XEROX

Xerox DocuPrint N2025/N2825

Network Laser Printer Service Manual

CAUTION

These components are susceptible to electrostatic discharge. Observe all ESD procedures to avoid damage.

721P52440
February 2000

This Service Manual contains information that applies to the DocuPrint N2025/N2825 Laser Printer.

Copyright

This Service Manual contains information that applies to the DocuPrint N2025/N2825 Electronic Laser Printer.

NOTICE

This manual is for use by Xerox Technicians and Xerox trained technicians only.

NOTICE

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Warning

This equipment complies with the requirements in Part 15 of FCC rules for a class A computing device. Operation of the equipment in a residential area may cause unacceptable interference to radio and TV reception, requiring the operator to take whatever steps are necessary to correct the interference.

Electrostatic Discharge

This caution indicates that there are components which are sensitive to damage caused by electrostatic discharge.

CAUTION

These components are susceptible to electrostatic discharge. Observe all ESD procedures to avoid damage.

Shock Hazard

This symbol indicates the presence of potentially hazardous voltages.

FM_001

Fuser Hazard

This symbol indicates the presence of extreme heat from the Fuser Assembly.

Class 1 LASER Product

The DocuPrint N2025/N2825 laser printers are 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 is a class of laser product that does not emit hazardous laser radiation; this is possible only because the laser beam is totally enclosed during all modes of customer operation.

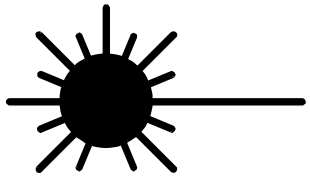
The laser and output of the laser scanner unit produces a beam that, if looked into, could cause eye damage. Service procedures must be followed exactly as written without change.

When servicing the machine or laser module, follow the procedures specified in the manual and there will be no hazards from the laser.

Laser (FDA): Any laser label visible to service must be reproduced in the service manual with location shown or indicated. Safe working procedures and clear warnings concerning precautions to avoid possible exposure must also be included.

The Laser contained in the DocuPrint N2025/N2825 meets the following standard: Laser class 3B, maximum 5mW, wavelength 780nm.

The following LASER symbol will be displayed at the start of any procedure where possible exposure to the laser beam exists.



LUOKAN 1 LASERLAITE

KLASS 1 LASER APPARAT

Table of Contents

Introduction

The DocuPrint N2025/N2825 Service Manual is the primary document used for repairing and maintaining the DocuPrint N2025/N2825 Laser Printers.

This manual contains Service Call Procedures, Diagnostic Procedures, General Information, Repair Analysis Procedures, Image Quality Analysis Procedures, Wiring Data, and Parts Lists that will enable the Service Representative to repair DocuPrint N2025/N2825 failures.

Organization

This manual is divided into seven sections. The title and description of each section of the manual is as follows:

Section 1 - Service Call Procedures

This section is used to identify a suspected problem. It contains Machine Orientation, Call Flow, Initial Actions, Corrective Actions, and Final Actions. This part of the service manual should always be used to start the service call.

Section 2 - Repair Analysis Procedures

This section is used to isolate and identify problems to a faulty component or subassembly. It contains the introduction, display message table, error code tables and the Repair Analysis Procedures (RAPs).

Section 3 - Image Quality

This section contains image quality repair procedures to assist in correcting image quality defects. These procedures provide defect samples and definitions to help identify the type of defect that exists, the test pattern to use, and actions required to correct the defects.

Section 4 - Repair / Adjustment

This section contains the instructions for removal, replacement, and adjustment of the spared parts within the machine.

Section 5 - Parts Lists

This section contains illustrations of disassembled subsystems and a listing of the spared parts.

Part names are listed in this section of the manual even if the part itself is not spared. All the parts that are spared will have the part number listed. Parts that are not spared will not have a number listed.

Section 6 - General Procedures

This section includes the Operations Menu Map and the Service Mode Menu Map. It includes all unique service operations, supplemental tools and supplies.

Section 7 - Wiring Data

This section contains sensor, connector, and PWB location drawings; power distribution diagrams, interconect diagrams, interconnect diagrams and pin assignment information. This information is not specific to individual procedures but is provided for general reference.

Terminology and Symbols

The following is the terminology and symbols that are used in this manual for Warnings, Electrostatic Device or General Cautions, and Notes.

Warning

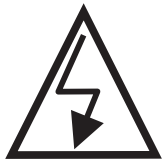
This equipment complies with the requirements in Part 15 of FCC rules for a class A computing device. Operation of the equipment in a residential area may cause unacceptable interference to radio and TV reception, requiring the operator to take whatever steps are necessary to correct the interference.

Electrostatic Discharge

The following symbols indicates that there are components which are sensitive to damage caused by electrostatic discharge.

Shock Hazard

This symbol indicates the presence of potentially hazardous voltages.



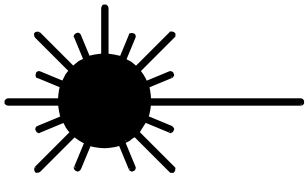
FM_001

Fuser Hazard

This symbol indicates the presence of extreme heat from the Fuser Assembly.

Laser Product Certification

CAUTION



Use of controls or adjustments other than those specified in this manual may result in an exposure to dangerous laser radiation.

The DocuPrint N2025/N2825 is certified to comply with Laser Product Performance Standards set by the United States Department of Health and Human Services as a Class 1 product. This means that it is a laser product that does not emit dangerous laser radiation during any mode of customer operation.

During servicing, the laser beam could cause eye damage if looked at directly. Service procedures must be followed exactly as written without change.

CAUTION

These components are susceptible to electrostatic discharge. Observe all ESD procedures to avoid damage.

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1 Service Call Procedures

1.0 Introduction

The Service Call Procedures section is used to identify a suspected problem. This section contains Call Flow, Initial Actions, Corrective Actions, and Final Actions.

Call Flow illustrates the normal activities and flow of a service call.

Initial Actions are used to gather information regarding the performance of the machine and prepare the product for servicing.

Corrective Actions are used to verify the normal operation of the machine. In the Y/N (Yes/No) steps of the corrective actions, a Yes response will lead you to the next step. A No response will indicate the next step to perform or will direct you to a Repair Analysis Procedure (RAP).

RAPs will provide the instructions to isolate the faulty part or provide a list of suspect parts, when isolation is not appropriate. Wire harnesses are not included in the repair actions and problems with loose connections or damaged harnesses should be isolated using visual inspection and the wiring data in section 7.

Final Actions are used to evaluate the total operation of the system and to identify the actions required to complete the service call.

1.1 Machine Orientation

For servicing the DocuPrint N2025/N2825, all references to machine orientation are as illustrated in Figure 1.

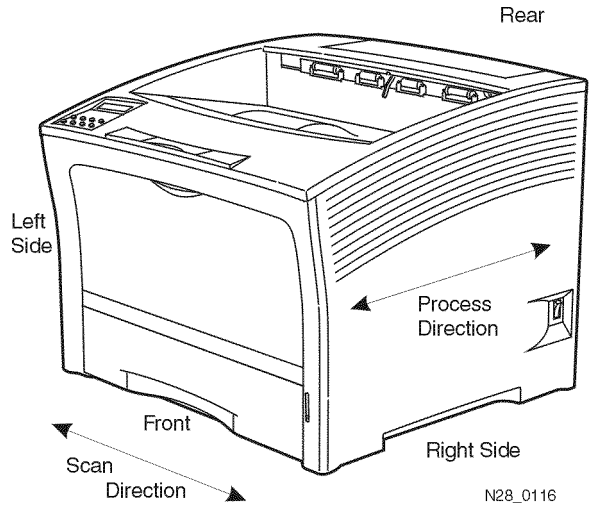


Figure 1 Machine Orientation

1.2 Call Flow

The call flow diagram shows the relationship of actions during a typical service call Figure 1.

The functions in Call Flow correspond to service manual sections as follows:

Section 1 - Initial Actions, Corrective Actions, and Final Actions

Section 2 - Status Indicator Repair Analysis Procedures (RAPs)

Section 3 - Image Quality Repair Analysis Procedures (IQ RAPs)

Section 4 - Repair / Adjustment (REPs)

Section 5 - Parts Lists (PLs)

Section 6 - General Procedures

Section 7 - Wiring

All service calls start with Initial Actions and all service calls end with Final Actions.

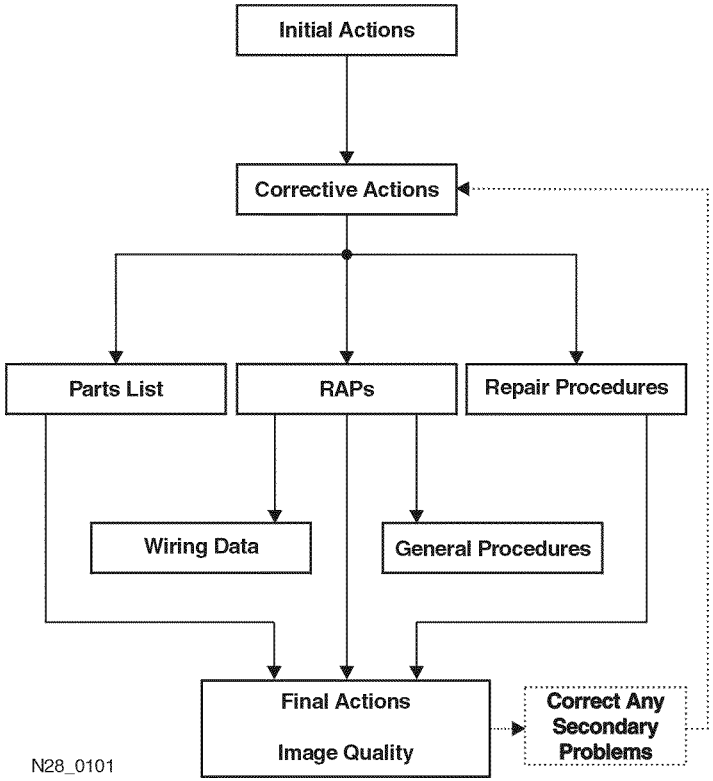


Figure 1 Call Flow Diagram

1.3 Initial Actions

Initial Actions are used to gather information from the operator concerning problems at the local machine. Make note of symptoms, error messages, error codes or other information concerning the problem that the operator may provide. This information may help identify an intermittent or unusual problem.

Procedure

1. Ensure that the power cord is connected to the wall outlet and to the machine.
2. Check for paper or other objects in the paper path.
3. Remove all paper from the output tray(s).
4. The Rear Cover and Top Cover are closed.
5. The paper is loaded correctly in the Paper Tray(s).
6. Ask the operator to describe, or if possible, demonstrate the problem.
7. If the problem is the result of incorrect operator action, refer the operator to the User documentation or to another customer support function.
8. Refer to Section 2 if an error message is displayed.
9. If possible, print the “Configuration Sheet”. To print the Configuration Sheet, press and release [1] or [5] until “Print Menu” is displayed. Then press and release [2] or [6] until “Config Sheet” is displayed. Press Enter [4] to print the sheet. If the sheet is blank, go to IQ RAP 2.
10. Determine that the configuration settings are correct.
11. If possible, print the “Fault History”. To print the “Fault History” press and release [1] or [5] until “Print Menu” is displayed. Then press and release [2] or [6] until “Fault History” is displayed. Next, press Enter [4] to print the sheet. The Fault History will list the error codes and the meter count when the event happened. Use the Fault History to determine the frequency of a problem. Access the Error Code Tables (Table 1 or Table 2) and perform the corrective action as instructed.
12. If the Fault History can not be printed, the fault history can be displayed on the Control Panel. To display the “Fault History” press and release [1] or [5] until “Print Menu” is displayed. Then press and release [2] or [6] until “Display Faults” is displayed. Next, press press [3] to display the last fault that occurred. Continue to press and release [3] to display the error codes in order from the newest to the oldest. Pressing and releasing the [4] key will display the codes in order from the oldest to the newest. The Display Faults will display the error code and the meter count when the event happened. An example of the display “E9-2 #820”, where E9-2 is the error code and #820 is the meter count.
13. Proceed to Corrective Actions.

1.4 Corrective Actions

Procedure

Ensure that Initial Conditions are met and that the Initial Actions have been completed. Switch the main power off, wait 10 seconds, then switch the main power on. **The Main Drive Motor runs.**

Y N

Perform RAP 2.

The display indicates an upper row of 16 solid squares that remain on for 1 second (Figure 1). **The display is correct.**

Y N

If machine indicates an error message, see the Error Code Table in section 2. If the display is blank or has garbled text, perform RAP 25.

The Main Drive Motor runs for 8 seconds, then stops.

Y N

Perform RAP 16.

The Fuser Fan runs at high speed for 5 seconds, then switches to low speed.

Y N

Perform RAP 20.

The LCD Panel will come on again and display “Power On” and the Power On Diagnostic (POD) software “Version x.xxx” (Figure 2). **The display is correct.**

Y N

Perform RAP 25/ RAP 26.

The Control Panel LEDs 1, 2, 3, and 4 turn on momentarily then turn off (blink).

Y N

Perform RAP 25/ RAP 26.

The display comes on and (*) shows in the upper row (Figure 3). **The display is correct.**

Y N

Perform RAP 25/ RAP 26.

A row of (*) (16) form across the top of the display (Figure 4). **The display indications are correct.**

Y N

Perform RAP 25/ RAP 26.

A second row of (*) (16) form across the bottom of the display (Figure 5). **The display indications are correct.**

Y N

Perform RAP 25/ RAP 26.

Control Panel LED 1 comes on and remains on.

Y N

Perform RAP 25/ RAP 26.

The LCD Panel now displays the Controller Software and Version level (x.xx-xx) (Figure 6). **The display indications are correct.**

Y N

Perform RAP 25/ RAP 26.

The Controller Software Version switches off and the display shows “Initializing . . .“ (Figure 7). **The display is correct.**

Y N

Perform RAP 25/ RAP 26.

The display now shows “Copyright Xerox Corp.” (Figure 8). **The display is correct.**

Y N

Perform RAP 25/ RAP 26.

Next, “1996-1999 All Rights Reserved” is displayed on the LCD Panel (Figure 9). **The display is correct.**

Y N

Perform RAP 25/ RAP 26.

Next, “Processing. . .“ is displayed on the LCD Panel(Figure 10). **The display is correct.**

Y N

Perform RAP 25/ RAP 26.

The final display is “Ready”. **The display is correct.**

Y N

Perform RAP 25/ RAP 26.

Press [1] twice to select “Print Menu”, then press and release [2] until “Menu Map” is displayed. Press Enter [4] to print the “Menu Map”. First, “Processing Menu Map” is displayed, immediately followed by “Processing Tray X". **The display is correct.**

Y N

Perform RAP 25/ RAP 26.

When the Main Driver Motor runs, the motor and all drive gears sound normal.

Y N

Perform RAP 29.

Paper is fed from the paper tray to the Registration Roller and is undamaged.

Y N

Perform RAP 8.

The paper feeds out of the machine and is undamaged.

Y N

Perform RAP 10/ RAP 11.

The print contains readable text.

Y N

If the print is black or blank perform IQ RAP 10 or IQ RAP 2. If the text is garbled, Perform RAP 44.

The print quality of the Menu Map is acceptable.

Y N

Perform Image Quality Checkout.

A

Enter Diagnostics and select “Print Menu”. Scroll to “Test Print”. Feed at least 5 test prints from all available trays to the Standard output tray. **Test prints were successfully delivered from each tray.**

Y N

If the failure occurred with:
MBF. Go to RAP 41.
Tray 1. Go to RAP 49.
Tray 2/3. Go to RAP 7.
2000 Sheet Feeder. Go to RAP 62.

If the Duplex Assembly is installed, select “Duplex On” press Enter [4]. Run at least 5 duplexed prints. If a Duplex Assembly is not installed, follow the “Y” path. **The prints were delivered successfully.**

Y N

Go to RAP 56.

If a Offset Catch Tray (OCT) is installed, select “OCT” and run at least 5 prints to the OCT. If an OCT is not installed, follow the “Y” path. **Prints were successfully delivered to the OCT.**

Y N

Go to RAP 68.

Ensure that all normal printer conditions are set i.e. paper loaded, machine in Ready condition, internet cable connected. Have the customer send a document to the printer. **The print is successful.**

Y N

Try a sending a document from a different application. **The print was successful.**

Y N

There may be a problem with the print drivers. Have the customer contact Xerox Customer Support.

There may be a problem with the application software. Have the customer contact Xerox Customer Support.

Go to Final Actions.

N28_0104

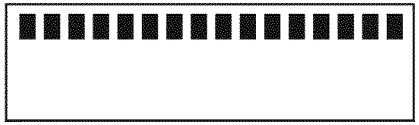


Figure 1

N28_0105

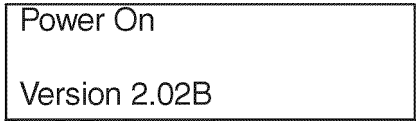


Figure 2

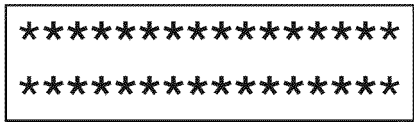
A

N28_0106

Figure 3

N28_0107

Figure 4

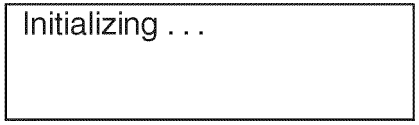


N28_0108

Figure 5

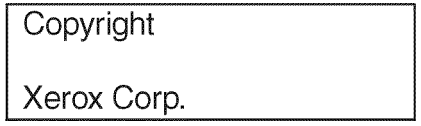
N28_0109

Figure 6



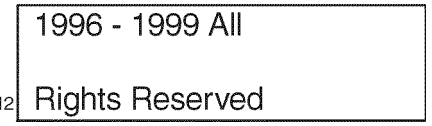
N28_0110

Figure 7



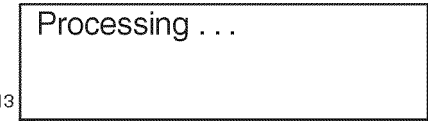
N28_0111

Figure 8



N28_0112

Figure 9

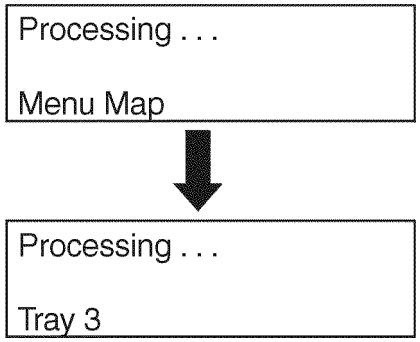


N28_0113

Figure 10

N28_0114

Figure 11



N28_0115

Figure 12

1.5 Final Actions

Procedure

1. Switch the main power off.
2. Update the tag matrix as required.
3. Reinstall all the covers removed during the service call and complete all required administrative tasks.
4. Clean the covers and ensure all labels are readable.
5. Switch the printer power on. If any of the customer selections were changed return them to the customer's preferred settings.
6. Run final prints and verify image quality. For Image Quality problems, go to section 3.
7. Clean the general area.
8. Communicate with the customer to inform them of actions taken and to ensure all problems have been solved.

2 Status Indicator Repair Analysis Procedures

Introduction

The Repair Analysis Procedures section is used to isolate and identify problems to a faulty component or subassembly. It contains the Introduction, display message table, error code table and the Repair Analysis Procedures (RAPs).

Use the Display Messages and Error Codes tables when messages are displayed or error codes are printed in a report.

The Repair Analysis Procedures (RAPs) are accessed from Section 1, system checks or additional checks. There are two types of RAPs: Status Indicator (SI) RAPs, contained in this section, and Image Quality (IQ) RAPs, located in Section 3.

RAPs will normally isolate a problem to a specific component or subassembly, excluding the wire harnesses.

In the Y/N (Yes/No) steps of the RAPs, a Yes/No response will either lead you to the next step or will indicate a corrective action. When the indicated corrective action has been completed, go to Section 1 and restart the System Check to verify that the problem has been corrected.

Measurements

Power and signal grounds are connected to frame ground, therefore all circuit troubleshooting can be performed using the metal frame (chassis) as the grounding point. If more information is needed to locate connectors or test points, refer to section 7.

Unless otherwise specified, the following voltage tolerances are used within this section: Table 1

Table 1 Voltage Measurements

Stated	Measured
+3.3 VDC	+3.0 to 3.6 VDC
+5.0 VDC	+4.8 to +5.2 VDC
+24.0 VDC	+21.6 to +26.4 VDC
0.0 VDC	Less than +0.5 VDC

Error Code Table

Table 1 Error Code Table

Comments	On LIne Message	Fault History Entry	Diagnostic Message	Error Description	Action
	IOT NVM Fail Power Off/On	U6	U6: NVM Fail	1. A read error is detected during power on. 2. A write error is detected during write to the Nonvolatile Memory.	Power Off and On Go to RAP 19
	Motor Failure Power Off/On	U1	U1: Motor Fail	Motor Fail signal is declared 0.75 seconds after start of Main Motor.	Power Off and On Go to RAP 16
	Laser Failure Power Off/On	U2	U2: ROS Fail	1. Laser Signal intervals are longer than the Ready time interval 20 seconds after the start of Laser warm up. 2. The laser power does not reach the value in NVM when the laser diode is switched on after the start of Laser warm up. 3. Laser signal intervals become longer than the Fail time interval after Laser warm up is completed.	Power Off and On Go to RAP 17
	Fuser Failure Power Off/On		U4: Fuser Fail	1. Fuser temperature drops below the set temperature after the Fuser warm up is complete. 2. Fuser warm up does not complete within 110 seconds. 3. Thermistor circuit is detected to be open. 4. Fuser temperature rises above the set temperature. 5. Heat rod is on for 10 seconds when the Main Drive Motor is stopped, after the Fuser warm up is completed.	Power Off and On Go to RAP 18
	Fan Failure Power Off Now	U5	U5: Fan Fail	1. Fuser Fan has failed. 2. LVPS Fan has failed.	Check the Fuser Fan and the LVPS Fan. Power Off and On Go to RAP 20
	Close Offset Door		E5: OCT Rear Door	OCT rear door interlock switch is open.	Close OCT rear door Go to RAP 69
2000 Sheet Feeder installed as Tray 2	Close Tray 2 Rear		E5: HCF Cover	2000 Sheet Feeder rear cover interlock switch is open	Close 2000 sheet feeder rear cover Go to RAP 65
2000 Sheet Feeder installed as Tray 3	Close Tray 3 Rear		E5: HCF Cover	2000 Sheet Feeder rear cover interlock switch is open	Close 2000 sheet feeder rear cover Go to RAP 65

Table 1 Error Code Table

Comments	On LIne Message	Fault History Entry	Diagnostic Message	Error Description	Action
	Close Covers		E5: Top/R Cover	1. Top cover interlock is open. 2. Rear cover interlock is open.	Close Top Cover Close Rear Cover Go to RAP 58
	Insert MBF		E5: MBF Extend	MBF Assy. is not closed.	Close MBF
	Install Print Cartridge		J3: EP Cartridge	1. Print Cartridge is not installed 2. The installed Print Cartridge is not the correct one.	Install the Print Cartridge, or replace with the correct Print Cartridge Go to RAP 13
	Duplex Jam Open Rear Cover Clear Paper Path	E7-1	E7: Duplex Jam	1. Duplex Sensor is not actuated within the time after the start of the Duplex drive motor in reverse. 2. Duplex sensor is being actuated at power up. 3. Duplex Sensor is on when the interlock is closed.	Open the Rear Cover and remove any paper. Go to RAP 57
	Exit Jam-Open Rear & Top Cover Remove Print Cartridge Clear Paper Path	E4-0	E-4: Exit Jam	1. Exit sensor is not deactuated within time after it is actuated. 2. Exit sensor is being actuated at power up. 3. Exit Sensor is ON when the interlock is closed. 4. Exit Sensor turns from OFF to ON at Erase Cycle.	Open Top Cover, remove EP Cartridge and remove any paper. Go to RAP 11
	Paper Jam Open Top Cover Remove Print Cartridge Clear Paper Path	E3-1	E3: Reg. Jam	Exit Sensor did not actuate within time after the Registration clutch is actuated.	Open Top Cover, remove EP Cartridge and remove any paper. Go to RAP 10
MBF misfeed	Paper Jam Open Top Cover Lift /Extend MBF Remove All Paper	E2-1M	E2-1 Misfeed Jam	1. Simplex printing: Reg. Sensor is OFF when the specified time has passed timing from Feed Roll ON. 2. Printing from 2000 Sheet Feeder: Reg. Sensor is OFF when the timing is after receiving Feed_Run status.	Open Top Cover or Feeder and remove the sheets. Then close the cover. Go to RAP 8
Tray 1 Misfeed	Tray 1 Jam Open Tray 1 Lift/Extend MBF Open Top Cover Remove Printery Clear Paper Path	E2-11	E2-1 Misfeed Jam	1. Simplex printing: Reg. Sensor is OFF when the specified time has passed timing from Feed Roll ON. 2. Printing from 2000 Sheet Feeder: Reg. Sensor is OFF when the timing is after receiving Feed_Run status.	Open Top Cover or Feeder and remove the sheets. Then close the cover. Go to RAP 8

Table 1 Error Code Table

Comments	On LIne Message	Fault History Entry	Diagnostic Message	Error Description	Action
Tray 2 misfeed with 500 Sheet Feeder installed as Tray 2	Tray 2 Jam Open Tray 2 Lift/Extend MBF Open Top Cover Remove PrintCart Clear Paper Path	E2-12	E2-1 Misfeed Jam	1. Simplex printing: Reg. Sensor is OFF when the specified time has passed timing from Feed Roll ON. 2. Printing from 2000 Sheet Feeder: Reg. Sensor is OFF when the timing is after receiving Feed_Run status.	Open Top Cover or Feeder and remove the sheets. Then close the cover. Go to RAP 49
Tray 3 Misfeed with 500 Sheet Feeder installed as Tray 3	Tray 3 Jam Open Tray 3 Lift/Extend MBF Open Top Cover Remove PrintCart Clear Paper Path	E2-13	E2-1 Misfeed Jam	1. Simplex printing: Reg. Sensor is OFF when the specified time has passed timing from Feed Roll ON. 2. Printing from 2000 Sheet Feeder: Reg. Sensor is OFF when the timing is after receiving Feed_Run status.	Open Top Cover or Feeder and remove the sheets. Then close the cover. Go to RAP 49
Tray 2 misfeed with 2000 Sheet Feeder installed as Tray 2	Tray 2 Jam Open Tray 2 Open Rear Trader Clear Paper Path	E2-12	E2-1 Misfeed Jam	1. Simplex printing: Reg. Sensor is OFF when the specified time has passed timing from Feed Roll ON. 2. Printing from 2000 Sheet Feeder: Reg. Sensor is OFF when the timing is after receiving Feed_Run status.	Open Top Cover or Feeder and remove the sheets. Then close the cover. Go to RAP 62
Tray 3 misfeed with 2000 Sheet Feeder installed as Tray 3	Tray 3 Jam Open Tray 3 Open Rear TrayDr Clear Paper Path	E2-13	E2-1 Misfeed Jam	1. Simplex printing: Reg. Sensor is OFF when the specified time has passed timing from Feed Roll ON. 2. Printing from 2000 Sheet Feeder: Reg. Sensor is OFF when the timing is after receiving Feed_Run status.	Open Top Cover or Feeder and remove the sheets. Then close the cover. Go to RAP 62
	Duplex Jam Open Rear Cover Clear Paper Path	E2-D	E2-2: Misfeed Jam	Registration Sensor did not actuate within time after the actuation of the Duplex Motor in reverse.	Open Rear Cover and remove any paper. Go to RAP 9
Jam in the OCT	Offset Jam Open Rear Cover Open Offset Door Clear Paper Path	E8-1	E8-OCT Jam	1. OCT sensor did not actuate within time after the actutation of the Exit sensor. 2. OCT sensor is not deactuated within time after actuation of OCT Sensor. 3. OCT sensor is actuated at power on.	Open OCT rear door and remove any paper. Open Rear cover and remove any paper. Go to RAP 68
	Paper Jam Open Top Cover Lift/Extend MBF Remove PrintCart Clear Paper Path	E1-1	E1: Reg. Jam	1. Registration Sensor did not deactuate within time after actuation of Registration sensor. 2. Registration sensor is actuated at power on. 3. Registration is actuated during warm up cycle or an erase cycle.	Open Top Cover, remove EP Cartridge, Lift and Extend MBF assy and remove any paper. Go to RAP 7

Table 1 Error Code Table

Comments	On LIne Message	Fault History Entry	Diagnostic Message	Error Description	Action
	Duplex Unit Fail or Removed	E9-1	E9:Duplex Fail	Duplex module removed while power is on.	Reinstall Duplex Module Go to RAP 60
	Offset Bin Fail Power Off/On	E9-2	E-9:OCT Fail	OCT removed while power is on.	Reinstall OCT Go to RAP 71
2000 Sheet Feeder installed as Tray 2	Tray 2 Failure Power Off/On	E9-3	E-9:HCF Fail	2000 Sheet Feeder removed while power is on.	Reinstall HCF Go to RAP 66
2000 Sheet Feeder installed as Tray 3	Tray 3 Failure Power Off/On	E9-3	E-9:HCF Fail	2000 Sheet Feeder removed while power is on.	Reinstall HCF Go to RAP 66
			EO:HCF Elevator	1. 2000 Sheet Feeder elevator did not reach home position within the pre-scribed time. 2. Paper level sensor on when 2000 Sheet Feeder Tray is Opened.	Open and close 2000 Sheet Feeder paper tray.
	Paper Size Jam Open Rear Cover	PSE-1	Paper Size Error	There is a conflict between the size of the paper, which is detected by the Size Switches, and the length of paper the printer detects by the length of time the Registration Sensor is actuated.	Correct the mismatch Go to RAP 22
	Insert Tray 1		C3:Tray 1 Error	Tray 1 is not detected in printer. (all paper size switches not actuated)	Install Tray 1 Go to RAP 4
	Insert Tray 2		C3: Tray 2 Error	Tray 2 is not detected in printer. (all paper size switches not actuated)	Install Tray 2 Go to RAP 4
	Insert Tray 3		C3: Tray 3 Error	Tray 3 is not detected in printer. (all paper size switches not actuated)	Install Tray 3 Go to RAP 4
	Load Tray 1		C5:Tray 1 Empty	Tray 1 is out of paper	Load paper into Tray 1 Go to RAP 5
	Load Tray 2		C5:Tray 2 Empty	Tray 2 is out of paper	Load paper into Tray 2 Go to RAP 5
	Load Tray 3		C5:Tray 3 Empty	Tray 3 is out of paper	Load paper into Tray 3 Go to RAP 5
	Load MBF		C5:MBF Empty	MBF is out of paper	Load paper into MBF Go to RAP 5
	Remove Output from St. Bin		C5: Top Tray Full	Top Tray is declared full when 5 prints are delivered to the top tray after the Full Stack sensor is actuated.	Empty Top Tray Go to RAP 6
	Remove Output from Offset Bin		C5:OCT Tray Full	5 prints are delivered to the top tray after the OCT Full Stack sensor is actuated.	Empty OCT Tray Go to RAP 67
	Toner Low		J5:Toner Low	Toner Low is detected after 10 prints while toner sensor is on.	Replace Print Cartridge Go to RAP 14 Go to RAP 23
	Memory Failure Power Off/On	ESS-M	N/A	Controller memory has failed (32 me on board).	Power Off/On Remove Options Replace System Controller PWB (REP 8.1) Go to RAP 12

Table 1 Error Code Table

Comments	On LIne Message	Fault History Entry	Diagnostic Message	Error Description	Action
	NV Memory Fail Power Off/On	ESS-N	N/A	Controller NVM Failure	Power Off/On Replace System Controller PWB (REP 8.1)
	Disk Error Format Disk	D-1	N/A	Hard Drive error was detected.	Power Off/On Format Hard Drive (See Reset Menu GP 3.3) Replace Hard Drive (PL 9.1) Replace System Controller PWB (REP 8.1)
	Init Failed Disk Locked	D-2	N/A	Cannot format disk, disk locked via PJL or SNMP Command.	Customer Unlock Disk Replace Hard Disk (PL 9.1)
	Format Failed Disk Locked	D-3	N/A	Cannot put disk in factory default attempt to initialize disk after it is locked.	Customer Unlock Disk Replace Hard Disk (PL 9.1)

Table 2 System Controller Error Code Table

Control Panel Message	LED # blinks Followed by 1 sec. off	Comment
0001 - System Controller	1	System Controller Board major failure. Go to RAP 12.
0001 - BASE RAM	2	System Controller Board RAM failure. Go to RAP 12.
0001 - BASE ROM	3	System Controller Board boot ROM. Go to RAP 12.
0001 - ASIC	4	System Controller Board ASIC failure. Go to RAP 12.
0001 - TIMER	4	System Controller Board Timer failure. Go to RAP 12.
0001 - PWPM	5	System Controller Board PWPM failure. Go to RAP 12.
0001 - DMA	5	System Controller DMA failure. Go to RAP 12.
0001 - COMM	6	System controller parallel port failure, USB port failure, E-Net Port Failure. Replace System Controller PWB (REP 8.1)
0001 - USB	6	Replace the System Controller PWB (REP 8.1)
1000 - IOT	8	System Controller - IOT handshake failure. Remove and reinstall the System Controller PWB (REP 8.1). Replace the System Controller PWB (REP 8.1). Replace the Print Engine Controller PWB (REP 8.5).
0010 - DISK	9	Hard disk failure. Format Hard Disk (see Reset Menu GP 3.3). Replace the Hard Disk (PL 9.1). Replace the System Controller PWB (REP 8.1).
0101 - DIMM1	10	DIMM board 1 failure. Go to RAP 45.
0102 - DIMM2	11	DIMM board 2 failure. Go to RAP 46.
0103 - DIMM3	12	DIMM board 3 failure. Go to RAP 47.
2000 - XIE RAM	15	System Controller Xerox Image Enhanced PWPM failure. Replace the System Controller PWB (REP 8.1).
2010 - XIE PWPM	15	System Controller Xerox Image Enhanced PWPM failure. Replace the System Controller PWB (REP 8.1).

Table 2 System Controller Error Code Table

Control Panel Message	LED # blinks Followed by 1 sec. off	Comment
2020 - XIE VDMA	15	System Controller Xerox Image Enhanced VDMA failure. Replace the System Controller PWB (REP 8.1).
3000 - Token Ring 3000 - Serial 3000 - E-Net (10 Base 2)	16	Replace the appropriate network card (PL 9.1). Replace System Controller PWB (REP 8.1).
5000 - Memory	None	Memory size not large enough to load the system software Download Data. Replace System Controller PWB (REP 8.1).

RAP 1 AC Power

Initial Actions

Disconnect the AC power cord from the wall outlet.

WARNING

Improper connection of the grounding conductor can result in the risk of electrical shock. The following must be observed:

- **Never use a ground adapter plug to connect the machine to a power source.**
- **Never attempt any maintenance function which is not specifically called out in the service procedures.**
- **Never remove any covers which are fastened with screws, unless so instructed in the service procedures.**

CAUTION

If any of the voltage measurements are not as specified in the following steps, the cause must be corrected. Caution the customer ***NOT*** *to connect the machine to the wall outlet. Advise the customer that a licensed electrician must correct the wiring. Do not attempt to correct the wiring yourself. If you later find the condition has not been corrected, inform your manager in writing of the improper wiring.*

Procedure

Perform one of the following line voltage checks:

US, XCI, and AO (115 VAC) Figure 1. Perform the following:Measure the AC voltage between AC Line and Neutral, between AC Line and Ground, and between AC Neutral and Ground. The voltage between Line and Neutral and between Line and Ground is 104 to 127 VAC and the voltage between Neutral and Ground less than 3 VAC.

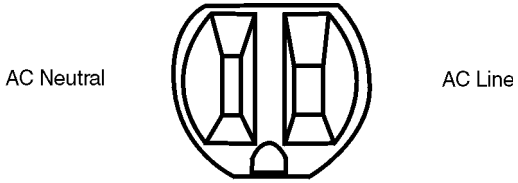


Figure 1 US, XCI, and AO (115 VAC) Outlet.

XL, UK and AO (220 VAC) Figure 2. Perform the following:Measure the AC voltage between Line and Neutral, between Line and Earth/Ground, and between Neutral and Earth/Ground. The voltage between Line and Neutral and between Line and Earth/Ground is 216 to 264 VAC and between Neutral and Earth/Ground is less than 3 VAC.

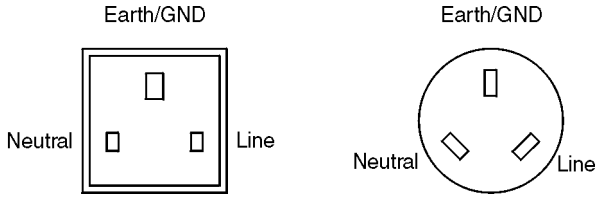


Figure 2 XL, UK, and AO (220 VAC) Outlet.

XL, Europe (220 VAC) Figure 3. Perform the following: Measure the AC voltage between the supply pins, then between a supply pin and earth, then between the other supply pin and earth. The voltage is 196 to 244 VAC between the supply pins and between one of the supply pins and earth. Between the other supply pin and earth is less than 3 VAC.

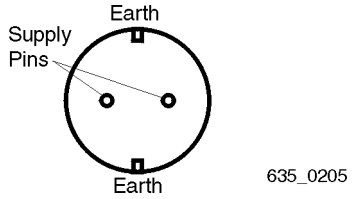


Figure 3 XL, Europe (220 VAC) Outlet.

The voltage measured is correct.

Y N

Inform the customer of insufficient voltage or improper wiring.

Check the continuity through all connections of the power cord. **The measurement is less than 10 ohms for each connection.**

Y N

Replace the power cord (PL 9.2) as applicable.

Perform RAP 2.

RAP 2 DC Power

This procedure is used to troubleshoot the Low Voltage Power Supply.

Procedure

Perform RAP 1 before starting this RAP. If RAP 1 checks out OK, switch the main power off and disconnect the printer power. Remove the Lower Rear Cover (REP 1.7). Connect printer power. Switch the printer power on. Measure the voltage on the LVPS between P/J167 pins 1 and 3. **The voltage matches the line voltage.**

Y N

Replace the AC Input Assembly (REP 8.8).

Measure the voltage between the bottom of Fuse F101 and P/J167 pin 3. **The voltage matches the line voltage.**

Y N

Switch the main power off. Replace fuse F101. Switch the main power on. Measure the voltage between the bottom of Fuse F101 and P/J167 pin 3. **The voltage matches the line voltage.**

Y N

Replace the LVPS (REP 8.6).

Problem Solved.

Measure the voltage between LVPS P/J162 pin 3 and frame ground. **The voltage is +24VDC.**

Y N

On the LVPS, measure the voltage between P/J162 pin 1 and frame ground. **The voltage is +24VDC**

Y N

Replace the LVPS (REP 8.6).

Check the Top Cover and the printer Upper Rear Cover. **Both covers are properly closed and actuating the interlock switches.**

Y N

Repair or replace the defective cover/interlock switch as necessary.

Check the continuity through the interlock switches. Replace if necessary (REP 7.5/REP 10.13).

Check the voltages listed in Table 1.

Table 1 LVPS

Red Lead	Black Lead	Voltage
P/J161 pin 10	Frame Ground	+5.0VDC
P/J161 pin 11	Frame Ground	+3.3VDC
P/J161 pin 3	Frame Ground	+24.0VDC

All voltages in Table 1 are correct.

Y N

Go to RAP 3.

A

A

Return to Initial Actions or to the procedure that sent you here.

RAP 3 DC Power Loading

Initial Actions

Perform RAP 2 DC Power before starting this RAP.

WARNING

AC input voltages can be lethal. Use extreme care while checking the voltages on the LVPS.

Disconnect the power cord while checking the continuity of fuses and while removing or reinstalling the components.

Procedure

Switch the printer power off. Remove the Lower Rear Cover (REP 1.7). Disconnect the following from the LVPS:

- P/J161 (Print Engine Controller PWB)
- P/J163 (System Controller PWB)
- P/J164 (Main Motor)
- P/J165 (Main Fan)
- P/J166 (LVPS Fan)
- P/J168 (5VDC Power Supply)

Switch the printer power on and measure the voltages listed in Table 1 on the LVPS.

Table 1 LVPS

Red Lead	Black Lead	Voltage
P/J161 pin 10	Frame Ground	+5.0VDC
P/J161 pin 11	Frame Ground	+3.3VDC
P/J161 pin 3	Frame Ground	+24.0VDC

All voltages are correct.

Y N

Replace the LVPS (REP 8.6).

Switch the printer power off. Reconnect P/J161 to the LVPS. Switch the printer power on and measure the voltages listed in Table 1. **All the voltages are correct**

Y N

Switch the printer power off. Remove the Left Side Cover and the Print Engine Controller PWB Cover. Reconnect all the P/Js to the LVPS. Disconnect the following from the Print Engine Controller PWB:

- P/J11 (Laser)
- P/J21 (Print Cartridge Sensor)
- P/J14 (Toner Sensor)
- P/J12 (Tray 1 Feed head components/Tray 1 Low Paper Sensor)
- P/J22 (Registration Clutch)
- P/J13 (Feeder 2/3)
- P/J17 (Fuser Control PWB / Fuser)
- P/J19 (Duplex Assembly/OCT)
- P/J18 (HVPS/Registration Sensor)

A

- P/J20 (Tray 1 Size Sensor/MBF Home Sensor)

Switch the printer power on and measure the voltages listed in Table 1. **All voltages are correct.**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

Switch the printer power off. Reconnect one of the disconnected plugs. Switch the printer power on. Measure the voltages listed in Table 1. **All the voltages are correct.**

Y N

Replace the component just connected to the Print Engine Controller PWB.

Repeat the step with the next disconnected plug.

Switch the printer power off. Reconnect one of the disconnected plugs. Switch the printer power on. Measure the voltages listed in Table 1. **All the voltages are correct.**

Y N

Replace the component just connected to the LVPS.

Repeat the step with the next disconnected plug.

RAP 4 C3: Tray Error / Insert Tray 1,2,3

Tray Assembly (Tray 1, Tray 2, or Tray 3) are not in place.

Procedure

Enter Diagnostics and select Test Print. Run a test print from every tray (see section 6). **The Error Code specifies Tray 2 or Tray 3.**

Y N

Remove and reinstall Tray 1. **The C3 error code still appears.**

Y N

Problem solved.

Inspect the Paper Stack End Guide position in the tray. **The End Guide is snug against the paper stack.**

Y N

Adjust the End Guide to contact the paper stack.

Enter Component Test, select Tray 1 Size. Press the Enter Key (key 4). **The paper size indicated on the LCD matches the paper size actually in Tray 1.**

Y N

Remove Tray 1. Enter Component Test - Sensor Input test. One at a time, press and release each of the Tray 1 size actuators. **The number on the LCD increments each time you press and release one of the actuators.**

Y N

Go to RAP 37

Check the size cam on the left side of the paper tray. **The cams are in good condition (not broken) and rotate freely as the paper tray end guide is moved.**

Y N

Replace Tray 1 (PL 2.1/ PL 2.2).

Remove the Left Side Cover (REP 1.1). As you insert Tray 1, watch the size actuators (visible under the Print Engine Controller PWB metal cover) move depending on the setting of tray 1. See Table 1.

Table 1 Paper Size Actuators

Actuator	8.5 LEF	A4 LEF	B5 LEF	A5 LEF	14" SEF	8.5" SEF	A4 SEF	B4 SEF
4 Top	x			x	x	x	x	
3	x	x	x			x	x	
2			x	x	x			x
1 Bottom	x	x	x	x				

The Tray 1 Size Cams contact the Paper Size Actuators correctly for each size of paper.

Y N

Replace Tray 1 (PL 2.1/ PL 2.2)). If the problem persists, replace the Tray 1 Left Guide Assembly (REP 3.6).

Replace the Tray 1 Left Guide Assembly (REP 3.6).

A B

A B

Replace the Print Engine Controller PWB (REP 8.5). If the problem persists, replace the System Controller (REP 8.1).

Go to RAP 45 (for 500 Sheet Feeder) or RAP 64 (for 2000 Sheet Feeder).

RAP 5 C5: Add Paper To MBF, Tray 1, 2 or 3)

Procedure

The problem appears when using Tray 2 or 3.

Y N

Check the paper level in Tray 1. **There is at least 100 sheets of paper in Tray 1.**

Y N

Load paper into Tray 1.

Check the paper level in the MBF. **There is paper in the MBF.**

Y N

Load paper into the MBF.

Enter Diagnostics and select Test Print. Run a test print from the MBF Tray (see section 6). **The C5 error code appears when you feed paper from MBF.**

Y N

Run a test print from the Tray 1. **The C5 error code appears when you feed paper from Tray 1.**

Y N

Return to Initial Actions and restart.

Remove Tray 1 from the printer. Remove the Tray Cover, if installed, and all paper from the tray. Insert Tray 1 into the printer and inspect the Bottom Plate. **The Bottom Plate is raised fully and evenly.**

Y N

Replace the Tray 1 Assembly (PL 2.1/ PL 2.2).

Remove Tray 1. Manually actuate the Tray 1 No Paper and Low Paper sensors. **The No Paper and Low Paper Actuators move smoothly.**

Y N

Replace the Tray 1 No Paper Actuator (REP 2.6) or Low Paper Actuator (PL 3.1).

NOTE: *When checking the Low Paper Sensor using the Sensor Test, at least one Paper Size switch and the Low Paper Sensor must be actuated.*

Enter Diagnostics and select Component Test. Scroll to Sensor Input Test and press Enter. Manually actuate the Tray 1 No Paper and Low Paper Sensors. **The number on the LCD increments each time you press and release one of the actuators.**

Y N

Go to RAP 34.

Replace the Print Engine Controller PWB (REP 8.5).

Insert then remove a piece of paper into the MBF. **The MBF No Paper Actuator moves smoothly when paper is inserted then removed.**

Y N

Repair or replace the actuator, as necessary.

Enter Diagnostics and select Component Test. Scroll to Sensor Input Test and press Enter. Manually actuate the MBF No Paper Sensor. **The number on the LCD increments each time you press and release the actuator.**

A

Y N

Go to RAP 33.

Replace the Print Engine Controller PWB (REP 8.5).

Go to RAP 47.

RAP 6 C5: Top Tray Full

Error code indicates the Top Tray is full.

Procedure

There is a paper stack on the Top Cover close to the Stack Full Actuator.

Y N

The paper is curled.

Y N

Open the Rear Cover. Press and release the Stack Full Actuator. **The flag of the Stack Full Actuator alternately clears and obscures the detecting points of the sensor when the actuator is moved.**

Y N

Replace Stack Full Actuator (REP 5.3) or Sensor (REP 5.2) as necessary.

Enter Diagnostics and select Component Test. Scroll to Sensor Input Test and press Enter. Manually actuate the MBF Stack Full Actuator. **The number on the LCD increments each time you press and release the actuator (the count may have a short delay because of the sensor circuit).**

Y N

Go to RAP 35.

Replace Print Engine Controller PWB (REP 8.5).

Replace paper in paper tray with fresh dry paper. Run test prints. **The error code reappears.**

Y N

Problem solved.

Open the Rear Cover. Press and release the Stack Full Actuator. **The flag of the Stack Full Actuator alternately clears and obscures the detecting points of the sensor when the actuator is moved.**

Y N

Replace Stack Full Actuator (REP 5.3) or Sensor (REP 5.2) as necessary.

Enter Diagnostics and select Component Test. Scroll to Sensor Input Test and press Enter. Manually actuate the Stack Full Actuator. **The number on the LCD increments each time you press and release the actuator.**

Y N

Go to RAP 35.

Replace Print Engine Controller PWB (REP 8.5).

Remove the paper stack.

RAP 7 E1: Paper Jam / Tray To Registration.

There is a paper jam between the Paper Tray / Paper Handler Assembly and the Registration Sensor.

Procedure

Inspect the Registration Actuator. **There is foreign material blocking the Registration Actuator.**

Y N

Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter [4]. Manually actuate the Registration Sensor Actuator. **The number on the LCD increments each time you press and release the actuator.**

Y N

Go to RAP 32.

Replace Print Engine Controller PWB (REP 8.5).

Remove foreign material.

RAP 8 E2-1: Paper Jam / Misfeed

There is a paper jam between the Tray 1, 2, 3 or MBF and the Registration Sensor.

Procedure

Enter Diagnostics and select Test Print. Run 10 prints from every paper tray. **The problem appears when feeding from Tray 1.**

Y N

The paper is curled, damaged, or damp.

Y N

The paper size is within specifications.

Y N

Replace with paper within size specifications.

Open MBF door and run a test print from MBF tray. Observe the MBF feed rolls. **The MBF Feed Rolls rotate one complete turn.**

Y N

Remove the MBF Assembly (REP 2.1). Remove MBF Gear Cover and inspect the gears for cracks, broken or missing teeth. Also inspect the return spring for the MBF Feed Roll Shaft Gear. **The gears and spring are OK.**

Y N

Replace defective gears or spring

Go to RAP 41.

Remove the MBF Assembly (REP 2.1). Inspect the paper tray for a broken, bent or missing spring. Check for a broken hinge pin, or any thing that would prevent the up and down movement of the paper tray. If the problem continues replace the MBF Assembly (REP 2.1).

Replace with fresh dry paper.

Remove Tray 1 and remove all paper. Open the printer Top Cover, remove the Print Cartridge, and extend the MBF to the paper load position. Insert the Tray Assembly into the printer and observe the bottom plate. **The bottom plate is raised.**

Y N

Replace Tray Assembly.

Close the MBF. Reinstall the Print Cartridge and close the Top Cover. Remove Tray 1. Enter Diagnostics and select Component Test. Scroll to Main Motor and press Enter [4]. Scroll to Tray 1 Feed Sol and press Enter [4] and observe the Tray 1 Feed Rolls. **The Feed Rolls rotate one complete turn.**

Y N

Remove the MBF Assembly (REP 2.1). Remove MBF Gear Cover and inspect the gears for cracks, broken or missing teeth. Also inspect the return spring for the Tray 1 Feed Roll Shaft Gear. **The gears and spring are OK.**

Y N

Replace defective gears or spring.

Go to RAP 40.

A

Remove the Retard Chute Assembly (REP 3.1). Inspect the retard holder and retard arm for damage. **The Retard Chute Assembly is OK.**

Y N

Replace the Retard Chute Assembly (REP 3.1) or the Tray 1 Retard Holder Assembly (REP 2.11) as necessary, If the problem persists, go to RAP 39.

Go to RAP 39.

RAP 9 E2-2: Paper Jam/ Misfeed Duplex

There is a paper jam between the Paper Handler Assembly and the Registration Sensor when the paper is refed to print a 2nd page.

Procedure

The paper is curled, damaged or damp.

Y N

The paper size is within specifications.

Y N

Replace with paper meeting size specifications.

Enter Diagnostics and select Test Print Menu. Set Duplex to on. Run 25 test prints. When the E2-2 error appears, open the Top Cover, remove the Print Cartridge and inspect the position of the paper. **The paper is touching the Registration Sensor Actuator.**

Y N

Select Component Test. Scroll to Dup Motor On Low and press the Enter key [4]. **The Duplex Motor switches on.**

Y N

Replace in the following order until problem is solved Duplex Assembly (REP 9.1), Print Engine Controller PWB (REP 8.5).

Inspect the Duplex Drive Belt for breakage, missing teeth, or wear. **The Drive Belt is in good condition.**

Y N

Replace Drive Belt.

Replace in the following order until problem is solved Duplex Assembly (REP 9.1), Print Engine Controller PWB (REP 8.5).

Enter Diagnostics and select Component Test. Scroll to Sensor Input Test and press Enter. Manually actuate the Registration Sensor Actuator. **The number on the LCD increments each time you press and release the actuator.**

Y N

Go to RAP 32.

Replace Print Engine Controller PWB (REP 8.5).

Replace with fresh, dry paper.

RAP 10 E3: Paper Jam / Registration To Fuser

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

Procedure

The paper loaded in the paper tray wrinkled or damaged.

Y N

The paper size used is within specifications.

Y N

Replace with paper meeting size specifications.

Open the Rear Cover. Open the Rear Fuser Cover. Inspect the position of paper when the error code E3 is displayed. **The paper is touching the Exit Actuator.**

Y N

Open the Top Cover and remove Print Cartridge. Enter Diagnostics and select Component Test. Scroll to Main Motor. Cheat the Top Cover Interlock. Press Enter [4]. Observe Gear Assembly, H/R Idler Gear, and the MBF Assembly Drive Gears. **The Gears rotate smoothly.**

Y N

Replace the Main Gear Drive Assembly (REP 6.1) and/or the MBF Gears (REP 2.8).

Scroll to Reg. Clutch and press Enter [4]. **The Metal Registration Roll and Rubber Registration Roll rotated smoothly.**

Y N

Replace the Rubber Registration Roll (REP 4.5) or Metal Registration Roll (REP 4.4).

Inspect paper position when E3 is displayed. **The front edge of the paper passed between the Metal Registration Roll and the Rubber Registration Roll.**

Y N

Go to RAP 38.

Remove the Fuser Assembly (REP 5.1). As you install the Print Cartridge, insert paper between the BTR Assembly and the Print Cartridge Drum. **The BTR Assembly and the Print Cartridge Drum hold the paper evenly.**

Y N

Replace the Paper Transport Assembly (REP 4.1).

Remove the paper and reinstall the Print Cartridge. Run a test print. Inspect the position of front edge of the paper. **The front edge of the paper passes between the BTR and the Print Cartridge Drum.**

Y N

Replace the Paper Transport Assembly (REP 4.1)

The Detack Saw is clean and free of contamination.

Y N

Clean the Detack Saw or Replace the Paper Transport Assembly (REP 4.1)

Rotate the Heat Roll Idler Gear. **The Heat Roll Idler Gear rotates smoothly.**

Y N

Replace the Fuser Assembly (REP 5.1).

A B C

A B C

Run a Test Print. Inspect paper path between Paper Transport Assembly and the pinch roll of the Fuser Assembly. **The paper passes through the Exit Roll Assembly and the pinch roll of the Fuser Assembly.**

Y N

Replace the Fuser Assembly (REP 5.1).

Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter [4]. Actuate and release the Fuser Exit Sensor. **The number on the LCD increments each time you actuate and release the Fuser Exit Sensor.**

Y N

Go to RAP 48.

Replace the Print Engine Controller PWB (REP 8.5).

Run a Test Print. Inspect paper path between Registration Rolls and the pinch roll of the Fuser Assembly. **The paper passes through the Registration Rolls and the pinch roll of the Fuser Assembly.**

Y N

Replace the Fuser Assembly (REP 5.1).

Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter [4]. Actuate and release the Fuser Exit Sensor. **The number on the LCD increments each time you actuate and release the Fuser Exit Sensor.**

Y N

Go to RAP 48.

Replace the Print Engine Controller PWB (REP 8.5).

Replace with fresh, dry paper.

RAP 11 E4: Paper Jam / Exit

There is a paper jam at the Exit Sensor.

Procedure

Check the paper path for paper or other obstructions. Enter Diagnostics and select Test Print. Run 25 prints from Tray 1. **When the E4 Exit Jam is displayed, there is paper on the Exit Sensor.**

Y N

Select Component Test and scroll to Sensor Input test. Press the Enter Key [4]. Actuate and deactuate the Exit Sensor. **The number on the LCD increments each time you press and release the actuator.**

Y N

Go to RAP 48.

Replace Print Engine Controller PWB (REP 8.5).

The printer has the Duplex Option installed.

Y N

Enter Diagnostics and select Component Test. Scroll to Main Motor and press Enter [4]. **The Exit Rollers and Pinch Rollers on the Rear Cover rotate smoothly.**

Y N

Remove the Left Side Cover (REP 1.1), scroll to Main Motor and press Enter [4]. Observe the Exit and Fuser Drive Gears. **The gears rotate smoothly.**

Y N

Replace the Fuser Assembly (REP 5.1).

Replace Rear Cover Assembly (REP 1.9).

Select Test Print and run test prints. **The Error Code reappears.**

Y N

Problem solved

Check the Fuser Assembly for obstructions or contamination. **The Fuser assembly is clean and free of obstructions.**

Y N

Clean or replace the Fuser Assembly (REP 5.1), as necessary.

Check the Exit Assembly. Clean or replace as necessary.

Enter Diagnostics and select Component Test. Scroll to Exit Motor Fwd L and press Enter [4]. **The Exit Rollers and Pinch Rollers on the Rear Cover rotate smoothly.**

Y N

Remove the Left Side Cover (REP 1.1). Enter Diagnostics and select Component Test. Scroll to Exit Motor L press Enter [4]. Observe the Exit Drive Gears and Exit Motor L. **The gears rotate smoothly.**

Y N

The Exit Motor L is rotating.

Y N

Replace Duplex Assembly (REP 9.1).

A B C

A B C

Open the Rear Cover and cheat the Rear Cover Interlock Switch. Scroll to Exit Motor Fwd L then press Enter [4]. After a few seconds press Offline [0]. Scroll to Exit Motor Rev and press Enter [4]. **The Exit Motor rotates smoothly in both directions.**

Y N

Replace the Duplex Assembly (REP 9.1).

Replace the Exit Assembly (PL 13.1).

Check the Exit Assembly for obstructions. Clean all rollers in the Exit Assembly. Replace Rear Cover Assembly (PL 6.1), if necessary.

Clean the Fuser Assembly. Replace the Fuser Assembly (REP 5.1), if necessary.

RAP 12 System Controller Isolation

Procedure

Switch the printer power off. Disconnect all cables connected to the rear of the System Controller PWB. Remove the Left Side Cover (REP 1.1). Remove all options from the System Controller PWB. Switch the printer power on. **The printer boots up correctly and Ready is displayed on the Control Panel (if no options are installed, follow the No path).**

Y N

Switch the printer power off. Remove then reinstall the System Controller PWB (REP 8.1) to reseat the connection with the Print Engine Controller PWB. Switch the printer power on. **The printer boots up correctly and Ready is displayed on the Control Panel.**

Y N

Replace the System Controller PWB (REP 8.1).

Problem Solved.

Switch the printer power off. Reinstall one of the removed options or cables. Switch the printer power on. **The printer boots up correctly and Ready is displayed on the Control Panel.**

Y N

Replace the option or cable just installed.

Repeat the last step with the next option or cable until the problem is found.

RAP 13 J3: Print Cartridge Not In Position - Install/reset Print Cartridge

The Print Cartridge is not in place or is installed incorrectly.

Procedure

Open the Top Cover and remove the Print Cartridge. Inspect the tab on the front left of the Print Cartridge that actuates the Print Cartridge Sensor Assembly. **The tab on the Print Cartridge is intact.**

Y N

Replace the Print Cartridge (PL 8.1).

Press and release the Print Cartridge Sensor Assembly Actuator. **The Print Cartridge Sensor Assembly Actuator lever moves smoothly.**

Y N

Replace the Print Cartridge Sensor Assembly (REP 7.4).

Enter diagnostics and select Component Test. Scroll to Sensor Input test and press Enter. Manually actuate the Print Cartridge Sensor Assembly Actuator. **The number on the LCD increments each time you press and release the actuator.**

Y N

Switch the printer power off. Install the Print Cartridge. Leave the Top Cover open. Disconnect P/J21 from the Print Engine Controller PWB. Open and close the Top Cover. Check for continuity between J21-4 and J21-3, and J21-2 and J21-1 as you lift and lower the Print Cartridge. **There is continuity between J21-4 and J21-3, and J21-2 and J21-1 when you lower the cartridge and no continuity when you lift the cartridge.**

Y N

Replace the Print Cartridge Sensor Assembly together with the harness (REP 7.4).

Replace the Print Engine Controller PWB (REP 8.5).

Replace the Print Engine Controller PWB (REP 8.5).

RAP 14 J5: Toner Low

The Print Cartridge is nearing end-of-life and should be replaced.

Procedure

Install a new Print Cartridge. **The J5 Error Code still appears.**

Y N

Problem solved.

Remove Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Disconnect P/J14 from the Print Engine Controller PWB and disconnect the Toner Sensor from P/J141. Check for continuity between J14 pin 1 and P141 pin 1, J14 pin 2 and P141 pin 2, J14 pin 3 and P141 pin 3. **The continuity check is good.**

Y N

Repair or replace Toner Sensor Harness Assembly as necessary (PL 8.1).

Replace Toner Sensor Assembly (REP 7.3). If the problem continues replace the Print Engine Controller PWB (REP 8.5).

RAP 15 P1: Fuser Pause

Receiving PAUSE command from the Controller.

Procedure

Switch OFF the printer power. Remove the Fuser Assembly. Measure the resistance between pins A1 & A2 of P174 on the Fuser Assembly (Figure 1). **The resistance reads between 10K ohms and 350K ohms (see NOTE).**

Y N

Replace the Fuser Assembly (REP 5.1).

Replace the Print Engine Controller PWB (REP 8.5).

NOTE: *The resistance measured will be determined by the actual temperature of the Fuser when the test is made. The acceptable range is between 10K ohms and 350K ohms.*

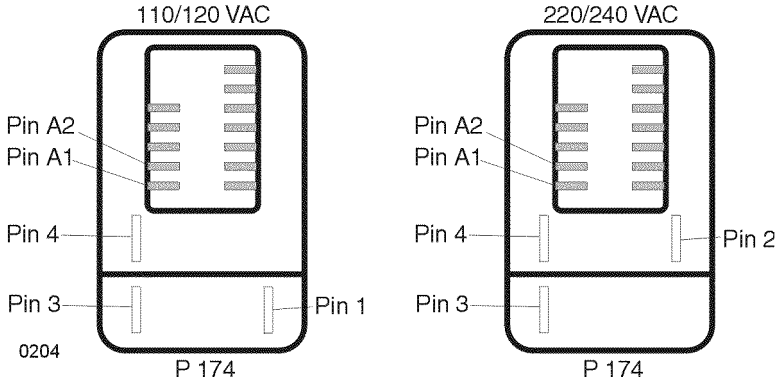


Figure 1 Fuser Connector

RAP 16 U1: Motor Fail / Power Off Then On

There is a problem with the Main Motor.

Procedure

Open the Rear Cover and, if installed, remove the Duplex Assembly. Rotate the rotor of the Main Motor counterclockwise (as viewed from the right side of the printer) manually. **The rotor of the Motor rotates smoothly.**

Y N

Open the Top Cover and remove Print Cartridge. Manually rotate the rotor of motor clockwise. **The rotor of Main Motor rotates smoothly.**

Y N

Remove the Fuser Assembly (REP 5.1). Manually rotate the rotor of the Motor clockwise. **The rotor of the Main Motor rotates smoothly.**

Y N

Replace the Main Motor (REP 6.2).

Replace the Fuser Assembly (REP 5.1).

Replace the Print Cartridge (PL 8.1).

Open the Top Cover. Remove the Print Cartridge. Rotate the Metal Registration Roll and Rubber Registration Roll manually. **The Metal Registration Roll and Rubber Registration Roll rotates smoothly.**

Y N

Replace the Registration Rolls (REP 4.4/ REP 4.5) or the paper, as necessary.

Open the Rear Cover. Manually rotate the Exit Assembly that is attached to the Rear Cover. **The Exit Assembly rotates smoothly.**

Y N

Replace components or the Exit Assembly as necessary (PL 6.1).

Close the Rear Cover. With the Top Cover still open, cheat the Top Cover Interlock. Enter diagnostics and select Component Test. Run the Main Motor. Visually inspect the Main Motor and Main Drive Gears. **The Main Motor and drive gears run smoothly and all drive gears are in good condition.**

Y N

Go to RAP 29.

Remove all paper from the MBF tray. With the Main Motor still running, select MBF Feed Solenoid. **The MBF Feed Roll Assembly rotates smoothly.**

Y N

Replace the MBF Feed Roll components as necessary (PL 4.1).

Select and run Tray 1 Feed Solenoid. **The Tray 1 Pick Up Gear rotates smoothly.**

Y N

Repair or replace the gears or assembly as necessary (PL 4.2).

Go to RAP 29.

RAP 17 U2: ROS Fail / Power Off Then On

There is a problem with the Laser Assembly.

Procedure

Enter Diagnostics and select NVM Config (password 0734). Check the value for Resolution and for Laser Density. **The value for Resolution is "D" and for Laser Power is "4".**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

Select Component Test then ROS Motor. **You can hear the Scanner Motor spin up.**

Y N

Go to RAP 30.

Switch the printer power off. Remove the Left Side Cover (REP 1.1). Remove the Print Engine Controller PWB Cover (REP 8.5). Disconnect P/J11 from the Print Engine Controller PWB. Switch the printer power on. Check the voltage between P11-7 and P11-8 on the Print Engine Controller PWB. **There is +5.0 VDC between P11-7 and P11-8.**

Y N

Check the voltage between P21-3 and P/J21-1 on the Print Engine Controller PWB. **There is +5.0 VDC between P21-3 and P/J21-1.**

Y N

Go to RAP 28.

Go to RAP 13.

Go to RAP 30.

RAP 18 U4: Fuser Failure / Power Off / On

There is a problem with the Fuser Assembly.

Procedure

Switch the printer power off. Wait a few minutes, then switch the printer power on. **The U4 Error Code reappears.**

Y N

Run 25 to 30 test prints. **The U4 Error code reappears.**

Y N

Problem solved

Go to RAP 31.

Go to RAP 31.

RAP 19 U6: NVM Fail / Power Off Then On

There is problem with Non-Volatile RAM on the Printer Engine Controller PWB.

Procedure

Switch the main power off then on. **The U6 Error Code appears.**

Y N

To ensure that the problem is solved, switch the Main Power off and on couple of times. **The U6 Error Code reappears.**

Y N

Problem Solved.

Enter Diagnostics and select NVM Config (password 0734). **It is possible to enter into the NVM Menu.**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

Check the NVM Data one by one referring to the Table of “Nonvolatile Memory Configuration Codes”. **The data is set properly.**

Y N

The incorrect data is read only.

Y N

Set the data to the default value.

Replace the Print Engine Controller PWB (REP 8.5).

Go to RAP 44.

Enter Diagnostics and select NVM Config (password 0734). **It is possible to enter into the NVM Menu.**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

Check the NVM Data one by one (Refer to NVM Menu under IDT Diagnostics). **The data is set properly.**

Y N

The incorrect data is read only.

Y N

Set the data to the default value.

Replace the Print Engine Controller PWB (REP 8.5).

Go to RAP 44.

RAP 20 Fan Abnormal

The printer is detecting incorrect fan rotation.

Procedure

Both Fans rotate when the main power is Switched ON.

Y N

Both of the fans are stopped.

Y N

Replace the fan that is not running (REP 8.4/ REP 8.7).

Switch OFF the main power. Remove the Lower Rear Cover (REP 1.7). Switch the main power ON. Check for 24VDC between P/J161-13 and frame ground, and 0.6VDC between P/J165-12 and frame ground. **Both voltages are correct.**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

Replace the LVPS (REP 8.6).

Enter Diagnostics. Enter Component Test and scroll to “High Speed Fan” to test the Fan Fast Signal. **The Fans rotate at high speed.**

Y N

Switch the printer power OFF. Remove the Lower Rear Cover (REP 1.7). Switch the printer power ON. Enter Diagnostics. Enter Component Test and scroll to “High Speed Fan”. Check for 24VDC between P/J161-13 and frame ground, and 0.6VDC between P/J165-12 and frame ground. **Both voltages are correct.**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

Replace the LVPS (REP 8.6).

Replace the Print Engine Controller PWB (REP 8.5).

RAP 21 Low Paper Tray 1/2/3

Paper stack in the Paper Tray Assembly is below 50 sheets.

Procedure

Insert a full Tray Assembly in the affected position. **The Error Message reappears.**

Y N

Problem solved.

Remove the affected tray Assembly. Push up the Low Paper Actuator (see PL 3.1) manually and then release. **The Low Paper Actuator returns to its normal position when released.**

Y N

Repair or replace the Low Paper Sensor Assembly (REP 3.4) or Low Paper Actuator (PL 3.1) as necessary.

NOTE: *When checking the Low Paper Sensor using the Sensor Test, at least one Paper Size switch and the Low Paper Sensor must be actuated.*

Enter Diagnostics. Scroll to Component Test and Sensor Input to check the Low Paper Sensor. Push up the Low Paper Actuator manually and then release. **The Low Paper Sensor increments the counter each time you push and release the Actuator.**

Y N

Check the wiring associated with the specific Low Paper Sensor. If ok, replace the Low Paper Sensor.

Replace the Print Engine Controller PWB (REP 8.5).

RAP 22 Paper Size Error

There is a conflict between the size of paper the printer senses in the paper tray and/or MBF and the size of paper that is actually loaded.

Procedure

The problem appears when using Tray 1, 2, or 3.

Y N

Open the MBF and verify the size of paper currently in the MBF Tray. Enter the User Menus, select Tray Menu, then select MBF Size. **The paper size displayed on the LCD matches the size actually in the MBF.**

Y N

Enter the User Menu and select Tray Menu. Scroll to MBF size. Set MBF size to the size of paper actually installed

Replace the Print Engine Controller PWB (REP 8.5).

The paper size in the problem tray is within printer specifications.

Y N

Replace with paper that meets specifications.

Check the side guides and the Paper Stack End Guide in the problem tray. **All guides are properly set for the size of paper installed.**

Y N

Properly set the guides.

Check the size cam on the left side of the paper tray. **The cams are in good condition (not broken) and rotate freely as the paper tray end guide is moved.**

Y N

Replace the paper tray (PL 2.1/ PL 2.2).

Reinstall the paper tray. Enter Diagnostics and select Component Test. Scroll to Tray Size for the problem tray and press Enter. **The paper size displayed on the LCD matches the size of the paper actually loaded.**

Y N

Scroll to Sensor Input test and press Enter. One at a time, press and release each of the problem tray size actuators. **The number on the LCD increments each time you press and release one of the actuators.**

Y N

Go to RAP 37

Switch the printer power off. Remove the Left Side Cover (REP 1.1). As you insert the Tray, watch the size actuators move depending on the setting of paper tray. See Table 1. **The Tray Size Cams contact the Paper Size Actuators correctly for each size of paper.**

Y N

Replace paper tray (PL 2.1/ PL 2.2). If the problem persists, replace the Tray 1 Left Guide Assembly (REP 3.6).

Replace the Print Engine Controller PWB (REP 8.5).

A

A

Replace the Print Engine Controller PWB (REP 8.5).

Table 1 Paper Size Actuators

Actuator	8.5 LEF	A4 LEF	B5 LEF	A5 LEF	14" SEF	8.5" SEF	A4 SEF	B4 SEF
4 Top	x			x	x	x	x	
3	x	x	x			x	x	
2			x	x	x			x
1 Bottom	x	x	x	x				

RAP 23 J5 Toner Low

J5 is not displayed when the Print Cartridge appears to be empty.

Procedure

Run a Test Print. Inspect the print quality. **The print is light.**

Y N

Problem does not exist. Return to Initial Actions.

Replace the Print Cartridge (PL 8.1). Run 5 test prints (Config Sheet or Demo Page) and inspect the print quality. **The print quality meets specifications.**

Y N

Go to IQ RAP 1.

Remove Tray 1. Remove the MBF (REP 2.1). Enter Diagnostics and select Component Test. Scroll to Sensor Input and press Enter [4]. Open the MBF Cover and carefully pull down then release the Toner Sensor. **The number on the LCD increments each time you pull down and release the Toner Sensor.**

Y N

Go to RAP 42.

Replace the Print Engine Controller PWB (REP 8.5).

RAP 24 Inoperative Printer

The main power cannot be switched on.

Procedure

Ensure the power cord is properly connected to the wall outlet and to the back of the printer. **The problem still exists.**

Y N

Problem solved.

Perform RAP 1, then return here. **RAP 1 indicated that correct AC voltage is being supplied to the printer.**

Y N

Notify customer that the power is out of specification.

Perform RAP 2, then return here. **RAP 2 indicated that correct DC voltage is being supplied to the printer.**

Y N

Rap 2 instructed you to replace a component.

Y N

Perform RAP 3.

Replace component as necessary.

On the System Controller PWB, check the voltage on P/J3 between pins 1 and 2. **The voltage is 3.3VDC.**

Y N

Switch the printer power off. Disconnect P/J3 from the System Controller PWB. Switch the printer power on. Check the voltage between pins 1 and 2 on the disconnected plug. **The voltage is 3.3VDC.**

Y N

On the LVPS, check the voltage on P/J163 between pins 1 and 2. **The voltage is 3.3VDC.**

Y N

Replace the LVPS (REP 8.6).

Repair or replace the harness between the LVPS and the System Controller (PL 9.2).

Switch the printer power off. Remove any options connected to the System Controller PWB. Reconnect P/J3 to the System Controller PWB. Switch the printer power on. Check the voltage on P/J3 between pins 1 and 2 (if there are no options installed, follow the No path). **The voltage is 3.3VDC.**

Y N

Replace the System Controller PWB (REP 8.1).

Switch the printer power off. Reinstall the removed options one at a time, switching on the power and checking for 3.3VDC on P/J3 between pins 1 and 2 after each one is installed. Replace the option just installed when the voltage fails.

On the System Controller PWB, check the voltage on P/J13 between pins 1 and 2. **The voltage is 5.0VDC.**

Y N

Switch the printer power off. Disconnect P/J13 from the System Controller PWB. Switch the printer power on. Check the voltage between pins 1 and 2 on the disconnected plug. **The voltage is 5.0VDC.**

Y N

On the LVPS, check the voltage between P/J168 pins 1 and 2. **The voltage is 24.0VDC.**

Y N

Replace the LVPS (REP 8.6).

Replace the System Controller +5.0VDC Power Supply (REP 8.9).

Switch the printer power off. Remove any options connected to the System Controller PWB. Reconnect P/J3 to the System Controller PWB. Switch the printer power on. Check the voltage on P/J3 between pins 1 and 2 (if there are no options installed, follow the No path). **The voltage is 3.3VDC.**

Y N

Replace the System Controller PWB (REP 8.1).

Switch the printer power off. Reinstall the removed options one at a time, switching on the power and checking for 3.3VDC on P/J3 between pins 1 and 2 after each one is installed. Replace the option just installed when the voltage fails.

Replace the System Controller PWB (REP 8.1). If the problem persists, replace the Print Engine Controller PWB (REP 8.5).

RAP 25 Malfunctioning LCD/LED

There is an erratic display on LCD/LED.

Procedure

Switch the printer power off. Remove any options connected to the System Controller PWB. Disconnect P/J18 from the System Controller PWB. Switch the printer power on. On the System Controller PWB, check the following voltages between P/J18 and frame ground.

Table 1

P18	With P/J18 Disconnected	With P/J18 Connected
Pin 1	3.3VDC	3.3VDC
Pin 2	0.0VDC	0.0VDC
Pin 3	1.3VDC	3.3VDC
Pin 4	0.0VDC	0.0VDC
Pin 5	3.3VDC	3.3VDC
Pin 6	1.3VDC	3.3VDC
Pin 7	3.3VDC	3.3VDC
Pin 8	0.0VDC	3.3VDC

All the voltages listed in the column "with P/J18 disconnected" are correct.

Y N

On the System Controller PWB, check the voltage on P/J3 between pins 1 and 2. **The voltage is 3.3VDC.**

Y N

Switch the printer power off. Disconnect P/J3 from the System Controller PWB. Switch the printer power on. Check the voltage between pins 1 and 2 on the disconnected plug. **The voltage is 3.3VDC.**

Y N

On the LVPS, check the voltage on P/J163 between pins 1 and 2. **The voltage is 3.3VDC.**

Y N

Replace the LVPS (REP 8.6).

Repair or replace the harness between the LVPS and the System Controller (PL 9.2).

Replace the System Controller PWB (REP 8.1).

On the System Controller PWB, check the voltage on P/J13 between pins 1 and 2. **The voltage is 5.0VDC.**

Y N

Switch the printer power off. Disconnect P/J13 from the System Controller PWB. Switch the printer power on. Check the voltage between pins 1 and 2 on the disconnected plug. **The voltage is 5.0VDC.**

Y N

On the LVPS, check the voltage between P/J168 pins 1 and 2. **The voltage is 24.0VDC.**

A B C

Y N

Replace the LVPS (REP 8.6).

Replace the System Controller +5.0VDC Power Supply (REP 8.9).

Replace the System Controller PWB (REP 8.1).

Switch the printer power off. Reconnect P/J18 to the System Controller PWB. Switch the printer power on. Check the voltages between the pins listed in Table 1 and frame ground. **All the voltages listed in the column "with P/J18 connected" are correct.**

Y N

Replace the Control Panel (PL 1.1).

Switch the printer power off. Reinstall the removed options one at a time, switching on the power and checking the voltages between the pins listed in Table 1 and frame ground after each component is installed. Replace the option just installed if the voltage fails. **After all the options are reinstalled, the LCD display is still erratic.**

Y N

Problem solved. Return to initial actions and restart.

Replace the Control Panel Assembly (PL 1.1). If the problem persists, replace the System Controller PWB (REP 8.1).

Switch the printer power off. Reconnect P/J18 to the System Controller PWB. Switch the printer power on. Check the voltages between the pins listed in Table 1 and frame ground. **All the voltages listed in the column "with P/J18 connected" are correct.**

Y N

Replace the Control Panel (REP 1.3).

Switch the printer power off. Reinstall the removed options one at a time, switching on the power and checking the voltages between the pins listed in Table 1 and frame ground after each component is installed. Replace the option just installed if the voltage fails. **After all the options are reinstalled, the LCD display is still erratic.**

Y N

Problem solved. Return to initial actions and restart.

Replace the Control Panel Assembly (PL 1.1). If the problem persists, replace the System Controller PWB (REP 8.1).

RAP 26 Inoperative Keypad

Control Panel is not operative.

Procedure

Enter Diagnostics and select the Component Test. Scroll to Sensor Input test and press Enter [4]. **The printer enters the Diagnostic Mode to the Sensor Input Level.**

Y N

Disconnect P/J18 on the System Controller PWB. Measure the voltages listed in Table 1 between P18 on the System Controller PWB and frame ground.

Table 1 Keypad

Pin	Voltage
1	3.3 VDC
2	0 VDC
3	1.3 VDC
4	0 VDC
5	3.3 VDC
6	1.3 VDC
7	3.3 VDC
8	0 VDC

All the voltages are correct.

Y N

Replace the System Controller PWB (REP 8.1).

Disconnect P/J421 from the Control Panel. Measure continuity on all wires between P/J421 and P/J18. **All checks are good.**

Y N

Replace the Wiring Harness (PL 9.1).

Replace the Control Panel Assembly (PL 1.1).

Keypad numbers (1-7) increment the counter. Keypad number [4] enters the test and (0) exits the test.

Y N

Replace the Control Panel Assembly (PL 1.1).

Replace the System Controller PWB (REP 8.1).

RAP 27 Erratic Printer Operation

Procedure

Enter diagnostics and select Test Print. Run 20 test prints. **The printer generates test prints.**

Y N

Switch the printer power off. Disconnect P/J168 from the LVPS Assembly. Switch the Main Power on. Check the voltage between P161 pin 10 and frame ground. **The voltage is +5.0VDC.**

Y N

Go to RAP 28.

Switch the printer power off. Reconnect P/J168 to the LVPS Assembly. Enter diagnostics and select Test Print. Run 20 test prints. **The printer RESETS while generating test prints.**

Y N

Replace the Print Engine Controller PWB (REP 8.5). **The problem still appears.**

Y N

Problem solved.

Replace the Interface Cable connecting host to printer. Run test prints from the host computer. **The problem still appears.**

Y N

Problem solved.

Notify customer the cause of the trouble seems to be a communication problem between the host computer and the printer. The customer should contact Customer Support.

Go to RAP 44.

The printer RESETS while generating test prints.

Y N

Replace the Print Engine Controller PWB (REP 8.5). **The problem still appears.**

Y N

Problem solved.

Notify customer the cause of the trouble seems to be a communication problem between the host computer and the printer. The customer should contact Customer Support.

Go to RAP 44.

RAP 28 Power Supply

Procedure

Switch the printer power off. Disconnect the power cord. Remove the Lower Rear Cover (REP 1.7). Disconnect the following from the LVPS:

- P/J161 (Print Engine Controller PWB)(REP 8.5)
- P/J163 (System Controller PWB)(REP 8.1)
- P/J164 (Main Motor)(REP 6.2)
- P/J165 (Main Fan)(REP 8.4)
- P/J166 (LVPS Fan)(REP 8.7)
- P/J168 (5VDC Power Supply)(REP 8.9)

Connect the power cord. Switch the printer power on and measure the voltages listed in Table 1 on the LVPS.

Table 1 LVPS

Red Lead	Black Lead	Voltage
P/J161 pin 10	Frame Ground	+5.0VDC
P/J161 pin 11	Frame Ground	+3.3VDC
P/J161 pin 3	Frame Ground	+24.0VDC

All voltages are correct.

Y N

Replace the LVPS (REP 8.6).

Switch the printer power off. Reconnect P/J161 to the LVPS. Switch the printer power on and measure the voltages listed in Table 1. **All the voltages are correct**

Y N

Switch the printer power off. Remove the Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Reconnect all the P/Js to the LVPS. Disconnect the following from the Print Engine Controller PWB:

- P/J11 (Laser) (RAP 30)
- P/J21 (Print Cartridge Sensor) (RAP 13)
- P/J14 (Toner Sensor) (RAP 42)
- P/J12 (Tray 1 Feed head components/Tray 1 Low Paper Sensor) (RAP 21)
- P/J22 (Registration Clutch) (RAP 38)
- P/J13 (Feeder 2/3) (PL 11.1)
- P/J17 (Fuser Control PWB / Fuser) (RAP 31)
- P/J19 (Duplex Assembly /OCT) (PL 13.1)
- P/J18 (HVPS/Registration Sensor) (RAP 32)
- P/J20 (Tray 1 Size Sensor/MBF Home Sensor) (RAP 22)

Switch the printer power on and measure the voltages listed in Table 1. **All voltages are correct.**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

Switch the printer power off. Reconnect one of the disconnected plugs. Switch the printer power on. Measure the voltages listed in Table 1. **All the voltages are correct.**

A

Y N

Replace the component just connected to the Print Engine Controller PWB.

Repeat the step with the next disconnected plug.

Switch the printer power off. Reconnect one of the disconnected plugs. Switch the printer power on. Measure the voltages listed in Table 1. **All the voltages are correct.**

Y N

Replace the component just connected to the LVPS.

Repeat the step with the next disconnected plug.

A

RAP 29 Main Motor Assembly

Procedure

Open the Top Cover and remove the Print Cartridge. Cheat the Top Cover Interlock. Enter Diagnostics and select the Component Test. Scroll to Main Motor and press Enter. **The Main Motor rotates.**

Y N

Switch the printer power off. Remove the Lower Rear Cover (REP 1.7). Switch the printer power on. Measure the voltages listed in Table 1 on the LVPS.

Table 1 Main Motor Harness

From	To	Voltage
P/J164 - Pin 1	Frame Ground	24 VDC
P/J164 - Pin 2	Frame Ground	24 VDC
P/J164 - Pin 5	Frame Ground	3.2 VDC
P/J164 - Pin 6	Frame Ground	7.0 VDC
P/J164 - Pin 7 This voltage valid if printer set for 1200 DPI	Frame Ground	6.3 VDC

All voltages are correct.

Y N

The voltages on pin 1 and pin 2 are correct.

Y N

Replace the LVPS (REP 8.6).

The voltage on pin 6 is correct.

Y N

Replace the Print Engine Controller PWB (REP 8.5).

The voltage on pin 5 is correct.

Y N

Check the voltage on P/J161 pin 11. **The voltage is 3.3VDC.**

Y N

Replace the LVPS (REP 8.6).

Replace the Print Engine Controller PWB (REP 8.5).

Replace the LVPS (REP 8.6).

With the Top Cover Interlock still cheated. Enter Diagnostics and select the Component Test. Scroll to Main Motor. Measure the voltage between P/J164 pin 6 and frame ground. Press the Enter key. **The voltage drops from 7.0 VDC to 0 VDC.**

Y N

Remove the cheater from the Top Cover Interlock, then reinstall the cheater. With Main Motor still selected, Measure the voltage on the LVPS between P/J161 pin 8 and frame ground. Press the Enter key. **The voltage drops from 7.0 VDC to 0 VDC.**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

A B C

Replace the LVPS (REP 8.6).

A B C

Replace the Main Motor Assembly (REP 6.2).

Problem solved.

RAP 30 Laser Assembly

Procedure

Enter Diagnostics and select Component Test. Scroll to ROS Motor and press Enter. **You can hear the ROS Motor spin up.**

Y N

Switch the printer power off. Remove the Left Side Cover (REP 1.1) and remove the Print Engine Controller PWB Cover (REP 8.5). Switch the printer power on. Measure the voltage between P/J11 pin 11 on the Print Engine Controller PWB and frame ground. **The voltage is 24.0 VDC.**

Y N

Measure the voltage between P/J16 pin 9 on the Print Engine Controller PWB and frame ground. **The voltage is 24.0 VDC.**

Y N

Replace the LVPS (REP 8.6).

Replace the Print Engine Controller PWB (REP 8.5).

Enter Diagnostics and select Component Test. Scroll to ROS Motor. Measure the voltage between P/J11 pin 13 and frame ground. Press the Enter key. **The voltage drops from 5.8 VDC to 0.6 VDC.**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

Replace the Laser Assembly (REP 7.1).

Switch the printer power off. Remove the Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Switch the printer power on. Check the voltage between P11 pin 8 and frame ground. **There is +5.0VDC between P11 pin 8 and frame ground.**

Y N

Measure the voltage between P/J21 pin 4 and frame ground. **There is +5.0VDC between P/J21 pin 4 and frame ground.**

Y N

Measure the voltage between P/J21 pin 3 and frame ground. **There is +5.0VDC between P/J21 pin 3 and frame ground.**

Y N

Switch the printer power off. Remove the Lower Rear Cover (REP 1.7). Disconnect P/J16 from the Print Engine Controller PWB. Measure the resistance between pin 5 of the disconnected plug and P/J161 pin 10 on the LVPS. **There is continuity between P16 pin 5 and P/J161 pin 10.**

Y N

Replace the Print Engine Controller Harness (PL 9.2).

Replace the LVPS (REP 8.6).

Replace the Print Engine Controller PWB (REP 8.5).

Measure the voltage between P/J21 pin 3 and frame ground. **There is +5.0VDC between P/J21 pin 3 and frame ground.**

Y N

A B

A B

Open the Top Cover and remove the Print Cartridge. Inspect the tab on the left upper portion of the Electronic Printing Cartridge that actuates the Print Cartridge Sensor Assembly. **The tab on the Print Cartridge is intact.**

Y N

Replace the Print Cartridge (PL 8.1).

Press and release the Print Cartridge Sensor Assembly Actuator. **The Print Cartridge Sensor Assembly Actuator lever moves smoothly.**

Y N

Replace the Print Cartridge Sensor Assembly (REP 7.4).

Enter diagnostics and select Component Test. Scroll to Sensor Input test and press Enter. Manually actuate the Print Cartridge Sensor Assembly Actuator. **The number on the LCD increments each time you press and release the actuator.**

Y N

Replace the Print Cartridge Sensor Assembly together with the harness (REP 7.4).

Replace the Print Engine Controller PWB (REP 8.5).

Replace the Print Engine Controller PWB (REP 8.5).

Run a test print. On the Print Engine Controller PWB, measure the voltage between P/J11 pin 5 and frame ground and between P/J11 pin 6 and frame ground. **The voltage on both pins change from 0.0VDC to +1.1VDC then back to 0.0VDC.**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

Replace the Laser Assembly (REP 7.1). **The problem still appears.**

Y N

Problem solved.

Go to RAP 44.

RAP 31 Fuser Assembly

Procedure

WARNING

If the printer has been switched on, the fuser may be hot.

Switch the printer power off. Remove the Fuser Assembly (REP 5.1). Measure the resistance between pins A1 & A2 and between pins 2 and 4 or 1 and 4 of P174 on the Fuser Assembly (Figure 1). **The resistance between A1 and A2 reads between 10K and 350K ohms (depending on the temperature of the fuser) and the resistance between pins 1 and 4 reads less than 5 ohms.**

Y N

Replace the Fuser Assembly (REP 5.1).

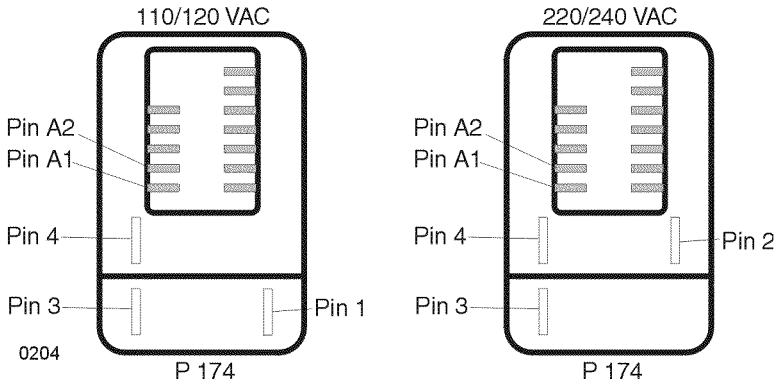


Figure 1 Fuser Connector (P174)

Reinstall the Fuser Assembly. Remove the Lower Rear Cover (REP 1.7). Disconnect P/J172 from the Fuser PWB. Ensure that the Rear Cover is closed. Check the continuity between P172 pin 1 and P172 pin 3. **There is continuity between P172 pin 1 and P172 pin 3.**

Y N

Remove the Right Side Cover (REP 1.2). Ensure that the Rear Cover is closed. Check continuity between P/J172 pin 3 and both sides of the Rear Cover Interlock Switch. **There is continuity between P/J172 pin 3 and both sides of the Rear Cover Interlock Switch.**

Y N

Repair or replace the Fuser Wiring Harness (PL 9.2) or replace the Rear Cover Interlock Switch as necessary (PL 9.2).

Replace the Fuser Harness Assembly (PL 9.2).

Remove the Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Disconnect P/J17 from the Print Engine Controller PWB. Check for continuity between P17 pin 7 and P17 pin 8. **There is continuity between P17 pin 7 and P17 pin 8.**

Y N

Replace the Fuser Harness Assembly (PL 9.2).

A

A

Disconnect P/J171 from the Fuser PWB. Check for continuity between P17 pin 3 and P171 pin 1, P17 pin 2 and P171 pin 2 and P17 pin 1 and P171 pin 3. **There is continuity between all pins measured.**

Y N

Replace the Fuser Harness Assembly (PL 9.2).

Reconnect P/J171, P/J172, and P/J17. Switch the printer power on. Measure the voltage between J17 pin 2 on the Print Engine Controller PWB and frame ground. **The voltage in 3.3 VDC.**

Y N

Measure the voltage between P/J16 pin 4 on the Print Engine Controller PWB and frame ground. **The voltage in 3.3 VDC.**

Y N

Replace the LVPS (REP 8.6).

Replace the Print Engine Controller PWB (REP 8.5).

Replace the Fuser PWB (REP 8.8). If the problem persists, replace the Print Engine Controller PWB (REP 8.5).

RAP 32 Registration Sensor

Procedure

Open the Top Cover and extend the MBF and remove the Print Cartridge. Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter. Actuate and deactuate the Registration Sensor. **The number on the LCD increments each time you press and release the actuator.**

Y N

Open the MBF Door and visually inspect the Registration Actuator. **The actuator moves freely and is in good condition (not broken or damaged).**

Y N

Replace the Registration Actuator (REP 4.2).

Switch the printer power off. Remove the Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Disconnect P/J18 from the Print Engine Controller PWB. Switch the printer power on. On the Print Engine Controller PWB, measure the voltage between P18 pin 11 and frame ground and between P18 pin 13 and frame ground. **There is +3.3VDC between P18 pin 11 and frame ground and 3.3VDC between P18 pin 13 and frame ground.**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

Switch the printer power off. Reconnect P/J18 to the Print Engine Controller PWB. Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter. On the Print Engine Controller PWB, measure the voltage between P/J18 pin 13 and frame ground. **There is +3.3VDC between P18 pin 13 and frame ground when the Registration Sensor is deactuated and 0.1VDC when actuated.**

Y N

Replace the Registration Sensor (REP 4.6).

Replace the Print Engine Controller PWB (REP 8.5).

It appears that the Registration Sensor is working correctly. If a problem persists, replace the Print Engine Controller PWB (REP 8.5).

RAP 33 MBF No Paper Sensor

Procedure

Open the MBF Door and remove all paper from the MBF. Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter [4]. Actuate and deactuate the MBF No Paper Sensor Actuator. **The number on the LCD increments each time you press and release the actuator.**

Y N

Visually inspect the MBF No Paper Sensor Actuator. **The actuator moves freely and is in good condition (not broken or damaged).**

Y N

Replace the MBF No Paper Sensor Actuator (REP 2.7).

WARNING

P12 pin 10 is a +24VDC supply line, if accidently shorted to pin 9 you will destroy the Print Engine Controller PWB.

Switch the printer power off. Remove the Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Disconnect P/J12 from the Print Engine Controller PWB. Switch the printer power on. On the Print Engine Controller PWB, measure the voltage between P12 pin 7 and frame ground and between P12 pin 9 and frame ground. **Both voltages are +3.28VDC.**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

Switch the printer power off. Reconnect P/J12 to the Print Engine Controller PWB. Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter. On the Print Engine Controller PWB, measure the voltage between P/J12 pin 9 and frame ground. **There is +3.28VDC between P12 pin 9 and frame ground when the MBF No Paper Sensor is deactuated and 0.0VDC when actuated.**

Y N

Switch the printer power off. Disconnect P/J121 from the MBF Assembly and P/J12 from the Print Engine Controller PWB. Check the continuity between P/J121 and P/J12 as follows.

- J121-9 and J12-7
- J121-8 and J12-8
- J121-7 and J12-9

There is continuity between each of the wires.

Y N

Replace the MBF Combo Harness (PL 4.2).

Remove the MBF Assembly and disconnect P/J125 from the MBF No Paper Sensor. Check the continuity between P/J125 and P/J121 as follows.

- J125-3 and J121-4
- J125-2 and J121-5
- J125-1 and J121-6

There is continuity between each of the wires.

Y N

Replace the MBF Combo Harness (PL 4.2).

Replace the MBF No Paper Sensor Assembly (REP 2.7).

A B

A B

Replace the Print Engine Controller PWB (REP 8.5).

It appears that the MBF No Paper Sensor is working correctly. If a problem persists, replace the Print Engine Controller PWB (REP 8.5).

RAP 34 Tray 1 No Paper Sensor

Procedure

Remove Tray 1. Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter. Actuate and deactuate the Tray 1 No Paper Sensor Actuator. **The number on the LCD increments each time you press and release the actuator.**

Y N

Visually inspect the Tray 1 No Paper Sensor Actuator. **The actuator moves freely and is in good condition (not broken or damaged).**

Y N

Replace the Tray 1 No Paper Sensor Actuator (PL 4.2).

Switch the printer power off. Remove the Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Disconnect P/J12 from the Print Engine Controller PWB. Switch the printer power on. On the Print Engine Controller PWB, measure the voltage between P12 pin 4 and frame ground and between P12 pin 6 and frame ground. **Both voltages are +3.28VDC.**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

WARNING

P12 pin 10 is a +24VDC supply line, if accidently shorted to pin 9 you will destroy the Print Engine Controller PWB.

Switch the printer power off. Reconnect P/J12 to the Print Engine Controller PWB. Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter. On the Print Engine Controller PWB, measure the voltage between P/J12 pin 6 and frame ground. **There is +3.28VDC between P12 pin 9 and frame ground when the Tray 1 No Paper Sensor is deactuated and 0.0VDC when actuated.**

Y N

Switch the printer power off. Disconnect P/J121 from the MBF Assembly and P/J12 from the Print Engine Controller PWB. Check the continuity between P/J121 and P/J12 as follows.

- J121-12 and J12-4
- J121-11 and J12-5
- J121-10 and J12-6

There is continuity between each of the wires.

Y N

Replace the MBF Harness Assembly (PL 4.2).

Remove the MBF Assembly and disconnect P/J126 from the MBF No Paper Sensor. Check the continuity between P/J126 and P/J121 as follows.

- J126-3 and J121-1
- J126-2 and J121-2
- J126-1 and J121-3

There is continuity between each of the wires.

Y N

Replace the MBF Combo Harness (PL 4.2).

Replace the Tray 1 No Paper Sensor Assembly (REP 2.7).

A B

A B

Replace the Print Engine Controller PWB (REP 8.5).

It appears that the Tray 1 No Paper Sensor is working correctly. If a problem persists, replace the Print Engine Controller PWB (REP 8.5).

RAP 35 Stack Full Sensor

Procedure

Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter. Actuate and deactuate the Stack Full Sensor Actuator. **The number on the LCD increments each time you press and release the actuator.**

Y N

Visually inspect the Stack Full Sensor Actuator. **The actuator moves freely and is in good condition (not broken or damaged).**

Y N

Replace the Stack Full Actuator (REP 5.3).

Switch the printer power off. Remove the Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Disconnect P/J19 from the Print Engine Controller PWB. Switch the printer power on. On the Print Engine Controller PWB, measure the voltage between P19 pin 11 and frame ground and between P19 pin 13 and frame ground. **Both voltages are +3.3VDC.**

Y N

Measure the voltage between P/J16 pin 4 and frame ground. **The voltage is +3.3VDC.**

Y N

Replace the LVPS (REP 8.6).

Replace the Print Engine Controller PWB (REP 8.5).

Switch the printer power off. Reconnect P/J19 to the Print Engine Controller PWB. Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter. On the Print Engine Controller PWB, measure the voltage between P/J19 pin 13 and frame ground. **There is +3.3VDC between P19 pin 13 and frame ground when the Stack Full Sensor is deactuated and 0.0VDC when actuated.**

Y N

Switch the printer power off. Open the Rear Cover. Disconnect P/J527 (3-pin connector on HVPS Cover). Switch the printer power on. Measure the voltage between P/J527 pin 3 and frame ground and between P/J527 pin 1 and frame ground. **Both voltages are +3.3VDC.**

Y N

Switch the printer power off. Remove the HVPS Cover (REP 8.2). Measure the resistance between P/J502 and P/J527 as follows:

- J527-1 and J502-1
- J527-2 and J502-2
- J527-3 and J502-3

There is continuity between each of the pins.

Y N

Repair or replace the harness, as necessary (PL 9.1).

Disconnect P/J501 from the Duplex Interface PWB and P/J19 from the Print Engine Controller PWB. Measure the resistance between P/J501 and P/J19 as follows:

- J501-1 and J19-13
- J501-2 and J19-12
- J501-3 and J19-11

A B C

A B C

There is continuity between each of the pins.

Y N

Repair or replace the harness, as necessary (PL 9.1).

Replace the Duplex Interface PWB (REP 8.3).

Switch the printer power off. Disconnect P/J507 from the Stack Full Sensor. Check the continuity between P/J507 and P/J527 as follows.

- J507-1 and J527-3
- J507-2 and J527-2
- J507-3 and J527-1

There is continuity between each of the pins.

Y N

Repair or replace the Stack Full Sensor Harness (PL 6.1), as necessary.

Replace the Stack Full Sensor (REP 5.2).

Replace the Print Engine Controller PWB (REP 8.5).

It appears that the Stack Full Sensor is working correctly. If a problem persists, replace the Print Engine Controller PWB (REP 8.5).

RAP 36 E5: MBF Extended / Insert MBF

MBF is extended and is not in the home position.

Procedure

Extend and close the MBF. **The error code reappears.**

Y N

Problem solved.

Extend the MBF and inspect the MBF Home Switch. **The MBF Home Switch is in good condition and the actuator moves freely.**

Y N

Replace the MBF Home Switch (REP 3.7).

Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press 4. Actuate and deactuate the MBF Home Switch. **The number on the LCD increments each time you press and release the actuator.**

Y N

Switch the power off. Remove the Left Side Cover (REP 1.1). Remove the Print Engine Controller PWB Cover (REP 8.5). Disconnect P/J20 from the Print Engine Controller PWB. Switch the printer power on. Measure the voltage between P20 pin 1 and frame ground. **The voltage is 3.2VDC**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

Switch the printer power off. Reconnect P/J20 to the Print Engine Controller PWB. Switch the printer power off. Measure the voltage between P20 pin 2 and frame ground as you actuate and deactuate the switch. **The voltage is 3.2VDC when the switch is deactuated and 0.0VDC when the switch is actuated.**

Y N

Replace the MBF Home Switch (REP 3.7).

Replace the Print Engine Controller PWB (REP 8.5).

Replace the Print Engine Controller PWB (REP 8.5).

RAP 37 Size Switch

Procedure

The problem is with a 2000 Sheet Feeder

Y N

Remove the tray from the problem feeder. Inspect the Size Cams on the left side of the paper tray. **The Size Cams are intact and in good condition (no broken surfaces).**

Y N

Replace the paper tray (PL 2.1/ PL 2.2).

Visually inspect the Size Switch Actuators. **The actuators move smoothly and are in good condition (not broken or damaged).**

Y N

Replace the Left Guide Assembly (REP 3.6()REP 11.14).

Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter. One at a time, press and release each of the size actuators. **The number on the LCD increments each time you press and release one of the actuators.**

Y N

The problem is with Tray 1 Size Sensor.

Y N

Switch the printer power off. Remove the Left Cover from the 500 Sheet Feeder (REP 11.3). Disconnect P/J138 from the Feeder PWB. Check the continuity between the following pins, of the disconnected plug, while pressing the switches:

- P138-1 and P138-3 when pressing SW1 Bottom
- P138-2 and P138-3 when pressing SW2
- P138-4 and P138-3 when pressing SW3
- P138-5 and P138-3 when pressing SW4 Top

There is continuity in each case.

Y N

Check for pin to pin continuity of the Size Sensor Harness. Repair or replace as necessary. If the harness is OK, replace the Size Sensor Switch (PL 3.1).

Reconnect P/J138 to the feeder PWB. Switch the printer power on. Measure the following voltages on P/J132 pin 5 as you actuate the switches (see Table 1).

Table 1 Size Switch Voltages

Press Actuator	Voltage	Press Actuators	Voltage	Press Actuators	Voltage
4 (top)	1.4VDC	4 & 3	0.4VDC	4, 3, & 2	0.0VDC
3	2.3VDC	4 & 2	0.9VDC	None	3.3VDC
2	2.8VDC	3 & 2	1.8VDC		

All voltages are correct.

Y N

Replace the Feeder PWB (REP 11.8).

A B C D

Switch the printer power off. Remove the printer Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Switch the printer power on. Measure the voltages on P/J13 pin 5 as you actuate the switches (see Table 1).

All voltages are correct.

Y N

Check for continuity between P/J13 pin 5 (Print Engine Controller PWB) and P/J131 pin 5 and between P/J131 pin 5 and P/J132 pin 5 (Feeder PWB). (P/J131 is the connector between the printer and the 500 sheet feeder). Repair or replace the harness as necessary.

Replace the Print Engine Controller PWB (REP 8.5).

Switch the printer power off. Remove the Left Side Cover (REP 1.1) from the printer. Disconnect P/J20 from the Print Engine Controller PWB. Check the continuity between the following pins, of the disconnected plug, while pressing the switches:

- P20-7 and P138-3 when pressing SW1 Bottom
- P20-6 and P138-3 when pressing SW2
- P20-4 and P138-3 when pressing SW3
- P20-3 and P138-3 when pressing SW4 Top

There is continuity in each case.

Y N

Check for pin to pin continuity of the Size Sensor Harness. Repair or replace as necessary. If the harness is OK, replace the Size Sensor Switch (PL 3.1).

Replace the Print Engine Controller PWB (REP 8.5).

The size sensors appear to be working correctly. If the problem persists, replace the Print Engine Controller PWB (REP 8.5).

Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter [4]. Press and release the 2000 Sheet Feeder A4 Paper Sensor. **The number on the LCD increments each time you press and release the sensor actuator.**

Y N

Switch the printer power off. Disconnect P/J604 from the 2000 Sheet Feeder PWB. Check the resistance between pins 5 and 6 as you actuate and deactuate the Paper Size Sensor. **The resistance is zero when the sensor is actuated and infinite when deactuated.**

Y N

Replace the 2000 Sheet Feeder A4 Paper Sensor (PL 12.2).

Replace the 2000 Sheet Feeder PWB (REP 12.10).

Replace the Print Engine Controller PWB (REP 8.5).

A B C D

RAP 38 Registration Clutch

Procedure

Enter Diagnostics and select Component Test. Scroll to Reg. Clutch and press Enter. **You can hear the Registration Clutch energize.**

Y N

Switch the printer power off. Remove the Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Disconnect P/J22 on the Print Engine Controller PWB. Measure the resistance between pins 1 and 2 on the disconnected plug. **The resistance is approximately 170 to 185 ohms.**

Y N

Remove the Print Cartridge and the MBF Assembly (REP 2.1). Disconnect P/J222 from the Registration Clutch. Check for pin to pin continuity between P22 and P222. **There is continuity between both pins.**

Y N

Repair or replace the Registration Clutch Harness as necessary (PL 9.1).

Replace the Registration Clutch (REP 4.3).

Switch the printer power on. Check the voltage between P/J22 pin 1 and frame ground. **The voltage is +24VDC.**

Y N

Check the voltage between P/J16 pin 9 and frame ground. **The voltage is +24VDC.**

Y N

Replace the LVPS (REP 8.6).

Replace the Print Engine Controller PWB (REP 8.5).

Switch the printer power off. Reconnect P/J22. Enter Diagnostics and select Component Test. Scroll to Reg. Clutch. Measure the voltage between P/J22 pin 2 and frame ground. Press the Enter key. **The voltage drops from +24VDC to 0.0VDC.**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

Switch the printer power off. Open the Top Cover and remove the Print Cartridge. With the Top Cover open, cheat the Top Cover Interlock. Enter Diagnostics and select Component Test. Scroll to Main Motor and press Enter. Scroll to Reg. Clutch and press Enter. **The Registration Rolls rotate smoothly without stalling or jerking.**

Y N

Replace the Registration Clutch (REP 4.3) or Registration Rolls (Metal - REP 4.4) (Rubber - REP 4.5) as necessary.

Problem Solved.

Switch the printer power off. Open the Top Cover and remove the Print Cartridge. With the Top Cover open, cheat the Top Cover Interlock. Enter Diagnostics and select Component Test. Scroll to Main Motor and press Enter. Scroll to Reg. Clutch and press Enter. **The Registration Rolls rotate smoothly without stalling or jerking.**

Y N

Replace the Registration Clutch (REP 4.3) or Registration Rolls (Metal - REP 4.4) (Rubber - REP 4.5) as necessary.

A

A

Problem Solved.

RAP 39 Turn Roll Clutch Assembly

Procedure

Enter Diagnostics and select Component Test. Scroll to Turn Roll Clutch Assembly and press Enter. **You can hear the Turn Roll Clutch Assembly energize.**

Y N

Switch the printer power off. Remove the Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Disconnect P/J12 on the Print Engine Controller PWB. Measure the resistance between pins 10 and 11 on the disconnected plug. **The resistance is approximately 170 to 185 ohms.**

Y N

Remove the MBF Assembly. On the MBF assembly measure the resistance between P121 pin 7 and pin 8. **The resistance is approximately 170 to 185 ohms.**

Y N

Remove the MBF Gear Cover. Disconnect the Turn Roll Clutch Assembly inline connector (P/J124). Measure the resistance of the clutch. **The resistance is approximately 170 to 185 ohms.**

Y N

Replace the Turn Roll Clutch Assembly (REP 2.3).

Repair or replace the MBF Combo Harness (PL 4.2).

Repair or replace the MBF Harness (P/J12 to P/J121) (PL 9.1).

Switch the printer power on. Measure the voltage between P/J12 pin 10 on the Print Engine Controller PWB and frame ground. **The voltage is +24VDC.**

Y N

Measure the voltage between P/J16 pin 9 and frame ground. **The voltage is +24VDC.**

Y N

Replace the LVPS (REP 8.6).

Replace the Print Engine Controller PWB (REP 8.5).

Switch the printer power off. Reconnect P/J12. Enter Diagnostics and select Component Test. Scroll to Turn Roll Clutch Assembly. Measure the voltage between P/J12 pin 11 and frame ground. Press the Enter key. **The voltage drops from +24VDC to 0.0VDC.**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

Switch the printer power off. Open the Top Cover and remove the Print Cartridge. With the Top Cover open, cheat the Top Cover Interlock. Enter Diagnostics and select Component Test. Scroll to Main Motor and press Enter. Scroll to Turn Roll Clutch Assembly and press Enter. **The Turn Rolls rotate smoothly without stalling or jerking.**

Y N

Replace the Registration Clutch (REP 4.3) or Turn Roll Assembly (REP 2.4) as necessary.

Problem Solved.

A

Switch the printer power off. Open the Top Cover and remove the Print Cartridge. With the Top Cover open, cheat the Top Cover Interlock. Enter Diagnostics and select Component Test. Scroll to Main Motor and press Enter. Scroll to Turn Roll Clutch Assembly and press Enter. **The Turn Rolls rotate smoothly without stalling or jerking.**

Y N

Replace the Turn Roll Clutch Assembly (REP 2.3) or Turn Roll Assembly (REP 2.4) as necessary.

Problem Solved.

RAP 40 Tray 1 Feed Solenoid

Procedure

Enter Diagnostics and select Component Test. Scroll to Tray 1 Feed Sol and press Enter. **You can hear the solenoid energize.**

Y N

Switch the printer power off. Remove the Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Disconnect P/J12 on the Print Engine Controller PWB. Measure the resistance between pins 12 and 13 on the disconnected plug. **The resistance is approximately 90 ohms.**

Y N

Remove the MBF Assembly. On the MBF assembly, measure the resistance between P121 pin 9 and pin 10. **The resistance is approximately 90 ohms.**

Y N

Remove the MBF Gear Cover. Disconnect the Tray 1 Feed Solenoid inline connector (P/J123). Measure the resistance of the solenoid. **The resistance is approximately 90 ohms.**

Y N

Replace the Tray 1 Feed Solenoid (REP 2.9).

Repair or replace the MBF Combo Harness (PL 4.2).

Repair or replace the MBF Harness (P/J12 to P/J121) (PL 9.1).

Switch the printer power on. Measure the voltage between P/J12 pin 12 on the Print Engine Controller PWB and frame ground. **The voltage is +24VDC.**

Y N

Measure the voltage between P/J16 pin 9 and frame ground. **The voltage is +24VDC.**

Y N

Replace the LVPS (REP 8.6).

Replace the Print Engine Controller PWB (REP 8.5).

Switch the printer power off. Reconnect P/J12. Enter Diagnostics and select Component Test. Scroll to Tray 1 Feed Sol. Measure the voltage between P/J12 pin 13 and frame ground. Press the Enter key. **The voltage drops from +24VDC to 0.0VDC.**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

Check for mechanical binding of the solenoid or a defective spring. If the problem persists, replace the Tray 1 Feed Solenoid (REP 2.9).

Scroll to Main Motor and press Enter. The Tray 1 Feed Rolls will rotate one revolution and feed a sheet of paper to the Tray 1 Turn Rolls. Open and close the Top Cover to stop the Main Motor. Open Tray 1 and remove the sheet of paper. Scroll to Main Motor and press Enter. Scroll to Turn Roll Clutch and press Enter. Scroll to Tray 1 Feed Sol and press Enter. **A sheet of paper is fed from Tray 1 to the Registration Rolls.**

Y N

Replace the Tray 1 Feed Solenoid (REP 2.9).

Problem solved.

RAP 41 MBF Feed Solenoid

Procedure

Enter Diagnostics and select Component Test. Scroll to MBF Feed Sol and press Enter. **You can hear the solenoid energize.**

Y N

Switch the printer power off. Remove the Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Disconnect P/J12 on the Print Engine Controller PWB. Measure the resistance between pins 14 and 15 on the disconnected plug. **The resistance is approximately 90 ohms.**

Y N

Remove the MBF Assembly. On the MBF assembly, measure the resistance between P121 pin 9 and pin 10. **The resistance is approximately 90 ohms.**

Y N

Remove the MBF Gear Cover. Disconnect the MBF Feed Solenoid inline connector (P/J122). Measure the resistance of the solenoid. **The resistance is approximately 90 ohms.**

Y N

Replace the MBF Feed Solenoid (REP 2.8).

Repair or replace the MBF Combo Harness (PL 4.2).

Repair or replace the MBF Harness (P/J12 to P/J121) (PL 9.1).

Switch the printer power on. Measure the voltage between P/J12 pin 14 on the Print Engine Controller PWB and frame ground. **The voltage is +24VDC.**

Y N

Measure the voltage between P/J16 pin 9 and frame ground. **The voltage is +24VDC.**

Y N

Replace the LVPS (REP 8.6).

Replace the Print Engine Controller PWB (REP 8.5).

Switch the printer power off. Reconnect P/J12. Enter Diagnostics and select Component Test. Scroll to MBF Feed Sol. Measure the voltage between P/J12 pin 15 and frame ground. Press the Enter key. **The voltage drops from +24VDC to 0.0VDC.**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

Check for mechanical binding of the solenoid or a defective spring. If the problem persists, replace the MBF Feed Solenoid (REP 2.9).

Open the Top Cover and cheat the Top Cover Interlock. Remove the Print Cartridge. Add paper to the MBF. Scroll to Main Motor and press Enter. The MBF Feed Rolls will rotate one revolution and feed a sheet of paper to the Registration Rolls. Open and close the Top Cover to stop the Main Motor. **A sheet of paper is fed from the MBF to the Registration Rolls.**

Y N

Replace the MBF Feed Solenoid (REP 2.8).

Problem solved.

RAP 42 Toner Sensor Assembly

Procedure

Switch the printer power off. Remove the Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Open the Top Cover and remove the Print Cartridge. Cheat the Top Cover Interlock. Disconnect P/J14 from the Print Engine Controller PWB. Measure the voltage between P14 pin 1 on the Print Engine Controller PWB and frame ground. **The voltage is +24.0VDC.**

Y N

Measure the voltage between P/J16 pin 9 on the Print Engine Controller PWB and frame ground. **The voltage is +24.0VDC.**

Y N

Replace the LVPS (REP 8.6).

Replace the Print Engine Controller PWB (REP 8.5).

Measure the voltage between P14 pin 3 and frame ground. **The voltage is +5.0VDC.**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

Switch the printer power off. Reconnect P/J14. Switch the printer power on. Raise and lower the Print Cartridge approximately 2 inches (50.8mm) while measuring the voltage between P/J14 pin 3 and frame ground. **The voltage is 5.0VDC when the cartridge is in place and 0.0VDC when the cartridge is raised.**

Y N

Check the continuity between P/J14 and P/J141. **There is continuity between all the pins tested.**

Y N

Repair or replace the Toner Sensor Harness (PL 8.1).

Replace the Toner Sensor Assembly (REP 7.3).

Problem Solved.

RAP 43 HVPS Assembly

Procedure

Open the Top Cover. Remove the Print Cartridge. Inspect all contacts on the Right Print Cartridge Guide Assembly and the terminals on the Print Cartridge. **The terminals are in good condition and contacting properly when the cartridge is installed.**

Y N

Replace the Right Print Cartridge Guide Assembly (REP 7.2) or the Print Cartridge (PL 8.1) as necessary.

Inspect the Seal Guide on the rear end of the Right Print Cartridge Guide Assembly. **The Seal Guide is intact, free of contamination, deformation or damage.**

Y N

Replace the Right Print Cartridge Guide Assembly (REP 7.2).

Enter Diagnostics and select Component Test. Scroll to Charge Roll AC. Insert a cheater into the Top Cover Interlock Switch. Press Enter [4]. Measure the voltage between the Right Side Guide Charge Terminal (connector nearest the front of the machine) and frame ground, press Enter. **The reading is 1150 VAC.**

Y N

Scroll to “Dev Bias AC”. Measure the voltage between the Right Side Guide Developer Bias Terminal (connector nearest the back of the machine) and frame ground, press Enter. **The voltage reading is 620 VAC.**

Y N

Scroll to “BTR-”. Place the probe on the left end of the BTR shaft. Press Enter. **The voltage reading is 915 VDC.**

Y N

Switch the printer power OFF. Remove the Lower Rear Cover (REP 1.7), Duplex Assembly (REP 9.1) if installed, and the HVPS Cover (REP 1.6). Switch the machine power on. Check the voltage between P/J181 pin 10 and frame ground. **The voltage is +24 VDC.**

Y N

Switch the printer power off. Remove the Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Switch the printer power on. Check the voltage between P/J18 pin 1 on the Print Engine Controller PWB and frame ground. **The voltage is +24 VDC.**

Y N

Check the voltage between P/J16 pin 9 on the Print Engine Controller PWB and frame ground. **The voltage is +24 VDC.**

Y N

Replace the LVPS (REP 8.6).

Replace the Print Engine Controller PWB (REP 8.5).

Check the wires for continuity between P/J181 and P/J18. Repair or replace the harness as necessary.

Replace the HVPS (REP 8.2).

Replace the HVPS (REP 8.2).

A B

A B

Check the wiring connections and continuity between the charge contact on the Right Side Guide and P186 on the HVPS. Repair or replace as necessary. If wiring is ok, replace the HVPS (REP 8.2).

Scroll to Charge Roll DC. Measure the voltage between the Right Side Guide Charge Terminal and frame ground, press Enter. **The reading is 485 VDC.**

Y N

Replace the HVPS (REP 8.2).

Scroll to Dev Bias AC. Measure the voltage between the Right Side Guide Developer Bias Terminal (connector nearest the back of the machine) and frame ground, press Enter. **The voltage reading is 620 VAC.**

Y N

Replace the HVPS PWB Assembly (REP 8.2).

Remove the Right Print Cartridge Guide Assembly (REP 7.2). Remove the screws that secure the Developer Wire Assembly (PL 8.1) and P/J186 of the Xero Wire Assembly (PL 8.1). Disconnect P/J187 and P/J186 from the HVPS Assembly. Check the continuity between both ends of the Developer Wire Assembly and Xero Wire Assembly. **There is continuity respectively through the Developer Wire Assembly and Xero Wire Assembly.**

Y N

Replace the Developer Wire Assembly and/or Xero Wire Assembly (PL 8.1).

Replace the Print Engine Controller PWB (REP 8.5). **The problem still appears.**

Y N

Problem solved.

Replace the HVPS PWB Assembly (REP 8.2).

RAP 44 Electrical Noise

Procedure

Check if there is other electrical equipment, such as electrical generators, radio transmitters, or devices using electrical motors, within ten feet of the printer. Shut off the other electrical equipment, or relocate the printer at least twenty feet away from other devices. **The Electrical Noise problem is still present.**

Y N

Problem solved.

Check the AC wall outlet and power cord (see RAP 1). **The AC wall outlet is correctly wired and grounded.**

Y N

Inform the customer of insufficient voltage or improper wiring. A licensed electrician must correct the wiring.

Open the Top Cover. Remove the Print Cartridge. Inspect all contacts on the Right Print Cartridge Guide Assembly and the terminals on the Print Cartridge. **The terminals are in good condition and contacting properly when the cartridge is installed.**

Y N

Replace the Right Print Cartridge Guide Assembly (REP 7.2) or the Print Cartridge (PL 8.1) as necessary.

Remove the Lower Rear Cover (REP 1.7). Inspect the grounding screw for the cable connected to the Main Power Switch. **The cable is grounded properly.**

Y N

Attach the grounding screw properly.

Replace the Print Cartridge (PL 8.1). **The Electrical Noise problem is still present.**

Y N

Problem solved.

Remove the Print Cartridge. Remove the Right Print Cartridge Guide Assembly (REP 7.2). Inspect the Seal Guide on the rear end of the Right Print Cartridge Guide Assembly. **The Seal Guide is intact, free of contamination, obstructions, and deformities.**

Y N

Clean the Seal Guide or replace the Right Print Cartridge Guide Assembly (REP 7.2).

Remove the Paper Transport Assembly (REP 4.1). Check the continuity of all the wires in the Paper Transport Assembly. **There is continuity on all the wires.**

Y N

Replace the Paper Transport Assembly (REP 4.1).

Inspect the Developer Wire Assembly. **The wires are connected properly.**

Y N

Connect the wires properly.

Inspect the cables of P174-1 and P174-4 and the right end of the Heater Rod. **The cables are attached properly.**

Y N

Attach the cables properly or replace the Fuser Assembly (REP 5.1).

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A

Disconnect the HVPS (P/J18) from the Print Engine Controller PWB (REP 8.5). Run Test Prints (continuously; approximately twenty sheets). **The Test Prints run normally.**

Y N

Replace the Print Engine Controller PWB (REP 8.5). **The problem is still present.**

Y N

Problem solved.

Inspect all of the grounds in the printer. **All the grounds are securely connected.**

Y N

Repair the bad grounds.

Replace the following components one at a time until the cause of the problem is found.

- HVPS PWB Assembly (REP 8.2).
- Right Print Cartridge Guide Assembly (REP 7.2).
- Print Engine Controller PWB (REP 8.5).
- Inlet Assembly (PL 9.2).
- Print Cartridge (PL 8.1).
- Fuser Assembly (REP 5.1).
- Paper Transport Assembly (REP 4.1).
- HVPS Harness Assembly (PL 9.2).

Replace the HVPS PWB Assembly (REP 8.2).

RAP 45 0101 - DIMM 1

Procedure

Switch off the printer power. Remove the Left Side Cover (REP 1.1) and the Shield Cover. Remove the DIMM installed in Slot 1 (J4). Switch the printer power on. **"0101 - DIMM 1" error message is displayed on the Control Panel.**

Y N

Switch the printer power off. Install the removed DIMM into Slot 2 (J5). Switch the printer power on. **"0102 - DIMM 2 error message is displayed on the Control Panel.**

Y N

Switch the printer power off. Remove the DIMM from Slot 2 (J5) and reinstall it into Slot 1 (J4). Switch the printer power on. **"0101 - DIMM 1" error message is displayed on the Control Panel.**

Y N

Attribute problem to a poor connection of the DIMM on the System Controller PWB and go to Final Actions.

Replace the System Controller PWB (REP 8.1).

Replace the DIMM (PL 9.1).

Replace the System Controller PWB (REP 8.1).

RAP 46 0102 - DIMM 2

Procedure

Switch off the printer power. Remove the Left Side Cover (REP 1.1) and the Shield Cover. Remove the DIMM installed in Slot 2 (J5). Switch the printer power on. **"0102 - DIMM 2" error message is displayed on the Control Panel.**

Y N

Switch the printer power off. Install the removed DIMM into Slot 1 (J4). Switch the printer power on. **"0101 - DIMM 1" error message is displayed on the Control Panel.**

Y N

Switch the printer power off. Remove the DIMM from Slot 1 (J4) and reinstall it into Slot 2 (J5). Switch the printer power on. **"0101 - DIMM 1" error message is displayed on the Control Panel.**

Y N

Attribute problem to a poor connection of the DIMM on the System Controller PWB and go to Final Actions.

Replace the System Controller PWB (REP 8.1).

Replace the DIMM (PL 9.1).

Replace the System Controller PWB (REP 8.1).

RAP 47 0101 - DIMM 3

Procedure

Switch off the printer power. Remove the Left Side cover (REP 1.1) and the shield cover. Remove the DIMM installed in Slot 3 (J6). Switch the printer power on. **"0103 - DIMM 3" error message is displayed on the Control Panel.**

Y N

Switch the printer power off. Install the removed DIMM into Slot 1 (J4). Switch the printer power on. **"0101 - DIMM 1" error message is displayed on the Control Panel.**

Y N

Switch the printer power off. Remove the DIMM from Slot 1 (J4) and reinstall it into Slot 3 (J6). Switch the printer power on. **"0101 - DIMM 1" error message is displayed on the Control Panel.**

Y N

Attribute problem to a poor connection of the DIMM on the System Controller PWB and go to Final Actions.

