Phaser® 6140
Color Laser Printer

Phaser® 6140
Service Manual

xerox

Phaser® 6140 Printer Service Manual

xerox

XEROX®, CentreWare®, Phaser®, PrintingScout™, and Walk-Up® are trademarks of Xerox Corporation in the United States and/or other countries.

Adobe Reader®, Adobe Type Manager®, ATM™, and PostScript® are trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Apple®, AppleTalk®, Bonjour®, EtherTalk®, LaserWriter®, LocalTalk®, Macintosh®, Mac OS®, and TrueType® are trademarks of Apple Computer, Inc. in the United States and/or other countries.

HP-GL®, HP-UX®, and PCL® are trademarks of Hewlett-Packard Corporation in the United States and/or other countries.

Windows®, Vista™, and Windows Server™ are trademarks of Microsoft Corporation in the United States and/or other countries.

Novell®, NetWare®, NDPS®, NDS®, Novell Directory Services®, IPX™, and Novell Distributed Print Services™ are trademarks of Novell, Incorporated in the United States and/or other countries.

Sun^{SM}, Sun Microsystems™, and Solaris™ are trademarks of Sun Microsystems, Incorporated in the United States and/or other countries.

SWOP® is a trademark of SWOP, Inc.

UNIX® is a registered trademark in the US and other countries, licensed exclusively through X/Open Company Limited.

As an ENERGY STAR® partner, Xerox Corporation has determined that this product meets the ENERGY STAR guidelines for energy efficiency. The ENERGY STAR name and logo are registered U.S. marks.

PANTONE® Colors generated may not match PANTONE-identified standards. Consult current PANTONE Publications for accurate color. PANTONE® and other Pantone, Inc. trademarks are the property of Pantone, Inc. © Pantone, Inc., 2000.

Contents

1 General Information

2 Theory of Operation

3 Error Messages and Codes

4 General Troubleshooting

5 Print-Quality Troubleshooting

6 Adjustments and Calibrations

7 Cleaning and Maintenance

8 Service Parts Disassembly

9 Parts List

10 Wiring

Reference

Index

About this Service Manual

The Phaser 6140 Printer Service Manual is the primary document used for repairing, maintaining, and troubleshooting the printer. Use this manual as your primary resource for understanding the operational characteristics of the printer and all available options. This manual describes specifications, theory, and the diagnosis and repair of problems occurring in the printer and attached options. Also included are detailed replacement procedures, parts lists, and wiring diagrams.

Manual Terms

Various terms are used throughout this manual to either provide additional information on a specific topic or to warn of possible danger present during a procedure or action. Be aware of all symbols and terms when they are used, and always read Note, Caution, and Warning statements.

Warning

A warning indicates an operating or maintenance procedure, practice or condition that, if not strictly observed, results in injury or loss of life.

Caution

A caution indicates an operating or maintenance procedure, practice or condition that, if not strictly observed, results in damage to, or destruction of, equipment.

Replacement Note

A replacement note provides important information related to parts replacement. When needed, replacement notes appear at the end of the disassembly procedure.

Note

A note indicates an operating or maintenance procedure, practice or condition that is necessary to efficiently accomplish a task. A note can provide additional information related to a specific subject or add a comment on the results achieved through a previous action.

Manual Organization

The Phaser 6140 Printer Service Manual contains these sections:

Introductory, Safety, and Regulatory Information: This section contains important safety information and regulatory requirements.

Chapter 1 - General Information: This section contains an overview of the printer's operation, configuration, specifications, and consumables.

Chapter 2 - Theory of Operation: This section contains detailed operational information on the print engine components.

Chapter 3 - Error Codes and Messages: This section provides detailed troubleshooting procedures for error messages and codes generated by resident diagnostics.

Chapter 4 - General Troubleshooting: Troubleshooting covers the operation of Power On Self Test (POST) and Service Diagnostics. In addition, this section includes troubleshooting methods for situations where an error indicator is not available.

Chapter 5 - Print-Quality Troubleshooting: This section focuses on techniques to correct image quality problems associated with printer output.

Chapter 6 - Adjustments and Calibrations: This section provides procedures for the adjustment of print engine components.

Chapter 7 - Cleaning and Maintenance: This section provides periodic cleaning procedures for the printer.

Chapter 8 - Service Parts Disassembly: This section contains removal procedures for spare parts listed in the Parts List. A replacement procedure is included when necessary.

Chapter 9 - Parts List: This section contains exploded views of the print engine and optional Field Replaceable Units (FRUs), as well as part numbers for orderable parts.

Chapter 10 - Wiring: This section contains the plug/jack locations and wiring diagrams for the printer.

Reference: This section provides an illustration of the printer's menu structure, printer firmware update instructions, and a list of acronyms and abbreviations.

Symbols Marked on the Product

Danger invisible laser radiation when open. Avoid direct exposure to beam.

Hot surface on or in the printer. Use caution to avoid personal injury.

Use caution (or draws attention to a particular component). Refer to the manual(s) for information.

It may take 30 minutes for the Fuser to cool down.

Do not touch the item.

Do not expose the item to sunlight.

Do not expose the item to light.

Product Terms

Caution: A personal injury hazard exists that may not be apparent. For example, a panel may cover the hazardous area.

Danger: A personal injury hazard exists in the area where you see the sign.

Power Safety Precautions

Power Source

For 115 VAC printers, do not apply more than 127 volts RMS between the supply conductors or between either supply conductor and ground. For 230 VAC printers, do not apply more than 254 volts RMS between the supply conductors or between either supply conductor and ground. Use only the specified power cord and connector. This manual assumes that the reader is a qualified service technician.

Plug the three-wire power cord (with grounding prong) into a grounded AC outlet only. If necessary, contact a licensed electrician to install a properly grounded outlet. If the product loses its ground connection, contact with conductive parts may cause an electrical shock. A protective ground connection by way of the grounding conductor in the power cord is essential for safe operation.

Disconnecting Power

Warning

Turning the power Off using the power switch does not completely de-energize the printer. You must also disconnect the Power Cord from the printer's Alternating Current (AC) inlet. Disconnect the Power Cord by pulling the plug, not the cord.

Disconnect the Power Cord in the following cases:

- if the power cord or plug is frayed or otherwise damaged,

- if any liquid or foreign material is spilled into the product,

- if the printer is exposed to any excess moisture,

- if the printer is dropped or damaged,

- if you suspect that the product needs servicing or repair,

- whenever you clean the product.

Electrostatic Discharge (ESD) Precautions

Some semiconductor components, and the respective sub-assemblies that contain them, are vulnerable to damage by Electrostatic Discharge (ESD). These components include Integrated Circuits (ICs), Large-Scale Integrated circuits (LSIs), field-effect transistors, and other semiconductor chip components. The following techniques will reduce the occurrence of component damage caused by static electricity.

Be sure the power is Off and observe these other safety precautions.

- Immediately before handling any semiconductor components assemblies, drain the electrostatic charge from your body. This can be accomplished by touching an earth ground source or by wearing a wrist strap device connected to an earth ground source. Wearing a wrist strap will also prevent accumulation of additional bodily static charges. Be sure to remove the wrist strap before applying power to the unit under test to avoid potential shock.

- After removing a static sensitive assembly from its anti-static bag, place it on a grounded conductive surface. If the anti-static bag is conductive, you may ground the bag and use it as a conductive surface.

- Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage some devices.

- Do not remove a replacement component or electrical sub-assembly from its protective package until you are ready to install it.

- Immediately before removing the protective material from the leads of a replacement device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

- Minimize body motions when handling unpacked replacement devices. Motion such as your clothes brushing together, or lifting a foot from a carpeted floor can generate enough static electricity to damage an electro-statically sensitive device.

- Handle ICs and Erasable Programmable Read-Only Memories (EPROM's) carefully to avoid bending pins.

- Pay attention to the direction of parts when mounting or inserting them on Printed Circuit Boards (PCB's).

Service Safety Summary

General Guidelines

For qualified service personnel only: Refer also to the preceding "Power Safety Precautions" on page xvi.

Avoid servicing alone: Do not perform internal service or adjustment of this product unless another person capable of rendering first aid or resuscitation is present.

Use care when servicing with power: Dangerous voltages may exist at several points in this product. To avoid personal injury, do not touch exposed connections and components while power is On. Disconnect power before removing the power supply shield or replacing components.

Do not wear jewelry: Remove jewelry prior to servicing. Rings, necklaces and other metallic objects could come into contact with dangerous voltages and currents.

Warning Labels

Read and obey all posted warning labels. Throughout the printer, warning labels are displayed on potentially dangerous components. As you service the printer, check to make certain that all warning labels remain in place.

Safety Interlocks

Make sure all covers are in place and all Interlock Switches are functioning correctly after you have completed a printer service call. If you bypass an Interlock Switch during a service call, use extreme caution when working on or around the printer.

Class 1 Laser Product

The Phaser 6140 Printer is certified to comply with Laser Product Performance Standards set by the U.S. Department of Health and Human Services as a Class 1 Laser Product. This means that this product does not emit hazardous laser radiation; which is possible only because the laser beam is totally enclosed during all modes of customer operation. When servicing the printer or laser unit, follow the procedures specified in this manual and there will be no hazards from the laser.

Servicing Electrical Components

Before starting any service procedure, switch the printer power Off and unplug the power cord from the wall outlet. If you must service the printer with power applied, be aware of the potential for electrical shock.

Warning

Do not touch any electrical component unless you are instructed to do so by a service procedure.

Servicing Mechanical Components

When servicing mechanical components within the printer, manually rotate the Drive Assemblies, Rollers, and Gears.

Warning

Do not try to manually rotate or manually stop the drive assemblies while any motor is running.
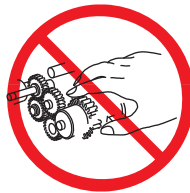
Servicing Fuser Components

Warning

This printer uses heat to fuse the image on the media. When operating, the Fuser is very hot. Turn the printer power Off and allow the Fuser to cool before servicing the Fuser or adjacent components.

Regulatory

Xerox has tested this product to electromagnetic emission and immunity standards. These standards are designed to mitigate interference caused or received by this product in a typical office environment.

United States (FCC Regulations)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the Federal Communications Commission (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. If it is not installed and used in accordance with these instructions, it 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 receiver (device being interfered with).
- Increase the separation between the printer and the receiver.
- Connect the equipment into an outlet on a circuit different from that which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

Any changes or modifications not expressly approved by Xerox could void the user's authority to operate the equipment. To ensure compliance with Part 15 of the FCC rules, use shielded interface cables.

Canada (Regulations)

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

European Union

The CE mark applied to this product symbolizes Xerox's declaration of conformity with the following applicable Directives of the European Union as of the dates indicated:

$$C\epsilon$$

December 12, 2006: Low Voltage Directive 2006/95/EC

December 15, 2004: Electromagnetic Compatibility Directive 2004/108/EC

This product, if used properly in accordance with the user's instructions, is neither dangerous for the consumer nor for the environment.

To ensure compliance with European Union regulations, use shielded interface cables.

A signed copy of the Declaration of Conformity for this product can be obtained from Xerox.

General Information

In this chapter...

- Printer Introduction and Overview
- Printer Configuration
- Parts of the Printer
- Maintenance Items
- Consumables
- Specifications

Chapter 1

Printer Introduction and Overview

The Xerox Phaser 6140 Printer has a single-pass color laser architecture, which offers color and mono print speeds of 19/21-ppm, and resolutions up to 600 x 600 dots-per-inch (dpi). The printer includes an image processor supporting PostScript 3 and PCL6 page description languages The printer supports USB 2.0, 10/100 Base-TX, and IPv6 Ethernet connectivity.

The Phaser 6140 provides a 250-sheet Tray and a manual feed slot supporting single-sheet feed of specialty media, card stock, and envelopes. The Output Tray holds 150 sheets facedown. Available options include a Duplex Unit and an additional 250-sheet input tray (Tray 2).

Technical Support Information

The Xerox Service Manual is the primary document used for repairing, maintaining, and troubleshooting the printer. To ensure complete understanding of this product, participation in Xerox Service Training is strongly recommended. To service this product, certification for this product is required.

For updates to the Service Manual, Service Bulletins, knowledge base, etc., go to:

- Xerox Global Service Net -https://www.xrxgsn.com/secure/main.p

- Service Partners: http://www.office.xerox.com/partners

For further technical support, contact your assigned Xerox Technical Support for this product.

Printer Configuration

The tables lists Phaser 6140 Printer configuration

Printer Configuration

Features	Phaser 6140N
Processor Speed	400 MHz
Memory Configuration[a]	256 MB
Print Speed (Color/Mono A-size)	19/21
Resolutions (dpi)	
Standard	600 x 600 x 1 bit
Enhanced	600 x 600 x 4 bit
PostScript 3 and PCL6 Fonts	Standard
USB 2.0 Support	Standard
Ethernet Interface	10/100 Base-TX
Manual Feed Slot (Single sheet)	Standard
Tray 1 (250 Sheets)	Standard
Tray 2 (250 Sheets)	Optional
Duplex Unit	Optional
Wireless LAN	Optional

a. Printer has one memory slot supporting 256 MB, 512 MB, or 1024 MB DDR2 DIMMs, to a maximum of 1280 MB (256 MB standard + 1024 MB optional).

Parts of the Printer

Front and Side Views
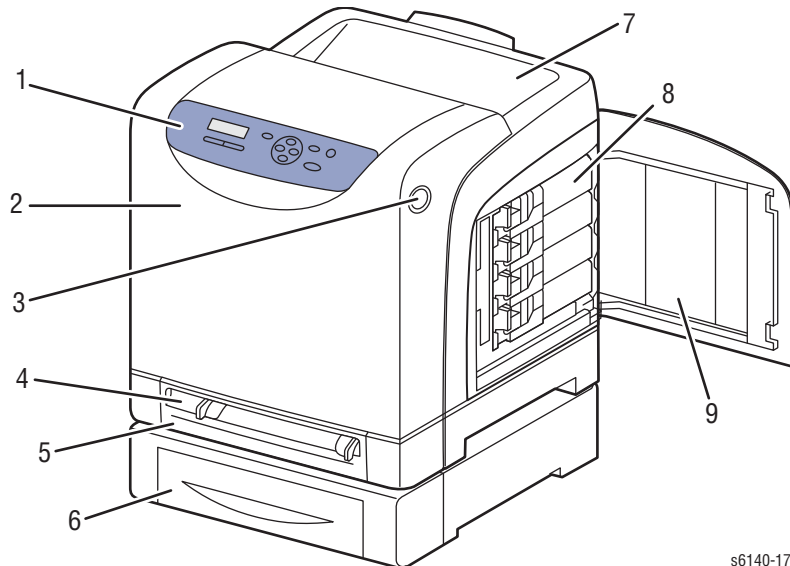
s6140-175

1.   Control Panel

2.   Front Cover

3.   Button for opening the Front Cover and releasing the Duplex Unit.

4.   Manual feed slot

5.   Media tray (Tray 1 if optional 250-sheet feeder is installed).

6.   Optional 250-sheet Feeder (Tray 2)

7.   Output tray

8.   Toner Cartridges

9.   Right Side Door

Rear View
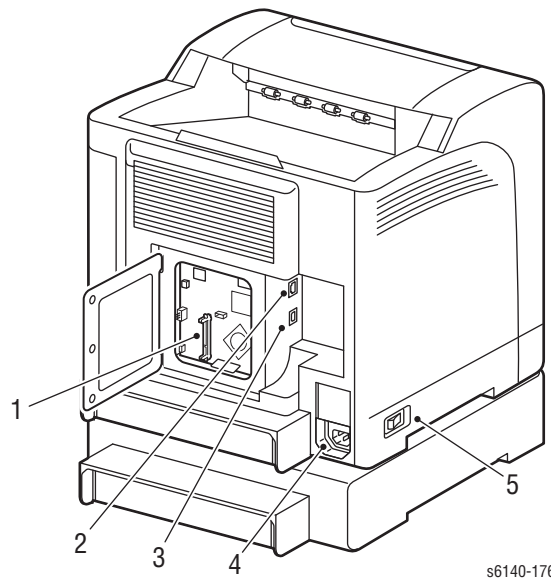
s6140-176

1. Optional memory slot

2. Network connector

3. USB port

4. Power cord connector

5. Power switch

Internal View

s6140-177
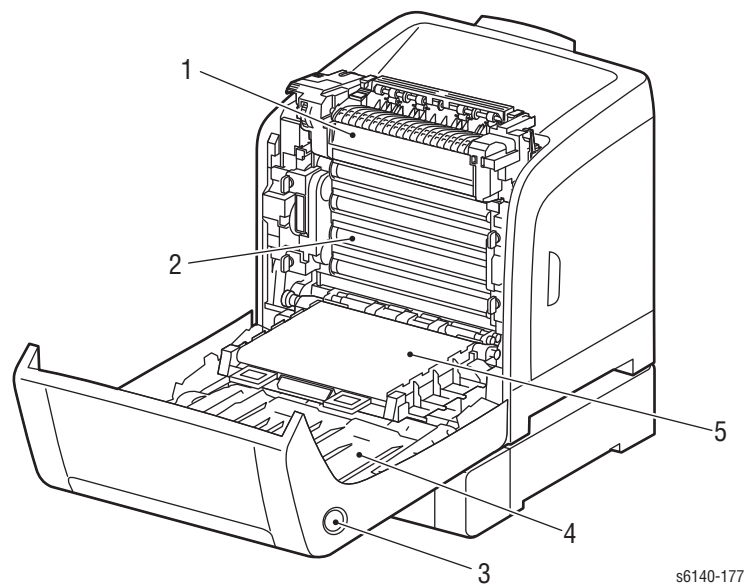
1. Fuser

2. Imaging Unit

3. Front Cover and Duplex Unit release.

4. Duplex Unit

5. Transfer Belt (Tray 1 removed so the Transfer Belt folds down completely).

Control Panel

The Control Panel consists of multiple LEDs, a display, and several function buttons. These buttons are used to navigate the menu system, perform functions, and select modes of operation.

Control Panel Button Descriptions

s6140-178
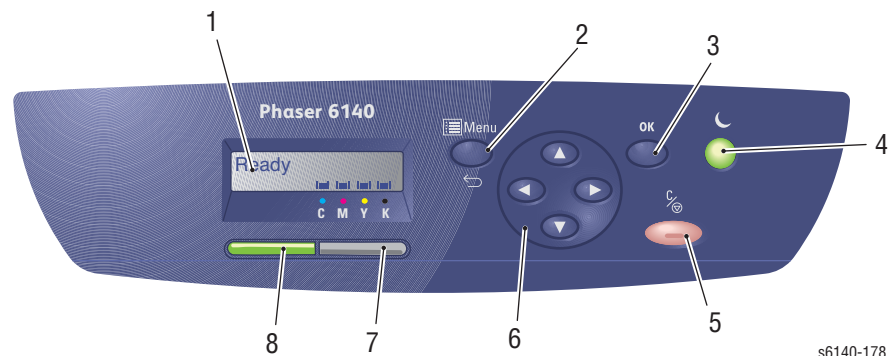
1.	Display	Displays status messages, menus, and toner levels.
2.	**Menu** button	Scrolls to the menu option. Switches the display between the menus and the print screen.
3.	**OK** button	Selects the displayed menu option and also prints reports and lists.
4.	**Wake Up / Power Saver** button	Stays lit in Power Save mode. Press to exit Power Save mode and "wake up" the printer when in sleep mode. When printer is idle, press to manually put the printer in sleep mode.
5.	**Cancel** button	Cancels the current print job.
6.	**Navigation / Menu** select buttons	**Up / Down** arrows scroll up and down through the menu display. **Back / Forward** arrows move left and right through the menu display. **Back** arrow backs out of a menu level. or displays the Walk-Up Features menu.
7.	**Error Indicator** light	Lights up to indicate an error condition or warning that can be resolved by the user. Blinks when an error occurs that cannot be resolved by the user. Off when the printer is operating properly.
8.	**Ready Indicator** light	Lights up when the printer is ready to receive data. Blinks when the printer is busy receiving data. Off when an error occurs or when the printer is in Power Saver mode.

LED Indicators

LED State	Printer State
Green	Ready to Print or in Power Saver mode
Flashing Green	Processing print job
Red	Error occurs, can be fixed by user
Flashing Red	Error occurs, cannot be fixed by user

Control Panel Shortcuts

Mode	Buttons Pressed at Power On
Service Diagnostics	**Up** + **Down** arrows
Reset Password to; **Down** arrow + **Down** arrow then **OK** (required if Menus are locked)	**Menu**
Firmware Update for Controller (enter password to begin upload)	**Up** + **Down** arrows + **Menu**

Printer Options

Additional Memory

The printer features one memory slot supporting 256 MB, 512 MB, 1024 MB DDR2 DIMMs, to a maximum of 1280 MB (256 MB standard + 1024 MB optional). Memory modules must meet the following characteristics:

- 200 Pin DDR2 SO-DIMM

- Unbuffered, Non-parity

The Configuration page lists the amount of RAM installed in the printer.
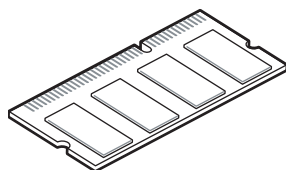
s6140-179

Optional Feeder

The 250-sheet, Optional Feeder (Tray 2) increases the input capacity. The feeder attaches below Tray 1 with 2 screws. Only one Optional Feeder per printer is supported. Electrical connection is made by a single interface connector.

Note

Remove the protective cap from the Optional Feeder connector before installation.
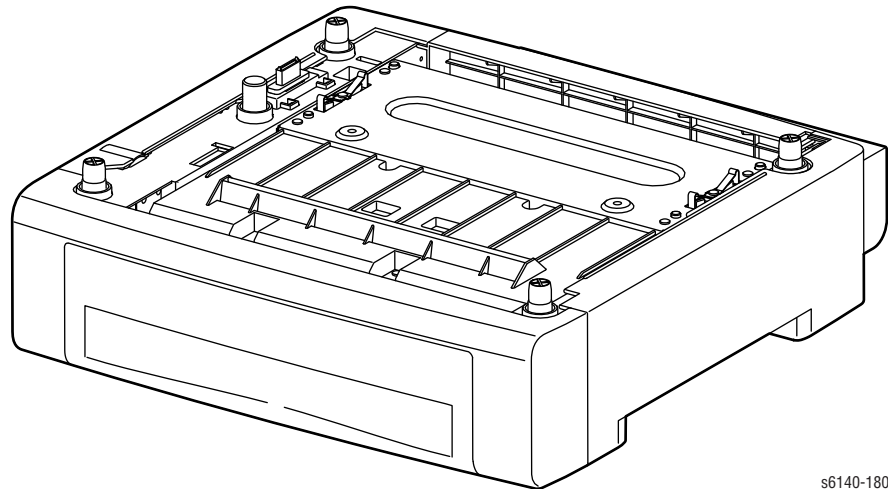
s6140-180

Duplex Unit

The Duplex Unit attaches to the Front Cover and is held in place by a single latch. Features on the Transfer Belt engage the Duplex Unit to properly align the media path. Electrical connection to the printer is made by a single interface connector
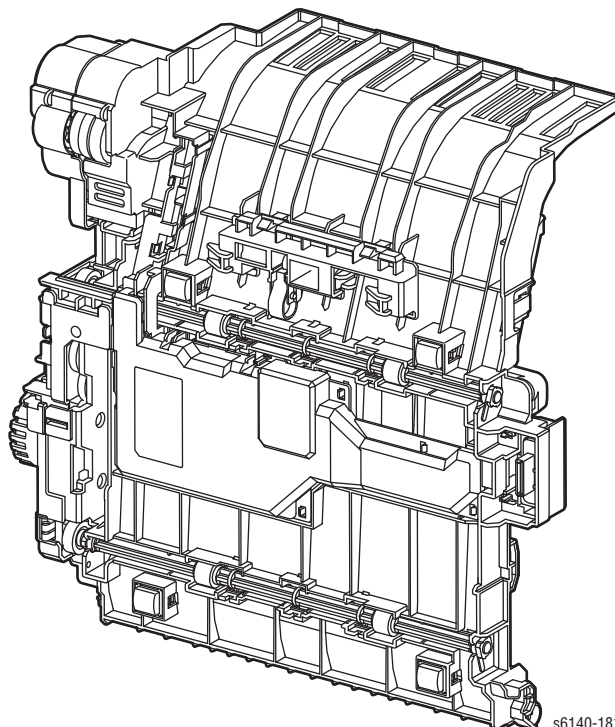
s6140-181

Maintenance Items

Routine maintenance items are parts or assemblies that require periodic replacement. These items are typically customer replaceable (CRU).
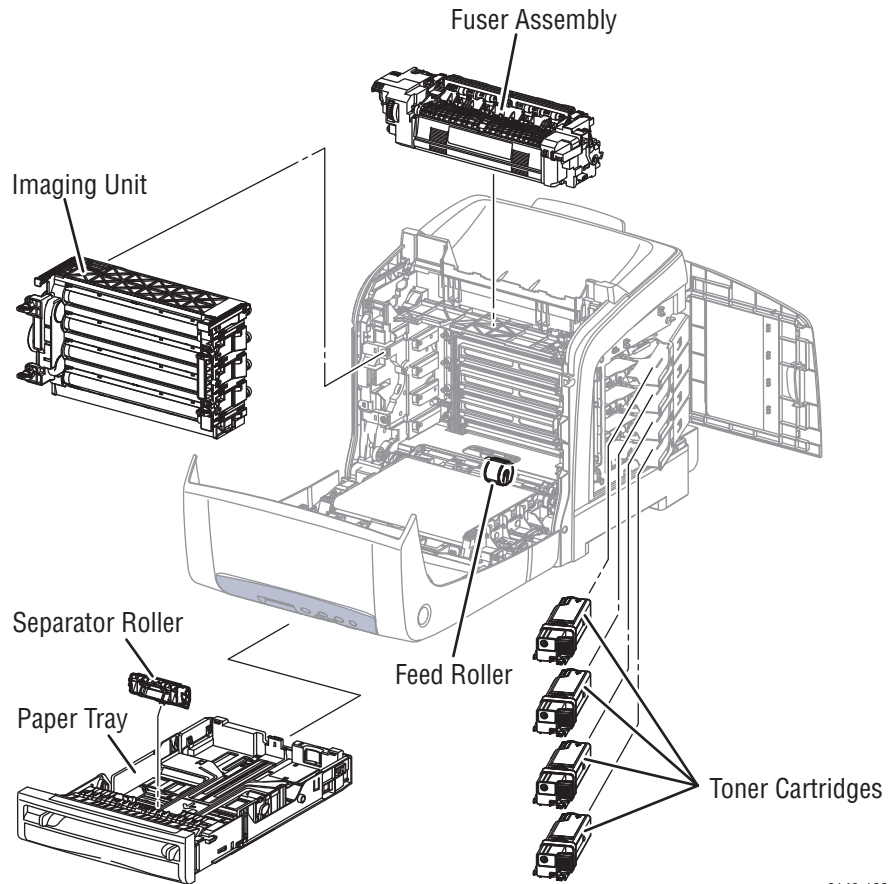
The listed items have limited life and require periodic replacement.

Maintenance Items

Item	Print Life
Imaging Unit	Approximately 30,000 pages
Fuser	Up to 50,000 pages
Separator Roll	Up to 50,000 pages
Pick Roller	Up to 50,000 pages

Note

Print life is based on "typical" office printing and 5 % coverage per color on 24 lb. paper. Print life figures are not guaranteed and varies depending on usage habits. Imaging Unit print life is based on 3-page jobs using letter-size paper.

Consumables

Consumables consist of 4 Toner Cartridges. Each Toner Cartridge has a CRUM (Customer Replaceable Unit Monitor) to record regional and toner usage information. The CRUM maintains a count the amount of toner consumed. When the count reaches set values, warning and error messages are displayed to notify the user when near and end of life status is reached.

CMY Toner is not consumed when printing in Black and White mode or when printing Gray scale.

Life ratings are based on A-size sheets at 5 % coverage.

Toner Cartridge	Print Life	
	C,M,Y	Black
Starter Capacity	1,000 pages	1,000 pages
High Capacity	2,000 pages	2,500 pages

Note

Starter capacity cartridges are packaged with the printer when shipped from the factory. These starter cartridges are not available for order.

Specifications

Printer Specifications

Characteristic	Specification	
Printing Technology	**Recording System**: Tandem electro-photographic system using OPC Drum and direct transfer by the Transport Belt	
	Exposure System: 4 semiconductors laser beam scanning system	
	Transfer System: Four-color finished toner image is transferred onto the paper	
	Fusing System: Thermal fusing system by Free Belt Nip Fusing (FBNF)	
Print Volume	Average	450 PV/month
	Maximum	40,000 PV/month
	Median	300 PV/month
Color Medium	Cyan, Magenta, Yellow, and Black Toner Cartridges	
Resolution / Addressability (dpi)	Standard	600 x 600 x 1
	Enhanced	600 x 600 x 4
Print-Quality Mode	600 x 600 x 1bit (Standard) 600 x 600 x 4bit (Enhanced)	
Average Image Coverage	Color	5 % each CMYK
	Mono	5 %
Maximum Image Coverage	240 % for all C, M, Y, K combined	
Printer Life	100,000 pages	
Maximum Duty Cycle	40,000 pages/month*	
Warm-Up Time	Less than 30 seconds from Power On	
Operating System	Windows	2000/ 2003/2008 Server/ XP/ Vista
	Macintosh	OS 10.3.9 through 10.5
	Linux	Redhat, SuSe, and TurboLinux 10 Desktop
* Assumes a 30 day month of printing.		

Memory Specifications

Characteristic	Specifications	
Memory	Minimum	256 MB Onboard memory
	Maximum	1280 MB
Supported RAM	Supports one 256, 512, or 1024 MB DDR2 SODIMM in expansion slot.	

Electrical Specifications

Characteristic	Specification
Power Supply Voltage/Frequency	
Line Voltages	110-127 VAC ± 10 %
	220-240 VAC ± 10 %
Frequency Range	50/60 Hz ± 3 Hz
Current Capacity	110 V Engine: < 9 A 220 V Engine: < 5 A
Power Consumption (with all options, 110 or 220 V)	
Power Saver Mode	5 W or less
Standby Mode (Fuser On)	50W or less
Color Continuous Printing	280W or less
B/W Continuous Printing	280W or less

Print Speed

Resolution	Color A/A4	Mono A/A4
600 Standard	19/18	21/20
600 Enhanced	19/18	21/20

Environmental Specifications

Characteristic	Specification	
Temperature		
Operating	10 to 32° C (41 to 90° F)	
Standby	-20 to 40° C (-4 to 104° F)	
Humidity (% RH)		
Operating	15 to 85 % RH	
Standby	5 to 85 % RH	
Altitude		
Operating	0 to 3,100 meters (10,171 feet)	
Acoustic Noise LWA(B)	**Sound Power Level (B)**	**Sound Pressure (dBA)**
Printing	6.46	51.6
Standby	4.3	25.7

Operating Mode

Mode	Condition	Description
Running Mode		The printer is under operating condition such as running or recording.
	Fusing	Maintained at operating temperature.
	Exposure	The Laser Unit Motor runs at the operating speed.
	Recording	The system is operating.
	Cooling Fan	The fan operates at high speed.
	Control Panel Operation	LCD - Backlight: On LED - Ready LED is On.
Ready Mode		The printer is in standby status, ready to run.
	Fusing	The system keeps the standby temperature.
	Exposure	The system is at Pause.
	Recording	The system is at Pause.
	Cooling Fan	The fan operates at low speed.
	Control Panel Operation	LCD - Backlight: On LED: If printer is online, Ready LED is On.

Mode	Condition	Description
Power Saver Mode (Deep Sleep)		The printer enters Power Saver mode when it has not received print data for the specified time.
	Fusing	The system is Off.
	Exposure	The system is at Pause.
	Recording	The system is at Pause.
	Cooling Fan	The system is Off.
	Control Panel Operation	LCD: Off, LCD Backlight: Off LED: Wake Up LED is On.

NOTE When the printer receives a print job or a button is pressed, the printer exits the Power Saver mode and enters the Ready mode.

First Print Output Time

First Print Output Time (FPOT) is defined as a time from when the engine receives a Start signal in Ready state, until a single page is delivered to the output tray.

The following conditions are applied:

- The Controller does not keep the print engine waiting

- The printer is at Ready mode

- Paper is A size Short Edge Feed (SEF)

- Process control time is not included

Mode	Tray	FPOT (sec.)[a]
Color	Tray	13.0 sec. or less
	Manual Feed	13.0 sec. or less
Mono	Tray	12.0 sec. or less
	Manual Feed	12.0 sec. or less

a. Maximum FPOT time is 18 seconds for mono or color. If the preceeding job was all mono, and the first page in the next job is mono, FPOT is 12 seconds. If the last job had any single color page, and the first page in the next job is color, FPOT is 13 seconds. If the printer has to switch modes, FPOT is 18 seconds.

Physical Dimensions and Clearances

Dimensions

Characteristic	Measurement
Height	585 mm (23")
Width	420 mm (16.7 in.)
Depth	507 mm (20")
Weight (base printer without consumables)	25 kg (55 lb.)

Minimum Clearances

s6140-183
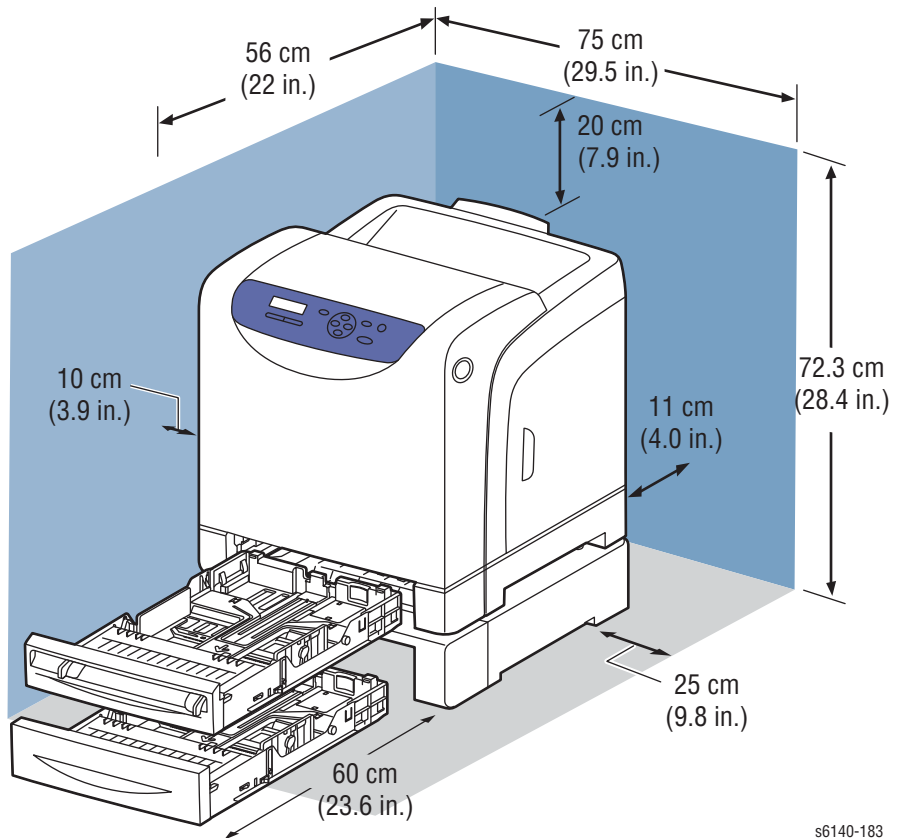
Mounting Surface Specifications

Mounting surface flatness must be within the specified range.

s6140-184
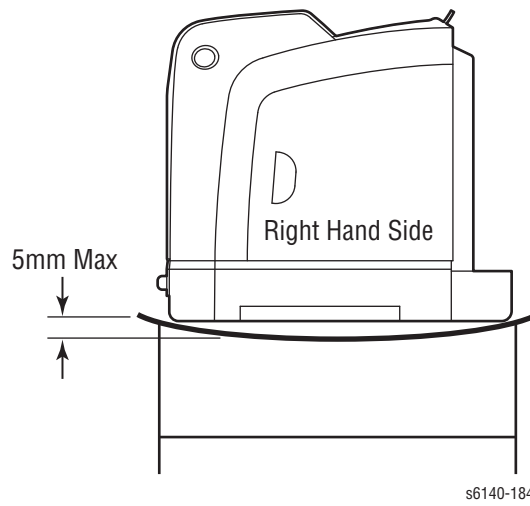
The printer must not be tipped or tilted more than 7 mm.

10° or 7 mm

10° or 7 mm

s6140-185
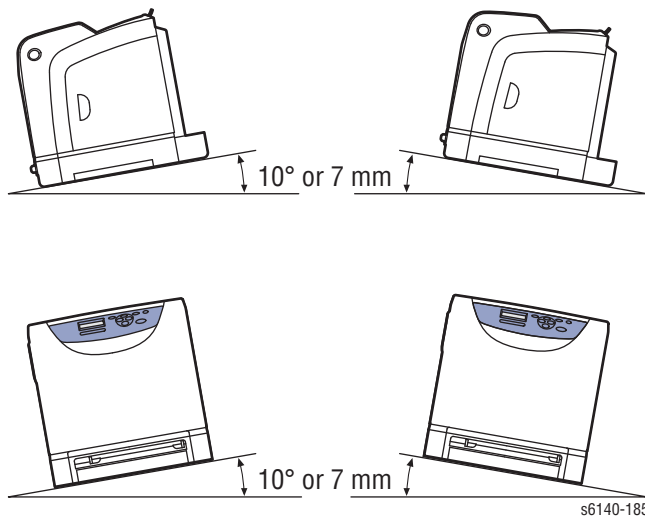
Failure to adhere to the specified mounting specifications will void all guarantees of print-quality and/or performance. Known problems that can occur as a result of exceeding the mounting surface specifications are:

- Color-to-Color mis-registration, primarily in the horizontal (laser scan) direction.

- A smear or line of toner approximately 40 mm from the trailing edge of the print.

Media and Tray Specifications

The following tables list the recommended Xerox paper for the printer.

Supported Paper Size

Paper Type	Dimension	Manual Feed	Tray
Letter	8.5 x 11 in.	Yes	Yes
Legal	8.5 x 14 in.	Yes	Yes
US Folio	8.5 x 13 in.	Yes	Yes
Executive	7.25 x 10.5 in.	Yes	Yes
A4	210 x 297 mm	Yes	Yes
A5	148 x 210 mm	Yes	Yes
B5 JIS	182 x 257 mm	Yes	Yes
Custom Size[a]		Yes	Yes

a. Minimum 3"x5", maximum 8.66"x14".

Supported Paper Types and Weights

Paper Type	Dimension	Manual Feed	Tray
Plain Paper	65-90 g/m^2	Yes	Yes
Letter Head	85-120 g/m² (22-32 lb. Bond)	Yes	Yes
Pre-Punched	65-90 g/m² (17-24 lb. Bond)	Yes	Yes
Color			
Thin Card Stock	100-163 g/m²	Yes	Yes
Special	100-163 g/m² (30-60 lb. Cover)	Yes	Yes
Thick Card Stock	170-216 g/m²	Yes	No
Glossy Paper	100-163 g/m²	Yes	Yes
Thick Glossy Paper	164-216 g/m²	Yes	Yes
Label	N/A	Yes	Yes

Supported Envelopes

Type	Dimension	Manual Feed	Tray
Envelope #10	4.12 x 9.5 in.	Yes	Yes
Monarch Envelope	3.87 x 7.5 in.	Yes	Yes
C5 Envelope	162 x 229 mm	Yes	Yes
DL Envelope	110 x 220 mm	Yes	Yes

NOTE Do not use envelopes with hot melt glue, windows, or metal clasps.

Theory of Operation

In this chapter...

- Phaser 6140 Operational Overview
- Print Process
- Media Path
- Major Assemblies and Functions
- Printer Modes
- Printer Control
- Drive

Chapter

2

Phaser 6140 Operational Overview

The Phaser 6140 is a full-color printer using raster output scanner (ROS) lasers with an electrophotographic four-color CMYK process. The tandem system consists of four color drums (C, M, Y, and K) which creates the toner image.

The following block diagram provides the sequence of events for the xerographic process (dashed lines) and the paper flow (solid lines) into and out of the printer.

Print Process

The print process consists of the following steps:

1. **Charging** – The drum surfaces are charged with electricity.
2. **Exposure** – The drums are exposed to laser beams.
3. **Development** – Image is developed with toner.
4. **Image Transfer** – Four color finished toner image on the drums is transferred onto the paper.
5. **Cleaning** – Excess toner is removed from the drum and BCR.
6. **Fusing** – The Fuser applies toner on to paper using heat and pressure.
7. **Cleaning** – Remaining toner is removed from the belt.
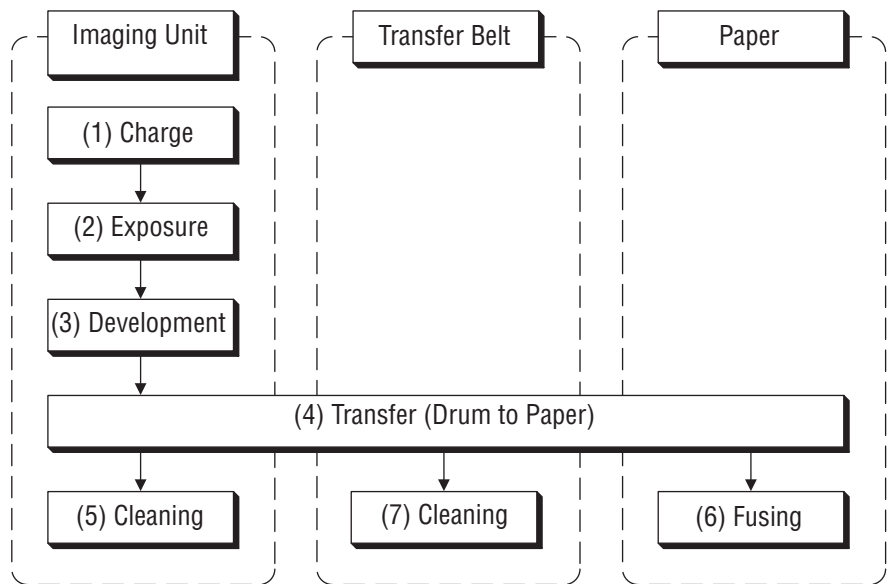
s6140-038

The following diagram shows the location of components involved in the print process.

Imaging Unit
[(1) Charge]
[(3) Development]
[(4) Transfer]
[(5) Cleaning]

Laser Unit
[(2) Exposure]

Fuser
[(6) Fusing]

: Laser Beam
: Media Path

Transfer
Belt
[(4) Transfer]
[(7) Cleaning]
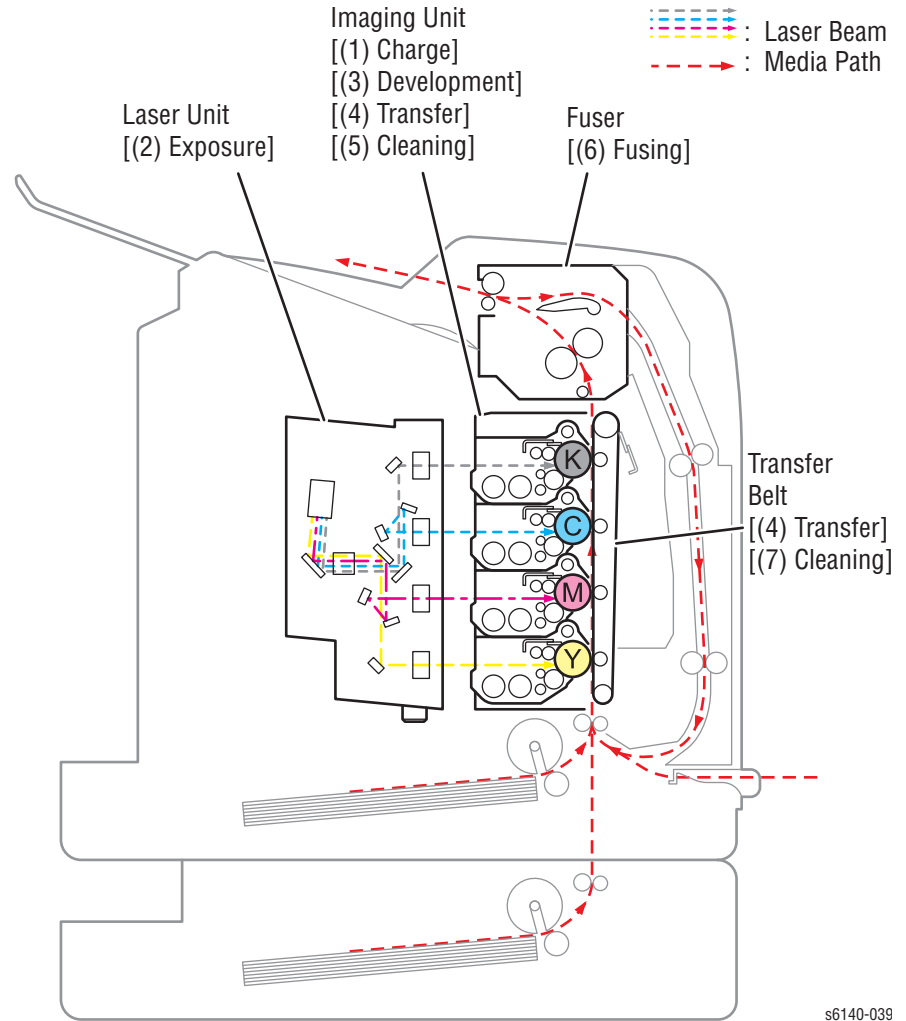
s6140-039

Charging

Each Imaging Unit drum's surface is charged with negative electricity by discharging of the bias charge roller (BCR) while rotating at a constant speed. This process is performed in parallel for Cyan, Magenta, Yellow, and Black.

The BCR is kept in contact with the drum and rotates with the drum. The BCR is a conductive roller, which receives negative voltage from the High-Voltage Power Supply (HVPS) and discharges a negative Direct Current (DC) voltage.

The drum surface is uniformly and negatively charged with DC bias voltage. The drum surface is a photoreceptor (which is an insulator in a dark areas and a conductor when exposed to light) and the drum inside is composed of conductor.

The cleaning roller is a sponge that contacts the BCR to catch the toner.
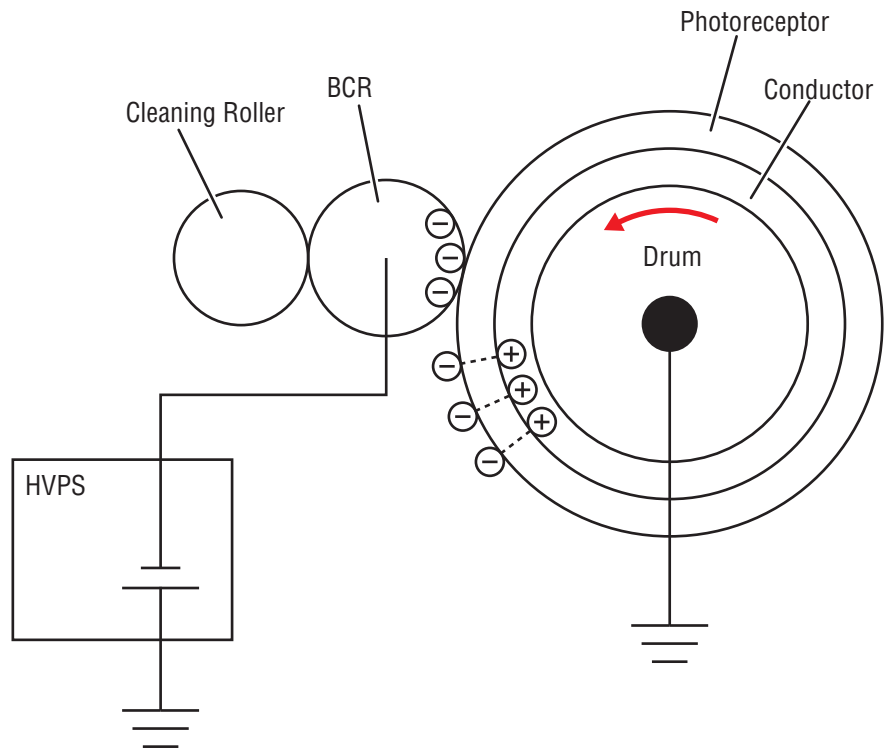
s6140-040

Exposure

Four laser diodes (one for each color) in the Laser Unit emit laser beams. The beams are directed by mirrors to the rotating polygon mirror attached to the scanner motor. As the polygon mirror rotates, the beams are directed through a series of lenses and mirrors to each of the drums, which are scanned by the beams from end to end in the axial direction.
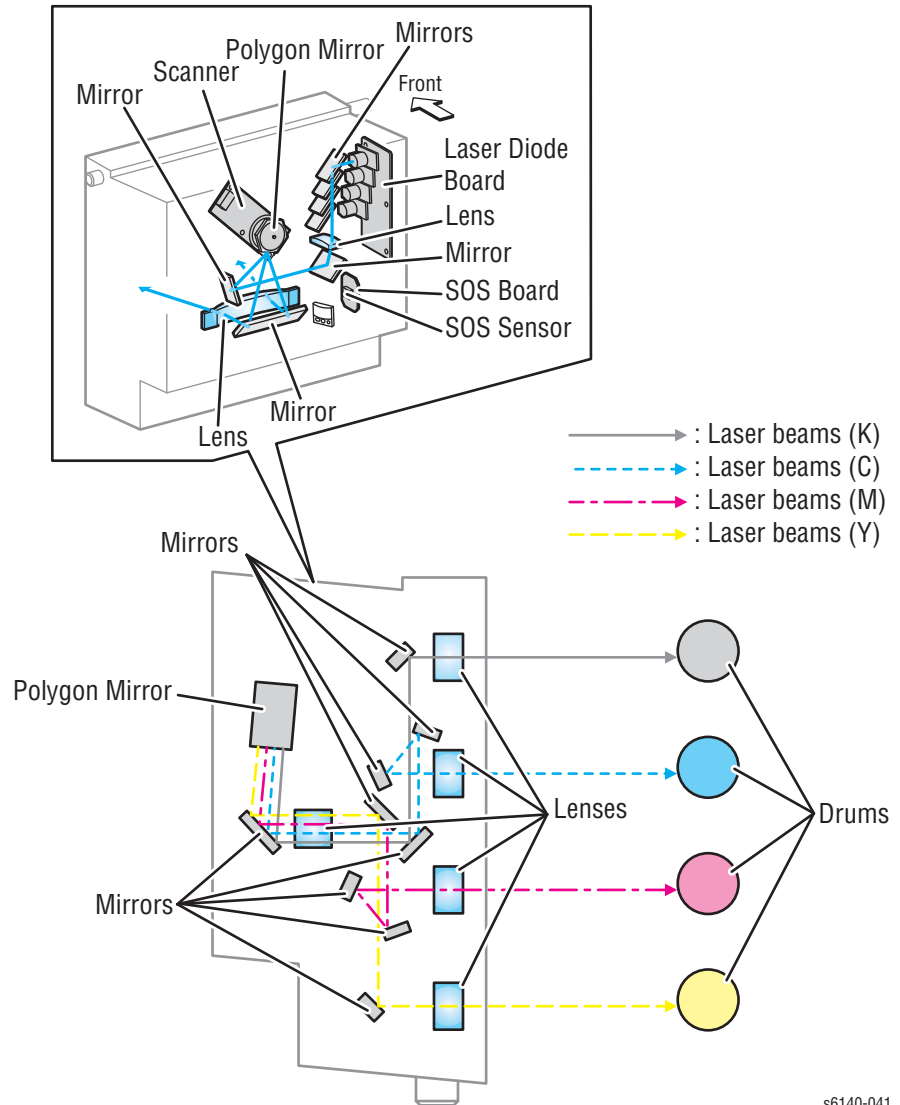
s6140-041

The negatively charged drum surface is scanned by the laser beams to form an invisible electrostatic latent image on the drum surface. The process is performed in parallel for all colors. The area on the drum where the laser beam strikes becomes conductive. The negative charge on the surface flows to the more positive drum, lowering the voltage potential.

Laser Unit

⊖ Negative Electric Charge
⊕ Positive Electric Charge

Laser Beams

Photoreceptor

Conductor

Drum

Drum Surface

Laser Beam

Electrostatic
Latent Image

Concept of Drum

Laser Beam

Electrostatic
Latent Image

Photoreceptor ⇒

Conductor ⇒

Potential on
Drum Surface

Laser Beam

-V

0
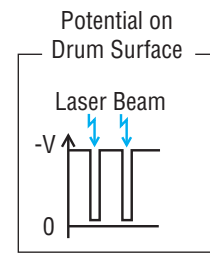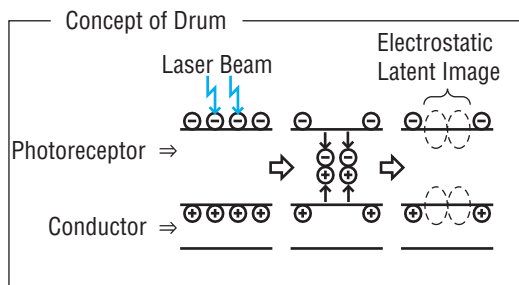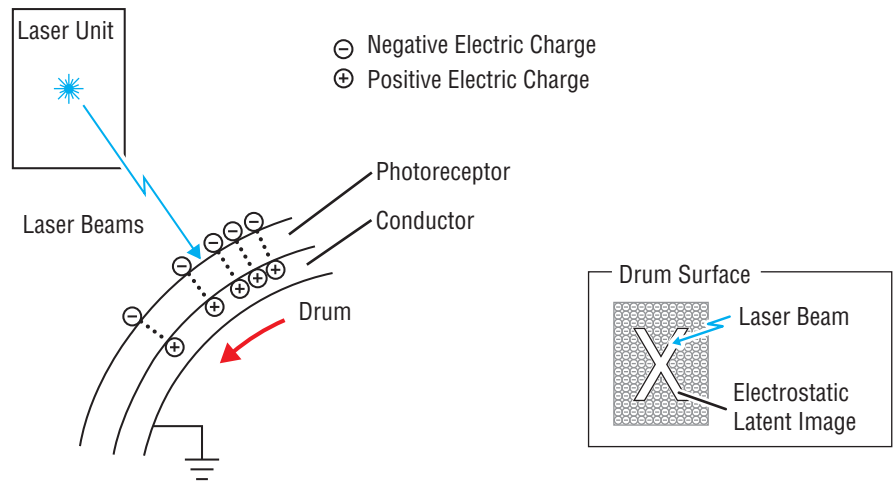
s6140-042

Development

Toner is electrically attached to the invisible electrostatic latent image on the drum surface to form the visible toner image on the drum.

The toner in the Toner Cartridge is agitated by the built-in agitator and fed into the developer. The augers are driven by the toner motors and the developer motor in the Main Drive Assembly. The toner is consumed according to the print count and fed into the developer. This process, called toner dispensation, is controlled by two processes: pixel count dispense control (PCDC) and automatic density control (ADC).

The toner fed into the developer is agitated by the auger, and supplied to the magnet roller. The toner and carrier are charged by friction due to agitation (toner in negative, carrier in positive), and they are attracted electrically. A uniform layer is formed by the trimmer bar as the carrier is attracted to the magnetic roller.

s6140-043
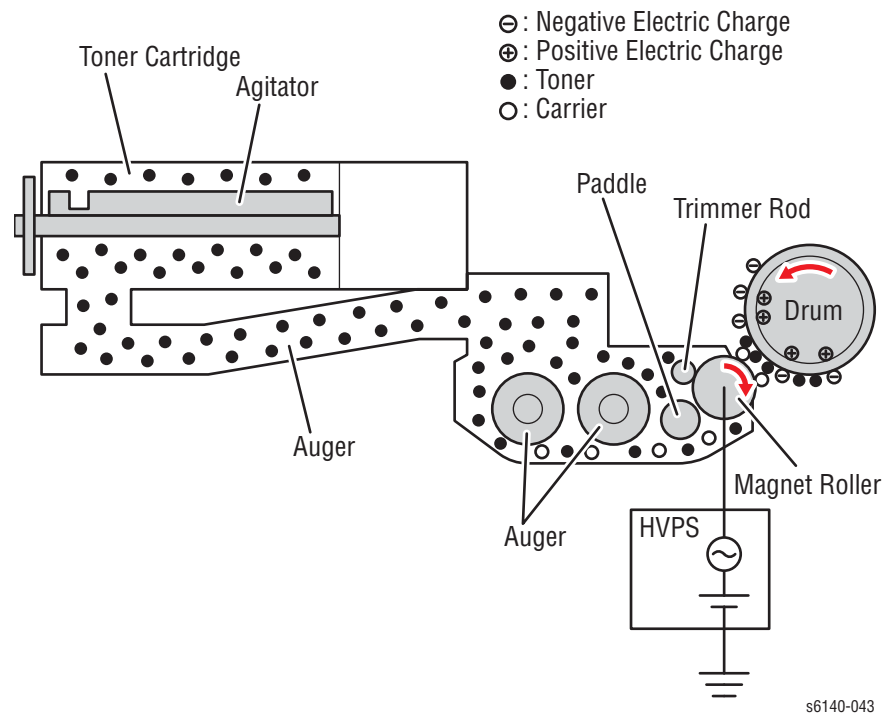
The magnet roll is covered by a thin semi-conductive sleeve. A developing bias voltage is supplied to the sleeve from the High Voltage Power Supply (HVPS). The developing bias voltage is negative DC voltage combined with AC voltage. The DC voltage holds the magnet roll at a constant negative voltage against the photoreceptor layer of the drum. Therefore, at the area where the negative electric charge on the drum surface does not decrease, the potential is lower than that of the magnet roll, while the potential is higher than that of the magnet roll at the area where the negative charge on the drum surface decreases.

The AC voltage waveform shakes the developer on the magnet roll so that the toner moves to the drum. Thus, only the portions of the drum surface where the negative charge has decreased below that of the magnet roll (electrostatic latent image) attract toner to form an image on the drum.

Once the toner is deposited on the drum, the potential and the toner-attracting force of the corresponding portion decreases because the increase of negative charge lowers the potential at that portion.
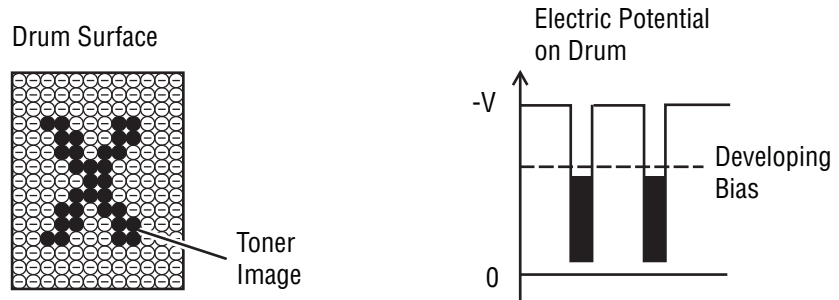
s6140-044

Toner Dispense Path

Toner moves from the Toner Cartridge to the Imaging Unit using an auger driven by the toner motor. When the Toner Cartridge is locked in position, the Toner Cartridge shutter moves forward opening the toner supply port. The toner is fed to the Imaging Unit by second port in the auger housing.
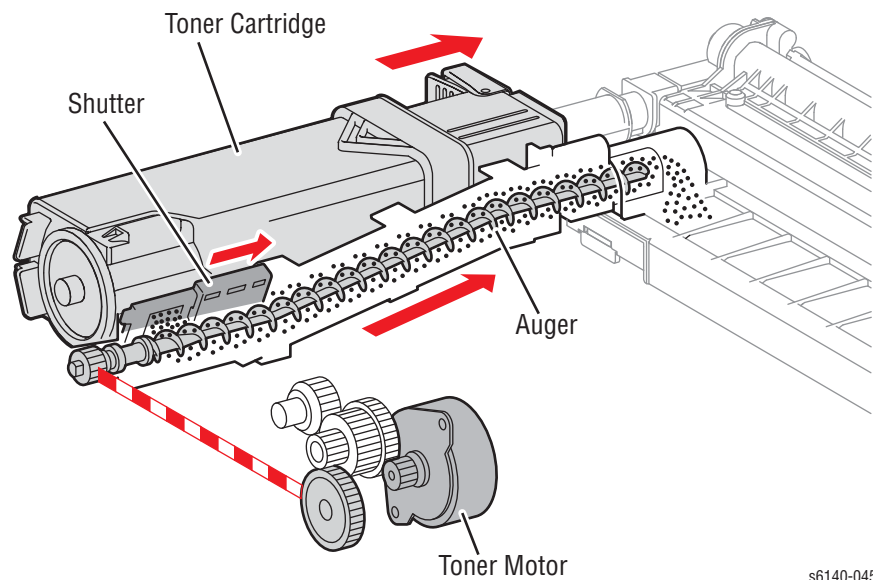
s6140-045

Image Transfer

During transfer, latent images formed on the drums are transferred to the media by attraction to the BTR (bias transfer rollers) in the Transfer Belt.The BTR is a metal roll, to which a positive voltage from the HVPS is applied. The BTR positively charges the belt. The toner on the drums moves towards the Transfer Belt due to the attracting force generated between the negative polarity of the toner and the positive charge on the belt. The four color separation images are transferred from the drums in Y, M, C, and K order.

⊖ : Negative electric charge
⊕ : Positive electric charge
● : Toner

Paper

Drum (K)

BTR

Drum (C)

Drum Surface

BTR

Drum (M)

BTR

BTR

Drum (Y)

Transfer Belt

HVPS

s6140-046

Drum Surface
(Black Toner Image)

Drum Surface
(Cyan Toner Image)

Drum Surface
(Magenta Toner Image)

Drum Surface
(Yellow Toner Image)

Paper

Black Toner Image

Cyan Toner Image

Magenta Toner Image

Yellow Toner Image
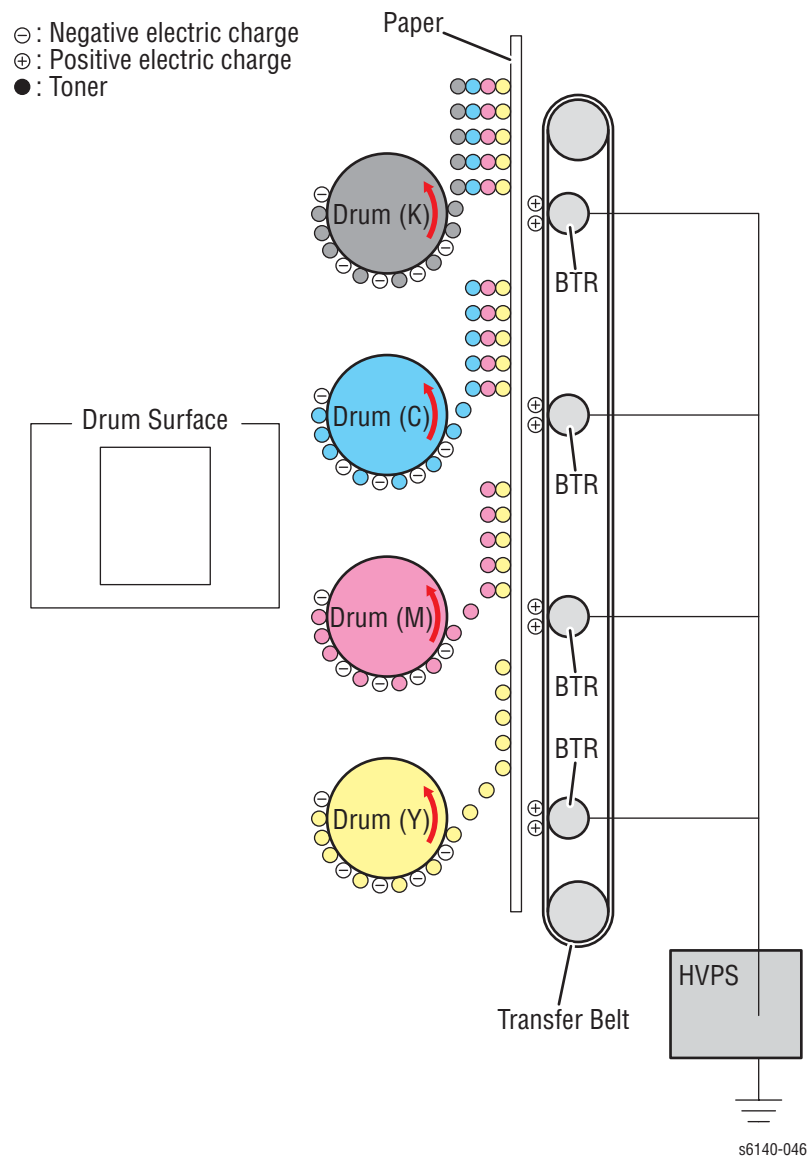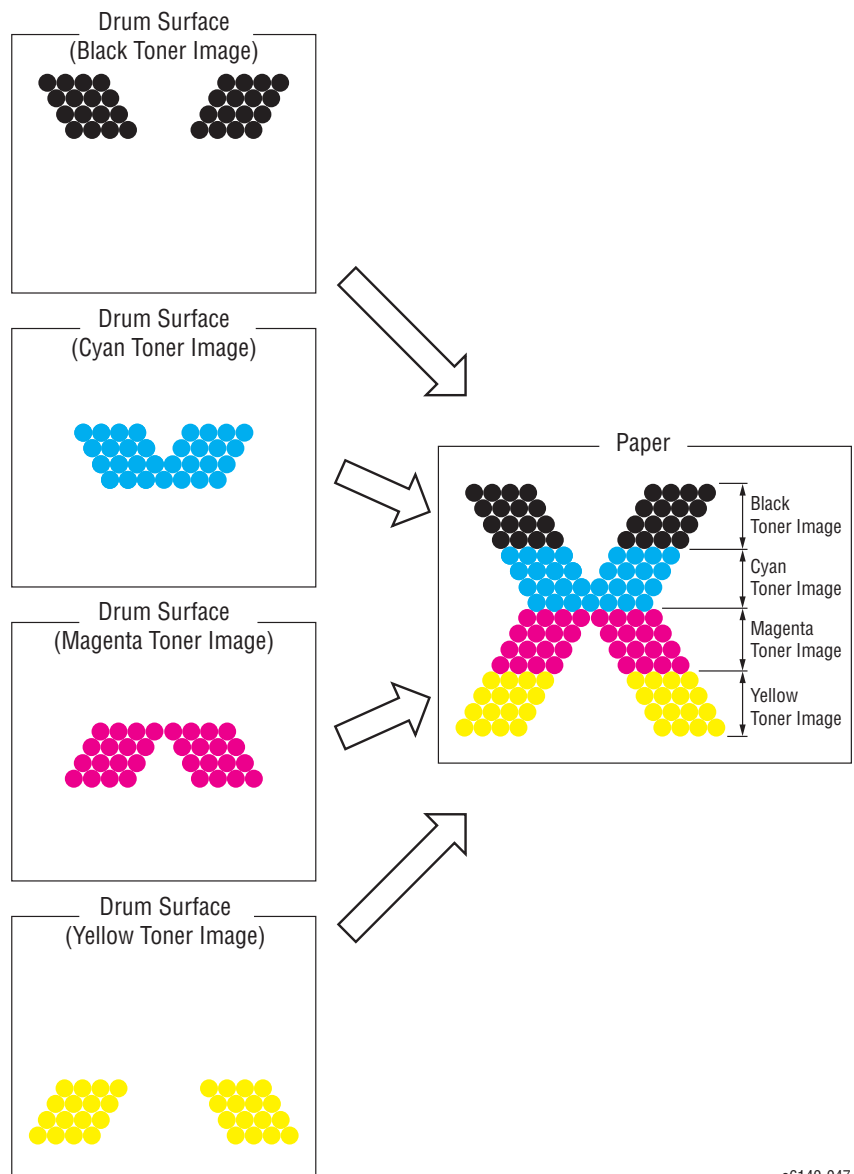
s6140-047

- Bias Transfer Roller (BTR) – The BTR is a conductive roller that receives positive voltage from the HVPS. The BTR contacts the rear side of the Belt and applies the positive voltage to the Belt.

- Belt – The belt is a conductive unit that receives positive voltage from the BTR. After the negative charged toner image on the drum surface is drawn by the positive charge on the belt, it is transferred from the drum to the paper. The Transfer Belt feeds the paper toward the Fuser.

Imaging Unit

Excess toner is removed from the drum and the BCR surfaces, while excess charge is also eliminated from the drum surface.

- Drum Cleaning – The cleaning blade contacts the surface of the drum collecting the excess toner by scraping off toner.

- Cleaning Roller – The cleaning roller contacts the surface of the BCR collecting the excess toner by scraping off toner.

- Charge Cleaning – When the drum is charged by the BCR, any excess charge hinders the drum surface from being uniformly charged, which may lead to print quality problems. The the latent charge pattern remaining on the photoconductive drum is neutralized by the Erase Lamp to prepare the drum for the next exposure cycle.

⊕ : Positive Electric Charge
⊖ : Negative Electric Charge
● : Toner
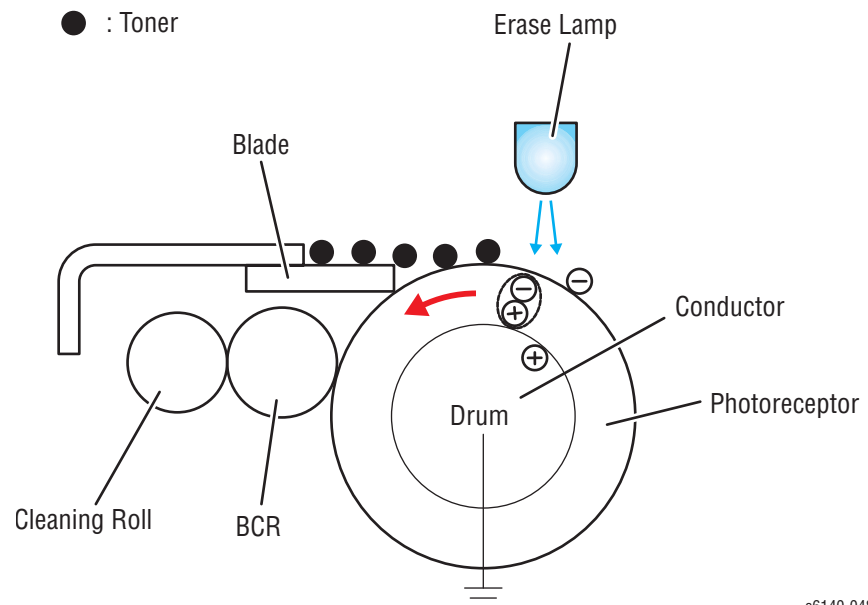
s6140-048

Excess Toner Collection

The excess toner is collected by the cleaner blade contacting the drum and moves to the Toner Cartridge collection box by two augers.
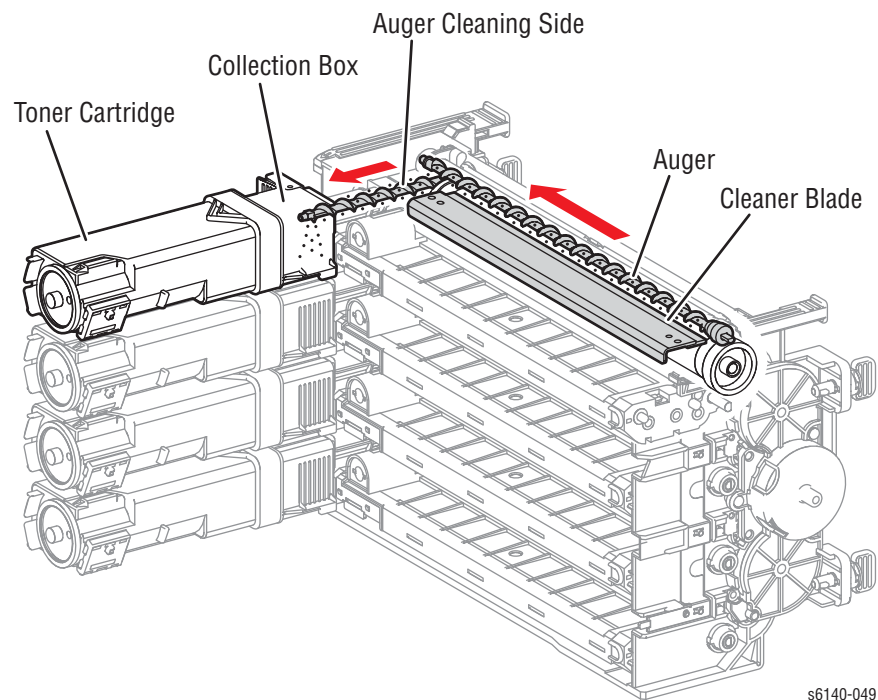
s6140-049

Fusing

The image is bonded to the media by the Fuser. The heat roller with the heat lamp melts the toner particles. Toner is fused onto the media by the combination of heat and pressure.

	Warm-Up	Stand By	Printing
Main Heater Lamp	On	On/Off	On
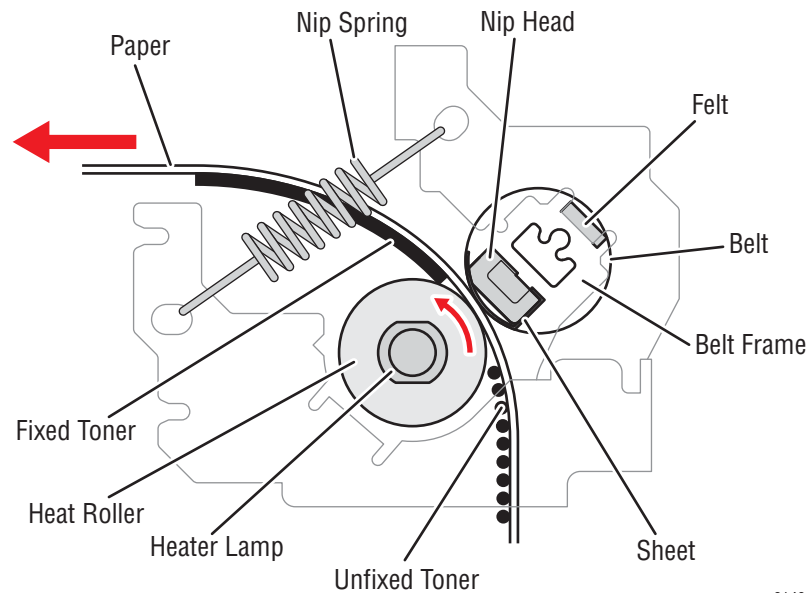
s6140-050

Transfer Belt Cleaning

The Transfer Belt is cleaned by a cleaning blade that removes excess toner from the Transfer Belt surface and directs waste toner to a reservoir.
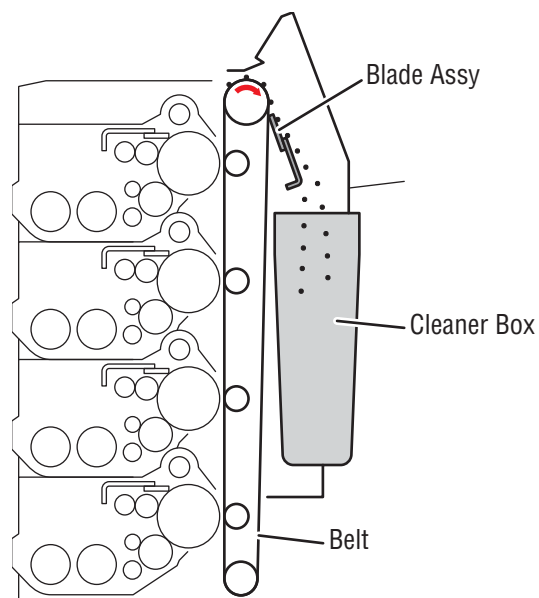
s6140-051

Media Path

Media Path Drive

Media is supplied from the Tray or the manual feed slot, and is transported into the printer along the paper path as shown in the diagram.
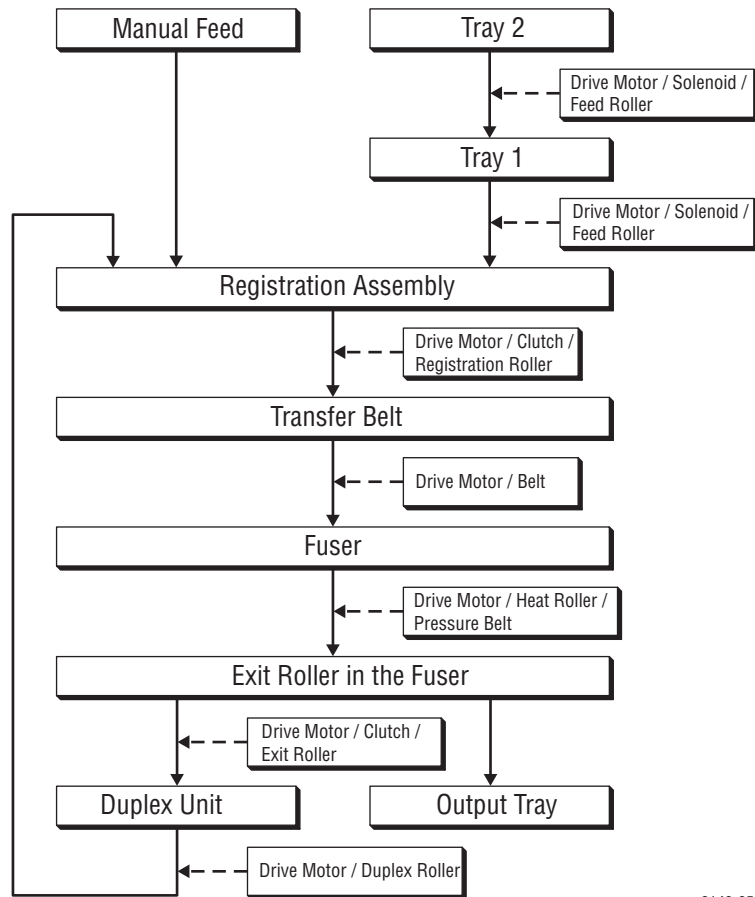
s6140-052

Media Path Components

Media path components are shown in the following figure.

: Laser Beams
: Media Path
▼ : Paper Sensors

Exit Sensor
Exit Roller
Duplex Gate
Pressure Belt
Heat Roller
Transfer Belt
Registration Roller (Rubber)
Duplex Roller
Registration Roller (Metal)
Feed Roller
Tray 1 No Paper Sensor
Duplex Roller
Manual Feed No Paper Sensor
Registration Sensor
Separator Roller
Turn Roller(Metal)
Tray 2 No Paper Sensor
Turn Roller (Rubber)
Feed Roller
Separator Roller
Paper Path Sensor

s6140-053

Sensors

The printer contains sensors of various types that perform a variety of functions. One group of sensors track media along the media path to detects jams. Other sensors detect the presence of the Toner Cartridges, stop printer activity if a door is open (interlock), detect the presence of media in the trays, and monitor fusing temperature.

List of Sensor and Interlock Functions

Name	Type	Function
No Paper	Photo-receptive	Detects no paper condition in all trays.
Registration	Photo-receptive	Detects paper at the registration rollers.
Exit	Photo-receptive	Detects paper as it leaves the Exit.
Stack Full	Photo-receptive	Detects when the Output Tray is full.
K Mode	Photo-receptive	Detects Black-only print mode.
Temperature	Thermistor	Monitor temperature of the Heat Roller.
Cover Interlock	Microswitch	Interrupts +24 V to the Main Motor
Start of scan	Photo	Detects laser at the start of a scan.
Fuser Thermostats	Thermostatic switches	Interrupts AC power to the Fuser.
Humidity	Integrated circuit	Monitors the printer's environemnt.

Sensor Types

The types of sensors used vary with function. In general, there are three types:

Photo Sensors

Two types of photo sensors are used, photo-reflective and photo-receptive. Photo-reflective sensors have the light emitter and light receiver aligned on a single surface. Output of the photo-receptor is High (> +4.5 V) when light is being reflected back and Low (< +.3 V) when it isn't. Photo-receptive sensors consist of a LED in one arm of a U-shaped holder, and a photo-transistor in the other arm. When the sensing area is vacant, nothing is between the arms of the sensor, light falls on the photo-receptor sending the signal High. If the light is interrupted, the photo-transistor goes Low.

Actuator

Optic Sensor/Actuator
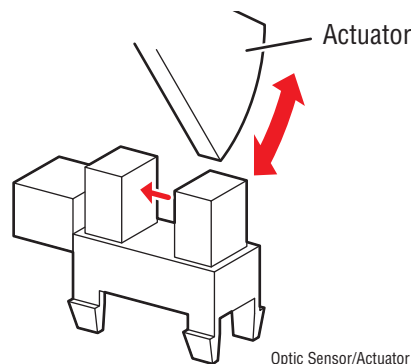
Microswitches

Microswitches are used primarily as paper size sensors and cover interlocks. They are in a normally open state, and close when actuated. A bank of microswitches is used to detect paper size in the universal trays. Microswitches also employ hooks or catches for retention in the bracket or frame.
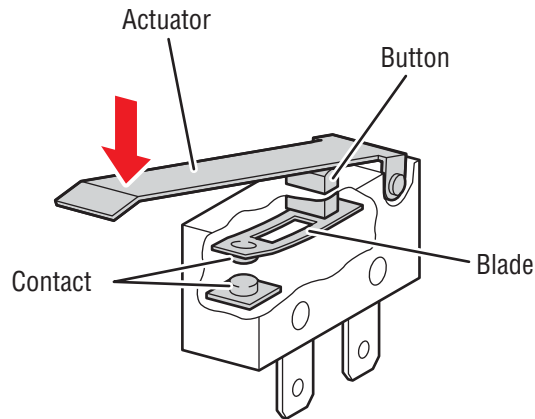
Thermistors

Thermistors have a known value of resistance whose value varies with temperature. Used primarily in the Fuser for temperature sensing.

Sensors in the Media Path

The following illustration identifies the sensors located along the paper path. Error detection is based on media transport timing through the sensing area.
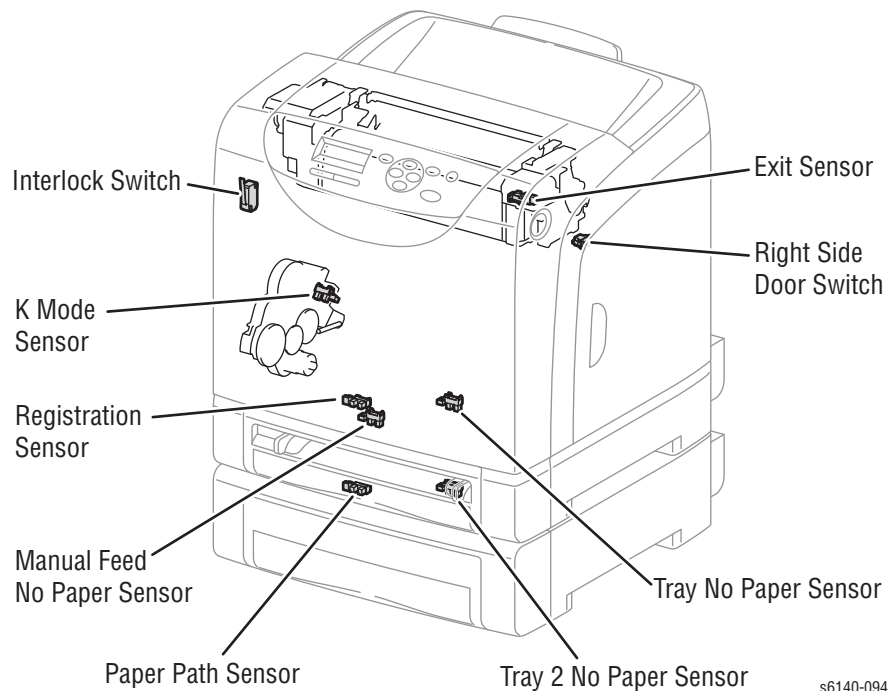
s6140-094

Major Assemblies and Functions

Major functional components are classified into the following categories:

- Tray
- Feeder
- Optional Feeder
- Duplex Unit
- Manual Feed & Registration
- Transfer Belt and Fuser
- Laser Unit
- Toner Cartridge & Dispenser
- Imaging Unit
- Drive
- Electrical

Tray
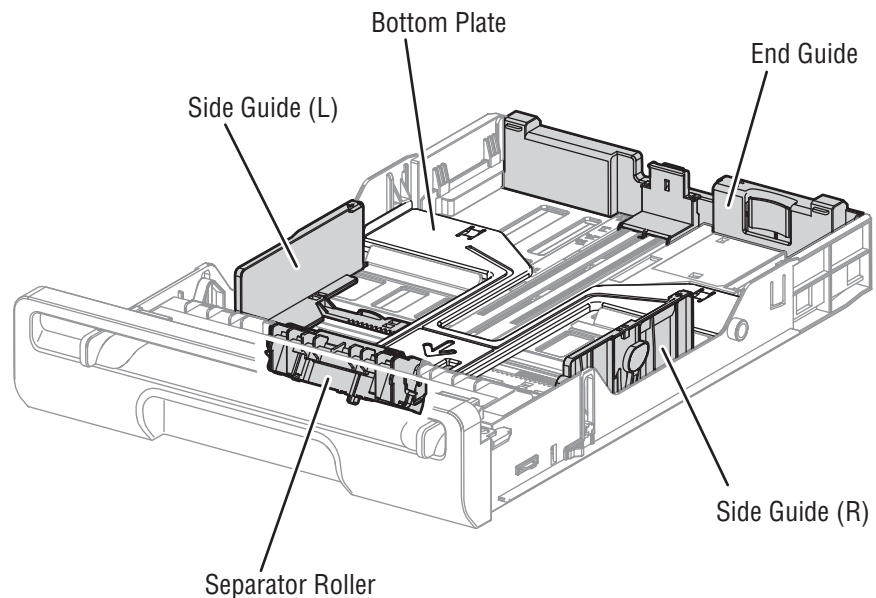
s6140-054

- Separator Roller

  The Separator Roller and Feed Roller pinch the media to prevent multiple sheets from feeding.

- Left/Right Side Guide

  The side guides move at a right angle to the paper transfer direction to align the paper width.

- Tray End Guide

  The end guide moves in toward the paper transfer direction to determine the paper size.

- Bottom Plate

  The bottom plate is locked to the Tray bottom when the Tray is pulled out of the paper feeder, and unlocked when the Tray is installed in the paper feeder. When unlocked, the bottom plate lifts the paper, pushing it against the feed roller using spring tension.

Separator Holder

The sheets loaded into the Tray are occasionally stuck together along the edges, which can cause a multiple feed or a jam. The sheets are fed by the Feed Roller to a position between the Feed Roller and the Separator Roller. Normally, when only one sheet is fed, both the Feed Roller and Separator Roller rotate to allow the sheet to pass.

However, when two sheets are fed concurrently, only the Feed Roller rotates. The Separator Roller is locked, allowing the upper sheet to pass, separated from the lower sheet that is stopped by the friction with the Separator Roller at rest.

The Separator Roller is pushed toward the Feed Roller by spring pressure, and controlled by a friction clutch.

s6140-055

Feeder

Feed Solenoid

Tray No Paper Sensor

Feed Roller

s6140-056

- Tray No Paper Sensor

    Detects the presence/absence of paper in the Tray based on the position of No Paper Actuator.

Tray No Paper Sensor

Tray No Paper Sensor

Bottom Plate

Paper

No Paper Actuator
(No Paper Position)

No Paper Actuator

s6140-057

- Feed Solenoid

  The Feed Solenoid transmits drive energy from the Main Drive Assembly to the Feed Roller.

- Feed Roller

  When the Feed Solenoid operates, it allows the Feed Roller to rotate and feed the paper.

s6140-058
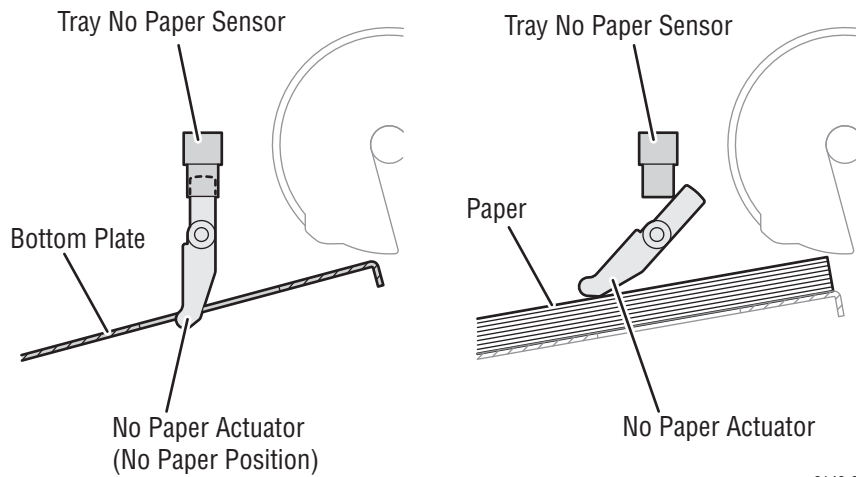
Optional Feeder

The Optional Feeder adds a second, 250-sheet input tray (Tray 2) to the printer.
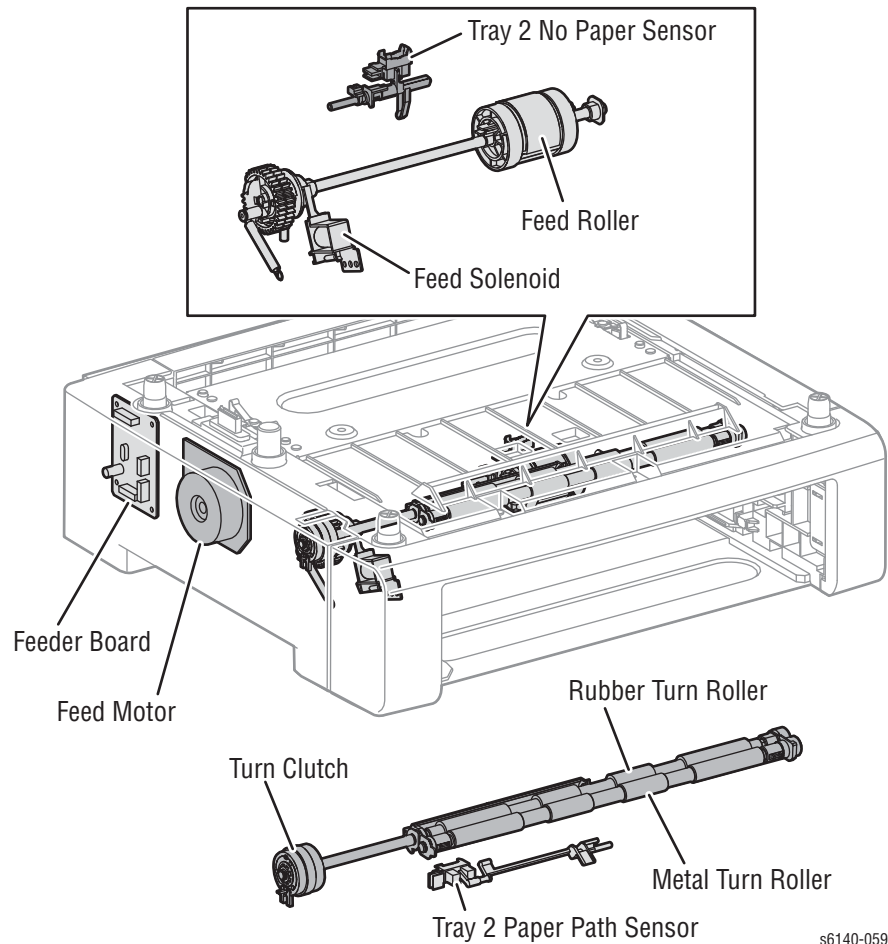
s6140-059

- No Paper Sensor

  Detects the presence/absence of paper in the Tray based on the position of No Paper Actuator.

- Feed Solenoid

  The Feed Solenoid transmits drive energy from the Main Drive Assembly to the Feed Roller.

- Feed Roller

  When the Feed Solenoid operates, it allows the Feed Roller to rotate and feed the paper.

- Paper Path Sensor

  Detects the leading edge as the media reaches the turn chute.

- Drive Clutch

  Transmits drive from the Feed Motor to the rollers.

- Feed Motor

  The Feed Motor drives the Turn Rollers.

- Feeder Board

  The Feeder Board controls the motor, sensor and clutch of the optional feeder.

Duplex Unit
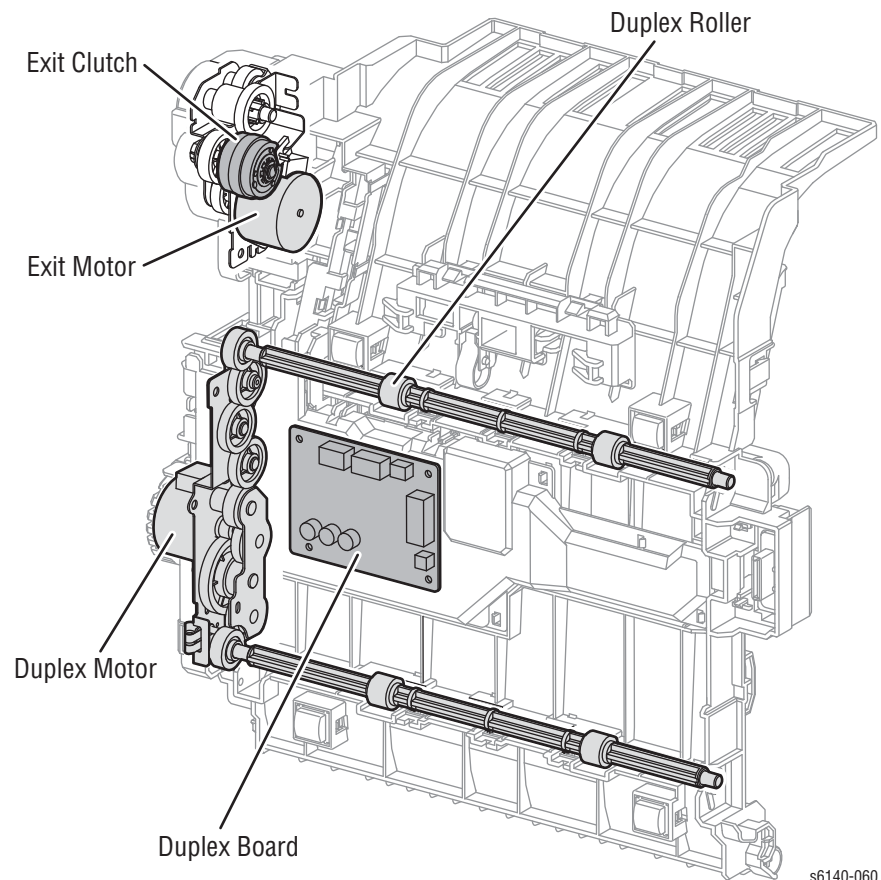
s6140-060

- Exit Clutch

  Transmits the drive from the exit motor to exit roller in the Fuser. When the clutch operates, the exit roller rotates in the reverse direction. The clutch is stopped when the paper reached the Duplex.

- Duplex Motor

  The Duplex Motor supplies the driving power to the Upper and Lower Duplex Rollers.

- Exit Motor

  The Exit Motor supplies the driving power to the Exit Roller in the Fuser.

- Duplex Board

  The PWBA DUP controls motor and clutch.

The Duplex Unit attaches to the Front Cover by a weighted latching mechanism. The latch maintains it's orientation to the Front Cover as the cover is opened and closed. With the Front Cover open, the latch follower is released from the locking slot allowing removal of the Duplex Unit by pushing the Front Cover release button.

Side Button

Duplex Follower Latch

Slot

Duplex

Latch Front

Duplex Latch Follower

Duplex Latch Spring

Duplex Latch
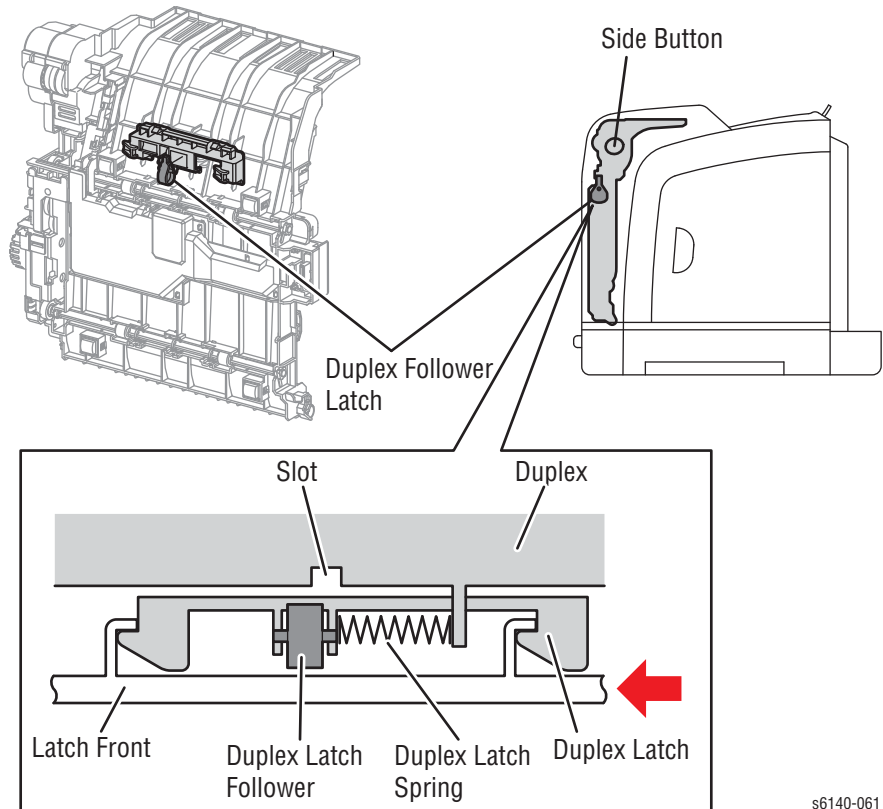
s6140-061

Manual Feed & Registration
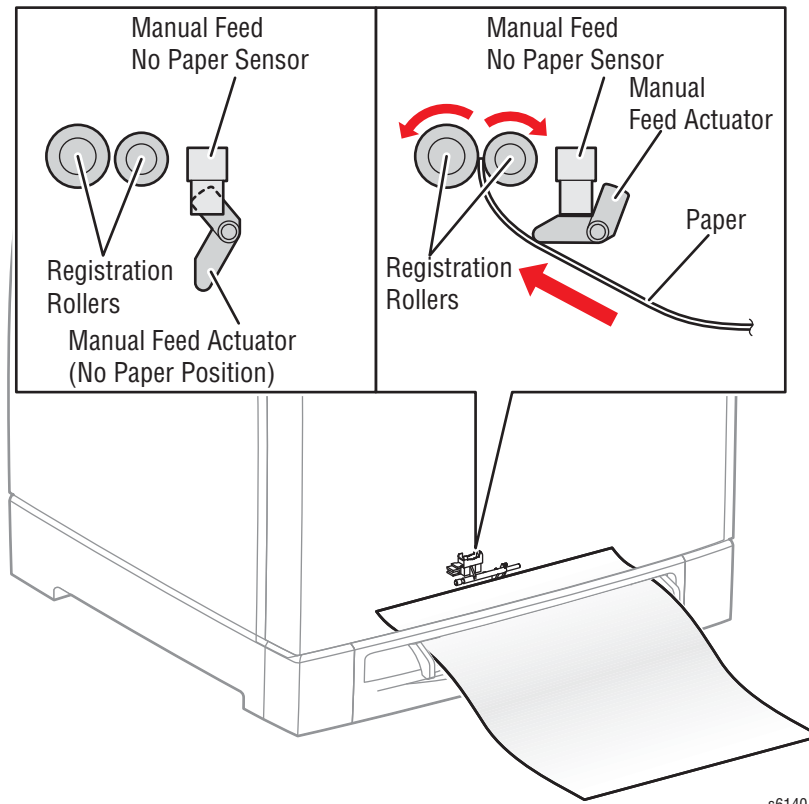
s6140-062

- Manual Feed No Paper Sensor

  Detects media in the manual feed slot by the change in actuator position.

  Upon detecting the sheet, the Registration Roller rotates for a predetermined duration to feed the sheet. The rollers stop immediately when the Registration Sensor detects the media.

- Registration Sensor

  The Registration Sensor detects paper when the paper leading edge reaches the registration chute. When paper is fed from the manual feed slot, the Registration Sensor measures the paper length. The On time of the Registration Sensor determines the media length.

- Registration Clutch

  The Registration (Drive) Clutch transmits drive energy from the Main Drive to the rubber registration roller, and transports paper from the Tray and manual feed slot toward the Imaging Unit. The timing of sheets feeding from the Registration is adjusted by the duration of the Drive Clutch operation so that the toner image on the drum is transferred to the correct position on the sheet.
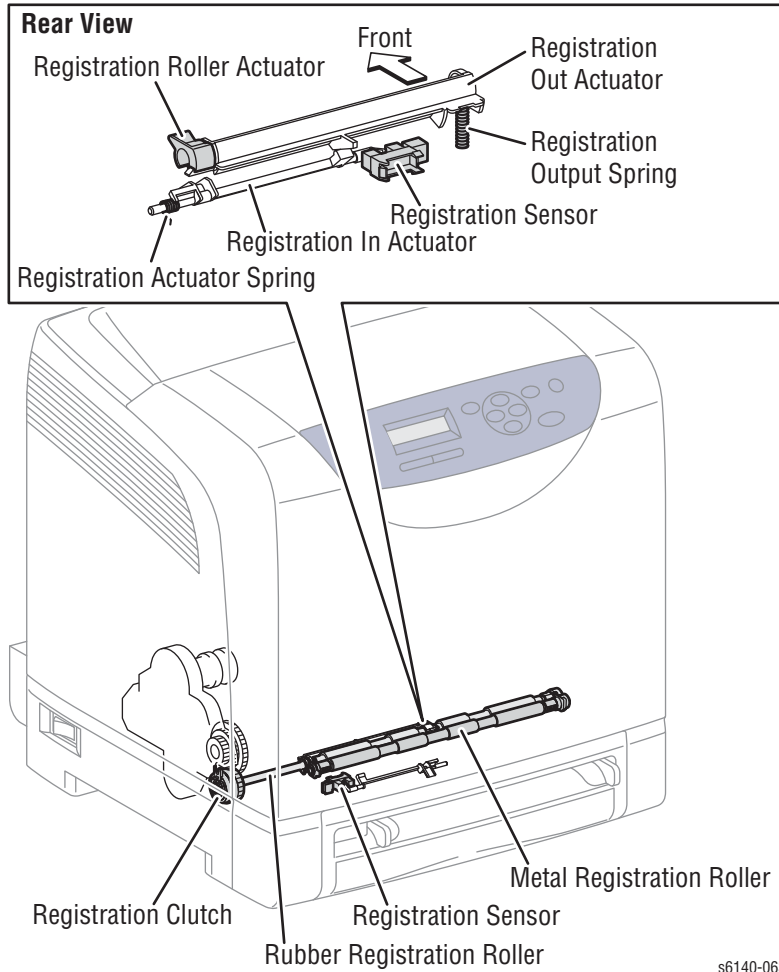
s6140-063

Lead Edge Registration

When a sheet is fed from the Tray to the toner transfer position, the registration of the sheet may not be correctly maintained due to misalignment of lead edges in the tray.

To avoid this problem, the lead edge position needs to be aligned at the Registration rollers before the sheet is fed in front of the Transfer Belt, or in front of the BTRs.

Registration Rollers
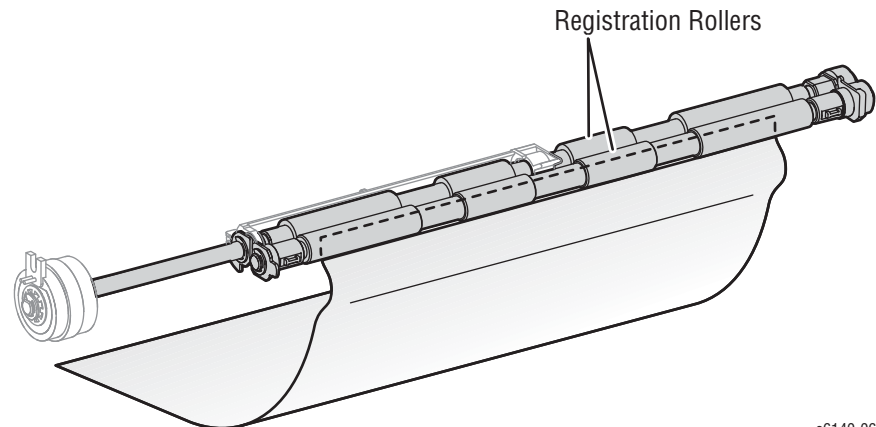
s6140-064

Before the registration rollers are energized, the paper is advanced from the tray to the rollers. This process aligns the leading edge as shown below.

By pushing the edge of the sheet against the registration roller that is not turning, the lead edge of the sheet is registered.

Registration Rollers

Skewed Paper
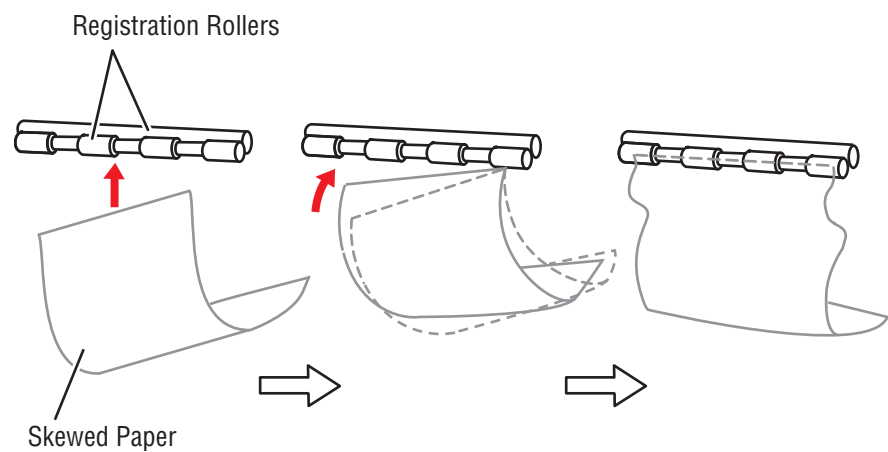
s6140-065

Media Size Control

The printer doesn't have switches for detecting paper size, and the length of paper is detected only by the Registration Sensor when feeding paper. If printing data and paper size don't match, an error is sent to the Image Processor Board.

Media Detection

Since the paper path from manual feed slot to the Registration Sensor is different than from the Tray to the Registration Sensor, the Registration Sensor is provided with the Registration In Actuator and the Registration Roller Actuator.

- The Registration Roller Actuator detects the sheet from the manual feed slot and detects the tail edge of the paper from the Tray.

- The Registration In Actuator detects the lead edge of the paper from the Tray.

The movement of the Registration In Actuator does not affect the Registration Roller Actuator.
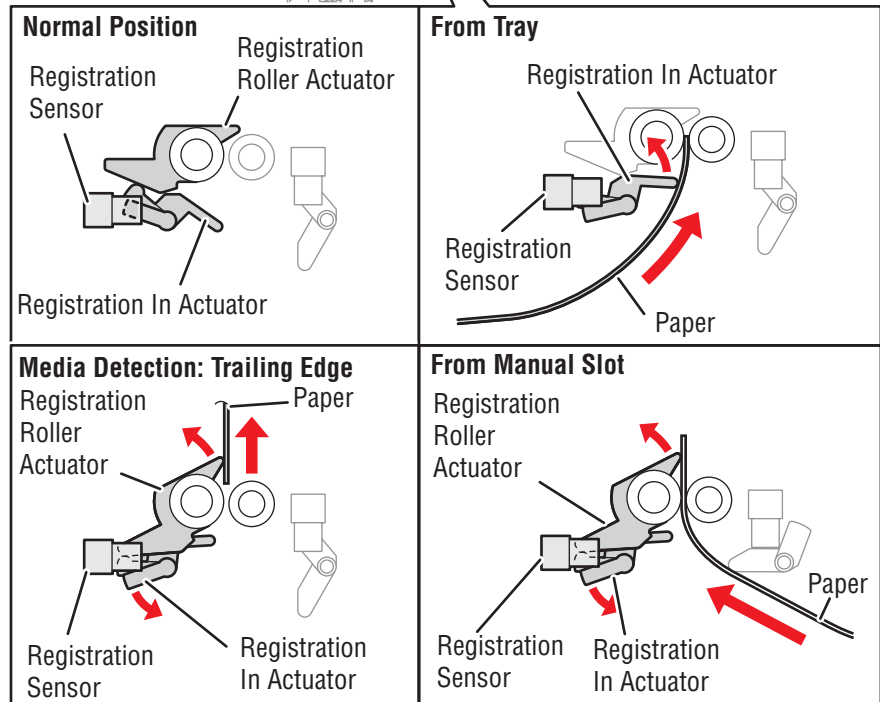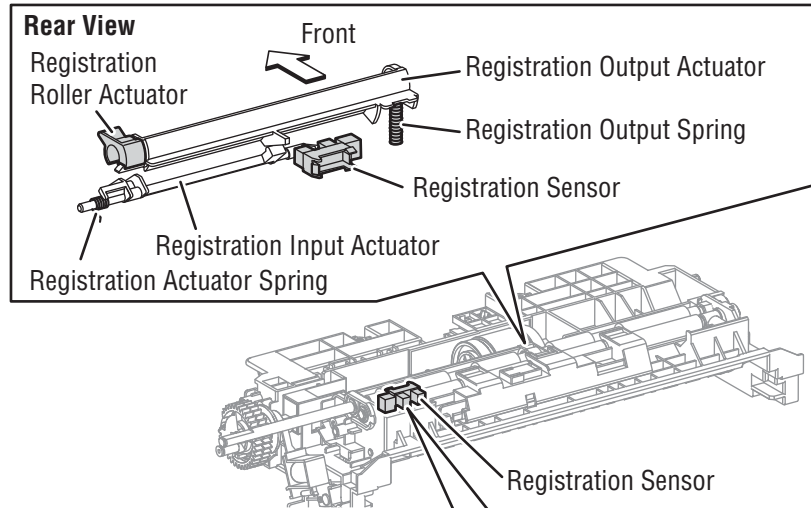
s6128-066

Transfer Belt and Fuser
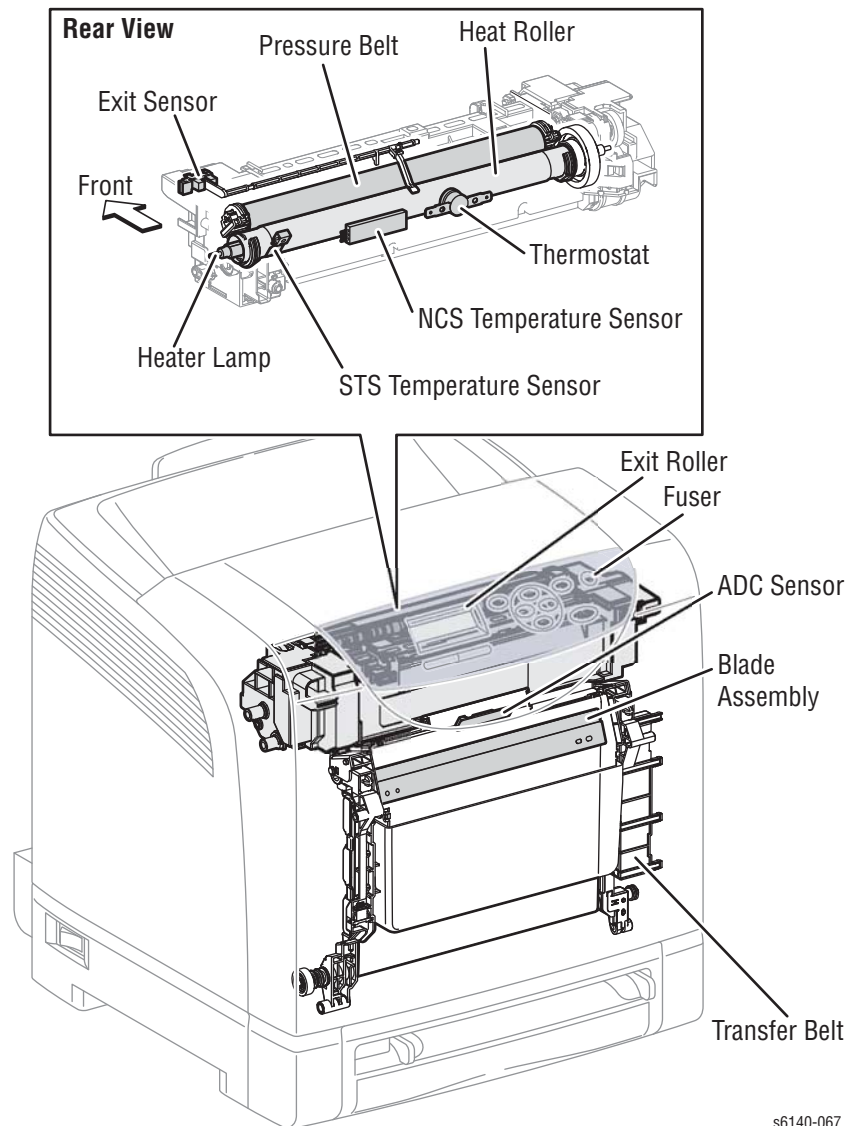
s6140-067

Transfer Belt

The Transfer Belt consists of the Transfer Belt and ADC Sensor.

- Belt

  The belt feeds media toward the Fuser.

- ADC Sensor

  The ADC Sensor detects test toner patches on the belt and converts them to voltage value. The voltage value is used to control toner density.

Fuser

The Fuser fixes transferred toner onto the paper using heat and pressure and feeds the paper before and after toner is fixed. The Fuser consists of these components: heat roller, heater lamp, thermostat, temperature sensor, pressure belt, exit roller, and exit sensor.

- Exit Sensor

  The exit sensor detects printed pages after fusing.

Laser Unit

s6140-068
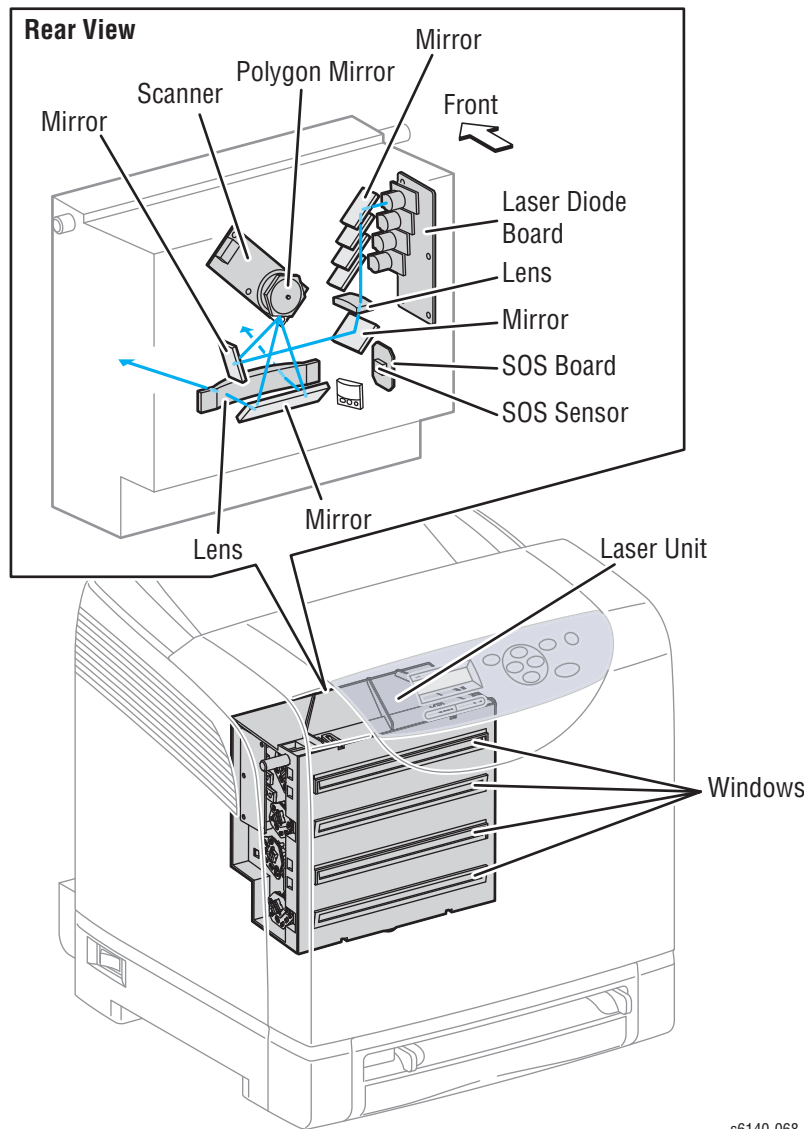
The Laser Unit generates laser beams to form an electrostatic latent image on the drum surface. The Laser Unit consists of a laser diode (LD) board, scanner, start of scan (SOS) board, lenses, mirrors, and windows.

- Laser Diode Board

  The laser diode board consists of four laser diodes (LDs) corresponding to C, M, Y, and K. Each LD converts the electric signals of incoming image data into laser waves. In order to stabilize the laser light quantity during formation of an electrostatic latent image, the laser diode board monitors the intensity of the laser beam to adjust it to the appropriate level. This process is called auto power control (APC).

- Scanner

  The scanner consists of a scanner motor that rotates at a constant speed and a polygon mirror that is mounted on the motor shaft. The laser light output from the LD is directed onto the polygon mirror. The polygon mirror, provided with six reflecting mirror faces, changes the reflection angle of the laser light as it rotates, thereby allowing the laser light to scan the drum along its axial direction. Scanning is performed using one reflecting mirror face for each line.

- Start of Scan (SOS) Board

  The SOS Sensor on the SOS Board converts incoming laser beam, upon detection, to an electric signal as reference for starting scanning, and transmits this signal to the MCU Board. The SOS sensor signals are used to synchronize the starting point of the laser beam scanning with the starting point of the image writing.

- Lenses

  The laser light reflected from the polygon mirror reaches the drum surface via the lenses, mirror, and window. The Lenses correct aberration.

- Mirror

  The mirror directs the laser beam to the Imaging Unit.

- Window

  The window is the area where the laser beams exit the Laser Unit.

Toner Cartridge & Dispenser

Dispenser Motors

Toner Cartridges

CRUM Connectors

s6140-069
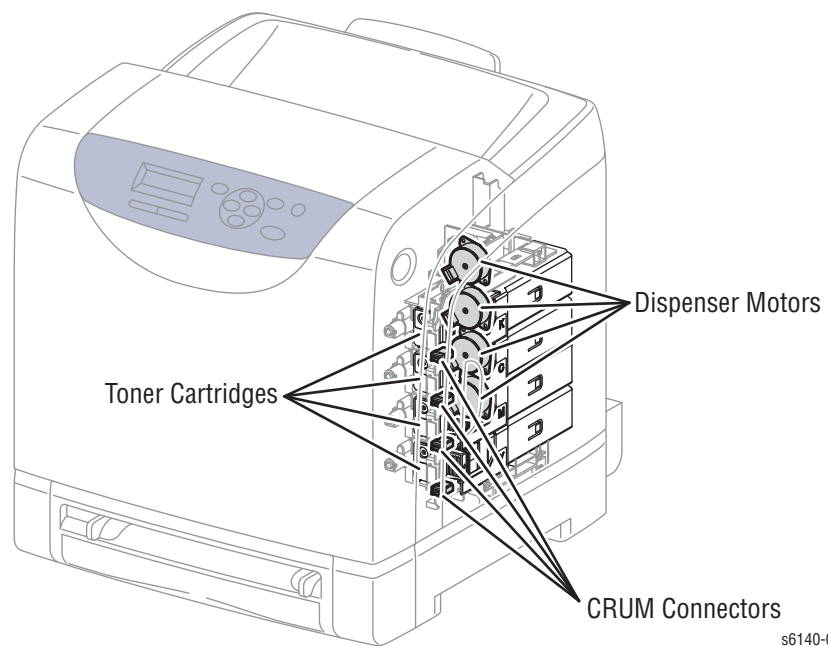
The Toner Cartridge is a customer replaceable item that includes the following components:

- Customer Replaceable Unit Monitor (CRUM) Connector

  The CRUM connector transfers CRUM data. Printer-specific information is stored in the CRUM.

- Toner Motor (C/M/Y/K)

  The toner motors provide the drive for the agitator and auger in each Toner Cartridge, and supply toner to the developer.

Imaging Unit

Rear View

CRUM

Front

Developers

Imaging Unit

Drums

Erase LED Assembly
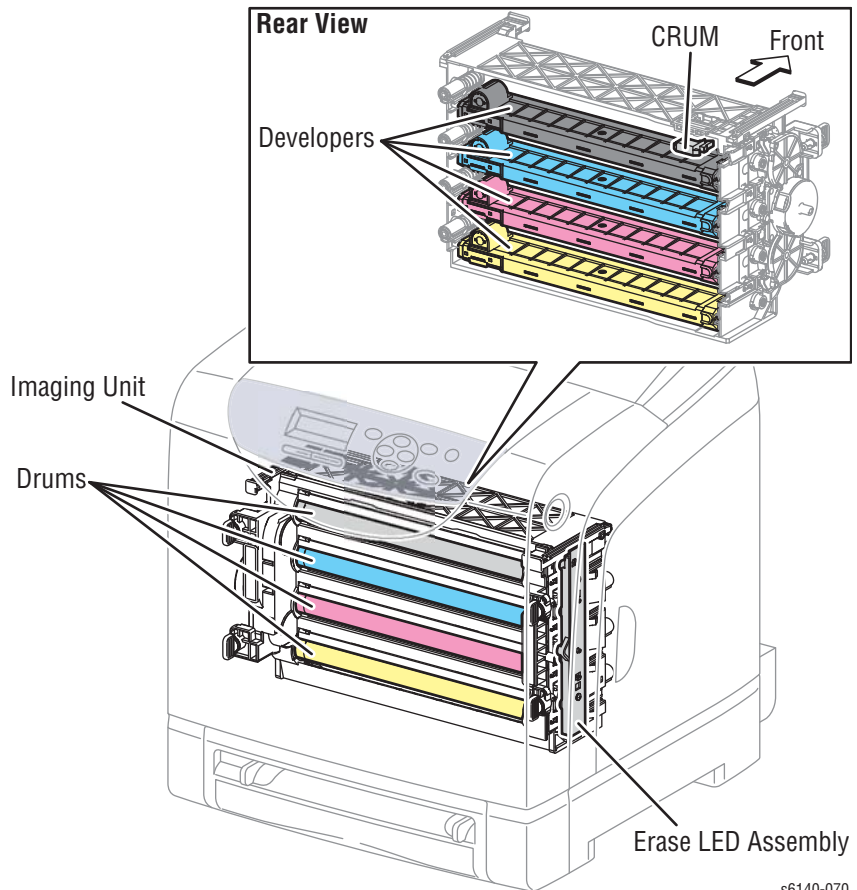
s6140-070

The Imaging Unit is a customer replaceable item that carries out the charging, development, transfer, and cleaning steps in the print process (see "Print Process" on page 2-2).

The Imaging Unit consists of the following items:

- Developers

  Each of the four developers includes the augers that distribute the toner and the magnet roller that applies toner to the drum to develop the latent image.

- Drums

  Each drum is given a latent image to which toner is applied by the developer. The resulting toner image is transferred to the paper.

- CRUM

  Information specific to the Imaging Unit is stored in the CRUM.

- Erase Lamp (LED)

  The light of the LED passes through the lens of the Developer, illuminates the drum, and eliminates the charge on the drum.

Imaging Unit   Erase Lens   Erase Lamp

Drum   Erase LED Assembly

s6140-071

Drive

Sub Drive

Main Drive

Feed Drive

s6140-072
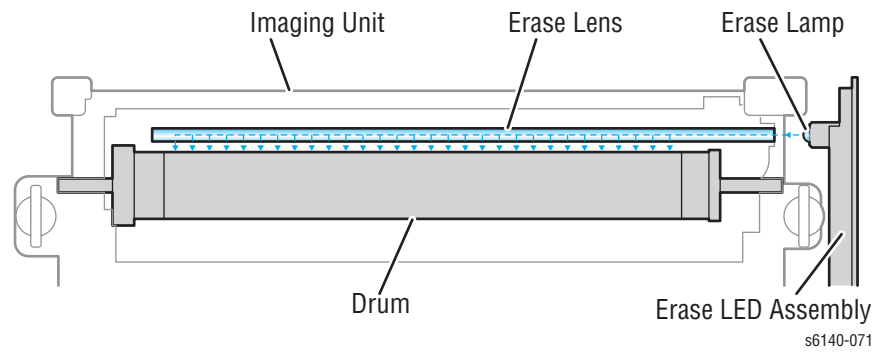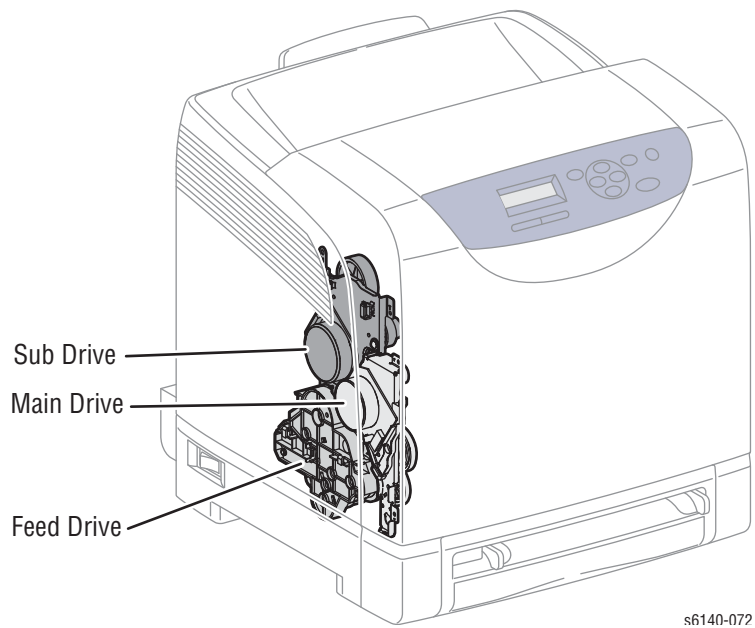
The drive consists of three assemblies:

- Main Drive Assembly

  Drives the Imaging Unit, Transfer Belt, Registration Rollers, and Feeder.

- Sub Drive Assembly

  Supplies drive to the Fuser and Cyan, Magenta, and Yellow developers in the Imaging Unit.

- Feed Drive Assembly

  The Feed Drive Assy transmits the driving force from the Main and Sub Drive Assemblies to relevant parts. The drive path is changed by the Color Mode Switching Solenoid located on the Feed Drive Assy. In Black and White print mode, the Sub Drive is disengaged to prevent rotation of the CMY developers. Only the Black Developer rotates. The Color Mode Switching Sensor detects whether the drive path is set for B/W or full color.
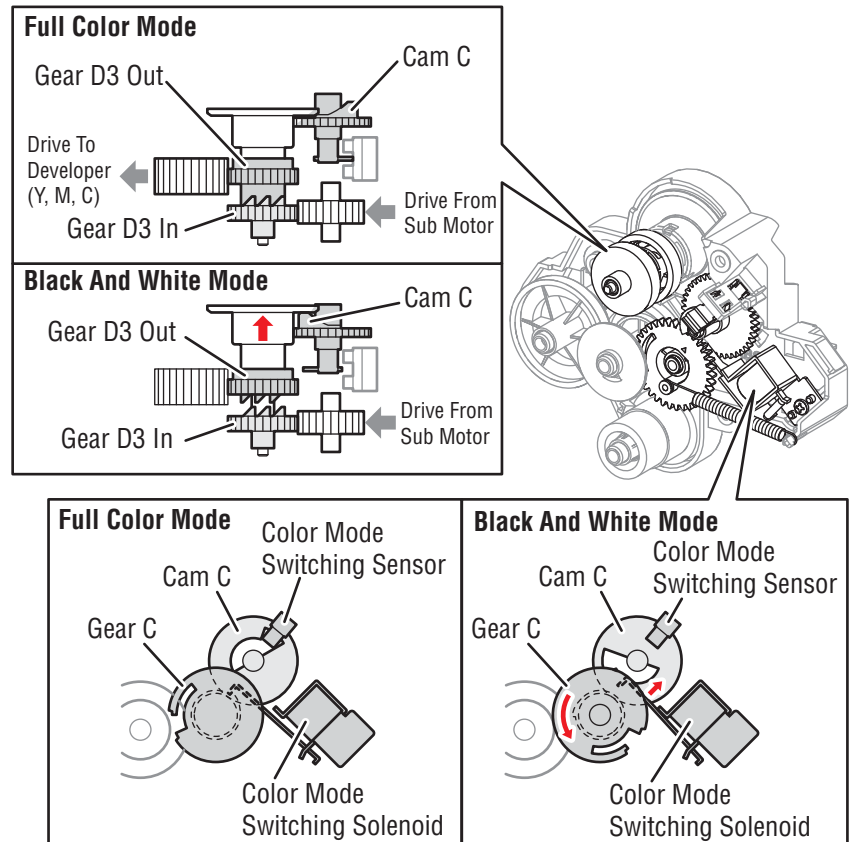
s6140-073

Electrical

s6140-074
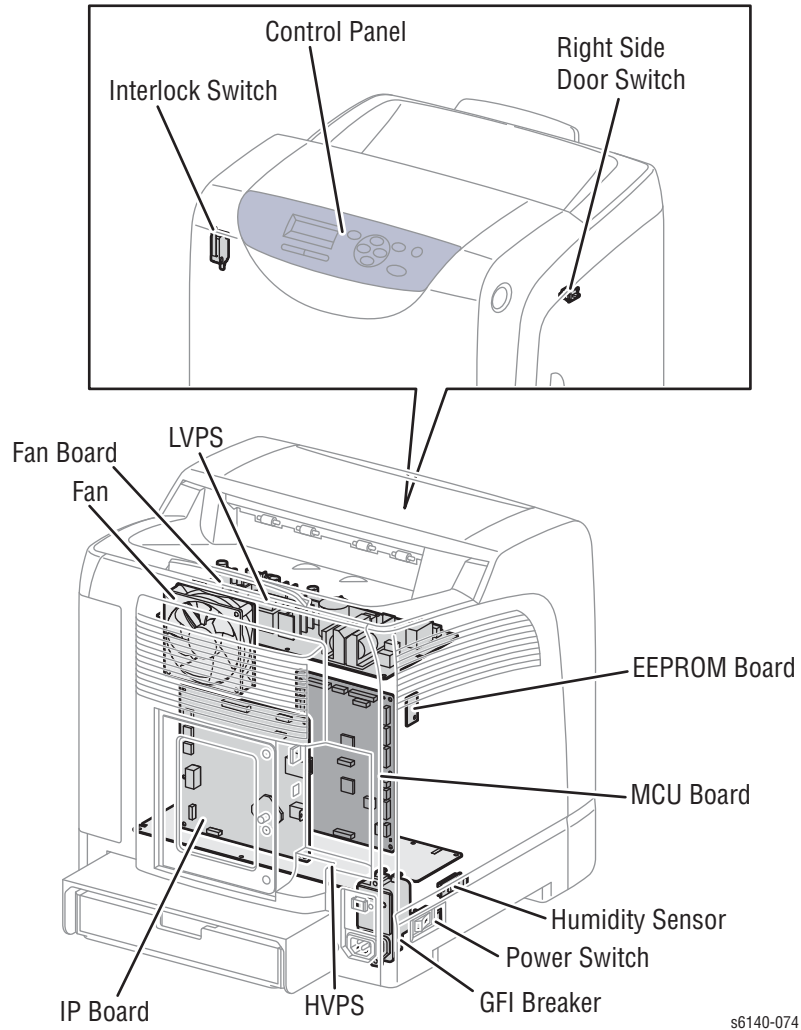
Fan

The Fan removes heat from the printer to prevent overheating.

