear the Exit Sensor window when a sheet of paper strikes the actuator? Does the Exit Actuator block the Exit Sensor window when no paper strikes the actuator?

Yes	No
Go to Step 11.	Replace the Fuser Assembly or the Exit Actuator.

11. EXIT SENSOR ANALYSIS
Use Diagnostic Tool test DG02 to check the Exit Sensor.
Does the Exit Sensor function correctly and increment the DG02 number each time you actuate it?

Yes	No
Replace the MCU PWB.	Go to Section 6.3.7 *Exit Sensor Assembly Failure.*

6.2.6 Paper Jam between Reg. Sensor and Exit Sensor: Fault code E3

There is a paper jam between the Registration Sensor and the Exit Sensor.

Notes:

1. Without the diagnostic tool, skip the Diagnostic Tool (DG) portions of each step but continue with the rest of the instructions.
2. The control panel message may be Paper Jam>Fuser if the registration sensor is open or the actuator is engaged (outside of sensor) at power up, recovery, or cleaning.
3. Be careful of other problems that cause this symptom, such as worn rollers, motor, motor cable, take-away roller, or inlet chute popped out of snap bearings etc.
4. Try printing from another tray

INITIAL ANALYSIS

Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Exit Sensor
Exit Actuator
Drive Assembly
BTR Assembly
Link Assembly
Fuser Assembly
Transportation Chute Assembly
Harness Assembly Sensor
Front Transport Assembly
Inlet Chute Assembly
EP Cartridge
Lower Chute Assembly
MCU PWB

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

Yes	No
Go to Step 2.	Replace the components or clean the paper path of obstructions.

2. Is there a sheet of paper covering the Exit Actuator when fault code E3 appears?

Yes	No
Go to Step 12.	Go to Step 3.

3. DRIVE ASSEMBLY ANALYSIS

Use Diagnostic Tool test DG90 to check the Drive Assembly.

Do the transmission gears rotate when meshed with the toner (EP) Cartridge drive gear?

Yes	No
Go to Step 4.	Replace the Drive Assembly.

6.2.6 Paper Jam between Reg. Sensor and Exit Sensor: Fault code E3 continued

4. LINK ASSEMBLY ANALYSIS
Does the LINK ASSEMBLY open the Drum Shutter when you close the Front Transport Assembly?

Yes	No
Go to Step 5.	Replace the Link Assembly.

5. DRUM ANALYSIS
Use Diagnostic Tool test DG90 to check the toner (EP) Cartridge. Does the Drum rotate?

Yes	No
Go to Step 6.	Replace the toner (EP) Cartridge.

6. TRANSPORTATION CHUTE ASSEMBLY ANALYSIS
Use your hand to rotate the BTR toward you.
Does the BTR rotate smoothly?

Yes	No
Go to Step 7.	Replace the Transportation Chute Assembly.

7. BTR ANALYSIS
Remove the Fuser Assembly. Close the Front Cover. Use Diagnostic Tool test DG90 to check the BTR rotation.
Does the BTR rotate?

Yes	No
Go to Step 8.	Replace the BTR Assembly.

8. TRANSPORTATION CHUTE ELIMINATOR ANALYSIS
Is the Eliminator clean?

Yes	No
Go to Step 9.	Clean or replace the Eliminator.

9. TRANSPORTATION CHUTE ELIMINATOR ANALYSIS
There is continuity between the Eliminator and RTN or SG?

Yes	No
Go to Step 10.	Replace the Eliminator.

6.2.7 Paper Jam between Feeder and Reg. Sensor: Fault code E2

There is a paper jam between the feeder and the registration sensor

NOTES:

1. Without the diagnostic tool, skip the Diagnostic Tool (DG) portions of each step, but continue with the rest of the instructions in each step.
2. The control panel message may be Paper Jam>Tray if the exit sensor is blocked, doesn't actuate, is disconnected, or if paper doesn't reach it.
3. This FIP may also be used to fix a problem with the Exit sensor. Be careful of other problems that cause this symptom, such as worn rollers, motor, motor cable, take-away roller, or inlet chute popped out of snap bearings.
4. Try printing from another tray.

INITIAL ANALYSIS

Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Registration Sensor	Harness Assembly Sensor
LVPS Assembly	Front Transport Assembly
Drive Assembly	Inlet Chute Assembly
Feeder Assembly	Optional Feeder Assembly
Pick–Up Solenoid	Lower Chute Assembly
Fuser Assembly	Take–Away Roll Assembly
MCU PWB	Pick–Up Roll Assembly
Paper Cassettes	Bottom Plate Assembly

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

Yes	No
Go to Step 2.	Replace the problem components or clean the paper path of obstructions.

2. Does fault code E2 appear when you switch ON Main Power?

Yes	No
Go to Step 22.	Go to Step 3.

3. MAIN MOTOR ANALYSIS

Use Diagnostic Tool test DG90 to check the main motor.

Does the Main Motor run?

Yes	No
Go to Step 4.	Go to Section 6.3.17 *Drive Assembly Failure.*

6.2.7 Paper Jam between Feeder and Reg. Sensor: Fault code E2 continued

4. DRIVE ASSEMBLY ANALYSIS
Use Diagnostic Tool test DG90 to check the Drive Assembly.
Do the transmission gears rotate normally?

Yes	No
Go to Step 5.	Replace the Drive Assembly.

5. TAKE–AWAY ROLL ASSEMBLY ANALYSIS
Use Diagnostic Tool test DG90 to check the Take–Away Roll. Remove the Fuser Assembly and toner (EP) Cartridge to observe the Take–Away Roll.
Does the Take–Away Roll rotate?

Yes	No
Go to Step 6.	Replace the Take–Away Roll Assembly.

6. PICK–UP ROLL ASSEMBLY ANALYSIS
Use Diagnostic Tool test DG90 to check the Pick–Up Roll. Remove the Fuser Assembly and toner (EP) Cartridge to observe the Pick–Up Roll.
Does the Pick–Up Roll rotate?

Yes	No
Go to Step 7.	Replace the Pick–Up Roll Assembly.

7. Is the printer equipped with MBF?

Yes	No
Go to Step 8.	Go to Step 13.

8. ROM DATA ANALYSIS
(Fault code E2 appears only when Legal 13" and 14" paper is used.)
Does the parameter for Configuration Code A represent the paper size used in the Front Tray Assembly?

Yes	No
Go to Step 9	Correct the Parameter.

6.2.7 Paper Jam between Feeder and Reg. Sensor: Fault code E2 continued

9. PICK–UP SOLENOID ANALYSIS

Use Diagnostic Tool test DG80 to check the Pick-up Solenoid. Open the Front Cover to observe the Pick–Up Solenoid.

Does the Pick–Up Solenoid actuate?

Yes	No
Go to Step 10	Go to Section 6.3.14 *Pick–Up Solenoid Failure.*

10. PICK–UP ROLL ASSEMBLY SOLENOID ANALYSIS

Fill the Front Tray Assembly with paper.

Use Diagnostic Tool test DG80, while DG90 MAIN MOTOR is running, to check the Pick–up Roll Assembly.

Does the Pick–Up Roll and the Pick–Up Roll Cam make a complete revolution and pick up a single sheet of paper?

Yes	No
Go to Step 11	Replace the Pick–up Roll Assembly.

11. BOTTOM PLATE ASSEMBLY ANALYSIS

Fill the Front Tray Assembly with paper.

Use Diagnostic Tool test DG80, while DG90 MAIN MOTOR is running, to check the Bottom Plate Assembly.

Does the Bottom Plate Assembly press against the Pick–Up Roll when the Pick–Up Roll Cam disengages?

Yes	No
Go to Step 12.	Replace the Bottom Plate Assembly.

12. RETARD PAD ASSEMBLY ANALYSIS

Open the Front Transport Assembly. Rotate the Pick–Up Roll until it touches the Retard Pad Assembly. Close the Front Transport Assembly. Observe the Retard Pad through the Front Tray Assembly opening.

Does the Retard Pad Assembly touch the Pick–Up Roll?

Yes	No
Go to Step 23.	Replace the Lower Chute Assembly.

6.2.7 Paper Jam between Feeder and Reg. Sensor: Fault code E2 continued

13. ROM DATA ANALYSIS
(Fault code E2 appears only when Legal 13" and 14" paper is used).
Make sure the paper guide is properly adjusted.
Does the parameter for DG00 SIZE SENSOR represent the paper size used in the Paper Cassette?

Yes	No
Go to Step 15.	Go to Step 14.

14. ROM DATA ANALYSIS
(Fault code E2 appears only when Legal 13" and 14" paper is used).
Make sure the paper guide is properly adjusted.
Do the paper size switches of Feeder PWB or Feeder PWB AUX show the correct switch combination for the paper size used in the cassette?

Yes	No
Go to Section 6.3.13 *Paper Size Switch Failure*	Replace the Paper Cassette.

15. PAPER CASSETTE ANALYSIS
Are the paper cassettes inserted in the printer and positioned correctly?

Yes	No
Go to Step 16.	Replace the Paper Cassette.

16. NO–PAPER ACTUATOR ANALYSIS
Does the No–Paper Actuator move freely, and not bind or stick?

Yes	No
Go to Step 17.	Reposition or replace the No–Paper Actuator.

17. NO–PAPER SENSOR ANALYSIS
Use Diagnostic Tool test DG02 to check the No–Paper Sensor.
Does the No–Paper Sensor function correctly and increment the DG02 number each time you actuate it?

Yes	No
Go to Step 18.	Go to Section 6.3.10 *No–Paper Sensor Failure.*

6.2.7 Paper Jam between Feeder and Reg. Sensor: Fault code E2 continued

18. FEED SOLENOID ANALYSIS

Use Diagnostic Tool test DG81, [DG86 for Tray 2], to check the Feed Solenoid.

Does the Feed Solenoid actuate?

Yes	No
Go to Step 19.	Go to Section 6.3.15 *Feed Solenoid Failure.*

19. FEED ROLL ASSEMBLY ANALYSIS

Use Diagnostic Tool tests DG81 [DG86 for Tray 2] and DG90 at the same time to check the Feed Roll Assembly.

Does the Feed Roll feed paper from the cassette?

Yes	No
Go to Step 20.	Replace the Feed Roll Assembly.

20. TURN SOLENOID ASSEMBLY ANALYSIS

Use Diagnostic Tool test DG84 [DG85 for Tray 2] to check the Turn Solenoid. Does the Turn Solenoid actuate?

Yes	No
Go to Step 21.	Go to Section 6.3.16 *Turn Solenoid Failure.*

21. TURN ROLL ASSEMBLY ANALYSIS

Use Diagnostic Tool tests DG90 and DG84 [DG85 for Tray 2] at the same time to check the Turn Roll Assembly. Remove the Paper Cassette so you can observe the Turn Roll.

Does the Turn Roll rotate while in DG90 and stop when you enter DG84 (or DG85)?

Yes	No
Go to Step 22.	Replace the Turn Roll Assembly.

6.2.7 Paper Jam between Feeder and Reg. Sensor: Fault code E2 continued

22. Is something causing the Registration Actuator to bind or stick?

Yes	No
Remove whatever is interfering with the actuator.	Go to Step 24.

23. REGISTRATION ACTUATOR ANALYSIS
Does the Registration Actuator expose the Registration Sensor window when a sheet of paper strikes the actuator and does the Registration Actuator block the Registration Sensor window when there is No paper striking the actuator?

Yes	No
Go to Step 24	Replace the Inlet Chute Assembly.

24. REGISTRATION SENSOR ANALYSIS
Use Diagnostic Tool test DG02 to check the Registration Sensor. Does the Registration Sensor function correctly and increment the DG02 number each time you actuate it?

Yes	No
Replace the MCU PWB.	Go to Section 6.3.8 *Registration Sensor Assembly Failure.*

6.2.8 Toner (EP) Cartridge Is Not in Place: Fault code J3

The Toner (EP) Cartridge is not in place.

NOTES:

1. Without the diagnostic tool, skip the Diagnostic Tool (DG) portion of step 2 go to Section 6.3.12 *CRU Switch Failure* before replacing the MCU.
2. The control panel message may be: Need Cartridge
3. This FIP may also be used to fix a bad CRU Switch or toner (EP) Cartridge.
4. If a tab is broken on the cartridge or the cartridge has been forced into wrong position, try another cartridge.

INITIAL ANALYSIS

Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

CRU Sensor PWB
LVPS Assembly
CRU Sensor Assembly
MCU PWB
EP Cartridge
HVPS Harness Assembly

Yes	No
Go to Step 2.	Replace the problem components.

2. CRU SWITCH ANALYSIS

Use Diagnostic Tool test DG02 to check the CRU Switch.

Does the CRU Switch function correctly and increment the DG02 number each time you actuate it?

Yes	No
Replace the MCU PWB.	Go to Section 6.3.12 *CRU Switch Failure.*

6.2.9 Printer Received a Set Pause Command: Fault code P1

The printer received a Set Pause command while the printer was on–line.

NOTES:
1. Without the diagnostic tool, this FIP is not usable.
2. There is no corresponding control panel message for this item.
3. If the printer cannot be diagnosed further, replace the MCU.
4. If the print engine powers up with a cleaning routine but the control panel does not display a normal power-up sequence, try replacing the controller.

1. INITIAL ANALYSIS
Inspect the **MCU PWB**. Is it compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Yes	No
Go to Step 2.	Replace the problem component.

2. ESS ASSEMBLY ANALYSIS
Remove the ESS Assembly.
Does P1 still appear?

Yes	No
Replace the MCU PWB.	Replace the ESS Assembly.

6.2.10 Paper Cassette Is Not in Place: Fault code C3

The paper cassette is not in place.

NOTES:
1. Without the diagnostic tool, skip the Diagnostic Tool (DG) portion of step 3. Go to Section 6.3.13 *Paper Size Switch Failure* before replacing the MCU.
2. The control panel message may be: Tray Out.
3. This FIP may also be used to fix a bad Switch or spring.
4. Try another tray, inspect mechanics.

1. INITIAL ANALYSIS

Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Feeder PWB	MCU PWB
LVPS Assembly	Feeder Assembly
Feeder PWB AUX	Harness Assembly OUT
Paper Cassettes	Harness Assembly Tray 1
Size Spring	Optional Feeder Assembly

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

Yes	No
Go to Step 2	Replace the problem components.

2. PAPER SIZE SWITCH ANALYSIS

Make sure the paper guide is properly adjusted.

Do the Paper Size Switches of Feeder PWB and Feeder PWB AUX show the correct switch combination for the size of paper used in the cassette?

Yes	No
Go to Step 3	Replace the Paper Cassette.

3. ROM DATA ANALYSIS

Make sure the paper guide is properly adjusted.

Does the parameter for DG00 SIZE SENSOR represents the actual paper size used in the Paper Cassette?

Yes	No
Replace the MCU PWB.	Go to Section 6.3.13 *Paper Size Switch Failure.*

6.2.11 Paper Tray Is Out of Paper: Fault code C5

The paper tray is out of paper.

NOTES:

1. Without the diagnostic tool, skip the Diagnostic Tool DG portion of steps 7, 8, and 9 and go to the sensor failures of Section 6.3.9 and 4.3.10 before replacing actuator and then MCU.
2. The control panel message may be: Tray Empty, Multi Tray Empty
3. If Paper is not loaded correctly, suspect a bad sensor or actuator.
4. Try another tray. Inspect the mechanics; the tray plate may be down (broken spring etc.).

1. PAPER CASSETTE ANALYSIS
Is there paper in the cassette?

Yes	No
Go to Step 2	Add paper to the cassette.

2. PAPER CASSETTE ANALYSIS
Is the paper cassette inserted correctly in the printer?

Yes	No
Go to Step 3	Reinstall the paper cassette.

3. INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Feeder PWB	Feeder PWB AUX
No Paper Actuator	MCU PWB
MBF Sensor	Paper Cassettes
MBF Actuator	LVPS Assembly
Feeder Assembly	Optional Feeder Assembly
Front Transport Assembly	Harness Assembly OUT
Harness Assembly	Harness Assembly Sensor Tray 1

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

Yes	No
Go to Step 4.	Replace the problem components.

4. Is the printer equipped with MBF?

Yes	No
Go to Step 5.	Go to Step 8.

6.2.11 Paper Tray Is Out of Paper: Fault code C5 continued

5. MBF ACTUATOR ANALYSIS
Use your fingers to move the MBF Actuator.
Does the MBF Actuator function correctly, without binding or sticking?

Yes	No
Go to Step 6.	Replace the MBF Sensor Actuator.

6. BOTTOM PLATE ASSEMBLY ANALYSIS
When the paper cassette is empty, does the MBF Actuator fit in the cut–out at the bottom of the Plate Assembly?
When there is paper in the cassette, does the MBF Actuator touch the top sheet of paper?

Yes	No
Go to Step 7.	Replace the MBF Sensor Assembly.

7. MBF SENSOR ANALYSIS
Use Diagnostic Tool test DG02 to check the MBF Sensor function.
Does the MBF Sensor function correctly and increment the DG02 number each time you actuate it?

Yes	No
Replace the MCU PWB.	Go to Section 6.3.9 *MBF Sensor Failure.*

8. NO–PAPER ACTUATOR ANALYSIS
Use Diagnostic Tool test DG02 to check the No–Paper Actuator function.
Does the No–Paper Actuator function correctly and increment the DG02 number each time you actuate it?

Yes	No
Go to Step 9.	Replace the No–Paper Actuator.

9. NO–PAPER SENSOR ANALYSIS
Use Diagnostic Tool test DG02 to check the No–Paper Sensor function.
Does the No–Paper Sensor function correctly and increment the DG02 number each time you actuate it?

Yes	No
Replace the MCU PWB.	Go to Section 6.3.10 *No–Paper Sensor Failure.*

6.2.12 Toner (EP) Cartridge is Low on Toner: Fault code J5

The Toner (EP) Cartridge is low on toner.

NOTES:
1. Without the diagnostic tool, skip the Diagnostic Tool test (DG) portion of steps 1 and 3 and go to the toner sensor assembly failure procedure in Section 4.3.18, before replacing the MCU.
2. The control panel message may be: Toner Low.
3. This FIP may also fix a bad sensor or toner cartridge.
4. If the toner sensor is disconnected (P/J 21), it cannot recognize that toner is low.

1. Toner (EP) CARTRIDGE ANALYSIS
Replace the Toner (EP) Cartridge. Print at least 10 pages.

Does the J5 Code still appear?

Yes	No
Go to Step 2	Problem solved.

2. INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

MCU PWB
EP Cartridge
LVPS Assembly
Toner Sensor Assembly

Yes	No
Go to Step 3.	Replace the problem components.

3. TONER SENSOR ANALYSIS
1. Disconnect P/J 111 on the HVPS.
2. Disconnect P/J 15 on the MCU PWB.
3. Use Diagnostic Tool test DG02 to check the Toner Sensor.
4. Open the Front Transport Assembly and actuate the interlock switch.
5. Remove and reinstall the Toner (EP) Cartridge.

Does the Toner Actuator function correctly and increment the DG02 number each time you actuate it?

Yes	No
Replace the MCU PWB.	Go to Section 6.3.18 *Toner Sensor Assembly Failure.*

6.2.13 Incorrect Paper Size: Fault code CX

The size of paper loaded in the MBF does not agree with the size data stored in ROM.

NOTES:

1. Without the diagnostic tool, skip the Diagnostic Tool test (DG) portion of steps 3 and 5 and go to Section 3.8 *Registration sensor assembly failure* before replacing the MCU.
2. The control panel message may be "LOAD ,Paper Size"
3. This FIP may also fix a bad sensor or cassette
4. Try another tray and cassette first.

1. INITIAL ANALYSIS

Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Feeder PWB	Feeder PWB AUX
Size Spring	MCU PWB
Registration Sensor	Paper Cassettes
Feeder Assembly	LVPS Assembly
Inlet Chute Assembly	Optional Feeder Assembly
Harness Assembly	Harness Assembly Tray 1

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

Yes	No
Go to Step 2	Replace the problem components.

2. ROM DATA ANALYSIS

Does the parameter for Configuration Code A represent the paper size used in the Front Tray Assembly?

Yes	No
Go to Step 3.	Correct the Parameter.

6.2.13 Incorrect Paper Size: Fault code CX Continued

3. REGISTRATION ACTUATOR ANALYSIS
Does the Registration Actuator expose the Registration Sensor window when a sheet of paper strikes the actuator?
Does the Registration Actuator block the Registration Sensor window when there is no paper striking the actuator?

Yes	No
Go to Step 4.	Replace the Inlet Chute Assembly.

4. REGISTRATION SENSOR ANALYSIS
Use Diagnostic Tool test DG02 to check the Registration Sensor function.

Does the Registration Sensor function correctly and increment the DG02 number each time you actuate it?

Yes	No
Replace the MCU PWB.	Go to Section 6.3.8 *Registration Sensor Assembly Failure.*

6.2.14 “Need Cartridge” Message Is Not Displayed: Fault code J5

NOTES:

1. Without the diagnostic tool, skip the Diagnostic Tool test portion of steps 2 and 4 and go to Section 6.3.18 *Toner sensor assembly failure*, before replacing the MCU.
2. There is no corresponding control panel message for this; although it should be "Need Cartridge."
3. This FIP may also fix a bad toner sensor or toner cartridge sensor.
4. Try another toner cartridge. If the toner sensor is disconnected (P/J 21), toner is never recognized as being low or the cartridge is never recognized as being missing.

1. INITIAL ANALYSIS

Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

EP Cartridge
LVPS Assembly
MCU PWB
Toner Sensor Assembly

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

Yes	No
Go to Step 2.	Replace the problem components.

2. ROM DATA ANALYSIS

Are the Configuration Mode parameters correct?

Yes	No
Go to Step 3.	Correct the parameters.

3. TONER SENSOR ANALYSIS

1. Disconnect P/J 111 from the HVPS.
2. Disconnect P/J 15.
3. Use Diagnostic Tool Test DG02 to check the Toner Sensor.
4. Open the Front Transport Assembly and actuate the interlock switch.
5. Remove and reinstall the Toner (EP) Cartridge.

Does the Toner Sensor function correctly and increment the DG02 number each time you actuate it?

Yes	No
Go to Step 4.	Go to Section 3.18 *Toner Sensor Failure.*

6.2.14 “Need Cartridge” Message Is Not Displayed: Fault code J5 Continued

4. Toner (EP) CARTRIDGE ANALYSIS

1. Disconnect P/J 15.
2. Use Diagnostic Tool Test DG02 to check the Toner (EP) Cartridge.
3. Open the Front Transport Assembly and actuate the interlock switch.
4. Remove and reinstall the Toner (EP) Cartridge.

Does the CRU Switch function correctly and increment the DG02 number each time you actuate it?

Yes	No
Replace the MCU PWB.	Replace the Toner (EP) Cartridge.

6.2.15 Inoperative Printer

NOTES:

1. This FIP does not use the diagnostic tool.
2. There may or may not be a control panel message for this case
3. Many things could cause this problem.
4. DO NOT use the LCD functionality questions in this FIP. The LCD is controlled by the ESS (controller) not the MCU as stated here. Understand symptoms and read this section and determine simple tasks first. Try the engine self test. If that works, try to swap the ESS (controller).

1. INITIAL ANALYSIS

Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Feeder Assembly
HVPS Assembly
Fan
Console Assembly
ROS Assembly
Optional Feeder Assembly
LVPS Assembly
MCU PWB
Drive Assembly
Pick–Up Solenoid
Toner Sensor Assembly

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

Yes	No
Go to Step 2.	Replace the problem components.

2. LVPS ASSEMBLY ANALYSIS

Disconnect P/J111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.
Switch ON Main Power.
Are the following voltages present on the MCU PWB?
Is there +24VDC between J11–10 and J11–2?

Is there +24VDC between J11–11 and J11–2?

Is there +24VDC between J11–12 and J11–2?

Is there +5VDC between J11–5 and J11–2?

Is there +5VDC between J11–6 and J11–2?

Yes	No
Go to Step 3.	Replace the LVPS Assembly.

6.2.15 Inoperative printer Continued

3. Does the fan rotate when Main Power is switched ON?

Yes	No
Go to Go to step 4.	Replace the MCU PWB

4. Unplug P/J 31 on the MCU PWB.
Unplug P/J 51 on the Controller (ESS) PWB.
Switch ON Main Power.
Do the LCD and Fan function normally?

Yes	No
Replace the ESS Assembly.	Go to Step 5.

5. DRIVE ASSEMBLY ANALYSIS
Disconnect P/J 14 from the MCU PWB.
Switch ON Main Power.
Do the LCD and Fan function normally?

Yes	No
Replace the Drive Assembly.	Go to Step 6.

6. PICK–UP SOLENOID ANALYSIS
Disconnect P/J 17 from the MCU PWB.
Switch ON Main Power.
Do the LCD and Fan function normally?

Yes	No
Replace the Pick–Up Solenoid.	Go to Step 7

7. ROS ASSEMBLY ANALYSIS
Disconnect P/J 12 from the MCU PWB.
Switch ON Main Power.
Do the LCD and Fan function normally?

Yes	No
Replace the ROS Assembly.	Go to Step 8

6.2.15 Inoperative printer continued

8. TONER SENSOR ANALYSIS
Disconnect P/J 21 from the MCU PWB.
Switch ON Main Power.
Do the LCD and Fan function normally?

Yes	No
Replace the Toner Sensor Assembly	Go to Step 9.

9. FEEDER PWB ANALYSIS
Disconnect P/J 13 from the MCU PWB.
Switch ON Main Power.
Do the LCD and Fan function normally?

Yes	No
Go to Step 10.	Go to Step 15.

10. OPTIONAL FEEDER ANALYSIS
Reconnect P/J 13 on the MCU PWB.
Remove the Optional Feeder from the printer.
Switch ON Main Power.

Do the LCD and Fan function normally?

Yes	No
Go to Step 11.	Go to Step 13.

11. FEED SOLENOID ON OPTIONAL FEEDER ASSEMBLY ANALYSIS
Unplug P/J 201 on the Optional Feeder PWB.
Is there continuity (0 ohms) between J201–1 and J201–2?

Yes	No
Go to Step 12.	Replace the Feed Solenoid on the Optional Feeder Assembly.

12. TURN SOLENOID ON OPTIONAL FEEDER ASSEMBLY ANALYSIS
Unplug P/J 202 on the Optional Feeder PWB.
Is there continuity (0 ohms) between J202–1 and J202–2?

Yes	No
Replace the Optional Feeder PWB.	Replace the Turn Solenoid on the Optional Feeder Assembly.

6.2.15 Inoperative printer continued

13. FEED SOLENOID ON STANDARD FEEDER ASSEMBLY ANALYSIS
Unplug P/J 201 on the Standard Feeder PWB.
Is there continuity (0 ohms) between J201–1 and J201–2?

Yes	No
Go to Step 14.	Replace the Turn Solenoid on the Feeder Assembly.

14. TURN SOLENOID ON STANDARD FEEDER ASSEMBLY ANALYSIS
Unplug P/J 202 on the Standard Feeder PWB.
Is there is continuity (0 ohms) between J202–1 and J202–2?

Yes	No
Replace the Standard Feeder PWB.	Replace the Turn Solenoid on the Feeder Assembly.

15. ROS ASSEMBLY ANALYSIS
Unplug P/J19 from the MCU PWB.
Do the LCD and Fan function normally?

Yes	No
Replace the ROS Assembly.	Go to Step 16.

16. CONSOLE ASSEMBLY ANALYSIS
Disconnect P/J 20 on the MCU PWB.
Switch ON Main Power.
Does the Fan function normally?

Yes	No
Replace the Console Assembly.	Replace the MCU PWB

6.2.16 Malfunctioning LCD

NOTES:

1. Without the diagnostic tool, skip step 2.
2. There is no corresponding control panel message.
3. This FIP may also fix ESS (controller) problems.
   DO NOT USE THIS FIP, except the initial analysis step 1. Check the ESS (controller) and the interconnect PWB). Also check for power and functionality on:
   - P/J 50 (the controller to interconnect PWB to the control panel, also known as the console)
   - P/J 51 (the controller to interconnect PWB to LVPS)

   Note:-P/J 20 is unused (for Diagnostic tool, only)

1. INITIAL ANALYSIS

Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

- MCU PWB
- LVPS Assembly
- Console Assembly
- Controller (ESS)
- Interconnect PWB

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

Yes	No
Go to Step 2.	Replace the problem components.

2. ROM DATA ANALYSIS

Is the parameter for Configuration Code B correct?

Yes	No
Go to Step 3.	Correct the parameter for the controller .

3. LVPS ANALYSIS

Disconnect P/J111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.
Switch ON Main Power.

Is there +5VDC between P/J 20–3 and P/J 20–2 on the MCU PWB?

Yes	No
Go to Step 4.	Go to Section 6.3.1 *LVPS Assembly (+5VDC) Failure.*

6.2.16 Malfunctioning LCD Continued

4. Short pins on P/J 32 through the hole in the chassis 1/2 inch below controller.
Does the self test page operate?

Yes	No
Go to Go to step 5.	Replace the MCU PWB.

5. Does the printer print a start page at power-up (if enabled)?

Yes	No
Replace the Console Assembly.	Replace the controller (ESS).

6.2.17 Inoperative key pad

NOTES:

1. Without the diagnostic tool, skip step 2
2. There is no corresponding control panel message for this
3. ESS (controller)
4. DO NOT USE THIS FIP except the initial analysis step 1 (and include the ESS (controller) and the interconnect PWB) Also check for power and functionality on P/J 50 (the controller to interconnect PWB to control panel also known as the console) and on P/J 51 (the controller to interconnect PWB to LVPS) Note: P/J 20 is unused (for Diagnostic tool, only)

1. INITIAL ANALYSIS

Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

- MCU PWB Controller (ESS)
- LVPS Assembly Interconnect PWB
- Console Assembly

Inspect the printer paper path. It is clear of foreign matter such as staples, paper clips, and paper scraps?

Yes	No
Go to Step 2	Replace the relevant components.

2. LVPS ANALYSIS

Disconnect P/J111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.
Switch ON Main Power.

Is there +5VDC between P/J 20–10 and P/J 11–2 on the MCU PWB?

Yes	No
Go to Step 3	Go to 3.1 LVPS Assembly (+5VDC) Failure.

6.2.17 Inoperative key pad Continued

3. Short P/J 52 through the chassis hole (1 inch below the controller).
Does the self test page operate?

Yes	No
Go to step 5	Replace the MCU PWB.

4. Does the printer print a start-up page at power fault code Up?

Yes	No
Replace the console assembly.	Replace the controller (ESS).

6.2.18 Erratic operation

NOTES:
DO NOT USE THIS FIP if the Diagnostic tool is not available

1. INITIAL ANALYSIS
Inspect the **MCU PWB**. Is it compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?
Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

Yes	No
Go to Step 2.	Replace the problem components.

2. Does the printer enter a print cycle?

Yes	No
Go to Step 3	Go to Step 4

3. Enter Printing Test Mode.
Can the printer generate a test print?

Yes	No
Go to Step 5.	Replace the MCU PWB.

4. Does the printer RESET while it is making a test print?

Yes	No
Go to Section 6.3.21 *Noise*.	Go to Step 5.

5. Install a new MCU PWB.
Does erratic operation still occur?

Yes	No
Replace the ESS Assembly.	Problem Solved.

6.2.19 Inoperative Drive Assembly

NOTES:
DO NOT USE THIS FIP if the Diagnostic tool is not available. Go to Section 6.3.17 *Drive Assembly failure.*

1. INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

- MCU PWB
- Drive Assembly
- LVPS Assembly

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

Yes	No
Go to Step 2.	Replace the problem components.

2. MAIN MOTOR ANALYSIS
Use Diagnostic Tool Test DG90 to check the Main Motor function.
Does the Main Motor function correctly?

Yes	No
Replace the MCU PWB.	Go to Section 6.3.17 *Drive Assembly Failure.*

6.2.20 Inoperative Fan

NOTES:
1. This FIP does not use the diagnostic tool.
2. There is no corresponding control panel message for this item.
3. This FIP may also fix erratic behavior due to overheating.
4. This is a 24V fan.

1. INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?
- MCU PWB
- Fan
- LVPS Assembly

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

Yes	No
Go to Step 2.	Replace the problem components.

2. LVPS ANALYSIS
Disconnect P/J111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.
Switch ON Main Power.
Is there +24VDC between P/J 18–3 and P/J 18–2 on the MCU PWB?

Yes	No
Replace the Fan.	Go to Section 6.3.2 *LVPS Assembly Failure (+24VDC).*

6.3.1 LVPS Assembly failure (+5VDC)

NOTES:
1. This FIP does not use the diagnostic tool.
2. There is no corresponding control panel message for this item.
3. Not much will operate without the 5V supply.
4. Check to see if the controller 5V power LED is on. If it is off, check the P/J 51 pins on interconnect PWB for 5V. If 5V exists on P/J 51, reseat the controller and try again. If there is no change, replace the ESS (controller).

1. INITIAL ANALYSIS

Inspect the **LVPS Assembly and MCU PWB**. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?
Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

Yes	No
Go to Step 2.	Replace the problem components.

2. LVPS ANALYSIS

Disconnect P/J111 from the HVPS.
Switch ON Main Power.

Perform these checks within 30 seconds after switching power ON. After 30 seconds, the LVPS shuts down due to the no–load condition.
Is there +5VDC between J11–5 and J11–2 on the MCU PWB?
Is there +5VDC between J11–6 and J11–2 on the MCU PWB?

Yes	No
Replace the MCU PWB.	Go to Go to step 3.

3. **Is there 5 VDC between P/J 51-3 and P/J 51-5 on the Interconnect PWB?**
Is there 5 VDC between P/J 5-4 and P/J 51-6 on the Interconnect PWB?

Yes	No
Replace the controller (ESS).	Replace the LVPS Assembly cable.

6.3.2 LVPS Assembly failure (+24VDC)

NOTES:
1. This FIP does not use the diagnostic tool.
2. There is no corresponding control panel message for this item.. If 24V is bad, then 12V is bad, which is used in the control panel (console).
3. Not much will operate without the 24V supply, for example, the fan or motor.
4. Check P/J 51 pins on interconnect PWB for 12V.

1. INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?
- **LVPS Assembly**
- **MCU PWB**

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

Yes	No
Go to Step 2.	Replace the problem components.

2. LVPS ANALYSIS
Disconnect P/J111 from the HVPS. Perform these checks within 30 seconds after switching power ON. After 30 seconds, the LVPS shuts down due to the no–load condition.
Switch ON Main Power.

Is there +24VDC between J11–12 and J11–2 on the MCU PWB?

Yes	No
Go to Step 3.	Replace the LVPS Assembly.

3. INTERLOCK SWITCH ANALYSIS
Actuate the Interlock Switch.

Is there +24VDC between J11–10 and J11–2 on the MCU PWB?
Deactuate the Interlock Switch.

Is there +0VDC between J11–10 and J11–2 on the MCU PWB?

Yes	No
Replace the MCU PWB.	Replace the LVPS Assembly.

4. Is there 12 VDC between P/J 51-1 and P/J 51-2 on the Interconnect PWB?

Yes	No
Replace the controller (ESS).	Replace the LVPS Assembly cable.

6.3.3 Scanner Assembly failure

NOTES:
1. Without the diagnostic tool, skip the Diagnostic Tool (DG) portion of step 3 (Printing Test Mode). You must replace the ROS if the Scanner motor is not available.
2. The control panel message may be: Failure: 930 Optical System.
3. This FIP may also fix the LVPS.
4. This condition occurs if P/J 114 of the Scanner Motor Power and signal are disconnected. Go to Section 6.3.4 *ROS Assembly failure* before replacing the ROS.

1. INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?
LVPS Assembly
MCU PWB
ROS Assembly
ROS Harness Assembly
SOS Harness Assembly

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

Yes	No
Go to Step 2.	Replace the problem components.

2. LVPS ANALYSIS
Disconnect P/J111 from the HVPS. Perform these checks within 30 seconds after switching power ON. After 30 seconds, the LVPS shuts down due to the no–load condition.
Switch ON Main Power.
Is there +24VDC between J12–13 and J12–12 on the MCU PWB?

Yes	No
Go to Step 3.	Go to Section 6.3.2 *LVPS Assembly Failure (+24VDC).*

3. SCANNER MOTOR ACTUATOR SIGNAL ANALYSIS
Disconnect P/J111 from the HVPS. Perform these checks within 30 seconds after switching power ON. After 30 seconds, the LVPS shuts down due to the no–load condition.
Switch ON Main Power.
Is there +24VDC between J12–11 and J12–10 on the MCU PWB when the U2 code is displayed in the LCD?
Is there +0VDC between J12–11 and J12–10 on the MCU PWB while the printer is in Printing Test Mode?

Yes	No
Replace the Scanner Motor.	Go to Step 4.

6.3.3 Scanner Assembly failure Continued

4. SCANNER MOTOR ACTUATOR SIGNAL ANALYSIS

Disconnect P/J111 from the HVPS. Perform these checks within 30 seconds after switching power ON. After 30 seconds, the LVPS shuts down due to the no–load condition.

Switch ON Main Power.

Is there +4VDC between J12–11 and J12–10 on the MCU PWB when the power is switched ON?

Yes	No
Replace the MCU PWB.	Go to Step 5.

5. ROS HARNESS ASSEMBLY ANALYSIS

Disconnect J12 on the MCU PWB and J112 and J114 on the ROS.

Is there continuity (0Ω) between all wires on J12 and J112 and J114?

Yes	No
Replace the ROS Assembly.	Replace the ROS Harness Assembly.

6.3.4 ROS Assembly failure

NOTES:

1. Without the diagnostic tool, skip the Diagnostic Tool (DG) portion of step 8 and go to Section 6.3.22 *Noise.*
2. The control panel message may be: "Failure: 930 Optical System"
3. This FIP may also fix the LVPS.
4. This condition occurs if the following P/Js and signals are disconnected:
    - P/J 112 of the LD PWB
    - P/J 113 of the SOS PWB
    - P/J 114 of the Scanner Motor Power

1. INITIAL ANALYSIS

Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

LVPS Assembly	MCU PWB
ROS Assembly	ROS Harness Assembly

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

Yes	No
Go to Step 2.	Replace the problem components.

2. LVPS ANALYSIS

Disconnect P/J111 from the HVPS. Perform these checks within 30 seconds after switching power ON. After 30 seconds, the LVPS shuts down due to the no–load condition.
Switch ON Main Power.
Is there +24VDC between J12–13 and J12–12 on the MCU PWB?

Yes	No
Go to Step 3.	Go to Section 6.3.2 *LVPS Assembly Failure (+5VDC).*

6.3.4 ROS Assembly failure continued

3. SCANNER MOTOR ACTUATOR SIGNAL ANALYSIS
Disconnect P/J111 from the HVPS. Perform these checks within 30 seconds after switching power ON. After 30 seconds, the LVPS shuts down due to the no–load condition.
Switch ON Main Power.
Determine the print resolution of the printer, and take the corresponding voltage readings at P/J12 on the MCU PWB.
Are the voltages measured correct for your printer resolution?

Yes	No
Go to Step 4.	Replace the MCU PWB.

4. ROS PWB POWER SUPPLY ANALYSIS
Is there +5VDC between J19–3 and J19–1 on the MCU PWB?

Yes	No
Go to Step 5.	Go to Section 6.3.2 *LVPS Assembly Failure (+5VDC)*

5. Replace the MCU PWB.

Is the problem still present?

Yes	No
Go to Step 6.	Problem solved.

6.3.4 ROS Assembly failure continued

6. ROS HARNESS ASSEMBLY ANALYSIS
Disconnect J12 on the MCU PWB and J112 and J114 on the ROS.
Is there continuity (0Ω) between all wires on J12 and J112 and J114?

Yes	No
Go to Step 7.	Replace the ROS Harness Assembly.

7. SOS HARNESS ASSEMBLY ANALYSIS
Disconnect J19 on the MCU PWB and J113 on the ROS.
Is there continuity (0Ω) between all wires on J19 and J113?

Yes	No
Replace the ROS Assembly.	Replace the ROS Harness Assembly.

8. Is fault code U2 displayed in the LCD after you replaced the ROS Assembly?

Yes	No
Go to Section 6.3.22 *Noise.*	Problem solved.

6.3.5 Heater Rod Failure

NOTES:
1. The diagnostic tool is not used in this FIP.
2. There is no corresponding control panel message. Everything appears normal, but no printing occurs.
3. This FIP may also fix fuser problems.
4. Do not use this FIP unless you plan on disassembling the fuser. FRUs are not supported. Look for the fuser lamp to light, reseat fuser, and replace fuser.

1. INITIAL ANALYSIS

Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

- LVPS Assembly MCU PWB
- ROS Assembly CRU Sensor PWB
- Heater Rod Fuser Assembly
- Temperature Sensor Assembly

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

Yes	No
Go to Step 2.	Replace the problem components.

2. HEATER ROD ANALYSIS

Unplug the AC power cord from the back of the printer.

Is there continuity (0Ω) between J101–2 and J101–6 (100V Model) on the Fuser Assembly?
Is there continuity (0Ω) between J101–3 and J101–6 (220V Model) on the Fuser Assembly?

Yes	No
Go to Step 3.	Go to Step 4.

3. LVPS ASSEMBLY ANALYSIS

Disconnect P/J 111 from the HVPS.

Perform these checks within 30 seconds after switching power ON. After 30 seconds, the LVPS shuts down due to the no–load condition.

Is there +4.2VDC between J11–1 and J11–2 on the MCU PWB?

Yes	No
Go to Step 4.	Replace the LVPS.

6.3.5 Heater Rod Failure Continued

4. HEAT ROD ACTUATOR SIGNAL ANALYSIS
Disconnect P/J 111 from the HVPS. Perform these checks within 30 seconds after switching power ON. After 30 seconds, the LVPS shuts down due to the no–load condition.
Perform these checks when the Fuser Assembly has cooled to room temperature.
Is there +.2VDC between J11–1 and J11–2 on the MCU PWB when you actuate the interlock switch and the Heater Rod is glowing?
Is there +3.7VDC between J11–1 and J11–2 on the MCU when you deactuate the interlock switch?

Yes	No
Go to Step 5.	Go to Section 6.3.6 *Temperature Sensor Assembly Failure.*

5. HEAT ROD SIGNAL ANALYSIS
Disconnect P/J 111 from the HVPS. Perform these checks within 30 seconds after switching power ON. After 30 seconds, the LVPS shuts down due to the no–load condition.
Is there +5VDC between P/J11–5 and P/J11–2?

Yes	No
Replace the LVPS Assembly.	Go to Step 6

6. HEAT ROD SIGNAL ANALYSIS
Disconnect P/J12 from the MCU PWB.

Does the Heat Rod glow?

Yes	No
Replace the ROS Assembly.	Go to Step 7

7. HEATER ROD SIGNAL ANALYSIS
Remove P/J15 from the MCU PWB.

Does the Heat Rod glow?

Yes	No
Replace the CRU Sensor PWB.	Replace the MCU PWB.

8. HEATER ROD ANALYSIS
Remove the Heater Rod.

Is there continuity (0Ω) between the two ends?

Yes	No
Go to Step 9	Replace the Heater Rod.

6.3.5 Heater Rod Failure Continued

9. TEMPERATURE SENSOR ASSEMBLY ANALYSIS

Disconnect the AC power plug from the back of the printer.

Is there continuity (0Ω) between J101–2 and J101–6 (100V Model) on the Fuser Assembly?

Is there continuity (0Ω) between J101–3 and J101–6 (220V Model) on the Fuser Assembly?

Yes	No
Go to Step 10.	Replace the Temperature Sensor Assembly.

10. THERMOSTAT AND FUSE ANALYSIS

Remove the Fuser Assembly from the printer.

Disassembly the Fuser Assembly.

Is there continuity (0Ω) between the two ends of the thermostat?

Is there continuity (0Ω) between the two ends of the fuse?

Yes	No
Return to Step 1 to determine the cause of the failure.	Replace the Fuser Assembly.

6.3.6 Temperature Sensor failure

NOTES:
1. The diagnostic tool is not used in this FIP
2. If the control panel message is "Failure: 910 Engine Ctrl PCB," suspect the fuser not MCU. If the control panel message is "Failure: 910 Engine Ctrl PCB" suspect a missing or unseated fuser or bad temperature sensor on the fuser - not the NVRAM!
3. This FIP may also fix the fuser
4. Don't get involved in this FIP unless you plan on disassembling the fuser. FRUs aren't supported. Look for fuser lamp to light; Reseat fuser; replace fuser.

1. INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?
LVPS Assembly MCU PWB
Fuser Assembly Temperature Sensor Assembly
Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

Yes	No
Go to Step 2.	Replace the problem components.

2. TEMPERATURE SENSOR ASSEMBLY ANALYSIS
Is the Temperature Sensor Thermistor clean?

Yes	No
Go to Step 3.	Clean or replace the Temperature Sensor Assembly.

3. TEMPERATURE SENSOR THERMISTOR ANALYSIS
Perform this check when the Fuser Assembly has cooled to room temperature.
Disconnect the AC power plug from the back of the printer.
Is the resistance between J 101–1 and J 101–4 on the Fuser Assembly between 110 and 350 KΩ?

Yes	No
Go to Step 4.	Replace the Temperature Sensor Assembly.

4. LVPS ASSEMBLY ANALYSIS
Perform this check when the Fuser Assembly has cooled to room temperature.
Disconnect the AC power plug from the back of the printer.
Is the resistance between J 11–13 and J 11–14 on the MCU PWB, 110 to 350 Kohms?

Yes	No
Replace the MCU PWB.	Replace the LVPS Assembly.

6.3.7 Exit Sensor failure

NOTES:
1. The diagnostic tool is not used in this FIP.
2. If the actuator is the problem, the control panel message may be: Paper Jam>Exit
3. If the exit sensor is disconnected or the paper doesn't reach the sensor, the control panel message may be: Paper Jam>Tray.
4. Order the sensor separately, because it is not part of another FRU; the actuator is part of fuser.

1. INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?
- Exit Sensor
- MCU PWB
- LVPS Assembly
- Sensor Harness Assembly

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

Yes	No
Go to Step 2.	Replace the problem components.

2. LVPS ASSEMBLY ANALYSIS
Disconnect P/J 111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.
Is there +5VDC between P 16–1 and 16–2 on the MCU PWB?

Yes	No
Go to Step 3.	Go to Section 6.3.1 *LVPS Assembly Failure (+5VDC).*

3. EXIT SENSOR ACTUATOR SIGNAL ANALYSIS
Disconnect P/J 111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.
Is there +5VDC between P 16–3 and 16–2 on the MCU PWB?

Yes	No
Go to Step 4.	Replace the MCU PWB.

6.3.7 Exit Sensor failure continued

4. EXIT SENSOR ACTUATOR SIGNAL ANALYSIS
Disconnect P/J 111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.
Block the Sensor window with a piece of paper.
Is there +5VDC between P/J 16–3 and P/J 16–2 on the MCU PWB?
Remove the piece of paper from the Sensor window.

Is there 0VDC between P/J 16–3 and P/J16–2 on the MCU PWB?

Yes	No
Replace the MCU PWB.	Go to Step 5.

5. SENSOR HARNESS ASSEMBLY ANALYSIS
Disconnect J16 on the MCU PWB and J119 on the Exit Sensor.
Is there continuity (0Ω) between all wires on J16 and J119?

Yes	No
Replace the Exit Sensor.	Replace the Sensor Harness Assembly.

6.3.8 Registration Sensor failure

NOTES:
1. The diagnostic tool is not used in this FIP
2. The control panel message may be: "Paper Jam>Fuser" if the registration sensor stays in one state during a print cycle.
3. This FIP may also fix paper friction.
4. Make sure inlet chute that holds the sensor is securely in place

1. INITIAL ANALYSIS

Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

- Registration Sensor
- MCU PWB
- LVPS Assembly
- Sensor Harness Assembly

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

Yes	No
Go to Step 2.	Replace the problem components.

2. LVPS ASSEMBLY ANALYSIS

Disconnect P/J 111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.

Is there +1.5VDC between P16–4 and 16–5 on the MCU PWB?

Yes	No
Go to Step 3.	Go to Section 6.3.1 *LVPS Assembly Failure (+5VDC).*

3. REGISTRATION SENSOR ACTUATOR SIGNAL ANALYSIS

Disconnect P/J 111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.

Is there +5VDC between P16–6 and 16–5 on the MCU PWB?

Yes	No
Go to Step 4.	Replace the MCU PWB.

6.3.8 Registration Sensor failure continued

4. REGISTRATION SENSOR ACTUATOR SIGNAL ANALYSIS
Disconnect P/J 111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.
Open the Front Transport Assembly.
Is there +5VDC between P/J 16–6 and P/J16–5?

Press on the Registration Sensor actuator.

Is there 0VDC between P/J 16–6 and P/J 16–5?

Yes	No
Replace the MCU PWB.	Go to Step 5.

5. SENSOR HARNESS ASSEMBLY ANALYSIS
Disconnect P/J 16 on the MCU PWB and P/J120 on the Registration Sensor PWB.
Is there continuity (0Ω) between all wires on J16 and J120?

Yes	No
Replace the Registration Sensor.	Replace the Sensor Harness Assembly.

6.3.9 MBF Sensor failure

NOTES:
a. The diagnostic tool is not used in this FIP
b. The control panel message may be: Tray Empty
c. This FIP may also fix a bad cassette spring.
d. Try another cassette tray first

1. INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

MBF Sensor	MCU PWB
LVPS Assembly	Sensor Harness Assembly

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

Yes	No
Go to Step 2.	Replace the problem components.

2. LVPS ASSEMBLY ANALYSIS
Disconnect P/J 111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.
Is there +1VDC between P16–8 and P16–7 on the MCU PWB?

Yes	No
Go to Step 3.	Go to Section 6.3.1 *LVPS Assembly Failure (+5VDC).*

3. MBF SENSOR ACTUATOR SIGNAL ANALYSIS
Disconnect P/J 111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.
Is there +5VDC between P16–9 and 16–8 on the MCU PWB?

Yes	No
Go to Step 4.	Replace the MCU PWB.

4. MBF SENSOR SIGNAL ANALYSIS
Disconnect P/J 111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.
Is there +5VDC between P/J 16–9 and P/J 16–8 on the MCU PWB?
Open the Front Feeder Cover. Actuate the MBF Sensor.
Is there 0VDC between P/J 16–9 and P/J16–8 on the MCU PWB?

Yes	No
Replace the MCU PWB.	Go to Step 5

6.3.9 MBF Sensor failure continued

5. SENSOR HARNESS ASSEMBLY ANALYSIS
Disconnect P/J16 from the MCU PWB and P/J121 from the MBF Sensor PWB.
Is there continuity (0Ω) between all wires on J16 and J121?

Yes	No
Replace the MBF Sensor.	Replace the Sensor Harness Assembly.

6.3.10 No–Paper Sensor failure

NOTES:
1. The diagnostic tool is not used in this FIP
2. The control panel message may be: Tray Empty
3. This FIP may also fix a bad cassette spring.
4. Try another cassette tray first.

1. INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Feeder PWB	LVPS Assembly
Optional Feeder Assembly	Feeder PWB AUX
Harness Assembly Tray 1	Feeder Assembly
Harness Assembly OUT	MCU PWB

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

Yes	No
Go to Step 2.	Replace the problem components.

2. LVPS ASSEMBLY ANALYSIS
Disconnect P/J 111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.
Is there +5VDC between P/J 13–2 and P/J 13–4 on the MCU PWB?

Yes	No
Go to Step 3.	Go to Section 6.3.1 *LVPS Assembly Failure (+5VDC).*

3. NO–PAPER SENSOR ACTUATOR SIGNAL ANALYSIS
Disconnect P/J 111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.
Remove the Paper Cassettes from the printer.
Is there +5VDC between P/J 13–1 and P/J 13–4 (Tray 1) on the MCU PWB?
Is there +5VDC between P/J 13–3 and p/J 13–4 (Tray 2) on the MCU PWB?

Yes	No
Go to Step 4.	Replace the MCU PWB.

6.3.10 No–Paper Sensor failure continued

4. NO–PAPER SENSOR ACTUATOR SIGNAL ANALYSIS
Fill the Paper Cassettes with paper, and insert them into the printer.

Is there 0VDC between P/J 13–1 and P/J 13–4 (Tray 1) on the MCU PWB?
Is there 0VDC between P/J 13–3 and P/J 13–4 (Tray 2) on the MCU PWB?
Remove all of the paper from the Paper Cassettes, and insert them into the printer.

Is there +5VDC between P/J 13–1 and P/J13–4 (Tray 1) on the MCU PWB?
Is there +5VDC between P/J 13–3 and P/J 13–4 (Tray 2) on the MCU PWB?

Yes	No
Replace the MCU PWB.	Go to Step 5.

5. TRAY 1 SENSOR HARNESS ASSEMBLY ANALYSIS
Disconnect P/J 13 on the MCU PWB and P/J115 on the Paper Feed PWB.

Is there continuity (0Ω) between all wires on J13 and J115?

Yes	No
Replace the Feeder PWB.	Replace the Tray 1 Harness Assembly.

6. FEEDER PWB ANALYSIS
Disconnect P/J 116 on the Paper Feeder PWB.

Is there continuity (0Ω) between all pins on J115 and J116 on the Feeder PWB?

Yes	No
Go to Step 7.	Replace the Feeder PWB.

7. HARNESS ASSEMBLY ANALYSIS OUT (Tray 2)
Disconnect P/J 115 and P/J 116 on the Tray 2 Paper Feeder PWB.

Is there continuity (0Ω) between all wires on J115 and J116 on the Tray 2 Harness Assembly?

Yes	No
Replace the Feeder PWB AUX.	Replace the Harness Assembly OUT.

6.3.11 LD Switch S101 failure

NOTES:
1. Without the diagnostic tool, skip step 2.
2. The control panel message may be: "Failure: 930 Optical System"
3. This FIP may also correct an incorrectly installed toner cartridge.
4. Try to move the toner Cartridge actuator. Try another toner cartridge.

INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

CRU Sensor PWB
EP Cartridge
Harness Assembly
MCU PWB
CRU Sensor Assembly
HVPS

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

Yes	No
Go to Step 2.	Replace the problem components.

2. CRU ACTUATOR ASSEMBLY ANALYSIS
Use Diagnostic test DG02 to check the LD Switch on the CRU Sensor.
Remove and reinstall the toner Cartridge.
Does the LD Switch S101 function correctly and increment the DG02 number each time you remove the toner Cartridge?

Yes	No
Go to Step 4.	Go to Step 3.

3. Toner CARTRIDGE ANALYSIS
Does the tab on the toner cartridge actuate the LD Switch S101?

Yes	No
Replace the CRU Actuator Assembly.	Replace the toner cartridge.

4. CRU SENSOR PWB ANALYSIS
Disconnect the AC power plug from the back of the printer. Remove the toner cartridge.
Is there continuity (0Ω) between P/J 15-9 and P/15-8 on the MCU PWB?
Reinstall the toner cartridge.
Is there 5 to 6 MΩ between P/J 15-9 and P/15-8 on the MCU PWB?

Yes	No
Go to Step 5.	Replace the CRU Sensor PWB.

6.3.11 LD Switch S101 Failure Continued

5. HARNESS ASSEMBLY HVPS ANALYSIS

Disconnect P/J15 on the MCU PWB and P/J118 on the CRU Switch PWB.

Is there continuity (0Ω) between all wires on J15 and J118?

Yes	No
Replace the MCU PWB.	Replace the Harness Assembly HVPS.

6.3.12 CRU Switch S100 failure

NOTES:
1. Without the diagnostic tool, skip step 2.
2. The control panel message may be: Need Cartridge
3. This FIP may also fix and incorrectly installed toner cartridge.
4. Try to move the Toner cartridge actuator. Try another Toner cartridge.

1. INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

CRU Sensor PWB	MCU PWB
EP Cartridge	Harness Assembly HVPS

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

Yes	No
Go to Step 2.	Replace the problem components.

2. CRU ACTUATOR ASSEMBLY ANALYSIS
Use Diagnostic Tool test DG02 to check the CRU Switch on the CRU Sensor.
Repeatedly move and reinstall the Toner Cartridge.
Does the CRU Switch S100 function correctly and increment the DG02 number each time you remove the Toner Cartridge?

Yes	No
Go to Step 4	Go to Step 3

3. Toner cartridge analysis
Does the tab on the Toner Cartridge actuate the CRU Switch?

Yes	No
Replace the CRU Actuator Assembly.	Replace the Toner Cartridge.

6.3.12 CRU Switch S100 failure Continued

4. CRU SENSOR PWB ANALYSIS
Disconnect the AC power plug from the back of the printer.
Remove the Toner Cartridge.
Is there continuity (0Ω) between P/J 15-10 and P/J15-11 on the MCU PWB?
Reinstall the Toner Cartridge.

Is there 1KΩ between P/J15-10 and P/J15-11 on the MCU PWB?

Yes	No
Go to Step 5.	Replace the CRU Sensor PWB

5. CRU SENSOR PWB ANALYSIS
With the Toner Cartridge installed, is there 0VDC between P/J15–10 and P/J 15–11 on the MCU PWB?
Remove the Toner Cartridge.

Is there +5VDC between P/J15–10 and P/J 15–11 on the MCU PWB?

Yes	No
Replace the MCU PWB.	Go to Step 6.

6. HARNESS ASSEMBLY HVPS ANALYSIS
Disconnect P/J15 on the MCU PWB and P/J118 on the CRU Sensor PWB.

Is there continuity (0Ω) between all wires on J15 and J118?

Yes	No
Go to 3.1 LVPS Assembly Failure (+5VDC).	Replace the Harness Assembly HVPS.

6.3.13 Paper Size Switch failure

NOTES:
1. Without the diagnostic tool, skip step 2.
2. The control panel message may be: Tray Out or Load <Paper Size>
3. This FIP may also fix a broken cassette tray.
4. Try another cassette tray. Move the size spring to feel for contact on the switch.

1. INITIAL ANALYSIS

1. Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

LVPS Assembly
Feeder PWB
Optional Feeder Assembly
MCU PWB
Harness Assembly OUT
MCU PWB
Feeder PWB AUX
Size Spring
LVPS Assembly
Harness Assembly Tray

Yes	No
Go to Step 2.	Replace the problem components.

2. SIZE SPRING ANALYSIS
Use Diagnostic Tool test DG02 to check the Size Spring function.
Remove both paper cassettes.
Reaching through the rear of the Paper Feeder, and press each Size Spring.
Does each spring function correctly and increment the DG02 number each time you press it?

Yes	No
Go to Step 3.	Replace the Size Spring.

3. LVPS ANALYSIS
Disconnect P/J111 from the HVPS. Perform this test within 30 seconds after switching power on.
After 30 seconds, the LVPS shuts down with a no-load condition.
Switch ON Main Power.
Is there +5VDC between P/J 13-2 and P/J 13-4 on the MCU PWB?

Yes	No
Go to Step 4.	Go to Section 6.3.1 *LVPS Assembly Failure (+5VDC).*

6.3.13 Paper Size Switch failure continued

4. **PAPER SIZE SWITCH SIGNAL ANALYSIS**
Insert the paper trays into the printer.
Disconnect P/J 111 from the HVPS.
Refer to the Component Connection/Wiring Diagram MCU PWB, Feeder PWB, Feeder PWB AUX, Feed Solenoid, and the Turn Solenoid signal voltage table in the General Procedures and Information section of this manual.
Measure the voltage between P/J 13-5 and P/J 13-4 on the MCU PWB (Tray 1).

Measure the voltage between P/J 13-6 and P/J 13-4 on the MCU PWB (Tray 2).

Are the voltages measured the same as those shown in the MCU PWB, Feeder PWB, Feeder PWB AUX, Feed Solenoid, and the Turn Solenoid signal voltage table?

Yes	No
Replace the MCU PWB.	Go to Step 5.

5. TRAY 1 HARNESS ASSEMBLY ANALYSIS
Disconnect P/J13 on the MCU and P/J115 on the Paper Feeder PWB.
Is there continuity (0Ω) between all wires on J13 and J115?

Yes	No
Replace the Feeder PWB.	Replace the Tray 1 Harness Assembly.

6. FEEDER PWB ANALYSIS
Disconnect P/J 116 on the Paper Feeder PWB.

Is there continuity (0Ω) between all pins on J115 and J116 on the Feeder PWB?

Yes	No
Go to step 7	Replace the Feeder PWB.