Replace the System Controller PWB (REP 8.1).

Replace the DIMM (PL 9.1).

Replace the System Controller PWB (REP 8.1).

RAP 48 Exit Sensor

Procedure

Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter [4]. Open the rear cover and open the Fuser Exit Door. Actuate and deactuate the Fuser Exit Sensor. **The number on the LCD increments each time you actuate and deactuate the sensor.**

Y N

Switch the printer power off. Remove the Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Disconnect P/J17 from the Print Engine Controller PWB. Switch the printer power on. Check the voltage between P/J17 pin 6 and frame ground. **The voltage is 3.2VDC.**

Y N

Check the voltage between P/J16 pin 4 and frame ground. **The voltage is 3.2VDC.**

Y N

Replace the LVPS (REP 8.6).

Replace the Print Engine Controller PWB (REP 8.5).

Switch the printer power off. Reconnect P/J17 to the Print Engine Controller PWB. Measure the voltage between P/J17 pin 6 and frame ground as you actuate and deactuate the Fuser Exit Sensor. **The voltage is 3.2VDC when the Fuser Exit Sensor is deactuated and 0.0VDC when actuated.**

Y N

Replace the Fuser Assembly (REP 5.1).

Replace the Print Engine Controller PWB (REP 8.5).

Replace the Print Engine Controller PWB (REP 8.5).

RAP 49 E2-1: Paper Jam / Misfeed 500 Sheet Feeder

Misfeed jam. There is a paper jam between a 500 Sheet Feeder Assembly and the Registration Sensor.

Procedure

Remove all of the paper from problem paper tray and reinstall the paper tray. Enter Diagnostics and select Test Print and run a test print from the problem Tray. **The LCD displays a C5 error code.**

Y N

Go to RAP 5.

The paper is curled, damaged or damp.

Y N

The paper size is within specifications.

Y N

Replace with paper within size specifications

Remove problem paper tray and install Tray 1 paper tray into problem feeder. Enter Diagnostics and select Test Print. Print 20 test prints from the problem feeder. **E2-1 Code is displayed.**

Y N

Replace Tray Assembly (PL 2.1/ PL 2.2).

Remove Tray from problem feeder. Enter Diagnostics and select Component Test. Scroll to Main Motor and press Enter. Scroll to Turn Roll Clutch and press Enter. Scroll to Tray 2 or Tray 3 Feed Sol and press Enter. Observe the problem Tray Feed Rolls. **The Feed Rolls rotate one complete turn.**

Y N

Remove the Left Cover (REP 11.3) of the 500 Sheet Feeder. Enter Diagnostics and select Component Test. Scroll to Turn Roll Clutch and press Enter. **The Feeder Motor is rotating.**

Y N

Go to RAP 51.

Remove the 500 Sheet Feeder Feed Head Assembly (REP 11.9). Inspect the gears for cracks, broken or missing teeth. Also inspect the return spring for the Feed Roll Shaft Gear. **The gears and spring are in good condition.**

Y N

Replace defective gears or springs (PL 11.2).

Go to RAP 51.

Open the rear door of the 500 Sheet Feeder. Enter Diagnostics and select Component Test. Scroll to Turn Roll Clutch and press Enter. **The Turn Roll Shaft is rotating.**

Y N

Remove the 500 Sheet Feeder Feed head Assembly (REP 11.9). Inspect the gears for cracks, broken or missing teeth. Replace defective parts (PL 11.2).

Remove the 500 Sheet Feeder Retard Chute Assembly (REP 11.13). Inspect the retard holder and retard arm for damage. **The Retard Chute Assembly is OK.**

A

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Y **N**

Replace the Retard Chute Assembly (REP 11.13).

Remove the Rear Chute Assembly (REP 11.13). Inspect the Rear Chute Assembly for damaged missing or broken Idler Rollers and Springs.

Replace with fresh, dry paper.

RAP 50 Low Paper Tray 2 (or Tray 3) 500 Sheet Feeder

Tray 2 and/or Tray 3 have low paper.

Procedure

Fill the affected paper tray with fresh paper. **The Error Code is still displayed.**

Y **N**

Problem solved.

Remove the paper tray from the 500 Sheet Feeder Assembly. Manually push up and release the low paper actuator. **The low paper actuator moves smoothly up and down.**

Y **N**

Replace the Low Paper Actuator (PL 11.3) or the Tray 2/3 Left Guide Assembly (REP 11.14) as necessary.

Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter. Press and release the Low Paper Actuator. **The number on the LCD increments each time you press and release the actuator.**

Y **N**

Switch the printer power off. Remove the 500 Sheet Feeder Left Cover (REP 11.3). Disconnect P/J133 from the Feeder PWB. Switch the printer power on. Measure the voltage between P133 pin 1 and frame ground and between P133 pin 3 and frame ground. **Both readings are +3.2VDC.**

Y **N**

Replace the Feeder PWB (REP 11.8).

Switch the printer power off. Reconnect P/J133. Switch the printer power on. Measure the voltage between P/J133 pin 3 and frame ground as you actuate and deactuate the Low Paper Sensor. **The voltage is 0.0VDC when deactuated and +3.2VDC when actuated.**

Y **N**

Switch the printer power off. Remove the 500 Sheet Feeder Left Tray Guide. Check for continuity between P/J133 and P/J137. Repair or replace as necessary. If the harness checks good, replace the Low Paper Sensor (PL 11.3).

Measure the voltage between P/J132 pin 7 and frame ground as you actuate and deactuate the Low Paper Sensor. **The voltage is +0.9VDC when deactuated and 0.0VDC when actuated.**

Y **N**

Replace the Feeder PWB (REP 11.8).

Switch the printer power off. Remove the printer Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Switch the printer power on. Measure the voltage between P/J13 pin 7 and frame ground as you actuate and deactuate the Low Paper Sensor. **The voltage is +0.9VDC when deactuated and 0.0VDC when actuated.**

Y **N**

Check for continuity between P/J132 and P/J131 and between P/J131 and P/J13. Repair or replace as necessary.

Replace the Print Engine Controller PWB (REP 8.5).

Replace the Print Engine Controller PWB (REP 8.5).

RAP 51 500 Sheet Feeder Feed Solenoid

The 500 Sheet Feeder is not feeding paper or not feeding paper at the correct time.

Procedure

Enter Diagnostics and select Component Test. Scroll to Tray 2 Feed Sol or Tray 3 Feed Sol and press Enter. **You can hear the solenoid energize.**

Y N

Switch the printer power off. Remove the 500 Sheet Feeder Left Cover (REP 11.3). Disconnect P/J133 on the Feeder PWB. Measure the resistance between pins 10 and 11 on the disconnected plug. **The resistance is approximately 90 ohms.**

Y N

Disconnect P/J135 from the Feed Head Assembly. On the Feed Head Assembly, measure the resistance between P135 pin 1 and pin 2. **The resistance is approximately 90 ohms.**

Y N

Replace the Tray 2 or 3 Feed Solenoid (REP 11.11).

Repair or replace the Feed Head Harness (P/J133 to P/J135) (PL 11.3).

Switch the printer power on. Measure the voltage between P/J133 pin 10 on the Feeder PWB and frame ground. **The voltage is +24VDC.**

Y N

Measure the voltage between P/J132 pin 3 and frame ground. **The voltage is +24VDC.**

Y N

Switch the printer power off. Remove the printer Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Switch the printer power on. Measure the voltage between P/J13 pin 3 and frame ground. **The voltage is +24VDC.**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

Check the continuity of the Feeder Harnesses (P/J132 to P/J131 and P/J131 to P/J13). Repair or replace as necessary (PL 11.3).

Replace the Feeder PWB (REP 11.8).

Switch the printer power off. Reconnect P/J133. Enter Diagnostics and select Component Test. Scroll to Tray 2 Feed Sol or Tray 3 Feed Sol. Measure the voltage between P/J133 pin 11 and frame ground. Press the Enter key. **The voltage drops from +24VDC to 0.0VDC.**

Y N

Measure the voltage between P/J132 pin 4 and frame ground. Press the Enter key. **The voltage changes from 0.0VDC to 3.2VDC.**

Y N

Switch the printer power off. Remove the printer Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Switch the printer power on. Measure the voltage between P/J13 pin 4 and frame ground. **The voltage changes from 0.0VDC to 3.2VDC.**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

A B C D

Check the continuity of the Feeder Harnesses (P/J132 to P/J131 and P/J131 to P/J13). Repair or replace as necessary (PL 11.3).

Replace the Tray 2/3 Feeder PWB (REP 11.8).

A B C D

Check for mechanical binding of the solenoid or a defective spring. If the problem persists, replace the Tray 2/3 Feed Solenoid (REP 11.11).

Scroll to Main Motor and press Enter. The Tray 2/3 Feed Rolls will rotate one revolution and feed a sheet of paper. Open and close the Top Cover to stop the Main Motor. Open the printer and remove the sheet of paper. Scroll to Main Motor and press Enter. Scroll to Turn Roll Clutch and press Enter. Scroll to Tray 2 Feed Sol or Tray 2 Feed Sol and press Enter. **A sheet of paper is fed from Tray 2/3 to the Registration Rolls.**

Y N

Replace the Tray 2/3 Feed Solenoid (REP 11.11).

Problem solved.

RAP 52 500 Sheet Feeder Assembly Not Recognized

Controller does not recognize the Feeder Assembly.

Procedure

Check the alignment of the printer to the 500 Sheet Feeder and the alignment of the top 500 Sheet Feeder to the second 500 Sheet Feeder, if installed. Ensure that the connectors are properly aligned and properly connected. **All connectors are properly aligned and connected.**

Y N

Reseat the feeders and printer to obtain proper alignment and connection.

Switch the printer power off. Remove the Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Disconnect P/J13 from the Print Engine Controller PWB. Switch the printer power on. Check the voltage between P13 pin 10 on the Print Engine Controller PWB and frame ground. **The voltage is 1.0VDC.**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

The printer contains only one 500 Sheet Feeder.

Y N

Switch the printer power off. Remove the Left Side Cover (REP 11.3) from the top 500 Sheet Feeder. Disconnect P/J136 from the Feeder PWB. Reconnect P/J13 to the Print Engine Controller PWB. Switch the printer power on. Check the voltage between P13 pin 10 on the Print Engine Controller PWB and frame ground. **The voltage is 1.9VDC.**

Y N

Switch the printer power off. Disconnect P/J13 from the Print Engine Controller PWB and P/J132 from the Feeder PWB. Check for the continuity between each of the Pins on P13 and P132 as follows:

- P13-1 and P132-1
- P13-2 and P132-2
- P13-3 and P132-3
- P13-4 and P132-4
- P13-5 and P132-5
- P13-6 and P132-6
- P13-7 and P132-7
- P13-9 and P132-8
- P13-10 and P132-9
- P13-11 and P132-10
- P13-12 and P132-11
- P13-13 and P132-12
- P13-14 and P132-13
- P13-15 and P132-14

There is continuity between all pins measured.

Y N

Repair or replace the harness between P/J13 and P/J131 (PL 9.1) or between P/J131 and P/J132 (PL 11.2).

Replace the Feeder PWB (REP 11.8) in the top 500 Sheet Feeder.

A B

Switch the printer power off. Reconnect P/J136 to the top 500 Sheet Feeder. Switch the printer power on. Check the voltage between P13 pin 10 on the Print Engine Controller PWB and frame ground. **The voltage is 0.68VDC.**

Y N

Switch the printer power off. Remove the Left Cover (REP 11.3) from the lower 500 Sheet Feeder. Disconnect P/J136 from the top Feeder PWB and P/J132 from the lower Feeder PWB. Check for the continuity between each of the Pins on P136 and P132 as follows:

- P136-1 and P132-1
- P136-2 and P132-2
- P136-3 and P132-3
- P136-4 and P132-4
- P136-5 and P132-5
- P136-6 and P132-6
- P136-7 and P132-7
- P136-8 and P132-9
- P136-9 and P132-10
- P136-10 and P132-11
- P136-11 and P132-12
- P136-12 and P132-13
- P136-13 and P132-14

There is continuity between all pins measured.

Y N

Repair or replace the harness between P/J13 and P/J131 (PL 9.1) or between P/J131 and P/J132 (PL 11.2).

Replace the Feeder PWB (REP 11.8).

Replace the Print Engine Controller PWB (REP 8.5).

Switch the printer power off. Reconnect P/J13 to the Print Engine Controller PWB. Switch the printer power on. Check the voltage between P13 pin 10 on the Print Engine Controller PWB and frame ground. **The voltage is 1.6VDC.**

Y N

Switch the printer power off. Remove the 500 Sheet Feeder Left Cover (REP 11.3). Disconnect P/J13 from the Print Engine Controller PWB and P/J132 from the Feeder PWB. Check for the continuity between each of the Pins on P13 and P132 as follows:

- P13-1 and P132-1
- P13-2 and P132-2
- P13-3 and P132-3
- P13-4 and P132-4
- P13-5 and P132-5
- P13-6 and P132-6
- P13-7 and P132-7
- P13-9 and P132-8
- P13-10 and P132-9
- P13-11 and P132-10

A B C

C

- P13-12 and P132-11
- P13-13 and P132-12
- P13-14 and P132-13
- P13-15 and P132-14

There is continuity between all pins measured.

Y N

Repair or replace the harness between P/J13 and P/J131 (PL 9.1) or between P/J131 and P/J132 (PL 11.2).

Replace the Feeder PWB (REP 11.8).

Replace the Print Engine Controller PWB (REP 8.5).

RAP 53 500 Sheet Feeder Feed Motor

Procedure

Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter [4]. Open the rear cover and open the Fuser Exit Door. Actuate and deactuate the Fuser Exit Sensor. **The number on the LCD increments each time you actuate and deactuate the sensor.**

Y N

Switch the printer power off. Remove the Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Disconnect P/J17 from the Print Engine Controller PWB. Switch the printer power on. Check the voltage between P/J17 pin 6 and frame ground. **The voltage is 3.2VDC.**

Y N

Check the voltage between P/J16 pin 4 and frame ground. **The voltage is 3.2VDC.**

Y N

Replace the LVPS (REP 8.6).

Replace the Print Engine Controller PWB (REP 8.5).

Switch the printer power off. Reconnect P/J17 to the Print Engine Controller PWB. Measure the voltage between P/J17 pin 6 and frame ground as you actuate and deactuate the Fuser Exit Sensor. **The voltage is 3.2VDC when the Fuser Exit Sensor is deactuated and 0.0VDC when actuated.**

Y N

Replace the Fuser Assembly (REP 5.1).

Replace the Print Engine Controller PWB (REP 8.5).

Replace the Print Engine Controller PWB (REP 8.5).

RAP 54 C3: Tray Out / Install Tray 2 (or Tray 3)

Tray 2, Tray 3.

Procedure

Remove and reinstall the paper Tray. Enter Diagnostics and Select Test Print. Run Test Print from problem tray. **The C3 error code still appears.**

Y N

Problem solved.

Inspect the Paper Stack End Guide position in the tray. **The End Guide is snug against the paper stack.**

Y N

Adjust the position of the End Guide.

Enter Diagnostics and select Component Test. Scroll to Tray 2 Size or Tray 3 Size. Press the Enter Key (key 4). **The paper size indicated on the LCD matches the paper size actually in Tray 1.**

Y N

Remove the paper tray. Scroll to Sensor Input test. One at a time, press and release each of the size actuators for the problem tray. **The number on the LCD increments each time you press and release one of the actuators.**

Y N

Go to RAP 37

Check the size cam on the left side of the paper tray. **The cams are in good condition (not broken) and rotate freely as the paper tray end guide is moved.**

Y N

Replace Tray 1 (PL 2.1/ PL 2.2).

Remove the 500 Sheet Feeder Left Cover (REP 11.3). As you insert the paper tray, watch the size actuators move depending on the setting of paper tray. See Table 1.

Table 1 Paper Size Actuators

Actuator	8.5 LEF	A4 LEF	B5 LEF	A5 LEF	14" SEF	8.5" SEF	A4 SEF	B4 SEF
4 Top	x			x	x	x	x	
3	x	x	x			x	x	
2			x	x	x			x
1 Bottom	x	x	x	x				

The Tray 1 Size Cams contact the Paper Size Actuators correctly for each size of paper.

Y N

Replace the paper tray (PL 2.1/ PL 2.2). If the problem persists, replace the Tray 1 Left Guide Assembly (REP 3.6).

Replace the Tray 1 Left Guide Assembly (REP 3.6).

Replace the Print Engine Controller PWB (REP 8.5).

RAP 55 Pre-Registration Sensor

Procedure

Open the 500 Sheet Feeder Rear Cover. Manually actuate and deactuate the Pre-Registration Actuator. **The Pre-Registration Actuator moves smoothly.**

Y N

Replace the Pre-Registration Actuator (PL 11.2).

Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter. Press and release the Pre-Registration Actuator. **The number on the LCD increments each time you press and release the actuator.**

Y N

Switch the printer power off. Remove the 500 Sheet Feeder Left Cover (REP 11.3). Disconnect P/J133 from the Feeder PWB. Switch the printer power on. Measure the voltage between P133 pin 7 and frame ground and between P133 pin 9 and frame ground. **Both readings are +3.2VDC.**

Y N

Replace the Feeder PWB (REP 11.8).

Switch the printer power off. Reconnect P/J133. Switch the printer power on. Measure the voltage between P/J133 pin 6 and frame ground as you actuate and deactuate the Pre-Registration Sensor Actuator. **The voltage is +3.2VDC when deactuated and 0.0VDC when actuated.**

Y N

Check for continuity between P/J133 and P/J13P and between P/J13P and P/J13C. Repair or replace as necessary. If the harness checks good, replace the Pre-Registration Sensor (REP 11.22).

With paper in the tray and the tray inserted into the 500 Sheet Feeder. measure the voltage between P/J132 pin 7 and frame ground as you actuate and deactuate the Pre-Registration Sensor. **The voltage is +2.76VDC when deactuated and 3.2VDC when actuated.**

Y N

Replace the Feeder PWB (REP 11.8).

Switch the printer power off. Remove the printer Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Switch the printer power on. Measure the voltage between P/J13 pin 7 and frame ground as you actuate and deactuate the Pre-Registration Sensor. **The voltage is +2.76VDC when deactuated and 3.2VDC when actuated.**

Y N

Check for continuity between P/J132 and P/J131 and between P/J131 and P/J13. Repair or replace as necessary.

Replace the Print Engine Controller PWB (REP 8.5).

Replace the Print Engine Controller PWB (REP 8.5).

RAP 56 C5: Add Paper To Tray 2 (or Tray 3)

Tray 2 or Tray 3 are out of paper.

Procedure

Check the paper level in the indicated Tray Assembly. **There is paper in the indicated Tray.**

Y N

Load paper into the Tray.

Remove the Tray from the 500 Sheet Feeder Assembly. Remove the Tray Cover and all paper from the tray. Insert the Tray into the 500 Sheet Feeder Assembly and inspect the Bottom Plate. **The Bottom Plate is raised.**

Y N

Replace the Tray 1 (PL 2.1/ PL 2.2).

Remove the Paper Tray. Manually actuate the No Paper Actuator. **The No Paper Actuator moves smoothly.**

Y N

Replace the No Paper Actuator (REP 11.21).

Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter. Press and release the No Paper Actuator. **The number on the LCD increments each time you press and release the actuator.**

Y N

Switch the printer power off. Remove the 500 Sheet Feeder Left Cover (REP 11.3). Disconnect P/J133 from the Feeder PWB. Switch the printer power on. Measure the voltage between P133 pin 4 and frame ground and between P133 pin 6 and frame ground. **Both readings are +3.2VDC.**

Y N

Replace the Feeder PWB (REP 11.8).

Switch the printer power off. Reconnect P/J133. Switch the printer power on. Measure the voltage between P/J133 pin 6 and frame ground as you actuate and deactuate the No Paper Sensor. **The voltage is +3.2VDC when deactuated and 0.0VDC when actuated.**

Y N

Check for continuity between P/J133 and P/J13A and between P/J13A and P/J134. Repair or replace as necessary. If the harness checks good, replace the No Paper Sensor (REP 11.20).

Measure the voltage between P/J132 pin 7 and frame ground as you actuate and deactuate the No Paper Sensor. **The voltage is +0.9VDC when deactuated and 2.76VDC when actuated.**

Y N

Replace the Feeder PWB (REP 11.8).

Switch the printer power off. Remove the printer Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Switch the printer power on. Measure the voltage between P/J13 pin 7 and frame ground as you actuate and deactuate the No Paper Sensor. **The voltage is +0.9VDC when deactuated and 2.76VDC when actuated.**

Y N

Check for continuity between P/J132 and P/J131 and between P/J131 and P/J13. Repair or replace as necessary.

A B

A B

Replace the Print Engine Controller PWB (REP 8.5).

Replace the Print Engine Controller PWB (REP 8.5).

RAP 57 E7: Duplex Jam

There is a paper jam between the Exit Assembly and the Duplex Sensor.

Procedure

Open the printer and check for paper or other obstructions in the paper path. **The printer if free of jammed paper, paper scraps, or other obstructions.**

Y N

Clear all jammed paper, paper scraps, and obstructions from the printer.

Run 15 to 20 duplex test prints. **The error code reappears.**

Y N

Problem Solved.

Open the Rear Cover and cheat the Rear Cover Interlock. Enter Diagnostics and select Component Test. Scroll to Dup Motor On Low and press Enter. **The Duplex Motor and rollers turn smoothly at low speed.**

Y N

Replace Duplex components as necessary (PL 13.1).

Scroll to Dup Motor On Hi and press Enter. **The Duplex Motor and rollers turn smoothly at high speed.**

Y N

Replace Duplex components as necessary (PL 13.1).

Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter. Open the Rear Cover. Actuate and deactuate the Duplex Sensor Actuator. **The number on the LCD increments each time you press and release the actuator.**

Y N

Switch the printer power off. Remove the printer Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Disconnect P/J19 from the Print Engine Controller PWB. Switch the printer power on. Check the voltage between P/J19 pin 5 and frame ground. **The voltage is 3.3VDC.**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

Switch the printer power off. Reconnect P/J19 to the Print Engine Controller PWB. Switch the printer power on. Check the voltage between P/J19 pin 5 and frame ground as you actuate and deactuate the Duplex Sensor Actuator. **The voltage is 3.3VDC when the sensor is deactuated and 0.0VDC when the sensor is actuated.**

Y N

Switch the printer power off. Disconnect P/J19 from the Print Engine Controller PWB and P/J501 from the Duplex Interface PWB. Check the continuity between the pins as follows:

- P501-1 and P19-13
- P501-2 and P19-12
- P501-3 and P19-11
- P501-4 and P19-10
- P501-5 and P19-9
- P501-6 and P19-8

A B

- P501-7 and P19-7
- P501-8 and P19-6
- P501-9 and P19-5
- P501-10 and P19-4
- P501-11 and P19-3
- P501-12 and P19-2
- P501-13 and P19-1

There is continuity between all pins measured.

Y N

Repair or replace the Duplex Interface Harness (PL 9.1).

Replace the Duplex PWB (REP 9.7). If the problem still exists, replace the Duplex Interface PWB (REP 8.3).

A B

Replace the Print Engine Controller PWB (REP 8.5).

Remove the Duplex Assembly. Check the Duplex Assembly rollers for contamination and wear. **The rollers are clean and in good condition.**

Y N

Clean or replace the rollers as necessary (PL 13.1).

Replace the Duplex Assembly. Run duplex test prints. **The error Code reappears.**

Y N

Problem solved.

Replace the Print Engine Controller PWB (REP 8.5).

RAP 58 E5: Top/R Cover

The Top Cover or Rear Cover is open.

Procedure

Open and close the Rear Cover and the Top Cover. **The error message is still displayed.**

Y N

Problem solved.

Open the Rear Cover. Slowly close the Rear Cover checking to ensure that the cover is actuating the Rear Cover Interlock Switch. **The Rear Cover is actuating the interlock switch.**

Y N

Realign or replace the Rear Cover (REP 1.9).

Open the Top Cover. Slowly close the Top Cover checking to ensure that the cover is actuating the Top Cover Interlock Switch. **The Top Cover is actuating the interlock switch.**

Y N

Replace the Top Cover (REP 1.3).

Switch the printer power off. Remove the Lower Rear Cover (REP 1.7). Switch the printer power on. Check the voltage between P/J162 pin 1 and frame ground. **The voltage is +24VDC.**

Y N

Replace the LVPS Assembly (REP 8.6).

Check the voltage between P/J162 pin 2 and frame ground. **The voltage is +24VDC.**

Y N

Switch the printer power off. Remove the Right Side Cover (REP 1.2). Switch the printer power on. Check the voltage between the Top Cover Interlock Switch, both terminals, (P/J623) and frame ground. **Both voltages are +24VDC.**

Y N

Check the wiring between the Top Cover Interlock Switch and P/J162 on the LVPS. If the wiring is ok, replace the Top Cover Interlock Switch (REP 7.5).

Check the voltage between the Rear Cover Interlock Switch, both terminals orange wires, (P/J621/P/J622) and frame ground. **Both voltages are +24VDC.**

Y N

Check the wiring between the Top Cover Interlock Switch and Rear Cover Interlock Switch. If the wiring is ok, replace the Rear Cover Interlock Switch (PL 8.1).

Replace the Print Engine Controller PWB (REP 8.5).

RAP 59 C5: Output Tray Full

Error code indicates that the Output Tray is full.

Procedure

Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter. Actuate and deactuate the Stack Full Sensor Actuator. **The number on the LCD increments each time you press and release the actuator.**

Y N

Visually inspect the Stack Full Sensor Actuator. **The actuator moves freely and is in good condition (not broken or damaged).**

Y N

Replace the Stack Full Actuator (REP 5.3).

Switch the printer power off. Remove the Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Disconnect P/J19 from the Print Engine Controller PWB. Switch the printer power on. On the Print Engine Controller PWB, measure the voltage between P19 pin 11 and frame ground and between P19 pin 13 and frame ground. **Both voltages are +3.3VDC.**

Y N

Measure the voltage between P/J16 pin 4 and frame ground. **The voltage is +3.3VDC.**

Y N

Replace the LVPS (REP 8.6).

Replace the Print Engine Controller PWB (REP 8.5).

Switch the printer power off. Reconnect P/J19 to the Print Engine Controller PWB. Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter. On the Print Engine Controller PWB, measure the voltage between P/J19 pin 13 and frame ground. **There is +3.3VDC between P19 pin 13 and frame ground when the Stack Full Sensor is deactuated and 0.0VDC when actuated.**

Y N

Switch the printer power off. Open the Rear Cover. Disconnect P/J527 (3-pin connector on HVPS Cover). Switch the printer power on. Measure the voltage between P/J527 pin 3 and frame ground and between P/J527 pin 1 and frame ground. **Both voltages are +3.3VDC.**

Y N

Switch the printer power off. Remove the HVPS Cover (REP 8.2). Measure the resistance between P/J502 and P/J527 as follows:

- J527-1 and J502-1
- J527-2 and J502-2
- J527-3 and J502-3

There is continuity between each of the pins.

Y N

Repair or replace the OCT Stack Full Sensor Harness (PL 10.2) or Duplex Interface Harness (PL 9.1) as necessary.

Disconnect P/J501 from the Duplex Interface PWB and P/J19 from the Print Engine Controller PWB. Measure the resistance between P/J501 and P/J19 as follows:

A B C

A B C

- J501-1 and J19-13
- J501-2 and J19-12
- J501-3 and J19-11

There is continuity between each of the pins.

Y N

Repair or replace the Duplex Interface Harness, as necessary (PL 9.1).

Replace the Duplex Interface PWB (REP 8.3).

Switch the printer power off. Disconnect P/J507 from the OCT Stack Full Sensor. Check the continuity between P/J507 and P/J527 as follows.

- J507-1 and J527-3
- J507-2 and J527-2
- J507-3 and J527-1

There is continuity between each of the pins.

Y N

Repair or replace the OCT Stack Full Sensor Harness (PL 10.2), as necessary.

Replace the OCT Stack Full Sensor (REP 10.7).

Replace the Print Engine Controller PWB (REP 8.5).

It appears that the OCT Stack Full Sensor is working correctly. If a problem persists, replace the Print Engine Controller PWB (REP 8.5).

RAP 60 Duplex Fail

Procedure

Switch the printer power off. Remove the Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Disconnect P/J19 from the Print Engine Controller PWB. Switch the main power on. Measure the voltage between P19 pin 4 on the Print Engine Controller PWB and frame ground. **The voltage is 3.3VDC.**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

Switch the Main Power off. Reconnect P/J19 to the Print Engine Controller PWB. Remove the OCT, if installed. Switch the main power on. Measure the voltage between P/J19 pin 4 and frame ground. **The voltage is 1.6VDC.**

Y N

Switch the printer power off. Open the Rear Cover and remove the Duplex Assembly (REP 9.1). Remove the HVPS Cover (REP 8.2). Disconnect P/J501 from the Duplex Interface PWB and P/J19 from the Print Engine Controller PWB. Check for the continuity between the following pins:

- J501-1 and J19-13
- J501-2 and J19-12
- J501-3 and J19-11
- J501-4 and J19-10
- J501-5 and J19-9
- J501-6 and J19-8
- J501-7 and J19-7
- J501-8 and J19-6
- J501-9 and J19-5
- J501-10 and J19-4
- J501-11 and J19-3
- J501-12 and J19-2
- J501-13 and J19-1

There is continuity on all pins measured.

Y N

Replace the Duplex Interface PWB Harness (PL 9.1).

Replace the Duplex PWB (REP 9.7). If the problem persists, replace the Duplex Interface PWB (REP 8.3).

Replace the Print Engine Controller PWB (REP 8.5).

RAP 61 C5: Wrong Size For Duplex

The size of paper the printer senses in the Tray and/or MBF is not supported by the Duplex Assembly.

Procedure

The problem appears when using Tray 1, 2, or 3.

Y N

The paper size in the MBF is within specifications.

Y N

Replace with paper that is within specifications for Duplex Operation.

Press Offline (key 0), select Tray Menu then scroll to MBF Size. **The MBF Size setting matches the paper actually in the MBF Tray.**

Y N

Correct the MBF Size setting to match the paper actually installed in the MBF Tray.

Replace the Print Engine Controller PWB (REP 8.5).

The paper size in the problem tray is within specifications.

Y N

Replace with paper that is within specifications for Duplex Operation.

Go to RAP 22.

RAP 62 E2-1:Paper Jam/Misfeed 2000 Sheet Feeder

A paper jam has occurred in the 2000 Sheet Feeder.

Procedure

Open the 2000 Sheet Feeder Upper Rear Cover Assembly. Remove the jammed paper. Run a test print. **The error still occurs.**

Y N

Problem solved.

Pull out the 2000 Sheet Feeder Tray Assembly. Check the paper condition and size. **The paper is dry and the size is within specifications.**

Y N

Replace with fresh paper of the proper size from an unopened ream.

Switch the printer power off. Remove the 2000 Sheet Feeder Right Side Cover (REP 12.5). Open the Upper Rear Cover. Manually rotate the top gear clockwise. Inspect the rotation of the 2000 Sheet Feeder Motor Assembly. **The Feed Motor Assembly rotates smoothly.**

Y N

Replace the 2000 Sheet Feeder Feed Motor Assembly (REP 12.18) or gears (REP 12.18) as necessary.

Manually rotate the top gear counterclockwise. **The 2000 Sheet Feeder Assembly rotates smoothly and feeds a sheet of paper from the Feeder Tray Assembly.**

Y N

Replace the Feeder Assembly (PL 12.3), if it doesn't rotate smoothly, or Replace the Feed Roll Assembly (REP 12.16), if it slips on the paper.

Remove the 2000 Sheet Feeder Tray Assembly (REP 12.7). Rotate the gears of the Turn Drive Assembly. **The gears of the Turn Drive Assembly rotate smoothly.**

Y N

Replace the Turn Drive Assembly (REP 12.5).

Run a test print. **The E2-1 Error Code cleared.**

Y N

Replace the 2000 Sheet Feeder PWB (REP 12.10).

Problem solved.

RAP 63 C3: 2000 Sheet Feeder Carriage Not In Position

The 2000 Sheet Feeder Tray Assembly has not been set.

Procedure

Open and close the 2000 Sheet Feeder Tray Assembly. **The C3 Error Code is still displayed.**

Y N

Problem solved.

Open the 2000 Sheet Feeder Tray Assembly. Manually push the actuator of the Stopper Link (REP 12.19). Make sure that the front side of the Nudger Support Assembly of the lowers slightly each time you press the Stopper Link. **The Nudger Support Assembly lowers each time you press the Stopper Link.**

Y N

Replace the Stopper Link (REP 12.19).

Enter Diagnostics and select Component Test. Scroll to Sensor Input and press Enter [4]. Manually push the actuator of the Stopper Link (REP 12.19). **The number on the LCD increments each time you press the Stopper Link.**

Y N

Switch the printer power off. Open the 2000 Sheet Feeder Tray Assembly. Remove the Lower Rear Cover. Disconnect P/J603 from the 2000 Sheet Feeder PWB. Switch the printer power on. Check the voltage between P/J603 pin 3 and frame ground. **The voltage is 3.2VDC.**

Y N

Check the voltage between P601 pin 1 and frame ground. **The voltage is 3.2VDC.**

Y N

Check for continuity between P/J13 pin 1 and P601 pin 1. **There is continuity between the pins.**

Y N

Replace the 2000 Sheet Feeder Harness (PL 12.2) or Feeder Harness (PL 9.1) as necessary.

Replace the Print Engine Controller PWB (REP 8.5).

Replace the 2000 Sheet Feeder PWB (REP 12.10).

Switch the printer power off. Reconnect P/J603 to the Feeder PWB. Switch the printer power on. Check the voltage between P/J603 pin 3 and frame ground. Press and release the Stopper Link. **The voltage is 3.2VDC when the link is released and 0.0VDC when the link is pressed.**

Y N

Replace the Paper Height Sensor (REP 12.17).

Replace the Print Engine Controller PWB (REP 8.5).

Replace the Print Engine Controller PWB (REP 8.5).

RAP 64 C5: Add Paper To 2000 Sheet Feeder

The last sheet of paper was fed.

Procedure

Open the 2000 Sheet Feeder paper tray. **There is paper in the tray.**

Y N

Add paper to the tray and close.

Open the 2000 Sheet Feeder Tray Assembly. Inspect the No Paper Sensor Actuator. **The Actuator is in good condition and moves freely.**

Y N

Replace the No Paper Sensor Actuator (REP 12.21).

Enter Diagnostics and select Component Test. Scroll to Sensor Input and press Enter [4]. Manually push the No Paper Actuator up and release. **The number on the LCD increments each time you press and release the No Paper Actuator.**

Y N

Switch the printer power off. Open the 2000 Sheet Feeder Tray Assembly. Remove the Lower Rear Cover. Disconnect P/J602 from the 2000 Sheet Feeder PWB. Switch the printer power on. Check the voltage between P/J602 pin 3 and frame ground. **The voltage is 3.2VDC.**

Y N

Check the voltage between P601 pin 1 and frame ground. **The voltage is 3.2VDC.**

Y N

Check for continuity between P/J13 pin 1 and P601 pin 1. **There is continuity between the pins.**

Y N

Replace the 2000 Sheet Feeder Harness (PL 12.2) or Feeder Harness (PL 9.1) as necessary.

Replace the Print Engine Controller PWB (REP 8.5).

Replace the 2000 Sheet Feeder PWB (REP 12.10).

Switch the printer power off. Reconnect P/J602 to the Feeder PWB. Switch the printer power on. Check the voltage between P/J602 pin 3 and frame ground. Press and release the No Paper Sensor Actuator. **The voltage is 3.2VDC when the actuator is released and 0.0VDC when the actuator is pressed.**

Y N

Replace the No Paper Sensor (REP 12.17).

Replace the Print Engine Controller PWB (REP 8.5).

Replace the Print Engine Controller PWB (REP 8.5).

RAP 65 E5: 2000 Sheet Feeder CVR Open / Please Close CVR

The 2000 Sheet Feeder Rear Cover Assembly is open.

Procedure

Manually open/close the 2000 Sheet Feeder Upper Rear Cover Assembly. Make sure the Upper Rear Cover actuates the Switch. **The 2000 Sheet Feeder Upper Rear Cover Assembly actuates the Switch.**

Y N

Reinstall the Switch. If the bracket is deformed, reshape the bracket.

Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter. Open and close the 2000 Sheet Feeder Upper Rear Cover. **The number on the LCD increments each time you open and close the cover.**

Y N

Switch the printer power off. Remove the 2000 Sheet Feeder Lower Rear Cover (REP 12.4). Switch the printer power on. Check the voltage between P/J604 pin 3 and frame ground as you open and close the Upper Rear Cover. **The voltage is 3.2VDC when the cover is open and 0.0VDC when the cover is closed.**

Y N

Replace the Upper Rear Cover Interlock Switch (PL 12.2).

Switch the printer power off. Remove the Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Disconnect P/J13 from the Print Engine Controller PWB and P/J604 from the 2000 Sheet Feeder PWB. Check continuity between the following pins:

- P601-1 to P13-1
- P601-2 to P13-2
- P601-3 to P13-3
- P601-4 to P13-13
- P601-5 to P13-10
- P601-6 to P13-14
- P601-7 to P13-15

There is continuity between all pins measured.

Y N

Replace the appropriate harness.

Replace the Print Engine Controller PWB (REP 8.5).

Replace the Print Engine Controller PWB (REP 8.5).

RAP 66 E9:HCF Fail (2000 Sheet Feeder)

Procedure

Switch the printer power off. Remove the Lower Rear Cover. Check the connection at both ends of the 2000 Sheet Feeder Harness Assembly (P/J601 on the Feeder PWB and P/J131 Feeder Interface Harness). **The 2000 Sheet Feeder interface Harness is properly connected to the 2000 Sheet Feeder PWB.**

Y N

Properly connect the 2000 Sheet Feeder Harness Assembly (J131,J601).

Replace the 2000 Sheet Feeder PWB (REP 12.10). **This problem still occurs.**

Y N

Problem solved.

Remove the 2000 Sheet Feeder Harness Assembly. Check the continuity of the pins indicated:

- J601-1 and J131-7
- J601-2 and J131-6
- J601-3 and J131-5
- J601-4 and J131-10
- J601-5 and J601-13
- J601-6 and J131-9
- J601-7 and J601-8

There is the continuity between all pins measured.

Y N

Replace the 2000 Sheet Feeder Harness Assembly (PL 12.2).

Replace the Print Engine Controller PWB (REP 8.5).

RAP 67 C5: OCT Tray Full

Error code indicates that the OCT Output Tray is full.

Procedure

Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter. Actuate and deactuate the Stack Full Sensor Actuator. **The number on the LCD increments each time you press and release the actuator.**

Y N

Visually inspect the Stack Full Sensor Actuator. **The actuator moves freely and is in good condition (not broken or damaged).**

Y N

Replace the Stack Full Actuator (REP 5.3).

Switch the printer power off. Remove the Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Disconnect P/J19 from the Print Engine Controller PWB. Switch the printer power on. On the Print Engine Controller PWB, measure the voltage between P19 pin 11 and frame ground and between P19 pin 13 and frame ground. **Both voltages are +3.3VDC.**

Y N

Measure the voltage between P/J16 pin 4 and frame ground. **The voltage is +3.3VDC.**

Y N

Replace the LVPS (REP 8.6).

Replace the Print Engine Controller PWB (REP 8.5).

Switch the printer power off. Reconnect P/J19 to the Print Engine Controller PWB. Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter. On the Print Engine Controller PWB, measure the voltage between P/J19 pin 13 and frame ground. **There is +3.3VDC between P19 pin 13 and frame ground when the Stack Full Sensor is deactuated and 0.0VDC when actuated.**

Y N

Switch the printer power off. Open the Rear Cover. Disconnect P/J527 (3-pin connector on HVPS Cover). Switch the printer power on. Measure the voltage between P/J527 pin 3 and frame ground and between P/J527 pin 1 and frame ground. **Both voltages are +3.3VDC.**

Y N

Switch the printer power off. Remove the HVPS Cover (REP 8.2). Measure the resistance between P/J502 and P/J527 as follows:

- J527-1 and J502-1
- J527-2 and J502-2
- J527-3 and J502-3

There is continuity between each of the pins.

Y N

Repair or replace the Stack Full Sensor Harness, as necessary (PL 6.1).

Disconnect P/J501 from the Duplex Interface PWB and P/J19 from the Print Engine Controller PWB. Measure the resistance between P/J501 and P/J19 as follows:

- J501-1 and J19-13

A B C

- J501-2 and J19-12
- J501-3 and J19-11

There is continuity between each of the pins.

Y N

Repair or replace the Duplex Interface Harness, as necessary (PL 9.1).

Replace the Duplex Interface PWB (REP 8.3).

Switch the printer power off. Disconnect P/J507 from the Stack Full Sensor. Check the continuity between P/J507 and P/J527 as follows.

- J507-1 and J527-3
- J507-2 and J527-2
- J507-3 and J527-1

There is continuity between each of the pins.

Y N

Repair or replace the Stack Full Sensor(REP 5.2) or Stack Full Sensor Harness (PL 6.1), as necessary.

Replace the Stack Full Sensor (REP 5.2).

Replace the Print Engine Controller PWB (REP 8.5).

It appears that the Stack Full Sensor is working correctly. If a problem persists, replace the Print Engine Controller PWB (REP 8.5).

RAP 68 E8: OCT Jam

There is a paper jam at the OCT Sensor.

Procedure

The front edge of the paper is located within the Exit Assembly.

Y N

Remove and reinstall the OCT Assembly (REP 10.1). Run a Test Print for simplex print. **The Error Code E4 still appears.**

Y N

Problem solved.

The paper is discharged from the top of the OCT Assembly.

Y N

Rotate the 14/33 Idler Gear counter clockwise manually. Observe the correct contact between the 14/33 Idler Gear and the 29 Gear and Offset Gear. **All of the gears rotate smoothly.**

Y N

Replace parts as necessary (PL 13.1).

Run a Test print. Observe the rotation of the Inlet Roll and Offset Roll (REP 10.12). **The Inlet Roll and Offset Roll rotates in the same direction smoothly.**

Y N

Replace the OCT Motor Assembly (REP 10.10).

Press and release the actuator of the Duplex Sensor (REP 9.6). **The Duplex Sensor actuates by lifting up the actuator and deactuates by releasing the actuator.**

Y N

Replace the OCT Sensor (REP 9.6).

Replace the Print Engine Controller PWB (REP 8.5).

Remove the Top Cover (REP 1.3). Remove the Rear Cover Assembly (REP 1.9). Rotate the Inlet Roll counterclockwise manually. **The Inlet Roll rotates smoothly.**

Y N

Replace the OCT Assembly (REP 10.1).

Rotate the 14/33 Idler Gear counter clockwise manually. Observe the correct contact between the 14/33 Idler Gear and the 29 Gear and Offset Gear. **All of the gears rotate smoothly.**

Y N

Replace parts as necessary (PL 13.1).

Run a Test print. Observe the rotation of the Inlet Roll and Offset Roll. **The Inlet Roll and Offset Roll rotates in the same direction smoothly.**

Y N

Replace the OCT Motor Assembly (REP 10.10).

Press and release the actuator of the OCT Sensor (REP 9.6). **The OCT Sensor actuates by lifting up the actuator and deactuates by releasing the actuator.**

A

Y N

Replace the OCT Sensor (REP 9.6).

Replace the Print Engine Controller PWB (REP 8.5).

Remove the Top Cover (REP 1.3). Remove the Rear Cover Assembly (REP 1.9). Rotate the Inlet Roll counterclockwise manually. **The Inlet Roll rotates smoothly.**

Y N

Replace the OCT Assembly (REP 10.1).

Rotate the 14/33 Idler Gear counter clockwise manually. Observe the correct contact between the 14/33 Idler Gear and the 29 Gear and Offset Gear. **All of the gears rotate smoothly.**

Y N

Replace parts as necessary (PL 13.1).

Run a Test print. Observe the rotation of the Inlet Roll and Offset Roll. **The Inlet Roll and Offset Roll rotates in the same direction smoothly.**

Y N

Replace the OCT Motor Assembly (REP 10.10).

Press and release the actuator of the OCT Sensor. **The OCT Sensor actuates by lifting up the actuator and deactuates by releasing the actuator.**

Y N

Replace the OCT Sensor (REP 9.6).

Replace the Print Engine Controller PWB (REP 8.5).

A

RAP 69 E5: OCT CVR Open / Please Close CVR

The Rear Cover Assembly is open.

Procedure

Open and close the OCT Rear Cover. **The error code reappears.**

Y N

Problem solved.

Open the OCT Rear Cover and check the Rear Cover Interlock Switch. **The Rear Cover Interlock Switch is in good condition and the actuator moves freely.**

Y N

Replace the OCT Rear Cover Interlock Switch (REP 10.13).

Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter [4]. Actuate and deactuate the Rear Cover Interlock Switch. **The number on the LCD increments each time you press and release the actuator.**

Y N

Switch the printer power off. Remove the OCT Front Cover (REP 10.4). Disconnect P/J524 from the OCT PWB. Switch the printer power on. Measure the voltage between P524 pin 1 and frame ground. **The voltage is 3.2VDC.**

Y N

Measure the voltage between P/J514 pin 6 and frame ground. **The voltage is 3.2VDC.**

Y N

Switch the printer power off. Remove the Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Measure the voltage between P/J19 pin 11 and frame ground. **The voltage is 3.2VDC.**

Y N

Replace the Print Engine Controller PWB (REP 8.5).

Check for continuity between P/J19 pin 11 and P/J501 pin 3 and between P/J504 pin 6 and P/J514 pin 6. **There is continuity between both sets of pins.**

Y N

Repair or replace the OCT Harness (PL 10.2) or the Duplex interface Harness (PL 9.2).

Replace the Duplex Interface PWB (REP 8.3).

Replace the OCT PWB (REP 10.14).

Switch the printer power off. Reconnect P/J524 to the OCT PWB. Switch the printer power on. Measure the voltage between P524 pin 1 and frame ground as you actuate and deactuate the interlock switch. **The voltage is 3.2VDC when the switch is deactuated and 0.0VDC when the switch is actuated.**

Y N

Replace the OCT Rear Cover Interlock Switch (REP 10.13).

Replace the Print Engine Controller PWB (REP 8.5).

Replace the Print Engine Controller PWB (REP 8.5).

RAP 70 OCT Motor Assembly

Procedure

Switch the printer power off. Remove the HVPS Cover (REP 1.6). On the Duplex Interface PWB, disconnect P/J506 and measure the voltage between J506 pin 1 and frame ground. **There is 24VDC between J506 pin 1 and frame ground.**

Y N

Replace the LVPS (REP 8.6).

Switch the printer Power off. Reconnect P/J506. Remove the OCT Front Cover (REP 10.4). Disconnect P/J514 on the OCT PWB. Measure the voltage between J514 pin 8 and frame ground. **There is 24VDC between J514 pin 8 and frame ground.**

Y N

Switch the printer power off. Measure the resistance between P/J504 and P/J514 as follows:

- J504 - 1 and J514 - 1
- J504 - 2 and J514 - 2
- J504 - 3 and J514 - 3
- J504 - 4 and J514 - 4
- J504 - 5 No Connection
- J504 - 6 and J514 - 6
- J504 - 7 and J514 - 7
- J504 - 8 and J514 - 8
- J504 - 9 and J514 - 9

There is continuity between each of the pins.

Y N

Repair or replace the STK-O-Harness Assembly (PL 10.2) and the SK-1 Harness Assembly (PL 9.1).

Replace the Duplex Interface Harness PWB (REP 8.3).

Switch printer power off. Reconnect P/J515. On the OCT PWB, measure the voltage between P/J517 pin 3 and frame ground and P/J517 pin 4 and frame ground. **Both voltages are 24VDC.**

Y N

Replace the OCT PWB (PL 10.2).

Replace the OCT Motor Assembly (PL 10.2).

RAP 71 E9: OCT Fail

Procedure

Switch the printer power off. Remove the Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Disconnect P/J19 from the Print Engine Controller PWB. Switch the main power on. Measure the voltage between P/J19-11 and frame ground. **The voltage is 3.2VDC.**

Y N

Check the voltage between P/J16 pin 4 and frame ground. **The voltage is 3.2VDC.**

Y N

Replace the LVPS (REP 8.6).

Replace the Print Engine Controller PWB (REP 8.5).

Switch the Main Power off. Remove the OCT Front Cover (REP 10.4). Disconnect P/J514 from the OCT PWB. Check for continuity between the following pins:

- P514-2 and P19-2
- P514-3 and P19-3
- P514-4 and P19-4
- P514-6 and P19-11
- P514-7 and P19-12

There is continuity between all pins measured.

Y N

Repair or replace the OCT Harness (PL 10.2) or the Duplex interface Harness (PL 9.2).

Replace the OCT PWB (REP 10.14).

RAP 72 Offset Operation Not Performed

Procedure

Manually move the Offset Assembly from one side to the other. **The Offset Assembly moves smoothly.**

Y N

Replace the Offset Assembly (PL 10.2).

Enter Diagnostics and select Component Test. Scroll to OCT Offset Motor and press Enter [4]. **The Offset Assembly shifts left then returns right.**

Y N

Switch the printer power off. Remove the OCT Front Cover (REP 10.4). Disconnect P/J515 from the OCT PWB. Measure the resistance between pins 1 and 2 of the disconnected plug. **The resistance is approximately 90 ohms.**

Y N

Replace the OCT Offset Motor (REP 10.9).

Remove the Left Side Cover (REP 1.1) and the Print Engine Controller PWB Cover (REP 8.5). Disconnect P/J19 from the Print Engine Controller PWB. Disconnect P/J514 from the OCT PWB. Check for continuity between the following pins:

- P514-2 and P19-2
- P514-3 and P19-3
- P514-4 and P19-4
- P514-6 and P19-11
- P514-7 and P19-12

There is continuity between all pins measured.

Y N

Repair or replace the OCT Harness (PL 10.2) or the Duplex interface Harness (PL 9.2).

Replace the OCT PWB (REP 10.14).

Replace the Print Engine Controller PWB (REP 8.5).

RAP 73 OCT Sensor

Procedure

Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter. Actuate and deactuate the OCT Sensor **The Number on the LCD increments each time you press and release the actuator.**

Y N

Switch the power off. Remove the Left Side Cover (REP 1.1). Remove the Print Engine Controller PWB Cover (REP 8.5). Disconnect P/J19 from the Print Engine Controller PWB. Switch the printer power on. Measure the voltage between P19 pin 11 and frame ground and P19 pin 4 and frame ground. **Both voltages are 3.2VDC.**

Y N

Measure the voltage between P/J16 pin 4 on the Print Engine Controller PWB and frame ground. **The voltage is 3.3VDC.**

Y N

Replace the LVPS (REP 8.6).

Replace the Print Engine Controller PWB (REP 8.5).

Switch the printer power off. Reconnect P/J19 to the Print Engine Controller PWB. Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter. On the Print Engine Controller PWB, measure the voltage between P19 pin 4 and frame ground. **There is +3.3VDC between P19 pin 4 and frame ground when the OCT Sensor is deactuated and 0.0VDC when actuated.**

Y N

Switch the printer power off. Remove the HVPS Cover (REP 1.6). Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter. On the Duplex Interface PWB, measure the voltage between P/J504 pin 4 and frame ground. **There is 3.3VDC between P/J504 pin 4 and frame ground when the OCT Sensor is deactuated and 0.0VDC when actuated.**

Y N

Switch the power off. Remove the OCT Front Cover (REP 10.4). Enter Diagnostics and select Component Test. Scroll to Sensor Input test and press Enter. On the OCT PWB, measure the voltage between P/J514 pin 4 and frame ground. **There is 3.3VDC between P/J514 pin 4 and frame ground when the OCT Sensor is deactuated and 0.0VDC when actuated.**

Y N

Switch the printer power off. Measure the resistance between P/J504 and P/J514 as follows:

- J504 - 1 and J514 - 1
- J504 - 2 and J514 - 2
- J504 - 3 and J514 - 3
- J504 - 4 and J514 - 4
- J504 - 5 No Connection
- J504 - 6 and J514 - 6
- J504 - 7 and J514 - 7
- J504 - 8 and J514 - 8
- J504 - 9 and J514 - 9

There is continuity between each of the pins.

A B C D

Y N

Repair or replace the STK-O-Harness Assembly (PL 10.2) and the SK-1 Harness Assembly (PL 9.1).

On the OCT PWB, measure the voltage between P/J520 pin 2 and frame ground. **There is 3.3VDC between P/J520 pin 2 and frame ground when the OCT Sensor is deactuated and 0.0VDC when actuated.**

Y N

Replace the OCT Sensor (PL 10.2).

Replace the OCT PWB (PL 10.2).

Replace the Duplex Interface PWB (PL 13.1).

Replace the Duplex Interface PWB (PL 13.1).

Replace the Print Engine Controller PWB (REP 8.5).

It appears that the OCT Sensor is working correctly. If the problem persists, replace the Print Engine Controller PWB (REP 8.5).

3 Image Quality Repair Analysis Procedures

Introduction

This section contains image quality repair procedures to assist in correcting image quality defects. These procedures provide defect samples, definitions and specifications to help identify the type of defect that exists, the test pattern to use, and actions required to correct the defects.

Throughout these procedures, the term “vertical” refers to the process direction (the direction paper travels through the printer); the term “horizontal” refers to the scanning direction (the direction the laser beam scans across the page).

Be sure to check the paper tray to determine whether paper is being fed long edge or short edge first. This determines “vertical” and “horizontal” for paper fed from that particular tray.

Cleaning procedures should always be performed before beginning any Print Quality Repair procedure.

Be sure that the paper meets printer specifications. Changing the paper, or using paper from a previously unopened ream, will resolve many print quality issues.

After resolving an image quality problem, return to Image Quality Checkout to verify that no other image quality defects exist.

Sample reproductions of the various image quality patterns are included under Image Quality Specifications.

Use the Image Quality RAPS to further diagnose machine problems.

In the Y/N (Yes/No) steps of the RAPs, a Yes response will lead you to the next step. A No response will indicate a corrective action, or will direct you to another step. When the indicated corrective action has been completed, go to Section 1 and restart the Initial Actions to verify that the problem has been corrected.

Image Quality Defect Definitions

The System Controller Test Print is used to evaluate each of the print quality parameters. Each area of the test pattern is used for a print quality parameter. The areas and the print quality parameters are listed in Image Quality Checkout.

Table 1 Image Quality Defect Definitions

Defect Definitions	Go To:
LIGHT PRINTS: The overall image density is too light.	IQ RAP 1
BLANK PRINTS: Prints with no visible image.	IQ RAP 2
SPOTS: There are spots of toner on the page.	IQ RAP 3
HORIZONTAL DELETIONS: There are areas of the image that are extremely light or missing entirely. These areas run horizontally across the page in the direction of scanning.	IQ RAP 4
VERTICAL DELETIONS: There are areas of the image that are extremely light or missing entirely. These areas run vertically along the page in the direction of paper movement.	IQ RAP 5
SPOT DELETIONS: Solid areas are marked with irregular white areas.	IQ RAP 6
VERTICAL STREAKS: Extraneous dark lines/bands in the process direction.	IQ RAP 7
HORIZONTAL STREAKS: Extraneous dark lines/bands in the direction of scan.	IQ RAP 8
RESIDUAL IMAGES: The image from a previous print, which was not removed during the cleaning process, has been developed on the current print.	IQ RAP 9
BLACK PRINTS: The print is completely covered with toner and has no visible image.	IQ RAP 10
BACKGROUND: Uniform toner contamination in non image areas. Refer to the Background specification.	IQ RAP 11
UNEVEN DENSITY: The text/line darkness and solid area density image varies across the print.	IQ RAP 12
SKEWED IMAGE: Angular displacement of the image from its intended position on the print. Refer to the specification.	IQ RAP 13
DAMAGED PRINTS: Creases, wrinkles, excessive curl, cuts, folds or embossed marks.	IQ RAP 14
REGISTRATION (lead edge to trail edge): Displacement of the image, in the process direction, from its intended position on the print.(inboard to outboard): Displacement of the image, in the direction of scan, from its intended position on the print.	IQ RAP 15
SKIPS / SMEARS: Skip-Loss or stretching of the image in bands across the process direction. Smear-The distortion of the image in bands across the process direction that cause it to appear to be blurred or compressed.	IQ RAP 16
UNFUSED IMAGE: Part of or all of the image is unfused. Refer to the specification.	IQ RAP 17
RESOLUTION: At 600 DPI, the two pixel lines and halftone patches cannot be reproduced clearly on the print.	IQ RAP 18

Image Quality Checkout

The System Controller Test Print is used to evaluate and ensure that the printed image meets the printer specifications.

Use new paper, whenever possible, to check the image quality of prints. Make five (5) prints of the System Controller Test Print (Figure 1) (GP 6.1). Discard the first two prints and retain the remaining prints for image quality analysis.

The Image quality Checkout is used to evaluate the following:

1. Resolution (2 places) (Figure 1)
2. Skips and Smears (4 places) (Figure 1)
3. Registration (1 place) (Figure 1)
4. Resolution and Uniformity (2 places) (Figure 1)
5. Solid Area Density (3 places) (Figure 1)
6. Half Tone Resolution (2 places). (Figure 1)

Go to Solid Area Density.

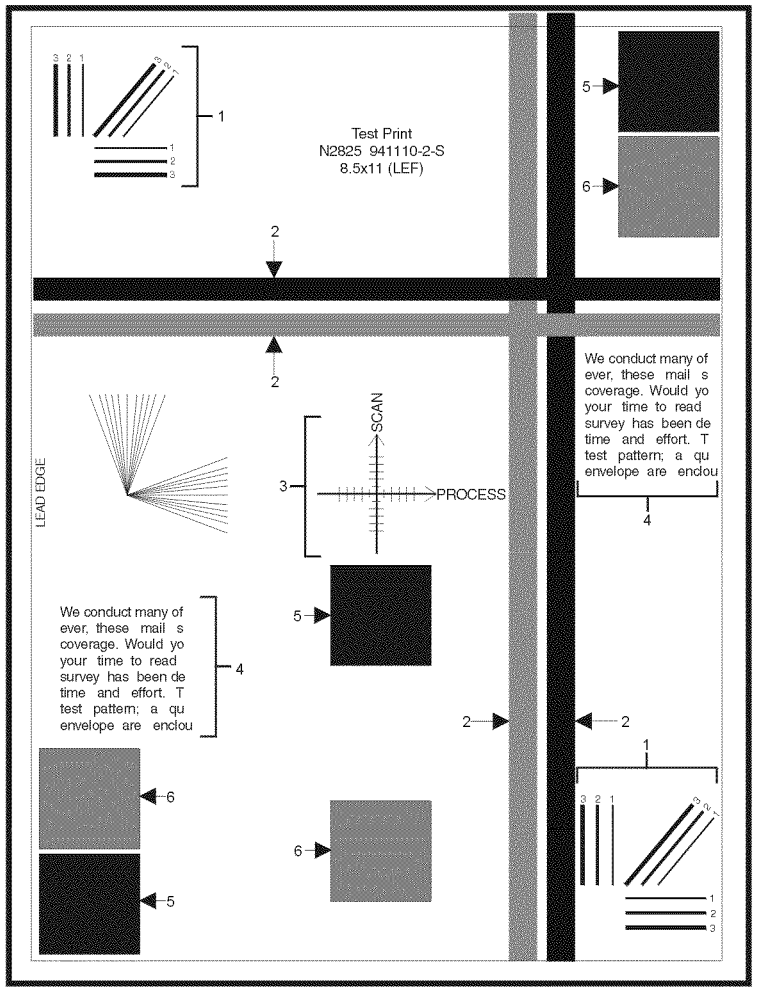


Figure 1 System Controller Test Print.

Solid Area Density

Procedure

Ensure the printer is set for 600 dpi. Compare the solid areas on the System Controller Test Patterns with the Output Reference document (82P520) (Figure 1). **The solid areas on the print are at the 1.20 density square on the scale or higher, and all the solid areas on any print differ in density less than one density square.**

Y N

The solid area density is uniform.

Y N

Go to IQ RAP 12 Uneven Density.

The prints are too faint.

Y N

The prints are black.

Y N

Go to IQ RAP 11 Background.

Go to IQ RAP 10 Black Prints

Go to IQ RAP 1 Light Prints

The Solid Area Density is within specifications. Go to Background.

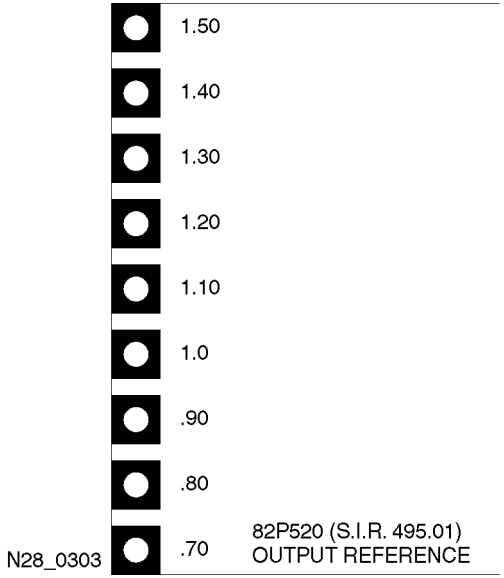


Figure 1 Output Reference Document

Background

Procedure

Compare the Test Prints with the Visual Scale (82P284). The worst background area on any print should be at, or below, area 3 on the rating guide (Figure 1). **The print is at the area 3 or below.**

Y N

The background is uniform.

Y N

Go to IQ RAP 12 Uneven Density.

Go to IQ RAP 11 Background.

The printed test patterns meet the Background specification. Go to Deletions.

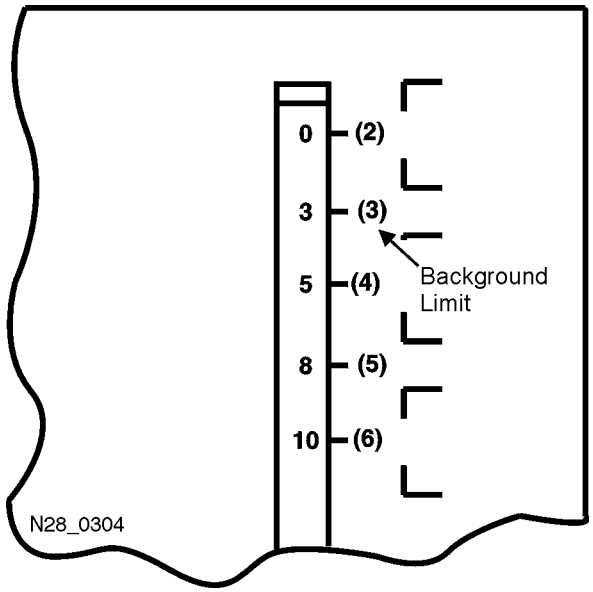


Figure 1 Rating Guide

Deletions (Line, Band, Spots)

Procedure

Inspect Test Prints for the presence of deletions (missing image). There should be no deletions with a diameter larger than 0.5 mm visible on test prints (Figure 1). **There are deletions on the test prints.**

Y N

Go to Fusing.

There are vertical (in direction of paper movement) Line/Band deletions present.

Y N

There are Horizontal (in direction of scanning) Line/Band Deletions present.

Y N

There are Spot Deletions present.

Y N

Go to Fusing.

Go to IQ RAP 6 Spot Deletions.

Go to IQ RAP 4 Horizontal Deletions.

Go to IQ RAP 5 Vertical Deletions.

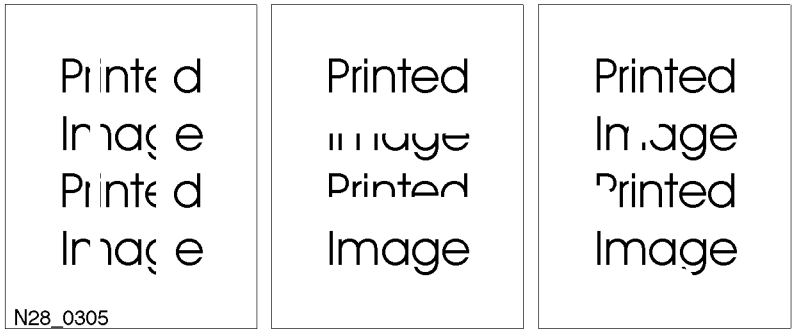


Figure 1 Line, Band, or Spot Deletions.

Fusing

Procedure

NOTE: *The operating environment of the printer is from 41o F (5o Celsius) at 15% relative humidity to 95o F (35o Celsius) at 85% relative humidity. The fusing performance of the printer will vary according to the environment.*

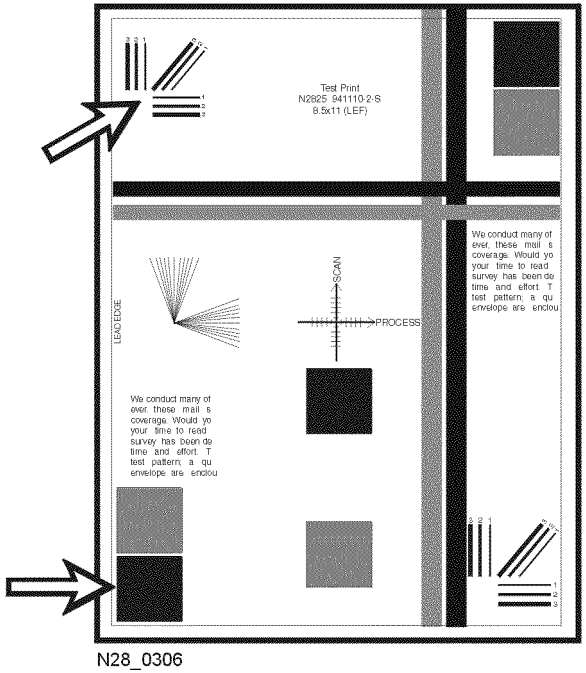
- A cold environment will affect the warm-up time.
- The weight (lb. / gsm) of the paper or transparency will affect the fusing of prints.
- High humidity will have an adverse affect on the fusing of prints.

Check the fusing quality of the image of a System Controller Test Print (Figure 1). Rub the image three times with a soft cloth or tissue. The image should not lift off of the surface of the print. **The fusing quality of the image meets the specification.**

Y N

Go to IQ RAP 17 Unfused Image.

The printed test patterns meet the Fusing specification. Go to Resolution.



N28_0306

Figure 1 Fusing Quality.

Resolution

Procedure

Refer to Figure 1. Observe the three image areas on several System Controller Test Patterns. Check the resolution of the images in each of the areas:

Arrow 1

The two pixel vertical, horizontal and diagonal lines should be clear and continuous. The diagonal lines might appear to be narrower than the others.

Arrow 2

The text paragraphs should be roughly equal in density.

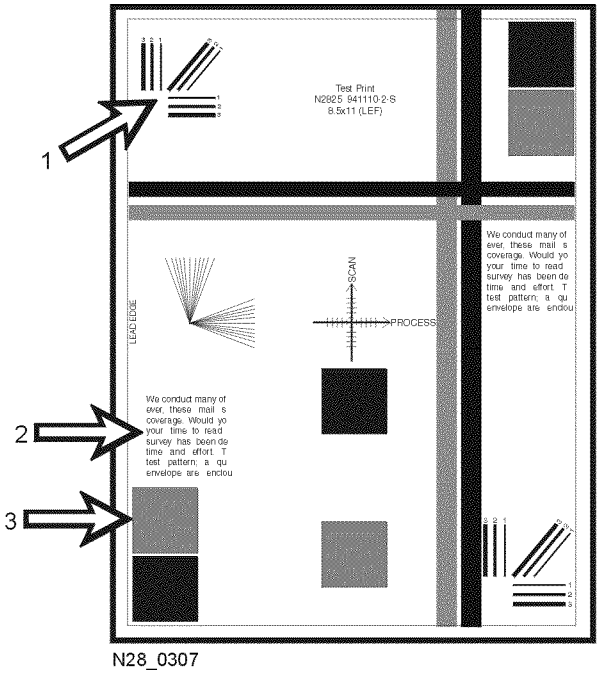
Arrow 3

The half-tone patches adjacent to the solid blocks in the corners should be uniform in appearance. **The three checks (arrows 1, 2, & 3) are within specification.**

Y N

Go to IQ RAP 18 Resolution.

The printed test patterns meet the Resolution specification. Go to the Registration (Side to Side).



N28_0307

Figure 1 Resolution.

Registration (Side to Side)

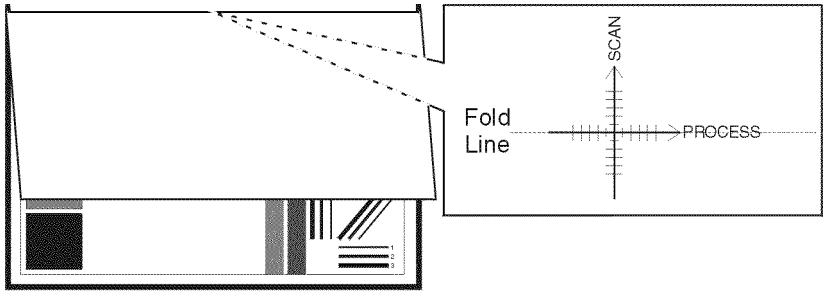
Procedure

Measure the registration on two consecutive System Controller Test Patterns. Fold the paper in half (top edge to the bottom edge). Observe the fold line of the paper with reference to the cross hairs of the target, Figure 1. **The fold is within +/- 2.0 mm of the target cross hairs (each line on the target is 1 mm).**

Y N

Go to IQ RAP 15 Registration.

The test prints meet the Lead Edge to Trail Edge registration specification. Go to Registration (Lead Edge to Trail Edge).



N28_0308

Figure 1 Registration (Side to Side).

Registration (Lead Edge to Trail Edge)

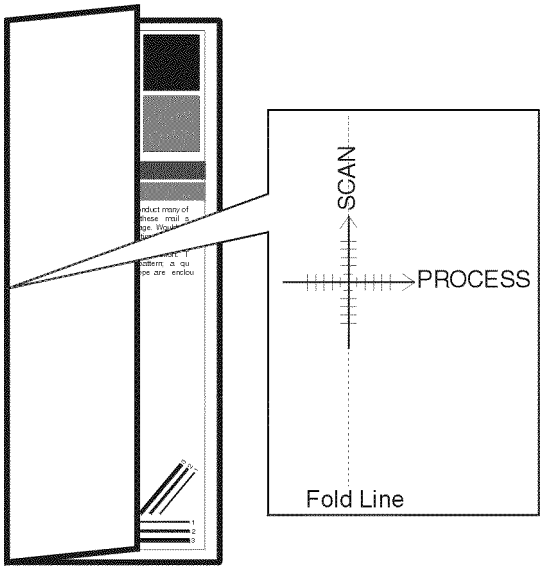
Procedure

Measure the registration on two consecutive System Controller Test Patterns. Fold the paper in half (lead edge to Trail Edge). Observe the fold line of the paper with reference to the cross hairs of the target. **The fold is within +/- 2.0 mm of the target cross hairs (each line on the target is 1 mm) (Figure 1).**

Y N

Go to IQ RAP 15 Registration.

The printed test patterns meet the lead edge to trail edge registration specification. Go to Skew.



N28_0309

Figure 1 Registration (Lead Edge to Trail Edge).

Skew

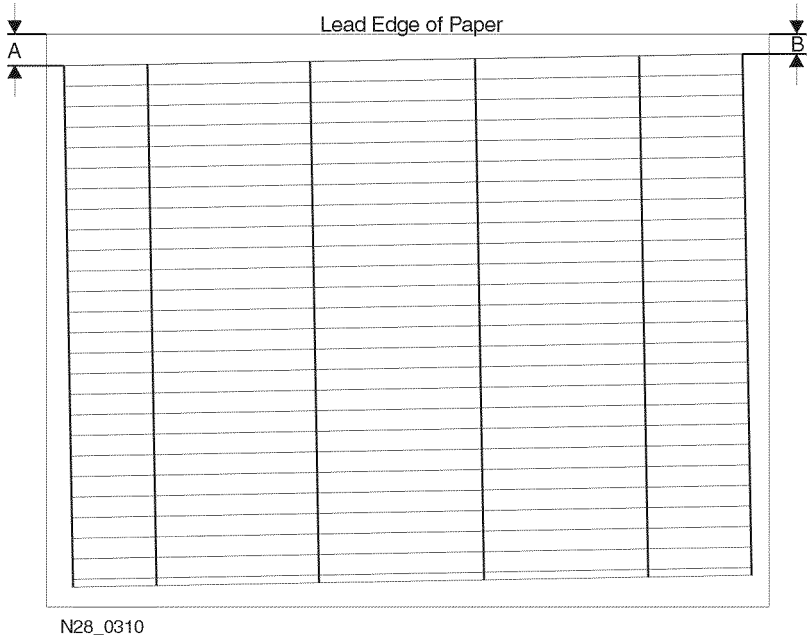
Procedure

Enter Diagnostics and select Test Print. Scroll to Print Pattern and press Enter [4]. Observe the test pattern. Measure the dimensions ‘A’ and ‘B’ (Figure 1) on two consecutive test patterns. The difference between ‘A’ and ‘B’ should be 1.5 mm or less. **The skew on the test patterns meets the specification.**

Y N

Go to IQ RAP 13 Skewed Image.

The printed test patterns meet the Skew specification. Go to the Skips and Smears.



N28_0310

Figure 1 Printer Engine Controller Test Pattern.

Skips / Smears

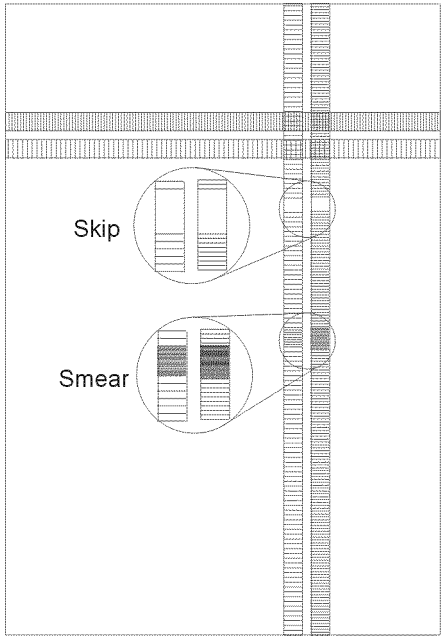
Procedure

Enter Diagnostics and select Test Print. Scroll to Print Pattern and press Enter [4]. Inspect the ladder chart test pattern. The pattern should be free from skips and smears (Figure 1). **The test prints are free from skips and smears.**

Y N

Go to IQ RAP 16 Skips/Smears.

Go to the Spots checkout



N28_0311

Figure 1 Skips / Smears.

Spots

Procedure

From the menu mode, run a Config Sheet. Inspect the print for spots (Figure 1). Within a 208 x 95 mm square:

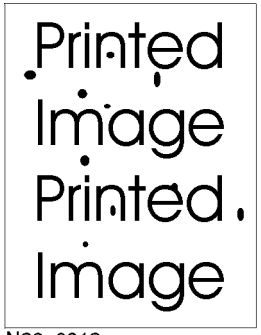
- There should be no spots larger than or equal to 0.5 mm visible on the prints.
- There should be no more than 1 spot measuring between 0.4 mm and 0.5 mm visible on the print.
- There should be no more than 16 spots measuring between 0.25 mm and 0.4 mm visible on the print.
- Any spot measuring less than 0.25 mm is acceptable.

The prints are free of spots or the spots that are visible fall within the acceptable range.

Y N

Go to IQ RAP 3 Spots.

Go to Other Print Defects.



N28_0312

Figure 1 Spots.

Other Print Defects

Procedure

Inspect the Test Patterns for other Print Defects. **Test Prints are free of defects.**

Y N

There are dark streaks present on the Test Prints.

Y N

There is a residual image (ghosts) on the Test Prints.

Y N

There is paper damage: wrinkles, creases, tears, etc.

Y N

The printer meets specifications. Go to Initial Actions

Go to IQ RAP 14 Damaged Prints.

Go to IQ RAP 9 Residual Image.

Go to IQ RAP 7 / IQ RAP 8 Streaks.

Go to Final Actions

IQ RAP 1 Light (Undertoned) Prints

The overall image density is too light (Figure 1).

Figure 1 Light Prints

Initial Actions

- Inspect the printer paper path for items such as staples, paper clips and paper scraps.
- Check installation of the Print Cartridge.
- Check that the Print Cartridge ground contact points are clean.
- Ensure there are no obstructions in the Laser path.

Procedure

Load fresh, dry paper. Run a test print. **The image density meets specifications.**

Y N

Install a new Print Cartridge. Run a test print. **The image density meets specifications.**

Y N

Remove the Print Cartridge. Inspect the Metal Grounding Contact on the rear of the Right Print Cartridge Guide. **The Metal Grounding Contact is intact and free of contamination.**

Y N

Reform or clean the Metal Grounding Contact, so it makes better contact with the drum shaft, or replace the Right Print Cartridge Guide (REP 7.2).

Check for the continuity between the Metal Grounding Contact and the printer body frame. **There is continuity between the Metal Grounding Contact and the printer frame.**

Y N

Replace the Right Print Cartridge Guide (REP 7.2).

Inspect Laser beam path between the Laser Assembly and the Drum for obstructions. **The laser beam path is free of obstructions.**

Y N

Clean the Laser window and remove any obstructions from the laser beam path.

A B C

A B C

The BTR is intact and is free of contamination.

Y N

Replace the BTR (REP 7.7).

Generate a Test Print and switch OFF the printer power halfway through the print cycle. Carefully remove the Print Cartridge and inspect the toner image on the drum just before the transfer area (BTR). **The image on the drum is completely developed with sharp, black, easily read areas.**

Y N

Go to RAP 43.

Inspect the toner image on the drum immediately after the transfer area (BTR). **The toner image on the drum is transferred completely to the paper.**

Y N

Go to RAP 43.

Replace in order until the problem is solved: BTR Assembly (REP 7.7), Fuser Assembly (REP 5.1), HVPS PWB (REP 8.2), Laser Assembly (REP 7.1), LVPS Assembly (REP 8.6), Right Print Cartridge Guide (REP 7.2), Print Engine Controller PWB (REP 8.5), Paper Transport Assembly (REP 4.1).

Problem Solved.

Problem Solved.

IQ RAP 2 Blank Prints

No visible image anywhere on the output print (Figure 1).

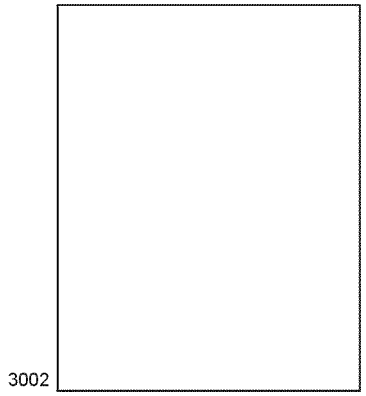


Figure 1 Blank Prints

Initial Actions

- Inspect the printer paper path for items such as staples, paper clips and paper scraps.
- Check installation of the Print Cartridge.
- Check that the Print Cartridge ground contact points are clean.
- Ensure there are no obstructions in the Laser path.
- Ensure the blank prints are not the result of multisheet feeds.

Procedure

Enter Diagnostics and select Test Print. Scroll to Print Pattern and press Enter [4]. Run five test prints. **The test prints are blank.**

Y N

Exit diagnostics and enter the Menu Mode. Print a Config Sheet. **The prints are blank.**

Y N

The problem appears to be with the host computer or the cables. If the problems persist, replace the System Controller PWB (REP 8.1).

Remove and reseat the System Controller PWB. If the problems persist, replace the System Controller PWB (REP 8.1).

Install a new Print Cartridge. Run a test print. **There is a normal image on the paper.**

Y N

Remove the Print Cartridge. Inspect the Metal Grounding Contact on the rear end of the Right Print Cartridge Guide. **The Metal Grounding Contact is intact and is free of contamination.**

Y N

Reform or clean the Metal Grounding Contact, so it makes better contact with the drum shaft, or replace the Right Print Cartridge Guide (REP 7.2).

A B

A B

Check for continuity between the Metal Grounding Contact and the printer frame. **There is continuity between the Grounding Contact and the printer frame.**

Y N

Replace the Right Print Cartridge Guide (REP 7.2).

The BTR is intact and is free of contamination.

Y N

Replace the BTR Assembly (REP 7.7).

Generate a Test Print and switch OFF the printer power halfway through the print cycle. Carefully remove the Print Cartridge and inspect the toner image on the drum just before the transfer area (BTR). **The image on the drum is completely developed; with sharp, black, easily read areas.**

Y N

Go to RAP 43.

Replace in order until the problem is solved: HVPS PWB (REP 8.2), Laser Assembly (REP 7.1), BTR Assembly (REP 7.7), Print Engine Controller PWB (REP 8.5), LVPS (REP 8.6), Right Print Cartridge Guide (REP 7.2).

Problem solved.

IQ RAP 3 Spots

There are spots of toner randomly scattered on the page (Figure 1).

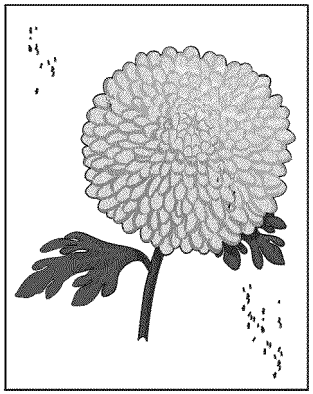


Figure 1 Spots

Initial Actions

- Check that the paper supply is clean, dry and fresh (recycled paper may have spots).
- Ensure there are no obstructions in the Laser path.
- Inspect the printer paper path for items such as staples, paper clips and paper scraps.
- Check installation of the Print Cartridge.
- Check that the Print Cartridge ground contact points are clean.
- Check that rollers and other components in the paper path are clean and unobstructed.

Procedure

Install a new Print Cartridge. Run a Test Print. **The spots are gone.**

Y N

Inspect the BTR Assembly for contamination and wear. **The BTR is free of contamination and wear.**

Y N

Replace the BTR Assembly (REP 7.7).

Generate a Test Print and switch OFF the printer power halfway through the print cycle. Carefully remove the Print Cartridge and inspect the toner image on the drum just before the transfer area (BTR). **The image on the drum is completely developed; with sharp, black easily read areas and no spots.**

Y N

Go to RAP 43.

A B

A B

WARNING

If the printer has been switched on, the Fuser will be hot.

Open the Exit Assembly. Remove the Fuser Assembly. Turn the Fuser Assembly upside down. Rotate the fuser idler gear manually and inspect the Heat Roll. Turn the Fuser Assembly right side up. Open fuser jam access cover. Rotate the fuser idler gear manually and inspect the Pressure Roll. **The Heat Roll and the Pressure Roll are free of scratches and contamination.**

Y N

Replace the Fuser Assembly (REP 5.1).

Replace the following, in order, until the defective component is found: BTR Assembly (REP 7.7), Fuser Assembly (REP 5.1), Paper Transport Assembly (REP 4.1), HVPS PWB (REP 8.2), Laser Assembly (REP 7.1), Print Engine Controller PWB (REP 8.5)

Problem solved.

IQ RAP 4 Horizontal (Scan) Deletions

A deletion is an area of the print where the image is missing or extremely light. Horizontal deletions extend across the long dimension of the page (Figure 1).

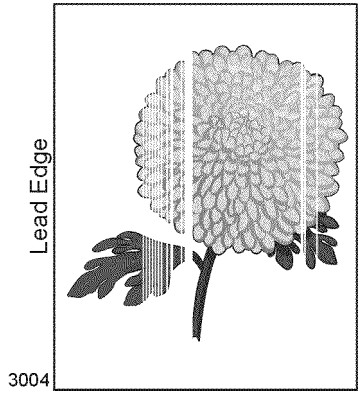


Figure 1 Horizontal Deletions

Initial Actions

- Check that the paper supply is dry and fresh.
- Inspect the printer paper path for items such as staples, paper clips and paper scraps.
- Check installation of the Print Cartridge.
- Check that the Print Cartridge ground contact points are clean.
- Check that rollers and other components in the paper path are clean and unobstructed.

Procedure

Enter Diagnostics and select Test Print. Scroll to Print Pattern and press Enter [4]. Run five test prints. **The test prints have horizontal deletions.**

Y N

Exit diagnostics and enter the Menu Mode. Print a Config Sheet. **The problem is still present.**

Y N

The problem appears to be with the host computer or the cables. If the problems persist, replace the System Controller PWB (REP 8.1).

Remove and reseat the System Controller PWB. If the problems persist, replace the System Controller PWB (REP 8.1).

Load fresh, dry paper. Run a test print. **The problem is still present.**

Y N

Problem solved.

Install a new Print Cartridge. **The problem is still present.**

Y N

Problem solved.

A

A

Inspect the BTR Assembly for contamination and wear. **The BTR is free of contamination and wear.**

Y N

Replace the BTR Assembly (REP 7.7).

Generate a test print and switch OFF the printer power halfway through the print cycle. Carefully remove the Print Cartridge and inspect the toner image on the drum just before the transfer area (BTR). **The image on the drum is completely developed, with sharp, black, easily read areas and no horizontal deletions.**

Y N

Go to RAP 43.

Inspect the toner image on the drum immediately after the transfer area (BTR). **The toner image on the drum was transferred to the paper.**

Y N

Go to RAP 43.

WARNING

If the printer has been switched on, the Fuser will be hot.

Warning: the Fuser may be hot. Open the Exit Assembly and remove the Fuser Assembly. Turn the Fuser Assembly upside down. Rotate the fuser idler gear manually and inspect the Heat Roll. Turn the Fuser Assembly right side up. Open the fuser jam access cover. Rotate the fuser idler gear manually and inspect the Pressure Roll. **The Heat Roll and the Pressure Roll are free of scratches and contamination.**

Y N

Replace the Fuser Assembly (REP 5.1).

Replace in order until the problem is solved: HVPS PWB (REP 8.2), Right Print Cartridge Guide (REP 7.2), BTR Assembly (REP 7.7), Paper Transport Assembly (REP 4.1), Laser Assembly (REP 7.1), Print Engine Controller PWB (REP 8.5), Fuser Assembly (REP 5.1), MBF Assembly (REP 2.1), Registration Clutch (REP 4.3), Rear Chute Assembly (REP 3.2), Turn Roll Assembly (REP 2.4).

IQ RAP 5 Vertical (Process) Deletions

A deletion is an area of the print where the image is missing or extremely light. Vertical band deletions are deletions which extend across the short dimension of the page (Figure 1).

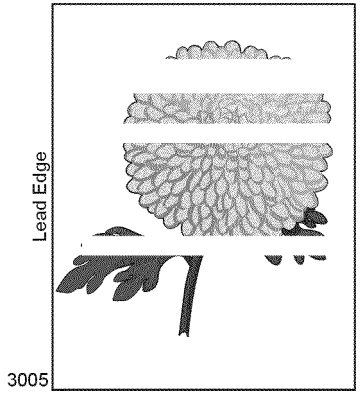


Figure 1 Vertical Deletions

Initial Actions

- Check that the paper supply is dry and fresh.
- Inspect the printer paper path for items such as staples, paper clips and paper scraps.
- Check installation of the Print Cartridge.
- Check that the Print Cartridge ground contact points are clean.
- Ensure there are no obstructions in the Laser path.
- Check that rollers and other components in the paper path are clean and unobstructed.

Procedure

Load fresh, dry paper. Run a test print. **The problem is still present.**

Y N

Problem solved.

Install a new Print Cartridge. Run a test print. **The problem is still present.**

Y N

Problem solved.

Inspect the laser beam path between the Laser Assembly and the Drum. **The laser beam path is free of obstructions.**

Y N

Remove any obstructions from the laser beam path.

Inspect the paper path, between feed and exit, for contamination or obstructions. **The paper path is free of obstructions.**

Y N

Remove obstructions or contamination from the paper path.

A

A

Inspect the BTR Assembly for contamination and wear. **The BTR is free of contamination and wear.**

Y N

Replace the BTR Assembly (REP 7.7).

WARNING

If the printer has been switched on, the Fuser will be hot.

Open the Exit Assembly and remove the Fuser Assembly. Turn the Fuser Assembly upside down. Rotate the fuser idler gear manually and inspect the Heat Roll. Turn the Fuser Assembly right side up. Open the fuser jam access cover. Rotate the fuser idler gear manually and inspect the Pressure Roll. **The Heat Roll and the Pressure Roll are free of scratches and contamination.**

Y N

Replace the Fuser Assembly (REP 5.1).

Replace in order until the problem is solved: BTR Assembly (REP 7.7), Laser Assembly (REP 7.1), Fuser Assembly (REP 5.1), Print Engine Controller PWB (REP 8.5).

IQ RAP 6 Spot Deletions

Solid areas are marked with irregular white areas.

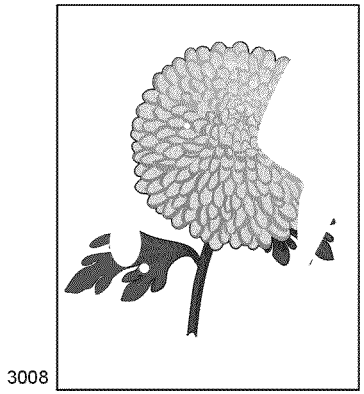


Figure 1 Spot Deletions

Initial Actions

- Check that the paper supply is dry and fresh.
- Inspect the printer paper path for items such as staples, paper clips and paper scraps.
- Check installation of the Print Cartridge.
- Check that the Print Cartridge ground contact points are clean.

Procedure

Load fresh, dry paper. Run a test print. **The problem is still present.**

Y N

Problem solved.

Install a new Print Cartridge. Run a test print. **The problem is still present.**

Y N

Problem solved.

Inspect the toner image on the drum immediately after the transfer area (BTR). **The toner image on the drum transferred to the paper.**

Y N

Replace the BTR Assembly (REP 7.7).

WARNING

If the printer has been switched on, the Fuser will be hot.

Open the Exit Assembly and remove the Fuser Assembly. Turn the Fuser Assembly upside down. Rotate the fuser idler gear manually and inspect the Heat Roll. Turn the Fuser Assembly right side up. Open the fuser jam access cover. Rotate the fuser idler gear manually and inspect the Pressure Roll. **The Heat Roll and the Pressure Roll are free of scratches and contamination.**

Y N

Replace the Fuser Assembly (REP 5.1).

Replace the following, in order, until the defective component is found: BTR Assembly (REP 7.7), Paper Transport Assembly (REP 4.1).

IQ RAP 7 Vertical (Process) Streaks

Extraneous dark lines/bands in the process direction (in the direction of paper travel) (Figure 1).

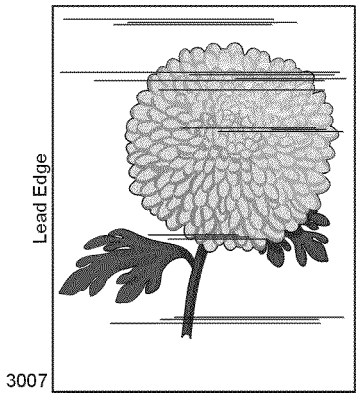


Figure 1 Vertical Streaks

Initial Actions

- Check that the paper supply is dry and fresh.
- Inspect the printer paper path for items such as staples, paper clips and paper scraps.
- Check installation of the Print Cartridge.
- Check that the Print Cartridge ground contact points are clean.
- Check that the paper is within specifications.
- Inspect the paper path, between feed and exit, for contamination or obstructions.

Procedure

Enter Diagnostics and select Test Print. Scroll to Print Pattern and press Enter [4]. Run five test prints. **The test prints have vertical streaks.**

Y N

Exit diagnostics and enter the Menu Mode. Print a Config Sheet. **The problem is still present.**

Y N

The problem appears to be with the host computer or the cables. If the problems persist, replace the System Controller PWB (REP 8.1).

Remove and reseat the System Controller PWB. If the problems persist, replace the System Controller PWB (REP 8.1).

Install a new Print Cartridge. Run a Test Print. **The vertical streaks are gone.**

Y N

Inspect the laser beam path between the Laser Assembly and the Drum. **The laser beam path is free of obstructions.**

A

A

Y N

Remove any obstructions from the laser beam path.

Inspect the BTR Assembly for contamination and wear. **The BTR is free of contamination and wear.**

Y N

Replace the BTR Assembly (REP 7.7).

WARNING

If the printer has been switched on, the Fuser will be hot.

Open the Exit Assembly. Remove the Fuser Assembly. Turn the Fuser Assembly upside down. Rotate the fuser idler gear manually and inspect the Heat Roll. Turn the Fuser Assembly right side up. Open the fuser jam access cover. Rotate the fuser idler gear manually and inspect the Pressure Roll. **The Heat Roll and the Pressure Roll are free of scratches and contamination.**

Y N

Replace the Fuser Assembly (REP 5.1).

Go to RAP 44.

Problem solved.

IQ RAP 8 Horizontal (Scan) Streaks

There are black lines running horizontally across the page (at a right angle to the direction of paper travel) (Figure 1).

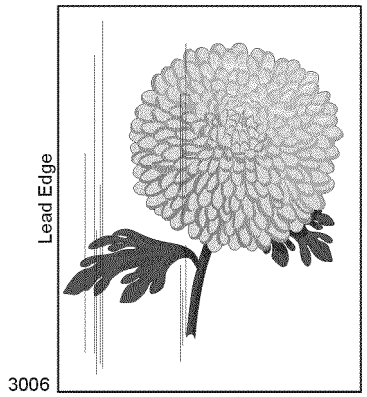


Figure 1 Horizontal Streaks

Initial Actions

- Check that the paper supply is dry and fresh.
- Inspect the printer paper path for items such as staples, paper clips and paper scraps.
- Check installation of the Print Cartridge.
- Check that the Print Cartridge ground contact points are clean.

Procedure

Enter Diagnostics and select Test Print. Scroll to Print Pattern and press Enter [4]. Run five test prints. **The test prints have horizontal streaks.**

Y N

Exit diagnostics and enter the Menu Mode. Print a Config Sheet. **The problem is still present.**

Y N

The problem appears to be with the host computer or the cables. If the problems persist, replace the System Controller PWB (REP 8.1).

Remove and reseat the System Controller PWB. If the problems persist, replace the System Controller PWB (REP 8.1).

Install a new Print Cartridge. Run a test print. **The horizontal streaks are gone.**

Y N

Remove the Print Cartridge. Inspect the Metal Grounding Contact on the rear end of the Right Print Cartridge Guide. **The Metal Grounding Contact is intact and is free of contamination.**

Y N

Reform or clean the Metal Grounding Contact, so it makes better contact with the drum shaft, or replace the Right Print Cartridge Guide (REP 7.2).

A B

A B

Check for the continuity between the Metal Grounding Contact and the printer body frame. **There is continuity between the Grounding Contact and the Printer Frame.**

Y N

Replace the Right Print Cartridge Guide (REP 7.2).

Inspect the BTR Assembly for contamination and wear. **The BTR is free of contamination and wear.**

Y N

Replace the BTR Assembly (REP 7.7).

Generate a Test Print and switch OFF the printer power halfway through print cycle. Carefully remove the Print Cartridge and inspect the toner image on the Drum just before the transfer area (BTR). **The image on the Drum is developed; with sharp, black, easily read areas and no horizontal streaks.**

Y N

Go to RAP 43.

Inspect the toner image on the Drum immediately after the transfer area (BTR). **The toner image on the Drum was transferred to the paper along with any horizontal streaks.**

Y N

Replace the BTR Assembly (REP 7.7).

Open the Exit Assembly. Remove the Fuser Assembly. Turn the Fuser Assembly upside down. Rotate the fuser idler gear manually and inspect the Heat Roll. Turn the Fuser Assembly right side up. Open the fuser jam access cover. Rotate the fuser idler gear manually and inspect the Pressure Roll. **The Heat Roll and the Pressure Roll are free of scratches and contamination.**

Y N

Replace the Fuser Assembly (REP 5.1).

Go to RAP 44.

Problem solved.

IQ RAP 9 Residual Image

The image from a previous print, which was not removed during the cleaning process, has been developed on the current print.

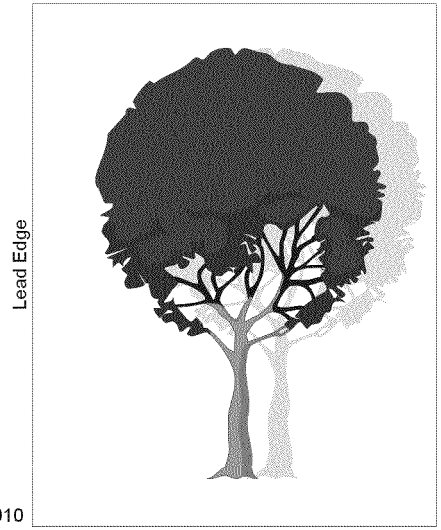


Figure 1 Residual Image

Initial Actions

- Inspect the printer paper path for items such as staples, paper clips and paper scraps.
- Check installation of the Print Cartridge.
- Check that the Print Cartridge ground contact points are clean.
- Verify the fuser temperature (NVM).

Procedure

Replace paper with fresh, dry paper. Run a test print. **Residual images still appear.**

Y N

Problem solved.

Install a new Print Cartridge. Run a test print. **The residual images still appear.**

Y N

Problem solved.

Inspect the BTR Assembly for contamination and wear. **The BTR is free of contamination and wear.**

Y N

Replace the BTR Assembly (REP 7.7).

A

A

WARNING

If the printer has been switched on, the Fuser will be hot.

Open the Exit Assembly. Remove the Fuser Assembly. Turn the Fuser Assembly upside down. Rotate the fuser idler gear manually and inspect the Heat Roll. Turn the Fuser Assembly right side up. Open the fuser jam access cover. Rotate the fuser idler gear manually and inspect the Pressure Roll. **The Heat Roll and the Pressure Roll are free of scratches and contamination.**

Y N

Clean or replace the Fuser Assembly (REP 5.1).

Replace the following, in order, until the defective component is found: BTR Assembly (REP 7.7), Fuser Assembly (REP 5.1), HVPS PWB (REP 8.2), Right Print Cartridge Guide (REP 7.2).

IQ RAP 10 Black Prints

A totally black output print. There is toner on the paper with no visible image.

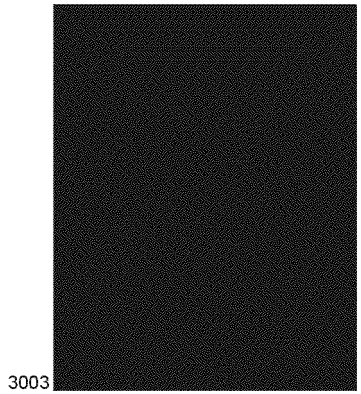


Figure 1 Black Prints

Initial Actions

- Inspect the printer paper path for items such as staples, paper clips and paper scraps.
- Check installation of the Print Cartridge.
- Check that the Print Cartridge ground contact points are clean.
- Ensure the machine covers are in place and fit well so no outside light can enter the machine.

Procedure

Install a new Print Cartridge. Run a Test Print. **The print is normal.**

Y N

Shield half of the window of the Laser Assembly. Run a Test Print. **The print is half white and half black.**

Y N

Go to RAP 43.

Go to RAP 30.

Problem solved.

IQ RAP 11 Background

There is toner contamination on all or part of the page. The contamination appears as a very light gray dusting (Figure 1).

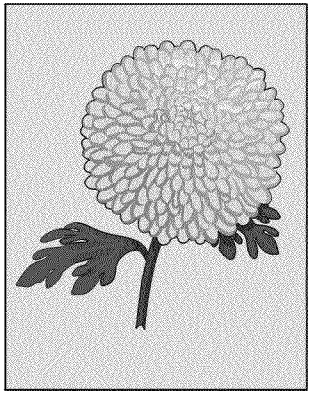


Figure 1 Background

Initial Actions

- Inspect the printer paper path for items such as staples, paper clips and paper scraps.
- Check installation of the Print Cartridge.
- Check that the Print Cartridge ground contact points are clean.
- Ensure the machine covers are in place and fit well so no outside light can enter the machine.

Procedure

Install a new Print Cartridge (PL 8.1). Run a Test Print. **The background is gone.**

Y N

Generate a Test Print and switch OFF the printer power halfway through the print cycle. Carefully remove the Print Cartridge and inspect the toner image on the drum just before the transfer area (BTR). **The undeveloped areas of the drum are clean and without background.**

Y N

Go to RAP 43.

Remove the Print Cartridge. Check for the continuity, from the front opening, between metal parts of the Paper Transport Assembly and the Printer Frame. **The Paper Transport Assembly Baffle is grounded.**

Y N

Remove and clean the contact areas of the Paper Transport Assembly (REP 4.1). Reinstall the assembly so that it is grounded properly. If the problem persists, replace the Paper Transport Assembly (REP 4.1).

Clean or replace the Fuser Assembly (REP 5.1). **The background is gone.**

A

Y N

Replace the following, in order, until the defective component is found: HVPS PWB (REP 8.2), Fuser Assembly (REP 5.1), Paper Transport Assembly (REP 4.1), Laser Assembly (REP 7.1), Right Print Cartridge Guide (REP 7.2), Print Engine Controller PWB (REP 8.5).

Problem solved.

Problem solved.

IQ RAP 12 Uneven Density

Image density varies within the page in either direction (Figure 1).

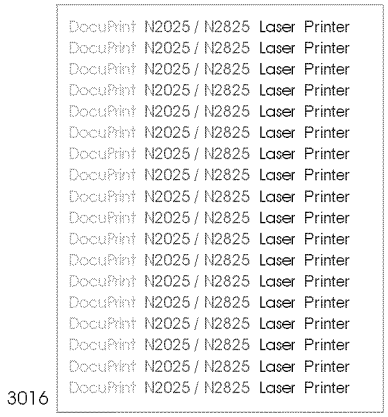


Figure 1 Uneven Density

Initial Actions

- Load fresh dry paper.
- Check that the correct Print Cartridge is properly installed and not empty.
- Ensure that the machine is reasonably level.
- Check to make sure the Laser path is clean and unobstructed.
- Remove the Print Cartridge and check the Left and Right Guides for ware, contamination, obstructions, etc.
- Clean the Laser window.

Procedure

Run a Test Print. **The Test Print output image contains uneven print.**

Y N

Go to 1.5 Final Actions.

Install a new Print Cartridge (PL 8.1). Run a Test Print. **The Test Print output image contains uneven print.**

Y N

Problem solved. Go to 1.5 Final Actions.

Check the Bias Transfer Roll (BTR) for contamination, even spring pressure, and proper installation. **The BTR is in good condition (not contaminated) and properly installed.**

Y N

Repair or replace the BTR Assembly (REP 7.7).

Check the Fuser Assembly for worn parts and for contamination on the Fuser Roll or Pressure Roll. **The Fuser Assembly is in good condition.**

Y N

Replace the Fuser Assembly (REP 5.1).

A

Panic stop the printer half way through the print cycle. Look at the image on the drum. **The image on the drum has even density.**

Y N

Replace the Laser Assembly (REP 7.1).

Look at the print on the paper before the Fuser. **The print on the paper has even density.**

Y N

Replace the BTR (REP 7.7).

Replace the Fuser Assembly (REP 5.1).

IQ RAP 13 Skewed Image

The image is not parallel to the edges of the print sheet (Figure 1).

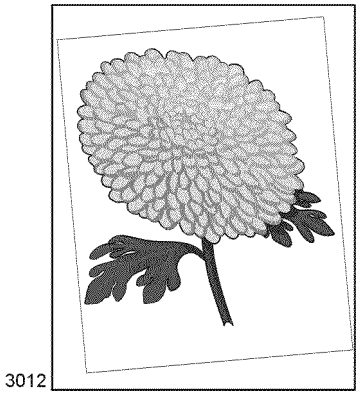


Figure 1 Skewed Image

Initial Actions

- Check the paper tray(s) installation and the paper in the tray(s).
- Load fresh dry paper.
- Paper meets specification.
- Check the paper path for any obstructions or debris that might hamper the passage of the paper.
- Ensure the Print Cartridge is properly installed.

Procedure

Run 5 test prints, single sided, from each paper tray. If the printer has a Duplex Assembly, run five duplexed prints from each tray. **The skewed image appears only on duplexed prints.**

Y N

The skewed image occurs on prints fed from all trays.

Y N

The skewed image occurs on prints fed from the MBF Tray.

Y N

The skewed image occurs on prints fed from Tray 1.

Y N

The skewed image occurs on prints fed from Tray 2.

Y N

- Check the Tray 3 Feed Rolls. Clean or replace if necessary.
- Check the Tray 3 Retard Pad/Retard Roll. Clean or replace if necessary.
- If a 2000 Sheet Feeder, check the Nudger Roll. Clean or replace if necessary.
- Check the feed chute between Tray 3 and Tray 2. Check for obstructions or contamination. Clean as necessary.

A B C D E

- Check the Tray 2 Lower Turn Rolls. Check for obstructions or contamination. Clean or replace as necessary.
- Check the Tray 2 Rear Chute. Check all rolls for obstructions or contamination. Clean or replace as necessary.

A B C D

- Check the Tray 2 Feed Rolls. Clean or replace if necessary.
- Check the Tray 2 Retard Pad/Retard Roll. Clean or replace if necessary.
- If a 2000 Sheet Feeder, check the Nudger Roll. Clean or replace if necessary.
- Check the feed chute between Tray 2 and Tray 1. Check for obstructions or contamination. Clean as necessary.
- Check the Tray 1 Lower Turn Rolls. Check for obstructions or contamination. Clean or replace as necessary.
- Check the Tray 1 Rear Chute. Check all rolls for obstructions or contamination. Clean or replace as necessary.

A B C

- Check the Tray 1 Feed Rolls. Clean or replace if necessary.
- Check the Tray 1 Envelope Feed Rolls. Clean or replace if necessary.
- Check the Tray 1 Retard Pad. Clean or replace if necessary.
- Check the Tray 1 Turn Rolls. Check for obstructions or contamination. Clean or replace as necessary.
- Check the feed chute between Tray 1 and the Registration Rolls. Check for obstructions or contamination. Clean as necessary.

A B

- Check the MBF Feed Rolls. Clean or replace if necessary.
- Check the MBF Retard Pad. Clean or replace if necessary.
- Check the MBF Chute. Check for obstructions or contamination. Clean or replace as necessary.
- Check the Registration Sensor. Check actuation and for obstructions or contamination. Clean or replace as necessary.

A

- Check the Registration Sensor. Check actuation and for obstructions or contamination. Clean or replace as necessary.
- Check the Registration Rolls. Clean or replace if necessary.
- Check the BTR Roll and bearings. Clean or replace if necessary.
- Check the Print Cartridge. Replace if necessary.
- Check the Paper Transport Assembly. Check for obstructions or contamination. Clean or replace as necessary.

- Check the Fuser Assembly. Check for worn parts or rolls. Check for obstructions or contamination. Clean or replace as necessary.
- Check all rolls and drives in the Exit Assembly. Check for obstructions or contamination. Clean or replace as necessary.
- Check the Duplex assembly. Check for worn parts or rolls. Check for obstructions or contamination. Clean or replace as necessary.

- Check the rear chute between the Duplex Assembly and the Registration Rolls. Check for worn parts or rolls. Check for obstructions or contamination. Clean or replace as necessary.

IQ RAP 14 Damaged Print

The printed page comes out of the printer either wrinkled, creased, or torn (Figure 1).

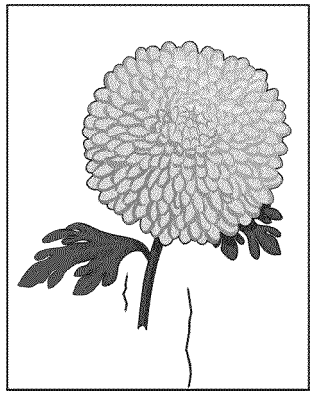


Figure 1 Damaged Print

Initial Actions

- Check that the paper supply is dry and fresh.
- Check that rollers and other components in the paper path are clean and unobstructed.
- Ensure that paper is within specification.

Procedure

Observe paper feed as you run a test print. **The paper fed crooked.**

Y N

Replace paper with fresh, dry standard paper. Run a Test Print. **The paper is still damaged.**

Y N

Problem solved.

Open the Exit Assembly. Remove the Fuser Assembly. Turn the Fuser Assembly upside down. Rotate the fuser idler gear manually and inspect the Heat Roll. Turn the Fuser Assembly right side up. Open the fuser jam access cover. Rotate the fuser idler gear manually and inspect the Pressure Roll. **The Heat Roll and the Pressure Roll are free of scratches and contamination.**

Y N

Clean or replace the Fuser Assembly (REP 5.1).

Inspect the paper path between the feed tray and the exit tray for contamination or obstructions. **The paper path is free of obstructions.**

Y N

Remove obstructions or contamination from the paper path.

Inspect all of the rolls along the paper path, between the feed tray and the exit tray, for contamination, wear or damage. **The paper path rolls are free of contamination, wear, or damage.**

A

A

Y **N**

Replace the damaged or worn roll (REP 3.1).

Install a new Print Cartridge. Run a Test Print. **The print is still damaged.**

Y **N**

Problem Solved.

Replace the following, in order, until the defective component is found: Fuser Assembly (REP 5.1), Paper Transport Assembly (REP 4.1), BTR Assembly (REP 7.7), MBF Feed Roll Assembly (REP 2.2), Retard Holder Assembly (REP 2.5), Rear Chute Assembly (REP 3.2), Turn Roll Assembly (REP 2.4), Feed Roll (REP 2.2/ REP 2.10), Tray Assembly (PL 2.1/ PL 2.2).

Go to IQ RAP 13.

IQ RAP 15 Registration

The image is not positioned correctly on the paper. It may be off in either the process direction or in the scan direction (Figure 1).

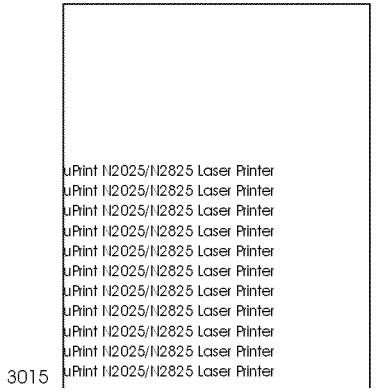


Figure 1 Registration

Initial Actions

- Check to ensure that the paper is within specification.
- Check that the paper supply is dry and fresh and loaded correctly.
- Check that the Paper Tray guides are set correctly.
- Check that rollers and other components in the paper path are clean and unobstructed.

Procedure

Run a test print. **The Test Print output image is properly registered.**

Y **N**

Perform the registration check (ADJ 1.1). **The printer registration is set correctly.**

Y **N**

Perform the registration procedure (ADJ 1.1).

If misregistration occurs in the process direction, replace in sequence as necessary: Registration Rolls (REP 4.4/ REP 4.5), Registration Clutch (REP 4.3), Main Gear Drive Assembly (REP 6.1), Main Drive Motor Assembly (REP 6.2), Registration Sensor (REP 4.6), Print Engine Controller PWB (REP 8.5), or System Controller PWB (REP 8.1).
If misregistration occurs across the process direction, replace in sequence as necessary: Laser (PL 8.1), System Controller PWB (REP 8.1).

Have the customer send another print job. **The print image is properly registered.**

Y **N**

Have the customer contact the Xerox Customer Support.

Problem Solved.

IQ RAP 16 Skips / Smears

A disturbance of the image which lengthens or shortens the image in the process direction. A darkening across the process direction or a repeat of the image in the process direction (Figure 1).

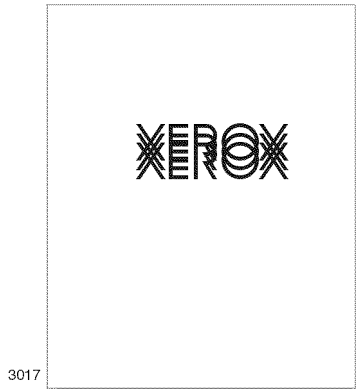


Figure 1 Skips / Smears

Initial Actions

- Check that the paper supply is dry and fresh.
- Check to ensure that the paper is within specification.
- Check the paper path for any obstructions or debris.

Procedure

Run a test print. **The image has skips or smears.**

Y N

Problem Solved.

Check, clean, or replace as necessary in the following sequence:

- The Paper Transport gears, pulleys, or other components (REP 4.1).
- The Main Drive components (REP 6.1).
- The Fuser drive components (REP 5.4/ REP 5.5).
- The Fuser Assembly (REP 5.1).

The defect still occurs.

Y N

Problem Solved.

Replace the Print Cartridge (PL 8.1).

IQ RAP 17 Unfused Image

The printed image is not fully fused to the paper. The image rubs off easily (Figure 1).

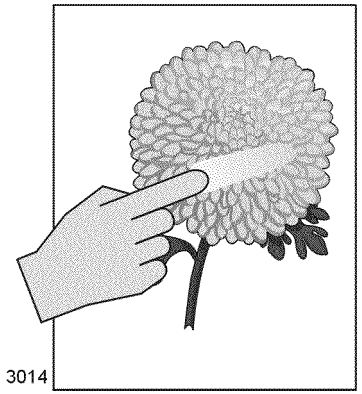


Figure 1 Unfused Image

Initial Actions

- Check to ensure that the paper is within specification.

Procedure

Replace the paper with fresh, dry paper from an unopened ream. Run a test print. **The problem is still present.**

Y N

Problem solved.

Refer to Nonvolatile Memory Setup Mode and check the Fuser setting. **The NV code is set to the factory default value.**

Y N

Set NV code to the factory default value. Run 25 test prints. **The problem is still present.**

Y N

Problem Solved.

Increase the fuser temperature by one increment.

The overall print density is within specification.

Y N

Go to IQ RAP 1

Open the Exit Assembly. Remove the Fuser Assembly. Turn the Fuser Assembly upside down. Rotate the fuser idler gear manually and inspect the Heat Roll. Turn the Fuser Assembly right side up. Open the fuser jam access cover. Rotate the fuser idler gear manually and inspect the Pressure Roll. **The Heat Roll and the Pressure Roll are free of scratches and contamination.**

Y N

Clean or replace the Fuser Assembly (REP 5.1).

Open the fuser jam access cover. Rotate the fuser idler gear manually and inspect the contact between the Heat Roll and the Pressure Roll along the rotation. **The Heat Roll and the Pressure Roll are contacting each other uniformly.**

Y N

Replace the Fuser Assembly (REP 5.1).

Replace the following, in order, until the defective component is found: Fuser Assembly (REP 5.1), Print Engine Controller PWB (REP 8.5), Low Voltage Power Supply (REP 8.6).

IQ RAP 18 Resolution

The two pixel lines and halftone patches cannot be reproduced clearly on the print.

Initial Actions

- Ensure that the print density is set to the default value.

Procedure

Install a new Print Cartridge (PL 8.1). Run the image quality test print. **The Test Print output resolution is good.**

Y N

Replace the following, in order, until the defective component is found: Laser Assembly (REP 7.1) then the High Voltage Power Supply (REP 8.2).

Problem Solved.

4 Repair-Adjustment

500 Sheet Feeder

2000 Sheet Feeder

Adjustments

Introduction

Overview

The Repair / Adjustment section, Section 4 of the Service Manual, provides information that enables the Service Representative to restore the product to within specification after fault isolation.

Section Contents

The Section Contents lists, in sequence, all the items of the section, with page references. Each entry in the section contents appears exactly as it appears in the manual.

Repair Procedures

This repair subsection contains instructions for removal and replacement tasks. A removal and/or replacement task is included when it is not obvious how components are removed and replaced, or when special conditions (such as an adjustment) must be met during these tasks.

Step-by-step removal procedures for a specific component or assembly are provided. Numbers in the illustrations refer to steps in the procedure. For example: if step 3 in a procedure instructed you to remove a screw, the screw in the illustration would be labeled 3.

Illustrations are used to assist you with the procedures. You should refer to the specific Parts List illustration (listed under the repair title) for locating most components within a procedure.

NOTE: *Always reinstall the correct type and size screws. Using the wrong screw can damage tapped holes.*

NOTE: *Do not use excessive force to either remove or install a part.*

Locations, such as left, right, front, or rear, given in the repairs assume you are facing the printer Control Panel.

Adjustment

The N2025/2825 printer does not contain any field adjustable components.

WARNING

Use of controls or adjustments other than those specified in this manual may result in an exposure to dangerous laser light.

REP 1.1 Left Side Cover

Parts List on PL 1.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Slide the Left Cover toward the rear of the printer (Figure 1).
2. Remove the Left Side Cover.

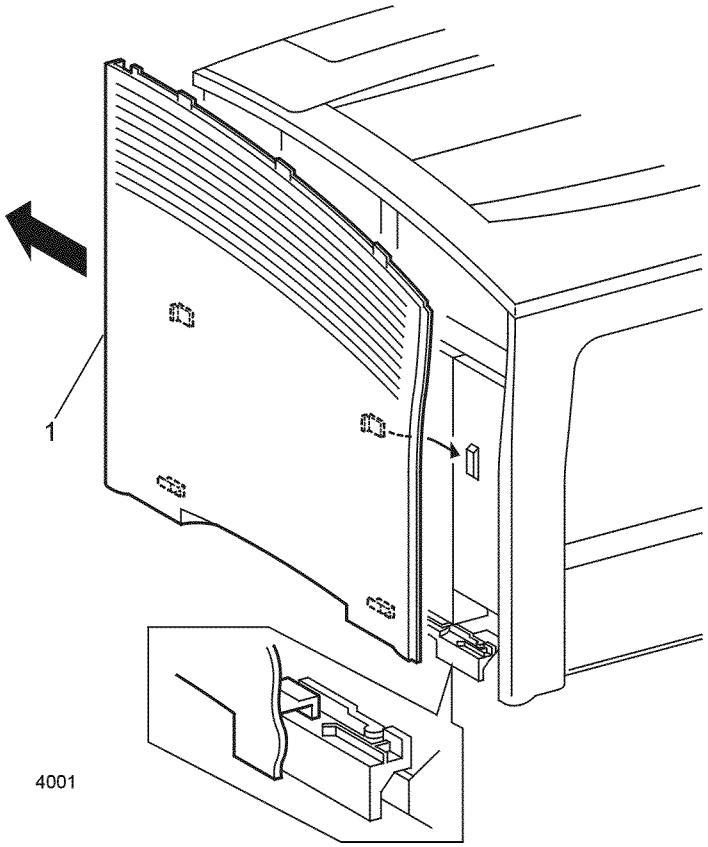


Figure 1 Removing the Left Side Cover

Replacement

1. Reinstall the components in the reverse order.

REP 1.2 Right Side Cover

Parts List on PL 1.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Rear Cover.
2. Remove the OCT, if installed (REP 10.1).
3. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.

   NOTE: *Place paper inside the Print Cartridge cavity to catch any dropped hardware.*

4. Remove the Left Side Cover (REP 1.1).
5. Remove the Top Cover Assembly (REP 1.3).
6. Remove the 5 screws that secure the Right Side Cover to the printer (Figure 1).
7. Remove the Right Side Cover (Figure 1).

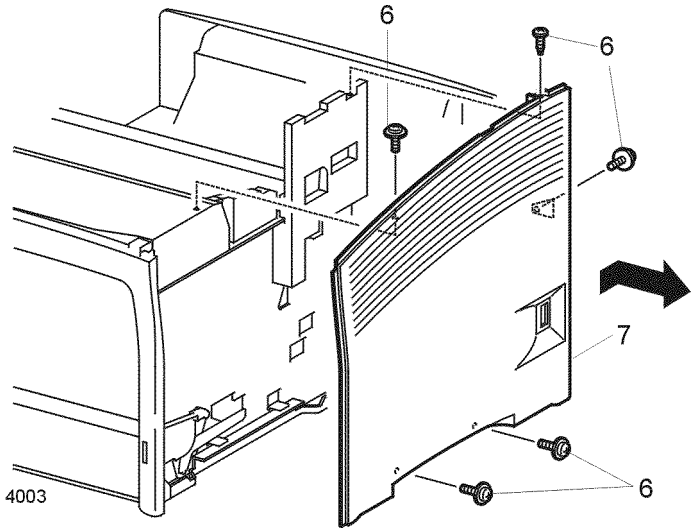


Figure 1 Right Side Cover

Replacement

1. Reinstall the components in the reverse order.

REP 1.3 Top Cover Assembly

Parts List on PL 1.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Rear Cover.
2. Remove the OCT, if installed (REP 10.1).
3. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.

   NOTE: *Place paper inside the Print Cartridge cavity to catch any dropped hardware.*

4. Remove the Left Side Cover (REP 1.1).
5. Remove the 8 screws that secure the Top Cover Assembly to the printer (Figure 1).
6. Remove the two screws that secure the Right and Left Print Cartridge Latches to the Top Cover (Figure 1).
7. Disconnect P/J421 from the rear of the Control Panel (Figure 1).
8. Remove the Top Cover Assembly (Figure 1).

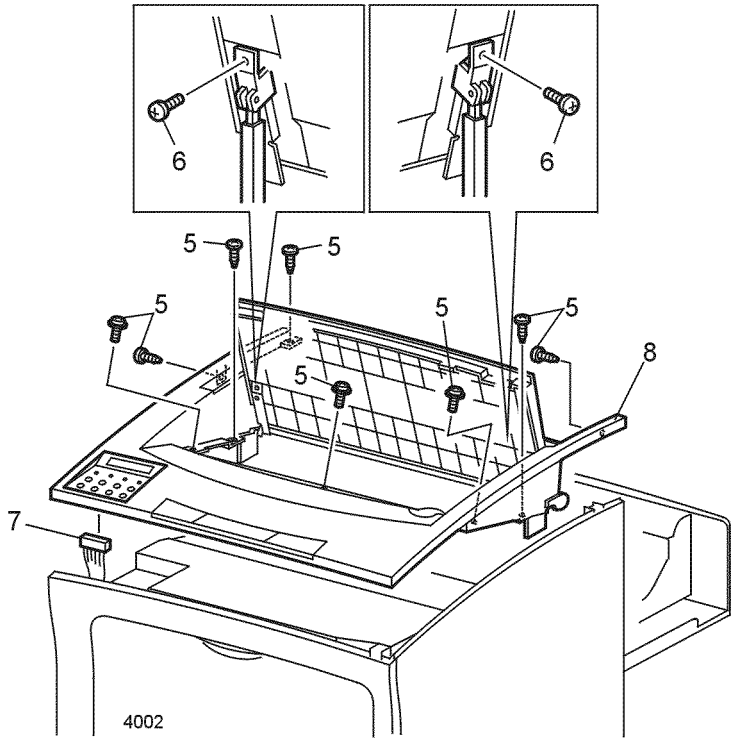


Figure 1 Top Cover Assembly

Replacement

1. Reinstall the components in the reverse order.

   NOTE: *Carefully reinstall the Top Cover Assembly on the overlapped sections of the Right Side Cover and the Front Cover.*

REP 1.4 Front Cover

Parts List on PL 1.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Rear Cover.
2. Remove the OCT, if installed (REP 10.1).
3. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.

   NOTE: *Place paper inside the Print Cartridge cavity to catch any dropped hardware.*

4. Remove the Left Side Cover (REP 1.1).
5. Remove the Top Cover Assembly (REP 1.3).
6. Open the MBF Assembly Door, lift slightly, and pull the assembly out approximately 2 inches (51 mm).
7. Remove the 2 screws that secure the Front Cover to the printer (Figure 1).
8. Pull the Front Cover out then up to remove (Figure 1).