Power Switch

The Power Switch turns the printer AC Power Supply On/Off.

Low-Voltage Power Supply

Two types of LVPS are available: 100/120V and 230V. The LVPS supplies AC power from the power source to the Fuser Heater; the LVPS also generates and supplies stable low-voltage DC power used for the logic circuits. The LVPS contains a control circuit for the Fuser heater, in addition to the power circuit.

LVPS Over-Current Protection Circuit

This circuit stops all outputs if the power supply voltage 3.3 VDC, 5 VDC, or 24 VDC is shorted. After short is repaired, cycle main power to reset the circuit.

LVPS Over-Voltage Protection Circuit

This circuit stops all outputs, if the power supply voltage 3.3 VDC, 5 VDC, or 24 VDC exceeds the specified voltage of 32 VDC or less for 24 VDC, 7 VDC or less for 5 VDC, or 4.4 VDC or less for 3.3 VDC. The circuit resets when main power is cycled after certain period of time.

Deep Sleep Mode (Power Saver)

The output of the following power supply are stopped according to the signals.

Signal	+3.3 VDC	+5 VDC	+24 VDC
Sleep	Off	Off	On
Deep Sleep	Off	Off	Off

Machine Control Unit Board

The Machine Control Unit (MCU) Board controls the printing process based on the communication with the printer Image Processor Board and information from the Sensors or Switches. Major functions include:

1. Communicates with the Image Processor Board.
2. Receives information from the Sensors or Switches.
3. Controls the Main and Sub-Drive Assemblies.
4. Distributes low-voltage DC power from the LVPS to each component.
5. Controls the Laser Unit.

Note

When replacing an MCU Board, be sure to transfer the contents of NVM from the old MCU Board to the new MCU Board.

High-Voltage Power Supply

The HVPS provides high-voltage power to the Transfer Belt and Imaging Unit for charging, development, and primary transfer to the BCR, BTR, and Developer.

Fan Board

The Fan Board controls operation of the Fan based on signals supplied by the MCU Board. Fan Board power (+24V) is supplied by the LVPS.

EEPROM Board

The EEPROM Board stores the printer unique information.

Image Processor Board

The Image Processor (IP) Board is connected to the MCU Board, which controls the printer, including diagnostic, interface, and image processing. The primary function of the IP Board is to receive and process host data. The host data is buffered, stored, and sent to the print engine in a rasterized format.

s6140mfp-075
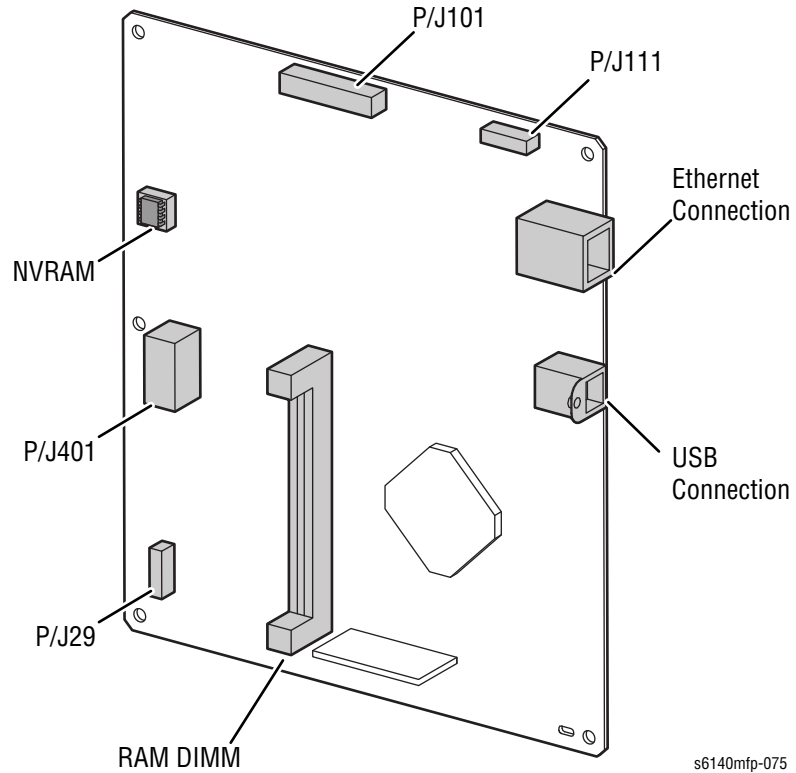
Note

When installing a new IP Board in the printer, transfer memory from the old board to the new board:

Data Flow

The electrical signal flow for the print data from the printer IP Board is shown in the following diagram.

Computer	Host (Electric Signal)

↓

I/P Board	Electronic Sub-system Control Board (Electric Signal)

↓

MCU Board	Machine Control Unit (Electric Signal)

↓

Laser Unit	Laser Unit (Laser Beams)

↓

Imaging Unit	Electrostatic Latent On Drum (Invisible Image)

↓

Imaging Unit	Toner Image On Drum

↓

Transfer Belt	Toner Image On Paper

↓

Fuser	Print Image On Paper
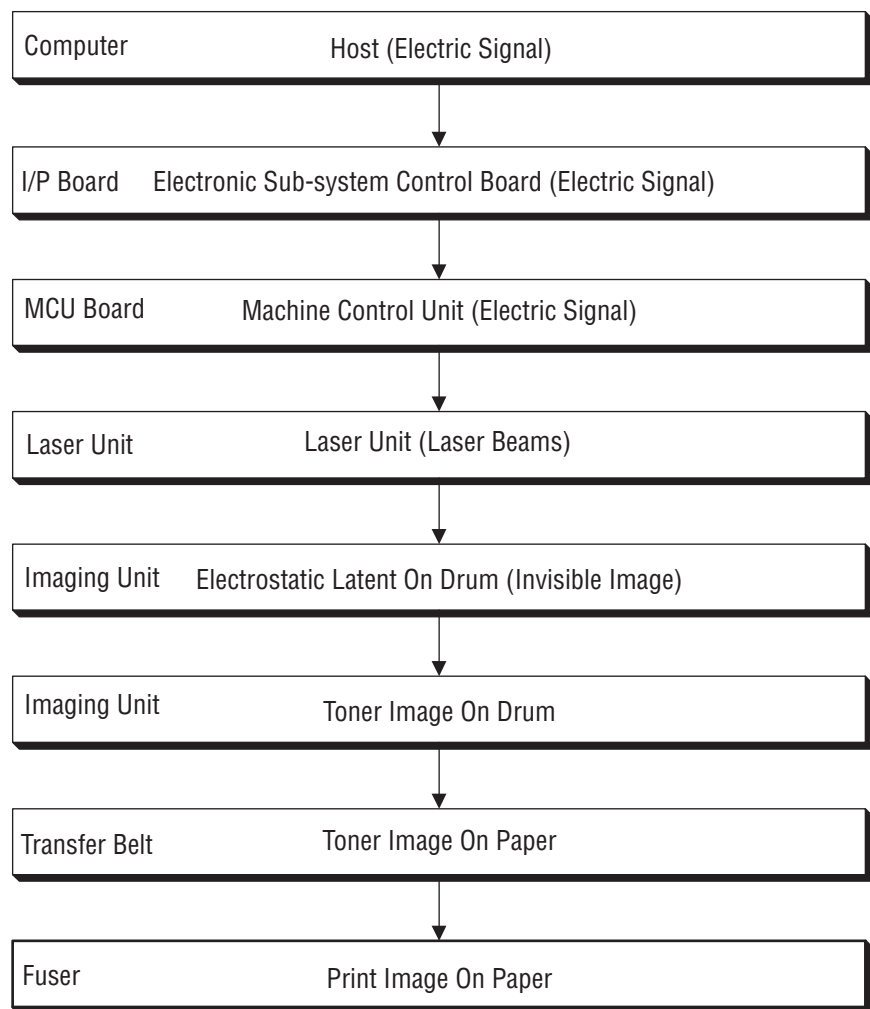
s6140-076

Humidity /Temperature Sensor

The Humidity/Temperature Sensor reads the humidity and temperature within the printer.

Interlock Switch

The Interlock Switch is a switch that interrupts the supply of +24 VDC power to the HVPS or Motor upon the opening of the Front Cover.

Right Side Door Switch

A switch that signals the controller when the Right Side Door is open.

GFI Breaker

Opens to shut off the AC power if it detects any voltage or current or leakage current that exceeds the rating of the AC power supply. Reset and test buttons are provided.

Printer Modes

The Phaser 6140 printer includes the following modes:

- Ready Mode

  The printer is ready for printing.

- Printing Mode

  Printing is in progress.

- Sleep Mode

  The printer has entered a power saving state.

- Deep Sleep Mode

  The printer has entered a power saving state.

Printer Control

Media Size Detection

The printer has no switches for detecting paper size; only the length of the paper is detected by the Registration Sensor as the media is fed. If the detected size does not match the size sent in the print data, an error is reported.

Laser Control

The Laser Unit has four laser diodes for Yellow, Magenta, Cyan, and Black respectively and the beam intensity is automatically adjusted for each color. Image data is sent to the Laser Unit as an electric signal where the laser diodes convert the image data to optical signals (data is expressed with blinking laser beams). Variations in light quantity of laser beams or variations in the optical system (such as lenses) or drum sensitivity may affect the electrostatic image. Therefore, the laser beams are monitored and controlled by the laser diodes.

Process Control

For stable printing, the parameters related to the image development must be corrected as necessary. The process control is performed in two methods after every 25 cumulative prints, upon termination of a print run, or during a continuous run.

- Potential Control
- Toner Density Control

The following controls supplement the above controls:

- High Area Coverage Mode
- Admix Mode

Potential Control

To attain stable image density, the drum charging voltage, the developing DC voltage, and the Laser Unit beam intensity are adjusted according to the developing capability of each color carrier. The adjusted drum charging voltage, the developing DC voltage, and the Laser Unit beam intensity are fed back to keep the printing image density constant.

The outline of controls is as follows:

1. The Humidity Sensor detects humidity and temperature.
2. The patches of respective colors (Yellow, Magenta, Cyan, and Black) for the potential control are generated and transferred on the transfer belt.
3. The ADC Sensor (Density Sensor) detects the density of the patch on the Belt.
4. The drum charging voltage, developing DC voltage, and the Laser Unit beam intensity are adjusted for each color according to the detected patch density.

Toner Density Control

Toner density must be kept constant to attain stable printing. The control system for this purpose is called toner density control.

1. PCDC (Pixel Count Dispense Control)

   The amount of toner to be consumed in the developing process is calculated by counting the video signals entered to the Laser Unit. The amount of the toner to be consumed is calculated by the toner dispensing time. The toner motor is driven for the calculated toner dispensing time when supplying the toner to the Developer.

2. ADC (Auto Density Control)

   The patches of respective colors (Yellow, Magenta, Cyan, and Black) for the toner density control are generated under a specified potential condition, and transferred on the Belt. The ADC Sensor measures this density, and the measured value is compared with reference value. If the toner density is low, the toner dispense quantity is increased at the next printing, or if the toner density is higher, the toner dispense quantity is reduced at the next printing. The toner dispense quantity is calculated by the toner dispense time. This calculation is made for each color.

High Area Coverage Mode

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

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

Admix Mode

The Admix Mode dispenses toner immediately to prevent the reduction of toner density, whenever the value of the toner density control patch measured by the ADC Sensor falls far below the standard value, by dispensing extra toner. If the toner density level cannot be recovered after this operation, it is determined that toner has run out.

ADC Sensor Control Function

The ADC Sensor is a reflection type sensor that radiates light from its LED onto the target and detects the reflected light at its photoreceptor and outputs electric signals responsive to the amount of the detected light.

To ensure an accurate patch density measurement, the surface of the ADC sensor is cleaned to remove soil due to toner, etc., and the light amount adjustment is made so that the reflected light amount satisfies the prescribed value, when creating the patch for potential control and toner density control.

Color Registration Control

The printer uses a tandem electro-photographic system with Organic Photo Conductor (OPC) drums and direct transfer by the Transfer Belt. The images are formed on the individual drums of the respective colors and then overlapped to form one image. The color registration control calculates how much the each color registration is shifted, and adjusts the Laser Unit write timing. The scan control adjusts all four colors in the process direction.

Color registration control is determined from a change in inside temperature and the print count at the time control is applied. This control is outlined as follows:

1. With no toner on the Transfer Belt, the output value of the ADC Sensor is measured to determine the threshold value.

2. The patches for color registration control are generated on the belt. These patches are composed of 10 mm lines of K, C, K, M, K, and Y in this order by the amount of four dispense counts, led by a BlackBlack trigger.

s6140-077
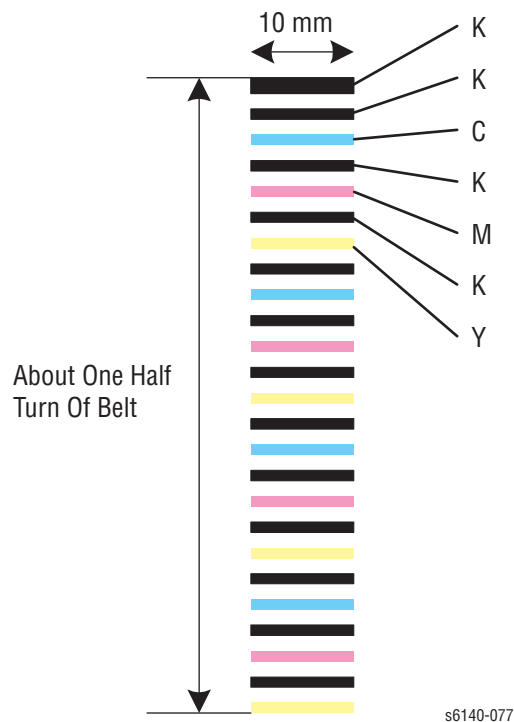
3. The ADC Sensor reads the patch density.

4. The amount of registration shift is calculated from the threshold value determined in step 1 and the patch density measured in step 3.

5. The Laser Unit write timing is changed according to the amount of registration shift.

Fuser Control

Fuser Temperature Control

The target temperature varies depending on the temperature detected by the Humidity Sensor. Other factors that contribute to the taget fusing temperature include. warm-up, printing, and process control.

After the target temperature is set, the heat roller surface temperature is controlled by turning the heater lamp On/Off. Temperature of individual areas of the heat roller (center/edge) is detected by the fuser non-contact sensor (NCS) in the center and the temperature sensor at the edges.

Cool Down

As printing continues, the temperature distribution across the heat roller surface becomes uneven. Cool down suspends feeling until heat roller temperature distribution returns to normal.

Warm-Up

The non-contact sensor at the center of the heat roller loses accuracy when the sensor temperature is below -5° C. Therefore, the sensor is warmed up when the temperature is below -5° C.

Drive

Main Drive Assembly

The Main Drive transmits power as shown in the following diagram.

s6140-078

■■ ■ : Indicates The Engagement Of Gears

Imaging Unit

Transfer Belt

Main Drive

Paper Feed Drive

Imaging Unit
Gear 2
[Drum (K)]
[Drum (C)]

Imaging Unit
Gear 1

Gear P2

Imaging Unit
Gear 2
[Drum (M)]
[Drum (Y)]

Gear P4

Gear T4

Drive Gear
[Belt]

Gear P3

Gear P5

Rubber Registration Gear

Metal Registration Gear
[Metal Registration Roller]

Registration Feeder Chute

Feed Gear
[Feed Roller]

Registration Clutch
[Registration Roller]

Front

Feed Solenoid

s6140-079

Sub Drive Assembly

The Sub Drive drives the Fuser and Imaging Unit CMY Developers dependent on the print mode (Color or Black and White). Sub Drive power is transmitted to the Fuser as shown:

Fuser Drive

Sub Drive

Heat Roller Idler Gear

Heat Roller Gear

Exit Idler Gear

[Heat Roller]

Exit Gear

[Exit Roller]

Fuser

s6140-088

◼◻◼◻◼◻◻ : Indicates The Engagement Of Gears

Exit Gear
[Exit Roller]

Exit Idler Gear

Fuser

Heat Roller Gear
[Heat Roller]

Heat Roller Idler Gear

Sub Drive

Front
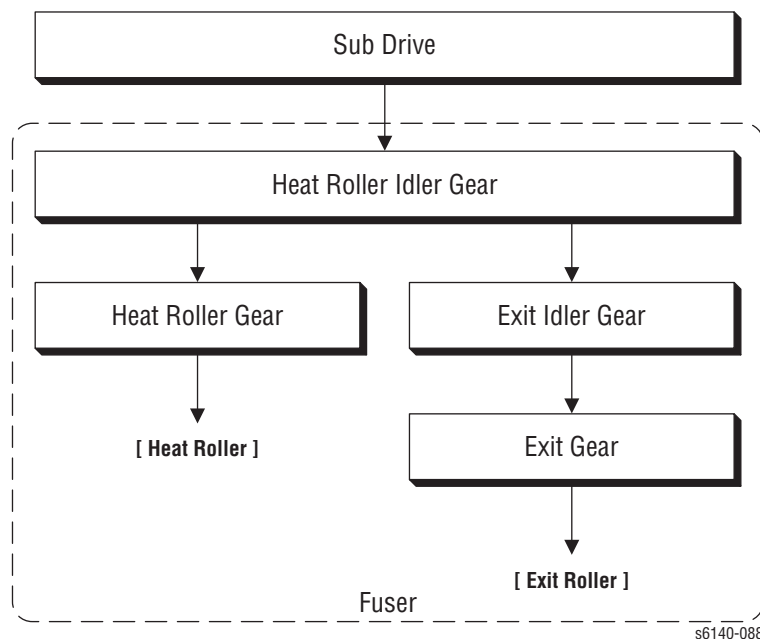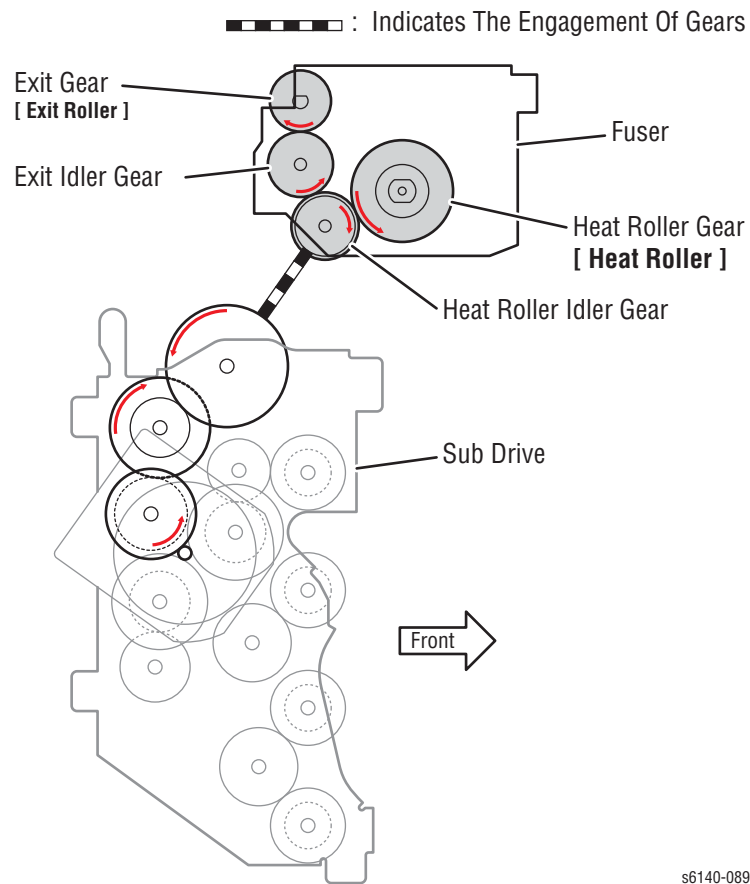
s6140-089

Feed Drive Assembly

The Feed Drive Assy transmits the driving force from the Sub and Main Drive Assemblies to the CMYK developers. The drive path is changed by the Color Mode Switching Solenoid, located on the Feed Drive Assy to restrict drive to only the Black Developer in Black and White print mode. In Black and White mode, drive to the CMY developers from the Sub Drive Assy is disengaged. The Color Mode Switching Sensor detects whether the drive path is set for B/W or full color.

Black and White Mode

s6140-080

■━━━━□ : Indicates The Engagement Of Gears.

Sub Drive

Developer (K)

Magnet Gear (K)
[Magnet Roll (K)]

Gear DK

Gear D1

Gear D5

Sub Motor

K

Gear D1

C

Gear D2

M

Gear D3 In
Gear D3 Out

Y

Gear D2

Imaging Unit

Gear D3 In

Gear D4

Gear D3 Out

Cam C   Flange D3

Gear P2

Main Drive

Flange D3

Cam C

Feed Drive

FRONT

Gear P3

Color Mode
Switching Solenoid

Gear C

Gear P4

Gear P4-2

s6140-081

Color Mode

s6140-082

s6140-083

Development and Toner Collection

```
┌─────────────────┐              ┌─────────────────┐
│   Main Drive    │              │    Sub Drive    │
└─────────────────┘              └─────────────────┘
         │                                │
┌─────────────────┐              ┌─────────────────────┐
│ Imaging Unit Gear 1 │          │ Magnet Gear (Y, M, C, K) │
└─────────────────┘              └─────────────────────┘
         │
┌─────────────────┐
│ Imaging Unit Gear 2 │
└─────────────────┘
```

[Drum]   **[Magnet Roller]**

Cleaning Auger Gear   Magnet Idler Gear

Side Auger Idler Gear   Paddle Idler Gear

Side Auger Gear   Paddle Gear

[Auger] [Side Cleaning Auger]   **[Developer Paddle]** Auger Gear

[Auger Front]

Auger Gear

[Auger Rear]

Xerographics Housing (Y, M, C, K)   Developer Housing (Y, M, C, K)

Imaging Unit

s6140-084

◼◼◼◼◼ : Indicates The Engagement Of Gears

Xerographics Housing (Y, M, C, K)

Cleaning Auger Gear
[Auger]

Gear Idler Paddle

Side Auger Gear
[Side Cleaning Auger]

Developer
Housing
(Y, M, C, K)

Side Auger Idler Gear

[Drum]

Magnet Idler Gear

Auger Gear
[Rear Auger]

Paddle Gear
[Developer Paddle]

Auger Gear
[Front Auger]

Magnet Gear
[Magnet Roller]

Imaging Unit
Gear 2
[Drum]

Imaging Unit
Gear 1

Imaging Unit
Gear 2
[Drum]

Sub Drive

Front

Main Drive

Imaging Unit

s6140-085

Dispense Assembly

Rotation of the toner motors drives the agitator and auger in the Toner Cartridge.

s6140-086

▰▰▱▰ : Indicates The Engagement Of Gears

s6140-087

Duplex Unit

Duplex Unit

Exit Motor	Duplex Motor

Idler Gear 24 → Gear D1

Idler Gear Clutch → SN Idler Gear | SN Idler Gear

Duplex Clutch → Idler Gear 18 | Duplex Roller Gear

Gear E1 → SN Idler Gear → [Upper Duplex Roller]

Idler Gear 16 → SN Idler Gear

Duplex Output Gear → SN Idler Gear

Duplex Roller Gear

[Lower Duplex Roller]

Duplex Idler Gear

Delay Idler Gear

Delay Idler Gear

Out Clutch Gear

Exit Gear | Cont Clutch Gear

[Exit Roller]

Fuser

s6140-090

Exit Roller

Fuser

Cont Clutch Gear

Delay Idler Gear

Duplex Idler Gear

Idler Gear 16

Exit Gear

Gear E1

Out Clutch Gear

Duplex Clutch

Delay Idler Gear

Clutch Idler Gear

Duplex Output Gear

[Duplex Roller Assembly]

Duplex Roller Gear

SN Idler Gear

Idler Gear 24

Idler Gear 18

Exit Motor

SN Idler Gear

Duplex Motor

Front

Gear D1

Duplex Unit

[Duplex Roller Assembly]

Duplex Roller Gear

s6140-091

Optional Feeder

```
┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
          ┌─────────────────────────┐
          │        Feed Motor        │
          └─────────────────────────┘
                       │
                       ▼
          ┌─────────────────────────┐
          │     Idle Gear 86-20z     │
          └─────────────────────────┘
                       │
                       ▼
          ┌─────────────────────────┐
          │      Idle Gear 40z       │
          └─────────────────────────┘
                       │
                       ▼
          ┌─────────────────────────┐
          │     Idle Gear 28-20z     │
          └─────────────────────────┘
                │               │
                ▼               ▼
       ┌──────────────┐  ┌─────────────────┐     ┌──────────────────┐
       │ Idle Gear 36z│  │Feed Gear Assembly│◄───│  Feed Solenoid   │
       └──────────────┘  └─────────────────┘     └──────────────────┘
              │                   │
              ▼                   ▼
       ┌──────────────┐      [ Feed Roller ]
       │ Idle Gear 25z│
       └──────────────┘
              │
              ▼
       ┌──────────────┐
       │ Idle Gear 25z│
       └──────────────┘
              │
              ▼
       ┌──────────────┐
       │Idle Gear 22-33z│
       └──────────────┘
              │
              ▼
       ┌─────────────────────────┐
       │       Turn Clutch        │
       └─────────────────────────┘
           │                │
           ▼                ▼
  [ Rubber Turn Roller ]  ┌──────────────────────────┐
                          │ Rubber Registration Gear  │
                          └──────────────────────────┘
                                      │
                                      ▼
                          ┌──────────────────────────┐
                          │ Metal Registration Gear   │
                          └──────────────────────────┘
                                      │
                                      ▼
                              [ Metal Turn Roller ]
└ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
                                              s6140-092
```

: Indicates The Engagement Of Gears.

Metal Registration Gear

Rubber Registration Gear

Feed Roller

Feed Gear

Feed Solenoid

Idle Gear 28-20z

Idle Gear 86-20z

Front

Turn Clutch

Idle Gear 22-33z

Idle Gear 25z

Idle Gear 40z

Idle Gear 36z   Idle Gear 25z

Feed Motor

s6140-093

Error Messages and Codes

In this chapter...

Chapter

3

Introduction

This chapter describes error messages and numeric codes displayed on the Control Panel or listed on the Error History page. These error indications serve as the entry point into the troubleshooting process.

Troubleshooting of problems not directly indicated by or associated with an error message or code is covered in Chapter 4, General Troubleshooting. Print quality problems are covered in Chapter 5, Print Quality Troubleshooting.

The printer tracks and reports errors in a number of ways. The two types of error reporting discussed in this section include:

- Error messages and codes displayed on the Control Panel

- Engine (fatal) and Jam Error logs displayed on the Control Panel or listed on the Error History Report

Accessing Error History Report

1. From the Control Panel, press **Menu**.
2. Information Pages is displayed. Press **OK**.
3. Press the **Up** or **Down** arrow button to find Error History. Press **OK**.
4. The Error History Report is printed. When printing is finished, the menu is displayed.

Error History Report

The Error History Report provides a list of error messages and codes relating to jam and system (fatal) errors. The printer can retain up to 42 jam errors and 42 system errors.

The Error History page contains two types of history information.

System Fail History

System Fail History contains: Item Number, Total Print Count, and Chain-Link code.

Paper Jam History

Paper Jam History contains: Item No., Total Print Count, and Paper Jam Type information.

Phaser 6140DN
Color Laser Printer

xerox

Error History Report

Xerox

System Fail History

No.	Total Print Count	Chain-Link
1	35	016-602
2	23	077-215
3	16	077-215
4	4	072-215
5	0	016-602

Paper Jam History

Page: 1(Last Page)

XEROX CORPORATION and Fuji Xerox Co., Ltd. 2009

s6140-326

Servicing Instructions

The service checklist below is an overview of the path a service technician should take when servicing the printer and printer optional equipment.

Step 1: Identify the Problem

1. Verify the reported problem does exist.
2. Check for any error codes and write them down.
3. Print normal customer prints and service test prints.
4. Make note of any print-quality problems in the test prints.
5. Make note of any mechanical or electrical abnormalities present.
6. Make note of any unusual noise or smell coming from the printer.
7. View the System Error and Paper Jam Error on the Error History Report.
8. Verify the AC input power supply is within proper specifications by measuring the voltage at the electric outlet while the printer is running.

Step 2: Inspect and Clean the Printer

1. Turn the printer power Off.
2. Disconnect the AC power cord from the wall outlet.
3. Verify the power cord is free from damage or short circuit and is connected properly.
4. Remove the Imaging Unit and protect it from light.
5. Remove the Transfer Belt.
6. Inspect the printer interior and remove any foreign matter such as paper clips, staples, pieces of paper, dust, or loose toner.
7. Do not use solvents or chemical cleaners to clean the printer interior.
8. Do not use any type of oil or lubricant on printer parts.
9. Use only an approved toner vacuum.
10. Clean all rubber rollers with a lint-free cloth, dampened slightly with cold water and mild detergent.
11. Inspect the interior of the printer for damaged wires, loose connections, toner leakage, and damaged or obviously worn parts.
12. If the Imaging Unit appears damaged, replace with a new one.

Step 3: Find the Cause of the Problem

1. Use the Error Messages and Codes and troubleshooting procedures to find the cause of the problem.
2. Use Service Diagnostics to check the printer and optional components.
3. Use the Wiring Diagrams and Plug/Jack Locator to locate test points.
4. Take voltage readings as instructed in the appropriate troubleshooting procedure.

Step 4: Correct the Problem

1. Use the Parts List to locate a part number.
2. Use the FRU Disassembly procedures to replace the part.

Step 5: Final Checkout

Test the printer to be sure you have corrected the initial problem and there are no additional problems present.

Messages, Codes, and Procedures

The error messages and codes generated by the printer's operating system are the lead-in to the troubleshooting procedures that follow in subsequent pages. This section correlates the output of the printer's diagnostic aids and provides the troubleshooting procedures to locate and correct the reported errors.

Error Messages Abbreviations

Due to limited display space, some error messages include abbreviations. The most common abbreviations used throughout this chapter are listed here.

Term	Definition
ADC	Automatic Density Control
ASIC	Application-Specific Integrated Circuit
BLK	Black
COMM	Communication
CRT	Cartridge
CRU	Customer Replaceable Unit
ER/ERR	Error
ENV	Environment
FUNC	Function
MACaddress	Media Access Control Address
MCU	Machine Control Unit
NVM	Non-Volatile Memory. Used instead of NVRAM.
NVRAM	Non-Volatile Random Access Memory
PCL	Printer Control Language
PDL	Page Description Language
RAM	Random Access Memory
REG	Registration
ROM	Read Only Memory
TRAN	Transfer Belt

Error Message and Code Summary

The Error Message Summary table lists possible errors, along with the corresponding code, and page reference for the corrective procedure.

- The Error column shows the message as it appears on the display when the error occurs during normal operation.

- The Description column lists the fault trigger responsible for the error.

- The Go to column links to the troubleshooting procedure related to the error.

Use this table to identify the proper procedure to correct the reported error.

Error Message Summary

Error	Description	Go to
Insert Fuser 010-317	No Fuser detected.	3-12
Replace Fuser 010-351	Fuser is near or has reached end of life.	3-13
Fuser Error 010-397	Fuser failure. **NOTE** Pressing (<↓> + <↑> + <OK>) shows error detail. Line1　010-397, Line2　Code:XX ■ 01: NC circuit fail ■ 02: NCD snap out ■ 03: NCD fail ■ 04: NCC snap out ■ 05: NC comp fail ■ 06: NC-STS temp over ■ 07: STS-NC temp over ■ 08: NC comp fail ■ 09: NC overheat ■ 0A: STS snap out ■ 0B: STS overheat ■ 0C: Low temp1 ■ 0D: Low temp2 ■ 0E: Timeout 1 ■ 0F: Timeout 2 ■ 10: Timeout 3 ■ 11: Relay cutoff 1 ■ 12: Relay cutoff 2 ■ 13: Relay cutoff 3	3-14
Erase Flash Error 016-500	An error occurred during Flash memory erase.	3-16
Write Flash Error 016-501	An error occurred during Flash memory write.	3-16
Verify Flash Error 016-502	An error occurred during Flash memory verify.	3-16
Out of Memory 016-718	The print job size exceeded memory.	3-17
PDL Error 016-720	PDL error.	3-18
Format Error 016-737	The downloaded file is corrupt, or a communication error occurred.	3-19

Error Message Summary

Error	Description	Go to
Invalid ID 016-742	The downloaded file does not match this model.	3-17
Range CHK Error 016-743	A memory write was attempted to a read-only area.	3-17
Check Sum Error 016-744	The downloaded file is corrupt, or a communication error occurred.	3-17
Header Error 016-745	The downloaded file is corrupt, or a communication error occurred.	3-17
Invalid User 016-757	Invalid user account error. With Auditron enabled.	3-20
Disabled Func 016-758	Disabled function selected. With Auditron enabled.	3-21
Limit Exceeded 016-759	When Auditron is enabled.	3-22
Invalid Job 016-799	Invalid print job settings.	3-23
Disk Full 016-982	RAM disk memory is full.	3-24
MCU Firmware Err 024-340	MCU firmware error occurred. **NOTE** Pressing three keys (<↓> + <↑> + <OK>) shows error detail. Line1 024-340 Line2 Code:XX ■ 01: Unexpected firmware trap ■ 02: Unexpected firmware trap ■ 03: I2C retry error ■ 04: Unexpected firmware trap ■ 05: Unexpected firmware trap ■ 07: Master fail 1 ■ 08: Master fail 2 ■ 09: NVM illegal data ■ 0A: Over dispense ■ 0B ~14: Unexpected firmware trap	3-25
Download Mode 024-360	MCU firmware download failure.	3-26
PAGEC Time Error 024-362	The PAGEC timeout error occurred.	3-27
MCU Comm. Error 024-371	Communication failure between MCU and ESS.	3-28
MCU NVRAM Error 041-340	The error is detected at MCU NVRAM check. **NOTE** Pressing (<↓> + <↑> + <OK>) shows address and data. Line1 041-340, Line2 Code: XXXX ■ 1000-17FF: MCU Board NVM ■ 3000-30FF: Imaging Unit CRUM ■ 3100-31FF: Y Toner CRUM ■ 3200-32FF: M Toner CRUM ■ 3300-33FF: C Toner CRUM ■ 3400-34FF: K Toner CRUM ■ 3800-38FF: EEPROM Board	3-29
Fan Motor Error 042-313	Fan failure detected.	3-31

Error Message Summary

Error	Description	Go to
Motor Error 042-325	Main Drive Assembly failure detected.	3-32
Motor Error 042-326	Sub Drive Assembly failure detected.	3-33
K Mode Sol Error 042-372	Feed Drive Assembly Black-only mode solenoid error.	3-35
K Mode Sol Error 042-373	Feed Drive Assembly color mode solenoid drive gear error (rotates two times).	3-35
Over Heat 042-700	Internal temperature too high. This error appears only at the time of Duplexer connection.	3-36
Laser Error 061-370	Laser Unit error. **NOTE** Pressing (<↓> + <↑> + <OK>) shows error detail. Line1 061-370, Line2 Code: 01~0F	3-37
250 Feeder Error 072-215	Option Feeder communication error.	3-38
Motor Error 072-216	Option Feeder Motor failure detected.	3-39
Duplexer Error 077-215	Duplex Unit communication error.	3-41
IU CRUM Error 091-916	Imaging Unit CRUM ID error.	3-43
CTD Sensor Error 092-310	ADC sensor error detected. **NOTE** Pressing (<↓> + <↑> + <OK>) shows address and data. Line1 092-310, Line2 Code: XX ■ 01 or 10: Y Toner Patch Error ■ 02 or 20: M Toner Patch Error ■ 03 or 30: Y and M Toner Patch Error ■ 04 or 40: C Toner Patch Error ■ 05 or 50: Y and C Toner Patch Error ■ 06 or 60: M and C Toner Patch Error ■ 07 or 70: Y, M and C Toner Patch Error ■ 08 or 80: K Toner Patch Error ■ 09 or 90: Y and K toner Patch Error ■ 0A or A0: M and K Toner Patch Error ■ 0B or B0: Y, M and K Toner Patch Error ■ 0C or C0: C and K Toner Patch Error ■ 0D or D0: Y, C and K Toner Patch Error ■ 0E or E0: M, C and K Toner Patch Error ■ 0F or F0: Y, M, C and K Toner Patch Error	3-44
ENV Sensor Error 092-661	Humidity sensor error detected. **NOTE** Pressing (<↓> + <↑> + <OK>) shows address and data. Line1 092-661, Line2 Code: XX ■ 01: Humid Sensor Error ■ 02: Temp. Sensor Error	3-46
Trans Life Over 094-351	Transfer Belt has reached end of life.	3-47
MAC address Error 116-314	Checksum error in Network MAC address detected.	3-48
RAM Error 116-315	IP Board RAM R/W check failed during initialization.	3-48

Error Message Summary

Error	Description	Go to
RAM Error 116-316	Optional memory DIMM slot RAM R/W check error.	3-49
Controller Error 116-317	Checksum error in main program ROM is detected.	3-48
RAM Error 116-320	Optional memory DIMM slot RAM power on error.	3-49
NVRAM Error 116-323	NVRAM 1 R/W check failed during initialization.	3-48
Controller Error 116-324	CPU illegal exception detected.	3-48
NVRAM Error 116-326	NVRAM 2 R/W check failed during initialization.	3-48
Controller Error 116-327	CPU instruction cache error detected.	3-48
Controller Error 116-328	CPU data cache error detected.	3-48
ASIC Error 116-343	ASIC error detected.	3-48
Network Error 116-350	Network error between CPU and ESS firmware.	3-48
Network Error 116-351	Network Ethernet parity RAM R/W error.	3-48
Network Error 116-352	Internal Loopback check error.	3-48
Network Error 116-355	Fatal on board network error.	3-48
NVRAM Error 116-390	NVRAM consistency check error.	3-48
Collate Full 116-721	Collate Full error occurred.	3-50
Media Errors		
Load Tray 1 Paper Size Paper Type	Paper size mismatch in Tray 1.	3-51
Load Tray 2 Paper Size Paper Type	Paper size mismatch in Tray 2.	3-51
Load Manual Feed Paper Size Paper Type	Paper size mismatch in manual feed slot.	3-51
Load Tray 1 Paper Size Paper Type	No paper in Tray 1.	3-52
Load Tray 2 Paper Size Paper Type	No paper in Tray 2.	3-53

Error Message Summary

Error	Description	Go to
Load Manual Feed Paper Size Paper Type	No paper in manual feed slot.	3-55
Insert Output to Tray 1	Media was not loaded in Tray 1 for manual duplex.	3-56
Insert Output to Tray 2	Media was not loaded in Tray 2 for manual duplex.	3-57
Jam Errors		
Jam at Tray 1	The Registration Sensor is not turned On within the specified time after feeding from Tray 1.	3-59
Jam at Tray 2	The Registration Sensor is not turned On within the specified time after feeding from Tray 2. Use this procedure when the Registration Sensor actuator is not blocked	3-62
Jam at Tray 2	Media remains at the Registration Sensor. The printer detects a jam at tray 2 after a jam has been cleared. Use this procedure when the Registration Sensor actuator is blocked.	3-59
Jam at Front Cover	Manual feed insertion jam. No Paper Sensor does not detect media inserted from manual feed slot.	3-69
Chk Manual Feed	Manual feed insertion jam or media removed from slot.	3-71
Remove Paper from Manual Feed	Feeding from Tray failed due to media remaining in the manual feed slot.	3-72
Reseat paper of Manual Feed	No Paper Sensor does not detect media in the manual feed slot.	3-55
Jam at Front Cover	Media reached the Registration Sensor earlier than expected or did not pass through within the specified time.	3-75
Jam at Exit	Media does not reach the Exit Sensor in time. Use this procedure when the Exit Sensor actuator is not blocked.	3-59
Jam at Front Cover	Media jam before reaching the Fuser.	3-77
Jam at Duplexer	The Registration Sensor is not turned On within the specified time or media remains during duplex job.	3-79
Jam at Exit	Media remains at the Exit Sensor. Use this procedure when media blocks the Exit Sensor actuator.	3-81
Jam at Reg. Roll	Media remains at the Registration Sensor.	3-83
Cover Errors		
Front Cover Open	Front Cover is open.	3-86
Side Door Open	Right Side Door is open.	3-87
Consumable Errors		
Check Imaging Unit	The Imaging Unit sealing tape remains. (Toner patch error after Imaging Unit installation.)	3-88
Replace Imaging Unit	Imaging Unit has reached end of life.	3-88

Error Message Summary

Error	Description	Go to
Insert Imaging Unit	Imaging Unit not detected.	3-89
CMYK Low	Indicated Toner Cartridge is near end of life.	3-90
Low Density Yellow	ADC Sensor detects a low density of Yellow toner.	3-90
Low Density Magenta	ADC Sensor detects a low density of Magenta toner.	3-92
Low Density Cyan	ADC Sensor detects a low density of Cyan toner.	3-93
Low Density Black	ADC Sensor detects a low density of Black toner.	3-95
Replace CMYK	Indicated Toner Cartridge has reached end of life.	3-90
Waste Full CMYK	Waste Toner count for the indicated color is full.	3-96
Invalid CMYK	CRUM ID error for the indicated Toner Cartridge.	3-97
Insert CMYK	Indicated Toner Cartridge not detected.	3-99
Non-Xerox Toner	Printer is in the Customer Toner Mode.	3-100
Check Unit CTD Sensor	ADC Sensor contamination detected.	3-101
Transfer Life	The Transfer Belt is near end of life.	3-47
Fuser Life	Fuser is near end of life.	3-13
Other		
Protection Error	Download was attempted under a prohibited condition.	3-16
Over Heat	Entering half speed mode, due to high temperature.	3-103

Fuser Errors

Insert Fuser 010-317

The printer does not detect the Fuser.

Warning

Allow the Fuser to cool before servicing the printer.

Applicable Error

- 010-317: Insert Fuser

Initial Actions

- Reseat the Fuser.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Fuser, PL6.1.1 ■ Fuser Harness, PL6.1.2 ■ MCU Board, PL8.2.13	■ "Map 1 - Print Engine" on page 10-7 ■ "Map 4 - MCU Board" on page 10-10 ■ "Fuser" on page 10-24

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Reseat the Fuser and cycle system power. Does the error persist?	Go to step 2.	Complete
2	Check the connections between the MCU Board P/J17 and Fuser P/J171. Are the connectors secure?	Go to step 3.	Secure the connectors.
3	Check the Fuser harness continuity. 1. Remove the Fuser. 2. Disconnect J17 from the MCU Board. Is the harness damaged? **NOTE** P171 is attached to the frame.	Repair the harness.	Go to step 4.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Check Fuser temperature sensor resistance. 1. Remove the Fuser. 2. Check resistance across these Fuser pins: ■ J171-5pin <=> J171-4pin ■ J171-6pin <=> J171-8pin ■ J171-6pin <=> J171-7pin Is there measurable resistance? (Resistance is 7 K Ohm at 180 degrees C).	Replace the MCU Board (page 8-103).	Replace the Fuser (page 8-10).

Replace Fuser 010-351

The count value indicates the Fuser is near or has reached end of life.

Warning

Allow the Fuser to cool before servicing the printer.

Applicable Error

- 010-351: Replace Fuser
- Fuser Life

Initial Actions

- Check the Fuser life count. Replace the Fuser if counter is at or near end of life.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Fuser, PL6.1.1 ■ MCU Board, PL8.2.13	■ "Map 1 - Print Engine" on page 10-7 ■ "Map 4 - MCU Board" on page 10-10 ■ "Fuser" on page 10-24

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Reseat the Fuser and cycle system power. Does the error persist?	Go to step 2.	Complete
2	Check the connections between the MCU Board P/J17 and Fuser P/J171. Are the connectors secure?	Go to step 3.	Secure the connectors.
3	Replace the Fuser (page 8-10). Does the error persist?	Replace the MCU Board (page 8-103).	Complete

Note

Reset the Fuser life counter after installation of a new Fuser.

Fuser Error 010-397

The Fuser has failed.

Warning

Allow the Fuser to cool before servicing the printer.

Applicable Error

- 010-397: Fuser Error

Initial Actions

- Reseat the Fuser.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Fuser, PL6.1.1 ■ Fuser Harness, PL6.1.2 ■ LVPS, PL8.2.1 ■ MCU Board, PL8.2.13 ■ LVPS2 Harness, PL9.1.3	■ "Map 1 - Print Engine" on page 10-7 ■ "Map 4 - MCU Board" on page 10-10 ■ "Fuser" on page 10-24

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Reseat the Fuser and cycle system power. Does the error persist?	Go to step 2.	Complete
2	Check these connections ■ MCU Board P/J17 and Fuser P/J171. ■ Fuser P/J171 and LVPS P/J47. ■ LVPS P/J501 and P/J502 and MCU Board P/J14 and P/J15 Are the connectors secure?	Go to step 3.	Secure the connectors.
3	Check the Fuser harness continuity. 1. Remove the Fuser. 2. Disconnect J17 from the MCU Board and J47 from the LVPS. Is the harness damaged? **NOTE** P171 is attached to the frame.	Repair the harness.	Go to step 4.
4	Check the LVPS harness continuity. Disconnect J14 from the MCU Board and J501 from the LVPS. Is the harness damaged?	Repair the harness.	Go to step 5.
5	Replace the Fuser (page 8-10). Does the error persist?	Replace the MCU Board (page 8-103).	Complete

Note

Reset the Fuser life counter after installation of a new Fuser.

System Errors

Firmware Errors

The firmware download to the printer failed.

Applicable Errors

- 016-500: Erase Flash Error
- 016-501: Write Flash Error
- 016-502: Verify Flash Error
- 016-741: Protection Error
- 016-742: Invalid ID Error
- 016-743: Range Check Error
- 016-744: Check Sum Error
- 016-745: Header Error

Initial Actions

- Check system firmware version.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
▪ Image Processor Board, PL8.1.7	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the system firmware version. Is the downloaded system firmware the correct version?	Go to step 2.	Download the correct firmware file.
2	Check the network or USB connection, then cycle system power. Does the error persist?	Go to step 3.	Complete.
3	Reseat connections on the Image Processor Board, then cycle system power. Does the error persist?	Replace the Image Processor Board (page 8-87).	Complete.

Out of Memory 016-718

The printer has detected a memory access error.

Applicable Error

- 016-718: Out of Memory Error

Initial Actions

- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Image Processor Board, PL8.1.7	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the memory. Print the Configuration page to determine the amount of memory installed. Is the print job too large?	Divide the print job to fit installed memory.	Go to step 2.
2	Reseat the Memory Card if installed. Does the error persist?	Replace the Memory Card, then go to step 3.	Complete.
3	Reseat all connections on the Image Processor Board. Does the error persist?	Replace the Image Processor Board (page 8-87).	Complete.

PDL Error 016-720

The printer has detected a print job error.

Applicable Error

- 016-720: PDL Error

Initial Actions

- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Image Processor Board, PL8.1.7	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Print a small file (test print). Does the error persist?	Go to step 2.	Divide the print job to fit installed memory.
2	Reseat all connections on the Image Processor Board. Does the error persist?	Replace the Image Processor Board (page 8-87).	Complete.

Format Error 016-737

The system firmware file is corrupt or communications to the printer failed.

Applicable Errors

- 016-737: Format Error

Initial Actions

- Check system firmware version.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Image Processor Board, PL8.1.7	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the system firmware version. Is the downloaded system firmware the correct version?	Go to step 2.	Download the correct firmware file.
2	Check the network or USB connection, then cycle system power. Does the error persist?	Go to step 3.	Complete.
3	Reseat connections on the Image Processor Board, then cycle system power. Does the error persist?	Replace the Image Processor Board (page 8-87).	Complete.

Invalid User 016-757

The system does not recognize the user.

Applicable Error

- 016-757: Invalid User Error

Initial Actions

- Check account setup.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check user account setup. Does the error persist?	Configure the user account. Go to step 2.	Complete.
2	Check network connections. Is the system connected to the network?	Verify the printer's network settings are correct for the customer's network.	Connect the network.

Disabled Func 016-758

A disabled operation was attempted.

Applicable Error

- 016-758: Disabled Func Error

Initial Actions

- Check the print driver version.
- Check availability of function in the print driver.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Image Processor Board, PL8.1.7	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check network connections. Is the system connected to the network?	Go to step 2.	Connect the network.
2	Reseat the Image Processor Board connections. Cycle system power. Does the error persist?	Replace the Image Processor Board (page 8-87).	Complete.

Limit Exceeded 016-759

User count exceeds the **User Registration** count.

Applicable Error

- 016-759: Limit Exceeded Error

Initial Actions

- Check the print driver version.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
▪ Image Processor Board, PL8.1.7	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the **User Registration** value under the **Print Auditron** setting. Maximum value is 50. Does the user count exceed the setting?	Reset the count to 50 or less.	Go to step 2.
2	Reseat the Image Processor Board connections. Cycle system power. Does the error persist?	Replace the Image Processor Board (page 8-87).	Complete.

Invalid Job 016-799

Print job settings do not match media size/type settings for the source.

Applicable Error

- 016-799: Invalid Job Error

Initial Actions

- Check the media size settings for the print job and source.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
▪ Image Processor Board, PL8.1.7	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the paper size. Does the loaded media match the print job specifications?	Go to step 2.	Load media matching job specifications.
2	Check the media size setup. Does the loaded media size match the printer setup value?	Go to step 3.	Set the tray to match the loaded media.
3	Check the print job. Print a test print. Does the error persist?	Replace the Image Processor Board (page 8-87).	Check print application settings.

Disk Full 016-982

RAM Disk memory is full and cannot receive additional data. Print job requires additional memory. The following troubleshooting procedure applies to this error.

Note

Optional memory is required to configure the RAM Disk function.

Applicable Error

- 016-982: RAM Disk Full Error

Initial Actions

- Reseat optional memory.
- Install additional optional memory
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Image Processor Board, PL8.1.7 ■ Memory Card, PL8.1.15	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Print a small size file (test print). Does the error persist?	Go to step 2.	Add memory, resize the RAM Disk, or partition the print job.
2	Print the Configuration Page: **Menu > Information Pages > Configuration**. Does the memory amount listed match the installed memory?	Replace the Image Processor Board (page 8-87).	Reseat the Memory Card and reprint the Configuration page to check memory.
3	Replace the memory card Does the error still occur?	Replace the Image Processor Board (page 8-87).	Complete.

MCU Firmware 024-340

MCU firmware error has occurred.

Applicable Error

- 024-340: MCU Firmware Error

Initial Actions

- Check MCU Board firmware version.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ MCU Board, PL8.2.13	■ "Map 4 - MCU Board" on page 10-10

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the system firmware version. Is the system firmware the correct version?	Go to step 2.	Update the firmware.
2	Check the MCU Board installation. 1. Reseat MCU Board connections. 2. Cycle system power. Does the error persist?	Replace the MCU Board (page 8-103).	Check system electrical grounds.

Download Mode 024-360

MCU firmware download failed.

Applicable Error

- 024-360: Download Mode Error

Initial Actions

- Check MCU Board firmware version.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Image Processor Board, PL8.1.7 ■ MCU Board, PL8.2.13	■ "Map 4 - MCU Board" on page 10-10

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the system firmware version. Is the system firmware the correct version?	Go to step 2.	Update the firmware.
2	Replace the MCU Board (page 8-103). Does the error persist?	Replace the Image Processor Board (page 8-87).	Complete

PAGEC Timer 024-362

The PAGEC timeout error occurred.

Applicable Error

- 024-362: PAGEC Timer Error

Initial Actions

- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Image Processor Board, PL8.1.7	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Reseat the Image Processor Board connections. Cycle system power. Does the error persist?	Replace the I/P Board (page 8-87).	Complete.

MCU Comm Error 024-371

Communication has failed between the MCU and image Processor Boards.

Applicable Error

- 024-371: MCU Comm. Error

Initial Actions

- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Image Processor Board, PL8.1.7 ■ MCU Board, PL8.2.13 ■ ESS Harness, PL9.1.1	■ "System Connections" on page 10-2 ■ "System Control" on page 10-25

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Reseat connections to the Image Processor and MCU Boards then cycle system power; Does the error persist?	Go to step 2.	Complete.
2	Check P/J101 and P/J10 connections between the I/P and MCU Boards. Are the connections secure?	Go to step 3.	Reseat the connectors.
3	Disconnect P/J101 and P/J10 and check ESS harness continuity. Is the harness damaged?	Repair the harness.	Go to step 4.
4	Replace the MCU Board (page 8-103). Does the error persist?	Replace the Image Processor Board (page 8-87).	Complete.

MCU NVRAM 041-340

Engine NVRAM is corrupted.

Note

If this error occurs after MCU Board replacement, transfer NVRAM data from the original MCU Board to the replacement.

Applicable Error

- 041-340: MCU NVRAM Error

Initial Actions

- Reseat the Imaging Unit and Toner Cartridges.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Imaging Unit, PL4.1.21 ■ Toner Cartridge, PL5.2.21~24 ■ Toner CRUM Harness, PL5.1.26 ■ MCU Board, PL8.2.13 ■ EEPROM Board, PL8.2.16 ■ Imaging Unit Harness, PL9.1.11	■ "Map 1 - Print Engine" on page 10-7 ■ "Map 4 - MCU Board" on page 10-10 ■ "Xerographics" on page 10-21 ■ "Toner Dispense" on page 10-23

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check these connections: ■ P/J311 Yellow Cartridge CRUM ■ P/J312 Magenta Cartridge CRUM ■ P/J313 Cyan Cartridge CRUM ■ P/J314 Black Cartridge CRUM ■ P/J31 and P/J42 on the MCU Board ■ P/J144 on the EEPROM Board ■ P/J422 on the Imaging Unit Are the connections secure?	Go to step 2.	Secure the connections.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
2	Check Toner CRUM harness continuity. Disconnect: ■ J311 from the Yellow CRUM ■ J312 from the Magenta CRUM ■ J313 from the Cyan CRUM ■ J314 from the Black CRUM ■ J31 from the MCU Board Is the harness damaged?	Repair the harness.	Go to step 3.
3	Check the Imaging Unit harness for continuity. Disconnect: ■ J42 from the MCU Board ■ J144 from the EEPROM Board ■ P422 from the Imaging Unit Is the harness damaged?	Repair the harness.	Go to step 4.
4	Check for +3.3 V at the MCU Board connector P/J42. Is there +3.3 V between P42-3 <=>ground?	Replace the EEPROM Board.	Go to step 5.
5	Reseat the MCU Board connections. Does the error persist?	Replace the MCU Board (page 8-103).	Complete.

Electrical Errors

Fan Motor 042-313

The Fan has failed.

Applicable Error

- 042-313: Fan Motor Error

Initial Actions

- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ MCU HAN Harness, PL5.1.28 ■ Fan, PL8.1.1 ■ LVPS, PL8.2.1 ■ MCU Board, PL8.2.13 ■ Fan Board, PL8.2.20 ■ LVPS Harness, PL9.1.3	■ "Map 3 - LVPS and Drive" on page 10-9 ■ "Map 4 - MCU Board" on page 10-10 ■ "LVPS" on page 10-17

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Test the Fan Motor (page 4-29): **Engine Diag** > **Motor Test** > **Fan High**. Does the Fan rotate?	Replace the MCU Board (page 8-103).	Go to Step 2.
2	Check P/J510 on the Fan Board. Is the connection secure?	Go to step 3	Secure the connector.
3	Check P/J520 on the Fan Board and P/J503 on the LVPS. Are the connections secure?	Go to step 4.	Secure the connectors.
4	Check P/J530 on the Fan Board and P/J30 on the MCU Board. Are the connections secure?	Go to step 5.	Secure the connectors.
5	Check P/J501 on the LVPS and P/J14 on the MCU Board. Are the connections secure?	Go to step 6.	Secure the connectors.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
6	Check the LVPS2 Harness continuity. Disconnect P/J501 from the LVPS and P/J14 from the MCU Board. Is the harness damaged?	Repair the harness.	Go to step 7.
7	Check the MCU HAN harness continuity. Disconnect P/J530 from the Fan Board and P/J30 from the MCU Board. Is the harness damaged?	Repair the harness.	Go to step 8.
8	Check for +24 V at J503 on the LVPS. Is +24 V available at J503-1 <=> ground when the Interlock Switch is closed?	Replace the Fan (page 8-86).	Go to step 9.
9	Replace the Fan Board (page 8-105). Does the error persist?	Go to step 10.	Complete.
10	Replace the LVPS (page 8-91). Does the error persist?	Replace the MCU Board (page 8-103).	Complete.

Motor Error 042-325

The Main Drive Assembly has failed.

Applicable Error

- 042-325: Motor Error

Initial Actions

- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Main Drive, PL7.1.2 ■ MCU Board, PL8.2.13 ■ Main Motor Harness, PL9.1.7	■ "Map 3 - LVPS and Drive" on page 10-9 ■ "Map 4 - MCU Board" on page 10-10 ■ "Main Drive" on page 10-19

Warning

Allow the Fuser to cool before servicing the printer.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Transfer Belt, Fuser, and Imaging Unit for correct installation. Are the parts correctly installed?	Go to step 2.	Correct any problems found.
2	Does the error persist when the power is turned On?	Go to step 3.	Complete.
3	Test the Main Drive (page 4-26): **Engine Diag > Motor Test > Main Motor Full2**. Does the motor rotate with the Front Cover closed?	Replace the MCU Board (page 8-103).	Go to step 4.
4	Check P/J21 and P/J211 between the MCU Board and Main Drive. Are the connectors secure?	Go to step 5.	Reconnect the connectors.
5	Check the Main Drive harness continuity. Disconnect P/J21 from the MCU Board and P/J211 from the Main Drive to check continuity. Is the harness damaged?	Repair the harness.	Go to step 6.
6	Check the Main Drive Assembly for correct installation. Is the Main Drive Assembly installed correctly?	Go to step 7.	Reseat the Main Drive Assembly (page 8-81).
7	Check for +24 V at J21 on the MCU Board. Is +24 V available at J21-2 and J21-4 when the Interlock Switch is closed?	Replace the Main Drive Assembly (page 8-81).	Replace the MCU Board (page 8-103).

Motor Error 042-326

The Sub Drive Assembly failed.

Applicable Error

- 042-326: Motor Error

Initial Actions

- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Sub Drive Assembly, PL7.1.1 ■ MCU Board, PL8.2.13 ■ Sub Motor Harness, PL9.1.8	■ "Map 3 - LVPS and Drive" on page 10-9 ■ "Map 4 - MCU Board" on page 10-10 ■ "Main Drive" on page 10-19

Warning

Allow the Fuser to cool before servicing the printer.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Transfer Belt, Fuser, and Imaging Unit for correct installation. Are the parts correctly installed?	Go to step 2.	Correct any problems found.
2	Does the error persist when the power is turned On?	Go to step 3.	Complete.
3	Test the Sub Drive (page 4-27): **Engine Diag** > **Motor Test** > **Sub Motor Full2**. Does the motor rotate with the Front Cover closed?	Replace the MCU Board (page 8-103).	Go to step 4.
4	Check connectors P/J22 and P/J221 between the MCU Board and Sub Drive Assembly. Are the connectors secure?	Go to step 5.	Reconnect the connectors.
5	Check the Sub Drive harness continuity. Disconnect P/J22 from the MCU Board and P/J221 from the Sub Drive to check continuity. Is the harness damaged?	Repair or replace the harness (PL10.8.8).	Go to step 6.
6	Check the Sub Drive Assembly for correct installation. Is the Sub Drive Assembly installed correctly?	Go to step 7.	Reseat the Sub Drive Assembly (page 8-80).
7	Check for +24 V at J22 on the MCU Board. Is +24 V available at J22-2 and J22-4 when the Interlock Switch is closed?	Replace the Sub Drive Assembly (page 8-80).	Replace the MCU Board (page 8-103).

K Mode Sol Error 042-372, 042-373

The K (Color) Mode Solenoid did not actuate on time or gear C rotated twice.

Applicable Error Code

- 042-372: K Mode Sol Error
- 042-373: K Mode Sol Error

Initial Actions

- Reseat the Imaging Unit.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Feed Drive Assembly, PL7.1.4 ■ MCU Board, PL8.2.13 ■ REGCL(KSNR) Harness, PL9.1.9	■ "Map 3 - LVPS and Drive" on page 10-9 ■ "Map 4 - MCU Board" on page 10-10 ■ "Main Drive" on page 10-19

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Test the K Mode Solenoid (page 4-25): **Engine Diag > Sensor Test > K Mode Solenoid**. Does the solenoid operate?	Go to step 2.	Go to step 3.
2	Reseat the Feed Drive Assembly. Does the error persist?	Go to step 6.	Complete.
3	Check the solenoid connection. Is P/J24 on the MCU Board secure?	Go to Step 4.	Secure the connection.
4	Check for +24 V at J24 on the MCU Board. Is +24 V available at J24-1 <=> ground when the Interlock Switch is closed?	Go to step 5.	Replace the MCU Board (page 8-103).
5	Check the solenoid resistance. Is the resistance across J24-1 and J24-2 80 to 110 Ohms?	Replace the MCU Board (page 8-103).	Replace the Feed Drive Assembly (page 8-84).
6	Check connectors P/J26 on the MCU Board and P/J261 on the K Mode Sensor. Are the connectors secure?	Go to step 7.	Secure the connections.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
7	Check the REGCL (KSNR) harness continuity. Disconnect P/J26 from the MCU Board and P/J261 from the solenoid. Is the harness damaged?	Repair the harness.	Go to step 8.
8	Check for +3.3 V at J26 of the MCU Board. Is there +3.3 V between ground <=> J26-1 on the MCU Board when the Interlock Switch is closed?	Go to step 9.	Replace the MCU Board (page 8-103).
9	Test the K Mode Sensor (page 4-20): **Engine Diag** > **Sensor Test** > **K Mode Sensor**. 1. Remove the Feed Drive Assembly leaving P/J261 and P/J24 connected. 2. Close the Front Cover. Does the display change when the sensor is blocked?	Replace the MCU Board (page 8-103).	Replace the Feed Drive Assembly (page 8-84).

Over Heat 042-700

The printer's internal temperature is too high.

Applicable Error Code

- 042-700: Over Heat Error

Initial Actions

- Turn the printer Off and allow the printer to cool for 5 minutes.
- Check Fan operation and airflow.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ MCU Board, PL8.2.13	■ "Map 4 - MCU Board" on page 10-10

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Reseat all connections to the MCU Board and cycle system power. Does the error persist?	Replace the MCU Board (page 8-103).	Complete.

Laser Error 061-370

An error was detected in the Laser Unit.

Applicable Error

- 061-370: Laser Error

Initial Actions

- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Laser Unit, PL4.1.1 ■ ROS RE Harness, PL4.1.22 ■ ROS Video Harness, PL4.1.23 ■ MCU Board, PL8.2.13	■ "Map 2 - Laser Unit and Feeder" on page 10-8 ■ "Map 4 - MCU Board" on page 10-10 ■ "Laser Unit" on page 10-20

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Laser Unit for correct installation. Is the Laser Unit correctly installed?	Go to step 3.	Reinstall the Laser Unit (page 8-54), then go to step 2.
2	Does the error still occur when the power is turned On?	Go to step 3.	Complete.
3	Check P/J40 and P/J41 on the MCU Board, and P/J411 and P/J412 on the Laser Unit. Are the connections secure?	Go to step 5	Reconnect the connections. Go to step 4.
4	Does the error still occur when the power is turned On?	Go to step 5.	Complete.
5	Check the ROS RE harness continuity. Disconnect P/J40 on the MCU Board and P/J411 from the Laser Unit. Is the harness damaged?	Repair the harness, then go to step 6.	Go to step 7.
6	Does the error still occur when the power is turned On?	Go to step 7.	Complete.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
7	Check the ROS Video harnesses for continuity. Disconnect P/J41 from the MCU Board and P/J412 from the Laser Unit. Is the harness damaged?	Repair the harness, then go to step 6.	Go to step 7.
8	Replace the Laser Unit (page 8-54). Does the error persist?	Replace the MCU Board (page 8-103).	Complete.

250 Feeder Error 072-215

A communications error with the Optional Feeder occurred.

Applicable Error Code

- 072-215: 250 Feeder Error

Initial Actions

- Reseat the Optional Feeder.
- Check the option connector for damage.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Option Harness, PL3.1.20 ■ MCU Board, PL8.2.13 ■ Optional Feeder, PL12.1.1 ■ Feeder Board, PL12.2.1 ■ Tray Harness, PL12.3.23	■ "Map 3 - LVPS and Drive" on page 10-9 ■ "Map 4 - MCU Board" on page 10-10 ■ "Map 6 - Optional Feeder" on page 10-12 ■ "Option Feeder" on page 10-26

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Optional Feeder installation. Is the Optional Feeder installed correctly?	Go to step 2.	Reseat the printer on the feeder.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
2	Check the connection between the printer and feeder (P/J273). Is the connector damaged?	Repair or replace the harness.	Go to step 3.
3	Check the Tray Harness continuity. Disconnect P/J419 from the Feeder Board and P/J273 from the Option Harness. Is the harness damaged?	Repair or replace the harness.	Go to step 4.
4	Check the Option Harness continuity. Disconnect P/J27 from the MCU Board and P/J273 from the Tray Harness. Is the harness damaged?	Repair or replace the harness.	Go to step 5.
5	Replace the Feeder Board (page 8-115). Does the error persist?	Go to step 6.	Complete
6	Replace the Optional Feeder. Does the error persist?	Replace the MCU Board (page 8-103).	Complete

Motor Error 072-216

An Optional Feeder Motor error occurred.

Applicable Error

- 072-216: Motor Error

Initial Actions

- Reseat the Optional Feeder.
- Check the option connector for damage.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Option Harness, PL3.1.20 ■ MCU Board, PL8.2.13 ■ Feeder Board, PL12.2.1 ■ Tray Motor Harness, PL12.2.2 ■ Tray Harness, PL12.3.23 ■ Option Feed Motor, PL12.2.98 ■ Feed Roller, PL12.4.4 ■ Separator Holder, PL12.5.5	■ "Map 3 - LVPS and Drive" on page 10-9 ■ "Map 4 - MCU Board" on page 10-10 ■ "Map 6 - Optional Feeder" on page 10-12 ■ "Option Feeder" on page 10-26

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Optional Feeder installation. Is the Optional Feeder installed correctly?	Go to step 2.	Reseat the printer on the feeder.
2	Check the Feed and Separator Roller rotation. Do the rollers rotate smoothly?	Go to step 3.	Replace the rollers.
3	Check P/J422 on the Feeder Board and P/J211 on the Feed Motor. Are and connected secure?	Go to step 4.	Secure the connections.
4	Test the Option Feeder Motor (page 4-38): **Engine Diag > Motor Test > Tray2 Feeder Motor**. Does the Feed Motor rotate?	Replace the MCU Board (page 8-103).	Go to step 5.
5	Check the Tray Motor Harness continuity. Disconnect P/J422 on the Feeder Board and P/J211 on the Feed Motor. Is the harness damaged?	Repair or replace the harness.	Go to step 6.
6	Check power to the Feed Motor. Disconnect P/J422 on the Feeder Board. Is there +24V across ground <=> J422-6 when the Interlock Switch is closed?	Replace the Option Feed Motor Kit (page 8-119).	Go to step 7.
7	Check connections between the Feeder and MCU boards. Are P/J419, P/J273 and P/J27 secure	Go to step 8.	Secure the connections.
8	Check the Tray Harness continuity. Disconnect P/J419 from the Feeder Board and P/J273 from the Option Harness. Is the harness damaged?	Repair or replace the harness.	Go to step 9.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
9	Check the Option Harness continuity. Disconnect P/J273 from the Option Harness P/J27 from the MCU Board. Is the harness damaged?	Repair or replace the harness.	Go to step 10.
10	Check power to the Feeder Board. Disconnect P/J27 on the MCU Board. Is there +24V across ground <=> J27-A5 and J27-A6 on the MCU Board when the Interlock Switch closed.	Replace the Feeder Board (page 8-115).	Replace the MCU Board (page 8-103).

Duplexer Error 077-215

An Duplex Unit communications error occurred.

Applicable Error

- 077-215: Duplexer Error

Initial Actions

- Reseat the Duplex Unit.
- Check the duplex connector for damage.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Duplex Relay Harness, PL1.2.13 ■ Option Harness, PL3.1.20 ■ MCU Board, PL8.2.13 ■ Duplex Harness, PL11.1.14 ■ Duplex Board, PL11.1.16	■ "Map 1 - Print Engine" on page 10-7 ■ "Map 4 - MCU Board" on page 10-10 ■ "Map 5 - Duplex Unit" on page 10-11 ■ "Duplex Unit" on page 10-27

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Duplex Unit installation. Is the Duplex Unit installed correctly?	Go to step 2.	Reseat the Duplex Unit.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
2	Check the connections between the Duplex and MCU boards. Are P/J27, P/J271, P/J272 and P/J 601 connected secure?	Go to step 3.	Secure the connections.
3	Check the Duplex Harness continuity. Disconnect P/J601 from the Duplex Board and P/J272 from the Duplex Harness. Is the harness damaged?	Repair or replace the harness.	Go to step 4.
4	Check the Duplex Relay Harness continuity Disconnect P/J271 from the Duplex Relay Harness and P/J272 from the Duplex Harness. Is the harness damaged?	Repair or replace the harness.	Go to step 5.
5	Check the Option Harness continuity. Disconnect P/J272 from the Option Harness and P/J27 from the MCU Board. Is the harness damaged?	Repair or replace the harness.	Go to step 6.
6	Check power to the Duplex Board. Remove the Duplex Unit. Is there +3.3V across ground <=> J272-7 on the duplex connector when the Interlock Switch closed.	Replace the Duplex Board (page 8-109).	Replace the MCU Board (page 8-103).

IU CRUM Error 091-916

An error occurred while reading the Imaging Unit CRUM.

Applicable Error

- 091-916: IU CRUM Error

Initial Actions

- Check that the correct Imaging Unit is installed for this model.
- Check the Imaging Unit connector P/J422 alignment.
- Cycle system power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Imaging Unit PL4.1.21 ■ MCU Board, PL8.2.13 ■ Imaging Unit Harness, PL9.1.11	■ "Map 4 - MCU Board" on page 10-10 ■ "Xerographics" on page 10-21

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Remove the Imaging Unit and check the condition of P/J422. Is the connector damaged on the Imaging Unit or Imaging Unit Harness?	Replace the damaged component.	Go to step 2.
2	Check the Imaging Unit Harness continuity. Disconnect P/J42 from the MCU Board and P/J422. Is the harness damaged?	Repair the harness.	Go to step 3.
3	Replace the Imaging Unit (page 8-7). Does the error persist?	Replace the MCU Board (page 8-103).	Complete.

CTD Sensor Error 092-310

Caution

Do not run the toner motors for more than a few seconds.

The ADC Sensor has detected a density error for the indicated color..

Applicable Error

- 092-310: CTD Sensor Error

Note

To determine the affected color, simultaneously press **Up**, **Down**, and **OK**.

Line1   092-310

Line2   Code: *XX* where *XX* is one of the following:

Code	Color
01 or 10	Y Toner Patch Error
02 or 20	M Toner Patch Error
03 or 30	Y and M Toner Patch Error
04 or 40	C Toner Patch Error
05 or 50	Y and C Toner Patch Error
06 or 60	M and C Toner Patch Error
07 or 70	Y, M and C Toner Patch Error
08 or 80	K Toner Patch Error
09 or 90	Y and K toner Patch Error
0A or A0	M and K Toner Patch Error
0B or B0	Y, M and K Toner Patch Error
0C or C0	C and K Toner Patch Error
0D or D0	Y, C and K Toner Patch Error
0E or E0	M, C and K Toner Patch Error
0F or F0	Y, M, C and K Toner Patch Error

Initial Actions

- Clean the Transfer Belt and ADC Sensor window using a dry cloth.

- Check the indicated Toner Cartridge.

- Check the Imaging Unit for sealing tapes or protective covers.

- Check the Transfer Belt and Imaging Unit life counters. If near end of life, replace the part.

- Cycle printer power.

- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Left Side Harness, PL3.1.18 ■ Imaging Unit, PL4.1.21 ■ Dispense Assembly, PL5.1.1 ■ Toner Cartridges, PL5.1.21~24 ■ Toner Motor harness, PL5.1.25 ■ Transfer Belt, PL6.1.7 ■ MCU Board, PL8.2.13	■ "Map 4 - MCU Board" on page 10-10 ■ "Xerographics" on page 10-21 ■ "Toner Dispense" on page 10-23

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Transfer Belt installation. Is the Transfer Belt correctly installed?	Go to step 3.	Correct the installation. Go to step 2.
2	Does the error persist?	Go to step 3.	Complete.
3	Test the Toner Motor (page 4-28): **Engine Diag** > **Motor Test** > **CMYK Toner Motor** for the affected color. Does the motor rotate?	Go to step 4.	Go to step 5.
4	Check the Dispense Assembly gear for the indicated color. Is the gear damaged or excessively worn?	Replace the Dispense Assembly (page 8-64).	Go to step 5.
5	Check Left Side Harness continuity. Disconnect P/J28 from the MCU Board and P/J281 to the Transfer Belt. Is the harness damaged?	Repair or replace the harness.	Go to step 6.
6	Check MCU Board connectors P/J18 and toner motor connections: ■ P/J181(Y) ■ P/J182(M) ■ P/J191(C) ■ P/J192(K) Are the connectors secure?	Go to step 7.	Reconnect the connectors.
7	Check Toner Motor harness continuity. Disconnect P/J18 from the MCU Board and the connection to the indicated toner motor. Is the harness damaged?	Repair or replace the harness.	Go to step 8.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
8	Check for +24 V at J18 or J19 on the MCU Board. Is +24 V available at ■ J18-3 (Y) ■ J18-8 (M) ■ J19-4 (C) ■ J19-9 (K) when the Interlock Switch is closed?	Replace the Dispense Assembly (page 8-64).	Replace the MCU Board (page 8-103).
9	Replace the indicated Toner Cartridge. Does the error persist?	Go to step 10.	Complete.
10	Replace the Imaging Unit (page 8-7). Does the error persist?	Replace the Transfer Belt (page 8-79).	Complete.

Env Sensor Error 092-661

An error occurred while reading the Humidity Sensor.

Applicable Error

- 092-661: Env Sensor Error

Initial Actions

- Cycle system power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Humidity Sensor, PL8.2.7 ■ MCU Board, PL8.2.13 ■ Humidity Harness, PL9.1.6	■ "Map 3 - LVPS and Drive" on page 10-9 ■ "Xerographics" on page 10-21

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Humidity Harness continuity. Disconnect J20 from the MCU Board and J201 from the Humidity Sensor. Is the harness damaged?	Repair the harness.	Go to step 2.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
2	Check power to Humidity Sensor. Disconnect J20 from the MCU Board. Is the voltage across P20-4 <=> ground about +5 V?	Replace the Humidity Sensor (page 8-95).	Replace the MCU Board (page 8-103).

Trans Life Over 094-351

The Transfer Belt has reached end of life.

Applicable Errors

- 094-351 Trans Life Over

Initial Actions

- Check the Transfer Belt life counter. If near end of life, replace the part.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
▪ Left Side Harness, PL3.1.18 ▪ Transfer Belt, PL6.1.7 ▪ MCU Board, PL8.2.13	▪ "Map 4 - MCU Board" on page 10-10 ▪ "Xerographics" on page 10-21

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Transfer belt life counter. Has the counter reached end of life?	Replace the Transfer Belt (page 8-79).	Go to step 2.
2	Check the Transfer Belt installation. Is the Transfer Belt correctly installed?	Go to step 3.	Reseat the Transfer Belt. Go to step 2.
3	Does the error still occur when the printer is turned On?	Go to step 4.	Complete.
4	Check connectors P/J28 and P/J281 between the MCU Board and Transfer Belt. Are the connectors secure?	Go to step 5.	Reconnect the connectors.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
5	Check Left Side Harness continuity. Disconnect P/J28 from the MCU Board and P/J281 to the Transfer Belt. Is the harness damaged?	Repair or replace the harness.	Go to step 6.
6	Replace the Transfer Belt (page 8-79). Does the error persist?	Replace the MCU Board (page 8-103).	Complete.

IP Board Errors 116-3xx

An Image Processor Board memory access, controller, or network error occurred.

Applicable Errors

- 116-310: Font ROM Error
- 116-314: MAC Address Error
- 116-315: RAM Error
- 116-317: Controller Error
- 116-323: NVRAM Error
- 116-324: Controller Error
- 116-326: NVRAM Error
- 116-327: Controller Error
- 116-328: Controller Error
- 116-343: ASIC Error
- 116-350: Network Error
- 116-351: Network Error
- 116-352: Network Error
- 116-355: Network Error
- 116-390: NVRAM Error

Initial Actions

- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Image Processor Board, PL8.1.7	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Image Processor Board installation. Is the Image Processor Board correctly installed?	Go to step 2.	Reseat connections on the IP Board.
2	Does the error still occur when the printer is turned On?	Replace the Image Processor Board (page 8-87).	Complete.

RAM Error 116-316, 116-320

An Image Processor Board option memory access error occurred.

Applicable Errors

- 116-316: RAM Error
- 116-320: RAM Error

Initial Actions

- Check the Memory Card manufacturer and specifications.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
▪ Image Processor Board, PL8.1.7 ▪ Memory Card, PL8.1.15	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Memory Card installation. Is the Memory Card correctly installed?	Go to step 2.	Reseat the Memory Card.
2	Replace the Memory Card. Does the error persist?	Replace the Image Processor Board (page 8-87).	Complete

Collate Full 116-721

Memory is full and cannot receive additional data. Print job requires additional memory.

Note

Optional memory is required to configure the Collate function.

Applicable Error

- 116-721: Collate Full Error

Initial Actions

- Install additional memory
- Resize the RAM Disk to hold larger files.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Image Processor Board, PL8.1.7 ■ Memory Card, PL8.1.15	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Reduce the RAM Disk size setting to allow space for collation. Does the error persist?	Go to step 2.	Complete.
2	Print the Configuration Page: **System > Information Pages > Configuration**. Does the memory amount listed match the installed memory?	Go to Step 3.	Reseat the Memory Card and reprint the Configuration page to check memory.
3	Partition the print job. Does the error still occur?	Replace the Image Processor Board (page 8-87).	Complete.

Tray and Media Errors

Load Tray 1, 2 or Manual Feed Slot

A paper size mismatch was detected for Tray 1, Tray 2, or the manual feed slot.

Applicable Errors

- Load Tray 1 *<paper size><paper type>*
- Load Tray 2 *<paper size><paper type>*
- Load Manual Feed *<paper size><paper type>*

Initial Actions

- Check the loaded media and print job specifications match.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Image Processor Board, PL8.1.7 ■ MCU Board, PL8.2.13	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Reload the tray with media matching the print job specifications. Does the error persist?	Go to step 2.	Complete.
2	Replace the MCU Board (page 8-103). Does the error persist?	Replace the Image Processor Board (page 8-87).	Complete

Load Tray 1

No media detected in Tray 1.

Applicable Error

- Load Tray 1 *<paper size><paper type>*

Initial Actions

- Check the Tray for obstructions supported media, and guide adjustment.
- Check the No Paper Sensor Actuator function.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Left Side Harness, PL3.1.18 ■ No Paper Sensor, PL3.2.13 ■ No Paper Actuator, PL3.2.32 ■ MCU Board, PL8.2.13	■ "Map 2 - Laser Unit and Feeder" on page 10-8 ■ "Media Feed" on page 10-18

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the No Paper Actuator. Does the actuator operate smoothly?	Go to step 2.	Replace the actuator (page 8-53).
2	Test the No Paper Sensor (page 4-17): **Engine Diag > Sensor Test > Tray 1 No Paper**. Does the display change when the actuator is activated?	Replace the MCU Board (page 8-103).	Go to step 3.
3	Check the wiring harness connectors P/J23, P/J234 between the No Paper Sensor and the MCU Board. Are the connections secure?	Go to step 4.	Reconnect the connectors.
4	Check Left Side Harness continuity. Disconnect P/J23 from the MCU Board and P/J234 from the No Paper Sensor. Is there continuity between P/J23 <=> P/J234.	Go to step 5.	Repair or replace the Left Side Harness.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
5	Check the No Paper Sensor signal. Disconnect P/J23 from the MCU Board. Is there +3.3 V across ground <=> J23-9 on the MCU Board?	Go to step 6.	Replace the MCU Board (page 8-103).
6	Check the No Paper Sensor. Measure the voltage across ground <=> J23-11 on the MCU Board. Does the voltage change when the No Paper Sensor is activated?	Replace the MCU Board (page 8-103).	Replace the No Paper Sensor (page 8-50).

Load Tray 2

No media detected in Tray 2 of the Optional Feeder.

Applicable Error

- Load Tray 2 *<paper size><paper type>*

Initial Actions

- Check the Tray for obstructions, supported media, and guide adjustment.
- Check the No Paper Sensor Actuator function.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Option Harness, PL3.1.20 ■ Feeder Board, PL12.1.1 ■ Tray Comp Harness, PL12.2.20 ■ No Paper Sensor, PL12.4.13 ■ No Paper Actuator, PL12.4.19 ■ MCU Board, PL8.2.13	■ "Map 3 - LVPS and Drive" on page 10-9 ■ "Option Feeder" on page 10-26

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the No Paper Actuator. Does the actuator operate smoothly?	Go to step 2.	Replace the actuator (page 8-130).

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
2	Test the Option No Paper Sensor (page 4-36): **Engine Diag** > **Sensor Test** > **Tray 2 No Paper**. Does the display change when the actuator is activated?	Replace the MCU Board (page 8-103).	Go to step 3.
3	Check the connectors P/J421, P/J4212 between the Feeder Board and No Paper Sensor. Are the connections secure?	Go to step 4.	Secure the connectors.
4	Check the Tray Comp Harness continuity. Disconnect P/J421 from the Feeder Board and P/J4212 from the No Paper Sensor. Is the harness damaged?	Go to step 5.	Repair the harness.
5	Check the No Paper Sensor signal. Disconnect P/J421 from the Feeder Board. Is there +3.3 V across ground <=> J421-3?	Go to step 6.	Replace the Feeder Board (page 8-115).
6	Check the No Paper Sensor. Measure the voltage across ground <=> J421-5 on the Feeder Board. Does the voltage change when the No Paper Sensor is activated?	Replace the MCU Board (page 8-103).	Replace the No Paper Sensor (page 8-127).

Load or Reseat Paper Manual Feed

No media detected or waiting for media in manual feed slot.

Applicable Errors

- Load Manual Feed *<paper size><paper type>*
- Reseat Paper of Manual Feed
- Press OK Button to Continue

Initial Actions

- Check the media path for obstructions.
- Check the No Paper Sensor Actuator function.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Left Side Harness, PL3.1.18 ■ No Paper Sensor, PL3.2.13 ■ No Paper Actuator, PL3.2.14 ■ MCU Board, PL8.2.13	■ "Map 2 - Laser Unit and Feeder" on page 10-8 ■ "Media Feed" on page 10-18

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the No Paper Actuator. Remove the lower chute (PL3.2.27) to access the actuator. Does the actuator operate smoothly?	Go to step 2.	Replace the actuator (page 8-52).
2	Test the Manual Feed Sensor (page 4-16): **Engine Diag** > **Sensor Test** > **Manual Feed Sensor**. Does the display change when the actuator is activated?	Replace the MCU Board (page 8-103).	Go to step 3.
3	Check the wiring harness connectors P/J23, P/J233 between the MCU Board and No Paper Sensor. Are the connections secure?	Go to step 4.	Secure the connectors.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Check Left Side Harness continuity. Disconnect P/J23 from the MCU Board and P/J233 from the No Paper Sensor. Is the harness damaged?	Go to step 5.	Repair or replace the Left Side Harness.
5	Check the No Paper Sensor signal. Disconnect P/J23 from the MCU Board. Is there +3.3 V across ground <=> J23-6 pin on the MCU Board?	Go to step 6.	Replace the MCU Board (page 8-103).
6	Check the No Paper Sensor. Measure the voltage across ground <=> J23-8 on the MCU Board. Does the voltage change when the No Paper Sensor is activated?	Replace the MCU Board (page 8-103).	Replace the No Paper Sensor (page 8-49).

Insert Output to Tray 1

The No Paper Sensor does not detect media for the second side of the duplex job.

Applicable Errors

- Insert Output to Tray 1
- Press OK Button to continue

Initial Actions

- Check the condition of the No Paper Sensor actuator.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Left Side Harness, PL3.1.18 ■ No Paper Sensor, PL3.2.13 ■ MCU Board, PL8.2.13	■ "Map 2 - Laser Unit and Feeder" on page 10-8 ■ "Media Feed" on page 10-18

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the No Paper Actuator. Does the actuator operate smoothly?	Go to step 2.	Replace the actuator (page 8-53).
2	Test the No Paper Sensor (page 4-17): **Engine Diag** > **Sensor Test** > **Tray 1 No Paper**. Does the display change when the actuator is activated?	Replace the MCU Board (page 8-103).	Go to step 3.
3	Check connectors P/J23 and P/J234 between the MCU Board and the No Paper Sensor. Are the connectors secure?	Go to step 4.	Secure the connectors.
4	Check the Left Side Harness continuity. Disconnect P/J23 from the MCU Board and P/J234 from the No Paper Sensor. Is the harness damaged?	Repair or replace the harness.	Go to step 5.
5	Check for +3.3 V at J23 on the MCU Board. Is +3.3 V available between J23-9 <=> ground when the Interlock Switch is closed?	Go to step 6.	Replace the MCU Board (page 8-103).
6	Check No Paper Sensor operation. Does the voltage between ground <=>J23-11 on the MCU Board change when the actuator blocks the sensor?	Replace the MCU Board (page 8-103).	Replace the No Paper Sensor (page 8-50).

Insert Output to Tray 2

The No Paper Sensor for Tray 2 of the Optional Feeder does not detect media for the second side of the duplex job.

Applicable Errors

- Insert Output to Tray 2
- Press OK Button to continue

Initial Actions

- Check the condition of the No Paper Sensor actuator.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Feeder Board, PL12.2.1 ■ Tray Comp Harness, PL12.2.20 ■ No Paper Sensor, PL12.4.13 ■ No Paper Actuator, PL12.4.32	■ "Map 2 - Laser Unit and Feeder" on page 10-8 ■ "Media Feed" on page 10-18

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the No Paper Actuator. Does the actuator operate smoothly?	Go to step 2.	Replace the actuator (page 8-130).
2	Test the Option No Paper Sensor (page 4-36): **Engine Diag** > **Sensor Test** > **Tray 2 No Paper**. Does the display change when the actuator is activated?	Replace the MCU Board (page 8-103).	Go to step 3.
3	Check the connectors P/J421, P/J4212 between the Feeder Board and No Paper Sensor. Are the connections secure?	Go to step 4.	Secure the connectors.
4	Check the Tray Comp Harness continuity. Disconnect P/J421 from the Feeder Board and P/J4212 from the No Paper Sensor. Is the harness damaged?	Repair or replace the harness.	Go to step 5.
5	Check the No Paper Sensor signal. Disconnect P/J421 from the Feeder Board. Is there +3.3 V across ground <=> J421-3?	Go to step 6.	Replace the Feeder Board (page 8-115).
6	Check the No Paper Sensor. Measure the voltage across ground <=> J421-5 on the Feeder Board. Does the voltage change when the No Paper Sensor is activated?	Replace the Feeder Board (page 8-115).	Replace the No Paper Sensor (page 8-50).

Jam Errors

Some initial steps to take when evaluating repeated jams:

1. Ask the customer about the paper types being used. If not on the recommended list, determine if this is contributing to the problem. Recycled, multi-purpose, or copier paper tends to contaminate the paper path. Constant use of special papers such labels or business cards can also contribute to jamming.

2. Ensure the correct tray loading and setup procedures are followed (guide adjustment, selecting the correct paper type, fanning the paper, etc.)

3. Make sure the printer is plugged directly into an electrical outlet. Using extension cords or a power strip is not recommended.

4. Make every attempt to establish a jam rate prior to starting any work. If possible print an Error History Report and note the page count between jams.

5. Determine if jamming is occurring in one tray but not another. This helps to identify any dirty or defective parts.

6. Clear the paper path of any jams and paper debris.

7. Clean all media path transport rollers in the trays and frame using a slightly damp (water only) lint free cloth.

Jam at Tray 1

The Registration Sensor is not turned On on time.

Applicable Error

- Jam at Tray 1

Initial Actions

- Check the media path for obstructions or debris.

- Check the condition of the Feed and Separator Rollers.

- Cycle printer power.

- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Separator Roller, PL2.1.5 ■ Feed Solenoid, PL3.1.11 ■ Left Side Harness, PL3.1.18 ■ Drive Clutch, PL3.1.97 ■ Feed Roller, PL3.2.4 ■ Registration Roller Actuator, PL3.2.8 ■ Registration In Actuator, PL3.2.11 ■ Registration Sensor, PL3.2.13 ■ Main Drive Assembly, PL7.1.2 ■ Feed Drive Assembly, PL7.1.4 ■ MCU Board, PL8.2.13 ■ Main Motor Harness, PL9.1.7 ■ REGCL (KSNR) Harness, PL9.1.9	■ "Map 2 - Laser Unit and Feeder" on page 10-8 ■ "Map 3 - LVPS and Drive" on page 10-9 ■ "Media Feed" on page 10-18 ■ "Main Drive" on page 10-19

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the media condition. Is the media damaged or damp?	Replace the media.	Go to step 2.
2	Check the Front Cover latch. Does the Front Cover latch correctly?	Go to step 3.	Repair or replace the Front Cover (page 8-22).
3	Test the Main Motor test (page 4-26): **Service Mode > Engine Diag > Motor Test > Main Motor** Does the Main Drive rotate?	Go to step 4.	Go to step 15.
4	Do the Feed and registration rollers rotate properly during the Main Motor test?	Go to step 5.	Replace the Feed Drive Assembly (page 8-84).
5	Does the media feed from the Tray into the media path?	Go to step 10.	Go to step 6.
6	Check guide adjustment in the Tray. Are the guides adjusted properly?	Go to step 7.	Adjust the guides to fit the media.
7	Check the Separator Roller for damage or wear. Is the Separator Roller damaged or worn?	Replace the Separator Holder (page 8-6).	Go to step 8.
8	Check the Feed Roller for damage or wear. Is the Feed Roller damaged or worn?	Replace the Feed Roller (page 8-9).	Go to step 9.
9	Test the Tray Feed Solenoid (page 4-31): **Service Mode > Engine Diag > Motor Test > Tray Feed Solenoid**. Does the solenoid operate?	Replace the Tray.	Go to step 18.
10	Does the leading edge of the media reach the registration rollers when fed from the Tray?	Go to step 13.	Go to step 11.
11	Check the Registration Actuator In. Remove the Lower Chute (PL3.2.27) to examine the actuator. Is the actuator damaged or misaligned?	Repair or replace the Registration Actuator In (page 8-48).	Go to step 12.
12	Test the Registration Sensor (page 4-18): **Engine Diag > Sensor Test > Regi Sensor.** Use the Registration Actuator In to toggle the sensor output. Does the sensor operate?	Go to step 13.	Go to step 22.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
13	Test the Main Motor (page 4-26): **Engine Diag** > **Motor Test** > **Main Motor,** then select the Registration Clutch test (page 4-30): **Engine Diag** > **Motor Test** > **Regi Clutch**. Does the Registration Clutch and registration rollers operate?	Go to step 14.	Go to step 26.
14	Check the Registration Roller Actuator for damage or misalignment. Remove the Lower Chute (PL3.2.27) to examine the actuator. Is the actuator damaged or misaligned?	Repair or replace the registration roller actuator	Replace the MCU Board (page 8-103).
15	Check connectors P/J21 and P/J211 between the MCU Board and Main Drive Assembly. Are the connectors secure?	Go to step 16	Secure the connectors.
16	Check the Main Drive harness continuity. Disconnect P/J21 from the MCU Board and P/J211 from the Main Drive. Is the harness damaged?	Repair or replace the harness.	Go to step 17.
17	Check for +24 V at J21 on the MCU Board. Is +24 V available at J21-2 and J21-4 when the Interlock Switch is closed?	Replace the Main Drive Assembly (page 8-81).	Replace the MCU Board (page 8-103).
18	Check connectors P/J23 and P/J231 between the MCU Board and Feed Solenoid. Are the connectors secure?	Go to step 19.	Secure the connectors.
19	Check Left Side Harness continuity. Disconnect P/J23 from the MCU Board and P/J231 from the Feed Solenoid. Is the harness damaged?	Repair or replace the harness.	Go to step 20.
20	Check for +24 V at J23 on the MCU Board. Is +24 V available between J23-1 <=> ground when the Interlock Switch is closed?	Go to step 21.	Replace the MCU Board (page 8-103).
21	Check Feed Solenoid resistance. Disconnect P/J231 from the Feed Solenoid Is the resistance about 96 Ohms?	Replace the MCU Board (page 8-103).	Replace the Feed Solenoid (page 8-36).

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
22	Check connectors P/J23 and P/J232 between the MCU Board and Registration Sensor. Are the connectors secure?	Go to step 23.	Secure the connectors.
23	Check Left Side Harness continuity. Disconnect P/J23 from the MCU Board and P/J232 from the Registration Sensor. Is the harness damaged?	Repair or replace the harness.	Go to step 24.
24	Check for +3.3 V at J23 of the MCU Board. Is there +3.3 V across ground <=> J23-3 pin on the MCU Board?	Go to step 25.	Replace the MCU Board (page 8-103).
25	Check the Registration Sensor signal. Does the voltage between ground <=>J23-5 on the MCU Board change when the Registration Actuator In is used to block the sensor?	Replace the MCU Board (page 8-103).	Replace the Registration Sensor (page 8-50).
26	Check connectors P/J26 and P/J262 between the MCU Board and Drive Clutch. Are the connectors secure?	Go to step 27.	Secure the connectors.
27	Check the KSNR RegCl harness continuity. Disconnect P/J26 from the MCU Board and P/J262 from the Drive Clutch. Is the harness damaged?	Repair or replace the harness.	Go to step 28.
28	Check for +24 V at J26 on the MCU Board. Is there +24 V between ground <=> J26-4 on the MCU Board when the Interlock Switch is closed?	Go to step 29.	Replace the MCU Board (page 8-103).
29	Check Drive Clutch resistance. Disconnect P/J262 from the Drive Clutch. Is the resistance across J262-1 and J262-2 about 280 Ohms?	Replace the MCU Board (page 8-103).	Replace the Drive Clutch (page 8-34).

Jam at Tray 2

The Registration Sensor is not turned On within the specified time after a feed from Tray 2. Tray 2 misfeed or media remains at the Registration Sensor.

Applicable Error

- Jam at Tray 2

Initial Actions

- Check the media path for obstructions or debris.
- Reseat the connection between the printer and feeder.
- Check the Tray 2 Feed and Separator Rollers.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ MCU Board, PL8.2.13 ■ Tray Motor Harness, PL12.2.2 ■ Drive Clutch and Bearing, PL12.2.6 ■ Sub Motor Assembly, PL12.2.16 ■ Feed Roller, PL12.4.4 ■ Paper Out Sensor, PL12.4.13 ■ Tray, PL12.5.1 ■ Separator Holder, PL12.5.5	■ "Map 3 - LVPS and Drive" on page 10-9 ■ "Map 6 - Optional Feeder" on page 10-12 ■ "Option Feeder" on page 10-26

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the media condition. Is the media damaged or damp?	Replace the media.	Go to step 2.
2	Check the Front Cover latch. Does the Front Cover latch correctly?	Go to step 3.	Repair or replace the Front Cover (page 8-22).
3	Test the Paper Path Sensor (page 4-37): **Engine Diag > Sensor Test > Option Path Sensor.** Use the Tray 2 Registration Actuator In to toggle the sensor output. Does the sensor operate?	Go to step 4.	Go to step 12.
4	Test the Tray 2 Feeder Motor (page 4-38): **Service Mode > Engine Diag > Motor Test > Tray 2 Feeder Motor** Does the Sub Drive rotate?	Go to step 5.	Go to step 16.
5	Does the media feed from Tray 2 into the media path?	Go to step 13.	Go to step 6.
6	Check guide adjustment in Tray 2. Are the guides adjusted properly?	Go to step 7.	Adjust the guides to fit the media.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
7	Check the Separator Roller for damage or wear. Is the Tray 2 Separator Roller damaged or worn?	Replace the Separator Holder (page 8-132).	Go to step 8.
8	Check the Feed Roller for damage or wear. Is the Tray 2 Feed Roller damaged or worn?	Replace the Feed Roller (page 8-123).	Go to step 9.
9	Test the Tray 2 Feed Solenoid (page 4-31): **Service Mode** > **Engine Diag** > **Motor Test** > **Tray 2 Feed Solenoid**. Does the solenoid operate?	Replace the Tray.	Go to step 19.
10	Test the Tray 2 Turn Roll (page 4-40): **Engine Diag** > **Motor Test** > **Tray 2 Feeder Motor,** then select the Tray 2 Turn Roll test (page 4-30): **Engine Diag** > **Motor Test** > **Tray 2 Turn Roll**. Does the Drive Clutch and registration rollers operate?	Go to step 11.	Go to step 23.
11	Does the leading edge of the media reach the registration rollers when fed from the Tray?	Go to step 12.	Replace the Optional Feeder.
12	Check the Paper Path Sensor connections P/J412 and P/J4200 between the Feeder Board and sensor. Are the connectors secure?	Go to step 13	Secure the connectors.
13	Check the Tray Comp harness continuity. Disconnect P/J412 from the Feeder Board and P/J4200 from the sensor. Is the harness damaged?	Repair the harness.	Go to step 14.
14	Check for +3.3 V at J420 of the Feeder Board. Is there +3.3 V across ground <=> J420-6 on the Feeder Board?	Go to step 15.	Replace the Feeder Board (page 8-115).
15	Check the Paper Path Sensor signal. Does the voltage between ground <=>J420-5 on the Feeder Board change when the Tray 2 Registration Actuator In is used to block the sensor?	Replace the Feeder Board (page 8-115).	Replace the Paper Path Sensor (page 8-128).
16	Check the Tray 2 Feeder Motor connections. Are P/J422 and P/J211between the Feeder Board and motor secure?	Go to step 17.	Secure the connectors.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
17	Check the Tray Motor harness continuity. Disconnect P/J422 from the Feeder Board and P/J211 from the Feeder Motor. Is the harness damaged?	Repair the harness.	Go to step 18.
18	Check for +24 V at J422 on the Feeder Board. Is there +24 V between J422-6<=> ground when the Interlock Switch is closed?	Replace the Feeder Motor Assembly (page 8-119).	Replace the Feeder Board (page 8-115).
19	Check connectors P/J421 and P/J4231 between the Feeder Board and Feed Solenoid. Are the connectors secure?	Go to step 20.	Secure the connectors.
20	Check the Tray Comp harness continuity. Disconnect P/J421 at the Feeder Board and P/J4213 from the solenoid. Is the harness damaged?	Repair the harness.	Go to step 21
21	Check for +24 V at J421 on the Feeder Board. Is there +24 V between J421-1 <=> ground when the Interlock Switch is closed?	Go to step 21.	Replace the Feeder Board (page 8-115).
22	Check Feed Solenoid resistance. Disconnect P/J231 from the Feed Solenoid Is the resistance about 96 Ohms?	Replace the Feeder Board (page 8-115).	Replace the Feed Solenoid (page 8-118).
23	Check connectors P/J420 and P/J4201 between the Feeder Board and Drive Clutch. Are the connectors secure?	Go to step 24.	Secure the connectors.
24	Check the Tray Comp harness continuity. Disconnect P/J420 at the Feeder Board and P/J4201 from the clutch. Is the harness damaged?	Repair the harness.	Go to step 25.
25	Check for +24 V at J420 on the Feeder Board. Is there +24 V between J420-1 <=> ground when the Interlock Switch is closed?	Repair or replace the harness.	Replace the Feeder Board (page 8-115).
26	Check Drive Clutch resistance. Disconnect P/J262 from the clutch. Is the resistance across J262-1 and J262-2 about 280 Ohms?	Replace the Feeder Board (page 8-115).	Replace the Drive Clutch (page 8-116).

Jam at Tray 2

Media remains at the Registration Sensor.

Applicable Error

- Jam at Tray 2

Initial Actions

- Check the media path for obstructions or debris.
- Check the condition of the Feed and Separator Rollers.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Tray, PL2.1.1. ■ Separator Roller, PL2.1.5 ■ Feed Solenoid, PL3.1.11 ■ Left Side Harness, PL3.1.18 ■ Drive Clutch, PL3.1.97 ■ Feed Roller, PL3.2.4 ■ Registration Roller Actuator, PL3.2.8 ■ Registration In Actuator, PL3.2.11 ■ Registration Sensor, PL3.2.13 ■ Main Drive Assembly, PL7.1.2 ■ Feed Drive Assembly, PL7.1.4 ■ MCU Board, PL8.2.13 ■ Main Motor Harness, PL9.1.7 ■ REGCL (KSNR) Harness, PL9.1.9	■ "Map 2 - Laser Unit and Feeder" on page 10-8 ■ "Map 3 - LVPS and Drive" on page 10-9 ■ "Media Feed" on page 10-18 ■ "Main Drive" on page 10-19

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the media condition. Is the media damaged or damp?	Replace the media.	Go to step 2.
2	Check the Front Cover latch. Does the Front Cover latch correctly?	Go to step 3.	Repair or replace the Front Cover (page 8-22).
3	Test the Main Motor (page 4-26): **Service Mode > Engine Diag > Motor Test > Main Motor** Does the Main Drive rotate?	Go to step 4.	Go to step 15.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Do the Feed and registration rollers rotate properly during the Main Motor test?	Go to step 5.	Replace the Feed Drive Assembly (page 8-84).
5	Does the media feed from the Tray into the media path?	Go to step 10.	Go to step 6.
6	Check guide adjustment in the Tray. Are the guides adjusted properly?	Go to step 7.	Adjust the guides to fit the media.
7	Check the Separator Roller for damage or wear. Is the Separator Roller damaged or worn?	Replace the Separator Holder (page 8-6).	Go to step 8.
8	Check the Feed Roller for damage or wear. Is the Feed Roller damaged or worn?	Replace the Feed Roller (page 8-9).	Go to step 9.
9	Test the Tray Feed Solenoid (page 4-31): **Service Mode > Engine Diag > Motor Test > Tray Feed Solenoid**. Does the solenoid operate?	Replace the Tray.	Go to step 18.
10	Does the leading edge of the media reach the registration rollers when fed from the Tray?	Go to step 13.	Go to step 11.
11	Check the Registration Actuator In. Remove the Lower Chute (PL3.2.27) to examine the actuator. Is the actuator damaged or misaligned?	Repair or replace the Registration Actuator In (page 8-48).	Go to step 12.
12	Test the Registration Sensor (page 4-18): **Engine Diag > Sensor Test > Regi Sensor.** Use the Registration Actuator In to toggle the sensor output. Does the sensor operate?	Go to step 13.	Go to step 22.
13	Test the Main Motor (page 4-26): **Engine Diag > Motor Test > Main Motor,** then select the Registration Clutch test (page 4-30): **Engine Diag > Motor Test > Regi Clutch**. Does the Registration Clutch and registration rollers operate?	Go to step 14.	Go to step 26.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
14	Check the Registration Roller Actuator for damage or misalignment. Remove the Lower Chute (PL3.2.27) to examine the actuator. Is the actuator damaged or misaligned?	Repair or replace the registration roller actuator	Replace the MCU Board (page 8-103).
15	Check connectors P/J21 and P/J211 between the MCU Board and Main Drive Assembly. Are the connectors secure?	Go to step 16	Secure the connectors.
16	Check the Main Drive harness continuity. Disconnect P/J21 from the MCU Board and P/J211 from the Main Drive. Is the harness damaged?	Repair or replace the harness.	Go to step 17.
17	Check for +24 V at J21 on the MCU Board. Is +24 V available at J21-2 and J21-4 when the Interlock Switch is closed?	Replace the Main Drive Assembly (page 8-81).	Replace the MCU Board (page 8-103).
18	Check connectors P/J23 and P/J231 between the MCU Board and Feed Solenoid. Are the connectors secure?	Go to step 19.	Secure the connectors.
19	Check Left Side Harness continuity. Disconnect P/J23 from the MCU Board and P/J231 from the Feed Solenoid. Is the harness damaged?	Repair or replace the harness.	Go to step 20.
20	Check for +24 V at J23 on the MCU Board. Is +24 V available between J23-1 <=> ground when the Interlock Switch is closed?	Go to step 21.	Replace the MCU Board (page 8-103).
21	Check Feed Solenoid resistance. Disconnect P/J231 from the Feed Solenoid Is the resistance about 96 Ohms?	Replace the MCU Board (page 8-103).	Replace the Feed Solenoid (page 8-36).
22	Check connectors P/J23 and P/J232 between the MCU Board and Registration Sensor. Are the connectors secure?	Go to step 23.	Secure the connectors.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
23	Check Left Side Harness continuity. Disconnect P/J23 from the MCU Board and P/J232 from the Registration Sensor. Is the harness damaged?	Repair or replace the harness.	Go to step 24.
24	Check for +3.3 V at J23 of the MCU Board. Is there +3.3 V across ground <=> J23-3 pin on the MCU Board?	Go to step 25.	Replace the MCU Board (page 8-103).
25	Check the Registration Sensor signal. Does the voltage between ground <=>J23-5 on the MCU Board change when the Registration Actuator In is used to block the sensor?	Replace the MCU Board (page 8-103).	Replace the Registration Sensor (page 8-50).
26	Check connectors P/J26 and P/J262 between the MCU Board and Drive Clutch. Are the connectors secure?	Go to step 27.	Secure the connectors.
27	Check the KSNR RegCl harness continuity. Disconnect P/J26 from the MCU Board and P/J262 from the Drive Clutch. Is the harness damaged?	Repair or replace the harness.	Go to step 28.
28	Check for +24 V at J26 of the MCU Board. Is there +24 V between ground <=> J26-4 on the MCU Board when the Interlock Switch is closed?	Go to step 29.	Replace the MCU Board (page 8-103).
29	Check Drive Clutch resistance. Disconnect P/J262 from the Drive Clutch. Is the resistance across J262-1 and J262-2 about 280 Ohms?	Replace the MCU Board (page 8-103).	Replace the Drive Clutch (page 8-34).

Jam at Front Cover

The Manual Feed No Paper Sensor did not detect media.

Applicable Error

- Jam at Front Cover

Initial Actions

- Check the condition of the Manual Feed Detect Sensor actuator.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Left Side Harness, PL3.1.18 ■ Manual No Paper Sensor, PL3.2.13 ■ MCU Board, PL8.2.13	■ "Map 2 - Laser Unit and Feeder" on page 10-8 ■ "Media Feed" on page 10-18

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Test the Manual Feed Sensor (page 4-16): **Engine Diag > Sensor Test > Manual Feed Sensor** Use a sheet of paper to toggle the sensor output. Does the sensor operate?	Go to step 2.	Go to step 3
2	Cycle system power. Does the error persist?	Replace the MCU Board (page 8-103).	Complete.
3	Check connectors P/J23 and P/J233 between the MCU Board and the Manual Feed No Paper Sensor. Are the connectors secure?	Go to step 4.	Secure the connectors.
4	Check Left Side Harness continuity. Disconnect P/J23 from the MCU Board and P/J233 from the Manual Feed No Paper Sensor. Is the harness damaged?	Repair the harness.	Go to step 5.
5	Check for +3.3 V at J23 on the MCU Board. Is +3.3 V available between J23-6 <=> ground?	Go to step 6.	Replace the MCU Board (page 8-103).
6	Check No Paper Sensor signal. Does the voltage between ground <=>J23-8 on the MCU Board change when the actuator blocks the sensor?	Replace the MCU Board (page 8-103).	Replace the Manual Feed No Paper Sensor (page 8-49).

Chk Manual Feed

The printer attempted to feed media from the manual feed slot, but media was either unavailable or removed before the feed operation completed.

Applicable Error

- Chk Manual Feed

Initial Actions

- Check the media path for obstructions or debris.
- Check the media size being used.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Left Side Harness, PL3.1.18 ■ Registration Roller, PL3.2.9 ■ Metal Registration Roller, PL3.2.10 ■ Manual No Paper Sensor, PL3.2.13 ■ Manual Feed Actuator, PL3.2.14 ■ Spring Registration R, PL3.2.24 ■ Spring Registration L, PL3.2.29 ■ MCU Board, PL8.2.13	■ "Map 2 - Laser Unit and Feeder" on page 10-8 ■ "Map 4 - MCU Board" on page 10-10 ■ "Media Feed" on page 10-18 ■ "Main Drive" on page 10-19

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the media size. Does the media match the print job size?	Replace the media.	Go to step 2.
2	Check the Front Cover latch. Does the Front Cover latch correctly?	Go to step 3.	Repair or replace the Front Cover (page 8-22).
3	Check the Registration Rollers. Are the rollers damaged, worn, or not touching?	Clean, repair or replace as needed.	Go to step 4.
4	Check the Manual Feed Actuator for damage or misalignment. Remove the Lower Chute (PL3.2.27) to examine the actuator. Is the actuator damaged or misaligned?	Repair or replace the actuator (page 8-52).	Go to step 5.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
5	Test the Manual Feed Sensor (page 4-16): **Engine Diag** > **Sensor Test** > **Manual Feed Sensor** Use a sheet of paper to toggle the sensor output. Does the sensor operate?	Replace the MCU Board (page 8-103).	Go to step 6
6	Check connectors P/J23 and P/J233 between the MCU Board and Manual Feed Sensor. Are the connectors secure?	Go to step 11	Secure the connectors.
7	Check Left Side Harness continuity. Disconnect P/J23 from the MCU Board and P/J233 from the Manual Feed Sensor. Is the harness damaged?	Repair or replace the harness.	Go to step 12.
8	Check for +3.3 V at J23 on the MCU Board. Is +3.3 V available between J23-6 <=> ground?	Go to step 13.	Replace the MCU Board (page 8-103).
9	Check Manual Feed Sensor signal. Does the voltage between ground <=>J23-8 on the MCU Board change when the actuator blocks the sensor?	Replace the MCU Board (page 8-103).	Replace the Manual Feed Sensor (page 8-49).

Remove Paper from Manual Feed

Media remains at the Manual Feed Sensor.

Applicable Error

- Remove Paper from Manual Feed

Initial Actions

- Check the media path for obstructions or debris.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Left Side Harness, PL3.1.18 ■ Drive Clutch, PL3.1.97 ■ Registration Roller Actuator, PL3.2.8 ■ Registration Sensor, PL3.2.13 ■ Manual Feed Actuator, PL3.2.14 ■ Main Drive Assembly, PL7.1.2 ■ Feed Drive Assembly, PL7.1.4 ■ MCU Board, PL8.2.13 ■ Main Motor Harness, PL9.1.7 ■ REGCL (KSNR) Harness, PL9.1.9	■ "Map 2 - Laser Unit and Feeder" on page 10-8 ■ "Map 3 - LVPS and Drive" on page 10-9 ■ "Media Feed" on page 10-18 ■ "Main Drive" on page 10-19

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the media size. Is the media supported and in good condition?	Go to step 2.	Replace the media.
2	Check the Front Cover latch. Does the Front Cover latch correctly?	Go to step 3.	Repair or replace the Front Cover (page 8-22).
3	Test the Main Motor (page 4-26): **Service Mode > Engine Diag > Motor Test > Main Motor** Does the Main Drive, Feed and registration rollers rotate properly?	Go to step 4.	Replace the Feed Drive Assembly (page 8-84).
4	Does the leading edge of the media reach the registration rollers when fed from the manual feed slot?	Go to step 5.	Go to step 6.
5	Check guide adjustment. Are the manual feed slot guides adjusted properly?	Go to step 6.	Adjust the guides to fit the media.
6	Check the Manual Feed Actuator for damage or misalignment. Remove the Lower Chute (PL3.2.27) to examine the actuator. Is the actuator damaged or misaligned?	Repair or replace the actuator (page 8-52).	Go to step 7.
7	Test the Manual Feed Sensor (page 4-16): **Engine Diag > Sensor Test > Manual Feed Sensor** Use a sheet of paper to toggle the sensor output. Does the sensor operate?	Replace the MCU Board (page 8-103).	Go to step 8.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
8	Test the Main Motor (page 4-26): **Engine Diag** > **Motor Test** > **Main Motor,** then select the Registration Clutch test (page 4-30): **Engine Diag** > **Motor Test** > **Regi Clutch**. Does the Registration Clutch and registration rollers operate?	Go to step 9.	Go to step 19.
9	Check the Registration Roller Actuator for damage or misalignment. Remove the Lower Chute (PL3.2.27) to examine the actuator. Is the actuator damaged or misaligned?	Repair or replace the registration roller actuator	Go to step 10.
10	Test the Registration Sensor (page 4-18): **Engine Diag** > **Sensor Test** > **Regi Sensor.** Use the Registration Actuator In to toggle the sensor output. Does the sensor operate?	Go to step 15.	Secure the connectors.
11	Check connectors P/J23 and P/J233 between the MCU Board and the Manual Feed No Paper Sensor. Are the connectors secure?	Go to step 12.	Secure the connectors.
12	Check Left Side Harness continuity. Disconnect P/J23 from the MCU Board and P/J233 from the Manual Feed No Paper Sensor. Is the harness damaged?	Repair or replace the harness.	Go to step 13.
13	Check for +3.3 V at J23 on the MCU Board. Is +3.3 V available between J23-6 <=> ground?	Go to step 14.	Replace the MCU Board (page 8-103).
14	Check No Paper Sensor signal. Does the voltage between ground <=>J23-8 on the MCU Board change when the actuator blocks the sensor?	Replace the MCU Board (page 8-103).	Replace the Manual Feed No Paper Sensor (page 8-49).
15	Check connectors P/J23 and P/J232 between the MCU Board and Registration Sensor. Are the connectors secure?	Go to step 16.	Secure the connectors.
16	Check Left Side Harness continuity. Disconnect P/J23 from the MCU Board and P/J232 from the Registration Sensor. Is the harness damaged?	Repair or replace the harness.	Go to step 17.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
17	Check for +3.3 V at J23 of the MCU Board. Is there +3.3 V across ground <=> J23-3 pin on the MCU Board?	Go to step 18.	Replace the MCU Board (page 8-103).
18	Check the Registration Sensor signal. Does the voltage between ground <=>J23-5 on the MCU Board change when the Registration Actuator In is used to block the sensor?	Replace the MCU Board (page 8-103).	Replace the Registration Sensor (page 8-50).
19	Check connectors P/J26 and P/J262 between the MCU Board and Drive Clutch. Are the connectors secure?	Go to step 20.	Secure the connectors.
20	Check the KSNR RegCl harness continuity. Disconnect P/J26 from the MCU Board and P/J262 from the Drive Clutch. Is the harness damaged?	Repair or replace the harness.	Go to step 21.
21	Check for +24 V at J26 of the MCU Board. Is there +24 V between ground <=> J26-4 on the MCU Board when the Interlock Switch is closed?	Go to step 22.	Replace the MCU Board (page 8-103).
22	Check Drive Clutch resistance. Disconnect P/J262 from the Drive Clutch. Is the resistance across J262-1 and J262-2 about 280 Ohms?	Replace the MCU Board (page 8-103).	Replace the Drive Clutch (page 8-34).

Jam at Front Cover

The media arrived at the Registration Sensor earlier then specified.

Applicable Error

- Jam at Front Cover

Initial Actions

- Check the condition of the Registration In Actuator.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Left Side Harness, PL3.1.18 ■ Drive Clutch Kit, PL3.1.97 ■ Registration Sensor, PL3.2.13 ■ MCU Board, PL8.2.13	■ "Map 2 - Laser Unit and Feeder" on page 10-8 ■ "Map 3 - LVPS and Drive" on page 10-9 ■ "Media Feed" on page 10-18

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Registration Rollers. Are the rollers damaged, worn, or not touching?	Clean, repair or replace as needed.	Go to step 2.
2	Test the Drive Clutch (page 4-30): **Engine Diag > Motor Test > Regi Clutch**. Does the Drive Clutch operate?	Go to step 3.	Go to step 9.
3	Test the Registration Sensor (page 4-18): **Engine Diag > Sensor Test > Regi Sensor.** Use the Registration Actuator In to toggle the sensor output. Does the sensor operate?	Replace the MCU Board (page 8-103).	Go to step 4.
4	Check the Registration Actuator In for damage or misalignment. Remove the Lower Chute (PL3.2.27) to examine the actuator. Is the actuator damaged or misaligned?	Repair or replace the Registration Actuator In (page 8-48).	Go to step 5.
5	Check connectors P/J23 and P/J232 between the MCU Board and Registration Sensor. Are the connectors secure?	Go to step 6.	Reconnect the connectors.
6	Check Left Side Harness continuity. Disconnect P/J23 from the MCU Board and P/J232 from the Registration Sensor. Is the harness damaged?	Repair or replace the harness (PL10.4.18).	Go to step 7.
7	Check for +3.3 V at J23 of the MCU Board. Is there +3.3 V across ground <=> J23-3 pin on the MCU Board?	Go to step 8.	Replace the MCU Board (page 8-103).
8	Check Registration Sensor operation. Does the voltage between ground <=>J23-5 on the MCU Board change when the Registration Actuator In is used to block the sensor?	Replace the MCU Board (page 8-103).	Replace the Registration Sensor (page 8-50).

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
9	Check connectors P/J26 and P/J262 between the MCU Board and Drive Clutch. Are the connectors secure?	Go to step 10.	Reconnect the connectors.
10	Check KSNR RegCl harness continuity. Disconnect P/J26 from the MCU Board and P/J262 from the Registration Clutch. Is the harness damaged?	Repair or replace the harness (PL10.8.9).	Go to step 11.
11	Check for +24 V at J26 of the MCU Board. Is there +24 V between ground <=> J26-4 on the MCU Board when the Interlock Switch is closed?	Go to step 12.	Replace the MCU Board (page 8-103).
12	Check Registration Clutch resistance. Disconnect P/J262 from the Feed Solenoid Is the resistance across J262-1 and J262-2 about 280 Ohms?	Replace the MCU Board (page 8-103).	Replace the Registration Clutch (page 8-84).

Jam at Exit

Warning

> Allow the Fuser to cool before using this procedure.

Media did not transit the Exit Sensor within the specified time indicating media mismatch or jam. Use this procedure when the jam is not at the Exit Sensor.

Applicable Error

- Jam at Exit

Initial Actions

- Check media size settings.
- Check the media path for obstructions or debris.
- Reseat the Fuser.
- Check the condition of the Exit Sensor actuator.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Drive Clutch, PL3.1.97 ■ Fuser, PL6.6.1 ■ Fuser Harness, PL6.1.2 ■ MCU Board, PL8.2.13	■ "Map 1 - Print Engine" on page 10-7 ■ "Fuser" on page 10-24

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Test the Exit Sensor (page 4-19): **Engine Diag > Sensor Test > Exit Sensor**. Does the display change when the actuator blocks the exit sensor?	Go to step 6.	Go to step 2.
2	Check connectors P/J17 and P/J171 between the MCU Board and Fuser. Are the connectors secure?	Go to step 3.	Reconnect the connectors.
3	Check the Fuser2 Harness continuity. Disconnect P/J17 from the MCU Board and P/J171 from the frame. Is the harness damaged?	Repair or replace the harness.	Go to step 4.
4	Check for +3.3 V at J17 of the MCU Board. Is there +3.3 V across ground <=> J17-1 pin on the MCU Board?	Go to step 5.	Replace the MCU Board (page 8-103).
5	Check exit sensor signal. Does the voltage between ground <=>J17-3 on the MCU Board change when the exit sensor actuator blocks the sensor?	Replace the MCU Board (page 8-103).	Replace the Fuser (page 8-10).
6	Check the Registration Rollers. Are the rollers damaged, worn, or not touching?	Clean, repair or replace as needed.	Go to step 7.
7	Test the Drive Clutch (page 4-30): **Engine Diag > Motor Test > Regi Clutch**. Does the Drive Clutch operate?	Go to step 11.	Go to step 8.
8	Check connectors P/J26 and P/J262 between the MCU Board and Drive Clutch. Are the connectors secure?	Go to step 9.	Secure the connectors.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
9	Check the KSNR RegCl harness continuity. Disconnect P/J26 from the MCU Board and P/J262 from the Drive Clutch. Is the harness damaged?	Repair or replace the harness.	Go to step 10.
10	Check for +24 V at J26 of the MCU Board. Is there +24 V between ground <=> J26-4 on the MCU Board when the Interlock Switch is closed?	Go to step 11.	Replace the MCU Board (page 8-103).
11	Check Drive Clutch resistance. Disconnect P/J262 from the Drive Clutch. Is the resistance across J262-1 and J262-2 about 280 Ohms?	Replace the MCU Board (page 8-103).	Replace the Drive Clutch (page 8-34).

Jam at Duplexer

Warning

Allow the Fuser to cool before using this procedure.

Media did not reach the Registration Sensor or arrived early at the Duplex Unit.

Applicable Error

- Jam at Duplexer

Initial Actions

- Check the media path for obstructions or debris.
- Reseat the Fuser.
- Check the condition of the Exit Sensor actuator.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Duplex Relay Harness, PL1.2.13 ■ Left Side Harness, PL3.1.18 ■ Option Harness, PL3.1.20 ■ Registration Roller, PL3.2.9 ■ Metal Registration Roller, PL3.2.10 ■ Registration Sensor, PL3.2.13 ■ Fuser, PL6.1.1 ■ MCU Board, PL8.2.13 ■ Duplex Unit, PL11.1.1	■ "Map 1 - Print Engine" on page 10-7 ■ "Map 5 - Duplex Unit" on page 10-11 ■ "Duplex Unit" on page 10-27

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the media condition. Is the media damaged or damp?	Replace the media.	Go to step 2.
2	Check the Front Cover latch. Does the Front Cover latch correctly?	Go to step 3.	Repair or replace the Front Cover (page 8-22).
3	Reseat the Fuser. Does the error persist?	Go to step 4.	Complete.
4	Reseat the Duplex Unit. Does the error persist?	Go to step 5.	Complete.
5	Test the Exit Motor (page 4-32): **Engine Diag > Motor Test > Exit Motor**. Does the exit motor rotate?	Go to step 6.	Replace the Duplex Unit (page 8-107).
6	Test the Duplex Motor (page 4-35): **Engine Diag > Motor Test > Duplex Motor**. Does the duplex motor rotate?	Go to step 7.	Replace the Duplex Unit (page 8-107).
7	Test the Duplex Clutch (page 4-34): **Engine Diag > Motor Test > Duplex Clutch**. Does the duplex clutch operate?	Go to step 8.	Replace the Duplex Unit (page 8-107).
8	Test the Registration Sensor (page 4-18): **Engine Diag > Sensor Test > Regi Sensor.** Use the Registration Actuator In to toggle the sensor output. Does the sensor operate?	Go to step 9.	Go to step 12.
9	Check the Registration Rollers. Are the rollers damaged, worn, or not touching?	Clean, repair or replace as needed.	Go to step 10.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
10	Check the Option Harness continuity. Disconnect J127 from the MCU Board and P271 from the Duplex Relay Harness. Is the harness damaged?	Repair or replace the harness.	Go to step 11.
11	Check the Duplex Relay Harness continuity. 1. Remove the Duplex Unit. 2. Disconnect J271 from the Option Harness and check continuity J127<=>P272. Is the harness damaged?	Repair or replace the harness.	Go to step 12.
12	Check connectors P/J23 and P/J232 between the MCU Board and Registration Sensor. Are the connectors secure?	Go to step 13.	Reconnect the connectors.
13	Check Left Side Harness continuity. Disconnect P/J23 from the MCU Board and P/J232 from the Registration Sensor. Is the harness damaged?	Repair or replace the harness.	Go to step 14.
14	Check for +3.3 V at J23 of the MCU Board. Is there +3.3 V across ground <=> J23-3 pin on the MCU Board?	Go to step 15.	Replace the MCU Board (page 8-103).
15	Check Registration Sensor signal. Does the voltage between ground <=>J23-5 on the MCU Board change when the Registration Actuator In is used to block the sensor?	Replace the MCU Board (page 8-103).	Replace the Registration Sensor (page 8-50).
16	Replace the Duplex Unit (page 8-107). Does the error persist?	Go to step 17.	Complete
17	Replace the Fuser (page 8-10). Does the error persist?	Replace the MCU Board (page 8-103).	Complete

Jam at Exit

Warning

Allow the Fuser to cool before using this procedure.

Media remains at the Exit Sensor. Use this procedure when media blocks the Exit Sensor actuator.

Applicable Error

- Jam at Exit Open Front Cover

Initial Actions

- Check the media path and Fuser for obstructions or debris.
- Reseat the Fuser.
- Check the condition of the Exit Sensor actuator.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Fuser, PL6.6.1 ■ Fuser Harness, PL6.1.2 ■ MCU Board, PL8.2.13	■ "Map 1 - Print Engine" on page 10-7 ■ "Fuser" on page 10-24

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the media condition. Is the media damaged or damp?	Replace the media.	Go to step 2.
2	Check the Front Cover latch. Does the Front Cover latch correctly?	Go to step 3.	Repair or replace the Front Cover (page 8-22).
3	Reseat the Fuser. Does the error persist?	Go to step 4.	Complete.
4	Test the Exit Sensor (page 4-19): **Engine Diag** > **Sensor Test** > **Exit Sensor**. Does the display change when the actuator blocks the exit sensor?	Replace the MCU Board (page 8-103).	Go to step 5.
5	Check connectors P/J17 and P/J171 between the MCU Board and Fuser. Are the connectors secure?	Go to step 6.	Reconnect the connectors.
6	Check the Fuser2 Harness continuity. Disconnect P/J17 from the MCU Board and P/J171 from the frame. Is the harness damaged?	Repair or replace the harness.	Go to step 7.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
7	Check for +3.3 V at J17 of the MCU Board. Is there +3.3 V across ground <=> J17-1 pin on the MCU Board?	Go to step 8.	Replace the MCU Board (page 8-103).
8	Check exit sensor signal. Does the voltage between ground <=>J17-3 on the MCU Board change when the exit sensor actuator blocks the sensor?	Replace the MCU Board (page 8-103).	Replace the Fuser (page 8-10).

Jam at Registration Roller

The Registration Sensor is not turned On within the specified time. The following troubleshooting procedure applies to these errors.