7. HARNESS ASSEMBLY ANALYSIS OUT (Tray 2)
Disconnect P/J 115 and P/J 116 on the Tray 2 Paper Feeder PWB.

Is there continuity (0Ω) between all wires on J115 and J116 on the Tray 2 Harness Assembly?

Yes	No
Replace the Feeder PWB AUX.	Replace the Harness Assembly OUT.

6.3.14 Pickup Solenoid failure

NOTES:
1. Without the diagnostic tool, skip the Diagnostic tool (DG) portion of step 3.
2. The control panel message may be: Paper Jam>Fuser
3. This FIP may also fix a bad sensor or toner cartridge.
4. Try to replace the pick-up solenoid before the MCU.

1. INITIAL ANALYSIS

1. Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

- MCU PWB
- LVPS Assembly
- Pick–Up Solenoid

Yes	No
Go to Step 2.	Replace the problem components.

2. Disconnect P/J111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.
Switch ON Main Power.
Is there +24VDC between P/J 17–1 and P/J 11–2 on the MCU PWB?

Yes	No
Go to Step 3.	Go to Section 6.3.2 *LVPS Assembly Failure (+24VDC*).

3. PICK–UP SOLENOID ACTUATOR SIGNAL ANALYSIS
Disconnect P/J111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.
Switch ON Main Power.
Use Diagnostic Tool test DG80 to check the Pick–Up Solenoid.
Is there 0VDC between P/J 17–2 and P/J 11–2 on the MCU PWB when you actuate the solenoid?
Is there +24VDC between P/J 17–2 and P/J 11–2 on the MCU PWB when you do not actuate the solenoid?

Yes	No
Replace the Pick–Up Solenoid.	Go to Step 4.

4. PICK–UP SOLENOID ANALYSIS
Disconnect P/J111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.Switch ON Main Power.
Is there +24VDC between P/J 17–2 and P/J 11–2 on the MCU PWB?

Yes	No
Replace the MCU PWB.	Replace the Pick–Up Solenoid.

6.3.15 Feed Solenoid failure

NOTES:
1. Without the diagnostic tool, skip the Diagnostic Tool test (DG) portion of step 3.
2. The control panel message may be: Paper Jam>Tray
3. This FIP may also fix worn feed rollers.
4. Try the front tray first to be sure it is the feed solenoid (in the cassette). Try another cassette tray or try to replace the feed solenoid before the MCU

1. INITIAL ANALYSIS

1. Inspect the following components. Are they are compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

MCU PWB
Feed Solenoid
Feeder PWB AUX
Harness Assembly OUT
LVPS Assembly
Feeder PWB
Harness Assembly Tray 1

Yes	No
Go to Step 2.	Replace the problem components.

2. LVPS ANALYSIS
Disconnect P/J111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.
Switch ON Main Power.
Is there +24VDC between P/J 13–10 and P/J 11–2 on the MCU PWB?

3. FEED SOLENOID ACTUATOR SIGNAL ANALYSIS
Disconnect P/J111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.
Switch ON Main Power.
Use Diagnostic Tool test DG81 to check the Feed Solenoid in Tray 1.
Is there 0VDC between P/J 13–11 and P/J 11–2 on the MCU PWB when you actuate the solenoid in Tray 1?
Is there +24VDC between P/J 13–11 and P/J 11–2 on the MCU PWB when you do not actuate the solenoid in Tray 1?
Use Diagnostic Tool test DG86 to check the Feed Solenoid in Tray 2.
Is there 0VDC between P/J 13–12 and P/J 11–2 on the MCU PWB when you actuate the solenoid in Tray 2?
Is there +24VDC between P/J 13–12 and P/J 11–2 on the MCU PWB when you do not actuate the solenoid in Tray 2?

6.3.15 Feed Solenoid failure Continued

4. FEED SOLENOID ANALYSIS
Disconnect P/J111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.
Switch ON Main Power.

Is there +24VDC between P/J 13–11 and P/J 11–2 on the MCU PWB (Tray 1)?
Is there +24VDC between P/J 13–12 and P/J 11–2 on the MCU PWB (Tray 2)?

Yes	No
Replace the MCU PWB.	Go to Step 5.

5. TRAY 1 SENSOR HARNESS ASSEMBLY ANALYSIS
Disconnect P/J13 on the MCU PWB and P/J115 on the Paper Feed PWB.

Is there continuity (0Ω) between all wires on J13 and J115?

Yes	No
Go to Step 6.	Replace the Tray 1 Harness Assembly.

6. Have you isolated the problem to the Feed Solenoid 1 of Feeder Assembly 1?

Yes	No
Go to Step 7.	Go to Step 8.

7. FEEDER PWB ANALYSIS
Disconnect P/J115 and P/J201 on the Paper Feeder PWB.

Is there continuity (0Ω) between all pins on J115 and J201 on the Feeder PWB?

Yes	No
Replace the Feeder Solenoid 1 of Feeder Assembly 1.	Replace the Feeder PWB.

8. FEEDER PWB ANALYSIS
Disconnect P/J 116 on the Paper Feeder PWB.
Is there continuity (0Ω) between all pins on J115 and J116 on the Feeder PWB?

Yes	No
Go to Step 9.	Replace the Feeder PWB.

6.3.15 Feed Solenoid failure Continued

9. HARNESS ASSEMBLY OUT ANALYSIS
Disconnect P/J116 on the Paper Feeder PWB and P/J115 on the Tray 2 Paper Feeder PWB.
Is there continuity (0Ω) between all wires on P/J116 and P/J115?

Yes	No
Go to Step 10.	Replace the Harness Assembly OUT.

10. FEEDER PWB AUX ANALYSIS
Disconnect P/J 115 and P/J 201 on the Tray 2 Paper Feeder PWB.

Is there continuity (0Ω) between all pins on J115 and J201 on the AUX Feeder PWB?

Yes	No
Replace the Feeder Solenoid 2 of Feeder Assembly 2.	Replace the Feeder PWB AUX.

6.3.16 Turn Solenoid failure

NOTES:
1. Without the diagnostic tool, skip the Diagnostic Tool test (DG) portion of step 3.
2. The control panel message may be: Paper Jam>Tray
3. This FIP may also fix worn turn or feed rollers.
4. Try the front tray first to be sure it is the turn solenoid (in the cassette). Try another cassette tray. Be sure the feed roller is operating first. Try replacing the turn solenoid before the MCU.

1. INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

MCU PWB
Turn Solenoid
Feeder PWB AUX
Harness Assembly OUT
LVPS Assembly
Feeder PWB
Harness Assembly Tray 1

Yes	No
Go to Step 2.	Replace the problem components.

2. LVPS ANALYSIS
Disconnect P/J111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.
Switch ON Main Power.

Is there +24VDC between P/J 13–10 and P/J 11–2 on the MCU PWB?

Yes	No
Go to Step 3.	Go to Section 6.3.2 *LVPS Assembly Failure (+24VDC).*

3. TURN SOLENOID ACTUATOR SIGNAL ANALYSIS
Disconnect P/J111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.
Switch ON Main Power.
Use Diagnostic Tool test DG84 to check the Turn Solenoid in Tray 1.
Is there +24VDC between P/J 13–8 and P/J 11–2 on the MCU PWB when you do not actuate the solenoid in Tray 1?

Is there 0VDC between P/J 13–8 and P/J 11–2 on the MCU PWB when you actuate the solenoid in Tray 1?

6.3.16 Turn Solenoid failure Continued

Use Diagnostic Tool test DG85 to check the Turn Solenoid in Tray 2.

Is there +24VDC between P/J 13–9 and P/J 11–2 on the MCU PWB when you do not actuate the solenoid in Tray 2?
Is there 0VDC between P/J 13–9 and P/J 11–2 on the MCU PWB when you actuate the solenoid in Tray 2?

Yes	No
Replace the Turn Solenoid.	Go to Step 4.

4. TURN SOLENOID ANALYSIS
Disconnect P/J111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.
Switch ON Main Power.
Is there +24VDC between P/J 13–8 and P/J 11–2 on the MCU PWB (Tray 1)?
Is there +24VDC between P/J 13–9 and P/J 11–2on the MCU PWB (Tray 2)?

Yes	No
Replace the MCU PWB.	Go to Step 5.

5. TRAY 1 HARNESS ASSEMBLY ANALYSIS
Disconnect P/J13 on the MCU and P/J115 on the Paper Feeder PWB.
Is there continuity (0Ω) between all wires on J13 and J115?

Yes	No
Go to Step 6.	Replace the Tray 1 Harness Assembly.

6. Have you isolated the problem to Turn Solenoid 1 of Feeder Assembly 1?

Yes	No
Go to Step 7.	Go to Step 8.

7. FEEDER PWB ANALYSIS
Disconnect P/J115 and P/J202 on the Paper Feeder PWB.

Is there continuity (0Ω) between all pins on J115 and J202 on the Feeder PWB?

Yes	No
Replace the Turn Solenoid 1 of Feeder Assembly	Replace the Feeder PWB.

6.3.16 Turn Solenoid failure Continued

8. FEEDER PWB ANALYSIS
Disconnect P/J 115 on the Paper Feeder PWB.

Is there continuity (0Ω) between all pins on J115 and J116 on the Feeder PWB?

Yes	No
Go to Step 9.	Replace the Feeder PWB.

9. HARNESS ASSEMBLY OUT ANALYSIS
Disconnect P/J116 on the Paper Feeder PWB and P/J115 on the Tray 2 Paper Feeder PWB.
Is there continuity (0Ω) between all wires on P/J116 and P/J115?

Yes	No
Go to Step 10.	Replace the Harness Assembly OUT.

10. FEEDER PWB AUX ANALYSIS
Disconnect P/J 115 and P/J 202 on the Tray 2 Paper Feeder PWB.

Is there continuity (0Ω) between all pins on J115 and J202 on the AUX Feeder PWB?

Yes	No
Replace the Feed Solenoid 2 of Feeder Assembly 2.	Replace the Feeder PWB AUX.

6.3.17 Drive Assembly failure

NOTES:
1. The diagnostic tool is not used in this FIP
2. The control panel message may be: Paper Jam>Fuser.
3. This FIP may fix something deformed
4. Read this section before proceeding and try some of the simpler items first, like another Toner cartridge.

1. INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

MCU PWB	LVPS Assembly
Drive Assembly	Feeder Assembly
Fuser Assembly	EP Cartridge
Optional Feeder Assembly	Take–Away Roll Assembly

Yes	No
Go to Step 2.	Replace the problem components.

2. DRIVE ASSEMBLY ANALYSIS
Unplug the AC power cord from the back of the printer.
Hand rotate (counter-clockwise) the Drive Assembly transmission gear located directly above the motor. (NEVER rotate the transmission gear clockwise.)
Does the gear on the Main Motor shaft rotate counterclockwise?

Yes	No
Go to Step 3.	Go to Step 6.

3. LVPS ANALYSIS
Disconnect P/J111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.
Switch ON Main Power.
Is there +24VDC between P/J 14–1 and P/J 11–2 on the MCU PWB?
Is there +24VDC between P/J 14–2 and P/J 11–2 on the MCU PWB?

Yes	No
Go to Step 4.	Go to Section 6.3.2 *LVPS Assembly Failure (+24VDC).*

6.3.17 Drive Assembly failure Continued

4. MAIN MOTOR ANALYSIS
Unplug the AC power cord from the back of the printer.

Is there continuity (0Ω) between J14–1 and J14–3 on the MCU PWB?
Is there continuity (0Ωbetween J14–1 and J14–5 on the MCU PWB?
Is there continuity (0Ω) between J14–2 and J14–4 on the MCU PWB?
Is there continuity (0Ω) between J14–2 and J14–6 on the MCU PWB?

Yes	No
Go to Step 5.	Replace the Drive Assembly.

5. Install a new MCU PWB.
Is the problem still present?

Yes	No
Replace the Drive Assembly.	Problem Solved.

6. OPTIONAL FEEDER ASSEMBLY ANALYSIS
Disconnect P/J111 from the HVPS.
Remove the Optional Feeder Assembly.
Hand rotate (counter-clockwise) the Drive Assembly transmission gear located directly above the motor. (NEVER rotate the transmission gear clockwise).
Does the gear on the Main Motor shaft rotate counterclockwise?

Yes	No
Go to Step 7.	Replace the Optional Feeder Assembly.

7. FEEDER ASSEMBLY ANALYSIS
Disconnect P/J111 from the HVPS.
Remove the Feeder Assembly.
Hand rotate (counter-clockwise) the Drive Assembly transmission gear located directly above the motor. (NEVER rotate the transmission gear clockwise.)

Does the gear on the Main Motor shaft rotate counterclockwise?

Yes	No
Go to Step 8.	Replace the Feeder Assembly.

6.3.17 Drive Assembly failure Continued

8. TAKE–AWAY ROLL ASSEMBLY ANALYSIS
Disconnect P/J111 from the HVPS.
Remove the Take–Away Roll Assembly.
Hand rotate (counter-clockwise) the Drive Assembly transmission gear located directly above the motor. (NEVER rotate the transmission gear clockwise.)
Does the gear on the Main Motor shaft rotate counterclockwise?

Yes	No
Go to Step 9.	Replace the Take–Away Roll Assembly.

9. TONER CARTRIDGE ANALYSIS
Disconnect P/J111 from the HVPS.
Remove the Toner Cartridge.
Hand rotate (counter-clockwise) the Drive Assembly transmission gear located directly above the motor. (NEVER rotate the transmission gear clockwise).
Does the gear on the Main Motor shaft rotate counterclockwise?

Yes	No
Go to Step 10.	Replace the Toner Cartridge.

10. FUSER ASSEMBLY ANALYSIS
Disconnect P/J111 from the HVPS.
Remove the Fuser Assembly.
Hand rotate (counter-clockwise) the Drive Assembly transmission gear located directly above the motor. (NEVER rotate the transmission gear clockwise).
Does the gear on the Main Motor shaft rotate counterclockwise?

Yes	No
Replace the Drive Assembly.	Replace the Fuser Assembly.

6.3.18 Toner Sensor failure (option)

NOTES:
1. The diagnostic tool is not used in this FIP>
2. The control panel message may be: Toner Low
3. This FIP may also fix a bad sensor or Toner cartridge .
4. If the toner sensor is disconnected or not working (P/J 21), it is not recognized as toner low.

1. INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?
- MCU PWB
- LVPS Assembly
- Toner Sensor Assembly

Yes	No
Go to Step 2.	Replace the problem components.

2. LVPS ANALYSIS
Disconnect P/J111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition. Switch ON Main Power.
Is there +24VDC between P 21–1 and P 21–3 on the MCU PWB?

Yes	No
Go to Step 3.	Go to Section 6.3.2 *LVPS Assembly Failure (+24VDC).*

3. TONER SENSOR ANALYSIS
Disconnect P/J111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition. Switch ON Main Power.
Is there +5VDC between P 21–4 and P 21–3 on the MCU PWB?

Yes	No
Go to Step 4.	Replace the MCU PWB.

4. TONER SENSOR ACTUATOR SIGNAL ANALYSIS
Disconnect P/J111 from the HVPS. Perform this test within 30 seconds after switching power on. After 30 seconds, the LVPS shuts down with a no-load condition.Switch ON Main Power.
Is there 0VDC between P 21–4 and P 21–3 on the MCU PWB?

Yes	No
Remove the Toner Cartridge.	Close the Front Transport Assembly.

Is there +5VDC between P 21–4 and P 21–3?

Yes	No
Replace the MCU PWB.	Replace the Toner Sensor.

6.3.19 HVPS CR (DC) failure

NOTES:
1. The diagnostic tool is not used in this FIP. See Diagnostic Tool test DG92.
2. There is no corresponding control panel message.
3. This FIP may also fix all black page prints or toner cartridge problems.
4. Try another Toner cartridge

1. INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

LVPS Assembly
HVPS
HVPS Harness Assembly
MCU PWB
Earth Plate Assembly

Yes	No
Go to Step 2.	Replace the problem components.

2. HVPS ANALYSIS
Is there +24VDC between P15–7 and P15–1 on the MCU PWB?

Yes	No
Go to Step 3.	Go to Section 6.3.2 *LVPS Assembly Failure (+24VDC).*

3. EARTH PLATE ASSEMBLY ANALYSIS
Unplug the AC power cord from the back of the printer.
Remove the Toner Cartridge.
Is there continuity (0Ω) between CR (Spring Plate) on the Earth Plate and J CR on the HVPS?

Yes	No
Go to Step 4.	Replace the Earth Plate Assembly.

4. HVPS HARNESS ASSEMBLY ANALYSIS
Disconnect P/J111 on the HVPS and P/J15 on the MCU PWB.
Is there continuity (0Ω) between all wires on P/J15 on the MCU PWB and P/J111 on the HVPS?

Yes	No
Go to Step 5.	Replace the HVPS Harness Assembly.

6.3.19 HVPS CR (DC) failure Continued

5. MCU PWB ANALYSIS
Install a new MCU PWB.
Is the problem still present?

Yes	No
Replace the HVPS.	Problem solved.

6.3.20 HVPS DB failure

NOTES:
1. The diagnostic tool is not used in this FIP. See Diagnostic Tool test DG93.
2. There is no corresponding control panel message
3. This FIP may also fix all blank page prints or a bad toner cartridge.
4. Try another Toner cartridge.

1. INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

LVPS Assembly
HVPS
HVPS Harness Assembly
MCU PWB
Earth Plate Assembly

Yes	No
Go to Step 2.	Replace the problem components.

2. HVPS ANALYSIS
Is there +24VDC between P15–7 and P15–1 on the MCU PWB?

Yes	No
Go to Step 3.	Go to Section 6.3.2 *LVPS Assembly Failure (+24VDC).*

3. EARTH PLATE ASSEMBLY ANALYSIS
Unplug the AC power cord from the back of the printer.
Remove the Toner Cartridge.
Is there continuity (0Ω) between DB (Spring Plate) on the Earth Plate and J DB–2 on the HVPS?

Yes	No
Go to Step 4.	Replace the Earth Plate Assembly.

4. HVPS HARNESS ASSEMBLY ANALYSIS
Disconnect P/J111 on the HVPS and P/J15 on the MCU PWB.
Is there continuity (0Ω) between all wires on P/J15 on the MCU PWB and P/J111 on the HVPS?

Yes	No
Go to Step 5.	Replace the HVPS Harness Assembly.

6.3.20 HVPS DB failure continued

5. MCU PWB ANALYSIS
Install a new MCU PWB.
Is the problem still present?

Yes	No
Replace the HVPS.	Problem solved.

6.3.21 HVPS TR failure

NOTES:
1. The diagnostic tool is not used in this FIP. See Diagnostic Tool tests DG94 and 95.
2. There is no corresponding control panel message
3. This FIP may also fix faded or light page prints or bad toner cartridge.
4. Try another Toner cartridge

1. INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

LVPS Assembly
HVPS
HVPS Harness Assembly
MCU PWB
Wire Assembly TR
Transportation Chute Assembly

Yes	No
Go to Step 2.	Replace the problem components.

2. HVPS ANALYSIS

Is there +24VDC between P15–7 and P15–1 on the MCU PWB?

Yes	No
Go to Step 3.	Go to Section 6.3.2 *LVPS Assembly Failure (+24VDC).*

3. WIRE ASSEMBLY TR ANALYSIS
Remove the Transportation Chute Assembly.
Is there continuity (0Ω) between TR-T (the red wire under the Transportation Chute Assembly) and TR on the HVPS?

Yes	No
Go to Step 4.	Replace the Wire Assembly TR.

4. TRANSPORTATION CHUTE ASSEMBLY ANALYSIS

Is there continuity (0Ω) between TR-T and the BTR shaft?

Yes	No
Go to Step 5.	Replace the Transportation Chute Assembly.

6.3.21 HVPS TR failure continued

5. HVPS HARNESS ASSEMBLY ANALYSIS
Disconnect P/J111 on the HVPS and P/J15 on the MCU PWB.

Is there continuity (0Ω) between all wires on P/J15 on the MCU PWB and P/J111 on the HVPS?

Yes	No
Go to Step 6	Replace the HVPS Harness Assembly.

6. MCU PWB ANALYSIS
Install a new MCU PWB.

Is the problem still present?

Yes	No
Replace the HVPS.	Problem solved.

6.3.22 Noise

NOTES:
1. This FIP does not use the diagnostic tool.
2. There is no corresponding control panel message for this item.
3. None
4. The take-away roller, inlet chute, Toner cartridge, and Fuser will make noise if not seated correctly. Look for obstructions in closing front door

1. INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

LVPS Assembly
HVPS
Fuser Assembly
EP Cartridge
Front Earth Spring
BTR Assembly
MCU PWB
Wire Assembly TR
Temperature Sensor Assembly
Transportation Chute Assembly
Wire Assembly BAFFLE
Earth Plate Assembly
Wire Assembly Front
Inlet Chute Assembly
Lower Chute Assembly
Wire Assembly Eliminator

Yes	No
Go to Step 2.	Replace the problem components.

2. Is the printer connected to a grounded AC wall outlet?

Yes	No
Go to Step 3.	Repair the wall outlet.

3. Is the printer positioned near a device (such as a generator or microwave oven) that could produce interfering electrical noise?

Yes	No
Move the device or the printer to a different location.	Go to Step 4.

4. WIRE ASSEMBLY BAFFLE ANALYSIS
Is there continuity (0Ω) between both ends of the Wire Assembly Baffle (Black wire with one end secured under the Inlet Chute and the other end at RTN on the HVPS)?

Yes	No
Go to Step 5.	Replace the Wire Assembly Baffle.

6.3.22 Noise Continued

5. INLET CHUTE ASSEMBLY ANALYSIS
Is the resistor securely mounted to the bottom of the Inlet Chute Assembly?

Yes	No
Go to Step 6	Replace the Inlet Chute Assembly.

6. WIRE ASSEMBLY ELIMINATOR ANALYSIS
Is there continuity (0Ω) between both ends of the Wire Assembly Eliminator (the green wire with one end secured to the bottom of the Transportation Chute Assembly and the other end at RTN on the HVPS)?

Yes	No
Go to Step 7.	Replace the Wire Assembly Eliminator.

7. WIRE ASSEMBLY FRONT ANALYSIS
Is there continuity (0Ω) between both ends of the Wire Assembly Front (the black shrink-wrapped wire connected to the Front Plate Assembly)?

Yes	No
Go to Step 8.	Replace the Wire Assembly Front.

8. TEMPERATURE SENSOR ANALYSIS
Is there continuity (0Ω) between P/J101–4 and P/J101-1 on the Fuser Assembly?

Yes	No
Go to Step 9.	Replace the Temperature Sensor.

9. LVPS ANALYSIS
Is there continuity (0Ω) between P/J101–5 and Frame Ground?

Yes	No
Go to Step 10.	Replace the LVPS Assembly.

10. HVPS ANALYSIS
Disconnect all HVPS P/Js except P/J 111.
Use Diagnostic Tool tests DG91, DG92, DG93, DG94, and DG95 to check the HVPS outputs.
Is the noise still present?

Yes	No
Go to Step 11.	Replace the HVPS.

6.3.22 Noise Continued

11. EARTH PLATE ASSEMBLY ANALYSIS
Unplug the AC power cord from the back of the printer.
Remove the Toner Cartridge.
Is there continuity (0Ω) between CR on the Earth Plate and P/J CR on the HVPS?
Is there continuity between DB on the Earth Plate and P/J DB on the HVPS?

Yes	No
Go to Step 12.	Replace the Earth Plate Assembly.

12. TONER CARTRIDGE ANALYSIS
Install a new Toner Cartridge.

Use Diagnostic Tool tests DG91, DG92, DG93, DG94, and DG95 to check the Toner Cartridge.
Is the noise still present?

Yes	No
Inspect the Toner Cartridge and Earth Plate Assembly contact point.	Replace the Toner Cartridge.

13. WIRE ASSEMBLY TR ANALYSIS
Remove the Transportation Chute Assembly.
Is there continuity (0Ω) between TR-T (the red wire under the Transportation Chute Assembly) and TR on the HVPS?

Yes	No
Go to Step 14.	Replace the Wire Assembly TR.

14. TRANSPORTATION CHUTE ASSEMBLY ANALYSIS
Press the BTR shaft against the Transportation Chute.

Is there (0Ω) between TR-T and the BTR shaft?

Yes	No
Replace the BTR Assembly.	Replace the Transportation Chute Assembly.

15. Inspect the machine ground path.

Try the initial analysis again.

Image Quality Problems

Before troubleshooting an image quality problem, first replace the toner cartridge and test image quality. If the problem still persists, proceed to the fault isolation procedure.
Use Letter–size or A4 paper when troubleshooting an image quality problem.
Use Printing Test Mode to determine whether an image quality problem is being caused by the printer or by the printer controller. The printer generates the Test Print. If the test print is normal, but the regular prints have a image quality problem, the problem may be with the printer controller.
If the Troubleshooting Tables do not lead you to a solution to your problem, then replace each part listed in Step 1 *Initial Analysis* until the image problem is corrected.

6.4.1 Light prints

NOTES:
1. Without the Diagnostic tool, skip the Diagnostic Tool test (DG) portion of step 4.
2. There is no corresponding control panel message
3. This FIP may also fix poor transfer charge.
4. Try another toner cartridge

PROBLEM
The overall image density is lighter than normal.

INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Toner Cartridge
BTR Assembly
Wire Assembly
MCU PWB
LVPS Assembly
Transportation Chute Assembly
HVPS
Earth Plate Assembly
TR Fuser Assembly
Harness Assembly HVPS
ROS Assembly

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scrap?

1. PAPER CONDITIONS
Is there moisture in the paper?

Yes	No
Load new paper.	Go to Step 2.

2. DRUM GROUND
Check the Drum Ground Path:
Drum>Pin at end of drum shaft>Earth Plate Assembly>Harness Assembly HVPS>MCU PWB>LVPS Assembly Frame.
Is the Drum Ground Path functioning correctly?

Yes	No
Go to Step 3.	Connect the Drum Ground Path correctly.

3. LASER BEAM PATH
Inspect the laser beam path, between the ROS Assembly and the Drum, for contamination or obstructions.
Is the laser beam path free of obstacles?

Yes	No
Go to Step 4	Remove obstructions or contamination from the laser beam path.

6.4.1 Light prints Continued

4. HVPS DB

Use Diagnostic Tool Test DG93 to check if the HVPS is supplying –250VDC to the Magnet Roll.

Is the output voltage correct?

Yes	No
Go to Step 5.	Go to Section 6.3.20 *HVPS DB Failure.*

5. BTR ASSEMBLY

Inspect the BTR Assembly for contamination.

Is the BTR free of contamination?

Yes	No
Go to Step 6.	Replace the BTR Assembly.

6. TRANSFER

Run a print.
Switch OFF Main Power in the middle of the print cycle.
Open the Front Transport Assembly and remove the Toner Cartridge.
Inspect the toner image on the drum.

Was the image on the drum transferred completely to the paper?

Yes	No
Go to Step 7.	Go to Section 6.3.21 *HVPS TR Failure.*

7. Toner CARTRIDGE

Install a new Toner Cartridge.

Is the image still light?

Yes	No
Return to Initial Analysis.	Problem Solved.

6.4.2 Blank prints

NOTES:
1. Without the Diagnostic tool, skip the Diagnostic Tool test (DG) portion of steps 3 and 4.
2. There is no corresponding control panel message.
3. This FIP may also fix poor development bias
4. Try another toner cartridge

PROBLEM
The entire print is blank

INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Toner Cartridge
BTR Assembly
Wire Assembly TR
MCU PWB
LVPS Assembly
HVPS
Earth Plate Assembly
ROS Assembly
Harness Assembly HVPS
Transportation Chute Assembly

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

1. DRUM GROUND
Check the Drum Ground Path:
Drum>Pin at end of drum shaft>Earth Plate Assembly>Harness Assembly HVPS>MCU PWB>LVPS Assembly Frame.
Is the Drum Ground Path functioning correctly?

Yes	No
Go to Step 2.	Connect the Drum Ground Path correctly.

2. LASER BEAM PATH
Inspect the laser beam path, between the ROS Assembly and the Drum, for contamination or obstructions.
Is the laser beam path free of obstacles?

Yes	No
Go to Step 3.	Remove obstructions or contamination from the laser beam path.

3. HVPS (DB)
Use Diagnostic Tool Test DG93 to check if the HVPS is supplying –250VDC to the Magnet Roll.
Is the output voltage correct?

Yes	No
Go to Step 4	Go to Section 6.3.20 *HVPS DB Failure.*

6.4.2 Blank prints continued

4. DRIVE ASSEMBLY

Use Diagnostic Tool Test DG90 to check the Drive Assembly.

Are the Drive Assembly transmission gears turning the Toner Cartridge gear?

Yes	No
Go to Step 5.	Replace the Drive Assembly.

5. BTR ASSEMBLY

Inspect the BTR Assembly for contamination.

Is the BTR free of contamination?

Yes	No
Go to Step 6.	Replace the BTR Assembly.

6. TRANSFER

Run a print.
Switch OFF Main Power in the middle of the print cycle.
Open the Front Transport Assembly and remove the Toner Cartridge.
Inspect the toner image on the drum.

Was the image on the drum transferred completely to the paper?

Yes	No
Go to Step 7.	Go to Section 6.3.21 *HVPS TR Failure.*

7. Toner CARTRIDGE

Install a new Toner Cartridge.

Is the paper still blank?

Yes	No
Return to Initial Analysis.	Problem solved.

6.4.3 Black prints

NOTES:
1. Without the Diagnostic tool, skip the Diagnostic Tool test (DG) portion of step 1.
2. There is no corresponding control panel message.
3. Try another toner cartridge

PROBLEM
The entire print is black.
INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Toner Cartridge	HVPS
MCU PWB	Earth Plate Assembly
ROS Assembly	Harness Assembly HVPS

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?
1. HVPS CR (DC)
Use Diagnostic Tool Test DG92 to check if the HVPS is supplying –350VDC to the BCR.
Is the output voltage correct?

Yes	No
Go to Step 2.	Go to Section 6.3.19 *HVPS CR Failure.*

2. Toner CARTRIDGE
Install a new Toner Cartridge.
Is the paper still black?

Yes	No
Return to Initial Analysis.	Problem Solved.

6.4.4 Vertical band deletions

NOTES:
1. This FIP does not use the Diagnostic tool.
2. There is no corresponding control panel message for this item.
3. This FIP may also fix BTR contamination.
4. Try another toner cartridge

PROBLEM
There are areas of the image that are extremely light or missing entirely. These missing areas form wide bands that run vertically along the page, in the direction of paper travel.

INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Toner Cartridge
MCU PWB
ROS Assembly
BTR Assembly
Fuser Assembly

Inspect the printer paper path. Is if clear of foreign matter, such as staples, paper clips, and paper scraps?
1. PAPER CONDITIONS
Is there moisture in the paper?

Yes	No
Load new paper.	Go to Step 2.

2. LASER BEAM PATH
Inspect the laser beam path, between the ROS Assembly and the Drum, for contamination or obstructions.
Is the laser beam path free of obstructions?

Yes	No
Go to Step 3.	Remove obstructions or contamination from the laser beam path.

3. BTR ASSEMBLY
Inspect the BTR Assembly for contamination.
Is the BTR free of contamination?

Yes	No
Go to Step 4.	Replace the BTR Assembly.

4. TONER CARTRIDGE
Install a new Toner Cartridge.
Are there vertical band deletions still on the page?

Yes	No
Return to Initial Analysis.	Problem Solved.

6.4.5 Vertical linear deletions

NOTES:
1. This FIP does not use the Diagnostic tool.
2. There is no corresponding control panel message for this item.
3. Try another toner cartridge

PROBLEM
There are areas of the image that are extremely light or missing entirely. These missing areas form narrow lines running vertically along the page, in the direction of paper travel.

INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Toner Cartridge
MCU PWB
ROS Assembly
Heat Roll
BTR Assembly
Fuser Assembly
Transportation Chute Assembly
Inlet Chute Assembly

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

1. LASER BEAM PATH
Inspect the laser beam path between the ROS Assembly and the Drum for contamination or obstructions.
Is the laser beam path free of obstructions?

Yes	No
Go to Step 2	Remove obstructions or contamination from the laser beam path.

2. BTR ASSEMBLY
Inspect the BTR Assembly for contamination.
Is the BTR free of contamination?

Yes	No
Go to Step 3.	Replace the BTR Assembly.

3. Toner CARTRIDGE
Install a new Toner Cartridge.
Are there vertical linear deletions still on the page?

Yes	No
Go to Step 4	Problem Solved.

4. PAPER PATH
Inspect the paper path, between feed tray and exit tray, for contamination or obstructions.
Is the paper path free of obstructions?

Yes	No
Return to Initial Analysis.	Remove obstructions or contamination from the paper path.

6.4.6 Horizontal band deletions

NOTES:
1. Without the Diagnostic tool, skip the Diagnostic Tool test (DG) portion of steps 2 and 3.
2. There is no corresponding control panel message for this item.
3. This FIP may also fix BTR or drive gears.
4. Try another toner cartridge

PROBLEM
There are areas of the image that are extremely light or missing entirely. These missing areas form wide bands that run horizontally across the page and parallel with the direction of paper travel.

INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Toner Cartridge
MCU PWB
ROS Assembly
HVPS
BTR Assembly
Fuser Assembly
Transportation Chute Assembly
Earth Plate Assembly

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

1. PAPER CONDITIONS
Is there moisture in the paper?

Yes	No
Load new paper.	Go to Step 2.

2. HVPS DB
Use Diagnostic Tool Test DG93 to check if the HVPS is supplying –250VDC to the Magnet Roll.
Is the output voltage correct?

Yes	No
Go to Step 3.	Go to Section 6.3.20 *HVPS DB Failure.*

3. DRIVE ASSEMBLY
Use Diagnostic Tool Test DG90 to check the Drive Assembly.
Are the Drive Assembly transmission gears turning the Toner Cartridge gear?

Yes	No
Go to Step 4	Replace the Drive Assembly.

4. BTR ASSEMBLY
Inspect the BTR Assembly for contamination.
Is the BTR free of contamination?

Yes	No
Go to Step 5.	Replace the BTR Assembly.

6.4.6 Horizontal band deletions Continued

5. TRANSFER
Run a print.
Switch OFF Main Power in the middle of the print cycle.
Open the Front Transport Assembly and remove the Toner Cartridge.
Inspect the toner image on the drum.
Was the image on the drum transferred completely to the paper?

Yes	No
Go to Step 6	Go to Section 6.3.21 *HVPS TR Failure.*

6. Toner CARTRIDGE
Install a new Toner Cartridge.
Are there horizontal band deletions still on the page?

Yes	No
Go to Step 7.	Problem solved.

7. HEAT ROLL ASSEMBLY
Inspect the Heat Roll for scratches, objects, or contamination.
Is the Heat Roll free of scratches and contamination?

Yes	No
Go to Step 8.	Replace the Heat Roll Assembly.

8. PRESSURE ROLL ASSEMBLY
If the band deletions occur at approximately 72mm intervals, inspect the Pressure Roll for scratches, objects, or contamination.
Is the Pressure Roll free of scratches and contamination?

Yes	No
Return to Initial Analysis.	Replace the Pressure Roll Assembly.

6.4.7 Vertical streaks

NOTES:
1. This FIP does not use the Diagnostic tool.
2. There is no corresponding control panel message for this item
3. This FIP may also fix BTR, fuser, or paper path contamination.
4. Try another toner cartridge

PROBLEM
There are black lines running vertically along the page.

INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Toner Cartridge
MCU PWB
ROS Assembly
HVPS
Heat Roll
BTR Assembly
Fuser Assembly
Transportation Chute Assembly
Wire Assembly ELIMINATOR

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

1. LASER BEAM PATH
Inspect the laser beam path, between the ROS Assembly and the Drum, for contamination or obstructions.

Is the laser beam path free of obstructions?

Yes	No
Go to Step 2.	Remove obstructions or contamination from the laser beam path.

2. BTR ASSEMBLY
Inspect the BTR Assembly for contamination.
Is the BTR free of contamination?

Yes	No
Go to Step 3.	Replace the BTR Assembly.

3. TRANSPORTATION CHUTE ASSEMBLY GROUND
Check the Eliminator Ground Path:
Transportation Chute Eliminator>Wire Assembly Eliminator>LVPS Assembly Frame.

Is the Transportation Chute Assembly Ground Path functioning correctly?

Yes	No
Go to Step 4.	Connect the Transportation Chute Assembly Ground correctly.

6.4.7 Vertical streaks Continued

4. Toner CARTRIDGE

If the streaks occur at approximately 95-mm intervals, inspect the drum surface.

Is the drum surface free of scratches or contamination?

Yes	No
Go to Step 5.	Replace the Toner Cartridge.

5. HEAT ROLL ASSEMBLY

If the streaks occur at approximately 72mm intervals, inspect the Heat Roll for scratches, objects, or contamination.

Is the Heat Roll free of scratches and contamination?

Yes	No
Return to Initial Analysis.	Replace the Heat Roll Assembly.

6.4.8 Horizontal streaks

NOTES:
1. Without the Diagnostic tool, skip the Diagnostic Tool test (DG) portion of steps 2 and 3.
2. There is no corresponding control panel message for this item.
3. This FIP may also fix BTR, fuser, or drive gears.
4. Try another toner cartridge

PROBLEM
There are black lines running horizontally across the page.

INITIAL ANALYSIS
Inspect the following components. Are they with your printer version, correctly installed, not damaged, deformed, or contaminated?

Toner Cartridge
MCU PWB
ROS Assembly
HVPS
LVPS Assembly
Harness Assembly HVPS
BTR Assembly
Fuser Assembly
Transportation Chute Assembly
Wire Assembly TR
Earth Plate Assembly

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

1. DRUM GROUND
Inspect the Drum Ground Path:
Drum>Pin at end of drum shaft>Earth Plate Assembly>Harness Assembly HVPS>MCU PWB>LVPS Assembly Frame.
Is the Drum Ground Path functioning correctly?

Yes	No
Go to Step 2.	Connect the Drum Ground Path correctly.

2. HVPS CR (DC)
Use Diagnostic Tool Test DG92 to check if the HVPS is supplying –350VDC to the BCR.
Is the output voltage correct?

Yes	No
Go to Step 3.	Go to Section 6.3.19 *HVPS CR Failure.*

3. HVPS (DB)
Use Diagnostic Tool Test DG93 to check if the HVPS is supplying –250VDC to the Magnet Roll.
Is the output voltage correct?

Yes	No
Go to Step 4	Go to Section 6.3.20 *HVPS DB Failure.*

6.4.8 Horizontal streaks Continued

4. BTR ASSEMBLY
Inspect the BTR Assembly for contamination.
Is the BTR free of contamination?

Yes	No
Go to Step 5.	Replace the BTR Assembly.

5. Toner CARTRIDGE
Install a new Toner Cartridge.
Are the horizontal streaks still on the page?

Yes	No
Go to Step 6.	Problem solved.

6. HEAT ROLL ASSEMBLY
Inspect the Heat Roll for scratches, objects, or contamination.
Is the Heat Roll free of scratches and contamination?

Yes	No
Go to Step 7.	Replace the Heat Roll Assembly.

7. NOISE
Does the printer make an unusual noise during a print cycle?

Yes	No
Go to Section 6.3.22 *Noise*	Return to Initial Analysis.

6.4.9 Spot deletions

NOTES:
1. This FIP does not use the Diagnostic tool.
2. There is no corresponding control panel message for this item.
3. This FIP may also fix BTR, fuser, or paper path contamination.
4. Try another toner cartridge

PROBLEM
There are areas of the image that are extremely light or missing entirely. These missing areas form spots that are localized to small areas of the page.

INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Toner Cartridge
Heat Roll
Pressure Roll
BTR Assembly
Fuser Assembly

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

1. PAPER CONDITIONS
Is there moisture in the paper?

Yes	No
Load new paper.	Go to Step 2.

2. BTR ASSEMBLY
Inspect the BTR Assembly for contamination.
Is the BTR free of contamination?

Yes	No
Go to Step 3.	Replace the BTR Assembly.

3. Toner CARTRIDGE
If the spots occur a approximately 95-mm intervals, install a new Toner Cartridge.
Are spot deletions still on the page?

Yes	No
Go to Step 4.	Problem Solved.

4. HEAT ROLL ASSEMBLY
If the spots occur at approximately 72-mm intervals, inspect the Heat Roll for scratches, objects, or contamination.
Is the Heat Roll free of scratches and contamination?

Yes	No
Go to Step 5.	Replace the Heat Roll Assembly.

6.4.9 Spot deletions Continued

5. PRESSURE ROLL ASSEMBLY

If the spots occur at approximately 72-mm intervals, inspect the Pressure Roll for scratches, objects, or contamination.

Is the Pressure Roll free of scratches and contamination?

Yes	No
Return to Initial Analysis.	Replace the Pressure Roll Assembly.

6.4.10 Spots

NOTES:
1. This FIP does not use the Diagnostic tool
2. There is no corresponding control panel message for this item.
3. This FIP may also fix BTR, fuser, or paper path contamination.
4. Try another toner cartridge

PROBLEM
There are spots of toner all over the page.

INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Toner Cartridge	BTR Assembly
Heat Roll	Fuser Assembly
Pressure Roll	

Inspect the printer paper path. Is it clear of objects, such as staples, paper clips, and paper scraps?

1. BTR ASSEMBLY
Inspect the BTR Assembly for contamination.
Is the BTR free of contamination?

Yes	No
Go to Step 2.	Replace the BTR Assembly.

2. TONER CARTRIDGE
If the spots occur a approximately 95mm intervals, install a new Toner Cartridge.
Are there spots still on the page?

Yes	No
Go to Step 3.	Problem Solved.

4. HEAT ROLL ASSEMBLY
If the spots occur at approximately 72-mm intervals, inspect the Heat Roll for scratches, objects, or contamination.
Is the Heat Roll free of scratches and contamination?

Yes	No
Go to Step 4.	Replace the Heat Roll Assembly.

5. PRESSURE ROLL ASSEMBLY
If the spots occur at approximately 72-mm intervals, inspect the Pressure Roll for scratches, objects, or contamination.
Is the Pressure Roll free of scratches and contamination?

Yes	No
Return to Initial Analysis.	Replace the Pressure Roll Assembly.

6.4.11 Residual image

NOTES:
1. This FIP does not use the Diagnostic tool.
2. There is no corresponding control panel message for this item.
3. This FIP may also fix BTR, fuser, or paper path contamination.
4. Try another toner Cartridge first. Ghosting is a phenomenon that occurs in extreme gray tones and diminishes with toner usage

PROBLEM
There are ghost images appearing on the page. The images may be ghosts of the previous page or from the page being printed.

INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Toner Cartridge	BTR Assembly
MCU PWB	Fuser Assembly
HVPS	Heat Roll
Pressure Roll	Earth Plate Assembly

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

1. HVPS CR (DC)
Use Diagnostic Tool Test DG92 to check if the HVPS is supplying –350VDC to the BCR.
Is the output voltage correct?

Yes	No
Go to Step 2.	Go to Section 6.3.19 *HVPS CR Failure.*

2. BTR ASSEMBLY
Inspect the BTR Assembly for contamination.
Is the BTR free of contamination?

Yes	No
Go to Step 3.	Replace the BTR Assembly.

3. Toner CARTRIDGE
If the spots occur a approximately 95-mm intervals, install a new Toner Cartridge.
Do residual images still appear on the page?

Yes	No
Go to Step 4.	Problem solved.

6.4.11 Residual image Continued

4. HEAT ROLL ASSEMBLY
If the spots occur at approximately 72-mm intervals, inspect the Heat Roll for scratches, objects, or contamination.
Is the Heat Roll free of scratches and contamination?

Yes	No
Go to Step 5	Replace the Heat Roll Assembly.

5. PRESSURE ROLL ASSEMBLY
If the spots occur at approximately 72-mm intervals, inspect the Pressure Roll for scratches, objects, or contamination.
Is the Pressure Roll free of scratches and contamination?

Yes	No
Return to Initial Analysis.	Replace the Pressure Roll Assembly.

6.4.12 Background

NOTES:
a. Without the Diagnostic tool, skip the Diagnostic Tool test (DG) portion of steps 2 and 3.
b. There is no corresponding control panel message for this item.
c. This FIP may also fix BTR, fuser, or drive gears.
d. Try another Toner Cartridge first. If the front door has been opened or a new Toner Cartridge has been installed, run at least two prints to see if background disappears

PROBLEM
There is toner contamination on all or part of the page. The contamination appears as a very light gray dusting.

INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Toner Cartridge	LVPS Assembly
MCU PWB	Harness Assembly
HVPS	Earth Plate Assembly
ROS Assembly	

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

1. HVPS CR (DC)
Use Diagnostic Tool Test DG92 to check if the HVPS is supplying –350VDC to the BCR.
Is the output voltage correct?

Yes	No
Go to Step 2.	Go to Section 6.3.19 *HVPS CR Failure*.

2. HVPS DB
Use Diagnostic Tool Test DG93 to check if the HVPS is supplying –250VDC to the Magnet Roll.
Is the output voltage correct?

Yes	No
Go to Step 3.	Go to Section 6.3.20 *HVPS DB Failure*.

3. Toner CARTRIDGE
Install a new Toner Cartridge.
Is the background still on the page?

Yes	No
Go to Step 4	Problem solved.

6.4.13 Skewed image

PROBLEM
The printed image is not parallel with the sides of the page.

INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Toner Cartridge	BTR Assembly
Paper Cassettes	Transportation Chute Assembly
Feeder Assembly	Inlet Chute Assembly
ROS Assembly	Lower Chute Assembly
Front Tray Assembly	Pick–Up Roll Assembly
Bottom Plate Assembly	Optional Feeder Assembly

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

1. PAPER FEED
Are the Paper Cassettes installed correctly, and is the paper correctly loaded into the cassettes?

Yes	No
Go to Step 2.	Reload the paper and reinstall the cassettes.

2. Toner CARTRIDGE
Install a new Toner Cartridge.
Is the image still skewed?

Yes	No
Go to Step 3.	Problem solved.

3. PAPER PATH
Inspect the paper path, between the feed tray and the exit tray, for contamination or obstructions.
Is the paper path free of obstructions?

Yes	No
Go to Step 4.	Remove obstructions or contamination from the paper path.

4. PAPER PATH ROLLS
Inspect the rolls along the paper path, between the feed tray and the exit tray, for contamination, scratches, or damage.
Are the paper path rolls free of contamination, scratches, or damage?

Yes	No
Return to Initial Analysis.	Replace the damaged roll.

6.4.14 Damaged prints

PROBLEM
The printed page is wrinkled, creased, or torn.

INITIAL ANALYSIS
Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Fuser Assembly
Pressure Roll
Front Transport Assembly
Heat Roll
Front Plate Assembly

Inspect the printer paper path. Is it clear of foreign matter, such as staples and paper scraps?

1. PAPER CONDITIONS
Is there moisture in the paper?

Yes	No
Load new paper.	Go to Step 2.

2. HEAT ROLL ASSEMBLY
Inspect the Heat Roll for scratches, objects, or contamination.
Is the Heat Roll free of scratches and contamination?

Yes	No
Go to Step 3.	Replace the Heat Roll Assembly.

3. PRESSURE ROLL ASSEMBLY
Inspect the Pressure Roll for scratches, objects, or contamination.
Is the Pressure Roll free of scratches and contamination?

Yes	No
Go to Step 4	Replace the Pressure Roll Assembly.

4. PAPER PATH
Inspect the paper path, between feed tray and exit tray, for contamination or obstructions.
Is the paper path free of obstructions?

Yes	No
Go to Step 5.	Remove obstructions or contamination from the paper path.

5. PAPER PATH ROLLS
Inspect the rolls along the paper path, between feed tray and exit tray, for contamination, scratches, or damage.
Are the paper path rolls free of contamination, scratches, or damage?

Yes	No
Return to Initial Analysis.	Replace the damaged roll.

6.4.15 Unfused image

PROBLEM

The printed image is not fully fused to the paper. The image easily rubs off.

INITIAL ANALYSIS

Inspect the following components. Are they compatible with your printer version, correctly installed, not damaged, deformed, or contaminated?

Fuser Assembly	Heat Roll
Pressure Roll	Front Plate Assembly
Front Transport Assembly	MCU PWB

Inspect the printer paper path. Is it clear of foreign matter, such as staples, paper clips, and paper scraps?

1. PAPER CONDITIONS

Is there moisture in the paper?

Yes	No
Load new paper.	Go to Step 2.

2. HEAT ROLL ASSEMBLY

Inspect the Heat Roll for scratches, objects, or contamination.

Is the Heat Roll free of scratches and contamination?

Yes	No
Go to Step 3.	Replace the Heat Roll Assembly.

3. PRESSURE ROLL ASSEMBLY

Inspect the Pressure Roll for scratches, objects, or contamination.

Is the Pressure Roll free of scratches and contamination?

Yes	No
Go to Step 4.	Replace the Pressure Roll Assembly.

Chapter 7 Using the Diagnostic Tool

The Diagnostic Tool

The Diagnostic Tool is a handheld keypad and display that you use to enter and run the various internal diagnostic programs of the printer. The tool has a keypad with eight keys, four LEDs, and an LCD that displays text.

Installing the Diagnostic Tool

1. Remove all of the covers except the Front Transport Assembly.
2. Remove the controller, controller enclosure, interconnect enclosure.
3. Thread the Diagnostic Tool wiring harness through the harness bushing on the left side of the MCU.
4. Plug the Diagnostic Tool into P20 on the MCU.
5. Reinstall the Interconnect enclosure and loosely fit the contoller enclosure back on.

Printer Modes

The DEClaser 3500 printer has five modes of operation; each with a unique set of options:

- ESS (Controller) Mode
- User Operation Mode
- Printing Test Mode
- Diagnostic Mode
- Configuration Mode

Entering a Printer Mode

You enter a printer mode by pressing the appropriate key on the Diagnostic Tool and switching the printer Main Power ON. You cannot shift between printer modes. You must switch the Main Power OFF, then ON again to select another mode or to exit the current mode. This section of the manual provides specific directions for entering each mode.

ESS (Controller) Mode

The ESS (Controller) Mode is the normal operating mode for the printer. In ESS (Controller) Mode, the printer is on-line, under control of the printer controller (ESS Assembly), and ready to generate prints.

ESS (Controller) Mode options

There are no options in ESS (Controller) Mode.

Entering ESS (Controller) Mode:

Switch on printer Main Power. If the printer detects no errors, it enters ESS (Controller) Mode. The printer enters a warm–up state called the Power–On Sequence. The fuser comes up to operating temperature and the Main Motor starts running. The LCD displays a *Please Wait* message

PLEASE WAIT

When the machine reaches operating temperature, and if the Power–On Sequence encountered no problems, the LCD displays a *Ready To Print* message.

READY TO PRINT

User Operation Mode

The User Operation Mode allows the user to lighten or darken the printed image and to select the paper size fed from the MBF.

User Operation Mode options

- Print Density Adjustment
- MBF Sheet Size Selection

Entering User Operation Mode:

1. Hold down [2] and switch ON printer Main Power.
2. Hold down [2] for more than 3 seconds.
3. When the LCD displays a *Density Tuning* message, release [2].

The printer is in the Print Density Adjustment option.

DENSITY TUNING
LIGHT<01*34>DARK

4. To select Operation Mode options, press [2]. The LCD displays the Front Tray Size message. The printer is in the MBF Sheet Size Selection option.

   FRONT TRAY SIZE
   A4(SEF)

5. Press [2] again. The LCD displays the *Density Tuning* message.The printer is back in the Print Density Adjustment option.

   DENSITY TUNING
   LIGHT<01*34>DARK

6. Press [2] to toggle between the two User Operation Mode options.
7. To Exit User Operation Mode; switch OFF printer Main Power.

Using the Print Density Adjustment

The Print Density Adjustment option allows you to lighten or darken the printed image your printer generates. This adjustment controls the laser beam intensity. Less intensity produces a lighter image. More intensity produces a darker image. The printer circuitry stores the Print Density data on nonvolatile EEPROM.

To adjust print density:

1. Hold down [2] and switch ON printer Main Power.
2. Hold down [2] for five seconds.
3. Release the key.

The LCD displays the Density Tuning message. The printer is in the Print Density Adjustment option. The bottom line of the message "**Light<012*4>Dark** "is the Density Adjustment gauge.

The asterisk * is the adjustment pointer.

DENSITY TUNING
LIGHT<012*4>DARK

1. Press [1] to step the * from 0 through 4; from the lightest value to the darkest value.
2. Press [1] to cycle the * from 4, back to 0.

DENSITY TUNING
LIGHT<012*4>DARK

DENSITY TUNING
LIGHT<0123*>DARK

DENSITY TUNING
LIGHT<*1234>DARK

To Exit the Print Density Adjustment option; switch OFF printer Main Power.

Using MBF Sheet Size Selection

The MBF Sheet Size Selection lets you to select the size of the paper fed from the Front Tray Assembly. The printer circuitry stores the MBF Sheet Size Selection data on nonvolatile EEPROM. There are fourteen paper size options. The LCD displays a paper type that corresponds to a standard sheet size. See the chart below.

Message Displayed	Sheet Size
UNIVERSAL	Undefined. Up to LEGAL 14”
MONARCH	Monarch
A4 (SEF)	A4 (SEF)
EXECUTIVE	Executive (SEF)
A5 (SEF)	A5 (SEF)
LEGAL-14”	Legal 14”
LEGAL-13”	Legal 13”
B5(SEF)	B5(SEF)
POSTCARD	Official Post card
A5(LEF) STATEMENT(LEF)	A5(LEF) Statement(LEF)
DL	DL
C5	C5
COM-10	COM-10

LEF means Long-Edge First
SEF mean Short-Edge First

To select an MBF sheet size:

1. Hold down [2] and switch on printer main power.
2. Hold down [2] for more than 3 seconds.
3. When the LCD displays a *Density Tuning* message, release the key
4. Press [2] again.

The LCD diplays the *Front Tray Size* mesage. The printer is in the Print Density Adjustment option.

5. Press [1] to step through the MBF sheet size options. Continue pressing [1] to cycle back to the beginning of the list.

Front Tray Size
Universal

Front Tray Size
COM-10

Stop pressing [1] when the LCD displays the MBF sheet size you want.
To exit the Front Tray Size option, switch off printer Main Power.

Printing Test Mode

The Printing Test Mode lets you to print a grid pattern test print, at the highest printer.speed. The test grid is made up of black lines that are one dot wide, spaced at 128-dot intervals, and running horizontally and vertically across the page. There is a 4mm +/- 1mm border of clear paper around the test grid.
The printer, not the print controller, generates the test print.

Printing Test Mode Options
There are no options in Printing Test Mode.

To enter Printing Test Mode

Warning: Make sure all covers are in place on the printer before entering Printing Test Mode.

1. Hold down [2] and swich on printer Main Power.
2. Hold down [2] for 2 seconds.
3. Release the key.

While in Power-On sequence, the LCD displays the *Please Wait/Test Print* mesage.

PLEASE WAIT
TEST PRINT 00

When the Power-On Sequence finishes, the LCD displays the *Ready To Print/Test Print* message. The printer is now in Test Print Mode.

READY TO PRINT
TEST PRINT 00

1. Press [1] to start generating test prints.

NOTE: The ROS Assembly Scanner Motor continues to spin throughout the test. The Test Print Count appears in the LCD message.

2. Press [1] again to stop generating the test prints.
3. To exit Printing Mode, switch off the Main Power.

Diagnostics Mode

The Diagnostics Mode allows you to test various switches and sensors. Diagnostic mode also displays the total number of prints the printer has produced.

Diagnostics Mode Options

- Total Print Count
- Input Test
- Output Tests

To Enter Diagnostics Mode

1. Hold down [1] and switch on printer Main Power.
2. Release [1].

The LCD displays the *Print Counter/Selecting DG* message. The printer is in Diagnostics Mode. The number after the DG is the diagnostic test currently selected. DG 30 is the default.

PRINT COUNTER
SELECTING DG30

NOTE: The printer will not enter Diagnostics Mode if Power-Up Sequence finds an error during the ROM/RAM check.

To Exit Diagnostics Mode:

Press [2] repeatedly until the DG code 00 appears, then press [1] to exit the current diagnostic mode.

Diagnostic Code Table

The following table lists the tasks you can perform with the Diagnostic Tool.
DG codes 80, 81, and 85 turn on solenoid for 500 msec (to avoid burnout).

To Display This...	Enter This DG Code...	The LCD Displays...
Total number of test prints made	30	PRINT COUNTER
A sensor or switch	02	SENSOR CHECK
Fuser Temperature setting	07	FUSER TEMP SET
Actual temperature of the fuser	08	FUSER TEMP
Current switch combination on the Paper Size Switches	00	SIZE SENSOR
ROM Checksum	00	CHECK SUM

To Test This...	Enter This DG Code...	The LCD Displays...
The Pick-Up Solenoid	80	SOLENOID TRAY 0
The Feed Solenoid f	81	SOLENOID TRAY 1
The Optional Feed Solenoid	86	SOLENOID TRAY 2
The Feed Assembly Turn Solenoid	84	T CLUTCH UPPER
The Optional Feed Assembly Turn Solenoid	85	T CLUTCH LOWER
Main Drive Motor	90	MOTOR MAIN
HVPS A/C voltage to BCR	91	HVPS (C. ROLL AC)
HVPS D/C voltage to BCR	92	HVPS (C ROLL DC)
HVPS D/C voltage to Magnet Roll	93	HVPS (DEV BIAS)
HVPS neg D/C voltage to BTR	94	HVPS (T ROLL -)
HVPS pos D/C voltage to BTR	95	HVPS (T TOLL +)
Exit the current diagnostic mode	00	EXIT

Selecting a Diagnostic Code:
The default diagnostic Code is DG 30 (Total Print Count). To select other codes:
1. Press [2]. The number following DG in the LCD display changes.
2. Repeatedly press [2] to step through the diagnostic codes.
DG codes are displayed in the order they appear in the Diagnostic Code Table.
NOTE: When running any diagnostic test, except DG 02, press [2] to get into DG00 the press [1] to exit the test and enter another DG.

DG 30 PRINT COUNTER

This Diagnostic code displays the total number of prints produced by the printer. The total print count is taken from the actuator signals sent to the feed solenoid. The total count icrements even when the paper jams in the paper tray.

To Run DG 30:

1. Enter the Diagnostics Mode

The LCD displays the *Print Counter/Selecting DG 30* message. The printer is in Diagnostics mode.

2. Press [1].

The LCD displays the print total. In the following example, the total print count is 000965:

PRINT COUNTER
000965 DG30

3. To exit DG30, press [2].

DG 02 Sensor Check

This Diagnostic test checks the function of a sensor or a switch within the printer.
DG02 checks:

- The LVPS interlock switch
- The CRU switch on the CRU sensor PWB
- The paper size switches on the Feeder PWB and Feeder PWB Aux
- The No-Paper sensor on the Feeder PWB and Feeder PWB Aux
- The MBF Sensor
- The Registration Sensor
- The Exit Sensor
- The Toner Sensor

To Run DG 02:

1. Enter Diagnostics Mode

The LCD displays the *Print Counter/Selecting DG 30* message. The printer is in Diagnostics mode.

2. Repeatedly press [2] until the LCD displays DG 02.
3. Press the [1] key to start the test.

The LCD displays the *Executing DG00* message.

4. Manually actuate the sensors or switches you want to test.

If a sensor or switch is functioning correctly, the number following DG increments by 1 each time you actuate the sensor or switch. If the number does not increment, you may have a faulty sensor or switch.

SENSOR CHECK
EXECUTING DG00

SENSOR CHECK
EXECUTING DG01

SENSOR CHECK
EXECUTING DG02

Output Tests

The Output dianostic tests check the function of the printer output components. Output tests perform the following tasks:

- Show the fuser set temperature and the current temperature.
- Show the ROM check sum.
- Test the operation of the major components.
- Show the current paper size switch combinations for both the standard and the optional feeder assemblies.

WARNING: DG 90 switches on the main motor. Be careful around the Motor and Drive Assembly when in DG90.
DG 91 through DG 95 switch on the HVPS. HIGH VOLTAGE is present in many areas of the printer. Be careful when working around the HVPS when using DG 91 through DG 95.

CAUTION: The DG 84 T CLUTCH UPPER and DG 85 T CLUTCH LOWER actuate the Turn Solenoid until you exit the diagnostics with a DG 00. Prolonged use of DG 84 and DG 85 can damage the Turn Solenoid. Complete your tests as quickly as possible.