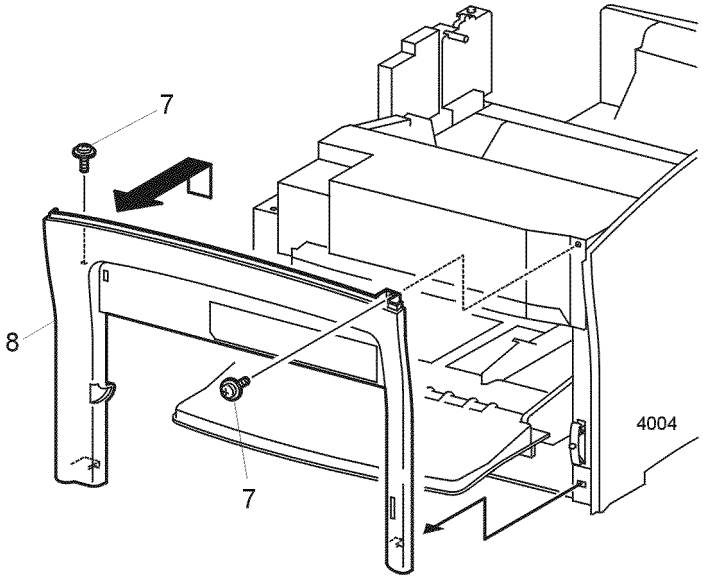


Figure 1 Front Cover

Replacement

1. Reinstall the components in the reverse order.
2. Align the two hooks on the Front Cover with the holes in the printer.

REP 1.5 Lower Left Cover

Parts List on PL 1.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Left Side Cover (REP 1.1).
2. Remove the 2 Screws that secure the Lower Left Cover to the printer (Figure 1).
3. Remove the Lower Left Cover (Figure 1).

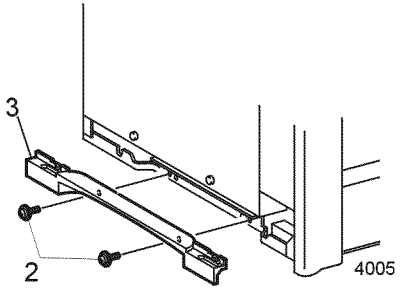


Figure 1 Lower Left Cover

Replacement

1. Reinstall the components in the reverse order.

REP 1.6 HVPS Cover

Parts List on PL 7.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Rear Cover (REP 1.9).
2. Remove the Duplex Assembly, if installed (REP 9.1).
3. Remove the screw that secures the Left Duplex Stopper to the printer. Remove the Stopper (Figure 1).
4. Remove the screw that secures the Right Duplex Stopper to the printer. Remove the Stopper (Figure 1).
5. Remove the six screws that secure the HVPS Cover to the printer (Figure 1).
6. Lower the cover and disconnect P/J502 and P/J505 from the Duplex Interface PWB (Figure 1).
7. Remove the HVPS Cover (Figure 1).

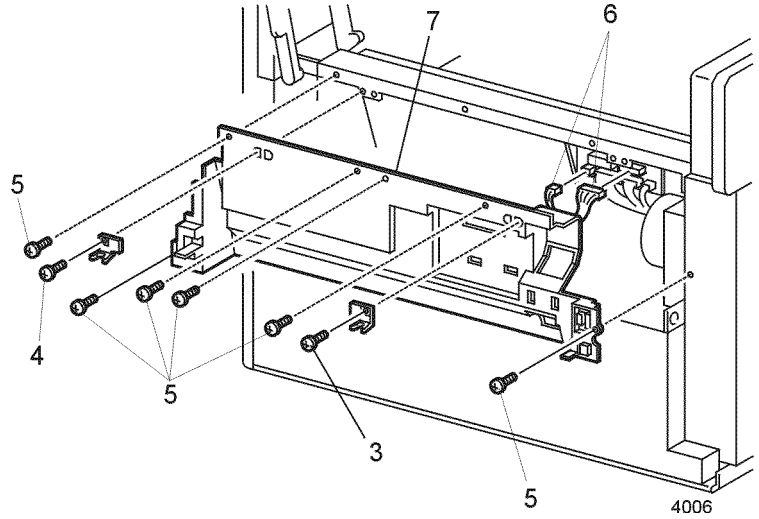


Figure 1 HVPS Cover

Replacement

1. Reinstall the components in the reverse order.

REP 1.7 Lower Rear Cover

Parts List on PL 1.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the four screws that secure the Lower Rear Cover to the printer (Figure 1).
2. Remove the Lower Rear Cover (Figure 1).

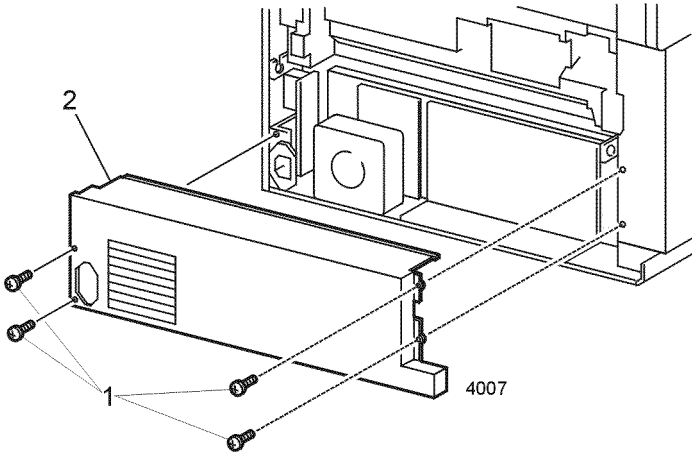


Figure 1 Lower Rear Cover

Replacement

1. Reinstall the components in the reverse order.

REP 1.8 MBF Gear Cover

Parts List on PL 4.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the MBF Assembly (REP 2.1).
2. Remove the screw that secures the Left MBF Gear Cover to the left side of the Paper Handler (Figure 1).
3. Release the three locking tabs and remove the MBF Gear Cover (Figure 1).
4. The MBF 2 Idler Gear (Figure 1) may come off with the cover.
5. Release the locking tabs and remove the harness from the MBF Cover (Figure 1).

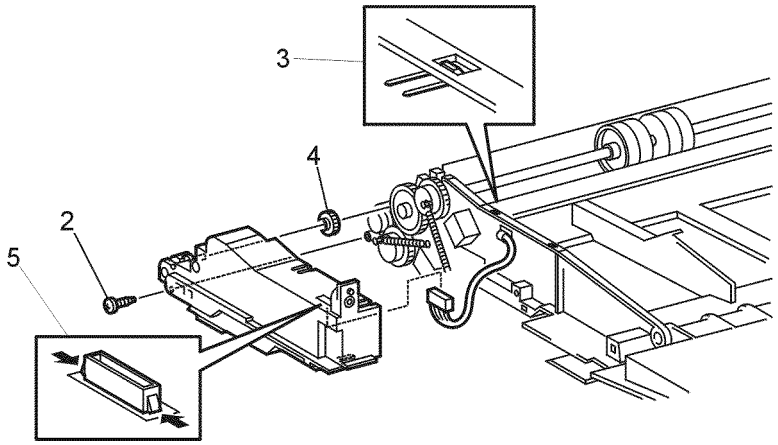


Figure 1 MBF Gear Cover

Replacement

1. Reinstall the components in the reverse order.

REP 1.9 Rear Cover

Parts List on PL 6.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Rear Cover.
2. Disconnect P/J527 and P/J528 (Figure 1).
3. Remove the two screws that secure the Rear Cover support straps to the Rear Cover (Figure 1).
4. With the cover positioned as show in Figure 1, lift the left end (as viewed from the rear of the printer) of the Rear Cover and remove (Figure 1).

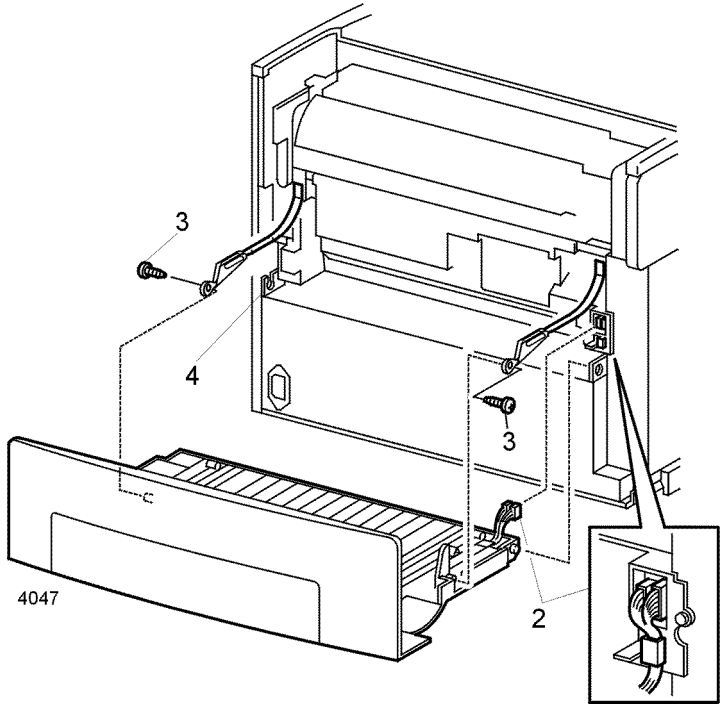


Figure 1 Rear Cover

Replacement

1. Reinstall the components in the reverse order.

REP 2.1 MBF Assembly

Parts List on PL 4.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove Tray 1.
2. Open and extend the MBF Assembly to the paper load position (Figure 1).
3. Remove the screw that secures the cover to the left side of the MBF Assembly (Figure 1).
4. To release the locking tab, push in slightly on the left front of the cover and rotate the cover clockwise to remove (Figure 1).
5. Release the harness from the underside of the cover (Figure 1).
6. Disconnect the in-line connector P/J121 (Figure 1).
7. Push the MBF into the home position.
8. Push down on the left tray stop, pull out to remove (Figure 2).
9. Push down on the right tray stop, pull out to remove (Figure 3).
10. Extend the MBF Assembly until it stops.
11. Lift the front of the paper handler 1.5 to 2" (38 to 51 mm) and remove the MBF Assembly.

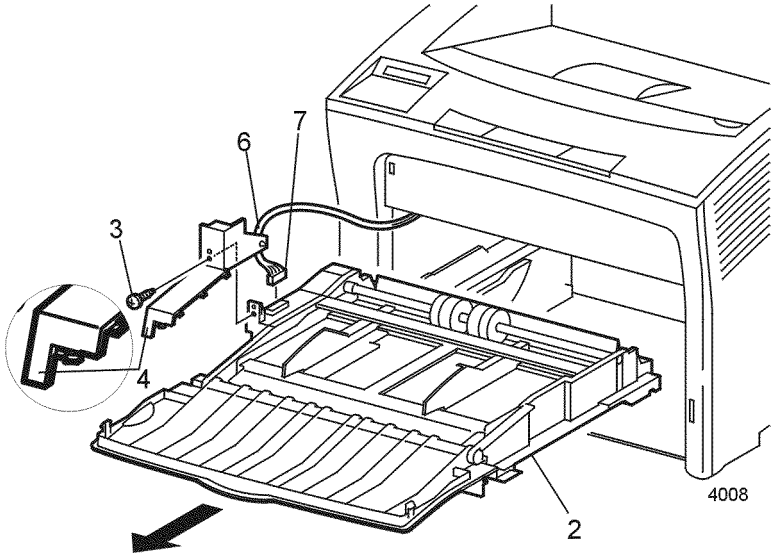


Figure 1 Paper Handler Assembly

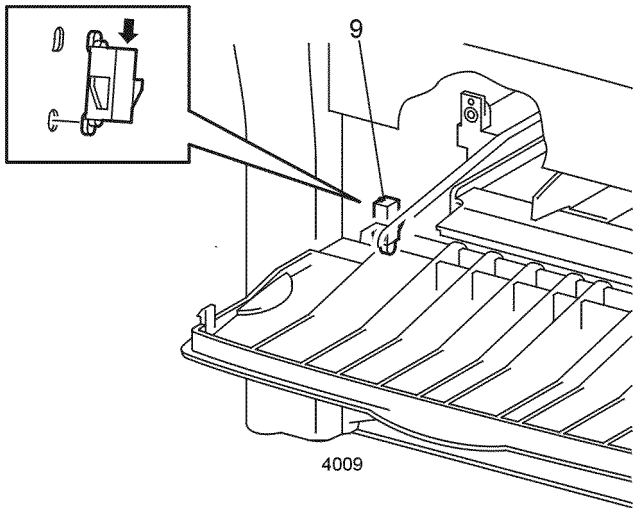


Figure 2 Left Tray Stop

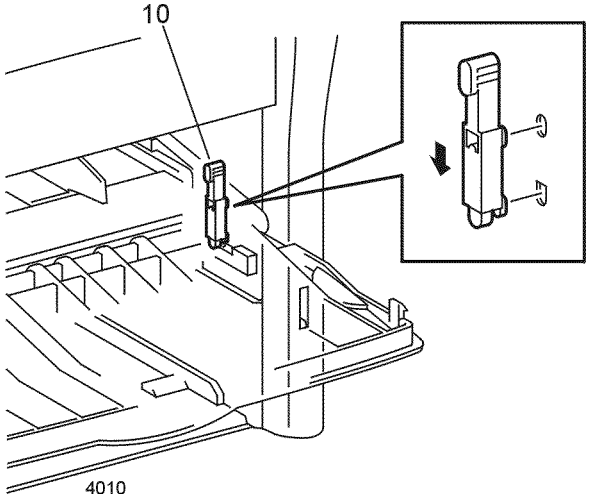


Figure 3 Right Tray Stop

Replacement

1. Reinstall the components in the reverse order.

REP 2.2 MBF Feed Roll

Parts List on PL 4.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.Power Cord.

1. Remove the MBF Assembly (REP 2.1).
2. For the Left Feed Roll, lift the locking tab on the Left MBF Roll Core and slide the core to the left. Slide the MBF Feed Roll to the left and remove (Figure 1).
3. For the Right Feed Roll, lift the locking tab on the Right MBF Roll Core and slide the core to the right. Slide the MBF Feed Roll to the right and remove (Figure 1).

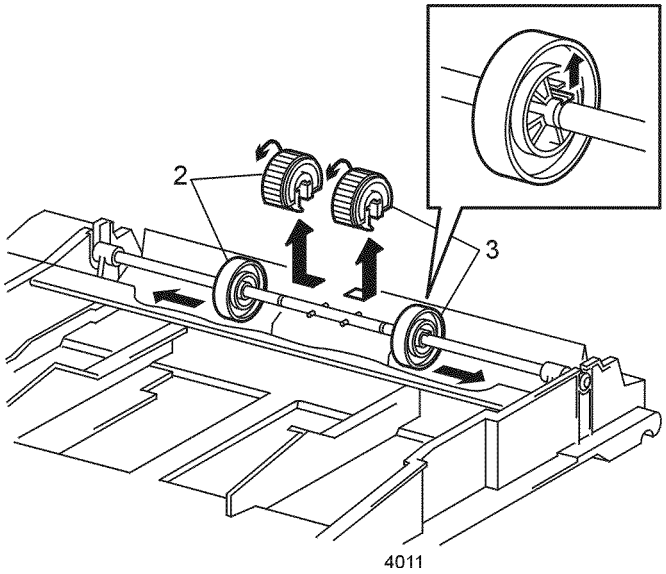


Figure 1 MBF Feed Roll Assembly

Replacement

1. Reinstall the components in the reverse order.

NOTE: *Arrows of the back side of the feed rolls indicate direction of rotation.*

REP 2.3 Tray 1 Turn Roll Clutch Assembly

Parts List on PL 4.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the MBF Assembly (REP 2.1).
2. Remove MBF Gear Cover (REP 1.8).
3. Disconnect in-line connector P/J124 (Figure 1).
4. Remove the screw that secures the Tray 1 No Paper Sensor Assembly Bracket to the bottom of the Paper handler (Figure 1).
5. Note the harness path, then remove the Turn Roll Clutch harness from the cable clamps (Figure 1).
6. Remove the E-Ring that secures the Turn Clutch Assembly to the Paper Handler (Figure 1).
7. Remove the Turn Roll Clutch Assembly from the Turn Roll Assembly (Figure 1).

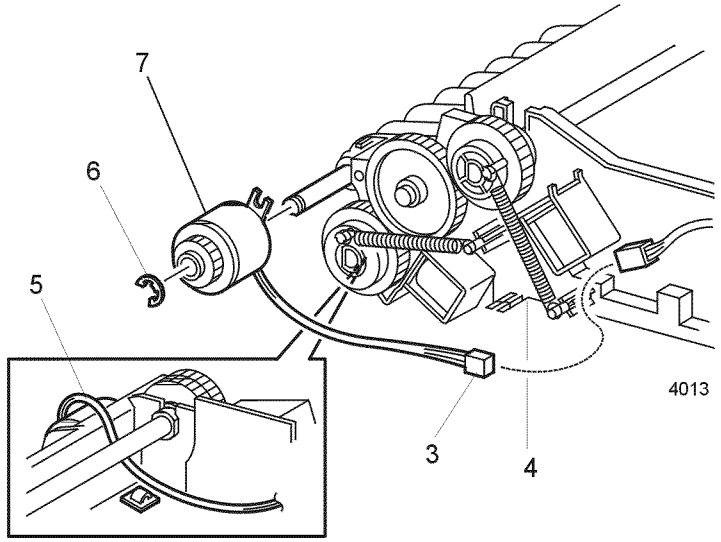


Figure 1 Tray 1 Turn Roll Clutch Assembly

Replacement

1. Reinstall the components in the reverse order.
2. Ensure that the tab on the clutch is positioned on the pin on the Paper Handler.

REP 2.4 Tray 1 Turn Roll Assembly

Parts List on PL 3.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the MBF Assembly (REP 2.1).
2. Remove the MBF Gear Cover (REP 1.8).
3. Remove the Turn Roll Clutch (REP 2.3).
4. Remove the bearing located behind the Turn Roll Clutch (Figure 1).
5. Remove the E-Ring from the right end of the Turn Roll Assembly (Figure 1).
6. Remove the bearing from the right end of the Turn Roll Assembly Shaft (Figure 1).
7. Remove the Turn Roll Assembly (Figure 1).

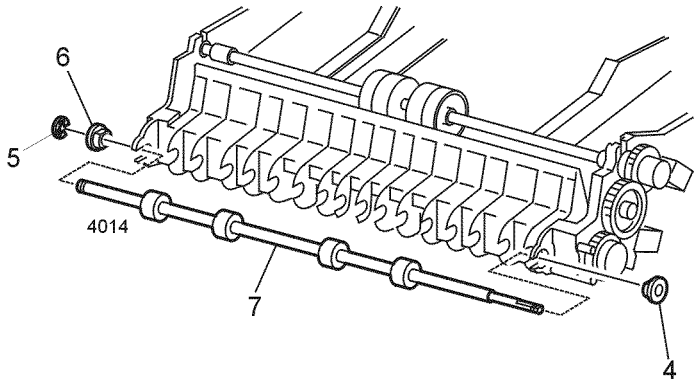


Figure 1 Tray 1 Turn Roll Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 2.5 MBF Retard Holder Assembly

Parts List on PL 3.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the MBF Assembly (REP 2.1).
2. Remove the MBF Gear Cover (REP 1.8).
3. Remove the Pick-up Spring from the MBF Pick-up Gear (Figure 1).
4. Release the two locking tabs on the MBF Pick-up Gear and remove the gear (Figure 1).
5. Move the MBF Pick-up Shaft to the right and remove the shaft from the MBF (Figure 1).
6. Remove the screw that secures the support bracket to the MBF (Figure 1). Remove the bracket.
7. Insert a screwdriver between the left side of the MBF and the MBF Tray Assembly near the tray pivot point (Figure 2). Carefully spread the two assemblies until the tray disengages from the MBF.
8. Release the two locking tabs on the back of the retard holder and rotate the retard holder forward (Figure 3).
9. Continue to rotate the holder forward until it can be lifted out of the MBF base (Figure 3).

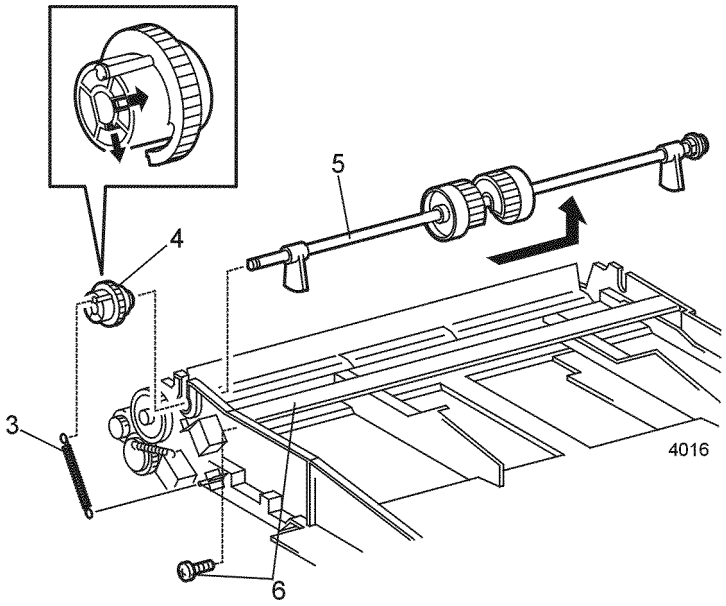


Figure 1 MBF Pick Up Shaft

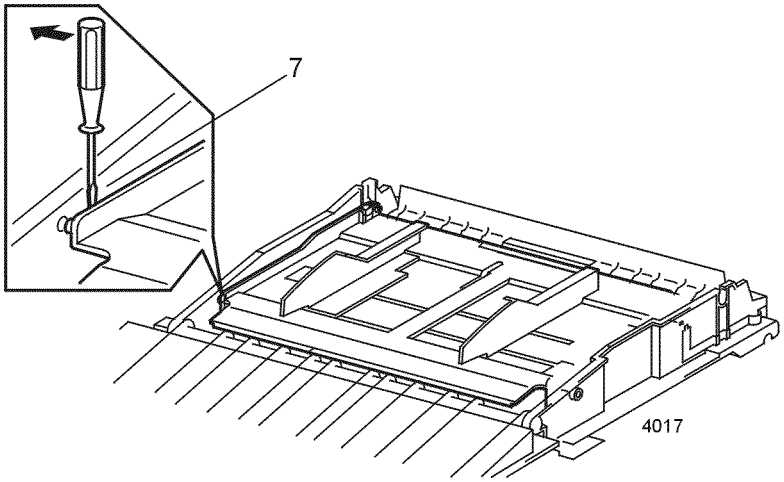


Figure 2 MBF Tray Assembly

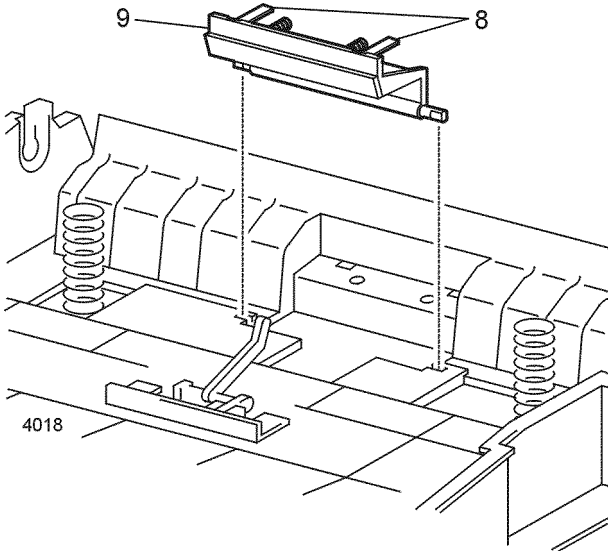


Figure 3 MBF Retard Holder Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 2.6 Tray 1 No Paper Sensor Assembly

Parts List on PL 4.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the MBF Assembly (REP 2.1).
2. Remove the MBF Gear Cover (REP 1.8).
3. Disconnect P/J126 from the sensor assembly (Figure 1).
4. Remove the screw that secures the Tray 1 No Paper Sensor Assembly Bracket to the MBF (Figure 1).
5. Use a small screwdriver to carefully release the two locking tabs that secure the sensor to the sensor assembly bracket (Figure 1).
6. Release the sensor harness form the harness clamps and remove the sensor.

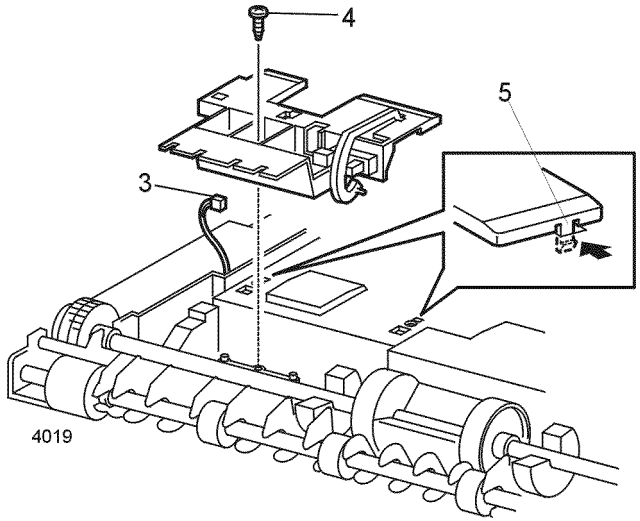


Figure 1 Tray 1 No Paper Sensor Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 2.7 MBF No Paper Sensor Assembly

Parts List on PL 4.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the MBF Assembly (REP 2.1).
2. Remove the MBF Gear Cover (REP 1.8).
3. Remove the Pick-up Spring from the MBF Pick-up Gear (Figure 1).
4. Release the two locking tabs on the MBF Pick-up Gear and remove the gear (Figure 1).
5. Move the MBF Pick-up Shaft to the right and remove the shaft from the MBF (Figure 1).
6. Remove the screw that secures the support bracket to the MBF (Figure 1). Remove the Bracket.
7. Insert a screwdriver between the left side of the MBF and the MBF Tray Assembly near the tray pivot point (Figure 2). Carefully spread the two assemblies until the tray disengages from the MBF.
8. Disconnect P/J125 from the MBF No Paper Sensor Assembly (Figure 3).
9. Release the two locking tabs on the bottom of the Sensor Assembly and remove the sensor (Figure 3).

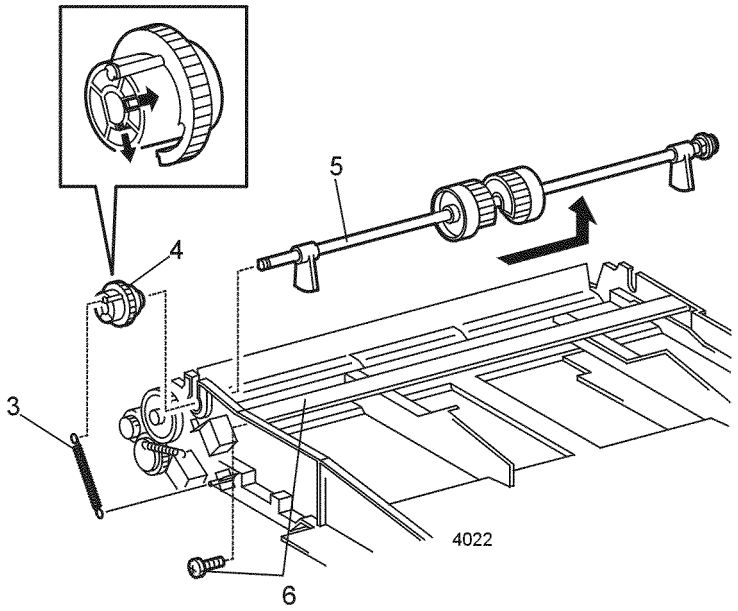


Figure 1 MBF Pick Up Shaft

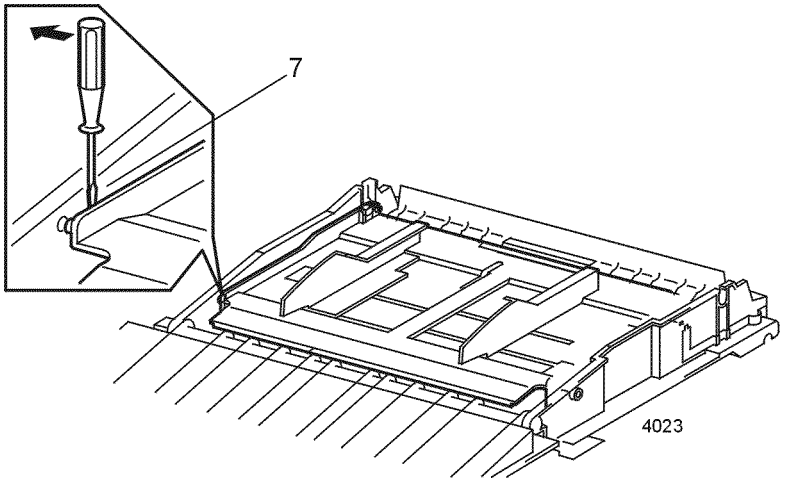


Figure 2 MBF Tray Assembly

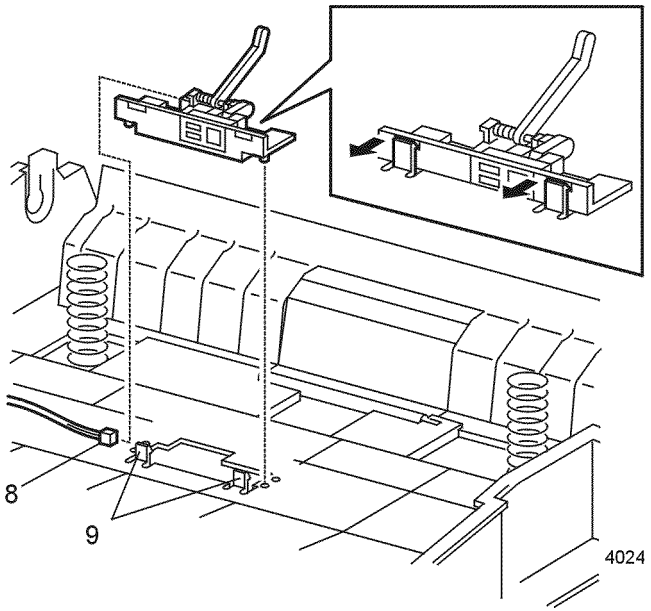


Figure 3 MBF No Paper Sensor Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 2.8 MBF Feed Solenoid

Parts List on PL 4.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the MBF Assembly (REP 2.1).
2. Remove the MBF Gear Cover (REP 1.8).
3. Remove the Pick-up Spring from the MBF Pick-up Gear (Figure 1).
4. Disconnect P/J123 from the MBF Feed Solenoid (Figure 1).
5. Remove the screw that secures the MBF Feed Solenoid to the MBF Assembly (Figure 1).

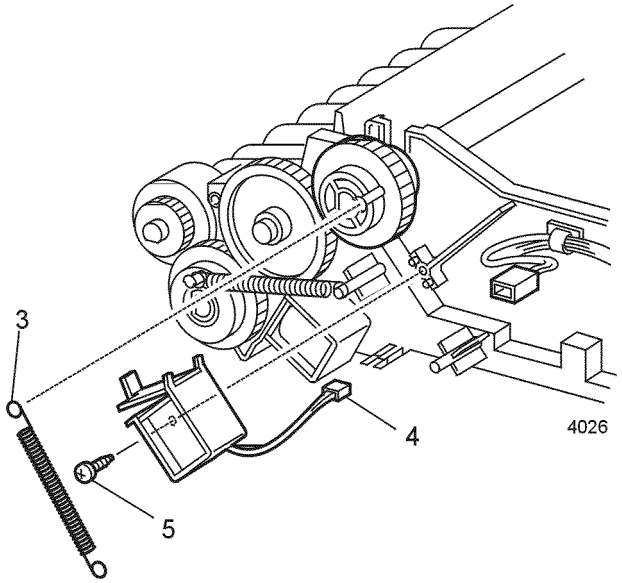


Figure 1 MBF Feed Solenoid

Replacement

1. Reinstall the components in the reverse order.

REP 2.9 Tray 1 Feed Solenoid

Parts List on PL 4.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the MBF Assembly (REP 2.1).
2. Remove the MBF Gear Cover (REP 1.8).
3. Remove the Pick-up Spring from the Tray 1 Pick-up Gear (Figure 1).
4. Disconnect P/J135 from the Tray 1 Feed Solenoid (Figure 1).
5. Remove the screw that secures the Tray 1 Feed Solenoid to the MBF Assembly (Figure 1).

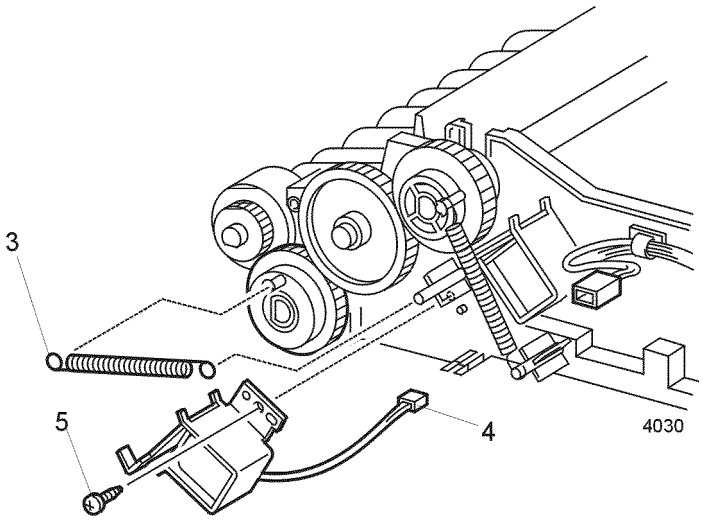


Figure 1 Tray 1 Feed Solenoid

Replacement

1. Reinstall the components in the reverse order.

REP 2.10 Tray 1 Feed Roll

Parts List on PL 4.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the MBF Assembly (REP 2.1).
2. Turn the MBF up-side down.
3. Release the Tray 1 Feed Solenoid.
4. Rotate the Feed Rolls up.
5. Press locking tab that secures the Left Roll Core (Figure 1).
6. Slide the Left Roll Core to the left (Figure 1).
7. Slide the Feed Roll to the left and remove (Figure 1).
8. If replacing the envelope feed rolls, press the locking tabs and remove the two envelope feed rolls (Figure 1).

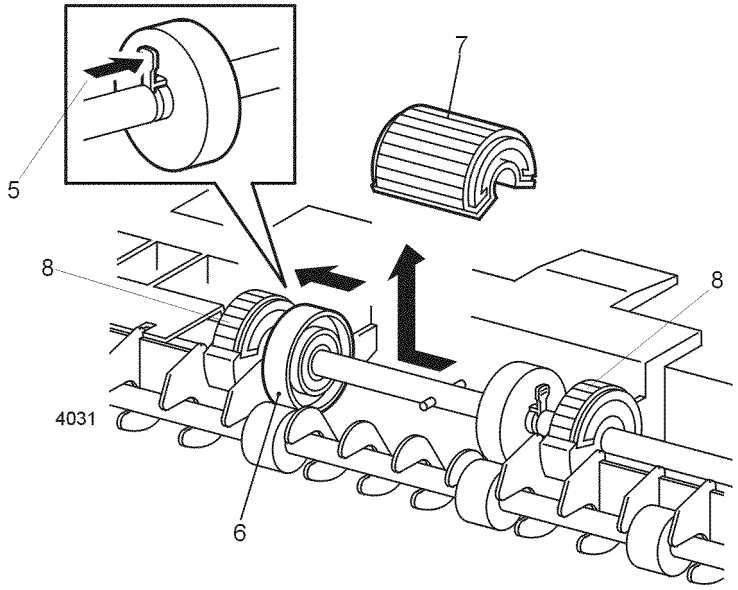


Figure 1 Tray 1 Feed Roll

Replacement

1. Reinstall the components in the reverse order. Note the arrows on the side of the envelope feed rolls. The arrows indicate the direction of rotation.

   NOTE: *Note the arrows on the side of the envelope feed rolls. The arrows indicate the direction of rotation.*

REP 2.11 Tray 1 Retard Holder Assembly

Parts List on PL 3.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.
2. Remove Tray 1.
3. Remove the MBF Assembly (REP 2.1).
4. Remove the Retard Chute Assembly (REP 3.1).
5. From the rear, release the two locking tabs (Figure 1).
6. Remove the Retard Holder Assembly from the front (Figure 1).

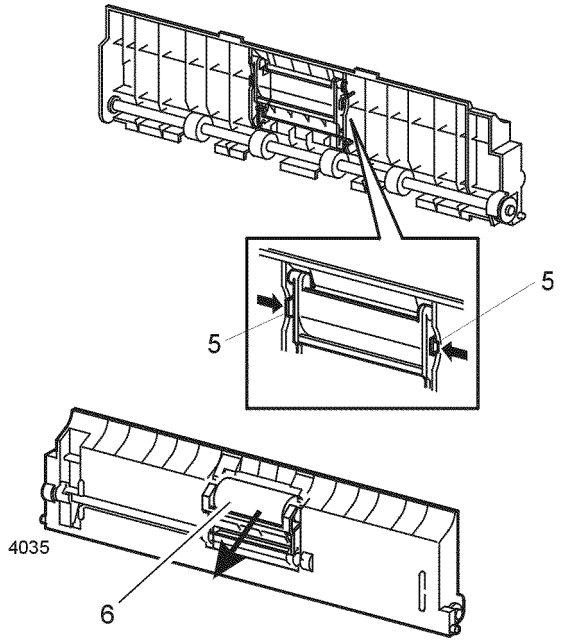


Figure 1 Retard Holder Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 3.1 Retard Chute Assembly

Parts List on PL 11.3

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.
2. Remove Tray 1.
3. Remove the MBF Assembly (REP 2.1).
4. Tilt the top of the Retard Chute Assembly toward the front of the printer (Figure 1).
5. Lift up on the right end of the chute (Figure 1).
6. Pull the right end forward and remove.

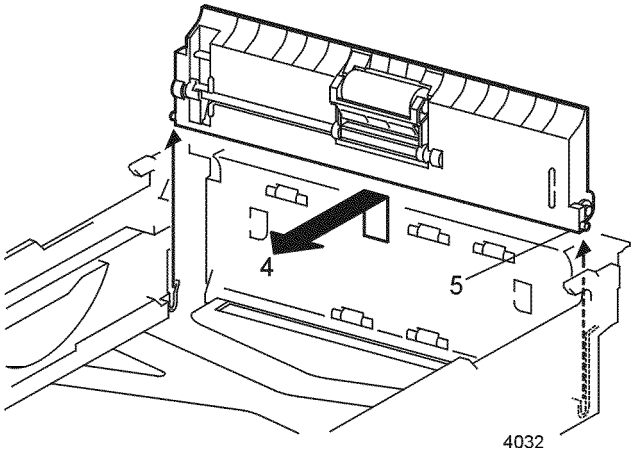


Figure 1 Retard Chute Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 3.2 Rear Chute Assembly

Parts List on PL 3.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.
2. Remove Tray 1.
3. Remove the MBF Assembly (REP 2.1).
4. Remove the Retard Chute Assembly (REP 3.1).
5. Remove the two screws that secure the Rear Chute Assembly to the printer (Figure 1).
6. Bias the Rear Chute to the left. Pull the top of the chute forward and remove it from the printer (Figure 1). Use care not to damage the ground tabs.

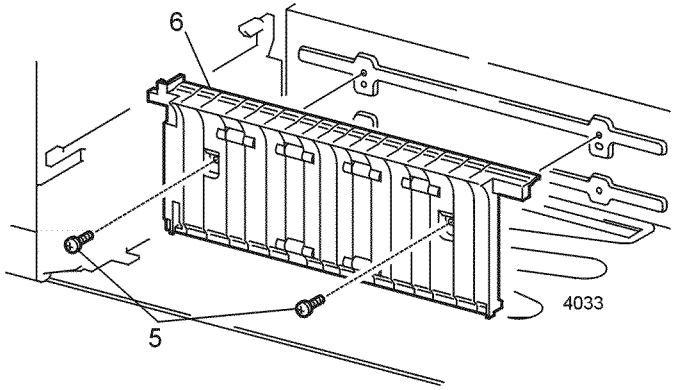


Figure 1 Rear Chute Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 3.3 Lower Turn Roll Assembly

Parts List on PL 3.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.
2. Remove Tray 1.
3. Remove the MBF Assembly (REP 2.1).
4. Remove the Retard Chute Assembly (REP 3.1).
5. Remove the E-ring from the right end of the Lower Turn Roll (Figure 1).
6. Remove the right bearing (Figure 1).
7. Release the locking tab on the Lower Turn Roll Gear and remove the gear (Figure 1).
8. Remove the left bearing (Figure 1).
9. Move the Lower Turn Roll Assembly to the left until the right end is free of the assembly (Figure 1).
10. Lift and remove the Lower Turn Roll Assembly.

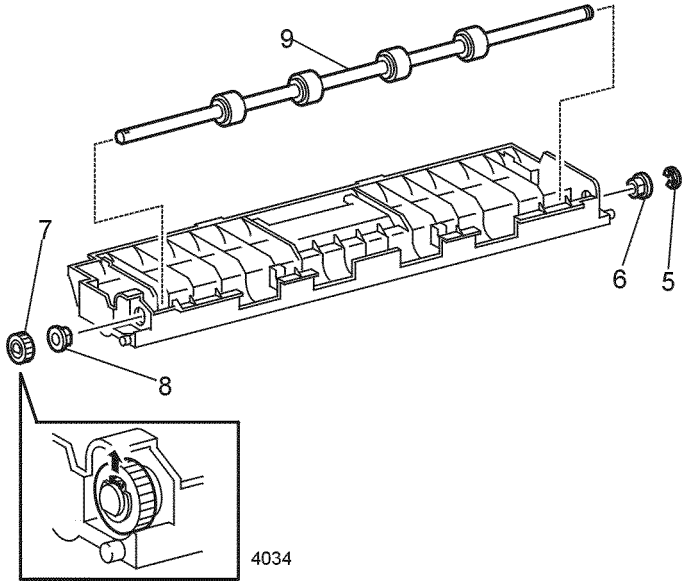


Figure 1 Lower Turn Roll Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 3.4 Tray 1 Low Paper Sensor

Parts List on PL 3.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.
2. Remove Tray 1.
3. Remove the MBF Assembly (REP 2.1).
4. Remove the Retard Chute Assembly (REP 3.1).
5. Remove Tray 1 Left Guide Assembly (REP 3.6)
6. Release the locking tabs and remove the sensor from the Guide Assembly (Figure 1).

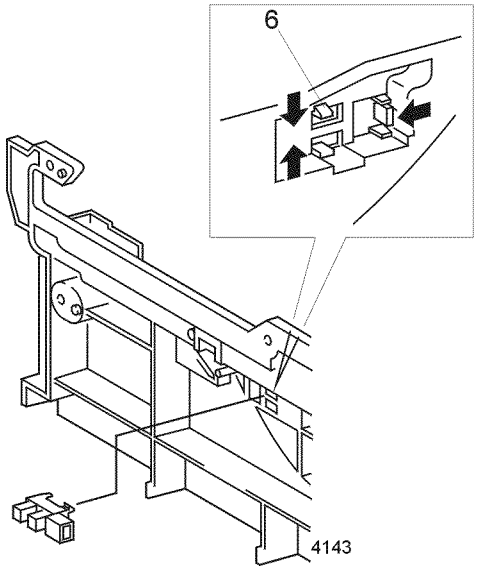


Figure 1 Tray 1 Low Paper Sensor

Replacement

1. Reinstall the components in the reverse order.

REP 3.5 Tray 1 Right Guide Assembly

Parts List on PL 3.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Rear Cover.
2. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.
3. Remove Tray 1.
4. Remove the Left Side Cover (REP 1.1).
5. Remove the Top Cover Assembly (REP 1.3).
6. Remove the Right Side Cover (REP 1.2).
7. Remove the MBF Assembly (REP 2.1).
8. Remove the Retard Chute Assembly (REP 3.1).
9. Remove Front Cover (REP 1.4).
10. Carefully push down on the locking tab that secures the rod to the paper level actuator (Figure 1).
11. Remove the paper level assembly from the stud on the frame (Figure 1).
12. Move the paper level forward to unlatch then remove from the printer (Figure 1).
13. Remove the four screws that secure the Tray 1 Right Guide Assembly to the printer (Figure 2).
14. Use a small screwdriver to pry up on the locking tab that locks the guide assembly to the bottom of the printer (Figure 2).
15. Remove the Tray 1 Right Guide Assembly.

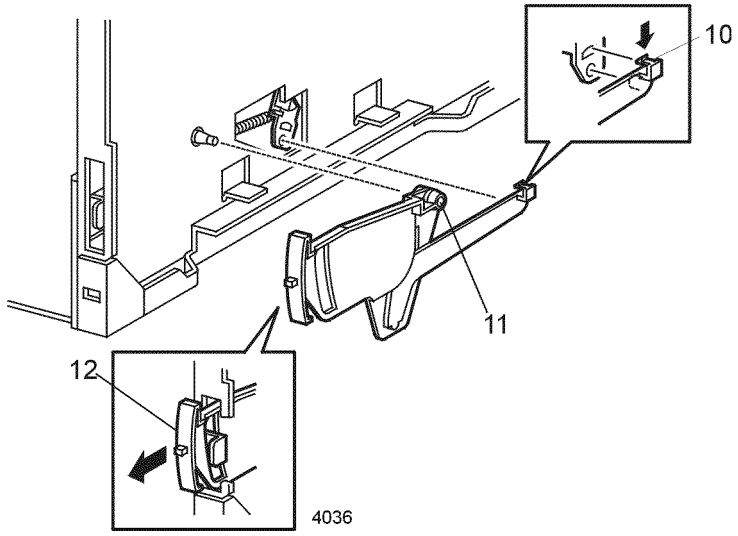


Figure 1 Paper Level Indicating Arm

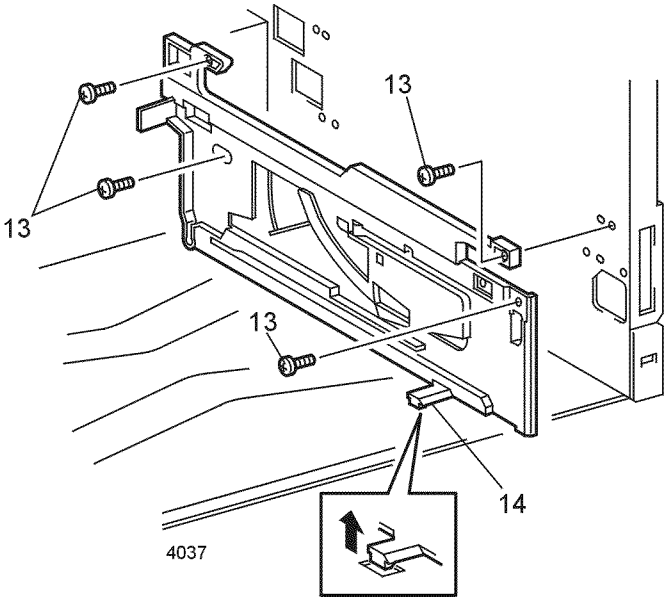


Figure 2 Tray 1 Right Guide Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 3.6 Tray 1 Left Guide Assembly

Parts List on PL 3.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.
2. Remove Tray 1.
3. Remove the Left Side Cover (REP 1.1).
4. Remove the MBF Assembly (REP 2.1).
5. Remove the Retard Chute Assembly (REP 3.1).
6. From the left side of the printer, disconnect P/J201 from the Tray 1 Size Sensor (Figure 1).
7. Remove the six screws that secure the Tray 1 left Guide Assembly to the printer (Figure 1).
8. Use a small screwdriver to pry up on the locking tab that locks the guide assembly to the bottom of the printer (Figure 1).
9. Disconnect P/J202 and P/J127 from the guide assembly (Figure 1).
10. Remove the Tray 1 Left Guide Assembly.

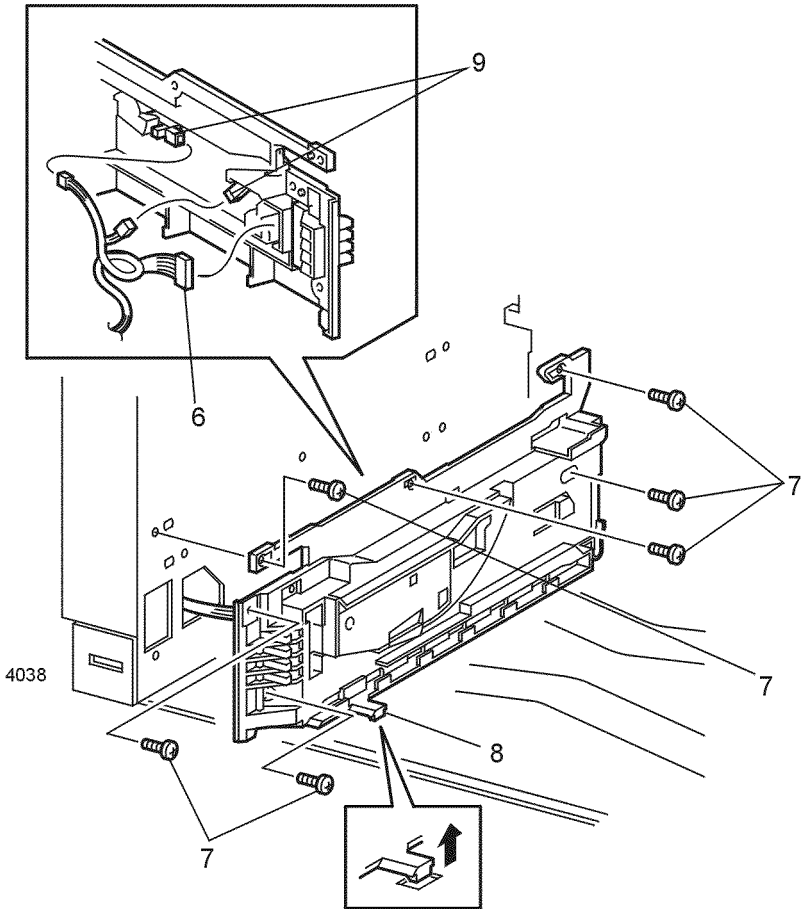


Figure 1 Tray 1 Left Guide Assembly

Replacement

1. Reinstall the components in the reverse order.

   NOTE: *Ensure that all alignment pins are properly inserted in the frame holes before replacing the six screws.*

REP 3.7 MBF Assembly Position

Parts List on PL 4.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.
2. Remove Tray 1.
3. Remove the Left Side Cover (REP 1.1).
4. Remove the MBF Assembly (REP 2.1).
5. Remove the Retard Chute Assembly (REP 3.1).
6. Remove Tray 1 Left Guide Assembly (REP 3.6)
7. Remove the two screws and remove the cover (Figure 1).
8. Release the locking tabs and remove the sensor from the Guide Assembly (Figure 1).

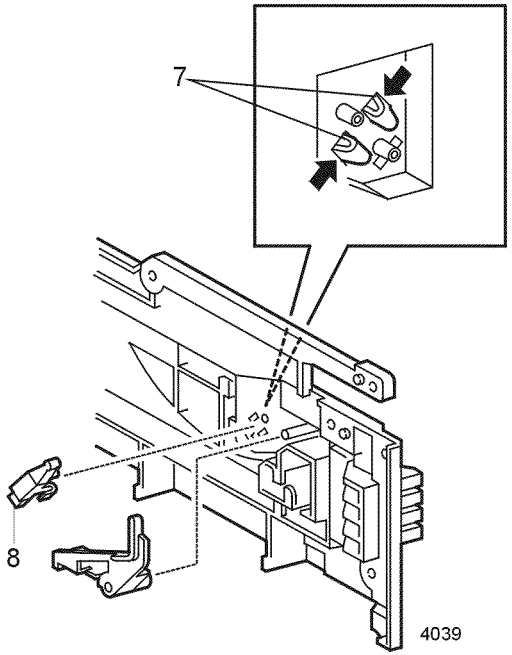


Figure 1 MBF Assembly Position Sensor

Replacement

1. Reinstall the components in the reverse order.

REP 4.1 Paper Transport Assembly

Parts List on PL 5.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Rear Cover.
2. Remove the Fuser Assembly (REP 5.1).
3. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.
4. Remove Tray 1.
5. Remove the MBF Assembly (REP 2.1).
6. Remove the Left Side Cover (REP 1.1).
7. Remove the Top Cover Assembly (REP 1.3).
8. Remove the HVPS Cover (REP 1.6).
9. Disconnect plug P185 (R) from the top of transformer T503 on the HVPS PWB (Figure 1).
10. Remove the screw that secures the Detack Saw Wire to the assembly (Figure 1).
11. Remove the wires from cable clamps.
12. Disconnect P/J222 from the bottom of the Registration Clutch (Figure 1).
13. Remove the four screws that secure the Paper Transport Assembly to the printer (Figure 1).

    NOTE: *When removing the Paper Transport Assembly, do not touch the BTR roll with your hands. Oil from your hands can cause copy quality problems.*

14. Guide the high voltage leads through the holes in the printer frame as you remove the Paper Transport Assembly.

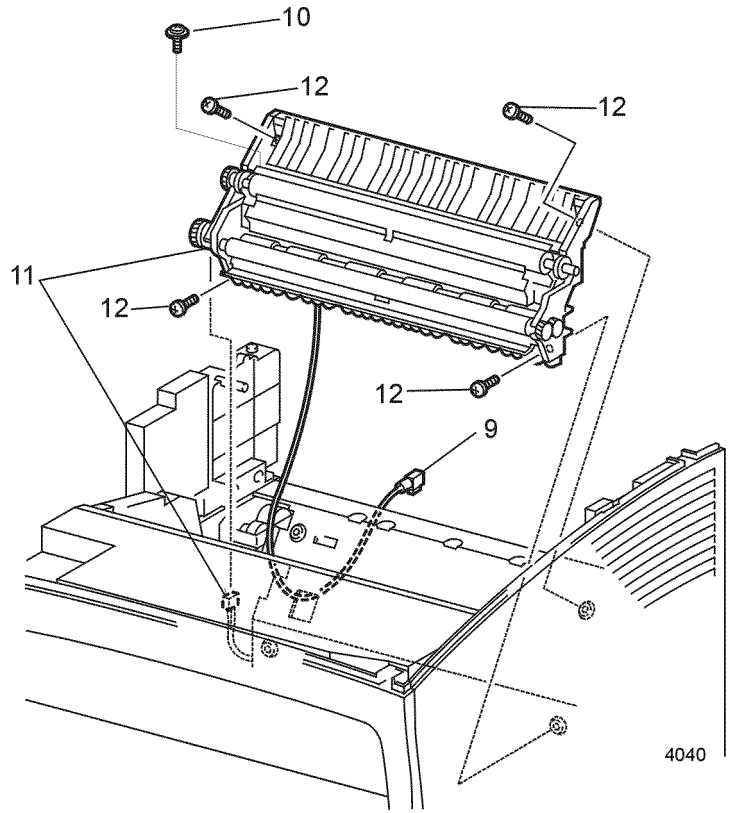


Figure 1 Paper Transport Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 4.2 Registration Actuator

Parts List on PL 5.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Rear Cover.
2. Remove the Fuser Assembly (REP 5.1).
3. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.
4. Remove Tray 1.
5. Remove the MBF Assembly (REP 2.1).
6. Remove the Left Side Cover (REP 1.1).
7. Remove the Top Cover Assembly (REP 1.3).
8. Remove the HVPS Cover (REP 1.6).
9. Remove the Paper Transport Assembly (REP 4.1)
10. Note the position of the actuator spring (Figure 1).
11. Move the Registration Actuator to its full actuated position.
12. Slide the Registration Actuator to the left to disengage the right end of the actuator (Figure 1). Pull the actuator up and out of the Paper Transport Assembly.
13. Remove the spring from the Registration Actuator.

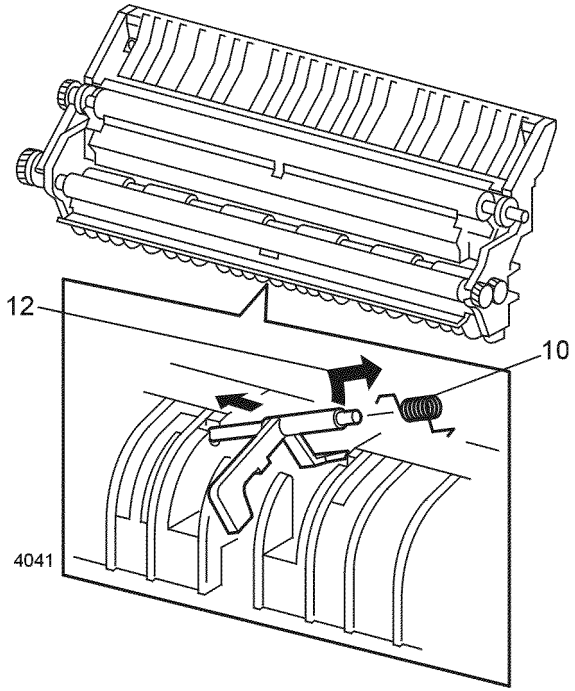


Figure 1 Registration Actuator

Replacement

1. Reinstall the components in the reverse order.

REP 4.3 Registration Clutch

Parts List on PL 5.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Rear Cover.
2. Remove the Fuser Assembly (REP 5.1).
3. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.
4. Remove Tray 1.
5. Remove the MBF Assembly (REP 2.1).
6. Remove the Left Side Cover (REP 1.1).
7. Remove the Top Cover Assembly (REP 1.3).
8. Remove the HVPS Cover (REP 1.6).
9. Remove the Paper Transport Assembly (REP 4.1)
10. Remove the E-ring that secures the Registration Clutch to the Rubber Registration Roll (Figure 1).
11. Remove the Registration Clutch (Figure 1).

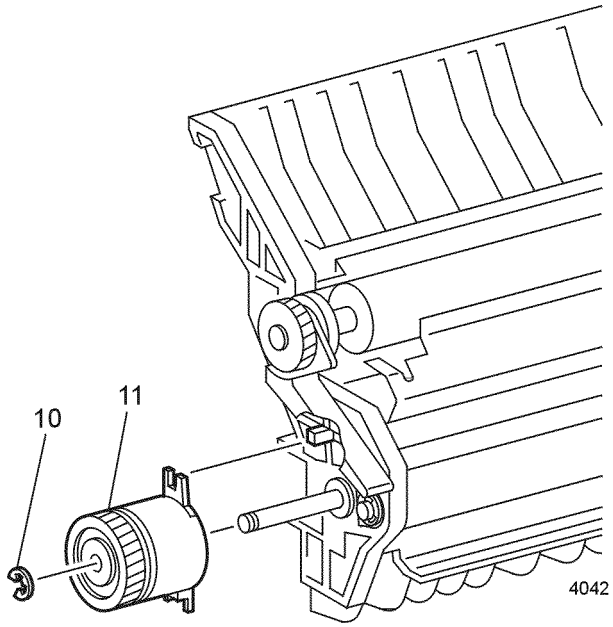


Figure 1 Registration Clutch

Replacement

1. Reinstall the components in the reverse order.

REP 4.4 Metal Registration Roll

Parts List on PL 5.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Rear Cover.
2. Remove the Fuser Assembly (REP 5.1).
3. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.
4. Remove Tray 1.
5. Remove the MBF Assembly (REP 2.1).
6. Remove the Left Side Cover (REP 1.1).
7. Remove the Top Cover Assembly (REP 1.3).
8. Remove the HVPS Cover (REP 1.6).
9. Remove the Paper Transport Assembly (REP 4.1)
10. Remove the Registration Clutch (REP 4.3).
11. Release the left and right Registration Springs (Figure 1).
12. Remove the left and right E-rings (Figure 1).
13. Remove the Gear from the right end of the Metal Registration Roll (Figure 1).
14. Remove the right and left bearings (Figure 1).
15. Lift the right end of the Metal Registration Roll. Slide the roll to the right to free the left end of the roll. Then slide the roll to the left to remove (Figure 1).

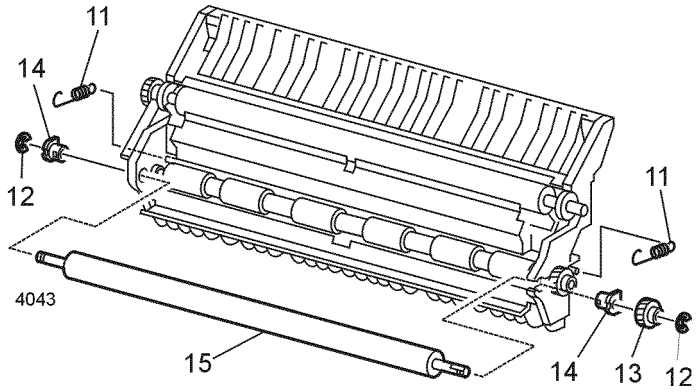


Figure 1 Metal Registration Roll

Replacement

1. Reinstall the components in the reverse order.

REP 4.5 Rubber Registration Roll

Parts List on PL 5.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Rear Cover.
2. Remove the Fuser Assembly (REP 5.1).
3. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.
4. Remove Tray 1.
5. Remove the MBF Assembly (REP 2.1).
6. Remove the Left Side Cover (REP 1.1).
7. Remove the Top Cover Assembly (REP 1.3).
8. Remove the HVPS Cover (REP 1.6).
9. Remove the Paper Transport Assembly (REP 4.1)
10. Remove the Registration Clutch (REP 4.3).
11. Remove the Metal Registration Roll (REP 4.4).
12. Remove the E-ring that secures the Registration Gear to the right end of the Registration Roll (Figure 1).
13. Remove the Registration Gear from the Registration Roll (Figure 1).
14. Remove the left and right bearings from the Registration Roll (Figure 1).
15. Lift the right end of the Registration Roll and remove (Figure 1).

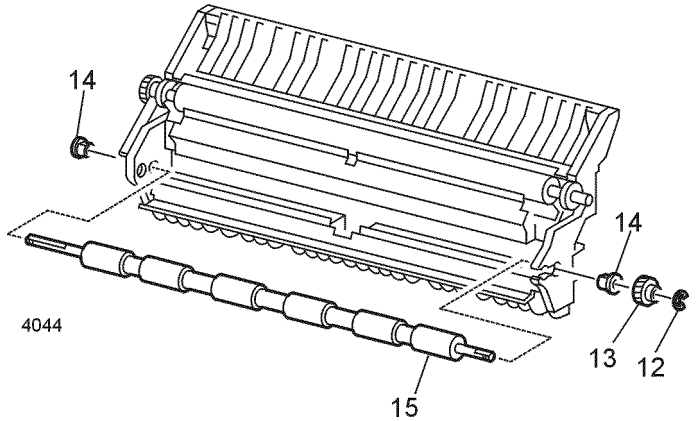


Figure 1 Rubber Registration Roll

Replacement

1. Reinstall the components in the reverse order.

REP 4.6 Registration Sensor

Parts List on PL 5.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Rear Cover.
2. Remove the Fuser Assembly (REP 5.1).
3. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.
4. Remove Tray 1.
5. Remove the MBF Assembly (REP 2.1).
6. Remove the Left Side Cover (REP 1.1).
7. Remove the Top Cover Assembly (REP 1.3).
8. Remove the HVPS Cover (REP 1.6).
9. Remove the Paper Transport Assembly (REP 4.1).
10. Remove the HVPS PWB (REP 8.2).
11. Disconnect P/J183 from the Registration Sensor (Figure 1).
12. Release the three locking tabs and remove the sensor (Figure 1).

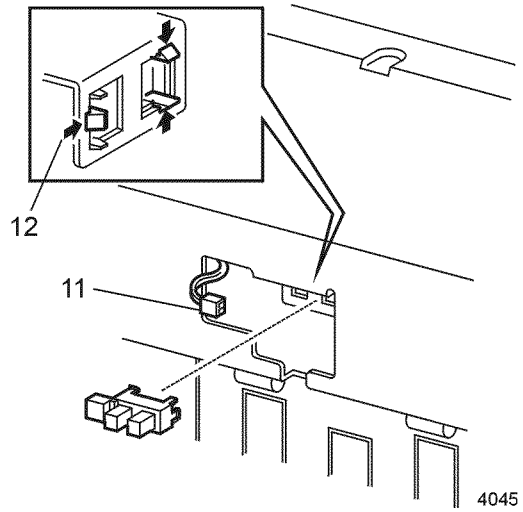


Figure 1 Registration Sensor

Replacement

1. Reinstall the components in the reverse order.

REP 5.1 Fuser Assembly

Parts List on PL 6.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

WARNING

If the printer has been in operation, the Fuser may be hot.

1. Open the Rear Cover.
2. Move the Fuser Locking Lever to the left (as viewed from the rear) (Figure 1).
3. Lift the left tabs to disconnect P/J174 then lift both the left and right tabs to remove (Figure 1).

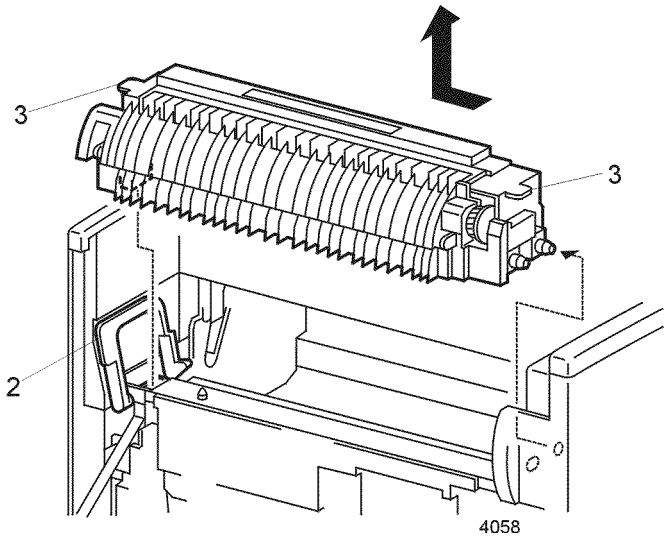


Figure 1 Fuser Assembly

Replacement

1. Reinstall the components in the reverse order.

   NOTE: *Install the locating pins first.*

REP 5.2 Stack Full Sensor

Parts List on PL 6.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open and remove the Rear Cover (REP 1.9).
2. Remove the four screws that secure the Lower Exit Chute Assembly (Figure 1). Remove the assembly.
3. Remove the four screws that secure the Upper Exit Chute (Figure 2). Remove the top of the Rear Cover.
4. Release the two locking tabs that secure the Stack Full Sensor Holder to the Rear Cover (Figure 2).
5. Remove the Stack Full Sensor Holder and Actuator from the Rear Cover.
6. Release the three locking tabs and remove the sensor from the holder (Figure 3).
7. Disconnect P/J507 from the Stack Full Sensor (Figure 2).

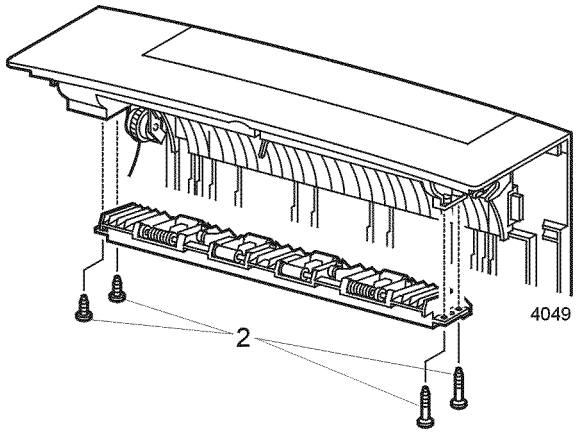


Figure 1 Lower Exit Chute

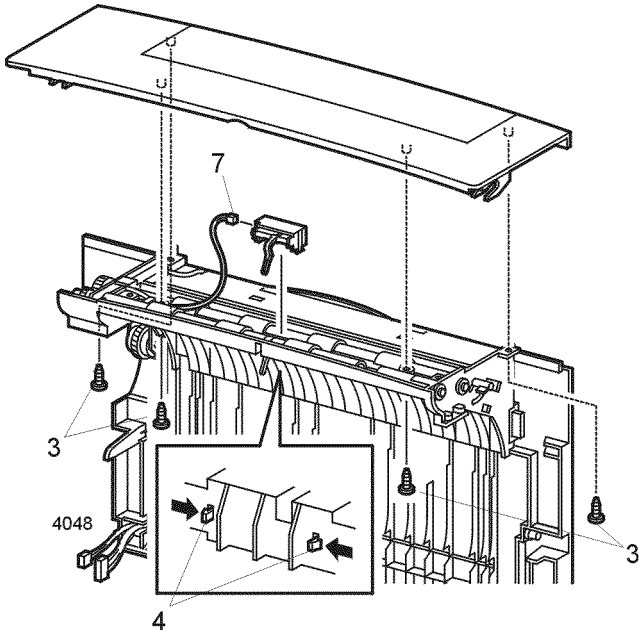


Figure 2 Upper Exit Chute

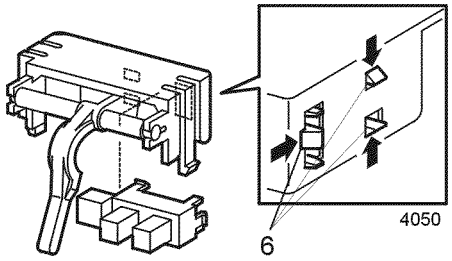


Figure 3 Stack Full Sensor

Replacement

1. Reinstall the components in the reverse order.

   NOTE: *The two shoulder screws go in the right end of the Lower Exit Chute Assembly (Figure 1).*

REP 5.3 Stack Full Actuator

Parts List on PL 6.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Rear Cover.
2. Remove the Rear Cover (REP 1.9).
3. Remove the Stack Full Sensor (REP 5.2).
4. Carefully pull the actuator out of the holder (Figure 1).

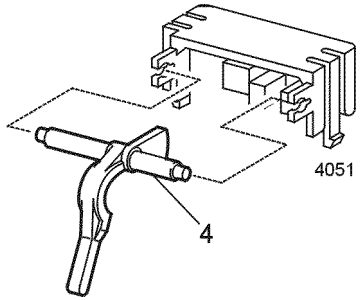


Figure 1 Stack Full Actuator

Replacement

1. Reinstall the components in the reverse order.

REP 5.4 Exit Gate Chute

Parts List on PL 6.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open and remove the Rear Cover (REP 1.9).
2. Remove the four screws that secure the Lower Exit Chute Assembly (Figure 1). Remove the assembly.
3. Note the position of the gate spring. Unhook the gate spring (Figure 2).
4. Carefully bend the Exit Gate in the middle until the left end is free of the Rear Cover (Figure 2).
5. Align the tab on the Gate with the hole in the Rear Cover. Remove the chute (Figure 3).
6. Remove the spring from the chute (Figure 3).

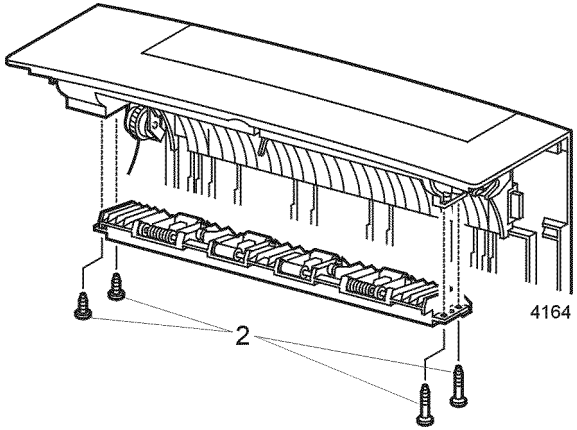


Figure 1 Lower Exit Chute

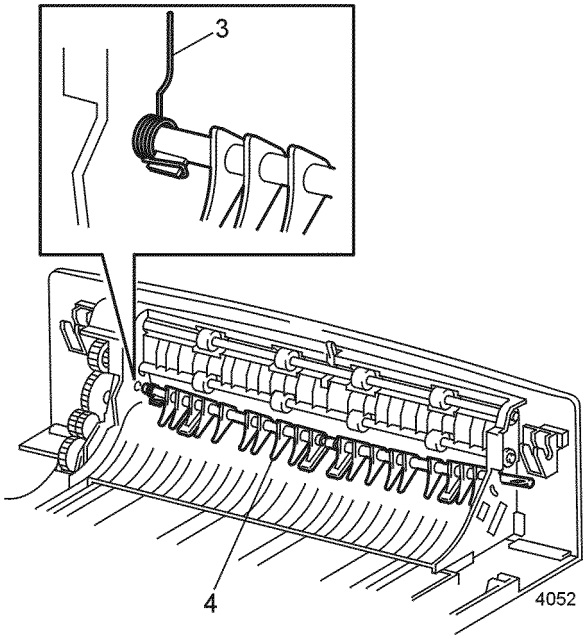


Figure 2 Exit Gate Spring

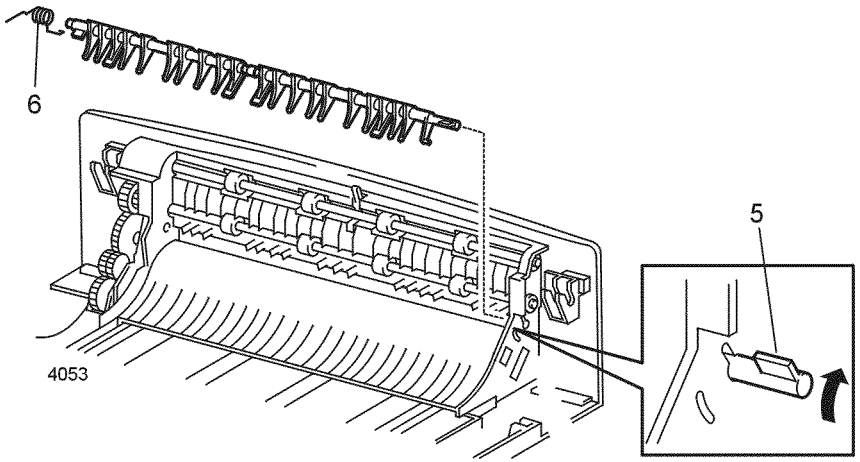


Figure 3 Exit Gate

Replacement

1. Reinstall the components in the reverse order.

REP 5.5 Exit Roll Assembly

Parts List on PL 6.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Rear Cover.
2. Remove the Rear Cover (REP 1.9).
3. Remove the four screws that secure the Lower Exit Chute Assembly (Figure 1). Remove the assembly.
4. Remove the four screws that secure the Upper Exit Chute. Remove the chute (Figure 2).
5. Remove the E-ring that secures the right end of the Upper Exit Roll Assembly (Figure 3).
6. Release the three locking tabs and remove the Gear Z15 from Upper Exit Roll Assembly (Figure 3).
7. Remove the left and right bearings from the Exit Roll (Figure 3).
8. Remove the two paper tabs from the shaft (Figure 3).
9. Move the Exit Roll Shaft to the left until the right end is free of the Rear Cover. Remove the Exit Roll (Figure 3).
10. Remove the E-ring that secures the right end of the Lower Exit Roll Assembly (Figure 4).
11. Release the three locking tabs and remove the Gear Z22 from Lower Exit Roll Assembly (Figure 4).
12. Remove the left and right bearings from the Exit Roll (Figure 4).
13. Move the Exit Roll Shaft to the left until the right end is free of the Rear Cover (Figure 4). Remove the Exit Roll.

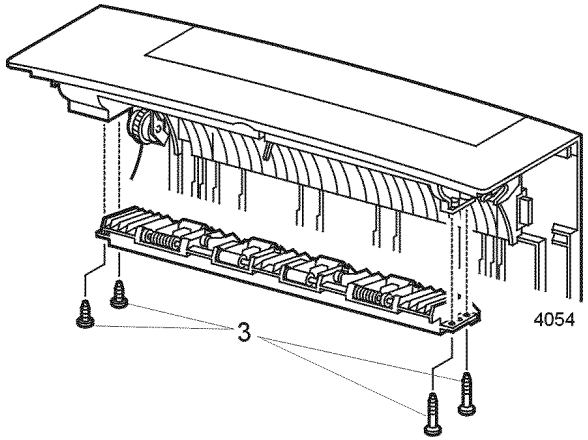


Figure 1 Lower Exit Chute

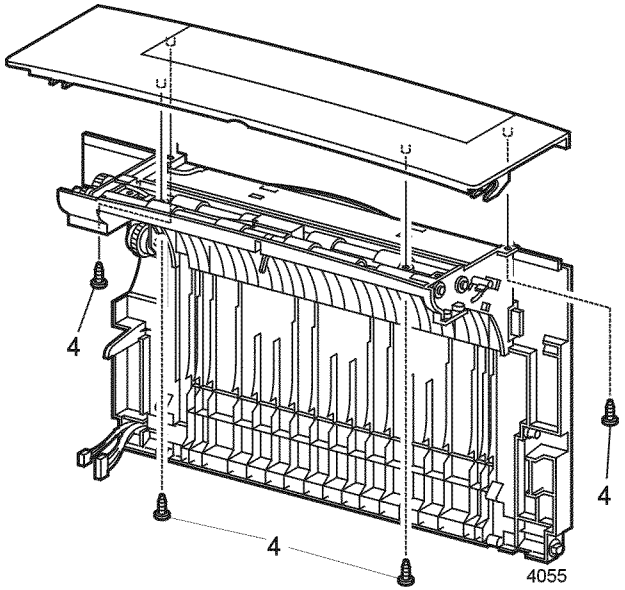


Figure 2 Upper Exit Chute

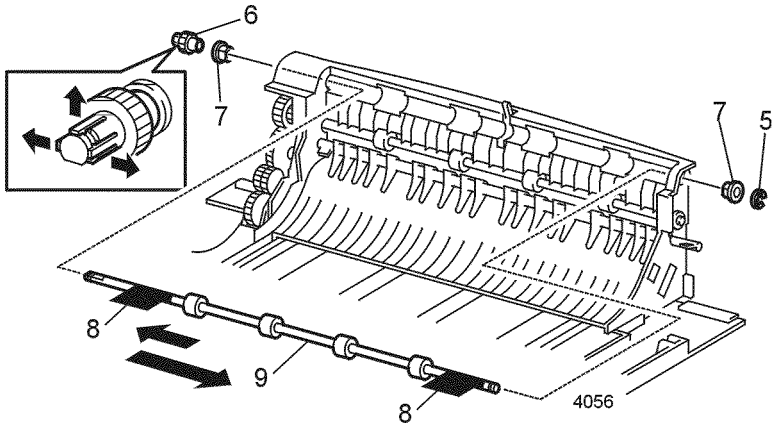


Figure 3 Upper Exit Roll Assembly

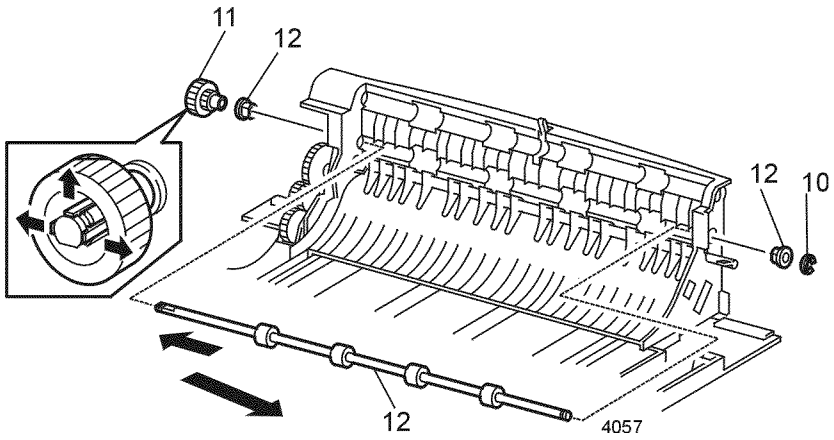


Figure 4 Lower Exit Roll Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 6.1 Main Gear Drive Assembly

Parts List on PL 7.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Lower Rear Cover (REP 1.7).
2. Open the Rear Cover.
3. Remove the Fuser Assembly (REP 5.1).
4. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.
5. Remove Tray 1.
6. Remove the MBF Assembly (REP 2.1).
7. Remove the Left Side Cover (REP 1.1).
8. Remove the Top Cover Assembly (REP 1.3).
9. Loosen the two thumb screws and remove the System Controller PWB Shield Cover (Figure 1).
10. Remove the System Controller PWB (REP 8.1).
11. Disconnect CN2 from the Motor Drive PWB (Figure 2).

    NOTE: *In the next step, there are arrows stamped into the metal indicating the eight screws to remove.*

12. Remove the eight screws that secure the Gear Assembly to the printer (Figure 2).
13. Remove the Gear Assembly and Motor from the printer (Figure 2).

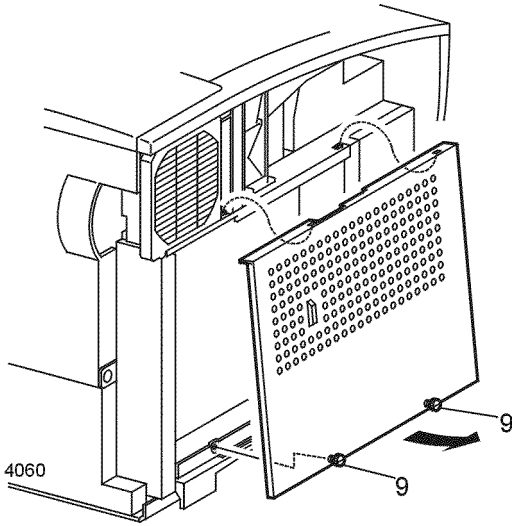


Figure 1 Shield Cover

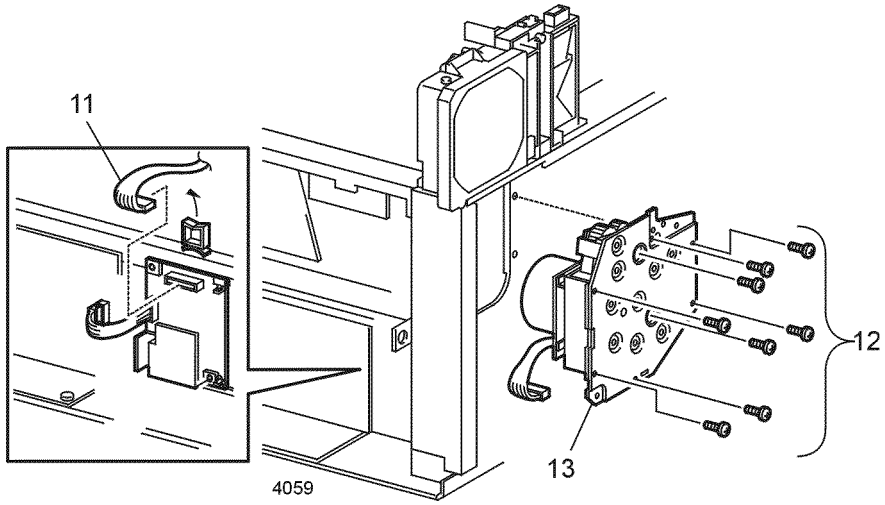


Figure 2 Gear Drive Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 6.2 Main Motor Assembly

Parts List on PL 7.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Gear Assembly (REP 6.1).
2. Remove the three screws that secure the Motor Assembly to the Gear Assembly (Figure 1).
3. Remove the Motor Assembly from the Gear Assembly (Figure 1).

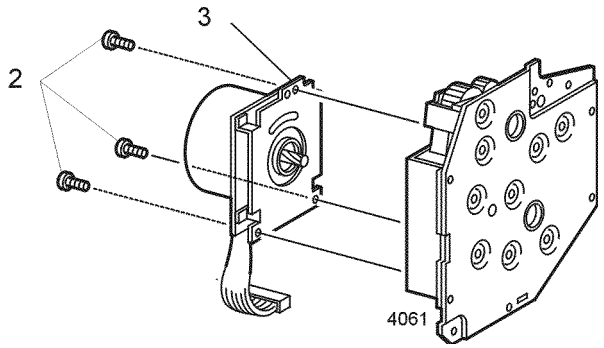


Figure 1 Motor Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 7.1 Laser Assembly

Parts List on PL 8.1

Removal

CAUTION

These components are susceptible to electrostatic discharge. Observe all ESD procedures to avoid damage.

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Rear Cover.
2. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.
3. Remove the Left Side Cover (REP 1.1).
4. Remove the Top Cover Assembly (REP 1.3).
5. Remove the screw that secures the Right Side Cover to the Laser Cover (Figure 1).
6. Remove the Front Cover (REP 1.4).
7. Remove the six screws that secure the Laser Cover to the printer (Figure 1). Move the top of the right cover to the right and remove the Laser Cover.
8. Disconnect P/J112 and the in-line connector P/J114 from the Laser Assembly (Figure 2).
9. Remove the four screws that secure the Laser Assembly to the printer (Figure 2).
10. Remove the Laser Assembly.

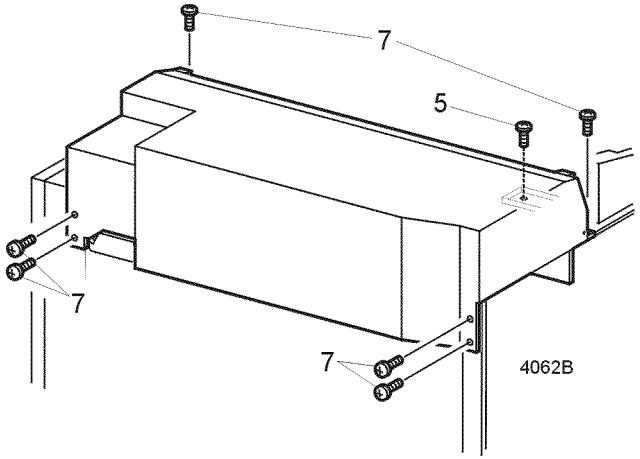


Figure 1 Laser Cover

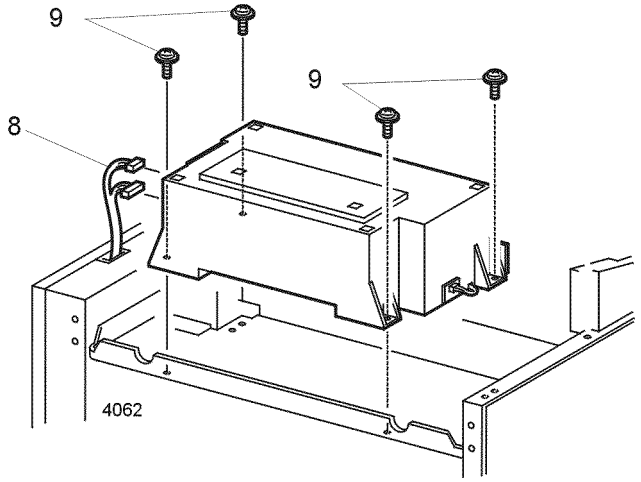


Figure 2 Laser Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 7.2 Right Print Cartridge Guide Assembly

Parts List on PL 8.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Lower Rear Cover (REP 1.7).
2. Open and remove the Rear Cover (REP 1.9).
3. Remove the Fuser Assembly (REP 5.1)
4. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.
5. Remove the Left Side Cover (REP 1.1).
6. Remove the Top Cover Assembly (REP 1.3).
7. Remove the HVPS Cover (REP 1.6).
8. Remove the BTR Assembly (REP 7.7).
9. Disconnect P/J186 (R) and P/J187 (W) from the HVPS PWB (Figure 1).
10. Disconnect P/J177 and P/J178 from the Fuser Interlock Switch (Figure 1).
11. Disconnect P/J162 from the LVPS PWB (Figure 1).
12. Remove all disconnected harnesses from cable clamps.
13. Remove the two screws that secure the right guide assembly (Figure 1).
14. Guide harnesses through the printer frame as you remove the Right Print Cartridge guide Assembly from the printer.

NOTE: *The Pin Link is not attached to the Guide Assembly and may fall into the printer when the guide assembly is removed.*

15. Remove the Right Print Cartridge Guide Assembly and Pin Link from the printer (Figure 1).

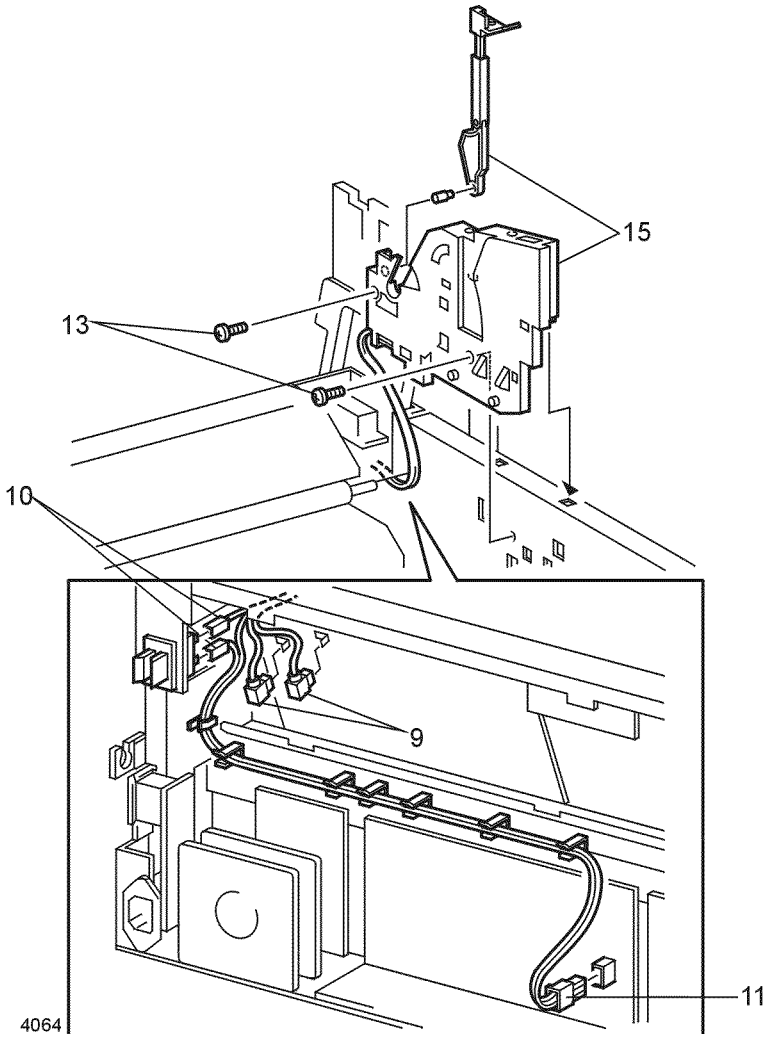


Figure 1 Right Print Cartridge Guide

Replacement

1. Reinstall the components in the reverse order.

REP 7.3 Toner Sensor Assembly

Parts List on PL 8.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.
2. Disconnect P/J141 (Figure 1).
3. Release Toner Sensor Assembly Harness from the cable clamps and retainers (Figure 1).
4. Release the two locking tabs and remove the Toner Sensor Assembly from the printer (Figure 1).

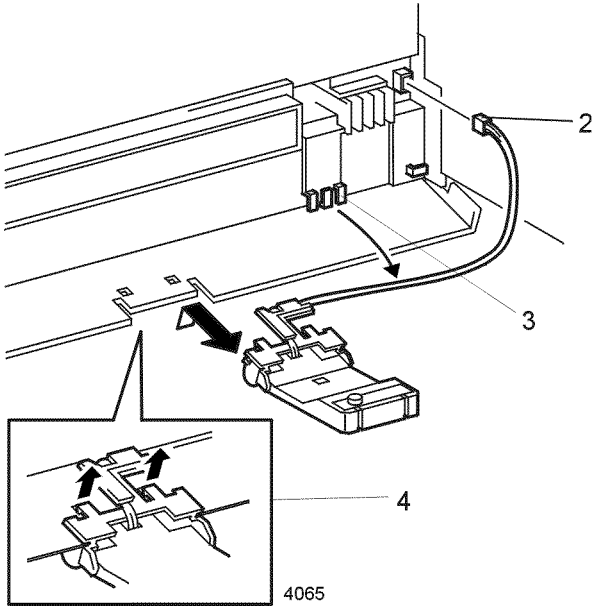


Figure 1 Toner Sensor Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 7.4 Print Cartridge Sensor Assembly

Parts List on PL 8.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Rear Cover.
2. Remove the OCT, if installed.
3. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.
4. Remove the Left Side Cover (REP 1.1).
5. Remove the Top Cover Assembly (REP 1.3).
6. Remove the screw that secures the Right Side Cover to the Laser Cover (Figure 1).
7. Remove the Front Cover (REP 1.4).
8. Remove the MBF Assembly (REP 2.1).
9. Remove the six screws that secure the Laser Cover to the printer (Figure 1). Move the Right Side Cover to the right and remove the Laser Cover.
10. Disconnect both ends of the Toner Sensor Cable (P/J171) from the Sensor Assembly (Figure 2). Remove cable from cable clamps on cartridge sensor.
11. Disconnect P/J211 from the Cartridge Sensor Assembly (Figure 2).
12. Remove the two screws that secure the Print Cartridge Sensor Assembly to the printer (Figure 2).
13. Carefully lift the sensor assembly and remove the PJ121 harness assembly that runs through the sensor assembly.
14. Remove the Print Cartridge Sensor Assembly.

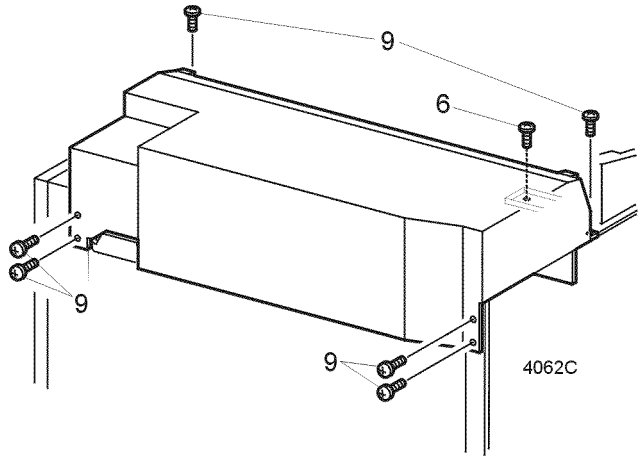


Figure 1 Laser Cover

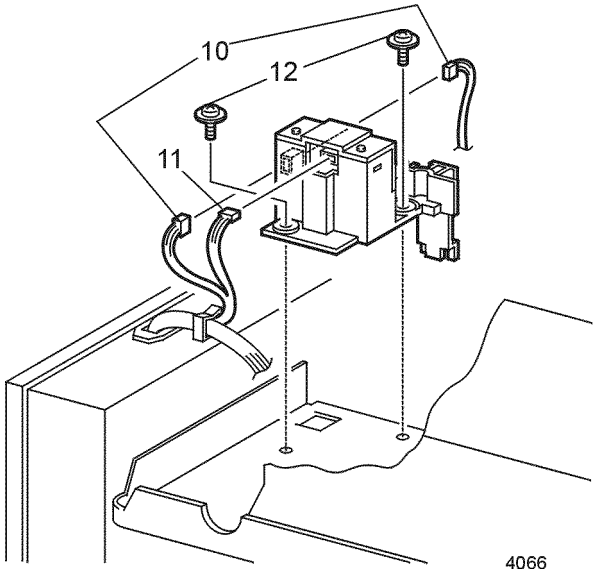


Figure 2 Print Cartridge Sensor

Replacement

1. Reinstall the components in the reverse order.

REP 7.5 Top Cover Interlock Switch

Parts List on PL 8.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Rear Cover.
2. Open the Top Cover.
3. Remove the Left Side Cover (REP 1.1).
4. Remove the Top Cover Assembly (REP 1.3).
5. Remove the Right Side Cover (REP 1.2).
6. Remove the screw that secures the Interlock Switch to the Right Print Cartridge Guide Assembly (Figure 1).
7. Disconnect P/J623 from the Interlock Switch (Figure 1). Remove the switch.

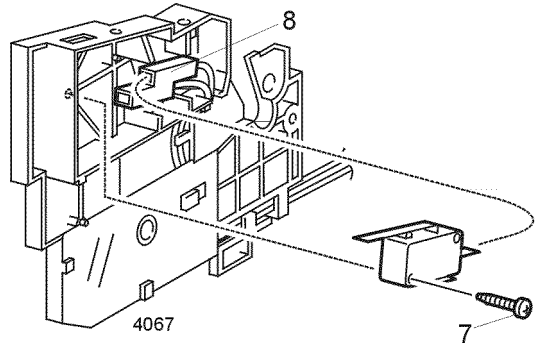


Figure 1 Top Cover Interlock Switch

Replacement

1. Reinstall the components in the reverse order.

REP 7.6 Left Print Cartridge Guide Assembly

Parts List on PL 8.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Rear Cover.
2. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.
3. Remove the Left Side Cover (REP 1.1).
4. Remove the Top Cover Assembly (REP 1.3).
5. Remove the BTR Assembly (REP 7.7).
6. Remove the two screws that secure the Print Cartridge Left Guide Assembly to the printer (Figure 1).
7. Remove the Print Cartridge Left Guide Assembly from the printer (Figure 1).
8. Remove the Left Guide Link Assembly and Pin Link from the printer (Figure 1).

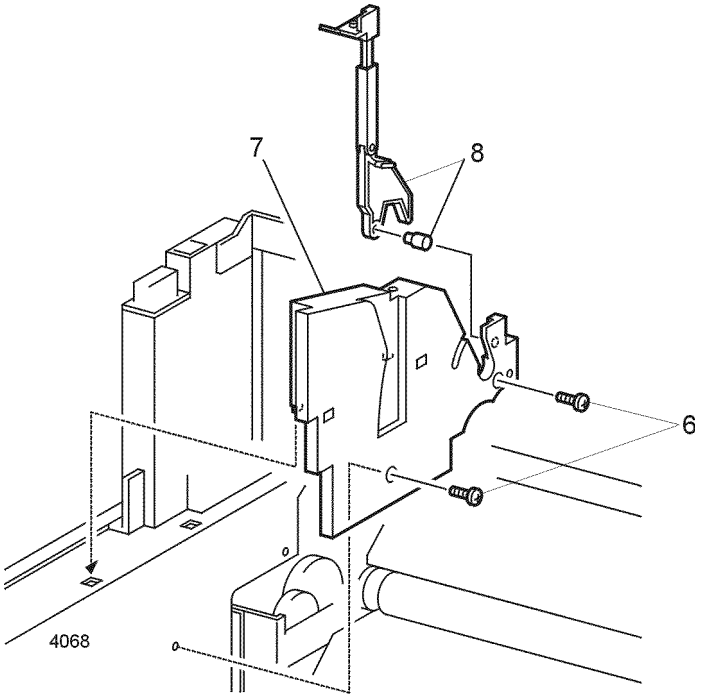


Figure 1 Left Print Cartridge Guide Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 7.7 BTR Assembly

Parts List on PL 5.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.

   NOTE: *During the following steps, do not touch the black roll part of the BTR. Oil from your hands can cause copy quality problems.*

2. Lift the orange handle on the left end of the BTR Assembly (Figure 1). Pull up on the handle to free the left end of the BTR.
3. Use your finger to lift the right end of the BTR Assembly (Figure 1).
4. Place the BTR roll on a sheet of clean paper and cover it with another sheet of paper.

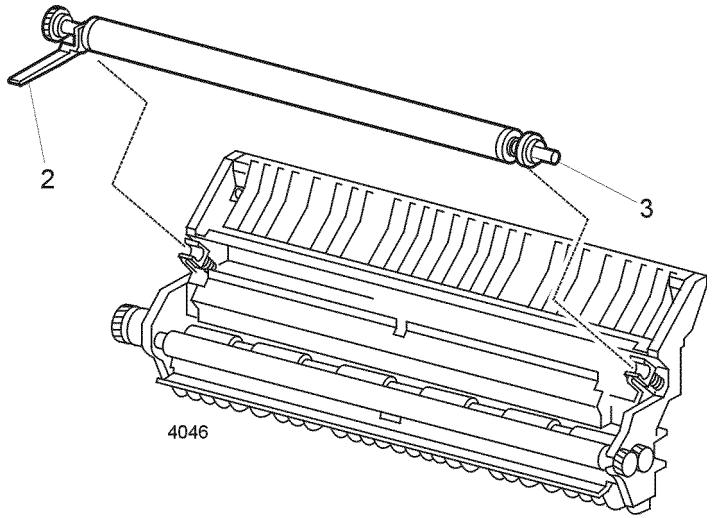


Figure 1 BTR Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 8.1 System Controller PWB

Parts List on PL 9.1

Removal

CAUTION

These components are susceptible to electrostatic discharge. Observe all ESD procedures to avoid damage.

WARNING

Turn the power off and disconnect the Power Cord.

1. Remove the Left Side Cover (REP 1.1).
2. Loosen the two thumb screws that secure the Shield Cover and remove the cover (Figure 1).
3. Remove the six screws and the RF Shields that secure the rear of the System Controller PWB Assembly to the printer (Figure 2).
4. Disconnect P/J3, P/J13, and P/J18 from the System Controller PWB.
5. Remove the seven screws that secure the System Controller PWB to the printer (Figure 2).
6. Slide the System Controller PWB toward the rear of the printer to disconnect P/J14 from the Print Engine Controller PWB (Figure 2).
7. Remove the System Controller PWB Assembly.

NOTE: *If replacing the System Controller PWB, continue with step 8.*

8. Remove any DIMMs from slots J5, J4, or J6 and install them on the new System Controller PWB.
9. If installed, remove the two screws that secure the Network Card to the frame assembly (Figure 3). Remove the network card.
10. If installed, remove the Hard Disk Drive and the two right standoffs.
11. Remove the two screws that secure the parallel connector to the frame assembly (Figure 3).
12. Remove the three screws that secures the System Controller PWB to the frame assembly (Figure 3). Remove the System Controller PWB.

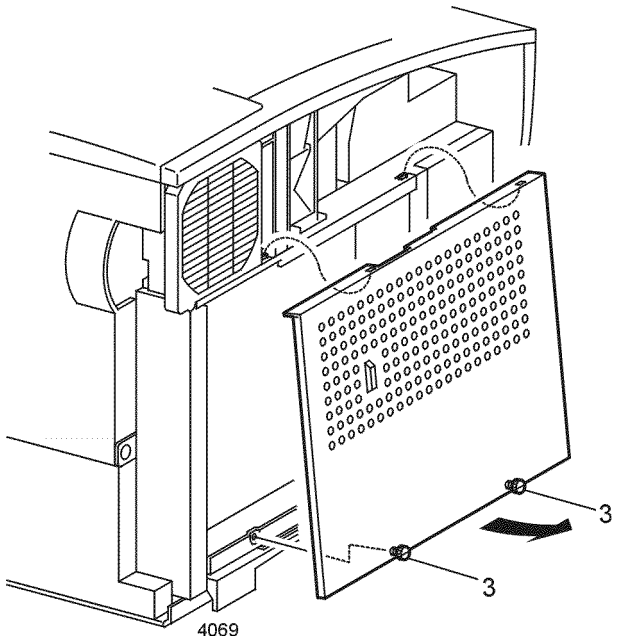


Figure 1 Shield Cover

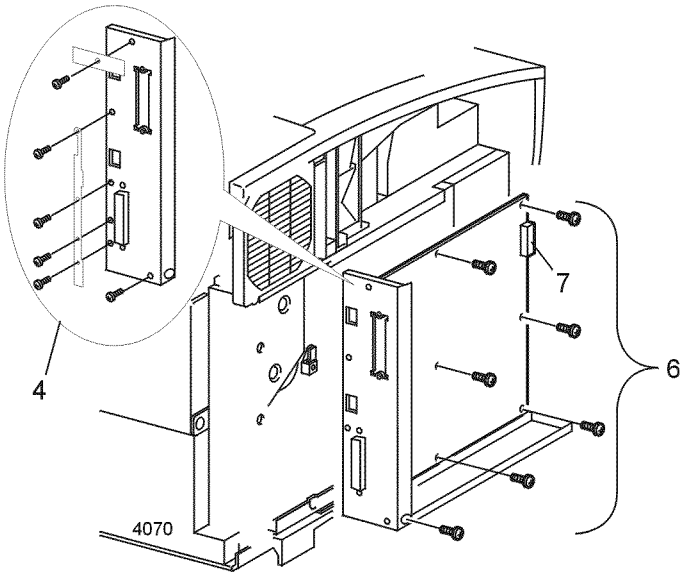


Figure 2 System Controller PWB Assembly

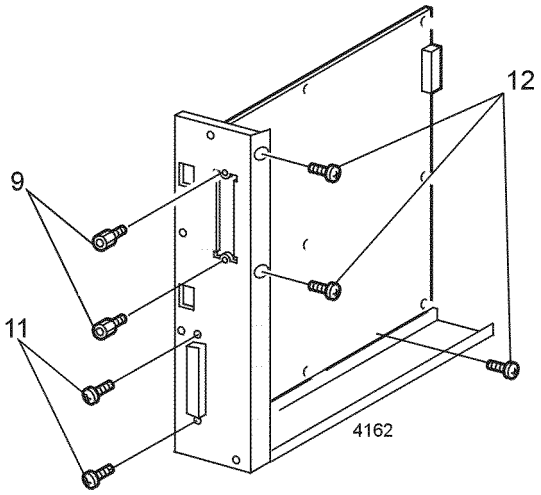


Figure 3 System Controller PWB

Replacement

1. Reinstall the components in the reverse order.

REP 8.2 HVPS PWB

Parts List on PL 9.1

Removal

CAUTION

These components are susceptible to electrostatic discharge. Observe all ESD procedures to avoid damage.

WARNING

Turn the power off and disconnect the Power Cord.

1. Remove the Rear Cover (REP 1.9).
2. Remove the HVPS Cover (REP 1.6).
3. DIsconnect P/J181, P/J182, P/J186, P/J187, P/J188, P/J185 from the HVPS PWB (Figure 1).
4. Remove the four screws that secure the HVPS PWB to the printer (Figure 1).
5. Remove the HVPS PWB.

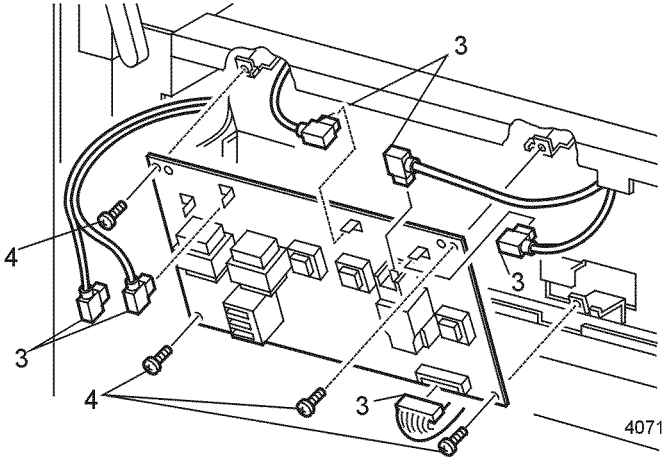


Figure 1 HVPS PWB

Replacement

1. Reinstall the components in the reverse order.

REP 8.3 Duplex Interface PWB

Parts List on PL 11.1

Removal

CAUTION

These components are susceptible to electrostatic discharge. Observe all ESD procedures to avoid damage.

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Rear Cover (REP 1.9).
2. Remove the HVPS Cover (REP 1.6).
3. DIsconnect P/J501, P/J504, and P/J506 from the Duplex Interface PWB (Figure 1).
4. Remove the two screws that secure the Duplex Interface PWB to the printer (Figure 1).
5. Remove the Duplex Interface PWB (Figure 1).

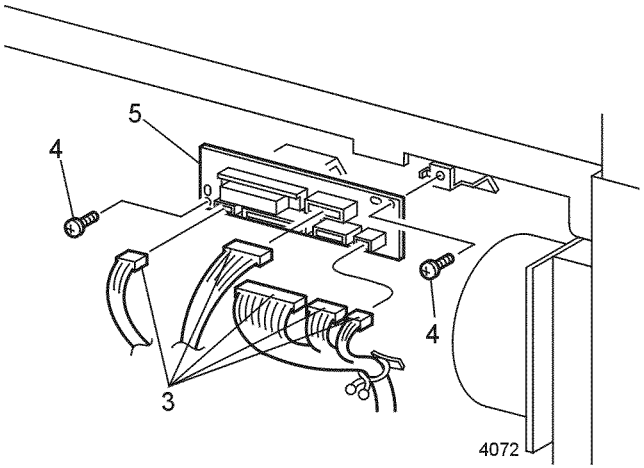


Figure 1 Duplex Interface PWB

Replacement

1. Reinstall the components in the reverse order.

REP 8.4 Main Fan

Parts List on PL 9.1

Removal

CAUTION

These components are susceptible to electrostatic discharge. Observe all ESD procedures to avoid damage.

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Lower Rear Cover (REP 1.7).
2. Remove the Rear Cover (REP 1.9).
3. Remove the OCT if installed (REP 10.1).
4. Remove the Left Side Cover (REP 1.1).
5. Open the Top Cover and remove the Print Cartridge. Cover the cartridge to protect it from light.
6. Remove the Top Cover Assembly (REP 1.3).
7. Remove the screw that secures the left edge of the HVPS Cover (Figure 1).
8. Disconnect P/J165 from the LVPS PWB (Figure 1).
9. Remove the three screws that secure the Fan Guard to the printer (Figure 1).
10. Remove Fan Harness from all clamps.
11. Remove the screw that secures the Main Fan to the printer (Figure 1). Remove the fan.

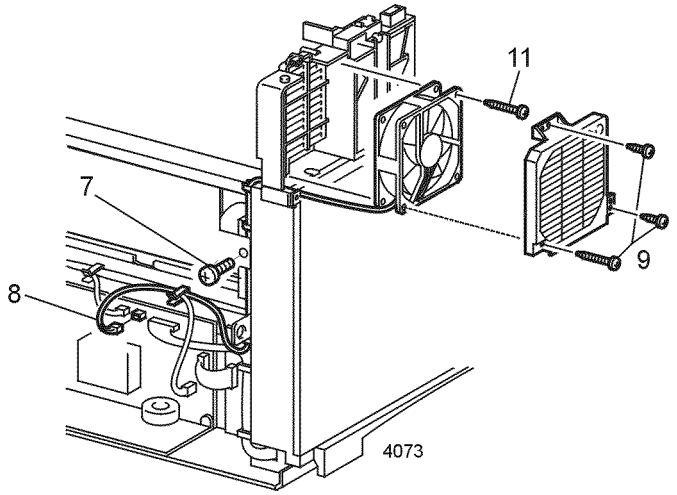


Figure 1 Main Fan

Replacement

1. Reinstall the components in the reverse order.

REP 8.5 Print Engine Controller PWB

Parts List on PL 9.1

Removal

CAUTION

These components are susceptible to electrostatic discharge. Observe all ESD procedures to avoid damage.

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Left Side Cover (REP 1.1)
2. Loosen the two thumb screws that secure the System Controller PWB Shield Cover and remove the cover (Figure 1).
3. Remove the four screws that secure the Print Engine Controller PWB Cover. Remove the cover (Figure 2).
4. Disconnect P/J11, P/J12, P/J13, P/J14, P/J16, P/J17, P/J18, P/J19, P/J20, P/J21, and P/J22 from the Print Engine Controller PWB (Figure 3).
5. Remove the four screws that secure the Print Engine Controller PWB to the printer. Slide the Print Engine Controller PWB to the right and remove (Figure 3).

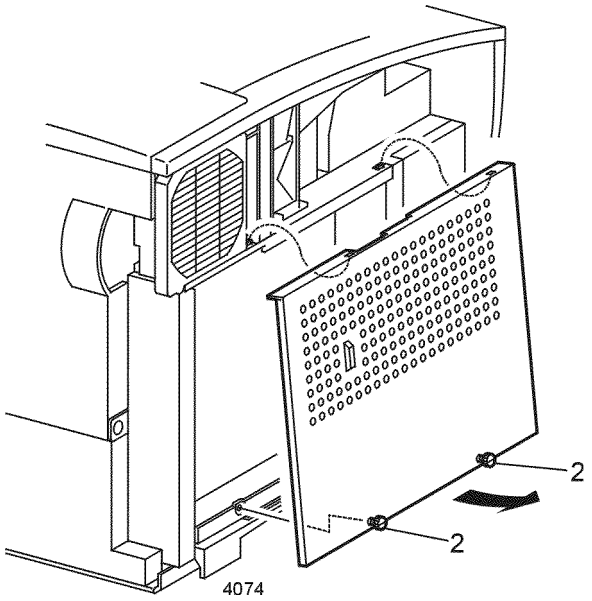


Figure 1 Shield Cover

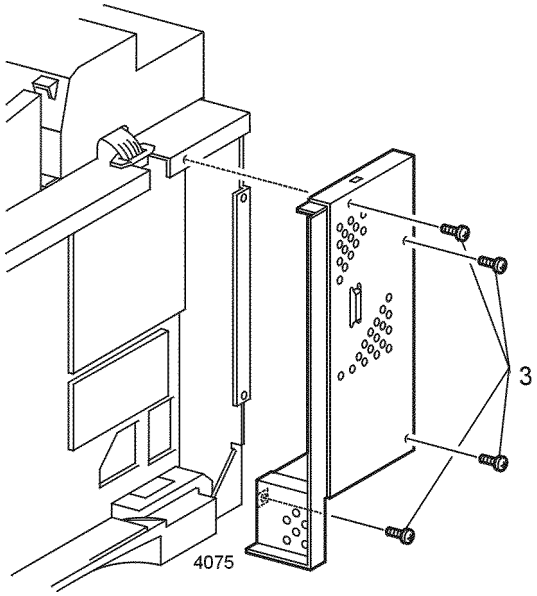


Figure 2 Print Engine Controller PWB Cover

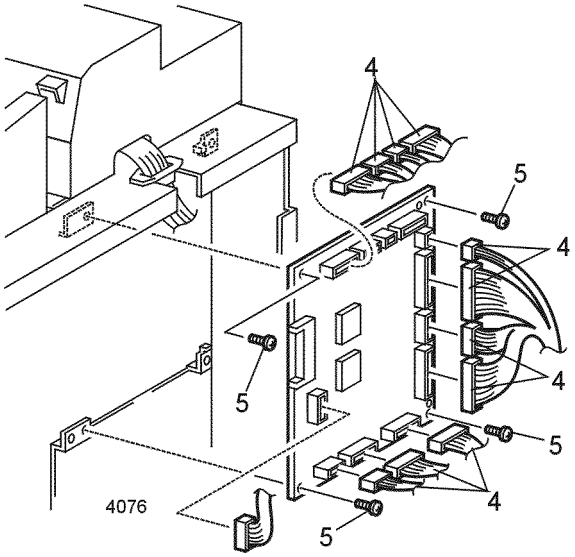


Figure 3 Print Engine Controller PWB

Replacement

1. Reinstall the components in the reverse order.

REP 8.6 LVPS Assembly

Parts List on PL 9.2

Removal

CAUTION

These components are susceptible to electrostatic discharge. Observe all ESD procedures to avoid damage.

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Lower Rear Cover (REP 1.7).
2. Disconnect P/J168, P/J167, P/J166, P/J165, P/J164, P/J163, P/J162, and P/J161 from the LVPS Assembly (Figure 1).
3. Remove the four screws that secure the LVPS Assembly to the printer (Figure 1).
4. Remove the LVPS Assembly.

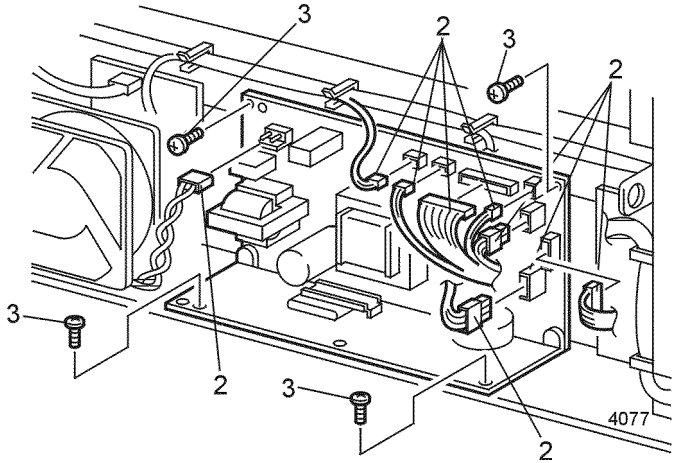


Figure 1 Low Voltage Power Supply (LVPS)

Replacement

1. Reinstall the components in the reverse order.

REP 8.7 LVPS FAN

Parts List on PL 9.2

Removal

CAUTION

These components are susceptible to electrostatic discharge. Observe all ESD procedures to avoid damage.

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Lower Rear Cover (REP 1.7).
2. Disconnect P/J166 from the LVPS Assembly (Figure 1).
3. Remove the Fan Harness from all clamps.
4. Remove the two screws that secure the LVPS Fan to the LVPS Assembly (Figure 1).
5. Remove the LVPS Fan.

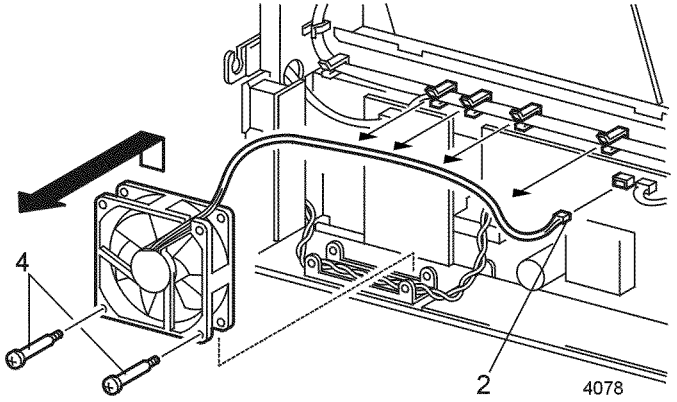


Figure 1 LVPS Fan

Replacement

1. Reinstall the components in the reverse order.

REP 8.8 AC Input Assembly

Parts List on PL 9.2

Removal

CAUTION

These components are susceptible to electrostatic discharge. Observe all ESD procedures to avoid damage.

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Lower Rear Cover (REP 1.7).
2. Remove the LVPS Fan (REP 8.7).
3. Remove the screw that secures the grounding wire to the printer (Figure 1).
4. Disconnect P/J167 from the LVPS Assembly (Figure 1).
5. Remove the two screws that secure the AC Input Connector to the printer (Figure 1).
6. Disconnect P/J171 and P/J172 from the AC Input PWB (Figure 1).
7. Remove the two screws that secure the AC Input PWB to the LVPS Assembly (Figure 1).
8. Flex the Right Cover out as you remove the AC Input Assembly.

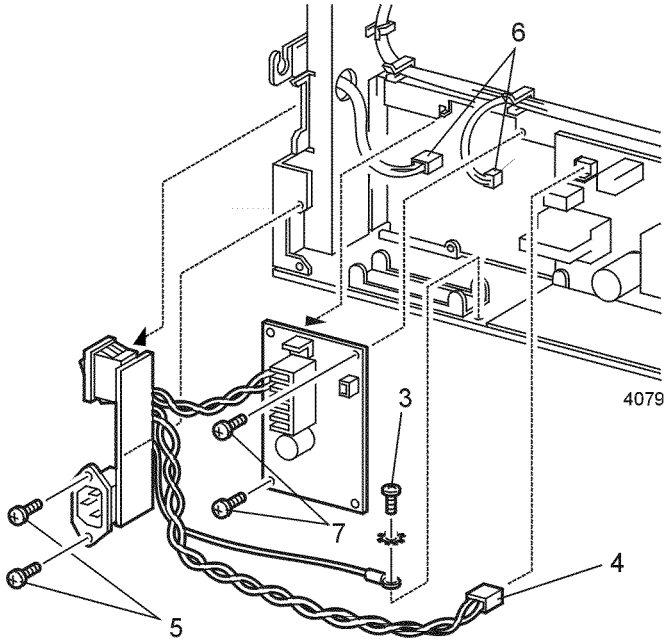


Figure 1 AC Input Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 8.9 Control Panel +5 VDC Power Supply

Parts List on PL 9.2

Removal

CAUTION

These components are susceptible to electrostatic discharge. Observe all ESD procedures to avoid damage.

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Left Cover (REP 1.1).
2. Loosen the two thumb nuts and remove the System Controller PWB Shield Cover (Figure 1).
3. Remove the four screws that secure the MCU Cover (Figure 2). Remove the cover.
4. Disconnect P/J169 from the +5 VDC power Supply (Figure 3).
5. Remove the two screws that secure the +5 VDC Power Supply (Figure 3). Remove the Power Supply.

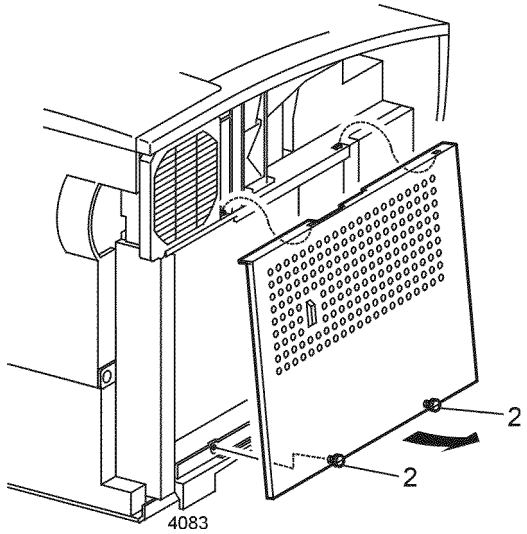


Figure 1 Shield Cover

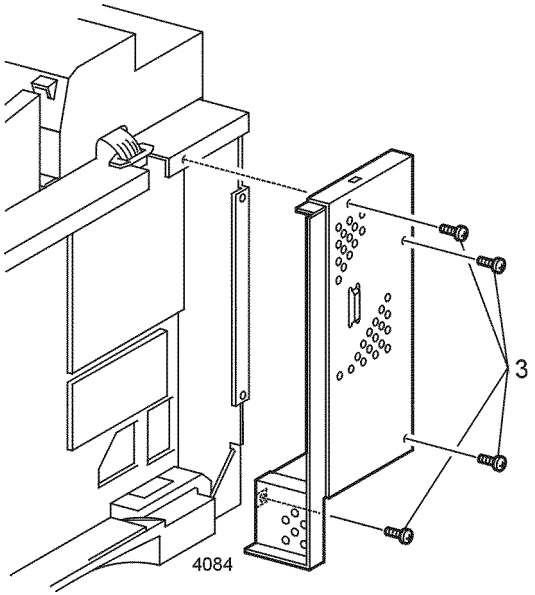


Figure 2 Print Engine Controller PWB Cover

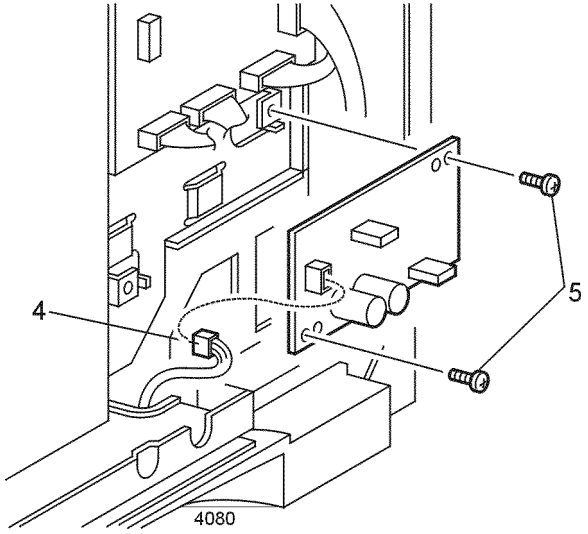


Figure 3 +5 VDC Power Supply

Replacement

1. Reinstall the components in the reverse order.

REP 9.1 Duplex Assembly

Parts List on PL 13.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Rear Cover.
2. Remove Left Cover (REP 1.1).
3. Pull the top of the Duplex Assembly away from the printer to disengage the two hooks securing the unit (Figure 1).
4. Pull the Duplex Assembly out and up to remove (Figure 1).