Applicable Error

- Jam at Regi Roll Open Front Cover

Initial Actions

- Check the media path for obstructions or debris.
- Check the condition of the Registration Sensor Actuator.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Left Side Harness, PL3.1.18 ■ Drive Clutch, PL3.1.97 ■ Registration Roller Actuator, PL3.2.8 ■ Registration Roller, PL3.2.9 ■ Metal Registration Roller, PL3.2.10 ■ Registration In Actuator, PL3.2.11 ■ Registration Sensor, PL3.2.13 ■ Transfer Belt, PL6.1.7 ■ Main Drive Assembly, PL7.1.2 ■ MCU Board, PL8.2.13 ■ Main Motor Harness, PL9.1.7 ■ REGCL (KSNR) Harness, PL9.1.9	■ "Map 2 - Laser Unit and Feeder" on page 10-8 ■ "Map 3 - LVPS and Drive" on page 10-9 ■ "Media Feed" on page 10-18 ■ "Main Drive" on page 10-19

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the media condition. Is the media damaged or damp?	Replace the media.	Go to step 2.
2	Check the Front Cover latch. Does the Front Cover latch correctly?	Go to step 3.	Repair or replace the Front Cover (page 8-22).
3	Check the Transfer Belt. Is the Transfer Belt damaged or misaligned?	Repair or replace the Transfer Belt (page 8-79).	Go to step 4.
4	Check the registration rollers for damage, improper alignment, or wear. Are the rollers damaged, misaligned, or show signs of excessive or uneven wear?	Clean or repair the rollers.	Go to step 5.
5	Check the Registration Actuator In and Registration Roll Actuator for damage or misalignment. Remove the Lower Chute (PL3.2.27) to examine the actuators. Is the actuator damaged or misaligned?	Repair or replace the Registration Actuator In (page 8-48).	Go to step 6.
6	Test the Registration Sensor (page 4-18): **Engine Diag > Sensor Test > Regi Sensor**. Use the Registration Actuator In to toggle the sensor output. Does the sensor operate?	Go to step 7.	Go to step 8.
7	Test the Main Motor (page 4-26): **Engine Diag > Motor Test > Main Motor,** then select the Registration Clutch test (page 4-30): **Engine Diag > Motor Test > Regi Clutch**. Does the Registration Clutch and registration rollers operate?	Go to step 8.	Go to step 13.
8	Check connectors P/J23 and P/J232 between the MCU Board and Registration Sensor. Are the connectors secure?	Go to step 9.	Secure the connectors.
9	Check Left Side Harness continuity. Disconnect P/J23 from the MCU Board and P/J232 from the Registration Sensor. Is the harness damaged?	Repair or replace the harness.	Go to step 10.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
10	Check for +3.3 V at J23 of the MCU Board. Is there +3.3 V across ground <=> J23-3 pin on the MCU Board?	Go to step 11.	Replace the MCU Board (page 8-103).
11	Check Registration Sensor signal. Does the voltage between ground <=> J23-5 on the MCU Board change when the Registration Actuator In is used to block the sensor?	Replace the MCU Board (page 8-103).	Replace the Registration Sensor (page 8-50).
12	Check connectors P/J26 and P/J262 between the MCU Board and Registration Clutch. Are the connectors secure?	Go to step 13.	Secure the connectors.
13	Check KSNR RegiCl harness continuity. Disconnect P/J26 on the MCU Board and P/J262 from the Drive Clutch. Is the harness damaged?	Repair or replace the harness.	Go to step 14.
14	Check for +24 V at J26 on the MCU Board. Is there +24 V between ground <=> J26-4 on the MCU Board when the Interlock Switch is closed?	Go to step 15.	Replace the MCU Board (page 8-103).
15	Check Drive Clutch resistance. Disconnect P/J262 from the Feed Solenoid Is the resistance across J262-1 and J262-2 about 280 Ohms?	Replace the MCU Board (page 8-103).	Replace the Drive Clutch (page 8-34).
16	Check connectors P/J21 and P/J211 between the MCU Board and Main Drive Assembly. Are the connectors secure?	Go to step 17	Secure the connectors.
17	Check the Main Motor harness continuity. Disconnect P/J21 from the MCU Board and P/J211 from the Main Drive to check continuity. Is the harness damaged?	Repair or replace the harness.	Go to step 18.
18	Check for +24 V at J21 on the MCU Board. Is +24 V present at J21-2 <=> J21-4 when the Interlock Switch is closed?	Replace the Main Drive Assembly (page 8-81).	Replace the MCU Board (page 8-103).

Covers

Front Cover Open

The Interlock Switch indicates the Front Cover is open.

Applicable Error

- Front Cover Open Close Front Cover

Initial Actions

- Check the Front Cover interlock actuator and latch for damage.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Front Cover, PL1.2.1 ■ LVPS, PL8.2.1 ■ Interlock Harness, PL8.2.5 ■ MCU Board, PL8.2.13 ■ LVPS2 Harness, PL9.1.3	■ "Map 3 - LVPS and Drive" on page 10-9 ■ "LVPS" on page 10-17

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Interlock Switch actuator located on the Left front holder. Is the actuator damaged?	Repair or replace the Front Cover (page 8-22)	Go to step 2.
2	Check the Front Cover latch. Does the Front Cover latch correctly?	Go to step 3.	Repair or replace the Front Cover (page 8-22).
3	Check Interlock Switch operation. Test the Interlock Switch (page 4-24): **Engine Diag > Sensor Test > Cover Open Sensor** Does the switch operate?	Replace the MCU Board (page 8-103).	Go to step 4.
4	Check the Interlock Harness connections P/J14 and P/J501. Are the connections secure?	Go to step 3.	Secure the connections.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
5	Check continuity of the LVPS2 Harness. Disconnect P/J14 from the MCU Board and P/J501 from the LVPS. Is the harness damaged?	Repair the harness.	Go to step 6.
6	Check for +24 V on P44 of the LVPS. Is there +24 V between P44-1 <=> ground?	Go to step 7.	Replace the LVPS (page 8-91).
7	Check the Interlock Switch signal. Does the voltage between P44-3 <=> ground change when the switch is closed?	Replace the LVPS (page 8-91).	Replace the Interlock Harness (page 8-92).

Side Door Open

The Right Side Door Switch indicates the Right Side Door is open.

Applicable Error

- Side Door Open Close Side Door

Initial Actions

- Check the Right Side Door and switch actuator for damage.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Right Side Door, PL1.1.7 ■ Right Side Door Switch, PL5.1.9 ■ Side Switch Harness, PL5.1.27 ■ MCU Board, PL8.2.13	■ "Map 1 - Print Engine" on page 10-7 ■ "LVPS" on page 10-17

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the door switch actuator located on the Right Side Door. Is the actuator damaged?	Repair or replace the door (page 8-19)	Go to step 2.
2	Test the Side Switch (page 4-23): **Engine Diag > Sensor Test > Side Switch**. Does the switch operate?	Replace the MCU Board (page 8-103).	Go to step 3.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
3	Check the Side Switch Harness connections P/J29 and P/J291. Are the connections secure?	Go to step 4.	Secure the connections.
4	Check continuity of the Side Switch Harness. Disconnect P/J29 from the MCU Board and P/J291 from the switch. Is the harness damaged?	Repair the harness.	Go to step 5.
5	Replace the Right Side Door Switch (page 8-100). Does the error persist?	Replace the MCU Board (page 8-103).	Complete.

Consumable/Routine Maintenance Errors

Check or Replace Imaging Unit

The Imaging Unit is improperly seated, is near, or has reached, end of life.

Applicable Errors

- Imaging Unit Life
- Replace Imaging Unit

Initial Actions

- Check the Imaging Unit life counter.
- Check that the correct Imaging Unit is installed for this model.
- Cycle system power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Imaging Unit, PL4.1.21 ■ MCU Board, PL8.2.13	■ "Map 4 - MCU Board" on page 10-10 ■ "Xerographics" on page 10-21

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Replace the Imaging Unit (page 8-7). **NOTE** Remove the 8 sealing tapes from the new Imaging Unit before installation. Does the error persist?	Replace the MCU Board (page 8-103).	Complete.

Insert Imaging Unit

An error occurred while reading the Imaging Unit CRUM.

Applicable Error

- Insert Imaging Unit

Initial Actions

- Check that the correct Imaging Unit is installed for this model.
- Remove and reseat the Imaging Unit.
- Cycle system power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Imaging Unit PL4.1.21 ■ MCU Board, PL8.2.13 ■ Imaging Unit Harness, PL9.1.11	■ "Map 4 - MCU Board" on page 10-10 ■ "Xerographics" on page 10-21

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Reset the Imaging Unit. Does the error persist?	Go to step 2.	Complete
2	Check the Imaging Unit CRUM connection P/J422. Is the connection secure?	Go to step 3.	Repair the harness.
3	Check the Imaging Unit CRUM harness continuity. Disconnect P/J42 and P/J422 and check continuity. Is the harness damaged?	Repair the harness.	Go to step 2.
4	Replace the Imaging Unit (page 8-7). **NOTE** Remove the 8 sealing tapes from the new Imaging Unit before installation. Does the error persist?	Replace the MCU Board (page 8-103).	Complete.

CMYK Low or Replace

The indicated Toner Cartridge is at, or near end of life.

Applicable Errors

- C,M,Y,K Low
- Replace C,M,Y,K Cartridge

Initial Actions

- Check that the Toner Cartridge is properly installed.
- Cycle printer power.
- If problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
▪ Toner Cartridge PL5.1.21~24 ▪ MCU Board, PL8.2.13	"Toner Dispense" on page 10-23

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Replace the affected Toner Cartridge (page 8-12). Does the error persist?	Replace the MCU Board (page 8-103).	Complete.

Low Density Yellow Cartridge

The ADC Sensor detects an insufficient amount of Yellow toner being applied.

Applicable Error

- Low Density Yellow Cartridge

Initial Actions

- Check that the cartridge is a genuine Xerox Toner Cartridge.
- Check the cartridge life count. If at or near end of life, replace the cartridge.
- Remove, inspect, and gently shake the cartridge from side to side.
- Check for sealing tape on the Imaging Unit.
- Cycle system power.
- If problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Imaging Unit, PL4.1.21 ■ Dispense Assembly, PL5.1.1 ■ Toner Motor, PL5.1.3 ■ Idler Gear, PL5.1.6 ■ Idler Gear Auger, PL5.1.7 ■ Idler Gear Agitator, PL5.1.8 ■ Toner Cartridge PL5.1.24 ■ Toner Motor Harness, PL5.1.25 ■ Transfer Belt, PL6.1.7 ■ MCU Board, PL8.2.13	"Map 1 - Print Engine" on page 10-7 "Map 4 - MCU Board" on page 10-10 "Toner Dispense" on page 10-23

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Caution: Do not run the toner motor more than a few seconds. Test the Toner Motor (page 4-28): **Engine Diag** > **Motor Test** > **Yellow Toner Motor**. Does the motor rotate?	Go to step 2.	Go to step 3.
2	Check the Dispense Assembly gears. Is the Yellow cartridge gear damaged?	Replace the Dispense Assembly (page 8-64).	Go to step 6.
3	Check P/J18 and P/J181 connections between the MCU Board and the Yellow toner motor. Are the connections secure?	Go to step 4.	Reseat the connectors.
4	Check the toner motor harness. Disconnect P/J18 and P/J181 and check the harness continuity. Is the harness damaged?	Repair the harness.	Go to step 5.
5	Check for +24 V between P/J18-3 <=> ground on the MCU Board. Is 24 V available at P/J18-3?	Replace the Dispense Assembly (page 8-64)	Replace the MCU Board (page 8-103).
6	Replace the Imaging Unit (page 8-7). Does the error persist?	Go to step 7.	Complete.
7	Reseat the Transfer Belt. Does the error persist?	Replace the Transfer Belt (page 8-79)	Complete

Low Density Magenta Cartridge

The ADC Sensor detects an insufficient amount of Magenta toner being applied.

Applicable Error

- Low Density Magenta Cartridge

Initial Actions

- Check that the cartridge is a genuine Xerox Toner Cartridge. If not, replace with a genuine Xerox cartridge.
- Check the cartridge life count. If at or near end of life, replace the cartridge.
- Remove, inspect, and gently shake the cartridge from side to side.
- Check for sealing tape on the Imaging Unit.
- Cycle system power.
- If problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Imaging Unit, PL4.1.21 ■ Dispense Assembly, PL5.1.1 ■ Toner Motor, PL5.1.3 ■ Idler Gear, PL5.1.6 ■ Idler Gear Auger, PL5.1.7 ■ Idler Gear Agitator, PL5.1.8 ■ Toner Cartridge PL5.1.24 ■ Toner motor Harness, PL5.1.25 ■ Transfer Belt, PL6.1.7 ■ MCU Board, PL8.2.13	"Map 1 - Print Engine" on page 10-7 "Map 4 - MCU Board" on page 10-10 "Toner Dispense" on page 10-23

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Caution: Do not run the toner motor more than a few seconds. Test the Toner Motor (page 4-28): **Engine Diag > Motor Test > Magenta Toner Motor**. Does the motor rotate?	Go to step 2.	Go to step 3.
2	Check the Dispense Assembly gears. Is the Magenta cartridge gear damaged?	Replace the Dispense Assembly (page 8-64).	Go to step 6.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
3	Check P/J18 and P/J182 connections between the MCU Board and the Magenta toner motor. Are the connections secure?	Go to step 4.	Reseat the connectors.
4	Check the toner motor harness. Disconnect P/J18 and P/J182 and check the harness continuity. Is the harness damaged?	Repair the harness.	Go to step 5.
5	Check for +24 V between P/J18-8 <=> ground on the MCU Board. Is 24 V available at P/J18-8?	Replace the Dispense Assembly (page 8-64)	Replace the MCU Board (page 8-103).
6	Replace the Imaging Unit (page 8-7). Does the error persist?	Go to step 7.	Complete.
7	Reseat the Transfer Belt. Does the error persist?	Replace the Transfer Belt (page 8-79)	Complete

Low Density Cyan Cartridge Error

The ADC Sensor detects an insufficient amount of Cyan toner being applied.

Applicable Error

- Low Density Cyan Cartridge

Initial Actions

- Check that the cartridge is a genuine Xerox Toner Cartridge. If not, replace with a genuine Xerox cartridge.
- Check the cartridge life count. If at or near end of life, replace the cartridge.
- Remove, inspect, and gently shake the cartridge from side to side.
- Check for sealing tape on the Imaging Unit.
- Cycle system power.
- If problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Imaging Unit, PL4.1.21 ■ Dispense Assembly, PL5.1.1 ■ Toner Motor, PL5.1.3 ■ Idler Gear, PL5.1.6 ■ Idler Gear Auger, PL5.1.7 ■ Idler Gear Agitator, PL5.1.8 ■ Toner Cartridge PL5.1.24 ■ Toner motor Harness, PL5.1.25 ■ Transfer Belt, PL6.1.7 ■ MCU Board, PL8.2.13	"Map 1 - Print Engine" on page 10-7 "Map 4 - MCU Board" on page 10-10 "Toner Dispense" on page 10-23

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Caution: Do not run the toner motor more than a few seconds. Test the Toner Motor (page 4-28): **Engine Diag** > **Motor Test** > **Cyan Toner Motor**. Does the motor rotate?	Go to step 2.	Go to step 3.
2	Check the Dispense Assembly gears. Is the Cyan cartridge gear damaged?	Replace the Dispense Assembly (page 8-64).	Go to step 6.
3	Check P/J19 and P/J191 connections between the MCU Board and the Cyan toner motor. Are the connections secure?	Go to step 4.	Reseat the connectors.
4	Check the toner motor harness. Disconnect P/J19 and P/J191 and check the harness continuity. Is the harness damaged?	Repair the harness.	Go to step 5.
5	Check for +24 V between P/J19-4 <=> ground on the MCU Board. Is 24 V available at P/J19-4?	Replace the Dispense Assembly (page 8-64)	Replace the MCU Board (page 8-103).
6	Replace the Imaging Unit (page 8-7). Does the error persist?	Go to step 7.	Complete.
7	Reseat the Transfer Belt. Does the error persist?	Replace the Transfer Belt (page 8-79)	Complete

Low Density Black Cartridge Error

The ADC Sensor detects an insufficient amount of Black Toner being applied. The following troubleshooting procedure applies to these errors.

Applicable Error

- Low Density Black Cartridge

Initial Actions

- Check that the cartridge is a genuine Xerox Toner Cartridge. If not, replace with a genuine Xerox cartridge.
- Check the cartridge life count. If at or near end of life, replace the cartridge.
- Remove, inspect, and gently shake the cartridge from side to side.
- Check for sealing tape on the Imaging Unit.
- Cycle system power.
- If problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Imaging Unit, PL4.1.21 ■ Dispense Assembly, PL5.1.1 ■ Toner Motor, PL5.1.3 ■ Idler Gear, PL5.1.6 ■ Idler Gear Auger, PL5.1.7 ■ Idler Gear Agitator, PL5.1.8 ■ Toner Cartridge PL5.1.24 ■ Toner motor Harness, PL5.1.25 ■ Transfer Belt, PL6.1.7 ■ MCU Board, PL8.2.13	"Map 1 - Print Engine" on page 10-7 "Map 4 - MCU Board" on page 10-10 "Toner Dispense" on page 10-23

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Caution: Do not run the toner motor more than a few seconds. Test the Toner Motor (page 4-28): **Engine Diag > Motor Test > Black Toner Motor**. Does the motor rotate?	Go to step 2.	Go to step 3.
2	Check the Dispense Assembly gears. Is the Black cartridge gear damaged?	Replace the Dispense Assembly (page 8-64).	Go to step 6.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
3	Check P/J19 and P/J192 connections between the MCU Board and the Black toner motor. Are the connections secure?	Go to step 4.	Secure the connectors.
4	Check the toner motor harness. Disconnect P/J19 and P/J192 and check the harness continuity. Is the harness damaged?	Repair the harness.	Go to step 5.
5	Check for +24 V between P/J19-9 <=> ground on the MCU Board. Is 24 V available at P/J19-9?	Replace the Dispense Assembly (page 8-64)	Replace the MCU Board (page 8-103).
6	Replace the Imaging Unit (page 8-7). Does the error persist?	Go to step 7.	Complete.
7	Reseat the Transfer Belt. Does the error persist?	Replace the Transfer Belt (page 8-79)	Complete

Waste Full CMYK Cartridge

The waste toner reservoir in the indicated Toner Cartridge is full.

Applicable Errors

- Waste Full Cyan Cartridge
- Waste Full Magenta Cartridge
- Waste Full Yellow Cartridge
- Waste Full Black Cartridge

Initial Actions

- Check the Toner Cartridge life counter.
- Check that the Toner Cartridge is a genuine Xerox Toner Cartridge.
- Remove and gently agitate the Toner Cartridge.
- Cycle system power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Toner Cartridge, PL5.1.21 ~ 24 ■ MCU Board, PL8.2.13	■ "Map 1 - Print Engine" on page 10-7 ■ "Map 4 - MCU Board" on page 10-10 ■ "Toner Dispense" on page 10-23

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Reseat and lock the affected Toner Cartridge and cycle system power. Does the error persist?	Go to step 2.	Complete
2	Replace the Toner Cartridge (page 8-12). Does the error persist?	Go to step 3.	Complete
3	Check P/J31 on the MCU Board and the Toner Cartridge CRUM connection to the affected color on the Dispense Assembly: ■ P/J311 Yellow ■ P/J312 Magenta ■ P/J313 Cyan ■ P/J314 Black Are the connections secure?	Replace the MCU Board (page 8-103).	Secure the connectors.

Invalid CMYK

The indicated Toner Cartridge is not recognized (CRUM error).

Applicable Errors

- Invalid Cyan
- Invalid Magenta
- Invalid Yellow
- Invalid Black

Initial Actions

- Check that the Toner Cartridge is a genuine Xerox Toner Cartridge.
- Cycle system power
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ CRUM Connector, PL5.1.14 ■ Toner Cartridge, PL5.1.21 ~ 24 ■ Toner CRUM Harness, PL5.1.26 ■ MCU Board, PL8.2.13	■ "Map 1 - Print Engine" on page 10-7 ■ "Map 4 - MCU Board" on page 10-10 ■ "Toner Dispense" on page 10-23

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Reseat and lock the affected Toner Cartridge and cycle system power. Does the error persist?	Go to step 2.	Complete
2	Replace the Toner Cartridge (page 8-12). Does the error persist?	Go to step 3.	Complete
3	Check P/J31 on the MCU Board and the Toner Cartridge CRUM connection to the affected color on the Dispense Assembly: ■ P/J311 Yellow ■ P/J312 Magenta ■ P/J313 Cyan ■ P/J314 Black Are the connections secure?	Go to step 4.	Secure the connectors.
4	Check continuity of the toner CRUM harness. Disconnect J31 from the MCU Board and the connection to the affected color on the Dispense Assembly: ■ P/J311 Yellow ■ P/J312 Magenta ■ P/J313 Cyan ■ P/J314 Black Is the harness damaged?	Repair the harness.	Go to step 5.
5	Check for +3.3V between J31-7 <=> ground on the MCU Board. Is +3.3V present on J31-7?	Repair the CRUM connector.	Replace the MCU Board (page 8-103).

Insert CMYK Cartridge

The printer does not detect the indicated Toner Cartridge.

Applicable Error Codes

- Insert Cyan Cartridge
- Insert Magenta Cartridge
- Insert Yellow Cartridge
- Insert Black Cartridge

Initial Actions

- Check that the cartridge is properly installed and is a genuine Xerox Toner Cartridge.
- Cycle printer power.
- If problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
▪ CRUM Connector, PL5.1.14 ▪ Toner Cartridge, PL5.1.21 ~ 24 ▪ Toner CRUM Harness, PL5.1.26 ▪ MCU Board, PL8.2.13	▪ "Map 1 - Print Engine" on page 10-7 ▪ "Map 4 - MCU Board" on page 10-10 ▪ "Toner Dispense" on page 10-23

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Reseat and lock the affected Toner Cartridge and cycle system power. Does the error persist?	Go to step 2.	Complete
2	Replace the affected Toner Cartridge (page 8-12). Does the error still occur?	Go to step 3.	Complete.
3	Check toner CRUM harness continuity. Disconnect J31 from the MCU Board and the connection to the affected color on the Dispense Assembly: ▪ Yellow: J311 ▪ Magenta: J312 ▪ Cyan: J313 ▪ Black: J324 Is the harness damaged?	Repair the harness.	Go to step 4.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Check the toner CRUM voltage at P/J31 on the MCU Board. Measure the voltage across: ■ Ground<=>P/J31-3 pin (Yellow) ■ Ground<=>P/J31-7 pin (Magenta) ■ Ground<=>P/J31-11 pin (Cyan) ■ Ground<=>P/J31-15 pin (Black) Is +3.3 V present at the affected CRUM connector?	Replace the Dispense Assembly (page 8-64).	Go to step 5.
5	Check for +3.3 V at P/J14 on the MCU Board. Is 3.3 V present at P14-12?	Replace the MCU Board (page 8-103).	Replace the LVPS (page 8-91).

Non-Xerox Toner

The Printer does not have a genuine Xerox Toner Cartridge installed. The following troubleshooting procedure applies to this error.

Applicable Error

- Non-Xerox Toner

Initial Actions

- Check the Toner Cartridge manufacturer.
- Cycle printer power.
- If problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Image Processor Board, PL8.1.7.	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Is the cartridge a Xerox cartridge?	Go to step 2.	Replace with a genuine Xerox cartridge or set to Non-Xerox Toner if necessary.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
2	Check the installed cartridges by replacing each with known good cartridges. Does the error persist?	Replace the I/P Board (page 8-87).	Complete.

Check Unit CTD Sensor

The ADC Sensor is likely contaminated with dust or debris.

Applicable Error

- Check Unit CTD Sensor

Initial Actions

- Clean the ADC Sensor lens, located on the Transfer Belt, using a dry cloth or cotton swab.
- Check the Transfer Belt life counter. If near end of life, replace the part.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Left Side Harness, PL3.1.18 ■ Transfer Belt, PL6.1.7 ■ MCU Board, PL8.2.13	■ "Map 1 - Print Engine" on page 10-7 ■ "Map 4 - MCU Board" on page 10-10 ■ "Xerographics" on page 10-21

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Transfer Belt installation. Is the Transfer Belt correctly installed?	Go to step 3.	Reseat the Transfer Belt. Go to step 2.
2	Does the error still occur when the printer is turned On?	Go to step 3.	Complete.
3	Check connectors P/J28 and P/J281 between the MCU Board and Transfer Belt. Are the connectors secure?	Go to step 4	Secure the connectors.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Check Left Side Harness continuity. Disconnect P/J28 from the MCU Board and P/J281 to the Transfer Belt. Is the harness damaged?	Repair or replace the harness.	Go to step 5.
5	Replace the Transfer Belt (page 8-79). Does the error persist?	Replace the MCU Board (page 8-103).	Complete.

Over Heat

The Humidity Sensor indicated the internal temperature of the printer is too high. The printer enters half-speed mode to reduce internal temperatures.

Applicable Error

- Over Heat Turned Halfmode

Initial Actions

- Check the Fan and vents.
- Move the printer to a cooler environment.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Fan, PL8.1.1 ■ Humidity Sensor, PL8.2.7 ■ MCU Board, PL8.2.13 ■ Humidity Harness, PL9.1.6	■ "Map 1 - Print Engine" on page 10-7 ■ "Map 4 - MCU Board" on page 10-10 ■ "LVPS" on page 10-17 ■ "Xerographics" on page 10-21

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the operating environment. Is the printer installed in an area that meets environmental specifications (page 1-14)?	Go to step 3.	Advise the customer.
2	Turn the printer Off for 5 minutes. Does the error still occur when the printer is turned On?	Go to step 3.	Print several documents. If the error persists, go to step 6.
3	Print the Configuration page to check reported temperature. Is the reported temperature above 32 degrees C?	Go to step 4	Replace the MCU Board (page 8-103).
4	Check Humidity Harness continuity. Disconnect P/J20 from the MCU Board and P/J201 from the Humidity Sensor. Is the harness damaged?	Repair the harness.	Replace the Humidity Sensor (page 8-95)

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
5	Check for +5V between J20-4 <=> ground on the MCU Board. Is +5V present on J20-4?	Go to step 6.	Replace the MCU Board (page 8-103).
6	Test the Fan (page 4-29): **Engine Diag > Motor Test > Fan High** Does the Fan rotate?	Go to step 8.	Go to step 7.
7	Check for +12V between J510-1 <=> ground on the Fan Board. Is +5V present on J510-1?	Replace the Fan (page 8-86).	Go to step 8.
8	Check for +24V between J520-1 <=> J520-3 on the LVPS. Is +24V present?	Replace the Fan Board (page 8-105).	Replace the LVPS (page 8-91)

General Troubleshooting

In this chapter...

Chapter

4

Introduction

This chapter covers the System Startup, Power On Self Test (POST), Service Diagnostics, and troubleshooting procedures not associated with an error code or Control Panel error message. For troubleshooting problems associated with a error message, refer to "Error Messages and Codes" on page 3-1. Print-quality problems are covered in "Print-Quality Troubleshooting" on page 5-1.

Initial Actions

Some problems are easy to resolve. Use these steps in an attempt to quickly isolate the problem.

1. Turn Off the printer, wait 10 seconds, then turn On the printer. This often solves problems related to power transients, ESD, and software errors.
2. If a message appears on the Control Panel, see "Error Message Summary" on page 3-6 for specific procedures related to error messages.
3. Check the power cord. Is the power cord plugged into the printer and a properly grounded electrical outlet? Is the power cord damaged?
4. Check the electrical outlet. Is the outlet turned off by a switch or breaker?
5. Does other electrical equipment plugged into the outlet operate?
6. Are all options properly installed?

Display Problems

If the Control Panel displays only diamonds or is blank:

1. Turn Off the printer, wait 10 seconds, then turn On the printer.
2. Self Test Messages should appear on the display. If not, see "Control Panel Troubleshooting" on page 4-44.
3. When tests complete, "Ready to Print" should appear on the display.

If the problem persists see "Control Panel Troubleshooting" on page 4-44, and "DC Power Supply Troubleshooting" on page 4-46.

Printing Problems

If menu settings entered from the Control Panel have no effect, change or disable print settings from the print driver, the print utilities, or the application.

Note

Settings made in the application, print driver, or print utilities override settings made from the Control Panel.

If a job did not print correct or incorrect characters were printed, check the following:

1. Check for "Ready" on the display before sending a print job.
2. Check the loaded media.
3. Check the print driver.
4. Check the printer connections to Ethernet or USB.

5. Verify that the correct print media size is selected.

6. If using a print spooler, verify that the spooler has not stalled.

7. Check the printer's interface configuration. Determine the host interface you are using. Print a Configuration page to verify that the current settings are correct.

Secure Print

If secure print is not available or not printing, refer to the requirements below.

- Enable or increase RAM Disk size if optional memory is installed.

- The number of secure print jobs the printer can store is dependent on the job size including number of pages, graphics, color attributes, and the amount of memory installed. To increase this number, add memory.

Media-Based Problems

1. Check that the correct type of media is being used; for the correct media types and weights, refer to "Media Guidelines" on page A-3. The customer should be using a quality laser printer paper. The printer may have trouble picking glossy or overly smooth paper.

2. Use only Xerox Premium Transparency Film in this printer.

3. Inspect the paper for bent, torn, or folded corners.

4. Check the media path for obstructions or debris.

5. Ensure that the correct media type is set at the Control Panel.

6. Ensure that the media guides are set correctly.

7. Ensure that the media is a supported type for the tray.

8. Load a fresh ream of paper in the tray.

Multiple-Sheet Pick

1. Check the media. Is the media in good condition and listed as supported media? Quality office laser printer paper works best.

2. Check that the printer is printing within its environmental specifications by printing and reviewing the Status page.

3. Remove the tray and remove, fan, and reload the media. Ensure that the guides are securely against the paper and the tray has not been over filled.

4. Try loading paper from a fresh ream, fan the paper, and then insert into the tray or flip existing paper over.

5. Check the tray's Separator Roller for damage.

6. Clean the Feed Rollers with a clean, dry, lint-free wipe.

7. Replace the Feed Rollers.

8. Replace theTray.

Mis-Pick

1. Check that the correct type of media is being used and the media guides are set correctly.
2. Remove, fan, and reload the media. Check that the tray is not over filled.
3. Try loading media from a fresh ream, fan, and then insert the media into the tray or flip existing media over.
4. Clean the Feed and Separator Rollers with a clean, dry, lint-free wipe.

Skewed Image

1. The image area is not parallel, Skewed, with the sides of the page but the printer neither jams nor displays an error code.
2. Remove the tray and ensure the paper guides are set correctly.
3. Check that the correct type of media for the tray is being used.
4. Ensure that the tray has not been over filled. (Skewed images are a common defect when the tray is overfilled.)
5. Verify the Feed Rollers are installed correctly.
6. Clean the Feed and Separator Rollers with a clean, dry, lint-free wipe.

Damaged Prints

The printed page exits the printer either wrinkled, creased, or torn. The printer neither jams nor displays an error code.

1. Stop the sheet at various points in the media path to determine where the media is damaged.
2. Try using the next heaviest type of paper.
3. Feed paper through the printer from each of the available trays. Is the paper damaged when fed out of one tray but not when fed out of the others? If so, inspect the tray for damage, ensure that the media guides are set correctly and verify that the proper media is being used.
4. If media shows damage from all trays, check the registration rollers.
5. Inspect the tray and media path for debris or broken components.

Wrinkled Envelopes

Envelope wrinkling of varying severity can sometimes occur. In general, envelope wrinkling is considered a laser technology limitation due to the fusing process which relies on heat and pressure to bond toner to the media. The #10 Commercial envelopes are particularly susceptible to wrinkling.

1. Check the media path for obstructions or debris.
2. Check that the media guides are set correctly.
3. Test envelopes from other manufacturers to find the best result.

Fuser Jams

1. Check that the Fuser is properly seated, locked, and operates normally.
2. Ensure that the paper is in good condition and is listed as supported media. Try loading new media from a fresh ream.
3. Ensure that only supported transparency film is being used.
4. Check that the printer is operating within its environmental specifications by printing the Configuration page.
5. Ensure that the loaded media matches the Control Panel settings.
6. Are the margins on the page greater than 4 mm?
7. Check the Fuser area for debris.
8. Visually inspect the Fuser for burrs.
9. Test the Fuser drive using Service Diagnostics.

Exit Jams

1. Check that the correct type of media is being used; refer to"Media Guidelines" on page A-3.
2. Ensure the printer is within its operating environmental specifications.
3. If media is showing excessive curl when exiting, try turning the media over, loading new media from a fresh ream, or a different type of media.
4. Ensure that the loaded media matches the Control Panel settings.
5. Is the jam caused by a heavy, stiff paper being used for two-sided printing? In such cases, a lighter grade of paper should be used.
6. If debris is visible, clean all exit locations in the Fuser and the Duplex Unit, with a clean, dry, lint-free wipe.
7. Does the exit roller turn? Test the duplex motor using Service Diagnostics.

System Startup

Listed here is a typical startup routine from a cold start. The printer requires approximately 20 seconds to complete this sequence.

1. When the power switch is turned On, the printer loads and runs POST diagnostics.
2. The Ready, Error, and Power Save LEDs turn On and the **Diagnosing...** message is displayed.
3. If POST test pass, Ready, Error, and Power Save LEDs are turned Off. If a POST test fails, an error is displayed.
4. The Ready LED is turned On and the message changes to **Xerox (TM) Toner Cartridge**.
5. If the Configuration page is disabled at power On, The Ready LED turns Green and the **Ready** message is displayed. If Configuration page printing is enabled, the message changes to **Processing...**, then **Configuration Printing** and the Ready LED begins to blink as the configuration data is being read.
6. The message changes to **Please Wait Calibrating...** and the Ready LED stops blinking as the Configuration page prints.
7. The message returns to **Ready** when the printer is ready to accept new data.

Power On Self Test (POST)

POST tests run when the printer is powered On. Errors are reported to the display.

1. Checks and initializes CRU Register.
2. Initializes ASIC.
3. Checks RAM.
4. Initializes the Control Panel driver.
5. Checks the ROM checksum.
6. Checks memory.
7. Initializes EEPROM driver.
8. Initializes IOT controller.
9. Starts the operating system.

POST Test Description

Test	Error	Description
CodeROM	116-317	This test calculates the ROM checksum and compares it to the value stored in CodeROM.
FontROM		This test calculates the FontROM checksum and compares it to the value stored in FontROM.
	116-310	Checksum error is in the built-in FontROM.
	116-317	Checksum error is in the main program ROM.
EEPROM		This test verifies the EEPROM.
	116-323	Error in EEPROM0 during initialization.
	116-326	Error in EEPROM1 during initialization.
DRAM		This test checks the DRAM.
	116-315	Error if included RAM is different.
	116-316	Error if extended RAM is different.
	116-320	Error if extended RAM is not supported.
MAC+PHY Test	116-352	This test performs PHY internal loopback.
ASIC	116-343	Runs register test.
PANEL		This test checks Control Panel function.
IOT	024-371	This test Runs communication tests between the print engine and controller.

Service Diagnostics

The Phaser 6140 printer has built-in diagnostics to test electromechanical components, display printer status, and provides some NVRAM access. Use these tests to diagnose problems and isolate which component or sub assembly part needs replacement.

If confronted with an error that requires more than a cursory investigation to clear or when directed by a troubleshooting procedure, use the diagnostic tests to exercise selected sub-assemblies or parts in the vicinity of the reported error. Diagnostic tests are controlled from the Control Panel and are described in detail in "Diagnostic Test Descriptions" on page 4-10.

Using Service Diagnostics

Two test groups, ESS Diag and Engine Diag are available to test components of the printer. Most diagnostic tests are straightforward and require no additional explanation, but there are some that require specific conditions be met to achieve meaningful results. These instructions cover each of the test groups, listing special instructions, conditions, or other information necessary to successfully interpret the results of the diagnostic tests.

Diagnostic tests are arranged in a menu structure. Use the arrow buttons to scroll through the menus and highlight the desired test. The **OK** button runs the test. During the test, the Ready and Error LEDs are turned On. Press **Cancel** to stop the test. To switch between test groups, exit the current diagnostics mode and return to the Service Mode menu.

Control Panel button functions while in Service Diagnostics:

Button	Function
Up	Moves or selects an item or parameter.
Down	Moves or selects an item or parameter.
Left	Moves the cursor to the left.
Right	Moves the cursor to the right.
OK	Confirms settings or runs the selected test.
Cancel	Resets a diagnostic item, cancel, or exit the menu.

For parameters, pressing **OK** after selecting an item from the menu displays the current value of the item.

Entering Service Diagnostics Mode

1. Turn the printer Off.
2. Press and hold the **Up** and **Down** arrows simultaneously and turn the printer On.
3. Release the buttons when **Service Mode** and **ESS Diag** appear on the display.

Exiting Service Diagnostics Mode

Scroll to **Exit Mode**, select Complete, then press **OK**.

Service Diagnostics Menu Maps

Diagnostic Menu Map Page 1

To access Service Mode, press Up and Down Arrows at power ON.

Menu · OK · Power Saver On/Off

Service Mode · Exit

ESS Diag

- All Test
- CodeROM Test
- EEPROM Test
- DRAM Test
- MAC+PHY Test
- ASIC Test
- PANEL Test
- Engine Test
- HD Test*1

Engine Diag

- Sensor Test ▶
- Motor Test ▶
- NVM Settings ▶

Print Info

- Info Page
- Print Settings

Installation

- Serial No.
- HexDump
- Tone Correction
- Pixel Counter
- Configuration
- Print Counter ▶
- CopyCounter MtoB
- CopyCounter BtoM
- Clear All NVM
- Clear JobHistory
- Clear AuditronPV*
- HD Erase*1

Sensor Test:
- Manual Feed Sensor
- Tray No Paper
- Regi Sensor
- Exit Sensor
- K Mode Sensor
- Side Switch
- Cover Open Sensor

Motor Test:
- Main Motor FULL2
- Main Motor FULL1
- Main Motor HALF
- Sub Motor FULL2
- Sub Motor FULL1
- Sub Motor HALF
- K Mode Solenoid
- Tray Feed Solenoid (Half)
- Tray Feed Solenoid (Init)
- Fan HIGH
- Fan LOW
- Yellow Toner Motor
- Magenta Toner Motor
- Cyan Toner Motor
- Black Toner Motor
- Regi Clutch
- Tray Feed Solenoid (Auto)
- Drum Erase Lamp K
- Drum Erase Lamp YMC

NVM Settings:
- Edit NVM
- Save NVM to ESS
- Load NVM from ESS
- Initialize Slave
- Print NVM Info

Print Counter:
- Color Print
- B/W Print
- Total Print
- Color Backup
- B/W Backup
- Total Backup
- Color Error
- B/W Error

s6140-241

Diagnostic Menu Map Page 2

Test Print

- No Image IOT
- Pattern IOT
- Grid2 ESS
- Cyan 20% ESS
- Magenta 20% ESS
- Yellow 20% ESS
- Black 20% ESS
- CMY 20% ESS
- Gradation ESS
- TonerPalletCheck
- ContaminationChk

Parameter

- Slow Scan KtoP
- Slow Scan 600M
- Slow Scan 600Y
- Slow Scan 600C
- Fast Scan KtoM
- Fast Scan KtoY
- Fast Scan KtoC
- Fast Scan M-Feed
- Fast Scan Tray2
- Fast Scan Tray3
- Fast Scan Duplex
- Fast Scan 2 KtoM
- Fast Scan 2 KtoY
- Fast Scan 2 KtoC
- Life Y Toner ▶ — Life Y Toner: 0
- Life M Toner ▶ — Life M Toner: 0
- Life C Toner ▶ — Life C Toner: 0
- Life K Toner ▶ — Life K Toner: 0

Parameter (Cont.)

- Life Fuser Sheet ▶ — Life Fuser: 0
- Life Printer Sheet ▶ — Life Printer: 0
- Life DTB Waste ▶ — Read / Initialize[2]
- Life YWasteToner ▶ — Life YWaste Toner: 0
- Life MWasteToner ▶ — Life MWaste Toner: 0
- Life CWasteToner ▶ — Life CWaste Toner: 0
- Life KWasteToner ▶ — Life KWaste Toner: 0
- Life Drum Y Time ▶ — Life IU Y: 0
- Life Drum M Time ▶ — Life IU M: 0
- Life Drum C Time ▶ — Life IU C: 0
- Life Drum K Time ▶ — Life IU K: 0
- Life Drum Xero ▶ — Life IU Xero: 0
- Life Drum Deve K ▶ — Life IU Deve K: 0
- Life Manual Feed ▶ — Life Manual Feed: 1
- Life Tray 2 Sheet ▶ — Life Tray: 100
- Life Tray 3 Sheet
- Life Duplex Sheet
- Life Custom In
- Life Custom Out
- Print ▶ — Ready[3]

Exit Mode

- Complete Exit ▶ — Exit?

[1] **Prints four single color pages and a repeating defects page**
[2] **Resets counter when Transfer Unit is replaced**
[3] **Prints current parameters**

s6140-242

Diagnostic Test Descriptions

The table below lists the diagnostic tests available, the expected results, and a brief description of each test. If a test fails and displays an error code, use the troubleshooting procedure in Chapter 3 specific to the error. If the test indicates component failure, replace the faile componet using the procedures in Chapter 8. If testresults are inconclusive, isolate the problem using the general procedures in this Chapter.

Caution
Do not turn the printer Off during ESS Diag testing.

Test	Control Panel Display	Test Description
ESS Diag	Tests core print engine components.	
All Test	▪ Start ▪ Processing ▪ Check OK or *<Failed Test>* Error	This test runs all ESS Diag tests except MAC/PHY and Panel tests. Test returns Check OK or failed test name.
CodeROM Test	▪ Start ▪ Processing ▪ Check OK or NG	Calculates the ROM checksum and compares it with the stored value. Run this test when a 016-317 error occurs.
EEPROM Test	▪ Start ▪ Processing ▪ Check OK or NG	This test checks the diag. area of the EEPROM. Run this test when 116-323, 116-324 and 116-390 errors occur.
DRAM Test	▪ Start ▪ Processing ▪ Check OK or NG	This test checks the DRAM address lines. Optional memory is checked if found. Run this test when 116-315, 116-316 and 116-320 errors occur.
MAC+PHY Test	▪ Start ▪ Processing ▪ Check OK or NG	Run this test when 116-314, 116-350, 116-351, 116-352 and 116-355 errors occur.
ASIC Test	▪ Start ▪ Check OK or ASIC Error	ASIC Register check. Run this test when 116-343 errors occur.
PANEL Test	▪ Start	This test checks the Control Panel buttons. Button function is indicated on the display and LEDs.

Button	LED Ready	LED Error	LED Power Save	Display
Up	On	On	Off	UP
Down	On	On	Off	DOWN.
Left	On	Off	Off	LEFT
Right	On	Off	Off	RIGHT
OK	Off	On	Off	SET
Menu	Off	On	Off	MENU.
Cancel	Off	Off	Off	CANCEL JOB
Power Save	Off	Off	On	POWER SAVE

Test	Control Panel Display	Test Description
Engine Test	▪ Start ▪ Check OK or Engine Error	Print engine communication test. Run this test when 024-371 errors occur.

Test	Control Panel Display	Test Description
Engine Diag	Tests for print engine components.	
Sensor Test	At the start, L - 0 is displayed. L changes to H and back to L while the counter increments when a sensor is turned On from Off.	These tests check whether the sensors operate normally. The Sensor Test is performed for all the components. Press the **OK** button to run the selected test. Press **Cancel to** exit the test. The display returns to the Service Mode menu.

	Component tests:	**NOTE** During the Sensor Test, no other diagnostic. functions can be performed. The printer only accepts DI components and exit commands.

Test	**Component**
Manual Feed Sensor	Manual Feeder No Paper Sensor
Tray No Paper	Tray 1 No Paper Sensor
Regi Sensor	Registration Sensor
Exit Sensor	Exit Sensor
K Mode Sensor	K Mode Sensor
Side Switch	Right Side Door Switch
Cover Open Sensor	Interlock Switch
Option No Paper	Tray 2 No Paper Sensor
Option Path Sensor	Tray 2 Registration Sensor

Test	Control Panel Display	Test Description
Motor Test		These tests check operation of the electromechanical components. Press **OK** button to run the selected test. Press **Cancel** to exit the test. The display returns to the Service Mode menu.
	Component tests.	**NOTE** During the Motor Tests, no other diagnostic. functions can be performed. The printer only accepts components and exit commands.

Test	**Component**
Main Motor(FULL2) Main Motor(FULL1) Main Motor(HALF)	Main Drive Assembly
Sub Motor(FULL2) Sub Motor(FULL1) Sub Motor(HALF)	Sub Drive Assembly
K Mode SOLENOID(Auto OFF)	Color Mode Switching Solenoid
Tray Feed SOLENOID (Half) Tray Feed SOLENOID (Init)	Tray 1 Feed Solenoid
Exit Motor(FULL1) Exit Motor(FULL2) Exit Motor(FULL3) Exit Motor(HALF)	Duplex Exit Motor
Duplex Motor(FULL1) Duplex Motor(FULL2) Duplex Motor(FULL3) Duplex Motor(HALF)	Duplex Motor

Test	Control Panel Display	Test Description
	Option Feeder Motor (FULL1) Option Feeder Motor (FULL2) Option Feeder Motor (FULL3) Option Feeder Motor (HALF)	Optional Feeder Feed Motor
	Fan(HIGH) Fan (LOW)	Fan
	Yellow Toner Motor Magenta Toner Motor Cyan Toner Motor Black Toner Motor	Toner Motors
	Regi Clutch	Drive Clutch
	Tray Feed SOLENOID (Auto)	Tray 1 Feed Solenoid
	Option Feed SOLENOID (Auto)	Tray 2 Feed Solenoid
	Option Turn Roll	Optional Feeder Drive Clutch
	Duplex Clutch	Duplex Clutch
	Drum Erase Lamp K	Black Erase lamp
	Drum Erase Lamp YMC	Color Erase Lamps
NVM Settings	Edits, saves, loads, and prints NVM information.	
Edit NVM	▪ Ad0000=00000000* ▪ Please wait	Displays current NVM values. Use this function to edit NVM information. Caution: Change NVM values only when directed to do so by a troubleshooting procedure.
Save NVM to ESS	Save NVM ▪ Save NVM MCU -> ESS OK? ▪ Saved ▪ Please wait	Saves MCU NVM to the IP Board.
Initialize Slave	▪ OK? ▪ Processing ▪ Loaded ▪ Please wait	Loads MCU NVM from the IP Board into the replacement MCU Board.
Print NVM Info	▪ Processing	Prints NVRAM data in the Controller.
Print Info	Provides printer configurations and settings information.	
Info Page	▪ Ready ▪ Processing	Prints version information. The Configuration Page contains: ▪ Engine unit information ▪ Standard Tray ▪ Optional Tray (displaying version) ▪ Optional Duplex Unit (displaying version) ▪ Engine ROM Revision No. ▪ MCU NVM Revision No.

Test	Control Panel Display	Test Description
Print Settings	■ Ready ■ Processing	Prints the configured settings. ■ Serial No. ■ HexDump On/Off Information ■ Tone Correction On/Off Information ■ Color Print Count ■ B/W Print Count ■ Total Print Count ■ Color Backup Count ■ B/W Backup Count ■ Total Backup Count ■ Color Error Count ■ B/W Error Count
Installation	Provides printer installation information.	
Serial No.	■ HATxxxxxx or ■ HARxxxxxx	Displays the 6 digit Serial Number. This value is read-only.
Hex Dump	■ OFF * ■ ON	Sets **HexDump** On/Off. Used to analyze received data in case of an error. Setting Hex Dump to On enables printing of received data via [Info Page] under [Print info].
Tone Correction	Tone Correction ■ ON * ■ OFF	Controls TRC in conjunction with process control to keep density constant. Turn Off tone correction when correction exceeds the limit. Sets Tone Correction mode On/Off. **NOTE** When Toner Correction is changed, an "*" appears next to the text.
Pixel Counter	■ Y: nn.n ■ C: nn.n ■ M: nn.n ■ K: nn.n	Displays the ratio (% used) of the number of pixels per C/M/Y/K counted by the Controller to A4 size area except 4 mm area from the edge on the last page printed. ■ 100% = empty Toner Cartridge The value is rounded to one decimal place. For B/W print, only K is displayed. The ranges are from 0-100% for each color (CMYK).
Configuration	Not Used for Testing	
Print Counter	Numeric counts of activity.	
Copy Counter MtoB	■ OK? ■ Processing ■ Copied	Copies the values from Master NVM to Backup NVM on the IP Board. ■ Device-specific information called "Personal info" in the first 128 Byte ■ PV counter master ■ Printer counter master
Copy Counter BtoM	■ OK? ■ Processing ■ Copied	Copies the values from Backup NVM to Master NVM on the IP Board. ■ Device-specific information called "Personal info" in the first 128 Byte ■ PV counter backup ■ Printer counter backup

Test	Control Panel Display	Test Description
Clear All NVM	■ OK? ■ Processing ■ Initialized	Clears all NVM.
Clear Job History	■ OK? ■ Processing ■ Initialized	Deletes job history data from NVM.
Clear Auditron PV		Clears print volume (PV) or Print Auditron values.
Test Print	Test prints for troubleshooting the printer.	
No Image IOT	■ Ready ■ Processing	Prints a blank page.
Pattern IOT	■ Ready ■ Processing	Prints the Engine Test print. This page isolates the IP Board.
Grid 2 ESS	■ Ready ■ Processing	Prints a built-in grid pattern. This print isolates ESS function.
Cyan 20%	■ Ready ■ Processing	20 % density pattern of Cyan.
Magenta 20%	■ Ready ■ Processing	20 % density pattern of Magenta.
Yellow 20%	■ Ready ■ Processing	20 % density pattern of Yellow.
Black 20%	■ Ready ■ Processing	20 % density pattern of Black.
CMY 20%	■ Ready ■ Processing	20 % density pattern of Cyan, Magenta, and Black combined.
Gradation	■ Ready ■ Processing	Prints a pattern in which the density of CMYK is varied from 0-100 %.
Toner Pallet Check	Toner Pallet Check	Pattern of 100 % density all colors.
Contamination Check	Contamination Check	Prints a scale pattern for each color (sheets 1-4) and the Pitch Chart, a repeating defects page (sheet 5).
Parameter	Reads/writes the parameter values, errors, and life counter values stored in the printer. **NOTE** Print the parameter list using the Print function of Parameter Menu before changing the value of the registration.	
Slow Scan K to P	■ -128 * ■ : ■ 127 *	Adjusts registration in the feed direction.
Slow Scan 600M	■ -128 * ■ : ■ 127 *	
Slow Scan 600Y	■ -128 * ■ : ■ 127 *	
Slow Scan 600C	■ -128 * ■ : ■ 127 *	
Fast Scan KtoM	■ -128 * ■ : ■ 127 *	Adjusts registration in the scan direction.
Fast Scan KtoY	■ -128 * ■ : ■ 127 *	
Fast Scan KtoC	■ -128 * ■ : ■ 127 **	

Test	Control Panel Display	Test Description
Fast Scan M-feed	▪ -30 * ▪ : ▪ 30 *	Adjusts registration in the scan direction.
Fast Scan Tray 1 & 2	▪ -30 * ▪ : ▪ 30 *	
Fast Scan Duplex		
Fast Scan 2 KtoM	▪ -1 * ▪ : ▪ 2 *	Adjusts registration in the scan direction.
Fast Scan 2 KtoY	▪ -1 * ▪ : ▪ 2 *	
Fast Scan 2 KtoC	▪ -1 * ▪ : ▪ 2 *	
Life Y Toner	▪ 0	Yellow toner cartridge life count.
Life M Toner	▪ 0	Magenta toner cartridge life count.
Life C Toner	▪ 0	Cyan toner cartridge life count.
Life K Toner	▪ 0	Black toner cartridge life count.
Life Fuser Sheet	▪ 0	Fuser sheet life count.
Life Printer Sheet	▪ 0	Printer life count.
Life DTB Waste	▪ 0	Belt Waste life count.
Life Y Waste Toner	▪ 0	Yellow waste toner life count.
Life M Waste Toner	▪ 0	Magenta waste toner life count.
Life C Waste Toner	▪ 0	Cyan waste toner life count.
Life K Waste Toner	▪ 0	Black waste toner life count.
Life IU Y Time	▪ 0	Yellow drum cycle count.
Life IU M Time	▪ 0	Magenta drum cycle count.
Life IU C Time	▪ 0	Cyan drum cycle count.
Life IU K Time	▪ 0	Black drum cycle count.
Life IU Xero	▪ 0	Imaging Unit motor operating time.
Life IU Deve K	▪ 0	K Developer sheet count.
Life Manual Feed	▪ 0	manual feed slot sheet count.
Life Tray 1 Sheet	▪ 0	Tray sheet count.
Life Tray 2 Sheet	▪ 0	Tray sheet count.
Life Duplex Sheet	▪ 0	Duplex sheet count.
Life Custom In	▪ 0	Custom sheet count.
Life Custom Out	▪ 0	Custom sheet count.
Print	▪ Ready	Prints current parameter values.
Exit Mode	Exits Service Mode.	
Complete Exit	Complete Exit ▪ Exit?	Pressing **OK** twice, exits the Service Diagnostic menu.

Print Engine Test Procedures

Procedures for testing each IOT sensor using Service Diagnostics.

Interlock Switch

Exit Sensor

Right Side Door Switch

K Mode Sensor

Registration Sensor

Tray No Paper Sensor

Manual Feed No Paper Sensor

Paper Path Sensor

Tray 2 No Paper Sensor
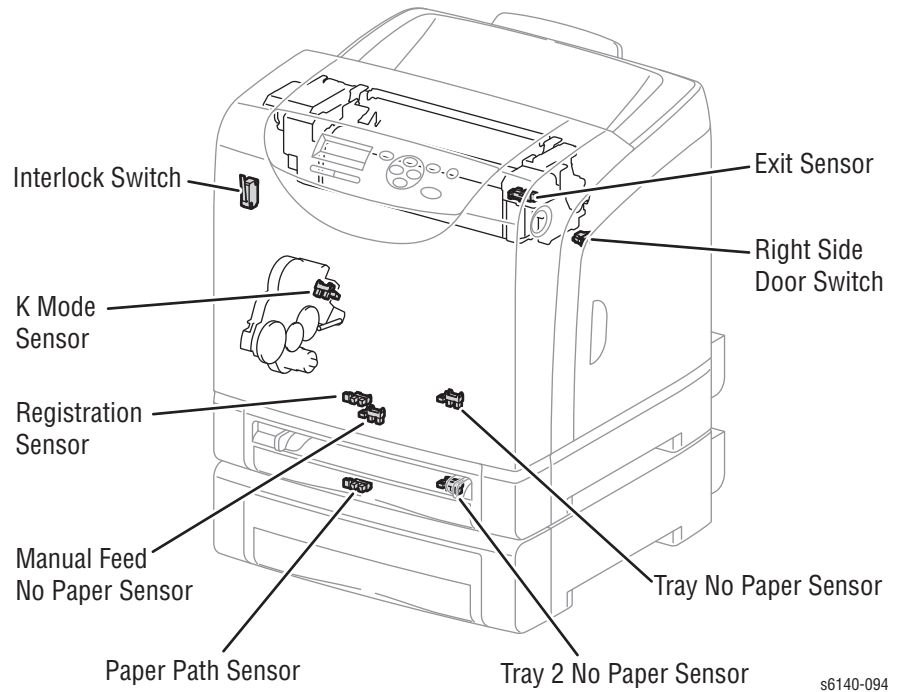
s6140-094

Manual Feed Sensor

1. Enter Service Diagnostics (page 4-7).
2. Run the Manual Feed Sensor test: **Engine Diag > Sensor Test > Manual Feed Sensor**.
3. Slide a sheet of paper in and out of the manual feed slot.

Control Panel

Manual Feed Sensor
L - 00

Manual Feed Sensor
H - 00

Normal

Manual Feed Sensor
L - 01
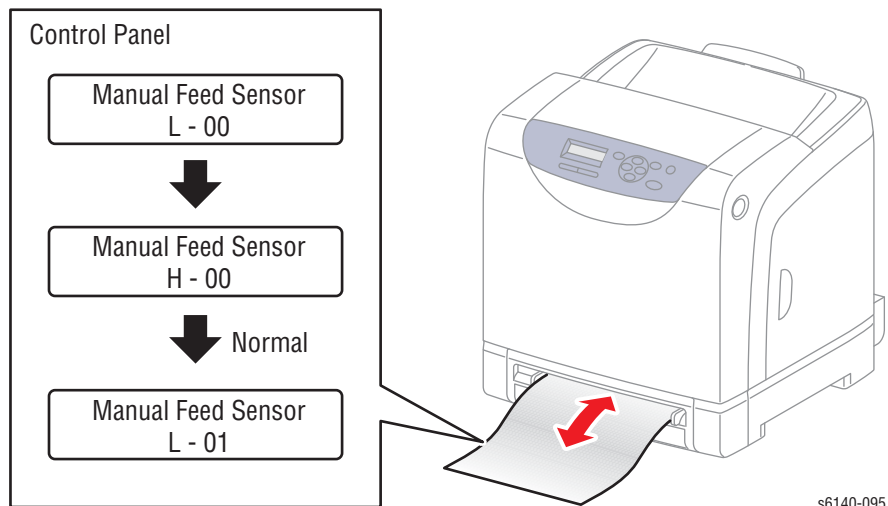
s6140-095

Note

Press **Cancel** to stop the test.

Tray 1 No Paper Sensor

1. Enter Service Diagnostics (page 4-7).
2. Run the Tray No Paper test: **Engine Diag** > **Sensor Test** > **Tray No Paper**.
3. Remove Tray.
4. Move the Actuator up and down while checking the Control Panel display.
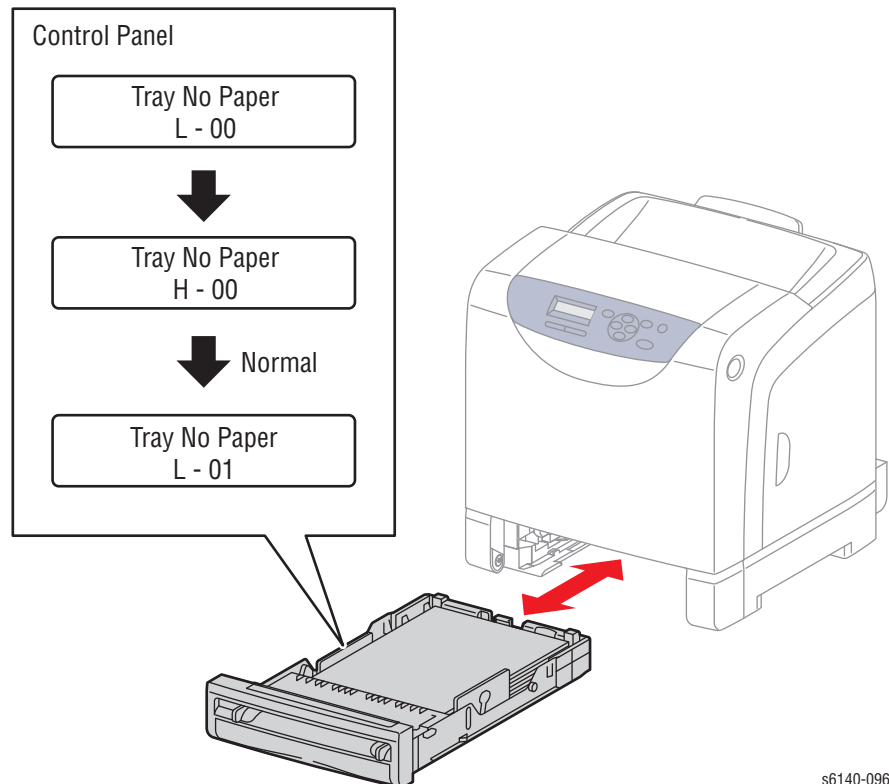
s6140-096

Note

Press **Cancel** to stop the test.

Registration Sensor

Caution

Cover the Imaging Unit to prevent light exposure.

1. Enter Service Diagnostics (page 4-7).
2. Remove Tray 1.
3. Open the Front Cover.
4. Lower the Transfer Belt.
5. Remove the Imaging Unit (page 8-7)
6. Run the Registration Sensor test: **Engine Diag** > **Sensor Test** > **Regi Sensor**.
7. Operate the actuator while checking the Control Panel display.
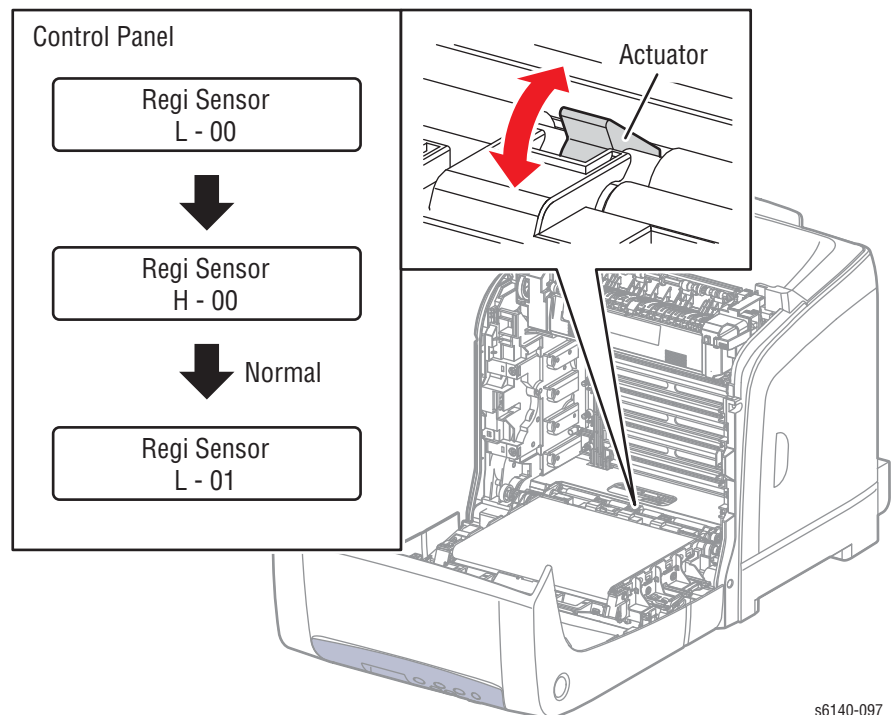
s6140-097

Note

Press **Cancel** to stop the test.

Exit Sensor

Warning

Allow the Fuser to cool before using this procedure.

1. Enter Service Diagnostics (page 4-7).
2. Open the Front Cover.
3. Run the Exit Sensor test: **Engine Diag > Sensor Test > Exit Sensor**.
4. Move the chute up and down and check the Control Panel display.

s6140-098
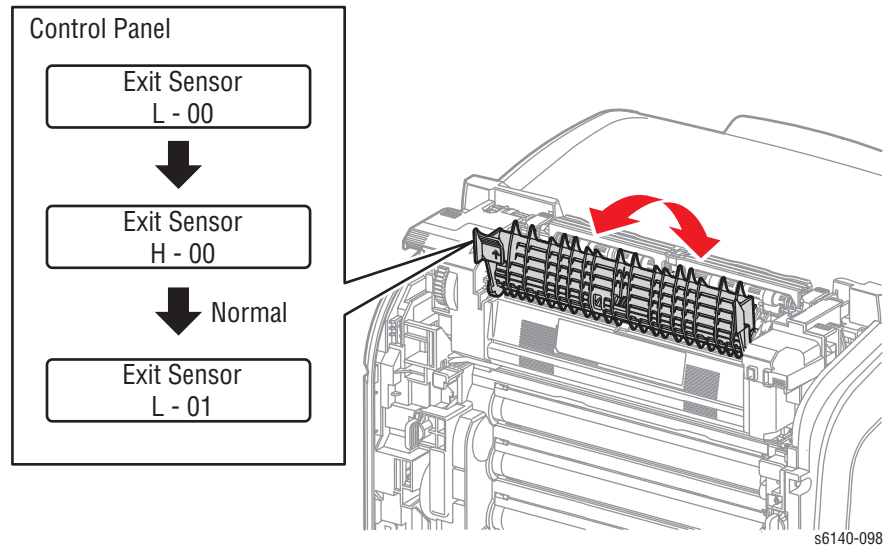
Note

Press **Cancel** to stop the test.

K Mode Sensor

Note

Close the Interlock Switch to provide power to the device under test.

1. Enter Service Diagnostics (page 4-7).
2. Remove Tray 1.
3. Open the Front Cover.
4. Lower the Transfer Belt.
5. Remove the Imaging Unit (page 8-7).
6. Remove the Left Side Cover (page 8-20).
7. Remove the Feed Drive Assembly (page 8-84) but do not disconnect the harness.
8. Run the K Mode Sensor test: **Engine Diag** > **Sensor Test** > **K Mode Sensor**.
9. Press the lever mounted on the solenoid to retract the actuator from the sensor.
10. Move a strip of paper in and out of the sensor to simulate the actuator.
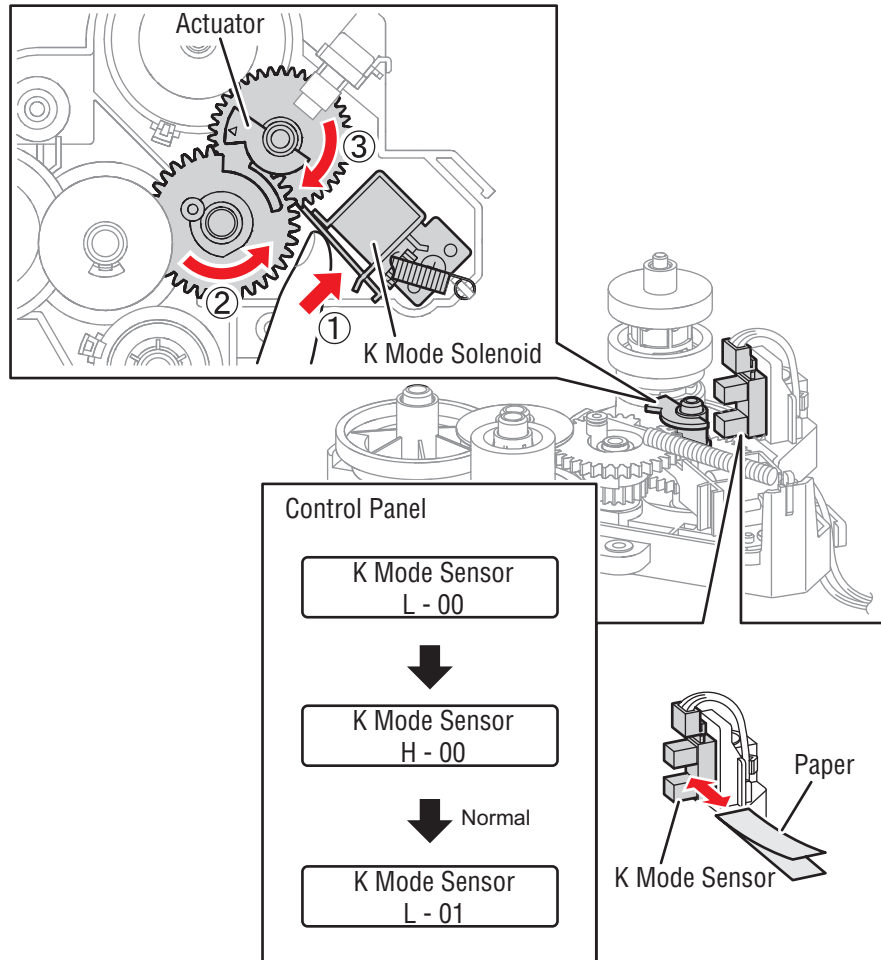
s6140-099

Note

Press **Cancel** to stop the test.

Drum Erase Lamp (K)

Note

Close the Interlock Switch to provide power to the device under test.

1. Enter Service Diagnostics (page 4-7).
2. Remove Tray 1.
3. Open the Front Cover.
4. Lower the Transfer Belt.
5. Remove the Imaging Unit (page 8-7).
6. Run the Drum Erase Lamp K test: **Engine Diag** > **Motor Test** > **Drum Erase Lamp K**.
7. Verify that the lamp is operating.
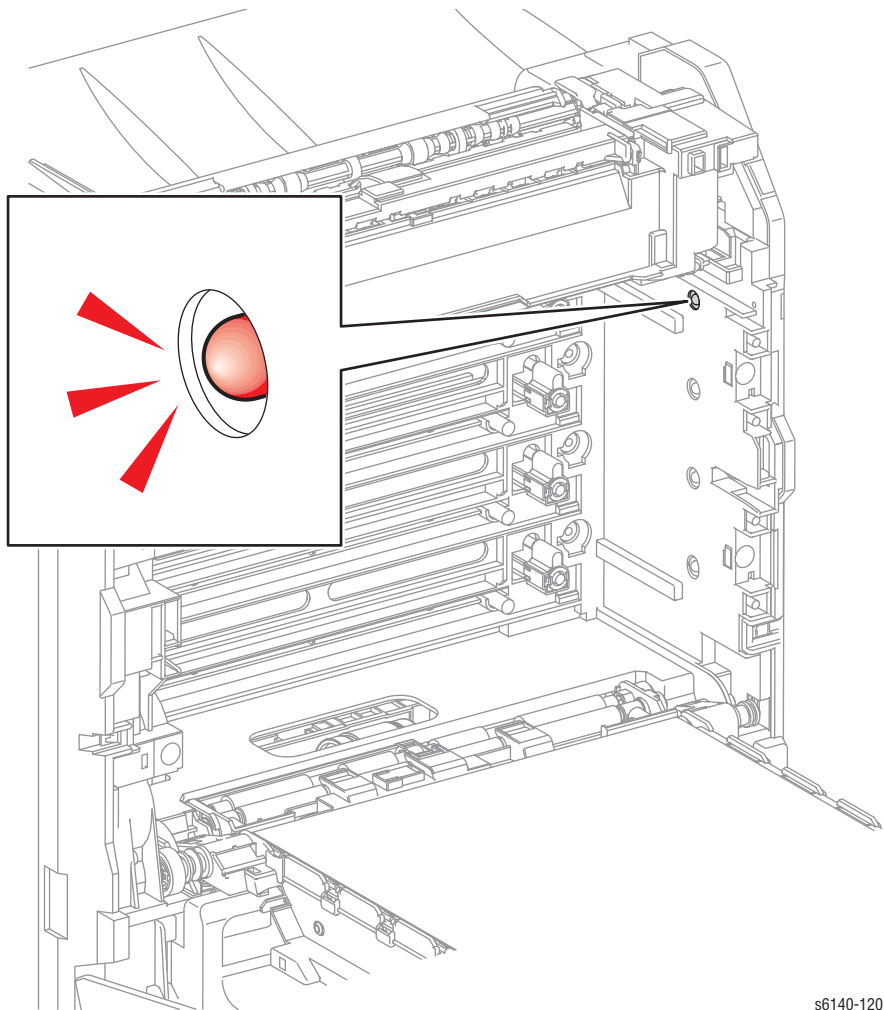
s6140-120

Note

Press **Cancel** to stop the test.

Drum Erase Lamp (C, M, Y)

Note

Close the Interlock Switch to provide power to the device under test.

1. Enter Service Diagnostics (page 4-7).
2. Remove Tray 1.
3. Open the Front Cover.
4. Lower the Transfer Belt.
5. Remove the Imaging Unit (page 8-7).
6. Run the Drum Erase Lamp YMC test: **Engine Diag** > **Motor Test** > **Drum Erase Lamp YMC**.
7. Verify that the lamps are operating.
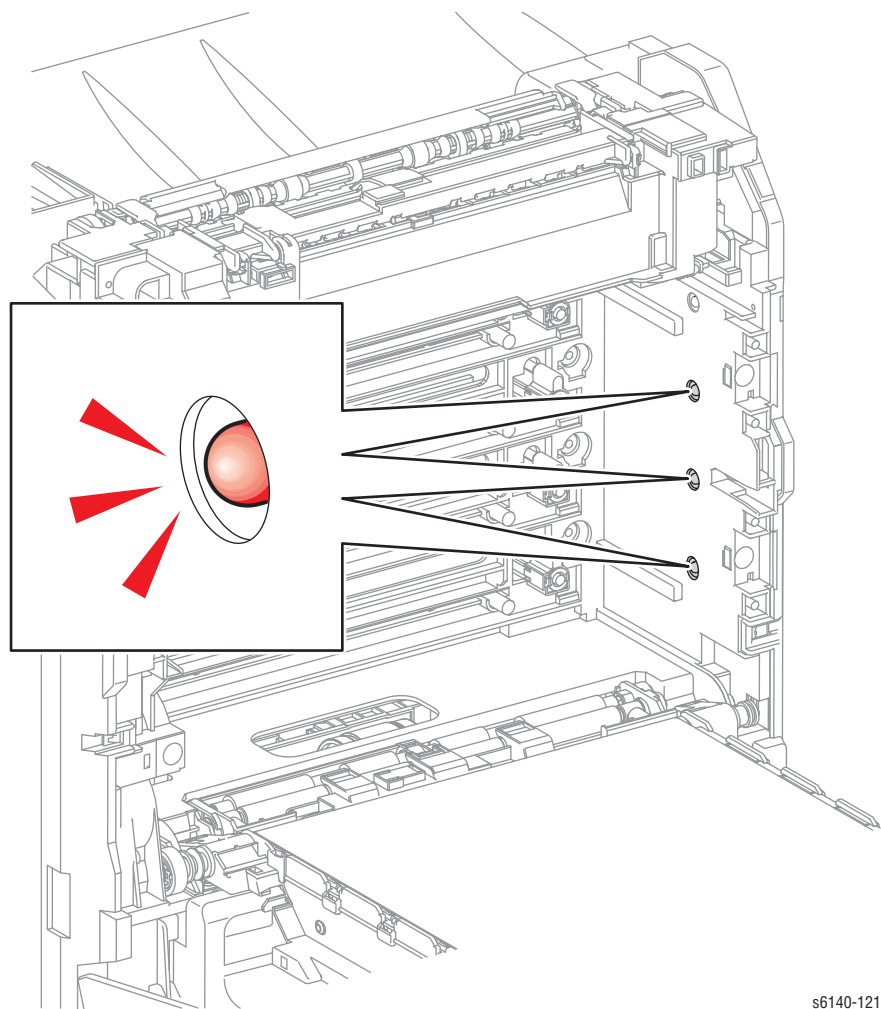
s6140-121

Note

Press **Cancel** to stop the test.

Right Side Door Switch

1. Enter Service Diagnostics (page 4-7).

2. Run the Side Switch test: **Engine Diag > Sensor Test > Side Switch**.

3. Open and close the Right Side Door while checking the display.

Control Panel

Side Switch
L - 00

Side Switch
H - 00

Normal

Side Switch
L - 01
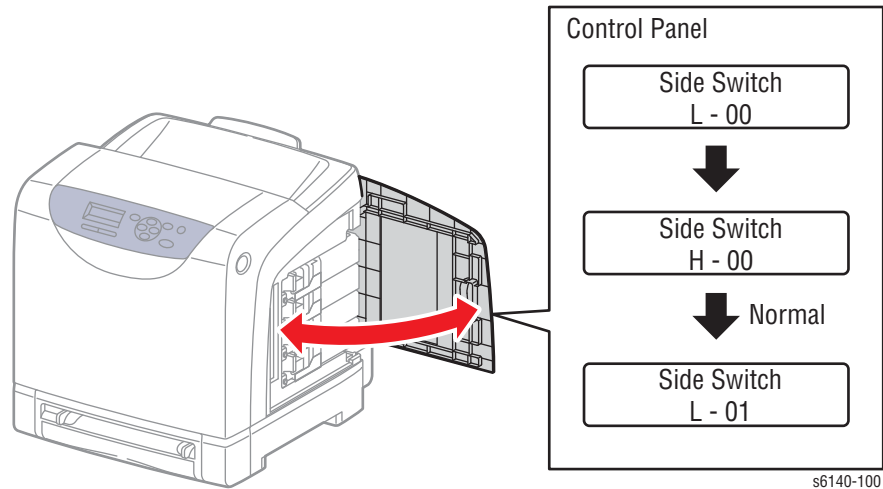
s6140-100

Note

Press **Cancel** to stop the test.

Interlock Switch

1. Enter Service Diagnostics (page 4-7).
2. Run the Interlock Switch test: **Engine Diag > Sensor Test > Interlock Switch**.
3. Open and close the Front Door while checking the Control Panel display.

Control Panel

Cover Open Sensor
L - 00

Cover Open Sensor
H - 00

Normal

Cover Open Sensor
L - 01
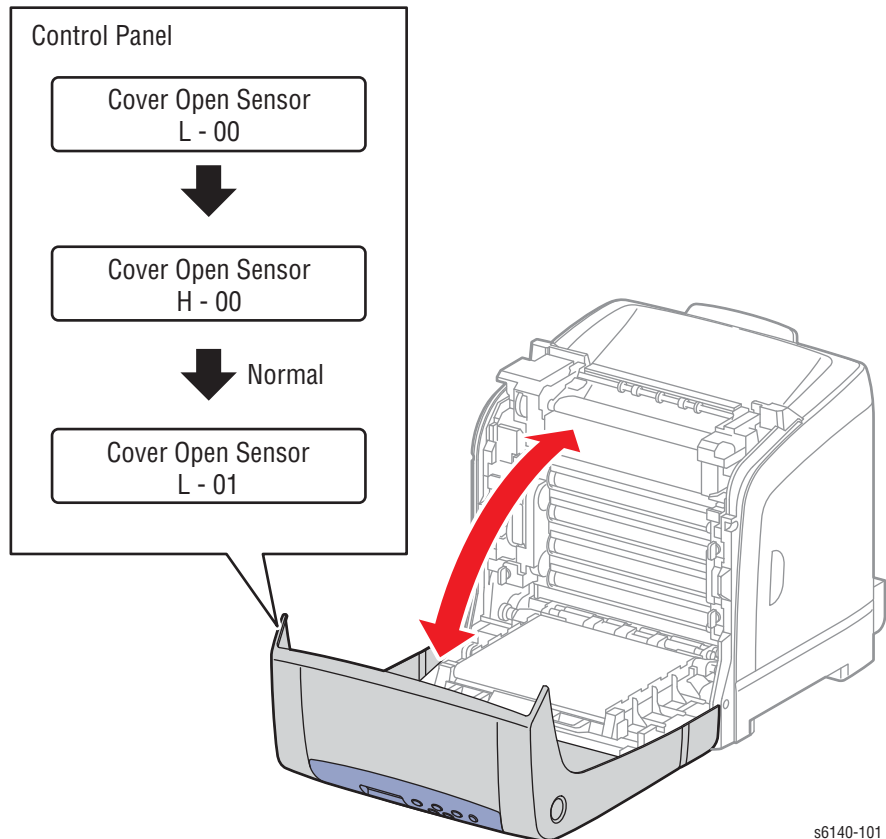
s6140-101

Note

Press **Cancel** to stop the test.

The following testing procedures are for print engine motors, solenoids and clutches. These components are identified below.

Fan
Black Toner Motor
Cyan Toner Motor
Magenta Toner Motor
Yellow Toner Motor
Black Drum Erase Lamp
Yellow, Magenta, Cyan Drum Erase Lamp
Sub Motor
Main Motor
K Mode Solenoid
Tray 2 Feed Motor
Tray 1(MPT) Feed Solenoid
Registration Clutch
Tray 2 Feed Solenoid
Tray 2 Turn Clutch
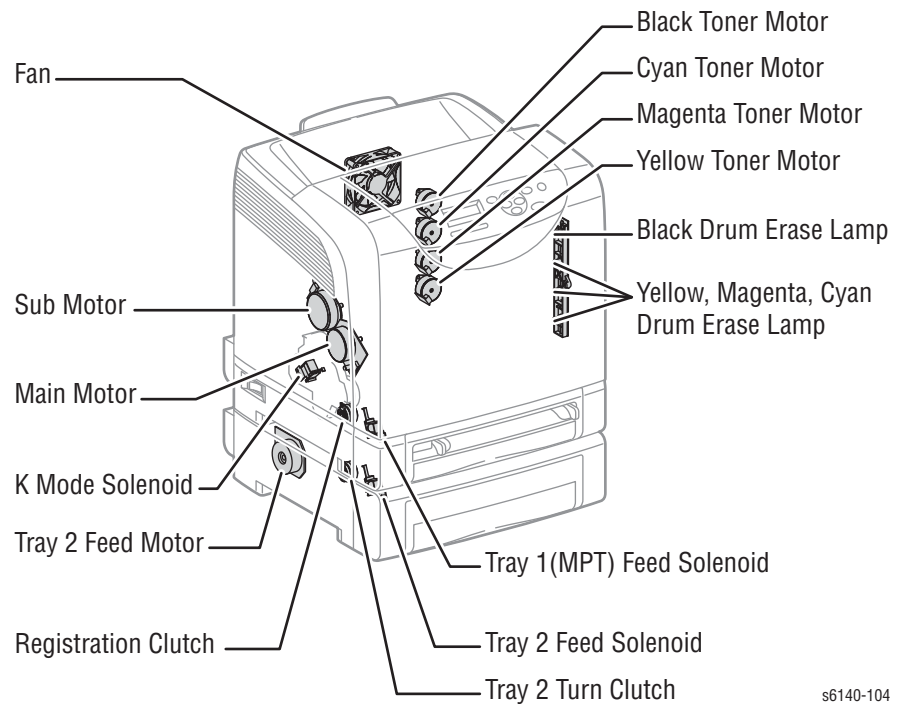
s6140-104

K Mode Solenoid

The K Mode Solenoid shifts the gear drive dependent on color or mono mode.

Note

Close the Interlock Switch to provide power to the device under test.

1. Remove the Feed Drive Assembly (page 8-84), but leave the harness connected.
2. Enter Service Diagnostics (page 4-7).
3. Run the K Mode Solenoid test: **Engine Diag** > **Motor Test** > **K Mode Solenoid**.
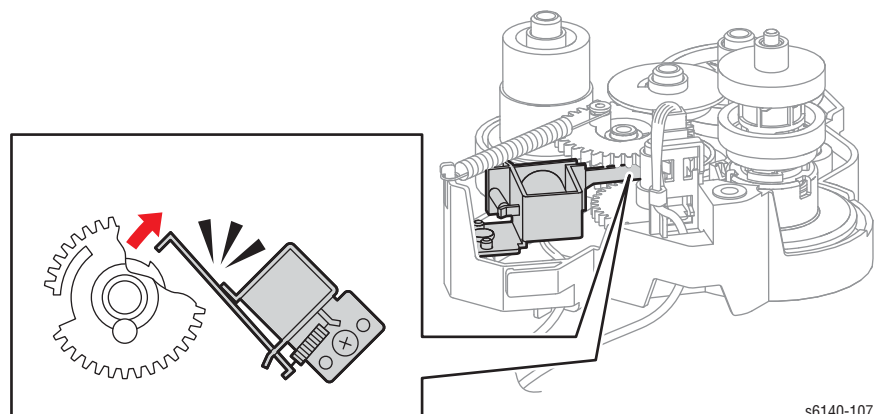
s6140-107

Note

Press **Cancel** to stop the test.

Main Drive Assembly

The Main Drive Assembly drives the Transfer Belt and Imaging Unit drums.

Note

Close the Interlock Switch to provide power to the device under test.

1. Enter Service Diagnostics (page 4-7).
2. Remove Tray 1.
3. Open the Front Cover.
4. Lower the Transfer Belt.
5. Run the Main Motor test: **Engine Diag** > **Motor Test** > **Main Motor Full2, Full1, Half**.
6. Verify that the Imaging Unit drums are rotating, and Transfer Belt is moving.
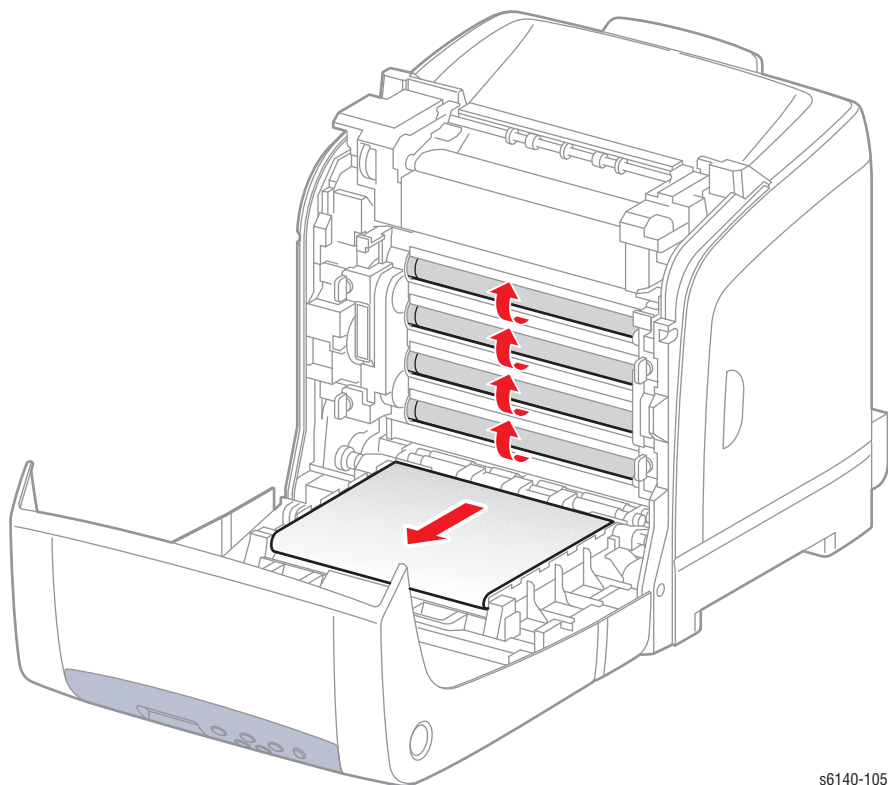
s6140-105

Note

Press **Cancel** to stop the test.

Sub Drive Assembly

The Sub Motor is located in the Main Drive and drives the Fuser and Developer.

Note

Close the Interlock Switch to provide power to the device under test.

1. Enter Service Diagnostics (page 4-7).
2. Run the Sub Motor test: **Engine Diag** > **Motor Test** > **Sub Motor Full2, Full1, Half**.
3. Verify that the Exit Roller is rotating.
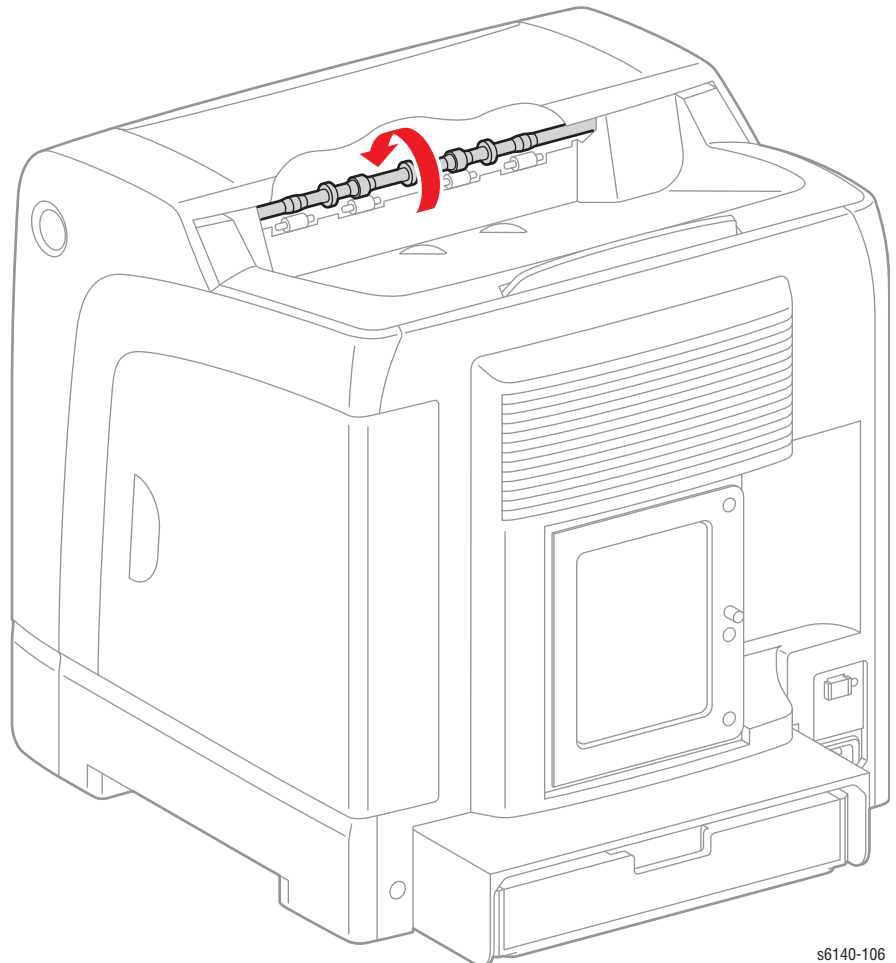
s6140-106

Note

Press **Cancel** to stop the test.

Toner Motors

Caution

Running the Toner Motor for longer than a few seconds can result in toner spilling from the Imaging Unit.

Note

Close the Interlock Switch to provide power to the device under test.

1. Enter Service Diagnostics (page 4-7).
2. Remove the Toner Cartridge (page 8-12) of the color under test.
3. Open the Toner Cartridge Holder of the color under test.
4. Run the Toner Motor test: **Engine Diag** > **Motor Test** > **CMYK Toner Motor**.
5. Check that the gear is rotating for the selected color.
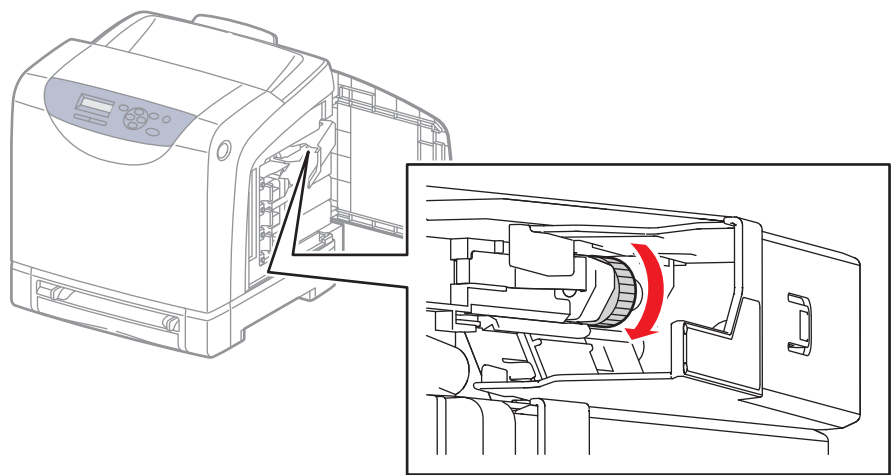
s6140-114

Note

Press **Cancel** to stop the test.

Fan

1. Enter Service Diagnostics (page 4-7).
2. Run the Fan test: **Engine Diag** > **Motor Test** > **Fan High or Low**.
3. Check for airflow from the vent.
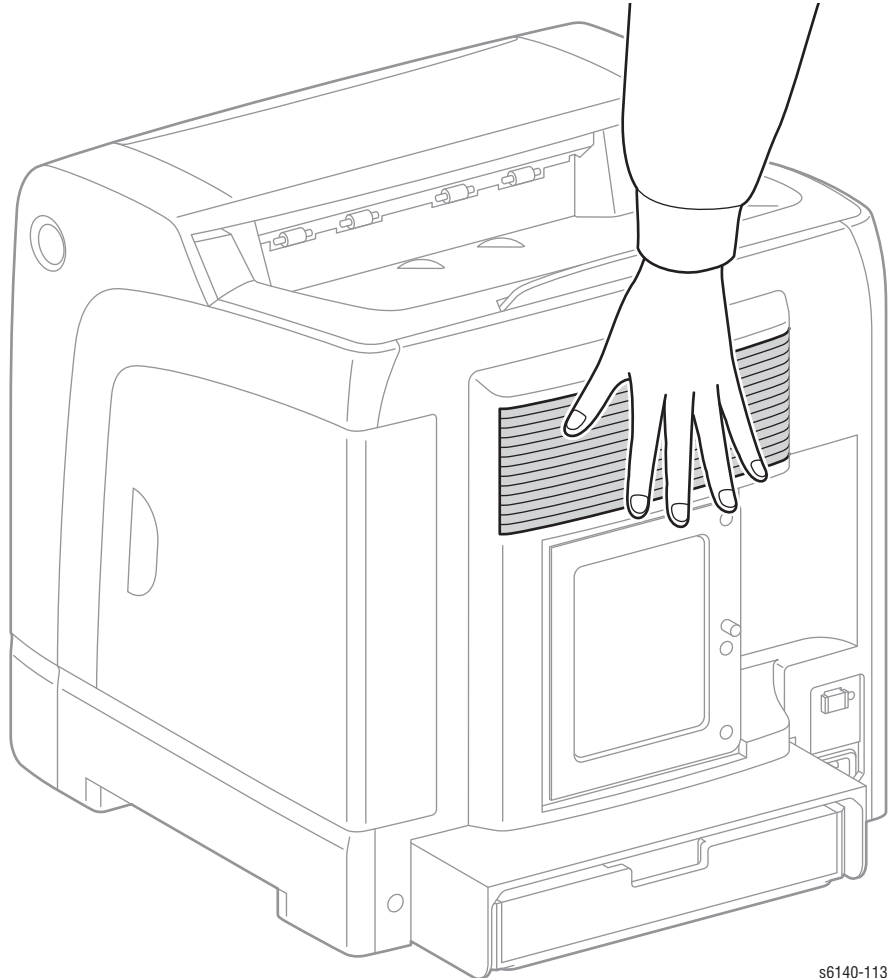
s6140-113

Note

Press **Cancel** to stop the test.

Registration Clutch

The Registration Clutch controls drive to the Registration Roller. To test the Registration Clutch:

1. Enter Service Diagnostics (page 4-7).
2. Run the Registration Clutch test: **Engine Diag > Motor Test > Regi Clutch**.

A click is heard when the clutch is energized. To test the Registration Clutch in combination with the Registration Rollers:

Note

> Close the Interlock Switch to provide power to the device under test.

1. Enter Service Diagnostics (page 4-7).
2. Open the Front Cover.
3. Remove Tray 1.
4. Remove the Imaging Unit (page 8-7).
5. Run the Main Motor Full2 test: **Engine Diag > Motor Test > Main Motor Full2**.
6. While the Main Motor is running, press the **Up** arrow to find **Regi Clutch**. Press **OK** to run the Regi Clutch test.
7. Check that the Registration Rollers are rotating.
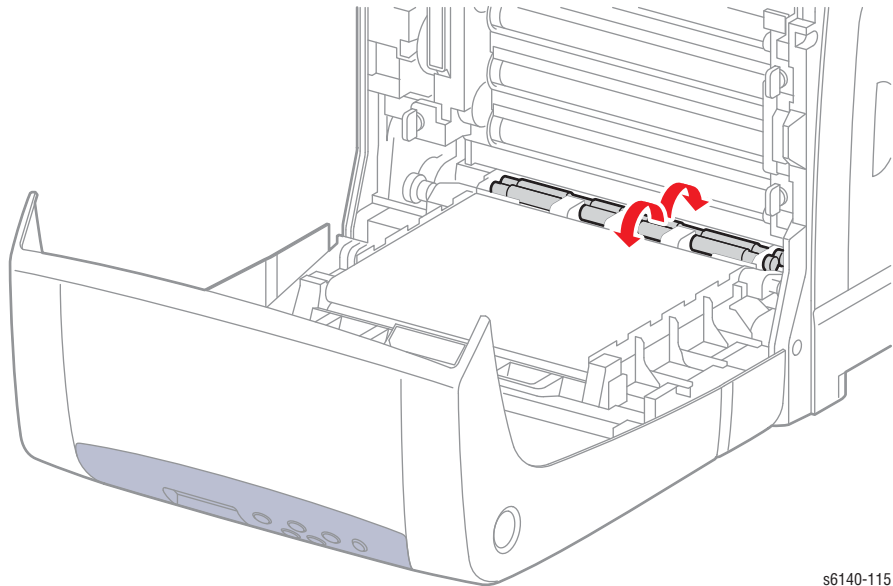
s6140-115

8. Press **Cancel** to stop the test.
9. Press the **Down** arrow to find Main Motor Full2
10. Press **Cancel** to stop the test.

Tray 1 Feed Solenoid

This test operates the Feed Solenoid and engages the Feed Roller. When **Half** is selected, the Feed Roller makes a half rotation; When **Init** is selected, the Feed Roller makes a full-rotation. When **Auto** is selected, the solenoid clicks.

1. Enter Service Diagnostics (page 4-7).

2. Remove the Paper Tray.

3. Run the Tray Feed Solenoid (Half), (Init), or (Auto) test: **Engine Diag > Motor Test> Feed Roller Half, or Init, or Auto.**
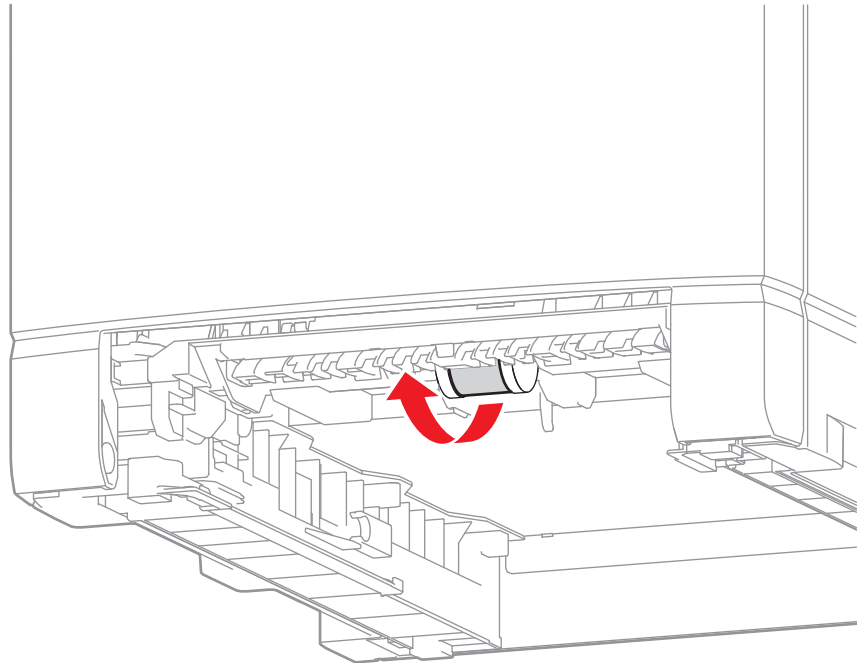
s6140-108

Note

Press **Cancel** to stop the test.

Duplex Unit Test Procedures

Duplex Clutch

Duplex Exit Motor

Duplex Motor

s6140-109
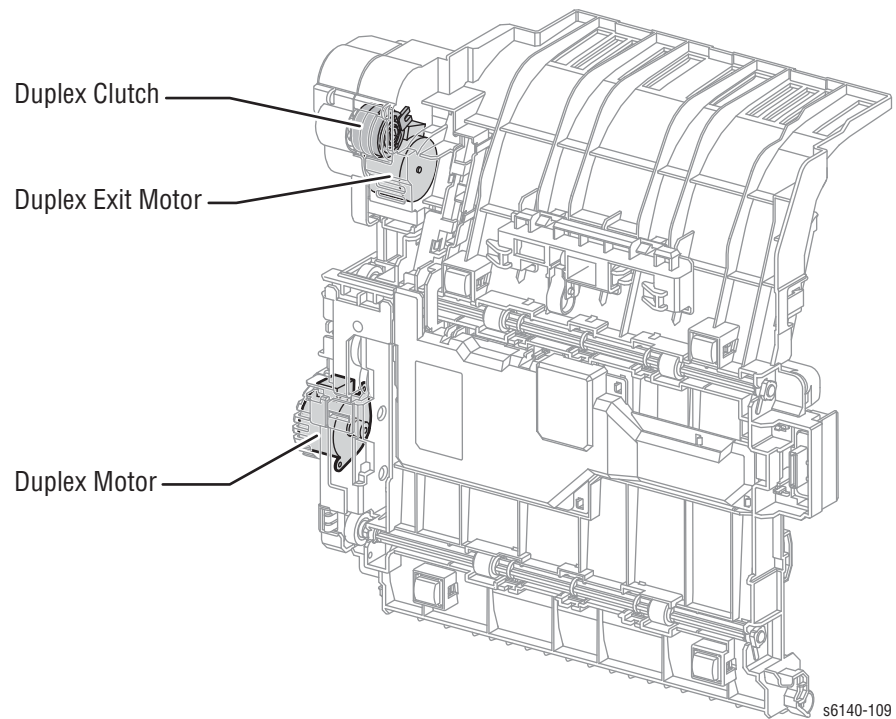
Duplex Exit Motor

The duplex exit motor drives the Exit Roller.

Note

> Close the Interlock Switch to provide power to the device under test.

1. Enter Service Diagnostics (page 4-7).
2. Run the Main Motor test: **Engine Diag** > **Motor Test** > **Exit Motor Half, Full1, Full2, Full3**.
3. Check that the Exit Roller is rotating.
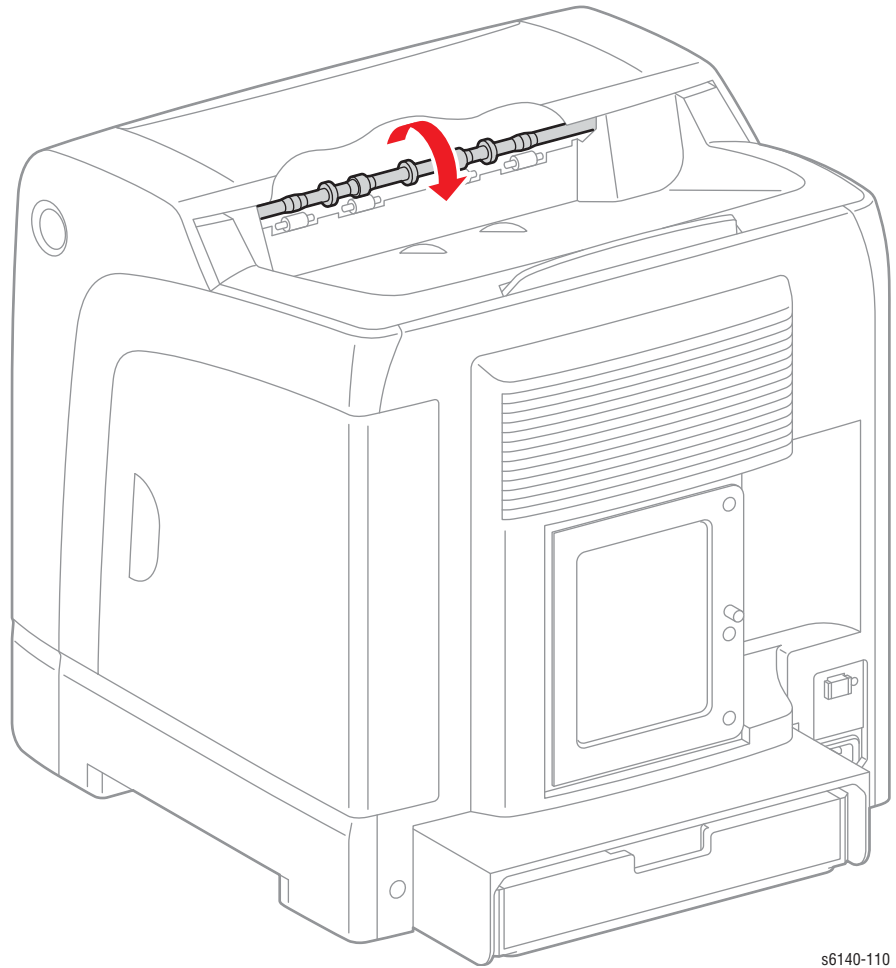
s6140-110

Note

Press **Cancel** to stop the test.

Duplex Clutch

The Duplex clutch engages drive to the rollers. To test the clutch:

Note

Close the Interlock Switch to provide power to the device under test.

1. Enter Service Diagnostics (page 4-7).
2. Run the Duplex Clutch test: **Engine Diag** > **Motor Test** > **Duplex Clutch**.

A click is heard when the clutch is energized.To test the clutch and the duplex exit motor:

1. Enter Service Diagnostics (page 4-7).
2. Open the Front Cover.
3. Run the Exit Motor Full2 test: **Engine Diag** > **Motor Test** > **Exit Motor Full2**.
4. While the motor is running, press the **Up** arrow to find **Duplex Clutch**. Press **OK** to run the test.
5. Check that the gear is rotating.
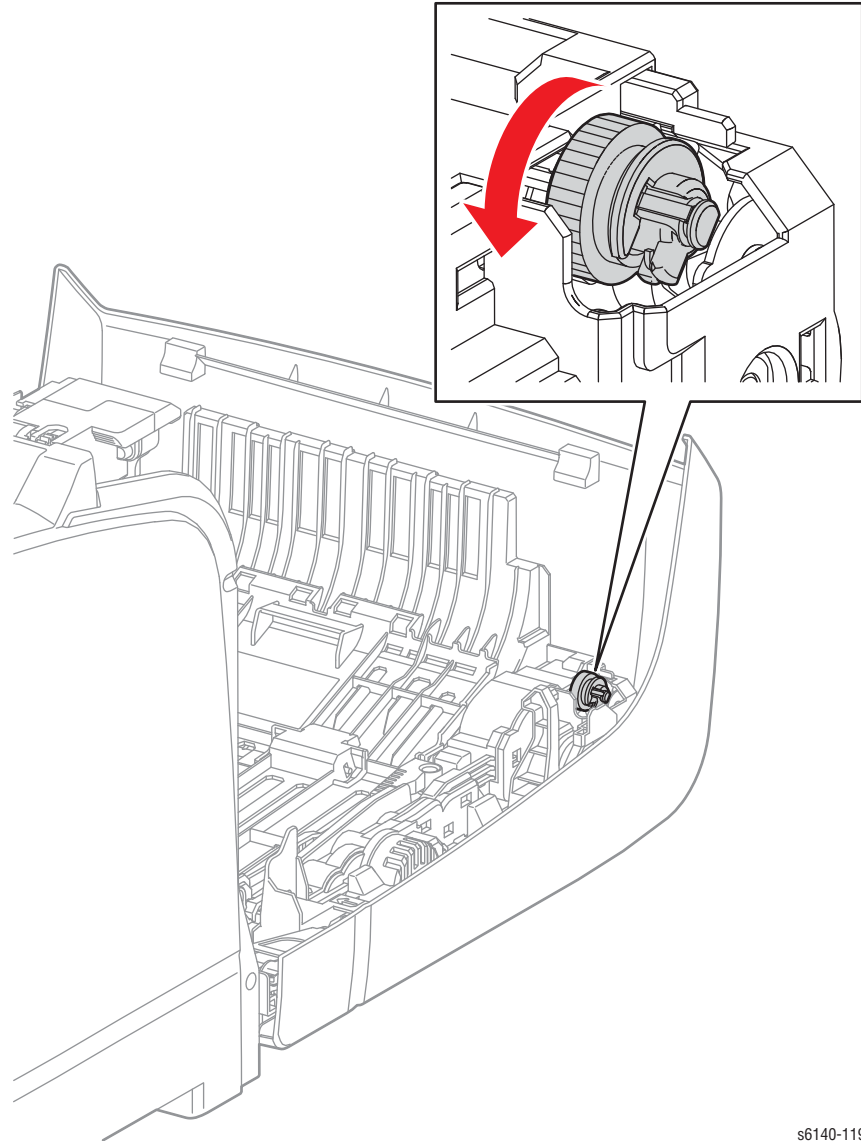
s6140-119

6. Press **Cancel** to stop the test.
7. Press the **Down** arrow to find Exit Motor Full2 and **Cancel** the test.

Duplex Motor

The duplex motor drives the duplex rollers.

Note

Close the Interlock Switch to provide power to the device under test.

1. Enter Service Diagnostics (page 4-7).
2. Open the Front Cover and duplex chute.
3. Run the Main Motor test: **Engine Diag** > **Motor Test** > **Duplex Motor Half, Full1, Full2, Full3**.
4. Check that the duplex rollers are rotating.
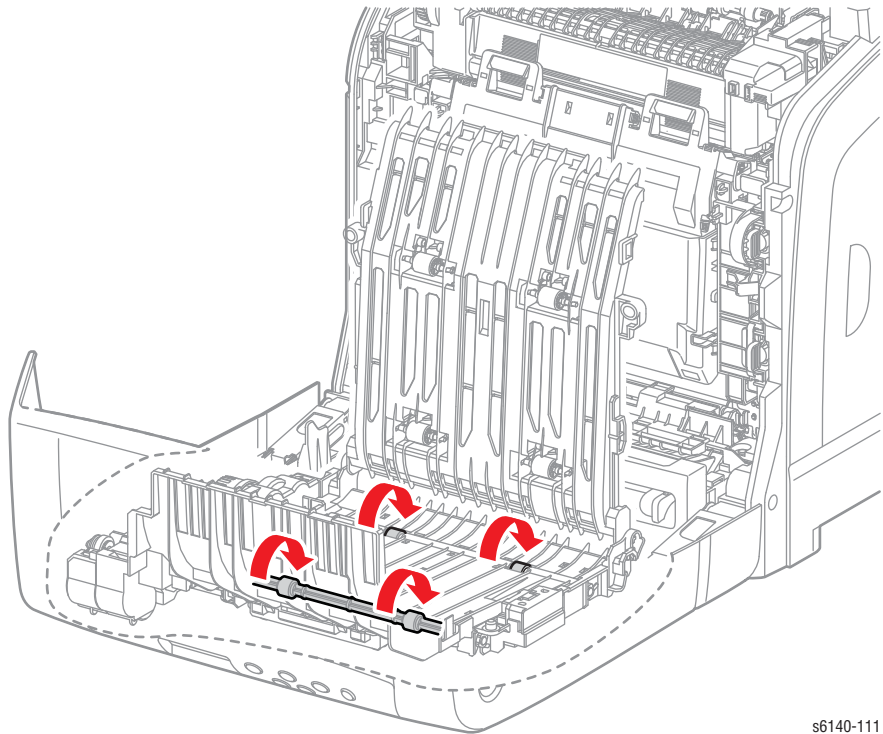
s6140-111

Note

Press **Cancel** to stop the test.

Optional Feeder Test Procedures

Tray 2 No Paper Sensor

1. Enter Service Diagnostics (page 4-7).
2. Run the Tray No Paper test: **Engine Diag** > **Sensor Test** > **Tray 2 No Paper**.
3. Remove Tray.
4. Move the Actuator up and down while checking the Control Panel display.
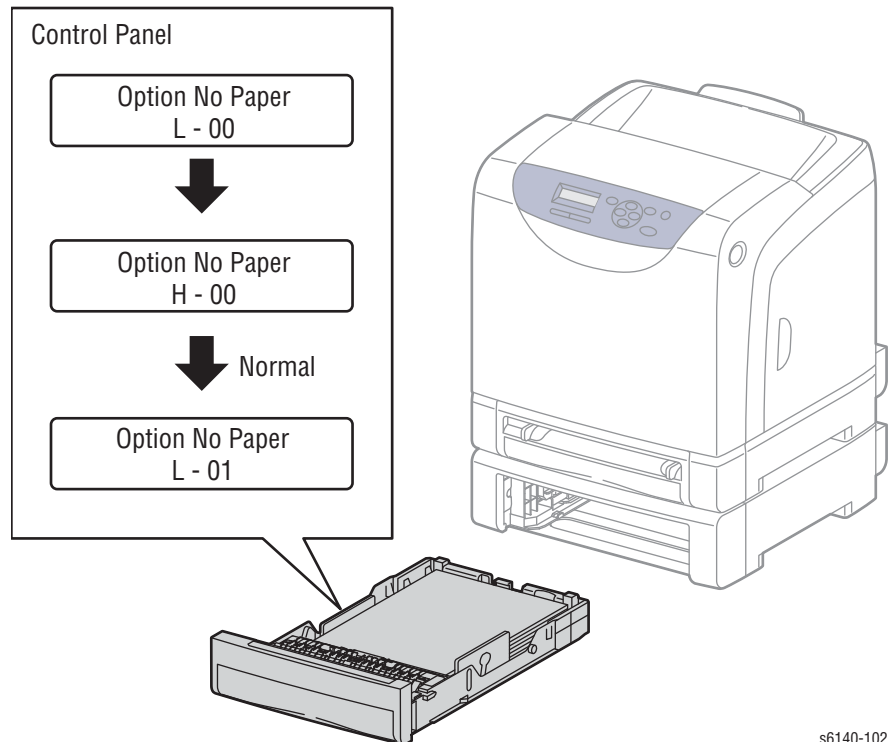
s6140-102

Note

Press **Cancel** to stop the test.

Tray 2 Paper Path Sensor

1. Enter Service Diagnostics (page 4-7).

2. Run the Tray No Paper test: **Engine Diag** > **Sensor Test** > **Tray 2 Path Sensor**.

3. Remove Tray 2.

4. Reach into the Tray 2 cavity and move the actuator while checking the Control Panel display.
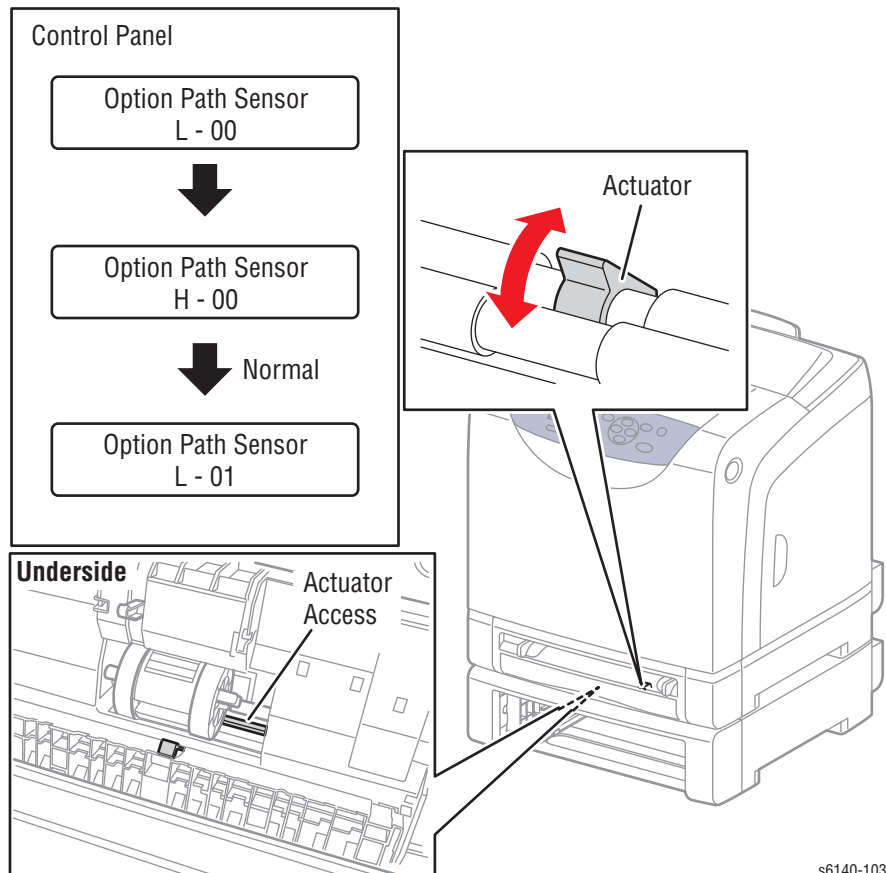
s6140-103

Note

Press **Cancel** to stop the test.

Tray 2 Feeder Motor Test

The Tray 2 feed motor drives the pick roller.

Note

> Do not remove the Optional Feeder from the printer and close the Interlock Switch to provide power to the device under test.

1. Enter Service Diagnostics (page 4-7).
2. Remove Tray 2 from the Optional Feeder.
3. Remove the Rear Cover from the Optional Feeder ().
4. Remove the Left Side Cover from the Optional Feeder ().
5. Run the Main Motor test: **Engine Diag** > **Motor Test** > **Tray2 Feeder Motor Half, Full1, Full2, Full3**.
6. Check that the motor rotates CCW.

s6140-112
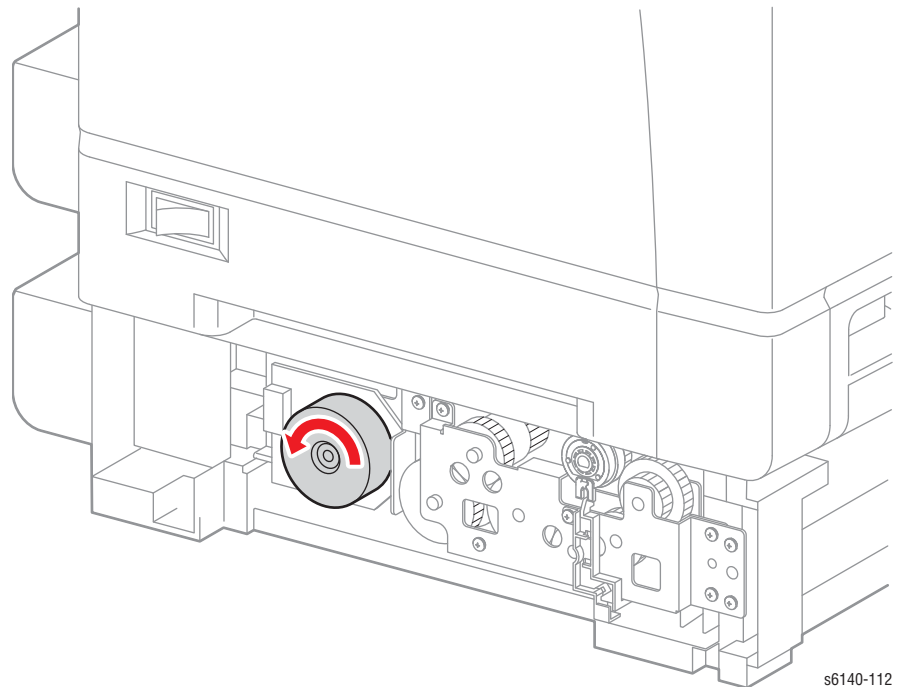
Note

> Press **Cancel** to stop the test.

Tray 2 Feed Solenoid Test

The Tray 2 Feed Solenoid engages the pick roller.

Note

Do not remove the Optional Feeder from the printer and close the Interlock Switch to provide power to the device under test.

1. Enter Service Diagnostics (page 4-7).
2. Remove Tray 2 from the Optional Feeder.
3. Remove the Rear Cover from the Optional Feeder ().
4. Remove the Left Side Cover from the Optional Feeder ().
5. Run the Main Motor test: **Engine Diag** > **Motor Test** > **Tray 2 Feed Solenoid Auto**.
6. Check Feed Solenoid movement.
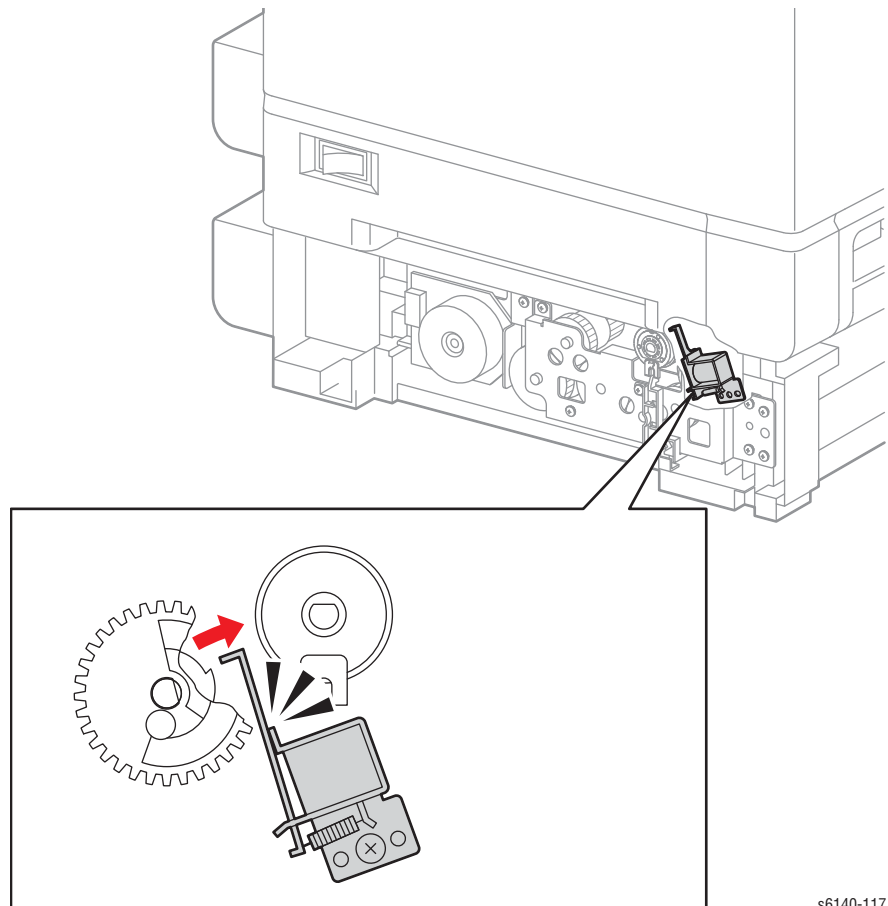
s6140-117

Note

Press **Cancel** to stop the test.

Tray 2 Drive Clutch

The Tray 2 Drive Clutch engages drive to the turn rollers. To test the Drive Clutch.

Note

> Do not remove the Optional Feeder from the printer and close the Interlock Switch to provide power to the device under test.

1. Enter Service Diagnostics (page 4-7).
2. Run the Option Turn Roll test: **Engine Diag** > **Motor Test** > **Tray 2 Turn Roll**.

A click occurs when the clutch is energized.To test the turn clutch in combination with the turn rollers:

1. Enter Service Diagnostics (page 4-7).
2. Remove Trays 1 and 2.
3. Run the Option Feeder Motor Full2 test: **Engine Diag** > **Motor Test** > **Tray 2 Feeder Motor Full2**.
4. While the motor is running, press the **Up Arrow** button to find **Option Turn Roll**. Press the **OK** button to run the test.
5. Check that the turn rollers are rotating.
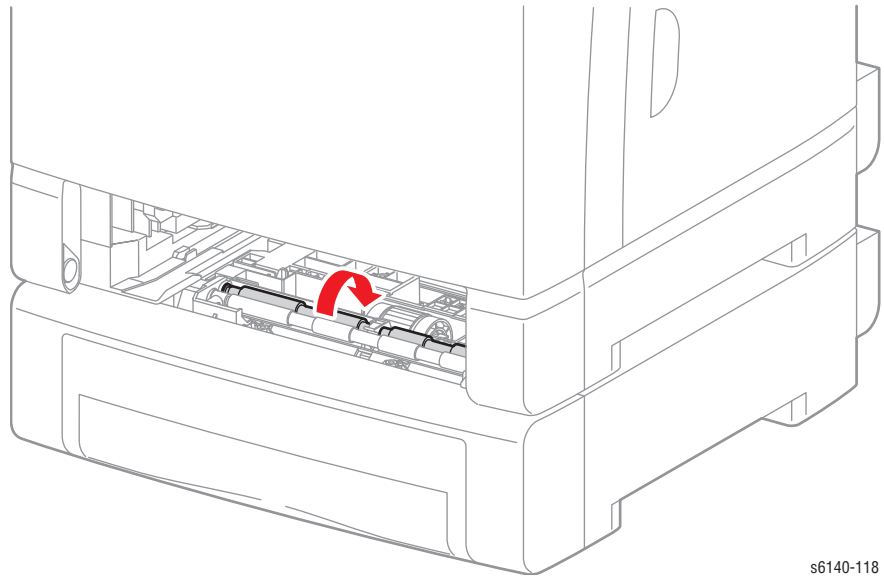
s6140-118

6. Press **Cancel** to stop the test.
7. Press the **Down** arrow to find Option Feeder Motor Full2.
8. Press **Cancel** to stop the test.

Engine Test Print

The Engine (Pattern IOT) test print isolates printer hardware problems to either the MCU or Image Processor Board by eliminating the need for image data transfer between the two. The printer requires no Image Processor Board circuitry to prduce the image. Use this procedure to access the contacts and print an Engine Test print.

Caution

Cover the Imaging Unit to prevent light exposure.

1. Turn the printer Off.
2. Open the Front Cover.
3. Remove the Rear Tray Cover (page 8-17).
4. Remove the Right Side Door (page 8-19).
5. Remove the Right Side Cover (page 8-18).
6. Remove the Left Side Cover (page 8-20).
7. Remove the Rear Cover (page 8-16).
8. Remove the Top Cover (page 8-14).
9. Disconnect P/J401 and P/J29 from the IP board.
10. Disconnect P/J10 and P/J11 from the MCU board.
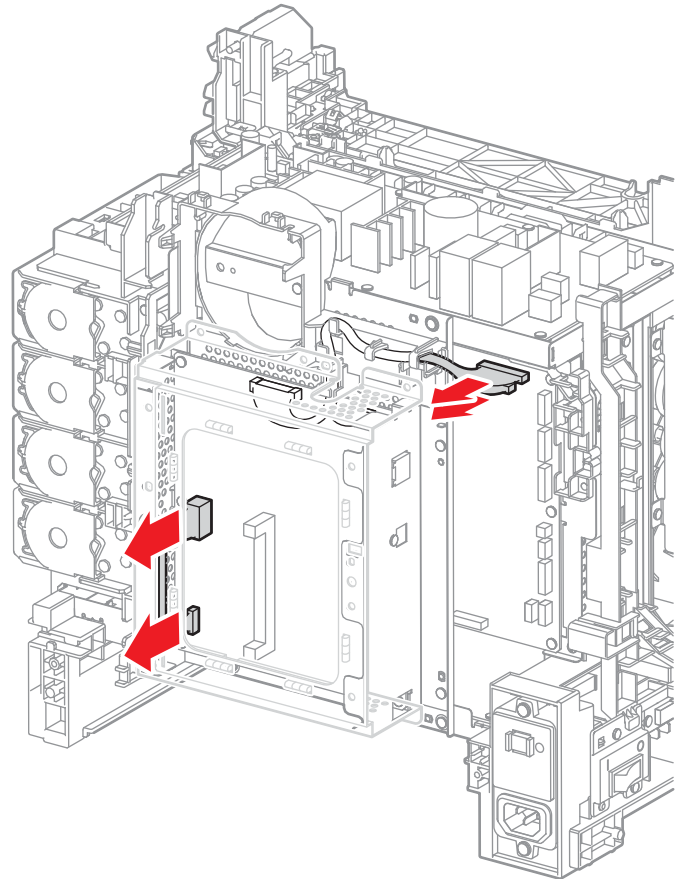
s6140-330

11. Close the Right Side Door Interlock Switch.

12. Turn the printer On.

13. Using a flat-blade screwdriver, roll the tip of the screwdriver from one contact to the other until they are shorted out.
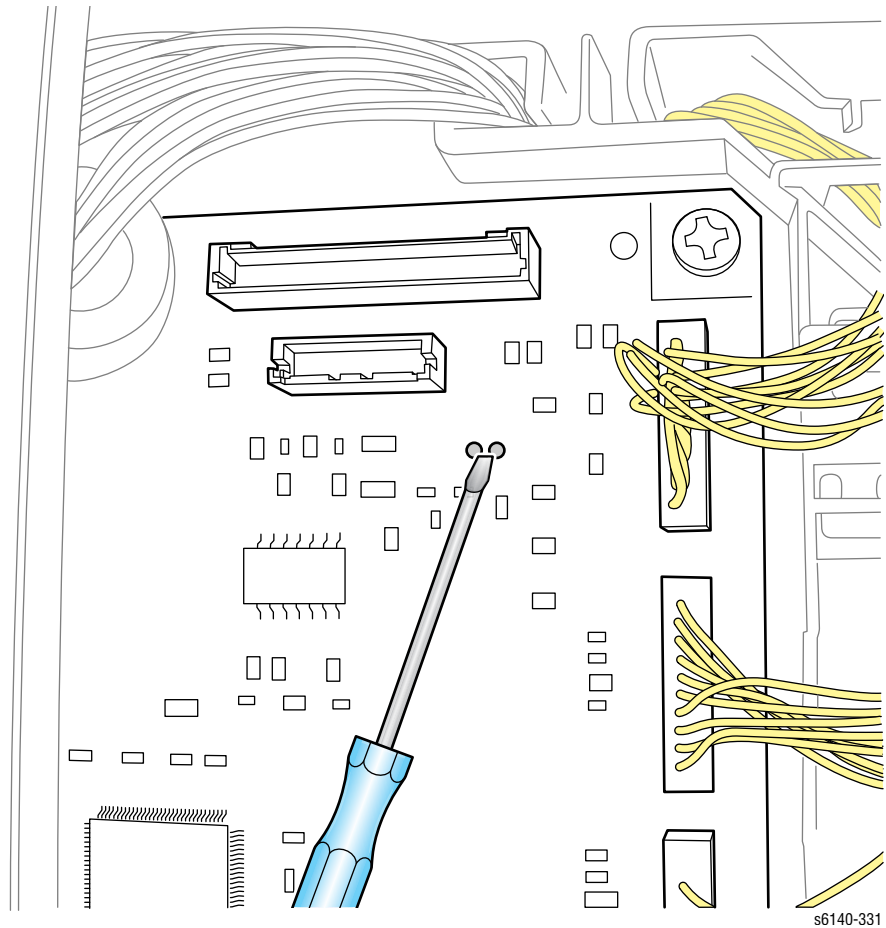
s6140-331

Note

The contacts are sensitive in response to being shorted out. It may require multiple attempts to get a test print.