NOTES:
1. Diagnostics modes DG 80 SOLENOID TRAY 0, DG 81 SOLENOID TRAY 1, and DG 86 SOLENOID TRAY 2 actuate the Feed Solenoid for a half second, then stop.
2. You can run putput tests concurrently.

DG 07 FUSER TEMP. SET

This Diagnostic code displays the fuser temperature setting for the printer. This is the value you set in Configuration Mode Code 9 FUSER TEMP SET. The LCD displays a two digit hexadecimal temperature code.

To run DG 07:

1. Enter Diagnostics Mode. The LCD displays a *Print Counter/Selecting DG 30* message. The printer is in Diagnostics mode.
2. Repeatedly press [2] until the LCD displays *DG 07*.
3. Press [1] to start the test.
   The LCD displays a two digit temperature code. Use the following table to determine the temperature setting.

Temperature Code Displayed in LCD for 12 PPM	Configuration Mode Code 9 Temperature Setting	Temperature Code Displayed in LCD for 12 PPM	Configuration Mode Code 9 Temperature Setting
C6	0	9E	8
C1	1	99	9
BC	2	94	A
B7	3	8F	B
B2	4	8A	C
AD	5	85	D
A8	6	80	E
A3	7	7B	F

4. To Exit DG 07, repeatedly press [2] to cycle the LCD to *DG 00 Exit Diagnostics*.
5. Press [1] to exit DG 07.

DG 08 FUSER TEMP

This Diagnostic code displays the current temperature of the fuser.

To run DG 08:

1. Enter Diagnostics Mode.
2. Repeatedly press [2] until the LCD displays *DG 08.*
3. Press [1] to start the test.
   The LCD displays a two digit temperature code. Use the following table to determine the temperature setting. The temperature code displayed in the LCD corresponds to the 16 temperature steps available in Configuration Mode Code 9.

Temperature Code Displayed in LCD for 12 PPM	Configuration Mode Code 9 Temperature Setting	Temperature Code Displayed in LCD for 12 PPM	Configuration Mode Code 9 Temperature Setting
C6	0	9E	8
C1	1	99	9
BC	2	94	A
B7	3	8F	B
B2	4	8A	C
AD	5	85	D
A8	6	80	E
A3	7	7B	F

Use the following table to find the actual fuser temperature in degrees Celsius

Code Displayed in LCD	Fuser Temperature
FF	0°c
FF	10°c
FF (FE ~ FF)	20°c
FE (FD~FE)	30°c
FD (FC~FD)	40°c
FC (FB~FC)	50°c
FA (F9~FB)	60°c
F& (F6~F5)	80°c
F4 (F3~F5)	80°c
F0 (EE~F1)	90°c
EA (E8~EC)	100°c
E3 (E1~E6)	110°c
DB (D8~DE)	120°c
D1 (CE~D4)	130°c
C6 (C2~C9)	140°c
C0 (BC~C3)	145°c
B9 (B6~BD)	150°c
B3 (AF~B6)	155°c
AC (A8~AF)	160°c
A5 (A1~A9)	165°c
9E (9A~A2)	170°c
97 (92~9B)	175°c
8F (8B~94)	180°c
81 (7C~86)	190°c
74 (6E~79)	200°c
67 (61~6c)	210°c
5B (55~60)	220°c
50 (4A~55)	230°c

1. To Exit DG 08, repeatedly press [2] to cycle the LCD to DG 00 Exit Diagnostics.
2. Press[1] to exit DG 08.

DG 80 SOLENOID TRAY 0

This Diagnostic code tests the Pick-Up Solenoid.

To run DG 80:

1. Enter Diagnostics Mode.
2. Repeatedly press [2] until the LCD displays *DG 80.*
3. Press [1] to start the test.
4. Verify that when you press [1], the Pick-Up Solenoid actuates.
5. To Exit DG 80, repeatedly press [2] to cycle the LCD to *DG 00 Exit Diagnostics.*
6. Press [1] to exit DG 80.

DG 81 SOLENOID TRAY 1

This Diagnostic code tests the Feed Solenoid.

To run DG 81:

1. Enter Diagnostics Mode.
2. Repeatedly press [2] until the LCD displays *DG 81.*
3. Press [1] to start the test.
4. Verify that when you press [1], the Feed Solenoid actuates.
5. To Exit DG 81, repeatedly press [2] to cycle the LCD to *DG 00 Exit Diagnostics.*
6. Press [1] to exit DG 81.

DG 86 SOLENOID TRAY 2

This Diagnostic code tests the Optional Feed Solenoid.

To run DG 86:

1. Enter Diagnostics Mode.
2. Repeatedly press [2] until the LCD displays *DG 86.*
3. Press [1] to start the test.
4. Verify that when you press [1], the Optional Feed Solenoid actuates.
5. To Exit DG 86, repeatedly press [2] to cycle the LCD to *DG 00 Exit Diagnostics.*
6. Press [1] to exit DG 86.

DG 84 T CLUTCH UPPER

This Diagnostic code tests the Feed Assembly Turn Solenoid.

To run DG 84:

1. Enter Diagnostics Mode.
2. Repeatedly press [2] until the LCD displays *DG 84.*
3. Press [1] to start the test.
4. Verify that when you press [1], the Feed Assembly Turn Solenoid actuates.

   CAUTION: *Quickly verify component operation, then exit DG 84. Extended operation of DG 84 may damage the Feed Assembly.*
5. To Exit DG 84, repeatedly press [2] to cycle the LCD to *DG 00 Exit Diagnostics*.
6. Press [1] to exit DG 84.

DG 85 T CLUTCH LOWER

This Diagnostic code tests the Optional Feed Assembly Turn Solenoid.

To run DG 85:

1. Enter Diagnostics Mode.
2. Repeatedly press [2] until the LCD displays *DG 85.*
3. Press [1] to start the test.
4. Verify that when you press [1], the Optional Feed Assembly Turn Solenoid actuates.

   CAUTION: *Quickly verify component operation, then exit DG 85. Extended operation of DG 85 may damage the Optional Feed Assembly Turn Solenoid.*
5. To Exit DG 85, repeatedly press [2] to cycle the LCD to *DG 00 Exit Diagnostics.*
6. Press [1] to exit DG 85.

DG 90 MOTOR MAIN

This Diagnostic code tests the Main Drive Motor.

WARNING: DG 90 switches on the Main Motor. Be careful around the Motor and Drive Assembly.

To run DG 90:

1. Enter Diagnostics Mode.
2. Repeatedly press [2] until the LCD displays *DG 90.*
3. Press [1] to start the test.
4. Verify that when you press [1], the Main Motor and Drive Assembly turn.
5. To Exit DG 90, repeatedly press [2] to cycle the LCD to *DG 00 Exit Diagnostics*.
6. Press [1] to exit DG 90.

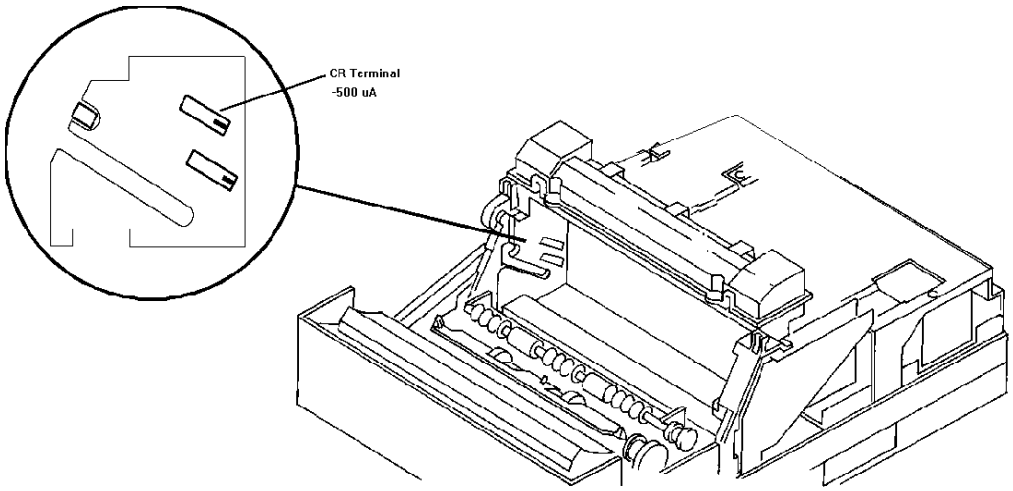
DG 91 HVPS (C. ROLL AC)

This Diagnostic code tests the HVPS A/C voltage to the BCR.

WARNING: DG 91 switches on the HVPS. HIGH VOLTAGE is present in many areas of the printer. Be careful working around the HVPS when in DG 91.

To run DG 91.

1. Open the Front Cover.
2. Remove the CRU.
3. Enter Diagnostics Mode.
4. Repeatedly press [2] until the LCD displays *DG 91.*
5. Set the multimeter range to 500 µA.
6. Place the red (+) probe of your multimeter on the CR Terminal of the Earth Plate Assembly.
7. Place the black (-) probe of your multimeter on the LVPS frame.



8. Use the blade of an insulated screwdriver to close the LVPS interlock switch.
9. Press [1] to start the test.
10. You should get a reading of approximately -500 µA.
11. To Exit DG 91, repeatedly press [2] to cycle the LCD to *DG 00 Exit Diag.*
12. Press [1] to exit DG 91.

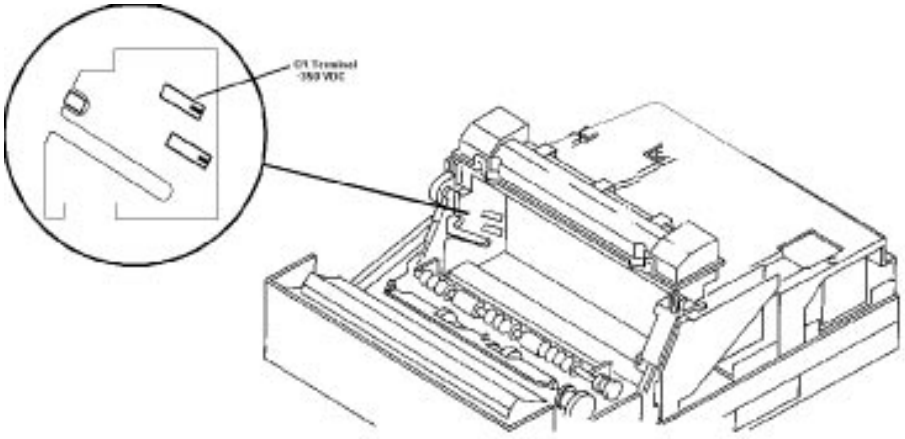
DG 92 HVPS (C. ROLL DC)

This Diagnostic code tests the HVPS D/C voltage to the BCR.

WARNING: DG92 switches on the HVPS. HIGH VOLTAGE is present in many areas of the printer. Be careful working around the HVPS when in DG 92.

To run DG 92:

1. Open the Front Cover.
2. Remove the CRU.
3. Enter Diagnostics Mode.
4. Repeatedly press [2] until the LCD displays *DG 92.*
5. Set the multimeter range to –500 VDC.
6. Place the red (+) probe of your multimeter on the CR Terminal of the Earth Plate Assembly.



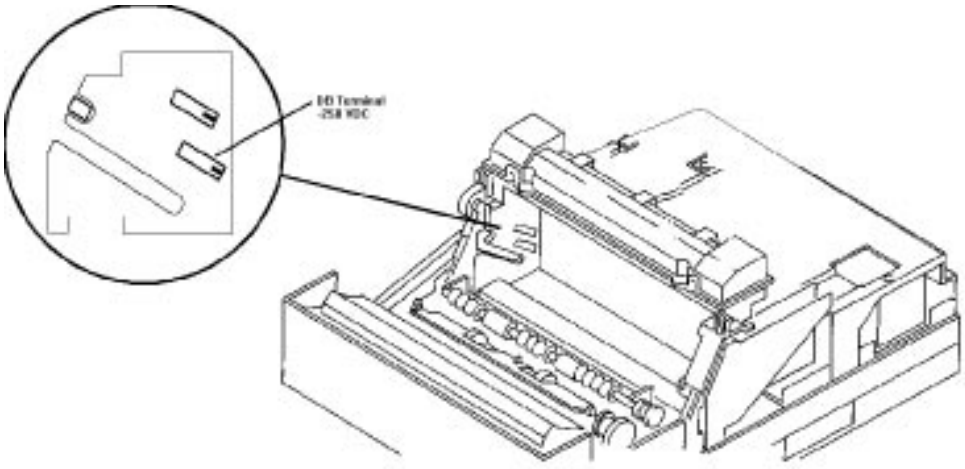
7. Place the black (–) probe of your multimeter on the LVPS frame.
8. Use the blade of an insulated screwdriver to close the LVPS interlock switch.
9. Press [1] to start the test.
10. You should get a reading of approximately –350 VDC.
11. To Exit DG 92, repeatedly press [2] to cycle the LCD to *DG 00 Exit Diagnostics.*
12. Press [1] to exit DG 92.

DG 93 HVPS (DEV BIAS)

This Diagnostic code tests the HVPS D/C voltage to the Magnet Roll.

WARNING: DG93 switches on the HVPS. HIGH VOLTAGE is present in many areas of the printer. Be careful working around the HVPS when in DG 93.
To run DG 93.

1. Open the Front Cover.
2. Remove the CRU.
3. Enter Diagnostics Mode.
4. Repeatedly press [2] until the LCD displays *DG 93.*
5. Set the multimeter range to –500 VDC.
6. Place the red (+) probe of your multimeter on the DB Terminal of the Earth Plate Assembly.



7. Place the black (–) probe of your multimeter on the LVPS frame.
8. Use the blade of an insulated screwdriver to close the LVPS interlock switch.
9. Press [1] to start the test.
10. You should get a reading of approximately –250VDC.
11. To Exit DG 93, repeatedly press [2] to cycle the LCD to *DG 00 Exit Diag.*
12. Press [1] to exit DG 93.

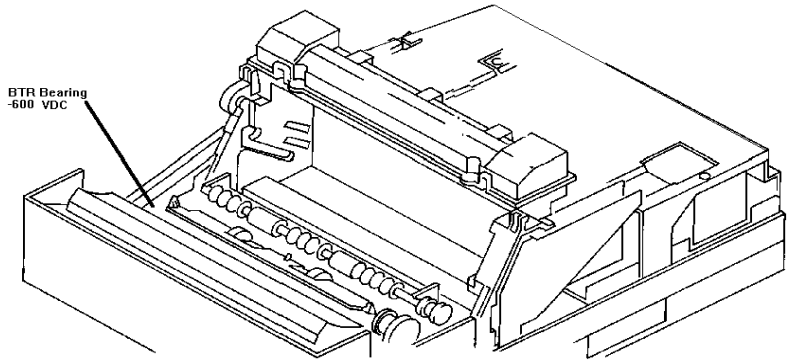
DG 94 HVPS (T. ROLL -)

This Diagnostic code tests the HVPS negative D/C voltage to the BTR.

WARNING: DG94 switches on the HVPS. HIGH VOLTAGE is present in many areas of the printer. Be careful working around the HVPS when in DG 94.

To run DG 94:

1. Open the Front Cover.
2. Remove the CRU.
3. Enter Diagnostics Mode.
4. Repeatedly press [2] until the LCD displays *DG 94.*
5. Set the multimeter range to −1000 VDC.
6. Place the red (+) probe of your multimeter on the BTR Bearing located at the end of the BTR shaft.



7. Place the black (−) probe of your multimeter on the LVPS frame.
8. Use the blade of an insulated screwdriver to close the LVPS interlock switch.
9. Press [1] to start the test.
10. You should get a reading of approximately −600 VDC.
11. To Exit DG 94, repeatedly press [2] to cycle the LCD to *DG 00 Exit Diagnostics.*
12. Press [1] to exit DG 94.

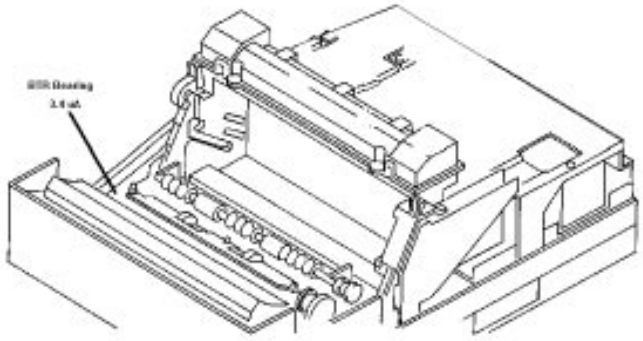
DG 95 HVPS (T. ROLL +)

This Diagnostic code tests the HVPS positive D/C voltage to the BTR.

WARNING: DG95 switches on the HVPS. HIGH VOLTAGE is present in many areas of the printer. Be careful working around the HVPS when in DG 95.

To run DG 95:

1. Open the Front Cover.
2. Remove the CRU.
3. Enter Diagnostics Mode.
4. Repeatedly press [2] until the LCD displays *DG 95.*
5. Set the multimeter range to 5 µA.
6. Place the red (+) probe of your multimeter on the BTR Bearing located at the end of the BTR shaft.



7. Place the black (–) probe of your multimeter on the LVPS frame.
8. Use the blade of an insulated screwdriver to close the LVPS interlock switch.
9. Press [1] to start the test.
10. You should get a reading of approximately 3.4 µA.
11. To Exit DG 95, repeatedly press [2] to cycle the LCD to *DG 00 Exit Diagnostics.*
12. Press [1] to exit DG 95.

DG 00 EXIT DIAG

This Diagnostic code exits the current diagnostic mode.

To run DG 00 EXIT DIAG

1. Repeatedly [2] to cycle the LCD to *DG 00 Exit Diag.*
2. Press [1] to exit the current diagnostic mode.

DG 00 SIZE SENSOR

This Diagnostic code checks the setting of the switch combination of the Paper Size Switches on Tray 1 or Tray 2.

To run DG 00 SIZE SENSOR:

1. Enter Diagnostics Mode.
2. Repeatedly press [2] until the LCD displays *DG 00 SIZE SENSOR.*
3. Press [1] to start the test.
   The LCD displays a two digit hexadecimal number that corresponds to the switch combination for Tray1
4. Press [1] again to display the switch combination for Tray 2.
   Use the following table to determine the Paper Size Switch combinations. 0 is OFF. 1 is ON

Sheet Size	SW1	SW2	SW3	SW4	HEX number	Switch Setting
No Tray installed					00(00~07)	
No Cassette installed	0	0	0	0	0F(08~15)	
MONARCH	0	0	0	1	1E(16~24)	2
LEGAL 13"	0	0	1	0	2C(25~32)	9
POSTCARD	0	0	1	1	3B (33~41)	B
COM10	0	1	0	0	49 (42~4F)	F
A4 (SEF)	0	1	0	1	58 (50~5E)	4
C5	0	1	1	0	66 (5F~6D)	E
DL	0	1	1	1	75 (6E~7B)	D
EXECUTIVE (SEF)	1	0	0	0	83 (7C~8A)	5
B5(SEF)	1	0	0	1	91 (8B~98)	A
LEGAL 14"	1	0	1	0	A0(99~A7)	8
	1	0	1	1	AE(A8~B5)	
	1	1	0	0	BD(B6~C4)	
LETTER (SEF)	1	1	0	1	CB(C5~D3)	6
	1	1	1	0	D9(D4~E1)	
A5(SEF)	1	1	1	1	E8(E2~FF)	7
Nonstandard (MAX 14") fed from MFB						0,1,3

.

Table continued on next page

Sheet Size	SW1	SW2	SW3	SW4	HEX number	Switch Setting
A5(SEF) fed from MFB	[STATEMENT (SEF)]	1	0	1	1	AE(A8~B5)
C	A5(SEF)	1	1	1	1	E8(E2~FF)
7	Nonstandard (MAX 14") fed from MFB					
0,1,3	A5(SEF) fed from MFB	[STATEMENT (SEF)]	1	0	1	1
AE(A8~B5)	C					

5. To Exit DG 00, repeatedly press [2] to cycle the LCD to *DG 00 Exit Diagnostics.*
6. Press [1] to exit DG 00.

DG 00 CHECK SUM

This Diagnostic code verifies the check sum value of the printer ROM. The check sum varies with the printer model.

To run DG 00 CHECK SUM:

1. Enter Diagnostics Mode.
2. Repeatedly press [2] until the LCD displays *DG 00 CHECK SUM.*
3. Press [1] to start the test. The LCD displays the check sum of the printer ROM.
4. To Exit DG 00 CHECK SUM, repeatedly press [2] to cycle the LCD to *DG 00 Exit Diagnostics.*
5. Press [1] to exit DG 00.

Configuration Mode

The Configuration Mode lets you set and verify printer configuration data, such as print resolution, MBF setting, and fuser temperature. Configuration Mode stores the configuration data in nonvolatile ROM within the printer circuitry. Configuration data is critical to correct printer operation.

Configuration Mode options

There are thirteen options available in Configuration Mode.

Printer configurations	Print resolution
Laser power output	Lead edge registration Tray 1
Lead edge registration Tray 2	Lead edge registration MBF
Side edge registration Tray 1	Side edge registration Tray 2
Side edge registration MBF	Fuser temperature
Paper size for MBF	Interface selection
Test print	

To enter Configuration Mode

1. Hold down both [1] and [2], and switch ON printer Main Power.
2. Hold down both keys for three seconds.
3. Release [1].
   The LCD displays 0 on the second line.

   RELEASE THE KEY
   0
4. When the 0 advances to the number 3, release [2].
   If you go past 3, the LCD cycles through number 9, then repeats the count.

The LCD displays Selecting NV, followed by a two digit number. The print is now in Configuration Mode

NOTE: If an error occurs during the ROM/RAM Check, the printer will not enter Configuration Mode

CONFIGURATION
SELECTING NV04

The NV stands for "Nonvolatile memory setting". The first digit of the displayed numbers is the Configuration Code currently selected. The second digit is the parameter that is currently valid for the Configuration Code. The Configuration Mode code table contains codes and valid parameters.

To select a Configuration Code

1. Enter Configuration Mode.
   The default is Configuration Code 0.
2. Repeatedly press [2] to select other codes.
   The first digit following NV changes.
3. Stop when the LCD displays the desired Configuration Code.
4. Enter the Code parameter.

To input code parameters

1. Press [1] to select Configuration Code parameters.
   The second digit following the NV changes.
2. Stop when the LCD displays the desired parameter.
   The LCD displays the parameter and writes it to ROM.

Using the Configuration Code G "Test Print"

Warning: Make sure the printer has all the covers in place when you perform NV G.

NV G performs the same function as Printing Test Mode except NV G generates a single test pattern, then stops.

1. Enter Configuration Mode.
2. Press [2] to select NV G
   The first digit following NV changes to G.
3. Press [1].
   The printer generates a grid test pattern, then stops.

Note: The printer will not generate a test print if it detects a fault when you press [1], or if the printer is in Power-On Sequence. The LCD displays a Fault Code for about two seconds, then returns to the status displayed before you pressed [1].

Configuration Mode code table

Code	LCD DISPLAY MESSAGE (Function of the routine)	Parameters [Factory default] Contents of the parameter	Are changes possible?
0	CONFIGURATION (Sets the printer configuration)	0~F (16 steps) [N/A] When you convert the HEX notation 0~F to the binary values b0, b1, b2, and b3, the parameters mean: b0=Paper size 0=Japanese 1=International b1=Fan Alarm 0=N/A 1=Available b2=MBF 0=N/A 1=Available b3=Toner Sensor 0=N/A 1=Available	NO
1	RESOLUTION (Set the print resolution)	0~7 (8 steps) [N/A] 0=240 dpi 5=300/240 dpi (sw) 1=300 dpi 6=400/300 dpi (sw) 2=400 dpi 7=640/300 dpi(sw) 3=480 dpi 8=400/240i (sw) 4=600 dpi (sw)=switching	NO
2	LD POWER (Sets the intensity of the laser output) This function is also available in User Mode	0~4 (5 steps) [21] 0=Minimum laser output. Produces the lightest print density 4=Maximum laser output. Produces the darkest print density	YES
3	REG.PROCESS 1 (Sets the lead edge registration for paper fed from Tray 1)	0~F (16 steps) [8] 0=Narrowest lead edge registration gap F=Widest lead edge registration gap (approximately 0.56mm per step)	YES, depending on the model of printing used

Configuration Mode code table continued

Code	LCD DISPLAY MESSAGE (Function of the routine)	Parameters [Factory default] Contents of the parameter	Are changes possible?
4	REG.PROCESS 2 (Sets the lead edge registration for paper fed from Tray 2)	0~F (16 steps)[8] 0=Narrowest lead edge registration gap F=Widest lead edge registration gap (approximately 0.56mm per step)	YES,depending on the model of printing used
5	REG.PROCESS 3 (Sets the lead edge registration for paper fed from the MBF)	0~F (16 steps)[8] 0=Narrowest lead edge registration gap F=Widest lead edge registration gap (approximately 0.56mm per step)	YES, depending on the model of printing used
6	REG.SCAN 1 (Sets the side edge registration for paper fed from Tray 1)	0~8 (9 steps) [4] 0=Narrowest side edge registration gap 8=Widest side edge registration gap (approximately 0.56mm per step)	YES, depending on the model of printing used
7	REG.SCAN 2 (Sets the side edge registration for paper fed from Tray 2)	0~8 (9 steps) [4] 0=Narrowest side edge registration gap 8=Widest side edge registration gap (approximately 0.56mm per step)	YES, depending on the model of printing used
8	REG.SCAN 3 (Sets the side edge registration for paper fed from MBF)	0~8 (9 steps) [4] 0=Narrowest side edge registration gap 8=Widest side edge registration gap (approximately 0.56mm per step)	YES, depending on the model of printing used
9	FUSER TEMP.SET (Sets the rated fuser temperature)	0~F(16 steps) [8] 0=Lowest rated temperature F=Highest rated temperature (approximately 4.0°c per step)	YES

Configuration Mode code table continued

Code	LCD DISPLAY MESSAGE (Function of the routine)	Parameters [Factory default] Contents of the parameter	Are changes possible?
A	FRONT TRAY SIZE (Sets the sheet size for the MBF)	0~F (16 steps)[0] See Section 6 Using MBF Sheet Size Selection	YES
B	I/F OPTION	0~F (16 steps)[N/A] When you convert the HEX notation 0~F to the binary values b0, b1, b2, and b3, the parameters mean: b0=Device controlling the LCD 0=MCU PWB 1=Printer Controller b1=Unused b2=Unused b3=Toner Life Counter 0=N/A 1=Available	NO
G	TEST PRINT (The printer generates a test print that you can use to check lead edge and side edge registration)	NONE	

Fault and Status Codes

The LCD displays Fault/Status Codes when the printer needs user attention.

Fault and Status code table

Code	Message displayed in LCD	Code description
U6	U6:POWER OFF THEN ON AGAIN	There is a problem in the nonvolatile ROM
U2	U2:POWER OFF THEN ON AGAIN	There is a problem in the ROS Assembly
U4	U4:POWER OFF THEN ON AGAIN	There is a problem in the Fuser Assembly
E5	CLOSE FRONT COVER	The Front Transport Assembly is open
E4	E4:OPEN COVERS CLEAR PAPER JAM	There is a paper jam in the exit area of the paper path
E3	E3:OPEN COVERS CLEAR PAPER JAM	There is a paper jam between the Registration and the Exit Sensors
E2	E2:OPEN COVERS CLEAR PAPER JAM	There is a paper jam between the Feeder Assembly and the Registration Sensor
J3	EP CARTRIDGE NOT IN POSITION	The EP Cartridge is not in place
P1	FUSER PAUSE MODE	The printer received a Set Pause command while the printer was on-line
C3	CASSETTE NOT IN PLACE	The paper cassette is not in place in a standard model printer
C3	C3:CASSETTE NOT IN PLACE (TRAY 1)	Tray 1 is not in place in a printer with an Optional Feeder Assembly
C3	C3:CASSETTE NOT IN PLACE (TRAY 2)	Tray 2 is not in place in a printer with an Optional Feeder Assembly
C5	ADD PAPER INTO CASSETTE	The Paper Cassette is empty (in a standard model printer)
C5	C5:ADD PAPER INTO TRAY 1 CASSETTE	Tray 1 is empty (in a printer with an Optional Feeder Assembly)
C5	C5:ADD PAPER INTO TRAY 2 CASSETTE	Tray 2 is empty (in a printer with an Optional Feeder Assembly)
C5	C5:ADD PAPER TO FRONT TRAY	The Front Tray Assembly is empty (in a printer with an MBF)
CX	PAPER SIZE ERROR	The paper size loaded in the paper tray does not agree with the size data stored in ROM
J5	EP CARTRIDGE NEED TO REPLACE	The toner in the EP Cartridge is low.

Printer conditions and responses for Fault /Status codes

Code	Conditions that caused the fault	How the printer responds to the fault	How to clear the LCD
U6	A ROM read error occurred when the printer power was switched ON. A ROM write error occurred when data was being written to ROM.	The printer shuts down the Main Motor, ROS, and Fuser functions.	Switch OFF the Main Power. Switch ON the Main Power.
U2	The SOS signal intervals are longer than the READY reference value after 20 seconds since the start of ROS preparation. The LD output is lower than the LD Power setting. The SOS signal intervals are longer than the FAIL reference value since the start of ROS preparation.	The printer shuts down the Main Motor, ROS, and Fuser functions.	Switch OFF the Main Power. Switch ON the Main Power.
U4	The Fuser temperature is below the set minimum temperature after Power On Sequence finishes. The Power On Sequence takes longer than 120 seconds. The Temperature Sensor detects an open thermistor circuit. The Fuser temperature raises above the maximum set temperature. The heater Roll actuates for more than 10 seconds after the completion of the PowerOn Sequence.	The printer cycles the Main Motor and ROS, and shuts down the Fuser functions.	Switch OFF the Main Power. Switch ON the Main Power.
E5	The Interlock is not actuated.	The printer shuts down the Main Motor, ROS, and Fuser functions.	Close the Front Transport Assembly.

Printer conditions and responses for Fault/Status codes continued

Code	Conditions that caused the fault	How the printer responds to the fault	How to clear the LCD
E4	A sheet of paper does not deactuate the Exit Sensor in the specified time after actuation of the Registration Sensor. A sheet of paper is actuating the Exit Sensor when the printer is switched ON. A sheet of paper is actuating the Exit Sensor when you actuate the interlock. A sheet of paper is actuating the Exit Sensor during the PowerOn sequence or during the Recovery Routine.	The printer shuts down the Main Motor, ROS, and Fuser functions.	Open the Front Transport Assembly. Remove the jammed paper. Close the Front Transport Assembly.
E3	A sheet of paper does not deactuate the Exit Sensor in the specified time after actuation of the Registration Sensor.	The printer shuts down the Main Motor, ROS, and Fuser functions.	Open the Front Transport Assembly. Remove the jammed paper. Close the Front Transport Assembly
E2	A sheet of paper actuates the Registration Sensor too soon after the start of paper feed. A sheet of paper does not actuate the Registration Sensor in the specified time after the start of paper feed. (Misfed Paper Jam). A sheet of paper is actuating the Registration Sensor when the printer is switched ON. A sheet of paper is actuating the Registration Sensor during PowerOn sequence or during the Recovery Routine.	The printer shuts down the Main Motor, ROS, and Fuser functions.	Open the Front Transport Assembly. Remove the jammed paper. Close the Front Transport Assembly.

Printer conditions and responses for Fault/Status codes continued

Code	Conditions that caused the fault	How the printer responds to the fault	How to clear the LCD
J3	The CRU switch is not actuated.	The printer shuts down the Main Motor, ROS, and Fuser functions.	Install or reposition the EP Cartridge.
P1	A Set Pause command stopped the Fuser and ROS controls.	The printer shuts down the Fuser functions.	Input a Reset Pause command.
C3	1. All of the Paper Size Switches are deactuated (Standard Model printer). 2. All of the Paper Size Switches in both paper feeders are deactuated (Optional Feeder Assembly).	The printer shuts down the Main Motor, ROS, and Fuser functions.	Install the Paper Cassettes.
C5	The selected paper feeder is empty. (The No Paper Sensor is actuated).	The printer completes the cycle, and stops.	Load paper into the empty cassette.
CX	The paper size detected by the Registration Sensor is different that the preset size in ROM. (MBF model only).	The printer displays the message PAPER SIZE ERROR on the LCD.	Change the paper size in the MBF tray, or reset the parameter in Configuration Mode.
J5	The printer made ten prints since the Toner Sensor was actuated.	The printer displays the message EP CARTRIDGE NEED TO REPLACE on the LCD.	Replace the EP Cartridge.

Modes when Fault/Status codes are displayed

This table shows the modes when the LCD displays Fault/Status Codes.

- An X indicates the LCD constantly displays the code until you clear the error.
- An O indicates the LCD displays the code for two seconds until you clear the error.
- A blank box in the table indicates the Code is not displayed when the printer is in that particular mode.

Printer Mode	U6	U2	U4	E5	E4	E3	E2	J3	P1	C3	C5	CX	J5
ESS (CONTROLLER) MODE	X	X	X	X	X	X	X	X	X				X
User Operation Mode	X			X									
Diagnostic Mode (Running no diagnostic routine				X									
Diagnostic Mode Running Total Print Count				X									
Diagnostic Mode (Running Input Test)													
Diagnostic Mode (Runing Output Test)				X									
Configuration Mode Selecting a Configuration Code		O	O	X				O		O	O		
Configuration Mode Selecting parameters	X		X										
Configuration Mode (Running Code G)	X	X	X	X	X	X	X	X		X	X	X	X

Printing Controls

Paper Sheet Size Selection

When running Diagnostic Mode DG 00 SIZE SENSOR, the LCD displays a 2-digit hexadecimal number that corresponds to the switch combination for the printer paper trays. Use the following table to determine the Paper Size Switch combinations.

0 is off. 1 is on.

Sheet Size	SW1	SW2	SW3	SW4	HEX number	Switch Setting
No tray installed	-	-	-	-	00(00-07)	-
No Cassette installed	0	0	0	0	0F(08~15)	-
MONARCH	0	0	0	1	1E(16~24)	2
LEGAL 13"	0	0	1	0	2C(25~32)	9
POSTCARD	0	0	1	1	3B(33~41)	B
COM-10	0	1	0	0	49(42~4F)	F
A4(SEF)	0	1	0	1	58(50~6D)	4
C5	0	1	1	0	66(5F~6D)	E
DL	0	1	1	1	75(6E~7B)	D
EXECUTIVE	1	0	0	0	83(7C~8A)	5
B5(SEF)	1	0	0	1	91(8B~98)	A
LEGAL 14"	1	0	1	0	A0(99~A7)	8
-	1	0	1	1	AE(A8~B5)	-
-	1	1	0	0	BD(B6~C4)	-
LETTER(SEF)	1	1	0	1	CB(C5~D3)	6
-	1	1	1	0	D9(D4~E1)	-
A5(SEF)	1	1	1	1	E8(E2~FF)	7
Nonstandard MAX 14" fed from MFB	-	-	-	-	-	0,1,3
A5(SEF) fed from MFB [STATEMENT (SEF)]	1	0	1	1	AE(A8~B5)	C

Sheet Feeder Selection Table

Use the following table to determine the default settings for the sheet feeder.

Paper Cassette in Tray 1?	Paper in Cassette?	Paper Cassette in Tray 2?	Paper in Cassette?	Paper in Front Tray? (MBF)	Feeder Selected
YES	YES	YES	YES	YES	Tray 1
YES	YES	YES	YES	NO	Tray 1
YES	YES	YES	NO	YES	Tray 1
YES	YES	YES	NO	NO	Tray 1
YES	YES	NO	YES	YES	Tray 1
YES	YES	NO	YES	NO	Tray 1
YES	YES	NO	NO	YES	Tray 1
YES	YES	NO	NO	NO	Tray 1
YES	NO	YES	YES	YES	Tray 2
YES	NO	YES	YES	NO	Tray 2
YES	NO	YES	NO	YES	MBF
YES	NO	YES	NO	NO	Tray 1
YES	NO	NO	YES	YES	MBF
YES	NO	NO	YES	NO	Tray 1
NO	YES	YES	YES	YES	Tray 2
NO	YES	YES	YES	NO	Tray 2
NO	YES	YES	NO	YES	MBF
NO	YES	YES	NO	NO	Tray 1
NO	YES	NO	YES	YES	MBF
NO	YES	NO	YES	NO	Tray 1
NO	YES	NO	NO	YES	MBF
NO	YES	NO	NO	NO	Tray 1
NO	NO	YES	YES	YES	Tray 2
NO	NO	YES	YES	NO	Tray 2
NO	NO	YES	NO	YES	MBF
NO	NO	YES	NO	NO	Tray 1
NO	NO	NO	YES	YES	MBF
NO	NO	NO	YES	NO	Tray 1
NO	NO	NO	NO	YES	MBF
NO	NO	NO	NO	NO	Tray 1

ROS Controls

Scanner Motor Control

The following table shows the status of the scanner motor during all modes of operation.

Print Mode	Scanner Motor Status
ESS (Controller) Mode	The Motor is controlled by the printer controller.
User Operation Mode	The Motor is off.
Printing Test Mode	The Motor is ON at Power-on, and remains ON during this mode
Diagnostic Mode	The Motor is OFF.
Configuration Mode	The Motor is ON at Power-on, and remains ON during this mode.

The relationship between scanner motor speed and print resolution

The printing speed depends on how the laser uses the ROS Assembly Polygon Mirror. In the 12 PPM model, the laser beam strikes every mirror surface on the rotating Polygon Mirror Assembly.

The following table shows the relationship between the speed of the Scanner Motor and the image resolution of the printer.

Print Resolution (Dots per Inch)	Scanner Motor Speed (Revolutions per Minute)
300	7540
600	15080

ROS Preparation

The Scanner Motor starts to spin at the beginning of ROS preparation. ROS preparation ends when the Scanner Motor reaches the rated speed. At rated speed, the SOS signal intervals are shorter than the READY reference value (during three consecutive samplings of the SOS signal interval.

ROS Reference Values

READY Reference Value — 98% of the Scanner Motor revolutions satisfy the rated SOS signal interval criteria..READY Reference Value enables printer operation

FAIL Reference Value — FAIL Reference Value inhibits printer operation. If the speed of the scanner motor exceeds rated speed by more than 1%, the laser beam does not reach the SOS sensor. The LCD then displays a U2 fault Code

Fuser Controls

The printer switches the Heater Rod ON or OFF according to the Rated Fuser Temperature parameters set in Configuration Code 9.
There are two Rated Fuser Temperature settings:

- Standby Mode Temperature – When thefuser is warming up or the Main Motor is idle.
- Running Mode Temperature – During a print cycle or in the Recovery Routine. Runing Mode temperature is slightly higher than Standby Mode Temperature.

Heater Rod Control

The printer switches the Heater Rod ON when the surface temprature of the Heat Roll reaches the Low Temperature range.
The printer switches the Heater Rod OFF when the surface temperature of the Heat Roll reaches the High Allowable Temperature range.

Fuser Warm-Up
Fuser warm-up begins whe the printer switches ON the Heater Rod. Fuser warm-up ends when the Temperature Sensor thermistor senses the Heat Roll surfaces has reached Standby Mode Temperature.
The Main Motor runs continuously during Fuser Warm-up.

Fuser Temperature Table
The table below shows the Heat Roll temperature parameters. The Rated Fuser Temperature value is variable. You can change it using Configuration Code 9.

Fuser Temperature Parameter	**Heat Roll Surface Temperature 12 PPM Model**
Overheating Limit	Approximately 205°C (Standby Mode Temperature + approximately 35°C)
High Allowable Temperature	Rated Fuser Temperature ±0°C
Rated Fuser Temperature	160°C nominal in Standby Mode 166°C nominal in Running Mode
Low Temperature	Rated Fuser Temperature 2°C
Subcooling Limit	Approximately 145°C

Fuser Temperature Code Table

Use the following table to find the actual fuser temperature in degrees Celcius.

Code Displayed in LCD	Fuser Temperature
FF	0°C
FF	10°C
FF (FE~FF)	20°C
FE (FD~FE)	30°C
FD (FC~FD)	40°C
FC (FB~FC)	50°C
FA (F9~FB)	60°C
F7 (F6~F8)	70°C
F4 (F3~F5)	80°C
F0 (EE~F1)	90°C
EA (E8~EC)	100°C
E3 E1~E6)	110°C
DB (D8~DE)	120°C
D1 (CE~D4)	130°C
C6 (C2~C9)	140°C
C0 (BC~C3)	145°C
B9 (B6~BD)	150°C
B3 (AF~B6)	155°C
AC (A8~A9)	160°C
A5 (A1~A9)	165°C
9E (9A~A2)	170°C
97 (92~9B)	175°C
8F (8B~94)	180°C
81 (7C~86)	190°C
74 (6E~79)	200°C
67 (61~6C)	210°C
5B (55~60)	220°C
50 (4A~55)	230°C

Recovery and Cleaning Routines

Recovery Routine

The Recovery Routine allows the printer to return to normal operation after a print cycle interruption. The routine switches ON the main motor and signals the HVPS to switch ON CR (DC) and TR (AC) voltages.

The printer uses the Recovery Routine after the following interruptions:

- Interlock Switch deactuation
- Paper Cassette removal
- Exit Sensor acuation

The printer does not perform the Recover Routine if either the Exit Sensor or the Registration Sensor are actuated when you actuate the Interlock Switch, install the Paper Cassette, or switch ON the power.

Cleaning Routine

The printer starts the Cleaning Routine when power is switched ON, when the CRU Switch is switched ON, and between printing cycles (except during continuous printing).

During the cleaning routine, the Main Motor and HVPS are ON.

There are two types of Cleaning Routines:

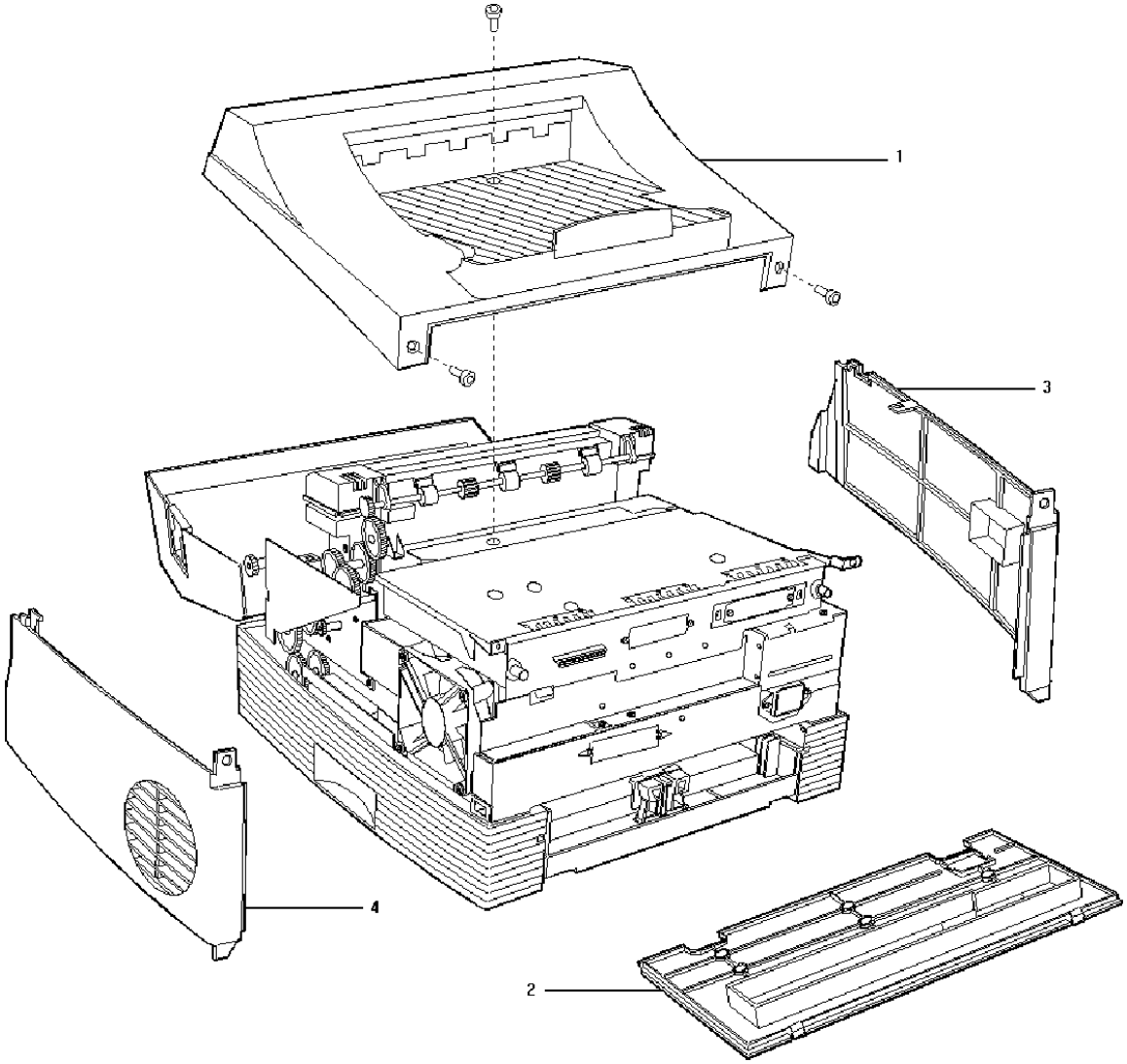
Warm-up cleaning	Starts whe the main power or CRU switch are switched on. Warm-up cleaning works only in ESS (Controller) Mode . The printer is READY when the Warm-up cleaning is finished and the fuser is at operating temperature.
Cycle-out cleaning	Starts at the end of each print cycle.

You can stop the Cleaning Routine by deactivating the Interlock Switch, removing the Paper Cassette, or actuating the Exit Sensor. To restart the Cleaning Routine, activate the Interlock Switch, replace the Paper Cassette, or deactivate the Exit Sensor.

Chapter 8 Illustrated Parts Breakdown

The following pages show the parts of the DEClaser 3500 printer.

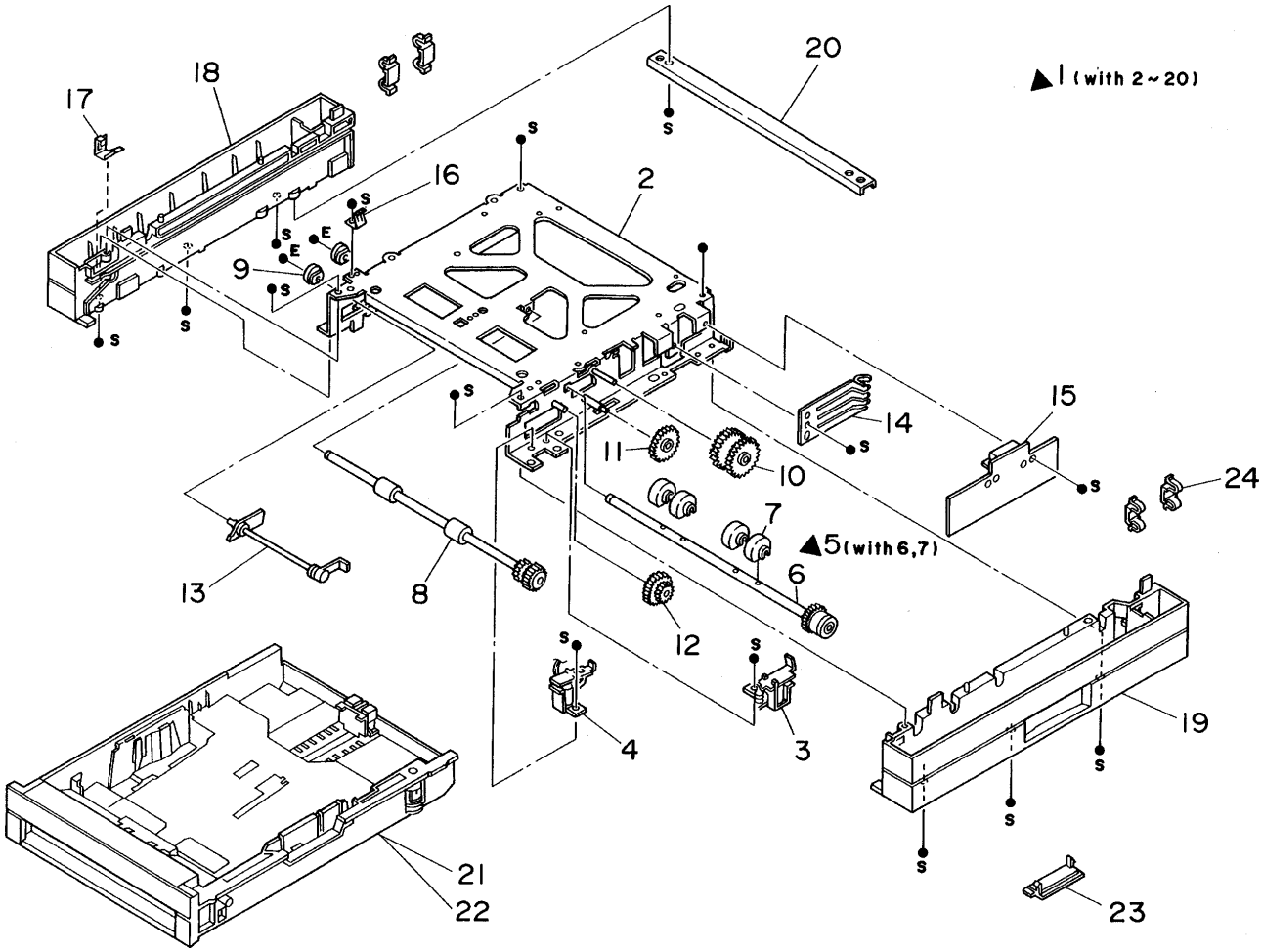
PL1 Covers



PL1 Covers

1. Top Cover Assembly
2. Rear Cover
3. Left Cover
4. Right Cover

PL2 Paper feed



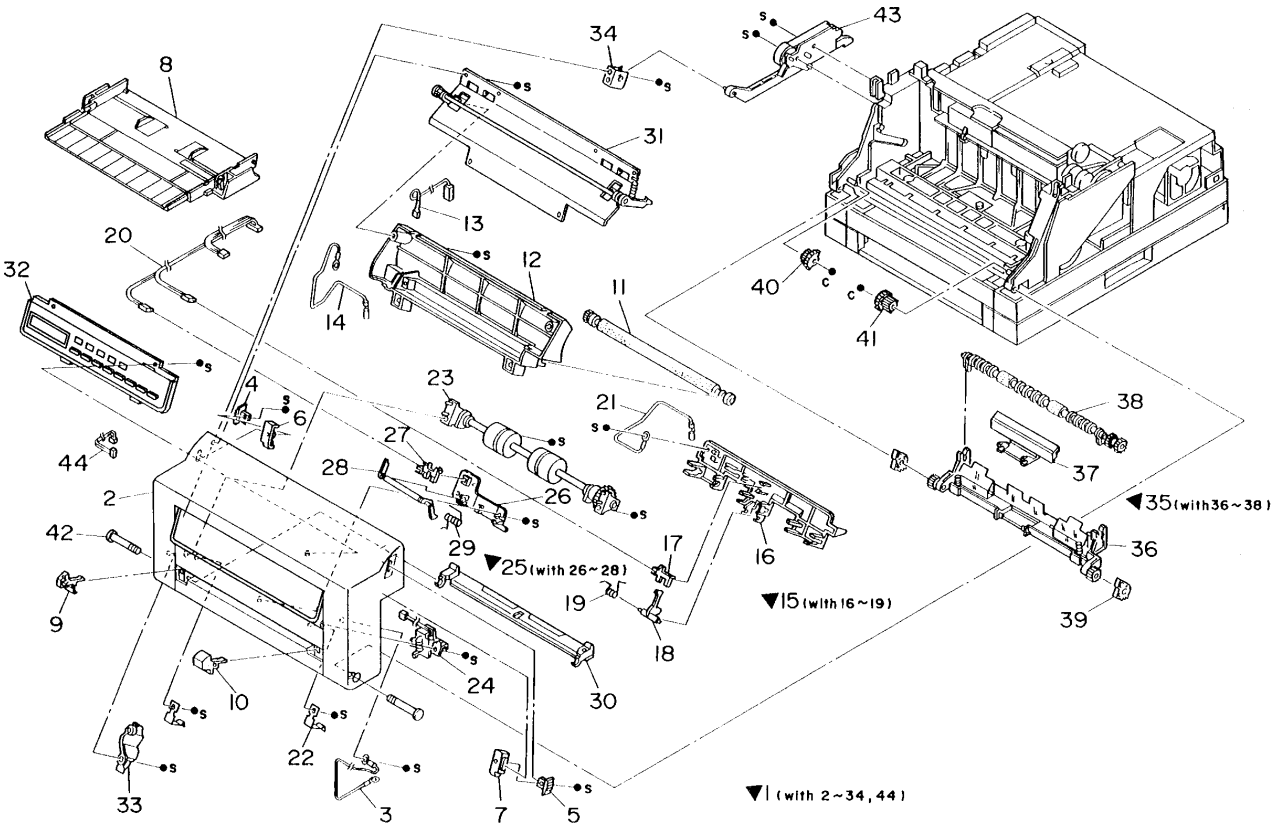
PL2 Paper feed

1. Feeder Assembly† (With 2~20)
2. Feeder Frame Assembly
3. Feed Solenoid†
4. Turn Solenoid†
5. Feed Roll Assembly† (With 6,7)
6. Feed Clutch Assembly
7. Feed Roll
8. Turn Roll Assembly†
9. Feed Bearing
10. Gear In
11. Gear Out
12. Gear Feed
13. No–Paper Actuator
14. Size Spring
15. Feeder PWB†
16. Harness Assembly Out (J116~J115
17. Feeder Earth Plate
18. Feed Housing L
19. Feed Housing R
20. Feeder Tie Plate
21. Universal Cassette (Option)
22. Legal Cassette (Option)

    Envelope Cassette (Option)

    Envelope Attachment Cassette (Option)

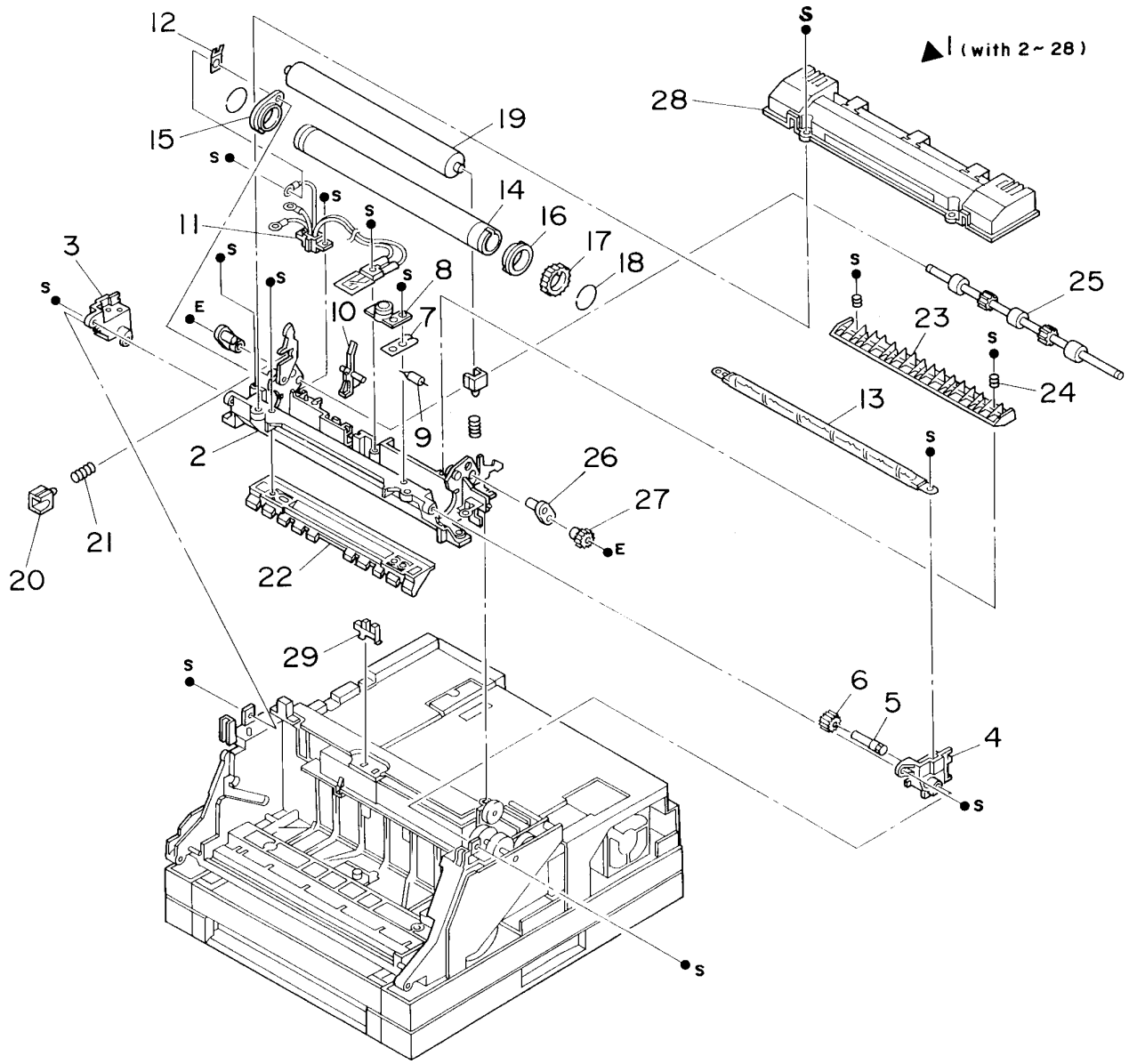
PL3 Paper transportation



PL3 Paper Transportation

1. Front Transport Assembly† (With 2~34)
2. Front Cover
3. Wire Assembly Front
4. Grip Lever L
5. Grip Lever R
6. Inner Lever L
7. Inner Lever R
8. Front Tray Assembly
9. Tray Hinge L
10. Tray Hinge R
11. Btr Assembly†
12. Transportation Chute Assembly†
13. Wire Assembly TR (J TR ´ J TR ´ T)
14. Wire Assembly Eliminator
15. Inlet Chute Assembly † (With 16~19)
16. Inlet Chute
17. Registration Sensor
18. Registration Actuator
19. Registration Spring
20. Harness Assembly Sensor (J16 ´ J119, J120, J121)
21. Wire Assembly Baffle
22. Inlet Spring
23. Pick–Up Roll Assembly†
24. Pick–Up Solenoid†
25. MBF Sensor Assembly† (With 26~28)
26. Sensor Cover
27. MBF Sensor
28. MBF Actuator
29. MBF Spring
30. Bottom Plate Assembly†
31. Front Plate Assembly
32. Console Assembly†
33. Harness Cover
34. Link Spring
35. Lower Chute Assembly† (with 36~38)
36. Lower Chute
37. Retard Pad Assembly
38. Take–Away Roll Assembly
39. Gear Front Cover
40. Gear Double L
41. Gear Double R
42. Pivot Shaft
43. Link Assembly