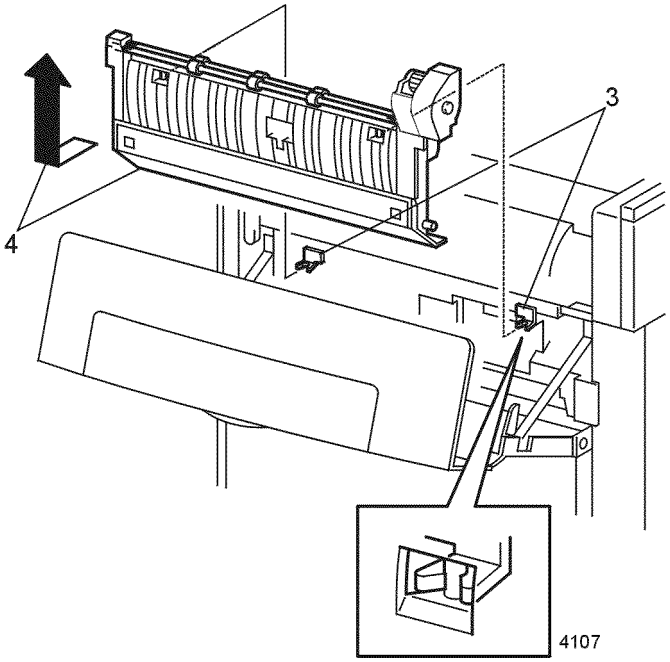


Figure 1 Duplex Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 9.2 Exit Motor Assembly

Parts List on PL 13.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Duplex Assembly (REP 9.1).
2. Remove the two screws that secure the Motor Assembly to the Duplex Assembly (Figure 1).

   NOTE: *There are different type and lengths of screws removed in Step 3.*

3. Remove the harness from the cable clamp (Figure 1).
4. Disconnect P/J510 from the Duplex Assembly PWB (Figure 1).
5. Rotate the connector sideways and push the connector through the hole in the Duplex frame (Figure 1).
6. Remove the motor cover (Figure 1).
7. Remove the two screws that secure the Exit Motor to the holder assembly (Figure 1).

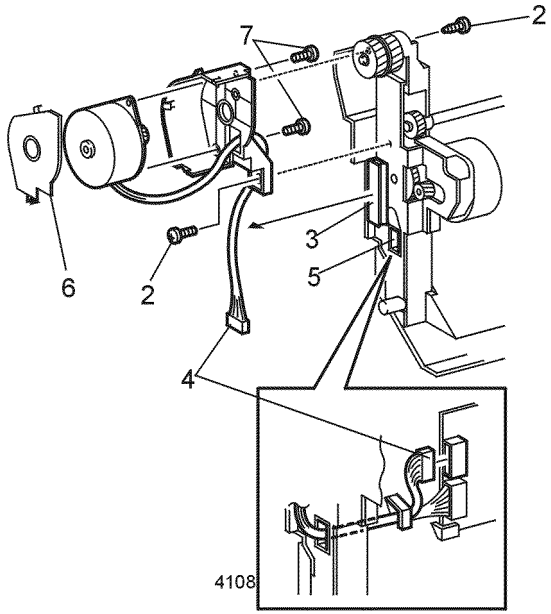


Figure 1 Exit Motor Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 9.3 Drive Belt

Parts List on PL 13.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Duplex Assembly (REP 9.1).
2. Remove the E-ring and collar from the right end of the Upper Roll Assembly (Figure 1).
3. Remove the Belt (Figure 1).

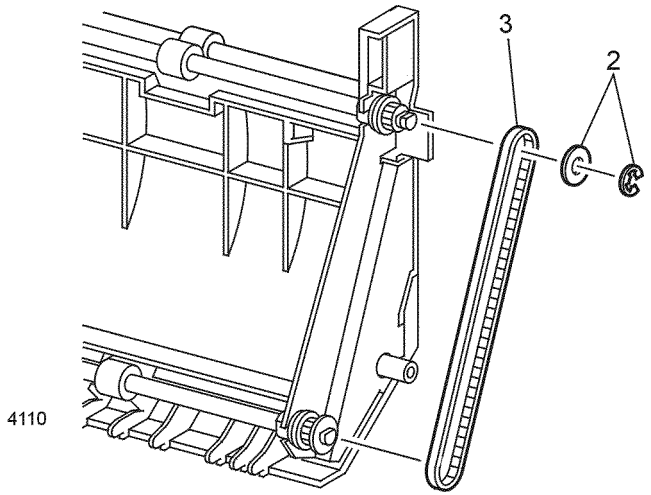


Figure 1 Duplex Drive Belt

Replacement

1. Reinstall the components in the reverse order.

REP 9.4 Upper Roll Assembly

Parts List on PL 13.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Duplex Assembly (REP 9.1).
2. Remove the Exit Motor Assembly (REP 9.2).

   NOTE: *The type and size of screws as you remove them in step three.*

3. Remove the six screws that secure the Left Bracket Assembly (Figure 1). Remove the bracket.
4. Remove the E-ring, Z15 gear, and bearing from the left end of the Upper Roll Assembly (Figure 1).
5. Remove the E-ring, collar, pulley, and bearing from the right end of the Upper Roll Assembly (Figure 1).
6. Remove the Upper Roll Assembly (Figure 1).

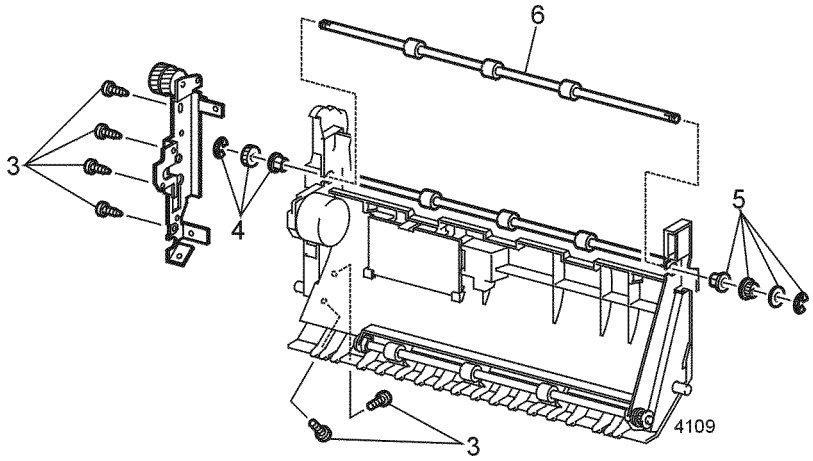


Figure 1 Upper Roll Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 9.5 Lower Roll Assembly

Parts List on PL 13.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Duplex Assembly (REP 9.1).
2. Remove the E-ring and bearing from the left end of the Roll Assembly (Figure 1).
3. Remove the E-ring and collar from the right end of the Roll Assembly (Figure 1).
4. Remove the Belt, pulley, and bearing from the right end of the Roll Assembly (Figure 1).
5. Remove the Lower Roll Assembly (Figure 1).

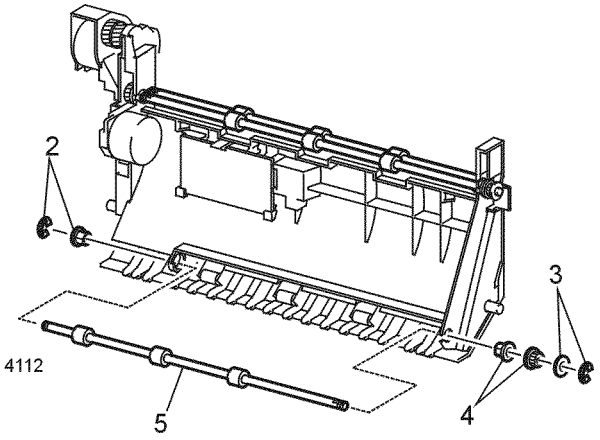


Figure 1 Lower Roll Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 9.6 Sensor Assembly

Parts List on PL 13.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Duplex Assembly (REP 9.1).
2. Disconnect P/J512 from the Duplex PWB (Figure 1).
3. Release the four locking tabs and remove the sensor (Figure 1).

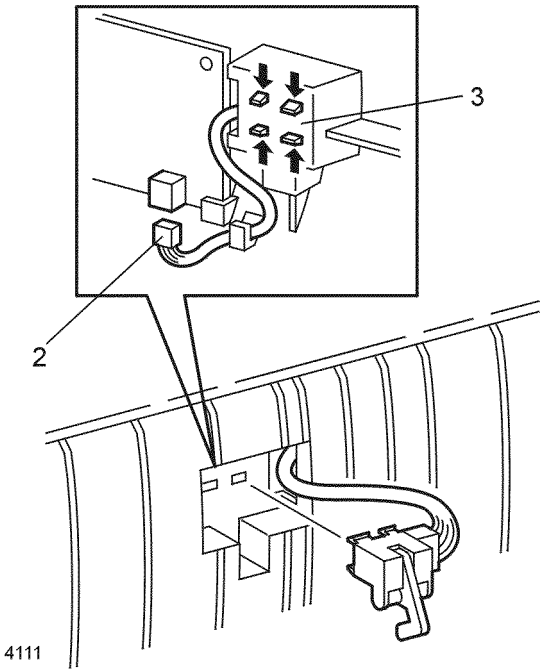


Figure 1 Sensor Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 9.7 Duplex PWB

Parts List on PL 13.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Duplex Assembly (REP 9.1).
2. Disconnect P/J508, P/J510, and P/J512 from the Duplex PWB (Figure 1).
3. Push up on the locking tab and lift the Duplex PWB (Figure 1).
4. Remove the PWB (Figure 1).

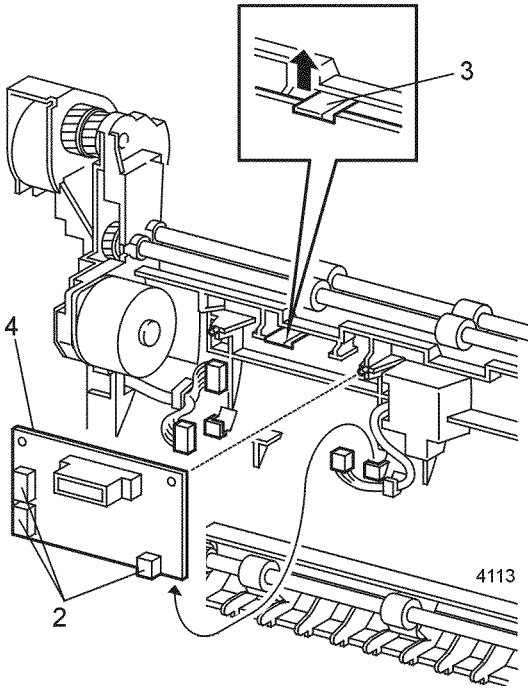


Figure 1 Duplex PWB

Replacement

1. Reinstall the components in the reverse order.

REP 9.8 Drive Motor Assembly

Parts List on PL 13.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Duplex Assembly (REP 9.1).
2. Disconnect P/J508 from the Duplex PWB (Figure 1).
3. Remove the two screws that secure the Motor Assembly to the Duplex Assembly (Figure 1).

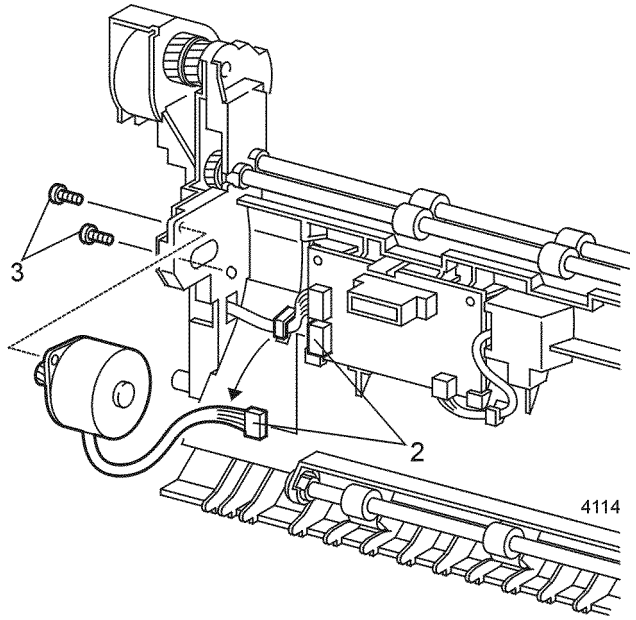


Figure 1 Motor Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 10.1 Offset Catch Tray (OCT)

Parts List on PL 10.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the printer Rear Cover.
2. Loosen the thumb screw located on the inside of the right frame (Figure 1).
3. Lift the Offset Catch Tray (OCT) straight up and remove (Figure 1).
4. Remove OCT Solenoid Assembly (REP 10.5) if removal is permanent.

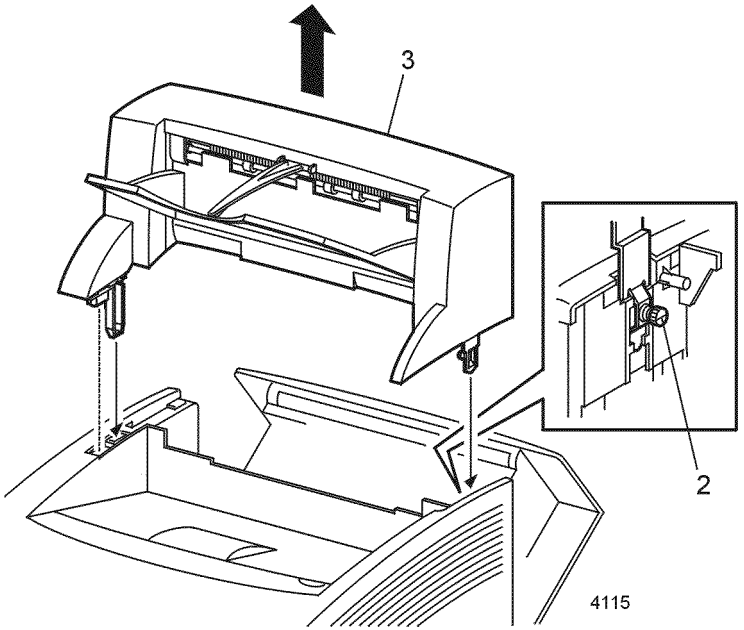


Figure 1 Offset Catch Tray

Replacement

1. Reinstall the components in the reverse order.

REP 10.2 Top Cover

Parts List on PL 10.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the OCT Rear Cover.
2. Remove the OCT Output Catch Tray.
3. Remove the four screws that secure the Top Cover (Figure 1).
4. Lift the cover up to remove (Figure 1).

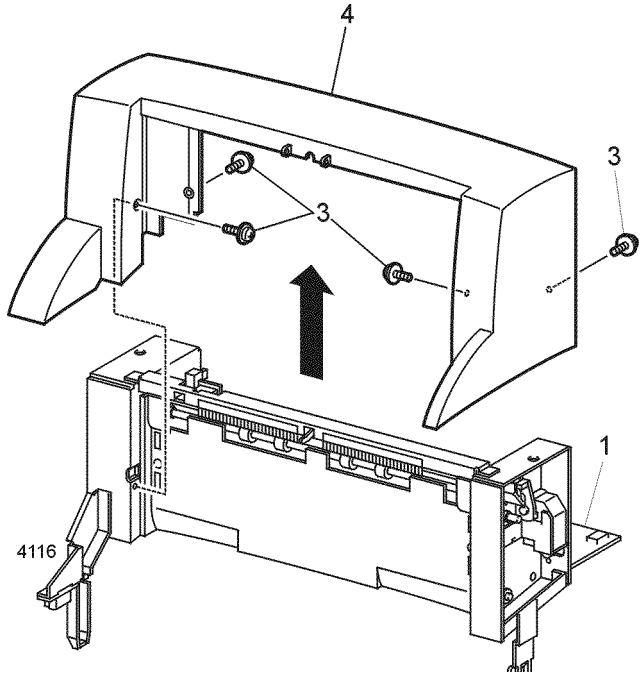


Figure 1 OCT Top Cover

Replacement

1. Reinstall the components in the reverse order.

REP 10.3 Rear Cover Assembly

Parts List on PL 10.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the OCT Rear Cover.
2. Rotate the cover strap 90o and remove (Figure 1).
3. Carefully press in on the right bracket to disengage the cover from the frame (Figure 1).
4. Remove the cover (Figure 1).

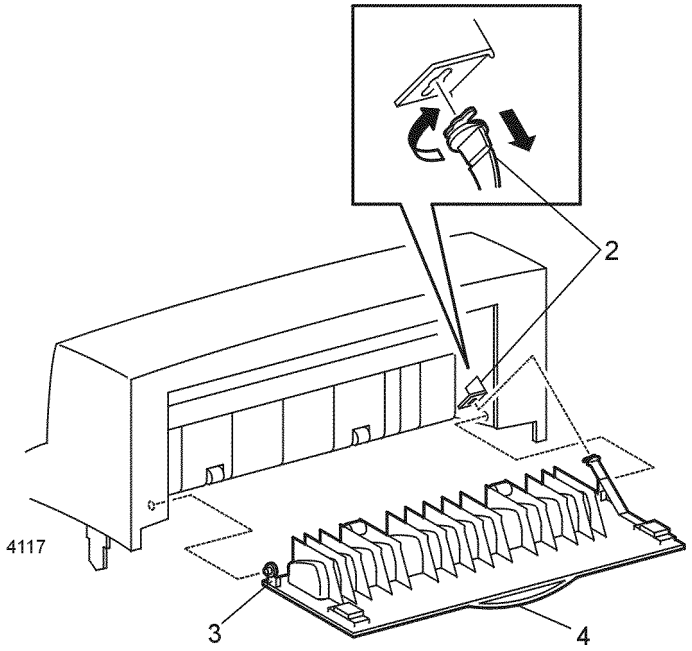


Figure 1 OCT Rear Cover

Replacement

1. Reinstall the components in the reverse order.

REP 10.4 Front Cover

Parts List on PL 10.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the OCT Rear Cover.
2. Remove the OCT Top Cover (REP 10.2).
3. Remove the two screws that secure the Front Cover (Figure 1). Remove the cover.

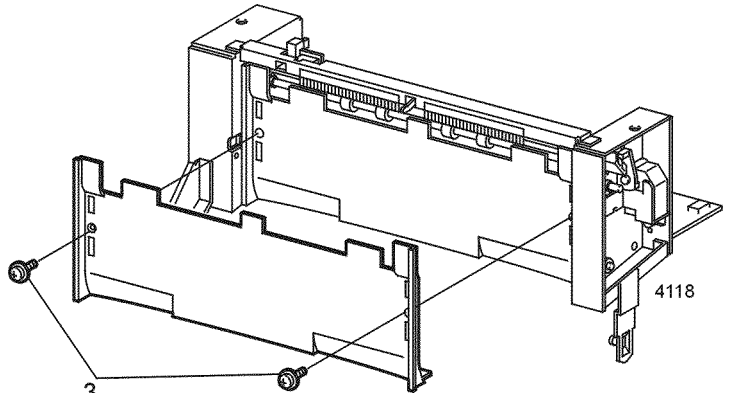


Figure 1 OCT Front Cover

Replacement

1. Reinstall the components in the reverse order.

REP 10.5 Exit Gate Solenoid

Parts List on PL 10.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the printer Rear Cover.
2. Press the locking tab and disconnect P/J519 from the Rear Cover (Figure 1).
3. Press the locking tab on the Solenoid Assembly and remove (Figure 1).

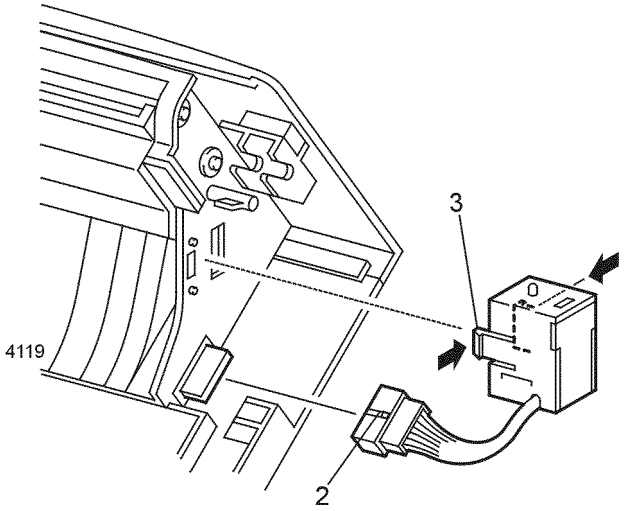


Figure 1 Exit Gate Solenoid

Replacement

1. Reinstall the components in the reverse order.

REP 10.6 Eliminator Assembly

Parts List on PL 10.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the OCT Rear Cover.
2. Remove the OCT Top Cover (REP 10.2).
3. Remove the Stack Full Sensor (REP 10.7).
4. Remove the two screws that secure the Eliminator Assembly to the OCT (Figure 1).
5. Remove the Eliminator Assembly (Figure 1).

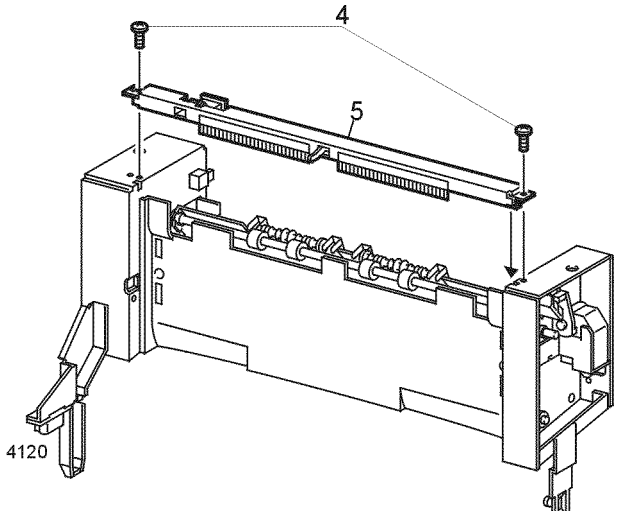


Figure 1 Eliminator Assembly

Replacement

1. If replacing the Eliminator Assembly, remove the Stack Full Sensor Actuator (REP 10.8) and place on the new assembly.
2. Reinstall the components in the reverse order.

REP 10.7 Stack Full Sensor

Parts List on PL 10.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the OCT Rear Cover.
2. Remove the OCT Top Cover (REP 10.2).
3. Disconnect P/J521 from the Stack Full Sensor (Figure 1).
4. Release the three locking tabs and remove the sensor (Figure 1).

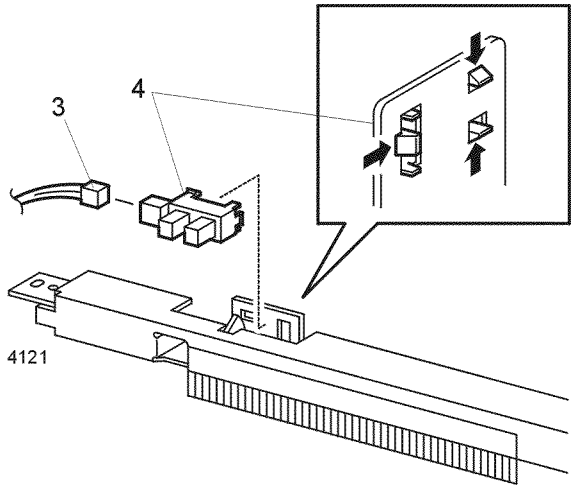


Figure 1 Stack Full Sensor

Replacement

1. Reinstall the components in the reverse order.

REP 10.8 Stack Full Sensor Actuator

Parts List on PL 10.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the OCT Rear Cover.
2. Remove the OCT Top Cover (REP 10.2).
3. Remove the Stack Full Sensor (REP 10.7).
4. Move the actuator to the left. Carefully flex the center of the actuator until the right end is free of the assembly (Figure 1).
5. Remove the actuator.

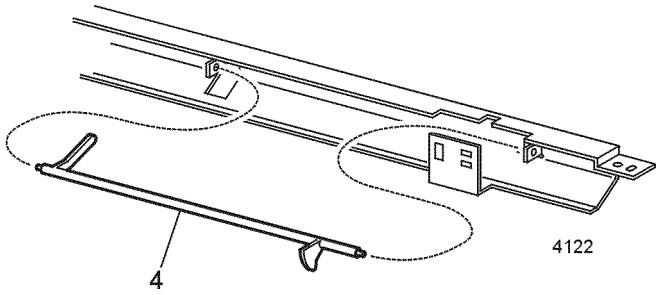


Figure 1 Stack Full Sensor Actuator

Replacement

1. Reinstall the components in the reverse order.

REP 10.9 Offset Motor Assembly

Parts List on PL 10.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the OCT Rear Cover.
2. Remove the OCT Top Cover (REP 10.2).
3. Remove the two screws that secure the Offset Motor Assembly to the OCT (Figure 1).
4. Disconnect P/J516 from the Offset Motor Assembly (Figure 1).

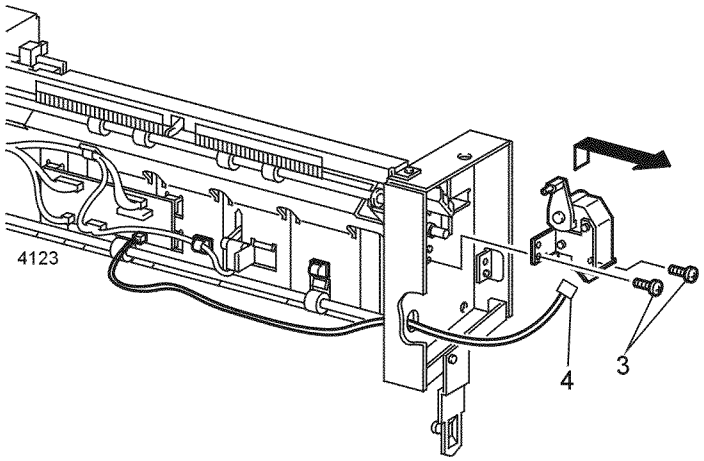


Figure 1 Offset Motor Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 10.10 Drive Motor Assembly

Parts List on PL 10.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the OCT Rear Cover.
2. Remove the OCT Top Cover (REP 10.2).
3. Disconnect P/J518 from the Drive Motor (Figure 1).
4. Remove the two screws that secure the Motor Bracket to the OCT (Figure 1).
5. Remove the Drive Motor and bracket (Figure 1).

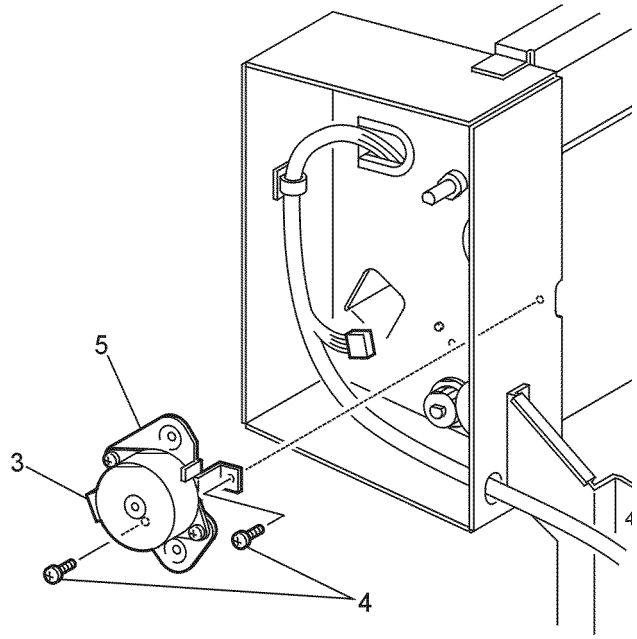


Figure 1 Drive Motor Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 10.11 Offset Assembly

Parts List on PL 10.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the OCT Rear Cover (REP 10.3).
2. Remove the OCT Top Cover (REP 10.2).
3. Remove the OCT Front Cover (REP 10.4).
4. Remove the Eliminator Assembly (REP 10.6).
5. Remove the Offset Motor Assembly (REP 10.9).
6. Remove the Drive Motor Assembly (REP 10.10).
7. Remove the E-ring that secures the Upper Gear 29 (Figure 1). Remove the three upper gears.
8. Remove the E-ring that secures the Lower Gear 29 (Figure 1). Remove the three lower gears.
9. Remove the OCT from the printer (REP 10.1).
10. Remove the E-rings and bearings from both ends of the lower roller (Figure 1). Remove the roller.
11. Remove the two screws that secure the Right Frame Assembly (Figure 1). Remove the Right Frame (Figure 1).

    NOTE: *Use care not to damage the harnesses when removing the Left Frame Assembly.*

12. Remove the two screws that secure the Left Frame Assembly (Figure 1). Remove the Left frame.
13. Remove the Offset Assembly (Figure 1).

Replacement

1. Reinstall the components in the reverse order.
2. Ensure that all harnesses are properly routed.

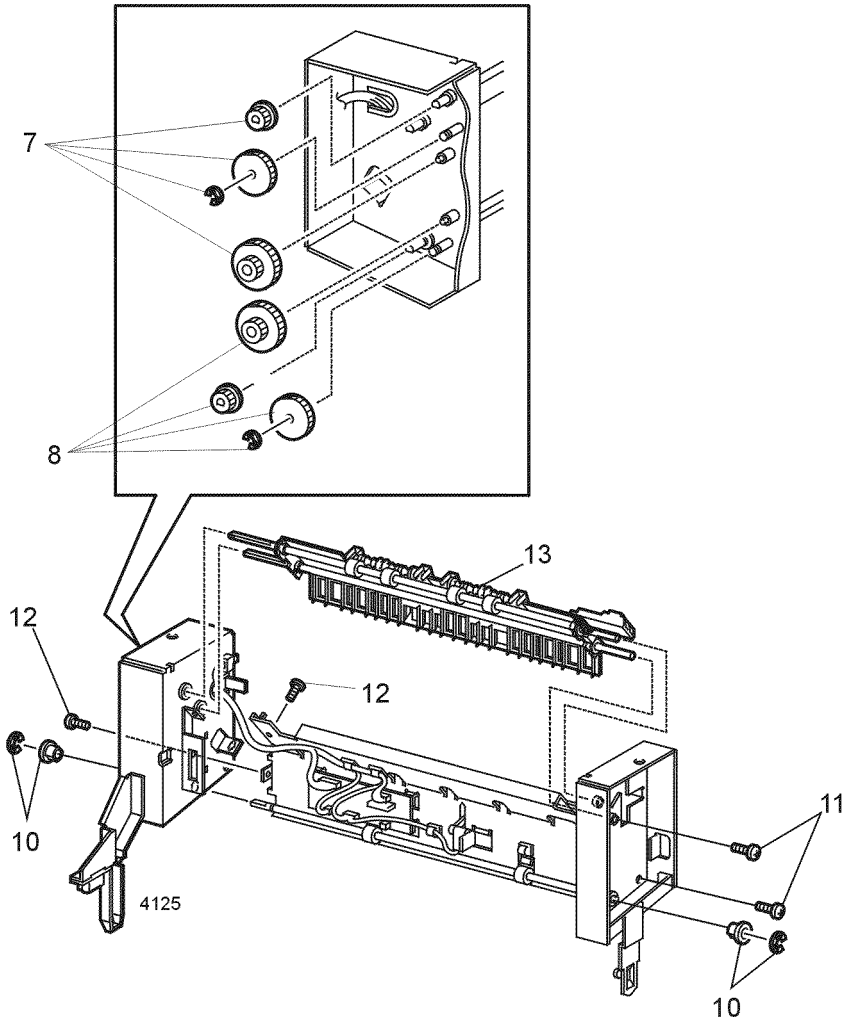


Figure 1 Offset Assembly

REP 10.12 Offset Roller

Parts List on PL 10.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the OCT Rear Cover (REP 10.3).
2. Remove the OCT Top Cover (REP 10.2).
3. Remove the Eliminator Assembly (REP 10.6).
4. Remove the Offset Motor Assembly (REP 10.9).
5. Remove the Drive Motor Assembly (REP 10.10).
6. Remove the Offset Assembly (REP 10.11).
7. Remove the E-rings and bearings from both ends of the Offset Roller (Figure 1).
8. Remove the roller (Figure 1).

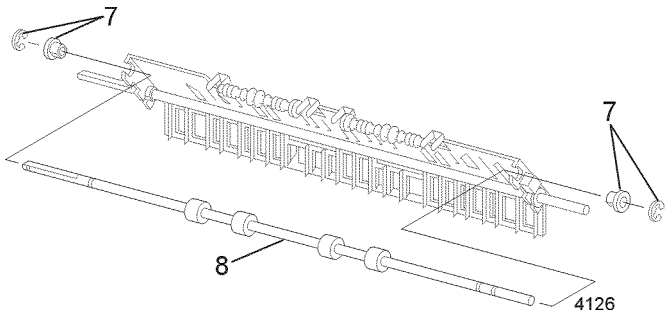


Figure 1 Offset Roller

Replacement

1. Reinstall the components in the reverse order.

REP 10.13 Rear Cover Interlock Switch

Parts List on PL 10.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the OCT Rear Cover.
2. Remove the OCT Top Cover (REP 10.2).
3. Disconnect P/J525 from the interlock switch (Figure 1).
4. Release the two locking tabs (Figure 1) and remove the switch.

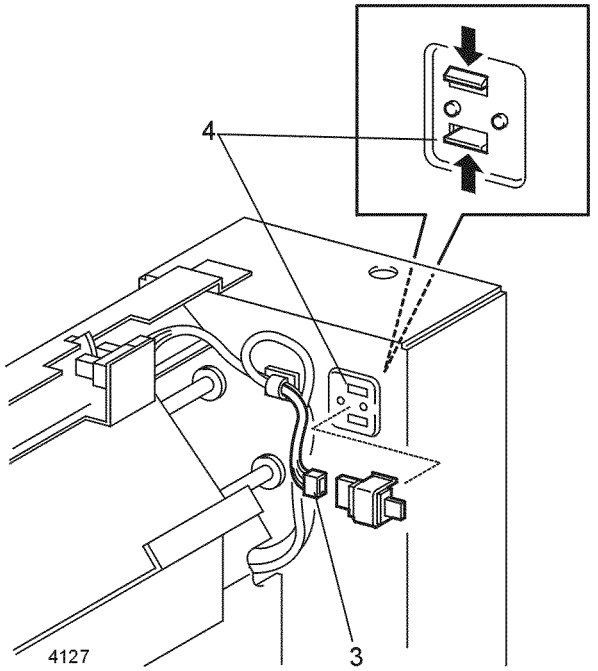


Figure 1 Interlock Switch

Replacement

1. Reinstall the components in the reverse order.

REP 10.14 OCT PWB

Parts List on PL 10.2

Removal

CAUTION

These components are susceptible to electrostatic discharge. Observe all ESD procedures to avoid damage.

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the OCT Rear Cover.
2. Remove the OCT Top Cover (REP 10.2).
3. Remove the OCT Front Cover (REP 10.4).
4. Disconnect P/J514, P/J515, P/J517, P/J520, and P/J524 from the OCT PWB (Figure 1).
5. Remove the two screws that secure the OCT PWB (Figure 1). Remove the PWB.

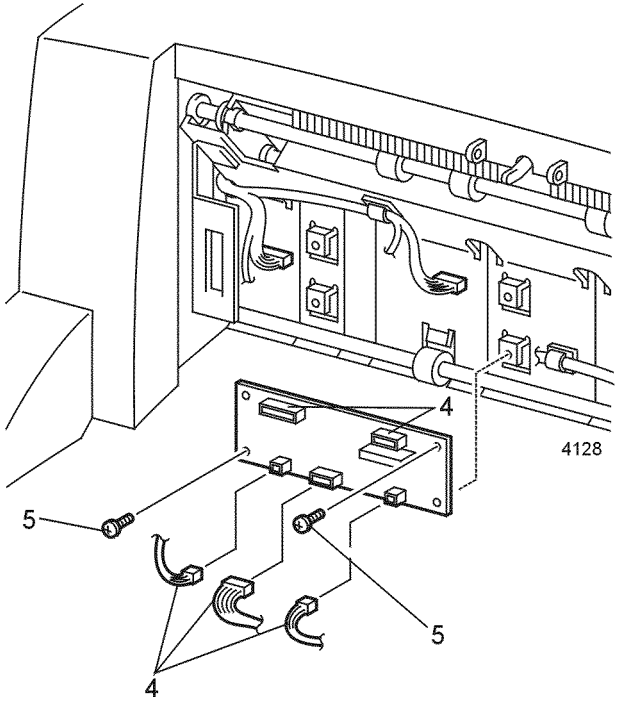


Figure 1 OCT PWB

Replacement

1. Reinstall the components in the reverse order.

REP 10.15 Paper Sensor

Parts List on PL 10.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the OCT Rear Cover.
2. Remove the OCT Top Cover (REP 10.2).
3. Remove the OCT Front Cover (REP 10.4).
4. Disconnect P/J523 from the Paper Sensor (Figure 1).
5. Release the two locking tabs that secure the sensor (Figure 1). Remove the sensor.

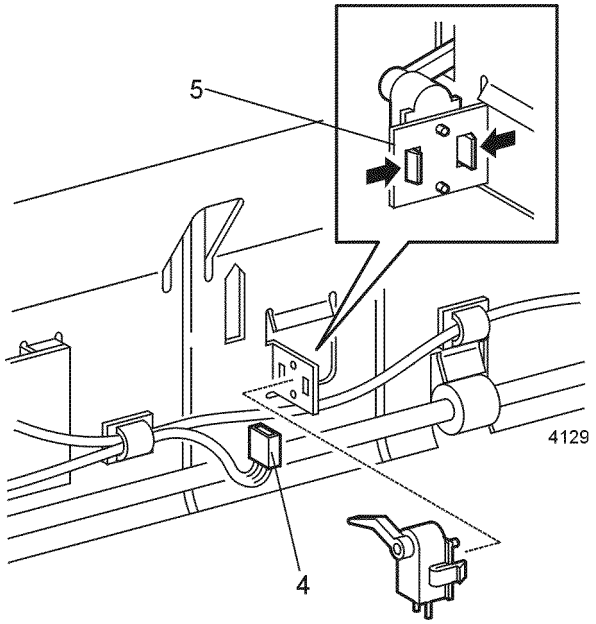


Figure 1 Paper Sensor

Replacement

1. Reinstall the components in the reverse order.

REP 11.1 Printer Removal

Parts List on PL 11.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the OCT, if installed (REP 10.1).
2. Remove Tray 1 from the printer.
3. Remove the two screws that secure the printer to the Optional Paper Feeder. Remove the printer (Figure 1).

   NOTE: *For safety reasons, have someone assist you in removing the printer and setting it in a safe place.*

4. Remove the printer.

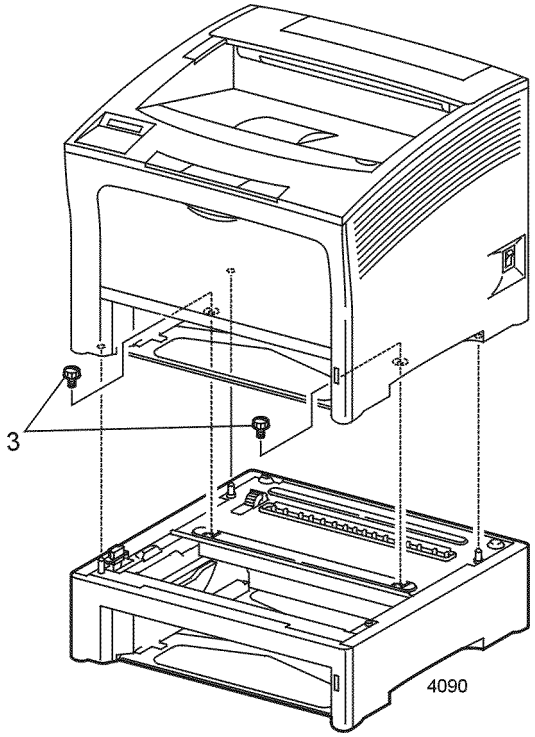


Figure 1 Printer Removal

Replacement

1. Reinstall the components in the reverse order.

REP 11.2 Front Cover

Parts List on PL 11.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the paper tray from the feeder.
2. Loosen the two screws that secure the front cover (Figure 1).
3. Pull out on the top of the Front Cover and lift slightly to remove the cover (Figure 1).

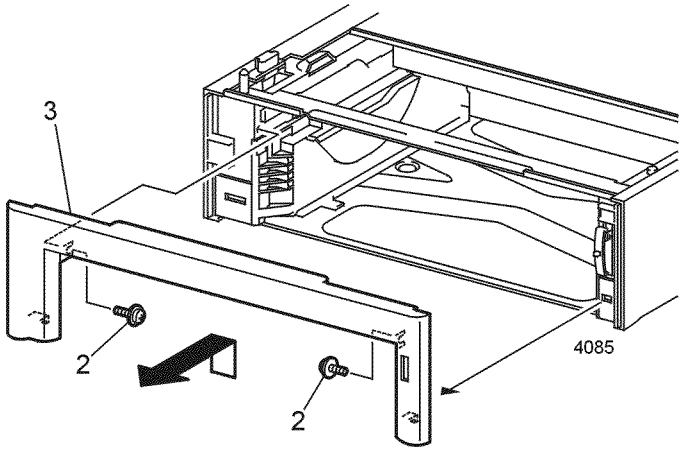


Figure 1 Front Cover

Replacement

1. Reinstall the components in the reverse order.

REP 11.3 Left Cover

Parts List on PL 11.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the paper tray from the feeder.
2. Remove the Front Cover (REP 11.2).
3. Remove the five screws that secure the Left Cover (Figure 1). Remove the cover.

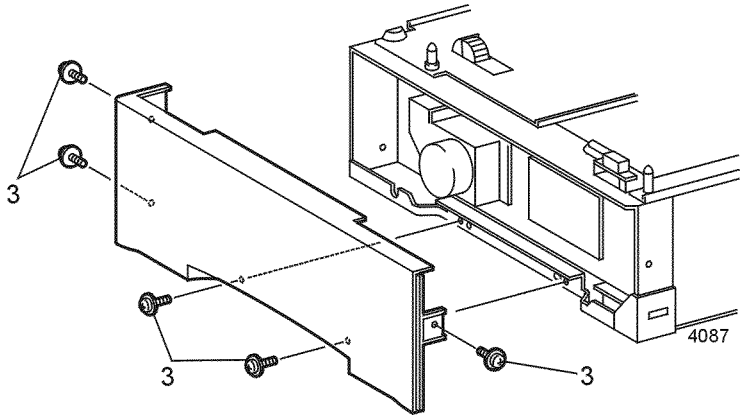


Figure 1 Left Cover

Replacement

1. Reinstall the components in the reverse order.

REP 11.4 Right Cover

Parts List on PL 11.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the paper tray from the feeder.
2. Remove the Front Cover (REP 11.2).
3. Remove the five screws that secure the Right Cover (Figure 1). Remove the cover.

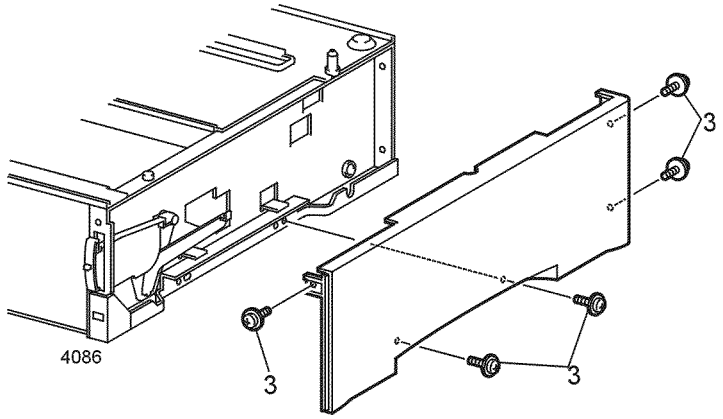


Figure 1 Right Cover

Replacement

1. Reinstall the components in the reverse order.

REP 11.5 Rear Cover

Parts List on PL 11.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Rear Cover.
2. Carefully pry the left hinge pin (as viewed from the rear of the feeder) out of the printer frame (Figure 1).
3. Pull the right end of the cover out and up (Figure 1). Remove the cover.

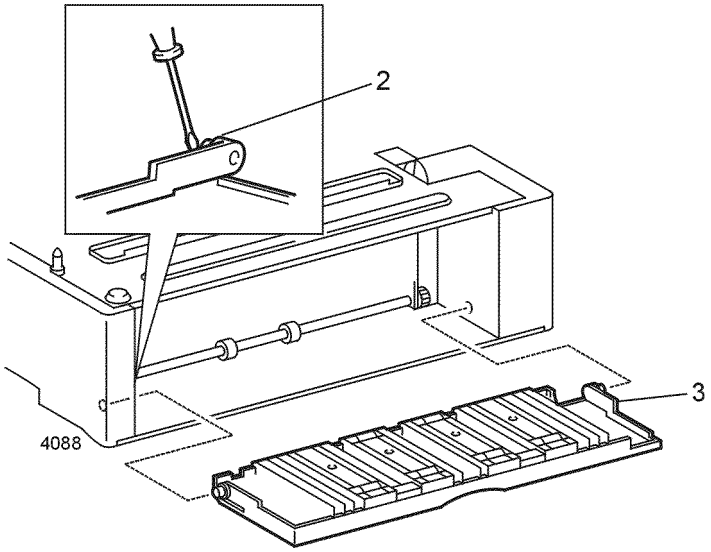


Figure 1 Rear Cover

Replacement

1. Reinstall the components in the reverse order.

REP 11.6 Drive Assembly

Parts List on PL 11.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the paper tray from the feeder.
2. Remove the Front Cover (REP 11.2).
3. Remove the Left Cover (REP 11.3)
4. Disconnect P/J13B from the Feeder PWB (Figure 1).
5. Remove the four screws that secure the Drive Assembly to the printer frame (Figure 1). Remove the Drive Assembly.

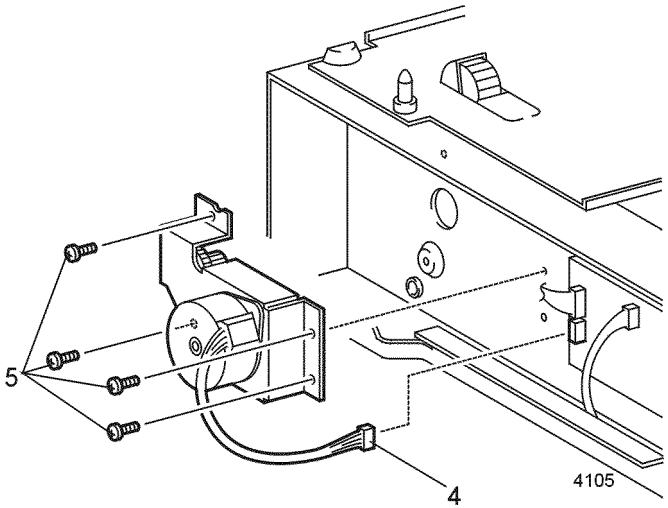


Figure 1 Feeder Drive Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 11.7 Drive Motor

Parts List on PL 11.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the paper tray from the feeder.
2. Remove the Front Cover (REP 11.2).
3. Remove the Left Cover (REP 11.3)
4. Remove the Drive Assembly (REP 11.6).
5. Remove the two screws that secure the Drive Motor to the Drive Assembly (Figure 1). Remove the motor.

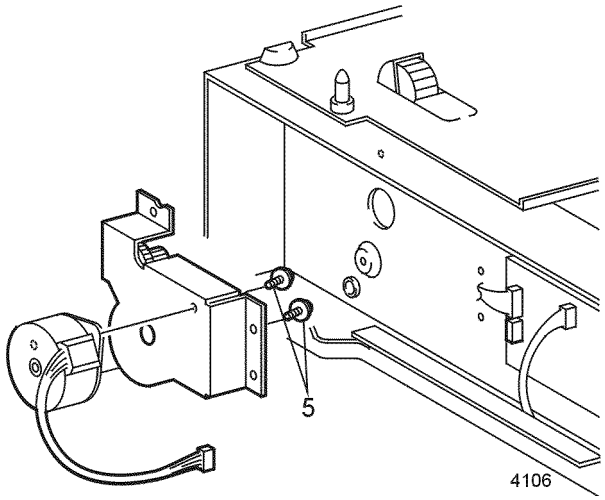


Figure 1 Feeder Drive Motor

Replacement

1. Reinstall the components in the reverse order.

REP 11.8 Feeder PWB

Parts List on PL 11.2

Removal

CAUTION

These components are susceptible to electrostatic discharge. Observe all ESD procedures to avoid damage.

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the paper tray from the feeder.
2. Remove the Front Cover (REP 11.2).
3. Remove the Left Cover (REP 11.3)
4. Disconnect P/J13B, P/J133, P/J138, P/J132, and P/J136 from the Feeder PWB (Figure 1).
5. Remove the two screws that secure the PWB to the printer frame (Figure 1). Remove the PWB.

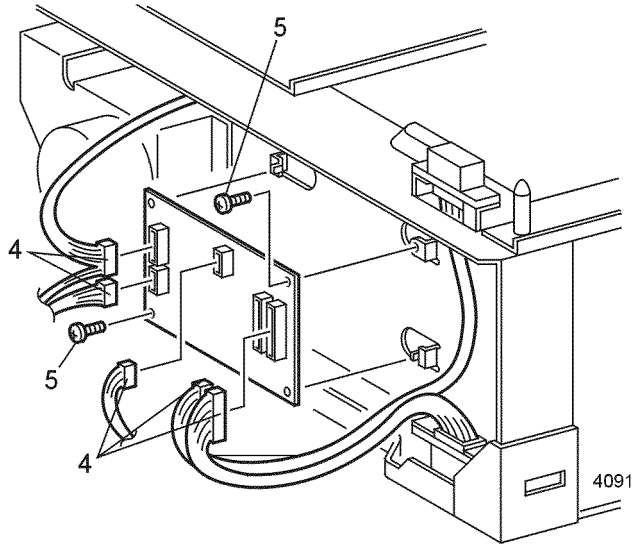


Figure 1 Feeder PWB

Replacement

1. Reinstall the components in the reverse order.

REP 11.9 Feed Head Assembly

Parts List on PL 11.3

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the printer from the 500 Sheet Paper Feeder (REP 11.1).
2. Remove the paper tray from the feeder.
3. Remove the Front Cover (REP 11.2).
4. Remove the Left Cover (REP 11.3)
5. Disconnect P/J13A, P/J13P, and P/J135 from the Feed Head Assembly (Figure 1).
6. Remove the screw that secures the Feed Head to the feeder frame (Figure 1).
7. Push the right locking pin down and slide the right end of the Feed Head forward (Figure 1).
8. Push the left locking pin down and slide the left end of the Feed Head forward (Figure 1).
9. Slide the Feed Head forward and remove (Figure 1).

Replacement

1. Reinstall the components in the reverse order.

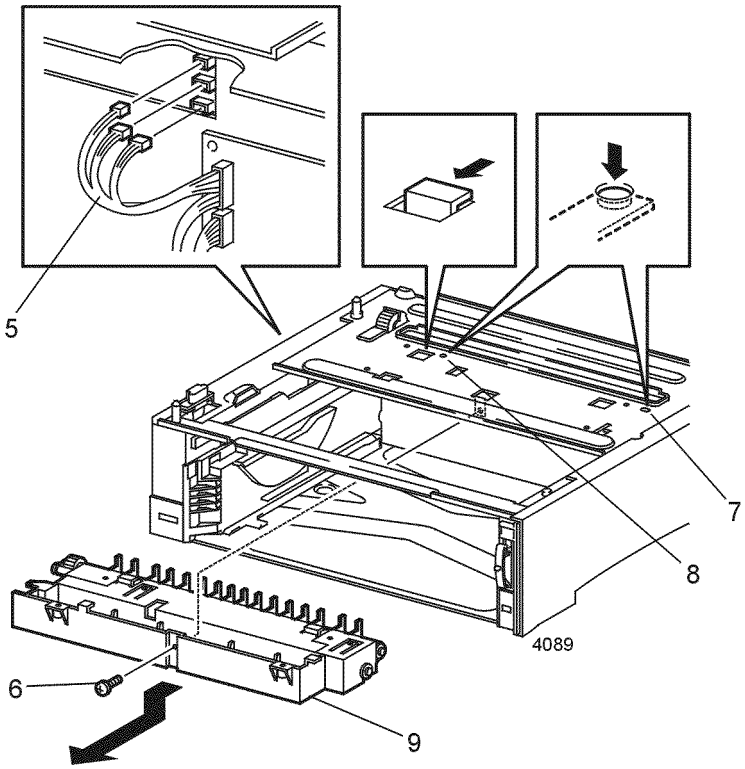


Figure 1 Feed Head Assembly

REP 11.10 Feed Rolls

Parts List on PL 11.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the printer from the 500 Sheet Feeder (REP 11.1).
2. Remove the paper tray from the feeder.
3. Remove the Front Cover (REP 11.2).
4. Remove the Left Cover (REP 11.3).
5. Remove the 500 Sheet Feed Head Assembly (REP 11.9).
6. Release the Feed Solenoid.
7. Rotate the Feed Rolls up.
8. Press the left locking tab and slide the roll core to the left (Figure 1).
9. Slide the roll core to the left (Figure 1).
10. Slide the feed roll to the left and remove (Figure 1).
11. If replacing the envelope feed rolls, rotate the feed roll shaft to access the locking tabs, press the locking tabs and remove the rolls (Figure 1).

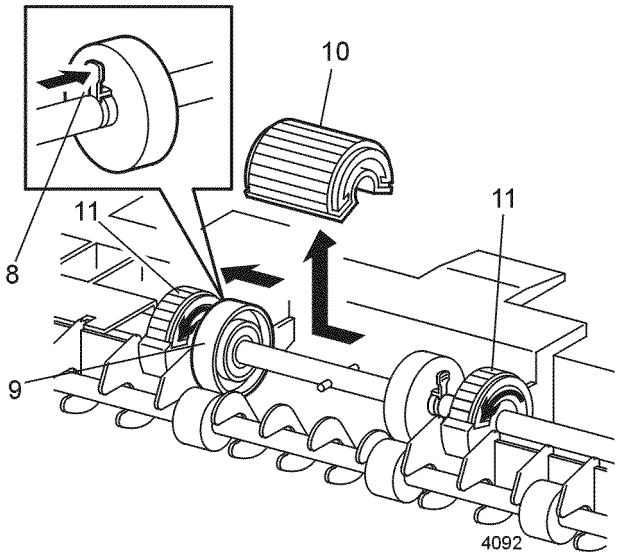


Figure 1 Feed Rolls

Replacement

1. Reinstall the components in the reverse order.

NOTE: *Note the arrows on the side of the envelope feed rolls. The arrows indicate the direction of rotation.*

REP 11.11 Feed Solenoid

Parts List on PL 11.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the printer from the 500 Sheet Feeder (REP 11.1).
2. Remove the paper tray from the feeder.
3. Remove the Front Cover (REP 11.2).
4. Remove the Left Cover (REP 11.3).
5. Remove the 500 Sheet Feed Head Assembly (REP 11.9).
6. Disconnect P/J135 (Figure 1).
7. Remove the screw that secures the feed solenoid (Figure 1). Remove the solenoid.

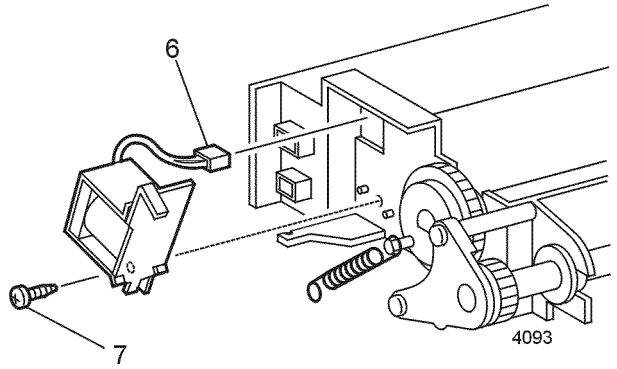


Figure 1 Feed Solenoid

Replacement

1. Reinstall the components in the reverse order.

REP 11.12 Turn Roll Assembly

Parts List on PL 11.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the printer from the 500 Sheet Feeder (REP 11.1).
2. Remove the paper tray from the feeder.
3. Remove the Front Cover (REP 11.2).
4. Remove the Left Cover (REP 11.3).
5. Remove the 500 Sheet Feed Head Assembly (REP 11.9).
6. Remove the two screws that secure the Gear Cover (Figure 1). Remove the gear cover.
7. Release the locking tab and remove the turn gear (Figure 1).
8. Remove the E-rings and bearings from the left end of the turn shaft (Figure 1).
9. Remove the Turn Roll Assembly (Figure 1).

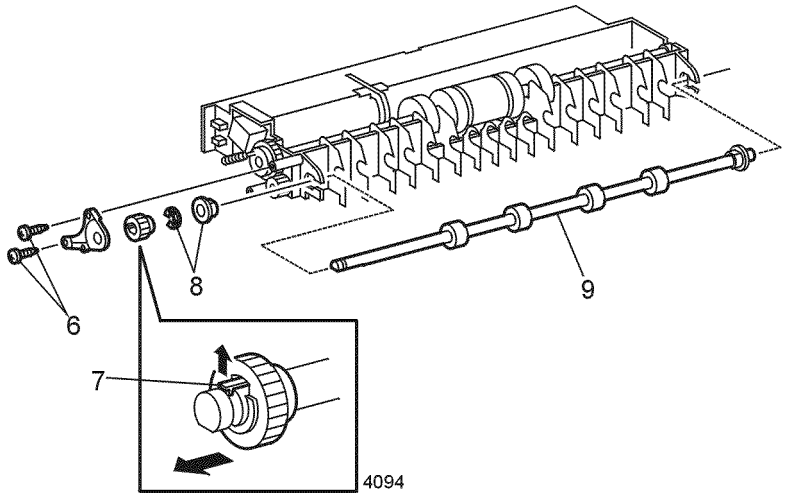


Figure 1 Turn Roll Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 11.13 Retard Chute Assembly

Parts List on PL 11.3

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the printer from the 500 Sheet Feeder (REP 11.1).
2. Remove the paper tray from the feeder.
3. Remove the Front Cover (REP 11.2).
4. Remove the Left Cover (REP 11.3).
5. Remove the 500 Sheet Feed Head Assembly (REP 11.9).
6. Tilt the retard chute forward.
7. Use a screwdriver to pry up the right end of the chute (Figure 1).
8. Slide the chute to the right and remove (Figure 1).

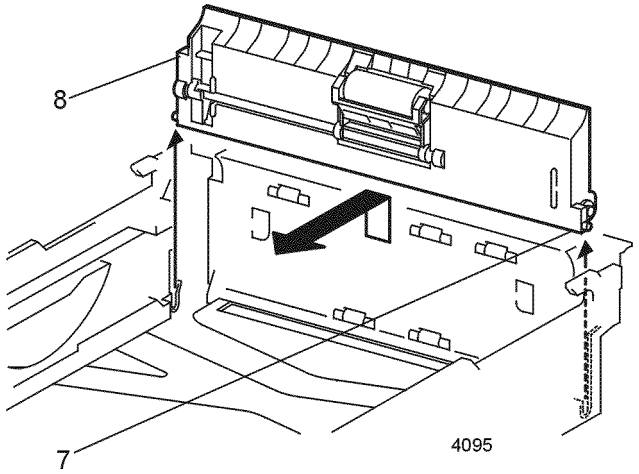


Figure 1 Retard Chute Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 11.14 Left Tray Guide

Parts List on PL 11.3

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the printer from the 500 Sheet Feeder (REP 11.1).
2. Remove the paper tray from the feeder.
3. Remove the Front Cover (REP 11.2).
4. Remove the Left Cover (REP 11.3).
5. Remove the 500 Sheet Feed Head Assembly (REP 11.9).
6. Remove the Retard Chute (REP 11.13).
7. Disconnect P/J133 and P/J138 and harness clip from the Feeder PWB (Figure 1).
8. Remove the seven screws that secure the Left Tray Guide to the feeder (Figure 1).
9. Use a small screwdriver to pry up the locking tab (Figure 1).
10. Remove the Left Tray Guide.

Replacement

1. Reinstall the components in the reverse order.

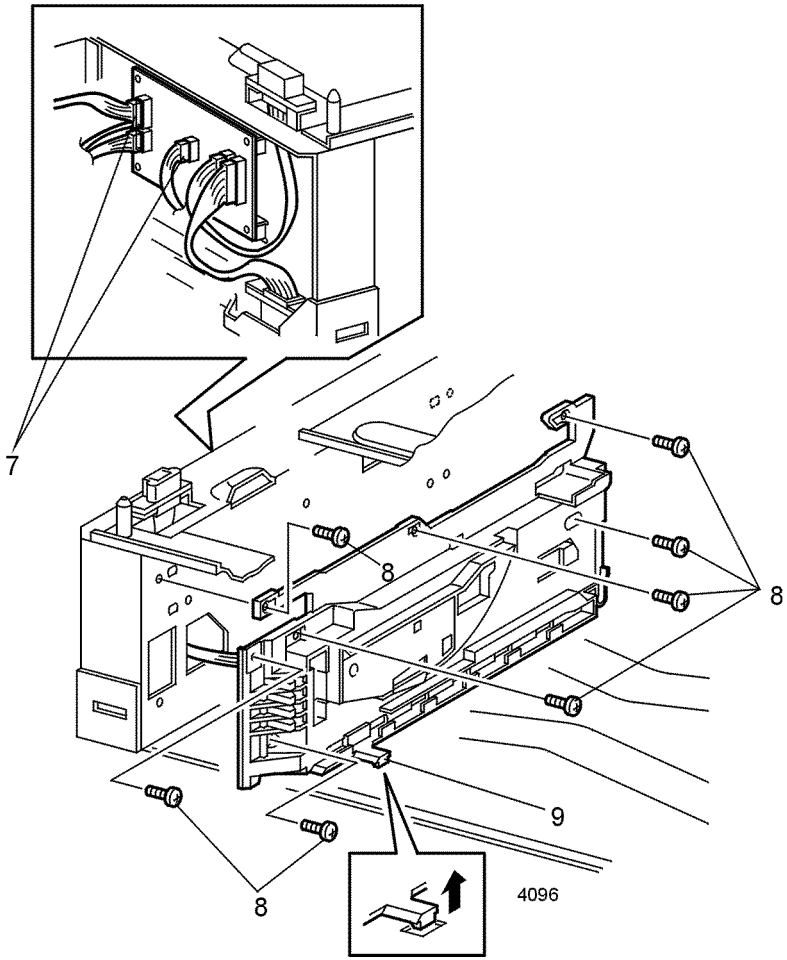


Figure 1 Left Tray Guide

REP 11.15 Right Tray Guide

Parts List on PL 11.3

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the printer from the 500 Sheet Feeder (REP 11.1).
2. Remove the paper tray from the feeder.
3. Remove the Front Cover (REP 11.2).
4. Remove the Right Cover (REP 11.4).
5. Remove the 500 Sheet Feed Head Assembly (REP 11.9).
6. Remove the Retard Chute (REP 11.13).
7. Carefully push down on the locking tab that secures the rod to the paper level actuator (Figure 1).
8. Remove the paper level assembly from the stud on the frame (Figure 1).
9. Move the paper level assembly forward and remove from the feeder (Figure 1).
10. Remove the five screws that secure the Right Tray Guide to the feeder (Figure 2).
11. Use a small screwdriver to pry up the locking tab (Figure 2).
12. Remove the Right Tray Guide (Figure 2).

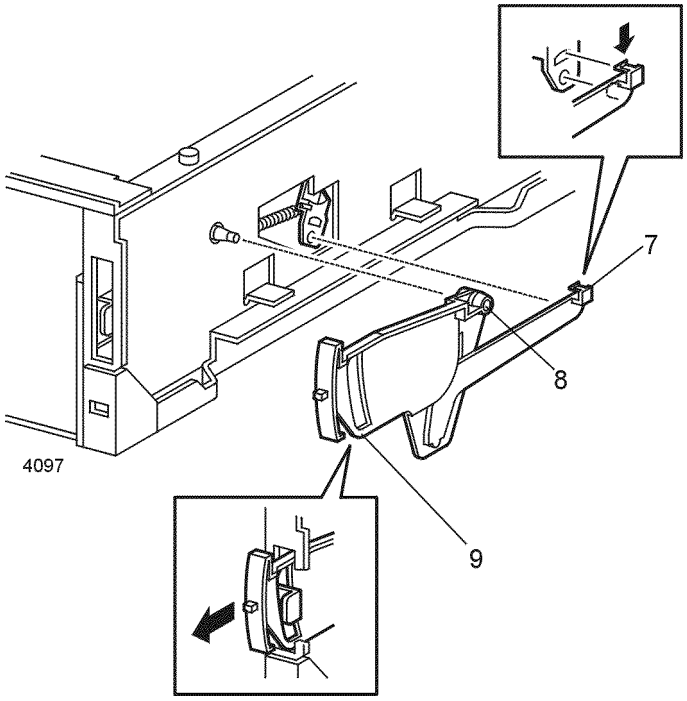


Figure 1 Paper Level Actuator

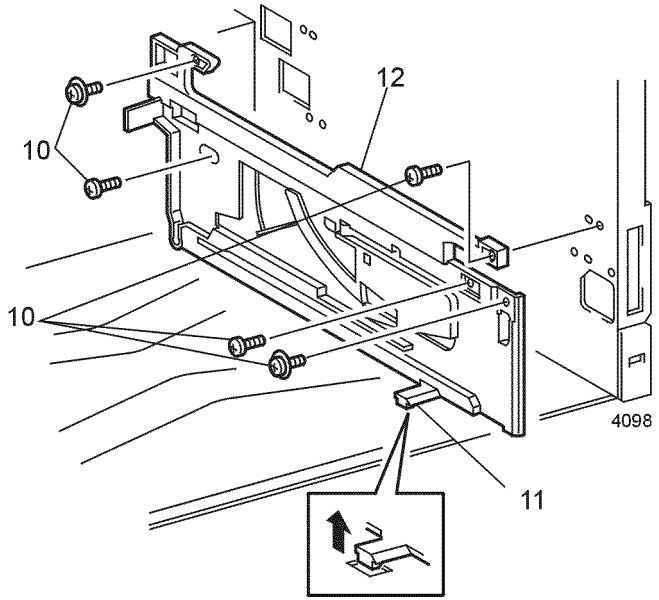


Figure 2 Right Tray Guide

Replacement

1. Reinstall the components in the reverse order.

REP 11.16 Retard Holder Assembly

Parts List on PL 11.3

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the printer from the 500 Sheet Feeder (REP 11.1).
2. Remove the paper tray from the feeder.
3. Remove the Front Cover (REP 11.2).
4. Remove the Left Cover (REP 11.3).
5. Remove the 500 Sheet Feed Head Assembly (REP 11.9).
6. Remove the Retard Chute (REP 11.13).
7. From the back of the Retard Chute Assembly, release the two locking tabs (Figure 1).
8. Remove the Retard Roll from the front of the chute (Figure 1).

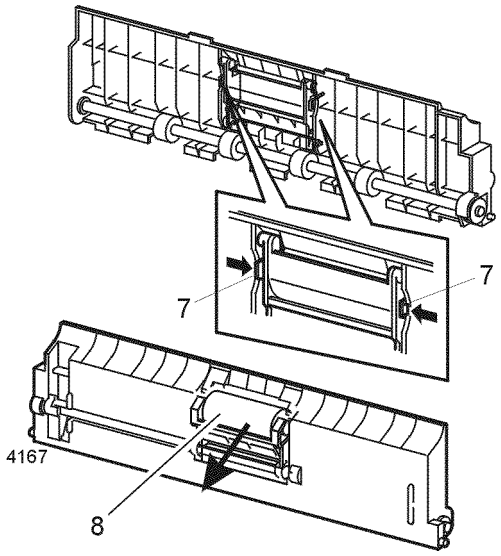


Figure 1 Retard Holder Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 11.17 Retard Turn Roll Assembly

Parts List on PL 11.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the printer from the 500 Sheet Feeder (REP 11.1).
2. Remove the paper tray from the feeder.
3. Remove the Front Cover (REP 11.2).
4. Remove the Left Cover (REP 11.3).
5. Remove the 500 Sheet Feed Head Assembly (REP 11.9).
6. Remove the Retard Chute (REP 11.13).
7. Press the locking tab and remove the Turn Gear from the left end of the shaft (Figure 1).
8. Remove the E-ring from the right end of the shaft (Figure 1).
9. Remove both the right and left bearings (Figure 1).
10. Remove the shaft (Figure 1).

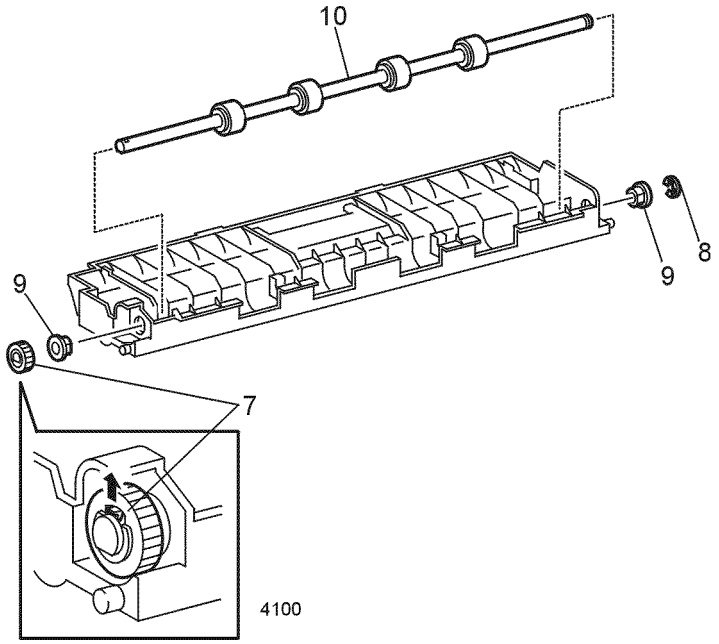


Figure 1 Turn Roll Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 11.18 Paper Size Sensor

Parts List on PL 11.3

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the printer from the 500 Sheet Feeder (REP 11.1).
2. Remove the paper tray from the feeder.
3. Remove the Front Cover (REP 11.2).
4. Remove the Left Cover (REP 11.3).
5. Remove the 500 Sheet Feed Head Assembly (REP 11.9).
6. Remove the Retard Chute (REP 11.13).
7. Remove the Left Tray Guide (REP 11.14).
8. Disconnect P/J139 from the back of the Paper Size Sensor (Figure 1).
9. Release the two locking tabs and remove the sensor (Figure 1).

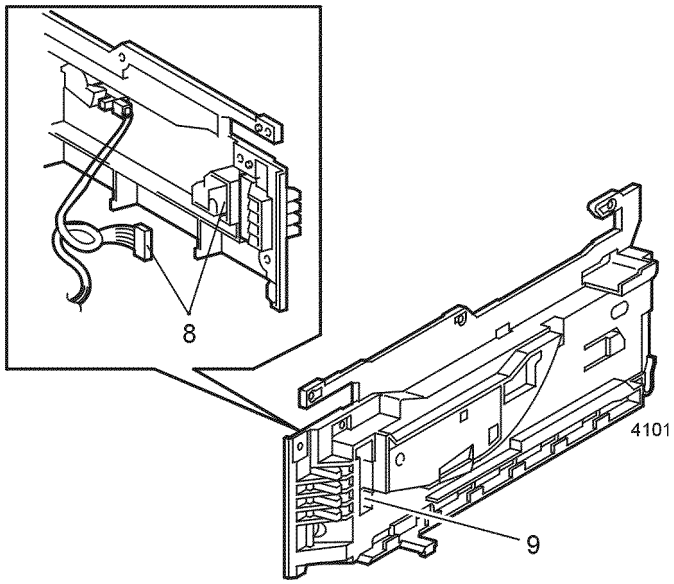


Figure 1 Paper Size Sensor

Replacement

1. Reinstall the components in the reverse order.

REP 11.19 Paper Tray Sensor

Parts List on PL 11.3

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the printer from the 500 Sheet Feeder (REP 11.1).
2. Remove the paper tray from the feeder.
3. Remove the Front Cover (REP 11.2).
4. Remove the Left Cover (REP 11.3).
5. Remove the 500 Sheet Feed Head Assembly (REP 11.9).
6. Remove the Retard Chute (REP 11.13).
7. Remove the Left Tray Guide (REP 11.14).
8. Disconnect P/J137 from the back of the Tray Sensor (Figure 1).
9. Release the three locking tabs and remove the sensor (Figure 1).

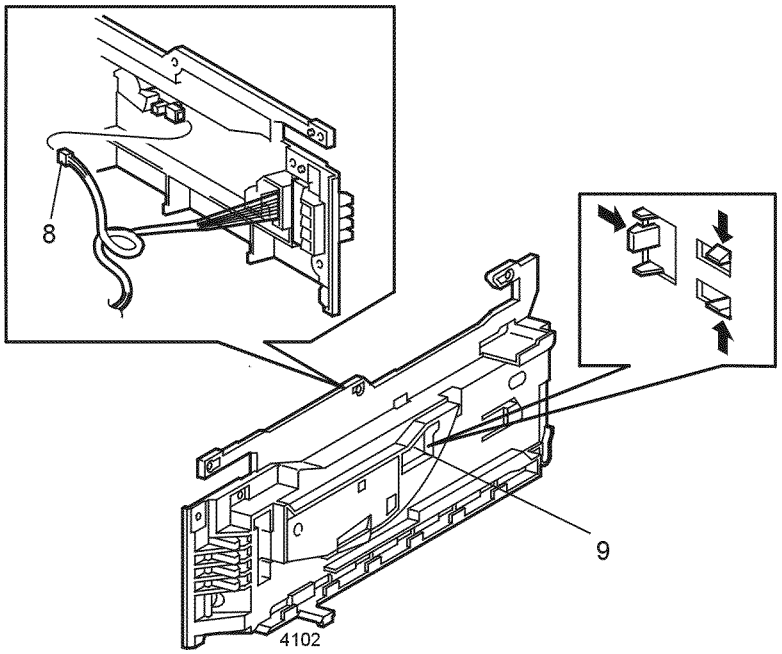


Figure 1 Paper Tray Sensor

Replacement

1. Reinstall the components in the reverse order.

REP 11.20 No Paper Sensor

Parts List on PL 11.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the printer from the 500 Sheet Feeder (REP 11.1).
2. Remove the paper tray from the feeder.
3. Remove the Front Cover (REP 11.2).
4. Remove the Left Cover (REP 11.3).
5. Remove the 500 Sheet Feed Head Assembly (REP 11.9).
6. Remove the screw that secures the sensor cover (Figure 1). Remove the cover.
7. Remove the No Paper Actuator (REP 11.21).
8. Release the Paper Feed Solenoid and rotate feed rolls to allow access to the sensor (Figure 2).
9. Disconnect P/J134 from the No Paper Sensor (Figure 3)
10. Release the three locking tabs and remove the sensor (Figure 3).

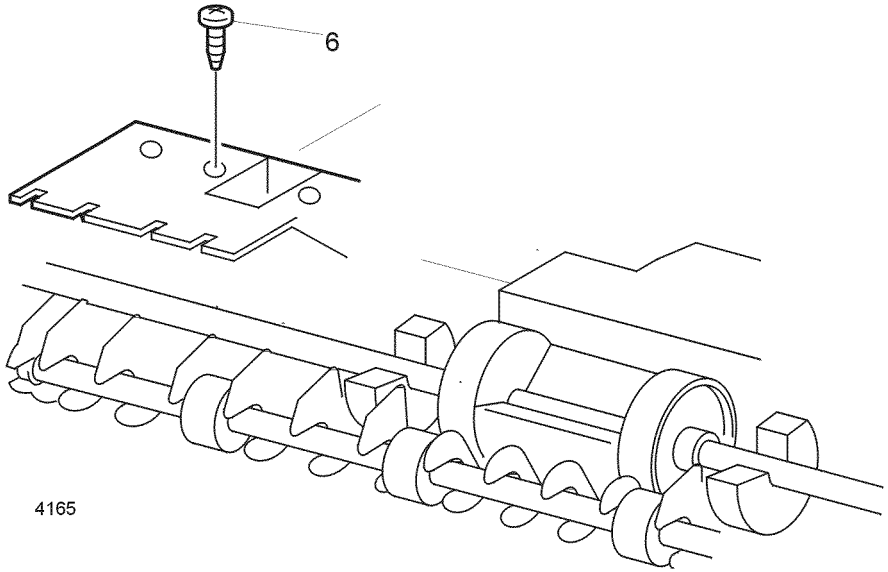


Figure 1 No Paper Sensor Cover

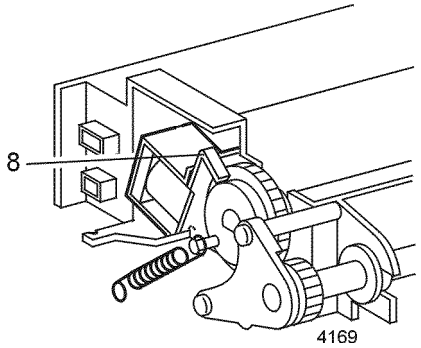


Figure 2 Feed Solenoid

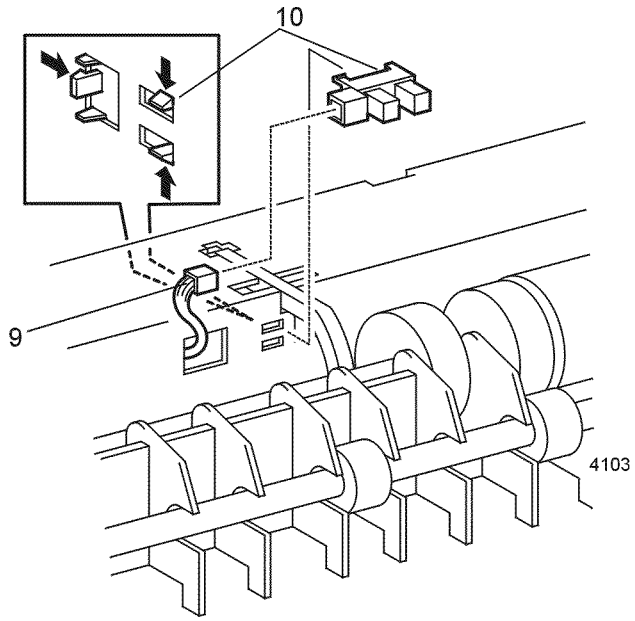


Figure 3 No Paper Sensor

Replacement

1. Reinstall the components in the reverse order.

REP 11.21 No Paper Actuator

Parts List on PL 11.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the printer from the 500 Sheet Feeder (REP 11.1).
2. Remove the paper tray from the feeder.
3. Remove the Front Cover (REP 11.2).
4. Remove the Left Cover (REP 11.3).
5. Remove the 500 Sheet Feed Head Assembly (REP 11.9).
6. Remove the actuator from the Feeder Chute (Figure 1). (A small screwdriver may be used to pry the actuator free of the retaining clips.

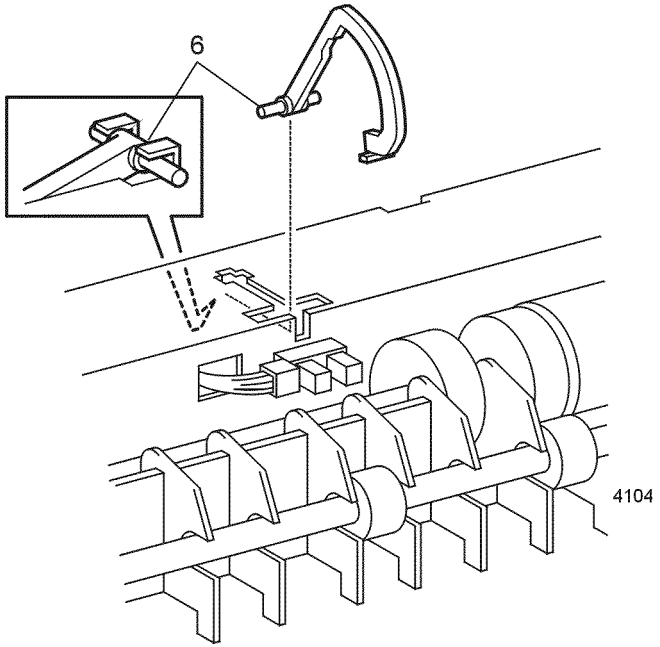


Figure 1 No Paper Actuator

Replacement

1. Reinstall the components in the reverse order.

REP 11.22 Preregistration Sensor

Parts List on PL 11.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the printer from the 500 Sheet Feeder (REP 11.1).
2. Remove the paper tray from the feeder.
3. Remove the Front Cover (REP 11.2).
4. Remove the Left Cover (REP 11.3).
5. Remove the Feed Head Assembly (REP 11.9).
6. Remove the screw that secures the sensor cover (Figure 1). Remove the cover.
7. Disconnect the P/J13C from the Preregistration Sensor.
8. Release the four locking tabs and remove the sensor (Figure 2).

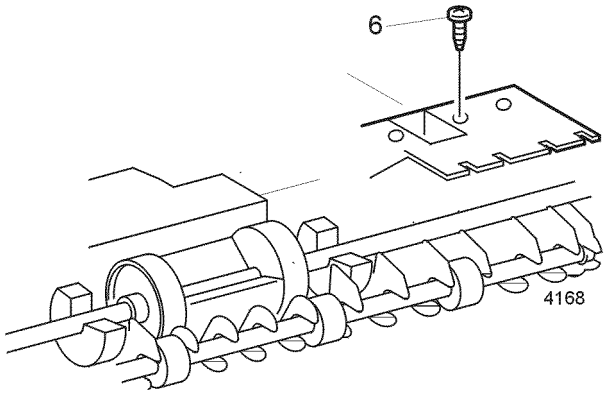


Figure 1 Sensor Cover

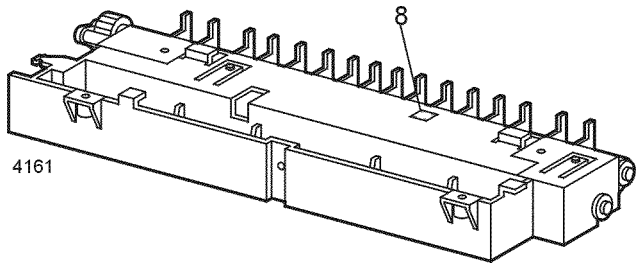


Figure 2 Preregistration Sensor

Replacement

1. Reinstall the components in the reverse order.

REP 12.1 Removing Printer from 2000 Sheet Feeder

Parts List on PL 12.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Lock the front casters on the 2000 Sheet Feeder (Figure 1).
2. Remove the OCT, if installed (REP 10.1).
3. Remove Tray 1 from the printer.
4. Remove the two screws that secure the printer (Figure 1).

   NOTE: *For safety reasons, have someone assist you in removing the printer and setting it in a safe place.*

5. Remove the printer.
6. If an 500 Sheet Feeder is installed, remove the paper tray, remove the two screws that secure the 500 Sheet Feeder to the 2000 Sheet Feeder, and remove the 500 Sheet Feeder.

Replacement

1. Reinstall the components in the reverse order.

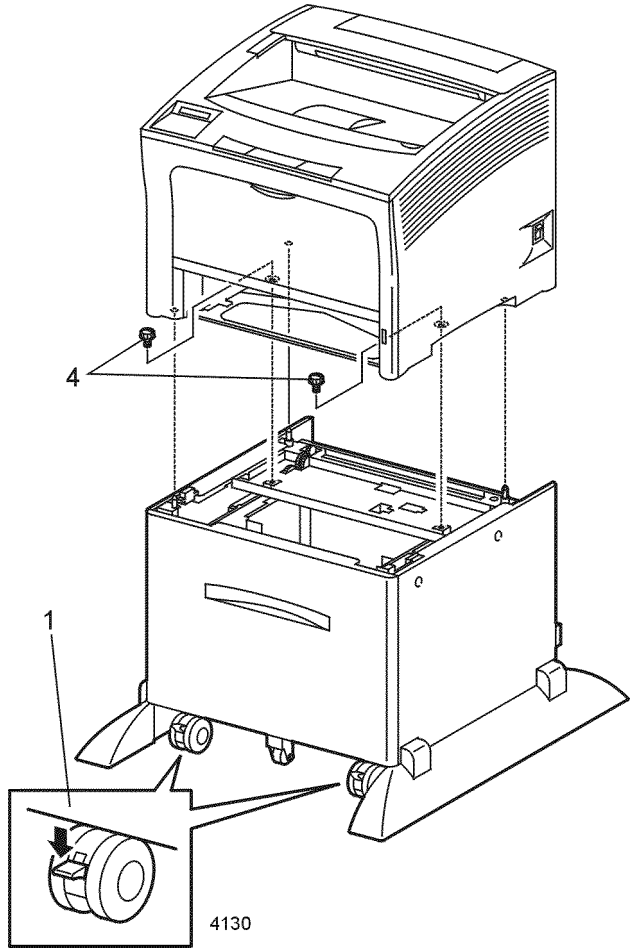


Figure 1 Removing The Printer

REP 12.2 Left Side Cover

Parts List on PL 12.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the two screws that secure the Left Side Cover (Figure 1).
2. Pull the top of the cover out and up to remove (Figure 1).

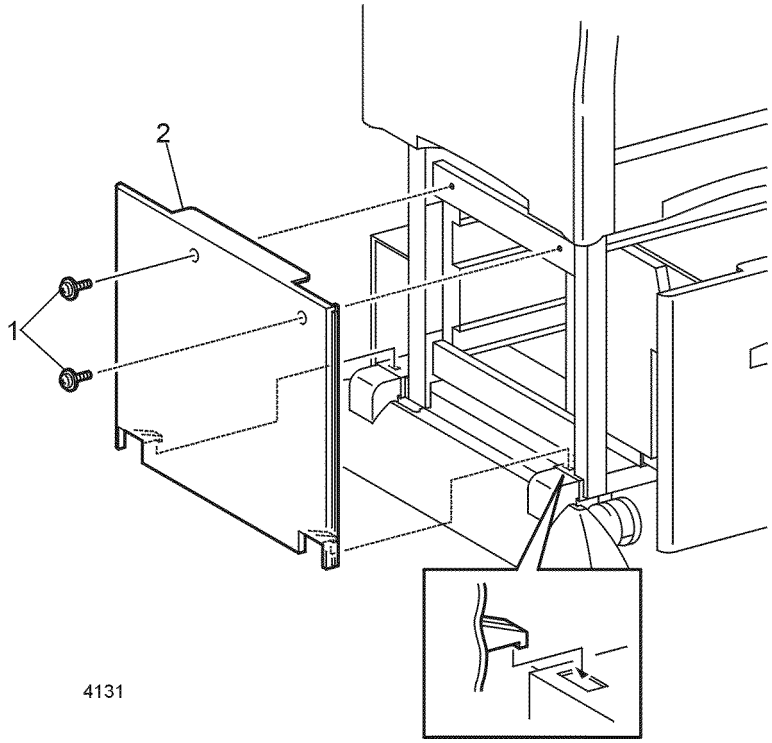


Figure 1 Left Side Cover

Replacement

1. Reinstall the components in the reverse order.

REP 12.3 Upper Rear Cover

Parts List on PL 12.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Upper Rear Cover (Figure 1).
2. Carefully push in on the left or right bracket to disengage the end of the cover (Figure 1).
3. Remove the cover.

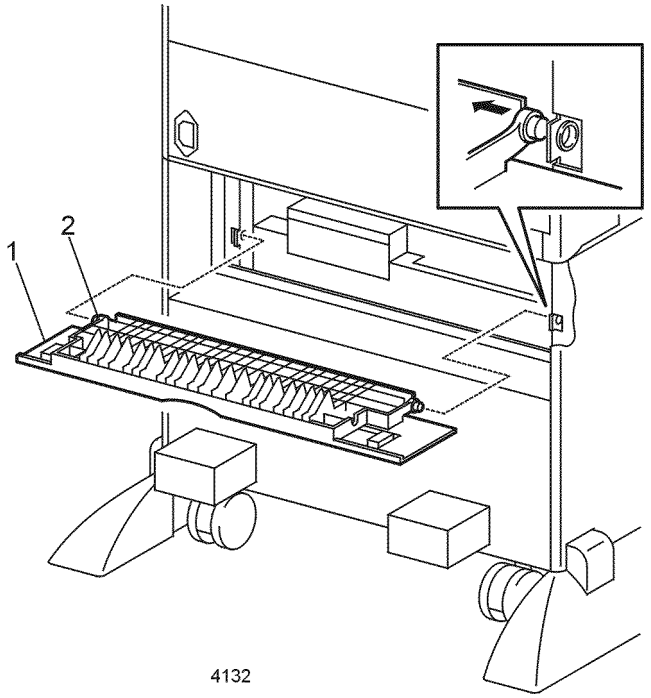


Figure 1 Upper Rear Cover

Replacement

1. Reinstall the components in the reverse order.

REP 12.4 Lower Rear Cover

Parts List on PL 12.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the two screws that secure the top of the Lower Rear Cover (Figure 1).
2. Loosen three screws that secure the Lower Rear Cover (Figure 1).
3. Remove the cover (Figure 1).

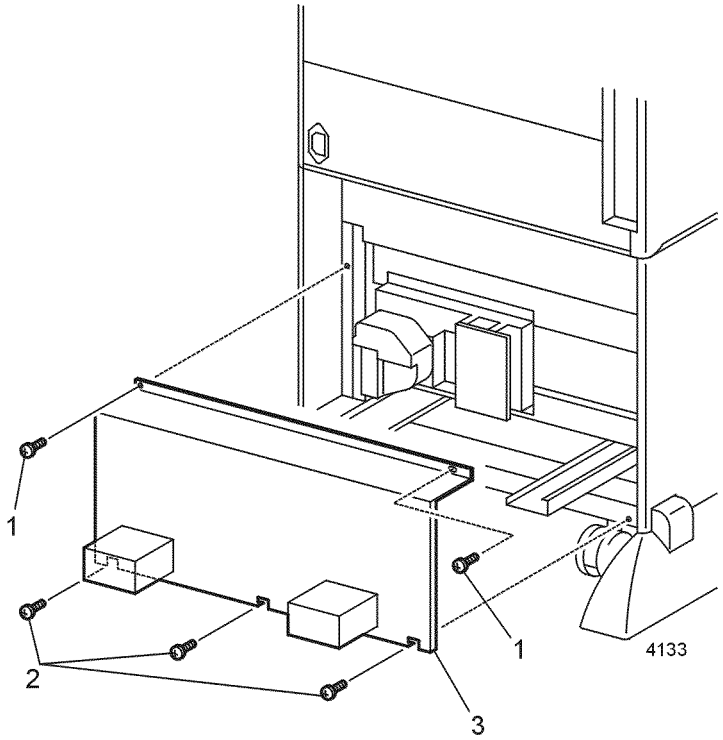


Figure 1 Lower Rear Cover

Replacement

1. Reinstall the components in the reverse order.

REP 12.5 Right Side Cover

Parts List on PL 12.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the two screws that secure the Right Side Cover (Figure 1).
2. Pull the top of the cover out and up to remove (Figure 1).

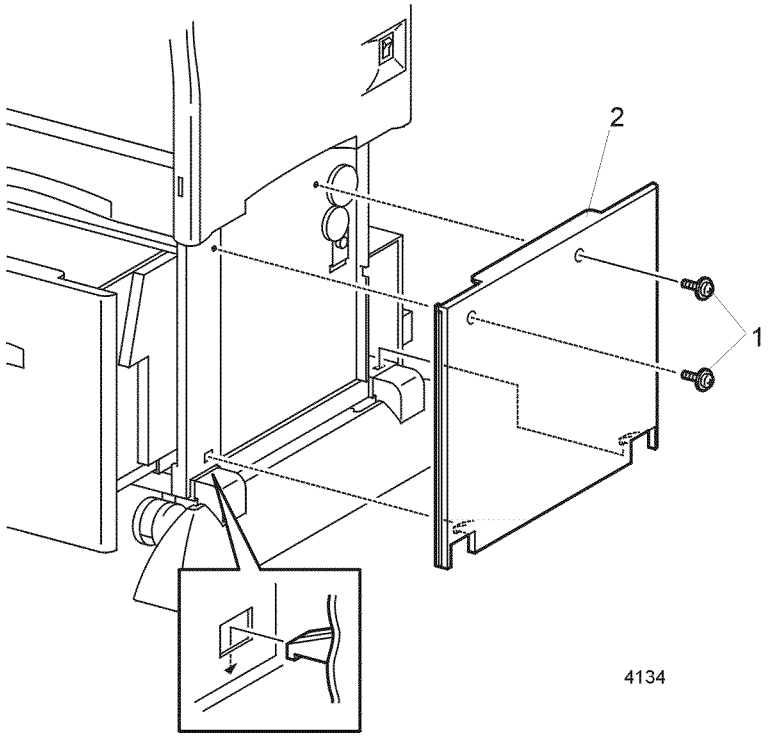


Figure 1 Right Side Cover

Replacement

1. Reinstall the components in the reverse order.

REP 12.6 Front Cover

Parts List on PL 12.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the 2000 Sheet Feeder Tray.
2. Remove the two screws that secure the front cover (Figure 1).
3. Pull the top of the cover out and up to remove (Figure 1).

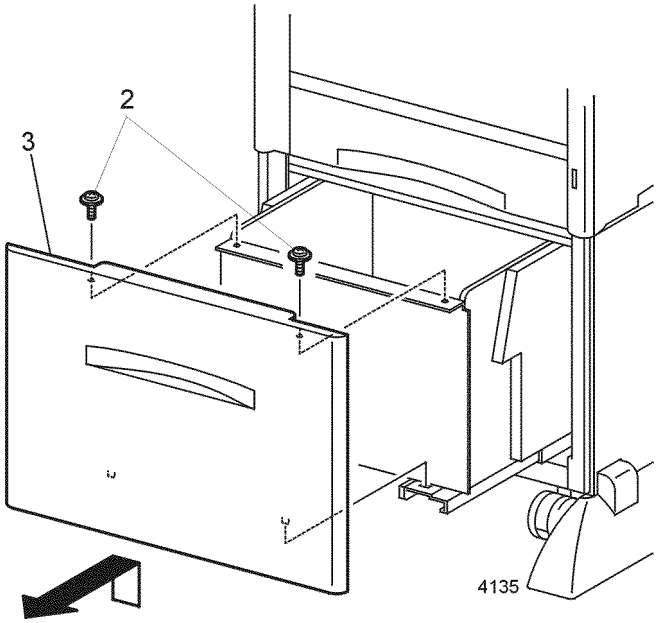


Figure 1 Front Cover

Replacement

1. Reinstall the components in the reverse order.

REP 12.7 Tray Assembly

Parts List on PL 12.4

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Pull the 2000 Sheet Feeder Tray out until it stops.
2. Remove all paper from the tray.
3. Push and hold the button on the Left Rail to release the latch (Figure 1).
4. Remove the Tray Assembly (Figure 1).

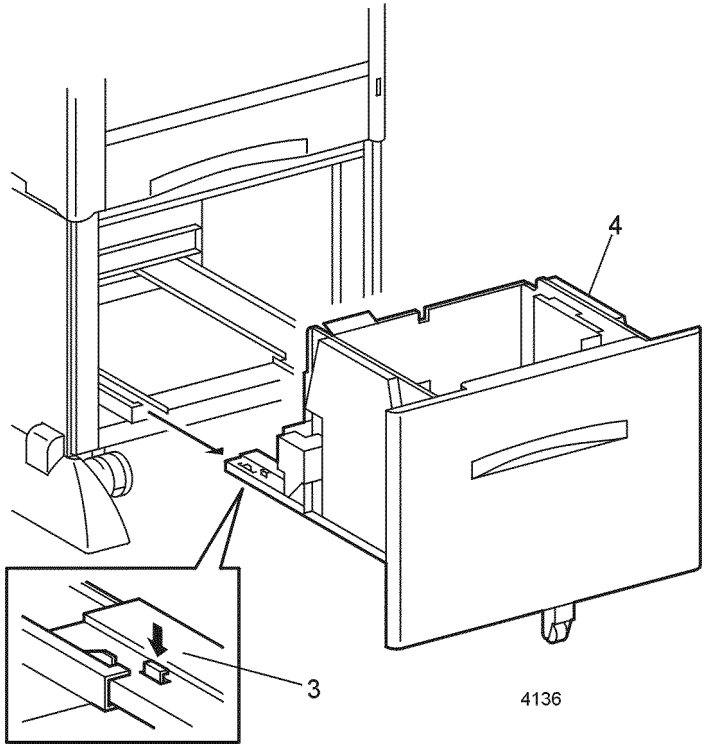


Figure 1 Tray Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 12.8 Left Foot

Parts List on PL 12.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Lower Rear Cover (REP 12.4).
2. Open the 2000 Sheet Feeder Tray.
3. Remove the two screws that secure the Left Foot (Figure 1).
4. Remove the foot (Figure 1).

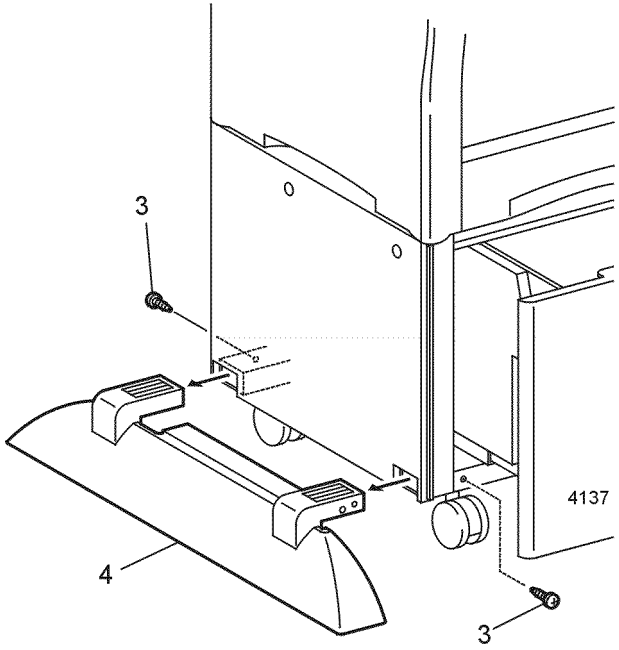


Figure 1 Left Foot

Replacement

1. Reinstall the components in the reverse order.

REP 12.9 Right Foot

Parts List on PL 12.1

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Lower Rear Cover (REP 12.4).
2. Open the 2000 Sheet Feeder Tray.
3. Remove the two screws that secure the Right Foot (Figure 1).
4. Remove the foot (Figure 1).

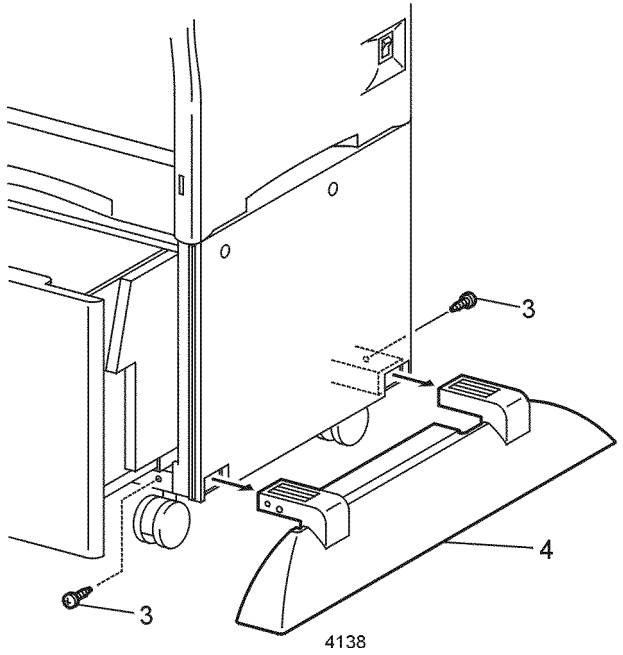


Figure 1 Right Foot

Replacement

1. Reinstall the components in the reverse order.

REP 12.10 2000 Sheet Feeder PWB

Parts List on PL 12.2

Removal

CAUTION

These components are susceptible to electrostatic discharge. Observe all ESD procedures to avoid damage.

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Lower Rear Cover (REP 12.4).
2. Disconnect P/J601, P/J602, P/J603, P/J604, P/J605, P/J606, and P/J607 (Figure 1).
3. Remove the four screws that secure the PWB (Figure 1).
4. Remove the PWB (Figure 1).

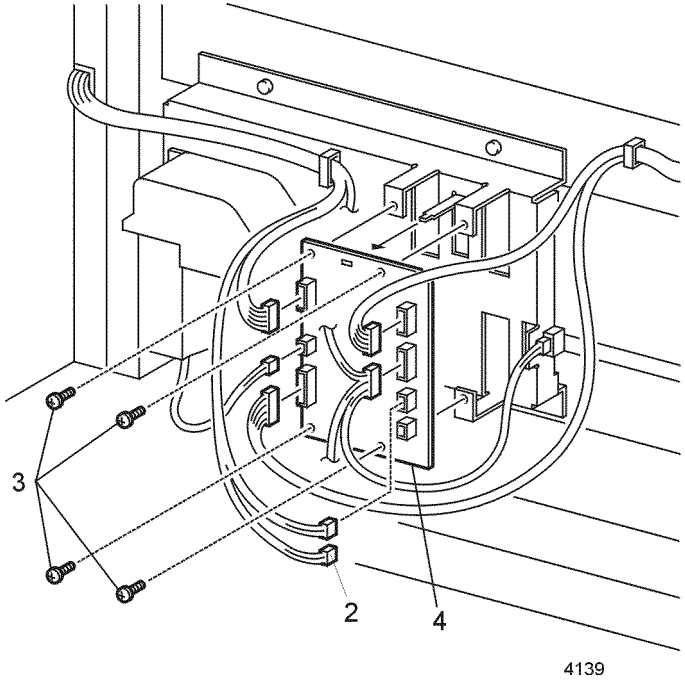


Figure 1 2000 Sheet Feeder PWB

Replacement

1. Reinstall the components in the reverse order.

REP 12.11 Tray Lift Motor Assembly

Parts List on PL 12.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Lower Rear Cover (REP 12.4).
2. Open the 2000 Sheet Feeder tray.
3. Disconnect P/J605 from the PWB (Figure 1).
4. Remove the three screws that secure the Lift Motor Assembly (Figure 1).
5. Remove the Tray Lift Motor Assembly (Figure 1).

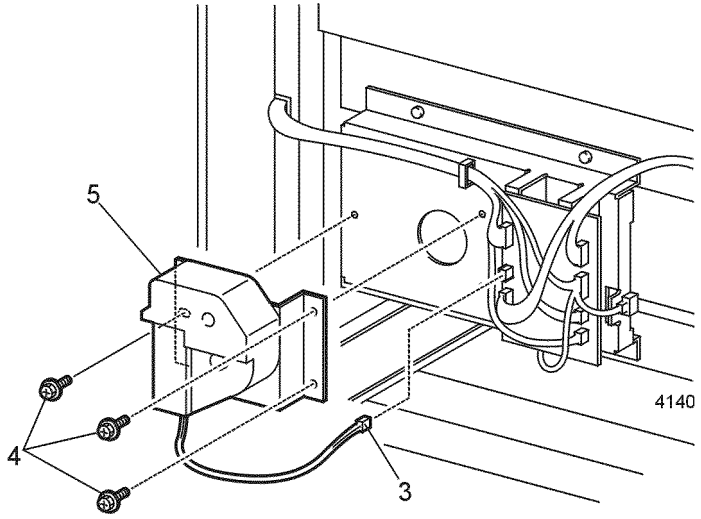


Figure 1 Tray Lift Motor Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 12.12 A4 Paper Size Sensor

Parts List on PL 12.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the 2000 Sheet Feeder Tray Assembly (REP 12.7).
2. Disconnect P/J612 from the Paper Size Sensor (Figure 1).
3. Release the two locking tabs and remove the Sensor (Figure 1).

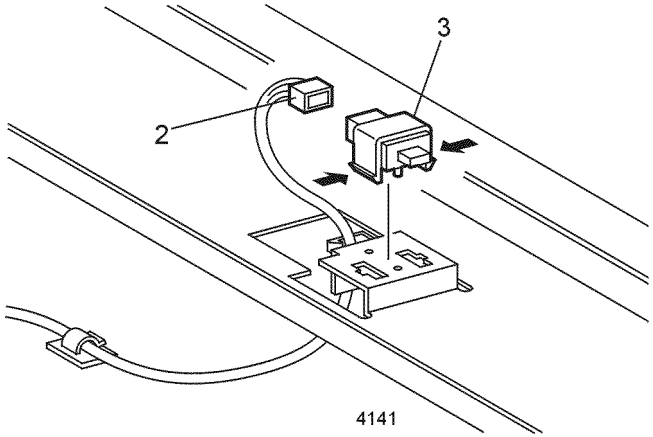


Figure 1 Paper Size Sensor

Replacement

1. Reinstall the components in the reverse order.

REP 12.13 Casters

Parts List on PL 12.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Printer / 500 Sheet Feeder (REP 12.1).
2. Remove the Left Foot (REP 12.8).
3. Remove the Left Side Cover (REP 12.2).
4. Remove all paper from the 2000 Sheet Feeder tray.
5. Tilt the 2000 Sheet Feeder onto its left side (Figure 1).

   NOTE: *The front casters are locking casters and rear are not.*

6. Remove the three screws that secure the defective caster (Figure 1).

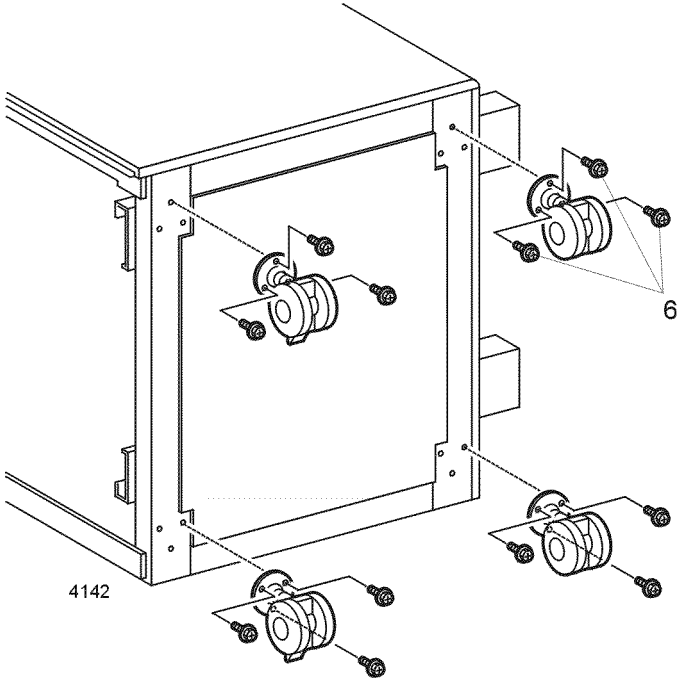


Figure 1 Casters

Replacement

1. Reinstall the components in the reverse order.

REP 12.14 Harness Assembly

Parts List on PL 12.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Printer / 500 Sheet Feeder (REP 12.1).
2. Remove the Left Side Cover (REP 12.2).
3. Remove the Lower Rear Cover (REP 12.4).
4. Disconnect P/J601 from the 2000 Sheet Feeder PWB (Figure 1).
5. Release the harness from all cable clamps (Figure 1).
6. Remove the two screws that secure the harness connector to the frame (Figure 1).
7. Guide the harness through the holes in the frame as you remove it (Figure 1).

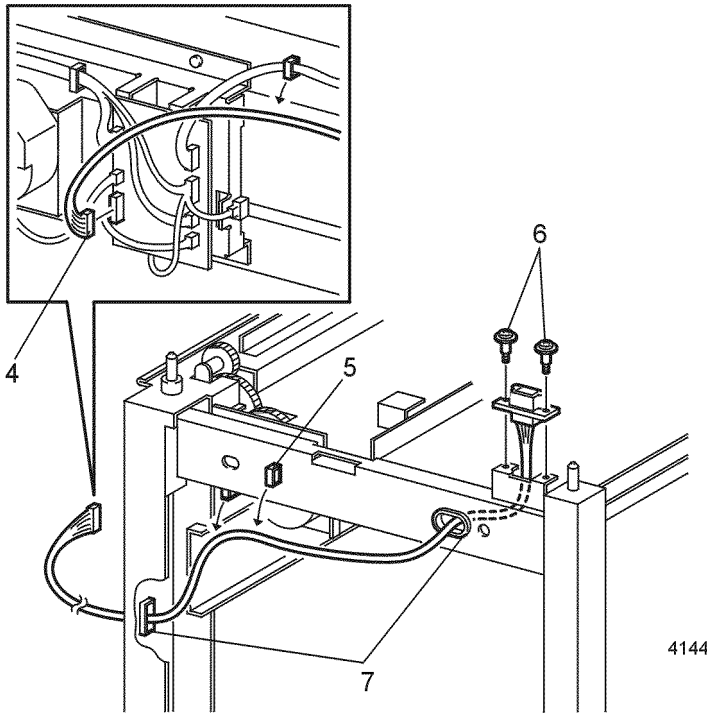


Figure 1 Harness Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 12.15 Drive Assembly

Parts List on PL 12.2

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the Upper Rear Cover.
2. Remove the screw that secures the back of the Drive Assembly (Figure 1).
3. Remove the Tray Assembly (REP 12.7).
4. Disconnect P/J615 from the Drive Assembly (Figure 1).
5. Remove the screw that secures the front of the Drive Assembly (Figure 1).
6. Remove the Drive Assembly (Figure 1).

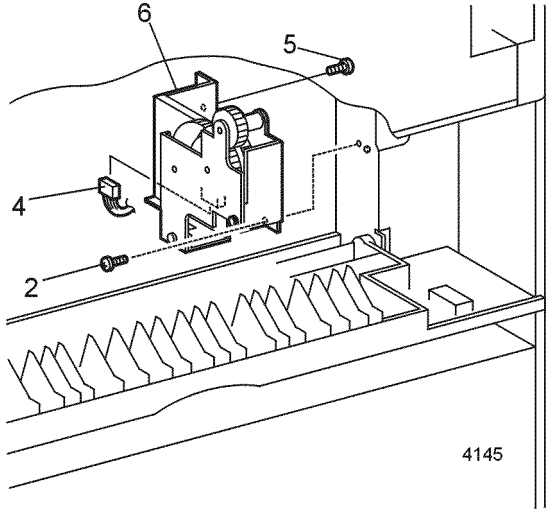


Figure 1 Drive Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 12.16 Feed, Nudger, and Retard Roll

Parts List on PL 12.3

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the 2000 Sheet Feeder tray.
2. Open the Upper Rear Cover.
3. From the rear loosen the two thumb screws and remove the paper baffle.
4. From the rear of the feeder, carefully lift the locking tab on the roll you wish to change (Figure 1).
5. Slide the roll off the end of the shaft (Figure 1).

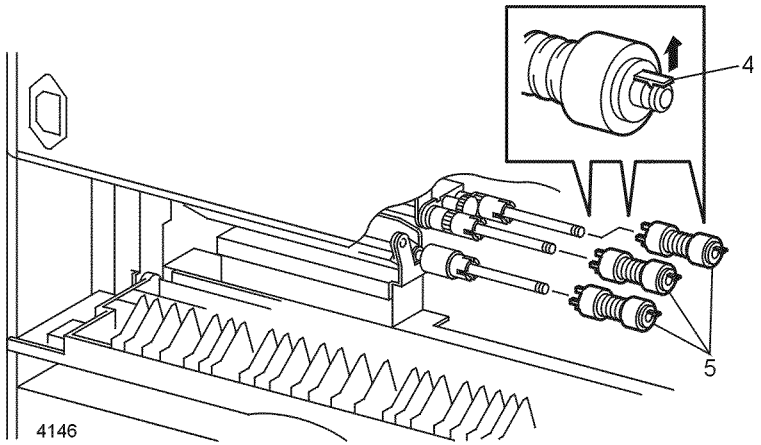


Figure 1 Feed, Nudger, and Retard Roll

Replacement

1. Reinstall the components in the reverse order.

REP 12.17 Paper Height Sensor

Parts List on PL 12.3

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the 2000 Sheet Feeder Tray Assembly (REP 12.7).
2. Hold the Nudger Assembly down as you release the three locking tabs that secure the Paper Height Sensor (Figure 1).
3. Disconnect P/J611 from the sensor (Figure 1).

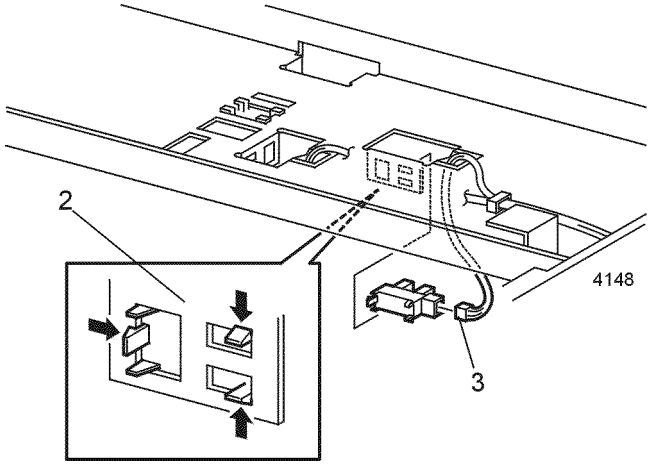


Figure 1 Paper Height Sensor

Replacement

1. Reinstall the components in the reverse order.

REP 12.18 Paper Feed Motor Assembly

Parts List on PL 12.3

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Right Side Cover (REP 12.5).
2. Remove the E-ring that secures the 47T gear (Figure 1). Remove the gear.
3. Remove the two screws that secure the motor to the Feeder Frame (Figure 1).
4. Remove the Paper Feed Motor Assembly.
5. Disconnect P/J609 from the Feed Motor Assembly (Figure 1).

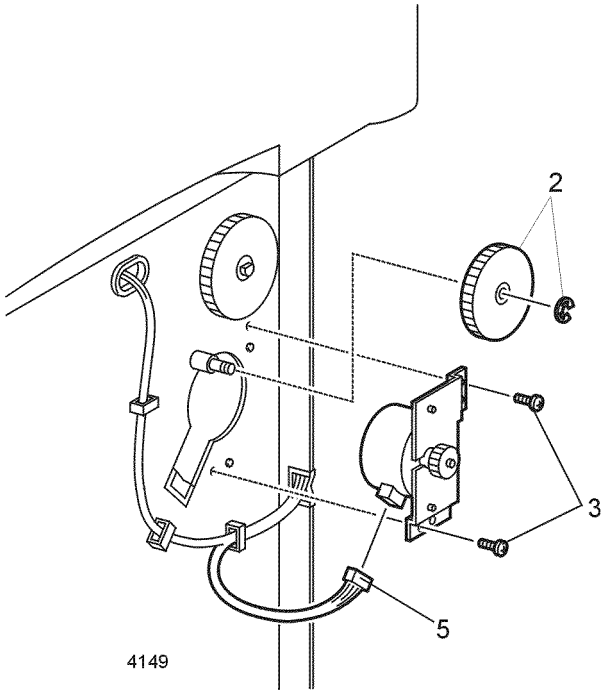


Figure 1 Paper Feed Motor Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 12.19 Link Stopper

Parts List on PL 12.3

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Retard Assembly (REP 12.29).
2. Remove the 2000 Sheet Feeder Tray Assembly (REP 12.7).
3. Unhook the torsion spring from the Link Stopper (Figure 1).
4. Pull up on the locking tab and remove the Link Stopper (Figure 1).
5. Remove the Torsion Spring (Figure 1).

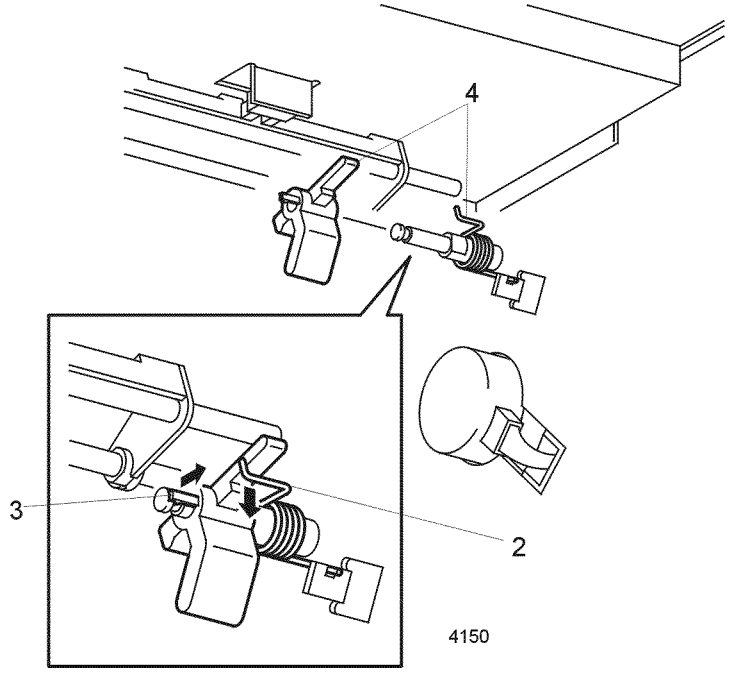


Figure 1 Link Stopper

Replacement

1. Reinstall the components in the reverse order.

REP 12.20 No Paper Sensor

Parts List on PL 12.3

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Tray Assembly (REP 12.7).
2. Disconnect P/J610 from the No Paper Sensor (Figure 1).
3. Release the three locking tabs that secure the sensor (Figure 1). Remove the sensor.

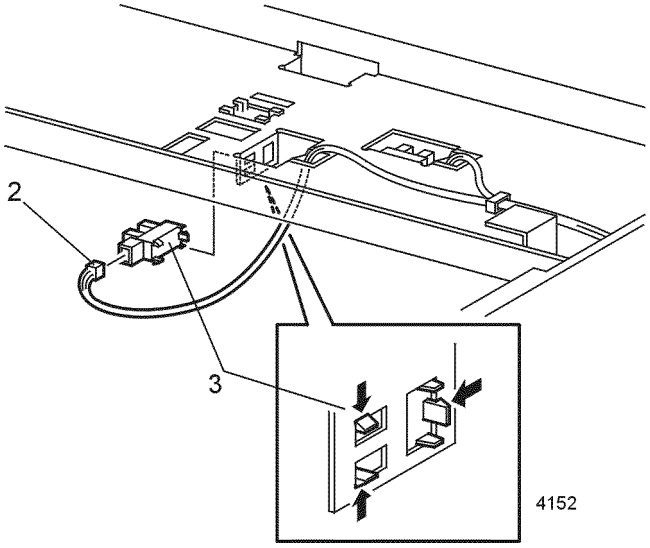


Figure 1 No Paper Sensor

Replacement

1. Reinstall the components in the reverse order.

REP 12.21 No Paper Sensor Actuator

Parts List on PL 12.3

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the Tray Assembly (REP 12.7).
2. Release the four locking tabs that secure the actuator and support (Figure 1).
3. Remove the actuator from the Actuator Support (Figure 1).

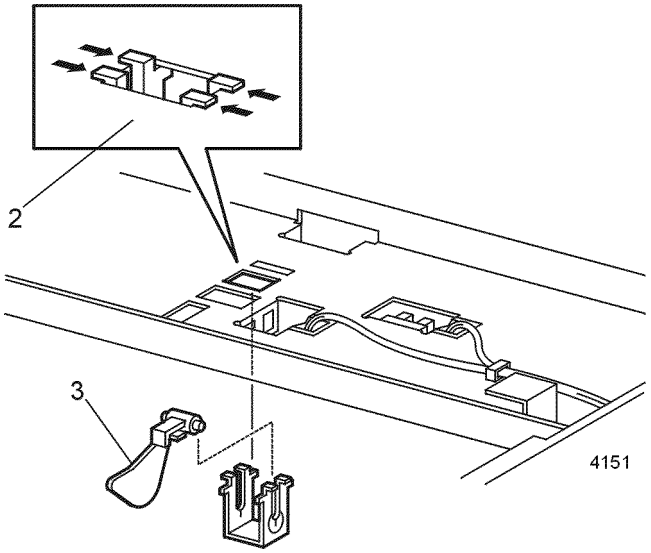


Figure 1 No Paper Sensor Actuator

Replacement

1. Reinstall the components in the reverse order.

REP 12.22 Left and Right Side Guides

Parts List on PL 12.4

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the 2000 Sheet Feeder Tray Assembly until it stops.
2. Remove all paper from the tray.
3. Press the Side Guide Latch and lift the guide to remove (Figure 1).

Replacement

1. Install the side guides in the outboard holes for A4 paper, and in the inboard holes for letter paper.
2. Reinstall the components in the reverse order.

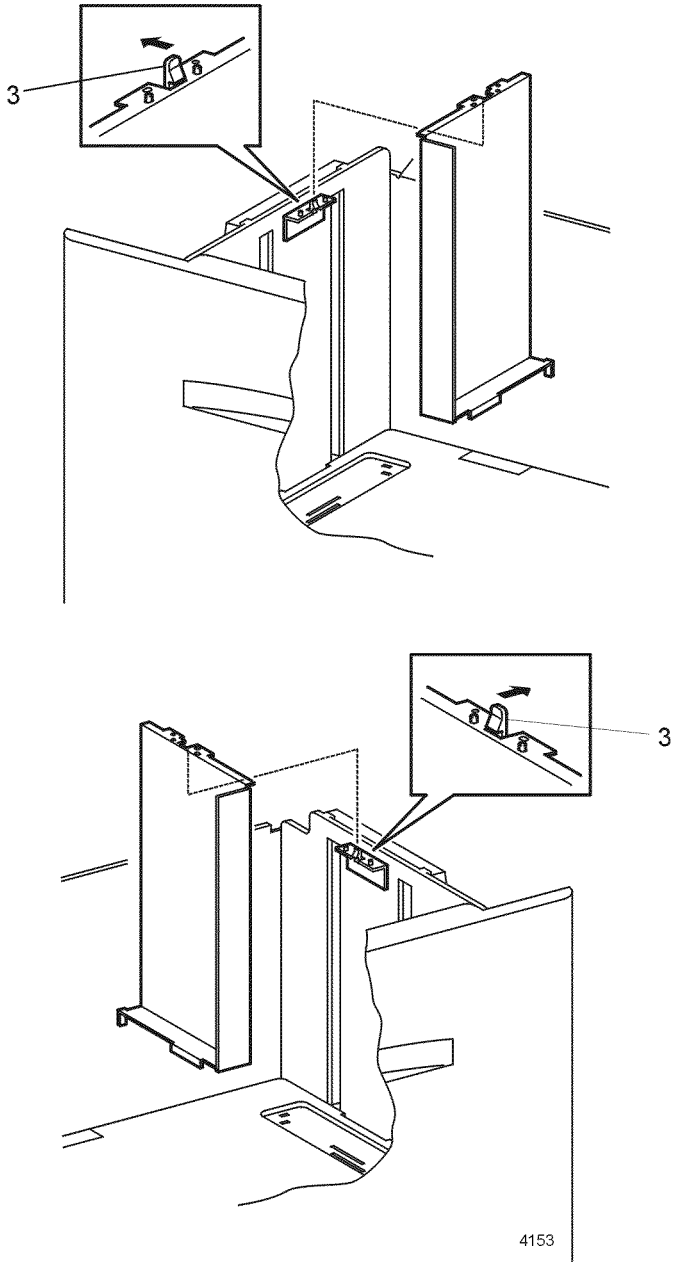


Figure 1 Tray Assembly Side Guides

REP 12.23 Left and Right Wire Cover

Parts List on PL 12.4

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Open the 2000 Sheet Feeder Tray Assembly until it stops.
2. Remove the two screws that secure the Wire Cover to the Tray Assembly (Figure 1).
3. Pull the top of the cover out and up to remove (Figure 1).