When done properly, the engine should immediately start to come on and the printer will output a test page.
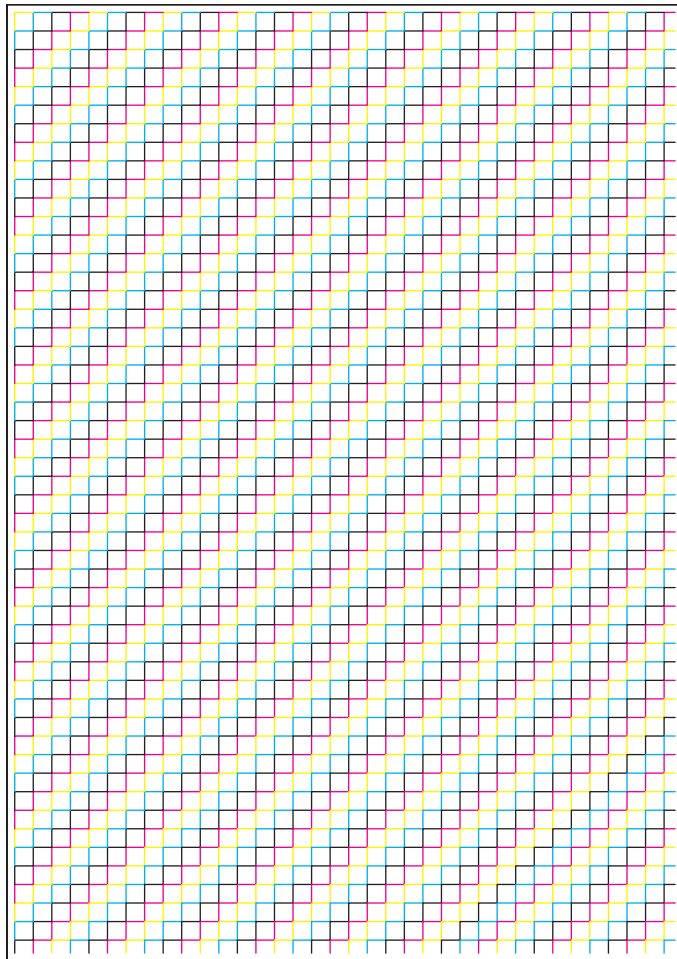
s6140-145

Control Panel Troubleshooting

Printer Does Not Come to a "Ready" State

1. Reseat connectors on the Image Processor Board.
2. Refer to "DC Power Supply Troubleshooting" on page 4-46.
3. Replace the Control Panel (page 8-93).
4. Repair the Control Panel wiring harnesses.

Ready LED is On, Display is Blank

1. Remove and reseat connections to the Image Processor Board.
2. Replace the Control Panel (page 8-93).
3. Repair the Control Panel wiring harness.
4. Replace the Image Processor Board (page 8-87).

Control Panel has Failed

The Control Panel either fails to illuminate or the buttons fail to operate after the power switch is turned On.

Initial Actions

- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
▪ Control Panel, PL1.2.3 ▪ Control Panel Harness A,PL1.2.12 ▪ Image Processor Board, PL8.1.7 ▪ LVPS, PL8.2.1 ▪ Control Panel Harness B, PL9.1.12	"Map 1 - Print Engine" on page 10-7 "System Control" on page 10-25

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check connections between the Image Processor Board and the Control Panel. Are P/J29, P/J2900, and P/J220 secure?	Go to step 2.	Secure the connections.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
2	Check the Control Panel input voltages: On the Image Processor Board measure the voltages at the following test points. ■ J29-1<=> ground = +3.3V ■ J29-4 <=> ground = +5 V Are the voltages within specification?	Go to step 3.	Replace the IP Board (page 8-87).
3	Check Control Panel Harness A and B harness for continuity. Disconnect: ■ J29 from the IP Board ■ P/J220 from the Control Panel Are the harnesses damaged?	Check the individual harnesses and repair the affected harness.	Go to step 4.
4	Replace the Control Panel (page 8-93). Does the error persist?	Replace the IP Board (page 8-87).	Complete.

Inoperable Printer Troubleshooting

No response from printer when the main power is switched on.

AC Power Supply Troubleshooting

Initial Actions

- Check the Power Cord.
- Press the reset on the GFI Breaker.
- Reseat the Front Cover.

If the error persists, eliminate the possibility that an installed option is the cause of the problem by following these steps.

1. Power printer Off.
2. Remove all installed options (Optional Feeder, Duplex Unit, and Memory)
3. Power the printer On. If printer powers up normally, plug in the options one at a time until the defective option is isolated. If the printer remains inoperative, use the following procedure to locate the problem.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ LVPS, PL8.2.1 ■ Power Switch Harness, PL8.2.9 ■ GFI Breaker, PL8.2.11 ■ Power Cord	■ "LVPS" on page 10-17 ■ "System Control" on page 10-25

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Power Cord. Is the Power Cord plugged into the printer and the AC outlet?	Go to step 2.	Replace or reconnect the power cord.
2	Check the voltage at the AC wall outlet. Is there approximately 110 or 220 VAC at the AC outlet?	Go to step 2.	Notify the customer.
3	Check for AC voltage to the LVPS. 1. Remove the Left Cover. 2. Power the Printer On. 3. Measure AC voltage at the P/J48. Is AC line voltage present P/J48?	Go to Step 5.	Go to Step 4.
4	Check Power Switch Harness continuity. Disconnect the printer from the wall outlet. Turn the power switch On. Check for continuity between: ■ P/J483 <=> P/J48-1 ■ P/J484 <=>P/J48-3 Is the Power Switch conductive?	Check the Power Cord. If necessary, replace the cord.	Go to step 5.
5	Check continuity of the GFI Breaker. Is the GFI Breaker closed?	Replace the LVPS (page 8-91).	Reset or replace the GFI Breaker (page 8-99)

DC Power Supply Troubleshooting

DC voltages are supplied by the LVPS. The LVPS includes protection circuitry that limits possible damage to printer components in the event of a short or transient event.

LVPS Overcurrent Protection Circuit

This circuit stops all outputs in the event of a short in any supplied voltage. (3.3, 5, or 24). The circuit is reset when the short is removed and the power cycled.

LVPS Overvoltage Protection Circuit

This circuit stops all outputs if the supply voltage exceeds the target voltage. The set point is 32 V or less for 24 V, 7 V or less for 5 V, or 4.4 V for 3.3 V.

LVPS

Use this procedure to check the condition of the LVPS.

Initial Actions

- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ LVPS, PL8.2.1 ■ MCU Board, PL8.2.13	■ "Map 3 - LVPS and Drive" on page 10-9 ■ "LVPS" on page 10-17

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the AC power supply (page 4-45). Does the problem persist?	Go to step 2.	Complete.
2	Turn the Power Switch Off. Is the Fuse on the LVPS open?	Replace the LVPS (page 8-91).	Go to step 3.
3	1. Disconnect J501 and J502 from the LVPS. 2. Turn the Power Switch On. 3. Measure the DC voltages between these pins on the LVPS: ■ P501-1 <=> P501-2 = +5 V ■ P501-3 <=> P501-4 = +3.3 V ■ P502-1 <=> P502-2 = +24 V Are all of the voltages present?	Go to step 4.	Replace the LVPS (page 8-91).
4	Turn the Power Switch Off. Check LVPS2 Harness continuity between: ■ P/J501 <=> P/J14 on the MCU Board ■ P/J502 <=> P/J15 on the MCU Board Is the harness damaged?	Repair the harness.	Replace the MCU Board (page 8-103)

+24 VDC Interlock Switch

The Interlock Switch disables +24 V to the electromechanical components when the Front Cover is open.

Initial Actions

- Check the switch actuator located on the Left front holder.
- Check for obstructions or debris blocking switch motion.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ LVPS, PL8.2.1 ■ Interlock Harness, PL8.2.5	■ "LVPS" on page 10-17

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Interlock Harness for continuity. 1. Disconnect P/J44. 2. Check continuity between P/J44-1 <=> P/J44-3. Is the circuit continuous when the switch is closed?	Replace the LVPS (page 8-91).	Replace the Interlock Harness (page 8-92).

Image Processor Board

This procedure is used to isolate the Image Processor Board, or one of its on-board options as the root cause of the failure.

Initial Actions

- Remove all installed options (Optional Feeder, Duplex Unit, and Memory)
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Image Processor Board, PL8.1.7 ■ IP Power Harness, PL9.1.10 ■ Options	■ "Map 3 - LVPS and Drive" on page 10-9 ■ "System Control" on page 10-25

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Print the Engine TestPrint (page 4-41). Does the test print print?	Go to step 2.	Replace the MCU Board (page 8-103)
2	Check option installation. **NOTE** If no optional memory is installed, go to step 2. 1. Switch the printer power Off. 2. Disconnect all cables connected to the Rear Panel. 3. Remove optional memory from the Image Processor Board (if installed) 4. Switch the printer power On. Does the printer boot and Ready appear on the display?	Replace the Memory Card.	Go to Step 2.
3	Reseat all connections to the IP Board and restart the printer. Does the error persist?	Go to step 3.	Complete.
4	Check for +5 V and +3.3 V at P/J401. ■ J401-1 <=> J401-2 = +5 V ■ J401-3 <=> J401-4 = +3.3 V Are the voltages present?	Replace the IP Board (page 8-87).	Go to step 4.
5	Check continuity of the IP Power Harness. Disconnect P/J401 from the IP Board and P/J40 from the LVPS. Is the harness damaged?	Repair the harness.	Replace the LVPS (page 8-91).

Printer Continually Displays Warming Up

Initial Actions

- Reseat the Fuser.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Fuser, PL6.1.1 ■ Fuser Harness, PL6.1.2 ■ LVPS, PL8.2.1 ■ MCU Board, PL8.2.13 ■ LVPS2 Harness, PL9.1.3	■ "Map 1 - Print Engine" on page 10-7 ■ "Map 4 - MCU Board" on page 10-10 ■ "Fuser" on page 10-24

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check these connections ■ MCU Board P/J17 and Fuser P/J171. ■ Fuser P/J171 and LVPS P/J47. ■ LVPS P/J501 and P/J502 and MCU Board P/J14 and P/J15 Are the connectors secure?	Go to step 2.	Reseat the connectors.
2	Check the Fuser harness continuity. 1. Remove the Fuser. 2. Disconnect J17 from the MCU Board and J47 from the LVPS. Is the harness damaged? **NOTE** P171 is attached to the frame.	Repair the harness.	Go to step 3.
3	Check the LVPS harness continuity. Disconnect J14 from the MCU Board and J501 from the LVPS. Is the harness damaged?	Repair the harness.	Go to step 4.
4	Replace the Fuser (page 8-10). Does the error persist? **NOTE** Reset the Fuser life counter after installation of a new Fuser.	Replace the MCU Board (page 8-103).	Complete

Abnormal Noises

Abnormal Noise When Power is Turned On

Initial Actions

- Check for obstructions or debris in the media path.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Imaging Unit, PL4.1.21 ■ Fuser, PL6.1.1 ■ Transfer Belt, PL6.1.7 ■ Sub Drive Assembly, PL7.1.1 ■ Main Drive Assembly, PL7.1.2	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Test the Main Drive (page 4-26): **Service Mode** > **Engine Diag** > **Motor Test** > **Main Motor FULL2**. Is the noise still present?	Go to step 2.	Go to step 5.
2	Reseat the Imaging Unit. Test the Main Drive (page 4-26): **Service Mode** > **Engine Diag** > **Motor Test** > **Main Motor FULL2**. Is the noise still present?	Go to step 3.	Complete
3	Check for proper Transfer Belt installation. Test the Main Drive (page 4-26): **Service Mode** > **Engine Diag** > **Motor Test** > **Main Motor FULL2**. Is the noise still present?	Go to step 4.	Complete
4	Check for proper Main Drive Assembly installation. Test the Main Drive (page 4-26): **Service Mode** > **Engine Diag** > **Motor Test** > **Main Motor FULL2**. Is the noise still present?	Replace in order: ■ Imaging Unit (page 8-7) ■ Transfer Belt (page 8-79). ■ Main Drive Assembly (page 8-81).	Complete

The

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
5	Test the Sub Drive (page 4-27): **Service Mode > Engine Diag > Motor Test > Sub Motor FULL2**. Is the noise still present?	Go to step 6.	Check operating environment and electrical grounding.
6	Reseat the Imaging Unit. Test the Sub Drive test (page 4-27): **Service Mode > Engine Diag > Motor Test > Sub Motor FULL2**. Is the noise still present?	Go to step 7.	Complete
7	Reseat the Fuser. Test the Sub Drive (page 4-27): **Service Mode > Engine Diag > Motor Test > Sub Motor FULL2**. Is the noise still present?	Go to step 8.	Complete
8	Reseat the Sub Drive Assembly. Test the Sub Drive (page 4-27): **Service Mode > Engine Diag > Motor Test > Sub Motor FULL2**. Is the noise still present?	Replace in order: ■ Imaging Unit (page 8-7) ■ Fuser (page 8-10) ■ Sub Drive Assembly (page 8-80).	Complete

Abnormal Noise During Standby

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Fan, PL8.1.1 ■ LVPS, PL8.2.1	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Test the Fan (page 4-29): **Service Mode > Engine Diag > Motor Test > Fan.** Is the noise coming from the Fan?	Replace the Fan. (page 8-86)	Replace the LVPS. (page 8-91)

Abnormal Noise During Printing

Initial Actions

- Check for obstructions or debris in the media path.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Separator Roller, PL2.1.5 ■ Feed Roller Assembly, PL3.2.4 ■ Registration Roller, PL3.2.9 ■ Metal Registration Roller, PL3.2.10 ■ Imaging Unit, PL4.1.21 ■ Fuser, PL6.1.1 ■ Transfer Belt, PL6.1.7 ■ Sub Drive Assembly, PL7.1.1 ■ Main Drive Assembly, PL7.1.2 ■ Fan, PL8.1.1 ■ Duplex Unit, PL11.1.1	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Is the noise present when paper is fed from the Tray?	Go to step 2.	Go to step 6.
2	Check the paper condition. Is the paper dry and approved?	Go to step 4.	Replace the paper, then go to step 3.
3	Is the noise present when paper is fed from the Tray?	Go to step 4.	Complete
4	Check the Separator Holder. 1. Remove the Tray. 2. Rotate the Separator Roller with your finger. Does the roller rotate smoothly?	Go to step 5.	Replace the Separator Holder (page 8-6).

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
5	Check the Feed Roller rotation 1. Remove the Tray. 2. Start the Main Drive test (page 4-26): **Service Mode > Engine Diag > Motor Test > Main Motor FULL2**, then while the motor is running, start the Tray Feed Solenoid test (page 4-31): **Service Mode > Engine Diag > Motor Test > Tray Feed Solenoid (Auto)**. Is the noise coming from this roller? **NOTE** After check is completed, cancel the Tray Feed Solenoid test first, then cancel the Main Motor FULL2 test.	Replace the Feed Roller (page 8-9).	Go to step 12.
6	Check the feed slot paper guides Were the guides correctly set, and was the paper correctly inserted?	Go to step 7.	Reset the guides, then go to step 7.
7	Check the paper condition Is the paper dry and approved paper?	Go to step 12.	Replace the paper, then go to step 8.
8	Check for noise when the paper is fed into the manual feed slot. Does the noise come from the printer?	Go to step 12	Go to step 9.
9	Check the Duplex Unit (if installed). Does the noise come from the Duplex Unit?	Go to step 10.	Go to step 12.
10	Reseat the Duplex Unit. Does the noise come from the Duplex Unit?	Replace the Duplex Unit (page 8-107).	Go to step 11.
11	Check the Duplex Motor. Run the Duplex Motor test (page 4-26): **Service Mode > Engine Diag > Motor Test > Duplex Motor.** Does the noise arise from the printer?	Replace the Duplex Unit (page 8-107).	Complete.
12	Test the Main Drive (page 4-26): **Service Mode > Engine Diag > Motor Test > Main Motor FULL2**. Does the noise arise from the printer?	Go to step 13.	Go to step 19.
13	Reseat the Imaging Unit. Test the Main Drive (page 4-26): **Service Mode > Engine Diag > Motor Test > Main Motor FULL2**. Is the noise still present?	Go to step 14.	Complete
14	Reseat the Transfer Belt connectors. Test the Main Drive test (page 4-26): **Service Mode > Engine Diag > Motor Test > Main Motor FULL2**. Is the noise still present?	Go to step 15.	Complete

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
15	Check for dirt or debris on the registration rollers?	Clean the rollers, then go to step 16.	Go to step 17.
16	Check for noise when printing Is the noise still present?	Go to step 14.	Complete
17	Check registration roller rotation. Start the Main Drive test (page 4-26): **Service Mode** > **Engine Diag** > **Motor Test** > **Main Motor FULL2**, and while the motor is running start the Regi Clutch test: **Service Mode** > **Engine Diag** > **Motor Test** > **Regi Clutch**. Is the noise coming from the roller(s)?	Replace the Feeder Assembly (page 8-45).	Go to step 18.
18	Reseat the Main Drive Assembly. Test the Main Drive (page 4-26): **Service Mode** > **Engine Diag** > **Motor Test** > **Main Motor FULL2**. Is the noise still present?	Replace in order: ■ Imaging Unit (page 8-7) ■ Transfer Belt (page 8-79) ■ Main Drive Assembly (page 8-81).	Complete
19	Test the Sub Drive (page 4-27): **Service Mode** > **Engine Diag** > **Motor Test** > **Sub Motor FULL2**. Is the noise still present?	Go to step 20.	Check printer installation.
20	Reseat the Imaging Unit. Test the Sub Drive (page 4-27): **Service Mode** > **Engine Diag** > **Motor Test** > **Sub Motor FULL2**. Is the noise still present?	Go to step 21.	Complete
21	Reseat the Fuser. Test the Sub Drive (page 4-27): **Service Mode** > **Engine Diag** > **Motor Test** > **Sub Motor FULL2**. Is the noise still present?	Go to step 22.	Complete
22	Reseat the Sub-Drive Assembly. Test the Sub Drive (page 4-27): **Service Mode** > **Engine Diag** > **Motor Test** > **Sub Motor FULL2**. Is the noise still present?	Replace in order: ■ Imaging Unit (page 8-7) ■ Fuser (page 8-10) ■ Sub Drive Assembly (page 8-80).	Complete

Electrical Noise

There is a variable pitch sound coming from the printer. Electrical noise can be either noise in the electrical lines or static in electromagnetic communications.

Initial Actions

- Cycle printer power.

- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ HVPS, PL4.1.19 ■ Transfer Belt, PL6.1.7 ■ Imaging Unit, PL4.1.21	"HVPS" on page 10-22

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check for sources of external noise. 1. Are there other electrical appliances within 3 meters of the printer? 2. Turn the electrical appliances Off or relocate the printer at least 6 meters away from other electrical appliances. Does the noise persist?	Go to step 2.	Complete
2	Check the AC ground. Is AC power supply outlet wired and grounded appropriately?	Go to step 3.	Notify the customer.
3	Check the Transfer Belt HVPS connections. Are the four terminals on the Transfer Belt, and the four springs in the frame dirty and/or damaged?	Clean or replace the Transfer Belt (page 8-79) and contacts.	Go to step 4.
4	Check the Imaging Unit connection Are the five HVPS terminals on the Imaging Unit, and five springs in the frame dirty and/or damaged?	Clean or replace the Imaging Unit (page 8-7) and contacts.	Go to step 5.
5	Reseat the Imaging Unit. Does the noise persist?	Go to step 6.	Complete
6	Reseat the Transfer Belt. Does the noise persist?	Reseat the HVPS.	Complete

Operating System and Application Problems

Windows 2000, Windows XP, Windows Server Troubleshooting

Note

For Window XP, select Classic Look or the Windows XP procedures will not match the following procedures. To select **Classic Look**, click **Start**, **Settings**, **Taskbar,** and **Start Menu**. Select the **Start Menu** tab, and then **Classic Start Menu**. Click **OK**.

This troubleshooting section assumes you have completed the following tasks.

- Loaded a Phaser printer PCL or PostScript printer driver.

- Printed and kept a current copy of the Configuration page.

Verify Settings

1. Verify the settings on the Configuration page.
   - **IP Address Source** is set to: DHCP, Control Panel, BOOTP, or Auto IP (depending on your network configuration).
   - **Current IP Address** is set correctly. (Note this address if it is assigned by Auto IP, DHCP, or BOOTP.)
   - **Subnet Mask** is set correctly (if used).
   - **Default Gateway** is set correctly (if used).
   - **LPR** is enabled. Verify that the LPR and AppSocket settings are set as desired.
   - **Interpreters**: Auto, PCL, or PostScript (depending on your driver).
2. Verify that the client is logged into the network and printing to the correct print queue. The user should also have access to the Phaser printer queue.

Verify Driver Installation

1. From the desktop, right-click **My Network Places**, and select **Properties**.
2. Right-click **Local Area Connection** and select **Properties**.
3. Click the **General** tab. View the list of installed network protocols to verify that TCP/IP is installed. (For more information, contact your network administrator.)
4. Click **Install** to install any components not listed, and then restart your computer.
5. From the **Start** menu, select **Start** > **Settings** > **Printers and Faxes**.
6. Right-click the printer icon, and select **Properties**.
7. Click the **Advanced** tab. Verify that the correct printer driver is installed.
8. Click the **Ports** tab. Verify that the IP Address in the **Print to the Following Ports** list is identical to the one on the Configuration page. You may need to click the **Configure Port** button to see the IP address. If necessary, re-select the TCP/IP number used for the printer.

Macintosh Troubleshooting

The following procedures eliminates cabling, communication, and connection problems. Once you complete these steps, print a test page from your software application.

Use these steps **only** for Mac OS 10.3.9 through 10.5.

1. For **AppleTalk**, use the steps below. For **TCP/IP**, proceed to step 2.

   a. At Control Panel, check that **EtherTalk** is enabled. If it not, enable **EtherTalk**, and reset the printer.

   b. Print the Configuration page and verify that **EtherTalk** is enabled.

   c. From the Configuration page, verity the **Zone**. If you have multiple zones on your network, verify that your printer appears in the desired zone.

2. Open the **Network Utility** and click the Ping tab.

3. Enter the printer's IP address.

4. Click **Ping**. If you do not get a response, verify that your TCP/IP settings are correct for your printer and computer.

Print-Quality Troubleshooting

In this chapter...

Chapter 5

Print-Quality Problems Overview

Print-quality defects can be attributed to printer components, consumables, media, internal software, external software applications, and environmental conditions. To successfully troubleshoot print-quality problems, eliminate as many variables as possible. The first step is to generate prints using information pages embedded in the printer on laser paper from the approved media list. Refer to "Media and Tray Specifications" on page 1-18 for supported and specialty media that have been tested and approved for use in the Phaser 6140 Printer. Use paper from a fresh ream that is acclimated to room temperature and humidity.

If the print-quality defect remains after printing on approved media from an unopened ream of paper, then investigate applications and environmental conditions.

Determine the temperature and humidity under which the printer is operating. Compare this to the "Environmental Specifications" on page 1-14. Extreme temperature and humidity can adversely affect print quality.

When analyzing a print-quality defect, first determine if the defect occurs in all colors or only one color and if it is repeating or a random occurrence. Continuous defects in the process direction, such as voids and lines, are the most difficult to diagnose. Inspect the visible surfaces of all rollers for obvious defects. If no defects are found, replace the Imaging Unit, Laser Unit, Transfer Belt, and Fuser one at a time until the defect is eliminated.

Defects Associated with Specific Printer Components

Some print-quality problems are associated with specific assemblies. The xerographic component is listed with the associated print-quality defects. Refer to the specific print-quality troubleshooting procedure for detail information.

Laser Unit

- Light or Undertone Print
- Blank Print
- Black Print
- Vertical Blank Lines
- Horizontal Band, Voids, or Streaks
- Vertical Stripes
- Horizontal Stripes
- Partial Band
- Random Spots
- Repeating Bands, Lines, Marks, or Spots

Transfer Belt

- Light or Undertone Print
- Horizontal Band, Voids, or Streaks
- Vertical Stripes
- Horizontal Stripes
- Partial Band
- Random Spots
- Repeating Bands, Lines, Marks, or Spots
- Background Contamination

Fuser

- Vertical Stripes
- Horizontal Stripes
- Repeating Bands, Lines, Marks, or Spots
- Unfused Image

Imaging Unit

- Light or Undertone Print
- Blank Print
- Black Print
- Vertical Blank Lines
- Horizontal Band, Voids, or Streaks
- Vertical Stripes
- Horizontal Stripes
- Partial Band
- Random Spots
- Repeating Bands, Lines, Marks, or Spots
- Background Contamination
- Unfused Image

Checklist Before Troubleshooting Print-Quality

Check Printer Condition

Toner

Low toner can cause print-quality problems, such as fading, streaking, White lines, or dropouts. Print a small document from different software applications to replicate the problem and check the amount of toner available. If the toner is low, replace the affected cartridges.

Cleaning

Paper, toner, and dust particles can accumulate inside the printer and cause print-quality problems such as smearing or specks. Clean the inside of the printer to reduce these problems. Refer to "Cleaning" on page 7-2.

Symptom Checklist

Based on the observed defect, check the following items prior to performing troubleshooting. These actions may help resolve the problem without troubleshooting the printer.

Color is out of alignment.

Note

This problem can occur after installing a new Black Toner Cartridge if the Imaging Unit has not been cleaned.

a. Clean inside the printer.
b. Clean the Laser Unit lenses using a Q-tip or a dry, lint-free cloth to wipe the lenses.
c. Check the Transfer Belt for damage.
d. Perform Color Registration Adjustment (page 6-3).
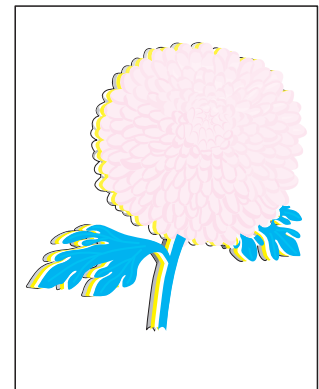
Color Registration

Print is too light.

a. The toner may be too low. Check the amount of toner and change the Toner Cartridges if necessary.
b. In the printer Printing Preferences menu, **Advanced > Details > Draft Mode**, verify **Off** is selected.
c. If you are printing on an uneven print surface, change the paper type settings in the Tray Settings menu.
d. Check that the correct media is being used.
e. The Imaging Unit needs to be replaced.
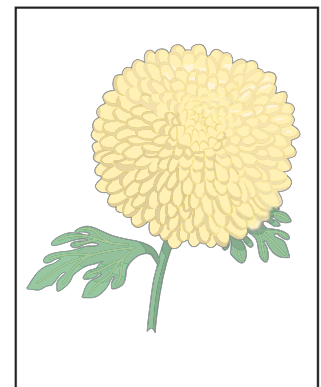
Light or Undertone Print

Toner smears or print comes off page.

    a.   If you are printing on an uneven print surface, change the Media Type settings in the Tray Settings menu.

    b.   Verify that the paper is within the printer specifications.

Smudges or Smears

Toner spots appear on the page and printing is blurred.

    a.   Check the Toner Cartridge(s) to make sure that it is installed correctly.

    b.   Change the Toner Cartridge(s).
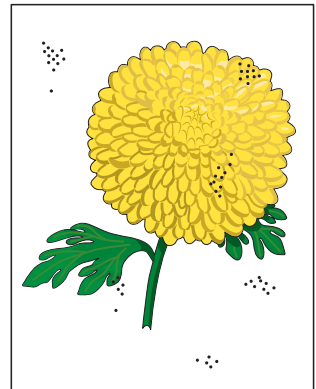
Random Spots

Entire page is white or one color is missing from image.

    a.   Ensure the packaging material is removed from the Toner Cartridge.

    b.   Check the Toner Cartridge to make sure that it is installed correctly.

    c.   The toner may be low. Change the Toner Cartridge.
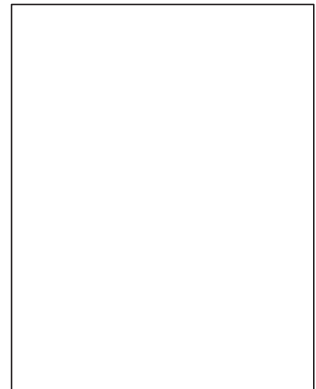
Blank Print

Streaks appear on the page.

    a.   The toner may be low. Change the Toner Cartridge(s).

    b.   If you are using preprinted forms, make sure the toner can withstand the temperature of 0˚ C to 35˚ C.
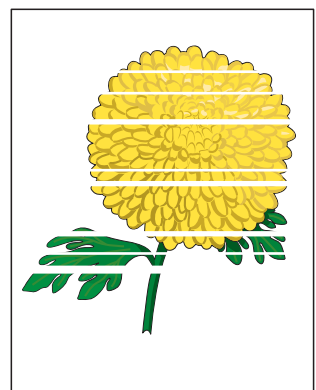
Horizontal Band, Void, or Streaks

Characters have jagged or uneven edges.

If you are using downloaded fonts, verify that the fonts are supported by the printer, the host computer, and the software application.

Fuzzy Text
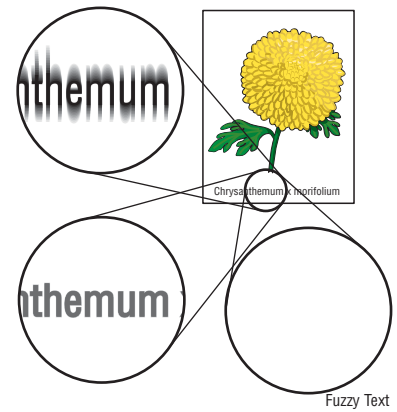
Part or all the page prints in Cyan, Magenta, Yellow, or Black.

Check the Toner Cartridges to make sure they are installed correctly.

Partial Band
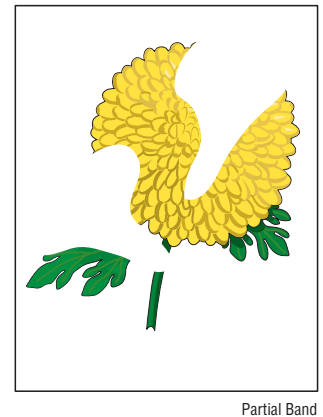
The job prints, but the top and side margins are incorrect.

a. Make sure the Paper Size setting in the Tray Settings is correct.

b. Make sure the margins are set correctly in the software application.

Image Not Centered
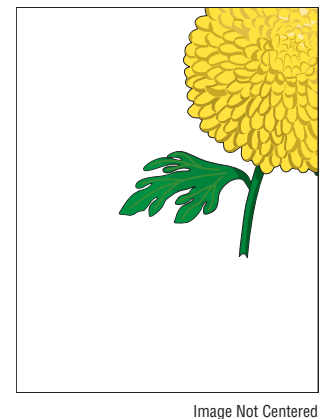
Print-Quality Troubleshooting

Print-Quality Defect Definitions

The following table lists the print-quality defect corrective procedure, their definition, and the page where each procedure is provided.

Defect	Description	Go to
Light or Undertone Print	The image density is too light in all colors.	page 5-8
Blank Print	The entire image area is blank.	page 5-10
Black Print	The entire image area is Black.	page 5-13
Vertical Blank Lines	There are faded or completely non-printed lines along the page.	page 5-15
Horizontal Band, Voids, or Streaks	There are areas of the image that are extremely light or are missing entirely.	page 5-17
Vertical Stripes	There are Black lines along the page in the direction of the paper travel.	page 5-19
Horizontal Stripes	There are dark lines running parallel with the leading edge of the print.	page 5-21
Partial Band	Areas of the image are extremely light or missing.	page 5-23
Random Spots	Spots of toner are randomly scattered.	page 5-25
Repeating Bands, Lines, Marks, or Spots	Recurring lines, marks, or spots on the page.	page 5-27
Background Contamination	There is toner contamination on all or most of the page.	page 5-30
Skew	The image is not parallel with both sides of the paper.	page 5-32
Damaged Media	The paper is wrinkled, folded, or worn-out.	page 5-34
Unfused Image	The toner is not completely fused.	page 5-36
Color Registration	A printed Yellow or Black image is not overlapped on a Cyan or Magenta image correctly.	page 5-37

Light or Undertone Print

The overall image density is too light in all colors.

Initial Actions

- Check the Imaging Unit life counter.
- Set the print mode to Enhanced.
- Check for obstructions or debris in the beam path between the Laser and the Imaging Units.
- Check the media settings at the Control Panel.

Troubleshooting Reference Table

Applicable Parts	Example Print
▪ Imaging Unit, PL4.1.21 ▪ Laser Unit, PL4.1.99 ▪ Dispense Assy, PL5.1.1 ▪ Toner Cartridge K, PL5.1.21 ▪ Toner Cartridge C, PL5.1.22 ▪ Toner Cartridge M, PL5.1.23 ▪ Toner Cartridge Y, PL5.1.24 ▪ Transfer Belt, PL6.1.7 ▪ IP Board, PL8.1.7 ▪ MCU Board, PL8.2.13	 Light or Undertone Print

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the toner type. Are the cartridges genuine Xerox?	Go to step 2.	Replace with Xerox toner.
2	Check the media condition. Is the media the recommended type?	Go to step 4.	Replace the media, then go to step 3.
3	Is the image printed correctly?	Complete	Go to step 4.
4	Check the print mode. Is the **Standard Mode** selected?	Select **Enhanced Mode**, then go to step 5.	Go to step 6.
5	Is the image printed correctly?	Complete	Go to step6.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
6	Check the the Imaging Unit for sealing tapes. Are sealing tapes present?	Remove the sealing tapes and check the media path for debris.	Go to step 7.
7	Print the Toner Pallet Check test print (page 5-44): **Service Mode > Test Print> Toner Pallet Check** Is one or more of the colors faint?	Go to step 8.	Check the original printing data.
8	Reseat and lock the Toner Cartridges. Is the image printed correctly?	Complete	Go to step 9.
9	Check the Transfer Belt high-voltage connections. Are the contacts on the Transfer Belt and springs damaged or dirty?	Clean or replace the Transfer Belt or spring(s), then go to step 9.	Go to step 10.
10	Check the Imaging Unit high-voltage connections. Are the contacts on the Imaging Unit, and springs damaged or dirty?	Clean or replace the Imaging Unit or spring(s), then go to step 10.	Go to step 11.
11	Reseat the Imaging Unit. Is the image printed correctly?	Complete	Go to step 12.
12	Check the Laser Unit windows. Are the laser windows clean?	Go to step 13.	Clean with soft cloth or cotton swab.
13	Check the laser beam path. Are there any obstructions between the Laser Unit and Imaging Unit?	Remove any obstructions.	Go to step 14.
14	Caution: Do not run the toner motor more than a few seconds. Test the Toner Motor for each color (page 4-28): **Engine Diag > Motor Test > CMYK Toner Motor**. Does the motor rotate?	Go to step 16.	Replace the Dispense Assy (page 8-64), then go to step 15.
15	Is the image printed correctly?	Complete	Replace the MCU Board (page 8-103).
16	Reseat all MCU Board connectors. Is the image printed correctly?	Complete	Go to step 17.
17	Reseat all IP Board connectors. Is the image printed correctly?	Complete	Go to step 18.
18	Open and close the Front Cover to reseat the Transfer Belt. Is the image printed correctly?	Complete	Go to step 19.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
19	Replace the Transfer Belt (page 8-79) Is the image printed correctly?	Complete	Go to step 20.
20	Replace the Imaging Unit. (page 8-7) Is the image printed correctly?	Complete	Go to step 21.
21	Replace the Dispense Assy (page 8-64). Is the image printed correctly?	Complete	Go to step 22.
22	Replace the Laser Unit. (page 8-54) Is the image printed correctly?	Complete	Replace the IP Board (page 8-87)
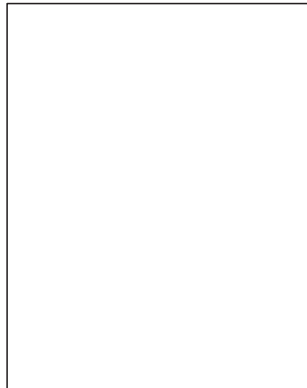
Blank Print

The entire image area is blank.

Initial Actions

- Check the media path.

- Run the Engine Test print (page 4-41) to help isolate the problem between the Image Processor Board and the MCU Board

- Check for obstructions or debris in the beam path between the Laser and the Imaging Units.

- Ensure there are no debris on the transfer path.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Imaging Unit, PL4.1.21 ■ Laser Unit, PL4.1.99 ■ Dispense Assy, PL5.1.1 ■ Toner Cartridge K, PL5.1.21 ■ Toner Cartridge C, PL5.1.22 ■ Toner Cartridge M, PL5.1.23 ■ Toner Cartridge Y, PL5.1.24 ■ Transfer Belt, PL6.1.7 ■ Sub Drive Assembly, PL7.1.1 ■ Main Drive Assembly, PL7.1.2 ■ Feed Drive Assembly, PL7.1.4 ■ IP Board, PL8.1.7 ■ MCU Board, PL8.2.13	 Blank Print

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the toner type. Are the Toner Cartridges genuine Xerox?	Replace with Xerox toner, then go to step 2.	Go to step 3.
2	Is the image printed correctly?	Complete	Print an Engine Test print, if successful, replace the IP Board (page 8-87). If not, go to step 3.
3	Reseat and lock the Toner Cartridges. Is the image printed correctly?	Complete	Go to step 4.
4	Check the Transfer Belt high-voltage connections. Are the contacts on the Transfer Belt and springs damaged or dirty?	Clean or replace the Transfer Belt (page 8-79) or spring(s), then go to step 5.	Go to step 6.
5	Is the image printed correctly?	Complete	Go to step 6.
6	Check media condition. Is the media dry and recommended?	Go to step 8.	Replace the media, then go to step 7.
7	Is the image printed correctly?	Complete	Go to step 8.
8	Check the Toner Cartridge life. Are one or more of the Toner Cartridges near end of life?	Replace the Toner Cartridge(s) (page 8-12).	Go to step 9.
9	Inspect the Laser Unit windows. Are the windows clean?	Go to step 10.	Clean with soft cloth or cotton swab.
10	Inspect the laser beam path Are there any obstructions between the Laser Unit and Imaging Unit?	Remove the foreign substances.	Go to step 11.
11	Reseat the Imaging Unit. Is the image printed correctly?	Complete	Go to step 12.
12	Caution: Do not run the toner motor more than a few seconds. Test the Toner Motor for each color (page 4-28): **Engine Diag > Motor Test > CMYK Toner Motor**. Do the toner motors rotate?	Go to step 17.	Go to step 13.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
13	Check the connectors between the MCU Board and Toner Motor (Y/M/C/K) (Dispenser Motor Assy). Are P/J18, P/J19, P/J181, P/J182, P/J191 and P/J192 connected correctly?	Go to step 15.	Securely reconnect the connectors, then go to step 14.
14	Is the image printed correctly?	Complete	Go to step 15.
15	Check the Toner Motor Harness for continuity: 1. Disconnect J18 and J19 from the MCU Board. 2. Disconnect J181, J182, J191 and J192 from the Toner Motors. Is each cable of J18 <=> J181 and J182 continuous? Is each cable of J19 <=> J191 and J192 continuous?	Go to step 16.	Replace the Dispense Assy (page 8-64).
16	Check for power to Toner Motors (Y/M/C/K): 1. Disconnect J18 and J19 from the MCU Board. 2. Measure the voltage across P18-3, P18-8, P19-4 and P19-9 <= > ground on the MCU Board. Is the voltage about +24 VDC when the Interlock Switch is closed?	Replace the Dispense Assy (page 8-64).	Replace the MCU Board (page 8-103).
17	Check the connections between the Laser Unit and MCU Board. Are P/J40, P/J 41, P/J411 and P/J 412 connected correctly?	Go to step 19.	Reconnect the connector(s) P/J40, P/J41, P/J411 and/or P/J412 securely, then go to step 18.
18	Is the image printed correctly?	Complete	Go to step 19.
19	Reseat all MCU Board connectors. Is the image printed correctly?	Complete	Go to step 20.
20	Reseat all IP Board connectors. Is the image printed correctly?	Complete	Go to step 21.
21	Open and close the Front Cover to reseat the Transfer Belt. Is the image printed correctly?	Complete	Go to step 22.
22	Replace the Imaging Unit (page 8-7). Is the image printed correctly?	Complete	Go to step 23.
23	Replace the Transfer Belt (page 8-79) Is the image printed correctly?	Complete	Go to step 24.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
24	Replace the Laser Unit. (page 8-54) Is the image printed correctly?	Complete	Replace the IP Board (page 8-87).

Black Print

The entire image is Black.

Initial Actions

- Check the media path.
- Ensure there are no debris on the transfer path.
- Print an Engine Test print (page 4-41).

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Laser Unit Kit, PL4.1.99 ■ HVPS, PL4.1.19 ■ Imaging Unit, PL4.1.21 ■ IP Board, PL8.1.7 ■ MCU Board, PL8.2.13	 Black Print

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Print the Gradation ESS test print (page 5-43): **Test Print> Toner Gradation ESS** Is the image printed correctly?	Go to step 2.	Go to step 3.
2	Print an Engine Test print (page 4-41). Is the image printed correctly?	Replace the IP Board (page 8-87).	Go to step 3.
3	Reseat the Imaging Unit. Is the image printed correctly?	Complete	Go to step 4.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Reseat all MCU Board connectors. Is the image printed correctly?	Complete	Go to step 5.
5	Reseat all IP Board connectors. Is the image printed correctly?	Complete	Go to step 6.
6	Reseat the Laser Unit. Is the image printed correctly?	Complete	Go to step 7.
7	Check the connections between the Laser Unit and MCU Board. Are P/J40, P/J 41, P/J411 and P/J 412 connected correctly?	Go to step 9.	Secure the connectors, then go to step 8.
8	Is the image printed correctly?	Complete	Go to step 9.
9	Replace the Imaging Unit (page 8-7). Is the image printed correctly?	Complete	Go to step 10.
10	Replace the IP Board (page 8-87). Is the image printed correctly?	Complete	Go to step 11.
11	Replace the Laser Unit (page 8-54). Is the image printed correctly?	Complete	Replace the MCU Board (page 8-103).
12	Does the error persist?	Replace the HVPS (page 8-101).	Complete
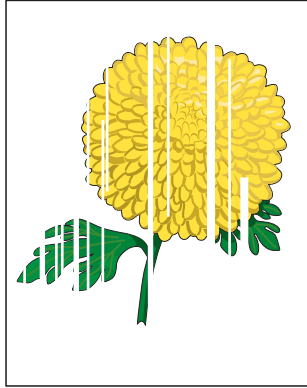
Vertical Blank Lines

There are faded or completely non-printed lines along the page in the direction of the paper travel from the leading edge to the trailing edge.

Initial Actions

- Check the area around the Laser Unit windows and openings in the Imaging Unit. Small obstructions, such as hair or fibers, can create streaks.

- Ensure there is no debris on the media path.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Imaging Unit, PL4.1.21 ■ Laser Unit, PL4.1.99 ■ Transfer Belt, PL6.1.7 ■ IP Board, PL8.1.7 ■ MCU Board, PL8.2.13	Vertical Blank Lines

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check media condition Is the media dry and approved for use?	Go to step 3.	Replace with dry, approved media, then go to step 2.
2	Is the image printed correctly?	Complete	Go to step 3.
3	Inspect the media path between the Transfer Belt and Fuser. Is there any debris?	Remove any debris, then go to step 4.	Go to step 5.
4	Is the image printed correctly?	Complete	Go to step 5.
5	Inspect the Transfer Belt surface. Is there any damage to the transfer belt surface?	Replace the Transfer Belt (page 8-79).	Go to step 6.
6	Check the Transfer Belt high-voltage connections. Are the contacts on the Transfer Belt and springs damaged or dirty?	Clean or replace the Transfer Belt contacts or spring(s).	Go to step 7.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
7	Print an Engine Test print (page 4-41). Is the image printed correctly?	Replace the IP Board (page 8-87).	Go to step 8.
8	Inspect the laser beam path Are there any obstructions between the Laser Unit and Imaging Unit?	Remove the foreign substances.	Go to step 9.
9	Check the Imaging Unit high-voltage connections. Are the contacts on the Imaging Unit, and springs damaged or dirty?	Clean or replace the Imaging Unit contacts or spring(s).	Go to step 10.
10	Reseat the Imaging Unit. Is the image printed correctly?	Complete	Go to step 11.
11	Reseat the Fuser. Is the image printed correctly?	Complete	Go to step 12.
12	Reseat all MCU Board connectors. Is the image printed correctly?	Complete	Go to step 13.
13	Reseat all IP Board connectors. Is the image printed correctly?	Complete	Go to step 14.
14	Open and close the Front Cover to reseat the Transfer Belt. Is the image printed correctly?	Complete	Go to step 15.
15	Replace the Imaging Unit (page 8-7). Is the image printed correctly?	Complete	Go to step 16.
16	Replace the IP Board (page 8-87). Is the image printed correctly?	Complete	Go to step 17.
17	Check the connections between the Laser Unit and MCU Board. Are P/J40, P/J 41, P/J411 and P/J 412 connected correctly?	Go to step 19.	Reseat the connectors, then go to step 18.
18	Is the image printed correctly?	Complete	Go to step 19.
19	Replace the Laser Unit (page 8-54). Is the image printed correctly?	Complete	Replace the MCU Board (page 8-103).
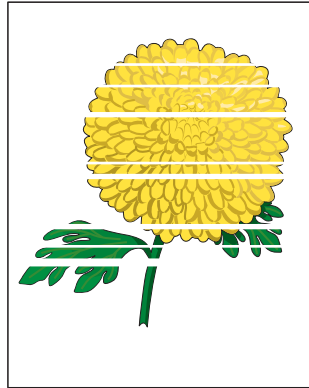
Horizontal Band, Voids, or Streaks

There are areas of the image that are extremely light or are missing entirely. These missing areas form wide bands which cover a wide area horizontally, perpendicular to the paper feed direction.

Initial Actions

- Check the paper transfer path.

- Ensure there are no debris on the transfer path.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ HVPS, PL4.1.19 ■ Imaging Unit, PL4.1.21 ■ Laser Unit, PL4.1.99 ■ Toner Cartridge K, PL5.1.21 ■ Toner Cartridge C, PL5.1.22 ■ Toner Cartridge M, PL5.1.23 ■ Toner Cartridge Y, PL5.1.24 ■ Transfer Belt, PL6.1.7 ■ IP Board, PL8.1.7 ■ MCU Board, PL8.2.13	 Horizontal Band, Void, or Streaks

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Print the Contamination Check test print (page 5-45): **Test Print > Contamination Chk** Compare any defects with the Pitch Chart (page 5-46). Do any of the horizontal bands match the chart?	Replace the corresponding parts	Go to step 2.
2	Check the paper condition Is the paper dry and approved for use?	Go to step 4.	Replace with dry, approved paper, then go to step 3.
3	Is the image printed correctly?	Complete	Go to step 4.
4	Inspect the transfer belt surface. Is there any damage to the belt?	Replace the Transfer Belt (page 8-79).	Go to step 5.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
5	Check the Transfer Belt high-voltage connections. Are the contacts on the Transfer Belt and springs damaged or dirty?	Clean or replace the Transfer Belt contacts or spring(s).	Go to step 6.
6	Print an Engine Test print (page 4-41). Is the image printed correctly?	Replace the IP Board (page 8-87).	Go to step 7.
7	Check the laser beam path Are there any obstructions between the Laser Unit and Imaging Unit?	Remove the obstructions.	Go to step 8.
8	Check the Imaging Unit high-voltage connections. Are the contacts on the Imaging Unit, and springs damaged or dirty?	Clean or replace the Imaging Unit contacts or spring(s).	Go to step 9.
9	Reseat the Imaging Unit. Is the image printed correctly?	Complete	Go to step 10.
10	Reseat the Fuser. Is the image printed correctly?	Complete	Go to step 11.
11	Reseat all MCU Board connectors. Is the image printed correctly?	Complete	Go to step 12.
12	Reseat all IP Board connectors. Is the image printed correctly?	Complete	Go to step 13.
13	Open and close the Front Cover to reseat the Transfer Belt. Is the image printed correctly?	Complete	Go to step 14.
14	Replace the Toner Cartridge(s) (page 8-12). Is the image printed correctly?	Complete	Go to step 15.
15	Replace the Imaging Unit (page 8-7). Is the image printed correctly?	Complete	Go to step 16.
16	Replace the IP Board (page 8-87). Is the image printed correctly?	Complete	Go to step 17.
17	Check the connections between the Laser Unit and MCU Board. Are P/J40, P/J 41, P/J411 and P/J 412 connected correctly?	Go to step 19.	Secure the connectors, then go to step 17.
18	Is the image printed correctly?	Complete	Go to step 19.
19	Replace the HVPS (page 8-101). Is the image printed correctly?	Complete	Go to step 20.
20	Replace the Laser Unit (page 8-54). Is the image printed correctly?	Complete	Replace the MCU Board (page 8-103).
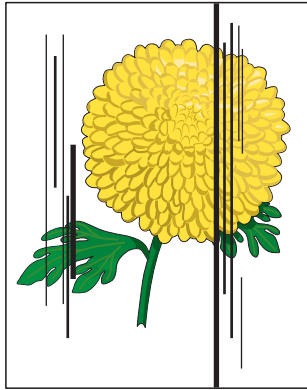
Vertical Stripes

There are Black lines along the page in the direction of the paper travel from the leading edge to the trailing edge.

Initial Actions

- Check the media path.
- Ensure there are no debris on the transfer path.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Imaging Unit, PL4.1.21 ■ Laser Unit, PL4.1.99 ■ Fuser, PL6.1.1 ■ Transfer Belt, PL6.1.7 ■ IP Board, PL8.1.7 ■ MCU Board, PL8.2.13	 Vertical Stripes

Warning

Allow the Fuser to cool before starting the procedure.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Print an Engine Test print (page 4-41). Is the test print printed correctly?	Replace the IP Board (page 8-87).	Go to step 2.
2	Check the Transfer Belt high-voltage connections. Are the contacts on the Transfer Belt and springs damaged or dirty?	Clean or replace the Transfer Belt contacts or spring(s).	Go to step 3.
3	Check the Imaging Unit high-voltage connections. Are the contacts on the Imaging Unit, and springs damaged or dirty?	Clean and/or replace the Imaging Unit or spring(s).	Go to step 4.
4	Reseat the Imaging Unit. Does the error persist?	Complete	Go to step 5.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
5	Reseat the Fuser. Does the error persist?	Complete	Go to step 6.
6	Reseat all MCU Board connectors. Does the error persist?	Complete	Go to step 7.
7	Reseat all IP Board connectors. Does the error persist?	Complete	Go to step 8.
8	Open and close the Front Cover to reseat the Transfer Belt. Does the error persist?	Complete	Go to step 9.
9	Check the connections between the Laser Unit and MCU Board. Are P/J40, P/J 41, P/J411 and P/J 412 connected correctly?	Go to step 11.	Reconnect the connectors securely, then go to step 10.
10	Is the image printed correctly?	Complete	Go to step 11.
11	Replace the Imaging Unit (page 8-7). Does the error persist?	Complete	Go to step 12.
12	Replace the Fuser (page 8-10). Does the error persist?	Complete	Go to step 13.
13	Replace the IP Board (page 8-87). Does the error persist?	Complete	Go to step 14.
14	Replace the Laser Unit (page 8-54). Does the error persist?	Complete	Go to step 15.
15	Replace the MCU Board (page 8-103). Does the error persist?	Replace the HVPS (page 8-101).	Complete
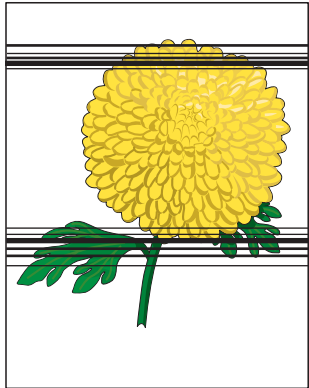
Horizontal Stripes

There are Black lines running parallel with the leading edge of the print, perpendicular to the direction of the paper travel.

Initial Actions

- Check the paper transfer path.

- Ensure there are no debris on the transfer path.

Troubleshooting Reference Table

Applicable Notes	Example Print
■ Imaging Unit, PL4.1.21 ■ Laser Unit, PL4.1.99 ■ Toner Cartridge K, PL5.1.21 ■ Toner Cartridge C, PL5.1.22 ■ Toner Cartridge M, PL5.1.23 ■ Toner Cartridge Y, PL5.1.24 ■ Fuser, PL6.1.1 ■ Transfer Belt, PL6.1.7 ■ IP Board, PL8.1.7 ■ MCU Board, PL8.2.13	Horizontal Stripes

Warning

Allow the Fuser to cool before servicing the printer.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Print the Contamination Check test print (page 5-45): **Test Print > Contamination Chk** Compare any horizontal bands with the Pitch Chart (page 5-46). Do any of the horizontal bands match the chart?	Replace the corresponding parts.	Go to step 2.
2	Check the Transfer Belt high-voltage connections. Are the contacts on the Transfer Belt and springs damaged or dirty?	Clean or replace the Transfer Belt contacts or spring(s).	Go to step 3.
3	Print an Engine Test print (page 4-41). Is the test print printed correctly?	Replace the IP Board (page 8-87).	Go to step 4.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Inspect the media path. Is there toner contamination ?	Clean the paper path (refer to "Cleaning" on page 7-2).	Go to step 5.
5	Check the Imaging Unit high-voltage connections. Are the contacts on the Imaging Unit, and springs damaged or dirty?	Clean and/or replace the Imaging Unit or spring(s).	Go to step 6.
6	Reseat the Imaging Unit. Is the image printed correctly?	Complete	Go to step 7.
7	Reseat the Fuser. Is the image printed correctly?	Complete	Go to step 8.
8	Check the Toner Cartridges Are any of the Toner Cartridges damaged?	Replace any damaged Toner Cartridges (page 8-12)	Go to step 9.
9	Reseat all MCU Board connectors. Is the image printed correctly?	Complete	Go to step 10.
10	Reseat all IP Board connectors. Is the image printed correctly?	Complete	Go to step 11.
11	Open and close the Front Cover to reseat the Transfer Belt. Is the image printed correctly?	Complete	Go to step 12.
12	Check the connections between the Laser Unit and MCU Board. Are P/J40, P/J 41, P/J411 and P/J 412 connected correctly?	Go to step 15.	Reconnect the connectors securely, then go to step 13.
13	Is the image printed correctly?	Complete	Go to step 14.
14	Replace the Imaging Unit (page 8-7). Is the image printed correctly?	Complete	Go to step 15.
15	Replace the Fuser (page 8-10). Does the error persist?	Complete	Go to step 16.
16	Replace the IP Board (page 8-87). Is the image printed correctly?	Complete	Go to step 17.
17	Replace the Laser Unit (page 8-54). Is the image printed correctly?	Complete	Replace the MCU Board (page 8-103).
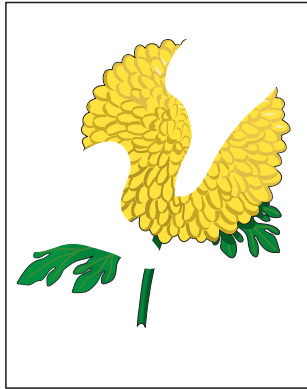
Partial Band

There are areas of the image that are extremely light or are missing in a limited area on the paper.
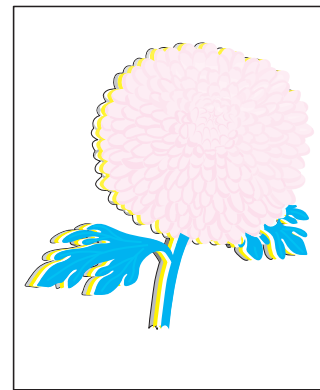
Initial Actions

- Check the paper transfer path.

- Ensure there are no debris on the transfer path.

Troubleshooting Reference Table

Applicable Notes	Example Print
■ Imaging Unit, PL4.1.21 ■ Laser Unit, PL4.1.99 ■ Transfer Belt, PL6.1.7 ■ IP Board, PL8.1.7 ■ MCU Board, PL8.2.13	 Partial Band

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Print the Contamination Check test print (page 5-45): **Test Print > Contamination Chk** Compare any blank areas with the Pitch Chart (page 5-46). Do any of the blank areas appear at regular intervals, and match the chart?	Replace the corresponding parts.	Go to step 2.
2	Check the media condition Is the media dry and approved for use?	Go to step 4.	Replace with dry, approved media, then go to step 3.
3	Is the image printed correctly?	Complete	Go to step 4.
4	Print an Engine Test print (page 4-41). Is the test print printed correctly?	Replace the IP Board (page 8-87).	Go to step 5.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
5	Inspect the Transfer Belt surface. Is the transfer belt damaged?	Replace the Transfer Belt (page 8-79).	Go to step 6.
6	Check the Transfer Belt high-voltage connections. Are the contacts on the Transfer Belt and springs damaged or dirty?	Clean or replace the Transfer Belt contacts or spring(s).	Go to step 7.
7	Check the Imaging Unit high-voltage connections. Are the contacts on the Imaging Unit, and springs damaged or dirty?	Clean and/or replace the Imaging Unit or spring(s).	Go to step 8.
8	Reseat the Imaging Unit. Is the image printed correctly?	Complete	Go to step 9.
9	Reseat and lock the Toner Cartridges. Is the image printed correctly?	Complete	Go to step 10.
10	Reseat all MCU Board connectors. Is the image printed correctly?	Complete	Go to step 11.
11	Reseat all IP Board connectors. Is the image printed correctly?	Complete	Go to step 12.
12	Open and close the Front Cover to reseat the Transfer Belt. Is the image printed correctly?	Complete	Go to step 13.
13	Reseat HVPS Board connections. Is the image printed correctly?	Complete	Go to step 14.
14	Check the connections between the Laser Unit and MCU Board. Are P/J40, P/J 41, P/J411 and P/J 412 connected correctly?	Go to step 16.	Reconnect the connectors securely, then go to step 15.
15	Is the image printed correctly?	Complete	Go to step 16.
16	Replace the Imaging Unit (page 8-7). Is the image printed correctly?	Complete	Go to step 17.
17	Replace the IP Board (page 8-87). Is the image printed correctly?	Complete	Go to step 18.
18	Replace the Laser Unit (page 8-54). Is the image printed correctly?	Complete	Replace the MCU Board (page 8-103).
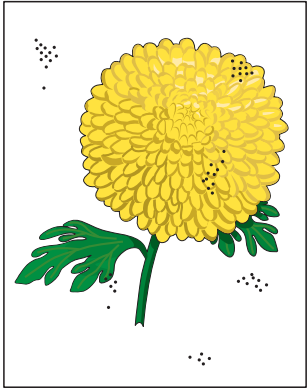
Random Spots

There are spots of toner randomly scattered across the page.

Initial Actions

- Check the paper transfer path.

- Ensure there are no debris on the transfer path.

Troubleshooting Reference Table

Applicable Notes	Example Print
■ Imaging Unit, PL4.1.21 ■ Laser Unit, PL4.1.99 ■ Transfer Belt, PL6.1.7 ■ IP Board, PL8.1.7 ■ MCU Board, PL8.2.13	Random Spots

Warning

Allow the Fuser to cool before starting the procedure.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Inspect the paper transfer path. Is there any contamination on the paper transfer path?	Clean the paper path (refer to "Cleaning" on page 7-2), then go to step 2.	Go to step 3.
2	Is the image printed correctly?	Complete	Go to step 3.
3	Print the Contamination Check test print (page 5-45): **Test Print > Contamination Chk** Compare any blank areas with the Pitch Chart (page 5-46). Do any of the blank areas appear at regular intervals, and match the chart?	Replace the corresponding parts.	Go to step 4.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Check the paper being used. Is it approved paper?	Go to step 6.	Load supported media, then go to step 5.
5	Is the image printed correctly?	Complete	Go to step 6.
6	Print an Engine Test print (page 4-41). Is the test print printed correctly?	Replace the IP Board (page 8-87).	Go to step 7.
7	Check the transfer belt surface. Is there any damage on the surface of the transfer belt?	Replace the Transfer Belt (page 8-79).	Go to step 8.
8	Check the Transfer Belt high-voltage connections. Are the contacts on the Transfer Belt and springs damaged or dirty?	Clean or replace the Transfer Belt contacts or spring(s).	Go to step 9.
9	Check the Imaging Unit high-voltage connections. Are the contacts on the Imaging Unit, and springs damaged or dirty?	Clean and/or replace the Imaging Unit or spring(s).	Go to step 10.
10	Reseat the Imaging Unit. Is the image printed correctly?	Complete	Go to step 11.
11	Reseat and lock the Toner Cartridges. Is the image printed correctly?	Complete	Go to step 12.
12	Reseat the Fuser. Is the image printed correctly?	Complete	Go to step 13.
13	Reseat all MCU Board connectors. Is the image printed correctly?	Complete	Go to step 14.
14	Reseat all IP Board connectors. Is the image printed correctly?	Complete	Go to step 15.
15	Open and close the Front Cover to reseat the Transfer Belt. Is the image printed correctly?	Complete	Go to step 16.
16	Check the connections between the Laser Unit and MCU Board. Are P/J40, P/J 41, P/J411 and P/J 412 connected correctly?	Go to step 18.	Reconnect the connectors securely, then go to step 17.
17	Is the image printed correctly?	Complete	Go to step 18.
18	Replace the Imaging Unit (page 8-7). Is the image printed correctly?	Complete	Go to step 19.
19	Replace the IP Board (page 8-87). Is the image printed correctly?	Complete	Go to step 20.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
20	Replace the Laser Unit (page 8-54). Is the image printed correctly?	Complete	Replace the MCU Board (page 8-103).
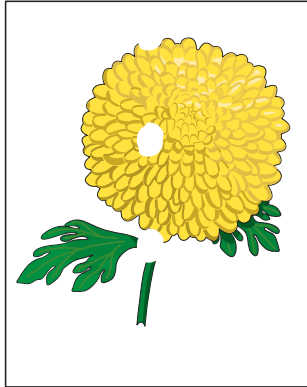
Repeating Bands, Lines, Marks, or Spots

There are recurring lines, marks, or spots on the page.

Initial Actions

- Check the paper transfer path.
- Ensure there are no debris on the transfer path.

Troubleshooting Reference Table

Applicable Notes	Example Print
■ Laser Unit, PL4.1.99 ■ Toner Cartridge K, PL5.1.21 ■ Toner Cartridge C, PL5.1.22 ■ Toner Cartridge M, PL5.1.23 ■ Toner Cartridge Y, PL5.1.24 ■ Fuser, PL6.1.1 ■ Transfer Belt, PL6.1.7	 Repeating Defects

Warning

Allow the Fuser to cool before starting the procedure.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check for spot's regular intervals. Do spots, lines, or marks that might appear on the page occur at regular intervals?	Refer to "Pitch Chart Test Print" on page 5-46.	Complete.

Residual Image or Ghosting

There are faint, ghostly images appearing on the page. The images may be either from a previous page or from the page currently being printed.

Initial Actions

- Check the paper transfer path.
- Ensure there are no debris on the transfer path.

Troubleshooting Reference Table

Applicable Notes	Example Print
■ Erase LED Assy, PL4.1.8 ■ Imaging Unit, PL4.1.21 ■ Fuser, PL6.1.1 ■ Transfer Belt, PL6.1.7 ■ IP Board, PL8.1.7 ■ MCU Board, PL8.2.13	 Residual Image/Ghosting

Warning

Allow the Fuser to cool before starting the procedure.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Did the client print a large number of the same image?	Go to step 2.	Go to step 3.
2	Print the Contamination Check test prints (page 5-45): **Test Print > Contamination Chk** Is the image printed correctly?	Complete	Go to step 3.
3	Print an Engine Test print (page 4-41). Is the test print printed correctly?	Replace the IP Board (page 8-87).	Go to step 4.
4	Remove the Imaging Unit and defeat the safety interlock switch. Do the four erase LEDs light correctly?	Go to step 6.	Go to step 5.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
5	Inspect the connections between the MCU Board and Erase LED Assy. Are P/J141 and P/J14 connected correctly?	Go to step 5.	Reconnect the connectors securely, then go to step 6.
6	Disconnect J14 from the Erase LED Assy and measure the voltage across P14-15 <=> ground on the MCU Board. Is +3.3 VDC present	Replace the Erase LED Assy (page 8-63).	Replace the MCU Board (page 8-103).
7	Check the Imaging Unit high-voltage connections. Are the contacts on the Imaging Unit, and springs damaged or dirty?	Clean and/or replace the Imaging Unit or spring(s), then go to step 8.	Go to step 9.
8	Reseat the Imaging Unit. Is the image printed correctly?	Complete	Go to step 9.
9	Check the Transfer Belt high-voltage connections. Are the contacts on the Transfer Belt and springs damaged or dirty?	Clean or replace the Transfer Belt contacts or spring(s).	Go to step 10.
10	Reseat all MCU Board connectors. Is the image printed correctly?	Complete	Go to step 11.
11	Reseat all IP Board connectors. Is the image printed correctly?	Complete	Go to step 12.
12	Open and close the Front Cover to reseat the Transfer Belt. Is the image printed correctly?	Complete	Go to step 13.
13	Replace the Imaging Unit (page 8-7). Is the image printed correctly?	Complete	Go to step 14.
14	Replace the Fuser (page 8-10). Is the image printed correctly?	Complete	Go to step 15.
15	Replace the MCU Board (page 8-103). Is the image printed correctly?	Complete	Replace the IP Board (page 8-87).
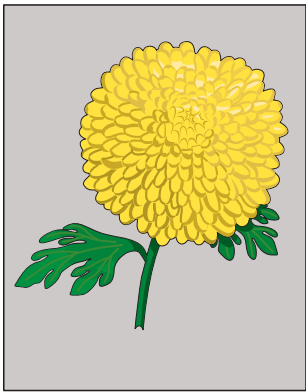
Background Contamination

There is toner contamination on all or most of the page. The contamination appears as a very light gray dusting.

Initial Actions

- Check the paper transfer path.

- Ensure there are no debris on the transfer path.

Troubleshooting Reference Table

Applicable Notes	Example Print
■ Erase LED Assy, PL4.1.8 ■ Imaging Unit, PL4.1.21 ■ Transfer Belt, PL6.1.7 ■ IP Board, PL8.1.7 ■ MCU Board, PL8.2.13	 Background Contamination

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Inspect the media path. Are there obstructions in the media path?	Clean the media path (refer to "Cleaning" on page 7-2), then go to step 2.	Go to step 3.
2	Is the image printed correctly?	Complete	Go to step 3.
3	Print the Windows test page after printing the Demo page **Information Pages > Demo Page**, or printing **Test Print > Toner Pallet Check**). Is the image printed correctly?	Complete	Go to step 4.
4	Print an Engine Test print (page 4-41). Is the test print printed correctly?	Replace the IP Board (page 8-87).	Go to step 5.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
5	Remove the Imaging Unit and defeat the safety interlock switch. Do the four erase LEDs light correctly?	Go to step 8.	Go to step 6.
6	Check the connections between the MCU Board and Erase LED Assy. Are P/J141 and P/J14 connected correctly?	Go to step 7.	Reconnect the connector(s) securely, then go to step 7.
7	Disconnect J14 from the Erase LED Assy and measure the voltage across P14-15 <=> ground on the MCU Board. Is +3.3 VDC present	Replace the Erase LED Assy (page 8-63).	Replace the MCU Board (page 8-103).
8	Check the Transfer Belt high-voltage connections. Are the contacts on the Transfer Belt and springs damaged or dirty?	Clean or replace the Transfer Belt contacts or spring(s).	Go to step 9.
9	Check the Imaging Unit high-voltage connections. Are the contacts on the Imaging Unit, and springs damaged or dirty?	Clean and/or replace the Imaging Unit or spring(s).	Go to step 10.
10	Reseat all IP Board connectors. Is the image printed correctly?	Complete	Go to step 11.
11	Reseat and lock the Toner Cartridges. Is the image printed correctly?	Complete	Go to step 12.
12	Check the connections between the Laser Unit and MCU Board. Are P/J40, P/J 41, P/J411 and P/J 412 connected correctly?	Go to step 14.	Reconnect the connectors securely, then go to step 13.
13	Is the image printed correctly?	Complete	Go to step 14.
14	Reseat all MCU Board connectors. Is the image printed correctly?	Complete	Go to step 15.
15	Reseat all IP Board connectors. Is the image printed correctly?	Complete	Go to step 16.
16	Open and close the Front Cover to reseat the Transfer Belt. Is the image printed correctly?	Complete	Go to step 17.
17	Replace the Imaging Unit (page 8-7). Is the image printed correctly?	Complete	Go to step 18.
18	Replace the IP Board (page 8-87). Is the image printed correctly?	Complete	Replace the MCU Board (page 8-103).
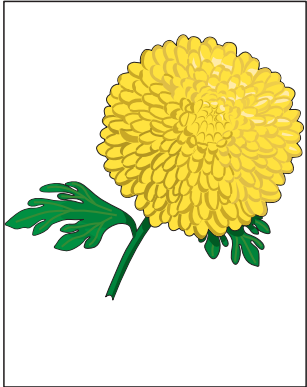
Skew

The printed image is not parallel with both sides of the paper.

Initial Actions

- Check the media path.

- Ensure there are no debris on the transfer path.

- If feeding throught the manual feed slot, try feeding from Tray 1.

Troubleshooting Reference Table

Applicable Notes	Example Print
■ Separator Roller, PL2.1.5 ■ Feed Roller Assembly, PL3.2.4 ■ Registration Roller, PL3.2.9 ■ Metal Registration Roller, PL3.2.10	 Skew 2

Note

The Tray is recommended for paper feeding because paper fed via the manual feed slot is prone to skew depending on how the sheet is fed.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Inspect the media being used. Is it approved paper?	Go to step 3.	Load approved media, then go to step 2.
2	Is the image printed correctly?	Complete	Go to step 3.
3	Check media condition. Is the media dry and recommended?	Go to step 5.	Replace the media, then go to step 4.
4	Is the image printed correctly?	Complete	Go to step 5.
5	Open and close the Front Cover. Does the Front Cover latch close properly?	Complete	Replace the defective parts, then go to step 6.
6	Is the image printed correctly?	Complete	Go to step 7.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
7	Reseat the Imaging Unit. Is the image printed correctly?	Complete	Go to step 8.
8	Open and close the Front Cover to reseat the Transfer Belt. Is the image printed correctly?	Complete	Go to step 9.
9	Is the skewed paper being fed from the manual feed slot?	Go to step 10.	Go to step 14.
10	Check the manual feed slot guides and reset the guides if needed. Is the image printed correctly?	Complete	Go to step 11.
11	Inspect the media path. Is there toner contamination in the media path?	Clean the paper path (refer to "Cleaning" on page 7-2), then go to step 12.	Go to step 13.
12	Is the image printed correctly?	Complete	Go to step 13.
13	Reseat the Tray. Is the image printed correctly?	Complete	Go to step 14.
14	Reload media in the Tray. Is the image printed correctly?	Complete	Go to step 15.
15	Reset the Tray side guides. Is the image printed correctly?	Complete	Go to step 16.
16	Reseat the Separator Roller. Is the image printed correctly?	Complete	Go to step 17.
17	Replace the Separator Roller (page 8-6). Is the image printed correctly?	Complete	Go to step 18.
18	Replace the Feed Roller (page 8-9). Is the image printed correctly?	Complete	Go to step 19.
19	**NOTE** During this check, defeat the Front Cover interlock switch. Test the Main Motor (page 4-26): **Engine Diag > Motor Test > Main Motor,** then select the Registration Clutch test (page 4-30): **Engine Diag > Motor Test > Regi Clutch**. Does the Registration Clutch and registration rollers operate?	Complete	Replace the Feeder Assembly page 8-45.
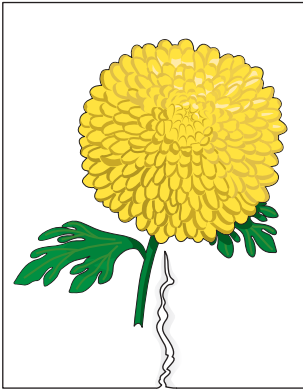
Damaged Media

Paper comes out from the printer wrinkled, folded, or worn-out.

Initial Actions

- Check the paper transfer path.

- Ensure there are no debris on the transfer path.

- If feeding throught the manual feed slot, try feeding from Tray 1.

Troubleshooting Reference Table

Applicable Notes	Example Print
▪ Separator Roller, PL2.1.5 ▪ Feed Roller Assembly, PL3.2.4 ▪ Registration Roller, PL3.2.9 ▪ Metal Registration Roller, PL3.2.10	 Damaged Print Media

Warning

Allow the Fuser to cool before servicing the printer.

Note

The Tray is recommended for paper feeding because paper fed via the manual feed slot is prone to skew depending on how the sheet is fed.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the paper condition Is the paper dry and approved for use?	Go to step 3.	Replace with dry, approved paper, then go to step 2.
2	Is the image printed correctly?	Complete	Go to step 3.
3	Open and close the Front Cover. Does the Front Cover latch close properly?	Complete	Replace any defective parts, then go to step 4.
4	Is the image printed correctly?	Complete	Go to step 5.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
5	Reseat the Imaging Unit. Is the image printed correctly?	Complete	Go to step 6.
6	Reseat the Fuser. Is the image printed correctly?	Complete	Go to step 7.
7	Open and close the Front Cover to reseat the Transfer Belt. Is the image printed correctly?	Complete	Go to step 8.
8	Is the paper damaged when fed from the manual feed slot?	Go to step 9.	Go to step 12.
9	Check the setting of the manual feed slot side guides and reset the side guides if needed. Is the image printed correctly?	Complete	Go to step 10.
10	Inspect the media path. Is there any contamination?	Clean the media path, then go to step 11.	Go to step 12.
11	Is the image printed correctly?	Complete	Go to step 12.
12	Reseat the Paper Tray. Is the image printed correctly?	Complete	Go to step 13.
13	Reset the Paper Tray side guides. Is the image printed correctly?	Complete	Go to step 14.
14	Replace the media in the Paper Tray. Is the image printed correctly?	Complete	Go to step 15.
15	Inspect the media path. Is there any contamination?	Clean the media path, then go to step 16.	Go to step 17.
16	Is the image printed correctly?	Complete	Go to step 17.
17	Reseat the Separator Holder. Is the image printed correctly?	Complete	Go to step 18.
18	Replace the Separator Holder (page 8-6). Is the image printed correctly?	Complete	Go to step 19.
19	Replace the Feed Roller (page 8-9). Is the image printed correctly?	Complete	Go to step 20.
20	**NOTE** During this check, defeat the Front Cover interlock switch. Test the Main Motor (page 4-26): **Engine Diag > Motor Test > Main Motor,** then select the Registration Clutch test (page 4-30): **Engine Diag > Motor Test > Regi Clutch**. Does the Registration Clutch and registration rollers operate?	Complete	Replace the Feeder Assembly page 8-45.
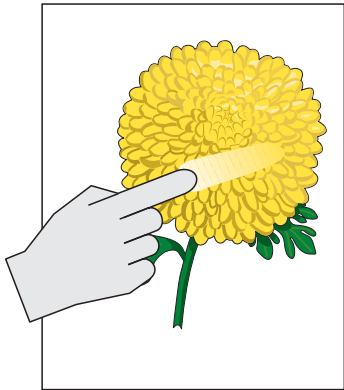
Unfused Image

The image is not completely fused to the paper. The image easily rubs off.

Initial Actions

- Check the media path.

- Check the Fuser connection (P/J171).

Troubleshooting Reference Table

Applicable Notes	Example Print
■ Fuser, PL6.1.1 ■ MCU Board, PL8.2.13	 Unfused Image

Warning

Allow the Fuser to cool before servicing the printer.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the media being used and its condition. Is the media dry and recommended?	Go to step 3.	Replace with dry, approved media, then go to step 2.
2	Is the image printed correctly?	Complete	Go to step 3.
3	Check the Toner type Is non-Xerox Toner in use?	Replace with Xerox toner, then go to step 4.	Go to step 5.
4	Is the image printed correctly?	Complete	Go to step 5.
5	Reseat the Fuser. Is the image printed correctly?	Complete	Go to step 6.
6	Replace the Fuser (page 8-10). Does the error persist?	Replace the MCU Board (page 8-103).	Complete

Color Registration

A printed Yellow or Black image is not overlapped on a Cyan or Magenta image correctly.

Initial Actions

- Check the paper transfer path.

- Ensure there are no debris on the transfer path.

Troubleshooting Reference Table

Applicable Notes	Example Print
■ Imaging Unit, PL4.1.21 ■ Fuser, PL6.1.1 ■ Transfer Belt, PL6.1.7 ■ MCU Board, PL8.2.13	 Color Registration

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Cycle the printer power. Does the mis-registration (color shift) appear on the print?	Go to step 2.	Complete
2	Print a test page. Is the image printed correctly?	Check the printing data for errors.	Go to step 3.
3	Check the media. Is the media dry and recommended?	Go to step 5.	Replace media, then go to step 4.
4	Does the mis-registration (color shift) appear on the print?	Go to step 5.	Complete
5	Open and close the Front Cover. Does the Front Cover latch close properly?	Complete	Replace any defective parts, then go to step 6.
6	Open and close the Front Cover. Does the mis-registration (color shift) appear on the print?	Go to step 7.	Complete

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
7	Reseat the Imaging Unit. Does the mis-registration (color shift) appear on the print?	Go to step 8.	Complete
8	Open and close the Front Cover to reseat the Transfer Belt. Does the mis-registration (color shift) appear on the print?	Go to step 9.	Complete
9	Set the printer to adjust the color registration automatically: **Menus > Admin Menu > Maintenance Mode > Automatic Registration Adjust**. Does the mis-registration (color shift) appear on the print?	Go to step 10.	Complete
10	Adjust the color registration manually: **Menus > Admin Menu > Maintenance Mode > Adjust Color Registration**. Does the mis-registration (color shift) appear on the print?	Go to step 11.	Complete
11	Replace the Imaging Unit (page 8-7). Is the image printed correctly?	Go to step 12.	Complete
12	Replace the Transfer Belt (page 8-79). Does the mis-registration (color shift) appear on the print?	Go to step 13.	Complete
13	Replace the MCU Board (page 8-103). Does the mis-registration (color shift) appear on the print?	Replace the printer.	Complete

Test Prints

A variety of test prints are available for troubleshooting print quality defects and to confirm proper printer operation. Test Prints can isolate printing problems to the MCU or Image Processor Board by using on board image data to isolate the two boards. Test prints are also useful for stimulating asynchronous (dynamic) events related to the print process, or as a test for media path and media related problems. Some other key features of test prints:

- Is the only diagnostic utility to exercise the entire print cycle.
- Isolated from the operating system (PostScript). Runs from firmware.
- Isolates the Image Processor Board from Engine Control Board.
- Captures static or dynamic events.
- Helps to isolate events that cause print artifacts or prevents printing.

Test prints are selected from the list of available test prints in the **Test Print** menu of diagnostics.

No Image IOT Test Print

This test print provides a sample blank page. This test is used to identify problems with the printer function, or clean media path components.

- **Fail:** Check the printer function.
- **Pass:** Check the network connection, cable, PC...etc.
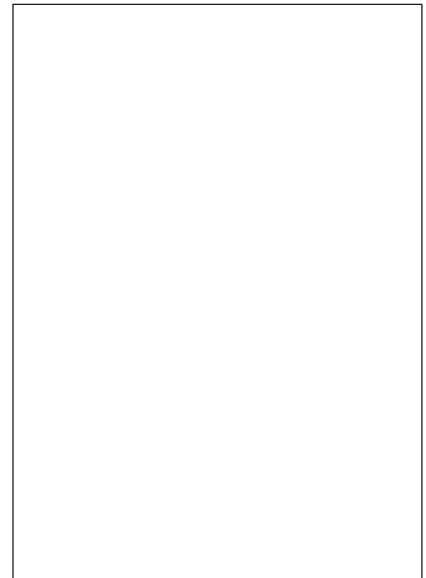
s6140-144

Pattern IOT Test Print

This Engine test print is used to identify problems with printer function or the Image Processor Board. The colors should be aligned vertically and horizontally. Compare the print with this example to determine the problem.

- **Fail:** Check the printer controller or the MCU Board.

- **Pass:** Check the Image Processor Board.

s6140-145
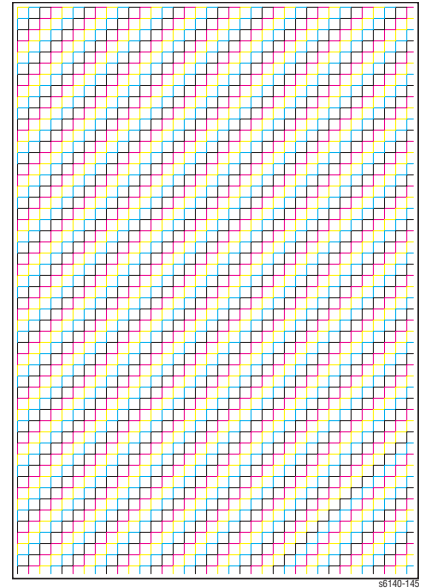
Grid 2 ESS Test Print

This test print provides a grid pattern sample. This page is used to identify problems with printer function. Compare the print with this example to determine the problem.

- **Fail:** Check the printer function and the Image Processor Board.

- **Pass:** Check the network connection, cable, PC...etc.

s6140-146

Cyan 20% ESS Test Print

This test print provides 20 % Cyan density on the whole page. This test is used to identify problems with Cyan toner or another color toner. Compare the print with this example to determine the problem.

- **Fail:** Check the Cyan Toner Cartridge.

- **Pass:** Check another Toner Cartridge.
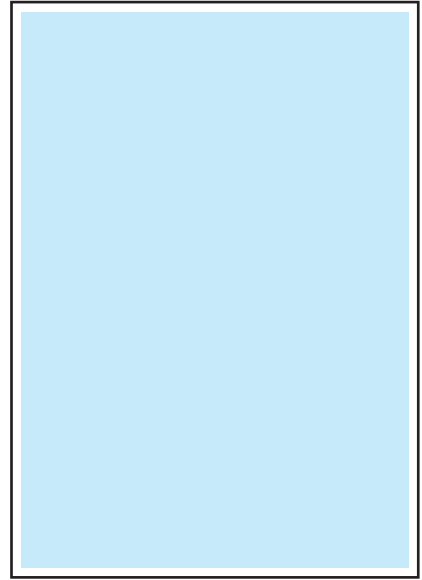
s6140-147

Magenta 20% ESS Test Print

This test print provides 20 % Magenta density on the whole page. This test is used to identify problems with Magenta toner or another color toner. Compare the print with this example to determine the problem.

- **Fail:** Check the Magenta Toner Cartridge.

- **Pass:** Check another Toner Cartridge.
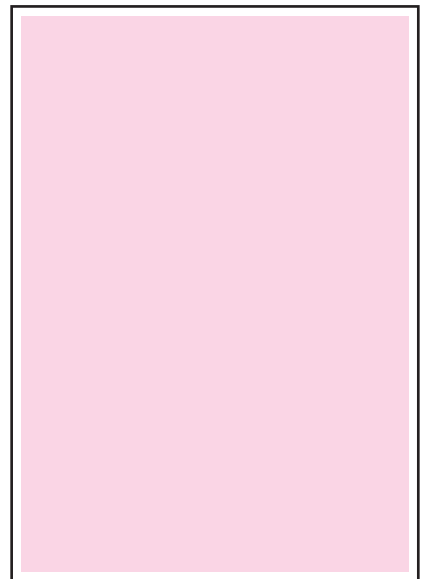
s6140-148

Yellow 20% ESS Test Print

This test print provides 20 % Yellow density on the whole page. This test is used to identify problems with Yellow toner or another color toner. Compare the print with this example to determine the problem.

- **Fail:** Check the Yellow Toner Cartridge.

- **Pass:** Check another Toner Cartridge.
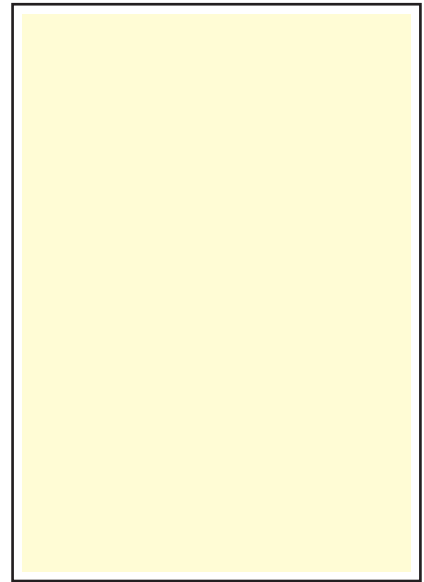
s6140-149

Black 20% ESS Test Print

This test print provides 20 % Black density on the whole page. This test is used to identify problems with Black toner or another color toner. Compare the print with this example to determine the problem.

- **Fail:** Check the Black Toner Cartridge.

- **Pass:** Check another Toner Cartridge.
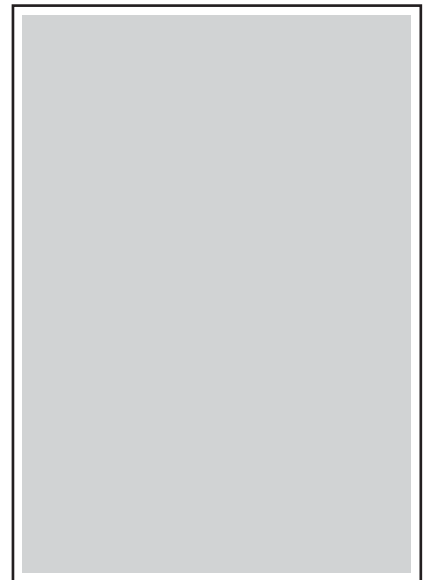
s6140-150

CMY 20% ESS Test Print

This test print provides 20 % density for combination of Cyan, Magenta, and Yellow on the whole page. This test is used to identify problems with balance of three color toners or another toner. Compare the print with this example to determine the problem.

- **Fail:** Check the Cyan, Magenta, or Yellow Toner Cartridge.

- **Pass:** Check the Black Toner Cartridge.
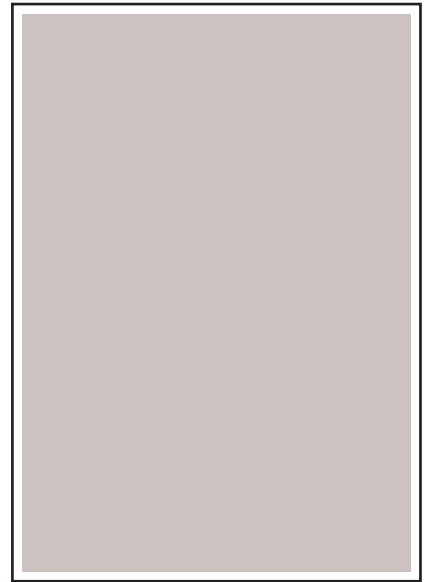
s6140-151

Gradation ESS Test Print

This test print provides 2 - 100 % density for Cyan, Magenta, Yellow, or Black on the whole page. This test is used to identify problems with the printer function or the Image Processor Board. Compare the print with this example to determine the problem.

- **Fail:** Check the printer function.

- **Pass:** Check the Image Processor Board.
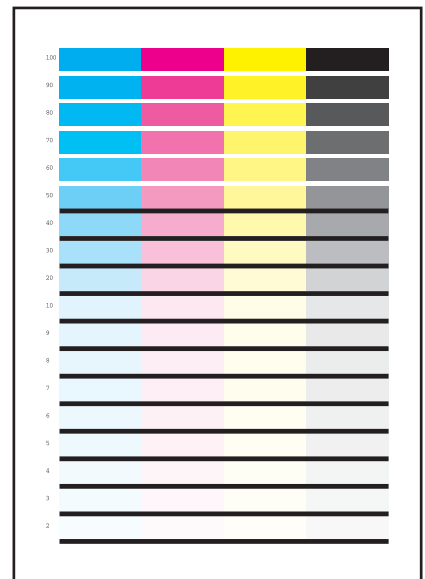
s6140-152

Toner Pallet Check Test Print

This test print provides 100 % density for Cyan, Magenta, Yellow, and Black on the whole page. This test is used to identify problems with the toner when printing pictures or photos. Compare the print with this example to determine the problem.

- **Fail:** Check the toner cartridge and delivery for the problem color.

- **Pass:** Check the print data.
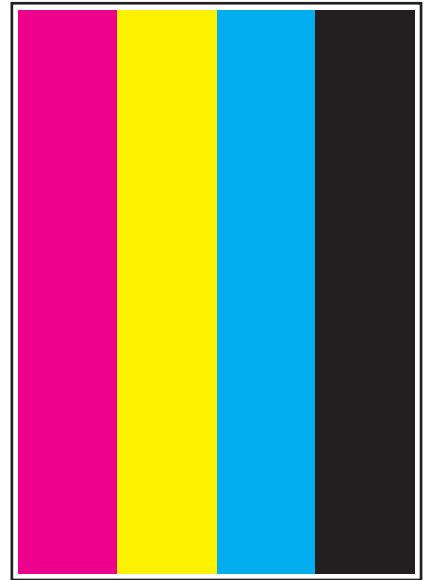
s6140-153

Contamination Check Test Prints

This check produces five pages that are useful for analyzing repeating defects such as lines or spots that occur at regular interval. By measuring the size of the interval it is possible to determine which printer component is causing the problem.

Pages 1 through 4: Vertical and horizontal scale patterns on a 20 % density background of one color; for evaluating regularity and intervals.

Page 5: A pitch chart that lists repeating defect intervals and their associated components.
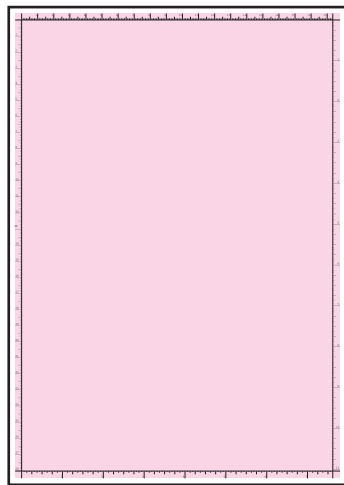
s6140-154
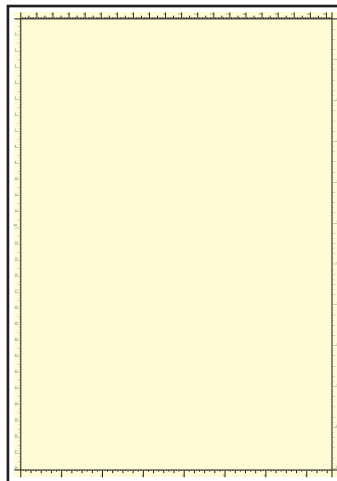
s6140-155
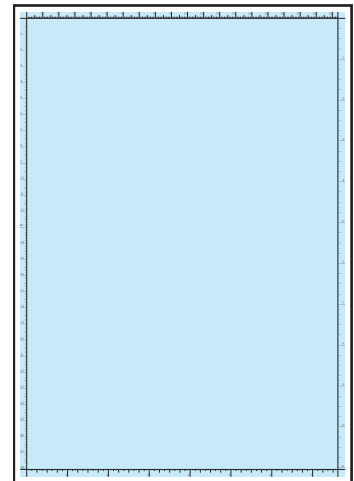
s6140-156
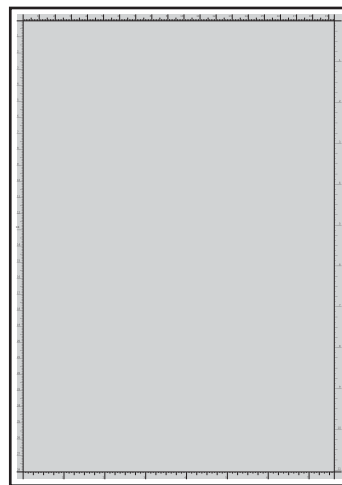
s6140-157
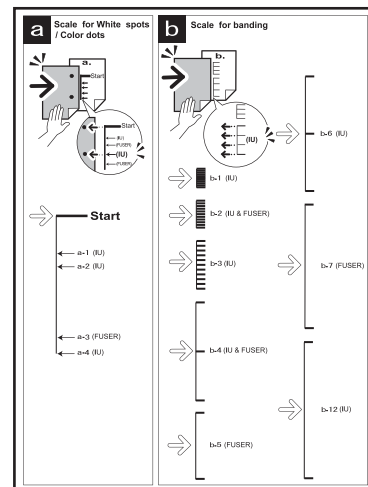
s6140-158

Pitch Chart Test Print

Horizontal lines and/or spots that occur periodically are usually caused by one of the printer's many rollers. However, the interval does not necessarily match the circumference of the roller. Compare the print defect intervals on the test print with the gauges on the Pitch Chart that can be printed from the diagnostics in Service Mode. The problem may be solved easily by the check.

To print the Pitch Chart, print the Contamination Check test prints: **Service Mode > Test Print > Contamination Check**.
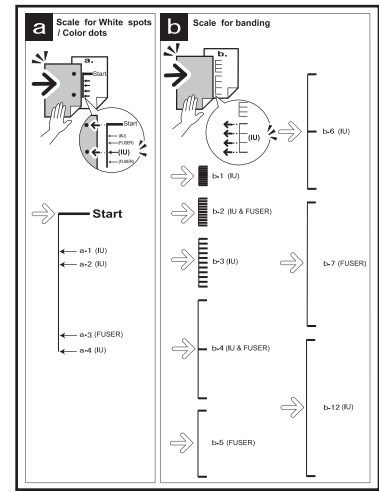
s6140-158
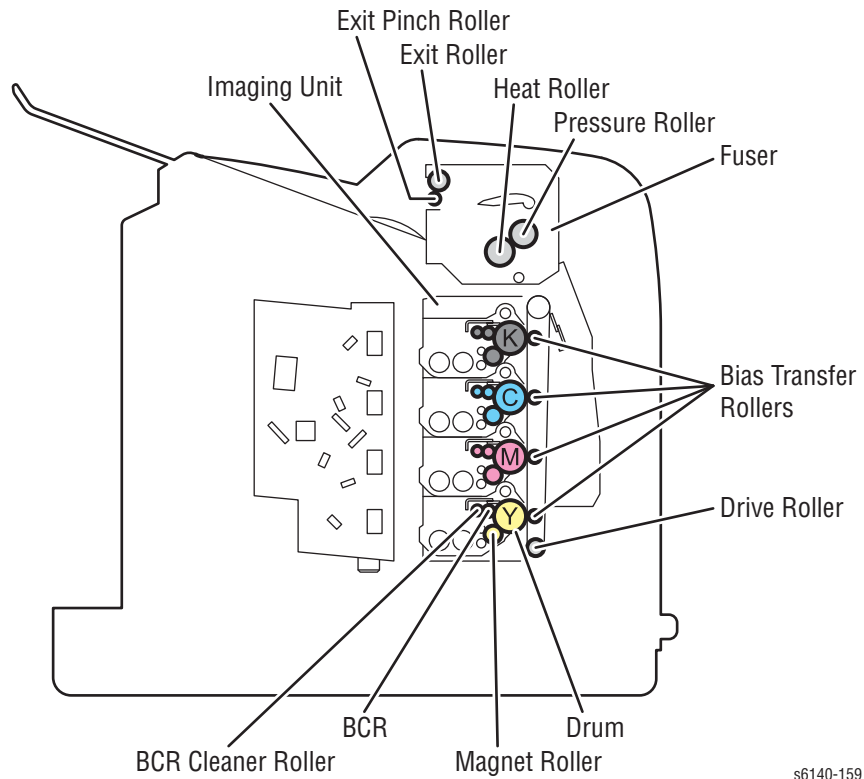
s6140-159

Image Specifications

The following provide specifications for Skew, Parallelism, Linearity, Perpendicularity, Magnification Error, Registration, and Guaranteed Print Areas.

Note

The printed image has 4 mm margins on all sides.

Characteristic	Specification
Maximum Print Area	210.9 mm (8.2 inches) x 351.6 mm (13.8 inches)
Guaranteed Print Area	207.9 mm (8.2 inches) x 347.6 mm (13.7 inches)
Skew	190 mm ± 1.2 mm
Perpendicularity	114.5 mm ± 0.8 mm
Parallelism	
Horizontal	180 mm ± 1.2 mm
Vertical	234 mm ± 1.2 mm
Linearity	
Horizontal	190 mm ± 0.5 mm
Vertical	234 mm ± 0.5 mm
Slant	269 mm ± 1.2 mm
Magnification Error	
Horizontal Simplex	234 mm ± 0.5 mm
Horizontal Duplex	234 mm ± 0.8 mm
Vertical Simplex	190 mm ± 0.5 mm
Vertical Duplex	190 mm ± 0.8 mm
Registration	
Leading Edge	10.0 mm ± 2.0 mm
Side Edge	8.5 mm ± 2.5 mm

Skew

- 180 mm ± 1.1 mm
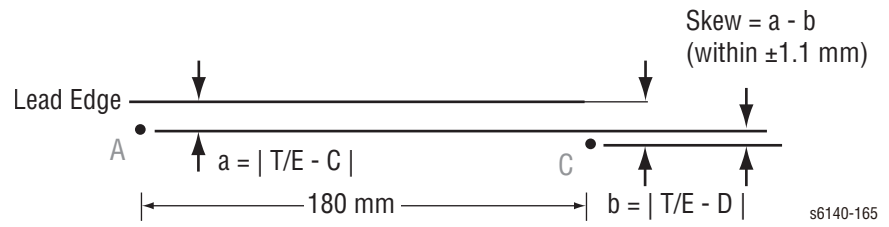
To measure skew: Measure the margin of the paper at the leading edge of each corner, and then take the difference between them.
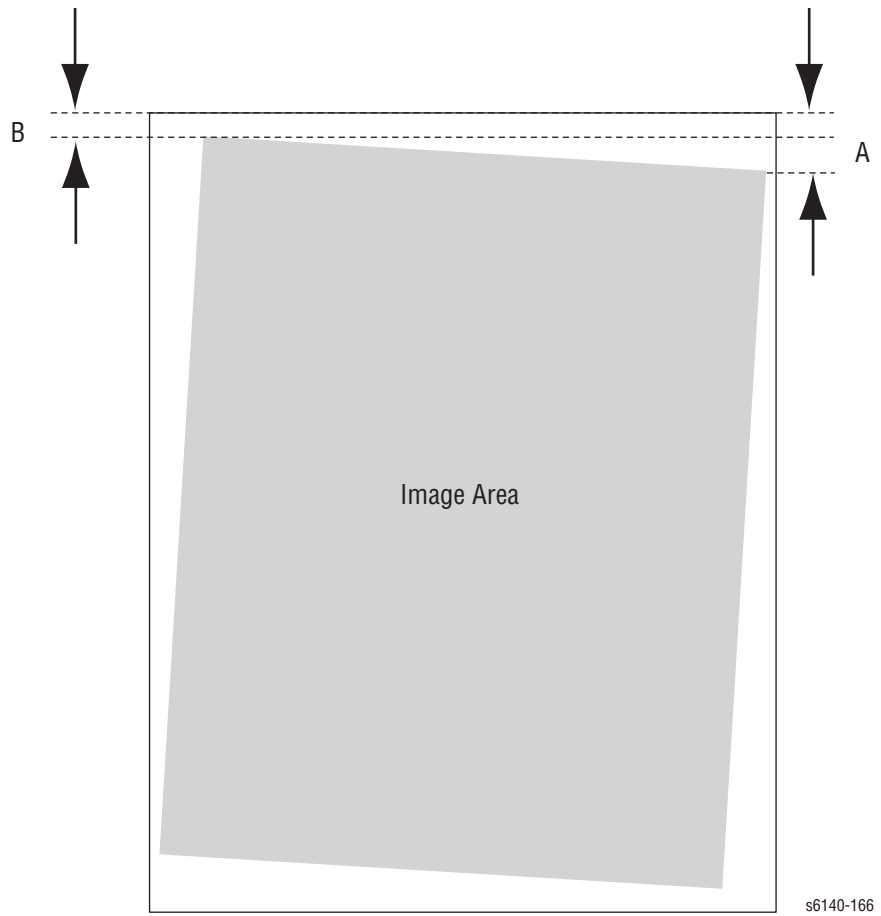
Parallelism

- Horizontal: 180 mm ± 1.2 mm

- Vertical: 280 mm ± 1.2 mm

s6140-167

Linearity

- Horizontal: 190 mm ± 0.5 mm

- Vertical: 234 mm ± 0.5 mm

- Slant: 269 mm ± 1.2 mm

s6140-168

Perpendicularity

- 114.5 mm ± 0.8 mm

Lead Edge — Assumed Perfect Line

A B C

90

140 mm

F

b   Perpendicularity = B - b (within ±1.0 mm)

s6140-169

Magnification Error

- Horizontal Simplex: 190 mm ± 0.5 %

- Horizontal Duplex:190 mm ± 0.8 %

- Vertical Simplex: 234 mm ± 0.5 %

- Vertical Duplex: 234 mm ± 0.8 %

Magnification = Measured Length / Nominal (within ±0.5%)

B

Nominal = 280 mm

J

Nominal = 180 mm

E   G
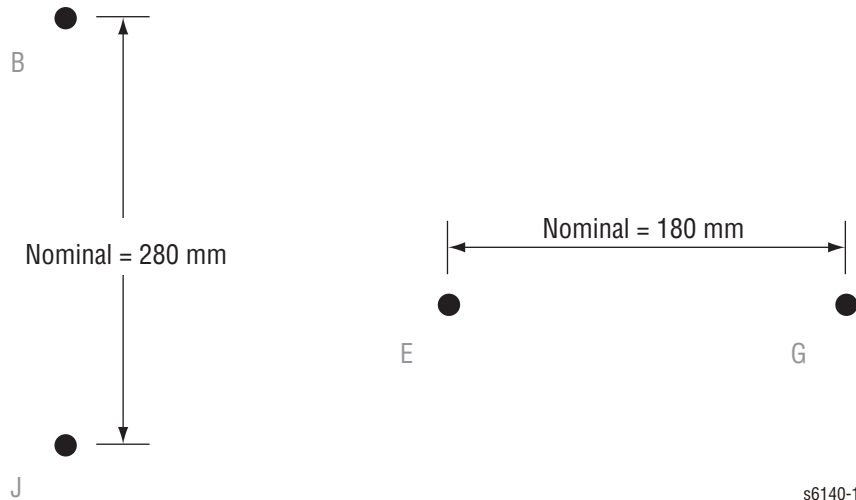
s6140-170

Registration

- Leading Edge: 10.0 mm ± 2.0 mm
- Side Edge: 8.5 mm ± 2.5 mm

Registration = Measured Length - Nominal

Lead Edge

Nominal = 10.0 mm
(within ±2 mm)

B

Left Edge

Nominal = 8.5 mm
(within ±2.5 mm)

F
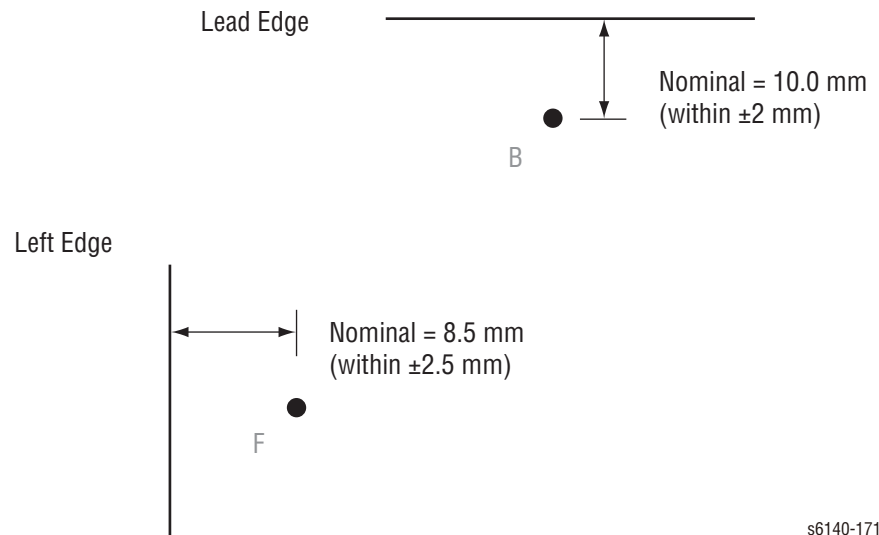
s6140-171

Guaranteed Print Areas

- Maximum Print Area: 211.8 mm x 351.5 mm
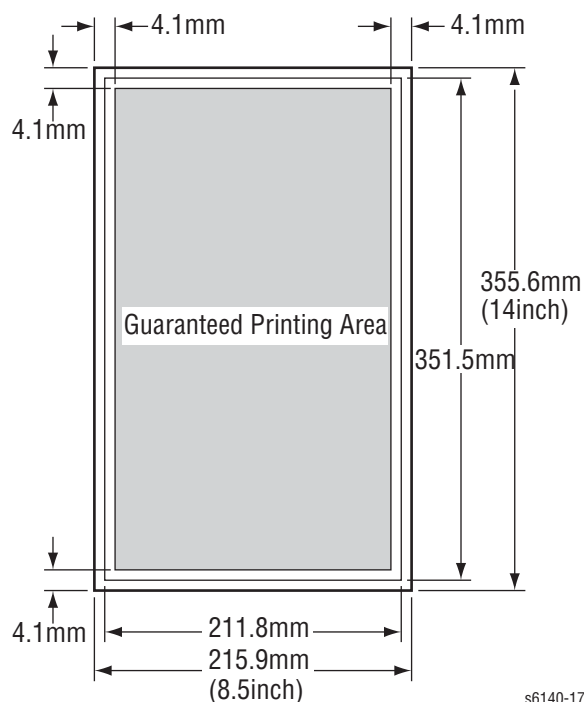
s6140-172

Note

Print the parameter list using the Print function of Parameter Menu in Service Diagnostics before changing the registration values.

Printer Diag Parameter Settings

Item	Range	Description
Slow Scan K to P (Shifts 0.17mm/1count)	-128 to 127	Sets the registration in the paper feeding direction
Slow Scan 600 M,Y,C (Shifts 0.042mm/1count)		
Fast Scan K to M,Y or C (Shifts 0.042mm/1count)	-128 to 127	Sets the registration in the scanning direction. Color registration adjustment Calculation of adjustment is shown below. (exp. Yellow) (Value of Fast Scan K to Y + Value of Fast Scan 2 K to Y)/4
Fast Scan M-Feed, Tray (Shifts 0.17mm/1count)	-30 to 30	
Fast Scan 2 K to M,Y or C (Shifts 0.01mm/1count)	-1 to 2	
Life Counter	-	Reads the life and print counts.

Adjustments and Calibrations

In this chapter...

- Adjustments
- Calibrations
- Parameter Setting

Chapter 6

Adjustments

Color Registration

The Color Registration adjustment procedure allows the user to change or correct the alignment of the four color images to meet specifications and/or user's requirements.

Caution

Adjusting laser power from the default value impacts other print-quality parameters, such as background, halftone/fine line production, Fuser fix, and toner consumption. This adjustment should not be performed without first discussing with the customer the potential impact on overall print quality.

Enabling/Disabling Automatic Color Registration

This procedure provides instructions for how to enable or disable the Automatic Color Registration after a new Imaging Unit is installed.

- If the function is set to On, the printer calibrates color alignment every time it detects a new Imaging Unit.

- If the function is set to Off, calibration will not occur. This saves toner.

To enable or disable the Automatic Color Registration:

1. From the Control Panel, press **Menu**.
2. Press the **Up** or **Down** arrow to find **Admin Menu**. Press **OK**.
3. Press the **Up** or **Down** arrow to find **Maintenance Mode**. Press **OK**.
4. Press the **Up** or **Down** arrow find **Adjust Regi.** Press **OK**.
5. Press the **Up** or **Down** arrow to turn automatic color registration **On** or **Off**.

Printing the Color Registration Correction Chart

Before performing the Color Registration adjustment procedure, print the Color Registration Correction Chart for reference.

1. From the Control Panel, press the **Menu** button.

2. Press the **Up** or **Down Arrow** to find **Admin Menu**. Press **OK**.

3. Press the **Up** or **Down Arrow** to find **Maintenance Mode**. Press **OK**.

4. Press the **Up** or **Down Arrow** find **Adjust Color Regi**. Press **OK**.

5. Press the **Up** or **Down Arrow** to find **Color Regi Chart**. Press **OK**. The Color Registration Chart prints. When finished, **Ready** appears.
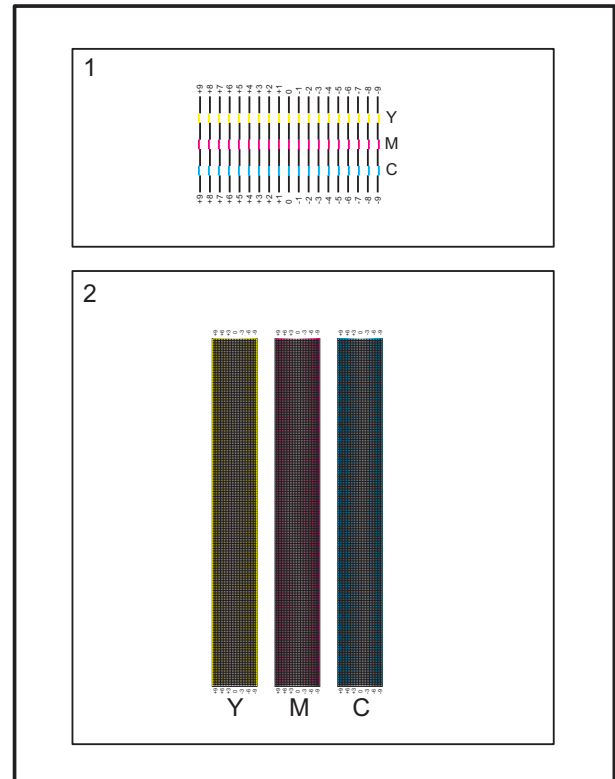
s6140-173

Note

After printing the Color Registration Correction Chart, do not power Off the printer until the Main Drive motor has stopped running.

Adjusting Color Registration

Color Registration can be automatically or manually adjusted.

Determining the Values

From the lines to the right of the Y (Yellow), M (Magenta), and C (Cyan) pattern, find the values of the straightest lines.

When "0" is the value nearest the straightest line, you do not need to adjust the color registration. When the value is not "0," refer to "Manual Color Registration Adjustment" on page 6-4.

Auto Adjustment

1. On the Control Panel, press **Menu**.
2. Press the **Up** or **Down** arrow to find **Admin Menu**. Press **OK**.
3. Press the **Up** or **Down** arrow to find **Maintenance Mode**. Press **OK**.
4. Press the **Up** or **Down** arrow find **Adjust Color Regi**. Press **OK**.
5. The **Auto Adjust** menu is displayed. Press **OK**.
6. **Are you sure?** message is displayed. Press **OK** to start the Auto Adjustment procedure.
7. The printer starts the auto Color Registration process.
8. When the auto Color Registration is completed, **Ready** is displayed.

Manual Color Registration Adjustment

Color registration can be adjusted manually by a user or automatically by the printer. Color registration should be adjusted any time the printer is moved. The color registration can be fine tuned by performing a manual adjustment.

Note

An automatic color registration adjustment is performed every time a new Imaging Unit is installed.

Horizontal Registration

Section 1 of the Color Registration Correction Chart displays a series of lines. Some lines are straight, with both the colored and Black segments aligned, while other lines are jagged, with the colored segments offset to the right or left. A value is listed next to each line. When the value is **0**, the color registration needs no adjustment.

To determine correction values for Horizontal Registration, choose the straightest line. If the value listed next to the straight line is anything other than **0**, follow the procedure below to enter values.

Note

The densest colors of the grid can also be used to find the straightest lines. The colors printed at the highest density are those next to the straight lines.

To enter values:

1. On the Control Panel, press **Menu**.
2. Press the **Up** or **Down** arrow to find **Admin Menu**. Press **OK**.
3. Press the **Up** or **Down** arrow to find **Maintenance Mode**. Press **OK**.
4. Press the **Up** or **Down** arrow to find **Adjust Color Regi**. Press **OK**.
5. Press the **Up** or **Down** arrow to find **Enter Number**. Press **OK**.
6. Press the **Up** or **Down** arrow to find **Fast Scan**. Press **OK**.
7. Use the **Up** or **Down** arrow to enter the values and the **Right** arrow to move from Y to M to C.
8. Repeat step 2 to continue adjusting the color registration.

9. Press the **OK** twice to print the Color Registration Correction Chart with the new values. The color registration adjustment is complete when the straightest Y, M, and C lines are next to the **0** line.

   Note

   If **0** is not displayed next to the straightest lines, determine the values and adjust again.

Vertical Registration

Section 2 of the Color Registration Correction Chart displays three columns of color. In the center of each column is a wavy white column. This column of white needs to be centered as much as possible at **0**.

To determine correction values for use in Vertical Registration adjustment, choose the value from each column that is best centered on the wavy white column.

To enter the correction values:

1. On the Control Panel, press **Menu**.
2. Press the **Up** or **Down** arrow to find **Admin Menu**. Press **OK**.
3. Press the **Up** or **Down** arrow to find **Maintenance Mode**. Press **OK**.
4. Press the **Up** or **Down** arrow to find **Adjust Color Regi**. Press **OK**.
5. Press the **Up** or **Down** arrow to find **Enter Number**. Press **OK**.
6. Press the **Up** or **Down** arrow to find **Slow Scan**. Press **OK**.
7. Use the **Up** or **Down** arrow to enter the values and the **Right** arrow to move from Y to M to C.
8. Repeat step 7 to continue adjusting the color registration.
9. Press the **OK** twice to print the Color Registration Correction Chart with the new values. The color registration adjustment is complete when the columns of white are centered, as much as possible, on **0**.

Resetting the Fuser

Fuser reset is required when a new Fuser is installed. This function sets the life counter to "0."

1. From the Control Panel, press the **System button**.
2. Press the **Up** or **Down Arrow** to find **Admin Menu**. Press **OK**.
3. Press the **Up** or **Down Arrow** to find **Maintenance Mode**. Press **OK**.
4. Press the **Up** or **Down Arrow** to find **Reset Fuser**. Press **OK**.
5. "**Are you sure?**" message is displayed. Press **OK** to start the process.
6. **Initializing...** --> **Initialized** messages are displayed. The **Maintenance Mode - Reset Fuser** menu is displayed when the process is completed.

Calibrations

Initializing Print Meter

This process initializes the Print Meter.

1. On the Control Panel, press **Menu**.
2. Press the **Up** or **Down** arrow to find **Admin Menu**. Press the **OK** button.
3. Press the **Up** or **Down** arrow to find **Maintenance Mode**. Press **OK**.
4. Press the **Up** or **Down** arrow to find **Init PrintMeter**. Press **OK**.
5. **Are you sure?** message is displayed. Press **OK** to start the process.
6. **Initialized** message is displayed. The **Maintenance Mode - Init PrintMeter** menu is displayed when the process is completed.

Initializing NVM (NVRAM)

This process initializes the settings stored in the NVRAM except for the network settings. The NVRAM is a non-volatile memory that stores the printer settings even after the power is turned Off. After executing this function and restarting the printer, all the menu parameters are reset to their default values.

1. On the Control Panel, press **Menu**.
2. Press the **Up** or **Down** arrow to find **Admin Menu**. Press **OK**.
3. Press the **Up** or **Down** arrow to find **Maintenance Mode**. Press **OK**.
4. Press the **Up** or **Down** arrow to find **Initialize NVM**. Press **OK**.
5. **Are you sure?** message is displayed. Press **OK** to start the process.
6. **Initializing...** --> **Initialized** messages are displayed.
7. The **Maintenance Mode - Initialize NVM** menu appears when the process is completed.
8. Turn the printer power Off and back On.

Parameter Setting

This function reads/writes the parameter values, errors, and life counter values stored in the printer.

Note

> Print the parameter list from **Parameter > Print** before changing the registration value. The parameter list contains the parameter and life counter values currently stored in the engine.

To access the Parameter list:

1. Turn the printer power Off (if the printer is On).
2. Simultaneously press the **Up** and **Down** arrows and turn On the printer.
3. The **Service Mode** menu is displayed.
4. Press the **Up** or **Down** arrow to find **Parameter**. Press **OK**.
5. Select the appropriate item to change (i.e., **Slow Scan KtoP**). Press **OK**.
6. Enter the appropriate range using the **Up** or **Down** arrow. Press **OK**.
7. The new value "**# ***" is displayed.

Note

> "*" = data has been saved

8. Press **Cancel** to return to the **Parameter** menu.

Parameter Setting

Item	Range	Description
Slow Scan K to P	-128 to 127	Sets registration in the feed direction.
Slow Scan 600 Y/M/C	-30 to 30	
Fast Scan K to M, Y, C	-128 to 127	Sets registration in the scan direction.
Fast Scan 2 K to M, Y, C	-1 to 2	
Fast Scan M-Feed, Tray	-30 to 30	
Life Counter	—	Reads the life counter and the printer.

Shifts the print area in this direction by reducing the value. ←

Shifts the print area in this direction by increasing the value. →

Fast Scan K to M,Y,C
Fast Scan 2 K to M,Y,C
Fast Scan M-Feed, Tray

Slow Scan K to P
Slow Scan 600 M,Y,C

Default Value

Image Side

Shifts the print area in this direction by reducing the value. ↑

Shifts the print area in this direction by increasing the value. ↓

Default Value

s6140-174

Note

> The default values are different in each printer.

Registration Values

Parameter	Function	Default	Range
Slow Scan K to P (shifts 0.17 mm/1 count)	Black registration adjustment	—	-128 to 127
Slow Scan 600 M, Y, C (shifts 0.042 mm/1 count)	Color registration adjustment (600dpi)	—	-30 to 30
Fast Scan K to M, Y, or C (shifts 0.042 mm/1 count)	Color registration adjustment	—	-30 to 30
Fast Scan 2 K to M, C, or Y (shifts 0.01 mm/1 count)	Calculation of adjustment is shown below (exp. Yellow) (Value of Fast Scan Reg K to Y + Value of Fast Scan Reg2 K to Y)/4	—	-1 to 2
Fast Scan M-Feed or Tray (shifts 0.17 mm/1 count)	Black registration adjustment at side 1 print	—	-30 to 30

Life Counter Values

Counter Name	Counter Value[a]
Life Y Toner (Dispense Time)	---
Life M Toner (Dispense Time)	---
Life C Toner (Dispense Time)	---
Life K Toner (Dispense Time)	---
Life Fuser Sheet	100000
Life Printer Sheet	---
Life DTB (Transfer Belt) Waste (Toner cleaning count)	200000
Life Y Waste Toner (Waste Toner cleaning count)	18000
Life M Waste Toner (Waste Toner cleaning count)	18000
Life C Waste Toner (Waste Toner cleaning count)	18000
Life K Waste Toner (Waste Toner cleaning count)	18000
Life IU Y Time (Dispense Time)	300000
Life IU M Time (Dispense Time)	300000
Life IU C Time (Dispense Time)	300000
Life IU K Time (Dispense Time)	300000
Life IU Xero (Round Time)	---
Life IU Deve K (Sheet)	---
Life Manual Feed	---
Life Tray Sheet	---

a. The life counter values reported when checking these parameters are not expressed in units that can be compared to end-of-life values listed in the product specifications. Use CWIS to find the life remaining for engine components.

Cleaning and Maintenance

In this chapter...

- Service Maintenance Procedure
- Cleaning
- Maintenance
- Moving the Printer

Chapter 7

Service Maintenance Procedure

Perform the following procedures whenever you check, service, or repair a printer. Cleaning the printer, as outlined in the following steps, assures proper operation of the printer and reduces the probability of having to service the printer in the future.

The frequency of use, Average Monthly Print Volume (AMPV), type of media printed on, and operating environment are factors in determining how critical cleaning the machine is and how often it is necessary. Record the number of sheets printed.

Recommended Tools

- Toner vacuum cleaner
- Clean water
- Clean, dry, lint-free cloth
- Black light-protective bag

Cleaning

Perform the following general cleaning steps as indicated by the printer's operating environment.

Caution
Never apply alcohol or other chemicals to any parts of the printer. Never use a damp cloth to clean up toner. If you remove the Imaging Unit, place it in a light-protective bag or otherwise protect it as exposure to light can quickly degrade performance and result in early failure.

1. Record number of sheets printed.
2. Print several sheets of paper to check for problems or defects.
3. Turn the printer power Off and disconnect the power cord.
4. Remove the Imaging Unit, Fuser, Toner Cartridges, Left and Right Side Covers, and Rear Cover before cleaning.
5. Clean the Fan.
6. Ensure that all cover vents are clean and free of obstructions.
7. Remove any debris or foreign objects from the Fuser, Transfer Belt, Imaging Unit, and inside of the printer.
8. Remove and clean the paper trays.
9. Clean all rubber rollers with a lint-free cloth slightly dampened with cold water.

# Cleaning the Laser Lens

Caution

Cover the Imaging Unit to avoid light exposure.

1. Remove Tray 1.
2. Open the Front Cover.
3. Lower the Transfer Belt.
4. Remove the Imaging Unit (page 8-7).
5. Using a clean, dry, lint-free cloth or swab, clean all debris from the laser lens.
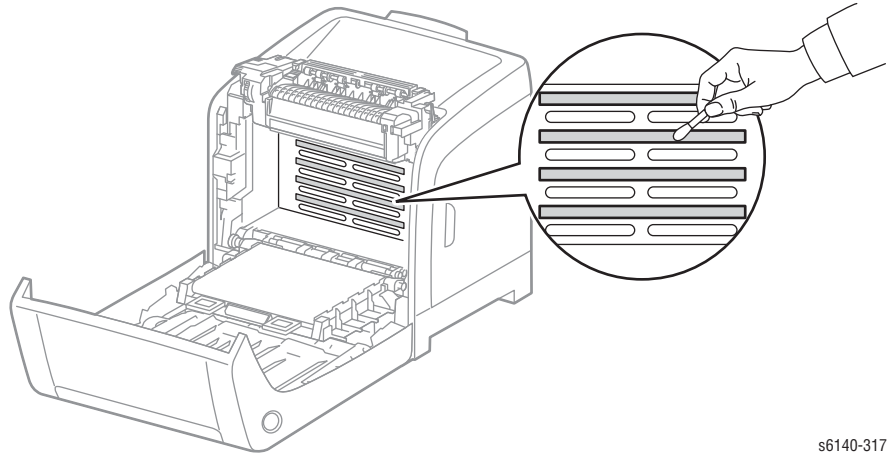
s6140-317

Maintenance

Perform these routine maintenance procedures during the course of servicing the printer.

- Clean the Feed Rollers, Exit Rollers, and Guides; replace if necessary.

- Remove and clean the paper trays.

- Print a Configuration and Error History pages, diagnose, and repair any problems as indicated.

- Check the printer engine and image processor firmware fans; if necessary, clean (dust or vacuum) these areas.

- Check cleanliness of the interior and exterior, including fans; if necessary clean (dust or vacuum) these areas.

- Review proper printer operation using a customer file, if possible. Check with the customer regarding any special applications they may be running.

- Review with the customer all work that was performed and discuss proper printer care.

Moving the Printer

The printer, with Tray 1 and consumables installed weighs 18.6 kg (41 lb.). Configured with the Duplex Unit and Optional Feeder, the printer weighs 24.2 kg (53.24 lb.).

Warning

Remove the Optional Feeder before moving the printer. The Optional Feeder is secured with 2 thumbscrews located in the Tray cavity. See "Optional Feeder" on page 111.

To avoid injury, use two people to lift the printer.
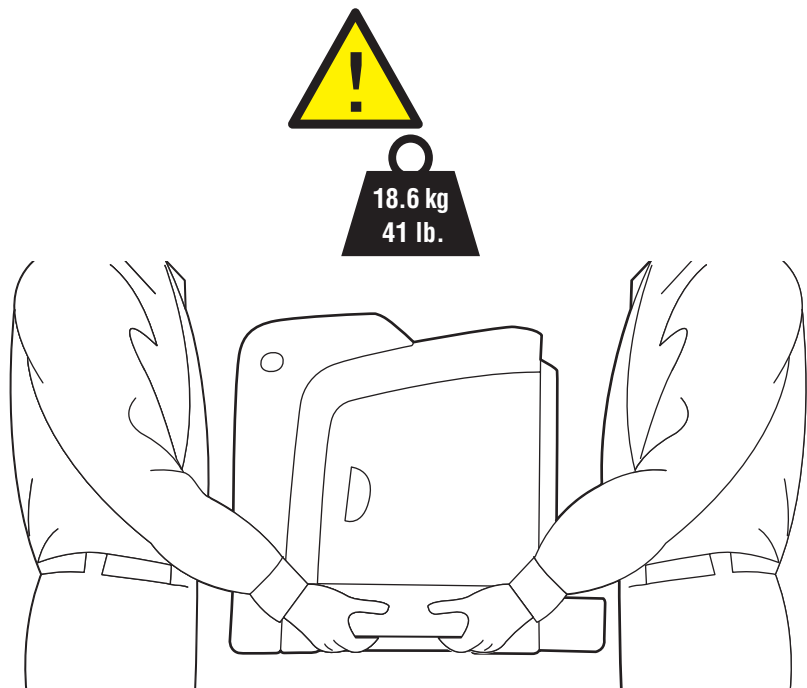
s6140-318

Caution

When moving the printer over long distances, remove the Toner Cartridges to prevent toner from spilling.

Before moving the printer, do the following:

1. Turn the printer Off and disconnect all cables.
2. Allow the printer to cool about 40 minutes.
3. Remove media from the output tray and return the Tray Extension to its non-extended position.
4. Remove Tray 1 and set it aside.
5. If the printer includes the Optional Feeder, remove it.

When moving the printer:

- Use two people to lift and move the printer.

- When lifting the printer, grasp the areas as shown in the illustration.

- Do not tilt the printer more than 10 degrees to the front or back, or left or right. Tilting the printer more than 10 degrees may cause toner spillage.

Caution

Failure to properly repackage the printer for shipment can result in damage not covered by the warranty, Service Agreement, or Total Satisfaction Guarantee.

After moving the printer:

1. Reinstall any parts you removed. If you removed the Optional Feeder, put the printer back on top of it.
2. Reconnect the printer to the cables and power cord.
3. Plug in and turn On the printer.
4. Adjust the color registration before using the printer.

Service Parts Disassembly

In this chapter...

Chapter 8

Overview

This section contains the removal procedures for field-replaceable parts listed in the Parts List. In most cases, the replacement procedure is simply the reverse of the removal procedure. In some instances, additional steps are necessary and are provided for replacement of the parts. For specific assemblies and parts, refer to Chapter 9.

Standard Orientation of the Printer

When needed, the orientation of the printer is called out in the procedure as an aid for locating the printer parts. The following figure identifies the Front, Rear, Left, and Right sides of the printer.
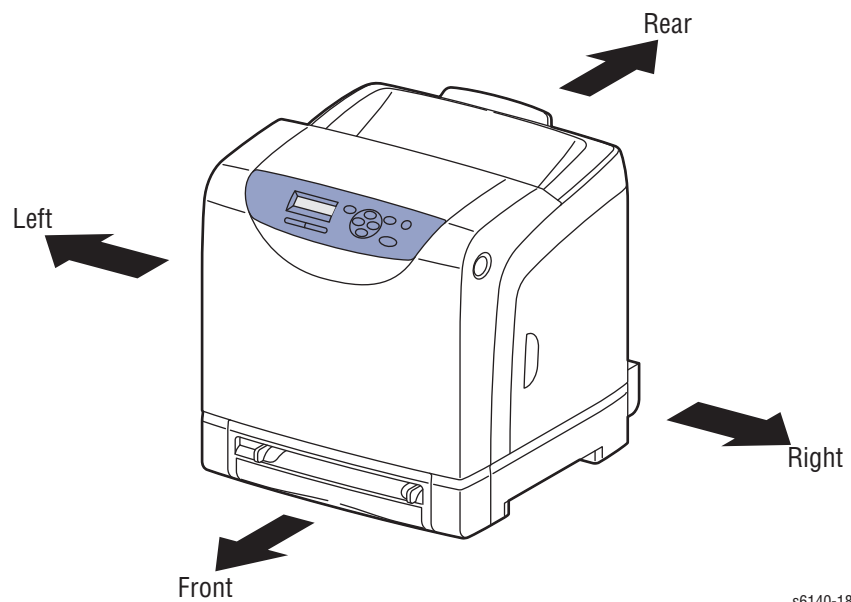
s6140-186

Preparation

Before you begin any procedure:

Warning

Unplug the power cord from the wall outlet.

Warning

Allow the Fuser to cool before using the procedure.

Caution

Remove and cover the Imaging Unit to avoid light exposure.

Caution

Many parts are secured by plastic tabs. Do not over flex or force these parts. Do not over torque screws threaded into plastic.

Note

Names of parts that appear in the removal procedures may not match the names that appear in the Parts List. For example, a part called Paper Tray in a removal procedure may appear on the Parts List as Cassette, Assy. While using removal procedure, ignore any prerequisite procedures for parts already removed.

1. Wear an Electrostatic Discharge wrist strap.
2. Turn Off power and disconnect the power cord from the wall outlet.
3. Disconnect all cables from the printer.
4. Remove these items:
    a.   Imaging Unit (page 8-7).
    b.   Tray
    c.   Fuser (page 8-10).
    d.   Toner Cartridges (page 8-12).

