XEROX

Service Manual

701P45793

Phaser® 6180

Color Laser Printer

XEROX®

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Color Laser Printer

Warning

The following servicing instructions are for use by qualified service personnel only. To avoid personal injury, do not perform any servicing other than that contained in the operating instructions, unless you are qualified to do so.

: January 2007

Service Terms

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.

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.

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.

Warning

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

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.

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.

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 to the chassis or circuit board, and observe all 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 IC's 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 1-v.

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 6180 Color Laser 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.

s6180-256

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 printer motor is running.

s6180-257

Servicing Fuser Components

Warning

This printer uses heat to fuse the toner image to paper. The Fuser is VERY HOT. Turn the printer power Off and wait at least 5 minutes for the Fuser to cool before you attempt to service the Fuser or adjacent components.

Regulatory Specifications

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:

January 1, 1995: Low Voltage Directive 73/23/EEC as amended by 93/68/EEC

January 1, 1996: Electromagnetic Compatibility Directive 89/336/EEC

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.

Manual Organization

The Phaser 6180 Color Laser 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 print engine and attached options. Also included are detailed replacement procedures, parts lists, and wiring diagrams.

The Phaser 6180 Color Laser Printer Service Manual contains these sections:

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

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

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

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

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

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

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

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

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

Section 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.

Section 10 - Plug/Jack and Wiring Diagrams: This section contains the plug/jack locations and the wiring diagrams for the printer.

Appendix A - Reference: This section provides an illustration of the printer's menu structure, printer firmware update instructions, a list of printer error chain link codes, and a list of acronyms and abbreviations.

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General Information

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- Printer Configurations
- Parts of the Printer
- Printer Options
- Maintenance Items
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- Printer Specifications
- Controller Functions

Chapter 1

Printer Introduction and Overview

The Xerox Phaser 6180 Color Laser Printer has a single-pass color laser-design architecture, which offers color and mono print speed at 20/26-ppm, and resolutions up to 600 x 600 dots-per-inch (dpi). The printer supports Adobe PostScript 3 and PCL6, USB 2.0, Parallel port, and 10/100 Base-TX Ethernet.

The Phaser 6180 printer provides a standard 150-Sheet Tray 1 (MPT) and a standard 250-Sheet Tray 2. Tray 1 (MPT) supports specialty media, card stock, and envelopes. The Output Tray holds 300 sheets facedown.

The printer options add memory, paper capacity, and functionality. Memory upgrades are available to increase the standard RAM from 128 up to 1152 MB maximum. A 550-Sheet Feeder is available as an option. Auto-duplexing is available and no tools are required to install the Duplex Unit. The Multi-Protocol Network Card expands the supported network protocols.

Technical Support Information

The Xerox Phaser 6180 Color Laser Printer Service Manual is the primary document used for repairing, maintaining, and troubleshooting the printer.

To ensure complete understanding of this product, participation in Xerox Phaser 6180 Service Training is strongly recommended. To service this product, Xerox 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.pl
- Service Partners: http://www.office.xerox.com/partners

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

Printer Configurations

The Phaser 6180 printer is available in two configurations.

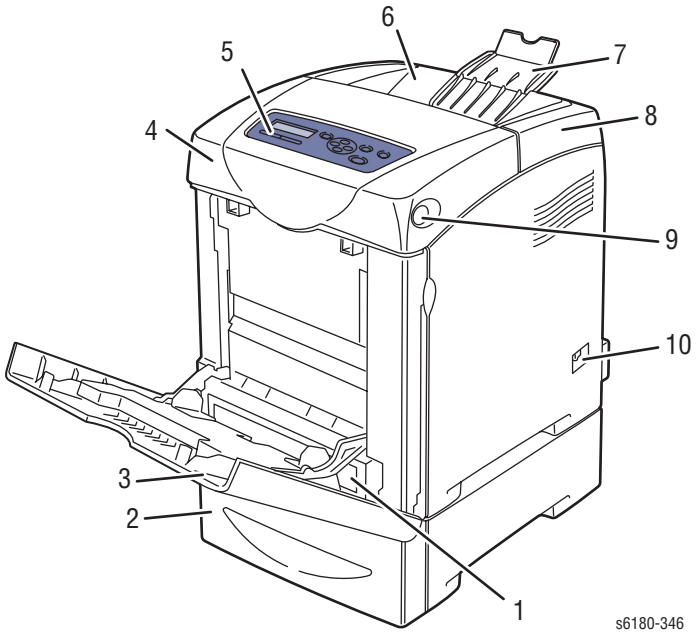
Phaser 6180 Configurations

Features	Printer Configuration	
	6180N	**6180DN**
Processor and Clock Speed	400 MHz	400 MHz
Memory Configuration*	128 MB	128 MB
Print Speed (Color/Mono)	20/26	20/26
Resolutions (dpi)		
Standard	600 x 600 x 1 bit	600 x 600 x 1 bit
Enhanced	600 x 600 x 4 bit	600 x 600 x 4 bit
Adobe PostScript 3 Fonts	Standard	Standard
PCL6 Fonts	Standard	Standard
Job Pipelining	Standard	Standard
USB 2.0 Hi-Speed Support	Standard	Standard
Parallel Port	Standard	Standard
Ethernet Interface	10/100 Base-TX	10/100 Base-TX
Tray 1 (MPT) (150 Sheet)	Standard	Standard
Tray 2 (250 Sheet)	Standard	Standard
550-Sheet Feeder	Optional	Optional
Duplex Unit	Optional	Standard
Wireless LAN	Optional	Optional
Print Speed - Maximum Duplex (Letter/ A4) (Color/Monochrome)	14/18	14/18
Warranty	1 year onsite	1 year onsite

* All configurations have one memory slot supporting 256 MB/ 512 MB/ 1 GB DDR2 DIMMs, to a maximum of 1152 MB. Standard memories are soldered on board.

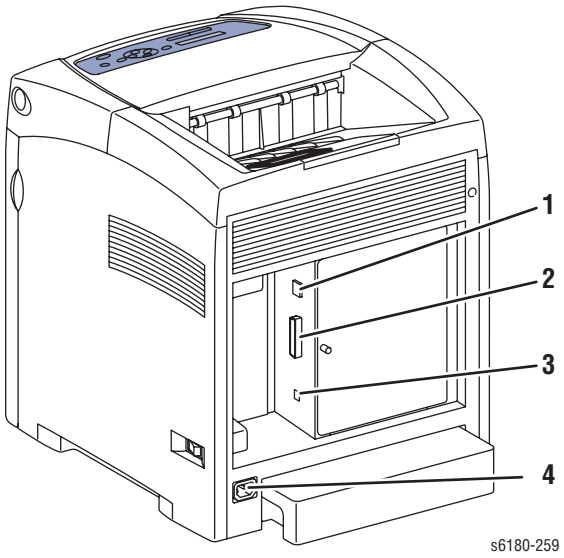
Parts of the Printer

Front and Side Views



1. Tray 2
2. Tray 3
3. Tray 1 (MPT)
4. Front Cover (Door A)
5. Control Panel
6. Output Tray
7. Extender Cover
8. Top Cover
9. Front Cover Release Button
10. Power Switch

Rear View

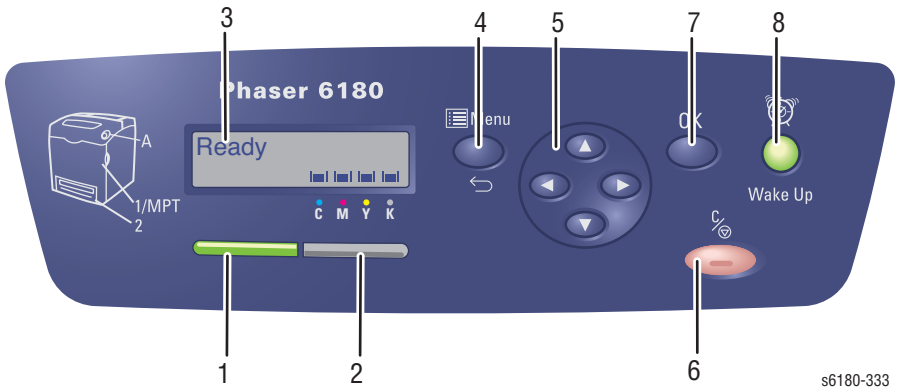


1. Ethernet Port
2. Parallel Port
3. USB Port
4. Power Cord Connector

Control Panel

The Control Panel consists of 2 LEDs, 1 display window, and 8 functional buttons. These buttons are used to navigate the menu system, perform functions, and select modes of operation for the printer.

Control Panel Button Descriptions



1.	Ready LED (Power/Status)	LED On - Ready to print or processing print job. LED blinking - The printer is receiving data. LED Off - An error has occurred and the printer is offline.
2.	Error LED	Light On - Error with print job. (blinking = not user fixable) (On solid = user fixable)
3.	Graphic Control Panel Display	Displays printer settings, status, and messages.
4.	**Menu** Button	Changes display between Menu mode and Print mode.
5.	**4 Way Cursor** Buttons	Moves between the Menu levels.
	Up and **Down** arrows	Switches between Menus or Items on the same level.
	Right and **Left** arrows	Switches between the Menu levels.
6.	**Cancel** Button	Cancels the current print job.
7.	**OK** Button	Move to the next level, confirm setting, and print report.
8.	**Wake Up** LED/Button	LED comes On when the printer is in Power Saver Mode. Press this button to exit the 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 arrow buttons
Reset Password to 0000 (used when the Control Panel menus are locked)	Menu
Boot Download for Controller	Up + Down + Menu buttons

Printer Options

Phaser 6180 printer options include:

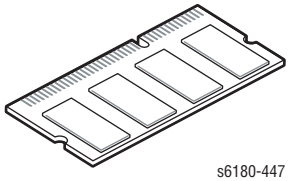
- Additional Memory (256 MB/ 512 MB/ 1024 MB)
- Optional 550-Sheet Feeder (Tray 3)
- Duplex Unit
- Multi-Protocol Network Card

Additional Memory

The printer features one slot that accepts 256, 512, or 1024 MB of DDR2 DIMMs. Memory modules must meet the following characteristics:

- 200 Pin DDR2 DIMM (8 chip type)
- Unbuffered, Non-parity

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



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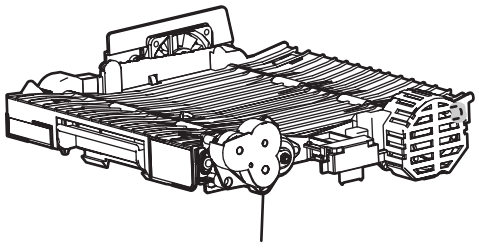
Duplex Unit

User can install the Duplex Unit without using any tools and by simply removing the Transfer Unit.



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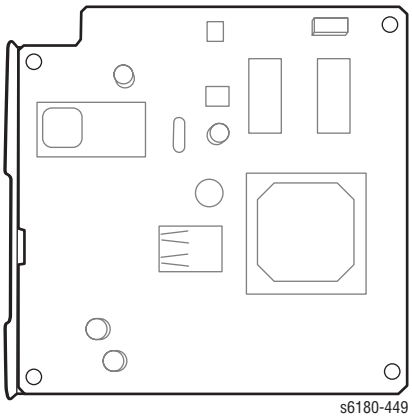
Multi-Protocol Network Card

The Multi-Protocol Network Card provides additional protocols and security features including IPP, SMB, SSL/HTTPs, WINS, DDNS, and Netware.

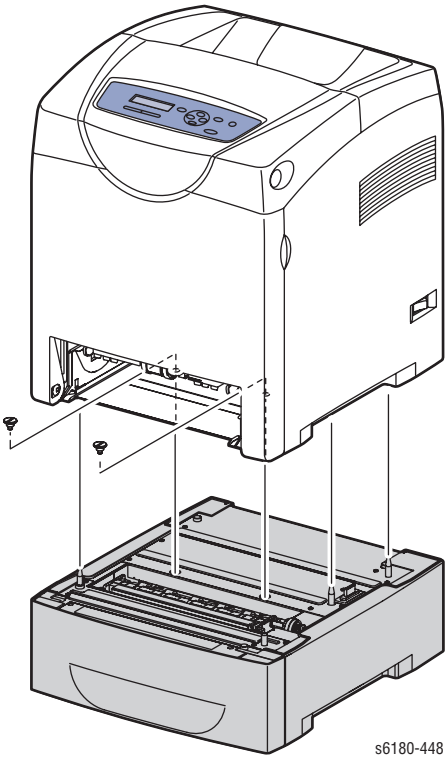


Optional 550-Sheet Feeder (Tray 3)

The Optional 550-Sheet Feeder increases the input capacity of the printer and can be attached to the printer underneath Tray 2 with 2 screws.

Note

Only one Optional 550-Sheet Feeder is supported.



Maintenance Items

An item is a printer part or assembly that has a limited life, and requires periodic replacement. Routine maintenance items are typically customer replaceable.

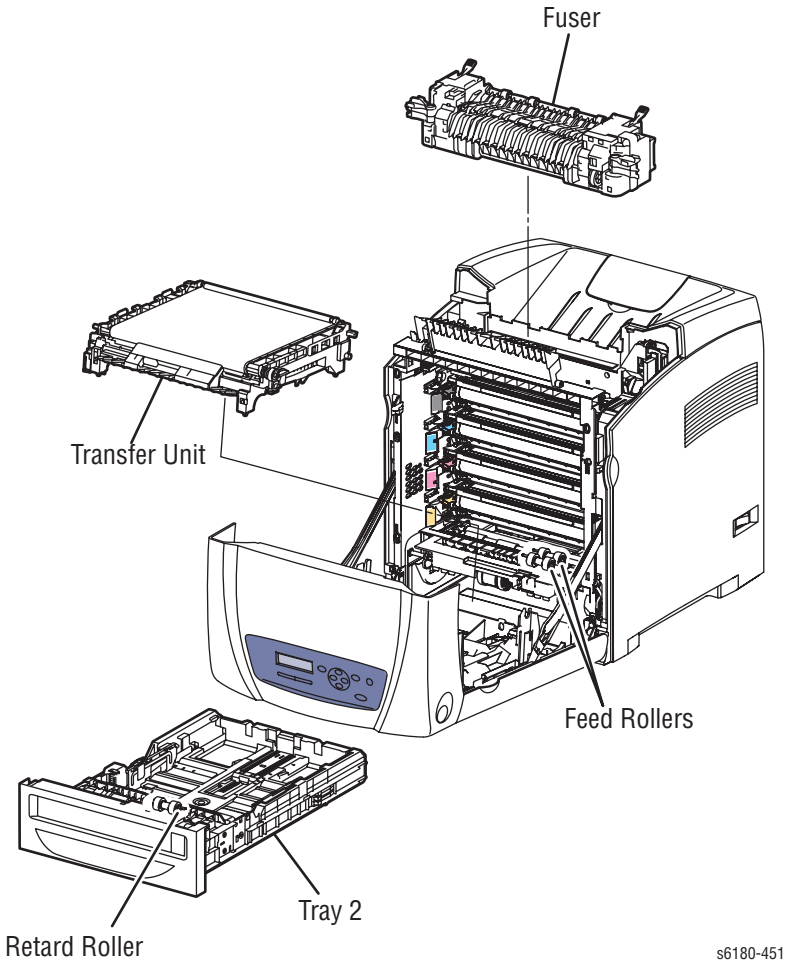
The listed items have limited life and require periodic replacement.

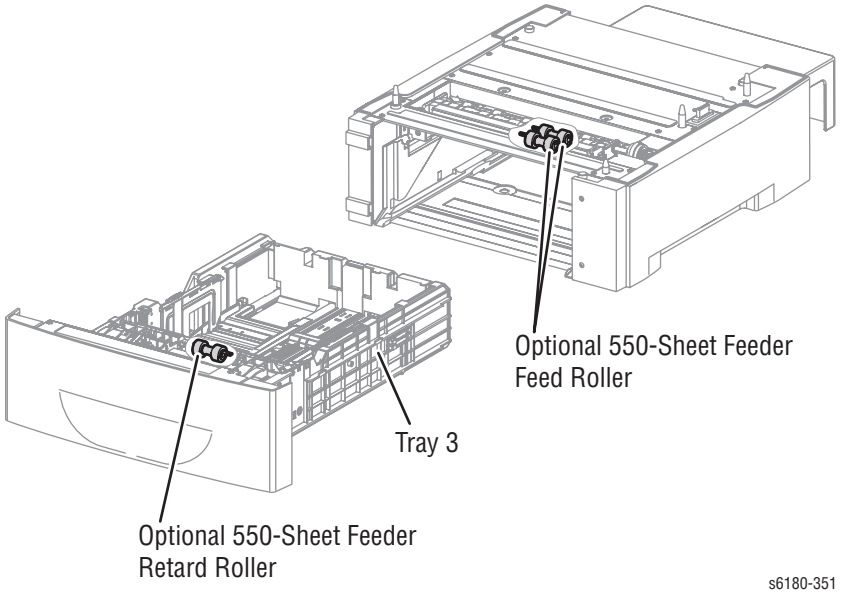
Phaser 6180 Maintenance Items

Item	Print Life
Transfer Unit	Up to 100,000 pages
Fuser	Up to 100,000 pages
Feed/Retard Roller	Up to 100,000 pages

Note

Print life is based on “typical” office printing and 5% coverage per color on 24 lb. paper. The 100,000 life is not guaranteed and varied depending on usage habits.




Optional 550-Sheet Feeder
Feed Roller
Tray 3
Optional 550-Sheet Feeder
Retard Roller
s6180-351

Consumables

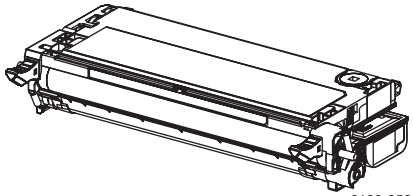
Consumables consist of 4 Print Cartridges used in the printer.

CMY Toner will not be consumed when printing in Mono mode or when printing a Grayscale job only. Internal counters track Consumables and Maintenance Items life usage.

Each Print Cartridge has a CRUM (Customer Replaceable Unit Meter) to record the information. CRUM counts the amount of remaining toner. When toner empty is detected, Life End status will be sent to indicate toner empty.

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

Print Cartridge	Print Life	
	Color	Mono
Standard Capacity	2,000 pages	3,000 pages
High Capacity	6,000 pages	8,000 pages



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Printer Specifications

Functional 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	2,000 PV/month
	Maximum	60,000 PV/month
	For Duplex prints, prints on the front and back sides of paper are counted as 2 PV. Maximum PV is 2,000 PV/day	
Color Medium	Cyan, Magenta, Yellow, and Black Print 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	300,000 pages	
Maximum Duty Cycle	60,000 pages/month*	
Warm-Up Time	Less than 30 seconds from Power On	
Operating System	Windows	2000/ 2003 Server/ XP Pro/ XP/ Vista
	Macintosh	OS 10.2 or higher
	Linux	Redhat, SuSe, and TurboLinux 10 Desktop
* Assumes a 30 day month of printing.		

Memory Specifications

Characteristic	Specifications	
Memory	Minimum	128 MB On-Board memory
	Maximum	1152 MB
Supported RAM	Supports up to 1152 MB of DDR2 DIMM with one slot for 256 MB/ 512 MB/1 GB	

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: < 8 A 220 V Engine: < 4 A	
Power Consumption		
Power Saver Mode	110 V Engine: 5.4 W 220 V Engine: 6.3 W	
Standby Mode (Fuser On)	110 V: 70 W	
	220 V: 68.9 W	
During Color Continuous Printing	110 V Engine: 450 W 220 V Engine: 410 W	
During B/W Continuous Printing	110 V Engine: 410 W 220 V Engine: 375 W	
Maximum Value	900 W	
In-rush Current		
Maximum at 1st 2.5 msec	50 Amp (Cold start) 135 Amp (Hot start	
Within 10 msec	80 Amp (110 V/ 220 V/ 240 V) 85 Amp (100 V)	
Leakage Current	**Power**	**Current**
	110 V M/C	< 3.5 (UL) mA
	120 V	< 3.5 (UL) mA
	220-240 V	< 3.5 mA (IEC)
ENERGY STAR	Sleep Mode	< 45 W

Print Speed

Resolution	Simplex (ppm)		Duplex (ipm)	
	Color A/A4	Mono A/A4	Color A/A4	Mono A/A4
600 Standard	20/20	26/25	14/14	18/18
600 Enhanced	20/20	26/25	14/14	18/18
Paper Type (65 - 220 gsm)				
Letter	18	26	12	21
A4	17	25	12	25
A5	18	26	12	21
Legal	15	26	11	18
Transparency	6	6	N/A	N/A

Environmental Specifications

Characteristic	Specification	
Temperature		
Operating	5 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 3,500 meters (11,482 feet)	
Acoustic Noise LWA(B)	**Sound Power Level (B)**	**Sound Pressure (dBA)**
Printing	6.6	49.1
Standby	4.0	28.6

Operating Mode

Mode	Condition	Description
Running Mode		The printer is under operating condition such as running or recording.
	Fusing	The system keeps the operating temperature.
	Exposure	The Laser Unit Motor runs at the running speed.
	Recording	The system is under operating condition.
	Cooling Fan	The fan operates at high speed.
	Control Panel Operation	LCD - Backlight: On LED - Ready LED is turned On.
Standby Mode		The printer is under standby condition.
	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 turned On.
Power Saver Mode		The printer enters into the Power Saver mode to reduce power consumption 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: Power Saver LED is turned On.
Note: When the printer receives a print job or the **Wake Up** button is pressed, the printer exits the Power Saver mode and enters the Ready mode.		

First Print Output Time (FPOT)

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

The following conditions are applied:

- The Controller does not keep the print engine waiting
- The printer is at Standby mode (Laser Unit Motor Off, Fuser Ready)
- Paper is A size Short Edge Feed (SEF)
- Process control time is not included

Mode	FPOT (sec.)
Color	As fast as 10.0
Mono	As fast as 10.0

Image Specifications

Note

The printer has 4 mm margins on all sides.

- Refer to “Print-Quality Troubleshooting” on page 5-1 for detailed specifications.

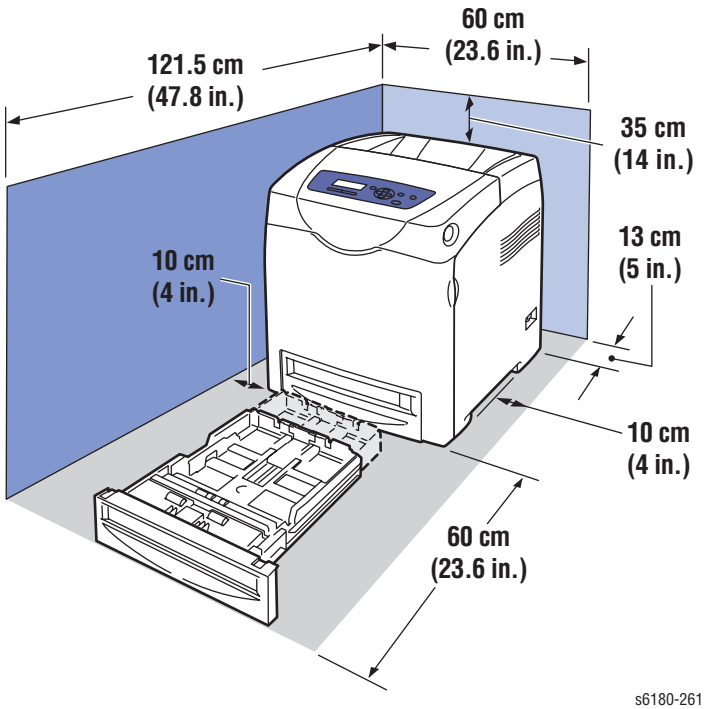
Characteristic	Specification
Maximum Print Area	210.9 mm (8.2 inches) x 351.6 mm (13.8 inches)
Guaranteed Print Area	207.9 mm (8.2 inches) x 347.6 mm (13.7 inches)
Skew	190 mm ± 1.2 mm
Perpendicularity	114.5 mm ± 0.8 mm
Parallelism	
Horizontal	180 mm ± 1.2 mm
Vertical	234 mm ± 1.2 mm
Linearity	
Horizontal	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

Physical Dimensions and Clearances

Printer Dimensions

Print Engine	6180N	6180DN
Height	470 mm (18.5 in.)	470 mm (18.5 in.)
Width	400 mm (15.7 in.)	400 mm (15.7 in.)
Depth	493 mm (19.4 in.)	493 mm (19.4 in.)
Weight (base printer with standard fill print cartridges)	27.2 kg (59.8 lb.)	28.3 kg (62.3 lb.)
Optional 550-Sheet Feeder	**Value**	
Height	138 mm (5.4 in.)	
Width	400 mm (15.7 in.)	
Depth	493 mm (19.4 in.)	
Weight	7.7 kg (16.9 lb.)	

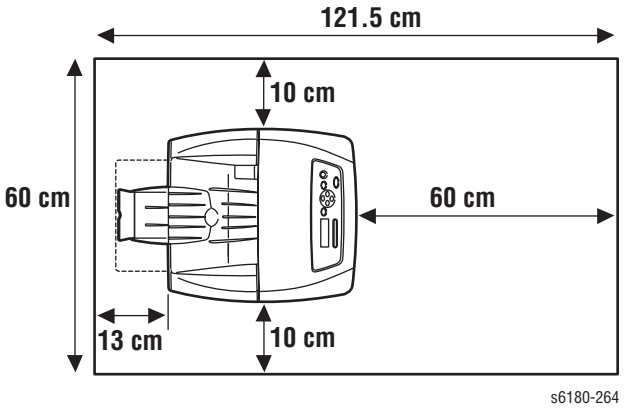
Minimum Clearances



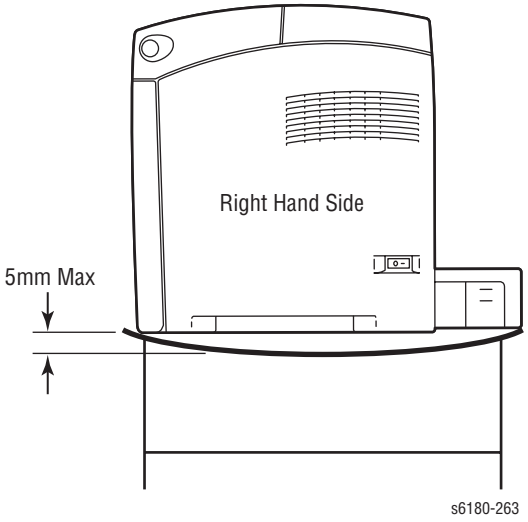
Mounting Surface Specifications

These specifications apply to any printer used as a table-top printer.

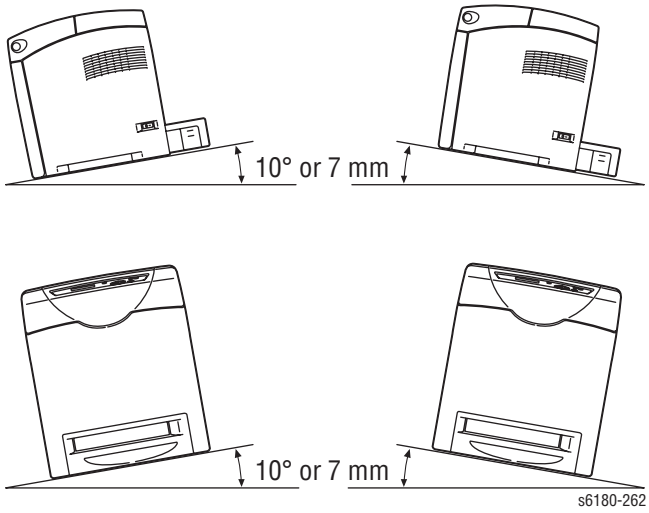
1. In order to function properly, the printer must be placed on a surface with the following minimum dimensions.



2. Mounting surface flatness must be within the specified range.



3. The printer must not be tipped or tilted more than 7 mm.



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 training 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	Tray 1 (MPT)	Tray 2, 3
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*		Yes	Yes
* All trays support Custom sizes. Tray 1 supports a wider range of Custom size dimensions than trays 2 and 3.			

Supported Paper Types and Weights

Paper Type	Paper Weight	Tray 1 (MPT)	Tray 2, 3
Plain Paper	65-90 g/m²	Yes	Yes
Letter Head	85-120 g/m² (22-32 lb. Bond)	Yes	Yes
Glossy Paper	100-163 g/m²	Yes	Yes
Thick Glossy Paper	164-216 g/m²	Yes	Yes
Pre-Punched	65-90 g/m² (17-24 lb. Bond)	Yes	Yes
Thin Card Stock	100-163 g/m²	Yes	Yes
Thick Card Stock	170-216 g/m²	Yes	No
Label	N/A	Yes	Yes
Transparency	N/A	Yes	No
Special	100-163 g/m² (30-60 lb. Cover)	Yes	No

Supported Envelopes

Type	Dimension	Tray 1 (MPT)	Tray 2, 3
Envelope #10	4.12 x 9.5 in.	Yes	No
Monarch Envelope	3.87 x 7.5 in.	Yes	No
C5 Envelope	162 x 229 mm	Yes	No
DL Envelope	110 x 220 mm	Yes	No
Note: Do not use envelopes with hot melt glue, windows, or metal clasps.			

Controller Functions

Job Control

Cancel Print

User can cancel a print job while printing is in progress using the Cancel button on the Control Panel. Job cancellation is not immediate. Depending on the job size, it may take a while to completely cancel.

Forced Output

This function forces the printer to print the received data when the printer is waiting for the remaining data during job processing.

IP Filter

User can accept or reject print jobs up to five specified IP addresses. IP filter is available only to LPD and Port9100.

Job Recovery

When a print job fails due to a paper jam, the printer automatically restarts the job after the jammed paper is removed. User does not have to reprint the entire job.

Job Timeout

When job transmission is interrupted for a certain period of time, the print data is deleted as an error. Timeout setting can be changed using the menu on the printer's Control Panel.

Print Volume Management

Print Volume (PV) Management manages print volume per user and can manage up to 50 users.

RAM Disk

RAM Disk functions when memory is expanded, enabling Collation, Secure Print, Proof Print, Form Overlay, and Font Download. 256 MB is needed to enable RAM Disk and all related functions.

Collation

The job is stored in the memory and multiple copies are printed. When the entire job does not fit in the memory, the printer prints one copy up to the stored pages, and the remaining are discarded.

An error message will appear on the Control Panel: “Error xxxx Press set key.”

Two options are available to ensure Job Collation will process effectively:

- Break large print job into multiple small print jobs
- Increase memory for the printer

Secure Print

When memory is expanded to 256 MB or more, the printer holds print data, including a User Password (11 digits), User Name, and Document Name in the memory.

- **User ID** – consists of a variable length from 1 to 24 byte characters (20H-FFH). The driver requests the User ID from the user when the Secure Print option is selected. A user ID cannot be blanked with only space characters.
- **User Password** – consists of a variable length from 0 to 11 digits. The password is an optional input and hidden from the user interface by displaying “*” for each digit. If a password is not specified, the driver will accept it as a zero-length string so that a password will not be required when requesting job output from the printer.
- **Document Name** – consists of a variable length from 0 to 24 characters (20H-FFH) that specifies the document name.

The data will not be printed until the same password, user name, and document name are provided via the printer menu on the Control Panel. User can remove or keep the data after printing the document. The data remains in the printer memory as long as it is not cleared and will be cleared when the printer is turned off. User can omit entering a password (this is called Store Print - not available for MAC OS 10.2.).

Proof Print

Proof Print can be selected only when multiple sets of prints are specified in the printer driver. Proof Print requires at least 256 MB of memory. The printer prints only the first set of the print data including a user name and document name specified in the printer driver. User can keep or remove the data using the printer menu on the Control Panel. The data remains in the printer memory as long as it is not cleared and will be cleared when the printer is turned Off. This function is not available for MAC OS 10.2 and Linux operating systems.

Form Overlay

The function for writing PCL6 forms are downloaded into RAM Disk.

Font Download

PCL6 fonts can be downloaded into RAM Disk.

Billing Meters

The Billing Print counter provides the number of pages printed properly (simplex print is counted as 1 and duplex print is counted as 2 - including N up).

If an error has occurred after the one side printed properly during duplex printing, it is counted as 1.

Note

Same data is stored in two or more addresses in one IC. When the Controller is replaced, IC can be transferred.

Counter	Description
Color Print Counter	Counts the number of pages printed in color (7 digits).
Mono Print Counter	Counts the number of pages printed in mono (7 digits).
Total Print Counter	Count the total number of pages printed in color and mono (7 digits).

ID Print

User can position and print the User Name on the upper right, upper left, lower right, and lower left (only for PCL6) of the page.

Non-Genuine Mode

When the Print Cartridge life has ended, the printer stops accepting print request (life of the Print Cartridge is counted by the counter in the CRUM). This mode can be changed so the printer will not stop at the end of the print cartridge rated life; however, the printer will display an end of life message on the Control Panel.

Print Cartridge Control Panel Display

Print Cartridge	Control Panel Display			Functionality
	Normal Status	Life Warning Error	End of Life Error	
Xerox	Xerox (TM) Print Cartridge	Replace Soon	Replace Print Cartridge	Prints with full functionality.

Print Cartridge Control Panel Display (continued)

Print Cartridge	Control Panel Display			Functionality
	Normal Status	Life Warning Error	End of Life Error	
Xerox (refill Print Cartridge)	Xerox (TM) Print Cartridge	Replace Soon	Empty	Prints with full functionality up to 40% of the Print Cartridge life.
Other OEM (non-Xerox printer manufacturer)	Non-Xerox Print Cartridge			Printer displays error and will not print.
Non-Xerox Print Cartridge Manufacturer	Non-Xerox Print Cartridge	No Life Tracking	Replace Print Cartridge	Prints with full functionality.

Toner Remaining Amount

The CentreWare Internet Services (IS) and PrintingScout (SimpleMonitor) allow the printer to display toner remaining amount.

Maintenance Function

Firmware Update

The Image Processor Board and Multi-Protocol Network Card firmware can be updated by customers and service technicians using Windows PC or Macintosh with dedicated utilities. Firmware updates are available at www.xerox.com/office/6180support.

Detailed procedures are available in the “” on page A-2.

Note

Boot Code can be updated via USB or Parallel port only.

Updated Firmware	Windows	
	Via USB/IEEE1284	Via Network (port 9100)
Image Processor Board	Available	Available
Multi Protocol Network Card	Available	Available
MCU Board	Available	Available
* MCU Board cannot be updated when ROM starts to be used for MCU Board.		

Diagnostics

Two types of diagnostic functions are available:

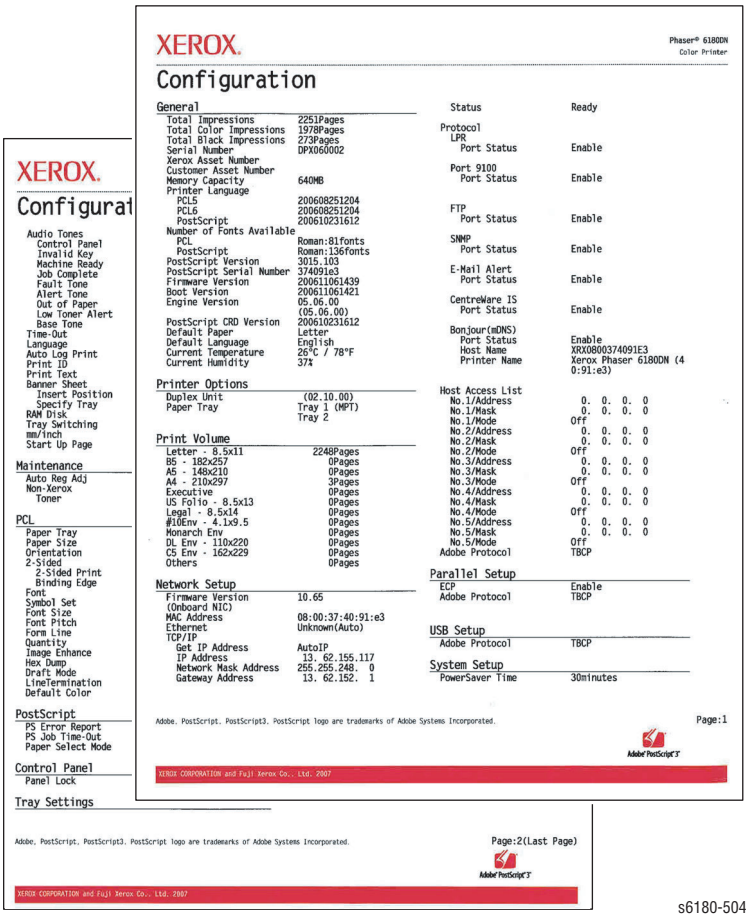
1. Auto Diagnostics: The printer is checked when it is turned on. It is checked whether hardware (ROM, RAM, ASIC, etc...) operates properly.
2. Manual Diagnostics: Only qualified service personnel can perform manual diagnostics using the Service Mode in the Control Panel.

Information Pages

Demo Page

Demo Page provides sample of print for the Phaser 6180 Color Laser Printer. The Demo Page is printed in color from selected paper tray.

Configuration Page



s6180-504

User can print the Configuration Page from the Control Panel > **Menu** > **Information Pages** > **Configuration**. The Configuration Page is printed in from the default tray and includes the following information.

Configuration Page Information

General Description	Detail Description
Title	Prints Title of the document
Product Name (Logo)	Prints organization's logo
General	Total Impressions, Total Color Impressions, Total Black Impressions, Memory Capacity, Printer Language, Number of Fonts Available, PostScript Version, PostScript Serial Number, Firmware Version, Boot Version, Engine Version, PostScript CRD Version, Default Paper, Default Language, Current Temperature, Current Humidity
Printer Options	Multi-Protocol Card (when installed) Duplex Unit: (00.00.00) Paper Tray: Tray 1 (MPT), Tray 2-3
Print Volume	Print Volume for each paper size
Network Setup	Firmware Version, MAC Address, Ethernet, TCP/IP, Protocol, Host Access List, Adobe Protocol
Parallel Setup	ECP, Adobe Protocol
USB Setup	Adobe Protocol
System Setup	PowerSaver Time, Audio Tones, Time-Out, Language, Auto Log Print, Print ID, Print Text, Banner Sheet, RAM Disk, Tray Switching, mm/inch, Start Up Page
Maintenance	Auto Reg Adj, Non-Xerox Toner
PCL	Paper Tray, Paper Size, Orientation, 2-Sided, Font, Symbol Set, Font Size, Font Pitch, Form Line, Quantity, Image Enhance, Hex Dump, Draft Mode, LineTermination, Default Color
PostScript	PS Error Report, PS Job Time-Out, Paper Select Mode
Control Panel	Panel Lock
Tray Settings	MPT Mode, Tray 2

PCL Fonts List

User can print the PCL Fonts List default in color on A size paper from default tray. The PCL Font List contains:

- No., Fonts, Escape Sequence, Font ID, Sample

PCL Macro List

User can print the PCL Macro List default on A paper size from default tray.

PostScript Fonts List

User can print the PostScript Fonts List default on A size paper from default tray. The PostScript Fonts List contains:

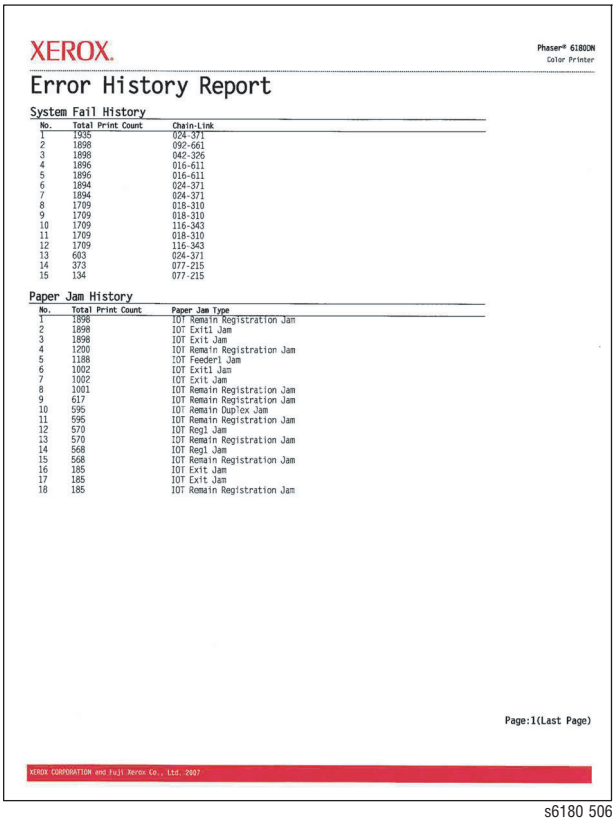
- Print Fonts, Fonts Sample

Job History Report

The printer can retain up to 20 job logs. Job History can be manually or automatically printed when the number of the retained job logs has reached 20. User can print the Job History Report default on A paper size from default tray. The Job History Report contains:

- Job sent data and time
- Input Interface (USB, LPD,...etc.)
- Document Name (File Name)
- Output Color
- User Name/Host Name
- Number of Printed Pages (Color/Mono)
- Number of Printed Impressions (Color/Mono)
- Paper Size
- Result (successful, error,...etc.)

Error History Report



XEROX

Phaser® 6180DN
Color Printer

Error History Report

System Fail History

No.	Total Print Count	Chain-Link
1	1935	024-371
2	1898	092-661
3	1898	042-326
4	1896	016-611
5	1896	016-611
6	1894	024-371
7	1894	024-371
8	1709	018-310
9	1709	018-310
10	1709	116-343
11	1709	018-310
12	1709	116-343
13	603	024-371
14	373	077-215
15	134	077-215

Paper Jam History

No.	Total Print Count	Paper Jam Type
1	1898	IOT Remain Registration Jam
2	1898	IOT Exit1 Jam
3	1898	IOT Exit Jam
4	1200	IOT Remain Registration Jam
5	1188	IOT Feeder1 Jam
6	1002	IOT Exit1 Jam
7	1002	IOT Exit Jam
8	1001	IOT Remain Registration Jam
9	617	IOT Remain Registration Jam
10	595	IOT Remain Duplex Jam
11	595	IOT Remain Registration Jam
12	570	IOT Reg1 Jam
13	570	IOT Remain Registration Jam
14	568	IOT Reg1 Jam
15	568	IOT Remain Registration Jam
16	185	IOT Exit Jam
17	185	IOT Exit Jam
18	185	IOT Remain Registration Jam

Page:1(Last Page)

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The printer can retain up to 42 jam errors and up to 42 fatal errors. User can print the Error History Report default on A paper size from default tray using the printer menu in the Control Panel.

Jam Error log includes the following information:

- Item No., Total Print Count, Paper Jam Type

Fatal Error log includes the following information:

- Item No., Total Print Count, Chain-Link Code

Print Meter (Print Volume Report)

User can print the Print Meter page default on A paper size from default tray. The Print Meter page contains:

- Date of Initialization, Job Accounting User Name, Pages, Sheets, Date/ Time

Theory of Operation

In this chapter...

- Phaser 6180 Printer Operational Overview
- Printing Process
- Paper Path of the Printer
- Major Assemblies and Functions
- Printer Modes
- Printer Control
- Drive Transmission

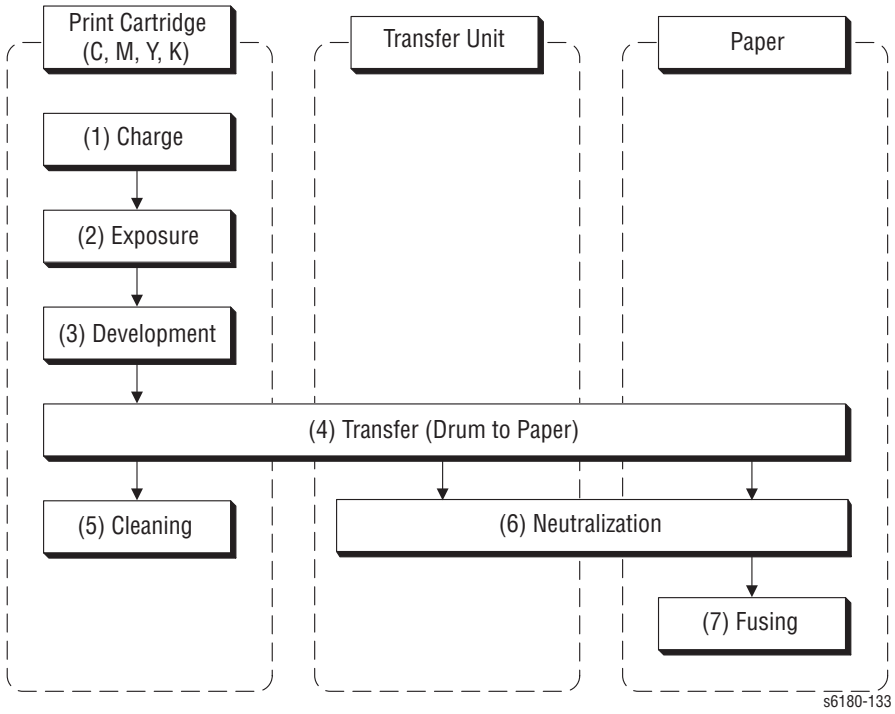
Chapter 2

Phaser 6180 Printer Operational Overview

The Phaser 6180 Color Laser Printer is a full-color laser printer that uses Raster Output Scanner (ROS) lasers with an electrophotographic four-color CMYK process. The tandem system consists of four color print cartridges (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 Phaser 6180 Printer.

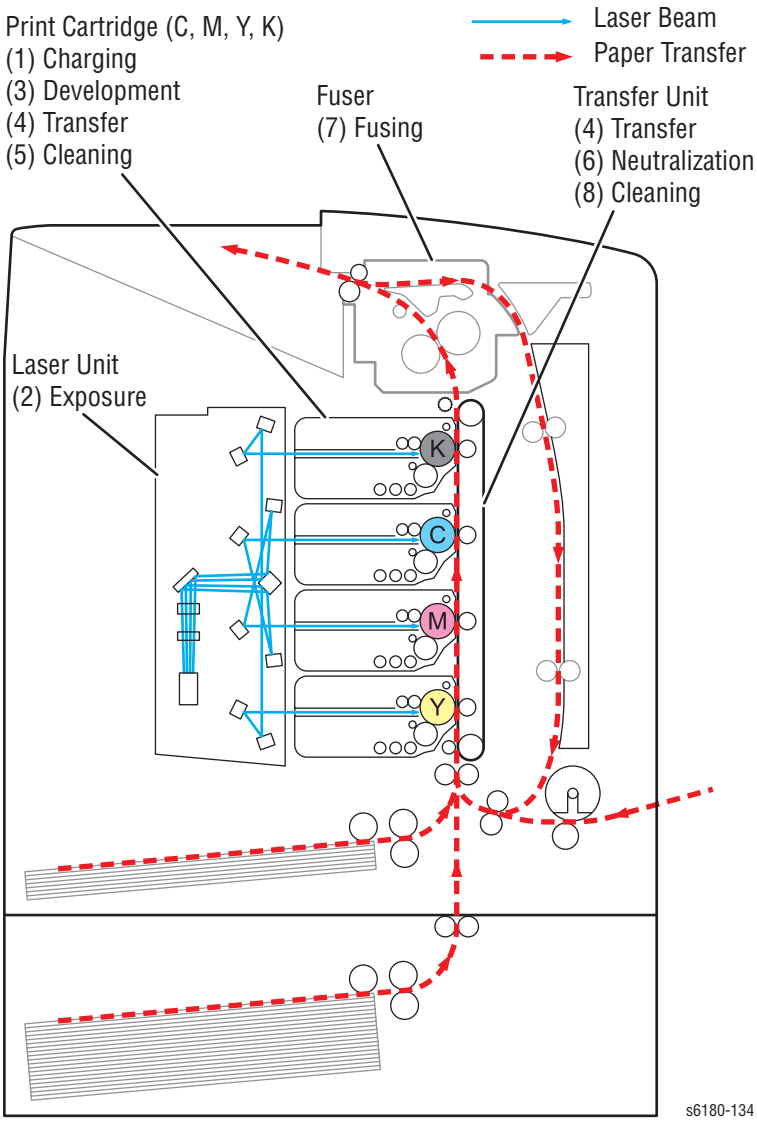
Print Process Block Diagram



Printing Process

The Phaser 6180 Printer 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. **Transfer (Drum ---> Paper)** – Four color finished toner image on the Drums is transferred onto the paper.
5. **Cleaning (Print Cartridge)** – Remaining toner on the drums is collected.
6. **Neutralization** – The Detack Saw neutralizes the charge on the paper via the Belt.
7. **Fusing** – The Fuser applies toner on to paper using heat and pressure.
8. **Cleaning** – Remaining toner on the Transfer Unit is collected.



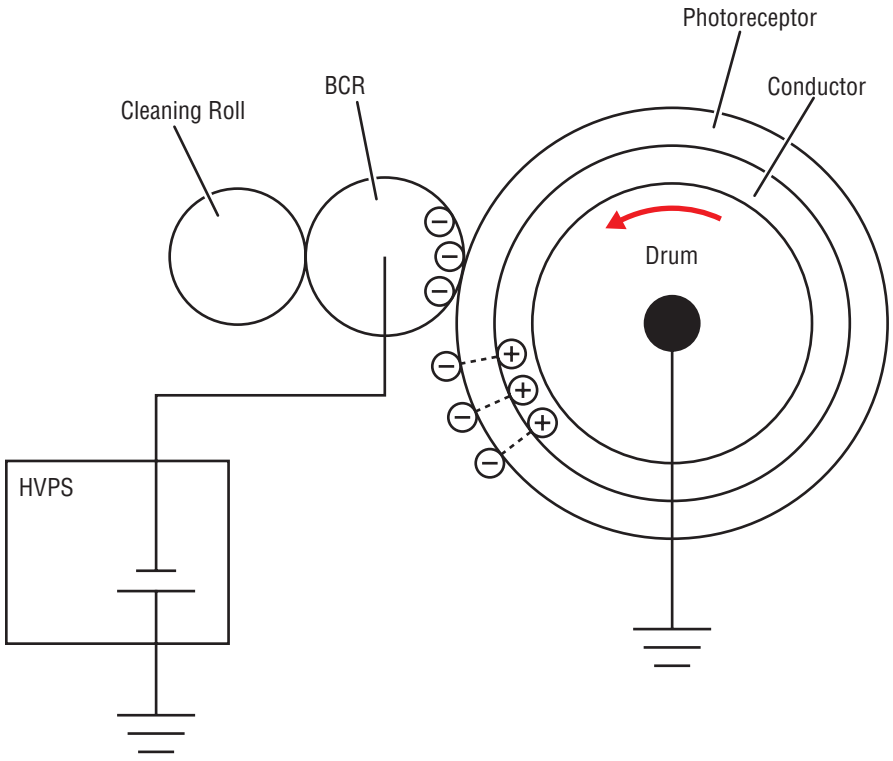
Charging

The Drum surface is charged with negative electricity by discharging of the Bias Charge Roll (BCR) while rotating at a constant speed. This process is performed in parallel for Cyan, Magenta, Yellow, and Black colors.

The BCR is kept in contact with the Drum and rotates following the rotations of the Drum. The BCR is a conductive roll, 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 area and a conductor when receiving light) and the Drum inside is composed of conductor.

The BCR Cleaner contacts with the BCR to catch the toner.



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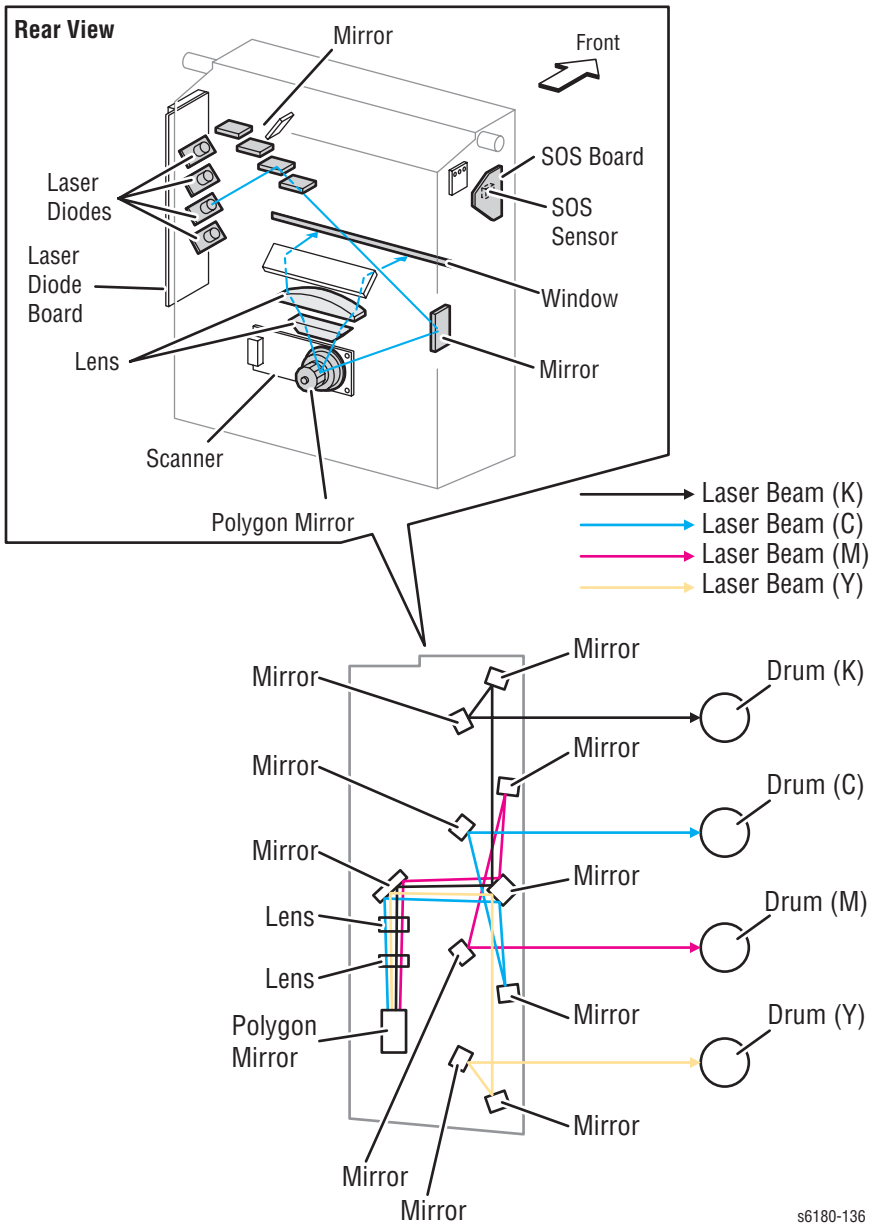
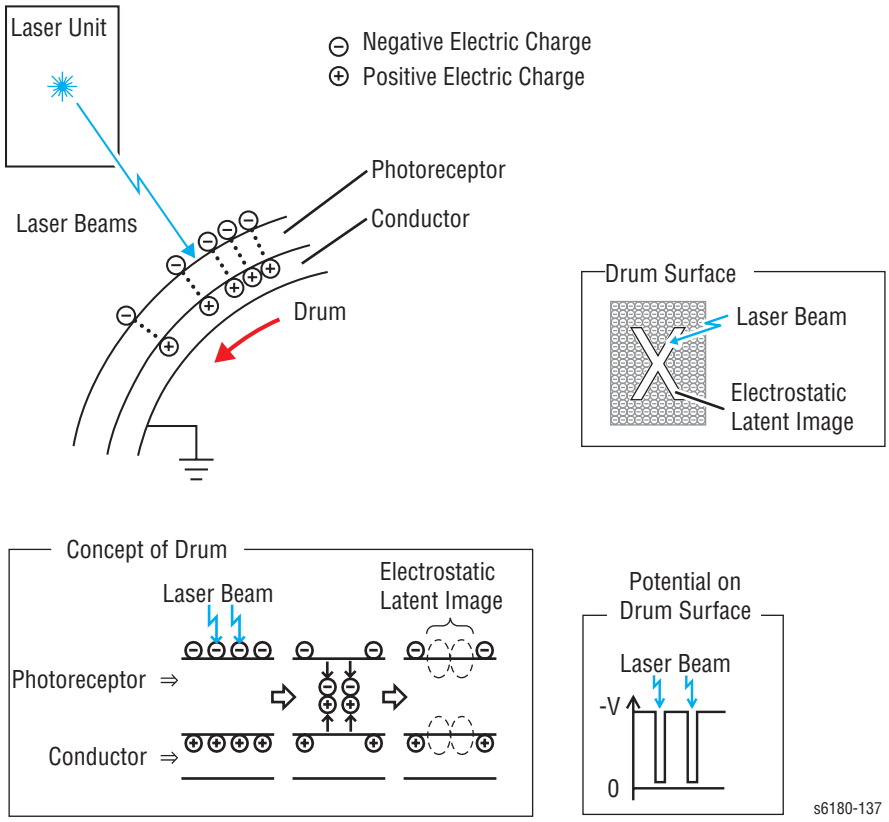
Exposure

Laser beams are emitted from the laser diodes in the Laser Unit. The Drum for each color is scanned from end to end in the axial direction as the polygon mirror rotates, which attaches the fixed mirror and lenses to the Scanner Motor of the Laser Unit.



The negative 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 Cyan, Magenta, Yellow, and Black colors.

The area on the surface where the voltage potential drops due to exposure to the laser beam becomes the electrostatic latent image.

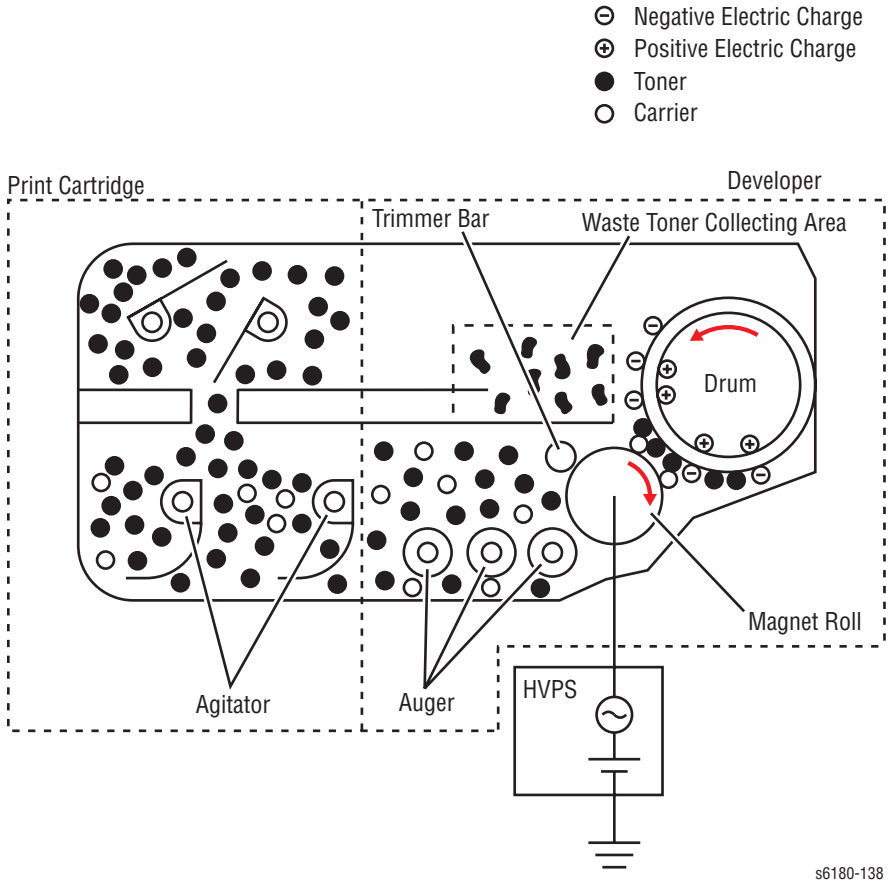


Development

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

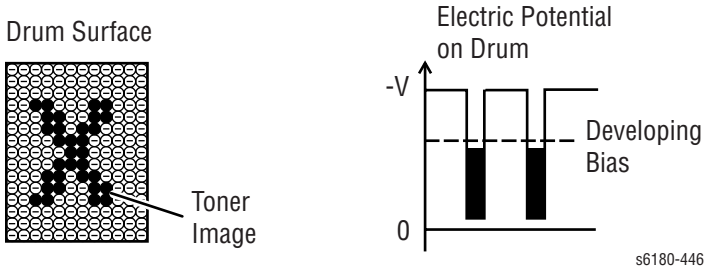
The toner in the Print Cartridge is agitated by the built-in Agitator and fed into the Developer part. The Augers are driven by the Toner Motor and the Developer Motor in the Main Drive. The toner to be consumed according to the print count is calculated and fed into the Developer. This process is called Toner Dispensation, which is controlled by two processes: Pixel Count Dispense Control (PCDC) and Automatic Density Control (ADC).

The toner fed into the Developer and the carrier in the Developer are agitated by the Auger, and supplied to the Magnet Roll arranged in the drum surface area. The toner and carrier are charged by friction due to agitation (toner in negative, carrier in positive), and they are absorbed electrically. A uniform layer is formed by the Trimmer Bar as the carrier magnetic substance is attracted to the Magnetic Roll.



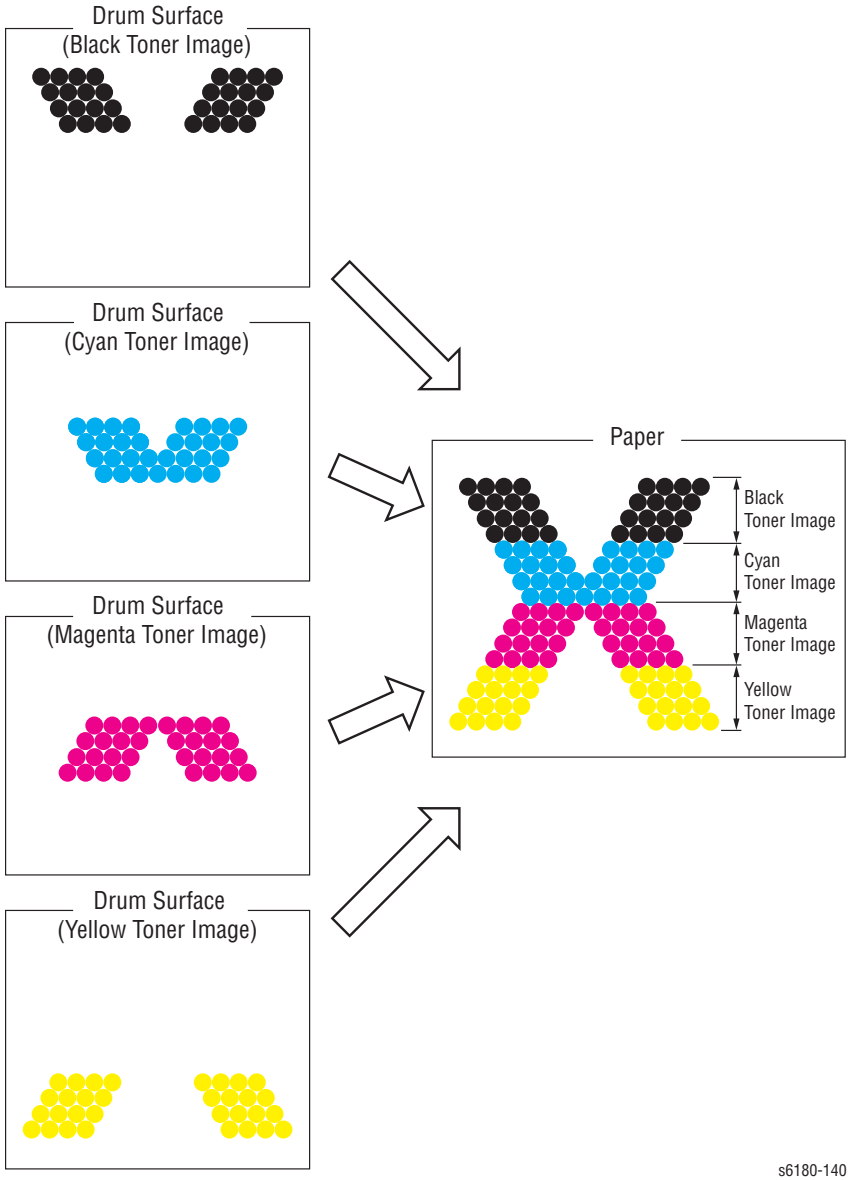
The Magnet Roll is covered by a thin semi-conductive sleeve over the surface. The Developer Bias voltage is supplied to this semiconductor sleeve from the High-Voltage Power Supply (HVPS). Developer Bias is negative Direct Current (DC) voltage combined with Alternating Current (AC) voltage. The Magnet Roll is kept at constant negative voltage against the photoreceptor layer of the drum by DC voltage. Therefore, at the area on the drum surface where the negative electric charge does not decrease, potential is lower than the magnet roll, while the potential is higher than the magnet roll at the area where the negative charge on the drum surface decreases. The AC voltage shakes the Developer on the Magnet Roll surface, causing the toner to transfer to the drum.

Thus, the negatively charged toner is attracted only by the area where the negative charge has decreased on the drum surface from the Magnet Roll (electrostatic latent image) and the toner image is formed on the drum. When the toner is attached, the negative charge at the portion of the drum increases where the toner is located increases, the potential decreases, and the force to attract the toner decreases.

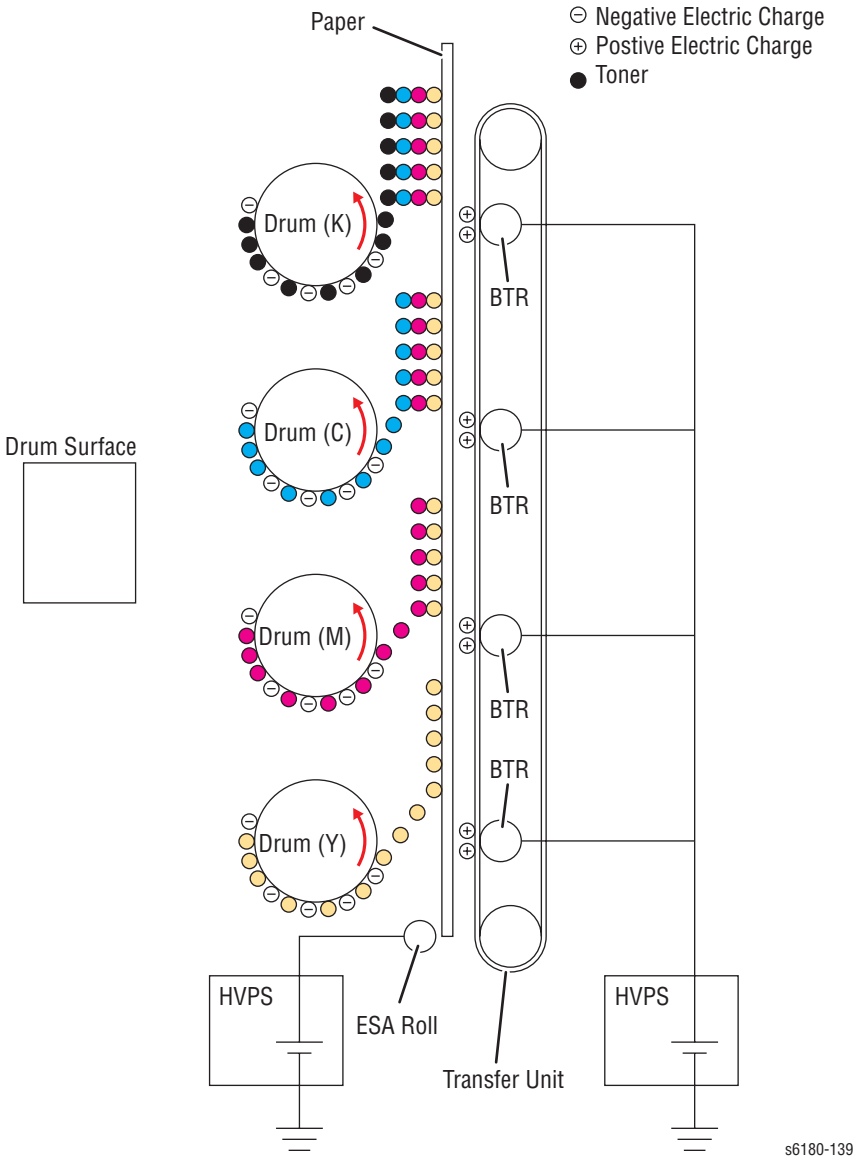


Transfer (Drum ---> Paper)

Toner image formed on the Drum surface is transferred onto the surface of the paper. The toner is transferred onto the paper in the order of Y, M, C, and K.



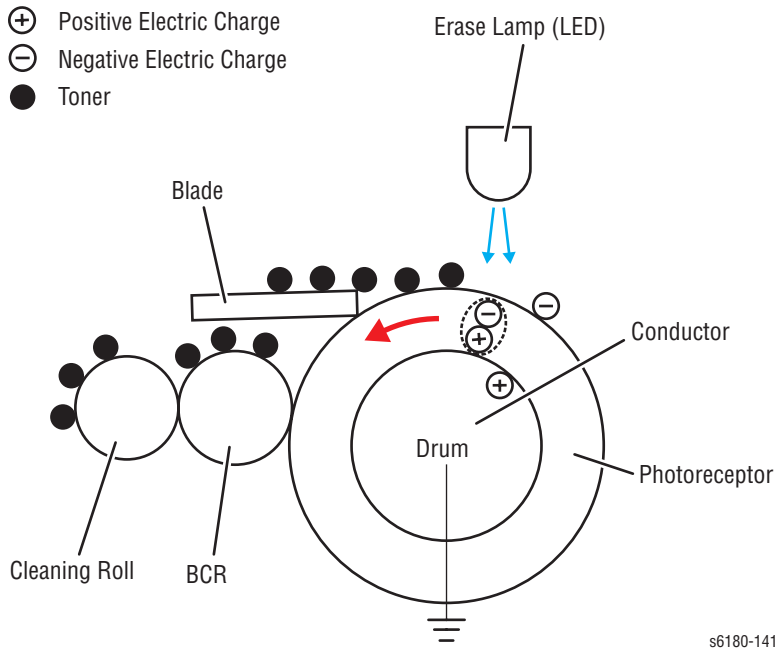
- **Bias Transfer Roll (BTR)** – The BTR is a conductive roll, which receives positive voltage from the HVPS. The BTR contacts the rear side of the Belt and applies the positive voltage to the Belt.
- **Transfer Unit (Belt)** – The Transfer Unit is a conductive unit, which receives positive voltage from 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 Unit feeds the paper toward the direction of the Fuser.
- **Electric Static Attachment (ESA) Roll** – The ESA Roll is a conductive roll, which receives positive voltage from the HVPS and discharges to the paper to improve the toner transfer efficiency.



Cleaning (Print Cartridge)

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

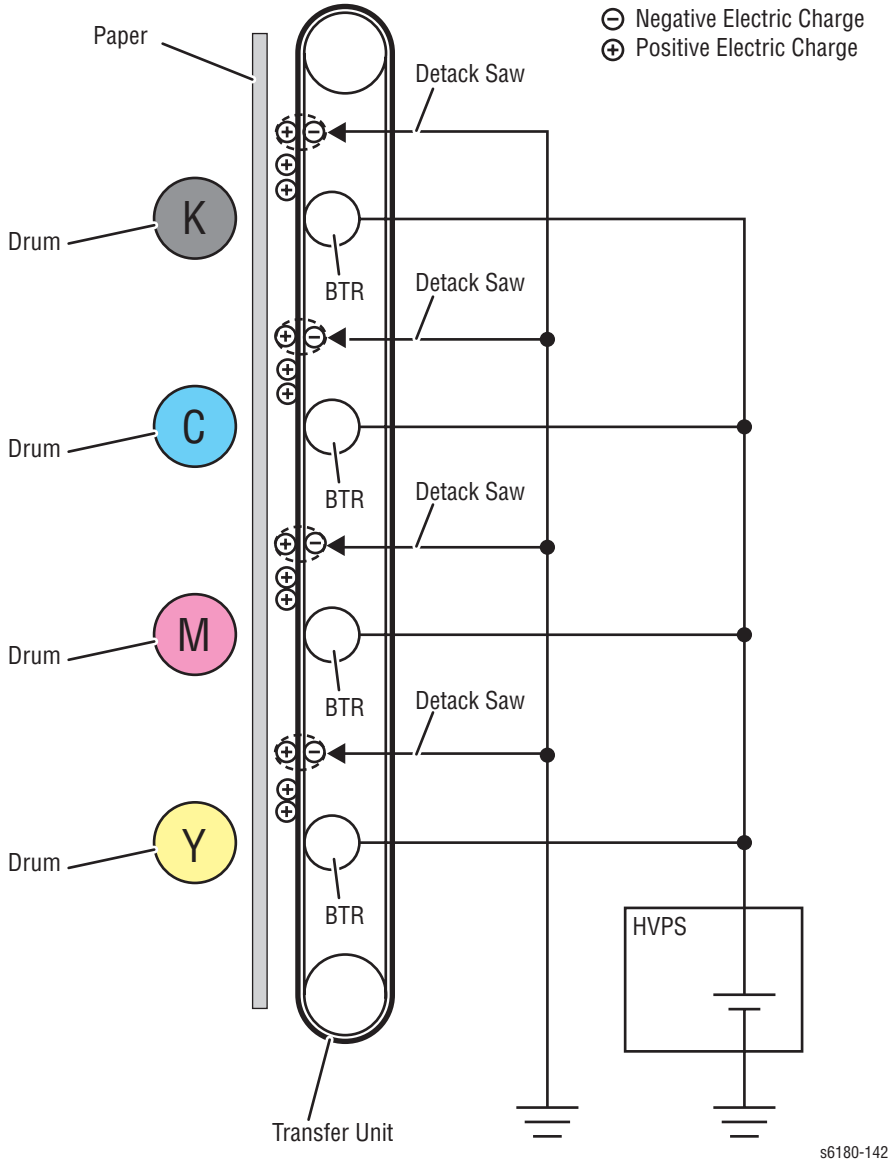
- **Drum Cleaning** – The cleaning blade contacts the surface of the drum collecting the excess toner by scraping off toner.
- **Cleaning Roll** – The Cleaning Roll contacts the surface of the BCR collecting the excess toner by scraping off toner.
- **Charge Cleaning** – When the Drum is charged by the BCR, any excess charge hinders the Drum surface from being uniformly charged, which may lead to print quality problems. The excess charge on the surface of the Drum is eliminated by irradiating the light of the Erase Lamp (LED).



Neutralization

The Detack Saw neutralizes the charge on the paper via the Belt.

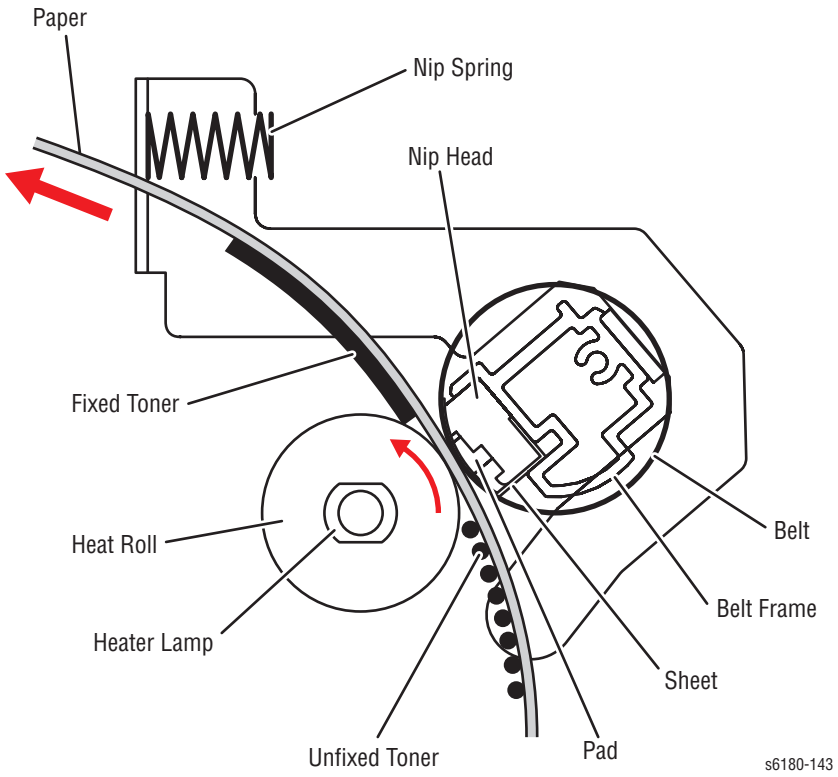
The Detack Saw, a metal sheet secured at the ground level, is installed at several millimeters away from the back side of the belt.



Fusing

Toner is applied by the BTR and the Developers. The toner image is applied on the paper with the Fuser (Fusing Unit) by the Free Belt Nip Fusing (FBNF) thermal fusing system. The Heat Roll with the Heater Lamp melts the toner particles. Toner is fused onto the paper by the combination of heat and pressure.

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



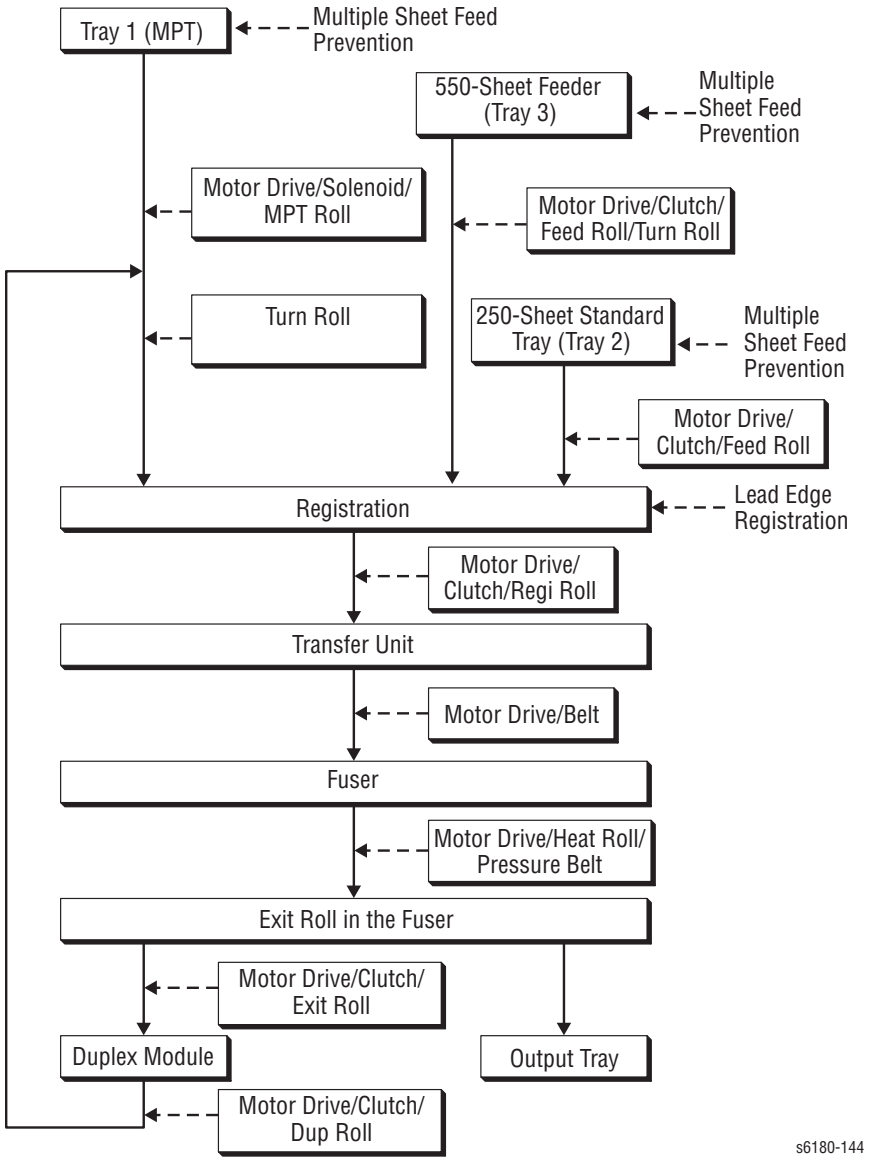
Cleaning

A cleaning blade in the Print Cartridge scrapes off toner remaining on the drum surface after transfer has occurred. Then, the latent charge pattern remaining on the photoconductive drum is neutralized by the Erase Lamp to prepare the drum for the next Exposure cycle.

Paper Path of the Printer

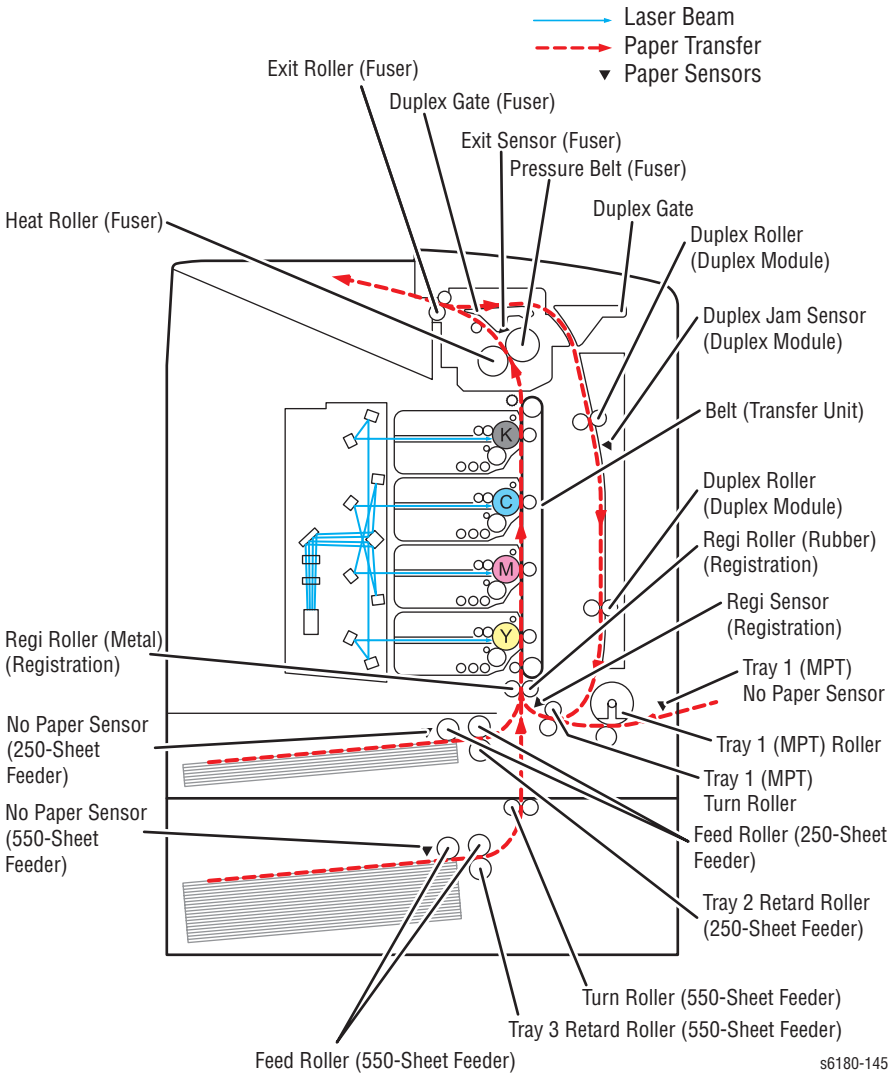
Paper Path Route

The paper is supplied from Tray 1, 2, or optional Tray 3, and is transported into the printer along the paper path as shown in the diagram.



Paper Path Components

Paper path components for the printer and the Optional 550-Sheet Feeder are shown in the following figure.

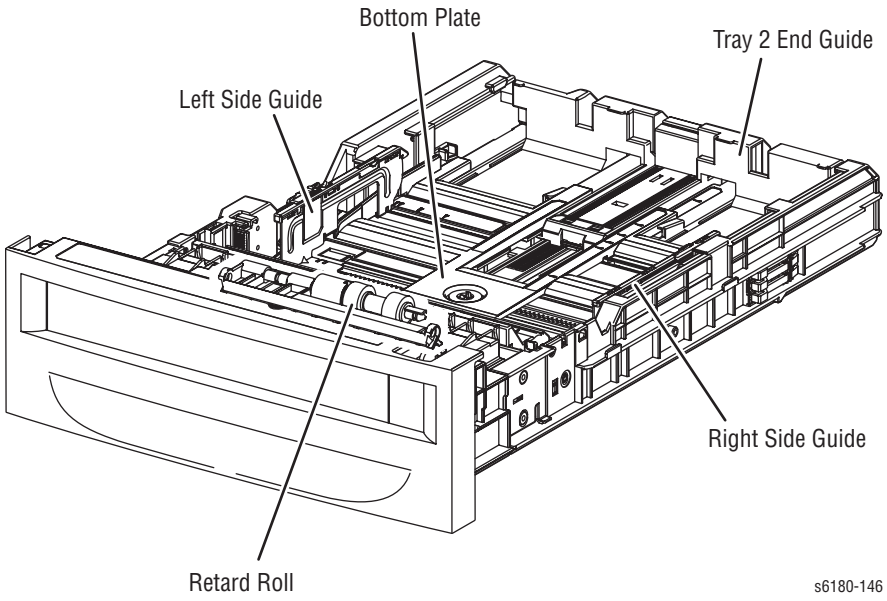


Major Assemblies and Functions

Major functional components for the printer are classified into the following categories based on the printer configuration.

- Tray 2
- Paper Feeder
- Tray 1 (MPT) & Registration
- Fuser
- Transfer Unit
- Laser Unit
- Print Cartridge
- Main Drive
- Refer to “Mechanical Components” on page 2-56 for detailed diagrams.
- Duplex Unit
- Tray 3 - Optional 550-Sheet Feeder

Tray 2



- **Tray 2 Left/Right Side Guide**

  The Side Guide moves at a right angle toward the paper transfer direction to align the paper width.

- **Tray 2 Retard Roll**

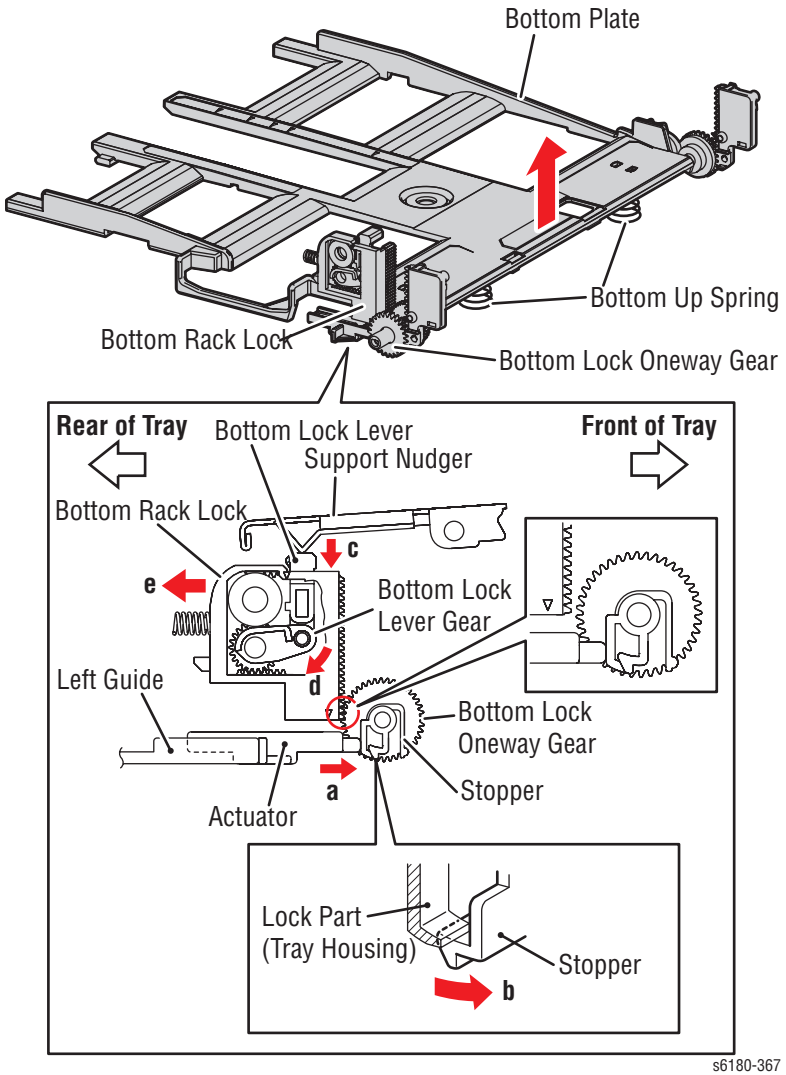
  The Retard Roll and Feed Roll pinch the paper to prevent multiple sheets of paper from feeding.

- **Tray 2 End Guide**

  The End Guide moves in toward the paper transfer direction to determine the paper size. The On/Off of the Size Switch adjusts according to the Tray End Guide position to detect the paper size.

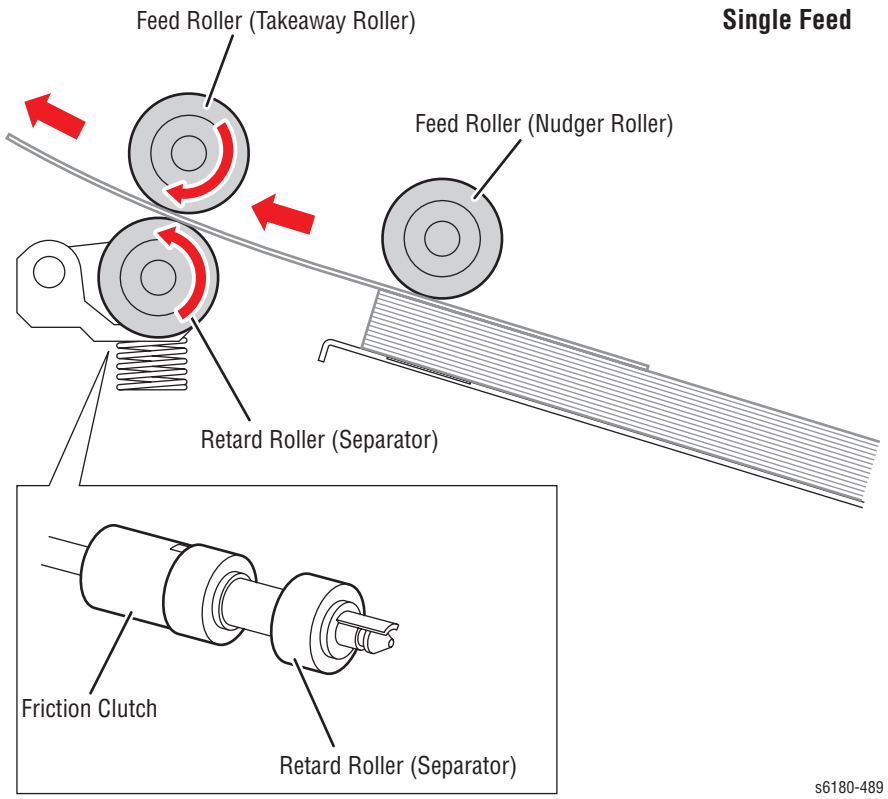
- **Tray 2 Bottom Plate**

  a. When the tray is inserted into the Sheet Feeder, the Actuator is pushed toward the front by the Left Guide, which pushes the Stopper.
  b. The Stopper unlocks the Bottom Lock Oneway Gear.
  c. When the tray is pushed until it stops, the Bottom Lock Lever is pressed down by the Support Nudger in the Sheet Feeder.
  d. The Bottom Lock Lever actuates the Bottom Lock Lever Gear, which pushes the Bottom Rack Lock toward the rear.
  e. The gear on the Bottom Rack Lock is disengaged from the Bottom Lock Oneway Gear, which allows the Bottom Plate to raise up by the Bottom Up Springs.



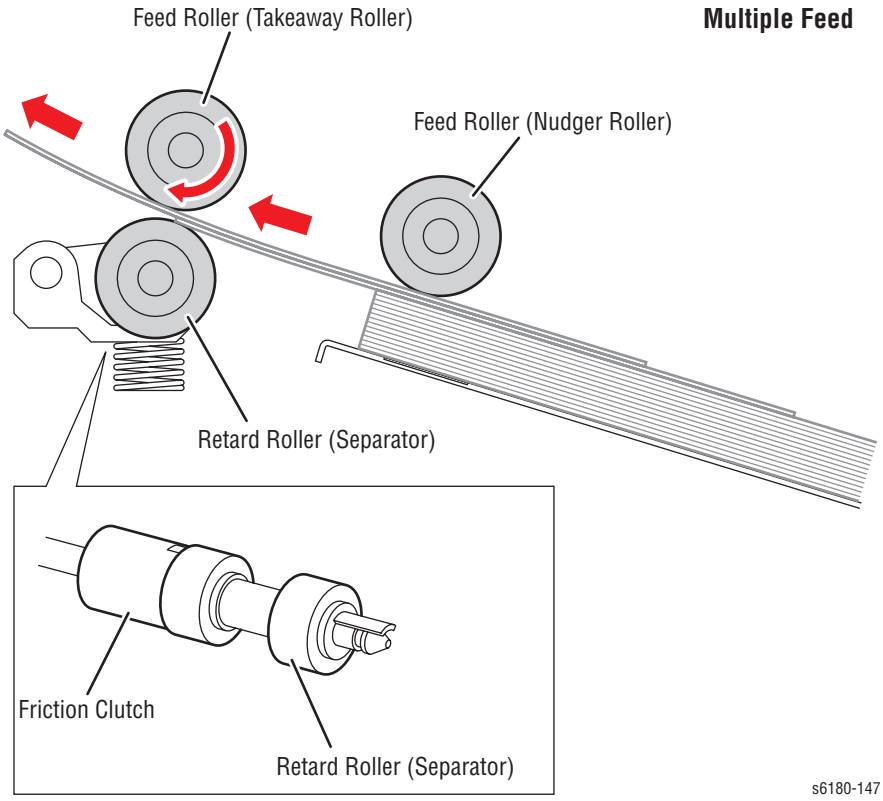
Tray 2 Multiple Sheet Feed Prevention

The sheets loaded into Tray 2 are occasionally stuck together along the edges, which can cause a multiple feed or a jam. The Nudger Roller feeds the sheets to a position between the Feed Roller and the Retard Roller. Normally, when only one sheet is fed, both the Feed Roller and Retard Roller rotate to allow the sheet to pass.

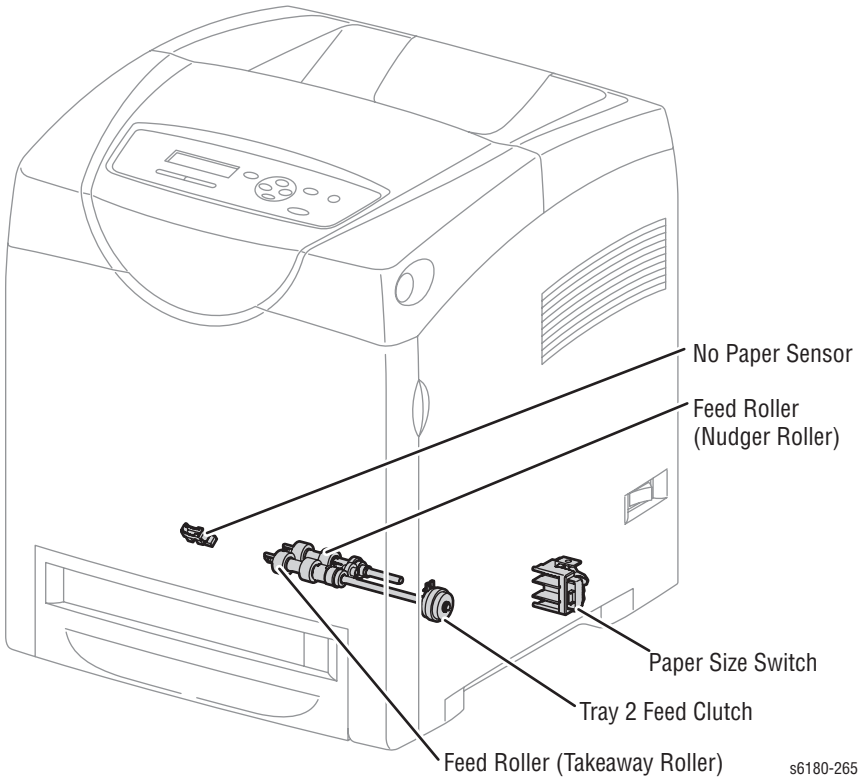


However, when two sheets are fed concurrently, only the Feed Roller rotates. The Retard Roller is coupled to a friction clutch that prevents the roller from rotating due to extra force from feeding two sheets; this process allows the upper sheet to pass by as the lower sheet is stopped by the friction with the Retard Roller at rest.

The Retard Roller is pushed toward the Feed Roller by spring pressure, and controlled by the Friction Clutch with which it is coupled.



Paper Feeder



- **Tray 2 Feed Roller**

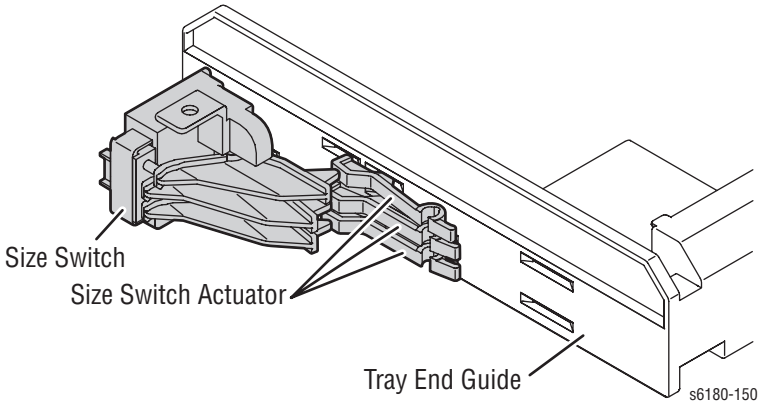
  The Feed Roller (Takeaway Roller) feeds the paper when the Feed Clutch operates.

- **Tray 2 Feed Clutch**

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

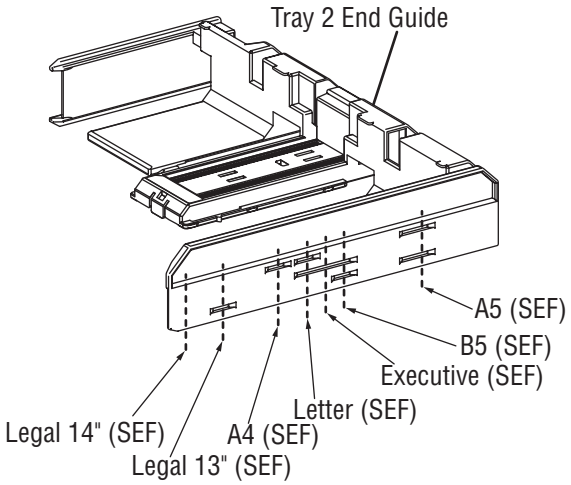
- **Tray 2 Size Switch**

  The Size Switch detects the presence and size of the paper in the tray.



Tray 2 End Guide

The paper size is detected at the End Guide position.



All paper should be loaded SEF.

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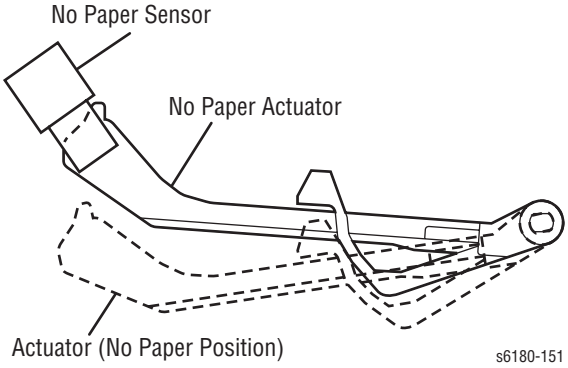
Note

Refer to “Paper Size Detection” on page 2-50 for detailed information on paper size switches and paper size.

Tray 2 No Paper Sensor

The No Paper Sensor detects the presence of the paper in the tray based on the Tray 2 No Paper Actuator position.



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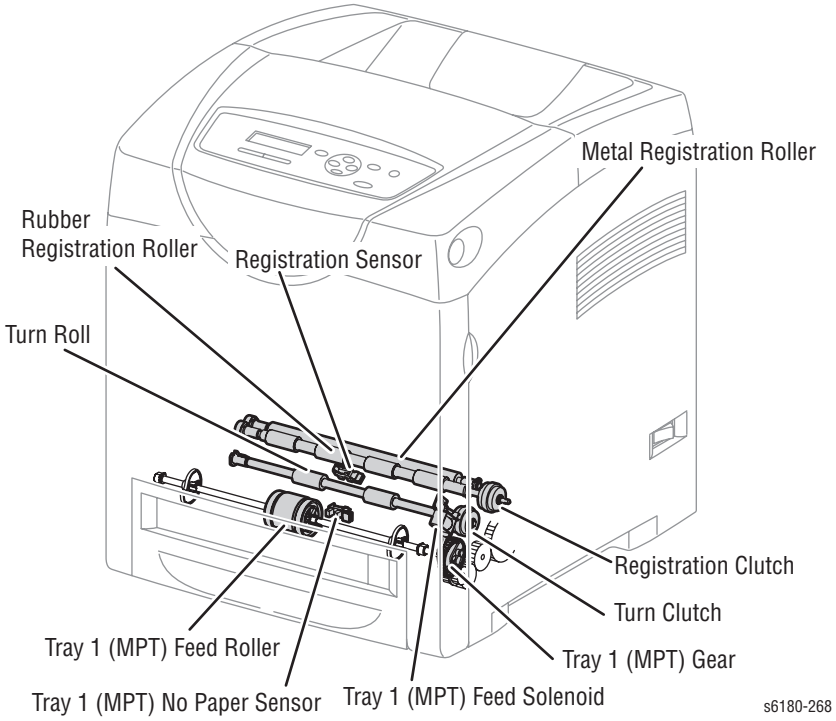
Tray 1 (MPT) & Registration



- **Tray 1 (MPT) Turn Clutch**

  The Turn Clutch transmits drive energy from the Drive Assembly to the Turn Roller.

- **Tray 1 (MPT) Turn Roller**

  The Turn Roller is rotated by the drive from the Drive Assembly through the Turn Clutch to feed paper from the Tray 1 (MPT) or duplex paper path to the Registration Chute.

- **Tray 1 (MPT) Registration Sensor**

  The Registration Sensor detects paper when the paper leading edge reaches the Registration Chute. When paper is fed from Tray 1 (MPT), the Registration Sensor measures the paper length. The On time of the Registration Sensor is converted into the paper length.

Note

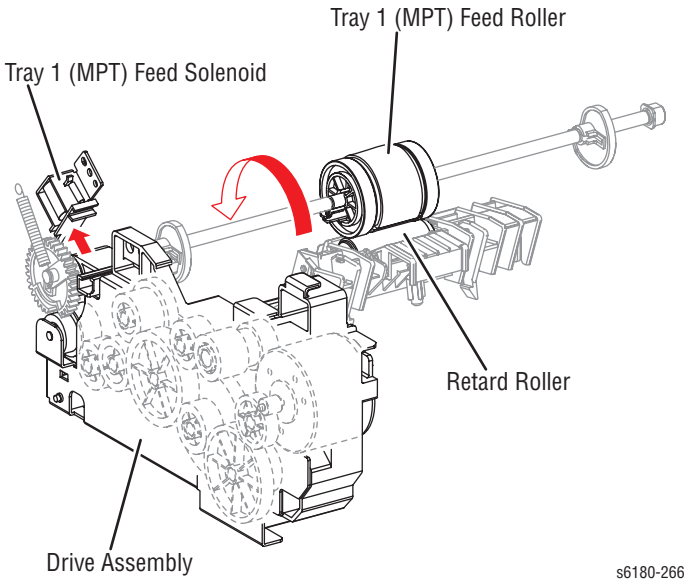
On: The paper activates the Actuator.

- **Tray 1 (MPT) Registration Clutch**

  The Registration Clutch transmits drive energy from the Main Drive to the Registration Rubber Roller, and transports paper from Tray 1 (MPT) and the duplex path to the Print Cartridge direction. The timing of sheets feeding from the Registration is adjusted by the duration of the Registration Clutch operation so that the toner image on the drum can be transferred to the appropriate position on the sheet.

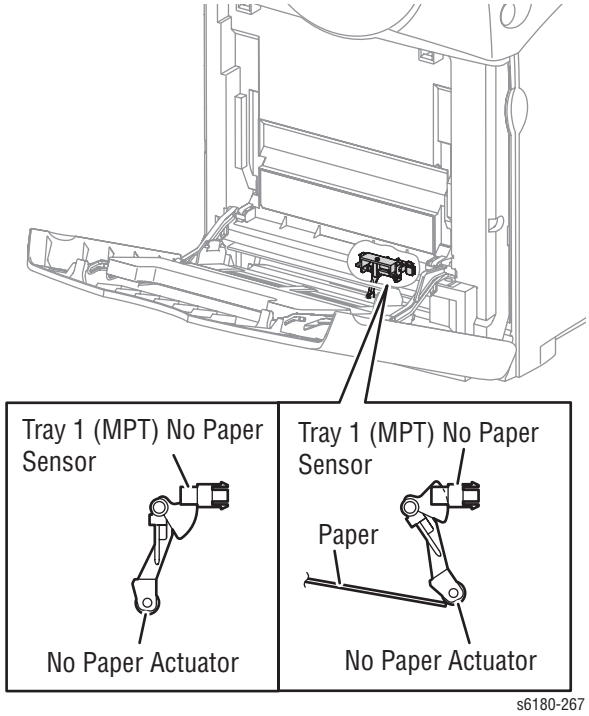
Tray 1 (MPT) Feed Solenoid

The Feed Solenoid controls drive energy from the Drive Assembly to the Tray 1 (MPT) Feed Roller.



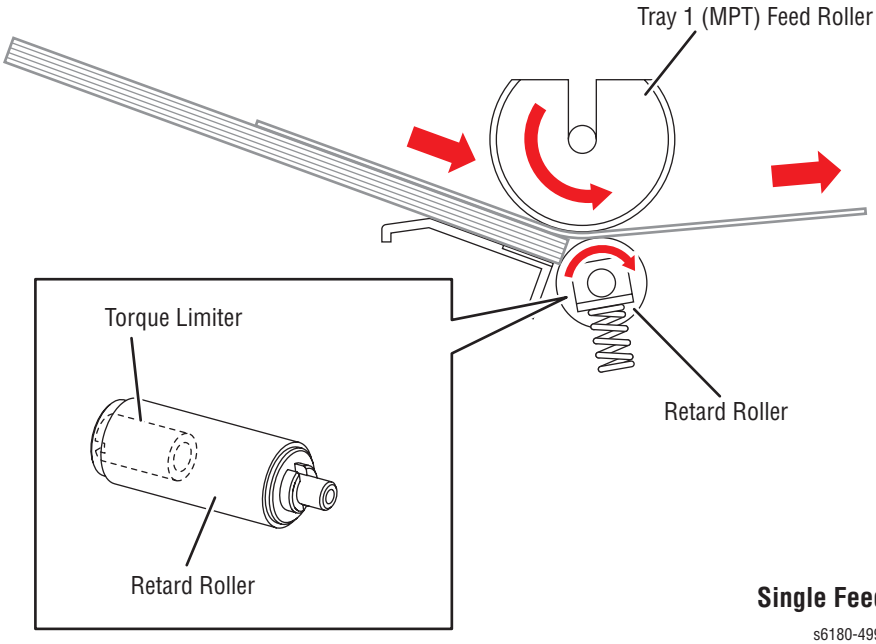
Tray 1 (MPT) No Paper Sensor

The No Paper Sensor detects the presence of paper in Tray 1 (MPT) based on the Actuator's position.



Multiple Sheet Feed Prevention

The sheets loaded in Tray 1 (MPT) are occasionally stuck together at the edges, which can cause a multiple sheet feed or a jam. Normally, when only one sheet is fed, both the Feed Roller and Retard Roller rotate to allow the sheet to pass.

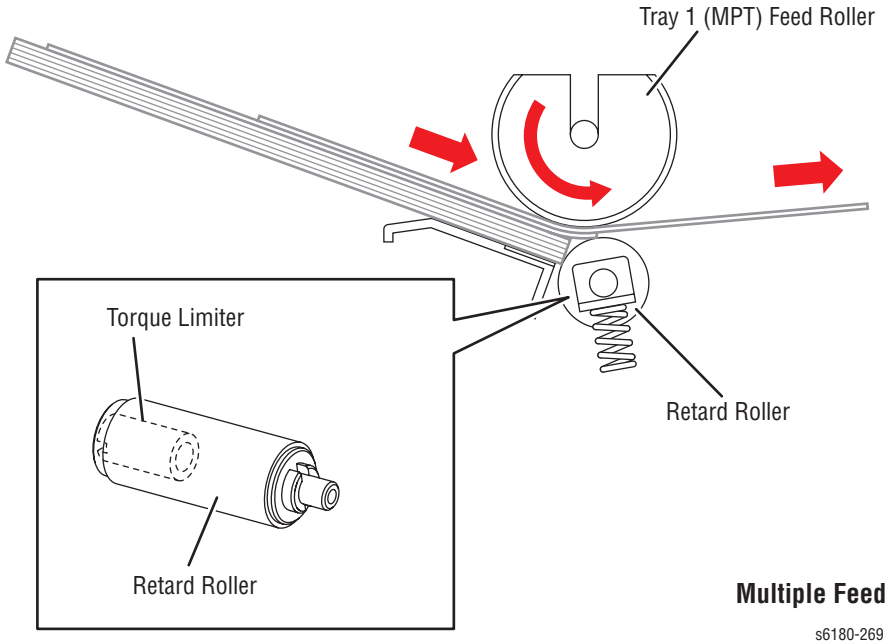


Single Feed

s6180-499

However, when two sheets are fed concurrently, only the Feed Roller rotates. The Retard Roller is coupled to a friction clutch that prevents the roller from rotating due to the extra force from feeding two sheets; this process allows the upper sheet to pass by as the lower sheet is stopped by the friction with the Retard Roller at rest.

The Retard Roller is pushed toward the Feed Roller by spring pressure, and controlled by the Torque Limiter (Friction Clutch Retard) with which it is coupled.



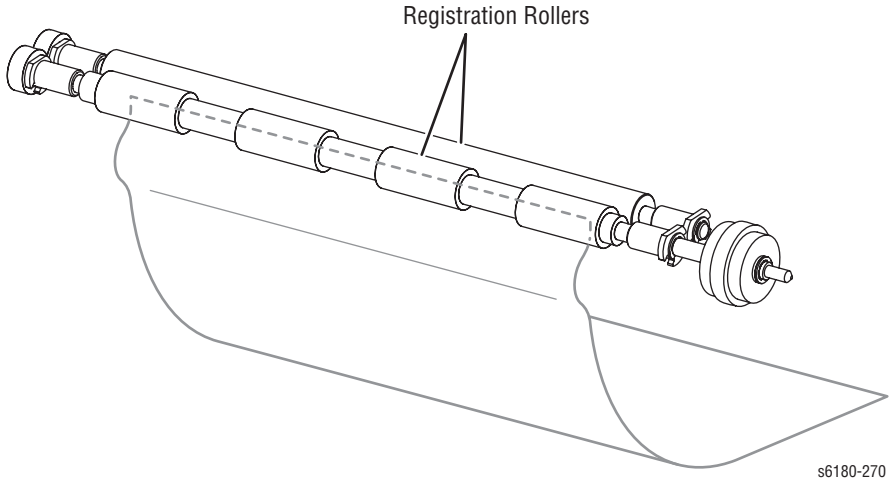
Multiple Feed

s6180-269

Lead Edge Registration

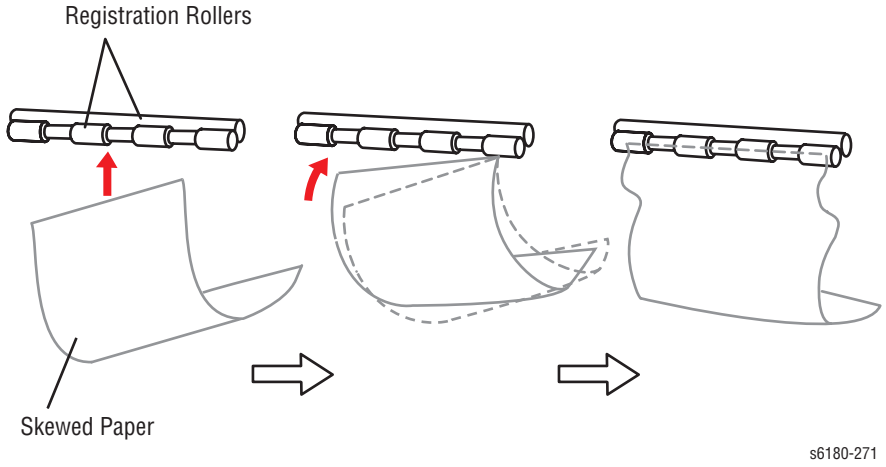
When a sheet is fed from Tray 1 (MPT) to the toner transfer position, the registration of the sheet may not be correctly maintained due to misalignment of lead edges in the tray.

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 Unit Belt, or in front of the BTR's.



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 coming out of Tray 1 (MPT) against the Registration Roller that is not turning, the lead edge of the sheet is registered.

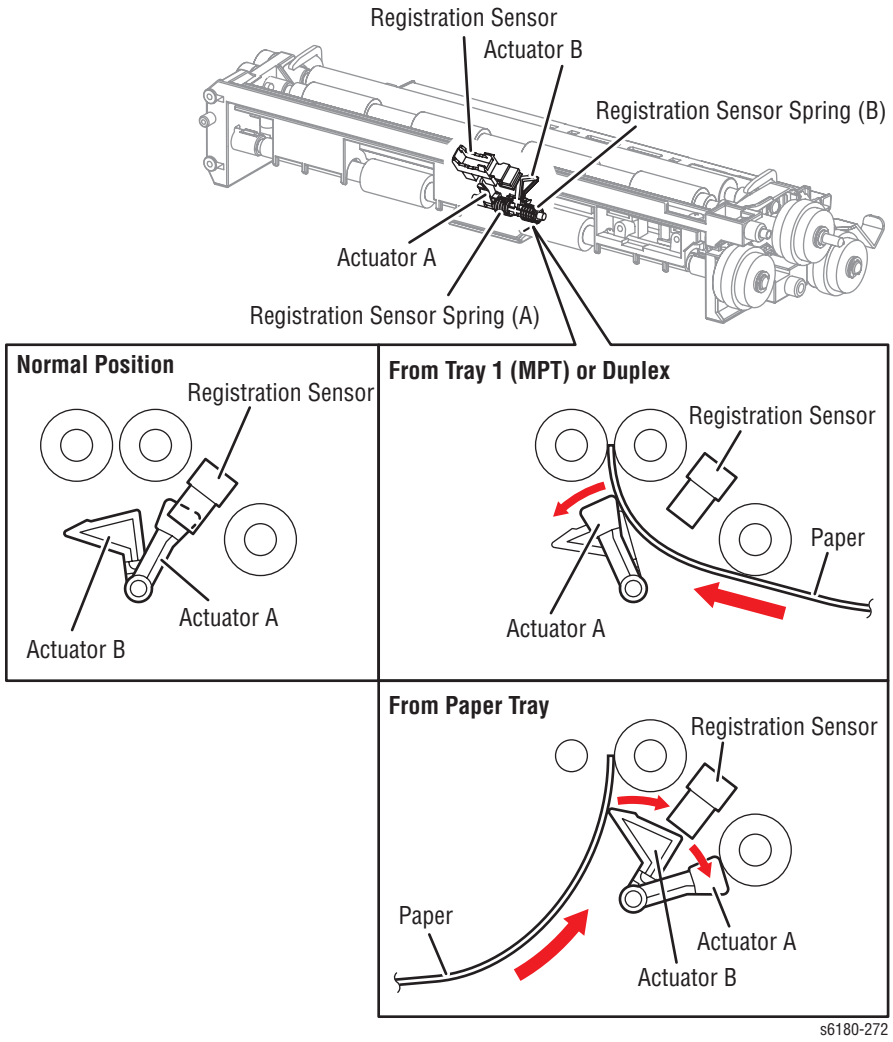


Paper Detection

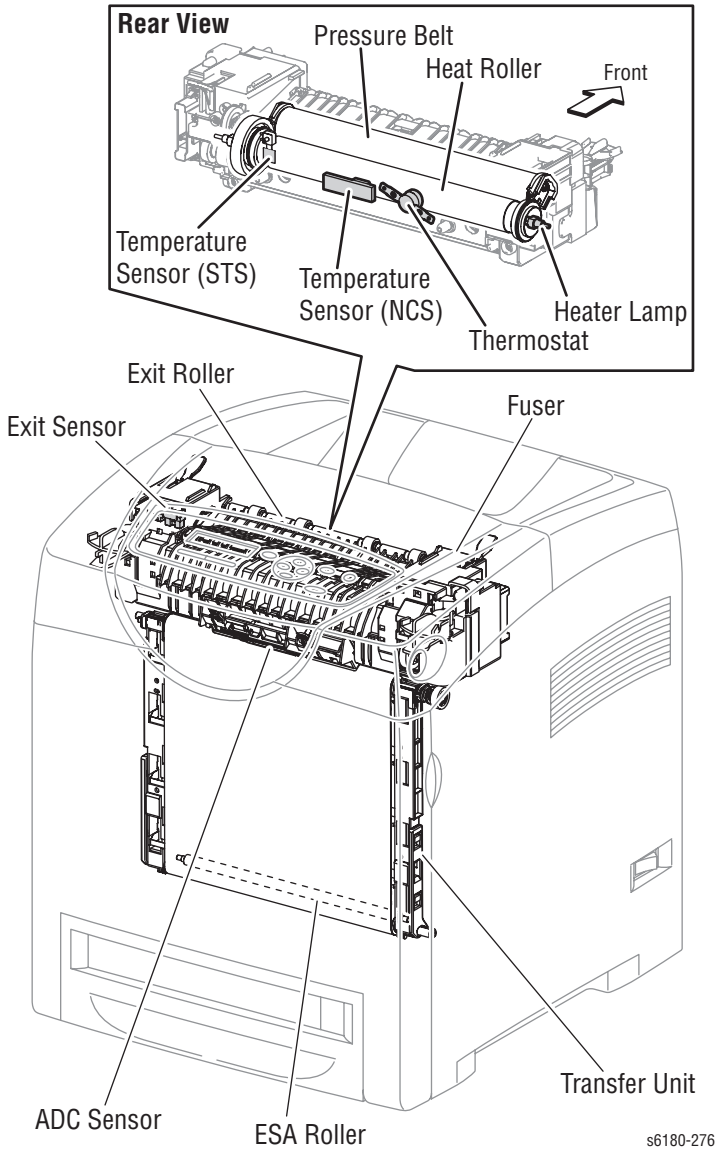
Since the paper path from Tray 1/Duplex to the Registration Sensor and from the paper tray to the Registration Sensor are different, the Registration Sensor is provided with Actuators A and B.

- Actuator A detects the sheet fed from Tray 1/Duplex.
- Actuator B detects the sheet fed from the paper tray.

The movement of Actuator A does not affect Actuator B.



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 the following components: Heat Roller, Heater Lamp, Thermostat, Temperature Sensor, Pressure Belt, Exit Roller, and Exit Sensor.

- **Heat Roller**

  The Heat Roller is a metal tube with coated surface and a Heater inside. As the paper passes between the Heat Roller and Pressure Belt, heat that is applied to the paper, melts the toner, and fuses it to the paper.

- **Heater Lamp**

  The Heater Rods are glass tubes containing heater coils. The Main Heater Lamp heats the entire length of the Heat Roller, and the Dual Sub-Heater Rods heat the center.

- **Thermostat**

  The Thermostat provides a second-level of protection. If the Heat Roller temperature exceeds the current temperature, the Thermostat cuts off the AC power to the Heater Lamps.

- **Temperature Sensors**

  The temperature sensors are thermistors having a known value of resistance that varies with temperature. There are two Temperature Sensors. The Soft Touch Sensor (STS) is located at the edge of the Heater Lamp, and the Non-Contact Sensor (NCS) is located at the center of the Fuser. The sensors monitor temperature of each location to control lighting of the Heater Lamp. The Sensors are mounted in contact with the surface of the Heat Roller. Power to the Heater Lamp is turned On and Off using the signals from these sensors, so that the surface temperature of the Heat Roller can be maintained within a specified range. This signal is also used to provide a first stage of overheat protection.

- **Pressure Belt**

  The Pressure Belt maintains pressure on the paper passing between it and the Heat Roller. The pressure bonds the melted toner to the paper.

- **Exit Roller**

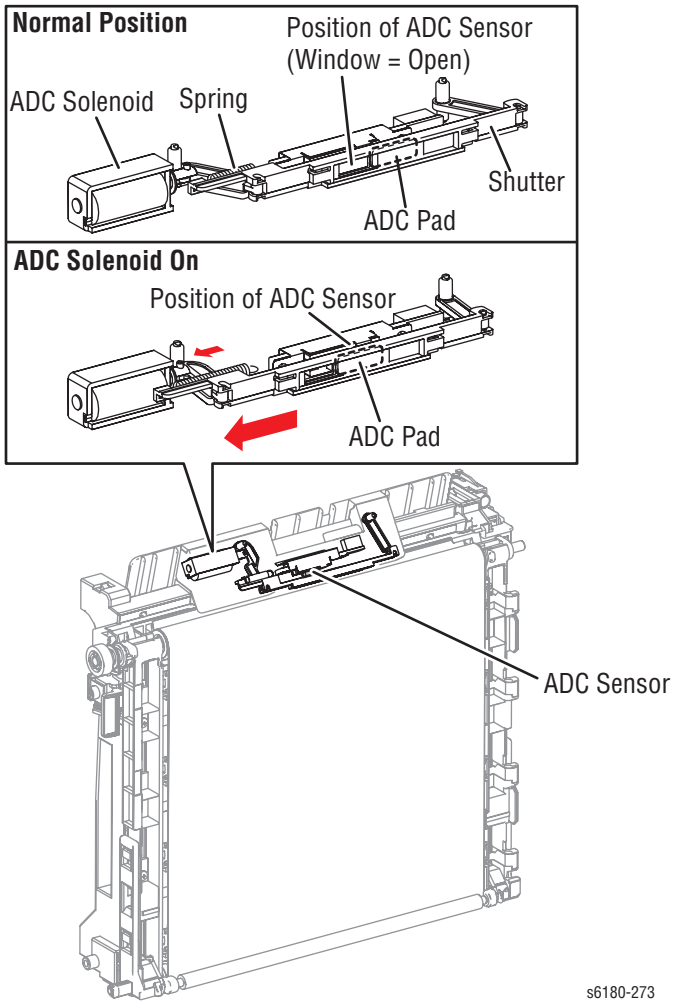
  The Exit Roller transports paper from the Fuser to the output tray.

- **Exit Sensor**

  The Exit Sensor detects passage of printed pages after fusing on the Actuator's position changes.

Transfer Unit

The Transfer Unit consists of the Belt, ADC Sensor, ADC Solenoid, ADC Pad, and ESA Roller.



- **Belt**

  The Belt feeds the paper toward the direction of the Fuser.

- **ADC Sensor**

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

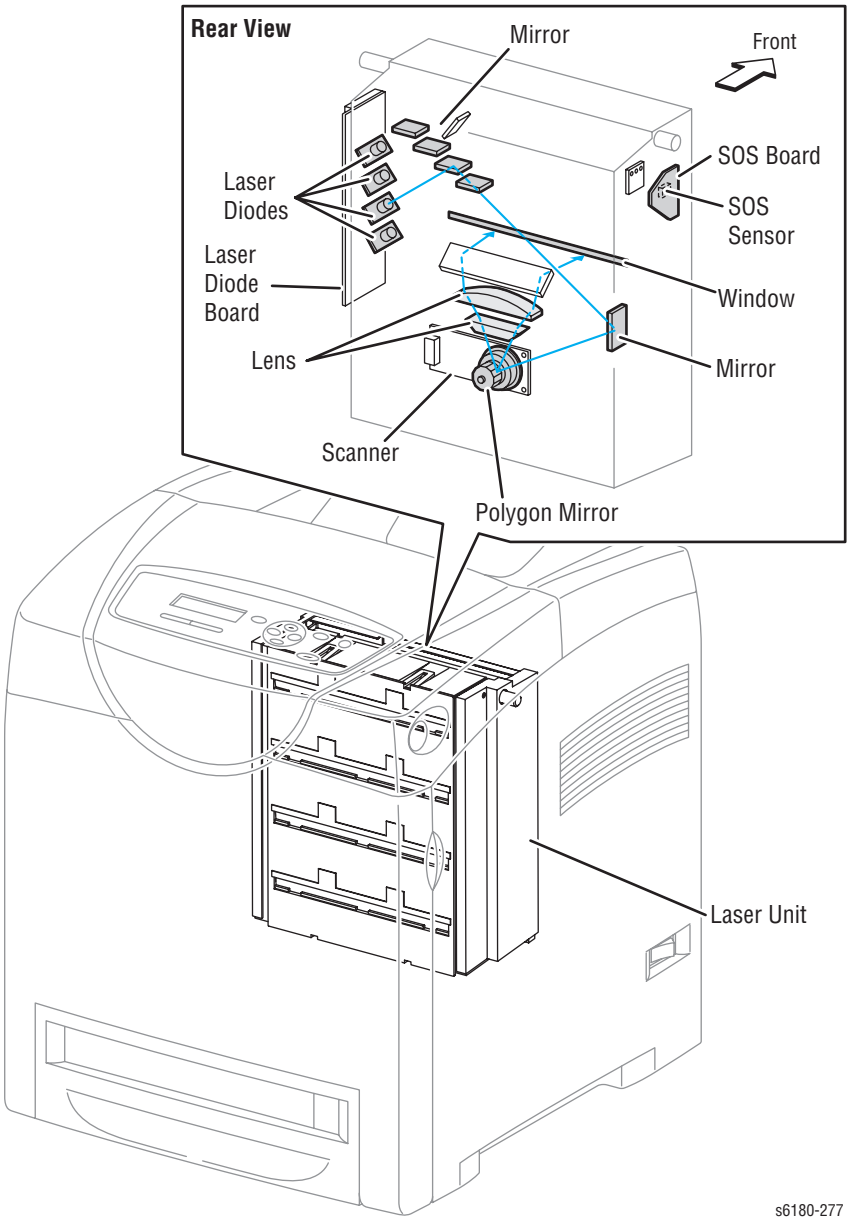
- **ADC Solenoid**

  To activate the ADC Pad, turn On the ADC Solenoid for a fixed time before the ADC Sensor starts reading the toner patches. When turned On, the ADC Solenoid activates the ADC Pad, which cleans contamination on the ADC Sensor surface.

- **ESA Roller**

  The ESA Roller discharges a positive voltage to the paper. Toner transfer efficiency is raised by applying a positive charge to the paper.

Laser Unit



The Laser Unit is an exposure unit that generates laser beams to form electrostatic latent image on the drum surface. The Laser Unit consists of the following components: Laser Diode (LD), Scanner, Start of Scan (SOS) Board, Lenses, Mirror, and Window.

- **Laser Diode Board**

  There are four Laser Diodes which produce laser beams that are turned On and Off according to the print data signal.

  The Laser Diode Board is comprised of four 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 electrostastic latent image, the LD 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 is comprised 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 irradiated onto the Polygon Mirror via the Mirror. The Polygon Mirror, provided with six reflecting mirror faces, changes the reflection angle of the laser light as it rotates by the Scanner Motor, 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.

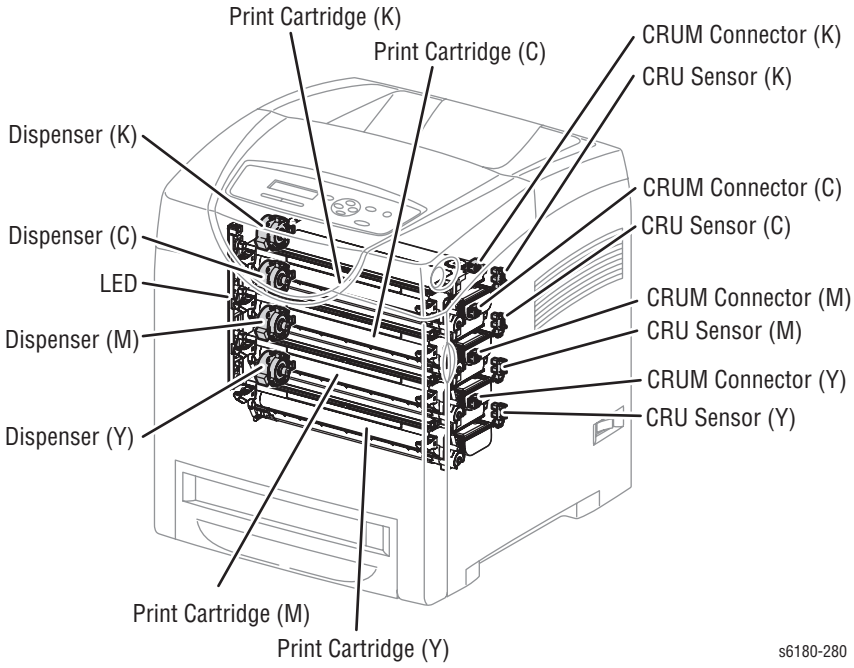
- **Mirror**

  The Mirror directs the laser beam and secure an optical path.

- **Window**

  The window prevents debris from entering the Laser Unit.

Print Cartridge



The Print Cartridge is a customer replaceable item consists of the following components:

- **Customer Replaceable Unit Memory (CRUM) Connector**

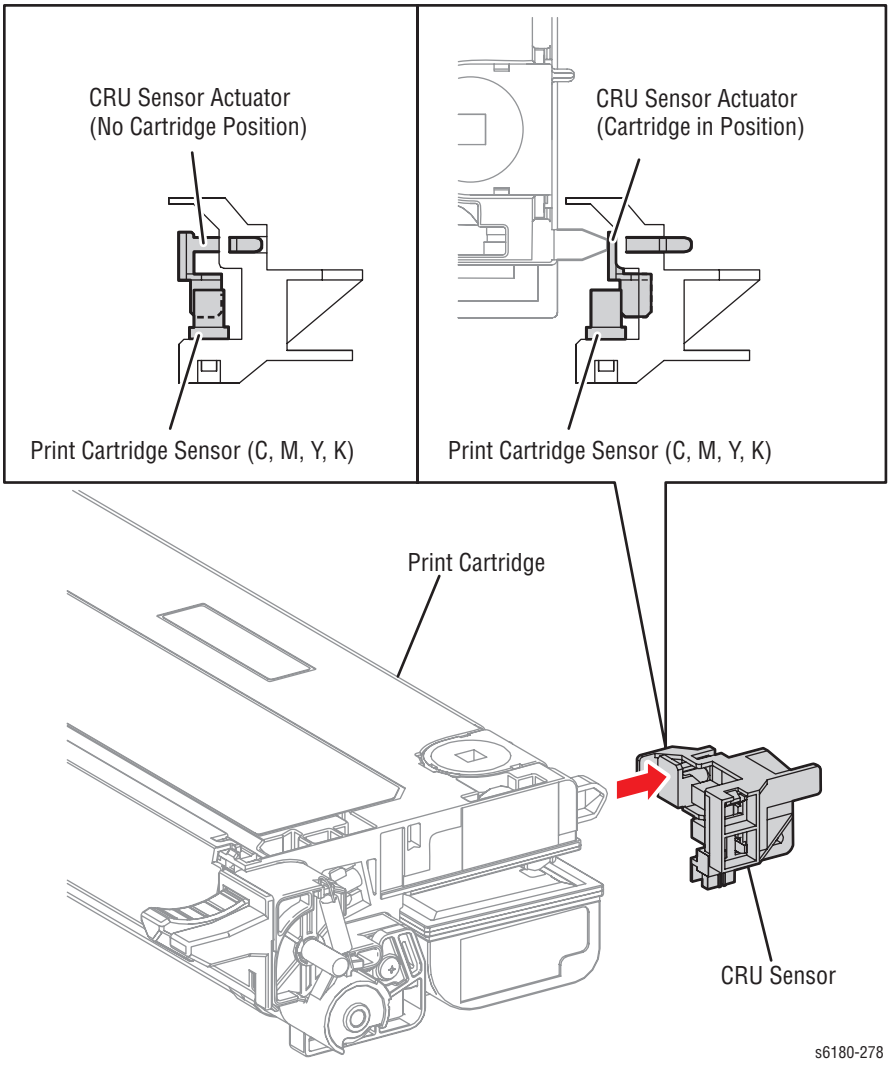
  The CRUM Connector reads and writes the CRUM data. Printer specific information is stored in the CRUM.

- **Dispenser (C/M/Y/K)**

  The Dispenser provides drive energy to the Agitator and Auger in the Print Cartridge, and provides toner to the Developer part of the Print Cartridge.

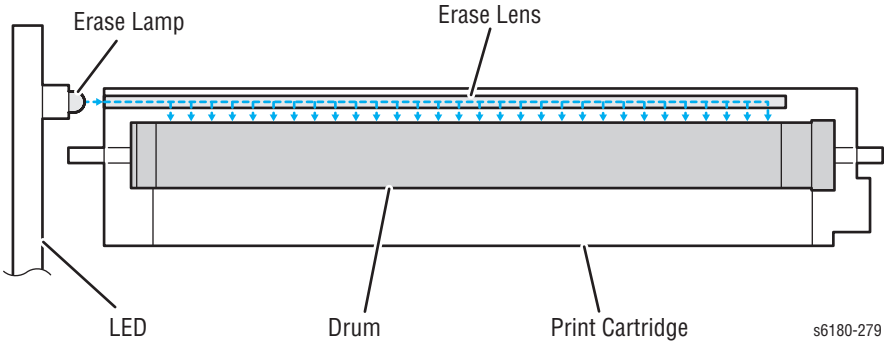
CRU Sensor (C/M/Y/K)

The CRU Sensor detects the presence of the Print Cartridge.

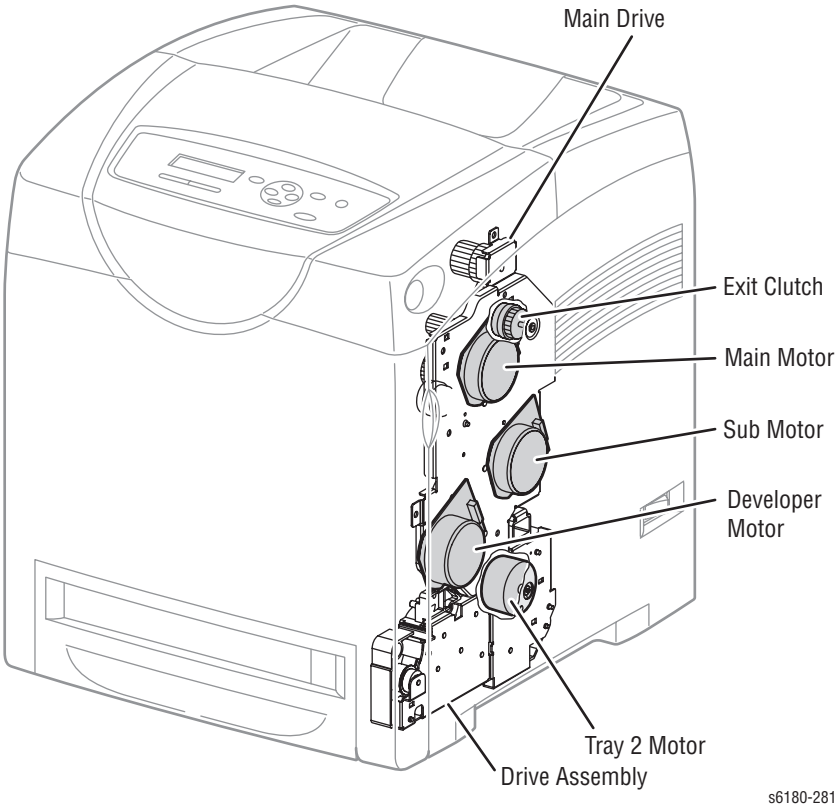


Erase Lamp (LED)

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



Main Drive



The Main Drive provides drive energy to the following components:

- **Main Motor**

  The Main Motor provides drive energy for the Black Drum, Transfer Unit, and Fuser.

- **Sub Motor**

  The Sub Motor provides drive energy for the Black Developer, Cyan, Magenta, and Yellow Drums.

- **Developer Motor**

  The Developer Motor provides drive energy for the Cyan, Magenta, and Yellow Developers.

- **Exit Clutch**

  The Exit Clutch transmits drive energy from the Main Motor to the Exit Roll in the Fuser. When Duplex mode is in use, the Exit Clutch stops. The Exit Roll is driven by the Duplex Motor.

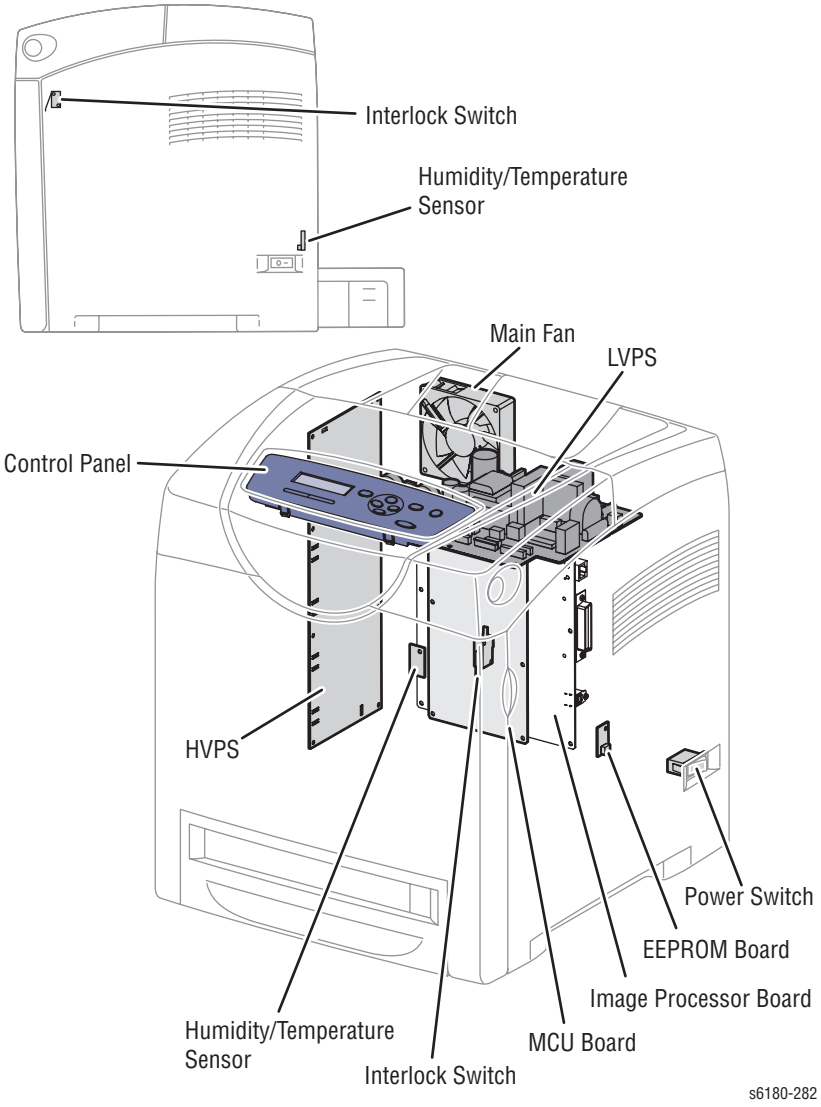
- **Drive Assembly**

  The Drive Assembly provides drive energy for Tray 1 (MPT), Tray 2, and Registration. The Tray 2 Motor is part of the Drive Assembly.

Note

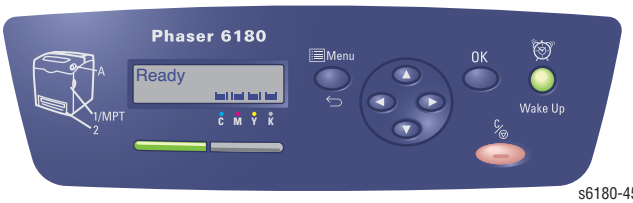
Refer to “Mechanical Components” on page 2-56 for detailed diagrams.

Electrical



Control Panel

The Control Panel displays the printer status and operates the printer.



Power Switch

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

Main Fan

The Main Fan removes heat from the printer to prevent overheating.

Electrically Erasable Programmable Read-Only Memory (EEPROM) Board

The EEPROM Board stores the printer unique information. Information on the EEPROM Board is also stored on the Machine Control Unit (MCU) Board.

Humidity /Temperature Sensor

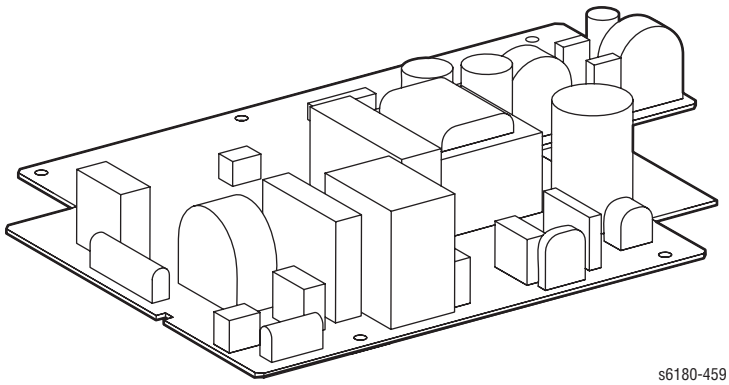
The Humidity/Temperature Sensor reads the humidity and temperature within the printer.

Interlock Switch

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

Low-Voltage Power Supply (LVPS)

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 circuit. The LVPS contains a control circuit for the heater of the Fuser, in addition to the power circuit.



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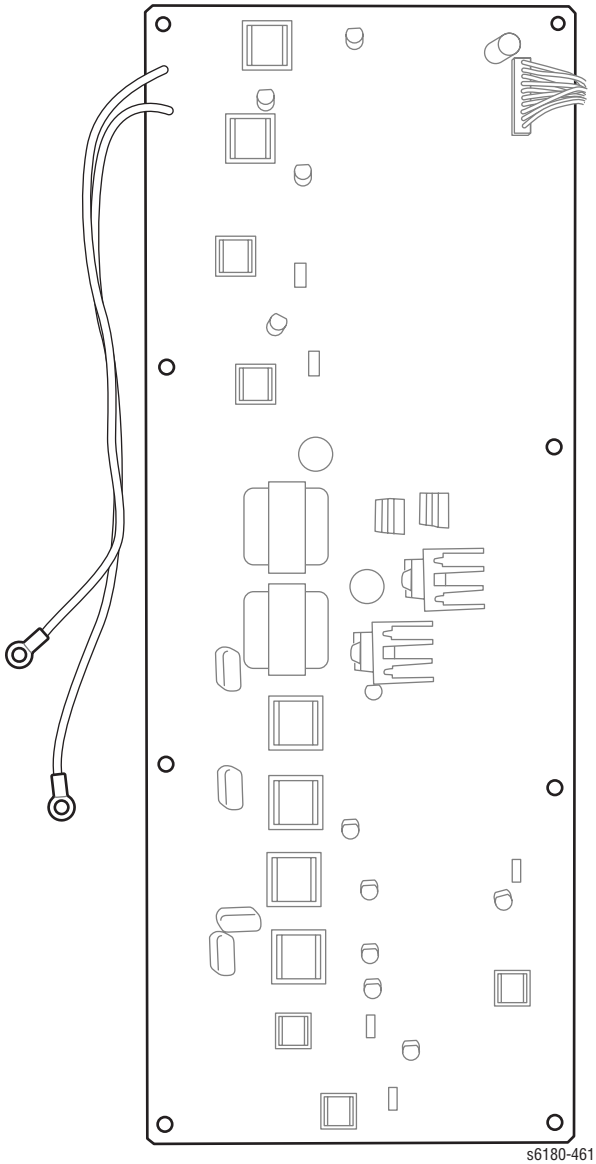
High-Voltage Power Supply (HVPS)

The HVPS provides high-voltage power to the components in the Transfer Unit and Print Cartridge to perform charging, development, and primary transfer of the print process to the BCR, BTR, Developer, and ESA Roller.