Replacement

1. Reinstall the components in the reverse order.

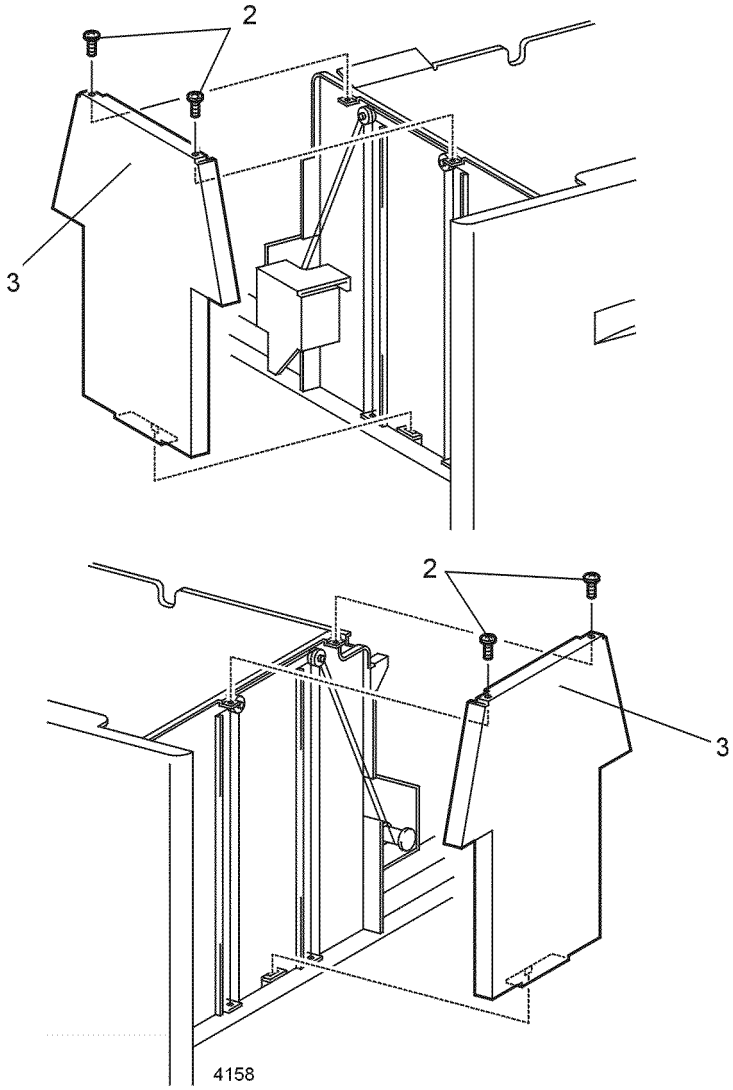


Figure 1 Tray Assembly Wire Covers

REP 12.24 Shaft Cover Assembly

Parts List on PL 12.4

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the 2000 Sheet Feeder Tray Assembly (REP 12.7).
2. Remove the four screws that secure the Shaft Cover Assembly to the Tray Assembly (Figure 1).
3. Remove the cover (Figure 1).

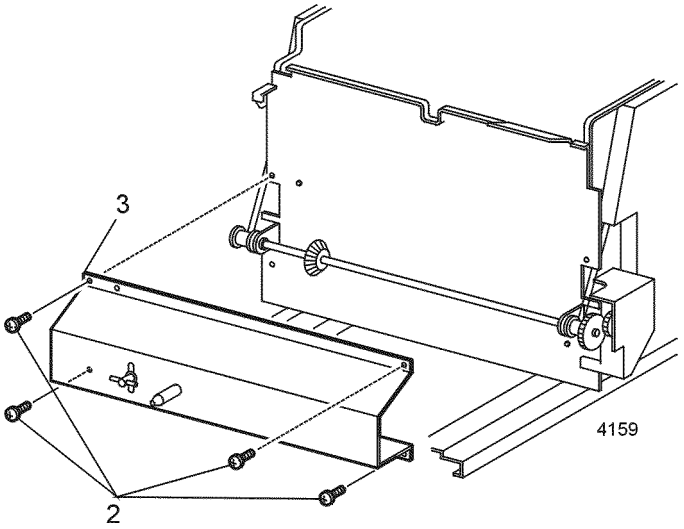


Figure 1 Shaft Cover Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 12.25 Drive Shaft Assembly

Parts List on PL 12.4

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the 2000 Sheet Feeder Tray Assembly (REP 12.7).
2. Remove the Shaft Cover Assembly (REP 12.24).
3. Align the Drive Shaft Assembly with the hole in the Shaft Cover Assembly (Figure 1).
4. Remove the two screws that secure the Drive Shaft Bracket to the shaft cover (Figure 1).
5. Remove the Drive Shaft Assembly.

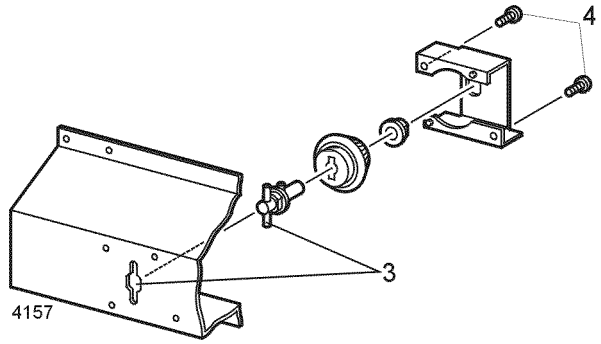


Figure 1 Drive Shaft Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 12.26 Brake Assembly

Parts List on PL 12.4

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the 2000 Sheet Feeder Tray Assembly (REP 12.7).
2. Remove the two screws that secure the Brake Assembly to the Tray Assembly (Figure 1).
3. Remove the Brake Assembly (Figure 1).

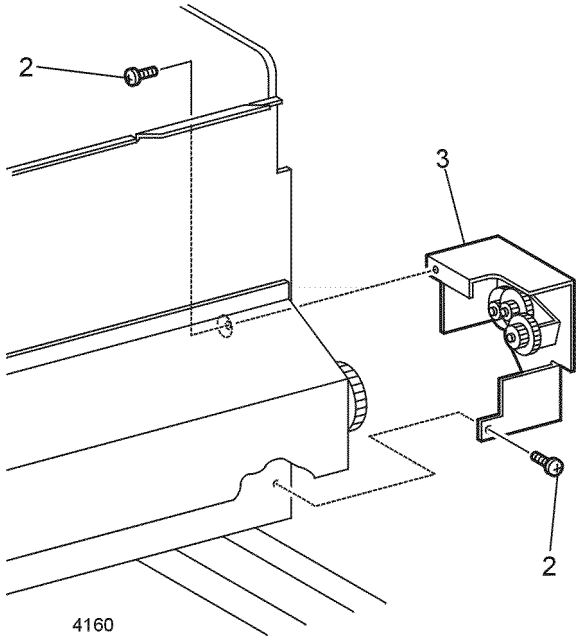


Figure 1 Brake Assembly

Replacement

1. Reinstall the components in the reverse order.

REP 12.27 Left Tray Wires

Parts List on PL 12.4

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the 2000 Sheet Feeder Tray Assembly (REP 12.7).
2. Remove the Shaft Cover Assembly (REP 12.24).
3. Remove the Brake Assembly (REP 12.26).
4. Remove the Left Wire Cover (REP 12.23).
5. Remove the E-ring that secures the 33 Gear (Figure 1). Remove the gear.
6. Remove the Cable Pulley from the shaft (Figure 1).
7. Remove the E-rings and pulleys from the two shafts on the tray assembly (Figure 1).
8. Remove the wires down through the holes in the tray assembly (Figure 1).

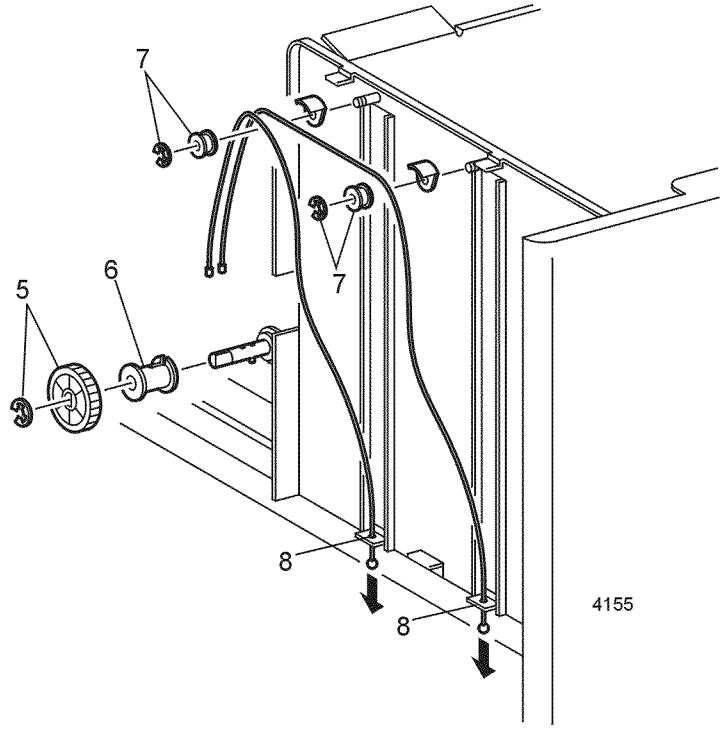


Figure 1 Left Tray Wires

Replacement

1. Ensure the black plastic wire guides are at the top of the pulleys (Figure 1).
2. Reinstall the components in the reverse order.
3. The longer wire goes to the front of the tray.

REP 12.28 Right Tray Wires

Parts List on PL 12.4

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the 2000 Sheet Feeder Tray Assembly (REP 12.7).
2. Remove the Shaft Cover Assembly (REP 12.24).
3. Remove the Right Wire Cover (REP 12.23).
4. Remove the E-ring that secures the Cable Pulley (Figure 1). Remove the pulley.
5. Remove the E-rings and pulleys from the two shafts on the tray assembly (Figure 1).
6. Remove the wires down through the holes in the tray assembly (Figure 1).

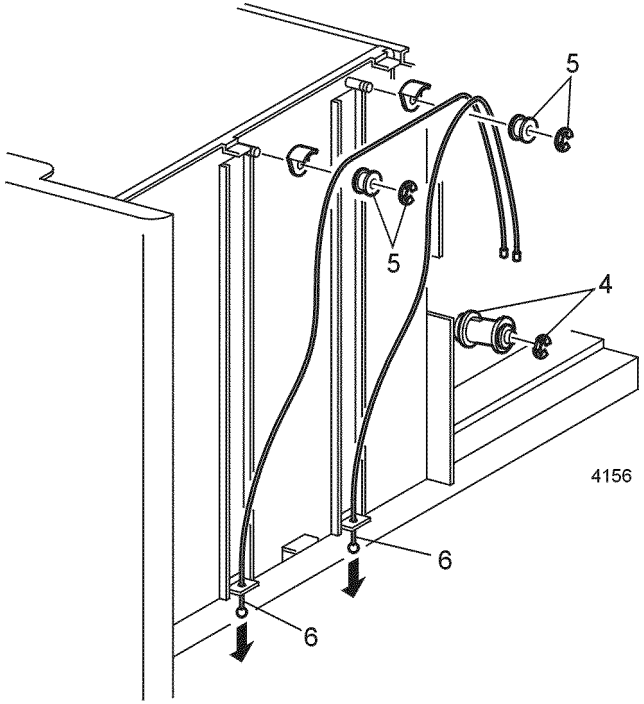


Figure 1 Right Tray Wires

Replacement

1. Ensure the black plastic wire guides are at the top of the pulleys (Figure 1).
2. Reinstall the components in the reverse order.
3. The longer wire goes to the front of the tray.

REP 12.29 Retard Assembly

Parts List on PL 12.3

Removal

WARNING

Switch off the power and disconnect the Power Cord.

1. Remove the 2000 Sheet Feeder Tray Assembly (REP 12.7).
2. Remove the Right Side Cover (REP 12.5).
3. Remove the E-ring that secures the 50T Gear to the Feeder Shaft (Figure 1). Remove the gear.
4. Remove the screw that secures the Stopper Gear (Figure 1). Remove the gear.
5. Remove Gear 22T from the Retard Shaft (Figure 1).
6. Open the Rear Door.
7. Release the spring from the left end (as viewed from the rear) of the Retard Support (Figure 2).
8. Remove the two screws that secure the Retard Support Assembly to the feeder (Figure 2).
9. Lift the Retard Support Assembly, slide it to the right and remove (Figure 2).

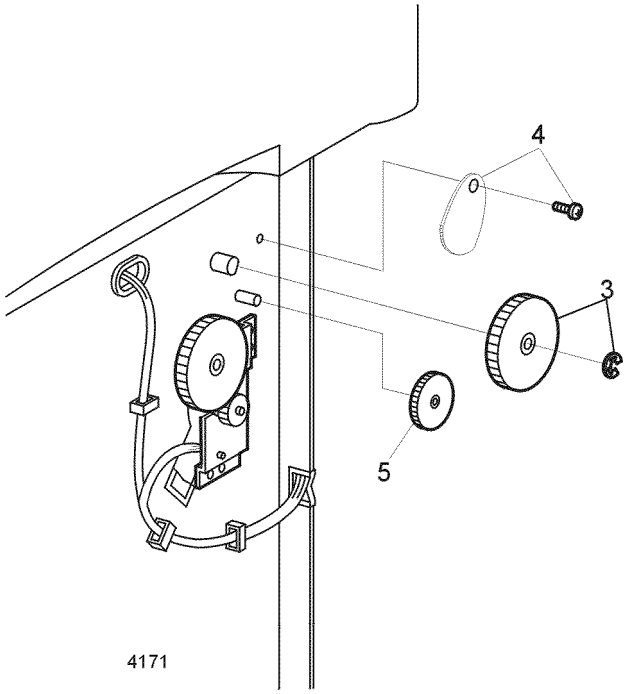


Figure 1 Feed Gears

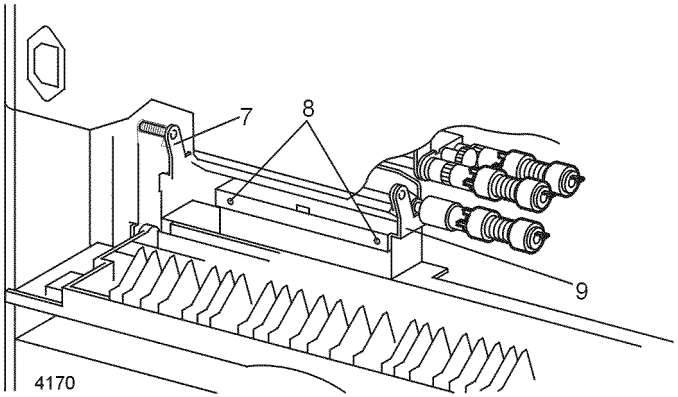


Figure 2 Retard Assembly

Replacement

1. Reinstall the components in the reverse order.

ADJ 1.1 Registration

Purpose

To adjust the registration in the scan direction and the process direction.

To set Default Tray

1. Enter Diagnostics and select Test Print.
2. Scroll to Input Tray.
3. Select the tray that you wish to be the Default Tray.
4. Press “Enter”.

Check

1. Set the Default Tray.
2. Enter diagnostics and select Test Print.
3. Scroll to Print Pattern and press Enter.
4. After at least two prints complete, press the [0] key for one second to stop the printing.
5. The measurement should be made on two consecutive test patterns from each tray (Figure 1).
   - Measure the distance from the top edge of the paper to the top edge of the image (C) and measure the distance from the bottom edge of the paper to the bottom edge of the image (D). These two measurements should be equal (Figure 1).
   - Measure the distance from the lead edge of the paper to the lead edge of the image (A) and measure the distance from the trail edge of the paper to the trail edge of the image (B). These two measurements should be equal (Figure 1).
6. If either measurement does not meet specification perform the adjustment below.
7. Repeat steps 1 through 6 for each paper tray.

Adjustment

1. Enter Diagnostics and select NVM Config.
2. Enter the NVM Password (0734).
3. Scroll to process (Process Tray X) or scan (Scan Tray X) adjustment for the desired tray.
4. Press the Value Key (3 or 7) to display the current setting.
5. Use the 3 or 7 keys to set the new value.

   NOTE: *Each increment of change equals approximately one-half millimeter. In the scan direction increasing the value moves the image to the right and decreasing the value moves the image to the left. In the process direction increasing the value moves the image toward the trail edge and decreasing the value moves the image towards the lead edge.*

6. Press Enter to save the setting.
7. Scroll to Test Print. Select Print Pattern and press Enter.
8. Measure the distance from the left edge of the paper to the left edge of the image and measure the distance from the right edge of the paper to the right edge of the image. These two measurements should be equal.
9. Measure the distance from the lead edge of the paper to the lead edge of the image and measure the distance from the trail edge of the paper to the trail edge of the image. These two measurements should be equal.
10. Repeat steps 1 through 9 until equal side-to-side and lead edge to trail edge measurements are achieved.

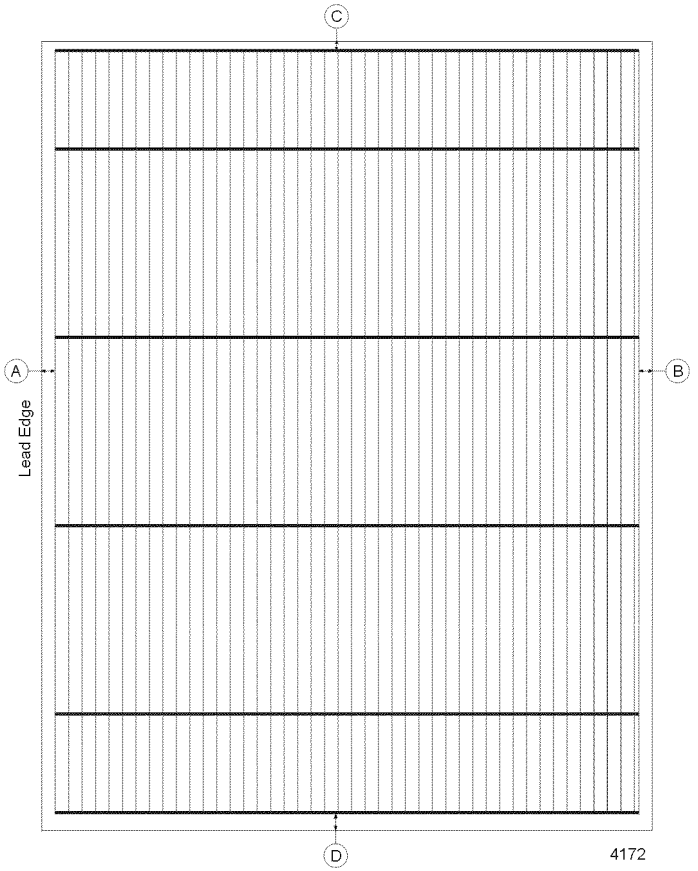


Figure 1 Test Pattern

5 Parts-list

Introduction

Overview

The Parts List section provides exploded view illustrations of all spared subsystem components and a listing of the corresponding part numbers. The illustrations show the relationships between parts.

Organization of this Section

The following elements make up the Parts List section:Parts Lists (PL)Each item number in the part numbers listing corresponds to an item number in the illustration. All the parts in a given subsystem of the machine will be located in the same illustration or in a series of associated illustrations. The parts which are not spared are indicated by “- -” in the Part column.

Exploded View IllustrationsAn item that is called out on an illustration has a corresponding listing within this section.Components are given item numbers that correspond to the part number listings. Hardware items are lettered. All hardware dimensions are in millimeters unless otherwise noted.

Assemblies and kits are a combination of several separate components. A bracket is used on the illustration when an assembly or kit is spared but is not shown. The item number of the assembly or kit precedes the bracket; the item numbers of the piece parts follow it.Part Number IndexThis index lists all the spared parts in the system in numerical order. Each number is followed by a reference to the parts list on which the part may be found.

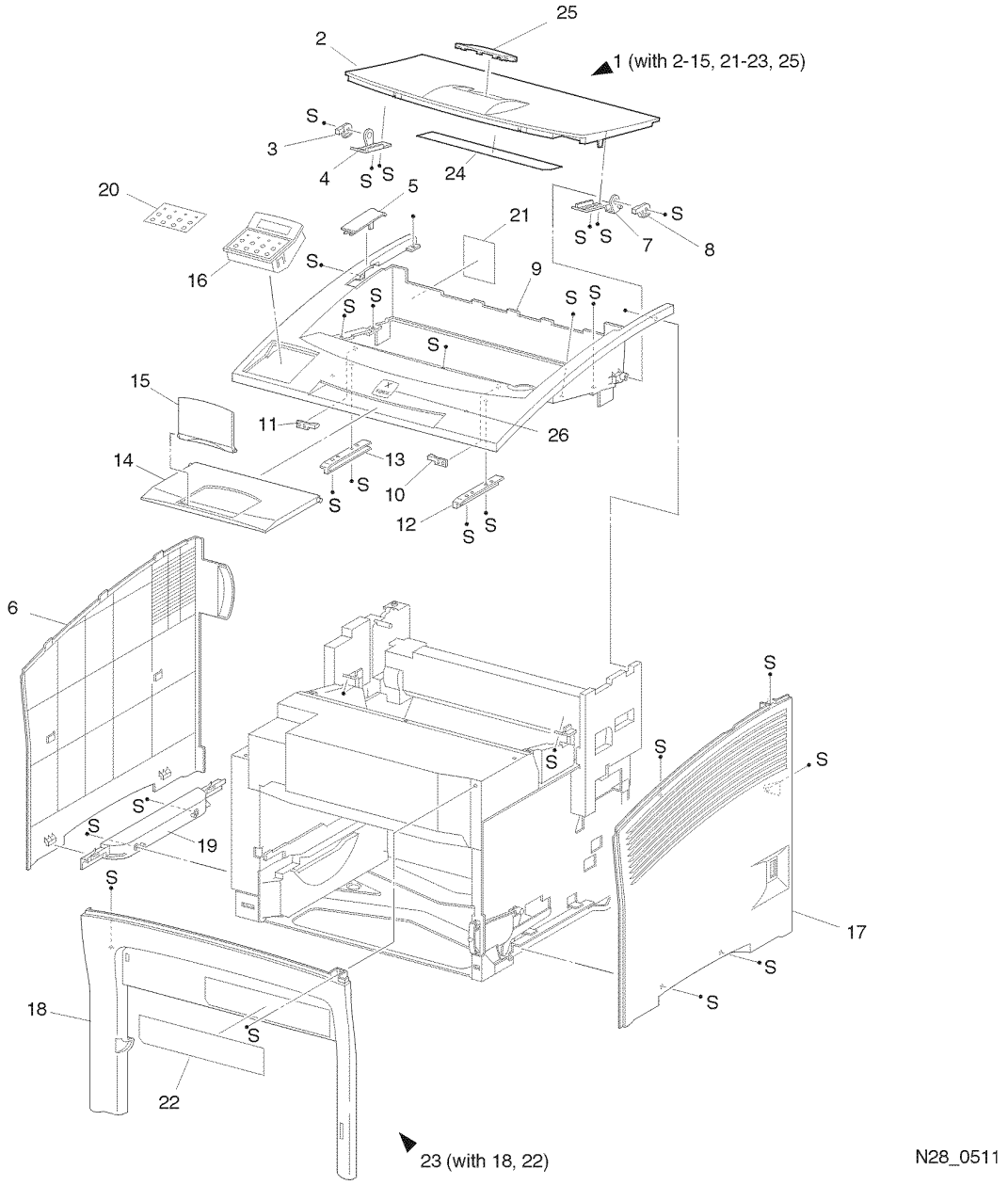
Other InformationAbbreviationsAbbreviations which may be used in the parts lists text or illustrations are as follows:US ------ United States Parts Distribution SystemXE ------ European Parts Distribution SystemAO ------ South America Parts Distribution SystemXCL ------ Canada Parts Distribution SystemP/J ------ Plug/Jack P/O ------ Part ofW/ ------ WithW/O ------ WithoutTagA Tag is used when a part or area of the system has been modified. The Change Tag Index, which is found in the General Procedures/Information Section, lists the name and purpose of the Tag. In some cases, you will go to the parts lists and find a part number listed as “with Tag.” Go to the Change Tag Index for a description of what the Tag is and what you need to install the Tag. The Change Tag Index will either list a kit number or indicate “piece part.” If “piece part” is indicated, the parts lists reference(s) will be given and all parts associated with the Tag will have to be individually located, ordered, and installed.The notation “P/O Tag” after a part number indicates that the item is part of a Tag. The notation “Tag” after a part number will be used only to indicate the entire Tag, whether that is a kit number or an individual part.Whenever you install a Tag kit or all the piece parts that make up a Tag, mark the appropriate number on the Tag matrix.

Using the Parts List

1. The numbers shown in each illustration correspond to the parts list number for that illustration.
2. Throughout this manual, parts are identified by the prefix “PL”, followed by a number, a decimal point, and another number. For example, PL3.1.12 means the part is item 12 of parts list 3.1.
3. The capital letters “C”, “E”, and “S” shown in an illustration stand for C-ring, E-ring, and Screw, respectively.
4. A shaded triangle t in an illustration indicates the item is part of an assembly.
5. The notation “with X~Y” following an 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.
6. The notation "RS" means that the part is a requested spare. Part numbers for these parts will be provided as soon as they are available.
7. An asterisk * following a part name indicates the page contains a note about this part.
8. 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 jack 2 is attached to the other end that is plugged into plug 2.
9. A notation "(part of item 1.1)" indicates that the part is included with item 1.2.1 (PL1.2, line item 1).

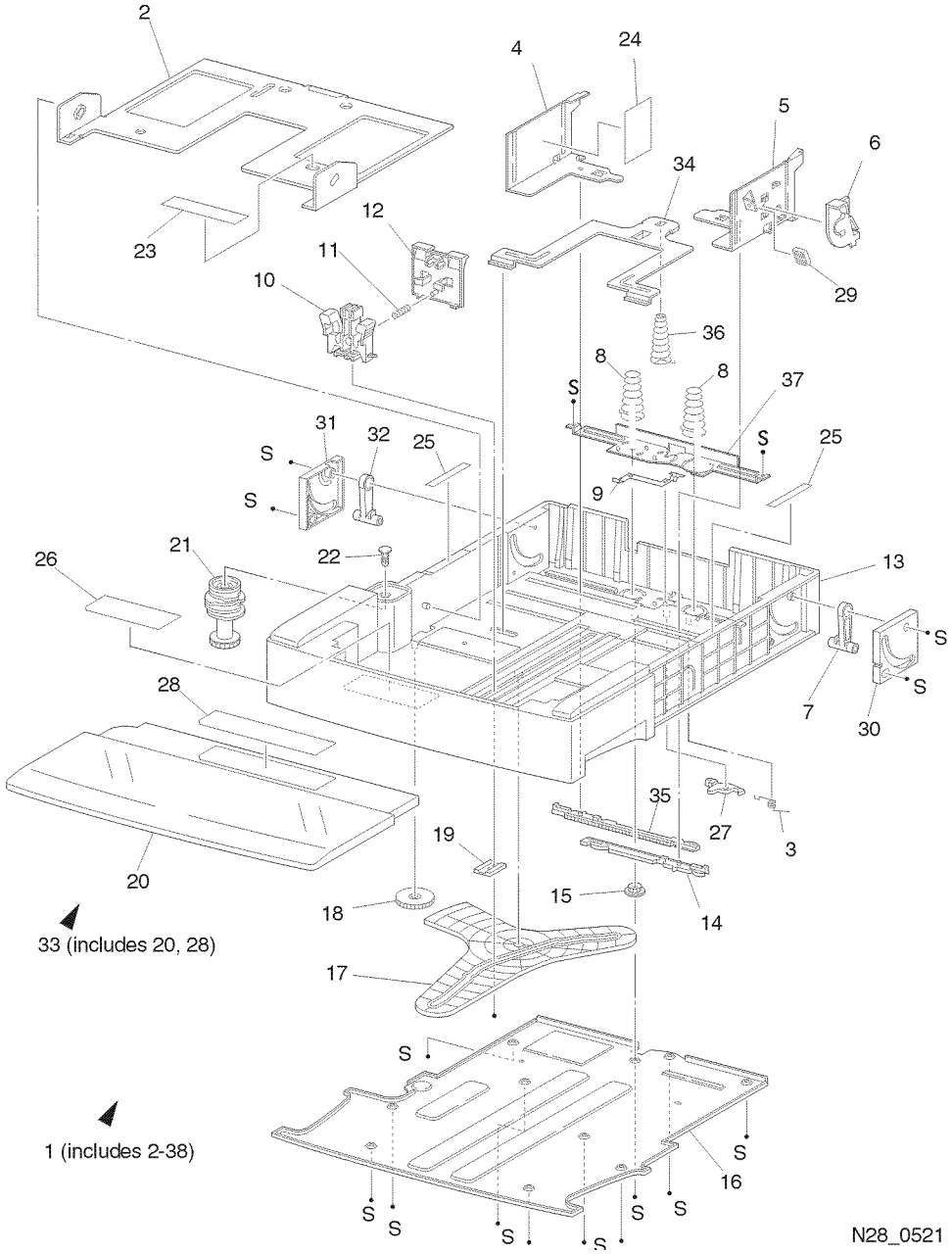
PL 1.1 Covers

Item	Part	Description
1	48K75876	Top Cover Assembly (includes 2-15, 21, 22)
2	- - - - -	Top Cover
3	3E46230	Stopper (left)
4	- - - - -	Bracket (left)
5	48E64291	Top Cover Cap
6	48E64082	Left Cover
7	- - - - -	Bracket (right)
8	3E46240	Stopper (right)
9	- - - - -	Top Cover
10	- - - - -	Latch (right)
11	- - - - -	Latch (left)
12	- - - - -	Tray Guide (right)
13	- - - - -	Tray Guide (left)
14	- - - - -	Tray Extension
15	50E88420	Tray Stopper
16	101K31281	Control Panel Assembly
17	48E64122	Right Cover
18	- - - - -	Front Cover
19	48E64102	Lower Left Cover
20	892E08620	Control Panel Overlay (US)
	892E08640	Control Panel Overlay (Port.)
	892E08660	Control Panel Overlay English
21	- - - - -	Label
22	- - - - -	Front Label
23	802K04213	Front Cover Assembly (with 18, 22)
24	- - - - -	Access Cover Label 3
25	- - - - -	Cover Pop Up Stand
26	892E08500	Badge
S	600K76430	Hardware Kit (includes Screw)



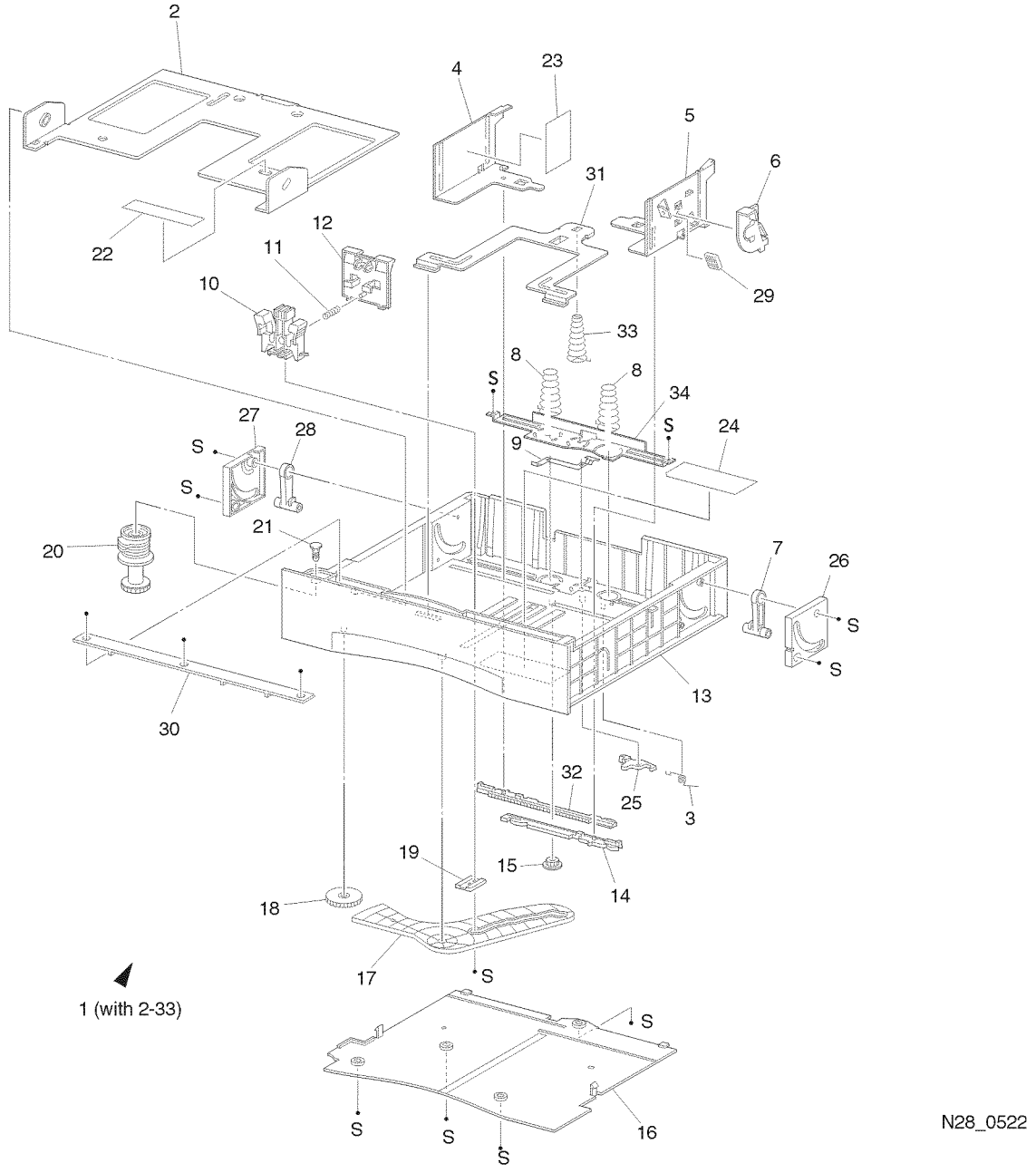
PL 2.1 Paper Tray (A3/Ledger)

Item	Part	Description
1	109R00484	Tray Assembly (A3/Ledger) (includes 2-28)
	- - - - -	Tray Assembly A3/Ledger
2	- - - - -	Bottom
3	- - - - -	Latch Spring
4	- - - - -	Side Guide Plate (left)
5	- - - - -	Side Guide Plate (right)
6	- - - - -	Side Lever (right)
7	- - - - -	Latch Assembly (right)
8	- - - - -	Spring Long
9	- - - - -	Ground Spring
10	- - - - -	End Guide
11	- - - - -	Plate End Guide Spring
12	- - - - -	End Plate Guide
13	- - - - -	Tray 1 Long Housing
14	- - - - -	Rack
15	- - - - -	Pinion
16	- - - - -	Bottom Cover (Long)
17	- - - - -	Sector Gear (Long)
18	- - - - -	Idler Gear
19	- - - - -	End Guide Lock
20	- - - - -	Tray 1 Cover
21	- - - - -	Size Cam (Long)
22	- - - - -	Pin Lock
23	- - - - -	Long Side Label
24	- - - - -	Max Paper Label
25	- - - - -	Hold Here Label
26	- - - - -	Paper Set Label
27	- - - - -	Latch
28	- - - - -	Tray Set Label
29	- - - - -	Side Cap (right)
30	- - - - -	Latch Cover (right)
31	- - - - -	Latch Cover (left)
32	- - - - -	Latch Assembly (left)
33	802K05701	Tray Cover Assembly (with 20, 28)
34	- - - - -	Mini Bottom Plate
35	- - - - -	Rack (left)
36	- - - - -	N/F Center Spring
37	- - - - -	Tray Plate
S	600K76430	Hardware Kit (Includes Screw)



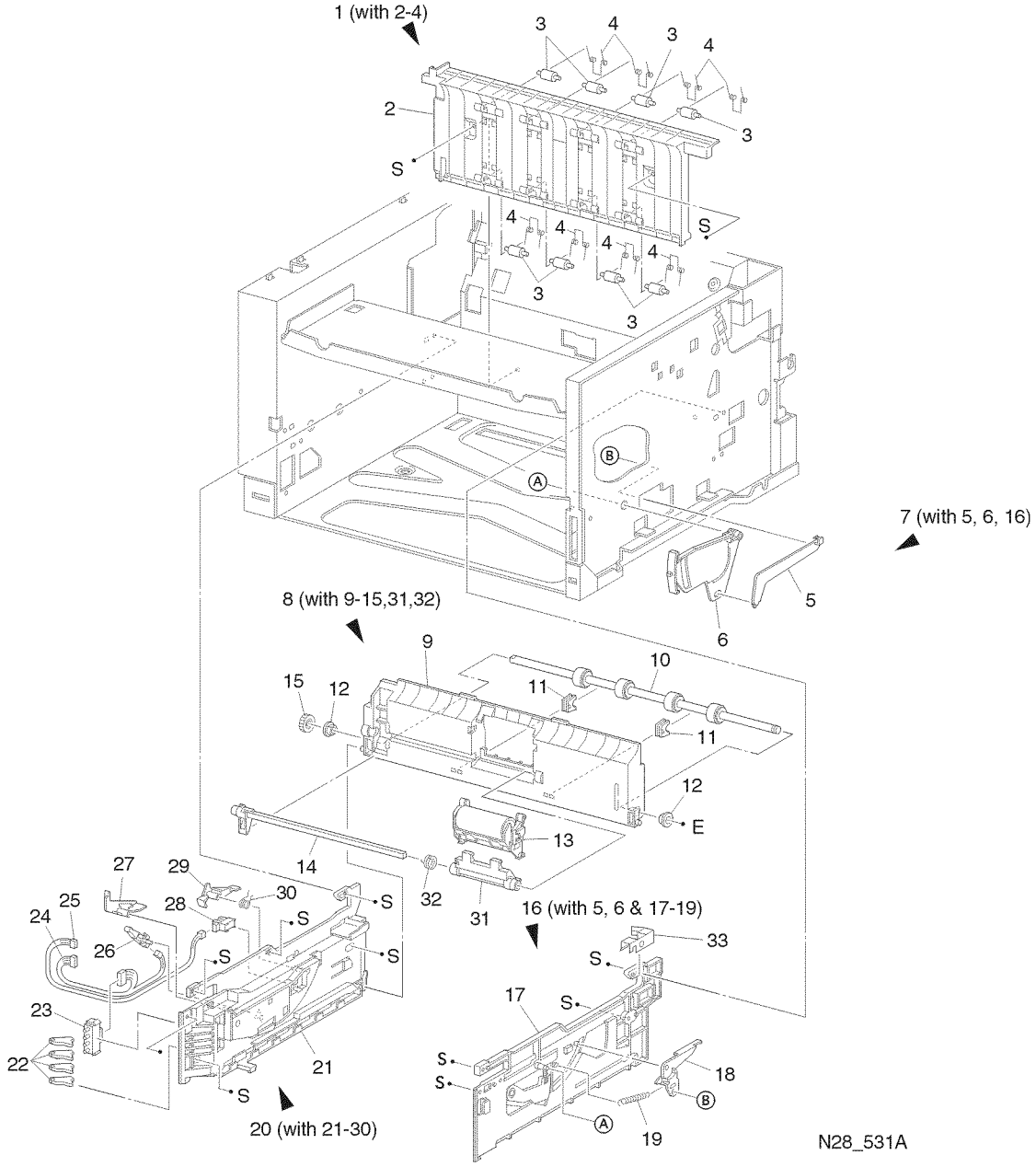
PL 2.2 Paper Tray (A4/Letter)

Item	Part	Description
1	109R00485	Tray Assembly (Short) (includes 2-33)
	- - - - -	Tray Assembly A4/Letter
2	- - - - -	Bottom Plate Assembly
3	- - - - -	Latch Spring
4	- - - - -	Side Guide Plate (left)
5	- - - - -	Side Guide Plate (right)
6	- - - - -	Side Lever (right)
7	- - - - -	Latch Assembly (right)
8	- - - - -	Spring
9	- - - - -	Ground Spring
10	- - - - -	End Guide
11	- - - - -	Spring Plate End Guide
12	- - - - -	End Plate Guide
13	- - - - -	Tray 1 Short Housing
14	- - - - -	Rack
15	- - - - -	Pinion
16	- - - - -	Bottom Cover (Short)
17	- - - - -	Sector Gear (Short)
18	- - - - -	Idler Gear
19	- - - - -	End Guide Lock
20	- - - - -	Size Cam (A4/Letter)
21	- - - - -	Pin Lock
22	- - - - -	Short Side Label
23	- - - - -	Max Paper Label
24	- - - - -	Set Paper Label
25	- - - - -	Latch
26	- - - - -	Latch Cover (right)
27	- - - - -	Latch Cove (left)
28	- - - - -	Latch Assembly (left)
29	- - - - -	Side Cap (right)
30	- - - - -	Handle Cover
31	- - - - -	Mini Bottom Plate
32	- - - - -	Rack (left)
33	- - - - -	N/F Center Spring
34	- - - - -	Tray Plate
S	600K76430	Hardware Kit (Includes Screw)



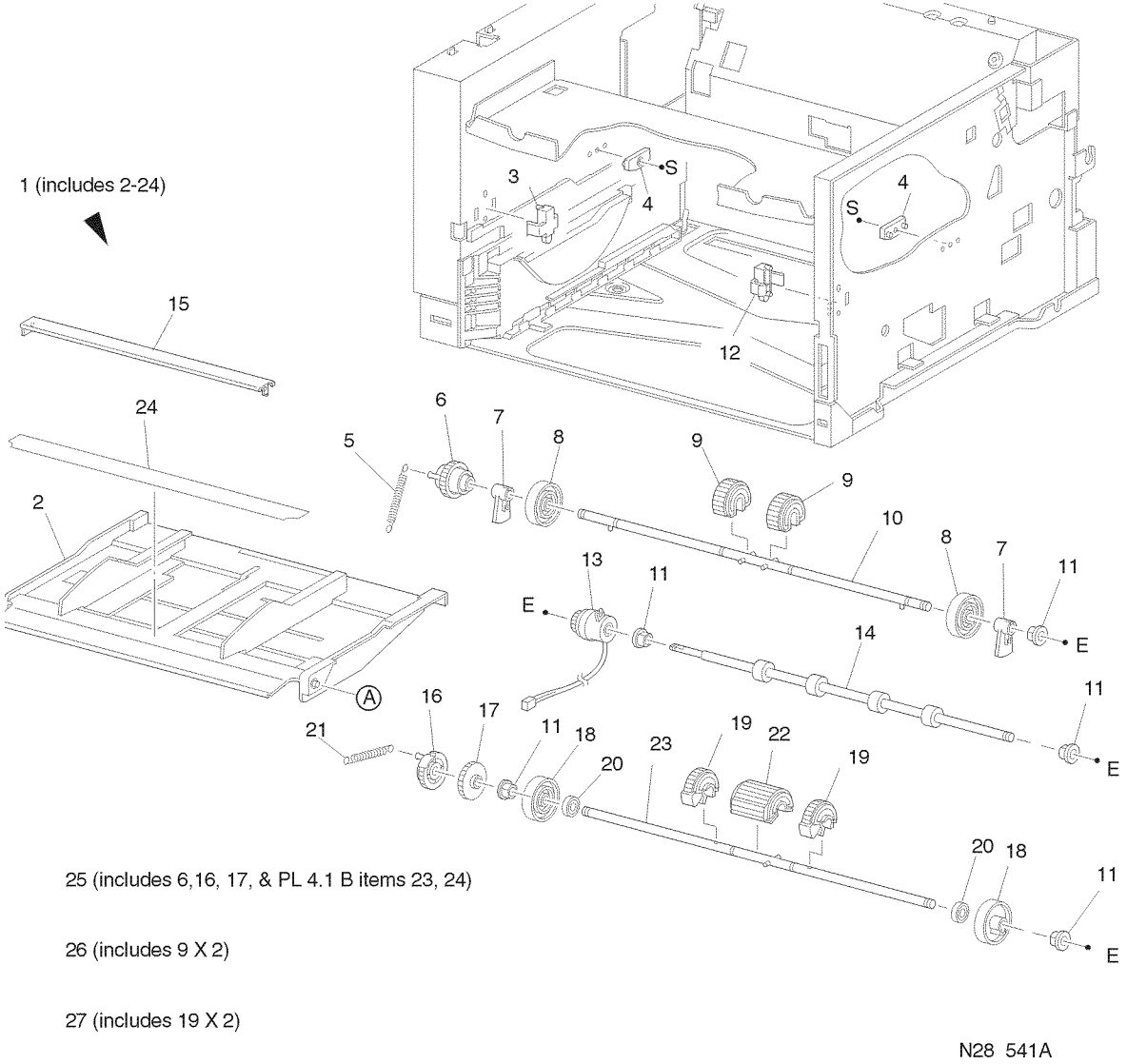
PL 3.1 Paper Feeder

Item	Part	Description
1	54K13043	Rear Chute Assembly (includes 2-4)
2	- - - - -	Chute (Rear)
3	- - - - -	Pinch Roll
4	- - - - -	Pinch Spring
5	- - - - -	Rod GG (P/O item 16)
6	- - - - -	Collar GG (P/O item 16)
7	- - - - -	Tray 1 Guide Assembly (with 5,6,16)
8	54K13055	Retard Chute Assembly (includes 9-15, 31, 32)
9	- - - - -	Retard Chute (P/O item 8)
10	- - - - -	Turn Roll Assembly (left) (P/O item 8)
11	- - - - -	Bearing Support (P/O item 8)
12	- - - - -	Bearing ES8 (P/O item 8)
13	19K94613	Retard Holder Assembly (P/O item 8)
14	- - - - -	Retard Arm (P/O item 8)
15	- - - - -	Turn Gear (left) (P/O item 8)
16	600K72189	Tray 1 Guide Assembly (right) (includes 5, 6 &17-19)
17	- - - - -	Tray 1 Guide (right) (P/O item 16)
18	- - - - -	GG Actuator
19	- - - - -	GG Spring
20	32K93788	Tray 1 Guide Assembly (left) (includes 21-33)
21	- - - - -	Tray 1 Guide (left)
22	- - - - -	Size Actuator
23	110E98320	Paper Size Switch
24	162K42630	Sensor Harness Assembly (J20-J201, J202)
25	- - - - -	Low Paper Sensor Harness Assembly (J127-P128)
26	130E82030	MBF Home Switch
27		MBF Actuator
28	130E81970	Tray 1 Low Paper Sensor
29	- - - - -	Low Paper Actuator
30	- - - - -	Low Paper Spring
31	- - - - -	Retard Lever (P/O item 8)
32	- - - - -	Release Spring (P/O item 8)
33	- - - - -	Ground Clip
E	600K76430	Hardware Kit (Includes E-ring)
S	600K76430	Hardware Kit (Includes Screw)



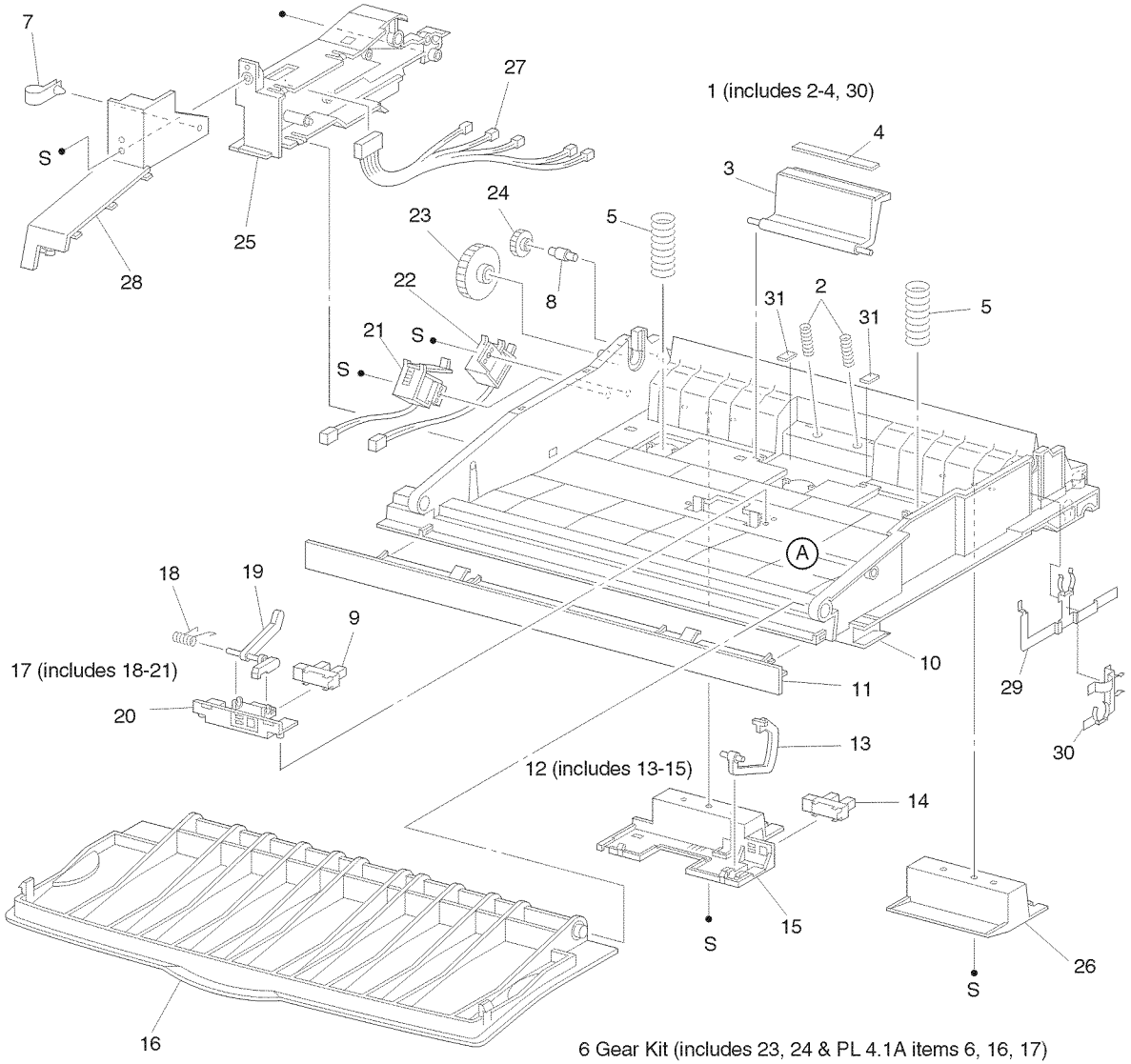
PL 4.1 MBF Assembly

Item	Part	Description
1	59K15221	MBF Assembly [includes 2, 5-11, 13-24 (PL 4.1), 2-5, 7-11, 13-16, 18-31 (PL 4.2)]
2	- - - - -	Tray Assembly
3	3K8552	Latch Assembly (left)
4	- - - - -	Upper Guide
5	809E15350	MBF Spring 1
6	- - - - -	Pick Up Gear
7	- - - - -	Pick Up Cam
8	- - - - -	Core Roll
9	- - - - -	MBF Feed Roll (P/O item 26)
10	- - - - -	Pick Up Shaft
11	- - - - -	Bearing #8
12	3K85941	Latch Assembly (right)
13	121K20060	Tray 1 Turn Roll Clutch
14	59K13064	Turn Roll Assembly -Tray 1
15	- - - - -	Bracket
16	- - - - -	Tray 1 Pick Up Gear
17	- - - - -	MBF Idle Gear 1
18	- - - - -	Tray 1 Core Roll
19	59K11930	Envelope Feed Roll (P/O item 27)
20	- - - - -	Core Bearing #8
21	809E15350	Spring
22	59K14640	Tray 1 Feed Roll
23	- - - - -	MBF Turn Roll Shaft
24	- - - - -	Label
25	600K72223	Gear Kit (includes 6, 16, 17 & PL 4.1B items 23, 24)
26	600K73122	Feed Roll Assembly Kit (contains 2)
27	600K76430	Envelope Feed Roll Kit (includes 2)
E	600K76430	Hardware Kit (Includes E-ring)
S	600K76430	Hardware Kit (Includes Screw)



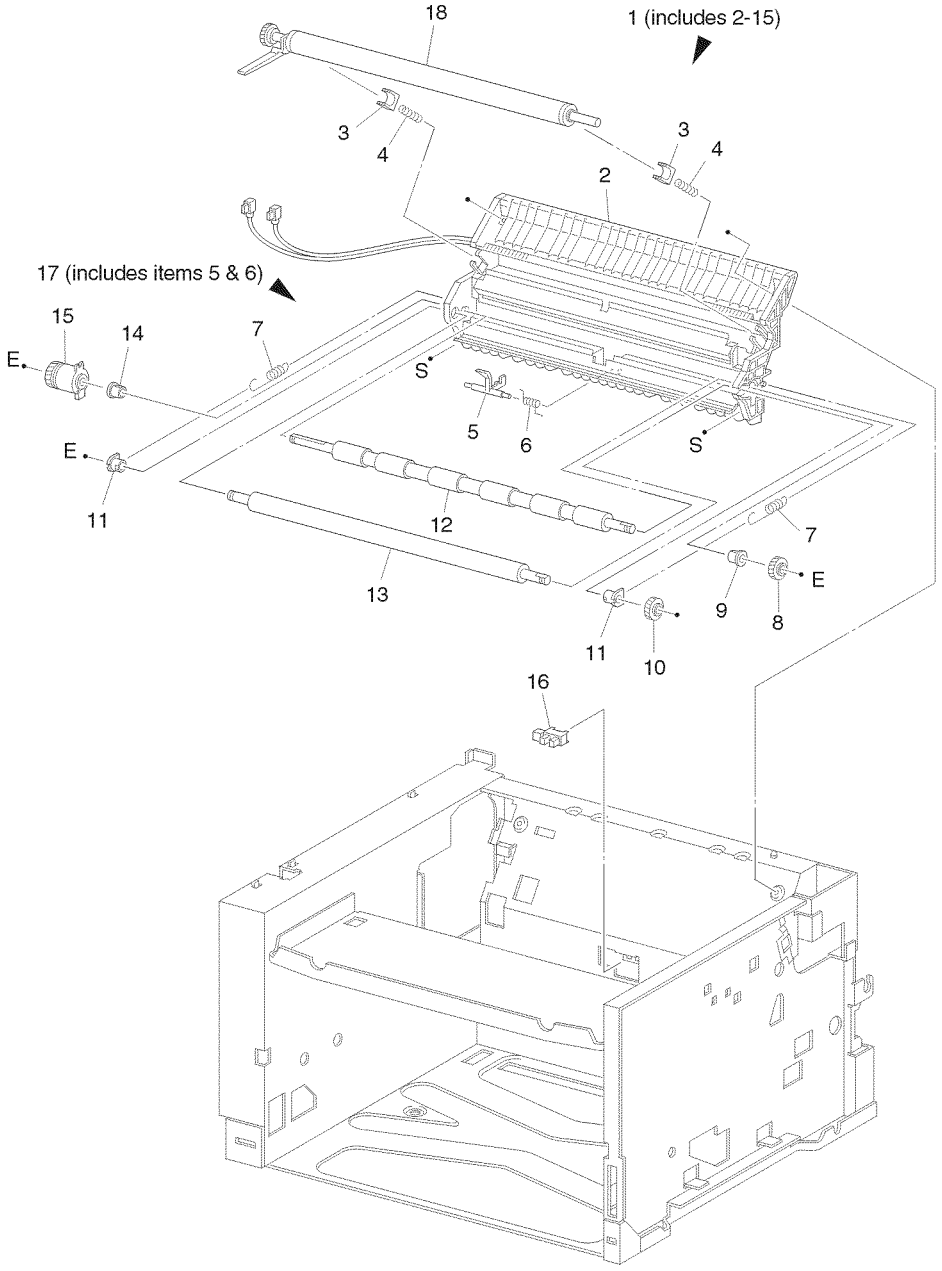
PL 4.2 Paper Handler

Item	Part	Description
1	600K72192	Retard Holder Assembly (includes 2-4)
2	- - - - -	NIP Spring (P/O item 1)
3	- - - - -	Retard Holder (P/O item 1)
4	- - - - -	Retard Pad (P/O item 1)
5	- - - - -	N/F Spring
6	600K72223	Gear Kit [includes 6,16, 17 (PL 4.1A) 23, 24 (PL 4.1B)]
7	- - - - -	Clamp
8	- - - - -	Idler Pin
9	19K94921	No/Low Paper Sensor
10	- - - - -	Chute
11	- - - - -	Lower Cover
12	600K72200	Tray 1 Sensor Assembly (includes13-15)
13	- - - - -	Tray 1 No Paper Actuator
14	19K94931	No Paper Sensor
15	- - - - -	Tray 1 Sensor Holder
16	50E89012	MBF Door
17	600K72210	MBF Lo/No Paper Sensor (includes 9, 18-20)
18	- - - - -	No/Low Sensor Spring (P/O item 17)
19	- - - - -	MBF No/Low Paper Actuator (P/O item 17)
20	- - - - -	Sensor Holder (P/O item 17)
21	121K18800	MBF Feed Solenoid (P/O item 17)
22	121K18810	Tray 1 Feed Solenoid
23	- - - - -	MBF In Gear
24	- - - - -	MBF Idle Gear 2
25	- - - - -	MBF Gear Cover
26	- - - - -	Lower Chute
27	162K42620	MBF Combo Harness (P121-P122, P123, P124, J125, J126)
28	- - - - -	Front Cover
29	- - - - -	Lower Ground Plate
30	- - - - -	Ground Plate
31	- - - - -	Retard Pad Holder
S	600K76430	Hardware Kit (Includes Screw)



PL 5.1 Paper Transport

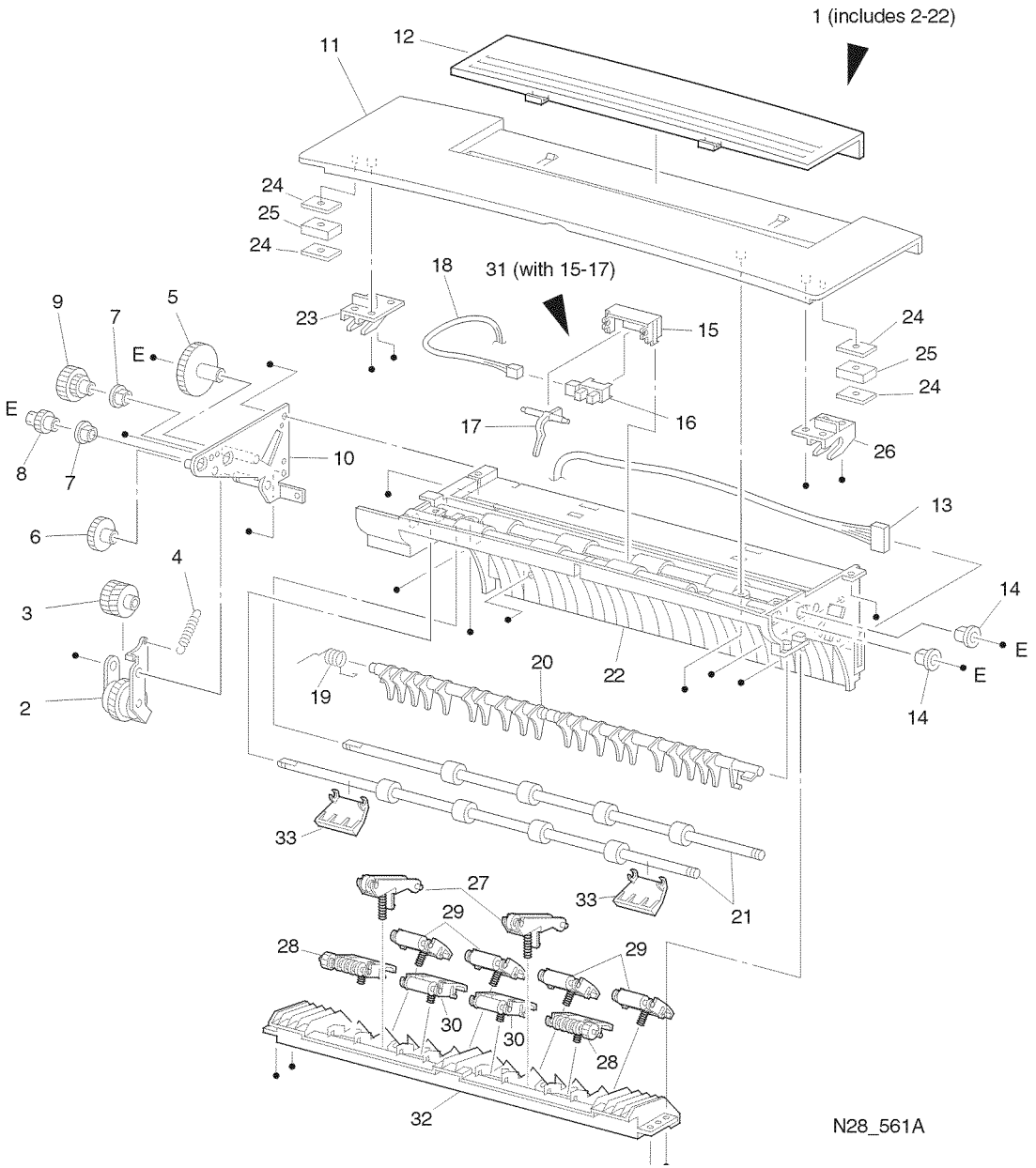
Item	Part	Description
1	54K14698	Paper Transport Assembly (includes 2-15)
2	- - - - -	Chute Transport
3	- - - - -	BTR Bearing
4	- - - - -	BTR Spring
5	- - - - -	Registration Actuator
6	- - - - -	Sensor Spring
7	- - - - -	Registration Spring
8	- - - - -	Registration Gear (Rubber)
9	- - - - -	Right Bearing (Rubber)
10	- - - - -	Registration Gear (Metal)
11	- - - - -	Metal Bearing
12	- - - - -	Registration Roll (Rubber)
13	- - - - -	Registration Roll (Metal)
14	- - - - -	Left Bearing (Rubber)
15	121E84300	Registration Clutch
16	130E82740	Registration Sensor
17	600K72231	Actuator Kit (includes items 5 & 6)
18	22K54452	Bias Transfer Roll
E	600K76430	Hardware Kit (Includes E-ring)
S	600K76430	Hardware Kit (Includes Screw)



N28_0551

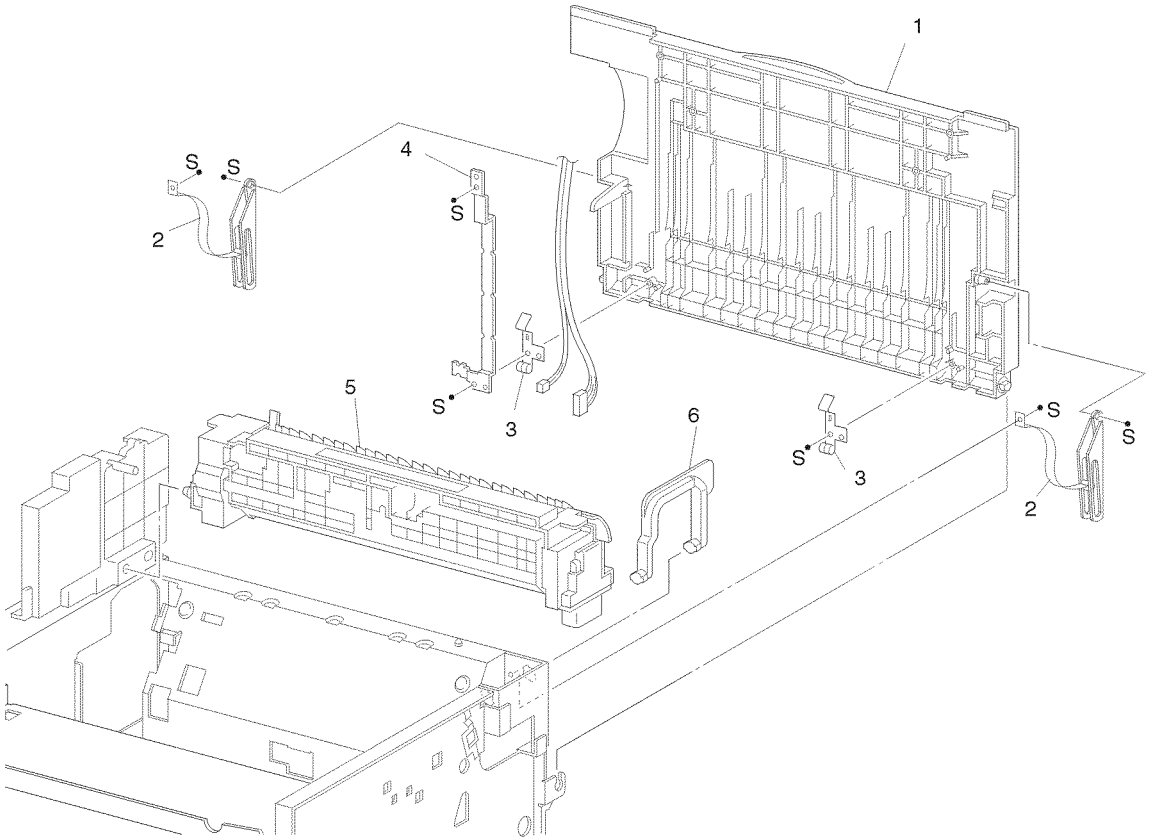
PL 6.1 Rear Cover Assembly

Item	Part	Description
1	802K04575	Rear Cover Assembly (includes 2-22)
2	- - - - -	Cover Gate Gear Assembly
3	- - - - -	Z20/20 Gear
4	- - - - -	Cover Gate Spring Gear
5	- - - - -	Z37 Gear
6	- - - - -	Z27 Gear
7	- - - - -	Exit Bearing
8	- - - - -	Z15 Gear
9	- - - - -	Z22/15 Gear
10	- - - - -	Exit Drive Plate Assembly
11	- - - - -	Top Exit Cover
12	- - - - -	Gate Cover
13	162K43690	Direction Solenoid Harness
14	- - - - -	Duplex Bearing
15	- - - - -	Full Stack Sensor Holder (P/O item 31)
16	- - - - -	Full Stack Sensor (P/O item 31)
17	- - - - -	Full Stack Actuator (P/O item 31)
18	162K43700	Full Stack Sensor Harness
19	- - - - -	Exit Gate Spring
20	- - - - -	Exit Gate
21	59K11892	Rear Cover Roll Shaft
22	- - - - -	Upper Exit Chute
23	- - - - -	Magnetic Holder (left)
24	- - - - -	Magnetic Plate
25	- - - - -	Exit Magnet
26	- - - - -	Magnetic Holder (right)
27	- - - - -	Exit Pinch Spring
28	- - - - -	Exit Pinch Roll-0
29	- - - - -	Pre-Exit Pinch Roll
30	- - - - -	Exit Pinch Roll-1
31	600K72253	Stack Full Sensor Assembly (with 15-17)
32	- - - - -	Lower Exit Chute
33	- - - - -	Exit Flapper
E	600K76430	Hardware Kit (Includes E-ring)
S	600K76430	Hardware Kit (Includes Screw)



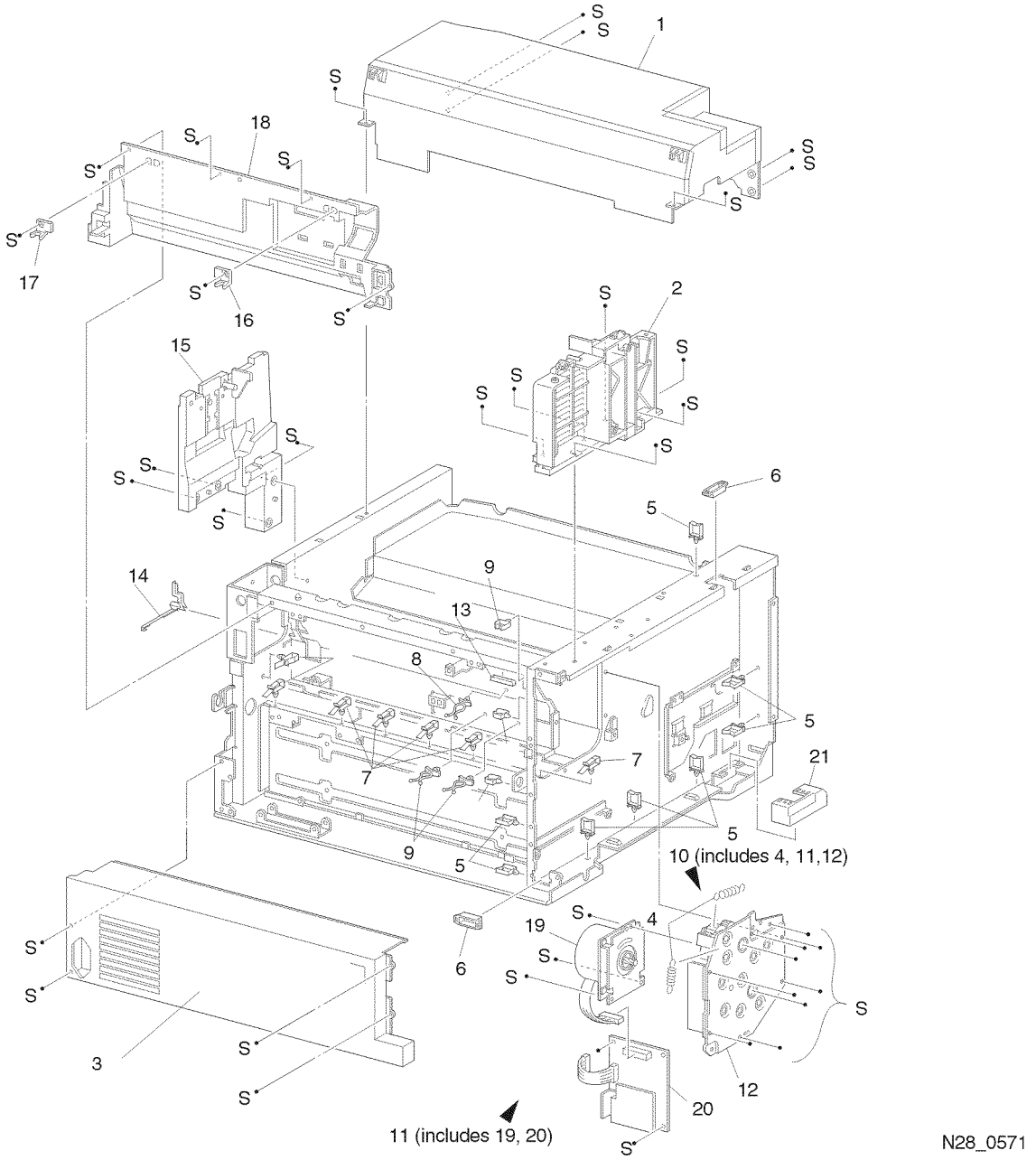
PL 6.2 Fuser

Item	Part	Description
1	802K04575	Rear Cover Assembly
2	- - - - -	Exit Strap Kit (2 pieces)
3	- - - - -	Exit Spring Ground
4	- - - - -	Exit Plate Ground
5	109R00481	Fuser Assembly 110V (customer purchase)
	109R00482	Fuser Assembly 220V (customer purchase)
6	11E07992	Fuser Latch Handle
S	600K76430	Hardware Kit (Includes Screw)



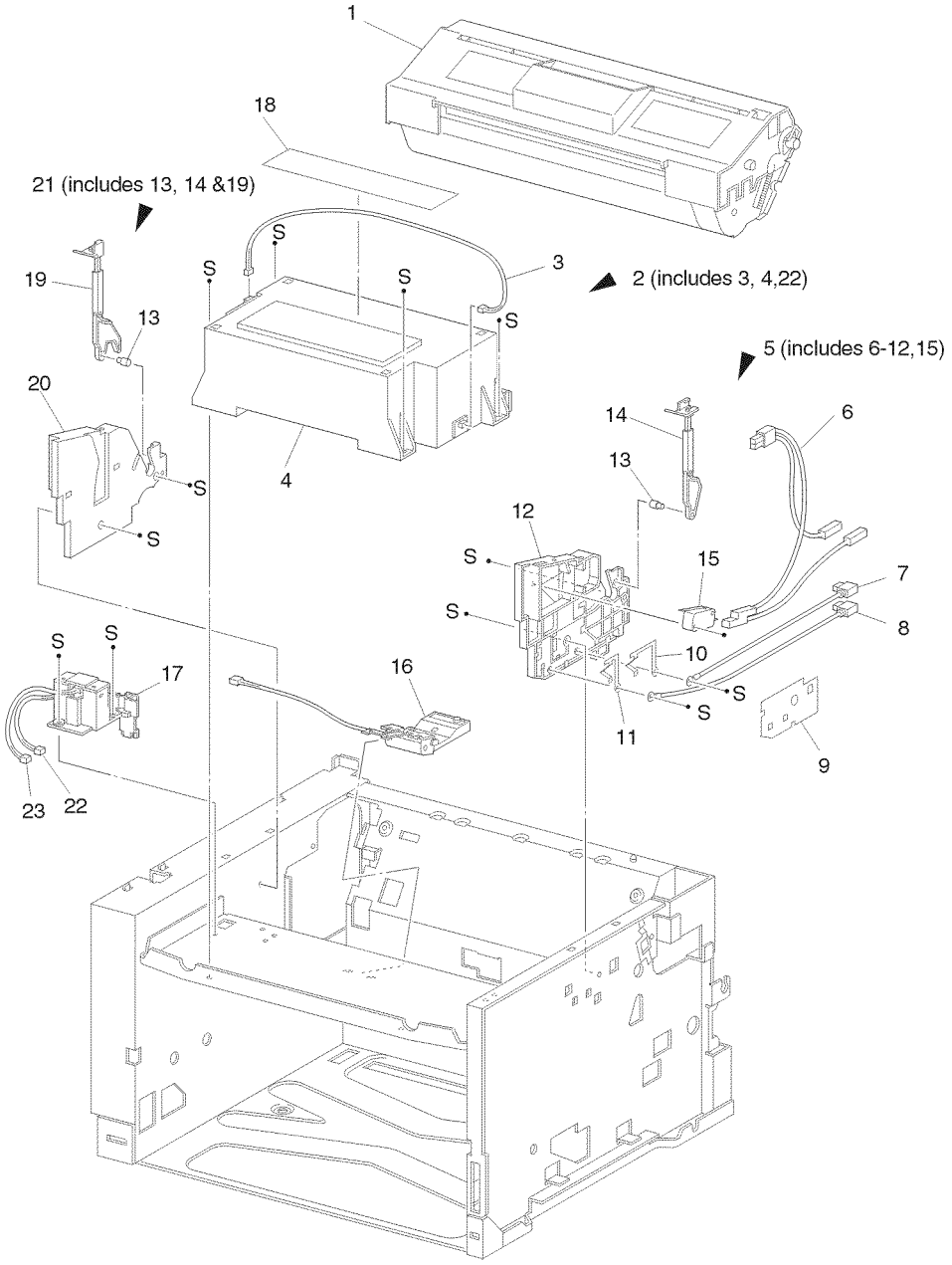
PL 7.1 Frame & Drives

Item	Part	Description
1	- - - - -	Laser Cover
2	- - - - -	OCT Bracket (left)
3	- - - - -	Lower Rear Cover (reference only)
4	809E10940	Main Drive Motor Spring Kit (P/O item 10)
5	- - - - -	Clamp
6	- - - - -	Laser Clamp
7	- - - - -	Clamp
8	- - - - -	Clamp
9	- - - - -	Clamp
10	- - - - -	Drive Gear Assembly (includes 4, 11, 12)
11	7K84845	Motor Assembly (includes19, 20,) (P/O item 10)
12	- - - - -	Main Drive Motor Gear Assembly (P/O item 10)
13	- - - - -	OCT Bush Harness
14	- - - - -	HV Bush
15	- - - - -	OCT Bracket (right)
16	3E46230	Duplex Stopper (left)
17	3E46240	Duplex Stopper (right)
18	48E65001	HVPS Cover
19	- - - - -	Motor (reference only) (P/O item 11)
20	- - - - -	Main Drive Motor Controller PWB (reference only) (P/O item 11)
21	- - - - -	Drawer Cover
S	600K76430	Hardware Kit (Includes Screw)



PL 8.1 Xerographics

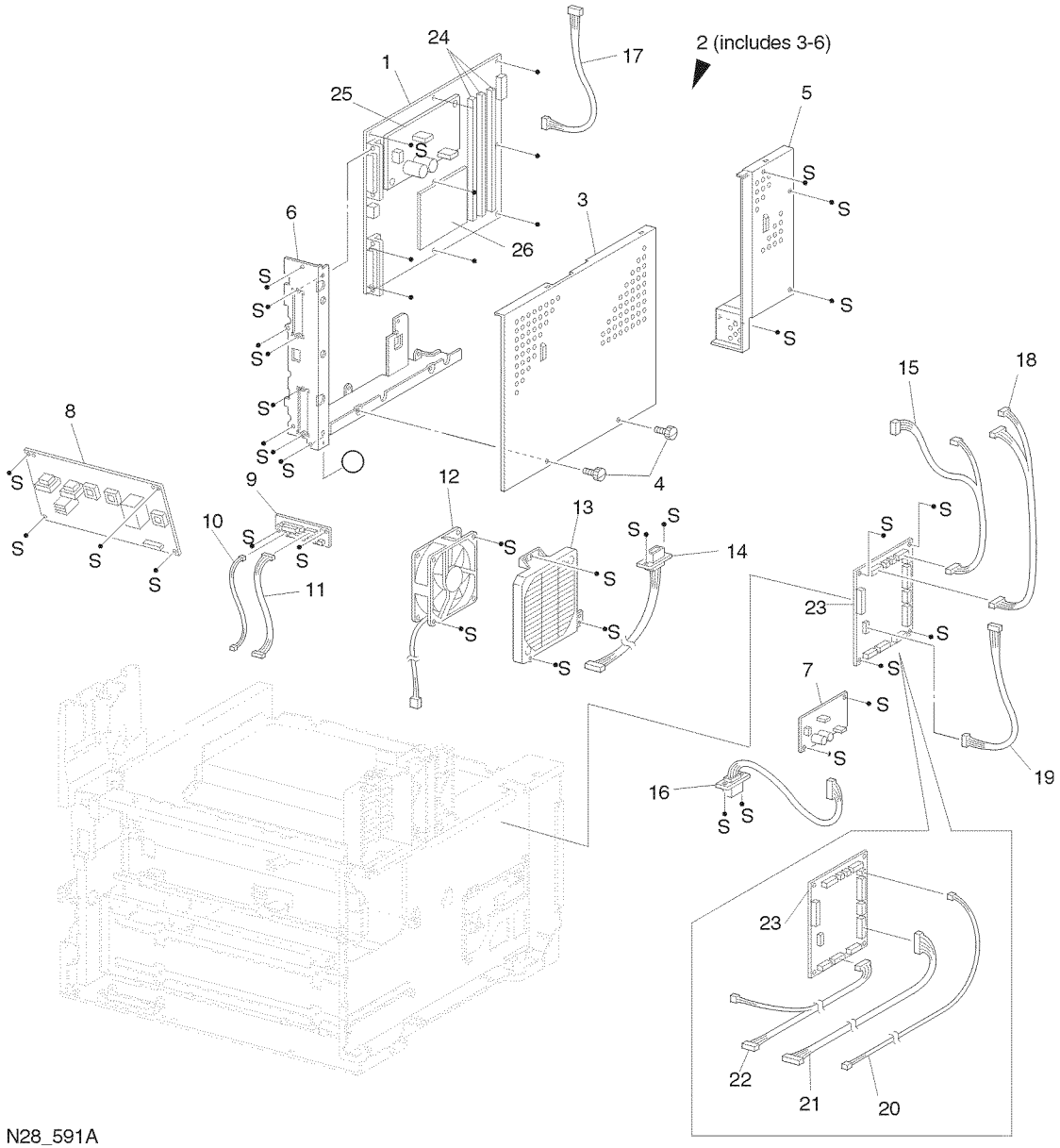
Item	Part	Description
1	113R00443	Print Cartridge
2	62K99106	Laser Assembly (with 3,4 22)
3	- - - - -	Laser Harness Assembly (J115-1-J115-2)
4	- - - - -	Laser (reference only)
5	32K93933	Print Cartridge Guide Assembly R (includes items 6-12 & 15))
6	162K43601	Interlock Harness Assembly (J162-J621, J622,J623) (P/O item 5)
7	- - - - -	Developer Wire Assembly (P/O item 5)
8	- - - - -	Xerographic Wire Assembly (P/O item 5)
9	- - - - -	Guide Seal (P/O item 5)
10	- - - - -	Developer Plate (P/O item 5)
11	- - - - -	Xerographic Plate (P/O item 5)
12	- - - - -	Print Cartridge Guide (Right) (P/O item 5)
13	29E29870	Hinge Pivot Pin (P/O item 21)
14	12K93720	Access Cover Support Arm R (P/O item 21)
15	110E98290	Top Cover Interlock Switch (P/O item 5)
16	130K57891	Toner Sensor Assembly
17	130K59790	Print Cartridge Key Sensor Assembly
18	- - - - -	Laser Label
19	12K93731	Access Cover Support Arm L (P/O item 21)
20	32E12382	Print Cartridge Guide (Left)
21	600K72261	Link Kit (includes 13 x 2, 14, 19)
22	162K42750	Toner Sensor Harness
23	162K42730	Print Cartridge Sensor Harness
S	600K76430	Hardware Kit (Includes Screw)



N28_0581

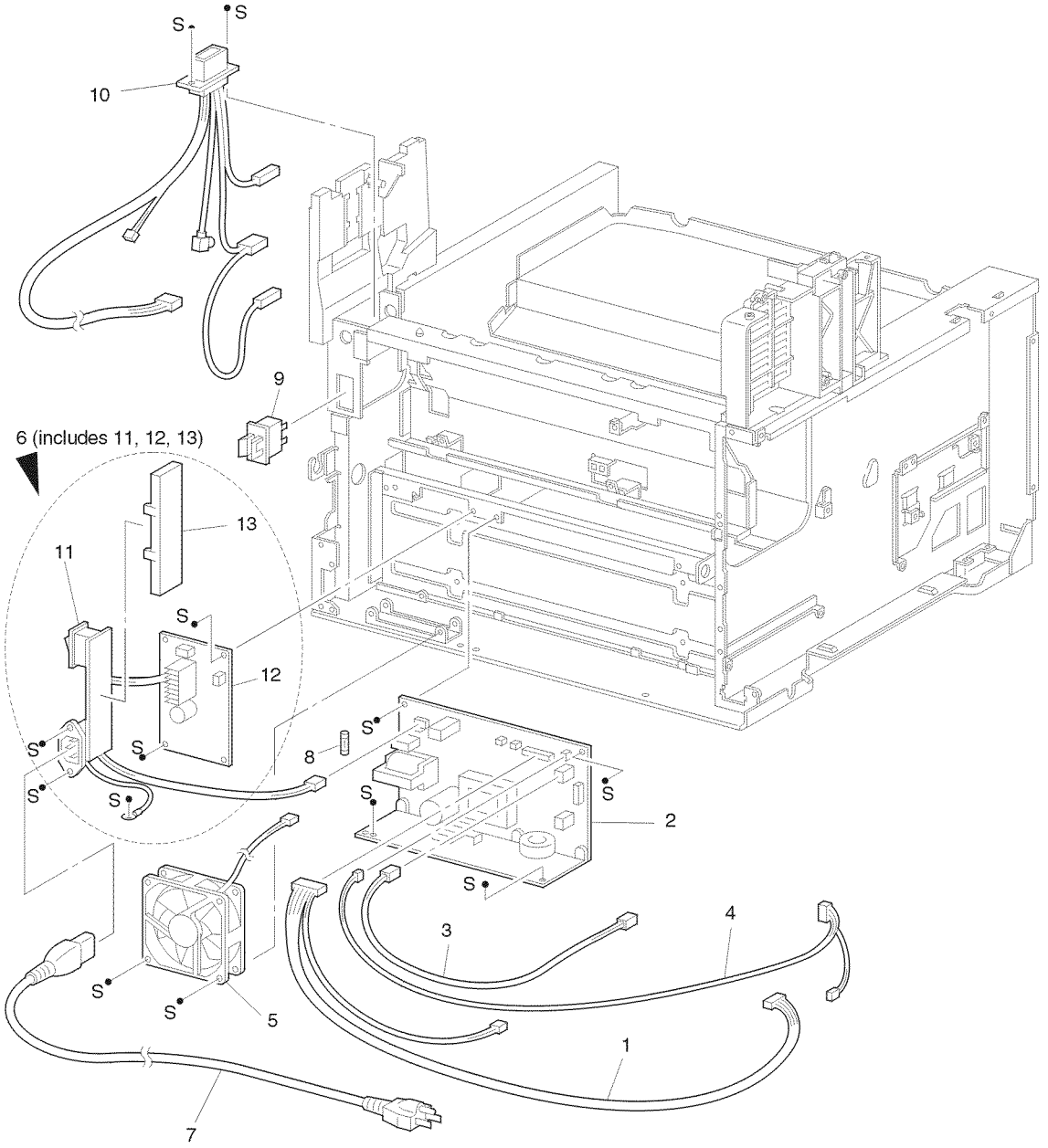
PL 9.1 Electrical

Item	Part	Description
1	160K5440	System Controller PWB
2	- - - - -	I/F Assembly (includes 3-6)
3	- - - - -	Cover Shield
4	- - - - -	Thumb Screws
5	- - - - -	MCU Cover
6	- - - - -	Rear Panel
7	105K14750	5V Power Supply PWB
8	105K14821	High Voltage Power Supply
9	160K52260	Duplex I/F PWB
10	162K43530	Harness Assembly Full Dup-1 (J502-J527)
11	162K43690	Harness Assembly Flap-1 (J505-J528)
12	127E81380	Fuser Fan
13	55E33041	Fuser Fan Cover
14	162K43542	Harness Assembly STK-1 (J504-P526)
15	162K42610	Harness Assembly P/H (J12-J121, J128)
16	162K42640	Feeder Harness Assembly Tray 2/3 (J13-P131)
17	162K42820	System Controller PWB to User Interface Harness Assembly (J18-J421)
18	162K42880	Harness Assembly Laser NS (J11-J112, J114)
19	- - - - -	Harness Assembly
20	162K42740	Harness Assembly Reg (J22-J222)
21	162K43521	Harness Assembly Dup-I/F (J19-J501)
22	162K42720	Harness Assembly HVPS (J18-J181, J183)
23	160K59073	Print Engine Controller PWB (N2825) (115V) (US)
	160K59083	Print Engine Controller PWB (N2825) (220V) (EU)
	160K62302	Print Engine Controller PWB (N2025) (115V) (US)
	160K62322	Print Engine Controller PWB (N2025) (220V) (EU)
24	733W14695	16 MB Dimm Card
	733W14696	32 MB Dimm Card
	733W14697	64 MB Dimm Card
	- - - - -	8 MB Flash Card
25	160K71520	Serial PWB
	160K71530	10 Base / 2 PWB
	160K71540	Token Ring PWB
26	- - - - -	Hard Drive
S	600K76430	Hardware Kit (Includes Screw)



PL 9.2 Electrical

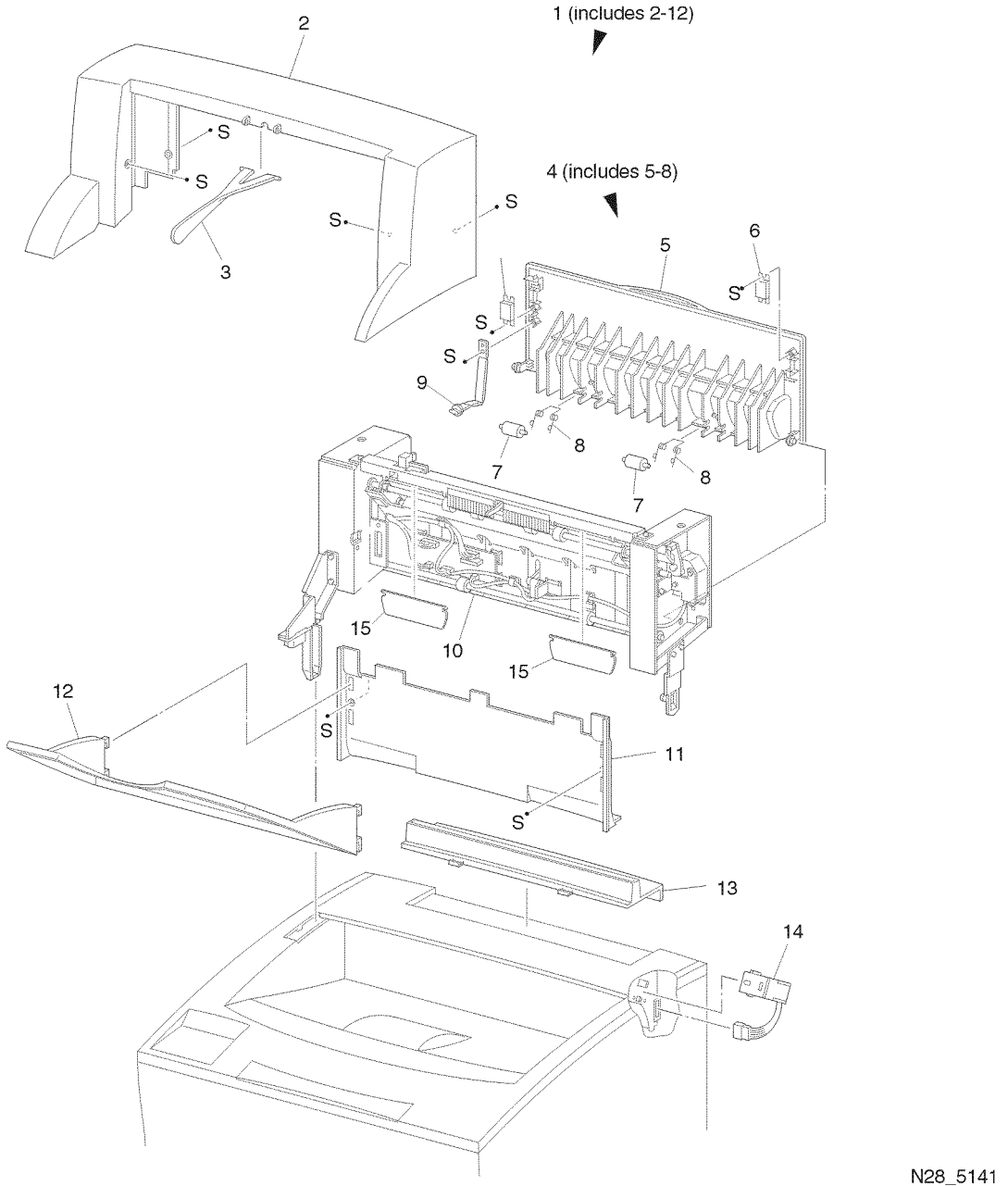
Item	Part	Description
1	162K42681	Harness Assembly LVPS (J161-J16, J506)
2	105K14972	Low Voltage Power Supply 110V
	105K14962	Low Voltage Power Supply 220V
3	162K42691	System Controller Harness Assembly 3.3V (J163-J3)
4	162K42800	System Controller Harness Assembly 5V (J169-J168, J13)
5	127E81781	LVPS Exhaust Fan
6	- - - - -	Inlet Assembly (includes 11, 12, 13)
7	177K99110	Power Cord (US)
8	- - - - -	Fuse
9	110E98300	Rear Cover/Fuser Interlock Switch
10	162K42711	Fuser Harness Assembly 100V (J174, J17, J171, J172, J177, J178, and J182)
	162K42871	Fuser Harness Assembly 200V (J174, J17, J171, J172, J177, J178, and J182)
11	- - - - -	Inlet (reference only) (P/O item 6)
12	- - - - -	PWB (reference only) (P/O item 6)
13	- - - - -	Cover (P/O item 6)
S	600K76430	Hardware Kit (Includes Screw)



N28_591B

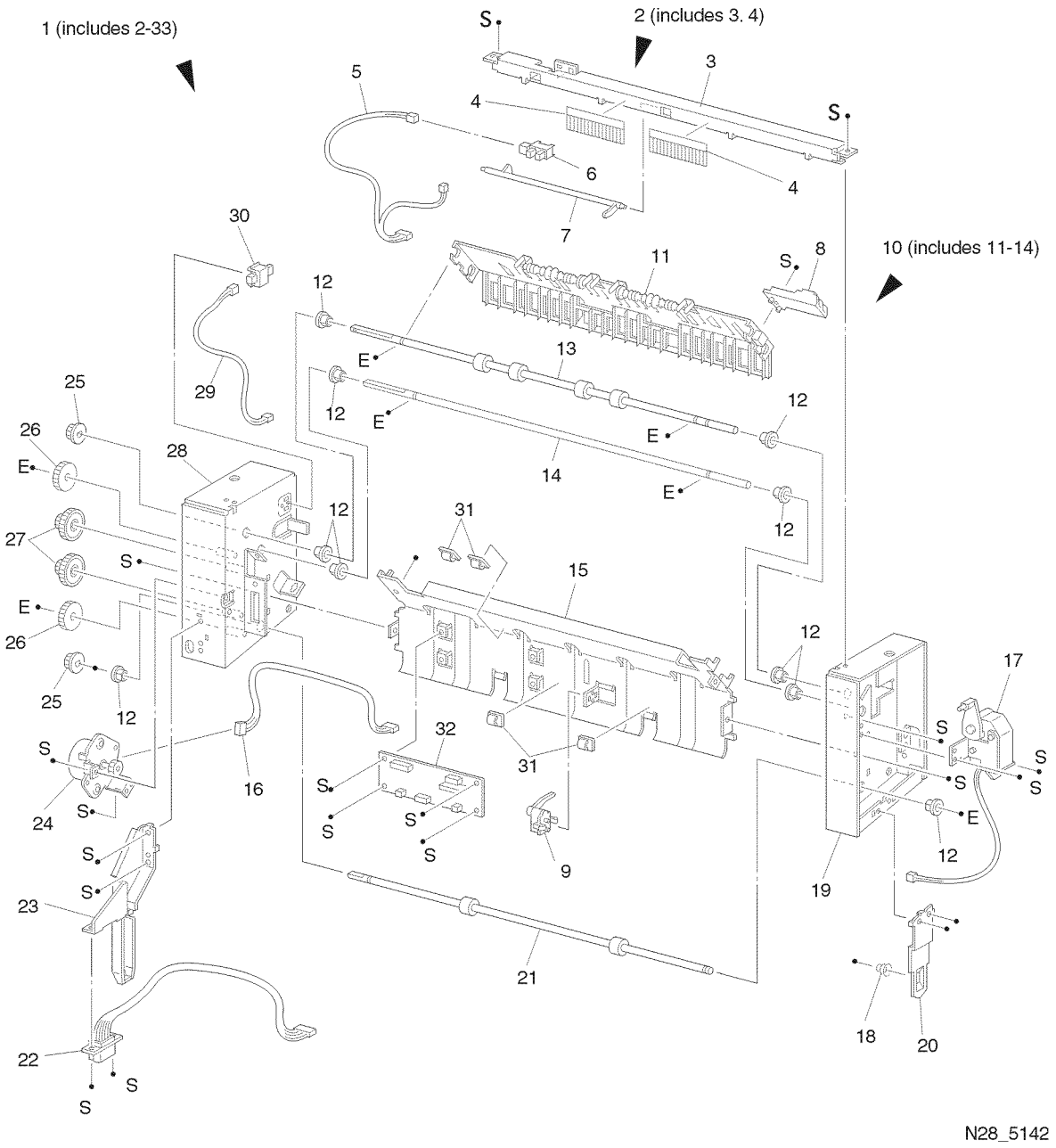
PL 10.1 Offsetting Catch Tray (1 of 2)

Item	Part	Description
1	- - - - -	OCT Assembly (includes 2-12)
2	48E64791	Top Cover
3	3E47341	Paper Weight
4	48K76362	Rear Cover Assembly (includes 5-8)
5	- - - - -	Rear Cover
6	- - - - -	Holder Magnet
7	- - - - -	Turn Pinch Roll
8	- - - - -	OCT Pinch Spring
9	1E39851	Strap
10	- - - - -	OCT Sub Assembly (same as PL 14.2, item 1)
11	48E65422	Front Cover
12	50E88851	OCT Tray
13	48E64831	Gate Cover
14	121K18871	Exit Gate Solenoid Assembly
15	- - - - -	OCT Flapper
S	600K76430	Hardware Kit (Includes Screw)



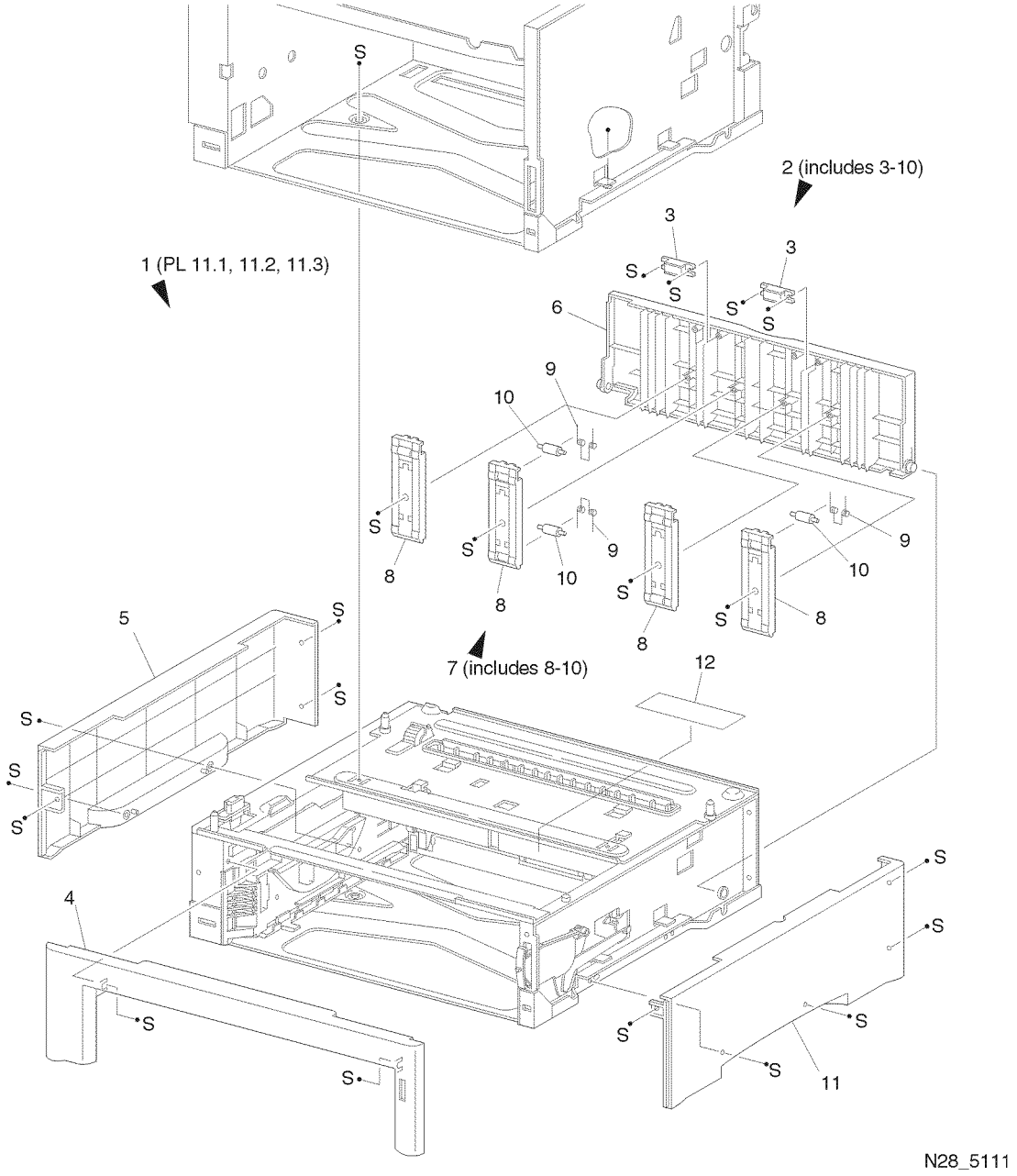
PL 10.2 Offsetting Catch Tray (2 of 2)

Item	Part	Description
1	48K76356	OCT Assembly (with 2-32)
2	- - - - -	Eliminator Assembly (with 3, 4)
3	- - - - -	Stack Full Bracket
4	- - - - -	Eliminator (Left)
5	162K43580	Stack Full Sensor Harness Assembly (J520-J521,J523)
6	130K86500	OCT Stack Full Sensor
7	120E16940	Stack Full Actuator
8	- - - - -	Offset Arm Guide
9	130K86500	OCT Sensor
10	- - - - -	Offset Assembly (includes 11-14)
11	- - - - -	Offset Chute Assembly
12	- - - - -	Exit Bearing
13	- - - - -	Offset Roll
14	- - - - -	Offset Shaft
15	- - - - -	OCT Chute
16	162K47140	OCT Motor Harness Assembly (J517-J518)
17	127K24581	Offset Motor Assembly
18	- - - - -	Spring Screw
19	- - - - -	Side Frame (Right)
20	- - - - -	Right Support
21	- - - - -	Inlet Roll
22	162K43560	STK-0 Harness Assembly (J514-P526)
23	- - - - -	Left Support
24	127K24560	OCT Motor Assembly
25	- - - - -	Offset Gear
26	- - - - -	Gear 29
27	- - - - -	Idler Gear 14/23
28	- - - - -	Side Frame Assembly (Left)
29	162K43601	OP STK COV Harness Assembly (J524-J525)
30	110E93440	Rear Cover Interlock Switch
31	- - - - -	Clamp
32	- - - - -	OCT PWB
E	600K76430	Hardware Kit (Includes E-ring)
S	600K76430	Hardware Kit (Includes Screw)



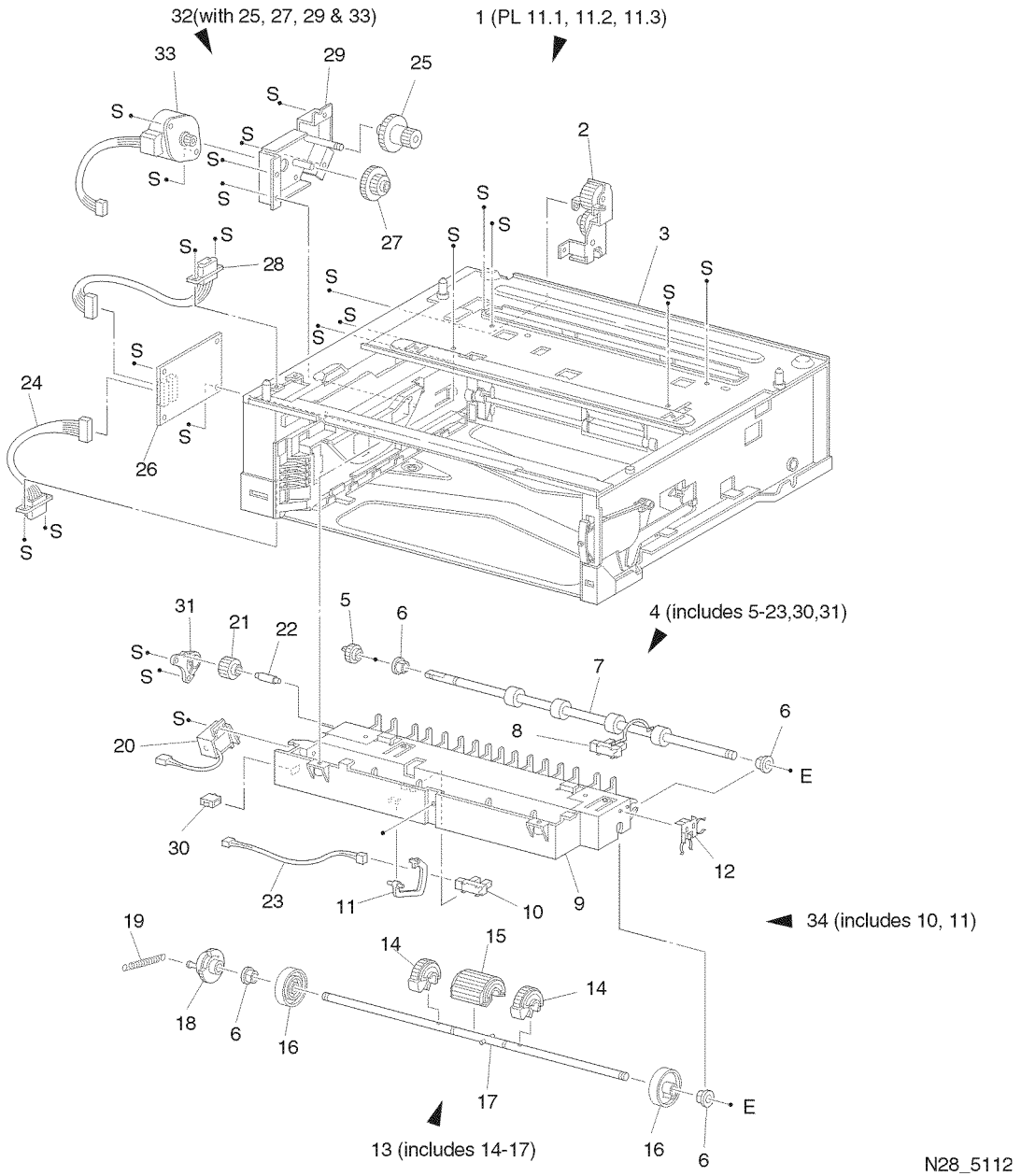
PL 11.1 500 Sheet Feeder (1 of 3)

Item	Part	Description
1	- - - - -	Complete Feeder Assembly (Customer Purchased Item)
2	802K11761	Rear Cover Assembly (includes 3-10)
3	- - - - -	Latch (P/O item 2)
4	802E03102	Front Cover (P/O item 2)
5	802E03081	Left Cover (P/O item 2)
6	- - - - -	Rear Cover (P/O item 2)
7	19K94731	Pinch Roll Assembly (includes 8-10) (P/O item 2)
8	- - - - -	Holder (P/O item 2) (P/O item 7)
9	- - - - -	Torsion Spring (P/O item 2) (P/O item 7)
10	- - - - -	Pinch Roll (P/O item 2) (P/O item 7)
11	802E03091	Right Cover
12	- - - - -	Label
S	600K76430	Hardware Kit (Includes Screw)



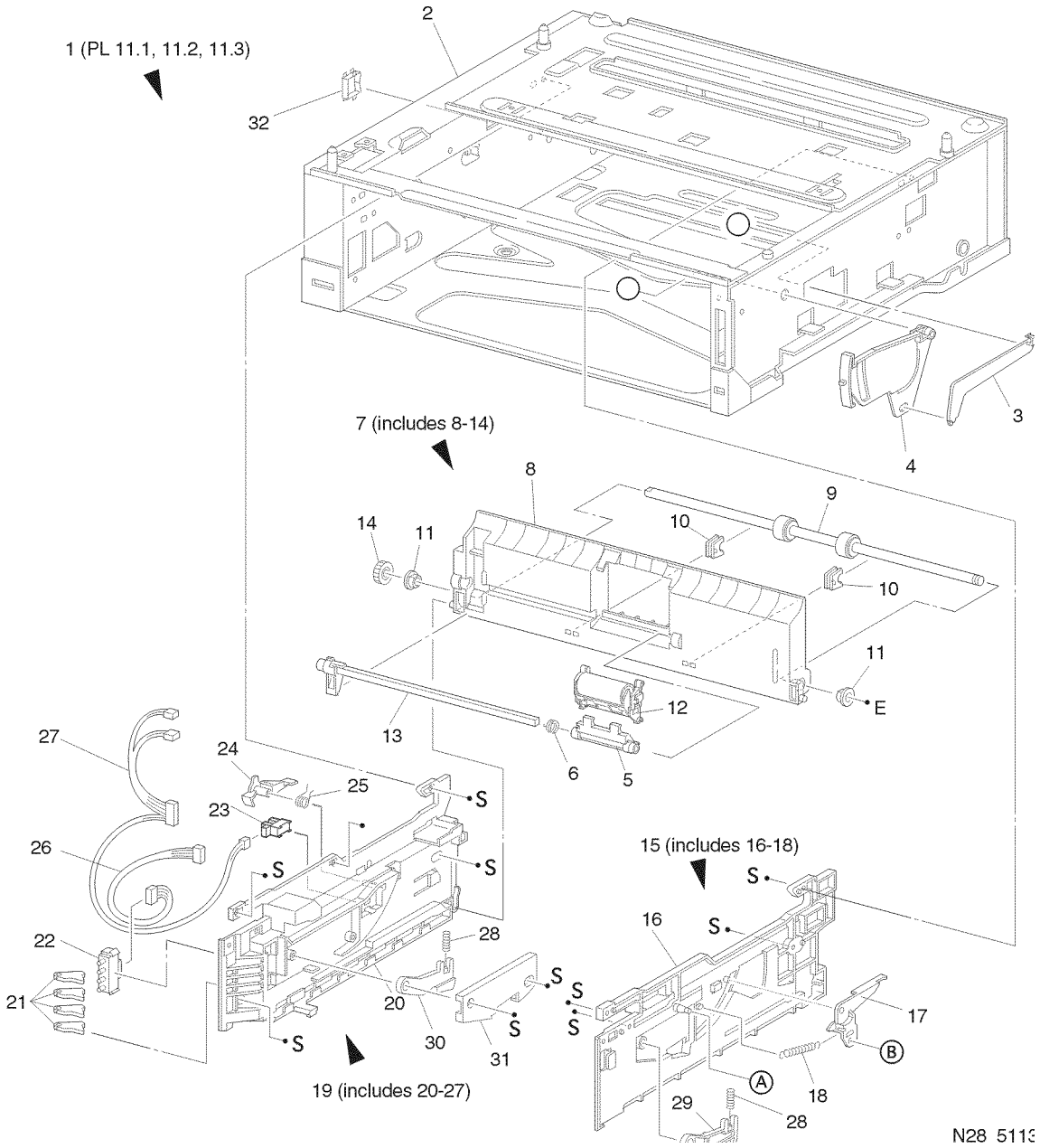
PL 11.2 500 Sheet Feeder (2 of 3)

Item	Part	Description
1	- - - - -	Complete Feeder Assembly (Customer Purchased Item)
2	15K39480	Gear Bracket Assembly 28
3	- - - - -	Feeder Sub Assembly (same as PL 11.3, item 1)
4	54K14725	Feed Head Assembly (includes 5-22)
5	- - - - -	Turn Gear
6	- - - - -	Bearing
7	- - - - -	Turn Roll Assembly
8	130K60371	Pre Registration Sensor
9	- - - - -	Feeder Chute
10		No Paper Sensor (P/O item 34)
11	- - - - -	No Paper Actuator (P/O item 34)
12	- - - - -	Ground Plate
13	600K73122	Feed Roll Assembly (includes 14-17)
14	600K73132	Envelope Feed Roll Assembly
15	59K14640	Feed Roll
16	- - - - -	Core Roll
17	- - - - -	Pick Up Shaft
18	- - - - -	Pick Up Gear
19	809E15350	Pick Up Spring 300
20	121K18810	Feed Solenoid
21	- - - - -	Gear 17
22	- - - - -	Gear Shaft
23	162K47400	Harness Assembly, Tray 2/3 J134 (J13A-J134)
24	162K47410	Harness Assembly J136 (P131-J136)
25	15K39480	Gear
26	160K53242	Feeder PWB
27	- - - - -	Gear
28	162K47380	Harness Assembly J131 (J131-J132)
29	- - - - -	Drive Bracket Assembly
30	- - - - -	Connector (reference only)
31	- - - - -	Shaft Plate
32	15K39471	Drive Assembly (with 33-36)
33	- - - - -	Motor Assembly
34	600K72200	No Paper Sensor Kit
E	600K76430	Hardware Kit (Includes E-ring)
S	600K76430	Hardware Kit (Includes Screw)



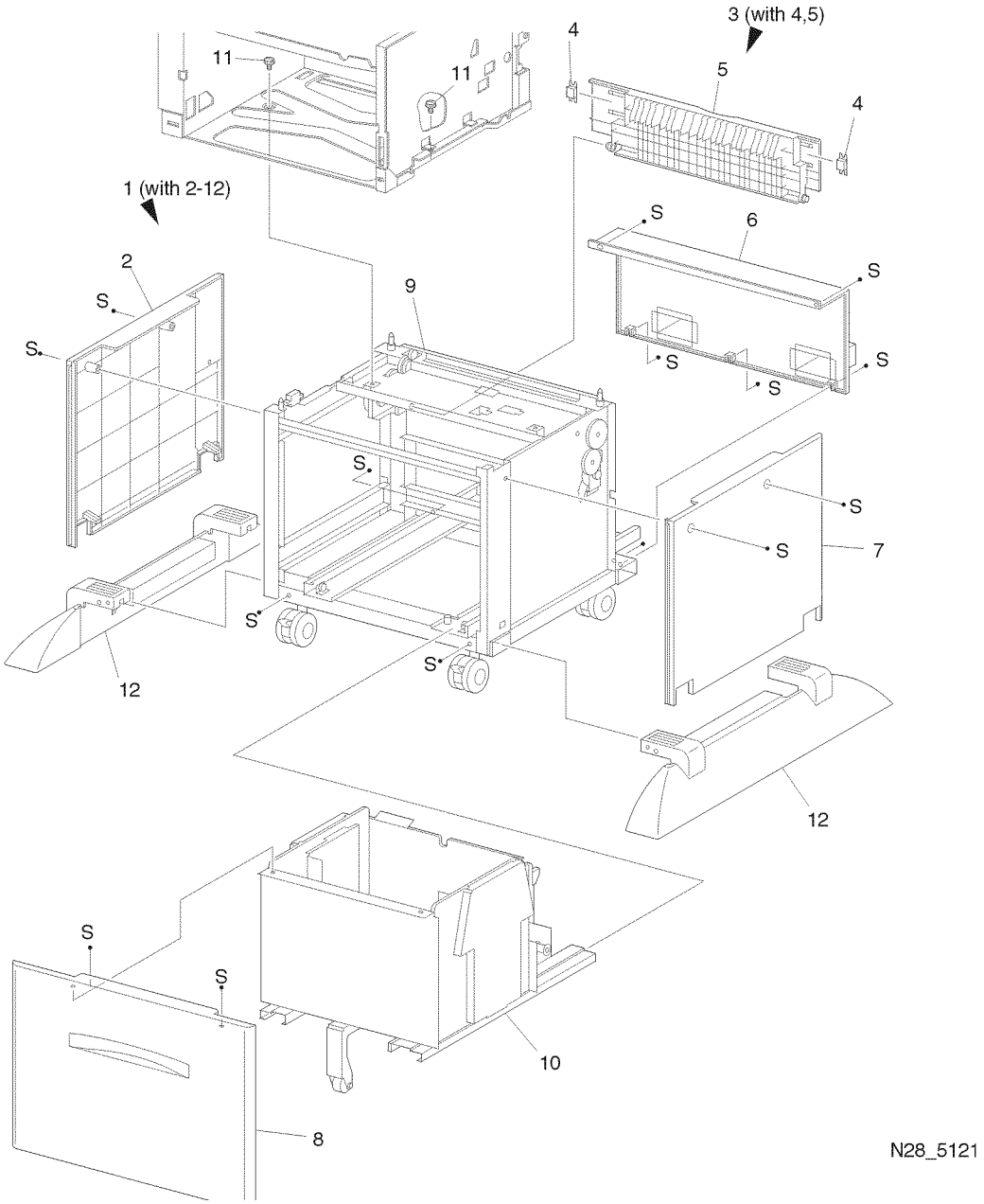
PL 11.3 500 Sheet Feeder (3 of 3)

Item	Part	Description
1	- - - - -	Complete Feeder Assembly (Customer Purchased Item)
2	- - - - -	Frame Assembly
3	- - - - -	GG Rod
4	- - - - -	GG Collar Assembly (includes 5, 6)
5	- - - - -	Retard Lever (P/O Item 4)
6	- - - - -	Release Spring (P/O Item 4)
7	54K13055	Retard Chute Assembly (includes 8-14)
8	- - - - -	Retard Chute (P/O Item 7)
9	- - - - -	Turn Roll Assembly (P/O Item 7)
10	- - - - -	Support Bearing (P/O Item 7)
11	- - - - -	Bearing 8 (P/O Item 7)
12	19K94613	Retard Holder Assembly (P/O Item 7)
13	- - - - -	Retard Arm (P/O Item 7)
14	- - - - -	Turn Gear (Left) (P/O Item 7)
15	600K72189	Guide Assembly (Right) (includes 16-18)
16	- - - - -	Guide (Right)
17	- - - - -	Paper Level Actuator
18	- - - - -	Paper Level Spring
19	32K93788	Guide Assembly (Left) (includes 20-28)
20	- - - - -	Guide (Left)
21	- - - - -	Size Actuator
22	110E98320	Paper Size Switch
23	- - - - -	Low Paper Sensor
24	- - - - -	L/P Actuator
25	- - - - -	Spring
26	162K47420	Harness Assembly J138 (J138-J139)
27	162K47390	Harness Assembly J133 (J133-P13A,P135,J137)
28	- - - - -	Tray 1 Spring
29	- - - - -	Tray 1 Arm R
30	- - - - -	Tray 1 Arm L
31	- - - - -	Tray 1 Cap
32	- - - - -	Saddle Edge
E	600K76430	Hardware Kit (Includes E-ring)
S	600K76430	Hardware Kit (Includes Screw)



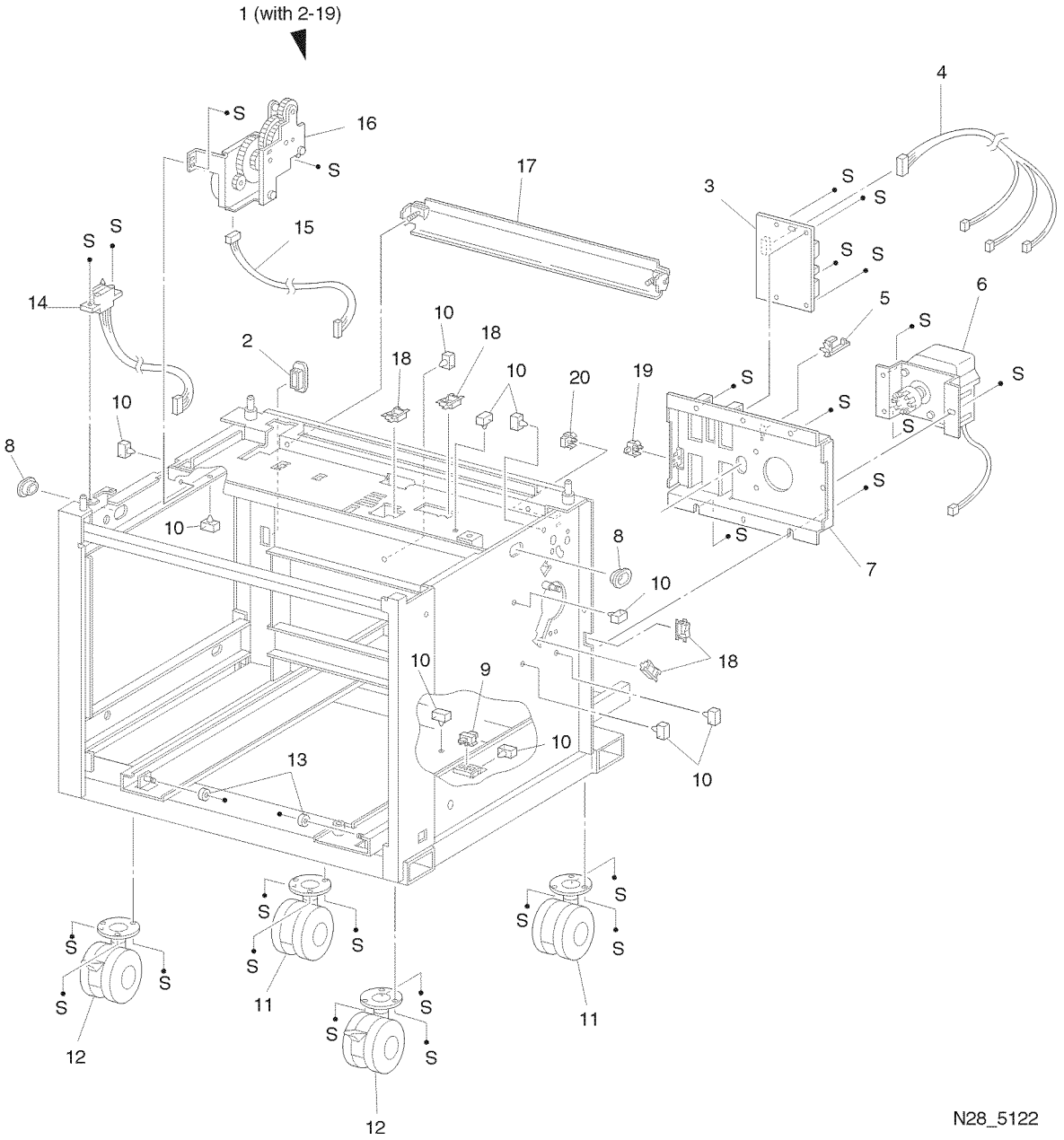
PL 12.1 2000 Sheet Feeder (1 of 4)

Item	Part	Description
1	- - - - -	Assembly (with 2-11)
2	48K77441	Left Side Cover Assembly.
3	- - - - -	2000 Sheet Feeder R/H Cover Assembly.
4	- - - - -	Folder Magnet
5	48K77533	2000 Sheet Feeder Rear Cover/ Door Assembly
6	802K05400	Rear Bottom Cover
7	48K77451	Right Side Cover Assembly.
8	48K69591	Front Cover
9	- - - - -	2000 Sheet Feeder Frame & Drive Assembly (reference only)
10	- - - - -	2000 Sheet Feeder Tray Assembly
11	- - - - -	Screw
12	- - - - -	Foot
S	600K76430	Hardware Kit (Includes Screw)



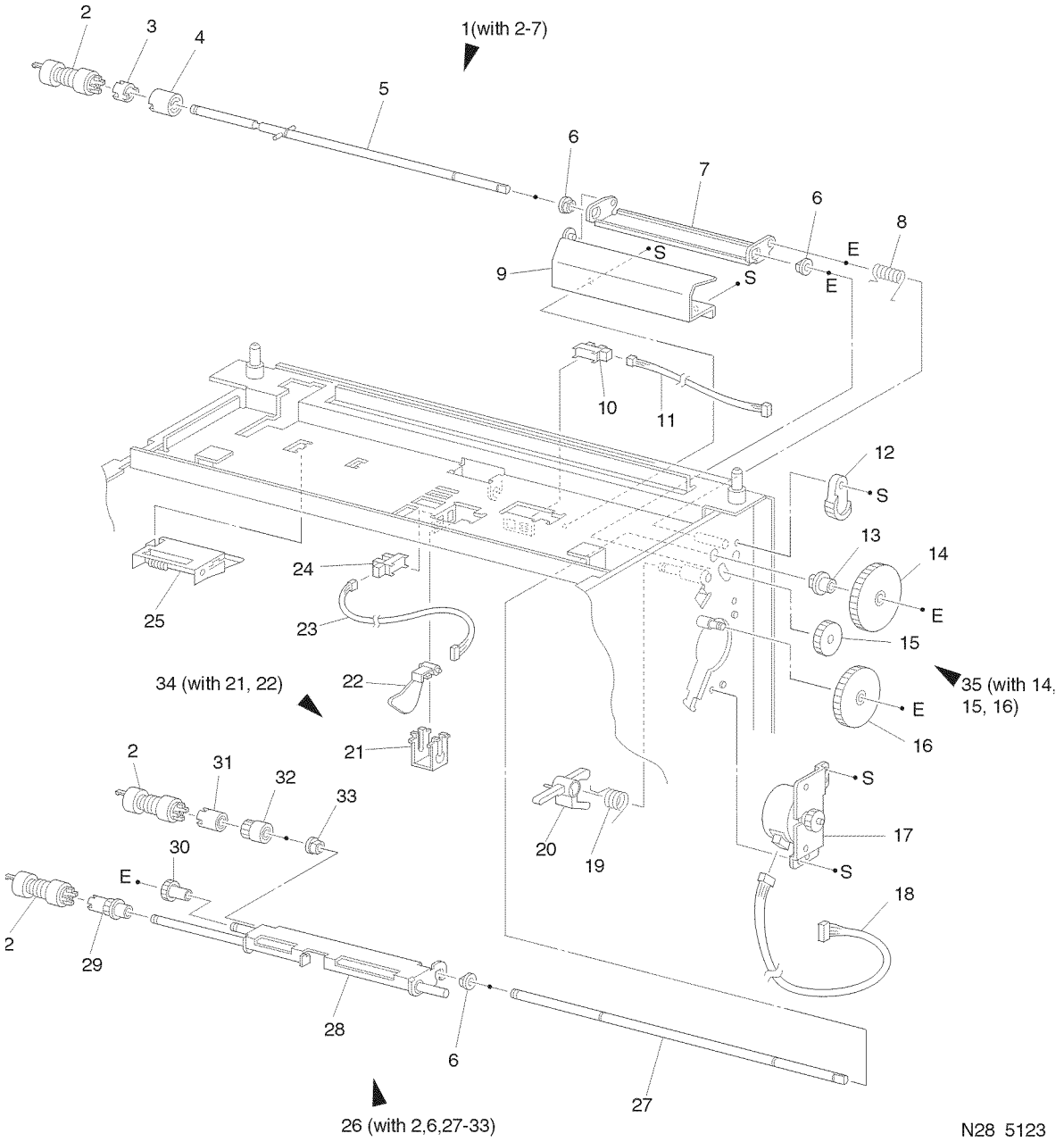
PL 12.2 2000 Sheet Feeder (2 of 4)

Item	Part	Description
1	- - - - -	2000 Sheet Feeder Frame & Drive Assembly. (with 2-19) (reference only)
2	- - - - -	Bushing
3	160K53033	2000 Sheet Feeder PWB
4	162K47560	2000 Sheet Feeder SW Harness Assembly (J604-J612, J613, J614)
5	- - - - -	Clamp
6	127K24971	Tray Lift Motor Assembly
7	- - - - -	2000 Sheet Feeder PWB Bracket
8	- - - - -	Tray Guide
9	110E93440	A4 Paper Sensor
10	- - - - -	Clamp
11	17E91980	Caster
12	17E91970	Locking Caster
13	600K78420	Roller Kit
14	162K43610	2000 Sheet Feeder-1 Harness Assembly (J131, J601)
15	162K43590	2000 Sheet Feeder Tray Feed Motor Harness Assembly (J607, J615)
16	7K85142	2000 Sheet Feeder Drive Assembly
17	54K14725	Chute Feed Out Assembly
18	- - - - -	Saddle Edge
19	110E93440	Drawer In Interlock Switch
20	110E93440	Rear Cover Interlock Switch
S	600K76430	Hardware Kit (Includes Screw)



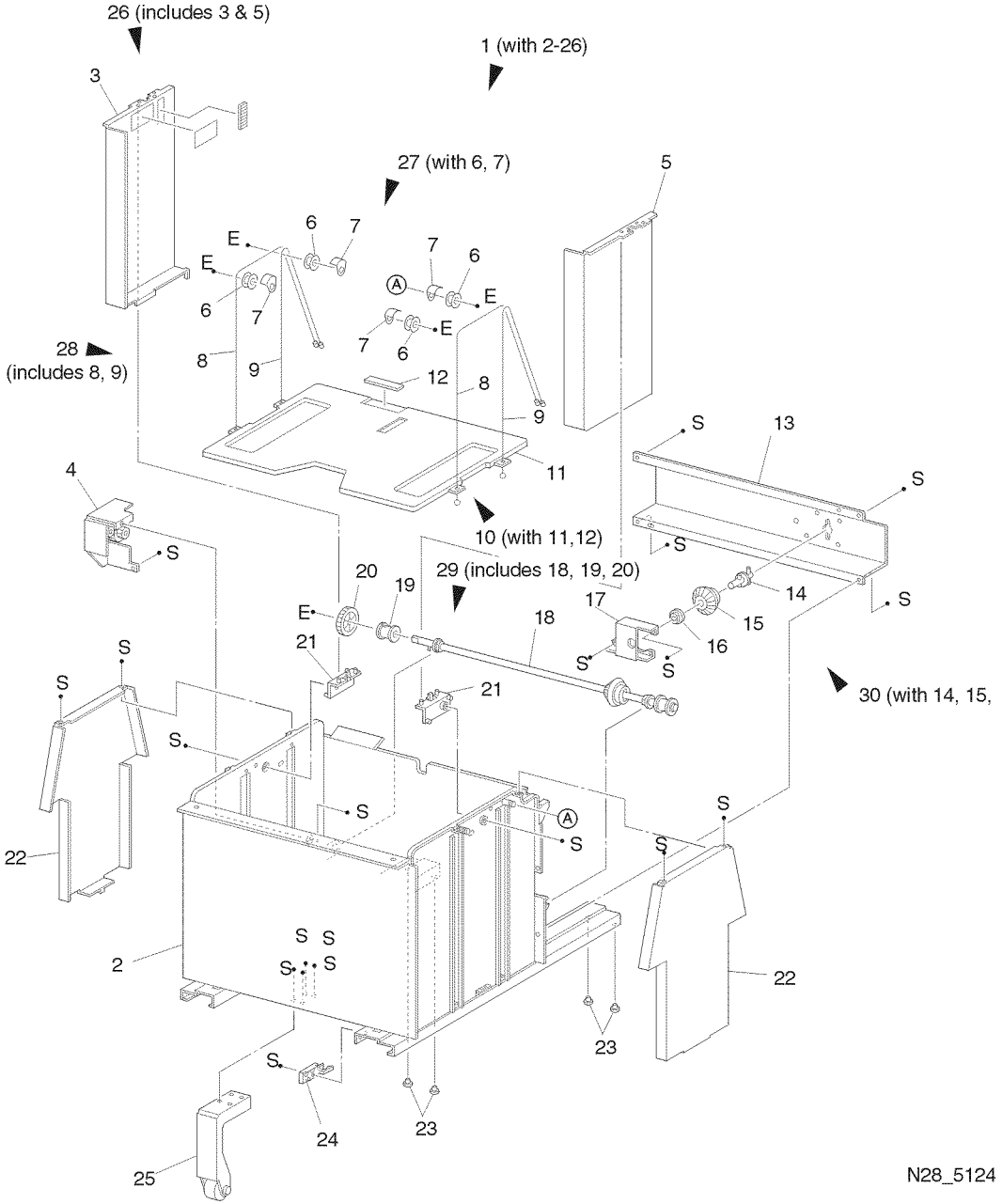
PL 12.3 2000 Sheet Feeder (3 of 4)

Item	Part	Description
1	50K33810	2000 Sheet Feeder Retard Assembly (with 2-7)
2	- - - - -	Roll Assembly (see kit) (P/O Item 1)
	600K78460	2000 Sheet Feeder Feed Roll Kit (3 pieces) (P/O Item 1)
3	- - - - -	Spacer (P/O Item 1)
	600K78500	Spacer Kit (P/O Item 1)
4	- - - - -	Friction Clutch Assy (P/O Item 1)
5	- - - - -	Retard Shaft Assy (P/O Item 1)
6	- - - - -	Bearing S6 (P/O Item 1)
7	- - - - -	Retard Support (P/O Item 1)
8	809E20551	Retard Spring
9	- - - - -	Retard Support Assembly
10	130E82740	Paper Height Sensor
11	162K47550	2000 Sheet Feeder FRDY Harness Assembly (J603-J611)
12	- - - - -	Stopper Gear
13	- - - - -	2000 Sheet Feeder Feed Bearing
14	- - - - -	Gear 50T (P/O Item 35)
15	- - - - -	Gear 22T (P/O Item 35)
16	- - - - -	Gear 47T (P/O Item 35)
17	127K24911	Feed Motor Assembly
18	162K47530	2000 Sheet Feeder Feed Motor Harness Assembly (J606-J609)
19	600K78440	Link Stopper / Spring Kit
20	- - - - -	Stopper Link (P/O item 19)
21	- - - - -	Actuator Support (P/O Item 34)
22	- - - - -	Actuator (P/O Item 34)
23	162K47540	2000 Sheet Feeder No Paper Sensor Harness Assembly (J602-J610)
24	130E82740	No Paper Sensor
25	54K08820	Front Chute Assembly
26	50K36761	2000 Sheet Feeder Assembly (with 2,6,27-33)
27	- - - - -	2000 Sheet Feeder Feed Shaft
28	- - - - -	Nudger Support Assembly
29	- - - - -	Gear 25T
30	- - - - -	Gear 31T
31	- - - - -	O.W. Clutch Assembly
32	- - - - -	Gear 25T Clutch
33	- - - - -	Bearing
34	600K78450	No Paper Actuator Kit (includes 21, 22)
35	600K78430	2000 Sheet Feeder Gear Kit (includes 14, 15, 16)
E	600K76430	Hardware Kit (Includes E-ring)
S	600K76430	Hardware Kit (Includes Screw)



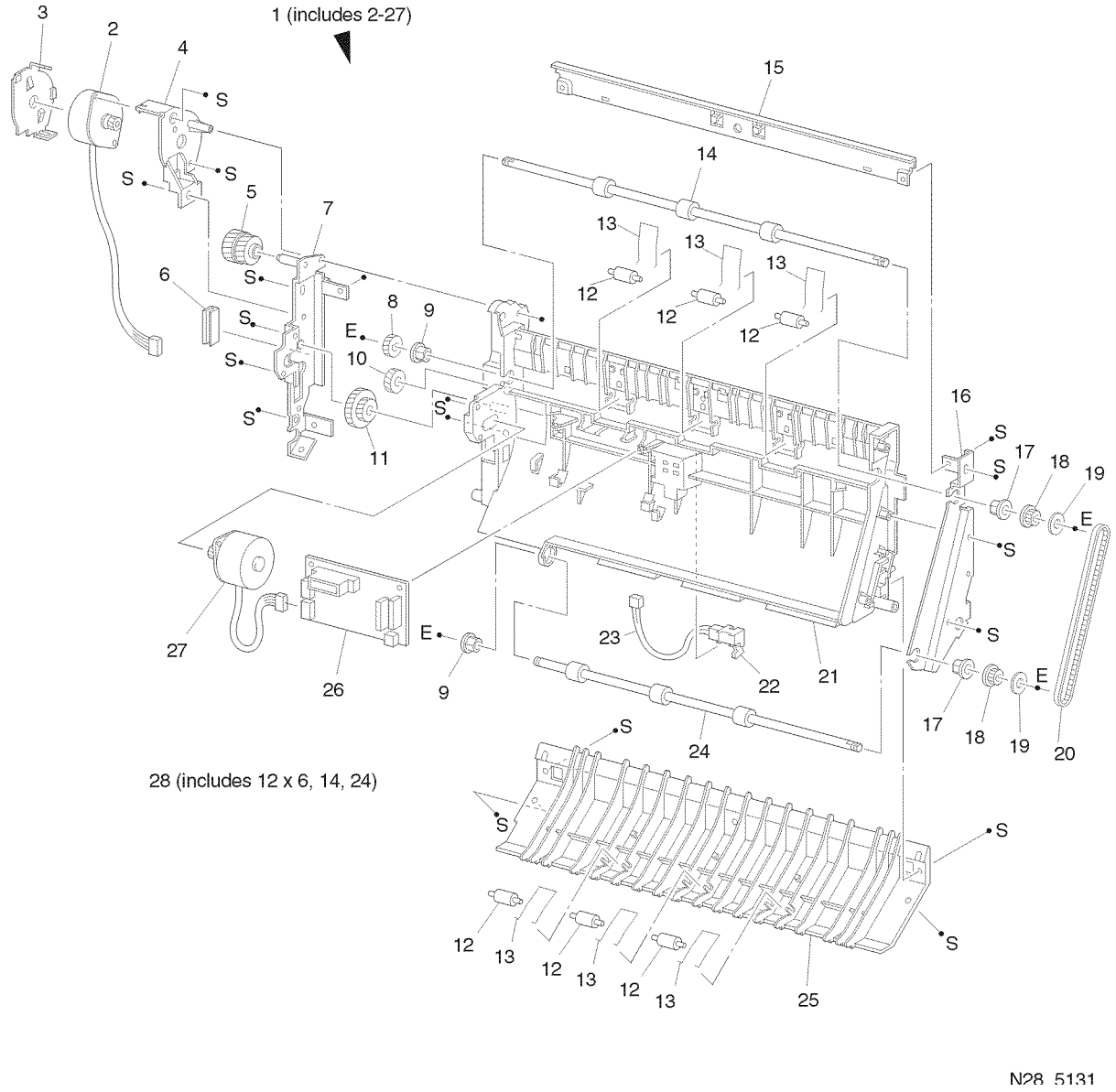
PL 12.4 2000 Sheet Feeder (4 of 4)

Item	Part	Description
1	- - - - -	2000 Sheet Feeder Tray Assembly (with 2-25)
2		2000 Sheet Feeder Housing Assembly
3	- - - - -	Left Side Guide (P/O item 26)
4	19K94630	Brake Assembly
5	- - - - -	Right Side Guide (P/O item 26)
6	- - - - -	Pulley (P/O item 27)
7	- - - - -	Wire Guide (P/O item 27)
8	- - - - -	Wire 2 (P/O item 28)
9	- - - - -	Wire 1 (P/O item 28)
10	- - - - -	Bottom Plate Assembly (with 11,12)
11	- - - - -	Bottom Plate
12	19E19780	Bottom Pad
13	- - - - -	Shaft Cover Assembly
14	- - - - -	Drive Shaft Assembly (P/O item 30)
15	7E55100	Bevel Gear (P/O item 30)
16	- - - - -	Bearing (P/O item 30)
17	- - - - -	Gear Bracket
18	- - - - -	Elevator Shaft Assembly (P/O item 29)
19	- - - - -	Cable Pulley (P/O item 29)
20	- - - - -	Gear 33 (P/O item 29)
21	3E48202	Side Guide Latch
22	- - - - -	Wire Cover
23	600K78500	Spacer Kit
24	3E23671	Drawer Latch
25	17K92370	Tray Caster Assembly
26	600K78470	2000 Sheet Feeder Tray Side Guides (includes 3 & 5)
27	600K78480	Elevator Wire Guide Kit (includes items 6 & 7)
28	600K78490	Elevator Wire Kit (includes items 8 & 9)
29	600K78520	2000 Sheet Feeder Elevator Shaft Kit (includes 18, 19, 20)
30	600K78510	Drive Gear Kit (includes 14, 15, 16)
E	600K76430	Hardware Kit (Includes E-ring)
S	600K76430	Hardware Kit (Includes Screw)



PL 13.1 Duplex

Item	Part	Description
1	- - - - -	Duplex Assembly (includes 2-27)
2	- - - - -	Exit Motor Assembly
3	- - - - -	Duplex Motor Cover
4	- - - - -	Duplex Motor Case
5	- - - - -	Duplex Gear 33
6	- - - - -	Clamp
7	- - - - -	Duplex Bracket (Left)
8	- - - - -	Gear Z15
9	- - - - -	Duplex Bearing
10	- - - - -	Gear Z16
11	- - - - -	Gear Z45/17
12	- - - - -	Duplex Pinch Roll (P/O item 28)
13	- - - - -	Duplex Pinch Spring
14	- - - - -	Duplex Roll Assembly (Upper) (P/O item 28)
15	- - - - -	Duplex Top Bracket
16	- - - - -	Duplex Bracket (Right)
17	- - - - -	Exit Bearing
18	- - - - -	Synchronous Pulley
19	- - - - -	Collar
20	23E15680	Duplex Drive Belt
21	- - - - -	Duplex Frame
22	130K59671	Duplex Sensor Assembly
23	- - - - -	Duplex Sensor Harness Assembly
24	- - - - -	Duplex Roll Assembly (Lower) (P/O item 28)
25	- - - - -	Duplex Pinch Holder
26	- - - - -	Duplex PWB
27	- - - - -	Duplex Motor Assembly
28	600K72270	Kit (includes item 12 x 6 pieces, 14, 24)
E	600K76430	Hardware Kit (Includes E-ring)
S	600K76430	Hardware Kit (Includes Screw)



6 General Procedures / Information

GP 1.1 Introduction

The following information is contained within this section:

General Procedures includes the Operations Menu Map and the Service Mode Menu Map. It includes all unique service operations and the machine soft switch parameters and defaults.