The disassembly procedures include steps for the removal of these parts.
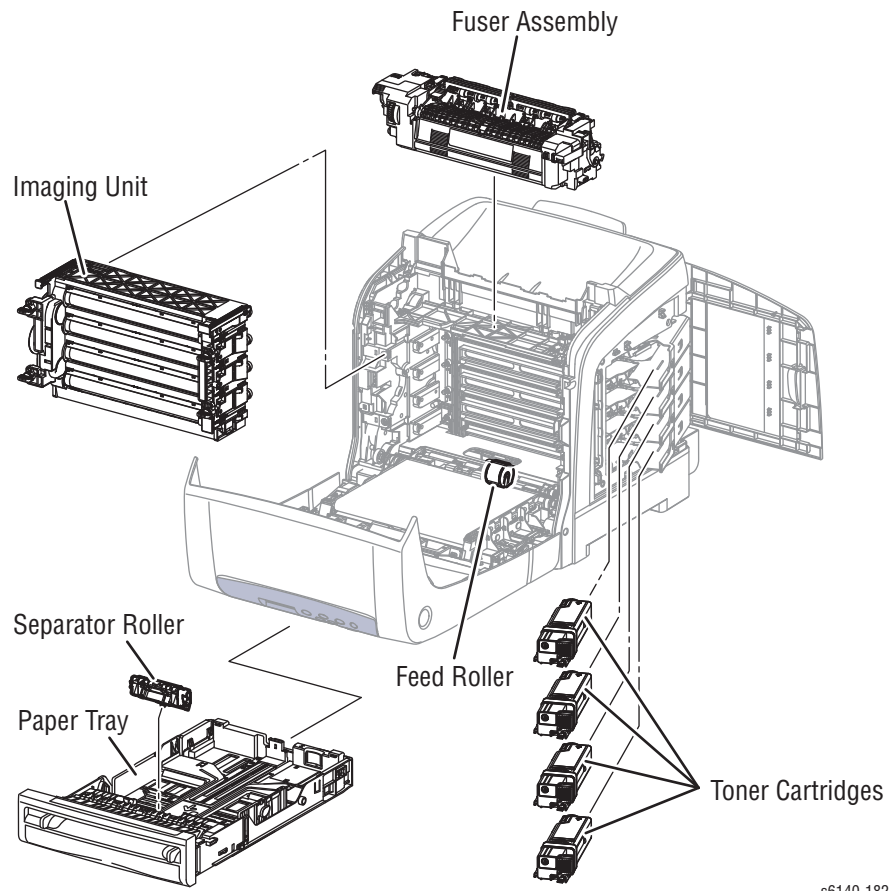
s6140-182

Notations in the Disassembly Text

- The notation "(item X)" points to a numbered callout in the illustration corresponding to the disassembly procedure being performed.

- The notation "PL*X.X.X*" indicates the component is listed in the Parts List.

- Arrows in an illustration show direction of movement when removing or replacing a component.

- The notation "(tap, plastic, 10 mm)" or "(metal, 6 mm)" refer to the type of screw being removed.
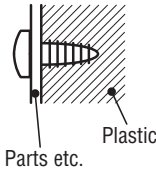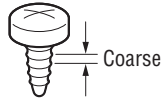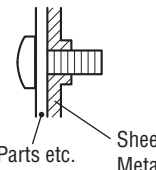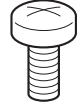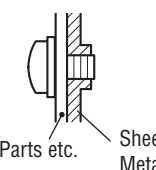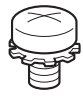
Replacement Note

Provides information specific to the replacement of parts or assemblies.

Fastener Types

The following table lists the types of Posi-Drive screws used to assemble the printer. The procedures provide dimensions for screws being removed.

Posi-Drive Screw Types Used in this Product

Type	Application	Shape	Characteristics
Self-tapping, plastic	Plastic / Parts etc.	Coarse	1. Silver colored. 2. Screw thread is coarse compared to metal screw. 3. Screw tip is thin.
Sheet Metal, silver	Parts etc. / Sheet Metal		1. Silver colored. 2. Diameter is uniform.
Sheet Metal, silver with lock washer	Parts etc. / Sheet Metal		1. Silver colored. 2. Includes a toothed washer. 3. Diameter is uniform. 4. Used for grounding terminals.

Caution

Use care when installing self-tapping screws in plastic. To properly start the screw in plastic, turn the screw counter-clockwise in the hole until you feel the screw engage the threads, then tighten as usual. Improperly aligning or over tightening the screw can result in damage to previously tapped threads

Always use the correct type and size screw. Using the wrong screw can damage tapped holes. Do not use excessive force to remove or install either a screw or a printer part.

Maintenance Items and Consumables

Maintenance items include the Separator Roller in the Paper Tray, Imaging Unit, and Fuser. Consumables consist of the four Toner Cartridges.

Separator Roller

PL2.1.5

1. Hold the tray and pinch the left and right hooks of the Separator Roller. Swing the Separator Roller to release the two hooks.
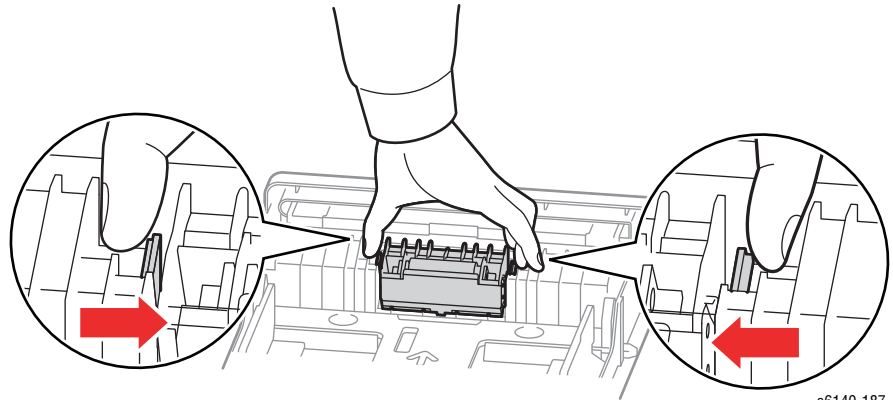
s6140-187

2. Pull the Separator Roller up to remove it from the Tray.
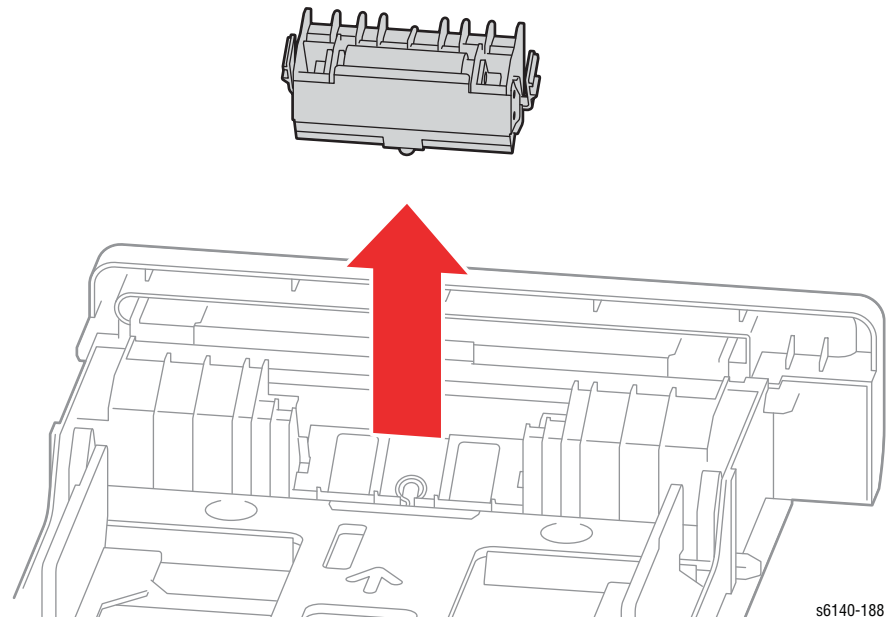
s6140-188

Imaging Unit

PL4.1.21

Caution

Cover the Imaging Unit to avoid light exposure.

1. Remove Tray 1.
2. Open the Front Cover.
3. Lower the Transfer Belt.
4. Place a sheet of paper over the Transfer Belt to protect the belt.
5. Rotate the four securing locks 90º degrees counter-clockwise.
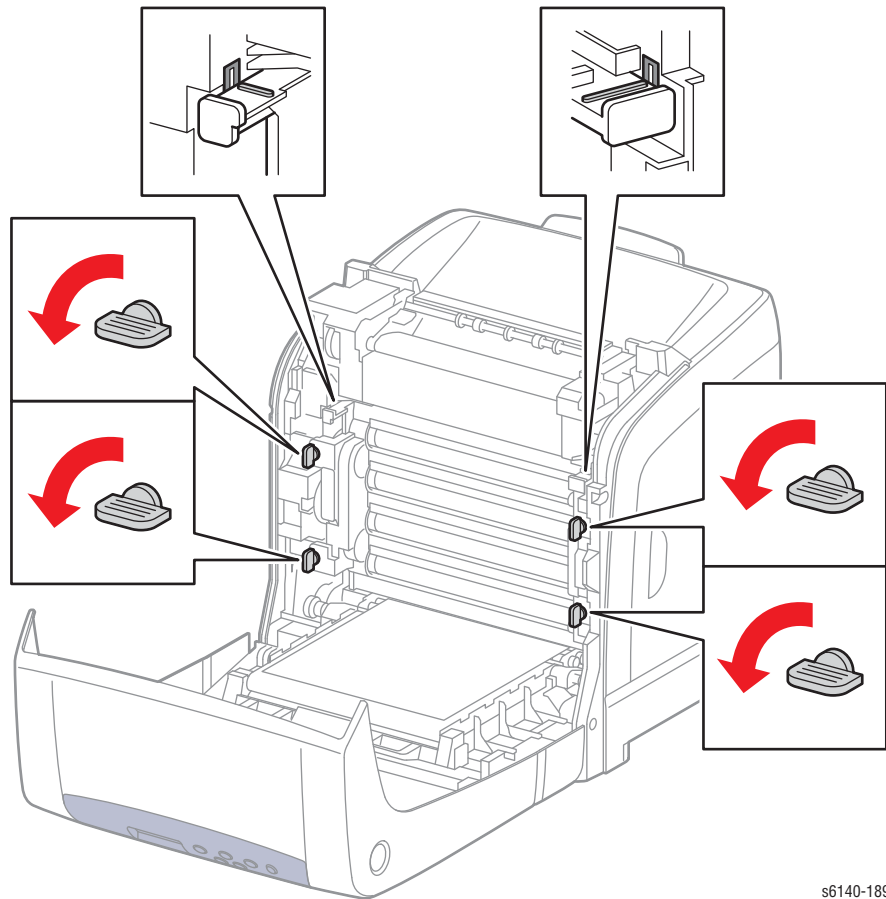
s6140-189

6. Grasp the left and right handles and pull the Imaging Unit straight forward until it is clear, then lift as shown. Take care to not touch the drums or scratch the Transfer Belt.
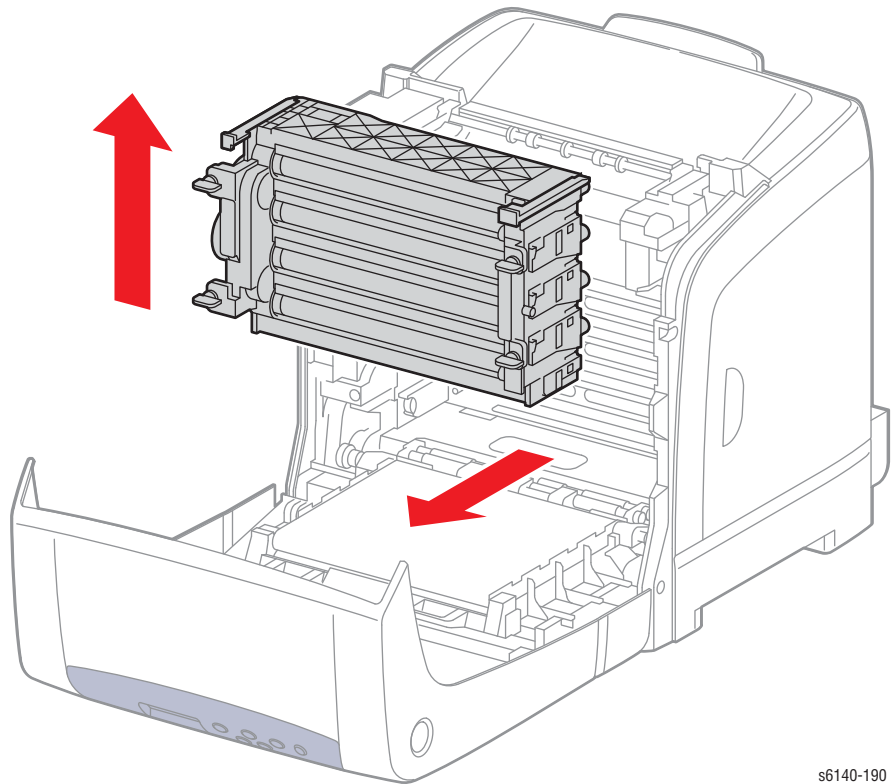
s6140-190

Feed Roller

PL3.2.4

1. Remove Tray 1.

2. Open the Front Cover.

3. Lower the Transfer Belt.

4. Remove the Imaging Unit (page 8-7)

5. Reach in through the opening in the bottom of the Imaging Unit cavity and release the hook on the left side of the roller. Move the roller core to the left side.

6. Move the Feed Roller to the left, so that the grooves in the Feed Roller are clear of the pins on the feed shaft.

7. Rotate the Feed Roller 180° on the feed shaft and allow the Feed Roller to drop off the shaft.
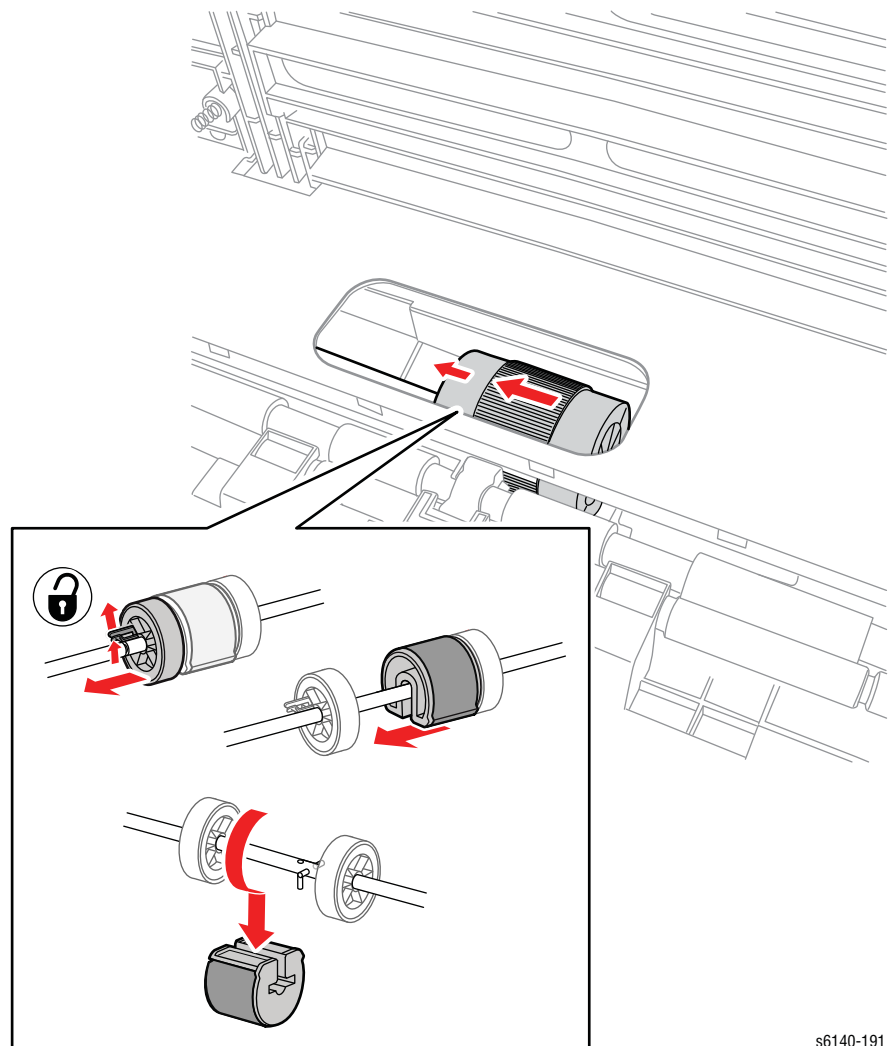
s6140-191

Replacement Note

Because there are grooves in only one side of the Feed Roller, it fits over the pins on the feed shaft in only one direction. Note the location of the grooves when installing the Feed Roller on the shaft.

Fuser

PL6.1.1

Warning

Allow the Fuser to cool before using this procedure.

1. Open the Front Cover.
2. Lower the Transfer Belt.
3. Pull the lever to release the lock.
4. Swing the right side of the Fuser toward you with the lever released to unplug the Fuser connector.
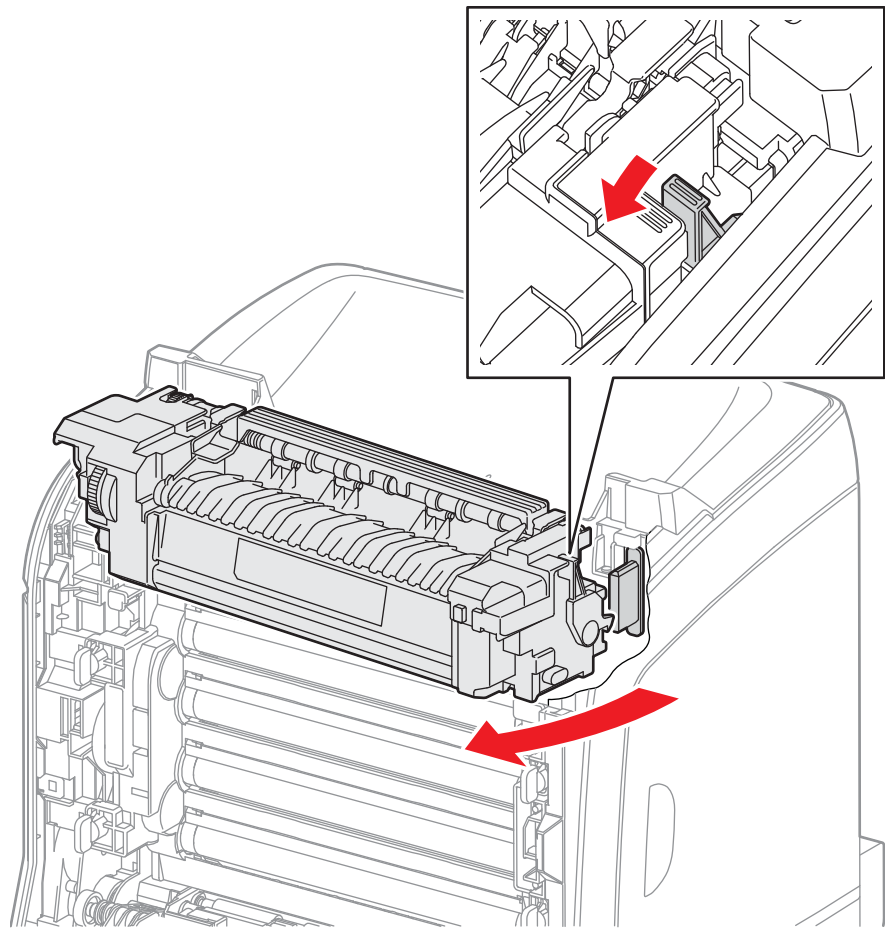
s6140-192

5. Lift the Fuser up, then to the right to remove it.
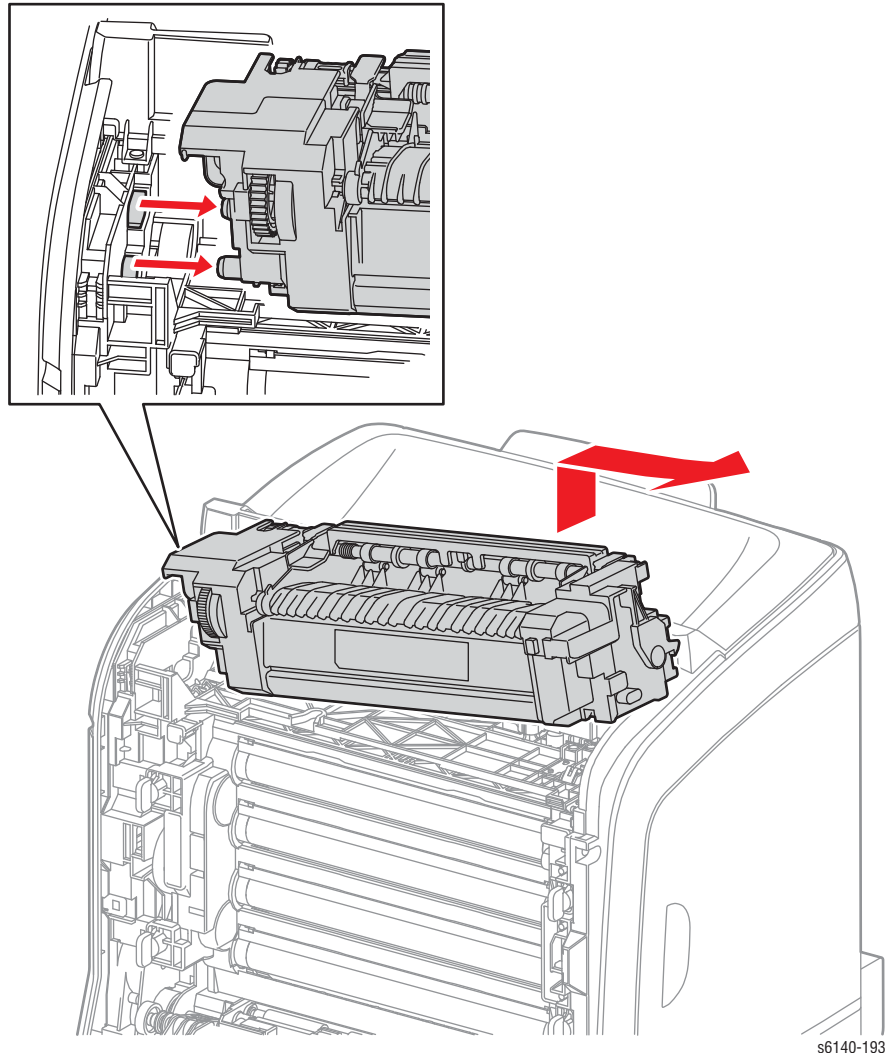
s6140-193

Replacement Note

If a new Fuser is installed:

1. Reset the Fuser counter.

2. If the Fuser being replaced was at end of life, it is highly recommended that the Feed and Separator Rollers also be replaced.

Toner Cartridges

PL5.1.21~24

1. Open the Right Side Door.
2. Push the Toner Cartridge handle toward the rear to release the lock.
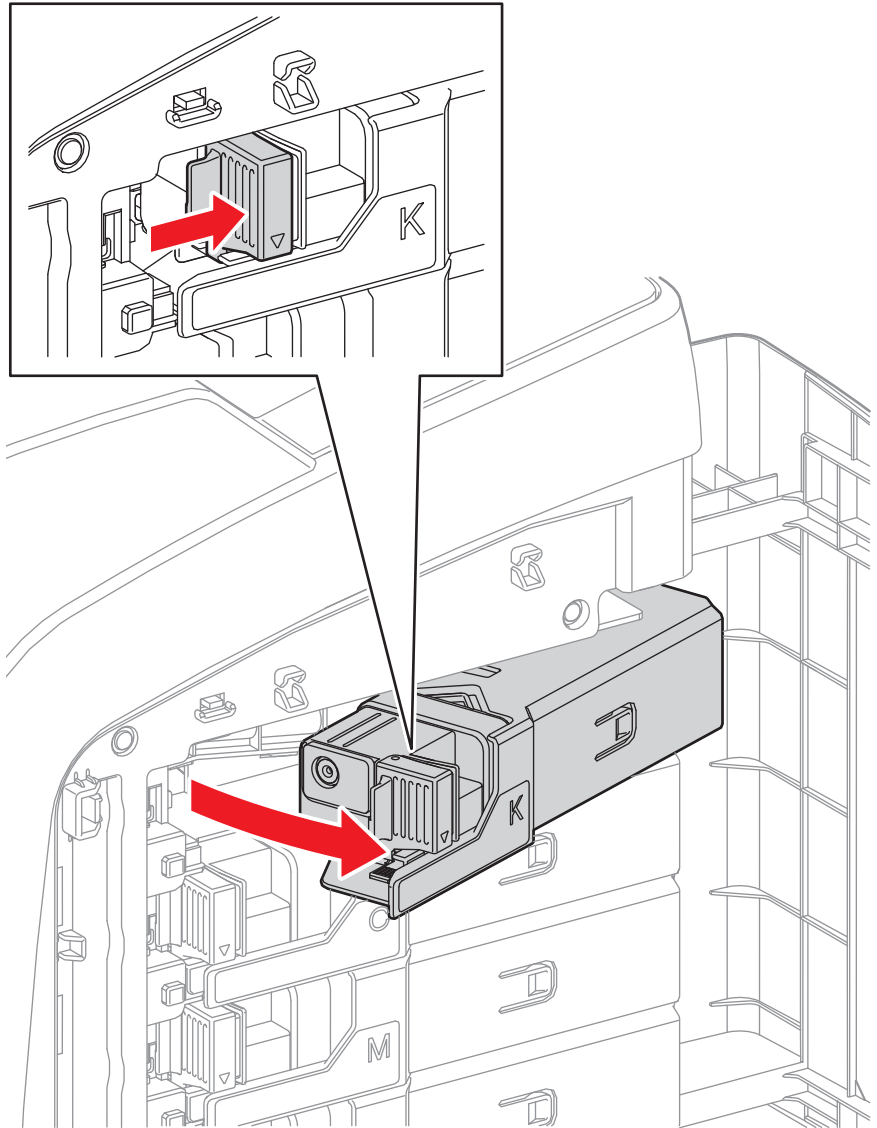
s6140-194

3. Swing open the Toner Cartridge Holder and remove the cartridge as shown.
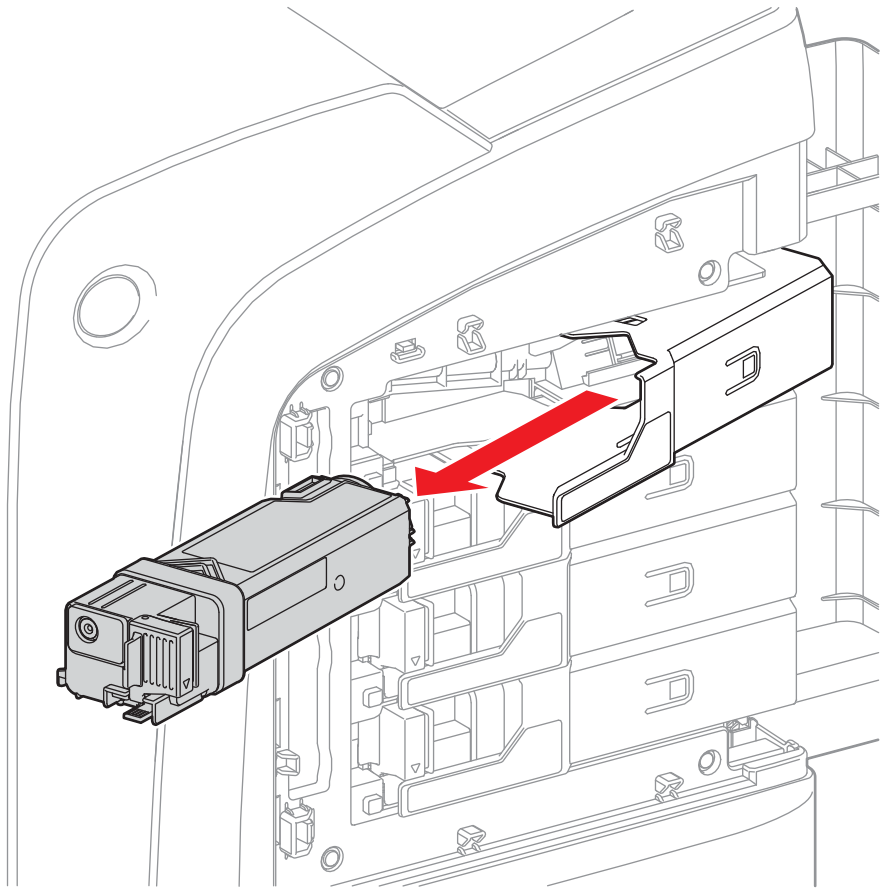
s6140-195

Covers

Top Cover

PL1.1.1

1. Remove Tray 1.
2. Open the Front Cover.
3. Lower the Transfer Belt.
4. Remove the Imaging Unit (page 8-7).
5. Remove the Fuser (page 8-10).
6. Remove the Right Side Door (page 8-19).
7. Remove the Right Side Cover (page 8-18).
8. Remove the Left Side Cover (page 8-20).
9. Remove the Rear Cover (page 8-16).
10. Remove the two screws (silver, tap, 8mm) that secure the Top Cover to the chassis.
11. Lift the front of the Top Cover to release the cover from the 2 bosses and remove.
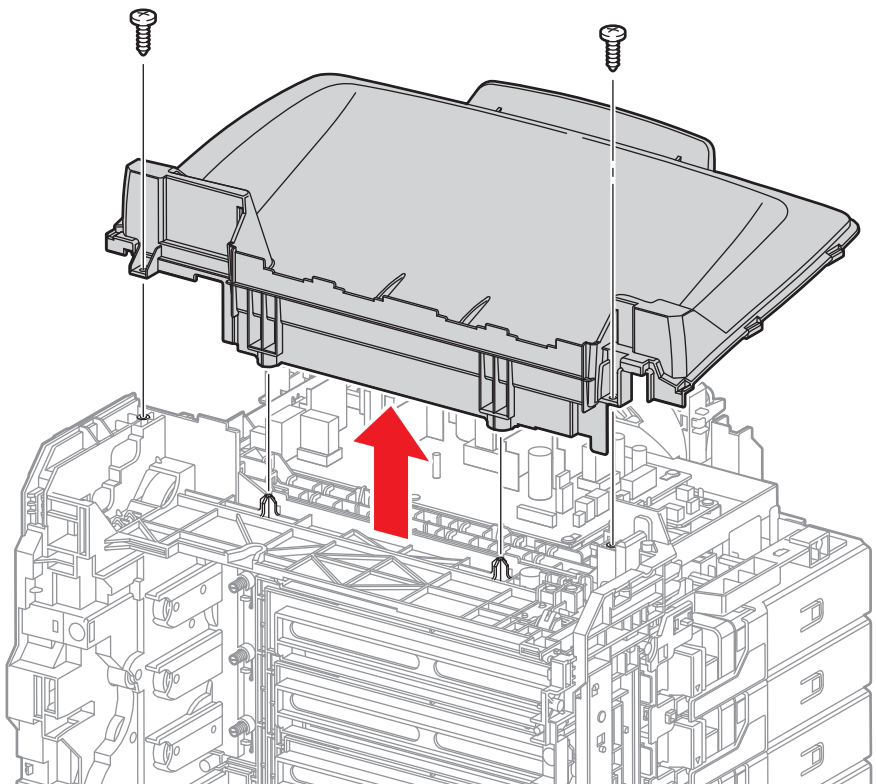
s6140-196

Output Tray Extension

PL1.1.2

1. Remove Tray 1.
2. Open the Front Cover.
3. Remove the Right Side Door (page 8-19).
4. Remove the Right Side Cover (page 8-18).
5. Remove the Left Side Cover (page 8-20).
6. Remove the Rear Cover (page 8-16).
7. Slide the Tray Extension to the rear and pull down where indicated to release 2 hooks on the extension and remove the extension from the Top Cover.
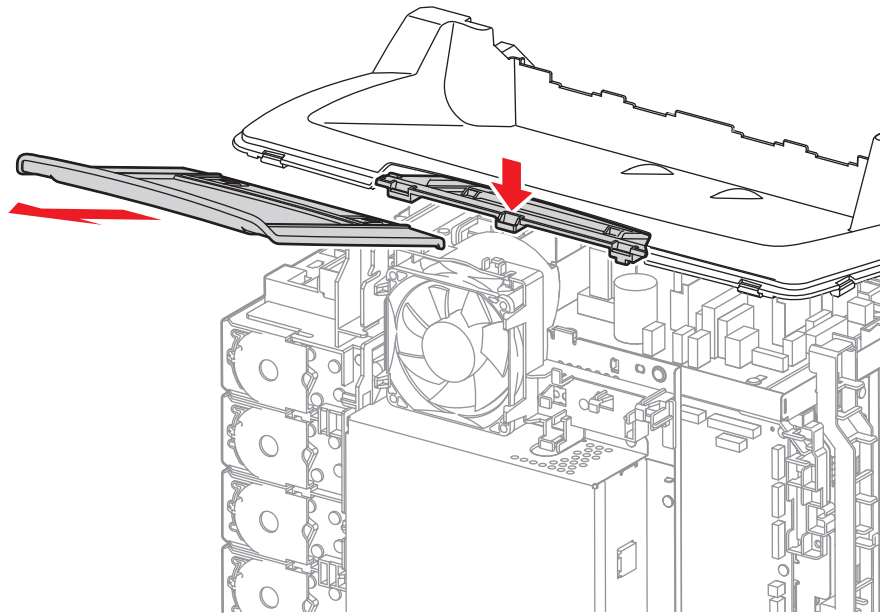
s6140-197

Rear Cover

PL1.1.3

1. Remove Tray 1.
2. Open the Front Cover.
3. Remove the Rear Tray Cover (page 8-17).
4. Remove the Right Side Door (page 8-19).
5. Remove the Right Side Cover (page 8-18).
6. Remove the Left Side Cover (page 8-20).
7. Remove 2 screws (silver, tap, 8mm) that secure the Rear Cover.
8. Release 2 tabs on the Rear Cover from holes in the Top Cover.
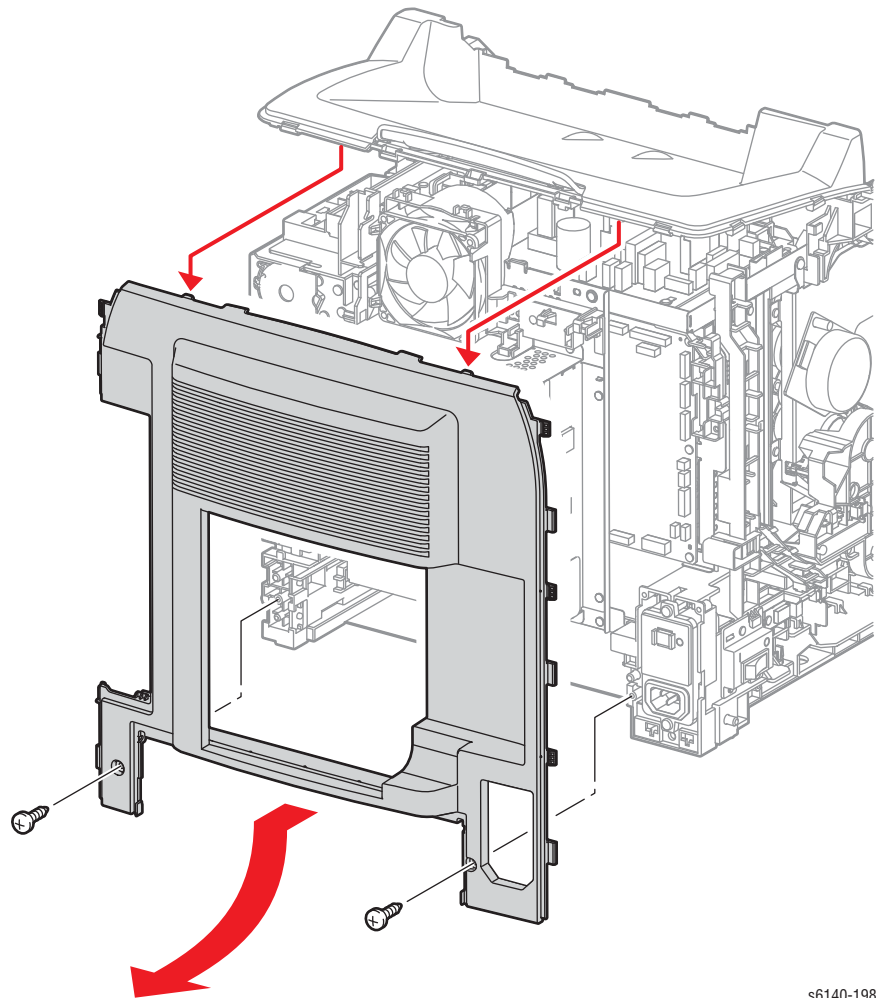
s6140-198

Rear Tray Cover

PL1.1.5

1. Remove Tray 1.
2. Press the sides of the Rear Tray Cover to release the 2 hooks from the chassis.
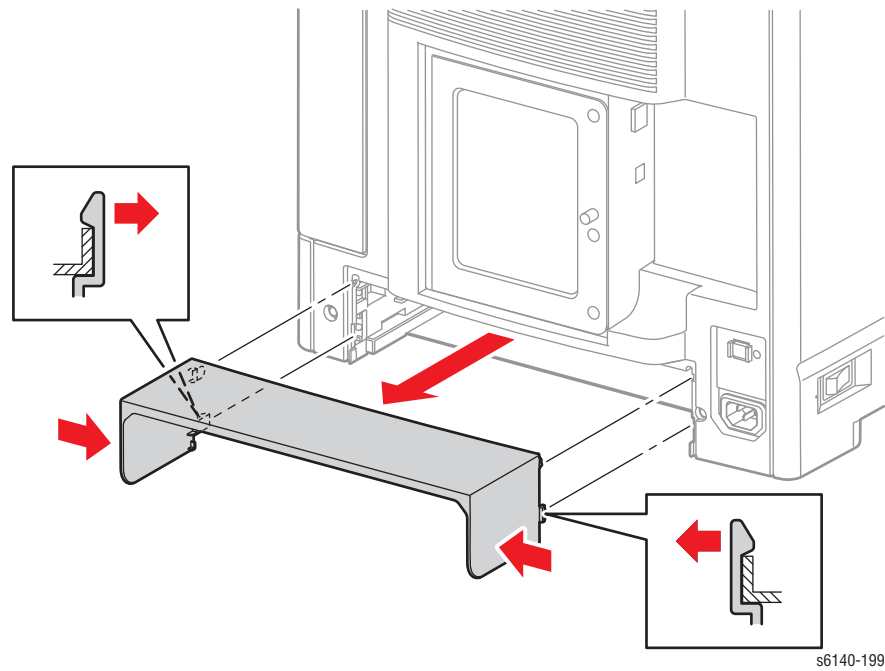
s6140-199

Right Side Cover

PL1.1.6

1. Remove Tray 1.
2. Open the Front Cover.
3. Open the Right Side Door (page 8-19).
4. Remove the 7 screws (silver, tap, 8mm) that secure the cover to the chassis.
5. Release the hook at the front of the cover.
6. Lift the cover slightly, then release the rear hook that secures the Right Side Cover to the Top Cover.
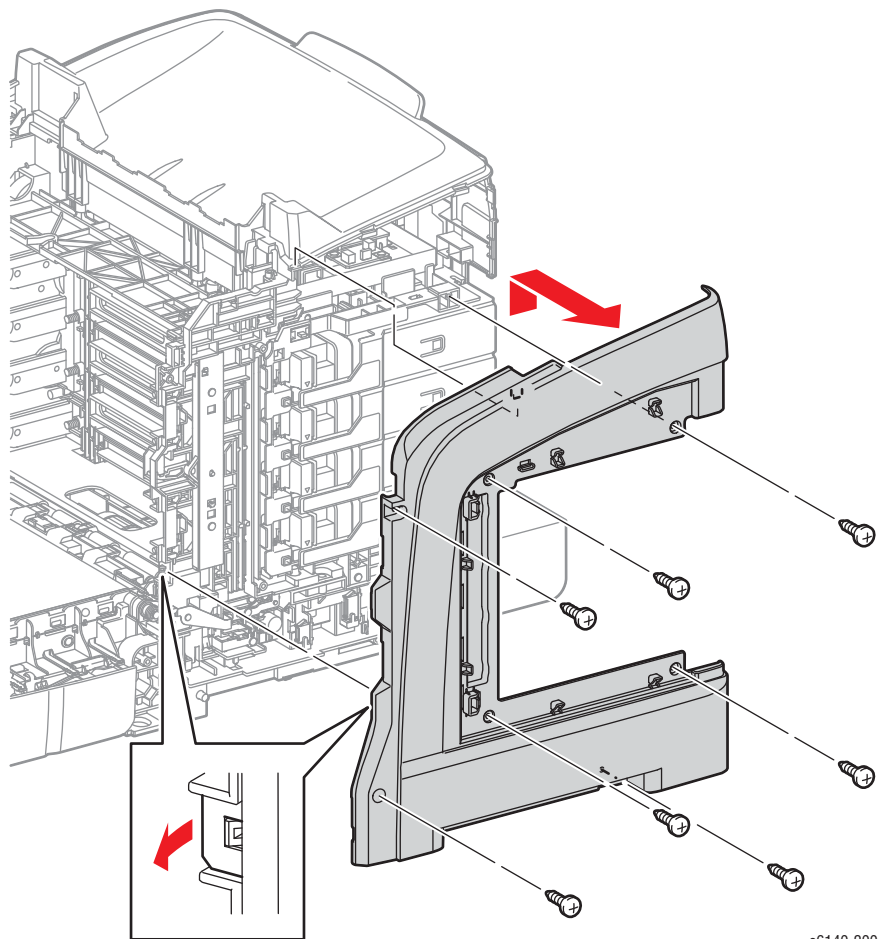
s6140-200

Right Side Door

PL1.1.7

1. Open the Right Side Door.
2. Release the bosses that secure to upper and lower hinges to the Right Side Cover.
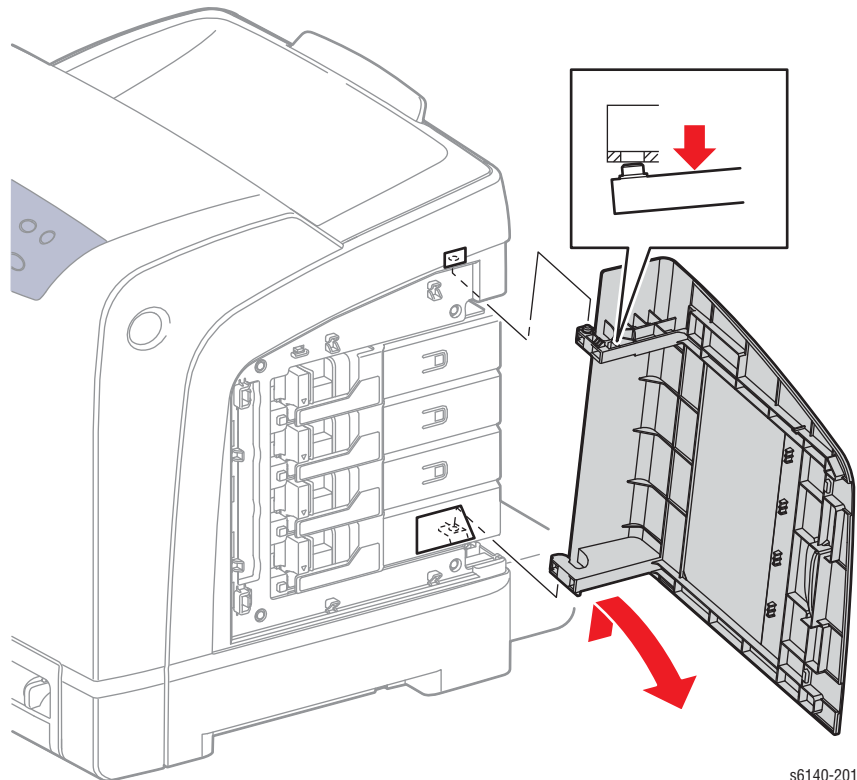
s6140-201

Left Side Cover

PL 1.1.19

1. Remove Tray 1.
2. Open the Front Cover.
3. Remove the 3 screws (silver, tap, 8mm).
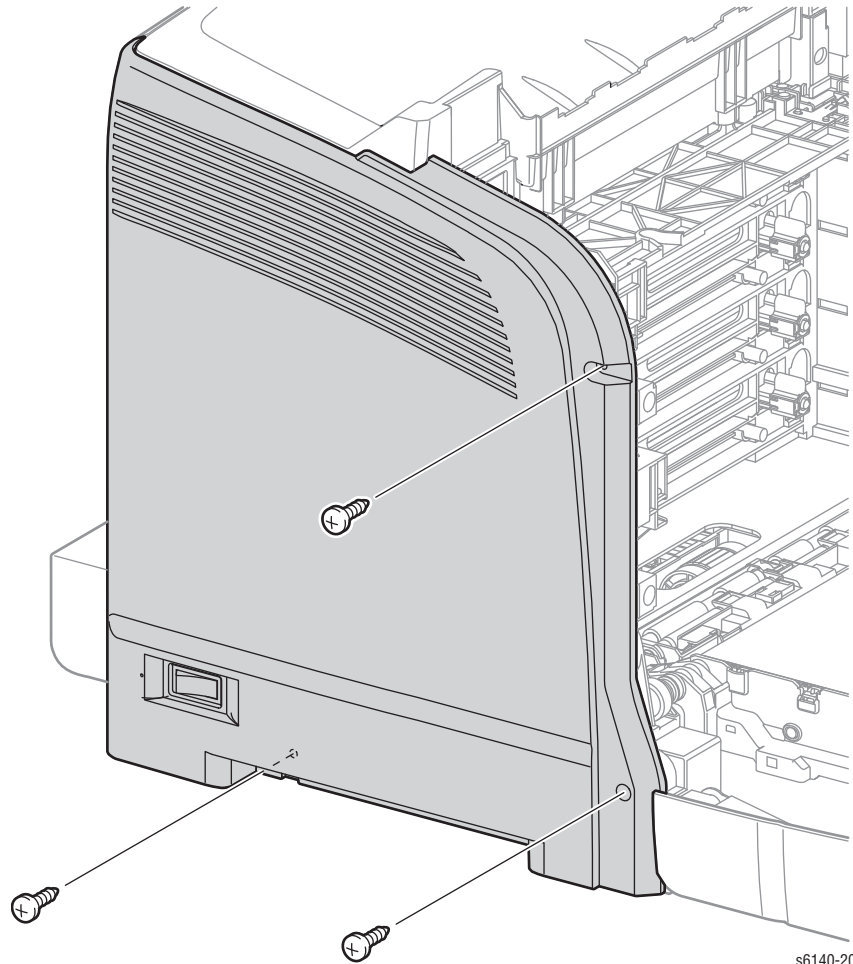
s6140-202

4. Release 1 hook at the front of the Left Side Cover.

5. Lift the cover slightly, then release 1 hook at the rear of the cover from the Top Cover.

6. Swing the cover front out to release 3 hooks on the Rear Cover and remove the Left Side Cover from the chassis.
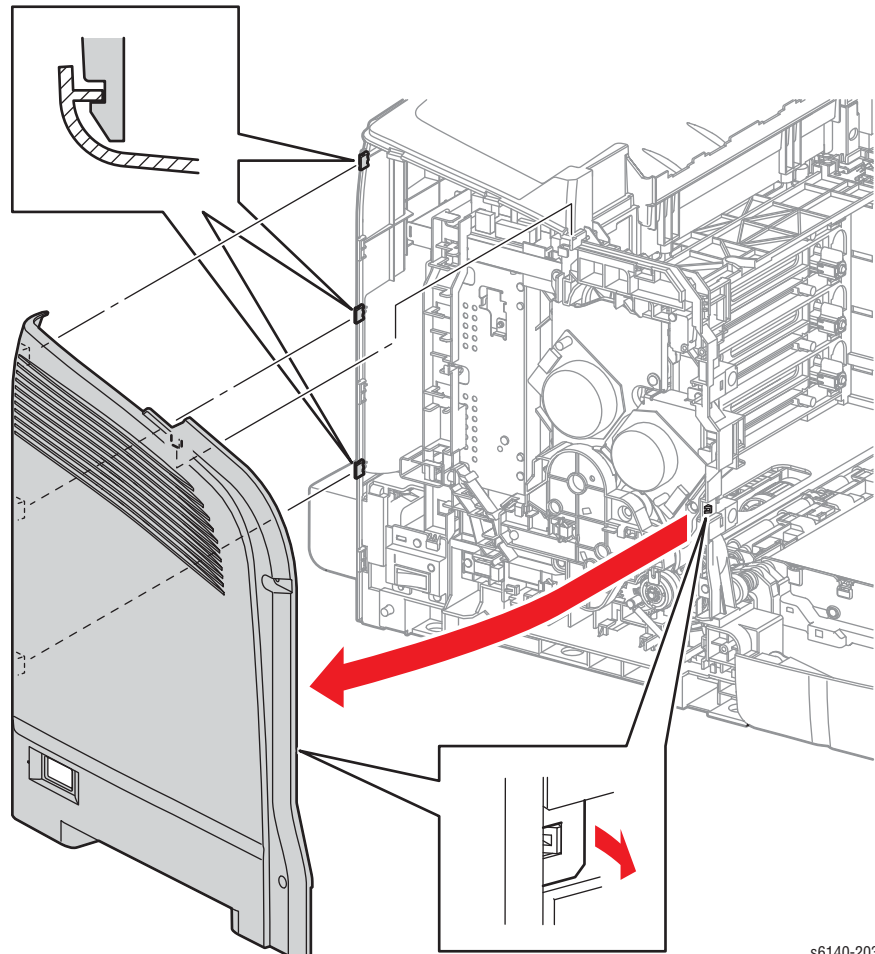
s6140-203

Front Cover

PL1.2.1

1. Remove Tray 1.
2. Open the Front Cover.
3. Remove the Right Side Door (page 8-19).
4. Remove the Right Side Cover (page 8-18).
5. Remove the Left Side Cover (page 8-20).
6. Disconnect P/J271 and P/J2200 and release the harnesses from the guides.

P/J271

P/J2200
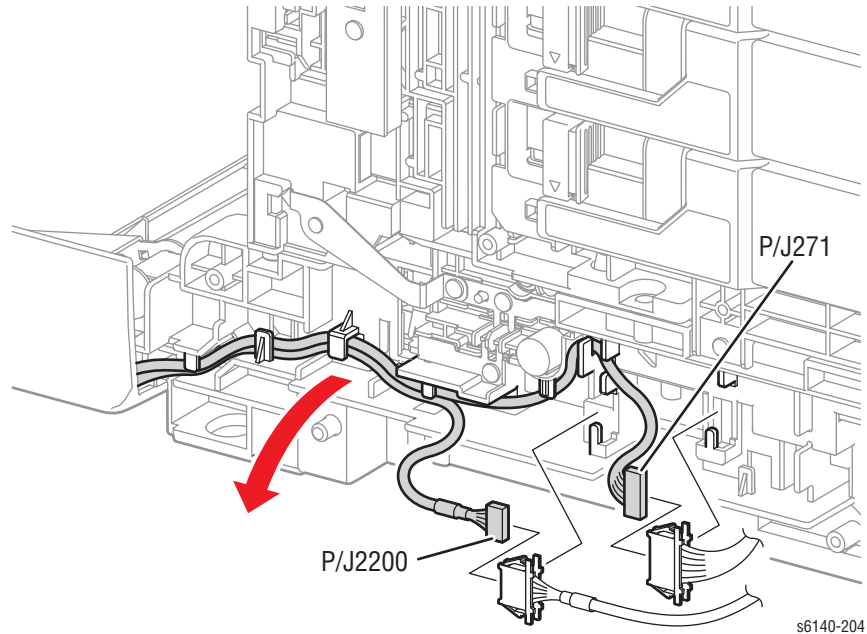
s6140-204

7. Remove 1 screw that secures the ground harness to the chassis.
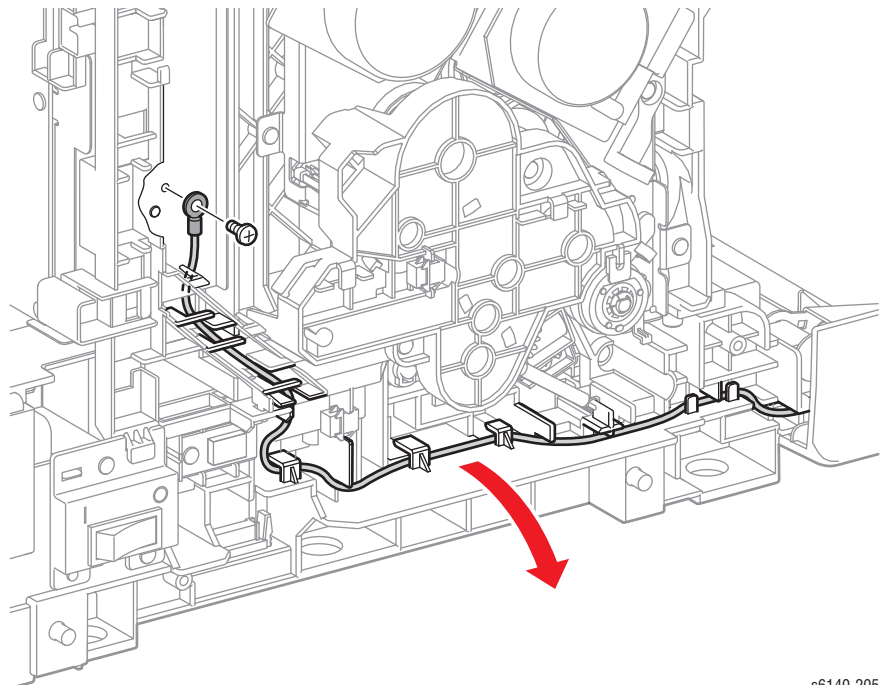
s6140-205

8. Remove link covers and springs.
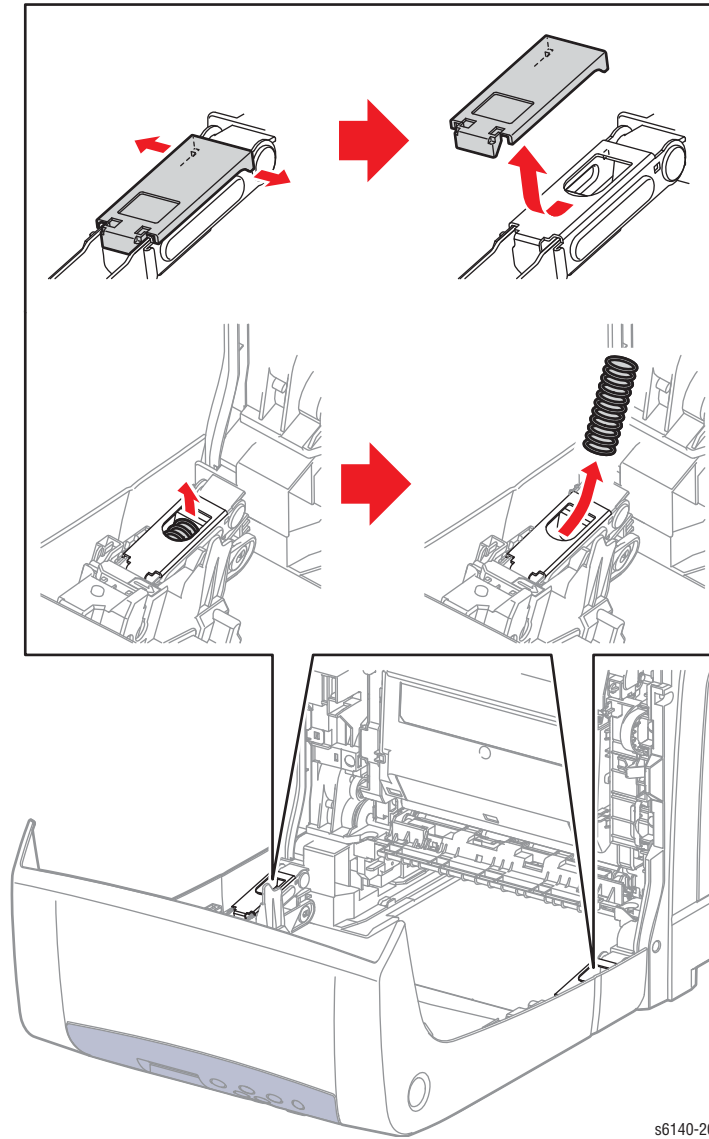
s6140-206

9. Release the 4 pivot shaft hooks and remove 2 pivot shafts from the Front Cover links and 2 pivot shafts from the Front Cover.
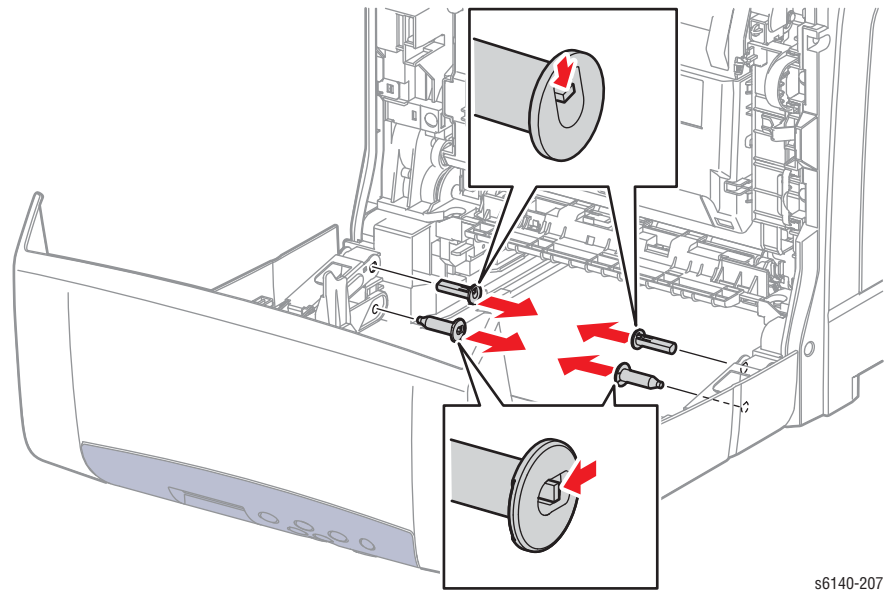
s6140-207

10. Pull the Front Cover forward to remove.
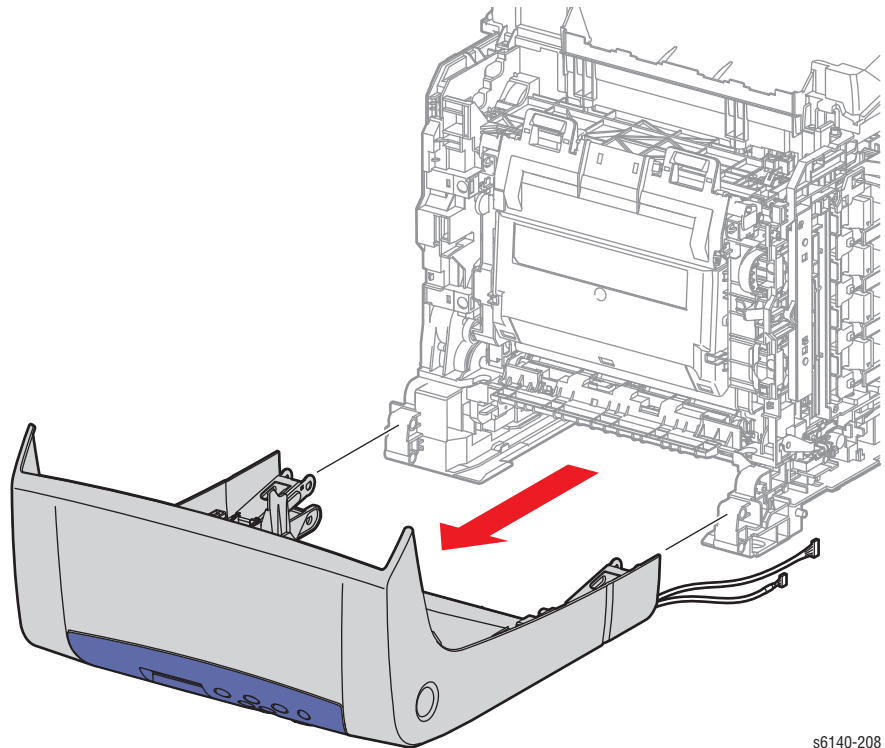
s6140-208

Lower Link Pivot Shaft Kit

PL1.2.98

1. Remove Tray 1.
2. Open the Front Cover.
3. Release the hook that secures each Pivot Shaft and pull the Pivot Shaft from the Link.
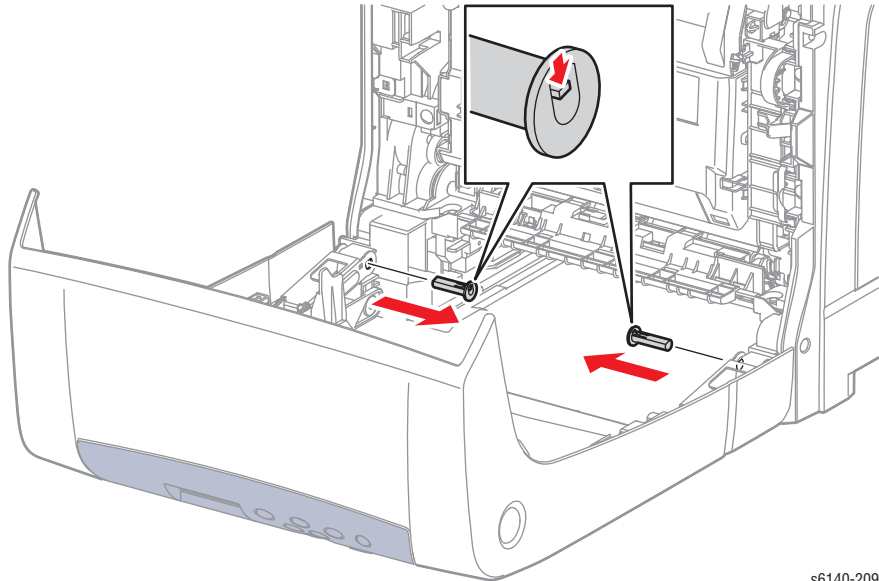
s6140-209

Front Cover Pivot Shaft Kit

PL1.2.99

1. Remove Tray 1.
2. Release the hook that secures each Pivot Shaft and pull the Pivot Shaft from the Front Cover.
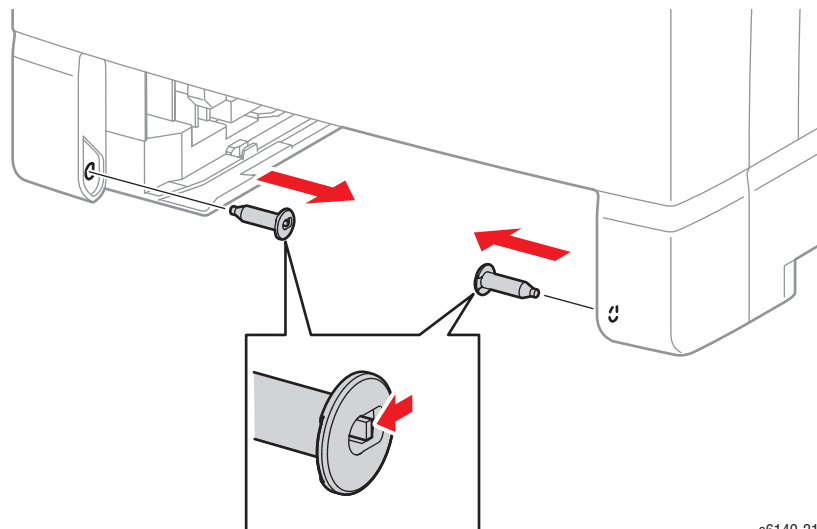
s6140-210

Link Covers

PL1.2.30

1. Open the Front Cover.
2. Release the two hooks that secure the cover to the link.
3. Slide the cover forward and remove.
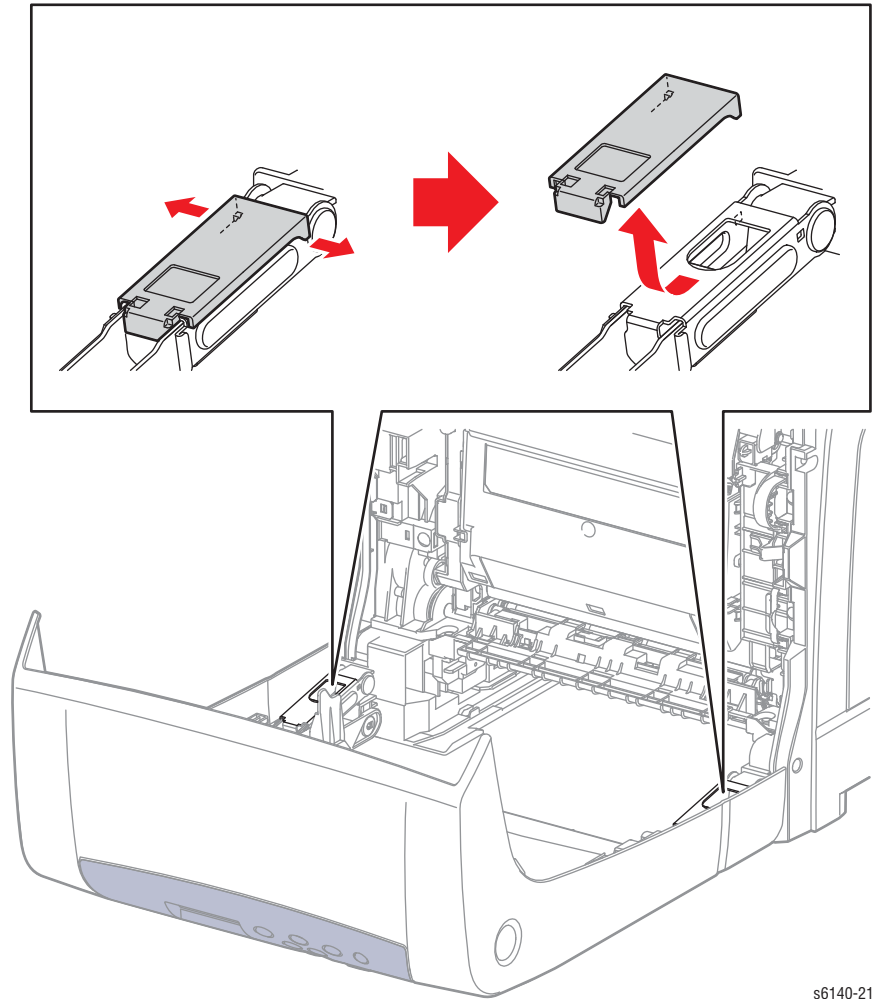
s6140-211

Link Springs

1.2.24

1. Open the Front Cover.
2. Remove the link covers (page 8-26)
3. Lift the Front Cover to expose the end of the spring in the link.
4. Remove the springs from the links.
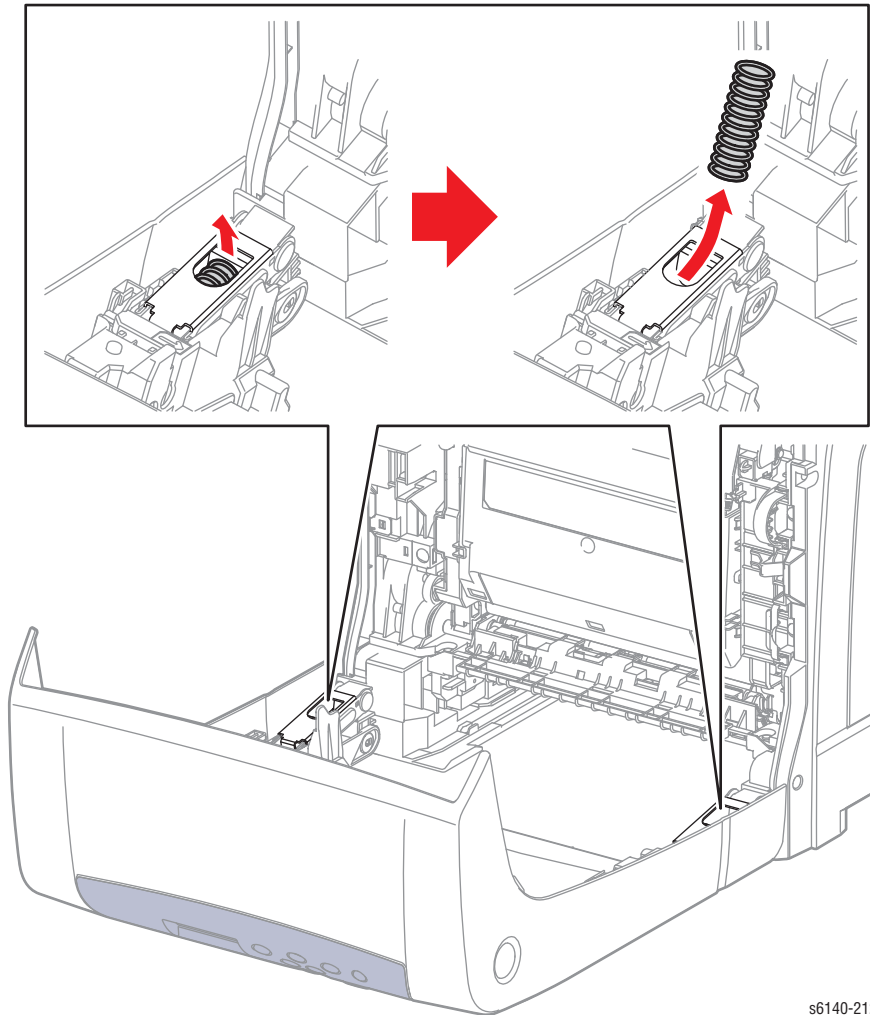
s6140-212

Right Front Holder

PL1.2.28

1. Remove Tray 1.
2. Open the Front Cover.
3. Remove the Duplex Unit (page 8-107).
4. Remove the Right link cover (page 8-26).
5. Remove the Right link spring (page 8-27).
6. Remove the Link Pivot Shaft (page 8-25).
7. Remove 4 screws that secure the Right front holder to the Front Cover;
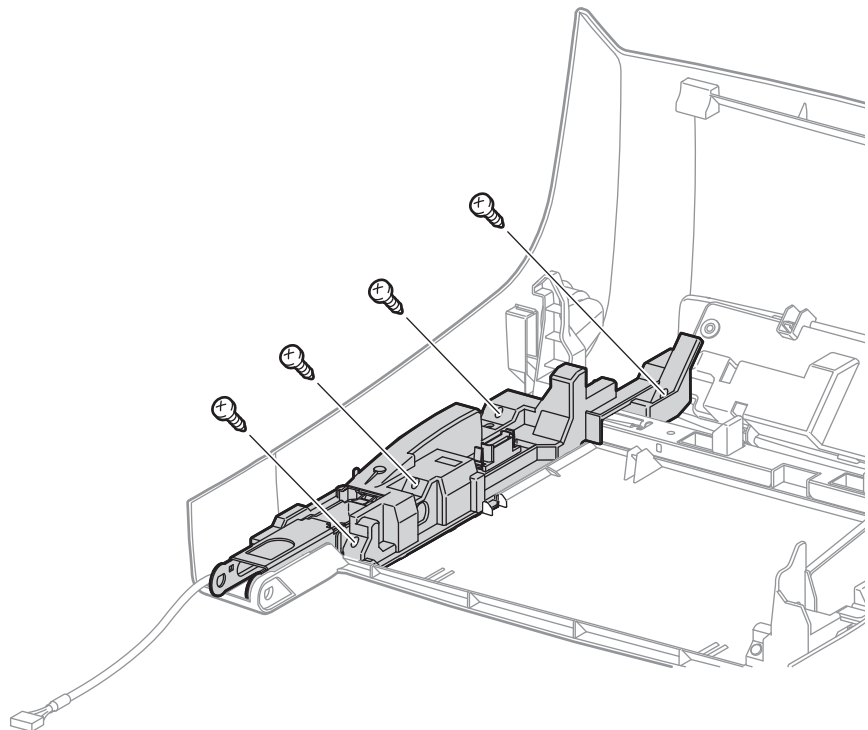
s6140-213

8. Turn the holder over and release 2 hooks that secure the drawer cover to the holder.

s6140-323
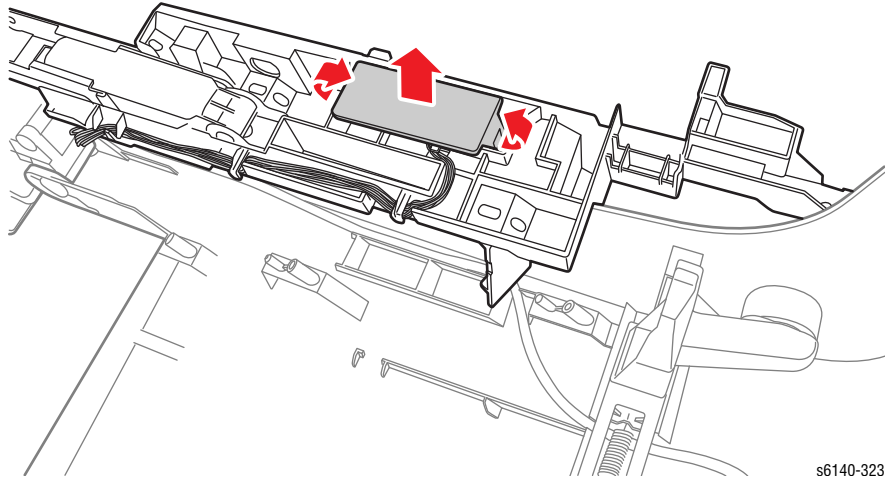
9. Disconnect the Duplex Harness (P/J272) from the connector and remove the harness from the holder guides.

P/J272

s6140-214
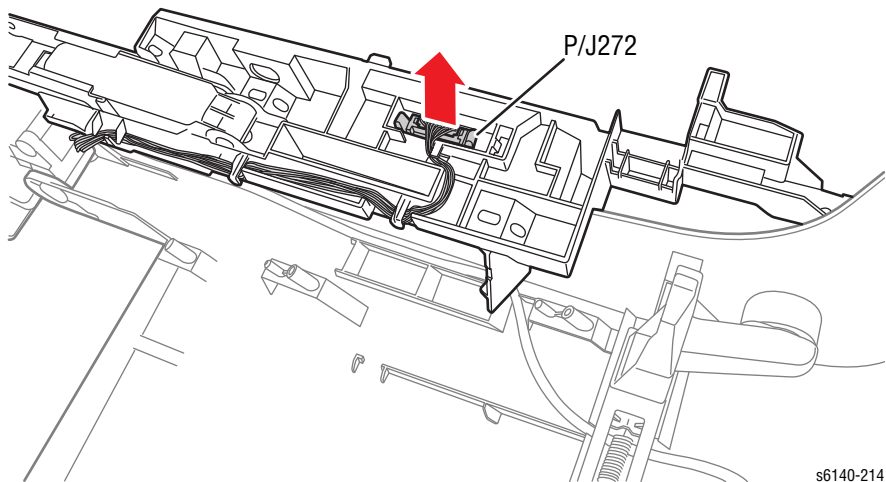
Left Front Holder

1. Remove Tray 1.
2. Open the Front Cover.
3. Remove the Duplex Unit (page 8-107).
4. Remove the Left link cover (page 8-26).
5. Remove the Left link spring (page 8-27).
6. Remove the Link Pivot Shaft (page 8-25).
7. Remove 1 screw that secures the ground harness to the holder.
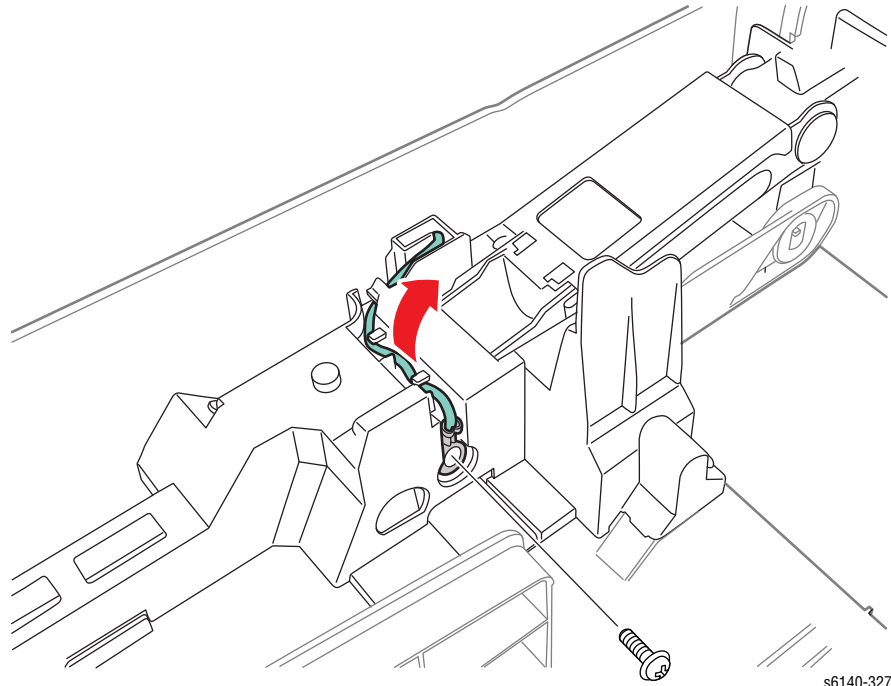
s6140-327

8. Remove 4 screws that secure the Left front holder to the Front Cover;
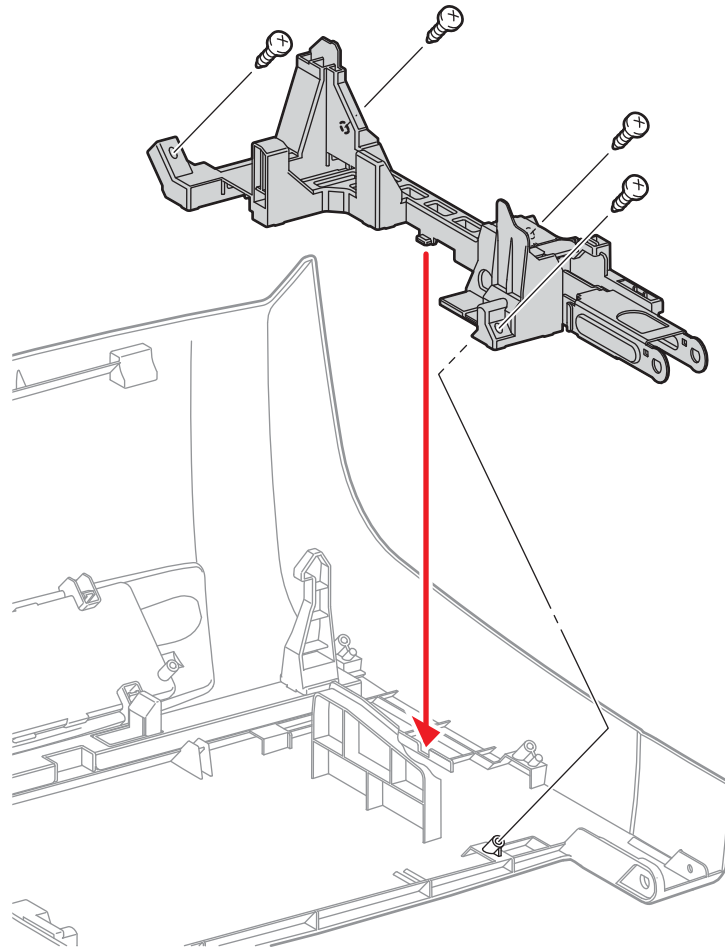
s6140-215

9. Release the ground harness from the holder guides to remove the holder.

Upper Link Pivot Shaft Kit

PL1.2.97

1. Remove Tray 1.
2. Open the Front Cover.
3. Remove the Duplex Unit (page 8-107).
4. Remove the Right front holder (page 8-28)
5. Remove the Left front holder (page 8-30).

   Note

   Left upper link pivot replacement is possible without disconnecting the Duplex Harness (P/J272) from the Left front holder.

6. Release the hook that secures each pivot shaft in the link and remove the pivot shaft.
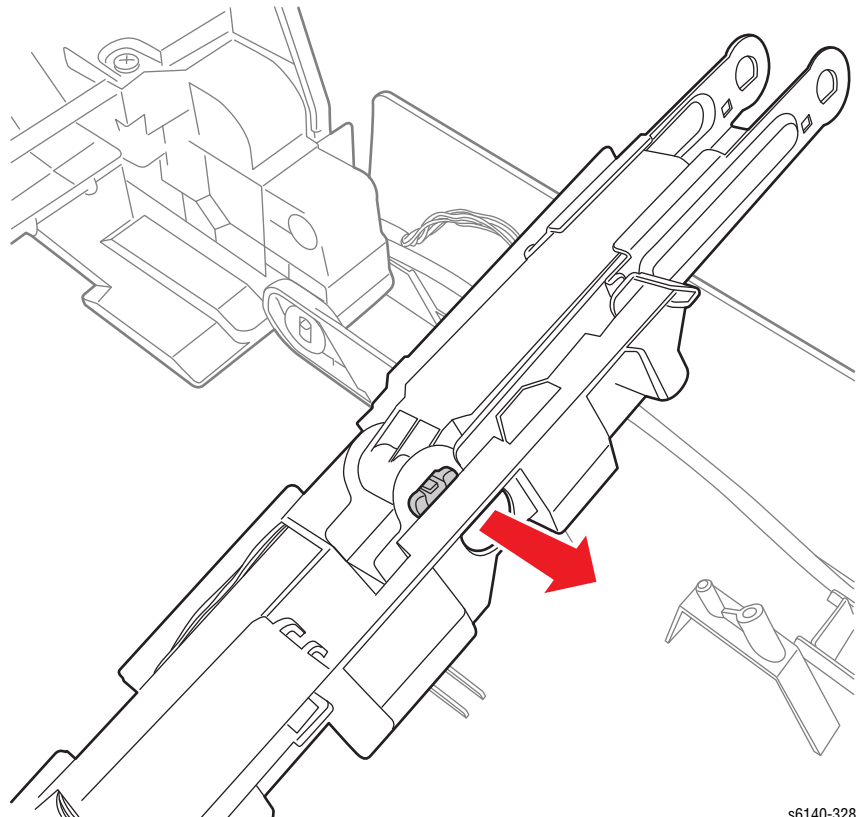
s6140-328
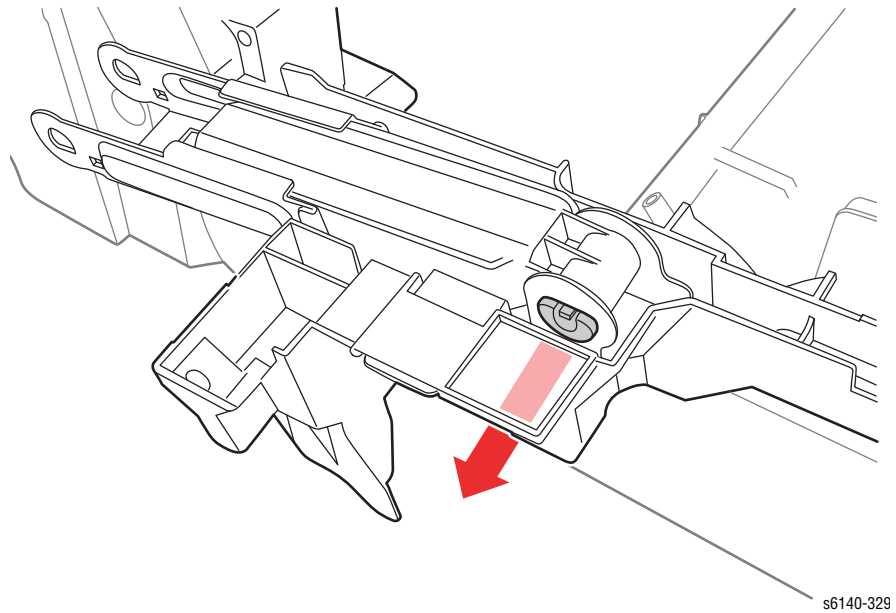
s6140-329

Cassette Stopper

PL3.1.10

1. Remove Tray 1.
2. Remove the Tray Rear Cover (page 8-17).
3. Remove 1 screw that secures the Cassette Stopper to the chassis.
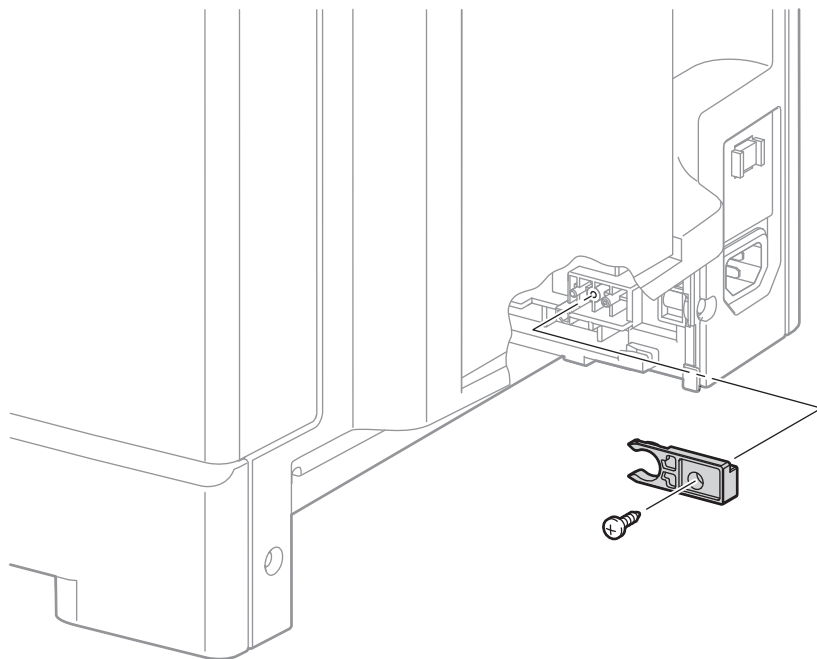
s6140-216

Feeder

Drive Clutch and Bearing Kit

PL3.1.97

1. Open the Front Cover.
2. Remove the Left Side Cover (page 8-20).
3. Release the Drive Clutch harness from the cable restraint on the Feed Drive Assembly.
4. Disconnect the Drive Clutch connector, P/J262. Allow the relay connector to remain with the printer side of the harness.

P/J262
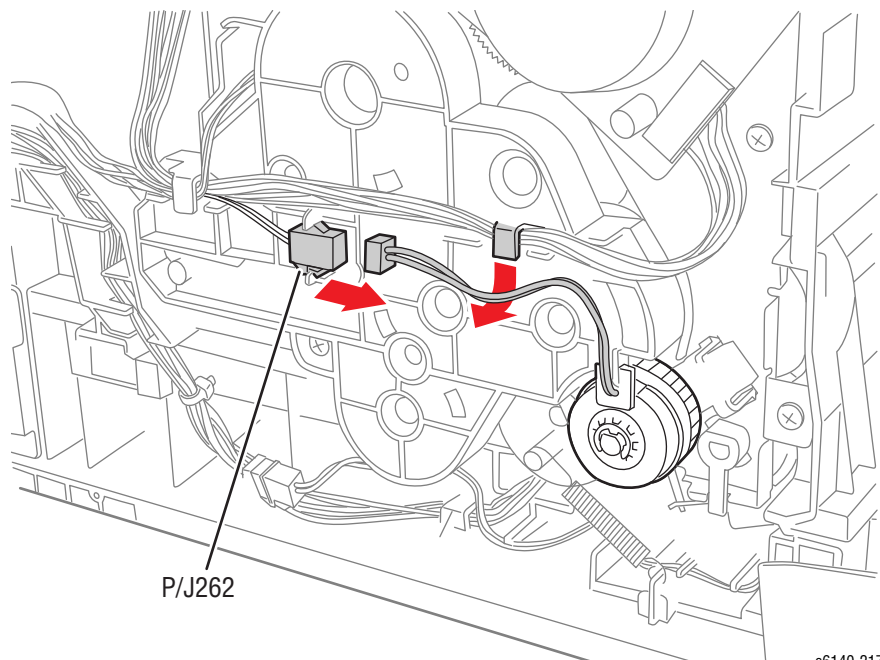
s6140-217

5. Remove the E-ring that secures the Drive Clutch on the shaft, using a miniature screwdriver, and remove the Drive Clutch.
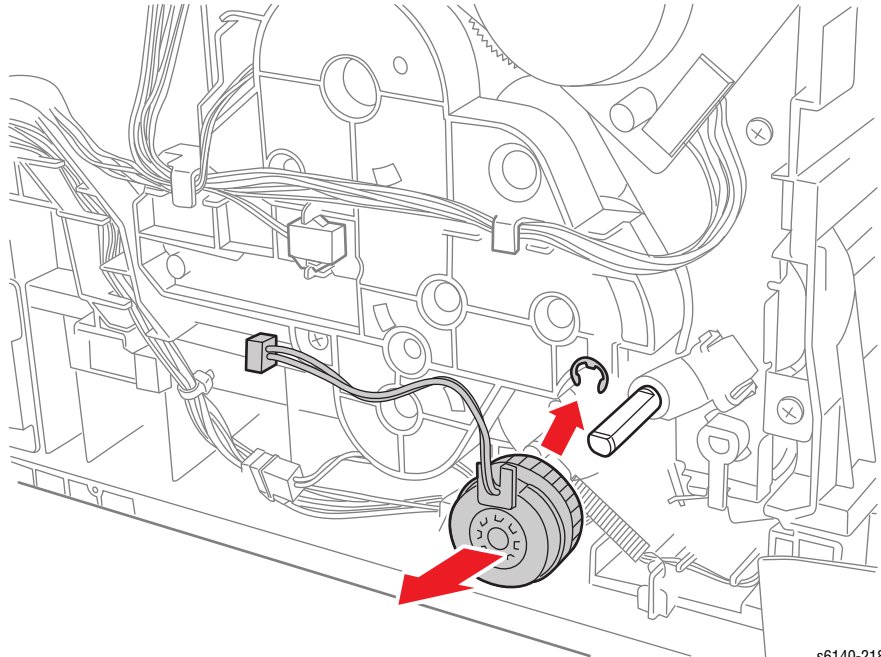
s6140-218

6. Release the two hooks of the Registration Bearing, and remove the Registration Bearing from the shaft.
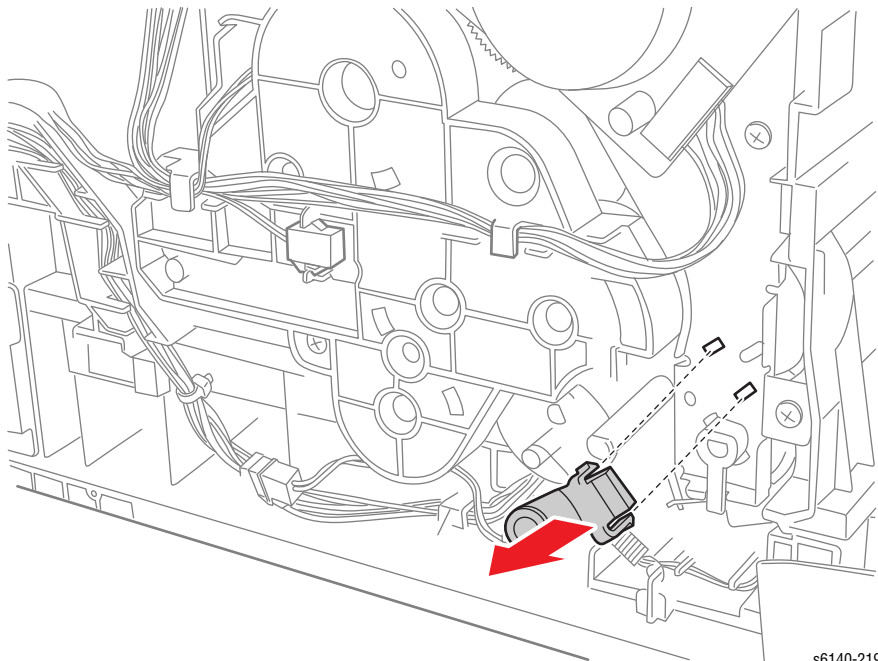
s6140-219

Feed Solenoid

PL3.1.99

1. Open the Front Cover.
2. Remove the Left Side Cover (page 8-20).
3. Remove the Drive Clutch and Bearing Kit (page 8-34).
4. Remove the Feed Drive Assembly (page 8-84).
5. Release the Feed Gear Return Spring from the chassis. Leave the spring connected to the arm on the Feed Gear.
6. Push down on the Feed Lever and release the Feed Gear retainer hook to slide the Feed Gear off the shaft.
7. Remove the Lever Spring.
8. Release the Feed Lever hook and slide the Feed Lever off the shaft.

Lever Spring

Feed Gear Return Spring
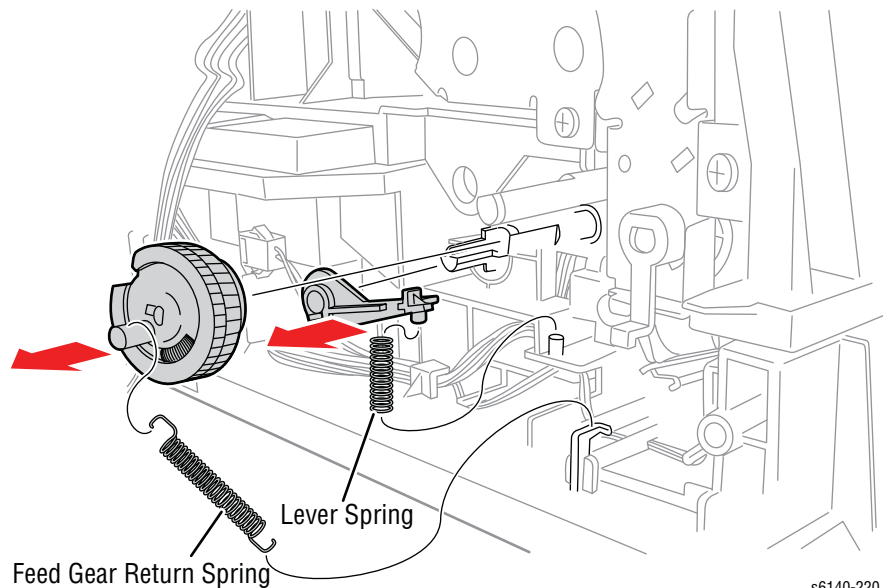
s6140-220

9. Release the Feed Solenoid harness from the cable restraints on the frame.

10. Disconnect P/J231. Allow the relay connector to remain with the printer side of the harness.

11. Remove the screw (silver, tap, 8mm) that secures the Feed Solenoid to the chassis to remove the solenoid.
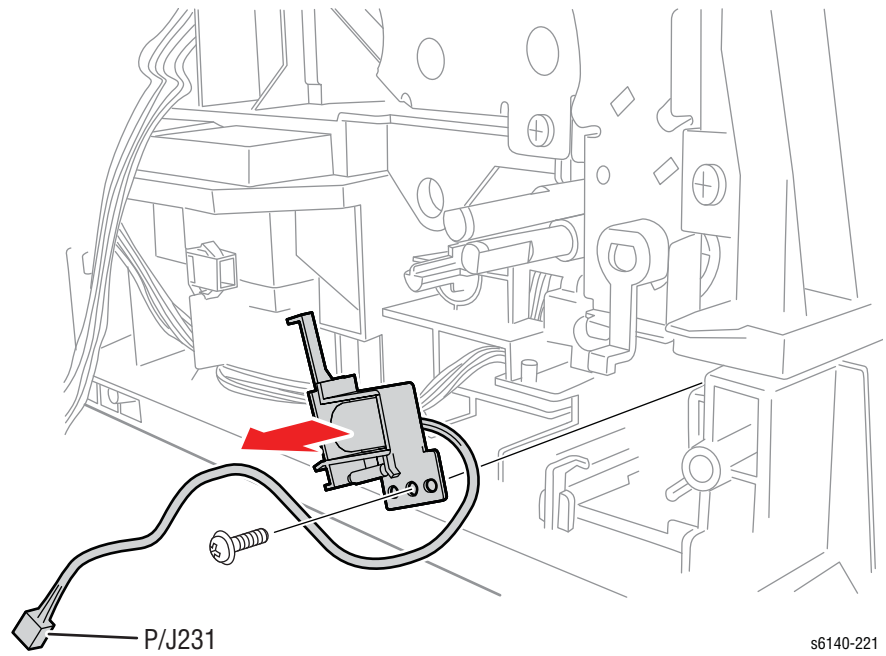
P/J231   s6140-221

Upper Frame Assembly

While this procedure is not directly related to a specific part, upper frame removal is a necessary for servicing the HVPS or components of the Feeder Assembly. As few parts as possible are removed to separate the assemblies.

1. Remove Tray 1.
2. Open the Front Cover.
3. Lower the Transfer Belt.
4. Remove the Imaging Unit (page 8-7).
5. Remove the Fuser (page 8-10).
6. Remove the Rear Tray Cover (page 8-17).
7. Remove the Right Side Door (page 8-19).
8. Remove the Right Side Cover (page 8-18).
9. Remove the Left Side Cover (page 8-20).
10. Remove the Rear Cover (page 8-16).
11. Remove the Top Cover (page 8-14).
12. Raise the Transfer Belt and latch in the upright position.
13. Remove the Drive Clutch and Bearing Kit (page 8-34).
14. Remove the Fan (page 8-86).
15. Remove the IP Board Cage (page 8-106).
16. Remove the MCU Board (page 8-103).
17. Remove GFI Breaker (page 8-99).
18. Remove the Transfer Belt Pivot Kit (page 8-76).
19. Remove the Transfer Belt (page 8-79).

20. Remove 1 screw (silver, 6mm) that secures the ground harness to the printer and remove the wire from the guides.
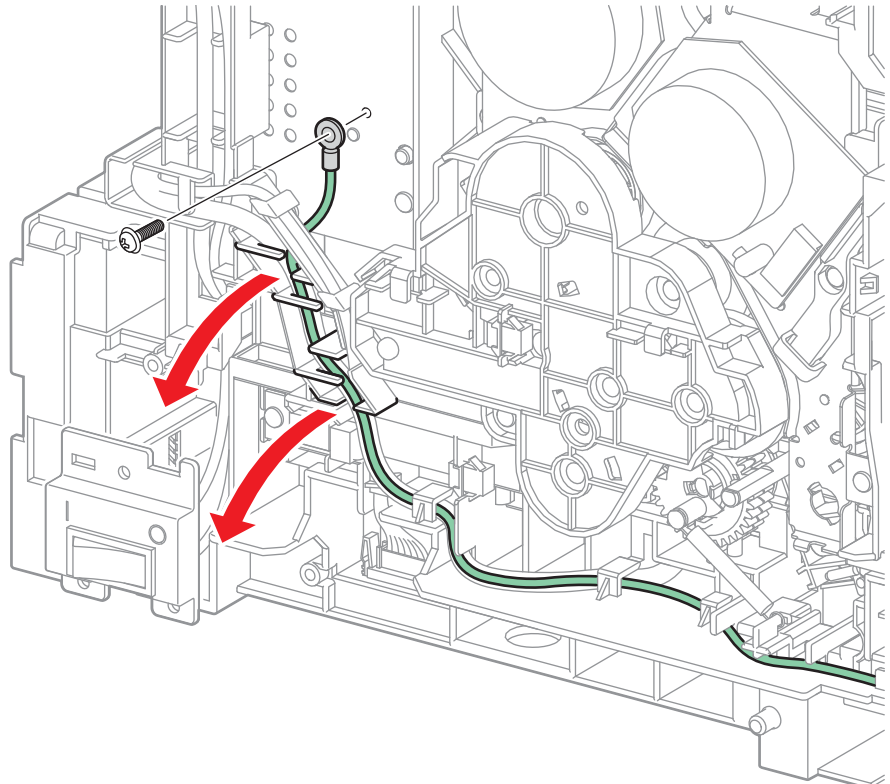
s6140-222

21. Remove 1 screw (silver, with washer, 6mm) that secures the GFI ground harness to the chassis.
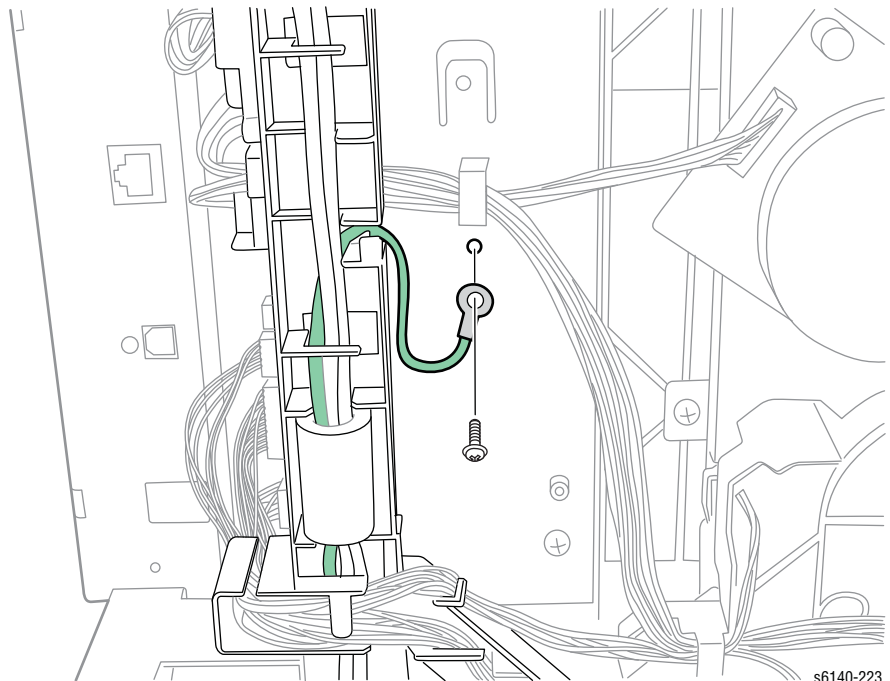
s6140-223

22. Release all harnesses from the AC harness guide.

23. Disconnect the Power Switch Harness from the LVPS (P/J48), then release 1 hook that secures the AC harness guide to the chassis.

24. Remove the AC harness guide together with the Power Switch Harness.

.

P/J48
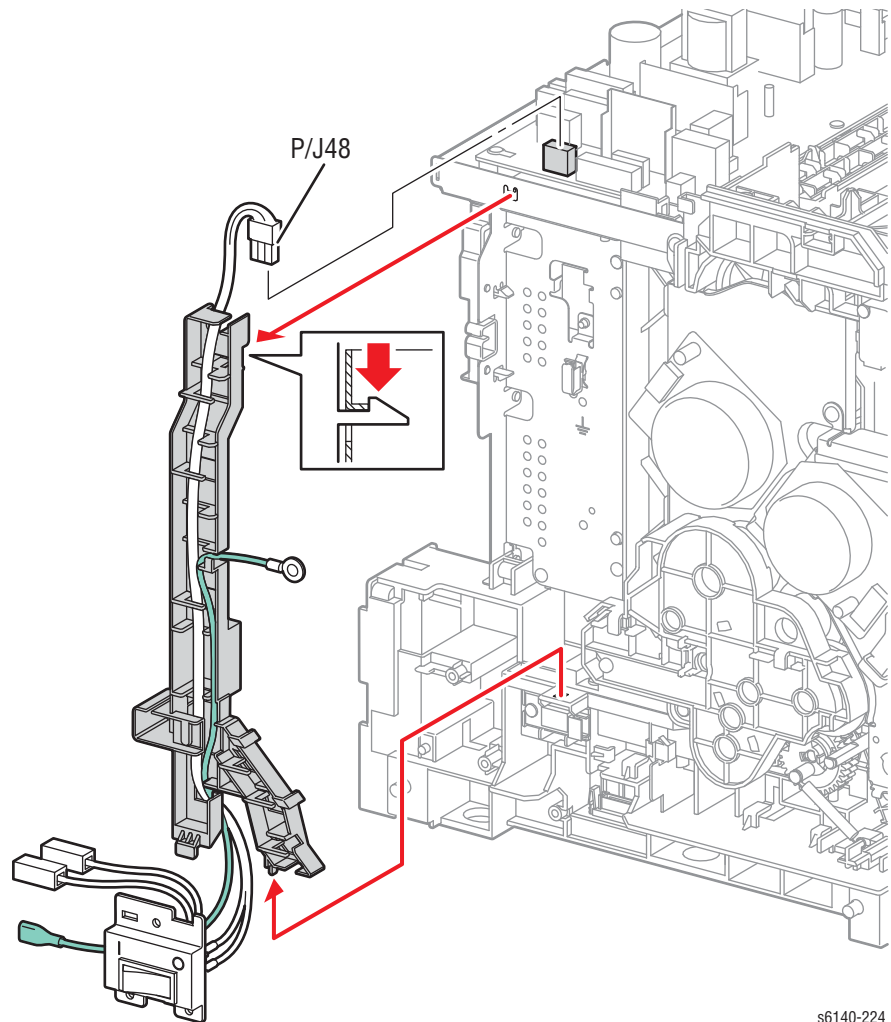
s6140-224

25. Release the option harness from the clamp of the Right MCU Board bracket.

26. Remove 2 screws (silver, 6mm) that secure the Right MCU Board bracket to the chassis and remove the bracket
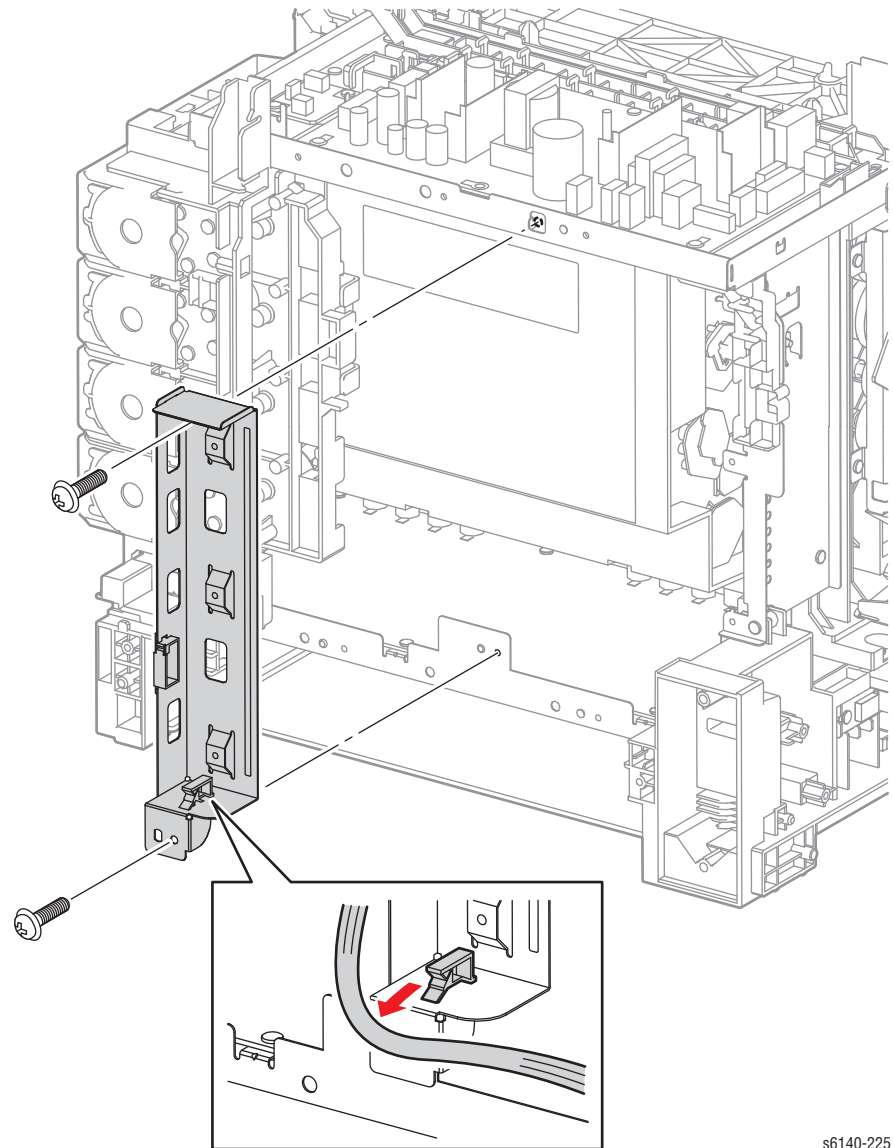
s6140-225

27. Remove the option harness and the Control Panel harness B from the hooks of the Dispense Assembly.

28. Open the Toner Cartridge Holders and remove 1 screw (silver, tap, 8mm).
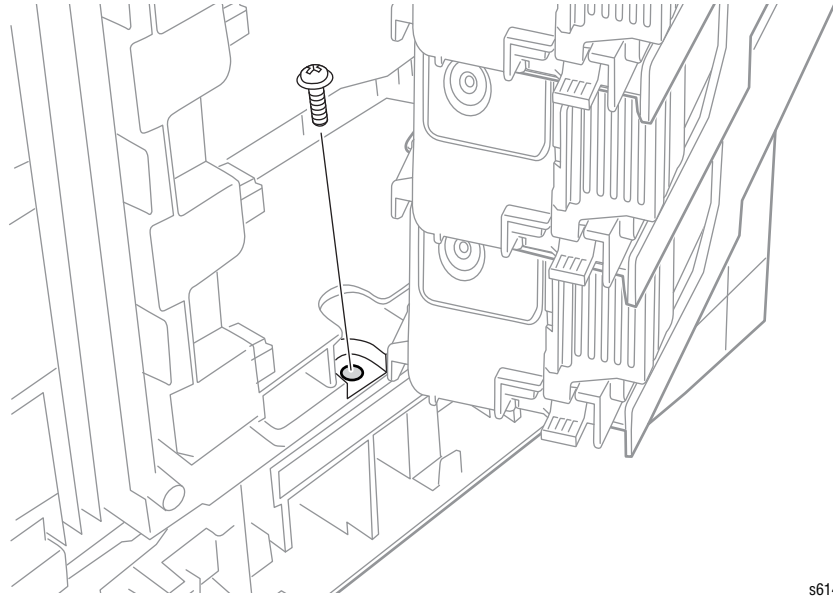
s6140-226

29. Remove 2 screws (silver, tap, 8mm) that secure the bottom and 1 screw (silver, M4, 6mm) that secures the rear of the Dispense Assembly.
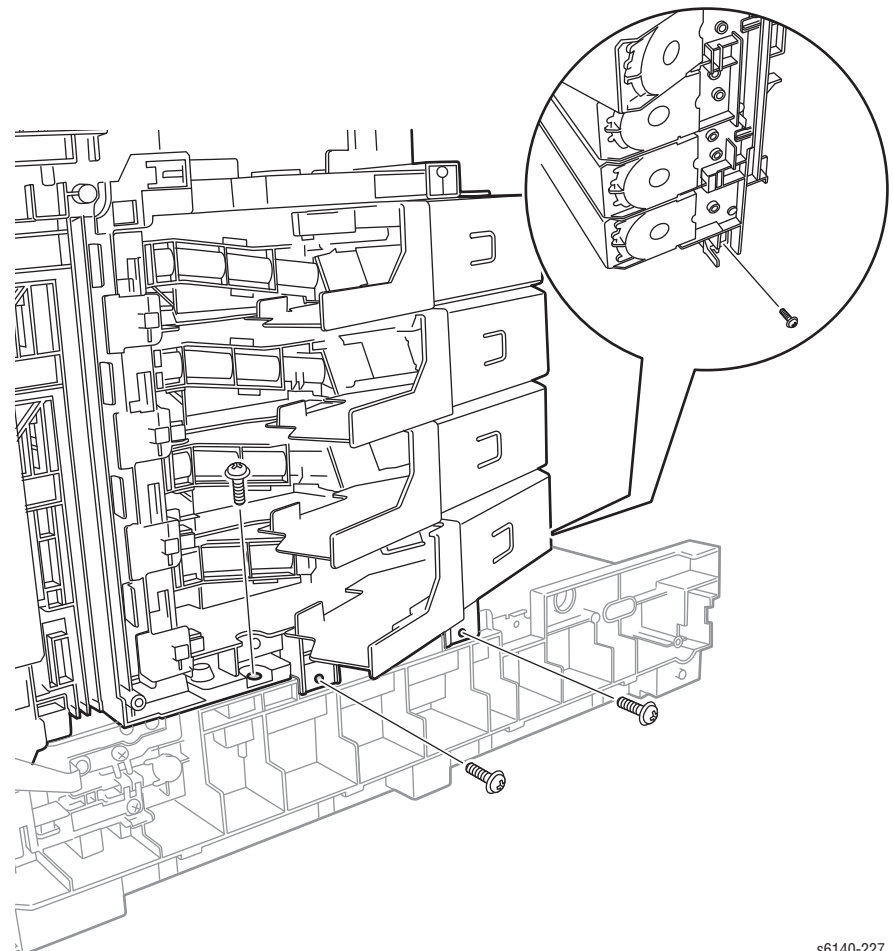
s6140-227

30. Remove 2 screws (silver, tap, 8mm) that secure the front of the frame.
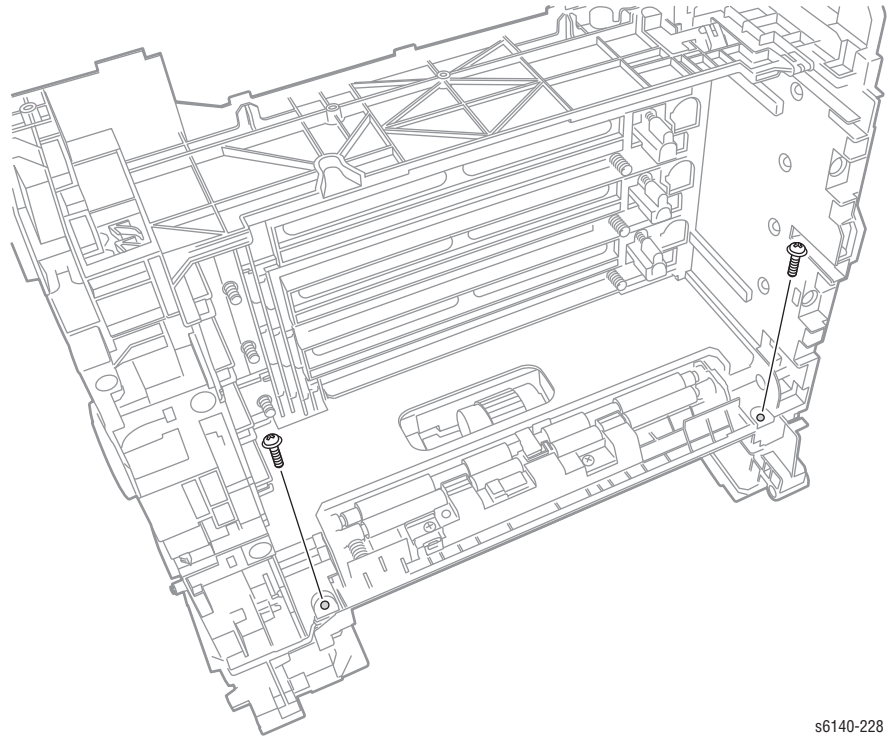
s6140-228

31. Remove 3 screws (silver, tap, 8mm) that secure the left side of the upper frame.
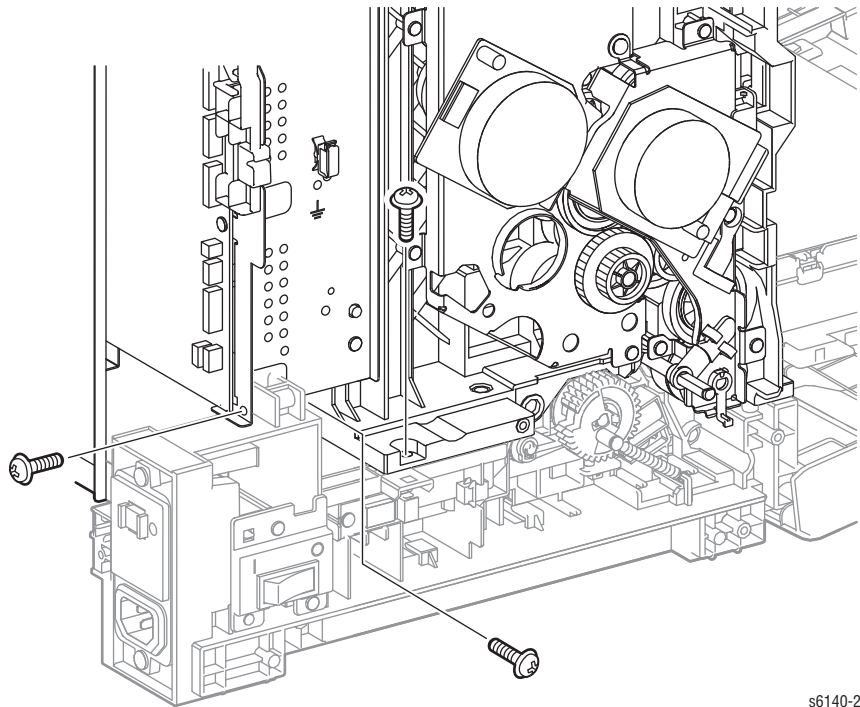
s6140-229

Caution

Do not damage the springs located on the bottom of the upper frame.

32. Lift the upper frame from the chassis.
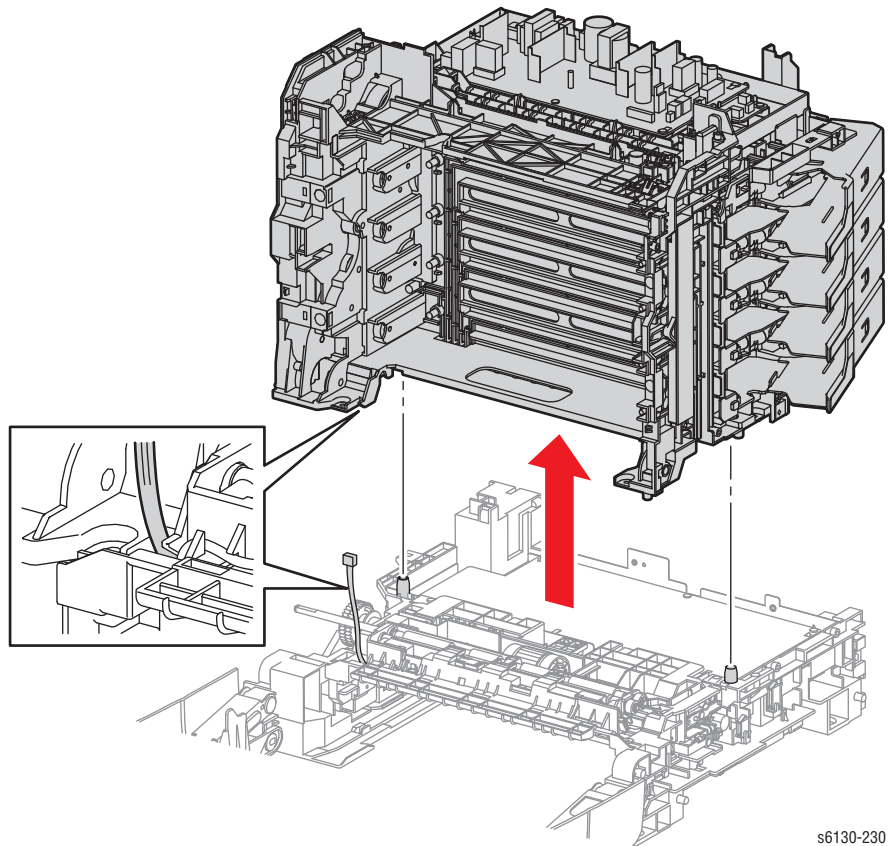
s6130-230

Replacement Note

Removal of the Laser Unit from the upper frame simplifies the task of lacing the harnesses around the Dispense Assembly. Route the Transfer Belt harness through the groove in the upper frame.

Feeder Assembly

PL3.2.1

1. Remove the Upper Frame Assembly (page 8-38).
2. Remove the Front Cover (page 8-22).
3. Release the Control Panel Harness B from the guides in the Feeder Assembly.
4. Remove the HVPS (page 8-101).
5. Remove the HVPS Frame (page 8-102).
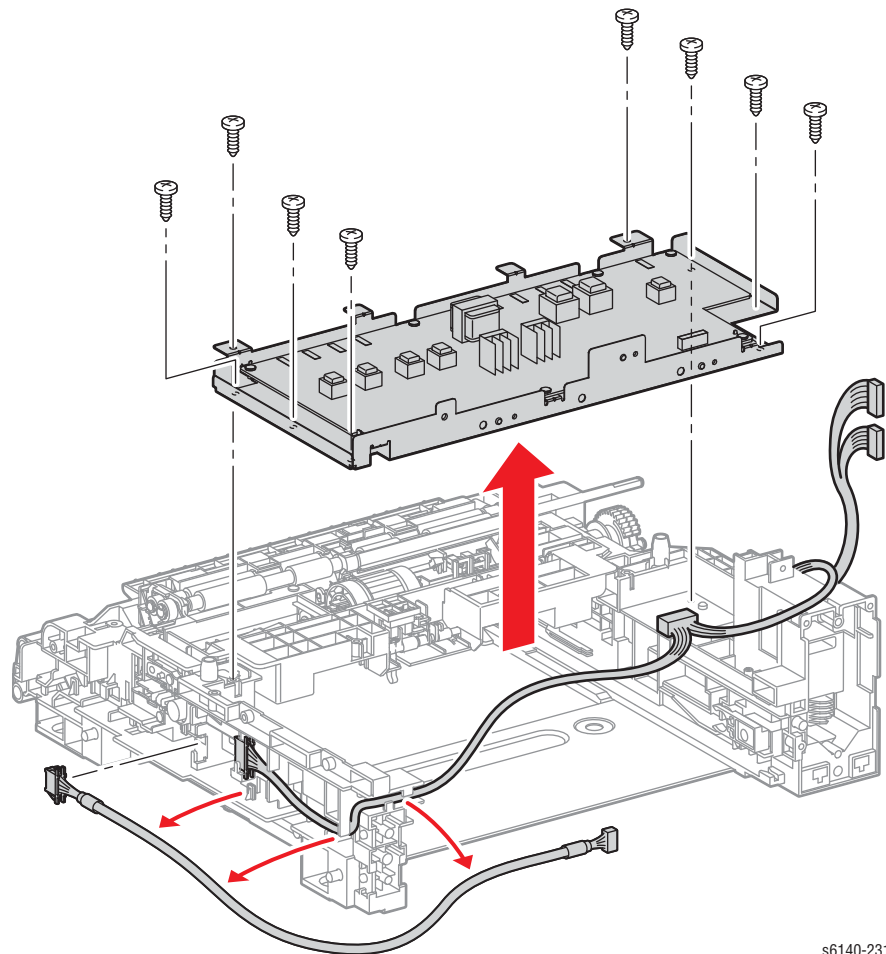
s6140-231

Replacement Note

Align 4 holes in the HVPS Frame with 4 bosses on the Feeder Assembly before replacing the HVPS and 8 screws.

Registration Roller

PL3.2.9

Note

The Registration Actuator Out is tensioned by a small spring located under the actuator.

1. Remove the Upper Frame Assembly (page 8-38).
2. Release the hook on the Registration Actuator Out and shift the Registration Roller Actuator to the right.
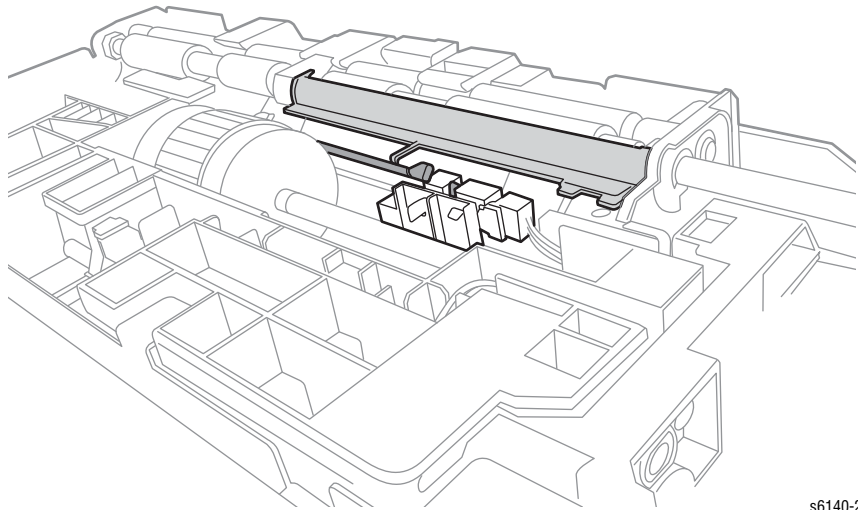
s6140-232

3. Release the Registration Actuator Out from the hook on the Chute Up, then open the Registration Actuator Out.
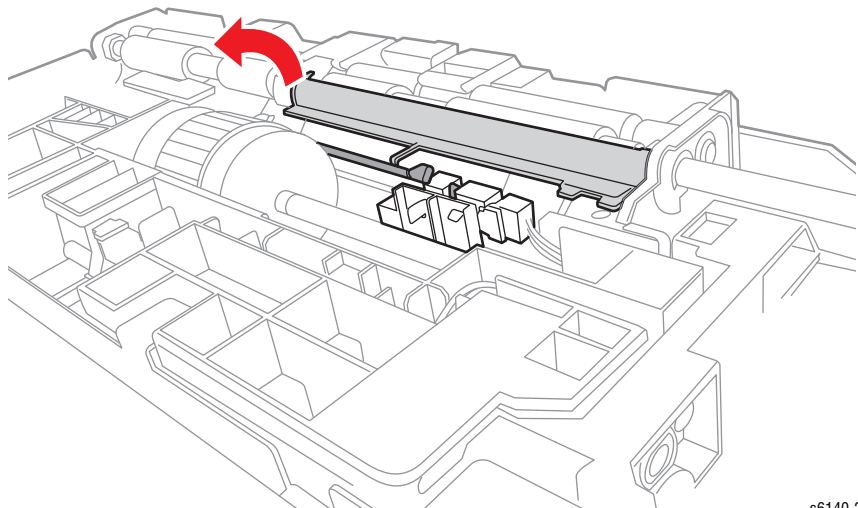
s6140-233

4. Remove the E-rings that secure the Registration Roller at both ends using a miniature screwdriver. Push the metal registration roller forward and remove the Gear and bearings from the shaft.

Registration Out Actuator

Metal Registration Roller
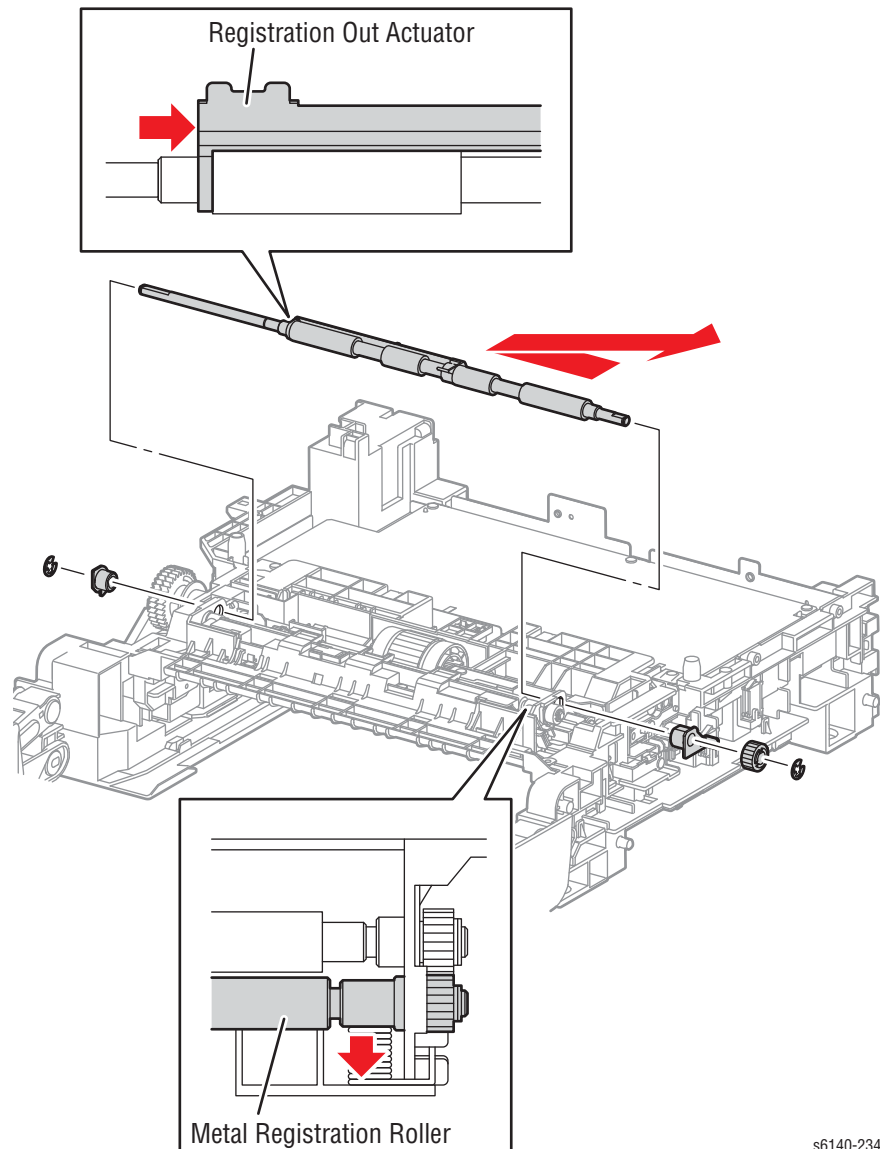
s6140-234

5. Shift the Registration Roller left to remove the shaft from the Feeder Assembly together with the Registration Actuator Out and Registration Roller Actuator.