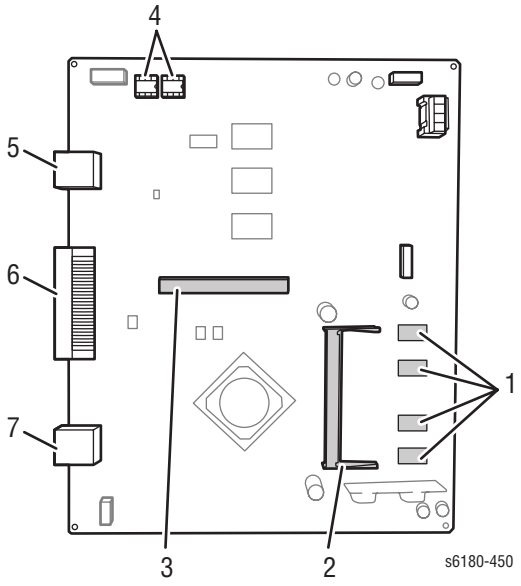
s6180-461

Image Processor Board

The Image Processor (I/P) Board is connected to the MCU Board, which controls the printer, including Diagnostic, Interface, and Image Processing. The I/P Board is one of the major elements of the Phaser 6180 Printer.

The primary function of the I/P Board is to receive host data through one of the following available ports (Parallel, USB, or Ethernet). The received host data is buffered, stored, and sent to the print engine in a rasterized format.

1. Standard Memory (128 MB on-board RAM)
2. Optional Memory DIMM (should be swapped)
3. Multi-Protocol Network Card Connection
4. NVRAM
5. Ethernet Connection
6. PC Interface Connection (Parallel)
7. USB Connection



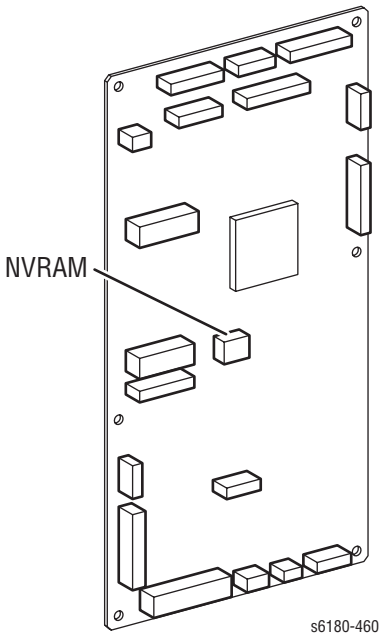
When installing a new I/P Board in the printer, you must transfer the following parts from the old board to the new board:

- Memory DIMM (if installed)
- NVRAM
- Multi-Protocol Network Card (if installed)

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 Motors in the Main Drive and Drive Assembly.
4. Distributes low-voltage DC power generated from the LVPS to each component.
5. Controls the Laser Unit.

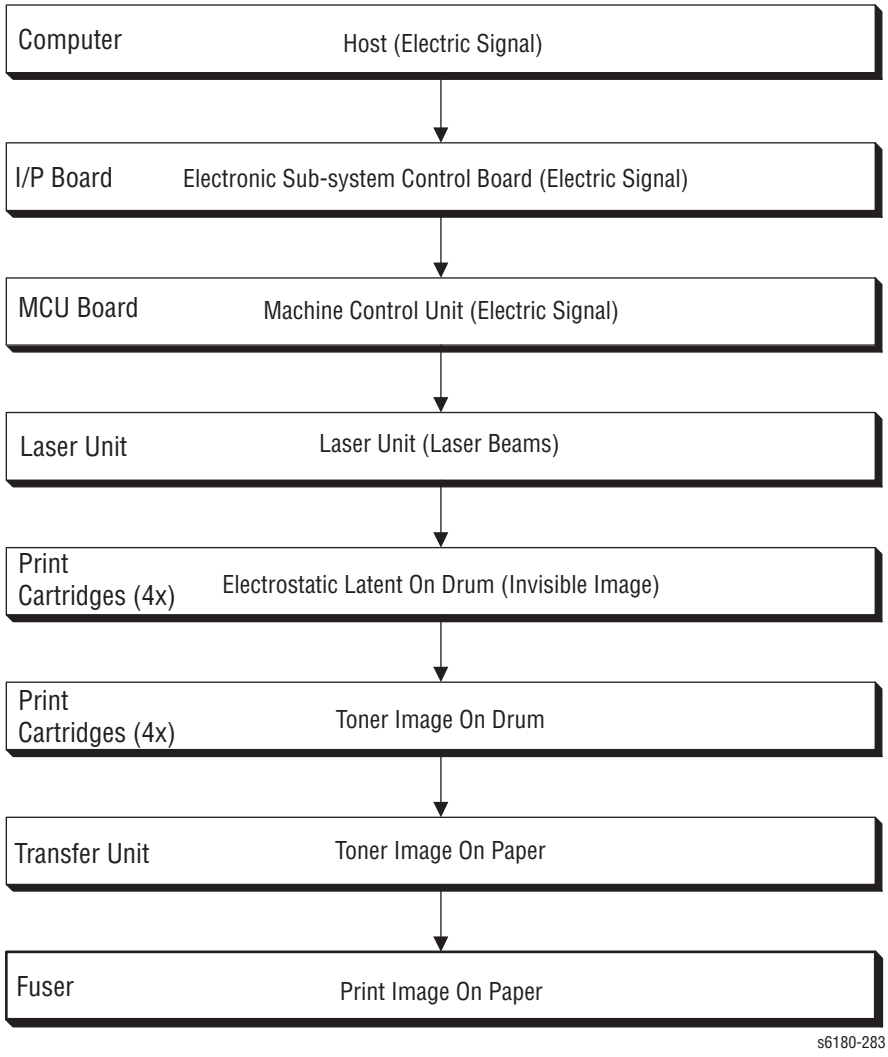


Note

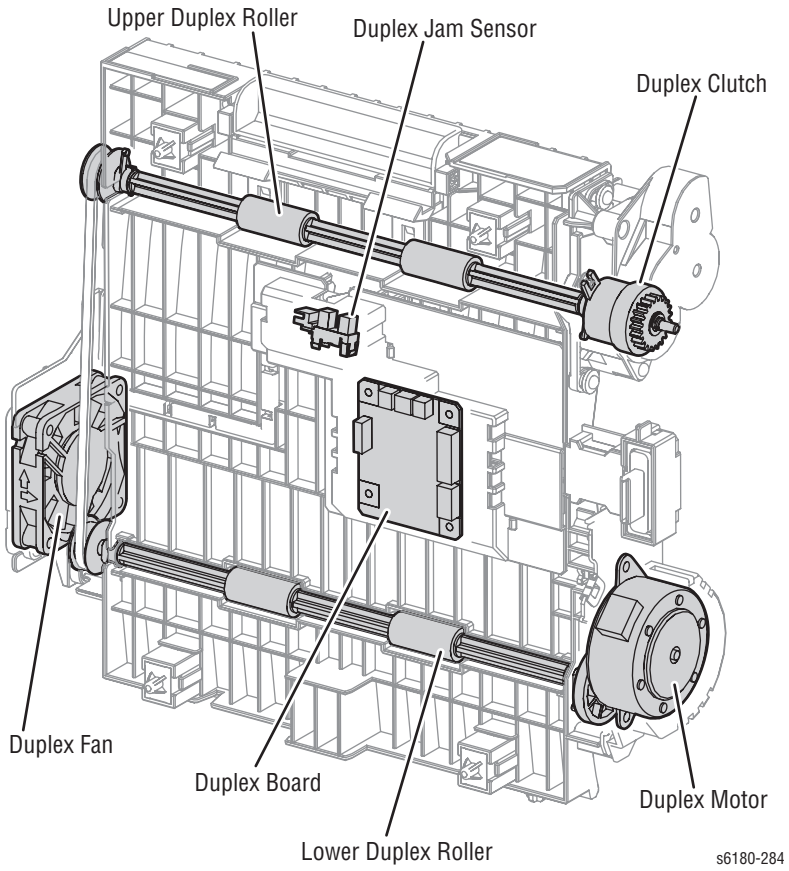
When replacing an MCU Board, ensure to transfer the NVRAM from the old MCU Board to the new MCU Board.

Data Flow

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



Duplex Unit



- **Duplex Jam Sensor**

  The Duplex Jam Sensor detects paper that is carried to the Duplex Unit.

- **Duplex Clutch**

  The Duplex Clutch transmits drive energy from the Duplex Motor to the Exit Roller in the Fuser. When the Clutch operates, the Exit Roller rotates in the reverse direction.

- **Duplex Motor**

  The Duplex Motor provides drive energy to the Lower Roller (Duplex 2 Roller), Upper Roller (Duplex 1 Roller), and Exit Roll on the Fuser.

- **Duplex Board**

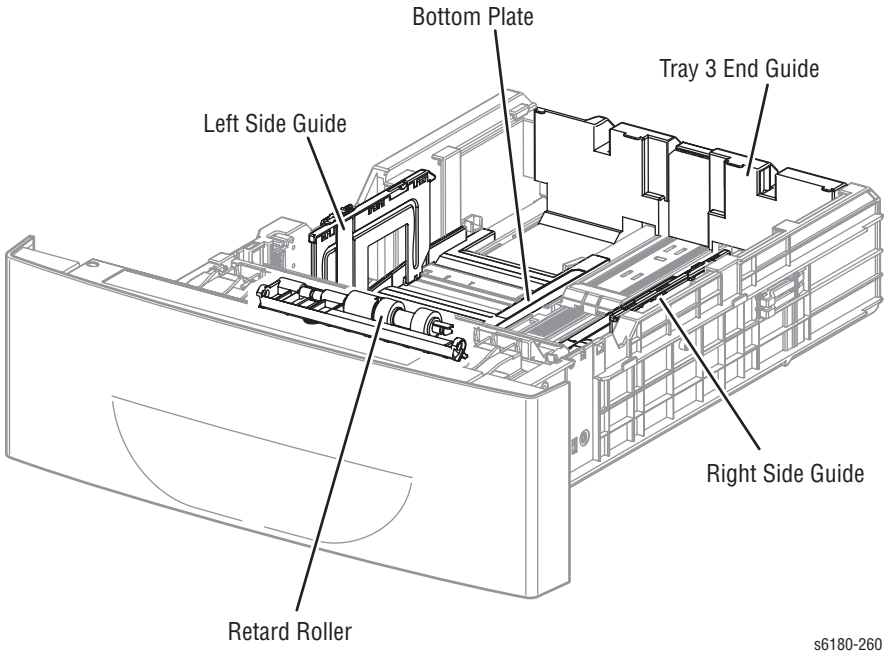
  The Duplex Board controls the Motor, Sensor, and Clutch.

- **Duplex Fan**

  The Duplex Fan removes heat from inside of the printer to prevent overheating.

Tray 3 - Optional 550-Sheet Feeder

Tray 3 Function



- **Tray 3 Side Guide (Left/Right)**

  The Left/Right Guide moves at a right angle to the paper transfer direction to align the paper width.

- **Tray 3 End Guide**

  The End Guide moves toward the paper direction to determine the paper size. The Size Switch On/Off switch varies according to the Tray 3 End Guide position to detect the paper size.

- **Tray 3 Retard Roller**

  The Retard Roller and the Feed Roller (Pick Up Unit) pinch the paper to feed.

Tray 3 Bottom Plate

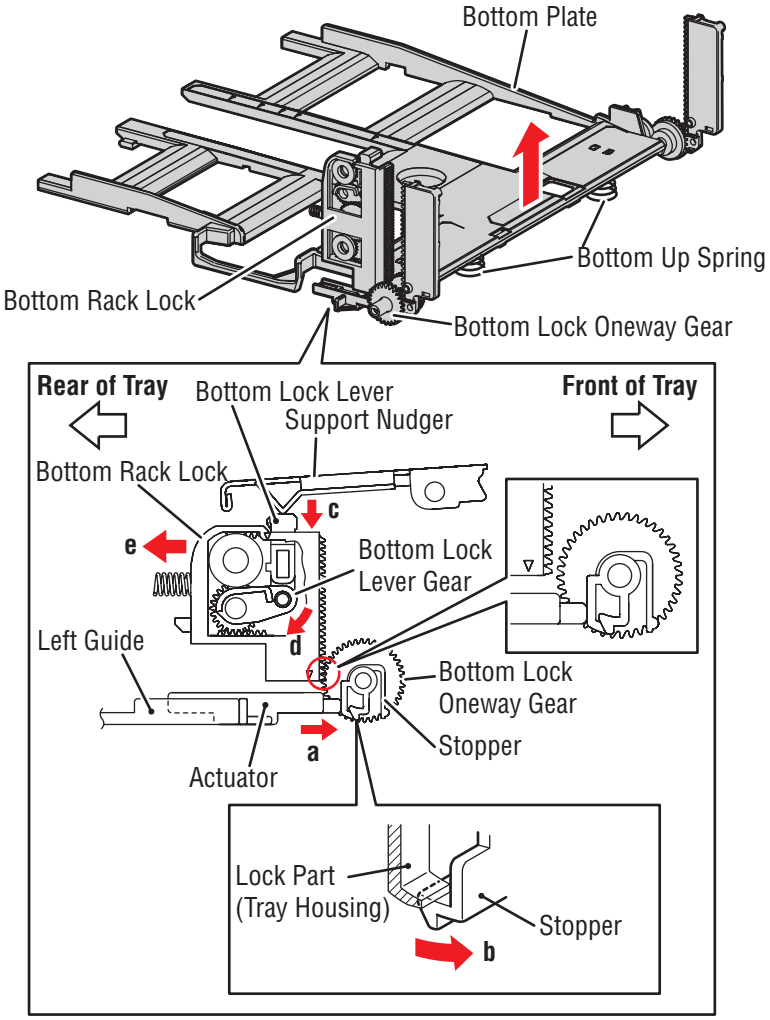
a. When the tray is inserted into the Sheet Feeder, the Actuator is pushed toward the front by the Left Guide, which pushes the Stopper.

b. The Stopper unlocks the Bottom Lock Oneway Gear.

c. When the tray is pushed until it stops, the Bottom Lock Lever is pressed down by the Support Nudger in the Feeder.

d. The Bottom Lock Lever actuates the Bottom Lock Lever Gear, which pushes the Bottom Rack Lock toward the rear.

e. The gear on the Bottom Rack Lock is disengaged from the Bottom Lock Oneway Gear, which allows the Bottom Plate to raise up by the Bottom Up Springs.



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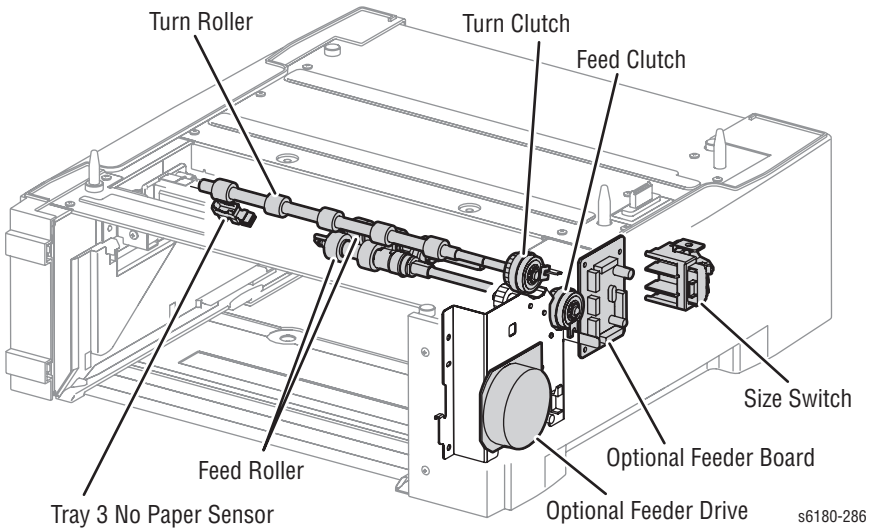
Optional 550-Sheet Feeder



- **Tray 3 No Paper Sensor**

  The No Paper Sensor detects the presence of the paper in the paper tray based on the No Paper Actuator position.

- **Tray 3 Feed Clutch**

  The Feed Clutch transmits drive energy from the Feeder Drive to the Feed Roller.

- **Tray 3 Feed Roller**

  When the Feed Clutch operates, the Feed Roller rotates and feeds the paper.

- **Tray 3 Turn Clutch**

  The Turn Clutch transmits drive energy from the Optional 550-Sheet Feeder Drive through the Turn Clutch to feed the paper from the paper tray to the printer.

- **Optional 550-Sheet Feeder Drive**

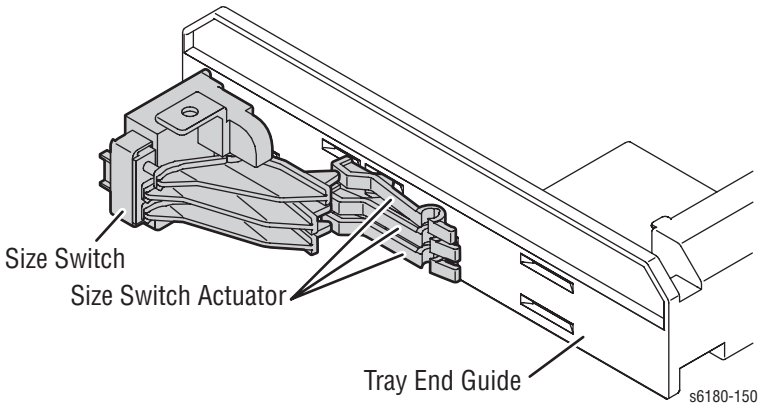
  The Optional 550-Sheet Feeder Drive drives the rollers of the Optional Feeder.

- **Optional 550-Sheet Feeder Board**

  The Optional 550-Sheet Feeder Board controls the Motor, Sensor, and Clutch.

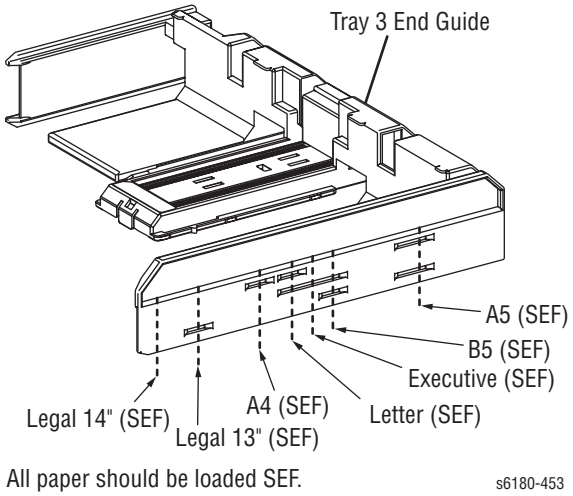
- **Tray 3 Size Switch**

  The Size Switch detects the paper size and the presence of the paper tray.



- **Tray 3 End Guide**

  Paper is detected at the Tray 3 End Guide.

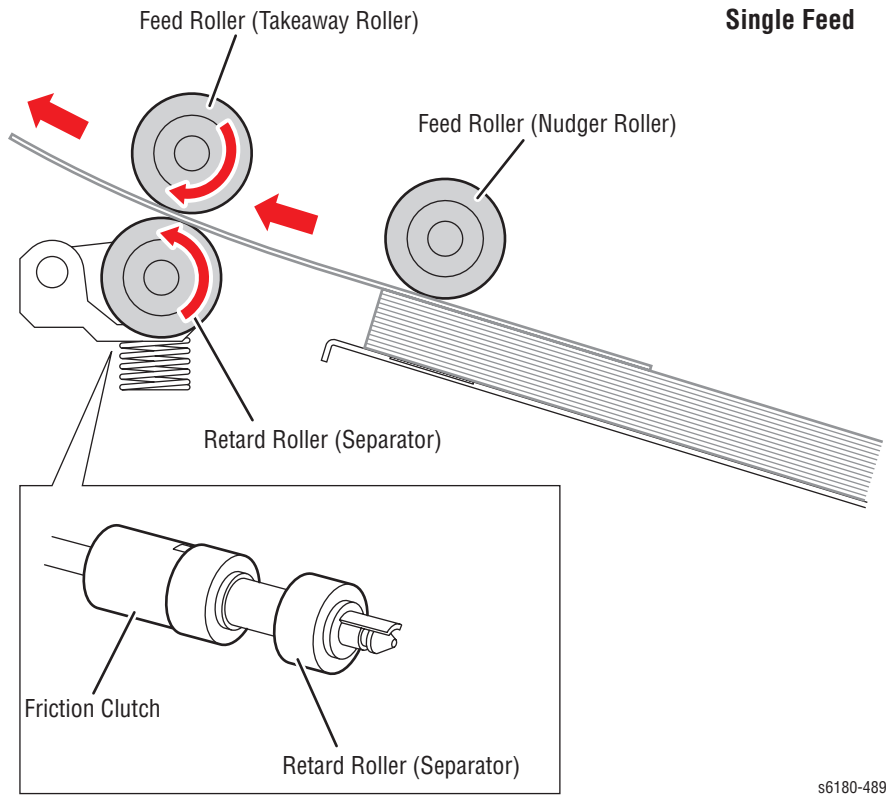


Note

Refer to “Paper Size Detection” on page 2-50 for detailed information on paper size switches and paper size.

Tray 3 Multiple Sheet Feed Prevention

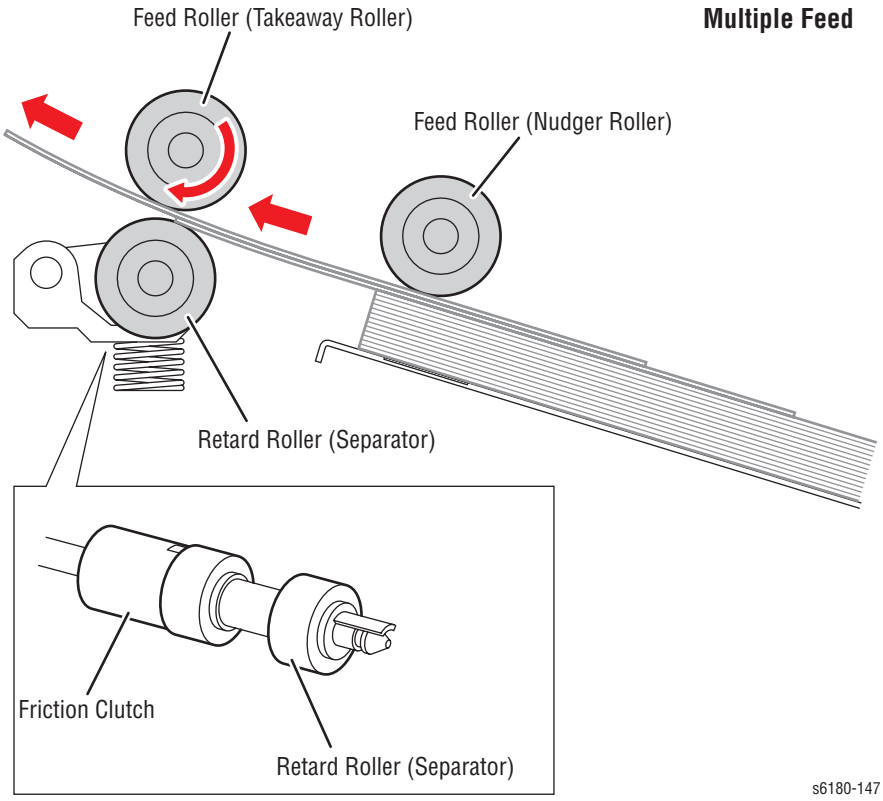
The sheets loaded in Tray 3 are occasionally stuck together along the edges, which can cause a multiple sheet feed or a jam. The Nudger Roller feeds the sheets to a position between the Feed Roller and the Retard Roller. Normally, when only one sheet is fed, both the Feed Roller and Retard Roller rotate to allow the sheet to pass.



However, when two sheets are fed concurrently, only the Feed Roller rotates. The Retard Roller is coupled to a friction clutch that prevents the roller from rotating due to extra force from feeding two sheets; this process allows the upper sheet to pass by as the lower sheet is stopped by the friction with the Retard Roller at rest.

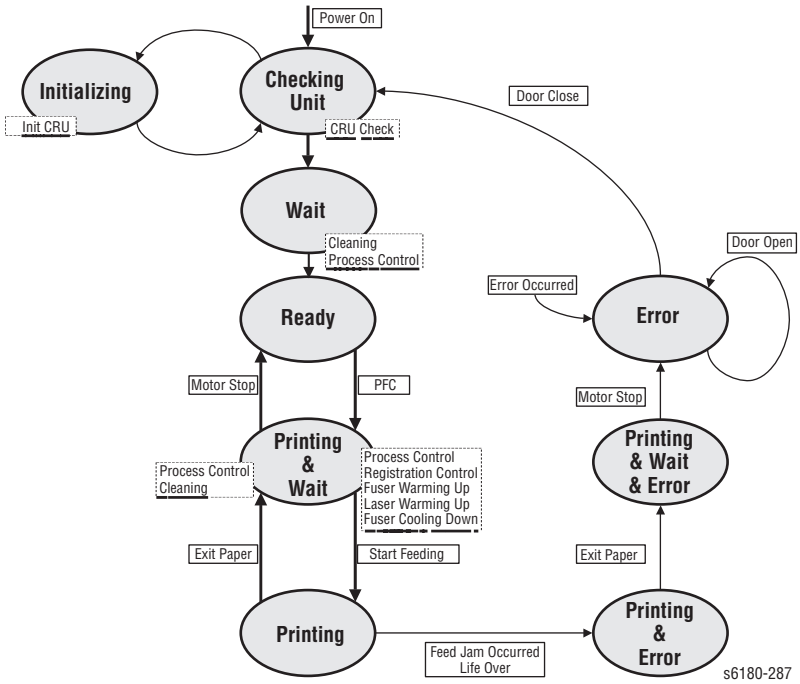
The Retard Roller is pushed toward Feed Roller by spring pressure, and controlled by the Friction Clutch with which it is coupled.

Multiple Feed



Printer Modes

Operational Modes



The Phaser 6180 Printer includes the following modes:

- **Diagnostics Mode**

  The printer is ready to receive diagnostic commands, or the printer diagnostic function is operating.

- **Wait Mode**

  The printer is preforming Print Quality adjustment.

- **Ready Mode**

  The printer is ready for printing.

- **Printing Mode**

  Printing is in progress.

- **Error Mode**

  An error is detected in the printer.

- **Initializing Mode**

  The printer is initializing with a new Developer Unit (new parts have been installed into the printer).

- **Checking Unit Mode**

  The printer is checking consumable units.

Printer Control

Paper Size Detection

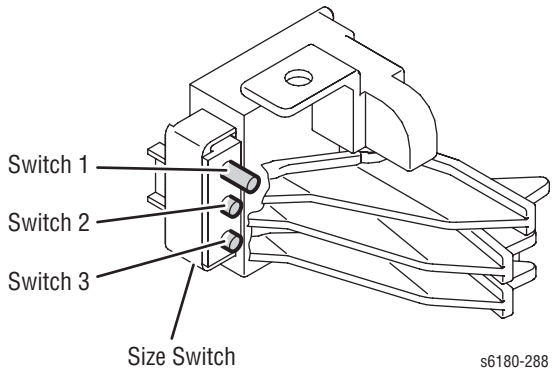
The paper size detection for Trays 2 and 3 is determined by three paper size switches in each paper tray slot. The switch condition is set by moving the paper guide in the tray. This in turn sets the plastic “fingers” on the side of the paper tray to a specific position that activates the correct switch combination for the selected paper size.

Paper Size Switches Indicated as SW1, SW2, and SW3

Paper Size	Paper Size Switch		
	SW1	SW2	SW3
Letter (SEF)	Off	Off	On
A4 (SEF)	Off	On	On
A5	Off	On	Off
B5 (SEF)	On	Off	Off
Legal 13” (SEF)	On	On	On
Legal 14” (SEF)	On	On	On
Executive (SEF)	On	Off	On
No Tray	Off	Off	Off

Note

On: The Actuator is pushing the Size Switch.



Selective Control on Paper Tray

The default tray is Tray 2. The preferred paper tray can be changed using the menu on the printer Control Panel: **Menu** > **Tray Settings**.

Laser Unit Light Quantity Control

Image data is sent to the Laser Unit as an electric signal (data are expressed with high and low voltage values), and the laser diodes convert the image data from electric signals to optical signals (data are expressed with blinking laser beams).

Variations in light quantity of laser beams or variations in the optical system (such as lenses) or drum sensitivity cannot attain a proper electrostatic image. Therefore, the laser beam light quantity is monitored and controlled by the laser diodes.

The Laser Unit has four laser diodes for Yellow, Magenta, Cyan, and Black respectively and the beam intensity is automatically adjusted for each color.

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 or during a continuous run.

- Potential Control
- Toner Density Control

The following controls supplement the above controls:

- High Area Coverage Mode
- Admix Mode

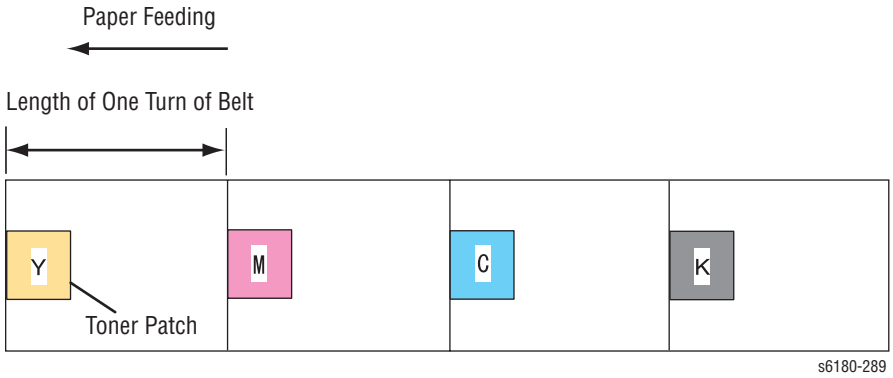
Potential Control

To attain stable printing 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 that varies momentarily. 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/Temperature 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 Adjustment

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 surfaces 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.

The surface is cleared by actuating the ADC Solenoid, which causes the ADC Pad to wipe the lens on the ADC Sensor.

LED Light Quantity Control of ADC Sensor

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. For exact density measurement, the sensor output value (reflected light intensity) must be the specified value when no toner is put on the Belt as an objective. The reflected light intensity varies, depending on the Belt surface condition or dirty condition of the ADC Sensor surface. The light intensity emitted from the LED is controlled so that the reflected light intensity satisfies the specified value. This control is made in two ways, one to set the light intensity so that the reflected light quantity satisfies the specified value, and the other to adjust the subsequent light intensity to be within the tolerance.

1. **Light Intensity Setting**

   The reflected light intensity may vary largely, if the Transfer Unit was replaced or the ADC Sensor was cleaned. Assuming this fact, the light intensity is set when the power is turned On, or the Front Cover is opened and closed.

   The light intensity of the LED is increased gradually, and the set value is fixed when the output of the ADC Sensor exceeds the specified value.

2. **Light Intensity Adjustment**

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

   The LED outputs the current setting of light intensity to check the output value of the ADC Sensor for the specified range. If the output value is low, the light intensity is increased by the specified amount at the next ADC, or if high, the light intensity is reduced at the next ADC.

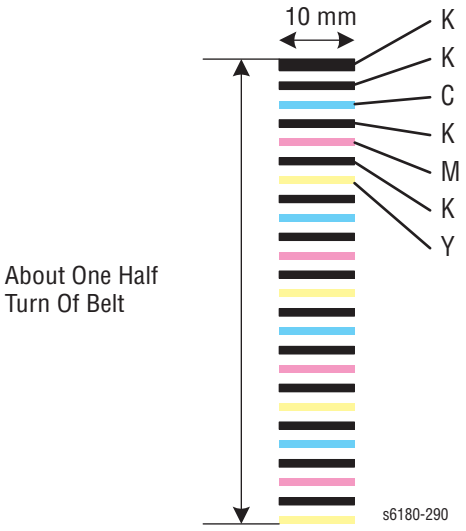
Color Registration Control

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 Drums of respective colors and they are overlapped to form one image, and in this case, a color shift may occur. The color registration control calculates how much the registration is shifted, and adjusts the Laser Unit write timing.

The scan control adjusts all four colors in the process direction.

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



3. The ADC Sensor reads the patch density.
4. The adjusting 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 from the adjusting amount of registration shift.

Fuser Control

Fuser Temperature Control

After the target temperature is set, the Heat Roll surface temperature is controlled so at that it can be the target temperature by turning the Heater Lamp On/Off.

Temperature of individual area of the Heat Roll is detected by the Fuser Non-Contact Sensor (NCS) in the middle of the Heat Roll and the Temp Sensor at the edge of it. When the temperature is detected higher than the target, the Heater Lamp will turn Off. When the temperature is lower than the target, the Heater Lamp will turn On.

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

Cool Down

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

When the edge of Heat Roll temperature is high, cooling down is performed to lower the temperature to the target temperature.

Sensor Warm-Up

The Fuser Non-Contact Sensor at the center of the Heat Roll will lose its accuracy of detecting temperature when the temperature of the Sensor itself is below -5° C. Therefore, the Sensor will be warmed up when the temperature is below -5° C. This process is called Sensor Warm-Up.

Drive Transmission

Mechanical Components

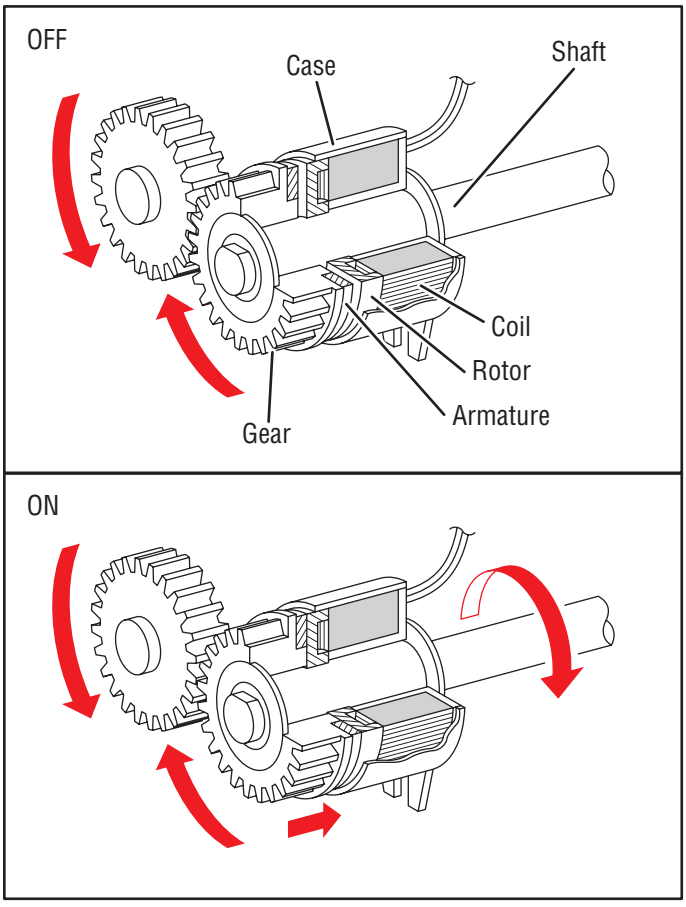
Clutch

The electromagnetic Clutch in the printer controls the rotation of the Roller by transferring torque from the Motor to the Roller.

The electromagnetic Clutch becomes an electromagnetic by transferring electric current through the coil inside the case and attracts the armature and gear to the rotating rotor, which rotates the Gear.

When the Coil lost its power, electromagnetic force is lost and the armature comes off the rotor, and the Gear stops rotating.

The Clutch makes very soft noise. When verifying the Clutch operation, ensure to stay close to the component in order to hear to the sound.



s6180-363

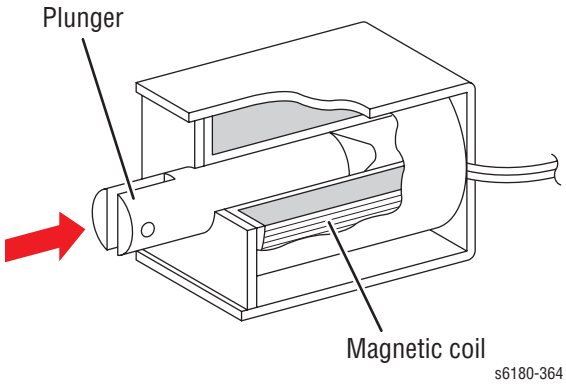
Solenoid

The Solenoid opens/closes the shutter or controls the position of the Gear for transferring torque of the Motor to the Roller.

The Solenoid becomes an electromagnet by transferring electric current through the Coil inside the Case and attracts the Plunger.

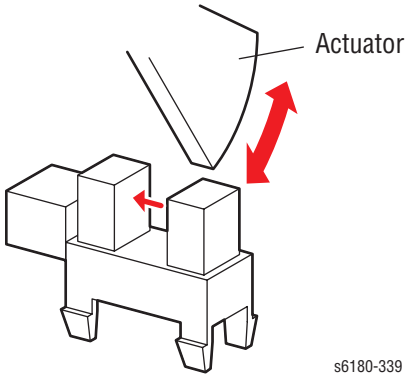
When the Coil lost its power, electromagnetic is lost and the Plunger is returned to its original position by spring action, which allows the shutter to operate or the Gear to move to the predefined position.

Unlike a Clutch, a Solenoid generates a loud noise.



Sensor

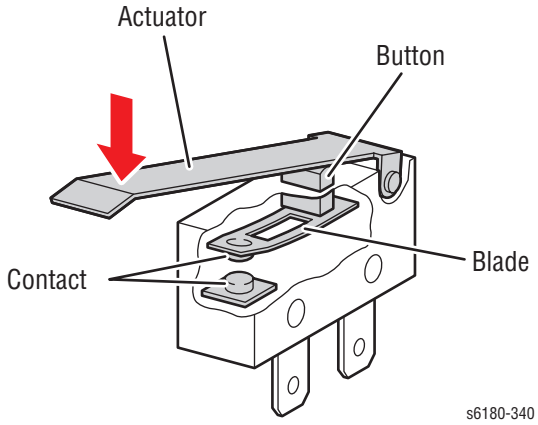
A transmissive type sensor is composed of the light-emitting side and the light-receiving side that are placed opposite to each other, allowing the light to pass from the former to the latter. On the basis of whether or not the light path is blocked due to the actuator, etc..., the sensor detects the paper absence/ presence or the moving parts position such as at the home position or elsewhere.



Switch

A micro-switch closes the internal contacts via a button, which is pushed down under the leaf spring that is held down by the Actuator of the cover or door that is being closed.

When the door or cover is opened, the leaf spring returns to its original position and the button is pushed up by the spring in the Switch, allowing the internal contacts to open.

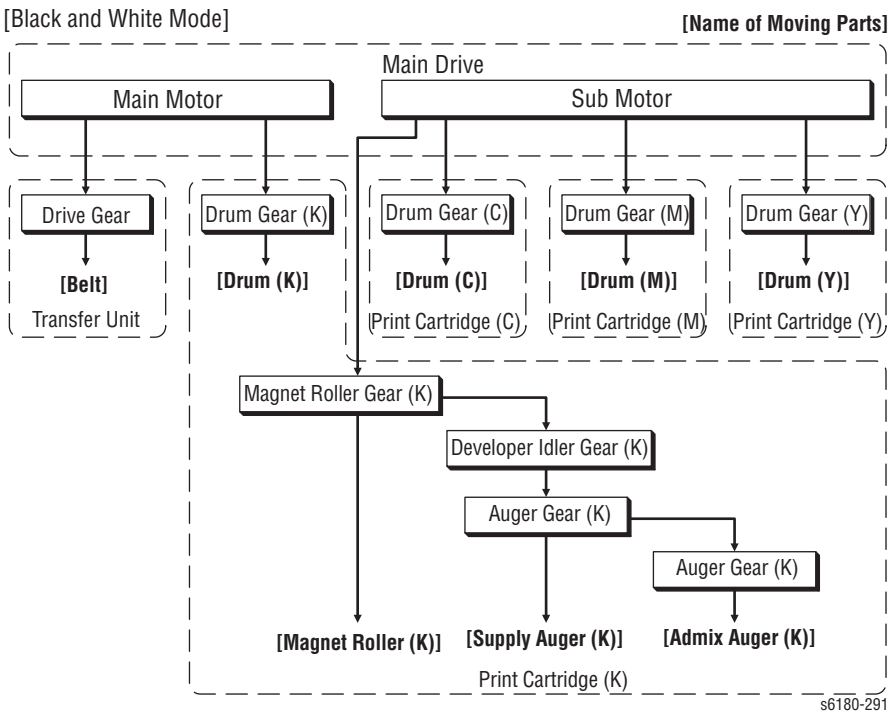


Main Drive

The Main Drive transmits power for Black and White, Full Color, and Simplex modes as shown in the following diagrams.

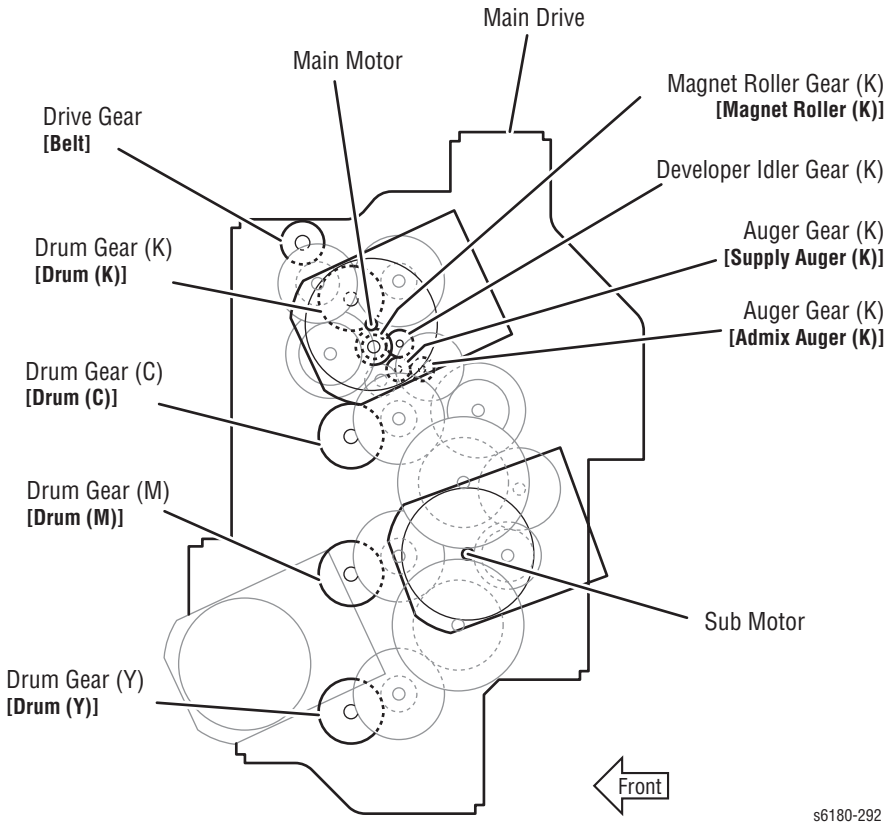
Black and White Mode

Process



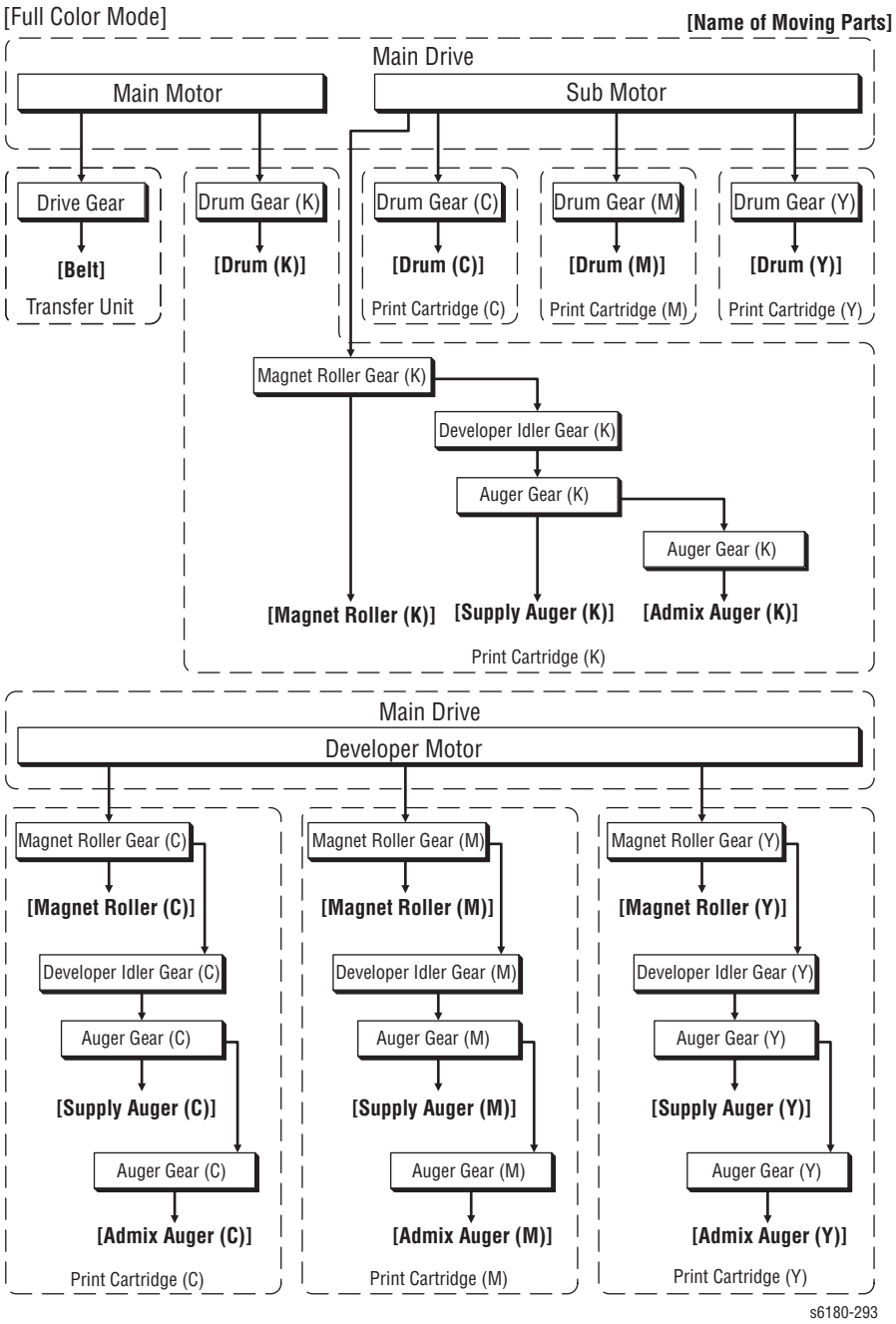
Front View

[Black and White Mode] **[Name of Moving Parts]**



Full Color Mode

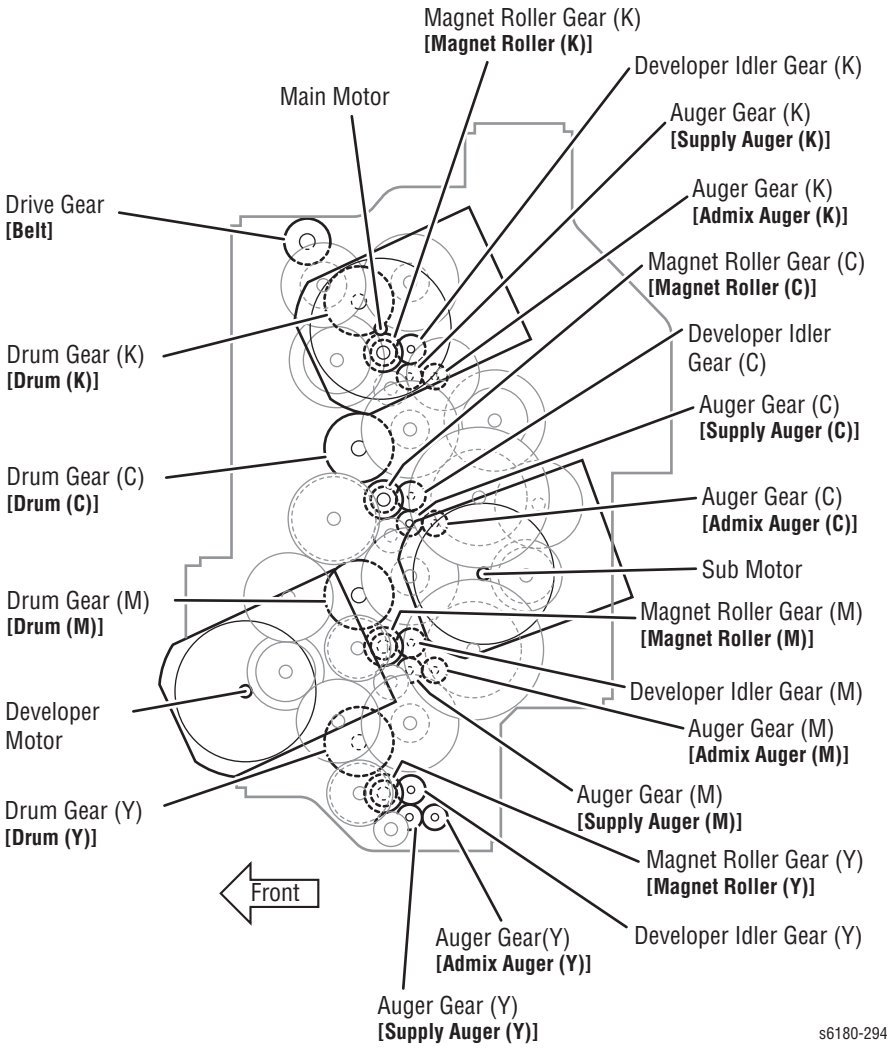
Process



Front View

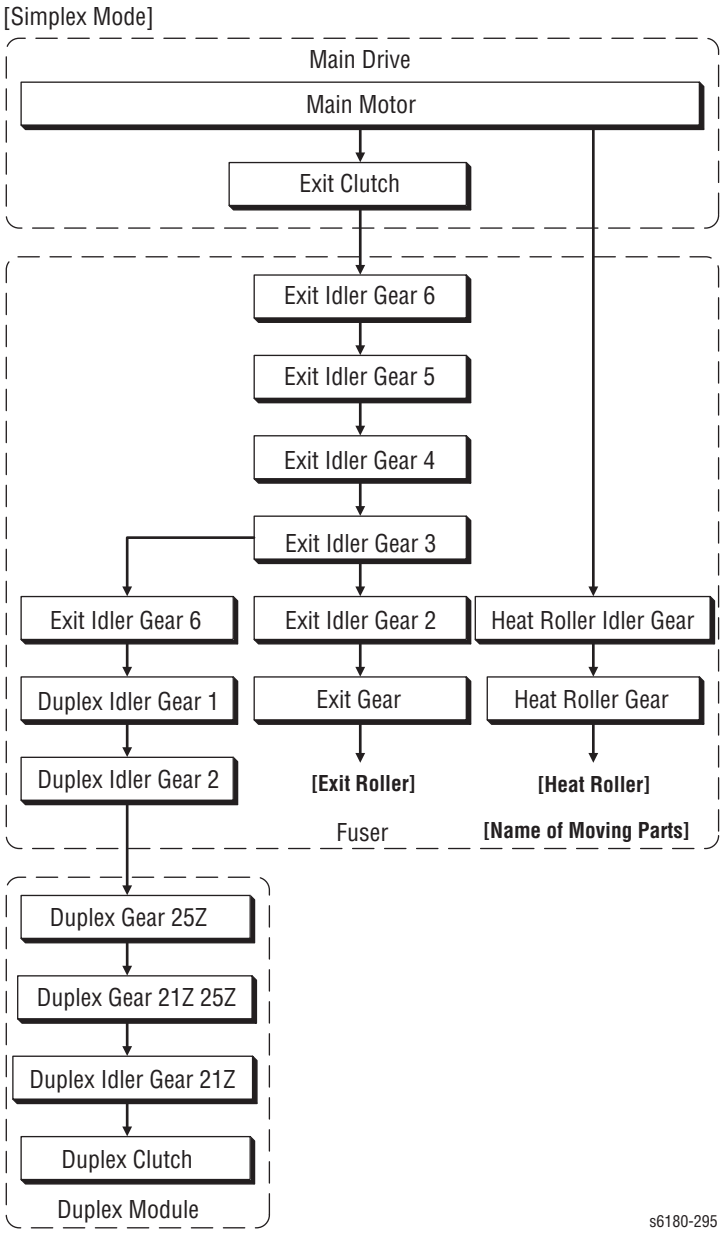
[Full Color Mode]

[Name of Moving Parts]

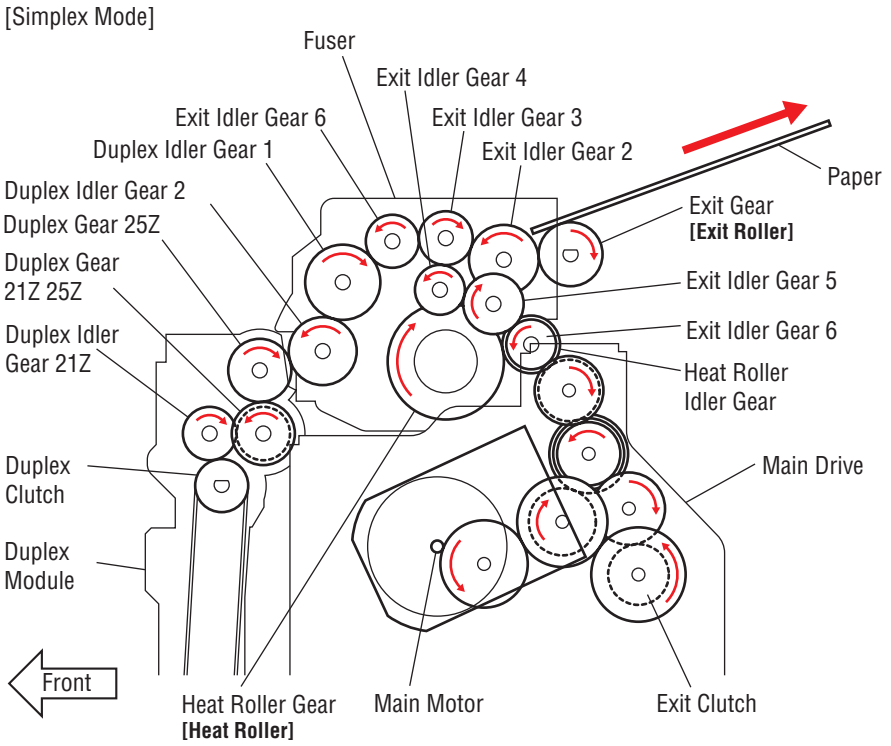


Simplex Mode

Process



Front View

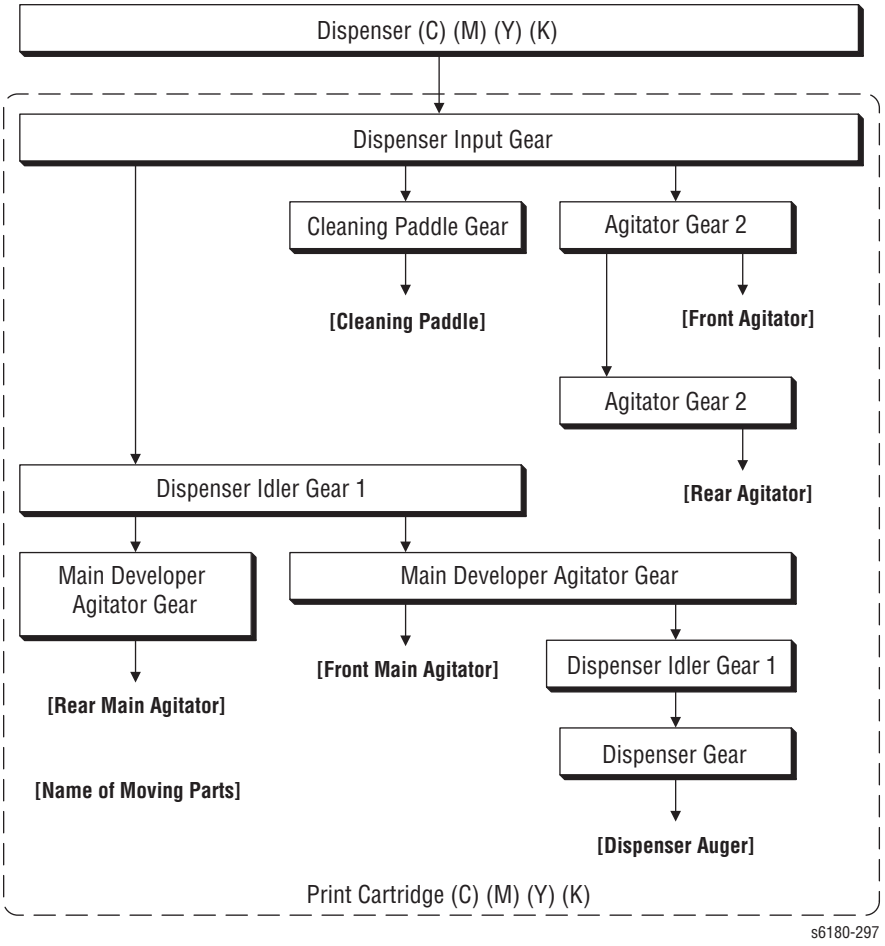

[Simplex Mode]
Fuser
Exit Idler Gear 4
Exit Idler Gear 6
Exit Idler Gear 3
Duplex Idler Gear 1
Exit Idler Gear 2
Paper
Duplex Idler Gear 2
Duplex Gear 25Z
Exit Gear
[Exit Roller]
Duplex Gear
21Z 25Z
Exit Idler Gear 5
Duplex Idler
Gear 21Z
Exit Idler Gear 6
Heat Roller
Idler Gear
Main Drive
Duplex
Clutch
Duplex
Module
Front
Heat Roller Gear
[Heat Roller]
Main Motor
Exit Clutch
[Name of Moving Parts]
s6180-296

Dispenser (C) (M) (Y) (K)

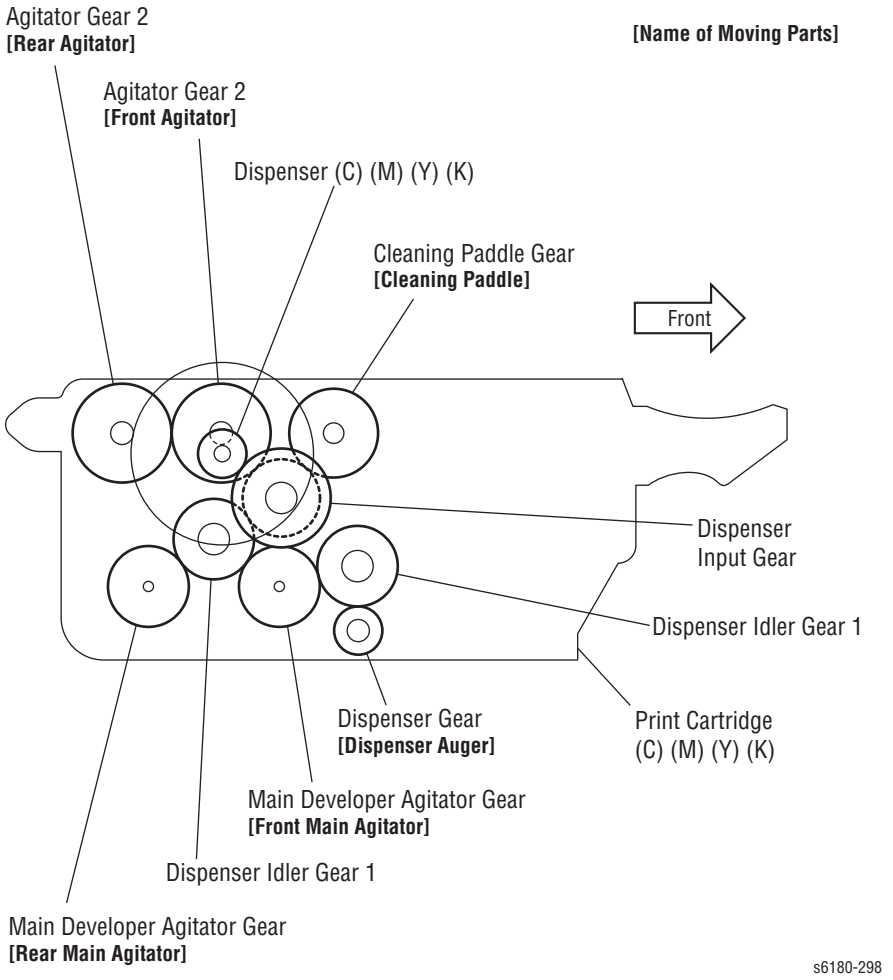
The Dispenser drives the Agitator and the Auger in the Print Cartridge as shown in the following diagram. The operation is common among the Dispensers C, M, Y, and K.

CRU

Process



Front View

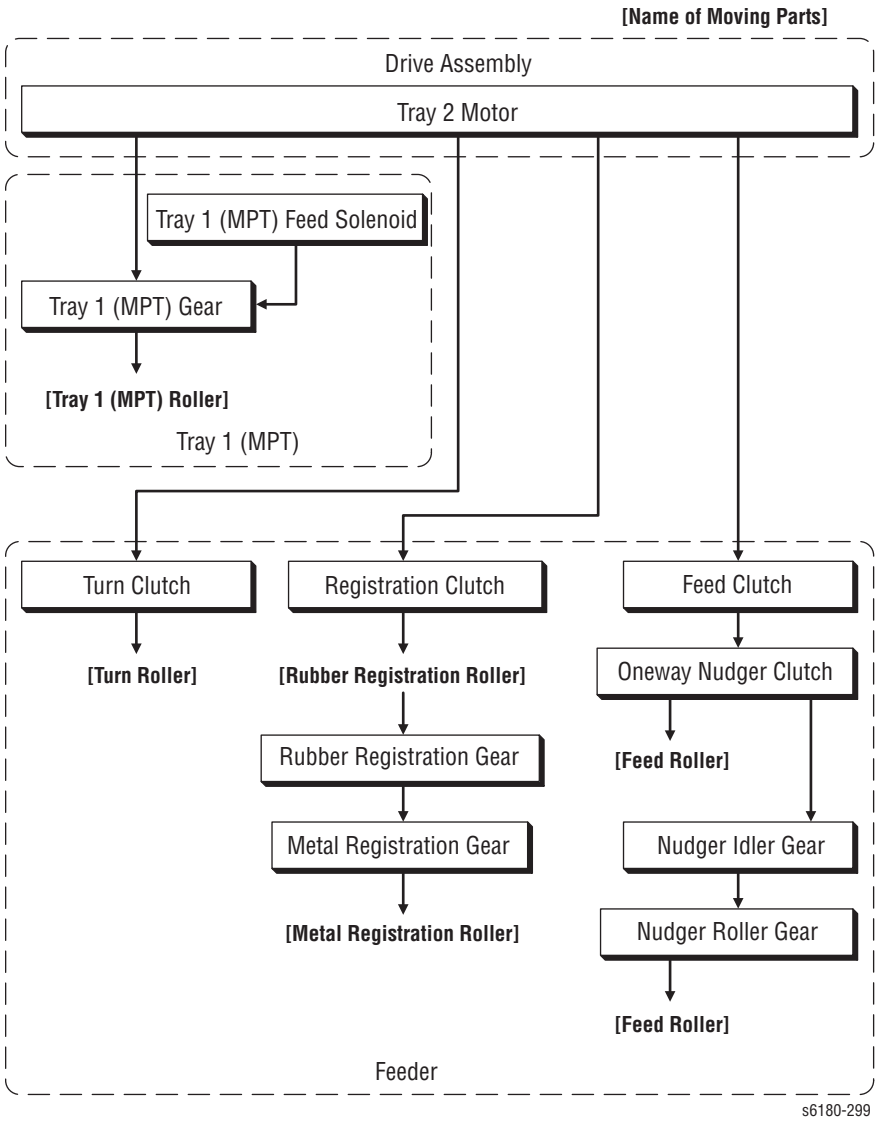

Agitator Gear 2
[Rear Agitator]
[Name of Moving Parts]
Agitator Gear 2
[Front Agitator]
Dispenser (C) (M) (Y) (K)
Cleaning Paddle Gear
[Cleaning Paddle]
Front
Dispenser
Input Gear
Dispenser Idler Gear 1
Print Cartridge
(C) (M) (Y) (K)
Dispenser Gear
[Dispenser Auger]
Main Developer Agitator Gear
[Front Main Agitator]
Dispenser Idler Gear 1
Main Developer Agitator Gear
[Rear Main Agitator]
s6180-298

Drive Assembly

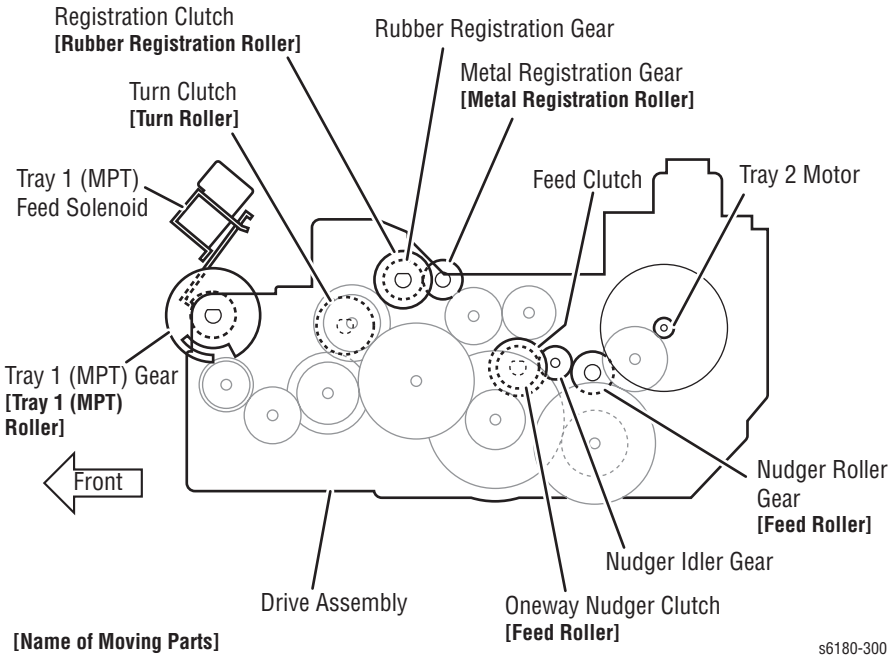
The Drive Assembly transmits drive energy as shown in the following diagram.

Paper Handling

Process



Front View

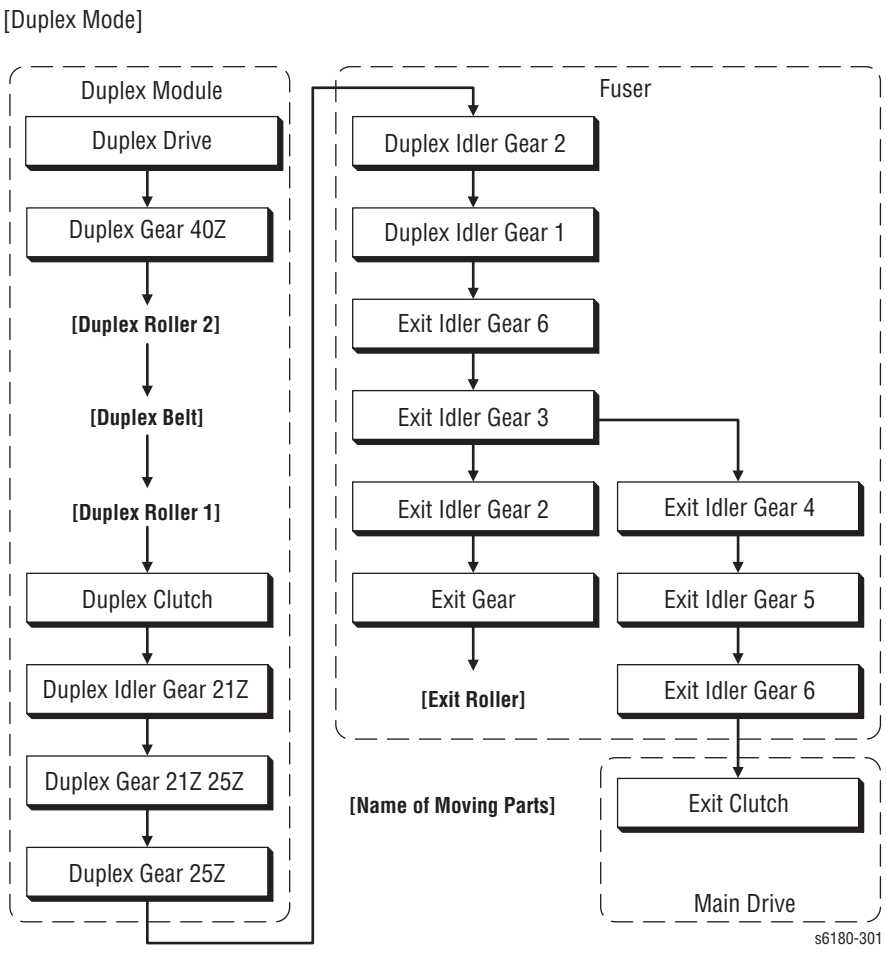

Registration Clutch
[Rubber Registration Roller]
Rubber Registration Gear
Metal Registration Gear
[Metal Registration Roller]
Turn Clutch
[Turn Roller]
Tray 1 (MPT)
Feed Solenoid
Feed Clutch
Tray 2 Motor
Tray 1 (MPT) Gear
[Tray 1 (MPT)
Roller]
Front
Nudger Roller
Gear
[Feed Roller]
Nudger Idler Gear
Drive Assembly
Oneway Nudger Clutch
[Feed Roller]
[Name of Moving Parts]
s6180-300

Duplex Drive

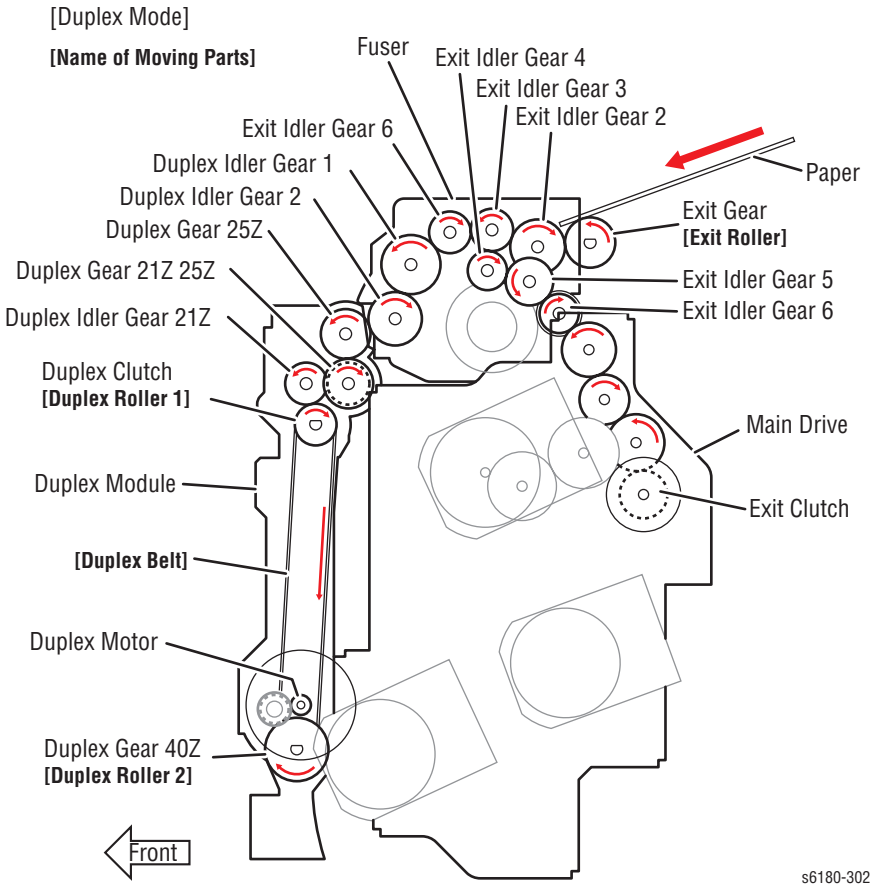
The following diagram provides a process flow of the Duplex Drive.

Duplex Mode

Process



Front View

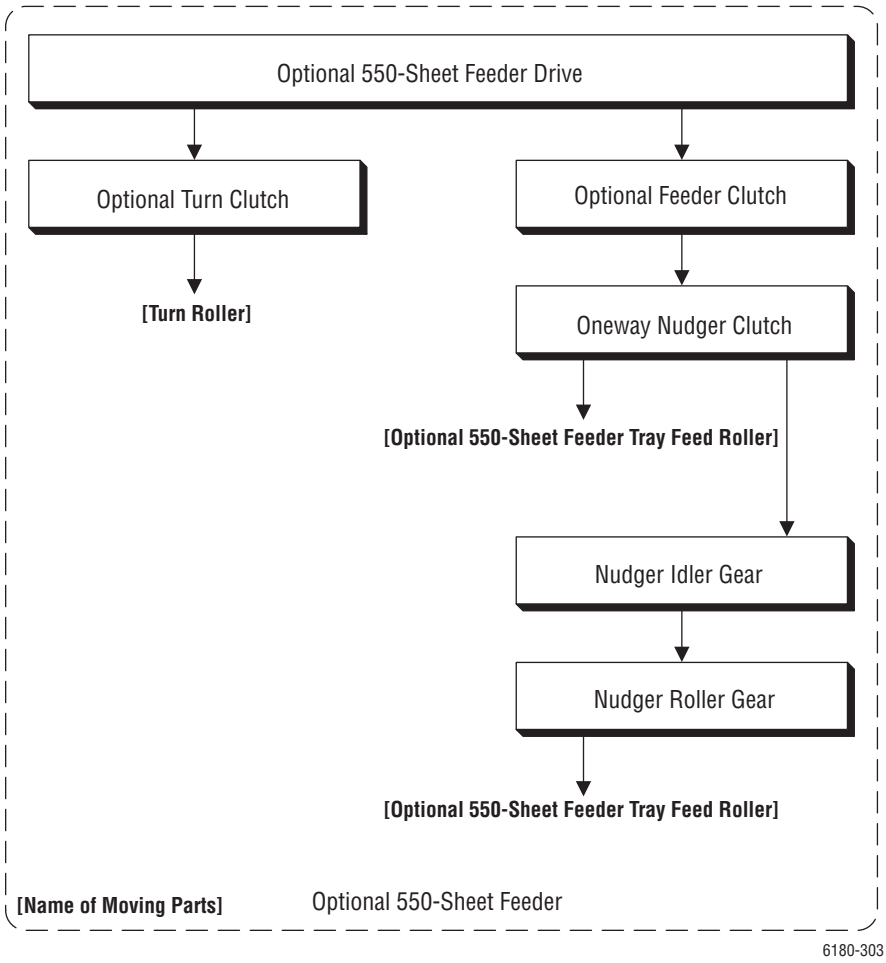

[Duplex Mode]
[Name of Moving Parts]
Fuser
Exit Idler Gear 4
Exit Idler Gear 3
Exit Idler Gear 2
Exit Idler Gear 6
Duplex Idler Gear 1
Duplex Idler Gear 2
Duplex Gear 25Z
Duplex Gear 21Z 25Z
Duplex Idler Gear 21Z
Duplex Clutch
[Duplex Roller 1]
Duplex Module
[Duplex Belt]
Duplex Motor
Duplex Gear 40Z
[Duplex Roller 2]
Front
Paper
Exit Gear
[Exit Roller]
Exit Idler Gear 5
Exit Idler Gear 6
Main Drive
Exit Clutch
s6180-302

Optional 550-Sheet Feeder Drive

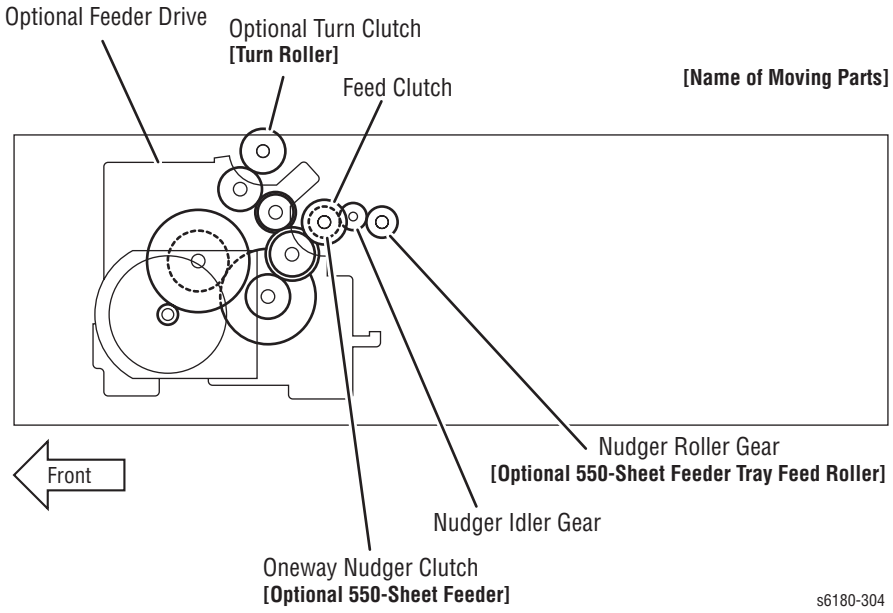
The following diagram provides a process flow of the Optional 550-Sheet Feeder Drive.

Optional 550-Sheet Feeder

Process



Front View


Optional Feeder Drive
Optional Turn Clutch
[Turn Roller]
Feed Clutch
[Name of Moving Parts]
Front
Nudger Roller Gear
[Optional 550-Sheet Feeder Tray Feed Roller]
Nudger Idler Gear
Oneway Nudger Clutch
[Optional 550-Sheet Feeder]
s6180-304

Error Messages and Codes

In this chapter...

- Introduction
- Servicing Instructions
- Messages, Chain Link Codes, and Procedures
- Jam Error Procedures
- Consumable/Routine Maintenance Procedures
- Tray and Paper Errors
- Configuration, Memory, and Firmware Errors

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 Chain Link code is covered in “General Troubleshooting” on page 4-1. Print quality problems are covered in “Print-Quality Troubleshooting” on page 5-1.

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 Chain Link codes display on the Control Panel
- Engine (fatal) and Jam Error logs display on the Control Panel or listed on the Error History Report

Accessing Error History Report

1. From the Control Panel, press the **Menu** button.
2. **Information Pgs** is displayed. Press the **OK** button.
3. Press the **Up** or **Down** arrow button to find **Error History**. Press the **OK** button.
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 Chain Link codes relating to Jam errors and System (fatal) errors. The printer can retain up to 42 Jam errors and 42 System Fail errors.

For Chain Link codes, Chain number (0 to 999) and Link number (0 to 999) are assigned. Chain numbers are assigned for each component. The number of component that detects Fault is entered in the Chain code, and the Fault type is defined by the Link code.

Examples of Error message and Chain Link code:

- System Fail History
  - Chain Link: 018-310
- Paper Jam History
  - Paper Jam Type: IOT Remain Registration Jam

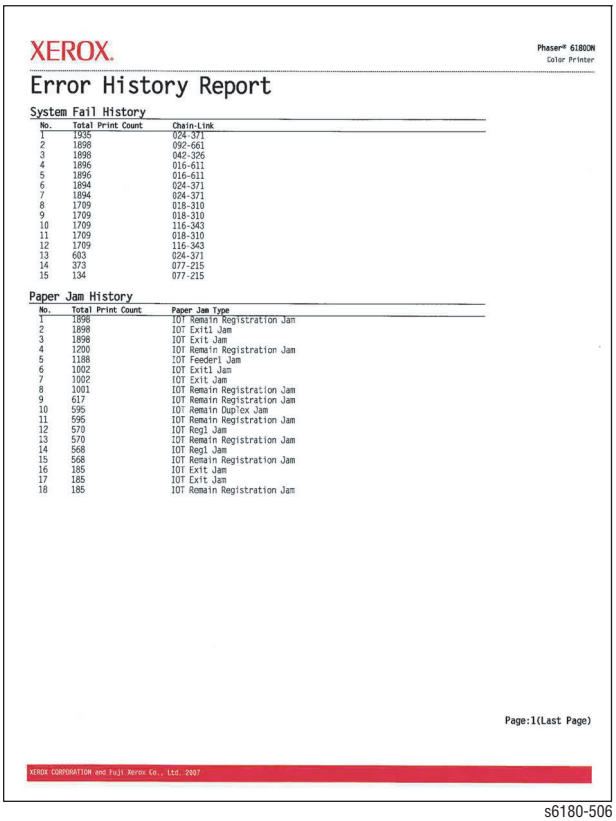
The Error History page contains two types of history information.

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.



XEROX

Phaser® 6180DN
Color Printer

Error History Report

System Fail History

No.	Total Print Count	Chain-Link
1	1935	024-371
2	1898	092-661
3	1898	042-326
4	1896	016-611
5	1896	016-611
6	1894	024-371
7	1894	024-371
8	1709	018-310
9	1709	018-310
10	1709	116-343
11	1709	018-310
12	1709	116-343
13	603	024-371
14	373	077-215
15	134	077-215

Paper Jam History

No.	Total Print Count	Paper Jam Type
1	1898	IOT Remain Registration Jam
2	1898	IOT Exit1 Jam
3	1898	IOT Exit Jam
4	1200	IOT Remain Registration Jam
5	1188	IOT Feeder1 Jam
6	1002	IOT Exit1 Jam
7	1002	IOT Exit Jam
8	1001	IOT Remain Registration Jam
9	617	IOT Remain Registration Jam
10	595	IOT Remain Duplex Jam
11	595	IOT Remain Registration Jam
12	570	IOT Regi Jam
13	570	IOT Remain Registration Jam
14	568	IOT Regi Jam
15	568	IOT Remain Registration Jam
16	185	IOT Exit Jam
17	185	IOT Exit Jam
18	185	IOT Remain Registration Jam

Page:1(Last Page)

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s6180-506

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 Print Cartridges and protect them from light.
5. Remove the Transfer Unit.
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 Print Cartridges appear obviously damaged, replace with new ones.

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

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

Messages, Chain Link Codes, and Procedures

The error messages and chain link 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
CRUM	Customer Replaceable Unit
ER/ERR	Error
ENV	Environment
FUNC	Function
MACaddress	Media Access Control Address
MCU	Machine Control Unit
MPC	Multi-Protocol Network Card
NVM	Non-Volatile Memory. Used instead of NVRAM.
NV RAM	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 Unit

Error Message and Chain Link Code Summary

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

- The Control Panel Message column shows the message as it appears on the printer's display when the error codes during normal operation.
- The Chain Link column lists codes listed on the printer Error History Report and the Control Panel.
- The Go to Page column references the procedure related to the error.

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

Error Message and Chain Link Code Display

Chain Link Code	Control Panel Message	Go to Page
Jam Errors		
071-100	Jam at Tray 2 (Feeder 1 Jam)	page 3-10
072-100	Jam at Tray 3	page 3-13
075-100	Jam at Tray 1 (MPT)	page 3-18
077-900 077-901	Jam at Exit/Jam at Reg. Roll	page 3-24
077-903	Jam at Tray 2	page 3-22
077-907	Jam at Duplexer	page 3-29
Consumable/Routine Maintenance Errors		
010-317	Insert Fuser	page 3-32
010-351	Replace Fuser	page 3-34
010-359	Fuser CRUM Error	page 3-35
010-397	Fuser Error	page 3-36
010-421	Ready Fuser Life	page 3-38
093-423 093-424 093-425 093-426	Print Cartridge Near Life (Y/M/C/K)	page 3-39
093-919 093-920 093-921 093-922	Check Print Cartridge (Y/M/C/K)	page 3-40
093-925	Print Cartridge CRUM Error (K)	page 3-44
093-926	Non-Xerox Toner Invalid (K) - (Print Cartridge CRUM ID Error)	page 3-46

Error Message and Chain Link Code Display (continued)

Chain Link Code	Control Panel Message	Go to Page
093-930 093-931 093-932 093-933	Replace Print Cartridge (Y/M/C/K)	page 3-42
093-935 093-936 093-937 093-938	Empty Print Cartridge (Y/M/C/K)	page 3-43
093-950 093-951 093-952	Print Cartridge CRUM Error (Y/M/C)	page 3-44
093-960 093-961 093-962	Non-Xerox Toner Invalid (Y/M/C) - (Print Cartridge CRUM ID Error)	page 3-46
093-970 093-971 093-972 093-973	Insert Print Cartridge (Y/M/C/K)	page 3-47
094-910	Insert Transfer Unit	page 3-49
094-911	Replace Transfer Unit	page 3-50
094-330	Transfer CRUM Error	page 3-51
094-422	Ready Transfer Life	page 3-52
191-700	Non-Xerox Toner Invalid (Y/M/C) - (Print Cartridge CRUM ID Error)	page 3-46
Tray and Paper Errors		
024-910	Load Tray 2 (Paper Mismatch)	page 3-55
024-911	Load Tray 3 (Paper Mismatch)	page 3-57
024-946 077-912	Insert Tray 2 (Tray Missing)	page 3-59
024-947	Insert Tray 3 (Tray Missing)	page 3-60
024-958	Load Tray 1 (MPT) (Paper Mismatch)	page 3-53
024-959	Load Tray 2 (No Suitable Paper)	page 3-63
024-960	Load Tray 3 (No Suitable Paper)	page 3-65
024-963	Load Tray 1 (MPT) (No Suitable Paper)	page 3-61
N/A	Multiple Feed	page 3-68
Configuration, Memory, and Firmware Errors		
016-610	Control Panel Language Set Unsupported	page 3-69
016-611	Engine Model Mismatch	page 3-70
016-718	Out of Memory	page 3-71

Error Message and Chain Link Code Display (continued)

Chain Link Code	Control Panel Message	Go to Page
016-720	PDL Error	page 3-71
016-738	MPC Error (Download Initial Error)	page 3-74
016-739	Reseat MPC	page 3-74
016-740	MPC Communication Error	page 3-74
016-799	Invalid Job	page 3-73
018-310	MPC Error (NIC-ESS Communication Fail)	page 3-74
018-311	MPC Error (NIC Flash ROM Boot Module Checksum Error)	page 3-74
018-312	MPC Error (NIC RAM R/W Test Error	page 3-74
018-313	MPC Error (NIC Flash ROM Application Module Checksum Error)	page 3-74
018-314	MPC Error (NIC MAC Address Checksum Error)	page 3-74
018-315	MPC Error (NIC Ethernet BIST Parity/RAM/R/W Error)	page 3-74
018-316	MPC Error (NIC Internal Loopback Error)	page 3-74
018-317	MPC Error (NIC Fatal Error)	page 3-74
018-319	Network Error (On Board Network OS Error)	page 3-76
018-320	Network Error (On Board Network VxWorks Error)	page 3-76
024-340	MCU Firmware Error	page 3-77
024-371	MCU Communication Error (Communication Fail)	page 3-78
041-340	MCU NVRAM Error	page 3-79
042-313	Fan Motor Error (Fan Motor Failure)	page 3-81
042-325	Main Motor Error (Motor Failure)	page 3-84
042-326	Sub Motor Error (Motor Failure)	page 3-86
042-358	Fan Motor Error (Print Engine Fan Motor Failure)	page 3-81
061-370	Laser Error	page 3-83
072-215	550 Feeder Error (Option Feeder Failure)	page 3-94
072-216	Optional 550 Motor Error (Print Engine Motor Failure)	page 3-92
077-215	Duplexer Error (Print Engine Option Duplexer Failure)	page 3-96
077-300	Door A Open (Print Engine Front Cover Open)	page 3-98
077-343	Tray 2 Motor Error (Print Engine Motor Failure)	page 3-90
092-651	ADC Sensor Error	page 3-99
092-661	Environmental Sensor Error	page 3-101

Error Message and Chain Link Code Display (continued)

Chain Link Code	Control Panel Message	Go to Page
093-320	Deve Motor Error	page 3-88
116-310	Font ROM Error (Main)	page 3-102
116-311	Controller System Error (Font ROM Option (Option))	page 3-102
116-314	Controller System Error (On Board Network MAC Address Checksum Error)	page 3-102
116-315	Controller System Error (ESS On Board RAM W/R Check Fail)	page 3-102
116-316	RAM Error (ESS DIM Slot RAM W/R Check Fail)	page 3-103
116-317	Controller System Error (Controller Error (ROM Check Fail) (Main))	page 3-102
116-320	RAM Error (DIMM Slot RAM Error)	page 3-103
116-323	Controller System Error (NVRAM Error (NVRAM1 W/R Check Fail))	page 3-102
116-324	Controller System Error (Illegal Exception)	page 3-102
116-326	Controller System Error (NVRAM2 W/R Check Fail)	page 3-102
116-327	Controller System Error (Instruction Cache Error)	page 3-102
116-328	Controller System Error (Data Cache Error)	page 3-102
116-333	MPC Error (PCI Option #0 Fail)	page 3-74
116-343	Controller System Error (ASIC Error (ASIC Fail))	page 3-102
116-350	Network Error (On Board Network Communication Fail)	page 3-76
116-351	Network Error (On Board Network Ethernet BIST Parity/RAM R/W Error)	page 3-76
116-352	Network Error (On Board Network Internal Loopback Error)	page 3-76
116-355	Network Error (On Board Network Fatal Error)	page 3-76
116-367	Parallel Port Error (IEEE1284 Data Error)	page 3-104
116-390	NVRAM Error (NVRAM1 Size and ID Check Fail)	page 3-102
116-392	MACPHY Chip Test Error (Diag Mode)	page 3-105
116-393	MACPHY Int Loop Test Error (Diag Mode)	page 3-106
116-394	MACPHY Ext Loop Test Error (Diag Mode)	page 3-107

Jam Error Procedures

Jam at Tray 2 (Feeder 1 Jam)

Paper fed from Tray 2 did not reach the Registration Sensor on time.

Applicable Chain Link

- **Chain Link 071-100**: Jam at Tray 2

Initial Actions

- Try picking paper from a different tray.
- Check the paper 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
■ MCU Board, PL9.1.20 ■ Right Side Harness, PL10.1.15 ■ Registration Sensor Harness, PL3.2.37 ■ Feeder Unit, PL3.2.1	■ "Map 2 - Laser Unit" on page 10-11 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Tray 1 (MPT) and Registration" on page 10-32 ■ "Feeder" on page 10-36

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the paper condition. Is the paper damaged?	Replace the paper.	Go to step 2.
2	Check the paper setting. Does the paper in use match with the paper settings on the Control Panel?	Go to step 3.	Correct the paper settings on the Control Panel. Go to step 3.
3	Does the error still occur?	Go to step 4.	Complete.
4	Reseat the paper tray. Does the error still occur?	Go to step 5.	Complete.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
5	Perform the Registration Sensor test (page 4-29): **Service Mode** > **Engine Diag** > **Sensor Test** > **Regi Sensor**. Does the number on the Control Panel increase by 1 when the Actuator of the Registration Sensor is activated?	Go to step 11.	Go to step 6.
6	Check the wiring harness connectors P/J23, P/J232, and P/J2322 between the MCU Board and the Registration Sensor. Are the connectors securely connected?	Go to step 7.	Reconnect the connectors.
7	Check the Registration Sensor Harness for continuity. 1. Disconnect P/J232 and P/J2322. 2. Check continuity between P/J232 <=> P/J2322.	Go to step 8.	Replace the Registration Sensor Harness.
8	Check the Right Side Harness for continuity. 1. Disconnect P/J23 and P/J232. 2. Check continuity between P/J23 <=> P/J232.	Go to step 9.	Replace the Right Side Harness.
9	Check the Registration Sensor signal. 1. Disconnect P/J23 on the MCU Board. 2. Is there +3.3 V across ground <=> J23-8?	Go to step 10.	Replace the MCU Board (page 8-87).
10	Check the Registration Sensor for signal. 1. Measure the voltage across ground <=> J23-10 on the MCU Board. 2. Does the voltage change when the Actuator of the Registration Sensor is activated?	Replace the MCU Board (page 8-87).	Replace the Feeder (page 8-43).
11	Perform the Tray 2 Motor test (page 4-42): **Service Mode** > **Engine Diag** > **Motor Test** > **Tray 2 Motor**. Does the Motor operate?	Go to step 15.	Go to step 12.
12	Check the wiring harness connectors P/J25 and P/J251 between the MCU Board and the Tray 2 Motor. Are the connectors securely connected?	Go to step 13.	Connect the connectors.
13	Check the Right Side Harness for continuity. 1. Disconnect P/J25 and P/J251. 2. Check continuity between P/J25 <=> P/J251.	Go to step 14.	Replace the Right Side Harness.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
14	Check the Drive Assembly signal. 1. Disconnect P/J25 on the MCU Board. 2. Is there +24 V across ground <=> J25-1/J25-2?	Replace the Drive Assembly (page 8-76).	Replace the MCU Board (page 8-87).
15	Perform the Tray 2 Feed Clutch test (page 4-54): **Service Mode** > **Engine Diag** > **Motor Test** > **Tray 2 Feed Clutch**. Does the Clutch operate properly?	Replace the MCU Board (page 8-87).	Go to step 16.
16	Check the wiring harness connectors P/J23 and P/J235 between the MCU Board and the Feed Clutch. Are the connectors securely connected?	Replace the Right Side Harness.	Reconnect the connectors.
17	Check the Right Side Harness for continuity. 1. Disconnect P/J25 and P/J251. 2. Check continuity between P/J25 <=> P/J251.	Go to step 18.	Replace the Right Side Harness.
18	Check the Feed Clutch signal. 1. Disconnect P/J23 on the MCU Board. 2. Is there +24 V across ground <=> J23-15?	Replace the Tray 2 Feed Clutch (page 8-42).	Replace the MCU Board (page 8-87).

Jam at Tray 3 (Feeder 2 Jam)

Paper fed from Tray 3 did not reach the Registration Sensor on time.

Applicable Chain Link

- **Chain Link 072-100**: Jam at Tray 3

Initial Actions

- Try picking paper from a different tray.
- Check the paper 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
■ MCU Board, PL9.1.20 ■ Right Side Harness, PL10.1.15 ■ C2 Chute Harness, PL12.2.7 ■ C2 Turn Harness, PL12.2.8 ■ Optional Feeder, PL12.1.8 ■ Optional 550-Sheet Feeder, PL12.1.1 ■ Optional Feeder Harness, PL12.2.3 ■ Roll Assy Feed (Feed Roll), PL12.1.9	■ "Map 2 - Laser Unit" on page 10-11 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Map 6 - Optional 550-Sheet Feeder" on page 10-15 ■ "Main Drive" on page 10-34 ■ "Optional 550-Sheet Feeder Wiring Diagram" on page 10-50

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the paper condition. Is the paper damaged?	Replace the paper.	Go to step 2.
2	Check the paper setting. Does the paper in use match with the paper settings on the Control Panel?	Go to step 3.	Correct the paper settings on the Control Panel. Go to step 3.
3	Does the error still occur?	Go to step 4.	Complete.
4	Reseat the paper tray. Does the error still occur?	Go to step 5.	Complete.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
5	Perform the Registration Sensor test (page 4-29): **Service Mode** > **Engine Diag** > **Sensor Test** > **Regi Sensor**. Does the number on the Control Panel increase by 1 when the Actuator of the Registration Sensor is activated?	Go to step 10.	Go to step 6.
6	Check the wiring harness connectors P/J23, P/J232, and P/J2322 between the MCU Board and the Registration Sensor. Are the connectors securely connected?	Go to step 7.	Reconnect the connectors.
7	Check the Registration Sensor Harness for continuity. 1. Disconnect P/J232 and P/J2322. 2. Check continuity between P/J232 <=> P/J2322.	Go to step 8.	Replace the Registration Sensor Harness.
8	Check the Right Side Harness for continuity. 1. Disconnect P/J23 and P/J232. 2. Check continuity between P/J23 <=> P/J232.	Go to step 9.	Replace the Right Side Harness.
9	Check the Registration Sensor signal. Disconnect P/J23 on the MCU Board. Is there +3.3 V across ground <=> J23-8?	Go to step 10.	Replace the MCU Board (page 8-87).
10	Perform the Tray 3 Feed Motor test (page 4-45): **Service Mode** > **Engine Diag** > **Motor Test** > **Tray 3 Feed Motor**. Does the Motor operate properly?	Go to step 18.	Go to step 11.
11	Check the wiring harness connectors P/J422 and P/J4222 between the Tray 3 Feeder Board and the Tray 3 Feeder Drive. Are the connectors securely connected?	Go to step 9.	Reconnect the connectors.
12	Check the C2 Motor Harness for continuity. 1. Disconnect P/J422 and P/J4222. 2. Check continuity between P/J422 <=> P/J4222.	Go to step 13.	Replace the C2 Motor Harness.
13	Check the Tray 3 Feeder Drive signal. 1. Disconnect P/J4222 on the Optional Feeder Board. 2. Is there +24 V across ground <=> J422-6?	Replace the Tray 3 Feeder Drive (page 8-106).	Go to step 14.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
14	Check the wiring harness connectors P/J419, P/J273, and P/J27 between the Tray 3 Feeder Board and the MCU Board. Are the connectors securely connected?	Go to step 15.	Reconnect the connectors.
15	Check the Tray 3 Feeder Harness for continuity. 1. Disconnect P/J419 and P/J273. 2. Check continuity between P/J419 <=> P/J273.	Go to step 16.	Replace the Optional Feeder Harness.
16	Check the Right Side Harness for continuity. 1. Disconnect P/J273 and P/J27. 2. Check continuity between P/J273 <=> P/J27.	Go to step 17.	Replace the Right Side Harness.
17	Check the Tray 3 Feeder Board signal. 1. Disconnect P/J27 on the MCU Board. 2. Is there +24 V across ground <=> J/27-B4/J27-B5 when the Interlock Switch is activated?	Replace the Tray 3 Feeder (page 8-102).	Replace the MCU Board (page 8-87).
18	Perform the Tray 3 Feed Clutch test (page 4-55): **Service Mode** > **Engine Diag** > **Motor Test** > **Tray 3 Feed Clutch**. Does the Clutch operate properly?	Go to step 25.	Go to step 19.
19	Check the wiring harness connectors P/J421 and P/J4213 between the Optional Feeder Board and the Feed Clutch. Are the connectors securely connected?	Go to step 20.	Reconnect the connectors.
20	Check the C2 Chute Harness for continuity. 1. Disconnect P/J421 and P/J4213. 2. Check continuity between P/J421 <=> P/J4213.	Go to step 21.	Replace the C2 Chute Harness.
21	Check the Tray 3 Feed Clutch signal. 1. Disconnect P/J421 from the Optional Feeder Board. 2. Is there +24 V across ground <=> J421-1?	Replace the Tray 3 Feed Clutch (page 8-101).	Go to step 22.
22	Check the wiring harness connectors P/J419, P/J273, and P/J27 between the Optional Feeder Board and MCU Board. Are the connectors securely connected?	Go to step 23.	Reconnect the connectors.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
23	Check the Right Side Harness for continuity. 1. Disconnect P/J419 and P/J273. 2. Check continuity between P/J419 <=> P/J273.	Go to step 24.	Replace the Right Side Harness.
24	Check the Optional Feeder Board signal. 1. Disconnect P/J27 on the MCU Board. 2. Is there 24 V across ground <=> J27-B4/J27-B5 when the Interlock Switch is activated?	Replace the Tray 3 Feeder (page 8-102).	Replace the MCU Board (page 8-87).
25	Perform the Tray 3 Turn Clutch test (page 4-56): **Service Mode** > **Engine Diag** > **Motor Test** > **Tray 3 Turn Clutch**. Does the Clutch operate properly?	Go to step 33.	Go to step 26.
26	Check the wiring harness connectors P/J420 and P/J4201 between the Optional Feeder Board and the Tray 2 Turn Clutch. Are the connectors securely connected?	Go to step 27.	Reconnect the connectors.
27	Check the C2 Turn Harness for continuity. 1. Disconnect P/J420 and P/J4201. 2. Check continuity between P/J420 <=> P/J4201.	Go to step 28.	Replace the C2 Turn Harness.
28	Check the Tray 3 Turn Clutch signal. 1. Disconnect P/J420 on the Optional Feeder Board. 2. Is there +24 V across ground <=> J420-1?	Replace the Tray 3 Turn Clutch (page 8-100).	Go to step 29.
29	Check the wiring harness connectors P/J419, P/J273, and P/J27 between the Optional Feeder Board and the MCU Board. Are the connectors securely connected?	Go to step 30.	Reconnect the connectors.
30	Check the Tray 3 Feeder Harness for continuity. 1. Disconnect P/J419 and P/J273. 2. Check continuity between P/J419 <=> P/J273.	Go to step 31.	Replace the Tray 3 Feeder Harness.
31	Check the Right Side Harness for continuity. 1. Disconnect P/J273 and P/J27. 2. Check continuity between P/J273 <=> P/J27.	Go to step 32.	Replace the Right Side Harness.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
32	Check the Tray 3 Feeder Board signal. 1. Disconnect P/J27 on the MCU Board. 2. Is there +24 V across ground <=> J27-B4/J27-B5 when the Interlock Switch is activated?	Replace the Tray 3 Feeder (page 8-102).	Replace the MCU Board (page 8-87).
33	Check the following for evidence of fault or damage: ■ Turn Roll, PL3.2.32 ■ Feed Roll, PL12.1.9	Go to step 34.	Replace the defective part(s). If the Turn Roll is damaged, replace the Tray 3 Feeder (page 8-102).
34	Replace the Optional 550-Sheet Feeder (page 8-96). Does the error still occur?	Replace the MCU Board (page 8-87).	Complete.

Jam at Tray 1 (MPT)

Paper fed from Tray 1 (MPT) did not reach the Registration Sensor on time.

Applicable Chain Link

- **Chain Link 075-100**: Jam at Tray 1

Initial Actions

- Try picking paper from a different tray.
- Check the paper 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 Reference
■ MCU Board, PL9.1.20 ■ Tray 1 (MPT) Retard Holder Kit, PL2.1.3 ■ MPT Feed Roll, PL3.1.10 ■ Tray 1 Feed Solenoid, PL3.1.3 ■ Turn Roll, PL3.2.32 ■ Feeder Unit, PL3.2.1 ■ Registration Sensor Harness, PL3.2.37 ■ Right Side Harness, PL10.1.15 ■ Turn Clutch, PL3.2.25 ■ Drive Assembly, PL8.1.7	■ "Map 2 - Laser Unit" on page 10-11 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Tray 1 (MPT) and Registration" on page 10-32 ■ "Feeder" on page 10-36

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the paper condition. Is the paper damaged?	Replace the paper.	Go to step 2.
2	Check the paper setting. Does the paper in use match with the paper settings on the Control Panel?	Go to step 3.	Correct the paper settings on the Control Panel. Go to step 3.
3	Does the error still occur?	Go to step 4.	Complete.
4	Reseat the Tray 1 Side Guides. Does the error still occur?	Go to step 5.	Complete.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
5	Perform the Registration Sensor test (page 4-29): **Service Mode** > **Engine Diag** > **Sensor Test** > **Regi Sensor**. Does the number on the Control Panel increase by 1 every time the Actuator of the Registration Sensor is activated?	Go to step 11.	Go to step 6.
6	Check the wiring harness connectors P/J23, P/J232, and P/J2322 between the MCU Board and the Registration Sensor. Are the connectors securely connected?	Go to step 7.	Reconnect the connectors.
7	Check the Registration Sensor Harness for continuity. 1. Disconnect P/J232 and P/J2322. 2. Check continuity between P/J232 <=> P/J2322.	Go to step 8.	Replace the Registration Sensor Harness.
8	Check the Right Side Harness for continuity. 1. Disconnect P/j23 and P/J232. 2. Check continuity between P/J23 <=> P/J232.	Go to step 9.	Replace the Right Side Harness.
9	Check the Registration Sensor for continuity. 1. Disconnect P/J23 on the MCU Board. 2. Is there +3.3 V across ground <=> J23-8?	Go to step 10.	Replace the MCU Board (page 8-87).
10	Check the Registration Sensor signal. 1. Measure the voltage across ground <=> J23-10 on the MCU Board. 2. Does the voltage change when the Actuator of the Registration Sensor is activated?	Replace the MCU Board (page 8-87).	Replace the Feeder (page 8-43).
11	Perform the Tray 1 (MPT) Feed Solenoid test (page 4-53): **Service Mode** > **Engine Diag** > **Motor Test** > **Tray 1 (MPT) Feed Solenoid**. Does the Solenoid operate properly?	Go to step 15.	Go to step 12.
12	Check the wiring harness connectors P/J23 and P/J236 between the MCU Board and the Tray 1 Feed Solenoid. Are the connectors securely connected?	Go to step 13.	Reconnect the connectors.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
13	Check the Right Side Harness for continuity. 1. Disconnect P/J23 and P/J236. 2. Check continuity between P/J23 <=> P/J236.	Go to step 14.	Replace the Right Side Harness.
14	Check the Tray 1 Feed Solenoid signal. 1. Disconnect P/J23 on the MCU Board. 2. Is there +24 V across ground <=> J23-17 when the Interlock Switch is activated?	Replace the Tray 1 Feed Solenoid (page 8-35).	Replace the MCU Board (page 8-87).
15	Perform the Tray 1 (MPT) Turn Clutch test (page 4-52): **Service Mode** > **Engine Diag** > **Motor Test** > **Tray 1 (MPT) Turn Clutch**. Does the Clutch operate properly?	Go to step 19.	Go to step 16.
16	Check the wiring harness connectors P/J23 and P/J234 between the MCU Board and the Turn Clutch. Are the connectors securely connected?	Go to step 17.	Reconnect the connectors.
17	Check the Right Side Harness for continuity. 1. Disconnect P/J23 and P/J234. 2. Check continuity between P/J23 <=> P/J234.	Go to step 18.	Replace the Right Side Harness.
18	Check the Turn Clutch signal. 1. Disconnect P/J23 on the MCU Board. 2. Is there +24 V across ground <=> J23-13 when the Interlock Switch is activated?	Replace the Turn Clutch (page 8-47).	Replace the MCU Board (page 8-87).
19	Perform the Tray 2 Motor test (page 4-42): **Service Mode** > **Engine Diag** > **Motor Test** > **Tray 2 Motor**. Does the Motor operate properly?	Go to step 22.	Go to step 20.
20	Check the Right Side Harness for continuity. 1. Disconnect P/J25 and P/J251. 2. Check continuity between P/J25 <=> P/J251.	Go to step 21.	Replace the Right Side Harness.
21	Check the Drive Assembly signal. 1. Disconnect P/J25 on the MCU Board. 2. Is there +24 V across ground <=> J25-1/J25-2 when the Interlock Switch is activated>	Replace the Drive Assembly (page 8-76).	Replace the MCU Board (page 8-87).

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
22	Check the following for evidence of fault or damage: ■ Retard Roll, PL2.1.7 ■ MPT Feed Roll, PL3.1.10 ■ Turn Roll, 3.2.32 Is the part damaged?	Replace the MCU Board (page 8-87).	Replace the defective part(s). ■ Retard Roll (page 8-24) ■ MPT Feed Roll (page 8-39) ■ Turn Roll (page 8-43)

Jam at Tray 2 (Feed Jam)

Paper fed from Tray 2 did not reach the Registration Sensor on time.

Applicable Chain Link

- **Chain Link 077-903**: Jam at Tray 2

Initial Actions

- Ensure that Tray 1 (MPT) is attached to the printer.
- Try picking paper from a different tray.
- Check the paper 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 Reference
■ MCU Board, PL9.1.20 ■ Tray 1 (MPT) Retard Holder Kit, PL2.1.3 ■ Roll Assy Feed (Feed Roll), PL3.1.10 ■ Feeder Unit, PL3.2.1 ■ Feed Roll, PL3.2.53	■ "Map 2 - Laser Unit" on page 10-11 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Tray 1 (MPT) and Registration" on page 10-32 ■ "Feeder" on page 10-36

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Perform the Registration Sensor test (page 4-29): **Service Mode** > **Engine Diag** > **Sensor Test** > **Regi Sensor**. Does the number on the Control Panel increase by 1 when the Actuator of the Registration Sensor is activated?	Go to step 3.	Go to step 2.
2	Check the wiring harness connectors P/J23, P/J232, and P/J2322 between the MCU Board and the Registration Sensor. Are the connectors securely connected?	Go to step 3.	Reconnect the connectors.
3	Check the paper feed. Does multiple feed occur?	Go to step 4.	Replace the MCU Board (page 8-87). Go to step 4.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Replace the paper. Does multiple feed still occur?	Replace the damaged part(s): ■ Retard Holder (page 8-24) ■ Tray 2 Feed Roll (page 8-49) ■ Feeder Unit (page 8-43).	Complete.

Jam at Exit/Jam at Registration Roll

The Registration Sensor indicates that paper did not reach the sensor on time or that paper remains in the Registration Chute.

Warning

The Fuser may be hot. Turn the printer power Off and allow at least 5 minutes for the Fuser to cool before removing the Fuser.

Applicable Chain Link

- **Chain Link 077-900**: Jam at Exit
- **Chain Link 077-901**: Jam at Reg. Roll

Initial Actions

- 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.
- Ensure the correct tray loading and setup procedures are followed (securing the guides, selecting the correct paper type, fanning the paper, etc.)
- Make sure the printer is plugged directly into an electrical outlet. Using extension cords or a power strip is not recommended.
- 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.
- Determine if jamming is occurring in one tray but not another. This helps to identify any dirty or defective parts.
- Clear the paper path of any jams and paper debris. Start at the Turn Chute and work up to the Registration Chute Assembly.
- Clean the paper Feed and Retard Rollers in the paper tray and tray slot using a slightly damp (water only) lint free cloth.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting References Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Registration Sensor Harness, PL3.2.37 ■ Fuser Harness, PL6.1.11 ■ Right Side Harness, PL10.1.15 ■ Feeder, PL3.2.1 ■ MCU Board, PL9.1.20 ■ Drive Assembly, PL8.1.7 ■ Main Drive, PL8.1.2	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 2 - Laser Unit" on page 10-11 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Main Drive" on page 10-34 ■ "Feeder" on page 10-36 ■ "Fuser" on page 10-46

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the paper condition. Is the paper damaged?	Replace the paper. Go to step 2.	Go to step 2.
2	Open and close the Front Cover to check the latches. Does the error still occur?	Go to step 3.	Complete.
3	Reseat the Fuser. Does the error still occur?	Go to step 4.	Complete.
4	Perform the Exit Sensor test (page 4-28): **Service Mode** > **Engine Diag** > **Sensor Test** > **Exit Sensor**. Does the number on the Control Panel increase by 1 when the Actuator of the Exit Sensor is activated?	Go to step 9.	Go to step 5.
5	Check the wiring harness connectors P/J17 and P/J171 between the MCU Board and the Fuser. Are the connectors securely connected?	Go to step 6.	Reconnect the connectors.
6	Check the Fuser Harness for continuity. 1. Disconnect P/J17 and P/J171. 2. Check continuity between P/J17 <=> P/J171.	Go to step 7.	Replace the Fuser Harness.
7	Check the Fuser signal. 1. Disconnect P/J17 on the MCU Board. 2. Is there +3.3 V across ground <=> J17-1?	Go to step 8.	Replace the MCU Board (page 8-87).

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
8	Check the Exit Sensor for signal. 1. Measure the voltage across ground <=> P/J17-3. 2. Does the voltage change when the Actuator of the Exit Sensor is activated?	Replace the MCU Board (page 8-87).	Replace the Fuser (page 8-10).
9	Perform the Registration Sensor test (page 4-29): **Service Mode** > **Engine Diag** > **Sensor Test** > **Regi Sensor**. Does the number on the Control Panel increase by 1 when the Actuator of the Registration Sensor is activated?	Go to step 15.	Go to step 10.
10	Check the wiring harness connectors P/J23, P/J232, and P/J2322 between the MCU Board and the Registration Sensor. Are the connectors securely connected?	Go to step 11.	Reconnect the connectors.
11	Check the Registration Sensor Harness for continuity. 1. Disconnect P/J232 and P/J2322. 2. Check continuity between P/J232 <=> P/J2322.	Go to step 12.	Replace the Registration Sensor Harness.
12	Check the Right Side Harness for continuity. 1. Disconnect P/J23 and P/J232. 2. Check continuity between P/J23 <=> P/J232.	Go to step 13.	Replace the Right Side Harness.
13	Check the Registration Sensor for continuity. 1. Disconnect P/J23 on the MCU Board. 2. Is there +3.3 V across ground <=> J23-8?	Go to step 14.	Replace the MCU Board (page 8-87).
14	Check the Registration Sensor signal. 1. Measure the voltage across ground <=> J23-10 on the MCU Board. 2. Does the voltage change when the Actuator of the Registration Sensor is activated?	Replace the MCU Board (page 8-87).	Replace the Feeder (page 8-43).
15	Perform the Main Motor test (page 4-40): **Service Mode** > **Engine Diag** > **Motor Test** > **Main Motor**. Does the Motor operate properly?	Go to step 19.	Go to step 16.
16	Check the wiring harness connectors P/J21 and P/J211 between the MCU Board and the Main Drive. Are the connectors securely connected?	Go to step 17.	Reconnect the connectors.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
17	Check the Right Side Harness for continuity. 1. Disconnect P/J21 and P/J211. 2. Check continuity between P/J21 <=> P/J211.	Go to step 18.	Replace the Right Side Harness.
18	Check the Main Drive signal. 1. Disconnect P/J21 from the MCU Board. 2. Is there +24 V across ground <=> J21-2/J21-4?	Replace the Main Drive (page 8-73).	Replace the MCU Board (page 8-87).
19	Perform the Sub Motor test (page 4-41): **Service Mode** > **Engine Diag** > **Motor Test** > **Sub Motor**. Does the Motor operate properly?	Go to step 23.	Go to step 20.
20	Check the wiring harness connectors P/J22 and P/J221 between the MCU Board and the Main Drive. Are the connectors securely connected?	Go to step 21.	Reconnect the connectors.
21	Check the Right Side Harness for continuity. 1. Disconnect P/J22 and P/J221. 2. Check continuity between P/J22 <=> P/J221.	Go to step 22.	Replace the Right Side Harness.
22	Check the Main Drive signal. 1. Disconnect P/J22 on the MCU Board. 2. Is there +24 V across ground <=> J22-A2/J22-A4 when the Interlock Switch is activated?	Replace the Main Drive (page 8-73).	Replace the MCU Board (page 8-87).
23	Perform the Tray 2 Motor test (page 4-42): **Service Mode** > **Engine Diag** > **Motor Test** > **Tray 2 Motor**. Does the Motor operate properly?	Go to step 27.	Go to step 24.
24	Check the wiring harness connectors P/J25 and P/J251 between the MCU Board and the Tray 2 Motor. Are the connectors securely connected?	Go to step 25.	Reconnect the connectors.
25	Check the Right Side Harness for continuity. 1. Disconnect P/J25 and P/J251. 2. Check continuity between P/J25 <=> P/J251.	Go to step 26.	Replace the Right Side Harness.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
26	Check the Drive Assembly signal. 1. Disconnect P/J25 on the MCU Board. 2. Is there +24 V across ground <=> J25-1/J25-2 when the Interlock Switch is activated?	Replace the Drive Assembly (page 8-76).	Replace the MCU Board (page 8-87).
27	Perform the Regi Clutch test (page 4-51): **Service Mode** > **Engine Diag** > **Motor Test** > **Regi Clutch**. Does the Clutch operate properly?	Go to step 31.	Go to step 28.
28	Check the wiring harness connectors P/J23 and P/J233 between the MCU Board and the Registration Clutch. Are the connectors securely connected?	Go to step 29.	Reconnect the connectors.
29	Check the Right Side Harness continuity. 1. Disconnect P/J23 and P/J233. 2. Check continuity between P/J23 <=> P/J233.	Go to step 30.	Replace the Right Side Harness.
30	Check the Registration Clutch signal. 1. Disconnect P/J23 on the MCU Board. 2. Is there +24 V across ground <=> P/J23 when the Interlock Switch is activated?	Replace the Feeder (page 8-43).	Replace the MCU Board (page 8-87).
31	Check the Fuser. Are there any paper debris in the Fuser?	Remove the debris.	Go to step 17.
32	Check the Rubber Registration Roll and Metal Registration Roll for operation. Are the Rolls correctly installed? Are there any contaminations on the Rolls?	Go to step 33.	Replace the Feeder (page 8-43).
33	Check the Transfer Unit for correct installation. 1. Reseat the Transfer Unit. 2. Does the error still occur?	Replace the MCU Board (page 8-87).	Complete.

Jam at Duplexer

The Duplex Jam Sensor indicates the paper did not reach the sensor on time or that paper remains in the Chute Assembly Out.

Applicable Chain Link

- **Chain Link 077-907**: Jam at Duplexer

Initial Actions

- Check for obstruction or debris in the Exit Chute Out or paper path.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map Reference
■ Registration Sensor Harness, PL3.2.37 ■ Fuser Harness, PL6.1.11 ■ Right Side Harness, PL10.1.15 ■ Feeder Unit, PL3.2.1 ■ MCU Board, PL9.1.20 ■ Main Drive, PL8.1.2 ■ Drive Assembly, PL8.1.7 ■ Front Cover Harness, PL1.2.11 ■ Exit Out Chute, PL6.1.1 ■ Duplex Gate Chute, PL6.1.13 ■ Duplex Harness, PL11.1.18 ■ Duplex Unit, PL11.1.1	■ “Map 1 - Electrical and Drive” on page 10-10 ■ “Map 2 - Laser Unit” on page 10-11 ■ “Map 4 - LVPS and MCU Board” on page 10-13 ■ “Map 5 - Duplex Unit” on page 10-14 ■ “Tray 1 (MPT) and Registration” on page 10-32 ■ “Main Drive” on page 10-34 ■ “Feeder” on page 10-36 ■ “Fuser” on page 10-46 ■ “Duplex Wiring Diagram” on page 10-52

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Front Cover Latch. Open and close the Front Cover. Does the error still occur?	Go to step 2.	Complete.
2	Reseat the Fuser. Does the error still occur?	Go to step 3.	Complete.
3	Reseat the Duplex Gate Chute. Does the error still occur?	Go to step 4.	Complete.
4	Check the Duplex Gate Chute for correct installation. Reseat the Duplex Gate Chute. Does the error still occur?	Go to step 5.	Replace the Duplex Gate Chute (page 8-64).

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
5	Check the Exit Out Chute for correct installation. Is the Exit Out Chute correctly installed?	Go to step 6.	Reseat the Exit Out Chute. If damaged, replace the Exit Out Chute (page 8-63).
6	Perform the Duplex Jam Sensor test (page 4-27): **Service Mode** > **Engine Diag** > **Sensor Test** > **DuplexJamSensor.** Does the number increase by 1 when the Actuator of the Sensor is activated?	Go to step 13.	Go to step 7.
7	Check the wiring harness connectors P/J428, P/J2720, P/J272, and P/J27 between the Duplex Board and the MCU Board. Are the connectors securely connected?	Go to step 8.	Reconnect the connectors.
8	Check the Duplex Harness for continuity. 1. Disconnect P/J428 and P/J2720. 2. Check continuity between P/J428 <=> P/J2720.	Go to step 9.	Replace the Duplex Harness.
9	Check the Front Cover Harness for continuity. 1. Disconnect P/J2720 and P/J272. 2. Check continuity between P/J2720 <=> P/J272.	Go to step 10.	Replace the Front Cover Harness.
10	Check the Right Side Harness for continuity. 1. Disconnect P/J272 and P/J27. 2. Check continuity between P/J272 <=> P/J27.	Go to step 11.	Replace the Right Side Harness.
11	Check the Duplex Board signal. 1. Disconnect P/J27 on the MCU Board. 2. Is there +3.3 V across ground <=> J27-15?	Go to step 12.	Replace the MCU Board (page 8-87).
12	Replace the Duplex Unit (page 8-94). Does the error still occur?	Go to step 13.	Complete.
13	Perform the Duplex Clutch test (page 4-57): **Service Mode** > **Engine Diag** > **Motor Test** > **Duplex Clutch.** Does the Clutch operate properly?	Go to step 14.	Perform steps 7-12.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
14	Perform the Duplex Motor test (page 4-44): **Service Mode** > **Engine Diag** > **Motor Test** > **Duplex Motor.** Does the Motor operate properly?	Go to step 15.	Perform steps 7-12.
15	Perform the Tray 1 (MPT) Turn Clutch test (page 4-52): **Service Mode** > **Engine Diag** > **Motor Test** > **Tray 1 (MPT) Turn Clutch.** Does the Clutch operate properly?	Go to step 19.	Go to step 16.
16	Check the wiring harness connectors P/J23 and P/J234 between the Tray 2 Turn Clutch and the MCU Board.	Go to step 17.	Reconnect the connectors.
17	Check the Right Side Harness for continuity. 1. Disconnect P/J23 and P/J234. 2. Check continuity between P/J23 <=> P/J234.	Go to step 18.	Replace the Right Side Harness.
18	Check the Tray 2 Turn Clutch signal. 1. Disconnect P/J123 on the MCU Board. 2. Is there +24 V across ground <=> J23-13 when the Interlock Switch is activated?	Replace the Feeder (page 8-43).	Replace the MCU Board (page 8-87).
19	Perform the Tray 2 Motor test (page 4-42): **Service Mode** > **Engine Diag** > **Motor Test** > **Tray 2 Motor.** Does the Motor operate properly?	Replace the MCU Board (page 8-87).	Go to step 20.
20	Check the wiring harness connectors P/J25 and P/J251 between the Drive Assembly and the MCU Board. Are the connectors securely connected?	Go to step 21.	Reconnect the connectors.
21	Check the Right Side Harness for continuity. 1. Disconnect P/J25 and P/J251. 2. Check continuity between P/J25 <=> P/J251.	Go to step 22.	Replace the Right Side Harness.
22	Check the Drive Assembly signal. 1. Disconnect P/J25 on the MCU Board. 2. Is there +24 V across ground <=> J25-1/J25-2 when the Interlock Switch is activated?	Replace the Drive Assembly (page 8-76).	Replace the MCU Board (page 8-87).

Consumable/Routine Maintenance Procedures

Insert Fuser

The printer does not detect the presence of the Fuser.

Warning

The Fuser may be hot. Turn the printer power Off and allow at least 5 minutes for the Fuser to cool before removing the Fuser.

Applicable Chain Link

- **Chain Link 010-317**: Insert Fuser

Initial Actions

- Ensure that the Fuser latches are fully locked.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map Reference
■ Fuser, PL6.1.10 ■ MCU Board, PL9.1.20 ■ Fuser Harness, PL6.1.11	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Fuser" on page 10-46

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Fuser for correct installation.	Go to step 3.	Reseat the Fuser. Go to step 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Check the wiring harness connectors P/J17 and P/J171 between the MCU Board and the Fuser. Are the connectors securely connected?	Go to step 4.	Reconnect the connectors. Go to step 4.
4	Check the Fuser Harness for continuity. 1. Disconnect P/J17 and P/J171. 2. Check continuity between P/J17 <=> P/J171.	Go to step 5.	Replace the Fuser Harness.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
5	Check the resistance of temperature sensor in the Fuser. 1. Remove the Fuser. 2. Disconnect P/J171. 3. Check continuity between: ■ P/J171-8 <=> P/J171-7 ■ P/J171-4 <=> P/J171-6 ■ P/J171-4 <=> P/J171-5	Replace the MCU Board (page 8-87).	Replace the Fuser (page 8-10).

Replace Fuser

The Fuser has reached its end of life.

Warning

The Fuser may be hot. Turn the printer power Off and allow at least 5 minutes for the Fuser to cool before removing the Fuser.

Applicable Chain Link

- **Chain Link 010-351**: Replace Fuser

Initial Action

- Check the Fuser life using CentreWare IS.
- Cycle printer power.
- If problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Fuser, PL6.1.10 ■ MCU Board, PL9.1.20	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Fuser" on page 10-46

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Fuser life using CentreWare IS. Does the Level show 0%?	Replace the Fuser (page 8-10).	Go to step 2.
2	Is the Fuser correctly installed?	Go to step 3.	Reseat the Fuser.
3	Does the error still occur?	Go to step 4.	Complete.
4	Replace the Fuser (page 8-10). Does the error still occur?	Replace the MCU Board (page 8-87).	Complete.

Fuser CRUM ID Error

The Fuser CRUM ID error is detected.

Warning

The Fuser may be hot. Turn the printer power Off and allow at least 5 minutes for the Fuser to cool before removing the Fuser.

Applicable Chain Link

- **Chain Link 010-359**: Fuser CRUM Error

Initial Actions

- Ensure that the Fuser latches are fully locked.
- Cycle printer power.
- If problem persists, follow the procedure below.

Troubleshooting Reference

Applicable Parts	Wiring and Plug/Jack Map References
■ Fuser, PL6.1.10 ■ MCU Board, PL9.1.20	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Fuser" on page 10-46

Troubleshooting Procedure

Step	Actions and Questions	Yes	No
1	Check the Fuser for correct installation.	Go to step 3.	Reseat the Fuser. Go to step 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Replace the Fuser (page 8-10). Does the error still occur?	Replace the MCU Board (page 8-87).	Complete.

Fuser Error

The Fuser temperature regulation has failed.

Warning

The Fuser may be hot. Turn the printer power Off and allow at least 5 minutes for the Fuser to cool before removing the Fuser.

Applicable Chain Link

- **Chain Link 010-397**: Fuser Error

Initial Actions

- Ensure that the Fuser latches are fully locked.
- Cycle printer power.
- If problem persists, follow the procedure below.

Troubleshooting References

Applicable Parts	Wiring and Plug/Jack Map References
■ Fuser, PL6.1.10 ■ Fuser Harness, PL6.1.11 ■ Top LV Harness, PL10.1.16 ■ LVPS, PL9.1.4 ■ MCU Board, PL9.1.20	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Fuser" on page 10-46

Troubleshooting Procedure

Step	Actions and Questions	Yes	No
1	Check the Fuser for correct installation.	Go to step 2.	Reseat the Fuser. Go to step 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Check the wiring harness connectors P/J17, P/J171, P/J47, P/J501, and P/J14. Are the connectors securely connected?	Go to step 4.	Reconnect the connectors.
4	Check the Fuser Harness for continuity. 1. Disconnect P/J17 and P/J171. 2. Check continuity between P/J17 <=> P/J171.	Go to step 5.	Replace the Fuser Harness.

Troubleshooting Procedure

Step	Actions and Questions	Yes	No
5	Check the Top LV Harness for continuity. 1. Disconnect P/J171, P/J47, P/J501, and P/J14. 2. Check continuity between: ■ P/J47 <=> P/J171 ■ P/J501 <=> P/J14	Go to step 6.	Replace the Top LV Harness.
6	Replace the Fuser (page 8-10). Does the error still occur?	Go to step 7.	Complete.
7	Replace the LVPS (page 8-81).	Replace the MCU Board (page 8-87).	Complete.

Ready Fuser Life

The Fuser has reached its end of life.

Warning

The Fuser may be hot. Turn the printer power Off and allow at least 5 minutes for the Fuser to cool before removing the Fuser.

Applicable Chain Link

- **Chain Link 010-421**: Ready Fuser Life

Initial Actions

- Check the Fuser life using CentreWare IS.
- Cycle printer power.
- If problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Fuser, PL6.1.10 ■ MCU Board, PL9.1.20	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Fuser" on page 10-46

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Fuser for correction installation. Is the Fuser correctly installed?	Go to step 3.	Reseat the Fuser. Go to step 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Replace the Fuser (page 8-10). Does the error still occur?	Replace the MCU Board (page 8-87).	Complete.

Print Cartridge Near Life (Yellow/Magenta/Cyan/Black)

The Print Cartridge (Yellow/Magenta,/Cyan/Black) is near or has reached its end of life.

Applicable Chain Links

- **Chain Link 093-423**: Yellow Cartridge Low
- **Chain Link 093-424**: Magenta Cartridge Low
- **Chain Link 093-425**: Cyan Cartridge Low
- **Chain Link 093-426**: Black Cartridge Low

Initial Actions

- Check the Print Cartridge life using CentreWare IS.
- Cycle printer power.
- If problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Print Cartridge (Y/M/C/K), PL5.1.18-21 ■ MCU Board, PL9.1.20	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Print Cartridge for correct installation. Is the Print Cartridge correctly installed?	Go to step 3.	Reseat the Print Cartridge. Go to step 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Replace the Print Cartridge (page 8-9). Does the error still occur?	Replace the MCU Boar (page 8-87).	Complete.

Check Cartridge (Yellow/Magenta/Cyan/Black)

The Print Cartridge (Yellow/Magenta/Cyan/Black) tape was not removed when a new Print Cartridge is installed.

Applicable Chain Links

- **Chain Link 093-919**: Check Yellow Cartridge
- **Chain Link 093-920**: Check Magenta Cartridge
- **Chain Link 093-921**: Check Cyan Cartridge
- **Chain Link 093-922**: Check Black Cartridge

Initial Actions

- Check the Print Cartridge life using CentreWare IS.
- Cycle printer power.
- If problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Print Cartridge (Y/M/C/K), PL5.1.18-21 ■ MCU Board, PL9.1.20 ■ Dispenser, PL5.1.12 ■ Top LV Harness, PL10.1.16	■ "Map 3 - Image Processor Board and Dispenser" on page 10-12 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Developer" on page 10-44

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Print Cartridge tape. Has the tape been removed?	Go to step 2.	Remove the tape on the Print Cartridge. Go to step 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Replace the Print Cartridge (page 8-9). Does the error still occur?	Go to step 4.	Complete.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Perform the Toner Motor test: **Service Mode** > **Engine Diag** > **Motor Test** > **Toner Motor**. ■ Yellow Toner Motor (page 4-47) ■ Magenta Toner Motor (page 4-48) ■ Cyan Toner Motor (page 4-49) ■ Black Toner Motor (page 4-50) While testing the Toner Motor, close the Interlock Harness.	Check the gear of the Auger for damage. If the gear is damaged, replace the Dispenser (page 8-56).	Go to step 5.
5	Check the Dispenser wiring harness connectors. ■ Yellow: P/J18 and P/J181 ■ Magenta: P/J18 and P/J182 ■ Black: P/J18 and P/J183 ■ Cyan: P/J18 and P/J184 Are the connectors securely connected?	Go to step 6.	Reconnect the connectors. Go to step 6.
6	Does the error still occur?	Go to step 7.	Complete.
7	Check the Top LV Harness for continuity. 1. Disconnect P/J Harnesses. ■ Yellow: P/J18 and P/J181 ■ Magenta: P/J18 and P/J182 ■ Black: P/J18 and P/J183 ■ Cyan: P/J18 and P/J184 2. Check continuity between P/J connectors: ■ Yellow: P/J18 <=> P/J181 ■ Magenta: P/J18 <=> P/J182 ■ Black: P/J18 <=> P/J183 ■ Cyan: P/J18 <=> P/J184	Go to step 8.	Complete.
8	Check the Dispenser signal. 1. Disconnect P/J18 from the MCU Board. 2. When the Interlock Switch is activated, is there +24 V across: ■ Ground <=> P/J18-A1/P/J18-A2 (Yellow) ■ Ground <=> P/J18-A7/P/J18-A8 (Magenta) ■ Ground <=> P/J18-B1/P/J18-B2 (Black) ■ Ground <=> P/J18-B7/P/J18-B8 (Cyan)	Replace the Dispenser (page 8-56).	Replace the MCU Board (page 8-87).

Replace Print Cartridge (Yellow/Magenta/Cyan/Black)

The Print Cartridge (Yellow/Magenta,/Cyan/Black) has reached its end of life.

Applicable Chain Links

- **Chain Link 093-930**: Replace Yellow Cartridge
- **Chain Link 093-931**: Replace Magenta Cartridge
- **Chain Link 093-932**: Replace Cyan Cartridge
- **Chain Link 093-933**: Replace Black Cartridge

Initial Actions

- Check the Print Cartridge life using CentreWare IS.
- Cycle printer power.
- If problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Print Cartridge (Y/M/C/K), PL5.1.18-21 ■ MCU Board, PL9.1.20	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Print Cartridge for correct installation. Is the Print Cartridge correctly installed?	Go to step 3.	Reseat the Print Cartridge. Go to step 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Replace the Print Cartridge (page 8-9). Does the error still occur?	Replace the MCU Board (page 8-87).	Complete.

Empty Print Cartridge

The Print Cartridge has reached its end of life.

Applicable Chain Link

- **Chain Link 093-935**: Replace Yellow Cartridge
- **Chain Link 093-936**: Replace Magenta Cartridge
- **Chain Link 093-937**: Replace Cyan Cartridge
- **Chain Link 093-938**: Replace Black Cartridge

Initial Actions

- Check the Print Cartridge life using CentreWare IS.
- Cycle printer power.
- If problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Print Cartridge (Y/M/C/K), PL5.1.18-21 ■ MCU Board, PL9.1.20	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Print Cartridge for correct installation. Is the Print Cartridge correctly installed?	Go to step 3.	Reseat the Print Cartridge. Go to step 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Replace the Print Cartridge (page 8-9). Does the error still occur?	Replace the MCU Board (page 8-87).	Complete.

Print Cartridge CRUM Error (Yellow/Magenta/Cyan/Black)

The Print Cartridge CRUM communication is detected.

Applicable Chain Link

- **Chain Link 093-950**: Yellow CRUM Error
- **Chain Link 093-951**: Magenta CRUM Error
- **Chain Link 093-952**: Cyan CRUM Error
- **Chain Link 093-925**: Black CRUM Error

Initial Actions

- Check the Print Cartridge life using CentreWare IS.
- Cycle printer power.
- If problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Print Cartridge (Y/M/C/K), PL5.1.18-21 ■ CRUM Connector, PL5.1.3 ■ CRUM Harness, PL10.1.13 ■ MCU Board, PL9.1.20	■ "Map 2 - Laser Unit" on page 10-11 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Developer" on page 10-44

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Print Cartridge for correct installation. Is the Print Cartridge correctly installed?	Go to step 3.	Reseat the Print Cartridge. Go to step 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Check the CRUM Connector for correct installation. Is the connector securely connected?	Go to step 4.	Reseat the CRUM Connector. Go to step 4.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Check the wiring harness connectors between the CRUM Connector and the MCU Board. ■ Yellow: P/J31 and P/J311 ■ Magenta: P/J31 and P/J312 ■ Cyan: P/J31 and P/J313 ■ Black: P/J31 and P/J314 Are the connectors securely connected?	Go to step 5.	Reconnect the connectors. Go to step 5.
5	Check the CRUM Harness for continuity. 1. Disconnect the wiring harnesses from the Connector CRUM and MCU Board. ■ Yellow: P/J31 and P/J311 ■ Magenta: P/J31 and P/J312 ■ Cyan: P/J31 and P/J313 ■ Black: P/J31 and P/J314 2. Check continuity between P/J connectors: ■ Yellow: P/J31 <=> P/J311 ■ Magenta: P/J31 <=> P/J312 ■ Cyan: P/J31 <=> P/J313 ■ Black: P/J31 <=> P/J314	Go to step 6.	Replace the CRUM Harness.
6	Check the CRUM Connector for damages. Is the CRUM Connector damaged?	Replace the CRUM Connector (page 8-52).	Go to step 7.
7	Replace the CRUM Connector (page 8-52). Does the error still occur?	Go to step 8.	Complete.
8	Replace the Print Cartridge (page 8-9). Does the error still occur?	Replace the MCU Board (page 8-87).	Complete.

Print Cartridge CRUM ID Error (Yellow/Magenta/Cyan/Black)

The Print Cartridge CRUM ID error indicates that a non-Xerox Print Cartridge is installed.

Applicable Chain Link

- **Chain Link 093-960**: Non-Xerox Toner, Invalid Yellow
- **Chain Link 093-961**: Non-Xerox Toner, Invalid Magenta
- **Chain Link 093-962**: Non-Xerox Toner, Invalid Cyan
- **Chain Link 093-926**: Non-Xerox Toner, Invalid Black
- **Chain Link 191-700**: Non-Xerox Toner

Initial Actions

- Check the Print Cartridge life using CentreWare IS.
- Cycle printer power.
- If problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Print Cartridge (Y/M/C/K), PL5.1.18-21 ■ MCU Board, PL9.1.20	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Print Cartridge for correct installation. Is the Print Cartridge correctly installed?	Go to step 3.	Reinstall the Print Cartridge.
2	Does the error still occur?	Go to step 3.	Complete.
3	Reseat the Print Cartridge. Does the error still occur?	Go to step 4.	Complete.
4	Replace the Print Cartridge (page 8-9). Does the error still occur?	Replace the MCU Board (page 8-87).	Complete.

Insert Print Cartridge (Yellow/Cyan/Magenta/Black)

The printer does not detect the Print Cartridge.

Applicable Chain Links

- **Chain Link 093-970**: Insert Yellow Cartridge
- **Chain Link 093-971**: Insert Magenta Cartridge
- **Chain Link 093-972**: Insert Cyan Cartridge
- **Chain Link 093-973**: Insert Black Cartridge

Initial Actions

- Check the Print Cartridge life using CentreWare IS.
- Cycle printer power.
- If problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Print Cartridge (Y/M/C/K), PL5.1.18-21 ■ Print Cartridge Sensor, PL5.1.4 ■ Toner Sensor Harness, PL10.1.9 ■ MCU Board, PL9.1.20	■ "Developer" on page 10-44

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Print Cartridge for correct installation. Is the Print Cartridge correctly installed?	Go to step 3.	Reseat the Print Cartridge.
2	Does the error still occur?	Go to step 3.	Complete.
3	Replace the Print Cartridge (page 8-9). Does the error still occur?	Go to step 4.	Complete.
4	Perform the CRU Sensor test: **Service Mode** > **Sensor Test** > **CRU Sensor**. ■ Yellow CRU Sensor (page 4-31) ■ Magenta CRU Sensor (page 4-32) ■ Black CRU Sensor (page 4-33) ■ Cyan CRU Sensor (page 4-34) Does the number on the Control Panel increase by 1 when the Print Cartridge is reseated?	Replace the MCU Board (page 8-87).	Go to step 5.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
5	Check the Toner Sensor wiring harness connectors between the Print Cartridge Sensor and the MCU Board. ■ Yellow: P/J19 and P/J191 ■ Magenta: P/J19 and P/J192 ■ Black: P/J19 and P/J193 ■ Cyan: P/J19 and P/J194 Are the connectors securely connected?	Go to step 6.	Reconnect the connectors. Go to step 6.
6	Does the error still occur?	Go to step 7.	Complete.
7	Check the Toner Sensor Harness for continuity. 1. Disconnect P/J Harnesses from the MCU Board and the Print Cartridge Sensor. ■ Yellow: P/J19 and P/J191 ■ Magenta: P/J19 and P/J192 ■ Black: P/J19 and P/J193 ■ Cyan: P/J19 and P/J194 2. Check continuity between P/J connectors: ■ Yellow: P/J19 <=> P/J191 ■ Magenta: P/J19 <=> P/J192 ■ Black: P/J19 <=> P/J193 ■ Cyan: P/J19 <=> P/J194	Go to step 8.	Replace the Toner Sensor Harness.
8	Check the Print Cartridge Sensor signal. 1. Disconnect P/J19 from the MCU Board. 2. Is there +3.3 V across the Toner Sensor Harness? ■ Yellow: J19-1 <=> J19-2 ■ Magenta: J19-4 <=> J19-5 ■ Black: J19-7 <=> J19-8 ■ Cyan: J19-10 <=> J19-11	Go to step 9.	Replace the MCU Board (page 8-87).
9	Check the Print Cartridge Sensor for operation. 1. Measure the voltage across: ■ Ground <=> P/J19-3 (Yellow) ■ Ground <=> P/J19-6 (Magenta) ■ Ground <=> P/J19-9 (Black) ■ Ground <=> P/J19-12 (Cyan) 2. Does the voltage change when the paper is inserted into the sensor detecting point?	Replace the MCU Board (page 8-87).	Replace the Print Cartridge Sensor: ■ Black (page 8-53) ■ Yellow/ Magenta/Cyan (page 8-54)

Insert Transfer Unit

The printer does not detect the Transfer Unit.

Applicable Chain Link

- **Chain Link 094-910**: Insert Transfer Unit

Initial Actions

- Remove and reseat the Transfer Unit.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Transfer Unit, PL4.1.1 ■ MCU Board, PL9.1.20 ■ Front Cover Harness, PL1.2.11 ■ Right Side Harness, PL10.1.15	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Xerographic" on page 10-40

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Is the Transfer Unit installed correctly?	Go to step 2.	Reseat the Transfer Unit.
2	Does the error still occur?	Go to step 3.	Complete.
3	Check the wiring harness connectors P/J27, P/J272, and P/J2721 between the MCU Board and the Transfer Unit. Are the connectors securely connected?	Go to step 4.	Reconnect the connectors.
4	Check the Right Side Harness for continuity. 1. Disconnect P/J27 and P/J272. 2. Check continuity between P/J27 <=> P/J272.	Go to step 5.	Replace the Right Side Harness.
5	Check the Front Cover Harness for continuity. 1. Disconnect P/J272 and P/J2721. 2. Check continuity between P/J272 <=> P/J2721.	Go to step 6.	Replace the Front Cover Harness.
6	Replace the Transfer Unit (page 8-7). Does the error still occur?	Replace the MCU Board (page 8-87).	Complete.

Replace Transfer Unit

The Transfer Unit has reached its end of life.

Applicable Chain Link

- **Chain Link 094-011**: Replace Transfer Unit

Initial Actions

- Check the Transfer Unit life using CentreWare IS.
- Cycle printer power.
- If problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Transfer Unit, PL4.1 ■ MCU Board, PL9.1	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Xerographic" on page 10-40

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Transfer Unit life using CentreWare IS. Does the Level show 0%?	Replace the Transfer Unit (page 8-7).	Go to step 2.
2	Does the error still occur?	Replace the MCU Board (page 8-87).	Complete.

Transfer Unit CRUM Error

The Transfer Unit CRUM ID error is detected.

Applicable Chain Link

- **Chain Link 094-330**: Transfer CRUM Error

Initial Actions

- Ensure the Transfer Unit is installed correctly.
- Cycle printer power.
- If problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Transfer Unit, PL4.1 ■ MCU Board, PL9.1	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Xerographic" on page 10-40

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Transfer Unit for correct installation. Is the Transfer Unit correctly installed?	Go to step 3.	Reseat the Transfer Unit. Go to step 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Replace the Transfer Unit (page 8-7). Does the error still occur?	Replace the MCU Board (page 8-87).	Complete.

Ready Transfer Unit Life

The Transfer Unit is near or has reached its end of life.

Applicable Chain Link

- **Chain Link 094-422**: Ready Transfer Life

Initial Action

- Check the Transfer Unit life using CentreWare IS.
- Cycle printer power.
- If problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map Reference
■ Transfer Unit, PL4.1 ■ MCU Board, PL9.1	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Xerographic" on page 10-40

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Transfer Unit life using CentreWare IS. Does the Level show 0%?	Replace the Transfer Unit (page 8-7).	Go to step 2.
2	Is the Transfer Unit installed correctly?	Go to step 3.	Reseat the Transfer Unit.
3	Does the error still occur?	Replace the MCU Board (page 8-87).	Complete.