When you suspect a machine is functioning outside the range of its specifications, refer to product specifications. If the problem is a result of space, electrical, or environmental problems, call for management or sales assistance as needed.

Tools and consumables contains a listing of the required tools and supplies needed to correctly repair and maintain the machine.

Changes in configuration to the machine are assigned a Tag number. Information about a specific modification is found in the Tag Index within Tag Information. The firmware matrix lists the launch firmware level and all subsequent issues.

Install provides the procedures required to install the machine and options.

The Principles of Operation have been added to provide additional machine operation theory and information to help in resolving obscure machine faults.

GP 2.1 Printer Specifications

Contents

1. Basic Specifications

Table 1 Basic Specifications

Category	Specification
Standard configuration	Print engine- MBF- 500-sheet Paper Feeder- A4/Letter Cassette (500-sheet universal paper cassette) - Print Cartridge
Printing method	Xerography
Exposing method	Scanning with a laser light beam
Laser light source	Laser Diode (Nominal maximum output: 10 mW)
Print image resolution	Fixed-resolution version: 600 or 1200 dpi
Fusing method	Applying heat and pressure with rolls
Warm-up time	Within 50 seconds from a cold start after power (nominal 100V,120V, 220V) is switched on.(Measured at 72° F (22° C) ambient temperature with the specified voltage)
Max. paper size	MBF:76.2 508 mm (Standard)76.2 900 mm (Optional)Short Cassette (Standard):279.4 215.9 mm (US) 297 210 mm (European/Japan)Long Cassette (Optional):279.4 431.8 mm (US) 297 420 mm (European/Japan)
Printable area	The print quality is not guaranteed in a 4 mm border from all edges in the printable area.
Paper storing capacity	MBF Feeder 1 Feeder 2* Feeder 3* (*Optional)150 + 500 + 500 + 500 † Sheets of standard paper (Xerox 4024DP 20lb paper or FX L paper)
Delivery Tray capacity	About 500 printed sheets of fresh paper*1 under the normal condition*2*1: Just unpacked paper after having been left in the package for 12 hours in the operating environment*2: Condition with a temperature of 72° F (22° C) and a humidity of 55 to 60% RH

2. Electrical Specifications

Table 2 Electrical Specifications

Power Supply	100/120V Version:100/120 VAC (90 ~ 140 V), 50/60 Hz (47 ~ 63 Hz)220/240V Version: 220/240 VAC (198 ~ 264 V), 50/60 Hz (47 ~ 63 Hz)
Power consumption	110-127 VAC rated consumption max: 1.1 kw electrical current max 9A 220-240 VAC rated consumption max: 1.1 kw electrical current max 4.5A

3. Mechanical Specifications

Table 3 Mechanical Specifications

Size and weight (with the A3/Letter cassette and without the Print Cartridge and options)	Width: 490 mm (19.3 inches) Depth: 585 mm (23 inches) Height: 395 mm (15.6 inches) Weight: 27 kg (59.5 lbs.)

Table 3 Mechanical Specifications

Minimum space requirements	Front: Min. 760 mm (30 inches) Right side: Min. 100 mm (4 inches) Left side: Min. 200 mm (8 inches) Overhead clearance: Minimum 500 mm (19.7 inches)

4. Environmental Specifications

Table 4 Environmental Specifications

Environmental conditions for installation (Printer unpacked and having the Print Cartridge installed)	Operating: 41 ~ 95° F (5 ~ 35° C)15 ~ 85% RH (Without condensation)0 ~ 3100 m above sea level Horizontal bias within 5° of level Illumination under 3000 Lux. (Direct sunlight must be avoided) Non-operating: -68 ~ 104° F (-20 ~ 40° C)5 ~ 85% RH (Without condensation)0 ~ 3100 m above sea level
Environmental conditions for storage of the printer in the packed condition	When the Print Cartridge is packed together: • Normal conditions (Assured period: 12 months)32 ~ 95° F (0 ~ 35° C)15 ~ 80% RH (Without condensation)• Sever conditions (Assured period: 1 month)-68 ~ 32 or 95 ~ 104° F (-20 ~ 0 or 35 ~ 40° C)5 ~15 or 80 ~ 95% RH (Without condensation) When the Print Cartridge is not packed together: • Normal conditions (Assured period: 12 months)-68 ~ 122° F (-20 ~ 50° C)5 ~ 85% RH (Without condensation)• Sever conditions (Assured period: 48 hours)122 ~ 140° F (50 ~ 60° C)85 ~ 95% RH (Without condensation)† The assured altitude is 0 ~ 3000 m above sea level. When transported by air in a cargo room pressurized over 70.93 kPa, the assured altitude is 0 ~ 15000 m.
Environmental conditions for storage of the Print Cartridge in the packed condition	• Normal conditions (Assured period: 24 months)32 ~ 95° F (0 ~ 35° C)15 ~ 80% RH (Without condensation)• Sever conditions (Assured period: 1 month)-68 ~ 32 or 95 ~ 104° F (-20 ~ 0 or 35 ~ 40° C)5 ~15 or 80 ~ 95% RH (Without condensation)† The assured altitude is 0 ~ 3000 m above sea level. When transported by air in a cargo room pressurized over 70.93 kPa, the assured altitude is 0 ~ 15000 m. † The unpacked Print Cartridge remains intact for 12 months in the above non-operating environmental conditions for the printer.
Noise generation (excluding impulse noises)	Printing: 1 Deck 2 Deck 2000 Sheet Feeder without the Duplex 49.5 dB 50.5 dB 53.0 dB with the Duplex Assembly 50.5 dB 50.5 dB 53.0 dB Standby: 35.0 dB Measured according to ISO 7779, printing with the MBF Assembly closed. The printer has two optional Paper Feeders installed, with the optional Duplex Assembly not installed
Dust generation	0.1 mg/m3 or less† Measured by the FX Mass Measurement method for an hour
Ozone generation	0.02 ppm or less in TWA (Time Weighted Average), measured according to ECMA 129 Standard

5. Life

Table 5 Life

Life of OCT	Either 600,000 prints or 5 years
Life of Duplex	Either 600,000 prints or 5 years which ever comes first
Life of printer engine	Either 600,000 prints on Letter size paper (LEF) or 5 years which comes earlier † A double-sided print is counted as two prints.
Life of Paper Feeder	600K for each-500 sheet & 2000 sheet feeders

Table 5 Life

Life of Print Cartridge	17,000 prints (average)† The life of the Print Cartridge is defined as the number of prints which satisfy the specified print quality without shaking the Print Cartridge when consecutively printing the FX test pattern on A4 size sheets (LEF) under the normal conditions with the obtained life converted into an estimated life for 5% image coverage. A double-sided print is counted as two prints.

6. Conforming Regulations and Standards

Table 6 Conforming Regulations and Standards

Laser safety regulations	100/120V Version: US FDA 21 CFR, Sections 1010 & 1040, Subchapter J, Chapter 1220/240V Version: IEC825 Class I Laser Product
EMI (Electromagnetic Interference) regulations	120V Version (USA): FCC Part 15 subpart B, Class B (ANSI C63.4/11.4D)220/240V Version (EC):EN55022 (CISPR Publication 22), Class B
Other safety regulations and standards	100/120V Version: UL 1950 3rd Edition CSA C22.2 No. 950-M95220/240V Version: IEC60950 2nd Edition CE Directive Nordic Agency Approvals (NEMKO, SEMKO, SETI, and DEMKO)

7. Printing Speed

7.1 Printing Speed for the First Sheet Out

Table 7 Printing Speed for the First Sheet Out

10.7	S: Simplex D: Duplex	Time Needed for Initial Print (sec)			
		MBF	Tray 1	Tray 2	Tray 3
Ledger SEF	S	6.39	7.23	8.45	9.25
	D	12.47	13.30	14.33	15.32
A3 SEF	S	16.30	7.14	8.16	9.15
	D	12.28	13.12	14.14	15.14
Letter LEF	S	4.73	5.57	6.59	7.58
	D	9.14	9.98	11.00	12.00
A4 LEF	S	4.69	5.52	6.55	7.54
	D	9.05	9.89	10.91	11.91
Statement LEF	S	4.15	4.99	6.01	7.01
	D	7.98	8.82	9.84	10.83

7.2 Consecutive Printing Speed after the First Sheet Out

Table 8 Consecutive Printing Speed after the First Sheet Out

Paper Size	Simplex Mode (Prints per min)	Duplex Mode (Prints per min)
Ledger SEF	15.8	11.1
A3 SEF	15.8	11.2
Letter LEF	28.3	23.1
A4 LEF	28.3	23.2

8. Printing Media Feeding Means

The N2025/N2825 printer has the following five print media feeding means.

1. Long Cassette [500-sheet universal cassette] (Optional)
2. Short Cassette [500-sheet universal cassette] (Standard)
3. MBF [250-sheet MBF] (Standard)

8.1 Ledger Cassette [500-Sheet Universal Cassette] (Standard)

This paper cassette can hold regular size cut sheets of the following sizes up to the Ledger size, 54 mm in stack height (500 sheets for standard paper). This cassette has the paper size detection function.

Table 9 Ledger Cassette [500-Sheet Universal Cassette] (Standard)

	USA Version n*1 (mm)		Europe/Japan Version*1 (mm)	
1	Legal 13" SEF	215.9 330.2	<--*2	<--
2	Legal 14" SEF	215.9 355.6	<--	<--
3	Ledger SEF	279.4 431.8	-	-
4	-	-		
5	-	-		
6	Letter LEF	215.9 279.4	<--	<--
7	Letter SEF	215.9 279.4	-	-
8	A4 LEF	210 297	<--	<--
9	-	-	A4 SEF	210 297
10	-	-	B5 LEF	257 182
11	-	-	A5 LEF	149 210
12	Executive LEF	184.2 266.7	-	-
13	Statement LEF	139.7 215.9	-	-
14	Other	-	Other	-

*1: Factory set option *2: The arrows mean that the content of the cells is the same as that of their corresponding cells. † Supported paper is 64 to 176 gsm in weight.

8.2 Short Cassette [500-Sheet Universal Cassette] (Optional)

Table 10 Ledger Cassette [500-Sheet Universal Cassette] (Standard)

	USA Version * (mm)		Europe/Japan Version* (mm)	
1	Letter LEF	279.4 215.9	A4 LEF	210 297
2	Letter LEF	279.4 215.9	Executive LEF	184.2 266.7
3	B5 LEF	257 182	Statement LEF	139.7 215.9
4	A5 LEF	210 149	A4 LEF	297 210
5	Com#10 LEF	241.3 104.8	Post Card LEF	148 100
6	Monarch LEF	190.5 98.4	-	-
7	-	-	DL LEF	220 110
8	-	-	C5 LEF	220 162
9	Other	-	Other	-

* Factory set option † Supported paper is 64 to 176 gsm in weight.

* Factory set option † Supported envelope is 60 to 105 gsm in weight. Supported postcard is 190 gsm in weight.

8.3 MBF [MBF] (Standard)

The MBF can hold the following regular or non-regular sizes of paper.

Table 11 MBF

Size (mm)	
Ledger SEF	431.8 279.4
Legal 14" SEF	355.6 215.9
Legal 13" SEF	330.2 215.9
Letter SEF	279.4 215.9
Letter LEF	279.4 215.9
Executive LEF	266.7 184.2
Statement LEF	215.9 139.7
A3 SEF	420 297
B4 SEF	364 257
A4 SEF	297 210
A4 LEF	297 210
B5 SEF	257 182
B5 LEF	257 182
A5 LEF	210 149
Universal(Others)	305 508
Oversize(Option)	305 900
Postcard LEF	148 100
COM # 10	241.3 104.8
C5	229 162
DL	220 110
Monarch	190.5 98. 4

• Weight of mediaCut sheet and envelope: 64 (16 lbs) ~ 176 (60 lbs) gsm Japanese official postcard: 190 (70 lbs) gsm

• Amount of media held in the MBF Cut sheet: 18.5 mm in stack height for supported paper (150 sheets for standard paper) Label sheet: 30 sheets Japanese official postcard: 75 sheets Envelope: 10 sheets Transparent film: 30 sheets

9. Printing Media

9.1 Standard Paper

- XEROX 4024DP 20 lb Letter (LEF)
- RX 80gsm

9.2 Special Purpose Printing Media

Table 12 Special Purpose Printing Media

Special Purpose Printing Media	Size	Product Name	Cassette		MBF
			Ledg.	Letter	
Transparent film (OHP)	A4 and Letter	Xerox P/N 3R3117	0	0	0
		Xerox P/N 3R2780	0	0	0
		Xerox P/N 3R3108	0	0	0
Label	A4 and Letter	Permanent Labels (Vinyl)	0	0	0
		Paper Label Model #5160	0	0	0
		Hybrid Interated Paper	0	0	0
Envelope	41/8 x 91/2" (104.8 x 241.3 mm)	Monroe Brand COM #10	0	X	0
	37/8 x 71/2" (98.5 x 190.5 mm)	Monroe Brand Monarch	0	X	0
	162 x 229 mm	C5 (River series #02067/ Gummed)	0	X	0
	110 x 220 mm	DL (River series #01029/ Gummed)	0	X	0
Postcard	A6 (100 x 148 mm)	Japanese Official Postcard	0	X	0

0: Feedable, X: Not feedable

9.3 Paper Feedable from the Universal Paper Cassettes

Table 13 Paper Feedable from the Universal Paper Cassettes

Weight	Product Name	Ledger	A3	B4	Legal 14"	Legal 13"	A4	Letter	Executive	B5	A5	Statement
64 gsm	FX L		@*	m*			@*			m	m	
64 gsm	FX EP						m					
65 gsm	FX P		m	m			m			m		
75 gsm	Xerox 4024DP	m*			m*	m*		@*3R721				m3R2072
75 gsm	White Nekosa								m			
80 gsm	3R9xxxx RX80		m*3R90120	m*3R90061			m*(Red)3R90208(Black)3R90008				m3R90000	
90 gsm	White Nekosa	m			m	m		m	m			
90 gsm	3R91854 RX90						m3R91854					

@*: Standard, m: Feedable*: Printable by duplex printing

10. Printing Accuracy

Table 14 Printing Accuracy

Item		Accuracy	Measuring Conditions
Registration	Lead Edge	2.0 mm	
	Side Edge	2.5 mm	
Skew		2.0 mm	At a distance of 245 mm
Orthogonality		1.3 mm	At a distance of 195 mm
Linearity	In direction of paper travel	1.0 mm	For 390 mm straight line
	At right angle to direction of paper travel	0.7 mm	For 245 mm straight line
	At 40 angle to direction of paper travel	1.5 mm	For 347 mm straight line
Parallelism		2.0 mm	Over 390 mm straight lines
Magnification	In direction of paper travel	100 0.8%	At a distance of 390 mm
	At right angle to direction of paper travel	100 0.5%	At a distance of 245 mm

11. Components to Be Replaced Periodically

NOTE: *Maintenance kit, supplied by customer is to be installed at regular intervals as indicated by the Control Panel. If you supply this kit the customer must be billed.*

Table 15 Components to Be Replaced Periodically

Fuser Unit (Print Cartridge)	200,000 prints (Letter LEF)
Bias Transfer Roll	200,000 prints (Letter LEF)
Feed Rolls-Standard 500 sheet feeders	600,000 feeds (Letter LEF)
2000 sheet feed rolls	200,000 feeds

12. Options

The basic N2025/N2825 configuration consists of the base engine and a Paper Feeder (Standard feeder) with a A4/Letter 500-sheet universal cassette. There are various customer installed options available for the N2025/N2825 printer. For detailed technical and service information on the options, refer to the individual service manuals that are located at the back of this manual.

Table 16 Options

Option	Description
Long cassette (500-sheet universal cassette)	Can hold regular size cut sheets up to the A3/Ledger size.
Short cassette (500-sheet universal cassette)	Can hold regular size cut sheets up to the A4/Letter size.

Table 16 Options

Option	Description
500 Sheet Feeder	Installed as the second and third paper feeders.
Duplex Assembly	Makes duplex printing possible.
Offset Catch Tray*	Stacks printed sheets, with or without offset delivery function.
2000 Sheet Feeder	Installed as the second and third paper high capacity feeders.

* Factory installed option

GP 2.2 500 Sheet Feeder Specification

Contents

1. Specifications

1.1 Equipment Components

1.1.1 Basic Components

500 Sheet Feeders are added beneath the base engine. Up to two assemblies may be added.

NOTE: *In the pages that follow, the cassette paper supply inside the base engine is called Tray 1; the 500 Sheet Feeder immediately below the base engine, Tray 2; the 500 Sheet Feeder below Tray 2, Tray 3.*

The basic components of an 500 Sheet paper supply unit are a 500 Sheet Feeder and two securing screws.The Cassette Assembly Short and the Cassette Assembly Long fit into the 500 Sheet Feeder.

1.2 Electrical Characteristics

1.2.1 Power Supply

The feeder assembly operates on the following two power supplies from the base N2025/N2825 laser printer engine.

- 24 V DC (Solenoid Feed CST and Motor Feeder)
- 3.3 V DC (Sensor Photo and Switch Size)

1.3 Mechanical Characteristics

1.3.1 500 Sheet Feeder Dimensions and Weight

The following does not include the securing screws or other protrusions.

- Width:490 mm
- Depth:439 mm
- Height:133.7 mm
- Weight:6.5 kg

1.3.2 Cassette Assembly Short Dimensions and Weight

The following does not include protrusions.

- Width:404.5 mm
- Depth:318 mm
- Height:88.7 mm
- Weight:2.0 kg

1.3.3 Cassette Assembly Long Dimensions and Weight

The following does not include protrusions.

- Width:404.5 mm
- Depth:475 mm
- Height:85.5 mm
- Weigh:2.95 kg

1.4 Paper

1.4.1 Paper Sizes

Table 1 lists the various paper sizes that the paper cassettes are capable of supplying to the feeder assembly. A circle indicates a paper size that may be used.

Table 1 Paper Sizes

	Paper Size	Cassette Assembly Long (European/ Japanese version)	Cassette Assembly Long (US version)	Cassette Assembly Short (European/ Japanese version)	Cassette Assembly Short (US version)	MBF
Standard Paper	Ledger (SEF)		O			
	A3 (SEF)	O				
	B4 (SEF)	O				
	Legal 14" (SEF)	O	O			
	Legal 13" (SEF)	O	O			
	A4 (SEF)	O		O		
	Letter (SEF)		O			
	B5 (SEF)					
	Letter (LEF)	O	O	O	O	
	A4 (LEF)	O	O	O	O	
	Executive (LEF)		O		O	
	B5 (LEF)	O		O		
	A5 (LEF)	O		O		
	Statement (LEF)		O		O	
Post Card	Japanese Government Standard Post Card (LEF)			O		O
Envelope	COM-10 (LEF)				O	O
	C5 (LEF)			O		O
	DL (LEF)			O		O
	Monarch (LEF)				O	O

1.5 Replacement Parts

Although we make no recommendations as to parts to be replaced at regularly scheduled intervals, we note that, in the interests of preventing breakdowns, the following parts are or contain rolls subject to wear from paper contact.

- Feed Roll Assembly
- Turn Roll Assembly
- Turn Roll Assembly L

NOTE: *Although we make no replacement part recommendations for users of standard A4 (landscape) sheets, we expect the replacement interval for users of nonstandard sizes, A3 sheets, etc. to be less than half that for users of standard A4 (landscape) sheets. (Note that duplex printing is counted as two pages.)*

1.6 Environment

1.6.1 Noise Levels with Feeder Assembly Installed

During printing:49.5 dB (with MBF assembly closed and using standard A4 size sheets) During standby:35.0 dB (with MBF assembly closed and using standard A4 size sheets)

NOTE: *The noise levels without the options installed are as follows.During printing:49.5 dB During standby:35.0 dB*

GP 2.3 Duplex Assembly Specifications

Contents

1. Specifications

1.1 Equipment Components

1.1.1 Basic Components

The functional components of the Duplex Assembly are the duplex function for printing on both sides of the paper Figure 1.

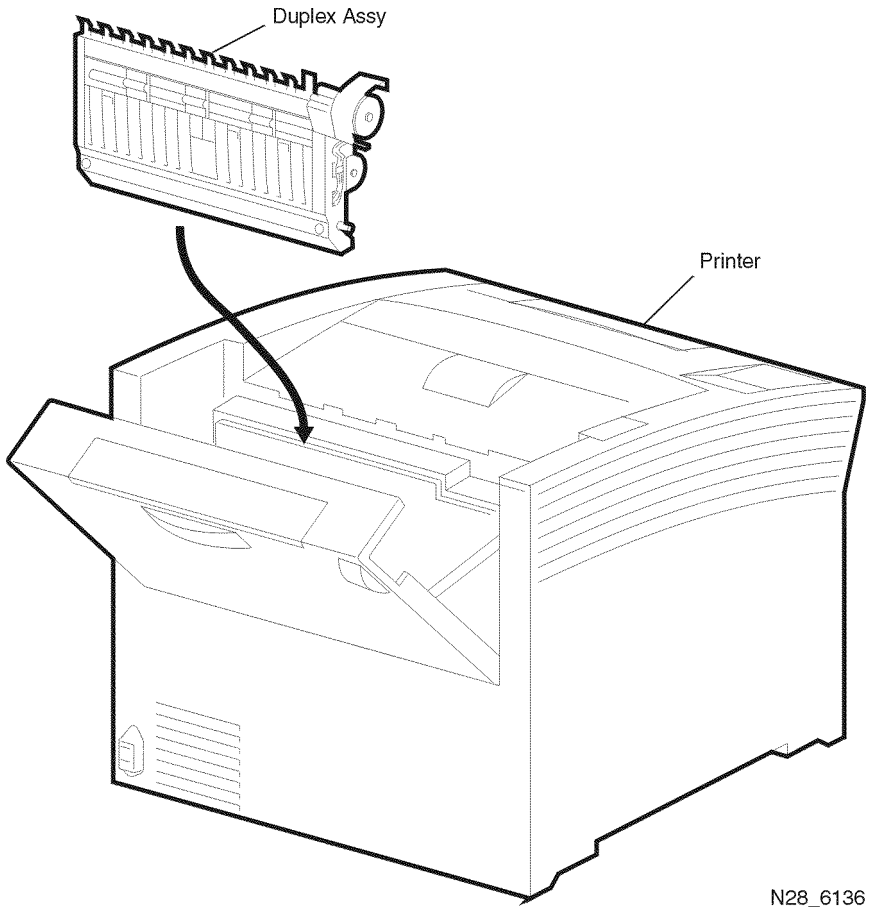


Figure 1 Basic Components

1.2 Electric Specifications

1.2.1 Power Supply

The Duplex Assembly operates on the following two power supplies from the base N2025/ N2825 laser printer engine.

- 24 VDC (for motors)
- 3.3VDC (for sensor)

1.3 Physical Specifications

1.3.1 Duplex Assembly Dimensions and Weight

The following do not include the paper weight or small protrusions.

- Width:410 mm
- Depth:75 mm
- Length:185 mm
- Weight:0.9 kg

1.4 Function

1.4.1 Print Modes

The Duplex Assembly has the following two print modes.

- Simplex Mode

  The printer prints on one side of the paper only and immediately ejects the sheet into the tray. Prints made in the simplex mode are called simplex prints.
- Duplex Mode

  The printer prints on both sides of the paper and then ejects the sheet into the tray. Prints made in the duplex mode are called duplex prints.

1.4.2 Duplex Print Processing

There are two types of duplex printing, producing different page sequences: one-sheet batch and two-sheet batch.

- One-Sheet Batch

  The printer prints on both sides of a sheet of paper and then feeds in the next sheet.
- Two-Sheets Batch

  The printer prints on the first side of the first sheet of paper, the first side of the second sheet, the second side of the first sheet, and the second side of the second sheet. It then repeats the process with the next two sheets.

  NOTE: *For further details on these two form of duplex printing, see Section 1.2 "Duplex Sequence" in Chapter 6.*

1.4.5 Continuous Printing Speed

The tables below show the calculated maximum speed of the continuous printing at the duplex mode when /PRDF is used. The actual speed may lower than those indicated value because of paper feed delay or other reasons Table 1 & Table 2.

- 600dpi

Table 1 600 dpi

Paper Size	Tray 1	Tray 2 or 2000 Sheet Feeder	Tray 3 or 2000 Sheet Feeder
A4 (LEF), Letter (LEF), Statement (LEF), A5 (LEF), B5 (LEF), Executive (LEF)	28.3 PPM	28.3 PPM	28.3 PPM
B5 (SEF), Letter (SEF), A4 (SEF)	15.8 PPM	15.8 PPM	15.8 PPM

Table 1 600 dpi

Paper Size	Tray 1	Tray 2 or 2000 Sheet Feeder	Tray 3 or 2000 Sheet Feeder
Legal 13" (SEF), Legal 14" (SEF), B4 (SEF)	15.8 PPM	15.8 PPM	15.8 PPM
A3 (SEF), Ledger (SEF)	15.8 PPM	15.8 PPM	15.8 PPM

- 1200dpi

Table 2 1200 dpi

Paper Size	Tray 1	Tray 2 or 2000 Sheet Feeder	Tray 3 or 2000 Sheet Feeder
A4 (LEF), Letter (LEF), Statement (LEF), A5 (LEF), B5 (LEF), Executive (LEF)	14.1 PPM	14.1 PPM	14.1 PPM
B5 (SEF), Letter (SEF), A4 (SEF)	7.9 PPM	7.9 PPM	7.9 PPM
Legal 13" (SEF), Legal 14" (SEF), B4 (SEF)	7.9 PPM	7.9 PPM	7.9 PPM
A3 (SEF), Ledger (SEF)	7.9 PPM	7.9 PPM	7.9 PPM

NOTE: *Long roll specifications represent special options subject to the conditions of the OEM contract with Fuji Xerox.*

NOTE: *In the above tables, SEF indicates feeding from the short edge of paper (a.k.a. "portrait" orientation); LEF from the long edge of paper (a.k.a. "landscape" orientation).*

NOTE: *PPM stands for pages per minute, the number of sides printed in one minute.*

1.5 Paper

1.5.1 Paper Sizes

Table 3 lists the various paper sizes that the Duplex Assembly is capable of handling.

Table 3 Paper Sizes

	Paper Size	Duplex Print (One-Sheet Batch)	Duplex Print (Two-Sheets Batch)
Standard Paper	Ledger (SEF)	O	
	A3 (SEF)	O	
	B4 (SEF)	O	
	Legal 14" (SEF)	O	
	Legal 13" (SEF)	O	
	A4 (SEF)	O	
	Letter (SEF)	O	
	B5 (SEF)		
	Letter (LEF)	O	O
	A4 (LEF)	O	O
	B5 (LEF)	O	

Table 3 Paper Sizes

	Paper Size	Duplex Print (One-Sheet Batch)	Duplex Print (Two-Sheets Batch)
	A5 (LEF)	O	

NOTE: *Long roll specifications represent special options subject to the conditions of the OEM contract with Fuji Xerox.*

NOTE: *The control system treats the nobi paper size the same as nonstandard sizes.*

1.5.2 Kinds of Paper

Size range that the Duplex Assembly can handle is from A5 to A3/Ledger and weight range is from 64 (16 lbs) GMS to 105 (28 lbs) GMS.

1.6 Periodical Replacement Parts

Although we make no specific recommendations as to parts to be replaced at regularly scheduled intervals, we note that, in the interests of preventing breakdowns, the following parts are or contain rolls or belts subject to wear from paper contact and other sources.

- Duplex Roll Assembly (Upper)
- Duplex Roll Assembly (Lower)
- Belt 160 S2M

NOTE: *Although we make no replacement part recommendations for users of standard A4 (landscape) sheets, we expect the replacement interval for users of nonstandard sizes, A3 sheets, etc. to be less than half that for users of standard A4 (landscape) sheets. (Note that duplex printing is counted as two pages.)*

1.7 Environment

1.7.1 Noise Levels with Duplex Assembly Installed

The below sound pressure is measured in accordance with ISO 7779 when the Cover Front of the P/H Assembly is closed.

During printing:50.5 dB (using 4024 20lb Letter LEF and 2000 Sheet Feeder is not installed.)

During standby:35.0 dB (using 4024 20lb Letter LEF.)

NOTE: *The noise levels without the options installed are as follows.*

During printing: 49.5 dB (no 500 Sheet tray is installed), 50.5 dB (with Tray 2 and Tray 3),53.0 dB (with 2000 Sheet Feeder) During standby: 35.0 dB

GP 2.4 Offsetting Catch Tray Specifications

Contents

1. Specifications

1.1 Equipment Components

1.1.1 Basic Components

The functional components of the OCT Assembly are the high capacity stacking function and the offset function Figure 1.

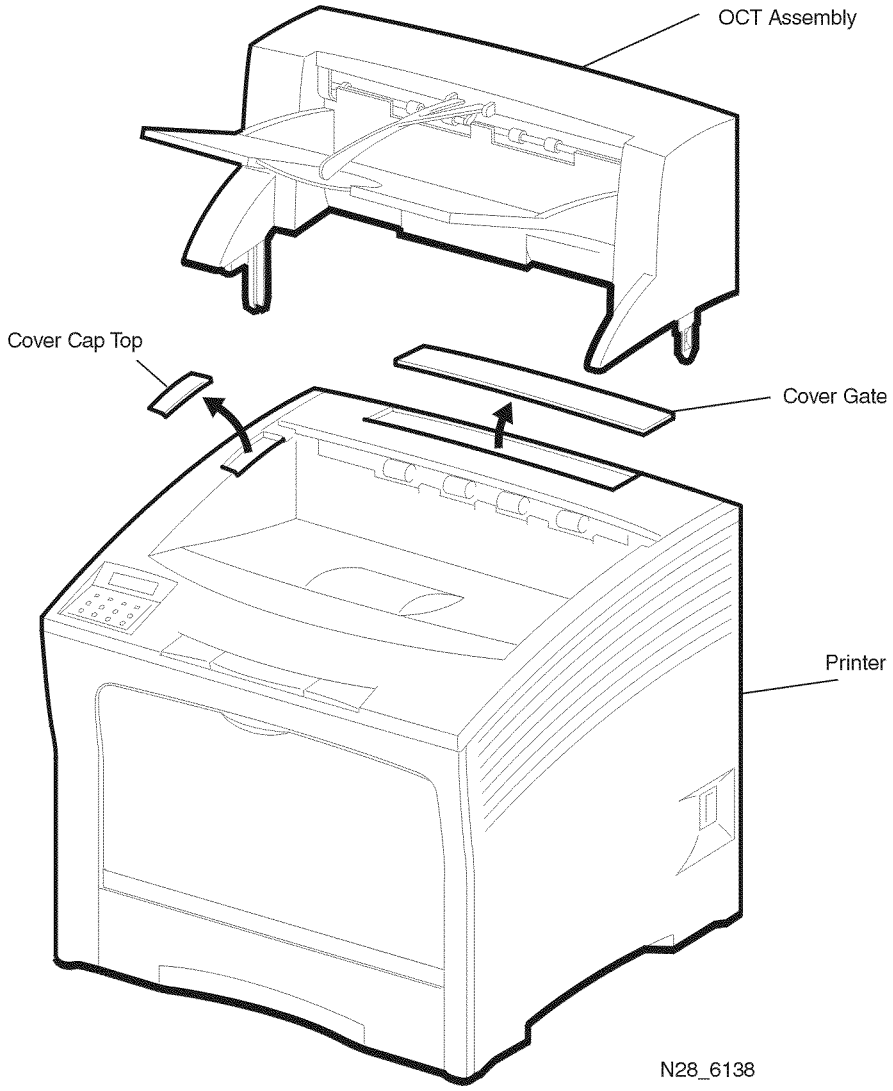


Figure 1 Basic Components

1.2 Electrical Specifications

1.2.1 Power Supply

The OCT Assembly operates on the following two power supplies from the base N2025/N2825 laser printer engine.

- 24 VDC (for motors)
- 3.3VDC (for sensor)

1.3 Physical Specifications

1.3.1 OCT Assembly Dimensions and Weight

The following do not include the paper weight or small protrusions.

- Width:490 mm
- Depth:300 mm
- Height:285 mm
- Weight: 4.0 kg

1.4 Function

1.4.1 OCT Function

The OCT Assembly can stack 500 sheets of paper on it's tray.

1.4.2 Offset Function

The OCT Assembly has the offset part. This function is implemented by the Motor Assembly Offset and the Chute Offset Assembly. By those components, the approx. 25mm offset discharge can be added to the exit process when the offset mode is effective. The offset timing of the SWITCH OFFSETFNC command execution is determined by the combination of the state of the Registration Sensor and the Exit Sensor.

1.5 Paper

1.5.1 Paper Sizes

The paper sizes available for the offset print are shown in Table 1.

Table 1 Paper Sizes

	Paper Size	Simplex Print	Offset Print
Standard Paper	Ledger (SEF)	O	O
	A3 (SEF)	O	O
	B4 (SEF)	O	O
	Legal 14"	O	O
	Legal 13"	O	O
	A4 (SEF)	O	O
	Letter (SEF)	O	O
	B5 (SEF)	O	O
	Letter (LEF)	O	O
	A4 (LEF)	O	O
	Executive	O	O
	B5 (LEF)	O	O
	A5 (LEF)	O	O
	Statement (LEF)	O	O
Post Card	Japanese Government Standard Post Card	O	O
Envelope	COM-10	O	O
	C5	O	O
	DL	O	O
	Monarch	O	O
Standard Paper	NOBI Paper Size	O	
	None Standard Sizes	O	
	Long Roll*	O	

NOTE: *A circle indicates a supported paper size-mode combination.*

1.6 Periodical Replacement Parts

Although we make no specific recommendations as to parts to be replaced at regularly scheduled intervals, we note that, in the interests of preventing breakdowns, the following parts are or contain rolls subject to wear from paper contact and other sources.

- Inlet Roll
- Offset Roll

NOTE: *Although we make no replacement part recommendations for users of standard A4 (landscape) sheets, we expect the replacement interval for users of nonstandard sizes, A3 sheets, etc. to be less than half that for users of standard A4 (landscape) sheets. (Note that duplex printing is counted as two pages.)*

GP 2.5 2000 Sheet Feeder Specifications

Contents

1. Specifications

1.1 Equipment Components

1.1.1 Basic Components

The 2000 Sheet Feeder Assembly is connected to the bottom of the N2025/N2825 base engine or 500 Sheet Feeder 2 with stud pins (2), screws (2) and a drawer connector.

1.2 Electrical Characteristics

1.2.1 Power Supply

24V DC and 3.3V DC are supplied from the Print Engine Controller PWB directly or through the PWB Feeder 2.

1.3 Mechanical Characteristics

1.3.1 Dimensions and Weight Table 1.

Table 1 Dimensions and Weight

	Unpacked
Width	490 mm
Depth	509 mm
Height	428 mm
Weight	19.0 kg

1.4 Paper

1.4.1 Paper Size

You can use the following paper size in the 2000 Sheet Feeder.

- A4 (LEF)
- LETTER (8.5"x11" LEF)

1.4.2 Supported Paper

64gsm ~ 200gsm

1.4.3 Maximum Paper Stacking Ability

2000 sheets (Xerox 4024 DP 20 lb(75gsm), RX, or FX L(64gsm))

1.5 Replacement Parts

The 2000 Sheet Feeder does not have any components that need to be regularly replaced. Replace the following components as needed when they are worn out.

- Roll Assembly

1.6 Environment

1.6.1 Noise Level

During printing: 53.0 dB (Print Engine +500 Sheet feeder + 2000 Sheet Feeder) 53.0 dB (Print Engine +500 Sheet feeder + Duplex + 2000 Sheet Feeder)

GP 3.1 Control Panel Hardware

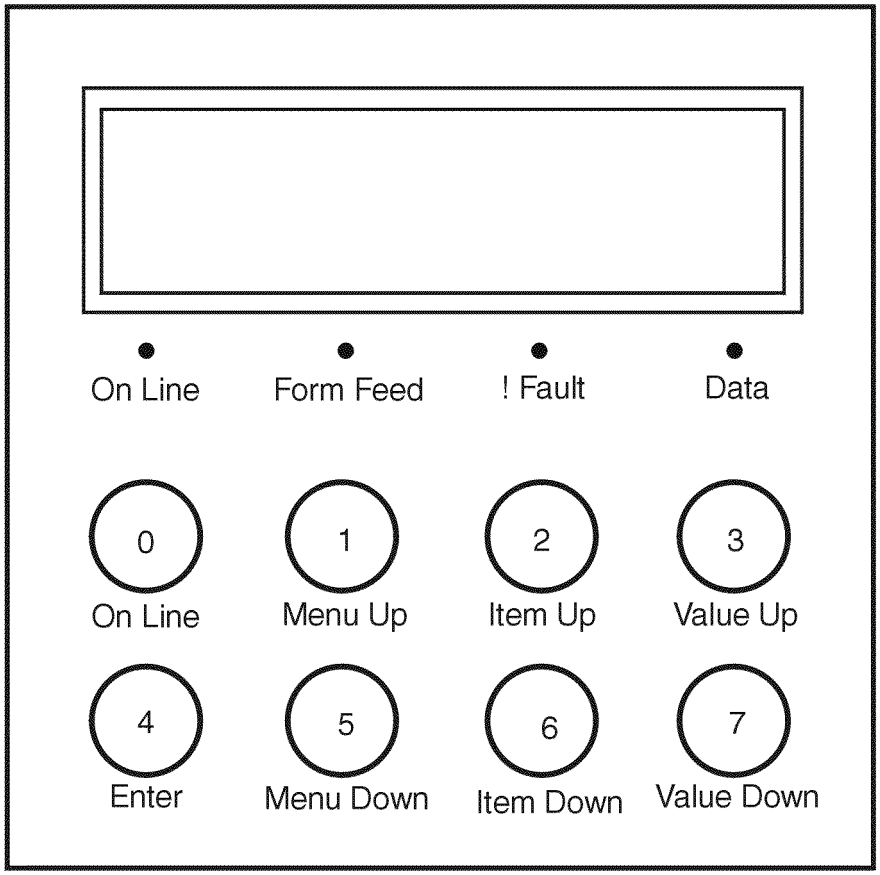


Figure 1 Control Panel

Control Panel Character Set

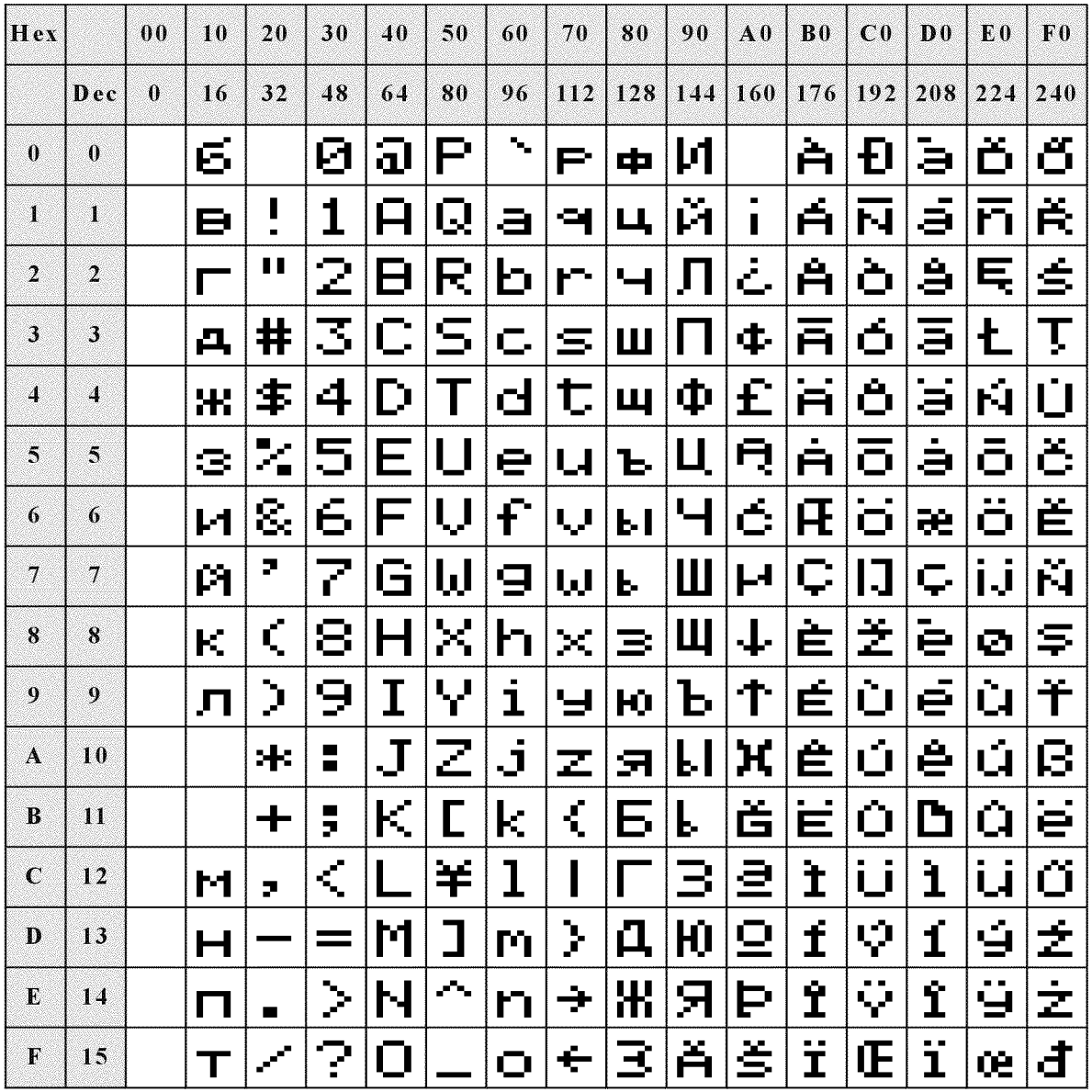


Figure 2 Control Panel Character Set

GP 3.2 Functional Overview

The Control Panel provides the following functions:

- Control of the Print Process
- Recovery from operator intervention conditions
- Modification of system default parameters
- Invocation of various test prints and test modes

The Control Panel provides these capabilities via push-button keys, LED indicators and a menu system that allows a user to scroll and select values for system parameters and invoke printer actions independent of the external data system.

3.1 Control Panel Keys

The Control Panel layout is found in section 2. Table 1 summarizes the operation of the Control Panel keys. Details of the Off-line and On-line states are described in ref. 11.

Table 1 Control Panel Key Usage

Key	Action
On-line	- If the Printer is On-line and not in the Menu system, pressing this key causes a transition to Off-line. All pages currently in the paper path are printed and then printing pauses until the printer is placed On-line. Status information via SNMP or AppleTalk protocols is provided while in the Off-line state. Page formatting stops. On Parallel port, Off-line sends an XOFF if XON/XOFF handshaking mode is selected. The DTR line is set to false. - If the printer is On-line and in the Menu system, pressing this key exits the menu system. The printer remains On-line. - If the printer is Off-line and not in the Menu system, pressing this key causes the printer to change to the On-line state, provided no operator intervention condition exists. This key is ignored if an operator intervention condition exists. - If the printer is Off-line and in the Menu system, pressing this key exits the Menu system. The printer state changes to On-line, provided no operator intervention condition exists. - If in the Password menu, and the display indicates "Enter Password," pressing this key causes a password digit "0" to be entered. - If in Power Saver Mode, not in the Menu System and the printer is Off-line pressing this key to cause the printer to exit Power Saver Mode.
Menu Up	- If in the menu system, pressing this key causes the Control Panel to scroll through the menus in order bottom to top unless a higher priority message is displayed, preempting menu navigation. Menu scrolling is available without going to the Off-line state. Scrolling wraps, such that if the displayed menu is the top menu, pressing this key scrolls to the bottom menu. If an item, value or action is displayed, pressing this key returns to the top of the current menu and removes the display of the item, value or action. - If not in the menu system, pressing this key enters the menu system and displays the first menu. - If in the Password menu, and the display indicates “Enter Password," pressing this key causes a password digit "1" to be entered.
Menu Down	- If in the menu system, pressing this key causes the Control Panel to scroll through the menus in order top to bottom unless a higher priority message is displayed. This will preempt menu navigation. Menu scrolling is available without going to the Off-line state. Scrolling wraps, such that if the displayed menu is the bottom menu, pressing this key scrolls to the top menu. If an item, value or action is displayed, pressing this key returns to the top of the current menu and removes the display of the time, value or action. - If not in the menu system, pressing this key enters the menu system and displays the first menu. - If in the Password menu, and the display indicates "Enter Password," pressing this key causes a password digit "5" to be entered.
Item Up	- If in the menu system, pressing this key causes the Control Panel to scroll through the items in the current menu, in order bottom to top, unless a higher priority message is displayed, preempting menu navigation. Scrolling wraps, such that if the displayed item is the top item, pressing this key scrolls to the bottom item. If a value is displayed, pressing this key returns to the current item in the current menu and removes the value from the display. - If not in the menu system, this key is ignored. - If in the Password menu, and the display indicates "Enter Password," pressing this key causes a password digit "2" to be entered.
Item Down	- If in the menu system, pressing this key causes the Control Panel to scroll through the items in the current menu, in order top to bottom, unless a higher priority message is displayed, preempting menu navigation. Scrolling wraps, such that if the displayed item is the bottom item, pressing this key scrolls to the top item. If a value is displayed, pressing this key returns to the current item in the current menu and removes the value from the display. - If not in the menu system, this key is ignored. - If in the Password menu, and the display indicates "Enter Password," pressing this key causes a password digit of "6" to be entered.
Value Up	- If in the menu system and an item is displayed, this key causes the Control Panel to scroll through the values for the current item in order bottom to top, unless a higher priority message is displayed, preempting menu navigation. Scrolling wraps, such that if the displayed value is the top value, pressing this key scrolls to the bottom value. If no value for the current item is displayed (Item key was pressed but Value key not yet pressed for this item), pressing this key displays the default value for the current item. When setting a numeric value, pressing this key increases the value by the step amount. It is subject to auto-repeat if held down by more than 1 second, after which the value scrolls repeatedly until the key is released. The increment for each step may be greater than that for a single key press. - If not in the menu system, and a paper mismatch condition does not exist, this key is ignored. - If a Paper Mismatch condition exists, pressing this key scrolls through the alternate paper that may be used instead of the requested paper. - If in the Password menu, and the display indicates "Enter Password," pressing this key causes a password digit "3" to be entered.

Table 1 Control Panel Key Usage

Key	Action
Value Down	- If in the menu system and an item is displayed, this key causes the Control Panel to scroll through the values for the current item in order top to bottom, unless a higher priority message is displayed preempting menu navigation. Scrolling wraps, such that if the displayed value is the bottom value, pressing this key scrolls to the top value. If no value for the current item is displayed (Item key was pressed but Value key not yet pressed for this item), pressing this key displays the default value for the current item. When setting a numeric value, passing this key decreases the value by the step amount. It is subject to auto-repeat if held down by more than 1 second, after which the value scrolls repeatedly until the key is released. The decrement for each step may be greater than that for a single key press. - If not in the menu system, and a paper mismatch condition does not exist, this key is ignored. - If a Paper Mismatch condition exists, pressing this key scrolls through the alternate paper that may be used instead of the requested paper. - If in the Password menu, and the display indicates "Enter Password," pressing this key causes a password digit "7" to be entered.
Enter	- If the current display is a value for an item, pressing this key causes the value to be entered as the default value for this item. The currently displayed value is immediately loaded in NVM. The display then returns to indicate the current menu on the top line and the current item on the bottom line. - If the current display is an action to be invoked (e.g., PCL Font List), pressing this key causes the action to take place. Following the action, the display returns to indicate "Ready" on the top line. - If not in the Menu system, and the Form Feed LED indicates that a partial page exists, pressing this key causes an implied PCL reset and the partial page is printed. - If a paper mismatch condition exists, and a request to use an alternate paper is displayed, pressing this key causes printing on the alternate paper. - If in the Password menu, and the display indicates "Enter Password," pressing this key causes a password digit "4" to be entered.

Table 2 Menu System Helper Symbols

Symbol	Helper Function
=	When at a point where a value may be changed, the item name is displayed on the top line with the "=" symbol in the last character position, and the selected value is displayed on the bottom line.
*	When first arriving at a point where a setting may be changed, the current value is displayed on the bottom line and a “*” symbol appears next to it in the right most column. Pressing Up Value or Down Value scrolls through the possible values. Whenever the current value is displayed, the “*” is displayed in the right most column. Pressing Enter causes the “*” to display in the right most column for the new value. Since pressing Enter causes the display to indicate the current menu and current item, the asterisk may not be seen until the item and current value is displayed again by pressing a Value key.

3.2 LED Indicators

The four LED’s convey the following information to the User:

"On-line" (Green)

When the printer is On-line this LED is On. When the printer is Off-line, this LED is OFF. When transitioning from On-line to Off-line, this LED flashes at a rate of 2 times/sec.

"Form Feed" (Green)

In PCL, when a partial page has been formatted, and the printer is waiting for new data to continue processing the job, and a 15-second time-out period has expired without any new data arriving in the input buffer, this LED will be On. Note that the time-out is constant and applies to all ports. The formfeed time-out is different from the port time-out, which appears in the Parallel, Ethernet and Token Ring menus. If an individual port time-out is set smaller value than 15 seconds, the port time-out will cause the partial page to be ejected and this LED will not be turned on for this purpose. When in the Menu system, a partial page may be printed by entering the Job menu, scrolling to the Form Feed item and pushing the Enter key. When not in the Menu system, a partial page may be printed by pressing the "Enter" key. Postscript does not have the concept of partial page and consequently this LED will not be On to indicate a partial page. The Form Feed LED is turned off when either an actual Form Feed character is received or a Form Feed function is invoked from the "Enter" key from the Job menu.

"Fault" (Amber)

The "Fault" LED is ON whenever operator intervention is required to allow printing to continue.

"Data" (Green)

When On-line, this LED flashes (1 sec On/1 sec Off) to indicate that data is being processed by Postscript, PCL or PJL, or is being spooled to the disk (e.g., secure or proof job). If no data is being processed, or either Postscript or PCL is processing a job but waiting for data (input buffer empty), this LED is Off.

When flashing, this LED informs the user that data is being received by one of the emulations (i.e., PJL, PCL or PostScript). For example, when a secure or proof job is sent to the printer, this LED will flash while the job is being received, even though no data is actually processed by one of the emulation’s or printing. At a later time, the user may enter a password to request printing the job. This LED will also flash during processing of the spooled job, with the input buffer being loaded from the disk rather than from one of the host interfaces.

Control Panel Messages

The 2 line x 16 character display is used to convey information to navigate through the menu system, report on system errors and indicate action and/or options when operator intervention is required. The detailed list of the Control Panel Display Messages is described in ref. 10.

3.3 Menu Navigation

With the exception of the Password menu, navigating through all other menus have the following display format and key press sequence. This sequence assumes starting from an On-line Ready state.

1. Pressing either the Up Menu or Down Menu keys enters the Menu system and causes "Menus" to appear on the top line and the name of the menu to appear on the bottom line.
2. Pressing the Up Item or Down Item keys after entering the Menu system with step 1 for any menu except the Password Menu causes the top line to indicate the current menu and the bottom line to scroll through the items in the selected menu. If the Job menu, Reset menu or Print menu is displayed (with the exception of “Language” in the Reset menu), the bottom line indicates an action to be taken (e.g., “Config Sheet” or “PCL Font List”). Pressing the Enter key will cause the action to be taken, and the display (using either one or two lines) indicates the action taken (e.g., “Processing” on the top line and “Config Sheet” on the bottom line). The display exists the Menu system and returns to the On-line, Ready state following the action. For all other menus, the Enter key is ignored until a value is displayed (step 3).
3. Pressing the Up or Down Value keys after step 2 causes the top line to indicate the item name with an "=" in the right most column. The bottom line indicates the current default value of the item followed by an asterisk (*). The current default value is displayed first when either Value key is pressed the first time after step 2 above. Additional key presses of the Values keys cause the display to scroll up or down through the possible values for the selected item. An asterisk does not follow a value displayed that is not the current default.
4. Pressing the Enter key after step 3 above causes the displayed value to be loaded in NVM. The display returns to the current menu and current item.
5. Pressing On-line at any time causes the Control Panel to exit the Menu system.

NOTE: *The printer will automatically exit the Menu system after 60 seconds have elapsed with no Control Panel key presses.*

The following examples illustrate the menu navigation and display message sequences that take place when setting default parameters (Example #1) and when involving a printer action (Example #2).

Example 1 -

1. Display Top Line- "Ready" ---Display Bottom Line- Blank	Ready
2. Scroll to the "System" menu using the Item Keys	Menus System Menu
3. Scroll to "Power Saver" item using the Item Keys	System Menu Power Saver
4. Press a Value Key to display the current defualt value.	Power Saver = 60*
5. Scroll to the 30-min. value using the Value Keys	Power Saver = 30
6. Press Enter key to save new default value	System Menu Power Saver
7. Press On-line key - Display indicates "Ready"	Ready

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Example 2 -

1. Display Top line - “Ready”; Bottom Line - Blank	Ready
2. Scroll to the “Print” menu using the menu keys	Menus Print Menu
3. Scroll to “Config Sheet” using the Item keys	Print Menu Config Sheet
4. Press Enter key-Display indicates “Processing Config Sheet”	Processing Config Sheet
5. After Configuration Sheet prints, display indicates “Ready”	Ready 30

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3.4 Special Menu Navigation Procedures

Some of the items in the Ethernet, Token Ring and Novell menus require a slightly different menu navigation technique from that described in section 3.3. The following menu items require this special navigation technique. Details of each item can be found in section 5.

- Ethernet Menu>IP Address, Token Ring Menu>IP Address
- Ethernet Menu>Subnet Mask, Token Ring Menu>Subnet Mask
- Ethernet Menu>Default Gateway, Token Ring Menu>Default Gateway
- Token Ring Menu>LAA
- Novell Menu>PServer Name
- Novell Menu>Primary Server
- Novell Menu>NDS Tree
- Novel Menu>NDS Context

The special menu navigation procedure is described below:

1. Pressing either the Up Menu or Down Menu keys enters the Menu system and causes "Menus" to appear on the top line and the name of the menu to appear on the bottom line.
2. Pressing the Up Item or Down Item keys after entering the Menu system with step 1 for the affected menus causes the top line to indicate the current menu and the bottom line to scroll through the items in the selected menu.
3. Pressing the Up or Down Value keys after step 2 causes the top line to indicate the item name with an "=" in the right most column. The bottom line indicates the current default value of the item, with the cursor under the first portion of the value that will be changed with the "Value" keys. The current default value is displayed first when the either Value key is pressed the first time after step 2 above. Additional key presses of the Value keys cause that portion of the value that is above the cursor to scroll up or down through the possible values for the selected item.
4. Pressing the Up or Down "Item" keys cause the cursor to move left and right respectively to the next portion of the value to be changed.
5. Pressing the Enter key will cause the current value to be loaded in NVM. The display returns to the current menu on the top line and the current item on the bottom line.

6. If an entry exists in any item that contains a string, all characters to the right of the cursor, including the current cursor position, may be cleared by entering a “space” character in the current cursor position, and pressing “Enter.”
7. Pressing the Up or Down "Menu" keys at any time after step 2 causes a return to the top of the current menu without changing a value.
8. Pressing On-line at any time causes the Control Panel to exit the Menu system.

3.5 Access to Special Operating Modes

The printer may be placed in special diagnostic or other operating modes by turning on power while holding down two keys on the Control Panel. Table 3 shows the key combinations for each mode:

Table 3 Access to Special Operating Modes

Key Combinations	Mode
On-line and Enter	Sets a flag in RAM so that the Control Panel enables the “Reset” menu.
Menu Up and Menu Down	Forces the "Download" mode on the Parallel port.
Item Up and Item Down	Forces the "IOT Diagnostic" mode.
Value Up and Value Down	Forces the "Monitor Mode" on the Serial port.
On-Line and Value Down	Forces NVM to be reset to Factory defaults.

3.6 Control Panel Lock

Some of the menus in the Control Panel may be “locked” to prevent unauthorized access and changes to system parameters. This is accomplished with the PJL “CPLOCK” command. If the user scrolls to a locked menu, pushing either “Item” key will cause the menu name to appear on the top line, and the “Menu Locked” to appear on the second line. Only the following menus are available from the Control Panel when locked:

- Job Menu
- Password Menu
- Tray Menu
- Print Menu
- Reset Menu

GP 3.3 Menu Maps

This chapter shows the menu structure in graphical format. Refer to Chapter 5 for an explanation of the items in these menus. The names of menus, items and values found in the menu maps contain the English language strings for reference only. Use to ref. 10 for the official list of menu strings. The order of menus, items, and values found in the menu maps is the order in which these strings are displayed when scrolling through the menu items. The “first” menu, item or value is at the top of the list and the “last” menu, item or value is at the bottom of the list. Selecting an “Up” key causes scrolling from first to last. Pressing a “Down” key causes scrolling from last to first.

Some of the Menus and Items in the following maps are only displayed if an associated option is installed. These options entries are flagged with the symbol “_” following the entry.

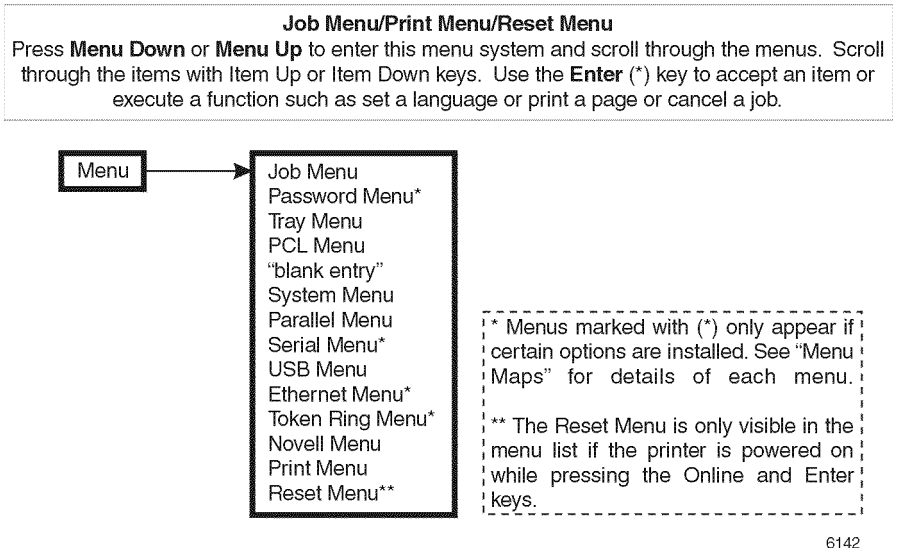


Figure 1 Job Menu/Print Menu/Reset Menu

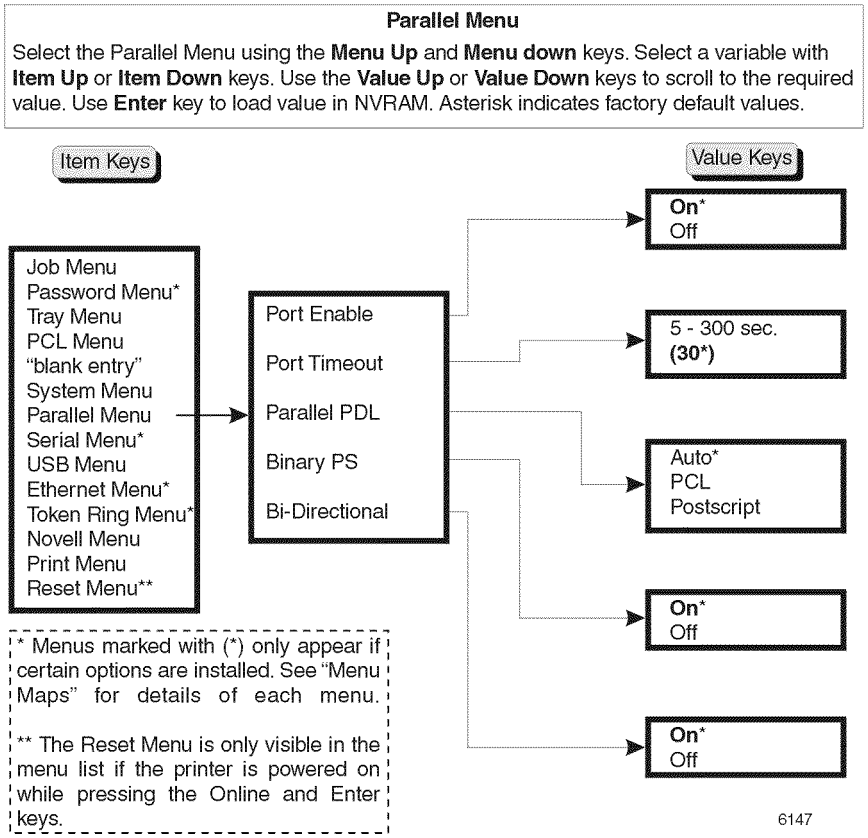


Figure 2 Password Menu

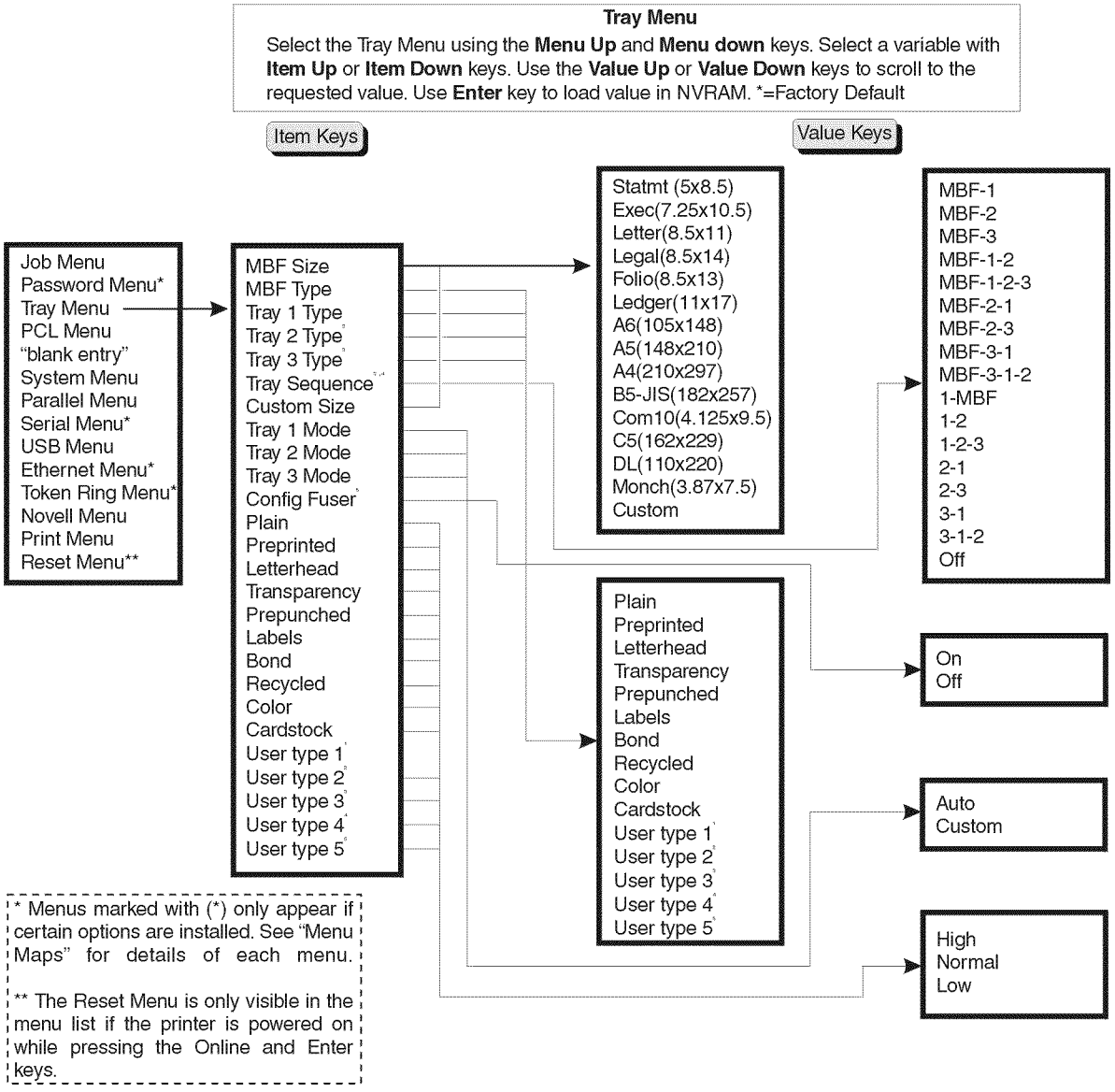


Figure 3 Tray Menu

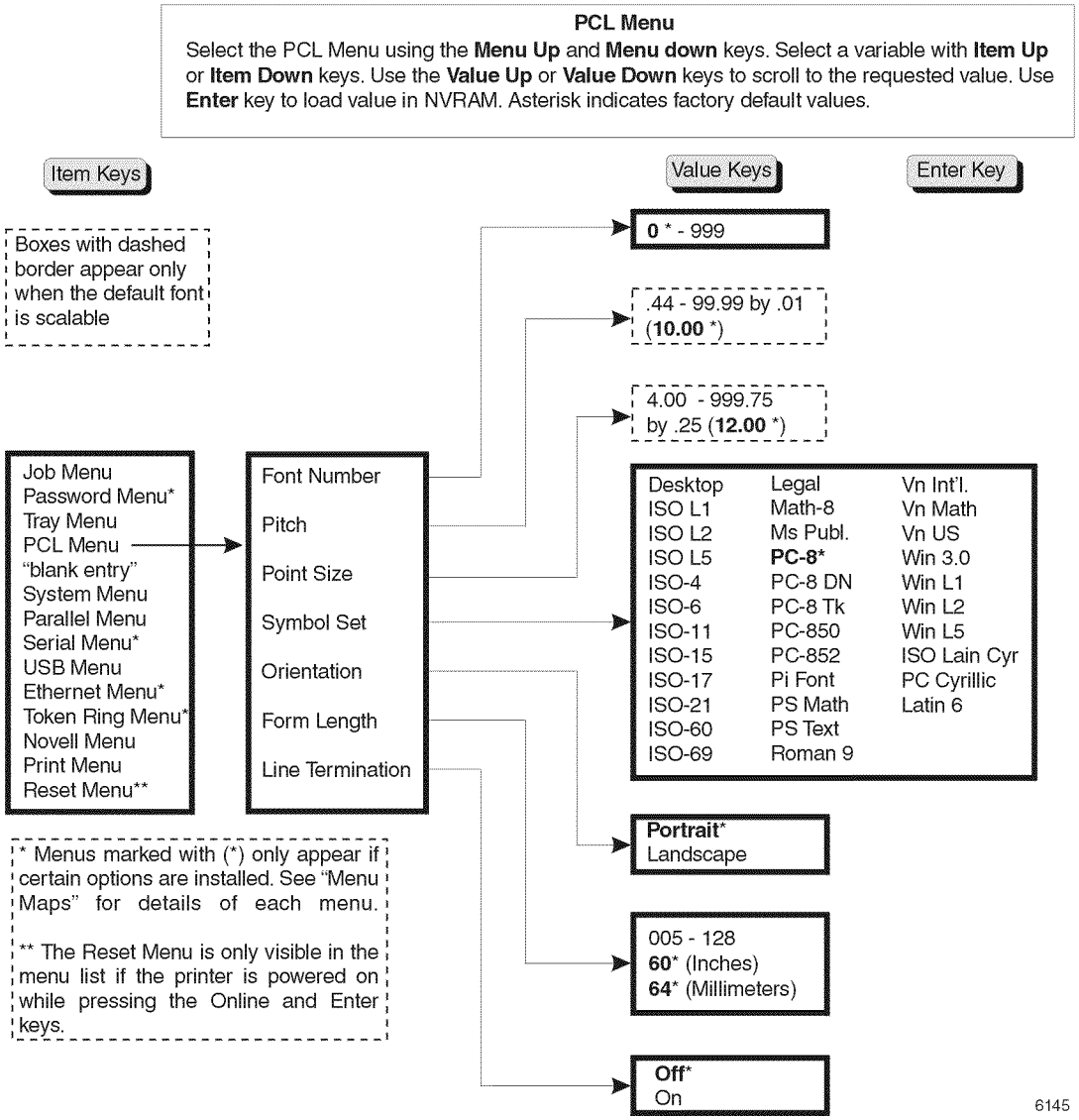


Figure 4 PCL Menu

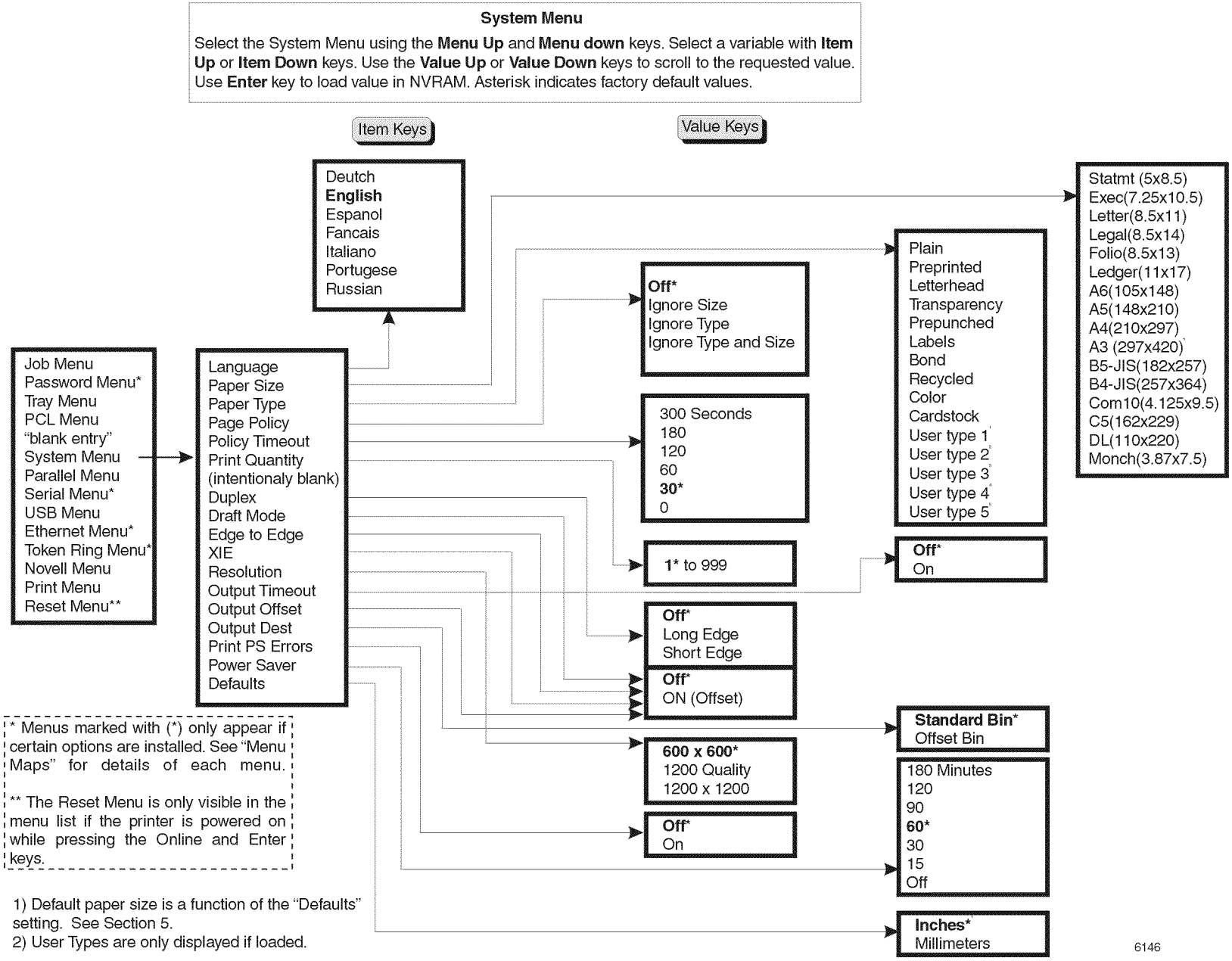
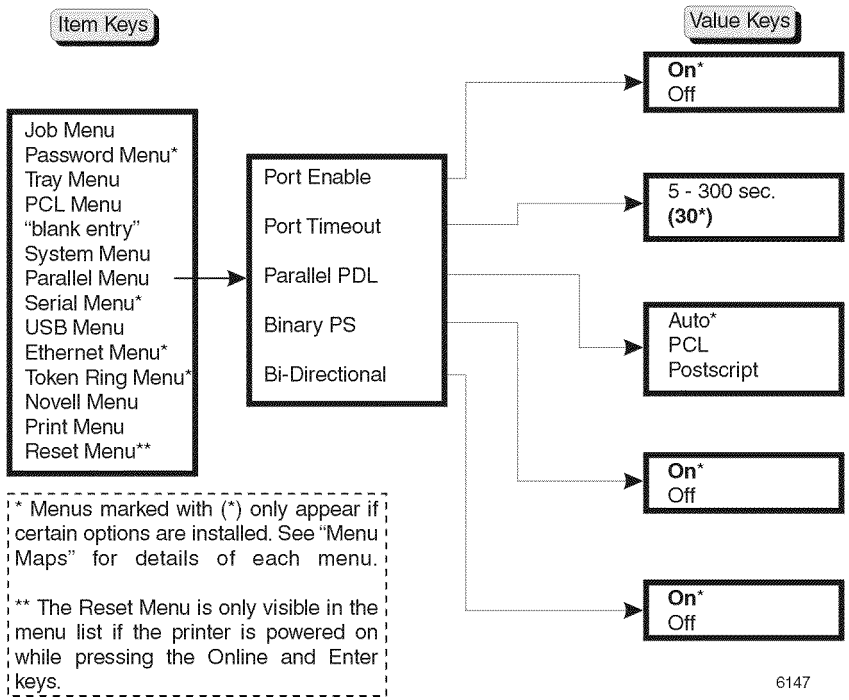


Figure 5 System Menu

Parallel Menu

Select the Parallel Menu using the **Menu Up** and **Menu down** keys. Select a variable with **Item Up** or **Item Down** keys. Use the **Value Up** or **Value Down** keys to scroll to the required value. Use **Enter** key to load value in NVRAM. Asterisk indicates factory default values.



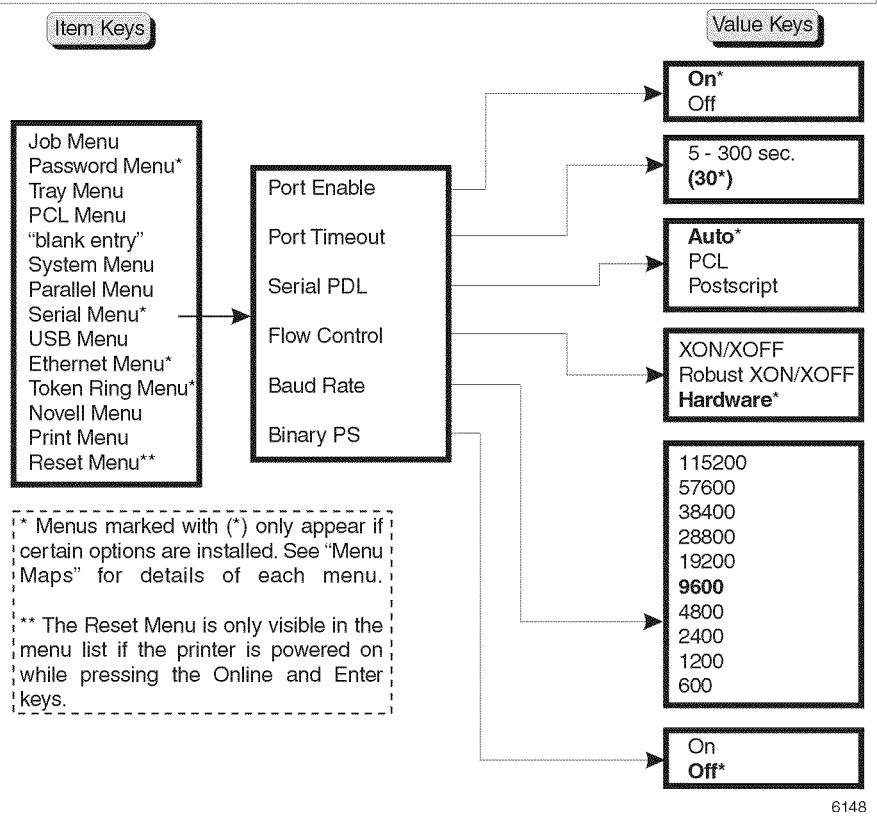
* Menus marked with (*) only appear if certain options are installed. See "Menu Maps" for details of each menu.

** The Reset Menu is only visible in the menu list if the printer is powered on while pressing the Online and Enter keys.

Figure 6 Parallel Menu

Serial Menu

Select the Serial Menu using the **Menu Up** and **Menu down** keys. Select a variable with **Item Up** or **Item Down** keys. Use the **Value Up** or **Value Down** keys to scroll to the requested value. Use **Enter** key to load value in NVRAM. Asterisk indicates factory default values. This menu only appears if the Serial option is installed.



* Menus marked with (*) only appear if certain options are installed. See "Menu Maps" for details of each menu.

** The Reset Menu is only visible in the menu list if the printer is powered on while pressing the Online and Enter keys.

Figure 7 Serial Menu

USB Menu

Select the USB Menu using the **Menu Up** and **Menu down** keys. Select a variable with **Item Up** or **Item Down** keys. Use the **Value Up** or **Value Down** keys to scroll to the requested value. Use **Enter** key to load value in NVRAM. Asterisk indicates factory default values.

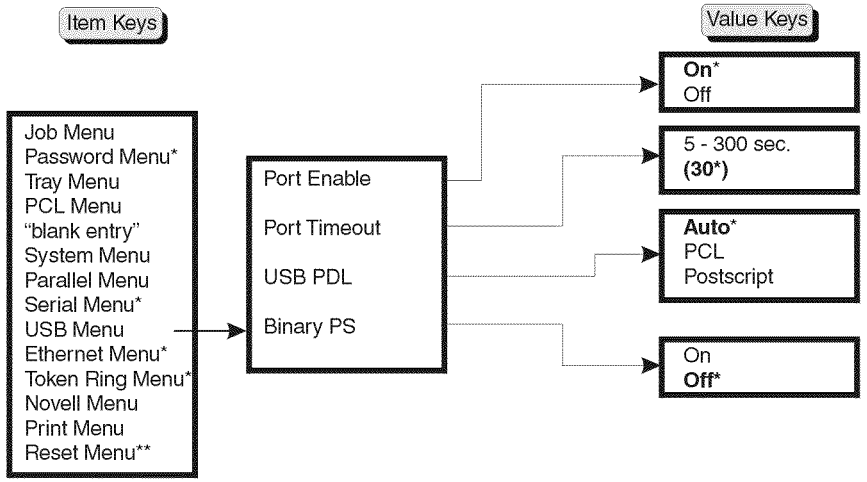


Figure 8 USB Menu

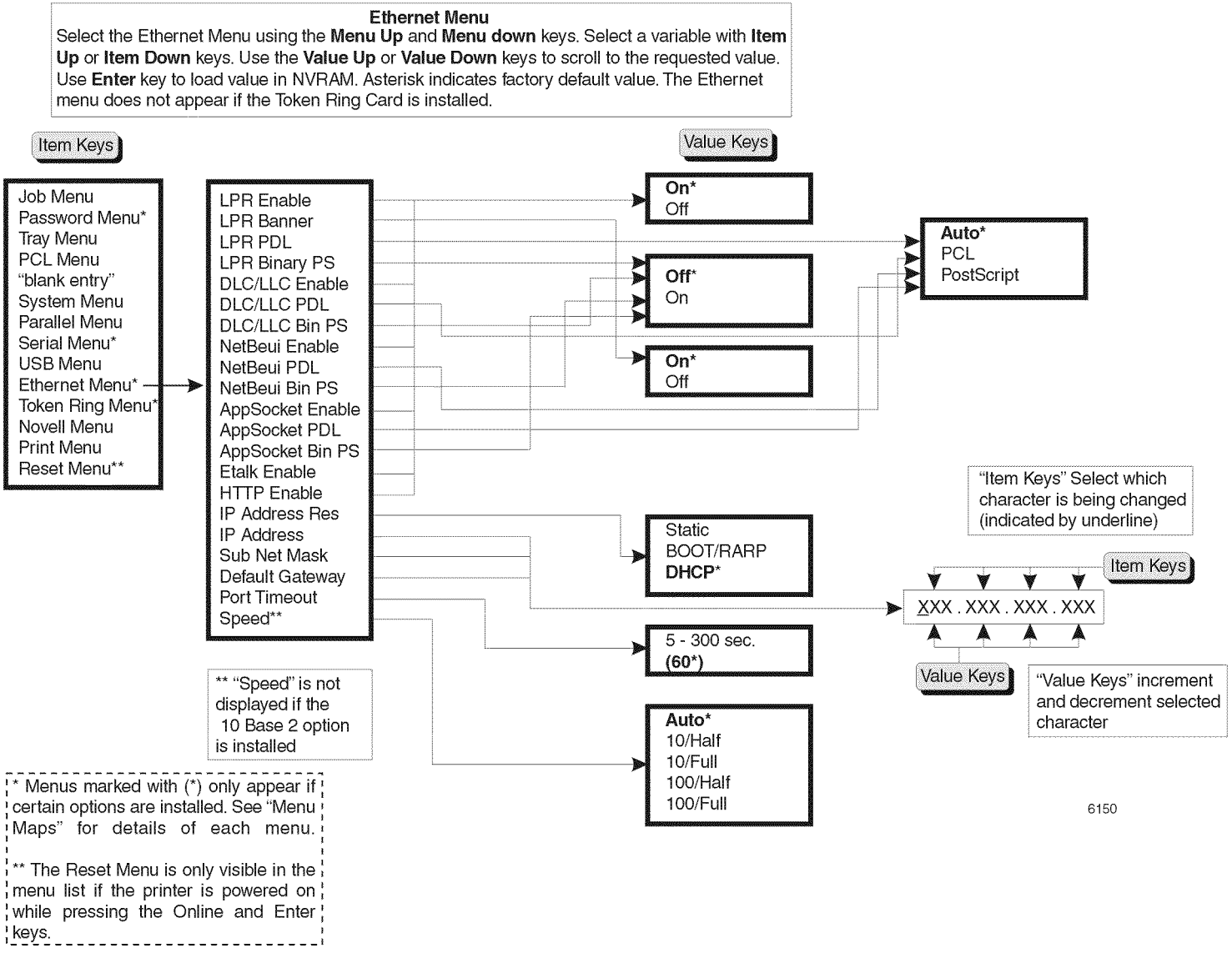


Figure 9 Ethernet Menu

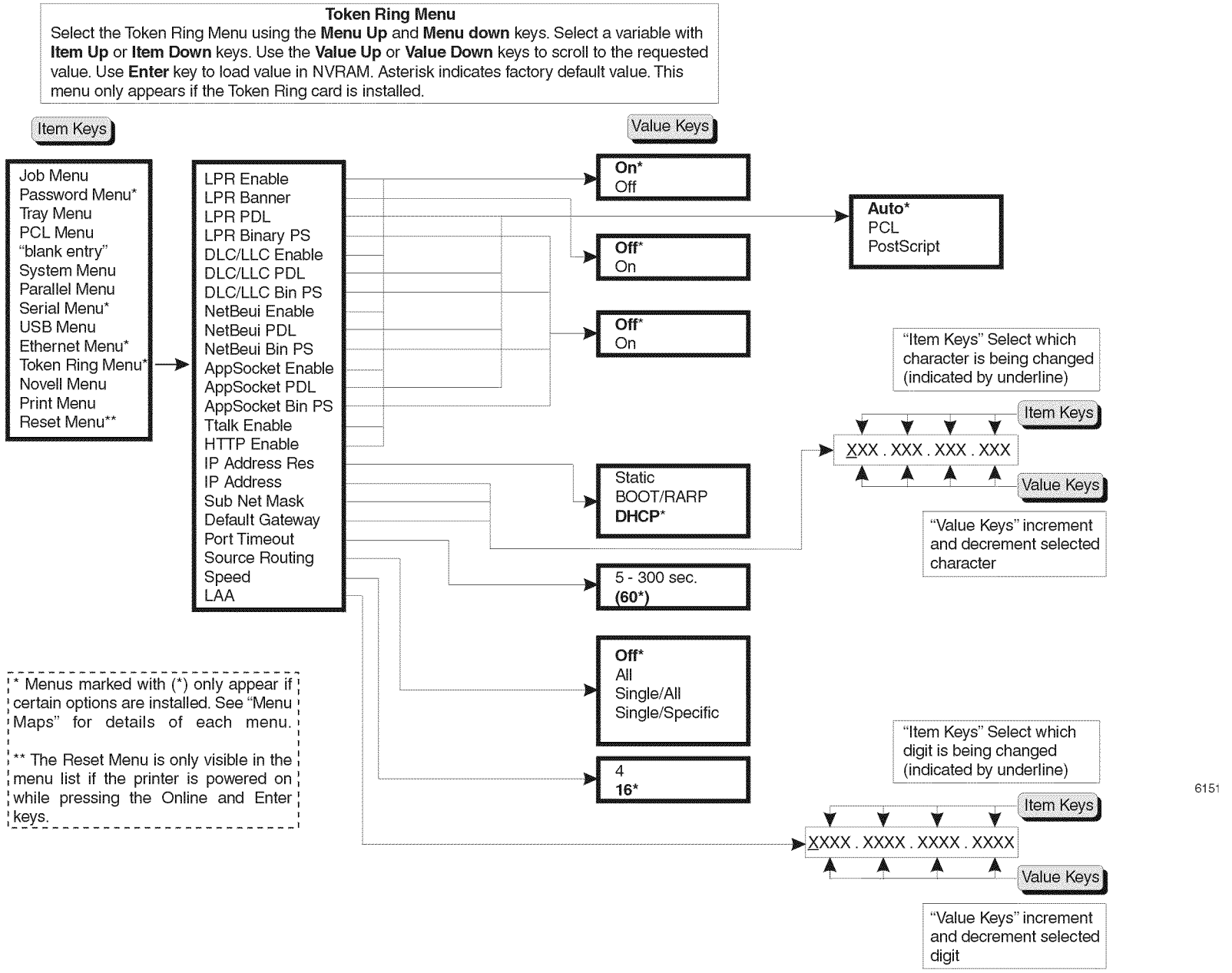


Figure 10 Token Ring Menu

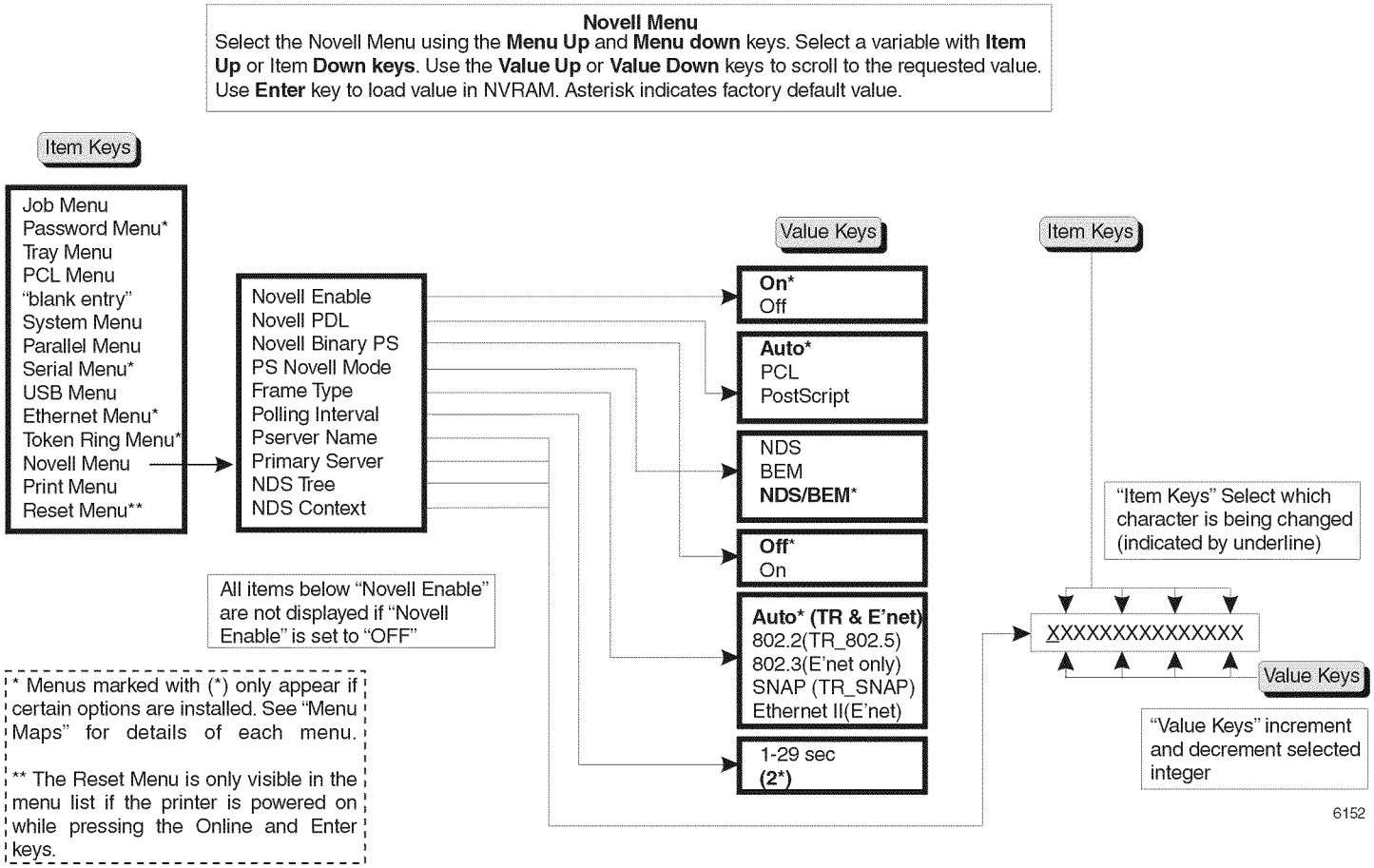
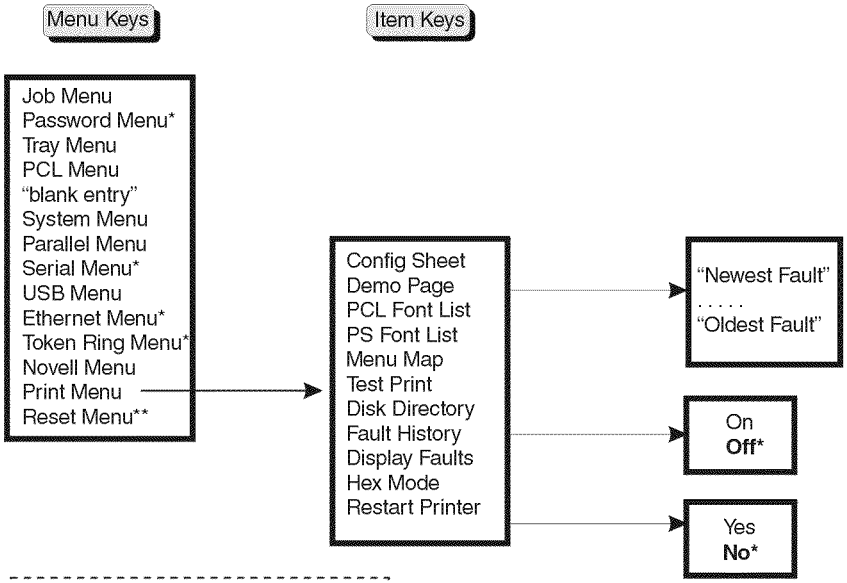


Figure 11 Novell Menu

Print Menu

Press ***Menu Down*** or ***Menu Up*** to enter this menu system and scroll through the menus. Scroll through the items with ***Item Up*** or ***Item Down*** keys. Use the Enter (*) key to accept an item or execute a function such as set a language or print a page or cancel a job.



* Menus marked with (*) only appear if certain options are installed. See "Menu Maps" for details of each menu.

** The Reset Menu is only visible in the menu list if the printer is powered on while pressing the Online and Enter keys.

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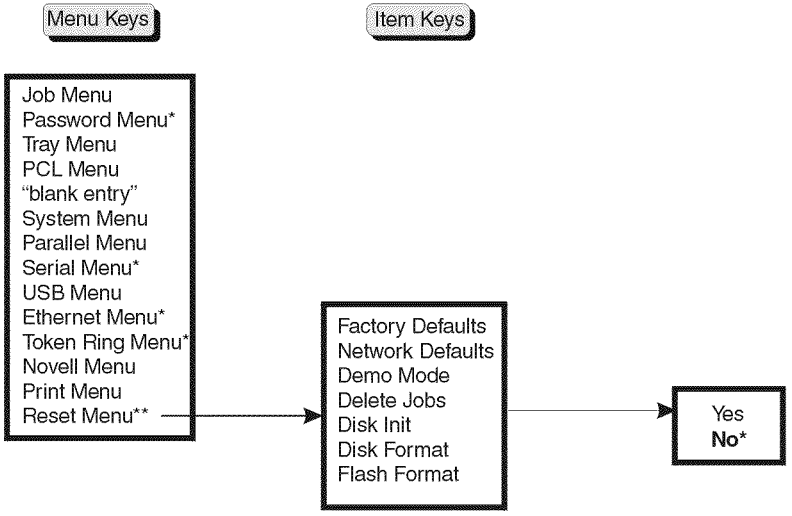
Figure 12 Print Menu

Reset Menu

Press ***Menu Down*** or ***Menu Up*** to enter this menu system and scroll through the menus. Scroll through the items with ***Item Up*** or ***Item Down*** keys. Use the Enter (*) key to accept an item or execute a function such as set a language or print a page or cancel a job.



* Menus marked with (*) only appear if certain options are installed. See "Menu Maps" for details of each menu.

** The Reset Menu is only visible in the menu list if the printer is powered on while pressing the Online and Enter keys.

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Figure 13 Reset Menu

GP 3.4 Menu Details (Alphabetically)

This chapter contains an alphabetic list of all the options found in the menu system. It can be used as a reference in conjunction with the menu maps in chapter 4.

Each item is followed by an explanation.

AppSocket Bin PS - Ethernet and Token Ring Menu settings to enable/disable the AppSocket binary mode of PostScript.

AppSocket Enable - Menu setting in the Ethernet menu to enable the AppSocket interface. This item is common between the Ethernet and Token Ring Menus

AppSocket PDL - Menu setting for the default emulation for the AppSocket interface

Baud Rate - Serial menu selection to transmission rate

Bi-Directional - Parallel menu selection to enable/disable the bi-directional modes of the Parallel port

Binary PS - Parallel, Serial and USB Menu settings to enable/disable the binary mode of PostScript

Cancel Job - Job menu selection to cancel the job currently printing (Postscript or PCL). See Chapter 6 for a detailed description of this feature.

Configure Fuser - Menu selection to allow access to the setting of fuser temperatures associated with each paper type. If this parameter is ON, the list of resident and user defined paper types (if loaded) is added to the item list for the Tray menu, with a list of values "High," "Normal" and "Low." The default value for Card Stock and Labels is "High." The default value for Transparencies is "Low." All other paper types have a default value of "Normal." If "Configure Fuser" is set to "OFF," paper types do not appear in the item list.

Config Sheet - Menu selection to print a configuration sheet. Config. sheets will be printed using the PCL default paper and type. The System Menu setting for number of Print Quantity is ignored.

Custom Size - Tray Menu setting for the paper size that is to be used for formatting custom paper when a Tray Mode is set to "Custom."

Default Gateway - Menu setting in the Ethernet or Token Ring menu to manually set the 4 Gateway address bytes. This setting is common between the Ethernet and Token Ring menus. This item only appears if "IP Address Res" is set to "Static."

Defaults - System Menu setting for the type of factory defaults to use when a “Factory Default” is performed. The value of this setting is not affected by performing a “Factory Default,” therefore it does not have a default value apart from the initial value of “Inches” that is used when the printer is powered up for the first time. It may be manually set to “Millimeters” at the Control Panel or via a PJL command.

Delete All Jobs - Reset Menu selection to delete all Secure and Proof jobs from the disk. The display indicates "Please Wait" on the bottom line while this action is being processed, and returns to "ready" when the action is complete. If the disk is locked, the display indicates "Disk Locked" for 10 seconds and then returns to "Ready."

Demo Mode - Reset Menu selection to place the printer in the demo mode. Once in this mode, the printer will print demo pages using the eight Control Panel keys to select the type of demo page. Once selected, the printer will enter this state automatically every time the power is cycled. The Demo Mode is entered by power-on while holding down the On-line key and Enter Key, scrolling to the Demo Mode using the Item keys, selecting “Yes” using the Value keys and pushing the Enter button. The Demo mode is exited by power-on while holding down the On-line key and Enter Key. If the Demo mode was enabled when the proceeding power on procedure was performed, it is used to exit the Demo mode only, and the Reset menu is not enabled.

Demo Page - Print Menu selection to print a demonstration page that shows the printer features. It will be printed using the PCL default paper size and type at 600 x 600 dpi.

Disk Directory - Print Menu setting to request printing the disk directory. Only one copy of the directory is printed regardless of the setting of System Menu>Print Quantity.

Disk Format - Reset Menu setting to request a complete format of the disk.

Disk Unit - Reset Menu setting to request initialization of the disk.

Display Faults - Print Menu setting to display the last 50 faults on the Control Panel.

DLC/LLC Enable - Menu setting in the Ethernet or Token Ring menu to enable the DLC/LLC protocol. This item is common between the Ethernet and Token Ring Menus.

DLC/LLC Bin PS - Ethernet or Token Ring Menu setting to enable/disable the DLC/DLL binary mode of PostScript.

DLC/LLC PDL - Menu setting for the default emulation for the DLC/LLC protocol. This item is common between the Ethernet and Token Ring Menus.

Draft Mode - System Menu setting to control the reduced toner mode for draft printing.

Duplex - Menu setting for Postscript and PCL to set the default duplex mode if installed. Long Edge or Short Edge refers to the printing direction on the back side of the sheet and is also a function the orientation (landscape or portrait) of the page.

Edge to Edge - Menu setting in the System menu to select the printable area in PCL. Setting this parameters to ON results in all margins of "0" allowing images to be placed at the edge of the paper on all sides. The logical page size becomes the physical page size.

Ethernet Menu - Menu selection to invoke the Ethernet menu.

Ethertalk Enable - Menu setting in the Ethernet menu to enable the Ethertalk protocol.

Factory Defaults - Reset Menu selection to reset the menus to factory defaults. This action is invoked by pressing the “Enter” key. All NVM values are set to factory defaults, with the exception of “Language” in the Reset Menu and “Defaults” in the System Menu. No NVM values associated with the Ethernet or Token Ring interfaces are reset. Ethernet and Token Ring values may be reset to factory defaults via the “Network Defaults” item. The display indicates “Please Wait” on the bottom line while this action is being processed, and returns to “Ready” when the action is complete.

Fault History - Print Menu setting to request printing the Fault History Log. Only one copy of the Fault Log is printed regardless of the setting of System Menu>Print Quantity.

Flash Format - Reset Menu setting to request initialization of the flash DIMM.

Flow Control - Serial Menu setting for the method of flow control used to meter data from the host to the printer.

Font Number - Menu setting for the ID of the default font in PCL. The up and down Value keys scroll through the available font numbers. These numbers are assigned by the printer and are not to be confused with the user defined ID numbers associated with font downloading (creation).

Form Feed - Job Menu function to cause a partial PCL page to be ejected when the Form Feed LED is ON.

Form Length - Menu setting for the default number of lines per page used in PCL. The value changes by increments of 1 each time either the up or down Value keys are pressed. If up or down keys are held down for more than 1 second the value will be changed by increments of 1 at a rate of 20 per second. Whenever the PCL Menu>Paper Size value is changed, this value is recalculated using the formula: Form Length=((logical page length in inches - 1 inch) * 6)

Frame Type - Menu setting in the Novell menu to select the frame type used for the Novell protocol. The values for this item are different for the Ethernet and Token Ring.

Hex Mode - Menu setting to control hex dump mode. Prints the data stream as hex codes instead of interpreting it as print data. No other parsing of the data stream is done. This mode may be enabled remotely via a PJL command, but stays in effect until turned off by the Control Panel. This setting is not persistent across power cycles. It returns to “OFF” at each power-up.

IP Address - Menu setting in the Ethernet or Token Ring menu to manually set the 4 IP address bytes. This setting is common between the Ethernet and Token Ring menus. This item only appears if "IP Address Res" is set to "Static."

IP Address Res - Menu setting in the Ethernet and Token Ring menus to select the method used to assign the IP address, including Subnet Mask and Default Gateway.

Job Menu - Menu selection to invoke the “Job Menu.” The Job Menu allows the user to cancel the job currently processed by one of the emulations, or to force a form feed on a partially formatted job in PCL.

LAA - Menu setting in the Token Ring menu to manually set the 4 Locally Administered Address bytes. If this parameter is set to "0," then the Token Ring hardware address is used. If set to any value in the range 400000000000 to 7FFFFFFFFFFF, then this parameter replaces the Token Ring Hardware address.

Language - Menu setting for the spoken language used for Control Panel display messages, Configuration Sheets, Font Lists, Demo Pages, etc. The value of this setting is not affected by performing a “Factory Default.” It does not have a default value apart from the initial value of “English” that is used when the printer is powered up for the first time. It may be manually set to another language using PJL commands. Otherwise, it will be left at its initial value of “English.”

Line Termination - PCL menu setting to add a Carriage Return after every Line Feed appearing in PCL text. This setting enables the <LF>=<CR><LF> line termination mode in PCL as the default.

LPR Banner - Ethernet or Token Ring Menu setting to enable/disable the LPR banner page.

LPR Binary PS - Ethernet or Token Ring Menu setting to enable/disable the LPR binary mode of PostScript.

LPR Enable - Ethernet or Token Ring Menu setting to enable/disable the LPR protocol.

LPR PDL - Ethernet or Token Ring Menu setting for the default LPR emulation.

MBF Size - Tray Menu setting for the paper size that is loaded in the MBF. Since the MBF does not have paper size sensing, this value must be entered manually.

MBF Type - Menu setting for the paper type loaded in the MBF.

Menu Map - Menu selection to print a page showing the configuration of the Control Panel menu.

NDS Tree - Menu setting in Novell menu to set the NDS Tree string.

NDS Context - Menu setting in Novell menu to set the NDS Context string.

NetBEUI Bin PS - Ethernet or Token Ring Menu setting to enable/disable the BetBEUI binary mode of PostScript.

NetBEUI Enable - Ethernet or Token Ring Menus setting to enable/disable the NetBEUI interface.

NetBEUI PDL - Ethernet or Token Ring Menu setting for the default emulation for the NetBEUI protocol.

Network Defaults - Menu setting to force all NVM parameters associated with the Ethernet and Token Ring interfaces to return to their factory default settings. Note that this action will reset the Novell PServer Name, the TCP/IP Address and other parameters which might require the printer be re-installed on the network. The reset action is taken when the Enter key is pressed, after selecting “Yes” via the Value keys. The display indicates “Please Wait” on the bottom line while this action is being processed, and returns to “Ready” when the action is complete.

Novel Bin PS - Novell Menu setting to enable/disable the Novell binary mode of PostScript.

Novell Enabled - Menu setting in the Novell menu to enable the Novell protocol. This item is common between the Ethernet and Token Ring Menus.

Novell Menu - Menu selection to invoke the “Novell Menu.” The Novell Menu allows the user to modify Novell parameters.

Novell Mode - Menu setting for the PServer mode for the Novell protocol.

Novell PDL - Menu setting for the default emulation for the Novell protocol.

Output Offset - Menu setting for the default mode of the Offset function used in PCl and Postscript. OFF indicates all pages are output to the same position. ON causes all pages within a job to be output to the same position, which job alternating in offset position.

Orientation - Menu setting for the default orientation used in PCl. PostScript does not use this parameter.

Output Dest - Menu setting for the default paper output destination used in PCL and PostScript.

Output Time-out - System menu setting to determine whether the printer will select an alternate bin when the selected output bin becomes full.

Page Policy - System Menu setting to allow the printer to automatically select an alternate paper type or paper size if the requested paper size or type is not installed. This is used by both PostScript and PCL. If the requested paper is not installed, the printer will prompt the user to load the requested paper. If the requested paper is not loaded before the time specified by "Page Timeout" below, then another paper size or type will be used based on this setting, ignoring either the size requested, the type requested or both. Trays are searched in the order defined in the "Tray Sequence" item in the Tray menu.

Paper Size - Menu setting for the default paper size.

Paper Type - Menu setting for the default paper Type used in Postscript and PCL.

Parallel PDL - Menu setting for the default emulation for the Parallel port.

Parallel Menu - Menu selection to invoke the Parallel menu.

Password Menu - Menu selection to invoke the “Password Menu.” The Password Menu allows the user to enter a four-digit password to enable printing of secure or proof jobs previously sent to the printer and stored in the hard disk.

PCL Font List - Menu selection to print a list of PCL fonts currently loaded.

PCL Menu - Menu selection to invoke the “PCL Menu.”

Pitch - Menu setting for the pitch when the default font already selected is a scalable fixed pitch font.