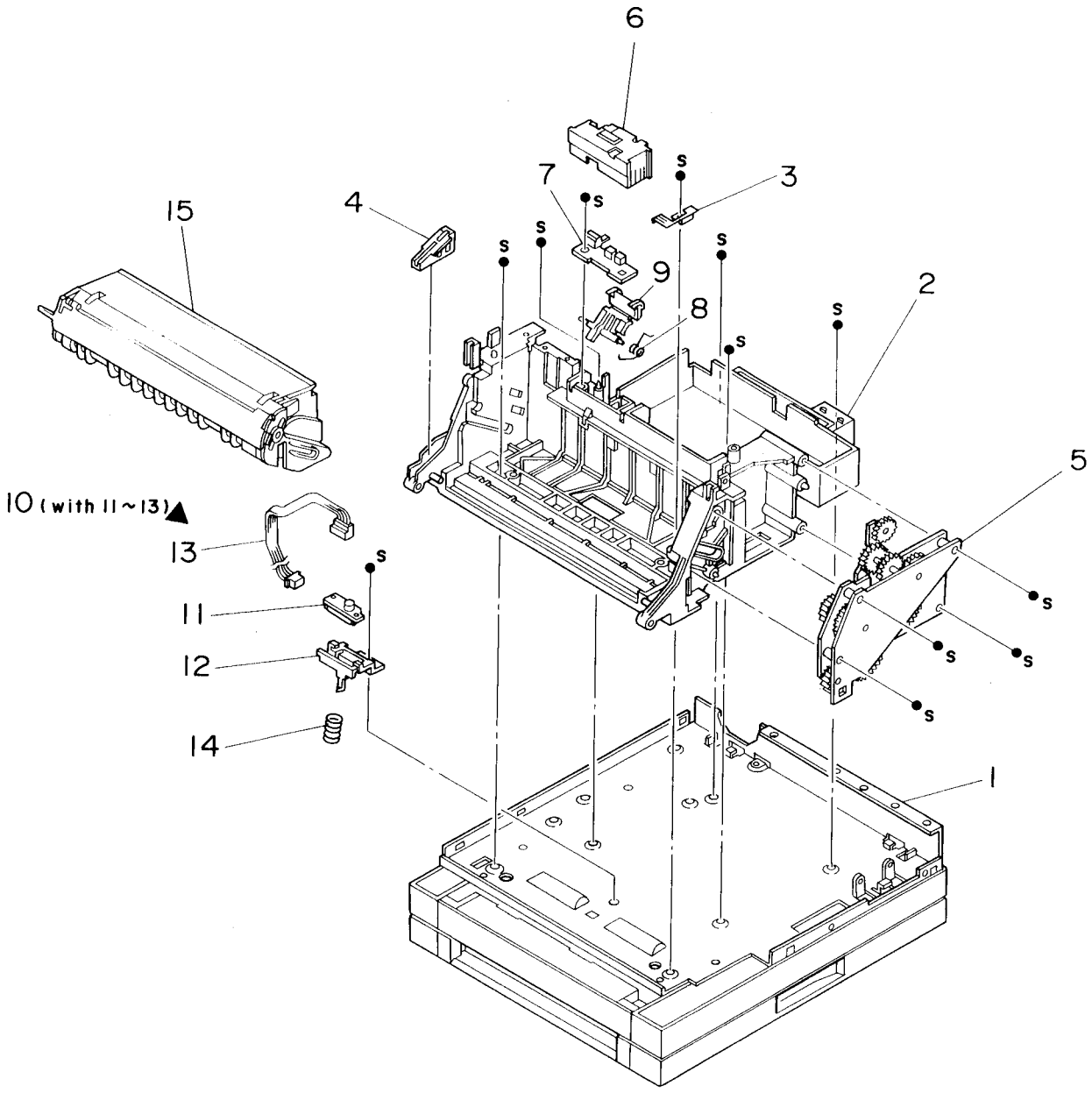
PL4 Fusing and paper exit



PL4 Fusing and Paper Exit

1. Fuser Assembly† (With 2~28)
2. Fuser Frame Assembly
3. Fuser Frame L
4. Fuser Frame R
5. Idler Shaft
6. Gear Idler
7. Fuse Plate
8. Thermostat
9. Fuse
10. Exit Actuator
11. Temperature Sensor Assembly
12. Ground Plate
13. Heater Rod
14. Heat Roll
15. H/R Bearing L
16. H/R Bearing R
17. Gear H/R
18. H/R Ring
19. Pressure Roll
20. P/R Bearing
21. Nip Spring
22. Fuser Inlet Chute
23. Exit Chute
24. Exit Spring
25. Exit Roll Assembly
26. Exit Bearing
27. Gear Exit
28. Fuser Cover Assembly
29. Exit Sensor†

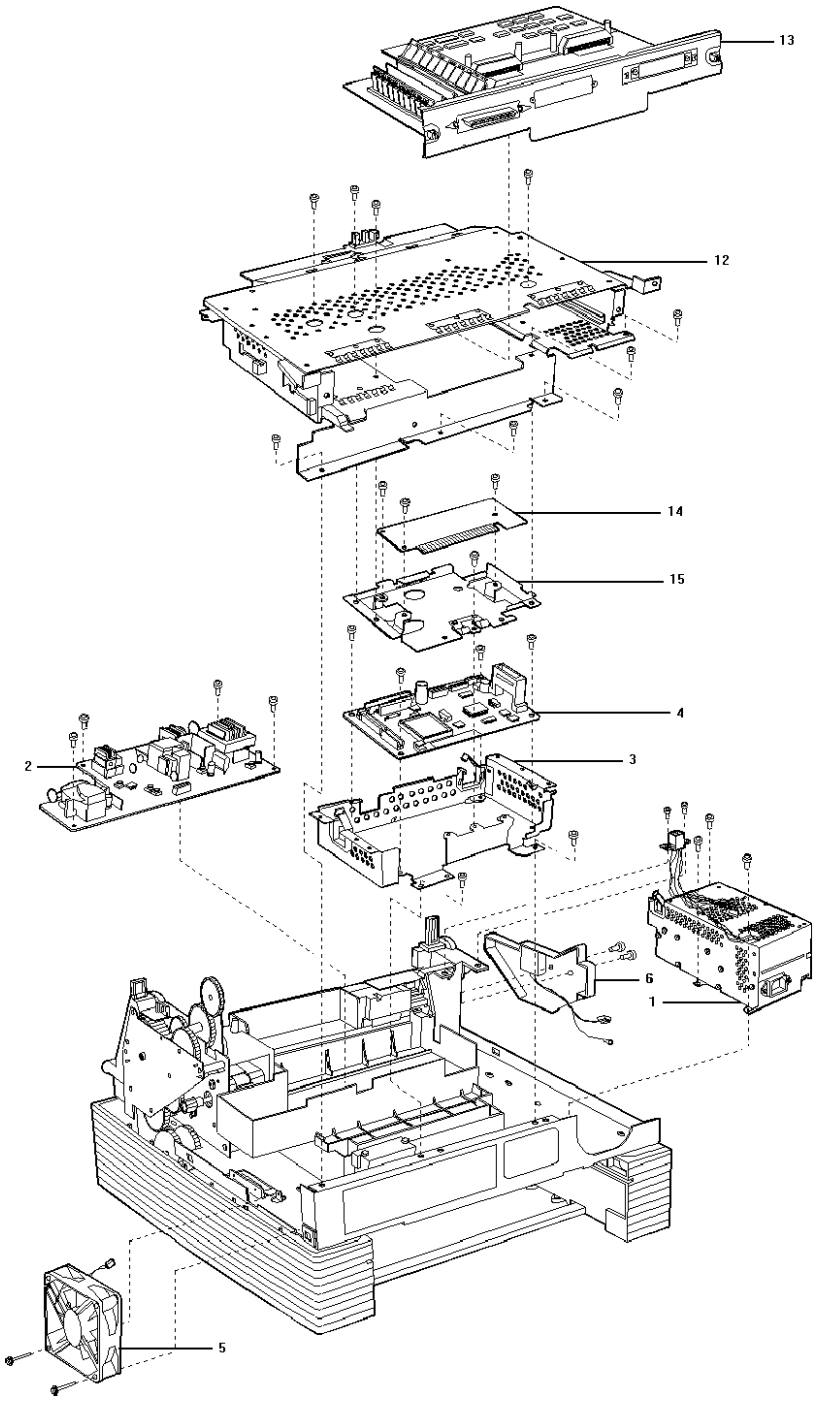
PL5 Drive and Xerographic Module



PL5 Drive and Xerographic Module

1. Base Frame
2. Ros Assembly†
3. Front Earth Spring
4. Cable Cap
5. Drive Assembly†
6. CRU Sensor Cover
7. CRU Sensor Pwb†
8. CRU Actuator Spring
9. CRU Actuator Assembly
10. Toner Sensor Assembly (With 11~13) (Option)
11. Toner Sensor (Option)
12. Toner Sensor Holder
13. Harness Assembly Toner (J21´ J123)
14. Toner Sensor Spring
15. Toner (EP) Cartridge

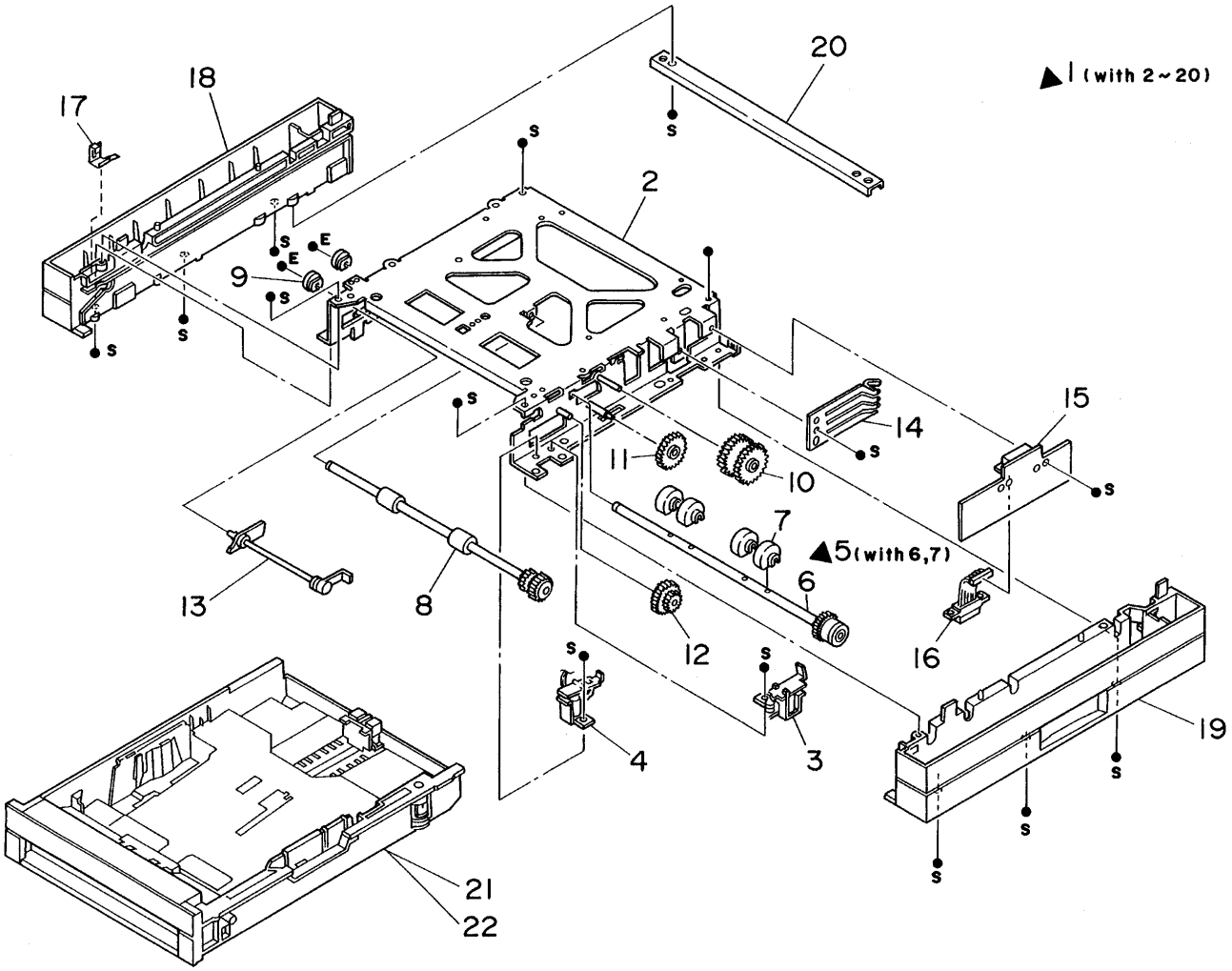
PL6 Electrical module



PL6 Electrical module

1. LVPS Assembly†
2. HVPS†
3. MCU PWB Enclosure (or Box Base)
4. MCU PWB†
5. Fan†
6. Earth Plate Assembly (not shown)
7. Harness Assembly ROS (J12 - J112,J114) (not shown)
8. Harness Assembly SOS (J19 - J113) (not shown)
9. Harness Assembly HVPS(J15 - J111, J118) (not shown)
10. Harness Assembly 1tray (J13 -J115) (not shown)
11. Saddle Edge H (not shown)
12. ESS (Controller) PWB Enclosure
13. ESS (Controller) PWB (with rear panel)
14. Interconnect PWB
15. Interconnect PWB enclosure

PL7 Optional 250 feeder assembly



PL7 Optional 250 feeder assembly

1. Feeder Assembly 2tray (With 2~20)
2. Feeder Frame Assembly 2tray
3. Feed Solenoid 2tray†
4. Turn Solenoid†
5. Feed Roll Assembly † (With 6,7)
6. Feed Clutch Assembly
7. Feed Roll
8. Turn–Roll Assembly†
9. Feed Bearing
10. Gear In
11. Gear Out
12. Gear Feed
13. No–Paper Actuator
14. Size Spring
15. Feeder PWB Aux†
16. Feeder Earth Spring
17. Feeder Earth Plate
18. Feed Housing L
19. Feed Housing R
20. Feeder Tie Plate
21. Universal Cassette (Option)
22. Legal Cassette (Option)

    Envelope Cassette (Option)

    Envelope Attachment Cassette (Option)

DEClaser 3500 Spare Parts List

The following tables show part numbers for the DEClaser 3500 printer.
Notes:

* means common parts to Fuji Xerox 5 & 10 ppm print engines. Otherwise they are uncommon or special to the LN14.

Feeders include with cassettes and covers.

The Xerox/FIC English Doc and Diskette Kit includes English User's Guide, English Quick Setup Guide, Read me first document, and Driver Diskettes.

Manufacturer's code for these spares are:
0000485008 for Xerox International Partner's (XIP)
0105008873 for Xerox/FIC (Xerox Corporation)

Number	Digital Part Number	Vendor Part Number	Description	See PL
1	29-xxxxx-01	002E47642	Cover, Door ROT	1-5
2	29-xxxxx-01	002E47681	Cover, Side Right	1--
3	29-xxxxx-01	002E47691	Cover, Side Left	1-3
4	29-xxxxx-01	002K65621	Cover, Top Assy	1-2
5	29-xxxxx-01	002K65641	Cover, Rear Assy	2-5, 7-5
6	*29-32017-01	005K80262	Roller, High Assy Feed	2-8, 7-8
7	*29-32018-01	005K80270	Roller, High Assy Turn	5-5
8	*29-32019-01	007K80885	Drive Assy P1	3-29
9	*29-32020-01	009E37050	Spring, SNR No Paper	3-43
10	*29-32021-01	012K95863	Link Assy	3-30
11	*29-32022-01	015K84313	Plate Assy Bottom	6-6
12	*29-32023-01	015K99144	Earth Plate Assy	3-23
13	*29-32024-01	022K21679	Roller, High Assy Pickup	3-11
14	*29-32025-01	022K29591	BTR Assy (A4) P1	3-2
15	29-32026-01	048K10361 (old) 048K10362 (new) (See Note.)	Cover, Front Assy	3-16, 17, 18
16	*29-32027-01	054K84874	Inlet Chute Sub Assy	3-12
17	*29-32028-01	054K87282	Trans Chute Sub	3-35
18	*29-32029-01	054K87310	Chute High Assy Lower P/H	2-7, 7-7
19	*29-32030-01	059K99951	Roll Assy Feed (rollers only)	5-2
20	29-32031-01	062K93460	ROS Assy 300/600 P1	na
21	LN14X-none	673K04280	Feeder 250 2 w/universal cass	na
22	LN14X-TU	673K04370	Cassette 250 Universal	na
23	LN14X-TE	673K04430	Cassette envelope w/o ps attach	na
24	LN14X-TL	673K04400	Cassette 250 Legal -	na

25	LN14X-TG	673K04310	Feeder 500 2 w/A4 cassette	na
26	LN14X-TF	673K04340	Feeder 500 2 w/letter cassette	na
27	LN14X-TA	673K04460	Cassette 500 A4	na
28	LN14X-TC	673K04490	Cassette 500 Letter	na
29	LN14X-none	673K04520	Cassette 500 B5	na
30	LN14X-AA	673K05470	CRU (EP-Cartridge)	5-15
31	*29-32054-01	073E07270	PKG LVPS Power Up 100V	6-1
32	*29-32056-01	073E07280	PKG LVPS Power Up 220V	6-1
33	29-32036-01	073E07291	PKG HVPS P1	6-2
34	29-32035-01	073E07300	PKG MCU DI 300/600 P1+	6-4
35	29-32055-01	673K05560	PKG Fuser Assy 110v P1+	4-1
36	29-32057-01	673K05570	PKG Fuser Assy 220v P1+	4-1
37	29-32037-01	101K15721	Control Panel Assy	3-32
38	*29-32038-01	121E80480	Solenoid Feed 1 Tray	2-3
39	*29-32039-01	121E80490	Solenoid Turn	2-4
40	*29-32040-01	121E81350	Solenoid Feed 2 Tray	7-3
41	*29-32041-01	121E81480	Solenoid Pickup	3-24
42	29-32042-01	127E80770	Fan	6-5
44	*29-32044-01	140K60670	Interface PWB Assy	6-14
45	*29-32045-01	152K44390	Harness High Assy Out	2-16
46	none	177K97320	Power Cord	na
47	*29-32046-01	600K92860	Kit Sensor CRU	5-6
48	29-32047-01	600K97261	Kit, Front Cover Latch	not shown
49	*29-32048-01	600K97270	Kit, Paper Feeder Gear	2-10 ~2-12
50	*29-32049-01	600K97280	Kit, Front Frame Gear	3-39 to 41
51	*29-32050-01	600K97290	Kit, Toner Sensor	5-10 + 14
52	29-32051-01	600K97300	Kit, Std Screw LH	all
53	29-32052-01	073K82430	Kit Tray Assy Input (MBF	3-8
54	29-32053-01	673K 5630	Feeder Assy 1 Tray 250	2-1 +21
55	29-xxxxx-01	101K15572	Rear Panel Assembly	6-15
56	29-32184-01	130K81070	Exit Sensor	4-29

Note: Old (oval) Digital Logo FX Part Number: 96E30860
New (rectangle) Digital Logo FX Part Number: 96E30661

FIC/Xerox Spares

Number	Digital Part Number	Vendor Part Number	Description	See PL
55	29-32070-01	600K47040	LN14 PS image controller (w/bracket but without f/w simm)	6-13
56	29-32071-01	600K47060	LN14 PS image controller (without bracket or f/w simm)	6-13
57	29-32072-01	600K47070	LN14 f/w SIMM	6-13
58	29-32073-01	720S31360	English Doc & Diskette	na

Note: PL 6-13, ESS controller with Rear Panel consists of items 55 and 57.

Third-Party Spares:

Number	Digital Part Number	Vendor Part Number	Description
59	LN14X-FA	na	1 MB PROGRAMABLE FONT MODULE
60	LN14X-FB	na	2 MB PROGRAMABLE FONT MODULE
61	LN14X-UC	na	2 MB MEMORY SIMM OPTION
62	LN14X-UD	na	4 MB MEMORY SIMM OPTION
63	LN14X-UE	na	8 MB MEMORY SIMM OPTION
64	LN14X-SI	na	LN14 SERIAL INTERFACE OPTION
65	LN14X-AT	na	APPLETALK INTERFACE OPTION
66	LN14X-FX	na	INTERNAL FAX OPTION U.S.
67	LN14X-NW	na	NETWORK OPTION CARD
68	LN14X-XE	na	EXTERNAL FAX OPTION FOR UK
69	LN14X-XG	na	EXTERNAL FAX OPTION FOR GERMANY
70	LN14X-XI	na	EXTERNAL FAX OPTION FOR ITALY
71	LN14X-XP	na	EXTERNAL FAX OPTION FOR FRANCE

Chapter 9 Removal and Replacement Procedures — Covers

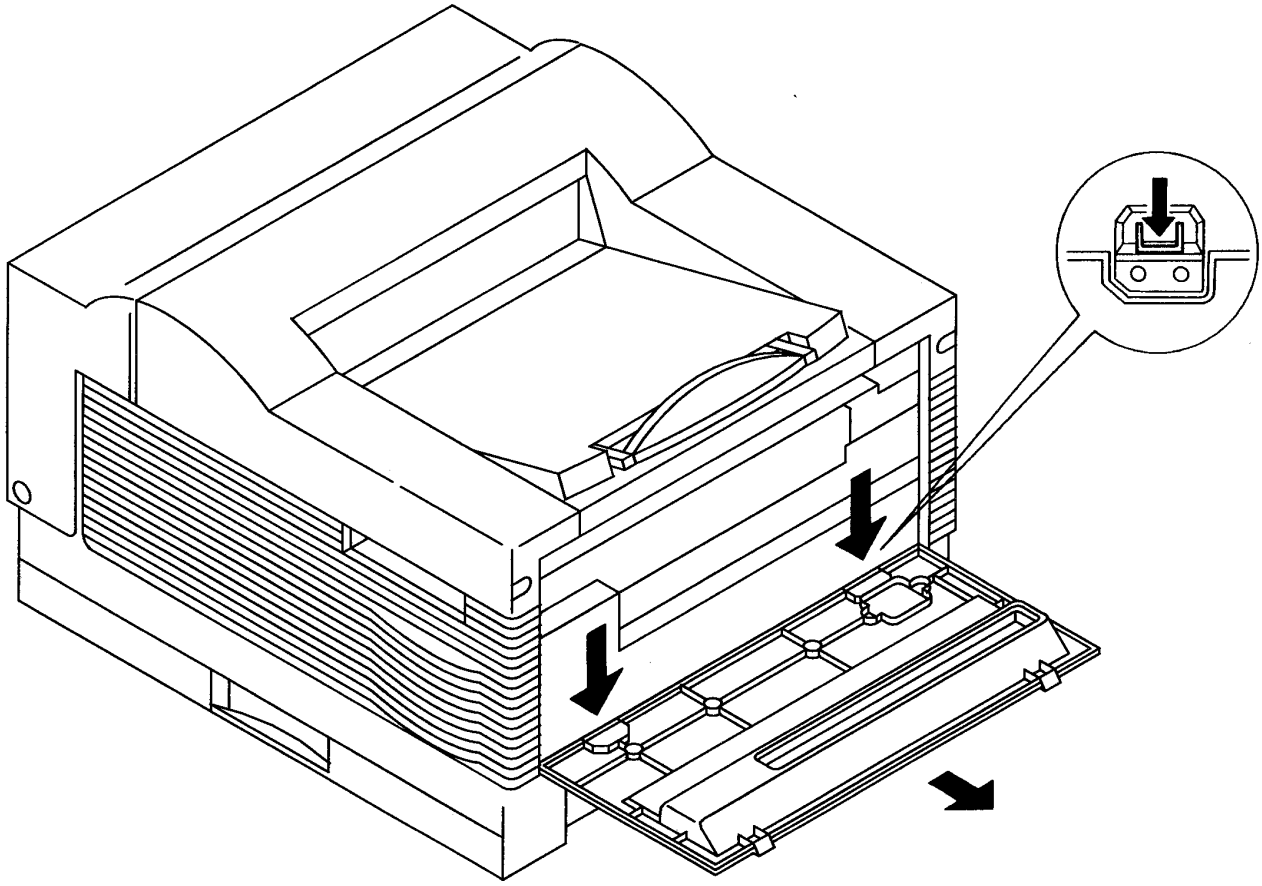
Notations in the RRP text

- Locations given in the RRPs assume you are facing the printer console panel.
- Arrows in the illustrations show direction of movement. Follow the numerical order if the arrows are numbered.
- The notation “screw (shape, color, and length of thread)” identifies individual screws.
- The notation “(See RRP X.Y)” in a RRP step, directs you to another RRP to see how to perform a related procedure.

Before You Start

- Switch off the printer power and disconnect the power cord from the wall outlet.
- Remove the toner (EP) Cartridge from the printer. Cover the cartridge to protect it from direct light.
- Close the Front Cover Assembly.
- Do not use force to remove or install printer components.
- Use only the screw size and type designated in the text. The wrong screw could easily damage tapped holes.
- Wear a wrist strap to dissipate static electricity that could damage sensitive electronic parts.

RRP 1.1 Rear Cover



RRP 1.1 Rear Cover

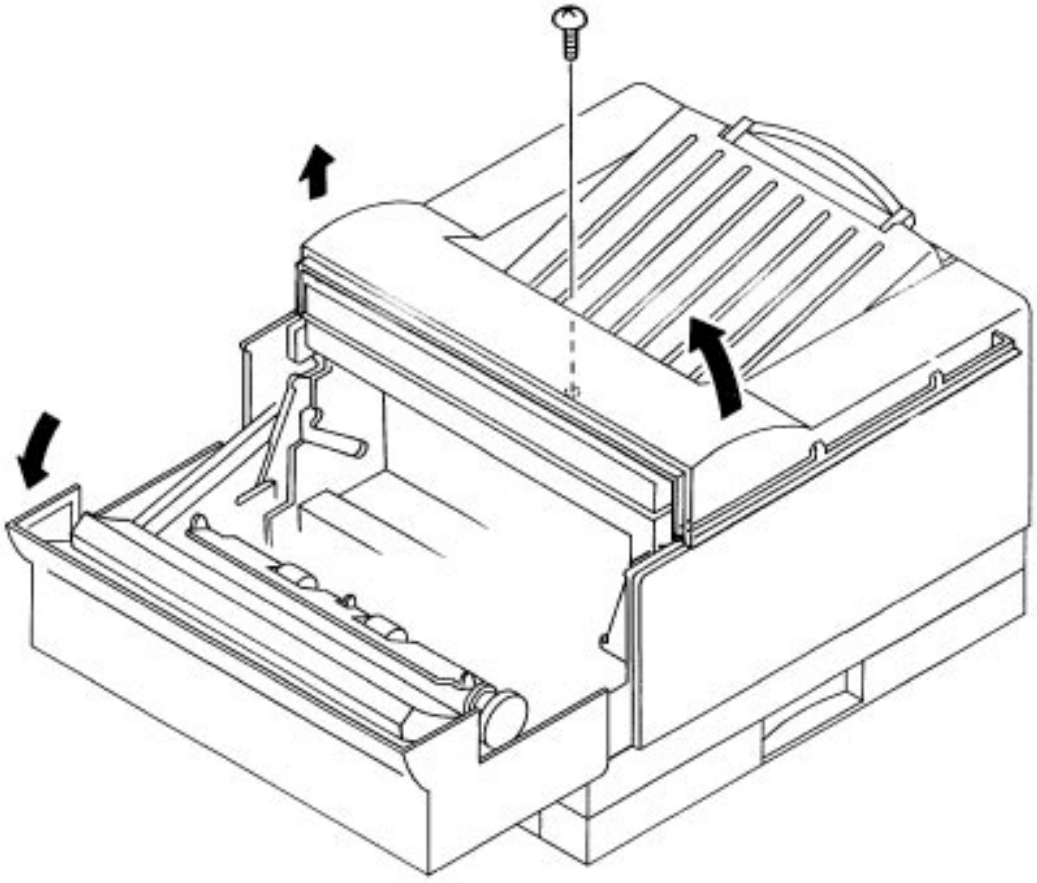
Removal

1. Remove the power cord from the back of the printer.
2. Press down on the two plastic tabs at the top of the Rear Cover, and swing the cover down and open.
3. Press the center tabs of the two plastic hinges located at the bottom of the open Rear Cover. Remove the cover.

Replacement

1. Push the plastic hinges, located at the bottom of the cover, into the slots at the bottom of the printer back plate. They will snap into place.
2. Swing the Rear Cover up and closed.

RRP 1.2 Top Cover Assembly



RRP 1.2 Top Cover Assembly

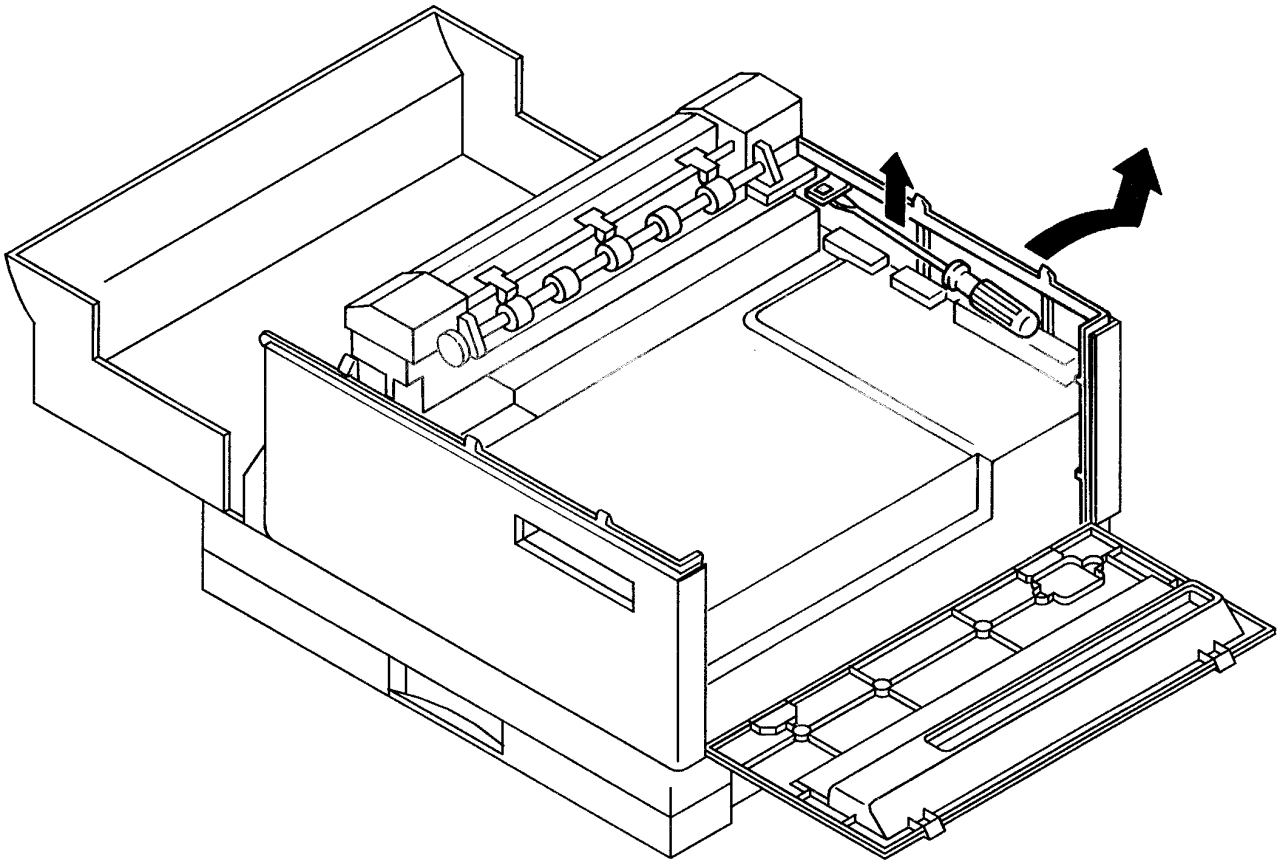
Removal

1. Open the rear cover (RRP 1.1).
2. Remove the two 6mm silver screws located at the top rear of the Top Cover Assembly.
3. Open the Front Transport Assembly.
4. Remove one 6-mm silver screw at the top of the top cover.
5. Gently lift up and remove the Top Cover

Replacement

1. Position the Top Cover so the plastic tabs on the Side Covers fit inside the Top Cover.
2. Press the Top Cover down and into place. Secure the top cover with one 6-mm silver screw at the top of the top cover.
3. Secure the Top Cover with two 6mm silver screws at the top of the top cover..

RRP 1.3 Left Cover



RRP 1.3 Left Cover

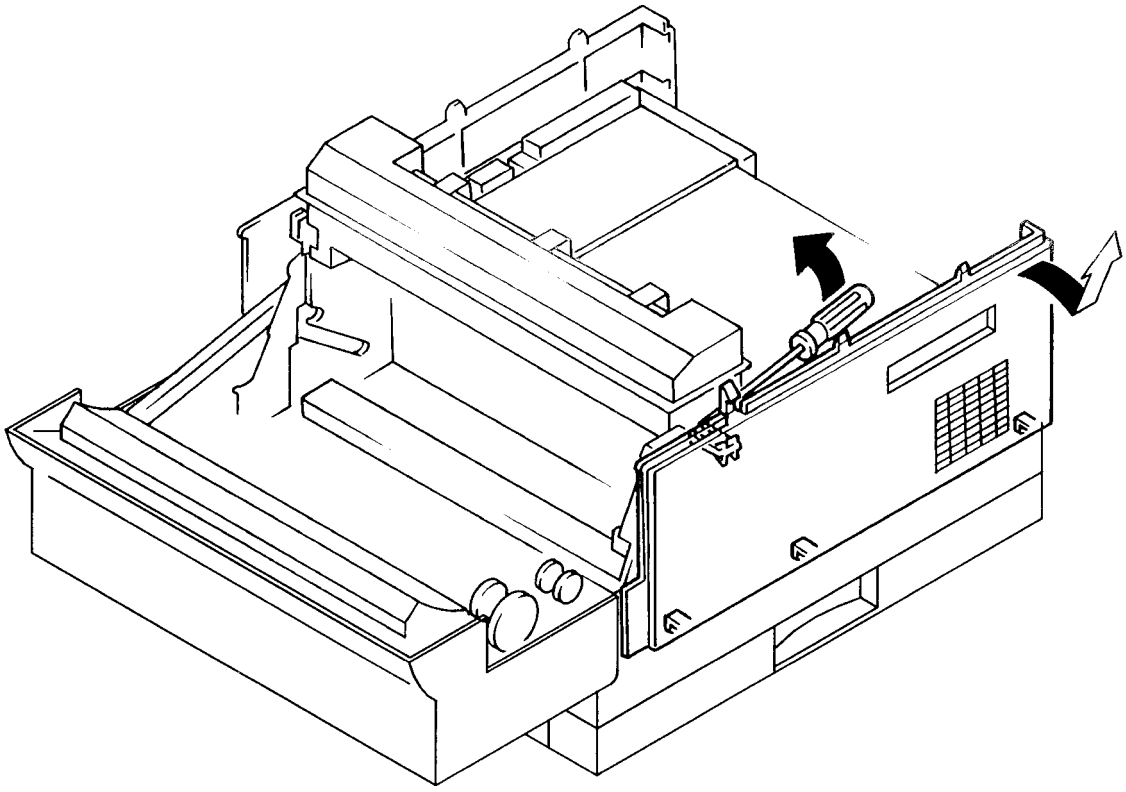
Removal

1. Open the rear cover (RRP 1.1).
2. Remove the Top Cover (RRP 1.2).
3. Use a screw driver to pry up the Left Cover latch located at the base of the fuser assembly .
4. Remove the Left Cover.

Replacement

1. Insert the three plastic tabs at the bottom of the Left Cover into the corresponding slots in the printer frame.
2. Swing the Left Cover up until the slotted plastic latch at the top of the cover snaps into place at the base of the fuser assembly.

RRP 1.4 Right Cover



RRP 1.4 Right Cover

Removal

1. Open the Rear Cover (RRP 1.1).
2. Remove the Top Cover (RRP 1.2).
3. Use a screwdriver to pry up the cover latch located at the base of the fuser assembly .
4. Remove the Right Cover.

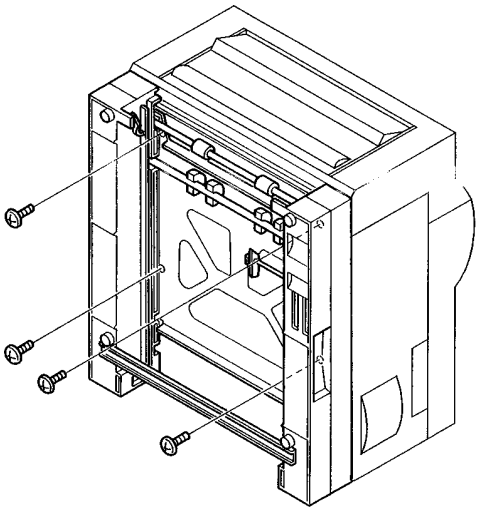
Replacement

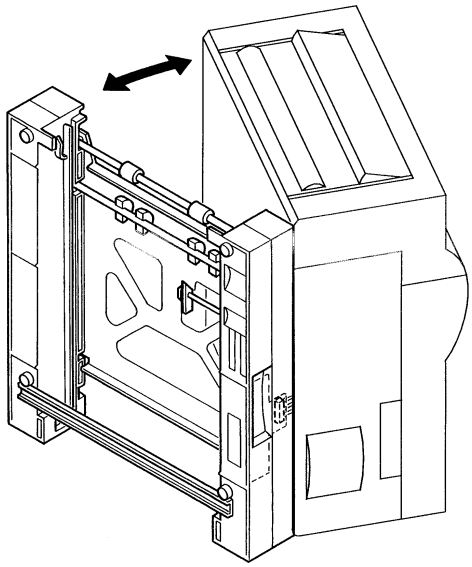
1. Insert the three plastic tabs located at the bottom of the Right Cover into the corresponding slots in the printer frame.
2. Swing the Right Cover up until the slotted plastic latch at the top of the cover snaps into place at the base of the fuser assembly.

Chapter 10 : Removal and Replacement Procedures — Feeder Assembly

The following sections show how to remove and replace the components of the feeder assembly.

RRP 2.1 Feeder Assembly





RRP 2.1 Feeder Assembly

Removal

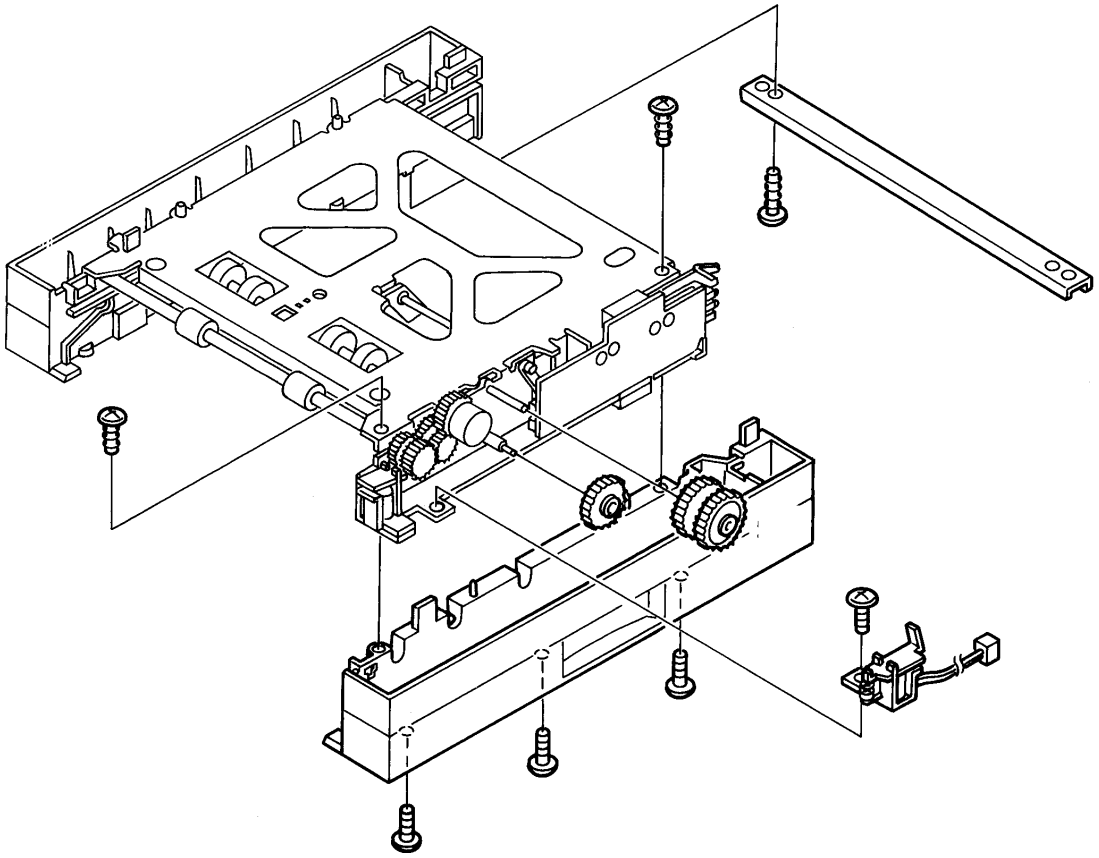
1. Remove the Paper Cassette.
2. Position the printer on its Rear Cover .
3. Hold the printer steady while you remove the four 6mm silver screws securing the Feeder Assembly to the bottom of the printer frame.
4. Carefully pull the assembly a few inches away from the printer, exposing the wiring harness connecting the two section .
5. Unplug P/J 115 from the Feeder PWB.
6. Remove the Feeder Assembly.
7. Return the printer to a normal upright position.

Replacement

1. Position the printer on its rear cover.
2. Hold the printer steady while you position the Feeder Assembly close to the bottom of the printer frame.
3. Carefully plug P/J 115 into the Feeder PWB.
4. Press the Feeder Assembly against the bottom of the printer frame. Align the holes on the feeder with the aligning bosses on the frame.

CAUTION: Do not pinch the wiring harness between the Feeder Assembly and the printer frame.

RRP 2.2 Feed Solenoid



RRP 2.2 Feed Solenoid

NOTE: If this printer has an optional Feeder Assembly, remove it before starting this RRP.

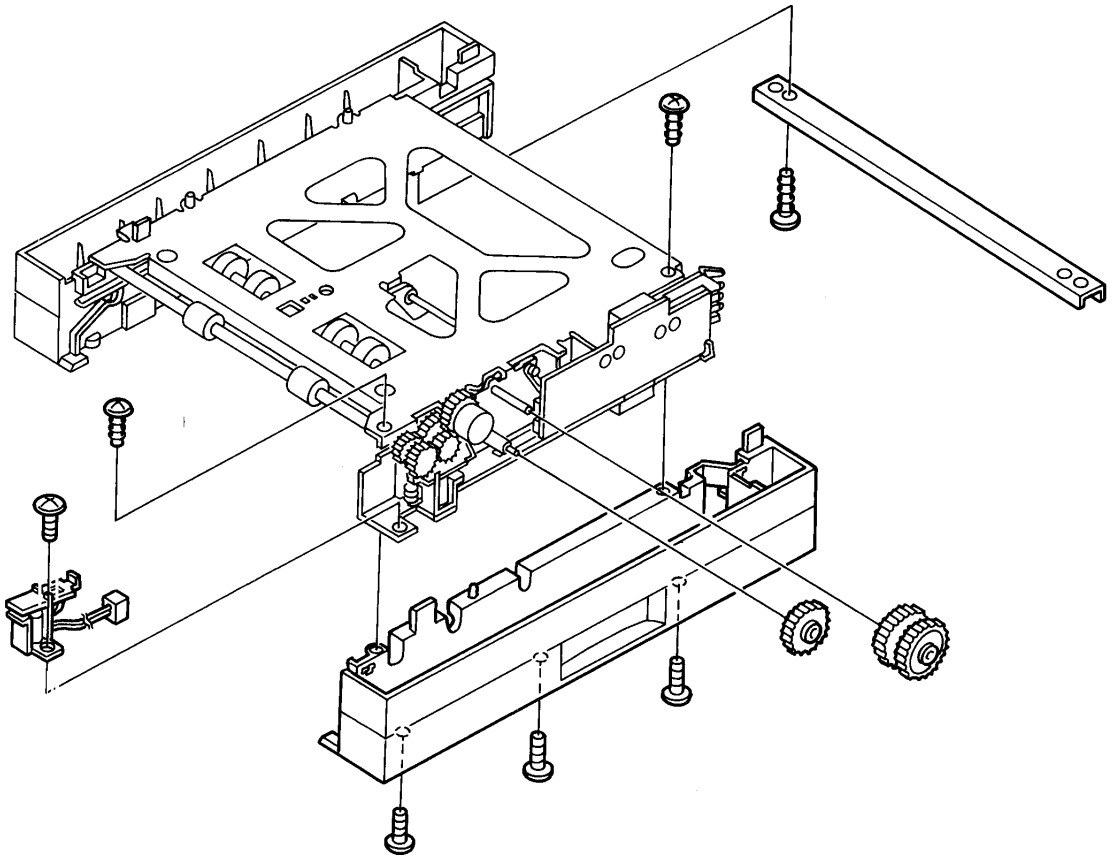
Removal

1. Remove the Paper Cassette.
2. Remove the Feeder Assembly (RRP 2.1).
3. Remove the two tapped 8mm gold screws securing the Feeder Tie Plate .
4. Remove the plate.
5. Remove the five screws (two 8mm silver screws on top, and three tapped 8mm silver screws on the bottom) securing Feed Housing R.
6. Remove Feed Housing R.
7. Remove the Gear IN and Gear OUT by sliding them forward and off of their shafts.
8. Remove the two 8mm silver screws securing the Feeder PWB, and pull the PWB away from the frame.
9. Unplug P/J 201 from the Feeder PWB.
10. Remove the 8mm silver screw securing the Feed Solenoid to the Feeder Assembly.
11. Remove the Solenoid.

Replacement

1. Secure the Feed Solenoid to the Feeder Assembly with an 8mm silver screw.
2. Plug P/J 201 into the Feeder PWB.
3. Secure the Feeder PWB to the Feeder Assembly with two 8mm silver screws.
4. Slide the Gear IN and Gear OUT back onto their respective shafts.
5. Reinstall the Feed Housing R. Secure it with two 8mm silver screws on top, and three tapped 8mm silver screws on the bottom.
6. Position the Feeder Tie Plate. Secure it with two 8mm tapped gold screws.

RRP 2.3 Turn Solenoid



RRP 2.3 Turn Solenoid

NOTE: If this printer has an optional Feeder Assembly, remove it before starting this RRP.

Removal

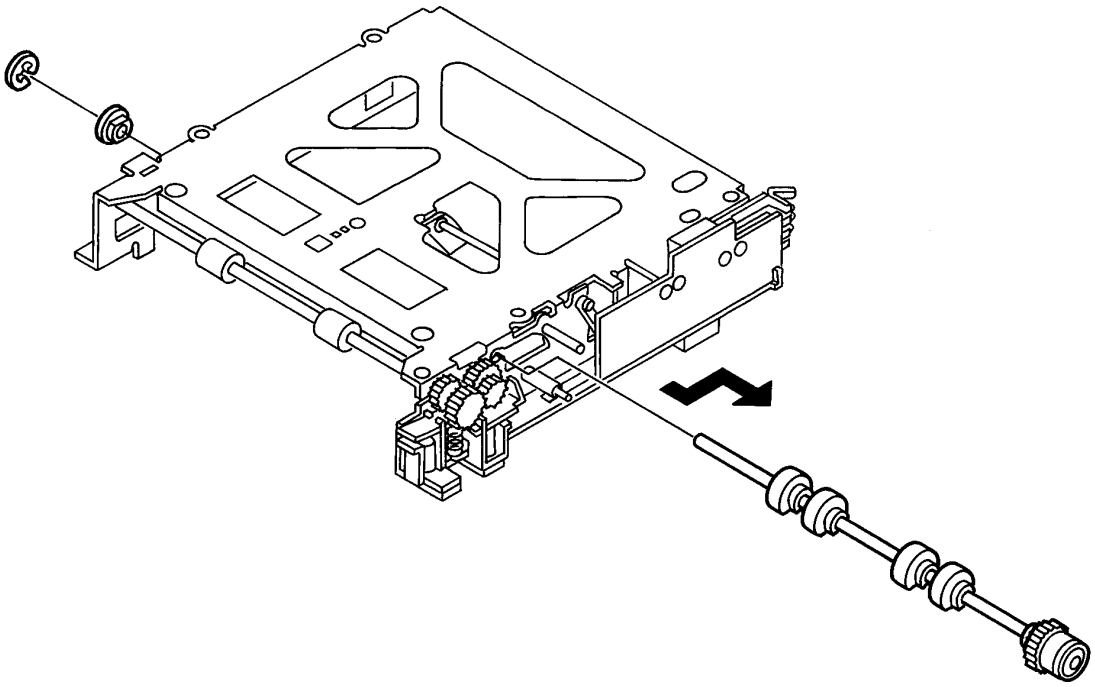
1. Remove the Paper Cassette.
2. Remove the Feeder Assembly (RRP 2.1).
3. Remove the two tapped 8mm gold screws securing the Feeder Tie Plate .
4. Remove the plate.
5. Remove the five screws (two 8mm silver screws on top, and three tapped 8mm silver screws on the bottom) securing Feed Housing R.
6. Remove Feed Housing R.
7. Remove the Gear IN and Gear OUT by sliding them off of their shafts.
8. Remove the two 8mm silver screws securing the Feeder PWB, and pull the PWB away from the frame.
9. Unplug P/J 202 from the Feeder PWB.
10. Remove the 8mm silver screw securing the Turn Solenoid to the Feeder Assembly.

Remove the Solenoid.

Replacement

1. Secure the Turn Solenoid to the Feeder Assembly with an 8mm silver screw.
2. Plug P/J 202 into the Feeder PW.
3. Secure the Feeder PWB to the Feeder Assembly with two 8mm silver screws.
4. Slide the Gear IN and Gear OUT back onto their respective shafts.
5. Reinstall the Feed Housing R. Secure it with two 8mm silver screws on top, and three 8mm tapped silver screws on the bottom.
6. Reinstall the Feeder Tie Plate. Secure it with two 8mm tapped gold screws.

RRP 2.4 Feed Roll Assembly



RRP 2.4 Feed Roll Assembly

NOTE: If this printer has an optional Feeder Assembly, remove it before starting this RRP (see section 2.1).

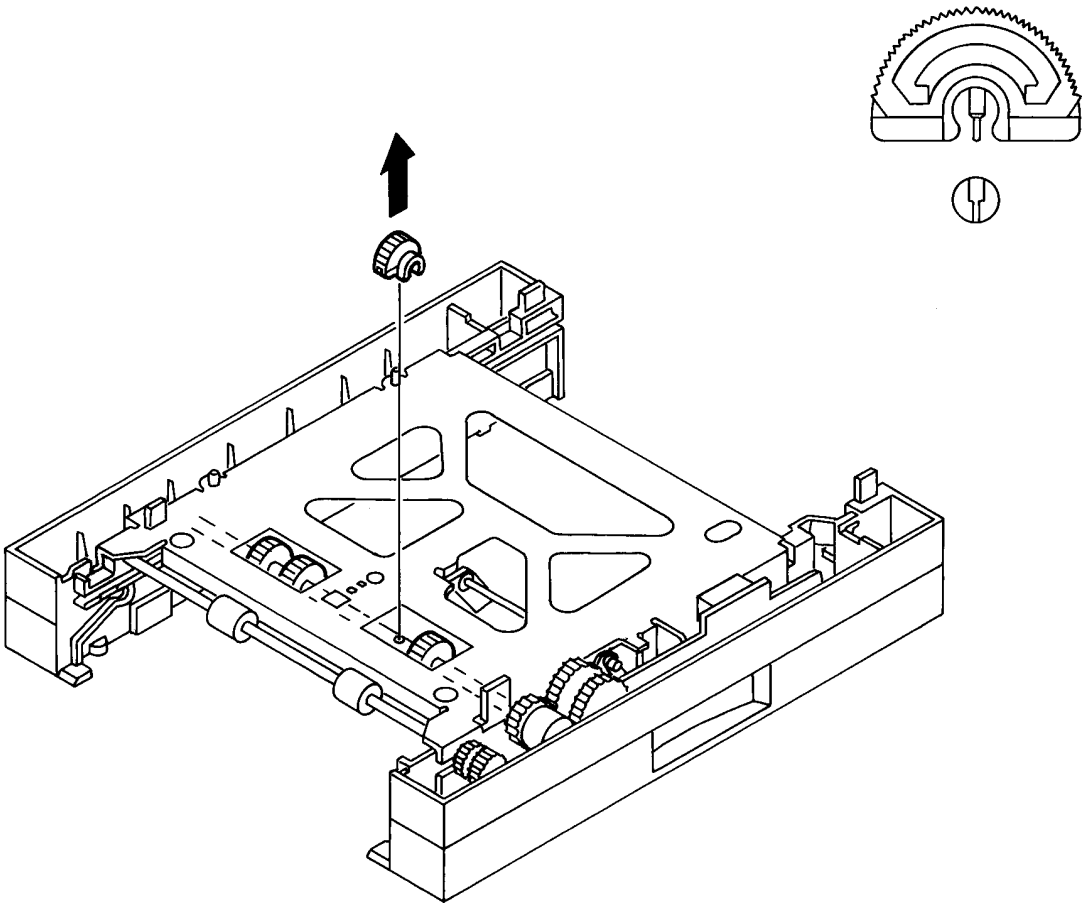
Removal

1. Remove the Paper Cassette.
2. Remove the Feeder Assembly (RRP 2.1).
3. Remove the two tapped 8mm gold screws securing the Feeder Tie Plate.
4. Remove the plate.
5. Remove the five screws (two 8mm silver screws on top, and three tapped 8mm silver screws on the bottom) securing Feed Housing R.
6. Remove Feed Housing R.
7. Remove the five screws (two 8mm silver screws on top, and three tapped 8mm silver screws on the bottom) securing Feed Housing L.
8. Remove Feed Housing L.
9. Remove the Gear IN and Gear OUT by sliding them off of their shafts.
10. Remove the E–Ring located on the left end of the Feed Roll shaft. Slide and pull the shaft out of the Feeder Assembly . Do not remove the bearing that supports the left end of the shaft.

Replacement

1. Slide the Feed Roll Assembly through the slot on the right side of the Feed Assembly.
2. Slide the free end of the Feed Roll Assembly shaft into the bearing on the left side of the Feed Assembly.
3. Position the bearing on the right end of the shaft so the flat sides mesh with the cutouts on the Assembly. Press the bearing into the cutout. Make sure both bearings are seated correctly in the frame.
4. Place the E–Ring on the left end of the shaft.
5. Slide the Gear IN and Gear OUT back onto their respective shafts.
6. Reinstall Feed Housing R and Feed Housing L. Secure each with two 8mm silver screws on the top and three 8mm tapped silver screws on the bottom.
7. Position the Feeder Tie Plate. Secure it with two 8mm tapped gold screws.

RRP 2.5 Feed Roll



RRP 2.5 Feed Roll

NOTE: If this printer has an optional Feeder Assembly, remove it before starting this RRP.

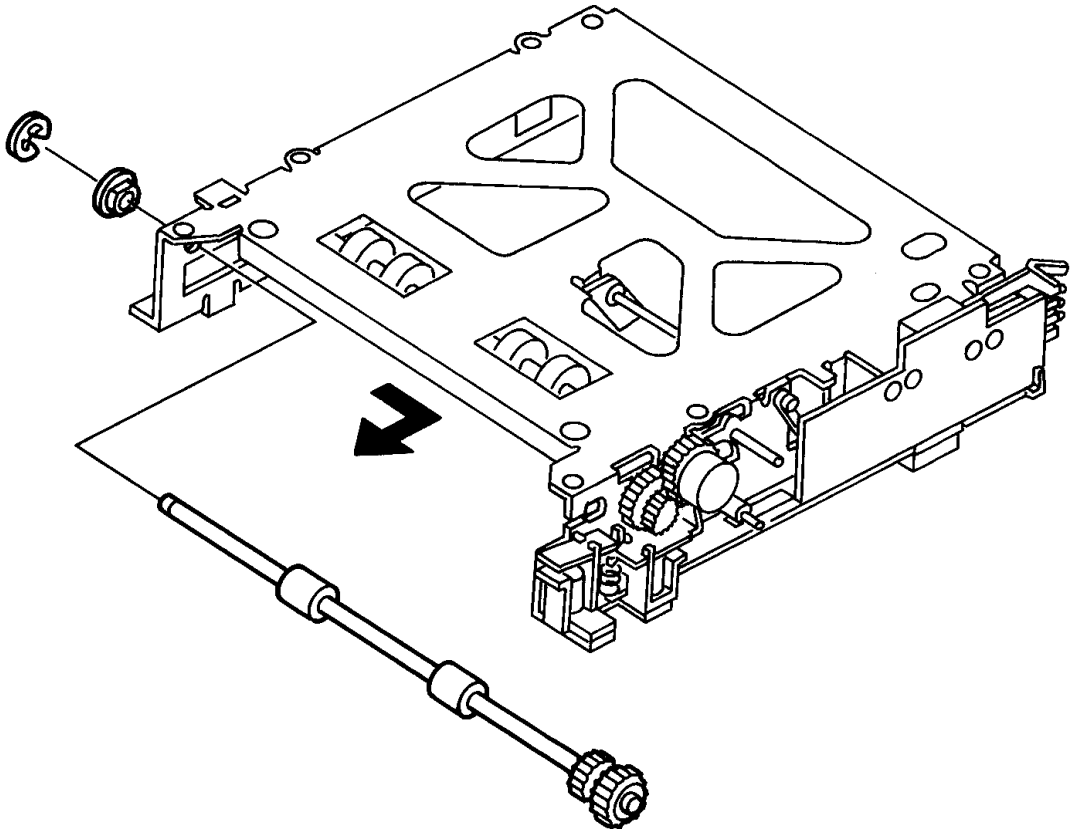
Removal

1. Remove the Paper Cassette.
2. Remove the Feeder Assembly (RRP 2.1).
3. Rotate the Feed Shaft so the flat side of the Feed Rolls are facing you.
4. Take the Feed Roll between your fingers and carefully rock it while pushing it off of the shaft .

Replacement

1. Rotate the Feed Shaft so the wide ends of the locating holes in the shaft are facing you.
2. Insert the locating pin on the Feed Roll into the locating hole in the shaft .
3. Push the Roll onto the shaft. It will snap into place.

RRP 2.6 Turn Roll Assembly



RRP 2.6 Turn Roll Assembly

NOTE: If this printer has an optional Feeder Assembly, remove it before starting this RRP (see RRP 2.1).

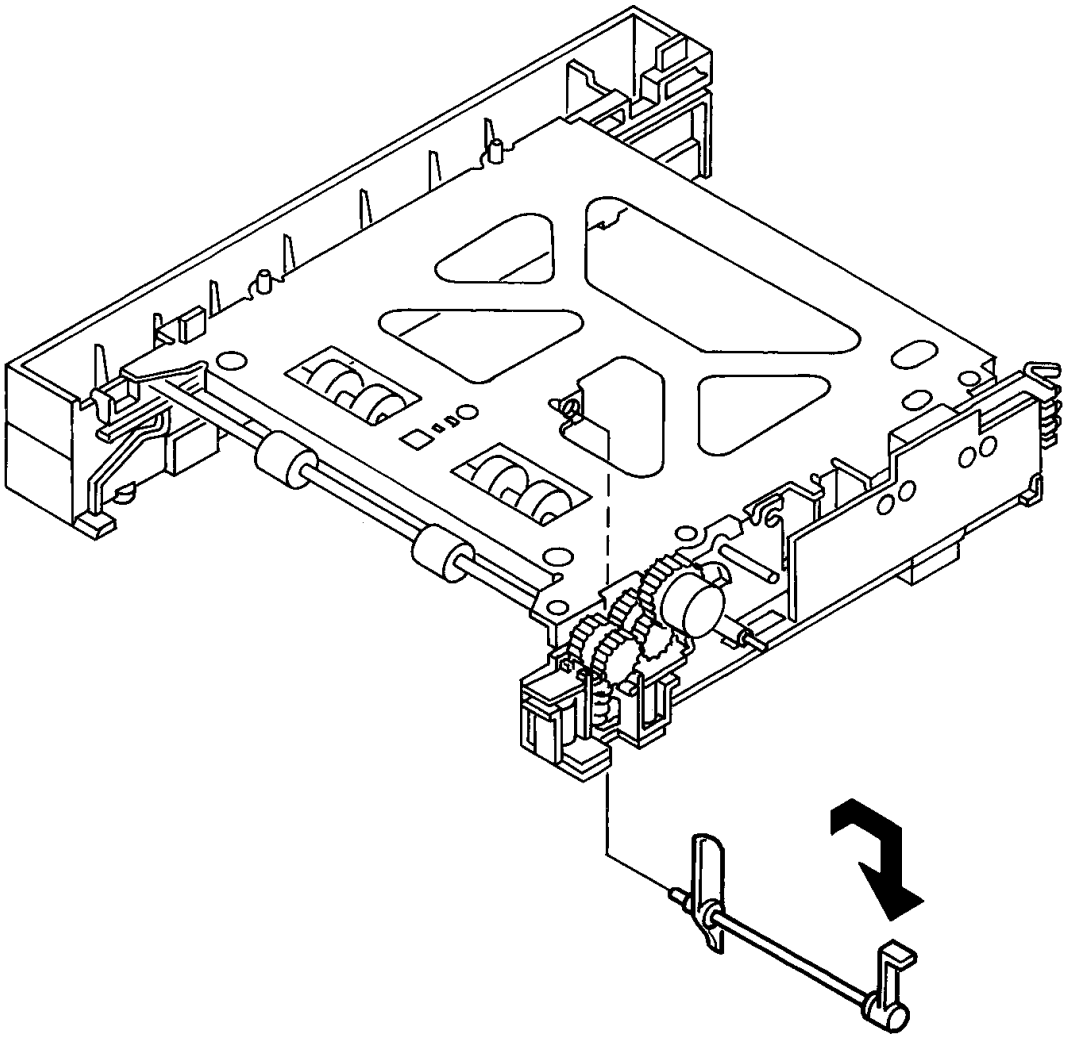
Removal

1. Remove the Paper Cassette.
2. Remove the Feeder Assembly (RRP 2.1).
3. Remove the two tapped 8mm gold screws securing the Feeder Tie Plate.
4. Remove the plate.
5. Remove the five screws (two 8mm silver screws on top, and three tapped 8mm silver screws on the bottom) securing the Feed Housing R.
6. Remove the Feed Housing R.
7. Remove the five screws (two 8mm silver screws on top, and three tapped 8mm silver screws on the bottom) securing the Feed Housing L.
8. Remove the Feed Housing L.
9. Remove the E-Ring located on the left end of the Turn Roll Assembly. Slide the shaft out of the Feeder Assembly. Do not remove the bearing that supports the left end of the shaft .