Tray and Paper Errors

Load Tray 1 (MPT) (Paper Mismatch)

The paper size mismatch is detected in Tray 1 (MPT).

Applicable Chain Link

- **Chain Link 024-958**: Load Tray 1 (MPT)

Initial Actions

- Inspect the tray to ensure that it is free of obstructions, is loaded with supported paper, and the Guides are adjusted correctly.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map Reference
■ Tray 1 (MPT) Cover, PL2.1.24 ■ Size Switch, PL7.1.18 ■ MCU Board, PL9.1.20 ■ Registration Sensor Harness, PL3.2.37 ■ Right Side Harness, PL10.1.15 ■ Registration Sensor, PL3.2.30 ■ Feeder Unit, PL3.2.1 ■ Tray 1 (MPT) Feed Roll, PL3.1.10	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 2 - Laser Unit" on page 10-11 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Main Drive" on page 10-34 ■ "Feeder" on page 10-36

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the paper size. Does the paper size meet specifications?	Go to step 2.	Replace the paper with the correct specifications.
2	Check the paper size setting. Does the paper match with the settings in the Control Panel?	Go to step 4.	Correct the paper settings in the Control Panel. Go to step 3.
3	Does the error still occur?	Go to step 4.	Complete.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Perform the Registration Sensor test (page 4-29): **Service Mode** > **Engine Diag** > **Sensor Test** > **Regi Sensor**. Does the number on the Control Panel increase by 1 when the Actuator of the Registration Sensor is activated?	Go to step 10.	Go to step 5.
5	Check the wiring harness connectors P/J23, P/J232, and P/J2322 between the MCU Board and the Registration Sensor. Are the connectors securely connected?	Go to step 6.	Reconnect the connectors.
6	Check the Registration Sensor Harness for continuity. 1. Disconnect P/J232 and P/J2322. 2. Check continuity between P/J232 <=> P/J2322.	Go to step 7.	Replace the Registration Sensor Harness.
7	Check the Right Side Harness for continuity. 1. Disconnect P/J23 and P/J232. 2. Check continuity between P/J23 <=> P/J232.	Go to step 8.	Replace the Right Side Harness.
8	Check the Registration Sensor for continuity. 1. Disconnect P/J23 on the MCU Board. 2. Is there +3.3 V across ground <=> J23-8?	Go to step 9.	Replace the MCU Board (page 8-87).
9	Check the Registration Sensor signal. 1. Measure the voltage across ground <=> J23-10 on the MCU Board. 2. Does the voltage change when the Actuator of the Registration Sensor is activated?	Replace the MCU Board (page 8-87).	Replace the Feeder (page 8-43). Go to step 10.
10	Check the Rollers for rotation. Does the Rollers rotate smoothly?	Replace the MCU Board (page 8-87).	Replace the defective Rollers. ■ Tray 1 (MPT) Feed Roll (page 8-39)

Load Tray 2 (Paper Mismatch)

The paper size mismatch is detected in Tray 2.

Applicable Chain Link

- **Chain Link 024-910**: Load Tray 2

Initial Actions

- Inspect the tray to ensure that it is free of obstructions, is loaded with supported paper, and the guides are adjusted correctly.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map Reference
■ Tray 2, PL2.1.1 ■ Size Switch, PL7.1.18 ■ MCU Board, PL9.1.20 ■ Registration Sensor Harness, PL3.2.37 ■ Right Side Harness, PL10.1.15 ■ Registration Sensor, PL3.2.30 ■ Feeder Unit, PL3.2.1 ■ Tray 2 Retard Roll, PL2.2.17	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 2 - Laser Unit" on page 10-11 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Main Drive" on page 10-34 ■ "Feeder" on page 10-36

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the paper size. Does the paper size meet the specifications?	Go to step 2.	Replace the paper with the correct specifications.
2	Check the paper size setting. Does the paper match with the settings in the Control Panel?	Go to step 4.	Correct the paper settings in the Control Panel.
3	Does the error still occur?	Go to step 4.	Complete.
4	Reseat the paper End Guide. Does the error still occur?	Go to step 5.	Complete.
5	Replace Tray 2. Does the error still occur?	Replace the MCU Board (page 8-87).	Complete.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
6	Perform the Registration Sensor test (page 4-29): **Service Mode** > **Engine Diag** > **Sensor Test** > **Regi Sensor**. Does the number on the Control Panel increase by 1 when the Actuator of the Registration Sensor is activated?	Go to step 12.	Go to step 7.
7	Check the wiring harness connectors P/J23, P/J232, and P/J2322 between the MCU Board and the Registration Sensor. Are the connectors securely connected?	Go to step 8.	Reconnect the connectors.
8	Check the Registration Sensor Harness for continuity. 1. Disconnect P/J232 and P/J2322. 2. Check continuity between P/J232 <=> P/J2322.	Go to step 9.	Replace the Registration Sensor Harness.
9	Check the Right Side Harness for continuity. 1. Disconnect P/J23 and P/J232. 2. Check continuity between P/J23 <=> P/J232.	Go to step 10.	Replace the Right Side Harness.
10	Check the Registration Sensor for continuity. 1. Disconnect P/J23 on the MCU Board. 2. Is there +3.3 V across ground <=> J23-8?	Go to step 11.	Replace the MCU Board (page 8-87).
11	Check the Registration Sensor signal. 1. Measure the voltage across ground <=> J23-10 on the MCU Board. 2. Does the voltage change when the Actuator of the Registration Sensor is activated?	Replace the MCU Board (page 8-87).	Replace the Feeder (page 8-43).
12	Perform the Tray 2 Paper Size test (page 4-38): **Service Mode** > **Engine Diag** > **Sensor Test** > **Tray 2 Paper Size.** Does the Size Switch operate properly?	Go to step 13.	Replace the Tray 2 Size Switch (page 8-72).
13	Check the Rollers for operation. Does the Rollers rotate smoothly?	Replace the MCU Board (page 8-87).	Replace the Tray 2 Retard Rollers (page 8-33).

Load Tray 3 (Paper Mismatch)

The paper size mismatch is detected in Tray 3.

Applicable Chain Link

- **Chain Link 024-911**: Load Tray 3

Initial Actions

- Inspect the tray to ensure that it is free of obstructions, is loaded with supported paper, and the guides are adjusted correctly.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Tray 3, PL12.3.1 ■ Tray 3 Size Switch, PL12.3.5 ■ MCU Board, PL9.1.20 ■ Registration Sensor Harness, PL3.2.37 ■ Right Side Harness, PL10.1.15 ■ Registration Sensor, PL3.2.30 ■ Feeder Unit, PL3.2.1 ■ Tray 3 Retard Roll, PL12.3.10	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 2 - Laser Unit" on page 10-11 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Main Drive" on page 10-34 ■ "Feeder" on page 10-36

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the paper size. Does the paper size meet the specifications?	Go to step 2.	Replace the paper with the correct specifications.
2	Check the paper size setting. Does the paper match with the settings in the Control Panel?	Go to step 4.	Correct the paper settings in the Control Panel.
3	Does the error still occur?	Go to step 4.	Complete.
4	Reseat the paper End Guide. Does the error still occur?	Go to step 5.	Complete.
5	Replace Tray 3. Does the error still occur?	Replace the MCU Board (page 8-87).	Complete.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
6	Perform the Registration Sensor test (page 4-29): **Service Mode** > **Engine Diag** > **Sensor Test** > **Regi Sensor**. Does the number on the Control Panel increase by 1 when the Actuator of the Registration Sensor is activated?	Go to step 12.	Go to step 7.
7	Check the wiring harness connectors P/J23, P/J232, and P/J2322 between the MCU Board and the Registration Sensor. Are the connectors securely connected?	Go to step 8.	Reconnect the connectors. Go to step 8.
8	Check the Registration Sensor Harness for continuity. 1. Disconnect P/J232 and P/J2322. 2. Check continuity between P/J232 <=> P/J2322.	Go to step 9.	Replace the Registration Sensor Harness.
9	Check the Right Side Harness for continuity. 1. Disconnect P/J23 and P/J232. 2. Check continuity between P/J23 <=> P/J232.	Go to step 10.	Replace the Right Side Harness.
10	Check the Registration Sensor for continuity. 1. Disconnect P/J23 on the MCU Board. 2. Is there +3.3 V across ground <=> J23-8?	Go to step 11.	Replace the MCU Board (page 8-87).
11	Check the Registration Sensor signal. 1. Measure the voltage across ground <=> J23-10 on the MCU Board. 2. Does the voltage change when the Actuator of the Registration Sensor is activated?	Replace the MCU Board (page 8-87).	Replace the Feeder (page 8-43).
12	Perform the Tray 3 Paper Size test (page 4-39): **Service Mode** > **Engine Diag** > **Sensor Test** > **Tray 3 Paper Size**. Does the Size Switch operate properly?	Go to step 13.	Replace the Tray 3 Size Switch (page 8-105).
13	Check the Rollers for operation. Does the Rollers rotate smoothly?	Replace the MCU Board (page 8-87).	Replace the Tray 3 Retard Rollers (page 8-109).

Insert Tray 2 (Tray Missing)

The Tray 2 Size Switch indicates that Tray 2 is not installed.

Applicable Chain Link

- **Chain Link 024-946**: Insert Tray 2 (Tray Missing)
- **Chain Link 077-912**: Insert Tray 2

Initial Actions

- Remove the tray and inspect the tray cavity to ensure that it is free of obstructions or debris.
- Reinstall the tray and cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Tray 2 Size Switch, PL7.1.18 ■ MCU Board, PL9.1.20 ■ Right Side Harness, PL10.1.15	■ "Map 2 - Laser Unit" on page 10-11 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Feeder" on page 10-36

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the tray for correct installation. Is Tray 2 correctly installed?	Go to step 3.	Reseat Tray 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Perform the Tray 2 Paper Size test (page 4-38): **Service Mode** > **Sensor Test** > **Tray2 Paper Size**. Does the switch operate properly?	Complete.	Go to step 4.
4	Check the Right Side Harness for continuity. 1. Disconnect P/J23 from the MCU Board. 2. Check continuity between P/J23 <=> P/J231.	Go to step 5.	Replace the Right Side Harness.
5	Replace the Tray 2 Size Switch (page 8-72). Does the error still occur?	Replace the MCU Board (page 8-87).	Complete.

Insert Tray 3 (Tray 3 Missing)

The Tray 3 Size Switch indicates that Tray 3 is not installed.

Applicable Chain Link

- **Chain Link 024-947**: Insert Tray 3 (Tray Missing)
- **Chain Link 024-947**: Insert Tray 3

Initial Actions

- Remove the tray and inspect the tray cavity to ensure that it is free of obstructions or debris.
- Reinstall the tray and cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Tray 3 Size Switch, PL12.2.5 ■ MCU Board, PL9.1.20 ■ C2 Chute Harness, PL12.2.7	■ "Map 6 - Optional 550-Sheet Feeder" on page 10-15 ■ "Optional 550-Sheet Feeder Wiring Diagram" on page 10-50

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the tray for correct installation. Is Tray 3 correctly installed?	Go to step 3.	Reseat tray 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Perform the Tray 3 Paper Size test (page 4-39): **Service Mode** > **Sensor Test** > **Tray3 Paper Size**. Does the Switch operate properly?	Complete.	Go to step 4.
4	Check the C2 Chute Harness for continuity. 1. Disconnect P/J421 and P/J4211. 2. Check continuity between P/J421 <=> P/J4211.	Go to step 5.	Replace the C2 Chute Harness.
5	Replace the Tray 3 Size Switch (page 8-105). Does the error still occur?	Replace the MCU Board (page 8-87).	Complete.

Load Tray 1 (MPT) (No Suitable Paper)

The type or size of paper mismatched or Tray 1 (MPT) is empty.

Applicable Chain Link

- **Chain Link 024-963**: Load Tray 1

Initial Actions

- Inspect the tray to ensure that it is free of obstructions, is loaded with supported paper, and the Guides are adjusted correctly.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Size Switch, PL7.1.18 ■ MCU Board, PL9.1.20 ■ Right Side Harness, PL10.1.15 ■ Feeder Unit, PL3.2.1 ■ Tray 1 (MPT) Feed Roll, PL3.1.10 ■ No Paper Actuator, PL3.2.49 ■ Tray 1 (MPT) Actuator, PL2.1.24	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Main Drive" on page 10-34 ■ "Feeder" on page 10-36 ■ "Tray 1 (MPT) and Registration" on page 10-32

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the paper size. Does the paper size meet specifications?	Go to step 2.	Replace the paper with the correct specifications.
2	Check the paper size setting. Does the paper match with the settings in the Control Panel?	Go to step 3.	Correct the paper settings in the Control Panel. Go to step 3.
3	Check the paper type. ■ Paper in the tray ■ Paper type setting in the Control Panel ■ Paper type of the printing job	Go to step 4.	Correct the paper type setting in the Control Panel.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Check the Tray 1 (MPT) Actuator. Does the Actuator operate smoothly.	Go to step 5.	Replace the Tray 1 (MPT) Actuator (page 8-28).
5	Perform the Tray 1 (MPT) No Paper test (page 4-36): **Service Mode** > **Engine Diag** > **Sensor Test** > **MPT No Paper**. Does the number on the Control Panel increase by 1 when the Actuator is activated?	Replace the MCU Board (page 8-87).	Go to step 6.
6	Check the wiring harness connectors P/J27, P/J275, and P/J2751 between the Tray 1 No Paper Sensor and the MCU Board.	Go to step 7.	Reconnect the connectors. Go to step 7.
7	Check the Right Side Harness for continuity. 1. Disconnect P/J27 and P/J275. 2. Check continuity between P/J27 <=> P/J275.	Go to step 8.	Replace the Right Side Harness.
8	Check the Tray 1 (MPT) NPP Harness for continuity. 1. Disconnect P/J275 and P/J2751. 2. Check continuity between P/J275 <=> P/J2751.	Go to step 9.	Replace the MCU Board (page 8-87).
9	Check the Tray 1 No Paper Sensor for operation. 1. Measure the voltage across ground <=> J27-B1. 2. Does the voltage change when the Tray 1 No Paper Sensor is activated?	Replace the MCU Board (page 8-87).	Replace the Tray 1 No Paper Sensor (page 8-40).

Load Tray 2 (No Suitable Paper)

The type or size of paper mismatched or Tray 2 is empty.

Applicable Chain Link

- **Chain Link 024-959**: Load Tray 2

Initial Actions

- Inspect the tray to ensure that it is free of obstructions, is loaded with supported paper, and the Guides are adjusted correctly.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Tray 2, PL2.1.24 ■ Size Switch, PL7.1.18 ■ MCU Board, PL9.1.20 ■ Registration Sensor Harness, PL3.2.37 ■ Right Side Harness, PL10.1.15 ■ Registration Sensor, PL3.2.30 ■ Feeder Unit, PL3.2.1 ■ No Paper Actuator, PL3.2.49 ■ Tray 2 No Paper Sensor, PL3.2.30	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 2 - Laser Unit" on page 10-11 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Main Drive" on page 10-34 ■ "Feeder" on page 10-36 ■ "Tray 1 (MPT) and Registration" on page 10-32

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the paper size. Does the paper size meet specifications?	Go to step 2.	Replace the paper with the correct specifications.
2	Check the paper size setting. Does the paper match with the settings in the Control Panel?	Go to step 3.	Correct the paper settings in the Control Panel. Go to step 3.
3	Check the paper type. ■ Paper in the tray ■ Paper type setting in the Control Panel ■ Paper type of the printing job	Go to step 4.	Correct the paper type setting in the Control Panel.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Reseat Tray 2. Does the error still occur?	Go to step 5.	Complete.
5	Check the No Paper Actuator. Does the Actuator operate smoothly?	Go to step 6.	Replace the Feeder (page 8-43).
6	Perform the Tray 2 No Paper test (page 4-37): **Service Mode** > **Engine Diag** > **Sensor Test** > **Tray 2 No Paper**. Does the number on the Control Panel increase by 1 every time the Actuator is activated?	Replace the MCU Board (page 8-87).	Go to step 7.
7	Check the wiring harness connectors P/J23, P/J232, and P/J2321 between the No Paper Sensor and the MCU Board. Are the connectors securely connected?	Go to step 8.	Reconnect the connectors. Go to step 8.
8	Check the Right Side Harness for continuity. 1. Disconnect P/J23 and P/J232. 2. Check continuity between P/J23 <=> P/J232.	Go to step 9.	Replace the Right Side Harness.
9	Check the Registration Sensor Harness for continuity. 1. Disconnect P/J232 and P/J2321. 2. Check continuity between P/J232 <=> P/J2321.	Go to step 10.	Replace the Registration Sensor Harness.
10	Check the No Paper Sensor signal. 1. Disconnect P/J23 on the MCU Board. 2. Is there +3.3 V across ground <=> J23-5?	Go to step 11.	Replace the MCU Board (page 8-87).
11	Check the No Paper Sensor for operation. 1. Measure the voltage across ground <=> J23-7. 2. Does the voltage change when the No Paper Sensor is activated?	Replace the MCU Board (page 8-87).	Replace the No Paper Sensor (page 8-48).

Load Tray 3 (No Suitable Paper)

The type or size of paper mismatched or Tray 3 is empty.

Applicable Chain Link

- **Chain Link 024-960**: Load Tray 3

Initial Actions

- Inspect the tray to ensure that it is free of obstructions, is loaded with supported paper, and the Guides are adjusted correctly.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Tray 3, PL12.3.1 ■ Size Switch, PL7.1.18 ■ MCU Board, PL9.1.20 ■ Registration Sensor Harness, PL3.2.37 ■ Right Side Harness, PL10.1.15 ■ Registration Sensor, PL3.2.30 ■ Feeder Unit, PL3.2.1 ■ No Paper Actuator, PL3.2.49 ■ C2 Chute Harness, PL12.2.7 ■ Tray 3 Feeder Harness, PL12.2.3 ■ Tray 3 Feeder, PL12.1.1	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 2 - Laser Unit" on page 10-11 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Main Drive" on page 10-34 ■ "Feeder" on page 10-36 ■ "Tray 1 (MPT) and Registration" on page 10-32 ■ "Optional 550-Sheet Feeder Wiring Diagram" on page 10-50

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the paper size. Does the paper size meet specifications?	Go to step 2.	Replace the paper with the correct specifications.
2	Check the paper size setting. Does the paper match with the settings in the Control Panel?	Go to step 3.	Correct the paper settings in the Control Panel. Go to step 3.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
3	Check the paper type. ■ Paper in the tray ■ Paper type setting in the Control Panel ■ Paper type of the printing job	Go to step 4.	Correct the paper type setting in the Control Panel.
4	Reseat Tray 2. Does the error still occur?	Go to step 5.	Complete.
5	Check the No Paper Actuator. Does the Actuator operate smoothly?	Go to step 6.	Replace the Tray 3 Feeder (page 8-102).
6	Perform the Tray 3 No Paper test (page 4-37): **Service Mode** > **Engine Diag** > **Sensor Test** > **Tray 3 No Paper**. Does the number on the Control Panel increase by 1 every time the Actuator is activated?	Replace the MCU Board (page 8-87).	Go to step 7.
7	Check the wiring harness connectors P/J421, P/J4212, and P/J42121 between the No Paper Sensor and the Tray 3 Feeder Board. Are the connectors securely connected?	Go to step 8.	Reconnect the connectors.
8	Check the C2 Chute Harness for continuity. 1. Disconnect P/J421 and P/J4212. 2. Check continuity between P/J421 <=> P/J4212.	Go to step 9.	Replace the C2 Chute Harness.
9	Check the C2 No Paper Harness for continuity. 1. Disconnect P/J4212 and P/J42121. 2. Check continuity between P/J4212 <=> P/J42121.	Go to step 10.	Replace the C2 No Paper Harness.
10	Check the No Paper Sensor signal. 1. Disconnect P/J421 on the MCU Board. 2. Is there +3.3 V across ground <=> J421-3?	Go to step 11.	Go to step 12.
11	Check the No Paper Sensor for operation. 1. Measure the voltage across ground <=> J421-5. 2. Does the voltage change when the No Paper Actuator is activated?	Go to step 12.	Replace the No Paper Sensor (page 8-48).
12	Replace the Tray 3 Feeder (page 8-102). Does the error still occur?	Complete.	Replace the MCU Board (page 8-87).

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
13	Check the wiring harness connectors P/J419, P/J273, and P/J27. Are the connectors securely connected?	Go to step 14.	Reconnect the connectors. Go to step 14.
14	Check the Optional Feeder Harness for continuity. 1. Disconnect P/J419 and P/J273. 2. Check continuity between P/J419 <=> P/J273.	Go to step 15.	Replace the Optional Feeder Harness.
15	Check the Right Side Harness for continuity. 1. Disconnect P/J273 and P/J27. 2. Check continuity between P/J273 <=> P/J27.	Go to step 16.	Replace the Right Side Harness.
16	Check the Optional Feeder Board signal. 1. Disconnect P/J27 on the MCU Board. 2. Is there +3.3 V across ground <=> J27-7?	Replace the Tray 3 Feeder (page 8-102).	Replace the MCU Board (page 8-87).

Multiple Feed

Multiple sheets of paper are fed concurrently.

Initial Actions

- Inspect the tray to ensure that it is free of obstructions, is loaded with supported paper, and the Guides are adjusted correctly.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Retard Roll (Separator), PL2.1.7 ■ MPT Feed Roll, PL3.1.10 ■ Turn Roll, PL3.2.32 ■ Feed Roll, PL3.2.53 ■ Retard Roll, PL2.2.17 ■ Retard Roll, PL12.1.9 ■ Retard Roll (Nudger), PL12.3.10 ■ Metal Regi Roll (PL3.2.6) ■ Rubber Regi Roll (PL3.2.7) ■ Feeder Unit, PL3.2.1	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the paper feeding. Does multiple feed occur?	Go to step 2.	Go to step 3.
2	Check the paper. Replace the paper. Does multiple feed still occur?	Replace the following parts: ■ MPT Feed Roll (page 8-39) ■ Tray 2 Feed Roll (page 8-49 ■ Tray 3 Feed Roll (page 8-104 ■ Tray 2 Retard Roll (page 8-33) ■ Tray 3 Retard Roll (page 8-109)	Complete.
3	Check the paper. Replace the paper. Does multiple feed still occur?	Replace the Feeder. ■ Tray 1/2 (page 8-43) Tray 3 (page 8-102)	Complete.

Configuration, Memory, and Firmware Errors

Control Panel Language Set Unsupported

The Control Panel does not support the language.

Applicable Chain Link

- **Chain Link 016-610**: Control Panel Language Set unsupported

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 Board, PL9.1.20	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Turn the printer power Off and back On. Does the error still occur?	Replace the MCU Boar (page 8-87).	Complete.

Engine Model Mismatch

Printer Engine model does not match.

Applicable Chain Link

- **Chain Link 016-611**: Print Engine model does not match

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 Board, PL9.1.20	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Turn the printer power Off and back On. Does the error still occur?	Replace the MCU Board (page 8-87).	Complete.

Out of Memory

The printer memory is full and cannot continue to print. Print job requires additional memory.

Applicable Chain Link

- **Chain Link 016-718**: Out of memory

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, PL9.1.27 ■ Memory Card (Option), PL9.1.30	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	1. Check the required memory for the print job. 2. Print a small size file (example as a Windows test print). 3. Does the error still occur?	Go to step 2.	Add memory card or separate the print job.
2	Reseat the memory card. Does the error still occur?	Go to step 3.	Complete.
3	Check the memory card capacity. Print the printer Configuration Page: **Menu** > **Information Pgs** > **Configuration**. Does the memory meet the print job requirements?	Replace the Image Processor Board (page 8-89).	Go to step 4.
4	Replace the memory card. Does the error still occur?	Replace the Image Processor Board (page 8-89).	Complete.

PDL Error

Error relating to Printer Command Language (PCL) has occurred.

Applicable Chain Link

- **Chain Link 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, PL9.1.27	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the print job. 1. Print a small print job (example as a Windows test print). 2. Does the error still occur?	Go to step 2.	Complete.
2	Reseat the Image Processor Board. Does the error still occur?	Replace the Image Processor Board (page 8-89).	Complete.

Invalid Job

Error occurs when the configuration of the printer does not match the printer driver.

Applicable Chain Link

- **Chain Link 016-799**: Invalid Job (Job Environment Violation)

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, PL9.1.27	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the paper size. Does the paper meet the specifications?	Go to step 2.	Replace the paper.
2	Check the paper size setup on the Control Panel: **Menu** > **Tray Settings** > **Paper Size**.	Go to step 4.	Go to step 3.
3	Set the paper size in the Control Panel to match the paper in the tray. Does the error still occur?	Replace the Image Processor Board (page 8-89).	Complete.
4	Does the error still occur?	Go to step 5.	Complete.

MPC Error

Multi-Protocol Network Card error occurs.

Applicable Chain Link

- **Chain Link 016-738**: MPC Error (Download Initial Error)
- **Chain Link 016-739**: MPC Error (Reseat MPC)
- **Chain Link 016-740**: MPC Communication Error
- **Chain Link 018-310**: MPC Error (NIC Controller Communication)
- **Chain Link 018-311**: MPC Error (NIC Flash ROM Boot Module Checksum Error)
- **Chain Link 018-312**: MPC Error (NIC RAM R/W Test Error)
- **Chain Link 018-313**: MPC Error (NIC Flash ROM Application Module Checksum Error)
- **Chain Link 018-314**: MPC Error (NIC MAC Address Checksum Error)
- **Chain Link 018-315**: MPC Error (NIC Ethernet BIST Parity/RAM R/W Error)
- **Chain Link 018-316**: MPC Error (NIC Internal Loopback Error)
- **Chain Link 018-317**: MPC Error (NIC Fatal Error)
- **Chain Link 116-333**: MPC Error (PCI Option #0 Failure)

Initial Actions

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

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Multi-Protocol Network Card (Option), PL9.1.31 ■ Image Processor Board, PL9.1.27	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Multi-Protocol Network Card (MPC) for correct installation. Is the MPC correctly installed?	Go to step 2.	Reseat the MPC. Go to step 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Replace the Multi-Protocol Network Card (page 8-92).	Replace the Image Processor Board (page 8-89).	Complete.

Network Error

Failure occurred on the Image Processor Board.

Applicable Chain Link

- **Chain Link 116-350**: Network Error (On Board Network Communication Fail)
- **Chain Link 116-351**: Network Error (On Board Network Ethernet BIST Parity/RAM R/W Error)
- **Chain Link 116-352**: Network Error (On Board Internal Loopback Error)
- **Chain Link 116-355**: Network Error (On Board Network Fatal Error)
- **Chain Link 018-319**: Network Error (On Board Network OS Error)
- **Chain Link 018-320**: Network Error (On Board Network VxWorks 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, PL9.1.27	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Image Processor Board for correct installation. Is the Image Processor Board correctly installed?	Go to step 2.	Reseat the Image Processor Board. Go to step 2.
2	Does the error still occur?	Replace the Image Processor Board (page 8-89).	Complete.

MCU Firmware Error

The MCU Board detected a firmware error.

Applicable Chain Link

- **Chain Link 024-340**: MCU Firmware 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 Board, PL9.1.20 ■ HVPS, PL5.1.17	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Xerographic" on page 10-40

Note

If the error occurred after replacing the MCU Board, transfer the internal data from the old MCU Board to the new MCU Board.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	1. Check the following wiring harness connectors. ■ P/J16 and P/J27 on the MCU Board ■ P/J144 on the EEPROM Board 2. Are the connectors securely connected?	Go to step 3.	Reconnect the connectors. Go to step 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Replace the HVPS (page 8-61). Does the error still occur?	Replace the MCU Board (page 8-87).	Complete.

MCU Communication Error

The MCU Board detected communication error.

Applicable Chain Link

- **Chain Link 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
■ MCU Board, PL9.1.20 ■ Image Processor Board, PL9.1.27	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Reseat the Image Processor Board and the MCU Board. Does the error still occur?	Go to step 2.	Complete.
2	Replace the Image Processor Board (page 8-89). Does the error still occur?	Replace the MCU Board (page 8-87).	Complete.

MCU NVRAM Error

Engine NVRAM is corrupted.

Applicable Chain Link

- **Chain Link 041-340**: MCU 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
■ MCU Board, PL9.1.20 ■ Right Side Harness, PL10.1.15 ■ EEPROM Board, PL9.1.1	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Xerographic" on page 10-40

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Does the error still occur after cycled printer power?	Go to step 2.	Complete.
2	Check the printer firmware version. Does the printer have the correct firmware version?	Go to step 3.	Upgrade printer firmware. Go to step 3.
3	Reseat the MCU Board. Does the error still occur?	Go to step 4.	Complete.
4	Check the wiring harness connectors P/J27 and P/J144 between the EEPROM Board and the MCU Board. Are the connectors securely connected?	Go to step 6.	Reconnect the connectors. Go to step 5.
5	Does the error still occur?	Go to step 6.	Complete.
6	Check the Right Side Harness for continuity. 1. Disconnect P/J27 and P/J144. 2. Check continuity between P/J27 <=> P/J144.	Go to step 7.	Replace the Right Side Harness.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
7	Check the EEPROM Board signal. 1. Disconnect P/J27 on the MCU Board. 2. Is there +3.3 V across ground <=> J27-B19?	Replace the MCU Board (page 8-87).	Go to step 8.
8	Replace the MCU Board (page 8-87). Does the error still occur?	Go to step 9.	Complete.
9	Check external noise. 1. Are there other electrical appliances within 3 meters from the printer? 2. Turn the electrical appliances Off or relocate the printer at least 6 meters away from other electrical appliances. 3. Does the error still occur?	Go to step 10.	Request client to fix power supply outlet.
10	Reseat the Print Cartridges and Transfer Unit. Does the noise still occur?	Go to step 11.	Complete.
11	Reseat the Print Cartridges. Are there any stains or debris on the Print Cartridges?	Clean the Print Cartridges.	Reseat the HVPS.

Fan Motor Error

The Fan Motor is not in operation.

Applicable Chain Link

- **Chain Link 042-313**: Fan Motor Error
- **Chain Link 042-358**: 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
■ Main Fan, PL9.1.10 ■ Duplex Fan, PL11.1.25 ■ Top LV Harness, PL10.1.16 ■ Duplex Unit Harness, PL11.1.18 ■ Front Cover Harness, PL1.2.11 ■ Right Side Harness, PL10.1.15 ■ LVPS, PL9.1.4 ■ MCU Board, PL9.1.20 ■ Duplex Unit, PL11.1.1	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Map 5 - Duplex Unit" on page 10-14 ■ "DC Power Supply" on page 10-30 ■ "Duplex Wiring Diagram" on page 10-52

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the following wiring harness connectors. ■ Between P/J503 and the Main Fan ■ Between P/J427 and the Duplex Fan	Go to step 2.	Complete.
2	Does the error still occur?	Go to step 3.	Complete.
3	Perform the Fan test (page 4-46): **Service Mode** > **Engine Diag** > **Fan**. Does the Fan operate properly?	Go to step 4.	Go to step 10.
4	Perform the Duplex Fan test (page 4-63): **Service Mode** > **Engine Diag** > **Duplex Fan**. Does the Motor operate properly?	Replace the MCU Board (page 8-87).	Go to step 5.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
5	Check the wiring harness connectors P/J428, P/J2720, P/J272, and P/J27 between the MCU Board and Duplex Board? Are the connectors securely connected?	Go to step 6.	Reconnect the connectors.
6	Check the Duplex Unit Harness for continuity. 1. Disconnect P/J428 and P/J2720. 2. Check continuity between P/J2720 <=> P/J428.	Go to step 7.	Replace the Duplex Unit Harness.
7	Check the Front Cover Harness for continuity. 1. Disconnect P/J2720 and P/J272. 2. Check continuity between P/J2720 <=> P/J272.	Go to step 8.	Replace the Front Cover Harness.
8	Check the Right Side Harness for continuity. 1. Disconnect P/J27 and P/J272. 2. Check continuity between P/J27 and P/J272.	Go to step 9.	Replace the Right Side Harness.
9	Check the Duplex Board signal. 1. Disconnect P/J27 from the MCU Board. 2. Are there +24 V across ground <=> J27-A17/J27-A18 when the Interlock is activated?	Replace the Duplex Unit (page 8-94).	Replace the MCU Board (page 8-87).
10	Check the Top LV Harness for continuity. 1. Disconnect P/J501 and P/J14. 2. Check continuity between P/J501 <=> P/J14.	Go to step 11.	Replace the Top LV Harness.
11	Check the LVPS signal. 1. Disconnect P/J503 from the LVPS. 2. Is there +24 V across ground <=> J503-1 when the Interlock Switch is activated?	Replace the MCU Board (page 8-87).	Replace the LVPS (page 8-81).

Laser Error

An error was detected in the Laser Unit.

Applicable Chain Link

- **Chain Link 061-370**: Laser Error (ROS Failure)

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, PL5.1.2 ■ MCU Board, PL9.1.20	■ "Map 2 - Laser Unit" on page 10-11 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Laser Unit" on page 10-38

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. Go to step 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Check the wiring harness connectors P/J12 and P/J121 between the MCU Board and the Laser Unit. Are the connectors securely connected?	Go to step 5	Reconnect the connectors. Go to step 4.
4	Does the error still occur?	Go to step 5.	Complete.
5	Check the MCU Board for correct installation. Is the MCU Board correctly installed?	Go to step 7.	Reseat the MCU Board. Go to step 6.
6	Does the error still occur?	Go to step 7.	Complete.
7	Replace the Laser Unit (page 8-50). Does the error still occur?	Replace the MCU Board (page 8-87).	Complete.

Main Motor Error

The Main Motor has failed.

Applicable Chain Link

- **Chain Link 042-325**: Main 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 Board, PL9.1.20 ■ Right Side Harness, PL10.1.15 ■ Main Drive, PL8.1.2	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Main Drive" on page 10-34

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Transfer Unit, Fuser, and Black Print Cartridge for correct installation. Are the parts seated correctly?	Go to step 3.	Reseat the Transfer Unit, Fuser, and Black Print Cartridge. Go to step 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Check the wiring harness connectors P/J21 and P/J211 between the MCU Board and the Main Drive. Are the connectors securely connected?	Go to step 5.	Reconnect the connectors. Go to step 4.
4	Does the error still occur?	Go to step 5.	Complete.
5	Perform the Main Motor test (page 4-40): **Service Mode** > **Engine Diag** > **Motor Test** > **Main Motor**. During the test, close the Front Cover. Does the Motor operate properly?	Replace the MCU Board (page 8-87).	Go to step 6.
6	Check the Main Drive for correct installation. Is the Main Drive securely installed?	Go to step 7.	Reseat the Main Drive. Go to step 7.
7	Does the error still occur?	Go to step 8.	Complete.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
8	Check the Right Side Harness for continuity. 1. Disconnect P/J21 and P/J211. 2. Check continuity between P/J21 <=> P/J211.	Go to step 9.	Replace the Right Side Harness.
9	Check the Main Drive signal. 1. Disconnect P/J21 on the MCU Board. 2. Are there +24 V across ground <=> J21-2/J21-4 when the Interlock Switch is activated?	Replace the Main Drive (page 8-73).	Replace the MCU Board (page 8-87).

Sub Motor Error

The Sub Motor has failed.

Applicable Chain Link

- **Chain Link 042-326**: Sub 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 Board, PL9.1.20 ■ Right Side Harness, PL10.1.15 ■ Main Drive, PL8.1.2	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Main Drive" on page 10-34

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Print Cartridges for correct installation. Are the Print Cartridges correctly installed?	Go to step 3.	Reseat the Print Cartridges. Go to step 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Check the wiring harness connectors P/J22 and P/J221 between the MCU Board and the Main Drive. Are the connectors securely connected?	Go to step 4.	Reconnect the connectors. Go to step 4.
4	Perform the Sub Motor test (page 4-41): **Service Mode** > **Engine Diag** > **Motor Test** > **Sub Motor**. During the test, close the Front Cover. Does the Motor operate properly?	Replace the MCU Board (page 8-87).	Go to step 5.
5	Check the Main Drive for correct installation. Is the Main Drive correctly installed?	Go to step 6.	Reseat the Main Drive. Go to step 6.
6	Does the error still occur?	Go to step 7.	Complete.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
7	Check the Right Side Harness for continuity. 1. Disconnect P/J22 and P/J221. 2. Check continuity between P/J22 <=> P/J221.	Go to step 8.	Replace the Right Side Harness.
8	Check the Main Drive signal. 1. Disconnect P/J22 from the MCU Board. 2. Are there +24 V across ground <=> J22-A2/J22-A4 when the Interlock Switch is activated?	Replace the Main Drive (page 8-73).	Replace the MCU Board (page 8-87).

Deve Motor Error

The Deve Motor has failed.

Applicable Chain Link

- **Chain Link 093-320**: Deve 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 Board, PL9.1.20 ■ Feeder Kit, PL3.2.1 ■ Right Side Harness, PL10.1.15 ■ Main Drive, PL8.1.2	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Main Drive" on page 10-34

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Print Cartridges for correct installation. Are the Print Cartridge correctly installed?	Go to step 3.	Reseat the Print Cartridges. Go to step 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Check the wiring harness connectors P/J22 and P/J222 between the MCU Board and the Main Drive. Are the connectors securely connected?	Go to step 4.	Reconnect the connectors. Go to step 4.
4	Perform the Deve Motor test (page 4-43): **Service Mode** > **Engine Diag** > **Motor Test** > **Deve Motor**. During the test, close the Front Cover. Does the Motor operate properly?	Replace the MCU Board (page 8-87).	Go to step 5.
5	Check the Main Drive for correct installation. Is the Main Drive correctly installed?	Go to step 6.	Reseat the Main Drive.
6	Does the error still occur?	Go to step 7.	Complete.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
7	Check the Right Side Harness for continuity. 1. Disconnect P/J22 and P/J222. 2. Check continuity between P/J22 <=> P/J252.	Go to step 8.	Replace the Right Side Harness.
8	Check the Main Drive signal. 1. Disconnect P/J22 from the MCU Board. 2. Are there +24 V across ground <=> J22-B2/J22-B4 when the Interlock Switch is activated?	Replace the Main Drive (page 8-73).	Replace the MCU Board (page 8-87).

Tray 2 Motor Error

The Tray 2 Motor has failed.

Applicable Chain Link

- **Chain Link 077-343**: Tray 2 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 Board, PL9.1.20 ■ Feeder Kit, PL3.2.1 ■ Right Side Harness, PL10.1.15 ■ Drive Assembly, PL8.1.7	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Tray 1 (MPT) and Registration" on page 10-32

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Rubber Registration Roller for rotation. Does the Roller rotate smoothly?	Go to step 2.	Replace the Feeder (page 8-43).
2	Check the wiring harness connectors P/J25 and P/J251 between the MCU Board and the Drive Assembly. Are the connectors securely connected?	Go to step 3.	Reconnect the connectors. Go to step 3.
3	Perform the Tray 2 Motor test (page 4-42): **Service Mode** > **Engine Diag** > **Motor Test** > **Tray 2 Motor**. During the test, close the Front Cover. Does the Motor operate properly?	Replace the MCU Board (page 8-87).	Go to step 4.
4	Check the Drive Assembly for correct installation. Is the Drive Assembly correctly installed?	Go to step 5.	Reseat the Drive Assembly. Go to step 5.
5	Does the error still occur?	Go to step 6.	Complete.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
6	Check the Right Side Harness for continuity. 1. Disconnect P/J25 and P/J251. 2. Check continuity between P/J25 <=> P/J251.	Go to step 7.	Replace the Right Side Harness.
7	Check the Drive Assembly signal. 1. Disconnect P/J25 from the MCU Board. 2. Are there +24 V across ground <=> J25-1/J25-2 when the Interlock Switch is activated?	Replace the Drive Assembly (page 8-76).	Replace the MCU Board (page 8-87).

Optional Feeder Motor Error

The Optional Feeder Motor has failed.

Applicable Chain Link

- **Chain Link 072-216**: Option Feeder Motor Fail

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 Board, PL9.1.20 ■ Feeder Kit, PL3.2.1 ■ Feed Roll, PL12.1.9 ■ Retard Roll, PL12.3.10 ■ Right Side Harness, PL10.1.15 ■ Tray 3 Feeder Drive, PL12.2.10 ■ C2 Motor Harness, PL12.2.9 ■ Feeder Unit Harness, PL12.2.3 ■ Tray 3 Feeder Board, PL12.2.6 ■ Optional 550-Sheet Feeder, PL12.1.1	■ "Map 2 - Laser Unit" on page 10-11 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Map 6 - Optional 550-Sheet Feeder" on page 10-15 ■ "Optional 550-Sheet Feeder Wiring Diagram" on page 10-50

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the paper tray for correct installation. Is the tray correctly installed?	Go to step 3.	Reseat the paper tray. Go to step 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Check the Feed Rollers and Retard Rollers for rotation. Do the Rollers rotate smoothly?	Go to step 4.	Replace the defective Roller(s).
4	Check the wiring harness connectors P/J422, P/J4221, and P/J4222 between the Tray 3 Feeder Board and the Tray 3 Feeder Drive.	Go to step 5.	Reconnect the connectors. Go to step 4.
5	Perform the Tray 3 Feed Motor test (page 4-45): **Service Mode** > **Engine Diag** > **Motor Test** > **Tray 3 Feed Motor**.	Replace the MCU Board (page 8-87).	Go to step 6.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
6	Check the Tray 3 Drive Feeder for correct installation. Is the Tray 3 Drive Feeder correctly installed?	Go to step 7.	Reseat the Tray 3 Drive Feeder. Go to step 7.
7	Does the error still occur?	Go to step 8.	Complete.
8	Check the C2 Motor Harness for continuity. 1. Disconnect P/J422 and P/J4222. 2. Check continuity between P/J422 <=> P/J4222.	Go to step 9.	Replace the C2 Motor Harness.
9	Check the Tray 3 Feeder Drive for signal. 1. Disconnect P/J422 from the Tray 3 Feeder Board. 2. Is the +24 V across ground <=> J422-6 when the Interlock Switch is activated?	Replace the Tray 3 Feeder Drive (page 8-106).	Go to step 10.
10	Check the wiring harness connectors P/J419, P/J273, and P/J27 between the Tray 3 Feeder Board and the MCU Board. Are the connectors securely connected?	Go to step 11.	Reconnect the connectors.
11	Check the Feeder Unit Harness for continuity. 1. Disconnect P/J419 and P/J273. 2. Check continuity between P/J419 <=> P/J273.	Go to step 12.	Replace the Feeder Unit Harness.
12	Check the Right Side Harness for continuity. 1. Disconnect P/J273 and P/J27. 2. Check continuity between P/J273 <=> P/J27.	Go to step 13.	Replace the Right Side Harness.
13	Check the Tray 3 Feeder Board signal. 1. Disconnect P/J27 from the MCU Board. 2. Are there +24 V across ground <=> J27-B4/J27-B5 when the Interlock Switch is activated?	Replace the Optional 550-Sheet Feeder (page 8-96).	Replace the MCU Board (page 8-87).

Optional 550-Sheet Feeder Error

The Optional 550-Sheet Feeder has failed.

Applicable Chain Link

- **Chain Link 072-215**: 550 Feeder 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 Board, PL9.1.20 ■ Feeder Unit Harness, PL12.2.3 ■ Right Side Harness, PL10.1.15 ■ Tray 3 Feeder Board, PL12.2.6 ■ Optional 550-Sheet Feeder, PL12.1.1	■ "Map 2 - Laser Unit" on page 10-11 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Map 6 - Optional 550-Sheet Feeder" on page 10-15 ■ "Optional 550-Sheet Feeder Wiring Diagram" on page 10-50

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Optional 550-Sheet Feeder for correct installation. Is the Optional 550-Sheet Feeder correctly installed?	Go to step 3.	Reseat the Optional 550-Sheet Feeder. Go to step 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Check the wiring harness connectors P/J27, P/J273, and P/J419 between the MCU Board and the Tray 3 Feeder Board. Are the connectors securely connected?	Go to step 5.	Reconnect the connectors. Go to step 4.
4	Does the error still occur?	Go to step 5.	Complete.
5	Check the Feeder Unit Harness for continuity. 1. Disconnect P/J419 and P/J273. 2. Check continuity between P/J419 <=> P/J273.	Go to step 6.	Replace the Feeder Unit Harness.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
6	Check the Right Side Harness for continuity. 1. Disconnect P/J27 and P/J273. 2. Check continuity between P/J27 <=> P/J273.	To go step 7.	Replace the Right Side Harness.
7	Replace the Optional 550-Sheet Feeder. Does the error still occur?	Replace the MCU Board (page 8-87).	Complete.

Duplex Error

The Duplex Unit has failed.

Applicable Chain Link

- **Chain Link 077-215**: Duplexer Error

Initial Actions

- Inspect the Duplex to ensure that it is free of obstructions.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ MCU Board, PL9.1.20 ■ Duplex Unit Harness, PL11.1.18 ■ Right Side Harness, PL10.1.15 ■ Front Cover Harness, PL1.2.11 ■ Duplex Unit, PL11.1.1	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 2 - Laser Unit" on page 10-11 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Map 5 - Duplex Unit" on page 10-14 ■ "Duplex Wiring Diagram" on page 10-52

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Duplex for correct installation. Is the Duplex correctly installed?	Go to step 3.	Reseat the Duplex. Go to step 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Check the wiring harness connectors P/J27, P/J272, P/J2720, and P/J428 between the Duplex Board and the MCU Board. Are the connectors securely connected?	Go to step 5.	Reconnect the connectors. Go to step 4.
4	Does the error still occur?	Go to step 5.	Complete.
5	Check the Duplex Unit Harness for continuity. 1. Disconnect P/J428 and P/J2720. 2. Check continuity between P/J428 <=> P/J2720.	Go to step 6.	Replace the Duplex Unit Harness.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
6	Check the Front Cover Harness for continuity. 1. Disconnect P/J272 and P/J2720. 2. Check continuity between P/J272 <=> P/J2720.	Go to step 7.	Replace the Front Cover Harness.
7	Check the Right Side Harness for continuity. 1. Disconnect P/J272 and P/J27. 2. Check continuity between P/J272 <=> P/J27.	Go to step 8.	Replace the Right Side Harness.
8	Replace the Duplex Unit (page 8-94). Does the error still occur?	Replace the MCU Board (page 8-87).	Complete.

Door A Open

The Front Cover is open.

Applicable Chain Link

- **Chain Link 077-300**: Door A Open (Front Cover Open)

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 Board, PL9.1.20 ■ Front Cover, PL1.2.1 ■ Interlock Harness, PL9.1.3	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Are there any damages on the Front Cover?	Replace the Front Cover (page 8-14).	Go to step 2.
2	Check the Interlock Switch for operation. Perform the Interlock Switch test (page 4-30): **Service Mode** > **Engine Diag** > **Sensor Test** > **Interlock Switch**. Does the Switch operate properly?	Replace the MCU Board (page 8-87).	Go to step 3.
3	Replace the Interlock Switch Harness (page 8-80). Does the error still occur?	Replace the MCU Board (page 8-87).	Complete.

ADC Sensor Error

The ADC Sensor has detected density error.

Applicable Chain Link

- **Chain Link 092-651**: ADC Sensor Error

Initial Actions

- Ensure the Transfer Unit and surrounding area is free of waste toner.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ MCU Board, PL9.1.20 ■ Transfer Unit, PL4.1.1 ■ Print Cartridge (C/M/Y/K), PL5.1.18-21 ■ Front Cover Harness, PL1.2.11 ■ Right Side Harness, PL10.1.15	■ "Map 1 - Electrical and Drive" on page 10-10 ■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Xerographic" on page 10-40

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Transfer Unit for correct installation. Is the Transfer Unit correctly installed?	Go to step 3.	Reseat the Transfer Unit. Go to step 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Check the toner density. Perform Gradation Test Print (page 5-17): **Service Mode** > **Test Print** > **Gradation ESS**. Is there dark color on the print? Compare the density of four colors toner.	Go to step 4.	Replace the MCU Board (page 8-87).

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Check the Solenoid in the Transfer Unit for operation. 1. Perform the ADC Sensor Solenoid test (page 4-58): **Service Mode** > **Engine Diag** > **Motor Test** > **ADC Sensor Solenoid**. 2. Perform the ADC Sensor LED test (page 4-59): **Service Mode** > **Engine Diag** > **Motor Test** > **ADC Sensor LED**. 3. Does the ADC Sensor operate properly?	Replace the corresponding Print Cartridge (page 8-9).	Go to step 5.
5	Check the wiring harness connectors P/J27, P/J272, and P/J2721 between the MCU Board and the Transfer Unit. Are the connectors securely connected?	Go to step 6.	Reconnect the connectors. Go to step 10.
6	Check the Front Cover Harness for continuity. 1. Disconnect P/J2721 and P/J272. 2. Check continuity between P/J2721 <=> P/J272.	Go to step 7.	Replace the Front Cover Harness.
7	Check the Right Side Harness for continuity. 1. Disconnect P/J27 and P/J272. 2. Check continuity between P/J27 <=> P/J272.	Go to step 8.	Replace the Right Side Harness.
8	Check the ADC Sensor signal. 1. Disconnect P/J27 from the MCU Board. 2. Is there +5 V across ground <=> J27-A7?	Replace the Transfer Unit (page 8-7).	Replace the MCU Board (page 8-87).

Environmental (Humidity/Temperature) Sensor Error

The Environmental Sensor has detected temperature error.

Applicable Chain Link

- **Chain Link 092-661**: Environmental Sensor 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 Board, PL9.1.20 ■ Humidity Sensor, PL9.1.19 ■ Humidity Harness, PL10.1.4	■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "Xerographic" on page 10-40

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Humidity/Temperature Sensor for correct installation. Is the Humidity/Temperature Sensor correctly installed?	Go to step 2.	Reseat the Humidity/ Temperature Sensor. Go to step 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Check the wiring harness connectors P/J26 and P/J261 between the MCU Board and the Humidity/Temperature Sensor. Are the connectors securely connected?	Go to step 4.	Reconnect the connectors.
4	Check the Humidity/Temperature Harness for continuity. 1. Disconnect P/J26 and P/J261. 2. Check continuity between P/J26 <=> P/J261.	Go to step 5.	Replace the Humidity/ Temperature Harness.
5	Check the Humidity/Temperature Sensor signal. 1. Disconnect P/J26 from the MCU Board. 2. Is there +5 V across ground <=> J26-4?	Replace the Humidity Sensor (page 8-86).	Replace the MCU Board (page 8-87).

Controller System Error

The printer controller has detected error.

Applicable Chain Link

- **Chain Link 116-310**: Font ROM Error (Main)
- **Chain Link 116-311**: Font ROM Error (Option)
- **Chain Link 116-314**: MAC Address Error
- **Chain Link 116-315**: RAM Error (On Board RAM W/R Check Fail)
- **Chain Link 116-317**: Controller Error (ROM Check Fail) (Main)
- **Chain Link 116-323**: NVRAM Error (NVRAM1 W/R Check Fail)
- **Chain Link 116-324**: Controller Error (Illegal Exception)
- **Chain Link 116-326**: NVRAM Error (NVRAM2 W/R Check Fail)
- **Chain Link 116-327**: Controller Error (Instruction Cache Error)
- **Chain Link 116-328**: Controller Error (Data Cache Error)
- **Chain Link 116-343**: ASIC Error (ASIC Fail)
- **Chain Link 116-390**: NVRAM Error (NVRAM1 Size and ID Check Fail)

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, PL9.1.27	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Image Processor Board for correct installation. Is the Image Processor Board correctly installed?	Go to step 2.	Reseat the Image Processor Board.
2	Does the error still occur?	Replace the Image Processor Board (page 8-89).	Complete.

RAM Error

The printer controller has detected RAM error.

Applicable Chain Link

- **Chain Link 116-316**: RAM Error (DIM Slot RAM W/R Check Fail)
- **Chain Link 116-320**: RAM Error (DIMM Slot RAM 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, PL9.1.27 ■ Memory Card (Option), PL9.1.30	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Verify RAM is compatible with the printer. If RAM was recently installed, it may not be compatible. Is RAM compatible?	Go to step 2.	Replace the Memory Card.
2	Check the Memory Card for correct installation. Is the Memory Card correctly installed?	Go to step 3.	Complete.
3	Replace the Memory Card. Does the error still occur?	Replace the Image Processor Board (page 8-89).	Complete.

Parallel Port Error

Parallel Port error occurs.

Applicable Chain Link

- **Chain Link 116-367**: Parallel Port Error (IEEE 1284 Data 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, PL9.1.27 ■ Parallel Cable	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Parallel cable connection. Is the cable securely connected?	Go to step 2.	Reconnect the cable. Go to step 2.
2	Does the error still occur?	Replace the Image Processor Board (page 8-89).	Complete.

MACPHY Chip Test Error

MACPHY Chip Test error occurs.

Applicable Chain Link

- **Chain Link 116-392**: MACPHY Chip Test Error (Diag Mode)

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, PL9.1.27	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Reboot the printer. Does the error still occur?	Go to step 2.	Complete.
2	Reseat the Image Processor Board. Does the error still occur?	Replace the Image Processor Board (page 8-89).	Complete.

MACPHY Internal Loop Test Error

MACPHY Internal Loop Test error occurs.

Applicable Chain Link

- **Chain Link 116-393**: MACPHY Int Loop Test Error (Diag Mode)

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, PL9.1.27	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Reboot the printer. Does the error still occur?	Go to step 2.	Complete.
2	Reseat the Image Processor Board. Does the error still occur?	Replace the Image Processor Board (page 8-89).	Complete.

MACPHY External Loop Test Error

MACPHY External Loop Test error occurs.

Applicable Chain Link

- **Chain Link 116-394**: MACPHY Ext Loop Test Error (Diag Mode)

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, PL9.1.27	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Reboot the printer. Does the error still occur?	Go to step 2.	Complete.
2	Reseat the Image Processor Board. Does the error still occur?	Replace the Image Processor Board (page 8-89).	Complete.

General Troubleshooting

In this chapter...

- Introduction
- System Startup
- Power On Seflf Test (POST)
- Service Diagnostics
- Service Diagnostics Menu Map
- Printer Components
- Duplex Components
- Service Diagnostics Tests
- Control Panel Troubleshooting
- Inoperable Printer Troubleshooting
- AC Power Supply Troubleshooting
- DC Power Supply Troubleshooting
- +24 VDC Interlock Switch
- Abnormal and Electrical Noise

Chapter 4

Introduction

This chapter covers the System Startup, Power On Self Test (POST), Service Diagnostics, and troubleshooting problems that are not associated with a Chain Link code or Control Panel error message.

For troubleshooting problems associated with a Chain Link code or Control Panel 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.

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 “Health” LED on the Image Processor Board turns On immediately.
2. The Boot Loader checks for RAM present and functional. If an error is detected, RAM ERROR is displayed and the Health LEDs alternately blink at 1/2 second intervals.
3. The Boot Loader then loads and runs POST diagnostics.
4. POST turns Off the Health LED.
5. POST checks the Control Panel.
6. The Control Panel LED cycles: Green and Red simultaneously, and Green.
7. The Control Panel LED turns Green and Red and **Diagnosing**... message is displayed.
8. The Control Panel message changes to **Ready Calibrating** and then **Xerox (TM) Print Cartridge**.
9. The Control Panel LED turns Green and the **Ready** message is displayed.

Power On Seflf Test (POST)

POST Diagnostics provide a quick mean of isolating a defective subsystem associated with the Image Processor Board and SDRAM. POST returns control to the boot loader and the operating system is loaded.

The following tests are performed when the printer is powered On.

1. Checks and initializes CRU Register.
2. Initializes ASIC.
3. Checks RAM.
4. Initializes the Control Panel driver.
5. Processes the ROM Sum Check.
6. Initializes Memory Manager.
7. Initializes EEPROM driver.
8. Initializes IOT Controller.
9. Starts the Operating System process.
10. Printer is Ready.

POST Test Description

Test	Chain Link	Description
CodeROM	116-317	This test calculates the ROM checksum chip by chip and compares it with the value stored in the CodeROM itself. Checksum error is in the main program ROM.
FontROM		This test calculates the FontROM checksum chip by chip and compares it with the value stored in the FontROM itself.
	116-310	Checksum error is in the built-in FontROM.
	116-317	Checksum error is in the main program ROM.
EEPROM		This test writes/reads/verifies on the diagnostic area of the EEPROM.
	116-323	Error is detected in EEPROM0 during initialization.
	116-326	Error is detected in EEPROM1 during initialization.
DRAM		This test checks OPEN/SHORT of the address line of the DRAM. This test also writes/reads/ verifies on the entire DRAM.
	116-315	Error is detected if included RAM is different.
	116-316	Error is detected if extended RAM is different.
	116-320	Error is detected if extended RAM is not supported.

POST Test Description (continued)

Test	Chain Link	Description
MAC+PHY Test	116-352 116-392 116-393 116-394	This test performs PHY internal loopback.
ASIC	116-343	Performs register test.
PANEL		This test checks input and output of the Control Panel buttons.
IOT	024-371	This test performs communication test with the Engine. This test also checks for Communication failure between the Engine and Controller.

Service Diagnostics

The Phaser 6180 Color Laser Printer has built-in diagnostics that allow access to Sensors, Clutches, Solenoids, printer status, turning the motors On and Off, and some NVRAM access. Using these tests, service technicians should be able to diagnose the problems quickly 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 Service Diagnostics 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 “Service Diagnostics” on page 4-5.

Entering Service Diagnostics

1. Turn the printer power Off.
2. Press and hold the **Up** and **Down Arrow** buttons simultaneously and turn the printer power On.
3. **Diagnosing...** message is displayed.
4. Continue to hold the buttons until the **Service Mode** message is displayed on the Control Panel and release the buttons.

Using Service Diagnostics

Most of the 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.

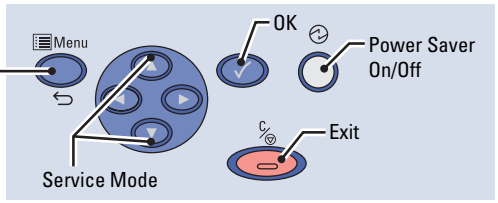
Service Diagnostics Control Panel Button Descriptions

Button	Function
Menu	Displays printer menu.
Up	Moves from one item to another.
Down	Moves from one item to another.
Left	Moves the cursor to the left.
Right	Moves the cursor to the right.
OK	Confirms settings or executes a task.
Exit/Cancel	Resets a diagnostic item, cancels a task, or exit the menu.
Wake Up	Function not available in Diagnostics mode.

Service Diagnostics Menu Map

Menu Map - Page 1

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



- **ESS Diag**
  - All Test
  - CodeROM Test
  - FontROM Test
  - EEPROM Test
  - DRAM Test
  - MAC+PHY Test
  - ASIC Test
  - PANEL Test
  - Engine Test
- **Engine Diag**
  - Sensor Test ▶
    - DuplexJamSensor
    - Exit Sensor
    - Regi Sensor
    - ROS Ready
    - Interlock Switch
    - CRU Sensor Y
    - CRU Sensor M
    - CRU Sensor K
    - CRU Sensor C
    - Tray 3 Low Paper
    - Tray 3 No Paper
    - Duplex Fan Alarm
    - Tray3 FdMotorAlm
    - MPT No Paper
    - Tray 2 No Paper
    - Main Motor Alarm
    - Sub Motor Alarm
    - FAN Alarm
    - Tray 2 Motor Alarm
    - DEVE Motor Alarm
    - Tray2 Paper Size
    - Tray3 Paper Size
  - Motor Test ▶
    - Main Motor (FULL2)
    - Main Motor (FULL1)
    - Main Motor (HALF)
    - Main Motor (LOW)
    - Sub Motor (FULL2)
    - Sub Motor (FULL1)
    - Sub Motor (HALF)
    - Sub Motor (LOW)
    - Tray 2 Motor (FULL2)
    - Tray 2 Motor (FULL1)
    - Tray 2 Motor (HALF)
    - Tray 2 Motor (LOW)
    - Deve Motor (FULL2)
    - Deve Motor (FULL1)
    - Deve Motor (HALF)
    - Duplex Motor (HIGH)
    - Duplex Motor (FULL2)
    - Duplex Motor (FULL1)
    - Duplex Motor (HALF)
    - Duplex Motor (LOW)
    - Tray 3 Feed Motor (FULL2)
    - Tray 3 Feed Motor (FULL1)
    - Tray 3 Feed Motor (HALF)
    - Tray 3 Feed Motor (LOW)
    - Fan (HIGH)
    - Fan (LOW)
    - Yellow Toner Motor
    - Magenta Toner Motor
    - Cyan Toner Motor
    - Black Toner Motor
    - Regi Clutch
    - Tray1(MPT) Turn Clutch
    - Tray1(MPT) Feed Solenoid
    - Tray 2 Feed Clutch
    - Tray 3 Feed Clutch
    - Tray 3 Turn Clutch
    - Duplex Clutch
    - ADC (CTD) Sensor Solenoid
    - ADC (CTD) Sensor LED
    - OHP Sensor LED
    - Drum Erase Lamp K
    - Drum Erase Lamp YMC
    - Exit Clutch
    - Duplex Fan
  - NVM Settings ▶
    - Edit NVM
    - Save NVM
    - Load NVM
    - Initialize Slave
    - Print NVM Info
- **Print Info**
  - Info Page
  - Print Settings
- **Installation**
  - SerialNo.
  - Tone Correction
  - Display Counter
  - HexDump
  - Pixel Counter
  - Configuration ▶
    - Dip Switch0
    - Dip Switch1
    - Dip Switch2
    - Dip Switch3
  - Counter Type ▶
    - Type1
    - Type2
    - Type3
    - Type4
  - Print Counter ▶
    - Color Print
    - B/W Print
    - Total Print
    - Color Backup
    - B/W Backup
    - Total Backup
    - Color Error
    - B/W Error
  - CopyCounter MtoB
  - CopyCounter BtoM
  - Clear All NVM
  - Clear JobHistory
  - Clear AuditronPV

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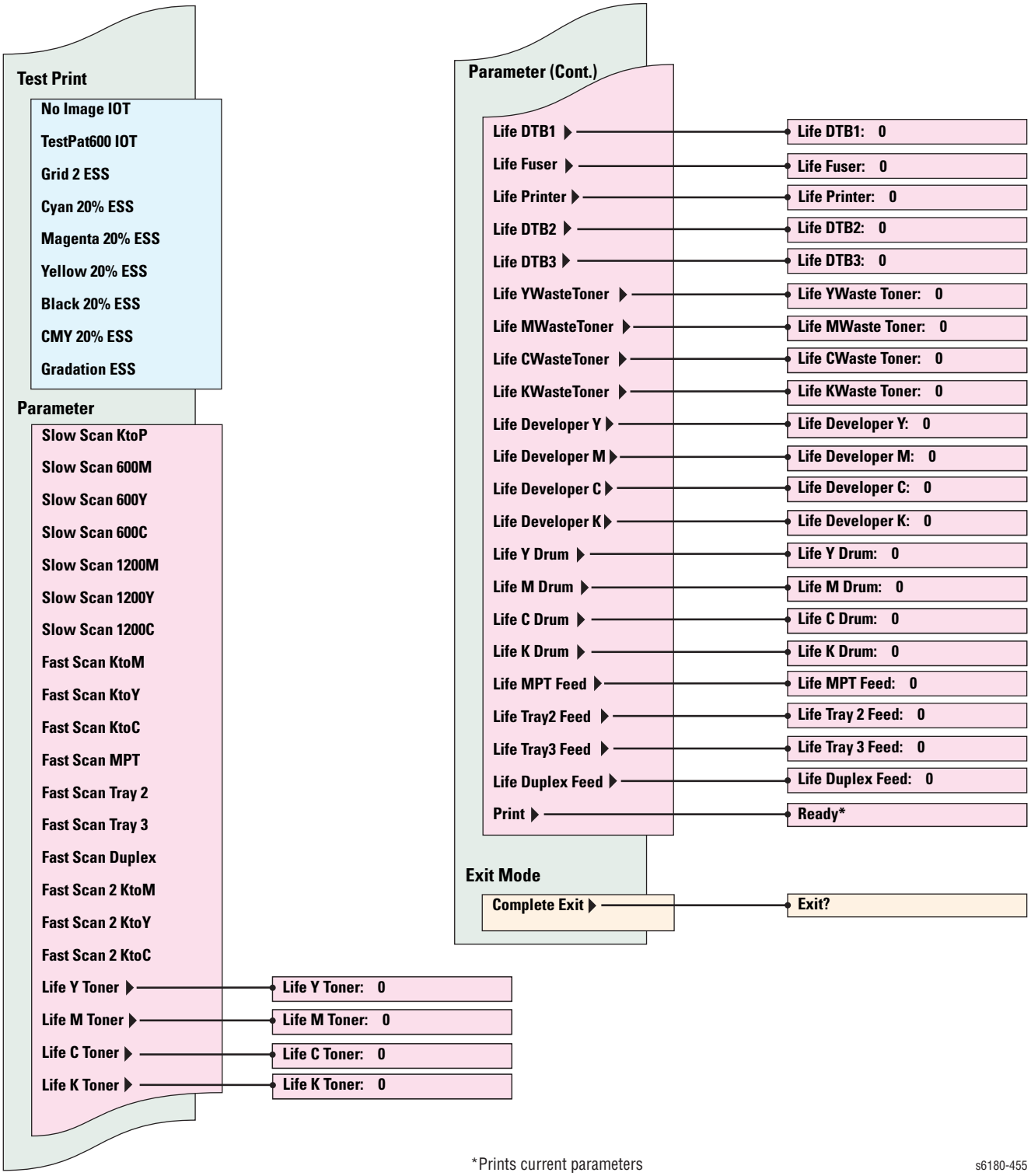
Menu Map - Page 2

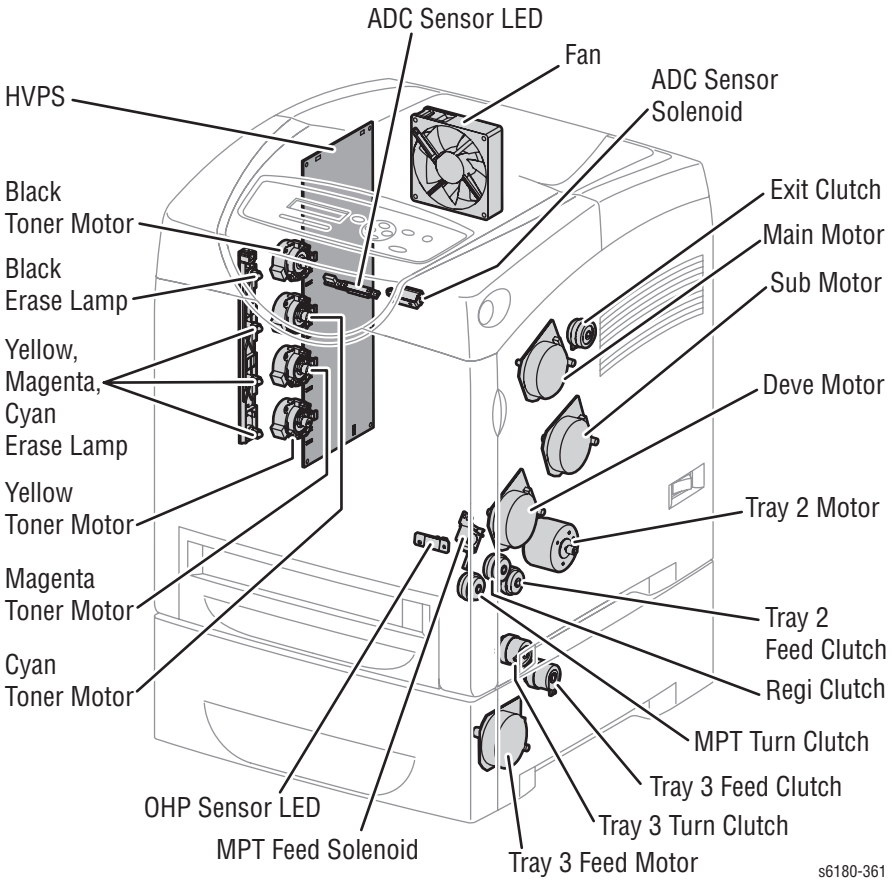


*Prints current parameters

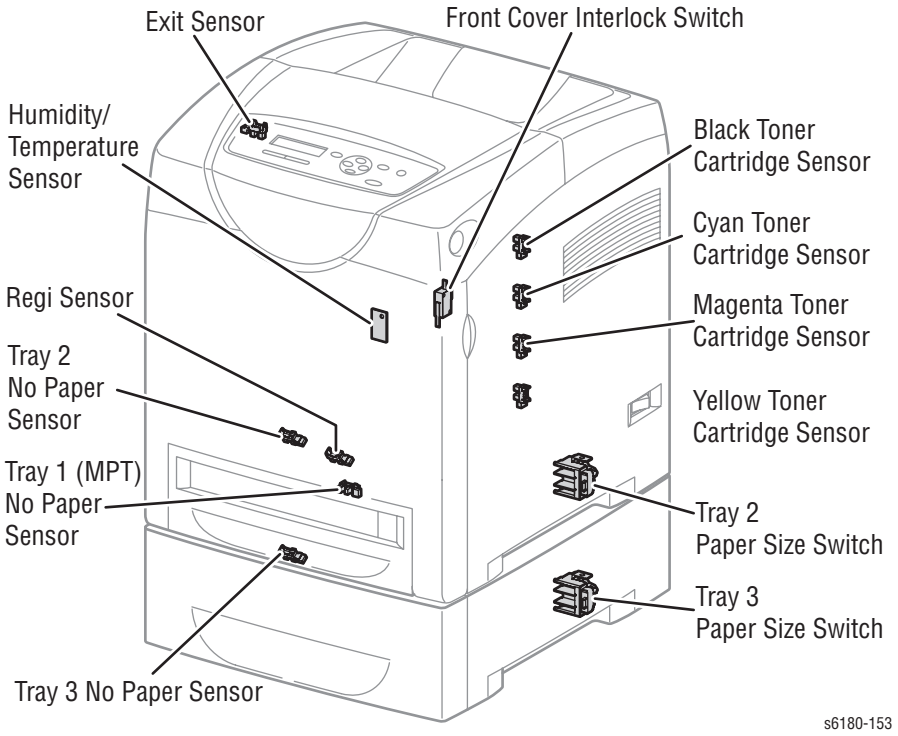
s6180-455

Printer Components

Motors, Clutches, Solenoids, Lamps

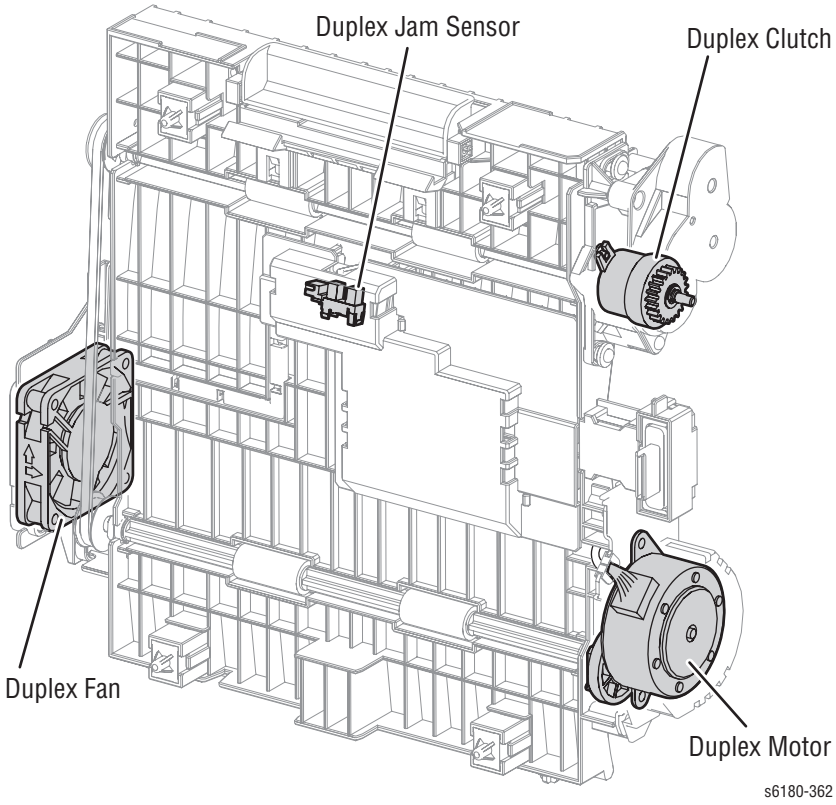


Sensors


Exit Sensor
Front Cover Interlock Switch
Humidity/
Temperature
Sensor
Black Toner
Cartridge Sensor
Cyan Toner
Cartridge Sensor
Regi Sensor
Magenta Toner
Cartridge Sensor
Tray 2
No Paper
Sensor
Yellow Toner
Cartridge Sensor
Tray 1 (MPT)
No Paper
Sensor
Tray 2
Paper Size Switch
Tray 3
Paper Size Switch
Tray 3 No Paper Sensor
s6180-153

Duplex Components

Clutch, Fan, Motor, Sensor



Service Diagnostics Tests

Service Diagnostic Tests and Utilities

Service Diagnostic Test Table

Test	Control Panel Display	Test Description
ESS Diag	Tests memory devices on the Controller.	
All Test	**All Test** ■ Start ■ Processing ■ Check OK	Tests all Controller Diag tests except for the MAC+PHY and Control Panel tests.
CodeROM Test	**CodeROM Test** ■ Start ■ Processing ■ Check OK	Calculates the ROM checksum chip by chip and compares it with the value stored in the CodeROM itself beforehand. When the checksum is identical to the stored value, this test determines the chip is normal. **Note:** Run this test when error 116-317 occurred.
FontROM Test	**FontROM Test** ■ Start ■ Processing ■ Check OK	Calculates the Font ROM checksum chip by chip and compares it with the value stored in the FontROM itself beforehand. When the checksum is identical to the stored value, this test determines the chip is normal. **Note:** Run this test when errors 116-310 and 116-311 occurred.
EEPROM Test	**EEPROM Test** ■ Start ■ Processing ■ Check OK	Performs write/read/verification of the test patterns (0xff, 0xaa, 0x55, and 0x00) on one byte at every 0x400 from the first address of EEPROM. **Note:** Run this test when errors 116-323, 116-324, and 116-327 occurred.
DRAM Test	**DRAM Test** ■ Start ■ Processing ■ Check OK	Tests Open/Short with the address line of the DRAM, and performs write/read/verification on the entire DRAM. **Note:** Run this test when errors 116-315, 116-316, and 116-320 occurred.
MAC+PHY Test	**MAC+PHY Test** ■ Start ■ Processing ■ Check OK	Tests PHY Internal loopback test. **Note:** Run this test when 116-352, 116-392, 116-393, and errors 116-394 occurred.
ASIC Test	**ASIC Test** ■ Start ■ Check OK	Performs register test. **Note:** Run this test when error 116-343 occurred.

Service Diagnostic Test Table (continued)

Test	Control Panel Display	Test Description
PANEL Test	**PANEL Test** ■ Start	Checks input and output of the Control Panel buttons. When buttons are pressed as shown, the test displays the corresponding contents on the LED.
Button	**LCD** **Note:** To exit the Panel Test, press the **Up** and **Down** buttons simultaneously.	
Up	Displays Up on the LCD.	
Down	Displays Down on the LCD.	
Left	Displays Left on the LCD.	
Right	Displays Right on the LCD.	
OK	Displays Set on the LCD.	
Menu	Displays Menu on the LCD.	
Cancel	Displays Cancel Job on the LCD.	
Power Saver	Displays Power Saver on the LCD.	
Engine Test	**Engine Test** ■ Start ■ Check OK	Performs communication test with the Engine Controller. Then it reads the status register of the engine to check whether commands can be exchanged with the engine. **Note:** Run this test when errors 116-370 and 116-371 occurred.
Engine Diag	Performs function checks on components whether operate normally or not. **Note:** During Engine Diag test, other Service Diagnostics functions cannot be performed simultaneously.	
Sensor Test		Tests the sensors of the printer.
Duplex Jam Sensor	**DuplexJamSensor** ■ OFF ■ L - 0 ■ H - 0	Tests the Duplex Jam Sensor.
Exit Sensor	**Exit Sensor** ■ OFF ■ L - 0 ■ H - 0	Tests the Exit Sensor.
Regi Sensor	**Regi Sensor** ■ OFF ■ L - 0 ■ H - 0	Tests the Registration Sensor.
ROS Ready	**ROS Ready** ■ OFF ■ L - 0 ■ H - 0	Tests the Laser Unit.

Service Diagnostic Test Table (continued)

Test	Control Panel Display	Test Description
Interlock Switch	**Interlock Switch** ■ OFF ■ L - 0 ■ H - 0	Tests the Front Cover Interlock Switch.
CRU Sensor (Y)	**CRU Sensor Y** ■ OFF ■ L - 0 ■ H - 0	Tests the Yellow Print Cartridge Sensor.
CRU Sensor (M)	**CRU Sensor M** ■ OFF ■ L - 0 ■ H - 0	Tests the Magenta Print Cartridge Sensor.
CRU Sensor (K)	**CRU Sensor K** ■ OFF ■ L - 0 ■ H - 0	Tests the Black Print Cartridge Sensor.
CRU Sensor (C)	**CRU Sensor C** ■ OFF ■ L - 0 ■ H - 0	Tests the Cyan Print Cartridge Sensor.
Tray 3 Low Paper	**Tray 3 Low Paper** ■ OFF ■ L - 0 ■ H - 0	Tests Tray 3 Low Paper Sensor.
Tray 3 No Paper	**Tray 3 No Paper** ■ OFF ■ L - 0 ■ H - 0	Tests Tray 3 No Paper Sensor.
Duplex Fan Alarm	**Duplex Fan Alarm** ■ OFF ■ L - 0 ■ H - 0	Tests Duplex Fan Alarm.
Tray 3 Feed Motor Alarm	**Tray 3 FdMotorAlm** ■ OFF ■ L - 0 ■ H - 0	Tests Tray 3 Feed Motor Alarm.
MPT No Paper	**MPT No Paper** ■ OFF ■ L - 0 ■ H - 0	Tests Tray 1 No Paper Sensor.
Tray 2 No Paper	**Tray 2 No Paper** ■ OFF ■ L - 0 ■ H - 0	Tests Tray 2 No Paper Sensor.

Service Diagnostic Test Table (continued)

Test	Control Panel Display	Test Description
Main Motor Alarm	**Main Motor Alarm** ■ OFF ■ L - 0 ■ H - 0	Tests Main Motor Alarm.
Sub Motor Alarm	**Sub Motor Alarm** ■ L - 0 ■ H - 0	Tests Sub Motor Alarm.
Fan Alarm	**FAN Alarm** ■ OFF ■ L - 0 ■ H - 0	Tests Fan Alarm.
Tray 2 Motor Alarm	**PH Motor Alarm** ■ OFF ■ L - 0 ■ H - 0	Tests Tray 2 Motor Alarm.
Deve Motor Alarm	**DEVE Motor Alarm** ■ OFF ■ L - 0 ■ H - 0	Tests Developer Motor Alarm.
Tray 2 Paper Size	**Tray2 Paper Size** ■ OFF ■ L - 0 ■ H - 0 ■ Paper Size (Letter - 8.5x11)	Tests Tray 2 Paper Size Switch.
Tray 3 Paper Size	**Tray3 Paper Size** ■ OFF ■ L - 0 ■ H - 0 ■ Paper Size (Legal - 8.5x14)	Tests Tray 3 Paper Size Switch.
Motor Test	■ ***Use the Up Arrow button to scroll through the menu.***	Tests the Motors of the printer.
Main Motor (Full2)	**Main Motor (FULL2)**	Tests the Main Motor.
Main Motor (Full1)	**Main Motor (FULL1)**	
Main Motor (Half)	**Main Motor (HALF)**	
Main Motor (Low)	**Main Motor (LOW)**	
Sub Motor (Full2)	**Sub Motor (FULL2)**	Tests the Sub Motor.
Sub Motor (Full1)	**Sub Motor (FULL1)**	

Service Diagnostic Test Table (continued)

Test	Control Panel Display	Test Description
Sub Motor (Half)	**Sub Motor (HALF)**	
Sub Motor (Low)	**Sub Motor (LOW)**	
Tray 2 Motor (Full2)	**Tray 2 Motor (FULL2)**	Tests the Tray 2 Motor.
Tray 2 Motor (Full1)	**Tray 2 Motor (FULL1)**	
Tray 2 Motor (Half)	**Tray 2 Motor (HALF)**	
Tray 2 Motor (Low)	**Tray 2 Motor (LOW)**	
Deve Motor (Full2)	**Deve Motor (FULL2)**	Tests the Developer Motor.
Deve Motor (Full1)	**Deve Motor (FULL1)**	
Deve Motor (Half)	**Deve Motor (HALF)**	
Duplex Motor (High)	**Duplex Motor (HIGH)**	Tests the Duplex Motor.
Duplex Motor (Full2)	**Duplex Motor (FULL2)**	
Duplex Motor (Full1)	**Duplex Motor (FULL1)**	
Duplex Motor (Half)	**Duplex Motor (HALF)**	
Duplex Motor (Low)	**Duplex Motor (LOW)**	
Tray 3 Feed Motor (Full2)	**Tray 3 Feed Motor (FULL2)**	Tests the Tray 3 Feed Motor.
Tray 3 Feed Motor (Full1)	**Tray 3 Feed Motor (FULL1)**	
Tray 3 Feed Motor (Half)	**Tray 3 Feed Motor (HALF)**	
Tray 3 Feed Motor (Low)	**Tray 3 Feed Motor (LOW)**	
Fan (High)	**Fan (HIGH)**	Tests the printer Fan.
Fan (Low)	**Fan (LOW)**	
Yellow Toner Motor	**Yellow Toner Motor**	Tests the yellow Toner Motor.
Magenta Toner Motor	**Magenta Toner Motor**	Tests the magenta Toner Motor.

Service Diagnostic Test Table (continued)

Test	Control Panel Display	Test Description
Cyan Toner Motor	**Cyan Toner Motor**	Tests the cyan Toner Motor.
Black Toner Motor	**Black Toner Motor**	Tests the black Toner Motor.
Regi Clutch	**Regi Clutch**	Tests the Registration Clutch.
Tray1 (MPT) Turn Clutch	**Tray1(MPT) Turn Clutch**	Tests the Tray 1 Turn Clutch.
Tray 1 (MPT) Feed Solenoid	**Tray1(MPT) Feed Solenoid**	Tests the Tray 1 Feed Solenoid.
Tray 2 Feed Clutch	**Tray 2 Feed Clutch**	Tests the Tray 2 Feed Clutch.
Tray 3 Feed Clutch	**Tray 3 Feed Clutch**	Tests the Tray 3 Feed Clutch.
Tray 3 Turn Clutch	**Tray 3 Turn Clutch**	Tests the Tray 3 Turn Clutch.
Duplex Clutch	**Duplex Clutch**	Tests the Duplex Clutch.
ADC (TCD) Sensor Solenoid	**ADC (TCD) Sensor Solenoid**	Tests the ADC Sensor Solenoid.
ADC (TCD) Sensor LED	**ADC (TCD) Sensor LED**	Tests the ADC Sensor LED.
OHP Sensor LED	**OHP Sensor LED**	Tests the OHP Sensor LED.
Drum Erase Lamp K	**Drum Erase Lamp K**	Tests the black Erase Lamp.
Drum Erase Lamp YMC	**Drum Erase Lamp YMC**	Tests the yellow, magenta, and cyan Erase Lamps.
Exit Clutch	**Exit Clutch**	Tests the Exit Clutch.
Duplex Fan	**Duplex Fan**	Tests the Duplex Fan.
NVM Settings	<Press the **Up** or **Down** button to move from one item to another> <Press the **Cancel** button to move one level up the menu> <Press the **Set** button to move to the execution level>	Edits, saves, loads, and prints NVRAM information.

Service Diagnostic Test Table (continued)

Test	Control Panel Display	Test Description
Edit NVM	**Edit NVM** ■ Ad0000=00000000* ■ Please wait <Press the **Left** or **Right** button to move the cursor> <Press the **Up** or **Down** button to change the value at the cursor> <Press the **Set** button to save the value in Engine NVM> <Press the **Cancel** button to move one level up the menu>	Displays the current NVRAM value. Use this function to edit NVRAM information.
Save NVM	**Save NVM** ■ SaveNVM MCU -> ESS OK? ■ Saved ■ Please wait <Press the **Set** button to save the value in the Controller NVM> <Press the **Cancel** button to move one level up the menu>	Saves the NVRAM information of the Engine in the Controller. NVRAM addresses to be saved are as follows: 1000-10FF, Total: 256Byte **Note:** Information saved in the Controller NVM can be initialized using **Clear All NVM**.
Load NVM	**Load NVM** ■ LoadNVM MCU -> ESS OK? ■ Processing ■ Loaded ■ Please wait <Press the **Set** button to load the value saved in the Controller NVM to the Engine> <Press the **Cancel** button to move one level up the menu>	Loads NVRAM information of the Engine saved in the Controller into the Engine. 1000-10FF / 1100-11FF / 1200-12FF **Note:** Information saved in the Controller NVM can be initialized using **Clear All NVM**.
Initialize Slave	**Initialize Slave** ■ Initialize Slave OK? ■ Processing ■ Initialized ■ Please wait <Press the **Set** button to run Slave Initialization> <Press the **Cancel** button to move one level up the menu>	Initializes Slave.

Service Diagnostic Test Table (continued)

Test	Control Panel Display	Test Description
Print NVM Info	**Print NVM Info** ■ Processing ■ Please wait <Press the **Set** button to run the test> <Press the **Cancel** button to move one level up the menu>	Prints NVRAM information saved in the Controller.
Print Info	Provides printer configurations and settings information.	
	Menu Buttons <Press the **Up** or **Down** button to move from one item to another> <Press the **Cancel** button to move one level up the menu> <Press the **Set** button to move to the execution level>	
Info Page	**Info Page** ■ Ready ■ Processing	Prints the software version of the printer controller. Use this function to verify the printer configuration. The Configuration Page contains: ■ Engine installation unit information ■ Standard Tray ■ Optional Tray (displaying version) ■ Optional Duplex Unit (displaying version) ■ Engine ROM Revision No. ■ MCU NVM Revision No.
Print Settings	**Print Settings** ■ Ready ■ Processing	Prints the configured settings through the Control Panel. The Print Settings page contains: ■ 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.	**SerialNo.** ■ DPXxxxxxx or ■ DRAxxxxxx	Displays the 6 digit Serial Number. **Note:** This information is not initialized with any key action.

Service Diagnostic Test Table (continued)

Test	Control Panel Display	Test Description
Tone Correction	**Tone Correction** ■ ON * ■ OFF <Press the **Up** or **Down** button to switch Tone Correction On/Off> <Press the **Set** button to save the setting and move one level up the menu> <Press the **Cancel** button to move one level up the menu without saving the value>	Controls TRC in conjunction with process control to keep the printer density constant. This function is implemented to turn Off tone correction control in case correction exceeds the limit due to machine-to-machine variation. Sets the printer Tone Correction mode On/Off. **Note:** When the Tone Correction has been changed, an "*" is displayed next to the text. **Note:** This information can be initialized by Initialize NVM (**Printer Menu** > **Admin Menu** > **Maintenance Mode** > **Initialize NVM**).
Display Counter	**Display Counter** ■ ON * ■ OFF <Press the **Up** or **Down** button to switch Display Counter On/Off> <Press the **Set** button to save the setting and move one level up the menu> <Press the **Cancel** button to move one level up the menu without saving the value>	Displays the current Display Counter On/Off information and sets mode On/Off. **Note:** This information is not initialized with any key action.
Hex Dump	**HexDump** ■ OFF * ■ ON <Press the **Up** or **Down** button to switch HexDump On/Off> <Press the **Set** button to save the setting and move one level up the menu> <Press the **Cancel** button to move one level up the menu without saving the value>	Displays the current HexDump On/Off information and sets mode On/Off. **Note:** This information is initialized by **Clear All NVM**. **Note:** When the Counter Type has been changed, an "*" is displayed next to the text.

Service Diagnostic Test Table (continued)

Test	Control Panel Display	Test Description
Pixel Counter	**Pixel Counter** ■ Y: nn.n ■ C: nn.n ■ M: nn.n ■ K: nn.n <Press the **Set** or **Cancel** button to move one level up the menu>	Displays the ratio (% used) of the number of pixel per C/M/Y/K counted by the Controller to A4 size area except 4 mm area from the edge on the last page print. ■ 100% = empty print cartridge The value is rounded off to one decimal place. For B/W print, only K is displayed. The ranges are from 0-100% for each color (CMYK).
Configuration ***(Do not use - for Development Only)***	**Configuration** ■ Dip Switch0 ■ 00000000 * ■ Dip Switch1 ■ 00000000 * ■ Dip Switch2 ■ 00000000 * ■ Dip Switch3 ■ 00000000 *	Operates the DIP switch on NVRAM of the Controller. Available values are 0 and 1. **Note:** This information is initialized by **Clear All NVM**.
Counter Type	**Counter Type** ■ Type1* ■ Type2 ■ Type3 ■ Type4 <Press the **Up** or **Down** button to change counter type> <Press the **Set** button to save the setting> <Press the **Cancel** button to move one level up the menu>	Sets counter type from 1-4. **Note:** When the Counter Type has been changed, an "*" is displayed next to the text.

Service Diagnostic Test Table (continued)

Test	Control Panel Display	Test Description
Print Counter	**Print Counter** ■ Color Print ■ n ■ B/W Print ■ n ■ Total Print ■ n ■ Color Backup ■ n ■ B/W Backup ■ n ■ Total Backup ■ n ■ Color Error ■ n ■ B/W Error ■ n **Menu Buttons** <Press the **Up** or **Down** button to move from one item to another> <Press the **Cancel** button to move one/two level(s) up the menu> <Press the **Set** button to run the test>	Operates the print counter.
Copy Counter MtoB	**CopyCounter MtoB** ■ OK? ■ Processing ■ Copied <Press the **Cancel** button to move one level up the menu> <Press the **Set** button to run the test>	Copies the values from Master NVRAM to Backup NVRAM. ■ Device-specific information called * ■ “Personal info” in the first 128 Byte ■ PV counter master ■ Printer counter master
Copy Counter BtoM	**CopyCounter BtoM** ■ OK? ■ Processing ■ Copied <Press the **Cancel** button to move one level up the menu> <Press the **Set** button to run the test>	Copies the values from Backup NVRAM to Master NVRAM. ■ Device-specific information called “Personal info” in the first 128 Byte ■ PV counter backup ■ Printer counter backup

Service Diagnostic Test Table (continued)

Test	Control Panel Display	Test Description
Clear All NVM	**Clear All NVM** ■ OK? ■ Processing ■ Initialized <Press the **Cancel** button to move one level up the menu> <Press the **Set** button to run the test>	Clears all NVRAM of the Controller including billing.
Clear Job History	**Clear JobHistory** ■ OK? ■ Processing ■ Initialized <Press the **Cancel** button to move one level up the menu> <Press the **Set** button to run the test>	Deletes the job history data. **Note:** Job History can also be initialized by **Clear All NVM**.
Clear Auditron PV	**Clear AuditronPV** ■ OK? ■ Processing ■ Initialized <Press the **Cancel** button to move one level up the menu> <Press the **Set** button to run the test>	Initializes Auditron or Print Volume. Print Volume and Auditron work exclusively and share the setting memory area. When Auditron is enabled, user account and restricted information is cleared. When Print Volume is enabled, Print Volume Counter is initialized. **Note:** AuditronPV can also be initialized by **Clear All NVM**.
Test Print	Provides various test prints to be used for troubleshooting the printer.	
	Menu Buttons <Press the **Up** or **Down** button to switch from one item to another> <Press the **Cancel** button to move one/two level(s) up the menu> <Press the **Set** button to run the test>	
No Image IOT	**No Image IOT** ■ Ready ■ Processing	Prints a blank page.
Test Pat600 IOT	**TestPat600 IOT** ■ Ready ■ Processing	Prints the printer built-in Test Pattern 600 DPI. This test checks the print function of the printer.
Grid 2 ESS	**Grid 2 ESS** ■ Ready ■ Processing	Prints the Controller built-in grid pattern. This test checks the print function of the printer.

Service Diagnostic Test Table (continued)

Test	Control Panel Display	Test Description
Cyan 20% ESS	**Cyan 20% ESS** ■ Ready ■ Processing	Prints 20% density paint pattern of cyan on the whole page.
Magenta 20% ESS	**Magenta 20% ESS** ■ Ready ■ Processing	Prints 20% density paint pattern of magenta on the whole page.
Yellow 20% ESS	**Yellow 20% ESS** ■ Ready ■ Processing	Prints 20% density paint pattern of yellow on the whole page.
Black 20% ESS	**Black 20% ESS** ■ Ready ■ Processing	Prints 20% density paint pattern of black on the whole page.
CMY 20% ESS	**CMY 20% ESS** ■ Ready ■ Processing	Prints 20% density paint pattern of cyan, magenta, and black combined on the whole page.
Gradation ESS	**Gradation ESS** ■ Ready ■ Processing	Prints a pattern in which the density of each cyan, magenta, yellow, or black is varied from 0-100%.
Parameter	Reads/writes the parameter values, errors, and life counter values stored in the printer.	
	Menu Buttons <Press the **Up** or **Down** button to move from one item to another or change the value> <Press the **Cancel** button to move to one/two level(s) up the menu without saving the value> <Press the **Set** button to run the test or the value in NVM and move one level up the menu>	**Note:** After the setting has been changed, the "*" at the right end disappears. Sets registration in the paper feeding direction. **Note:** When the value is minimum or maximum, pressing the **Up** or **Down** button does not change the value.
Slow Scan KtoP	**Slow Scan KtoP** ■ -128 * ■ : ■ 127 *	Adjusts the registration in the paper feeding direction.
Slow Scan 600M	**Slow Scan 600M** ■ -30 * ■ : ■ 30 *	
Slow Scan 600Y	**Slow Scan 600Y** ■ -30 * ■ : ■ 30 *	

Service Diagnostic Test Table (continued)

Test	Control Panel Display	Test Description
Slow Scan 600C	**Slow Scan 600C** ■ -30 * ■ : ■ 30 *	
Slow Scan 1200M	**Slow Scan 1200M** ■ -60 * ■ : ■ 60 *	
Slow Scan 1200Y	**Slow Scan 1200Y** ■ -60 * ■ : ■ 60 *	
Slow Scan 1200C	**Slow Scan 1200C** ■ -60 * ■ : ■ 60 *	
Fast Scan KtoM	**Fast Scan KtoM** ■ -30 * ■ : ■ 30 *	Sets the registration in the scanning direction for Tray 1 (MPT), Tray 2, Tray 3, and Duplex Unit.
Fast Scan KtoY	**Fast Scan KtoY** ■ -30 * ■ : ■ 30 *	
Fast Scan KtoC	**Fast Scan KtoC** ■ -30 * ■ : ■ 30 *	
Fast Scan Tray 1 (MPT)	**Fast Scan MPT** ■ -30 * ■ : ■ 30 *	
Fast Scan Tray 2	**Fast Scan Tray 2** ■ -30 * ■ : ■ 30 *	
Fast Scan Tray 3	**Fast Scan Tray 3** ■ -30 * ■ : ■ 30 *	
Fast Scan Duplex	**Fast Scan Duplex** ■ -30 * ■ : ■ 30 *	

Service Diagnostic Test Table (continued)

Test	Control Panel Display	Test Description
Fast Scan 2 KtoM	**Fast Scan 2 KtoM** ■ -1 * ■ : ■ 2 *	
Fast Scan 2 KtoY	**Fast Scan 2 KtoY** ■ -1 * ■ : ■ 2 *	
Fast Scan 2 KtoC	**Fast Scan 2 KtoC** ■ -1 * ■ : ■ 2 *	
Fast Scan 2 KtoY	**Fast Scan 2 KtoY** ■ -1 * ■ : ■ 2 *	
Fast Scan 2 KtoC	**Fast Scan 2 KtoC** ■ -1 * ■ : ■ 2 *	
Life Y Toner	**Life Y Toner** ■ 0	Reads life counter of the yellow toner.
Life M Toner	**Life M Toner** ■ 0	Reads life counter of the magenta toner.
Life C Toner	**Life C Toner** ■ 0	Reads life counter of the cyan toner.
Life K Toner	**Life K Toner** ■ 0	Reads life counter of the black toner.
Life DTB1	**Life DTB1** ■ 0	Reads life counter of the Belt Page Count.
Life Fuser	**Life Fuser** ■ 0	Reads life counter of the Fuser.
Life Printer	**Life Printer** ■ 0	Reads life counter of the Printer.
Life DTB2	**Life DTB2** ■ 0	Reads life counter of the Belt Waste Count.
Life DTB3	**Life DTB3** ■ 0	Reads life counter of the Belt Rotation Count.
Life Y Waste Toner	**Life YWaste Toner** ■ 0	Reads life counter of the yellow Waste Toner.
Life M Waste Toner	**Life MWaste Toner** ■ 0	Reads life counter of the magenta Waste Toner.

Service Diagnostic Test Table (continued)

Test	Control Panel Display	Test Description
Life C Waste Toner	Life CWaste Toner ■ 0	Reads life counter of the cyan Waste Toner.
Life K Waste Toner	Life KWaste Toner ■ 0	Reads life counter of the black Waste Toner.
Life Developer Y	Life Developer Y ■ 0	Reads life counter of the yellow Developer.
Life Developer M	Life Developer M ■ 0	Reads life counter of the magenta Developer.
Life Developer C	Life Developer C ■ 0	Reads life counter of the cyan Developer.
Life Developer K	Life Developer K ■ 0	Reads life counter of the black Developer.
Life Y Drum	Life Y Drum ■ 0	Reads life counter of the yellow OPC Drum.
Life M Drum	Life M Drum ■ 0	Reads life counter of the magenta OPC Drum.
Life C Drum	Life C Drum ■ 0	Reads life counter of the cyan OPC Drum.
Life K Drum	Life K Drum ■ 0	Reads life counter of the black OPC Drum.
Life Tray 1 (MPT) Feed	Life MPT Feed ■ 0	Reads life counter of the Tray 1 (MPT) Feed.
Life Tray 2 Feed	Life Tray2 Feed ■ 0	Reads life counter of the Tray 2 Feed.
Life Tray 3 Feed	Life Tray3 Feed ■ 0	Reads life counter of the Tray 3 Feed.
Life Duplex Feed	Life Duplex Feed ■ 0	Reads life counter of the Duplex Feed.
Print	Print ■ Ready	Prints current parameters.
Exit Mode	Reads/writes the parameter values, errors, and life counter values stored in the printer.	
	Menu Buttons <Press the **Cancel** button to move one/two level(s) up the menu> <Press the **Set** button to move to the Execution level or reboot the printer>	
Complete Exit	Complete Exit ■ Exit?	Exits the Service Diagnostic menu.

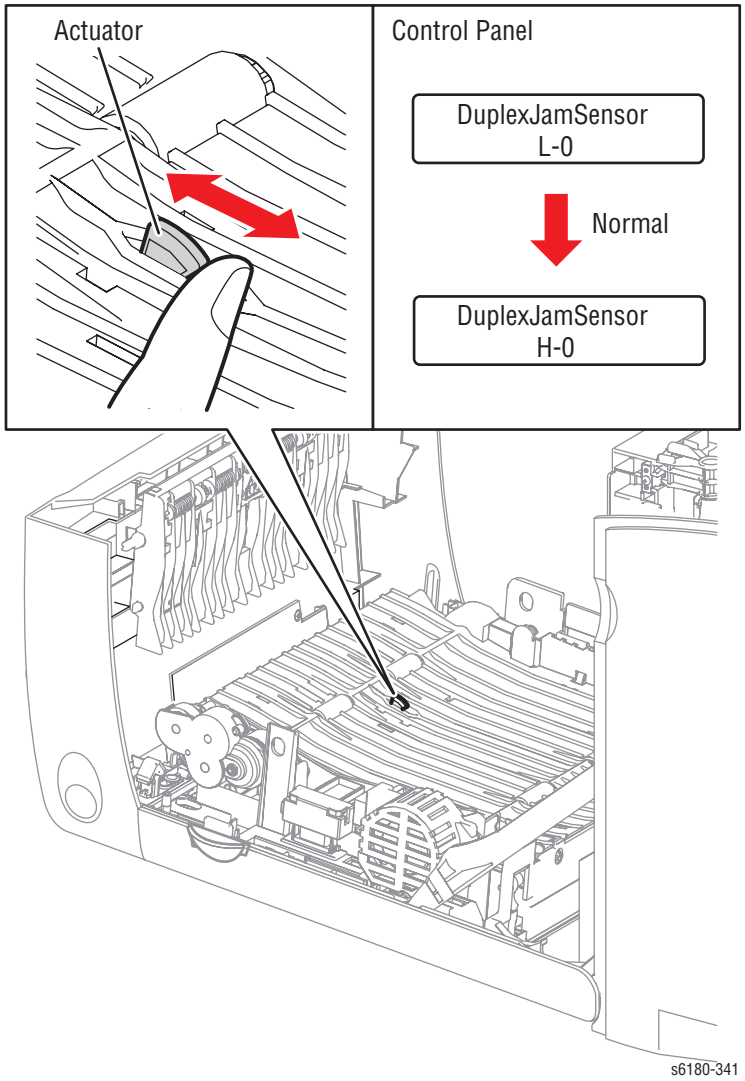
Sensor Tests

Duplex Jam Sensor

Caution

When performing this procedure, remove and cover the Print Cartridges to avoid exposure to light.

1. Enter the Service Diagnostic menu (page 4-5).
2. Open the Front Cover.
3. Remove the Transfer Unit (page 8-7).
4. Remove the Print Cartridges (page 8-9).
5. Perform the Duplex Jam Sensor test: **Engine Diag** > **Sensor Test** > **DuplexJamSensor**.
6. Move the Actuator back and forth and check the information on the Control Panel display. The Low and High values change from 0 up to 99.



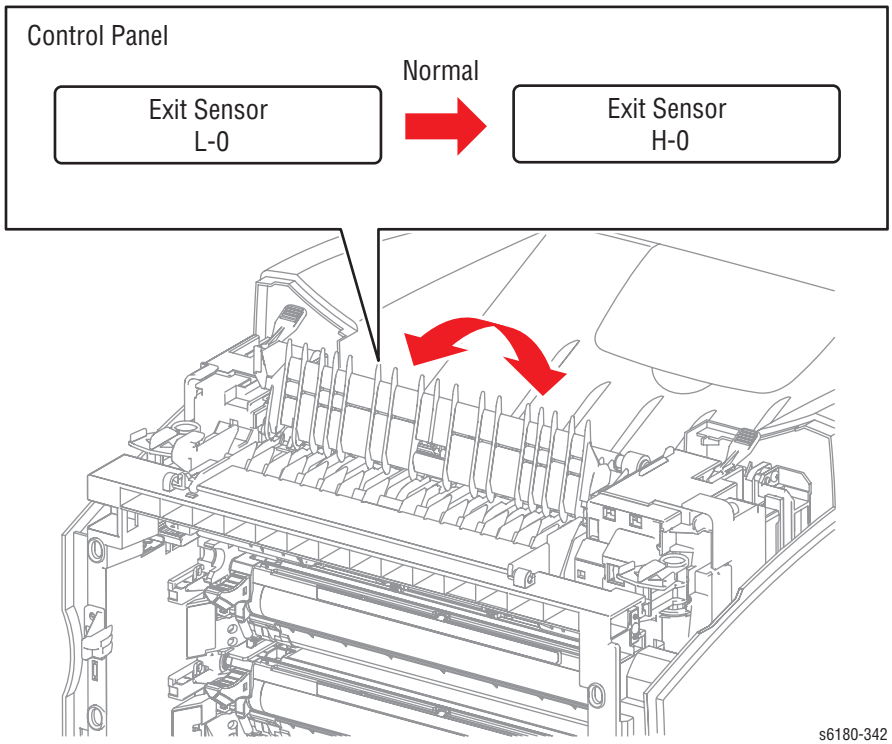
7. Press the **Cancel** button to stop the Duplex Jam Sensor test.

Exit Sensor

Warning

Ensure to wait for the Fuser to cool down before starting the procedure.

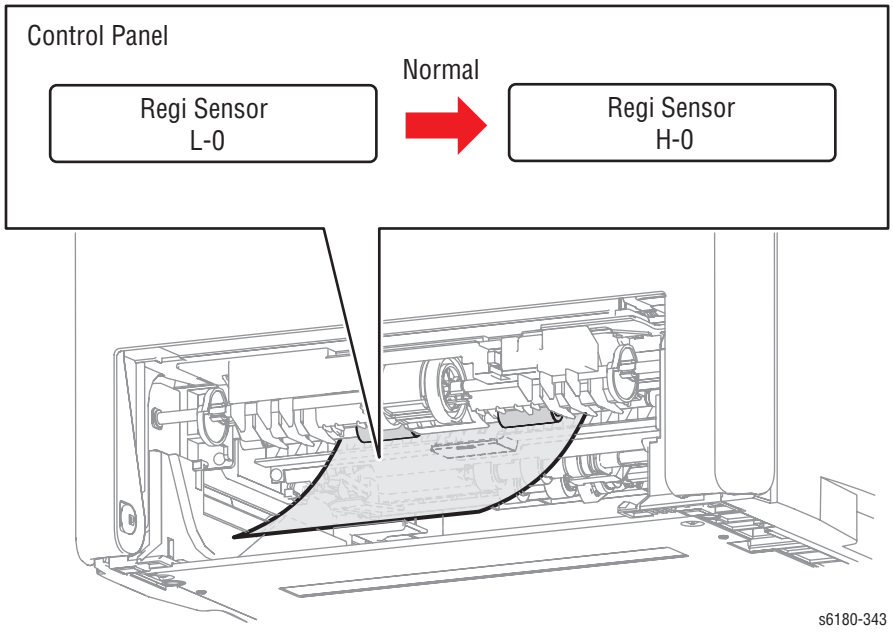
1. Enter the Service Diagnostic menu (page 4-5).
2. Open the Front Cover.
3. Remove the Transfer Unit (page 8-7).
4. Perform the Duplex Jam Sensor test: **Engine Diag** > **Sensor Test** > **Exit Sensor**.
5. Move the Sensor up and down and check the information on the Control Panel display. The Low and High values change from 0 up 99.



6. Press the **Cancel** button to stop the Exit Sensor test.

Regi Sensor

1. Enter the Service Diagnostic menu (page 4-5).
2. Remove Tray 2.
3. Perform the Regi Sensor test: **Engine Diag** > **Sensor Test** > **Regi Sensor**.
4. Insert one sheet of paper in between the Registration Chute and the Turn Clutch until the paper stops.
5. Slowly pull out the sheet of paper while checking the information on the Control Panel display. The Low and High values change from 0 up 99.



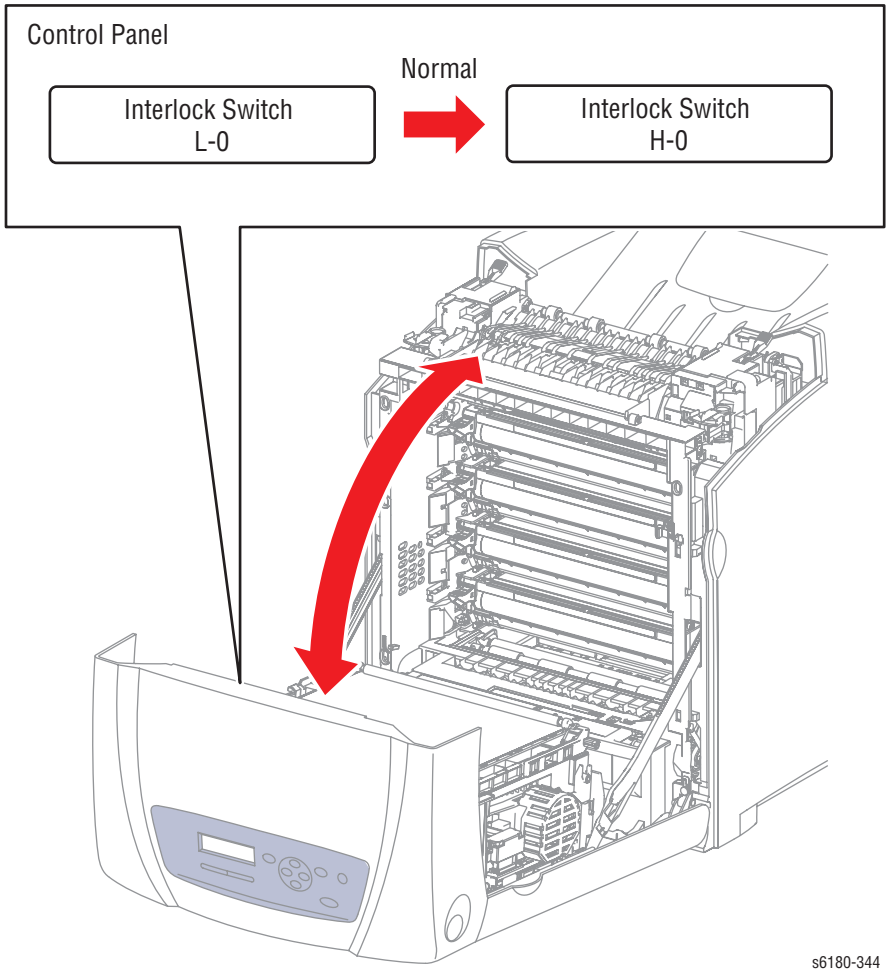
6. Press the **Cancel** button to stop the Regi Sensor test.

Interlock Switch

Caution

When performing this procedure, remove and cover the Print Cartridges to avoid exposure to light.

1. Enter the Service Diagnostic menu (page 4-5).
2. Open the Front Cover.
3. Remove the Transfer Unit (page 8-7).
4. Remove the Print Cartridges (page 8-9).
5. Perform the Interlock Switch test: **Engine Diag** > **Sensor Test** > **Interlock Switch**.
6. Open and close the Front Door while checking the information on the Control Panel display. The Low and High values change from 0 up to 99.



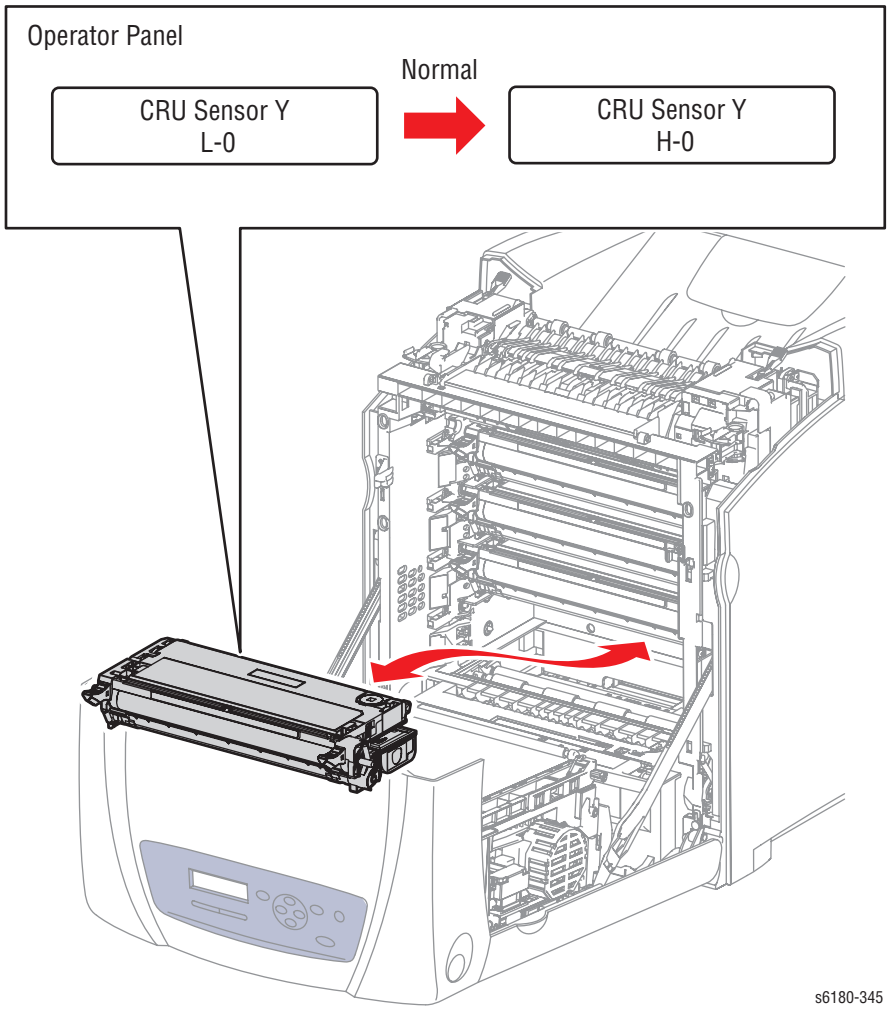
7. Press the **Cancel** button to stop the Interlock Switch test.

CRU Sensor Y (Yellow Toner Cartridge Sensor)

Caution

When performing this procedure, remove and cover the Print Cartridges to avoid exposure to light.

1. Enter the Service Diagnostic menu (page 4-5).
2. Open the Front Cover.
3. Remove the Transfer Unit (page 8-7).
4. Remove the Print Cartridges (page 8-9).
5. Perform the CRU Sensor Y test: **Engine Diag** > **Sensor Test** > **CRU Sensor Y**.
6. Install and remove the Yellow Print Cartridge while checking the information on the Control Panel display. The Low and High values change from 0 up to 99.



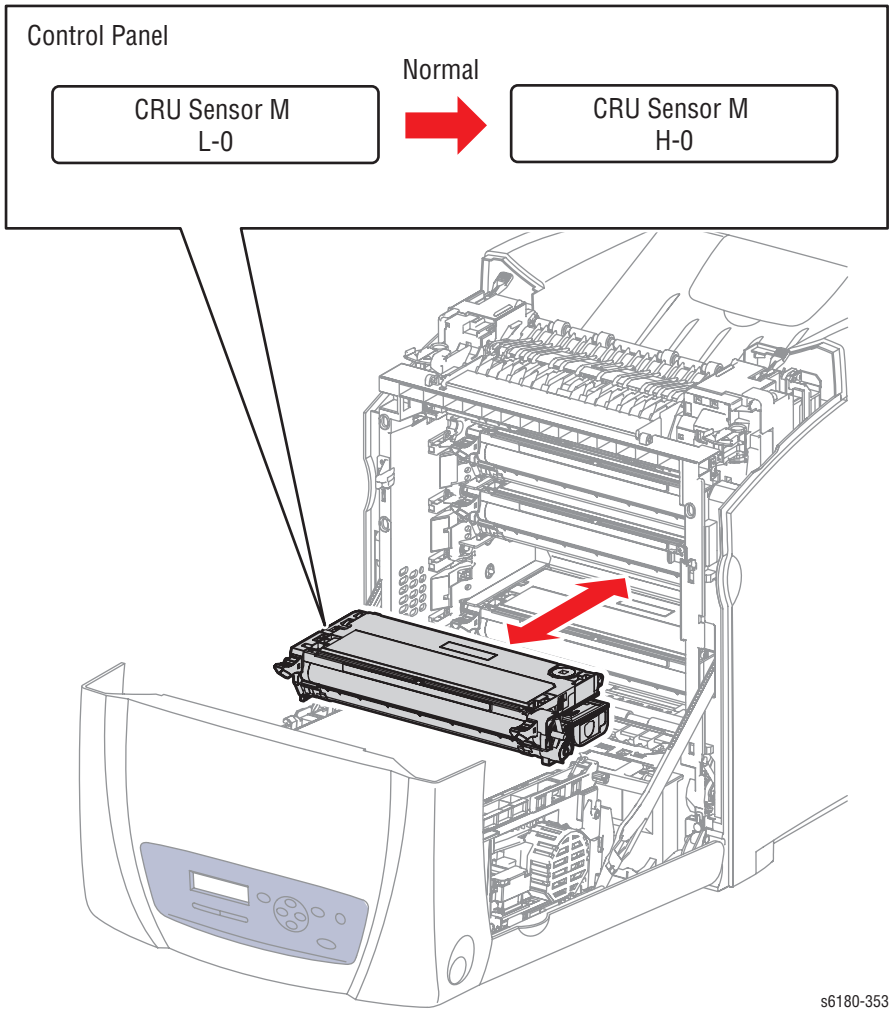
7. Press the **Cancel** button to stop the CRU Sensor Y test.

CRU Sensor M (Magenta Toner Cartridge Sensor)

Caution

When performing this procedure, remove and cover the Print Cartridges to avoid exposure to light.

1. Enter the Service Diagnostic menu (page 4-5).
2. Open the Front Cover.
3. Remove the Transfer Unit (page 8-7).
4. Remove the Print Cartridges (page 8-9).
5. Perform the CRU Sensor M test: **Engine Diag** > **Sensor Test** > **CRU Sensor M**.
6. Install and remove the Magenta Print Cartridge while checking the information on the Control Panel display. The Low and High values change from 0 up to 99.



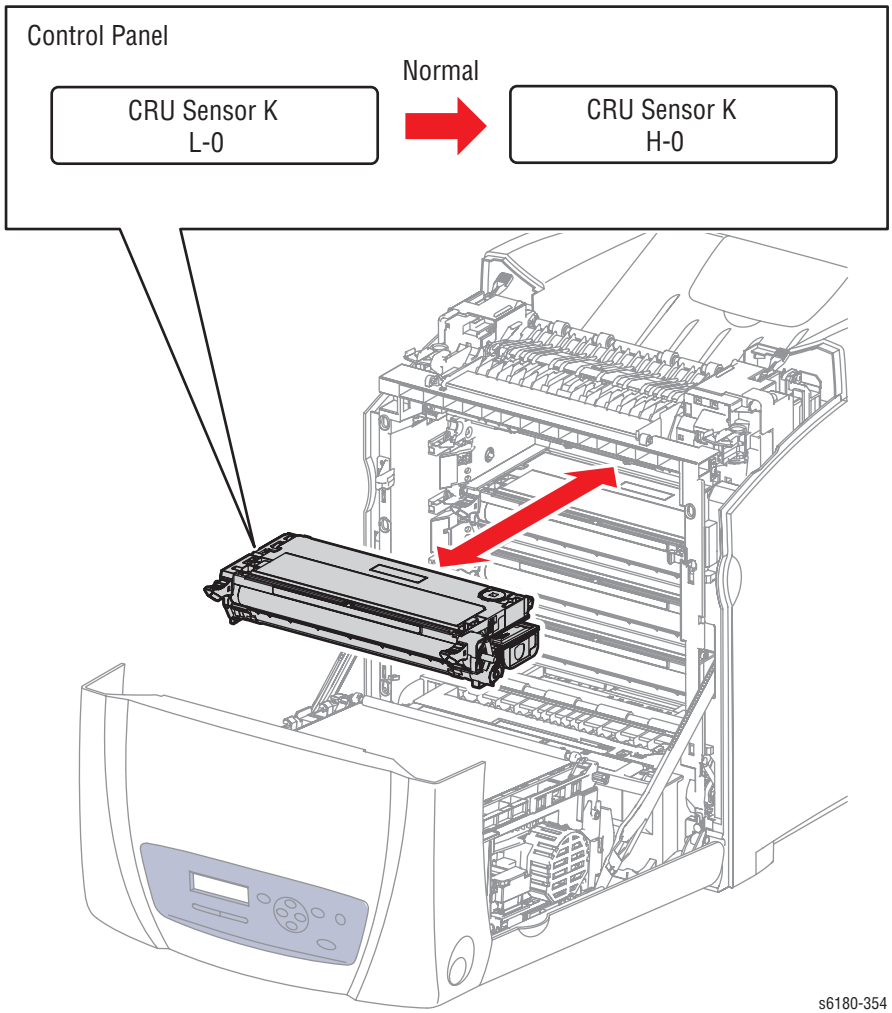
7. Press the **Cancel** button to stop the CRU Sensor M test.

CRU Sensor K (Black Toner Cartridge Sensor)

Caution

When performing this procedure, remove and cover the Print Cartridges to avoid exposure to light.

1. Enter the Service Diagnostic menu (page 4-5).
2. Open the Front Cover.
3. Remove the Transfer Unit (page 8-7).
4. Remove the Print Cartridges (page 8-9).
5. Perform the CRU Sensor K test: **Engine Diag** > **Sensor Test** > **CRU Sensor K**.
6. Install and remove the Black Print Cartridge while checking the information on the Control Panel display. The Low and High values change from 0 up to 99.



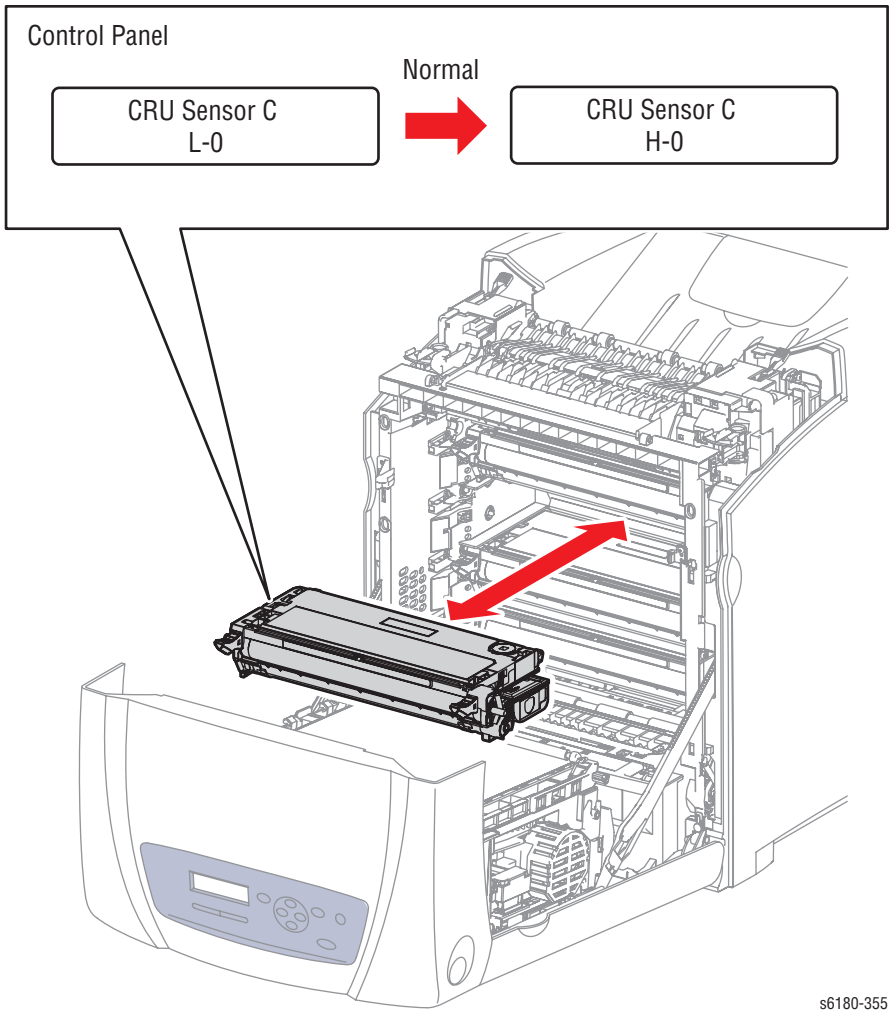
7. Press the **Cancel** button to stop the CRU Sensor K test.

CRU Sensor C (Cyan Toner Cartridge Sensor)

Caution

When performing this procedure, remove and cover the Print Cartridges to avoid exposure to light.

1. Enter the Service Diagnostic menu (page 4-5).
2. Open the Front Cover.
3. Remove the Transfer Unit (page 8-7).
4. Remove the Print Cartridges (page 8-9).
5. Perform the CRU Sensor C test: **Engine Diag** > **Sensor Test** > **CRU Sensor C**.
6. Install and remove the Cyan Print Cartridge while checking the information on the Control Panel display. The Low and High values change from 0 up to 99.



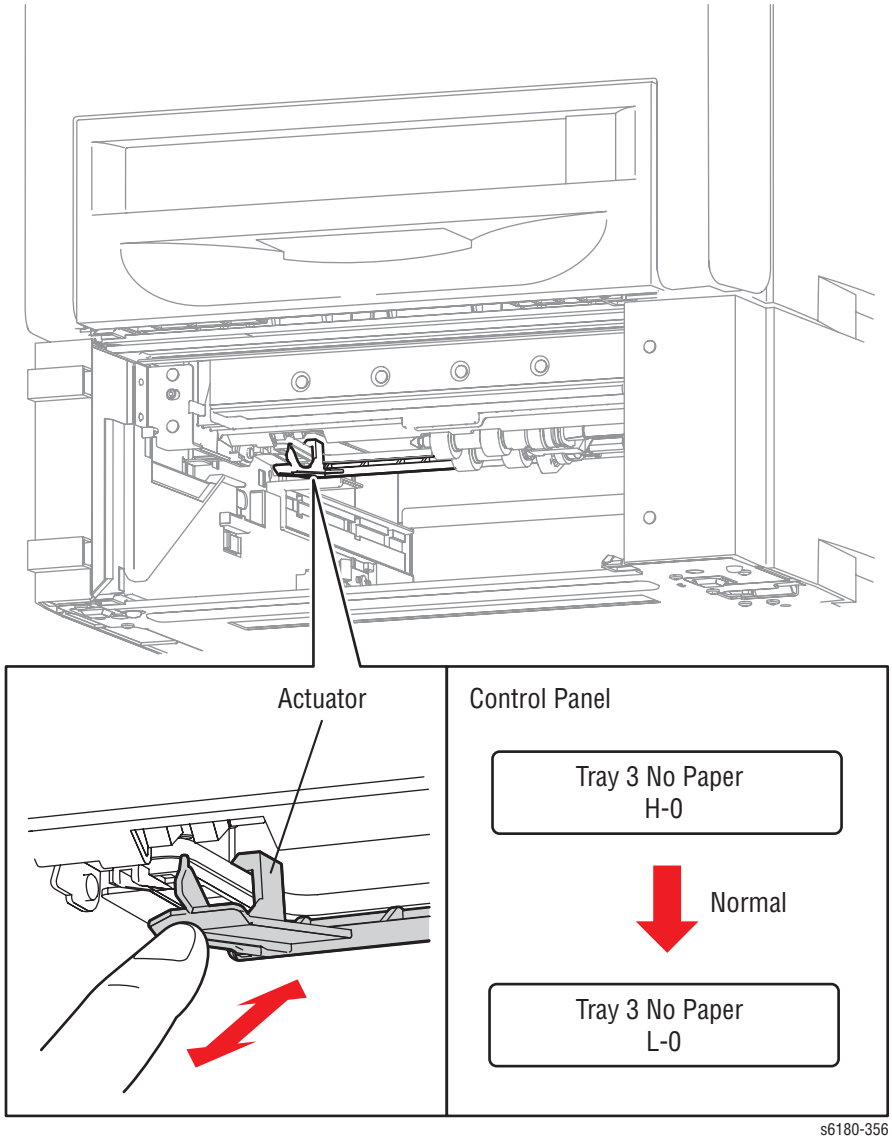
7. Press the **Cancel** button to stop the CRU Sensor C test.

Tray 3 No Paper

Note

The Tray 3 No Paper Sensor is located in the Optional 550-Sheet Feeder.

1. Enter the Service Diagnostic menu (page 4-5).
2. Perform the Tray 3 No Paper test: **Engine Diag** > **Sensor Test** > **Tray 3 No Paper**.
3. Remove Tray 3.
4. Move the Tray 3 No Paper sensor up and down while checking the information on the Control Panel display. The Low and High values change from 0 up to 99.



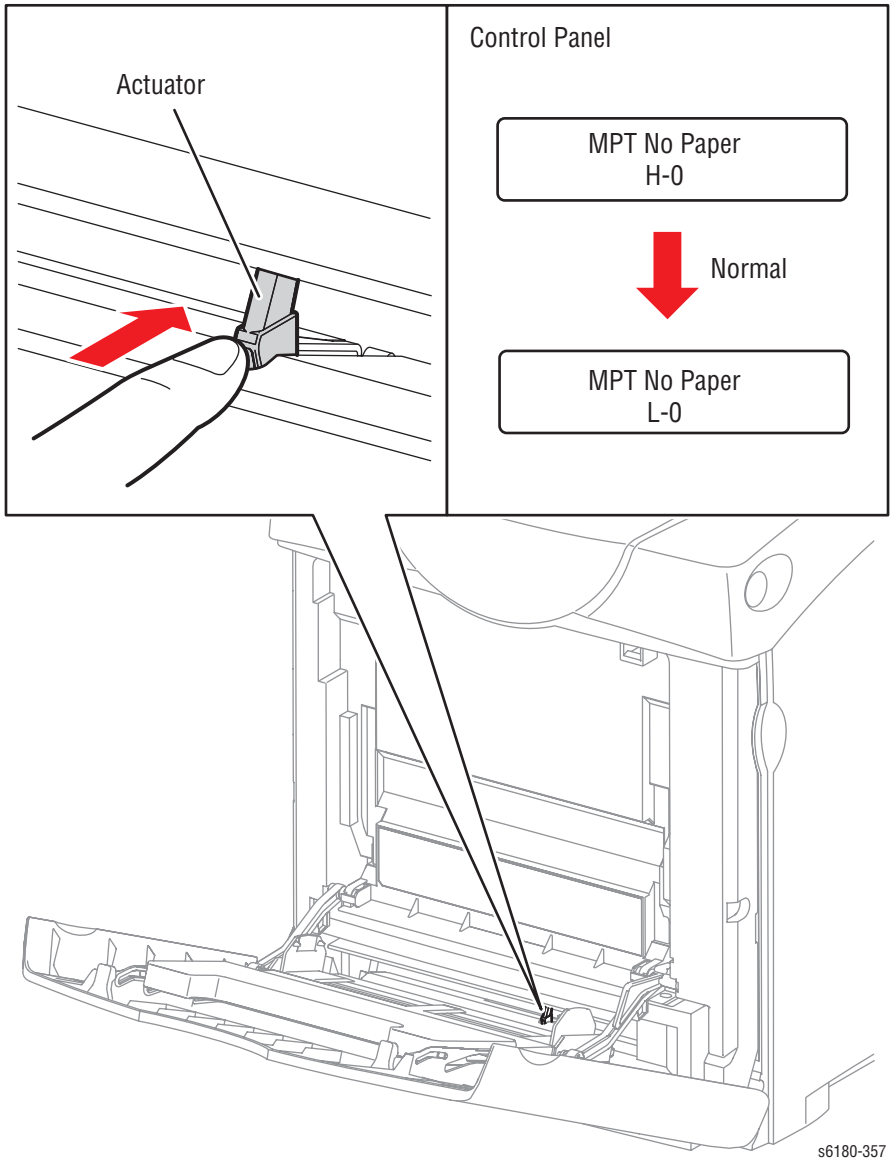
5. Press the **Cancel** button to stop the Tray 3 No Paper test.

Tray 1 (MPT) No Paper

Note

Ensure to remove paper from the Tray 1 (MPT) prior performing the test.

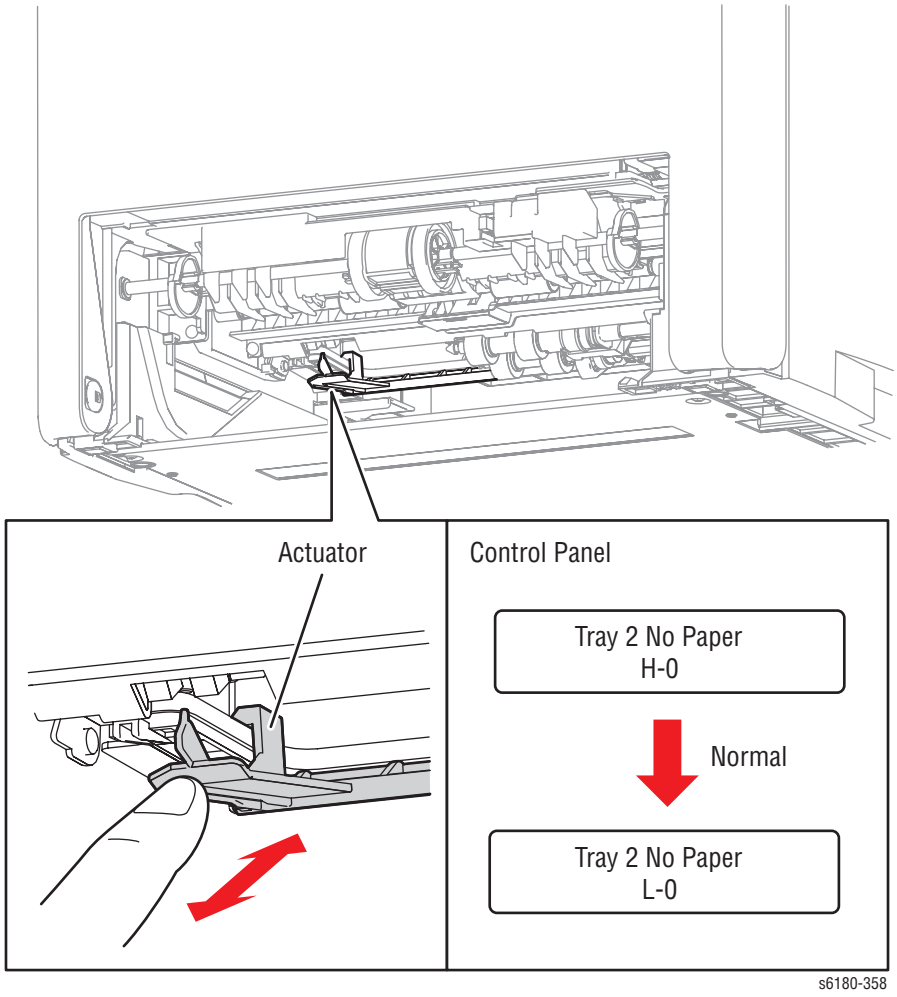
1. Enter the Service Diagnostic menu (page 4-5).
2. Perform the MPT No Paper test: **Engine Diag** > **Sensor Test** > **MPT No Paper**.
3. Open Tray 1 (MPT).
4. Move the Actuator back and forth while checking the information on the Control Panel display. The Low and High values change from 0 up to 99.



5. Press the **Cancel** button to stop the Tray 1 No Paper test.

Tray 2 No Paper

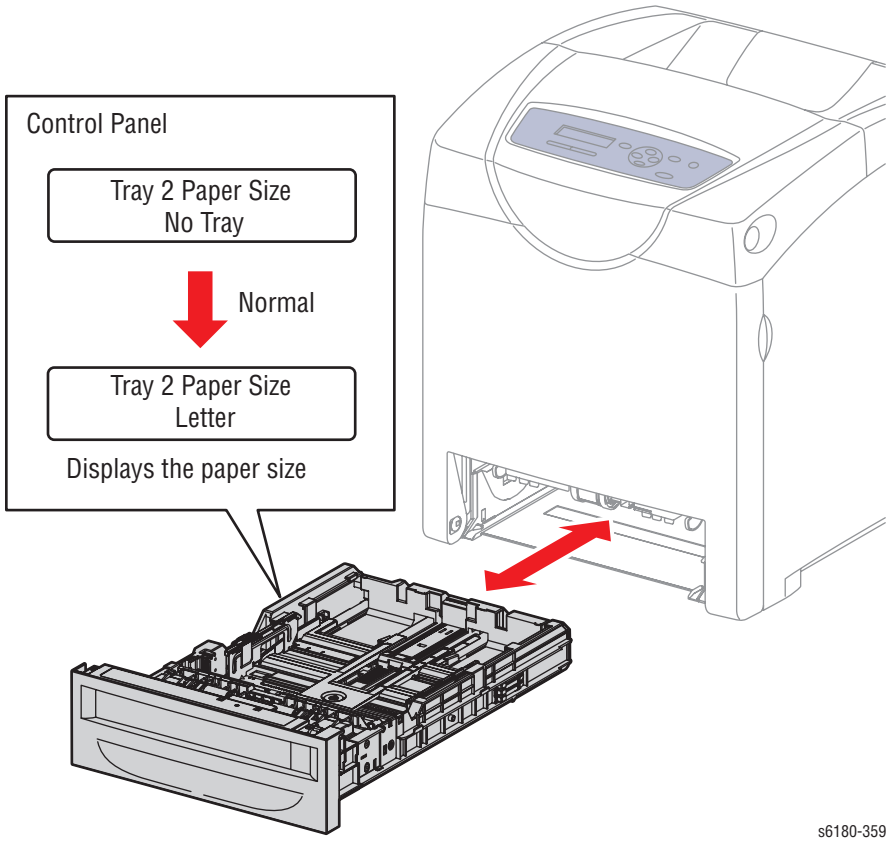
1. Enter the Service Diagnostic menu (page 4-5).
2. Perform the Tray 2 No Paper test: **Engine Diag** > **Sensor Test** > **Tray 2 No Paper**.
3. Remove Tray 2.
4. Move the Actuator up and down while checking the information on the Control Panel display. The Low and High values change from 0 up to 99.



5. Press the **Cancel** button to stop the Tray 2 No Paper test.

Tray 2 Paper Size

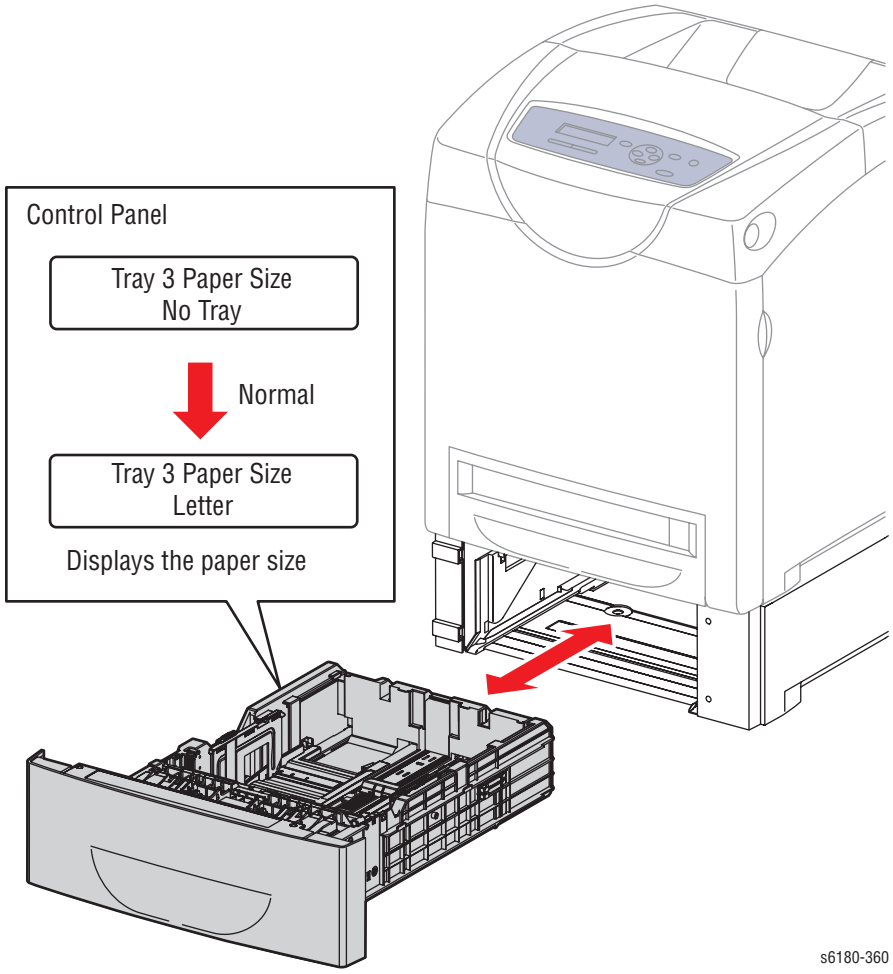
1. Enter the Service Diagnostic menu (page 4-5).
2. Perform the Tray 2 Paper Size test: **Engine Diag** > **Sensor Test** > **Tray2 Paper Size**.
3. The paper size information is displayed on the Control Panel.
4. Remove Tray 2.
5. Verify that the displayed paper size information on the Control Panel matches with the paper size settings located inside of Tray 2.



6. Press the **Cancel** button to stop the Tray 2 Paper Size test.

Tray 3 Paper Size

1. Enter the Service Diagnostic menu (page 4-5).
2. Perform the Tray 3 Paper Size test: **Engine Diag** > **Sensor Test** > **Tray3 Paper Size**.
3. The paper size information is displayed on the Control Panel.
4. Remove Tray 3.
5. Verify that the displayed paper size information on the Control Panel matches with the paper size settings located inside of Tray 3.



6. Press the **Cancel** button to stop the Tray 3 Paper Size test.

Motor Tests

Main Motor (FULL2/FULL1/HALF1/LOW)

Caution

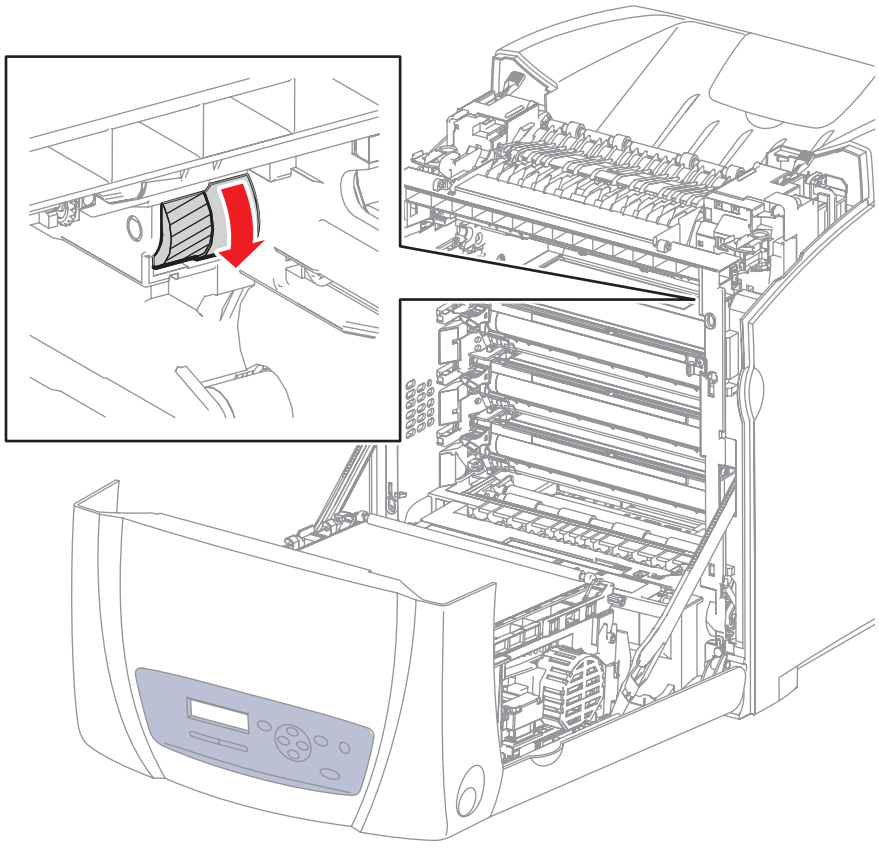
The Main Motor is in the Main Drive. When performing this procedure, remove and cover the Print Cartridges to avoid exposure to light.