Registration Sensor Actuator

PL3.2.11

1. Remove the Upper Frame Assembly (page 8-38).
2. Remove the Registration Roller (page 8-46).
3. Release the left side of the Registration Sensor Actuator from the hook on the chute up.
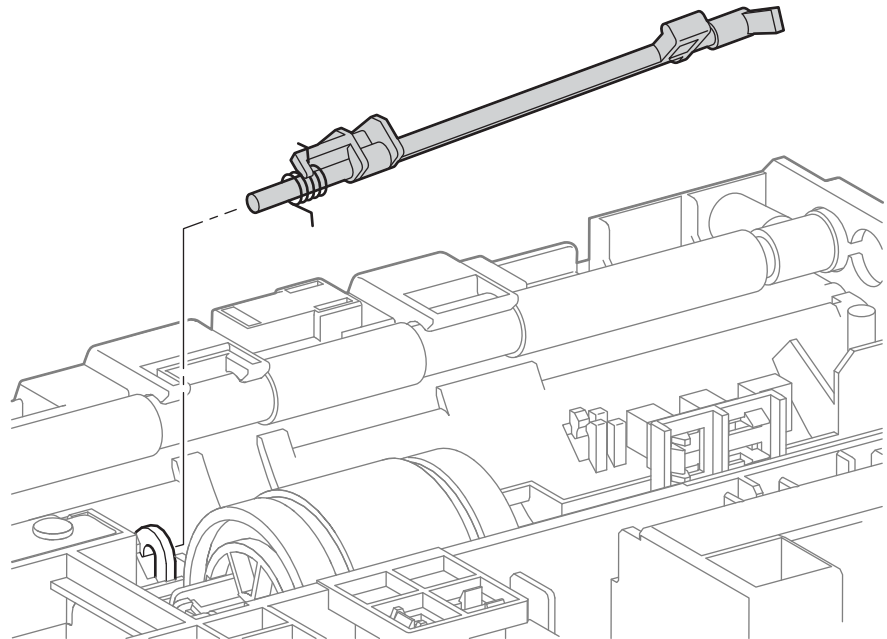
s6140-235

4. Remove the actuator and spring by removing the right end of the shaft from the hole of the chute up.
5. Remove the spring from the Registration Sensor Actuator.

Replacement Note

Install the spring on the actuator before replacing the actuator in the feeder.

Manual Feed No Paper Sensor

PL3.2.13

1. Remove Tray 1.
2. Open the Front Cover.
3. Lower the Transfer Belt.
4. Remove the Imaging Unit (page 8-7).
5. Remove 2 screws (silver, tap, 8mm) that secure the bracket.
6. Lift the bracket to release 2 bosses that align the bracket in the chute.
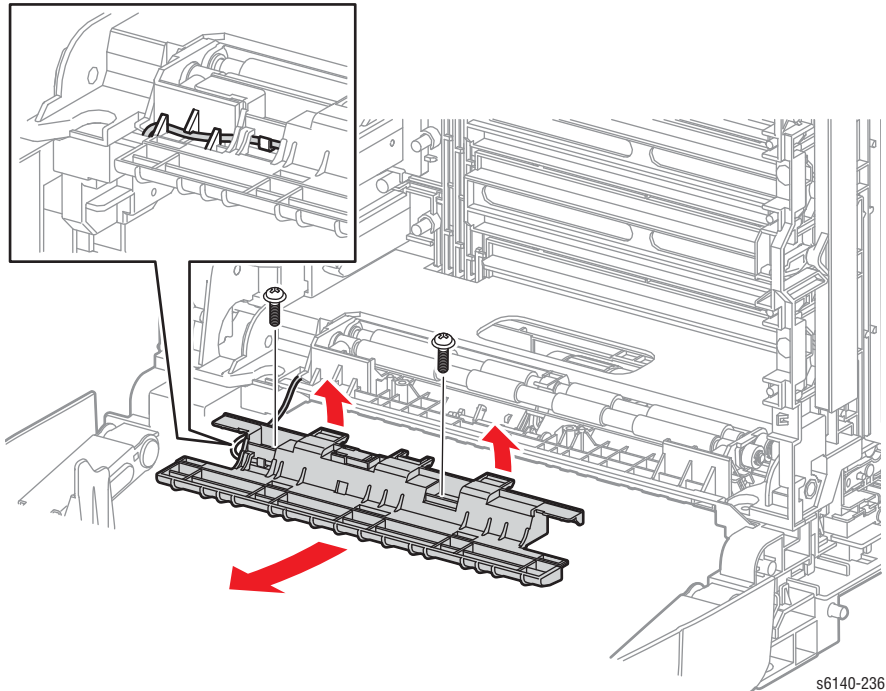
s6140-236

7. Raise and latch the Transfer Belt and remove the bracket.
8. Release 3 hooks that secure the sensor to the bracket. Release the harness wires from the restraint on the bracket and set the bracket aside.
9. Unplug the sensor from the harness connector (P/J233).

Replacement Note

When installing a new sensor:

1. Plug the sensor into harness connector.
2. Install the sensor into the bracket. Tip: insert the end hook first, then snap the side hooks in place.
3. Route the harness wires into the restraint in the bracket.
4. Set the bracket in place and secure it with the two screws.

Tray 1 No Paper Sensor

PL3.2.13

1. Remove the Upper Frame Assembly (page 8-38).
2. Release the three hooks that secure the Tray No Paper Sensor to the Feeder and remove the sensor.
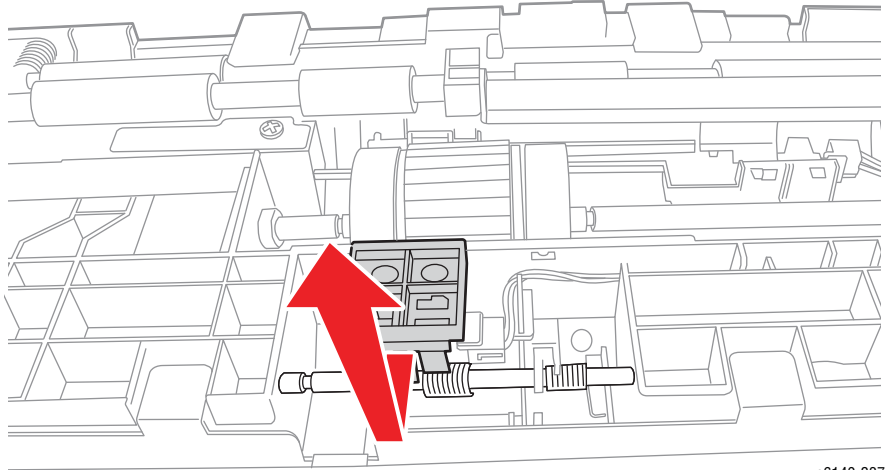
s6140-237

3. Disconnect P/J234 from the sensor.

Registration Sensor

PL3.2.13

Caution

The Registration Actuator Out is spring-loaded by a small spring located under the actuator.

1. Remove the Upper Frame Assembly (page 8-38).
2. Release the hook on the Registration Actuator Out and shift the Registration Roller Actuator to the right side.
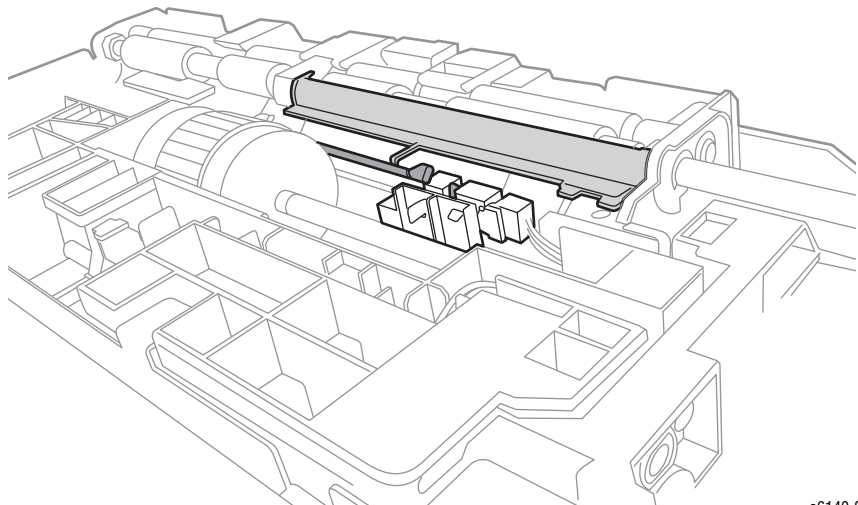
s6140-232

3. Release the Registration Actuator Out from the hook on the Chute Up, then open the Registration Actuator Out.
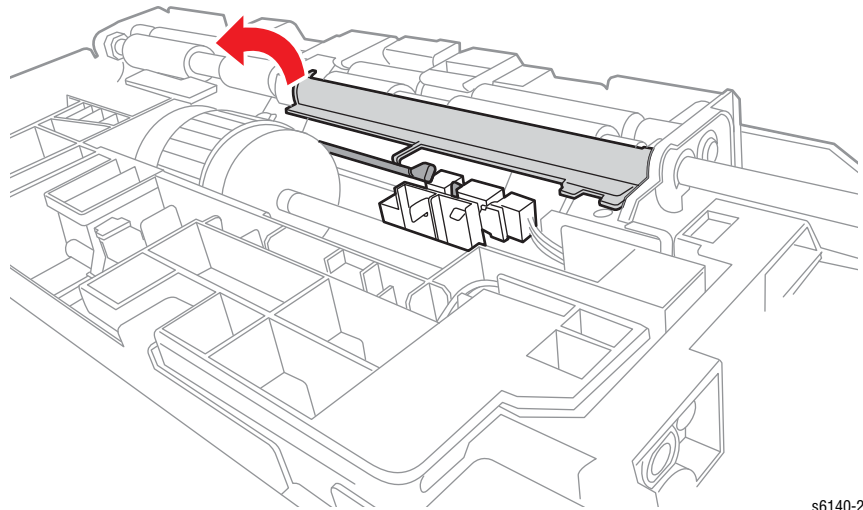
s6140-233

4. Release 3 hooks that secure the Registration Sensor to the Feeder Assembly and remove the sensor.
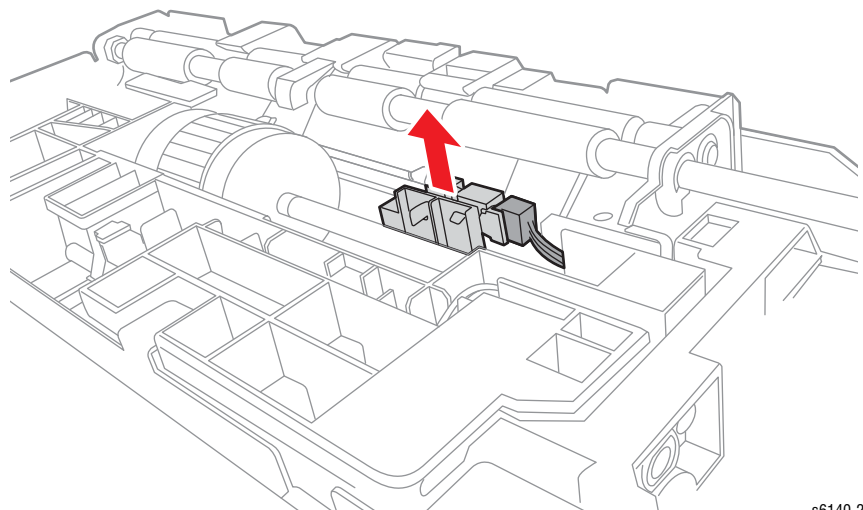
s6140-238

5. Disconnect P/J232 from the Registration Sensor.

Manual Feed Sensor Actuator

PL3.2.14

1. Open the Front Cover.
2. Lower the Transfer Belt.
3. Remove the Imaging Unit (page 8-7).
4. Raise and latch the Transfer Belt.
5. Remove 2 screws (silver, tap, 8mm) that secure the bracket.
6. Lift the bracket to release 2 bosses that align the bracket in the chute.
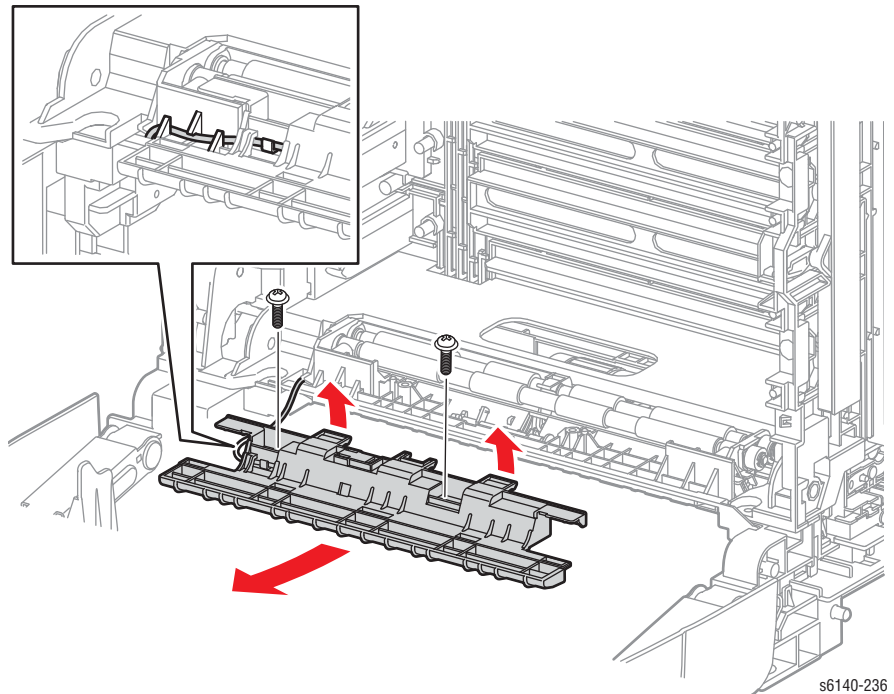
s6140-236

7. Raise and latch the Transfer Belt and remove the bracket.

8. Remove the actuator and spring by removing the right end of the shaft from the hole in the chute.
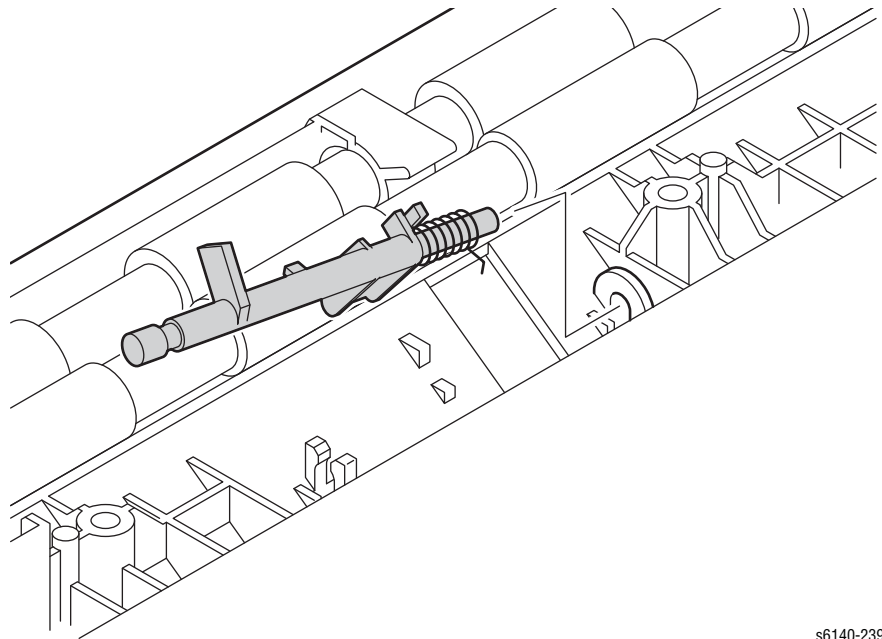
s6140-239

Replacement Note

Note the orientation of the spring on the actuator.

Tray No Paper Sensor Actuator

PL3.2.32

1. Remove the Upper Frame Assembly (page 8-38).

2. Remove the Tray 1 No Paper Sensor (page 8-50).

3. Release the right end of the actuator shaft from the hole in the chute up using a miniature screwdriver.
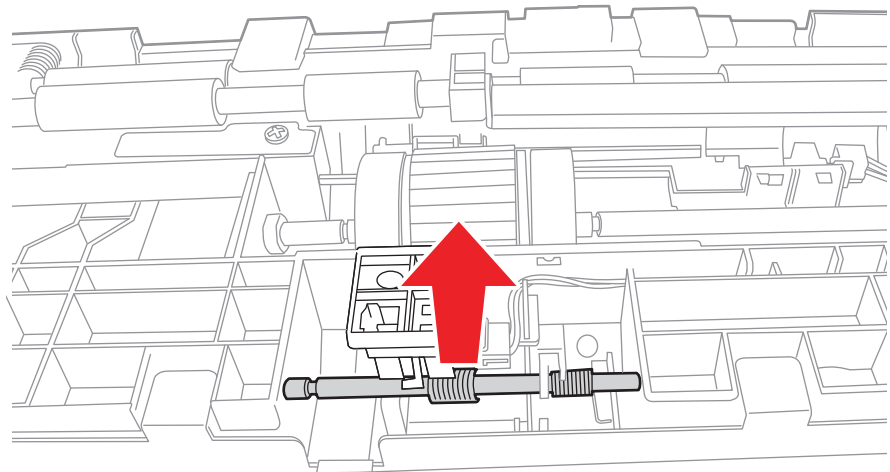
s6140-240

4. Remove the actuator and spring from the hole in the left side of the chute up.

5. Remove the spring from the actuator.

Xerographics

Laser Unit

PL 4.1.99

1. Remove Tray 1.
2. Open the Front Cover.
3. Lower the Transfer Belt.
4. Remove the Imaging Unit (page 8-7).
5. Remove the Fuser (page 8-10).
6. Remove the Rear Tray Cover (page 8-17).
7. Remove the Right Side Door (page 8-19).
8. Remove the Right Side Cover (page 8-18).
9. Remove the Left Side Cover (page 8-20).
10. Remove the Rear Cover (page 8-16).
11. Remove the Top Cover (page 8-14).
12. Raise the Transfer Belt and latch in the upright position.
13. Remove the IP Board Card Cage (page 8-106).
14. Remove the LVPS (page 8-91).
15. Remove the MCU Board (page 8-103).
16. Remove 1 screw (silver, with washer, 6mm) that secures the GFI ground harness to the chassis.
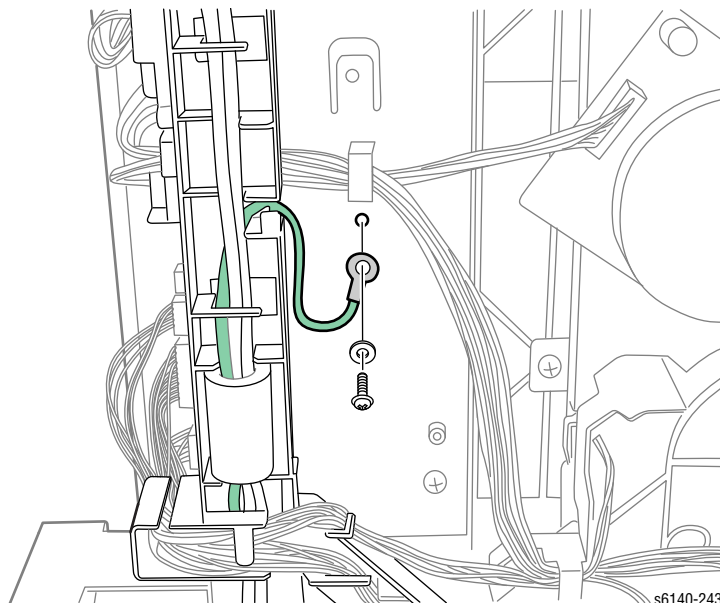
s6140-243

17. Disconnect the Power Switch Harness from the LVPS (P/J48), then release 1 hook that secures the AC harness guide to the chassis.

Hook

P/J48
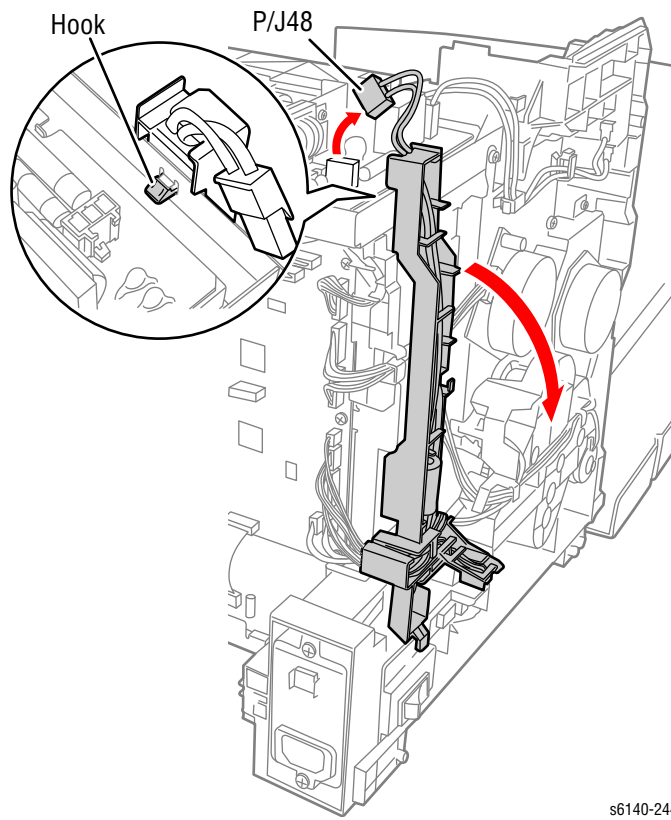
s6140-244

18. Remove 2 screws (silver, 6mm) that secure the Right MCU Board bracket to the chassis and remove the bracket
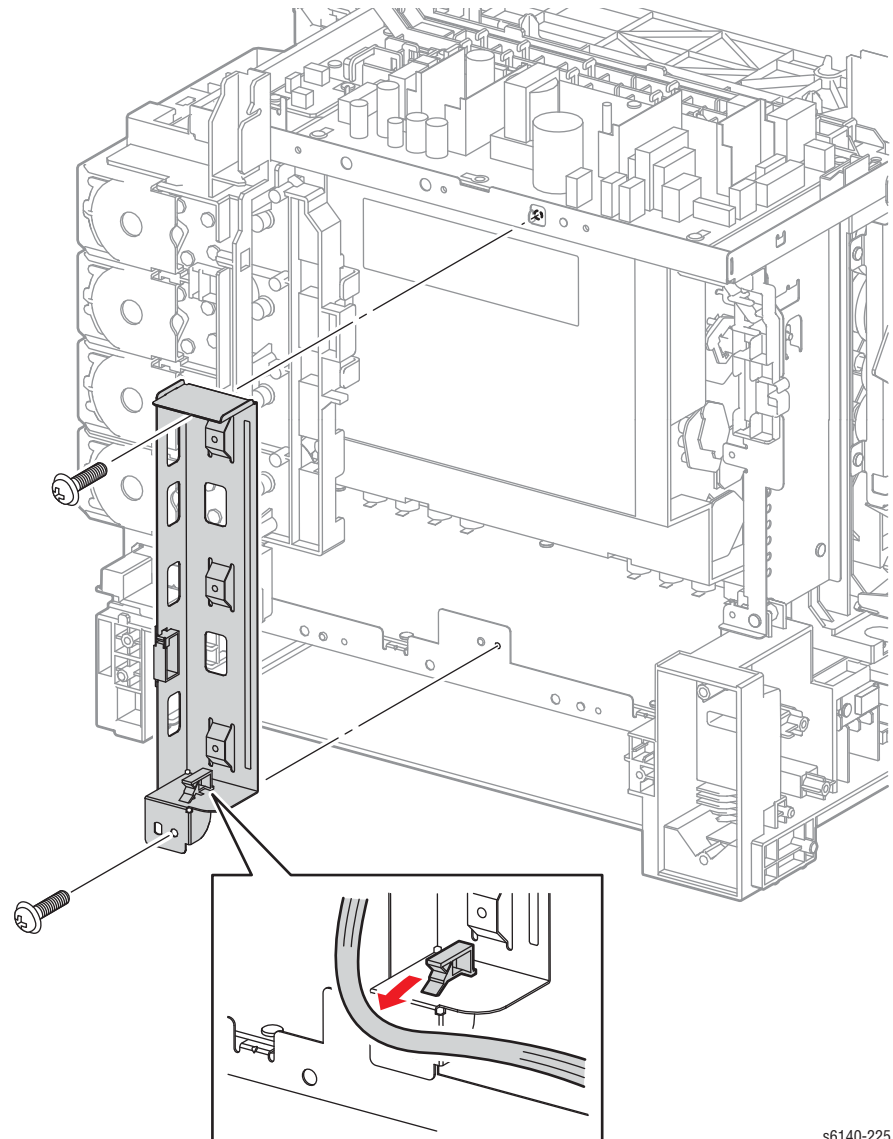
s6140-225

19. Remove the Fuser and Interlock Switch harnesses from the guide.
20. Release the 4 hooks to remove the guide from the LVPS Frame.
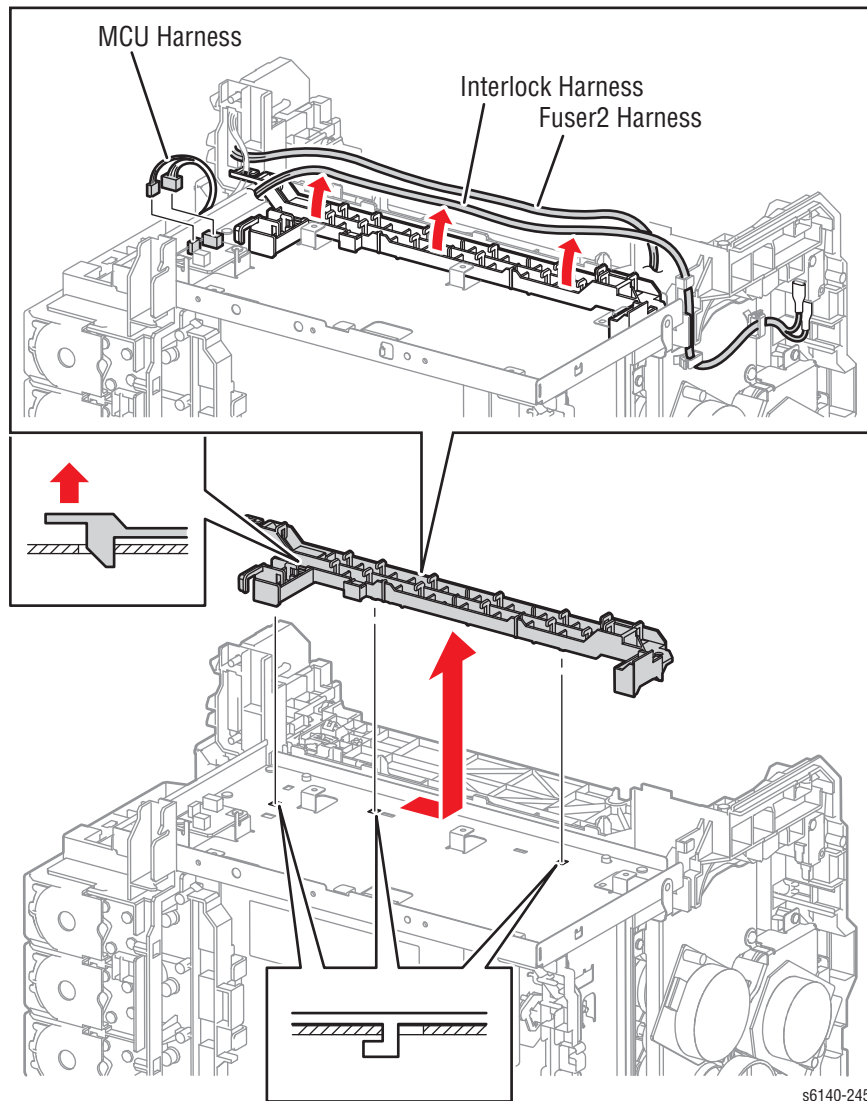
s6140-245

21. Remove 3 screws (silver, M4, 6mm) and 6 screws (silver, tap, 8mm) that secure the LVPS Frame to the chassis.

Silver, M4, 6mm

Silver, M4, 6mm
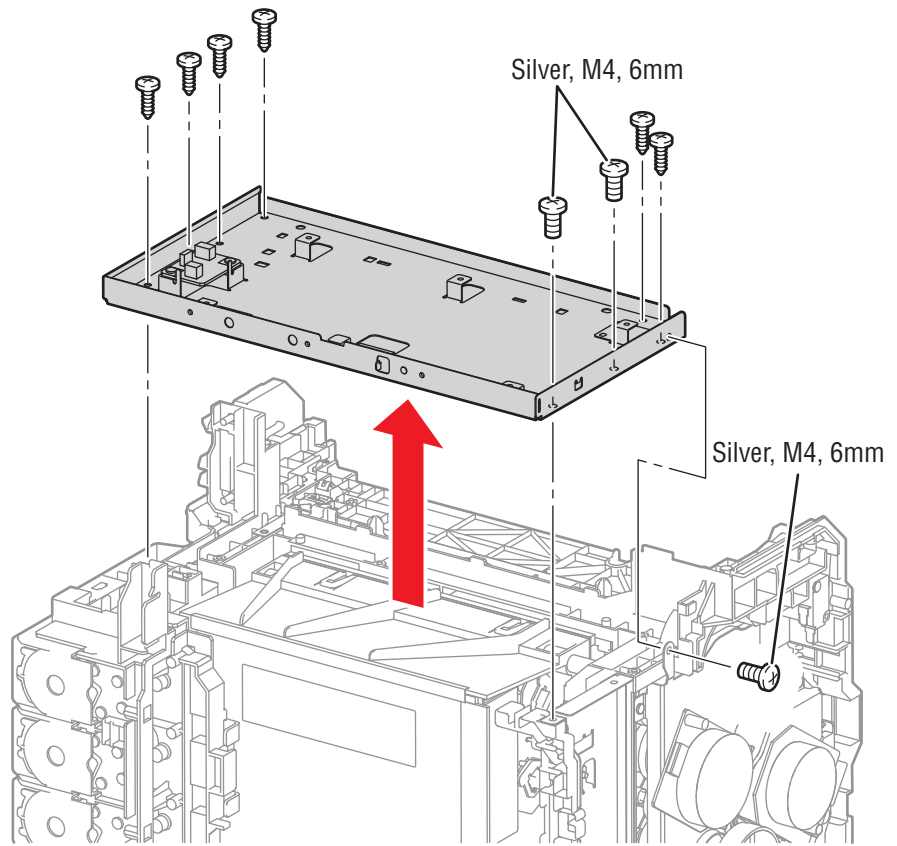
s6140-246

22. Disconnect the 2 Laser Unit harnesses from the Laser Unit (P/J411 and P/J412).

P/J412

P/J411
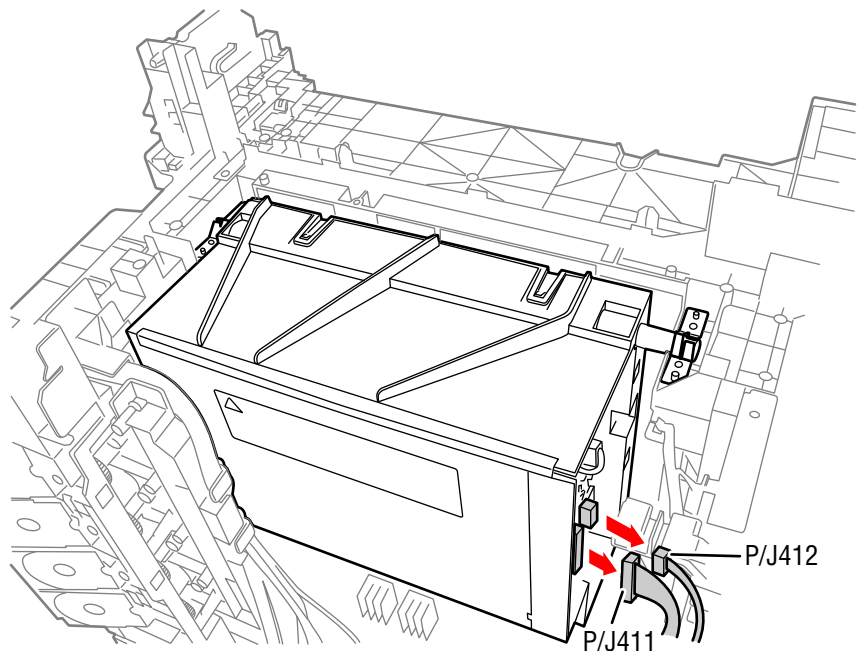
s6140-247

23. Remove 4 screws (silver, tap, 8mm) that secure the Left and Right springs, then lift the Laser Unit from the chassis.
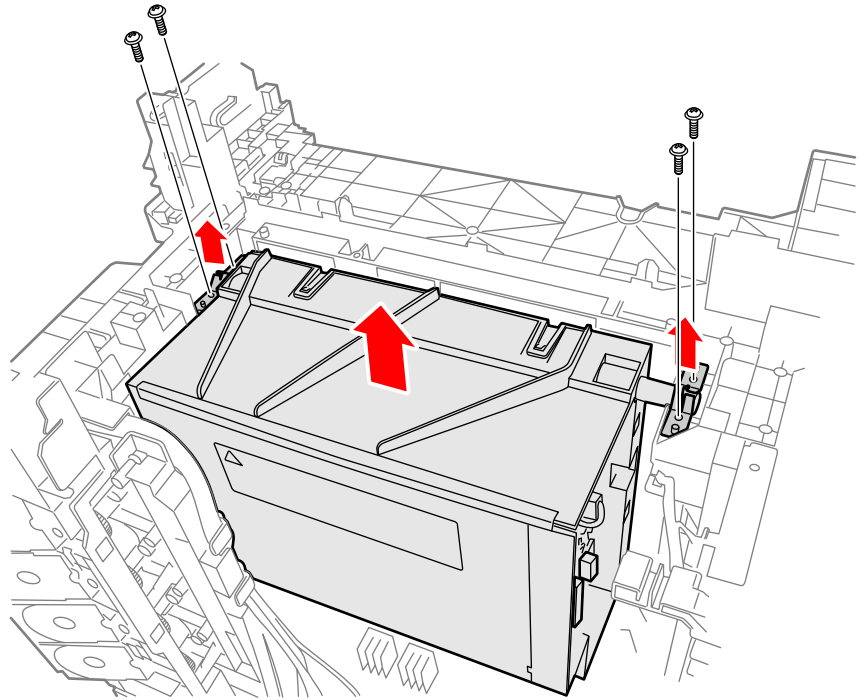
s6140-248

Right Imaging Unit Restraint Block

PL4.1.97

Note

The following procedure applies to both the upper and lower Right Imaging Unit Restraint Blocks.

1. Remove Tray 1.
2. Open the Front Cover.
3. Lower the Transfer Belt.
4. Remove the Imaging Unit (page 8-7).
5. Raise the Transfer Belt and latch in the upright position.
6. Remove the Left Side Cover (page 8-20).
7. Remove the Rear Cover (page 8-16).
8. Remove the Right Side Cover (page 8-18).
9. Remove the Erase LED Assembly (page 8-63).
10. Use a miniature screwdriver to release the hook on the Imaging Unit Restraint Block.
11. Remove the Imaging Unit Restraint Block.
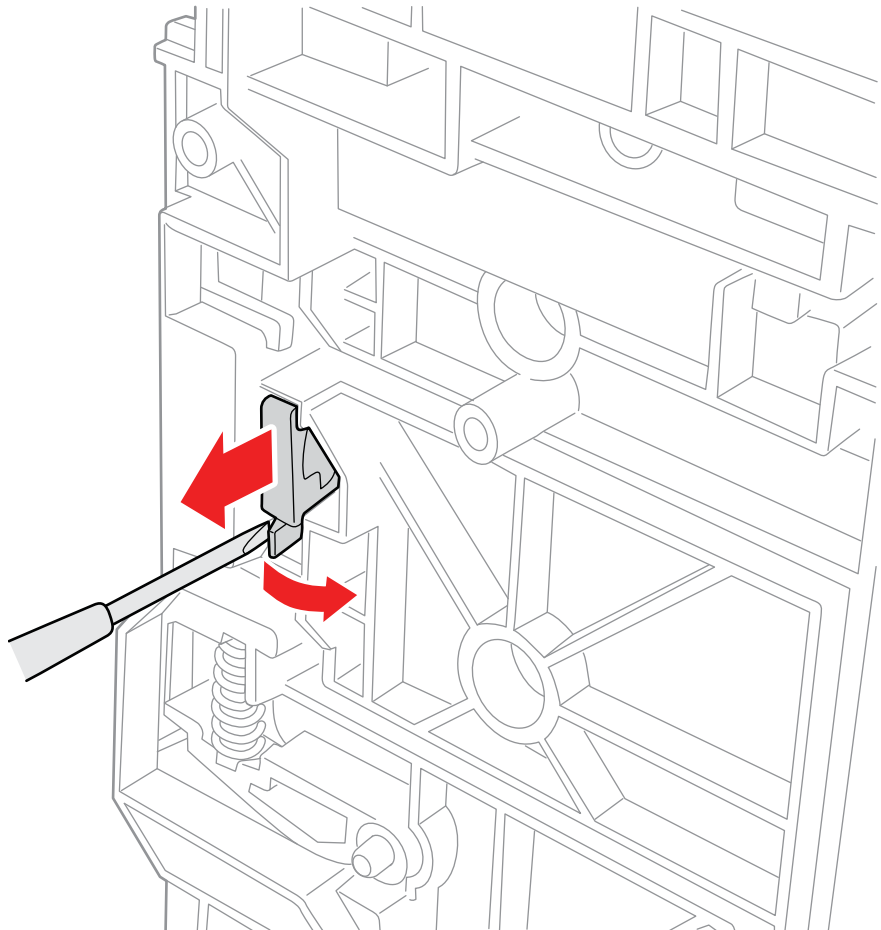
s6140-249

12. Remove the Imaging Unit Spring.

13. Rotate the Imaging Unit Lever slightly and remove it.
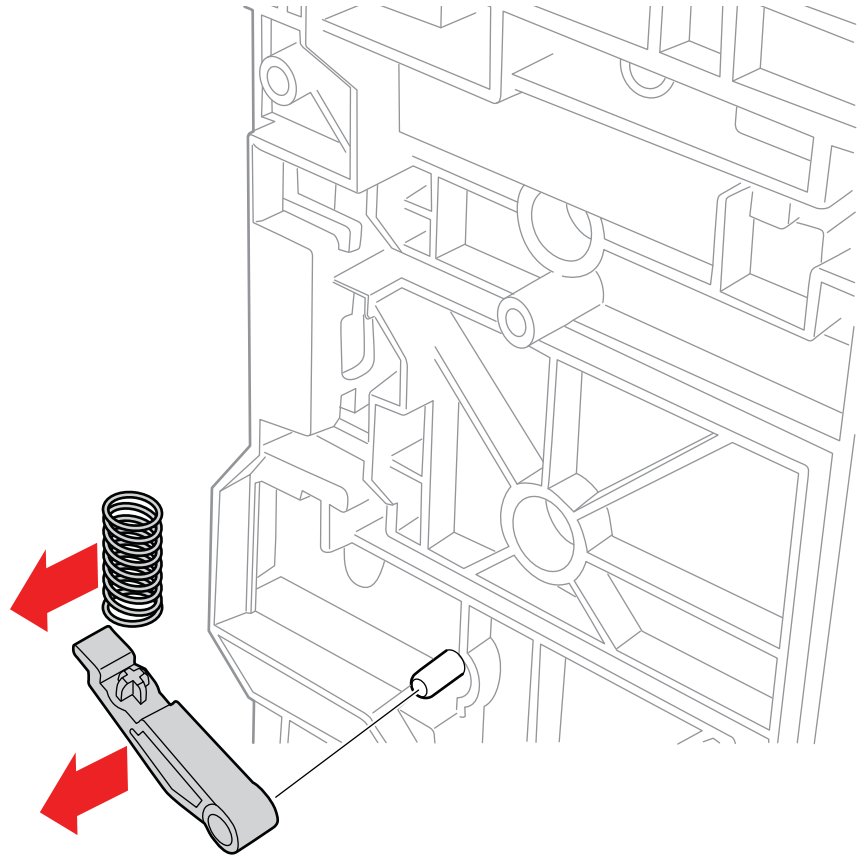
s6140-250

Left Imaging Unit Restraint Block

PL 4.1.98

1. Remove Tray 1.

2. Open the Front Cover.

3. Lower the Transfer Belt.

4. Remove the Imaging Unit (page 8-7).

5. Raise the Transfer Belt and latch in the upright position.

6. Remove the Left Side Cover (page 8-20).

7. Remove the Main Drive Assembly (page 8-81).

8. Use a miniature screwdriver to release the hook on the Imaging Unit Restraint Block.
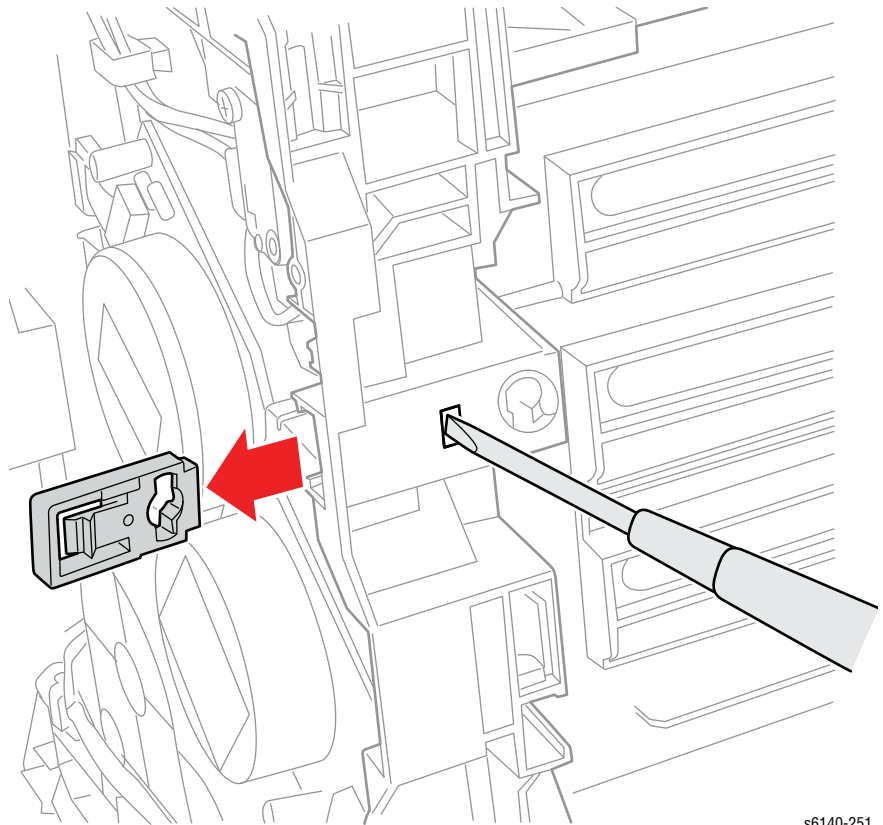
s6140-251

9. Remove the Imaging Unit Restraint Block.

10. Remove the Imaging Unit Spring.

11. Rotate the Imaging Unit Lever slightly and remove it.
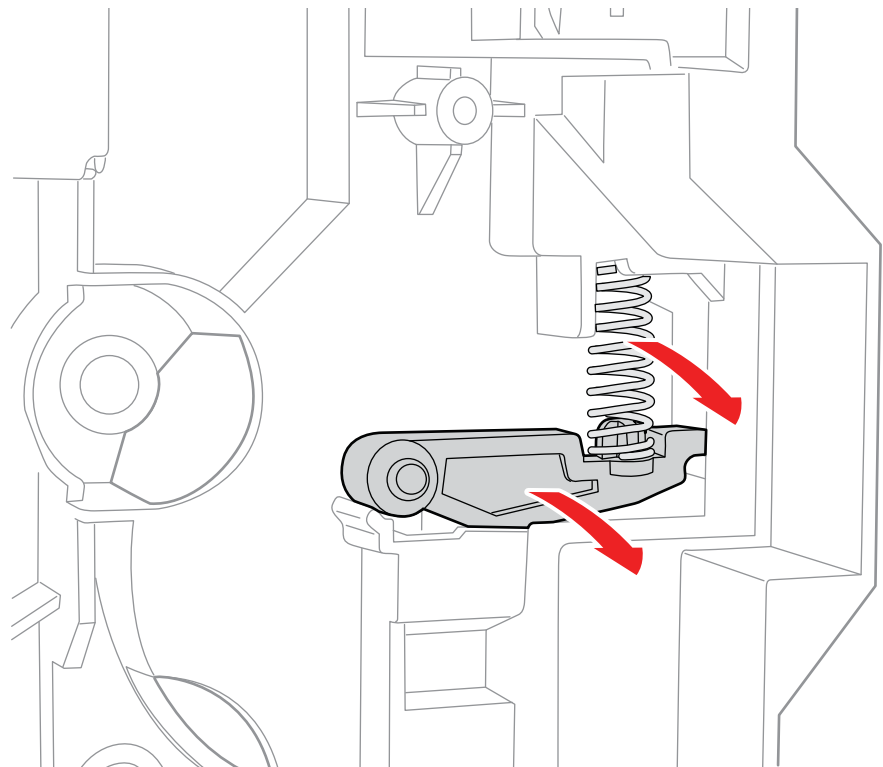
s6140-252

Erase LED Assembly

PL4.1.8

1. Open the Front Cover.
2. Remove the right Side Door (page 8-19).
3. Remove the Right Side Cover (page 8-18).
4. Remove the two screws (silver, tap, 8mm) that secure the Erase LED Assembly to the chassis.
5. Disconnect P/J141 to remove the Erase LED Assembly.
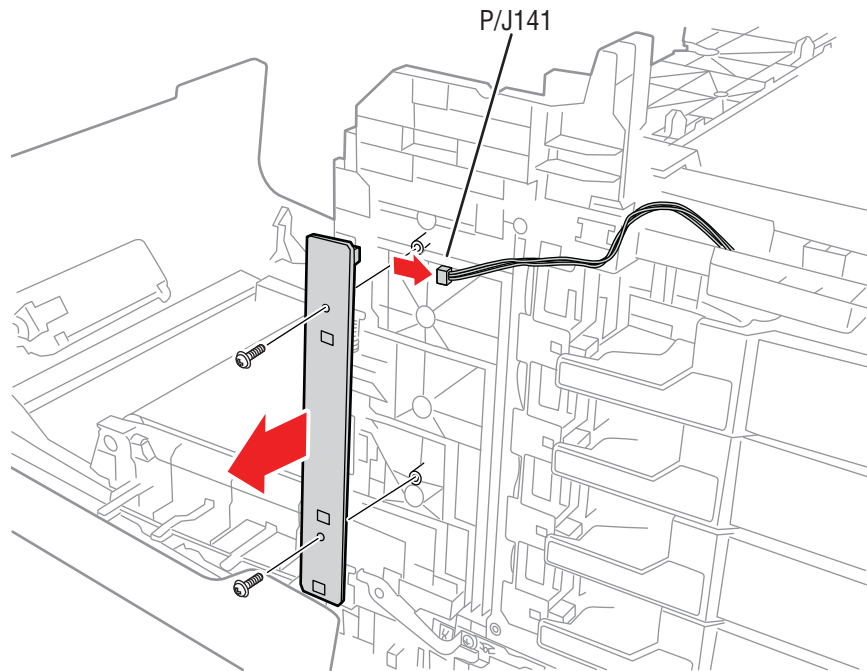
s6140-253

Dispense Assembly

PL5.1.1

1. Remove Tray 1.
2. Open the Front Cover.
3. Lower the Transfer Belt.
4. Remove the Imaging Unit (page 8-7).
5. Remove the Fuser (page 8-10).
6. Remove the Rear Tray Cover (page 8-17).
7. Remove the Right Side Door (page 8-19).
8. Remove the Right Side Cover (page 8-18).
9. Remove the Left Side Cover (page 8-20).
10. Remove the Rear Cover (page 8-16).
11. Raise the Transfer Belt and latch in the upright position.
12. Remove the Top Cover (page 8-14).
13. Remove 4 Toner Cartridges (page 8-12).
14. Remove 4 Toner Cartridge Holders (page 8-74).
15. Remove the IP Board Card Cage (page 8-106).
16. Remove the MCU Board (page 8-103).
17. Remove 1 screw (silver, with washer, 6mm) that secures the GFI ground harness to the chassis.
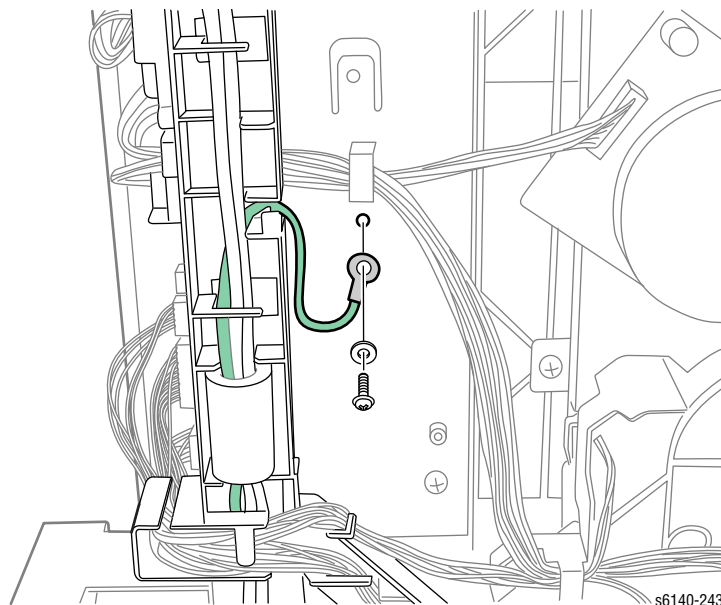
s6140-243

18. Disconnect the Power Switch Harness from the LVPS (P/J48), the release 1 hook that secures the AC harness guide to the chassis.
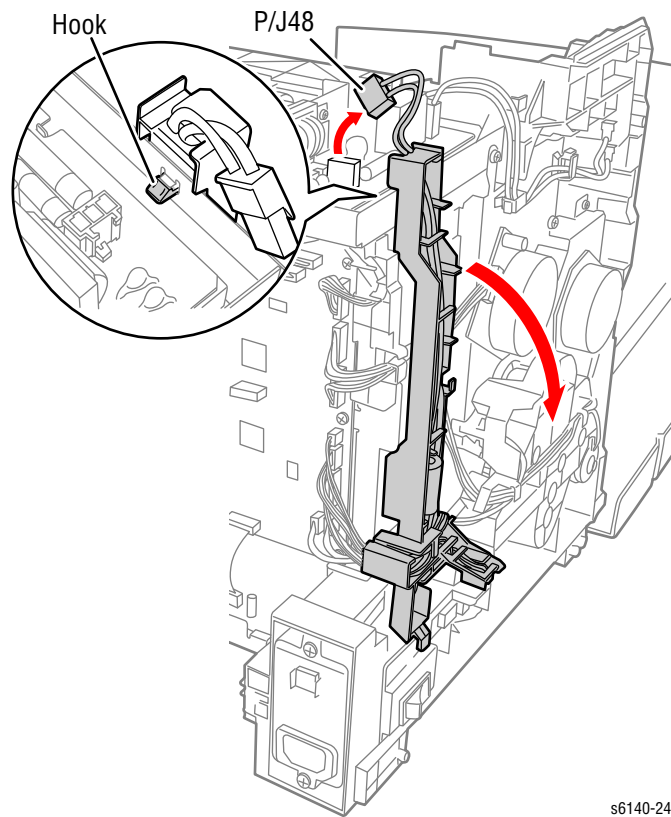
s6140-244

19. Remove 2 screws (silver, 6mm) that secure the Right MCU Board bracket to the chassis and remove the bracket
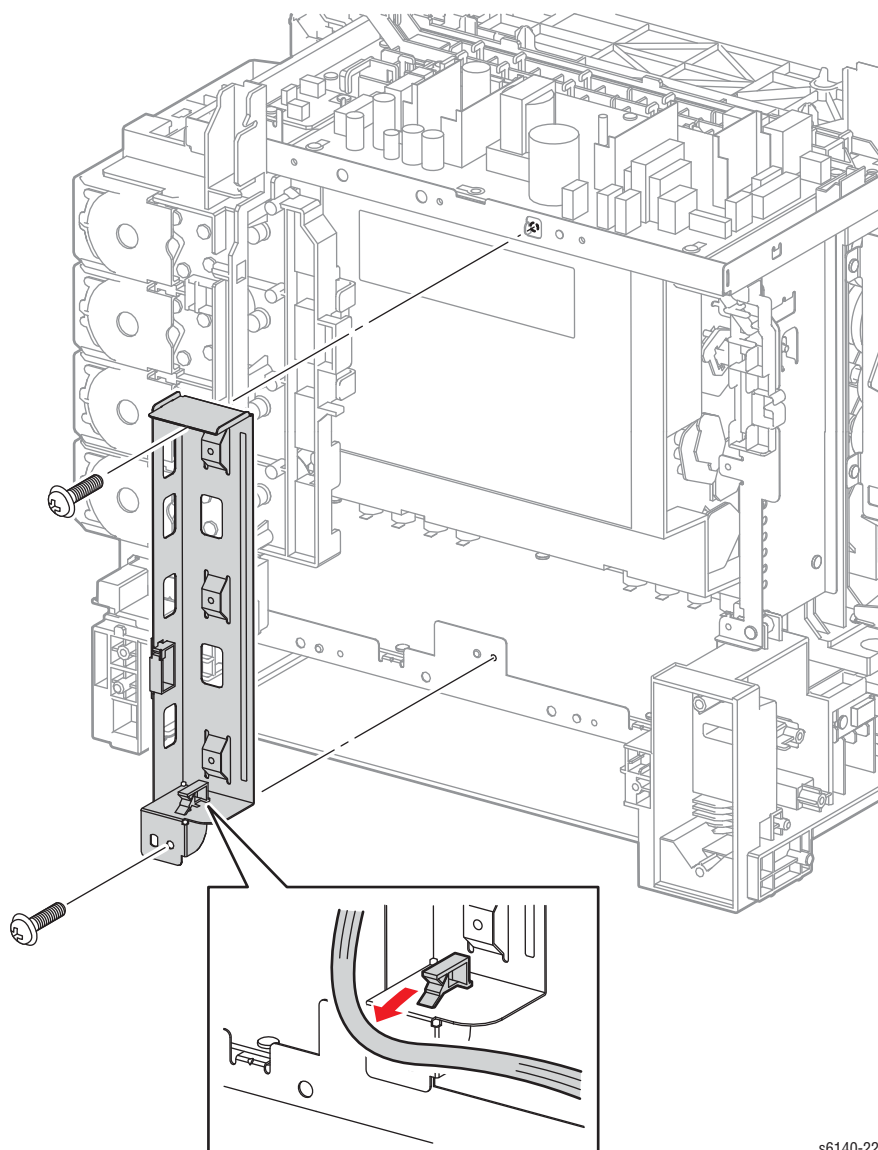
s6140-225

20. Remove the LVPS (page 8-91).

21. Remove the Fuser and Interlock Switch harnesses from the guide.
22. Release the 4 hooks to remove the guide from the LVPS Frame.
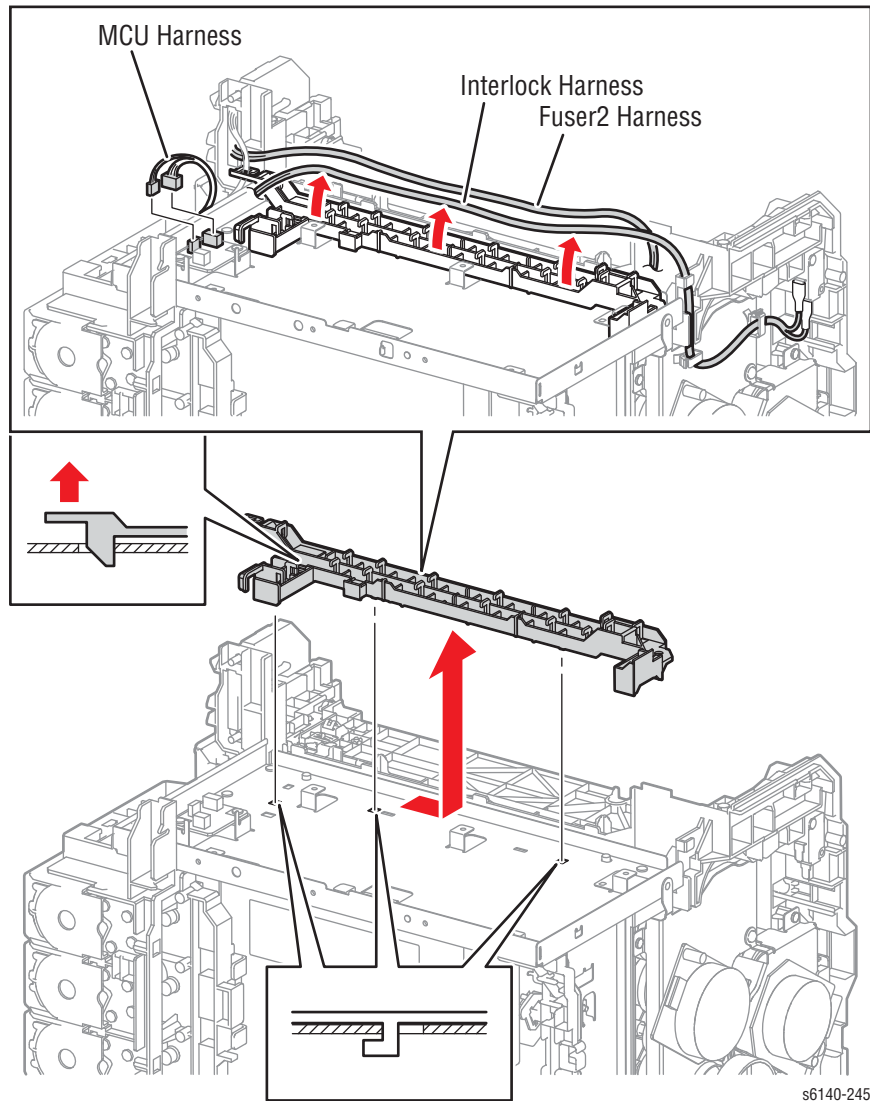
s6140-245

23. Remove 3 screws (silver, M4, 6mm) and 6 screws (silver, tap, 8mm) that secure the LVPS Frame to the chassis.

Silver, M4, 6mm

Silver, M4, 6mm

s6140-246
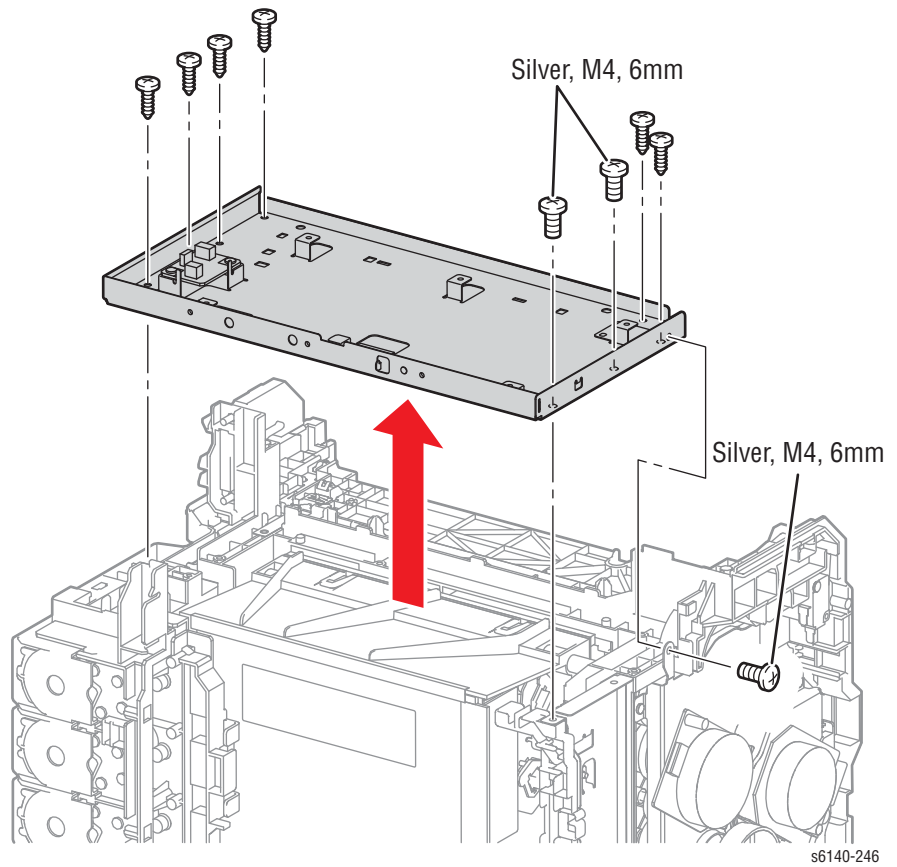
24. Release the hook of the connector of the MCU HAN Harness using a pliers, and then remove it from the Dispenser Assembly.

P/J5041

s6140-254
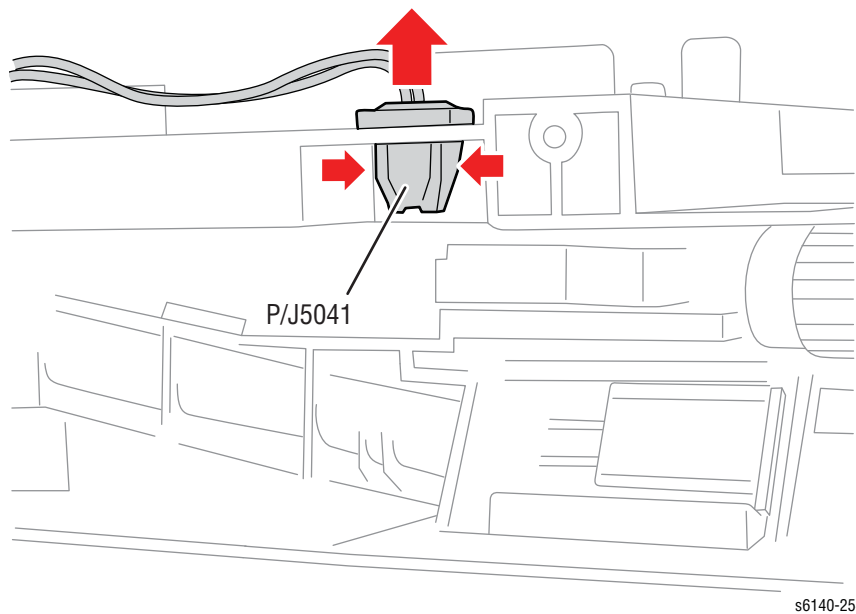
25. Remove all harnesses from the Dispense Assembly guides.

26. Remove the four screws (silver, tap, 8mm) that secures the Dispenser Assembly to the chassis.

27. Remove the screw (silver, 6mm) that secures the rear side of the Dispenser Assembly to the chassis.
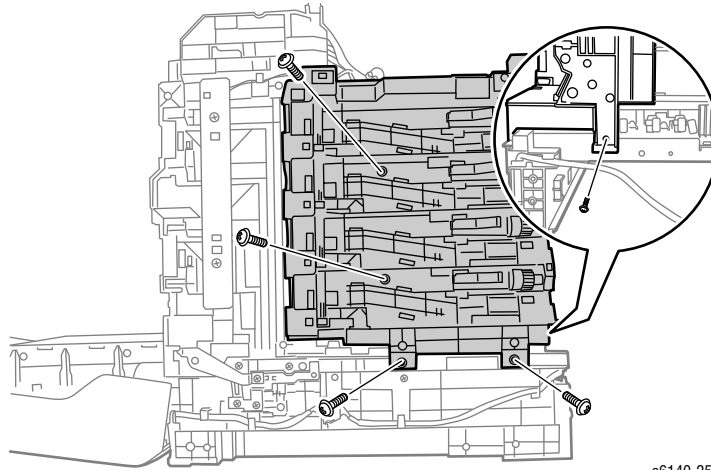
s6140-255

Replacement Note

Align the boss on the chassis with the hole in the Dispense Assembly before tightening the screws.

Boss
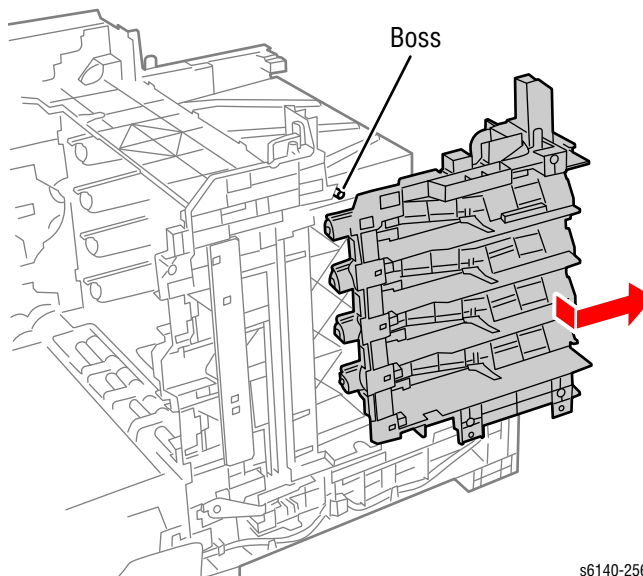
s6140-256

Toner Motor Frame Assembly

PL 5.1.2

1. Remove Tray 1.
2. Open the Front Cover.
3. Lower the Transfer Belt.
4. Remove the Imaging Unit (page 8-7).
5. Remove the Fuser (page 8-10).
6. Remove the Rear Tray Cover (page 8-17).
7. Remove the Right Side Door (page 8-19).
8. Remove the Right Side Cover (page 8-18).
9. Remove the Left Side Cover (page 8-20).
10. Remove the Rear Cover (page 8-16).
11. Raise the Transfer Belt and latch in the upright position.
12. Remove the Top Cover (page 8-14).
13. Remove 4 Toner Cartridges (page 8-12).
14. Remove 4 Toner Cartridge Holders (page 8-74).
15. Remove the IP Board Card Cage (page 8-106).
16. Remove the MCU Board (page 8-103).
17. Remove the Dispense Assembly (page 8-64).
18. Disconnect all the Toner Motor connectors and release all the harnesses from the Toner Motor Frame Assembly.

19. Remove 2 screws (silver, tap, 8mm) that secure the Toner Motor Frame Assembly to the Dispense Assembly at the side.
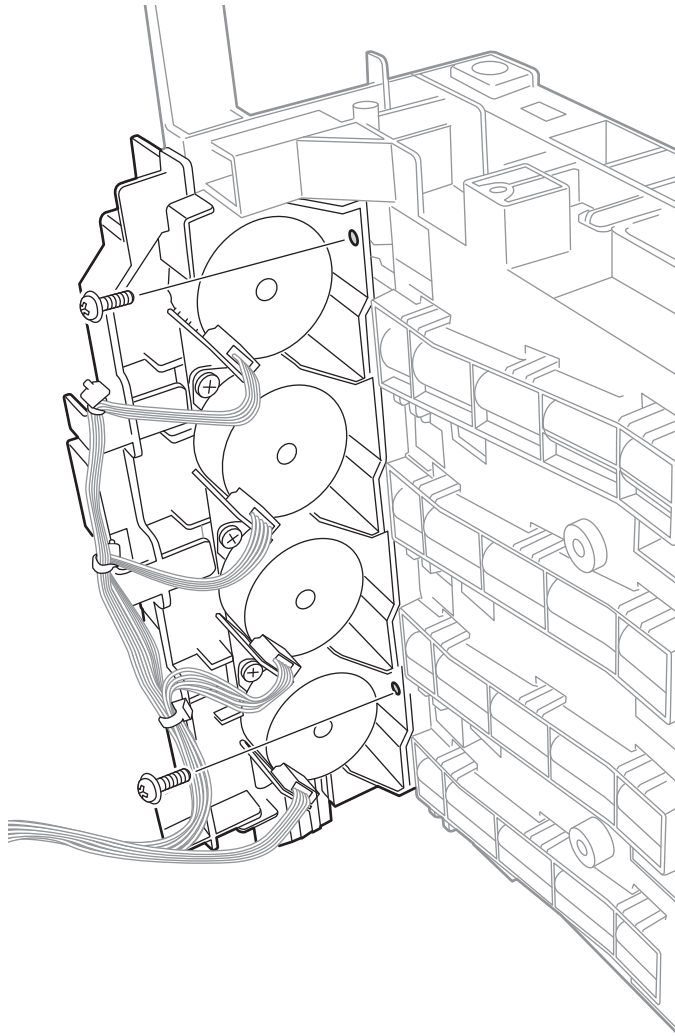
s6140-257

20. Remove 3 screws (silver, tap, 8mm) that secure the Toner Motor Frame Assembly to the Dispense Assembly at the back.
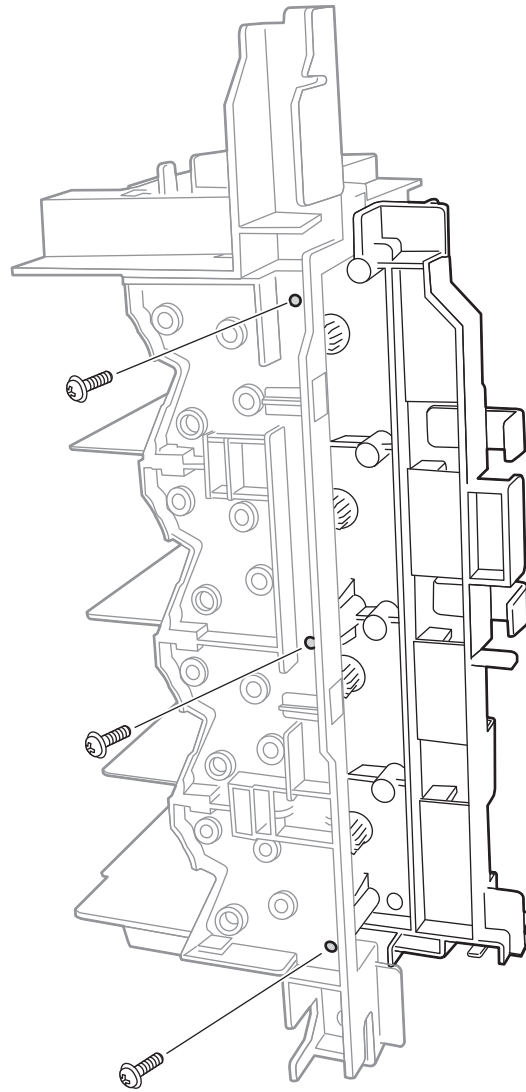
s6140-258

21. Release the toner motor conductor from the hook of the Dispense Assembly.

Toner Motor Conductor Hook
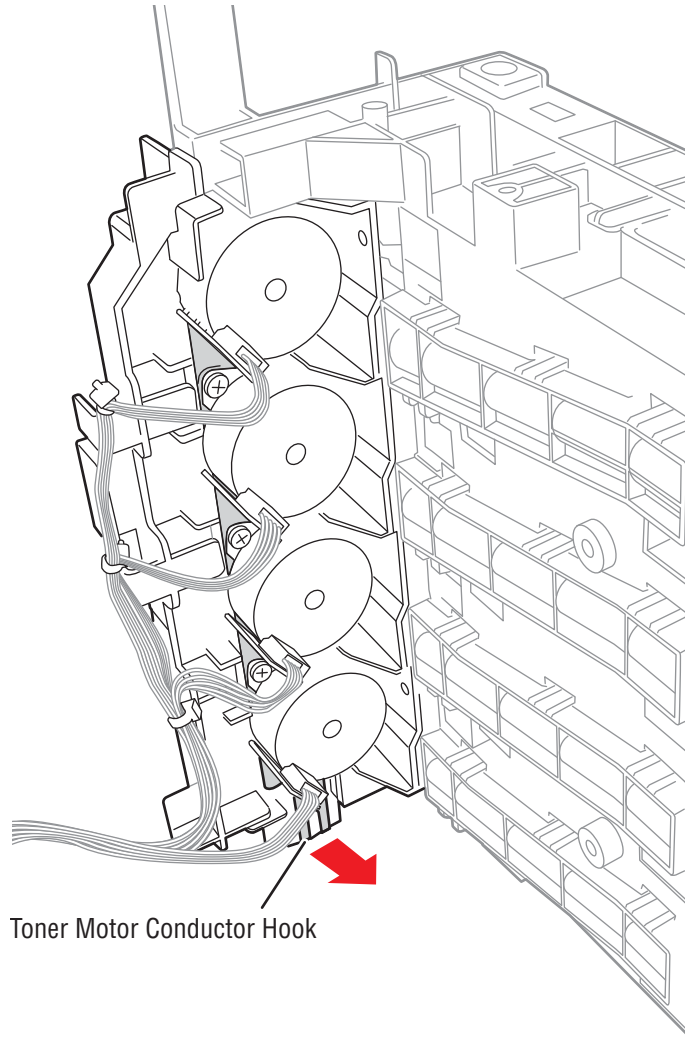
s6140-259

Note

The auger drive gears are not captive to the toner motor frame assembly.

22. Separate the toner motor frame assembly from the Dispense Assembly.

Toner Cartridge Holders

PL 5.1.17~20

Note

The following procedure applies to all four Toner Cartridge Holders.

1. Remove Tray 1.
2. Open the Front Cover.
3. Remove the Rear Tray Cover (page 8-17).
4. Remove the Right Side Door (page 8-19).
5. Remove the Right Side Cover (page 8-18).
6. Remove the Rear Cover (page 8-16).
7. Remove the Toner Cartridges (page 8-12).
8. Squeeze the center of the Toner Cartridge Holder to release the hole of the Toner Cartridge Holder from the boss of the Dispenser Frame. Open the Toner Cartridge Holder by 90 degrees.
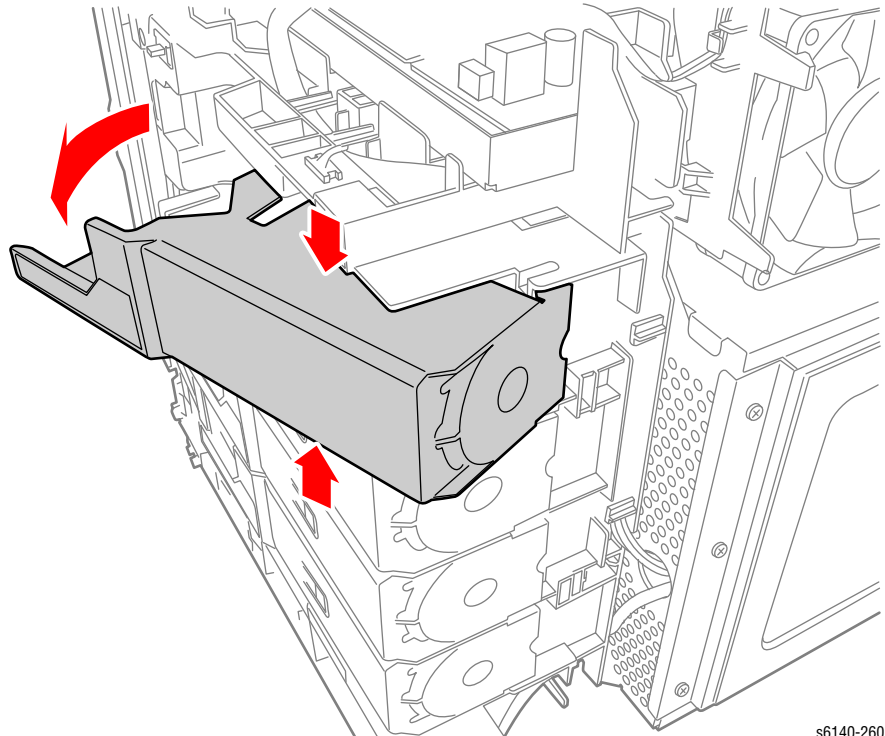
s6140-260

9. Press the boss part of the Toner Cartridge Holder, remove the Toner Cartridge Holder.
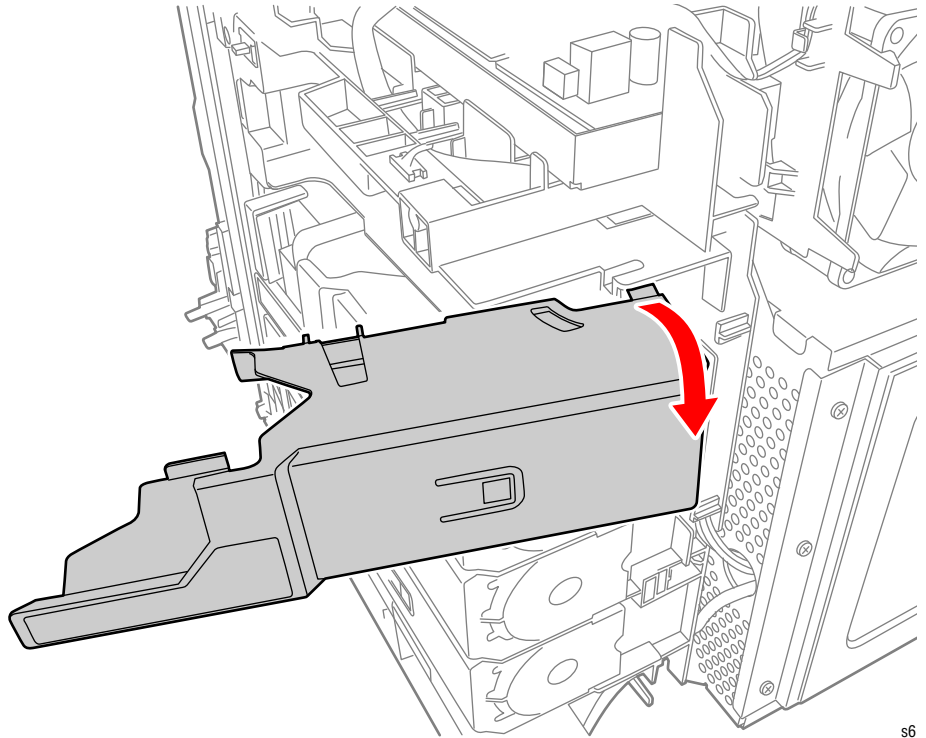
s6

Transfer Belt Pivot Kit

PL 6.1.99

This procedure removes the Transfer Belt pivot shafts.

1. Open the Front Cover.
2. Remove the Rear Tray Cover (page 8-17).
3. Remove the Right Side Door (page 8-19).
4. Remove the Right Side Cover (page 8-18).
5. Remove the Left Side Cover (page 8-20).
6. Rotate the Pivot Stopper to align the tabs of the Pivot Stopper with the notches of the Main Drive Assembly.
7. Remove the Pivot Stopper.
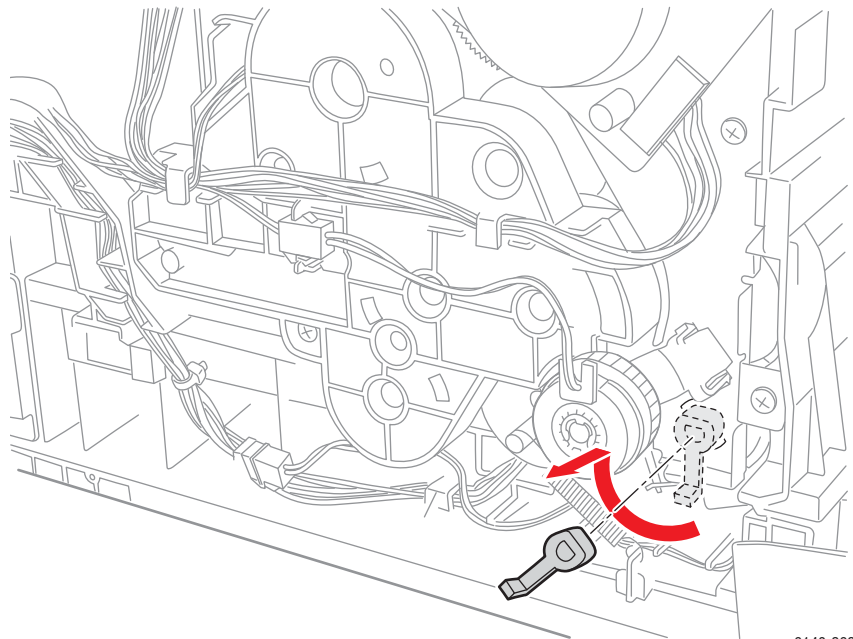
s6140-262

Note

> When performing the following procedure, take care not to drop Gear T4.

8. Pull out the Left Transfer Pivot, and remove the Gear T4.

Gear T4

s6140-263
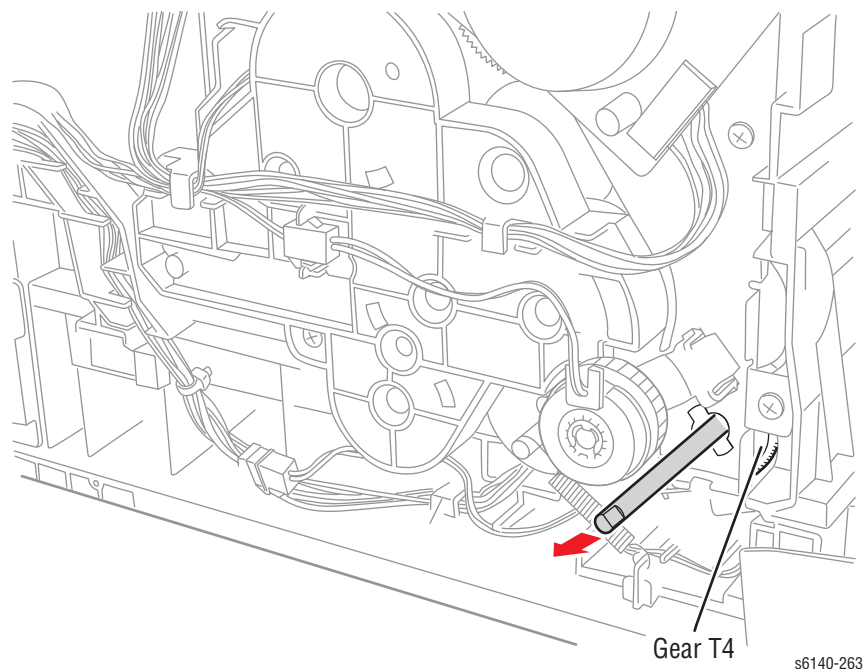
9. Remove the screw (silver, tap, 8mm) that attaches the Right Side Pivot Shaft to the printer.

   Note

   When performing the next step, keep the Transfer Belt slightly lifted to ease Pivot Shaft removal. If you are performing this procedure as part of the Transfer Belt removal, the only step remaining after removing the Right Pivot Shaft is to lift the Transfer Belt out of the printer.

10. Pull the Pivot Shaft out of the printer.
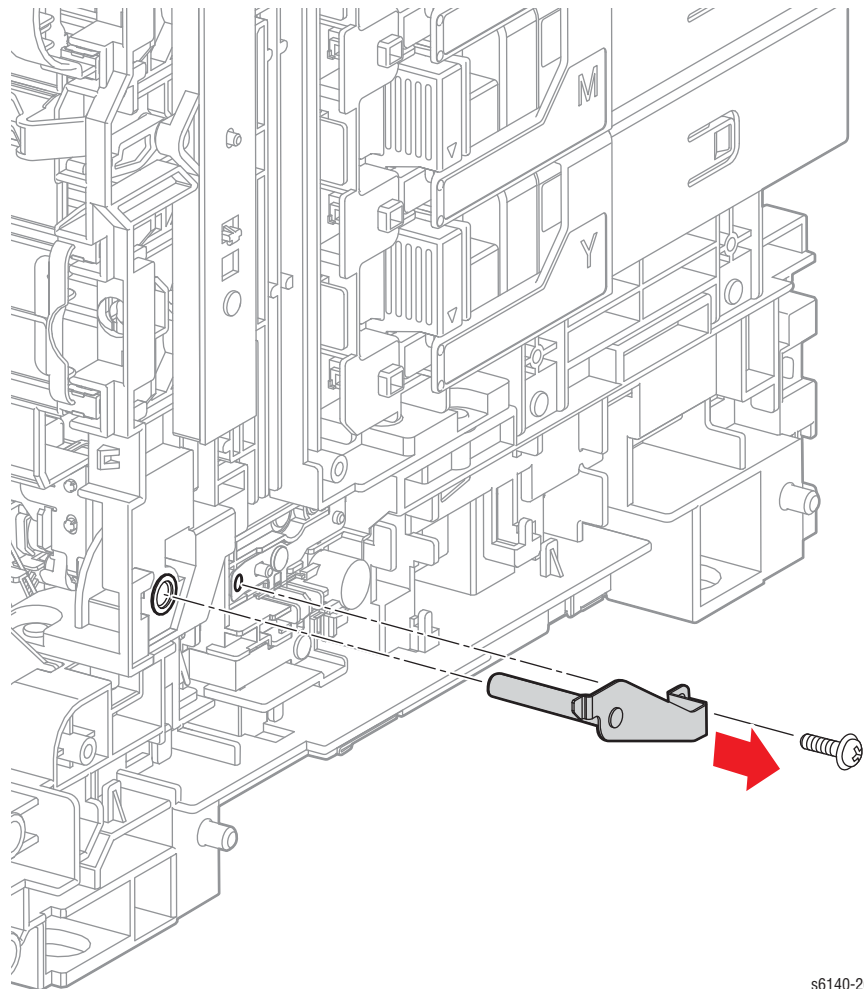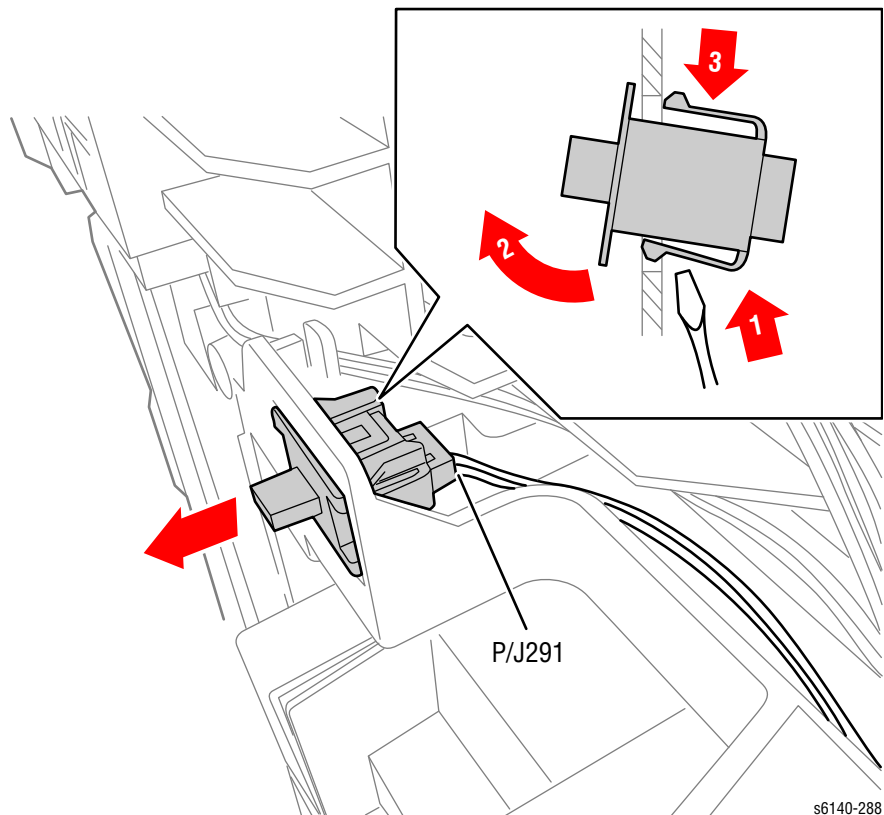
s6140-264

Transfer Belt

PL 6.1.7

Caution

Do not scratch the Transfer Belt surface.

1. Open the Front Cover.
2. Remove the Right Side Door (page 8-19).
3. Remove the Right Side Cover (page 8-18).
4. Remove the Left Side Cover (page 8-20).
5. Use a miniature screwdriver to release the harness 2 cover hooks, then remove the cover.
6. Release the harness from the Transfer Belt, then unplug the Transfer Belt connector (P/J281).

P/J281
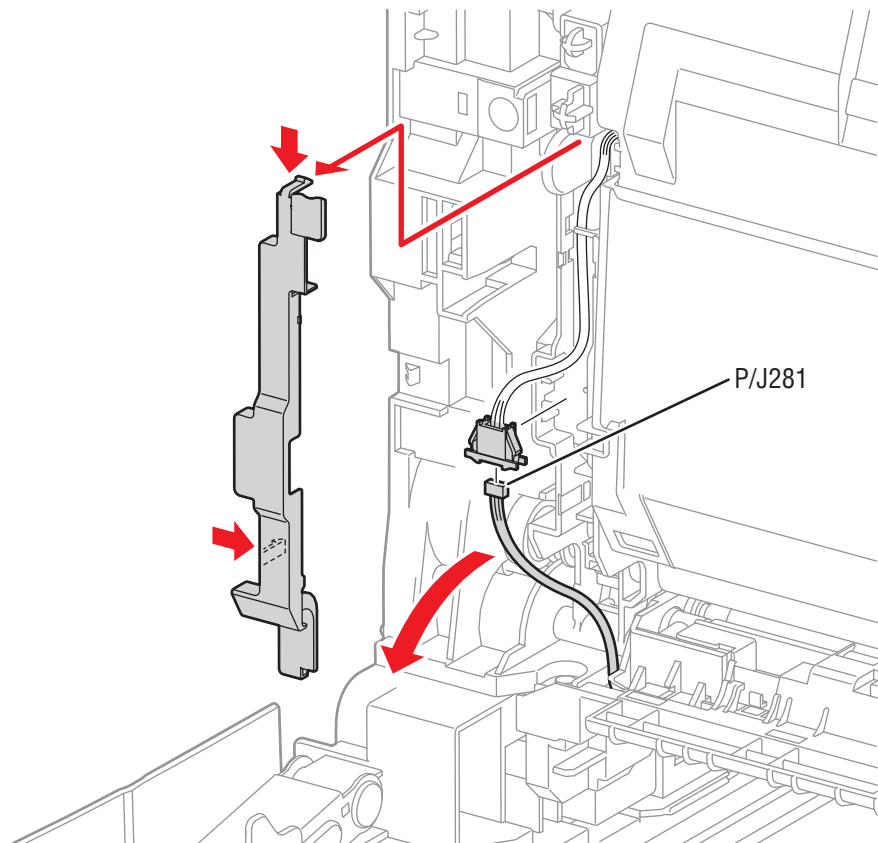
s6400-265

Note

Leave the relay connector on the Transfer Belt harness side.

7. Release the harness coming from printer from hook of the Transfer Belt.
8. Remove the Transfer belt Pivot Kit (page 8-76).

Replacement Note

Reset the Transfer Belt life counter after installing a new Transfer Belt.

Drive

Sub-Drive Assembly

PL 7.1.1

1. Open the Front Cover.
2. Remove the Left Side Cover (page 8-20).
3. Remove the Drive Clutch and Bearing Kit (page 8-34).
4. Remove the Feed Drive Assembly (page 8-84).
5. Remove Gear P2 (page 8-83).
6. Remove the Main Drive Assembly (page 8-81).
7. Remove the Interlock Harness from the clamps.
8. Disconnect P/J221 from the Sub-Drive Assembly.
9. Remove 1 screw (silver, M4, 6mm) and 4 screws (silver, tap, 8mm) that secure the Sub-Drive Assembly to remove the drive.

6mm

8mm

8mm

P/J221

8mm

8mm
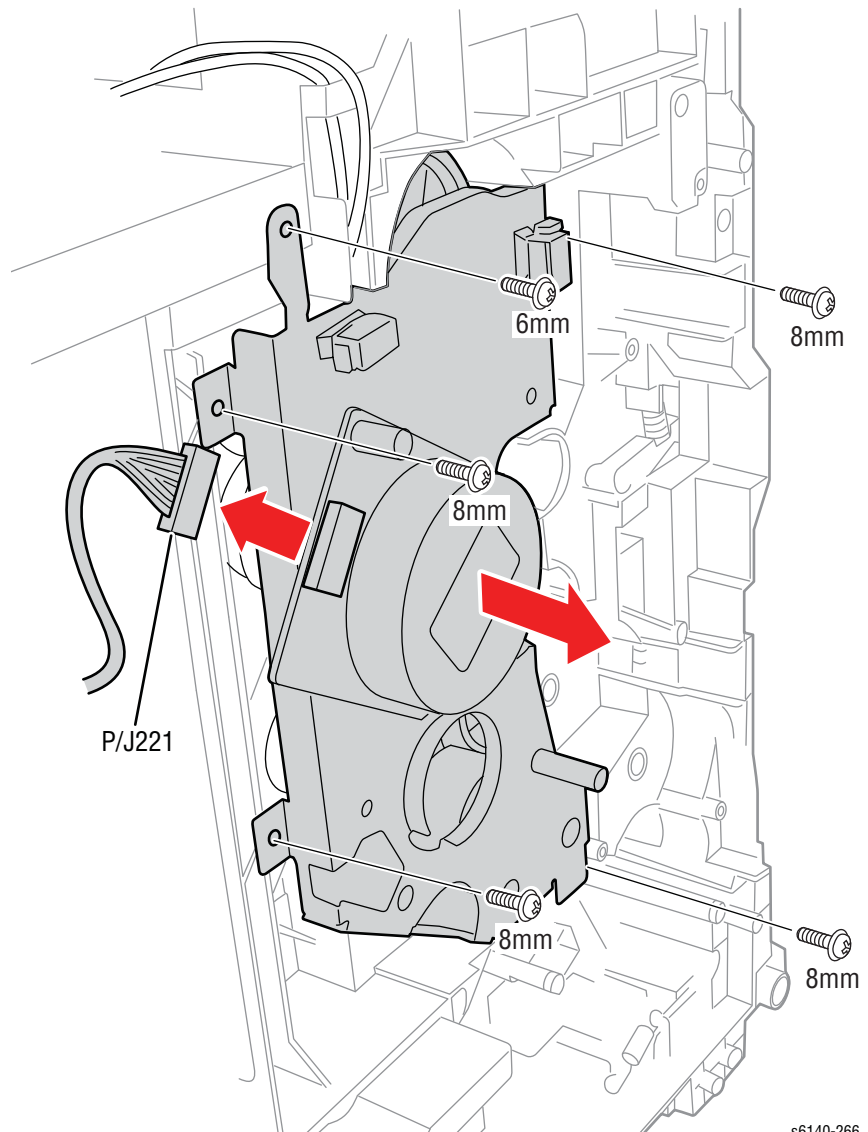
s6140-266

Main Drive Assembly

PL 7.1.2

1. Open the Front Cover.
2. Remove the Left Side Cover (page 8-20).
3. Remove the Drive Clutch and Bearing Kit (page 8-34).
4. Remove the Feed Drive Assembly (page 8-84).
5. Remove Gear P2 (page 8-83).
6. Rotate the Stopper Pivot(PL6.1.3) counter clockwise to align the tabs with openings in the Main Drive Assembly and remove the stopper.
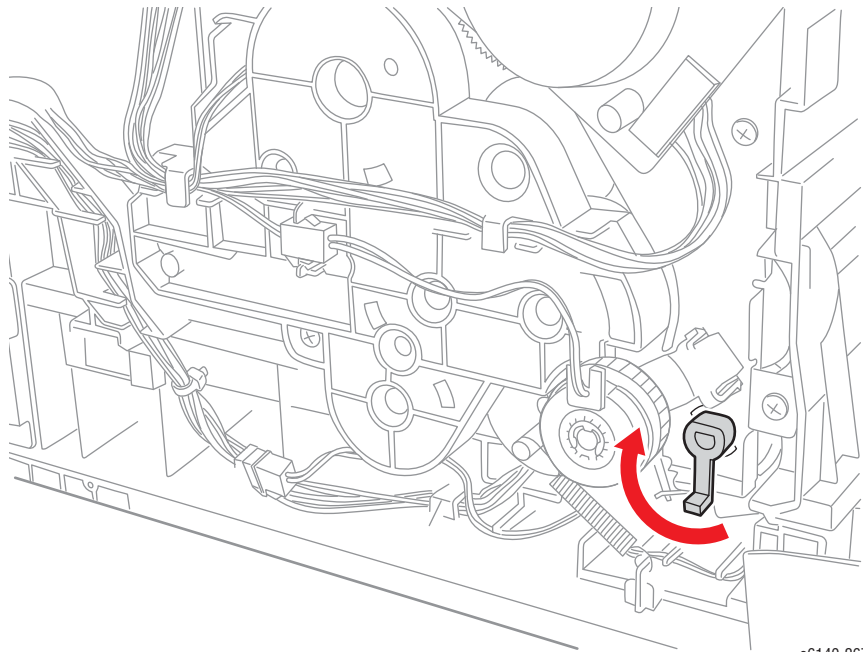
s6140-267

7. Remove 1 screw (silver, M4, 6mm) and 5 screws (silver, tap, 8mm) that secure the Main Drive Assembly to remove the drive.

6mm

s6140-268
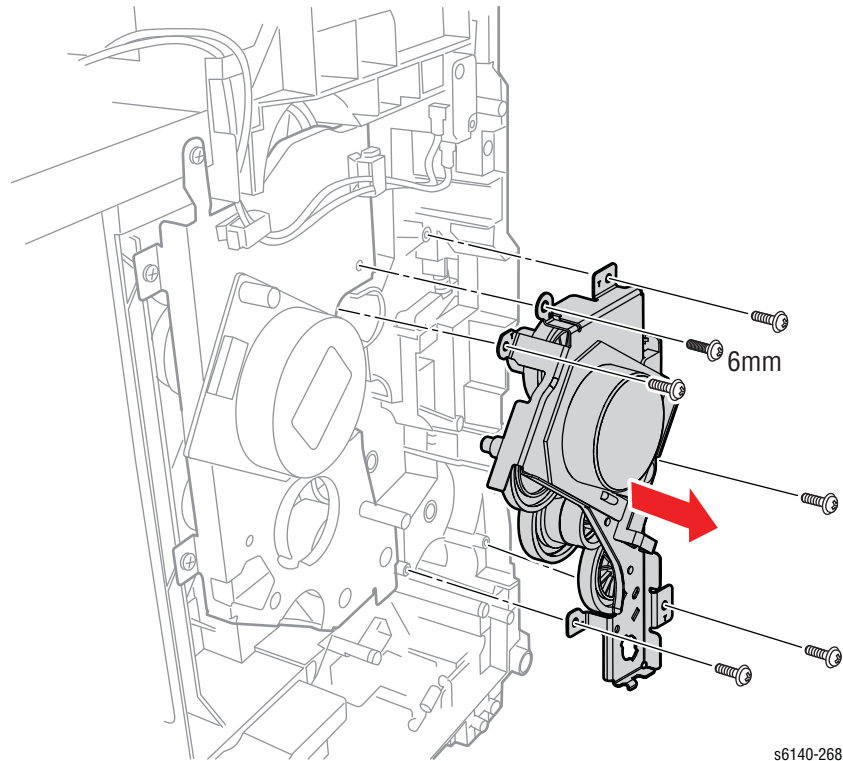
Replacement Note

Secure the wiring harness connecting the sub motor through the back of the hook on the Main Drive Assembly

Gear P2

PL 7.1.3

1. Open the Front Cover.
2. Remove the Left Side Cover (page 8-20).
3. Remove the Drive Clutch and Bearing Kit (page 8-34).
4. Remove, but do not disconnect the Feed Drive Assembly (page 8-84).
5. Remove Gear P2 from the shaft of the Sub-Drive Assembly.
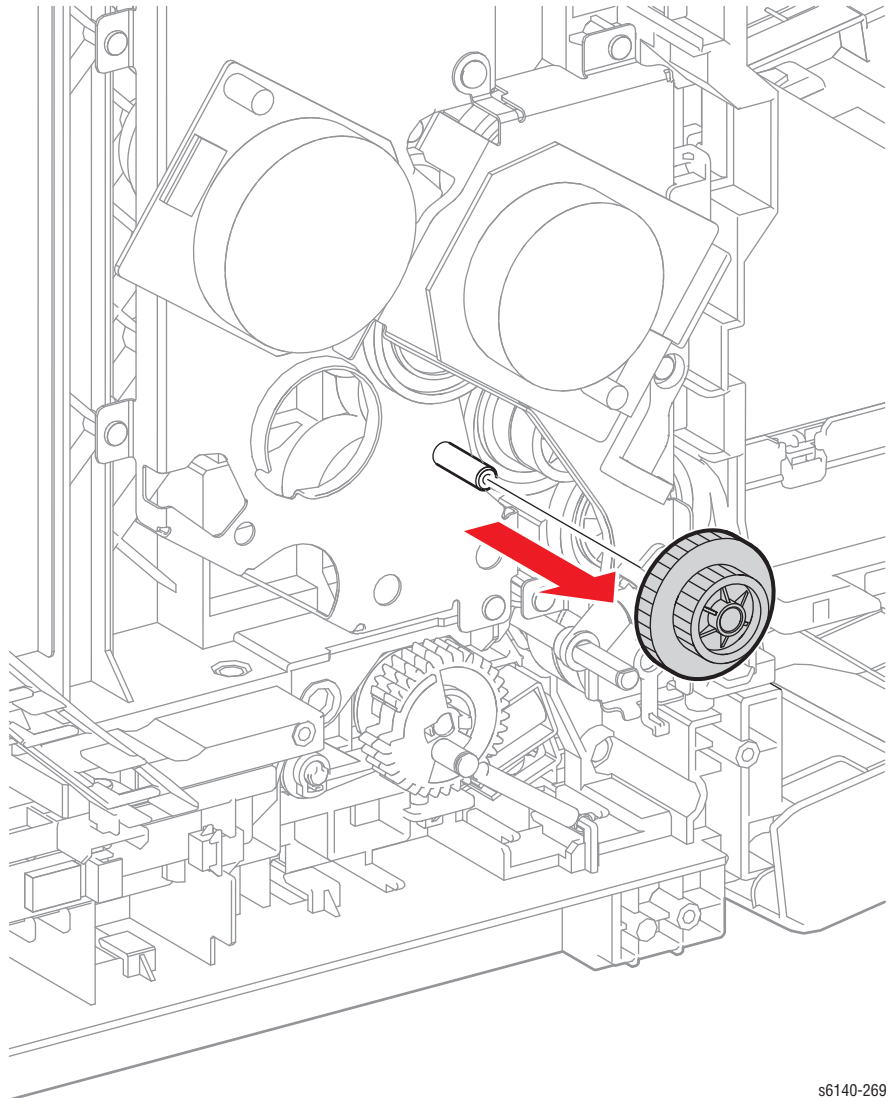
s6140-269

Feed Drive Assembly

PL7.1.4

1. Open the Front Cover.
2. Remove the Left Side Cover (page 8-20).
3. Remove the Drive Clutch and Bearing Kit (page 8-84).
4. Disconnect P/J24 and P/J26 from the MCU Board and release the harnesses from the AC harness guide.
5. Disconnect P/J211 of the Main Drive Assembly and release all the harnesses from the hooks on the Feed Drive Assembly.
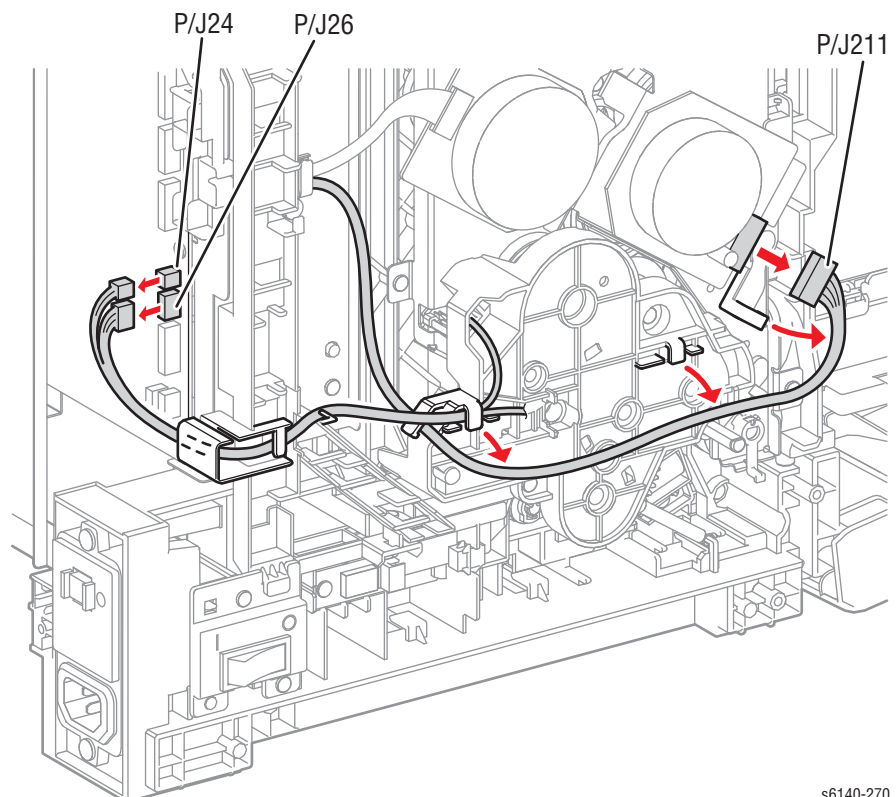
s6140-270

Note

When removing the Feed Drive Assembly, make sure the coupling gear remains on the shaft of the Feed Drive Assembly.

6. Remove 3 screws (one silver, M4, 6mm; one silver, M3, 6mm; one silver, tap, 8mm) that attach the Feed Drive Assembly to the printer.

P/J24

6mm
6mm
8mm

s6140-271
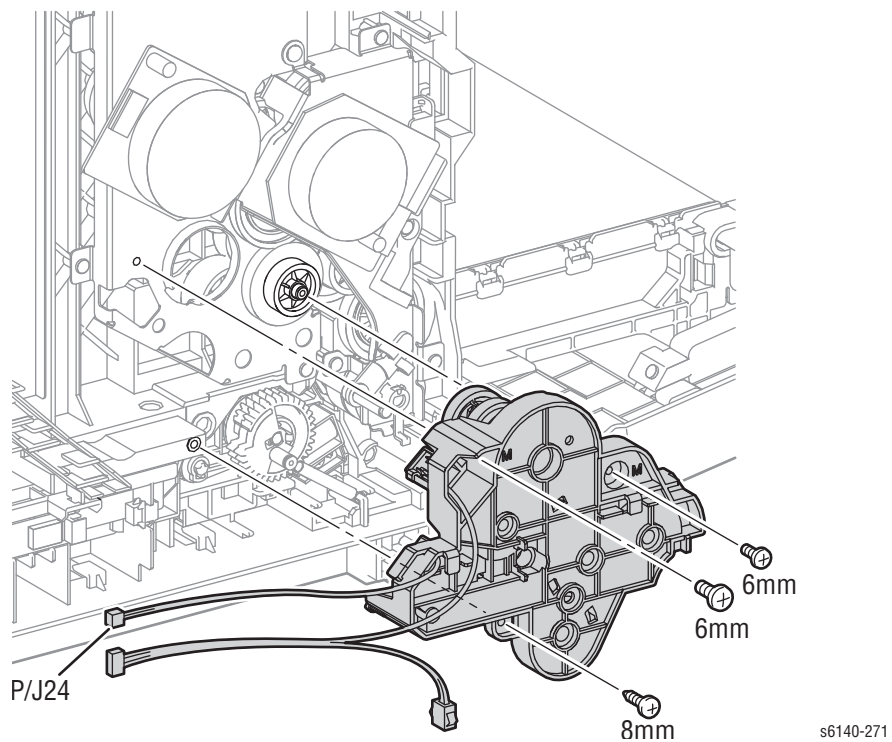
7. Disconnect the color mode sensor (P/J261) from the Feed Drive Assembly and release the Color Mode Sensor harness from the hook on the Feed Drive Assembly.

P/J261

s6140-272
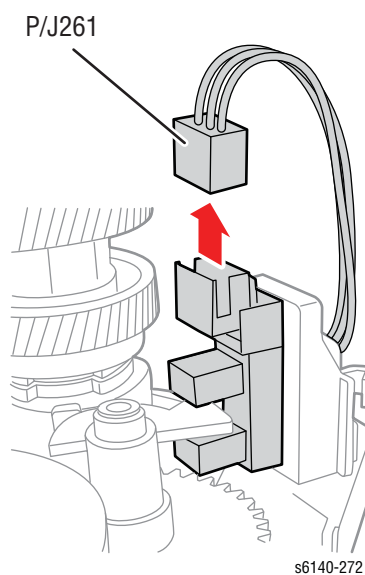
Replacement Note

The screw holes in the assembly are marked with "M" and "T" to indicate where machine (M) or tapping (T) screws are used.

Electrical

Fan

PL8.1.1

1. Open the Front Cover.
2. Remove the Rear Tray Cover (page 8-17).
3. Remove the Right Side Door (page 8-19).
4. Remove the Right Side Cover (page 8-18).
5. Remove the Rear Cover (page 8-16).
6. Disconnect P/J510 from the Fan Board and release the Fan harness from the guides on the fan duct.
7. Release 4 hooks that secure the Fan in the fan duct.

P/J510   s6140-273
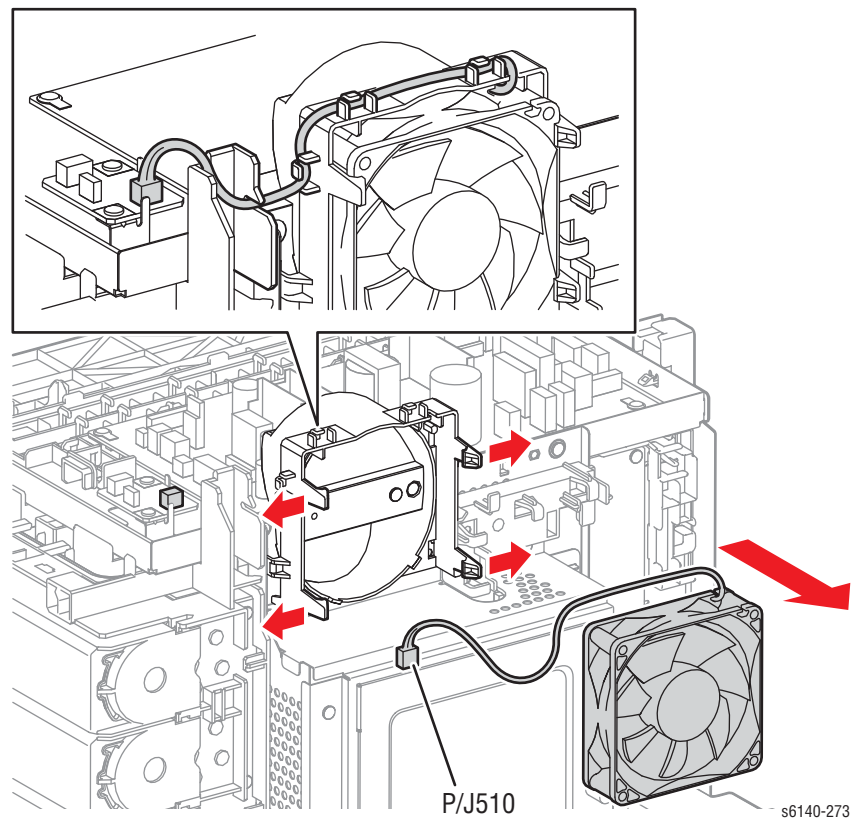
Replacement Note

Install the Fan to direct airflow into the printer. The Fan has arrows that indicate the direction of airflow through the Fan.

Image Processor Board

PL8.1.7

1. Open the Front Cover.
2. Remove the Rear Tray Cover (page 8-17).
3. Remove the Right Side Door (page 8-19).
4. Remove the Right Side Cover (page 8-18).
5. Remove the Rear Cover (page 8-16).
6. Remove the Fan (page 8-86).
7. Loosen 1 captive thumbscrew that secures the cage cover.
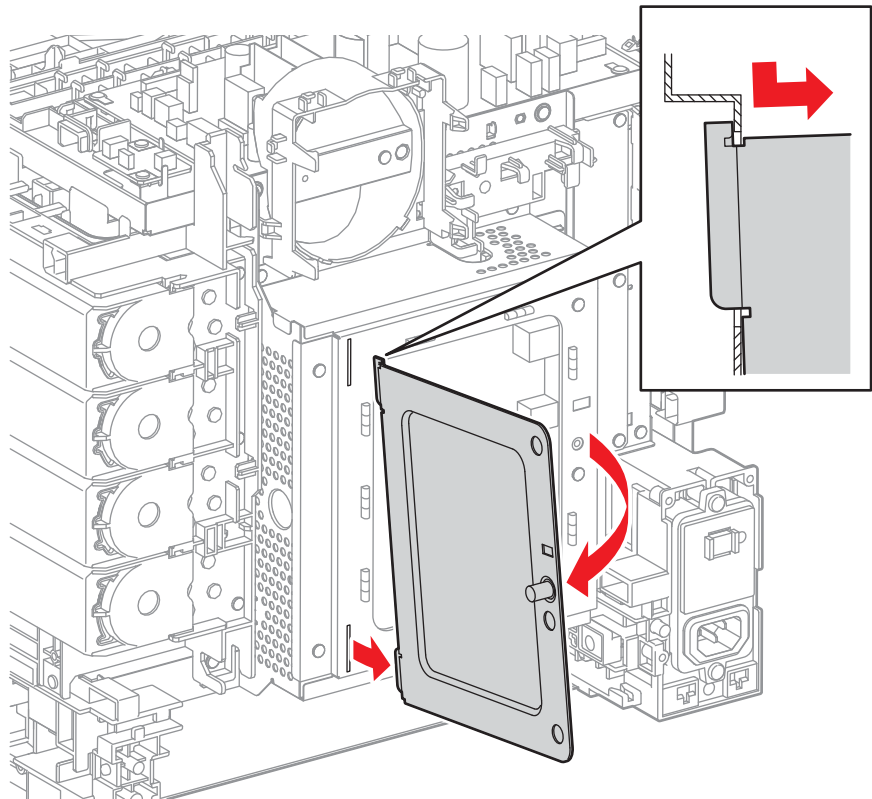
s6140-274

8. Remove 11 screws (silver, metal, 6mm) that secure the ESS shield to the chassis.
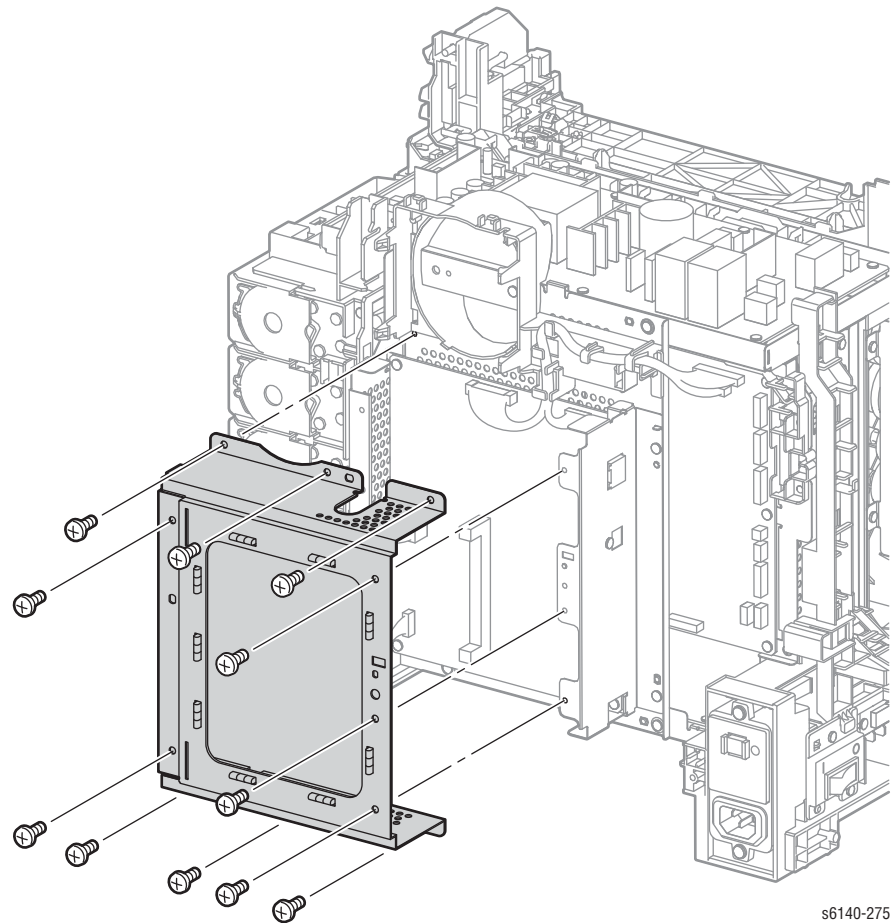
s6140-275

9. Disconnect 4 connections to the IP Board and release the harnesses from the IP Board cage.

10. Remove 6 screws (silver, metal, 6mm) that secure the IP Board and rear panel to the chassis.
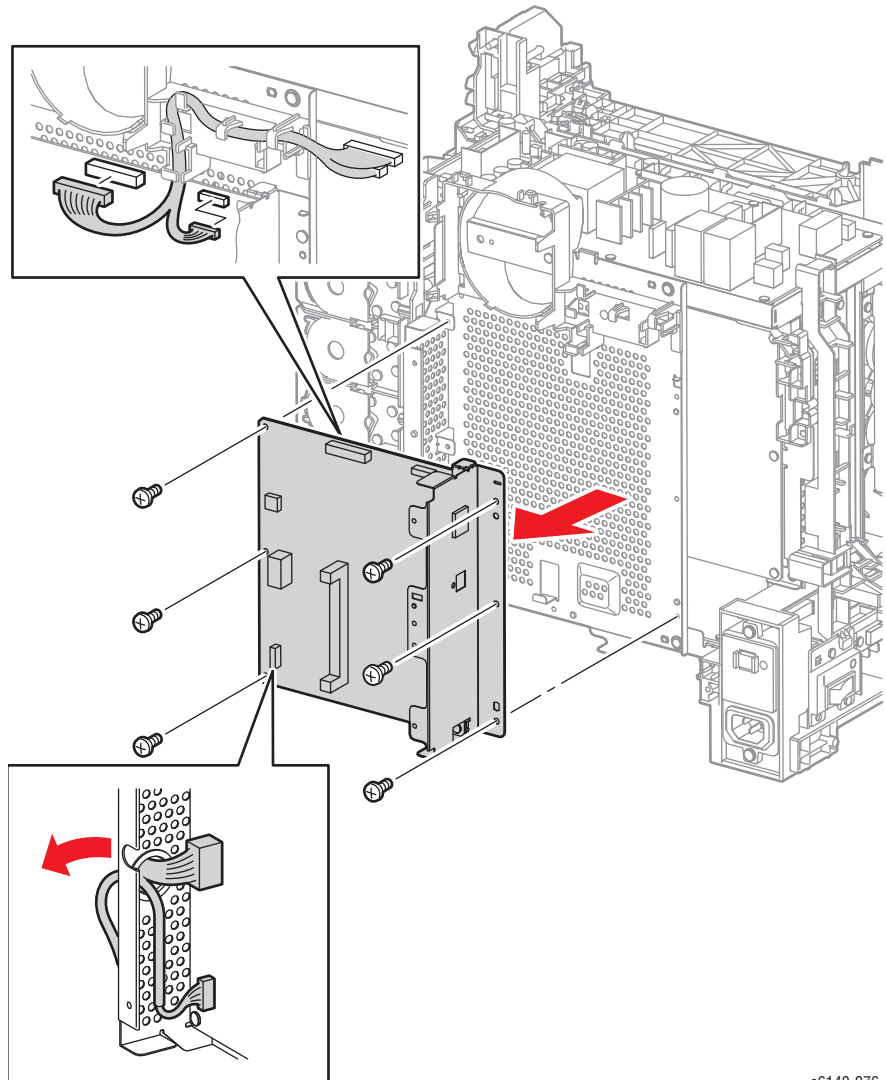
s6140-276

11. Remove 1 screw (silver, 4mm) that secures the USB connector on the Image Processor Board to the I/O Plate.

12. Remove 2 screws (silver, 6mm) that secures the IP Board to the rear panel and separate the two pieces.

s6140-277
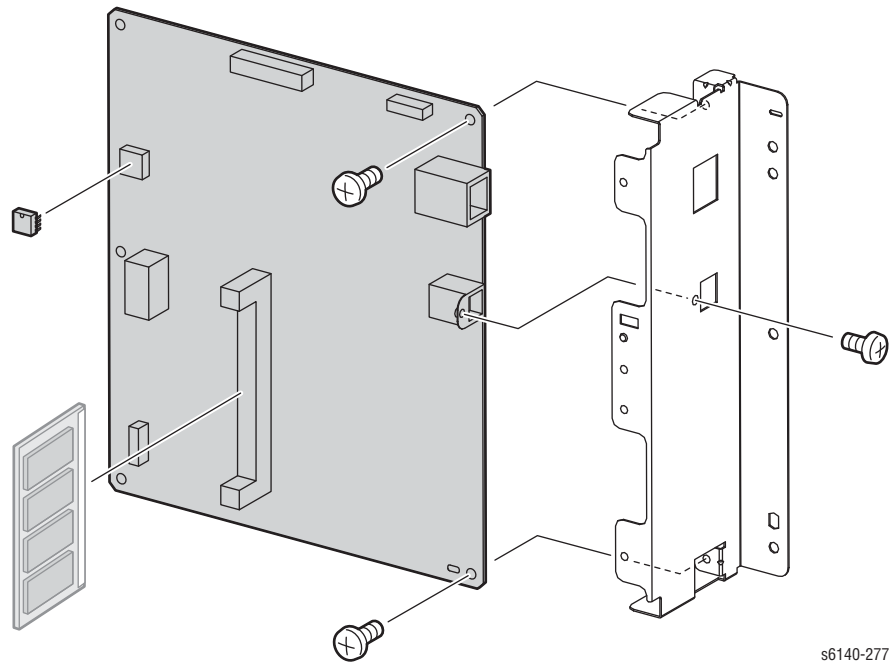
Replacement Note

When installing a new IP Board, move the NVRAM and, if installed, the Memory Card from the old IP Board to the new I/P Board. Note NVRAM chip orientation in the socket when removing and replacing the device

Phaser 6140 Printer Service Manual

LVPS

PL8.2.1

1. Remove Tray 1.
2. Open the Front Cover.
3. Remove the Left Side Cover (page 8-20).
4. Remove the Top Cover (page 8-14).
5. Disconnect all connections from the LVPS.
6. Remove the 5 screws (silver, metal, 6mm) that secure the LVPS to the frame.
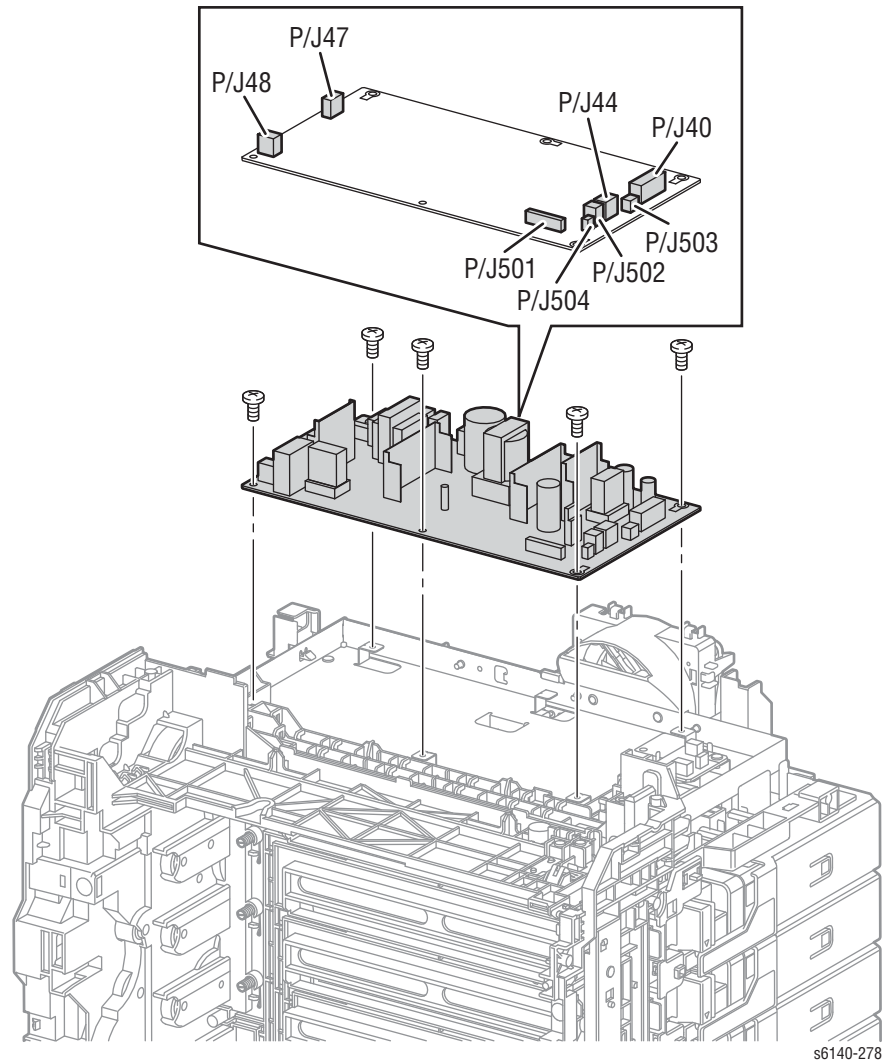
s6140-278

Interlock Harness

PL8.2.5

Caution
Cover the Imaging Unit to prevent light exposure.

1. Remove Tray 1.
2. Open the Front Cover.
3. Lower the Transfer Belt.
4. Remove the Fuser (page 8-10).
5. Remove the Imaging Unit (page 8-7).
6. Remove the Left Side Cover (page 8-20).
7. Remove the Top Cover (page 8-14).
8. Disconnect P/J44 on the LVPS, and release the harness from the clamp.

P/J44
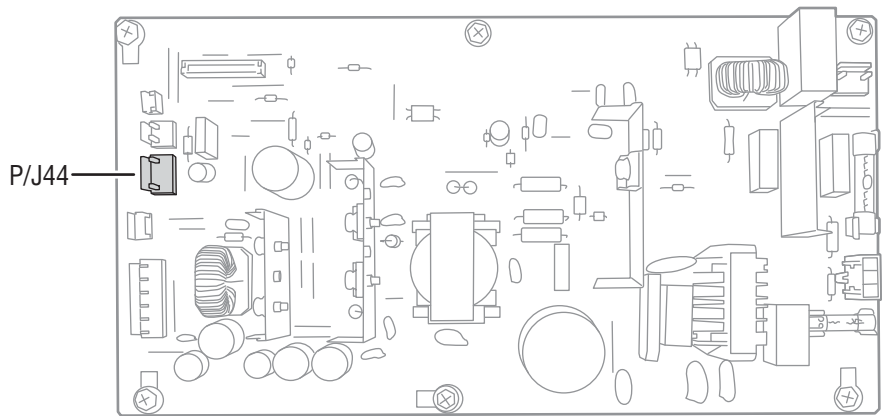
s6140-279

9. Release the harness from the Fuser harness guide and 2 clamps on the chassis.
10. Remove 1 screw (sliver, tap, 6mm) that secures the Interlock Harness.