Replacement

1. Slide the Feed Roll Assembly through the slot on the right side of the Feed Assembly.
2. Slide the free end of the Feed Roll Assembly shaft into the bearing on the left side of the Feed Assembly.
3. Position the bearing on the right end of the shaft so the flat sides mesh with the cutouts on the Assembly. Press the bearing into the cutout. Make sure both bearings are seated correctly.
4. Place the E-Ring on the left end of the shaft.
5. Slide the Gear IN and Gear OUT back onto their respective shafts.
6. Reinstall the Feed Housing R and the Feed Housing L. Secure each with two 8mm screws on top, and three tapped 8mm silver screws on the bottom.
7. Position the Feeder Tie Plate. Secure it with two 8mm tapped gold screws.

RRP 2.7 No-Paper Actuator



RRP 2.7 No-Paper Actuator

NOTE: If this printer has an optional Feeder Assembly, remove it before starting this RRP.

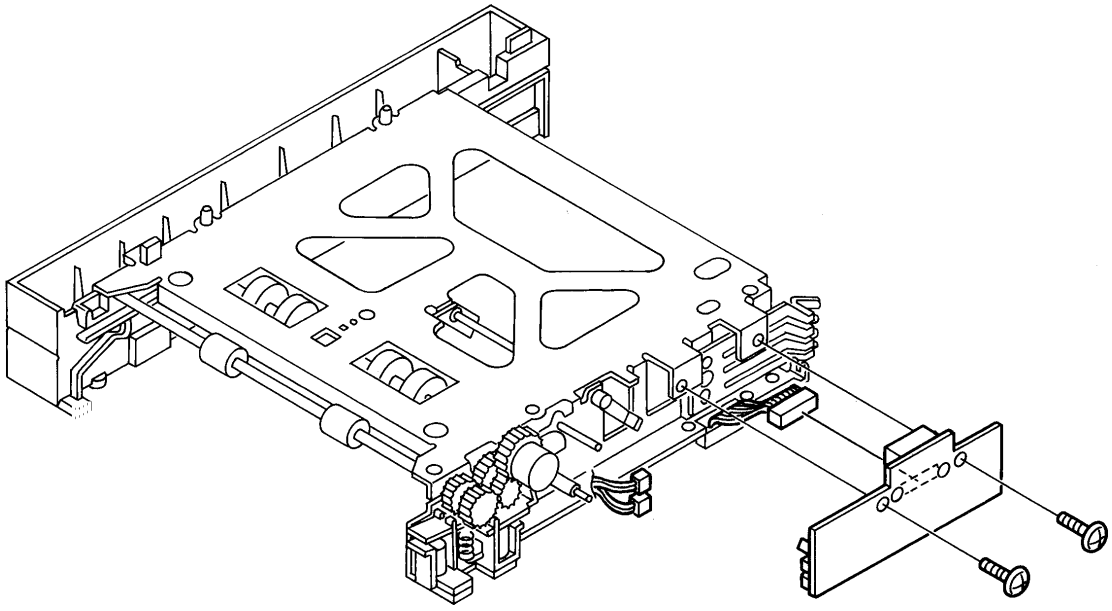
Removal

1. Remove the Paper Cassette.
2. Remove the Feeder Assembly (RRP 2.1).
3. Remove the two tapped 8mm gold screws securing the Feeder Tie Plate.
4. Remove the plate.
5. Remove the five screws (two 8mm silver screws on top, and three tapped 8mm silver screws on the bottom) securing the Feed Housing R.
6. Remove the Feed Housing R.
7. Rotate the No-Paper Actuator counter clockwise to the position shown in the illustration .
8. Remove the No-Paper Actuator from the Feeder Frame Assembly.

Replacement

1. Slide the small end of the No-Paper Actuator into the hole in the tab at the center of the Feeder Assembly.
2. Rotate the No-Paper Actuator counter clockwise to the position shown in the illustration.
3. Rotate the No-Paper Actuator clockwise. Make sure it clears the sensor on the Feeder PWB.
4. Reinstall the Feed Housing R. Secure it with two 8mm silver screws on top, and three tapped 8mm silver screws on the bottom.
5. Position the Feeder Tie Plate. Secure it with two 8mm tapped gold screws.

RRP 2.8 Feeder PWB



RRP 2.8 Feeder PWB

NOTE: If this printer has an optional Feeder Assembly, remove it before starting this RRP (see RRP 2.1).

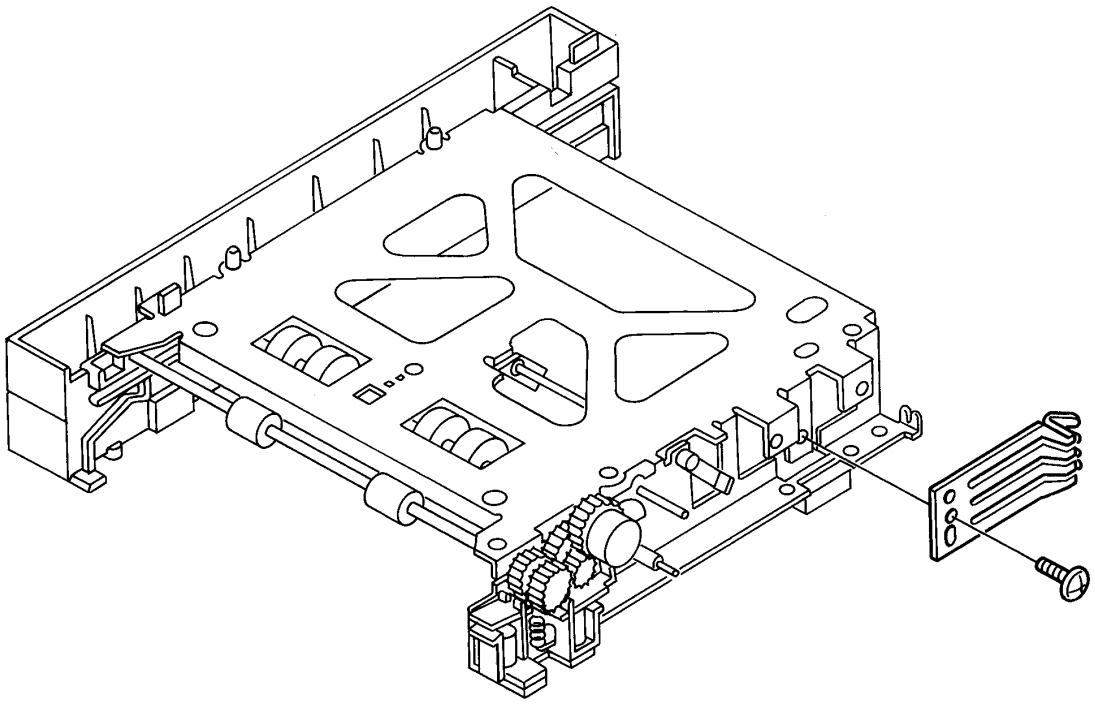
Removal

1. Remove the Paper Cassette.
2. Remove the Feeder Assembly (RRP 2.1).
3. Remove the two tapped 8mm gold screws securing the Feeder Tie Plate.
4. Remove the plate.
5. Remove the five screws (two 8mm silver screws on top, and three tapped 8mm silver screws on the bottom) securing the Feed Housing R.
6. Remove the Feed Housing R.
7. Remove the two 8mm silver screws securing the Feeder PWB, and pull the PWB away from the frame .
8. Disconnect the three connectors P/J116, P/J201, and P/J202 from the Feeder PWB, and remove the PWB.

Replacement

1. Position the Feeder PWB close to the Feeder Assembly.
2. Plug connectors P/J116, P/J201, and P/J202 in to the Feeder PWB.
3. Secure the Feeder PWB to the Feeder Assembly with two 8mm silver screws.
4. Reinstall the Feed Housing R. Secure it with two 8mm screws on top, and three tapped 8mm silver screws on the bottom.
5. Reposition the Feeder Tie Plate. Secure it with two 8mm tapped gold screws.

RRP 2.9 Size Spring



RRP 2.9 Size Spring

NOTE: If this printer has an optional Feeder Assembly, remove it before starting this RRP (see RRP 2.1).

Removal

1. Remove the Paper Cassette.
2. Remove the Feeder Assembly (RRP 2.1).
3. Remove the two tapped 8mm gold screws securing the Feeder Tie Plate.
4. Remove the plate.
5. Remove the five screws (two 8mm silver screws on top, and three tapped 8mm silver screws on the bottom) securing the Feed Housing R.
6. Remove the Feed Housing R.
7. Remove Feeder PWB (RRP 2.8).
8. Remove the 8mm silver screw securing the Size Spring to the Feeder Assembly, and remove the spring .

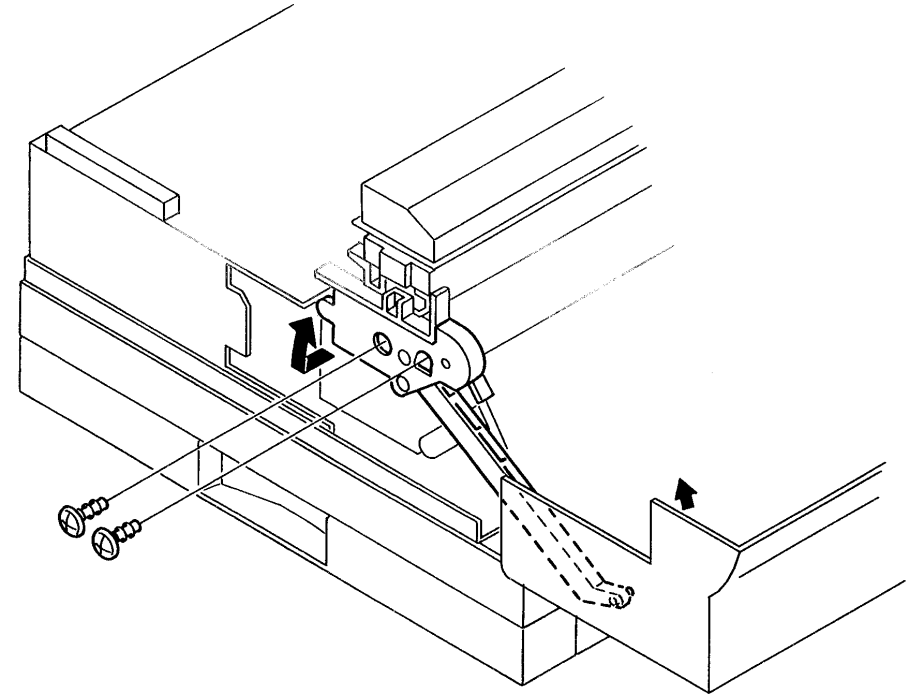
Replacement

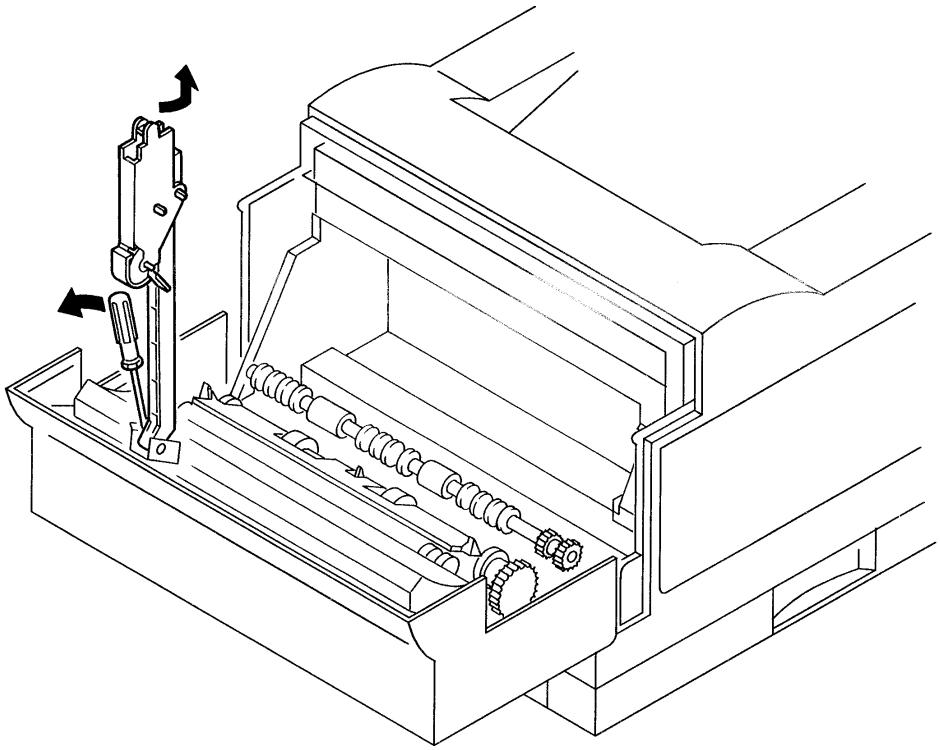
1. Position the Size Spring against the Feeder Assembly. Line up the two alignment holes in the spring with the two alignment bosses on the assembly.
2. Secure the Size Spring to the Feeder Assembly with a 8mm silver screw.
3. Reinstall the Feeder PWB.
4. Reinstall the Feed Housing R. Secure it with two 8mm screws on the top, and three tapped 8mm silver screws on the bottom.
5. Position the Feeder Tie Plate. Secure it with two 8mm tapped gold screws.

Chapter 11 : Removal and Replacement Procedures — Paper Transportation

The following sections explain how to remove and replace the paper transport components.

RRP 3.1 Link Assembly





RRP 3.1 Link Assembly

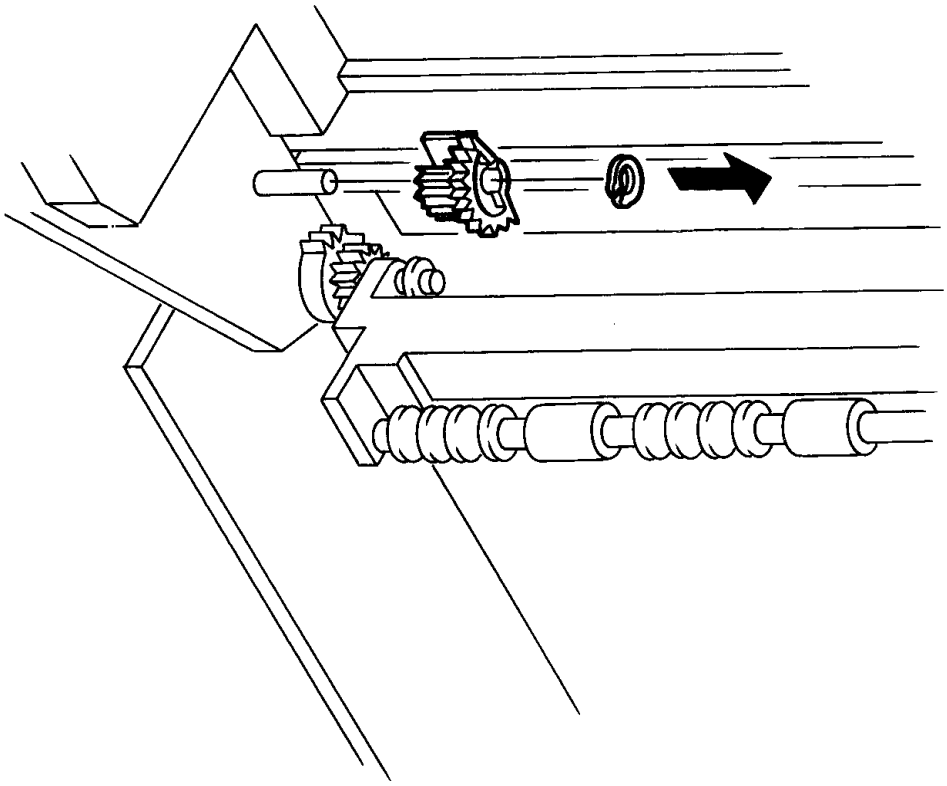
Removal

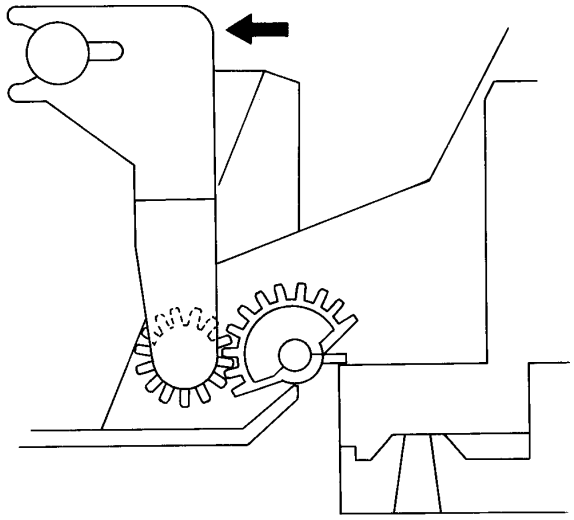
1. Open the Rear Cover (RRP 1.1).
2. Remove the Top Cover (RRP 1.2).
3. Remove the Left Cover (RRP 1.3).
4. Open the Front Cover and remove the two tapped 8mm silver screws securing the Link Assembly to the printer frame just below the fuser area .
5. Use a screwdriver to pry open the link spring that holds the Link Assembly to the front cover .
6. Remove the Link Assembly.

Replacement

1. Snap the end of the Link Assembly arm into the spring on the front cover.
2. Position the other end of the Link Assembly against the printer frame just below the fuser area.
3. Line up the alignment bosses on the Link Assembly with the holes in the frame.
4. Secure the Link Assembly to the frame with two tapped 8mm silver screws.

RRP 3.2 Gear Double L





RRP 3.2 Gear Double L

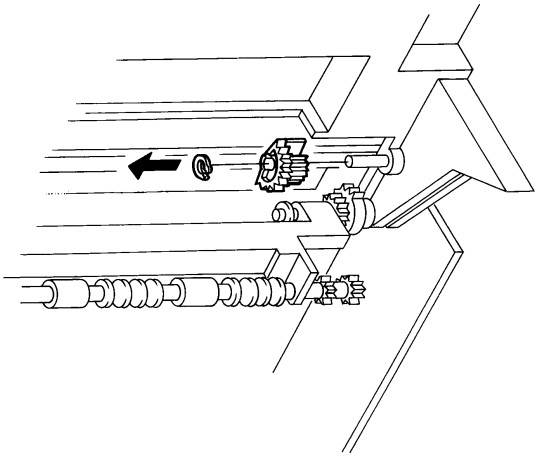
Removal

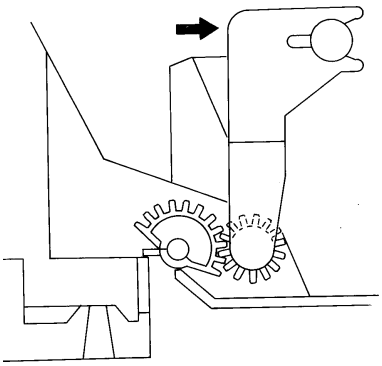
1. Open the Front Transport Assembly.
2. Remove the C–Ring holding the Gear Double L to its shaft .
3. Remove the Gear Double L by biasing the Lower Chute Assembly toward the front of the printer while you slide the gear off of the shaft.

Replacement

1. Reinstall the Gear Double L by biasing the Lower Chute Assembly toward the front of the printer while you slide the gear onto the shaft .
2. Reinstall the C–Ring to secure the gear to the shaft.

RRP 3.3 Gear Double R





RRP 3.3 Gear Double R

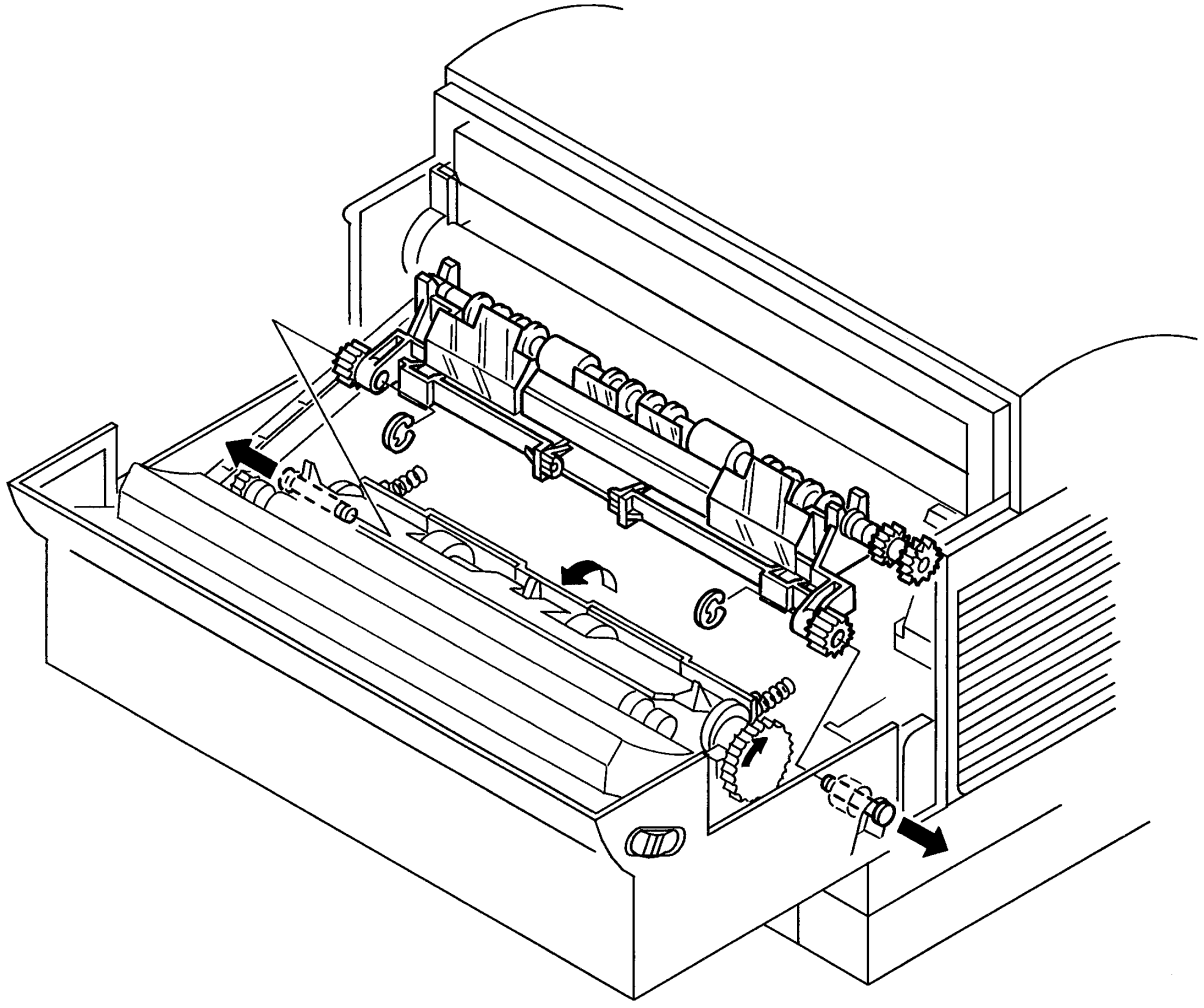
Removal

1. Open the Front Transport Assembly.
2. Remove the C–Ring holding the Gear Double R to the shaft .
3. Remove the Gear Double R by biasing the Lower Chute Assembly toward the front of the printer while you slide the gear off of the shaft.

Replacement

1. Reinstall the Gear Double R by biasing the Lower Chute Assembly toward the front of the printer while you slide the gear onto the shaft .
2. Reinstall the C–Ring to secure the gear to the shaft.

RRP 3.4 Lower Chute Assembly



RRP 3.4 Lower Chute Assembly

Removal

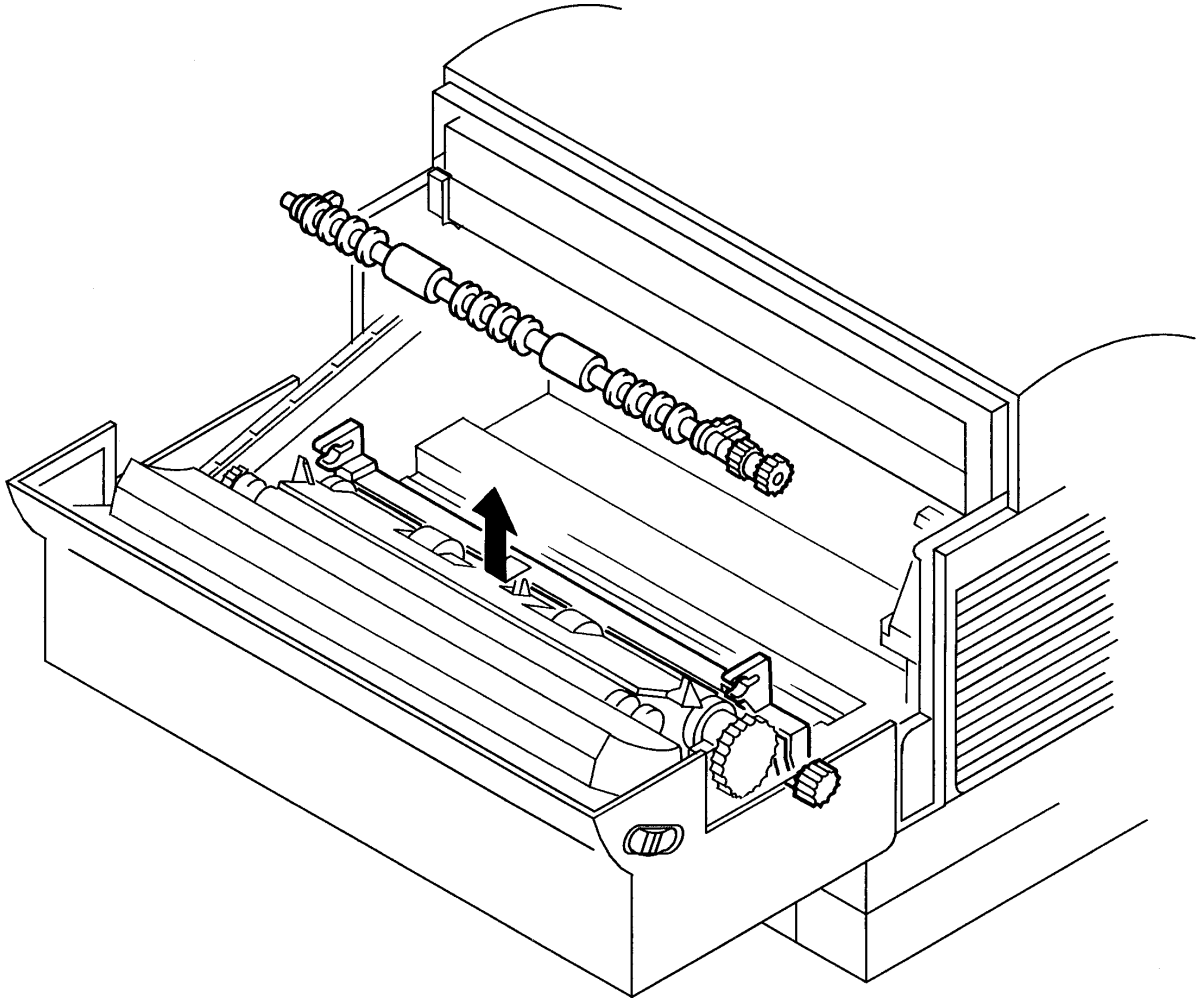
1. Open the Front Transport Assembly.
2. Remove the Gear Double L (RRP 3.2).
3. Remove the Gear Double R (RRP 3.3).
4. Push the Lower Chute Assembly back, while pressing the Bottom Plate Assembly against the Pick–Up Roll Assembly. This will expose the E–Rings securing the left and right Pivot Shafts.
5. Remove the E–Rings .
6. Pull both Pivot Shafts out about 25mm and remove the Lower Chute Assembly.

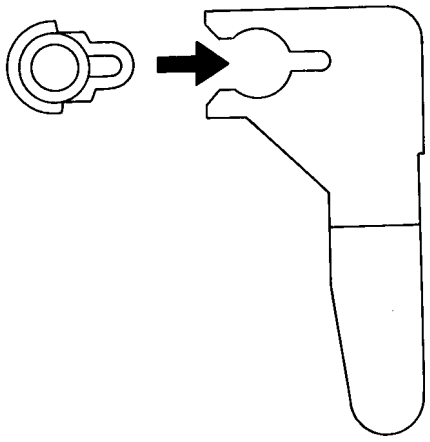
NOTE: Do not pull the Pivot Shafts completely out of the Front Transport Assembly and the Gear Front Cover.

Replacement

1. Position the Lower Chute Assembly next to the Pivot Shafts.
2. Press the shafts all the way into the holes in the Lower Chute Assembly.
3. Reinstall the E–Ring in the second notch from the end of the left Shaft.
4. Reinstall the E–Ring in the first notch from the end of the right Shaft.
5. Replace both the Gear Double L and the Gear Double R.

RRP 3.5 Take–Away Roll Assembly





RRP 3.5 Take–Away Roll Assembly

Removal

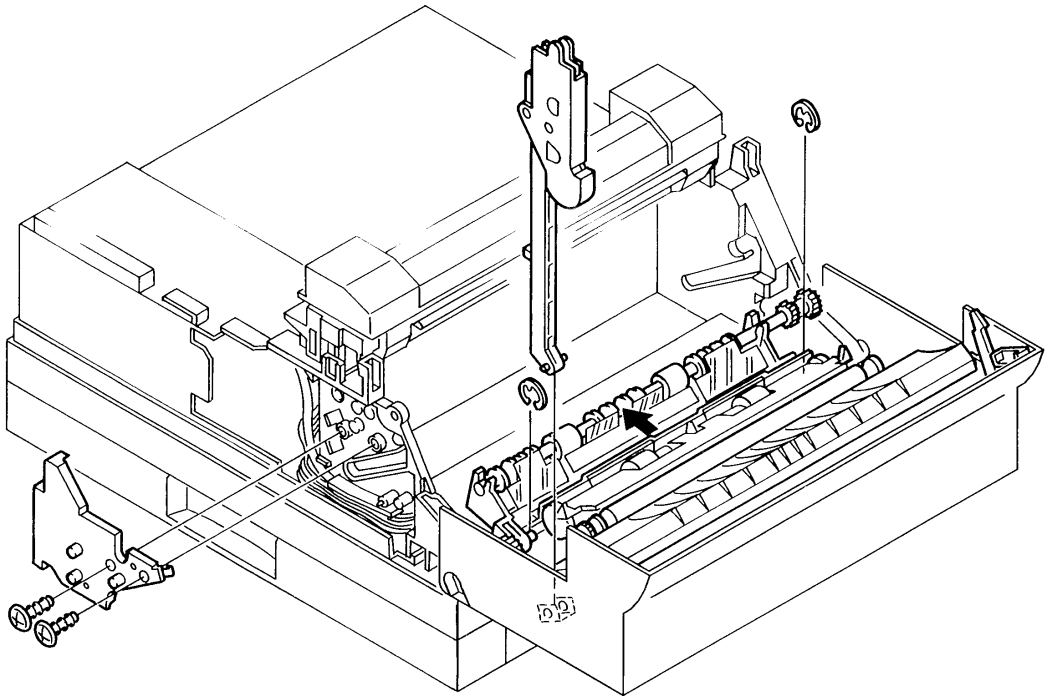
1. Open the Front Transport Assembly.
2. Remove the Take–Away Roll Assembly from the Lower Chute Assembly .

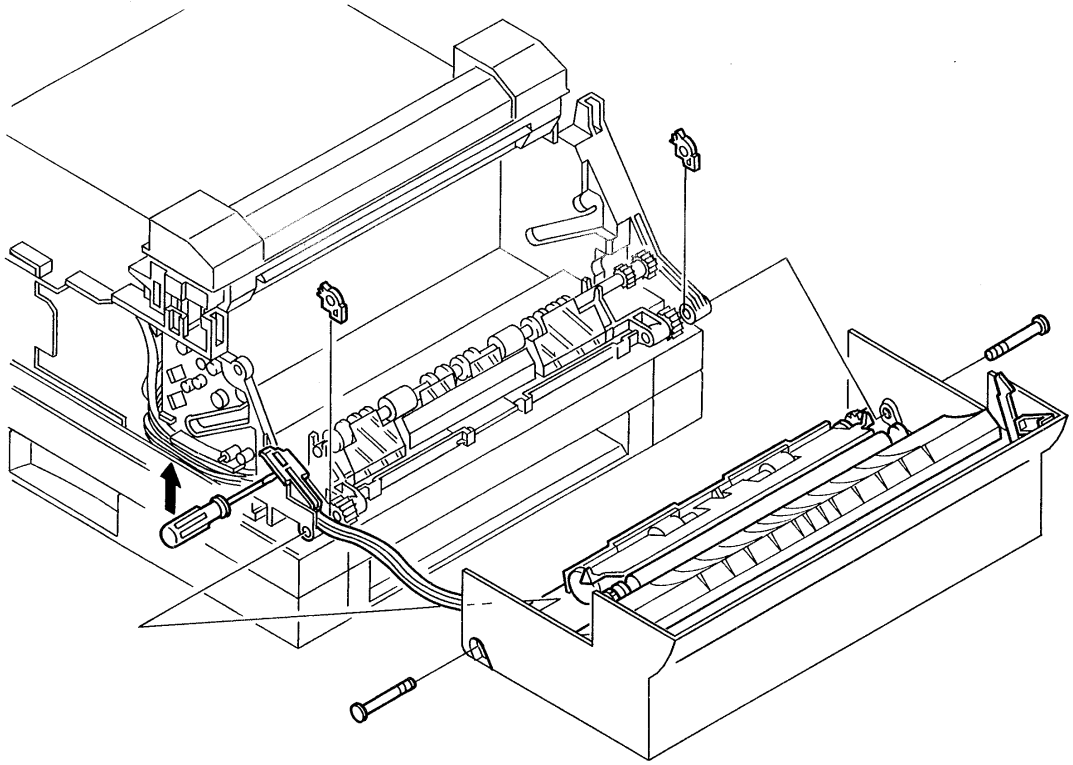
   Take the left end of the Take–Away Roll Assembly in your left hand and take the right end of the Assembly in your right hand. Pull the Assembly up while pushing the Lower Chute Assembly away from the Take–Away Roll. The Roll will pop out of the positioning tabs.

Replacement

1. Align the bearings at the ends of the Take–Away Roll Assembly with the tabs in the Lower Chute Assembly .
2. Press the Take–Away Roll Assembly bearings into the Lower Chute Assembly tabs.
3. Position the Lower Chute Assembly mylar strips so they ride on top of the Take–Away Roll Assembly.

RRP 3.6 Front Transport Assembly





RRP 3.6 Front Transport Assembly

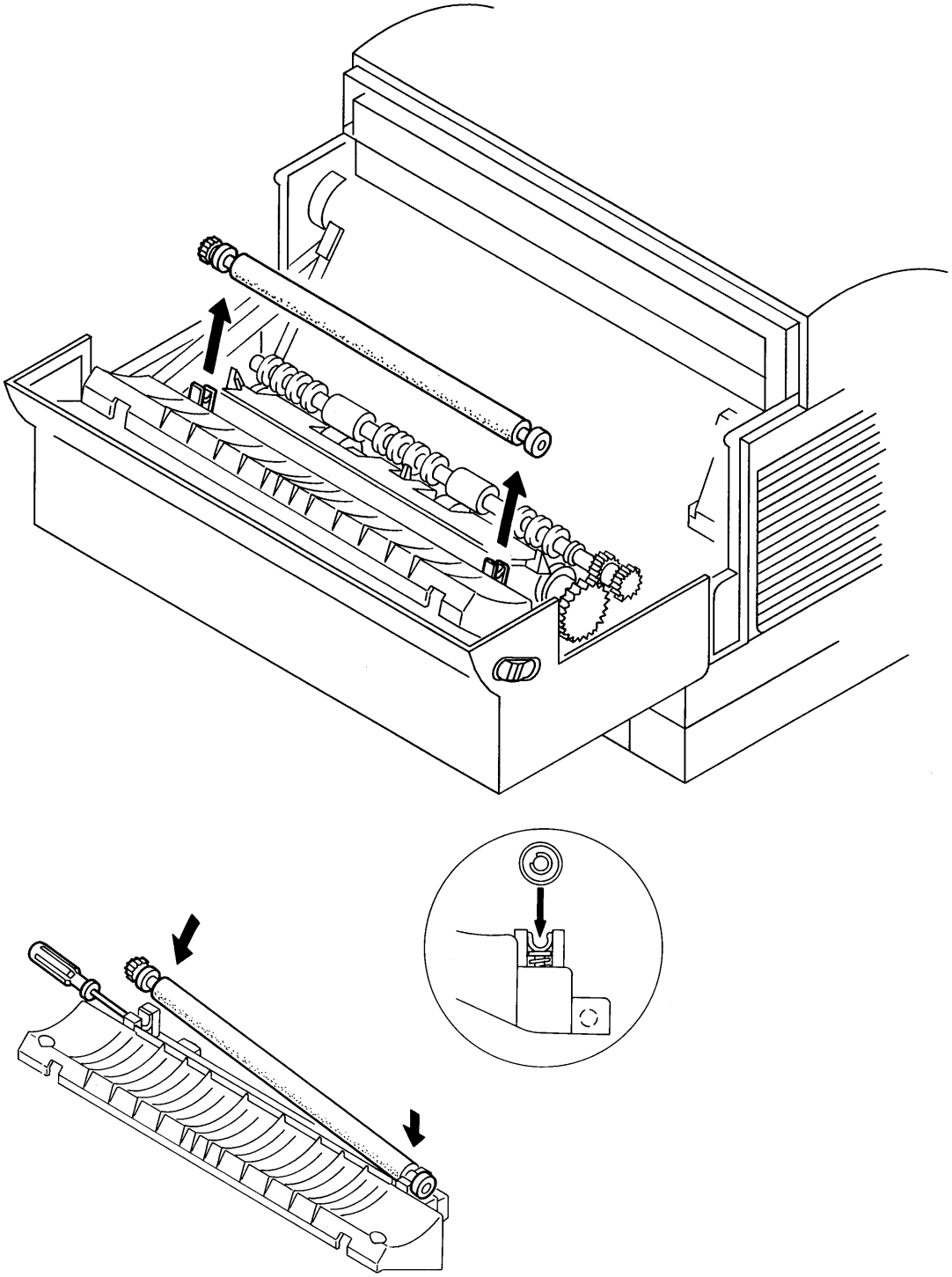
Removal

1. Open the Rear Cover (RRP 1.1).
2. Remove the Top Cover Assembly (RRP 1.2).
3. Remove the Left Cover (RRP 1.3).
4. Remove the Right Cover (RRP 1.4).
5. Remove the Fuser Assembly (RRP 4.1).
6. Remove the Gear Double L (RRP 3.2).
7. Remove the Gear Double R (RRP 3.3).
8. Remove the Lower Chute Assembly (RRP 3.4).
9. Remove the Link Assembly (RRP 3.1) .
10. Remove the Earth Plate Assembly (RRP 6.4).
11. Use a screwdriver to pry off the Cable Cap securing the wire harness running next to the Link Assembly .
12. Hold the Front Transport Assembly while you slowly slide the Left and Right Pivot Shafts out.
13. Remove the Front Transport Assembly.

Replacement

1. Position the Front Transport Assembly so the pivot holes align.
2. Reinstall the Left and Right Pivot Shafts.
   NOTE: Make sure the Pivot Shaft bearings are squarely seated in their slots.
3. Reinstall the Cable Cap.
   NOTE: Make sure the wiring harness doesn't interfere with the Link Assembly.
4. Reinstall the Earth Plate Assembly.
5. Reinstall the Link Assembly.
6. Reinstall the Lower Chute Assembly.
7. Reinstall the Gear Double R.
8. Reinstall the Gear Double L.
9. Reinstall the Fuser Assembly.
10. Reinstall the Right Cover.
11. Reinstall the Left Cover.
12. Reinstall the Top Cover Assembly.
13. Close the Rear Cover.

RRP 3.7 BTR Assembly



RRP 3.7 BTR Assembly

Removal

1. Open the Front Transport Assembly.
2. Remove the BTR Assembly by pulling the ends of BTR Assembly shaft while pressing against the Transportation Chute Assembly .

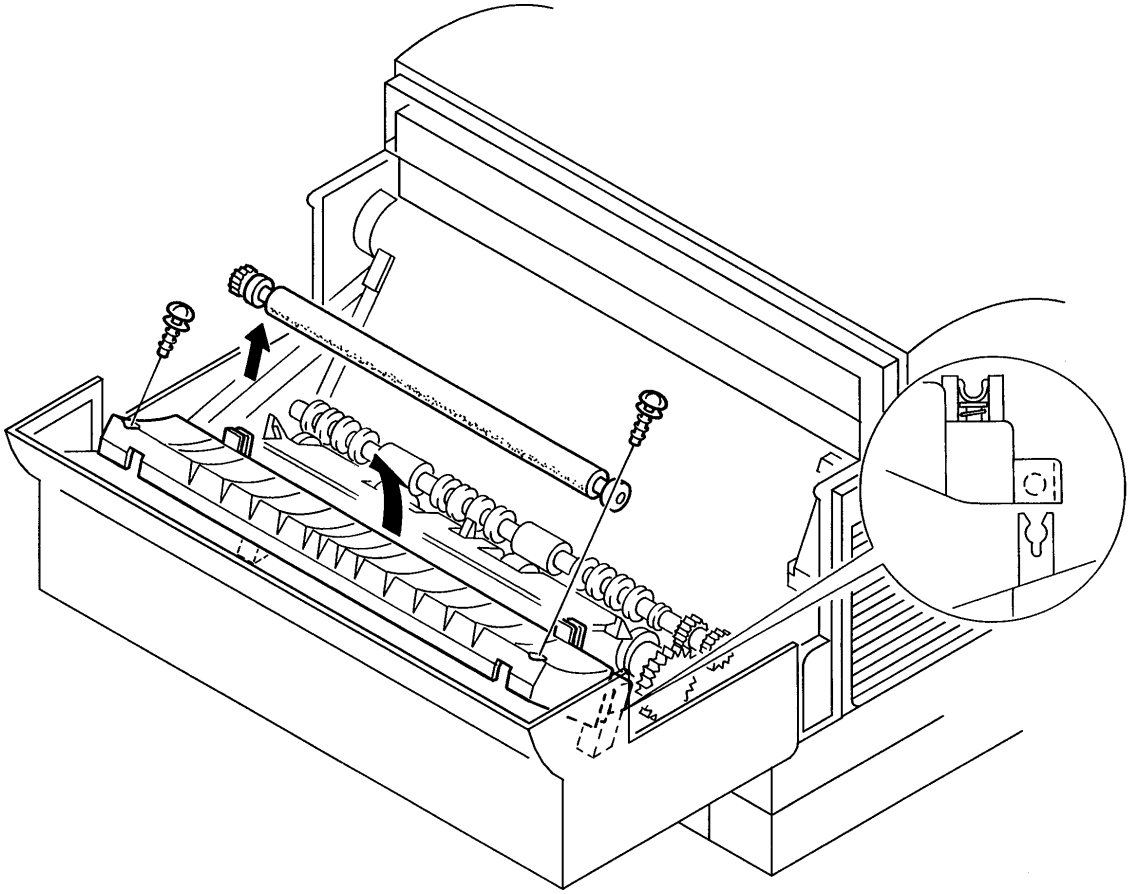
   NOTE: Do not remove the Transportation Chute Assembly bearings and springs when you remove the BTR Assembly.

   CAUTION: Do not touch the BTR surface or the Transportation Chute Assembly Eliminator. After you have removed the BTR Assembly, cover it so it will not get contaminated or damaged.

Replacement

1. Remove the Transportation Chute Assembly.
2. Align the BTR Assembly shaft (with the gear to the left side) with the Transportation Chute Assembly bearing.
3. Press the right end of the BTR Assembly shaft into the right bearing on the Transportation Chute Assembly. It will snap into place.
4. Place the blade of a small screwdriver at the bottom of the left bearing spring. This will stop downward travel of the bearing when you are installing the BTR Assembly .
5. Press the left end of the BTR Assembly shaft into the left bearing on the Transportation Chute Assembly. It will snap into place.
6. Reinstall the Transportation Chute Assembly.

RRP 3.8 Transportation Chute Assembly



RRP 3.8 Transportation Chute Assembly

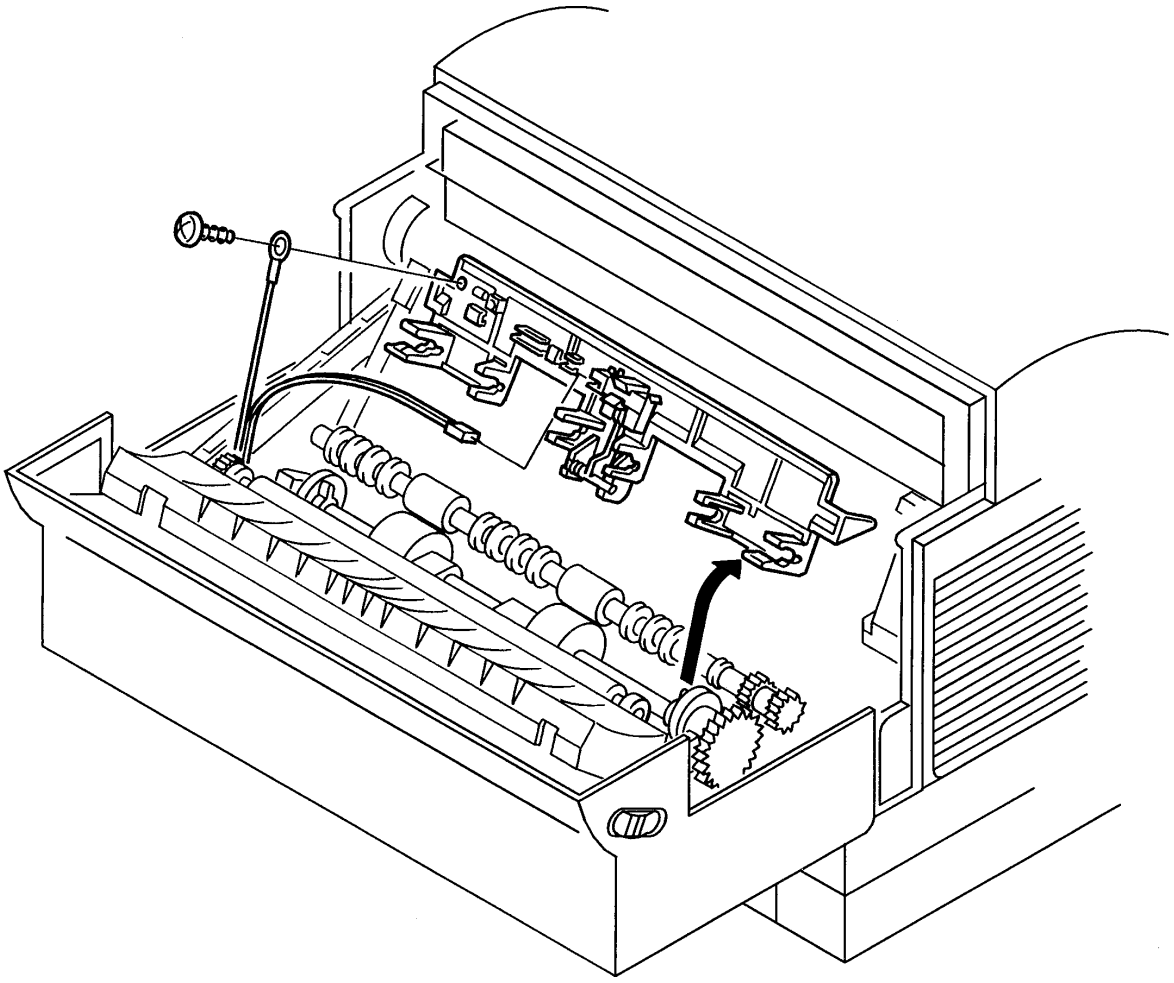
Removal

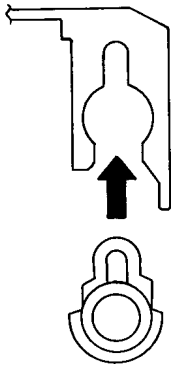
1. Open the Front Transport Assembly.
2. Remove the BTR Assembly (RRP 3.7).
3. Remove the two tapped 8mm gold screws that secure the Transportation Chute Assembly to the Front Transport Assembly .
4. Use the blade of a screwdriver to spread the latches that secure the Transportation Chute to the front cover. Lift the Transportation Chute Assembly away from the Front Transport Assembly.
5. Turn the Transportation Chute Assembly over.
6. Unplug the red wire (P/J TR–T).
7. Remove the 8mm silver screw securing the green wire, and remove the green wire

Replacement

1. Reinstall the BTR Assembly.
2. Plug in the red wire (P/J TR–T) and secure the green wire with an 8mm silver screw.
3. Position the Transportation Chute Assembly against the Front Cover, aligning the latches at the bottom of the Assembly with the latches on the Front Cover.
4. Press firmly on the Transportation Chute Assembly, until it snaps into place.
5. Secure the Transportation Chute Assembly with two tapped 8mm gold screws.

RRP 3.9 Inlet Chute Assembly





RRP 3.9 Inlet Chute Assembly

Removal

1. Open the Front Transport Assembly.
2. Remove the Inlet Chute Assembly from the Pick–Up Roll by holding the chute at both sides of the near edge, and rotating the Assembly back while pulling up .

   CAUTION: Do not touch the surface of the BTR Assembly.

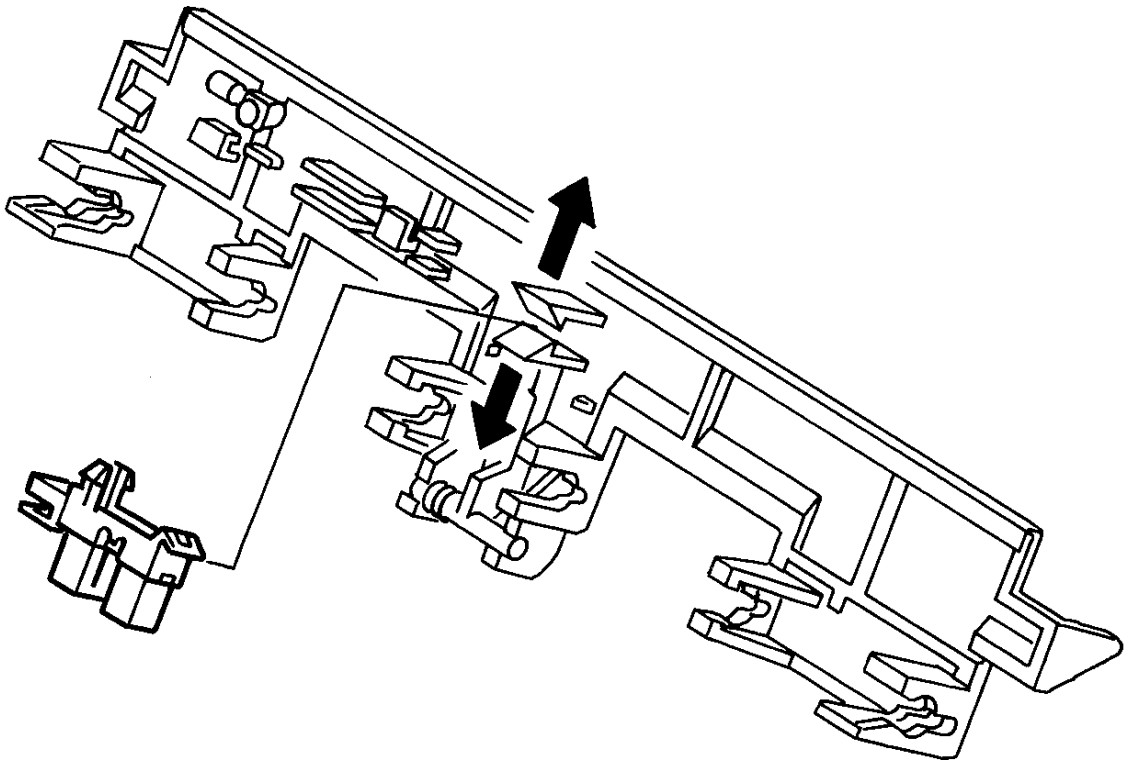
3. Disconnect P/J 120 (Registration Sensor) from the bottom of the Assembly.
4. Remove the tapped 6mm gold screw securing the black wire to the resistor on the bottom of the Assembly.

Replacement

1. Position the Inlet Chute Assembly near the Pick–Up Roll Assembly.
2. Plug in P/J 120 and secure the black wire with a tapped 6mm gold screw.
3. Align the tabs on each end of the Inlet Chute Assembly with the locating bosses on the Pick–Up Roll Assembly .
4. Press the Inlet Chute Assembly onto the Pick–Up Roll Assembly. It will snap into place.

   NOTE: Position the Inlet Chute in front of the Inlet Spring. Position the Lower Chute Assembly mylar strips so they ride on top of the Take–Away Roll Assembly.

RRP 3.10 Registration Sensor



RRP 3.10 Registration Sensor

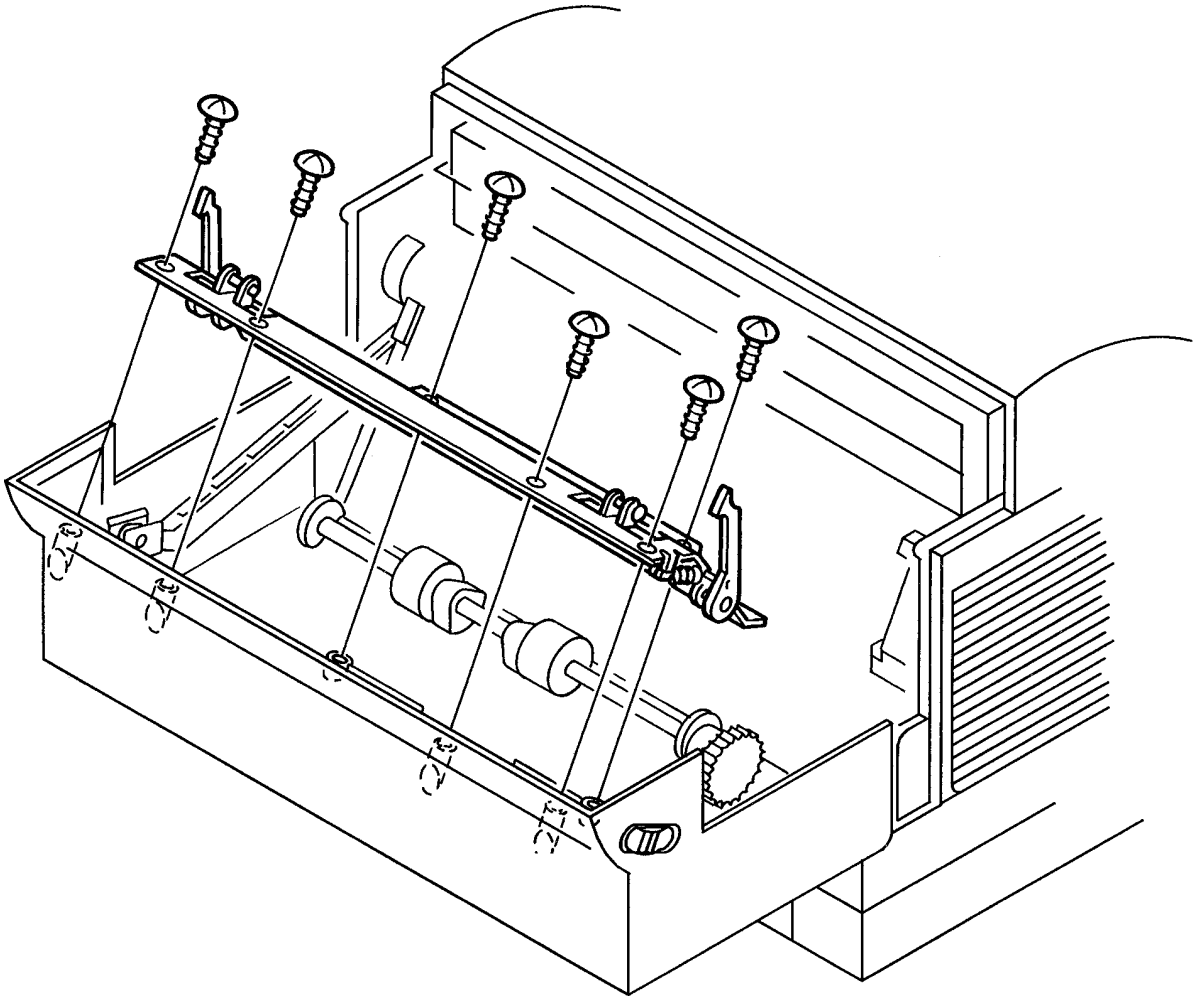
Removal

1. Open the Front Transport Assembly.
2. Remove the Inlet Chute Assembly (RRP 3.9).
3. Use your fingers to slightly spread the two plastic latches holding the Sensor in place .
4. Remove the Registration Sensor from the Inlet Chute Assembly.

Replacement

1. Install the Registration Sensor with connector P120 facing the left side of the Inlet Chute Assembly.
2. Press the Registration Sensor between the plastic latches on the Inlet Chute Assembly. It will snap into place.
3. Reinstall the Inlet Chute Assembly.

RRP 3.11 Front Plate Assembly



RRP 3.11 Front Plate Assembly

Removal

1. Open the Front Transport Assembly.
2. Remove the BTR Assembly (RRP 3.7).
3. Remove the Transportation Chute Assembly (RRP 3.8).
4. Remove the Inlet Chute Assembly (RRP 3.9).
5. Remove the wire harness that runs across the bottom of the plate.
6. Remove the seven tapped 8mm gold screws securing the Front Plate Assembly (including the control panel)to the Front Transport Assembly.
7. Remove the Front Plate Assembly.

CAUTION: Do not deform or stretch the Front Plate Assembly spring.