Point Size - Menu setting in PCL for the point size when the default font already selected is a scalable proportional spaced font.

Policy Time-out - Menu setting associated with "Page Policy" above. The value of this setting determines how long the printer will wait before taking the action defined by the setting of "Page Policy."

Polling Interval - Menu setting for the interval (in seconds) at which the PServer issues polling requests for assigned queues.

Port Enable - Menu setting to enable or disable the Parallel, USB or Serial ports. When "on" (enabled) it will be included in port switching sequence.

Port Time-out - Menu setting for the time-out for each port. When there is no activity on a port for a time equal to the time-out then the data stream will be switched to take data from any other port that has been active. This also causes an implicit job end such as Control D in PostScript or <ESC> E in PCL, and invokes the emulation functions associated with this action (e.g., formfeed, reset. etc.).

Power Saver - System Menu setting to control the idle period before low power mode is activated.

Print PS Errors - Menu setting in System Menu to control the use of the built in error handler or debugger.

Print Quantity - System Menu setting for the number of times each page is printed (uncollated). This is usually overridden by the job stream.

Primary Server - Novell menu setting to set the name of the primary file server.

PServer Name - Novell menu setting to set the name of the PServer for this printer.

PS Font List - Menu selection to print a list of the fonts available in PostScript, including resident fonts and fonts stored on the hard disk.

Reset Menu - Main Menu selection to invoke the Reset menu. The Reset Menu does not appear in the normal menus list. The Reset menu appears in the menu list if the printer is powered on while holding down the "On-line" and "Enter" keys.

Resolution - System menu setting to select the default resolution in PostScript, PCL5e and PCLXL emulations.

Restart Printer - Menu setting to re-boot the printer as if the power was cycled, but bypassing power on diagnostics. All NVM parameters are reloaded into the current configuration. All network interfaces are re-initialized to their Power On state. The display indicates the same sequence of messages as seen during a normal power-on sequence, with the exception of the Power On diagnostic messages.

Serial Menu - Menu selection to invoke the Serial menu.

Serial PDL - Menu setting for the default emulation for the Serial port.

Speed - Ethernet Menu setting to select the speed of the 10/100Base-Tx Ethernet interface. The default setting of “Auto” allows the card to automatically sense the speed of the Ethernet as either 10 or 100 Mbits, automatically sense duplex mode as either half or full. The setting of 10/Half or 10/Full forces the card to operate at 10 Mbits in either half or full duplex mode. The setting of 100/Half or 100/Full forces the card to operate at 100Mbits in either half or full duplex mode.

Speed - Token Ring Menu setting for the default ring speed for the Token Ring interface.

Source Routing - Menu setting in the Token Ring menu to select the source routing option.

Subnet Mask - Menu setting in the Ethernet or Token Ring menu to manually set the 4 Subnet Mask address bytes. This setting is common between the Ethernet and Token Ring menus. This item only appears if "IP Address Res” is set to “Static.”

Symbol Set - Menu setting for the default font symbol set used in PCL.

System Menu - Menu selection to invoke the "System Menu."

Print Menu - Menu selection to invoke the "Print Menu."

Test Print - Print a test pattern which can be used by service engineers (and users) to analyze print quality. Will cause a printer reset. It will be printed using the PCl number of Print Quantity, default source and default type. All test prints are printed at 600x600 DPI.

Token Talk Enable - Token Ring menu setting to enable Token Talk protocol.

Token Ring Menu - Menu selection to invoke the Token Ring menu.

Tray Menu - Main Menu selection to access tray settings that are common to all system languages (PCL and PostScript).

Tray Sequence - Tray Menu setting defining the order in which trays are used when more than one tray meets the size and type requirements.

Tray x Mode - Tray Menu setting to select the paper size installed in this tray is automatically detected by the printer, or if the auto detection mechanism is overridden by the values loaded in the Custom Size entry.

Tray x Type - Tray Menu setting defining the type of paper installed in each tray. Since the printer cannot sense the type of paper installed, this parameter must be entered manually for each tray. There is a separate entry for each tray installed.

USB PDL - Menu setting for the default emulation for the USB port.

XIE - Menu setting to select the default image (resolution) enhancement mode used in PCL and PostScript.

GP 3.5 Non-Menu Control Panel States

Printer States

After power is turned on, the printer cycles through Power On Diagnostics, Initialization and Warming Up states before entering the Ready state. The following is the display indication for each state (Table 1). All states defined in Table 1 are mutually exclusive.

Table 1 Power-Up Sequence Display Messages

State	Description	Display
P/O Diag.	See Ref. 12	See Ref. 12
Initializing	This state commands the IOT to warm up, starts all system tasks, loads NVM parameters into the current configuration table and starts connectivity protocols.	Top Line: Initializing Bottom Line:
Warming-up	For the case where the IOT is already warmed up, the display may change from Initializing to Ready, and bypass this display.	Top Line: Warming Up Bottom Line:
Ready	In this state, the printer is ready to accept and print data from any enabled port. It may be overridden by higher priority messages requiring operator intervention such as paper jams or load paper requests. The message may be overridden by the PJL "RDYMSG" command.	Top Line: Ready Bottom Line:
Processing	This state is entered when PostScript or PCL is processing a job. It is overridden by higher priority messages such as paper jams or load paper requests or by the PJL "RDYMSG" command. The Tray No. currently in use is displayed on the bottom line. The Tray number message is alternated with the "Job Name" on the second line if a name was supplied with the PJL "JOB" command.	Top Line: Processing Bottom Line: <job name> <Tray x>
Waiting	This state occurs when either PostScript or PCL is waiting for input data as defined in the PCL and PostScript Job Flow diagrams. It is overridden by higher priority messages such as paper jams or load paper requests or by the PJL "RDYMSG" command. The Tray number currently in use is displayed on the bottom line. The Tray number message is alternated with the "Job Name" on the second line if a name was supplied with the PJL "JOB" command.	Top Line: Waiting Bottom Line: <job name> Bottom Line: <Tray x>
Flushing	This state occurs in PostScript when flushing a job due to a PostScript error or PostScript "Interrupt" command (Control-C). It is not overridden by the PJL "RDYMSG," but is overridden by operator intervention conditions, the "Canceling Job" message and manu selections. The "job name" appears on the second line if a name was supplied with the PJL "JOB" command.	Top Line: Flushing Bottom Line: <job name>

Table 1 Power-Up Sequence Display Messages

State	Description	Display
Cancel Job	This state occurs while a job is being canceled from the Control Panel "Job" menu. It is not overridden by the PJL "RDYMSG," but is overridden by operator intervention conditions and other menu selections.	Top Line: Canceling Job Bottom Line: <job name>
Off-line	The printer has been placed Off-line via the "On-line" key, with no operator intervention conditions and not in the Menu system.	Top Line: Off-line Bottom Line:
Power Saver	see section 6.2	see section 6.2

Power Saver

Table 2 Power Saver Display Messages

State	Display
Display indication when the Power Save state with no operator intervention conditions and not in the Menu system.	Top Line: Power Saver On Bottom Line:
Display indication when exiting the Power Saver state and the IOT is not warmed up.	Top Line: Warming Up Bottom Line:
Display indication after exiting Power saver state, IOT is warmed up, no operator intervention conditions and not in the Menu system and no jobs are processing.	Top Line: Ready Bottom Line:

Alternating Messages

When not in the Menu System, the top line displays one of the states described in sec. 6.1. All states described in the referenced section are mutually exclusive. Only one of these states can exist at a time. There are several printer conditions requiring operator intervention that do not prevent normal printing. Examples of these conditions are toner low, tray out, paper low (tray not in use) and bin full (bin not in use). When one of these non-critical intervention conditions exists, the message describing the condition is alternated with one of the states in sec. 6.1. For example, if the printer is processing a job, and the toner is low, the top line will alternate with the following messages: "Processing" and "Toner Low." The bottom line displays the information described in sec. 6.1. Non-critical conditions such as "Toner Low" may require two lines to display. If a non-critical conditions exists, the top line will display the condition and the bottom line may be either blank or display the second part of the condition. The bottom line will alternate between the non-critical condition (which may be blank), the input sources, and the job name. Critical condition messages (e.g., paper jams, load paper and service required) are displayed continuously, and do not alternate with other messages. Since the states listed in section 6.1 are mutually exclusive, the top line can only display one of these states. These states are never alternating with each other.

Power Up Diagnostics

Control Panel functions and messages during Power-Up Diagnostics are described in ref. 12.

Data Handling States

The following state transition diagrams show the normal processing of data without jams or out of paper situations or interaction such as entering menus or performing resets.

Cancel Job

"Cancel Job" is selected from the Job menu, and applies to both PCL and PostScript. The job to be canceled is the job that is currently printing. “Printing” in this context means the job that contains the pages that are currently being processed by the IOT, or if the IOT has not started processing the job, the job that is currently being processed by PCL or PostScript. Job overlap allows a new job to be processed by PostScript or PCl before all pages of the previous job (the job that is printing) are delivered to the output bin. The sequence for canceling a job is dependent on whether that job currently printing is still being processed by a PDL.

Case 1 - Job currently printing is being processed by PostScript or PCL.

1. Display “Canceling Job”
2. Stop formatting input data for current job.
3. Remove formatted pages from IOT print queue
4. Stop processing multiple Print Quantity of current page
5. Discard input data until end of job is detected
6. Force end of job
7. Display “Ready”

Case 2 - Job currently printing has completed processing by PCl or PostScript.

1. Display “Canceling Job”
2. Remove formatted pages for the job that is printing from IOT print queue. Pages formatted for the next job are retained.
3. Stop processing multiple Print Quantity of current page
4. Continue processing next job or display “Ready” if no new job is available.

Paper Size/Type Mismatch (accept current tray)

Paper size/type mismatch occurs when the requested size is not available in the printer. This can be cause by running out of paper in a tray that is configured for the requested paper, or by requesting a paper that is not configured in the printer. The printer goes Off-line under paper mismatch conditions. It automatically returns On-line and continues printing after the paper mismatch condition is resolved. Paper mismatch display messages override “Ready” and “Processing” messages.

If a try is configured for the requested paper, but the tray is out of paper, the display prompts the User to load the requested paper (size and type) in the appropriate tray. After the tray is loaded, printing continues.

If the request is for paper that is not configured in the printer (e.g., the job requests A4 paper and no tray is configured for A4), the user is prompted to load the requested paper in the first tray specified in the “Tray Sequence” parameter.

If the user does not want to load paper in the first tray of the “Tray Sequence” parameter, two options are available:

1. One of the trays may be loaded with the requested size paper and re-configured via the Tray menu to match the requested paper type.

2. The up and down “Value” keys may be pressed to scroll through all the trays, displaying the size and type paper in each tray. If an alternate paper is acceptable, pressing the “Enter” key will cause printing to continue on the new paper. Note that data may be lost (off the page) or not formatted correctly when allowing a different size paper to be used. Trays are searched in the order specified in the Tray Menu>Tray Sequence item.

   NOTE: *The following examples illustrate the procedure for selecting one of the other paper sizes or types installed instead of the requested type when a paper mismatch condition occurs. The user may also "cancel" the jon from the "Job" menu. This may be used if no alternate sources are acceptable.*

The following examples illustrate the display and User interaction for various paper mismatch conditions.

Printer Configuration:

- Letter/Plain paper in Tray 1
- Letter/Transparency in Tray 2
- Legal/Plain paper in Tray 3

Paper Supply:

- No paper in Tray 1
- Letter/Transparency in Tray 2
- Legal/Plain in Tray 3

Tray Sequence set to MBF-1.2

Table 3 Paper Mismatch Examples

Example	Display
Example 1	
Job requests Letter/Plain paper but Tray 1 is empty	Top Line: Load Tray 1 Bottom Line: Letter, Plain
Load paper in Tray 1 - Printing continues	Top Line: Processing Bottom Line:
Example 2	
Job Requests A4/plain paper. No tray is configured for this paper, therefore display prompts to load A4 plain paper in MBF (first tray in sequence).	Top Line: Load MBF Bottom Line: A4, Plain
A4 plain paper is loaded in MBF - Printing continues	Top Line: Processing Bottom Line:
Example 3	
Job requests A4/plain paper. Tray Sequence set to 1-2. No tray is configured for this paper, therefore display prompts to load A4 plain paper in Tray 1.	Top Line: Load Tray 1 Bottom Line: A4, Plain
A4 paper is not available but letter/plain can be used instead. "Value" keys are pressed, scrolling through the available sizes and types.	Top Line: Print Using Bottom Line: Legal, Plain
"Value" Key Pressed	Top Line: Print Using Bottom Line: Letter, Plain
"Enter" Key Pressed	Top Line: Processing Bottom Line:
Example 4	
Job Requests A4/plain paper. No tray is configured for this paper, therefore display prompts to load A4 plain paper in MBF	Top Line: Load MBF Bottom Line: A4, Plain
Page Policy is set to ignore size and type and page time-out is set to 5 min. After 5 min., printer chooses another paper size and printing continues. The trays are scanned in the order defined in the item "Tray Sequence" in the Tray menu until paper is found which satisfies the "Page Policy." In this example, Letter/Plain is used.	Top Line: Processing Bottom Line:

Table 3 Paper Mismatch Examples

Paper Jams

When a paper jam occurs, the display indicates that a paper jam exists and suggested operator action required to clear the jam and return to the printing state is displayed. The specific messages for each type of jam can be found in ref. 10. Paper jam messages override "Ready," "Processing" and "Load Paper" messages. After the jam has been cleared, the printer automatically returns to On-line and printing resumes without additional operation action.

Secure and Proof Printing

Secure and Proof jobs submitted to the printer are stored in PCL or PostScripts format on the hard disk. These jobs are printed by entering the Password menu, keying in the appropriate 4-digit password, and selecting "Print" using the Value keys.

Demo Pages

A demo page may be printed from the Print Menu using the normal menu navigation techniques. The printer may also be placed in a Demo Mode from the Reset menu. This mode allows various demo pages to be printed by pushing a button on the Control Panel. Printing from any of the host interfaces is disabled in this mode. This mode is persistent across power cycles until canceled via the procedure described in sec. 5 under "Demo Mode." Details of the Demo Page(s) contents and assignment of keys in TBD.

XIE, Resolution and Draft Mode

Although the Control Panel allows the setting of these imaging parameters independently, the actual settings used during imaging are modified based on the combinations selected. The following table defines the settings used for each combination of Control Panel settings. The Control Panel display does not change to reflect the actual internal settings used.

Table 4 Imaging Parameter Relationship

Control Panel Setting			Setting Used During Imaging		
OFF	OFF	600	OFF	OFF	600
OFF	OFF	1200 Quality/ 1200	OFF	OFF	1200

Table 4 Imaging Parameter Relationship

Control Panel Setting			Setting Used During Imaging		
OFF	ON	600	OFF	ON	600
OFF	ON	1200 Quality/ 1200	OFF	ON	600
ON	OFF	600	ON	OFF	600
ON	OFF	1200 Quality/ 1200	OFF	OFF	1200
ON	ON	600	OFF	ON	600
ON	ON	1200 Quality/ 1200	OFF	ON	600

GP 4.1 System Controller Error Codes

Table 1 identifies error conditions and error codes Power on Diagnostics Sequence.

Table 1 System Controller Error Codes

Failure Condition	Error Code	Control Panel Message	Number of LED blinks Followed by 1 sec. off	Comment
System Controller	0001	0001 - ESS	1	System Controller PWB major failures
System Controller Base RAM	0001	0001 - BASE RAM	2	System Controller PWB on board RAM failure
System Controller ROM	0001	0001 - BASE ROM	3	System Controller PWB boot ROM failure
ASIC	0001	0001 - ASIC	4	System Controller PWB ASIC controller failure
DMA Controller	0001	0001 - DMA	5	System Controller PWB ASIC DMA failure
System Controller Communication Interfaces	0001	0001 - COMM	6	System Controller PWB Parallel or USB ports failure
Ethernet Communi-cation	0001	0001 - NIC	7	System Controller PWB onboard Ethernet failure
IOT Communication	1000	1000 - IOT	8	System Controller PWB - IOT handshake failure
Hard Disk	0010	0010 - DISK	9	Hard disk failure
DIMM	0101	0101 - DIMM1	10	DIMM board 1 failure
DIMM 2	0102	0102 - DIMM2	11	DIMM board 2 failure
DIMM 3	0103	0103 - DIMM3	12	DIMM board 3 failure
XIE RAM	2000	2000 - XIE RAM	15	Xerox Image Enhancement RAM is part of the ASIC
Expansion Slot	3000	3000 - TOKEN-RING	16	Token Ring card failure
Memory	5000	5000 - MEMORY	None	Memory size not large enough to load the system software
Expansion Slot	3000	3000-ENET	16	10Base2 Card Failure
Expansion Slot	3000	3000-Serial	16	Serial Card Failure

GP 4.2 Power On Diagnostics

The controller board has the following LEDs: Table 1

Table 1 Power On Diagnostics

LED	Description
Power - CR6	On motherboard, indicates power to the controller. Should stay on when power is turned on.
Test - CR1	Indicates that a power on diagnostics failure has occurred when flash.
Fail	Indicates that a CPU fatal failure has occurred when on. Should blink once on power up and then go off.
Enet RX	Ethernet Receive: With connector: should be on when power is on. Without connector: should be off when power is on.
Enet TX	Ethernet Transmit: With connector: should be on when power is on. Without connector: should be off when power is on.

GP 4.3 IOT Diagnostics

The IOT diagnostics provide the ability to:

- Print IOT test page (Grid)
- Read or Set IOT NVM configuration values.
- Monitor and verify operation of all input sensors for IOT and options.
- Monitor and verify operation of all Output devices for IOT and options (motors, clutches, etc.)

Table 1 summarizes the operation of the Control Panel keys for entering IOT diagnostics.

Table 1 Entering IOT Diagnostics

Key Combination - Key Number	Action
Item Up + Item Down 2 / 6	While turning the power on, press and hold until message "*IOT*" is displayed on the LCD; When "IOT" is displayed, release keys 2/6 and press ENTER. The system will enter the IOT diagnostic mode.

The IOT diagnostic mode menu has the following selections: “COMPONENT TEST”, “NVM CONFIG”, and “TEST PRINT”.

GP 4.4 Test Print

GP 4.5 NVM Config

GP 4.6 Component Test

The following table summarizes the operation of the Control Panel keys in IOT Diagnostics Mode (Figure 1).

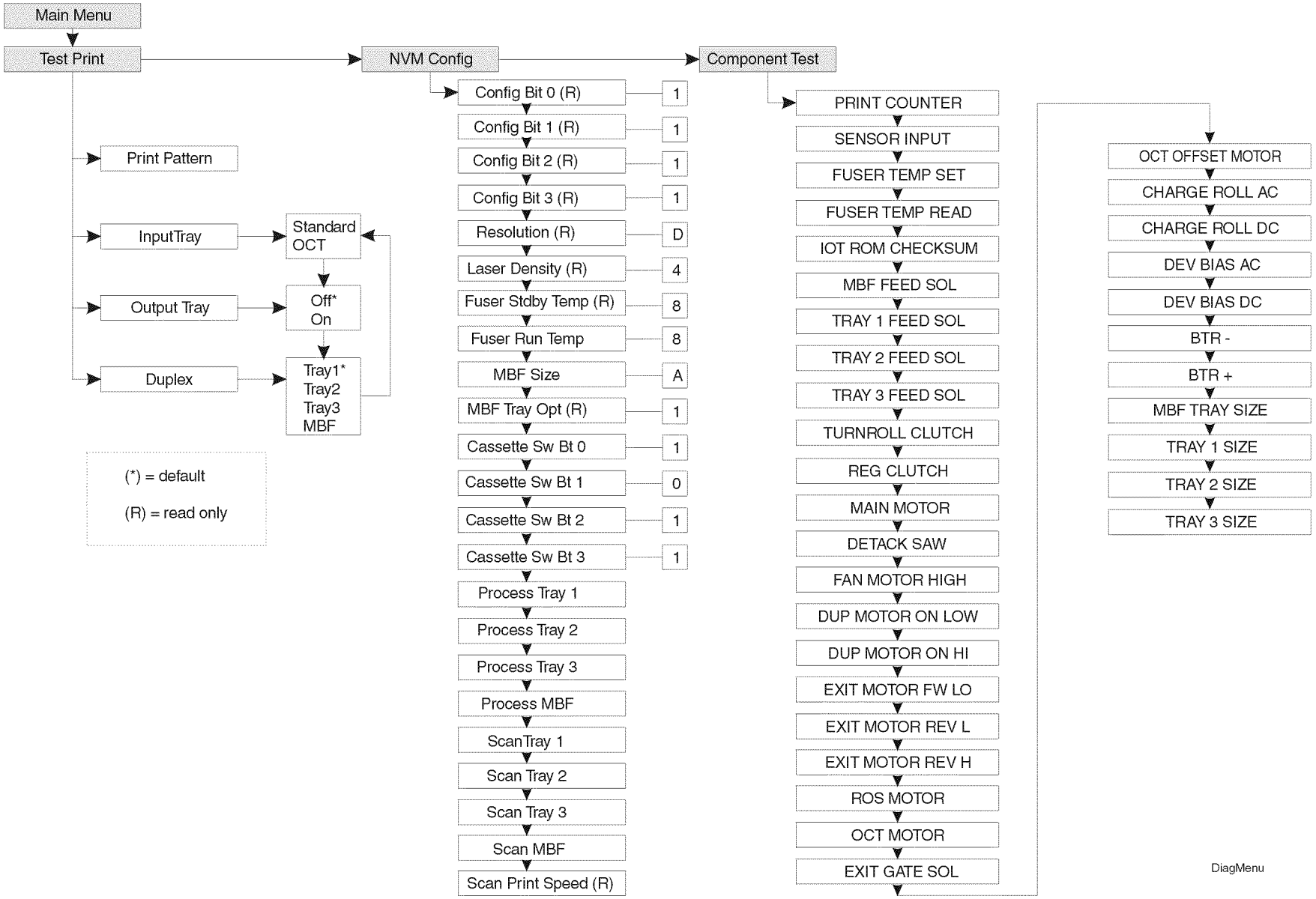


Figure 1 Diagnostic Menu

GP 4.4 Test Print

IOT Grid pattern is stored in the Print Engine Controller PWB. The Grid pattern is used by service personal to identify, repair, and validate the operability of printer xerographics and paper handling from all paper sources and options.

- Grid Test Pattern
- Grid Pattern selectable from all IOT input sources and Output destinations (Tray 1, MBF, OCT, etc.)
- All supported Paper sizes

The Test Print Key Table summarizes the operation of the Control Panel keys in TEST PRINT mode of IOT diagnostics (ref. Test Print Key Table). Table 1

Table 1 Test Print Key Table

Key Numbers	Actions
Enter Diagnostics: Item Up + Item Down 2 / 6	While turning the power on, press and hold until message "*IOT*" is displayed on the LCD; When "IOT" is displayed, release keys 2/6 and press ENTER. The system will enter the IOT diagnostic mode.
Menu Up / Menu Down 1 / 5	Scrolls to select: Component Test NVM Config Test Print
Item Up / Item Down 2 / 6	Scrolls to available selections in the selected menu above.
Item Up / Item Down 2 / 6	With Test Print selected - scrolls between: Input Tray Output Tray Duplex Tray Print Pattern
Value Up / Value Down 3 / 7	Input Tray - scrolls through available Trays Output Tray - scrolls to Standard or OCT Duplex Tray - scrolls to On or Off Print Pattern
Enter 4	Will execute the Test Print selections up to 999
Online 0 (Press and hold for 1 second)	Stop Printing

GP 4.5 NVM Config

The NVM values hold critical control parameters of the mechanical and electromagnetic components of the printer. The following allows service personal to status or change NVM settings.

- Read and write to NVM locations (refer. To NVM Table).

The following table summarizes the operation of the Control Panel keys in the NVM mode of IOT diagnostics Table 1, Table 2

Table 1 IOT NVM Key Table

Key Numbers	Actions
Enter Diagnostics: Item Up + Item Down 2 / 6	While turning the power on, press and hold until message "*IOT*" is displayed on the LCD; When "IOT" is displayed, release keys 2/6 and press ENTER. The system will enter the IOT diagnostic mode.
Item Up / Item Down 1 / 5	Scroll to NVM Menu.
Enter 2 / 6	Display NVM password.
Enter 0-7-3-4	Display NVM password. Password to enter NVM (20 sec. timeout for wrong password)
Enter 2 / 6	Display NVM Menu Items
Value Up & Value Down 3 & 7	Change NVM value up or down. Display current value of selected item. Pressing 3/7 again will increment the value of any adjustable NVM.
Enter 4	Enter new NVM value. Display will flash when new value is entered.
Menu Up 1	Escape

Table 2 NVM Table

Menu Seq.	Menu Selection	Default	Read/Write
1	Config Bit 0	1	Read
2	Config Bit 1	1	Read
3	Config Bit 2	1	Read
4	Config Bit 3	1	Read
5	Resolution	D	Read
6	Laser Density	4	Read
7	Fuser Standby Temp	8	Read
8	Fuser Run Temp	8	Read/Write
9	Front Tray Size	A	Read/Write
10	Front Tray Opt	4	Read
11	Cassette Sw BT 0	1	Read/Write
12	Cassette Sw BT 1	0	Read/Write
13	Cassette Sw BT 2	1	Read/Write
14	Cassette Sw BT 3	1	Read/Write
15	Process Tray 1	8	Read/Write

Table 2 NVM Table

Menu Seq.	Menu Selection	Default	Read/Write
16	Process Tray 2	8	Read/Write
17	Process Tray 3	8	Read/Write
18	Process MBF	B	Read/Write
19	Scan Tray 1	3	Read/Write
20	Scan Tray 2	4	Read/Write
21	Scan Tray 3	4	Read/Write
22	Scan MBF	4	Read/Write
23	Print Speed	0=28 ppm 1=20 ppm	Read

GP 4.6 Component Test

This operation allows a user to test a various electrical components of the printer. The actuation and deactuation of switches / sensors, and the energizing / de-energizing of motors, solenoids, and clutches (refer to Component Table).

- Input/Output actuation. The counter on the LCD Display increments with each actuation/deactuation (no printer resets between routine selection)
- Visual feedback for component control (refer Input Component Key Table).

Table 1 and Table 2 summarize the operation of the Control Panel keys in “COMPONET TESTING” mode of IOT diagnostics.

Table 1 Component Key Table

Key Numbers	Actions
Enter Diagnostics: Item Up + Item Down 2 / 6	While turning the power on, press and hold until message "*IOT*" is displayed on the LCD; When "IOT" is displayed, release keys 2/6 and press ENTER. The system will enter the IOT diagnostic mode.
Item Up / Item Down 2 / 6	Will Scroll Component Menu (see Component Table)
Enter 4	Will select/energize Component (automatically de-selects after 4 sec)
On Line 0	Will de-energize all components

Table 2 Component Table

Menu Seq.	Menu Selection	FUNCTION	Comment
1	PRINT COUNTER	INPUT	
2	SENSOR INPUT	INPUT	
3	FUSER TEMP SET	INPUT	Reads temperature setting
4	FUSER TEMP READ	INPUT	Reads current temperature
5	IOT ROM CHECKSUM	OUTPUT	
6	MBF FEED SOL	OUTPUT	MBF=MBF
7	TRAY 1 FEED SOL	OUTPUT	
8	TRAY 2 FEED SOL	OUTPUT	TRAY 2 or TRAY 3
9	TRAY 3 FEED SOL	OUTPUT	TRAY 3 or 2000 sheet feeder
10	EXIT GATE SOL	OUTPUT	
11	TURNROLL CLUTCH	OUTPUT	
12	REG CLUTCH	OUTPUT	

Table 2 Component Table

Menu Seq.	Menu Selection	FUNCTION	Comment
13	MAIN MOTOR OPERATION	OUTPUT	Runs for 5 minutes, then automatically shuts off. *All other motors run continuously.
14	DUP MOTOR ON LOW	OUTPUT	Will turn on for 4 sec then switch off
15	DUP MOTOR ON HI	OUTPUT	Will turn on for 4 sec then switch off
16	EXIT MOTOR FW LO	OUTPUT	FW=forward
17	EXIT MOTOR REV L	OUTPUT	REV=reverse
18	EXIT MOTOR REV H	OUTPUT	REV=reverse
19	ROS MOTOR	OUTPUT	
20	OCT OFFSET MOTOR	OUTPUT	
21	OCT FUNCTION OPERATION		
22	CHARGE ROLL AC	OUTPUT	
23	CHARGE ROLL DC	OUTPUT	
24	DEV BIAS AC	OUTPUT	
25	DEV BIAS DC	OUTPUT	
26	BTR -	OUTPUT	
27	BTR +	OUTPUT	
28	DETACK SAW	OUTPUT	
29	FAN MOTOR HIGH	OUTPUT	
30	MBF TRAY SIZE	OUTPUT	
31	TRAY 1 SIZE	OUTPUT	
32	TRAY 2 SIZE	OUTPUT	
33	TRAY 3 SIZE	OUTPUT	

NOTE: ** Pressing "0" key shuts off all motors.*

GP 4.7 Fuser Replacement Strategy

When the IOT NVM counter of the Fuser Assembly reaches the end of life value (200,000 images) the following message is displayed on the Control Panel by System software:

- REPLACE FUSER CARTRIDGE

NOTE: *A maintenance kit should be used. This is a customer purchased item.*

At this point, the user should replace the Fuser Assembly and BTR roll. When the fuser is replaced, the above counter needs to reset to zero. The following procedure is used to reset the counter:

1. Power down printer.
2. Simultaneously hold keys 2 and 6 down.
3. Power up printer, wait for message "IOT?" to appear on the LCD.
4. Release both keys, then simultaneously press keys 0 and 5 to activate the fuser reset function. If keys 0 and 5 are not pressed within 5 seconds of the "IOT?" message, printer will go to the normal boot process.
5. Wait for message, "Reset Completed, Please reboot" to appear on the LCD then release both keys.
6. Reboot printer.

GP 4.8 System Controller Diagnostics

System controller to provide the following diagnostic capability:

- Configuration Sheet shows Print Engine Controller PWB software ver.
- System Controller Test Print
- System Controller Test Print for 8 x 11 and A4 paper sizes
- System Main Menu to contain SERVICE sub menu (password protected) containing the following.
  - Print System Controller Test Pattern selected from any input/output sources.
  - Hex Dump
  - Error Log enablement and print capability

    Active Faults

    Fault History (list last 40 faults) and print capability.
- Smart Diagnostics, CentreWare Internet Services

  Assumption: Smart Diagnostics with e-mail warnings to be sent to System Administrator location, defined by System Administrator (delivered in 2.0 platform)
  - Capability to query printer for Configuration Sheet, NVM Log, Fault History Log to prescribed printer address.
  - Email capability

GP 5.1 Print Process Overview

Print Process Overview

The N2025/N2825 printer uses the Xerographic process to print an image on paper using video data sent from the Controller. The Xerographic process consists of seven steps: Figure 1

1. **Charge**
   A bias charge roll places a uniform negative electric charge on the drum surface.
2. **Exposure**
   The laser scanner scans the drum surface with a very thin beam of laser light modulated according to the signal from the Controller to form an invisible electrostatic latent image on the drum surface.
3. **Development**
   Attracts toner to the electrostatic latent image on the drum surface to form a visible toner image.
4. **Transfer**
   Transfers the toner image from the drum surface to the paper.
5. **Detack**
   Partially neutralizes the charge on the paper to allow the paper peel off the drum surface.
6. **Fusing**
   Permanently fixes the toner image to the paper by heat and pressure.
7. **Cleaning**
   Cleans the drum surface of the remaining toner.

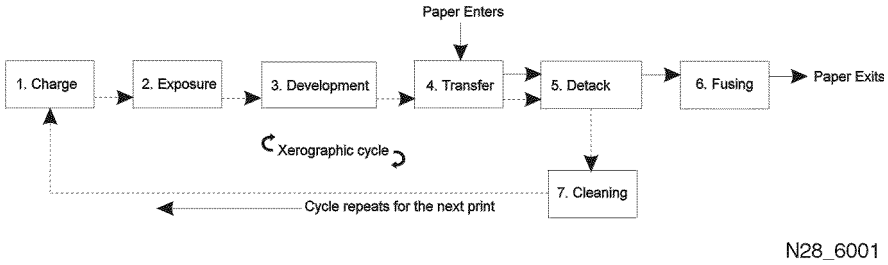


Figure 1 Xerographic Process

The drum surface is passed through the Charge, Expose, Develop, Transfer, Detack, and Clean steps by rotating the drum to form an image of toner on the drum surface and transfer the toner image to paper. Paper is passed through the Transfer, Detack, and the Fuse steps by the paper transportation mechanism and is registered to the image to transfer the toner image from the drum surface to it and to fix the toner image.

Figure 2 the major components that are directly related to the print process and the paper transportation.

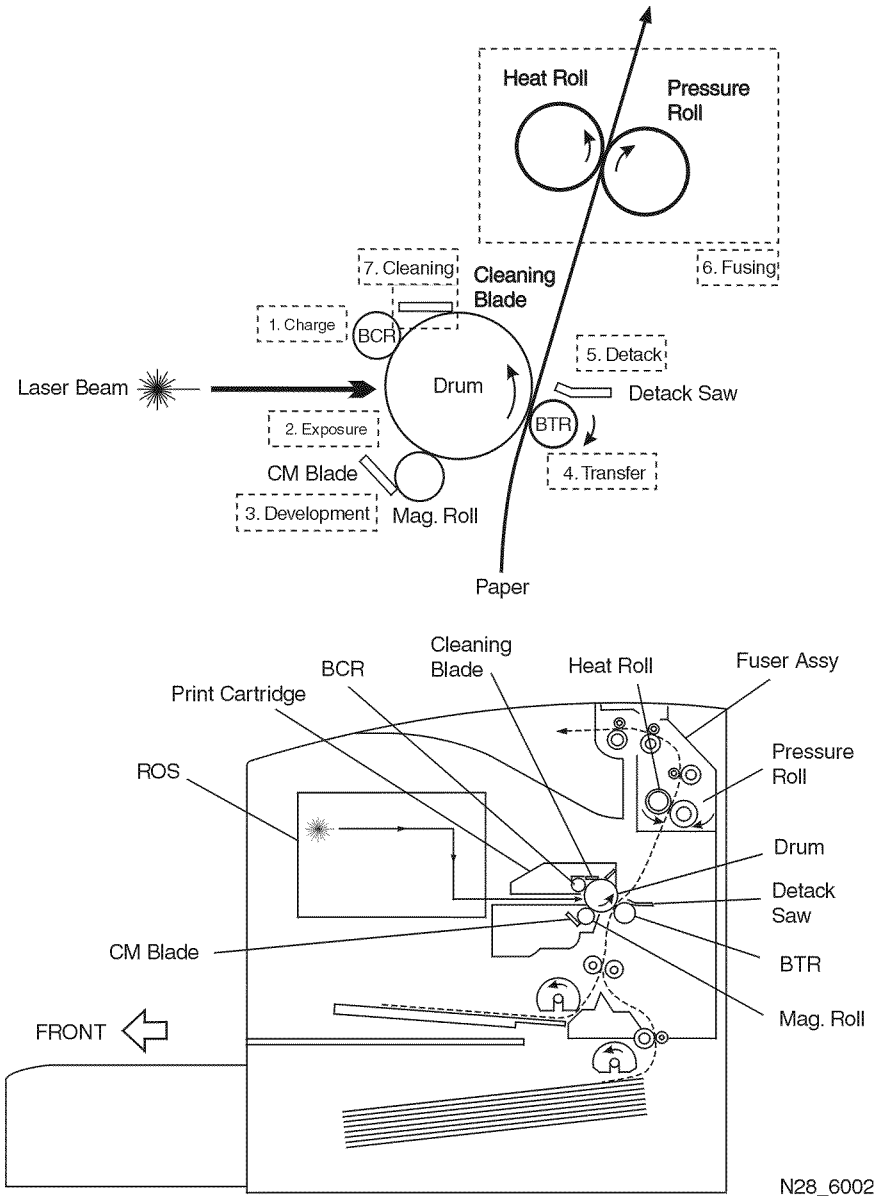


Figure 2 Print Process and Paper Transportation

Print Process Description

1. **Charge**

   This step places a uniform negative electric charge on the drum surface (the outside surface of the photoconductive layer, to be exact*). Figure 3

   The charge is given by the BCR (Bias Charge Roll) in the Print Cartridge. The BCR is a conductive roll disposed in direct contact with the drum surface. A discharge voltage is applied to the BCR from the HVPS. The discharge voltage is an AC voltage with a negative DC bias voltage superimposed. The AC voltage is controlled by constant-current regulation. The discharge occurs in the very small gaps between the BCR and the drum surface.

   Any unevenness in the charge on the drum surface resulting from the previous cycle is leveled by the AC discharge between the BCR and the drum surface, and the drum surface is uniformly charged again to the same voltage as the DC bias voltage with respect to the inner conductor of the drum.

   *The drum is an aluminum cylinder with a coating of photoconductive material on the surface.

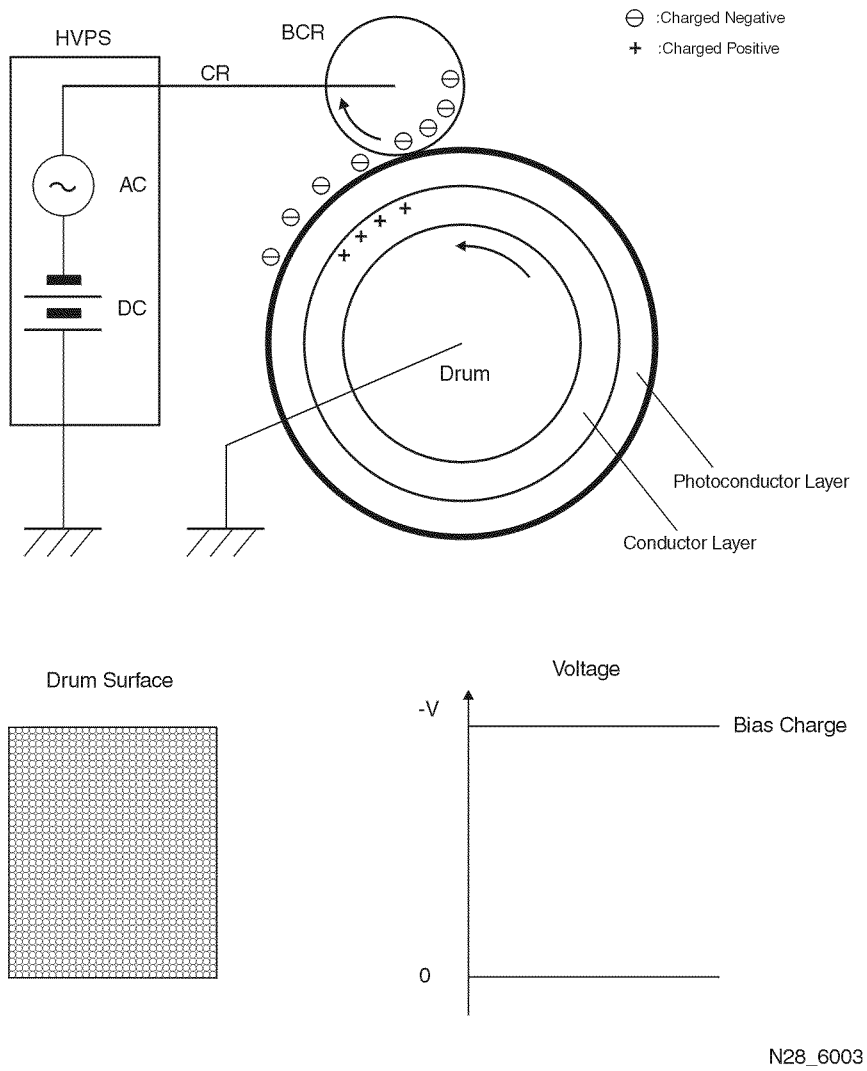


Figure 3 Charge

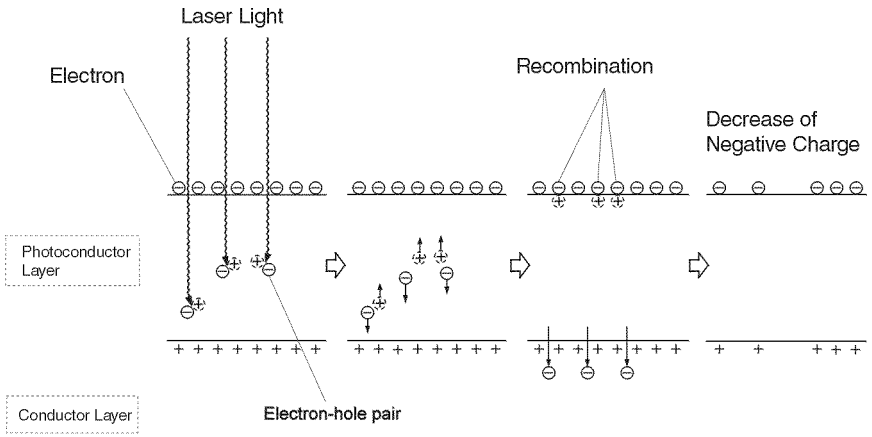
2. **Exposure**

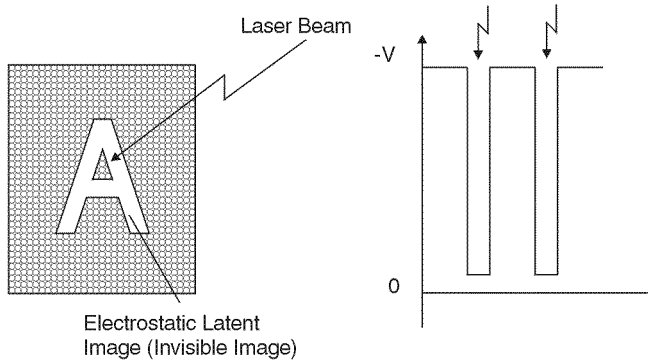
   This step scans the negative charged drum surface with a thin beam of laser light. Figure 4

   The laser light beam is emitted by the laser diode in the Laser (Raster Output Scanner) and shines onto the drum surface being moved from one side to the other by means of the rotating polygon mirror and mirrors and lenses in the Laser.

The laser light beam is modulated according to the Video signal from the Controller: switched on when the video signal denotes a black pixel point and off when it denotes a white pixel point. This is known as a “write black” system.

The laser beam shining onto the drum surface generates electron-hole pairs in the photo-conductive layer by exciting electrons to the conduction band and thereby creating holes in the valence band. The electrons are attracted by the electric field and move toward the inner conductor of the drum to flow into it. The holes move toward the outside surface of the photoconductive layer and recombine with the negative charge (electrons) on the surface, decreasing the negative charge there. The resulting less negative charged parts on the drum surface form an invisible electrostatic latent image.





N28_6004

Figure 4 Exposure

3. **Development (1/2)**

This step attracts toner over the electrostatic latent image on the drum surface to form a visible toner image. Figure 5

This printer uses non-conductive magnetic toner that is easy to transfer to plain paper. In the Print Cartridge, the toner is supplied from the toner compartment to the Magnet Roll. The toner is attracted to the surface of the Magnet Roll by the magnetism of the Magnetic Roll. The CMB (Charging and Metering Blade) spreads the toner on the Magnetic Roll into a very thin layer with a silicone rubber blade. The toner is given a negative electric charge by the friction with the silicone rubber. As the Magnet Roll rotates, the toner is transported to the gap between the drum and the Magnet Roll to contact the drum surface at the nip.

The Mag. Roll is covered with a thin, semi-conductive sleeve. A DB (Development Bias) voltage is applied to the Conductive Sleeve from the HVPS Figure 6. The DB voltage is a negative DC voltage with an AC voltage superimposed. The DB voltage retains the Magnetic Roll at a DC electric potential between the electric potential of the areas on the drum surface with a full negative charge and that of the areas on the drum surface with the decreased negative charge with respect to the conductive layer of the drum (i.e., the latent image), thereby generating an electric field that attracts the negative charged toner to the areas on the drum surface with the decreased negative charge and repels it from the areas wit the full negative charge, in the gap between the drum and the Magnet Roll. The “Knob Volume Deve” on the HVPS varies the DB voltage slightly acting as a fine tuning control over the amount of development that takes place.

In the presence of this development bias field, the toner transfers selectively to those areas with the decreased negative charge.

The AC voltage agitates toner particles, making toner transfer easier and causing extra toner on the drum surface to migrate back to the Magnet Roll.

The invisible electrostatic latent image on the drum surface is thus developed into a visible toner image.

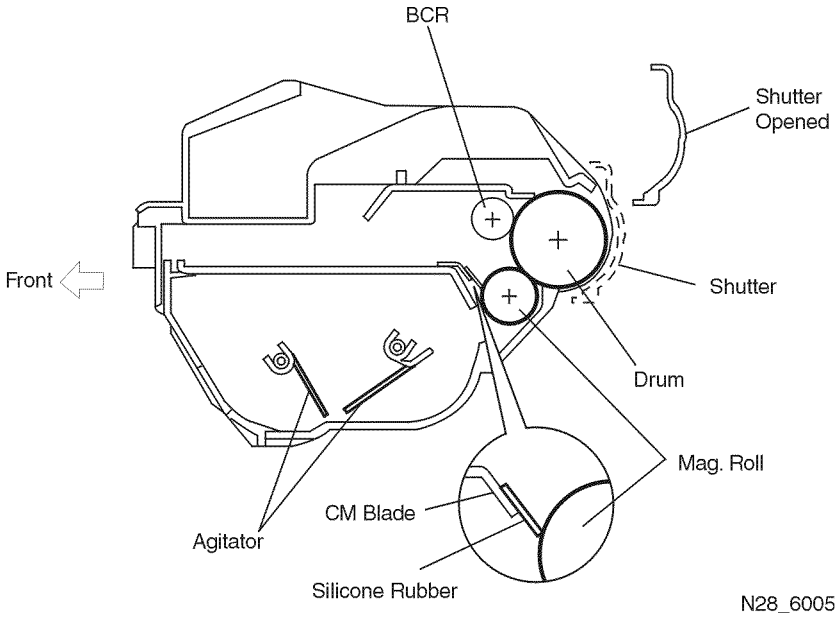


Figure 5 Development Components

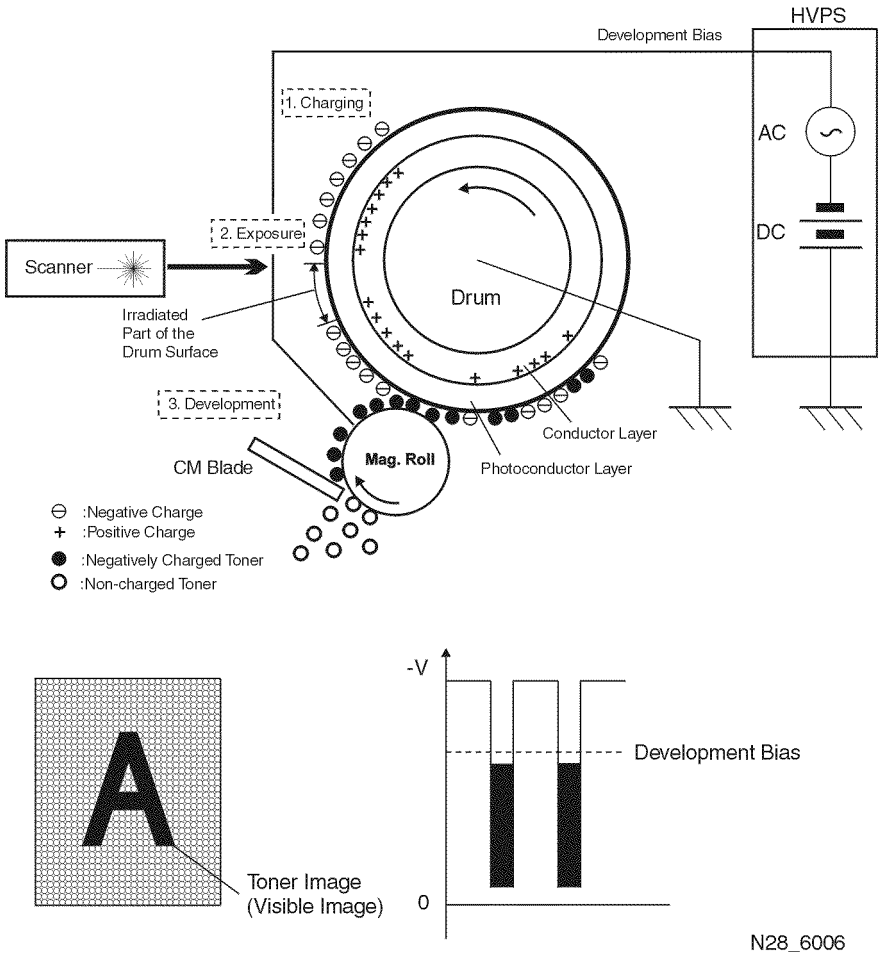


Figure 6 Developer Bias

4. **Transfer**

This step transfers the toner image from the drum surface to paper Figure 7.

The BTR (Bias Transfer Roll) applies a positive charge to the back side of the paper when the paper travels between the BTR and the drum. The negatively charged toner image transfers from the drum surface to the front side of the paper because it is attracted by the positive charge on the back side of the paper.

The positively charged paper sticks to the drum surface because it is attracted by the negative charge on the drum surface.

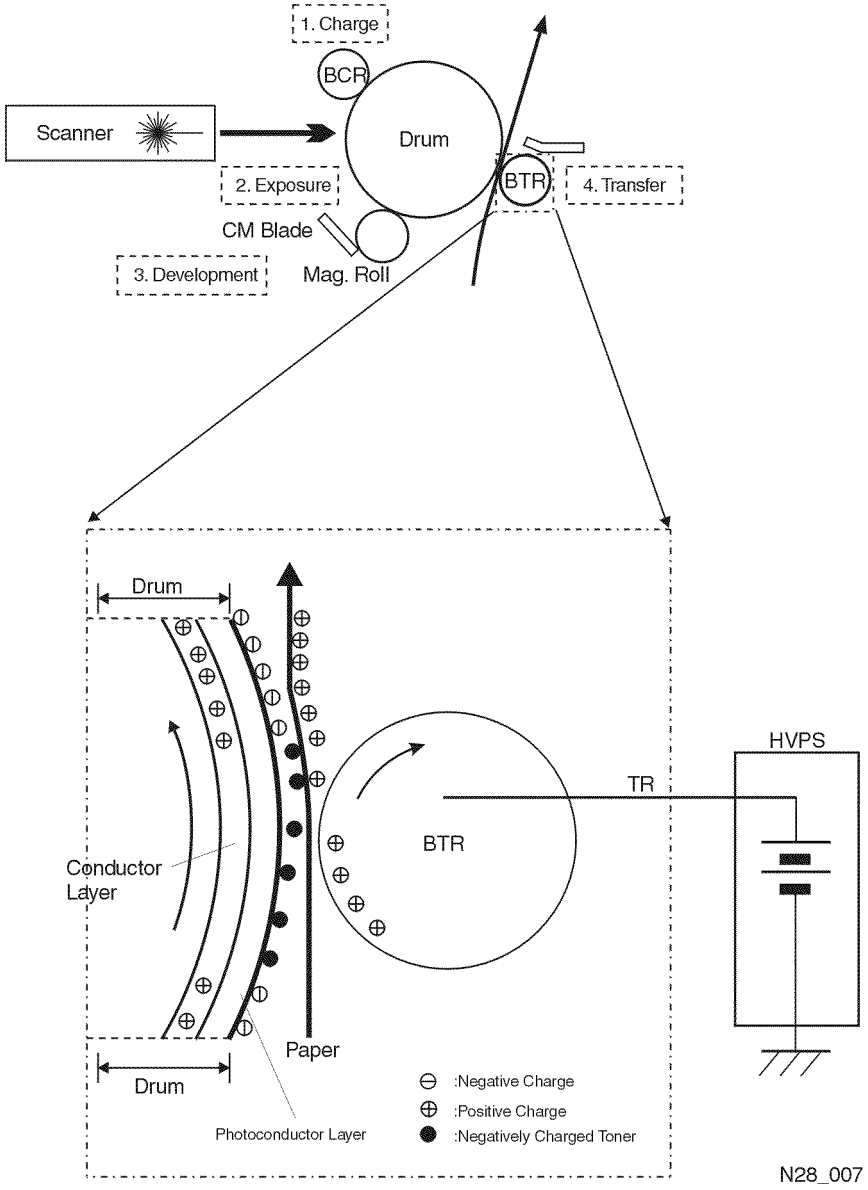


Figure 7 Transfer Process

5. **Detack**

   This step helps the paper peel off the drum surface Figure 8.

The Detack saw applies a negative charge to the back side of the paper to neutralize the positive charge that was applied by the BTR. By this neutralization of charge, the attractive force which causes the paper to stick to the drum surface disappears, and the paper peels off the drum surface because of its mechanical stiffness.

The negative charge is low enough to avoid disturbing the transferred toner image on the paper.

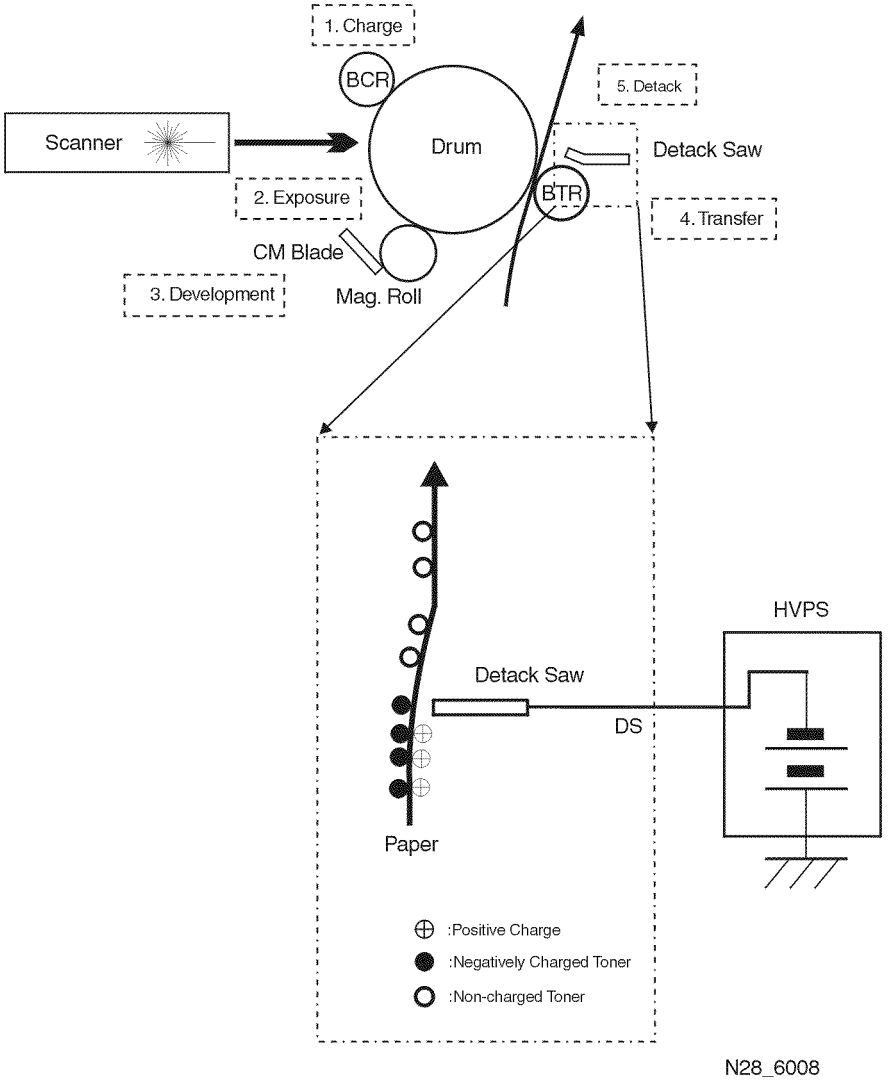


Figure 8 Detack

6. **Fuse**

   This step permanently fixes the toner image to the paper.

The toner image on the paper transferred from the drum surface is easily disturbed by a light touch with fingers. The paper with the transferred toner image must be passed through the Fuser assembly to fix the toner image to the paper. The toner is melted and bonded to the paper by heat and pressure applied by the Heat Roll and Pressure Roll of the Fuser assembly.

7. **Cleaning**

This step removes the remaining toner from the drum surface to prepare the drum surface for the next cycle.

The toner is scraped off the drum surface with the cleaning blade. Figure 9

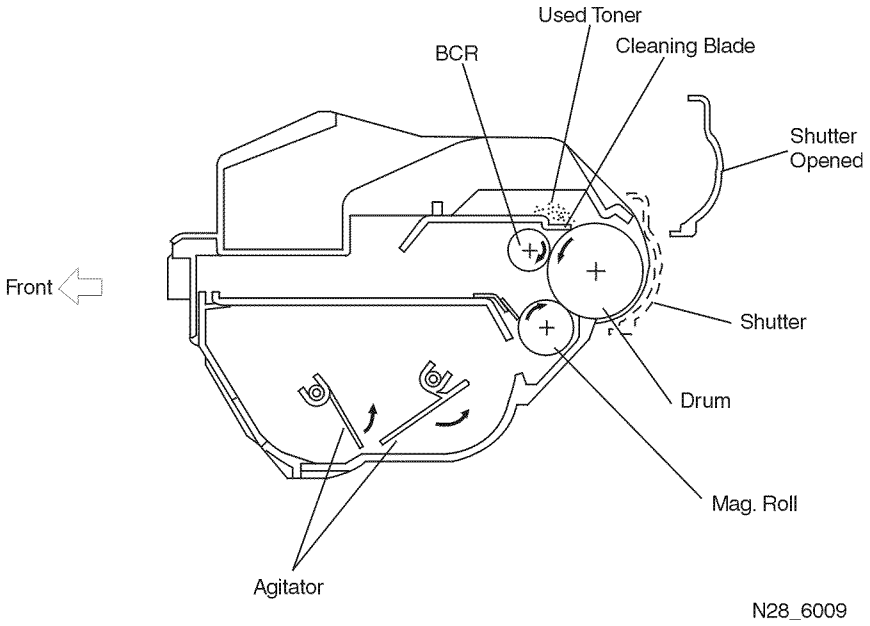


Figure 9 Cleaning

NOTE: *The toner scraped off by the Cleaning step is collected in the used toner compartment separate from the fresh toner compartment. The transfer rate is greater than 90%, but varies according to the image coverage and the environmental conditions such as temperature and humidity. Used toner cannot be used again.*

At the beginning of each printing operation, the whole drum surface is scanned with the laser light to completely remove any charge on the drum surface remaining from the previous printing operation.

At the beginning and end of each consecutive printing operation, a high negative voltage is applied to the BTR to clean the BTR surface by transferring any toner which has stuck to the BTR during the previous printing operation to the drum surface.

GP 5.2 Paper Transportation

Paper is fed from the Tray for the MBF (Multi Sheet Bypass Feeder) and transported through the printer to the exit along the paper path shown below. Figure 1

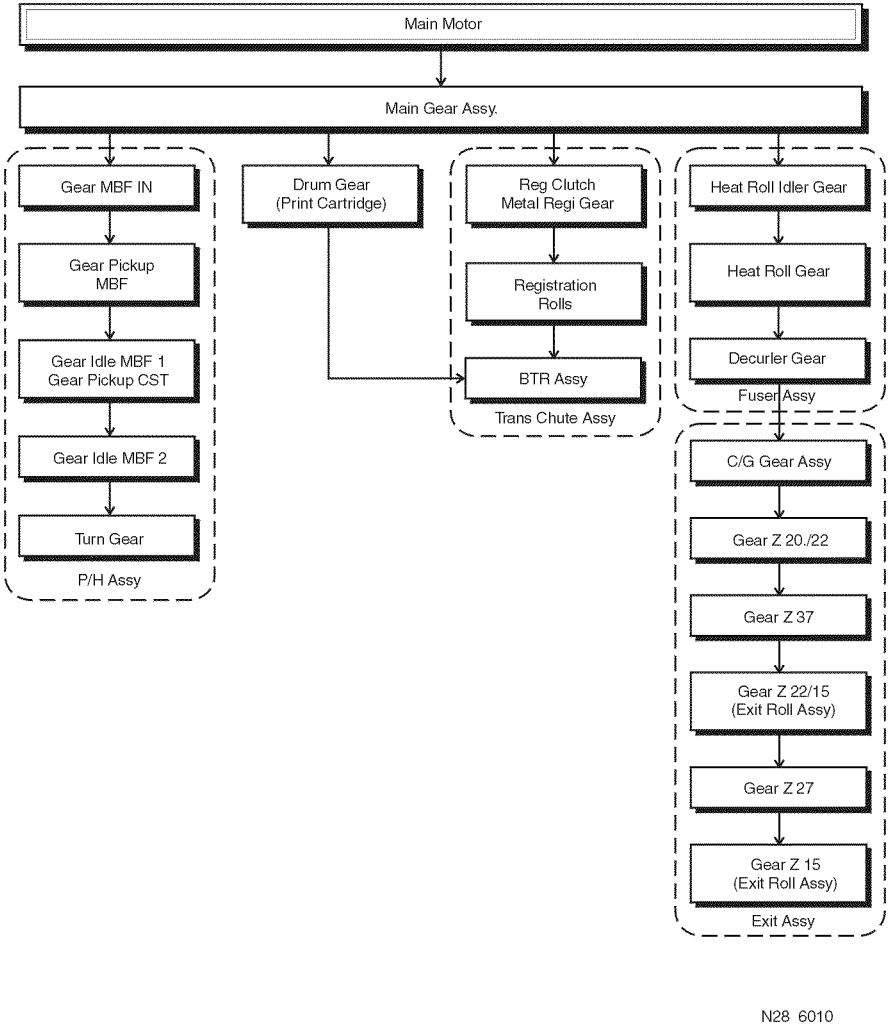


Figure 1 Paper Path

The figure below is a cut-away side view of the N2025/N2825 printer that shows the paper paths and the major components directly related to the paper transportation Figure 2. For the paper paths and the major components directly related to the paper transportation when the 500 Sheet Feeder units (Tray 2, Tray 3, High Capacity Feeder and Duplex) are installed, refer to the options service manual.

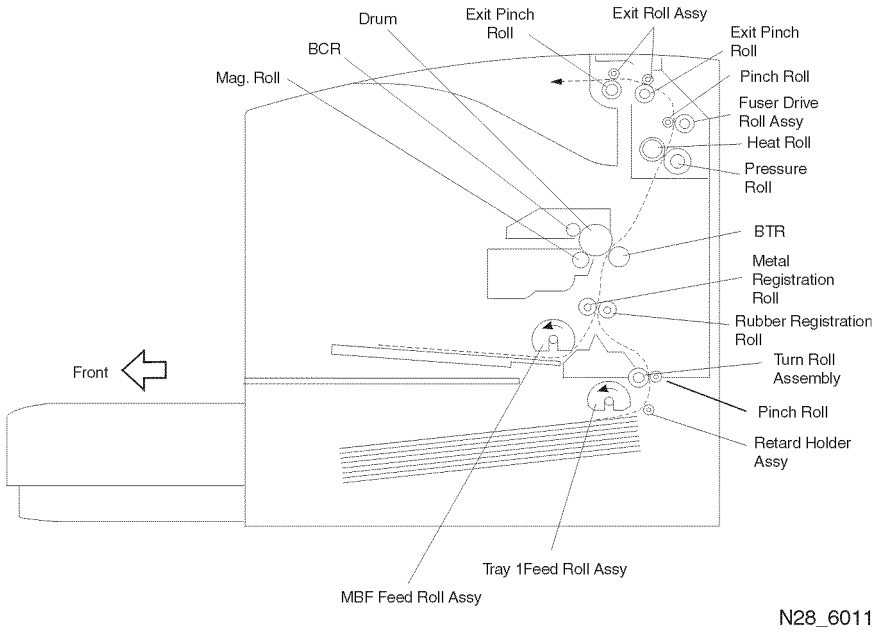


Figure 2 Paper Path Components

GP 5.3 Print Image Creation

The printers NIC (Network Interface Card) connected to the network receives packets from a client or the server on the network in a bit stream, and disassembles the received packets into the data format for the layer in which the data is passed to the Controller. The Controller handles the data from the NIC in the same manner as the data that it receives from the host computer through the parallel port. (Both types of data are referred to as host data.)

The Controller buffers the host data in rasterized bit image data or converted host data in a PDL (Page Description Language) into rasterized bit image data. The Controller sends this rasterized bit image data to the Print Engine Controller PWB line by line for each scan of the laser beam.

The signal conveying image data (/VDO signal) is sent from the Controller to the Laser via the Print Engine Controller PWB. The signal is passed through the Print Engine Controller PWB to the Laser as the /P.DATA signal as received from the Controller without buffering or processing. In the Laser, the signal is converted into laser light which is emitted in a very thin beam being switched on and off according to the video signal. The laser light beam is reflected off the surface of the rotating Polygon Mirror, then it is focused by a series of lenses and onto the surface of the drum in the Print Cartridge. As the result, and electrostatic latent image is produced on the drum surface Figure 1.

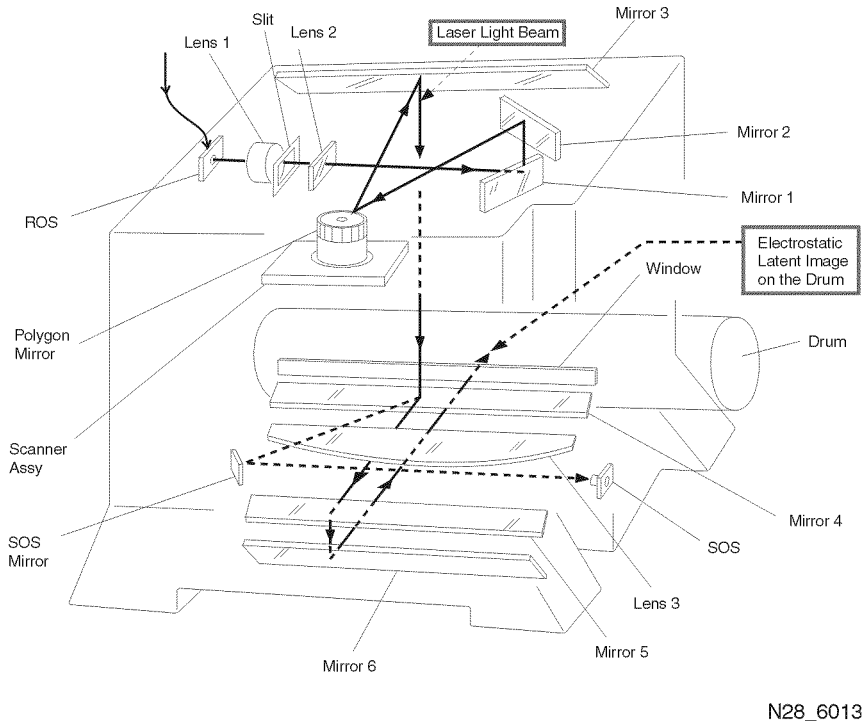


Figure 1 Print Image Creation

GP 5.4 Drive Power Transmission

The drive power is generated by the Motor: Main and transmitted through the Gear Assembly: Main and the gear trains to the printer components requiring mechanical drive.

As shown in the Figure below and the Figure on the next page, the drive power is distributed by the Gear Assembly Figure 1: Main to the P/H Assembly, the Print Cartridge, the Chute Trans Assembly and the Fuser Assembly.

The drive power transmitted to the P/H Assembly is then transmitted, through the Gear MBF IN, to the MBF Feed Roll Assembly, the Roll Assembly Feed ENV and the Turn Roll Assembly.

The drive power transmitted to the Chute Trans Assembly drives the Metal Registration Roll and Rubber Registration Roll.

The drive power transmitted to the Print Cartridge drives the Drum, and then it is transmitted to the BTR in the Chute Trans Assembly through the Drum Gear.

The drive power transmitted to the Fuser Assembly drives the Heat Roll and the Drive Roll Assembly Fuser. The power is further transmitted to the Roll Assembly Exit through the Decurler Gear.

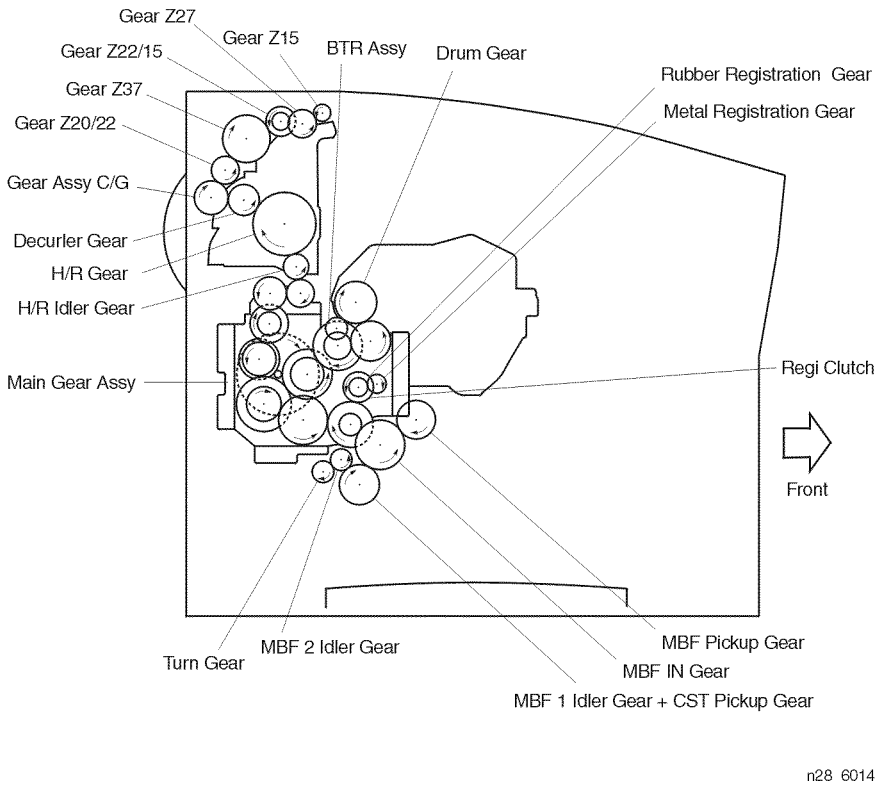


Figure 1 Drive Power Gear Assembly

GP 5.5 Drive Power Transmission to the MBF Feed Roll Assembly (or CST) (1 of 2)

The drive power generated by the Motor: Main is transmitted to the MBF Feed Roll Assembly (or ENV) of the P/H Assembly through the Gear Assembly: Main and the Gear MBF IN Figure 1.

Each time the MBF Feed Solenoid (or CST) is actuated, the MBF Pick Up Gear (or CST) is pulled into engagement by the Spring Pick Up (or the Spring), and rotates one turn. Then, it disengages from the Gear MBF IN. Driven by this MBF Pick Up Gear (or CST) rotation, the MBF Feed Roll Assembly (or ENV) rotates one turn and feeds one sheet of paper from the MBF (or the Cassette Assembly) into the printer.

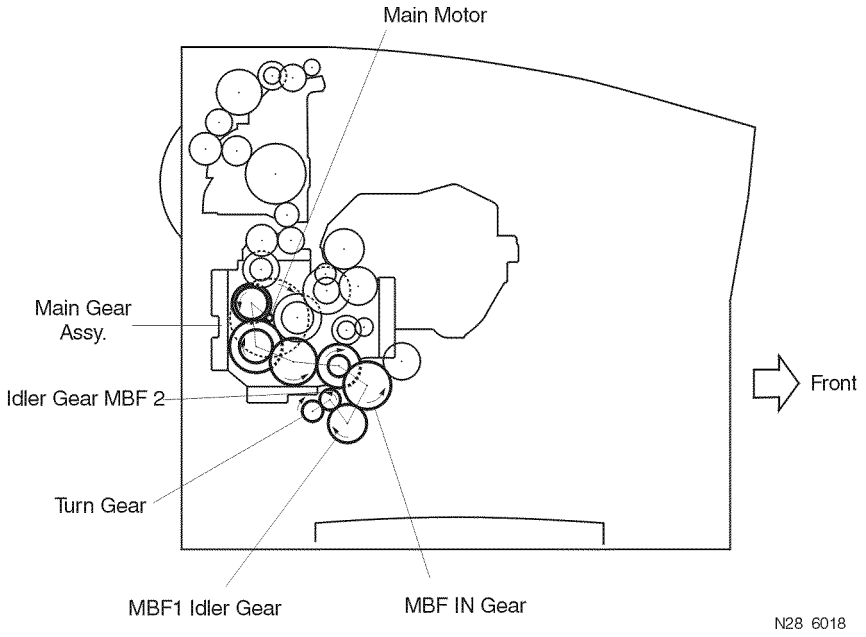


Figure 1 Drive to MBF Feed Roll Assembly

GP 5.6 Drive Power Transmission to the Feed Roll Assembly (or CST) (2 of 2)

See the figure below Figure 1.

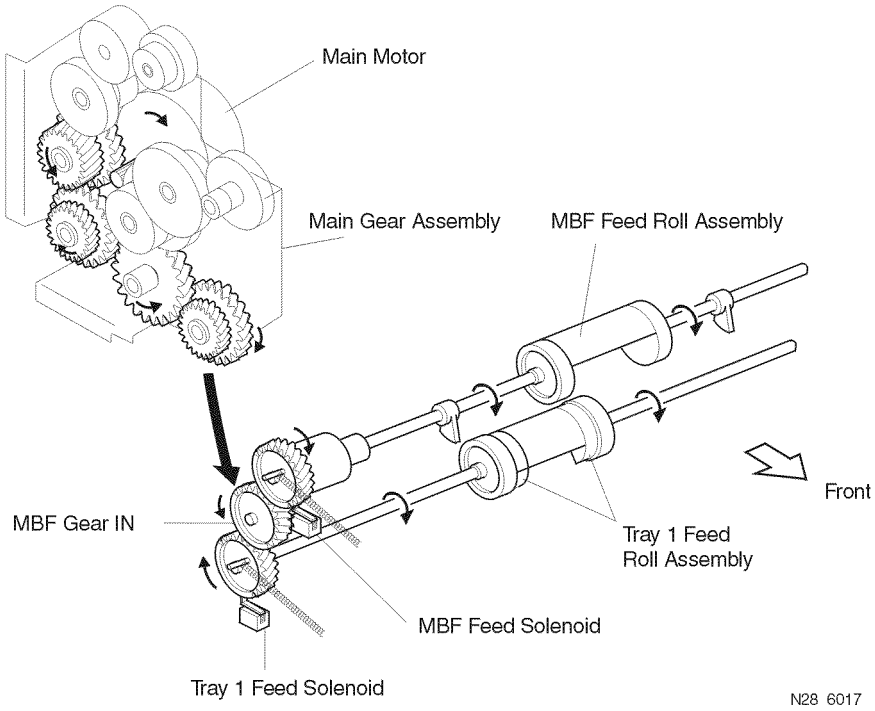


Figure 1 Drive to Feed Roll Assembly

GP 5.7 Drive Power Transmission to the Turn Roll Assembly

The drive power generated by the Motor: Main is transmitted to the Turn Clutch Assembly of the Turn Roll Assembly through the Gear Assembly: Main, the Gear MBF IN, the Gear Idle MBF 1, and the Gear Idle MBF 2 Figure 1.

When the Turn Clutch Assembly is activated, the drive power in transmitted through the Turn Clutch Assembly to the Gear Turn and the Rolls on the same shaft as the Turn Clutch Assembly are put on. Figure 2.

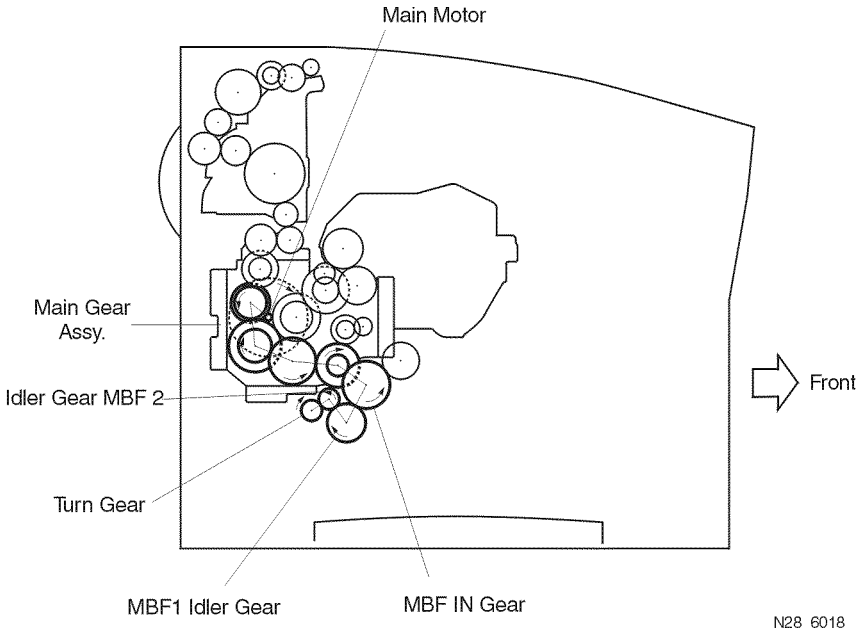


Figure 1 Drive to Turn Roll Assembly

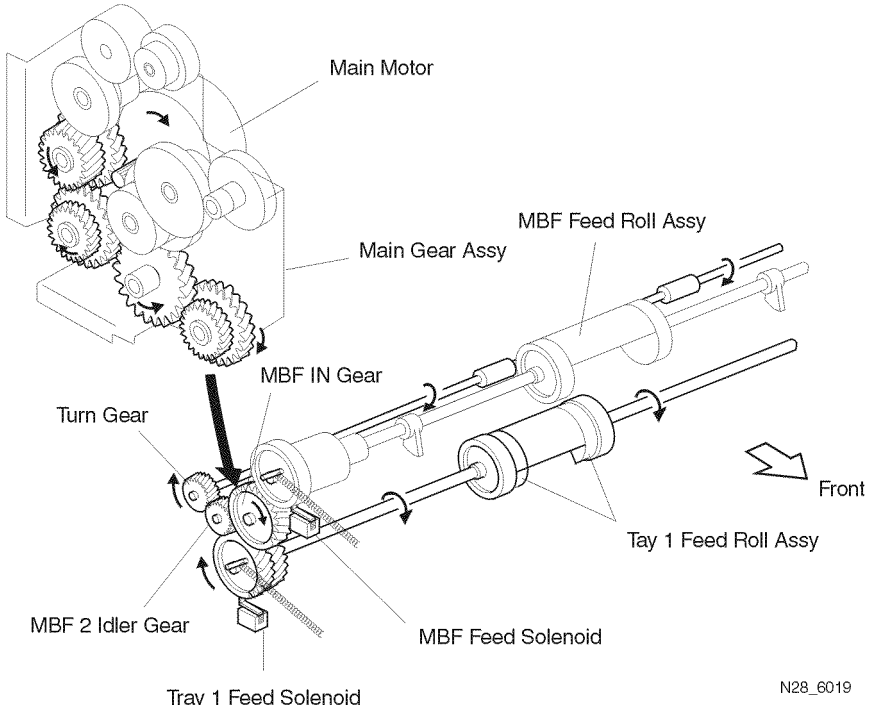


Figure 2 Drive to Feed Roll Assembly

GP 5.8 Drive Power Transmission to the Registration Rolls

The drive power generated by the Motor: Main is transmitted to the Registration Clutch through the Gear Assembly: Main. Figure 1 & Figure 2

When the Registration Clutch is activated, the drive power is transmitted through the Registration Clutch to the Rubber Registration Gear (the Rubber Registration Roll).

The drive power is further transmitted through the Rubber Registration Gear to the Metal Registration Gear (the Metal Registration Roll).

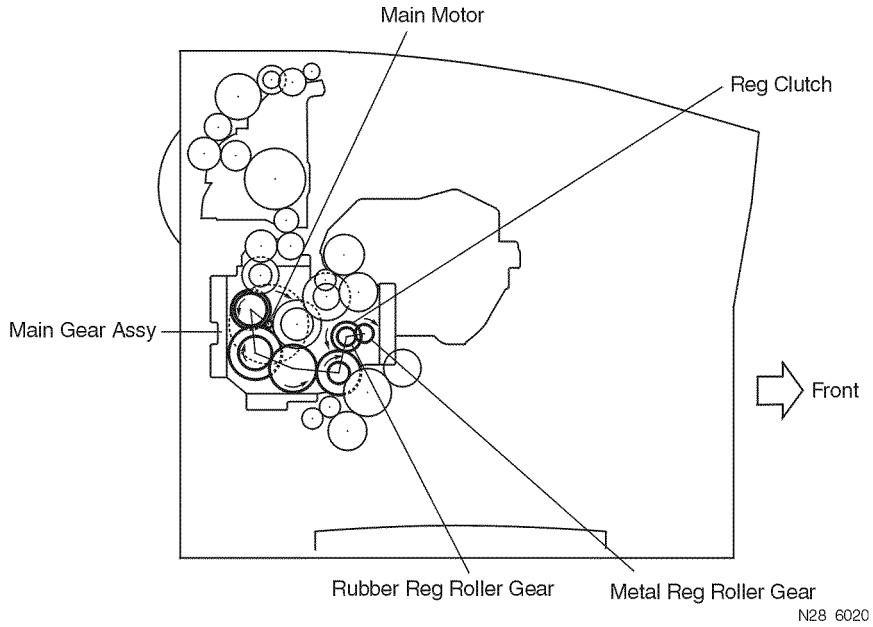


Figure 1 Drive to Registration Rolls

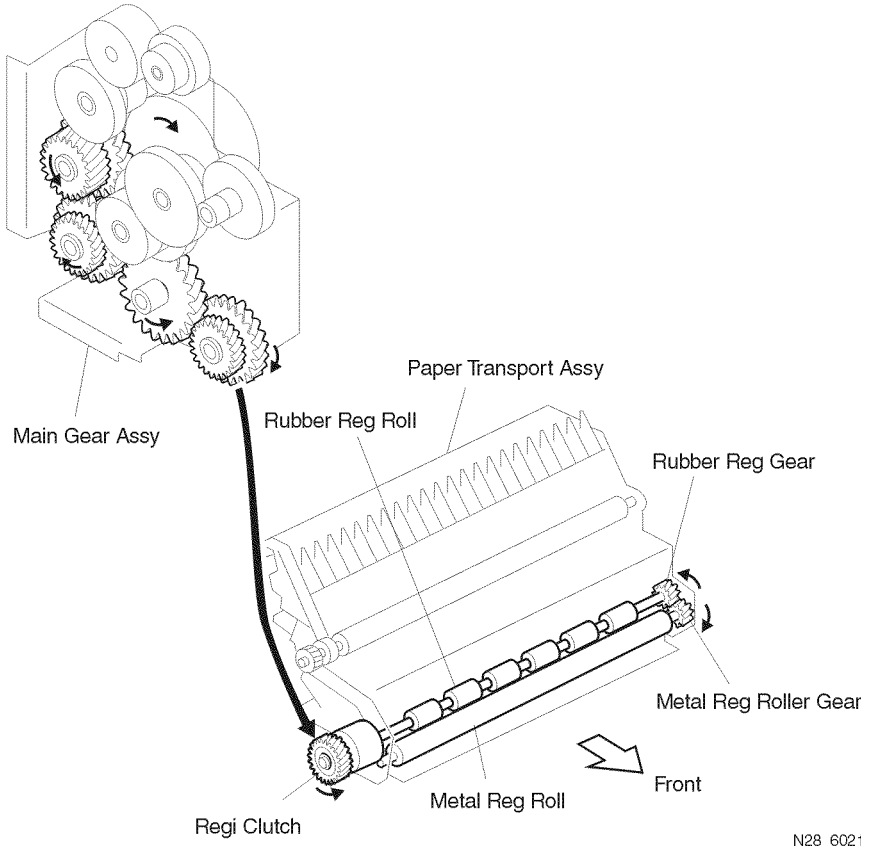


Figure 2 Registration Rolls

GP 5.9 Drive Power Transmission to the Drum and the BTR Assembly

The drive power generated by the Motor: Main is transmitted to the Drum in the Print Cartridge through the Main Gear Assembly: Figure 1 & Figure 2

The drive power is further transmitted from the drum to the BTR Assembly.

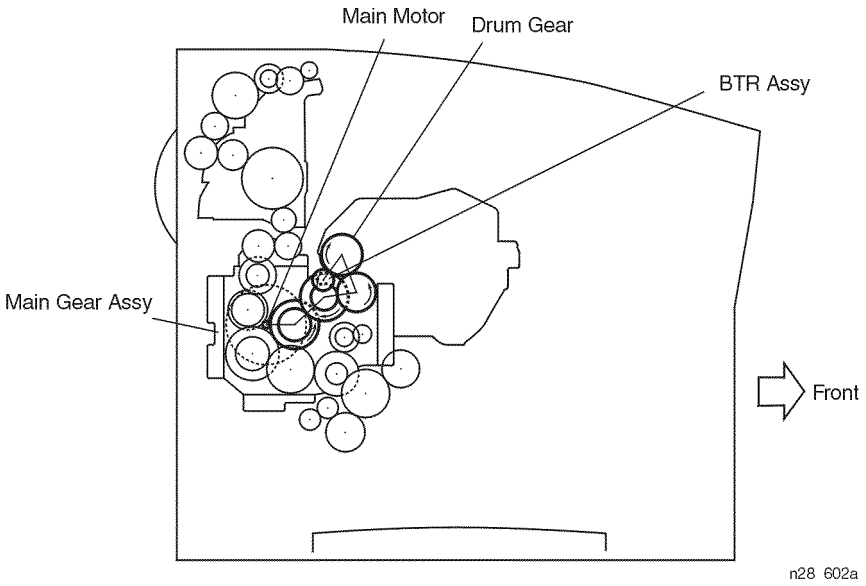


Figure 1 Drum and BTR Drives

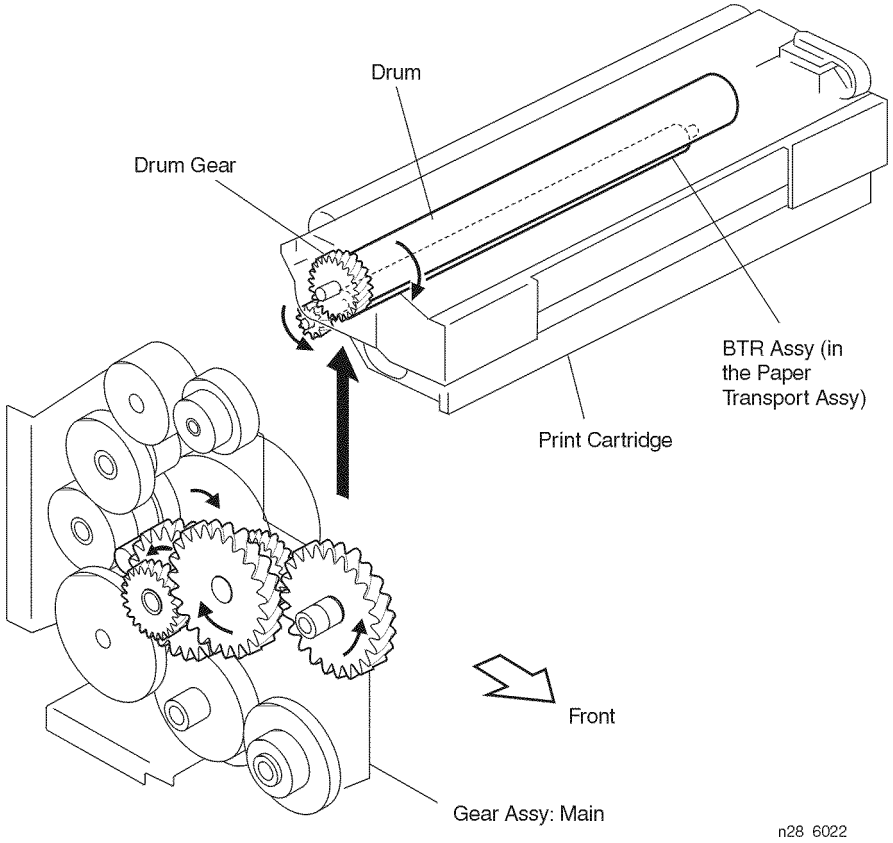


Figure 2 Drum and BTR Drives

GP 5.10 Drive Power Transmission to the Fuser and the Exit Roll Assembly

The drive power generated by the Main Motor is transmitted to the Fuser through the Main Gear Assembly. Figure 1 & Figure 2

The drive power transmitted to the H/R Gear is further transmitted to the Gear Assembly C/G (Exit Assembly) through the Decurler Gear.

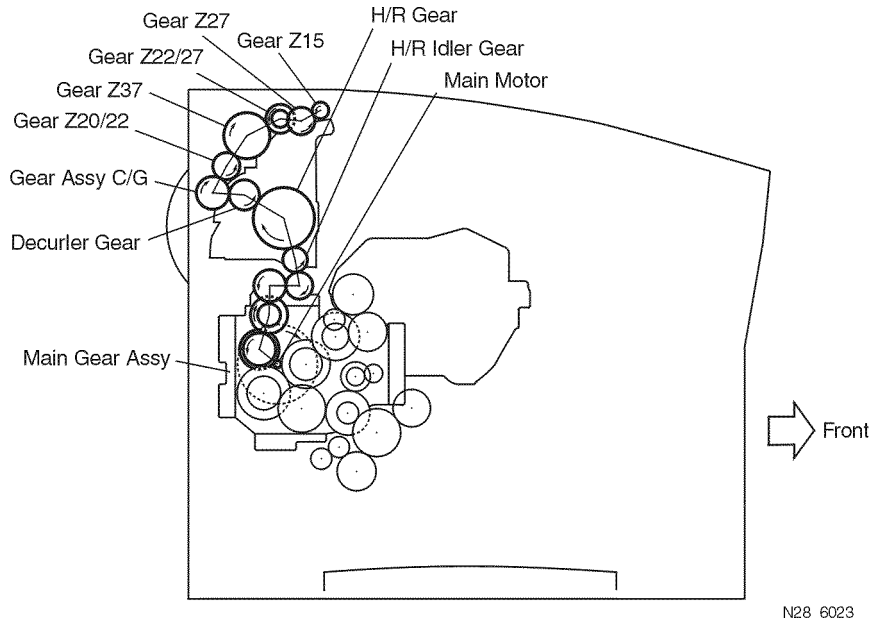


Figure 1 Fuser and Exit Roll Drives

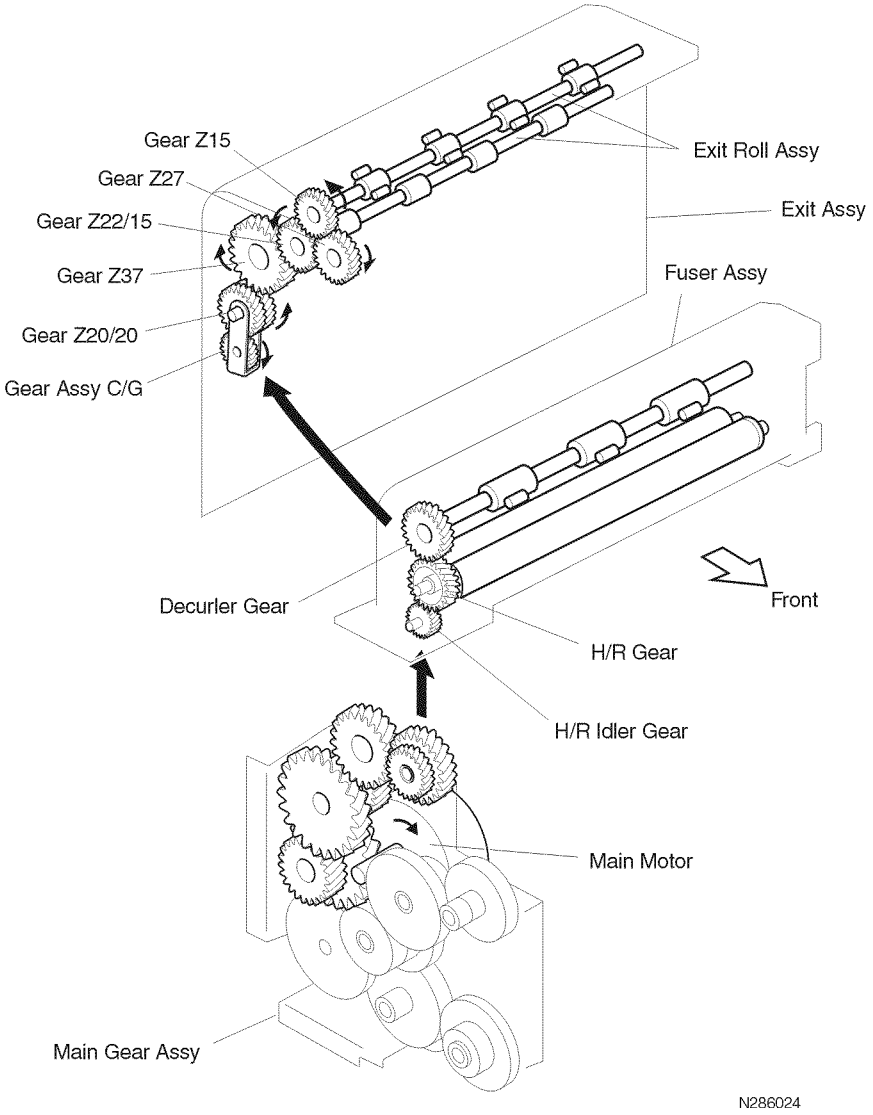


Figure 2 Fuser and Exit Roll Drives

GP 5.11 Tray1/2/3 Assembly

Side Guide PLT (Left and Right) - Figure 1

Can be adjusted left and right to accommodate different paper sizes. They contact the left and right sides of the paper stack and hold the paper stack in place in the left and right direction.

The Side Guide PLT L and R are able to move together smoothly by pushing down the Lever side R to the positions where they hold the left and right corners of the front end of the paper stack.

End Guide -

Can be adjusted in the front and rear direction to accommodate different paper sizes. It contacts the back (far side) of the paper stack and holds the paper stack in place in the front and rear direction.

When the Guide End is moved to come into contact with the rear side of paper stack, the Cam Size at the left side of the Cassette Assembly turns to the position in which it presses the Actuators Size of the feeder with a pattern of projections corresponding to the paper size. The depressed Actuators Size in turn actuate the Switches Size. The size of the paper loaded in the Cassette Assembly is thus detected by the pattern of actuated Switches Size.

The Cam Size has different patterns of projections predetermined for the sizes of paper the Cassette Assembly can hold.

Bottom Plate -

The force pressing up the Plate Bottom is provided by the three springs. The Plate Bottom is pressed up by these springs to ensure the contact with paper to be fed and the Feed Roll of the Tray Feed Assembly.

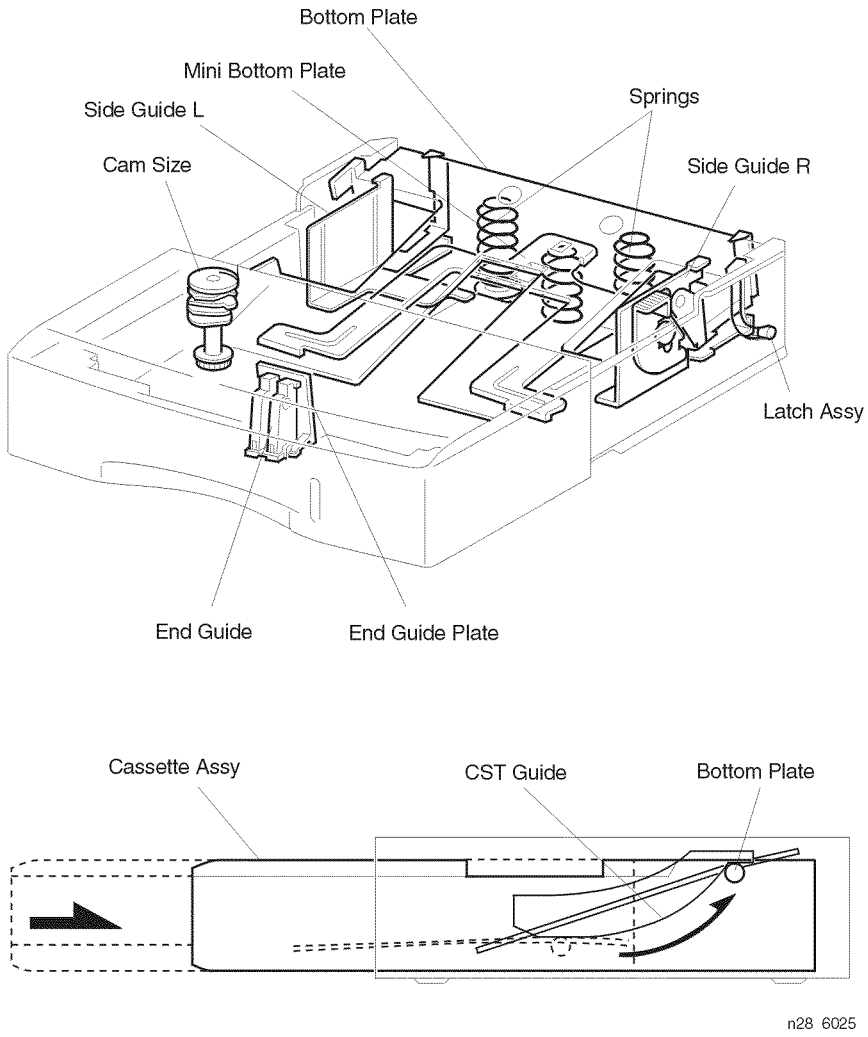


Figure 1 Cassette Assembly

GP 5.12 Feeder

Size Switch – Figure 1

Detects the paper size in the Cassette Assembly. The switch is actuated by the Cam Size corresponded to the paper size. The contact signal is detected by the Print Engine Controller PWB and then the bit information of STATUS 7 which represents the paper size is returned to the Controller.

Low Paper Sensor - Figure 2

Detects the Low Paper State of the Cassette Assembly by the Low Paper Actuator. When the Low Paper State, the longer arm of the actuator which end contacted on the Latch Assembly is pushed up by the Latch Assembly and the shorter arm, opposite side of the fulcrum, is pushed down and actuates the Low Paper Sensor.

MBF Home Switch –

Detects the completion of the Cassette Assembly insertion in the Feeder.

Retard Holder Assembly –

Prevents extra sheets of paper from being fed from the Cassette Assembly by the function between the paper and the rubber roll of the Holder Assembly Retard and ensures the feeding of only one sheet of paper.

Lower Turn Roll Assembly –

This assembly transports the paper fed from the Option Feeder installed below this Feeder. The drive power is delivered from the Feed 2 Motor through the Gear Turn/L.

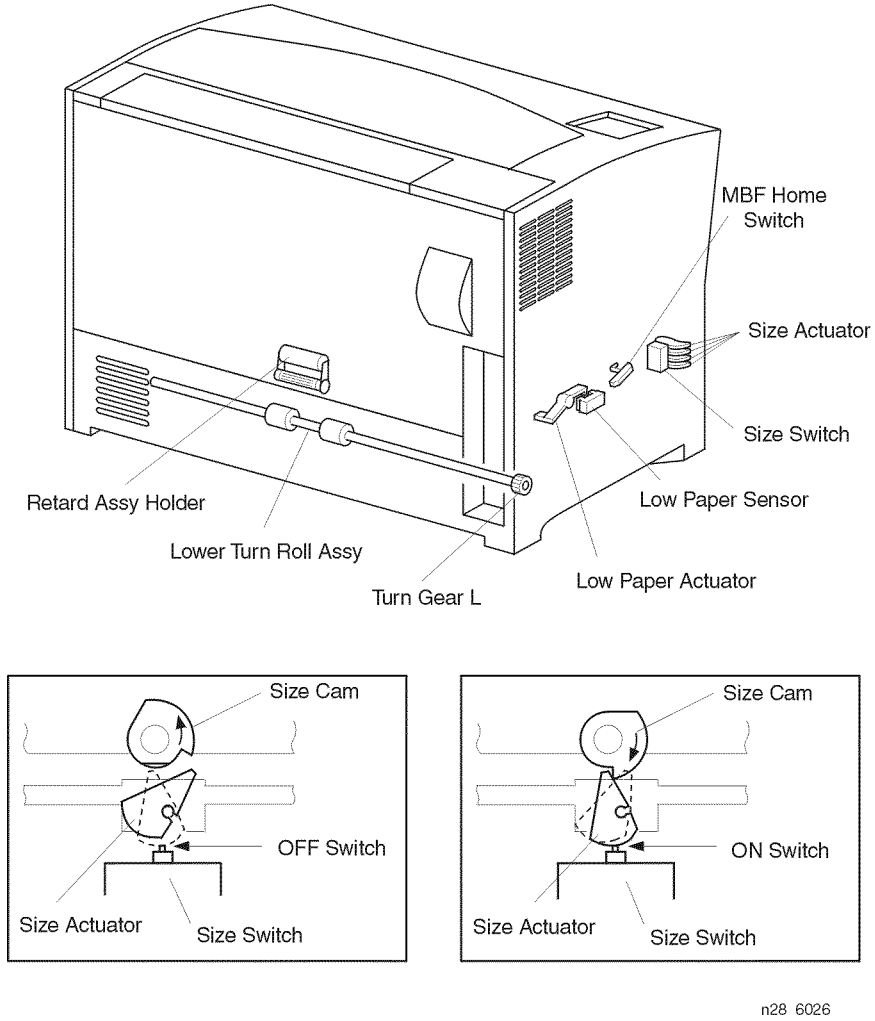


Figure 1 Size Switch

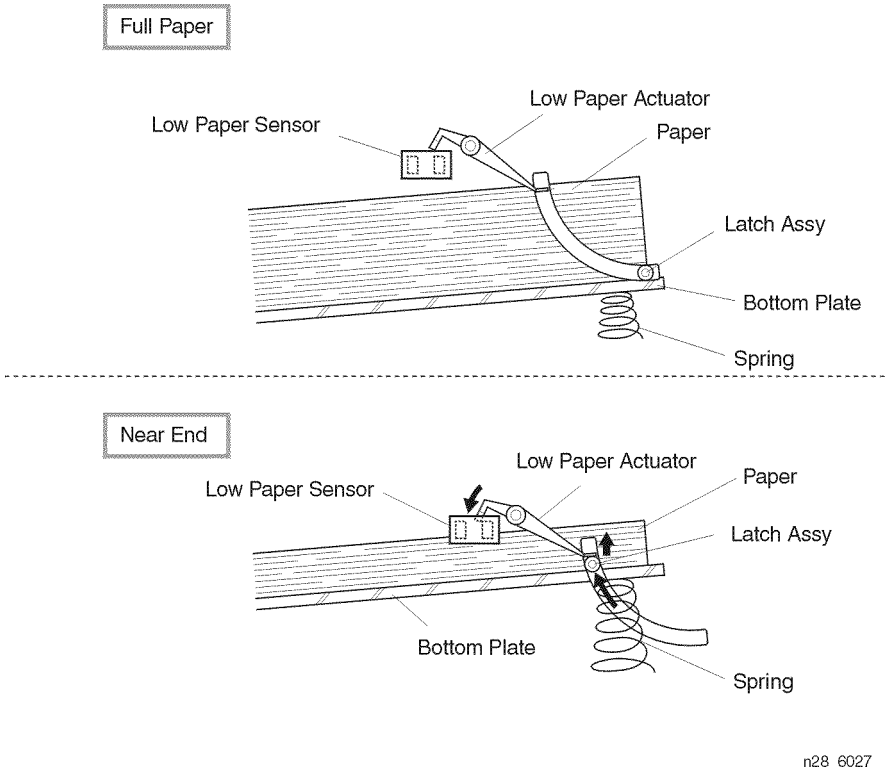


Figure 2 Full and Near End Sensors

GP 5.13 MBF Assembly

MBF Tray Assembly – Figure 1

Holds paper for the front feed (bypass feed). The MBF Tray Assembly is depressed by the Pick Up Cams of the MBF Feed Roll Assembly when paper is not being fed. When the paper is about to be fed, the Pick Up Cams move off the MBF Tray Assembly because of the rotation of the MBF Feed Roll Assembly and release the MBF Tray Assembly. The MBF Tray Assembly is therefore pushed up by the spring to press the paper against the MBF Feed Roll Assembly and generates the friction necessary for feeding a sheet of paper.

MBF Feed Roll Assembly –

Feeds a sheet of paper from the Tray Assembly MBF by the one turn of the roll on the Shaft Pick Up each time the MBF Feed Solenoid is actuated.

Tray 1 Feed Roll Assembly –

Feeds a sheet of paper from the Tray 1 Assembly by the one turn of the roll each time the Tray 1 Feed Solenoid is actuated.

MBF Feed Solenoid and MBF Pick Up Gear –

When the MBF Feed Solenoid is actuated, the MBF Pick Up Gear is released and turned by the pulling force of the Spring Pick up to engage with the Gear MSSI IN. The MBF Pick Up Gear then begins to rotate, causing the MBF Feed Roll Assembly to rotate. After one revolution, the MBF Pick Up Gear disengages from the Gear MBF IN because of its sector-shaped cutout and is latched by the pawl of the Solenoid Feed CST.

Turn Roll Assembly –

The rotation of these rolls are controlled on and off by means of the Turn Clutch Assembly to guide the paper between the Metal Registration Roll and the Rubber Registration Roll or hold the pre-fed paper from the Option Feeders on standby just before the Registration Sensor so that the paper can be fed to the printing process immediately when the Controller is ready (when the printer receives /START from the Controller).

When the printer (Print Engine Controller PWB) with the Pre-feed function receives /PRFD from the Controller, it pre-feeds a sheet of paper and halt the pre-fed paper at the pre-fed position just before the Registration Sensor by stopping the rotation of the Turn Roll Assembly. The printer restarts the rotation of the Turn Roll Assembly to resume the transportation of the paper when it receives the subsequent /START.

When the /START is received before the paper reaches the pre-fed position, the printer transports the paper continuously without stopping the rotation of the Turn Roll Assembly. The Printer without the Pre-feed function or the printer with the Pre-feed function when it receives /START without receiving /PRFD feeds a sheet of paper by the normal feed, and transports the paper continuously without stopping the rotation of the Turn Roll Assembly.

Turn Clutch Assembly –

Switches on and off the driver power transmission to the Turn Roll Assembly. When the printer with the Pre-feed function receives /PRFD from the Controller and pre-feeds paper, it de-actuates the Turn Clutch Assembly to stop the rotation of the Turn Roll Assembly and thereby keeps the pre-fed paper waiting just before the Registration Sensor, and then actuates the Turn Clutch Assembly again when it receives the subsequent /START.

Retard Pad –

Prevent extra sheets of paper from fed from the Tray Assembly MBF by the friction between the paper and the rubber of the Pad Retard.

No Paper Sensor –

Detects when the MBF Tray is out of paper.

No Paper Sensor 1 –

Detects when the Tray 1 is out of paper.

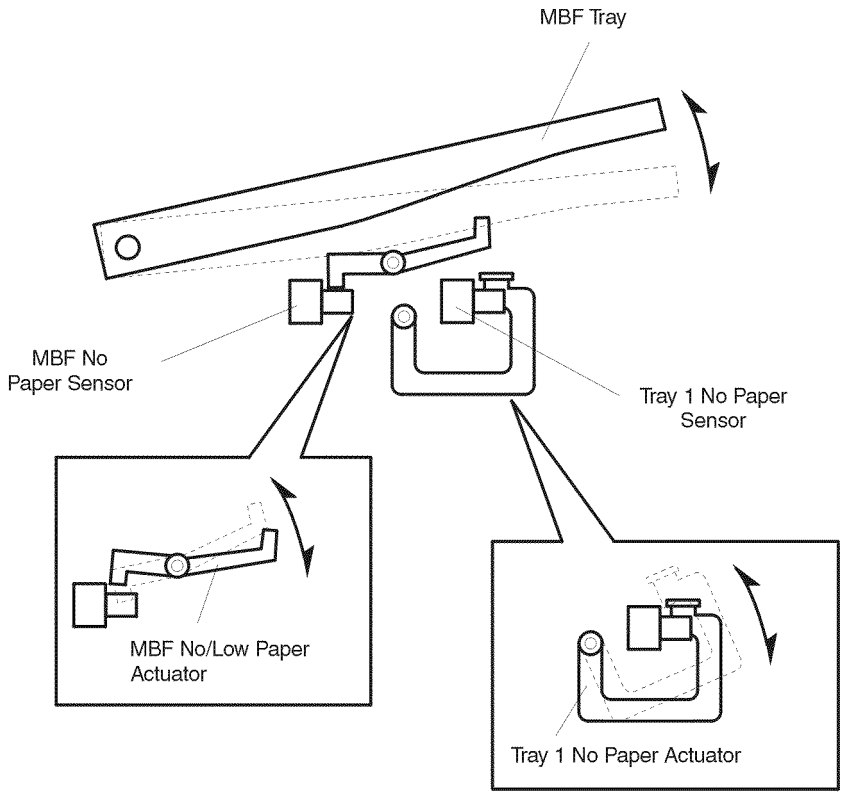


Figure 1 MBF Tray Assembly

GP 5.14 Paper Transport Assembly

BTR Assembly – Figure 1

The Bias Transfer Roll of the BTR Assembly is in contact with the drum in the Print Cartridge. The BTR is driven by the Drum Gear so that the BTR surface moves at the same speed as the Drum surface.

The BTR applies a positive charge to the back side of the paper when the paper travels between the BTR and the drum. The negatively charged toner image transfers from the drum surface to the front side of the paper because it is attracted by the positive charge on the back side of the paper.

Paper Transport Assembly (Includes the following components) –

Metal Registration Roll and Rubber Registration Roll: The rotation of these Rolls is controlled by means of the Registration Clutch so as to register the paper with the image on the drum.

Registration Sensor: Detects the arrival and departure of the paper at and from the registration position.

BTR Bearing: Applies the toner image transferring voltage supplied from the HVPS to the BTR Assembly.

Detack Saw: Imparts a negative charge to the back side of the paper to partially neutralize the positive charge and let the paper peel off the drum.

Zener Diode: Flows the electrostatic charge on the rolls and the paper guiding surfaces around the BTR to the Frame Assembly, maintaining them at a constant voltage with respect to the Frame Assembly. By thus grounding through a Zener diode, the disturbance of the toner image during the transfer is better prevented.

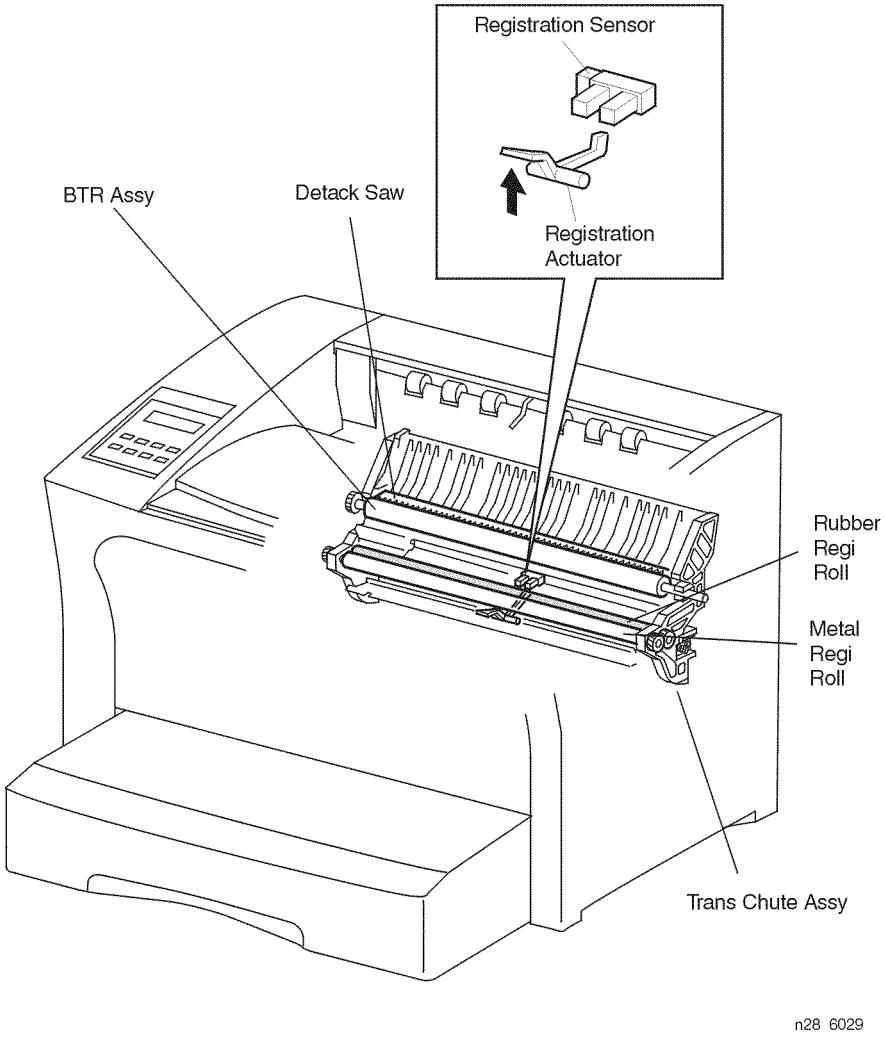


Figure 1 Bias Transfer Roll Assembly

GP 5.15 Exit Assembly and Fuser

The Fuser Assembly includes the components for fusing (to permanently fix the toner image on the paper by heat and pressure) and those for ejecting the printed sheets out of the printer. In this manual, only the components for fusing and associated components are often referred to as the Fuser. Figure 1 & Figure 2

Heat Roll –

A hollow, surface-coated metal tube that is heated by the Heater Rod inside it and applies heat to the paper passing between itself and the Pressure Roll. The heat melts the toner on the paper.

Pressure Roll –

A solid, sponge rubber-coated metal shaft that presses the paper between itself and the Heat Roll. The pressure helps bond the toner to the paper.

Heater Assembly –

Consists of a Heater Rod that is a lamp with a heat generating coil sealed in a quartz glass tube and the connectors attached to the ends of the Heater Rod. The Heater Rod is located inside the Heat Roll and heats the Heat Roll.

Temperature Sensor Assembly –

A resistor (thermistor) whose resistance varies sharply in a known manner with the temperature. This sensor is held in contact with the Heat Roll surface and monitors the temperature thereof. The signal from this sensor is used to maintain the temperature of the Heat Roll surface within the specified range by switching the power to the Heater Rod on and off. The signal is also used for the first-stage overheat protection.

Thermostat –

Connected in series with the Heater Rod. The Thermostat functions as the second-stage overheat protection. If the first stage fails to prevent a fuser overheat, the Thermostat opens the power supply circuit to the Heater Rod.

Thermal Fuse –

Connected in series with the Heater Rod. The Thermal Fuse functions as the third-stage overheat protection. If both the first and second stages fail to prevent a fuser overheat, the Thermal Fuse opens the power supply circuit to the Heater Rod.

Fuser Stripper Fingers –

In conjunction the non-stick coating of the Heat Roll to peel the leading edge of the paper from the Heat Roll to prevent the paper from winding around the Heat Roll.

Heat Roll Diode –

There is a negative charge that builds up on the Heater Rod. This charge can disturb the toner image on the paper during fusing. The Heat Roll Diode flows the charge to frame ground.

Exit Sens –

Detects the arrival and departure of the paper at and from the detection point in the exit area after the Fuser.

Stack Full Sensor –

Detects when the Delivery Tray is full of printed sheets.

Exit Gate –

When the 500 Sheet OCT Assembly is installed, the Exit Gate is depressed by the Exit Gate Solenoid Assembly and guides the paper coming out to the fuser into the OCT Assembly.

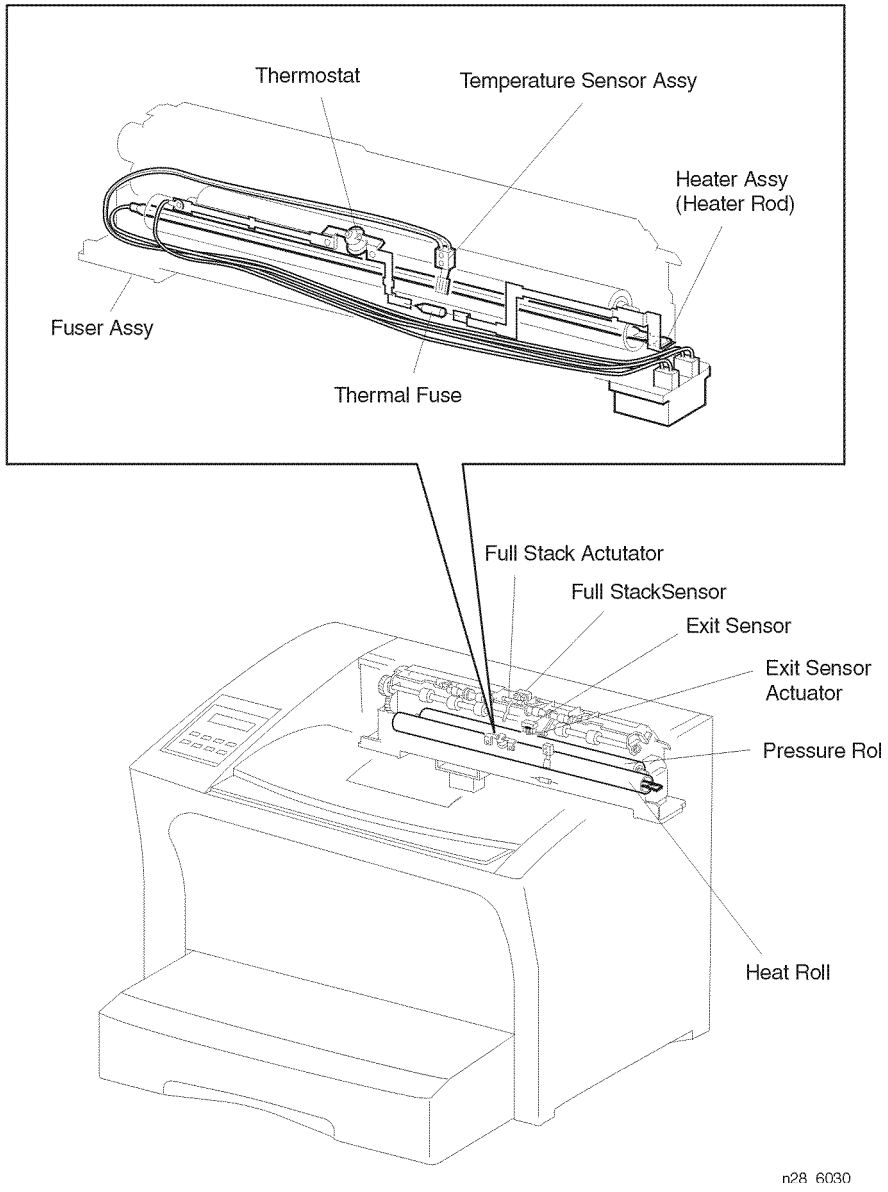


Figure 1 Fuser Assembly

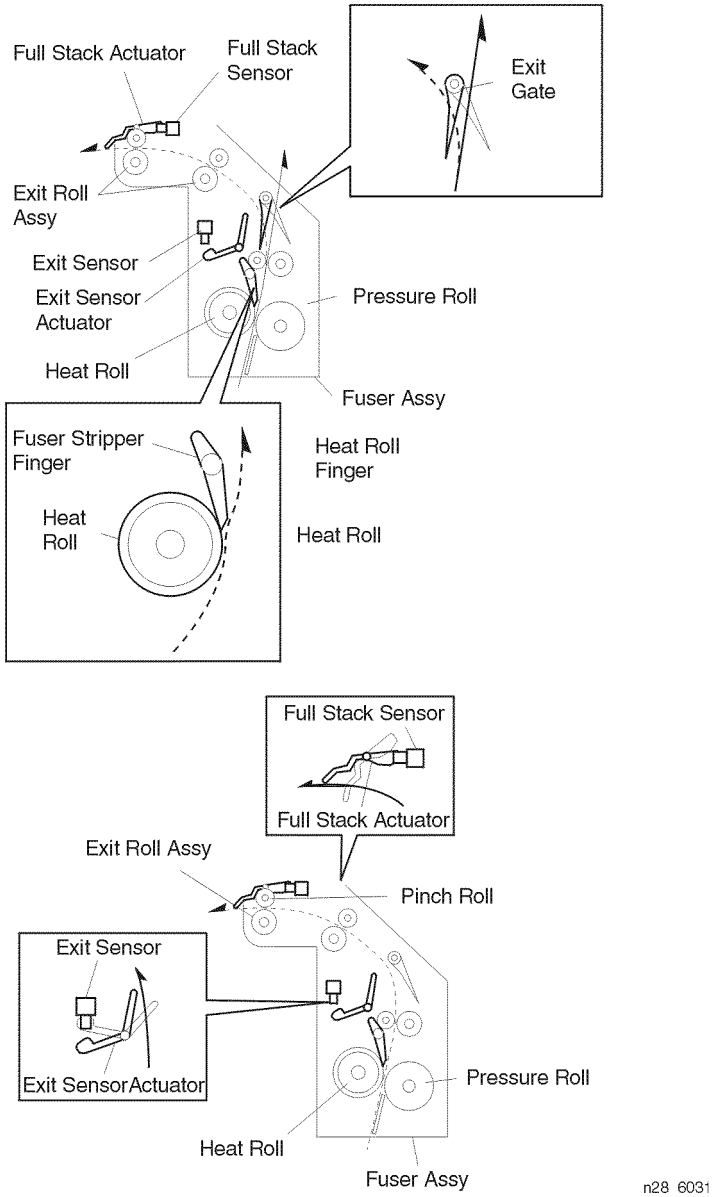


Figure 2 Fuser Assembly

GP 5.16 Frame and Drive

Motor:Main – Figure 1

Generates the drive power by which the printer is operated.

Gear Assembly: Main –

Includes tent gears, and distributes the driver power generated by the Motor:Main to the Fuser Assembly, Print Cartridge, P/H Assembly, and Registration Clutch.

MBF Assembly –

Includes five drive gears, and transmits the drive power that is transmitted from the Motor:Main through the Gear Assembly: Main to the Gear MBF IN.

Registration Clutch –

An electromagnetic clutch that switches the drive power on and off to the Rubber Registration Roll and the Metal Registration Roll of the Paper Transport Assembly for registration.

The Registration Clutch is actuated to rotate the Rubber Registration Roll and the Metal Registration Roll at the specified time after the Registration Sensor has detected the arrival of the paper.