Note

The rotational speed of the Main Motor is as follows:

- LOW < HALF < FULL2 < FULL1

1. Enter the Service Diagnostic menu (page 4-5).
2. Open the Front Cover.
3. Remove the Transfer Unit (page 8-7).
4. Remove the Print Cartridges (page 8-9).
5. Use a paper clip to secure the Interlock Switch.
6. Perform the Main Motor (FULL2/FULL1/HALF/LOW) test: **Engine Diag** > **Motor Test** > **Main Motor (FULL2/FULL1/HALF/LOW)**.
7. Verify that the Main Motor is running and the gear is rotating.



s6180-365

8. Press the **Cancel** button to stop the Main Motor test.
9. Remove the paper clip from the Interlock Switch.

Sub Motor (FULL2/FULL1/HALF/LOW)

Caution

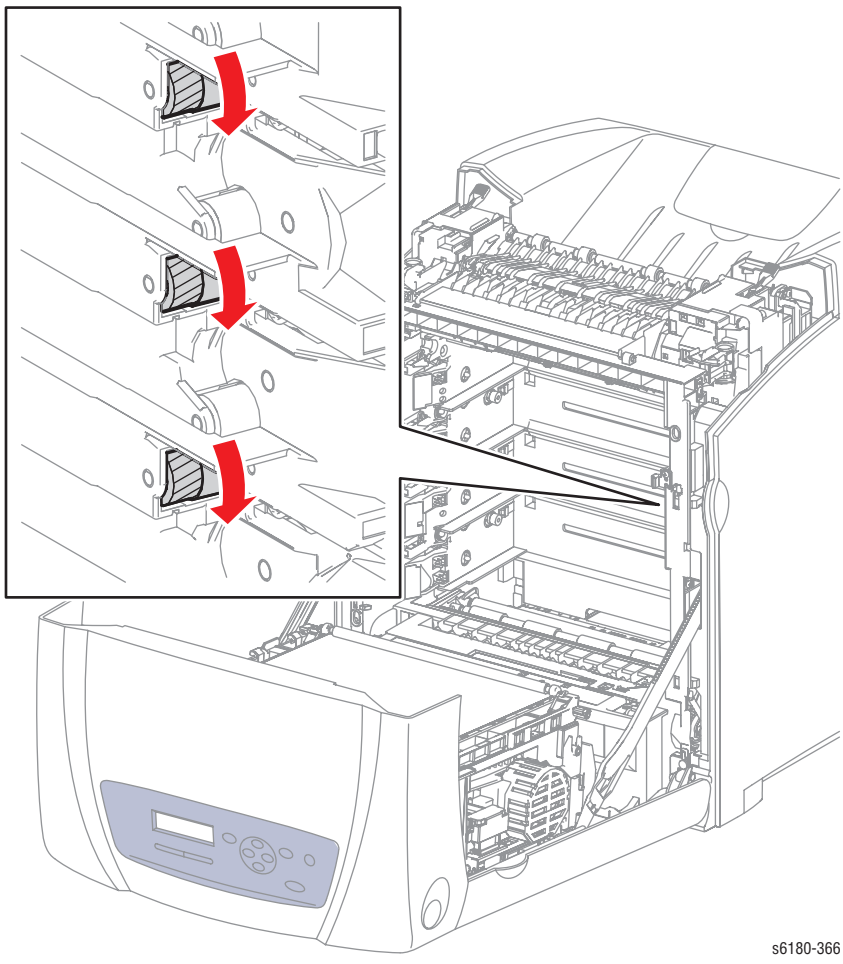
The Sub Motor is located in the Main Drive. When performing this procedure, remove and cover the Print Cartridges to avoid exposure to light.

Note

The rotational speed of the Sub Motor is as follows:

- LOW < HALF < FULL2 < FULL1

1. Enter the Service Diagnostic menu (page 4-5).
2. Open the Front Cover.
3. Remove the Transfer Unit (page 8-7).
4. Remove the Print Cartridges (page 8-9).
5. Use a paper clip to secure the Interlock Switch.
6. Perform the Sub Motor (FULL2/FULL1/HALF/LOW) test: **Engine Diag** > **Motor Test** > **Sub Motor (FULL2/FULL1/HALF/LOW)**.
7. Verify that the Sub Motor is running and the three gears are rotating.



s6180-366

8. Press the **Cancel** button to stop the Sub Motor test.
9. Remove the paper clip from the Interlock Switch.

Tray 2 Motor (FULL2/FULL1/HALF/LOW)

Caution

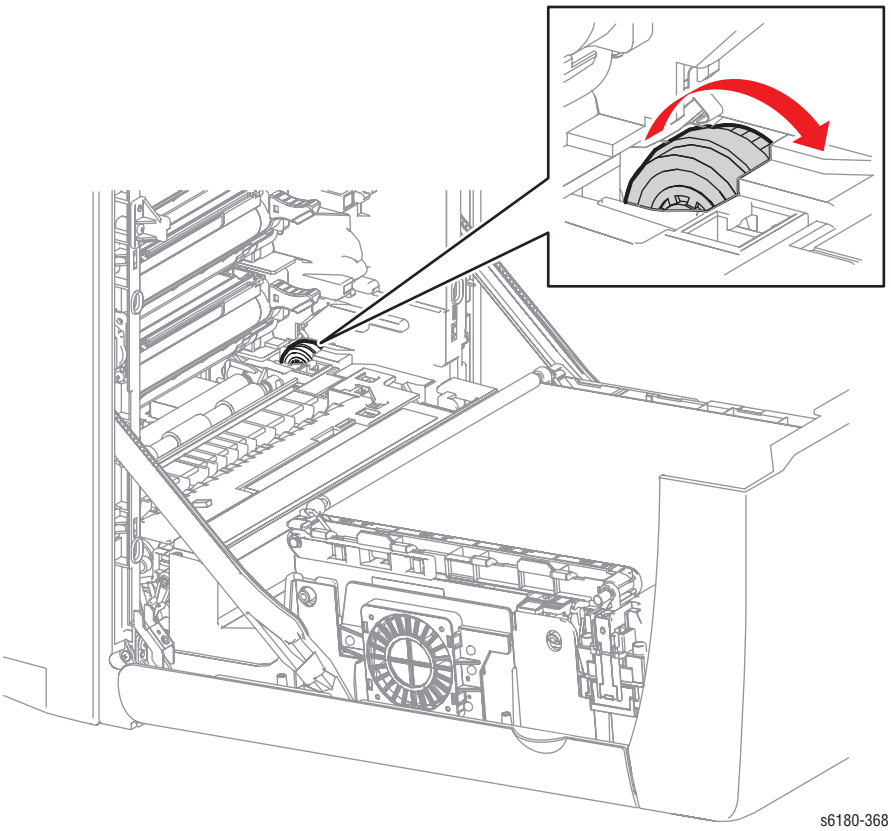
The Tray 2 Motor is located in the Main Drive. When performing this procedure, remove and cover the Print Cartridges to avoid exposure to light.

Note

The rotational speed of the Tray 2 Motor is as follows:

- LOW < HALF < FULL2 < FULL1

1. Enter the Service Diagnostic menu (page 4-5).
2. Open the Front Cover.
3. Remove the Transfer Unit (page 8-7).
4. Remove the Print Cartridges (page 8-9).
5. Use a paper clip to secure the Interlock Switch.
6. Perform the Tray 2 Motor (FULL2/FULL1/HALF/LOW) test: **Engine Diag** > **Motor Test** > **Tray 2 Motor (FULL2/FULL1/HALF/LOW)**.
7. Verify that the Tray 2 Motor is running and the gear is rotating.



8. Press the **Cancel** button to stop the Tray 2 Motor test.
9. Remove the paper clip from the Interlock Switch.

Deve Motor (FULL2/FULL1/HALF)

Caution

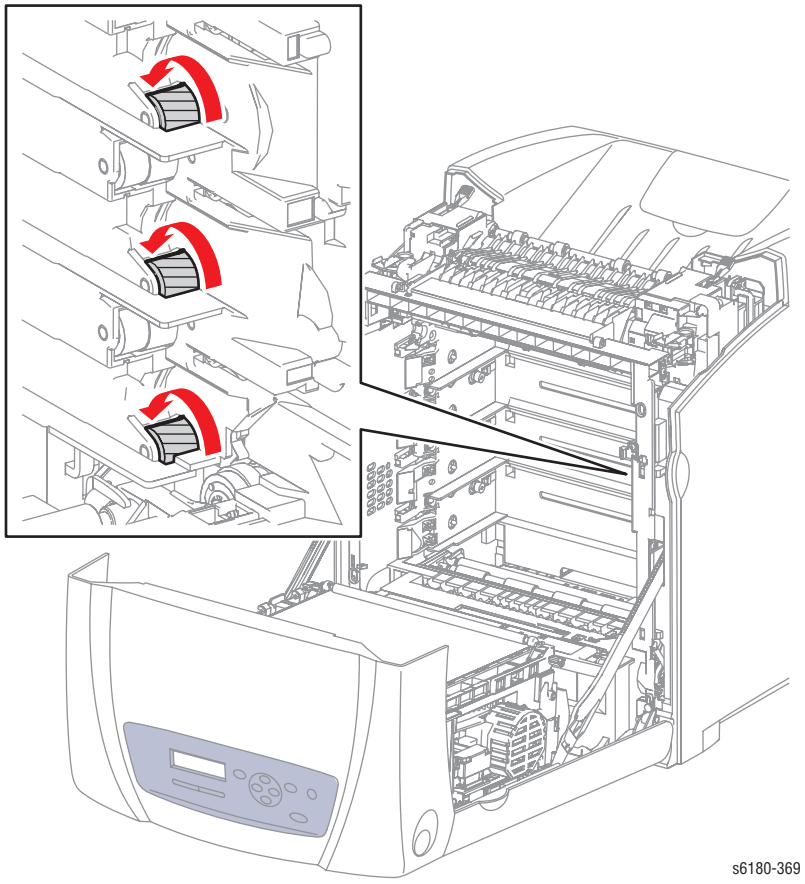
The Deve Motor is located in the Main Drive. When performing this procedure, remove and cover the Print Cartridges to avoid exposure to light.

Note

The rotational speed of the Deve Motor is as follows:

- HALF < FULL1 < FULL2

1. Enter the Service Diagnostic menu (page 4-5).
2. Open the Front Cover.
3. Remove the Transfer Unit (page 8-7).
4. Remove the Print Cartridges (page 8-9).
5. Use a paper clip to secure the Interlock Switch.
6. Perform the Deve Motor (FULL2/FULL1/HALF) test: **Engine Diag** > **Motor Test** > **Deve Motor (FULL2/FULL1/HALF)**.
7. Verify that the Deve Motor is running and the three gears are rotating.



8. Press the **Cancel** button to stop the Deve Motor test.
9. Remove the paper clip from the Interlock Switch.

Duplex Motor (HIGH/FULL2/FULL1/HALF/LOW)

Caution

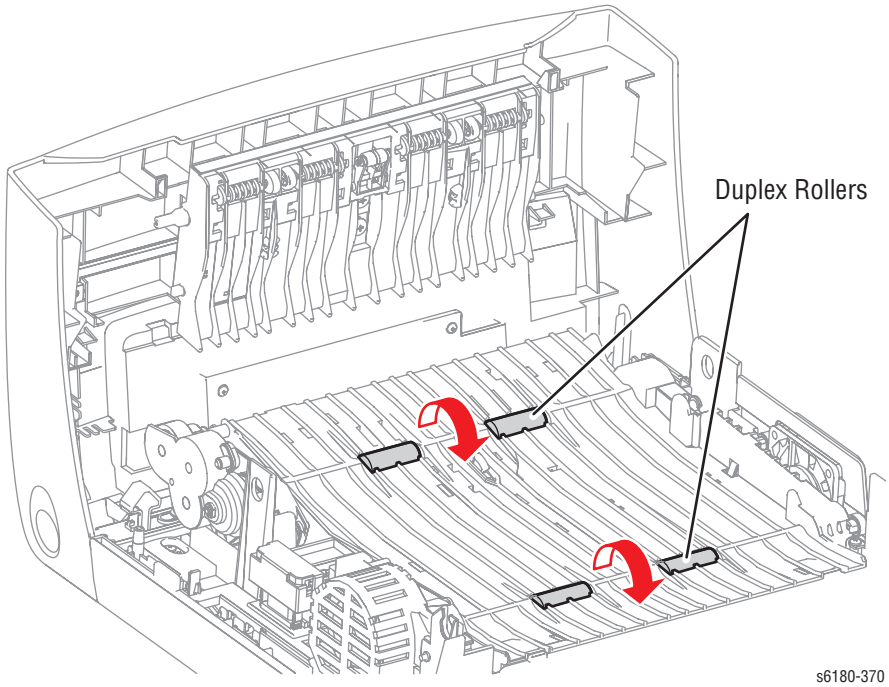
The Duplex Motor is located in the Duplex Unit. When performing this procedure, remove and cover the Print Cartridges to avoid exposure to light.

Note

The rotational speed of the Duplex Motor is as follows:

- LOW < HALF < FULL1 < FULL2 < HIGH

1. Enter the Service Diagnostic menu (page 4-5).
2. Open the Front Cover.
3. Remove the Transfer Unit (page 8-7).
4. Remove the Print Cartridges (page 8-9).
5. Use a paper clip to secure the Interlock Switch.
6. Perform the Duplex Motor (HIGH/FULL2/FULL1/HALF/LOW) test: **Engine Diag** > **Motor Test** > **Duplex Motor (HIGH/FULL2/FULL1/HALF/LOW)**.
7. Verify that the Duplex Motor is running and the four Duplex Rollers are rotating.



8. Press the **Cancel** button to stop the Duplex Motor test.
9. Remove the paper clip from the Interlock Switch.

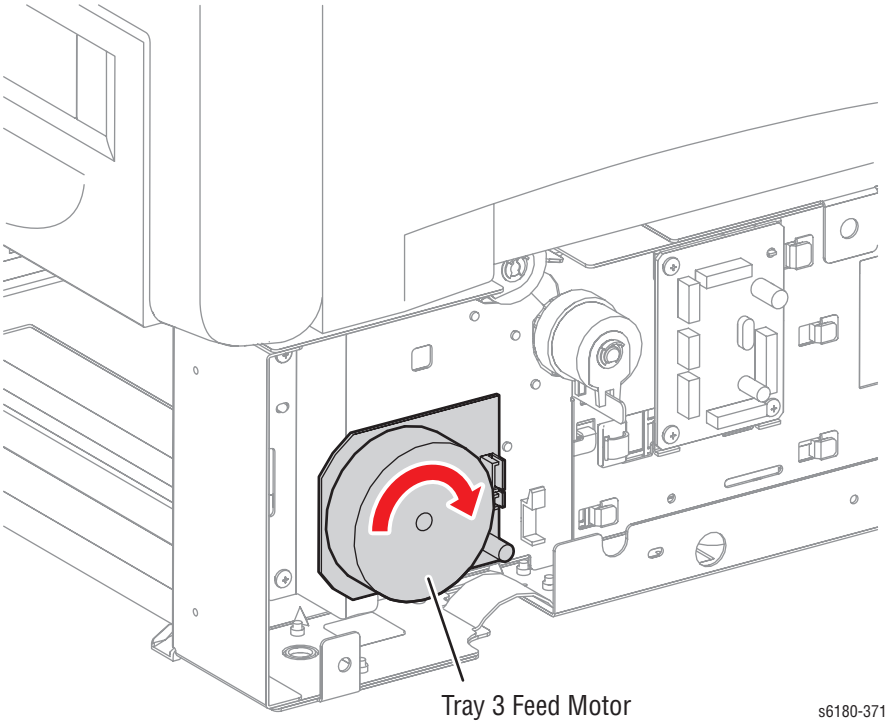
Tray 3 Feed Motor (FULL2/FULL1/HALF/LOW)

Note

The rotational speed of the Motor is as follows:

- LOW < HALF < FULL2 < FULL1

1. Enter the Service Diagnostic menu (page 4-5).
2. Remove Tray 3.
3. Remove the Tray 3 Left Cover (page 8-97).
4. Perform the Tray 3 Feed Motor (FULL2/FULL1/HALF/LOW) test: **Engine Diag** > **Motor Test** > **Tray 3 Feed Motor (FULL2/FULL1/HALF/LOW)**.
5. Verify that the Tray 3 Feed Motor is running.



6. Press the **Cancel** button to stop the Tray 3 Feed Motor test.

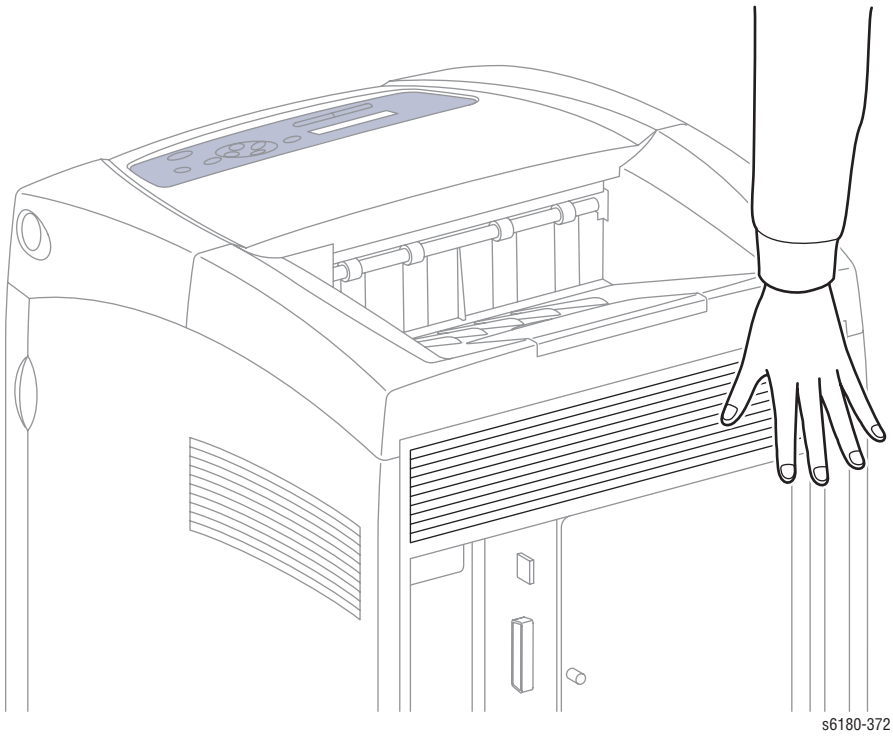
Fan (HIGH/LOW)

Note

The rotational speed of the Motor is as follows:

- LOW < HIGH

1. Enter the Service Diagnostic menu (page 4-5).
2. Perform the Fan (HIGH/LOW) test: **Engine Diag** > **Motor Test** > **Fan (HIGH/LOW)**.
3. Verify that the fan is running.



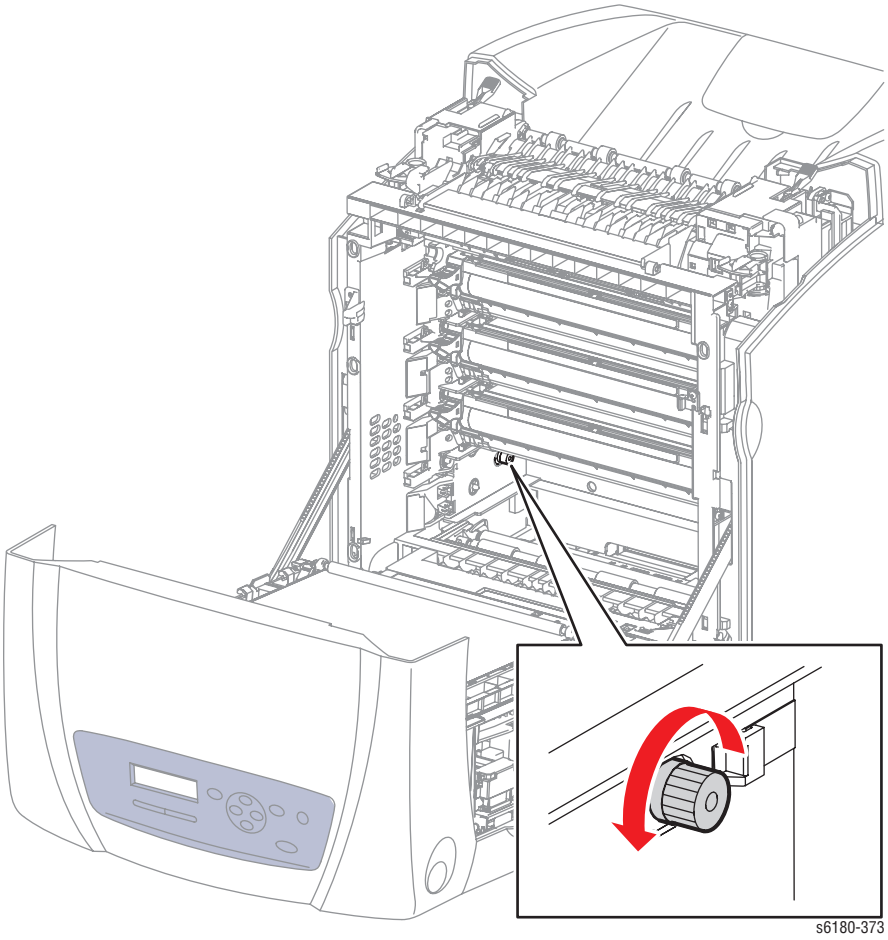
4. Press the **Cancel** button to stop the Fan test.

Yellow Toner Motor

Caution

When performing this procedure, remove and cover the Print Cartridges to avoid exposure to light.

1. Enter the Service Diagnostic menu (page 4-5).
2. Open the Front Cover.
3. Remove the Transfer Unit (page 8-7).
4. Remove the Print Cartridges (page 8-9).
5. Use a paper clip to secure the Interlock switch.
6. Perform the Yellow Toner Motor test: **Engine Diag** > **Motor Test** > **Yellow Toner Motor**.
7. Verify that the Yellow Toner Motor is running and the gear is rotating.



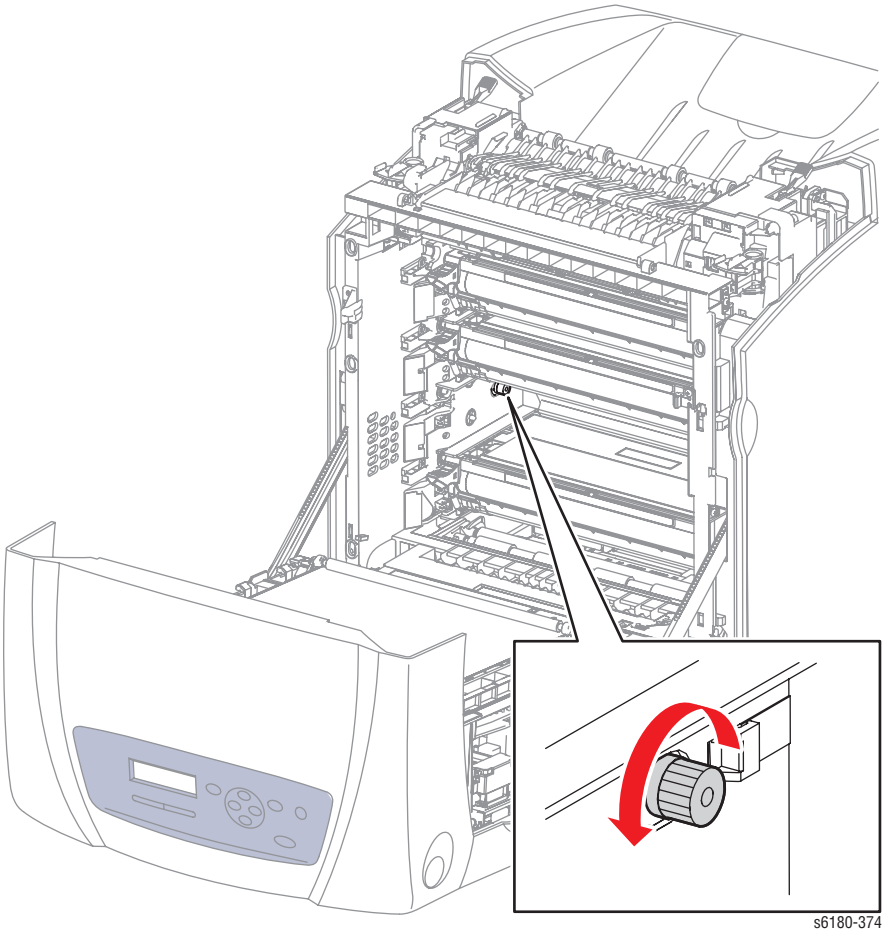
8. Press the **Cancel** button to stop the Yellow Toner Motor test.
9. Remove the paper clip from the Interlock Switch.

Magenta Toner Motor

Caution

When performing this procedure, remove and cover the Print Cartridges to avoid exposure to light.

1. Enter the Service Diagnostic menu (page 4-5).
2. Open the Front Cover.
3. Remove the Transfer Unit (page 8-7).
4. Remove the Print Cartridges (page 8-9).
5. Use a paper clip to secure the Interlock Switch.
6. Perform the Magenta Toner Motor test: **Engine Diag** > **Motor Test** > **Magenta Toner Motor**.
7. Verify that the Magenta Toner Motor is running and the gear is rotating.



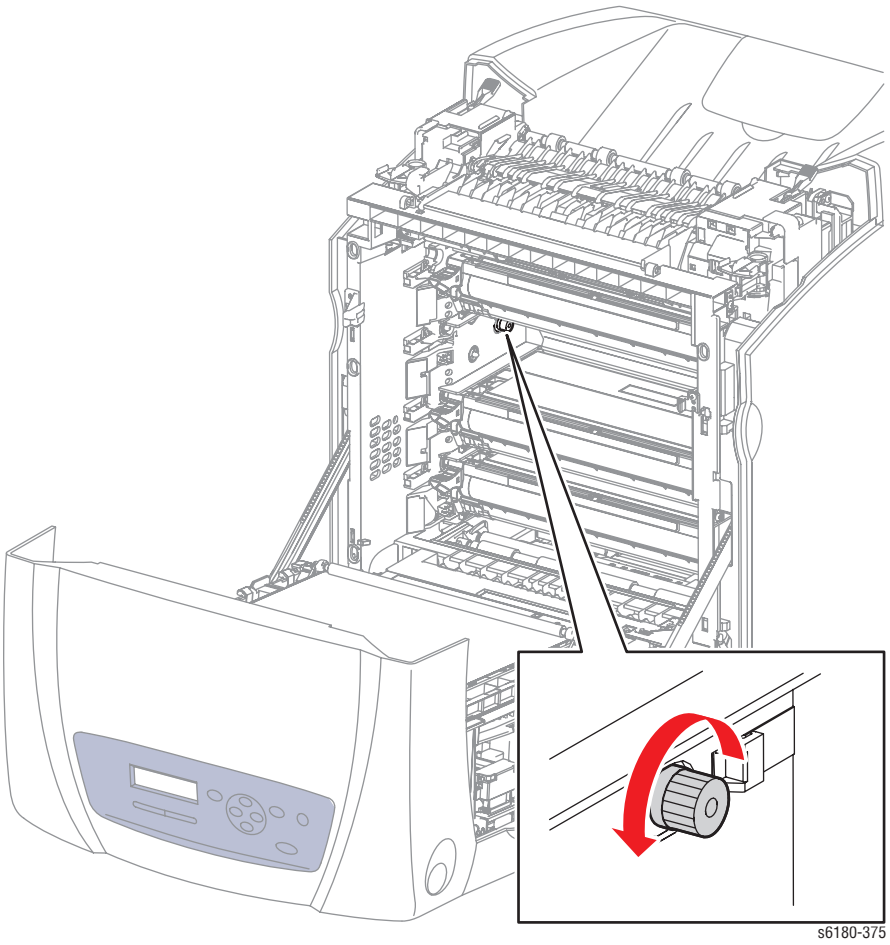
8. Press the **Cancel** button to stop the Magenta Toner Motor test.
9. Remove the paper clip from the Interlock Switch.

Cyan Toner Motor

Caution

When performing this procedure, remove and cover the Print Cartridges to avoid exposure to light.

1. Enter the Service Diagnostic menu (page 4-5).
2. Open the Front Cover.
3. Remove the Transfer Unit (page 8-7).
4. Remove the Print Cartridges (page 8-9).
5. Use a paper clip to secure the Interlock Switch.
6. Perform the Cyan Toner Motor test: **Engine Diag** > **Motor Test** > **Cyan Toner Motor**.
7. Verify that the Cyan Toner Motor is running and the gear is rotating.



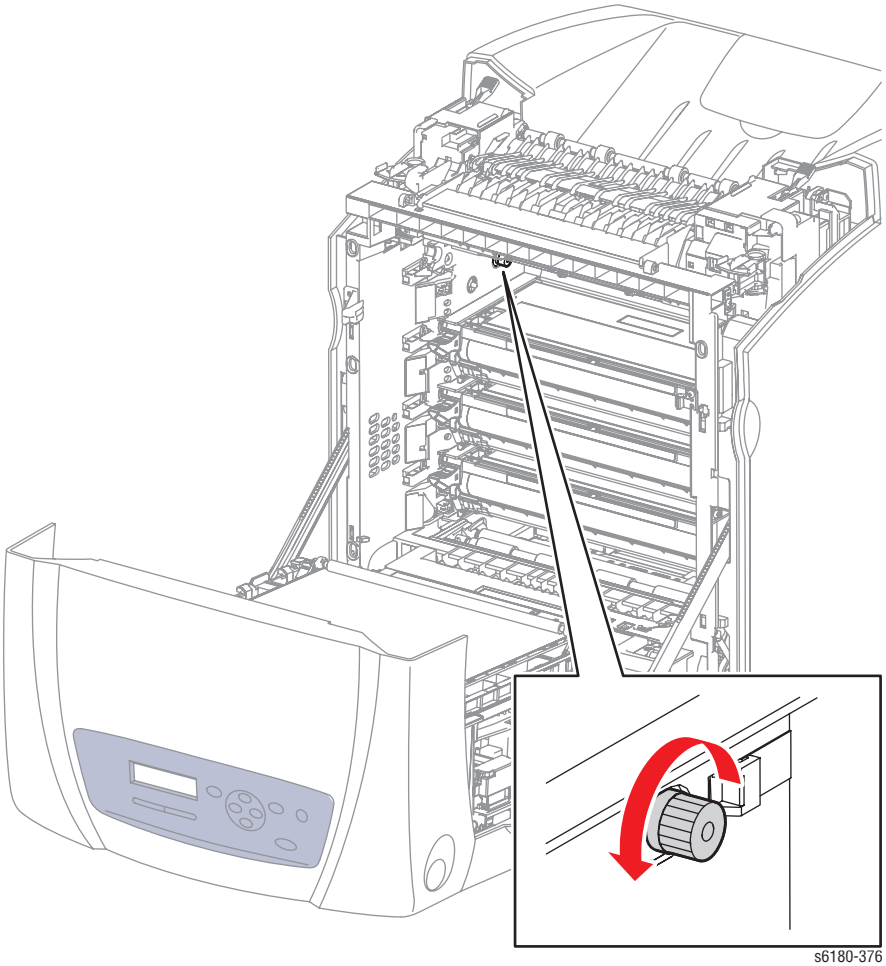
8. Press the **Cancel** button to stop the Cyan Toner Motor test.
9. Remove the paper clip from the Interlock Switch.

Black Toner Motor

Caution

When performing this procedure, remove and cover the Print Cartridges to avoid exposure to light.

1. Enter the Service Diagnostic menu (page 4-5).
2. Open the Front Cover.
3. Remove the Transfer Unit (page 8-7).
4. Remove the Print Cartridges (page 8-9).
5. Use a paper clip to secure the Interlock Switch.
6. Perform the Black Toner Motor test: **Engine Diag** > **Motor Test** > **Black Toner Motor**.
7. Verify that the Black Toner Motor is running and the gear is rotating.



s6180-376

8. Press the **Cancel** button to stop the Black Toner Motor test.
9. Remove the paper clip from the Interlock Switch.

Regi Clutch

Caution

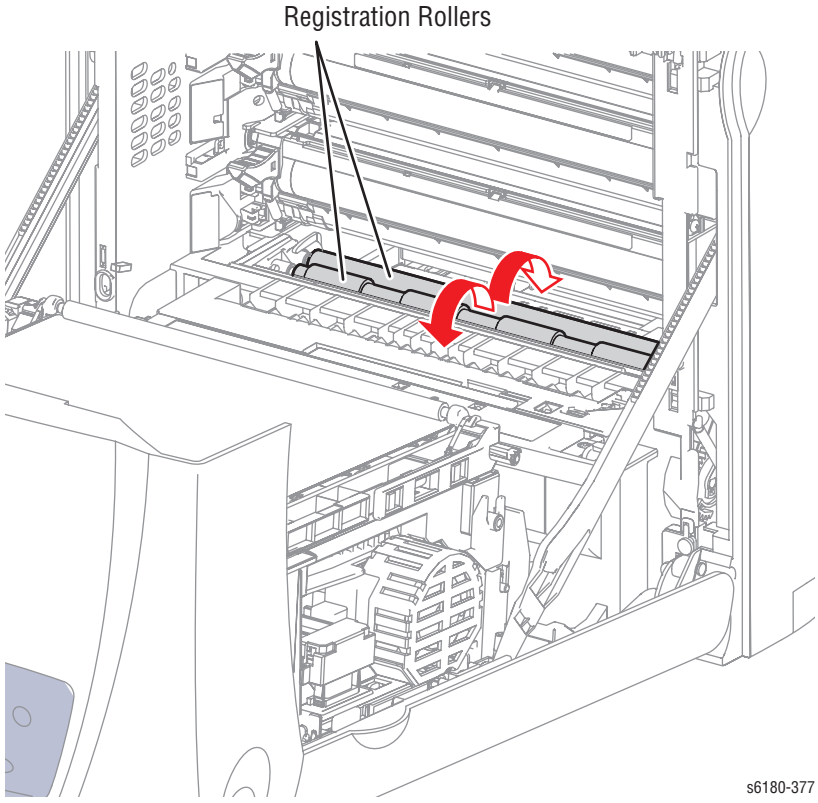
When performing this procedure, remove and cover the Print Cartridges to avoid exposure to light.

1. Enter the Service Diagnostic menu (page 4-5).
2. Open the Front Cover.
3. Remove the Transfer Unit (page 8-7).
4. Remove the Print Cartridges (page 8-9).
5. Use a paper clip to secure the Interlock Switch.
6. Perform the Tray 2 Motor (FULL2) test: **Engine Diag** > **Motor Test** > **Tray 2 Motor (FULL2)**.
7. While the PH Motor is running, press the **Up Arrow** button to find **Regi Clutch**. Press the **OK** button to run the Regi Clutch test.

Note

The Registration Rollers rotate when the Tray 2 Motor (FULL2) and the Registration Clutch tests are executed.

8. Verify that the Tray 2 Motor is running and the Registration Rollers are rotating.



9. Press the **Cancel** button to stop the Regi Clutch test.
10. Press the **Down Arrow** button to find **Tray 2 Motor (FULL2)**.
11. Press the **Cancel** button to stop the Tray 2 Motor test.
12. Remove the paper clip from the Interlock Switch.

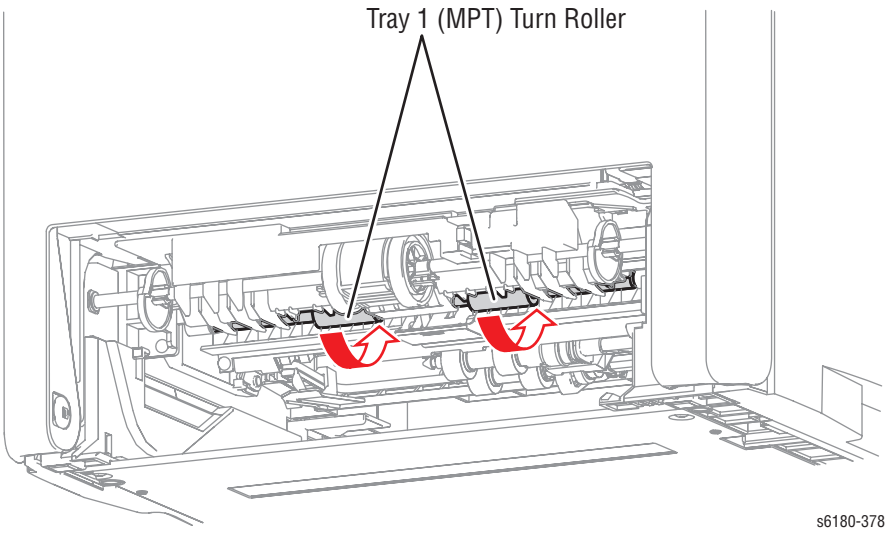
Tray 1 (MPT) Turn Clutch

1. Enter the Service Diagnostic menu (page 4-5).
2. Remove Tray 2.
3. Perform the Tray 2 Motor (FULL2) test: **Engine Diag** > **Motor Test** > **Tray 2 Motor (FULL2)**.
4. While the Tray 2 Motor is running, press the **Up Arrow** button to find **Tray 1 (MPT) Turn Clutch**. Press the **OK** button to run the Tray 1 (MPT) Turn Clutch test.

Note

The Tray 1 (MPT) Turn Rollers rotate when the Tray 2 Motor (FULL2) and the Tray 1 (MPT) Turn Clutch tests are executed.

5. Verify that the Tray 2 Motor is running and the Turn Rollers are rotating.



6. Press the **Cancel** button to stop the Tray 1 Turn Clutch test.
7. Press the **Down Arrow** button to find **Tray 2 Motor (FULL2)**.
8. Press the **Cancel** button to stop the Tray 2 Motor test.

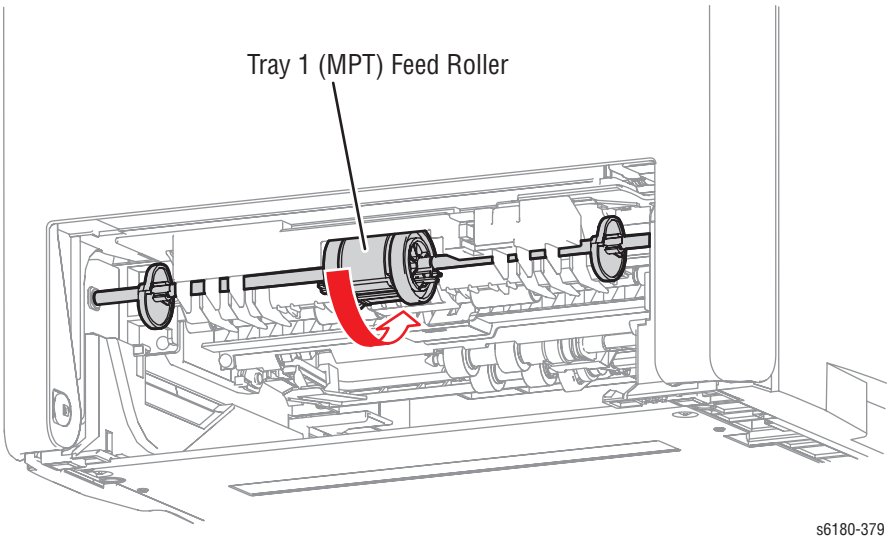
Tray 1 (MPT) Feed Solenoid

1. Enter the Service Diagnostic menu (page 4-5).
2. Remove Tray 2.
3. Perform the Tray 2 Motor (FULL2) test: **Engine Diag** > **Motor Test** > **Tray 2 Motor (FULL2)**.
4. While the Tray 2 Motor is running, press the **Up Arrow** button to find **Tray 1 (MPT) Feed Solenoid**. Press the **OK** button to run the Tray 1 (MPT) Feed Solenoid test.

Note

The Tray 1 (MPT) Feed Roller rotates when the Tray 2 Motor (FULL2) and the Tray 1 (MPT) Feed Solenoid tests are executed.

5. Verify that the Tray 2 Motor is working and the Tray 1 Feed Roller is rotating.



6. Press the **Cancel** button to stop the Tray 1 Feed Solenoid test.
7. Press the **Down Arrow** button to find **Tray 2 Motor (FULL2)**.
8. Press the **Cancel** button to stop the Tray 2 Motor test.

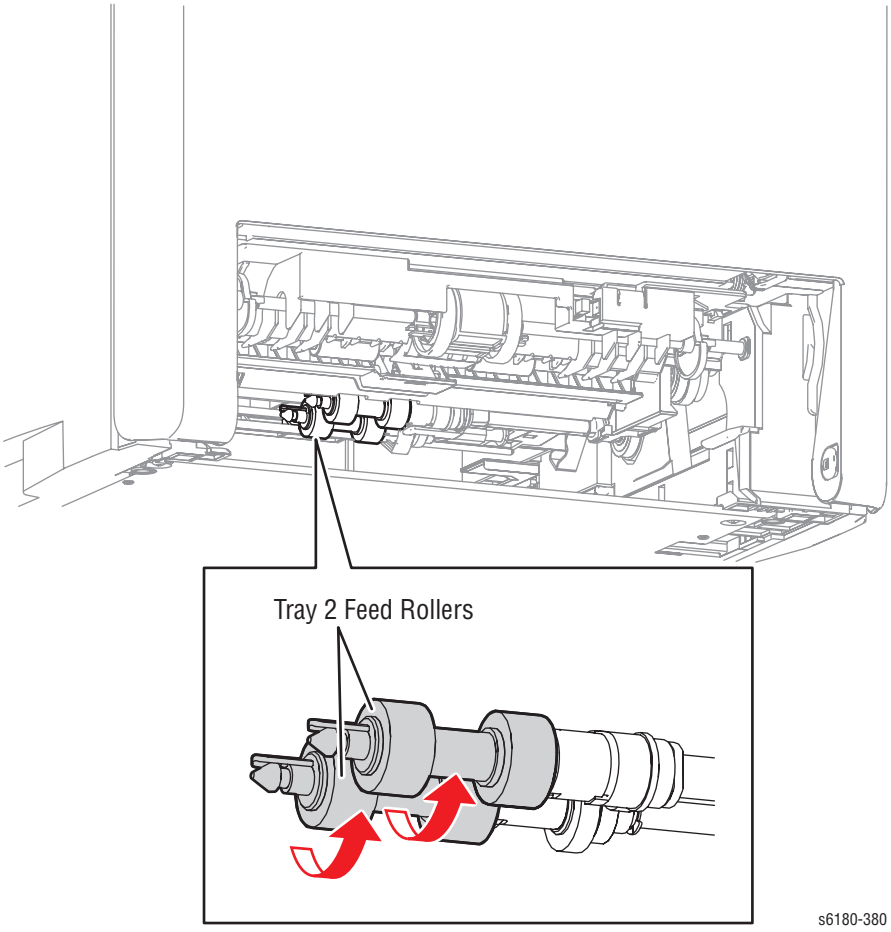
Tray 2 Feed Clutch

1. Enter the Service Diagnostic menu (page 4-5).
2. Remove Tray 2.
3. Perform the Tray 2 Feed Motor (FULL2) test: **Engine Diag** > **Motor Test** > **Tray 2 Motor (FULL2)**.
4. While the Tray 2 Motor is running, press the **Up Arrow** button to find **Tray 2 Feed Clutch**. Press the **OK** button to run the Tray 2 Feed Clutch test.

Note

The Tray 2 Feed Rollers rotate when the Tray 2 Motor (FULL2) and the Tray 2 Feed Clutch tests are executed.

5. Verify that the Tray 2 Motor is working and the Tray 2 Feed Rollers are rotating.



6. Press the **Cancel** button to stop the Tray 2 Feed Clutch test.
7. Press the **Down Arrow** button to find **Tray 2 Motor (FULL2)**.
8. Press the **Cancel** button to stop the Tray 2 Motor test.

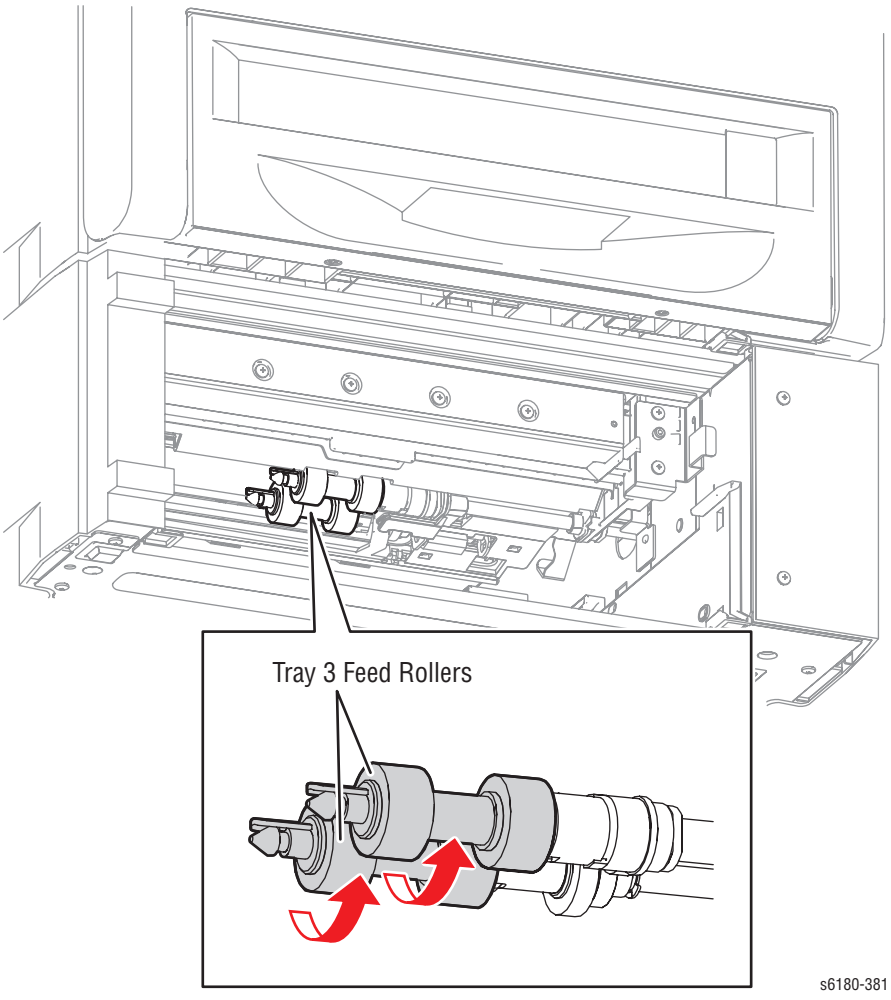
Tray 3 Feed Clutch

1. Enter the Service Diagnostic menu (page 4-5).
2. Remove Tray 3.
3. Perform the Tray 3 Feed Motor (FULL2) test: **Engine Diag** > **Motor Test** > **Tray 3 Feed Motor (FULL2)**.
4. While the Tray 3 Feed Motor is running, press the **Up Arrow** button to find **Tray 3 Feed Clutch**. Press the **OK** button to run the Tray 3 Feed Clutch test.

Note

The Tray 3 Feed Rollers rotate when the Tray 3 Feed Motor (FULL2) and the Tray 3 Feed Clutch tests are executed.

5. Verify that the Tray 3 Feed Motor is working and the Tray 3 Feed Rollers are rotating.



6. Press the **Cancel** button to stop the Tray 3 Feed Clutch test.
7. Press the **Down Arrow** button to find **Tray 3 Feed Motor (FULL2)**.
8. Press the **Cancel** button to stop the Tray 3 Feed Motor test.

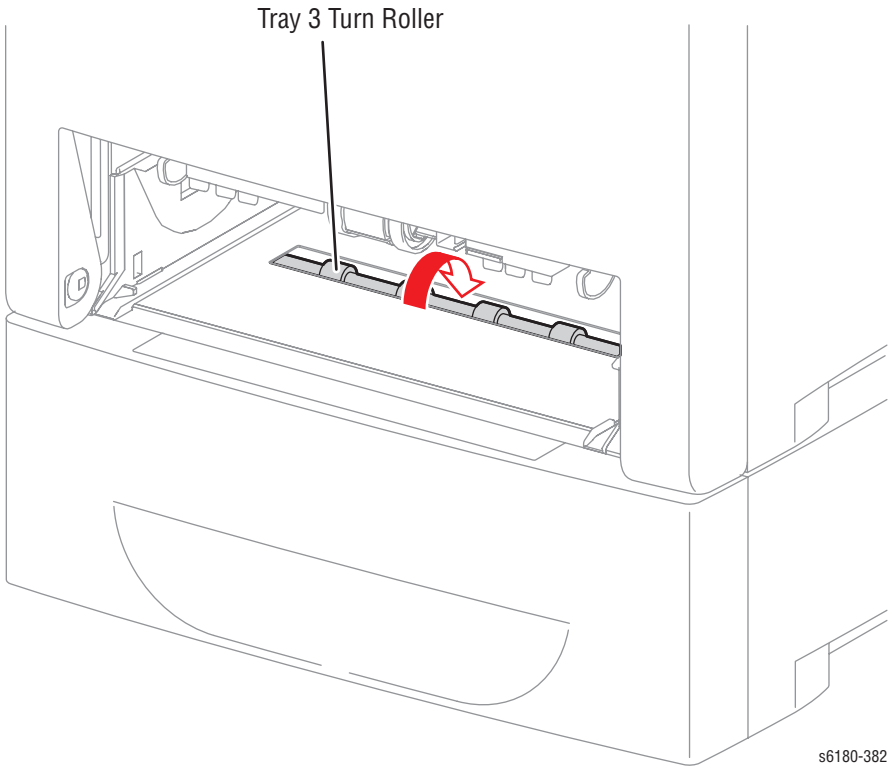
Tray 3 Turn Clutch

1. Enter the Service Diagnostic menu (page 4-5).
2. Remove Tray 3.
3. Perform the Tray 3 Feed Motor (FULL2) test: **Engine Diag** > **Motor Test** > **Tray 3 Feed Motor (FULL2)**.
4. While the Tray 3 Feed Motor is running, press the **Up Arrow** button to find **Tray 3 Turn Clutch**. Press the **OK** button to run the Tray 3 Turn Clutch test.

Note

The Tray 3 Turn Roll rotates when the Tray 3 Feed Motor (FULL2) and the Tray 3 Turn Clutch tests are executed.

5. Verify that the Tray 3 Feed Motor is working and the Turn Roller is rotating.



6. Press the **Cancel** button to stop the Tray 3 Turn Clutch test.
7. Press the **Down Arrow** button to find **Tray 3 Feed Motor (FULL2)**.
8. Press the **Cancel** button to stop the Tray 3 Feed Motor test.

Duplex Clutch

Caution

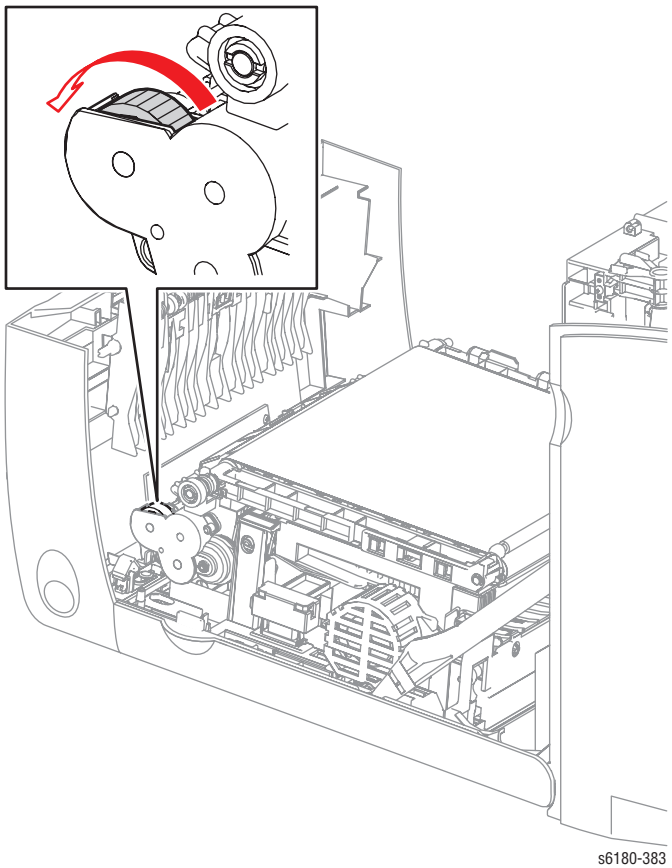
When performing this procedure, remove and cover the Print Cartridges to avoid exposure to light.

1. Enter the Service Diagnostic menu (page 4-5).
2. Open the Front Cover.
3. Remove the Transfer Unit (page 8-7).
4. Remove the Print Cartridges (page 8-9).
5. Use a paper clip to secure the Interlock Switch.
6. Perform the Duplex Motor (HIGH) test: **Engine Diag** > **Motor Test** > **Duplex Motor (HIGH)**.
7. While the Duplex Motor is running, press the **Up Arrow** button to find **Duplex Clutch**. Press the **OK** button to run the Duplex Clutch test.

Note

The Duplex Gear rotates when the Duplex Motor (HIGH) and the Duplex Clutch tests are executed.

8. Verify that the Duplex Motor is working and the gear is rotating.



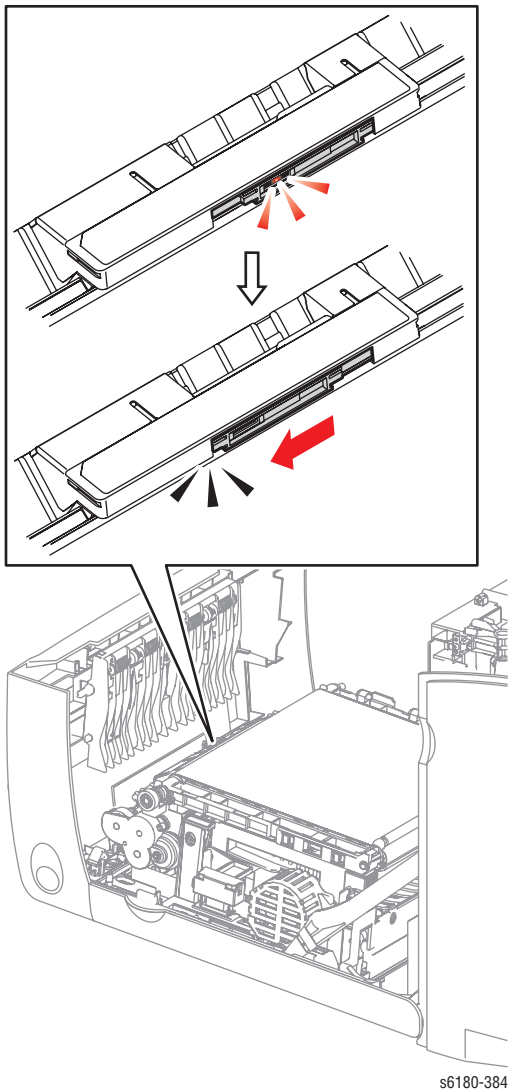
9. Press the **Cancel** button to stop the Duplex Clutch test.
10. Press the **Down Arrow** button to display **Duplex Motor (HIGH)**.
11. Press the **Cancel** button to stop the Duplex Motor test.

ADC Sensor Solenoid

Caution

When performing this procedure, remove and cover the Print Cartridges to avoid exposure to light.

1. Enter the Service Diagnostic menu (page 4-5).
2. Open the Front Cover.
3. Remove the Print Cartridges (page 8-9).
4. Use a paper clip to secure the Interlock Switch.
5. Perform the ADC Sensor Solenoid test: **Engine Diag** > **Motor Test** > **ADC Sensor Solenoid**.
6. Verify that a clicking sound is heard when the Solenoid is operating. The ADC Sensor LED turns off (inside the Transfer Unit).



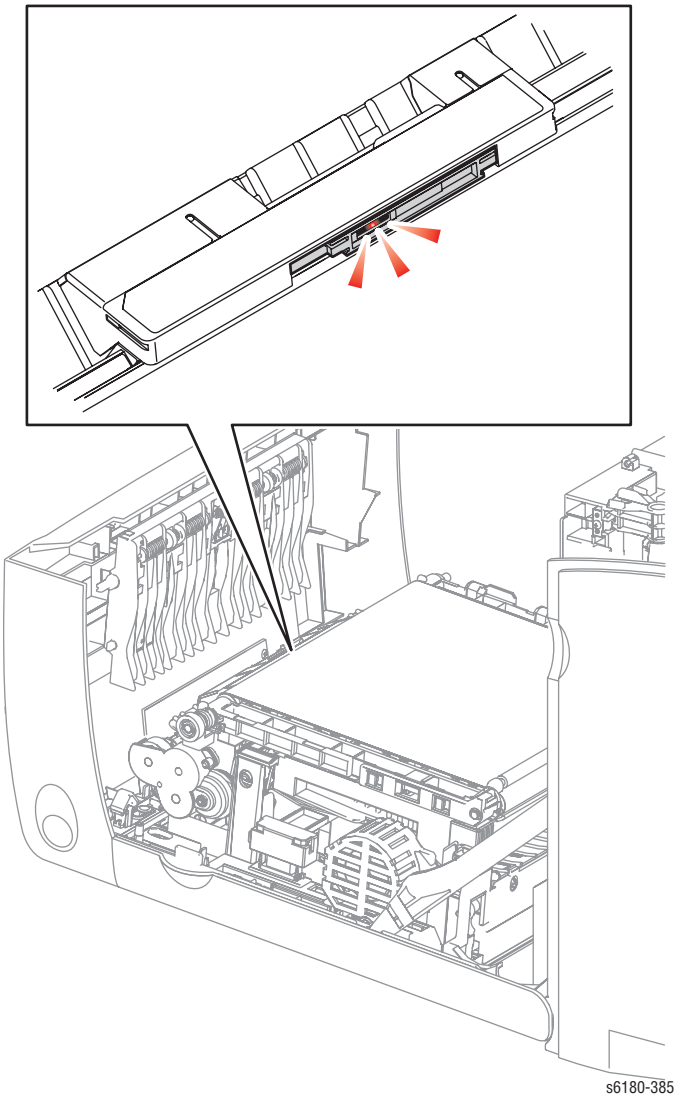
7. Press the **Cancel** button to stop the ADC Sensor Solenoid test.
8. Remove the paper clip from the Interlock Switch.

ADC Sensor LED

Caution

When performing this procedure, remove and cover the Print Cartridges to avoid exposure to light.

1. Enter the Service Diagnostic menu (page 4-5).
2. Open the Front Cover.
3. Remove the Print Cartridges (page 8-9).
4. Use a paper clip to secure the Interlock Switch.
5. Perform the ADC Sensor LED test: **Engine Diag** > **Motor Test** > **ADC Sensor LED**.
6. Verify that the LED is working (red light inside the Transfer Unit).



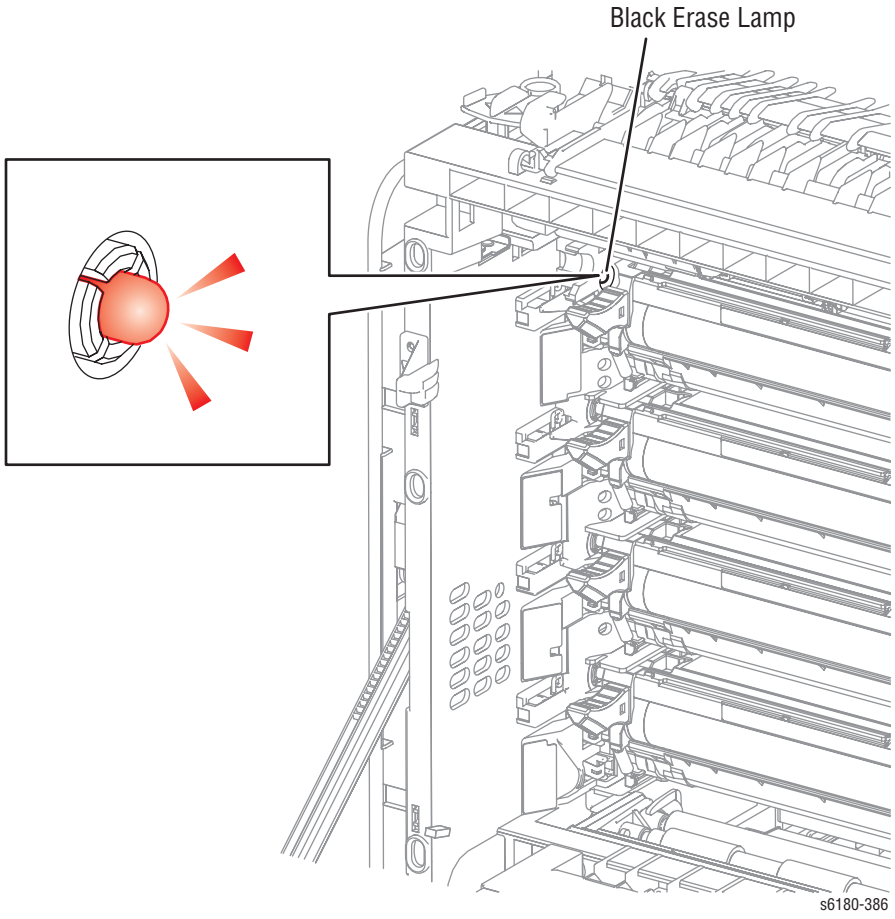
7. Press the **Cancel** button to stop the ADC Sensor LED test.
8. Remove the paper clip from the Interlock Switch.

Drum Erase Lamp (K)

Caution

When performing this procedure, remove and cover the Print Cartridges to avoid exposure to light.

1. Enter the Service Diagnostic menu (page 4-5).
2. Open the Front Cover.
3. Remove the Print Cartridges (page 8-9).
4. Use a paper clip to secure the Interlock Switch.
5. Perform the Drum Erase Lamp K test: **Engine Diag** > **Motor Test** > **Drum Erase Lamp K**.
6. Verify that the Lamp is operating.



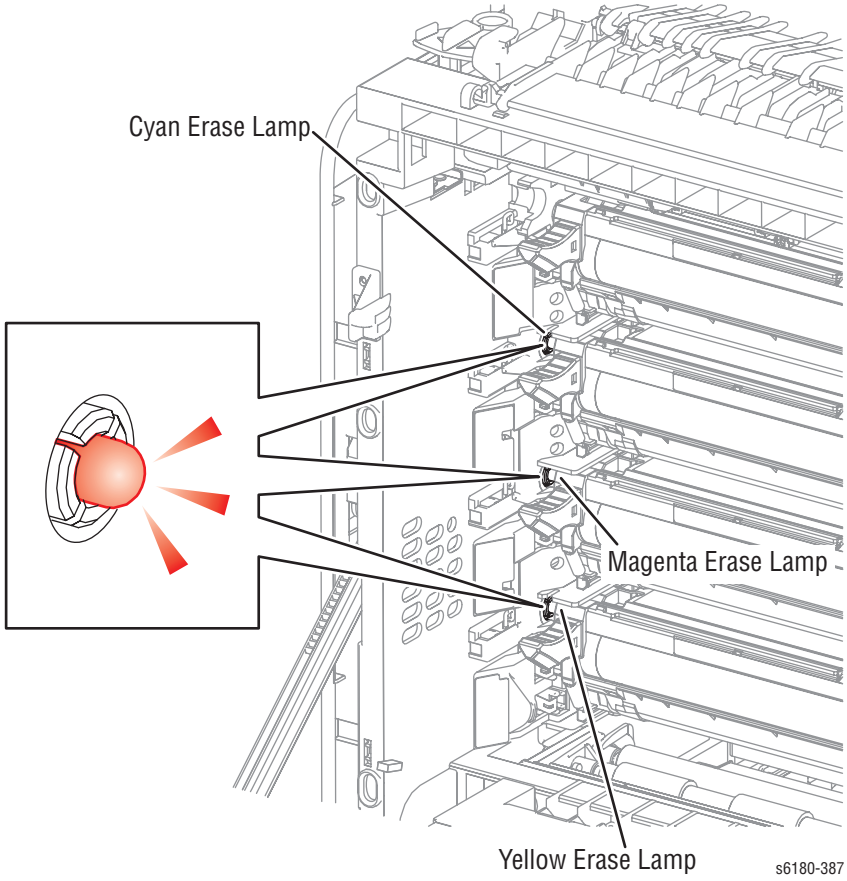
7. Press the **Cancel** button to stop the Drum Erase Lamp K test.
8. Remove the paper clip from the Interlock Switch.

Drum Erase Lamp (Y/M/C)

Caution

When performing this procedure, remove and cover the Print Cartridges to avoid exposure to light.

1. Enter the Service Diagnostic menu (page 4-5).
2. Open the Front Cover.
3. Remove the Print Cartridges (page 8-9).
4. Use a paper clip to secure the Interlock Switch.
5. Perform the Drum Erase Lamp YMC test: **Engine Diag** > **Motor Test** > **Drum Erase Lamp YMC**.
6. Verify that the Lamps are operating.



7. Press the **Cancel** button to stop the Drum Erase Lamp YMC test.
8. Remove the paper clip from the Interlock Switch.

Exit Clutch

1. Enter the Service Diagnostic menu (page 4-5).
2. Run the Exit Clutch test: **Engine Diag** > **Motor Test** > **Exit Clutch**.
3. Verify that the Exit Roller is not rotating.
4. Press the **Cancel** button to stop the test.

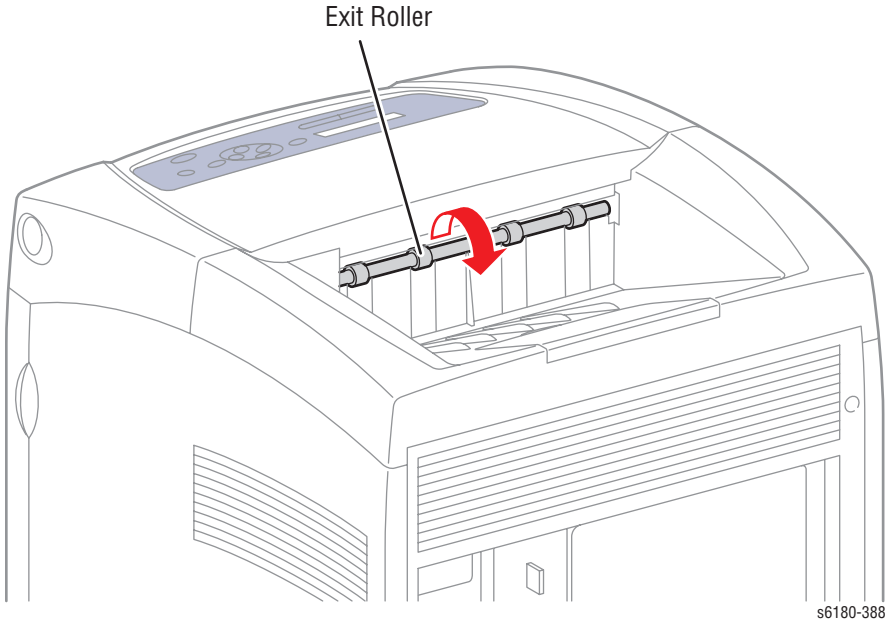
Combination Test

1. Enter the Service Diagnostic menu (page 4-5).
2. Perform the Main Motor (FULL2) test: **Engine Diag** > **Motor Test** > **Main Motor (FULL2)**.
3. While the Main Motor is running, press the **Up Arrow** button to find **Exit Clutch**. Press the **OK** button to run the Exit Clutch test.

Note

The Exit Roller rotates when the Main Motor (FULL2) and the Exit Clutch tests are executed.

4. Verify that the Main Motor is working and the Exit Roller is rotating.



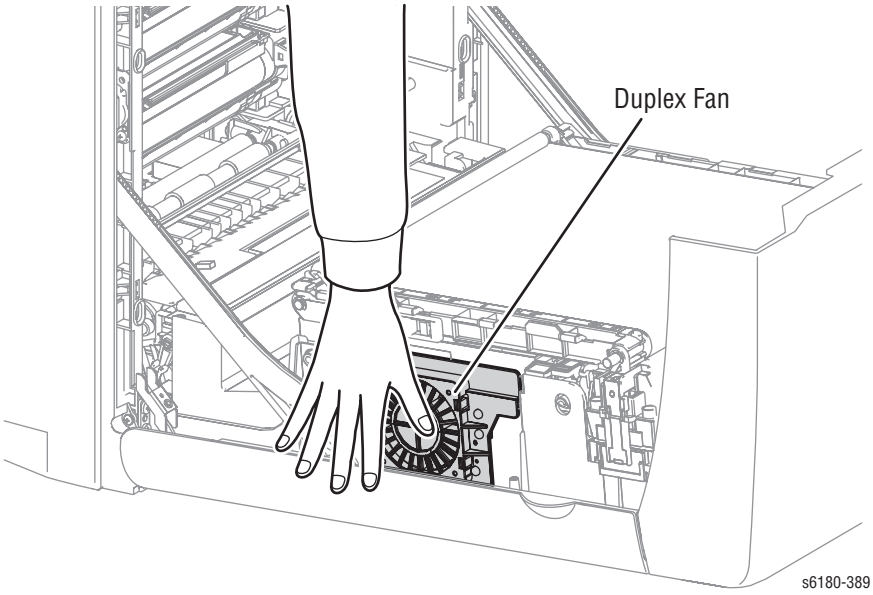
5. Press the **Cancel** button to stop the Exit Clutch test.
6. Press the **Down Arrow** button to find **Main Motor (FULL2)**.
7. Press the **Cancel** button to stop the Main Motor test.

Duplex Fan

Caution

When performing this procedure, remove and cover the Print Cartridges to avoid exposure to light.

1. Enter the Service Diagnostic menu (page 4-5).
2. Open the Front Cover.
3. Remove the Transfer Unit (page 8-7).
4. Remove the Print Cartridges (page 8-9).
5. Use a paper clip to secure the Interlock Switch.
6. Perform the Duplex Fan test: **Engine Diag** > **Motor Test** > **Duplex Fan**.
7. Verify that the Fan is operating.



8. Press the **Cancel** button to stop the Duplex Fan test.
9. Remove the paper clip from the Interlock Switch.

Control Panel Troubleshooting

Printer Does Not Come to a “Ready” State

1. Remove and reseat the Image Processor Board (page 8-89).
2. Refer to “DC Power Supply Troubleshooting” on page 4-70.
3. Replace the Control Panel (page 8-19).
4. Replace the Control Panel wiring harness (page 8-19).

Control Panel LED is On, Control Panel Display is Blank

1. Remove and reseat the Image Processor Board (page 8-89).
2. Replace the Control Panel (page 8-19).
3. Replace the Control Panel wiring harness (page 8-19).
4. Replace the Image Processor Board (page 8-89).

Engine Test Print

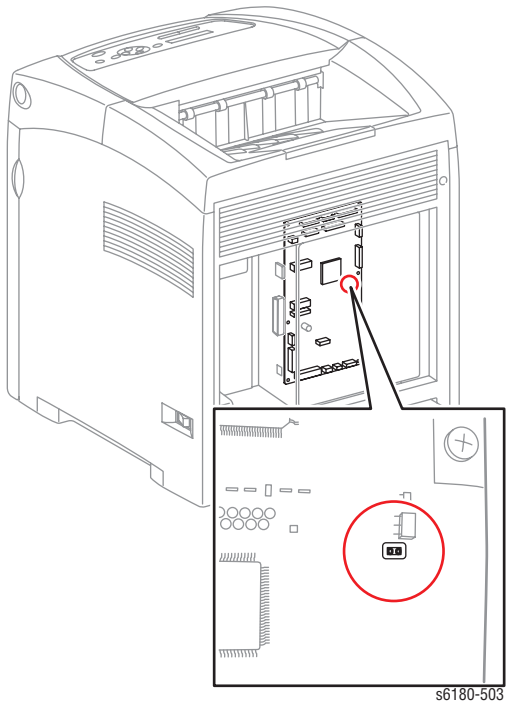
This test isolates printer hardware problems to either the Engine Control Board or Image Processor Board.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Image Processor Board, PL9.1.27 ■ MCU Board, PL9.1.20	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Remove the Image Processor Board (page 8-89).		
2	Turn the printer power On (the Control Panel will be blank).		
3	Short the pins on the MCU Board.		
4	Did the printer print the TestPat600 IOT page?	Replace the Image Processor Board (page 8-89).	Replace the MCU Board (page 8-87).



Inoperable Printer Troubleshooting

Engine Power-Up Sequence

1. Machine Control Unit (MCU) Board logic check
2. Print Cartridge (Missing, NVRAM (CRUM) Error, CRUM ID, Life Over)
3. Fuser (Missing, NVRAM (CRUM) Error, Life Over)
4. Transfer Unit (Missing, Life Over)
5. ADC Sensor (Error)
6. All paper Sensor (Jam)
7. Door (Open)
8. Environmental (Humidity/Temperature) Sensor (Error)
9. NVRAM (NVRAM Error)
10. Image Processor Board POST Diagnostic check

Printer Continually Displays Warming Up

1. Verify the correct Fuser (110 V vs. 220 V) is installed in the printer.
2. Refer to the Engine Power-Up Sequence (page 4-66).

Printer Continually Displays Insert Print Cartridge

Initial Actions

- Check the Print Cartridge life using CentreWare IS.
- Cycle printer power.
- If problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Print Cartridge (Y/M/C/K), PL5.1.18-21 ■ Print Cartridge Sensor, PL5.1.4 ■ Toner Sensor Harness, PL10.1.9 ■ MCU Board, PL9.1.20	■ "Developer" on page 10-44

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Print Cartridge for correct installation. Is the Print Cartridge correctly installed/	Go to step 3.	Reseat the Print Cartridge.
2	Does the error still occur?	Go to step 3.	Complete.
3	Replace the Print Cartridge (page 8-9). Does the error still occur?	Go to step 4.	Complete.
4	Perform the CRU Sensor test: **Service Mode** > **Sensor Test** > **CRU Sensor**. ■ Yellow CRU Sensor (page 4-31) ■ Magenta CRU Sensor (page 4-32) ■ Black CRU Sensor (page 4-33) ■ Cyan CRU Sensor (page 4-34) Does the number on the Control Panel increase by 1 when the Print Cartridge is reseated?	Replace the MCU Board (page 8-87).	Go to step 5.
5	Check the Toner Sensor wiring harness connectors between the Print Cartridge Sensor and the MCU Board. ■ Yellow: P/J19 and P/J191 ■ Magenta: P/J19 and P/J192 ■ Black: P/J19 and P/J193 ■ Cyan: P/J19 and P/J194 Are the connectors securely connected?	Go to step 6.	Reconnect the connectors. Go to step 6.
6	Does the error still occur?	Go to step 7.	Complete.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
7	Check the Toner Sensor Harness for continuity. 1. Disconnect P/J Harnesses from the MCU Board and the Print Cartridge Sensor. ■ Yellow: P/J19 and P/J191 ■ Magenta: P/J19 and P/J192 ■ Black: P/J19 and P/J193 ■ Cyan: P/J19 and P/J194 2. Check continuity between P/J connectors: ■ Yellow: P/J19 <=> P/J191 ■ Magenta: P/J19 <=> P/J192 ■ Black: P/J19 <=> P/J193 ■ Cyan: P/J19 <=> P/J194	Go to step 8.	Replace the Toner Sensor Harness.
8	Check the Print Cartridge Sensor signal. 1. Disconnect P/J19 from the MCU Board. 2. Is there +3.3 V across the Toner Sensor Harness? ■ Yellow: J19-1 <=> J19-2 ■ Magenta: J19-4 <=> J19-5 ■ Black: J19-7 <=> J19-8 ■ Cyan: J19-10 <=> J19-11	Go to step 9.	■ Replace the MCU Board (page 8-87).
9	Check the Print Cartridge Sensor for operation. 1. Measure the voltage across: ■ Ground <=> P/J19-3 (Yellow) ■ Ground <=> P/J19-6 (Magenta) ■ Ground <=> P/J19-9 (Black) ■ Ground <=> P/J19-12 (Cyan) 2. Does the voltage change when the paper is inserted into the sensor detecting point?	Replace the MCU Board (page 8-87).	Replace the Print Cartridge Sensor: ■ Black (page 8-53) ■ Yellow/ Magenta/ Cyan (page 8-54)

AC Power Supply Troubleshooting

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ LVPS, PL9.1.4	■ “DC Power Supply” on page 10-30

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the voltage at the AC wall outlet. Is there approximately 110 VAC (or 220 VAC if the printer is a 220 V configuration) at the AC wall outlet?	Go to step 2.	Notify the customer of improper AC output from the outlet.
2	Check the power cord for defects or a loose connection. Is the power cord loose or defective?	Replace or reconnect the power cord.	Replace the LVPS (page 8-81).

DC Power Supply Troubleshooting

LVPS Overcurrent Protection Circuit

This circuit stops all outputs if any of the Low Voltage Power Supply voltages 3.3 VDC, 5 VDC, or 24 VDC are shorted.

The circuit is reset when the short is removed, the power is turned Off, and then On again.

LVPS Overvoltage Protection Circuit

This circuit stops all outputs if the power supply voltage 3.3 VDC, 5 VDC, or 24 VDC exceeds the specified voltage respectively. The operating point is 32 VDC or less for 24 VDC, 7 VDC or less for 5 VDC, or 4.4 VDC for 3.3 VDC.

The circuit is reset when the power is turned Off, and then On again after certain time.

LVPS

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ LVPS, PL9.1.4 ■ Top LV Harness, PL10.1.16	■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "DC Power Supply" on page 10-30

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Perform the AC power supply troubleshooting procedure. Does the problem persist?	Go to step 2.	Complete.
2	Turn the AC power switch Off. Is the Fuse on the low-voltage power supply board open?	Replace the LVPS (page 8-81).	Go to step 3.
3	1. Disconnect the connectors J501 and J502 from the LVPS. 2. Turn the AC power Switch On. 3. Verify the DC voltages between the following pins on the LVPS: ■ P501-1 <=> P501-2 = +5 V ■ P501-3 <=> P501-4 = +3.3 V ■ P502-1 <=> P501-2 = +24 V	Go to step 4.	Replace the LVPS (page 8-81).

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	1. Turn the AC power Switch Off. 2. Connect J501 to the LVPS then turn the AC power Switch On. 3. Check continuity between P501-3 <=> P501-4? 4. Is there 3.3 V present?	Go to step 7.	Go to step 5.
5	Check the following parts for fault or damage: ■ LV Top Harness, PL10.1.16 ■ MCU Board, PL9.1.20	Replace if damaged. Go to step 6.	Go to step 7.
6	Does the problem still occur?	Go to step 7.	Complete.
7	1. Turn the AC power Switch Off. 2. Connect J501 to the LVPS then turn the AC power Switch Off. 3. Check continuity between P501-1 <=> P501-2. 4. Is there +5 V present?	Go to step 10.	Go to step 8.
8	Check the Top LV Harness for fault or damage.	Replace if damaged. Go to step 9.	Go to step 10.
9	Does the error occur?	Go to step 10.	Complete.
10	1. Turn the AC power Switch Off. 2. Connect J502 to the LVPS then turn the AC power Switch On. 3. Check continuity between P502-1 <=> P501-2? 4. Is there +24 V present?	Complete.	Go to step 11.
11	Check the Top LV Harness for fault or damage.	Replace if damaged.	Complete.

+24 VDC Interlock Switch

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Interlock Harness, PL9.1.3 ■ LVPS, PL9.1.4 ■ Top LV Harness, PL10.1.16	■ "Map 4 - LVPS and MCU Board" on page 10-13 ■ "DC Power Supply" on page 10-30

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. 3. Is there voltage present when the Interlock is activated?	Go to step 2.	Replace the Interlock Harness (page 8-80).
2	1. Disconnect connectors P/J501 and P/J14. 2. Check continuity between P/J44-1 <=> P/J44-3. 3. Is there +5 V present?	Go to "LVPS" on page 4-70.	Replace the Top LV Harness.

Abnormal and Electrical Noise

Abnormal Noise when Power is Turned On

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Transfer Unit, PL4.1.1 ■ Print Cartridge (C/M/Y/K), PL5.1.18-21 ■ Fuser Unit, PL6.1.10 ■ Main Drive, PL8.1.2 ■ Drive Assembly, PL8.1.7 ■ Optional 550-Sheet Feeder, PL12.1.1	

Warning

Ensure to wait for the Fuser to cool down before starting the procedure.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Perform the Main Motor test (page 4-40): **Service Mode** > **Engine Diag** > **Motor Test** > **Main Motor**. Does the noise come from the printer?	Go to step 2.	Go to step 6.
2	1. Check the Fuser for correct installation. 2. Reseat the Fuser. 3. Perform the Main Motor test (page 4-40): **Service Mode** > **Engine Diag** > **Motor Test** > **Main Motor**. 4. Does the noise come from the printer?	Go to step 3.	Complete.
3	1. Check the Black Print Cartridge for correct installation. 2. Reseat the Black Print Cartridge. 3. Perform the Main Motor test (page 4-40): **Service Mode** > **Engine Diag** > **Motor Test** > **Main Motor**. 4. Does the noise come from the printer?	Go to step 4.	Complete.
4	1. Check the Transfer Unit for correct installation. 2. Reseat the Transfer Unit. 3. Perform the Main Motor test (page 4-40): **Service Mode** > **Engine Diag** > **Motor Test** > **Main Motor**. 4. Does the noise come from the printer?	Go to step 5.	Complete.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
5	1. Check the Main Drive for correct installation. 2. Reseat the Main Drive. 3. Perform the Main Motor test (page 4-40): **Service Mode** > **Engine Diag** > **Motor Test** > **Main Motor**. 4. Does the noise come from the printer?	Replace the following parts, one after another. ■ Fuser (page 8-10) ■ Black Print Cartridge (page 8-9) ■ Transfer Unit (page 8-7) ■ Main Drive (page 8-73)	Complete.
6	Perform the Sub Motor test (page 4-41): **Service Mode** > **Engine Diag** > **Motor Test** > **Sub Motor**. Does the noise come from the printer?	Go to step 7.	Go to step 9.
7	1. Check the Print Cartridges for correct installation. 2. Reseat the Print Cartridges. 3. Perform the Sub Motor test (page 4-41): **Service Mode** > **Engine Diag** > **Motor Test** > **Sub Motor**. 4. Does the noise come from the printer?	Go to step 8.	Complete.
8	1. Check the Main Drive for correct installation. 2. Reseat the Main Drive. 3. Perform the Sub Motor test (page 4-41): **Service Mode** > **Engine Diag** > **Motor Test** > **Sub Motor**. 4. Does the noise come from the printer?	Replace the following parts, one after another. ■ Print Cartridges (C/M/Y/K) (page 8-9) ■ Main Drive (page 8-73)	Complete.
9	Perform the Deve Motor test (page 4-43): **Service Mode** > **Engine Diag** > **Motor Test** > **Deve Motor**. Does the noise come from the printer?	Go to step 10.	Go to step 12.
10	1. Check the Print Cartridges for correct installation. 2. Perform the Deve Motor test (page 4-43): **Service Mode** > **Engine Diag** > **Motor Test** > **Deve Motor**. 3. Does the noise come from the printer?	Go to step 11.	Complete.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
11	1. Check the Main Drive for correct installation. 2. Perform the Deve Motor test (page 4-43): **Service Mode** > **Engine Diag** > **Motor Test** > **Deve Motor**. 3. Does the noise come from the printer?	Replace the following parts, one after another. ■ Print Cartridges (C/M/Y/K) (page 8-9) ■ Main Drive (page 8-73)	Complete.
12	1. Check the Drive Assembly for correct installation. 2. Perform the Tray 2 Motor test (page 4-42): **Service Mode** > **Engine Diag** > **Motor Test** > **Tray 2 Motor.** 3. Does the noise come from the printer?	Go to step 14.	Complete, if the Optional 550-Sheet Feeder is installed.
13	Perform the Option Feeder Motor test (page 4-45): **Service Mode** > **Engine Diag** > **Motor Test** > **Tray 3 Feed Motor.** Does the noise come from the printer?	Replace the Tray 3 Feeder (page 8-102).	Complete.
14	1. Check the Drive Assembly for correct installation. 2. Perform the Tray 2 Motor test (page 4-42): **Service Mode** > **Engine Diag** > **Motor Test** > **Tray 2 Motor.** 3. Does the noise come from the printer?	Replace the Drive Assembly (page 8-76).	Complete.

Abnormal Noise During Printing

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Retard Roll (Separator), PL2.1.7 ■ MPT Feed Roll, PL3.1.10 ■ Turn Roll, PL3.2.32 ■ Feed Roll, PL3.2.53 ■ Retard Roll, PL2.2.17 ■ Feed Roll, PL12.1.9 ■ Retard Roll, PL12.3.10 ■ Metal Regi Roll, PL3.2.6 ■ Rubber Regi Roll, PL3.2.7 ■ Transfer Unit, PL4.1.1 ■ Print Cartridge (C/M/Y/K), PL5.1.18-21 ■ Fuser, PL6.1.10 ■ Main Drive, PL8.1.2 ■ Drive Assembly, PL8.1.7 ■ Duplex Unit, PL11.1.1 ■ Optional 550-Sheet Feeder, PL12.1.1	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check Tray 1 (MPT). Does the noise come from Tray 1 when paper feed from Tray 1?	Go to step 2.	Go to step 3.
2	Check the paper condition. Replace the paper. Does the noise still occur?	Replace the Tray 1 (MPT) Feed Roll, Retard Roll, and Turn Roll.	Complete.
3	Check the Feeder for abnormal noise. Does the noise come from the Feeder while paper is feeding?	Go to step 4.	Complete.
4	Check the paper condition. Replace the paper. Does the noise still come from the printer?	Go to step 5.	Complete.
5	Replace the Feed Roll, Retard Roll, and the Feeder (page 8-43). Does the noise still occur?	Go to step 6.	Complete.
6	Check the Fuser for correct installation. Reseat the Fuser. Does the noise still occur?	Go to step 7.	Complete.
7	Check the Transfer Unit for correct installation. Reseat the Transfer Unit. Does the noise still occur?	Go to step 8.	Complete.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
8	Check the Print Cartridges for correct installation. Reseat the Print Cartridges. Does the noise still occur?	Go to step 9.	Complete.
9	Check the Duplex Unit. Does the noise come from the Duplex Unit while paper is feeding?	Go to step 10.	Go to step 11.
10	Check the Duplex Unit for correct installation. Reseat the Duplex Unit. Does the noise still occur?	Replace the Duplex Unit (page 8-94).	Complete.
11	Perform the Duplex Motor test (page 4-44): **Service Mode** > **Engine Diag** > **Motor Test** > **Duplex Motor**. Does the noise come from the printer?	Replace the Duplex Unit (page 8-94).	Complete.
12	Check the Main Drive for correct installation. Reseat the Main Drive. Does the noise still occur?	Go to step 13.	Complete.
13	Check the Drive Assembly for correct installation. Reseat the Drive Assembly. Does the noise still occur?	Go to step 14.	Complete.
14	Perform the Main Motor test (page 4-40): **Service Mode** > **Engine Diag** > **Motor Test** > **Main Motor.** Does the noise come from the motor?	Replace the Main Drive (page 8-73).	Go to step 15.
15	Perform the Deve Motor test (page 4-43): **Service Mode** > **Engine Diag** > **Motor Test Deve Motor**. Does the noise come from the motor?	Replace the Main Drive (page 8-73).	Go to step 16.
16	Perform the Sub Motor test (page 4-41): **Service Mode** > **Engine Diag** > **Motor Test Sub Motor**. Does the noise come from the motor?	Replace the Main Drive (page 8-73).	Go to step 17.
17	Perform the Tray 2 Motor test (page 4-42): **Service Mode** > **Engine Diag** > **Motor Test Tray 2 Motor**. Does the noise come from the motor?	Replace the Drive Assembly (page 8-76).	Complete, if Tray 3 is installed. Go to step 17.
18	Perform the Tray 3 Feed Motor test (page 4-45): **Service Mode** > **Engine Diag** > **Motor Test** > **Tray 3 Motor**. Does the noise come from the motor?	Replace the Optional 550-Sheet Feeder (page 8-96).	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, PL5.1.17 ■ Transfer Unit, PL4.1.1 ■ Print Cartridge (C/M/Y/K), PL5.1.18-21	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check external noise. 1. Are there other electrical appliances within 3 meters from the printer? 2. Turn the electrical appliances Off or relocate the printer at least 6 meters away from other electrical appliances. 3. Does the error still occur?	Go to step 2.	Complete.
2	Check the AC ground. Is the AC power supply outlet wired and grounded appropriately?	Go to step 3.	Request the client to fix the AC power supply outlet.
3	Reseat the Print Cartridges and Transfer Unit. Does the electrical noise still occur?	Go to step 4.	Complete.
4	Check the Print Cartridges for stains or debris. Are the Print Cartridges dirty?	Clean the Print Cartridges.	Reseat the HVPS.

AC Noise

There is high pitch sound coming from the printer.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ LVPS, PL9.1.4	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check for abnormal noise. Is there abnormal noise from the motors when turning On the printer?	Go to step 2.	Go to step 4.
2	1. Turn the printer power Off. 2. Disconnect the power cord and wait for one minute. 3. Reseat the LVPS connectors. 4. Turn the printer power On. Is the printer working?	Complete.	Go to step 3.
3	Check the MCU Board for correct installation. Reseat the MCU Board. Is the printer working?	Complete.	Replace the LVPS (page 8-81).
4	1. Connect the printer power cord to another electrical outlet. 2. Turn the printer power On. Is the printer working?	Complete.	Go to step 5.
5	1. Turn the printer power Off. 2. Check the power cord connection. Reconnect the printer power cord. Is the printer working?	Complete.	Go to step 6.
6	1. Turn the printer power Off. 2. Disconnect the power cord and wait for one minute. 3. Reseat the LVPS connectors. 4. Turn the printer power On. Is the printer working?	Complete.	Go to step 7.
7	1. Turn the printer power Off. 2. Disconnect the printer power cord and wait for one minute. 3. Reconnect the power cord. 4. Turn the printer power On. Is the printer working?	Complete.	Replace the LVPS (page 8-81).

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 (Mac OS 10.2 and Higher)

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

Note

If the job prints, no further system troubleshooting is necessary. If there are print-quality problems, refer to the User Guide at www.xerox.com/office/6180support.

Macintosh Troubleshooting OS 10.2 Step-by-Step

Perform these steps **only** for Mac OS 10.2 and higher.

1. For **AppleTalk**, perform the steps below. For **TCP/IP**, proceed to step 2.
   a. From the printer's Control Panel, verify that the **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.

Note

See also: www.xerox.com/office/6180support

UNIX / Linux

This section includes:

- Quick Install Steps
- Additional Resources

Your printer supports connection to a variety of UNIX platforms through the Parallel and Network interface. The workstations currently supported by CentreWare for UNIX/Linux to a network-connected printer are:

- Sun Solaris
- IBM AIX
- Hewlett-Packard HP-UX
- Linux (i386) tested on SUSE 10.0, RedHat 9, Fedora Core1

The following procedures enable you to connect your printer using any of the supported versions of UNIX or Linux listed above.

Quick Install Steps

Perform the following procedures to set up the printer and install the appropriate drivers.

From the Printer

To set up the printer:

1. Verify that both TCP/IP protocol and the proper connector are enabled.
2. On the Control Panel, select one of these IP address options:
   - Allow the printer to set up a DHCP address
   - Enter the IP address manually
3. Print the Configuration page and keep it for reference.

From Your Computer

To install the CentreWare for Unix driver:

1. Go to www.xerox.com/office/drivers.
2. Select your printer, the platform your are running (**UNIX**), and file type (**Drivers**).
3. Click **Go to Downloads**.
4. From the list of provided files, download the **PrinterPackageXPXX** and the appropriate CentreWare printer driver for your platform <OS>XPXX 4.xx.x.tar.
   a. As root untar the Driver and Printer package, this will create two subdirectories. Cd to <O/S>InstallPackage and type ./setup to install the driver.
   b. CD to the PrinterPackagexpxx and type ./setup to install the printer specific data files.

c. Type xpadmin to open the admin tool for creating print queues. Select the printer from the list of discovered printers you want to print to. Click on the printer icon at the top left of the screen to add a print queue.

5. Print a test page and verify the print quality of the printed page.

Note

If print-quality problem exists, or your job did not print, refer to the User Guide at www.xerox.com/office/6180support.

Additional Resources

For users that want to use the CUPS driver instead of CentreWare for Unix, access the Xerox website for the latest CUPS ppd package at www.xerox.com/office/drivers. To download printer drivers:

1. Find your printer. Click the **Drivers & Downloads** link. Select the platform you are running (UNIX), and the files you would like to download (Drivers).
2. Click the **Go** button.
3. Click the **CUPSPrinterPackage**.
4. Untar the printer package and select the ppd for the printer you want to install.
5. Copy the file to /usr/share/cups/model/Xerox. (This is the directory for SUSE10.1. The directory may not be in the same location on other Linux versions).
6. Open the printer manager supplied for the Linux release and follow the instructions for adding a print queue.

Note

The print daemon may need restarting for the print manager to see the new PPD added to the CUPS ppd directory.

Print-Quality Troubleshooting

In this chapter...

- Print-Quality Problems Overview
- Checklist Before Troubleshooting Print-Quality
- Test Prints
- Print-Quality Specifications
- Print-Quality Troubleshooting

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 1-22 for supported and specialty media that have been tested and approved for use in the Phaser 6180 Color Laser Printer. Use paper from a fresh ream that is acclimated to room temperature and humidity.

If the print-quality defect is still present when printing on approved media from an unopened ream of paper, then investigate software applications and environmental conditions.

Print the Configuration page to determine the temperature and humidity under which the printer is operating. Compare this to the “Environmental Specifications” on page 1-15. Extreme temperature and humidity can adversely affect the xerographic and fusing characteristics of the printer.

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 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 defect. If no defects are found, replace the Print Cartridge, Laser Unit, Transfer Unit, and Fuser one at a time until the defect is eliminated.

Defects Associated with Specific Printer Components

Some print-quality problems can be associated with specific assemblies; the most common problems and the associated assemblies are listed in this section. Refer to the specific print-quality troubleshooting procedure for detail information.

Laser Unit

- Light or Undertone Print
- Blank Print (No 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 Unit

- 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

Print Cartridge

- Light or Undertone Print
- Blank Print (No 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

Checking the 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. Use the CentreWare Internet Services (IS) to check the supplies status. To access the CentreWare IS:

1. Open your web browser.
2. In the Address field, enter the printer IP address.
3. Click the **Status** button.
4. Click the **Supplies** button.
5. The **Supplies Status** is displayed.

If the toner is low, you can extend the Print Cartridge life by removing the Cartridge from the printer, and gently shaking the Print Cartridge from side-to-side.

Cleaning

Paper, toner, and dust particles can accumulate inside the printer and cause print-quality problems such as Smearing or Toner Specks. Clean the inside of the printer to prevent these problems.

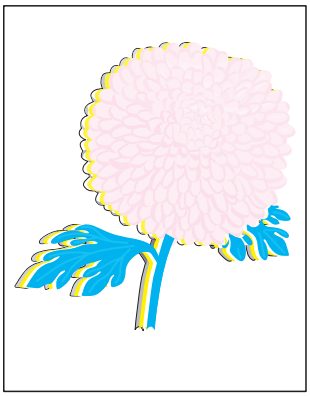
Checklist

Check the following items prior to performing troubleshooting. These procedures may help to resolve the problems without troubleshooting the printer.

1. **Color is out of alignment.**

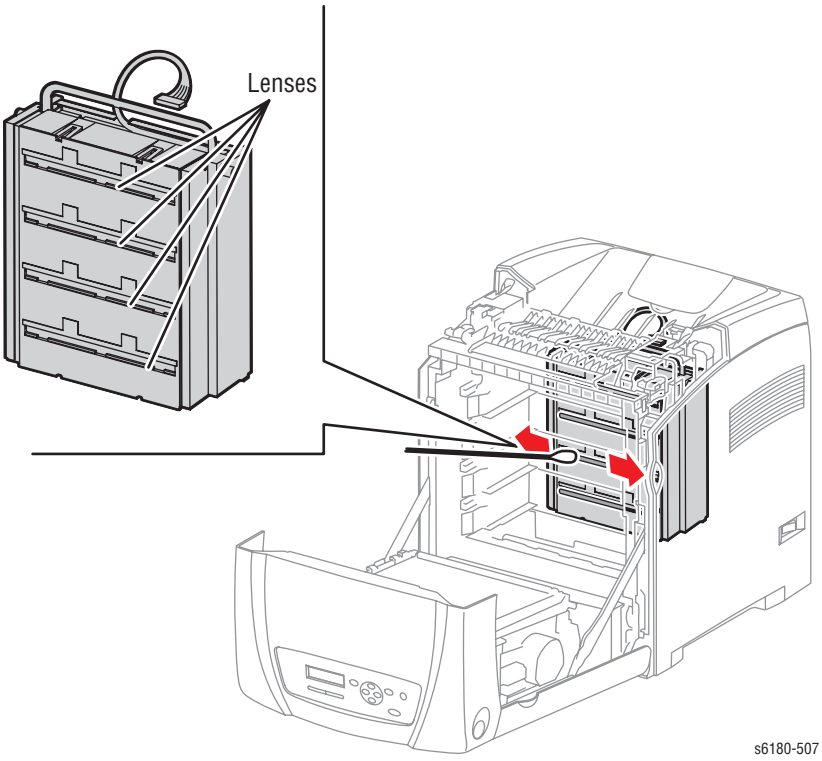
Note

After installing a new black Print Cartridge, ensure to clean the Laser lens.



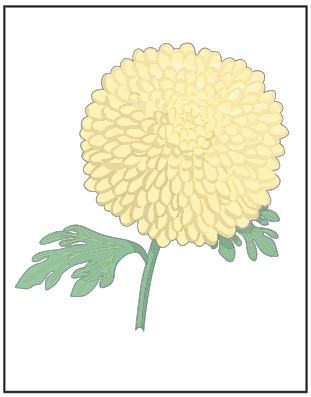
Color Registration

a. Clean the Laser Unit lenses using a Q-tip or a dry, lint-free cloth to wipe the lenses.



b. Check the Transfer Unit for damage.
c. Perform Color Registration Adjustment (page 6-2).

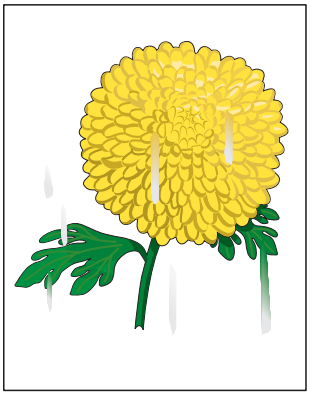
2. **Print is too light.**



Light or Undertone Print

a. The toner may be too low. Check the amount of toner and change the Print 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. Verify that the correct type of paper is being used.

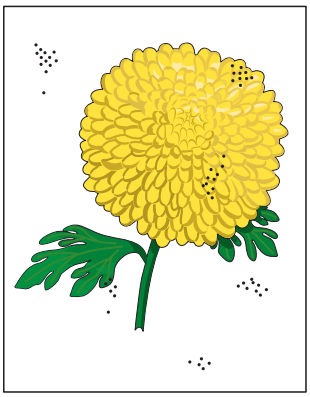
3. **Toner smears or print comes off page.**



Smudges or Smears

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 (refer to “Media and Tray Specifications” on page 1-22).

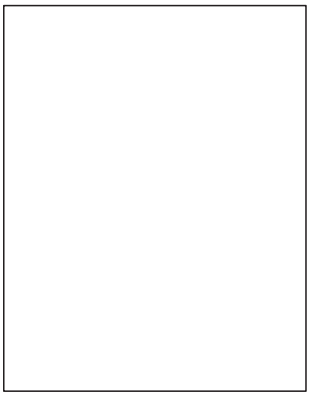
4. **Toner spots appear on the page and printing is blurred.**



Random Spots

   a. Check the Print Cartridge(s) to make sure that it is installed correctly.
   b. Change the Print Cartridge(s).

5. **Entire page is white or one color is missing from color image.**



Blank Print

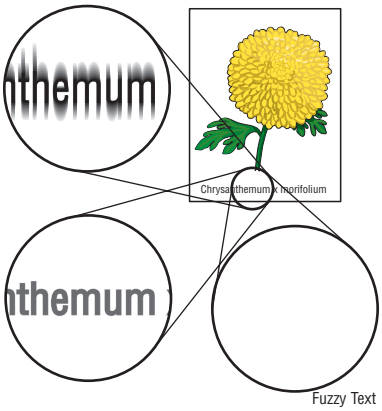
   a. Ensure the packaging material is removed from the Print Cartridge.
   b. Check the Print Cartridge to make sure that it is installed correctly.
   c. The toner may be low. Change the Print Cartridge.

6. **Streaks appear on the page.**

Horizontal Band, Void, or Streaks

   a. The toner may be low. Change the Print Cartridge(s).
   b. If you are using preprinted forms, make sure the toner can withstand the temperature of 0° C to 35° C.

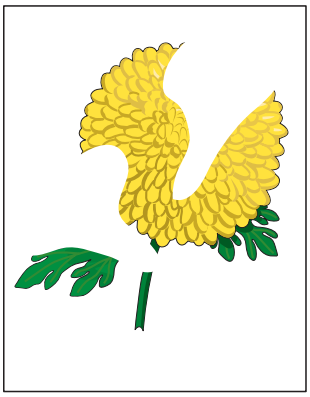
7. **Characters have jagged or uneven edges.**



Fuzzy Text

   a. If you are using downloaded fonts, verify that the fonts are supported by the printer, the host computer, and the software application.

8. **Part or all the page prints in cyan, magenta, yellow, or black.**



Partial Band

   a. Check the Print Cartridges to make sure they are installed correctly.

9. **The job prints, but the top and side margins are incorrect.**

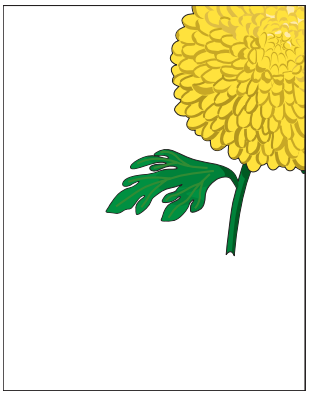


Image Not Centered

   a. Ensure the Media Size settings in the Tray Settings is correct.
   b. Ensure the margins are set correctly in your software application.

Test Prints

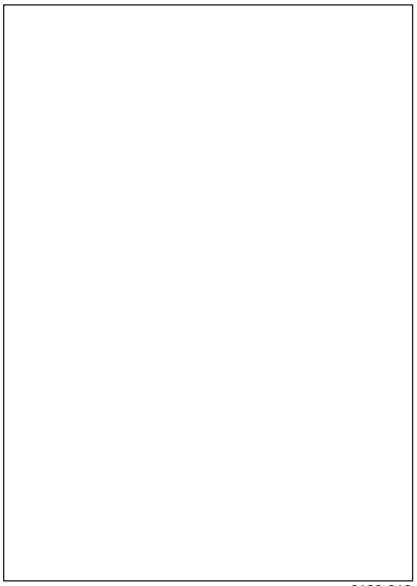
This section provides information for how to analyze test prints. A variety of test prints are available for determining the quality of output from the printer and to assist in troubleshooting the problems.

- No Image IOT
- TestPat600 IOT
- Grid 2 ESS
- Cyan 20% ESS
- Magenta 20% ESS
- Yellow 20% ESS
- Black 20% ESS
- CYM 20% ESS
- Gradation ESS

No Image IOT

This test print provides a sample of blank page. This test is used to identify problems with the printer function.

- **Fail:** Check the printer function.
- **Pass:** Check the network connection, cable, PC...etc.

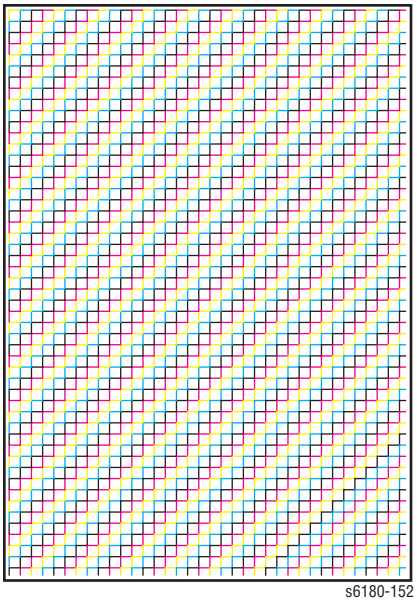


s6180-318

TestPat600 IOT

This test print provides the printer's built-in test pattern. This test is used to identify problems with the printer function or the Image Processor Board. The colors should be aligned vertically and horizontally. Compare the print with the following chart to determine the problem.

- **Fail:** Check the printer controller or the MCU Board.
- **Pass:** Check the Image Processor Board.

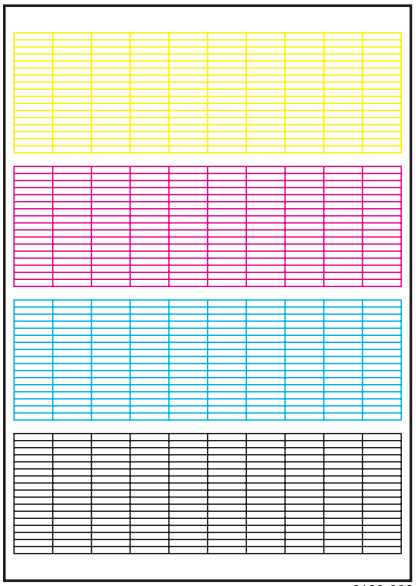


s6180-152

Grid 2 ESS

This test print provides the Controller built-in grid pattern sample. This test is used to identify problems with the printer function. Compare the print with following chart to determine the problem.

- **Fail:** Check the printer function and the Image Processor Board.
- **Pass:** Check the network connection, cable, PC...etc.

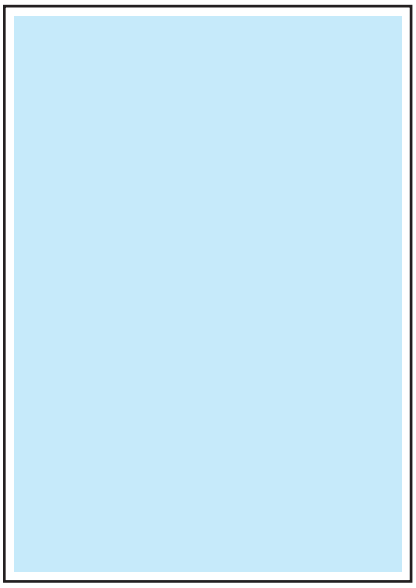


s6180-390

Cyan 20% ESS

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 the following chart to determine the problem.

- **Fail:** Check the cyan Print Cartridge.
- **Pass:** Check another Print Cartridge.

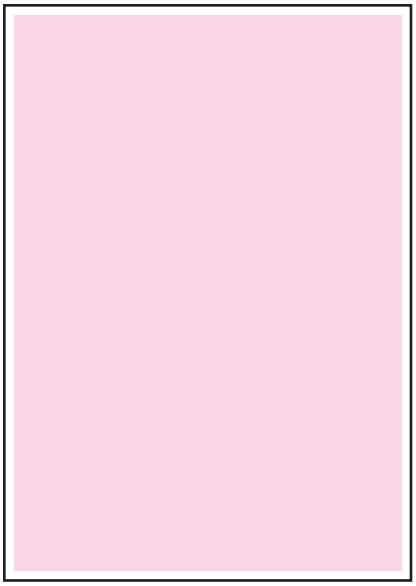


s6180-391

Magenta 20% ESS

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 the following chart to determine the problem.

- **Fail:** Check the magenta Print Cartridge.
- **Pass:** Check another Print Cartridge.

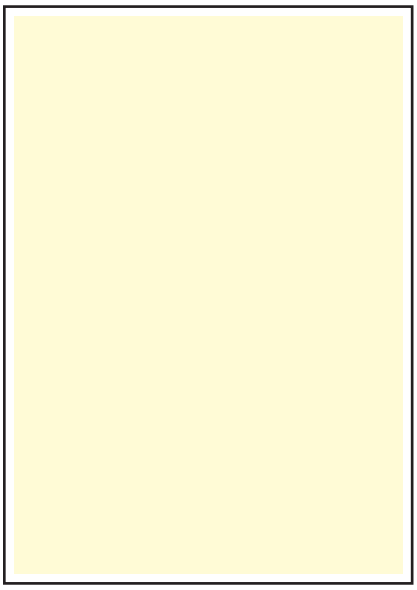


s6180-392

Yellow 20% ESS

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 the following chart to determine the problem.

- **Fail:** Check the yellow Print Cartridge.
- **Pass:** Check another Print Cartridge.

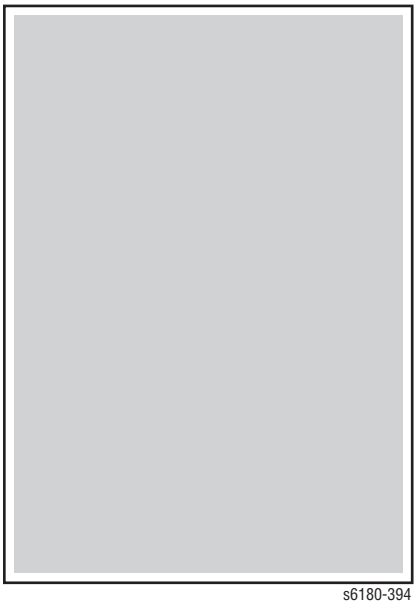


s6180-393

Black 20% ESS

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 the following chart to determine the problem.

- **Fail:** Check the black Print Cartridge.
- **Pass:** Check another Print Cartridge.

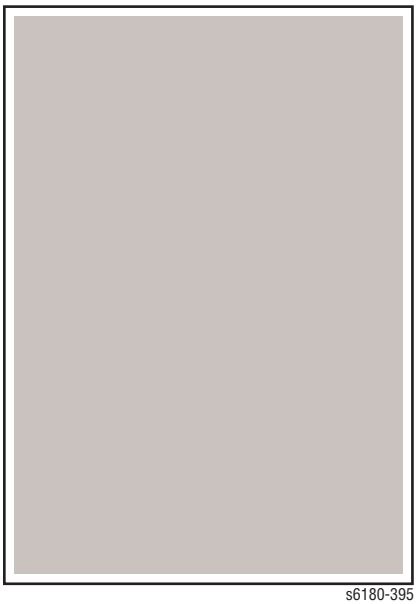


s6180-394

CYM 20% ESS

This test print provides 20% density for combination of cyan, magenta, and black on the whole page. This test is used to identify problems with balance of three color toners or another toner. Compare the print with the following chart to determine the problem.

- **Fail:** Check the cyan, magenta, or yellow Print Cartridge.
- **Pass:** Check the black Print Cartridge.

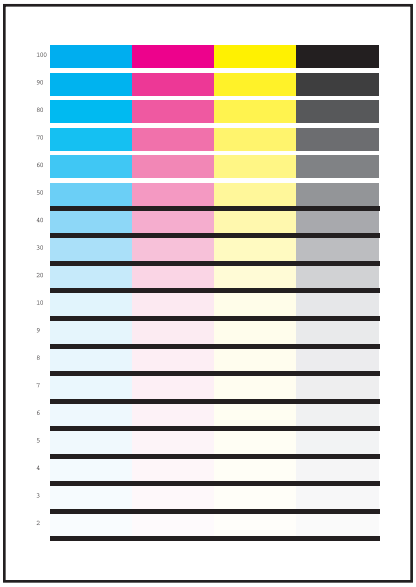


s6180-395

Gradation ESS

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 the following chart to determine the problem.

- **Fail:** Check the printer function.
- **Pass:** Check the Image Processor Board.



s6180-396

Print-Quality Specifications

The Print-Quality specifications are provided as follows.

Environmental Condition

- Temperature: 10° C - 32° C
- Humidity: 15% RH - 85% RH (85% RH at 28° C)

Note

Defects may occur due to condensation after around 30 minutes if the printer is turned On in a critical environment such as 85% at 10° C.

Quality Paper

The print-quality is best when quality paper is fed from the tray. The print-quality is evaluated on the maximum size of each standard paper.

- Color Print-Quality: Xerox-brand X-Pression paper
- Black and White Quality: Xerox-brand 4200 paper

Paper Condition

Paper should be fresh and stored in the operating environment for 12 hours before use for printing.

Printer Condition

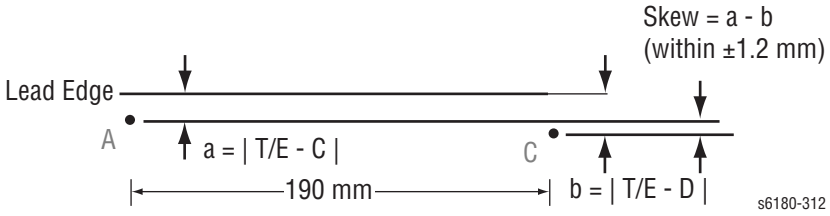
The specified print-quality is guaranteed with the printer in specified normal environmental condition.

Specifications

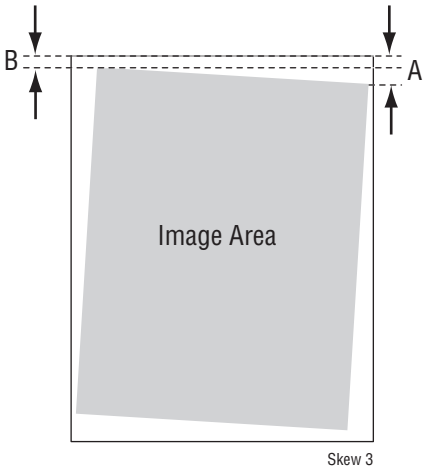
The following charts provide specifications for Skew, Parallelism, Linearity, Perpendicularity, Magnification Error, Registration, and Guaranteed and Maximum Print Areas.

Skew

- 190 mm ± 1.2 mm

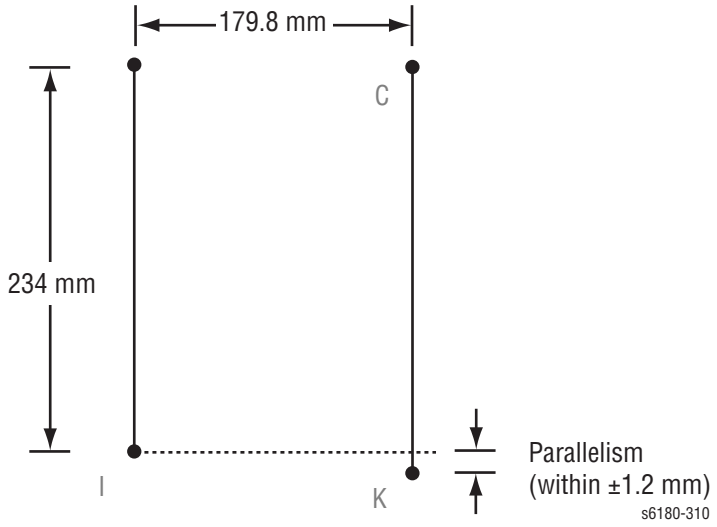


To measure Skew: Measure the margin of the paper at the leading edge of each corner, and then take the difference between them.



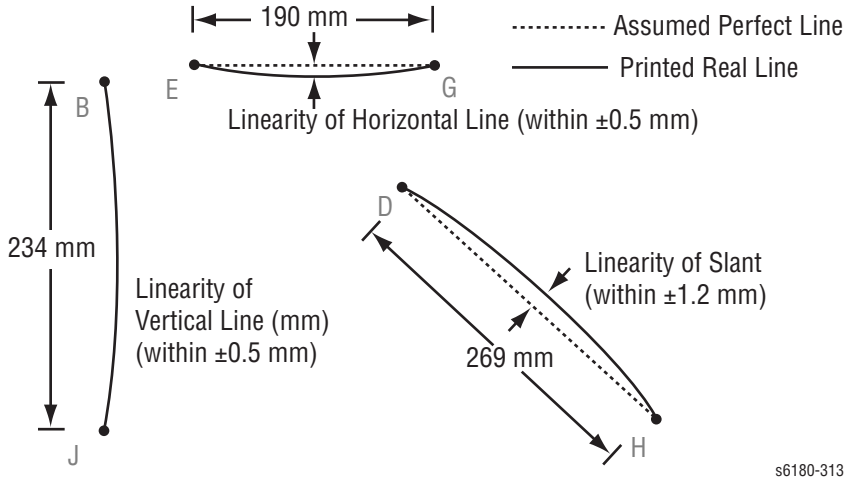
Parallelism

- Horizontal: 180 mm ± 1.2 mm
- Vertical: 234 mm ± 1.2 mm



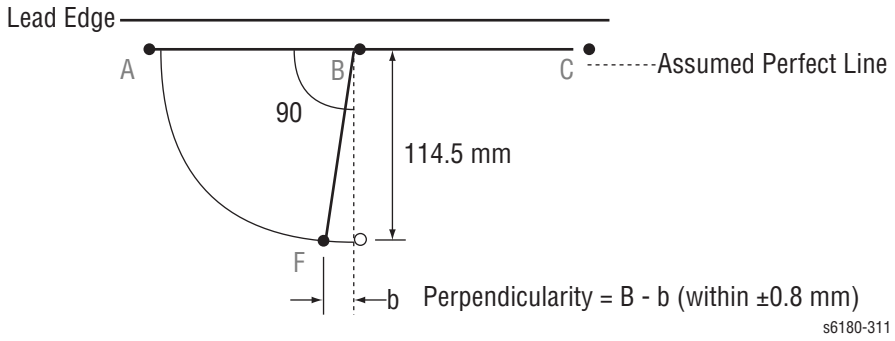
Linearity

- Horizontal: 190 mm ± 0.5 mm
- Vertical: 234 mm ± 0.5 mm
- Slant: 269 mm ± 1.2 mm



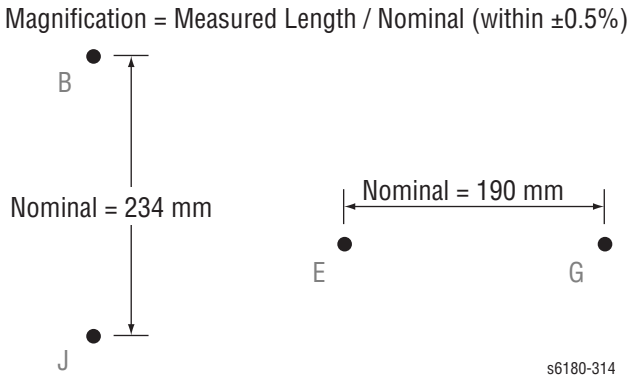
Perpendicularity

- 114.5 mm ± 0.8 mm



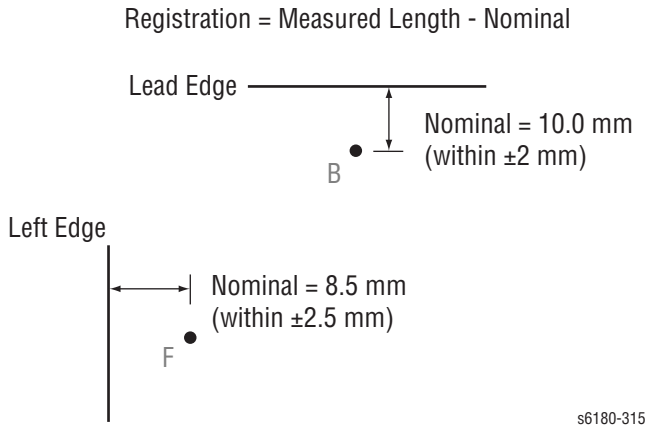
Magnification Error

- Horizontal Simplex: 190 mm ± 0.5%
- Horizontal Duplex:190 mm ± 0.8%
- Vertical Simplex: 234 mm ± 0.5%
- Vertical Duplex: 234 mm ± 0.8%



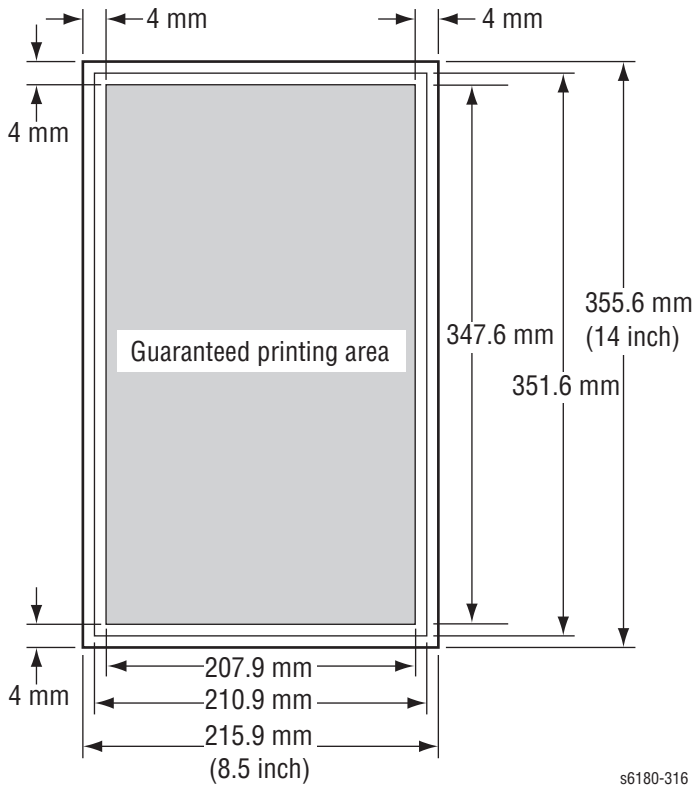
Registration

- Leading Edge: 10.0 mm ± 2.0 mm
- Side Edge: 8.5 mm ± 2.5 mm



Guaranteed and Maximum Print Areas

- Maximum Print Area: 210.9 mm x 351.6 mm
- Guaranteed Print Area: 207.9 mm x 347.6 mm



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.

f

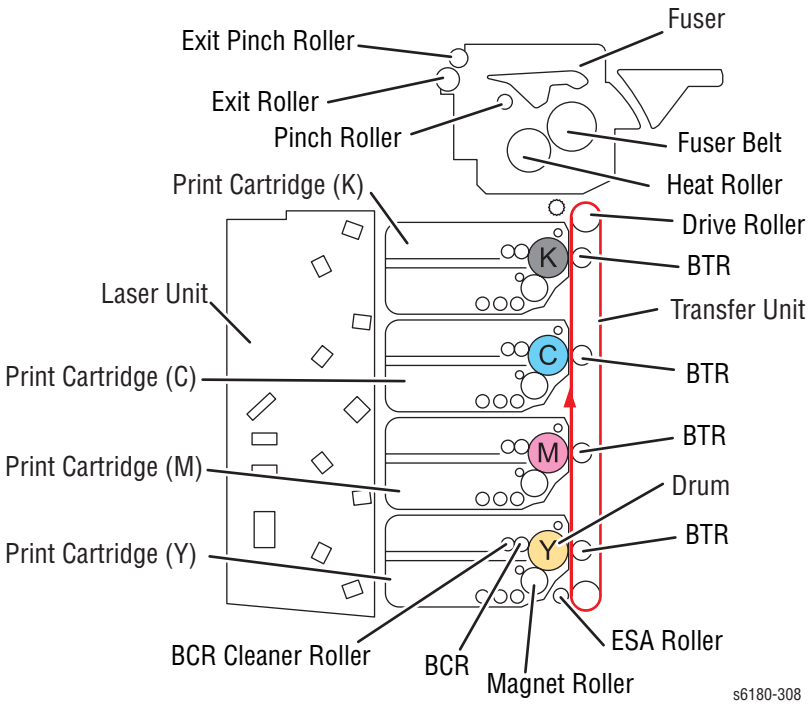
Defect	Definition	Page
Light or Undertone Print	The overall image density is too light in all colors.	page 5-25
Blank Print (No Print)	The entire image area is blank.	page 5-27
Black Print	The entire image area is black.	page 5-29
Vertical Blank Lines	There are faded or completely non-printed lines along the page.	page 5-31
Horizontal Band, Voids, or Streaks	There are areas of the image that are extremely light or are missing entirely.	page 5-33
Vertical Stripes	There are black lines along the page in the direction of the paper travel.	page 5-35
Horizontal Stripes	There are dark lines running parallel with the leading edge of the print.	page 5-37
Partial Band	There are areas of the image that are extremely light or are missing in a limited area.	page 5-39
Random Spots	There are spots of toner randomly scattered across the page.	page 5-41
Repeating Bands, Lines, Marks, or Spots	There are recurring lines, marks, or spots on the page.	page 5-43
Background Contamination	There is toner contamination on all or most of the page.	page 5-46
Skew	The printed image is not paralleled with both sides of the paper.	page 5-48
Damaged Paper	The paper comes out from the printer wrinkled, folded, or worn-out.	page 5-50
Unfused Image	The toner image is not completely fused to the paper. The image easily rubs off.	page 5-53
Color Registration	A printed yellow or black image is not overlapped on a cyan or magenta image correctly.	page 5-55

Repeating Defect Measurement

When horizontal lines and/or spot occur periodically, it is possibly caused by the trouble of particular roller. Measure the trouble interval on the test print, and check the relation to the Roller in the table. The interval does not necessary match circumference of the Roller.

Horizontal Line and Spot Trouble Measurement

Roll	Roll Diameter	Interval	Replacement	Part List Number
Drum	24.0 mm	75.4 mm	Print Cartridge (C/M/Y/K)	PL5.1.18-21
BCR	9.0 mm	28.8 mm	Print Cartridge (C/M/Y/K)	PL5.1.18-21
BCR Cleaner Roll	8.0 mm	25.9 mm	Print Cartridge (C/M/Y/K)	PL5.1.18-21
Magnet Roll (C/M/Y/K)	16.0 mm	25.2 mm	Print Cartridge (C/M/Y/K)	PL5.1.18-21
BTR	12.0 mm	37.7 mm	Transfer Unit	PL4.1.1
ESA Roll	9.0 mm	28.3 mm	Transfer Unit	PL4.1.1
Drive Roll	18.1 mm	56.9 mm	Transfer Unit	PL4.1.1
Fuser Roll	26.32 mm	82.7 mm	Fuser	PL6.1.10
Fuser Belt	30.0 mm	94.2 mm	Fuser	PL6.1.10
Pinch Roll	6.0 mm	18.8 mm	Fuser	PL6.1.10
Exit Roll	13.75 mm	43.2 mm	Fuser	PL6.1.10
Exit Pinch Roll	10.0 mm	31.4 mm	Fuser	PL6.1.10



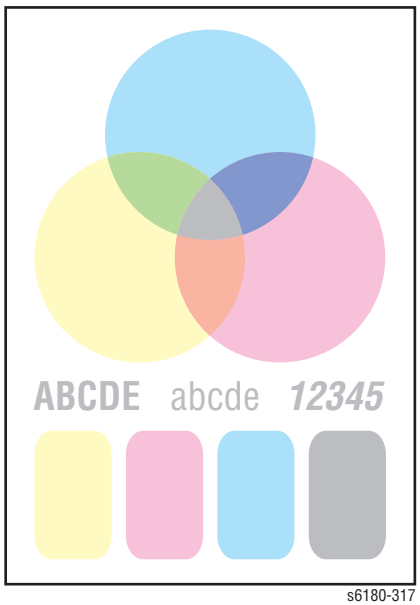
Light or Undertone Print

The overall image density is too light in all colors.

Initial Actions

- Check the paper transfer path.
- Ensure there are no debris on the transfer path.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Transfer Unit, PL4.1.1 ■ Print Cartridge (C/M/Y/K), PL5.1.18-21 ■ Laser Unit, PL5.1.2 ■ Dispenser, PL5.1.12 ■ MCU Board, PL9.1.20 ■ HVPS, PL5.1.17 ■ Image Processor Board, PL9.1.27	 s6180-317

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Print Cartridge (C/M/Y/K) for damages. Is the Print Cartridge damaged?	Go to step 2.	Replace the Print Cartridge (page 8-9).
2	Check the paper condition. Is the paper dry, recommended type, and loaded in the correct position?	Go to step 3.	Replace the paper.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
3	1. Perform Test Print (Cyan 20%, Magenta 20%, Yellow 20%, and Black 20%): **Service Mode** > **Test Print**. 2. Check the Print Cartridge (C/M/Y/K). Is there a faint toner?	Go to step 4.	Complete.
4	Check the Transfer Unit for correct installation. Reseat the Transfer Unit. Does the image quality improve?	Complete.	Go to step 5.
5	Check the laser beam path. Are there any debris between the Laser Unit and Transfer Unit?	Remove the debris.	Go to step 6.
6	Check the Print Cartridge (C/M/Y/K) for correct installation. Reseat the Print Cartridge. Does the image quality improve?	Complete.	Go to step 7.
7	Perform Yellow/Magenta/Cyan/Black Toner Motor test (Yellow,page 4-47; Magenta, page 4-48; Cyan, page 4-49; Black, page 4-50): **Service Mode** > **Engine Diag** > **Motor Test** > **Toner Motor**. Does the Dispenser rotate smoothly?	Go to step 8.	Replace the MCU Board (page 8-87). If not, replace the Dispenser (page 8-56).
8	Check the MCU Board for correct installation. Reseat the MCU Board. Does the image quality improve?	Complete.	Go to step 9.
9	Check the Image Processor Board for correct installation. Reseat the Image Processor Board. Does the image quality improve?	Complete.	Go to step 10.
10	Check the HVPS for correct installation. Reseat the HVPS. Does the image quality improve?	Complete.	Go to step 11.
11	Replace the Print Cartridge (page 8-9). Does the image quality improve?	Complete.	Go to step 12.
12	Replace the Laser Unit (page 8-50). Does the image quality improve?	Complete.	Replace the Image Processor Board (page 8-89).

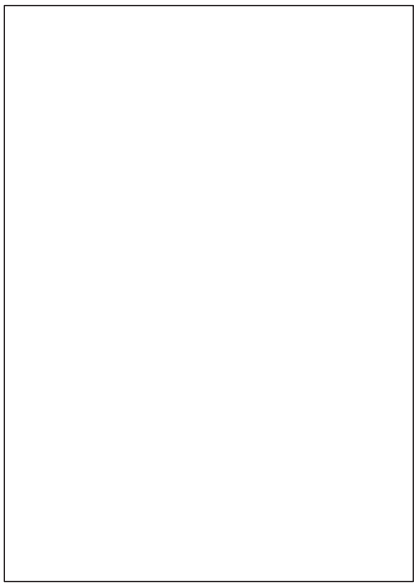
Blank Print (No Print)

The entire image area is blank.

Initial Actions

- Check the paper transfer path.
- Ensure there are no debris on the transfer path.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Dispenser, PL5.1.12 ■ Print Cartridge (C/M/Y/K), PL5.1.18-21 ■ Laser Unit, PL5.1.2 ■ MCU Board, PL9.1.20 ■ Image Processor Board, PL9.1.27	 s6180-318

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Print Cartridge (C/M/Y/K) for damages. Is the Print Cartridge damaged?	Go to step 2.	Replace the Print Cartridge (page 8-9).
2	Check the paper condition. Is the paper dry, recommended type, and loaded in the correct position?	Go to step 3.	Replace the paper.
3	Perform Test Print (Cyan 20%, Magenta 20%, Yellow 20%, and Black 20%): **Service Mode** > **Test Print**. Does the image quality improve?	Complete.	Go to step 4.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Check the Transfer Unit for correct installation. Reseat the Transfer Unit. Does the image quality improve?	Complete.	Go to step 5.
5	Check the laser beam path. Are there any debris between the Laser Unit and Transfer Unit?	Remove the debris.	Go to step 6.
6	Check the wiring harness connectors P/J12 and P/J151 between the Laser Unit and the MCU Board. Are the connectors securely connected?	Go to step 7.	Reconnect the connectors. Go to step 7.
7	Check the Print Cartridge (C/M/Y/K) for correct installation. Reseat the Print Cartridge. Does the image quality improve?	Complete.	Go to step 8.
8	Perform Yellow/Magenta/Cyan/Black Toner Motor test (Yellow, page 4-47; Magenta, page 4-48; Cyan, page 4-49; Black, page 4-50): **Service Mode** > **Engine Diag** > **Motor Test** > **Toner Motor**. Does the Dispenser rotate properly?	Go to step 9.	Replace the MCU Board (page 8-87). If not, replace the Dispenser (page 8-56).
9	Check the MCU Board for correct installation. Reseat the MCU Board. Does the image quality improve?	Complete.	Go to step 10.
10	Check the Image Processor Board for correct installation. Reseat the Image Processor Board. Does the image quality improve?	Complete.	Go to step 11.
11	Check the HVPS for correct installation. Reseat the HVPS. Does the image quality improve?	Complete.	Go to step 12.
12	Replace the Laser Unit (page 8-50). Does the image quality improve?	Complete.	Replace the Image Processor Board (page 8-89).

Black Print

The entire image is black.

Initial Actions

- Check the paper transfer path.
- Ensure there are no debris on the transfer path.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Print Cartridge (C/M/Y/K), PL5.1.18-21 ■ Laser Unit, PL5.1.2 ■ MCU Board, PL9.1.20 ■ Image Processor Board, PL9.1.27	 s6180-319

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Print Cartridge (C/M/Y/K) for damages. Is the Print Cartridge damaged?	Go to step 2.	Replace the Print Cartridge (page 8-9).
2	Check the paper condition. Is the paper dry, recommended type, and loaded in the correct position?	Go to step 3.	Replace the paper.
3	Perform Test Print (Cyan 20%, Magenta 20%, Yellow 20%, and Black 20%): **Service Mode** > **Test Print**. Does the image quality improve?	Complete.	Go to step 4.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Check the Transfer Unit for correct installation. Reseat the Transfer Unit. Does the image quality improve?	Complete.	Go to step 5.
5	Check the wiring harness connectors P/J12 and P/J151 between the Laser Unit and the MCU Board. Are the connectors securely connected?	Go to step 6.	Reconnect the connectors. Go to step 6.
6	Check the Print Cartridge (C/M/Y/K) for correct installation. Reseat the Print Cartridge. Does the image quality improve?	Complete.	Go to step 7.
7	Check the MCU Board for correct installation. Reseat the MCU Board. Does the image quality improve?	Complete.	Go to step 8.
8	Check the Image Processor Board for correct installation. Reseat the Image Processor Board. Does the image quality improve?	Complete.	Go to step 9.
9	Check the HVPS for correct installation. Reseat the HVPS. Does the image quality improve?	Complete.	Go to step 10.
10	Replace the Print Cartridge (page 8-9). Does the image quality improve?	Complete.	Go to step 11.
11	Replace the Laser Unit (page 8-50). Does the image quality improve?	Complete.	Replace the Image Processor Board (page 8-89).

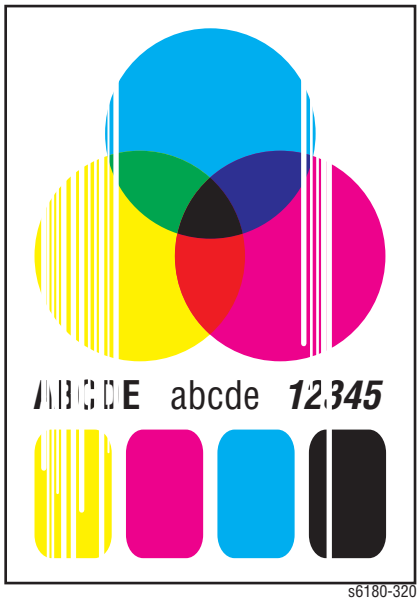
Vertical Blank Lines

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 paper transfer path.
- Ensure there are no debris on the transfer path.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Print Cartridge (C/M/Y/K), PL5.1.18-21 ■ Laser Unit, PL5.1.2 ■ MCU Board, PL9.1.20 ■ Image Processor Board, PL9.1.27	 s6180-320

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Print Cartridge (C/M/Y/K) for damages. Is the Print Cartridge damaged?	Go to step 2.	Replace the Print Cartridge (page 8-9).
2	Check the paper condition. Is the paper dry, recommended type, and loaded in the correct position?	Go to step 3.	Replace the paper.
3	Check the Transfer Unit. Are there any damages on the Transfer Unit surface?	Replace the Transfer Unit (page 8-7).	Go to step 4.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Check the Transfer Unit for correct installation. Reseat the Transfer Unit. Does the image quality improve?	Complete.	Go to step 5.
5	Check for debris in the laser beam path between the Laser Unit and Transfer Unit.	Remove the debris.	Go to step 6.
6	Check the wiring harness connectors P/J12 and P/J151 between the Laser Unit and the MCU Board. Are the connectors securely connected?	Complete.	Reconnect the connectors. Go to step 7.
7	Check the Print Cartridge (C/M/Y/K) for correct installation. Reseat the Print Cartridge. Does the image quality improve?	Complete.	Go to step 8.
8	Check the MCU Board for correct installation. Reseat the MCU Board. Does the image quality improve?	Complete.	Go to step 9.
9	Check the Image Processor Board for correct installation. Reseat the Image Processor Board. Does the image quality improve?	Complete.	Go to step 10.
10	Check the HVPS for correct installation. Reseat the HVPS. Does the image quality improve?	Complete.	Go to step 11.
11	Replace the Print Cartridge (page 8-9). Does the image quality improve?	Complete.	Go to step 12.
12	Replace the Laser Unit (page 8-50). Does the image quality improve?	Complete.	Replace the Image Processor Board (page 8-89). If not, replace the MCU Board (page 8-87).

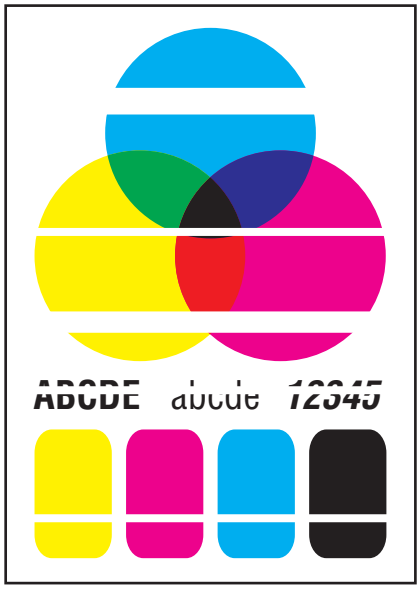
Horizontal Band, Voids, or Streaks

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
■ Transfer Unit, PL4.1.1 ■ Print Cartridge (C/M/Y/K), PL5.1.18-21 ■ Laser Unit, PL5.1.2 ■ MCU Board, PL9.1.20 ■ Image Processor Board, PL9.1.27	 s6180-321

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the blank line's regular intervals. Are there any blank lines on the image?	Refer to "f" on page 5-23.	Go to step 2.
2	Check the Print Cartridge (C/M/Y/K) for damages. Is the Print Cartridge damaged?	Go to step 3.	Replace the Print Cartridge (page 8-9).
3	Check the paper condition. Is the paper dry, recommended type, and loaded in the correct position?	Go to step 4.	Replace the paper.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Check the Transfer Unit. Are there any damages on the Transfer Unit surface?	Replace the Transfer Unit (page 8-7).	Go to step 5.
5	Check the Transfer Unit for correct installation. Reseat the Transfer Unit. Does the image quality improve?	Replace the Transfer Unit (page 8-7).	Go to step 6.
6	Check for debris in the laser beam path between the Laser Unit and the Transfer Unit. Are there any debris?	Remove the debris.	Go to step 7.
7	Check the wiring harness connectors P/J12 and P/J151 between the Laser Unit and the MCU Board. Are the connectors securely connected?	Go to step 8.	Reconnect the connectors. Go to step 8.
8	Check the Print Cartridge (C/M/Y/K) for correct installation. Reseat the Print Cartridge. Does the image quality improve?	Complete.	Go to step 9.
9	Check the MCU Board for correct installation. Reseat the MCU Board. Does the image quality improve?	Complete.	Go to step 10.
10	Check the Image Processor Board for correct installation. Reseat the Image Processor Board. Does the image quality improve?	Complete.	Go to step 11.
11	Check the HVPS for correct installation. Reseat the HVPS. Does the image quality improve?	Complete.	Go to step 12.
12	Replace the Print Cartridge (page 8-9). Does the image quality improve?	Complete.	Go to step 13.
13	Replace the Laser Unit (page 8-50). Does the image quality improve?	Complete.	Replace the Image Processor Board (page 8-89). If not, replace the MCU Board (page 8-87).

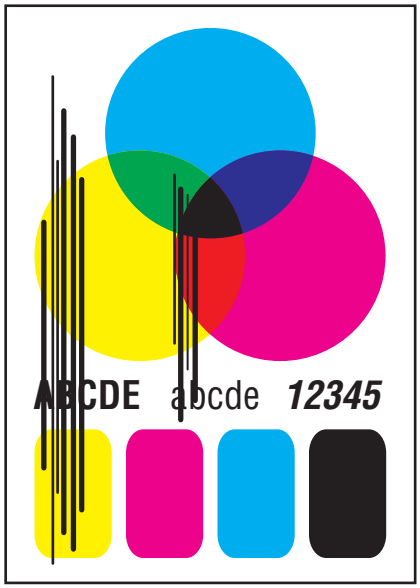
Vertical Stripes

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 paper transfer path.
- Ensure there are no debris on the transfer path.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Transfer Unit, PL4.1.1 ■ Print Cartridge (C/M/Y/K), PL5.1.18-21 ■ Laser Unit, PL5.1.2 ■ Fuser, PL5.1.10 ■ MCU Board, PL9.1.20 ■ Image Processor Board, PL9.1.27	 s6180-322

Warning

Ensure to wait for the Fuser to cool down before starting the procedure.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Print Cartridge (C/M/Y/K) for damages. Is the Print Cartridge damaged?	Go to step 2.	Replace the Print Cartridge (page 8-9).
2	Check the Transfer Unit. Are there any damages on the Transfer Unit surface?	Replace the Transfer Unit (page 8-7).	Go to step 3.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
3	Check the Transfer Unit for correct installation. Reseat the Transfer Unit. Does the image quality improve?	Complete.	Go to step 4.
4	Check the Fuser for correct installation. Reseat the Fuser. Does the image quality improve?	Complete.	Go to step 5.
5	Check the wiring harness connectors P/J12 and P/J151 between the Laser Unit and the MCU Board. Are the connectors securely connected?	Go to step 6.	Reconnect the connectors. Go to step 8.
6	Check the Print Cartridge (C/M/Y/K) for correct installation. Reseat the Print Cartridge. Does the image quality improve?	Complete.	Go to step 7.
7	Check the MCU Board for correct installation. Reseat the MCU Board. Does the image quality improve?	Complete.	Go to step 8.
8	Check the Image Processor Board for correct installation. Reseat the Image Processor Board. Does the image quality improve?	Complete.	Go to step 9.
9	Check the HVPS for correct installation. Reseat the HVPS. Does the image quality improve?	Complete.	Go to step 10.
10	Replace the Print Cartridge (page 8-9). Does the image quality improve?	Complete.	Go to step 11.
11	Replace the Fuser (page 8-10). Does the image quality improve?	Complete.	Go to step 12.
12	Replace the Laser Unit (page 8-50). Does the image quality improve?	Complete.	Replace the Image Processor Board (page 8-89). If not, replace the MCU Board (page 8-87).

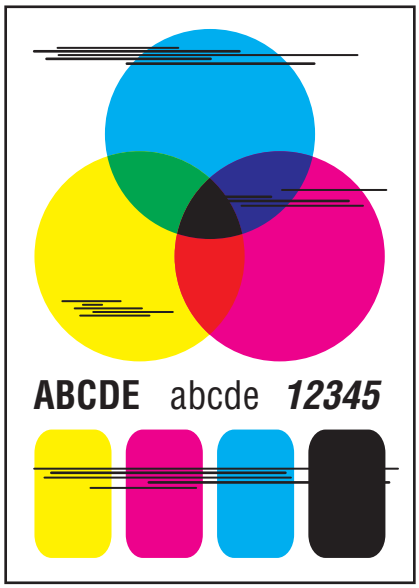
Horizontal Stripes

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
■ Transfer Unit, PL4.1.1 ■ Print Cartridge (C/M/Y/K), PL5.1.18-21 ■ Laser Unit, PL5.1.2 ■ Fuser, PL6.1.10 ■ MCU Board, PL9.1.20 ■ Image Processor Board, PL9.1.27	 s6180-323

Warning

Ensure to wait for the Fuser to cool down before starting the procedure.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the black line's regular intervals. Are there any black lines on the page?	Refer to "f" on page 23.	Go to step 2.
2	Check the Print Cartridge (C/M/Y/K) for damages. Is the Print Cartridge damaged?	Go to step 3.	Replace the Print Cartridge (page 8-9).
3	Check the Transfer Unit. Are there any damages on the Transfer Unit surface?	Replace the Transfer Unit (page 8-7).	Go to step 4.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Check the Transfer Unit for correct installation. Reseat the Transfer Unit. Does the image quality improve?	Complete.	Go to step 5.
5	Check the Fuser for correct installation. Reseat the Fuser. Does the image quality improve?	Complete.	Go to step 6.
6	Check the paper path. Are there any toner contaminations on the paper path?	Complete.	Go to step 7.
7	Check the wiring harness connectors P/J12 and P/J151 between the Laser Unit and the MCU Board. Are the connectors securely connected?	Go to step 8.	Reconnect the connectors. Go to step 8.
8	Check the Print Cartridge (C/M/Y/K) for correct installation. Reseat the Print Cartridge. Does the image quality improve?	Complete.	Go to step 9.
9	Check the MCU Board for correct installation. Reseat the MCU Board. Does the image quality improve?	Complete.	Go to step 10.
10	Check the Image Processor Board for correct installation. Reseat the Image Processor Board. Does the image quality improve?	Complete.	Go to step 11.
11	Check the HVPS for correct installation. Reseat the HVPS. Does the image quality improve?	Complete.	Go to step 12.
12	Replace the Print Cartridge (page 8-9). Does the image quality improve?	Complete.	Go to step 13.
13	Replace the Fuser (page 8-10). Does the image quality improve?	Complete.	Go to step 14.
14	Replace the Laser Unit (page 8-50). Does the image quality improve?	Complete.	Replace the Image Processor Board (page 8-89). If not, replace the MCU Board (page 8-87).