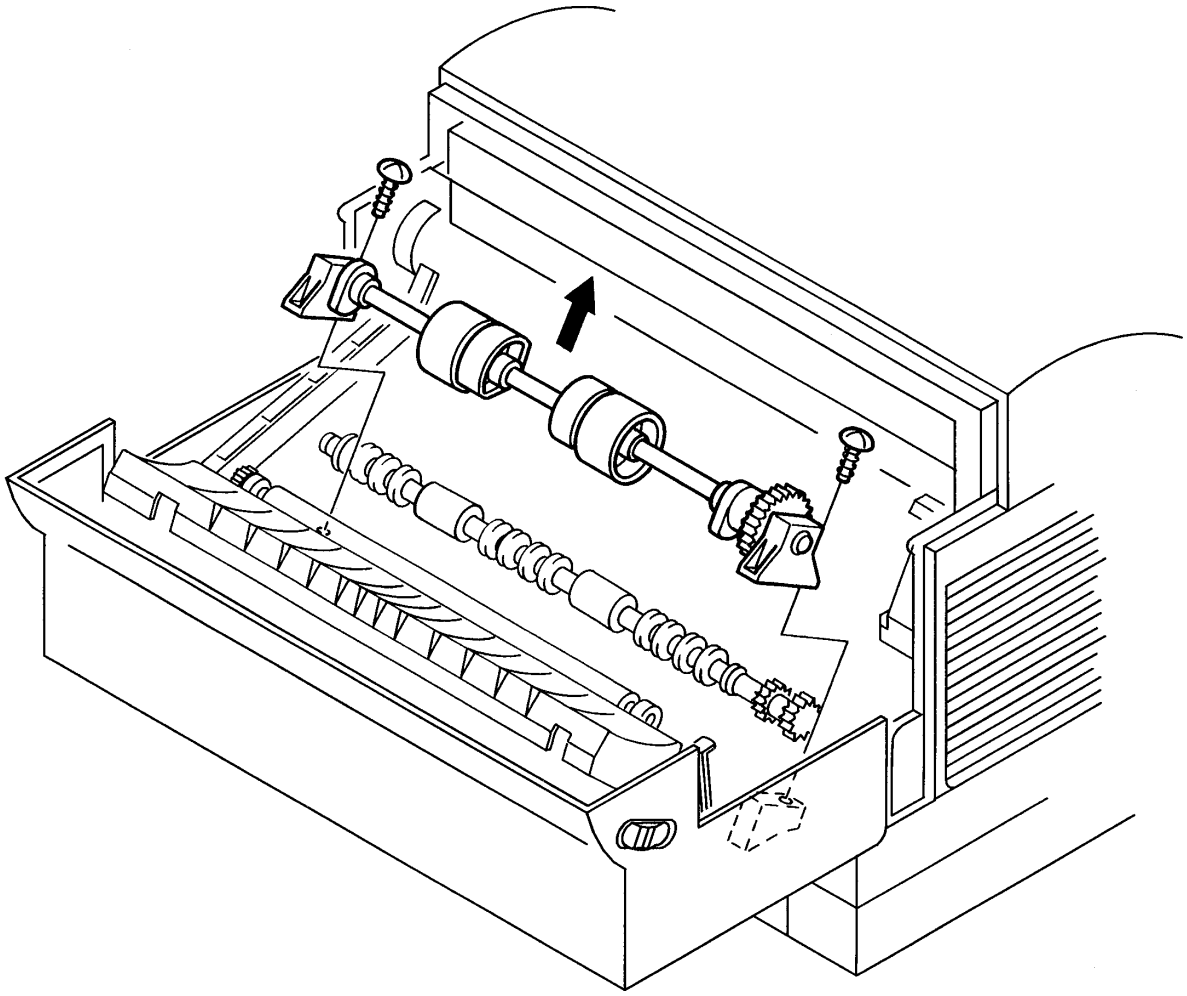
Replacement

1. Align the Front Plate Assembly with the holes in the Front Transport Assembly.
2. Reinstall the seven tapped 8mm gold screws securing the Front Plate Assembly to the Front Transport Assembly.

   NOTE: Be sure to replace the black wire secured by the top right screw.

3. Replace the wire harness that runs across the bottom of the plate.
4. Reinstall the Inlet Chute Assembly.
5. Reinstall the Transportation Chute Assembly.
6. Reinstall the BTR Assembly.

RRP 3.12 Pick–Up Roll Assembly



RRP 3.12 Pick–Up Roll Assembly

Removal

1. Open the Front Transport Assembly.
2. Remove the Inlet Chute Assembly (RRP 3.9).
3. Remove the two tapped 8mm gold screws securing the Pick–Up Roll Assembly to the Front Transport Assembly .

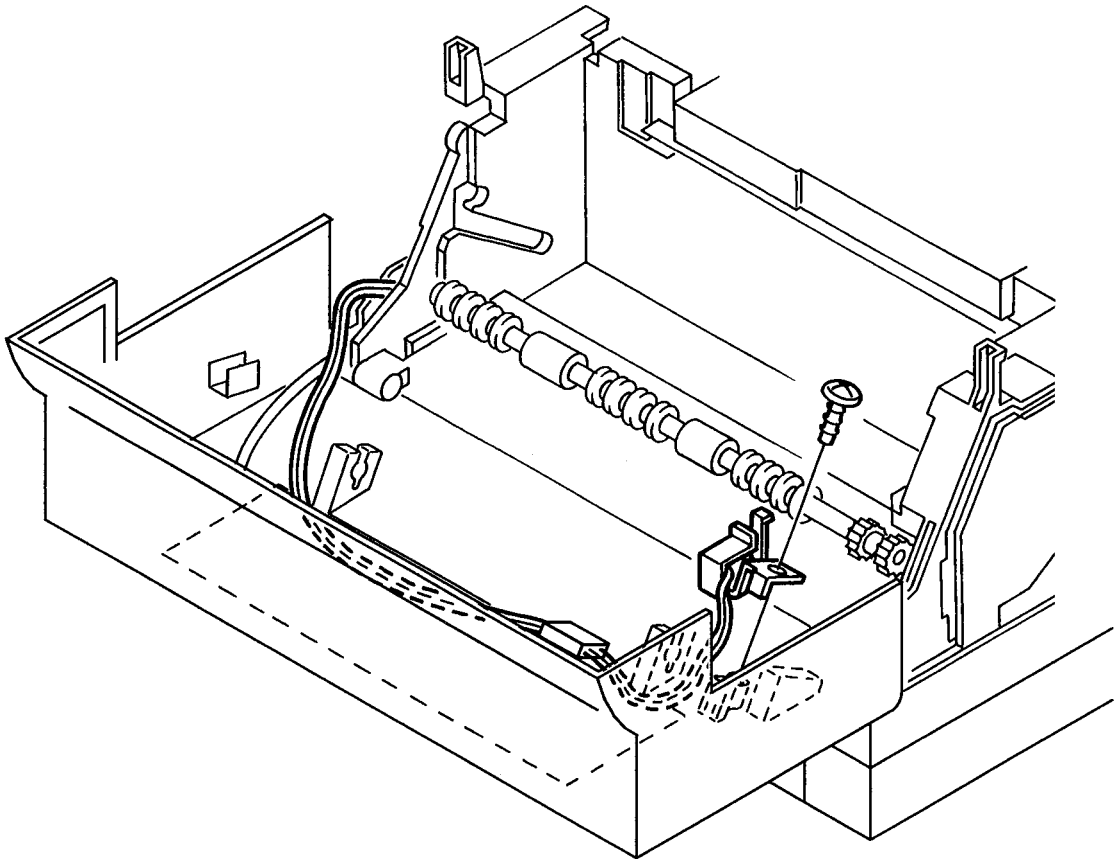
   NOTE: If the Lower Chute Assembly is in the way, close the Front Transport Assembly slightly. Remove the screws while you press the Bottom Plate Assembly away from you.

4. Remove the Pick–Up Roll Assembly.

Replacement

1. Align the Pick–Up Roll Assembly with the holes in the Front Transport Assembly. Install the Assembly with the Spring Clutch on the right end of the shaft.
2. Reinstall the two tapped 8mm gold screws securing the Pick–Up Roll Assembly to the Front Transport Assembly.
3. Reinstall the Inlet Chute Assembly.

RRP 3.13 Pick–Up Solenoid



RRP 3.13 Pick–Up Solenoid

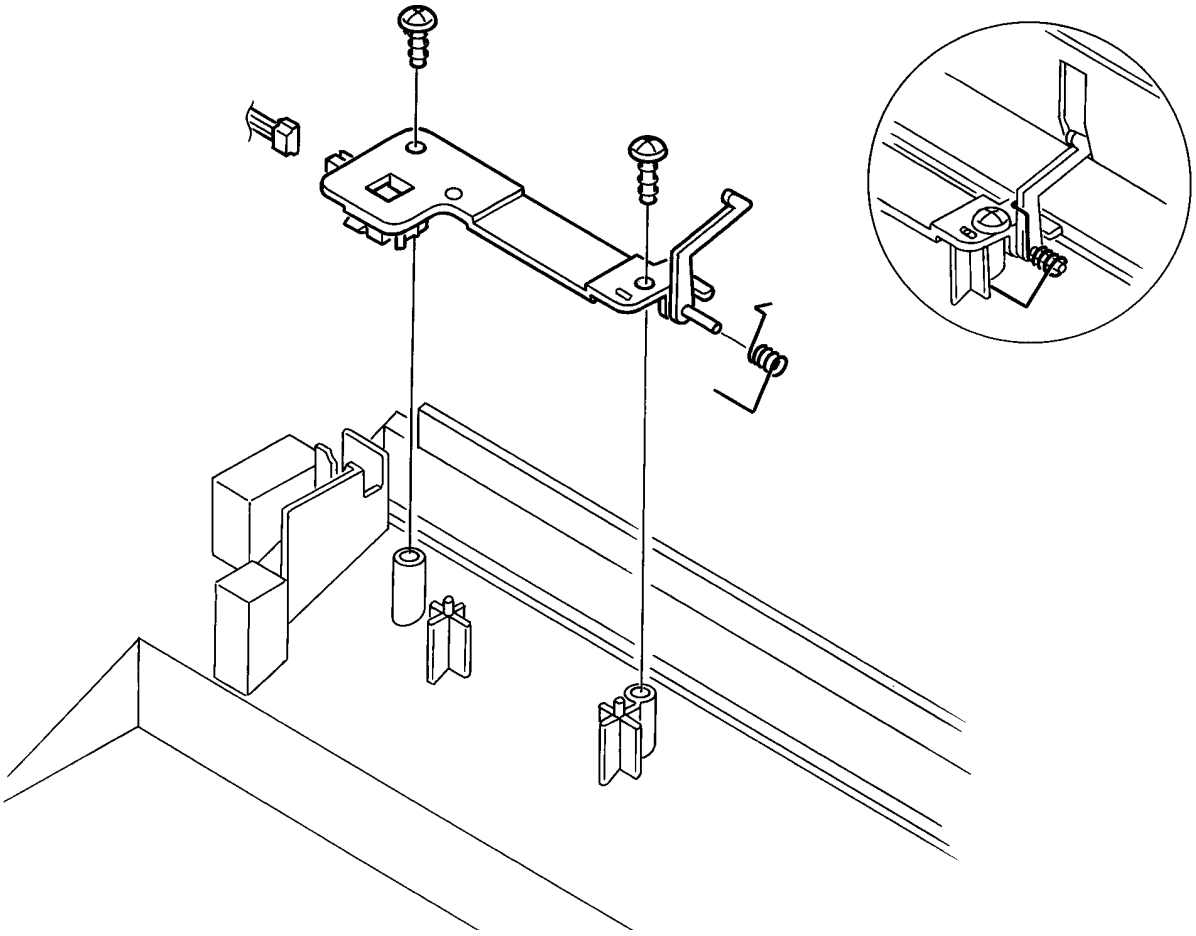
Removal

1. Open the Front Cover.
2. Remove the BTR Assembly (RRP 3.7).
3. Remove the Transportation Chute Assembly (RRP 3.8).
4. Unplug the two wire P/J located under the Transportation Chute Assembly, that leads from the Pick–Up Solenoid.
5. Remove the tapped 8mm gold screw securing the Pick–Up Solenoid to the Front Transport Assembly .
6. Remove the Solenoid.

Replacement

1. Align the Pick–Up Solenoid with the holes in the Front Transport Assembly.
2. Reinstall the tapped 8mm gold screw securing the Pick–Up Solenoid to the Front Transport Assembly.
3. Plug in the two wire P/J leading to the Solenoid.
4. Reinstall the Transportation Chute Assembly.
5. Reinstall the BTR Assembly.

RRP 3.14 MBF Sensor Assembly



RRP 3.14 MBF Sensor Assembly

Removal

1. Open the Front Transport Assembly.
2. Remove the Inlet Chute Assembly (RRP 3.9).
3. Remove the Pick–Up Roll Assembly (RRP 3.12).
4. Remove the two tapped 8mm gold screws securing the MBF Sensor Assembly to the Front Transport Assembly .

   NOTE: If the Lower Chute Assembly is in the way, slightly close the Front Transport Assembly.

5. Disconnect P/J 121 from the MBF Sensor Assembly.
6. Remove the MBF Sensor Assembly.

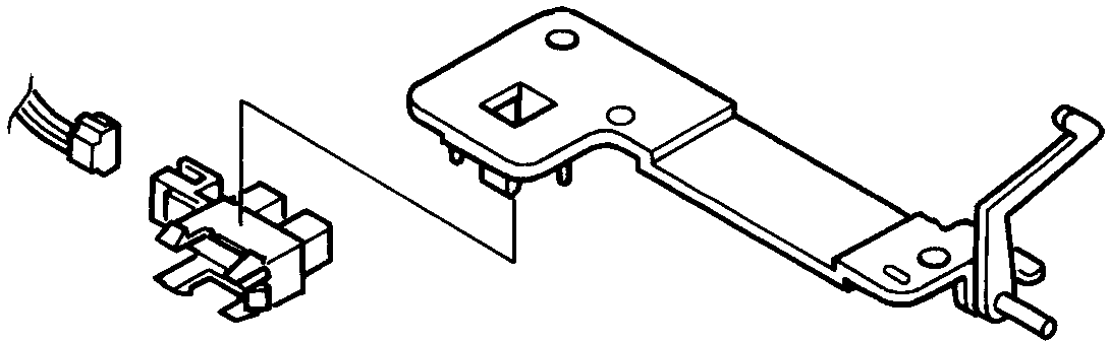
Replacement

1. Align the MBF Sensor Assembly with the holes and alignment bosses in the Front Transport Assembly.
2. Install the MBF Sensor with connector P121 to the left and the actuator centered in the slot in the Bottom Plate Assembly.
3. Reinstall the two tapped 8mm gold screw securing the MBF Sensor Assembly to the Front Transport Assembly.

   NOTE: Follow the illustration to position the MBF Spring.

4. Reinstall the Pick–Up Roll Assembly.
5. Reinstall the Inlet Chute Assembly.

RRP 3.15 MBF Sensor



RRP 3.15 MBF Sensor

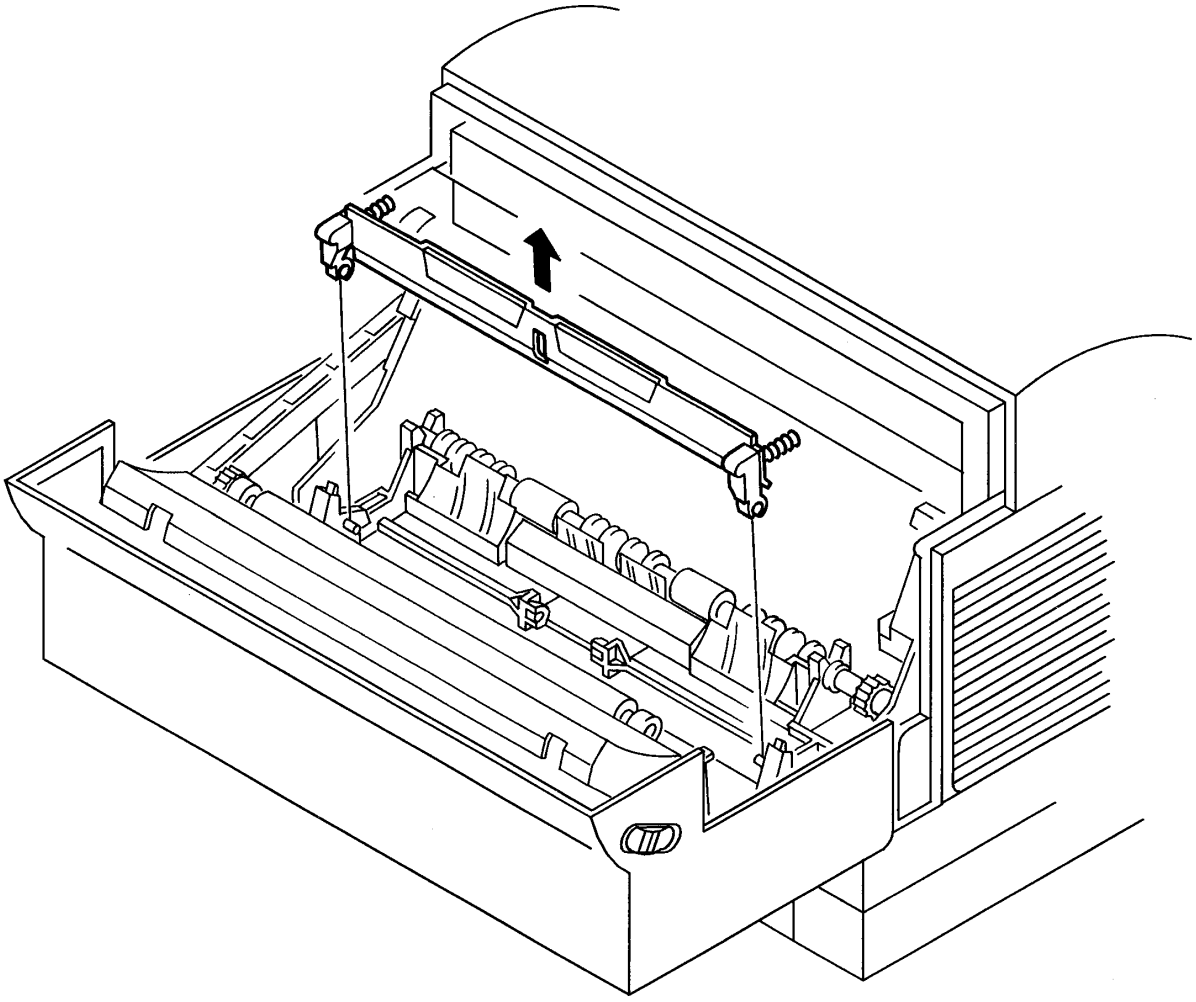
Removal

1. Open the Front Transport Assembly.
2. Remove the Inlet Chute Assembly (RRP 3.9).
3. Remove the Pick–Up Roll Assembly (RRP 3.12).
4. Remove the MBF Sensor Assembly (RRP 3.14)
5. Use your fingers to slightly spread the two plastic latches holding the Sensor in place.
6. Remove the MBF Sensor from the MBF Sensor Assembly .

Replacement

1. Align the MBF Sensor with connector P121 facing left.
2. Press the MBF Sensor between the plastic latches on the MBF Sensor Assembly. It will snap into place.
3. Reinstall the MBF Sensor Assembly.
4. Reinstall the Pick–Up Roll Assembly.
5. Reinstall the Inlet Chute Assembly.

RRP 3.16 Bottom Plate Assembly



RRP 3.16 Bottom Plate Assembly

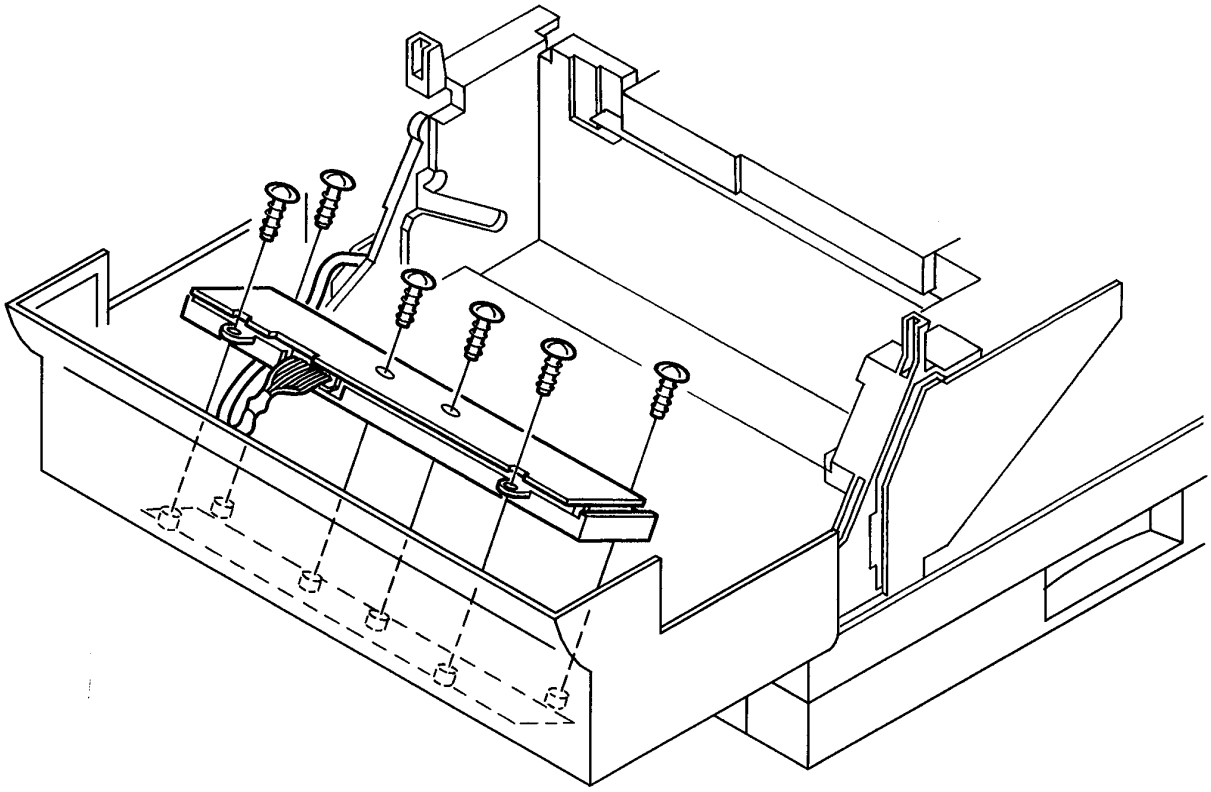
Removal

1. Open the Front Transport Assembly.
2. Remove the Inlet Chute Assembly (RRP 3.9).
3. Remove the Pick–Up Roll Assembly (RRP 3.12).
4. Hold the Bottom Plate Assembly firmly at both ends and pull up to remove .

Replacement

1. Align the plastic slots at the base of the Bottom Plate Assembly with the plastic tabs on the Front Transport Assembly.
2. Position the MBF Sensor Actuator in the cutout in the center of the Bottom Plate Assembly.
3. Press firmly on the Bottom Plate Assembly. It will snap into place.
4. Position the springs on each end of the Lower Chute Assembly so they contact the alignment bosses at each end of the Bottom Plate Assembly.
5. Reinstall the Pick–Up Roll Assembly.
6. Reinstall the Inlet Chute Assembly.

RRP 3.17 Console Assembly



RRP 3.17 Console Assembly

Removal

1. Remove the BTR Assembly (RRP 3.7).
2. Remove the Transportation Chute Assembly (RRP 3.8).
3. Remove the Inlet Chute Assembly (RRP 3.9).
4. Remove the Front Plate Assembly (RRP 3.11).
5. Unplug P/J 22 (LCD) and P/J 23 (keypad) from the Console Assembly.

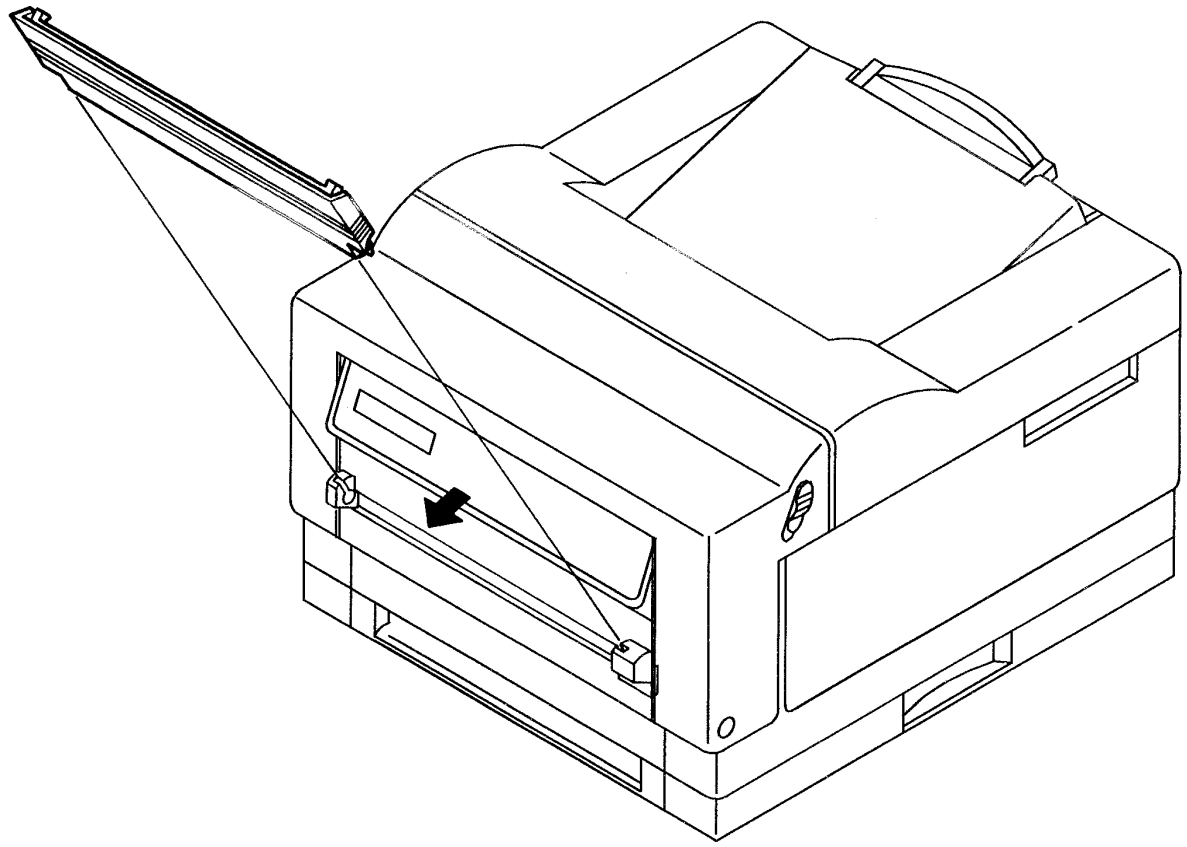
   NOTE: The Console Assembly wiring harness runs to P/J 50 on the MCU PWB.

6. Remove the six tapped 8mm gold screws securing the Console Assembly to the Front Transport Assembly .
7. Remove the Console Assembly.

Replacement

1. Align the Console Assembly with the holes in the Front Transport Assembly.
2. Reinstall the six tapped 8mm gold screws securing the Console Assembly to the Front Transport Assembly.
3. Plug P/J 22 (LCD) and P/J 23 (keypad) into the Console Assembly.
4. Replace the Front Plate Assembly.
5. Replace the Inlet Chute Assembly.
6. Replace the BTR.
7. Replace the Transport Chute Assembly.

RRP 3.18 Front Tray Assembly



RRP 3.18 Front Tray Assembly

Removal

1. Slide the black, slide switch (located on the right side of the tray) to the left.
2. Pull the assembly straight toward you.

Replacement

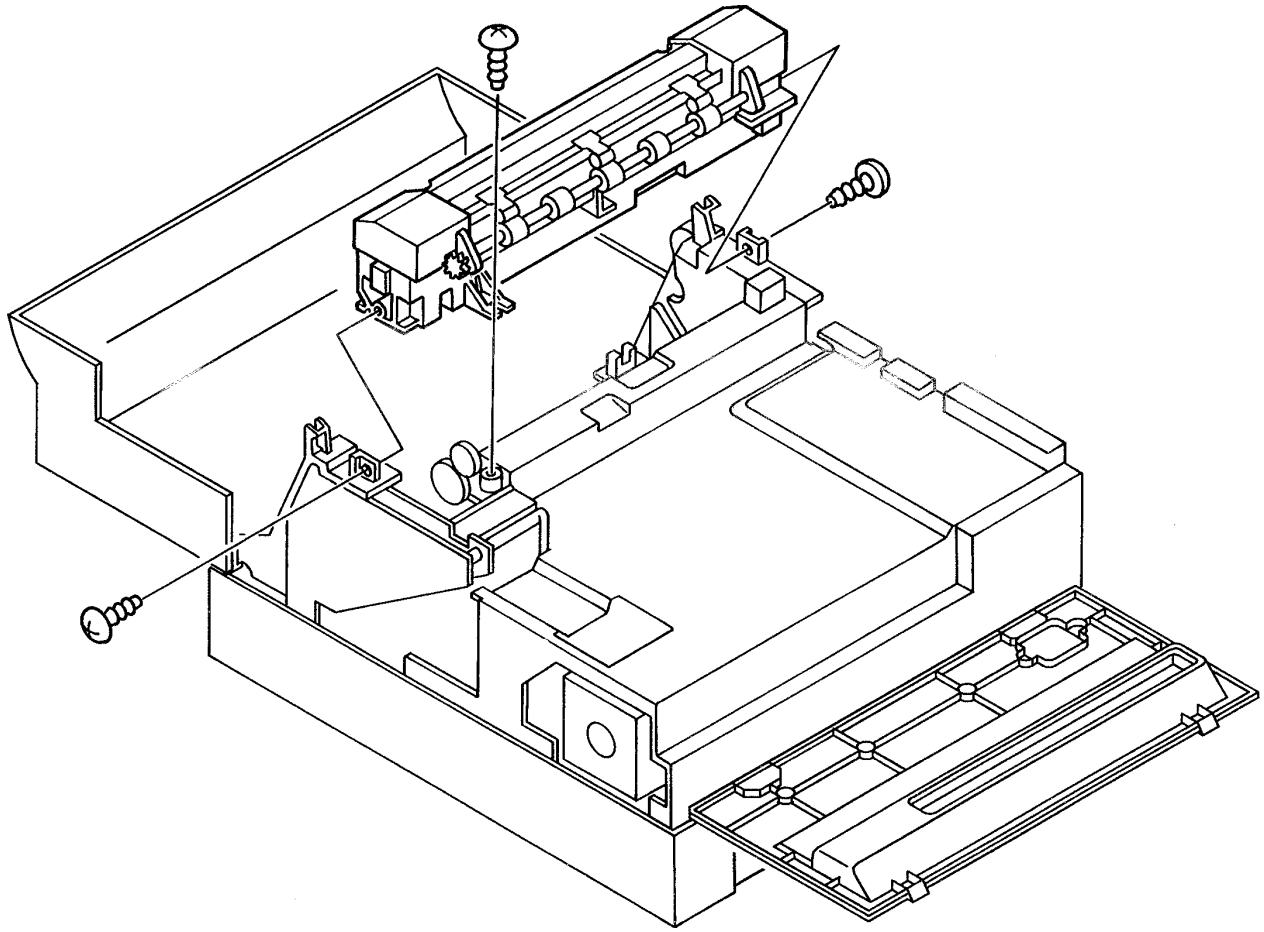
1. Open the Front Tray door.
2. Align the Front Tray to the door .
3. Insert the metal pin (located on the left side of the tray) into the corresponding hole on the left side (inside) of the open door.
4. Slide the black, slide switch (located on the right side of the tray) to the left.
5. Insert the right side of the tray into the door, and release the slide switch.

NOTE: Make sure the metal pin on the right side of the tray is seated in the corresponding hole on the right side (inside) of the open door.

Chapter 12 : Removal and Replacement Procedures — Fuser and Paper Exit

The following sections explain how to remove and replace components of the fuser and paper exit.

RRP 4.1 Fuser Assembly



RRP 4.1 Fuser Assembly

Removal

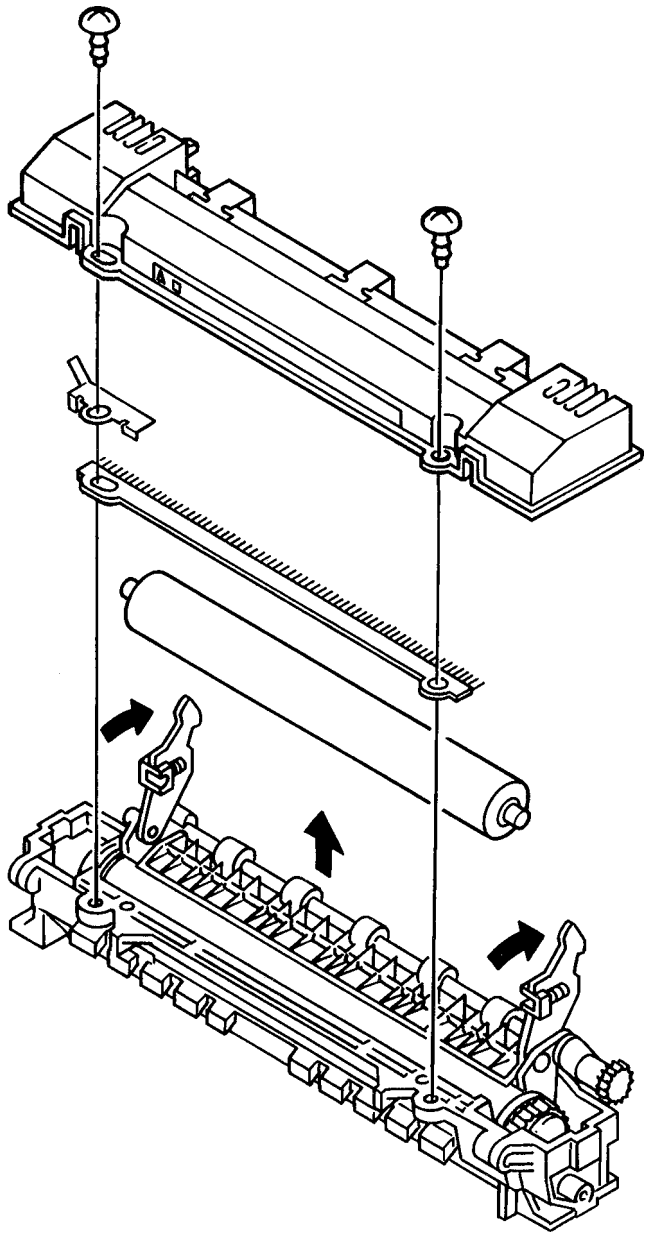
1. Open the Front Cover.
2. Remove the Rear Cover (RRP 1.1).
3. Remove the Top Cover Assembly (RRP 1.2).
4. Remove the Left Cover (RRP 1.3).
5. Remove the Right Cover (RRP 1.4).
6. Remove the three tapped 8mm gold screws securing the Fuser Assembly to the top of the ROS Assembly.
7. Slowly pull up on the Assembly to unplug P/J101.
8. Remove the Fuser Assembly.

Replacement

1. Align the Fuser Assembly with the holes at the top of the ROS Assembly, and with P/J 101 at the left end of Fuser Assembly.

   NOTE: Make sure the Gear Exit on the right end of the Fuser Assembly meshes with the Drive Assembly gear, and the Paper Exit Actuator clears the Paper Exit Sensor.
2. Press the Fuser Assembly firmly into place.
3. Reinstall the three tapped 8mm gold screws securing the Fuser Assembly to the top of the ROS Assembly.
4. Reinstall all of the covers.

RRP 4.2 Pressure Roll



RRP 4.2 Pressure Roll

Removal

1. Remove all of the covers except the Front Transport Assembly.
2. Remove the Fuser Assembly (RRP 4.1).
3. Remove the two tapped 8mm gold screws securing the Fuser Cover Assembly to the Fuser Base .
4. Remove the Fuser Cover.
5. Unlatch the nip straps and remove the Pressure Roll.

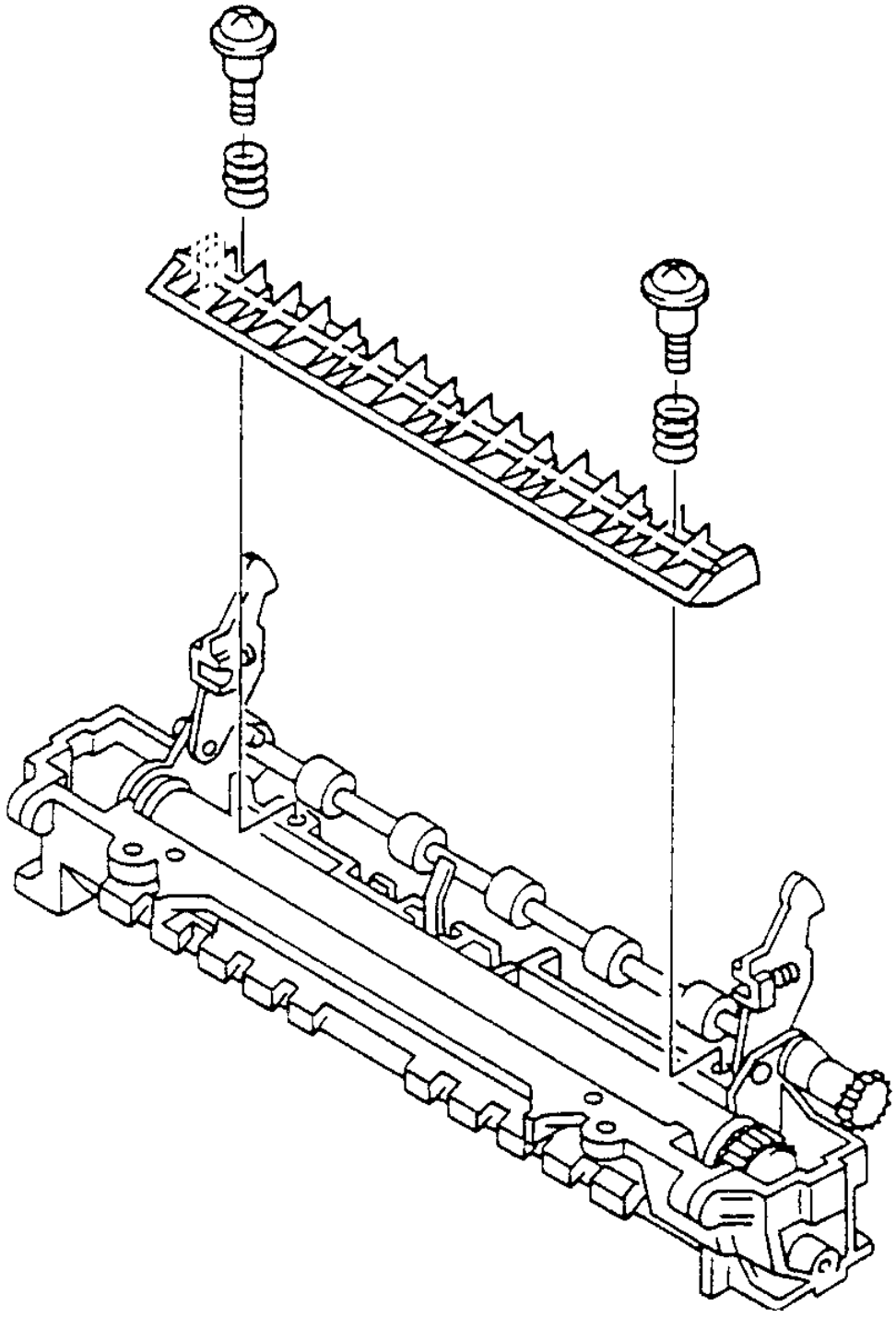
NOTE: The pressure roll bearings and springs on the nip straps drop off very easily. Do not lose them.

Replacement

1. Position the Pressure Roll on top of the Heat Roll.
2. Clamp the nip straps down onto the metal ends of the Pressure Roll.

   NOTE: You may have to reposition the Pressure Roll for the nip straps to engage.
3. Reinstall the Fuser Cover.
4. Reinstall the two tapped 8mm gold screws securing the Fuser Cover Assembly to the Fuser Base.
5. Reinstall the Fuser Assembly.
6. Reinstall the covers.

RRP 4.3 Exit Chute



RRP 4.3 Exit Chute

Removal

1. Remove all of the covers except the Front Transport Assembly.
2. Remove the Fuser Assembly (RRP 4.1).
3. Remove the Pressure Roll (RRP 4.2).
4. Remove the two 8mm gold collar screws and springs securing the Exit Chute to the Fuser Assembly .
5. Remove the Exit Chute.

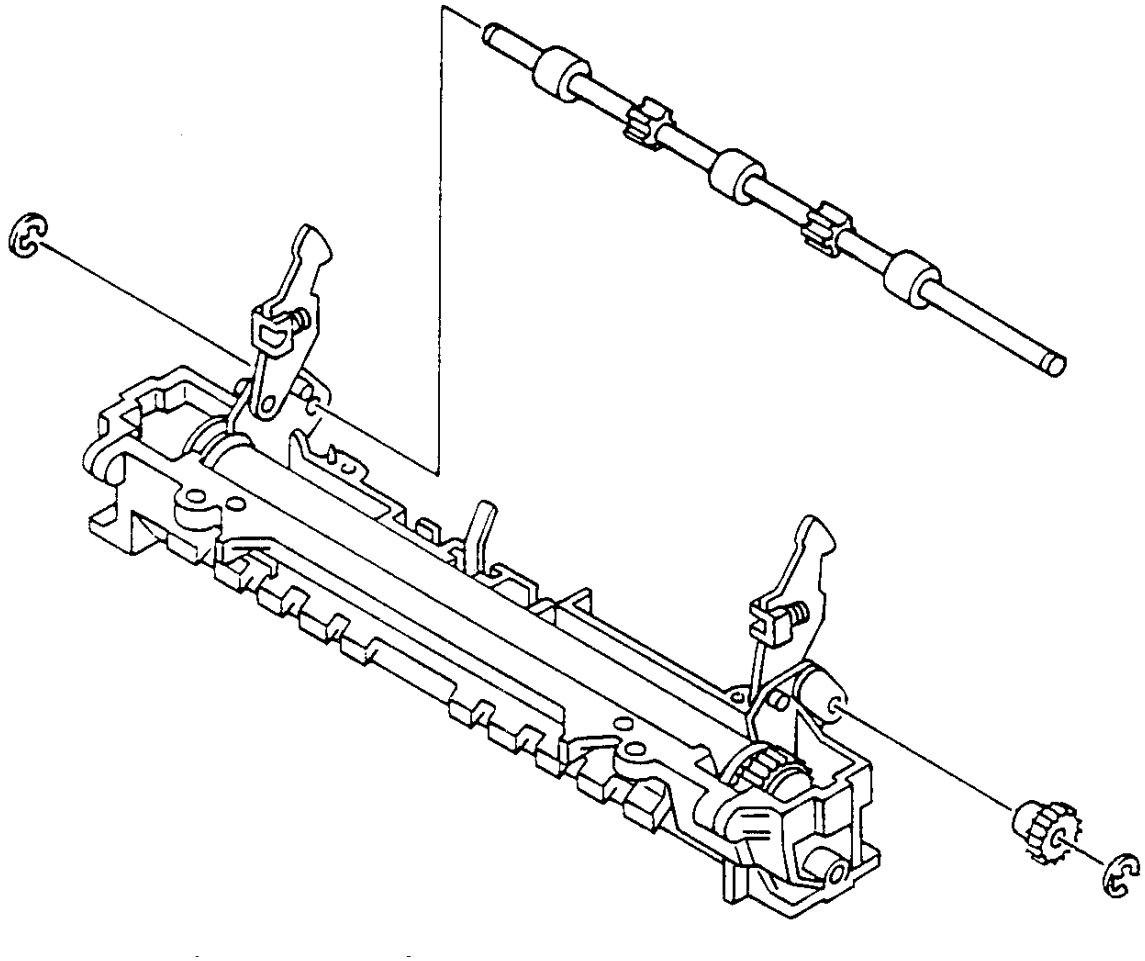
Replacement

1. Position the Exit Chute on top of the heat roller the Heat Roll, threading the Exit Actuator through the rectangular hole in the center of the Chute.

2. NOTE: Make sure the holes at the ends of the Exit Chute line up with the bosses on the base of the Fuser Assembly.

3. Reinstall the two 8mm gold collar screws and springs securing the Exit Chute to the Fuser Assembly.
4. Reinstall the Pressure Roll.
5. Reinstall the Fuser Assembly.
6. Reinstall the covers.

RRP 4.4 Exit Roll Assembly



RRP 4.4 Exit Roll Assembly

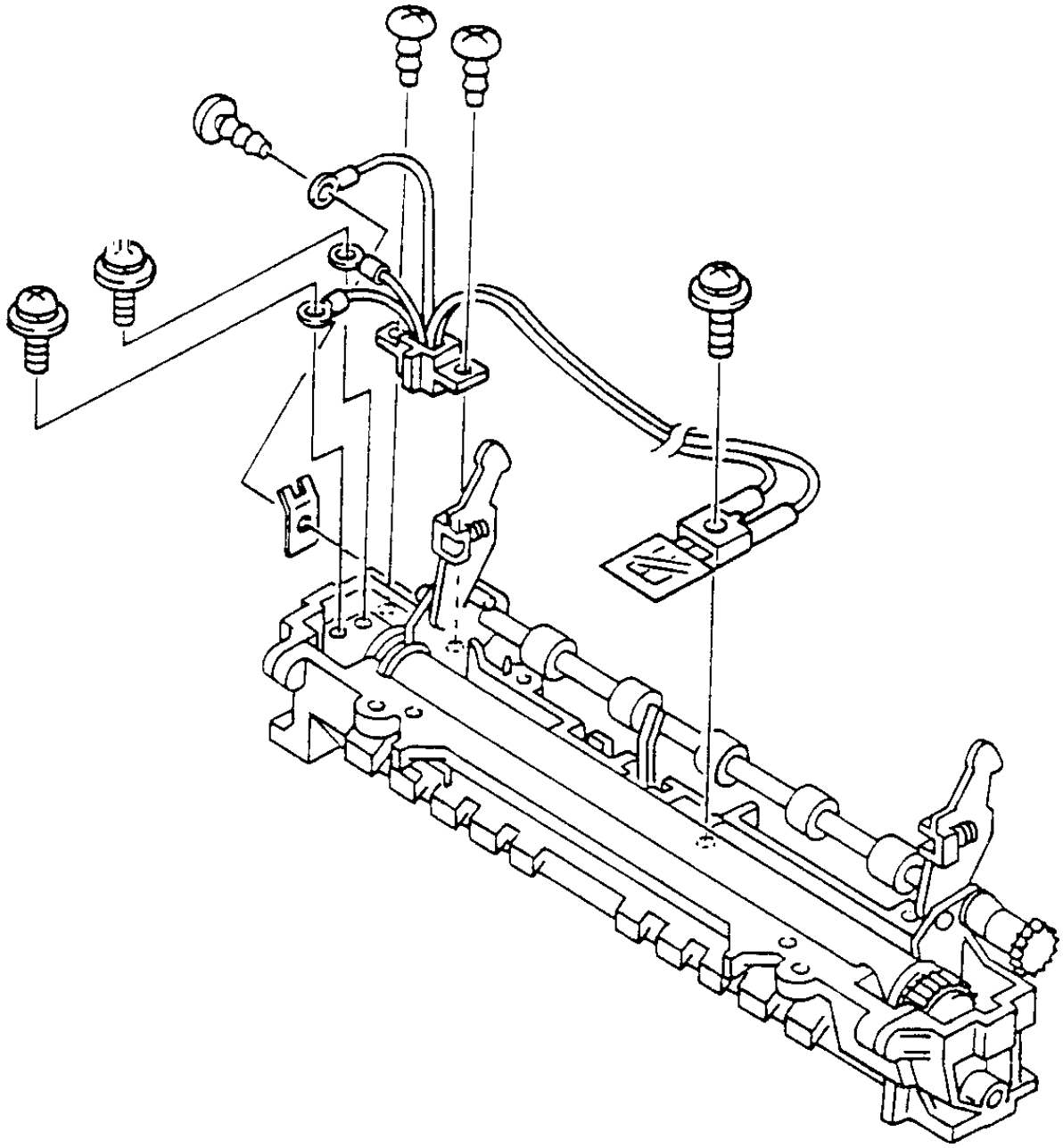
Removal

1. Remove all of the covers except the Front Transport Assembly.
2. Remove the Fuser Assembly (RRP 4.1).
3. Remove the Pressure Roll (RRP 4.2).
4. Remove the Exit Chute (RRP 4.3).
5. Remove the two E–Rings at the ends of the Exit Roll Assembly .
6. Remove the Gear Exit located on the right end of the shaft.
7. Slide the Exit Roll shaft to the left and out of the Fuser Assembly.

Replacement

1. Insert the ends of the Exit Roll Assembly into the holes just above the Exit Chute area.
2. Reinstall the Gear Exit onto the right end of the shaft.
3. Reinstall the two E–Rings at the ends of the Exit Roll Assembly.
4. Reinstall the Exit Chute.
5. Reinstall the Pressure Roll.
6. Reinstall the Fuser Assembly.
7. Reinstall the covers.

RRP 4.5 Temperature Sensor Assembly



RRP 4.5 Temperature Sensor Assembly

Removal

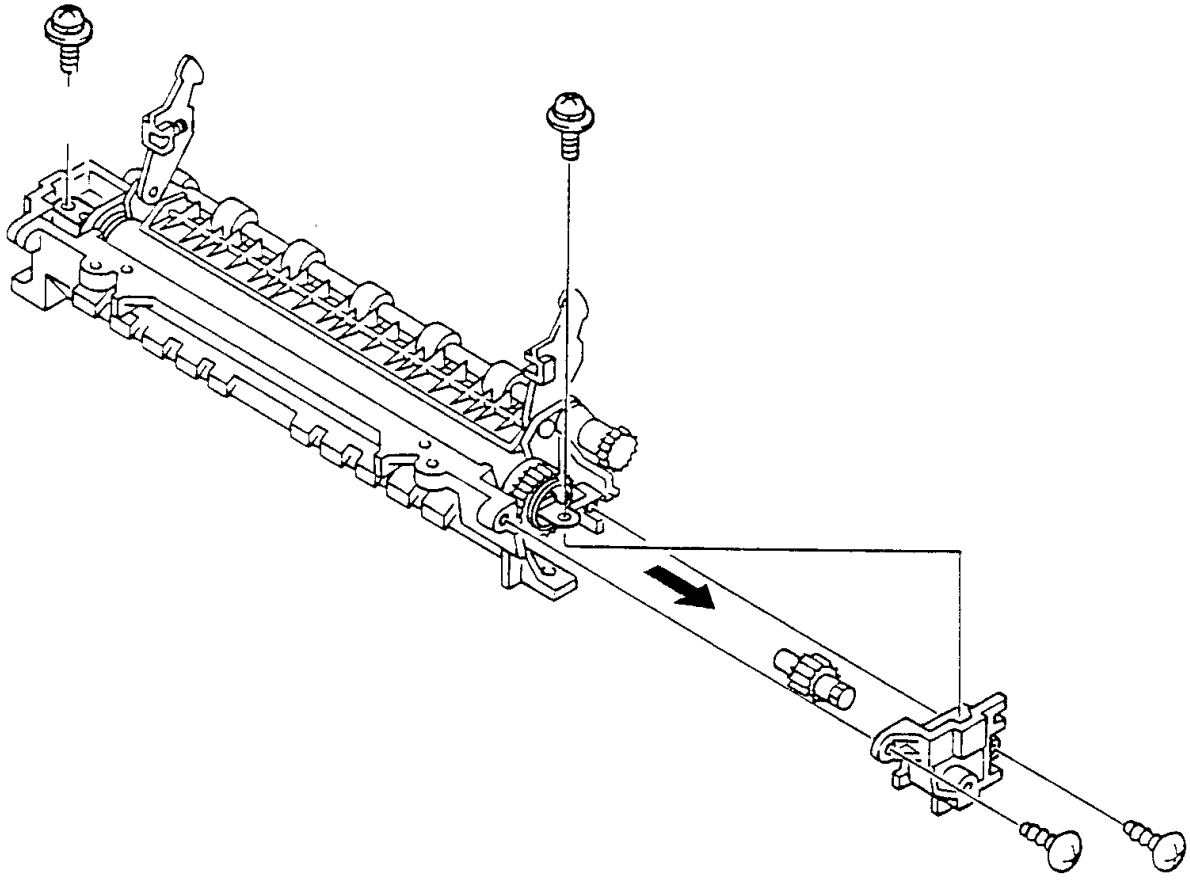
1. Remove all of the covers except the Front Transport Assembly.
2. Remove the Fuser Assembly (RRP 4.1).
3. Remove the Pressure Roll (RRP 4.2).
4. Remove the Exit Chute (RRP 4.3).
5. Remove the Exit Roll Assembly (RRP 4.4).
6. Remove the following six screws :
    - One 10mm gold screw and washer securing the thermistor to the Fuser Assembly.
    - Three tapped 7mm gold screws securing the three white wires coming from P/J 101 to the Fuser Assembly.
    - Two 8mm gold screws securing J101 to the Fuser Assembly.
7. Remove the Temperature Sensor Assembly.

CAUTION: Do not damage the Heat Roll when you remove the Sensor Assembly.

Replacement

1. Align the Temperature Sensor Assembly to the alignment boss near the center of the Heat Roll frame.
2. Position the Sensor Assembly with the thermistor positioned underneath the Heat Roll.
3. Secure the thermistor with one 10mm gold screw and washer.
4. Use one 7mm gold screw and washer to secure the wire coming from J101–2 (110 volt model) or J101–3 (220 volt model) to the end of the Heater Rod.
5. Use one 7mm gold screw and washer to secure the wire coming from J101–6 to the metal strip near end of the Heater Rod.
6. Use one tapped 7mm gold screw to secure the wire coming from J101–5 to the Heat Roll Bearing Ground Plate.
7. Reinstall J101 and secure it with two 8mm gold screws.
8. Reinstall the Exit Roll Assembly.
9. Reinstall the Exit Chute.
10. Reinstall the Pressure Roll.
11. Reinstall the Fuser Assembly.
12. Reinstall the covers.

RRP 4.6 Heater Rod



RRP 4.6 Heater Rod

Removal

1. Open the Rear Cover (RRP 1.1).
2. Remove all of the covers except the Front Transport Assembly.
3. Remove the Fuser Assembly (RRP 4.1).
4. Remove the Pressure Roll (RRP 4.2).
5. Remove the two 8mm gold screws and washers securing the Heater Rod at both ends of the Fuser Assembly .
6. Remove the two tapped 8mm gold screws securing the Fuser Frame R to the Fuser Assembly.
7. Remove the Frame along with the Idler Shaft and Gear Idler.

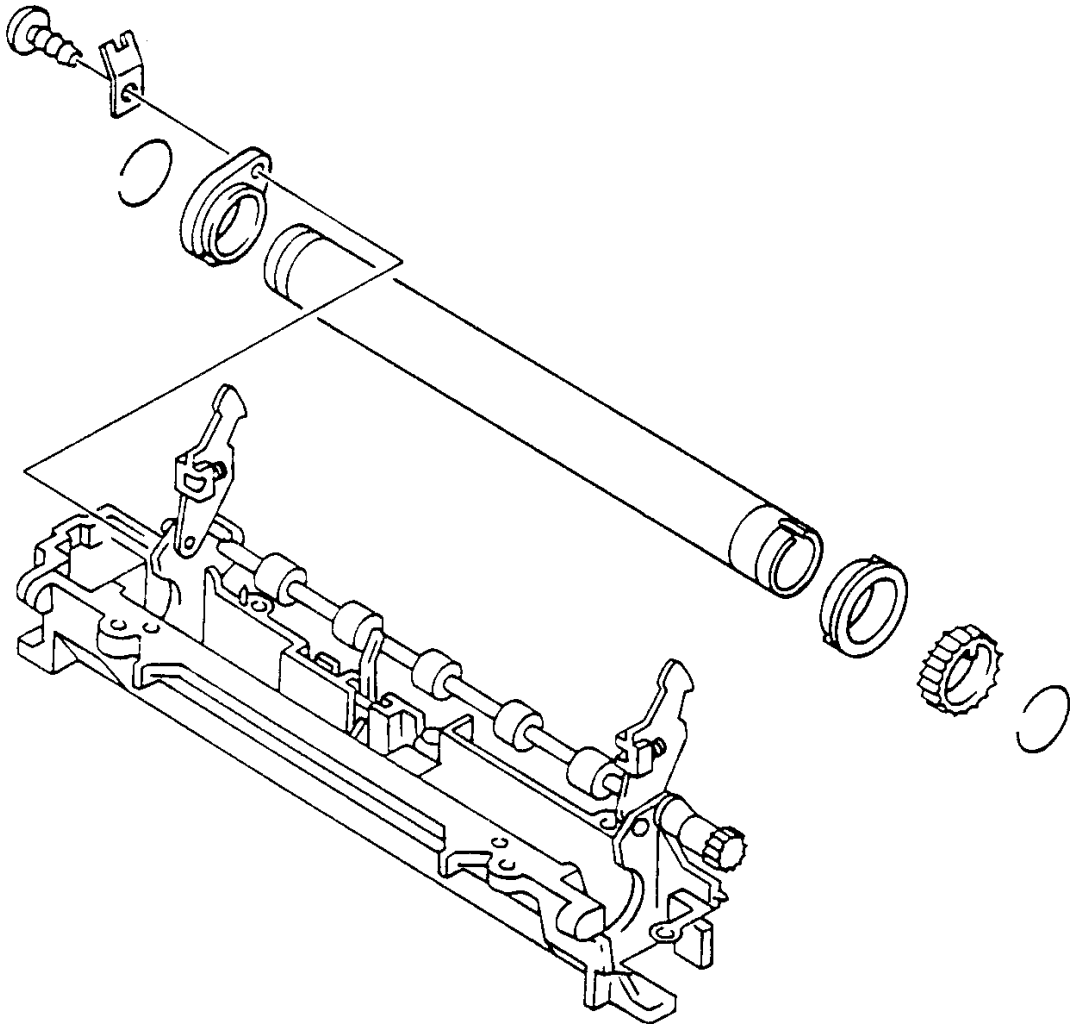
   NOTE: Hold the Heater Rod when removing these components.
8. Carefully slide the Heater Rod out of the Heat Roll.

NOTE: Do not touch the glass rod with your fingers. Hold the rod by the ends.

Replacement

1. Carefully slide the Heater Rod into the Heat Roll.
2. Reinstall the 8mm gold screw and washer securing the Heater Rod and white wire from P/J 101-2, to the left end of the Fuser Assembly.
3. Reinstall the Fuser Frame R, along with the Idler Shaft and Gear Idler, and secure the frame with two tapped 8mm gold screws.
4. Reinstall the 8mm gold screw and washer securing the Heater Rod to the right end of the Fuser Assembly.
5. Reinstall the Pressure Roll.
6. Reinstall the Fuser Assembly.
7. Reinstall all covers.