P/J44
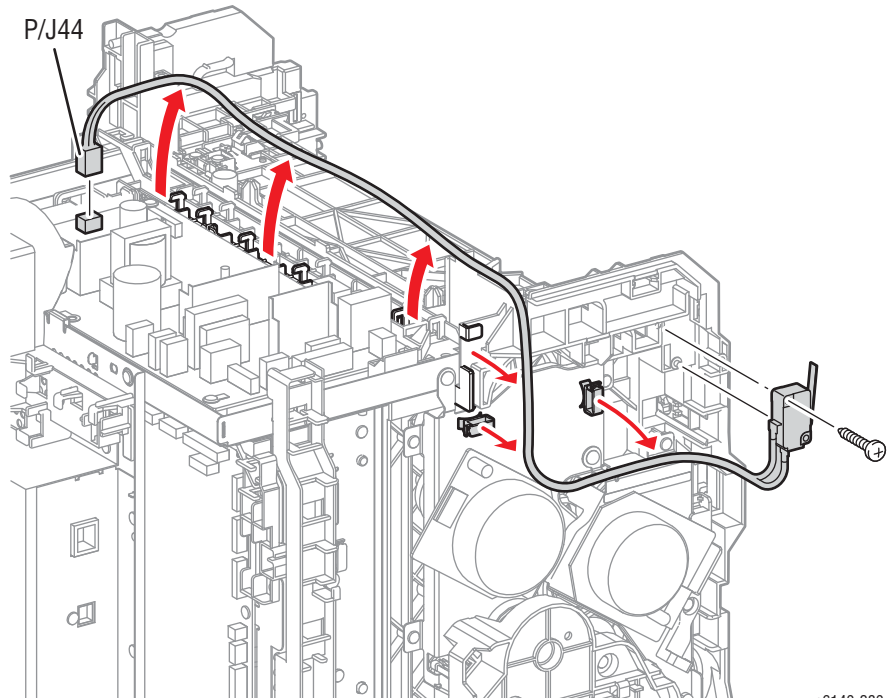
s6140-280

Control Panel

PL1.2.3

1. Open the Front Cover.
2. Remove Duplex Unit if installed (page 8-107).
3. Release 4 hooks that secure the Control Panel to the Front Cover.
4. Disconnect P/J220 to release the Control Panel from the Front Cover.
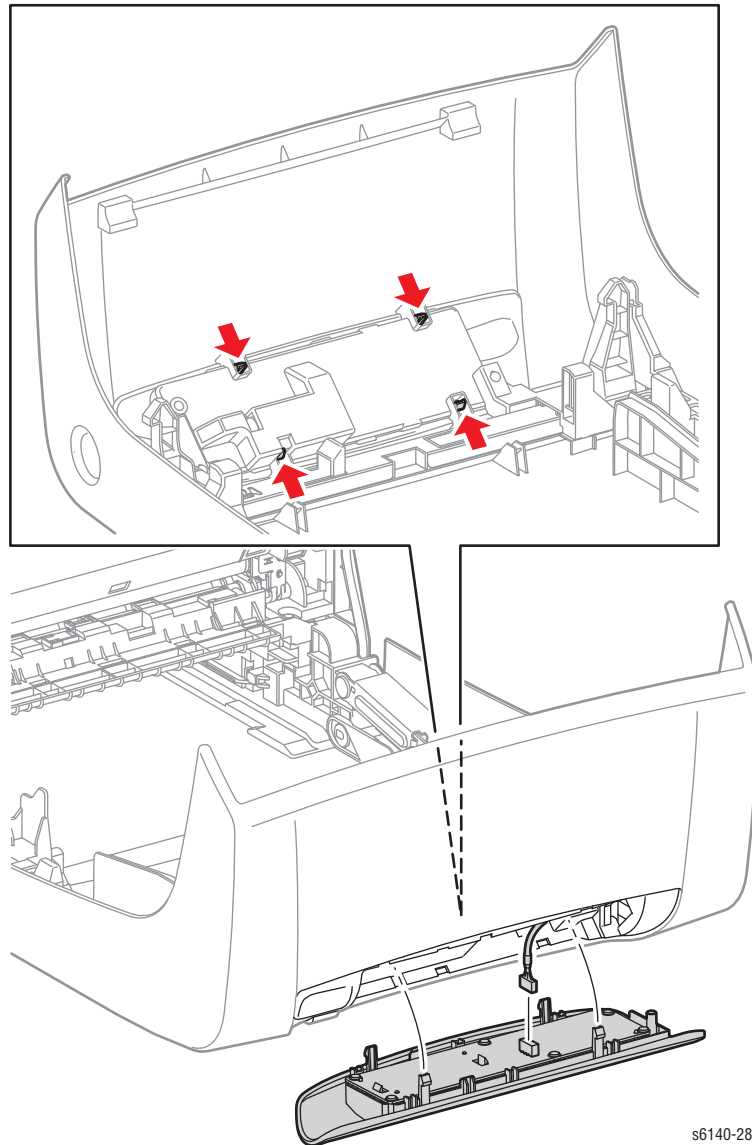
s6140-281

Control Panel Harness A

PL1.2.12

1. Open the Front Cover.
2. Remove Duplex Unit if installed (page 8-107).
3. Remove the Control Panel (page 8-93).
4. Disconnect P/J220 and release the harness from the Control Panel.
5. Remove the Right front holder (page 8-28).

s6140-282
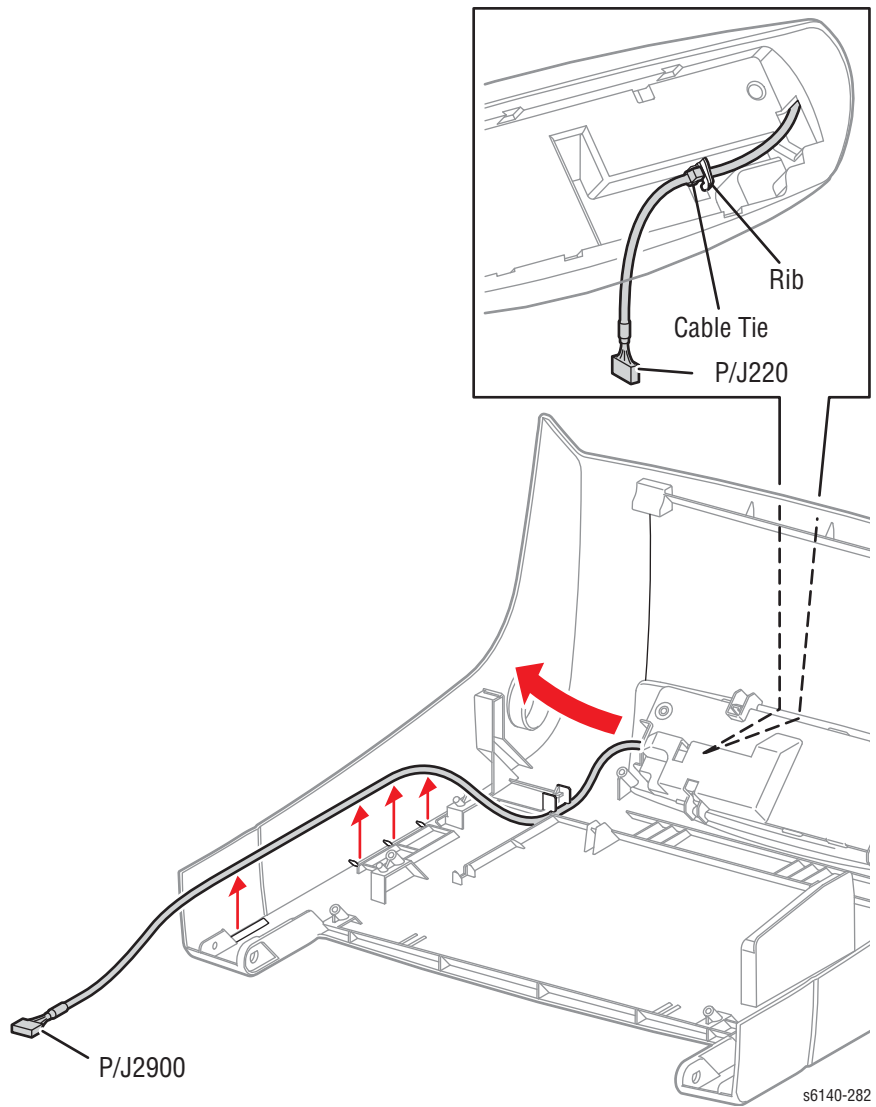
6. Remove the Right Side Door (page 8-19).
7. Remove the Right Side Cover (page 8-18).
8. Disconnect P/J2900 to remove the harness.

Humidity Sensor

PL8.2.7

1. Open the Front Cover.
2. Remove the Left Side Cover (page 8-20).
3. Remove 1 screw (silver, tap, 8mm) that secures the Humidity Sensor to the chassis.
4. Unplug the connector (P/J201) and remove the sensor.

P/J201

s6140-283
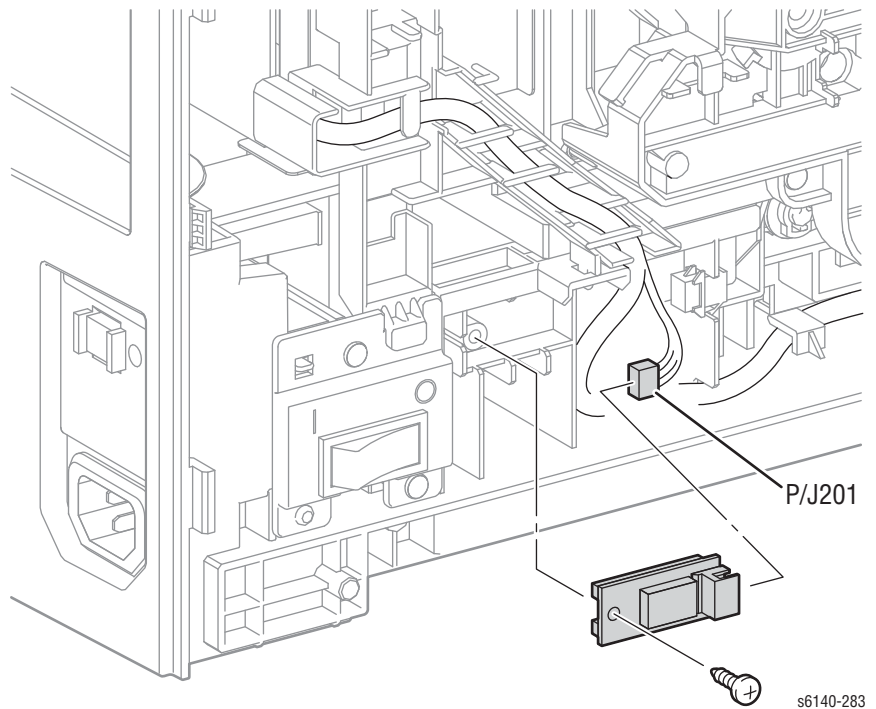
Power Switch Harness

PL8.2.9

1. Remove Tray 1.
2. Open the Front Cover.
3. Remove the Rear Tray Cover (page 8-17).
4. Remove the Left Side Cover (page 8-20).
5. Remove 2 screws (silver, tap, 8 mm) that secure the power switch bracket.
6. Disconnect P/J482 and P/J483 from the GFI Breaker.
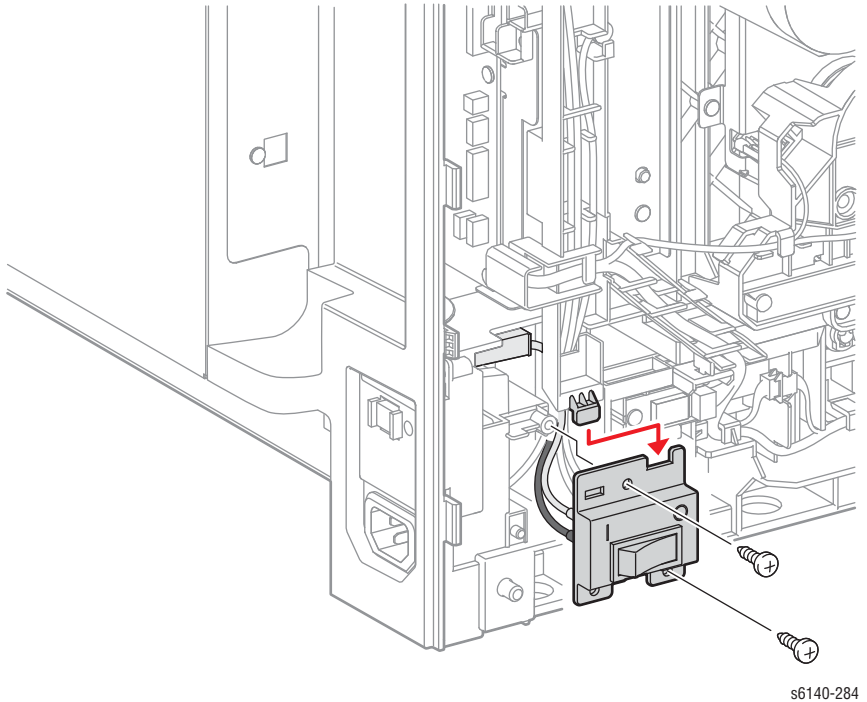
s6140-284

9. Disconnect P/J48 from the LVPS.

10. Release the Power Switch Harness from the AC harness guide.

P/J48
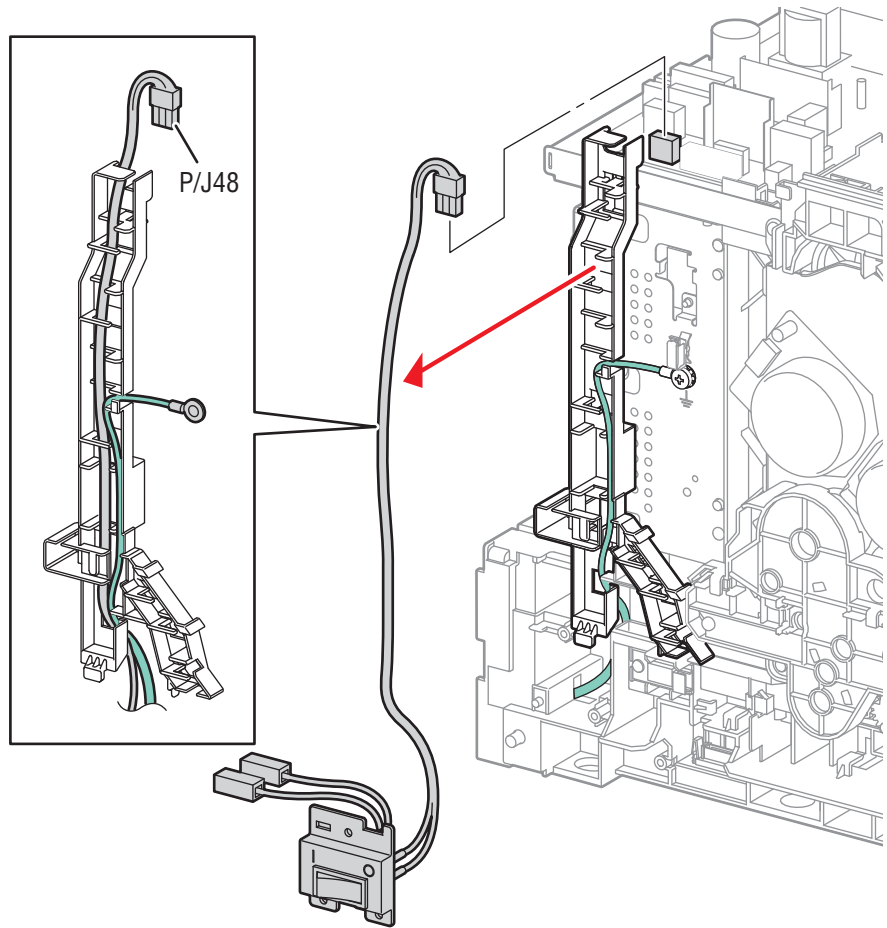
s6140-285

11. Release 4 hooks on the power switch to release the switch from the bracket.

s6140-286
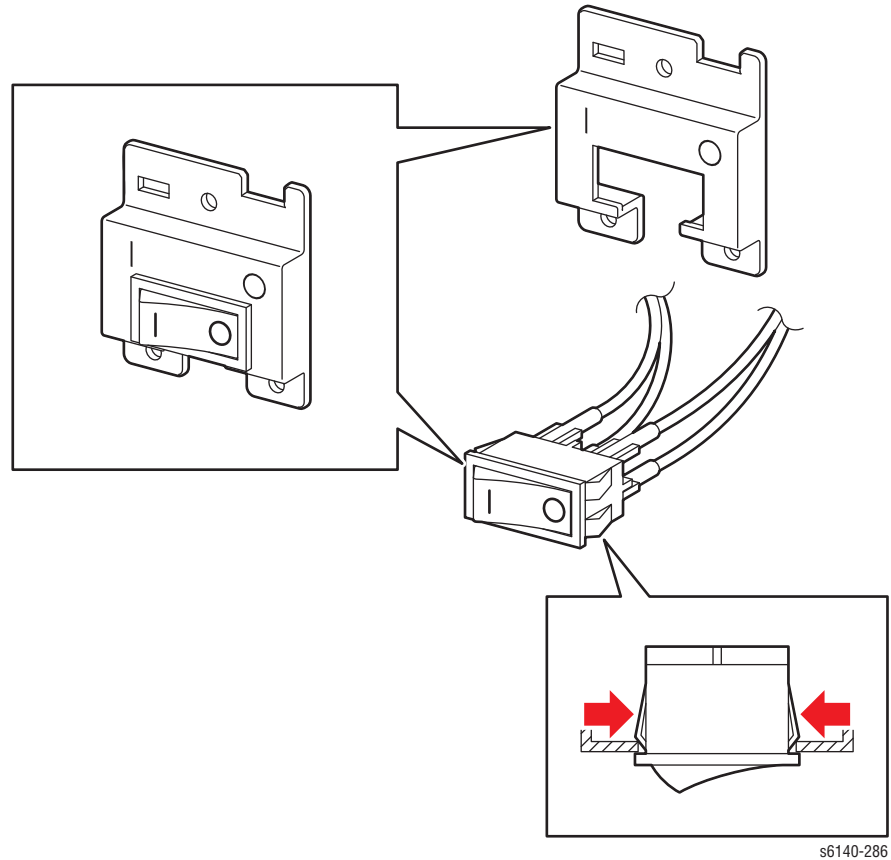
Replacement Note

Check that the symbols on the bracket and switch are aligned before installing the switch in the bracket.

GFI Breaker

PL8.2.11

1. Open the Front Cover.
2. Remove the Rear Tray Cover (page 8-17).
3. Remove the Left Side Cover (page 8-20).
4. Remove the Rear Cover (page 8-16).
5. Remove 2 screws (silver, tap, 12 mm) that secure the GFI Breaker.
6. Disconnect P/J482, P/J483, and P/J484 from the GFI Breaker.
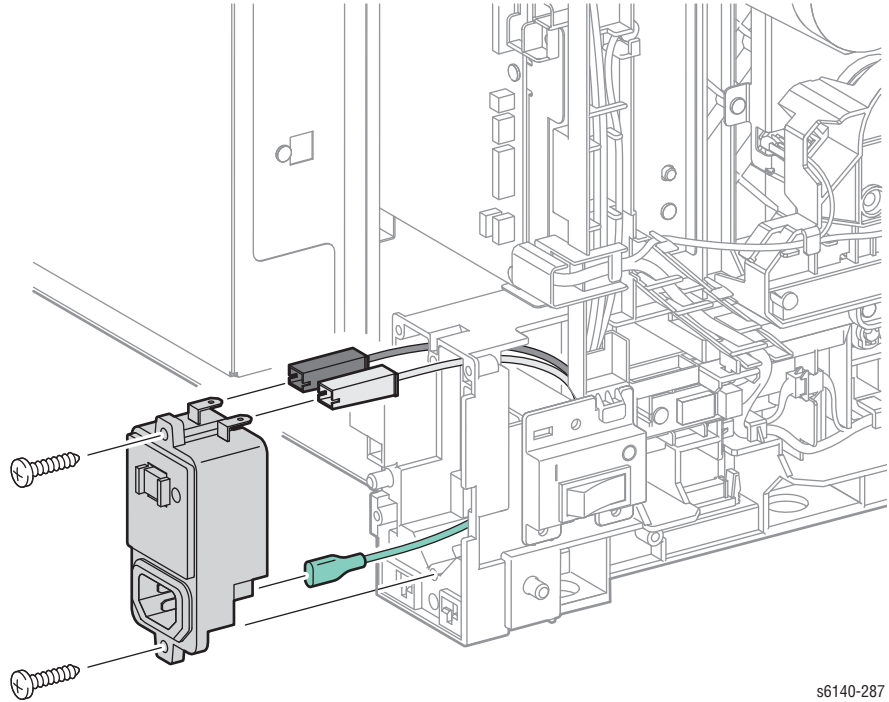
s6140-287

Right Side Door Switch

PL5.1.9

1. Open the Front Cover.
2. Remove the Right Side Door (page 8-19).
3. Remove the Right Side Cover (page 8-18).
4. Using a miniature screwdriver, release the hooks that latch the switch in the frame and remove the switch.
5. Unplug the switch from the harness connector (P/J291).

P/J291

s6140-288

HVPS

PL4.1.19

1. Remove the Upper Frame Assembly (page 8-38).
2. Remove the 7 screws (silver, 6mm) that secure HVPS to the HVPS Frame.
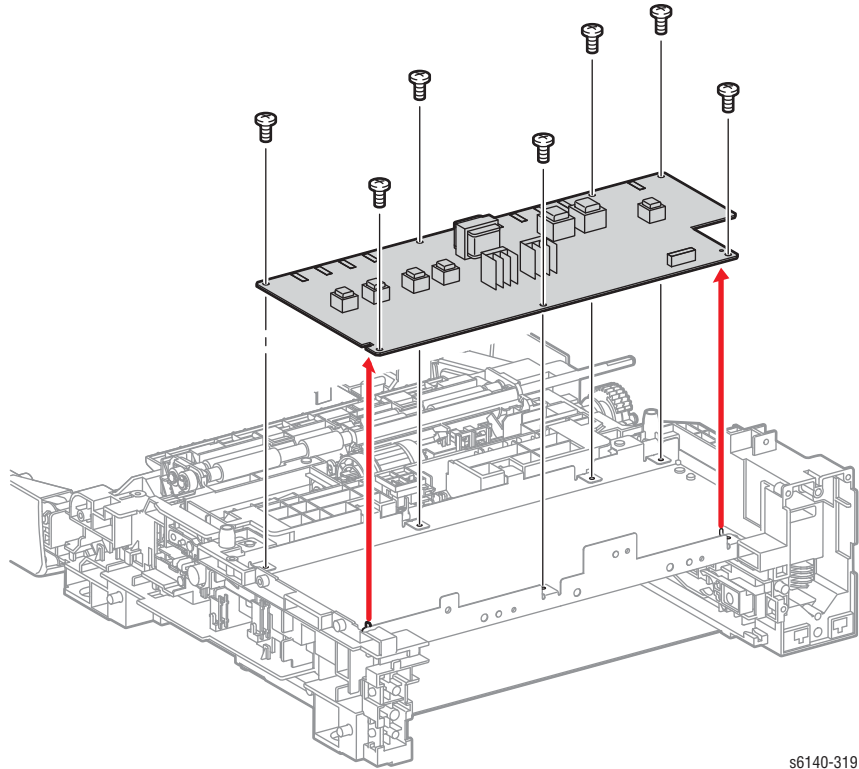
s6140-319

HVPS Frame

PL4.1.29

1. Remove the Upper Frame Assembly (page 8-38).
2. Remove the HVPS (page 8-101).
3. Remove 8 screws (silver, 6mm) that secure the HVPS Frame to the Feeder.
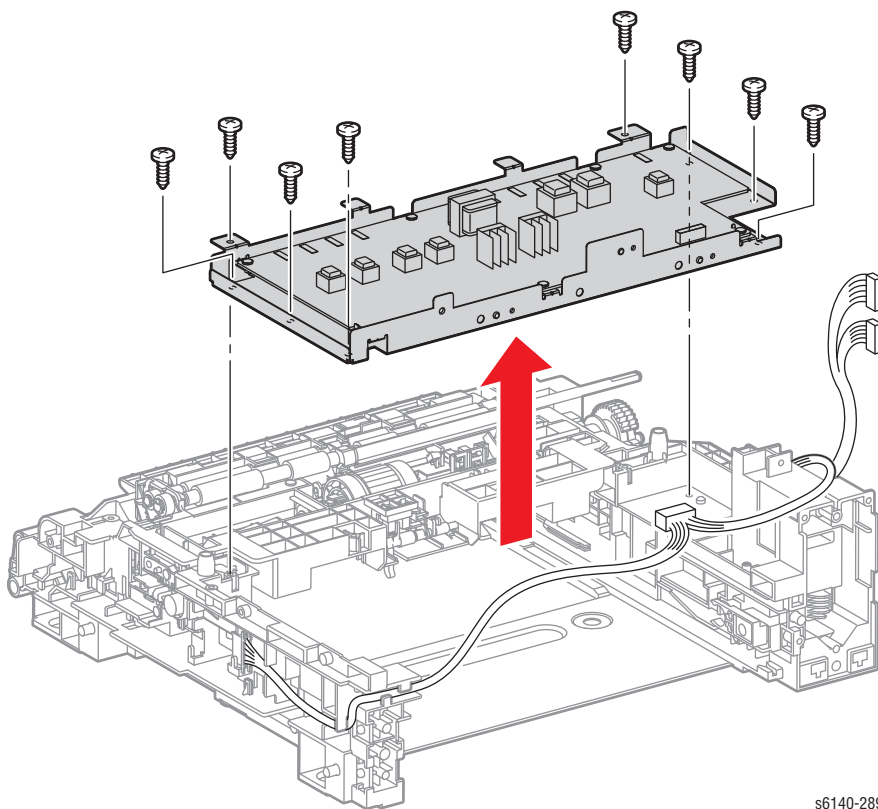
s6140-289

MCU Board

PL8.2.13

1. Enter diagnostics and copy the contents of MCU memory to the IP Board.
2. Exit diagnostics and turn Off the printer.
3. Disconnect the Power Cord from the wall outlet.
4. Remove the Rear Tray Cover (page 8-17).
5. Remove the Left Side Cover (page 8-20).
6. Remove the Rear Cover (page 8-16).
7. Remove the Top Cover (page 8-14).
8. Remove the IP Board Cage (page 8-106).
9. Disconnect all connectors on the MCU Board.
10. Remove 6 screws (silver, 6mm) that secure the MCU Board to the chassis to remove the board.

s6140-290
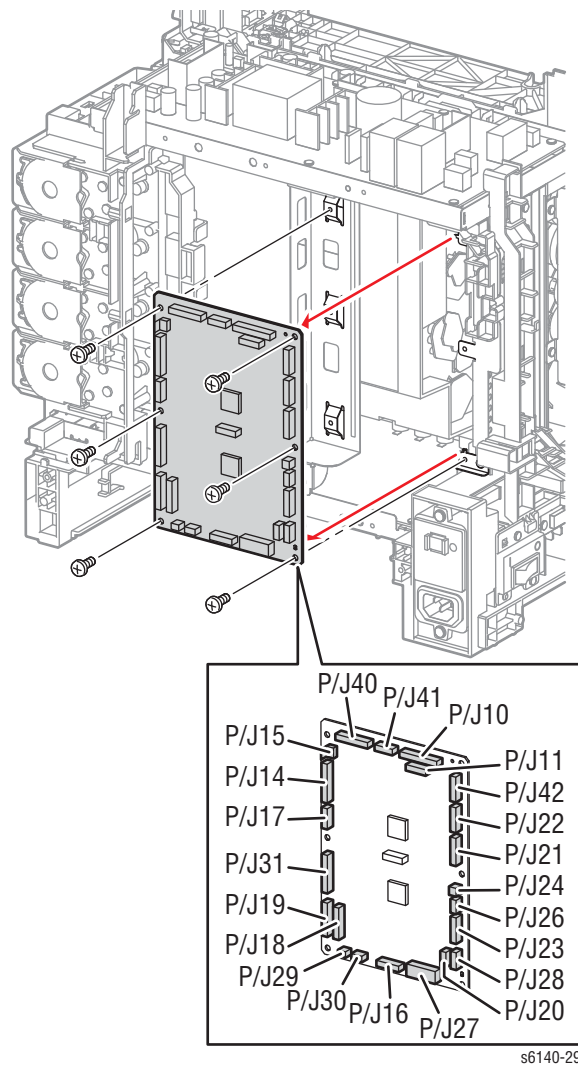
EEPROM Board

PL8.2.16

1. Remove Tray 1.
2. Open the Front Cover.
3. Remove the Rear Tray Cover (page 8-17).
4. Remove the Left Side Cover (page 8-20).
5. Remove the Rear Cover (page 8-16).
6. Remove the IP Board Cage (page 8-106).
7. Remove the MCU Board (page 8-103).

   Note

   After removal of the MCU Board, remove the EEPROM Board using a short, Phillips-head screwdriver. If a short screwdriver is unavailable, remove the Laser Unit to provide access.

8. Remove the Laser Unit (page 8-54).
9. Remove 1 screw (silver, 6mm) that secures the EEPROM Board to the chassis.
10. Disconnect P/J144 to remove the EEPROM Board.

P/J144
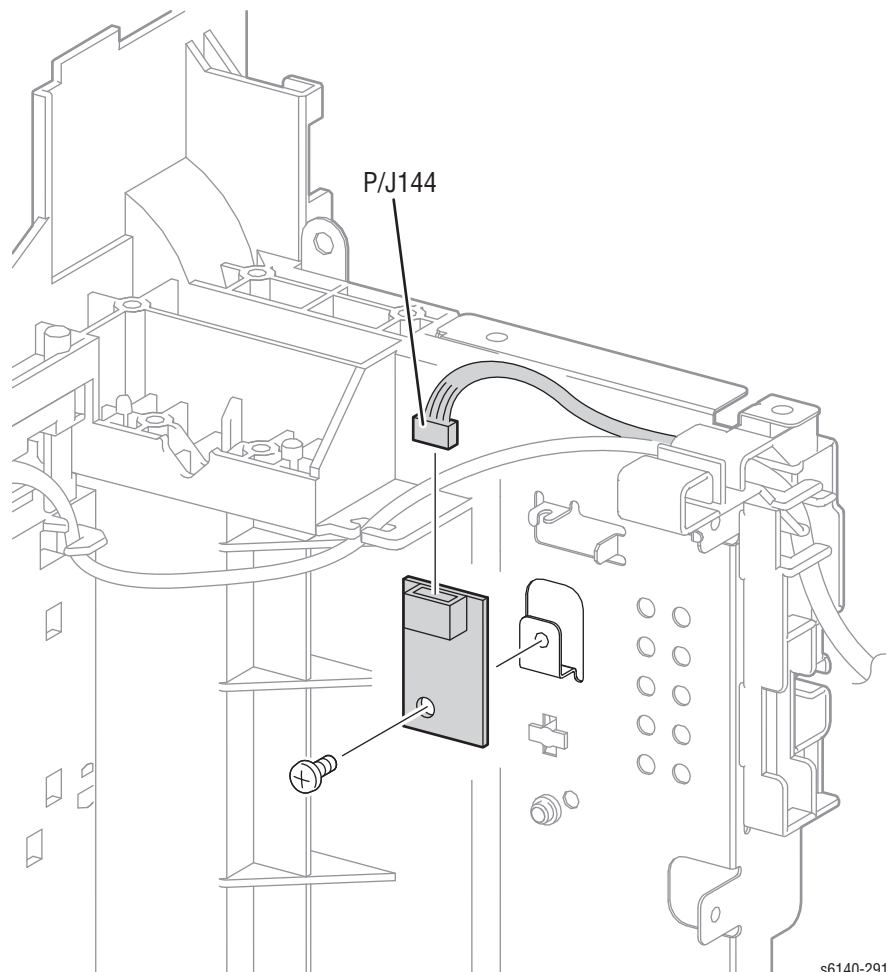
s6140-291

Fan Board

PL8.2.20

1. Remove Tray 1.
2. Open the Front Cover.
3. Lower the Transfer Belt.
4. Remove the Rear Tray Cover (page 8-17).
5. Remove the Left Side Cover (page 8-20).
6. Remove the Rear Cover (page 8-16).
7. Remove the Top Cover (page 8-14).
8. Disconnect all connections to the Fan Board.
9. Remove 2 screws (silver, 6mm) that secure the Fan Board to the chassis.
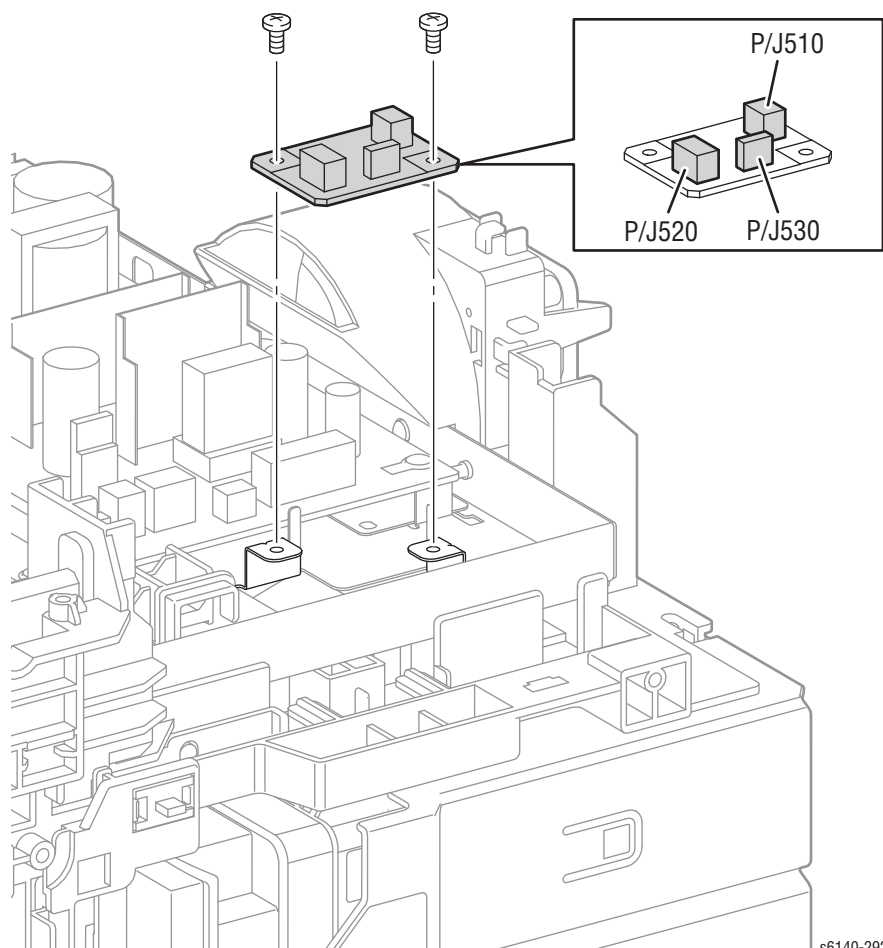
s6140-292

IP Board Cage

This procedure removes the entire IP Board cage including the fan duct. Although it is not associated with any one part, it simplifies other procedures.

1. Remove the Fan (page 8-86).

2. Remove 2 circled screws at the bottom of the IP Board Cage.

3. Unplug the cables at P10 and P11 on the MCU board.

4. Open the cage cover and disconnect P401 and P29 from the IP Board. Pull the harnesses through the hole in the side of the cage.

5. Remove 3 circled screws at the top of the IP Board Cage (one screw is behind the Fan).

Note

Loosening or removing the screw that holds the Fan Duct to the IP Board cage can ease removal. Complete removal of the Fan Duct is unnecessary.

6. Swing the cage out from the bottom and lift up enough to free the hook at the top.

P/J10

P/J11
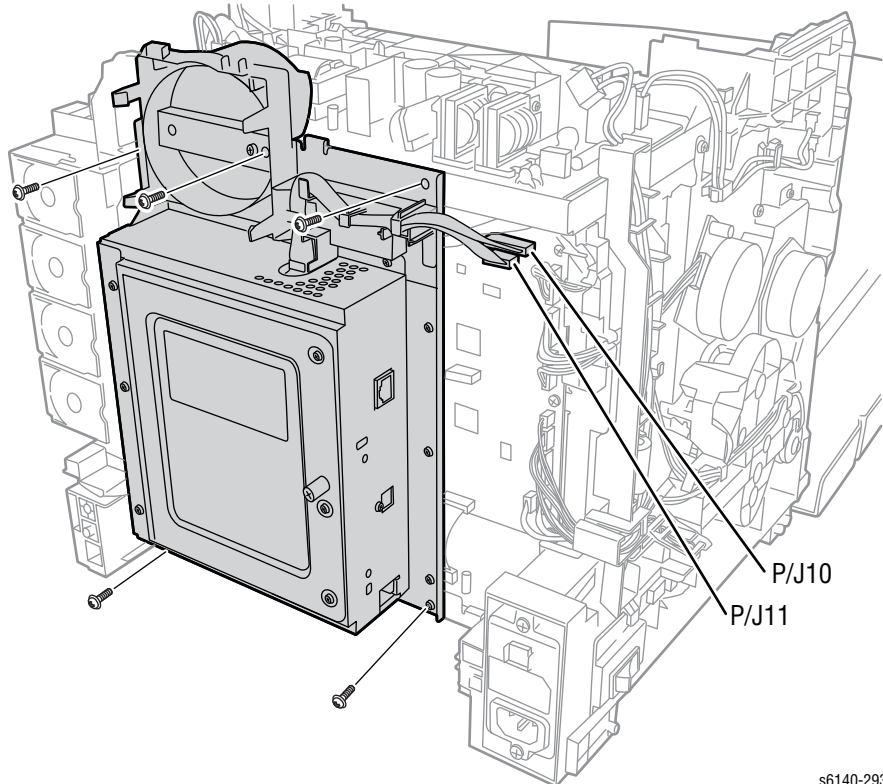
s6140-293

Duplex Unit

PL11.1.1

1. Open the Front Cover.
2. Press the Front Cover release button to release the latch that secures the Duplex Unit to the Front Cover.
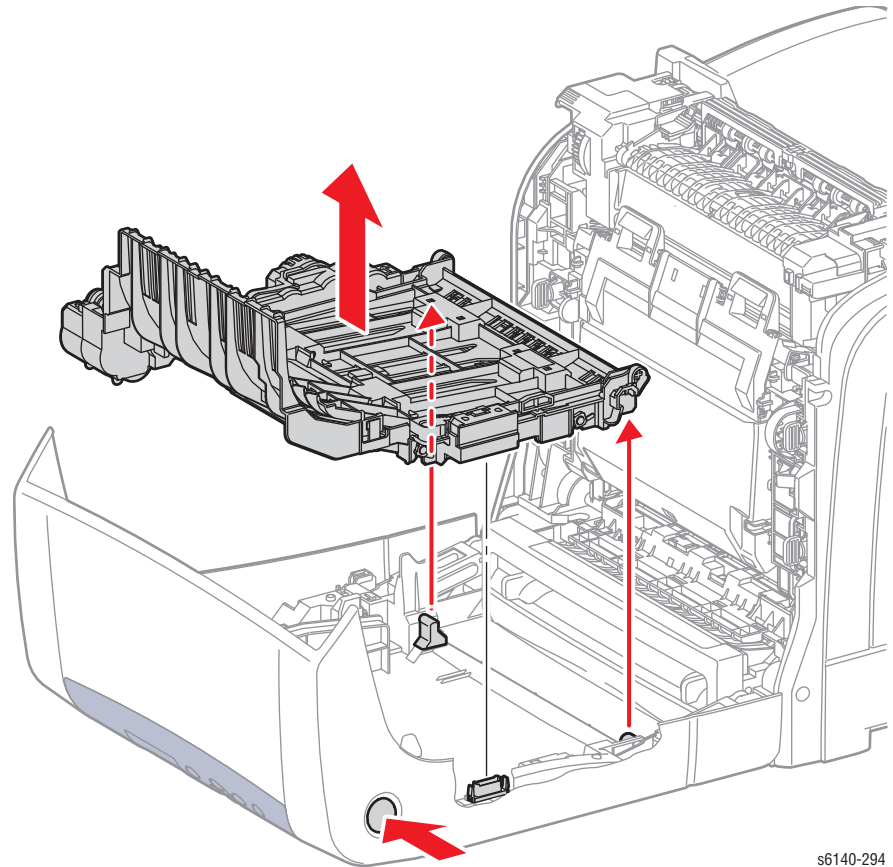
s6140-294

Replacement Note

Align the arrows on the Left holder and Duplex Unit, then press the Duplex Unit into position.

Duplex Harness

PL11.1.14

1. Open the Front Cover.
2. Remove the Duplex Unit (page 8-107).
3. Release the 6 hooks that secure the duplex board cover.
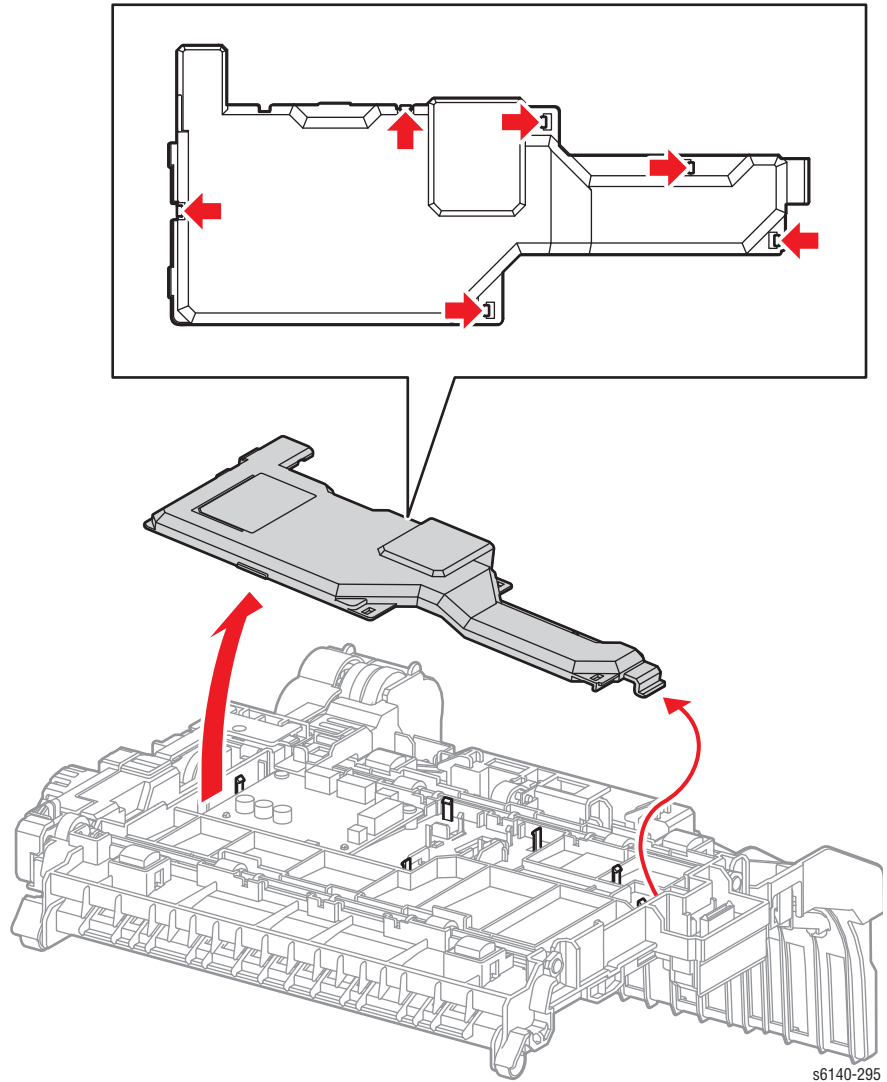
s6140-295

4. Disconnect P/J601 from the Duplex Board and remove the Duplex Harness from the guides.
5. Release 2 hooks that secure the duplex connector to the Duplex Unit.
6. Release 2 hooks that secure the Duplex harness to the duplex connector to remove the harness.

Duplex Board

PL11.1.16

1. Open the Front Cover.
2. Remove the Duplex Unit (page 8-107).
3. Release the 6 hooks that secure the duplex board cover.
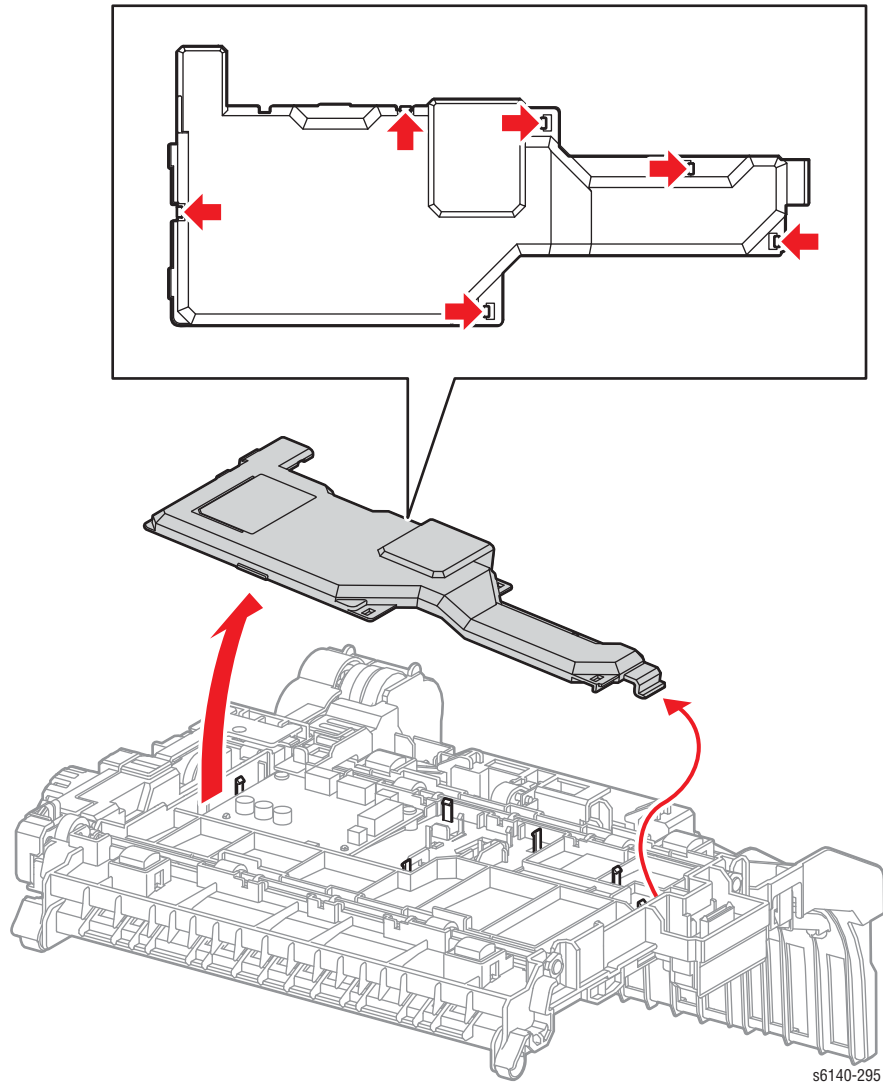
s6140-295

4. Disconnect all connections to the Duplex Board.
5. Remove 2 screws (silver, tap, 8mm) that secure the board to the Duplex Unit.

P/J601 P/J604 P/J603 P/J602
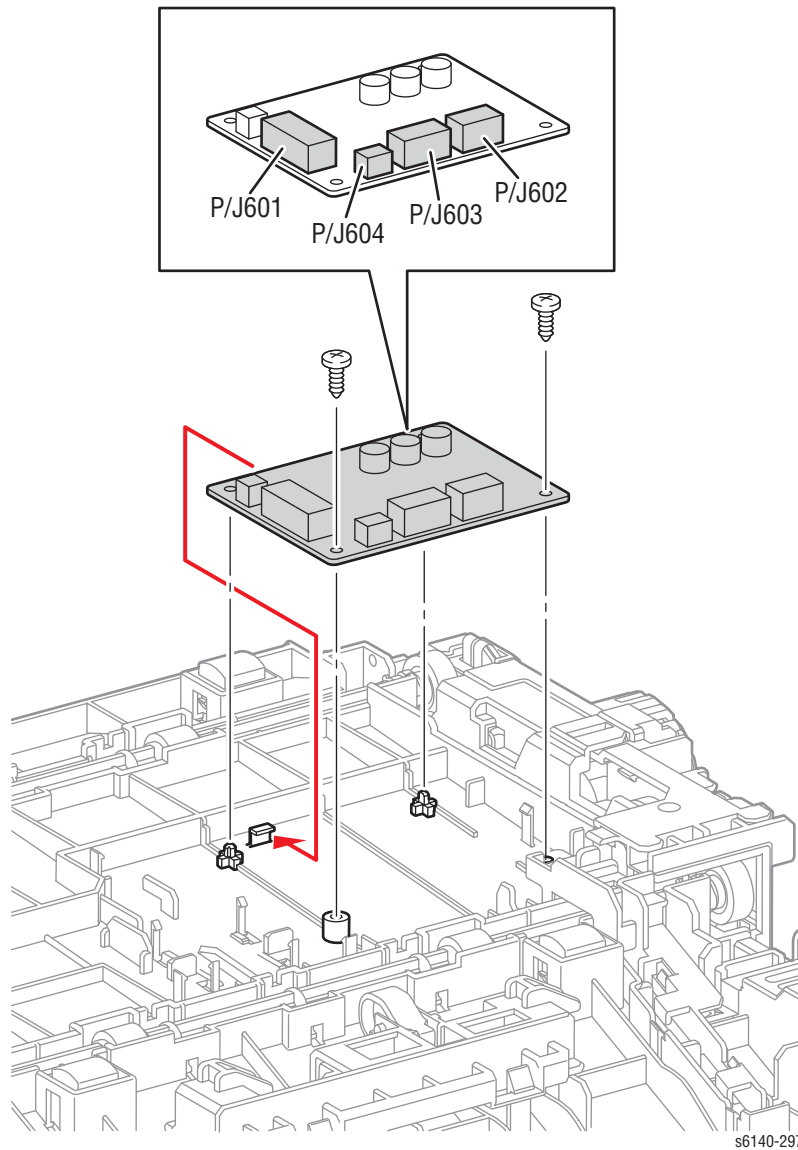
s6140-297

Optional Feeder

Note

> Remove the protective cap from the Optional Feeder connector before installation.

Note

> To service Optional Feeder components, remove the feeder.

PL12.1.1

1. Remove Tray 1.
2. Remove 2 thumbscrews that secure the Optional Feeder to the printer.
3. Lift the printer off the Optional Feeder.
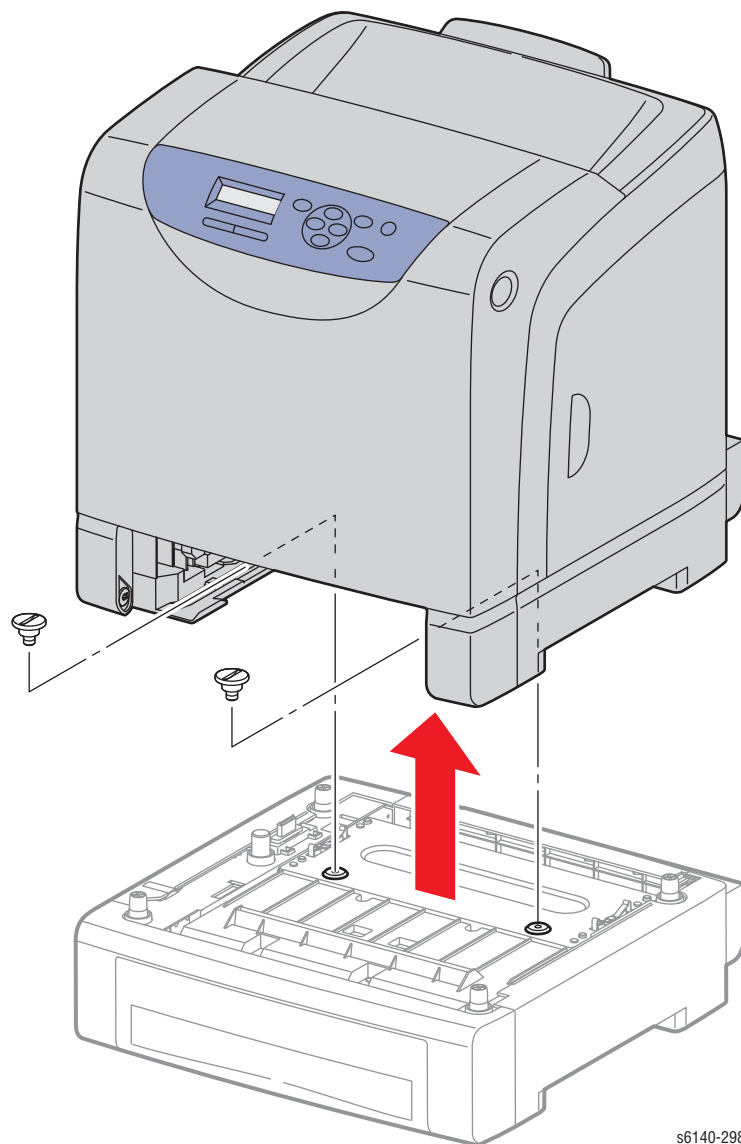
s6140-298

Left Side Cover

PL12.1.4

1. Remove the Optional Feeder (page 8-111).
2. Remove the Tray.
3. Remove the front cover (page 8-113).
4. Remove 2 screws (silver, tap, 8mm) that secure the left side cover.
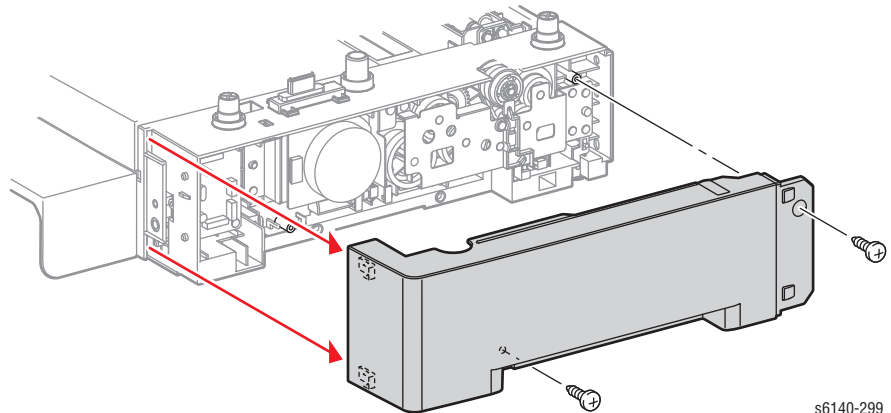
s6140-299

Chute Cover

PL12.1.5

1. Remove the Optional Feeder (page 8-111).
2. Remove the Tray.
3. Remove 4 screws that secure the chute cover.
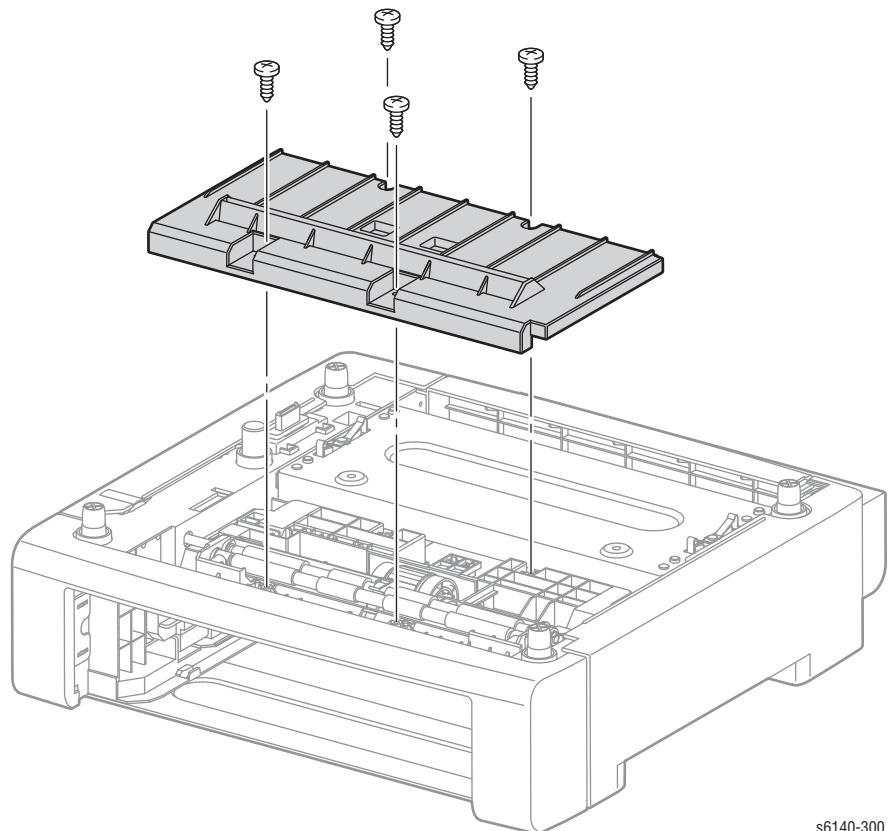
s6140-300

Rear Cover

PL12.1.6

1. Remove the Optional Feeder (page 8-111).
2. Remove the Tray.
3. Remove the front cover (page 8-113).
4. Remove the rear tray cover.
5. Remove the Left side cover (page 8-112).
6. Remove the Right side cover (page 8-114).
7. Remove 2 screws that secure the rear cover to the feeder.
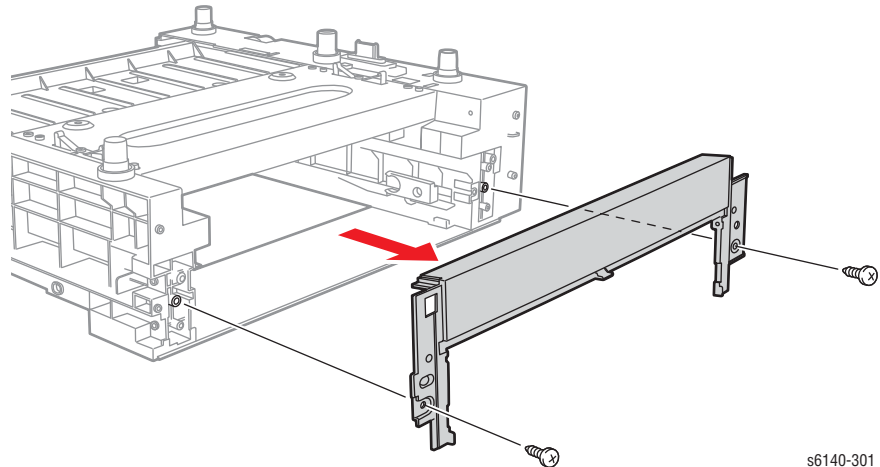
s6140-301

Front Cover

PL12.1.8

1. Remove the Optional Feeder (page 8-111).
2. Remove Tray 2.
3. Release 4 hooks that secure the front cover.
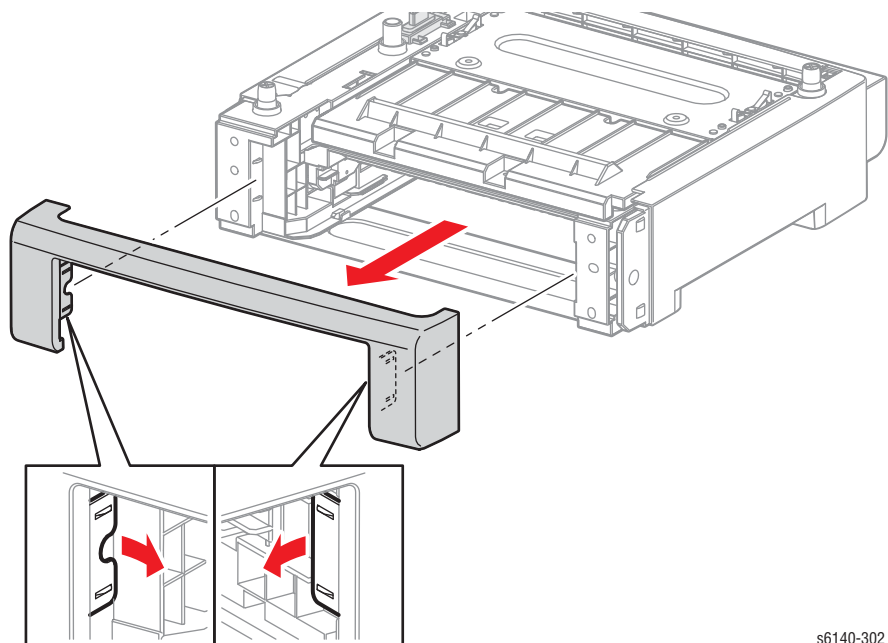
s6140-302

Right Side Cover

PL12.1.7

1. Remove the Optional Feeder (page 8-111).
2. Remove the front cover (page 8-113).
3. Remove the rear tray cover.
4. Remove 2 screws that secure the Right side cover to the feeder.

s6140-303
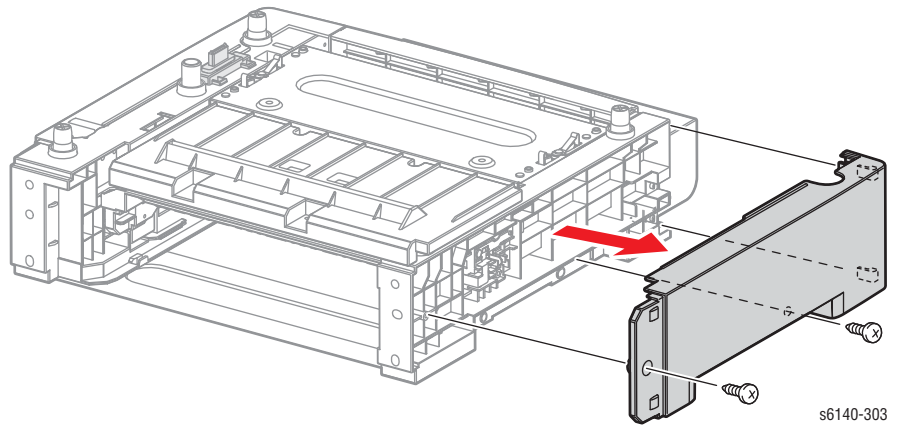
Feeder Board

PL12.2.1

1. Remove the Optional Feeder (page 8-111).
2. Remove the front cover (page 8-113).
3. Remove the rear tray cover.
4. Remove the left side cover (page 8-112).
5. Disconnect all connections to the Feeder Board.
6. Remove 3 screws (silver, plastic, 8mm) that secure the Feeder Board to the feeder.
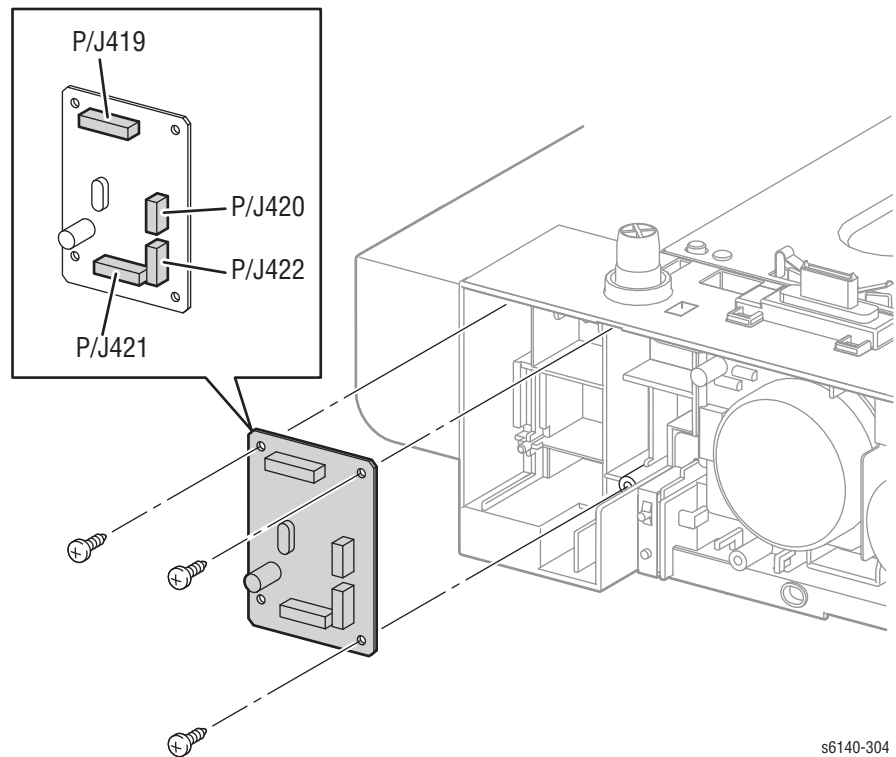
s6140-304

Option Drive Clutch and Bearing

PL12.2.6

1. Remove the Optional Feeder (page 8-111).
2. Remove the front cover (page 8-113).
3. Remove the left side cover (page 8-112).
4. Disconnect P/J4201 and release the clutch harness from the guide.
5. Remove the E-ring that secures the clutch to the shaft and remove the clutch.
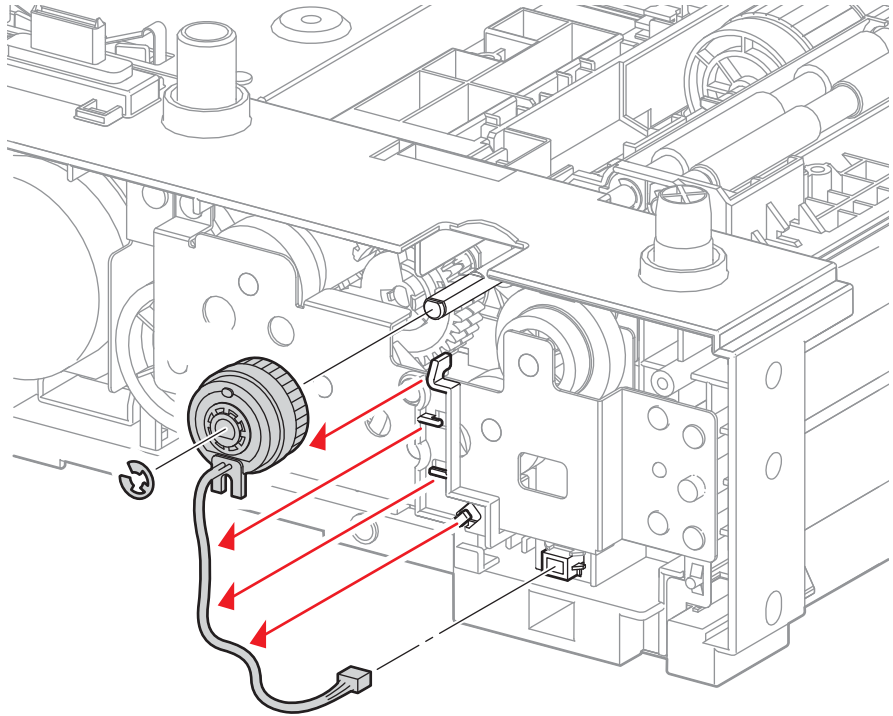
s6140-305

6. Remove the Feed Gear Kit (page 8-120).
7. Remove the registration roller bearing (page 8-122) to replace the bearing.

Replacement Note

After replacement, check that the gears rotate, the clutch is properly installed over the stopper, the clutch harness is laced into the guide, and P/J4201 is connected.

Feed Gear Assembly

12.2.10

1. Remove the Optional Feeder (page 8-111).
2. Remove the front cover (page 8-113).
3. Remove the left side cover (page 8-112).
4. Remove the Drive Clutch (page 8-116).
5. Remove the Feed Gear Kit (page 8-120).
6. Remove the feed spring out from the feed gear.
7. Release the hook that secures the feed gear to the feed shaft and slide it off the shaft as far as it will go (only a few mm).
8. Use a miniature screwdriver to press the feed lever down then slide the feed gear off the feed shaft completely.

Feed Gear Side

Optional
Feeder Side
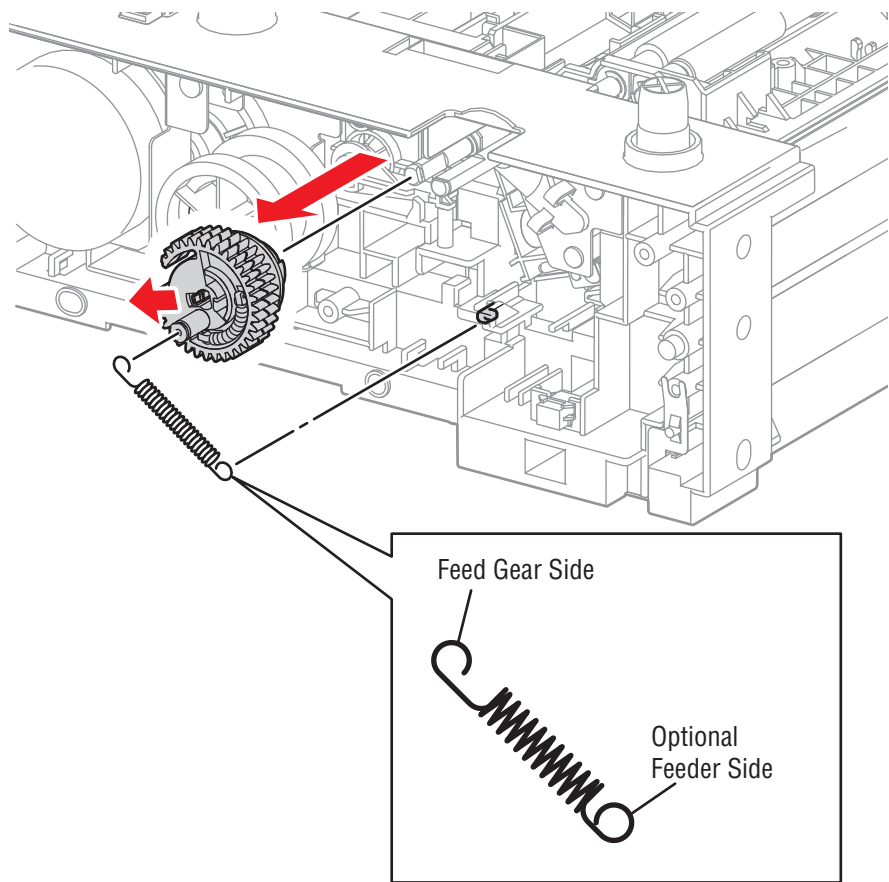
s6140-306

Replacement Note

Move the feed lever and Feed Solenoid away from the shaft to allow clearance to install the feed gear.

Feed Solenoid Kit

PL12.2.97

1. Remove the Optional Feeder (page 8-111).
2. Remove the front cover (page 8-113).
3. Remove the left side cover (page 8-112).
4. Remove the Drive Clutch (page 8-116).
5. Remove the Feed Gear Kit (page 8-120).
6. Remove the Feed Gear Assembly and spring (page 8-117).
7. Disconnect P/J4213 from the Option Harness.
8. Remove 1 screw (silver, tap, 8mm) that secures the solenoid and remove the solenoid.

P/J4213

s6140-320
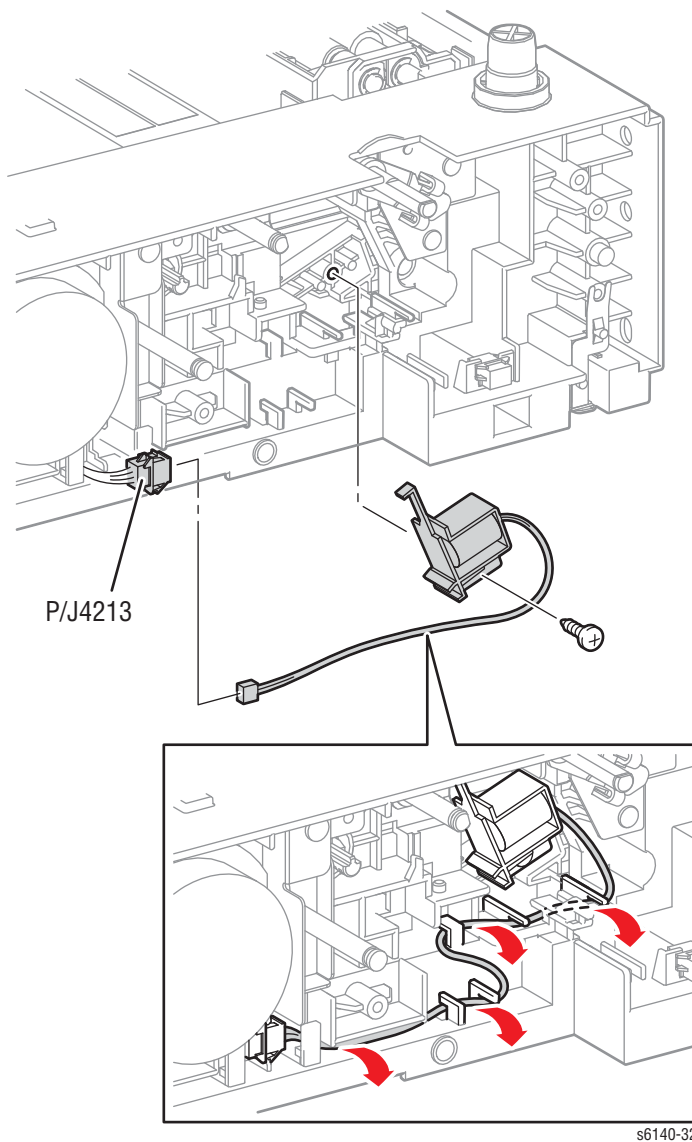
Feed Motor Kit

PL12.2.98

1. Remove the Optional Feeder (page 8-111).
2. Remove the front cover (page 8-113).
3. Remove the left side cover (page 8-112).
4. Disconnect CN1 from the Feed Motor.
5. Remove 2 (silver, metal, 6mm) and 2 (silver, plastic, 8mm) screws that secure the Feed Motor to the feeder.

Silver, M4, 6mm

s6140-307
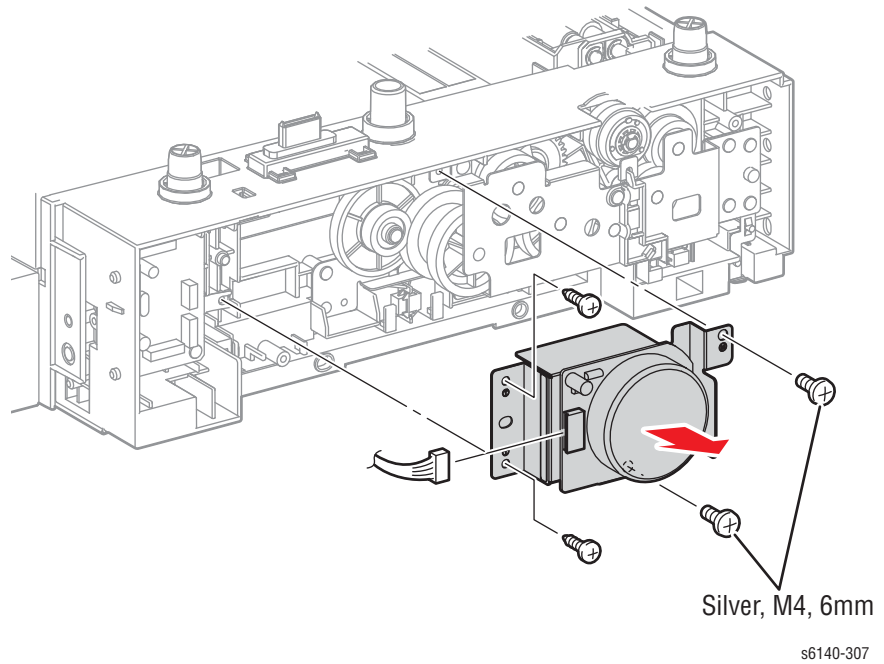
Feed Gear Kit

PL12.2.99

1. Remove the Optional Feeder (page 8-111).
2. Remove the front cover (page 8-113).
3. Remove the left side cover (page 8-112).
4. Disconnect P/J4201 and release the clutch harness from the guide.
5. Remove 1 (silver, metal, 6mm) and 3 (silver, plastic, 8mm) screws that secure the Feed Gear Kit.

Silver, M4, 6mm
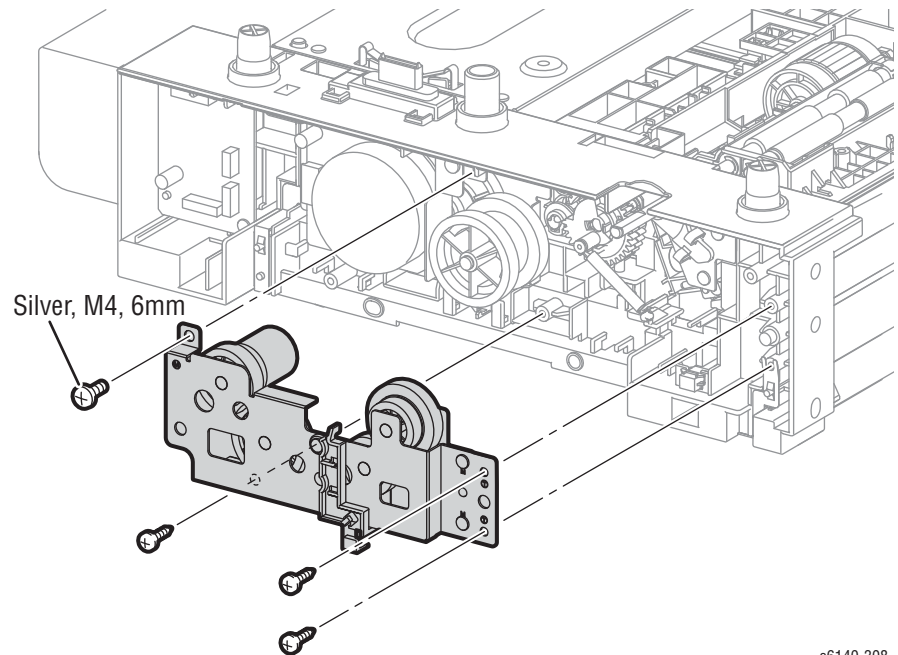
s6140-308

Replacement Note

After replacement, check that the gears rotate, the clutch is properly installed over the stopper, the clutch harness is laced into the guide, and P/J4201 is connected.

Optional Feeder Harness

PL12.3.23

1. Remove the Optional Feeder (page 8-111).
2. Remove the front cover (page 8-113).
4. Remove the left side cover (page 8-112).
5. Remove the Feed Motor (page 8-119).
6. Disconnect P/J419 on the Feeder Board.
7. Release 4 hooks that secure the drawer harness cover and remove the cover.

P/J419

s6140-324
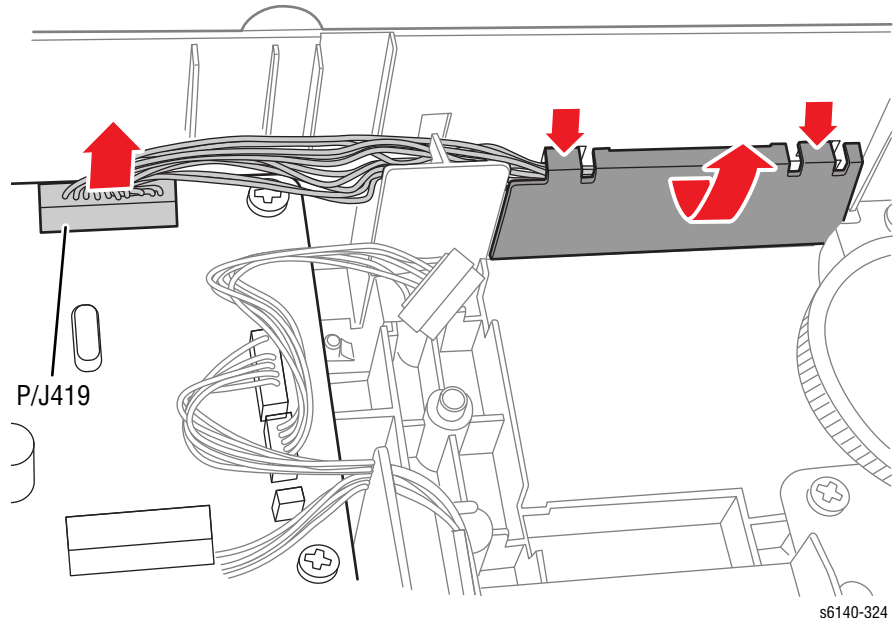
8. Release 2 hooks that secure the option connector and remove the harness.
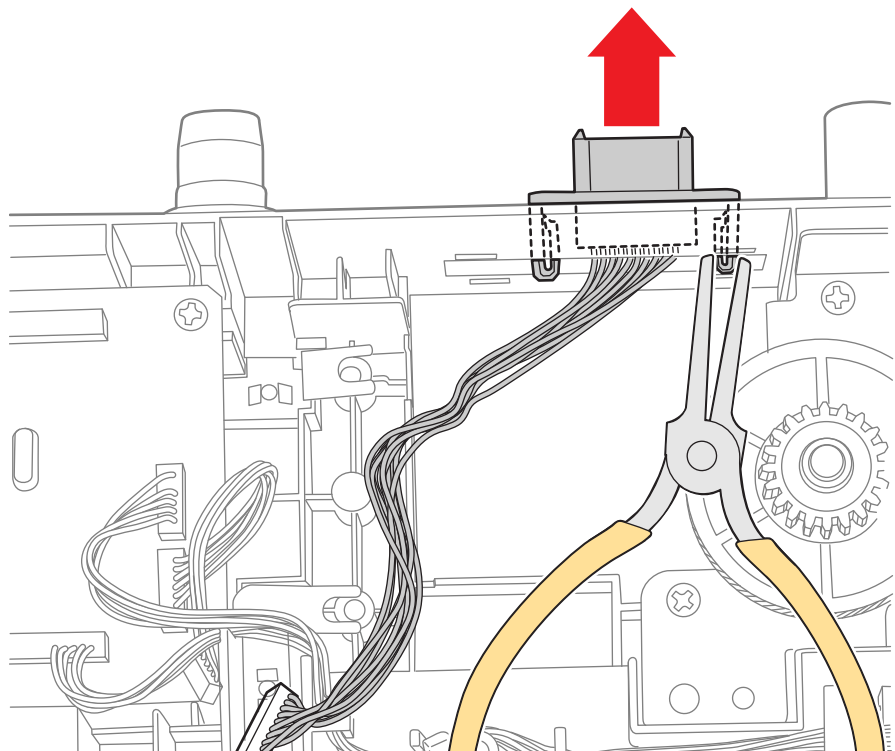
Registration Roller Bearing

PL12.3.16

1. Remove the Optional Feeder (page 8-111).
2. Remove the front cover (page 8-113).
4. Remove the left side cover (page 8-112).
5. Remove the Drive Clutch (page 8-116).
6. Remove the Feed Gear Kit (page 8-120).
7. Release 2 hooks that secure the bearing and remove the bearing from the registration roller shaft.
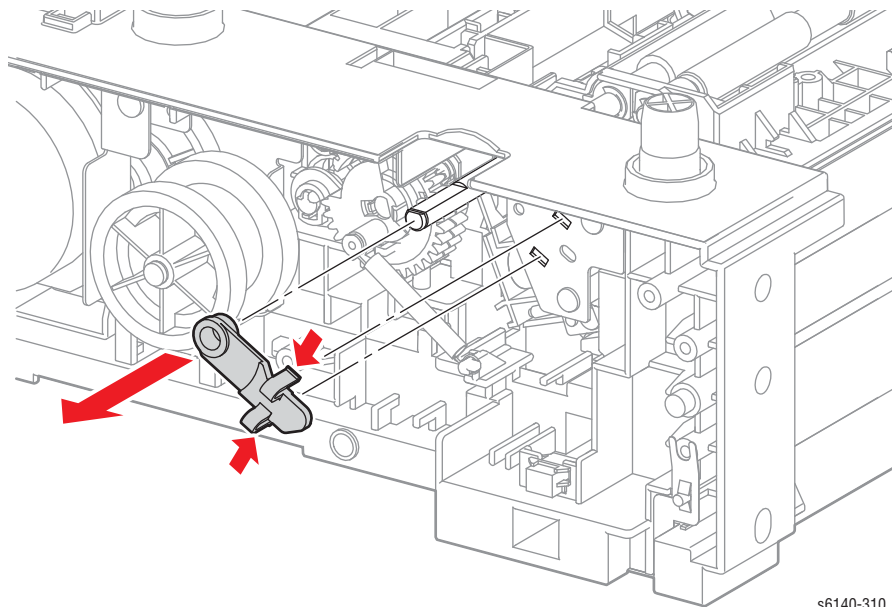
s6140-310

Feed Roller

PL12.4.4

1. Remove the Optional Feeder (page 8-111).

2. Remove the chute cover (page 8-112).

3. Release the hook on the left side of the roller. Move the roller core to the left side.

4. Move the Feed Roller to the left, so that the grooves in the Feed Roller are clear of the pins on the feed shaft.

5. Rotate the Feed Roller 180° on the feed shaft and allow the Feed Roller to drop off the shaft.
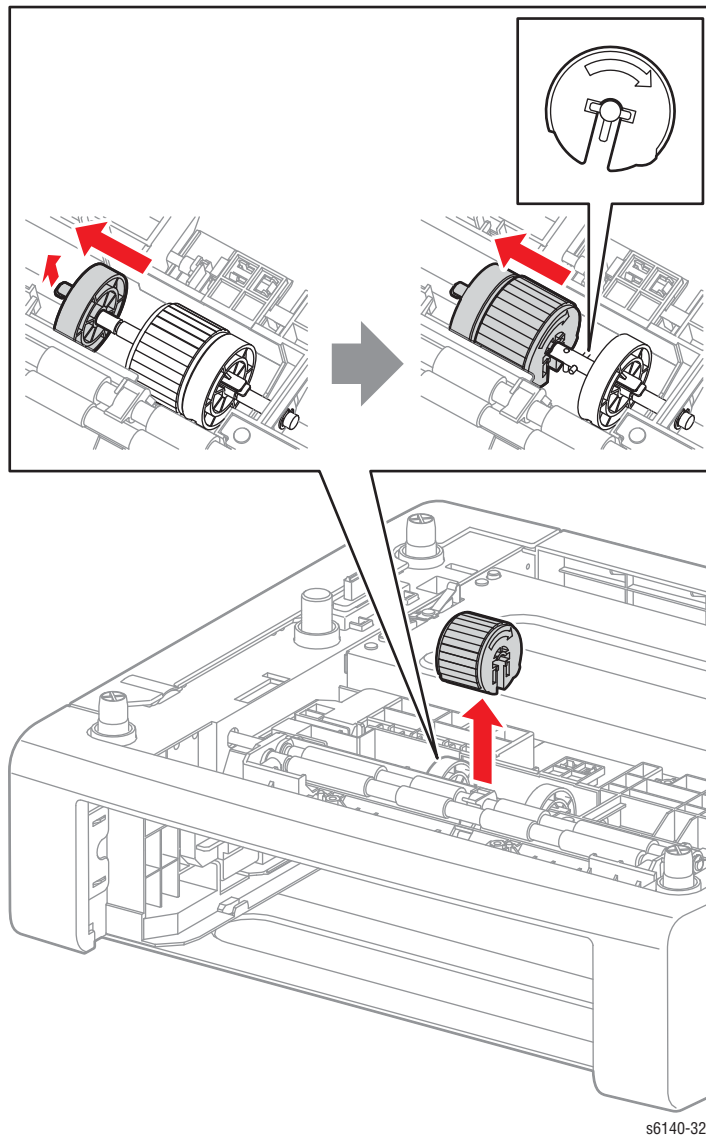
s6140-321

Replacement Note

The Feed Roller fits over the pins on the feed shaft in only one direction. Note the location of the Feed Roller grooves when installing the roller on the shaft.

Registration Roller

PL12.4.9

Note

To simplify removal of feeder components, rotate the feeder to the rear side.

1. Remove the Optional Feeder (page 8-111).
2. Remove the front cover (page 8-113).
3. Remove the left side cover (page 8-112).
4. Remove the chute cover (page 8-112).
5. Remove the Drive Clutch (page 8-116).
6. Remove the Feed Gear Kit (page 8-120).
7. Remove the registration roller bearing (page 8-122).
8. Release the hook that secures the registration out actuator and move the actuator to the right side of the roller.
9. Release the hook that secures the registration out actuator to the chute up and rotate the actuator up.

Registration Out Spring
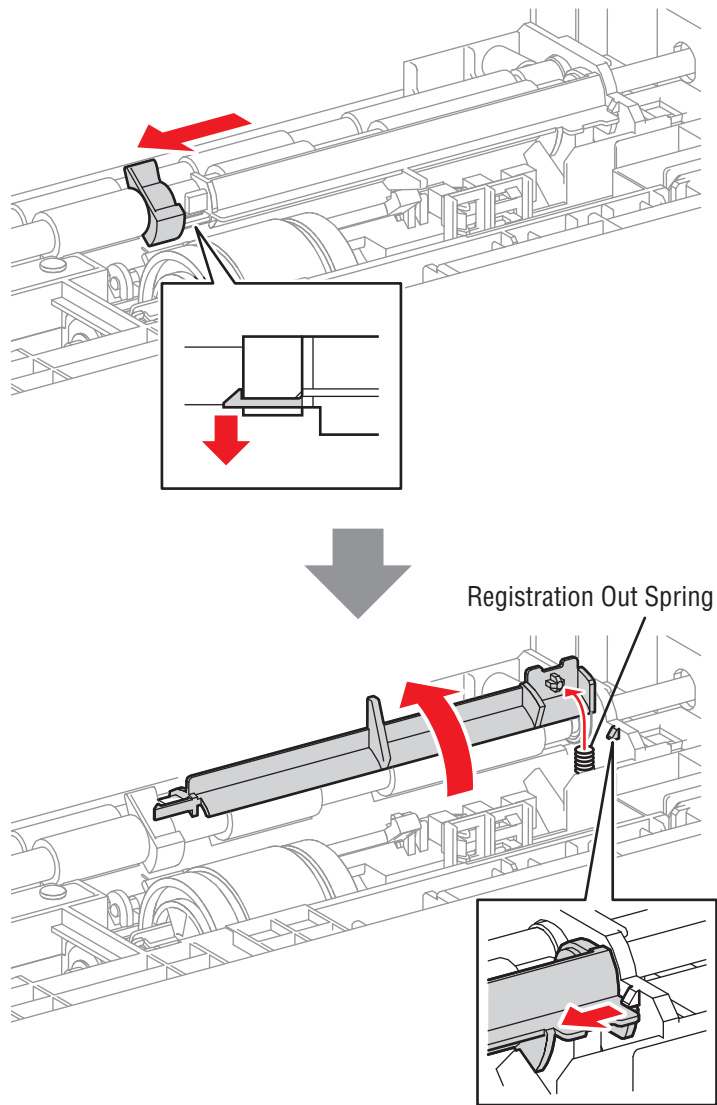
s6140-311

Note

When removing the gear and bearings from the registration roller it may be helpful to push the metal registration roller towards the front of the Optional Feeder.

10. Remove 2 E-rings that secure a bearing and gear at the each end of the registration roller.

11. Shift the roller left to release the right end from the frame and remove the roller from the feeder.

Registration Out Actuator

Metal Registration Roller
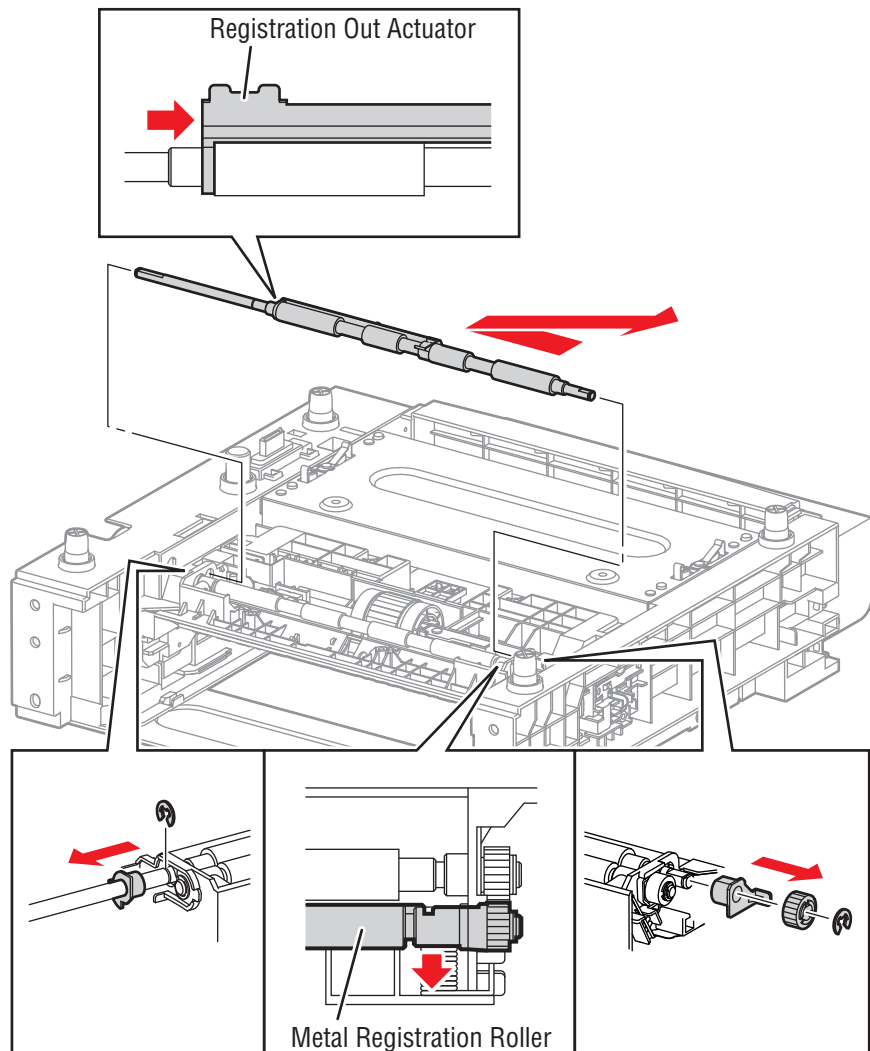
s6140-312

Registration In Actuator

PL12.4.11

Note

> To simplify removal of feeder components, rotate the feeder to the rear side.

1. Remove the Optional Feeder (page 8-111).
2. Remove the front cover (page 8-113).
4. Remove the left side cover (page 8-112).
5. Remove the chute cover (page 8-112).
6. Remove the Drive Clutch (page 8-116).
7. Remove the Feed Gear Kit (page 8-120).
8. Remove the registration roller bearing (page 8-122).
9. Remove the registration roller (page 8-124).
10. Release the left end of the actuator from the chute.
11. Remove the actuator and spring from the feeder.
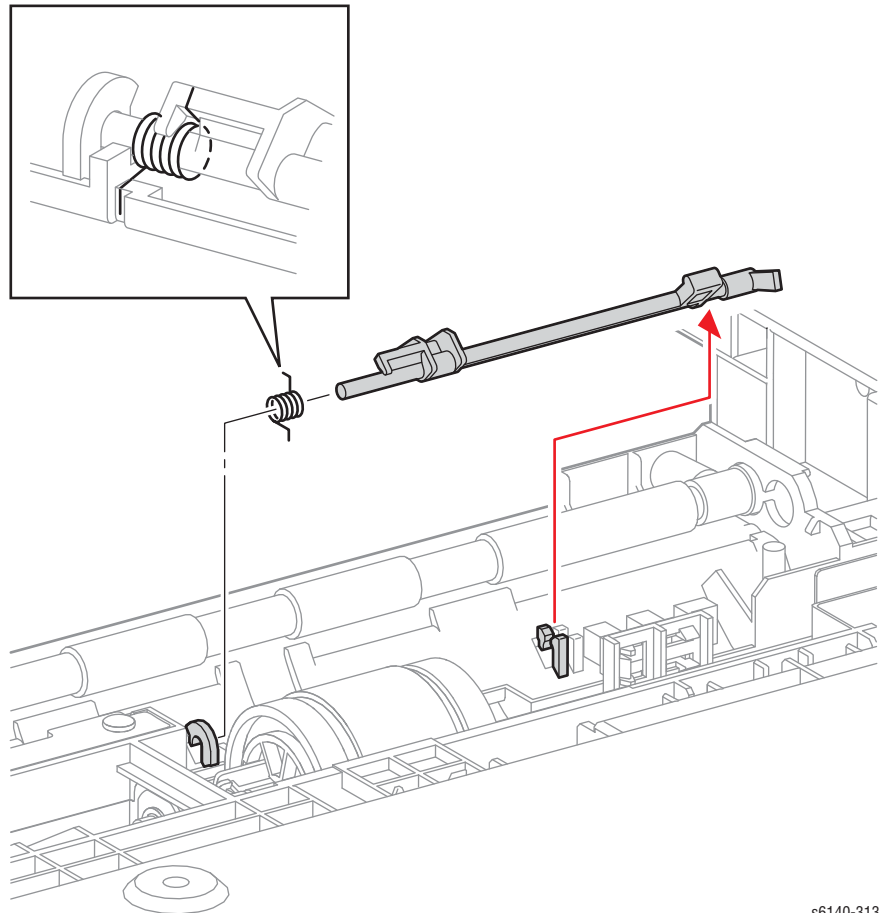
s6140-313

No Paper Sensor

PL12.4.13

Note

To simplify removal of feeder components, rotate the feeder to the rear side.

1. Remove the Optional Feeder (page 8-111).
2. Remove the chute cover (page 8-112).
3. Release 3 hooks that secure the sensor to the feeder.
4. Disconnect P/J4212 and remove the sensor.

P/J4212
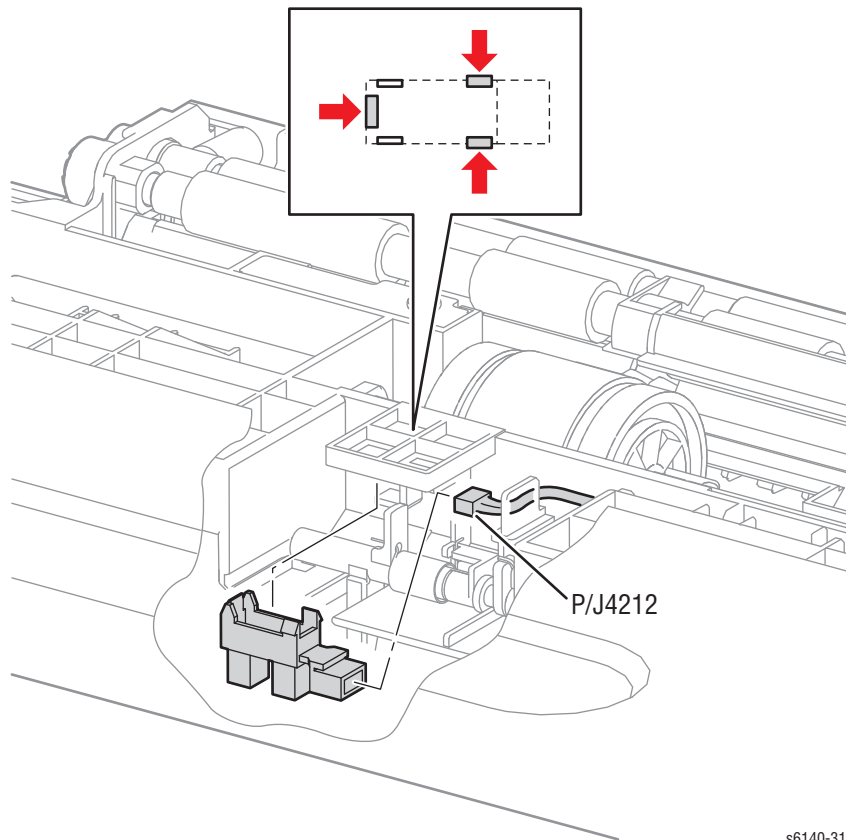
s6140-314

Paper Path Sensor

PL12.4.13

Note

To simplify removal of feeder components, rotate the feeder to the rear side.

1. Remove the Optional Feeder (page 8-111).
2. Remove the chute cover (page 8-112).
3. Release the hook that secures the registration out actuator and move the actuator to the right side of the roller.
4. Release the hook that secures the registration out actuator to the chute and rotate the actuator up to access the sensor.

Registration Out Spring
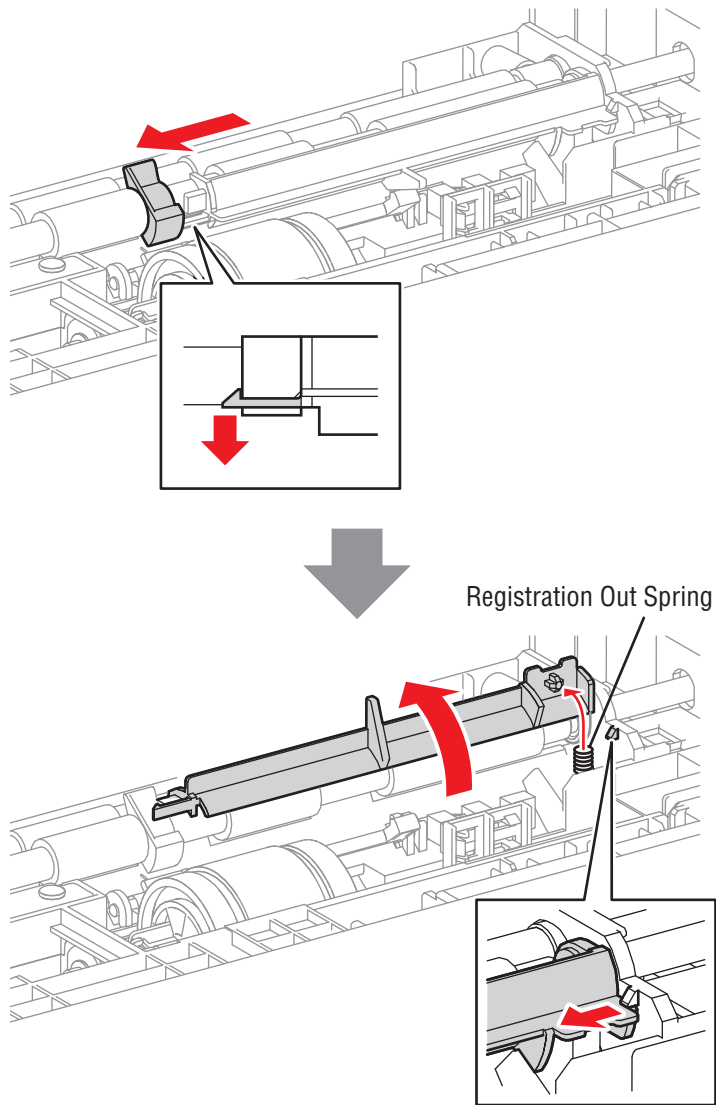
s6140-311

5. Release 3 hooks that secure the sensor to the feeder.

6. Disconnect P/J4200 to remove the sensor.

Registration In Actuator

P/J4200
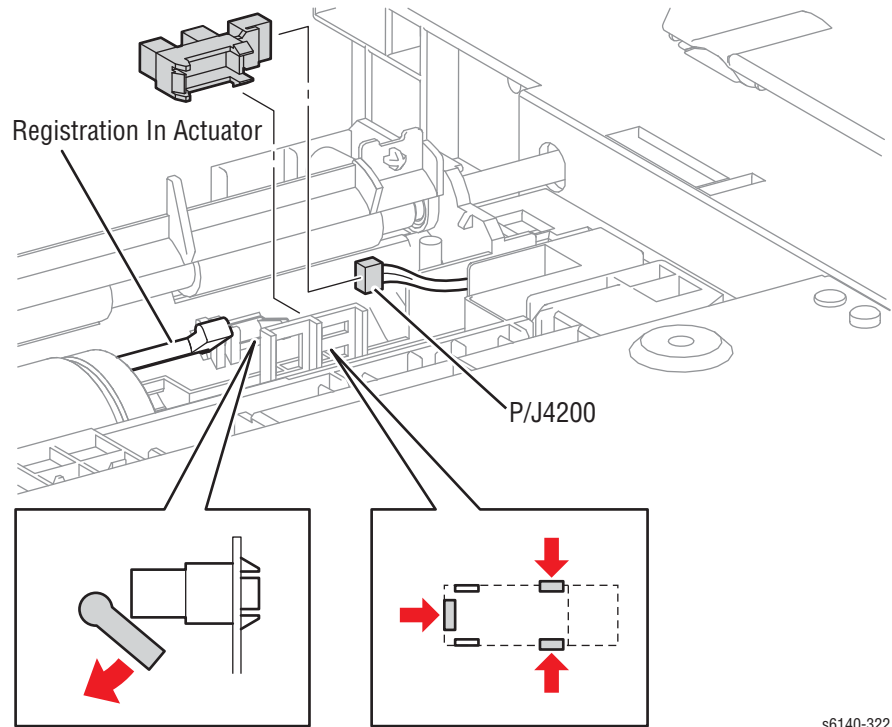
s6140-322

No Paper Sensor Actuator

PL12.4.32

Note

To simplify removal of feeder components, rotate the feeder to the rear side.

1. Remove the Optional Feeder (page 8-111).
2. Remove the chute cover (page 8-112).
3. Release 3 hooks that secure the no paper sensor to the feeder.

P/J4212
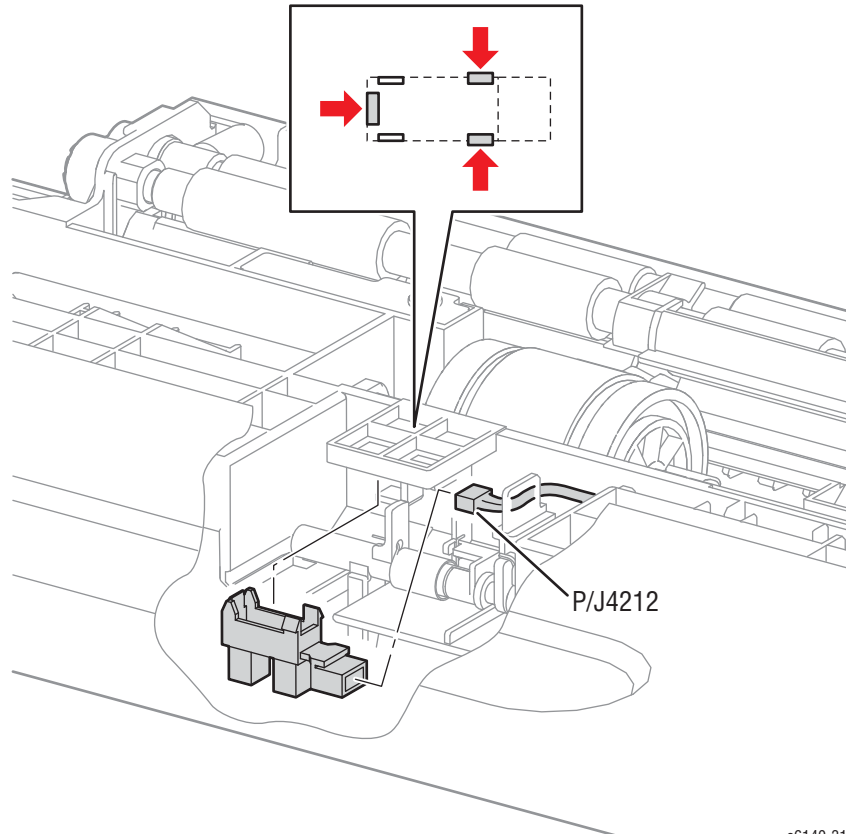
s6140-314

4. Release the right end of the actuator shaft from the frame and remove the actuator and spring.
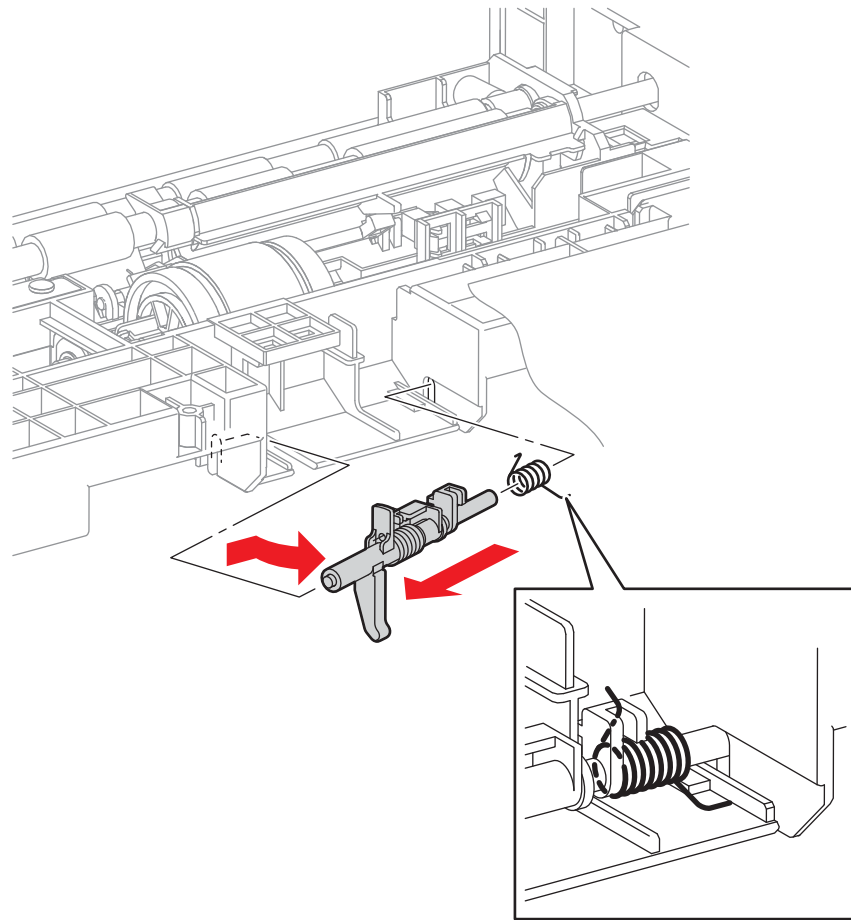
s6140-315

Replacement Note

Install the spring on the actuator and in the feeder before replacing the actuator.

Separator Holder

PL12.5.5

1. Hold the tray and pinch the left and right hooks of the Separator Holder. Swing the Separator Holder to release the two hooks.
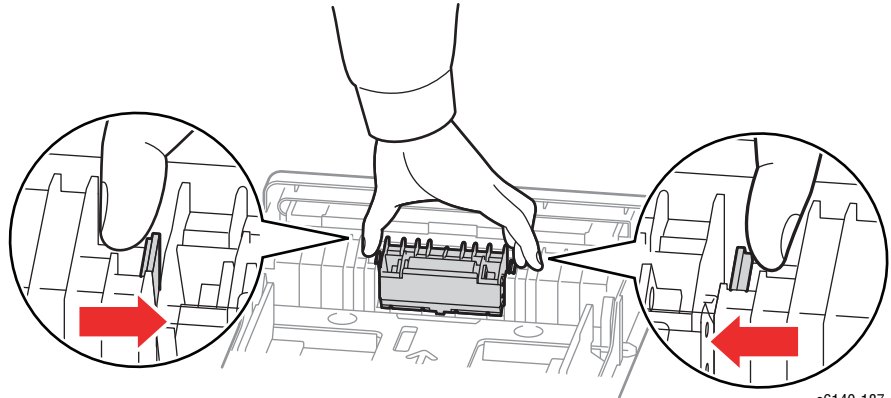
s6140-187

2. Pull the Separator Roller up to remove it from the Tray.
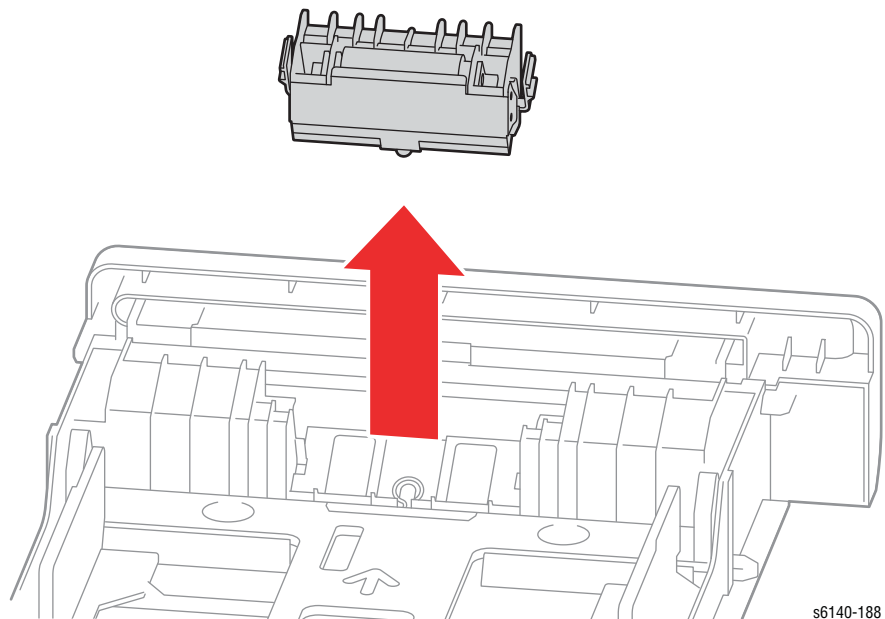
s6140-188

Parts List

In this chapter...

- Serial Number Format
- Using the Parts List
- Parts Lists
- Xerox Supplies and Accessories
- Service Kits

Chapter 9

Serial Number Format

Changes to Xerox products are made to accommodate improved components as they become available. It is important when ordering parts to include the following information:

- Component's part number
- Product type or model number
- Serial Number of the printer

The serial number is found on a label located on the left-side frame near the Fuser. The Front Cover must be opened to view the Serial Number.

S/N: HAT030001

MANUFACTURED: September, 2009

s6140-316
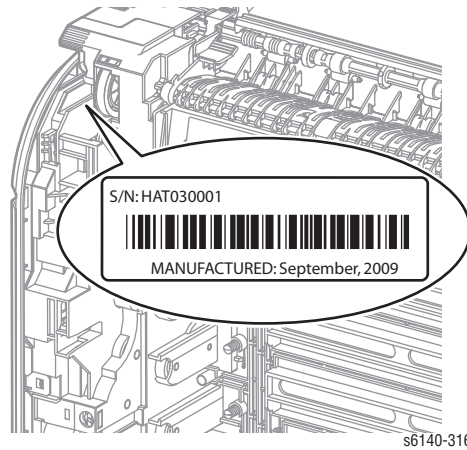
The nine-digit serial number uses the format **PPPRSSSSS**.

- **PPP** = Three digit alphanumeric product code

Product Code	Product
VUX	6140, 110 V Engine
VVA	6140V, 220 V Engine

- **R** = Single digit numeric revision digit, 0-9. To be rolled when the ending serial number is reached or when a major product change occurs.

- **SSSSS** = Five digit numeric serial number based on the following table. The serial numbers are reset only when the ending number is reached or when the revision number is rolled.

Product	Starting Serial Number	Ending Serial Number
6140_N, 110V Engine	10001	99999
6140V_N, 220V Engine	10001	99999

Example

VUX243072: Xerox Serial Number

VUX: Product Code for the Phaser 6140, 110V printer

2 = Revision Level

43072 = Serial Number for 6140 N

Using the Parts List

- **ID No.:** The callout number from the exploded part diagram.

- **Name/Description:** The name of the part to be ordered and the number of parts supplied per order.

- **Part Number:** The material part number used to order that specific part.

- Parts identified throughout this manual are referenced **PL#.#.#**; For example, PL3.1.10 means the part is item 10 of Parts List 3.1.

- A Black triangle preceding a number followed by a parenthetical statement in an illustrated parts list means the item is a parent assembly, made up of the individual parts called out in parentheses.

- The notation "**with X~Y**" following a part name indicates an assembly that is made up of components X through Y. For example, "1 (with 2~4)" means part 1 consists of part 2, part 3, and part 4.

- An asterisk (*) following a part name indicates the page contains a note about this part.

- The notation "**J1<>J2 and P2**" is attached to a wire harness. It indicates that connector Jack 1 is attached to one end of the wire harness and connector J2 is attached to the other end that is plugged into P2.

Note

Only parts showing part numbers are available for ordering by support. Parts not showing part numbers are available on the parent assembly.