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
■ Transfer Unit, PL4.1.1 ■ Print Cartridge (C/M/Y/K), PL5.1.18-21 ■ Laser Unit, PL5.1.2 ■ MCU Board, PL9.1.20 ■ Image Processor Board, PL9.1.27	 s6180-324

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the partial band's regular intervals. Are there any blank spots on the page?	Refer to "f" on page 5-23.	Go to step 2.
2	Check the Print Cartridge (C/M/Y/K) for damages. Is the Print Cartridge damaged?	Go to step 3.	Replace the Print Cartridge (page 8-9).
3	Check the paper condition. Is the paper dry, recommended type, and loaded in the correct position?	Go to step 4.	Replace the paper.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Check the Transfer Unit. Are there any damages on the Transfer Unit surface?	Replace the Transfer Unit (page 8-7).	Go to step 5.
5	Check the Transfer Unit for correct installation. Reseat the Transfer Unit. Does the image quality improve?	Complete.	Go to step 6.
6	Check the wiring harness connectors P/J12 and P/J151 between the Laser Unit and the MCU Board. Are the connectors securely connected?	Go to step 7.	Reconnect the connectors. Go to step 7.
7	Check the Print Cartridge (C/M/Y/K) for correct installation. Reseat the Print Cartridge. Does the image quality improve?	Complete.	Go to step 8.
8	Check the MCU Board for correct installation. Reseat the MCU Board. Does the image quality improve?	Complete.	Go to step 9.
9	Check the Image Processor Board for correct installation. Reseat the Image Processor Board. Does the image quality improve?	Complete.	Go to step 10.
10	Check the HVPS for correct installation. Reseat the HVPS. Does the image quality improve?	Complete.	Go to step 11.
11	Replace the Print Cartridge (page 8-9). Does the image quality improve?	Complete.	Go to step 12.
12	Replace the Laser Unit (page 8-50). Does the image quality improve?	Complete.	Replace the Image Processor Board (page 8-89) If not, replace the MCU Board (page 8-87).

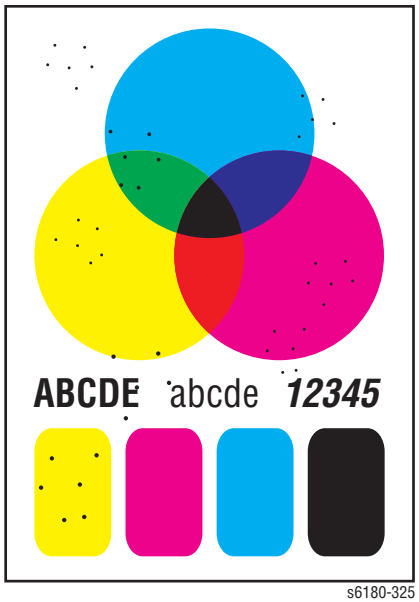
Random Spots

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
■ Transfer Unit, PL4.1.1 ■ Print Cartridge (C/M/Y/K), PL5.1.18-21 ■ Laser Unit, PL5.1.2 ■ Fuser, PL6.1.10 ■ MCU Board, PL9.1.20 ■ Image Processor Board, PL9.1.27	 s6180-325

Warning

Ensure to wait for the Fuser to cool down before starting the procedure.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check for spot's regular intervals. Are there any spots on the page?	Refer to "f" on page 5-23.	Go to step 2.
2	Check the Print Cartridge (C/M/Y/K) for damages. Is the Print Cartridge damaged?	Go to step 3.	Replace the Print Cartridge (page 8-9).
3	Check the Transfer Unit. Are there any damages on the Transfer Unit surface?	Replace the Transfer Unit (page 8-7).	Go to step 4.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Check the Transfer Unit for correct installation. Reseat the Transfer Unit. Does the image quality improve?	Complete.	Go to step 5.
5	Check the Fuser for correct installation. Reseat the Fuser. Does the image quality improve?	Complete.	Go to step 6.
6	Check the paper path. Are there any toner contaminations on the paper path?	Clean the paper path.	Go to step 7.
7	Check the wiring harness connectors P/J12 and P/J151 between the Laser Unit and the MCU Board. Are the connectors securely connected?	Go to step 8.	Reconnect the connectors. Go to step 8.
8	Check the Print Cartridge (C/M/Y/K) for correct installation. Reseat the Print Cartridge. Does the image quality improve?	Complete.	Go to step 9.
9	Check the MCU Board for correct installation. Reseat the MCU Board. Does the image quality improve?	Complete.	Go to step 10.
10	Check the Image Processor Board for correct installation. Reseat the Image Processor Board. Does the image quality improve?	Complete.	Go to step 11.
11	Check the HVPS for correct installation. Reseat the HVPS. Does the image quality improve?	Complete.	Go to step 12.
12	Replace the Print Cartridge (page 8-9). Does the image quality improve?	Complete.	Go to step 13.
13	Replace the Laser Unit (page 8-50). Does the image quality improve?	Complete.	Replace the Image Processor Board (page 8-89). If not, replace the MCU Board (page 8-87).

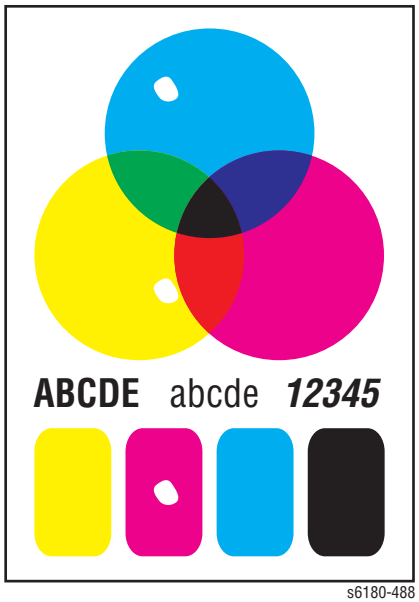
Repeating Bands, Lines, Marks, or Spots

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
■ Transfer Unit, PL4.1.1 ■ Print Cartridge (C/M/Y/K), PL5.1.18-21 ■ Fuser, PL6.1.10 ■ Laser Unit, PL5.1.2	 s6180-488

Warning

Ensure to wait for the Fuser to cool down before starting the procedure.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check for spot's regular intervals. Are there any spots, lines, or marks on the page?	Refer to "f" on page 5-23.	Complete.

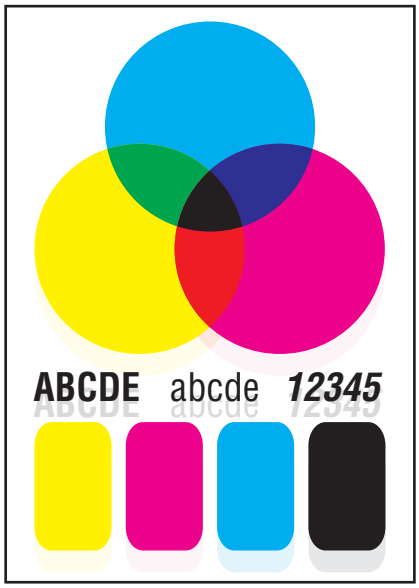
Residual Image or Ghosting

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
■ Transfer Unit, PL4.1.1 ■ Print Cartridge (C/M/Y/K), PL5.1.18-21 ■ Fuser, PL6.1.10 ■ MCU Board, PL9.1.20 ■ Image Processor Board, PL9.1.27	 s6180-326

Warning

Ensure to wait for the Fuser to cool down before starting the procedure.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the printing usage. Did the user print the same image at a large volume?	Go to step 2.	Go to step 3.
2	Print a page including color photograph. If not possible, perform Test Print (Cyan 20%, Magenta 20%, Yellow 20%): **Service Mode** > **Test Print**. Does the image quality improve?	Complete.	Go to step 3.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
3	Check the Transfer Unit. Are there any damages on the Transfer Unit surface?	Replace the Transfer Unit (page 8-7).	Go to step 4.
4	Check the Transfer Unit for correct installation. Reseat the Transfer Unit. Does the image quality improve?	Complete.	Go to step 5.
5	Check the Print Cartridge (C/M/Y/K) for correct installation. Reseat the Print Cartridge. Does the image quality improve?	Complete.	Go to step 6.
6	Check the MCU Board for correct installation. Reseat the MCU Board. Does the image quality improve?	Complete.	Go to step 7.
7	Check the Image Processor Board for correct installation. Reseat the Image Processor Board. Does the image quality improve?	Complete.	Go to step 8.
8	Check the HVPS for correct installation. Reseat the HVPS. Does the image quality improve?	Complete.	Go to step 9.
9	Replace the Print Cartridge (page 8-9). Does the image quality improve?	Complete.	Go to step 10.
10	Replace the Fuser (page 8-10). Does the image quality improve?	Complete.	Go to step 11.
11	Replace the MCU Board (page 8-87). Does the image quality improve?	Complete.	Replace the Image Processor Board (page 8-89).

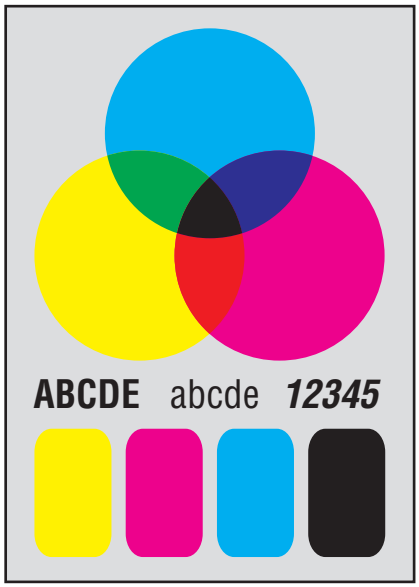
Background Contamination

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
■ Transfer Unit, PL4.1.1 ■ Print Cartridge (C/M/Y/K), PL5.1.18-21 ■ MCU Board, PL9.1.20 ■ Image Processor Board, PL9.1.27	 s6180-327

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the print-quality. Print a page including color photograph. If not possible, perform Test Print (Cyan 20%, Magenta 20%, Yellow 20%): **Service Mode** > **Test Print**. Does the image quality improve?	Complete.	Go to step 2.
2	Check the Print Cartridge (C/M/Y/K) for damages. Is the Print Cartridge damaged?	Go to step 3.	Replace the Print Cartridge (page 8-9).

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
3	Check the Transfer Unit. Are there any damages on the Transfer Unit surface?	Replace the Transfer Unit (page 8-7).	Go to step 4.
4	Check the Transfer Unit for correct installation. Reseat the Transfer Unit. Does the image quality improve?	Complete.	Go to step 5.
5	Check the paper path. Are there any toner contaminations on the paper path?	Clean the paper path.	Go to step 6.
6	Check the wiring harness connectors P/J12 and P/J151 between the Laser Unit and the MCU Board. Are the connectors securely connected?	Go to step 7.	Reconnect the connectors. Go to step 7.
7	Check the Print Cartridge (C/M/Y/K) for correct installation. Reseat the Print Cartridge. Does the image quality improve?	Complete.	Go to step 8.
8	Check the MCU Board for correct installation. Reseat the MCU Board. Does the image quality improve?	Complete.	Go to step 9.
9	Check the Image Processor Board for correct installation. Reseat the Image Processor Board. Does the image quality improve?	Complete.	Go to step 10.
10	Check the HVPS for correct installation. Reseat the HVPS. Does the image quality improve?	Complete.	Go to step 11.
11	Replace the Print Cartridge (page 8-9). Does the image quality improve?	Complete.	Replace the Image Processor Board (page 8-89). If not, replace the MCU Board (page 8-87).

Skew

The printed image is not parallel with both sides of 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
■ Tray 2 Retard (Separator) Roll, PL2.1.7 ■ Tray 1 (MPT) Feed Roll, PL3.1.10 ■ Turn Roll, PL3.2.32 ■ Feed Roll (Nudger Roll), PL3.2.53 ■ Tray 2 Retard Roll, PL2.2.17 ■ Tray 3 Feed Roll, PL12.1.9 ■ Tray 3 Retard Roll, PL12.3.10 ■ Duplex Unit, PL11.1.1	 s6180-328

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Check the paper condition. Is the paper dry, recommended type, and loaded in the correct position?	Go to step 2.	Replace the paper.
2	Check the Front Cover Latch. Open and close the Front Cover. Does the error still occur?	Go to step 3.	Complete.
3	Check the Transfer Unit for correct installation. Reseat the Transfer Unit. Does the error still occur?	Go to step 4.	Complete.

Troubleshooting Procedure Table (continued)

Step	Action and Questions	Yes	No
4	Check the Print Cartridge (C/M/Y/K) for correct installation. Reseat the Print Cartridge. Does the error still occur?	Go to step 5.	Complete.
5	Check the skewed tray. Is the skewed paper fed from Tray 1 (MPT)?	Go to step 6.	Go to step 10.
6	Check the paper for correct placement. Reseat the paper. Does the error still occur?	Go to step 7.	Complete.
7	Check the Tray 1 (MPT) Side Guides. Reset the Side Guides. Does the error still occur?	Go to step 8.	Complete.
8	Check the paper path. Are there any debris on the paper path?	Remove the debris.	Go to step 9.
9	Replace the Tray 1 (MPT) Feed Roll (page 8-39). Does the error still occur?	Replace the Tray 2 Retard Roll (page 8-33).	Complete.
10	Replace the Feeder Unit (page 8-43).	Go to step 11.	Complete.
11	Check the skewed mode. Is the skewed paper fed the from the Duplex?	Go to step 12.	Go to step 14.
12	Check the Duplex Unit for correct installation. Reseat the Duplex Unit. Does the error still occur?	Go to step 13.	Complete.
13	Check the paper path. Are there any debris on the paper path?	Remove the debris.	Replace the Duplex Unit (page 8-94).
14	Check the paper tray for correct installation. Reseat the tray. Does the error still occur?	Go to step 15.	Complete.
15	Check the paper for correct placement. Reseat the paper in the tray. Does the error still occur?	Go to step 16.	Complete.
16	Check the paper tray Side Guides. Reset the Side Guides. Does the error still occur?	Go to step 17.	Complete.
17	Check the paper path. Are there any debris on the paper path?	Remove the debris.	Go to step 18.
18	Replace the Feed Roll (Tray 2, page 8-49) (Tray 3, page 8-104). Does the error still occur?	Replace the Retard Roll (Tray 2, page 8-33) (Tray 3, page 8-109).	Complete.

Damaged Paper

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.

Troubleshooting Reference Table

Applicable Notes	Example Print
■ Tray 2 Retard (Separator) Roll, PL2.1.7 ■ Tray 1 (MPT) Feed Roll, PL3.1.10 ■ Turn Roll, PL3.2.32 ■ Feed Roll, PL3.2.53 ■ Tray 2 Retard Roll, PL2.2.17 ■ Tray 3 Feed Roll, PL12.1.9 ■ Tray 3 Retard Roll, PL12.3.10 ■ Duplex Unit, PL11.1.1 ■ Fuser, PL5.1.10	 s6180-329

Warning

Ensure to wait for the Fuser to cool down before starting the procedure.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the paper condition. Is the paper dry, recommended type, and loaded in the correct position?	Go to step 2.	Replace the paper.
2	Check the Front Cover Latch. Open and close the Front Cover. Does the error still occur?	Go to step 3.	Complete.
3	Check the Transfer Unit for correct installation. Reseat the Transfer Unit. Does the error still occur?	Go to step 4.	Complete.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Check the Print Cartridge (C/M/Y/K) for correct installation. Reseat the Print Cartridge. Does the error still occur?	Go to step 5.	Complete.
5	Check the Fuser for correct installation. Reseat the Fuser. Does the error still occur?	Go to step 6.	Complete.
6	Was the damaged paper fed from Tray 1 (MPT)?	Go to step 7.	Go to step 11.
7	Check the paper for correct placement. Reseat the paper in Tray 1 (MPT). Does the error still occur?	Go to step 8.	Complete.
8	Check the Tray 1 (MPT) Side Guides. Reseat the Side Guides. Does the error still occur?	Go to step 9.	Complete.
9	Check the paper path. Are there any debris on the paper path?	Remove the debris.	Go to step 10.
10	Replace the Tray 1 (MPT) Feed Roll (page 8-39). Does the error still occur?	Replace the Tray 1 (MPT) Retard Holder (page 8-24).	Complete.
11	Replace the Feeder Unit (page 8-43).	Go to step 12.	Complete.
12	Was the damaged paper fed from the Duplex Unit?	Go to step 13.	Complete.
13	Check the Duplex Unit for correct installation. Reseat the Duplex Unit. Does the error still occur?	Go to step 14.	Complete.
14	Check the paper path. Are there any debris on the paper path?	Remove the debris.	Replace the Duplex Unit (page 8-94).
15	Check the paper tray for correct installation. Reseat the tray. Does the error still occur?	Go to step 16.	Complete.
16	Check the paper for correct placement. Reseat the paper. Does the error still occur?	Go to step 17.	Complete.
17	Check the paper tray Side Guides. Reseat the tray Side Guides. Does the error still occur?	Go to step 18.	Complete.
18	Check the paper path. Are there any debris on the paper path?	Remove the debris.	Go to step 19.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
19	Replace the Feed Roll (Tray 2 - page 8-49, Tray 3 - page 8-104). Does the error still occur?	Replace the Retard Roll (Tray 2 - page 8-33, Tray 3 - page 8-109).	Complete.

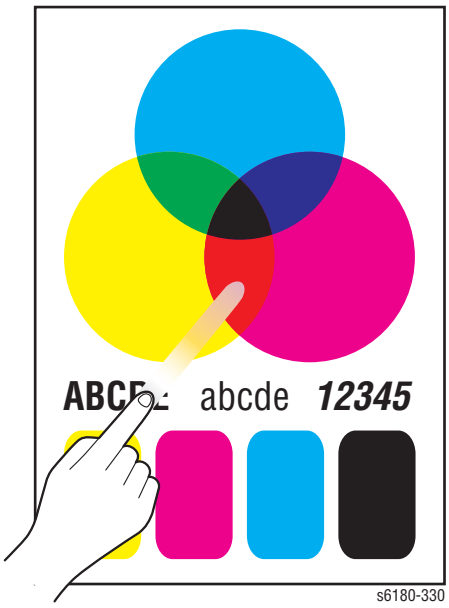
Unfused Image

The toner image is not completely fused to the paper. The image easily rubs off.

Initial Actions

- Check the paper transfer path.
- Ensure there are no debris on the transfer path.

Troubleshooting Reference Table

Applicable Notes	Example Print
■ Fuser, PL6.1.10 ■ Print Cartridge (C/M/Y/K), PL5.1.18-21) ■ MCU Board, PL9.1.20	

Warning

Ensure to wait for the Fuser to cool down before starting the procedure.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the paper condition. Is the paper dry, recommended type, and loaded in the correct position?	Go to step 2.	Replace the paper.
2	Check the Print Cartridge (C/M/Y/K) for damages. Is the Print Cartridge damaged?	Go to step 3.	Replace the Print Cartridge (page 8-9).

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
3	Check the Fuser for correct installation. Reseat the Fuser. Does the image quality improve?	Complete.	Go to step 4.
4	Replace the Fuser (page 8-10). Does the image quality improve?	Complete.	Replace the MCU Board (page 8-87).

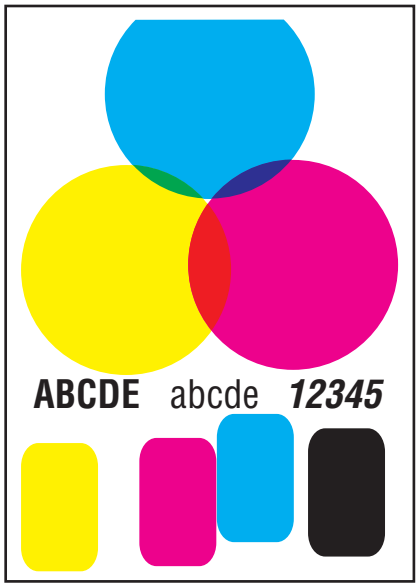
Color Registration

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
■ Feeder Unit, PL3.2.1 ■ MCU Board, PL9.1.20 ■ Transfer Unit, PL4.1.1 ■ Print Cartridge (C/M/Y/K), PL5.1.18-21	 s6180-331

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Turn the printer power Off and back On. Does the image quality improve?	Complete.	Go to step 2.
2	Check the paper condition. Is the paper dry, recommended type, and loaded in the correct position?	Go to step 3.	Replace the paper.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
3	1. Perform Test Print procedure (Cyan 20%, Magenta 20%, Yellow 20%): **Service Mode** > **Test Print**. 2. Adjust the color registration in the Control Panel: **Menu** > **Admin Menu** > **Maintenance Mode** > **Adjust ColorRegi**. 3. Does the image quality improve?	Complete.	Go to step 4.
4	Check the parameter value. Did the client change the value of the registration parameter?	Reset the value to default.	Go to step 5.
5	Check the Front Cover Latch. Open and close the Front Cover. Does the image quality improve?	Complete.	Go to step 6.
6	Check the Transfer Unit for correct installation. Reseat the Transfer Unit. Does the image quality improve?	Complete.	Go to step 7.
7	Check the Print Cartridge (C/M/Y/K) for correct installation. Reseat the Print Cartridge. Does the image quality improve?	Complete.	Go to step 8.
8	Perform the Regi Clutch test (page 4-51): **Service Mode** > **Engine Diag** > **Motor Test** > **Regi Clutch**. Does the Registration Clutch operate properly?	Replace the MCU Board (page 8-87).	Replace the Feeder Unit (page 8-43).

Adjustments and Calibrations

In this chapter...

- Adjustments
- Calibrations
- Parameter Setting

Chapter 6

Adjustments

Color Registration

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.

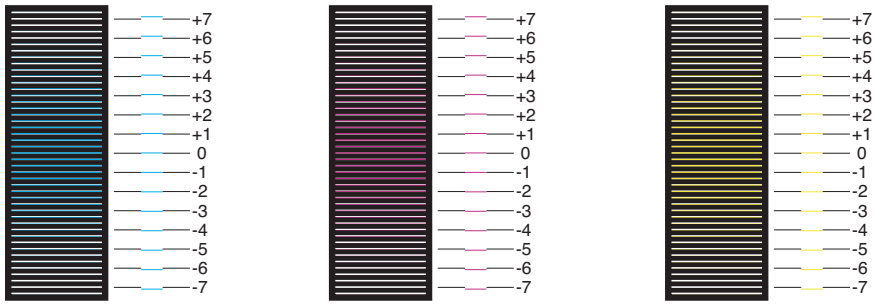
Note

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 regarding its potential impact on overall print quality.**

Printing the Color Registration Correction Chart

Before performing Color Registration adjustment procedure, print the Color Registration Chart for reference.

1. From the Control Panel, press the **Menu** button.
2. Press the **Up Arrow** or **Down Arrow** button to find **Admin Menu**. Press the **OK** button.
3. Press the **Up Arrow** or **Down Arrow** button to find **Maintenance Mode**. Press the **OK** button.
4. Press the **Up Arrow** or **Down Arrow** button find **Adjust Color Regi**. Press the **OK** button.
5. Press the **Up Arrow** or **Down Arrow** button to find **Color Regi Chart**. Press the **OK** button. The Color Registration Chart is printed. When printing is finished, the **Ready** menu is displayed.



Enabling/Disabling Automatic Color Registration

This procedure provides instructions for how to enable or disable the Automatic Color Registration function after a new Print Cartridge is installed.

- If the function is set to On, the printer will calibrate the color alignment every time it detects a new Print Cartridge.
- If the function is set to Off, calibration will not occur. This allows users to save toner.

To enable or disable the Automatic Color Registration:

1. From the Control Panel, press the **Menu** button.
2. Press the **Up Arrow** or **Down Arrow** button to find **Admin Menu**. Press the **OK** button.
3. Press the **Up Arrow** or **Down Arrow** button to find **Maintenance Mode**. Press the **OK** button.
4. Press the **Up Arrow** or **Down Arrow** button find **Adjust Regi Regi**. Press the **OK** button.
5. Press the **Up Arrow** or **Down Arrow** button to turn automatic color registration **On** or **Off**.

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 Adjustment” on page 6-4.

Auto Adjustment

1. From the Control Panel, press the **Menu** button.
2. Press the **Up Arrow** or **Down Arrow** button to find **Admin Menu**. Press the **OK** button.
3. Press the **Up Arrow** or **Down Arrow** button to find **Maintenance Mode**. Press the **OK** button.
4. Press the **Up Arrow** or **Down Arrow** button find **Adjust Color Regi**. Press the **OK** button.
5. The **Auto Adjust** menu is displayed. Press the **OK** button.
6. **Are you sure?** message is displayed. Press the **OK** button to start the Auto Adjustment procedure.
7. The printer starts the auto Color Registration process.
8. When the auto Color Registration is completed, the **Ready** menu is displayed.

Manual Adjustment

Use the adjustment information in the following table to perform Color Registration procedure.

Caution

After printing the Color Registration Correction Chart, DO NOT turn Off the printer until the printer motor has stopped running.

Color Registration Adjustment

Color	Range	Default
Yellow	-9 to +9	0
Magenta	-9 to +9	0
Cyan	-9 to +9	0

1. From the Control Panel, press the **Menu** button.
2. Press the **Up Arrow** or **Down Arrow** button to find **Admin Menu**. Press the **OK** button.
3. Press the **Up Arrow** or **Down Arrow** button to find **Maintenance Mode**. Press the **OK** button.
4. Press the **Up Arrow** or **Down Arrow** button to find **Adjust Color Regi**. Press the **OK** button.
5. Press the **Up Arrow** or **Down Arrow** button to find **Enter Number**. Press the **OK** button.
6. Use the **Up Arrow** or **Down Arrow** button to enter the values and the **Left Arrow** or **Right Arrow** button to move from Y to M to C.
7. Press the **OK** button to save the data. The **Enter Number** menu is displayed.
8. Press the **Up Arrow** and **Down Arrow** buttons simultaneously to access the **Color Regi Chart** menu. Press the **OK** button to print the **Color Regi Chart.**
9. The Color Registration adjustment is complete when the straightest Y (yellow), M (magenta), and C (cyan) lines are next to the “0” line.

Note

If “0” is not next the straightest lines, determine and adjust the values again.

Resetting the Fuser

Fuser reset is required when a new Fuser is installed into the printer. This function sets the life counter to “0.”

1. From the Control Panel, press the **Menu** button.
2. Press the **Up Arrow** or **Down Arrow** button to find **Admin Menu**. Press the **OK** button.
3. Press the **Up Arrow** or **Down Arrow** button to find **Maintenance Mode**. Press the **OK** button.
4. Press the **Up Arrow** or **Down Arrow** button to find **Reset Fuser**. Press the **OK** button.
5. “**Are you sure?**” message is displayed. Press the **OK** button 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. From the Control Panel, press the **Menu** button.
2. Press the **Up Arrow** or **Down Arrow** button to find **Admin Menu**. Press the **OK** button.
3. Press the **Up Arrow** or **Down Arrow** button to find **Maintenance Mode**. Press the **OK** button.
4. Press the **Up Arrow** or **Down Arrow** button to find **Init PrintMeter**. Press the **OK** button.
5. **Are you sure?** message is displayed. Press the **OK** button 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. From the Control Panel, press the **Menu** button.
2. Press the **Up Arrow** or **Down Arrow** button to find **Admin Menu**. Press the **OK** button.
3. Press the **Up Arrow** or **Down Arrow** button to find **Maintenance Mode**. Press the **OK** button.
4. Press the **Up Arrow** or **Down Arrow** button to find **Initialize NVM**. Press the **OK** button.
5. **Are you sure?** message is displayed. Press the **OK** button to start the process.
6. **Initializing...** --> **Initialized** messages are displayed.
7. The **Maintenance Mode - Initialize NVM** menu is displayed 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 the **Service Mode** > **Parameter** before changing the registration value.

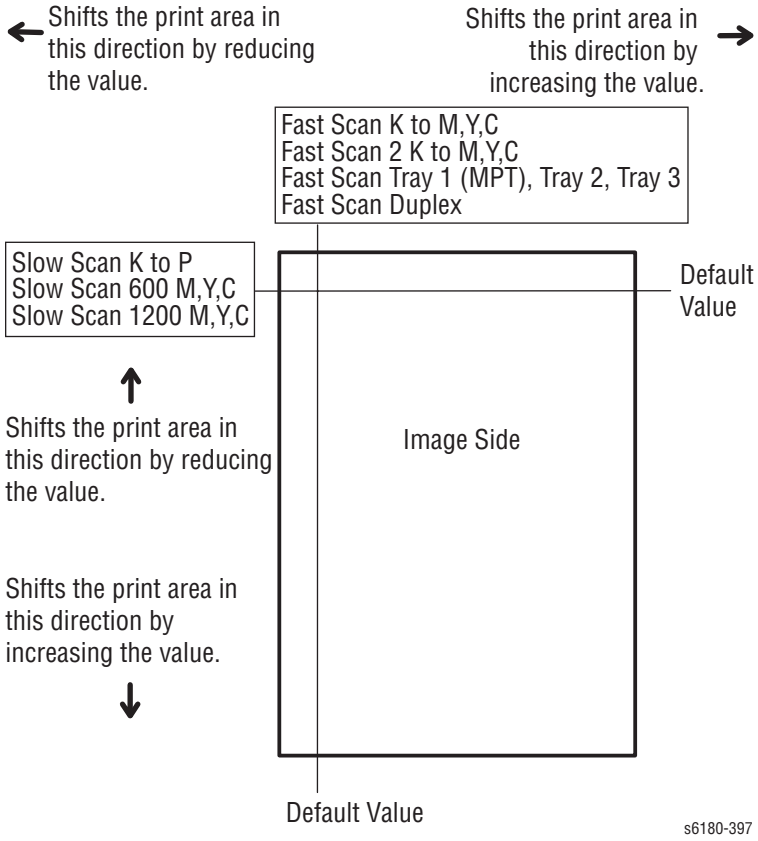
To access the Parameter list:

1. Turn the printer power Off (if the printer is On).
2. Simultaneously press the **Up Arrow** and **Down Arrow** buttons and turn on the printer.
3. The **Service Mode** menu is displayed.
4. Press the **Up Arrow** or **Down Arrow** button to find **Parameter**. Press the **OK** button.
5. Select the appropriate item to change (i.e., **Slow Scan KtoP**). Press the **OK** button.
6. Enter the appropriate range using the **Up Arrow** or **Down Arrow** button. Press the **OK** button.
7. The new value "**# ***" is displayed.

Note

"*" = data has been saved

8. Press the **Cancel** button to return to the **Parameter** menu.



Parameter Setting

Item	Range	Description
Slow Scan K to P	-128 to 127	Sets the registration in the paper feeding direction.
Slow Scan 600 Y/M/C	-30 to 30	
Slow Scan 1200 Y/M/C	-60 to 60	
Fast Scan (all items)	-30 to 30	Sets the registration in the scanning direction.
Life Counter	---	Reads the life counter and the printer.

Registration Values

Parameter	Function	Default	Adjustable 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 (600 and 1200 dpi)	---	-30 to 30
Slow Scan 1200 M, Y, C (shifts 0.021 mm/1 count)		---	-60 to 60
Fast Scan K to M, Y, or C (shifts 0.042 mm/1 count)	Color registration adjustment 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	---	-30 to 30
Fast Scan 2 K to M, C, or Y (shifts 0.01 mm/1 count)		---	-1 to 2
Fast Scan Tray 1 (MPT), Tray 2, or Tray 3 (shifts 0.17 mm/1 count)	Black registration adjustment at side 1 print	---	-30 to 30
Fast Scan Duplex (shifts 0.17 mm/1 count)	Black registration adjustment at side 2 print	---	-30 to 30

Note

The default values are different in each printer.

Reference Counter Values

Counter Name	Value of Life Warning
Life Y Toner (Dispense Time)	---
Life M Toner (Dispense Time)	---
Life C Toner (Dispense Time)	---
Life K Toner (Dispense Time)	---
Life DTB (Transfer Unit) 1 (paper feeding count)	100,000
Life Fuser (paper feeding count)	100,000
Life Printer (paper feeding count)	---
Life DTB (Transfer Unit) 2 (Waste Toner cleaning count)	200,000
Life DTB (Transfer Unit) 3 (Cycle count)	14,000,000
Life Y Waste Toner (Waste Toner cleaning count)	18,000
Life M Waste Toner (Waste Toner cleaning count)	18,000
Life C Waste Toner (Waste Toner cleaning count)	18,000
Life K Waste Toner (Waste Toner cleaning count)	18,000
Life Y Developer (Cycle count)	2,500,000
Life M Developer (Cycle count)	2,500,000
Life C Developer (Cycle count)	2,500,000
Life K Developer (Cycle count)	2,500,000
Life Y Drum (Cycle count)	3,000,000
Life M Drum (Cycle count)	3,000,000
Life C Drum (Cycle count)	3,000,000
Life K Drum (Cycle count)	3,000,000
Life Tray 1 (MPT) Feed	---
Life Tray 2 Feed	---
Life Tray 3 Feed	---
Life Duplex Feed	---
Print	---

Cleaning and Maintenance

In this chapter...

- Service Maintenance Procedure
- Cleaning
- Maintenance

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.

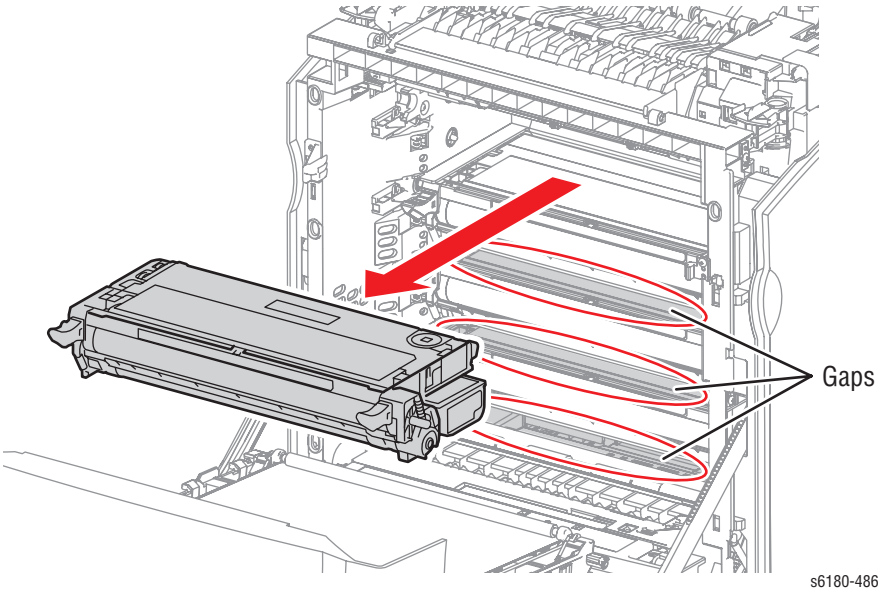
Caution

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 Print Cartridges, place them in a light-protective bag or otherwise protect them as exposure to light can quickly degrade performance and result in early failure.

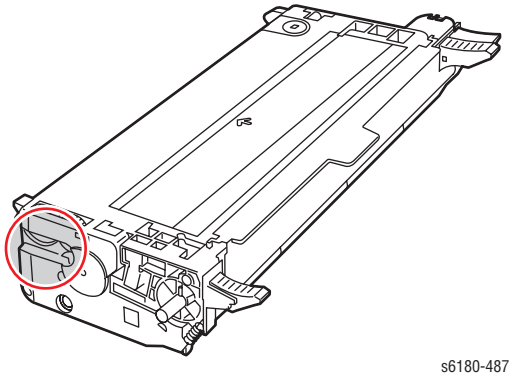
1. Record number of sheets printed.
2. Print several sheets of paper to check for problems or defects.
3. Turn the printer power Off and disconnect the power cord.
4. Remove the Transfer Unit, Fuser, Print Cartridges, Duplex Unit (if installed), Side Covers, and Rear Cover before cleaning.
5. Remove the Top Cover and clean the Main Fan to remove excess dust.
6. Ensure that all cover vents are clean and free of obstructions.
7. Remove any debris or foreign objects from the Fuser, Transfer Unit, Print Cartridges, Duplex 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 Print Cartridge

1. Open the Front Cover.
2. Using a flash light, inspect the gaps between the Print Cartridges. Remove the Print Cartridge if necessary. Using tweezers, remove any paper debris from the area.



3. Check for any debris around the Print Cartridge gear areas.



Maintenance

RIP (Repair, Inspect, and Prevent) Procedure

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.

Service Parts Disassembly

In this chapter...

- Overview
- Maintenance Items and Consumables
- Covers
- Paper Tray
- Paper Feeder
- Xerographics
- Exit Chute
- Frame
- Drive
- Electrical
- Duplex Unit
- Optional 550-Sheet Feeder

Chapter 8

Overview

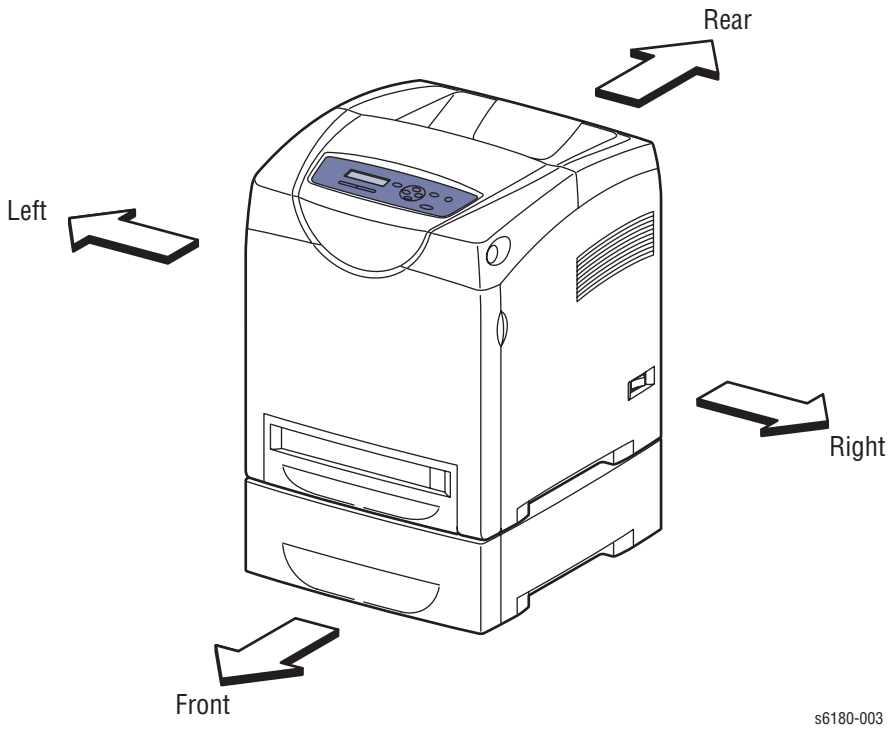
This section contains the removal procedures for field-replaceable parts of the printer listed in the Parts List. In most cases, the replacement procedure is simply the reverse of the removal procedure. In some instances, additional steps are necessary and are provided for replacement of the parts. For specific assemblies and parts, refer to the "Parts List" in Section 9.

The procedures are organized by the consumer replacement parts and functions of the printer.

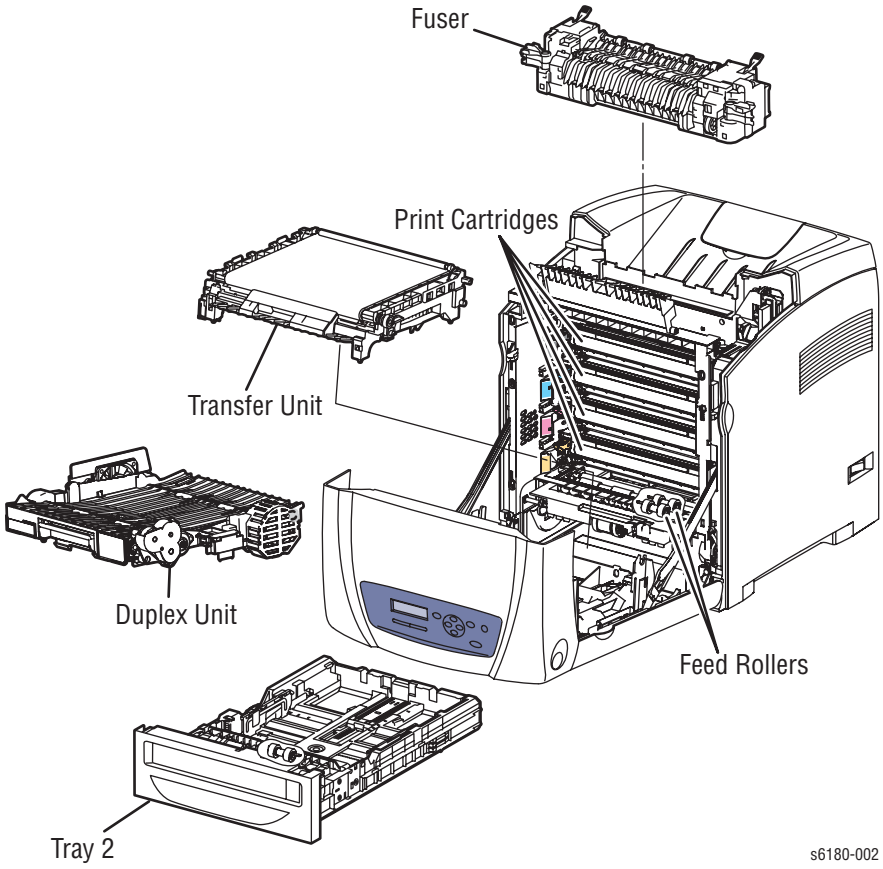
- Always use the correct type and size screw. Using the wrong screw can damage tapped holes. Do not use excessive force to remove or install either a screw or a printer part. (page 8-6)
  - Transfer Unit (page 8-7)
  - Print Cartridge (C/M/Y/K) (page 8-9)
  - Fuser (page 8-10)
- Covers (page 8-11)
- Paper Tray(page 8-24)
- Paper Feeder (page 8-35)
- Xerographics (page 8-50)
- Exit Chute (page 8-63)
- Frame (page 8-65)
- Drive (page 8-73)
- Electrical (page 8-79)
- Duplex Unit (page 8-94)
- Optional 550-Sheet Feeder (page 8-96)

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.



Preparation



Before you begin any removal and replacement procedure:

1. Wear an Electrostatic Discharge wrist strap to help prevent damaging to the sensitive electronics of the printer circuit boards.
2. Turn off the printer power and disconnect the power cord from the wall outlet.
3. Disconnect all computer interface cables from the printer.
4. Remove Tray 2.
5. Open the Front Cover.
6. Remove the following Maintenance Items and Consumables.
   a. Transfer Unit (page 8-7)

   Caution

   Do not touch the Transfer Unit belt area.

   b. Print Cartridges (page 8-9)

   Caution

   Do not expose the Print Cartridges to light for more than 5 minutes. After removal, cover the Print Cartridges to minimize the amount of light striking the Print Cartridges. Prolonged exposure to light significantly reduces Print Cartridges performance.

c. Fuser (page 8-10)

Warning

The Fuser may be hot. Turn the printer power Off and allow at least 5 minutes for the Fuser to cool before removing the Fuser.

Note

Names of parts that appear in the removal and replacement procedures may not match the names that appear in the Parts List. For example, a part called the Registration Chute Assembly in a removal procedure may appear on the Parts List as Assembly, Registration Chute. When working on a removal procedure, ignore any prerequisite procedure for parts already removed.

Caution

Many parts are secured by plastic tabs. DO NOT over flex or force these parts. DO NOT over torque the screws threaded into plastic parts.

Warning

Unplug the AC power cord from the wall outlet before removing any printer part.

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 that this component is listed in the Parts List.
- Bold 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.

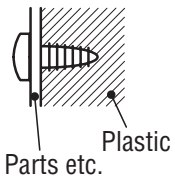
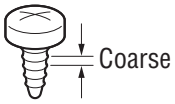
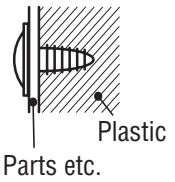
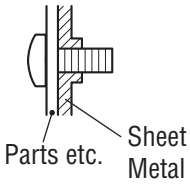
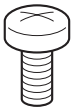
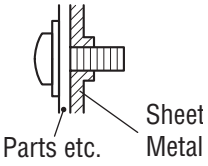
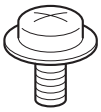
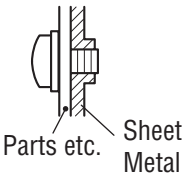
Note

Provides information specific to the replacement of parts or assemblies.

Fastener Types

The following table lists the primary types of Posi-Drive screws used to assemble the printer. The procedures provide dimensional specifications for screws being removed.

Posi-Drive Screw Types used in the Printer

Type	Application	Shape	Characteristics
Self-tapping, plastic			1. Silver colored. 2. Screw thread is coarse compared to metal screw. 3. Screw tip is thin.
Self-tapping, plastic, with flange			1. Black colored. 2. Screw thread is coarse compared to metal screw. 3. Screw has a flange. 4. Screw tip is thin.
Sheet Metal, silver			1. Silver colored. 2. Diameter is uniform.
Sheet Metal, with flange			1. Silver colored. 2. Screw has a flange. 3. Diameter is uniform.
Sheet Metal, silver with lock washer			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. Failure to properly align or over tighten 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

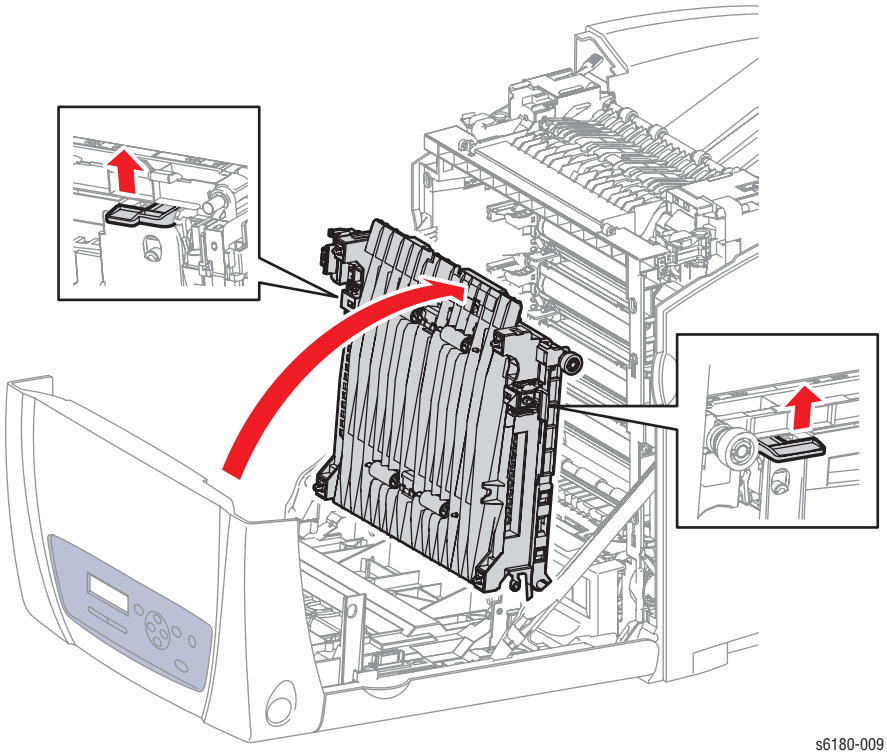
Maintenance items include the Transfer Unit, Fuser, and Feed/Retard Rollers. Individual procedures for the Rollers removal and replacement are provided starting on page 8-7. Consumables consist of the four print cartridges.

Transfer Unit (PL4.1.1)

Caution

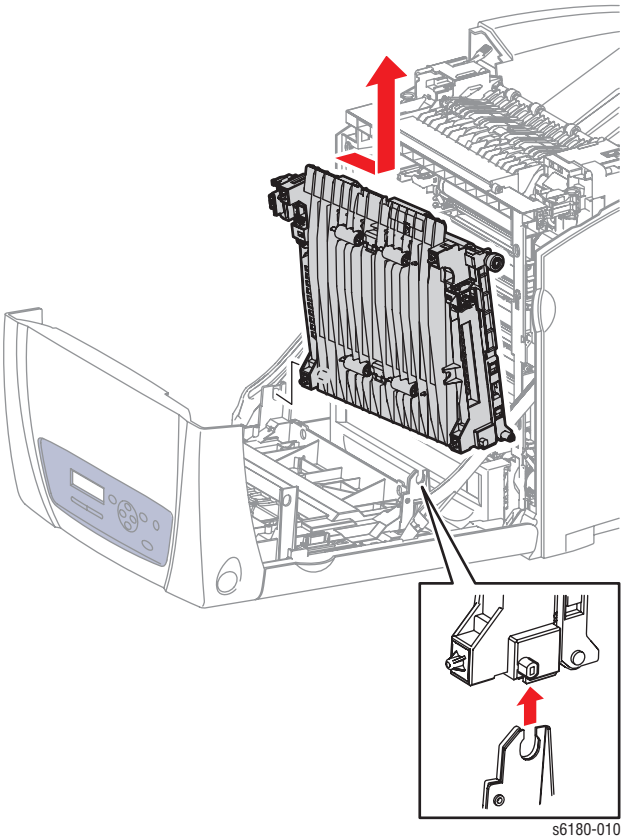
Do not touch the Transfer Unit belt area.

1. Open the Front Cover.
2. Release the levers on the left and right sides of the Transfer Unit and lift the Transfer Unit at a 90° angle.



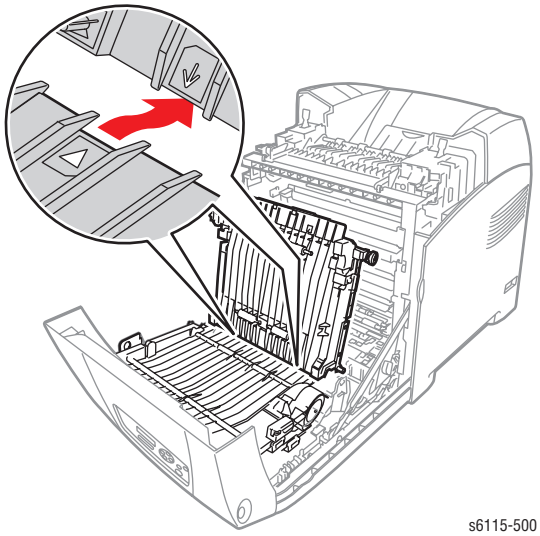
s6180-009

3. Tilt the right side of the Transfer Unit up toward the left side to move the notch out of the U-shape groove and slide the notch on the left side away from the hole.



Replacement Note

If there is a Duplex Unit installed, ensure to align the arrows on the bottom of the Transfer Unit with the arrows on top of the Duplex Unit.

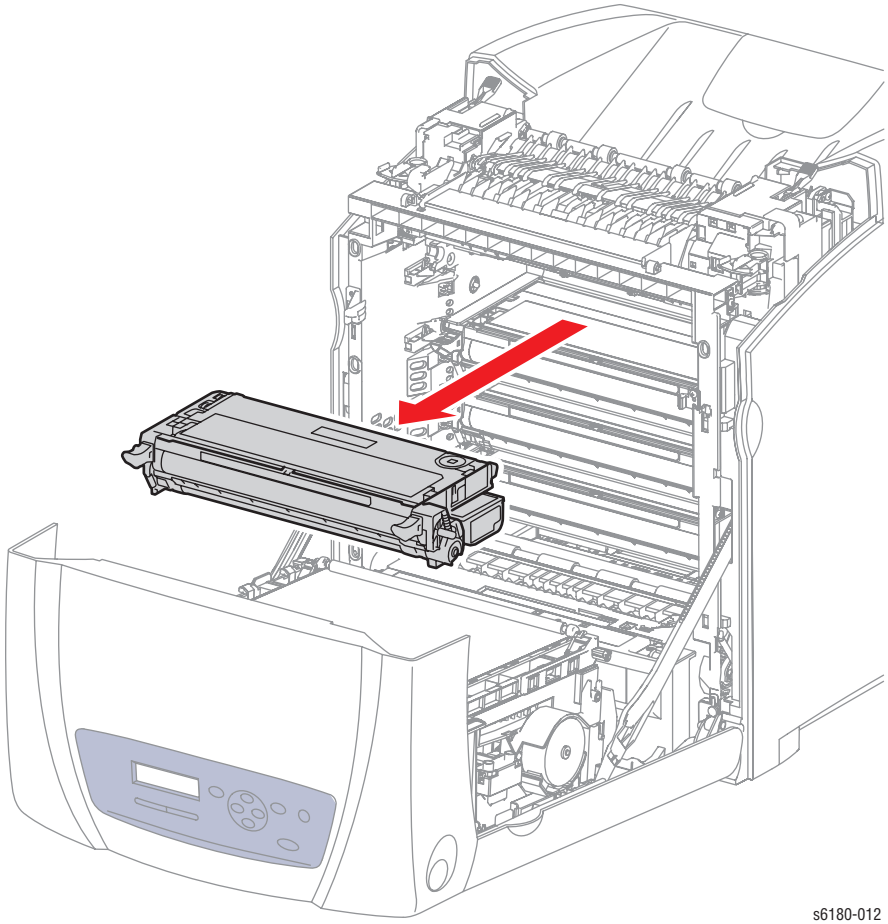


Print Cartridge (C/M/Y/K) (PL5.1.18-21)

Caution

Do not expose the Print Cartridges to light for more than 5 minutes. Cover the Print Cartridges to avoid damage.

1. Open the Front Cover.
2. Hold the levers on the left and right sides of the Print Cartridge and slowly pull it out.



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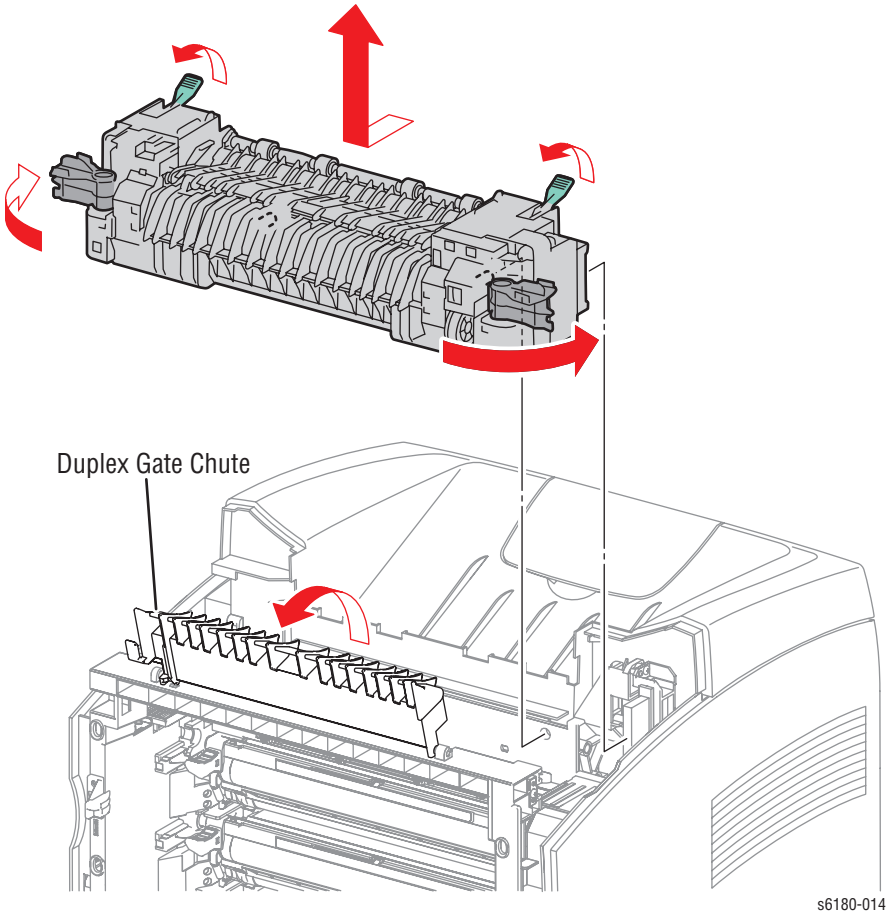
Fuser (PL6.1.10)

Warning

The Fuser may be hot. Turn the printer power Off and allow at least 5 minutes for the Fuser to cool before removing the Fuser.

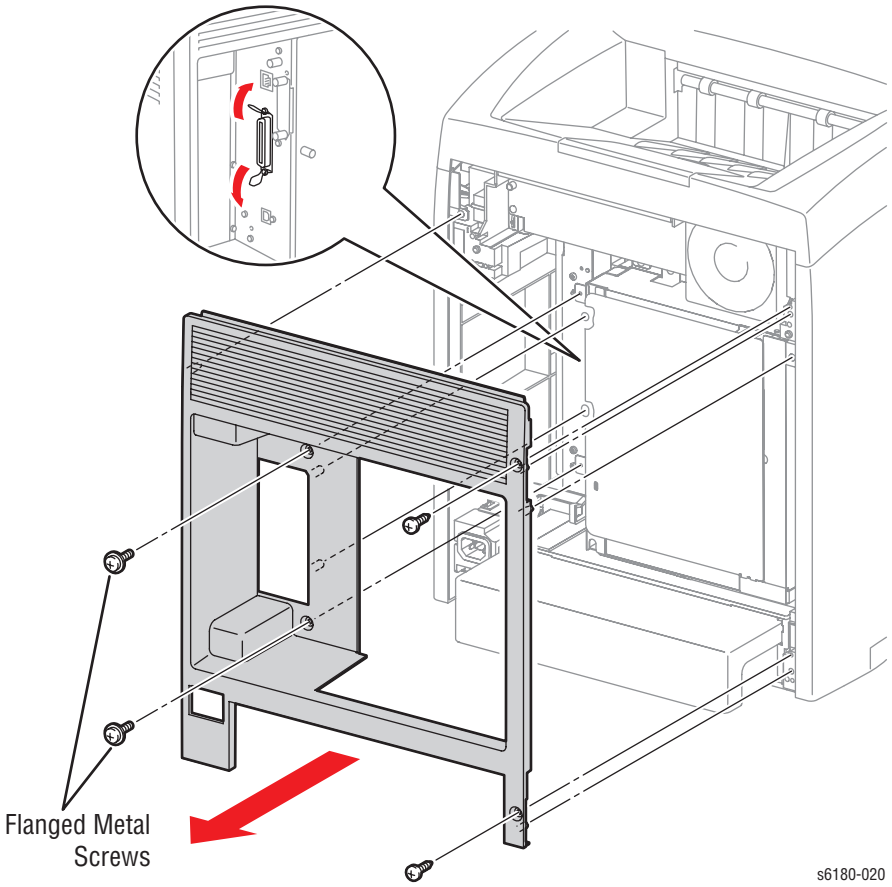
1. Open the Front Cover.
2. Open the Duplex Gate Chute (PL6.1.13).
3. Release the levers on the left and right sides of the Fuser to unlock the Fuser from the printer.
4. Lift the green latches, push the Fuser toward the front, and lift the Fuser up to remove it.



Covers

Rear Cover (PL1.1.4)

1. Remove 2 screws (10 mm) and 2 screws (8 mm, flanged) securing the Rear Cover.
2. Push the metal clips on the Parallel connector against the shield and remove the Rear Cover.

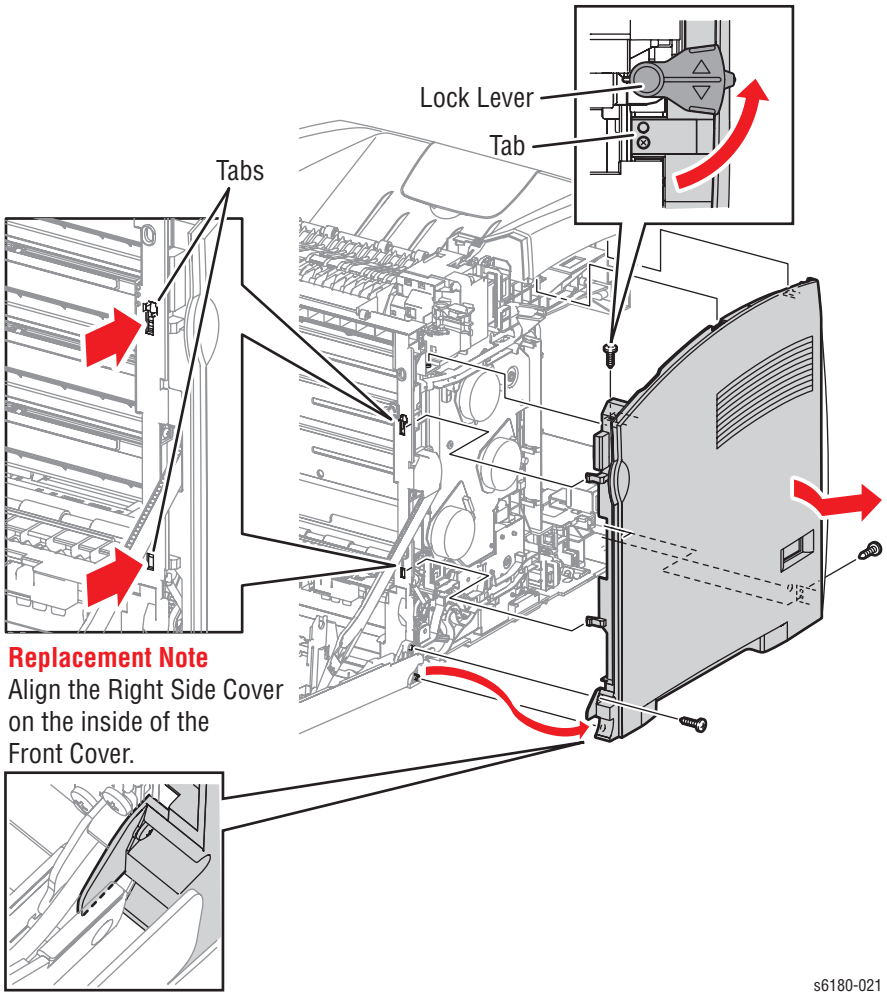


Replacement Note

Ensure to hold down the metal clips on the Parallel connector while inserting the Rear Cover to prevent bending the clips.

Right Side Cover (PL1.1.6)

1. Remove the Rear Cover (page 8-11).
2. Remove 3 screws (10 mm) securing the Right Side Cover.
3. Use a flat tip screwdriver to release the plastic tabs from the notches on the top and rear sides of the printer frame.
4. Push the Right Side Cover at an angle toward the rear to remove it.

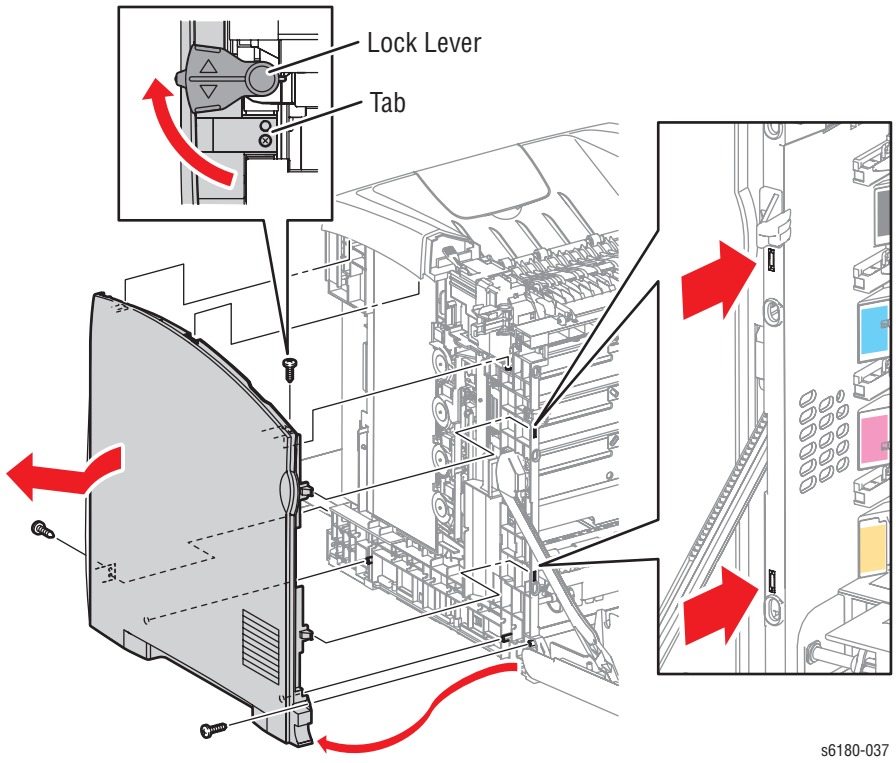


Replacement Note

Insert the top and bottom tabs of the Right Side Cover at an angle in order to fit the Right Side Cover in the correct position.

Left Side Cover (PL1.1.7)

1. Remove the Rear Cover (page 8-11).
2. Remove 3 screws (10 mm) securing the Left Side Cover.
3. Use a flat tip screwdriver to release the plastic tabs from the notches on the top and rear sides of the printer frame.
4. Push the Left Side Cover at an angle toward the rear to remove it.

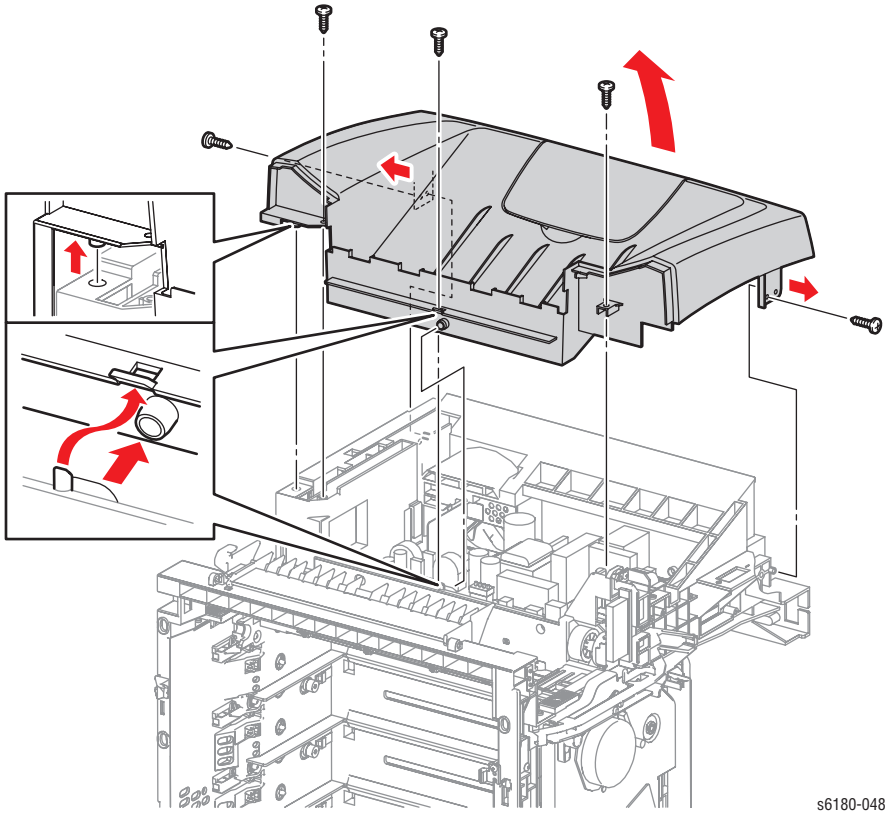


Replacement Note

Insert the top and bottom tabs of the Left Side Cover at an angle in order to fit the Left Side Cover in the correct position.

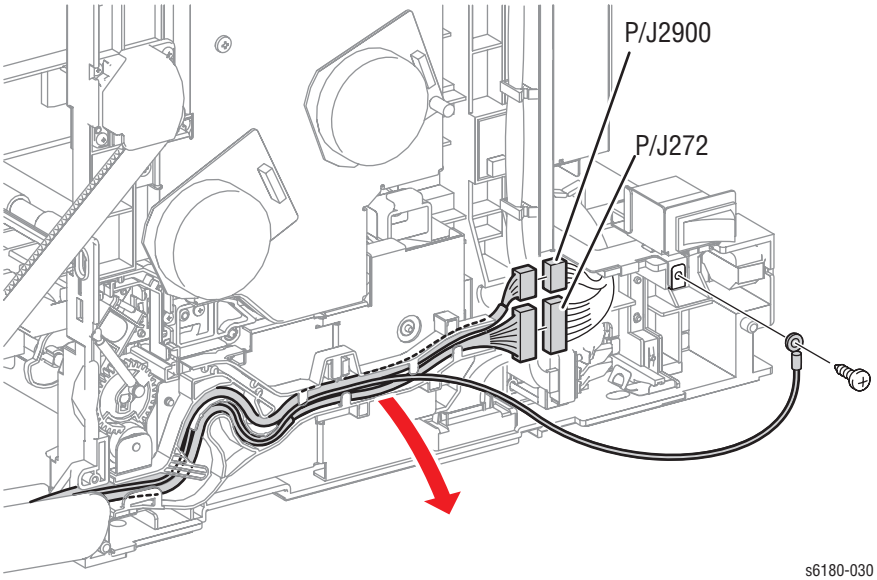
Top Cover (PL1.1.4)

1. Remove the Rear Cover (page 8-11).
2. Remove the Right Side Cover (page 8-12).
3. Remove the Left Side Cover (page 8-13).
4. Remove 5 screws (10 mm) securing the Cover.
5. Release the tabs from the holes on the left and right sides of the Top Cover.
6. Lift the Top Cover to release the two notches in the front center and the front left of the Top Cover.
7. Remove the Top Cover.

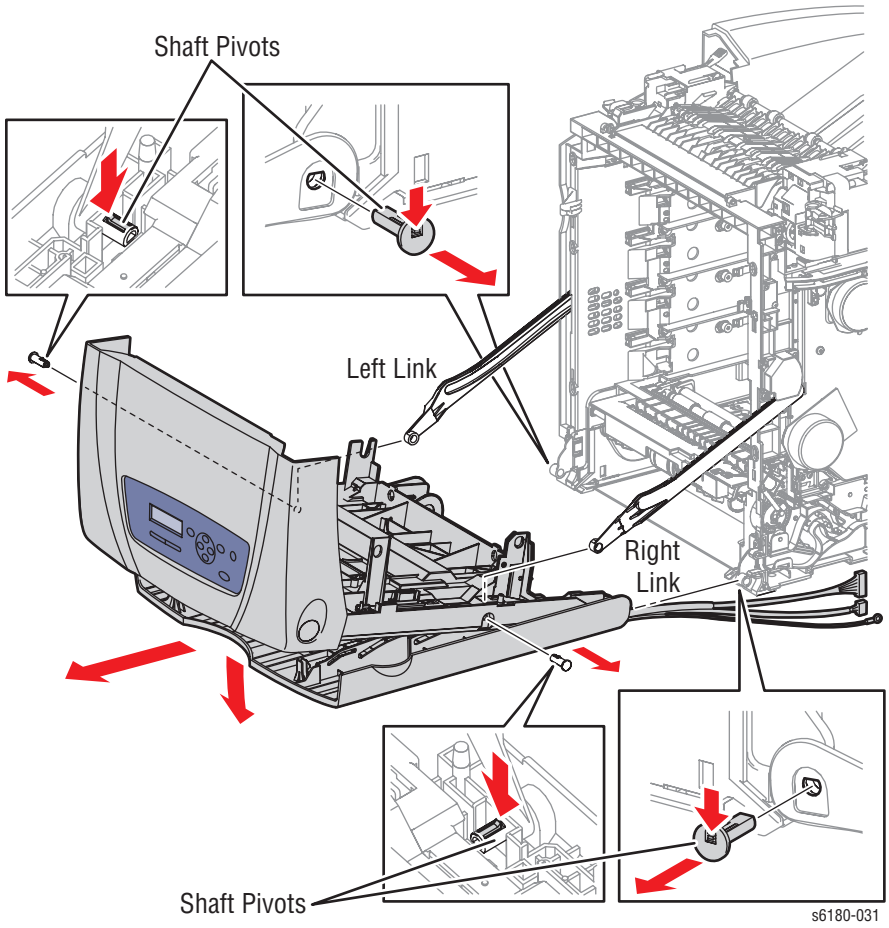


Front Cover (PL1.2.1)

1. Remove the Duplex Unit (page 8-94).
2. Remove the Rear Cover (page 8-11).
3. Remove the Right Side Cover (page 8-12).
4. Remove 1 screw (6 mm) securing the Ground Wire on the printer.
5. Disconnect the Front Cover connector P/J272 and the Control Panel connector P/J2900 (PL1.2.15).
6. Release the Ground Wire and the wiring harness from the Drive Duct (PL8.1.8).



7. Open the Tray 1 (MPT) Cover (PL1.2.24).
8. Release the hook of the Shaft Pivot on the left and right side of the Front Cover. Pull the Shaft Pivot outward while holding the Front Cover and remove the Cover from the Left and Right Links (PL 7.1.13).
9. Release the hooks of the Shaft Pivot (PL 1.2.30) securing the Front Cover to the printer from the outside of Tray 1 (MPT), and pull out the Shaft Pivot.
10. Remove the Front Cover together with the Tray 1 (MPT) Cover.
11. Remove Tray 1 (MPT) Cover from the Front Cover.

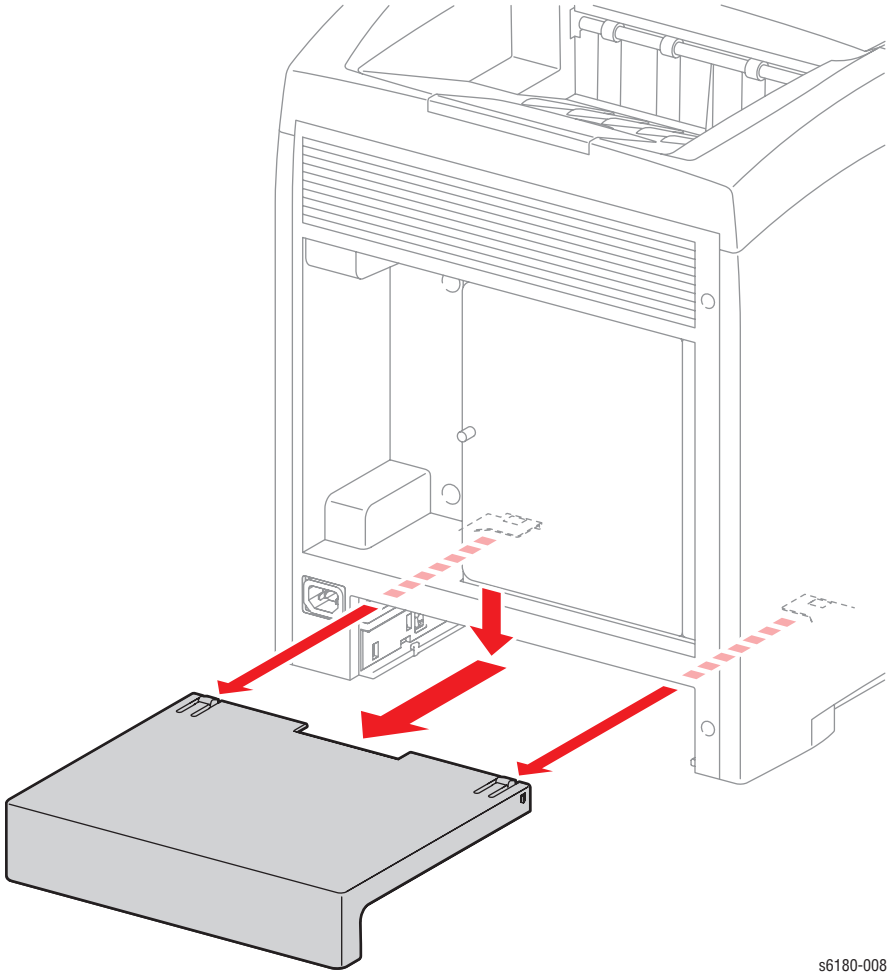


Replacement Note

Ensure to tilt the Front Cover accordingly when mounting the Front Cover. Push the Shaft Pivot in all the way to secure the hooks of the Shaft Pivots to the Left and Right Links.

Tray 2 Cover (PL1.1.5)

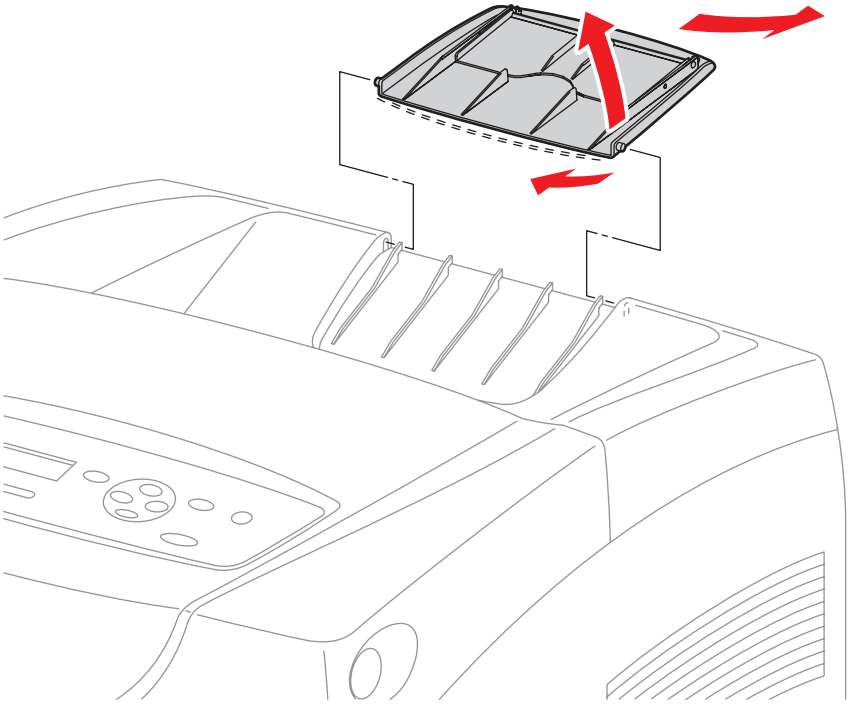
1. Remove Tray 2.
2. Pull the Tray 2 Cover all the way out until it stops.
3. Press the center part of the Tray 2 Cover to release the hooks (on the left and right sides) and remove the Tray 2 Cover from the printer.



s6180-008

Extender Cover (PL1.1.9)

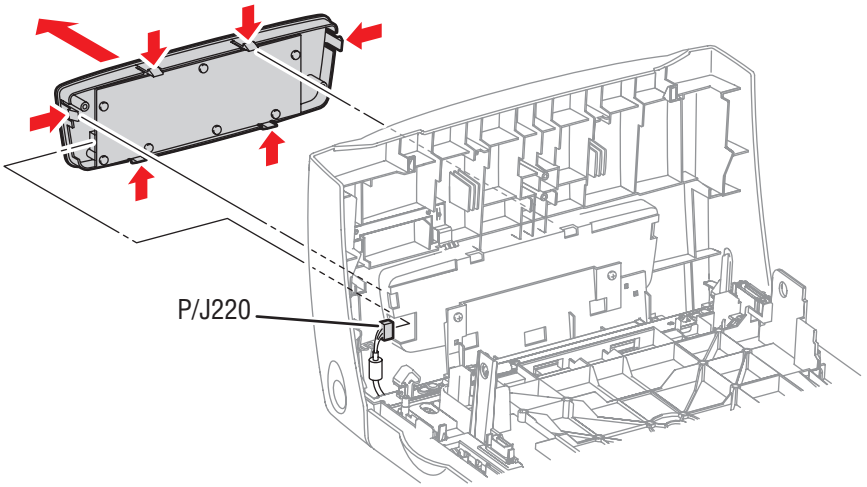
1. Open the Extender Cover.
2. Press the center part of the Extender Cover and pull one of the two notches of the Extender Cover from the hole of the Top Cover (PL1.1.1).
3. Pull out the other notch of the Extender Cover from the hole of the Top Cover and remove the Extender Cover.



s6180-006

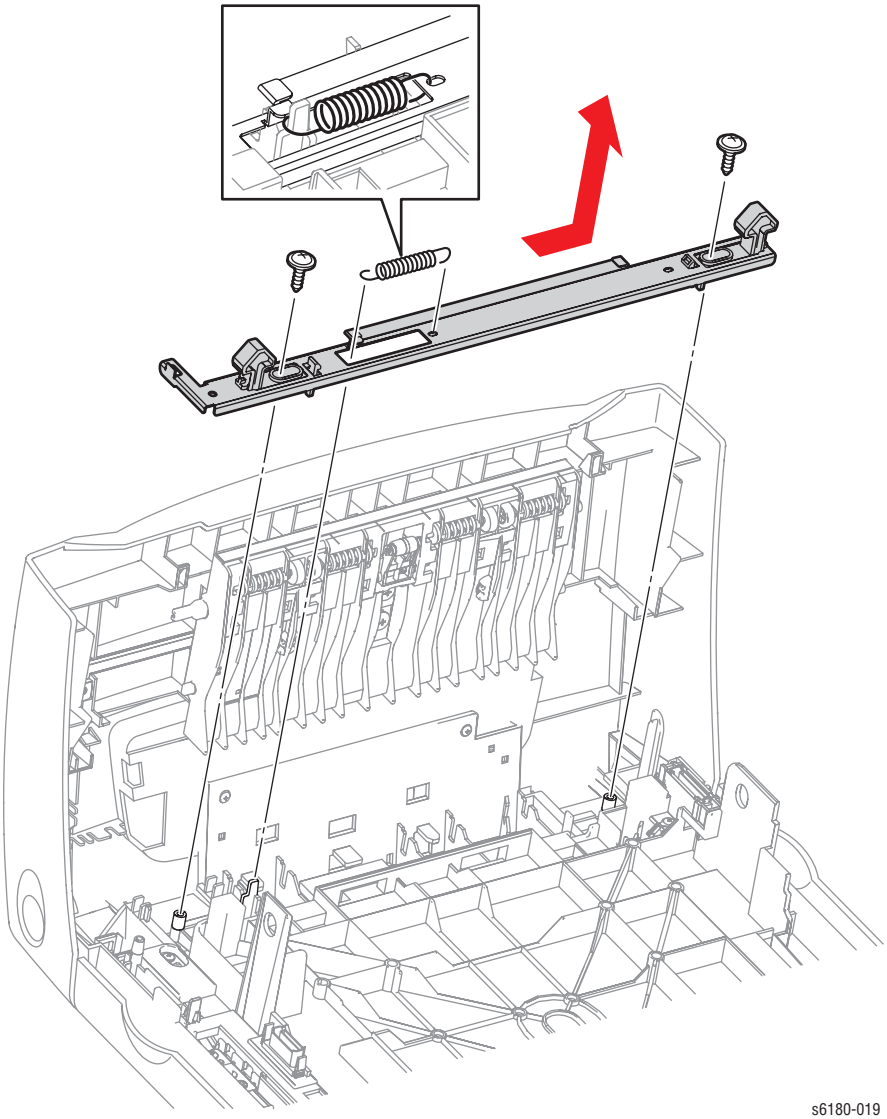
Control Panel (PL1.2.16)

1. Remove the Exit Out Chute (page 8-63).
2. Disconnect the Control Panel connector P/J220.
3. Release the 6 hooks securing the Control Panel to the Front Cover (PL1.2.9).
4. Remove the Control Panel.



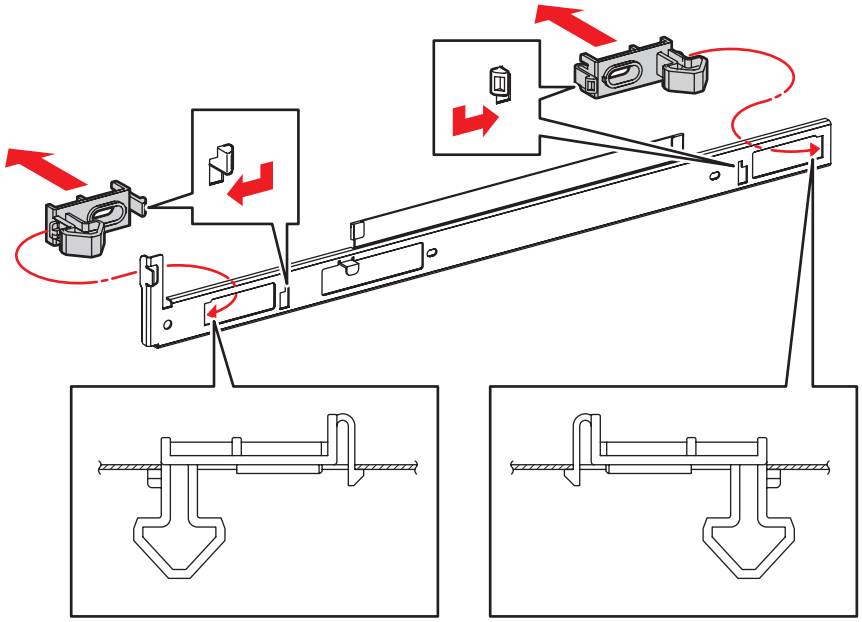
Tray 1 (MPT) Base (PL1.2.26)

1. Remove the Duplex Unit (page 8-94).
2. Remove the Latch Spring (PL1.2.3) from the Latch Plate (PL1.2.2).
3. Remove 2 screws (black, 10 mm, flanged) securing the left and right sides of the Front Latch (PL1.2.4).
4. Simultaneously shift the Latch Plate and the Front Latch to the left and remove the parts from the Front Cover.



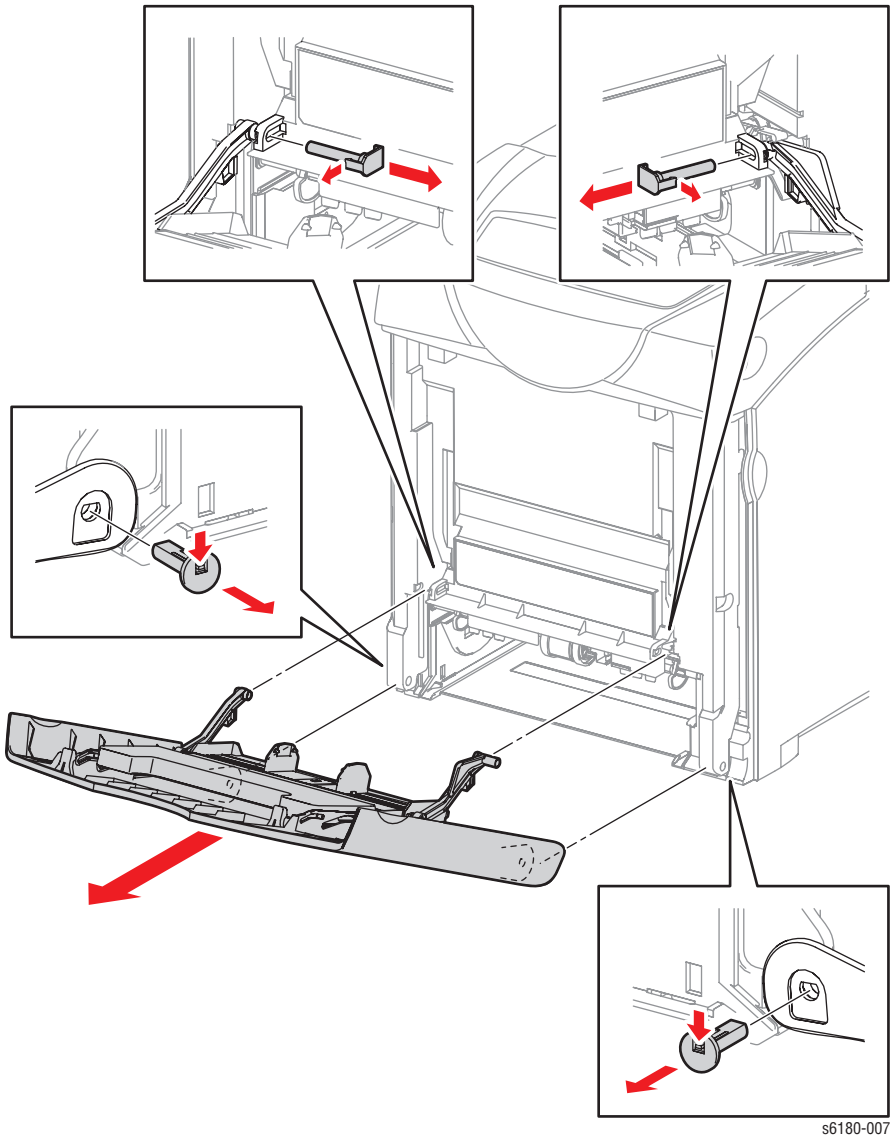
s6180-019

5. Push the Front Latch downward to release the hooks and remove the Front Latch from the Latch Plate.



Tray 1 (MPT) Cover (PL1.2.24)

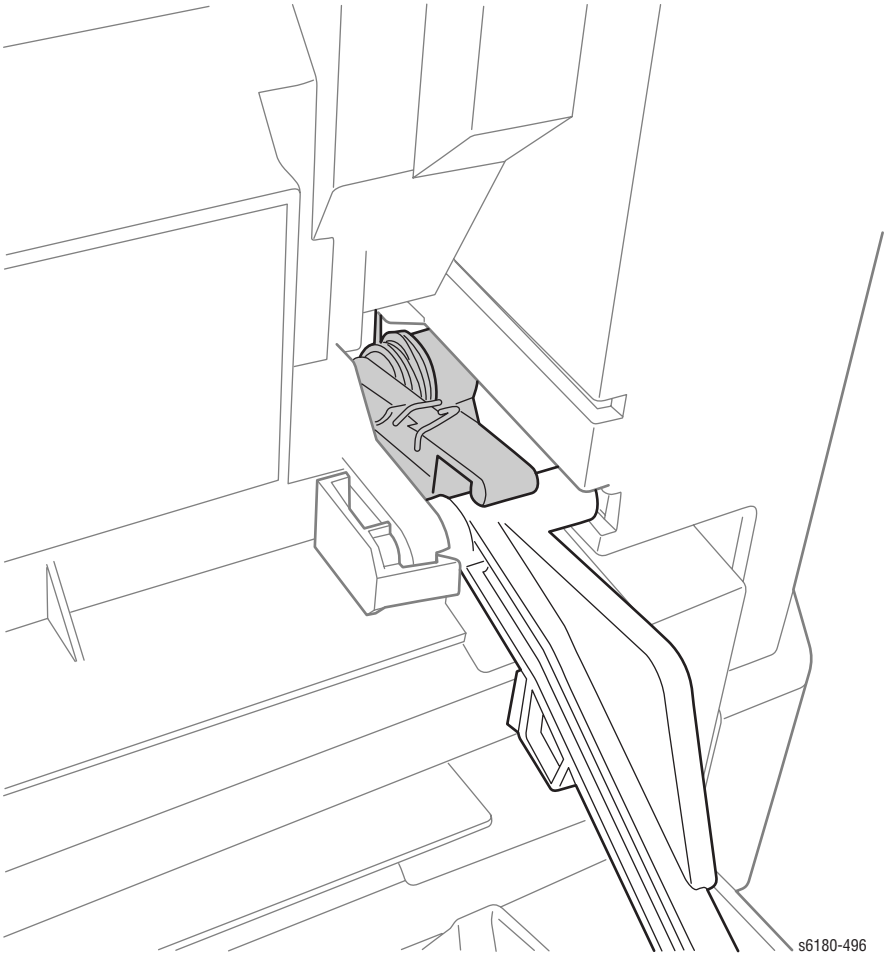
1. Remove Tray 2.
2. Open Tray 1 (MPT) Cover.
3. Rotate the Pivot Pin (PL1.2.17) to release the hooks securing the Link on the left and right sides of the Tray 1 (MPT) Cover. Remove the left and right Pivot Pins.
4. Use a small flat tip screwdriver to press on the lip of the Shaft Pivots to release the Shaft Pivots (PL1.2.30) securing the left and right sides of the Tray 1 (MPT) Cover and remove the Shaft Pivots.
5. Remove the Tray 1 (MPT) Cover.



s6180-007

Replacement Note

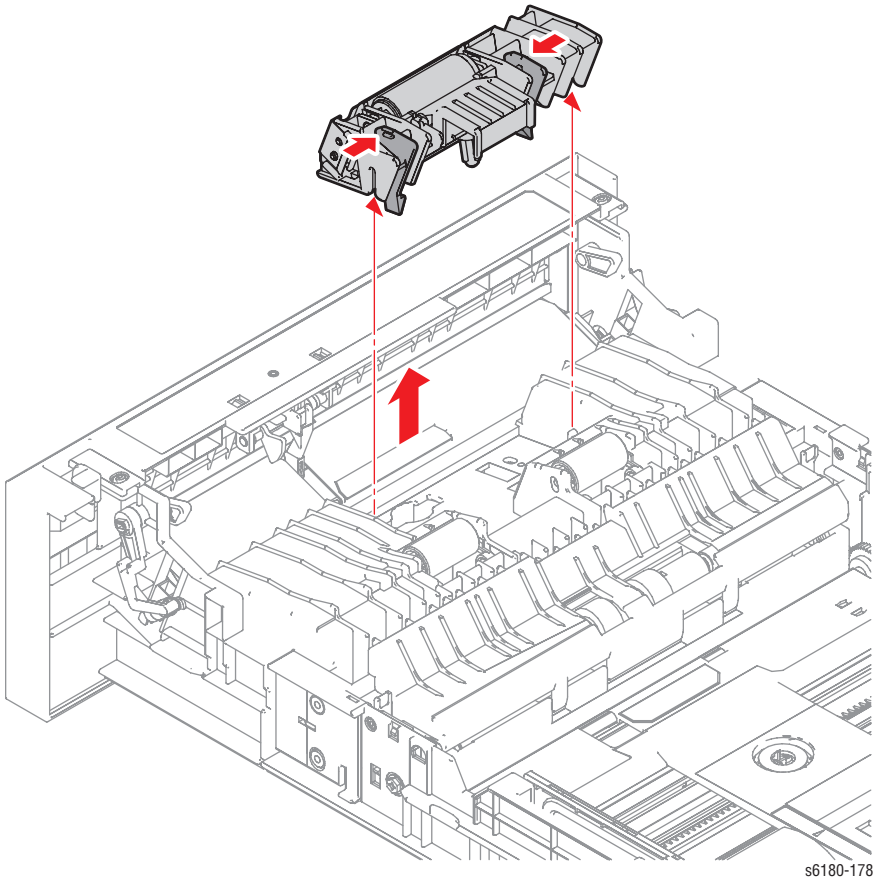
Ensure to place the Tray 1 (MPT) Lever on top of Tray 1 (MPT).



Paper Tray

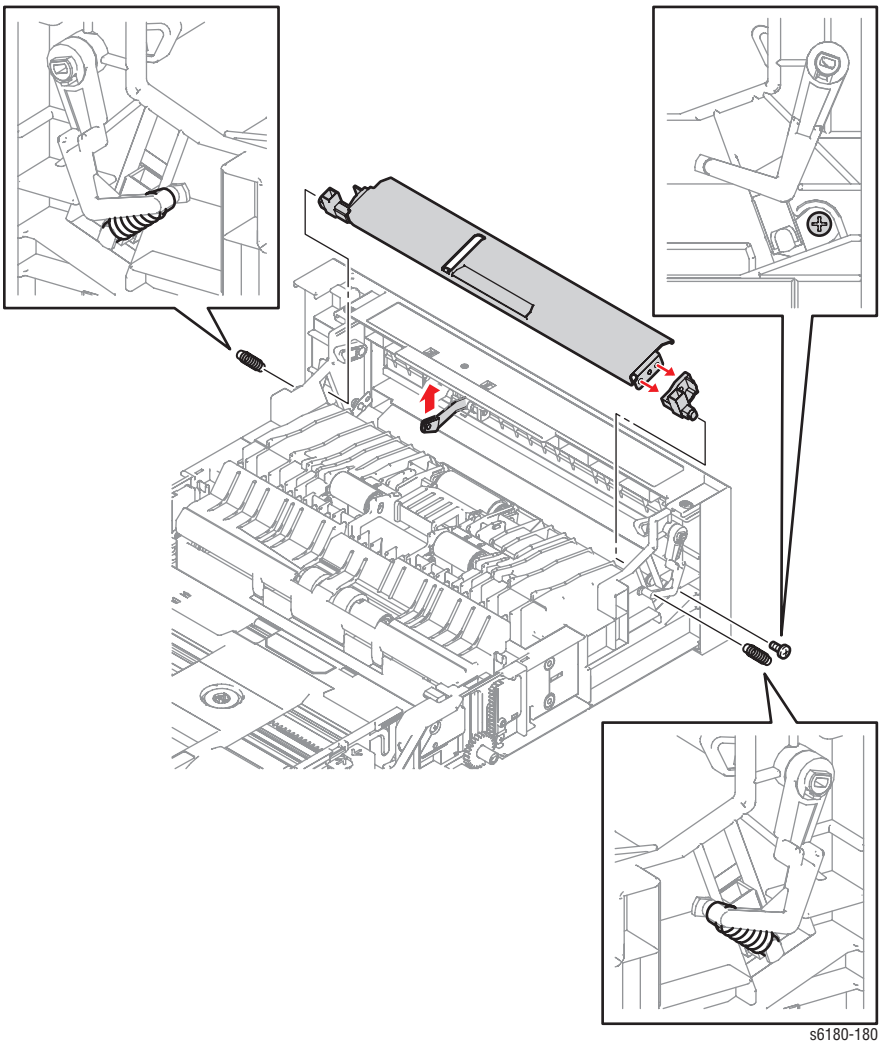
Tray 1 (MPT) Retard Holder (PL2.1.3)

1. Remove Tray 2.
2. Press lightly on the left and right sides of the Separator Holder (PL2.1.10) toward the center, lift and remove the Holder.
3. Remove the Tray 1 (MPT) Retard Holder from the Tray Housing Base.



Bottom Plate (PL2.1.20)

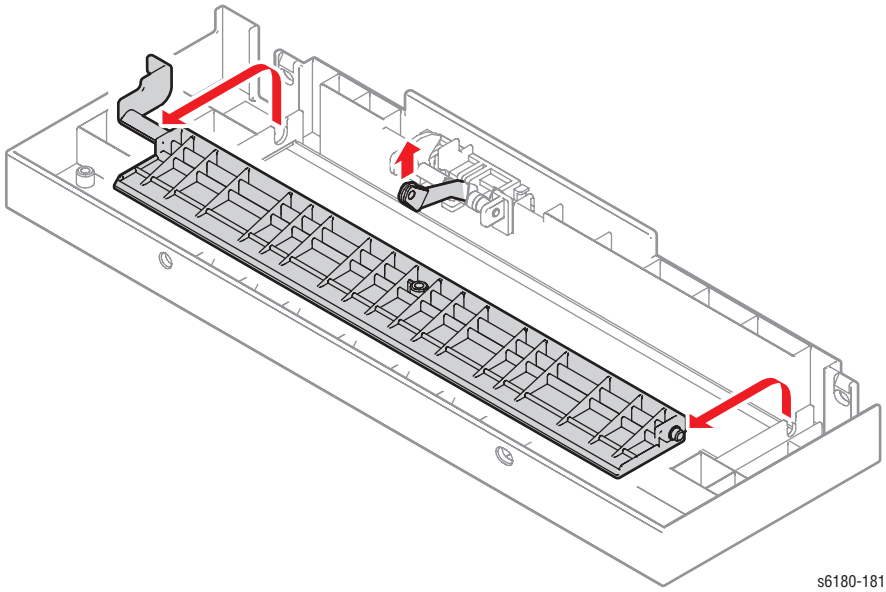
1. Remove Tray 2.
2. Remove the MPT Springs (PL2.1.17) on the left and right Arms.
3. Remove 1 screw (6 mm) securing the left MPT Holder (PL2.1.21). Remove the left MPT Holder.
4. While pushing the No Paper Actuator (PL2.1.26) upward, remove the Bottom Plate from the Tray 2 Housing Base.



s6180-180

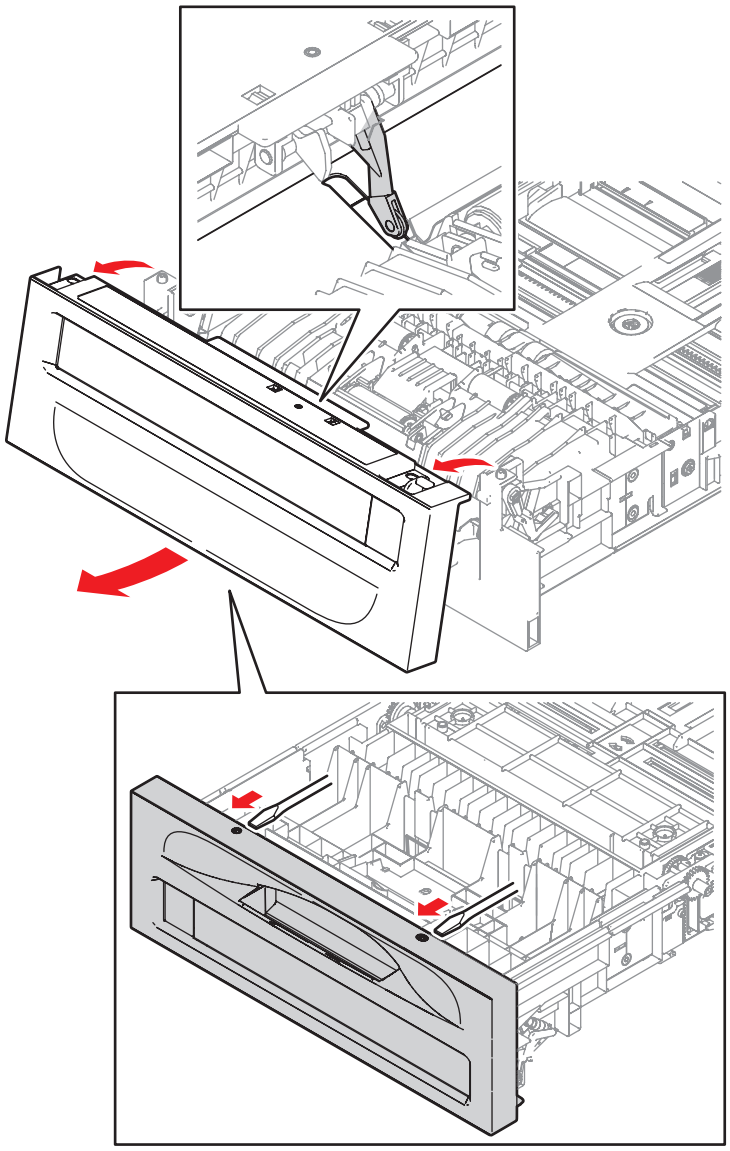
Tray 1 (MPT) Front Cover (PL2.1.22)

1. Remove Tray 2.
2. Remove the Tray 2 Handle (page 8-27).
3. While pushing the Tray 1 (MPT) No Paper Actuator (PL2.1.26) upward, remove the left and right shaft sections of the Front Cover from the groove of the Tray Handle, and remove the Tray 1 (MPT) Front Cover.



Tray 2 Handle (PL2.1.23)

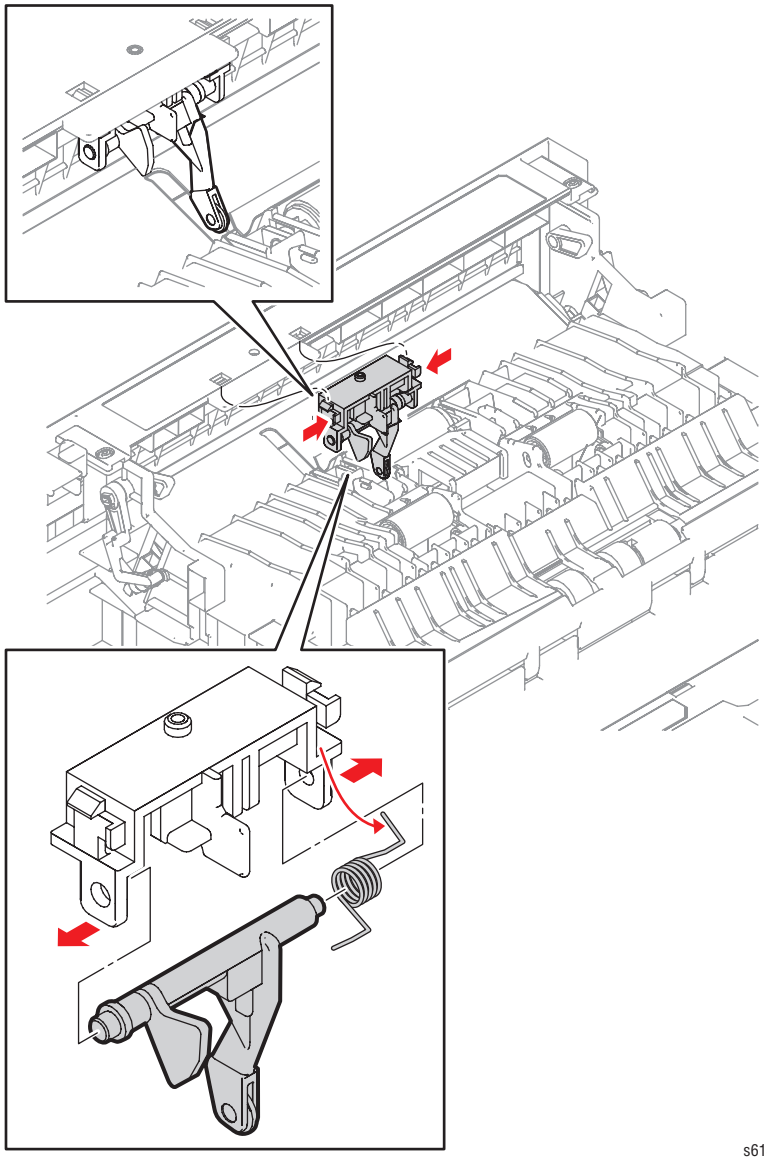
1. Remove Tray 2.
2. Use a small flat tip screwdriver to press on the 2 latches and remove the Tray Handle.



s6180-182

No Paper Actuator (PL2.1.26)

1. Remove Tray 2.
2. Press on the notches on the Actuator (PL2.1.24) to release the hooks. Remove the Actuator from the Tray Handle (PL2.1.23).
3. Remove the No Paper Spring hooks (PL2.1.28) from the Actuator Holder (PL2.1.25).
4. Expand the left and right Actuator Holder mounting sections and remove the Shaft. Remove the No Paper Actuator together with the No Paper Spring.
5. Remove the No Paper Spring from the No Paper Actuator.



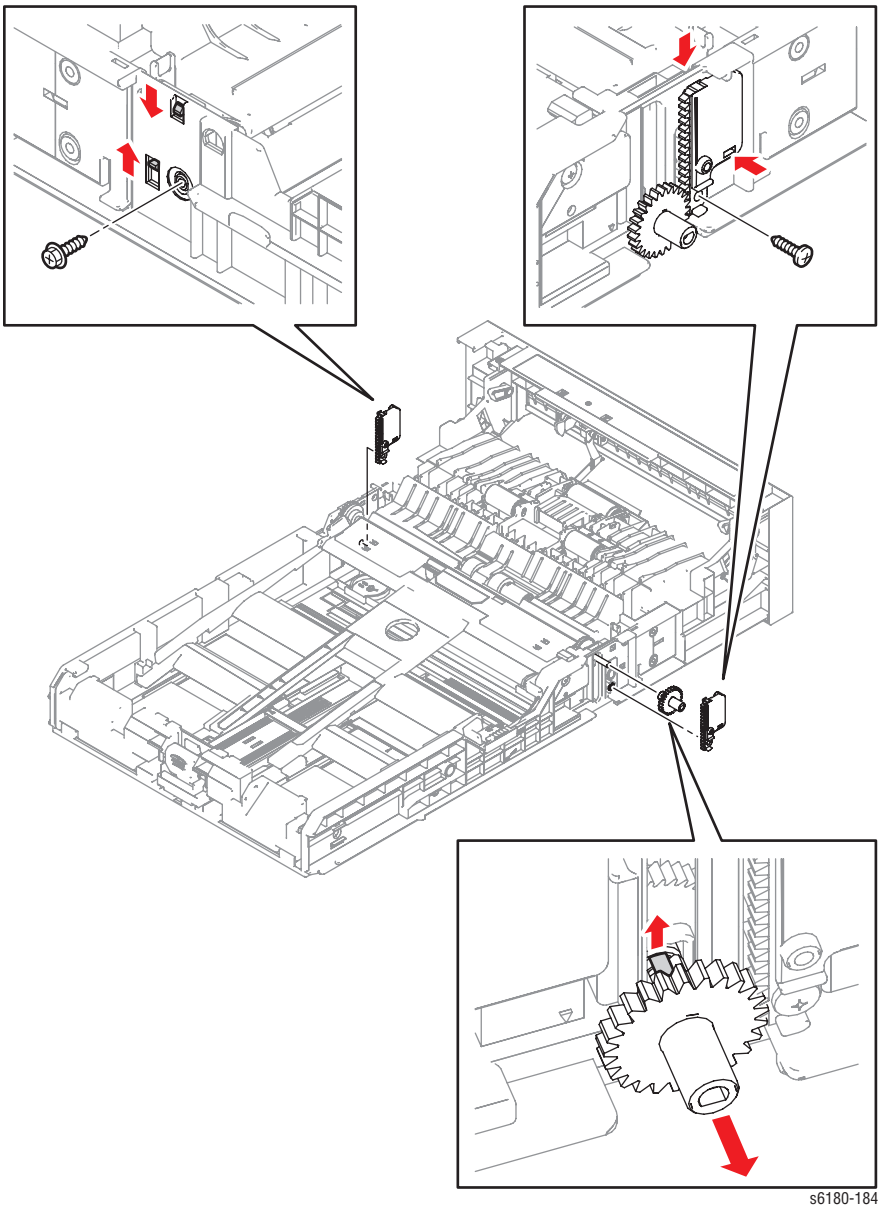
s6180-183

Replacement Note

Ensure the A/B Registration Spring Sensor is hooked securely onto the A/B Actuator and the Registration Chute. Verify that the No Paper Actuator fits inside the Bottom Plate hole.

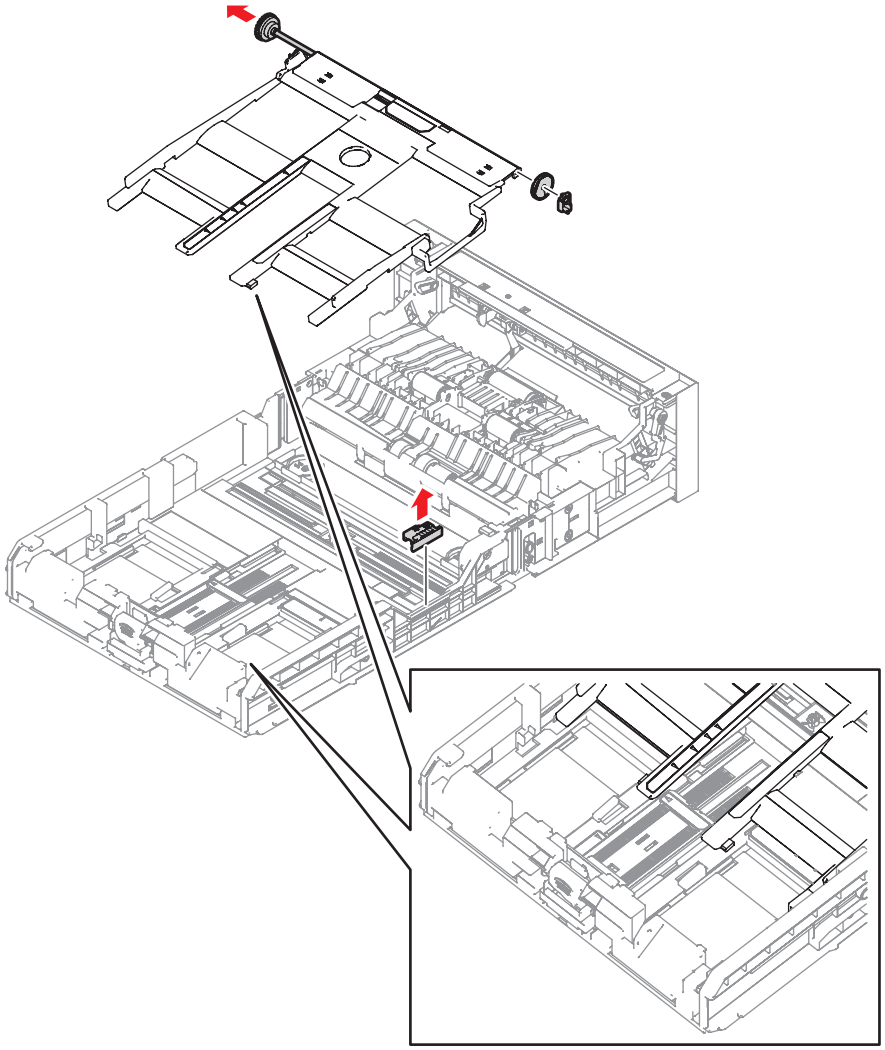
Bottom Plate - Tray 2/Tray 3 (PL2.2.2)

1. Remove Tray 2.
2. Remove the Tray 2 left and right Side Guides (page 8-31).
3. Remove 2 screws (10 mm) securing the Gear Lock Plate on the left and right sides of Tray 2.
4. Use a screwdriver to release the tabs and remove the Gear Lock Plate (PL2.2.21).
5. Release the hook on the right Bottom Plate Gear (PL2.2.27) and remove the right Bottom Plate Gear from the Bottom Plate Shaft (PL2.2.5).



s6180-184

6. Use a screwdriver to release the hook on the Size Set Switch (PL2.2.19) and remove the Switch from Tray 2.
7. Pull the Bottom Plate Shaft out toward the left from the Bottom Plate and remove the Stopper (PL2.2.3) and the Bottom Oneway Lock Gear (PL2.2.4).
8. Release the notches on the Bottom Plate from the hooks on the Tray Housing Base and remove the Bottom Plate.



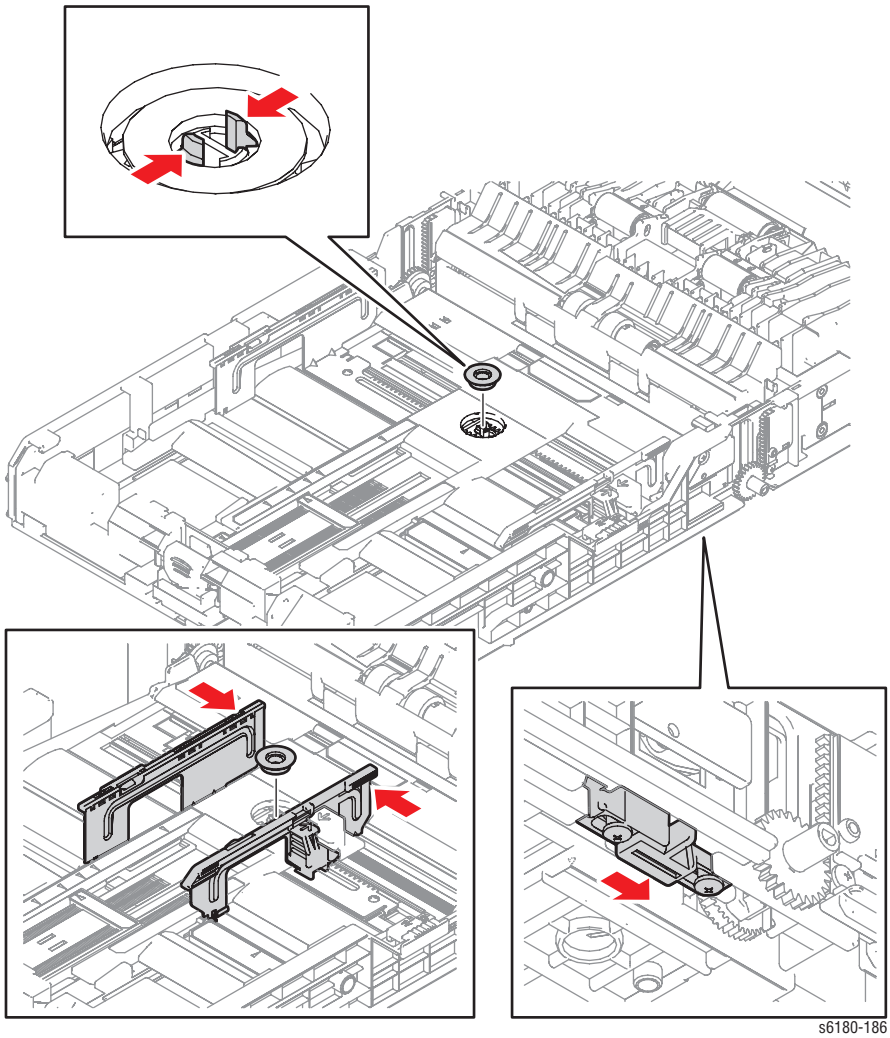
s6180-185

Replacement Note

Ensure the Bottom Plate Release Actuator is shifted to release the Lock and the Bottom Plate is raised at its highest position.

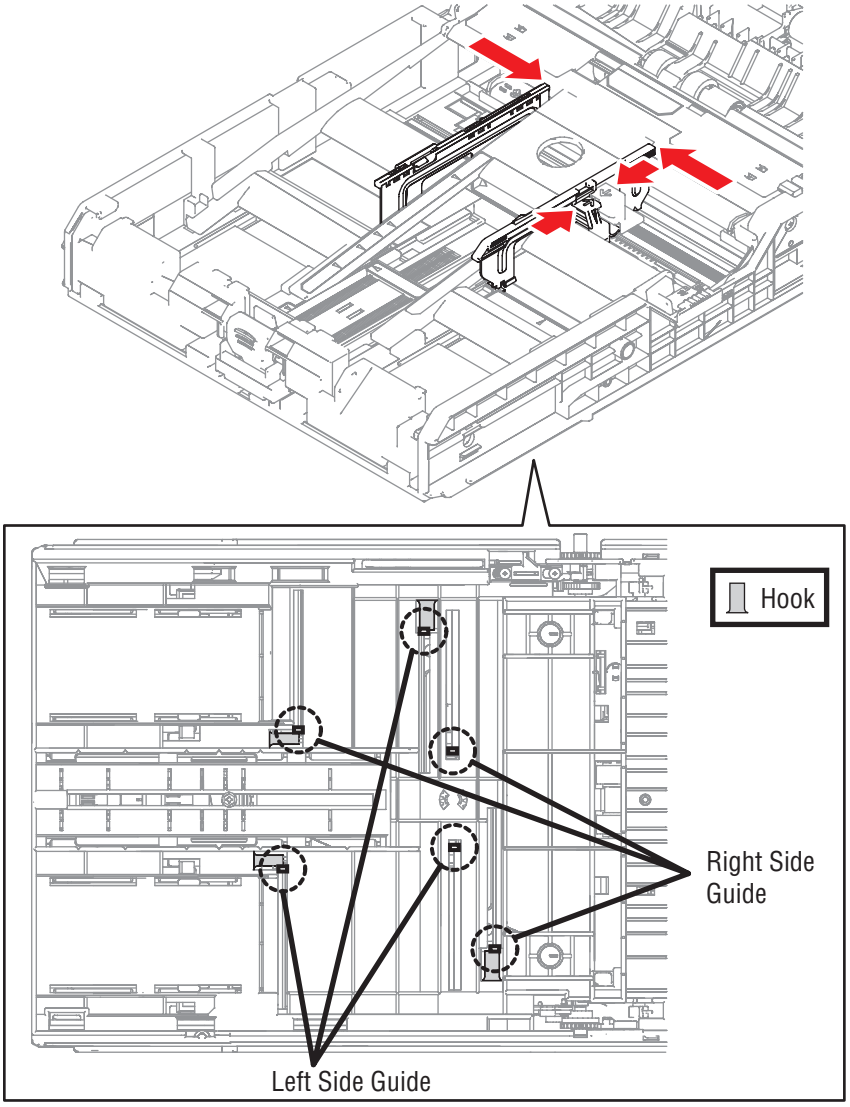
Tray 2 Side Guide (Left/Right) (PL2.2.9 & PL2.2.10)

1. Remove Tray 2.
2. Release the hook securing the Pinion Gear (PL2.2.11) to the Housing Base and remove the Pinion Gear.
3. Shift the Bottom Plate Release Actuator (PL2.2.25) to release the lock of the Bottom Plate (PL2.2.2).



s6180-186

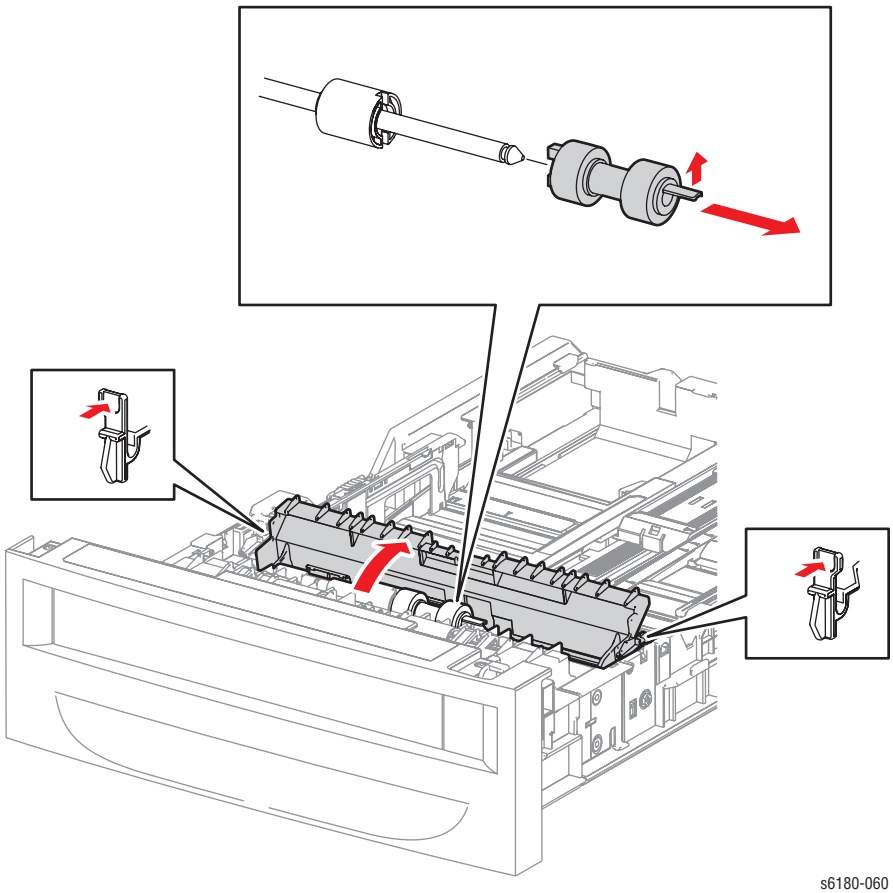
4. Hold the knob of the Right Side Guide and move the Guide toward the inside.
5. Move the Left Side Guide toward the inside.
6. While pressing down on the hooks securing the Right Guide, release the claws from the notches of the Tray Base. Remove the Right Side Guide.
7. While pressing down on the hooks securing the Left Guide, release the claws from the notches of the Tray Base. Remove the Left Side Guide.



s6180-187

Tray 2 Retard Roll (PL2.2.17)

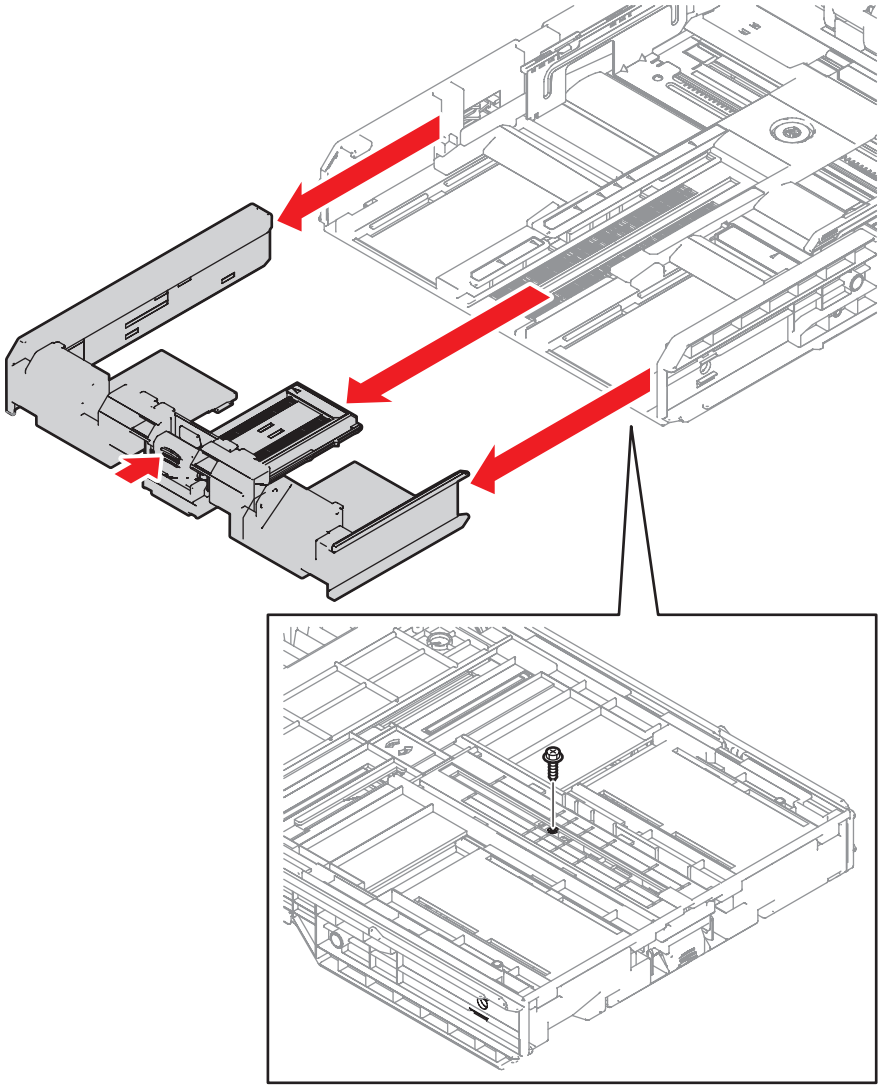
1. Remove Tray 2.
2. Release the hooks on the left and right of the Retard Tray Cover (PL2.2.13) and open the Retard Tray Cover.
3. Release the hooks on the left and right side of the Retard Roll and remove the Retard Roll from the Retard Shaft (PL2.2.15).



s6180-060

Tray 2 End Guide (PL2.2.22)

1. Remove Tray 2.
2. From the bottom side of Tray 2, remove 1 screw (8 mm, flanged) securing the Tray 2 End Guide.
3. Remove the Tray 2 End Guide.
4. Remove the rail sections from the Tray 2 End Guide.

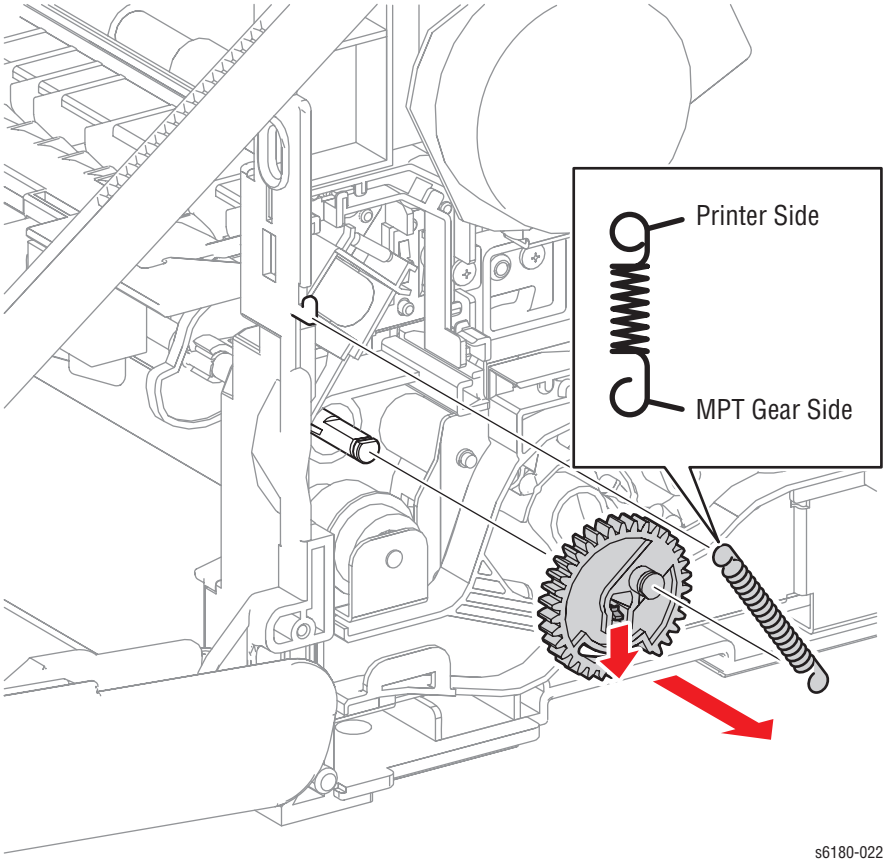


s6180-189

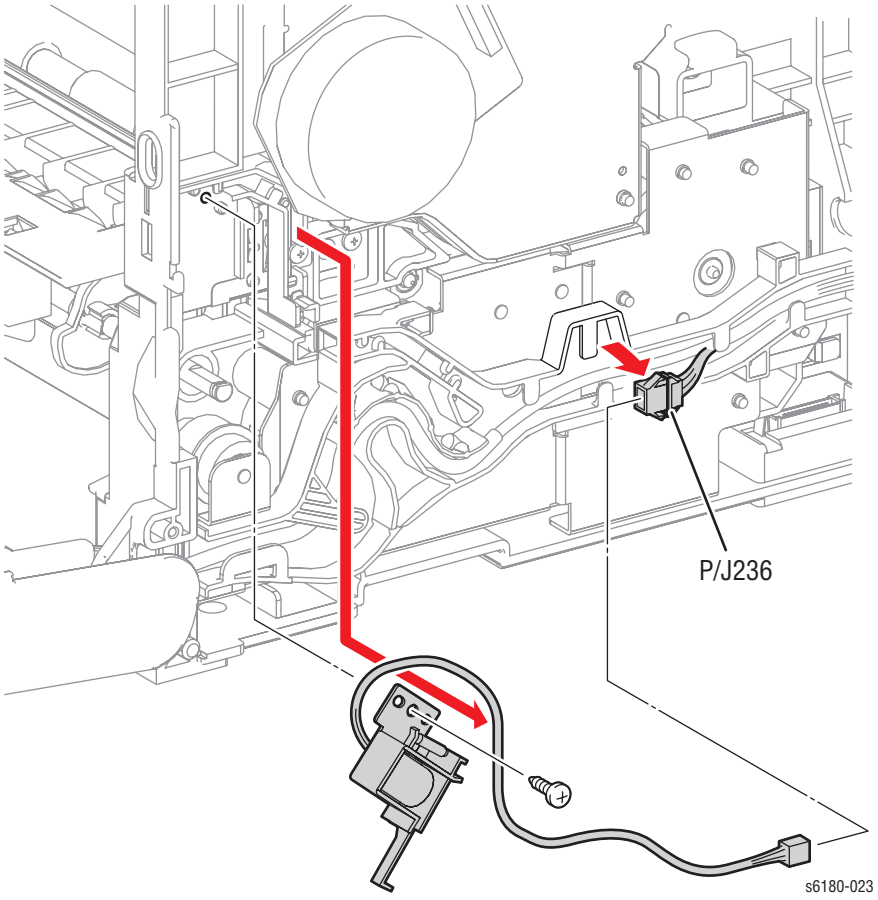
Paper Feeder

Tray 1 (MPT) Feed Solenoid (PL3.1.3)

1. Remove the Rear Cover (page 8-11).
2. Remove the Right Side Cover (page 8-12).
3. Remove the MPT Feed Spring (PL3.1.4).
4. Release the hook and remove the MPT Gear (PL3.1.5) from the MPT Shaft (PL3.1.12).

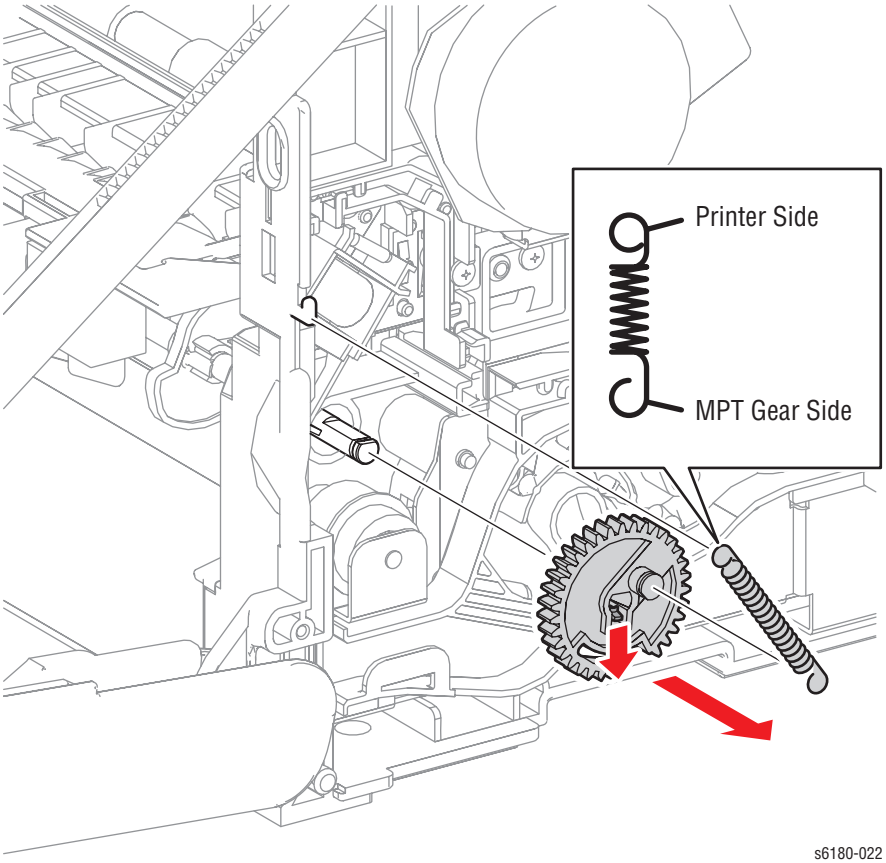


5. Disconnect the Tray 1 (MPT) Feed Solenoid connector P/J236.
6. Release the Feed Solenoid wiring harness from the Solenoid Duct (PL3.1.2) and the Drive Duct (PL8.1.8).
7. Remove 1 screw (8 mm) securing the Feed Solenoid to the printer.
8. Remove the Tray 1 (MPT) Feed Solenoid.

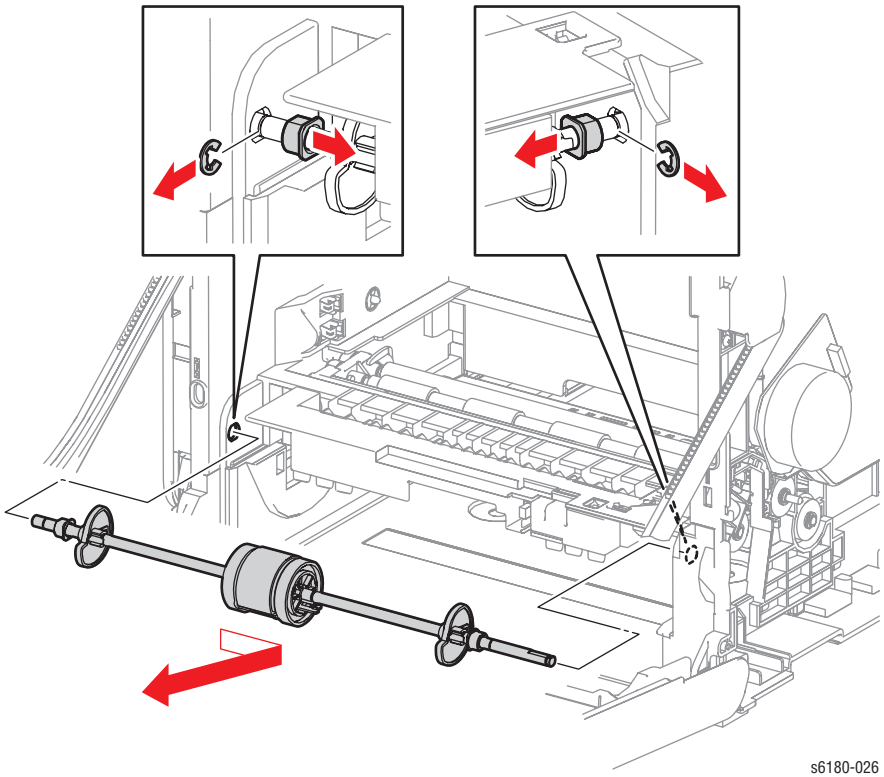


Tray 1 (MPT) Roll (PL3.1.8)

1. Remove the Rear Cover (page 8-11).
2. Remove the Right Side Cover (page 8-12).
3. Remove the MPT Feed Spring (PL3.1.4).
4. Release the hook of the MPT Gear (PL3.1.5) and remove the Gear from the MPT Shaft (PL3.1.12).



5. Remove the E-ring securing the bearing on the left and right sides of the Roll, and shift the bearing toward the inside.
6. Shift the Roll to the right and pull out the left side shaft section of the Roll from the bearing. Pull the Tray 1 (MPT) Roll out toward the lower left side to remove it.



Replacement Note

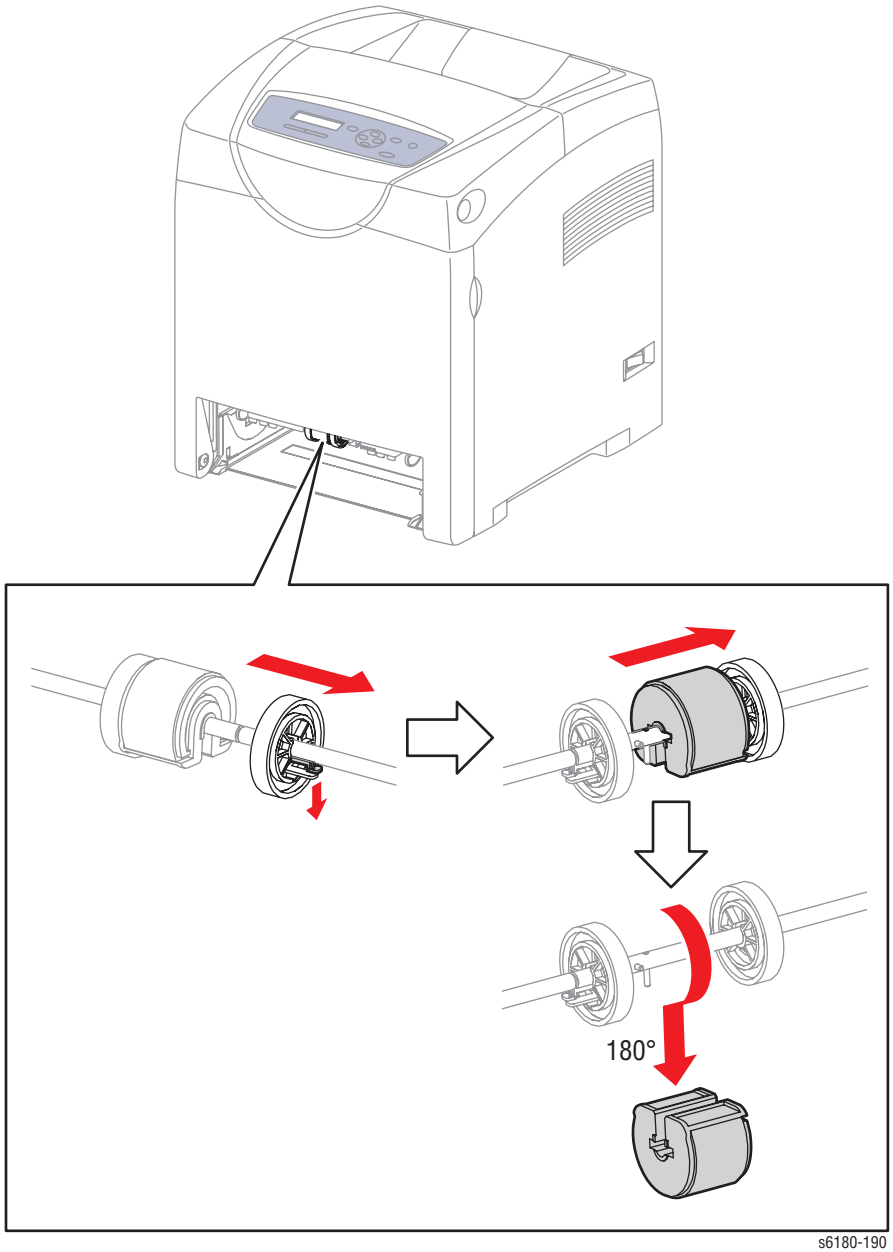
Pay attention to the orientation of the Bearings. The right side of the Bearing (PL3.1.6) is Black; the left side of the Bearing (PL3.1.13) is White.

Ensure the D cut surface of the Shaft faces upward which makes the installation process easier.

Attach the elliptical side of the mounting section of the MPT Feed Spring to the Gear.