RRP 4.7 Heat Roll



RRP 4.7 Heat Roll

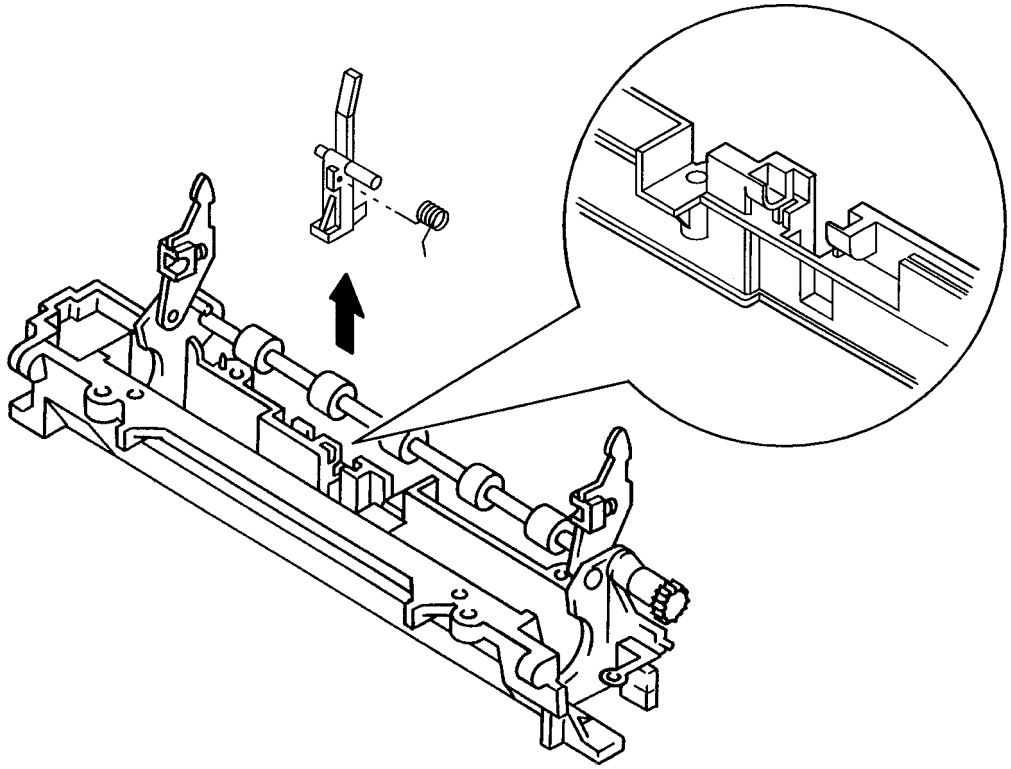
Removal

1. Open the Rear Cover (RRP 1.1).
2. Remove all of the covers except the Front Transport Assembly.
3. Remove the Fuser Assembly (RRP 4.1).
4. Remove the Pressure Roll (RRP 4.2).
5. Remove the Exit Chute (RRP 4.3).
6. Remove the Heater Rod (RRP 4.6).
7. Remove the right Heat Roll Ring (*spring clip*), Gear Heat Roll (*drive gear*), Heat Roll Bearing (*collar*), and Ground Plate on Heat Roll Bearing L .
8. Remove the Heat Roll.

Replacement

1. Position the Heat Roll by sliding it through the Heater Roll Bearing R and Heater Roll Bearing L.
2. Reinstall the right Heat Roll Ring (*spring clip*), Gear Heat Roll (*drive gear*), Heat Roll Bearing (*collar*), and Ground Plate on Heat Roll Bearing L.
3. Reinstall the Heater Rod.
4. Reinstall Exit Chute.
5. Reinstall the Pressure Roll.
6. Reinstall the Fuser Assembly.
7. Reinstall the covers.

RRP 4.8 Exit Actuator



RRP 4.8 Exit Actuator

Removal

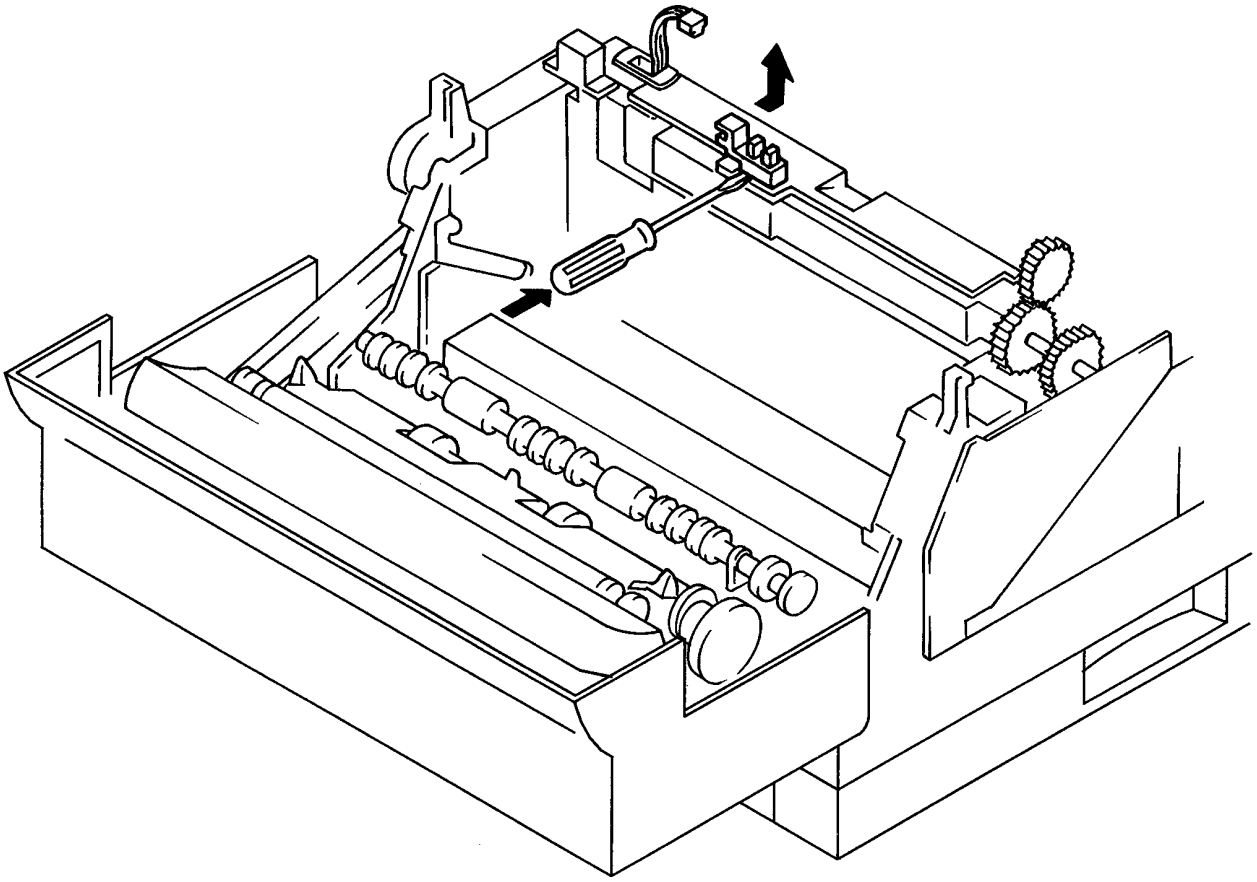
1. Open the Rear Cover (RRP 1.1).
2. Remove all of the covers except the Front Transport Assembly.
3. Remove the Fuser Assembly (RRP 4.1).
4. Remove the Pressure Roll (RRP 4.2).
5. Remove the Exit Chute (RRP 4.3).
6. Remove the Heater Rod (RRP 4.6).
7. Remove the Heat Roll (RRP 4.6).
8. Lift the Exit Actuator, along with the attached Exit Spring, and remove both from the Fuser Assembly .

Replacement

1. Reinstall the Exit Spring onto the Actuator arm, securing one leg of the Spring into the hole on the side of the Actuator.
2. Reinstall the Exit Actuator, along with the attached Exit Spring, in the slot next to the Temperature Sensor Assembly on the Fuser Assembly (Figure 1 insert).

   NOTE: Make sure you position the free end of the Spring in the slot so it provides spring–return action for the Actuator.
3. Reinstall the Heat Roll.
4. Reinstall the Heater Rod.
5. Reinstall the Exit Chute.
6. Reinstall the Pressure Roll.
7. Reinstall the Fuser Assembly.
8. Reinstall the covers.

RRP 4.9 Exit Sensor



RRP 4.9 Exit Sensor

Removal

1. Open the Rear Cover (RRP 1.1)
2. Remove all of the covers except the Front Transport Assembly.
3. Remove the Fuser Assembly (RRP 4.1).
4. Unplug P/J 119 from the Exit Sensor .
5. Use a screwdriver to pry open the clips holding the Exit Sensor to the Electronics Cover.
6. Remove the Exit Sensor.

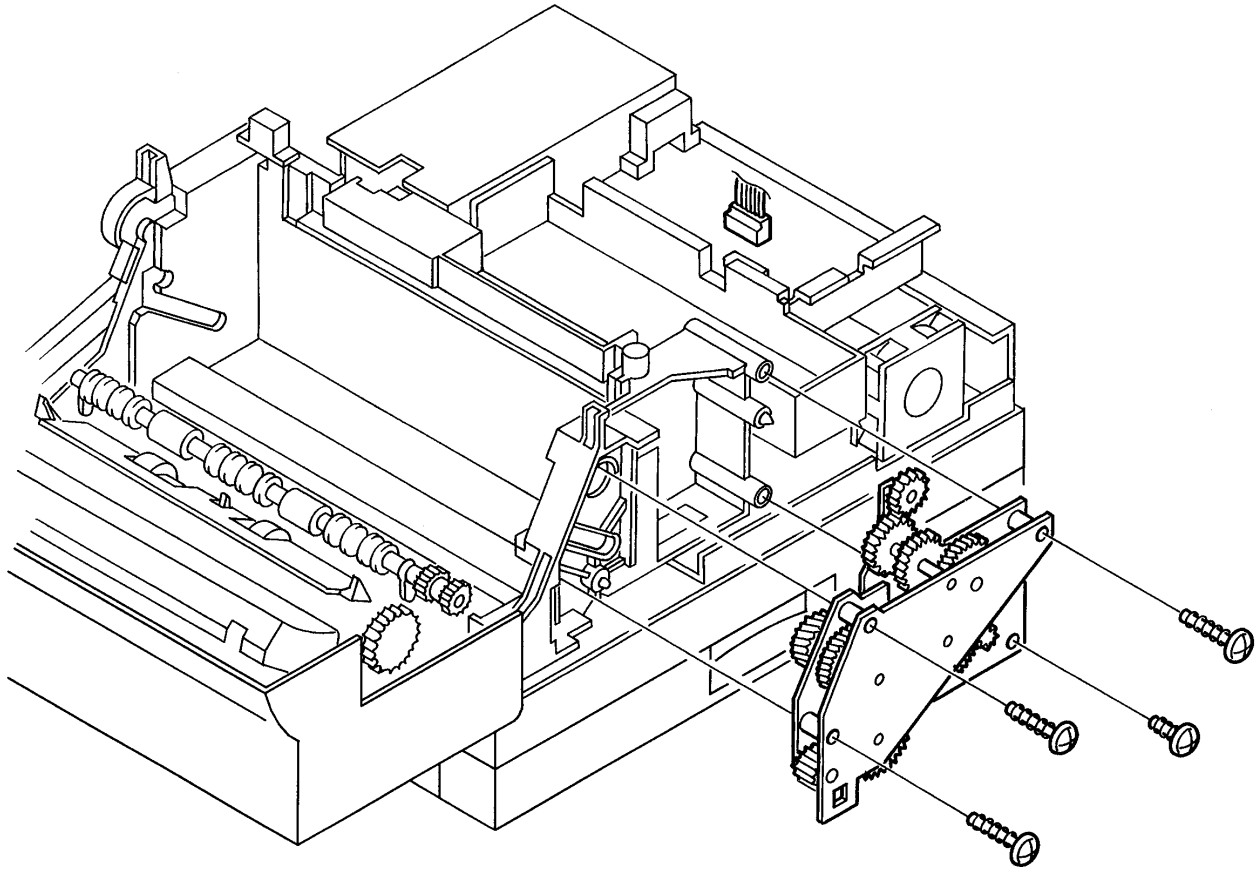
Replacement

1. Align the Exit Sensor with the slot in the Electronics Cover. Face P/J 119 to the left side of the printer.
2. Firmly press the Exit Sensor into the slot. It will snap into place.
3. Reconnect P/J 119.
4. Reinstall the Fuser Assembly.
5. Reinstall the covers.

Chapter 13 : Removal and Replacement Procedures — Drive and Xerographic Modules

The following sections show how to remove and replace the components of the drive and xerographic modules.

RRP 5.1 Drive Assembly



RRP 5.1 Drive Assembly

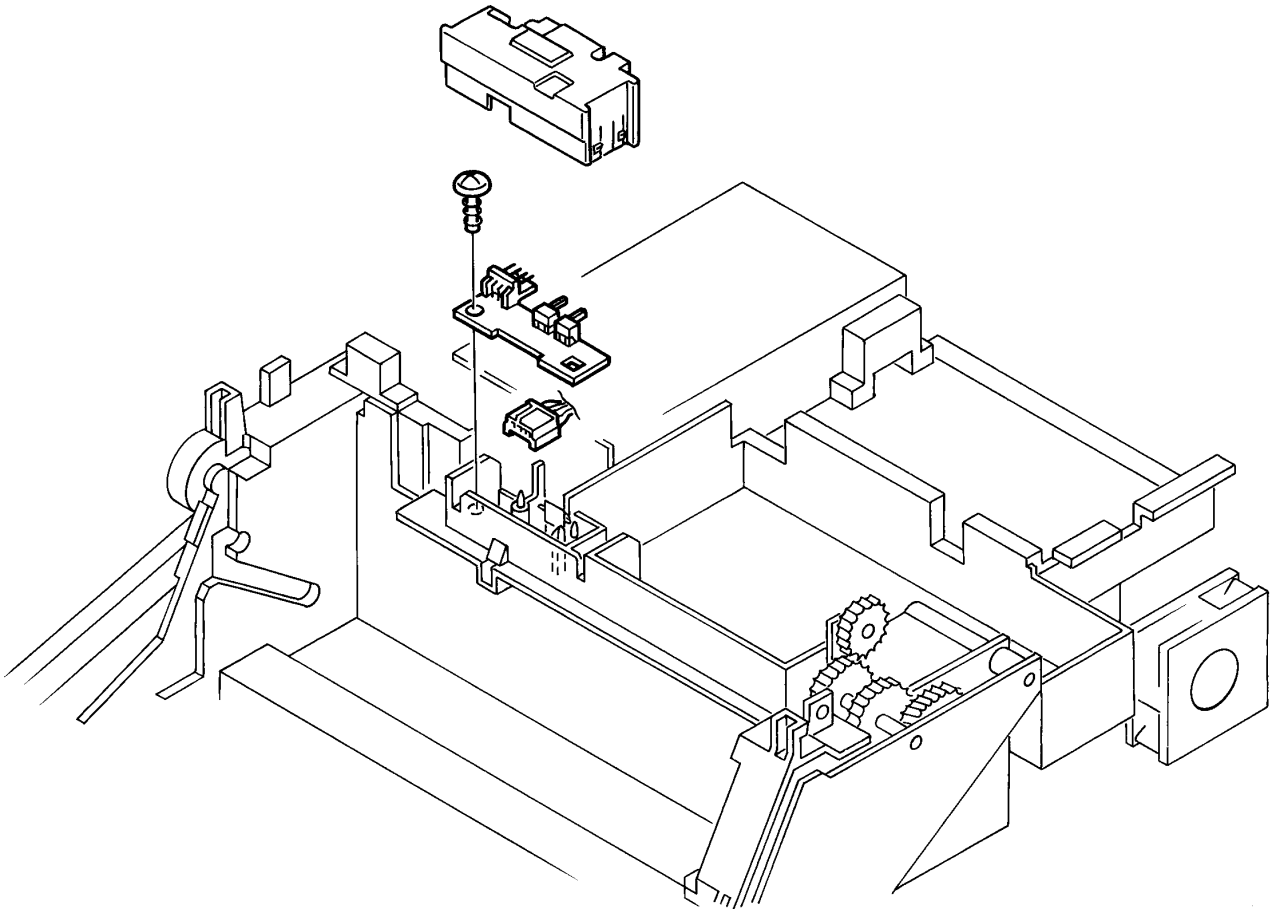
Removal

1. Remove all of the covers except the Front Transport Assembly.
2. Open the Front Cover.
3. Remove the CRU.
4. Remove the Fuser Assembly (RRP 4.1).
5. Remove the controller (ESS) . (RRP 6.2)
6. Remove the ESS enclosure (RRP 6.1).
7. Remove the Interconnect PWB enclosure (with PWB) (RRP 6.3).
8. Disconnect P/J 14 on the MCU PWB.
9. Remove the following five screws securing the Drive Assembly to the printer frame :
   - One tapped 8mm silver screw at the top of Drive Assembly.
   - Three tapped 87mm gold screws.
   - One tapped 10mm gold screw at the bottom rear of the Drive Assembly.
10. Remove the Drive Assembly.

Replacement

1. Align the Drive Assembly with the holes in the side of the frame.
2. Reinstall the five screws securing the Drive Assembly to the ROS Assembly.
3. Reconnect P/J 14 on the MCU PWB.
4. Reinstall the Interconnect PWB enclosure (with PWB).
5. Reinstall the ESS enclosure.
6. Reinstall the controller.
7. Reinstall the Fuser Assembly.
8. Reinstall the covers.
9. Reinstall the CRU.

RRP 5.2 CRU Sensor PWB



RRP 5.2 CRU Sensor PWB

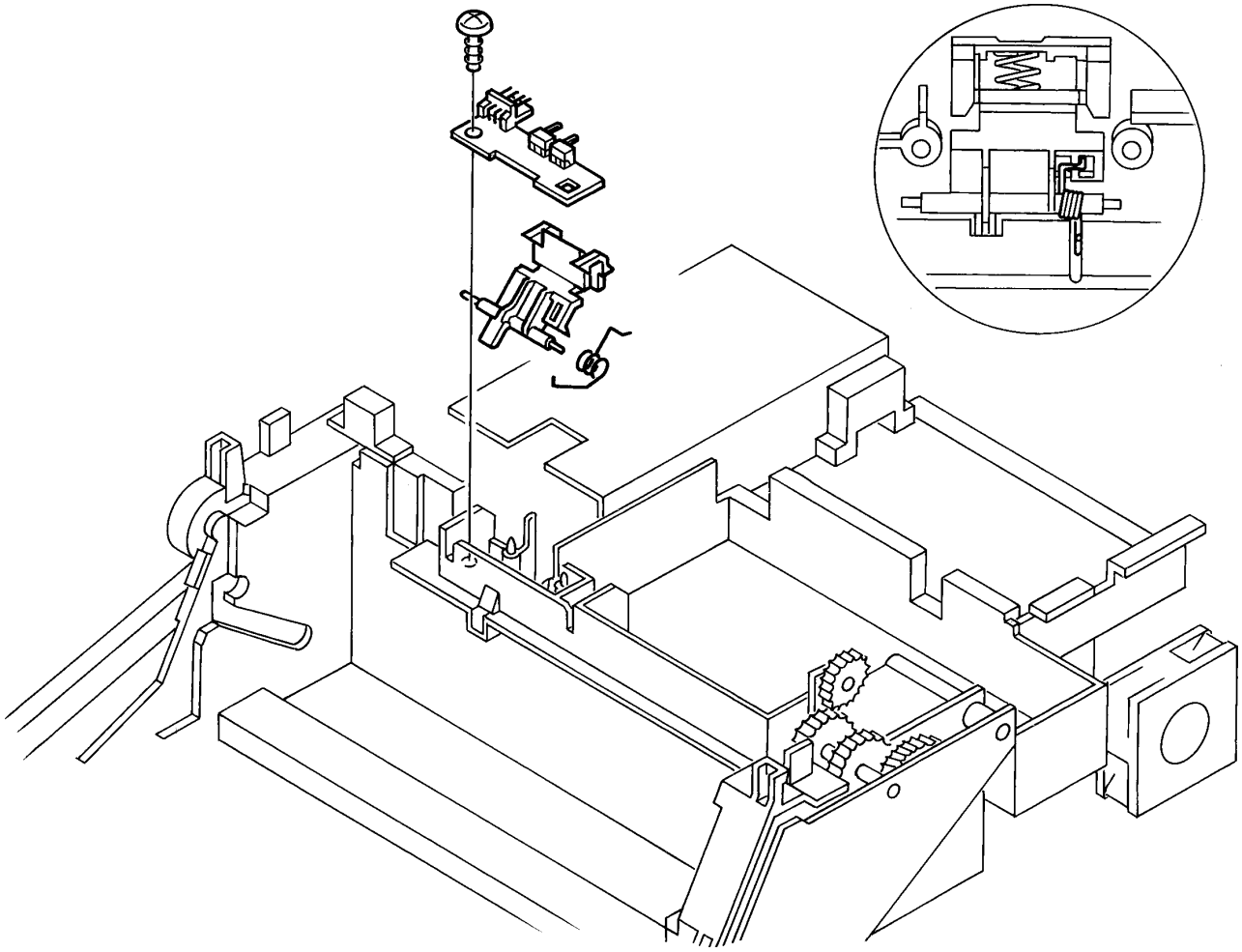
Removal

1. Remove all of the covers except the Front Transport Assembly.
2. Open the Front Cover.
3. Remove the Fuser Assembly (RRP 4.1).
4. Remove the controller (ESS). (RRP 6.2)
5. Remove the ESS enclosure (RRP 6.1).
6. Remove the Interconnect PWB enclosure (with PWB) (RRP 6.3).
7. Disconnect P/J 118 from the CRU Sensor PWB.
8. Use a screwdriver to pry off the CRU Sensor Cover .
9. Remove the tapped 8mm gold screw securing the CRU Sensor PWB to the ROS.
10. Push back the plastic latch securing the PWB, and remove the CRU Sensor PWB.

Replacement

1. Align the CRU Sensor PWB with the holes in the top of the ROS Assembly.
2. Press down on the PWB until the latch snaps into place.
3. Reinstall the tapped 8mm gold screw securing the CRU Sensor PWB to the ROS.
4. Reinstall the CRU Sensor Cover.
5. Reconnect P/J 118 on the CRU Sensor PWB.
6. Reinstall the Interconnect PWB enclosure (with PWB).
7. Reinstall the ESS enclosure.
8. Reinstall the controller.
9. Reinstall the Fuser Assembly.
10. Reinstall all covers.

RRP 5.3 CRU Actuator Assembly



RRP 5.3 CRU Actuator Assembly

Removal

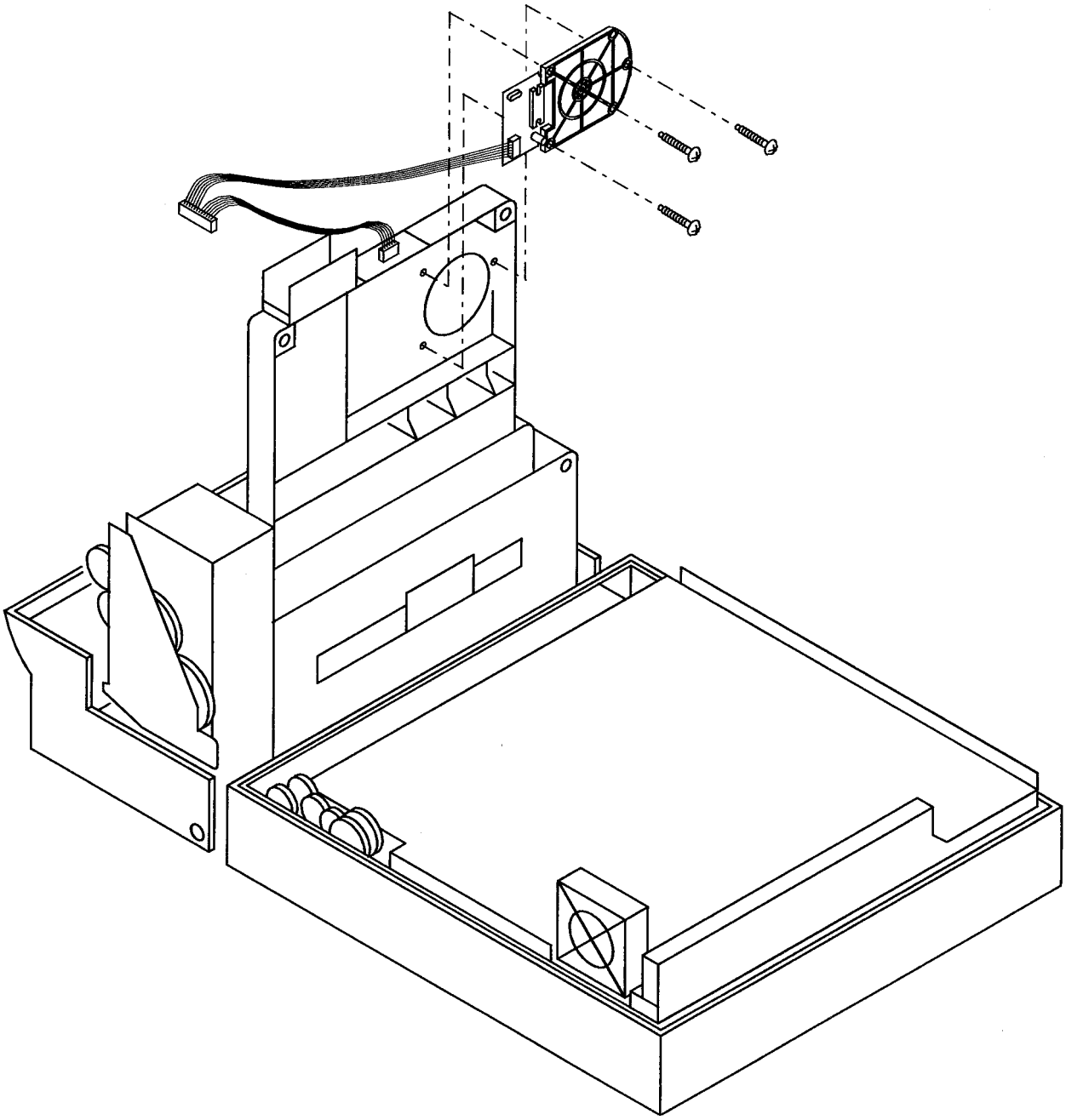
1. Open the Front Cover.
2. Remove all of the covers.
3. Remove the CRU.
4. Remove the Fuser Assembly (RRP 4.1).
5. Remove the controller (ESS). (RRP 6.2)
6. Remove the ESS enclosure (RRP 6.1).
7. Remove the Interconnect PWB enclosure (with PWB) (RRP 6.3).
8. Remove the CRU Sensor PWB (RRP 5.2).
9. Pull up on the Actuator Assembly to remove it from the ROS .

Replacement

1. Reinstall the CRU Sensor Actuator and Spring.

   NOTE: Reattach the spring so it provides the proper return action for the Actuator.
2. Reinstall the CRU Sensor.
3. Reinstall the Interconnect PWB enclosure (with PWB).
4. Reinstall the ESS enclosure.
5. Reinstall the controller
6. Reinstall the Fuser Assembly.
7. Reinstall the covers.
8. Reinstall the CRU.

RRP 5.4 Scanner Motor



RRP 5.4 Scanner Motor

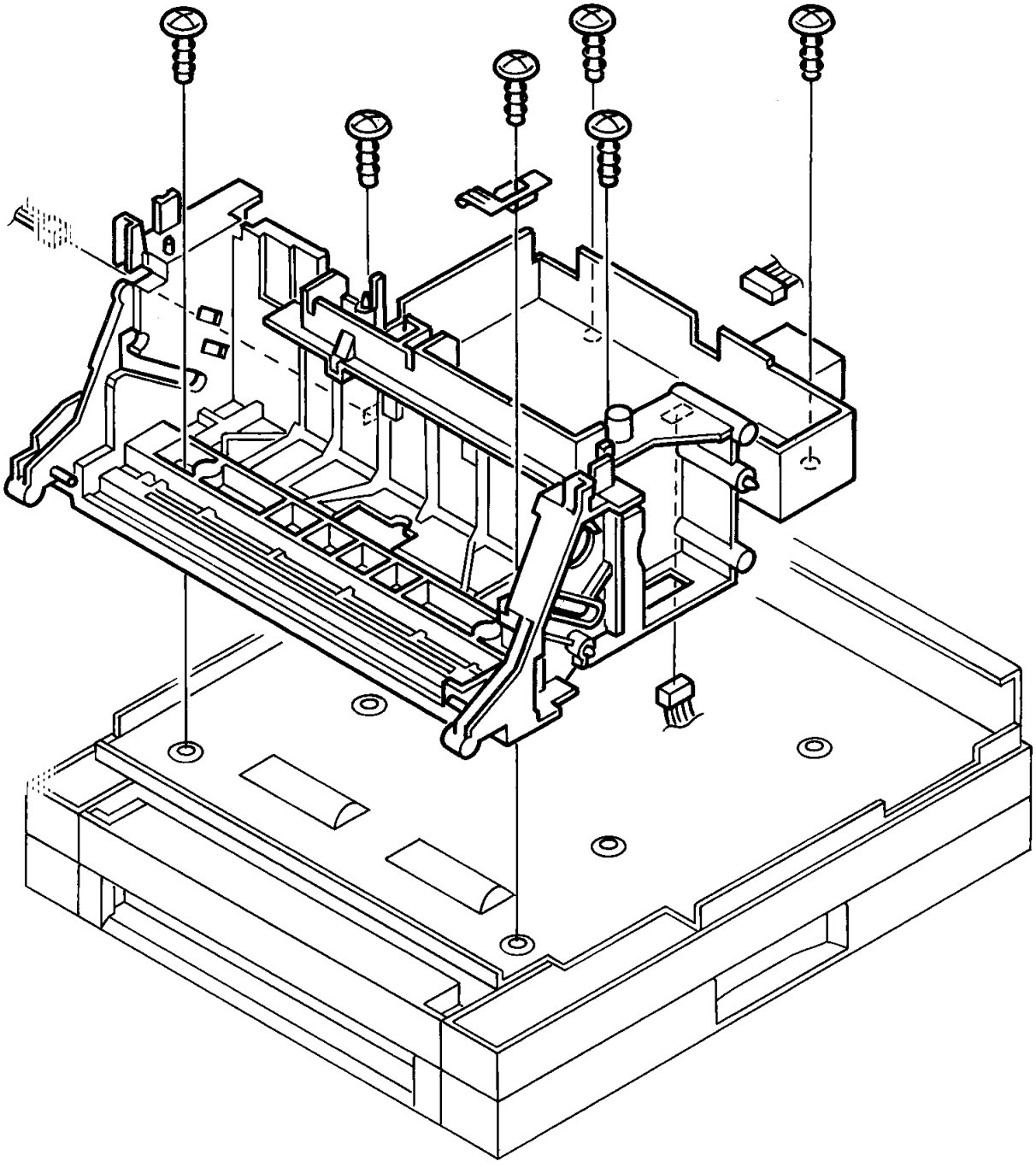
Removal

1. Remove all of the covers.
2. Remove the CRU.
3. Remove the Fuser Assembly (RRP 4.1).
4. Remove the controller (ESS). (RRP 6.2)
5. Remove the ESS enclosure (RRP 6.1).
6. Remove the Interconnect PWB enclosuer (with PWB).
7. Remove the HVPS (RRP 6.6).
8. Remove the LVPS Assembly (RRP 6.7).
9. Remove the six tapped 10mm gold screws securing the ROS Assembly.
10. Disconnect P/J 114 from the ROS Assembly and P/J 113 from the SOS Assembly.
11. Grasp the rear of the ROS, and pivot it toward the front of the printer so you can access the underside of the Assembly.
12. Remove the three 13mm silver screws securing the Scanner Motor to the underside of the ROS Assembly.
13. Disconnect P/J 112 from the LDD PWB.
14. Remove the Scanner Motor.

Replacement

1. Reinstall the Scanner Motor on the underside of the ROS Assembly.
2. Secure the Scanner Motor with three 13mm silver screws.
3. Reconnect P/J 112 on the LLD PWB.
4. Align the ROS Assembly onto the Frame Base.
5. Reconnect P/J 114 on the ROS Assembly and P/J 113 on the SOS Assembly.
6. Reinstall the six tapped 10mm gold screws securing the ROS Assembly.
7. Reinstall the LVPS Assembly.
8. Reinstall the HVPS.
9. Reinstall the Interconnect PWB enclosure with PWB.
10. Reconnect all P/Js on the HVPS (P/J 111, P/J CR, P/J DB, P/J TR, and P/J RTN).
11. Reconnect all P/Js on the MCU PWB (P/J 11 through P/J 20), plus P/J 21 if a Toner Sensor Assembly is installed.
12. Reinstall the ESS enclosure.
13. Reinstall the controller.
14. Reinstall the Fuser Assembly.
15. Reinstall the covers.

RRP 5.5 ROS Assembly



RRP 5.5 ROS Assembly

Removal

1. Remove all of the covers, including the Front Transport Assembly.
2. Remove the CRU.
3. Remove the Fuser Assembly (RRP 4.1).
4. Remove the controller (ESS). (RRP 6.2)
5. Remove the ESS enclosure (RRP 6.1).
6. Remove the Interconnect PWB enclosure (with PWB and remove all P/Js from the Interconnect PWB.) (RRP 6.3).
7. Disconnect all of the P/Js on the MCU PWB.
8. Disconnect all of the P/Js on the HVPS.
9. Disconnect the green and black wires on the LVPS.
10. Remove the Gear Double L (RRP 3.2).
11. Remove the Gear Double R (RRP 3.3).
12. Remove the Link Assembly (RRP 3.1).
13. Remove the Earth Plate Assembly (RRP 6.4).
14. Use a screwdriver to pry off the Cable Cap from the ROS Assembly.
15. Remove the Lower Chute Assembly, and two Gear Front Covers (RRP 3.6)
16. Remove the Electronics Box Base along with the MCU PWB.
17. Remove the HVPS (RRP 6.6).
18. Remove the LVPS Assembly (RRP 6.7).
19. Remove the Drive Assembly (RRP 5.1).
20. Remove the CRU Sensor PWB (RRP 5.2).
21. Remove the CRU Actuator Assembly (RRP 5.3).
22. Remove the six tapped 10mm gold screws securing the ROS Assembly.
23. Disconnect P/J 112 and P/J 114 from the ROS Assembly, and P/J 113 from the SOS Assembly.
24. Lift the ROS Assembly, along with the ROS and SOS wiring harness assemblies, out of the printer.

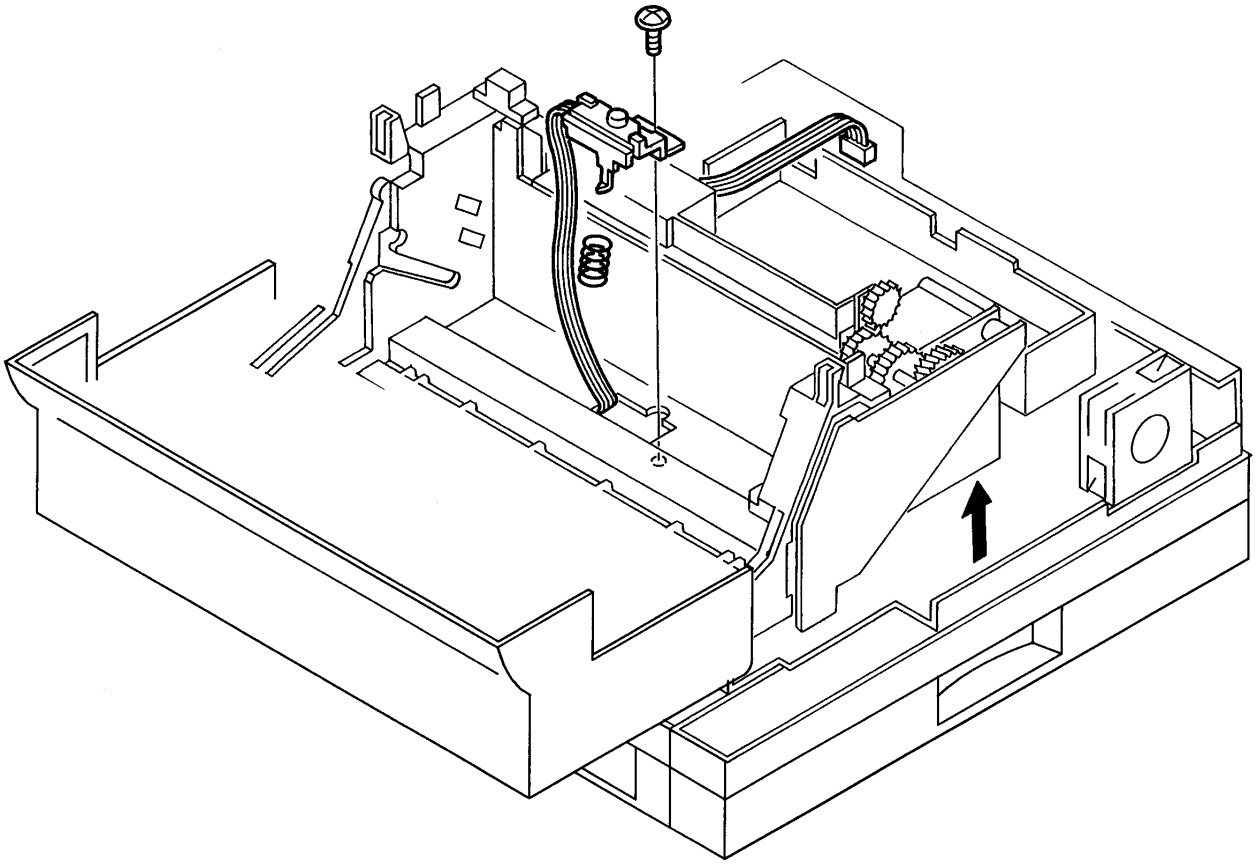
RRP 5.5 ROS Assembly Continued

RRP 5.5 ROS Assembly Continued

Replacement

1. Align the ROS Assembly onto the Frame Base.
2. Reconnect P/J 112 and P/J 114 from the ROS Assembly, and P/J 113 from the SOS Assembly.
3. Reinstall the six tapped 10mm gold screws securing the ROS Assembly.
4. Reinstall the CRU Sensor PWB.
5. Reinstall the CRU Actuator Assembly.
6. Reinstall the Drive Assembly.
7. Reinstall the LVPS Assembly.
8. Reinstall the HVPS.
9. Reinstall the Electronics Box Base along with the MCU PWB
10. Reinstall the Front Transport Assembly, Lower Chute Assembly, and two Gear Front Covers.
11. Reinstall the Cable Cap on the ROS Assembly.
12. Reinstall the Earth Plate Assembly.
13. Reinstall the Link Assembly.
14. Reinstall the Gear Double R.
15. Reinstall the Gear Double L.
16. Reinstall the black and green wires on the LVPS.
17. Reconnect all P/Js on the HVPS (P/J 111, P/J CR, P/J DB, P/J TR, and P/J RTN).
18. Reconnect all P/Js on the MCU PWB (P/J 11 through P/J 20), plus P/J 21 if a Toner Sensor Assembly is installed.
19. Reinstall the Interconnect PWB enclosure (with PWB) and P/Js 31, 50, and 51.
20. Reinstall the ESS enclosure.
21. Reinstall the controller.
22. Reinstall the Fuser Assembly.
23. Reinstall the covers.

RRP 5.6 Toner Sensor Assembly



RRP 5.6 Toner Sensor Assembly

Removal

1. Open the Rear Cover (RRP 1.1)
2. Remove all of the covers, including the Front Transport Assembly.
3. Remove the CRU.
4. Remove the Fuser Assembly (RRP 4.1).
5. Remove the controller (ESS). (RRP 6.2)
6. Remove the ESS enclosure (RRP 6.1).
7. Remove the Interconnect PWB enclosure (with PWB and disconnect all the P/Js on the Interconnect PWB.) (RRP 6.3).
8. Disconnect all P/Js on the MCU PWB.
9. Remove the LVPS (RRP 6.7).
10. Remove the Electronics Box Base along with the MCU PWB.
11. Remove the Link Assembly (RRP 3.1).
12. Remove the Earth Plate Assembly (RRP 6.4).
13. Remove the 5mm gold screw securing the Toner Sensor Assembly to the ROS Assembly .
14. Lift the Toner Sensor Assembly a few inches and unplug P/J 123.
15. Remove the Toner Sensor Assembly and Toner Sensor Spring.

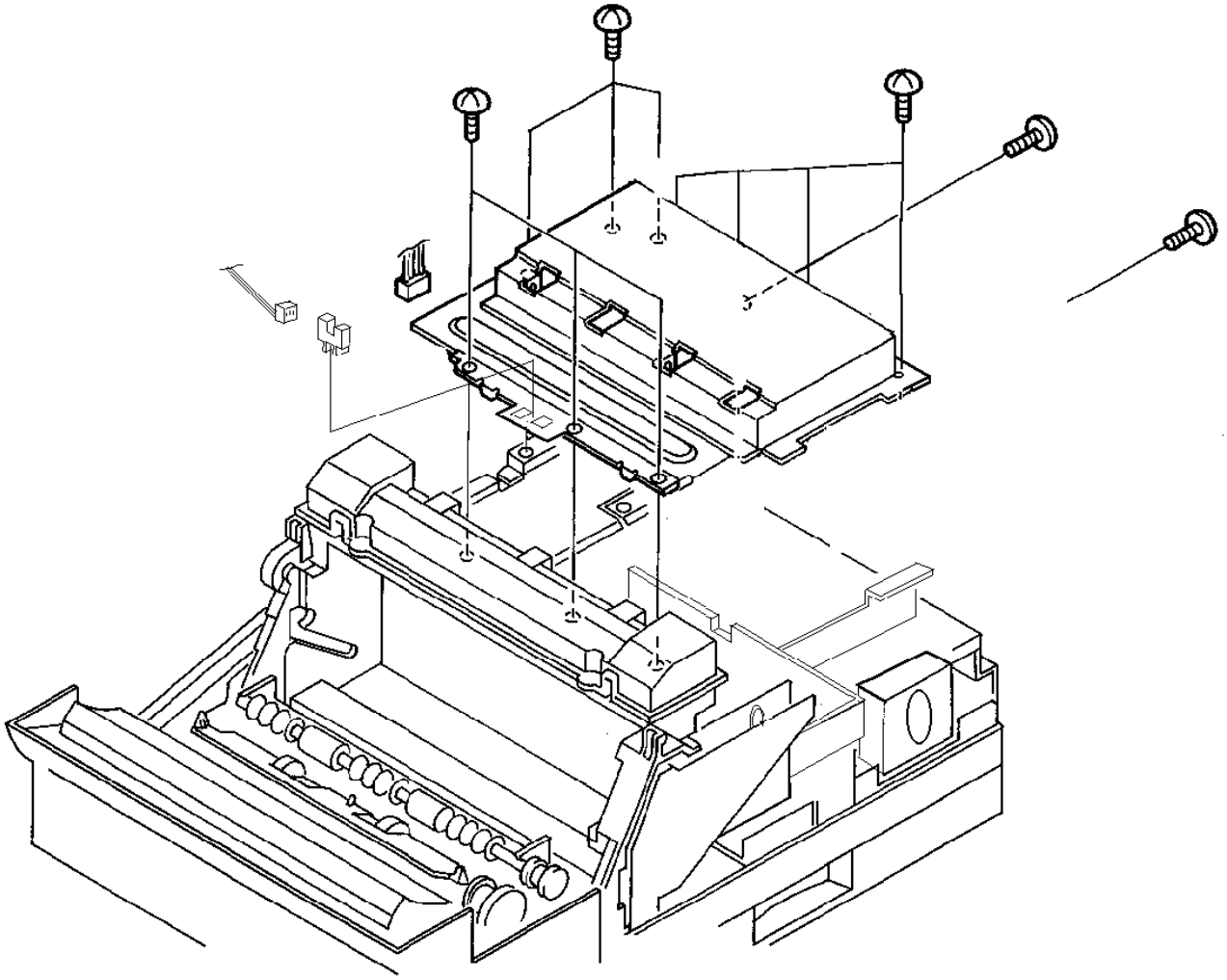
Replacement

1. Align the Toner Sensor Assembly and the Toner Sensor Spring with the hole in the bottom of the ROS Assembly.
2. Reconnect P/J 123 on the Toner Sensor Assembly.
3. Reinstall the 5mm gold screw to secure the Toner Sensor Assembly to the ROS.
4. Reinstall the Earth Plate Assembly.
5. Reinstall the Link Assembly.
6. Reinstall the Electronics Box Base and MCU PWB.
7. Reinstall the LVPS.
8. Reconnect all P/Js on the MCU PWB.
9. Reinstall the Interconnect PWB enclosure (with PWB) Connect PWB PJs 31, 50, and 51.
10. Reinstall the ESS enclosure.
11. Reinstall the controller
12. Reinstall the Fuser Assembly.
13. Reinstall the CRU.
14. Reinstall all covers.

Chapter 14 : Removal and Replacement Procedures --- Electrical Modules

The following sections explain how to remove and replace the electrical modules.

RRP 6.1 Controller (ESS) Enclosure



RRP 6.1 Controller (ESS) Enclosure

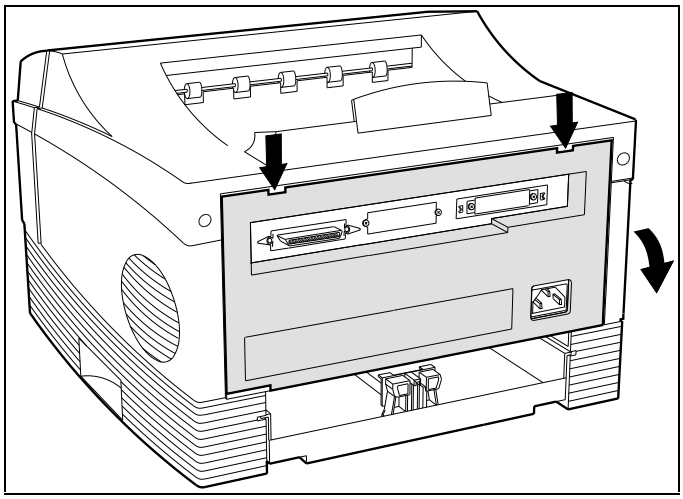
Removal

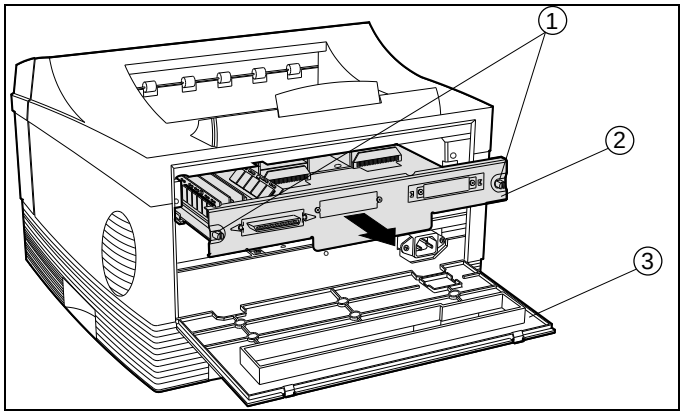
1. Open the Rear Cover (RRP 1.1).
2. Remove all of the covers, except the Front Transport Assembly.
3. Remove the controller (ESS). (RRP 6.2)
4. Remove the following components:
    - Two sheet metal screws from the ESS enclosure. The locations are stamped with the number 1.
    - Four silver machine screws from the ESS enclosure. The locations are stamped with the number 2.
    - Six brass machine screws from the ESS enclosure. The locations are stamped with the number 3.

Replacement

1. Position the ESS enclosure over the ROS and chassis, aligning the hols near the stamps labeled with the number 1. .
2. Reinstall the following components:
    - Two sheet metal screws from the ESS enclosure. The locations are stamped with the number 1.
    - Four silver machine screws from the ESS enclosure. The locations are stamped with the number 2.
    - Six brass machine screws from the ESS enclosure. The locations are stamped with the number 3.
3. Reinstall the controller (ESS).
4. Reinstall the covers.

RRP 6.2 Controller (ESS)





RRP 6.2 Controller (ESS)

Removal:

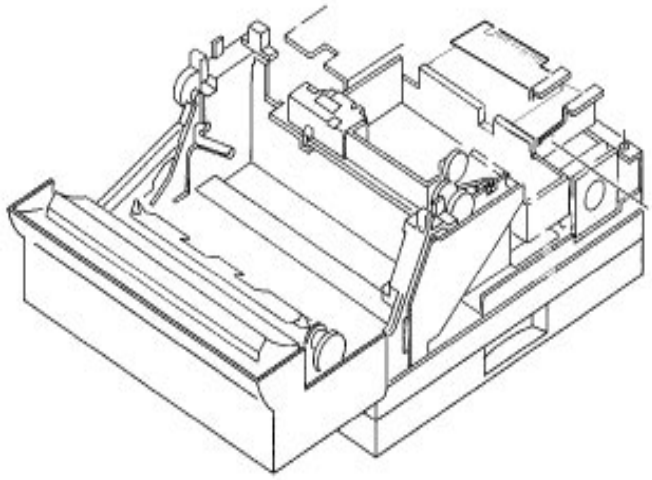
1. Press down on the tabs to open and lower the rear cover.
2. Loosen the thrumbscrews and remove the system controller (ESS) board.
    1 Thumbscrews
    2 System Controller (ESS) Board
    3 Rear Cover

Replacement

Reinstall and secure the controller (ESS) board and close the rear cover.

Thumbscrews
System Controller (ESS) Board
Rear Cover

RRP 6.3 Interconnect PWB Enclosure (with PWB)



RRP 6.3 Interconnect PWB Enclosure (with PWB)

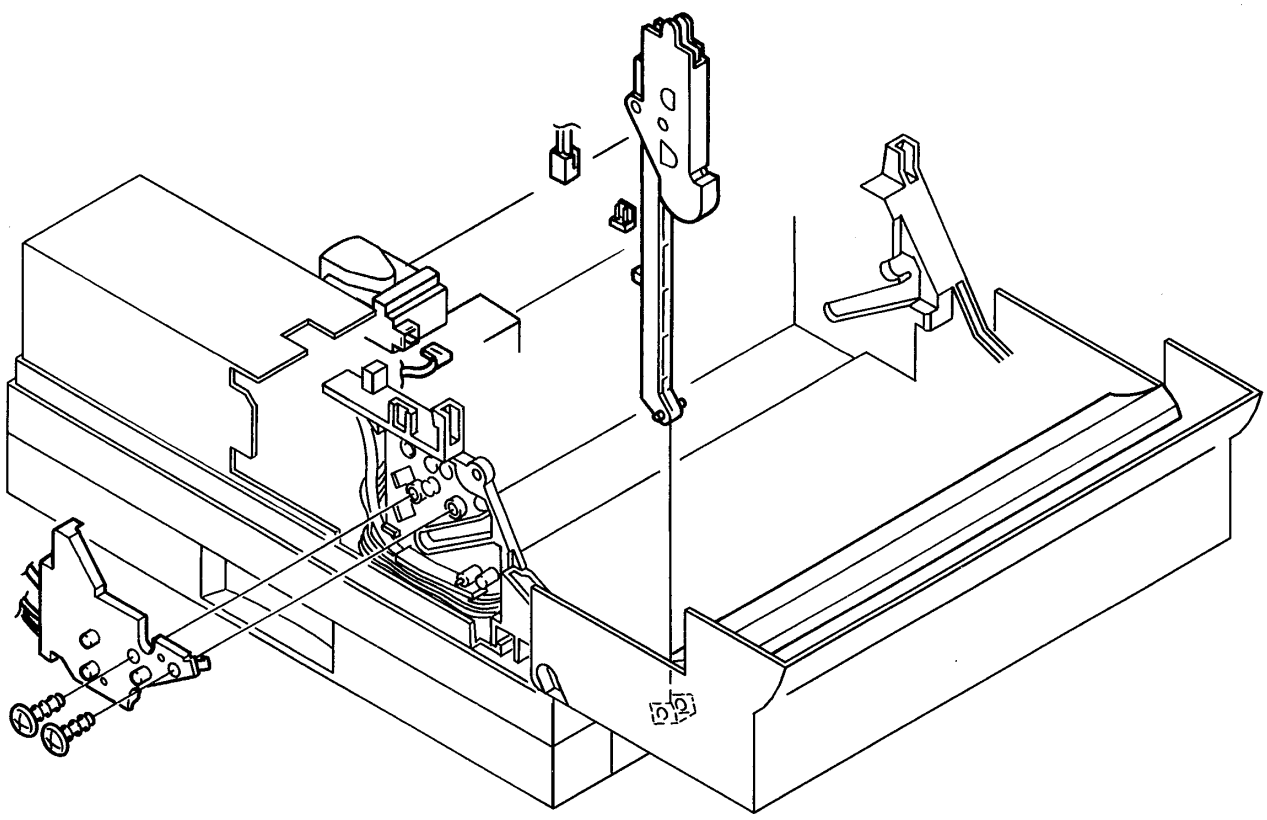
Removal

1. Open the Rear Cover (RRP 1.1).
2. Remove all of the covers, except the Front Transport Assembly.
3. Remove the controller (ESS). (RRP 6.2)
4. Remove the ESS enclosure (RRP 6.1).
5. Unplug the Exit Sensor .
6. Remove the two tapped 6mm gold screws securing the Electronics Box Cover to the ROS Assembly.
7. Remove the 6-mm gold screw securing the Interconnect PWB to the MCU electronics box base.
8. Lift the Interconnect PWB enclosure. This disconnects the P/J 31 header from the MCU.
   If the Interconnect PWB does not need to be removed, for example, to disconnect a P/J from the MCU PWB, hinge the unit backwards
   If the Interconnect PWB must be removed, remove the three 6-mm gold screws from the Interconnect PWB and remove P/J 50 (Control Panel) and P/J 51 (LVPS).

Replacement

1. If the Interconnect PWB was removed, Replace P/J 50 and P/J 51 and the three 6-mm gold screws from the Interconnect PWB
   If the Interconnect PWB was not removed, reinstall interconnect PWB enclosure, carefully reconnecting P/J 31 on the MCU.
2. Replace the 6-mm gold screw connecting the Interconnect PWB to the MCU electronics box base.
3. Plug in the Exit Sensor.
4. Replace the Assembly.
5. Replace the controller (ESS).
6. Replace the covers.

RRP 6.4 Earth Plate Assembly



RRP 6.4 Earth Plate Assembly

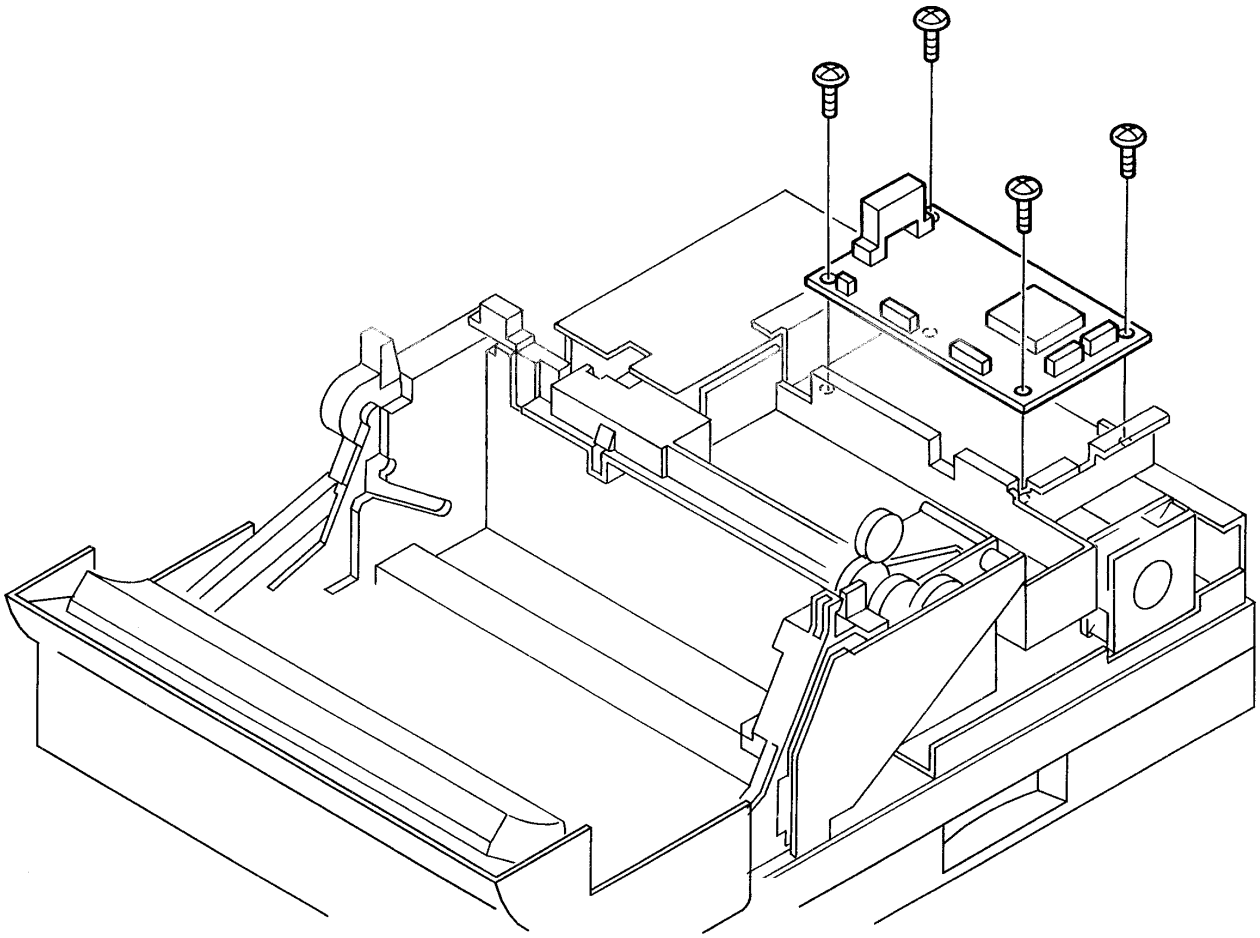
Removal

1. Open the Front Cover.
2. Remove all of the covers.
3. Remove the CRU.
4. Remove the Fuser Assembly (RRP 4.1).
5. Remove the controller (ESS). (RRP 6.2)
6. Remove the ESS enclosure (RRP 6.1).
7. Unplug the Exit Sensor.
8. Disconnect P/J CR and P/J DB from the HVPS.
9. Remove the Link Assembly (RRP 3.1).
10. Remove the two tapped 8mm gold screws securing the Earth Plate Assembly to the ROS Assembly .
11. Remove the Earth Plate Assembly.

Replacement

1. Position the Earth Plate Assembly on the left side of the ROS Assembly.
2. Reinstall the two tapped 8mm gold screws securing the Earth Plate Assembly to the ROS Assembly.
3. Reinstall the Link Assembly.
4. Reconnect P/J CR and P/J DB.
5. Plug in the Exit Sensor.
6. Reinstall the ESS enclosure.
7. Reinstall the controller (ESS).
8. Reinstall the Fuser Assembly.
9. Reinstall the CRU.
10. Reinstall all covers.

RRP 6.5 MCU PWB



RRP 6.5 MCU PWB

NOTE: If you replace the MCU PWB, you lose the current Total Print Count data recorded there. Write down the Total Print Count data before replacing the MCU PWB.

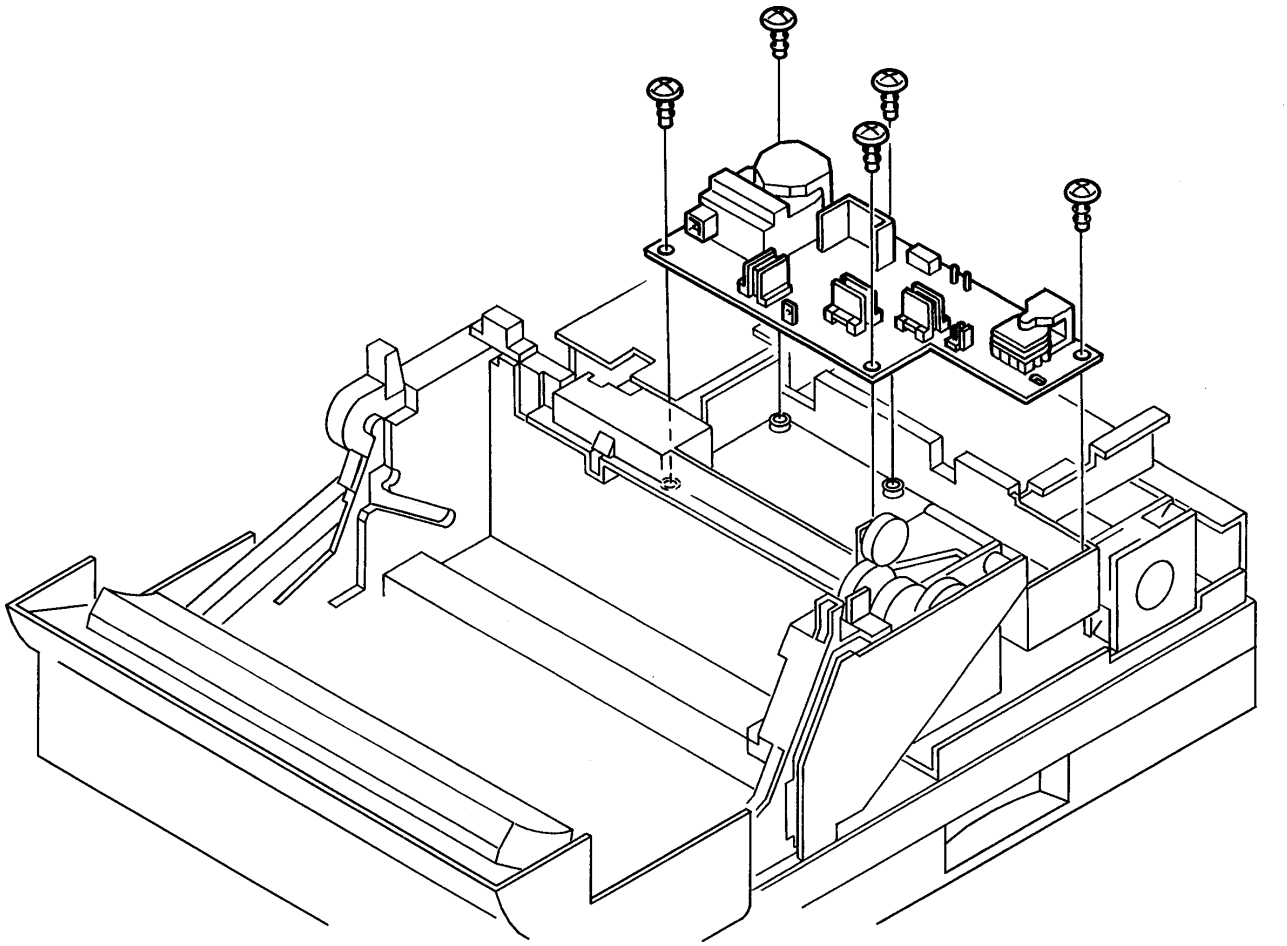
Removal

1. Remove all of the covers.
2. Remove the Fuser Assembly (RRP 4.1).
3. Remove the controller (ESS). (RRP 6.2)
4. Remove the ESS enclosure (RRP 6.1).
5. Remove the Inteconnect PWB enclosure (with PWB)
6. Disconnect all P/Js on the MCU PWB.
7. Remove the four 6mm silver screws securing the MCU PWB to the Electronics Box.
8. Remove the MCU PWB.