Abbreviations

Abbreviation	Meaning
C	C-ring
E	E-ring
KL	K-clip
S	Screw

Parts Lists

Parts List 1.1 Covers (1/2)

2

1 (with 22,23)

22

ST1

ST1

3

ST1

19

ST1

23

ST1

ST1

A

ST1

ST1

5

ST1

ST1

ST1

Front

6

A

ST1

ST1

ST1

ST1

ST1
ST1

ST1

7

s6140-001
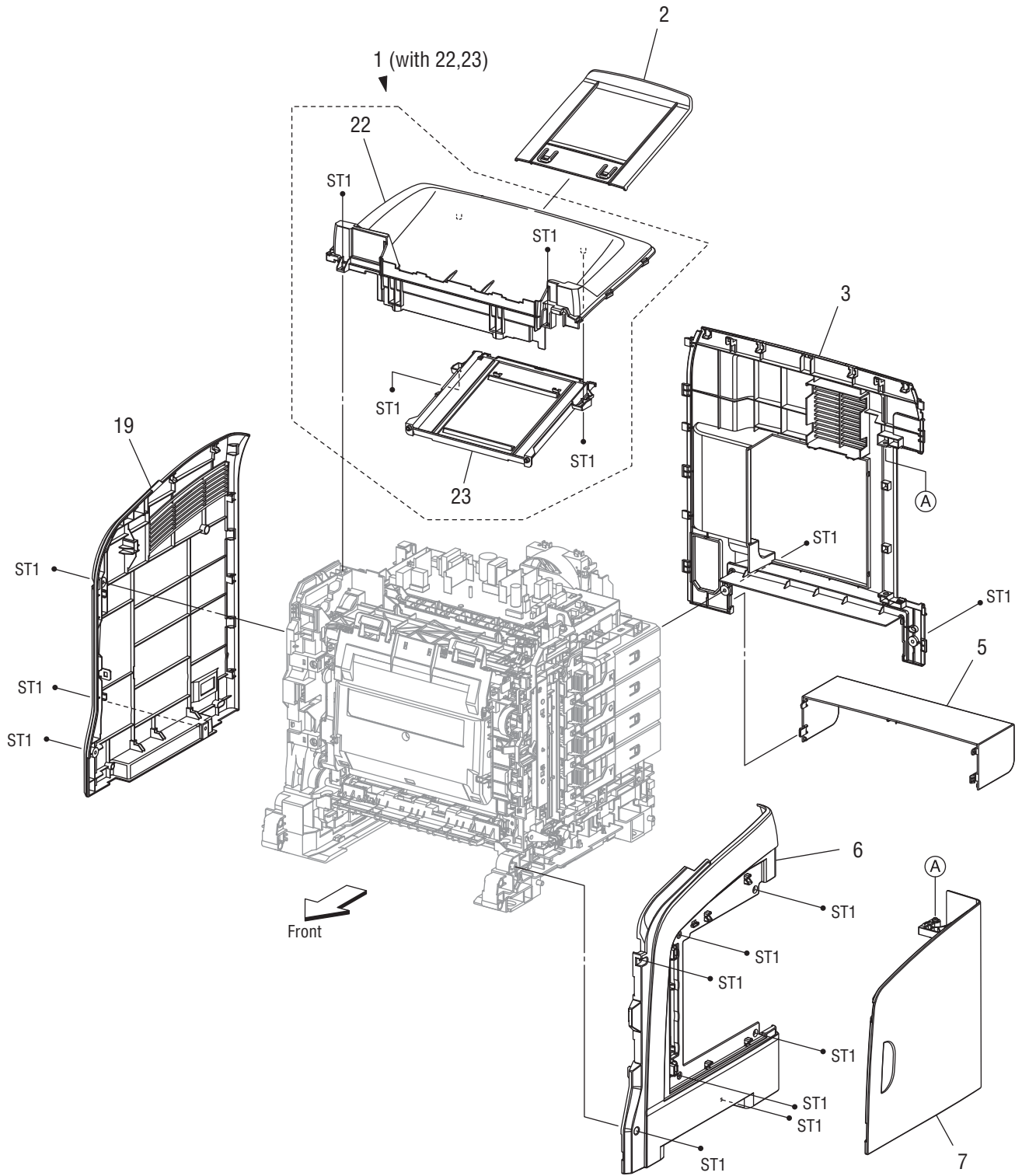
Parts List 1.1 Covers (1/2)

Item	Description	Part Number
1	Cover Assy Top (With 22,23)	848K28561
2	Tray Ext (Output Tray Extension)	050E25201
3	Cover Rear	848E38121
4	- -	
5	Cover CST (Rear Tray Cover)	848E38130
6	Cover Side R	848E38081
7	Cover Assy Window TNR (Right Side Door)	848K28550
8	- -	
9	- -	
10	- -	
11	- -	
12	- -	
13	- -	
14	- -	
15	- -	
16	- -	
17	- -	
18	- -	
19	Cover Side L	848E38101
20	- -	
21	- -	
22	Cover Top	
23	Guide Tray	

Parts List 1.2 Covers (2/2)

1 (with 2,3,5,10-12,28,29)

3

(P220)

2

5 (with 6-9)

6

8

9

10

11

7

ST1

ST1

ST1

ST1

(J220)

12

27

(P272)

(J2200)

(J271)

13

ST1

19

97

14

20

17

15

ST1

16

ST1

18

22

17

SM2

ST1

ST1

28 (with 13-18)

29
(with 17-20, 22)

SM2

18

98

99

23

23

26

26

30

24

24

30
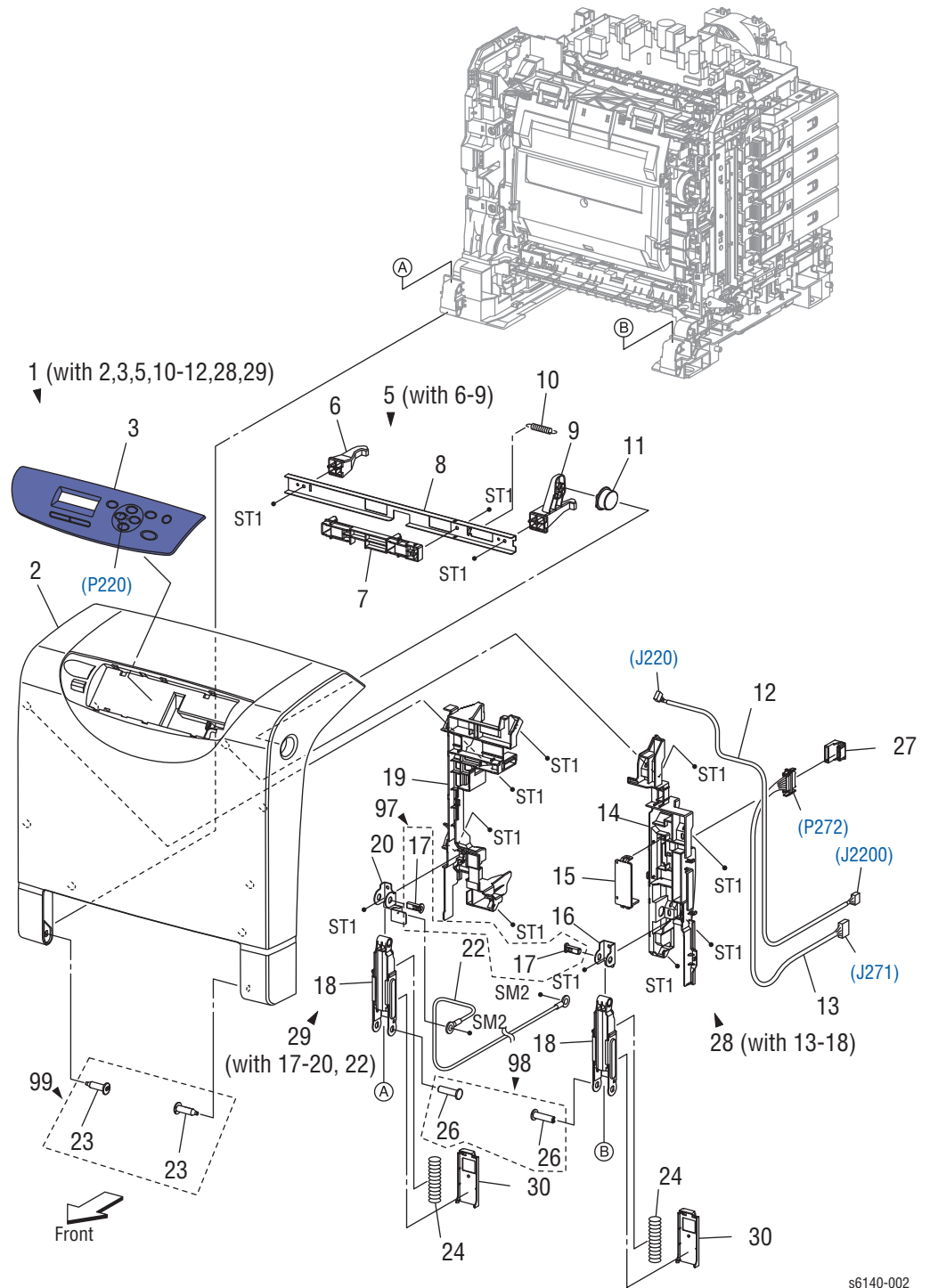
Front

s6140-002

Parts List 1.2 Covers (2/2)

Item	Description	Part Number
1	Cover Assy Front (with 2, 3, 5, 10-12, 28,29)	848K33132
2	Cover Front	
3	Console Assy Panel (Control Panel)	848K33151
4	- -	
5	Latch Assy Front (with 6-9)	
6	Latch Front L	
7	Latch Front Dup	
8	Plate Latch	
9	Latch Front R	
10	Spring Latch Front	
11	Button Latch Front	
12	Harness Assy A (J220-J2200) (Control Panel Harness)	962K73260
13	Harn Assy Dup Relay (J271-P272)	962K73400
14	Holder Front R	
15	Cover Drawer	
16	Bracket Holder R	
17	Shaft Link Front	
18	Link Assy Front	
19	Holder Front L	
20	Bracket Holder L	
21	- -	
22	Harn Assy Gnd	
23	Shaft Pivot	
24	Spring Link Front	
25	- -	
26	Shaft Link Front Fdr	
27	Dup Connector Cap	021E13220
28	Holder Assy Front R (with 13-18)	
29	Holder Assy Front L (with 17-20, 22)	
30	Cover Link Front	
97	Kit Shaft Link Front (with 17 x 2 pcs) (Upper)	604K53040
98	Kit Shaft Link Front FDR (with 26 x 2 pcs) (Lower)	604K53050
99	Kit Shaft Pivot (with 23 x 2 pcs) (Front Cover)	675K54051

Parts List 2.1 Tray 1

1 (with 19,21)

2

21 (with 2-8,14-18)

3

4

Ⓐ

5

6

7

8

14

16

15

16

17

Ⓐ

18

Front

19
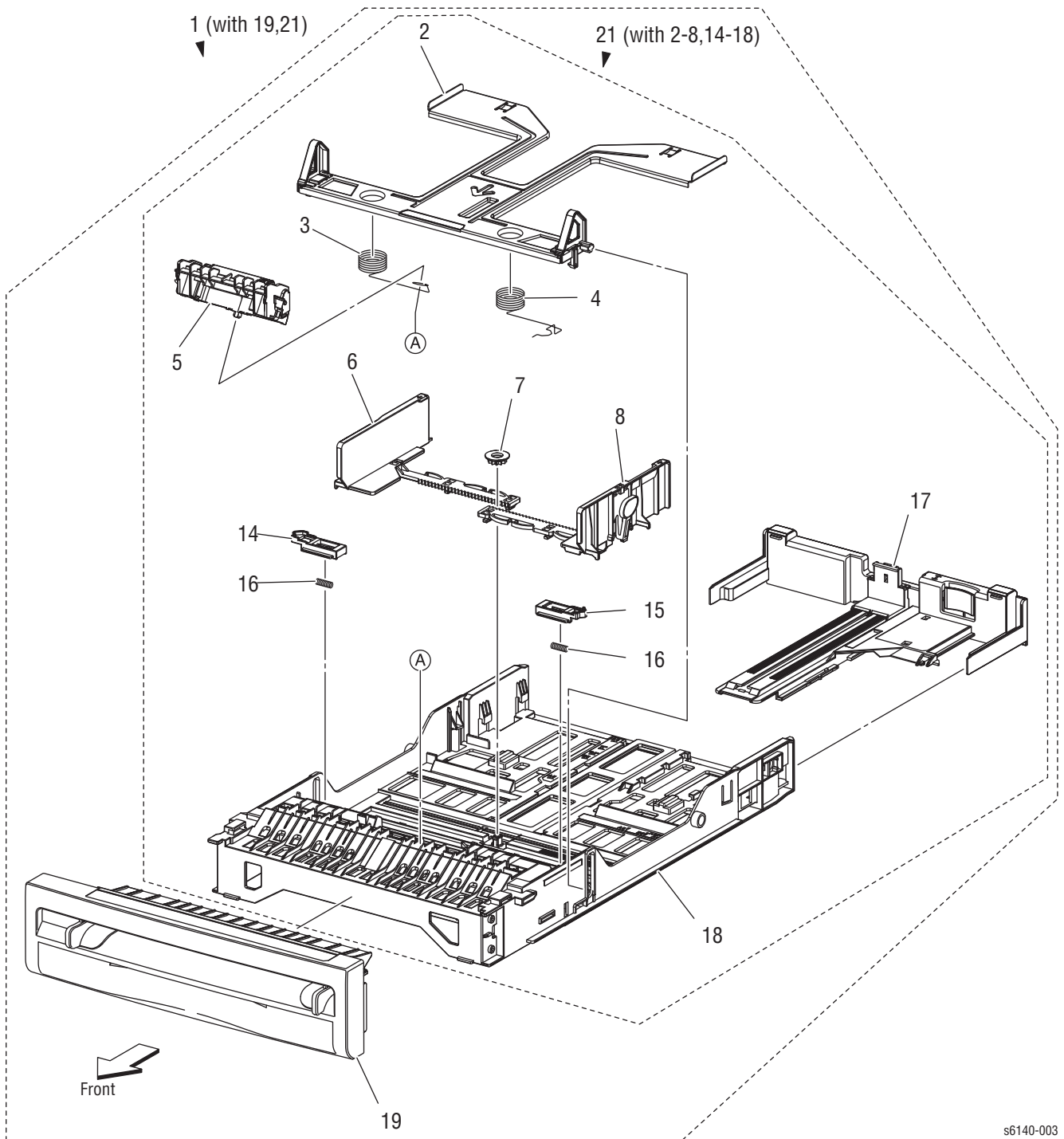
s6140-003

Parts List 2.1 Tray 1

Item	Description	Part Number
1	Cassette Assy 250 (With 19, 21)	050K64160
2	Plate Assy Bottom	
3	Spring N/f L	
4	Spring N/f R	
5	Holder Assy Separator	019K10491
6	Guide Side L	
7	Gear Pinion	
8	Guide Side Assy R	
9	- -	
10	- -	
11	- -	
12	- -	
13	- -	
14	Latch Bottom L	
15	Latch Bottom R	
16	Spring Latch B	
17	Tray Assy Extension	
18	Housing Cst 250	
19	Handle Assy Cst	
20	- -	
21	Tray Assy Cst 250 (With 2-8,14-18)	

Parts List 3.1 Feeder (1/2)

[Ref PL3.2.1]

Front
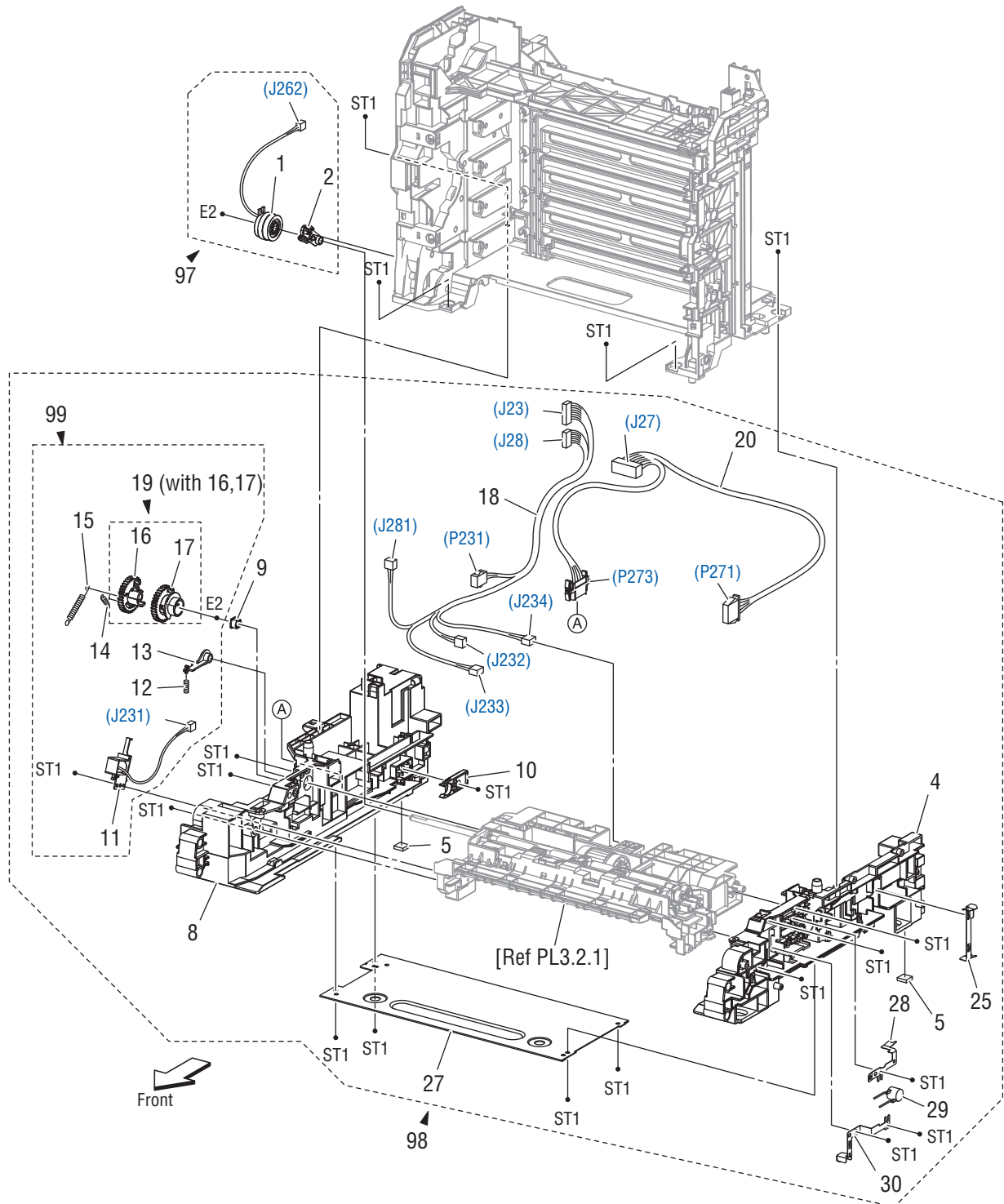
s6140-004

Parts List 3.1 Feeder (1/2)

Item	Description	Part Number
1	Clutch Assy Drv	
2	Bearing Regi	
3	- -	
4	Chassis FDR R	
5	Foot	
6	- -	
7	- -	
8	Chassis FDR L	
9	Bearing	
10	Stopper CST	003E73341
11	Solenoid Feed MSI (Manual Feed Solenoid)	
12	Spring Lever	
13	Lever Feed	
14	Spring Feed In	
15	Spring Feed Out	
16	Gear Feed Out	
17	Gear Feed In	
18	Harn Assy L Side (J23,J28-P231,J232,J233,J234, J281)	962K57541
19	Gear Assy Feed (With 16,17)	
20	Harn Assy Option (J27-P271, P273)	962K68772
21	- -	
22	- -	
23	- -	
24	- -	
25	Plate Earth Fdr R	
26	- -	
27	Plate Tie	
28	Plate Earth Fdr	
29	Arrester Ene112D-10A	
30	Plate Earth CST	
97	Kit Clutch Assy Drv (with 1, 2)	675K54231
98	Feeder Assy (with 4,5, 8-15, 18-20, 25, 27-30, PL3.2.1, PL8.2.7, PL9.1.6)	059K58060
99	Kit Solenoid Feed (with 11-15, 19)	604K51880

Parts List 3.2 Feeder (2/2)
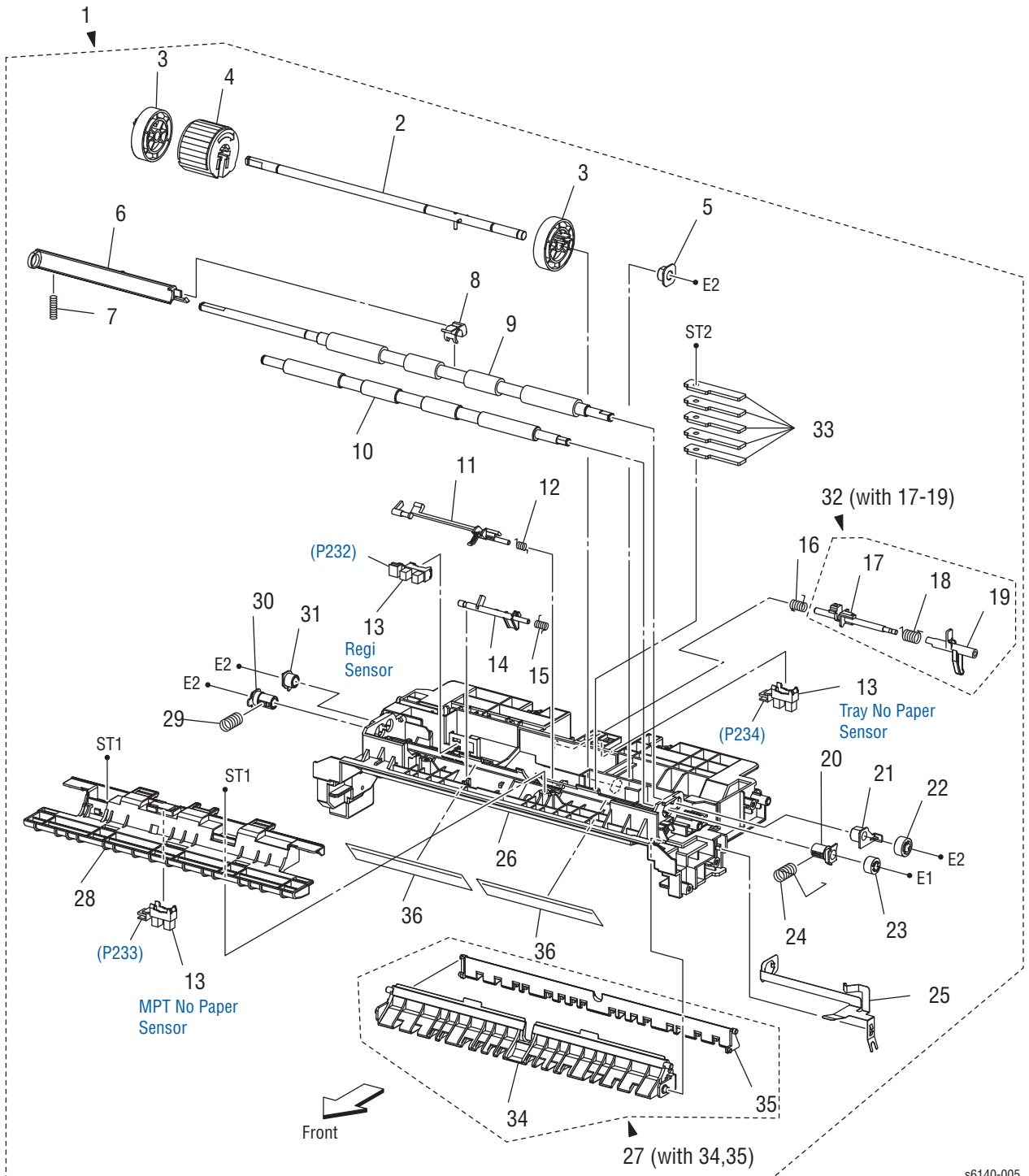
s6140-005

Parts List 3.2 Feeder (2/2)

Item	Description	Part Number
1	Chute Assy FDR Regi (With 2-16,20-33, 36)	
2	Shaft Assy Feed	
3	Roll Core MSI	
4	Roll Assy Feed	059K60140
5	Bearing Earth	
6	Actuator Regi Out	
7	Spring Regi Out	
8	Actuator Regi Roll	
9	Roll Assy Regi	
10	Roll Regi Metal	
11	Actuator Regi In	120E30270
12	Spring Act Regi	
13	Sensor Photo	130E87090
14	Actuator SSI	120E27850
15	Spring Act SSI	
16	Spring Stp	
17	Stopper Act	
18	Spring Act Np	
19	Actuator No Paper	
20	Bearing M Earth	
21	Bearing Earth Regi	
22	Gear Regi R	
23	Gear Regi M	
24	Spring Regi R M	
25	Plate Earth Regi	
26	Chute Up	
27	Chute Assy Low (With 34,35)	
28	Bracket Sns	
29	Spring Regi L M	
30	Bearing M	
31	Bearing R	
32	Actuator Assy No Paper (With 17-19)	120K92294
33	Plate Weight	
34	Chute Assy Low Ssi	
35	Chute Low Cst	
36	Film Chute Up	

Parts List 4.1 Xerographics

s6140-006

Parts List 4.1 Xerographics

Item	Description	Part Number
1	ROS Assy (Laser Unit)	
2	Spring ROS	
3	Holder CRUM	
4	Spring PHD	
5	Lever PHD	
6	Block Stopper PHD D	
7	Block Stopper PHD AD	
8	LED Assy Erase	122K94041
9	Spring Tracking	
10	Spring CF	
11	Spring TR4	
12	Spring TR3	
13	Spring TR2	
14	Spring TR1	
15	Spring D4	
16	Spring D3	
17	Spring D2	
18	Spring D1	
19	PWBA HVPS	105K23681
20	Frame HVPS	801E01504
21	PHD Assy (Imaging Unit)	675K69244
22	Harn Assy ROS RE (J40-J411)	
23	Harn Assy ROS Video (J41-J412)	
97	Kit Block Phd Right (with 4, 5, 7 x 2 pcs)	675K54241
98	Kit Block Phd Left (with 4, 5, 6 x 2 pcs)	675K54251
99	Kit ROS Assy (with 1, 2 x 2 pcs) (Laser Unit)	604K52950

Parts List 5.1 Toner Dispense
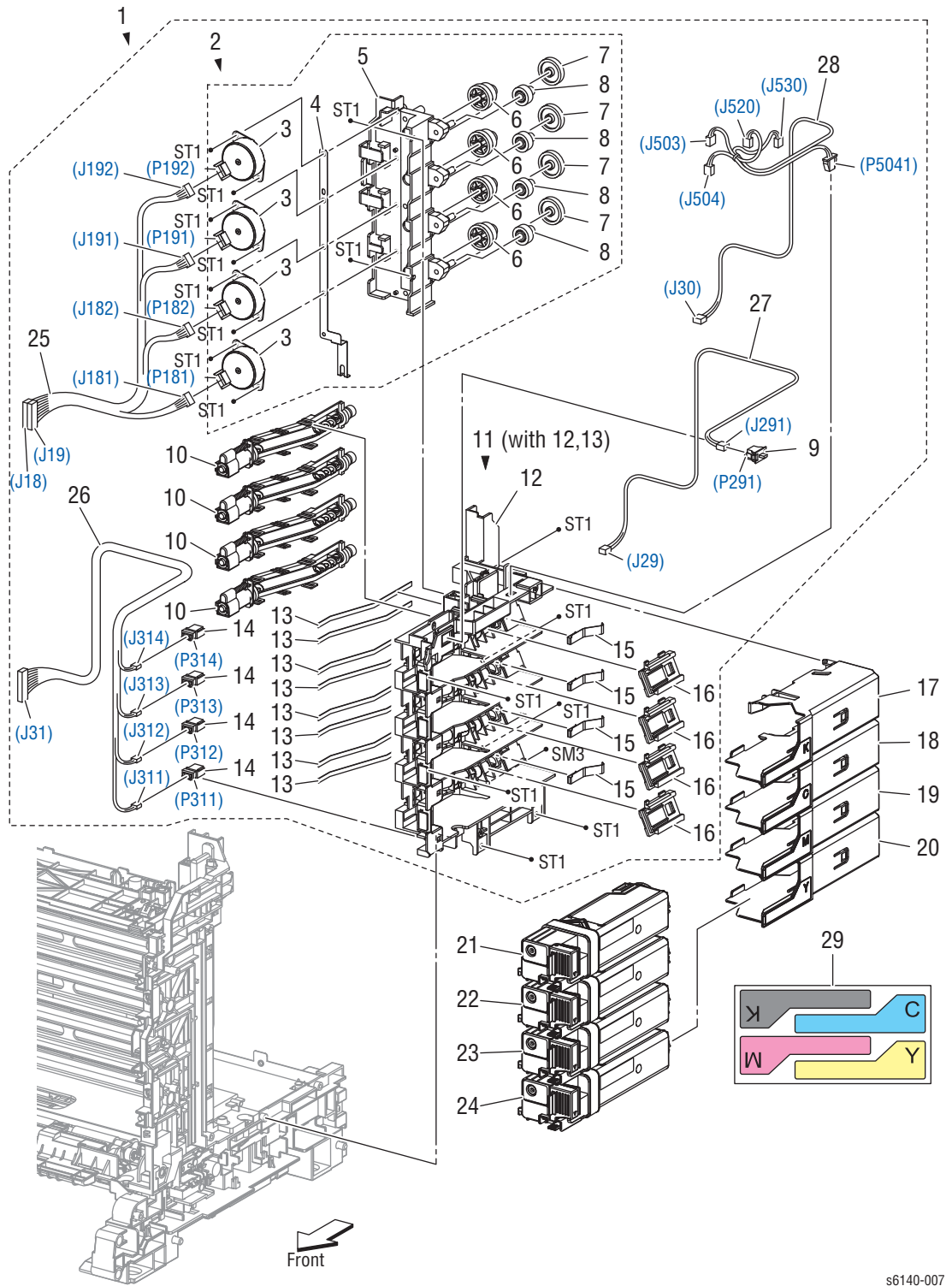
s6140-007

Parts List 5.1 Toner Dispense

Item	Description	Part Number
1	Dispenser Assy (with 2, 9~11,14~16, 25~27)	094K92290
2	Frame Assy Mot (with 3~8)	
3	Motor Assy Disp	
4	Conductor Motor	
5	Frame Motor	
6	Gear Idler	
7	Gear Idler Aug	
8	Gear Idler Agi	
9	Switch	110E10200
10	Housing Assy Auger	
11	Frame Assy Disp (with 12, 13)	
12	Frame Disp	
13	Seal Disp Aug	
14	Connector CRUM	
15	Spring Disp	
16	Joint Assy Disp	
17	Kit Holder Assy TCRU K (with 29)	604K44920
18	Kit Holder Assy TCRU C (with 29)	604K44930
19	Kit Holder Assy TCRU M (with 29)	604K44940
20	Kit Holder Assy TCRU Y (with 29)	604K44950
21a 21b	Toner Cartridge US/EU 2.5K-K S Toner Cartridge DMO 2.5K-K S	106R01480 106R01484
22a 22b	Toner Cartridge US/EU 2K-C S Toner Cartridge DMO 2K-C S	106R01477 106R01481
23a 23b	Toner Cartridge US/EU 2K-M S Toner Cartridge DMO 2K-M S	106R01478 106R01482
24a 24b	Toner Cartridge US/EU 2K-Y S Toner Cartridge DMO 2K-Y S	106R01479 106R01483
25	Harn Assy TNR MOT (J18,J19-J181,J182,J191,J192)	
26	Harn Assy Toner CRUM (J31-J311, J312, J313, J314)	
27	Harn Assy Side SW (J29-J291)	
28	Harn Assy MCU HAN (J503, J504, J530-J30, J520, P5041)	
29	Label Holder (included with 17, 18, 19, and 20)	

Parts List 6.1 Transfer & Fuser

1

(P171)

2

(J171)

(J17)

(J47)

99

3

4

5

ST1

6

(P281)

7

8

Front
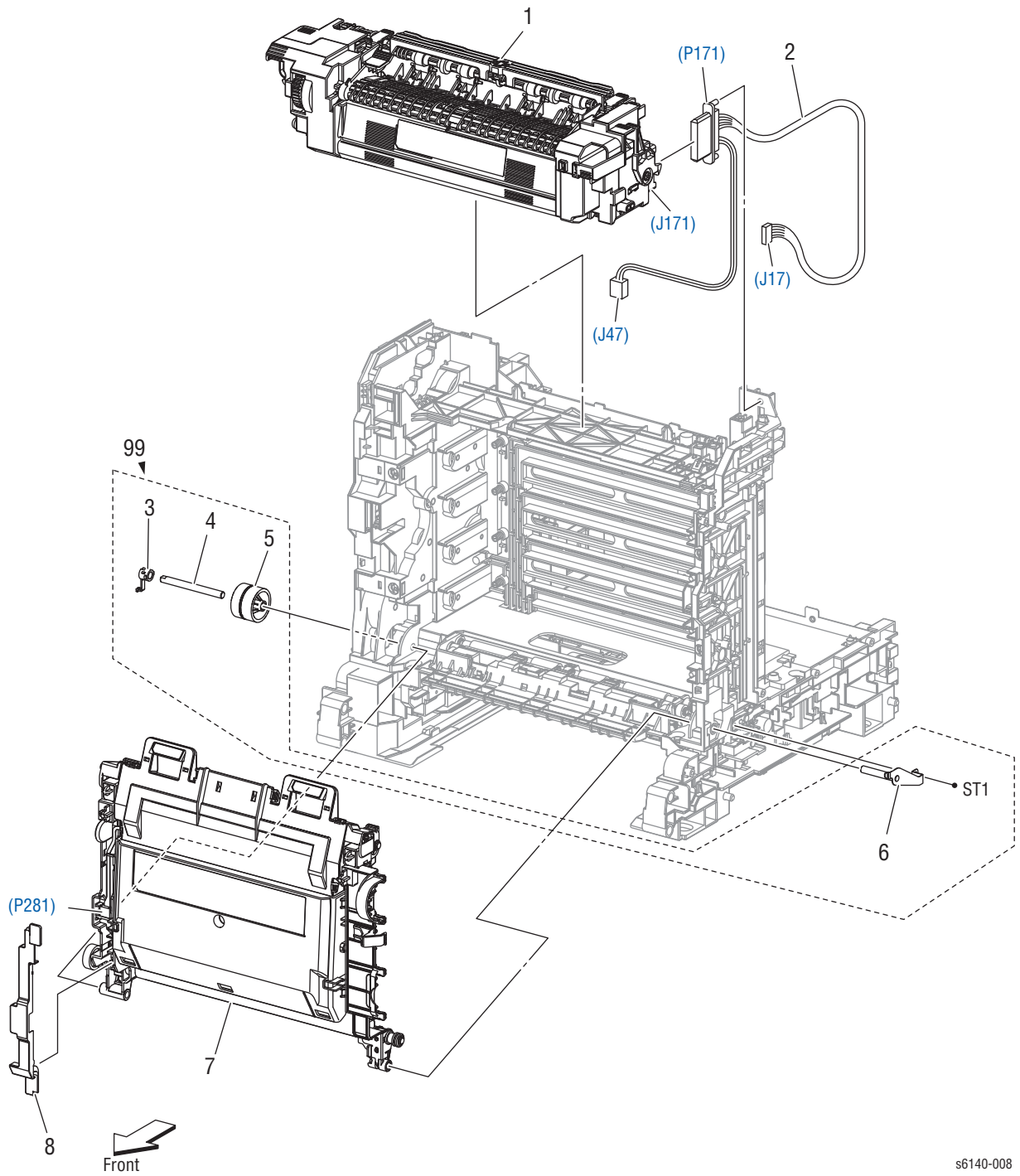
s6140-008

Parts List 6.1 Transfer & Fuser

Item	Description	Part Number
1A 1B	Fuser 110V Fuser 220V	126K26570 126K26580
2	Harn Assy Fuser (J17, J47-P171)	
3	Stopper Pivot	
4	Pivot Trans L	
5	Gear T4	
6	Shaft Assy Pivot	
7	Transfer Belt	848K28540
8	Cover Harness 2	
99	Kit Pivot (with 3-6)	675K54121

Parts List 7.1 Drive

Front

1

2

ST1

SM3

(P221)

ST1

ST1

SM3

ST1

(P211)

ST1

ST1

ST1

3

ST1

ST1

ST1

Color Mode
Switching Sensor

SM2

SM3

(P261)

(J24)

ST1

4

s6140-009
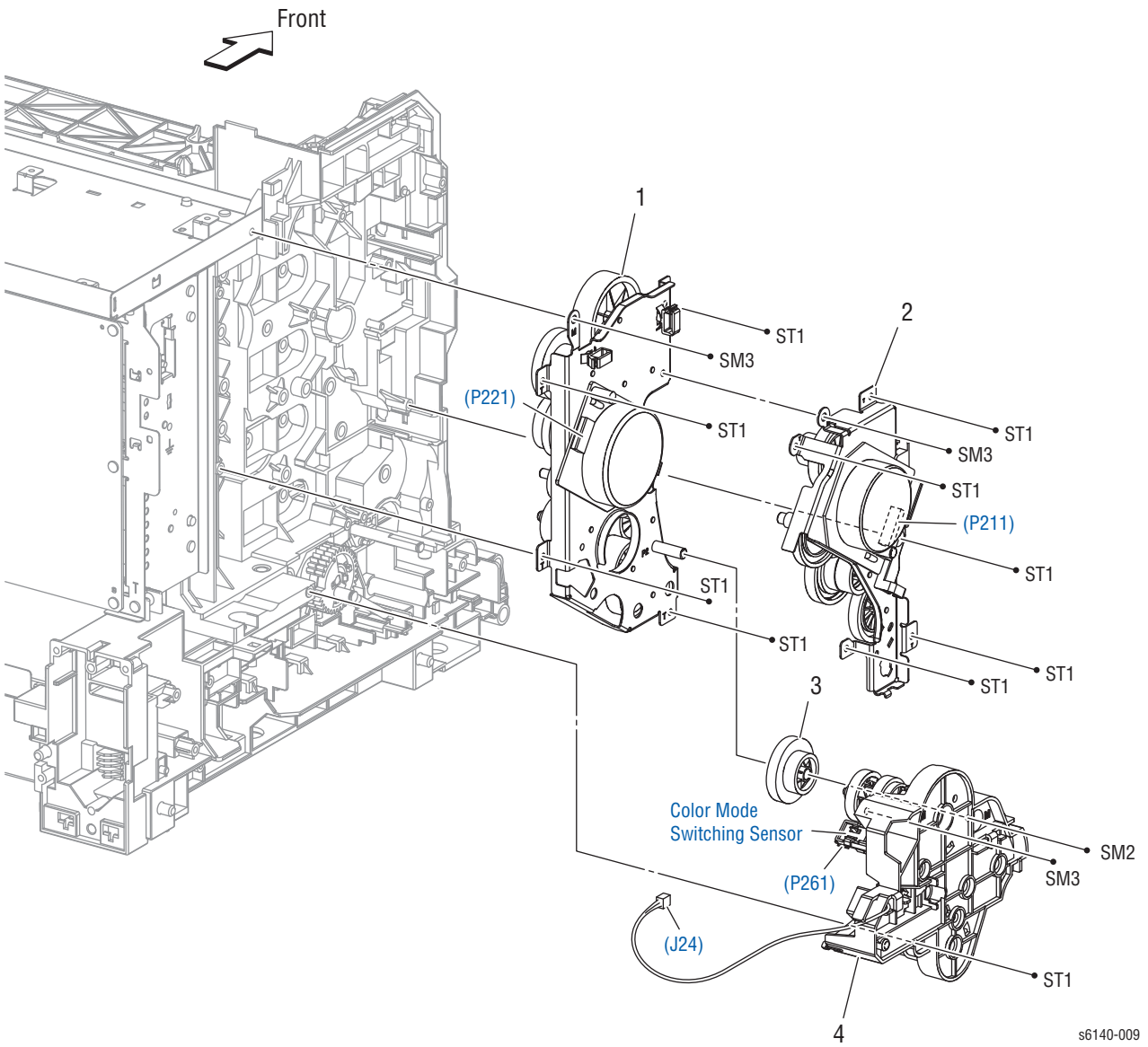
Parts List 7.1 Drive

Item	Name/Description	Part Number
1	Drive Assy Sub (Sub Drive Assembly)	007K15480
2	Drive Assy Main (Main Drive Assembly)	007K15470
3	Gear P2	807E15100
4	Drive Assy PH (Feed Drive Assembly)	007K94706

Parts List 8.1 Electrical (1/2)
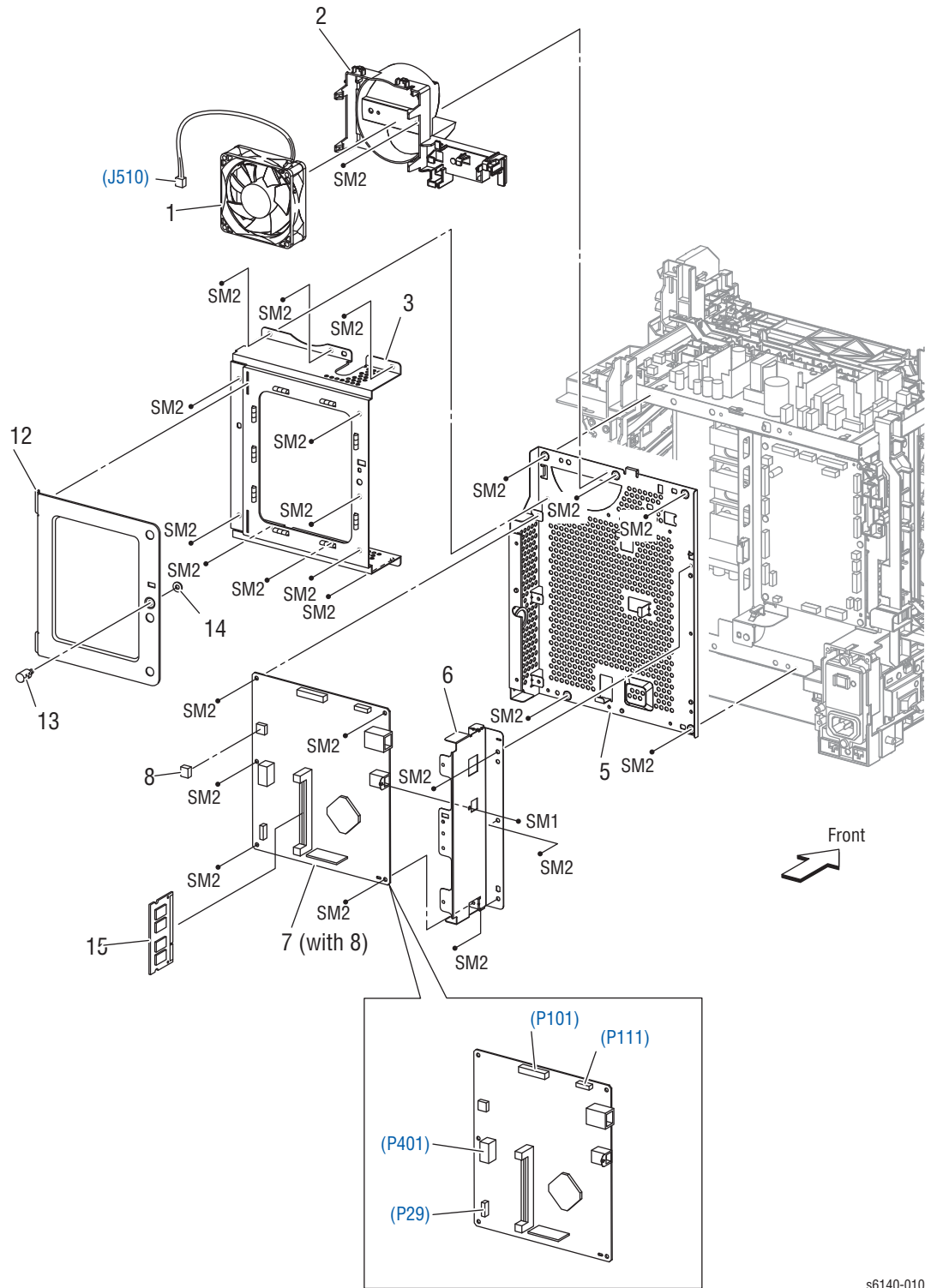
s6140-010

Parts List 8.1 Electrical (1/2)

Item	Description	Part Number
1	Fan	127E85360
2	Duct Fan	
3	Shield Assy ESS	
4	- -	
5	Frame ESS	
6	Plate IF	
7	PWBA ESS (with 8) (IP Board)	960K48550
8	NVM ROM	
9	- -	
10	- -	
11	- -	
12	Plate ESS	
13	Screw Knurling	
14	Washer	
15	Memory Card (512 MB)	097S03635
16	- -	
17	- -	
18	- -	
19	- -	

Parts List 8.2 Electrical (2/2)

s6140-011
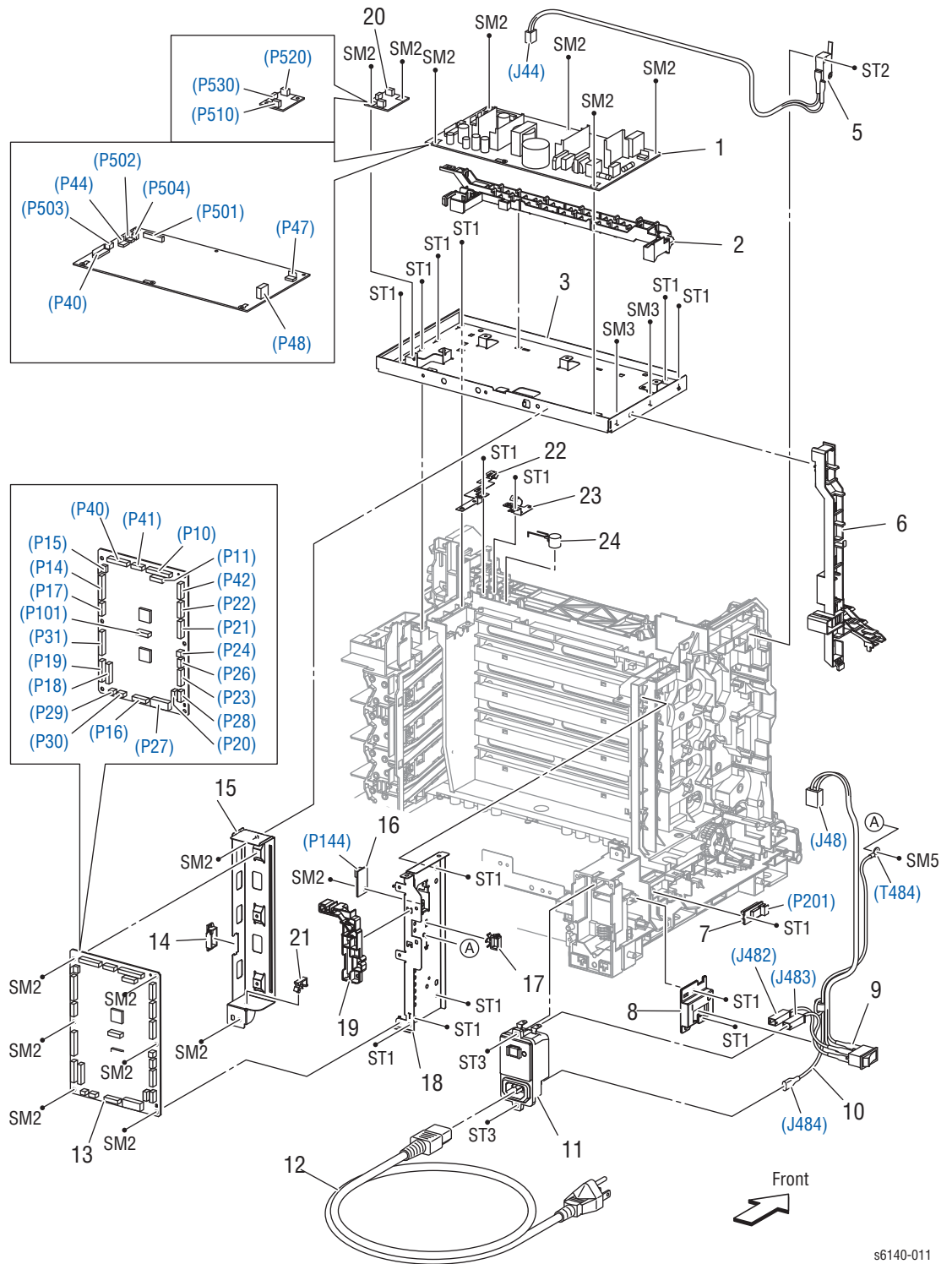
Parts List 8.2 Electrical (2/2)

Item	Description	Part Number
1a 1b	PWBA LVPS 110V PWBA LVPS 200V	105K23210 105K23740
2	Guide Harness FSR	
3	Frame Assy LVPS	
4	- -	
5	Harn Assy Interlock (SW-J44)	962K68760
6	Guide Harness AC	
7	Sensor HUM	130E93460
8	Bracket SW	
9a 9b	Harn Assy SW Power (SW-J48, J482, J483) 100 Harn Assy SW Power (SW-J48, J482, J483) 200	962K74250 962K77380
10	Harn Assy GFI GND (J484-T484)	
11	Breaker GFI	908W01201
12	Power Cord	
13	MCU Board	960K47031
14	Edging Saddle	
15	Bracket MCU R	
16	PWBA EEPROM (XPRO)	960K32640
17	Clamp	
18	Bracket MCU L	
19	Guide Harness MCU	
20	PWB Assy Fan	960K43211
21	Clamp MST-10V0	
22	Plate Earth Drum	
23	Plate Earth FSR	
24	Arrester ENE112D-10A	

Parts List 9.1 Harnesses

[Ref PL8.2.1]

(P502)
(P44)   (P504)
(P503)   (P501)
(P40)   (P47)

(P48)

(P40)   (P41)   (P10)   [Ref PL8.2.13]
(P15)   (P11)
(P14)   (P42)
(P17)   (P22)
(P101)   (P21)
(P31)   (P24)
(P19)   (P26)
(P18)   (P23)
(P29)   (P28)
(P30)   (P16)   (P27)   (P20)

(J10)

1

(J101)   (J11)

2

(J111)   (J14)   (J15)

3

(J501)

(J141)

(J502)

(J16)

5

(J161)   (J20)

6

(J201)   (J21)

7

(J211)

(J22)

8

(J221)   (J26)

9

(J261)   (J40)

(P262)

10

(J401)   (J42)

11

(P422)   (J144)

(J29)

12

(P2200-P/J2900)
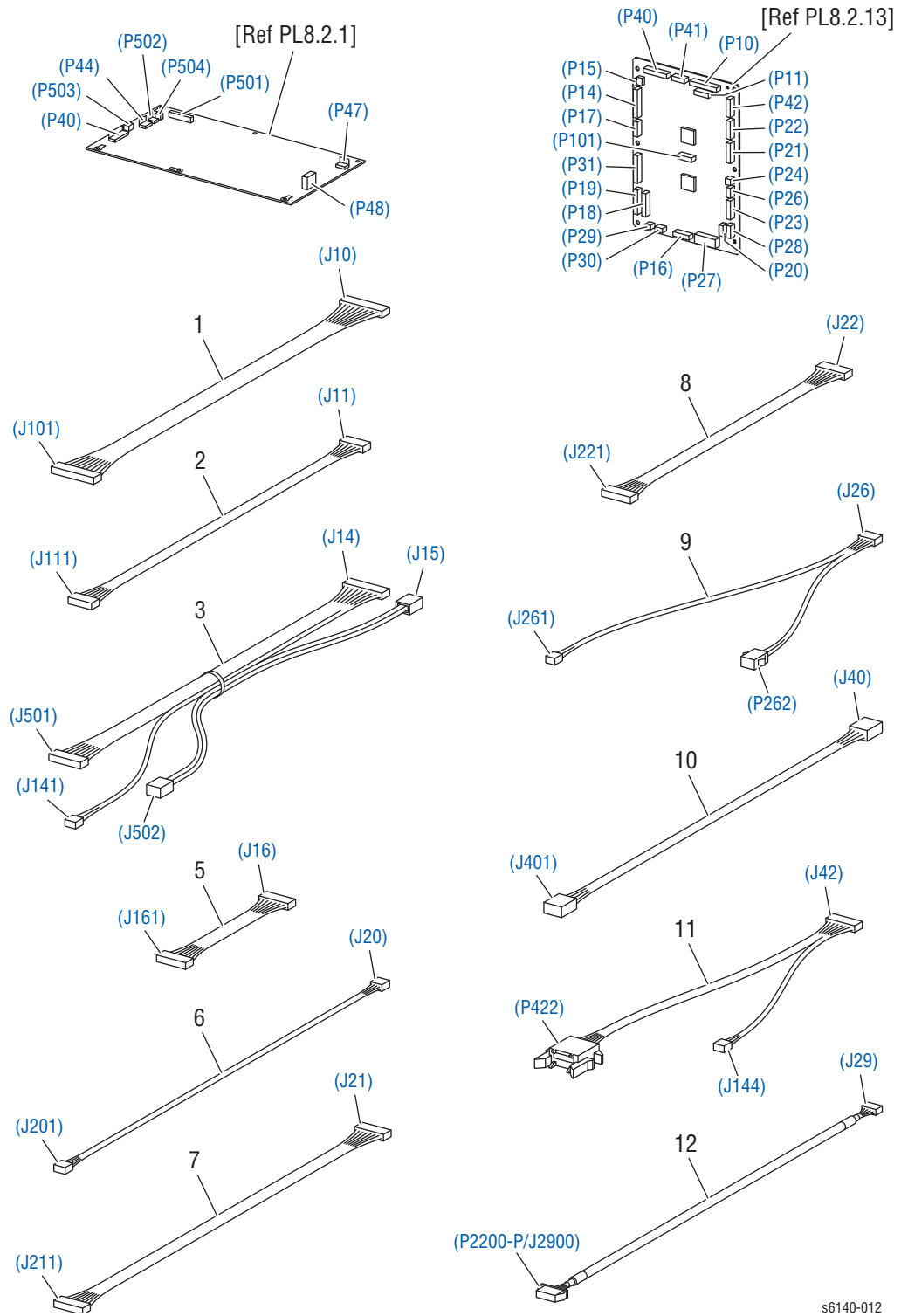
s6140-012

Parts List 9.1 Harness

Item	Description	Part Number
1	Harness Assy ESS (J10-J101)	
2	Harness Assy ESS Video (J11-J111)	
3	Harness Assy LVPS2 (J14,J15-J141,J501,J502)	
4	- -	
5	Harness Assy HVPS (J16-J161)	
6	Harness Assy HUM (J20-J201)	
7	Harness Assy Main MOT (J21-J211)	
8	Harness Assy Sub MOT (J22-J221)	
9	Harness Assy KSNR Regcl (J26-J261,P262)	
10	Harness Assy ESS Power (J40-J401)	
11	Harness Assy PHD XPRO (J42-J144,P422)	
12	Harness Assy B (J29-P2200-P/J2900)	
13	- -	

Parts List 11.1 Duplex Unit

1 (with 2-16,PL11.2)

2

3

3

4

4

5

6

7

3

3

4

4

8 9

9

8

10

[Ref PL11.2]

(P602)

(P603)

(P604)

(P601)

(P605)

11

ST1

ST1

16

9

8

15

8

9

(J601)

14

12

12

13

(J272)

Front

s6140-013
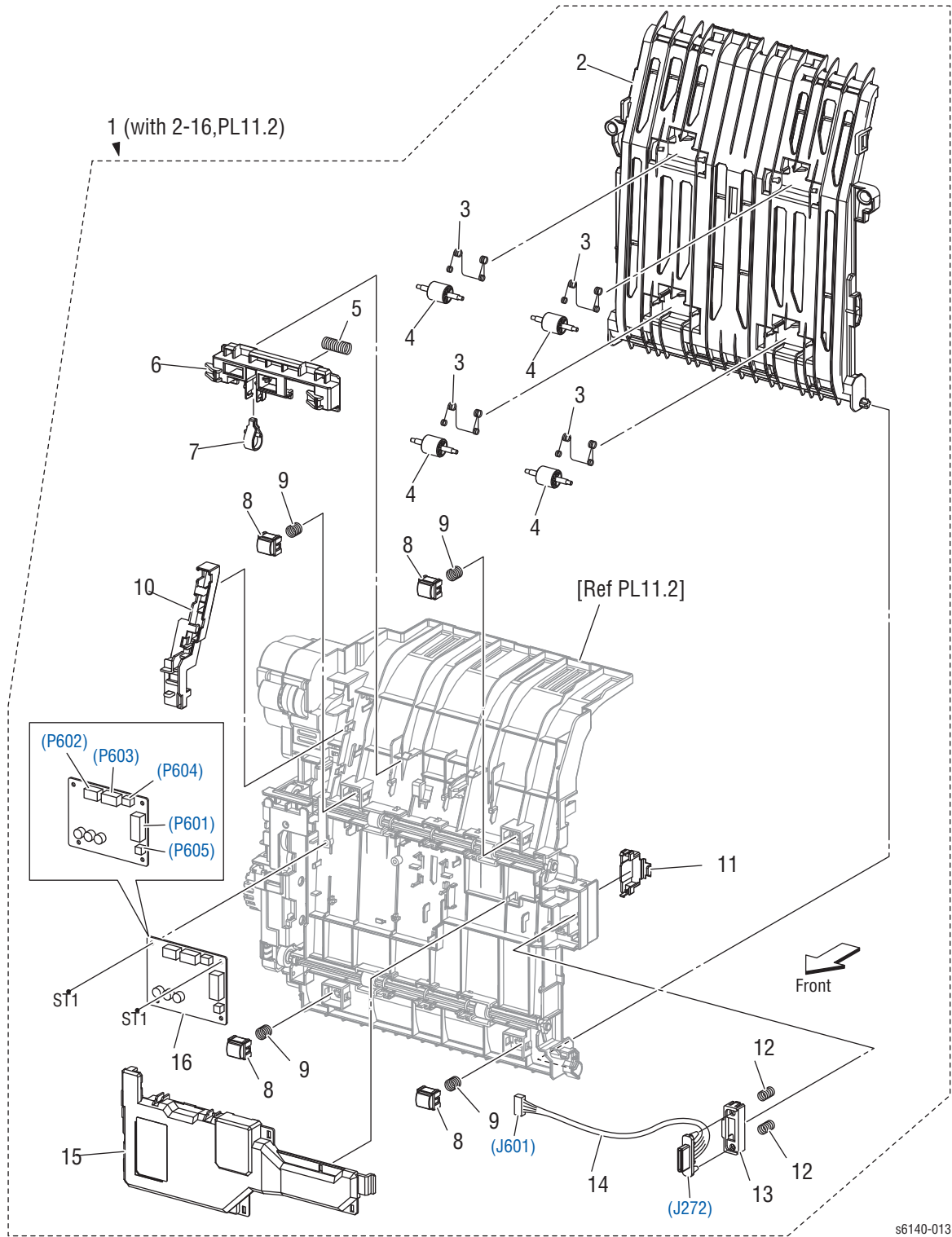
Parts List 11.1 Duplex Unit (1/2)

Item	Description	Part Number
1	Feeder Assy Dup (With 2-16, PL11.2)	059K65450
2	Chute Dup In	
3	Spring Pinch Dup	
4	Roll Pinch Dup	
5	Spring Latch Dup	
6	Latch Dup	
7	Follower Latch Dup	
8	Holder Chute Dup	
9	Spring Chute Dup	
10	Holder Harness Dup	
11	Cover Connect Dup	
12	Spring Connect Dup	
13	Holder Connect Dup	
14	Harness Assy Dup (J272-J601)	962K68790
15	Cover PWBA Dup	
16	PWBA Dup	960K43081

Parts List 11.2 Duplex Unit (2/2)
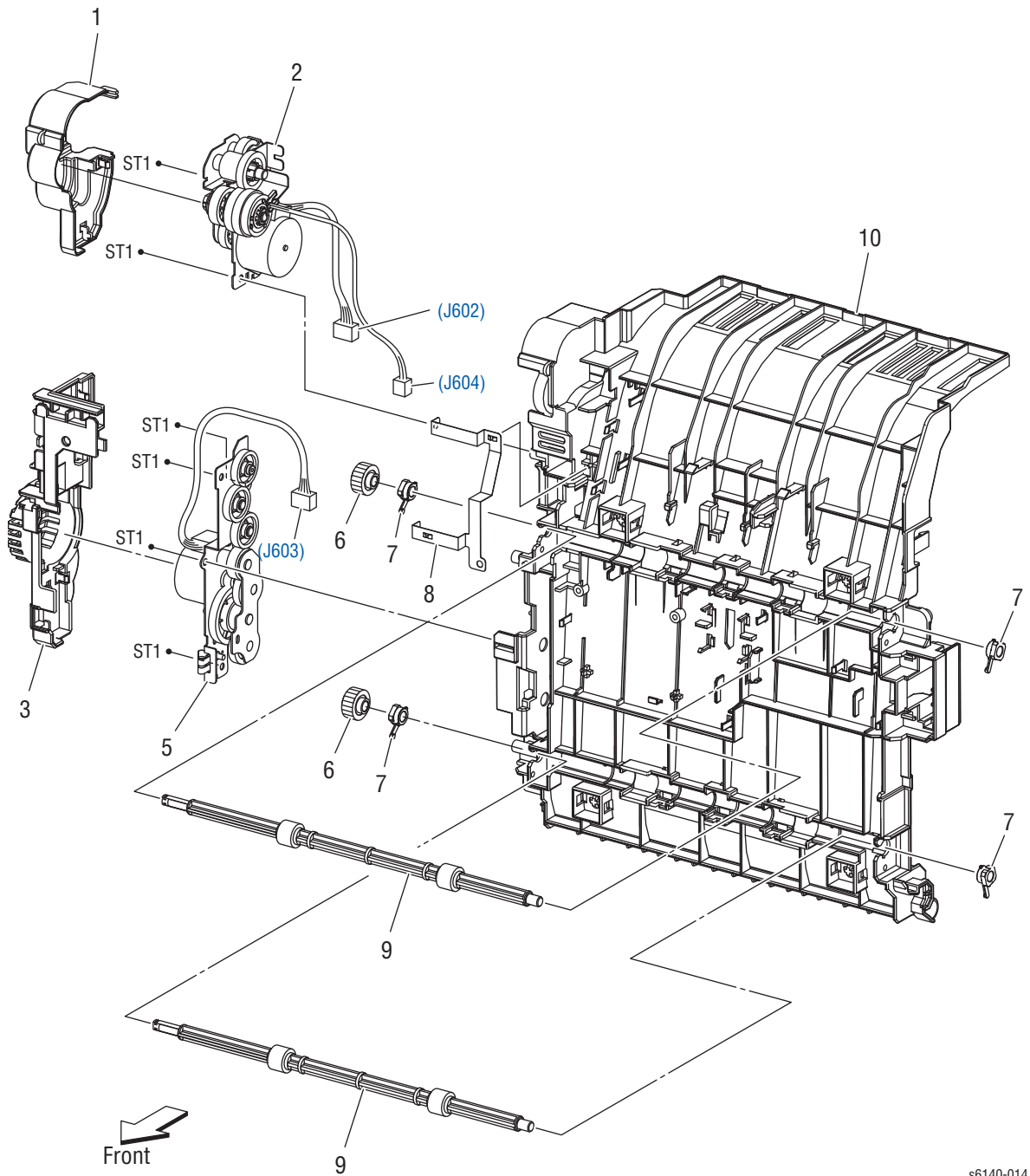
s6140-014

Parts List 11.2 Duplex Unit (2/2)

Item	Description	Part Number
1	Cover Drive Exit	
2	Drive Assy Exit	
3	Cover Drive Dup	
4	- -	
5	Drive Assy Dup	
6	Gear Roll Dup	
7	Bearing Dup	
8	Plate Earth PWBA	
9	Roller Assy Dup	
10	Chute Dup Frame	

Parts List 12.1 Optional Feeder (1/5)

1 (with 2,3,PL12.5.1)

3 (with 4-9,PL12.2-12.4)

2

2

ST1

ST1

ST1

ST1

ST1

5

9

6

ST1

4

ST1

ST1

ST1

ST1

7

8

ST1

ST1

[Ref PL12.2]

[Ref PL12.5.1]

Front

s6140-015
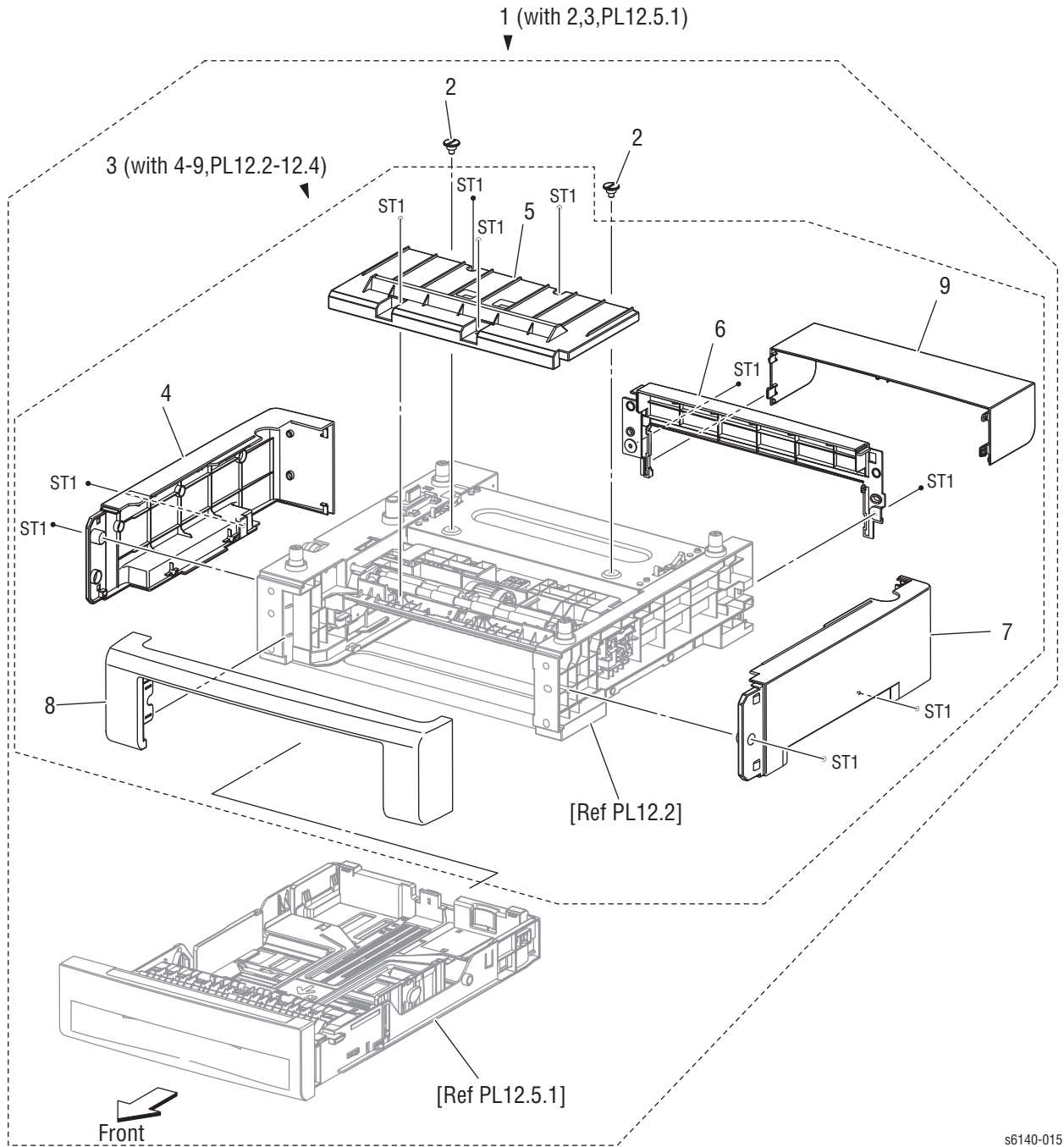
Parts List 12.1 Optional Feeder (1/5)

Item	Description	Part Number
1	250 Option Feeder (With 2,3, PL12.5.1)	675K81130
2	Screw Joint	
3	Feeder Assy Opt (With 4-9, PL12.2-12.4)	
4	Cover Side L Opt	
5	Cover Chute	
6	Cover Rear Opt	
7	Cover Side R Opt	
8	Cover Front Opt	
9	Cover CST	

Parts List 12.2 Optional Feeder (2/5)
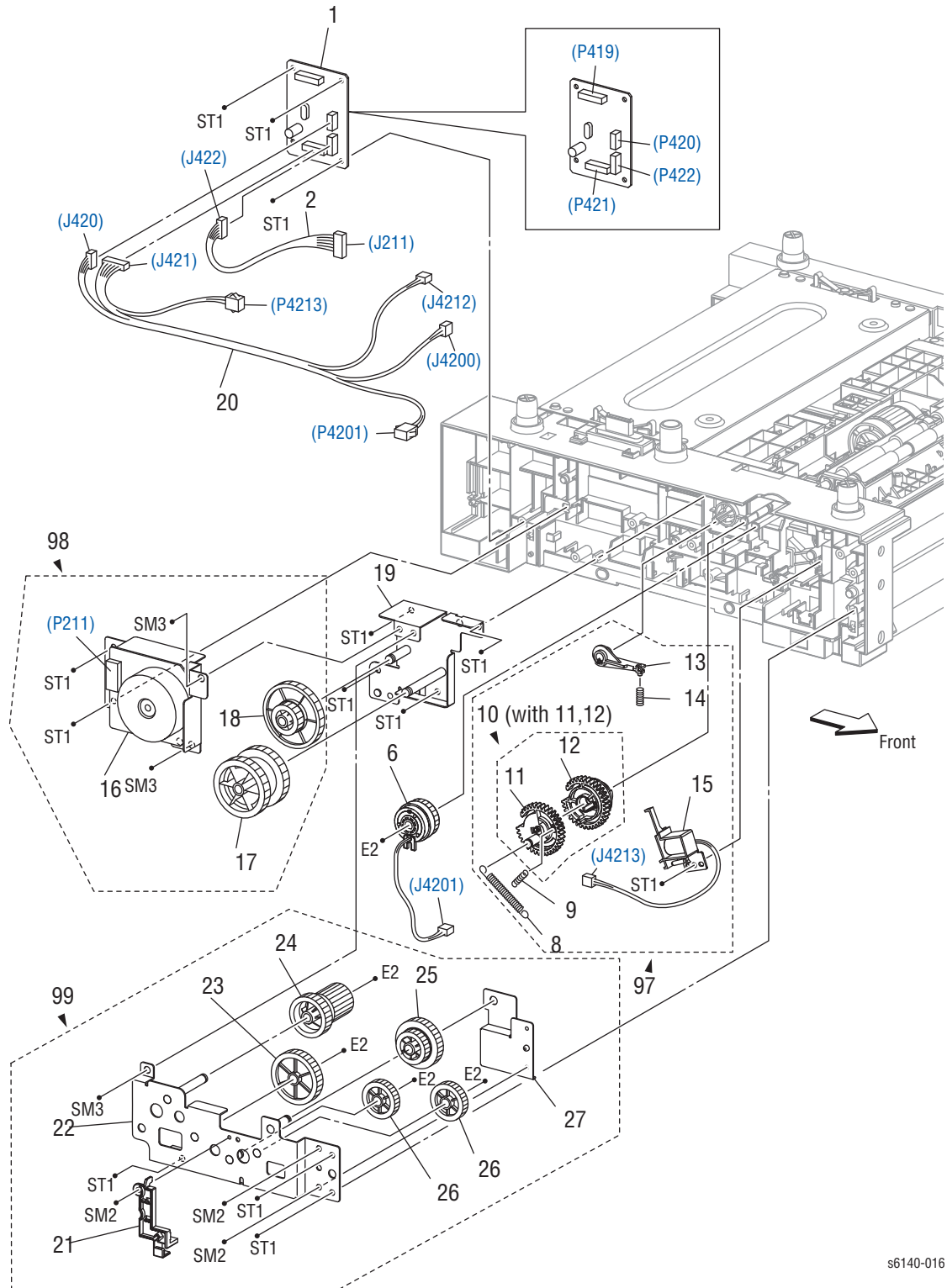
s6140-016

Parts List 12.2 Optional Feeder (2/5)

Item	Description	Part Number
1	PWBA Feed	960K43091
2	Harn Assy Tray Mot (J422-J211)	
3	- -	
4	- -	
5	- -	
6	Clutch Assy Drv 9 (with PL12.3.16)	675K54231
7	- -	
8	Spring Feed Out	
9	Spring Feed In	
10	Gear Assy Feed (With 11,12)	
11	Gear Feed Out	
12	Gear Feed In	
13	Lever Feed	
14	Spring Lever	
15	Solenoid Feed MSI	
16	Motor Assy Sub	
17	Gear Idle 40z	
18	Gear Idle 86-20z	
19	Plate Assy Idler 1	
20	Harn Assy Tray Comp (J420, J421-J4200, P4201. J4212, P4213)	
21	Cover Harness Cl	
22	Plate Assy Idler 2	
23	Gear Idle 36z	
24	Gear Idle 28-20z	
25	Gear Idle 22-33z	
26	Gear Idle 25z	
27	Plate Support	
97	Kit Solenoid Feed (with 8~10, 13~15)	604K51880
98	Kit Assy Motor Opt	604K52890
99	Kit Assy Feeder Gear (with 21-25, 26 x 2pcs, 27)	604K51900

Parts List 12.3 Optional Feeder (3/5)
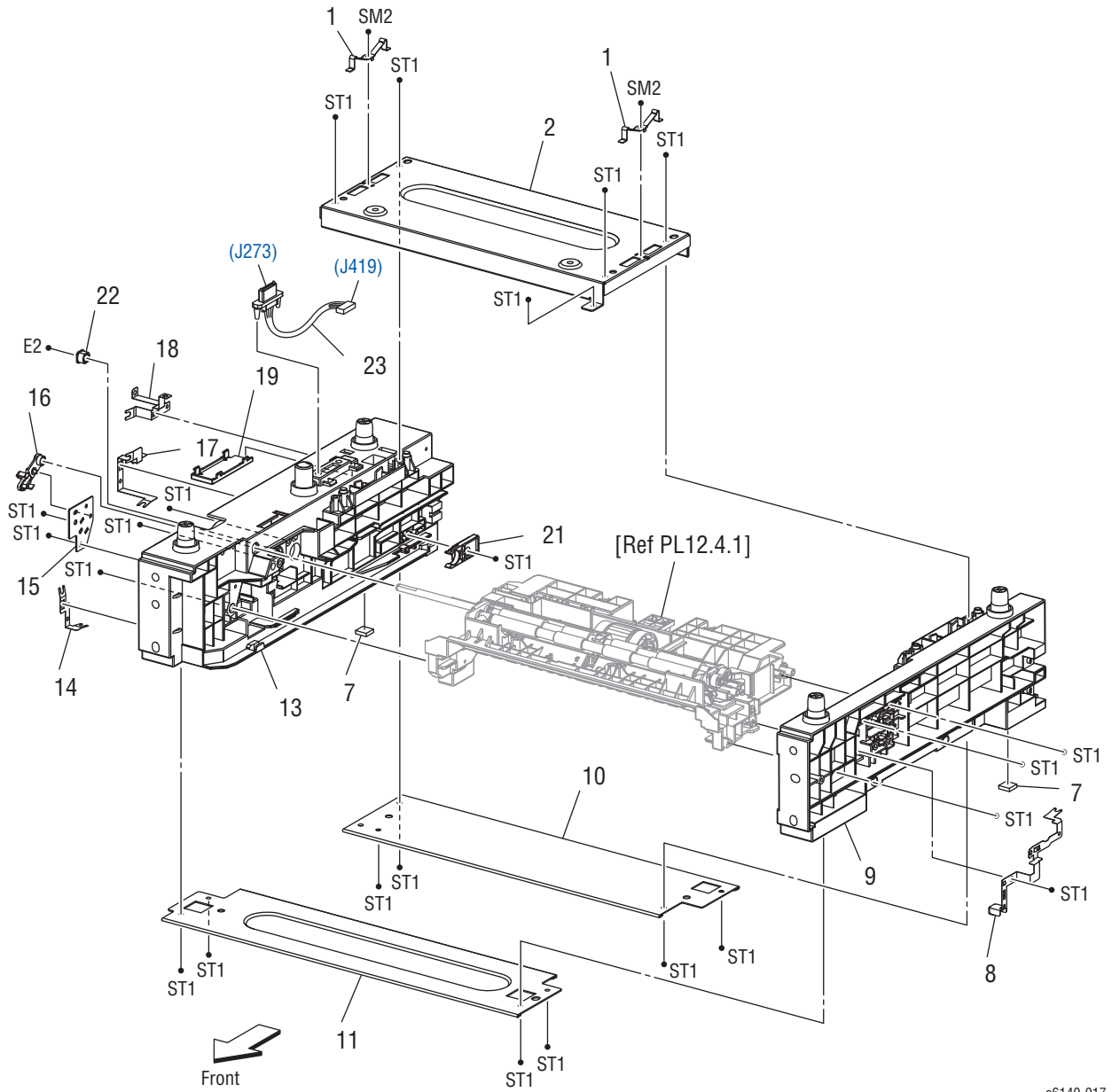
s6140-017

Parts List 12.3 Optional Feeder (3/5)

Item	Description	Part Number
1	Spring Earth Opt	
2	Plate Rear Top	
3	- -	
4	- -	
5	- -	
6	- -	
7	Foot	
8	Plate Earth Ph	
9	Chassis FDR R Opt	
10	Plate Rear Bottom	
11	Plate Front Bottom	
12	- -	
13	Chassis FDR L Opt	
14	Plate Earth Front Bottom	
15	Bracket Sup Regi	
16	Bearing Regi (includes PL12.2.6)	675K54231
17	Plate Earth Rear Bottom	
18	Plate Earth Rear Top	
19	Cover Harness Drawer	
20	- -	
21	Stopper CST	003E73341
22	Bearing	
23	Harn Assy Tray (J273-J419)	962K68800

Parts List 12.4 Optional Feeder (4/5)

1 (with 2-13,16,20-27,29-33)

Paper Out
Sensor

Tray2 No Paper
Sensor

(P4200)

(P4212)

ST2

32 (with 17-19)

Front

s6140-018
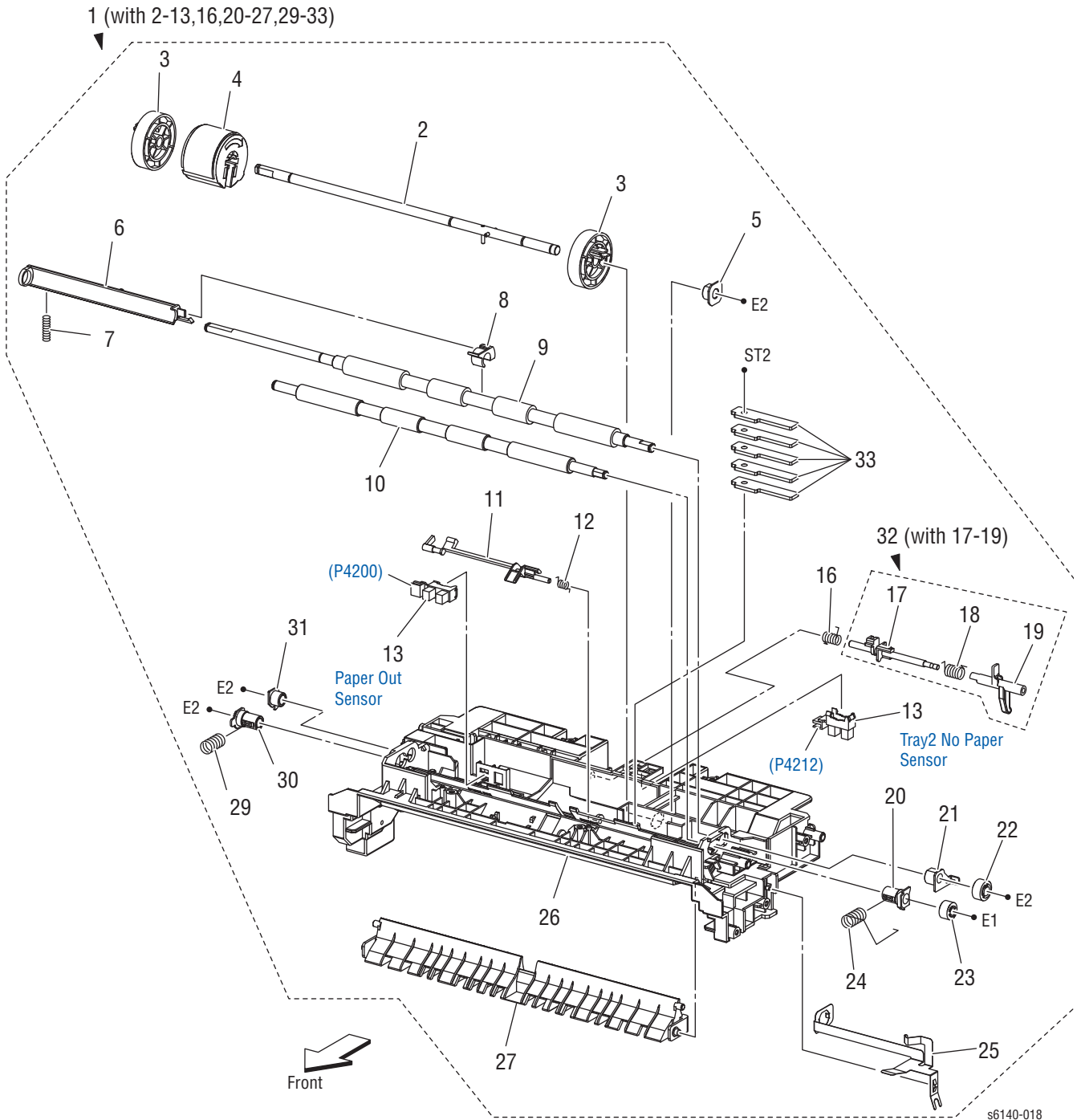
Parts List 12.4 Optional Feeder (4/5)

Item	Description	Part Number
1	Chute Assy Turn (With 2-13, 16, 20-27, 29-33)	
2	Shaf Assy Feed	
3	Roll Core MSI	
4	Roll Assy Feed	059K60140
5	Bearing Earth	
6	Actuator Regi Out	
7	Spring Regi Out	
8	Actuator Regi Roll	
9	Roll Assy Regi	
10	Roll Regi Metal	
11	Actuator Regi In	120E27820
12	Spring Act Regi	
13	Sensor Photo	130E87090
14	- -	
15	- -	
16	Spring Stp	
17	Stopper Act	
18	Spring Act NP	
19	Actuator No Paper	
20	Bearing M Earth	
21	Bearing Earth Regi	
22	Gear Regi R	
23	Gear Regi M	
24	Spring Regi R M	
25	Plate Earth Regi	
26	Chute Up	
27	Chute Low	
28	- -	
29	Spring Regi L M	
30	Bearing M	
31	Bearing R	
32	Actuator Assy No Paper (With 17-19)	120K92294
33	Plate Weight	

Parts List 12.5 Optional Feeder (5/5)

1 (with 19,21)

2

21 (with 2-8,14-18)

3

4

5

A

6

7

8

17

14

16

15

16

A

18

19

Front
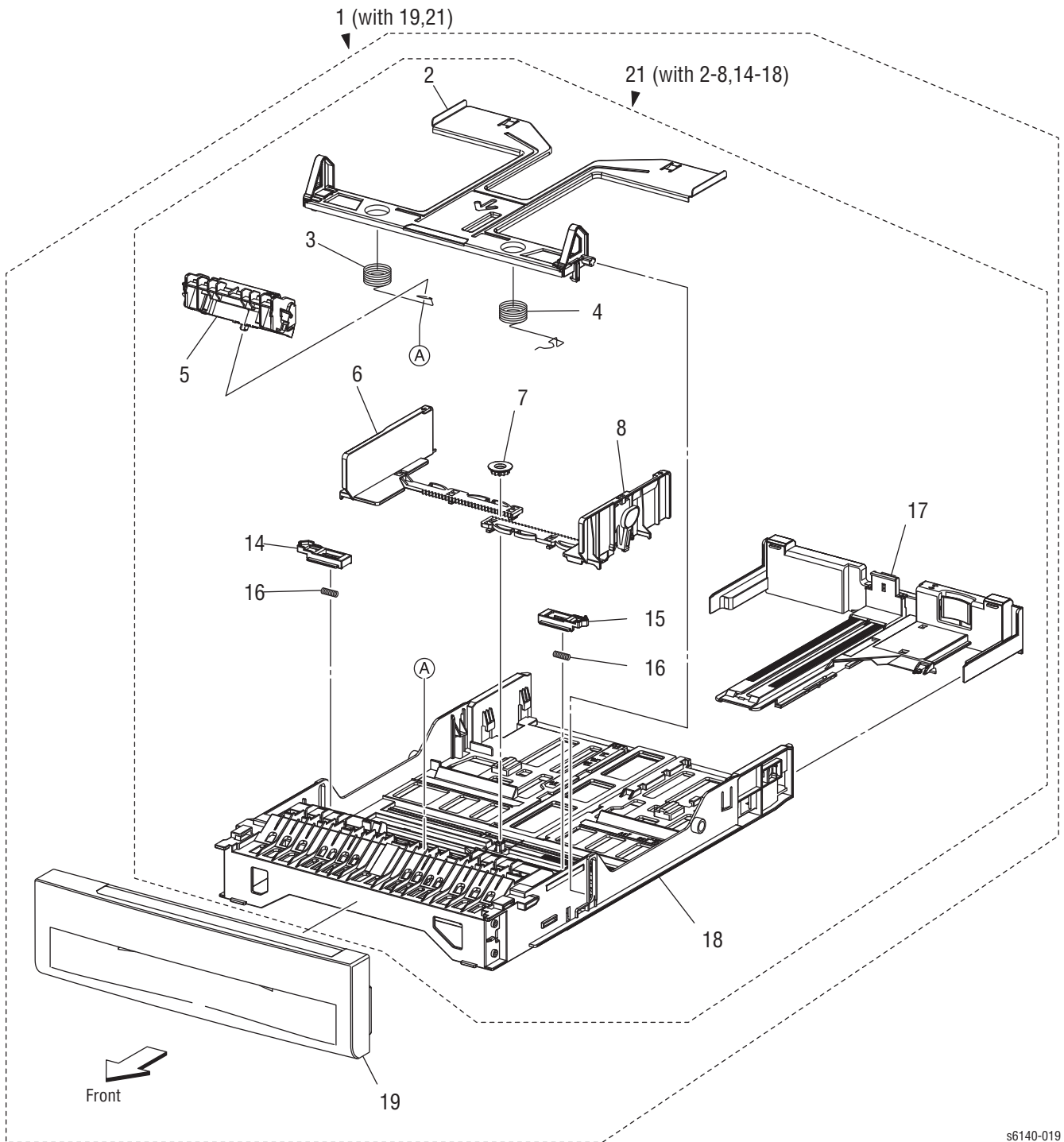
s6140-019

Parts List 12.5 Optional Feeder (5/5)

Item	Description	Part Number
1	Cassette Assy 250 Opt (With 19,21)	050K64180
2	Plate Assy Bottom	
3	Spring N/F L	
4	Spring N/F R	
5	Holder Assy Separator	019K10491
6	Guide Side L	
7	Gear Pinion	
8	Guide Side Assy R	
9	- -	
10	- -	
11	- -	
12	- -	
13	- -	
14	Latch Bottom L	
15	Latch Bottom R	
16	Spring Latch B	
17	Tray Assy Extension	
18	Housing CST 250	
19	Handle Assy CST 250 Opt	
20	- -	
21	Tray Assy CST 250 (With 2-8, 14-18)	

Xerox Supplies and Accessories

Consumable and Maintenance Items

Description	Part Number
Toner Cartridge US/EU 2.5K-K S Toner Cartridge DMO 2.5K-K S	106R01480 106R01484
Toner Cartridge US/EU 2K-C S Toner Cartridge DMO 2K-C S	106R01477 106R01481
Toner Cartridge US/EU 2K-M S Toner Cartridge DMO 2K-M S	106R01478 106R01482
Toner Cartridge US/EU 2K-Y S Toner Cartridge DMO 2K-Y S	106R01479 106R01483

Customer-replaceable Service Items

Description	Part Number
Fuser 110V Fuser 220V	126K26570 126K26580
Imaging Unit	675K69244
Feed Roller	657K81230
Separator Holder	675K81220

Service Kits

Service Kits provide spare parts normally associated with larger assemblies.

Hardware Kit

Hardware Kit

Description	Part Number
Hardware Kit	604K34030
Screw, Bind Head Del (1)	
Screw, 8 mm Plastic (1)	
Screw, Tap Bind Head (1)	
Screw, M3x6 B (1)	
Screw, DT3x8 B (1)	
E-Ring, 3 mm (1)	
E-Ring, 4 mm (1)	

Wiring

In this chapter...

- System Connections
- Plug/Jack Designations
- Plug/Jack Locator Diagrams
- Notations Used in the Wiring Diagrams
- Wiring Diagrams

Chapter 10

System Connections
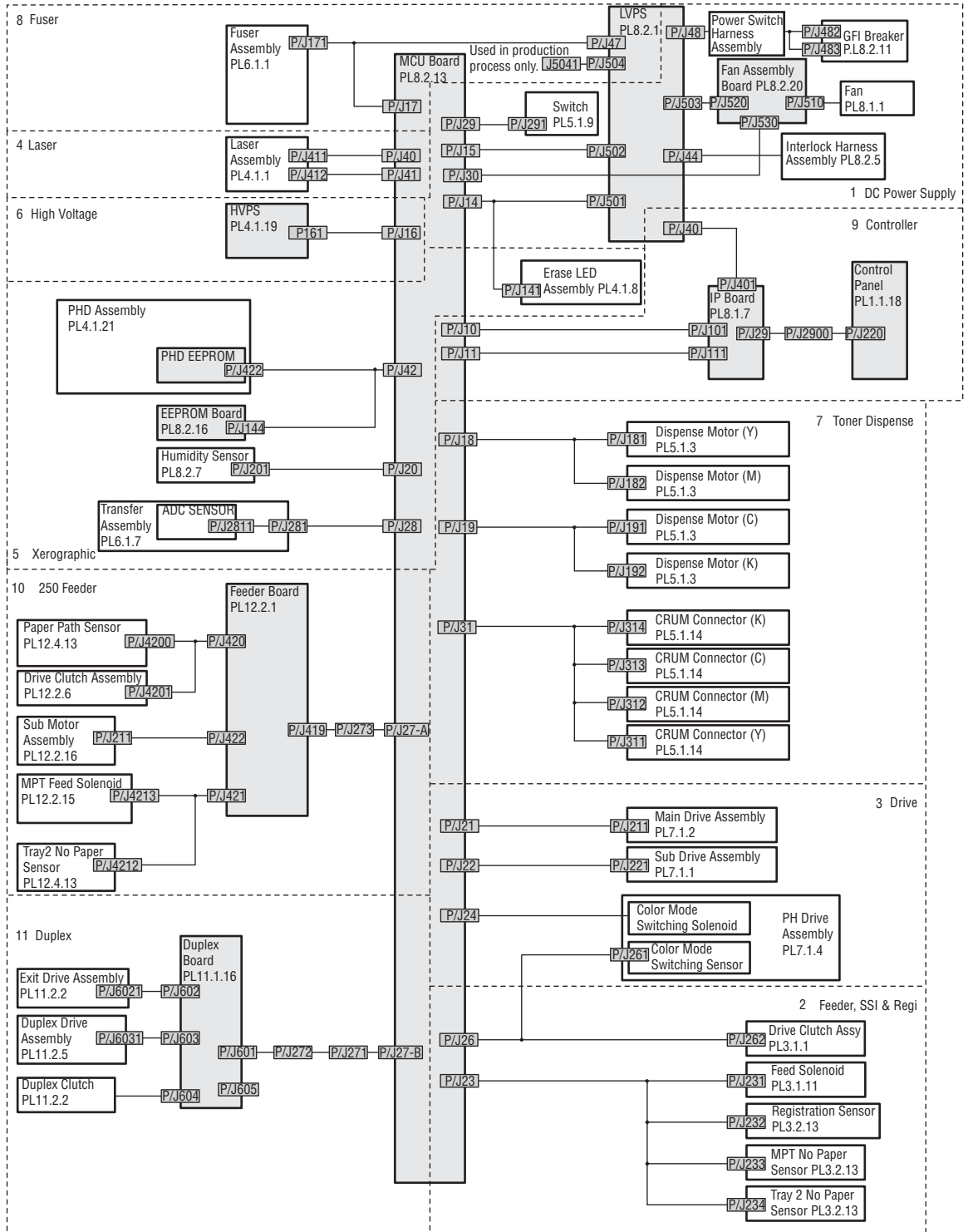
s6140-020

Plug/Jack Designations

This chapter contains the plug/jack designators, locator diagrams, and wiring diagrams. The Plug/Jack Locator diagrams show the P/J locations within the printer. Use these illustrations to locate connections called out in the troubleshooting procedures presented in Sections 3, 4, and 5.

1. Locate the P/J connector designator in the first column of the table.
2. With this information, go to the map listed in the second column.
3. Use the coordinates to locate the connection indicated on the map by its P/J designation number.
4. The Remarks column provides a brief description of each connection.

Print Engine Plug/Jack Designators

Printer Plug/Jack Designators

P/J	Map	Coordinates	Remarks
10	4	I-156	Connects MCU Board and Harness Assy ESS
11	4	I-156	Connects MCU Board and Harness Assy ESS Video
14	4	H-157	Connects MCU Board and LVPS2 Harness
15	4	H-156	Connects MCU Board and LVPS2 Harness
16	4	I-158	Connects MCU Board and HVPS Harness
17	4	H-157	Connects MCU Board and Fuser2 Harness
18	4	H-158	Connects MCU Board and Harness Assy TNR MOT
19	4	H-158	Connects MCU Board and Harness Assy TNR MOT
20	4	J-158	Connects MCU Board and Harness Assy HUM
21	4	J-157	Connects MCU Board and Harness Assy MAIN MOT
22	4	J-157	Connects MCU Board and Harness Assy SUB MOT
23	4	J-158	Connects MCU Board and Left Side Harness
24	4	J-158	Connects MCU Board and Feed Drive (Color Mode Switching Solenoid)
26	4	J-158	Connects MCU Board and Harness Assy KSNR REGCL
27	4	I-158	Connects MCU Board and Option Harness
28	4	J-158	Connects MCU Board and Left Side Harness
29	3	C-141	Connects IP Board and Harness Assy B
29	4	H-158	Connects MCU Board and Harness Assy SIDE SW
30	4	I-158	Connects MCU Board and Harness Assy MCU HAN
31	4	H-157	Connects MCU Board and Harness Assy TONER CRUM
40	3	D-133	Connects LVPS and Harness Assy ESS POWER
40	4	I-156	Connects MCU Board and Harness Assy ROS RE
41	4	I-156	Connects MCU Board and Harness Assy ROS Video

Printer Plug/Jack Designators

P/J	Map	Coordinates	Remarks
42	4	J-157	Connects MCU Board and Harness Assy PHD XPRO
44	3	D-133	Connects LVPS and Interlock Switch
47	3	G-133	Connects LVPS and Harness Assy Fuser2
48	3	G-133	Connects LVPS and Harness Assy SW Power
101	3	D-139	Connects IP Board and Harness Assy ESS
101	4	I-157	Not Connected (Debug only)
111	3	E-139	Connects IP Board and Harness Assy ESS Video
141	1	H-107	Connects Erase LED ASSY and LVPS2 Harness
144	4	G-151	Connects EEPROM Board and Harness Assy PHD XPRO
161	4	F-153	Connects HVPS andHVPS Harness
171	1	H-107	Connects Fuser and Fuser2 Harness
181	4	C-152	Connects Y toner motor and toner motor harness
182	4	C-151	Connects M toner motor and toner motor harness
191	4	C-151	Connects C toner motor and toner motor harness
192	4	C-150	Connects K toner motor and toner motor harness
201	3	H-141	Connects Humidity Sensor and Humidity Harness
211	3	I-139	Connects Main Motor and Main Motor Harness
220	1	D-106	Connects Control Panel and Harness Assy A
221	3	H-139	Connects Sub Motor and Harness Assy SUB MOT
231	2	C-125	Connects Feed Solenoid and Left Side Harness
232	2	F-125	Connects Registration Sensor and Left Side Harness
233	2	G-125	Connects Manual Feed No Paper Sensor and Left Side Harness
234	2	F-124	Connects Tray No Paper Sensor and Left Side Harness
261	3	H-140	Connects Color Mode Switching Sensor and Harness Assy KSNR REGCL
262	3	I-140	Connects Drive Clutch and Harness Assy KSNR REGCL
271	1	I-110	Connects Dup Relay Harness and Option Harness
272	1	F-109	Connects Harness Assy Dup Relay and Duplex Module (Harness Assy DUP)
273	3	H-142	Connects Option Harness and Option Feeder (Harness Assy TRAY)
281	1	C-108	Connects Transfer Belt (Harness Assy CTD SNR2) and Left Side Harness
291	1	H-107	Connects Dispenser Assy (Side Door Switch) and Harness Assy SIDE SW
311	1	H-110	Connects Dispenser Assy (Connector CRUM Y) and Harness Assy Toner CRUM
312	1	H-109	Connects Dispenser Assy (Connector CRUM M) and Harness Assy Toner CRUM

Printer Plug/Jack Designators

P/J	Map	Coordinates	Remarks
313	1	H-108	Connects Dispenser Assy (Connector CRUM C) and Harness Assy Toner CRUM
314	1	H-108	Connects Dispenser Assy (Connector CRUM K) and Harness Assy Toner CRUM
401	3	C-140	Connects PWBA ESS and Harness Assy ESS Power
411	2	D-122	Connects Laser Unit and Harness Assy ROS RE
412	2	D-123	Connects Laser Unit and Harness Assy ROS Video
422	4	G-150	Connects Laser Unit EEPROM and Harness Assy PHD XPRO
482	3	F-141	Connects GFI Breaker and Harness Assy SW Power
483	3	G-141	Connects GFI Breaker and Harness Assy SW Power
484	3	G-142	Connects GFI Breaker and GFI GND
501	3	E-133	Connects LVPS and LVPS2 Harness
502	3	D-133	Connects LVPS and LVPS2 Harness
503	3	D-133	Connects LVPS and MCU HAN Harness
504	3	D-133	Connects LVPS and MCU HAN Harness
510	3	C-137	Connects Fan Board and Fan
520	3	C-137	Connects Fan Board and MCU HAN Harness
530	3	C-137	Connects Fan Board and MCU HAN Harness
2811	1	D-107	Connects ADC Sensor and Harness Assy CTD SNR2 (Transfer Belt)
5041	1	I-107	Not Connected (Used in production process only)
2200 / 2900	1	H-111	Connects Control Panel Harness A and Control Panel Harness B

Duplex Unit Plug/Jack Designators

Duplex Unit Plug/Jack Designators

P/J	Map	Coordinates	Remarks
272	5	I-169	Connects Duplex Unit (Harness Assy DUP) and Printer
601	5	E-169	Connects Duplex Board and Harness Assy DUP
602	5	D-168	Connects Duplex Board and Exit Motor
603	5	D-168	Connects Duplex Board and Duplex Motor
604	5	E-168	Connects Duplex Board and Duplex Clutch
605	5	E-169	Not Connected

Optional Feeder Plug/Jack Designators

Optional Feeder Plug/Jack Designators

P/J	Map	Coordinates	Remarks
211	6	E-179	Connects Feeder Motor and Harness Assy TRAY MOT
273	6	D-184	Connects Option Feeder (Tray Harness) and Printer
419	6	C-179	Connects Feeder Board and Harness TRAY
420	6	D-179	Connects Feeder Board and Tray Comp Harness
421	6	C-180	Connects Feeder Board and Tray Comp Harness
422	6	D-180	Connects Feeder Board and Harness TRAY MOT
4200	6	D-185	Connects Path Sensor and Tray Comp Harness
4201	6	H-181	Connects Turn Clutch and Tray Comp Harness
4212	6	F-185	Connects No Paper Sensor and Tray Comp Harness
4213	6	F-180	Connects Feed Solenoid and Tray Comp Harness

Plug/Jack Locator Diagrams

Map 1 - Print Engine
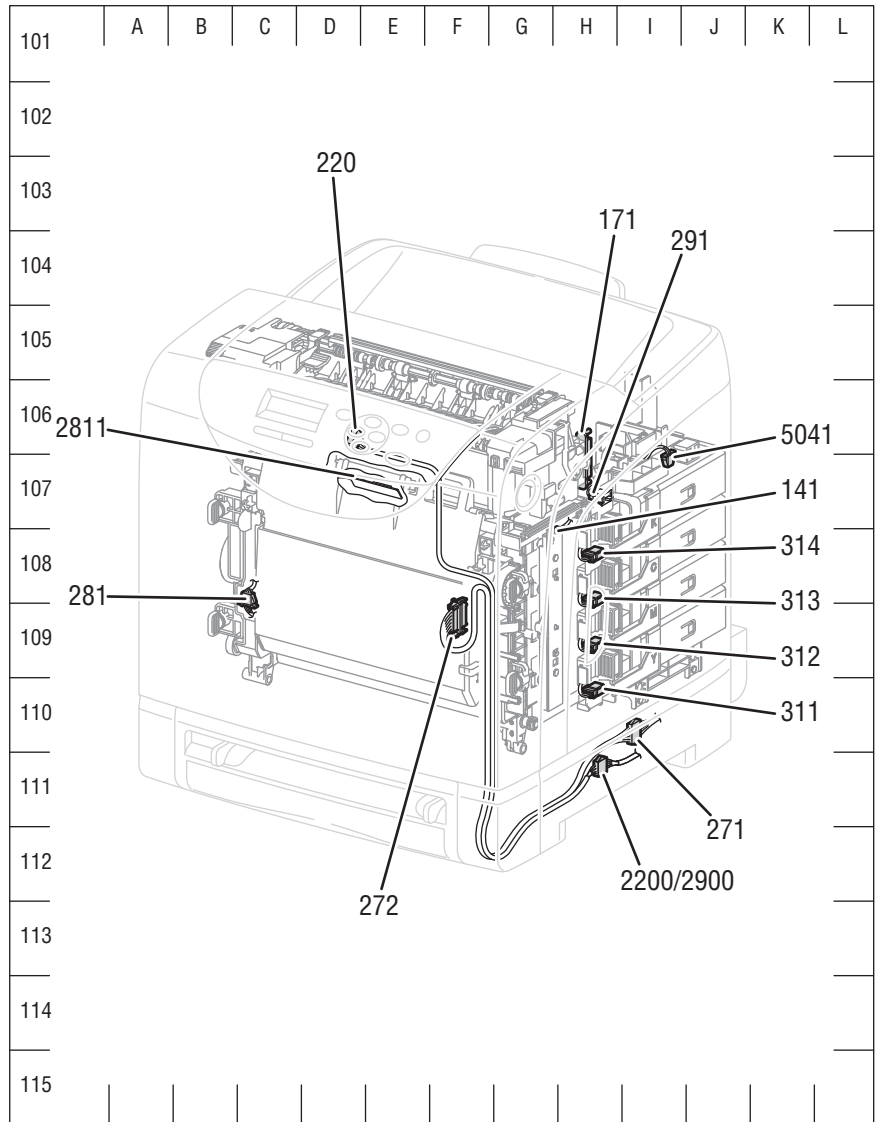
s6140-021

Map 2 - Laser Unit and Feeder
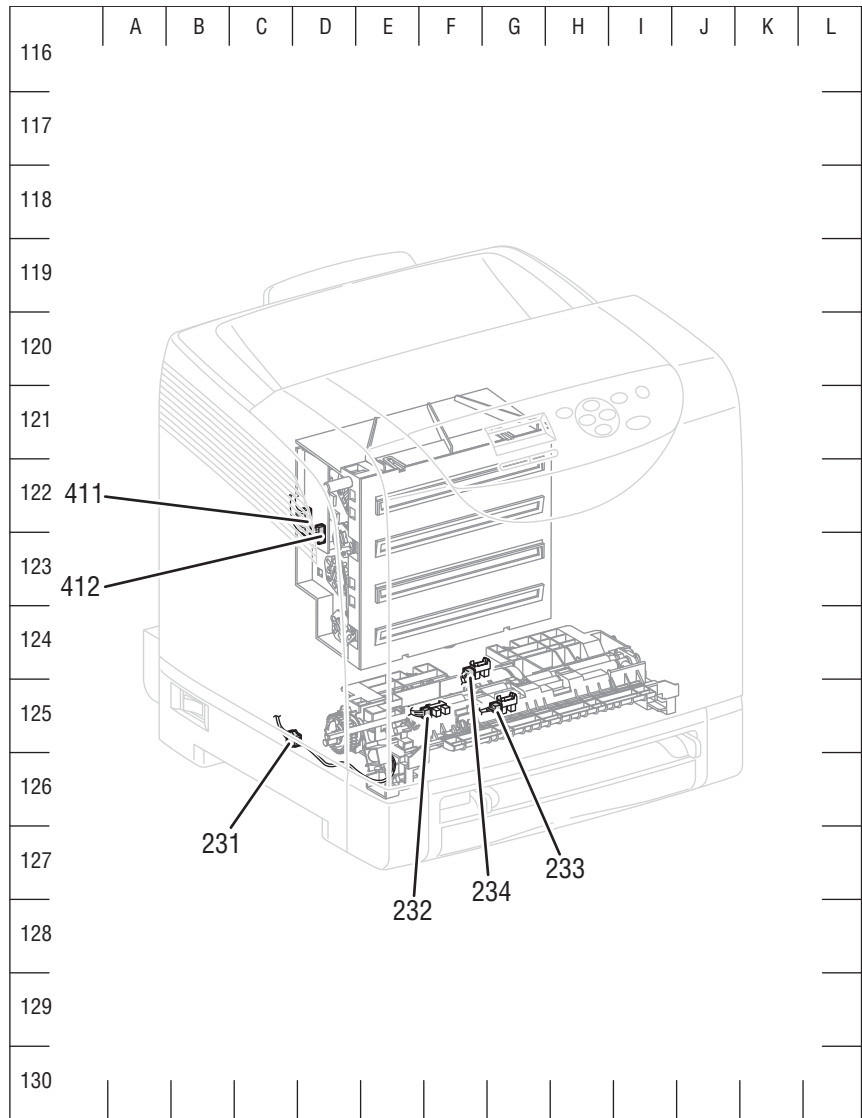
s6140-022

Map 3 - LVPS and Drive
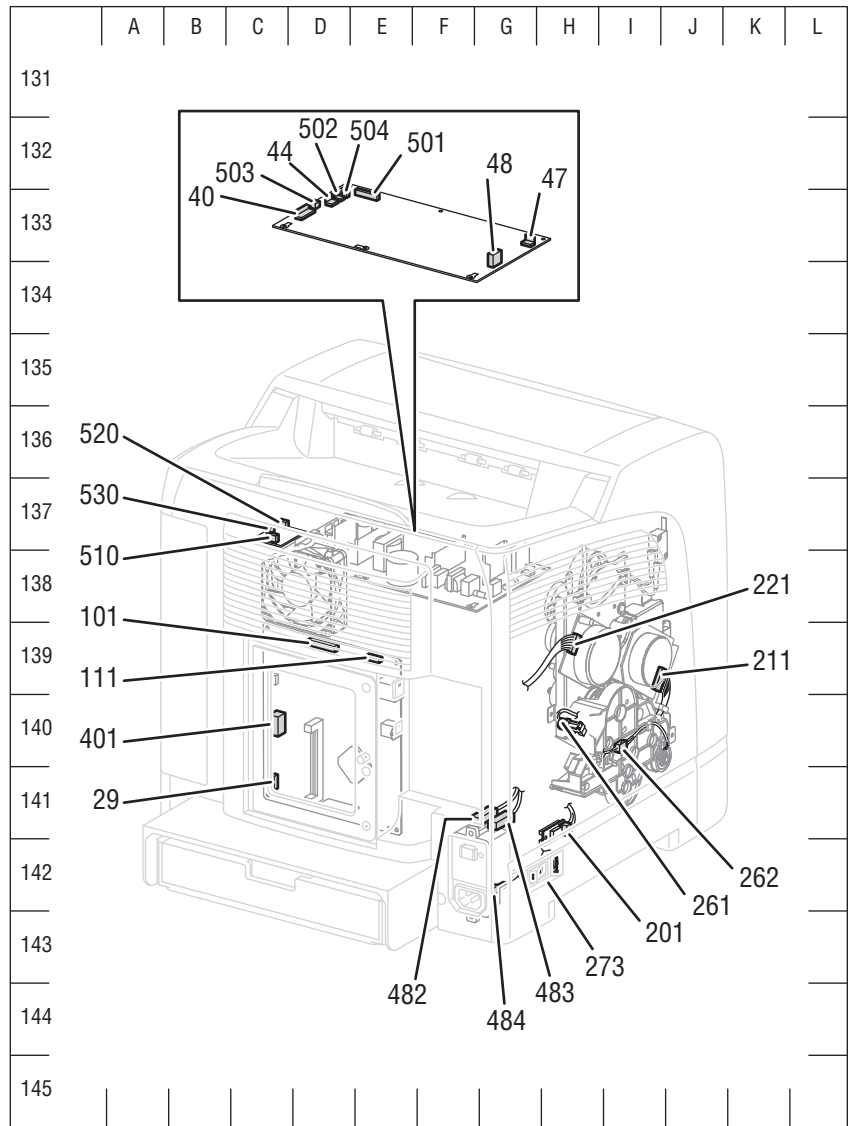
s6140-023

Map 4 - MCU Board
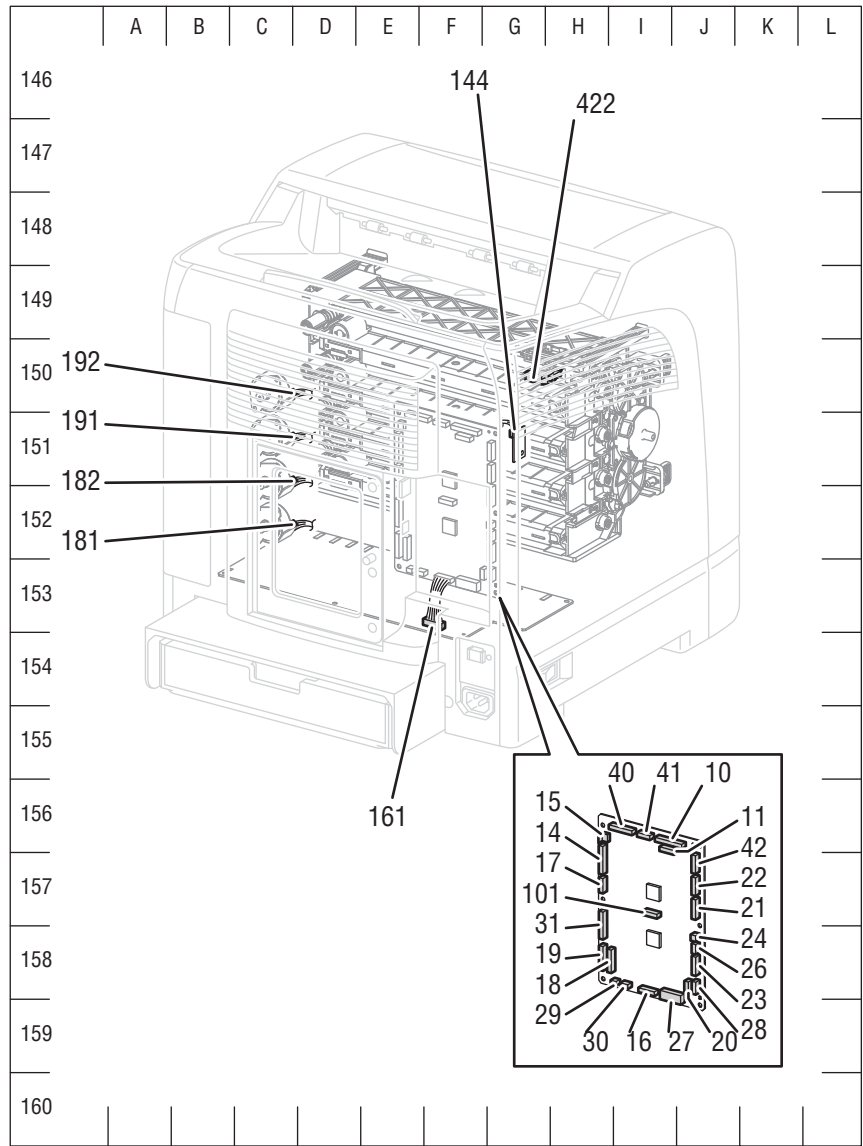
s6140-024

Map 5 - Duplex Unit
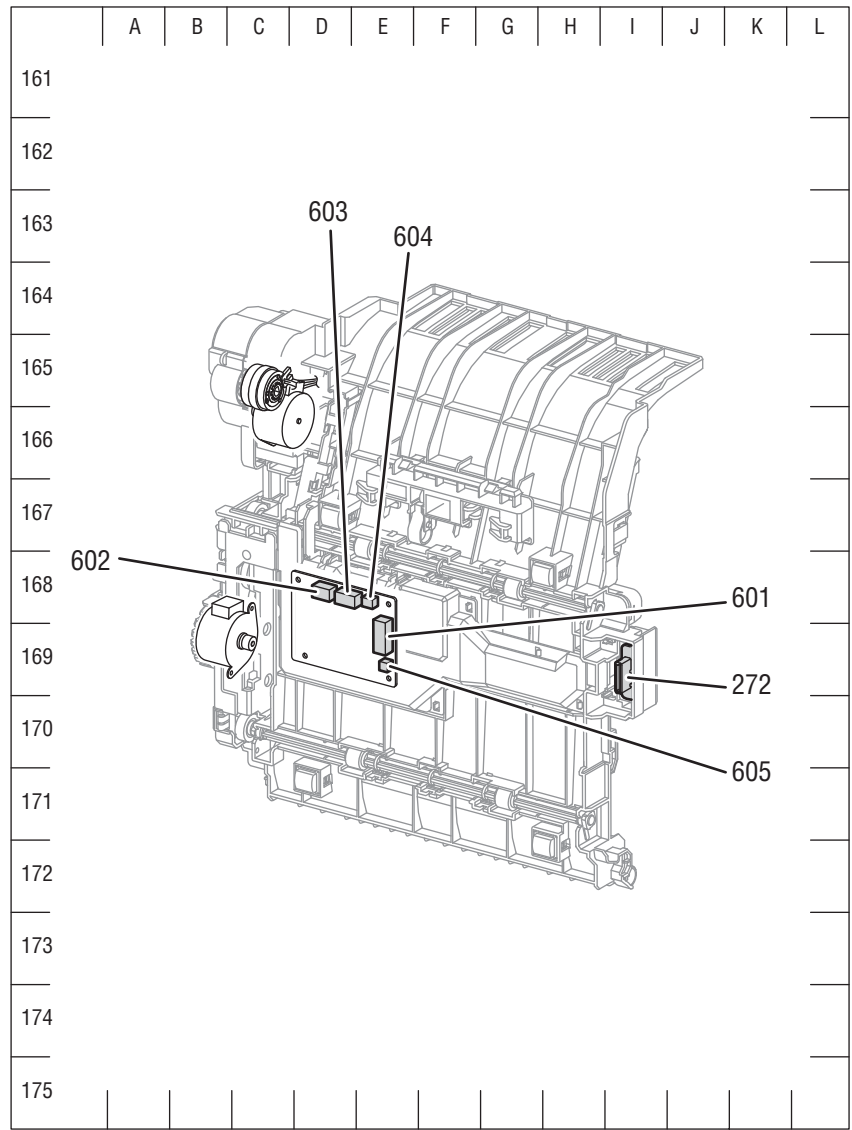
s6140-025

Map 6 - Optional Feeder
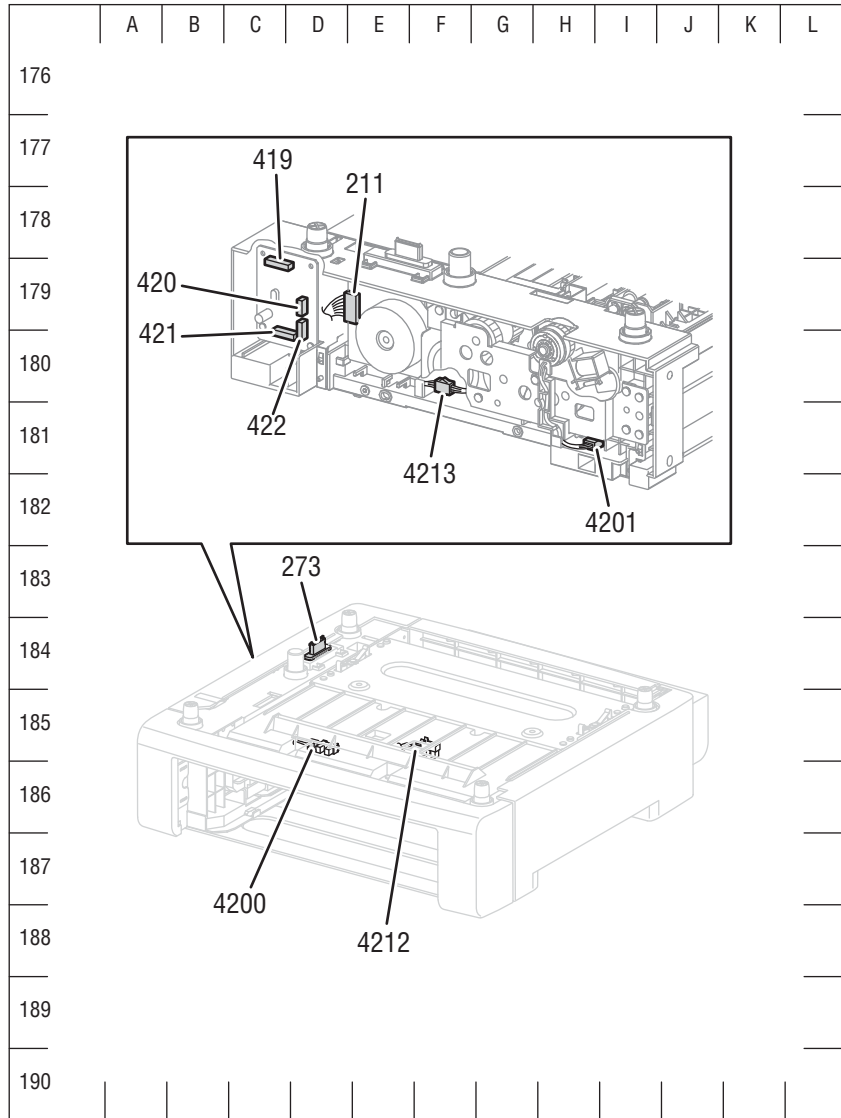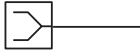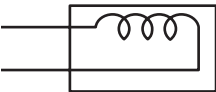
s6140-026
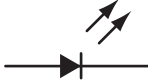
Wiring Diagrams

Notations Used in the Wiring Diagrams

The following table lists the symbols used in the wiring diagrams.

Symbol	Description
s6140-124	Denotes a Plug.
s6140-125	Denotes a Jack.
P/Jxx YY s6140-126	Denotes Pin yy and Jack yy of the connector Pxx and Jxx.
JPxxx s6140-127	Denotes a Jumper Point (JPxxx/xxx). Each end of the Jumper connection has a numeric designation.
Fuser PL X.Y.Z s6140-128	Denotes the parts. PL X.Y.Z implies the item "Z" of plate (PL) "X.Y" in Parts List.
Heater s6140-129	Denotes functional parts attached with functional parts name.

Symbol	Description
Control s6140-130	Denotes the control and its outline in the Board.
DEVE_A ⟶ s6140-131	Denotes a connection between parts with harness or wires, attached with signal name/contents.
CLUTCH ON(L)+24V ⟶ s6140-132	Denotes the function, and logic value of the signal to operate the function (Low: L, High: H). The given voltage is for signal in high status. The arrow indicates the direction of signal.
⟵ EXIT SENSED(L)+3.3VDC s6140-133	Denotes the function, and logic value of the signal when the function operated (Low: L, High: H). The given voltage is for signal in high status. The arrow indicates the direction of signal.
s6140-134	Denotes a connection between wires.
s6140-135	Denotes a Clutch or Solenoid.
M s6140-136	Denotes a Motor.

Symbol	Description
s6140-137	Denotes a Photo Sensor.
s6140-138	Denotes an LED.
s6140-139	Denotes a Safety Interlock Switch.
s6140-140	Denotes an On-Off Switch (single-pole, single-throw switch).
s6140-141	Denotes an On-Off Switch (Temperature - normally close).
s6140-142	Denotes an NPN Photo-transistor.
I/L +24 VDC	Denotes DC voltage when the Interlock Switch in MCU Board turns On.
+5 VDC +3.3 VDC	Denotes DC voltage.
SG	Denotes signal ground.
AG	Denotes analog ground.
RTN	Denotes return.

Wiring Diagram Descriptions

The connections illustrated on each of the wiring diagrams is listed below.

Wiring Diagram	Description
LVPS	Connections of LVPS with MCU Board.
	Connections of Power Switch with LVPS.
	Connections of GFI Breaker with Power Switch.
	Connections of Main Fan with LVPS.
	Connections of Interlock Harness with LVPS.
	Connections of RH Cover Switch with MCU Board.
Media Feed	Connections of Feed Solenoid with MCU Board.
	Connections of Registration Sensor with MCU Board.
	Connections of Manual Feed (SSI) No Paper Sensor with MCU Board.
	Connections of CST No Paper Sensor with MCU Board.
	Connections of Drive Clutch with MCU Board.
Main Drive	Connections of Feeder Drive with MCU Board.
	Connections of Main Drive with MCU Board.
	Connections of Sub-Drive with MCU Board.
Laser Unit	Connections of Laser Unit with MCU Board.
Xerographics	Connections of EEPROM Board with MCU Board.
	Connections of Imaging Unit (PHD) with MCU Board.
	Connections of Hum/Temp Sensor with MCU Board.
	Connections of Erase LEDs and MCU Board.
	Connections of Transfer Belt with MCU Board.
HVPS	Connections of HVPS with MCU Board.
Toner Dispense	Connections of Dispenser Motor (Y) with MCU Board.
	Connections of Dispenser Motor (M) with MCU Board.
	Connections of Dispenser Motor (C) with MCU Board.
	Connections of Dispenser Motor (K) with MCU Board.
	Connections of CRUM Connector (Y) with MCU Board.
	Connections of CRUM Connector (M) with MCU Board.
	Connections of CRUM Connector (C) with MCU Board.
	Connections of CRUM Connector (K) with MCU Board.
Fuser	Connections of Fuser with MCU Board.
	Connections of Fuser with LVPS.
	Connections of MCU Board with LVPS.
System Control	Connections of Image Processor Board with MCU Board.
	Connections of Control Panel with Image Processor Board.
	Connections of LVPS with Image Processor Board
Option Feeder	Connections of Optional Feeder Tray 2
Duplex Unit	Connections of Duplex Unit with MCU Board

LVPS

s6140-027

Media Feed

MCU Board
PL8.2.13

Left Side Harness Assembly
PL3.1.18

P/J23

+3.3VDC

+3.3VDC

+3.3VDC

+3.3VDC

1 I/L +24VDC
2 CST FEED CL ON (L) +24VDC

P/J231
2 1
1 2

MPT Feed Solenoid
PL3.1.11

3 PULL UP +3.3VDC
4 SG
5 REGI SENSED (L) +3.3VDC

P/J232
3
2
1

Registration Sensor
PL3.2.13

6 PULL UP +3.3VDC
7 SG
8 PAPER EMPTY SENSED (H) +3.3VDC

P/J233
3
2
1

MPT No Paper
Sensor
PL3.2.13

9 PULL UP +3.3VDC
10 SG
11 PAPER EMPTY SENSED (L) +3.3VDC

P/J234
3
2
1

Tray 2 No Paper
Sensor
PL3.2.13

Interlock
+24VDC

K Sensor/Registration Clutch Harness Assembly
PL9.1.9

P/J26

4 I/L +24VDC
5 REGI CL ON (L) +24VDC

P/J262
2 1
1 2

Drive Clutch Assembly
PL3.1.1

s6140-028

Main Drive

s6140-029

Laser Unit

MCU Board
PL8.2.13

Laser Unit
PL4.1.1

Interlock
+24VDC

Laser RE Harness Assembly
PL4.1.22

P/J40

1	ROS MOT ON	15
2	SG	14
3	I/L +24VDC	13
4	ROS MOT CLK	12
5	SOS	11
6	LD ERR	10
7	PCONT	9
8	SG	8
9	V REF K	7
10	V REF C	6
11	V REF M	5
12	V REF Y	4
13	ENB	3
14	SG	2
15	+3.3V LD	1

P/J411

ROS Motor

1	CLK	5
2	LOCK	4
3	ROS MOT ON	3
4	SG	2
5	+24VDC	1

SOS Board

1	+5VDC	3
2	SOS	2
3	SG	1

from Xerography

Laser Video Harness Assembly
PL4.1.23

P/J41

1	SG	8
2	DATA K	7
3	SG	6
4	DATA C	5
5	SG	4
6	DATA M	3
7	SG	2
8	DATA Y	1

P/J412

s6140-030

Xerographics

MCU Board
PL8.2.13

PHD XPRO Harness Assembly
PL9.1.11

+3.3VDC

P/J42

1 DATA
2 CLOCK
3 +3.3VDC
4 SG

P/J144

4
3
2
1

EEPROM Board
PL8.2.16

+3.3VDC

5 +3.3VLD
6 DATA
7 CLOCK
8 +3.3VDC
9 SG
10 +3.3VLD

PHD Assembly
PL4.1.21

P/J422

6
5
4
3
2
1

PHD
EEPROM

to ROS

Humidity Harness Assembly
PL9.1.6

+5VDC

P/J20

1 TEMP.
2 SG
3 HUMI.
4 +5VDC

P/J201

4
3
2
1

Humidity
Sensor
PL8.2.7

LVPS2 Harness Assembly
PL9.1.3

+3.3VDC

P/J14

15 +3.3VDC
16 ERASE Y/M/C ON (L) +3.3VDC
17 ERASE K ON (L) +3.3VDC

P/J141

3
2
1

Erase LED
Assembly
PL4.1.8

+5VDC

Left Side Harness Assembly
PL3.1.18

P/J28

1 +5VDC
2 ADC SENSOR
3 LED REM
4 ADC V MONI
5 SG

P/J281

5 1
4 2
3 3
2 4
1 5

Transfer Assembly
PL6.1.7

P/J2811

5
4
3
2
1

ADC Sensor

s6140-031

HVPS

MCU Board
PL8.2.13

HVPS
PL4.1.19

HVPS Harness Assembly
PL9.1.5

+3.0V REF

+24VDC

P/J16

10	TR MON
9	NC
8	HV DO
7	HV LD
6	HV CLK
5	+3.0V REF
4	SG
3	MAIN CLK
2	SG
1	I/L +24V

P/J161

1
2
3
4
5
6
7
8
9
10

A
E
I
D
H
C
G
B
F

BCR

BTR

K

Developer

C

M

Y

BTR : Bias Transfer Roller

BCR : Bias Charge Roller

s6140-032

Toner Dispense

MCU Board
PL8.2.13

Interlock
+24VDC

Toner Motor Harness Assembly
PL5.1.25

P/J18

1	Y DISPENSE MOT A
2	Y DISPENSE MOT B
3	I/L +24VDC
4	Y DISPENSE MOT XA
5	Y DISPENSE MOT XB

P181   J181

Dispense Motor (Y)
PL5.1.3

6	M DISPENSE MOT A
7	M DISPENSE MOT B
8	I/L +24VDC
9	M DISPENSE MOT XA
10	M DISPENSE MOT XB

P182   J182

Dispense Motor (M)
PL5.1.3

Interlock
+24VDC

P/J19

1	N.C.
2	C DISPENSE MOT A
3	C DISPENSE MOT B
4	I/L +24VDC
5	C DISPENSE MOT XA
6	C DISPENSE MOT XB

P191   J191

Dispense Motor (C)
PL5.1.3

Interlock
+24VDC

7	K DISPENSE MOT A
8	K DISPENSE MOT B
9	I/L +24VDC
10	K DISPENSE MOT XA
11	K DISPENSE MOT XB

P192   J192

Dispense Motor (K)
PL5.1.3

Toner CRUM Harness Assembly
PL5.1.26

+3.3VDC

P/J31

1	DATA Y IN
2	CLK Y OUT
3	+3.3VDC
4	SG

P/J311

Connector CRUM (Y)
PL5.1.14

5	DATA M IN
6	CLK M OUT
7	+3.3VDC
8	SG

P/J312

Connector CRUM (M)
PL5.1.14

9	DATA C IN
10	CLK C OUT
11	+3.3VDC
12	SG

P/J313

Connector CRUM (C)
PL5.1.14

13	DATA K IN
14	CLK K OUT
15	+3.3VDC
16	SG

P/J314

Connector CRUM (K)
PL5.1.14

s6140-033

Fuser

s6140-034

System Control

IP Board
PL8.1.7

+3.3VDC

IP Harness Assembly
PL9.1.1

MCU Board
PL8.2.13

P/J101
1 TEST PRINT
2 SG
3 +3.3VDC
4 SG
5 SG
6 STS
7 CMD
8 CREADY
9 SREADY
10 SG
11 VSYNC K
12 VSYNC C
13 VSYNC M
14 VSYNC Y
15 SG
16 HSYNC
17 SG
18 SG

P/J10
18 +3.3VDC
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1

IP Video Harness Assembly
PL9.1.2

P/J111
1 SG
2 DATA K
3 SG
4 DATA C
5 SG
6 DATA M
7 SG
8 DATA Y

P/J11
8
7
6
5
4
3
2
1

LVPS
PL8.2.1

IP Power Harness Assembly
PL9.1.10

+5VDC

+3.3VDC

P/J401
1 +5VDC
2 SG
3 +3.3VDC
4 SG

P/J40
1 +5VDC
2 +3.3VDC
3
4

B Harness Assembly
PL9.1.12

A Harness Assembly
PL1.2.12

Console Panel
PL1.2.3

+5VDC

P/J29
7
6
5
4
3
2
1

P/J2900
1 7
2 6
3 5
4 4
5 3
6 2
7 1

SG
DATA
CLK
+5VDC
WAKE UP
LED ON
+3.3VDC

P/J220
1
2
3
4
5
6
7

+5VDC

s6140-035

Option Feeder

s6140-036

Duplex Unit

s6140-037

Reference

In this chapter...

- Phaser 6140 Menu Map
- Media Guidelines
- Firmware Update
- Acronyms and Abbreviations

Appendix A

Phaser 6140 Menu Map

Phaser® 6140
Color Laser Printer

Menus

Menu   OK   [OK]   Power Saver Off

Cancel

Walk-Up Features*

Nederlands
Svenska
Dansk
Polski
Česky
Magyar
Türkçe

www.xerox.com/office/6140docs

Information Pages

- Menu Map
- Demo Page
- Configuration
- PCL Fonts List
- PCL Macro List
- PS Fonts List
- Job History
- Error History
- Print Meter
- Stored Document*

Billing Meters

- Total Impression
- Color Impression
- Black Impression

Admin Menu

- Network Setup ▸
- USB Setup ▸
- System Setup ▸
- Maintenance Mode ▸
- PCL Setup ▸
- PostScript Setup ▸
- Control Panel ▸

Tray Settings

- Tray 1 ▸
- Tray 2 ▸

Ethernet

- TCP/IP ▸
- Protocol ▸
- Host Access List
- IEEE 802.1X†
- Reset Defaults
- Adobe Protocol

- IP Mode
- IPv4
- IPsec†

- LPR
- Port 9100
- IPP
- SMB TCP/IP
- SMB NetBEUI
- FTP
- WSD
- SNMP
- Email Alerts
- CentreWare IS
- Bonjour (mDNS)
- HTTP-SSL/TLS****

- Port Status
- Adobe Protocol

- PowerSaver Time
- Audio Tones
- Fault Time-Out
- Time-Out
- Language
- Auto Log Print
- Print ID
- Print Text
- RAM Disk*
- Size Mismatch
- mm/inch
- Default Size
- Start Up Page
- Odd Page 2-Sided**
- Power On Wizard

- F/W Version
- Automatic Registration Adjust
- Adjust Color Registration
- Clear Developer
- Toner Refresh
- Drum Refresh
- Initialize Print Meter
- Initialize NVM
- Clear Storage*
- Reset Fuser

- Paper Tray
- Paper Size
- Orientation
- 2-Sided**
- Font
- Symbol Set
- Font Size
- Font Pitch
- Form Line
- Quantity
- Image Enhance
- Hex Dump
- Draft Mode
- Line Termination
- Default Color

- PS Error Report
- PS Job Time-Out
- Paper Select Mode
- Default Color

- Panel Lock
- Change Password†

- Paper Type
- Paper Size
- Display Popup

- Paper Type***
- Paper Size***
- Display Popup

Requires:
* Optional Memory
** Duplex Unit
*** 250-Sheet Feeder
**** Self-signed certificate created
† Available when enabled

Page 1 of 1

s6140-143

Media Guidelines

Print media is paper, transparencies, labels, envelopes, coated paper and several other types. The printer prints on a variety of print media. Selecting the appropriate print media for the printer helps avoid printing problems. This section describes how to select, store, and load print media.

For the best results in color, a 75 g/m2 (20 lb.) xerographic, grain long paper is recommended. For the best results in Black and White, use 90 g/m2 (24 lb.) xerographic, grain long paper.

When loading paper, identify the recommended print side on the paper package, and load the paper accordingly.

Paper Characteristics

The following paper characteristics affect print quality and printer reliability. Use these guidelines when evaluating the customer's paper stock.

Weight

The trays automatically feed paper weights from 60 to 216 g/m2 (16 to 57.6 lb. bond) grain long. Paper lighter than 60 g/m2 (16 lb.) might not feed properly, and could cause paper jams. For best performance, use 75 g/m2 (20 lb. bond) grain long paper.

Curl

Curl is the tendency of media to curve at its edges. Excessive curl can cause feeding problems. Curl usually occurs after the paper passes through the printer, where it is exposed to high temperatures. Storing paper unwrapped in humid conditions, even in the paper tray, can contribute to curling prior to printing and cause feeding problems.

Smoothness

The degree of surface smoothness directly affects print quality. If the paper is too rough, the toner does not fuse to the paper properly, resulting in poor print quality. If the paper is too smooth, it can cause feeding problems. Smoothness between 150 and 250 Sheffield points produces the best print quality.

Moisture Content

The amount of moisture in the paper affects both print quality and the ability of the printer to feed the paper properly. Paper should remain in its original packaging until loaded. This limits the exposure of the paper to moisture changes that can degrade its performance.

Grain Direction

Grain refers to the alignment of paper fibers in a sheet of paper. Grain is either grain long, running the length of the paper, or grain short, running the width of the paper. For 60 to 135 g/m2 (16 to 36 lb. bond) paper, grain long fibers are recommended. For papers heavier than 135 g/m2 (36 lb. bond), grain short is preferred.

Fiber Content

Most high-quality xerographic paper is made from 100 % chemically pulped wood. Paper containing fibers such as cotton possess characteristics that can result in degraded paper handling.

Recommended Paper

To ensure the best print quality and feed reliability, use 75 g/m2 (20 lb.) xerographic paper. Business papers designed for general business use also provide acceptable print quality.

The laser printing process heats paper to temperatures of 225°C (437°F) for Magnetic Ink Character Recognition (MICR) applications, and 205°C (401°F) for non-MICR applications. Paper able to withstand these temperatures without discoloring, bleeding, or releasing hazardous emissions. Check with the customer to determine whether the paper is acceptable for laser printers.

Unacceptable Paper

The following paper types are not recommended:

- Chemically treated papers used to make copies without carbon paper, also known as carbonless papers, carbonless copy paper (CCP), or no carbon required (NCR) paper

- Preprinted papers with chemicals affected by Fuser temperatures

- Preprinted forms that require registration (the print location on the page) greater than ±0.09 in., such as optical character recognition (OCR) forms. In some cases, the application can adjust registration to successfully print on these forms.

- Coated papers (erasable bond), synthetic papers, thermal papers

- Rough-edged, rough or heavily textured surface papers or curled papers

- Recycled papers containing more than 25 % post-consumer waste that do not meet DIN 19 309

- Multiple-part forms or documents

- Perforated or pre-cut label paper

Firmware Update

Boot Firmware Update

Caution

Do not reboot or turn Off the printer during the update process. The printer automatically reboots when the process is complete.

Note

Boot Code updates are restricted to USB only.

1. Download and unzip the applicable files from the Xerox support web site.
2. Turn Off the printer.
3. Connect the USB cable from the host to the printer.
4. Press **Up**, **Down** arrow, and **Menu** simultaneously, and turn On the printer. Wait until FW Update - Password appears, then release the keys.
5. Enter the password by pressing the **Down** arrow 2 times, then press **OK**.
6. When F/W Download DL Mode USB appears, press **OK**.
7. Very briefly, two firmware version numbers appear, then the DownLoad Mode Send F/W Data prompt is displayed.
8. Open the Boot directory. Double-click the Xeroxfwup.exe file. The boot firmware file (boot_*.prn) should also be located in the Boot directory.

   Note

   Xeroxfwup.exe does not have a security certificate attached to it, so a security warning may pop up - this is normal, click **Run**.

9. When the Xeroxfwup window appears, click the USB radio button, and press **Next**. The printer serial number should appear in the Xeroxfwup window.
10. Click the check box in front of the serial number and press **Next**. Boot firmware downloads require approximately one minute. After the firmware has downloaded, the printer reboots. If the Startup page is enabled, the Configuration pages print.

    Xeroxfwup continues to display the progress bar for some time after the download has completed. When the progress bar completes, click **Next**, then **Finish** on the next screen. The update process is complete.
11. If the Startup page is disabled, print a Configuration page to verify the Boot firmware version.

Main Firmware Update

Caution

Do not reboot or turn Off the printer during the update process. The printer automatically reboots when the process is complete.

1. Download and unzip the applicable files from the Xerox support web site.
2. Ensure the appropriate downloading cable (Ethernet or USB) is connected.
3. Reboot the printer.
4. Open the Main directory. Double-click the Xeroxfwup.exe file. The main firmware file (_*.prn) should also be located in the Main directory.

   Note

   Xeroxfwup.exe does not have a security certificate attached to it, so a security warning may pop up - this is normal, click **Run**.

5. The xeroxfwup window with connection options is displayed. Select the appropriate downloading option (Network or USB). Click **Next**.
6. The xeroxfwup window is displayed.
   a. For Network connection:
      - If your printer IP address is available, click the appropriate check box, then click **Next**.
      - If the printer IP address is not listed, click the Add button. Enter the printer IP address. Click **OK**. Click the checkbox with the correct IP address. Click **Next**.
      - On the printer Control Panel, messages are displayed from Receiving data Port 9100 --> Writing... Port 9100 as the printer starts updating the firmware.
   b. For USB connection:
      - The Xeroxfwup window with the serial number is displayed. Click the check box, then click **Next**.
      - On the printer Control Panel, messages are displayed from Receiving data USB --> Writing... USB as the printer updates the firmware.
7. Main firmware downloads require approximately 3 minutes. After the firmware has downloaded, the printer reboots. If the Startup page is enabled, the Configuration pages print.

   Xeroxfwup continues to display the progress bar for some time after the download has completed. When the progress bar completes, click **Next**, then **Finish** on the next screen. The update process is complete.
8. If the Startup page is disabled, print a Configuration page to verify the firmware version.

Acronyms and Abbreviations

Acronym	Description
A3	Paper size 297 millimeters (11.69 inches) x 420 millimeters (16.54 inches).
A4	Paper size 210 millimeters (8.27 inches) x 297 millimeters (11.69 inches).
A5	Paper size 148 millimeters (5.82 inches) x 210 millimeters (2.10 inches).
AC	Alternating Current is type of current available at power source for the printer.
ADC	Automatic Density Control
AMPV	Average Monthly Print Volume
APC	Auto Power Control
ASSY	Assembly
ATM	Adobe Type Manager
BCR	Bias Charge Roller
BOOTP	Boot Parameter Protocol
BTR	Bias Transfer Roller
CCD	Charge Coupled Device (Photoelectric Converter)
CCW	Counter-Clock Wise
CMYK	Toner colors for the printer: Y=Yellow, C=Cyan, M=Magenta, K=Black
CRU	Customer Replaceable Unit
CRUM	Customer Replaceable Unit Monitor
CST	Cassette
dB	Decibel
DC	Direct Current
DDNS	Dynamic Domain Name System
DDR2 DIMM	Double Data Rate Dual In-Line Memory Module
DEV	Developer
DHCP	Dynamic Host Configuration Protocol
DPI	Dots Per Inch
DRV	Drive
DUP	Duplex
Duplex	2-sided printing
EA	Emulsion Aggregation (Toner)
EEPROM	Electrically Erasable Programmable Read-Only Memory

Acronym	Description
ESD	Electrostatic Discharge. A transfer of charge between bodies at different electrostactic potential.
ESS	Image process controller
FCC	Federal Communications Commission
FDR	Feeder
FPOT	First Print Output Time
FRU	Field Replaceable Unit
GB	Giga Byte
GDI	Graphics Device Interface
GND	Ground
HARN	Harness
HCF	High-Capacity Feeder
HDD	Hard Disk Drive
HUM	Humidity
HV	High Voltage
HVPS	High-Voltage Power Supply
Hz	Hertz (cycles per second)
IDT	Intermediate Drum Transfer
IEC	International Electrotechnical Commission
I/F	Interface
IIT	Image Input Terminal - ADF, Scanner
IOT	Image Output Terminal - the printer
IP	Image Processor
KB	Kilo Byte
LAN	Local Area Network
LCD	Liquid Crystal Display
LD	Laser Diode
LED	Light Emitting Diode
LEF	Long-Edge Feed
LPD	Line Printer Daemon
LPR	Line Printer Remote
LTR	Letter Size Paper (8.5 x 11 inches)
LVPS	Low-Voltage Power Supply
MB	Mega Byte
MCU	Machine Control Unit (Engine Control Board)
MHz	Mega Hertz
MIB	Management Information Base

Acronym	Description
MM	Millimeters
MOT	Motor
MPT	Multi-Purpose Tray
NCS	Non-Contact Sensor
NVM	Non-Volatile Memory
NVRAM	Non-Volatile Random Access Memory
OHP	Overhead Paper (Transparency)
OPT	Optional
OS	Operating System
PCB	Printed Circuit Board
PCL	Printer Command Language
PDL	Page Description Language
P/J	Plug Jack (electrical connections)
PJL	Printer Job Language
PL	Parts List
POP3	Post Office Protocol version 3
PPD	PostScript Printer Description
PPM	Pages Per Minute
PWBA	Printed Wiring Board Assembly
RAM	Random Access Memory
RH	Relative Humidity
RMS	Root Mean Square Voltage
ROM	Read-Only Memory
ROS	Raster Output Scanner - Laser Unit
SEF	Short-Edge Feed
SMB	Server Message Block
SNMP	Simple Network Management Protocol
SNR	Sensor
SOL	Solenoid
SOS	Start of Scan
TDC	Toner Density Control
TNR	Toner
UI	User Interface
USB	Universal Serial Bus
WINS	Wireless Integrated Network Sensor

Index

S

T