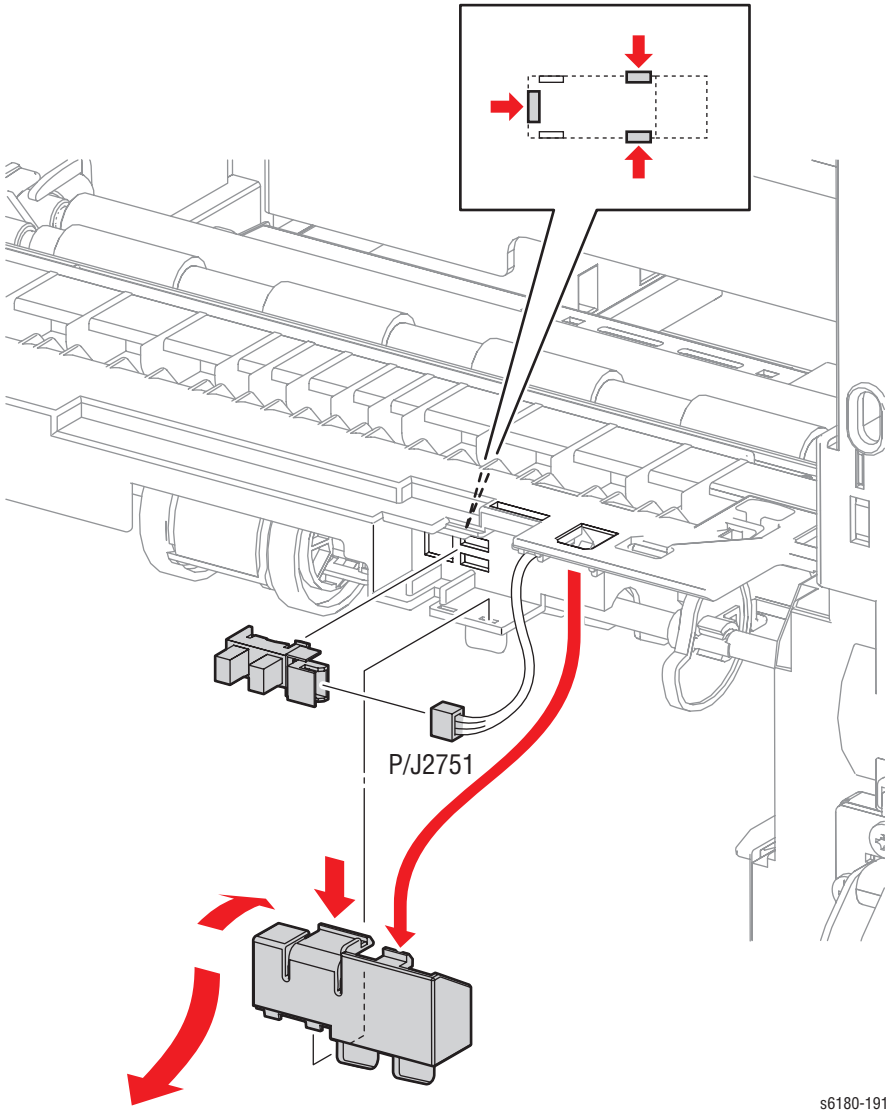
Tray 1 (MPT) Feed Roll (PL3.1.10)

1. Remove Tray 2.
2. Release the MPT Core Roll hook (PL3.1.9) on the right side of the MPT Feed Roll. Shift the MPT Core Roll to the right.
3. Shift the MPT Feed Roll to the right and remove the groove of the MPT Feed Roll from the pin mounted on the Shaft (PL3.1.12).
4. Rotate the Tray 1 (MPT) Feed Roll 180° and remove it from the Shaft.



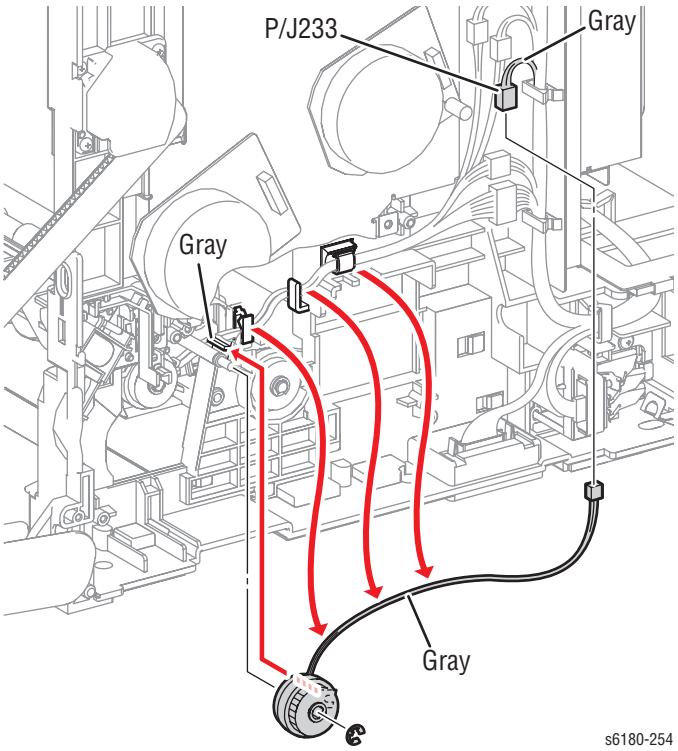
Tray 1 (MPT) No Paper Sensor (PL3.1.15)

1. Remove Tray 2.
2. Release the Cover Sensor hook (PL3.1.16).
3. Push the Cover Sensor backward while pressing on the lower side of the Sensor to remove the latch on the upper right side of the Cover Sensor from the MPT Chute (PL3.1.14).
4. Release the hooks and remove the Tray 1 (MPT) No Paper Sensor from the MPT Chute.
5. Disconnect the Tray 1 (MPT) No Paper Sensor connector P/J2751.



Registration Clutch (PL3.1.19)

1. Remove Tray 2.
2. Remove the Rear Cover (page 8-11).
3. Remove the Right Side Cover (page 8-12).
4. Remove the Drive Assembly (page 8-76).
5. Disconnect the Registration Clutch connector P/J233.
6. Release the gray Registration Clutch wiring harness from the clamp, the hook on the printer frame, and the clamp of the Feeder (PL3.2.1).
7. Remove the E-ring securing the Registration Clutch to the Feeder.
8. Remove the Registration Clutch from the Feeder.

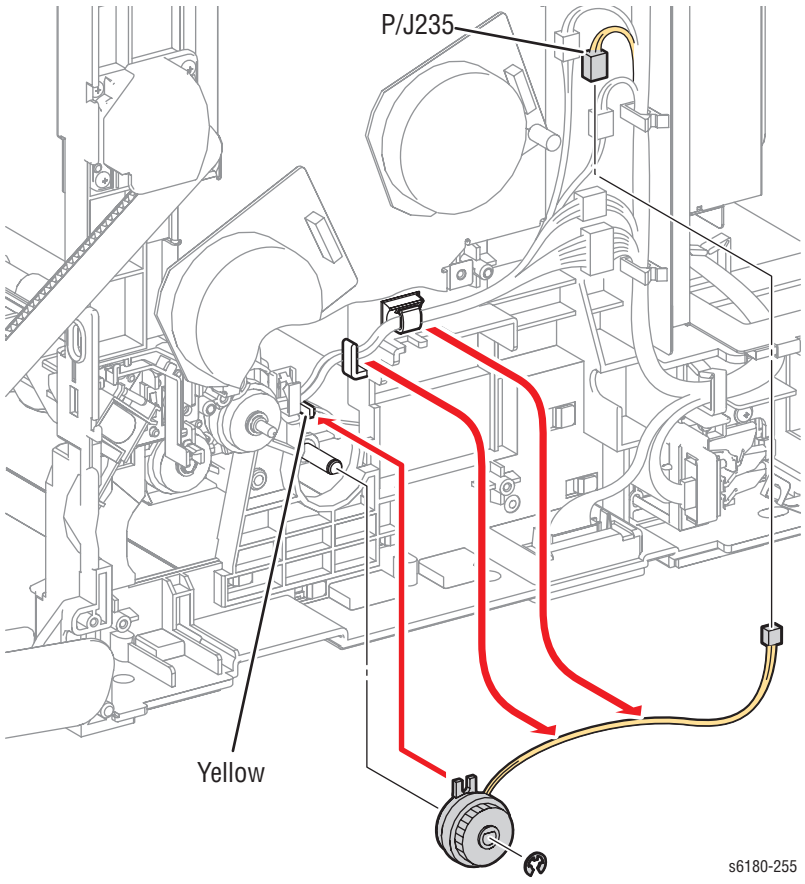


Replacement Note

Ensure to match the color of the Clutch Harness and the color of the Clutch positioning rib. The Registration Clutch Harness is Gray.

Feed Clutch (PL3.1.20)

1. Remove Tray 2.
2. Remove the Rear Cover (page 8-11).
3. Remove the Right Side Cover (page 8-12).
4. Remove the Drive Assembly (page 8-76).
5. Disconnect the Feed Clutch connector P/J235.
6. Release the yellow Feed Clutch wiring harness from the clamp and the hook on the printer frame.
7. Remove the E-ring securing the Feed Clutch to the Feeder (PL3.2.1).
8. Remove the Feed Clutch from the Feeder.



Replacement Note

Ensure to match the color of the Clutch Harness and the color of the Clutch positioning rib. The Feed Clutch Harness is Yellow.

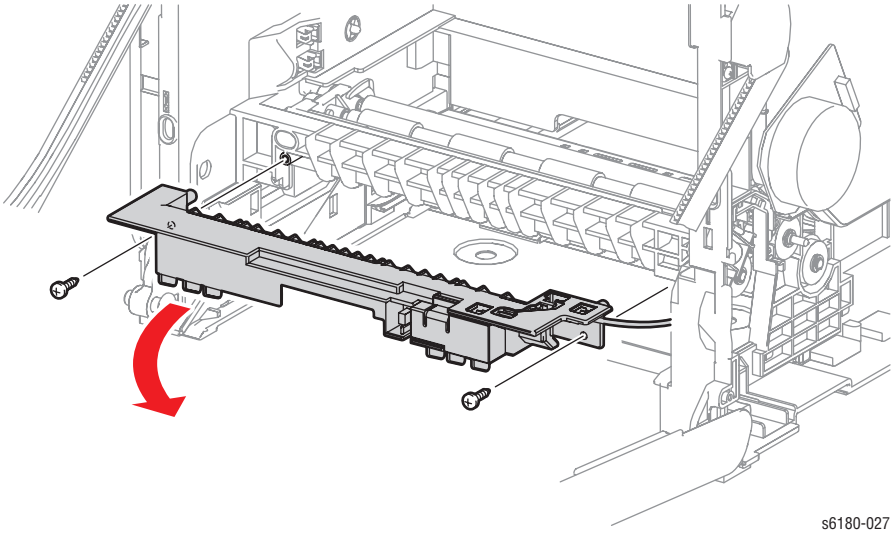
Feeder Unit (PL3.2.1)

1. Remove Tray 2.
2. Remove the Rear Cover (page 8-11).
3. Remove the Right Side Cover (page 8-12).
4. Remove the Drive Assembly (page 8-76).
5. Remove the Registration Clutch (page 8-41).
6. Remove the Feed Clutch (page 8-42).
7. Remove the Tray 1 (MPT) Roll (page 8-37).

Note

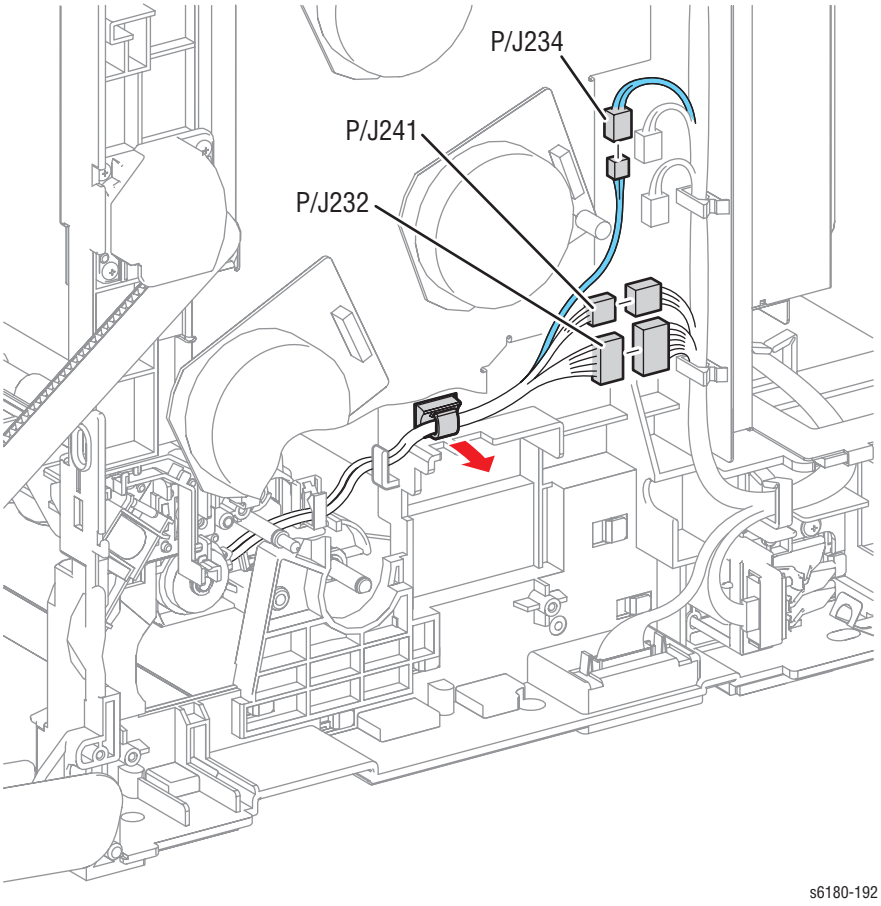
It is not necessary to remove the Tray 1 (MPT) No Paper Sensor (PL3.1.15) and the Cover Sensor (PL3.1.16).

8. Remove 2 screws (10 mm) securing the MPT Chute (PL3.1.14) to the printer.
9. Remove the MPT Chute from the printer.



s6180-027

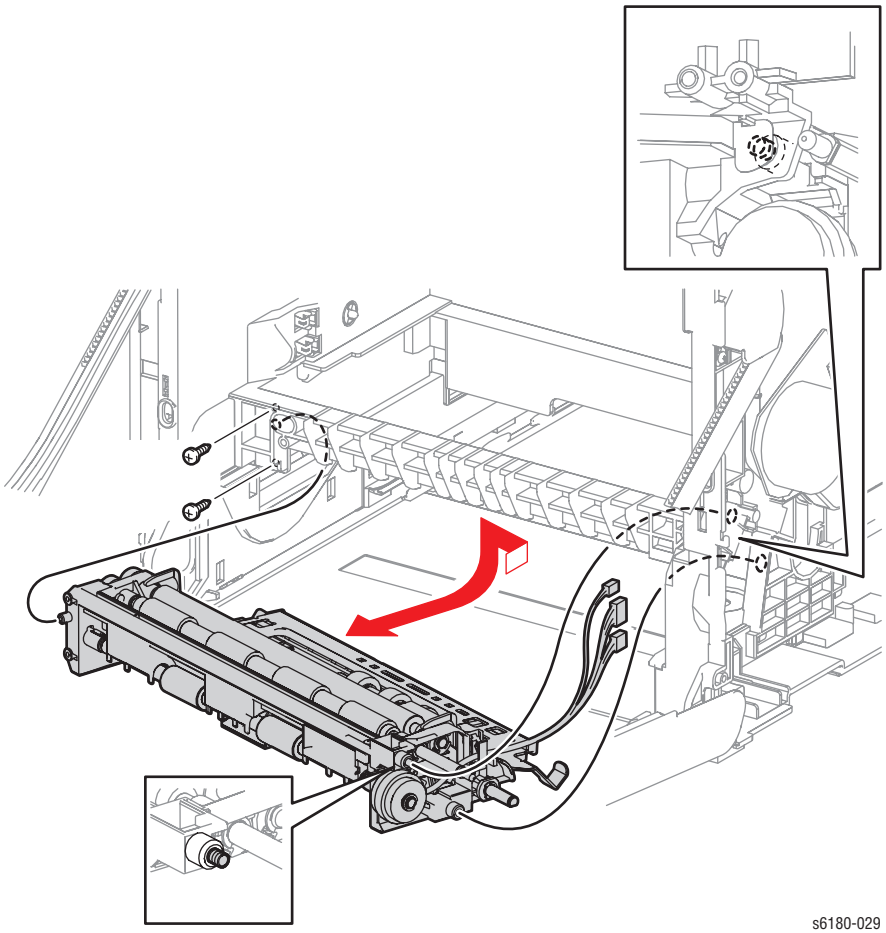
10. Disconnect the Feeder connectors P/J232 and P/J241.
11. Disconnect the Turn Clutch connector P/J234.
12. Release the wiring harnesses from the clamps and hooks.



Caution

Ensure to hold the Feeder while removing the 2 screws to prevent the Feeder drop to the bottom of the printer.

13. Shift the CAM Shaft on the left side to access the screws. Remove 2 screws (10 mm) securing the Feeder.
14. Move the Feeder down and forward to move the notch on the left side of the Feeder out of the hole on the printer. Slightly shift the Feeder toward the rear left side to remove the notches (1 on the Earth Spring and 1 on the right side of the Feeder) out of the holes on the printer.
15. Pull the Shaft section and the Clutch on the right side of the Feeder out of the hole on the printer and remove the Feeder.



s6180-029

Replacement Procedures

1. Insert the Feeder into the printer with the right side in first.
2. Insert the 2 wiring harness connectors coming out of the Feeder and the connector of the Turn Clutch through the hole of the printer.

Note

Ensure the Earth Spring attached on the right side of the Feeder is touching the Earth Plate.

3. Insert the shaft section and the Clutch on the right side of the Feeder and the 2 notches through the holes on the printer.
4. Insert the notch on the left side of the Feeder through the hole on the printer and attach the Feeder.
5. Secure the Feeder to the printer with 2 screws (10 mm).
6. Route the wiring harnesses to the hooks on the printer frame and secure them with the clamps.

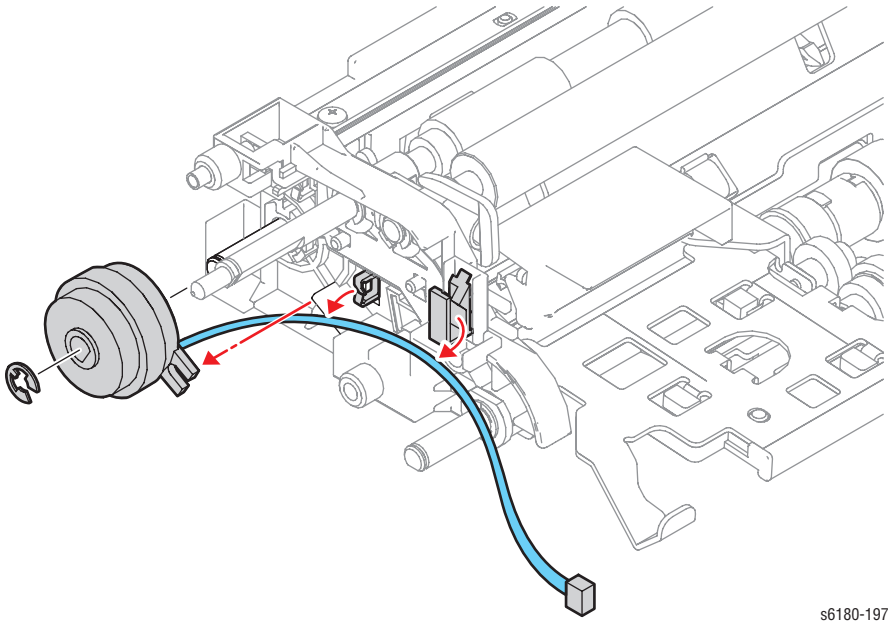
Note

Ensure to match the color of the wiring harness. The Turn Clutch wiring harness is blue.

7. Connect the Turn Clutch connector P/J234.
8. Connect connectors P/J232 and P/J241.
9. Align the notch on the Chute with the printer and attach the Chute.
10. Secure the Chute with 2 screws (10 mm).
11. Install the Tray 1 Roll (page 8-37).
12. Install the Feed Clutch (page 8-42).
13. Install the Registration Clutch (page 8-41).
14. Install the Drive Assembly (page 8-76).
15. Attach the Right Side Cover (page 8-12).
16. Attach the Rear Cover (page 8-11).
17. Install the Transfer Unit (page 8-7).
18. Install the Print Cartridges (C/M/Y/K) (page 8-9).
19. Close the Front Cover.
20. Insert Tray 2.

Turn Clutch (PL3.2.25)

1. Remove the Feeder Unit (page 8-43).
2. Release the Turn Clutch wiring harness from the Clamps.
3. Remove the E-ring securing the Turn Clutch.
4. Remove the Turn Clutch from the Feeder.



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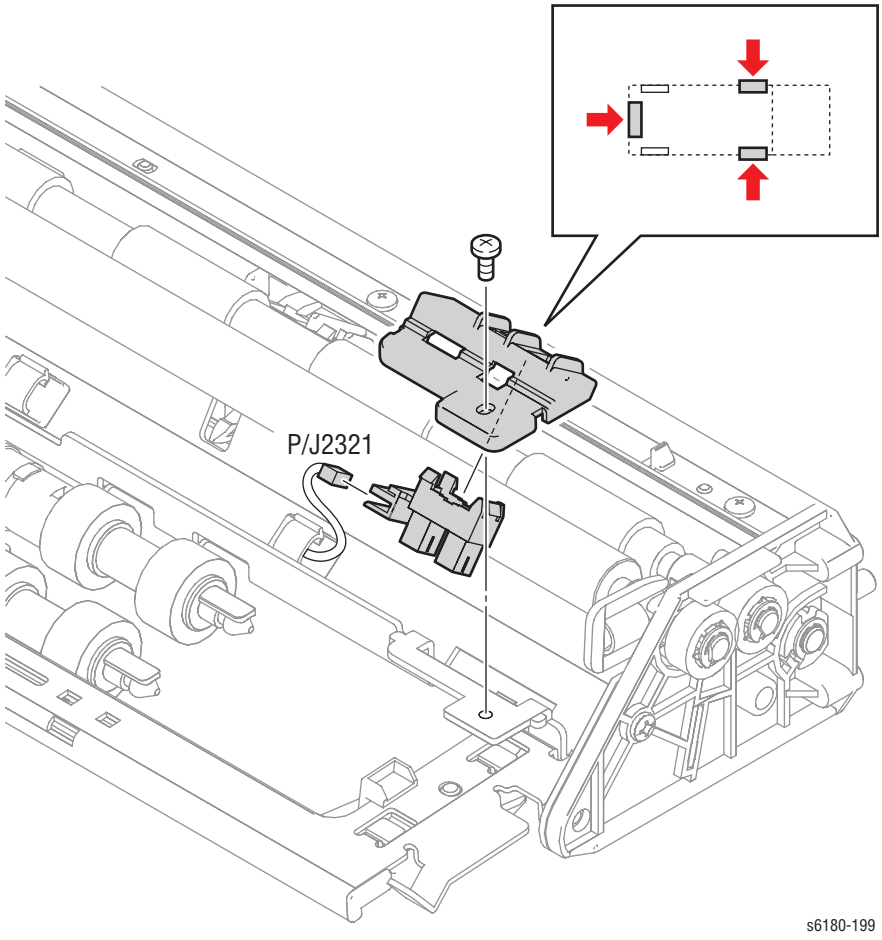
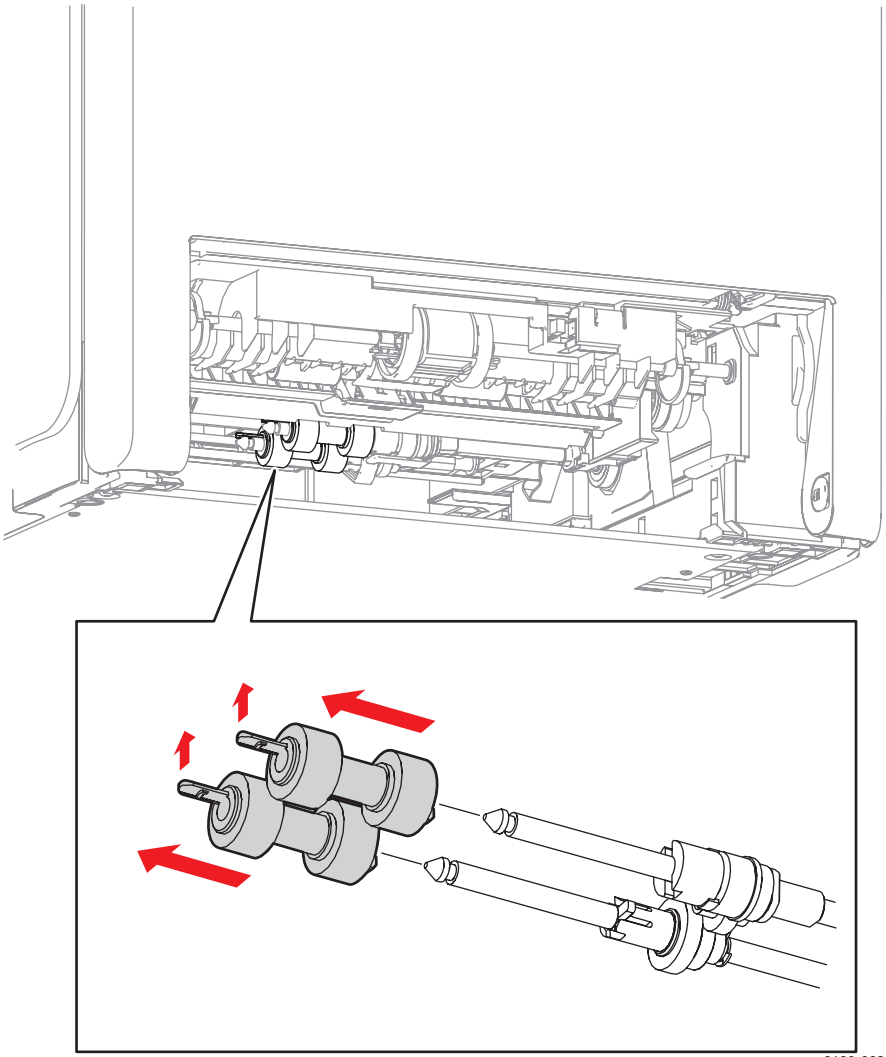
No Paper Sensor (PL3.2.30)

1. Remove the Feeder Unit (page 8-43).
2. Remove 1 screw (6 mm) securing the No Sensor Holder (PL3.2.34) and remove the No Sensor Holder.
3. Release the 3 hooks securing the No Paper Sensor.
4. Disconnect the No Paper Sensor connector P/J2321.



Tray 2 Feed Roll (PL3.2.53)

1. Remove Tray 2.
2. Release the hook on the Tray 2 Feed Roll hook and remove the Feed Roll from each Shaft.



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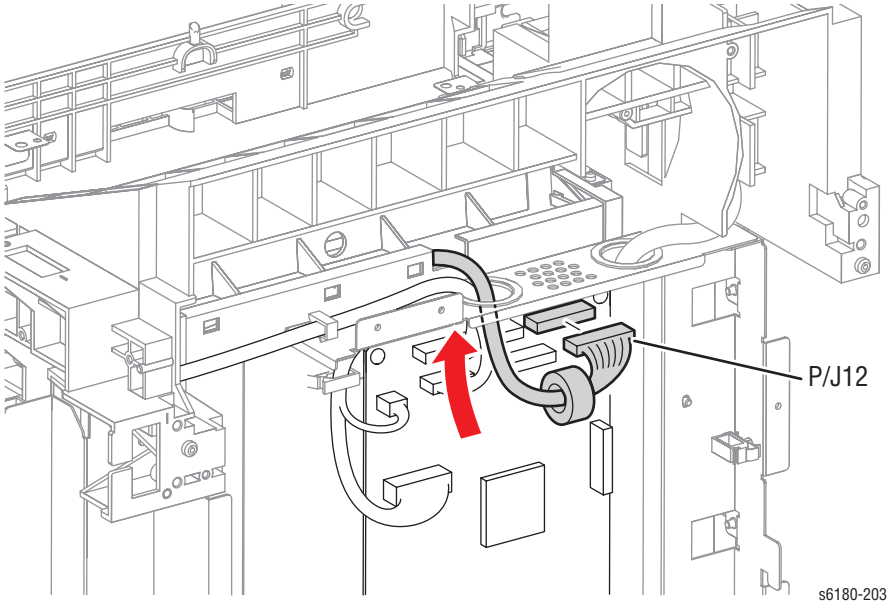
Replacement Note

Ensure to align the convex section of the Tray 2 Feed Roll with the concave section of the Nudger Roll Gear (PL3.2.46) and the Oneway Feed Clutch (PL3.2.52).

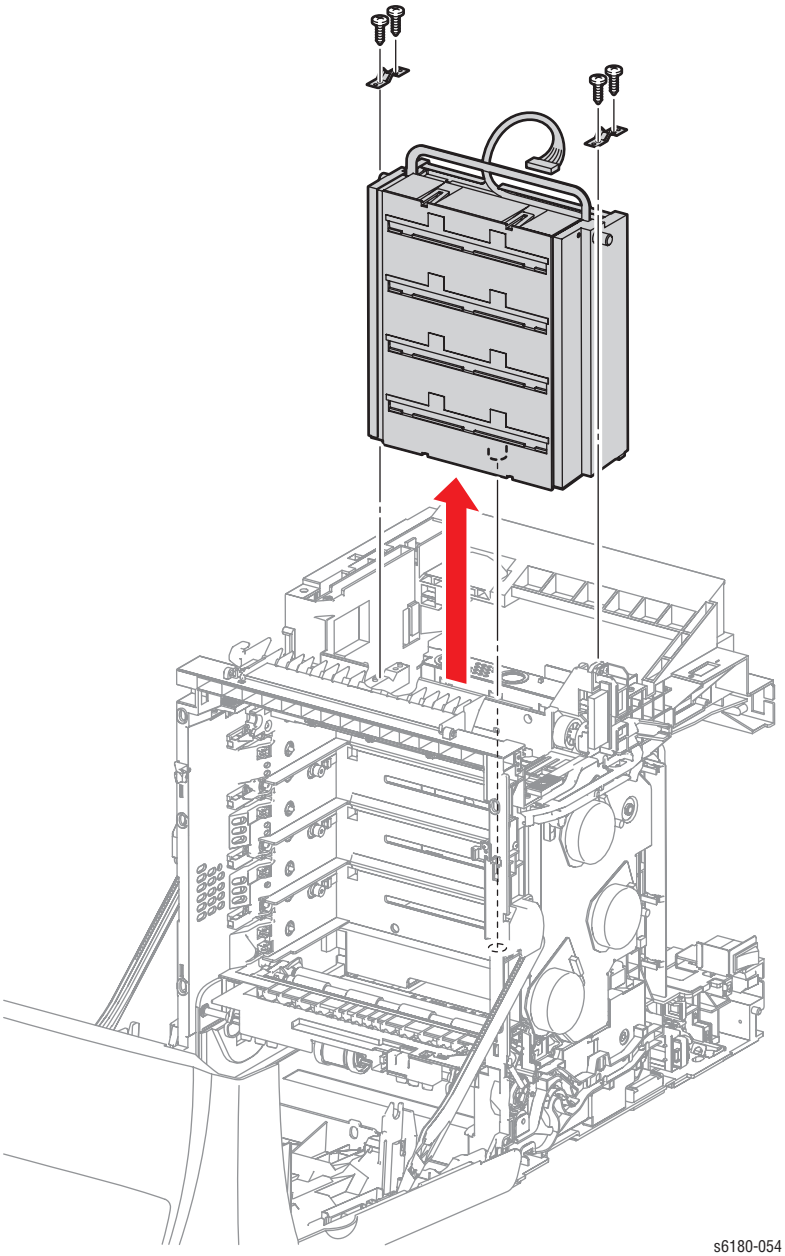
Xerographics

Laser Unit (PL5.1.2)

1. Remove the Rear Cover (page 8-11).
2. Remove the Right Side Cover (page 8-12).
3. Remove the Left Side Cover (page 8-13).
4. Remove the Top Cover (page 8-14).
5. Remove the Main Fan (page 8-84).
6. Remove the LVPS (page 8-81).
7. Remove the Controller Shield (page 8-92).
8. Disconnect the Laser Unit connector P/J12 on top of the MCU Board (PL9.1.20).
9. Remove the Ferrite Core (PL5.1.22) from the Laser Unit wiring harness and pull the connector through the hole of the MCU Board Shield (PL9.1.11).

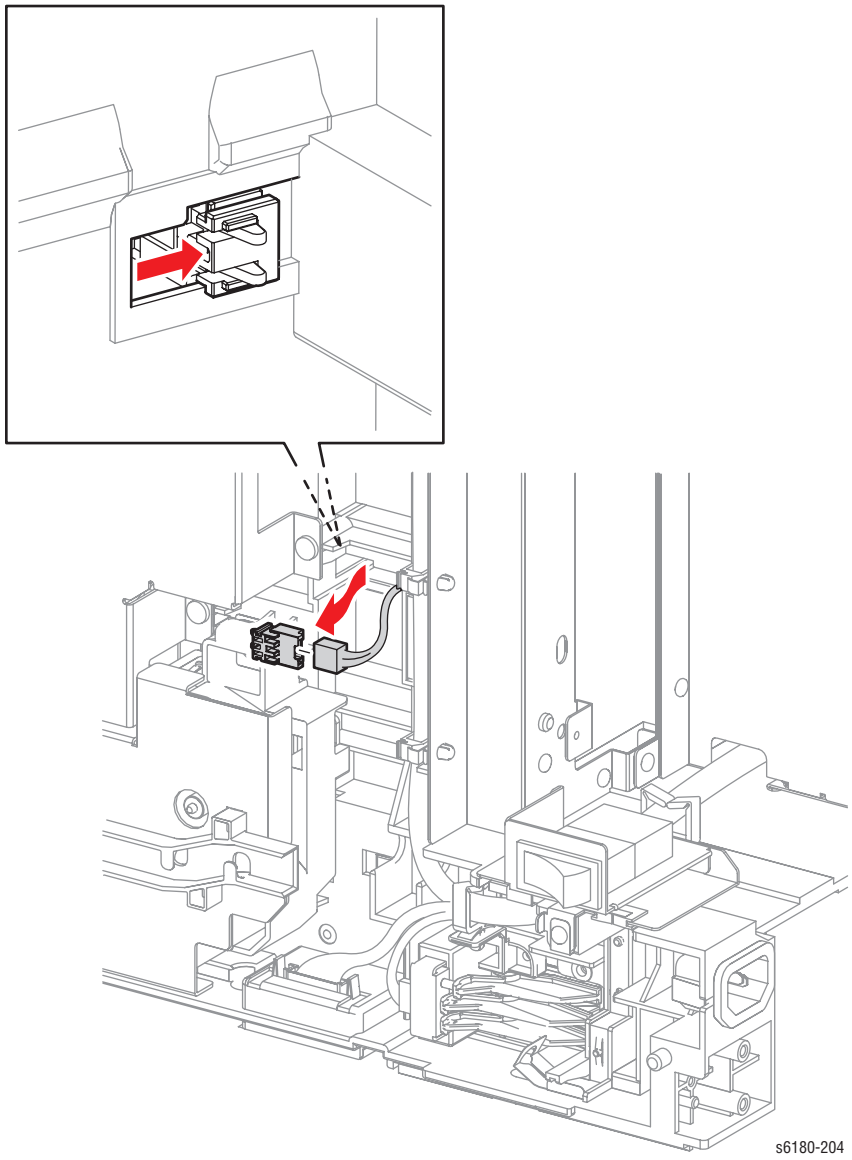


10. Remove 4 screws (10 mm) securing the Laser Unit Springs (PL5.1.1) on the left and right sides.
11. Remove the Laser Unit Springs.
12. Slowly lift up the Laser Unit and remove it from the printer.



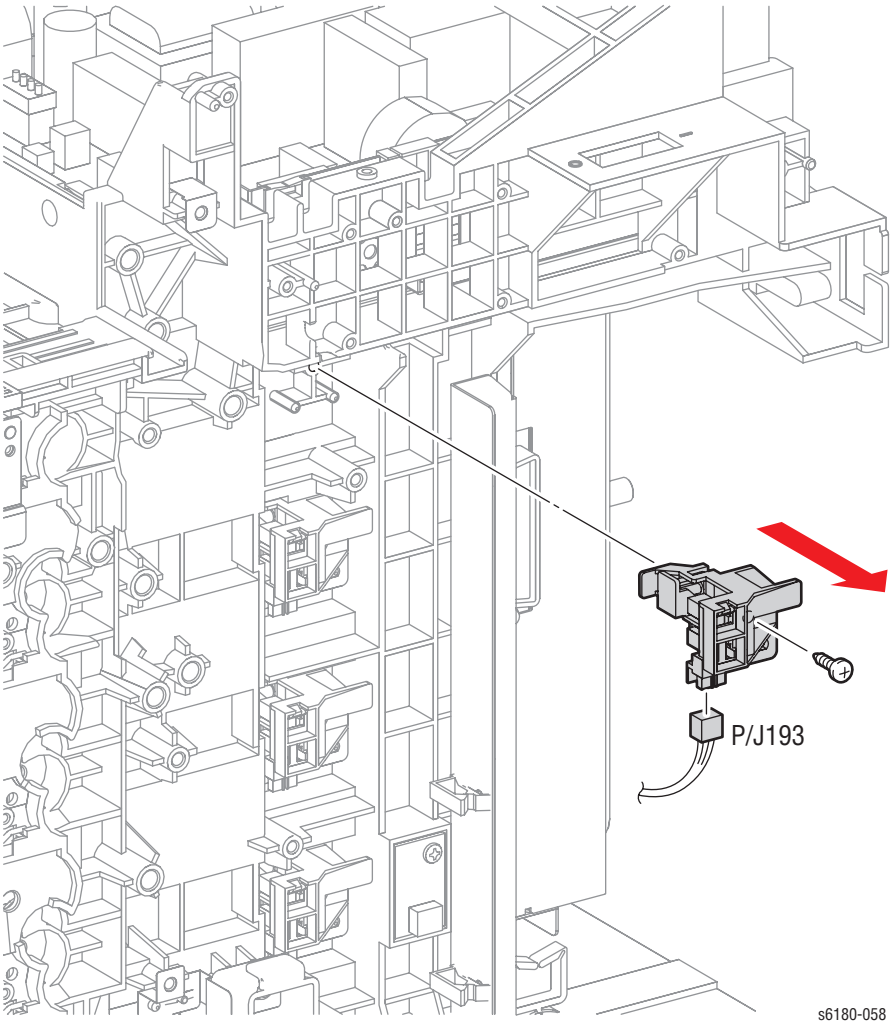
CRUM Connector (PL5.1.3)

1. Remove the Rear Cover (page 8-11).
2. Remove the Right Side Cover (page 8-12).
3. Remove the Print Cartridge Sensor Assembly (page 8-53, page 8-54).
4. Shift the CRUM Connector to the right.
5. Disconnect and remove the CRUM Connector.



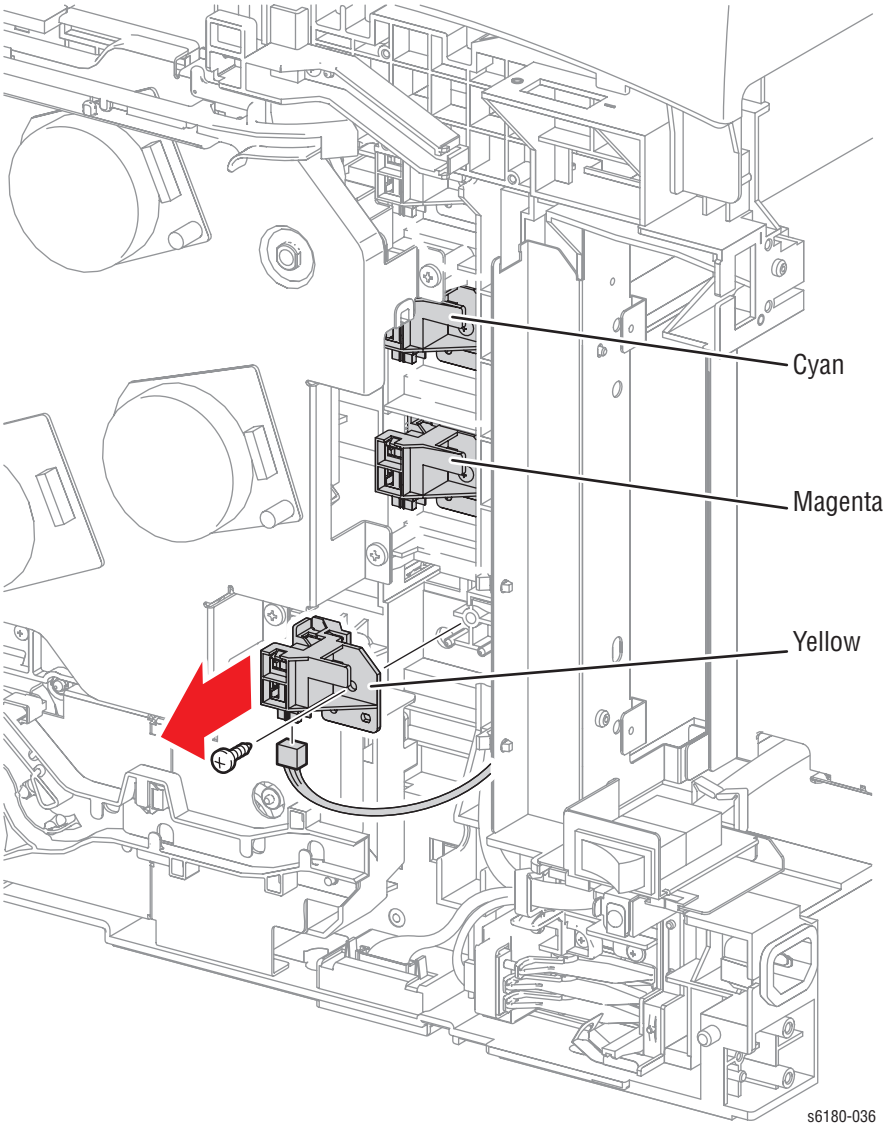
Print Cartridge Sensor Assembly (Black) (PL5.1.4)

1. Remove the Rear Cover (page 8-11).
2. Remove the Right Side Cover (page 8-12).
3. Remove the Main Drive (page 8-73).
4. Remove the 1 screw (10 mm) securing the Black Print Cartridge Sensor Assembly.
5. Remove the Black Print Cartridge Sensor Assembly.
6. Disconnect the Black Print Cartridge Sensor Assembly connector P/J193.



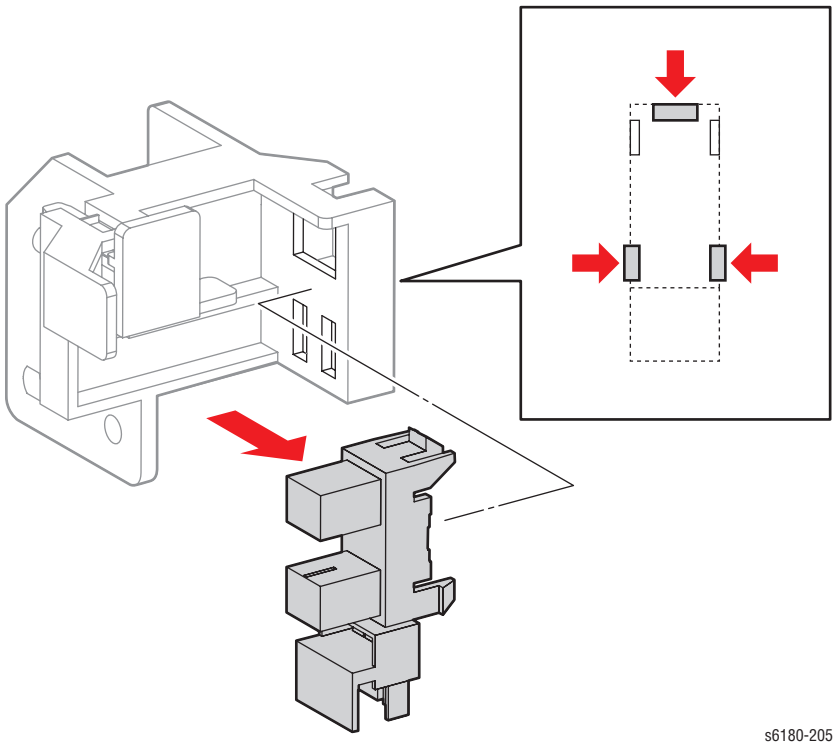
Print Cartridge Sensor Assembly (Cyan/Magenta/Yellow) (PL5.1.4)

1. Remove the Rear Cover (page 8-11).
2. Remove the Right Side Cover (page 8-12).
3. Remove the 1 screw (10 mm) securing the Print Cartridge Sensor Assembly to the printer.
4. Remove the Print Cartridge Sensor Assembly.
5. Disconnect the Print Cartridge Sensor Assembly connector.



Print Cartridge Sensor (PL5.1.8)

1. Remove the Rear Cover (page 8-11).
2. Remove the Right Side Cover (page 8-12).
3. Remove the Print Cartridge Sensor Assembly (page 8-53, page 8-54).
4. Release the 3 hooks securing the Print Cartridge Sensor to the CRU Sensor Bracket while pressing on the Developer Actuator Sensor (PL5.1.5).
5. Remove the Print Cartridge Sensor.



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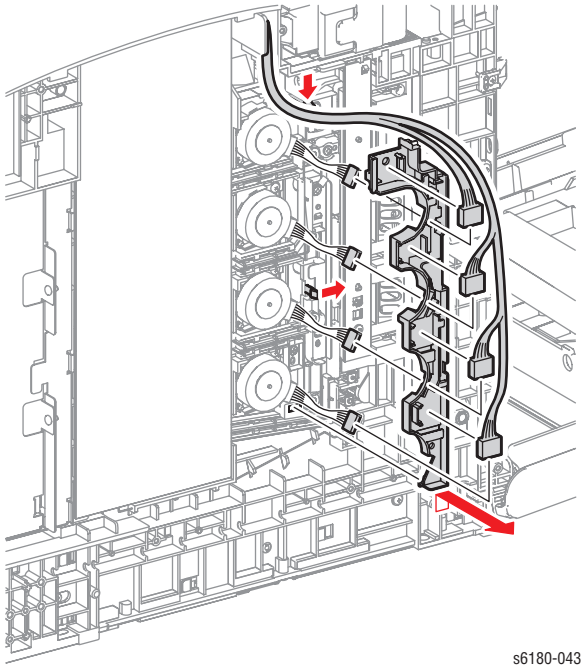
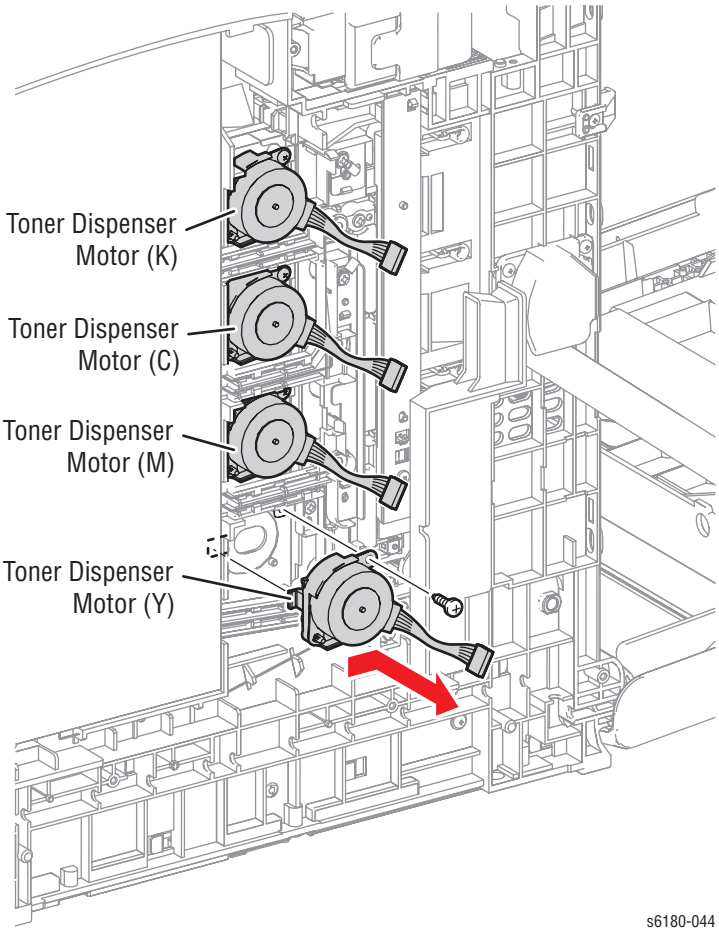
Dispenser (C/M/Y/K) (PL5.1.12)

1. Remove the Rear Cover (page 8-11).
2. Remove the Left Side Cover (page 8-13).
3. Disconnect the 4 Dispenser Motor wiring harnesses.
4. Release the 2 hooks securing the Motor Harness Duct to the printer.
5. Slightly shift the Harness Motor Duct upward and release the convex sections of the Harness Motor Duct from the printer. Place the 4 connectors through the hole of the Harness Motor Duct.



s6180-043

6. Remove 1 screw (10 mm) securing the Dispenser Motor.
7. Slightly shift the Dispenser Motor toward the front, release the convex sections, and remove the Motor.



Replacement Note

Ensure to align the convex sections of the Dispenser Motor with the holes on the printer and shift the Motor toward the rear.

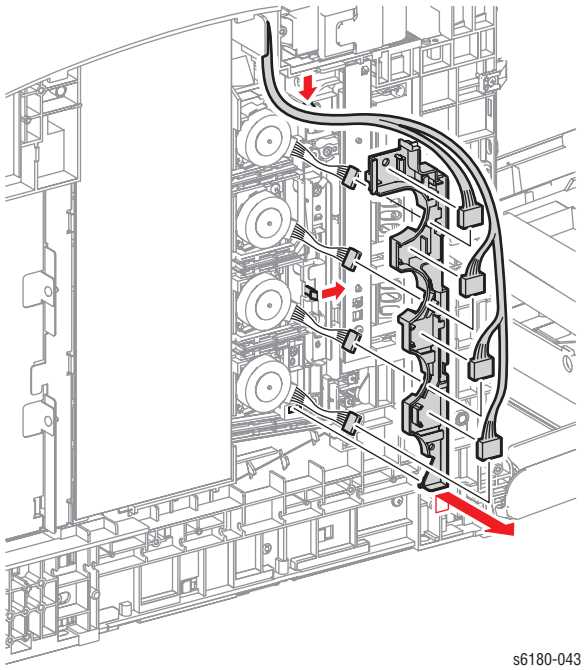
BIAS (PL5.1.13)

1. Remove the Rear Cover (page 8-11).
2. Remove the Right Side Cover (page 8-12).
3. Remove the Left Side Cover (page 8-13).
4. Remove the Top Cover (page 8-14).
5. Remove the LED (page 8-60).

Note

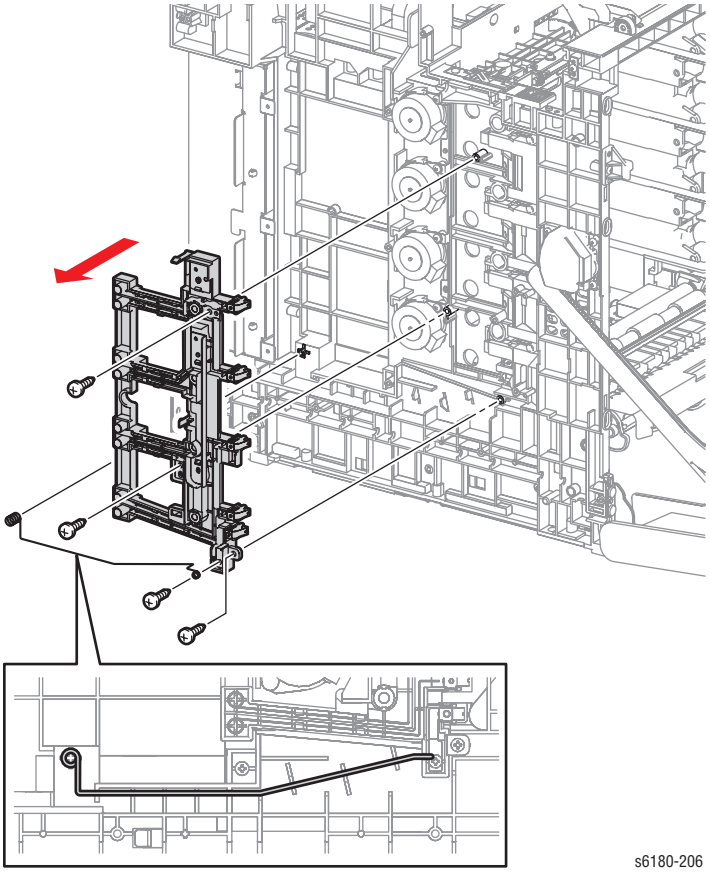
It is not necessary to disconnect the connector on the MCU Board for the following step.

6. Remove the HVPS (page 8-61).
7. Disconnect the Dispenser Motor connectors and release the wiring harnesses from the Harness Motor Duct.
8. Release the 2 hooks securing the Harness Motor Duct.
9. Slightly shift the Harness Motor Duct upward to release the convex section from the printer. Place the connectors through the hole of the Harness Motor Duct and remove the Harness Motor Duct.



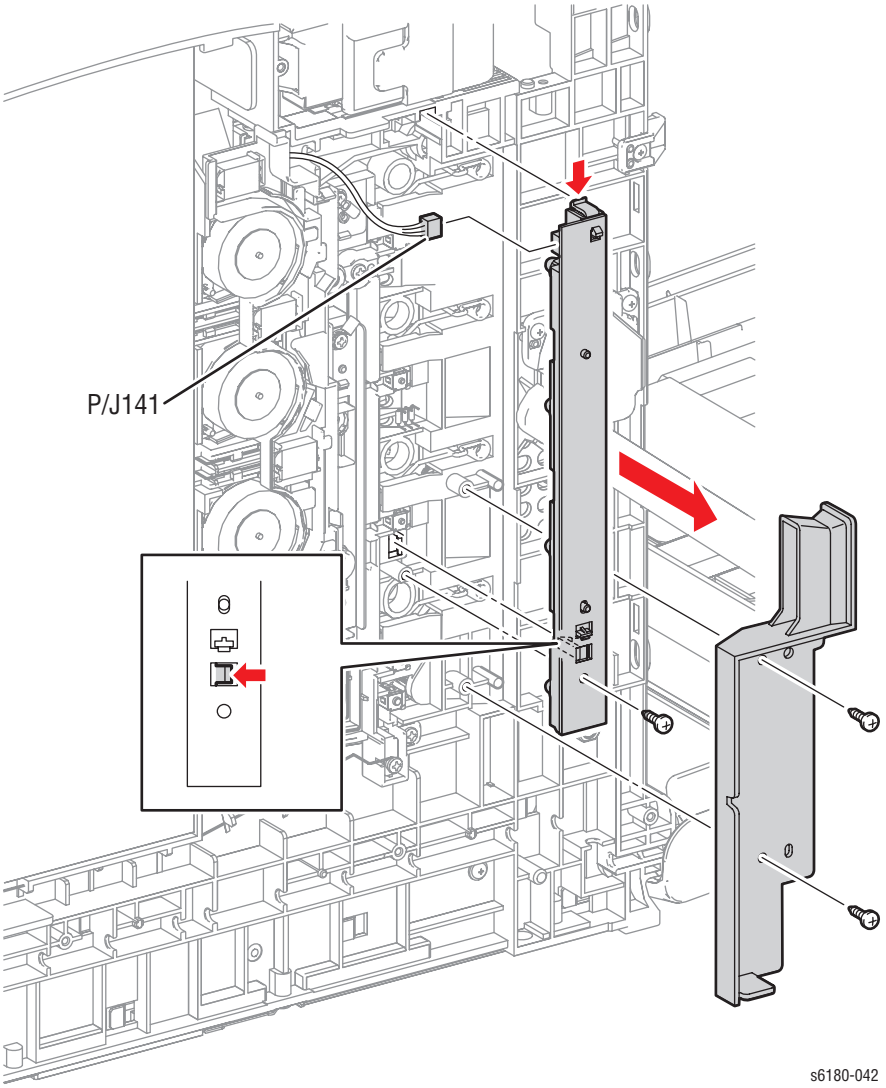
s6180-043

10. Remove 1 screw (10 mm) securing the ESA Roll Spring (PL5.1.14).
11. Remove the ESA Roll Spring.
12. Remove 3 screws (10 mm) securing the Bias.
13. Remove the Bias.



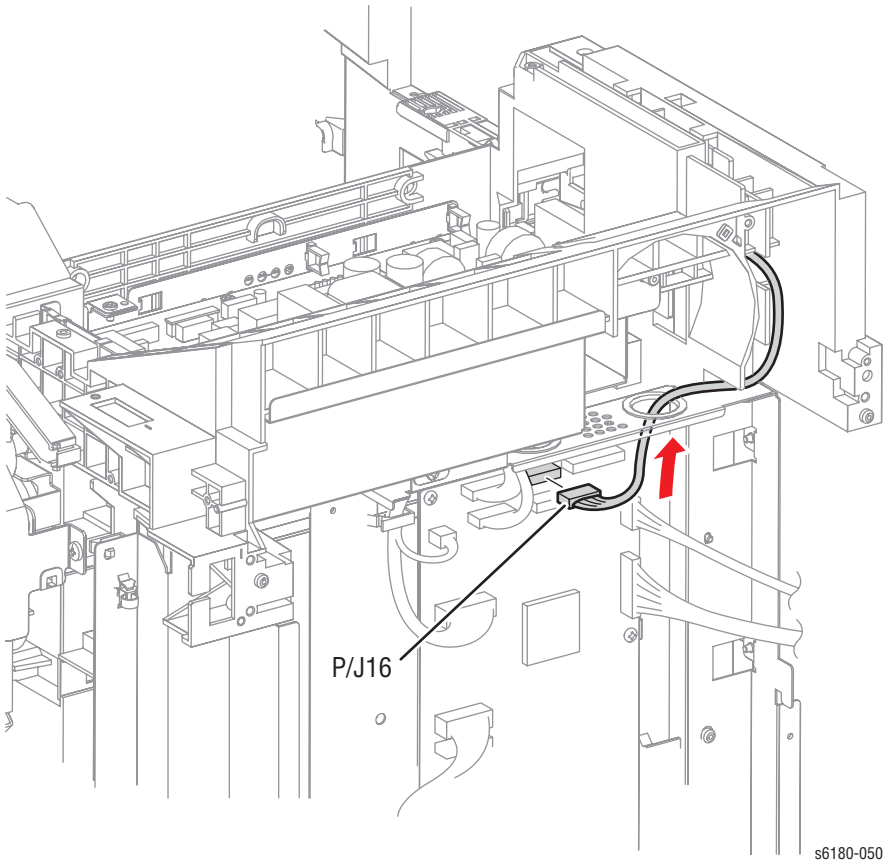
LED (PL5.1.15)

1. Remove the Rear Cover (page 8-11).
2. Remove the Left Side Cover (page 8-13).
3. Remove 2 screws (8 mm) securing the Left Side Duct (PL7.1.23) and remove the Left Side Duct.
4. Remove 1 screw (10 mm) securing the LED.
5. Release the 2 hooks securing the LED and remove the LED.
6. Disconnect the LED connector P/J141.

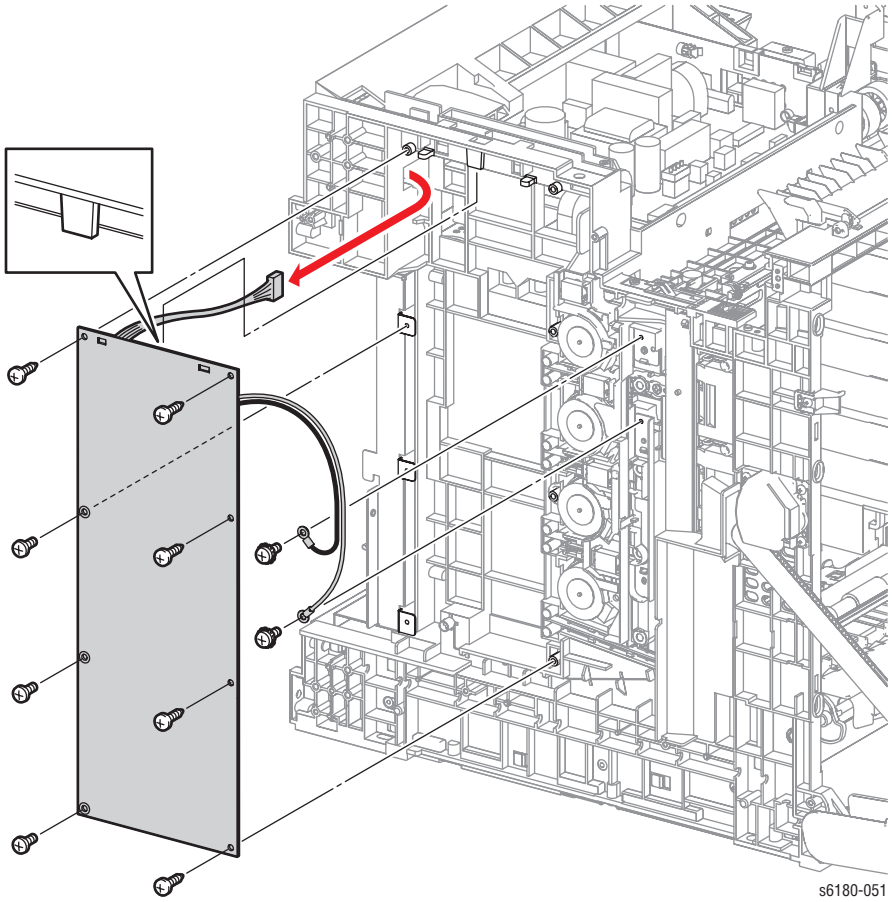


HVPS (PL5.1.17)

1. Remove the Rear Cover (page 8-11).
2. Remove the Right Side Cover (page 8-12).
3. Remove Left Side Cover (page 8-13).
4. Remove the Top Cover (page 8-14).
5. Remove the Main Fan (page 8-84).
6. Remove the Controller Shield (page 8-92).
7. Disconnect the HVPS connector P/J16 on the MCU Board (PL9.1.20). Slide the connector through the hole of the MCU Board Shield (PL9.1.11).



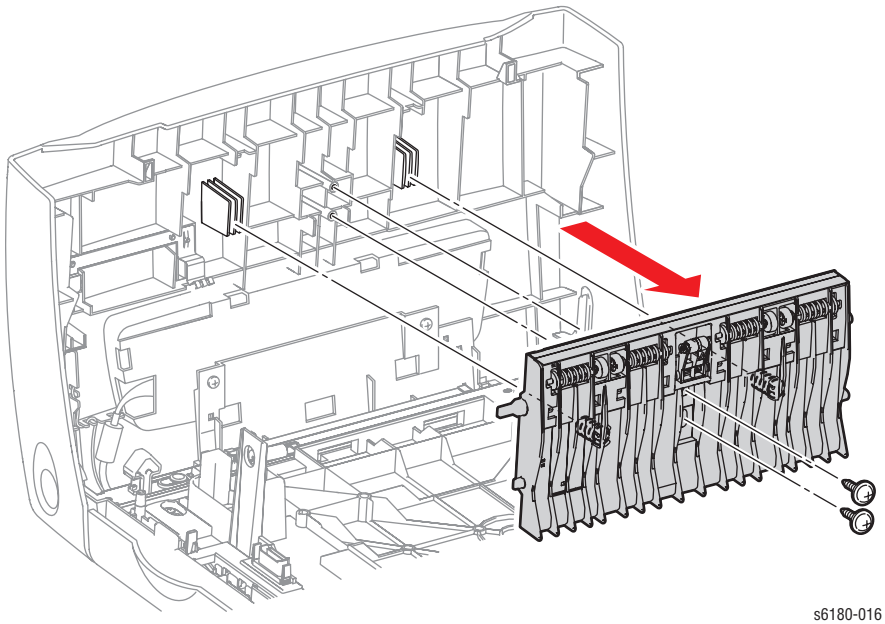
8. Remove 2 screws (6 mm, with washer) securing the wiring harnesses coming out of the HVPS.
9. Remove 5 screws (10 mm) securing the HVPS to the printer.
10. Remove 3 screws (6 mm) securing the HVPS to the printer.
11. Shift the upper part of the HVPS from the printer, pull out the connector through the hole of the printer, and remove the HVPS.



Exit Chute

Exit Out Chute (PL6.1.1)

1. Remove 2 screws (black,10 mm, flanged) securing the Exit Out Chute to the Front Cover.
2. Remove the Exit Out Chute.



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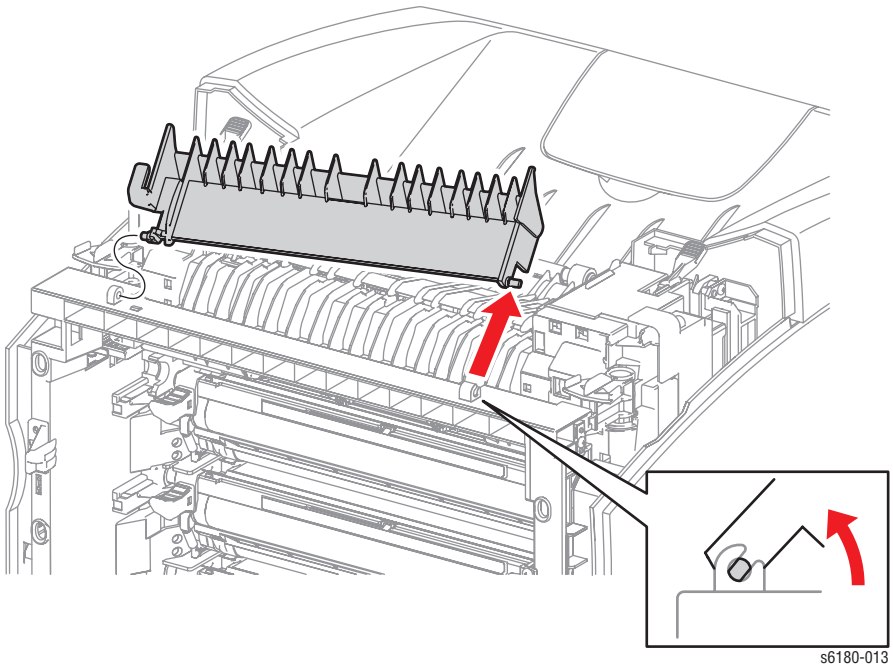
Duplex Gate Chute (PL6.1.13)

1. Open the Duplex Gate Chute approximately 45° and align the cut surface of the axis on the right side of the Duplex Gate Chute with the notch on the printer.
2. Detach the axis on the left side of the Duplex Gate Chute from the hole of the printer and remove the Chute.



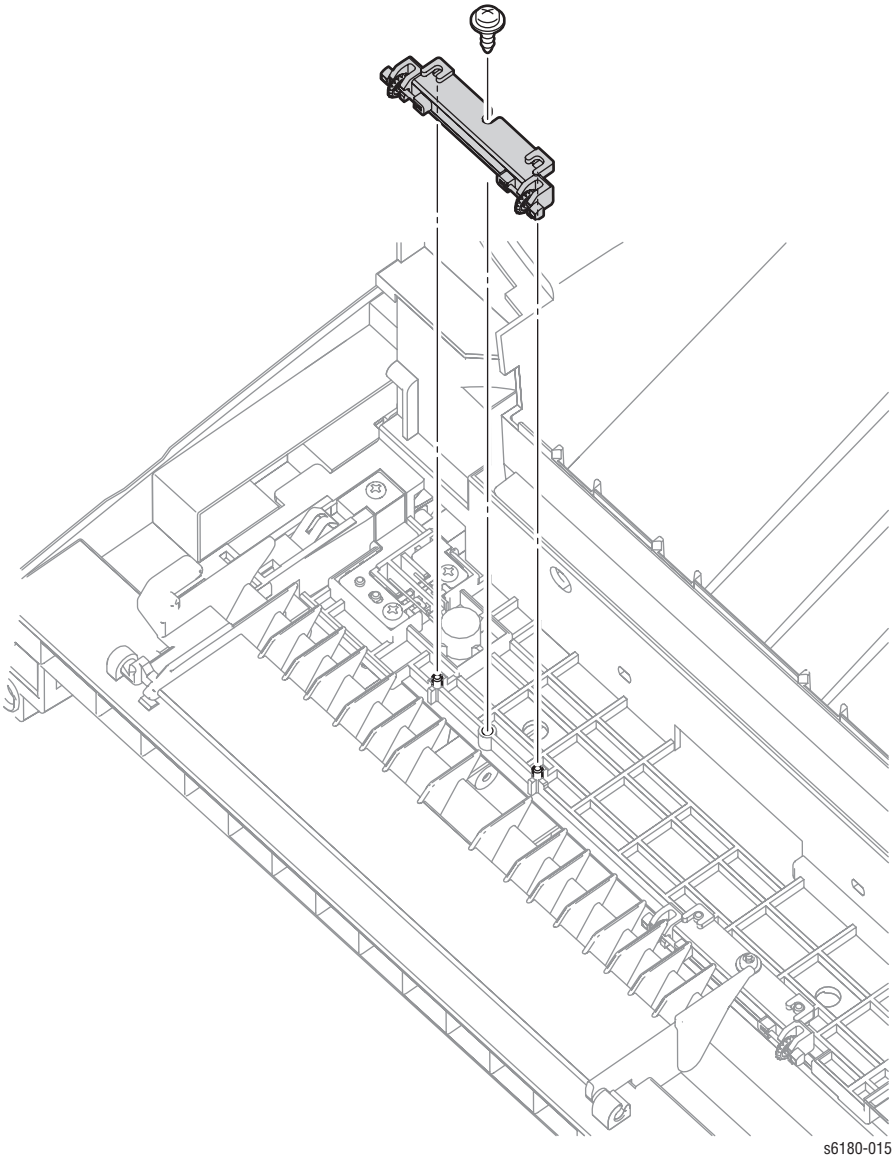
Replacement Note

Ensure to open the Duplex Gate Chute at approximately 45° angle and align the cut surface of the shaft on the right side of the Chute with the notch on the printer.

Frame

Star Wheel (PL7.1.1)

1. Remove 1 screw (8 mm, flanged) securing the Star Wheel to the printer.
2. Remove the Star Wheel.



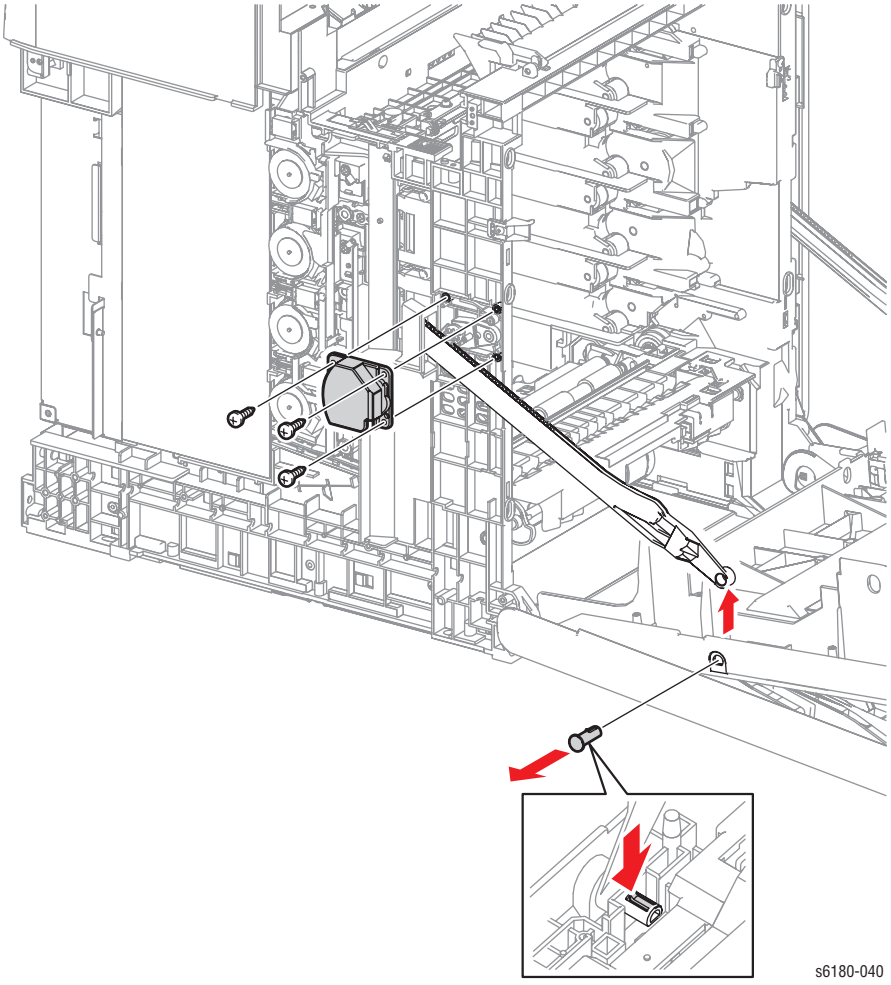
Left Link (PL7.1.3)

1. Remove the Rear Cover (page 8-11).
2. Remove the Left Side Cover (page 8-13).
3. Release the hook of the Shaft Pivot (PL1.2.8) securing the Left Link and remove the Shaft Pivot.
4. Remove the Left Link from the Front Cover.
5. Remove 3 screws (8 mm) securing the Left Support Link (PL7.1.2) to the printer.

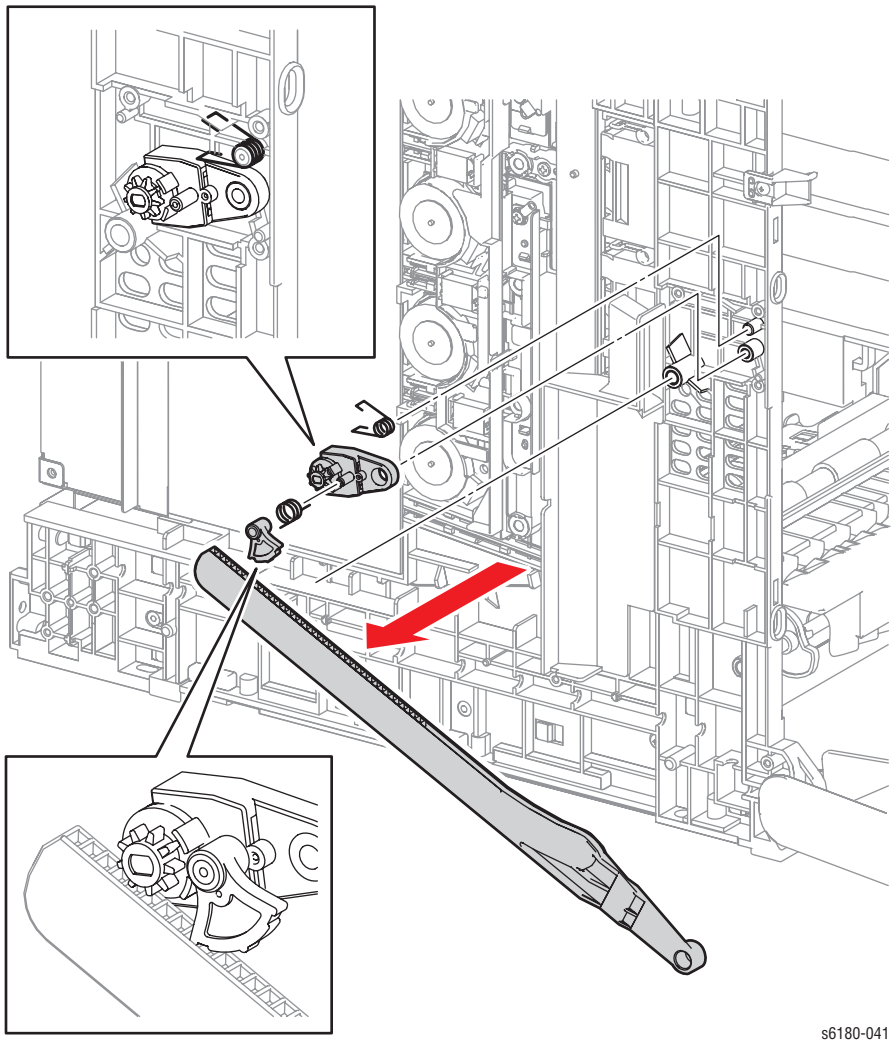
Caution

The Support Spring may come loose when removing the Left Support Link. Cover the area with your hand to prevent the Support Spring from coming loose.

6. Remove the Left Support Link.



7. Remove the Release Lever (PL7.1.4).
8. Remove the Left Link from the printer.
9. Remove the Support Spring (PL7.1.8).
10. Remove the Damper Holder (PL7.1.6) together with the Oil Damper (PL7.1.7).



Replacement Note

Ensure the orientation of the Damper Holder is correct. Push the cylinder of the Release Lever toward the Damper Holder side.

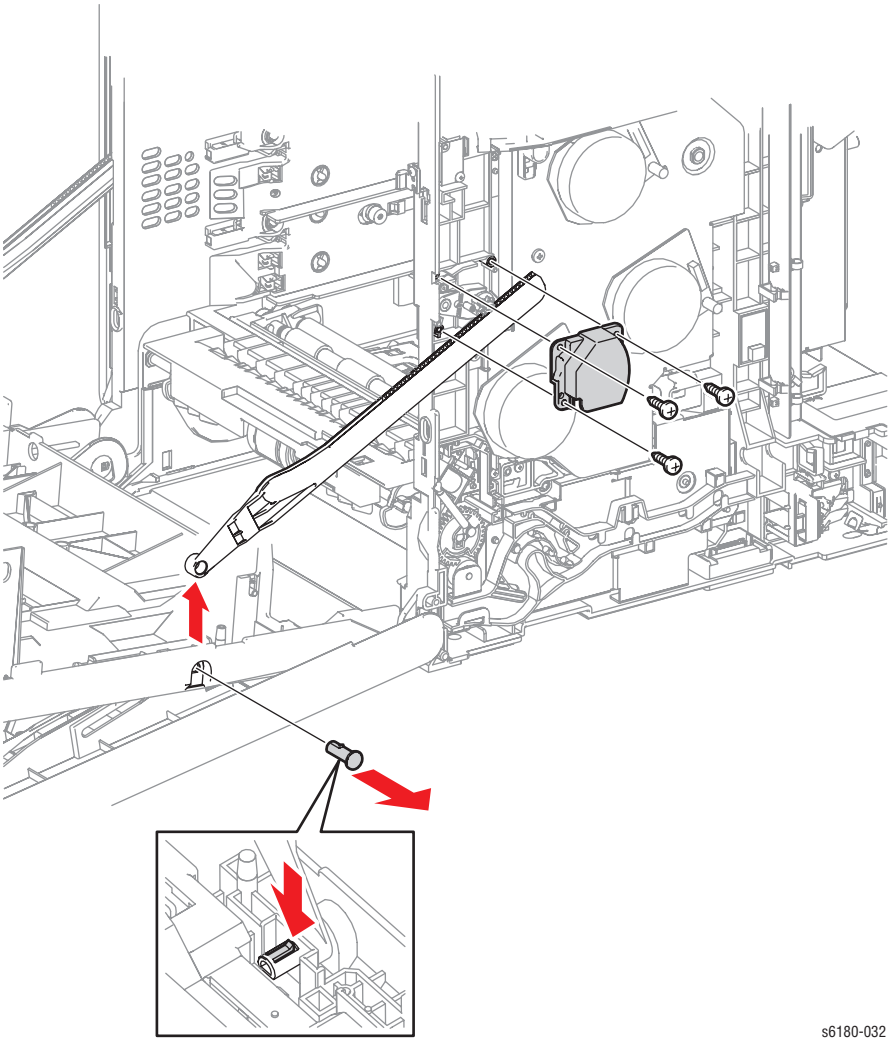
Right Link (PL7.1.13)

1. Remove the Rear Cover (page 8-11).
2. Remove the Right Side Cover (page 8-12).
3. Release the hook of the Shaft Pivot (PL1.2.8) securing the Right Link. Pull out the Shaft Pivot.
4. Remove the Right Link from the Front Cover.
5. Remove 3 screws (8 mm) securing the Right Support Link (PL7.1.12) to the printer.

Caution

The Support Spring may come loose when removing the Right Support Link. Cover the area with your hand in case the Support Spring comes loose.

6. Remove the Right Support Link.



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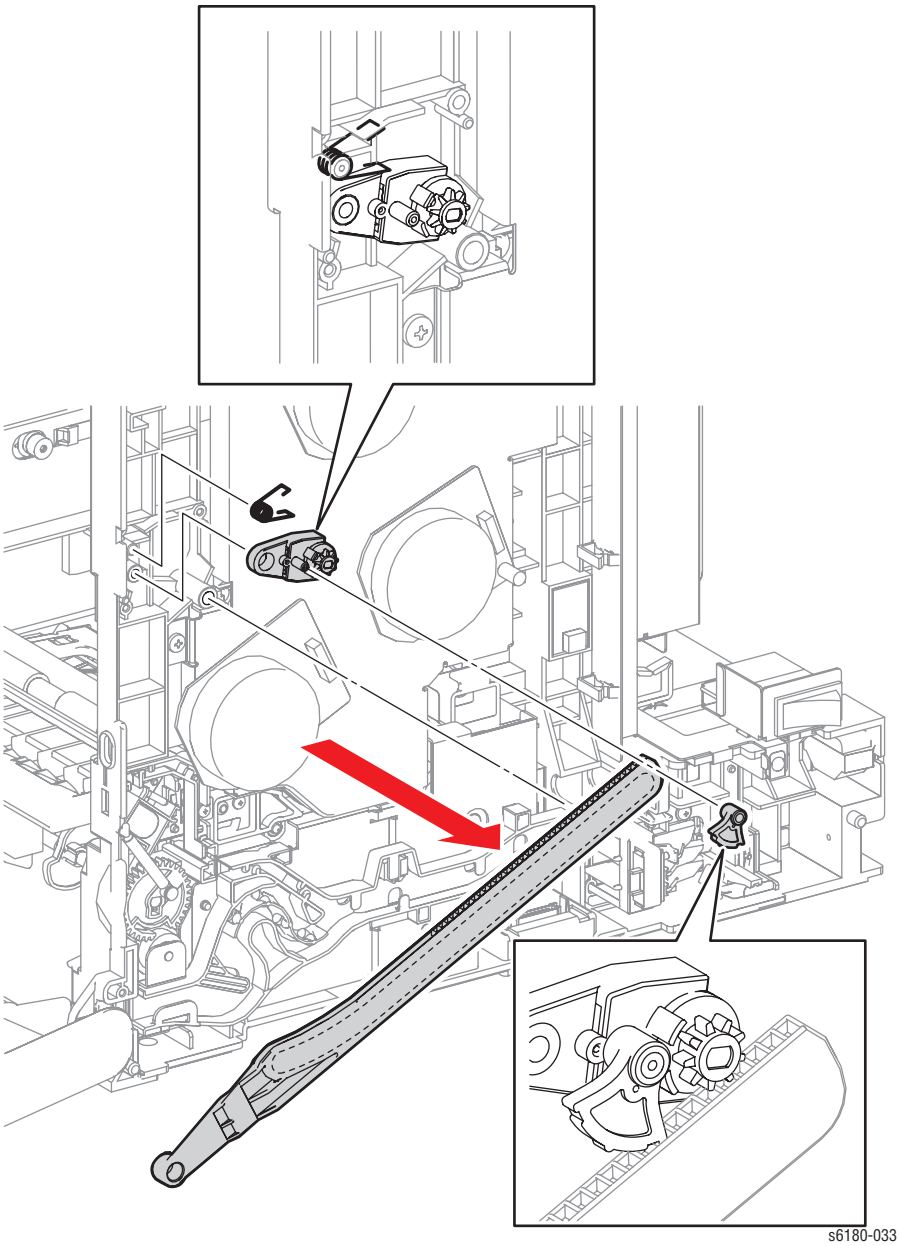
7. Remove the Release Lever (PL7.1.4).
8. Remove the Right Link from the printer.
9. Remove the Support Spring (PL7.1.8).
10. Remove the Damper Holder (PL7.1.6) together with the Oil Damper (PL7.1.7).

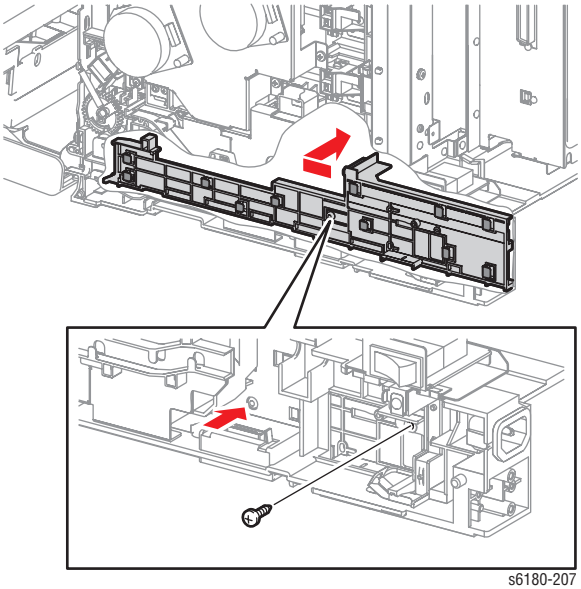


Replacement Note

Ensure the orientation of the Damper Holder is correct. Push the cylinder of the Release Lever toward the Damper Holder side.

Right Tray Guide (PL7.1.17)

1. Remove Tray 2.
2. Remove the Rear Cover (page 8-11).
3. Remove the Right Side Cover (page 8-12).
4. Remove the Tray 2 Cover (page 8-17).
5. Remove the Size Switch (page 8-72).
6. Remove 1 screw (8 mm, flanged) securing the Right Tray Guide to the printer.
7. Shift the Right Tray Guide toward the front while pushing the notch of the Tray Guide and release 11 hooks from the printer.



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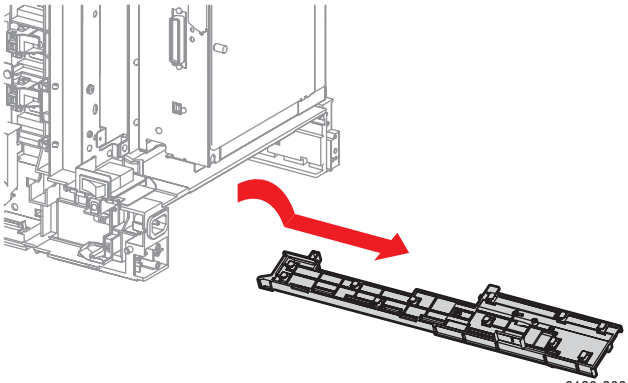
8. Push the Right Tray Guide down toward the inside and remove it from the printer.



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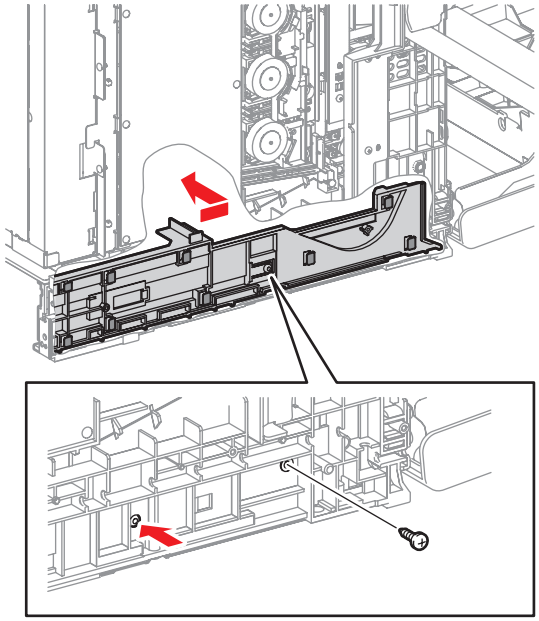
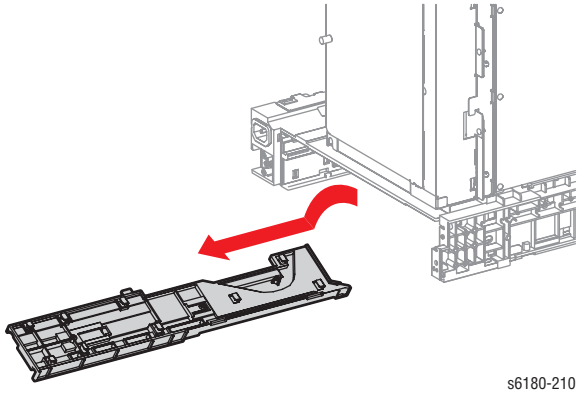
Left Tray Guide (PL7.1.19)

1. Remove Tray 2.
2. Remove the Rear Cover (page 8-11).
3. Remove the Left Side Cover (page 8-13).
4. Remove the Tray 2 Cover (page 8-17).
5. Remove 1 screw (8 mm, flanged) securing the Left Tray Guide (PL7.1.19) to the printer.
6. Shift the Left Tray Guide toward the front side while pushing the notch of the Left Tray Guide and release 9 hooks from the printer.



s6180-209

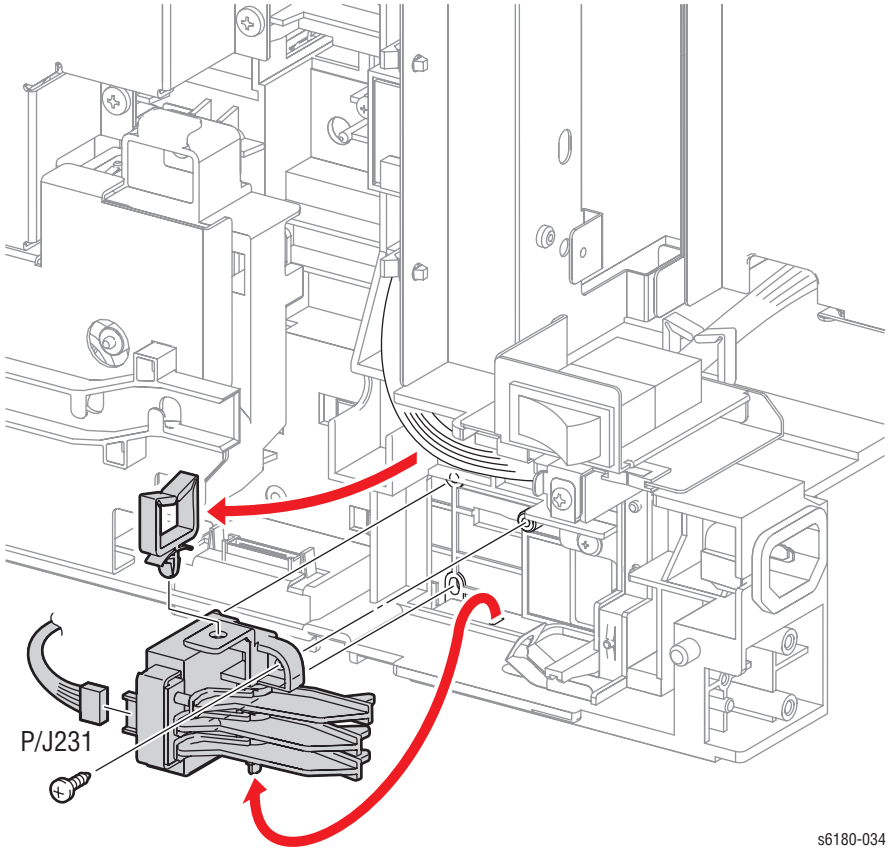
7. Push the Left Tray Guide down toward the inside and remove it from the printer.



s6180-210

Tray 2 Size Switch (PL7.1.18)

1. Remove the Rear Cover (page 8-11).
2. Remove the Right Side Cover (page 8-12).
3. Release the Clamp (PL7.1.15) securing the Size Switch and remove the wiring harness.
4. Disconnect the Size Switch connector P/J231.
5. Remove 1 screw (10 mm) securing the Size Switch.
6. Release the 2 notches of the Size Switch and the notch located on the bottom from the holes of the printer and remove the Size Switch.
7. Remove the Clamp from the Size Switch.



Drive

Main Drive (PL8.1.2)

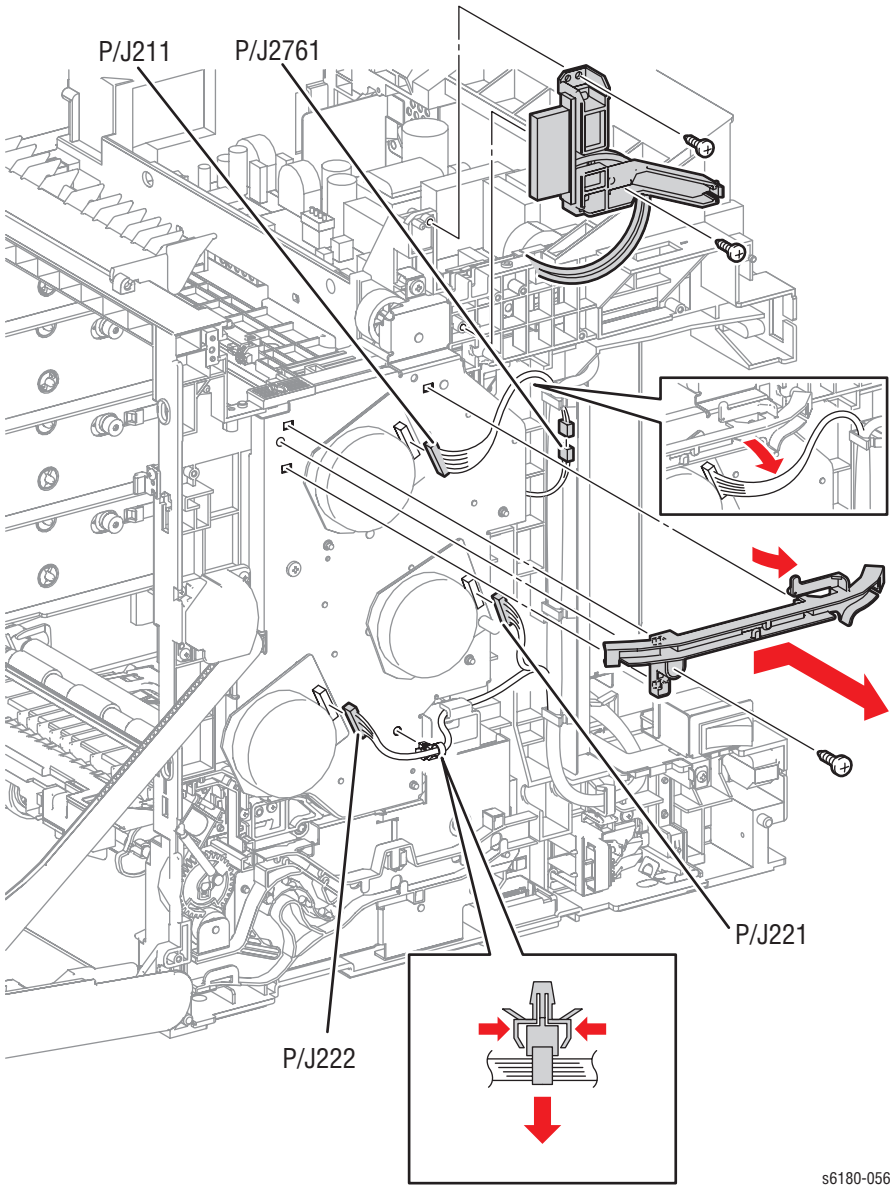
1. Remove the Rear Cover (page 8-11).
2. Remove the Right Side Cover (page 8-12).
3. Remove the Left Side Cover (page 8-13).
4. Remove the Top Cover (page 8-14).
5. Remove the Interlock Harness (page 8-80).
6. Remove 2 screws (10 mm) securing the Fuser Bracket (PL6.1.12) to the printer.

Caution

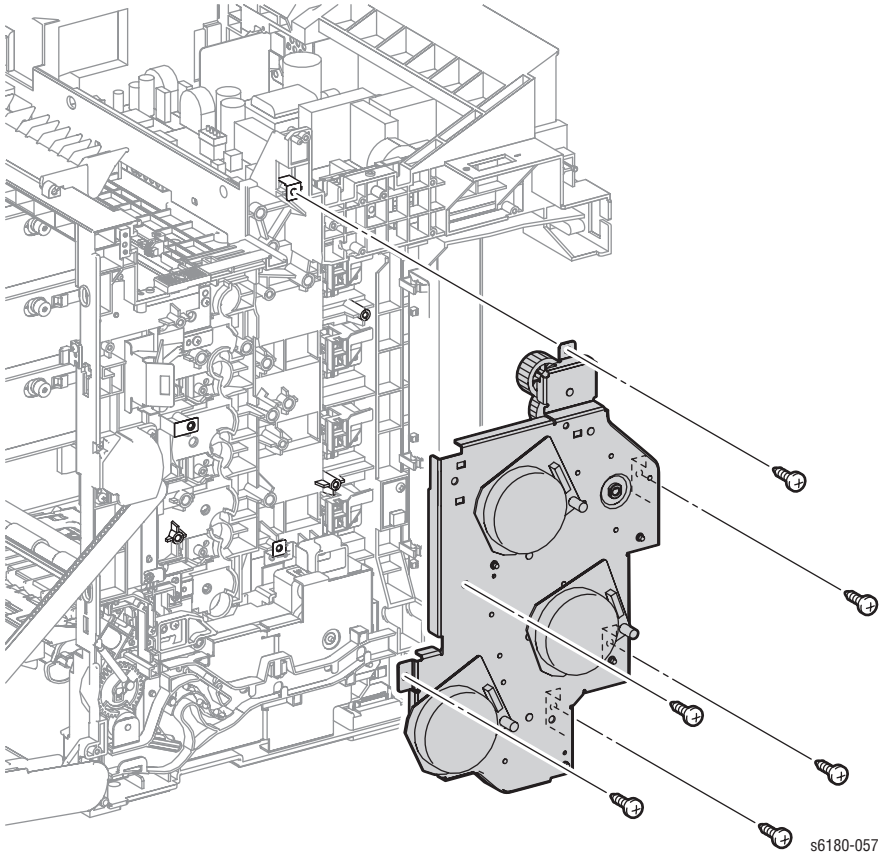
DO NOT separate the Fuser Bracket and the printer too far apart, because they are connected by a wiring harness.

7. Remove the Fuser Bracket.
8. Release the Main Drive wiring harness from the Main Drive Duct (PL8.1.9).
9. Remove 1 screw (10 mm) securing the Main Drive Duct to the printer.
10. Release the notch of the Main Drive Duct and push the Main Drive Duct toward the back. Remove the Main Drive Duct.
11. Disconnect the following 4 connectors:
    - Main Motor - P/J211 (Main Motor), Sub Motor - P/J221, Developer Motor - P/J222
    - Exit Clutch: P/J2761 on the Main Drive.

12. Remove the Clamp and wiring harness that are secured to the Main Drive.



13. Remove 6 screws (10 mm) securing the Main Drive to the printer.
14. Remove the Main Drive.

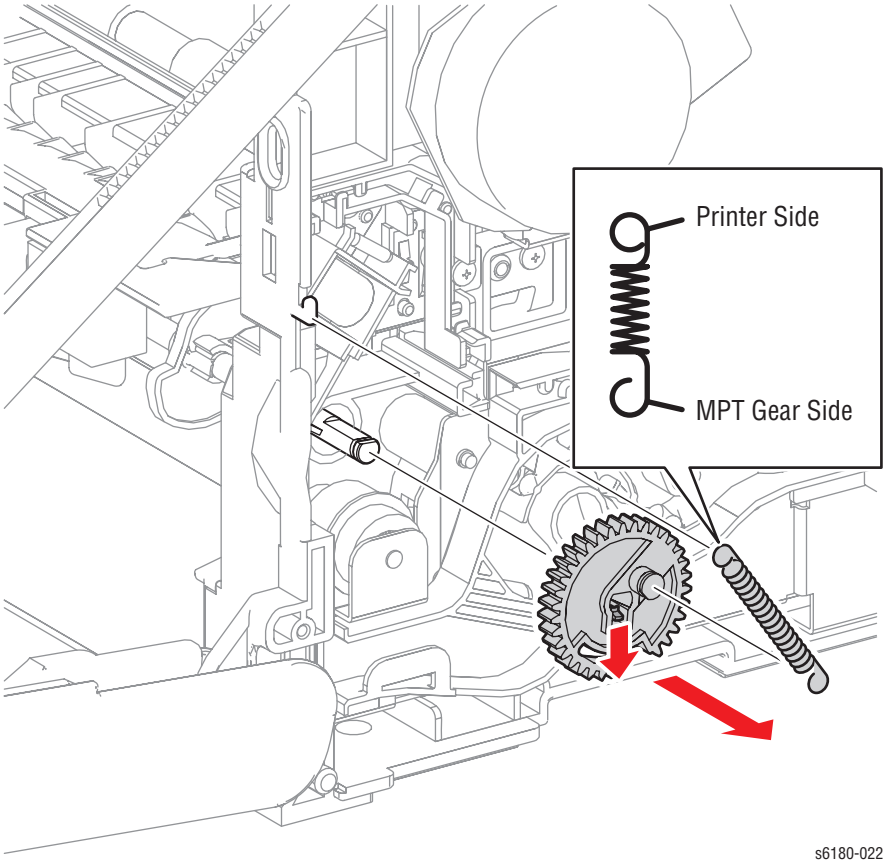


Replacement Note

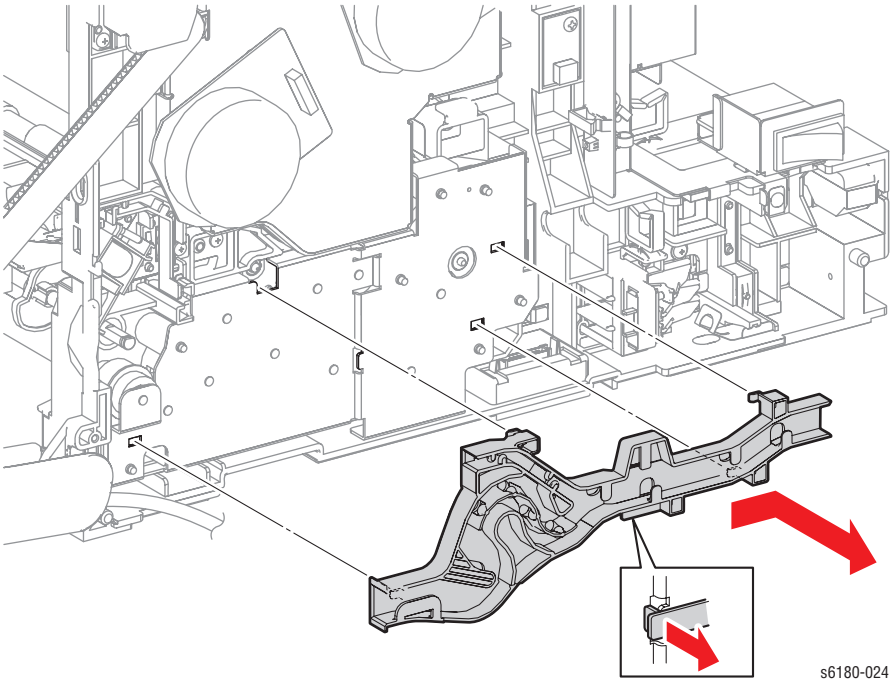
Ensure to place the wiring harness connecting the Developer Motor through the back of the hook on the Drive Assembly (PL8.1.7)

Drive Assembly (PL8.1.7)

1. Remove the Rear Cover (page 8-11).
2. Remove the Right Side Cover (page 8-12).
3. Remove the MPT Feed Spring (PL3.1.4).
4. Release the MPT Gear (PL3.1.5) and remove the Gear from the MPT Shaft (PL3.1.12).



5. Release the wiring harnesses from the Drive Duct (PL8.1.8).
6. Release the hook of the Drive Duct from the Drive Assembly. Shift the Drive Duct toward the rear side of the printer and remove it from the Drive Assembly.

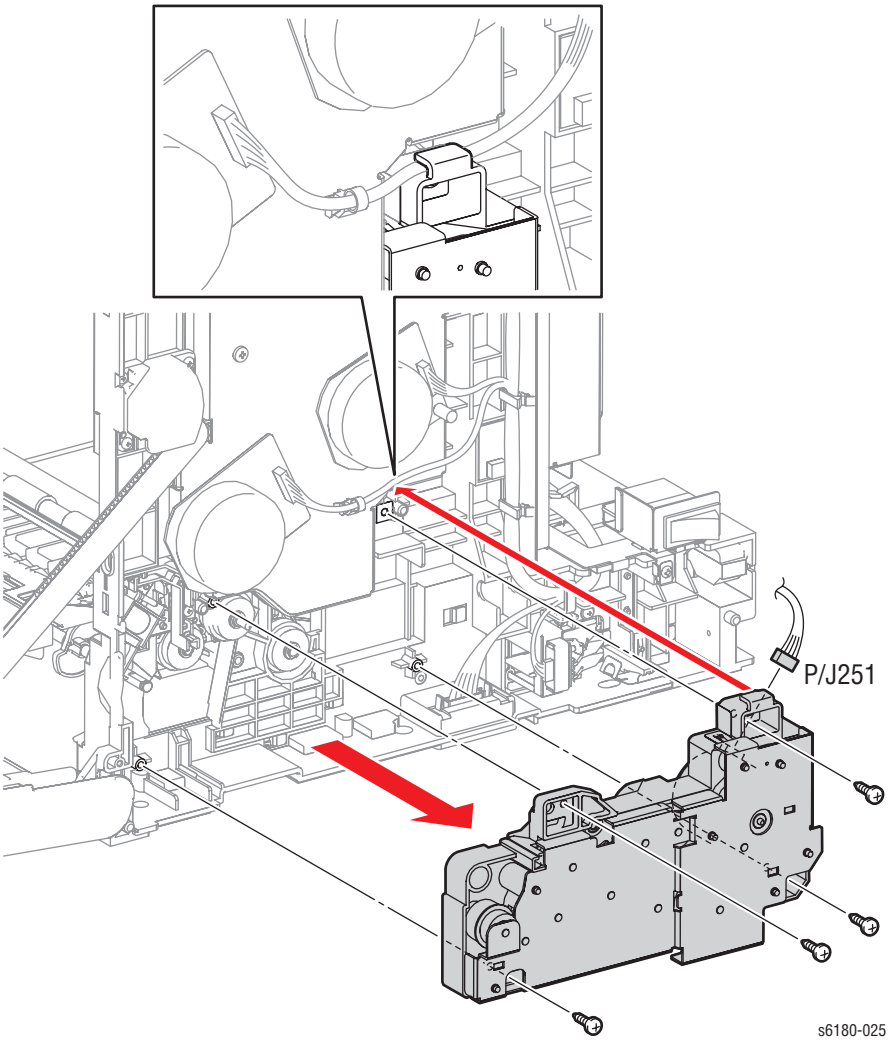


7. Remove 4 screws (10 mm) securing the Drive Assembly to the printer.

Caution

DO NOT separate the Drive Assembly from the printer, because they are connected with the wiring harness.

8. Remove the Drive Assembly.
9. Disconnect the Drive Assembly connector P/J251.



Replacement Note

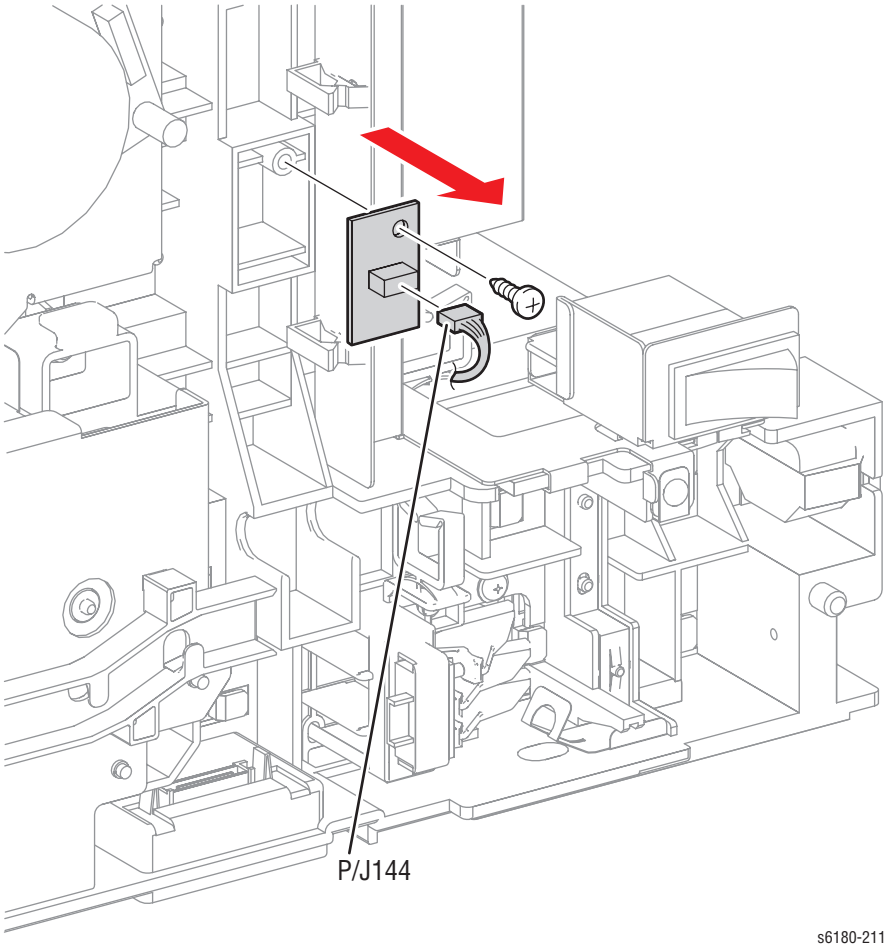
Ensure to place the wiring harness connecting the Developer Motor of the Main Drive (PL8.1.2) through the back of the hook on top of the Drive Assembly.

Pay attention to the direction of the MPT Feed Spring. Attach the hyperelliptic side of the Tray 1 (MPT) Feed Spring to the Tray 1 (MPT) Gear.

Electrical

EEPROM Board (PL9.1.1)

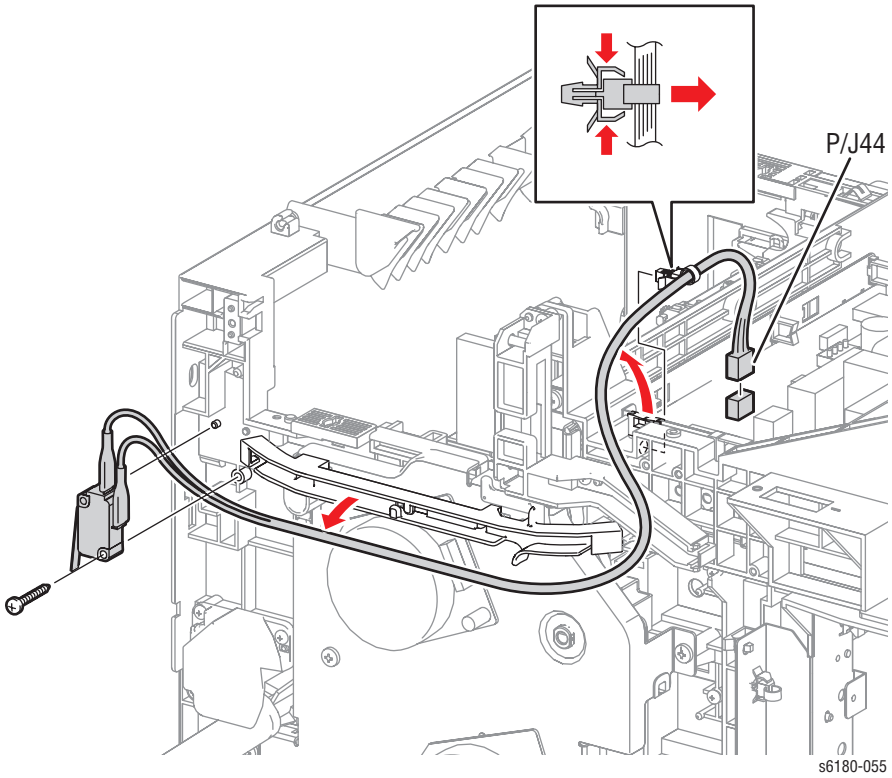
1. Remove the Rear Cover (page 8-11).
2. Remove the Right Side Cover (page 8-12).
3. Disconnect the EEPROM Board connector P/J144.
4. Remove 1 screw (10 mm) securing the EEPROM Board to the printer.
5. Remove the EEPROM Board.



s6180-211

Interlock Harness (PL9.1.3)

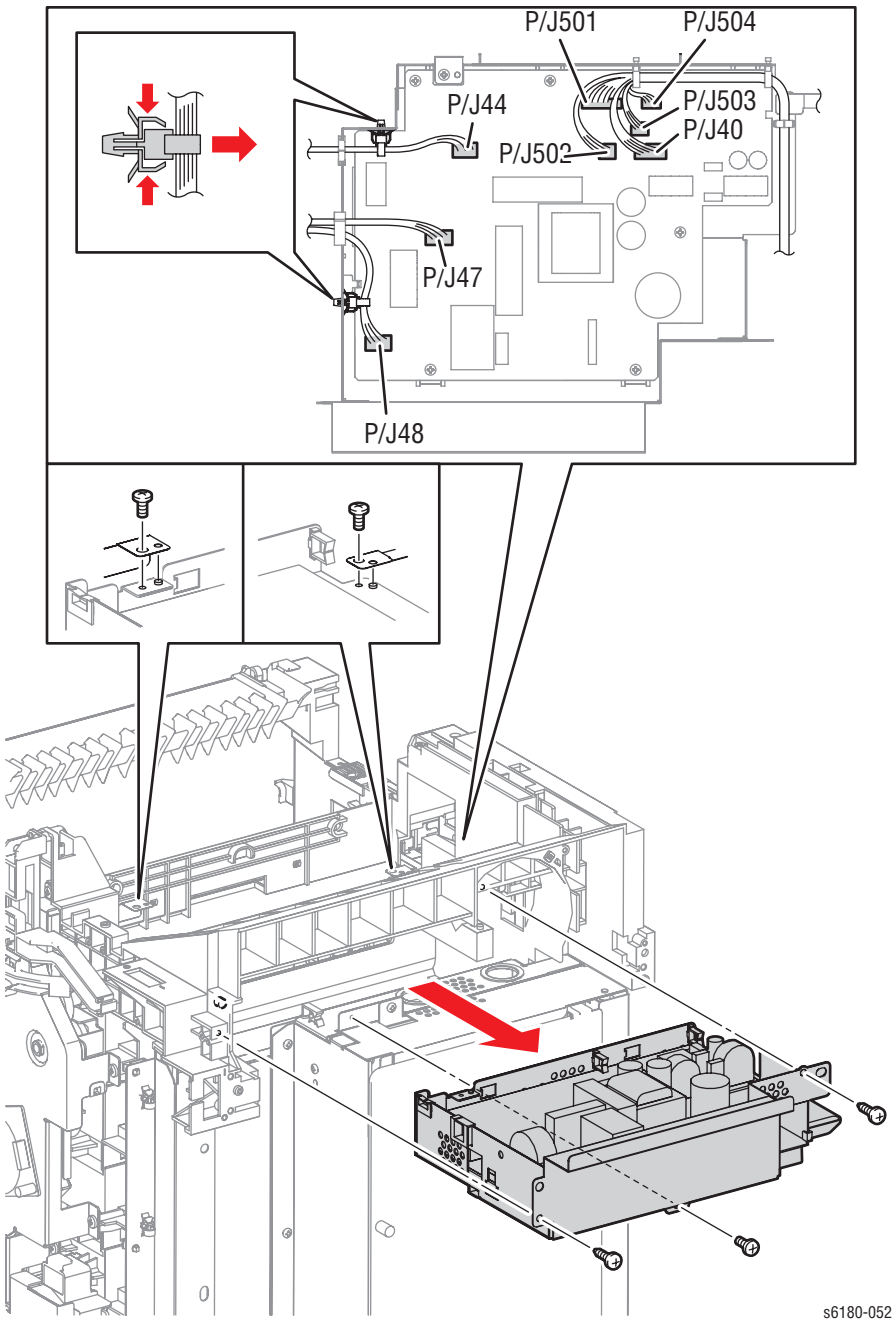
1. Remove the Rear Cover (page 8-11).
2. Remove the Right Side Cover (page 8-12).
3. Remove the Left Side Cover (page 8-13).
4. Remove the Top Cover (page 8-14).
5. Disconnect the Interlock Harness connector P/J44 on the LVPS (PL9.1.4).
6. Release the Clamp on the LVPS Shield (PL9.1.9) securing the Interlock Harness wiring harness.
7. Remove the Interlock Harness from the Main Drive Duct (PL8.1.9).
8. Remove 1 screw (16 mm) securing the Interlock Harness to the printer.
9. Remove the Interlock Harness.



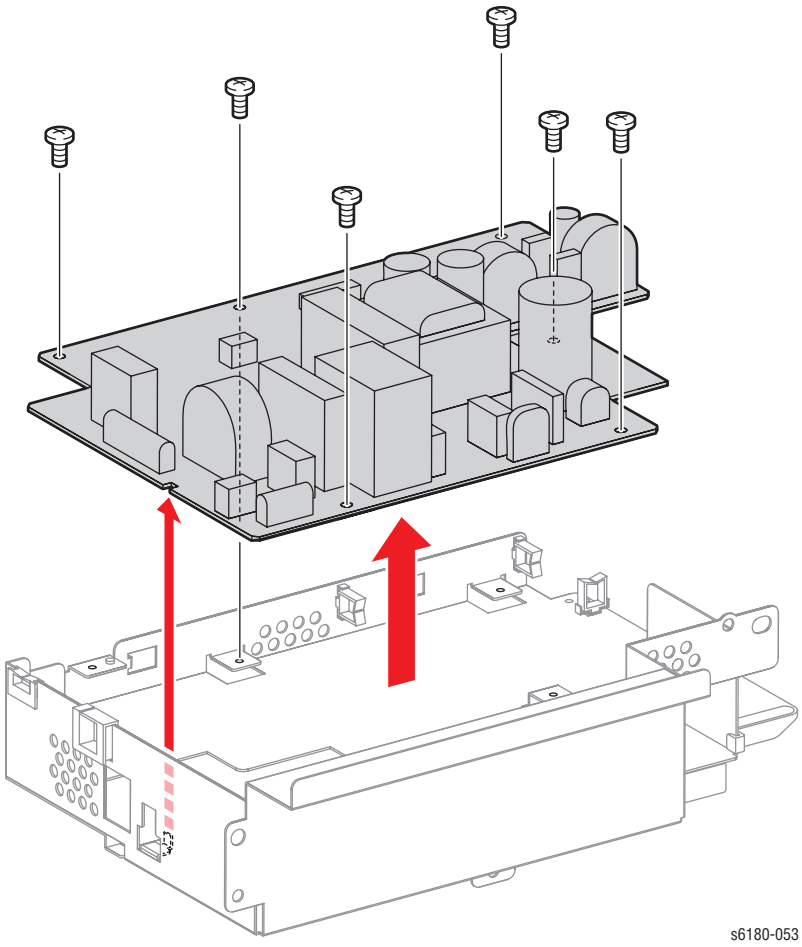
LVPS (PL9.1.4)

1. Remove the Rear Cover (page 8-11).
2. Remove the Right Side Cover (page 8-12).
3. Remove the Left Side Cover (page 8-13).
4. Remove the Top Cover (page 8-14).
5. Remove the Main Fan (page 8-84).
6. Disconnect all LVPS connectors and release the wiring harnesses from the Clamp.
7. Release the Clamps on the LVPS Shield securing the Interlock Harness and the Inlet Harness (PL9.1.16).

8. Remove 2 screws (10 mm) and 3 screws (6 mm) securing the LVPS Shield.



9. Remove the LVPS Shield and the LVPS.
10. Remove 6 screws (6 mm) securing the LVPS to the LVPS Shield and remove the LVPS.

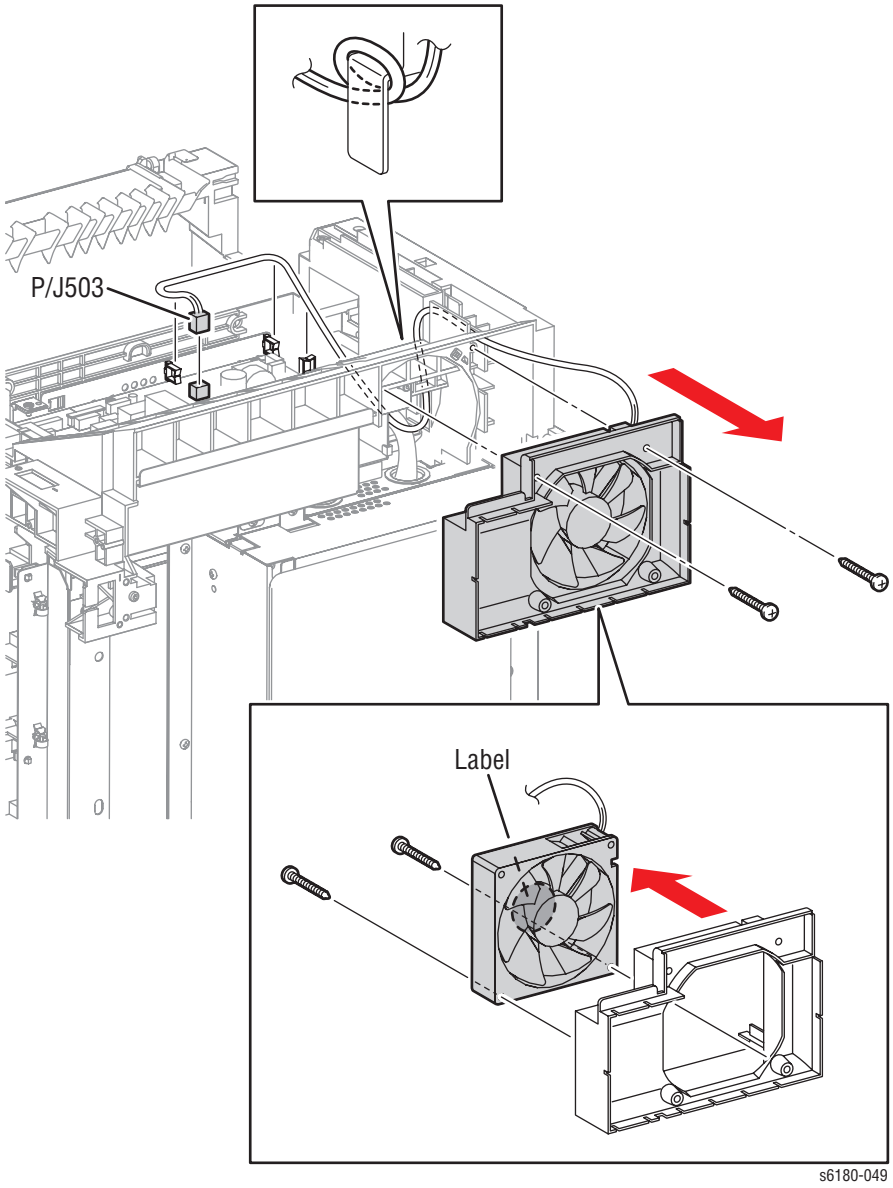


Replacement Note

Ensure the LVPS Shield sits under the Earth Plate.

Main Fan (PL9.1.10)

1. Remove the Rear Cover (page 8-11).
2. Remove the Right Side Cover (page 8-12).
3. Remove the Left Side Cover (page 8-13).
4. Remove the Top Cover (page 8-14).
5. Disconnect the Main Fan connector P/J503 on the LVPS (PL9.1.4).
6. Release the Main Fan wiring harness from the Clamp.
7. Remove 2 screws (35 mm) securing the Main Fan to the Main Fan Duct.
8. Remove the Main Fan.

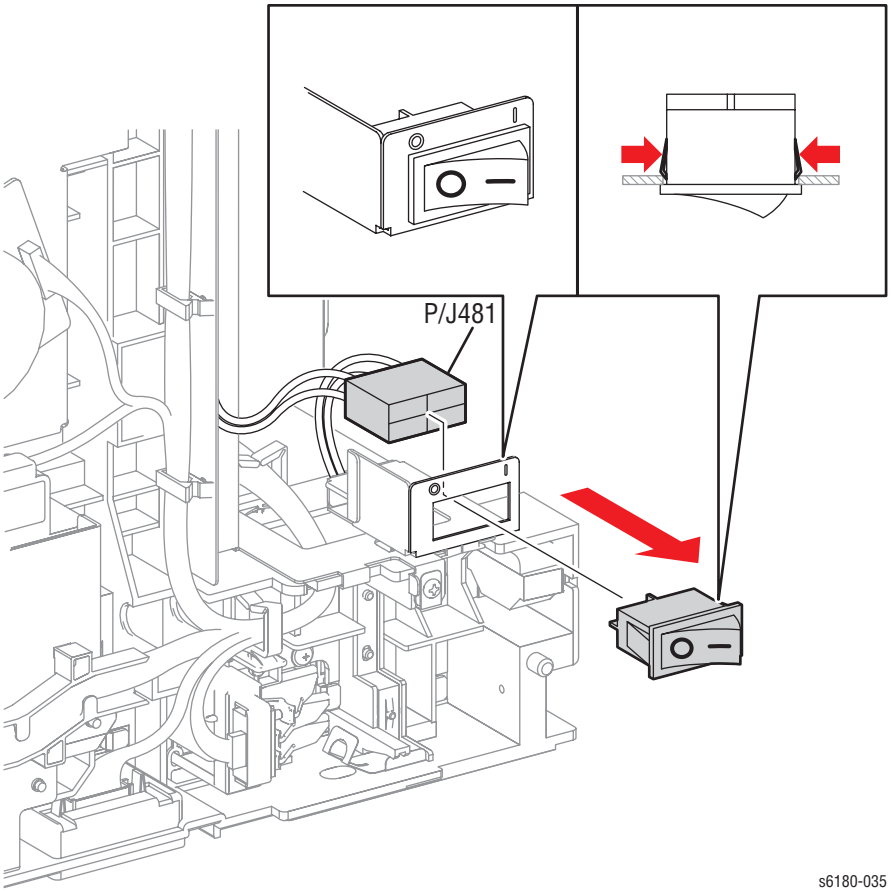


Replacement Note

When installing the Fan, ensure the labeled surface faces toward the front of the printer.

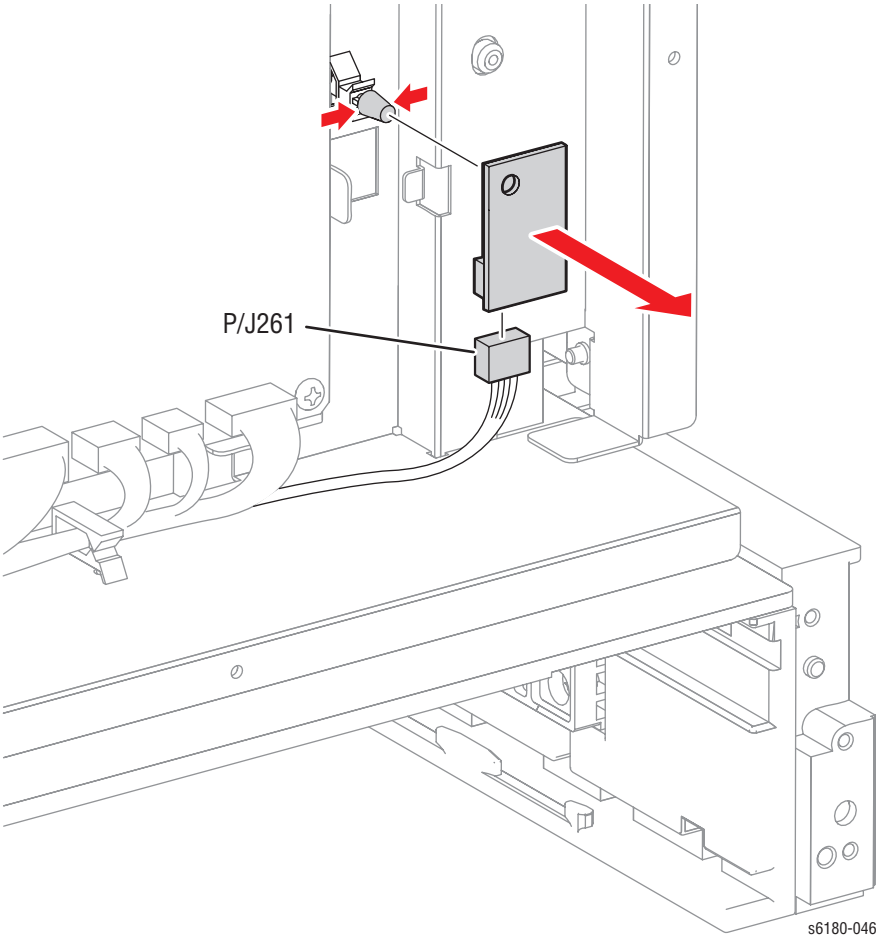
Power Switch (PL9.1.13)

1. Remove the Rear Cover (page 8-11).
2. Remove the Right Side Cover (page 8-12).
3. Disconnect the Power Switch connector P/J481.
4. Release the hook and remove the Power Switch.



Humidity/Temperature Sensor (PL9.1.19)

1. Remove the Rear Cover (page 8-11).
2. Remove the Right Side Cover (page 8-12).
3. Remove the Left Side Cover (page 8-13).
4. Remove the Controller Shield (page 8-92).
5. Release the Spacer (PL9.1.18) hook and remove the Humidity/ Temperature Sensor.
6. Disconnect the Humidity/Temperature Sensor connector P/J261.



Replacement Note

Ensure to align the On/Off Power Switch mark with the SW Bracket (PL9.1.37).

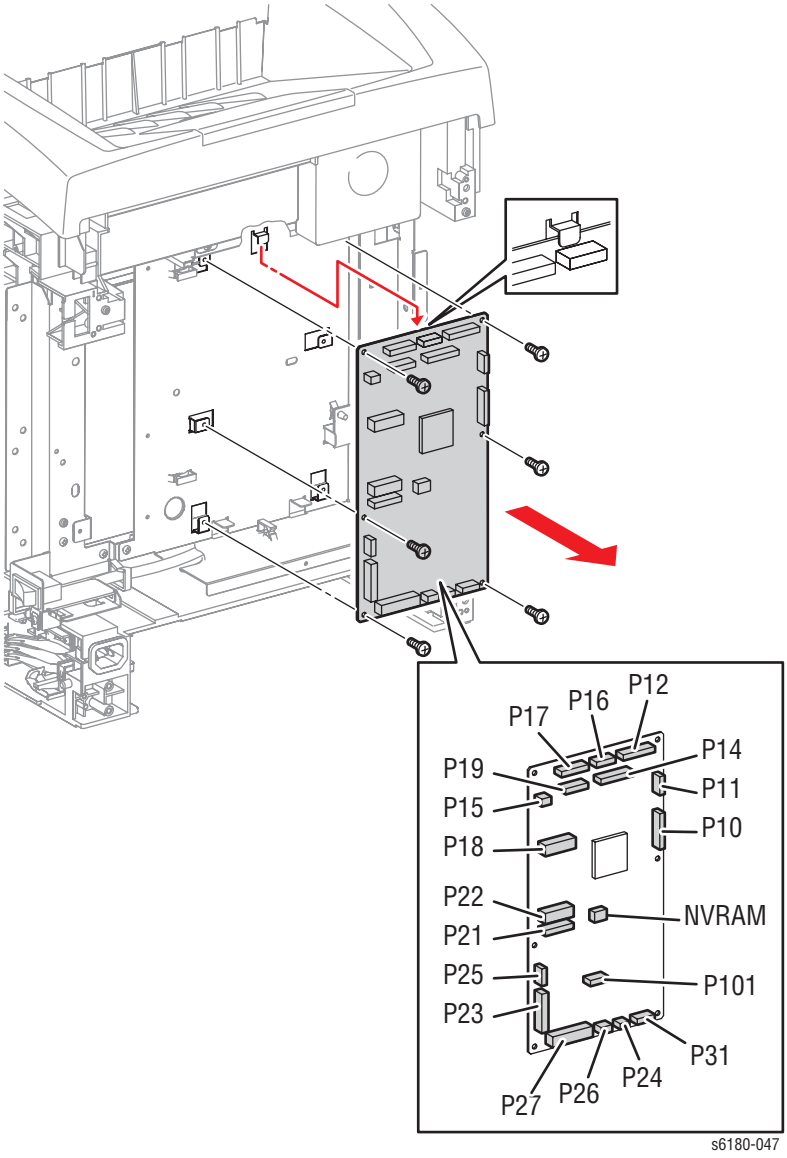
MCU Board (PL9.1.20)

Note

If the MCU Board is exchanged, store internal data to the Image Processor Board. Enter Service Diagnostics menu: **Service Mode** > **Engine Diag** > **NVM Settings** > **Save NVM**. Refer to ”Service Diagnostics” on page 4-5 for detailed procedures.

1. Remove the Rear Cover (page 8-11).
2. Remove the Right Side Cover (page 8-12).
3. Remove the Left Side Cover (page 8-13).
4. Remove the Controller Shield (page 8-92).
5. Disconnect the 18 MCU Board connectors.

6. Remove 6 screws (6 mm) securing the MCU Board to the printer and remove the MCU Board.

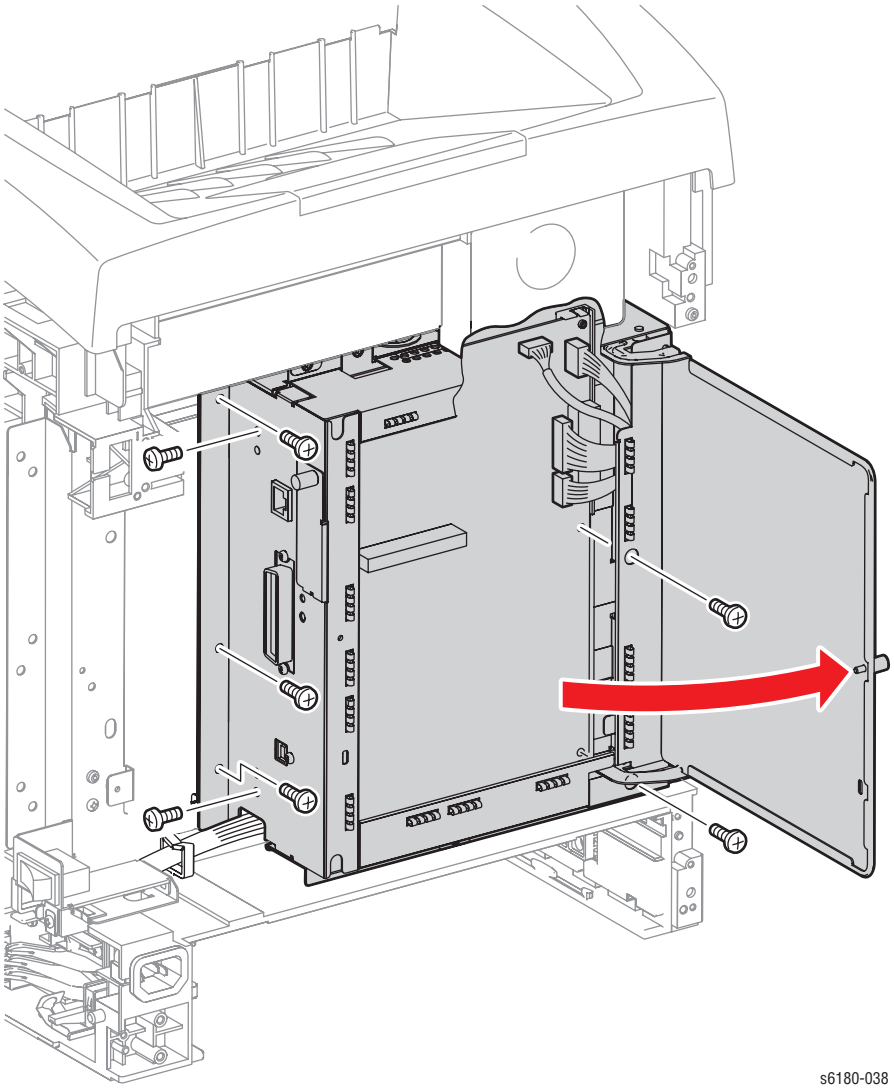


Replacement Note

If the MCU Board is exchanged, simply move the NVRAM chip from the old MCU Board to the new MCU Board.

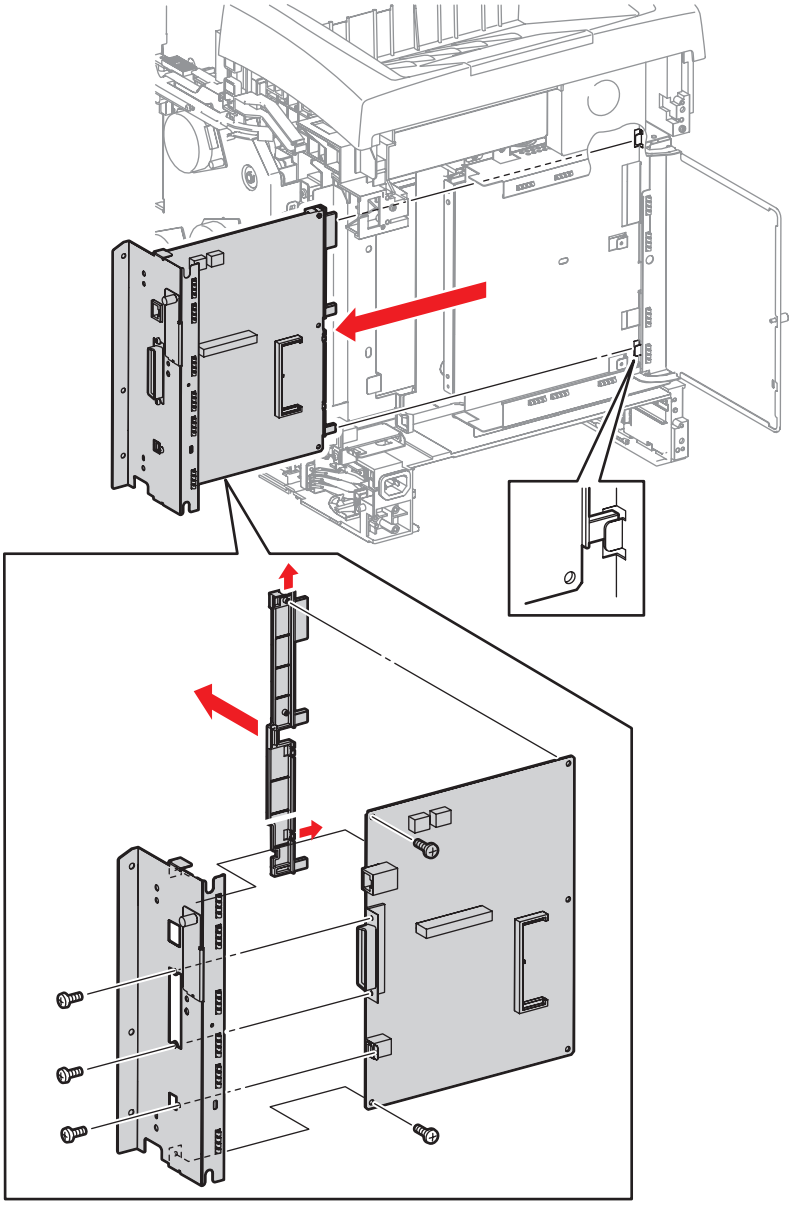
Image Processor Board (PL9.1.27)

1. Remove the Rear Cover (page 8-11).
2. Remove the Right Side Cover (page 8-12).
3. Remove the Left Side Cover (page 8-13).
4. Loosen 1 Knurling Screw (PL9.1.22) and open the Window Shield (PL9.1.21).
5. Disconnect all the Image Processor (I/P) Board connectors.
6. Remove 7 screws (6 mm) securing the IF Shield (PL9.1.28) to the printer.



s6180-038

7. Pull the IF Shield out at an angle toward the arrow direction together with the I/P Board and remove the Shield.
8. Remove 3 screws and 2 screws (6 mm) securing the I/P Board connectors to the IF Shield.
9. Remove the I/P Board from the IF Shield.
10. Release the Controller Guide (PL9.1.26) hooks and remove the Controller Guide from the I/P Board.



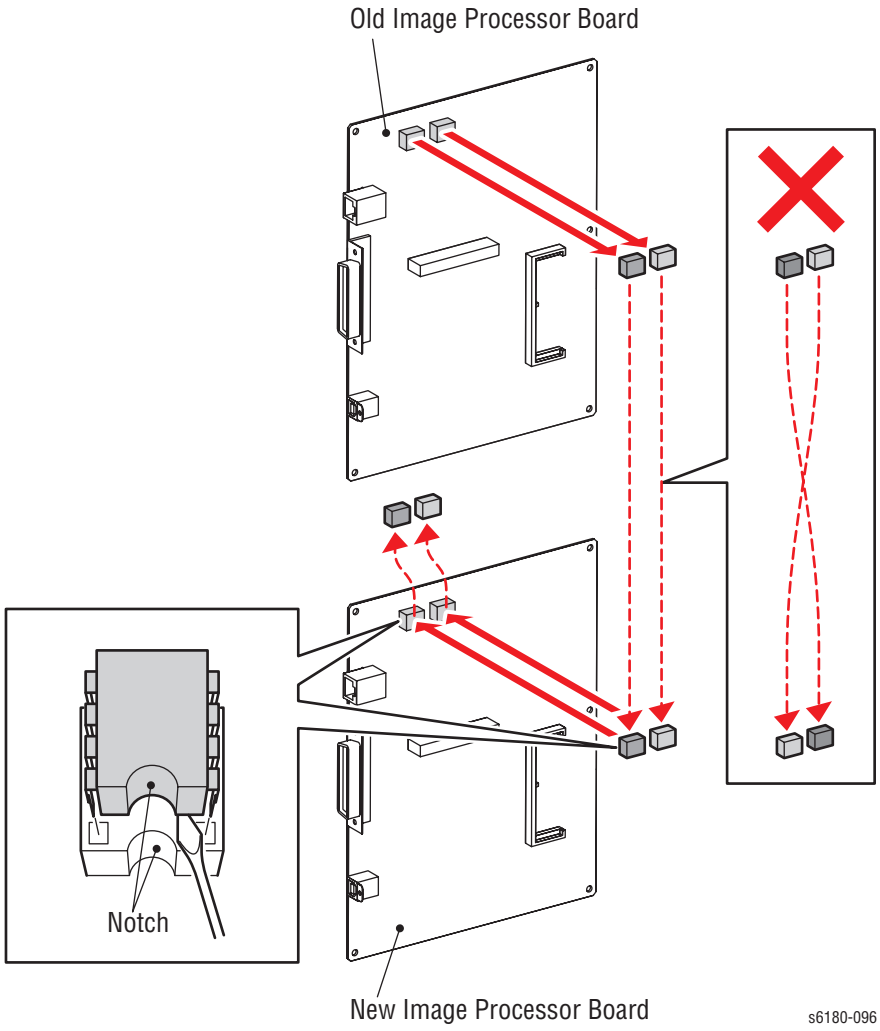
s6180-039

Replacement Note

DO NOT use the NVRAM ROM from the new I/P Board.

DO NOT apply pressure on the I/P Board when removing the NVRAM ROM.

Make sure to move the NVRAM ROM from the old I/P Board to the new I/P Board. Carefully check the correct orientation of the NVRAM ROM when installing the NVRAM ROM.



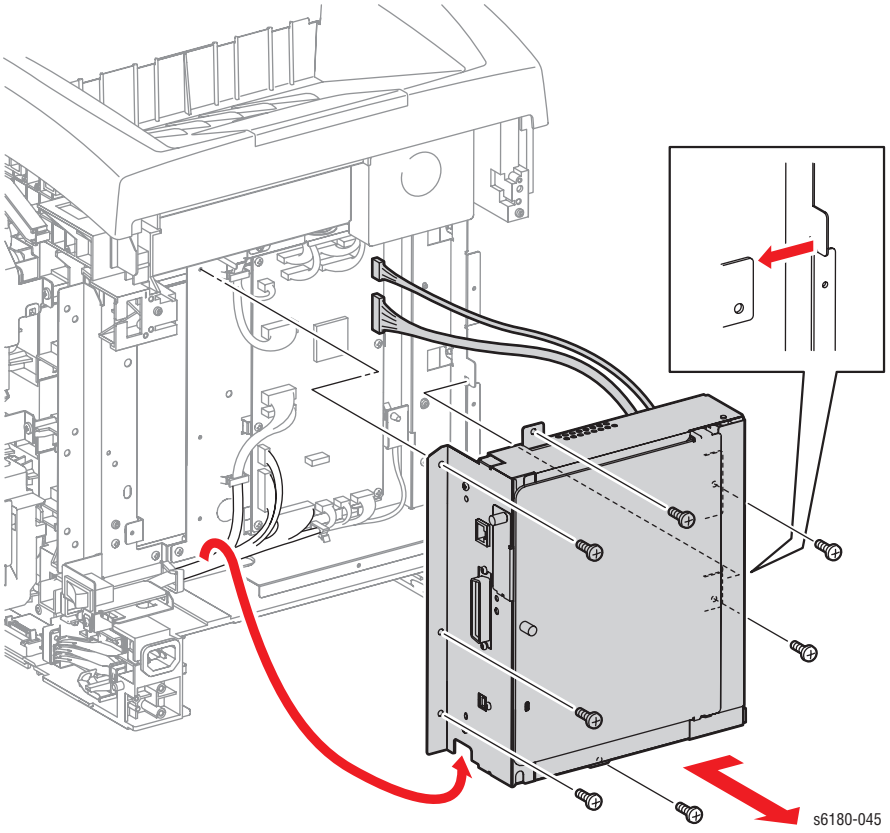
Controller Shield (PL9.1.25)

1. Remove the Rear Cover (page 8-11).
2. Remove the Right Side Cover (page 8-12).
3. Remove the Left Side Cover (page 8-13).
4. Remove 7 screws (6 mm) securing the Controller Shield.