Replacement

1. Position the MCU PWB in the Electronics Box.
2. NOTE: Enter the operating parameters into the NVRAM if you replace the old MCU PWB with a new one.
3. Reinstall the four 6mm silver screws securing the MCU PWB to the Electronics Box.
4. Reconnect all P/Js on the MCU PWB (P/J 11 through P/J 20), plus P/J 21 if a Toner Sensor Assembly is installed.
5. Reinstall the Interconnect PWB enclosure with PWB
6. Reinstall the ESS enclosure.
7. Reinstall the controller (ESS).
8. Reinstall the Fuser Assembly.
9. Reinstall the covers.

RRP 6.6 HVPS



RRP 6.6 HVPS

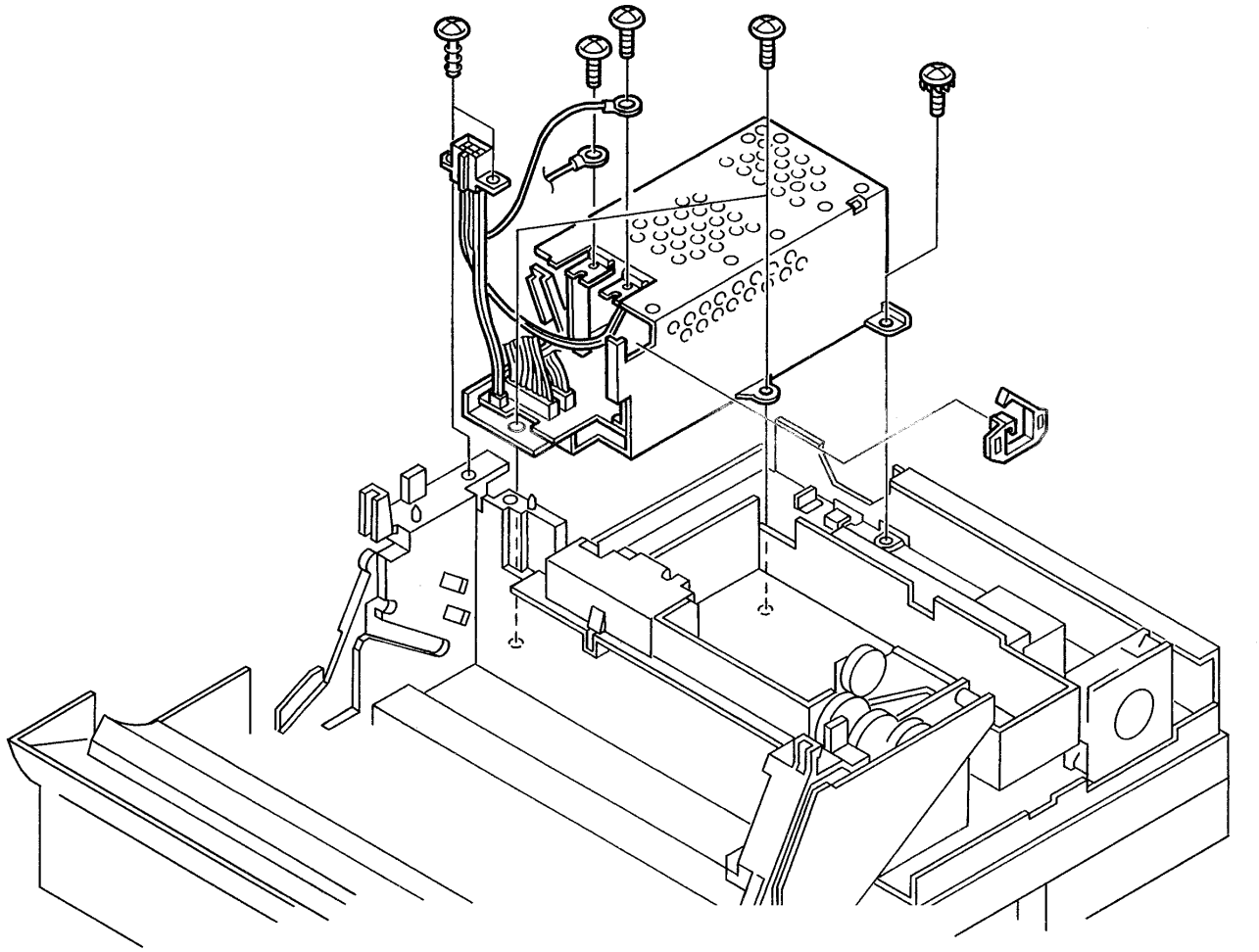
Removal

1. Open the Rear Cover (RRP 1.1).
2. Remove all of the covers.
3. Remove the Fuser Assembly (RRP 4.1).
4. Remove the controller (ESS). (RRP 6.2)
5. Remove the ESS enclosure (RRP 6.1).
6. Remove the Interconnect PWB enclosure (with PWB)
7. Disconnect all P/Js on the HVPS.
8. Remove the five tapped 8mm gold screws securing the HVPS to the frame .
9. Remove the HVPS from the Electronics Box.

Replacement

1. Position the HVPS in the Electronics Box.
2. Reinstall the five tapped 8mm gold screws securing the HVPS to the Electronics Box.
3. Reconnect all P/Js on the HVPS (P/J 111, P/J CR, P/J DB, P/J TR, and P/J RTN).
4. Reinstall the Interconnect PWB enclosure (with PWB)
5. Reinstall the ESS enclosure.
6. Reinstall the controller (ESS).
7. Reinstall the Fuser Assembly.
8. Reinstall all covers.

RRP 6.7 LVPS Assembly



RRP 6.7 LVPS Assembly

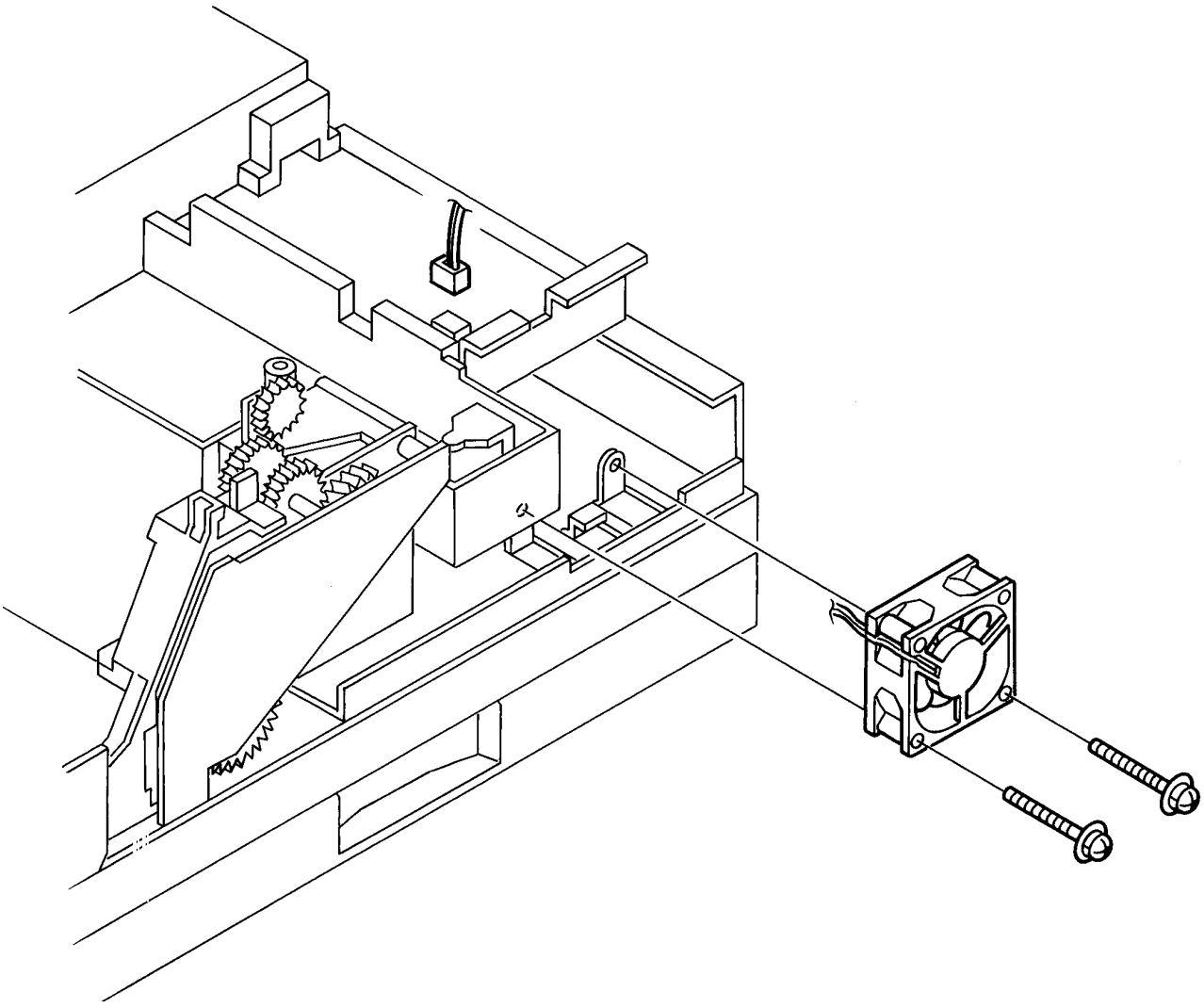
Removal

1. Open the Front Cover.
2. Remove all of the covers.
3. Remove the Fuser Assembly (RRP 4.1).
4. Remove the controller (ESS). (RRP 6.2)
5. Remove the ESS enclosure (RRP 6.1).
6. Remove the Interconnect PWB enclosure (with PWB). Also disconnect the P/Js on the Interconnect PWB.
7. Disconnect all P/Js on the MCU PWB.
8. Remove the 6mm silver screw securing the Electronics Box Base.
9. Remove the Base along with the MCU PWB.
10. Remove the Link Assembly (RRP 3.1).
11. Remove the Earth Plate Assembly (RRP 6.4)
12. Remove the tapped 8mm gold screw securing the black wire to the LVPS.
13. Remove the 6mm gold screw securing the green wire to the LVPS.
14. Remove the 6mm gold screw and washer securing the rear of the LVPS.
15. Remove the two 6mm silver screws securing the LVPS .
16. Remove the two tapped 10mm gold screws securing P101 to the ROS Assembly.
17. Remove the LVPS Assembly.

Replacement

1. Reinstall the LVPS into the Electronics box.
2. Reinstall the two tapped 10mm gold screws securing P101 to the ROS Assembly.
3. Reinstall the two 6mm silver screws securing the LVPS to the base.
4. Reinstall the 6mm gold screw and washer securing the rear of the LVPS to the base.
5. Reinstall the 6mm silver screw securing the black wire to the LVPS.
6. Reinstall the 6mm gold screw securing the green wire to the LVPS.
7. Reinstall the Earth Plate Assembly.
8. Reinstall the Link Assembly.
9. Reinstall the MCU and Electronics Box Base.
10. Reconnect all P/Js on the MCU PWB (P/J 11 through P/J 20) and P/J 21 if a Toner Sensor Assembly is installed.
11. Reinstall the Interconnect PWB (with PWB). Reintall P/Js 30, 50, and 51.
12. Reinstall the Assembly.
13. Reinstall the controller (ESS).
14. Reinstall the Fuser Assembly.
15. Reinstall all covers

RRP 6.8 Fan



RRP 6.8 Fan

Removal

1. Open the Rear Cover (RRP 1.1).
2. Remove all of the covers.
3. Remove the Fuser Assembly (RRP 4.1).
4. Remove the controller (ESS). (RRP 6.2)
5. Remove the ESS enclosure (RRP 6.1).
6. Remove the Electronics Box Cover (RRP 6.3).
7. Disconnect P/J 18 from the MCU PWB.
8. Remove the two 30mm gold screws and washers securing the Fan to the Frame Base .
9. Remove the Fan.

Replacement

1. Align the Fan with the holes in the Frame Base.

   NOTE: Install the Fan with the label facing out, so the air flows OUT of the printer.

2. Reinstall the two 30mm gold screws and washers securing the Fan to the Frame Base.
3. Reconnect P/J 18 to the MCU PWB.
4. Reinstall the Interconnect PWB enclosure (with PWB).
5. Reinstall the controller (ESS).
6. Reinstall the Fuser Assembly.
7. Reinstall the covers.

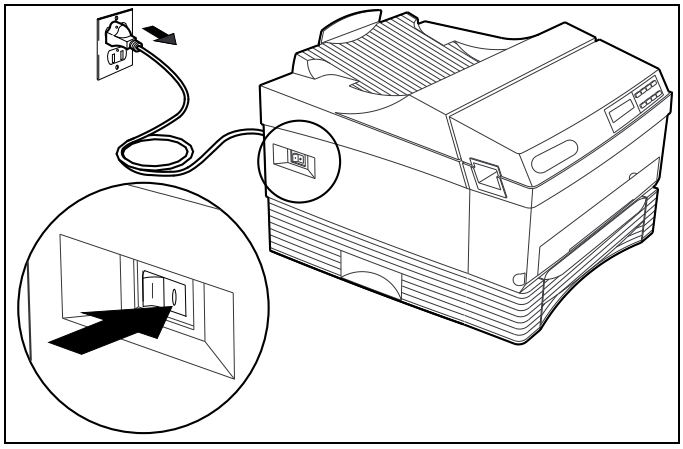
Chapter 15 : Removal and Replacement Procedures — Options

The following sections show how to remove the options from the printer. Troubleshooting instructions are also included.

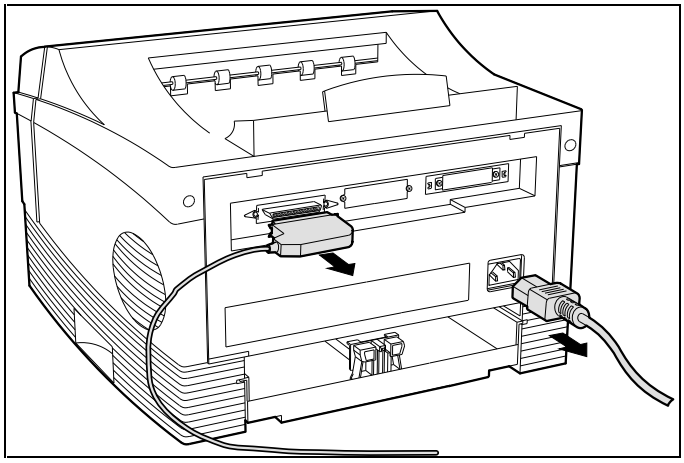
RRP 7.1 Memory and Font Options

The following procedures explain how to remove and replace the following options:

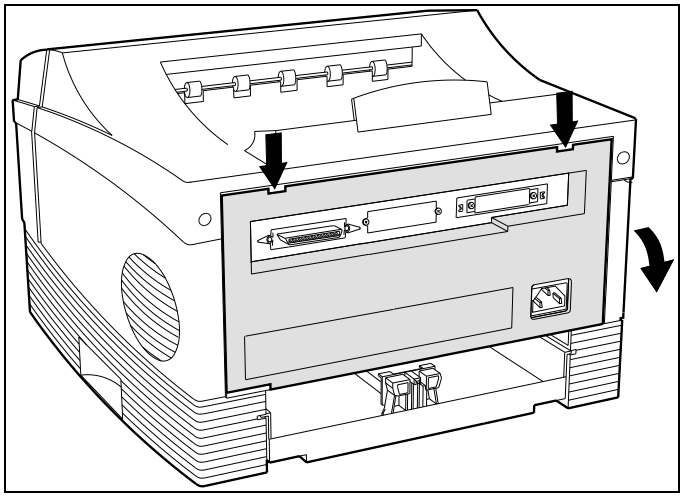
- 1- and 2-MB Programmable Font Modules
- 2-, 4-, and 8-MB Memory Modules



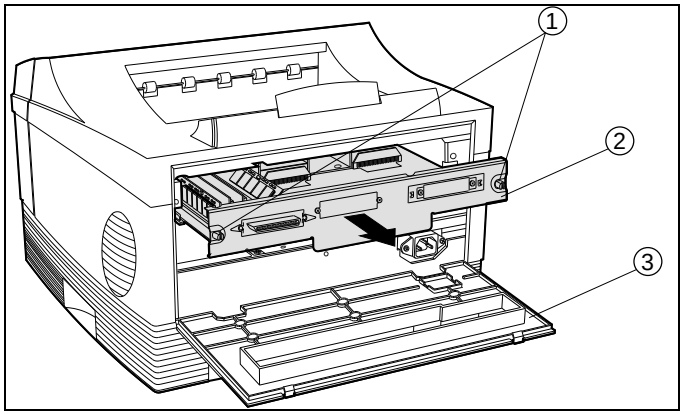
Turn the printer off (o) and unplug the power cord.



Disconnect all cables from the printer.

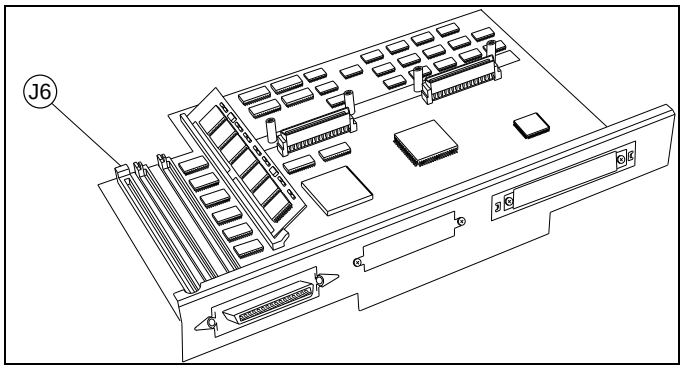


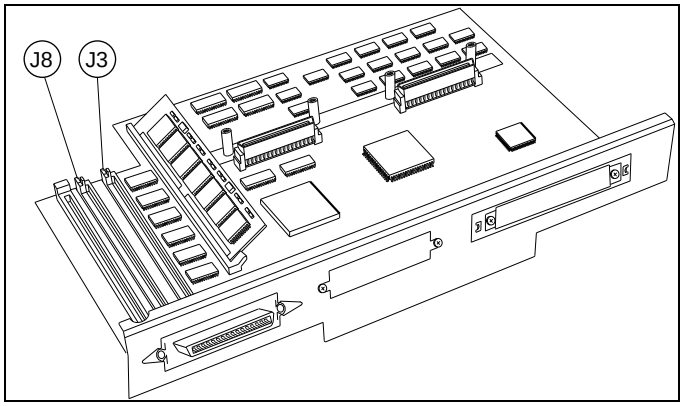
Press down on the tabs to open and lower the rear cover.



Loosen the thumbscrews and remove the system controller (ESS) board.

1 Thumbscrews
2 System Controller (ESS) Board
3 Rear Cover

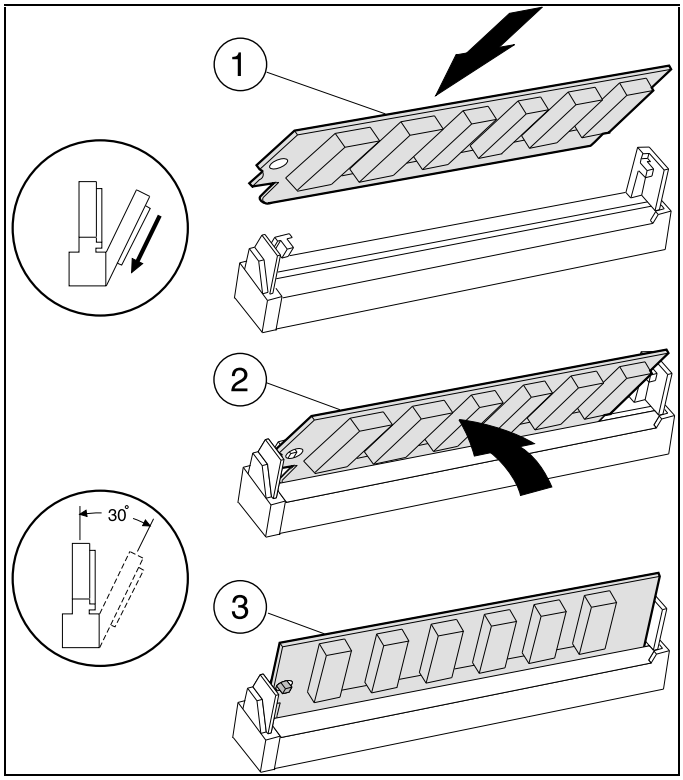




Remove the option from the appropriate slot:

J6 is the slot of the font module.

J3 or J8 is the slot for the memory option.

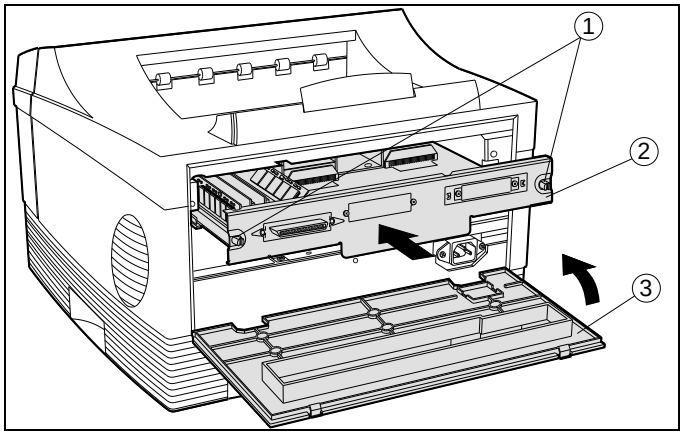


Install the option into the appropriate slot.

J6 is the slot of the font module.

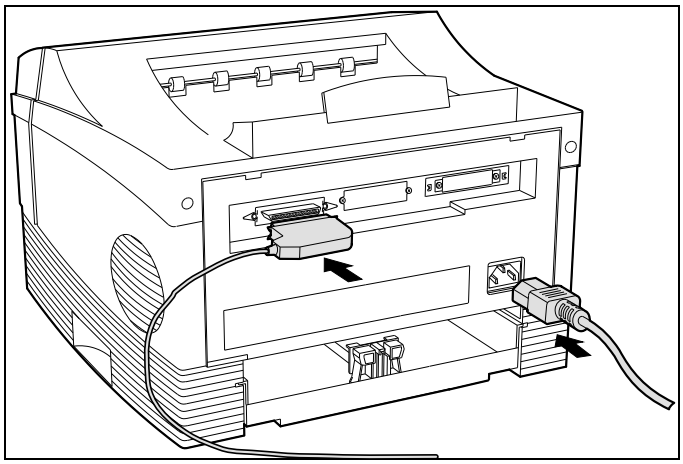
J3 or J8 is the slot for the memory option.

With the notched edge to the left, insert the module at a 30° angle into the slot. Rotate it vertically until it snaps into place.

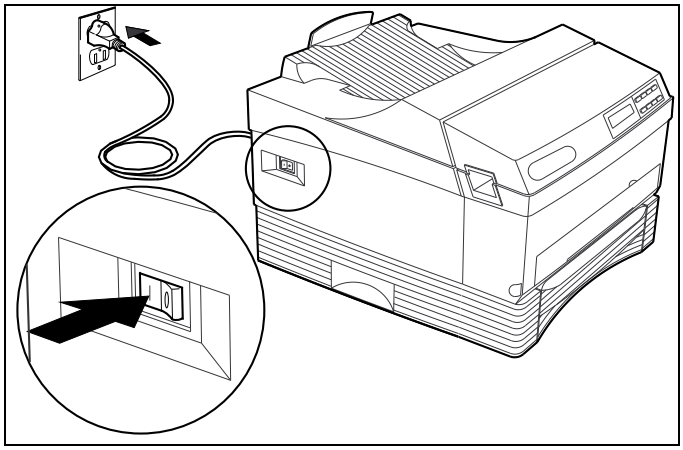


Reinstall and secure the controller (ESS) board and close the rear cover.

1 Thumbscrews
2 System Controller (ESS) Board
3 Rear Cover



Reconnect all cables.



Plug in and turn on (I) the printer.
Print a hardware report.
Using the printer control panel:

1. Press the **Menu** key. The printer is placed offline and in menu mode.
2. Go to the Reports menu to print a Hardware Report.
3. After printing the report, press **Online** to place the printer back online.
4. Verify that the optionis listed on the report.

Troubleshooting

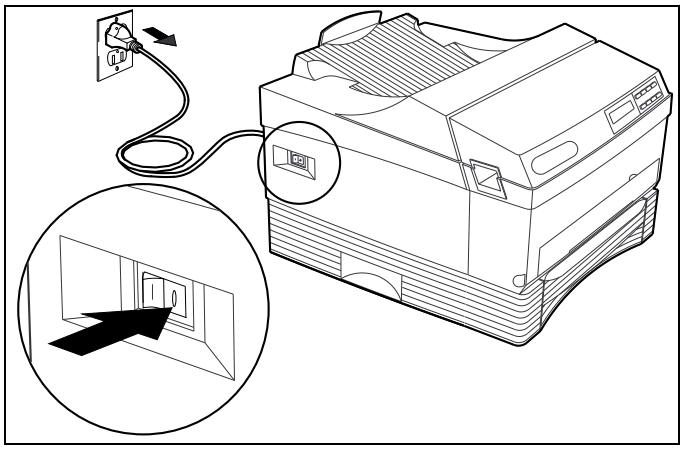
If the option you just installed is not listed on the Hardware Report, you should:

1. Make sure that the option is properly installed and fully seated.
   J6 is the slot of the font module.
   J3 or J8 is the slot for the memory option.
2. Reprint the Hardware Report.
3. If the Hardware Report still does not list the option, try installing a new option.
4. If installing a new option does not work, try a new controller (ESS).

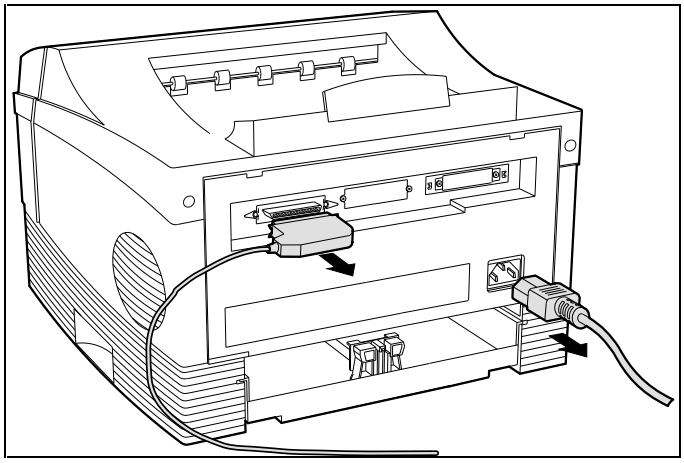
RRP 7.2 Communications Options

The following sections explain how to remove and replace the following options:

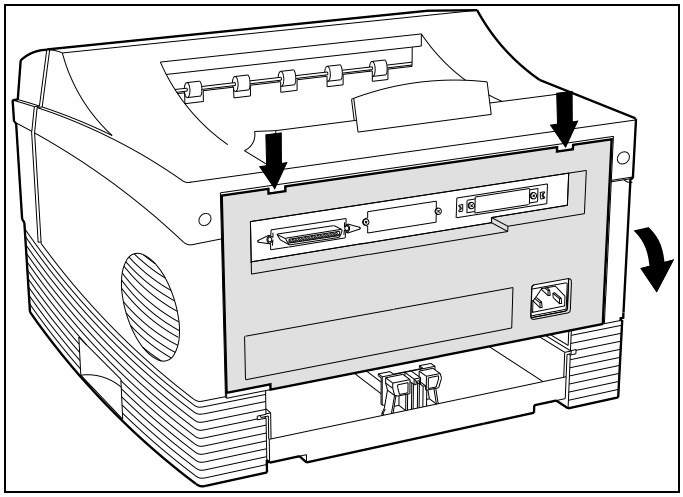
- Internal and External Fax Modems
- Serial Interface
- AppleTalk Interface
- EtherTalk Interface



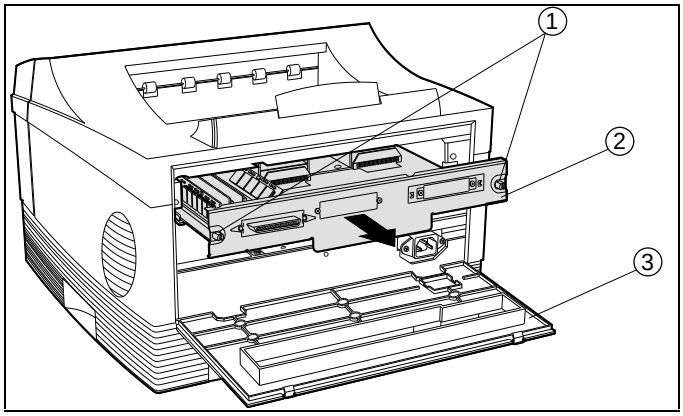
Turn the printer off (O) and unplug the power cord.



Disconnect all cables from the printer.

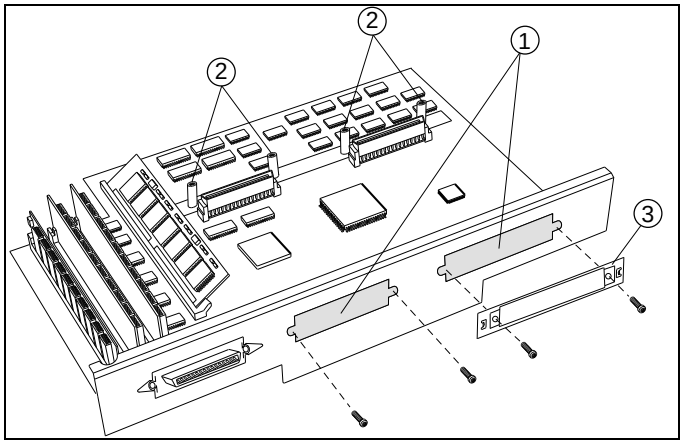


Press down on the tabs to open and lower the rear cover.



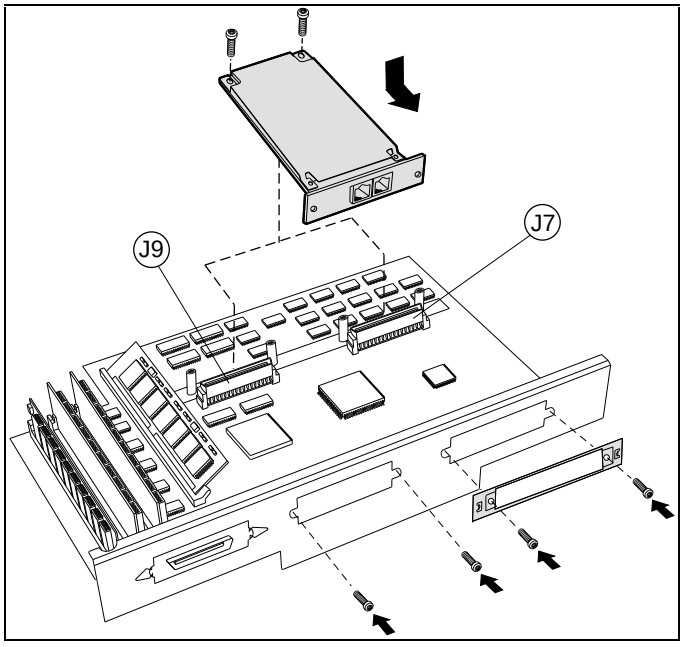
Loosen the thumbscrews and remove the system controller (ESS) board.

1 Thumbscrews
2 System Controller (ESS) Board
3 Rear Cover

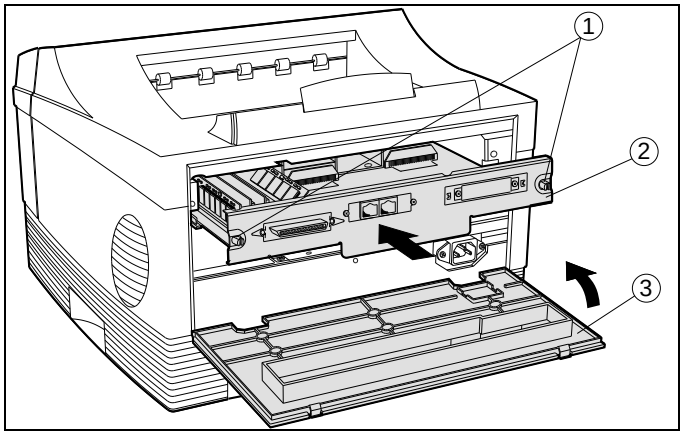


Remove the blank plate covering an interface connector slot.

1 Blank Plate
2 Mounting Posts (not used)
3 Retaining Bracket

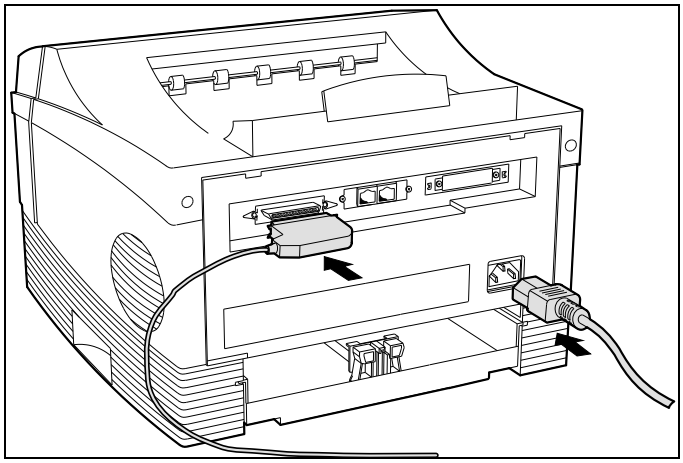


Plug the interface connector into location J7 or J9 and secure.
Be sure that the screws are inserted through the insulator cover.

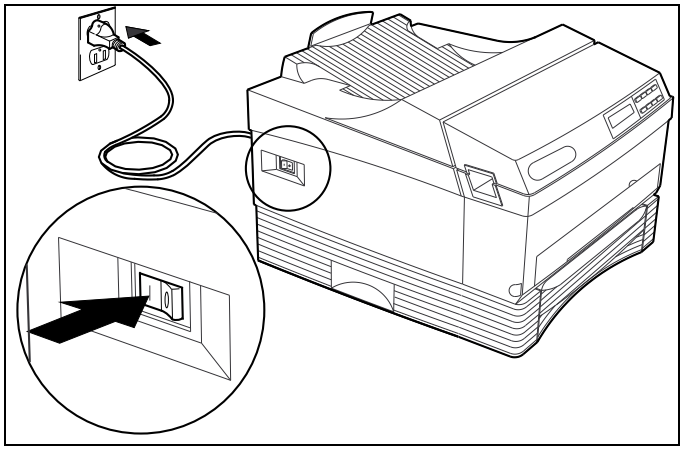


Reinstall and secure the controller (ESS) board thumbscrews and close the rear cover.

1 Thumbscrews
2 System Controller (ESS) Board
3 Rear Cover



Reconnect all cables.



Plug in and turn on (o) the printer.
Print a hardware report.
Using the printer control panel:

1. Press the **Menu** key. The printer is placed offline and in menu mode.
2. Go to the Reports menu to print a Hardware Report.
3. After printing the report, press **Online** to place the printer back online.
4. Verify that the Fax board is listed on the report.

Troubleshooting

If the option you just installed is not listed on the Hardware Report, you should:

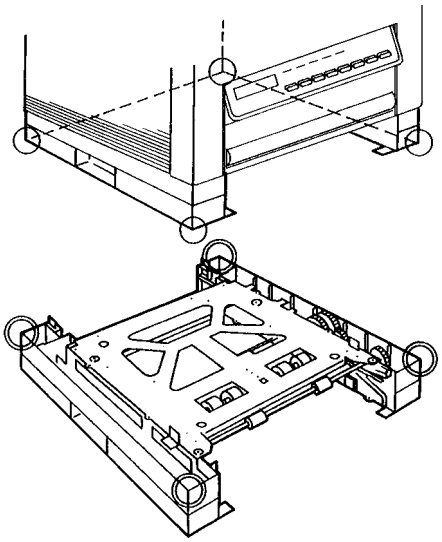
1. Make sure that the option is properly attached and firmly secured to the J7 or J9 connector.
2. Rerun the Hardware Report.
3. If the option is still not listed, move the option to the other connector (J7 or J9).
4. Rerun the Hardware Report.
5. If the option is still not listed, try a new option.
6. If a new option does not work, replace the controller (ESS).

If the printer does not print, check your cable connections.
If the printer prints lines of characters and symbols instead of your file, check the driver for proper configuration and setup. (See the driver option manual.)

RRP 7.3 Optional Feeder Assembly

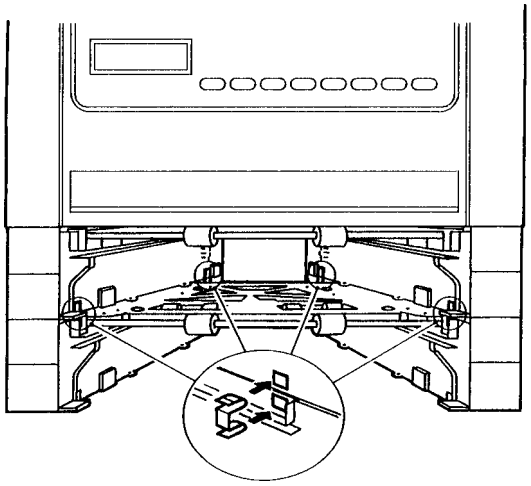
Removal:

1. Switch OFF Main Power, and disconnect the power cord from the printer.
2. Lift the printer off the optional feeder assembly.



Replacement:

1. Carefully pace the printer on top of the feeder assembly.
2. Align the edges of the printer with the edges of the asembly.



3. Run a few test prints to check printer operation and print quality.

Appendix A : Training, Documentation, and Tools

Training

Training consists of a 2-day self-paced course. The course is part of this Field Service Manual.

DEClaser 3500 Self Paced Service Guide

This guide is for users who provide phone support or full FRU replacement of the DEClaser 3500 printer. Customers have a minimum 1-year warranty where they can return the printer to Digital. Most customers will continue with the support of Return to Digital (RTD).

The following outline provides the topics and the time to devote to each topic. Depending on the type of support you provide, emphasis/time spent on certain sections may vary.

The toolkit for supporting the DEClaser 3500 consists of:

- Hardware, including the printer and options
- Software, including drivers that come with the printer, options, and operating system software
- Documentation that comes with the printer
- Options and operating system software
- Database information from:
    - POSTSCRIPT_PRINTING notes file
    - PRINTING_SUPPORT notes file
    - TIMA; internal to Digital

Read the following information first to get an overview of this course. Proceed in the order shown below. In general:

- 1/2 day: study the printer from a user perspective
- 1/2 day: study this guide
- 1/2 day: Tear down the printer
- 1/2 day: Diagnose problems and review overall

Note: If you provide phone support only, spend the second day as an extension of the first and spend some time investigating the POSTSCRIPT_PRINTING and PRINTING_SUPPORT notes files, TIMA articles, and tips and hints.

1. **First 1/2 day** - Investigate the printer from a user's perspective by reading and following the User's Manual (EK-D350P-UG) and Quick Setup Guide (EK-D350P-RG). Concentrate on the following tasks:
    A. Connecting to various hosts
    B. Installing media types and the toner (EP) Cartridge
    C. Performing user maintenance
    D. Installing drivers (refer to the driver manuals)
    E. Using the control panel and printing reports
    F. Changing the characteristics of the printer through drivers, the control panel and PostScript files
    G. Causing jams (by turning the printer off in the middle of a job for example)
    H. Clearing jams
    I. Troubleshooting printer problems

Review the User's Guide and Driver Manuals; pay particular attention to:

- Chapter 3: Printing and using different types of media
- Using the control panel
- Control panel messages
- Appendix E: Paper Specifications
- Differences between the PCL and PS drivers

Overall, know the User's Guide and drivers completely.

2. **The next 1/2 day** involves using and understanding the Field Service Manual (EK-D35PS-SG).

A. Review Chapter 1: *Printer Specifications* (this should be a review of User's Manual)
B. Read Chapter 2: *Printer Technical Description*
C. Study Chapter 3: *Using the Control Panel*
D. Study Chapter 4: *Troubleshooting and General Procedures*
E. Study Chapter 5: *Wiring Diagrams* (Skim if phone support.)
F. Understand completely Chapter 6 *FRU Replacement Fault Isolation Procedures* (skim quickly if phone support)
G. Review Chapter 7: *Using the Diagnostic Tool* (only if FRU support)
H. Review Chapter 8 *Illustrated Parts Breakdown* (and supported Digital FRU part numbers)
I. Chapters 9 through 15: *Removal an Replacement Procedures* (Review briefly if phone support.)
J. Read Appendix A *Training, Documentation, and Tools* (this self paced guide is included in this section)

3. **The next 1/2 day** involves doing a limited or complete teardown of the DEClaser 3500 printer (depending on your level of support). Use Chapters 9 through 15*: Repair and Replacement Procedures* as a guide. Also refer to Chapter 5: *Wiring Diagrams* and Chapter 8: *Illustrated Parts Breakdown.*

A. Do not spend alot of time removing components of the Feed Assembly module; remove it and inspect the components at least. Make sure you understand the remaining portions of this feed unit though. (The whole unit is considered a FRU.)
B. Be very careful with the remove and replace procedure of the front assembly, taking time to identify each component, how it goes together, and the purpose or functions of the interrelated components.
C. Only inspect the sensors and understand the remove and replace procedure
D. Understand the PCB's R and R and all interconnects
E. Do not remove the ROS completely, this involves the entire teardown of the printer.

4. **Spend the last 1/2 day** doing fault insertion, using the diagnostic tool (if available), reviewing the printer and its usage. Also review the tools listed in this appendix.
    A. Check and Adjustments (Diagnostic Tool) - be very careful of this section. The printer has been factory set; most adjustments will not be needed unless there is a FRU replacement or the printer requires a major print quality adjustment.
    B. Before putting all the covers back on the printer, try some fault insertion:
        1. Remove a connector and troubleshoot
        2. Remove the RAM SIMM and see what happens
        3. Unseat a PCB and see what happens
        4. Experiment on your own
    C. Reassemble the printer and troubleshoot for any problems.
    D. Finally, spend some time using the printer; try some applications on various hosts if possible. Remember to put the printer back to its factory defaults when completed:
        1. All ports set to PostScript mode
        2. Start page enabled
    E. Make sure you know how to:
        1. Create hardware, font and error reports, demo pages, start page, 300 and 600 dpi test pages
        2. Understand meanings of the start page and reports
        3. Put the printer in self test mode
        4. Change the printer's characteristics
        5. Install and use the two base drivers; explain the differences
        6. Explain the three emulations modes, which is the factory setting and which one to use for PCL and which one to use in VMS environment etc.
        7. Install and use options and their drivers
        8. Set paper trays for types (paper or transparencies) and sizes
        9. Install the toner (EP) cartridge, point out major components, and clean the printer
        10. Explain the FRUs available for repair
        11. Access the following tools (* means internal to Digital)
            - Notes files:
                ONTIME::PRINTING_SUPPORT
                ONTIME::POSTSCRIPT_PRINTING
                REFINE::LN14_BUGS (special)
            - Documentation - TIMA/SSB
            - Product service plan - TIMA
            - Print engine purchase spec in REGENT::3XNHWLIBRY:
            - CSD - TIMA
            - Others - TIMA articles

Documentation and Option Information

The DEClaser 3500 has the following documentation and options:

Document Titles and Order Numbers for the Printer:

EK-D350P-SG	DEClaser 3500 Printer Software Guide
EK-D350P-UG	DEClaser 3500 Printer User's Guide
EK-D350P-RG	DEClaser 3500 Printer Quick Reference Guide
EK-D350P-AG	DEClaser 3500 Printer AppleTalk Installation Guide
EK-D350P-FI	DEClaser 3500 Printer Font Module Installation Guide
EK-D350P-IG	DEClaser 3500 Printer Internal Fax Modem Installation Guide
EK-D350P-MI	DEClaser 3500 Printer Memory Expansion Installation Guide
EK-D350F-UG	DEClaser 3500 Printer User's Guide French
EK-D350F-RG	DEClaser 3500 Printer Quick Ref. Guide French
EK-D350S-UG	DEClaser 3500 Printer User's Guide Spanish
EK-D350S-RG	DEClaser 3500 Printer Quick Ref. Guide Spanish
EK-D350G-UG	DEClaser 3500 Printer User's Guide German
EK-D350G-RG	DEClaser 3500 Printer Quick Ref. Guide German
EK-D350U-UG	DEClaser 3500 Printer User's Guide Italian
EK-D350U-RG	DEClaser 3500 Printer Quick Ref. Guide Italian
EK-D350H-UG	DEClaser 3500 Printer User's Guide Dutch
EK-D350H-RG	DEClaser 3500 Printer Quick Ref. Guide Dutch
EK-D35PS-SG	DEClaser 3500 Printer Service Guide

DEClaser 3500 Sales Option Numbers Base Unit

Part Number	Countries supported	Core Product	Country Kit Part Number
LN14-CA	USA, Canada, Mexico	LN14-A2	NONE
LN14-AD	Denmark	LN14-A3	NONE-INSERT POWER CORD
LN14-AE	England	LN14-A3	NONE-INSERT POWER CORD
LN14-AI	Italy	LN14-A3	LN14X-KI
LN14-AS	Spain	LN14-A3	LN14X-KS
LN14-AT	Israel	LN14-A3	NONE-INSERT POWER CORD
LN14-AZ	Australia New Zealand	LN14-A3	NONE-INSERT POWER CORD
LN14-CB	Switzerland	LN14-A3	LN14X-MB
LN14-CC	Sweden Finland Norway Portugal	LN14-A3	NONE-INSERT POWER CORD
LN14-CD	Belgium France Holland Germany	LN14-A3	LN14X-MD

DEClaser 3500 Sales Option Numbers MAC Environment

Part Number	Countries Supported	Core Product	Country Kit Part Number	Added to Packaging by Digital Dist
LN14M-CA	USA Canada Mexico	LN14-A2	NONE	LN14X-AT
LN14M-AD	Denmark	LN14-AD	NONE	LN14X-AT
LN14M-AE	England Ireland	LN14-AE	NONE	LN14X-AT
LN14M-AI	Italy	LN14-AI	LN14X-KI	LN14X-AT
LN14M-AS	Spain	LN14-AS	LN14X-KS	LN14X-AT
LN14M-AT	Israel	LN14-AT	NONE	LN14X-AT
LN14M-AZ	Australia New Zealand	LN14-AZ	NONE	LN14X-AT
LN14M-CB	Switzerland	LN14-CB	LN14X-MB	LN14X-AT
LN14M-CC	Sweden Finland Norway Portugal	LN14-CC	NONE	LN14X-AT
LN14M-CD	Belgium France Holland Germany	LN14-CD	LN14X-MD	N14X-AT

DEClaser 3500 Sales Option Numbers Networked Model

Part Number	Countries Supported	Core Product	Country Kit Part Number	Added to Packaging by Digital Dist
LN14N-CA	USA Canada Mexico	LN14-A2	NONE	LN14X-NW
LN14N-AD	Denmark	LN14-AD	NONE	LN14X-NW
LN14N-AE	England Ireland	LN14-AE	NONE	LN14X-NW
LN14N-AI	Italy	LN14-AI	LN14X-KI	LN14X-NW
LN14N-AS	Spain	LN14-AS	LN14X-KS	LN14X-NW
LN14N-AT	Israel	LN14-AT	NONE	LN14X-NW
LN14N-AZ	Australia New Zealand	LN14-AZ	NONE	LN14X-NW
LN14N-CB	Switzerland	LN14-CB	LN14X-MB	LN14X-NW
LN14N-CC	Sweden Finland Norway Portugal	LN14-CC	NONE	LN14X-NW
LN14N-CD	Belgium France Holland Germany	LN14-CD	LN14X-MD	LN14X-NW

DEClaser 3500 Country Kits

Country Kit Part Number	Country Supported	Contents
None	Denmark	Power Cord (17-00310-08) INSERT INTO PACKAGING
None	England Ireland	Power Cord (17-00209-15) INSERT INTO PACKAGING
LN14X-KI	Italy	Power Cord (17-00364-18) User's Guide: Italian (EK-D350U-UG) Quick Setup Guide: Italian (EK-D350U-QG)
LN14X-KS	Spain	Power Cord (17-00199-21) User's Guide: Spanish (EK-D350S-UG) Quick Setup Guide: Spanish (EK-D350S-QG)
None	Israel	Power Cord (17-00457-16) INSERT INTO PACKAGING
None	Australia New Zealand	Power Cord (17-00198-14) INSERT INTO PACKAGING
LN14X-MB	Switzerland	Power Cord (17-00210-13) User's Guide: German (EK-D350G-UG) Quick Setup Guide: German (EK-D350G-QG) User's Guide: French (EK-D350F-UG) Quick Setup Guide: French (EK-D350F-QG) User's Guide: Italian (EK-D350U-UG) Quick Setup Guide: Italian (EK-D350U-QG)
None	Sweden Finland Norway Portugal	Power Cord (17-00199-21) INSERT INTO PACKAGING
LN14X-MD	Belgium France Holland Germany	Power Cord (17-00199-21) User's Guide: French Dutch, and German (EK-D350F-UG) Quick Setup Guide: French (EK-D350F-QG) Quick Setup Guide: Dutch (EK-D350H-QG) Quick Setup Guide: German (EK-D350G-UG)

DEClaser 3500 Retail/Distribution/Pallet Part Numbers

RETAIL

RT-LN14-CA (Quantity of 1)	LN14-CA (at RETAIL PRICING)
RT-LN14M-CA (Quantity of 1)	LN14M-CA (at RETAIL PRICING)
RT-LN14N-CA (Quantity of 1)	LN14N-CA (at RETAIL PRICING)

DISTRIBUTION

DL-LN14-PA	(Quantity of 12) LN14-CA
DL-LN14M-PA	(Quantity of 12) LN14M-CA
DL-LN14N-PA	(Quantity of 12) LN14N-CA
DL-LN14-PF	(Quantity of 12) LN14-AD
DL-LN14M-PF	(Quantity of 12) LN14M-AD
DL-LN14N-PF	(Quantity of 12) LN14N-AD
DL-LN14-PE	(Quantity of 12) LN14-AE
DL-LN14M-PE	(Quantity of 12) LN14M-AE
DL-LN14N-PE	(Quantity of 12) LN14N-AE
DL-LN14-PI	(Quantity of 12) LN14-AI
DL-LN14M-PI	(Quantity of 12) LN14M-AI
DL-LN14N-PI	(Quantity of 12) LN14N-AI
DL-LN14-PS	(Quantity of 12) LN14-AS
DL-LN14M-PS	(Quantity of 12) LN14M-AS
DL-LN14N-PS	(Quantity of 12) LN14N-AS
DL-LN14-PT	(Quantity of 12) LN14-AT
DL-LN14M-PT	(Quantity of 12) LN14M-AT
DL-LN14N-PT	(Quantity of 12) LN14N-AT
DL-LN14-PZ	(Quantity of 12) LN14-AZ
DL-LN14M-PZ	(Quantity of 12) LN14M-AZ
DL-LN14N-PZ	(Quantity of 12) LN14N-AZ
DL-LN14-PB	(Quantity of 12) LN14-CB
DL-LN14M-PB	(Quantity of 12) LN14M-CB
DL-LN14N-PB	(Quantity of 12) LN14N-CB
DL-LN14-PC	(Quantity of 12) LN14-CC
DL-LN14M-PC	(Quantity of 12) LN14M-CC
DL-LN14N-PC	(Quantity of 12) LN14N-CC
DL-LN14-PD	(Quantity of 12) LN14-CD
DL-LN14M-PD	(Quantity of 12) LN14M-CD
DL-LN14N-PD	(Quantity of 12) LN14N-CD

DEClaser 3500 Accessories/Supplies Toner

LN14X-AA DEClaser 3500 Toner cartridge

INTERFACE CARDS

LN14X-NW DEClaser 3500 Network Option

- - Interface card
- - Interface Installation Guide
- - MS-DOS NIC Card Software Utilities for UNIX (TCP/IP), Macintosh (EtherTalk) and Novell
- - MAC PS Drivers
- - MAC PS Docs

LN14X-SI DEClaser 3500 Serial Interface Option

- Interface Option
- Installation Guide

LN14X-AT DEClaser 3500 Appletalk Interface Option

One Package

- - Interface Card
- - Installation Guide
- - MAC PS Drivers
- - MAC PS Docs

MEMORY UPGRADES

DEClaser 3500 4MB SIMM Memory Upgrade

LN14X-UE DEClaser 3500 8MB SIMM Memory Upgrade

FAX OPTIONS

LN14X-FX DECLASER 3500 Internal FAX option for US

- - FAX Card
- - PS FAX Driver
- - PS FAX Docs

LN14X-ZK DEClaser 3500 External FAX option for UK

Package #1

- - FAX Module
- - Serial Interface Card
- - FAX Module and Serial Interface Installation Guide
- - PS FAX Drivers
- - PS FAX Documentation
- - 2 Interconnect Cables (one comm. and one telephone)
- - Adapter (if needed:TBD)

LN14X-XG DEClaser 3500 External FAX option for Germany

Package #1

- - FAX Module
- - Serial Interface Card
- - FAX Module and Serial Interface Installation Guide
- - PS FAX Drivers
- - PS FAX Documentation
- - 2 Interconnect Cables (one comm. and one telephone)
- - Adapter (if needed:TBD)

LN14X-XH DEClaser 3500 External FAX option for Holland

Package #1

- - FAX Module
- - Serial Interface Card
- - FAX Module and Serial Interface Installation Guide
- - PS FAX Drivers
- - PS FAX Documentation
- - 2 Interconnect Cables (one comm. and one telephone)
- - Adapter (if needed:TBD)

LN14X-ZB DEClaser 3500 External FAX option for Australia

Package #1

- - FAX Module
- - Serial Interface Card
- - FAX Module and Serial Interface Installation Guide
- - PS FAX Drivers
- - PS FAX Documentation
- - 2 Interconnect Cables (one comm. and one telephone)
- - Adapter (if needed:TBD)

FONT OPTIONS

LN14X-FB	DEClaser 3500 2MB Programmable Font Module - SIMM - Guide

MEDIA HANDLING

LN14X-TA	DEClaser 3500 500 Sheet A4 Paper Tray
LN14X-TC	DEClaser 3500 500 Sheet Letter Paper Tray
LN14X-TE	DEClaser 3500 Envelope Tray
LN14X-TF	DEClaser 3500 Optional Feeder with 500 Sheet Letter Paper Tray
LN14X-TG	DEClaser 3500 Optional Feeder with 500 Sheet A4 Paper Tray
LN14X-TL	DEClaser 3500 250 Sheet Legal Paper Tray
LN14X-TU	DEClaser 3500 250 Sheet Universal Paper Tray

DEClaser 3500 Manufacturing Part Numbers (Not Orderable)

PART NUMBER	DESCRIPTION
LN14-C2	12PPM LASER PRINTER, NO CONTROLLER, TONER CARTRIDGE, POWER CORD, 110 VOLT MODEL
LN14-C3	12PPM LASER PRINTER, NO POWER CORD, NO CONTROLLER, TONER CARTRIDGE, 220 VOLT MODEL
LN14-A2	LN14-C2 PLUS:
LN14-A3	LN14-C3 PLUS: Controller LN14 Driver Kit (QB-3HKAA-SA) English Documentation

Tools and Additional Information

Operating systems supported:
- Can print from:
- Microsoft Windows
- MS-DOS
- Macintosh systems
- OpenVMS
- Ultrix/OSF/Unix

Special SW requirements:

ANSI (DEC PPL3)/PostScript Level 2/ASCII support on OpenVMS base requires the purchase of the DECprint Supervisor for OpenVMS(Version 1.1 or higher) media kit.

Special HW requirements: NONE

Additional Information Sources

Document	Source
DEClaser 3500 AppleTalk Installation Guide	TIMA/SSB
DEClaser 3500 Internal Fax Modem Installation Guide	TIMA/SSB
DEClaser 3500 Font Module Installation Guide	TIMA/SSB
DEClaser 3500 Memory Expansion Installation Guide	TIMA/SSB
DEClaser 3500 Serial Interface Installation Guide	TIMA/SSB
DEClaser 3500 Printer User's Guide	TIMA/SSB
DEClaser 3500 Printer Field Service Guide The IPB is part of the service guide	TIMA/SSB
Engineering spec	REGENT::3XNHWLIBRY:
Training: Self-Paced Service Guide	Part of Service Guide and TIMA

Other sources: (* means internal to Digital)

- Notes files:
  - REGENT::PRINTING_SUPPORT
  - REGENT::POSTSCRIPT_PRINTING
  - REFINE::LN14_BUGS (special)
- Documentation - TIMA/SSB
- product service plan - TIMA
- print engine purchase spec in REGENT::3XNHWLIBRY:
- Others - TIMA articles

Support Information:

- List Local PFE's (Product Focus Engineers):
- List of CSCs that support product: ALF and CXO

Customer's responsibilities:

- Preventive Maintenance:
  - Clean the fan and the area around the exhaust.
  - Use a brush to clean the static eliminator on the transportation chute assembly
  - Use a brush or dry cloth to clean the paper path and the paper rolls

Supplies Replacement
Replace the toner cartridge and paper when prompted by the Control Panel LCD.

Printer Usage Guidelines
The average monthly print volume is 5000 pages.

Others (for example, specific instructions, end of life programs etc. ...)
No end of life program has been implemented.

Warranty Information:
One year return to Digital.

Hardware attributes:
One year return to Digital.

Special consideration: (according to the system you are connected to) :NONE

To know more about warranty:

Refer to MCSD Warranty Advisory Package

NEW TIMA TOOL :

SDR 6 - MCSD WARRANTY ADVISORY PACKAGE Rev. 1.7
DB: TOOLS
ID: 009835C6-46E79AC0-0301BF
BY: 197386

Service Providers:

- Digital: (for example, ServiCenters, Depots etc ...)
- Others: (retailers etc ...)

Business Information:

- Selling Channels: Direct, Commercial distributors, VARS, Retail.
- Related Offers:
- Others (for example, competition information)

Feedback/Comments/Voice of the Customer :

Thank you for your help to improve our products and services. Specific comments, questions or suggestions about this document should be forwarded to: Printer Domain Mgr