Caution

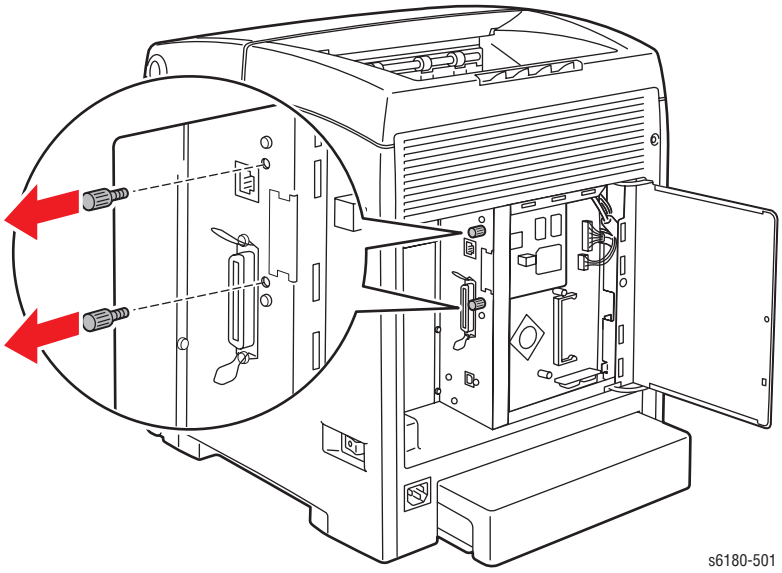
When removing the Controller Shield, do not move the Controller Shield too far from the printer, because it is connected with the wiring harnesses.

5. Move the Controller Shield toward the rear of the printer and release the tab on the Controller Shield from the notch of the printer. Remove the Controller Shield.

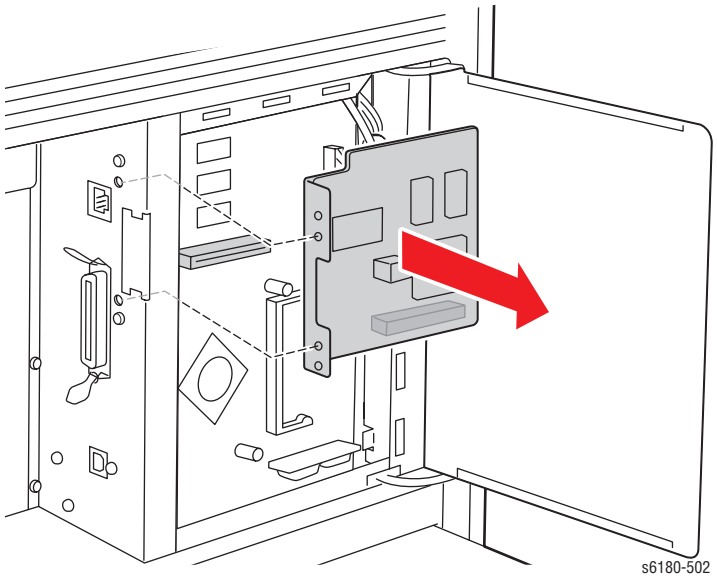


Multi-Protocol Network Card (PL9.1.30)

1. Turn the printer power Off.
2. Disconnect the power cord.
3. Loosen 1 Knurling Screw (PL9.1.22) and open the Window Shield (PL9.1.21).
4. Loosen 2 screws securing the Multi Protocol Network Card (MPC).



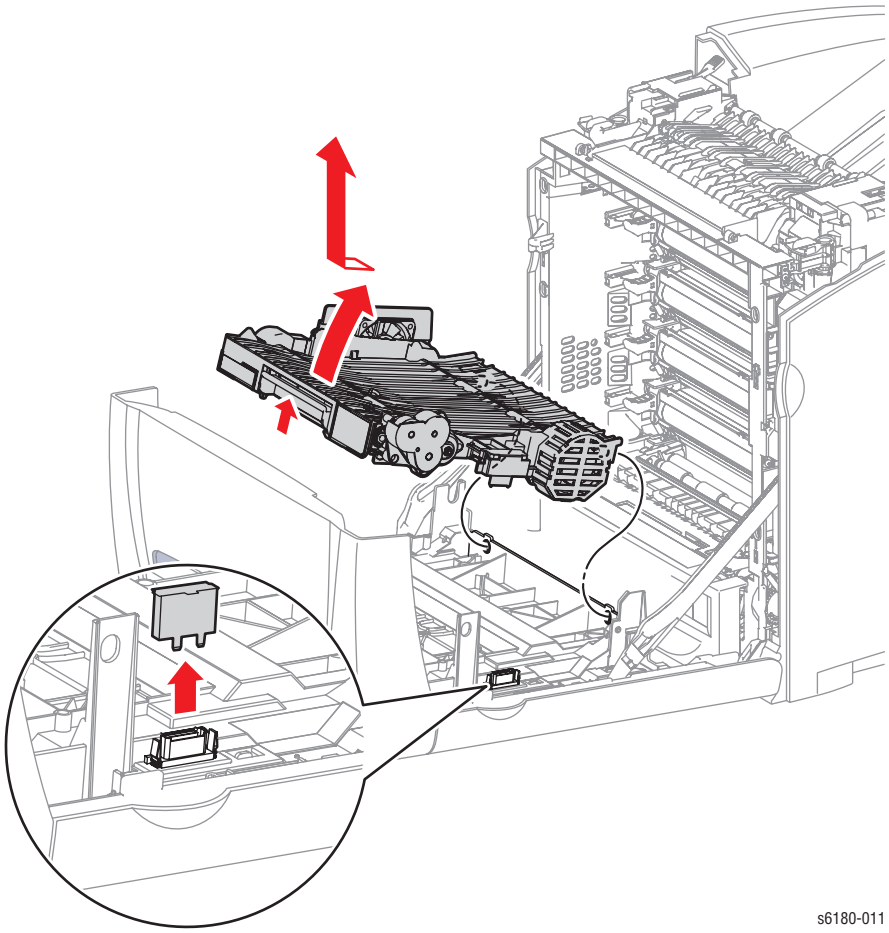
5. Disconnect the MPC from the Image Processor Board (PL9.1.27) and remove the card.



Duplex Unit

Duplex Unit (PL11.1.1)

1. Remove the Transfer Unit (page 8-7).
2. Lift the Duplex Unit lever to release the lock.
3. Pull the notches on the bottom of the Duplex Unit out from the holes of the Front Cover and remove the Duplex Unit.

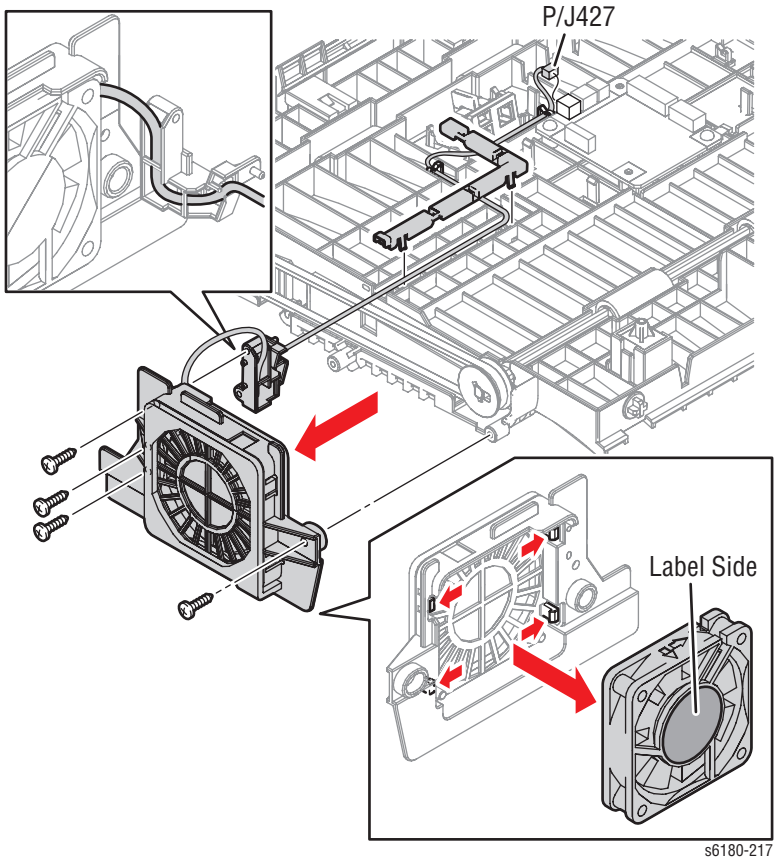


Replacement Note

Ensure to remove the cover from the Duplex Unit connector location (if installed). The cover is only installed if the printer never had a Duplex Unit installed.

Duplex Fan (PL11.1.25)

1. Remove the Transfer Unit (page 8-7).
2. Remove the Duplex Unit (page 8-94).
3. Remove the Duplex Board Cover (PL11.1.16).
4. Release the 4 hooks securing the Harness Chute Cover (PL11.1.24) and remove the Harness Chute Cover.
5. Disconnect the Duplex Fan connector P/J427 located on top of the Duplex Board.
6. Release the 2 Clamps securing the wiring harness of the Duplex Fan to the Duplex Feeder and remove the wiring harness.
7. Remove 2 screws (10 mm) securing the Duplex Fan Bracket (PL11.1.22) to the Duplex Feeder.
8. Remove the Duplex Fan Bracket together with the Duplex Fan from the Duplex Feeder.
9. Remove 2 screws (10 mm) securing the Harness Fan Cover (PL11.1.23) to the Duplex Fan Bracket. Release the wiring harness and remove the Harness Fan Cover.
10. Release the 4 hooks securing the Duplex Fan to the Duplex Fan Bracket.
11. Remove the Duplex Fan.



Replacement Note

When reinstalling the Duplex Fan, ensure to place the labeled surface of the Duplex Fan toward the side of the Duplex Feeder.

Optional 550-Sheet Feeder

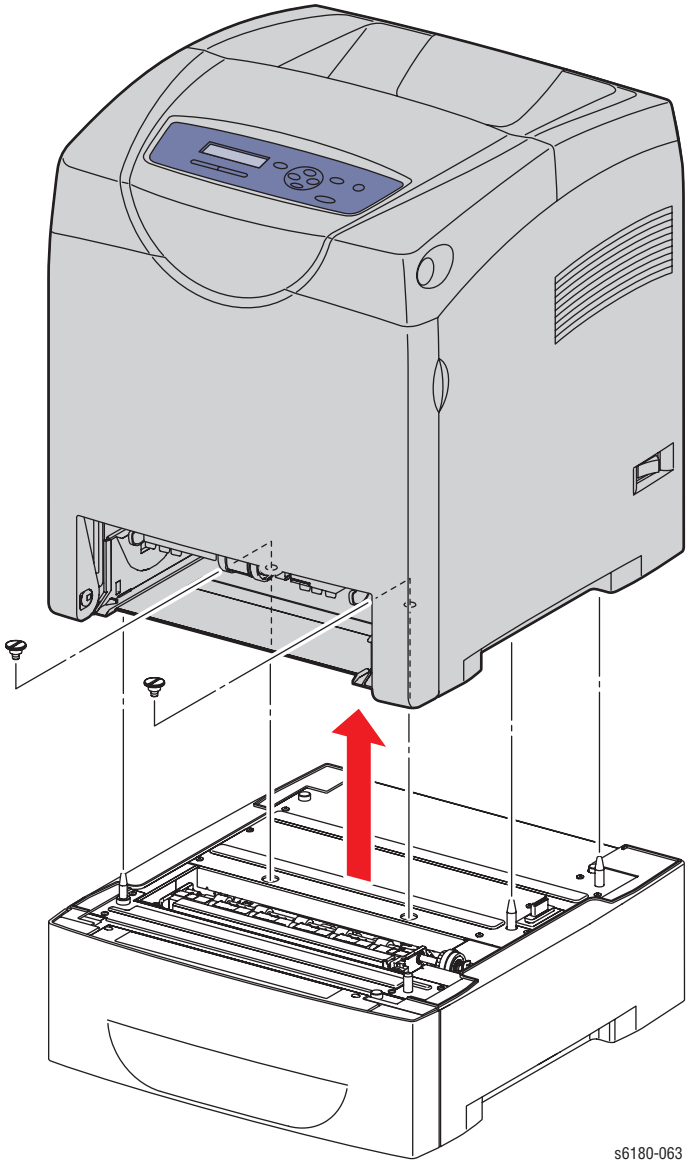
Optional 550-Sheet Feeder (PL12.1.1)

1. Remove Tray 2.
2. Remove the 2 Joint Screws securing the printer to the Optional 550-Sheet Feeder.

Caution

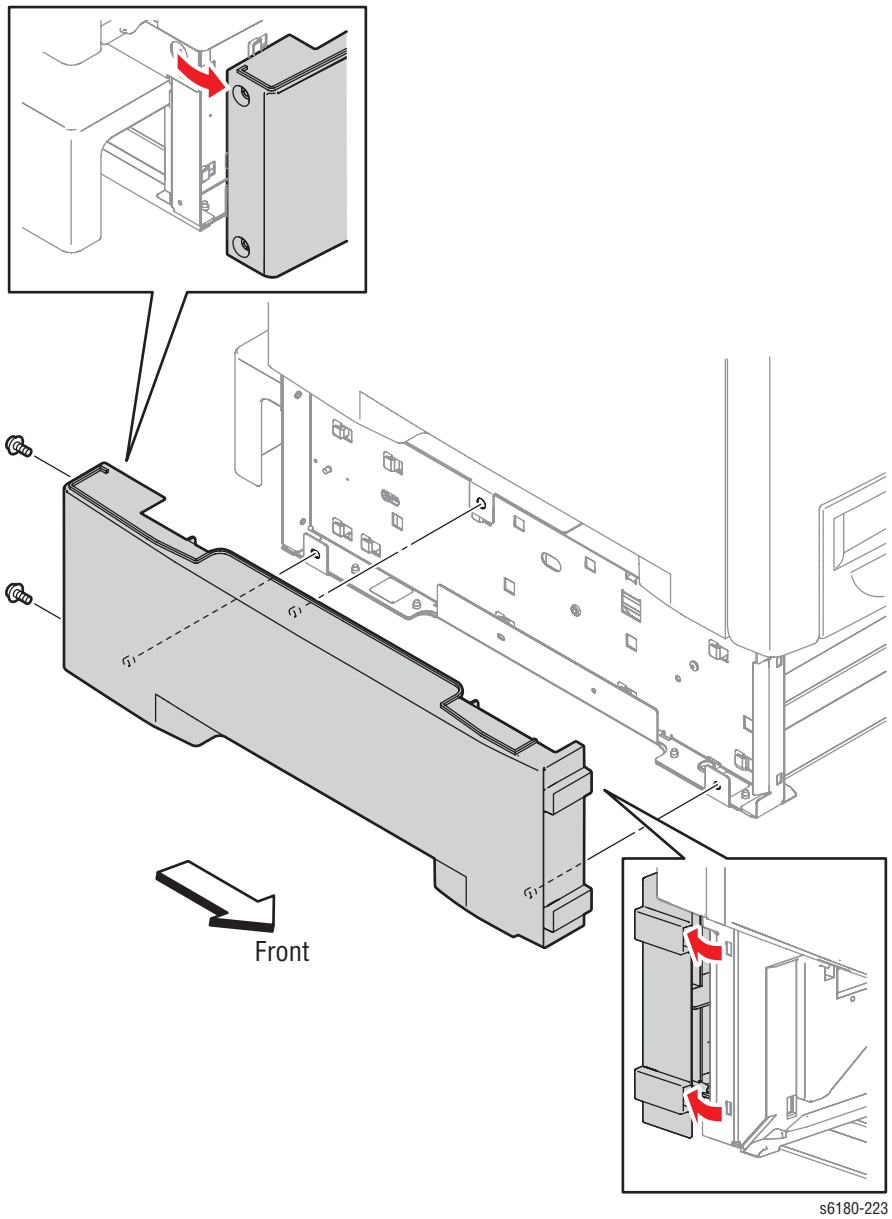
Lifting the printer requires two people. Use care when removing the printer from the Optional 550-Sheet Feeder.

3. Lift the printer from the Optional 550-Sheet Feeder.



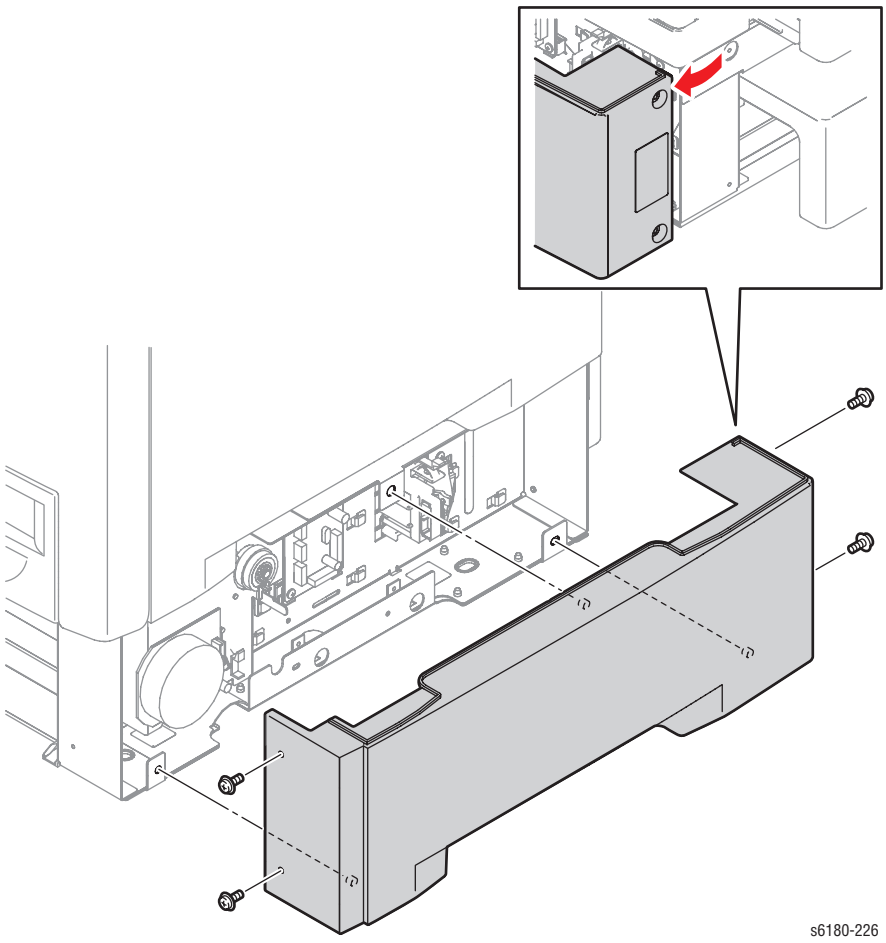
Tray 3 Left Cover (PL12.1.2)

1. Remove Tray 3 from the Optional 550-Sheet Feeder.
2. Remove 2 screws (8 mm, flanged) securing the Left Cover to the Optional Frame (PL12.2.1).
3. Open the Left Cover toward the front side to release the 2 hooks securing to the Optional Frame .
4. Open the rear side of the Left Cover toward the rear side and release the convex part of the Left Cover from the concave part of the Optional Frame. Remove the Left Cover.



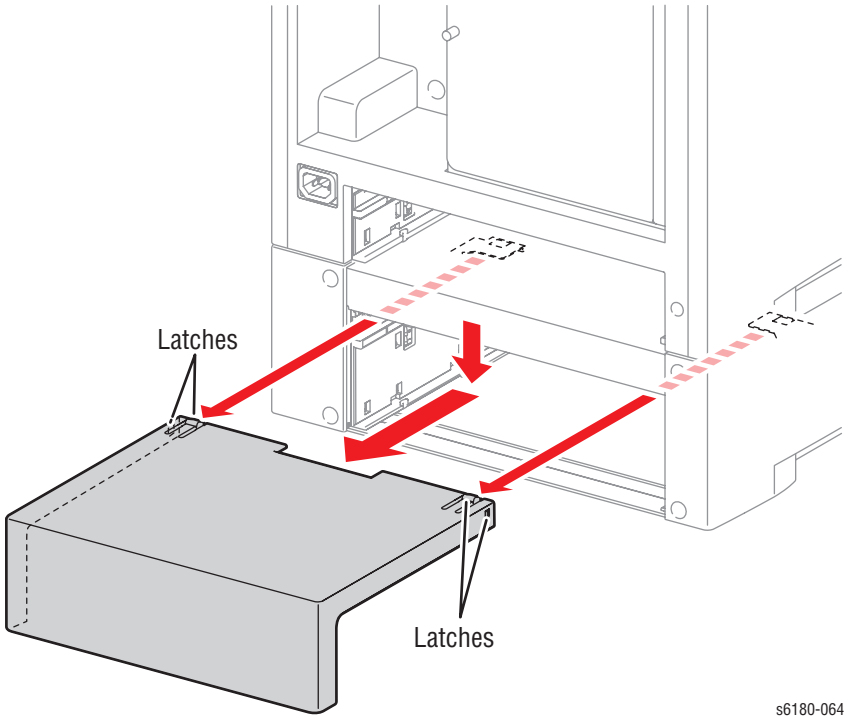
Tray 3 Right Cover (PL12.1.7)

1. Remove Tray 3 from the Optional 550-Sheet Feeder.
2. Remove 4 screws (8 mm, flanged) securing the Right Cover to the Optional Frame (PL12.2.1).
3. Open the rear side of the Right Cover toward the rear side.
4. Release the notches on the Right Cover from the holes on the Optional Frame.
5. Remove the Right Cover.



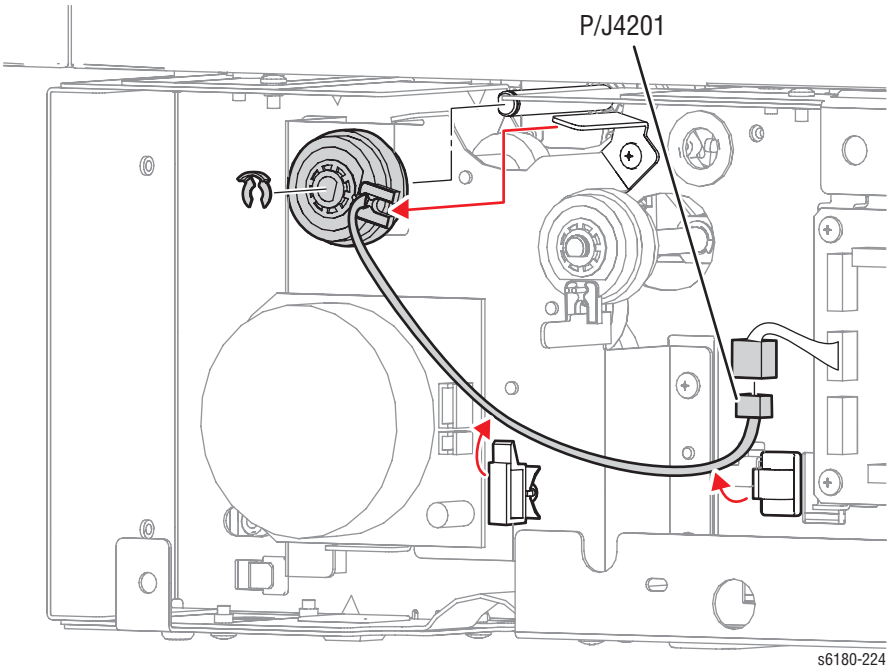
Tray 3 Cover (PL12.1.4)

1. Remove the Tray 2 Cover (page 8-17).
2. Remove Tray 3 from the Optional 550-Sheet Feeder.
3. Pull the Tray 3 Cover backward until it stops.
4. Press the center part of the Tray 3 Cover to release the 2 hooks (on the left and right sides), and remove the Tray 3 Cover from the Optional 550-Sheet Feeder.



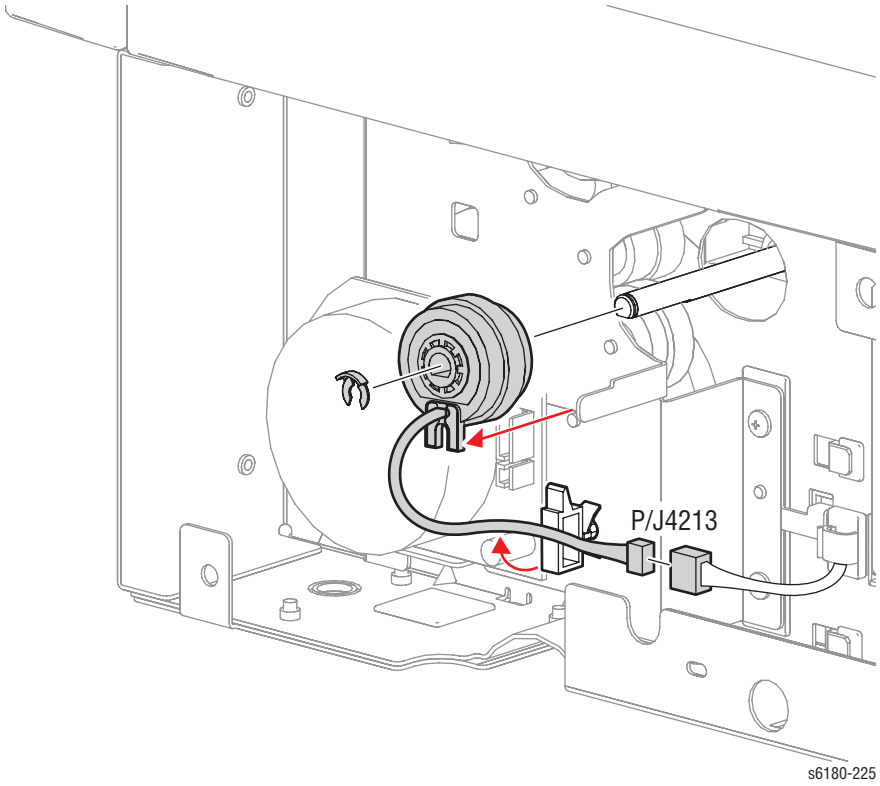
Tray 3 Turn Clutch (PL12.1.5)

1. Remove Tray 3 from the Optional 550-Sheet Feeder.
2. Remove the Tray 3 Right Cover (page 8-98).
3. Disconnect the Tray 3 Turn Clutch connector P/J4201.
4. Release the 2 Clamps securing the Tray 3 Turn Clutch wiring harness and remove the harness.
5. Remove the E-ring securing the Tray 3 Turn Clutch to the Turn Roll.
6. Remove the Tray 3 Turn Clutch from the Turn Roll.



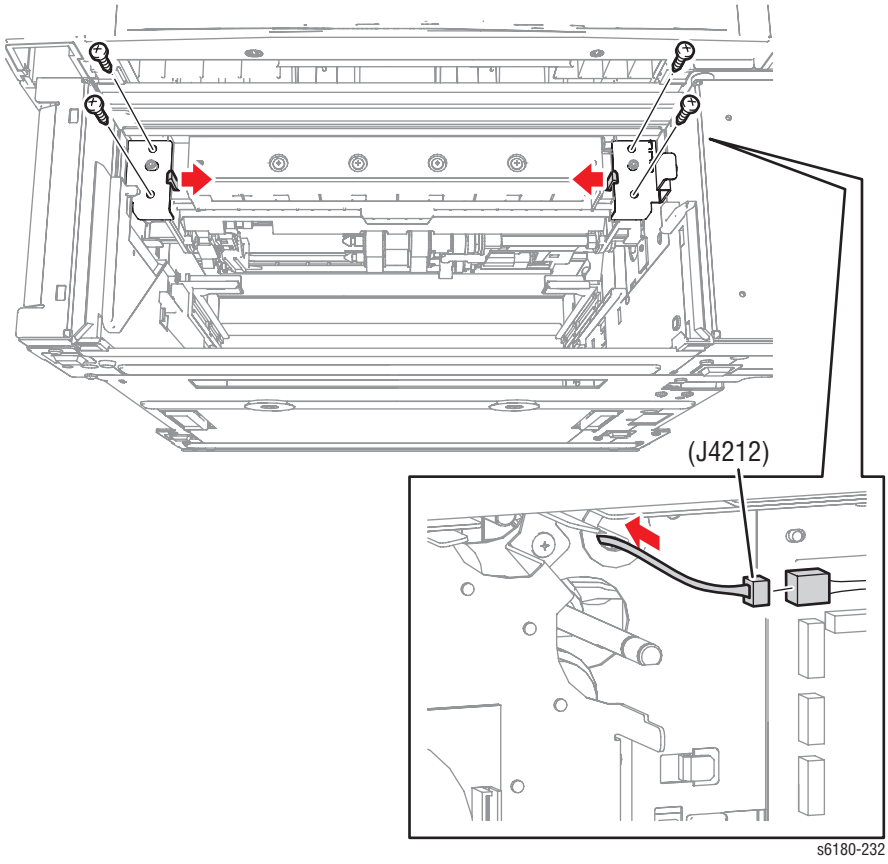
Tray 3 Feed Clutch (PL12.1.6)

1. Remove Tray 3 from the Optional 550-Sheet Feeder.
2. Remove the Tray 3 Right Cover (page 8-98).
3. Disconnect the Tray 3 Feed Clutch connector P/J4213.
4. Release the Clamp securing the Tray 3 Feed Clutch wiring harness to the Feed Shaft (PL12.3.8).
5. Remove the E-ring securing the Tray 3 Feed Clutch to the Feed Shaft.
6. Remove the Tray 3 Feed Clutch from the Feed Shaft.

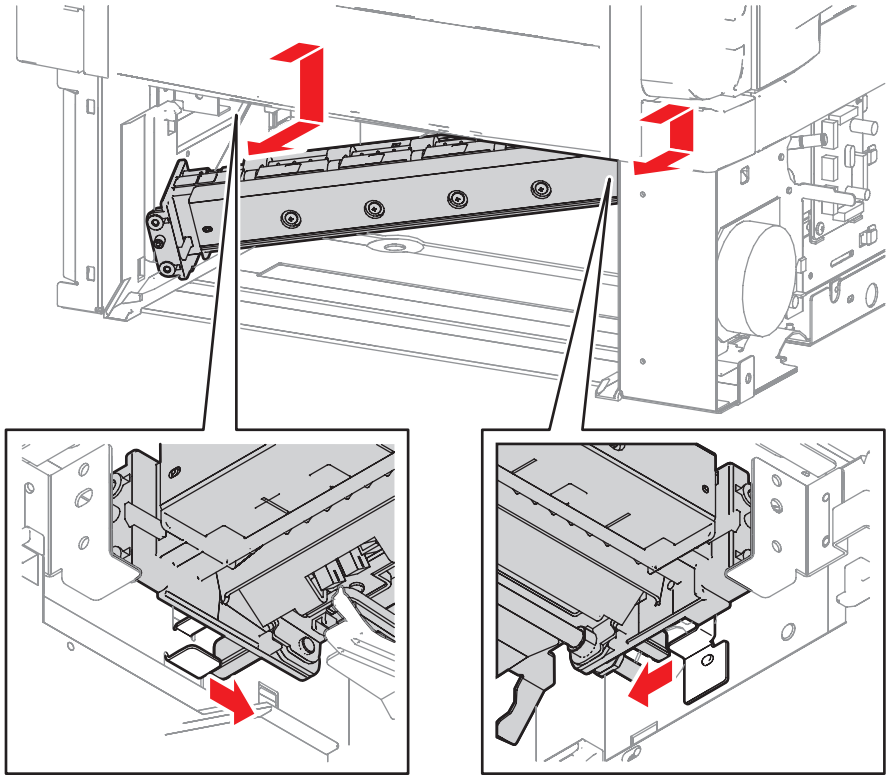


Tray 3 Feeder (PL12.1.8)

1. Remove Tray 3 from the Optional 550-Sheet Feeder.
2. Remove the Tray 3 Left Cover (page 8-97).
3. Remove the Tray 3 Right Cover (page 8-98).
4. Remove the Tray 3 Turn Clutch (page 8-100).
5. Remove the Tray 3 Feed Clutch (page 8-101).
6. Disconnect the Tray 3 Feeder connector P/J4212 and slide the connector out of the hole of the Frame (PL12.2.1).
7. Remove 4 screws (8 mm) securing the Tray 3 Feeder to the Frame.
8. Release the 2 hooks securing the Tray 3 Feeder to the Frame and release the 2 notches from the hole of the Frame.

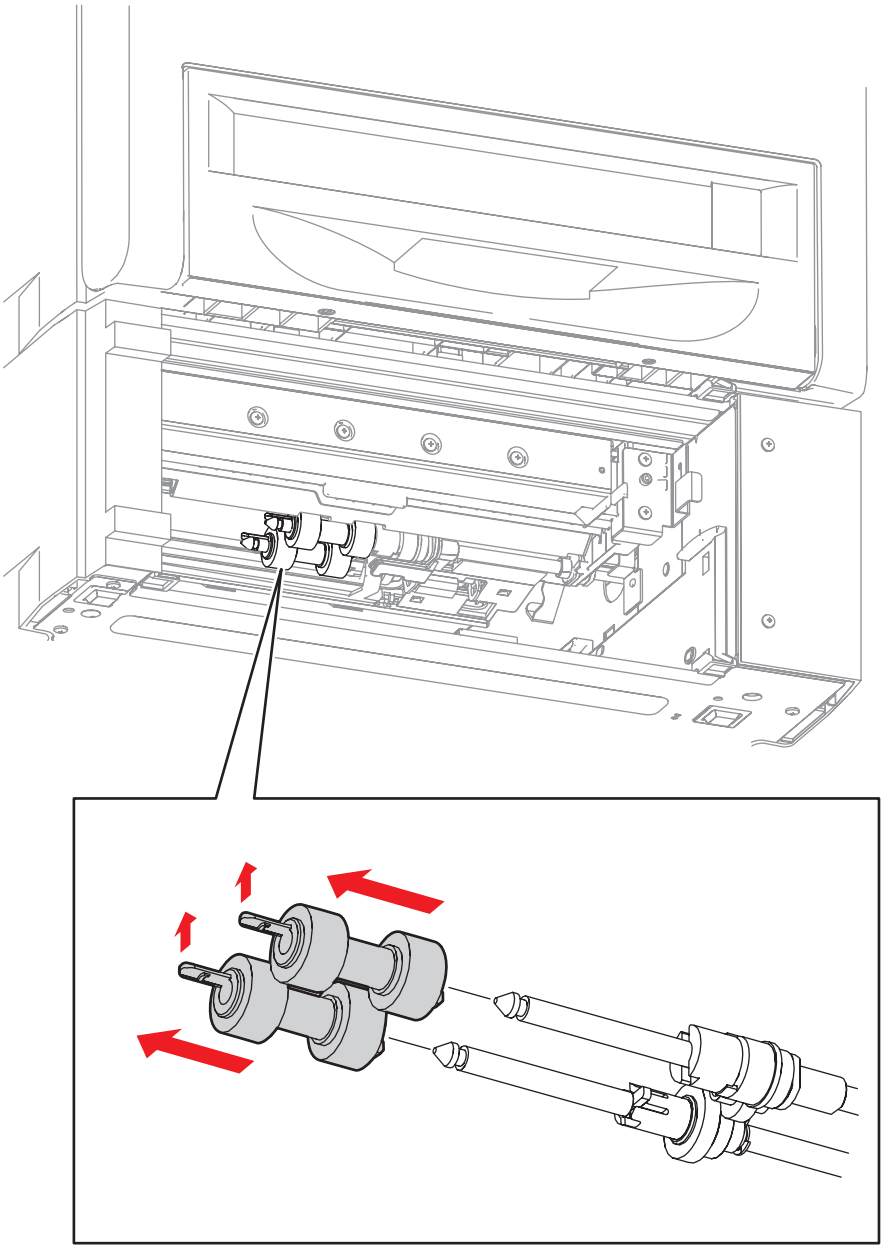


9. Release the convex part on the left and right sides of the Tray 3 Feeder from the flange on the left and right sides of the Frame to remove the Tray 3 Feeder.



Tray 3 Feed Roll (PL12.1.9)

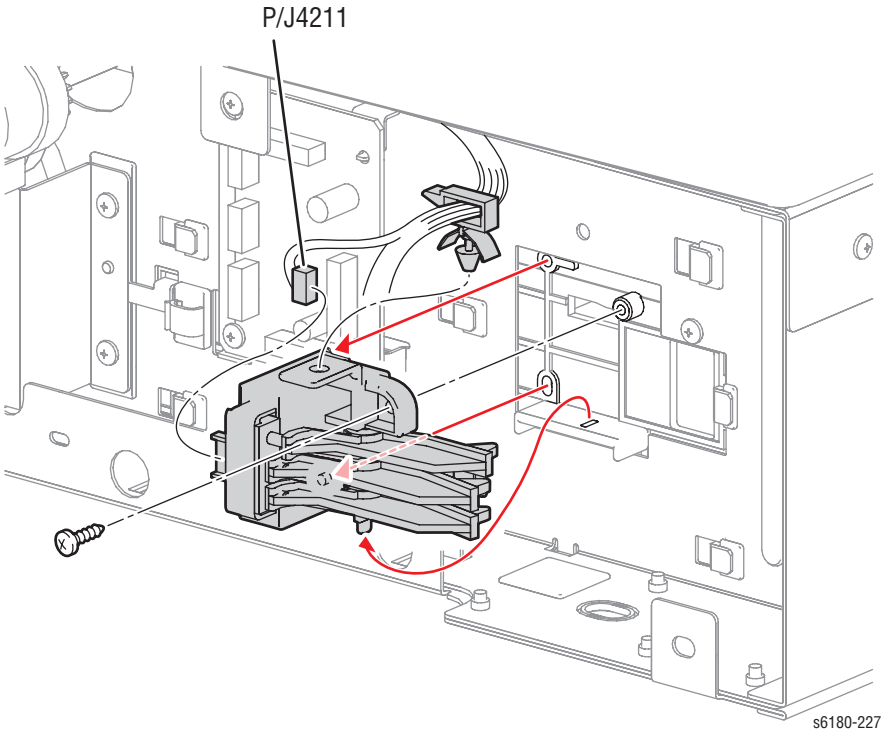
1. Remove Tray 3 from the Optional 550-Sheet Feeder.
2. Release the Tray 3 Feed Roll hook and remove the Tray 3 Feed Roll from each Shaft.



s6180-065

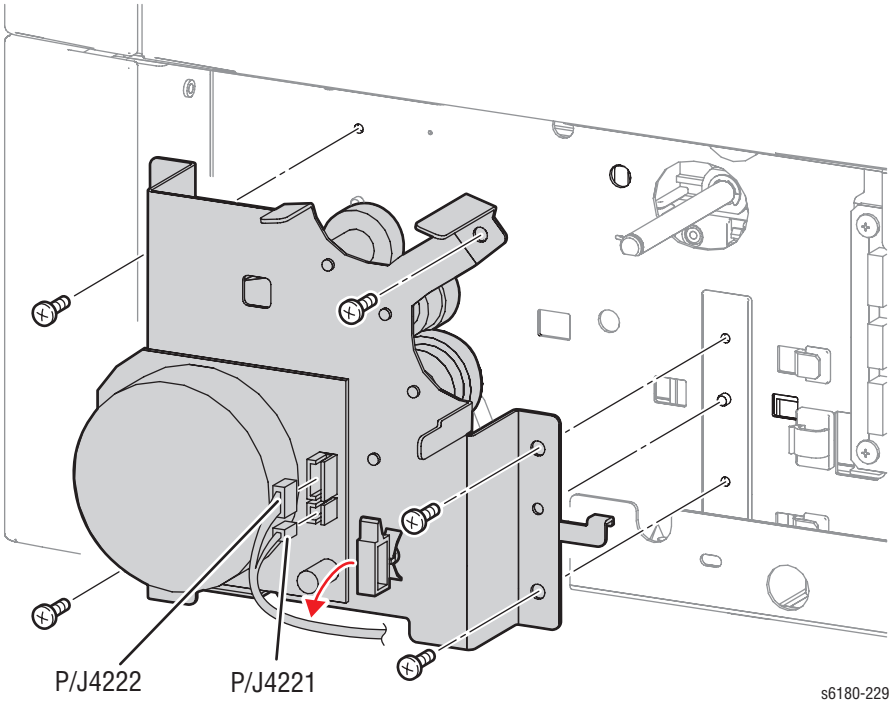
Tray 3 Size Switch (PL12.2.5)

1. Remove Tray 3 from the Optional 550-Sheet Feeder.
2. Remove the Tray 3 Right Cover (page 8-98).
3. Disconnect the Tray 3 Size Switch connector P/J4211.
4. Release the Clamp securing the Tray 3 Size Switch wiring harness.
5. Remove 1 screw (8 mm) securing the Tray 3 Size Switch to the Tray 3 Right Guide (PL12.2.11).
6. Release the tab on the bottom of the Tray 3 Size Switch from the square hole of the Tray 3 Right Guide and release the 2 notches from the holes of the Tray 3 Right Guide to remove the Tray 3 Size Switch.



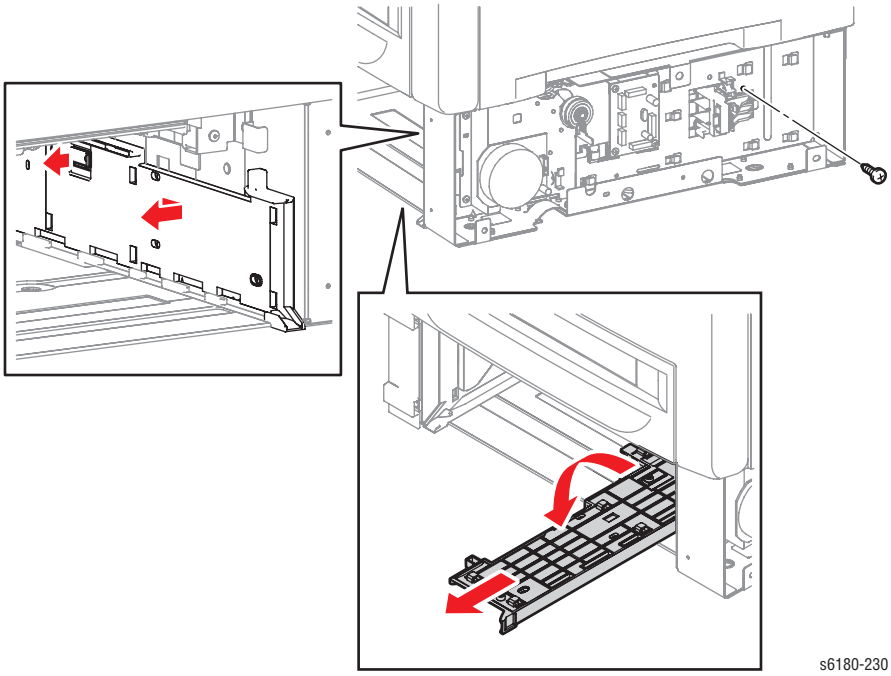
Tray 3 Feeder Drive (PL12.2.10)

1. Remove Tray 3 from the Optional 550-Sheet Feeder.
2. Remove the Tray 3 Right Cover (page 8-98).
3. Remove the Tray 3 Turn Clutch (page 8-100).
4. Remove the Tray 3 Feed Clutch (page 8-101).
5. Disconnect the Tray 3 Feeder Drive connectors P/J4221 and P/J4222.
6. Release the Clamp securing the wiring harness on the Tray 3 Feeder Drive.
7. Remove 5 screws (6 mm) securing the Tray 3 Feeder Drive to the Frame (PL12.2.1).
8. Remove the Tray 3 Feeder Drive from the Frame.



Tray 3 Right Guide (PL12.2.11)

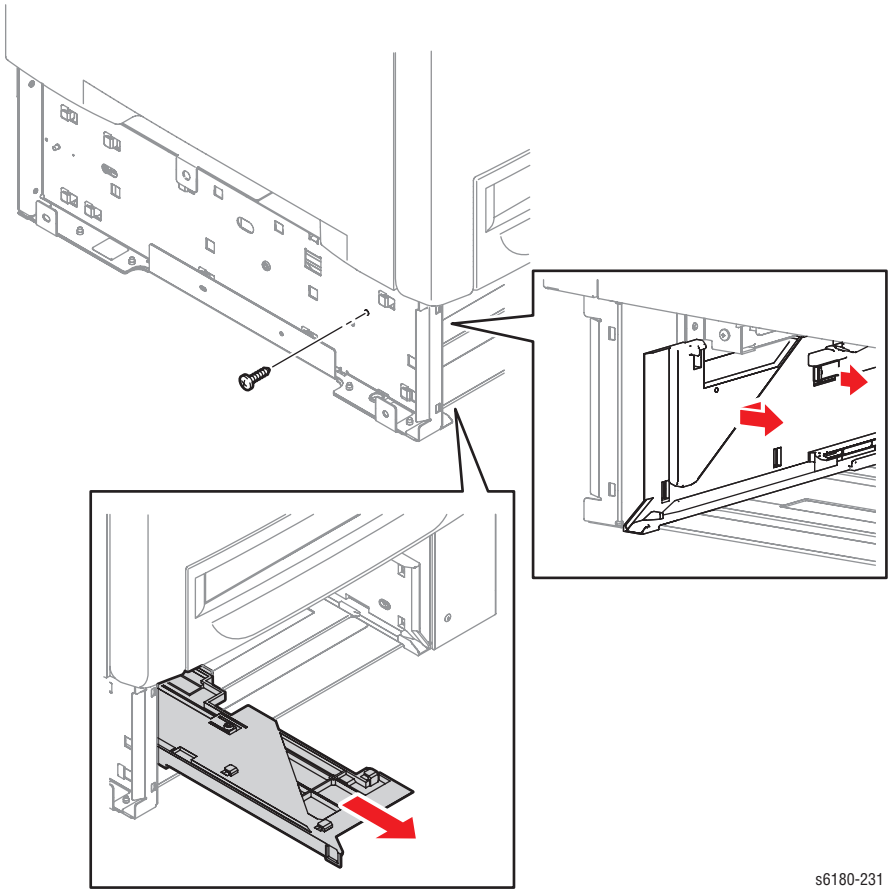
1. Remove Tray 3 from the Optional 550-Sheet Feeder.
2. Remove the Tray 3 Cover (page 8-99).
3. Remove the Tray 3 Right Cover (page 8-98).
4. Remove the Tray 3 Size Switch (page 8-105).
5. Remove 1 screw (8 mm) securing the Tray 3 Right Guide to the Frame (PL12.2.1).
6. Release the hook securing the Tray 3 Right Guide to the Frame. Push the Right Tray 3 Guide forward, release the 12 hooks, and push the Tray 3 Right Guide downward to remove it.



s6180-230

Tray 3 Left Guide (PL12.2.12)

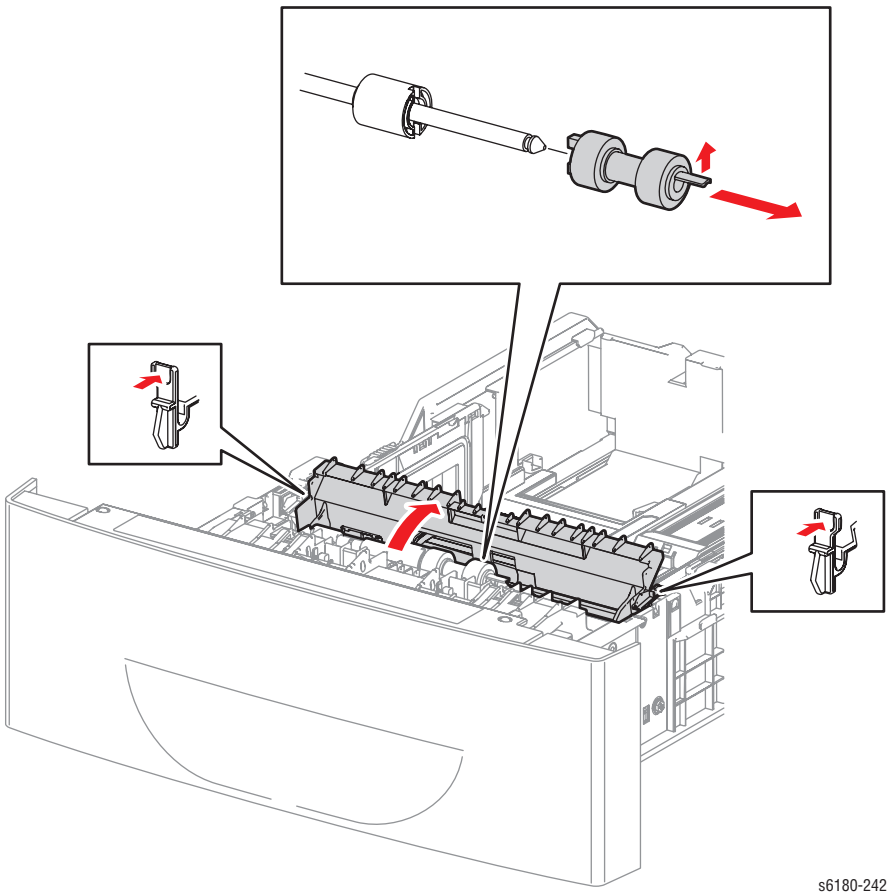
1. Remove Tray 3 from the Optional 550-Sheet Feeder.
2. Remove the Tray 3 Left Cover (page 8-97).
3. Remove the Tray 3 Cover (page 8-99).
4. Remove 1 screw (8 mm) securing the Tray 3 Left Guide to the Frame (PL12.2.1).
5. Release the hook securing the Tray 3 Left Guide to the Frame. Push the Tray 3 Left Guide forward, release the 9 hooks, and push the Tray 3 Left Guide downward to remove it.



s6180-231

Tray 3 Retard Roll (PL12.3.10)

1. Remove Tray 3 from the Optional 550-Sheet Feeder.
2. Release the hooks on the left and right sides of the Retard Tray Cover (PL12.3.6) and open the Retard Tray Cover.
3. Release the hook of the Tray 3 Retard Roll and remove the Tray 3 Retard Roll from the Retard Shaft (PL12.3.8).



s6180-242

Parts List

In this chapter...

- Serial Number Format
- Using the Parts List
- Print Engine Parts
- Options
- 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 frame of the printer. Front Cover must be opened to locate the Serial Number.

The nine-digit serial number has the following format:

- **PPPRSSSSS**
- **PPP =** Three digit alphanumeric product code
- **R =** Single digit numeric revision digit, 0-9. To be rolled when a major product change occurs and initiated with a change request.

Product Code	Product
DPX	6180, 110 V Engine
DRA	6180V, 220 V Engine

Mass Production Units (MP Build)

PPP1SSSSS

SSSSS = Five digit numeric serial number based on the following table:

Product	Starting Serial Number	Ending Serial Number
6180_N, 110V Engine	10001	50000
6180_DN, 110V Engine	50001	80000
6180_YN, 110V, Engine	80001	99999
6180_N, 220V Engine	10001	70000
6180V_DN, 220V Engine	70001	99999

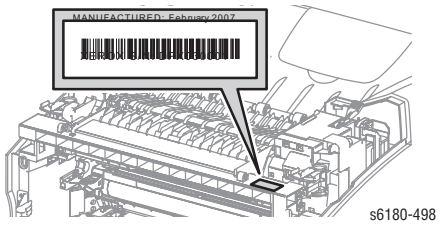
Example

DPX030001: Xerox Serial Number

DPX: Product Code for the Phaser 6180, configuration N or DN, 110V printer

0 = Revision Level

30001 = Serial Number for 6180 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 (NS) next to a part indicates that particular part is not spared, but contained in a kit or major assembly.
- 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

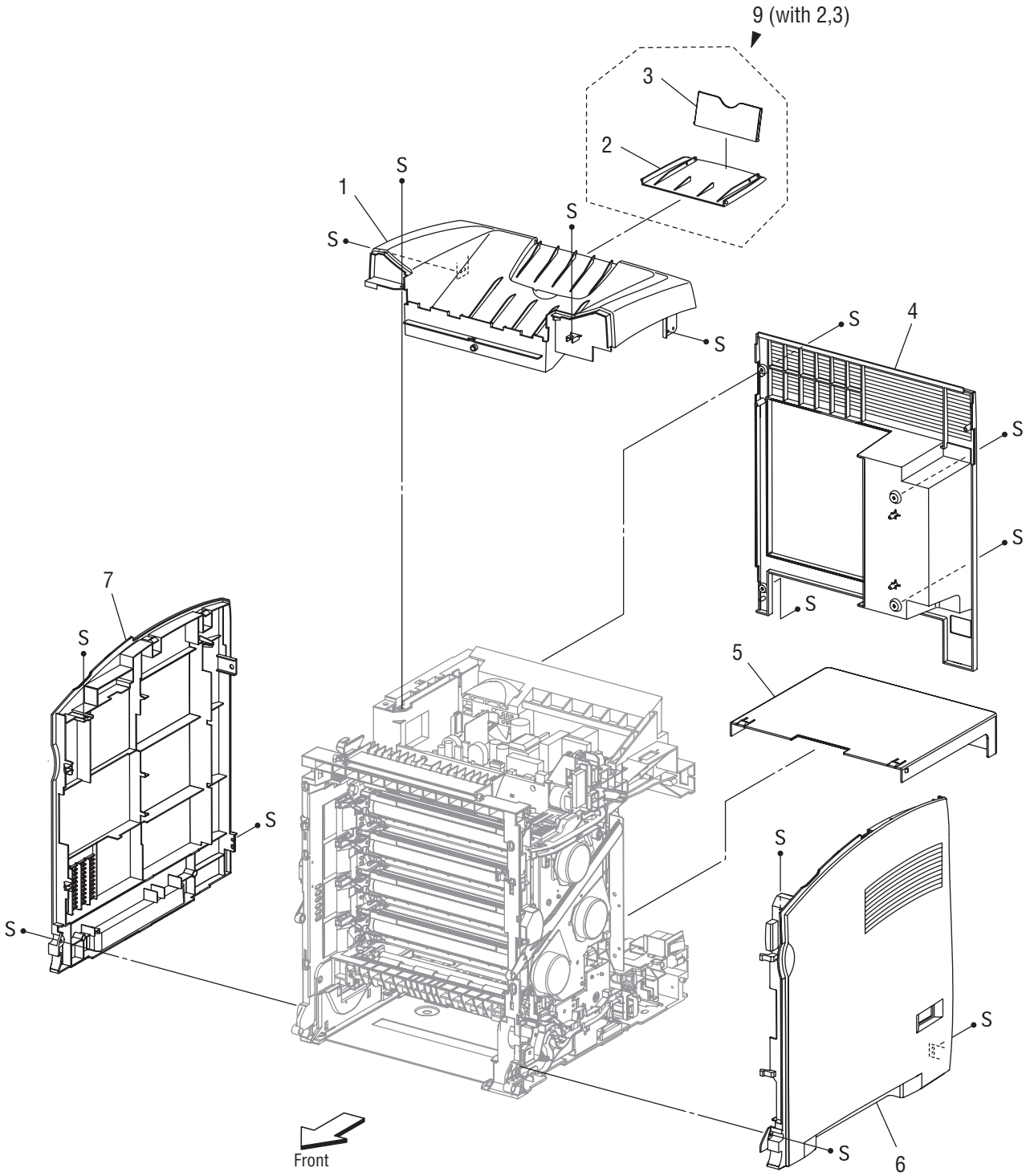
Only parts showing part numbers are available for ordering by support. Parts not showing part numbers are available on the parent assembly.

Abbreviations

Abbreviation	Meaning
C	C-ring
E	E-ring
KL	K-clip
S	Screw

Print Engine Parts

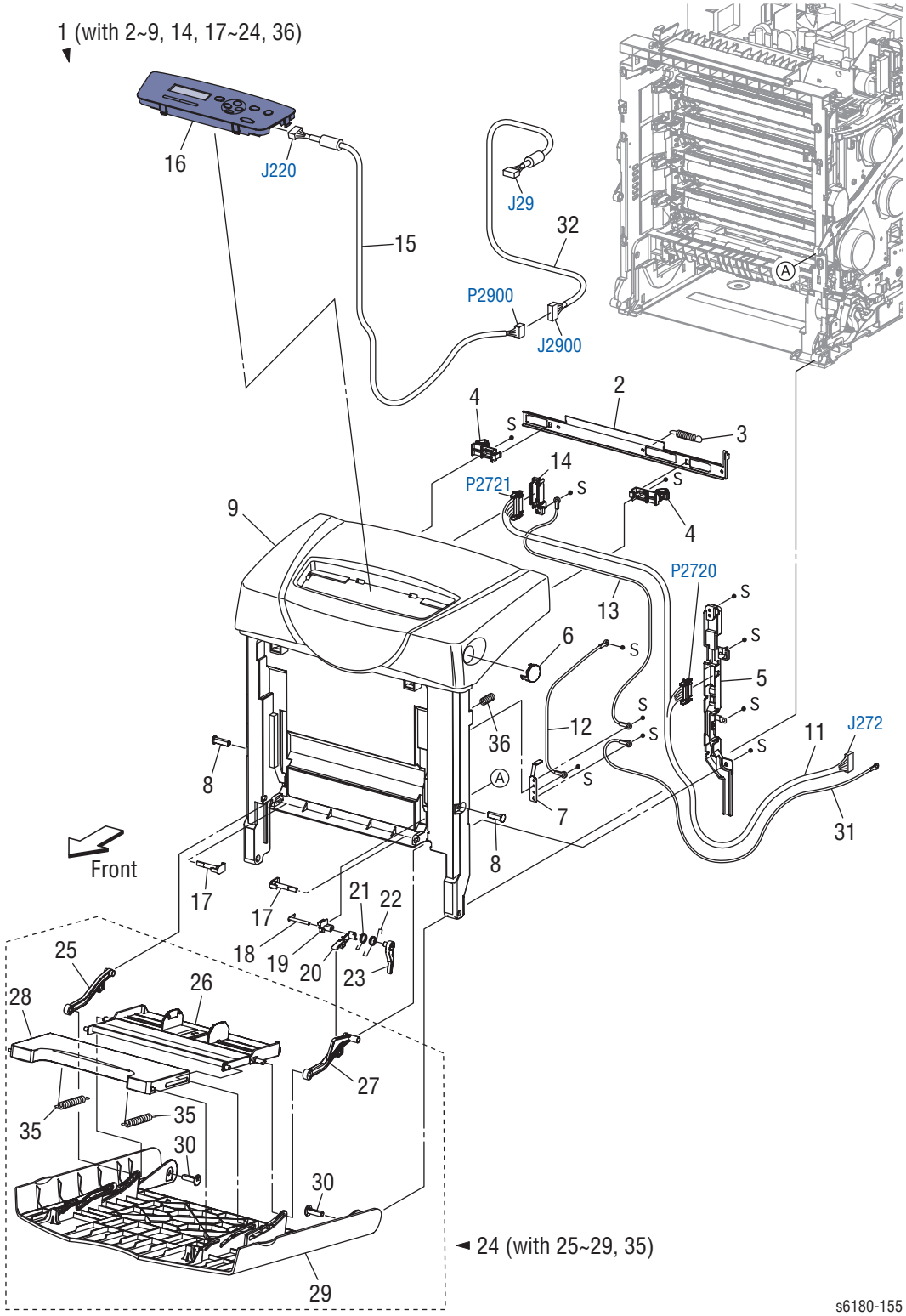
Parts List 1.1 Covers (1 of 2)



Parts List 1.1 Covers (1 of 2)

ID No.	Name/Description	Part Number
1.	Cover Top	802K99750
2.	Cover Extension 1	
3.	Cover Extension 2	
4.	Cover Rear	848E07961
5.	Cover CST (Tray Cover)	848E07990
6.	Cover Side Right Assy	848E07950
7.	Cover Side Left Assy	848E07940
8.	-----	
9.	Cover Assy Extender (with 2, 3)	802K97111

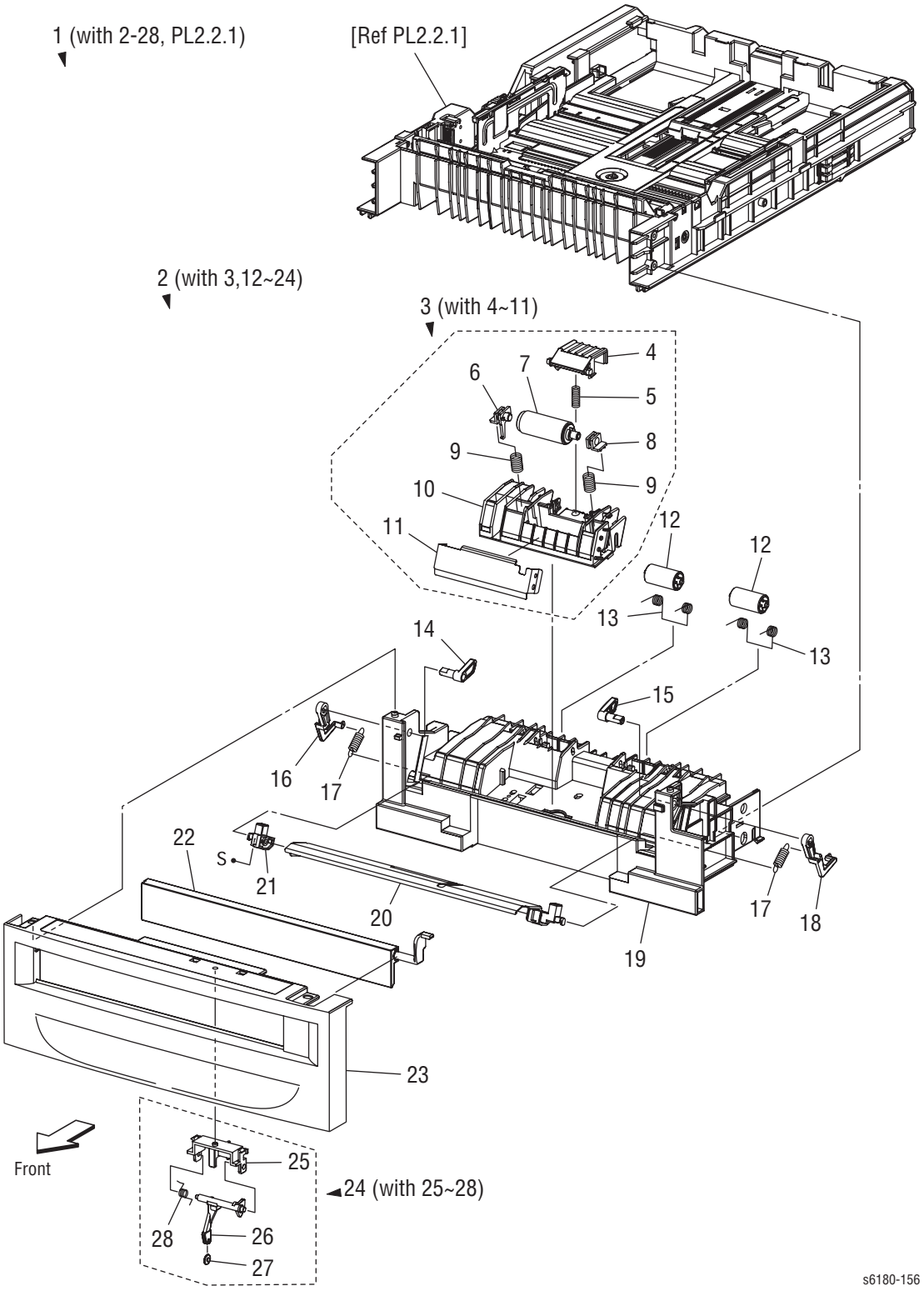
Parts List 1.2 Covers (2 of 2)



Parts List 1.2 Covers (2 of 2)

ID No.	Name/Description	Part Number
1.	Kit Cover Assy Front (with 2-9, 11-15, 18-23, 36)	675K47129
2.	Plate Latch	
3.	Spring Latch	
4.	Latch Front	
5.	Cover Harness	
6.	Button Top	
7.	Contact Front	
8.	Shaft Pivot (Pin Kit)	675K47432
9.	Cover Front Assy	
10.	-----	
11.	Harness Assy Front Cover (J272-P2720, P2721) - (Harness Kit)	604K38541
12.	Harness Assy Front Cover Earth 1 (T4321-T43210)	
13.	Harness Assy Drawer Earth (T4321-T43210)	
14.	Holder Drawer	
15.	Harness Assy Operation Panel (J220-P2900) - (Harness Kit)	962K39541
16.	Operator Panel (Control Panel)	848K01182
17.	Pin Pivot (Pin Kit)	675K47432
18.	Shaft Lever	
19.	Plate Pivot	
20.	Lever MPT 1	
21.	Spring Lever MPT	
22.	Spring Lever Link	
23.	Lever MPT 2	
24.	Cover Assy MPT (with 25-29, 35)	848K02012
25.	Link Assy MPT Left	
26.	Tray Assy MPT Base	
27.	Link Assy MPT Right	
28.	Tray MPT	
29.	Cover MPT (Tray 1 Cover/Door A)	
30.	Shaft Pivot MPT (Pin Kit)	675K47432
31.	Harness Assy Front Cover Earth 2 (T4322-T43221)	
32.	Harness Assy ESS (J29-J2900) - (Harness Kit)	962K39541
33.	Clamp RLWT-4V0 (not shown)	
34.	-----	
35.	Spring Tray	
36.	Spring	
98.	Kit Pin BKY (with 8, 17, 30 - 2pcs each)	675K47432

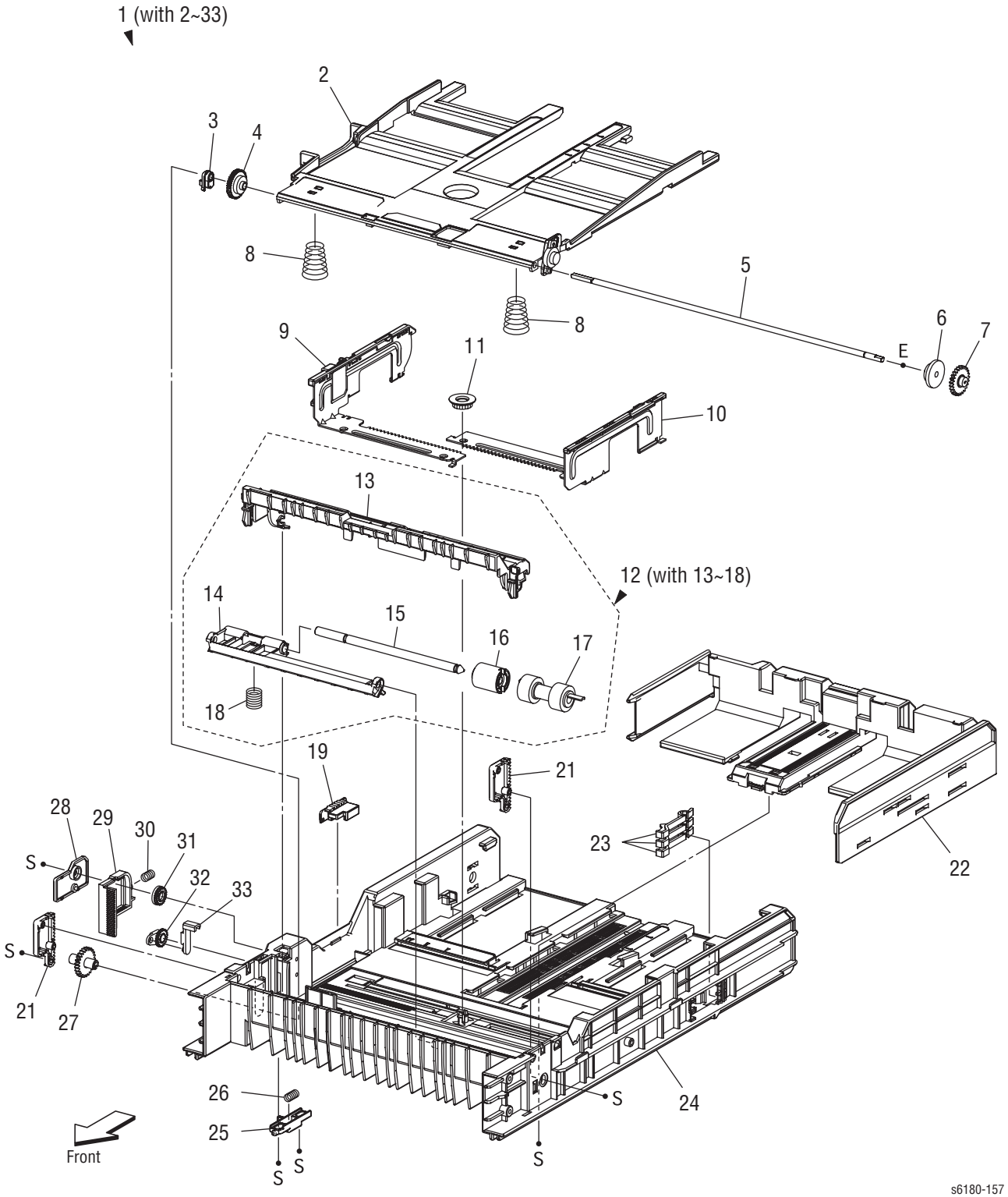
Parts List 2.1 Tray 2 (1 of 2)



Parts List 2.1 Tray 2 (1 of 2)

No.	Name/Description	Part Number
1.	Cassette Assy 250 (with 2-28, PL2.2.1) (Tray 2)	050K57912
2.	Cassette Assy Front (with 3-28) (Tray 2 Front Assy)	
3.	Kit Holder Assy Retard MPT (with 4-11)	019K09060
4.	Chute Separator	
5.	Spring Chute	
6.	Bearing Separator Left	
7.	Roll Assy Separator N	
8.	Gearing Separator Right	
9.	Spring Separator 200	
10.	Holder Separator MPT	
11.	Plate Assy Separator	
12.	Roll Pinch Turn	
13.	Spring Pinch Turn	
14.	Follower Left	
15.	Follower Right	
16.	Arm Left	
17.	Spring NF MPT	
18.	Arm Right	
19.	Housing Base FR 250	
20.	Plate Assy Bottom	
21.	Holder MPT Left	
22.	Cover Front MPT	
23.	Handle CST (Tray Handle)	
24.	Actuator Assy MPT (with 25-28)	120K92151
25.	Holder Actuator	
26.	Actuator No Paper MPT	
27.	Roll Actuator No Paper	
28.	Spring No Paper	

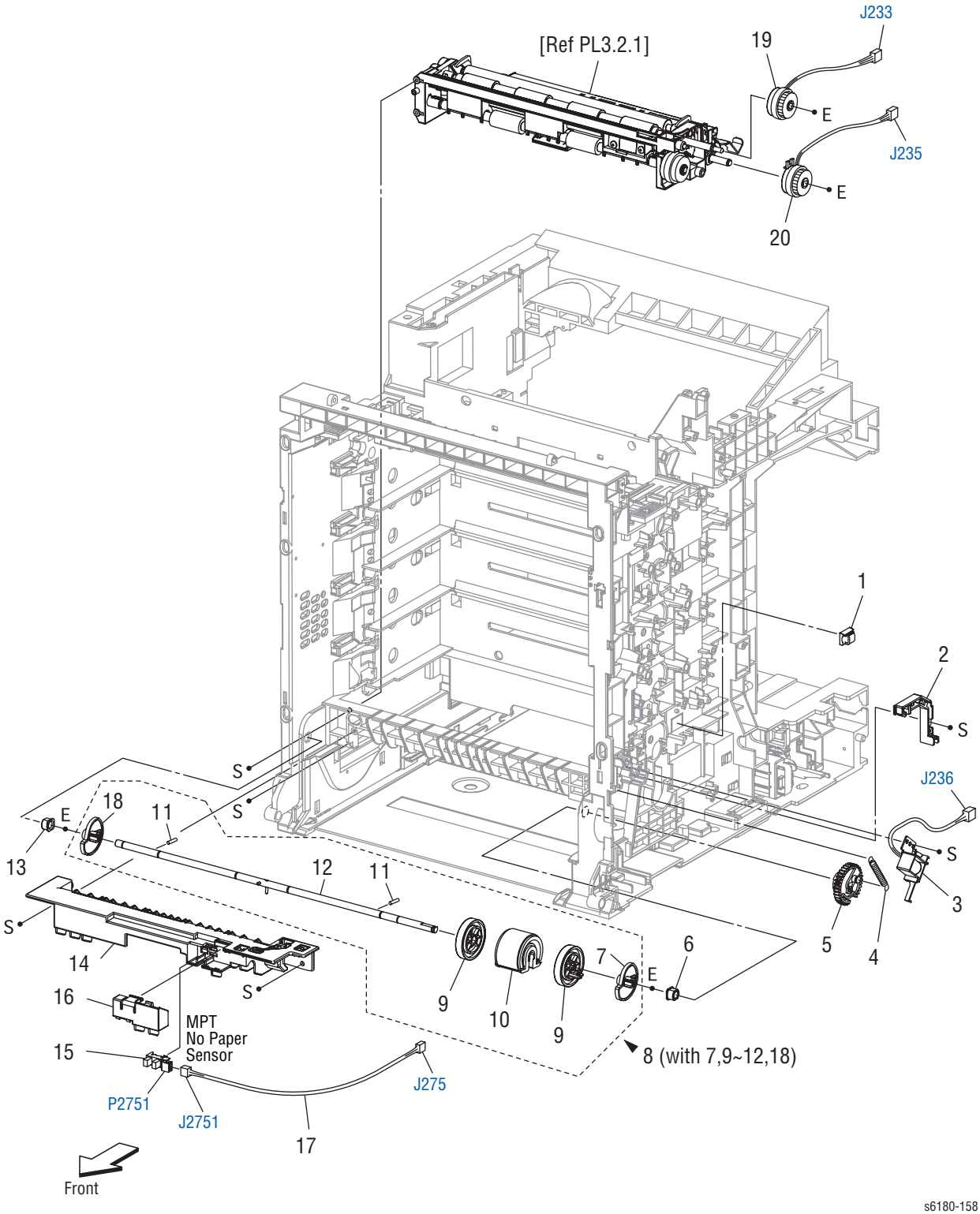
Parts List 2.2 Tray 2 (2 of 2)



Parts List 2.2 Tray 2 (2 of 2)

No.	Name/Description	Part Number
1.	Cassette Assy Rear 250	
2.	Plate Assy BTM A4	
3.	Stopper PB	
4.	Gear BTM Lock Oneway	
5.	Shaft PB A4	
6.	Gear BTM DMP Oneway	
7.	Gear PB Left	
8.	Spring BTM Up 250 A4	
9.	Guide Assy Side Right 250 A4	
10.	Guide Assy Side Left 250 A4	
11.	Gear Pinion	
12.	Holder Assy Separator (with 13-18)	019K08510
13.	Cover Retard CST (Tray Retard Cover)	
14.	Holder Separator	
15.	Shaft Separator	
16.	Clutch Friction Retard	
17.	Kit, Roll Assy Retard (Separator) (Periodic Replacement Part - per 100K prints) (consists of 3 pcs and tech sheet)	675K47670
18.	Spring Separator	
19.	Switch Size Set	
20.	-----	
21.	Plate Gear Lock 250	
22.	Guide Assy Tray End 250	
23.	Actuator Size	
24.	Housing Base RE 250	
25.	Actuator Release PB	
26.	Spring Stopper Gear	
27.	Gear PB Right	
28.	Cover BTM Up 250	
29.	Rack BTM Lock 250	
30.	Spring BTM Lock	
31.	Gear BTM Lock Pinion	
32.	Gear Lever BTM Lock	
33.	Lever BTM Lock	

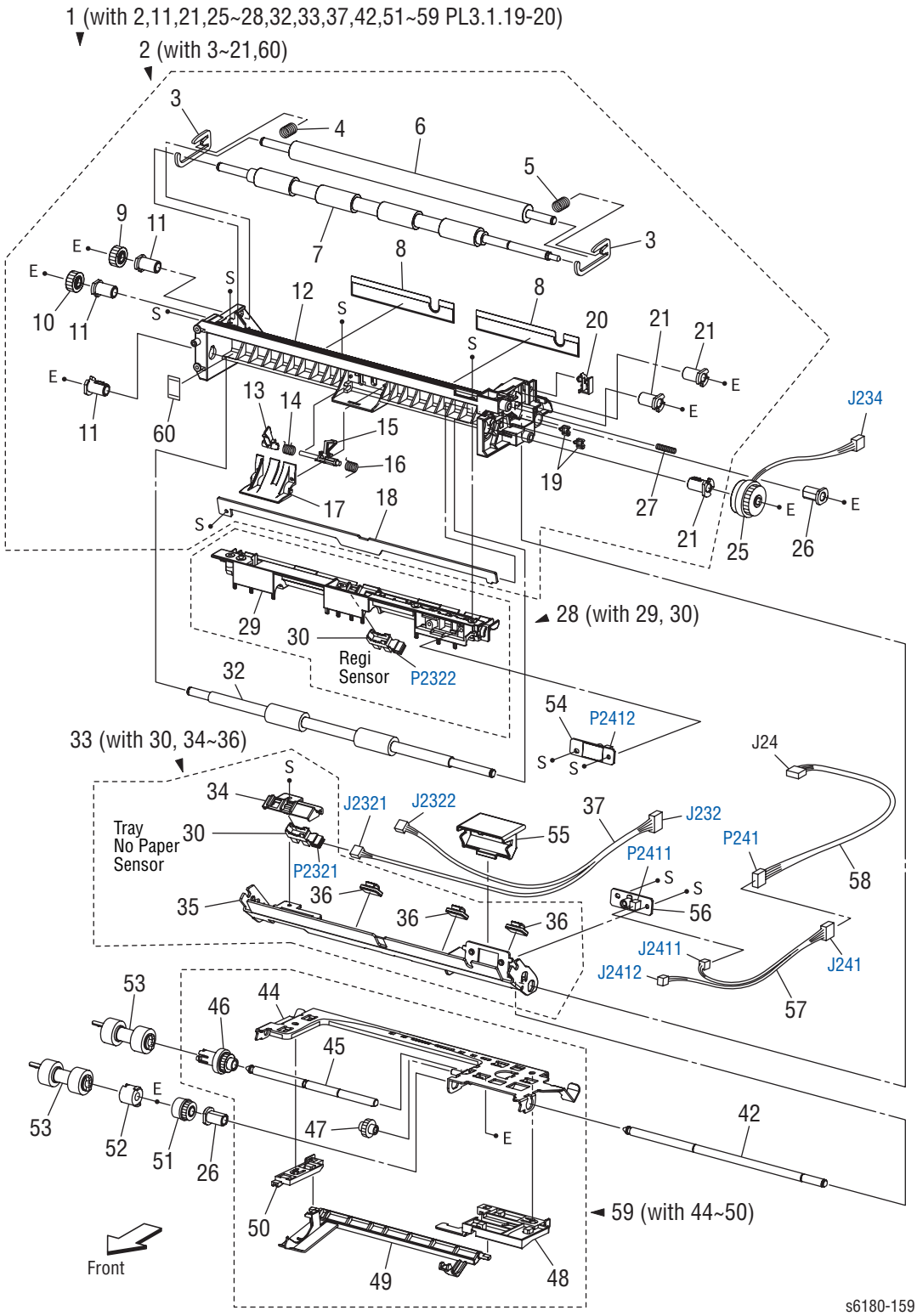
Parts List 3.1 Paper Feeder (1 of 2)



Parts List 3.1 Paper Feeder (1 of 2)

ID No.	Name/Description	Part Number
1.	Clamp	
2.	Duct MPT Solenoid	
3.	Kit Solenoid Feed MPT (with 4, 5)	675K35590
4.	Spring Feed MPT	
5.	Gear MPT	
6.	Bearing Earth	
7.	CAM MPT Right	
8.	Roll Assy MPT (with 7, 9-12, 18)	059K43961
9.	Roll Core MPT	
10.	Kit Roll Assy Feed MPT (with tech sheet)	675K47380
11.	Pin Dowel	
12.	Shaft MPT	
13.	Bearing	
14.	Chute MPT	
15.	Sensor Photo (Tray 1 No Paper Sensor)	930W00113
16.	Cover Sensor	802E89292
17.	Harness Assy MPT NPP (J275-J2751) - (Harness Kit)	604K38550
18.	CAM MPT Left	
19.	Clutch Assy PH Regi	
20.	Clutch Assy PH Feeder	

Parts List 3.2 Paper Feeder (2 of 2)



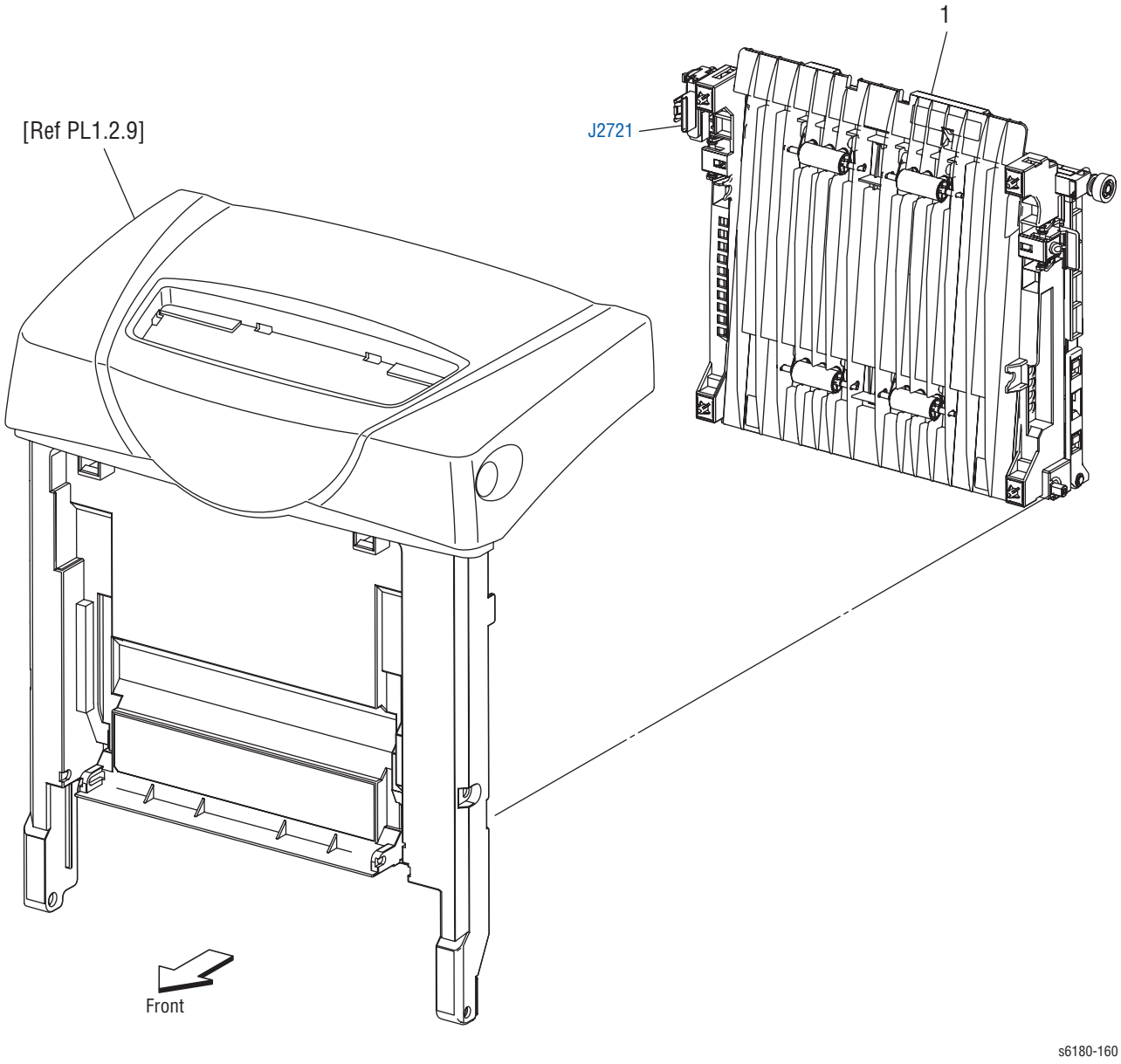
Parts List 3.2 Paper Feeder (2 of 2)

ID No.	Name/Description	Part Number
1.	Kit Feeder Assy (with 2, 11, 21, 25-28, 32, 33, 37, 42, 51-59, PL3.1.19-20)	675K47543
2.	Chute Assy Regi (with 3-21, 60)	
3.	Bracket NIP	
4.	Spring Regi Left	
5.	Spring Regi Right	
6.	Roll Regi Metal	
7.	Roll Regi Rubber	
8.	Film Inlet Left	
9.	Gear Regi Metal	
10.	Gear Regi Rubber	
11.	Bearing Regi	
12.	Chute Regi	
13.	Actuator A	
14.	Spring Regi Sensor A	
15.	Actuator B	
16.	Spring Regi Sensor B	
17.	Cover Actuator	
18.	Chute Separator BTM	
19.	Clamp Mini-Saddle	
20.	Clamp	
21.	Bearing Regi E	
22.	-----	
23.	-----	
24.	-----	
25.	Clutch Assy PH Turn	
26.	Bearing Nudger	
27.	Spring Earth	
28.	Chute Assy Regi Upper (with 29, 30)	
29.	Chute Regi Upper	
30.	Sensor Photo (Regi Sensor, Tray No Paper Sensor)	
31.	-----	
32.	Roll Assy Turn	
33.	Chute Assy Top (with 30, 34, 35)	
34.	Holder No Sensor	
35.	Chute Assy Separator	
36.	Clamp	
37.	Harness Assy Regi Sensor (J232-J2321, J2322) - (Harness Kit)	604K38550
38.	-----	
39.	-----	
40.	-----	

Parts List 3.2 Paper Feeder (2 of 2)

ID No.	Name/Description	Part Number
41.	-----	
42.	Shaft Feed	
43.	-----	
44.	Support Nudger Assy	
45.	Shaft Nudger	
46.	Roll Assy Gear Nudger	
47.	Gear Idler Nudger	
48.	Holder No Paper Left A4	
49.	Actuator No Paper A4	
50.	Holder No Paper Right A4	
51.	Clutch Oneway Nudger	
52.	Clutch Oneway Feed	
53.	Roll Assy Feed (Periodic Replacement Part - per 100K prints) (consist of 3 pcs and tech sheet)	675K47670
54.	PWBA OHP LED (Not used on 6180)	
55.	Cover OHP Sensor	
56.	PWBA OHP Sensor (Not used on 6180)	
57.	Harness Assy OHP Sensor (J241-J2411, J2412)	
58.	Harness Assy OHP (J24-P241)	
59.	Nudger Assy (with 44-50)	068K29482
60.	Guide Film	

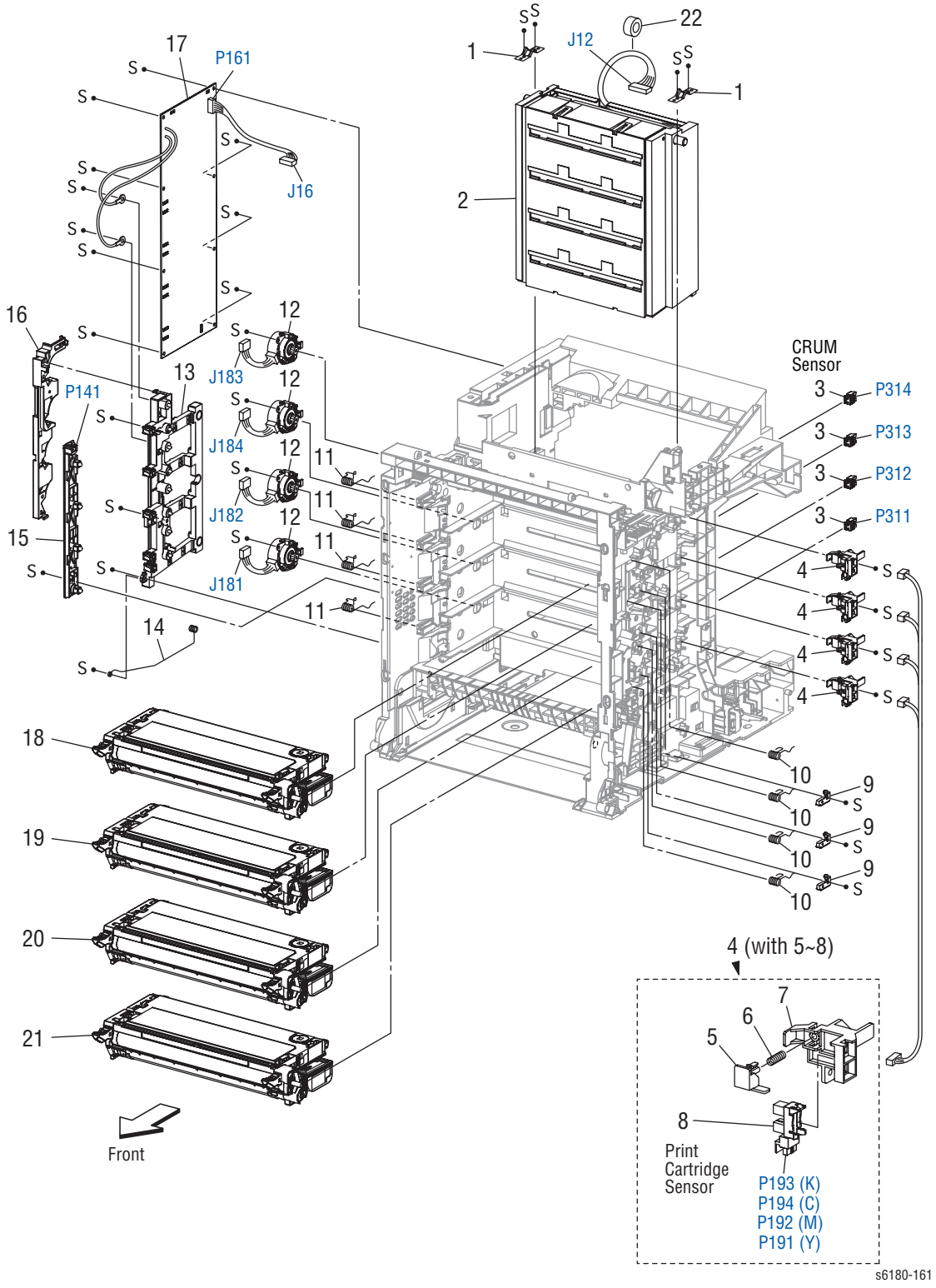
Parts List 4.1 Transfer Unit



Parts List 4.1 Transfer

ID No.	Name/Description	Part Number
1.	Kit Belt CRU (Transfer Unit) (Periodic Replacement Part - per 100K prints)	675K47084

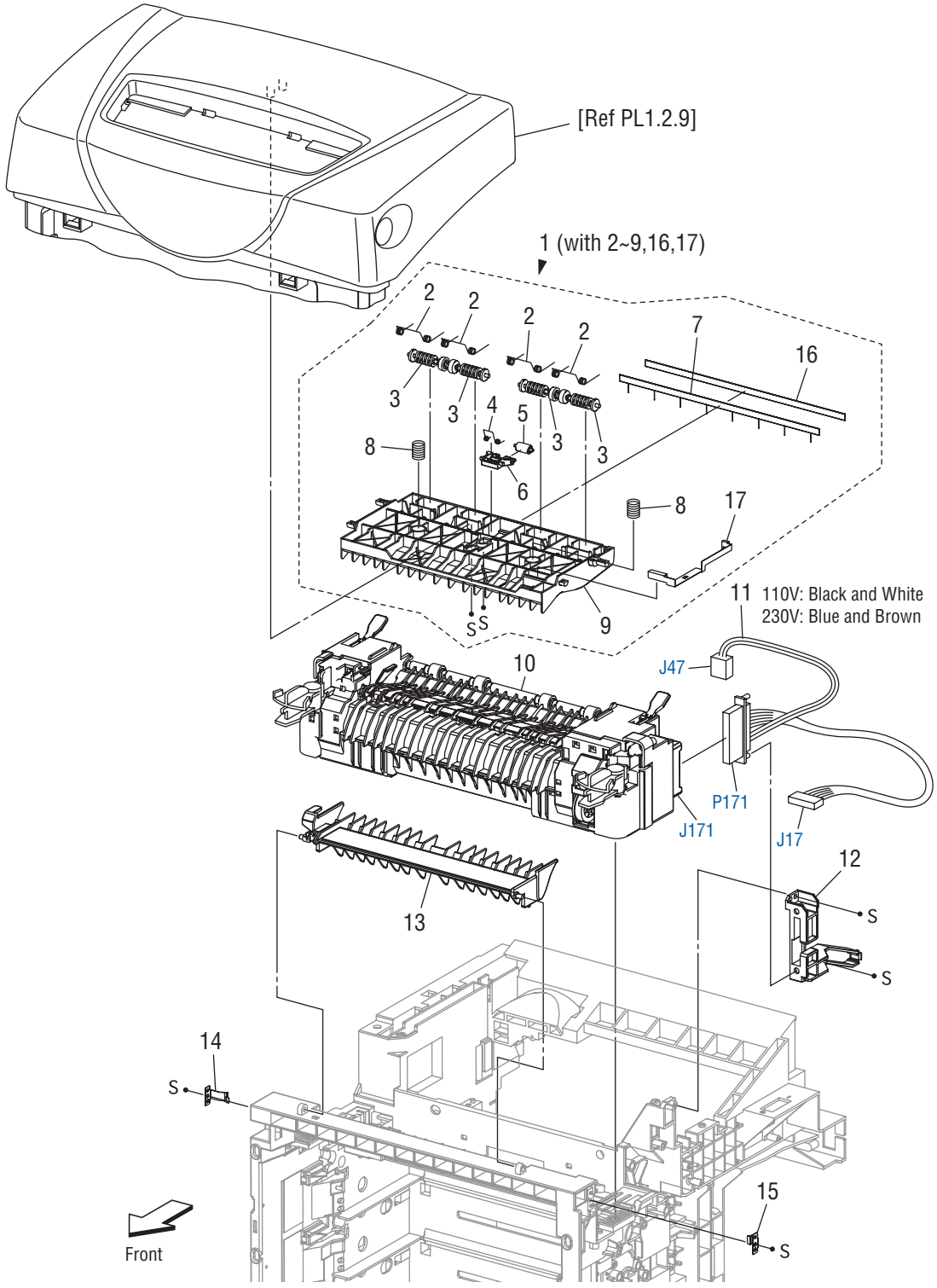
Parts List 5.1 Xerographics



Parts List 5.1 Xerographics

ID No.	Name/Description	Part Number
1.	Spring ROS (Laser Unit Spring)	
2.	ROS Assy (with 1x2) (Laser Unit)	604K36193
3.	Connector CRUM	
4.	Sensor Assy CRU (with 5-8)	130K69871
5.	Actuator Sensor CRU	
6.	Spring CRU	
7.	Bracket Sensor CRU	
8.	Sensor Photo (Print Cartridge Sensor)	
9.	Spring Guide	
10.	Spring CRU Right	
11.	Spring CRU Left	
12.	Dispenser Assy	094K91880
13.	Bias Assy	
14.	Spring ESA Roll	
15.	LED Assy	122K93900
16.	Duct Harness Motor	
17.	HVPS	105K22440
18.	Cartridge Assy (Print Cartridge) (K) (Periodic Replacement Part - per 8K prints)	675K47150
	Cartridge Assy (Print Cartridge) (K) (Periodic Replacement Part - per 3K prints)	675K47190
19.	Cartridge Assy (Print Cartridge) (C) (Periodic Replacement Part - per 6K prints)	675K47160
	Cartridge Assy (Print Cartridge) (C) (Periodic Replacement Part - per 2K prints)	675K47200
20.	Cartridge Assy (Print Cartridge) (M) (Periodic Replacement Part - per 6K prints)	675K47170
	Cartridge Assy (Print Cartridge) (M) (Periodic Replacement Part - per 2K prints)	675K47210
21.	Cartridge Assy (Print Cartridge) (Y) (Periodic Replacement Part - per 6K prints)	675K47180
	Cartridge Assy (Print Cartridge) (Y) (Periodic Replacement Part - per 2K prints)	675K47220
22.	Core (Ferrite Core)	

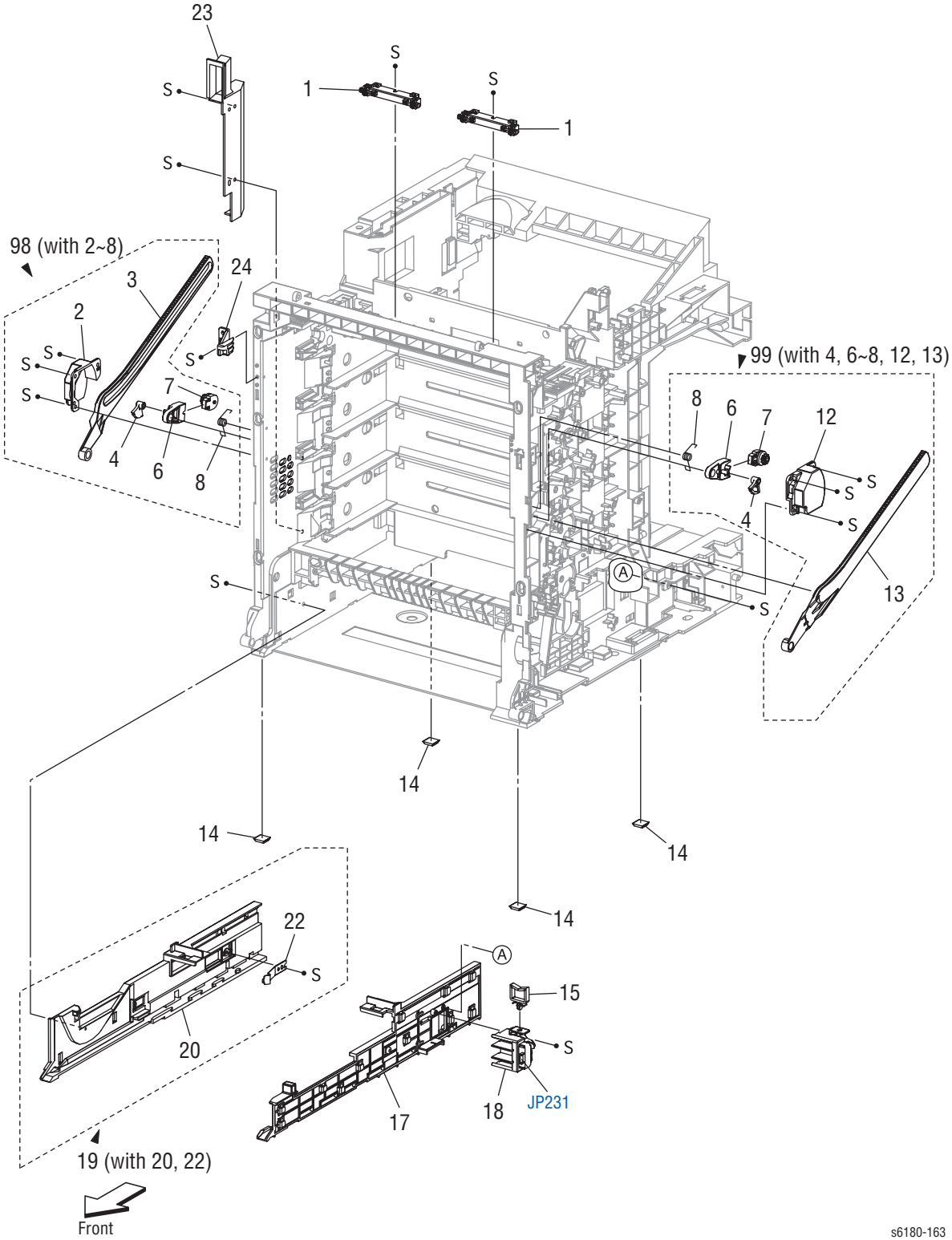
Parts List 6.1 Fuser & Exit



Parts List 6.1 Fuser & Exit

ID No.	Name/Description	Part Number
1.	Chute Assy Exit Out (with 2-9, 16, 17) (attached on PL 01.02.09)	054K30850
2.	Spring Pinch Exit Out	
3.	Roll Pinch Exit	
4.	Spring CORR	
5.	Roll Corrugate	
6.	Holder CORR 2	
7.	Eliminator Exit 1	
8.	Spring Chute Out	
9.	Chute Exit Out 20	
10.	Fuser Assy KMY 115V (Periodic Replacement Part - per 100K prints)	675K47094
	Fuser Assy KMY 230V (Periodic Replacement Part - per 100K prints)	675K47105
11.	Harness Assy Fuser (P171-J17, J47) - 100V/115V - (Harness Kit, Black & White)	604K38550
	Harness Assy Fuser (P171-J17, J47) - 230V - (Harness Kit, Blue & Brown)	604K38550
12.	Bracket Fuser	
13.	Chute Dup Gate	054E30113
14.	Plate Latch FSR AD	
15.	Plate Latch FSR D	
16.	Tape Eliminator	
17.	Plate Earth Exit	

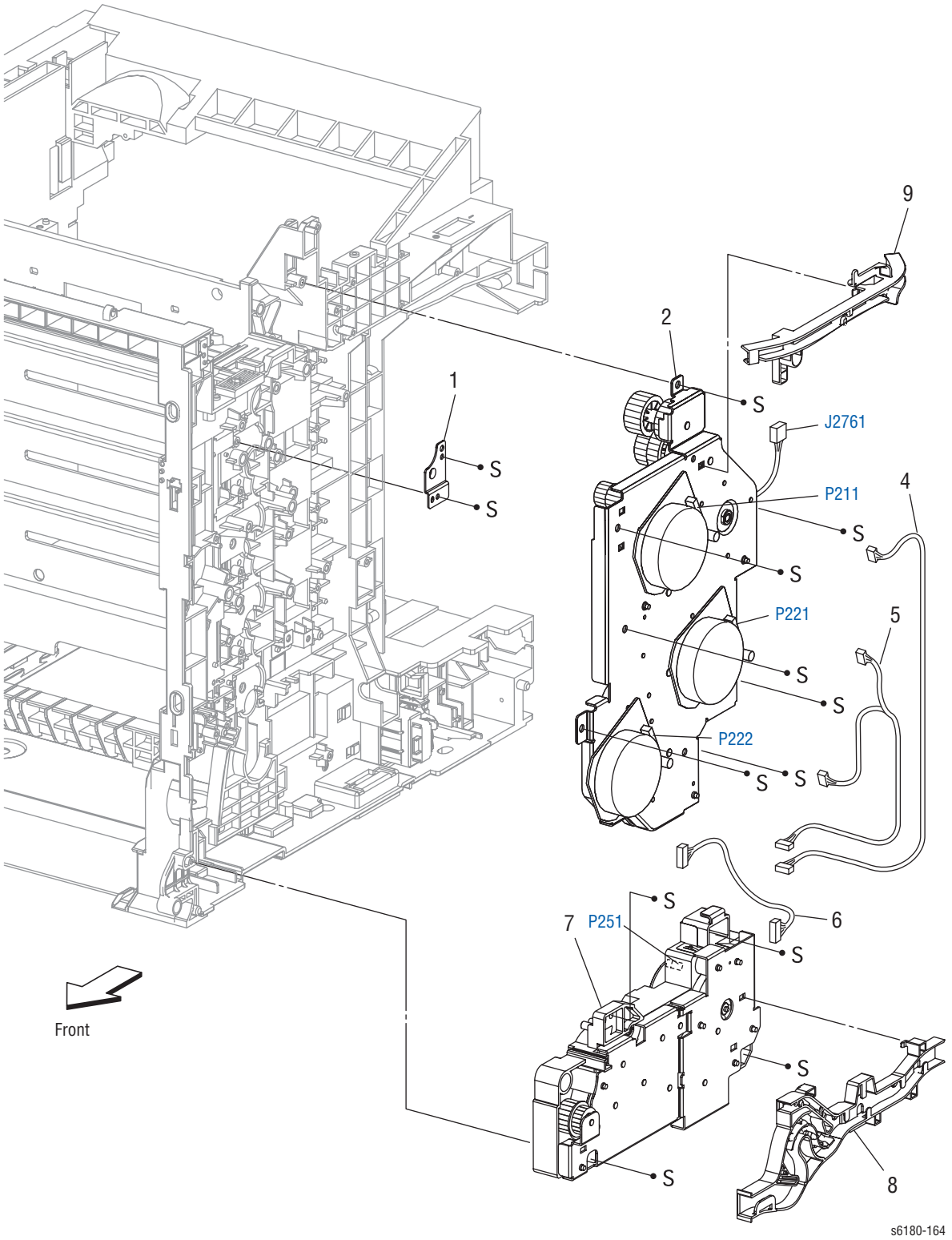
Parts List 7.1 Frame



Parts List 7.1 Frame

ID No.	Name/Description	Part Number
1.	Wheel Star Assy	019K08450
2.	Link Assy Left (Kits)	
3.	Link Latch Trans (Kits)	
4.	Lever Release (Kits)	
5.	-----	
6.	Holder Damper H (Kits)	
7.	Damper Oil H (Kits)	
8.	Spring Support	
9.	-----	
10.	-----	
11.	-----	
12.	Link Assy Right (Kits)	
13.	Link Right	
14.	Kit Foot Assy (4 pcs)	675K35450
15.	Clamp WS-2W-V0	
16.	-----	
17.	Guide Tray Right 250	
18.	Switch Assy Size	110K12820
19.	Guide Tray Assy Left 250 (with 20, 22)	
20.	Guide Tray Left 250	
21.	-----	
22.	Spring Tray Lock	
23.	Duct Side Left	
24.	Stopper Frame Left	
98.	Kit Link Assy Left (with 2-8)	675K35433
99.	Kit Link Assy Right (with 4, 6-8, 12, 13)	675K48080

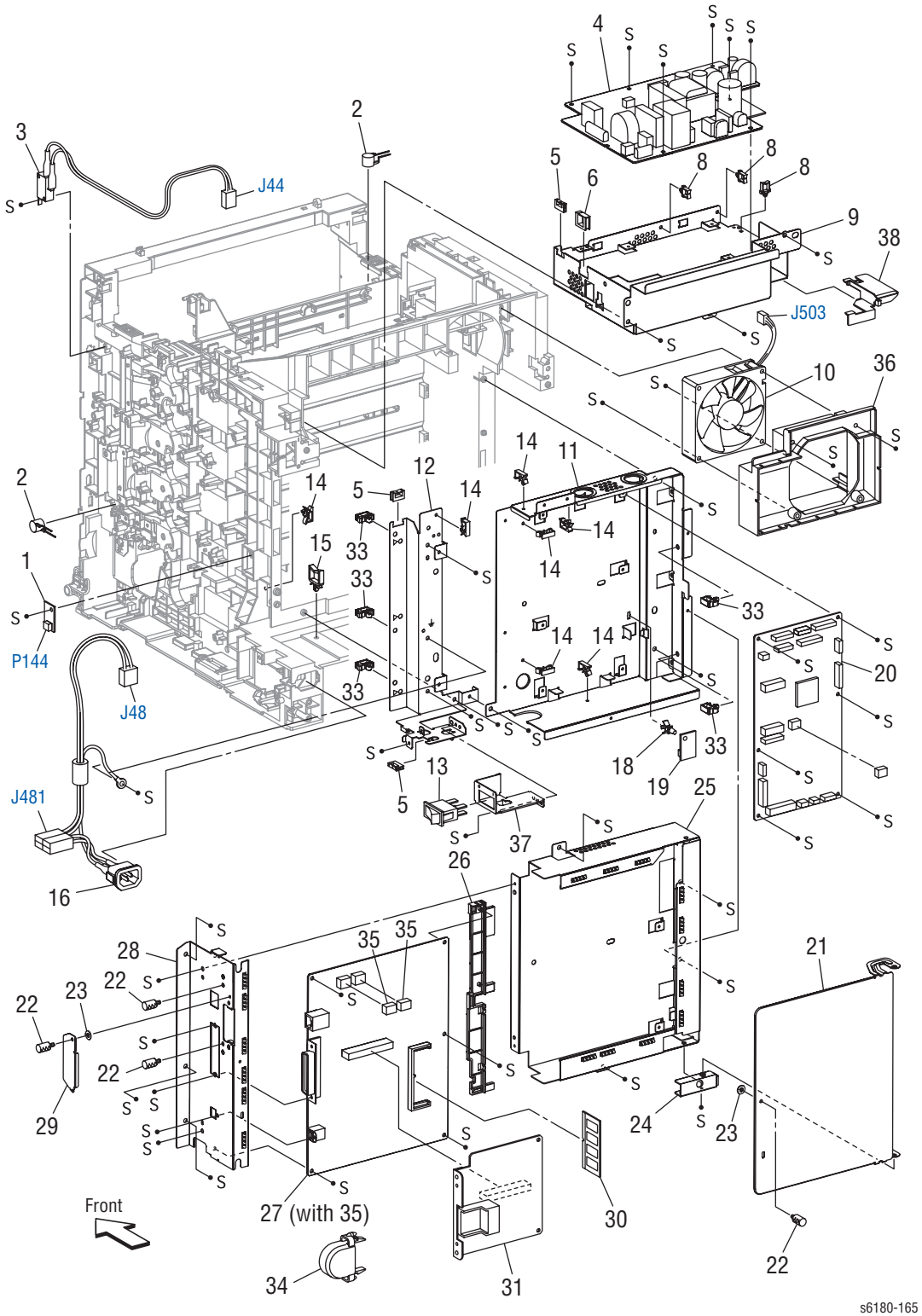
Parts List 8.1 Drive



Parts List 8.1 Drive

ID No.	Name/Description	Part Number
1.	Bracket Gear T1	
2.	Drive Assy Main	675K45142
3.	-----	
4.	-----	
5.	-----	
6.	-----	
7.	Drive Assy PH	675K47390
8.	Duct Drive PH	
9.	Duct Drive Main	

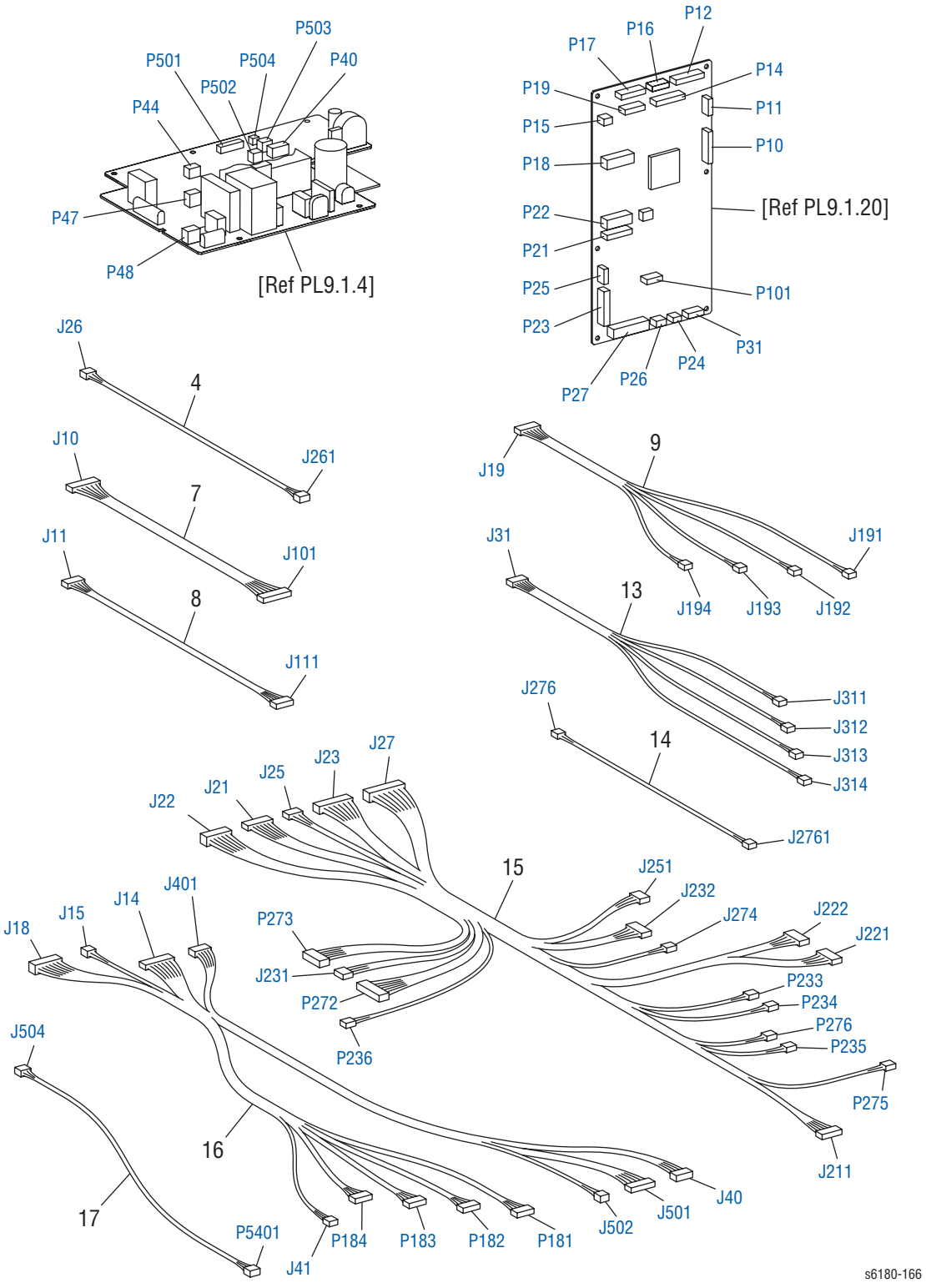
Parts List 9.1 Electrical



Parts List 9.1 Electrical

ID No.	Name/Description	Part Number
1.	PWBA EEPROM (XPRO)	960K17290
2.	Varistor	
3.	Harness Assy Interlock (Harness Kit)	604K38550
4.	LVPS KMY 100/115V	105K22420
	LVPS KMY 230V	105K22430
5.	Edge Saddle ES-0510	
6.	Edge Saddle LENS-1010	
7.	-----	
8.	Clamp RMS-3V0	
9.	Shield LVPS	
10.	Fan Main	127E84800
11.	Shield MCU	
12.	Plate Rear RH	
13.	Switch Power - (Harness Kit)	604K38560
14.	Clamp MST-10V0	
15.	Clamp WS-2W-V0	
16.	Harness Assy Inlet (J48-J481) - (Harness Kit)	604K38560
17.	Power Cord (not shown)	117E35170
18.	Spacer RCBT-11S	
19.	Sensor Humidity (Temperature Sensor)	130E87990
20.	PWBA MCU KMY	960K26322
21.	Shield Window	
22.	Screw Knurling	
23.	Washer	
24.	Bracket Pivot	
25.	Shield Assy ESS (Shield Controller Assembly)	
26.	Guide ESS (Controller Guide)	
27.	PWBA ESS (with 35) (Image Processor Board)	960K26232
28.	Shield Assy IF	
29.	Plate Opt	
30.	512 MB DDR2 Memory (1x 512 MB)	604K48400
	256 MB DDR2 Memory (1x 256 MB)	604K48180
31.	Multi-Protocol Network Card	675K47113
32.	Clamp RLWC-1SV0	
33.	Cover USB (Option)	
34.	NVM ROM	
35.	Duct Fan Main	
36.	Bracket SW	
37.	Duct ROS Guard	

Parts List 10.1 Wiring Harness

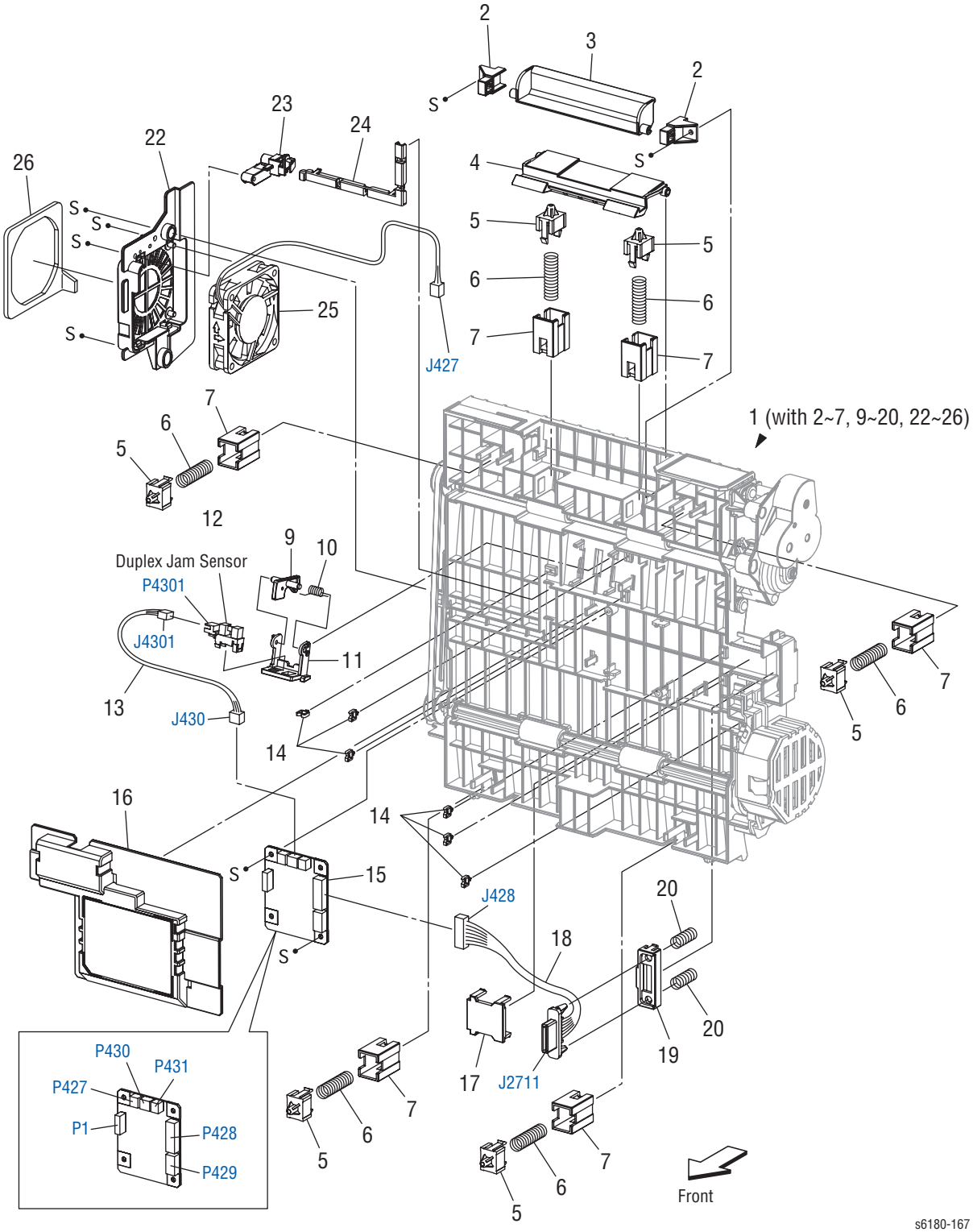


Parts List 10.1 Wiring Harness

ID No.	Name/Description	Part Number
1.	-----	
2.	-----	
3.	-----	
4.	Harness Assy Humidity (J26-J261) - (Harness Kit)	604K38560
5.	-----	
6.	-----	
7.	Harness Assy ESS (J10-J101) - (Harness Kit)	604K38560
8.	Harness Assy Video (J11-J111) - (Harness Kit)	604K38560
9.	Harness Assy TNR SNR (J19-J191, J192, J193, J194) - (Harness Kit)	604K38560
10.	-----	
11.	-----	
12.	-----	
13.	Harness Assy CRUM (J31-J311, J312, J313, J314) - (Harness Kit)	604K38560
14.	Harness Assy Exit CLT (J276-J2761) - (Harness Kit)	604K38550
15.	Harness Assy Right Side (J21, J22, J23, J25, J27-J211, J221, J222, J231, J232, P233, P234, P235, P236, J251, P272, P273, J274, P275, P276)	962K42112
16.	Harness Assy LV Top (J14, J15, J18, J401-J141, P181, P182, P183, P184, J40, J501, J502)	962K42101
17.	Harness Assy RLY (J504-J5401)	

Options

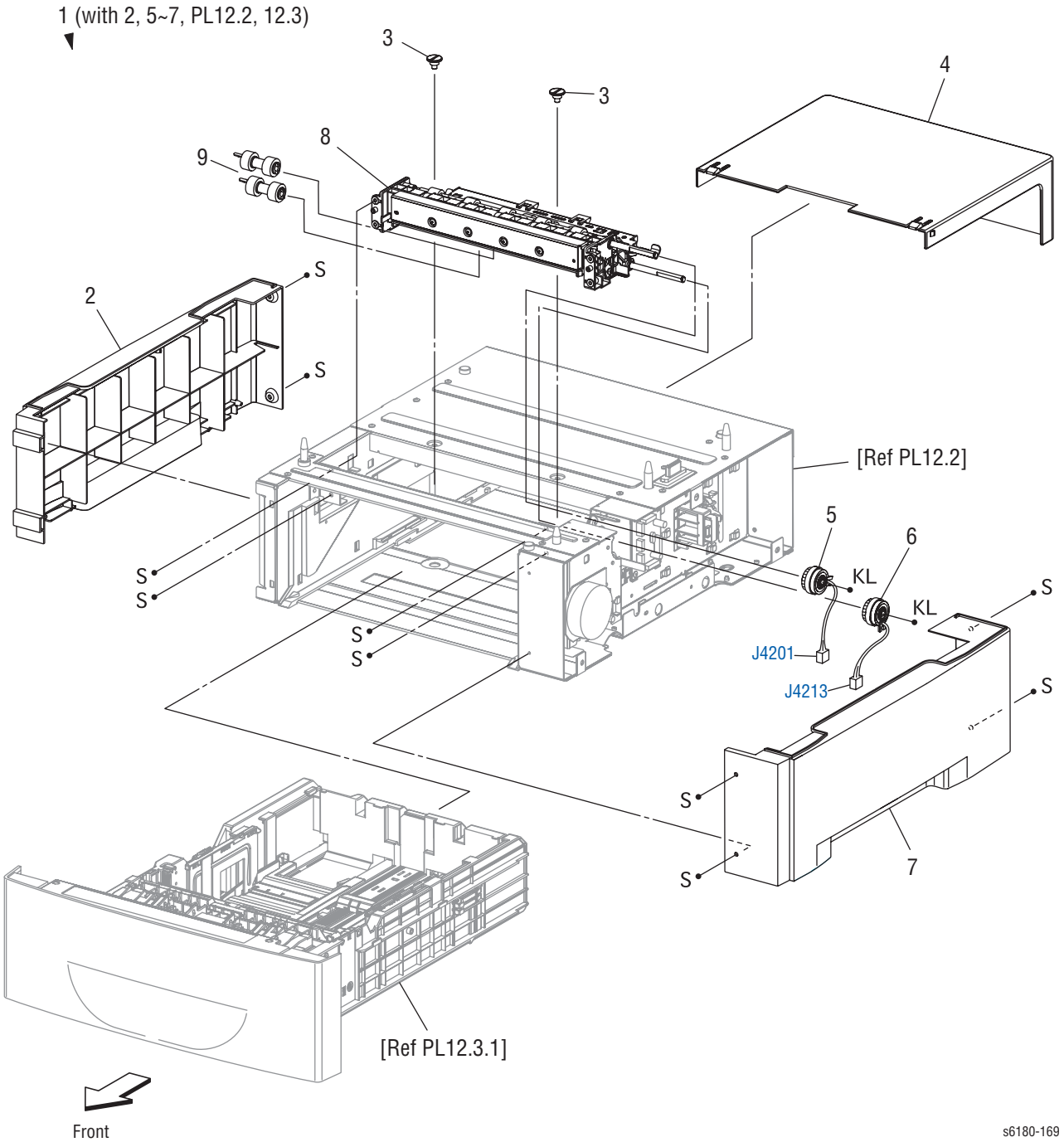
Parts List 11.1 Duplex



Parts List 11.1 Duplex

ID No.	Name/Description	Part Number
1.	Kit Duplex Module (with 2-7, 9-20, 22-26)	675K47078
2.	Stopper Latch Pivot	
3.	Handle Latch Duplex	
4.	Latch Duplex	
5.	Holder Main	
6.	Spring Chute Duplex	
7.	Bracket Holder Duplex	
8.	-----	
9.	Actuator Duplex	
10.	Spring Sensor Duplex	
11.	Holder Sensor Duplex	
12.	Sensor Photo (Duplex Jam Sensor)	
13.	Harness Assy Duplex Sensor (J430-J4301)	
14.	Clamp Mini	
15.	PWBA Duplex	
16.	Cover PWBA Duplex	
17.	Cover Connect Duplex	
18.	Harness Assy Duplex Unit (J428-J2711)	
19.	Holder Connect Duplex	
20.	Spring Connect Duplex	
21.	-----	
22.	Bracket Fan Duplex	
23.	Cover Harness Fan	
24.	Cover Harness Chute	
25.	Fan Duplex	
26.	Seal Duplex	

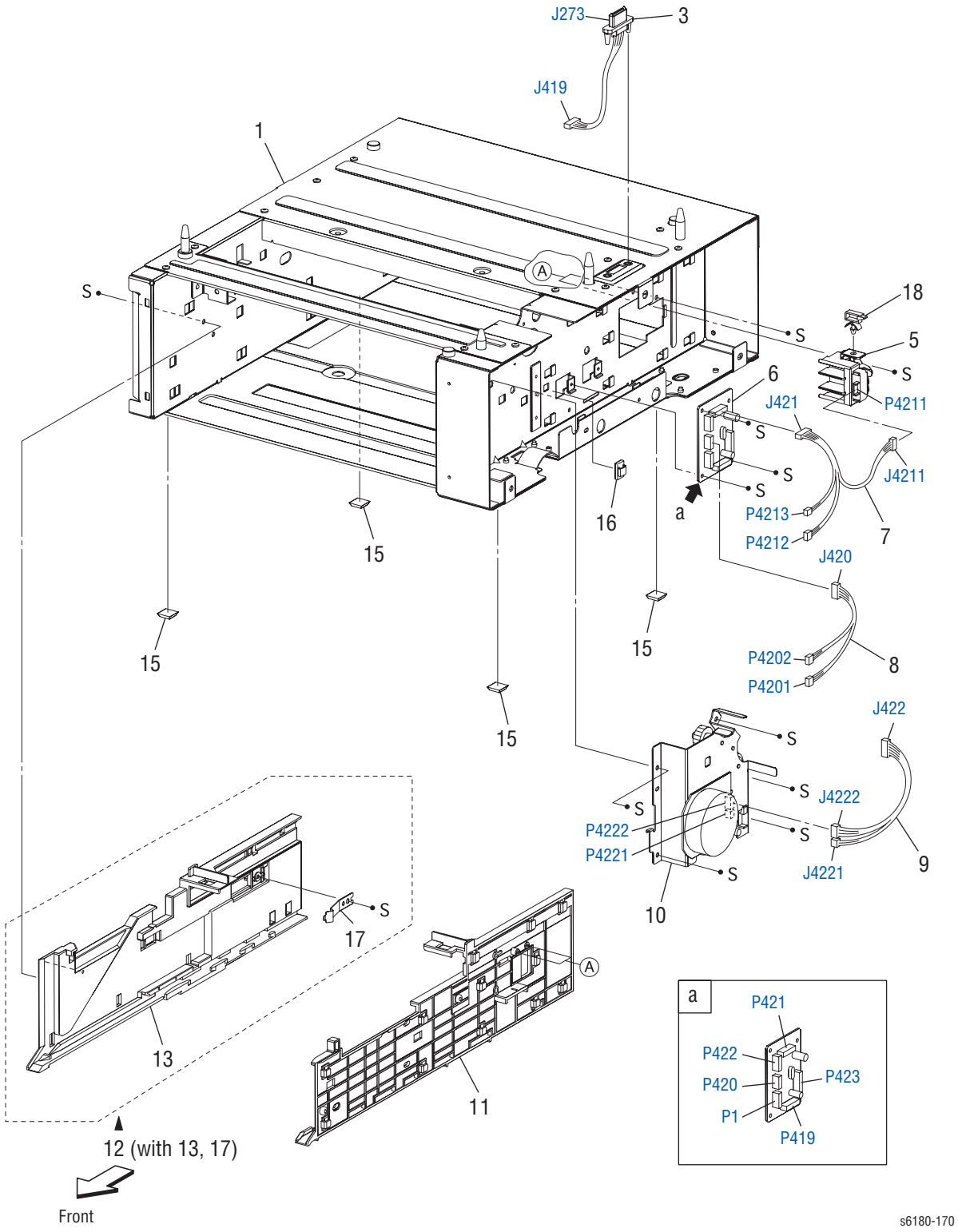
Parts List 12.1 Optional-550 Sheet Feeder - Tray 3 (1 of 3)



Parts List 12.1 Optional 550-Sheet Feeder - Tray 3 (1 of 3)

ID No.	Name/Description	Part Number
1.	550 Option Feeder (with 2, 5-7, PL12.2-12.5)	675K47066
2.	Cover Left	
3.	Screw Joint	
4.	Cover Tray 550	
5.	Clutch Assy PH Turn	
6.	Clutch Assy PH Feed	
7.	Cover Right	
8.	Feed Assy Option	05948273
9.	Roll Assy Feed (Periodic Replacement Part - per 100K prints)	PL2.2.17

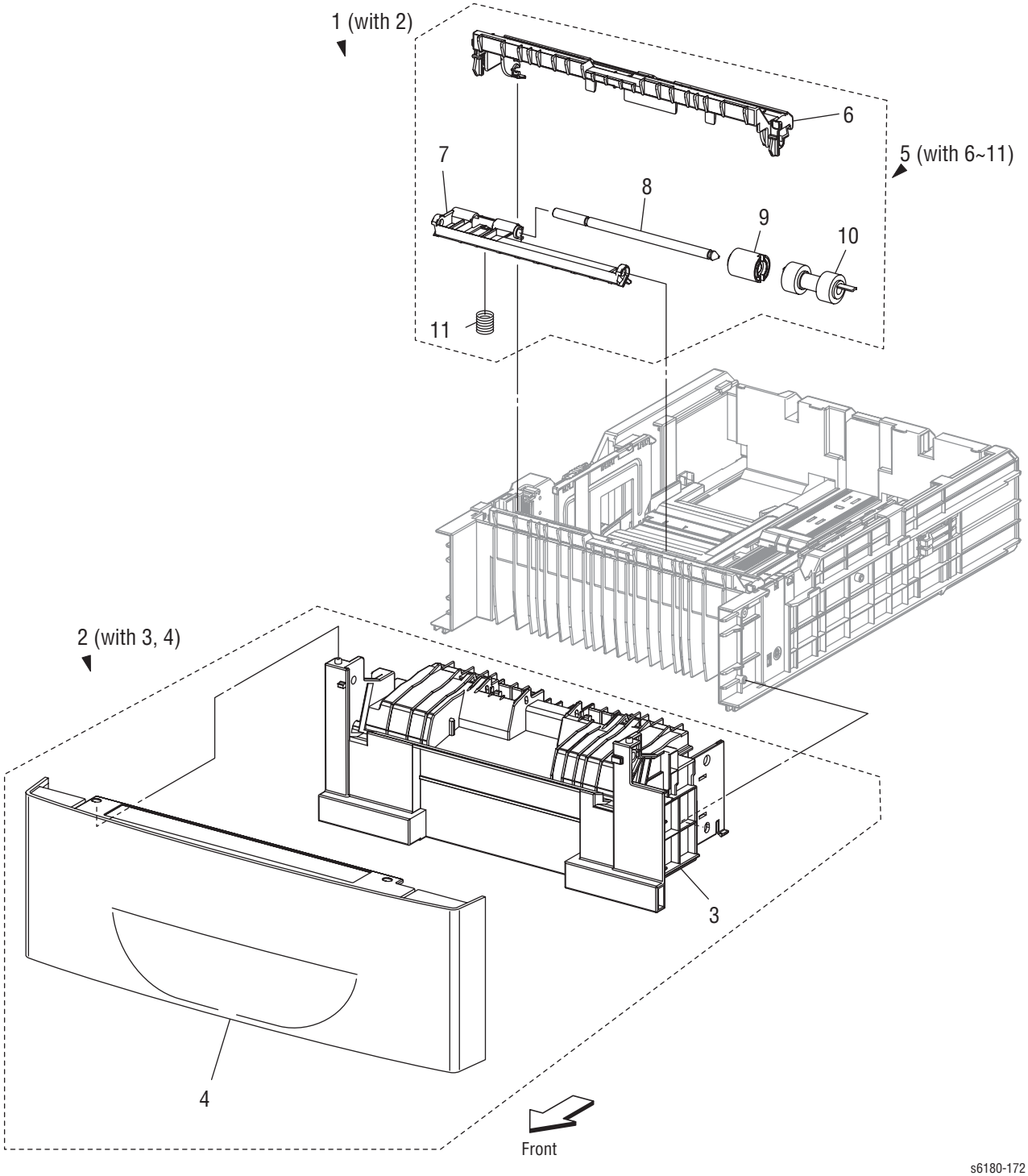
Parts List 12.2 Optional 550-Sheet Feeder - Tray 3 (2 of 3)



Parts List 12.2 Optional 550-Sheet Feeder - Tray 3 (2 of 3)

ID No.	Name/Description	Part Number
1.	Frame Assy Option	
2.	-----	
3.	Harness Assy Feeder Unit (J273-J419)	
4.	-----	
5.	Switch Assy Size Option	
6.	PWBA Option Feeder (Tray 3 Feeder Board)	
7.	Harness Assy C2 Chute (J421-J4211, P4212, P4213)	
8.	Harness Assy C2 Turn (J420-P4201, P4202)	
9.	Harness Assy C2 Motor (J422-J4221, J4222)	
10.	Drive Assy Option Feeder	
11.	Guide Tray Right 550	
12.	Guide Tray Assy 550 Left (with 13, 17)	
13.	Guide Tray Left 550	
14.	-----	
15.	Foot	675K35450
16.	Clamp Mini	
17.	Spring Tray Lock	
18.	Clamp Locking	

Parts List 12.3 Optional 550-Sheet Feeder - Tray 3 (3 of 3)



Parts List 12.3 550-Sheet Feeder - Tray 3 (3 of 3)

ID No.	Name/Description	Part Number
1.	Cassette Assy 550 Option (Tray 3) (with 2)	050K57921
2.	Cassette Assy Front 550 Option (with 3, 4) (Tray 3 Front Assy)	
3.	Housing Base FR 550 (Tray 3 Housing Base)	
4.	Handle CST 550 Option (Tray 3 Handle)	
5.	Holder Assy Separator (with 6-11)	
6.	CVR RTD CST (Tray 3 Retard Cover)	
7.	Holder Separator	
8.	Shaft Separator	
9.	Clutch Friction RET (Clutch Friction Retard)	
10.	Roll Assy Retard (Periodic Replacement Part - per 100K prints)	657K47670
11.	Sprint Separator	

Xerox Supplies and Accessories

World Kit/Documentation

Description	Part Number
World Kit	650K27620

Consumable and Maintenance Items

Parts List Reference	Description	Part Number
PL2.2.17 PL3.2.53 PL12.3.10	Kit, Roll Assy Feed (100K)	675K47670
PL4.1.1	Kit Belt CRU (Transfer Unit) (100K)	675K47084
PL6.1.10	Fuser Assy - 115V (100K)	675K47094
	Fuser Assy - 230V (100K)	675K47105
PL5.1.18	Print Cartridge (K), High Capacity (8K)	675K47150
	Print Cartridge (K), Standard Capacity (3K)	675K47190
PL5.1.19	Print Cartridge (C), High Capacity (6K)	675K47160
	Print Cartridge (C), Standard Capacity (2K)	675K47200
PL5.1.20	Print Cartridge (M), High Capacity (6K)	675K47170
	Print Cartridge (M), Standard Capacity (2K)	675K47210
PL5.1.21	Print Cartridge (Y), High Capacity (6K)	675K47180
	Print Cartridge (Y), Standard Capacity (2K)	675K47220

Options

Parts List Reference	Description	Part Number
PL9.1.30	512 MB DDR2 Memory (1x 512 MB)	604K48400
	256 MB DDR2 Memory (1x 256 MB)	604K48180
PL9.1.31	Multi-Protocol Network Card	675K47113
PL11.1.1	Kit Duplex Unit	675K47078
PL12.1.1	550-Sheet Feeder	675K47066, PL12.2-12.3

Power Cords

Description	Part Number
Power Cord, North America (NEMA 5-15), 125 V, 13A	117E35170
Power Cord, Italy, 230 V	117E29450
Power Cord, Denmark, 230 V	117E29460
Power Cord, India/South Africa, 230 V	117E29470
Power Cord, Israel, 230 V	117E29480
Power Cord, Australia, 230 V	117E29490
Power Cord, Euro, 230 V	117E29500
Power Cord, UK, 240 V	117E29510
Power Cord, China, 220 V	117E35030
Power Cord, Argentina, 220 V	117E35040
Power Cord, Switzerland, 230 V	117E35050

Service Kits

Service Kits are developed to provide an easy means to obtain spare parts normally associated with larger assemblies. A number of Service Kits have been developed for the Phaser 6180. The following tables list the contents for each kit.

Kits

Pin Kit

Parts List Reference	Description	Part Number
99.99.95	Kit Pin BKY	675K47432
PL1.2.98	*Kit Pin BKY (with 8, 17, 30 - 2pcs each)*	

Hardware Kit

Parts List Reference	Description	Part Number
99.99.99	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)	

Packaging Kit

Parts List Reference	Description	Part Number
	Packaging Kit	604K48130

Harness Kits

Parts List Reference	Description	Part Number
99.99.96	Kit Harness Front Cover STD	604K38541
PL1.2.11	*Harness Assy Front Cover (J272-P2720, P2721)*	
PL1.2.15	*Harness Assy Operation Panel (J220-P2900)*	
PL1.2.32	*Harness Assy ESS (P29-J2900)*	
PL3.2.99	*Kit Feeder Assy (with 1, PL3.2.1, 19-20)*	
99.99.97	Kit Harness Feeder/Fuser/Interlock STD	604K38550
PL3.1.17	*Harness Assy MPT NPP (J275-J2751)*	
PL3.2.37	*Harness Assy Regi Sensor (J232-J2321, J2322)*	
PL6.1.11	*Harness Assy Fuser (P171-J17, J47), 100V/115V*	
PL6.1.11	*Harness Assy Fuser (P171-J17, J47), 230V*	
PL9.1.03	*Harness Assy Interlock*	
PL10.1.14	*Harness Assy Exit CLT (J276-J2761)*	
99.99.98	Kit Harness Power Switch STD	604K38560
PL9.1.13	*Power Switch*	
PL9.1.16	*Harness Assy Inlet, 100 V(J48-J481)*	
PL9.1.16	*Harness Assy Inlet, 200 V (J48-J481)*	
PL10.1.4	*Harness Assy Humidity (J26-J261)*	
PL10.1.7	*Harness Assy ESS (J10-J101)*	
PL10.1.8	*Harness Assy Video (J11-J111)*	
PL10.1.9	*Harness Assy Toner Sensor (J19-J191, J192, J193, J194)*	
PL10.1.13	*Harness Assy CRUM (J31, J311, J312, J313, J314)*	

Plug/Jack and Wiring Diagrams

In this chapter...

- Plug/Jack Diagrams and Designators
- Plug/Jack Locators
- Notations Used in the Wiring Diagrams
- Print Engine Wiring Diagrams
- Optional 550-Sheet Feeder Wiring Diagram
- Duplex Wiring Diagram

Chapter 10

Plug/Jack Diagrams and Designators

This chapter contains the Plug/Jack Designators, Locators, and wiring diagrams for the print engine and all options.

The Plug/Jack Locator diagrams show the P/J locations within the printer, Optional 550-Sheet Feeder, and Duplex Unit. Use these illustrations to locate connections called out in the Troubleshooting procedures presented in Sections 3, 4, and 5.

The Plug/Jack locators consist of the P/J Designator Tables and the P/J Locator Diagrams.

- The P/J column lists the Plug/Jack numbers in numerical order.
- The Map column provides the map number of the specific areas (i.e., Electrical, Laser Unit...etc.)
- The Coordinates column lists the diagram coordinates for the location of the connector.
- The Remarks column provides a brief description of each connection.

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 with its P/J designation number.

Print Engine Plug/Jack Designators

Print Engine Plug/Jack Designators

P/J	Map	Coordinates	Remarks
3	3	E-138	Connects Image Processor Board and Multi-Protocol Network Card.
10	4	J157	Connects MCU Board and Controller Harness.
11	4	J-156	Connects MCU Board and Video Harness.
J12	4	I-155	Connects MCU Board and Laser Unit Harness.
J14	4	I-156	Connects MCU Board and Top Low Voltage Harness.
J15	4	H-157	Connects MCU Board and Top Low Voltage Harness.
J16	4	I-156	Connects MCU Board and HVPS.
J17	4	I-156	Connects MCU Board and Fuser Harness.
J18	4	I-157	Connects MCU Board and Top Low Voltage Harness.
J19	4	I-156	Connects MCU Board and Toner Sensor Harness.
J21	4	H-158	Connects MCU Board and Right Side Harness.
J22	4	H-158	Connects MCU Board and Right Side Harness.
J23	4	H-159	Connects MCU Board and Right Side Harness.

Print Engine Plug/Jack Designators (continued)

P/J	Map	Coordinates	Remarks
J24	4	I-159	Connects MCU Board and Overhead Paper (OHP) Harness.
J25	4	H-158	Connects MCU Board and Right Side Harness.
J26	4	I-159	Connects MCU Board and Humidity/Temperature Harness.
J27	4	I-159	Connects MCU Board and Right Side Harness.
J29	3	F-138	Connects Image Processor Board and Controller Harness.
J31	4	I-159	Connects MCU Board and CRUM Harness.
J40	4	F-149	Connects LVPS and Top Low Voltage Harness.
J44	4	E-149	Connects LVPS and Interlock Harness.
J47	4	E-150	Connects LVPS and Fuser Harness.
J48	4	E-150	Connects LVPS and Inlet Harness.
J101	3	F-138	Connects Image Processor Board and Video Harness.
J101	4	I-158	Not connected (Debug only).
J111	3	F-139	Connects Image Processor Board and Video Harness.
J121	2	H-122	Connects Laser Unit and Laser Unit Harness.
J141	3	I-136	Connects LED and Top Low Voltage Harness.
J144	1	C108	Connects EEPROM Board and Belt Harness (Transfer Unit).
J144	4	D-153	Connects EEPROM Board and Right Side Harness.
P/J151			Connects Laser Unit and MCU Board.
J161	3	G-136	Connects HVPS and MCU Board.
J171	1	H-106	Connects Fuser and Fuser Harness.
J181	3	I-139	Connects Dispenser (Y) and Top Low Voltage Harness.
J182	3	H-138	Connects Dispenser (M) and Top Low Voltage Harness.
J183	3	H-136	Connects Dispenser (K) and Top Low Voltage Harness.
J184	3	H-137	Connects Dispenser (C) and Top Low Voltage Harness.
J191	2	H-124	Connects Print Cartridge Sensor (Y) and Toner Sensor Harness.
J192	2	H-124	Connects Print Cartridge Sensor (M) and Toner Sensor Harness.
J193	2	H-122	Connects Print Cartridge Sensor (K) and Toner Sensor Harness.
J194	2	H123	Connects Print Cartridge Sensor (C) and Toner Sensor Harness.

Print Engine Plug/Jack Designators (continued)

P/J	Map	Coordinates	Remarks
J211	1	H-107	Connects Main Drive (Main Motor) and Right Side Harness.
J220	1	F-106	Connects Control Panel and Control Panel Harness.
J221	1	H-108	Connects Main Drive (Sub Motor) and Right Side Harness.
J222	1	G109	Connects Main Drive (Developer Motor) and Right Side Harness.
J231	2	I-125	Connects Size Switch and Right Side Harness.
J232	2	H-125	Connects Feeder Unit (Registration Sensor Harness) and Right Side Harness.
J233	2	H-123	Connects Registration Clutch and Right Side Harness.
J234	2	I-124	Connects Feeder (Turn Clutch) and Right Side Harness.
J235	2	H-123	Connects Feed Clutch with Right Side Harness.
J236	1	H-111	Connects Tray 1 (MPT) Feed Solenoid with Right Side Harness.
J241	2	I-125	Connects OHP Sensor Harness with OHP Harness (not used on 6180).
J251	1	H-110	Connects Drive Assembly (Tray 2 Motor) with Right Side Harness.
J261	4	H-152	Connects Humidity/Temperature Sensor and Humidity/Temperature Harness.
J272	1	I-110	Connects Front Cover Harness and Right Side Harness.
J273	2	H-126	Connects Right Side Harness and Optional-550 Sheet Feeder (Feeder Unit Harness).
J275	1	I-108	Connects Tray 1 (MPT) No Paper Harness and Right Side Harness.
J276	1	I-109	Connects Exit Clutch Harness and Right Side Harness.
J311	2	G-124	Connects CRUM Sensor (Y) and CRUM Harness.
J312	2	G-123	Connects CRUM Sensor (M) and CRUM Harness.
J313	2	G-122	Connects CRUM Sensor (C) and CRUM Harness.
J314	2	G-122	Connects CRUM Sensor (K) and CRUM Harness.
J401	3	F-138	Connects Image Processor Board and Top Low Voltage Harness.
J481	4	E-154	Connects Power Switch and Inlet Harness.
J501	4	F-149	Connects LVPS and Top Low Voltage Harness.
J502	4	F-149	Connects LVPS and Top Low Voltage Harness.
J503	4	F-149	Connects LVPS and Top Low Voltage Harness.
J504	4	F-149	Connects LVPS and Relay Test Harness.

Print Engine Plug/Jack Designators (continued)

P/J	Map	Coordinates	Remarks
J2321	2	D-125	Connects Feeder Unit (No Paper Sensor) and Registration Sensor Harness.
J2322	2	E-125	Connects Feeder Unit (Registration Sensor) and Registration Sensor Harness.
J2411	2	F-125	Connects OHP Sensor Board and OHP Sensor Harness (not used on 6180).
J2412	2	F-125	Connects OHP LED Board and OHP Sensor Harness (not used on 6180)
J2721	1	B-107	Connects Transfer Unit and Front Cover Harness.
J2751	1	E-110	Connects Tray 1 (MPT) No Paper Sensor and Tray 1 (MPT) No Paper Harness.
J2761	1	I-107	Connects Main Drive (Exit Clutch) and Exit Clutch Harness.
J2900	1	I-110	Connects Control Panel Harness and Image Processor Harness.
J5041	3	F-138	Not connected (used in Production process only).
J27212	1	D-107	Connects ADC Sensor and Transfer Unit Harness.
J27213	1	D-107	Connects ADC Solenoid and Transfer Unit Harness.

Optional Feeder Plug/Jack Designators

Optional Feeder Plug/Jack Designators

P/J	Map	Coordinates	Remarks
1	6	G-180	Not connected (Debug only).
J273	6	H-183	Connects Optional-550 Sheet Feeder (Feeder Unit Harness) and printer.
J419	6	G-180	Connects Optional Feeder Board and Feeder Unit Harness.
J420	6	G-180	Connects Optional Feeder Board and Tray 3 Turn Harness.
J421	6	G-179	Connects Optional Feeder Board and Tray 3 Chute Harness.
J422	6	G-179	Connects Optional Feeder Board and Tray 3 Motor Harness.
J423	6	G-180	Not connected.
J4201	6	H-185	Connects Turn Clutch and Tray 3 Turn Harness.
J4202	6	H-185	Not connected.
J4211	6	I-184	Connects Optional Size Switch and Tray 3 Chute Harness.
J4212	6	H-184	Connects Tray 3 Chute Harness and Tray 3 No Paper Harness.
J4213	6	H-185	Connects Feed Clutch and Tray 3 Chute Harness.
J4221	6	G-185	Connects Optional Feeder Drive (Optional Feeder Motor) and Tray 3 Motor Harness.
J4222	6	G-185	Connects Optional Feeder Drive (Optional Feeder Motor) and Tray 3 Motor Harness.
J42121	6	D-183	Connects Tray 3 No Paper Sensor and Tray 3 No Paper Sensor Harness.

Duplex Plug/Jack Designators

Duplex Plug/Jack Designators

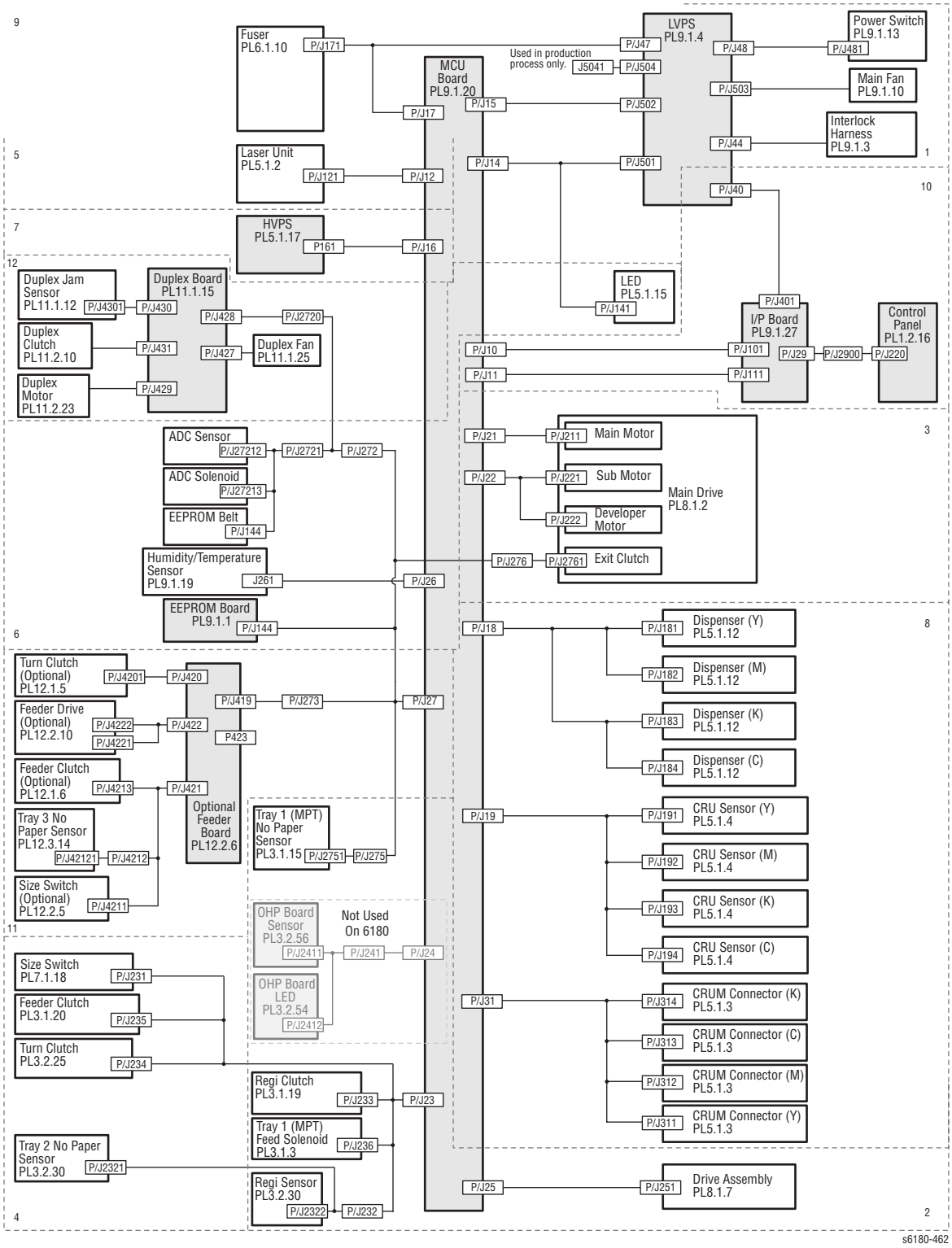
P/J	Map	Coordinates	Remarks
1	5	E-168	Not connected (Debug only).
J427	5	F-168	Connects Duplex Board and Duplex Fan.
J428	5	F-168	Connects Duplex Board and Duplex Unit Harness.
J429	5	F-169	Connects Duplex Board and Duplex Motor.
J430	5	F-168	Connects Duplex Board and Duplex Sensor Harness.
J431	5	F-168	Connects Duplex Board and Duplex Clutch.
J2720	5	I-169	Connects Duplex (Duplex Unit Harness) and printer.
J4301	5	E-167	Connects Duplex Jam Sensor and Duplex Sensor Harness.

Plug/Jack Locators

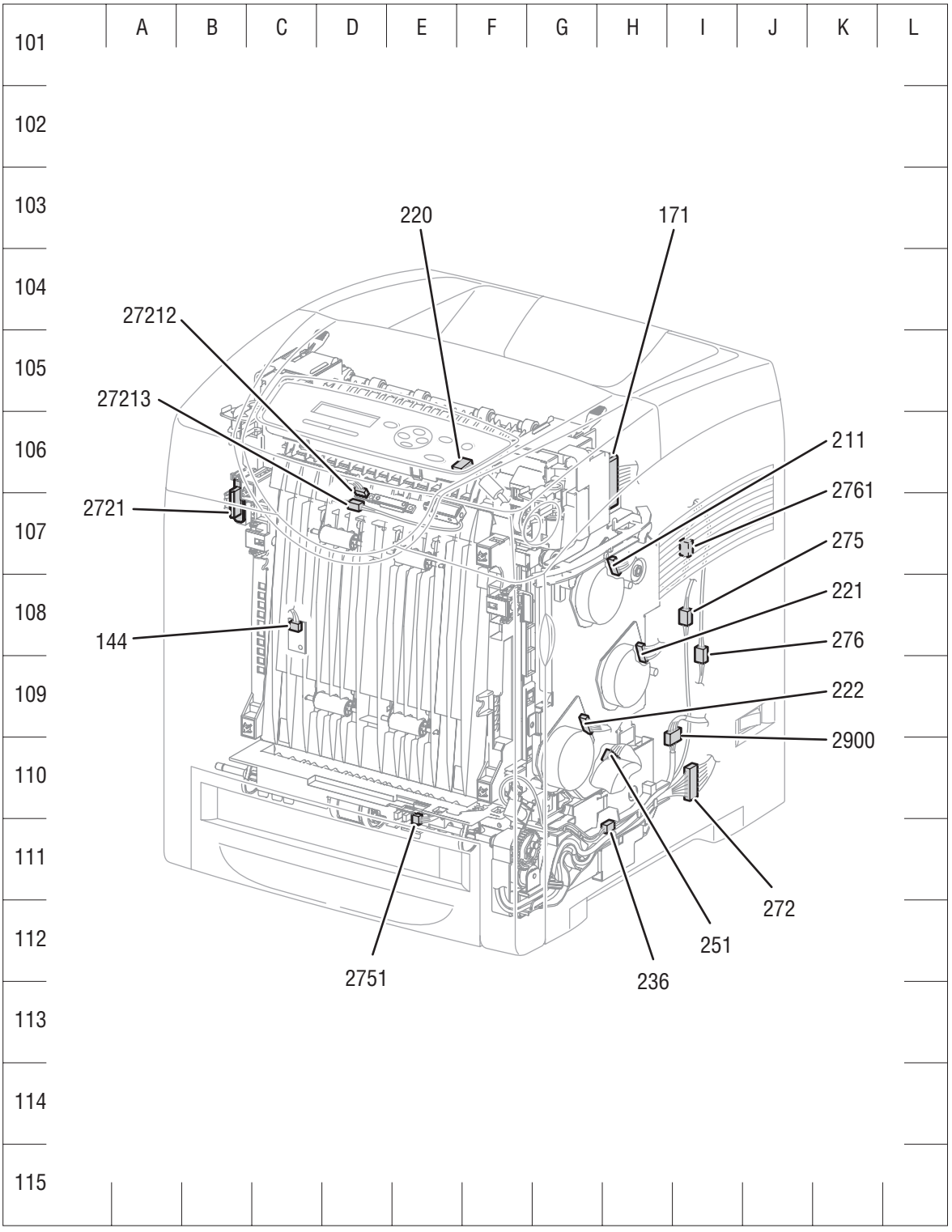
Maps 1 through 6 indicate the location of key connections within the printer. Connections are referenced by their P/J designation.

1. General Diagram - Plug/Jack Locations
2. Map 1 - Electrical and Drive
3. Map 2 - Laser Unit
4. Map 3 - Image Processor Board and Dispenser
5. Map 4 - LVPS and MCU Board
6. Map 5 - Duplex Unit
7. Map 6 - Optional 550-Sheet Feeder

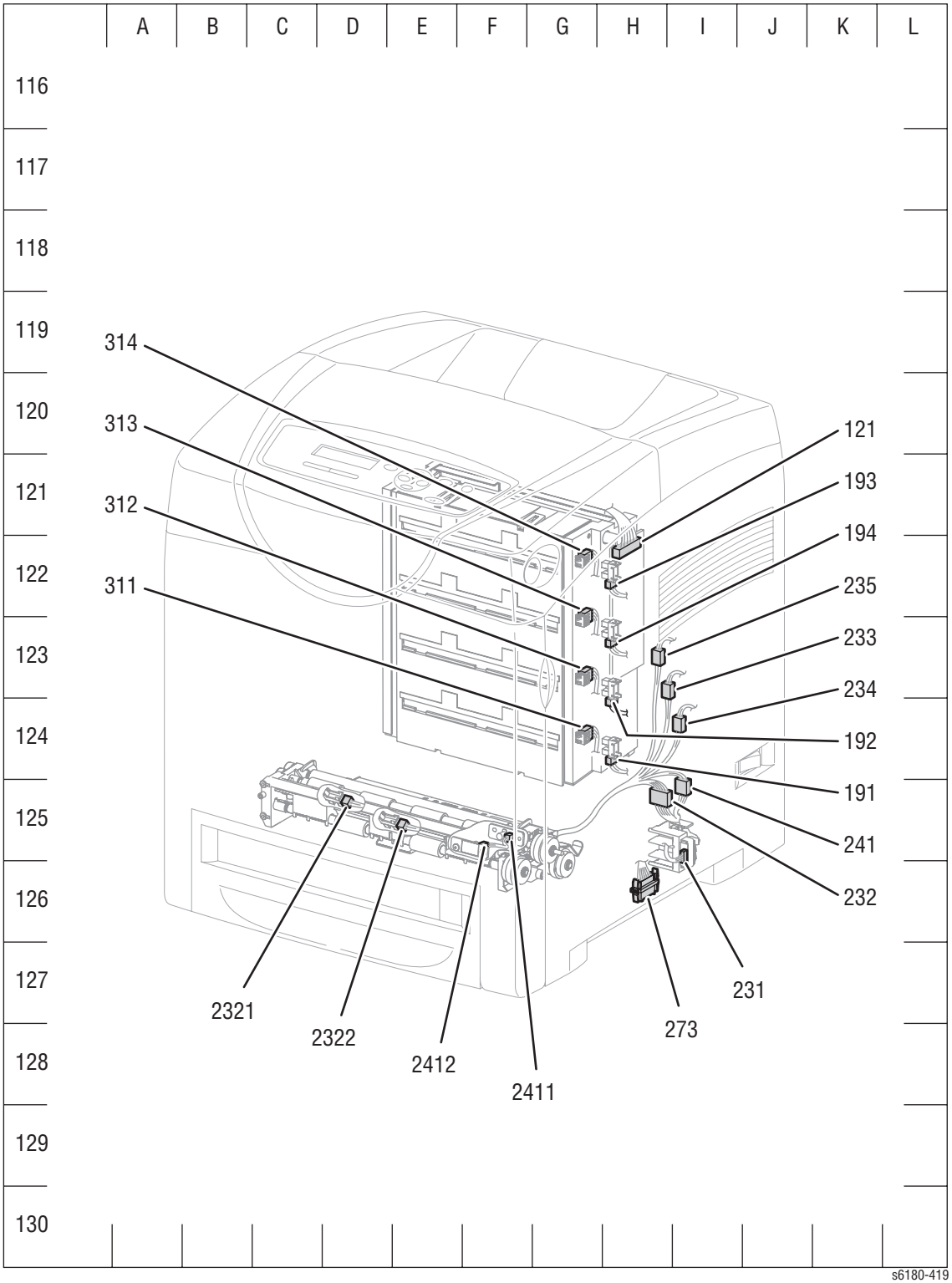
General Diagram - Plug/Jack Locations



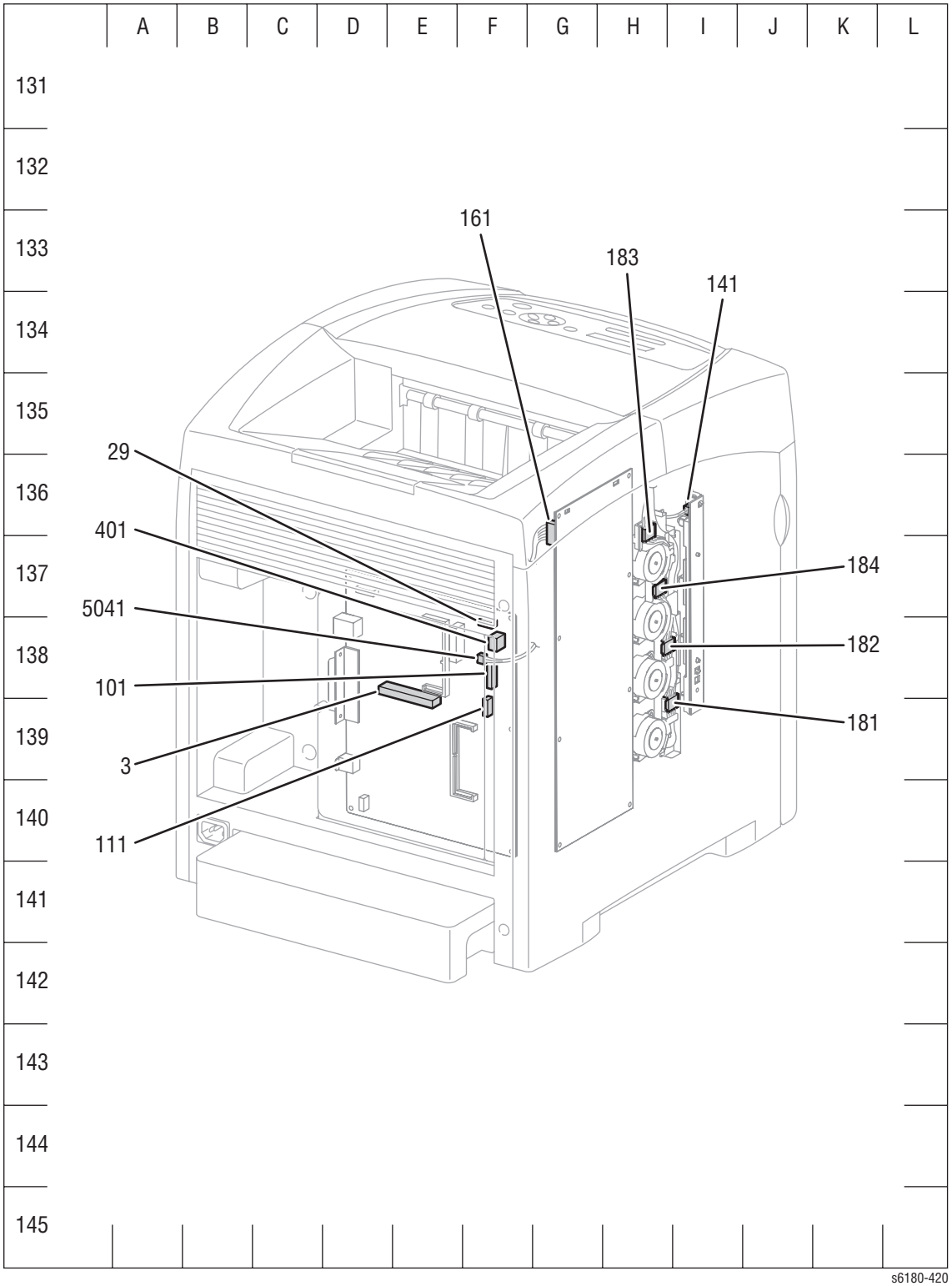
Map 1 - Electrical and Drive



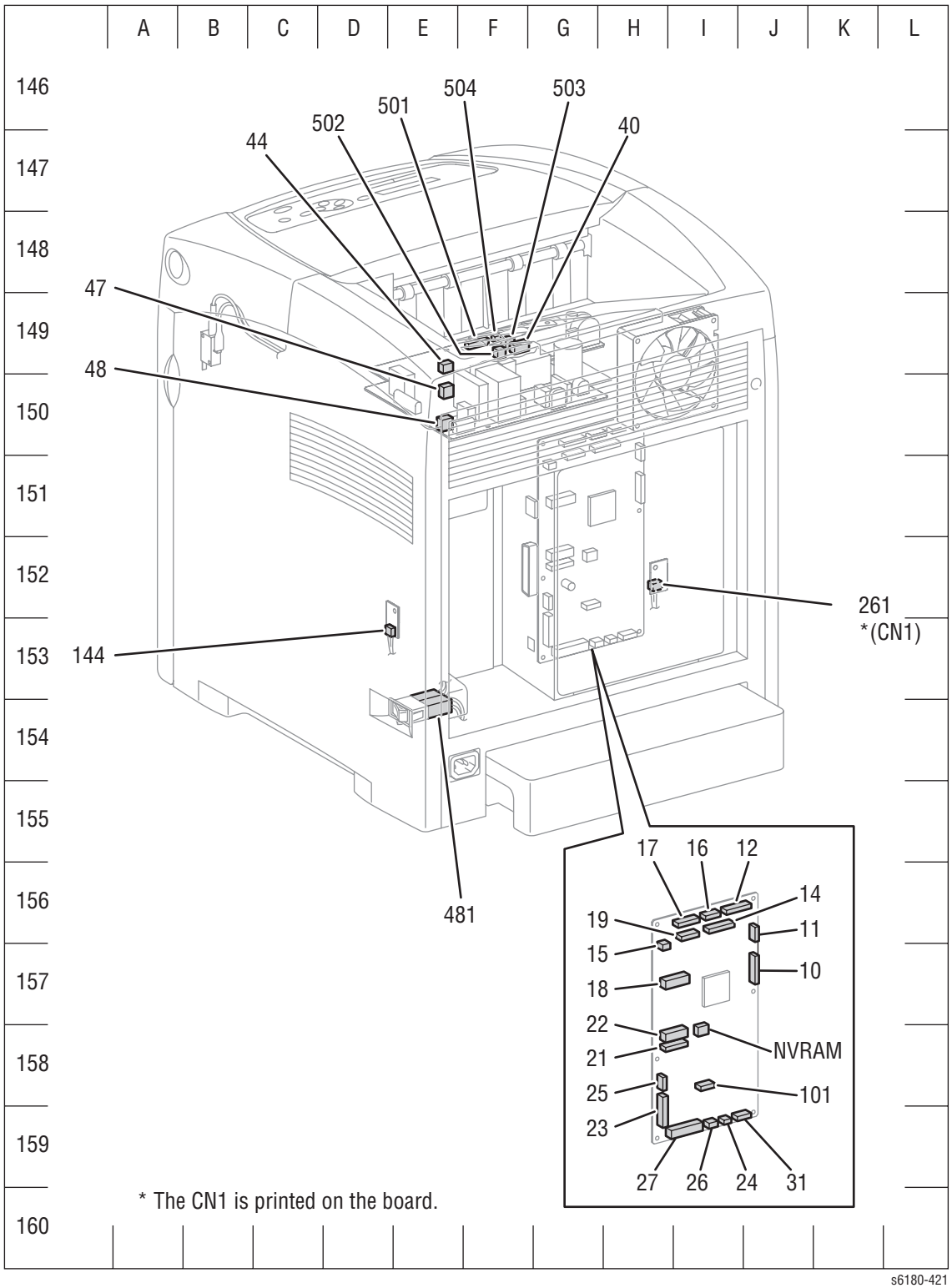
Map 2 - Laser Unit



Map 3 - Image Processor Board and Dispenser

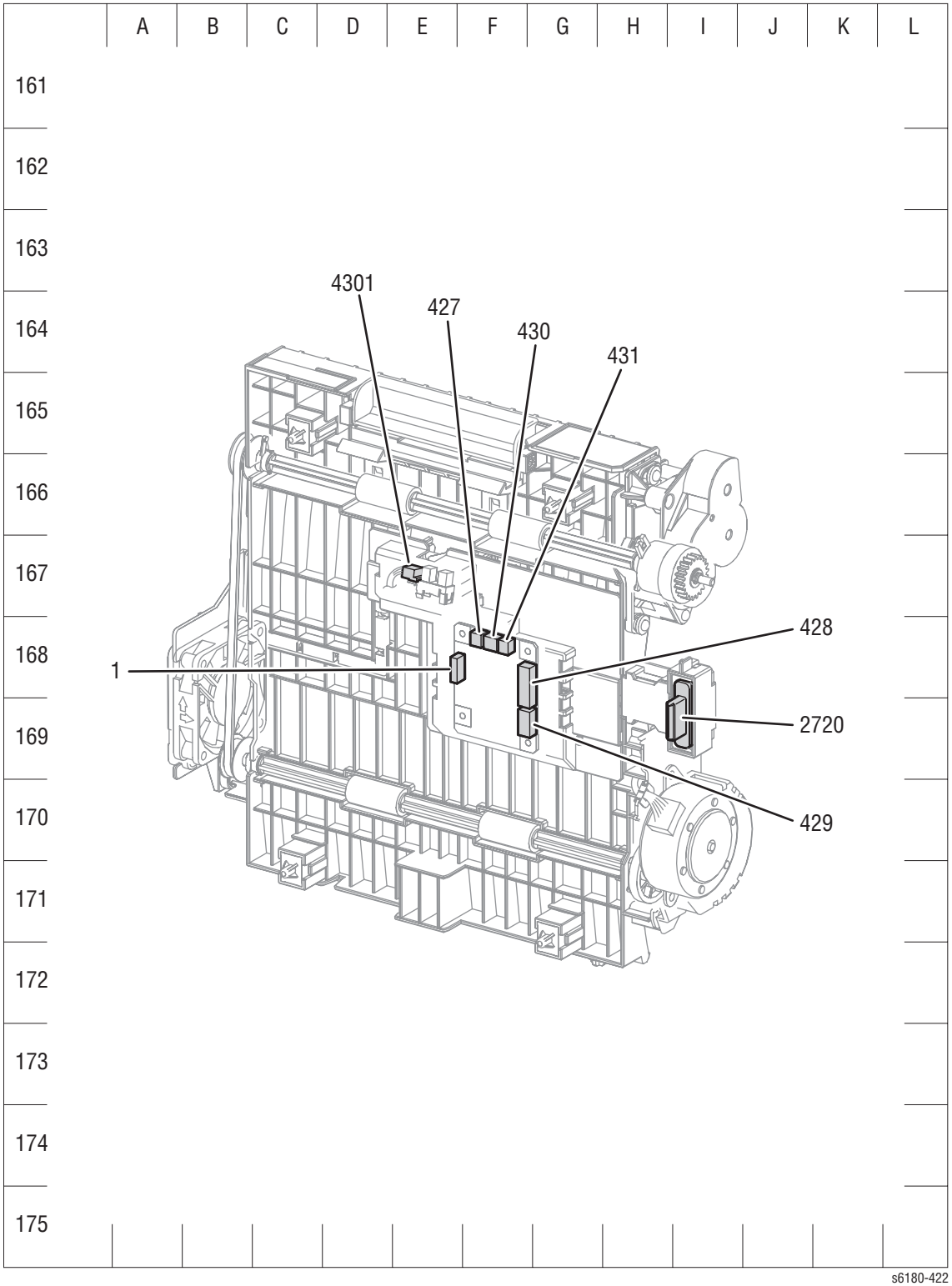


Map 4 - LVPS and MCU Board

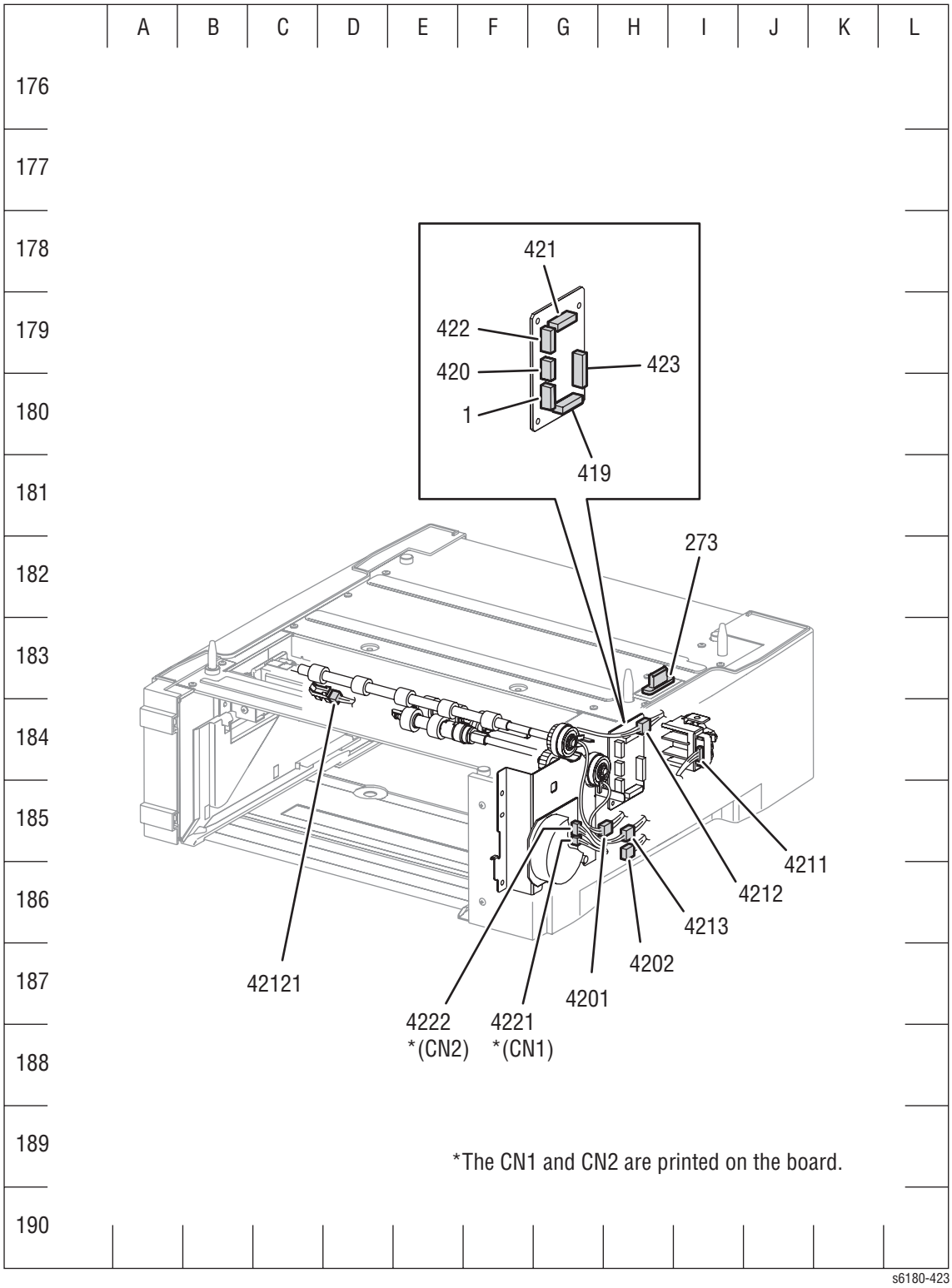


s6180-421

Map 5 - Duplex Unit

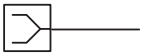
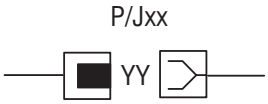


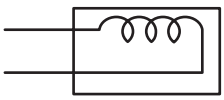
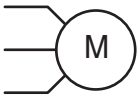
Map 6 - Optional 550-Sheet Feeder

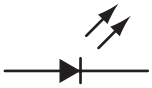


Notations Used in the Wiring Diagrams

The following table lists the symbols used in the wiring diagrams.

Symbol	Description
s6180-467	Denotes a Plug.
 s6180-468	Denotes a Jack.
 s6180-469	Denotes Pin yy and Jack yy of the connector Pxx and Jxx.
s6180-470	Denotes a Jumper Point (JPxxx/xxx). Each end of the Jumper connection has a numeric designation.
s6180-471	Denotes the parts. PL X.Y.Z implies the item “Z” of plate (PL) “X.Y” in Parts List.
s6180-472	Denotes functional parts attached with functional parts name.

Symbol	Description
s6180-473	Denotes the control and its outline in the Board.
s6180-474	Denotes a connection between parts with harness or wires, attached with signal name/ contents.
s6180-475	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.
s6180-476	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.
s6180-477	Denotes a connection between wires.
 s6180-464	Denotes a Clutch or Solenoid.
 s6180-465	Denotes a Motor.

Symbol	Description
 s6180-466	Denotes a Photo Sensor.
 s6180-480	Denotes an LED.
 s6180-481	Denotes a Safety Interlock Switch.
 s6180-482	Denotes an On-Off Switch (single-pole, single-throw switch).
 s6180-484	Denotes an On-Off Switch (Temperature - normally close).
 s6180-483	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.

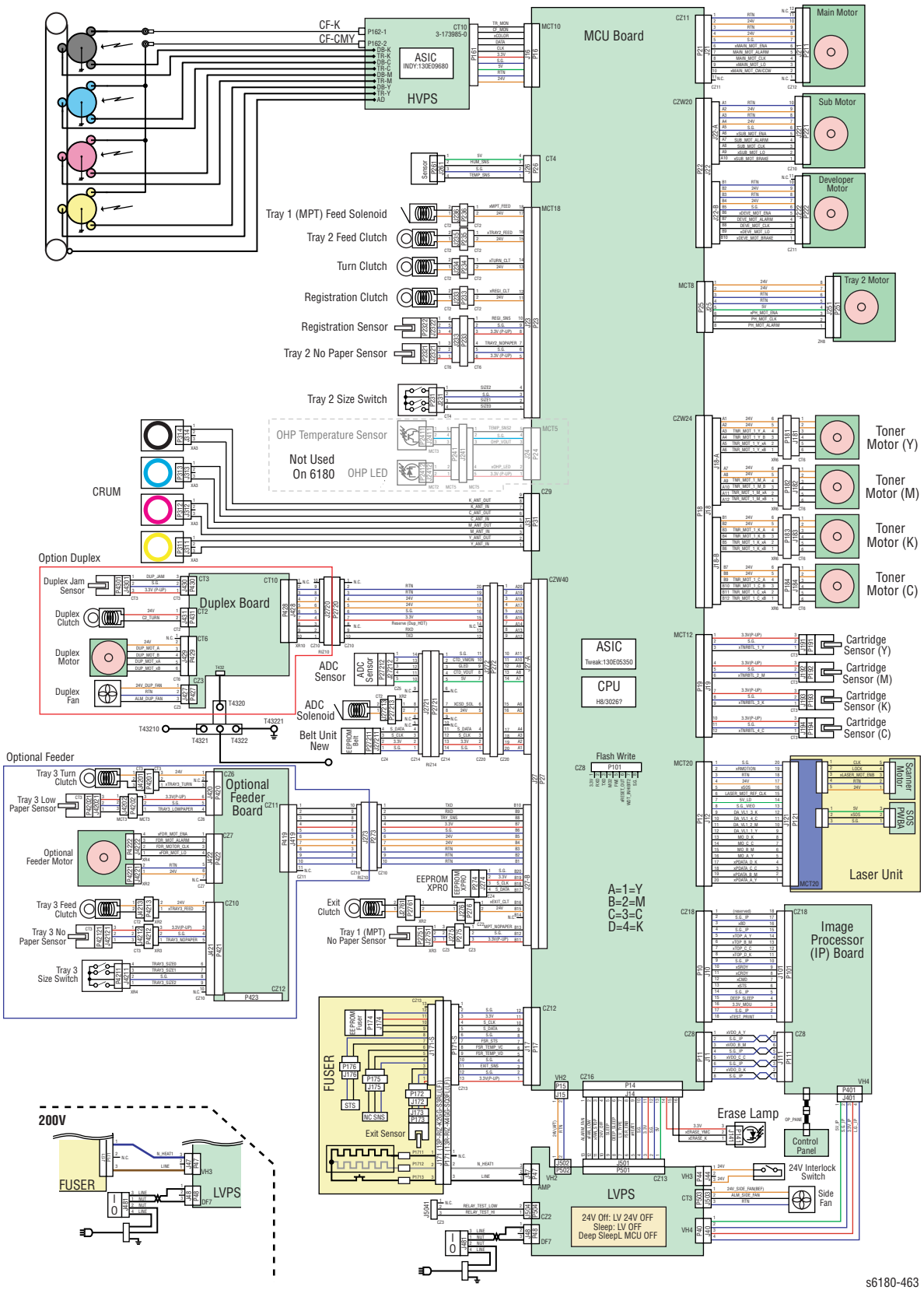
Print Engine Wiring Diagrams

Wiring Diagrams Configurations

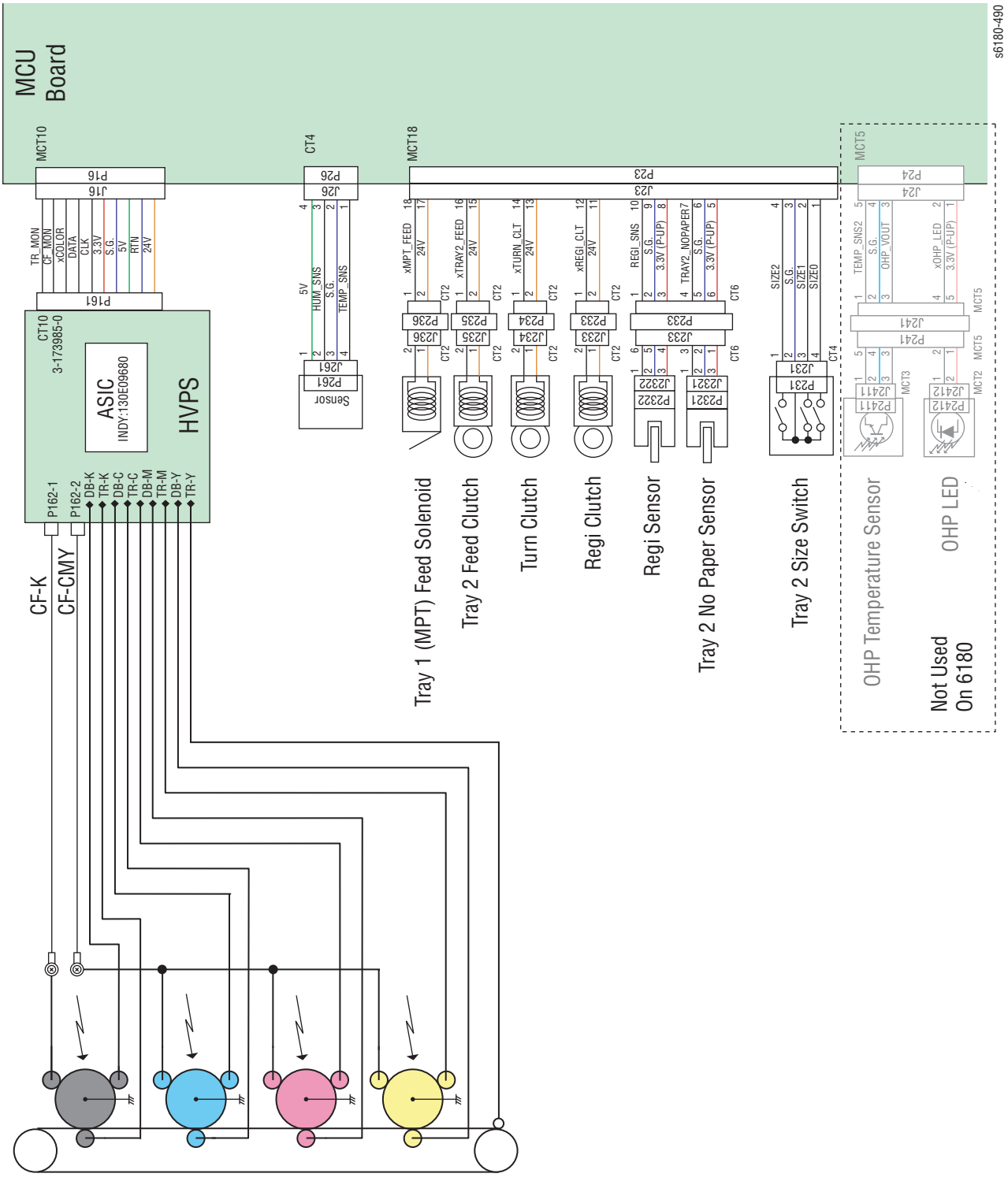
Wiring Diagram	Description
DC Power Supply	Connections of LVPS with MCU Board.
	Connections of Power Switch with LVPS.
	Connections of Main Fan with LVPS.
	Connections of Interlock Harness with LVPS.
Tray 1 (MPT) & Registration	Connections of Drive Assembly with MCU Board.
	Connections of Registration Clutch with MCU Board.
	Connections of Tray 1 (MPT) Feed Solenoid with MCU Board.
	Connections of Registration Sensor with MCU Board.
	Connections of OHP Sensor Board with MCU Board.
	Connections of OHP LED Board with MCU Board.
	Connections of Tray 1 (MPT) No Paper Sensor with MCU Board.
Drive	Connections of Main Drive with MCU Board.
Feeder	Connections of Tray No Paper Sensor with MCU Board.
	Connections of Size Switch with MCU Board.
	Connections of Feed Clutch with MCU Board.
	Connections of Turn Clutch with MCU Board.
ROS (Laser Unit)	Connections of Laser Unit with MCU Board.
Xerographic	Connections of ADC Sensor with MCU Board.
	Connections of ADC Solenoid with MCU Board.
	Connections of EEPROM Board with MCU Board.
	Connections of Humidity/Temperature Sensor with MCU Board.
	Connections of EEPROM Board with MCU Board.
	Connections of LED and MCU Board.
High Voltage	Connections of HVPS with MCU Board.
Developer	Connections of Dispenser (C/M/Y/K) with MCU Board.
	Connections of Print Cartridge Sensor (C/M/Y/K) with MCU Board.
	Connections of CRUM Connector (C/M/Y/K) with MCU Board.
Fuser	Connections of Fuser with MCU Board.
	Connections of Fuser with LVPS.

Wiring Diagram	Description
	Connections of MCU Board with LVPS.
Controller	Connections of Image Processor Board with MCU Board.
	Connections of Control Panel with Image Processor Board.
	Connections of LVPS with Image Processor Board.
Feeder	Connections of Optional Feeder Board with MCU Board.
	Connections of Optional Turn Clutch with Optional Feeder Board.
	Connections of Optional Feeder Drive with Optional Feeder Board.
	Connections of Optional Feed Clutch with Optional Feeder.
	Connections of Tray No Paper Sensor with Optional Feeder Board.
	Connections of Optional Size Switch with Optional Feeder Board.
Duplex	Connections of Duplex Board with MCU Board.
	Connections of Jam Sensor Duplex with Duplex Board.
	Connections of Duplex Clutch with Duplex Board.
	Connections of Duplex Motor with Duplex Board.
	Connections of Duplex Fan with Duplex Board.

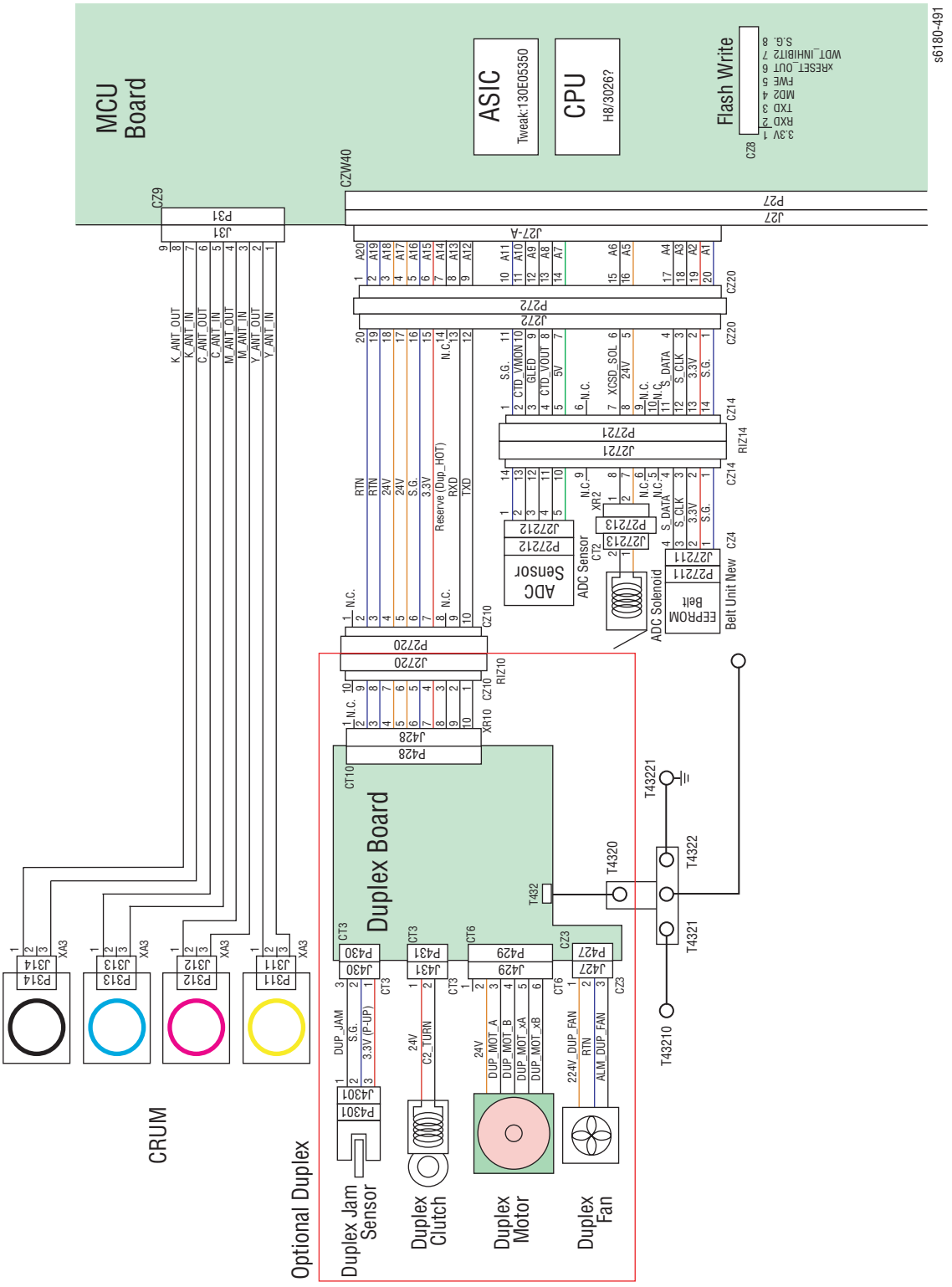
General Wiring Diagram - Electrical (refer to page 10-22 for details)



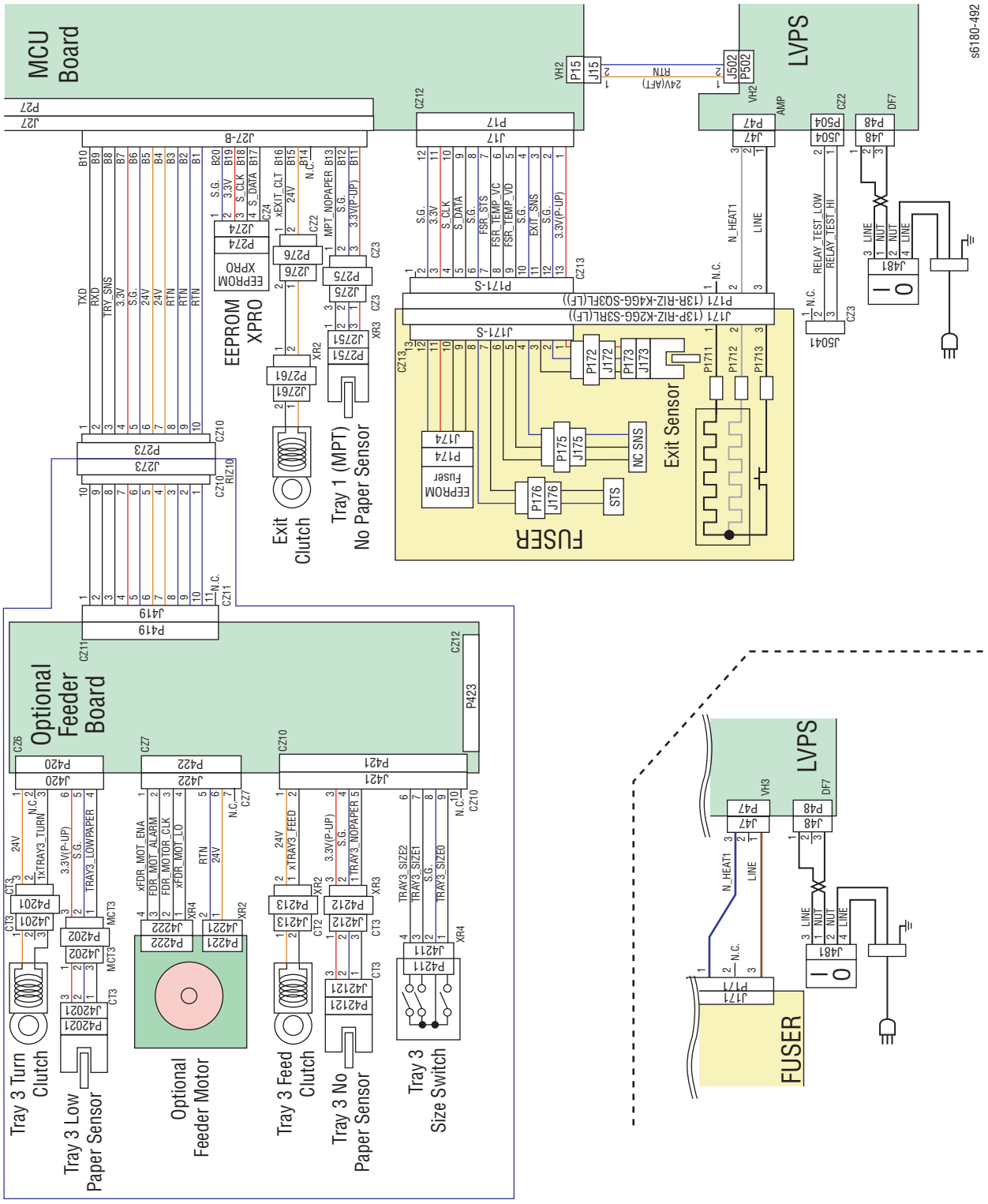
Detailed Electrical Wiring Diagram (1 of 6)



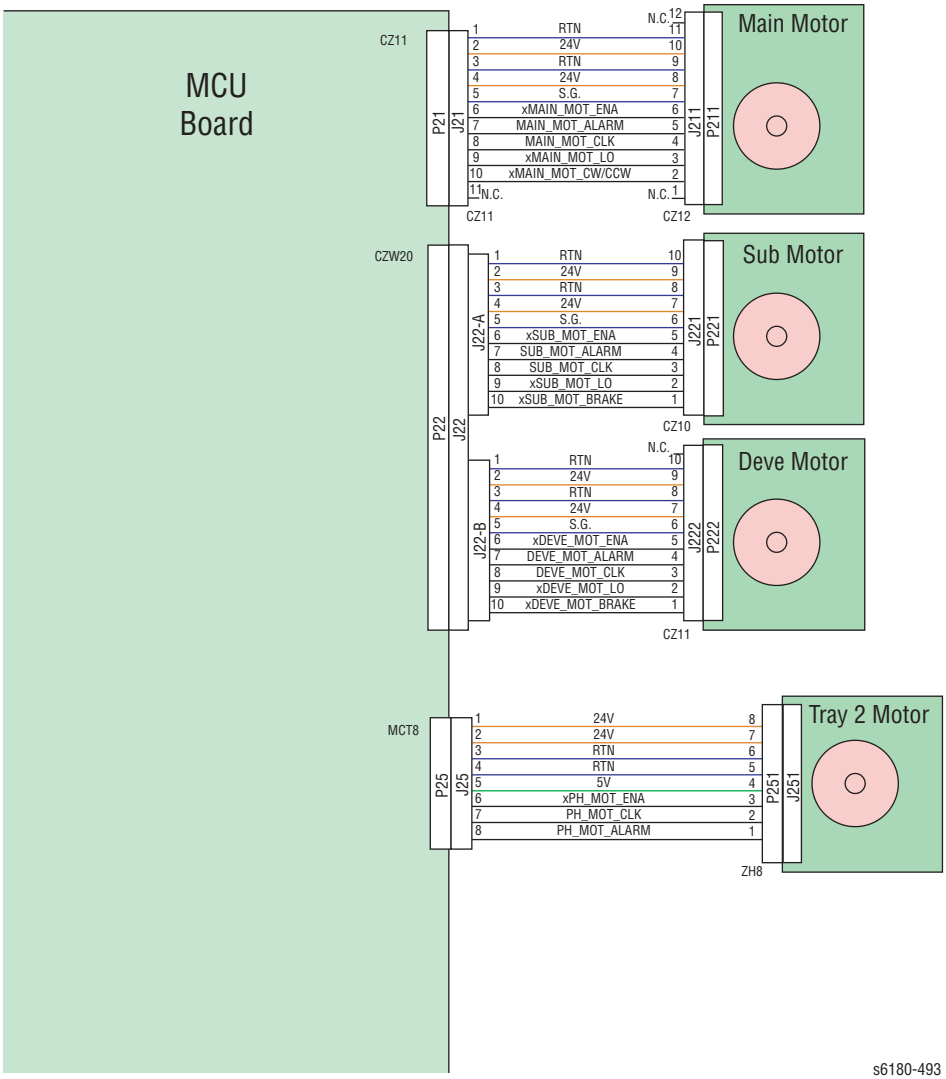
Detailed Electrical Wiring Diagram (2 of 6)



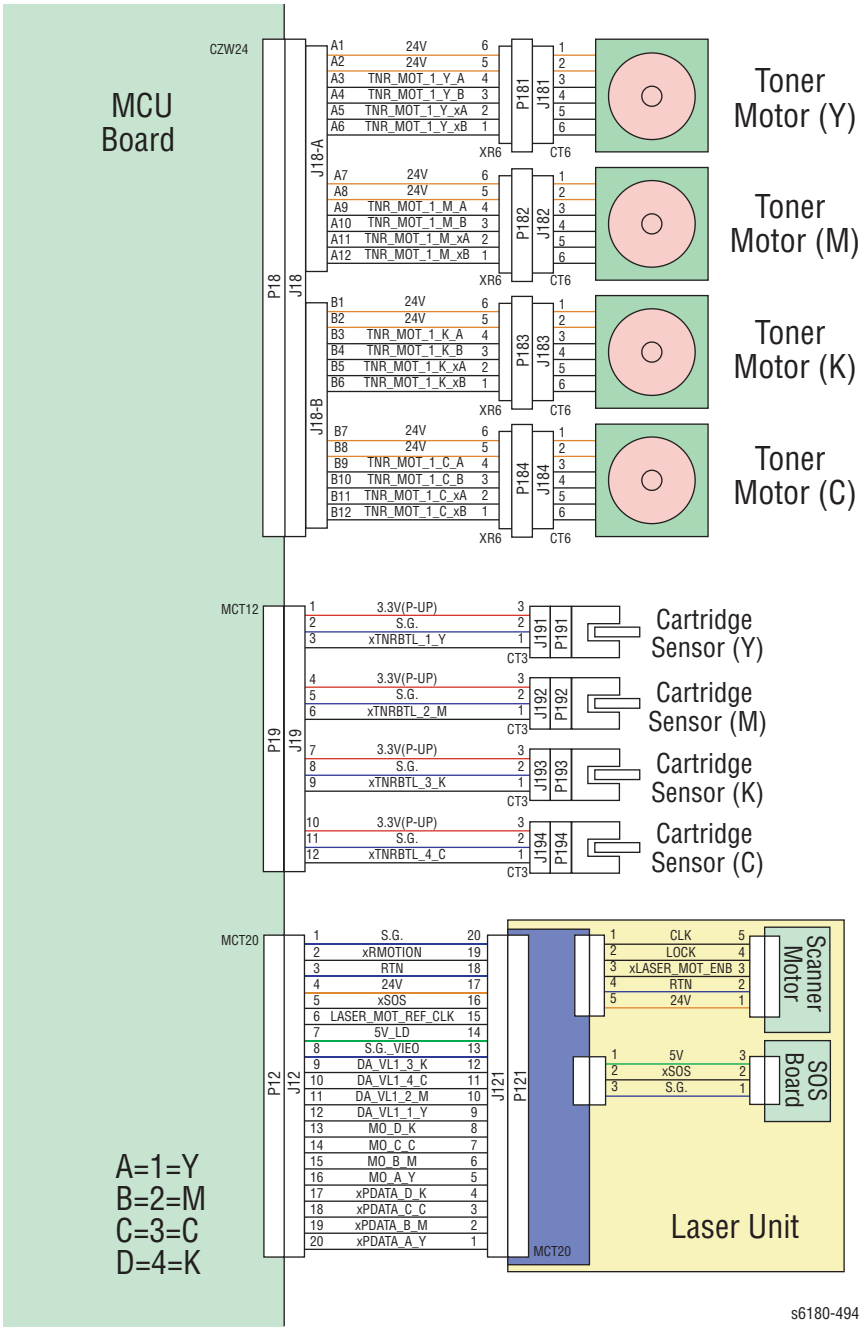
Detailed Electrical Wiring Diagram (3 of 6)



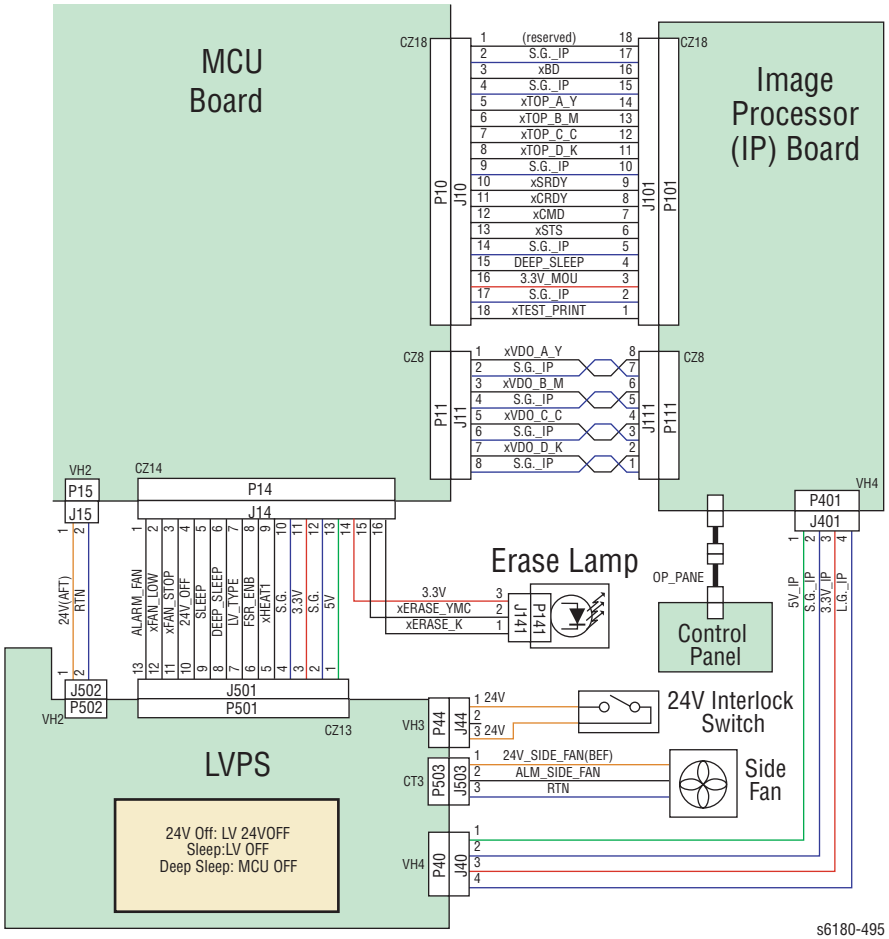
Detailed Electrical Wiring Diagram (4 of 6)



Detailed Electrical Wiring Diagram (5 of 6)

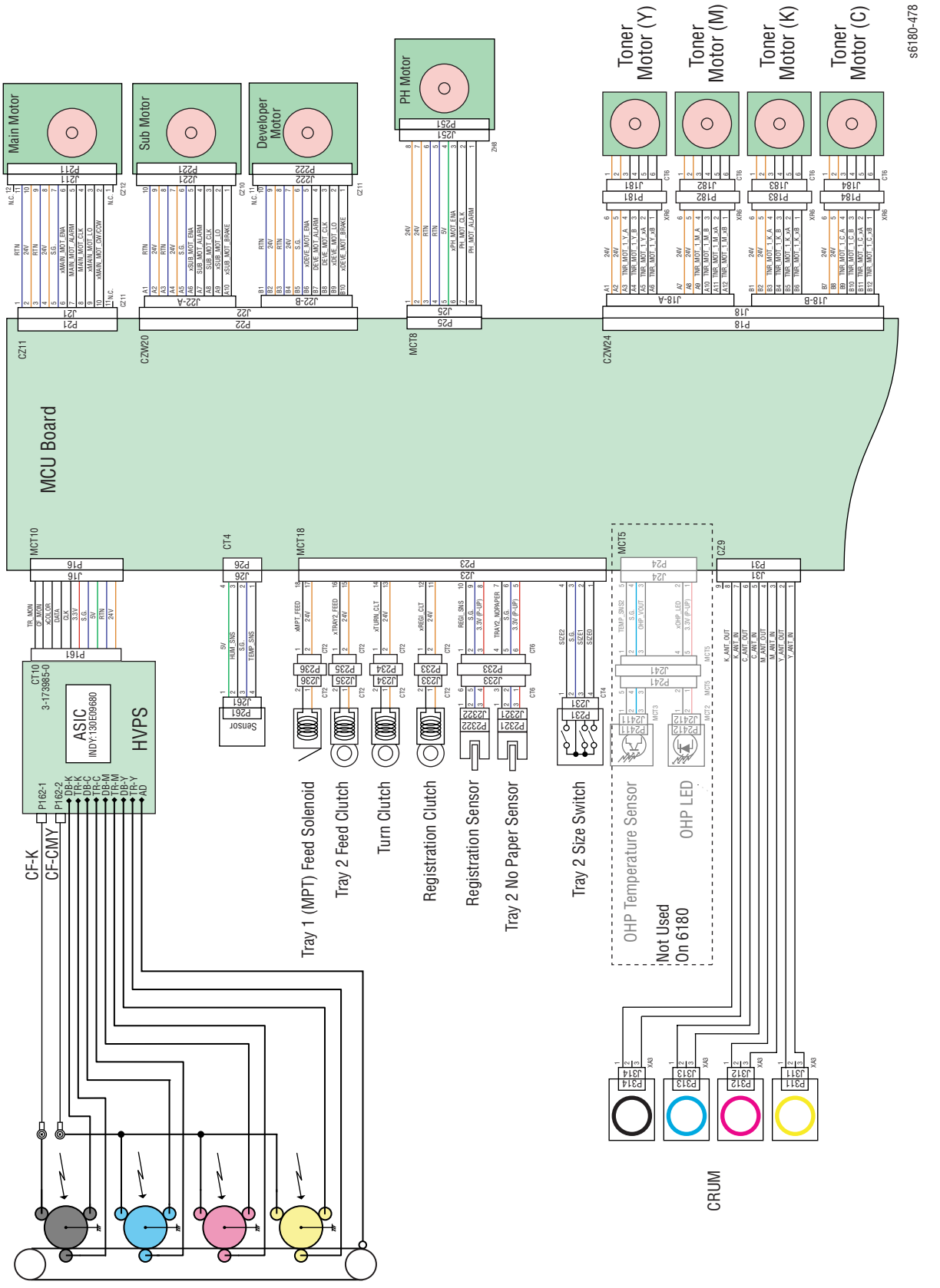


Detailed Electrical Wiring Diagram (6 of 6)

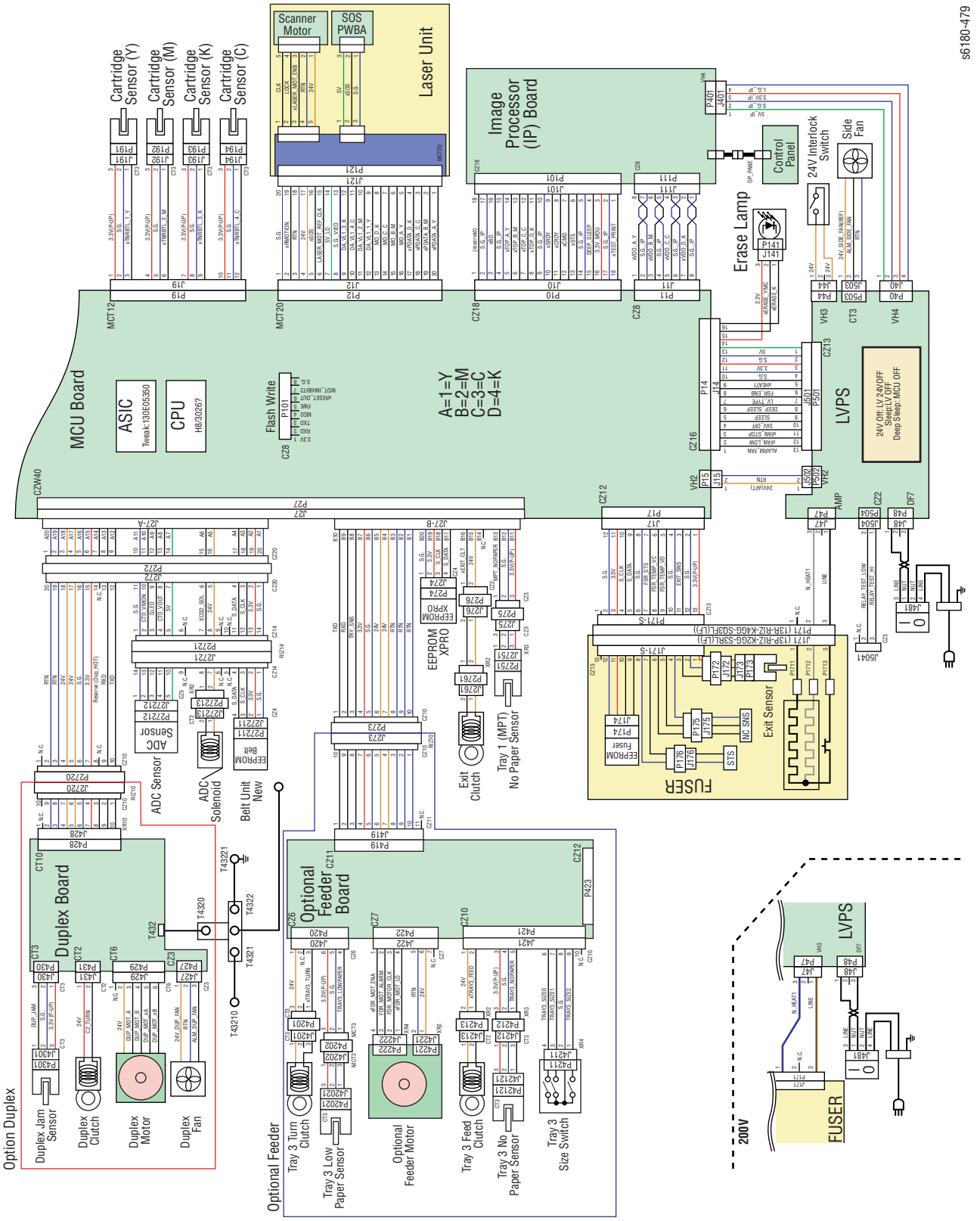


s6180-495

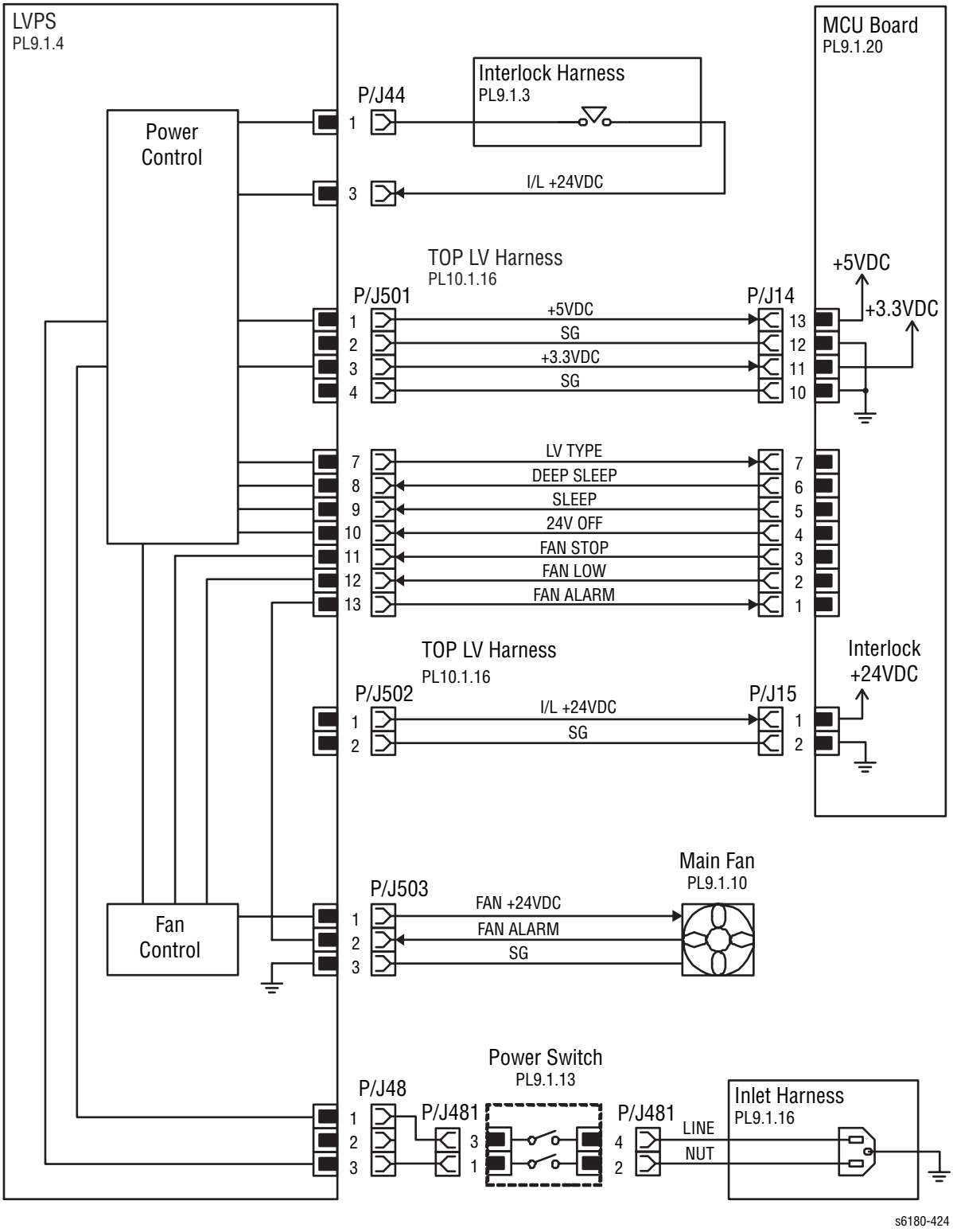
Electrical Wiring Diagram (1 of 2)



Electrical Wiring Diagram (2 of 2)



DC Power Supply



Signal Line Name	Description
LV TYPE	Controls signal of the LVPS.
DEEP SLEEP	
SLEEP	
24 V OFF	
FAN STOP	Drives control signal of the Main Fan.
FAN LOW	
FAN ALARM	

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.

The circuit is reset, when after the cause of short was removed, the power is turned Off, and then On again after certain time.

LVPS 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 respectively.

At this time, the operating point is 32 VDC or less for 24 VDC, 7 VDC or less for 5 VDC, or 4.4 VDC or less for 3.3 VDC.

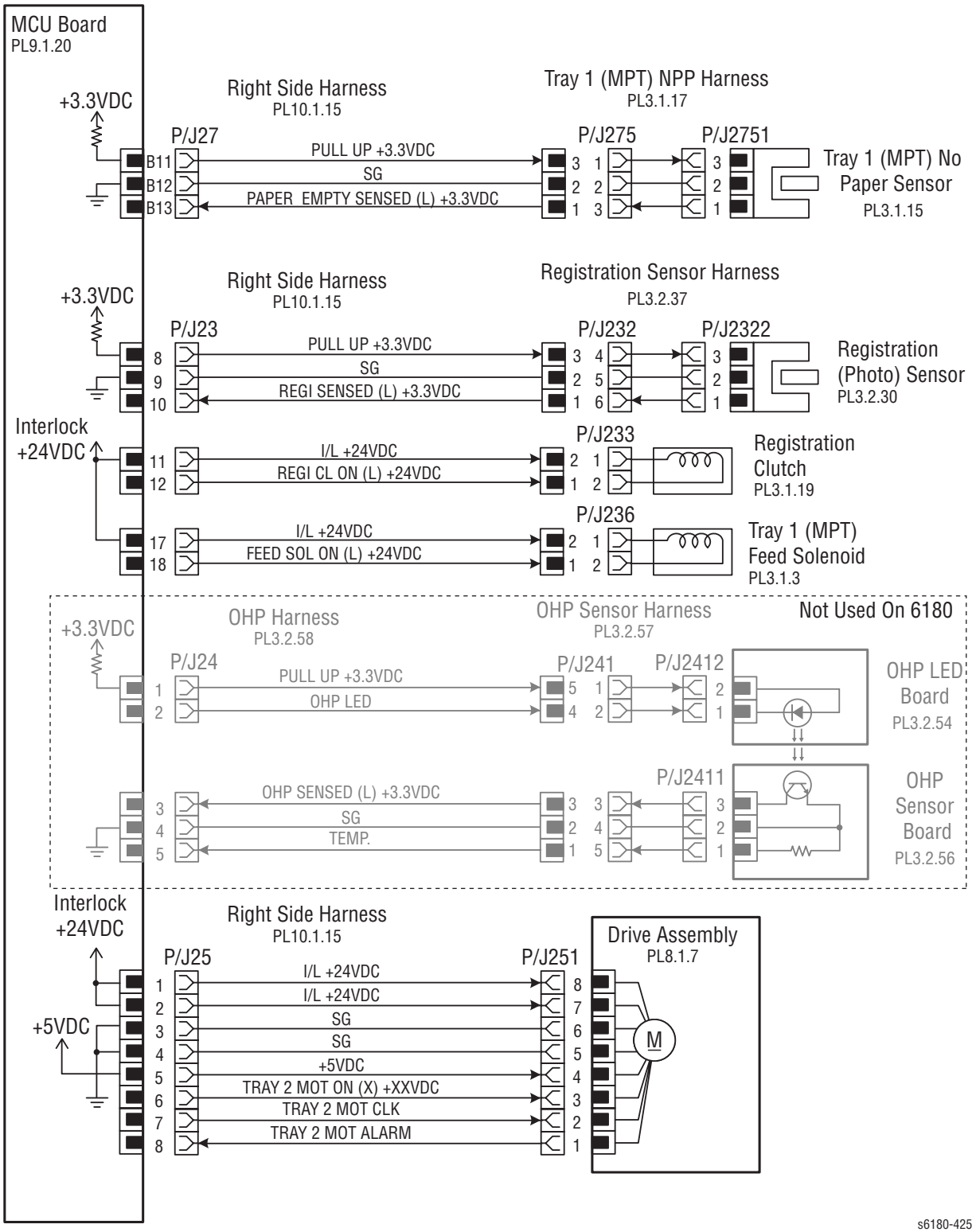
The circuit is reset when the power is turned Off, and then On again after certain time.

Deep Sleep Mode (Power Saver)

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

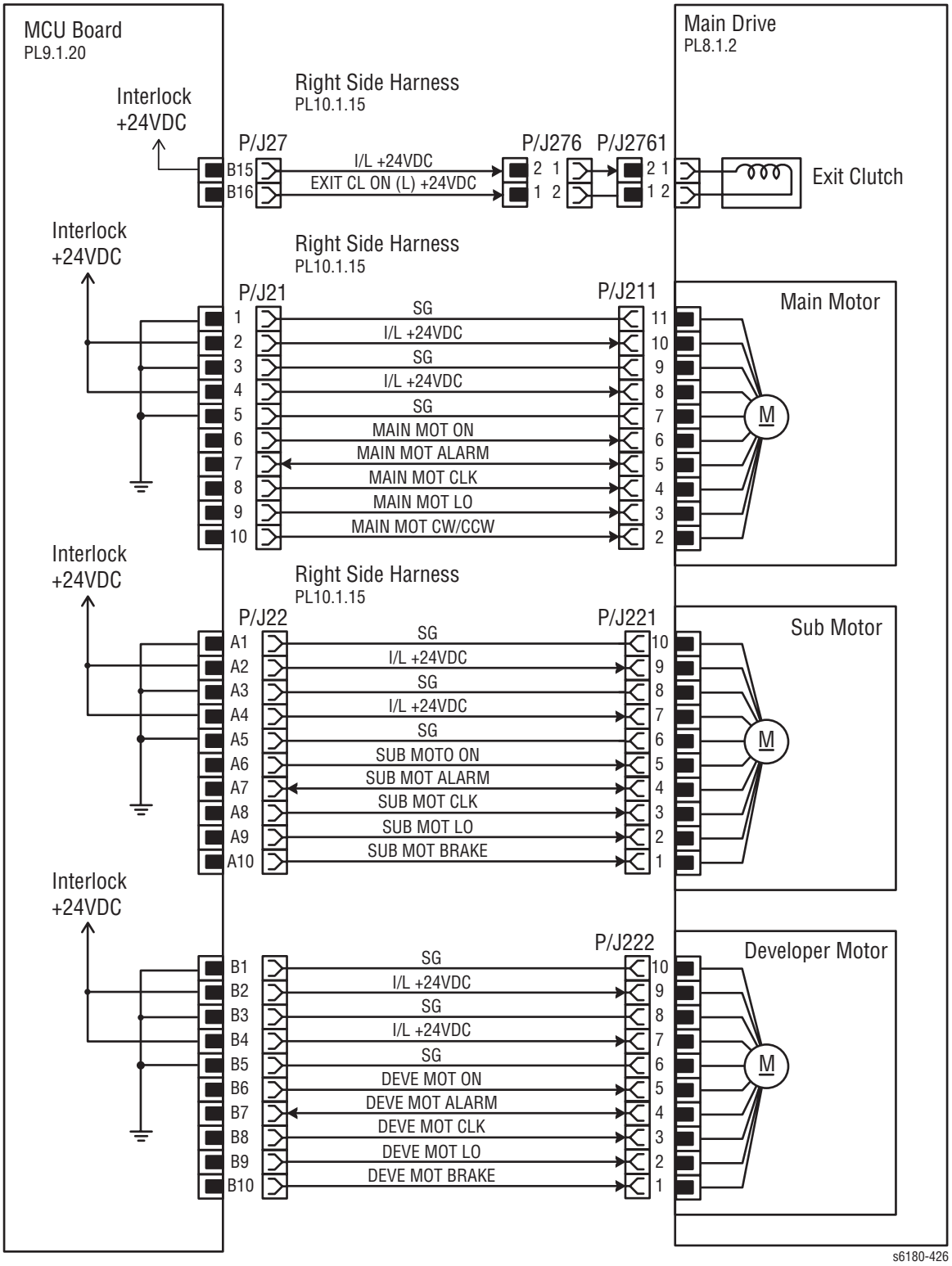
Signal	+3.3 VDC	+5 VDC	+24 VDC
Deep Sleep	Off	Off	Off

Tray 1 (MPT) and Registration



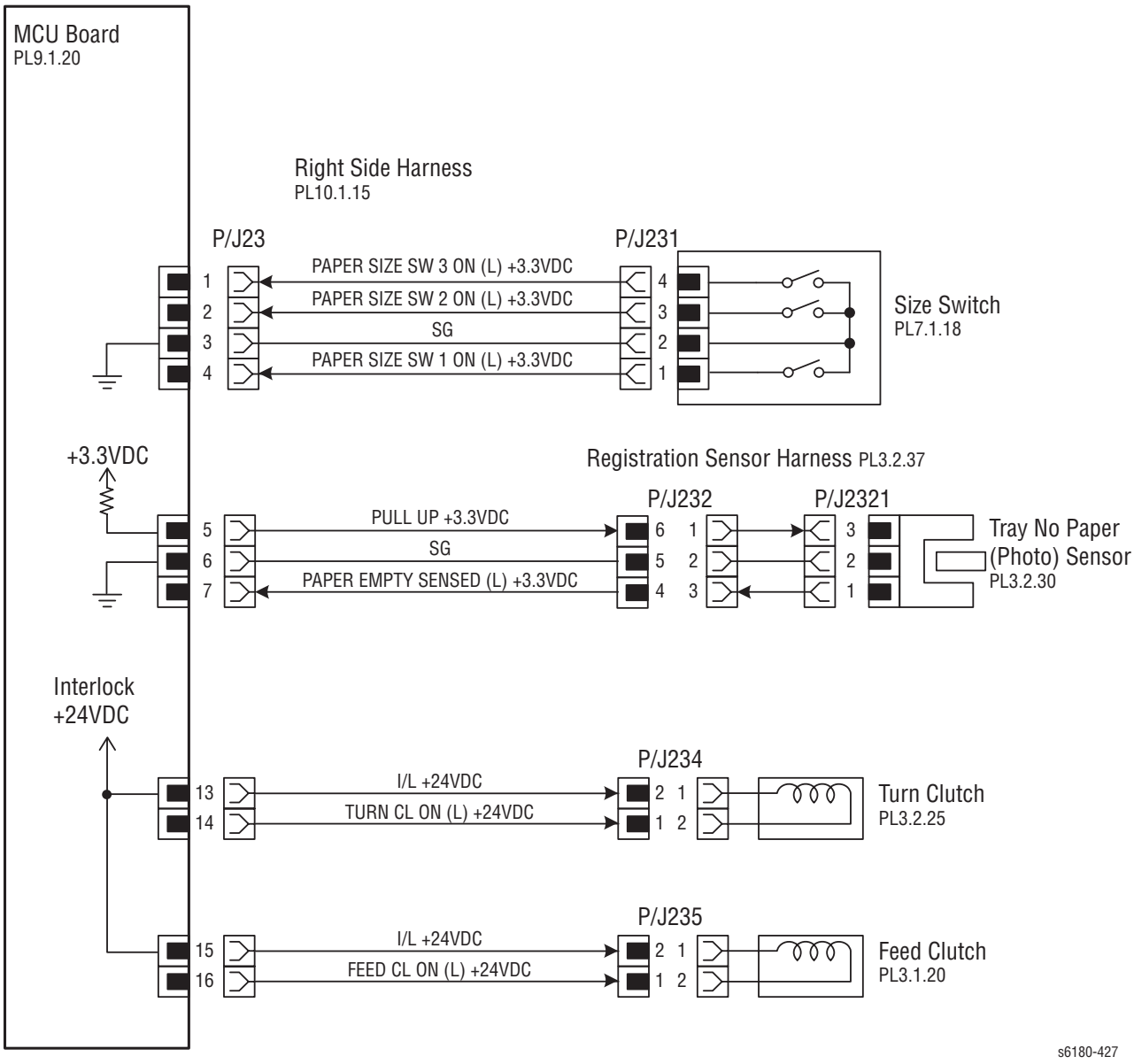
Signal Line Name	Description
PAPER EMPTY SENSED (L) +3.3 VDC	Paper detects signal of the Tray 1 (MPT) by the Photo Sensor (Tray 1 (MPT) No Paper Sensor).
REGI SENSED (L) +3.3 VDC	Paper detects signal of the Registration area by the Photo Sensor (Registration Sensor).
REGI CL ON (L) +24 VDC	On/Off signal of the Tray 1 (MPT) Feed Solenoid.
OHP LED	On/Off signal of the OHP LED Board (not used on 6180).
OHP SENSED (L) +3.3 VDC	Detects signal of the transparency sheet by the Photo Sensor (OHP Sensor Board) (not used on 6180).
TEMP.	Data on temperature inside the printer.
TRAY2 MOT ON (X) +XX VDC	Drives control signal of the Drive Assembly.
TRAY2 MOT CLK	
TRAY2 MOT ALARM	

Main Drive


MCU Board
PL9.1.20
Main Drive
PL8.1.2
Interlock
+24VDC
Right Side Harness
PL10.1.15
P/J27
P/J276
P/J2761
B15
B16
I/L +24VDC
EXIT CL ON (L) +24VDC
2 1
1 2
Exit Clutch
Interlock
+24VDC
Right Side Harness
PL10.1.15
P/J21
P/J211
Main Motor
SG
I/L +24VDC
MAIN MOT ON
MAIN MOT ALARM
MAIN MOT CLK
MAIN MOT LO
MAIN MOT CW/CCW
M
Interlock
+24VDC
Right Side Harness
PL10.1.15
P/J22
P/J221
Sub Motor
SUB MOTO ON
SUB MOT ALARM
SUB MOT CLK
SUB MOT LO
SUB MOT BRAKE
Interlock
+24VDC
P/J222
Developer Motor
DEVE MOT ON
DEVE MOT ALARM
DEVE MOT CLK
DEVE MOT LO
DEVE MOT BRAKE
s6180-426

Signal Line Name	Description
MAIN MOT ON	Drives control signal of the Main Motor.
MAIN MOT ALARM	
MAIN MOT LO	
MAIN MOT CW/CCW	
SUB MOT ON	Drives control signal of the Sub Motor.
SUB MOT ALARM	
SUB MOT CLK	
SUB MOT LO	
SUB MOT BRAKE	
DEVE MOT ON	Drives control signal of the Developer Motor.
DEVE MOT ALARM	
DEVE MOT CLK	
DEVE MOT LO	
DEVE MOT BRAKE	
EXIT CL ON (L) +24 VDC	On/Off signal of the Exit Clutch.

Feeder



Signal Line Name	Description
PAPER SIZE SW 1 ON (L) +3.3 VDC	On/Off signal of the Size Switch.
PAPER SIZE SW 2 ON (L) +3.3 VDC	
PAPER SIZE SW 3 ON (L) +3.3 VDC	
PAPER EMPTY SENSED (L) +3.3 VDC	Paper detects signal of the Feeder by the Photo Sensor (Tray No Paper Sensor).
TURN CL ON (L) +24 VDC	On/Off signal of the Turn Clutch.

Signal Line Name	Description
FEED CL ON (L) +24 VDC	On/Off signal of the Feed Clutch.

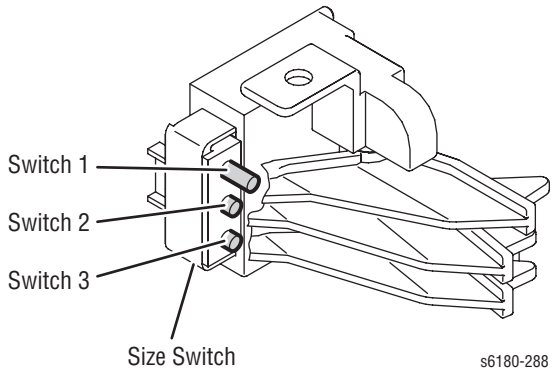
Outline of Size Switch

The paper size is determined by a combination of On/Off statuses of the SW 1, SW 2, and SW 3 switches of the Size Switch.

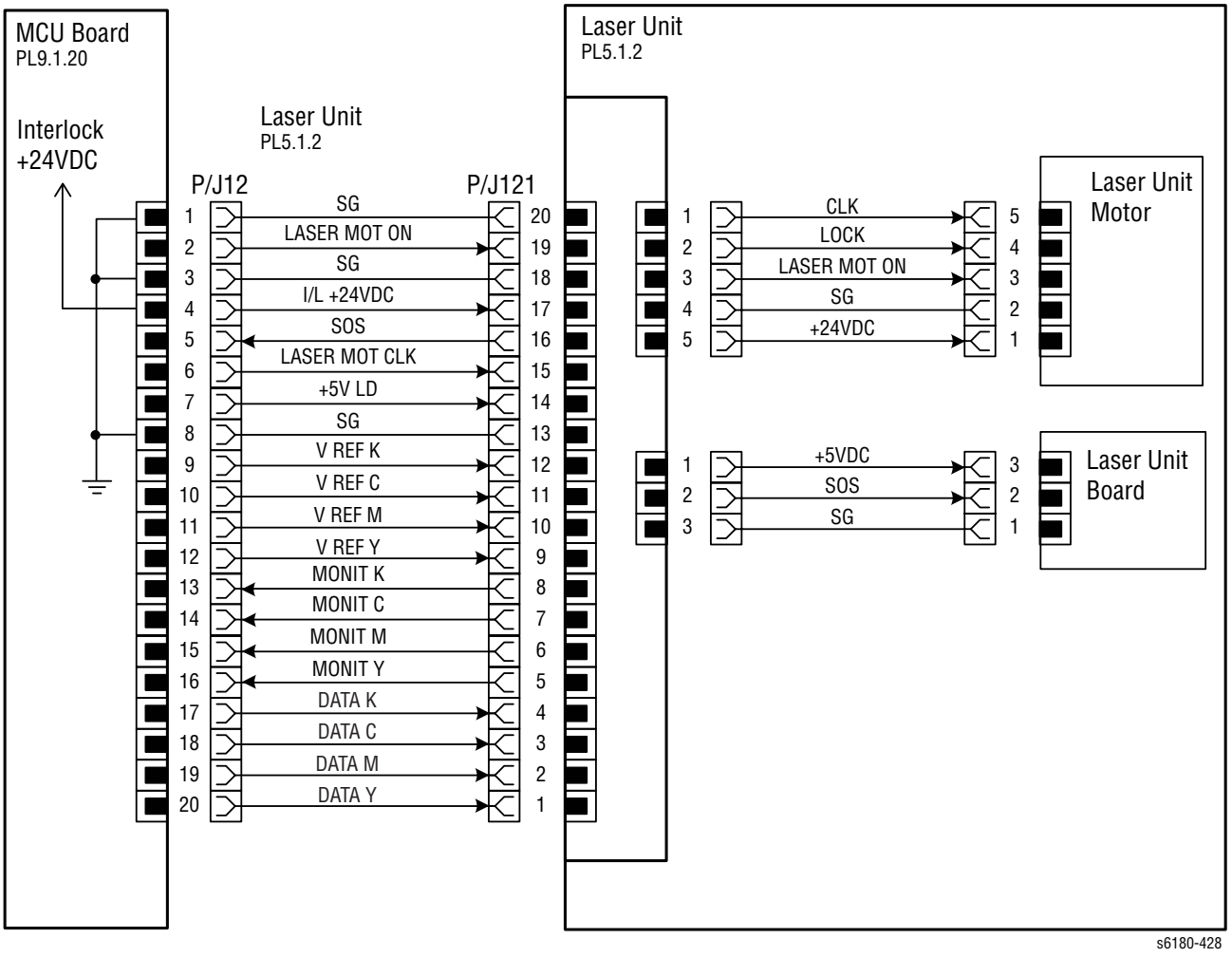
Paper Size	Switches		
	SW 1	SW 2	SW 3
Letter (SEF)	Off	Off	On
A4 (SEF)	Off	On	On
A5	Off	On	Off
B5 (SEF)	On	Off	Off
Legal 13” (SEF)	On	On	Off
Legal 14” (SEF)	On	On	On
Executive (SEF)	On	Off	On
No Tray	Off	Off	Off

Note

The Actuator is pushing the Size Switch.



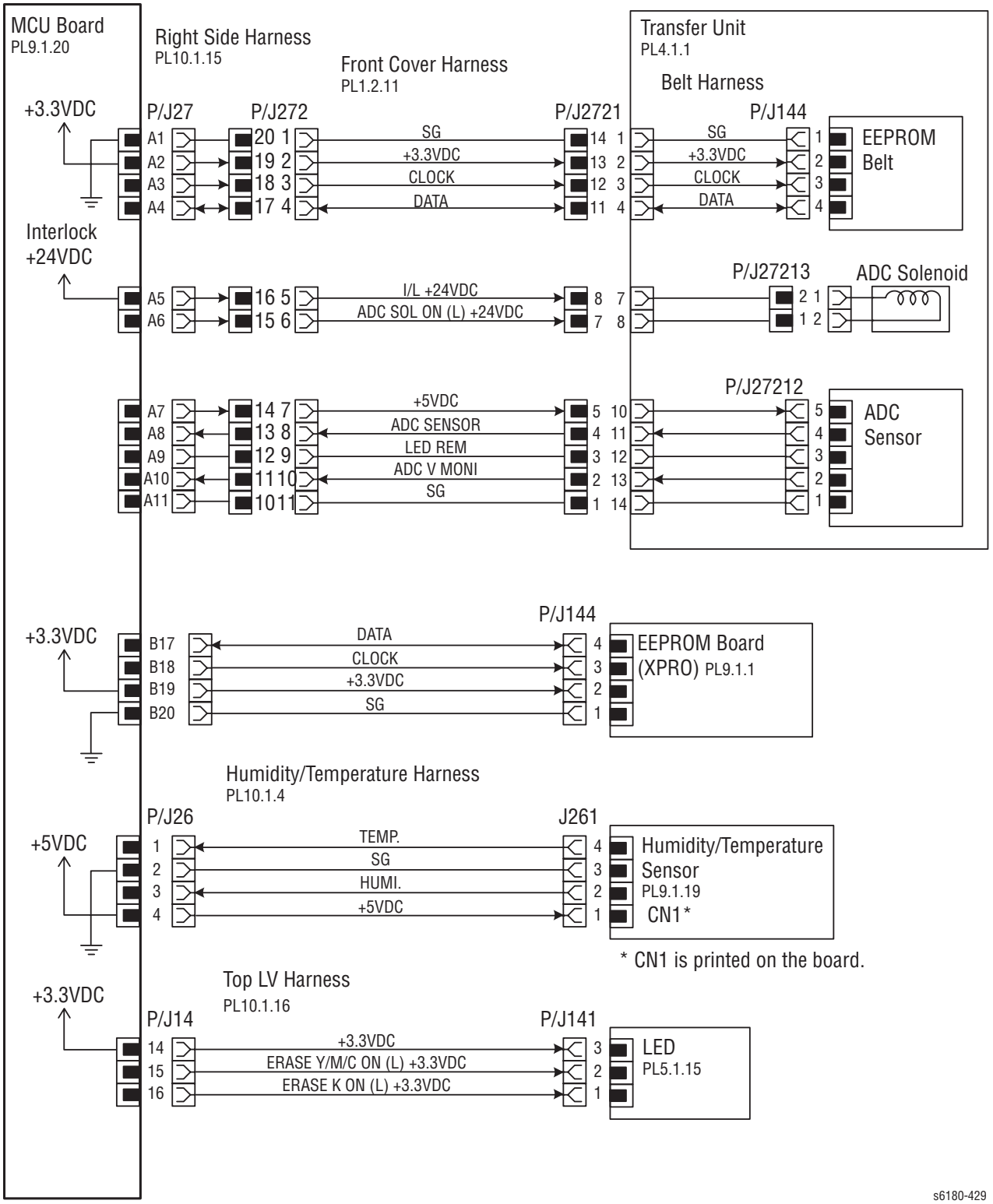
Laser Unit



Signal Line Name	Description
ROS MOT ON	Drives control signal of the Laser Unit Motor.
ROS MOT CLK	
V REF K	Emits control signal of the Laser Diode.
V REF C	
V REF M	
V REF Y	
MONIT K	Monitors voltage of the Laser Diode.
MONIT C	
MONIT M	
MONIT Y	

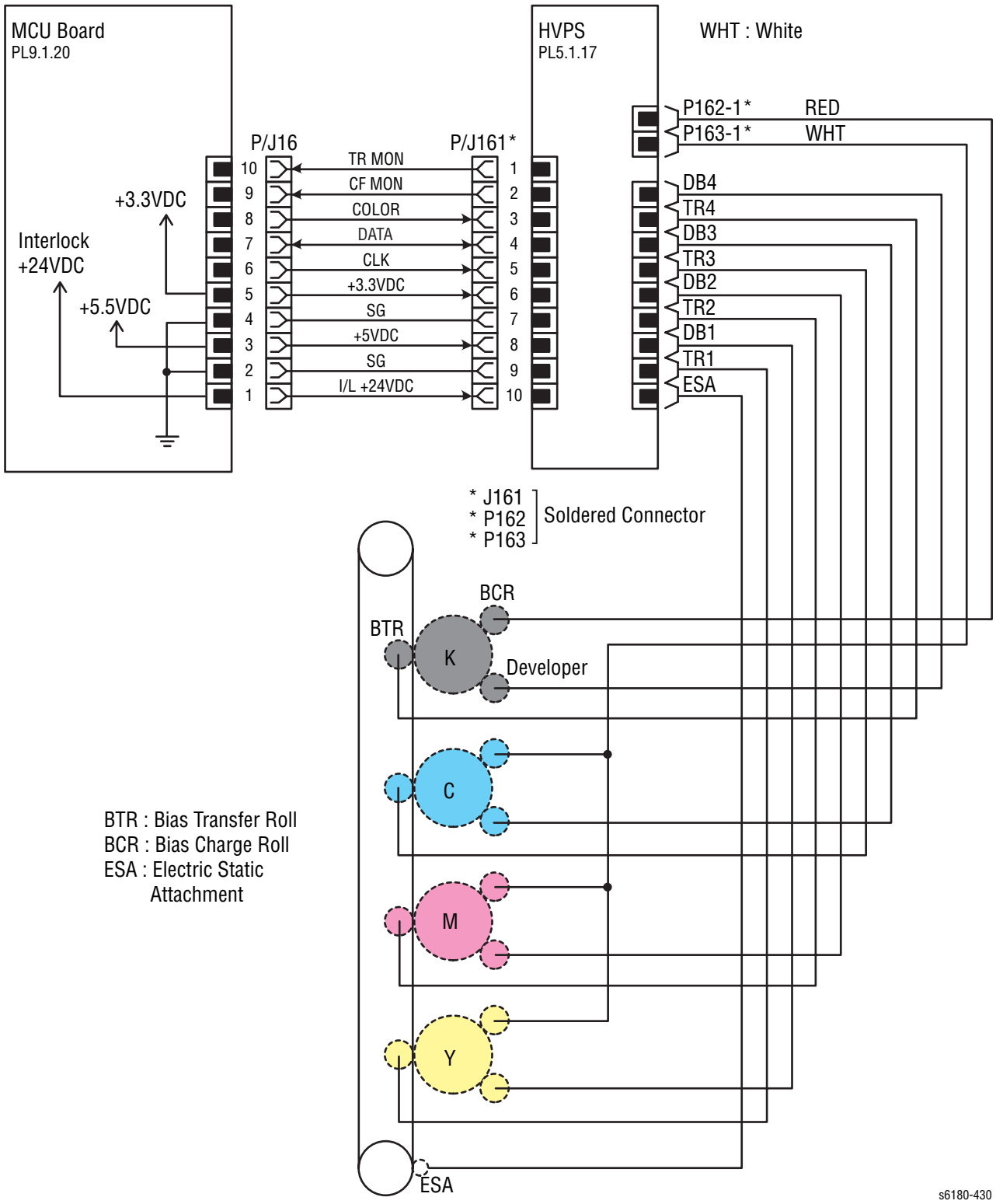
Signal Line Name	Description
DATA K	Provides video signal of the Laser Diode.
DATA C	
DATA M	
DATA M	

Xerographic



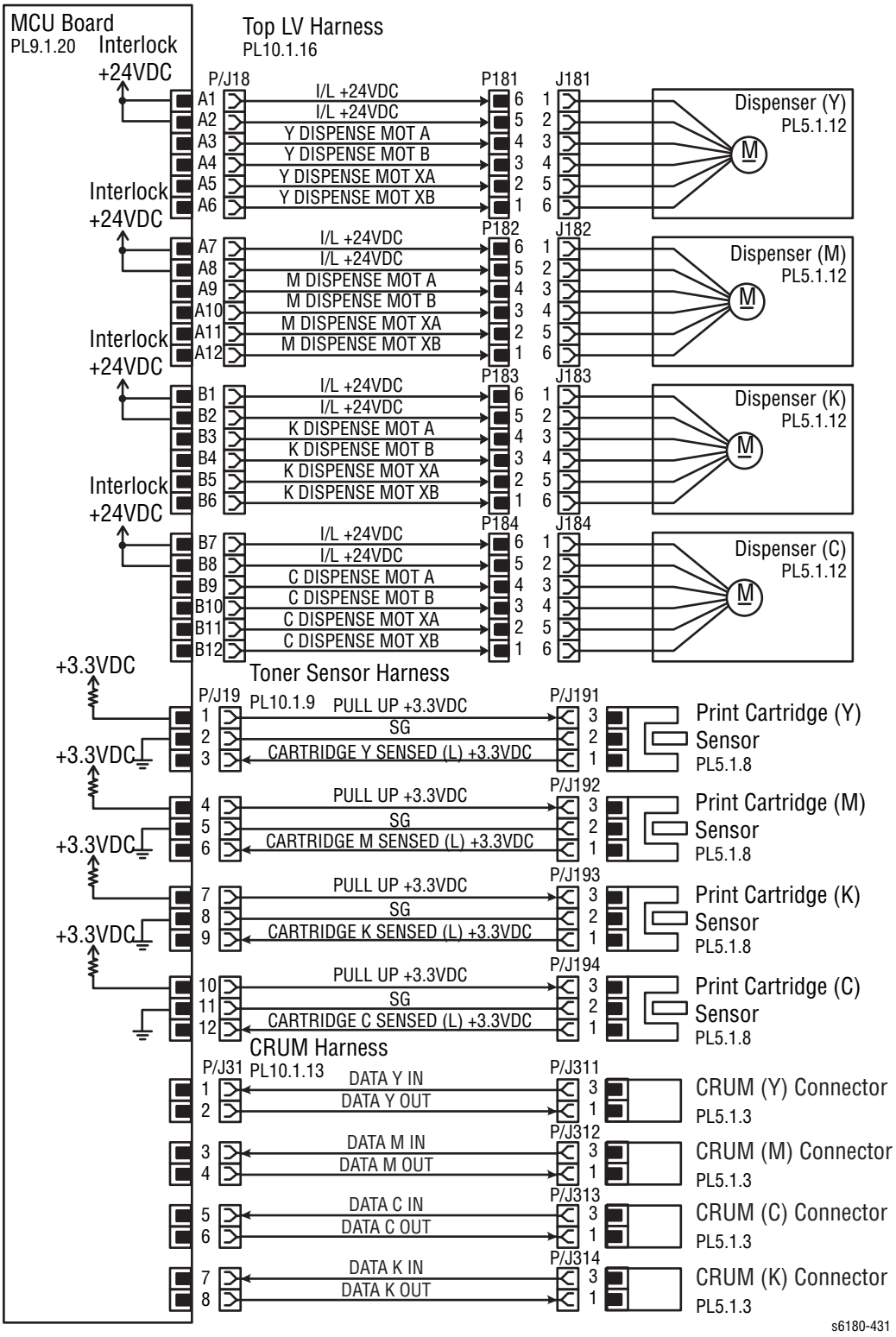
Signal Line Name	Description
CLOCK	Controls signal of the EEPROM Board.
DATA	
ADC SOL ON (L) +24 VDC	On/Off signal of the ADC Solenoid.
ADC SENSOR	Toner patch density data measured by the ADC Sensor (Analog value).
LED REM	Removes signal of the LED of the ADC Sensor.
ADC V MONI	Controls signal of the ADC Sensor.
DATA	Controls signal of the EEPROM Board.
CLOC	
TEMP.	Temperature data in the printer by the Humidity/ Temperature Sensor (Analog value).
HUMI.	Provides Humidity/Temperature data in the printer by the Humidity/Temperature Sensor (Analog value).
ERASE K ON (L) +3.3 VDC	On/Off signal of the LED.
ERASE Y/M/C ON (L) +3.3 VDC	

High Voltage



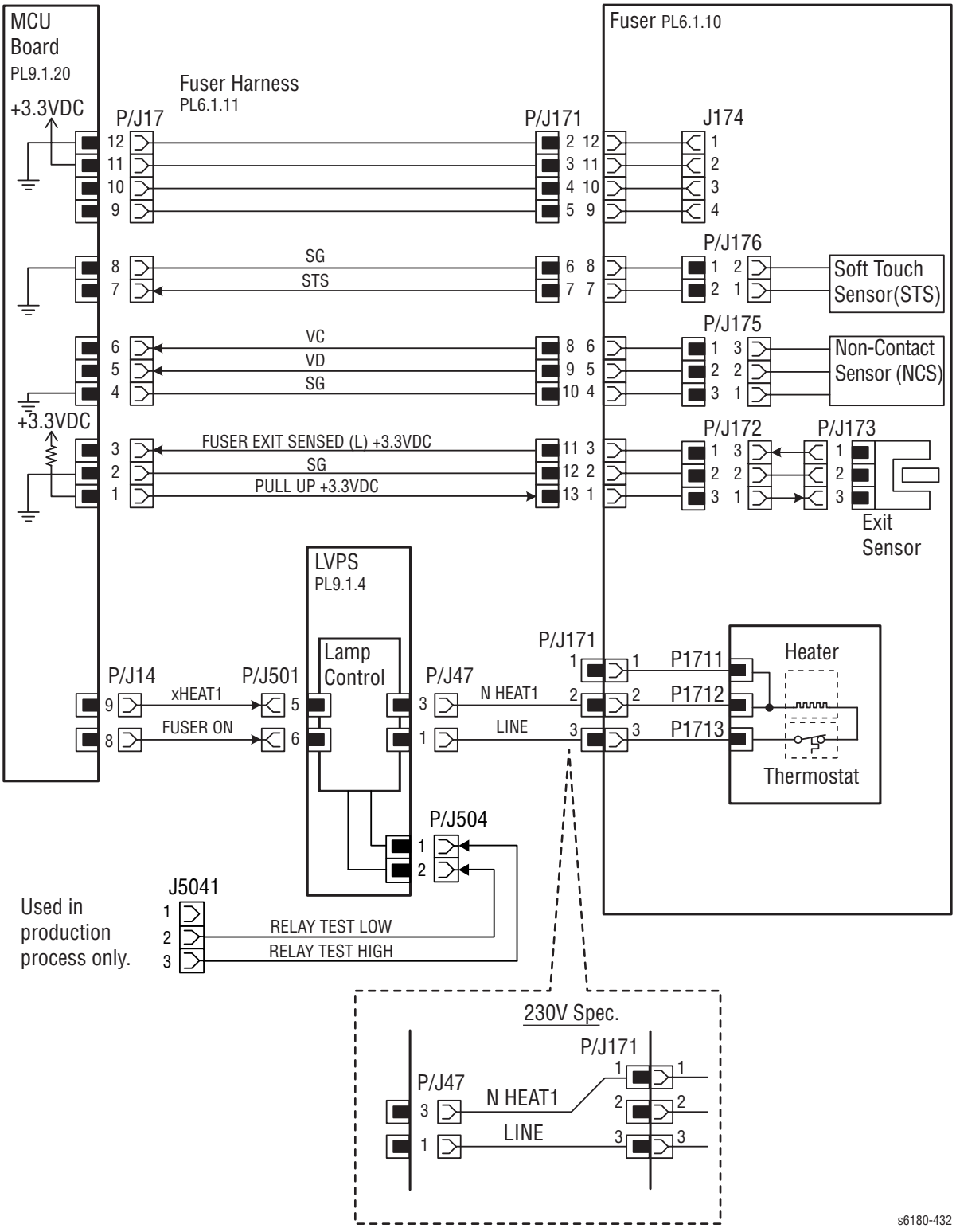
Signal Line Name	Description
TR MON	Controls signal of the HVPS.
CF MON	
COLOR	
DATA	
CLK	

Developer


MCU Board
PL9.1.20
Interlock
+24VDC
Top LV Harness
PL10.1.16
P/J18
P181
J181
A1
A2
A3
A4
A5
A6
I/L +24VDC
I/L +24VDC
Y DISPENSE MOT A
Y DISPENSE MOT B
Y DISPENSE MOT XA
Y DISPENSE MOT XB
Dispenser (Y)
PL5.1.12
Interlock
+24VDC
P182
J182
A7
A8
A9
A10
A11
A12
M DISPENSE MOT A
M DISPENSE MOT B
M DISPENSE MOT XA
M DISPENSE MOT XB
Dispenser (M)
PL5.1.12
P183
J183
B1
B2
B3
B4
B5
B6
K DISPENSE MOT A
K DISPENSE MOT B
K DISPENSE MOT XA
K DISPENSE MOT XB
Dispenser (K)
PL5.1.12
P184
J184
B7
B8
B9
B10
B11
B12
C DISPENSE MOT A
C DISPENSE MOT B
C DISPENSE MOT XA
C DISPENSE MOT XB
Dispenser (C)
PL5.1.12
+3.3VDC
Toner Sensor Harness
P/J19
PL10.1.9
P/J191
PULL UP +3.3VDC
SG
CARTRIDGE Y SENSED (L) +3.3VDC
Print Cartridge (Y)
Sensor
PL5.1.8
P/J192
PULL UP +3.3VDC
SG
CARTRIDGE M SENSED (L) +3.3VDC
Print Cartridge (M)
Sensor
PL5.1.8
P/J193
PULL UP +3.3VDC
SG
CARTRIDGE K SENSED (L) +3.3VDC
Print Cartridge (K)
Sensor
PL5.1.8
P/J194
PULL UP +3.3VDC
SG
CARTRIDGE C SENSED (L) +3.3VDC
Print Cartridge (C)
Sensor
PL5.1.8
CRUM Harness
P/J31
PL10.1.13
P/J311
DATA Y IN
DATA Y OUT
CRUM (Y) Connector
PL5.1.3
P/J312
DATA M IN
DATA M OUT
CRUM (M) Connector
PL5.1.3
P/J313
DATA C IN
DATA C OUT
CRUM (C) Connector
PL5.1.3
P/J314
DATA K IN
DATA K OUT
CRUM (K) Connector
PL5.1.3
s6180-431

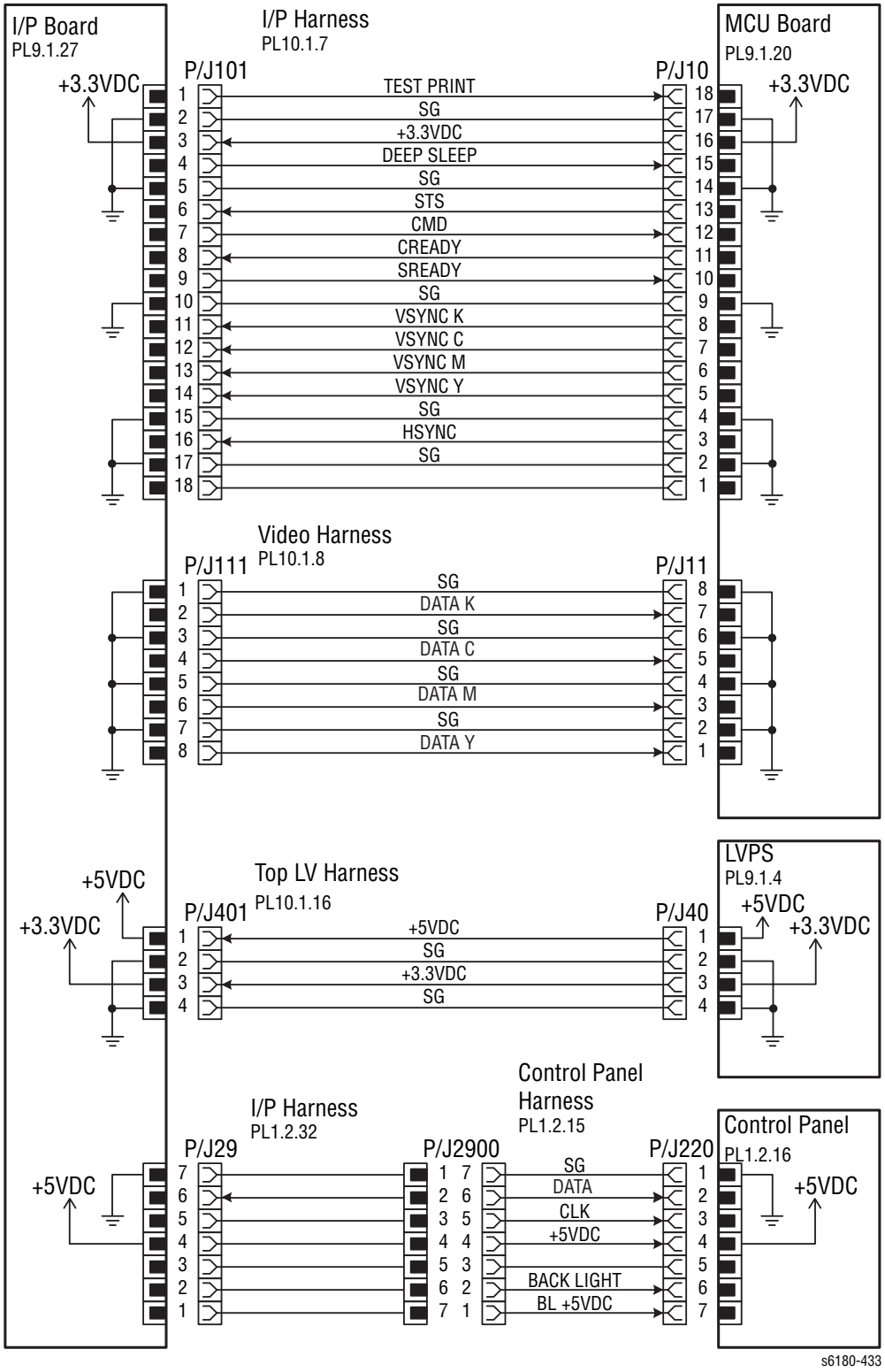
Signal Line Name	Description
Y DISPENSE MOT A	Drives control signal of the Dispenser (Y).
Y DISPENSE MOT B	
Y DISPENSE MOT XA	
Y DISPENSE MOT XB	
M DISPENSE MOT A	Drives control signal of the Dispenser (M).
M DISPENSE MOT B	
M DISPENSE MOT XA	
M DISPENSE MOT XB	
C DISPENSE MOT A	Drives control signal of the Dispenser (C).
C DISPENSE MOT B	
C DISPENSE MOT XA	
C DISPENSE MOT XB	
K DISPENSE MOT A	Drives control signal of the Dispenser (K).
K DISPENSE MOT B	
K DISPENSE MOT XA	
K DISPENSE MOT XB	
CARTRIDGE Y SENSED (L) +3.3 VDC	Detects signal of the Print Cartridge (Y) Sensor.
CARTRIDGE M SENSED (L) +3.3 VDC	Detects signal of the Print Cartridge (M) Sensor.
CARTRIDGE K SENSED (L) +3.3 VDC	Detects signal of the Print Cartridge (K) Sensor.
CARTRIDGE C SENSED (L) +3.3 VDC	Detects signal of the Print Cartridge (C) Sensor.
DATA Y IN	Controls signal of the CRUM Connector (Y).
DATA Y OUT	
DATA M IN	Controls signal of the CRUM Connector (M).
DATA M OUT	
DATA C IN	Controls signal of the CRUM Connector (C).
DATA C Out	
DATA K IN	Controls signal of the CRUM Connector (K).
DATA K OUT	

Fuser


MCU Board
PL9.1.20
+3.3VDC
Fuser Harness
PL6.1.11
P/J17
P/J171
Fuser PL6.1.10
J174
SG
STS
P/J176
Soft Touch Sensor(STS)
VC
VD
SG
P/J175
Non-Contact Sensor (NCS)
+3.3VDC
FUSER EXIT SENSED (L) +3.3VDC
SG
PULL UP +3.3VDC
P/J172
P/J173
Exit Sensor
LVPS
PL9.1.4
Lamp Control
P/J14
P/J501
xHEAT1
FUSER ON
P/J47
N HEAT1
LINE
P/J171
P1711
P1712
P1713
Heater
Thermostat
P/J504
J5041
Used in production process only.
RELAY TEST LOW
RELAY TEST HIGH
230V Spec.
P/J171
P/J47
N HEAT1
LINE
s6180-432

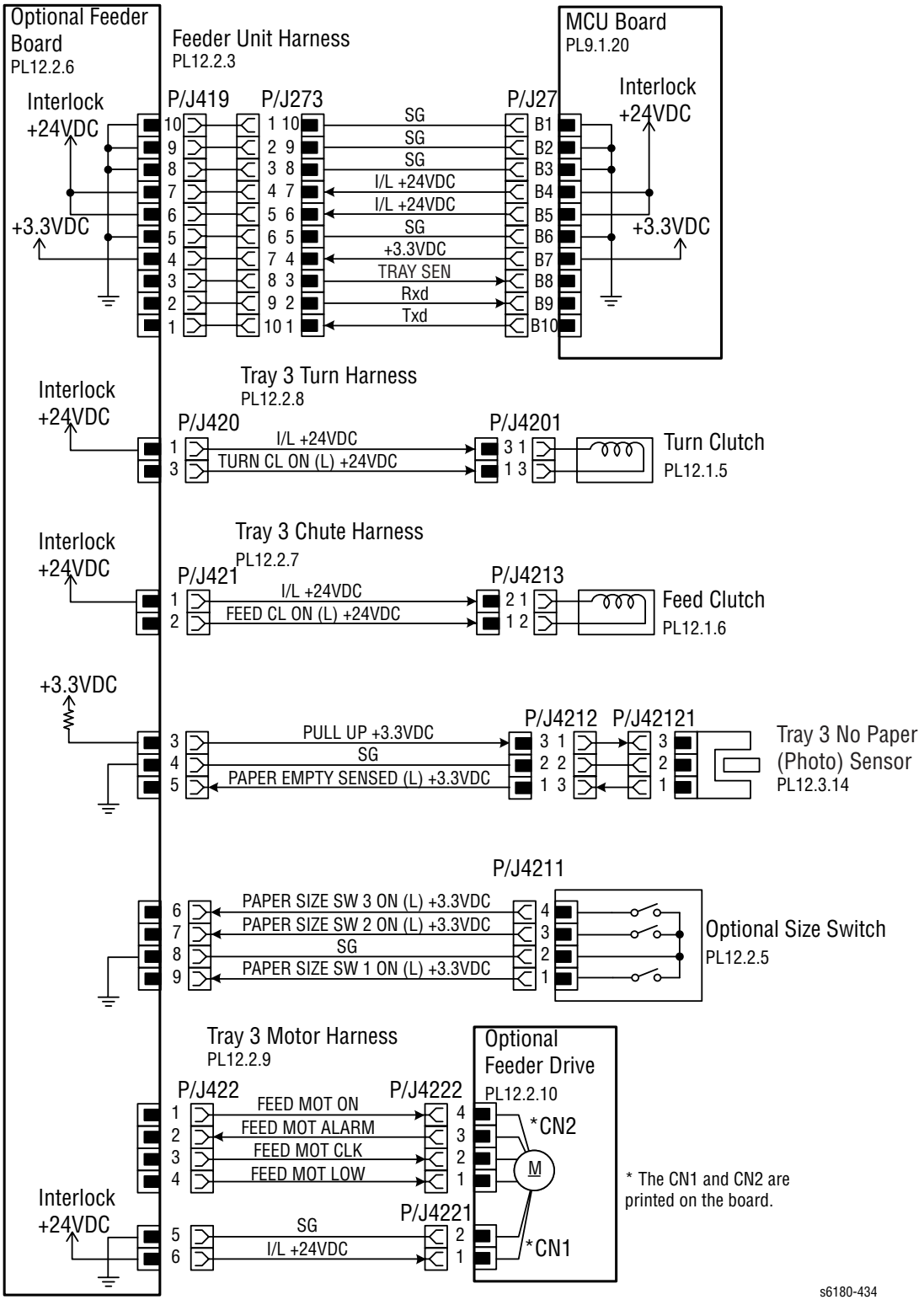
Signal Line Name	Description
STS	Heat Roll surface temperature data measured by the Humidity/Temperature Sensor for detecting high temperature (Analog value).
VC	Temperature data measured by the Humidity/ Temperature Sensor for controlling the temperature (Analog value).
VD	
FUSER EXIT SENSED (L) +3.3 VDC	Paper detects signal of the Fuser Exit by the Photo Sensor (Exit Sensor).
FUSER ON	Displays lighting signal of the Fuser Lamp.
RELAY TEST LOW	Tests signal of the LVPS (used in production process only)
RELAY TEST HIGH	

Controller


I/P Board
PL9.1.27
+3.3VDC
I/P Harness
PL10.1.7
P/J101
P/J10
MCU Board
PL9.1.20
+3.3VDC
TEST PRINT
SG
+3.3VDC
DEEP SLEEP
SG
STS
CMD
CREADY
SREADY
SG
VSYNC K
VSYNC C
VSYNC M
VSYNC Y
SG
HSYNC
SG
Video Harness
PL10.1.8
P/J111
P/J11
SG
DATA K
SG
DATA C
SG
DATA M
SG
DATA Y
+5VDC
+3.3VDC
Top LV Harness
PL10.1.16
P/J401
P/J40
LVPS
PL9.1.4
+5VDC
+3.3VDC
+5VDC
SG
+3.3VDC
SG
I/P Harness
PL1.2.32
Control Panel
Harness
PL1.2.15
P/J29
P/J2900
P/J220
Control Panel
PL1.2.16
+5VDC
SG
DATA
CLK
+5VDC
BACK LIGHT
BL +5VDC
+5VDC
s6180-433

Signal Line Name	Description
TEST PRINT	Controls signal for the Test Print mode.
DEEP SLEEP	Controls signal for the Deep Sleep mode.
STS	Status signal transmitted from the MCU Board to the Image Processor Board.
CMD	Commands signal transmitted from the Image Processor Board to the MCU Board.
CREADY	Signal for indicating wether or not the printer is ready for receiving command signal.
SREADY	
VSYNC K	Signal for indicating registration position of each of images Y, M, C, and K.
VSYNC C	
VSYNC M	
VSYNC Y	
HSYNC	Signal for data.
DATA K	Video data of four colors.
DATA C	
DATA M	
DATA Y	
DATA	Controls signal of the Control Panel.
CLK	
BACK LIGHT	
BL +5 VDC	

Optional 550-Sheet Feeder Wiring Diagram



Signal Line Name	Description
TRAY SEN	Controls signal of the Optional Feeder Board.
Rxd	
Txd	
TURN CL ON (L) +24 VDC	On/Off signal of the Optional Turn Clutch.
FEED CL ON (L) +24 VDC	Paper detects signal of the Feeder by the Photo Sensor (Tray 3 No Paper Sensor).
PAPER SIZE SW 1 ON (L) +3.3 VDC	On/Off signal of the Optional Size Switch.
PAPER SIZE SW 2 ON (L) +3.3 VDC	
PAPER SIZE SW 3 ON (L) +3.3 VDC	
FEED MOT ON	Drives control signal of the Optional Feeder Drive.
FEED MOT ALARM	
FEED MOT CLK	
FEED MOT LOW	

Outline of Optional Size Switch

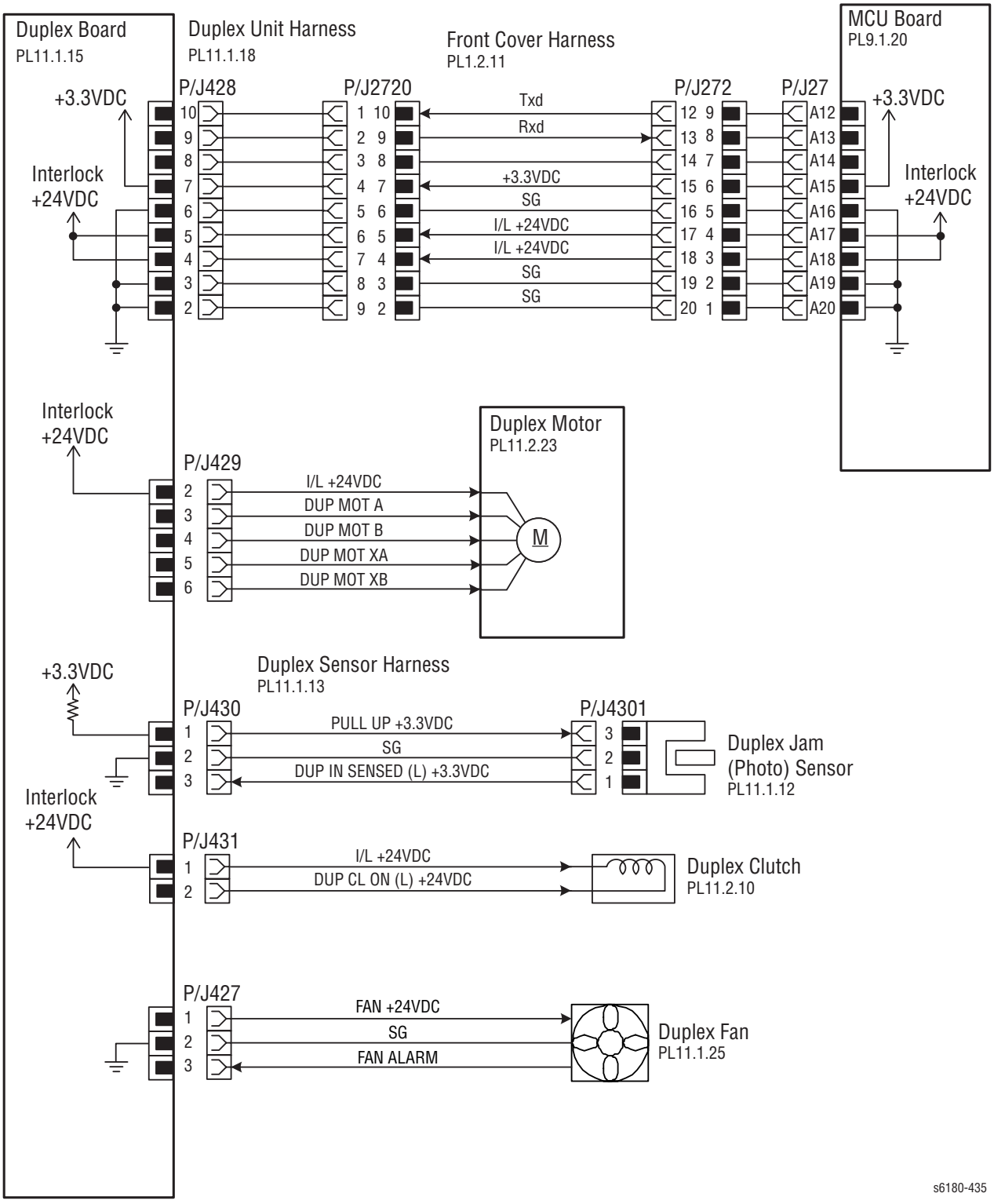
The paper size is determined by a combination of the On/Off statuses of the SW 1, SW 2, and SW 3 switches of Optional Size Switch.

Paper Size	Switches		
	SW 1	SW 2	SW 3
Letter (SEF)	Off	Off	On
A4 (SEF)	Off	On	On
A5	Off	On	Off
B5 (SEF)	On	Off	Off
Legal 13” (SEF)	On	On	Off
Legal 14” (SEF)	On	On	On
Executive (SEF)	On	Off	On
No Tray	Off	Off	Off

Note

The Actuator is pushing the Size Switch.

Duplex Wiring Diagram



Signal Line Name	Description
Txd	Controls signal of the Duplex Board.
Rxd	
DUP MOT A	Drives control signal of the Duplex Motor.
DUP MOT B	
DUP MOT XA	
DUP MOT XB	
DUP IN SENSED (L) +3.3 VDC	Paper detects signal of the Duplex by the Photo Sensor (Duplex Jam Sensor).
DUP CL ON (L) +24 VDC	On/Off signal of the Duplex Clutch.
FAN +24 VDC	Drives control signal of the Duplex Fan.
FAN ALARM	

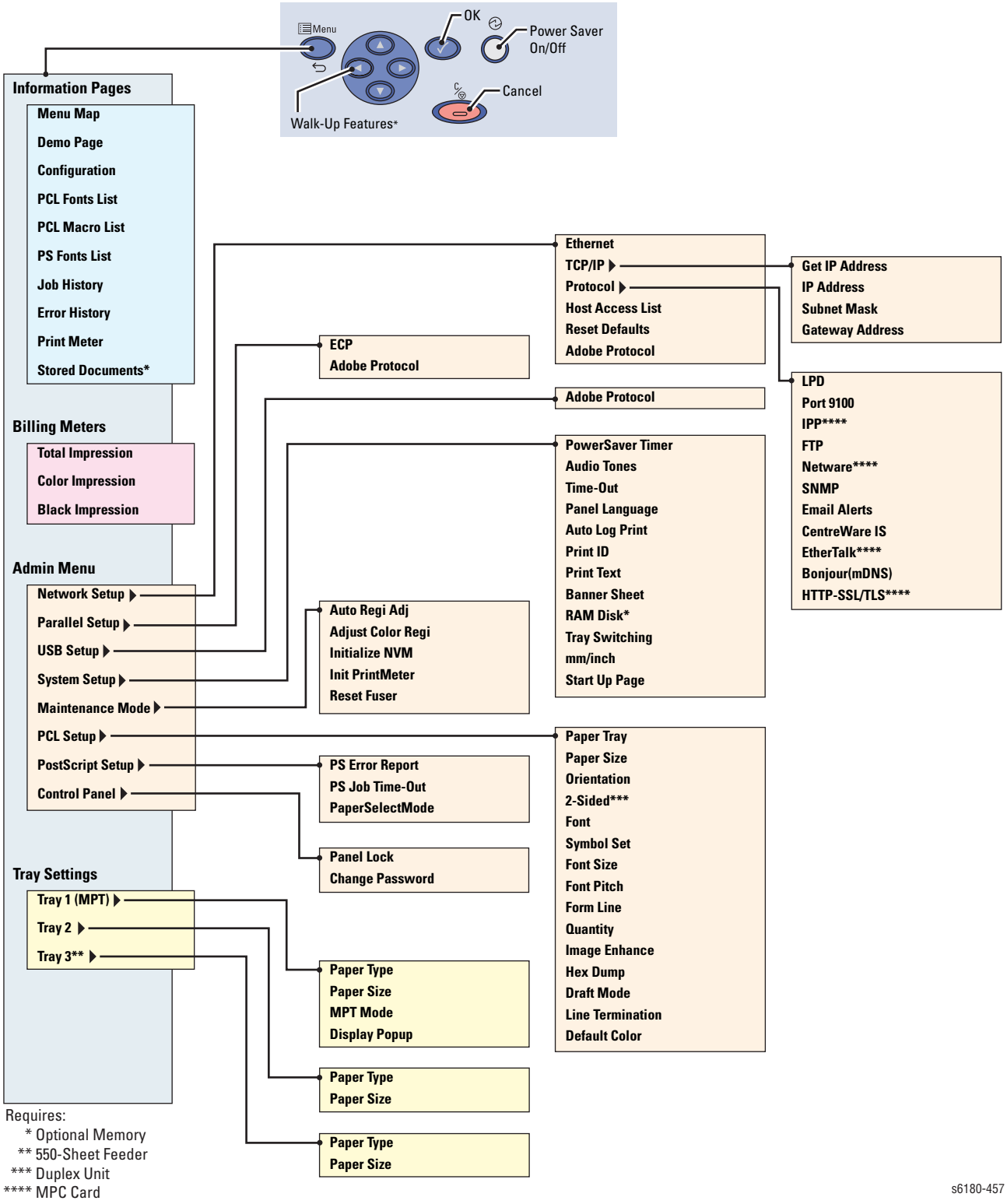
Reference

Contents...

- Phaser 6180 Menu Map
- Firmware Update
- Printer Chain Link Codes
- Acronyms and Abbreviations

Appendix A

Phaser 6180 Menu Map



Firmware Update

Boot Controller Update

Note

Boot Code can be updated via USB or Parallel port only.

1. Down load applicable files from the Xerox support web site.
2. Turn off the printer.
3. Ensure your appropriate downloading cable option (USB or Parallel) is connected.
4. Press the **Up Arrow**, **Down Arrow**, and **Menu** buttons simultaneously and turn on the printer.
5. The **FW Update Password** is displayed.
6. Press the **Down Arrow** button 2 times.
7. Press the **OK** button.
8. The **F/W Download** is displayed.
9. Select the appropriate method (**DL Mode Parallel** or **DL Mode USB**). Press the **OK** button.
10. The serial number of the printer is displayed. Then the **DownLoad Mode Send F/W Data** is displayed.
11. On your computer, locate the downloaded file. Open the **Boot** directory. Double-click the **Xeroxfwup.exe** file.
12. Select the appropriate method (**USB** or **Parallel**). Click the **Next** button.
13. The **xeroxfwup** window with the module number is displayed. Click the **Next** button.
14. On the printer Control Panel, the **Erasing Flash...** --> **Diagnosing** message is displayed. The the printer starts updating the firmware.

Caution

Do Not reboot or turn off the printer. The printer will automatically reboot.

12. When the process is completed, the following messages are displayed on the printer Control Panel.
    - **Xerox (TM) Print Cartridge**
    - **Processing... Ready**
13. Print the printer Configuration page (**Menu** > **Information Pgs** > **Configuration**) and verify the Boot Version information.

Firmware Controller Update

1. Down load the applicable files from the Xerox support web site.
2. Ensure your appropriate downloading cable option (Ethernet, USB, or Parallel) is connected.
3. Reboot the printer.
4. On your computer, locate the downloaded file. Open the **Main** directory. Double-click the **Xeroxfwup.exe** file.
5. The **xeroxfwup** window with connection options is displayed. Select the appropriate downloading option (Network, USB, or Parallel). Click the **Next** button.
6. The **xeroxfwup** window is displayed.
   a. For Network connection:
      - If your printer IP address is available, select the appropriate box. Click the **Next** button.
      - If your printer IP address in not listed, click the **Add** button. Enter your printer IP address. Click the **OK** button. Select the box with your printer IP address. Click the **Next** button.
      - 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 or Parallel connection:
      - The **xeroxfwup** window with the module number is displayed. Click the **Next** button.
      - On the printer Control Panel, messages are displayed from **Receiving data Parallel/USB** --> **Writing... Parallel/USB** as the printer starts updating the firmware.
      - A **Completed** message is displayed on the Control Panel.

Caution

Do Not reboot or turn off the printer. The printer will automatically reboot.

7. When the process is completed, the following messages are displayed on the printer Control Panel.
   - **Diagnosing... Xerox (TM) Print Cartridge**
   - **Processing... Please wait... Calibrating... Ready**
8. On your computer, verify that the firmware update has been sent. Click the **Next** button. Click the **OK** button.
9. Print the printer Configuration page (**Menu** > **Information Pgs** > **Configuration**) and verify the Firmware Version information.

Firmware MPC Update

1. Down load the applicable files from the Xerox support web site.
2. Ensure your appropriate downloading cable option (Ethernet, USB, or Parallel) is connected.
3. Reboot the printer.
4. On your computer, locate the downloaded file. Double-click the **Xeroxfwup.exe** file.
5. The **xeroxfwup** window with connection options is displayed. Select the appropriate downloading option (Network, USB, or Parallel). Click the **Next** button.
6. The **xeroxfwup** window is displayed.
   a. For Network connection:
      - If your printer IP address is available, select the appropriate box. Click the **Next** button.
      - If your printer IP address in not listed, click the **Add** button. Enter your printer IP address. Click the **OK** button. Select the box with your printer IP address. Click the **Next** button.
      - On the printer Control Panel, messages are displayed from **Receiving data Port 9100** --> **Checking... Port 9100** --> **Writing... Port 9100** as the printer starts updating the firmware.

   b. For USB or Parallel connection:
      - The **xeroxfwup** window with the module number is displayed. Click the **Next** button.
      - On the printer Control Panel, messages are displayed from **Receiving data Parallel/USB** --> **Checking... Parallel/USB** --> **Writing... Parallel/USB** as the printer starts updating the firmware.
      - A **Diagnosing...** message is displayed on the Control Panel.

Caution

Do Not reboot or turn off the printer. The printer will automatically reboot.

7. When the process is completed, the following messages are displayed on the printer Control Panel.
   - **Diagnosing... Xerox (TM) Print Cartridge**
   - **Processing... Please wait... Calibrating... Ready**
8. On your computer, verify that the firmware update has been sent. Click the **Next** button. Click the **OK** button.
9. Print the printer Configuration page (**Menu** > **Information Pgs** > **Configuration**) and verify the Firmware Version information.

Printer Chain Link Codes

The Chain Link codes in the table below may not require troubleshooting procedures. These Chain Link codes appear as an information when the printer operates.

Error Message and Chain Link Code Display

Chain Link	Description
016-500	Erase Flash Error
016-501	Write Flash Error
016-502	Verify Flash Error
016-737	Format Error
016-741	Protection Error
016-742	Invalid ID
016-743	Range Check Error
016-744	Check Sum Error
016-745	Header Error
016-757	Invalid User (Auditron)
016-758	Disabled Function (Auditron)
016-759	Limit Exceeded (Auditron)
016-982	RAM Disk Full
024-360	MCU Download Error
042-700	Over Heat (Print Engine Over Heat)
077-100	IOT Reg1 Jam (Print Engine Reg1 Jam)
077-101	IOT Reg2 Jam (Print Engine Reg2 Jam)
077-102	IOT Exit1 Jam (Print Engine Exit1 Jam)
077-103	IOT Exit2 Jam (Print Engine Exit2 Jam)
077-104	IOT Duplex1 Jam (Print Engine Duplex1 Jam)
077-105	IOT Duplex2 Jam (Print Engine Duplex2 Jam)
077-106	IOT Duplex3 Jam (Print Engine Duplex3 Jam)
077-107	IOT Duplex4 Jam (Print Engine Duplex4 Jam)
077-300	Door A Open (IOT Cover Front Open
077-912	Insert Tray 2
142-700	Over Heat (Print Engine Over Heat)

Acronyms and Abbreviations

Acronym	Description
3TM	Three Tray Module
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
BSD	Block Schematic Diagram
BTM	Bottom
BTR	Bias Transfer Roller
CAM	Cam Shaft
CCD	Charge Coupled Device (Photoelectric Converter)
CCW	Counter-Clock Wise
CD	Circuit Diagram
CD	Compact Disc
CFD	Computational-Fluid Dynamics
CLT	Clutch
CMYK	Toner colors for the printer: Y=yellow, C=cyan, M=magenta, K=black
CORR	Corrugate
CRD	(PostScript) Color Rendering Dictionary
CRU	Customer Replaceable Unit
CRUM	Customer Replaceable Unit Meter/Memory
CST	Cassette
CWIS	Collection Workflow Integration System
dB	Decibel

Acronym	Description
DC	Direct Current is type of power for printer components. Machine converts AC power from power source to DC power.
DDNS	Dynamic Domain Name System
DDR2 DIMM	Double Data Rate Dual In-Line Memory Module
DEV	Developer
DHCP	Dynamic Host Configuration Protocol
DMP	Damper
DPI	Dot Per Inch
DRV	Drive
DUP	Duplex
Duplex	2-sided printing
EA	Emulsion Aggregation (Toner)
EC	European Community
EEC	European Economic Community
EEPROM	Electrically Erasable Programmable Read-Only Memory
ESA	Electric Static Attachment
ESD	Electrostatic Discharge. A transfer of charge between bodies at different electrostactic potential.
ESS	Printer Controller
FCC	Federal Communications Commission
FDR	Feeder
FE	Field Engineer
FPOT	First Print Output Time
FR/FRNT	Front
FRU	Field Replaceable Unit
GB	Giga Byte
GND	Ground
HARN	Harness
HCF	High-Capacity Feeder
HDD	Hard Disk Drive
HGEA	High-Grade Emulsion Aggregation (Toner)
HSG	Housing
HUM	Humidity
HVPS	High-Voltage Power Supply
Hz	Hertz (cycles per second)
IBT	Intermediate Belt Transfer

Acronym	Description
IC	Integrated Circuit
IDT	Intermediate Drum Transfer
IEC	International Electrotechnical Commission
I/F	Interface
IOT	Image Output Terminal - the ROS/Xerox/paper handling/ fusing portion of the printer
IP	Image Processor
IPM	Impression Per Minutes
IPP	Internet Present Provider
IPX	Internetwork Packet Exchange
IQ	Image Quality
JBA	Job-Based Accounting
KB	Kilo Byte
LAN	Local Area Network
LCD	Liquid Crystal Display
LD	Laser Diode
LED	Light Emitting Diode
LEF	Long-Edge Feed
LH	Left Hand
LPD	Line Printer Daemon
LPR	Line Printer Remote
LTR	Letter Size Paper (8.5 x 11 inches)
LVPS	Low-Voltage Power Supply
MAC	Media Access Control
MB	Mega Byte
MCU	Machine Control Unit (Engine Control Board)
MHz	Mega Hertz
MIB	Management Information Base
MICR	Magnetic Ink Character Recognition
MM	Millimeters
MOB	Marks On Belt
MOT	Motor
MPC	Multi-Protocol Network Card
MPT	Multi-Purpose Tray
NCS	Non-Contact Sensor
NPP	No Paper
NVM	Non-Volatile Memory

Acronym	Description
NVRAM	Non-Volatile Random Access Memory
OEM	Original Equipment Manufacturer
OHP	Overhead Paper (Transparency)
OPC	Organic Photo Conductor
OPT	Optional
OS	Operating System
PC	Personal Computer
PCB	Printed Circuit Board
PCDC	Pixel Count Dispense Control
PCL	Printer Command Language
PDL	Page Description Language
PH	Paper Handling
PHY	Physical Layer
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
PPS	Pages
PV	Print Volume Management
PWB	Printed Wiring Board
PWBA	Printed Wiring Board Assembly
RAM	Random Access Memory
RegiCon	Registration Control
RET	Retard
RH	Relative Humidity
RLS	Release
RMS	Root Mean Square Voltage
ROM	Read-Only Memory
ROS	Raster Output Scanner - Laser Unit
RTD	Retard
SEF	Short-Edge Feed
SLP	Service Location Protocol
SMB	Server Message Block
SNMP	Simple Network Management Protocol

Acronym	Description
SNR	Sensor
SOL	Solenoid
SOS	Start of Scan
STS	Soft Touch Sensor
TDC	Toner Density Control
TNR	Toner
TRNS	Transport
UI	User Interface
USB	Universal Serial Bus
WINS	Wireless Integrated Network Sensor

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