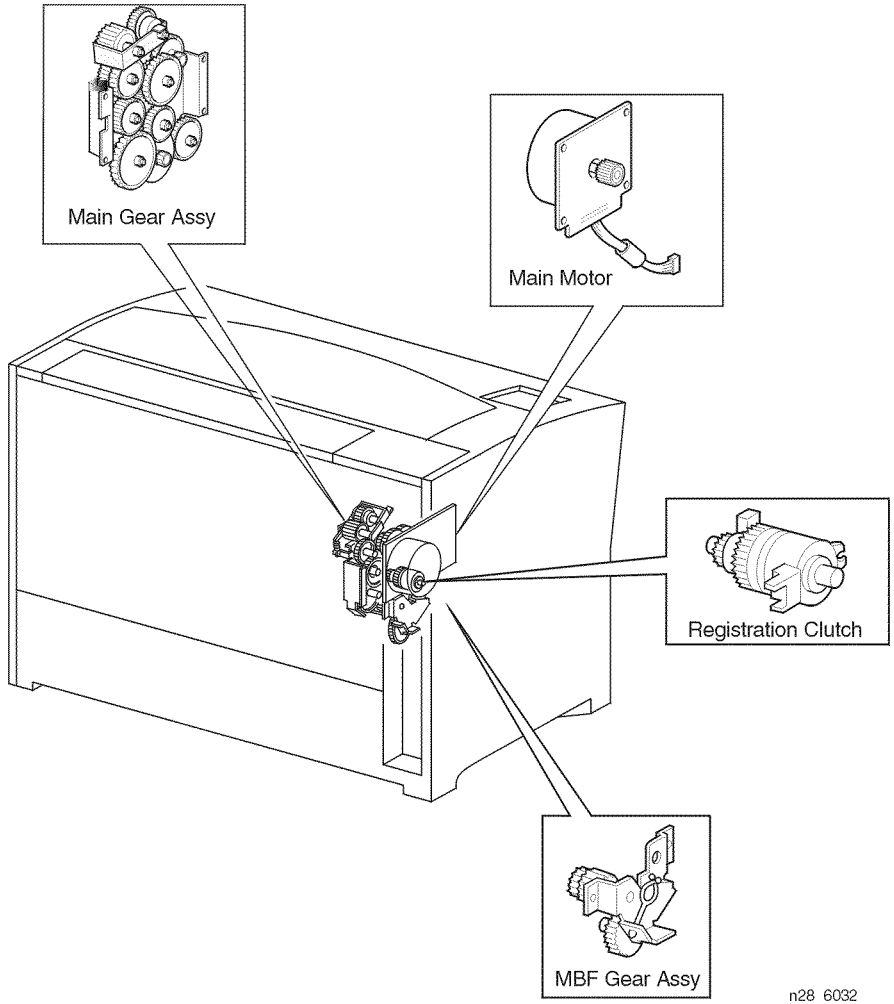


Figure 1 Frame and Drive

Interlock Switch –

When the Top Cover is open, the Interlock Switch is turned off, and thereby the power to the Fuser Assembly is cut off. When the Top Cover is closed, the actuator of it presses down the Interlock Switch and then the power for the Fuser Assembly is recovered.

Sensor Assembly Print Cartridge –

Houses the Print Cartridge Sensor and the LD Switch. These switches are actuated by a molded tab on the Print Cartridge through an actuator inside the Print Cartridge Sensor Assembly.

Print Cartridge Sensor: The signal from this switch is used to stop the printer operation when the Print Cartridge is removed.

LD Switch: Connected in series with the Laser Diode. This switch opens the 5 VDC circuit to the Laser Diode when the Print Cartridge is removed. It functions as a safety switch to prevent the user or a service person from being exposed to the laser light.

Print Cartridge –

The Print Cartridge (Elector Photographic) (also called the Print Cartridge, for Customer Replaceable Unit) consists of five major components.

Drum: An aluminum cylinder with a coating of photoconductive material on the surface. The photoconductive coating (layer) holds an electrical charge placed on the surface while in darkness, and allows the charge to flow through the thickness when exposed to light.

BCR (Bias Charge Roll): Places a uniform electrical charge on the drum surface, erasing any patterns of decreased charge remaining from the previous cycle.

Magnet Roll: Holds toner on its surface in a thin layer and transports it to the gap between the drum and the Magnet Roll. Toner is supplied to the Magnet Roll by the two Agitators inside the Toner Compartment.

CM Blade (Charging and Metering Blade): Spreads toner on the Magnet Roll in a thin layer, and also gives toner a negative charge.

Cleaning Blade: Scrapes the toner remaining after the Transfer step off the drum surface.

Laser – Figure 1 & Figure 2

The Laser (Raster Output Scanner) scans a laser light beam on the drum surface. The Laser Assembly consists of three major components: the Layer Diode Assembly, the Scanner Assembly, and the SOS PWB.

LD Assembly: Generate laser light that is modulated on and off according to the print data signal.

Scanner Assembly - Consists of the Polygon Mirror with twelve sides (mirror facets) and the Scanner Motor. The Polygon Mirror is secured to the shaft of the Scanner Motor,

The Scanner Motor rotates the Polygon Mirror at a specified constant speed. The spinning Polygon Mirror reflects the beam through a lens and a mirror onto the rotating drum surface, scanning the beam from one side of the drum to the other, one scan per mirror facet.

The scanning of the laser light beam on the drum surface from one side to the other switching the laser light on and off produces a latent image of one line. A two dimensional image is produced by repeating the scanning of the laser light beam as the drum rotates. The resolution in the scanning direction (right to left) is determined by the speed of the polygon motor and how quickly the laser can be modulated. The resolution in the process direction (top to bottom) is determined by the speed of the polygon motor (a faster scan allows the next line scanned to begin more quickly).

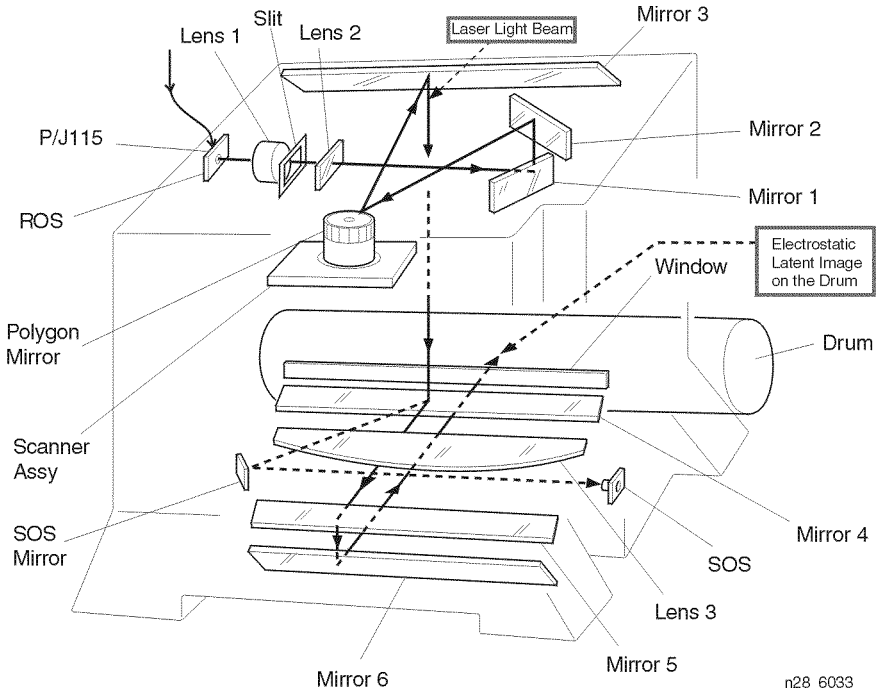


Figure 1 Laser

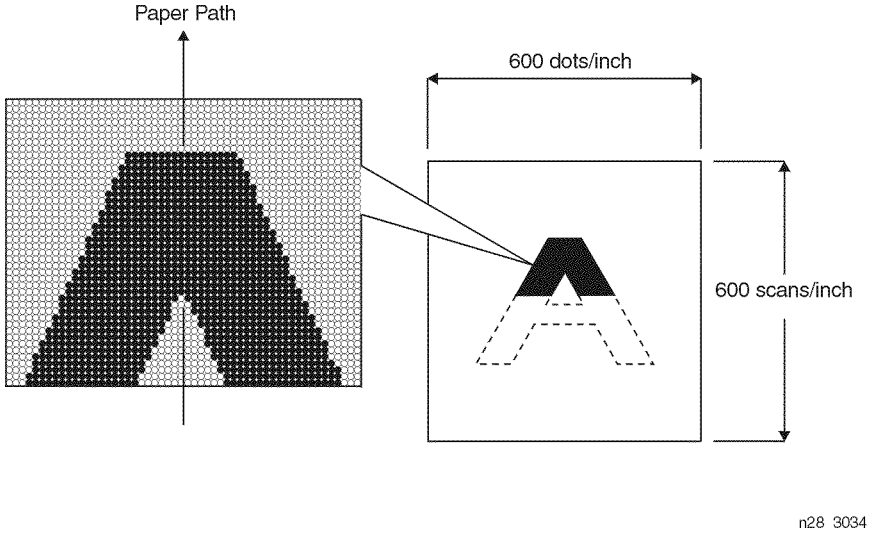


Figure 2 Laser Scanning

GP 5.18 Electrical

Interlock Switch – Figure 1

A safety switch that interrupts the supply of 24 VDC from the LVPS to the Print Engine Controller PWB when the Top Cover is open. This switch also causes the LVPS to interrupt AC line voltage to the Fuser Assembly.

Fuser Interlock Switch –

A safety switch for stopping the operation of the Motor:Main, the Laser, and the Fuser Assembly when the Exit Assembly is open.

Fuser Fan and LVPS Fan –

Exhausts the air inside the printer and introduces fresh air to prevent an excessive rise of the inside temperature.

LVPS Assembly –

Produces regulated low DC voltages (5V supplied to logic circuits, 5V-LD supplied to the Laser Diode, and 24V supplied to motors, solenoids, and clutches) from AC power. It also switches on and off the AC power to the Heater Rod of the Fuser Assembly.

The LVPS Assembly contains the Fan control circuit, the Heater Rod switching circuit, and has Main Power Switch connected to it.

HVPS Assembly –

Produces high AC and DC voltages applied to charge (BCR), development (Magnet Roll), transfer (BTR), and detack (Detack Saw).

Print Engine Controller PWB –

The Print Engine Controller PWB (Main Control Unit) controls all printer operations responding to signals from the Control Panel, Controller, and sensors and switches. The Print Engine Controller PWB has the following six major functions.

1. Communicates with the Controller.
2. Communicates with the optional Duplex Assembly.
3. Receives information from the printer sensors and switches.
4. Controls the Laser, Fuser, and Motor:Main.
5. Controls the printing process.
6. Distributes DC power from the LVPS Assembly to other printer components.

The Print Engine Controller PWB consists of a single chip, 8-bit microcomputer and ASICs (Application Specific Integrated Circuit for image data transfer and communication control. The microcomputer has ROM, RAM, 16-bit integrated timer unit, programmable timing pattern controller, watch dog timer, serial communication interfaces, and A/D converter, a D/A converter, I/O ports, DMA controller, and refresh controller built in.

Duplex Interface PWB –

Supplies DC power to the Duplex Unit and offers the interface port between the Print Engine Controller PWB and the Duplex Unit.

PWA:5V –

Supplies DC power.

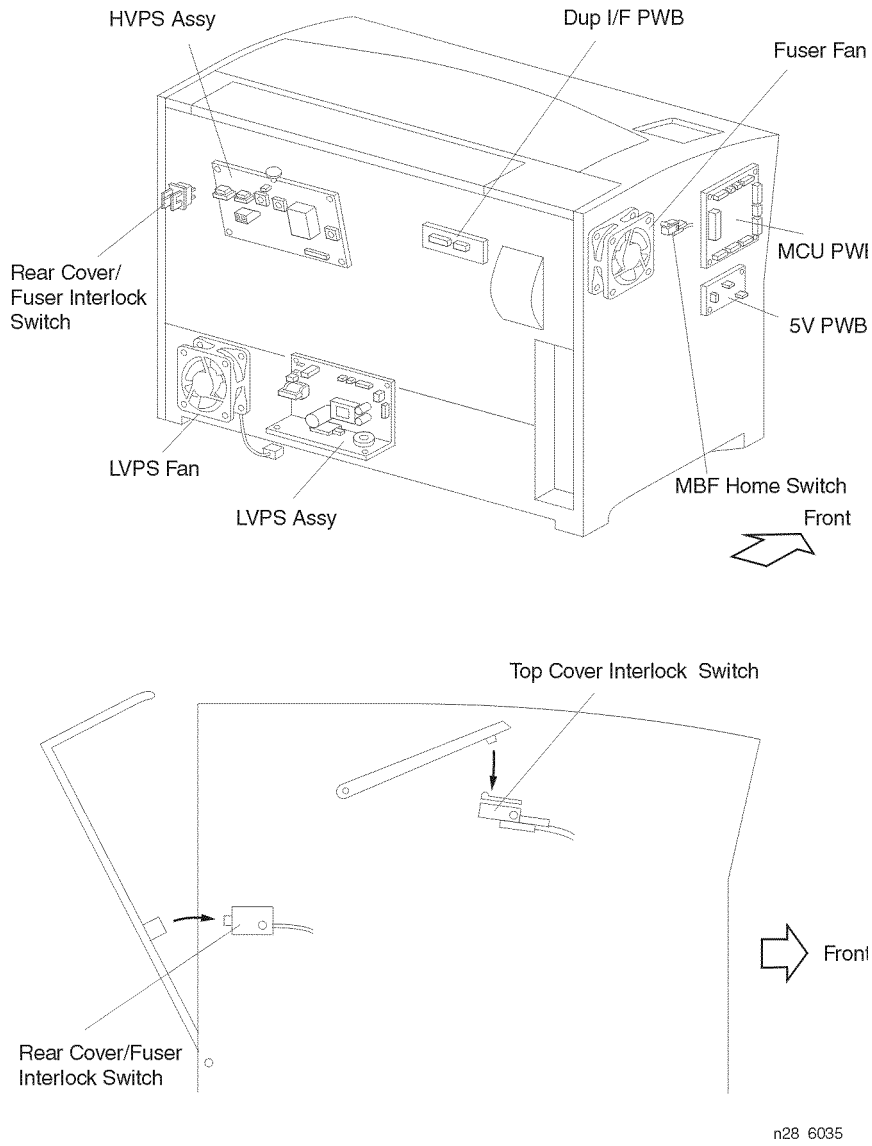


Figure 1 Electrical Components

GP 5.19 Power Supply

LVPS (Low Voltage Power Supply) Figure 1

The N2025/N2825 LVPS is a separately-excited, feedforward switching regulator. The LVPS produces +24 VDC, +5 VDC, and +5 VDC (B) voltages from AC power. +5 VDC (B) is labeled as 5V-LD in the printer wiring diagrams.

The LVPS has the following three protections.

-Short-circuit protection (over current protection)

When the 5VDC or 24VCD supply circuit is short-circuited, and an excessive current begins to flow in the circuit, all DC supplies are shut down. To reset this short-circuit protection, switch off printer power, remove the cause, then switch on printer power two or three minutes after turning the power off.

-Open-circuit protection (overvoltage protection)

When the 5VDC or 24VDC supply circuit is open or the connector is disconnected, the output voltage of the circuit begins to decrease after about 1 minute and the output is stopped. To reset this open-circuit protection, switch off the printer power, reconnect the connector or repair the open circuit, then switch on printer power about five minutes after the power off.

-Low-voltage protection

When the voltage of the 24VDC supply circuit becomes 15 VDC or lower, the output voltage of the 24VDC supply circuit begins to decrease and the output is stopped.

HVPS (High Voltage Power Supply) Figure 1

The HVPS produces the high voltages applied to the BCR, BTR, DB, and DTS from +24 VDC supplied by the LVPS under the control of the Print Engine Controller PWB.

The HVPS has an overcurrent protection. If an excessive current begins to flow in any of the high voltage output circuits, all high voltages are shut down. To reset the protection circuit after an overcurrent shutdown, switch off the printer power, remove the cause, then switch on the printer power again.

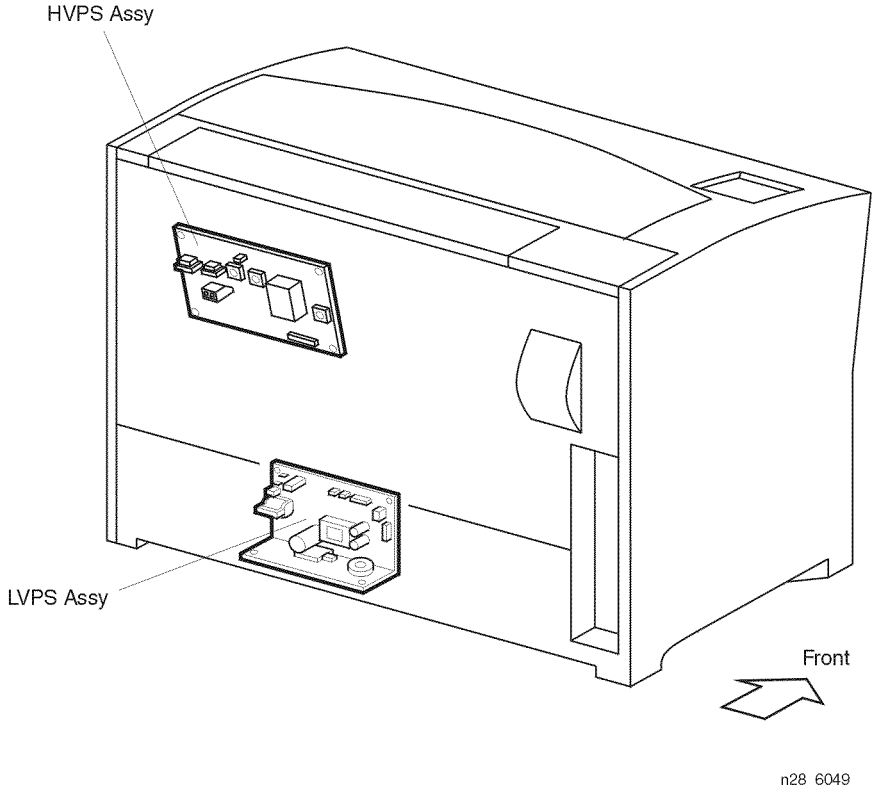


Figure 1 HVPS/LVPS Locations

GP 5.20 Printer Controls

Paper Size Detection Table 1

Table 1 shows the patterns of actuated Switch Size and the values set with Memory Code NV C for the paper sizes that can be used with the N2025/N2825 printer. This table also shows the representation of the patterns of actuated Switch Size in hexadecimal numbers that is displayed by Diagnostic Code DG04 in the Diagnostic Mode.

The Switch Sizes are denoted by SW1 to SW4 in top to bottom order. "1" indicates On (actuated state), and "0" Off (not actuated state).

Oversize A3 paper is indicated in non-regular size paper in the paper size detection.

Table 1 Size Switches

Paper Size	Paper Cassette				MBF Tray Size
	Paper Size Switches				Setting in NVM Config
	SW4	SW3	SW2	SW1	
Cassette removed	-	-	-	-	-
Large size	-	-	-	-	-
Non-regular size	-	-	-	-	0
Ledger SEF	-	-	-	-	1
A3 SEF	0	1	1	0	2
B4 SEF	0	0	1	0	3
Legal 14" SEF	1	0	1	0	4
Legal 13" SEF	1	0	0	0	5
A4 SEF	1	1	0	0	6
Letter SEF	-	-	-	-	6
B5 LEF	-	-	-	-	7
Letter LEF	1	1	0	1	A
A4 LEF	0	1	0	1	B
Executive LEF	-	-	-	-	D
B5 LEF	-	-	-	-	0D
A5 LEF	0	1	0	1	46
Statement LEF	-	-	-	-	16
Postcard SEF	0	0	0	1	49
C5 SEF	0	0	1	1	29
COM-10 SEF	-	-	-	-	2A
DL SEF	1	0	0	1	26
Monarch SEF	-	-	-	-	C

Paper Source Selection

When printer power is switched on, the paper source from which paper is fed (MBF Tray, Tray 1, Tray 2 (or 2000 Sheet Feeder), or Tray 3 (or 2000 Sheet Feeder) is selected according to the following rules of not otherwise selected by the Controller.

-When all paper sources are out of paper – MBF Tray is selected

-When MBF Tray is loaded with paper – MBF Tray is selected, whether Tray 1 is loaded with paper or out of paper.

-When MBF Tray is out of paper, and the Feeder1 is loaded with paper – Tray 1 is selected, whether Tray 2 (or 2000 Sheet Feeder) is loaded with paper or out of paper.

-When MBF Tray and the Tray 1 are out of paper, and the Tray 2 (or 2000 Sheet Feeder) is loaded with paper – Tray 2 is selected, whether Tray 3 (or 2000 Sheet Feeder) is loaded with paper or out of paper.

-When MBF Tray, Tray 1, and Tray 2 (or 2000 Sheet Feeder) are out of paper, and Tray 3 is loaded with paper – Tray 3 (or 2000 Sheet Feeder) is selected.

Print Area

The guaranteed print area is the entire page except a 4 mm border on all four sides of the paper used.

NOTE: *The guaranteed print area for the maximum non-regular size paper is the entire page except a 5 mm border on the left and right edges and a 4 mm border on the leading and trailing edge. No print guarantee is given for a long size paper.*

Laser Motor Control

The Laser Motor is turned on or off in various printer modes as shown in Table 2.

Table 2 Laser Motor Control

Printer Mode	Laser Motor
On-line mode (When setting the size of paper for the MBF)	Always Off
On-line mode (In the time other than the above paper size setting)	Controlled by the Controller.
Print Test mode	Starts immediately when printer power is switched on, and Stops about preset seconds after printer is completed. Starts each time Print Test is executed, and stops about preset seconds after printing is completed.
Diagnostic mode	Always Off
Nonvolatile Memory Setting Mode	Starts each time Print Test is executed with Memory Code NVP, and stops about preset seconds after printing is completed.

Warm up

Laser warm-up completes when the three consecutive SOS signal intervals are shorter than the READY reference value. (The Laser Motor has reached the specified speed, and is rotating steadily.)

Laser Reference Values Table 3

Table 3 Laser Reference Values

Reference Value	Description
READY	98% of the SOS interval when the Laser Scanner Motor is rotating at the specified speed. This value is used to detect a warm-up failure of the Laser Motor.
FAIL	90% of the SOS interval when the Laser Motor is rotating at the specified speed. This value is used to detect a Laser Motor failure (Down failure and Overrun failure).

NOTE: *When the speed of the Scanner Motor increases by more than 1% of the specified speed, the SOS signal is not detected. As the result, the SOS interval becomes longer beyond the FAIL reference value, and an Overrun failure of the Laser Motor is detected.*

LD Control

The laser light power is maintained at the value set with NVM by increasing or decreasing the LD drive current so that the monitor signal MO becomes equal to the reference voltage for the current setting in NVM.

The laser light power adjustment is performed by rough adjustment and fine adjustment.

Rough adjustment is made when the printer starts printing. If this adjustment does not work, Laser trouble (U2) is determined.

Fine adjustment of the laser light power is made at two time periods: the time period when the laser is turned on, and that between P.SYN signals (inter-image period). 15 times of adjustment is made at 4 ms intervals for 60 msec.

Fuser Temperature Control Table 4

The Fuser temperature (Heat Roll surface temperature) is maintained within the specified temperature range around the set temperature. The Print Engine Controller PWB switches the Heater Rod on and off so as to decrease the difference between the actual Heat Roll surface temperature and the set temperature.

This printer has three temperatures (STANDBY Temperature, RUNNING Temperature, and Continuous-controlled Temperature) which are used as the set temperature in different printer modes or states.

The RUNNING Temperature is used as the set temperature when the Motor:Main is rotating in the printing operation or in an erase cycle, excluding when the printer is warming up.

The STANDBY Temperature is used as the set temperature when the Motor:Main is stopped and when the printer is warming up.

The printer switches the Running Temperature to the Continuous-Controlled Temperature when 20 prints have been produced in a more than 20 prints job. One duplex print is counted as two prints. This fuser temperature control switching is not used in the Thick Paper Mode described below.

-The Print Engine Controller PWB switches on power to the Heater Rod when the Fuser temperature drops to the FUSER ON temperature (set temperature – about 3 C) or below.

-The Print Engine Controller PWB switches off power to the Heater Rod when the Fuser temperature rises to the FUSER OFF temperature (set temperature ± 0 C) or above.

Fuser Warm-up

The Heater Rod is switched on at the start of Fuser warm-up. Fuser warm-up completes when the Heat Roll surface temperature reaches the set temperature (Standby Temperature).

Thick Paper mode

This printer has two Running Temperatures: normal and high. The high Running Temperature gives an increased toner fixing capability for thick paper. The Controller can select the normal or high Running Temperature through the SET FUSER TEMP command. The printer mode when the high Running Temperature is selected is the Thick Paper mode.

When the printer detects the size of the paper used to be one of the following paper sizes, it enters the Thick Paper mode by itself if the normal Running Temperature is selected by the Controller: Postcard, Monarch, DL, C5, and COM-10

Table 4 Fuser Temperature Control

Name	Temperature
HIGH TROUBLE Temperature*	Approx. 218°C / 424.4°F (STANDBY Temp. + approx. 41°C / 118.4°F
FUSER OFF Temperature*	Set temperature ± 0°C
STANDBY Temperature* RUNNING Temperature* Continuous Controlled Temperature*	Approx. 170°C / 338°F Normal: Approx. 180°C / 356°F High (Thick Paper Mode): Approx.196°C / 384.8°F Approx. 174°C / 345.2°F
Thick Paper Mode PAPER FEED START Temperature*	Approx. 193°C (STANDBY Temp. + approx. 26°C)
FUSER ON Temperature*	Set temperature - approx. 3°C / 37.4°F
*:The Fuser Control Temperatures marked with an asterisk change according to the setting of the memory Code NVM. The temperature values shown above are those when the NVM setting is “8”.	

NOTE: *If the Fuser temperature has not yet reached the PAPER FEED START Temperature in the Thick Paper mode when the printer starts the print operation (that is, when the printer begins to feed paper), the printer does not start the print operation until the Fuser temperature reaches the PAPER FEED START Temperature.*

Fuser Temperature Code Table Table 5

Table 5 Fuser Temperature Codes

Fuser Temp. (°C)	Temp. Code (hex)	Fuser Temp. (°C)	Temp. Code (hex)	Fuser Temp. (°C)	Temp. Code (hex)
0	EE	110	E4(E1-E6)	180	AA(A7-AE0
-	-	-	-	-	-
10	FE(FD-FE)	120	DE(DB-E0)	185	A5(A2-A9)
-	-	-	-	-	-
20	FD	130	D6(D3-D9)	190	A0(9C-A4)
-	-	-	-	-	-
30	FD(FC-FD)	140	CF(CB-D2)	195	9B(97-9F)
-	-	-	-	-	-
40	FB(FA-FC)	145	CB(C7-CE)	200	96(92-9A)
-	-	-	-	-	-
50	F9(F8-FA)	150	C6(C3-CA)	205	91(8D-96)
-	-	-	-	-	-
60	F7(F6-F8)	155	C2(BE-C5)	210	8C(88-91)
-	-	-	-	-	-
70	F5(F3-F6)	160	BD(BA-C1)	215	88(83-8C)
-	-	-	-	-	-
80	F2(F0-F3)	165	B9(B5-BC)	220	83(7E-88)
-	-	-	-	-	-
90	EE(EC-F0)	170	B4(B0-B7)	225	7E(79-83)
-	-	-	-	-	-
100	E9(E7-EB)	175	AF(AB-B3)	230	79(74-7E)
-	-	-	-	-	-

Erase Cycle

The printer executes the Erase Cycle when printer power is turned on or the interlock switches are actuated. During an Erase Cycle, the printer runs the Motor:Main, actuates the Registration Clutch, and Turn Clutch Assembly and outputs the CR(AC), CR(DC), DTS, and BTR(-) voltages from the HVPS to clean the drum surface and drive the paper remaining in the printer to a sensor for detection.

NOTE: *The printer interrupts the Erase Cycle when the interlock switches are deactuated, or the Registration Sensor, Exit Sensor or Sensor Assembly Dup is actuated during the Erase Cycle. It restarts the Erase Cycle when the interlock switches are actuated again, or printer power is switched off and back on again.*

The printer does not start an Erase Cycle if the Registration Sensor, Exit Sensor, or Sensor Assembly Dup is being actuated or the Print Cartridge is not in place when the interlock switches are actuated or printer power is switched on.

Fan Control

The printer switches the speed of the Fan between High and Low.

-High Speed: When the Main Motor is rotating

-Low Speed: When the Main Motor is stopped

When printer power is switched on, the Fan rotates at High Speed, then switches to Low Speed.

GP 5.21 Duplex Assembly

Paper Transportation

Paper is fed from the Cassette Assembly or the Tray Assembly MBF and transported through the printer to the exit along the paper paths shown below when the optional Duplex Assembly is installed. The Duplex Assembly adds the re-feed path for duplex printing to the printer. Figure 1

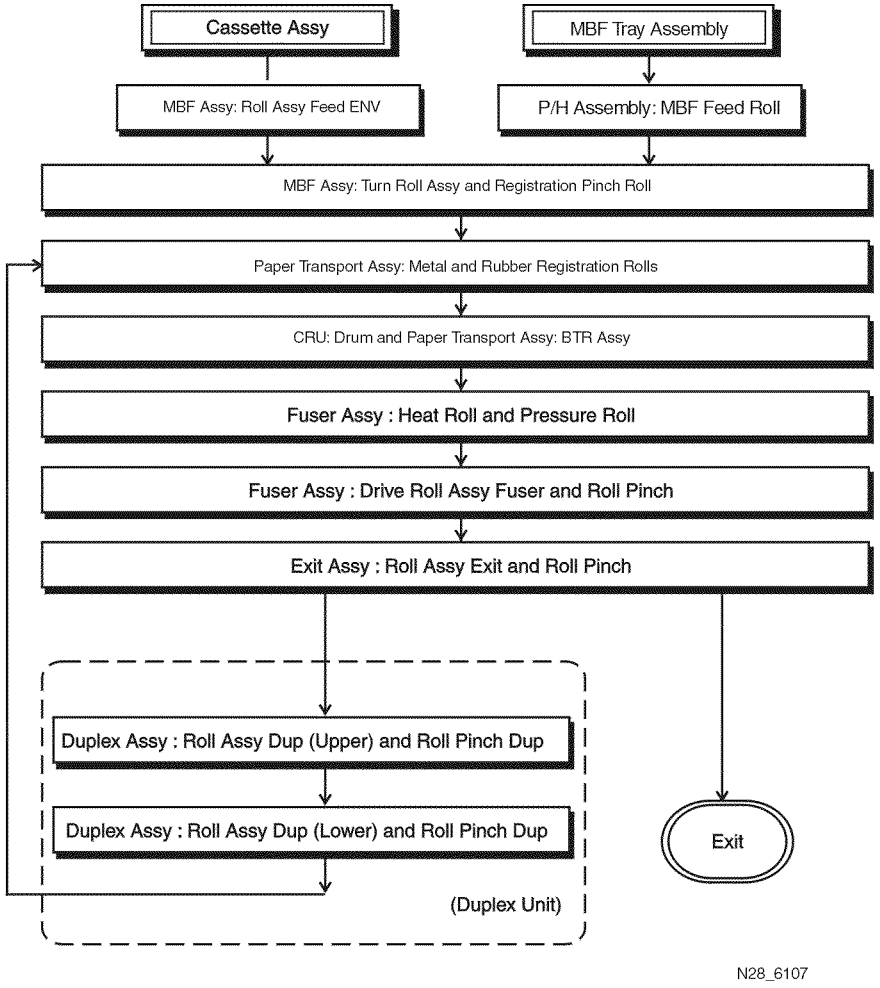


Figure 1 Paper Path With Duplex Assembly Installed

Figure 2 is a cut-away side view of the N2025/N2825 printer that shows the paper paths and the major components directly related to the paper transportation of the printer with the optional Duplex Assembly installed.

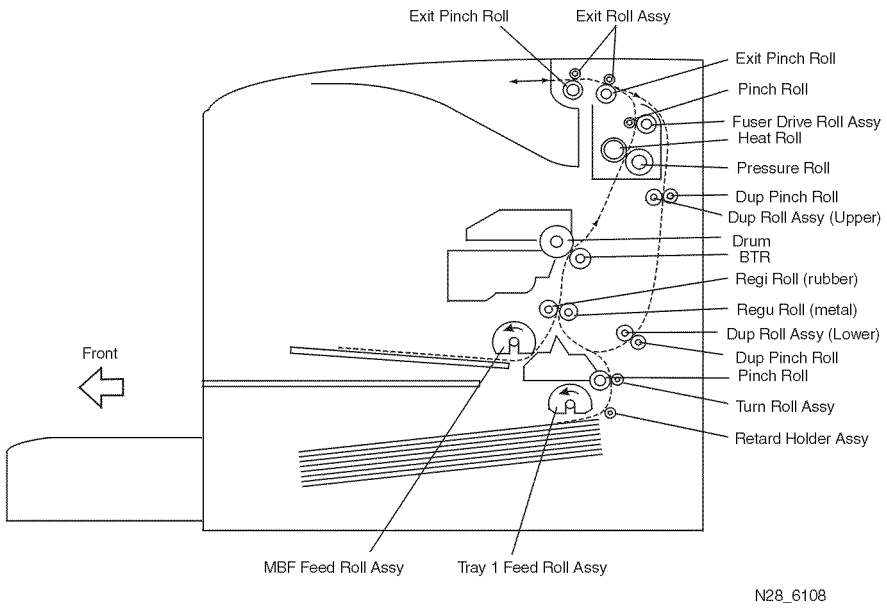


Figure 2 Paper Path Components

Drive Power Transmission

The optional Duplex Assembly has its own motors (Motor Assembly Dup and Motor Assembly Exit) for paper transportation. The drive power generated by the Motor Assembly Dup is transmitted to the paper driving rolls in the Duplex Assembly through the drive gears and belt. This drive power is used to transmit the paper through the path toward the Registration Roll after receiving the return paper from the Exit Assembly. The drive power generated by the Motor Assembly Exit is transmitted to the paper driving rolls in the Duplex Assembly and Exit Assembly. This drive power is used to deliver the paper from the Exit Assembly to the Duplex Assembly and discharge it from the Exit Assembly after the completion of side 2 printing.

Figure 3 is a diagram that shows the gear arrangement of the Duplex Assembly.

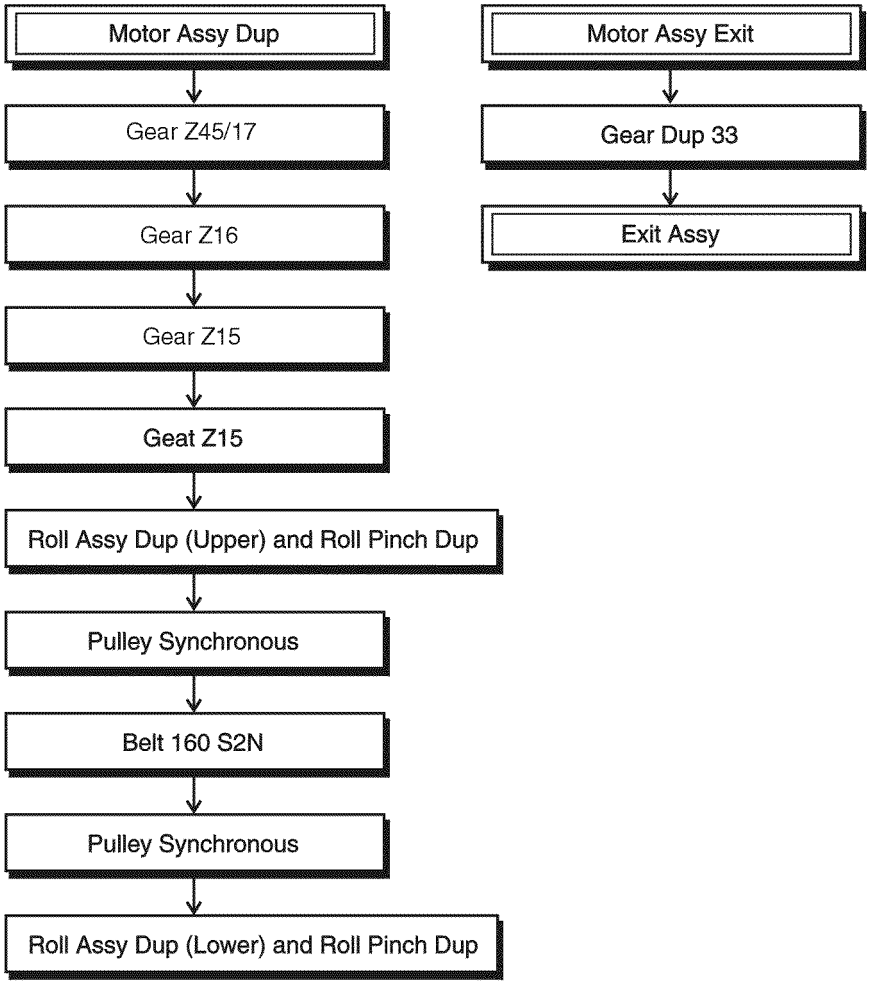


Figure 3 Duplex Assembly Gear Arrangement

Figure 4 is a cut-away side view of the Duplex Assembly that shows the drive power transmission through the gears of the Duplex Assembly.

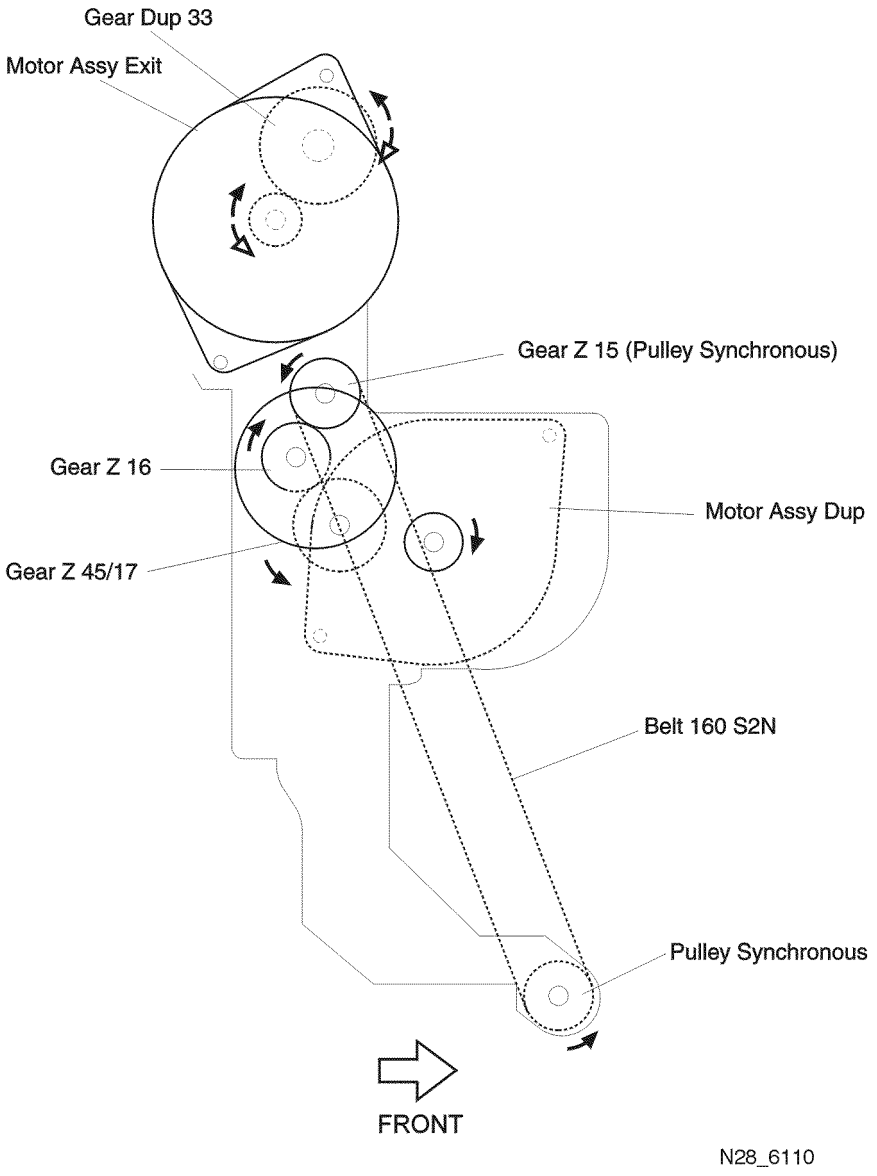


Figure 4 Drive Power Transmission through Duplex Assembly Gears

The Figure below is a perspective view that shows the drive power transmission through the gears of the Duplex Assembly. Figure 5

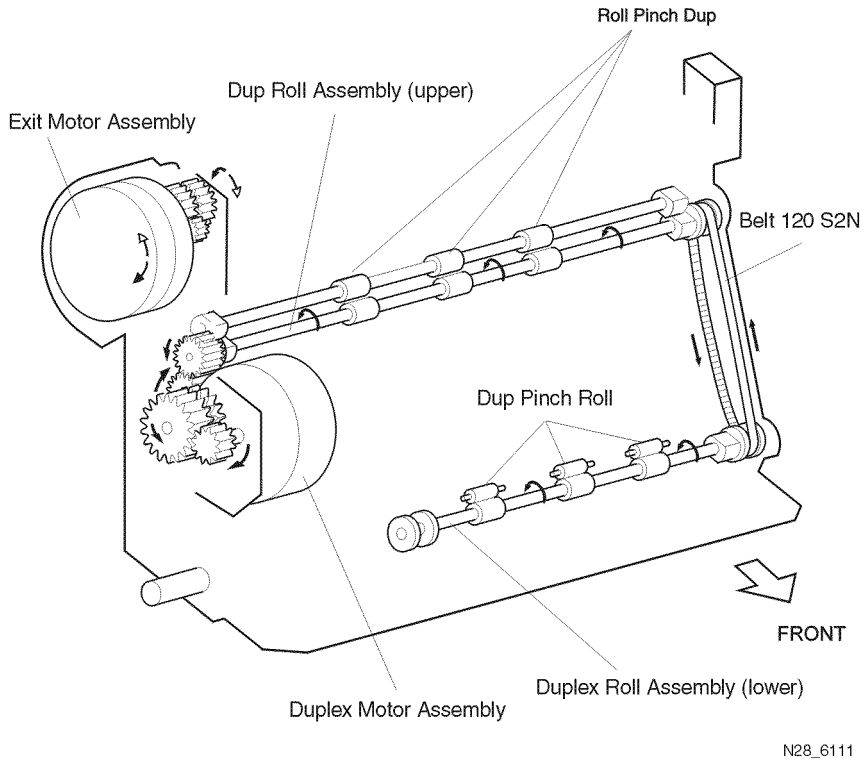


Figure 5 Drive Power Transmission through Duplex Assembly Gears

Duplex Assembly Main Component Function

The function of the major components of the optional Duplex Assembly is described here. Figure 6 & Figure 7

Duplex and Exit

Duplex PWB - Drives the Duplex Motor Assembly and the Exit Motor Assembly according to the control signals from the Print Engine Controller PWB through the Duplex Interface PWB. The Duplex PWB also relays the signals from the sensors and switches connected to it to the Duplex Interface PWB.

Duplex Sensor Assembly - Detects the paper between the Duplex Roll Assembly (Upper) and the Duplex Roll Assembly (Lower) in the Duplex Assembly.

Duplex Motor Assembly - Generates the drive power to transfer the paper to the Metal Registration Roll and Rubber Registration Roll. This motor rotates only in the clockwise direction.

Duplex Roll Assembly (Upper), Duplex Roll Assembly (Lower) - Re-feed the paper printed on the one side into the printer through the Duplex Assembly to print on the other side.

Motor Assembly Exit - Generates the drive power to retrieve the paper from the Exit Assembly for the duplex printing and deliver the paper toward the Duplex Roll Assembly (Upper). During this process, the Motor rotates in clockwise. After the completion of the duplex printing, the Motor rotates in counter clockwise and generates the power to discharge the duplex printed paper.

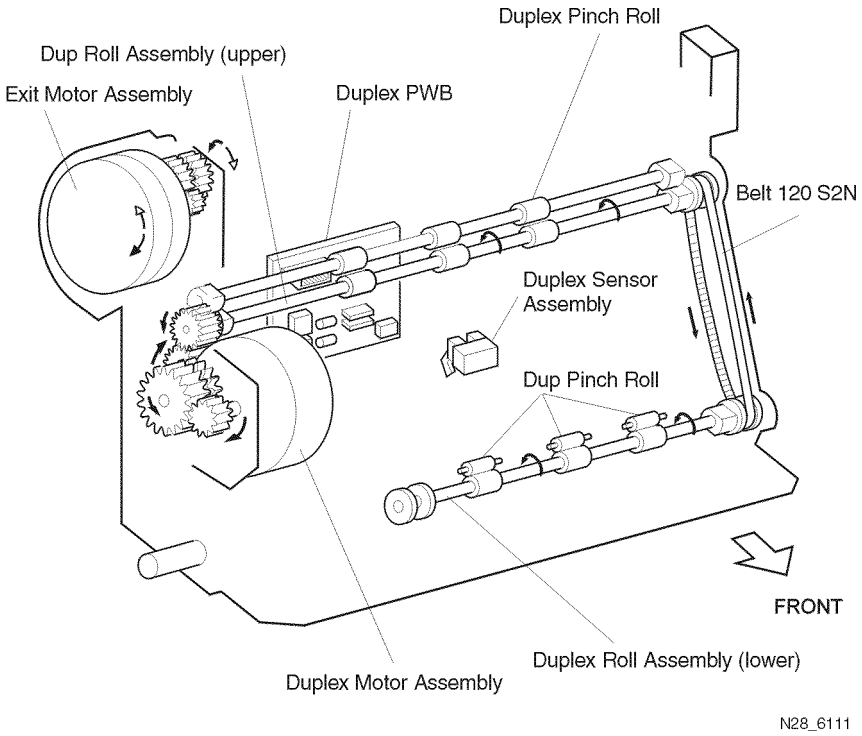


Figure 6 Duplex Assembly Components

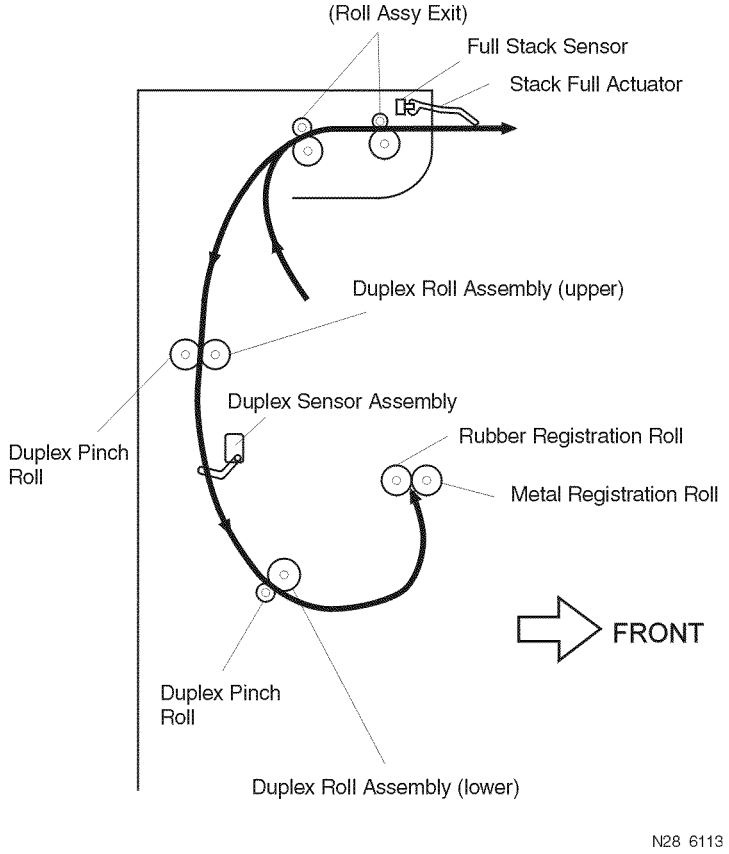


Figure 7 Duplex Assembly Components

Printer Control Figure 8

The control of the printer with the Duplex Assembly installed by the Controller is described here.

Simplex Mode and Duplex Mode Switching

The Controller uses the SWITCH PRINTING MODE command to toggle between the Simplex and Duplex printing modes.

The Print Engine Controller PWB switches the print mode when the current print job is completed after it has received the SWITCH PRINTING MODE command.

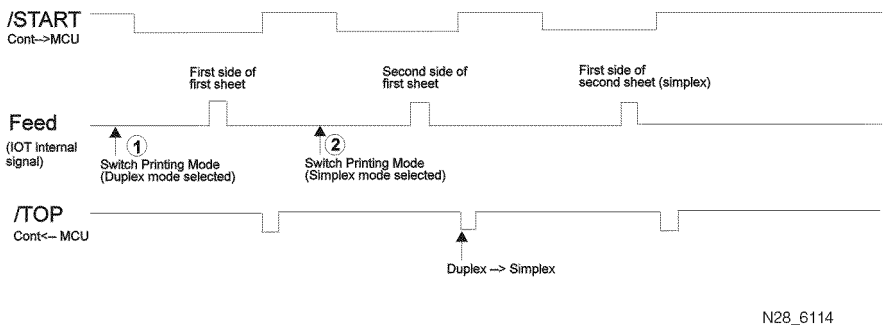


Figure 8

NOTE: *For the description of the interface signals, Commands, and Statuses, refer to Controller in Section 13 Principles of Operation of the Base Engine Service Manual.*

Direction of Scanning in Duplex Printing Figure 9 & Figure 10

The Figure below shows the direction of the main scan (direction in which the laser light is scanned) and that of the sub-scan (direction of paper travel) for the first and second sides of a sheet of paper in Duplex printing. The Controller sends the image data to the printer according to the printing order of pages, lines (raster lines) on each page, and pixels on each line.

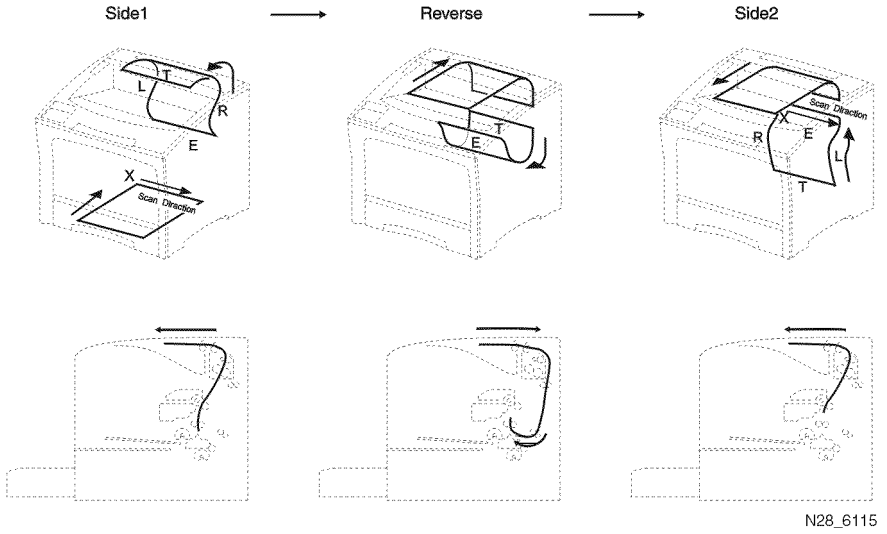


Figure 9 Scan Direction in Duplex Printing

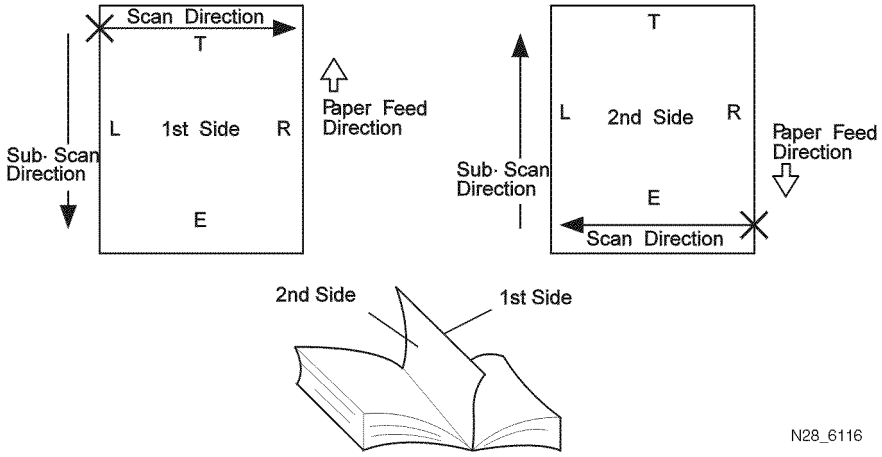


Figure 10 Scan Direction in Duplex Printing

Duplex Print Control Sequence

Duplex print can be performed in either the 1-Sheet Batch or 2-Sheet Batch Duplex printing mode.

In the 1-Sheet Batch mode, a sheet of paper is printed on the first side, re-fed, printed on the second side, and delivered.

In the 2-Sheet Batch mode, a sheet of paper is printed on the first side, and another sheet of paper is fed and printed on the first side. Next, the first sheet is re-fed and printed on the second side. Then, the second sheet is re-fed and printed on the second side.

1-Sheet Batch Duplex printing control sequence

Page two image is printed on side 1. The sheet of paper is re-fed by the Duplex Assembly into the printer. Page one image is then printed on side 2 of the sheet.

2-Sheet Batch Duplex printing control sequence

The first sheet is fed, and Page two image is printed on side 1 of the first sheet. The second sheet is fed, and Page four image is printed on side 1 of the second sheet. The first sheet is re-fed, and Page one image is printed on side 2 of the first sheet. The second sheet is re-fed, and Page three image is printed on side 2 of the second sheet.

No Paper Error during a 2-Sheet Batch Sequence

If the printer runs out of paper after Page two image has been printed on side 1 of the first sheet, the second sheet is not fed and the No-paper error is reported from the Print Engine Controller PWB to the System Controller PWB with Status 0. Page one image is then printed on side 2 of the re-fed sheet.

GP 5.22 500 Sheet Feeder Assembly

Paper Transport

The paper transport from the 500 Sheet Feeder is as shown below Figure 1 & Figure 2.

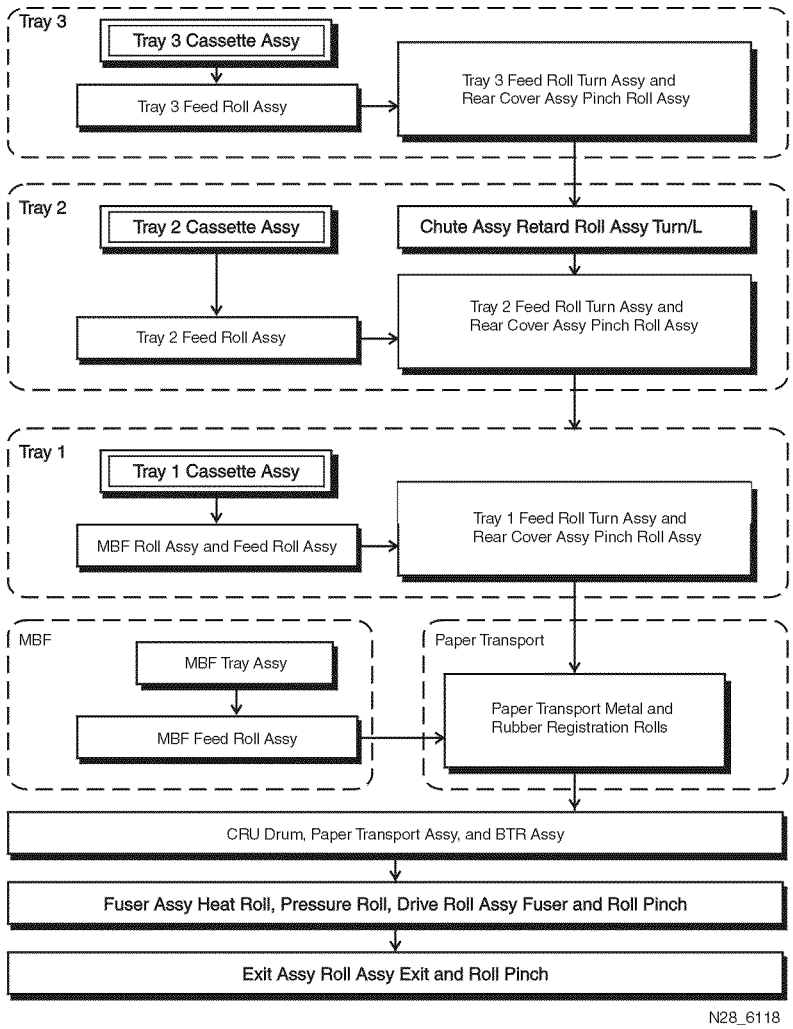


Figure 1 Paper Transportation from 500 Sheet Feeder

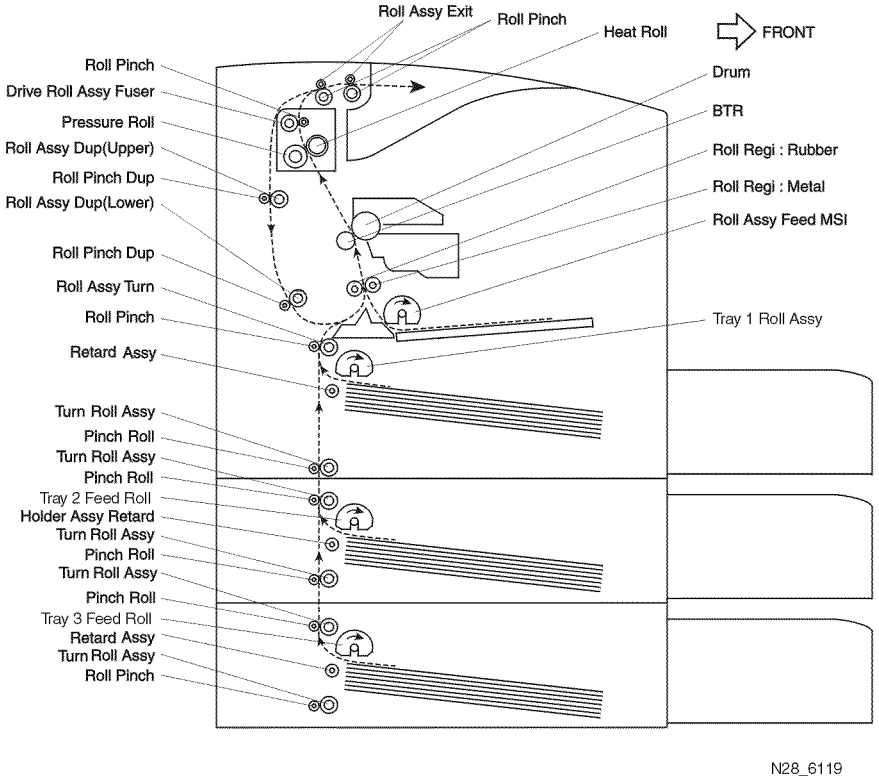


Figure 2 Paper Transportation from 500 Sheet Feeder

Drive Force Generation and Transmission

The drive force for the 500 Sheet Feeder is transmitted from the Motor Feeder via drive gears and provides the force to drive the paper transport. The transmission paths are as shown below Figure 3, Figure 4, Figure 5 & Figure 6.

NOTE: *In the pages that follow, the cassette paper supply inside the base engine is called Tray 1; the Feeder immediately below the base engine, Tray 2; the Feeder below Tray 1, and Tray 3; the Feeder below Tray 2.*

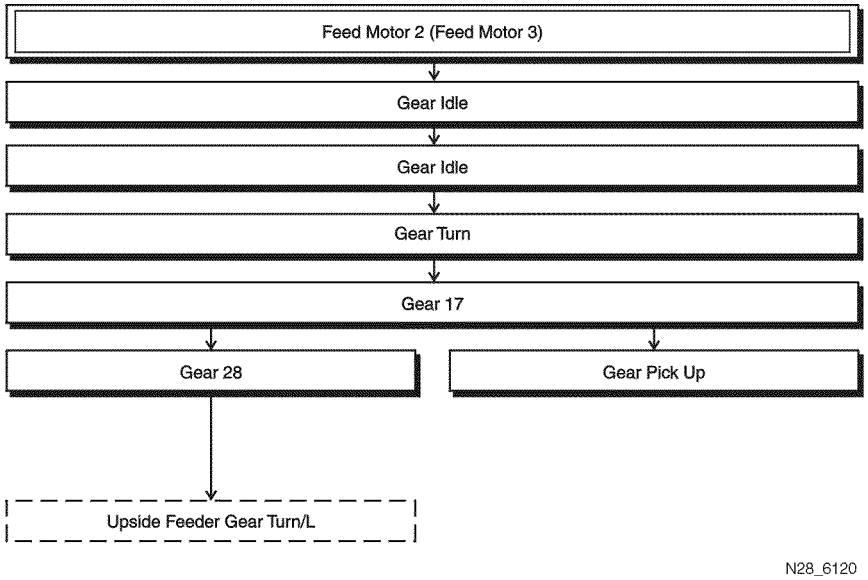


Figure 3 Transmission Path

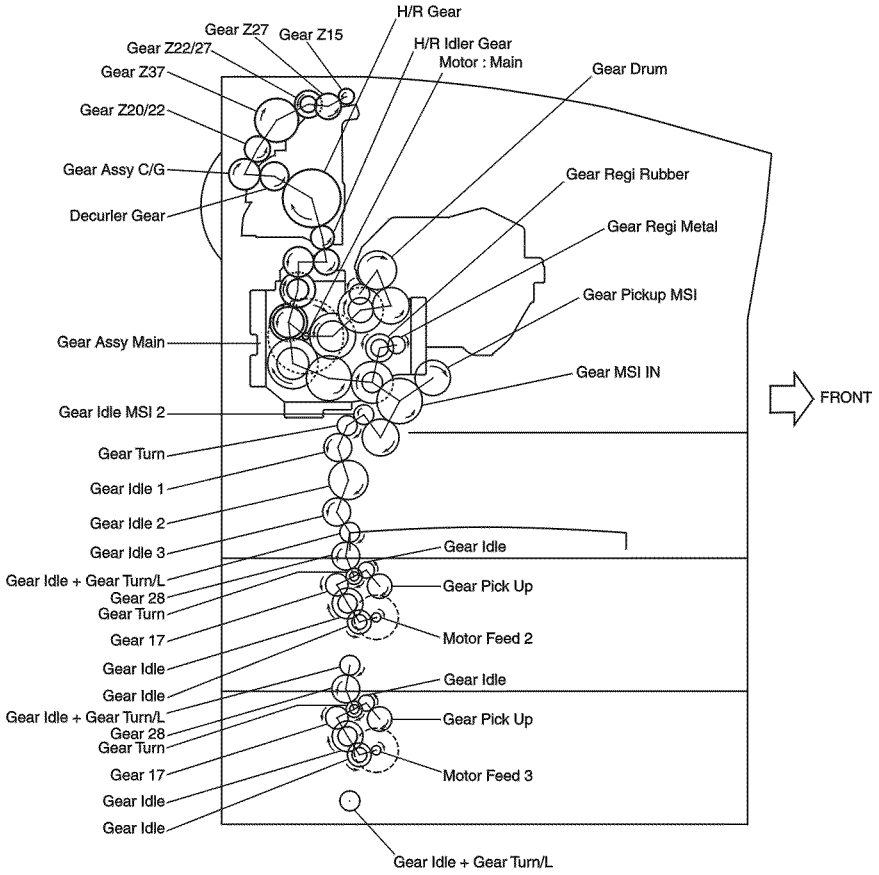


Figure 4 Transmission Path

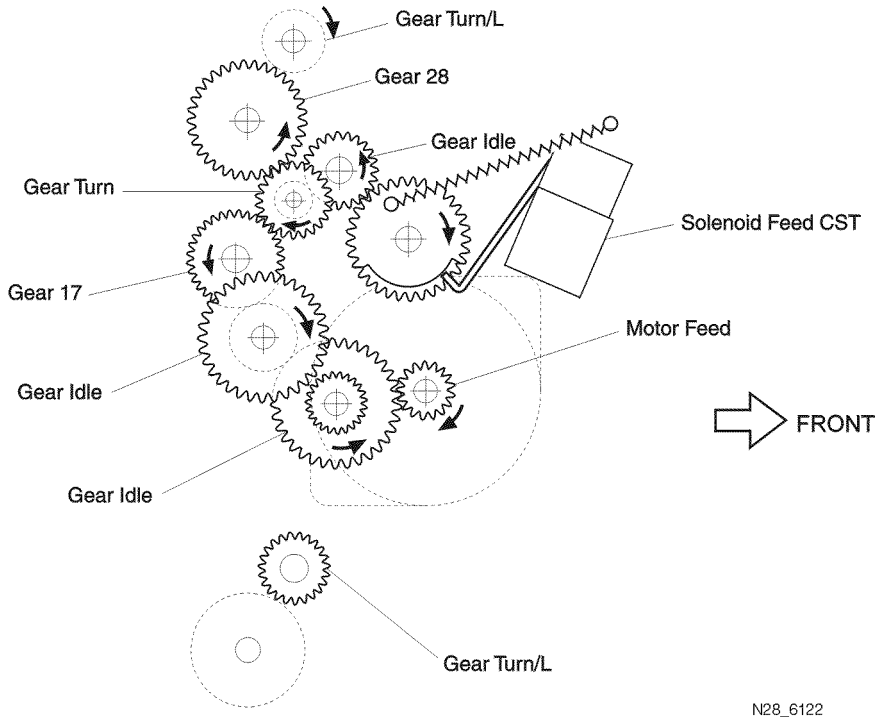


Figure 5 Transmission Path

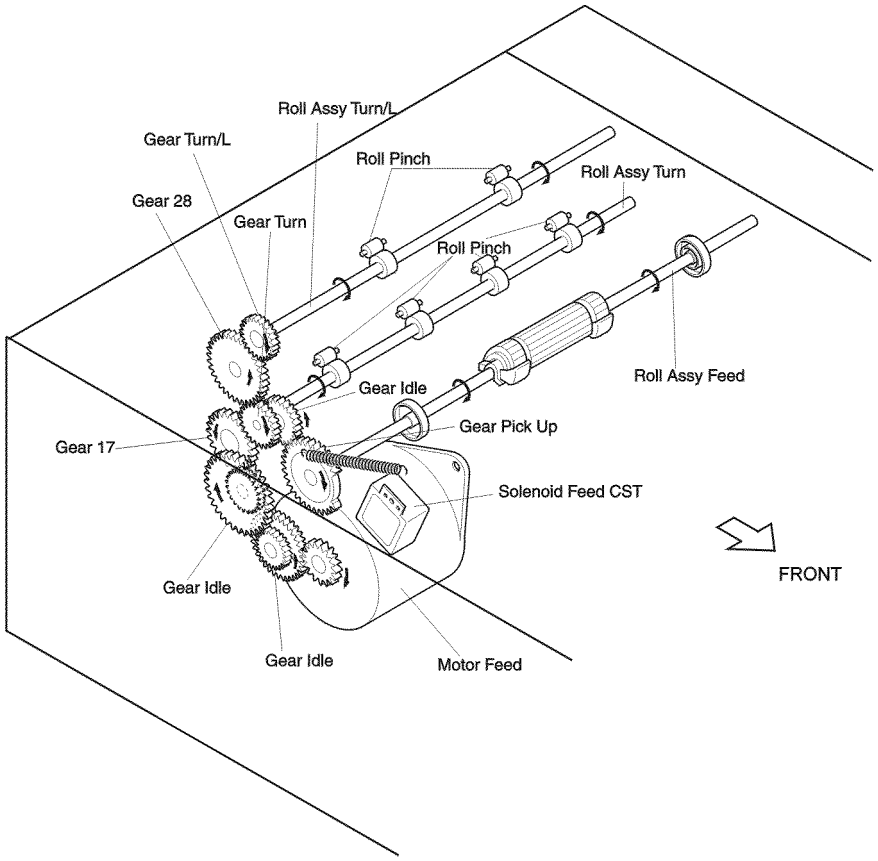


Figure 6 Transmission Path

Function of Major Components

This manual skips operational descriptions of the 500 Sheet Feeder and Cassettes since their major components function in basically the same fashion as the corresponding components of the base engine and standard Cassette Assembly included with the base engine. If necessary, refer to the descriptions in the N2025/N2825 Laser Printer Engine Service Manual.

The following illustrations give the names and locations of these major components Figure 7, Figure 8 & Figure 9.

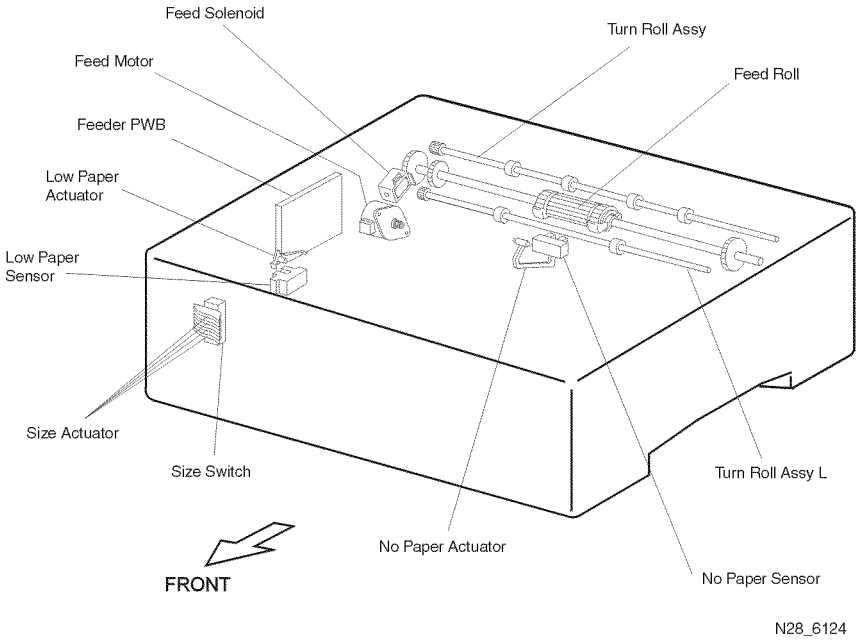


Figure 7 Major Components

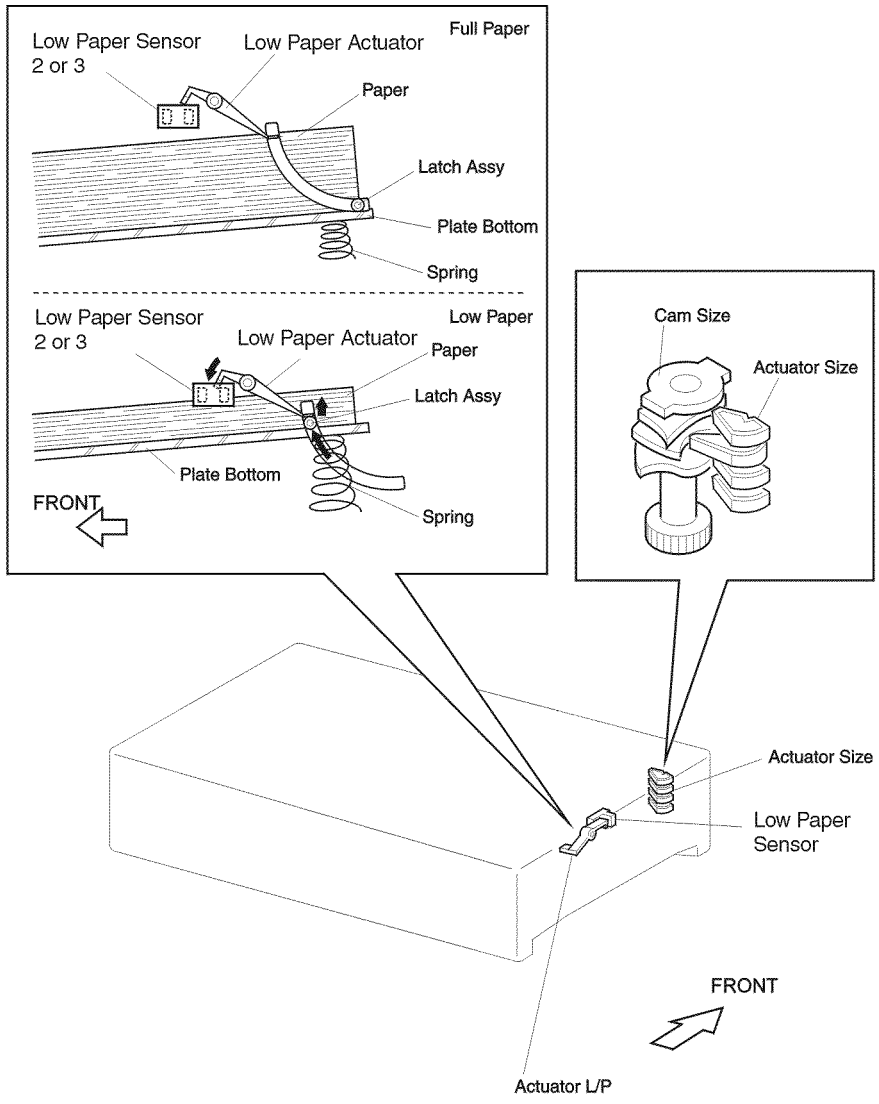


Figure 8 Major Components

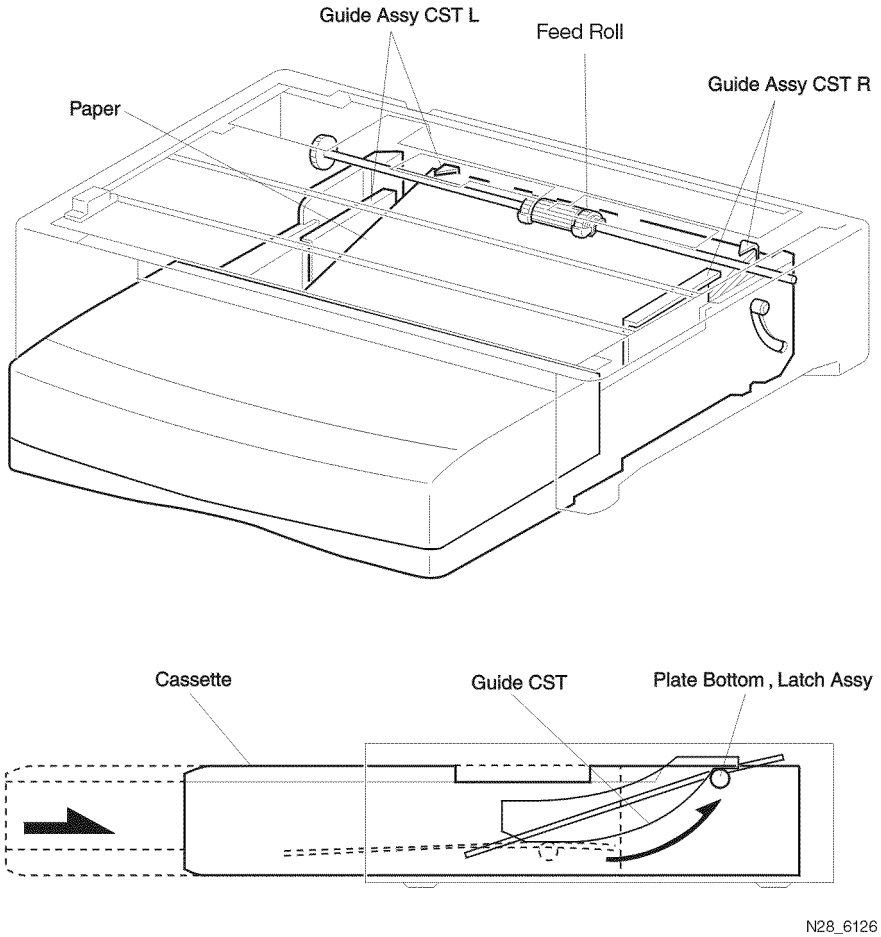


Figure 9 Major Components

GP 5.23 Offsetting Catch Tray

Paper Transportation Figure 1 & Figure 2

Paper is fed from the Cassette Assembly or the Tray Assembly MBF and transported through the printer to the exit along the paper paths shown below when the optional OCT Assembly is installed. The OCT Assembly adds the offset paper discharging.

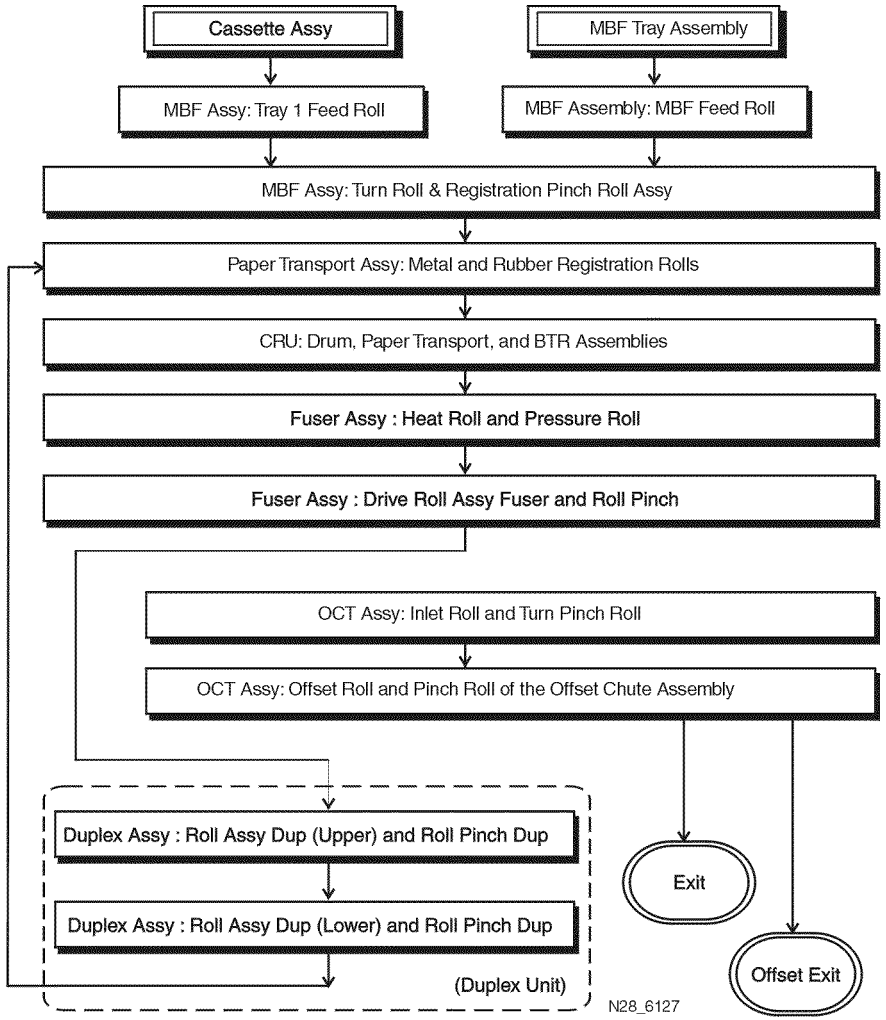


Figure 1 Paper Transportation

The Figure below is a cut-away side view of the N2025/N2825 printer that shows the paper paths and the major components directly related to the paper transportation of the printer with the optional OCT Assembly installed.

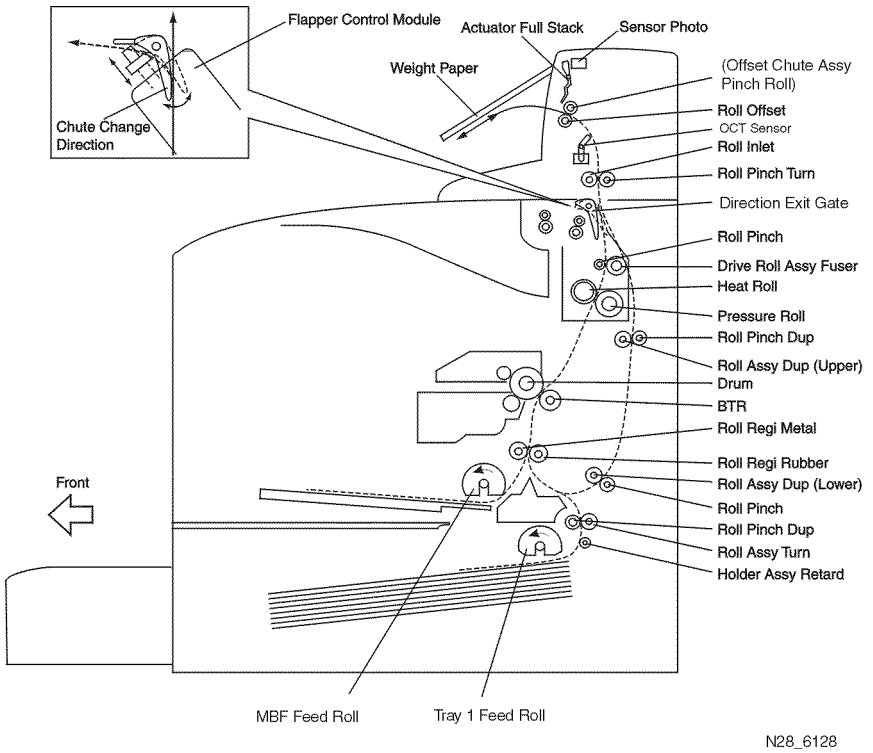


Figure 2 Paper Transportation

Drive Power Transmission

The optional OCT Assembly has its own motors (Motor Assembly OCT and Motor Assembly Offset) for the paper transportation and the offset discharging. The drive power generated by the Motor Assembly OCT is transmitted to the paper driving rolls in the OCT Assembly through the drive gears. The drive power generated by the Motor Assembly OCT is used to transmit the paper through the path toward the Offset Assembly and re-feed toward the Duplex Assembly after receiving the return paper. The drive power generated by the Motor Assembly Offset is used to discharge the paper with or without offset, or re-feed the paper toward the Duplex Assembly at the duplex mode.

The Figure below is a diagram that shows the gear arrangement of the OCT Assembly Figure 3.

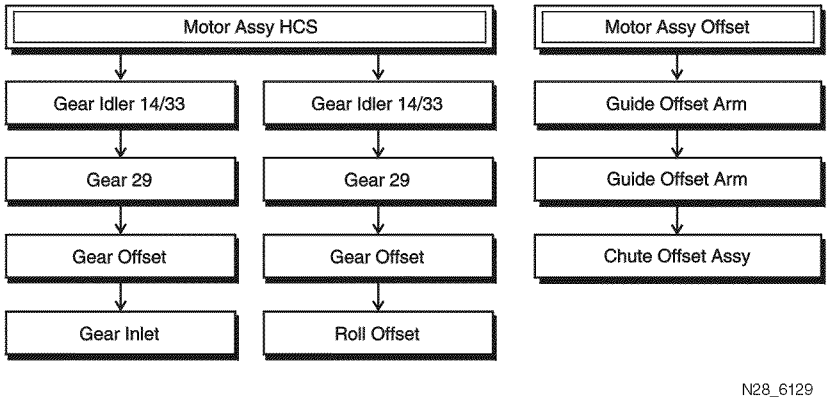


Figure 3 OCT Gear Arrangement

The Figure below is a cut-away side view of the Duplex Assembly that shows the drive power transmission through the gears of the OCT Assembly Figure 4.

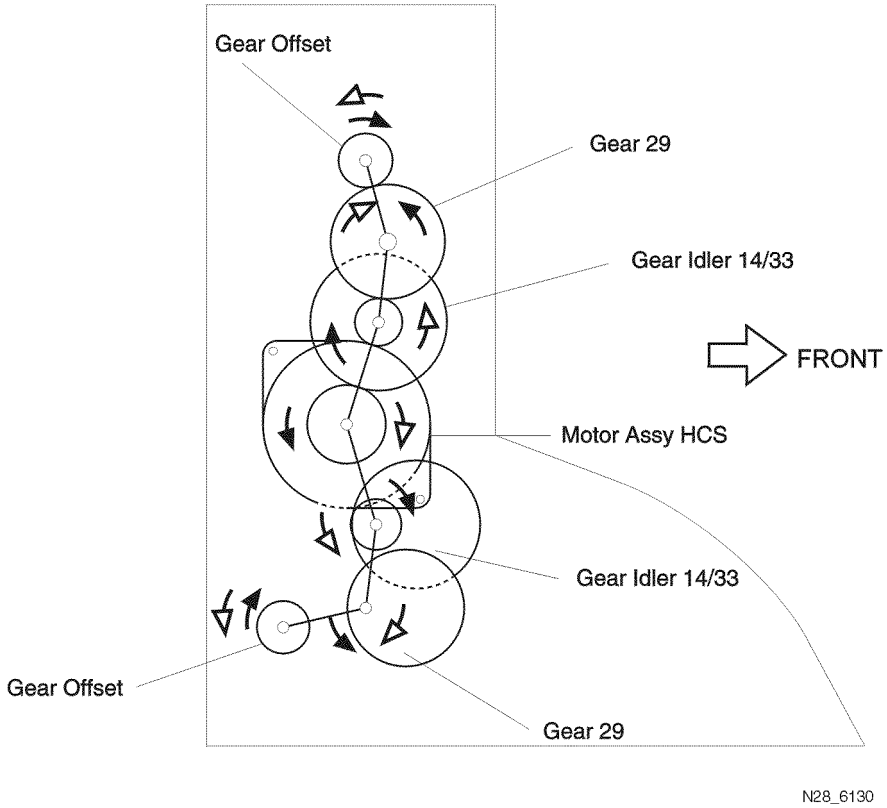


Figure 4 Drive Power Transmission Through OCT Gear Assembly

The Figure below is a perspective view that shows the drive power transmission through the gears of the OCT Assembly Figure 5.

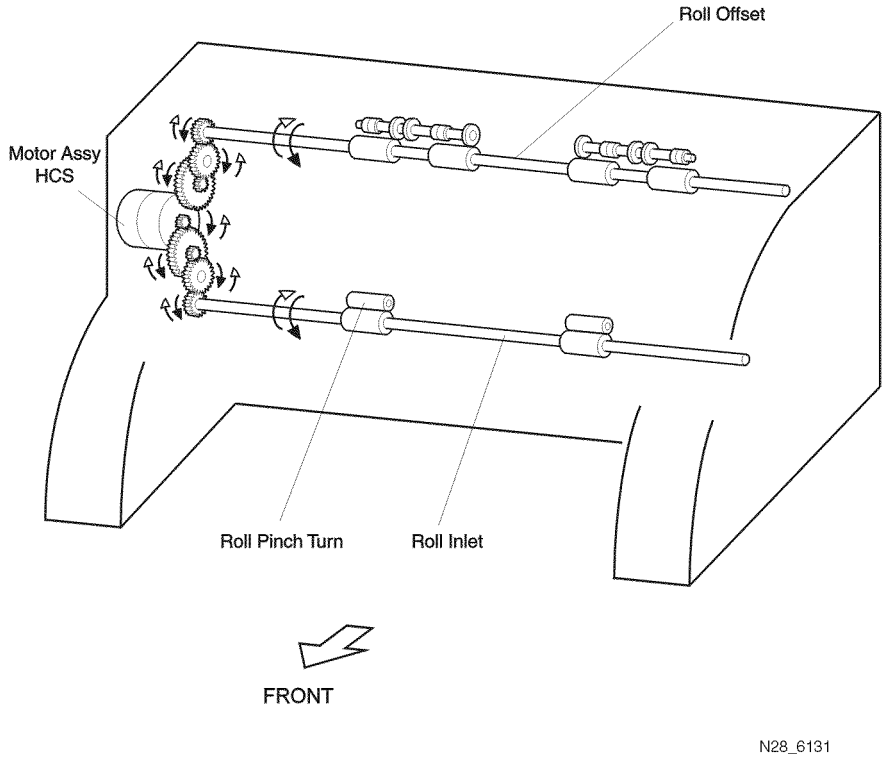


Figure 5 Perspective View of Power Transmission

OCT Assembly Main Component Function Figure 6 & Figure 7

The function of the major components of the optional OCT Assembly is described here.

Exit and Offset

OCT PWB - Drives the OCT Motor Assembly and the Offset Motor Assembly according to the control signals from the Print Engine Controller PWB through the Duplex Interface PWB. The OCT PWB also relays the signals from the sensors and switches connected to it to the Duplex Interface PWB.

OCT Sensor - Detects the paper jam between the Roll Inlet and the Roll Offset in the OCT Assembly. This sensor is a micro switch.

Sensor Photo: Full Stack - Detects the paper full on the exit tray.

Switch Interlock - Detects the open of the Cover Assembly Rear.

Roll Inlet - Deliveries the paper to the Offset Assembly.

Roll Offset - Discharges the paper to the OCT Output Tray.

Motor Assembly OCT - Generates the drive power. The power is transmitted to the Inlet Roll and Offset Roll.

Motor Assembly Offset - Generates the drive power to discharge the paper adding offset. The power is transmitted to the Guide offset Arm.

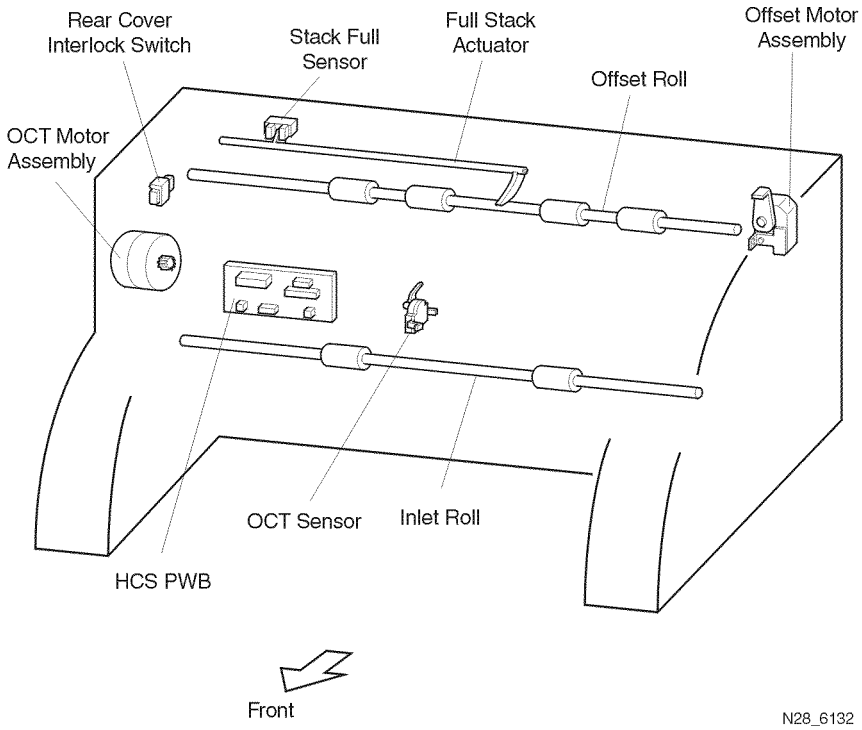


Figure 6 OCT Major Components

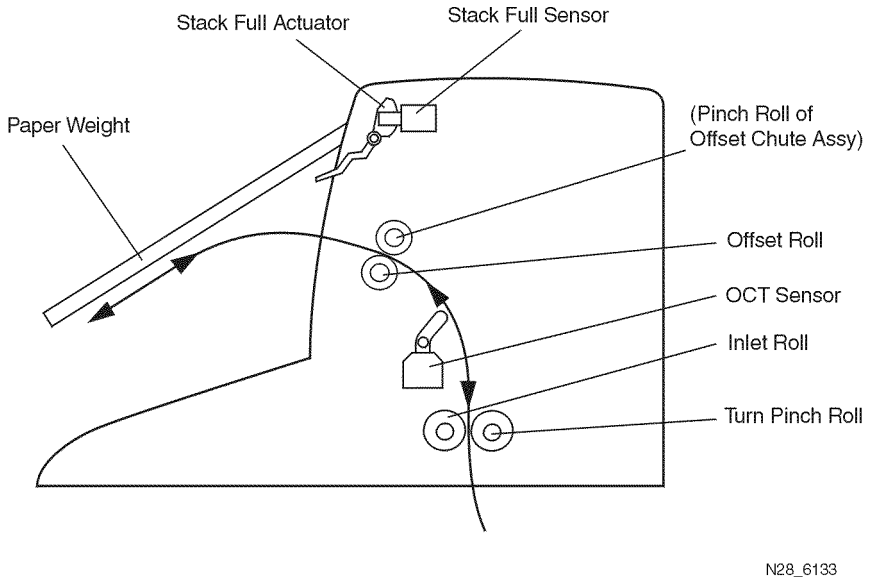


Figure 7 OCT Major Components

Printer Control

The control of the printer against the OCT Assembly by the Controller is described here.

Control Timing of the Exit Gate Solenoid Figure 8

The Controller uses the signal /Reg. IN to change the discharging direction between the Exit Assembly and OCT Assembly. The change of direction is made by the Chute Change Direction. When the lever of the Chute Change Direction is pushed up by the spindle of the Flapper Solenoid, the paper is fed to the Assembly. When the Exit Gate Solenoid is ON and the spindle is pulled down, the Chute Change Direction is released and returns to the position that the paper is discharged to the standard exit tray. The timing chart shows the Exit Gate control at simplex mode.

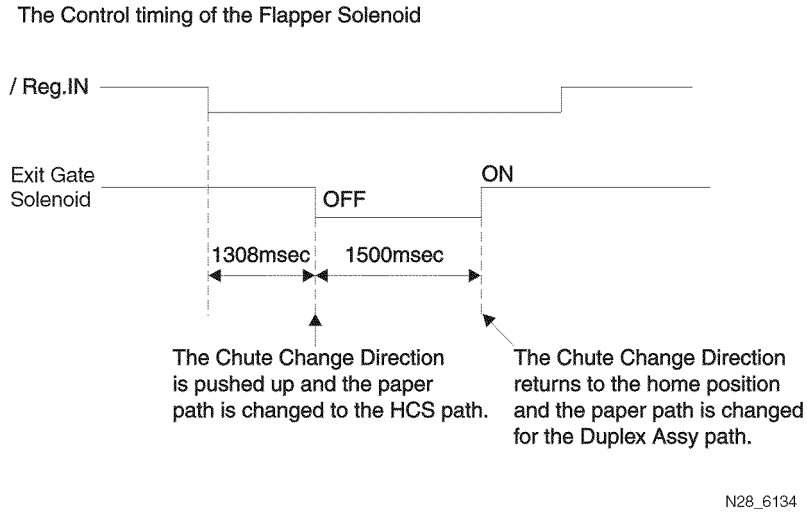


Figure 8 Flapper Solenoid Control Timing

NOTE: *For the description of the interface signals, Commands, and Statuses, refer to Controller in Section 13 Principles of Operation of the Base Engine Service Manual.*

Offset Paper Exit

When the OCT Assembly is selected as the exit tray (STATUS 13 bit 4=1) and the Offset Function of OCT is effective (STATUS 13 bit1=1), the paper is discharged to the offset position. If the Offset Function is not effective (STATUS 13 bit1=0), the paper is discharged to the normal position. The distance between the offset position and the normal position is approx. 25mm.

Available Paper Size

The paper sizes available for the Offset Function are as follows;

Ledger (SEF), Letter (SEF), DL, Letter (LEF), A3 (SEF), A4 (SEF), A4 (LEF), Post Card, B4 (SEF), B5 (SEF), Monarch, Statement (LEF), Legal 13", COM-10, Executive, B5 (LEF), Legal 14", C5, A5 (LEF)

GP 6.1 How to Run a System Controller Test Print

1. Switch the printer power on.
2. When the display indicates "Ready", press the [1] or [5] key until "Print Menu" is displayed.
3. Press the [2] or [6] key until "Test Print" is displayed.
4. Press Enter. The printer will print two test print and return to the "Ready" condition.

NOTE: *If Duplex is set to On, it will print one double-sided print.*

GP 6.2 How to run a IOT Test Print

1. Enter IOT Diagnostics - while switching on the printer power, press and hold keys [2] and [6] until the message "IOT" is displayed. When “IOT” is displayed or the control panel, release keys [2] and [6] and press “Enter”. The system will now enter the Diagnostics Mode.
2. Main Menu / Component Test appears on the Display Panel.
3. Using key [1] or [5], scroll until “Test Print” is displayed.

Select the “Input Tray” for feeding:

4. Using key [2] or [6], scroll until “Input Tray” is displayed.
5. Using key [3] or [7], scroll to select the tray for paper feed.
6. Press “Enter” to lock in the selection.

Select the “Output Tray”:

7. Using key [2] or [6], scroll until “Output Tray” is displayed.
8. Using key [3] or [7], scroll to select either “Standard” or “OCT”.
9. Press “Enter” to “Lock-In” the selection.

Selecting Duplex:

10. Using key [2] or [6], scroll until “Duplex”.
11. Using key [3] or [7], select either “On” or “Off”.
12. Press “Enter” to “Lock-in” the selection.

Print Pattern:

13. Using key [2] or [6] scroll until “Print Pattern” is displayed.
14. Press “Enter”. Printer will begin delivering test prints. Printing will continue until output quantity reaches 999 or key [0] is pressed and held for 1 second.

GP 7.1 Supplemental Tools, Supplies, and Hardware

Table 1 Supplies

Description	Part Number
Cleaning Cloth (treated)	35P1538
Cleaning Pads	600S4372
Cotton Swabs	35P2162
Disposable Gloves	99P3082
Disposable Plastic Bags	99P30234
Drop Cloth	5P1737
Film Remover	43P45
Formula A Cleaner	43P48
Polyurethane Pads	600S4653
Towel (heavy duty)	35P3191
XE Unique Cleaner	8R90175
Cleaning Pad Kit	600S4372
Cloth	8R90019
Fuser Cleaning Solvent Pads	43P83
General Cleaning Solvent	8R90176
Test Pattern, Output Performance	82P520
Test Pattern, Visual Scale	82P284
Interlock Cheater	3E85271
Basic Tool Kit	600T1835
Metric Tool Kit	600T1880
Multimeter	600T1616
Lead Kit	600T1923
Hardware Kit	600K76430

GP 8.1 Tag Matrix

All important modifications are identified by a number on the Tag Matrix.

Classification Codes

A tag number may be required to identify differences between parts that cannot be interchanged, or differences in diagnostic, repair, installation, or adjustment procedures. A tag number may also be required to identify the presence of optional hardware, special nonvolatile memory programming, or if mandatory modifications have been installed. Each tag number is given a classification code to identify the type of change the tag has made.

M - Mandatory

N - Not installed in the field

O - Optional

R - Repair

S - Situational

Change Tag index

Tag: 001

Class:

Manufacturers Serial Number:

Name:

Purpose:

Kit Number:

References:

7 Wiring Data

Section Contents

1. Base Engine
   - Wiring Diagrams and Signal Information for Engine
   - Plug/Jack (P/J) Connector Locations for Engine
2. 500 Sheet Feeder
   - Location of P/J Connectors
   - Wiring Diagrams and Signal Information
3. Duplex Assembly
   - Location of P/J Connectors
   - Wiring Diagrams and Signal Information
4. Offset Catch Tray
   - Location of P/J Connectors
   - Wiring Diagrams and Signal Information
5. 2000 Sheet Feeder
   - Location of P/J Connectors
   - Wiring Diagrams and Signal Information

Introduction

This section contains sensor, connector, and PWB location drawings; power distribution diagrams, interconnect diagrams and pin assignment information. This information is not specific to individual procedures but is provided for general reference.

Wiring Diagrams and Signal Information for Engine

Master Wiring Diagram Figure 1 & Figure 2

Wiring and Signal Description between Components

Organization

1. Print Engine Controller PWB<-->LVPS<-->INTER-LOCK SWITCH and FANs (Figure 3, Table 1, Table 2)
2. Print Engine Controller PWB<-->FUSER ASSEMBLY, FUSER PWB (Figure 4, Table 3, Table 4, Figure 5)
3. Print Engine Controller PWB<-->Laser and Print Cartridge SENSOR ASSEMBLY (Print Cartridge SWITCH and LD SWITCH) (Figure 6, Table 5)
4. Print Engine Controller PWB<-->HVPS<-->Print Cartridge (BCR and MAG. ROLL), BTR, and DETACK SAW (Figure 7, Table 6, Table 7)
5. Print Engine Controller PWB<-->REG. CLUTCH and REG. SENSOR (Figure 8, Table 8)
6. Print Engine Controller PWB<-->FEED SOLENOID, TURN CLUTCH, NO-PAPER SENSOR (Figure 9, Table 9, Table 10)
7. Print Engine Controller PWB<-->Low Paper SENSOR, P/H UNIT, TRAY 1 PAPER SIZE SWITCH (Figure 10, Table 11, Table 12)
8. Print Engine Controller PWB<-->MAIN MOTOR (Figure 11, Table 13)
9. Print Engine Controller PWB<-->TONER SENSOR (Figure 12, Table 14)
10. Print Engine Controller PWB<-->Duplex Interface PWB<-->FULL STACK SENSOR (Figure 13, Table 15)
11. CONTROLLER<-->Control Panel (Figure 14)
12. Print Engine Controller PWB<-->DIAGNOSTIC TOOL

Master Wiring Diagram

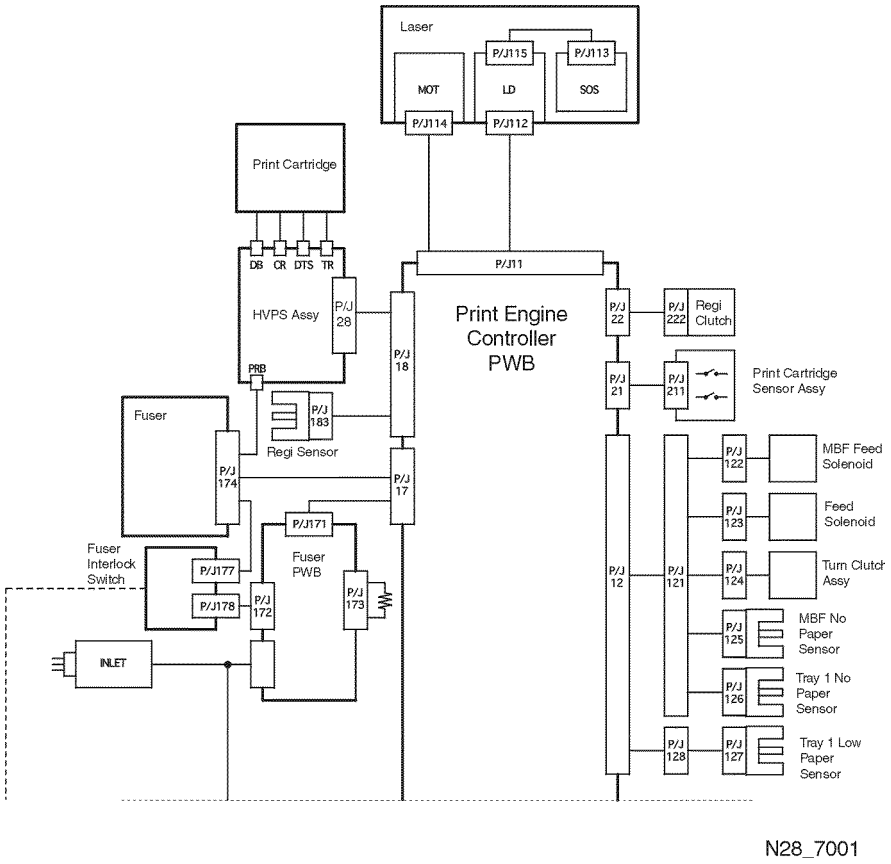


Figure 1 Master Wiring Diagram (1 of 2)

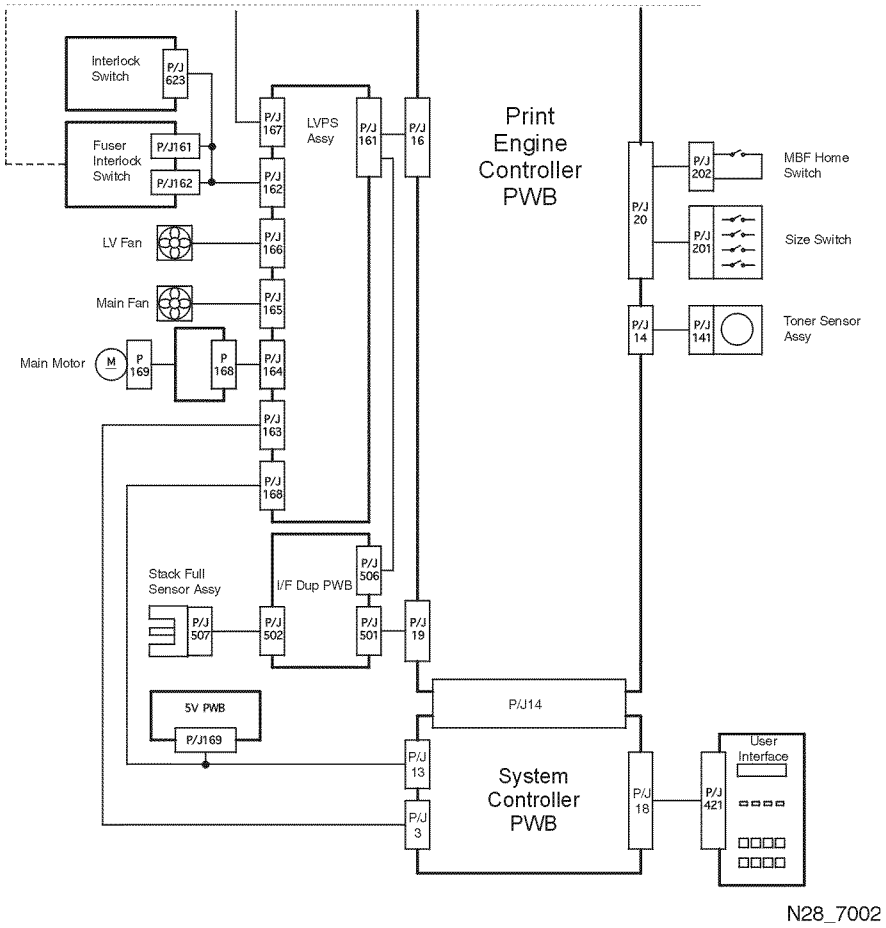


Figure 2 Master Wiring Diagram (2 of 2)

NOTE: **1: The Duplex Interface PWB and the components connected to it by means of P/J503, P/J504, and P/J505 are the components of the Duplex Assembly and OCT.*

Wiring and Signal Description between Components

The Master Wiring Diagram is divided into the following 12 sections. The signal names, pin numbers, and other information are given in detailed diagrams by sections.

Organization

1. Print Engine Controller PWB<-->LVPS<-->INTER-LOCK SWITCH and FANs

2. Print Engine Controller PWB<-->FUSER ASSEMBLY, FUSER PWB

3. Print Engine Controller PWB<-->Laser and Print Cartridge SENSOR ASSEMBLY (Print Cartridge SWITCH and LD SWITCH)

4. Print Engine Controller PWB<-->HVPS<-->Print Cartridge (BCR and MAG. ROLL), BTR, and DETACK SAW

5. Print Engine Controller PWB <--> REG. CLUTCH and REG. SENSOR

6. Print Engine Controller PWB <--> FEED SOLENOID, TURN CLUTCH, NO-PAPER SENSOR

7. Print Engine Controller PWB <--> LOW PAPER SENSOR, P/H UNIT, TRAY 1 PAPER SIZE SWITCH

8. Print Engine Controller PWB <--> MAIN MOTOR

9. Print Engine Controller PWB <--> TONER SENSOR

10. Print Engine Controller PWB <--> Duplex Interface PWB <--> FULL STACK SENSOR

11. CONTROLLER <--> Control Panel

12. Print Engine Controller PWB <--> DIAGNOSTIC TOOL

Symbols	Description
	A plug
	A jack
	P/J Plug/Jack Connector
5VDC	5VDC supply circuit
24VDC	24VDC supply circuit
/HEAT (TTL)	"/" indicates that the signal is a negative logic signal and goes Low when it is ON. "TTL" indicates that the voltage level of the signal is TTL compatible. High: 4 to 5 VDC Low: 0 to 0.8 VDC
/FAN FAST ON(L) xx VDC	"ON(L)" indicates that the signal goes Low when it is ON. "Xx VDC" indicates the voltage when the signal is High.
SG FG RTN	Signal Ground Frame Ground Return * There is continuity between SG and RTN. Continuity between SG and FG depends on the circuit specifications.

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1.Print Engine Controller PWB<-->LVPS<-->INTER-LOCK SWITCH and FANs

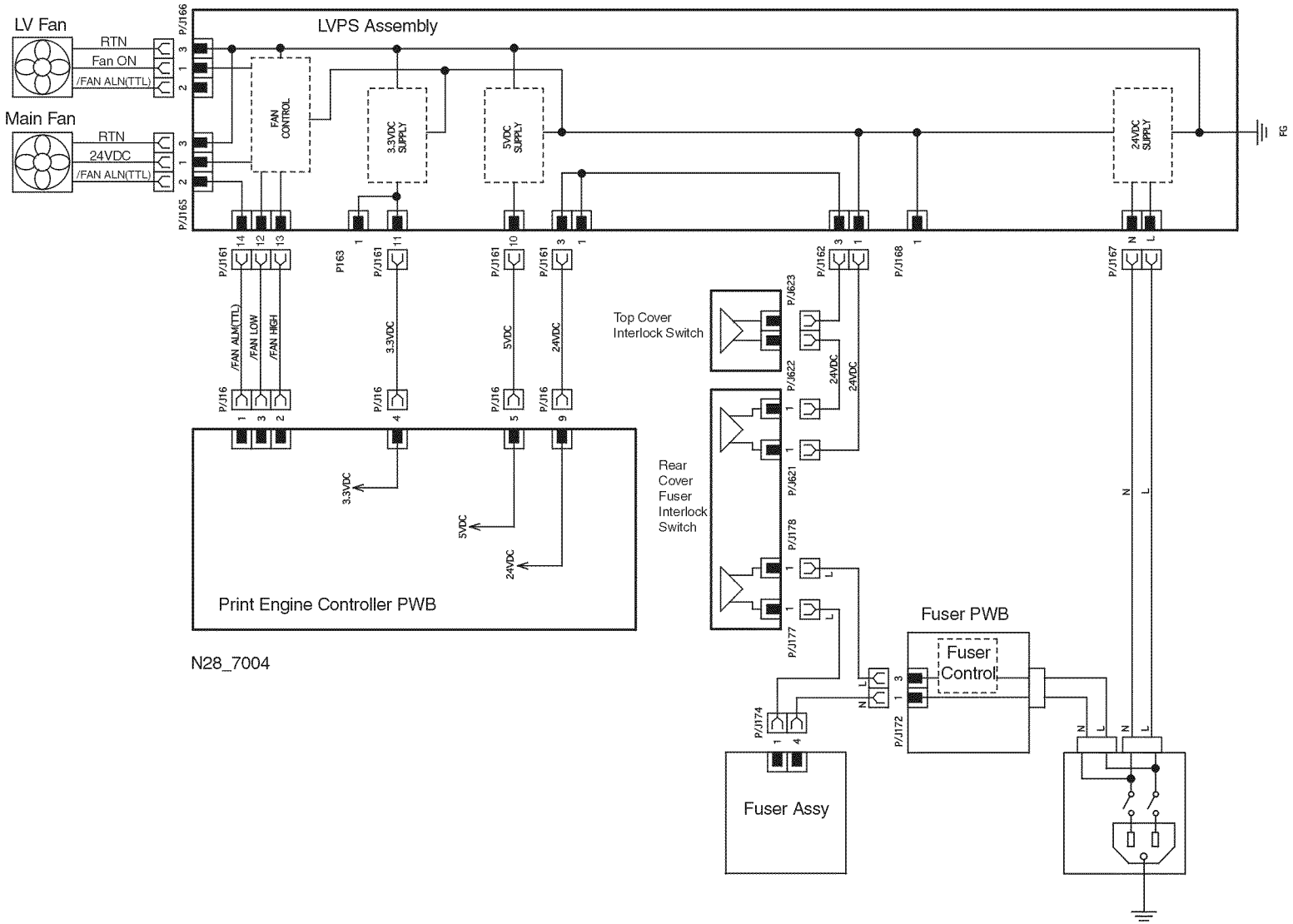

Figure 3 Printer Engine Controller PWB - LVPS - Interlock Switches and Fans

Table 1 Signal names for the Print Engine Controller PWB<-->LVPS path

Signal Name	Description
/FAN ALM (TTL)	Fan monitor signal. Goes High when the rotation of the Main Fan and LVPS Fan is abnormal.

Table 1 Signal names for the Print Engine Controller PWB<-->LVPS path

Signal Name	Description
/FAN LOW ON(L) 24V	Fan speed switching signal that switches the speed of rotation of the Fuser Fan and LVPS Fan between High and Low: Low speed, High: High speed
/FAN HIGH ON(L) 24V	Fan speed switching signal that switches the speed of rotation of the Fuser Fan and LVPS Fan between High and Low: High speed, High: Low speed

Table 2 Signal names for the LVPS<-->Fuser Fan/Main Fan path

Signal Name	Description
FAN ON	Fan drive power that drives the Fuser Fan and LVPS Fan with two voltages, 24V for High speed and 15V for Low speed
/FAN ALM (TTL)	Fan monitor signal. Goes Low when the rotation of the Fuser Fan or LVPS Fan is abnormal

• 24VDC Supply Interruption by the Interlock Switch when the Rear Cover, Top Cover, OCT Rear Cover, or the 2000 Sheet Feeder Rear Cover is open, the Interlock Switch is deactuated to open the 24 VDC supply circuit between the LVPS and the Print Engine Controller PWB. As the result, 24 VDC supply to the Print Engine Controller PWB, and hence Motors, Clutches, and Solenoids are stopped. However, the Fans are always supplied with 24 VDC without being interrupted by the deactuation of the Interlock Switch.

2. Print Engine Controller PWB<-->FUSER ASSEMBLY, FUSER PWB

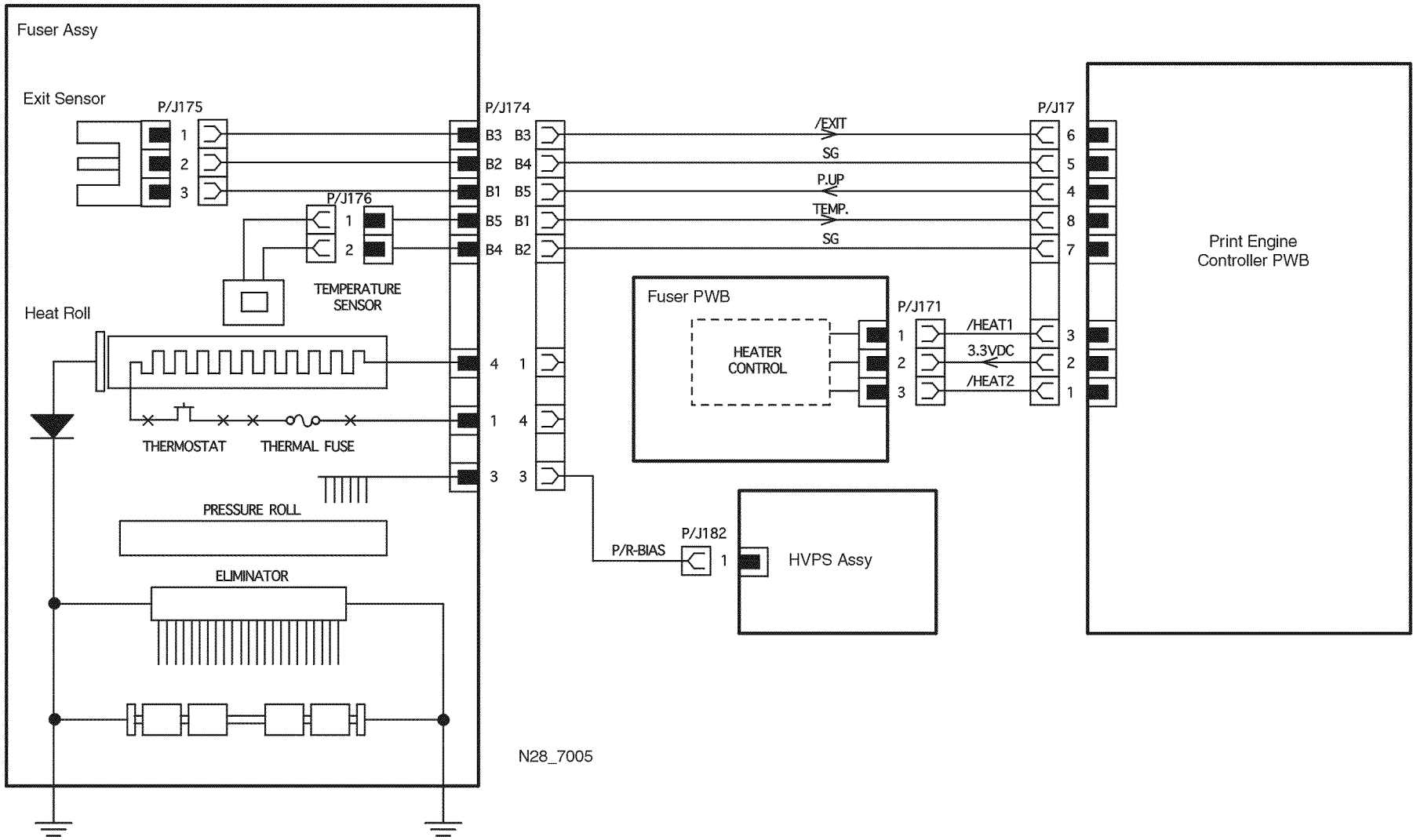

Figure 4 Print Engine Controller PWB-Fuser Assembly, Fuser PWB

Table 3 Pin numbers and voltage levels for the Print Engine Controller PWB <--> Fuser Assembly path

Signal Name	Description
/EXIT (TTL)	Signal from the Exit Sensor. This signal is Low when the Exit Sensor is actuated.
TEMP	Temperature monitor signal (analog signal) from the Temperature Sensor Assembly (Thermistor) that indicates the temperature of the Heat Roll surface

Table 4 Signal names for the Print Engine Controller PWB <--> Fuser PWB path

Signal Name	Description
/HEAT 1(TTL)	Fuser control signal to switch AC power to the Heater Rod on and off Low: On, High: Off
/HEAT 2(TTL)	Fuser control signal to switch AC power to the Heater Rod on and off Low: On, High: Off

Thermal Fuse melting point	Specified temperature = 141 C
Thermostat contacts opening temperature	Temperature of the contacts = approx. 160 C
Heater Rod rated power	100V version: 760 +/- 38 W (100V) 220V version:
Resistance of the Thermistor of Temperature Sensor Assembly.	C: 10 / 20 / 30 / 160 / 170 / 180 / 190 kΩ: 647.0 / 483.3 / 302.3 / 10.1 / 8.4 / 7.0 / 5.9

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Figure 5 Fuse, Thermostat, Heater Rod, and Thermistor specifications

3. Print Engine Controller PWB<-->Laser and Print Cartridge SENSOR ASSEMBLY (Print Cartridge SWITCH and LD SWITCH)

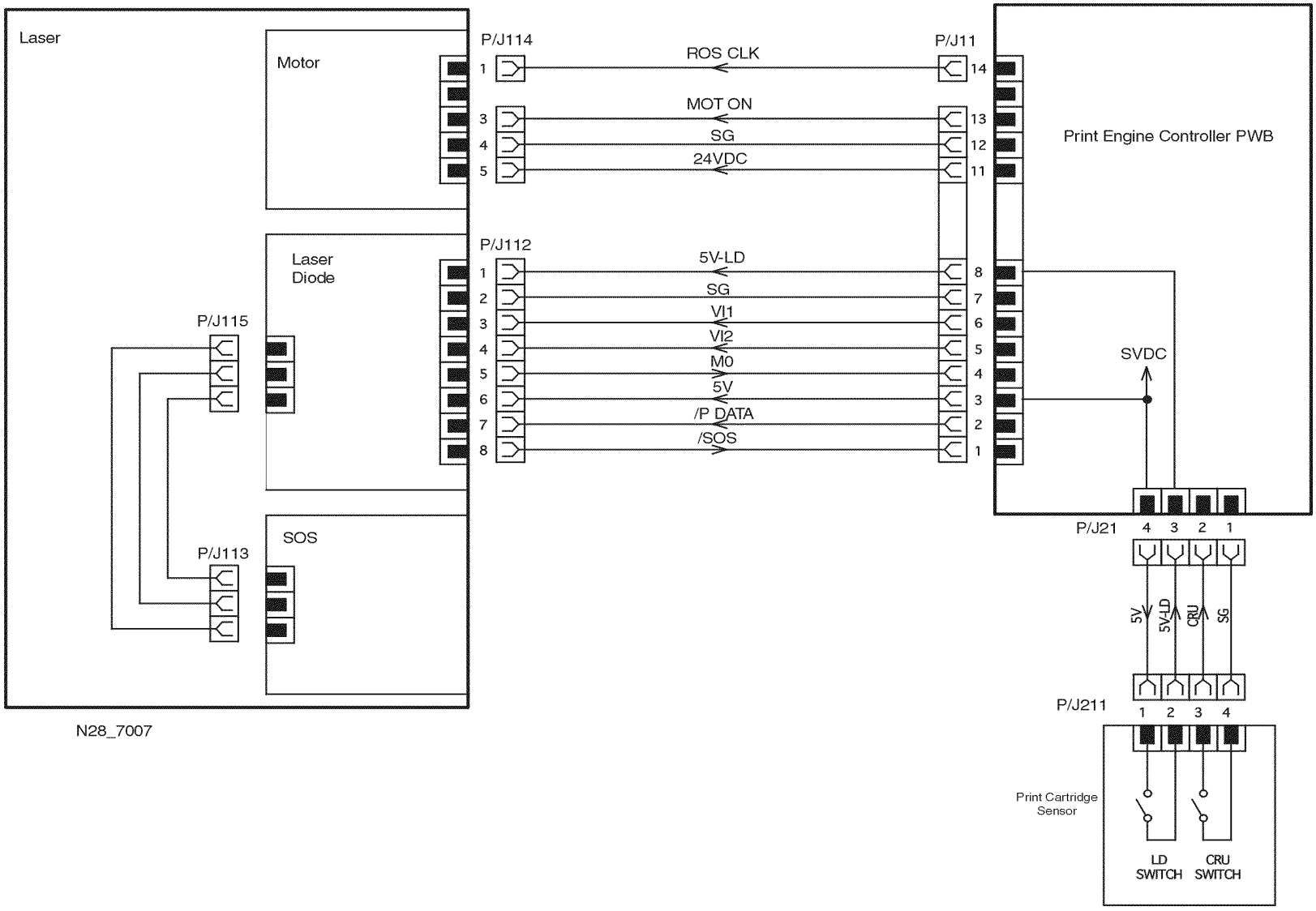

Figure 6 Print Engine Controller PWB-Laser and Print Cartridge Sensor Assembly (Print Cartridge Switch and LD Switch)

Table 5 Signal names for the Print Engine Controller PWB<-->Laser path

Signal Name	Description
/Laser CLK	Clock signal to Laser MOTOR
/MOT ON (TTL)	Scanner Motor Control signal that switches the Scanner Motor on and off Low: On, High: Off
5VDC-LD	Laser Diode drive power causing the Laser Diode to emit laser light. This 5VDC supply to the Laser Diode is interrupted by the deactuation of the LD Switch in the Print Cartridge Sensor assembly.
VL1	Laser power control signal that determines (or adjusts) the current flowing through the Laser Diode (analog signal)
VL2	Laser power control signal that determines (or adjusts) the current flowing through the Laser Diode (analog signal)
MO	Laser power monitor signal that feeds back the power of the laser light emitted by the Laser Diode (analog signal)
/P. DATA (TTL)	Print image data (Low=Black dot, High=White dot)
/SOS (TTL)	Synchronization signal generated by the SOS Sensor that indicates the start of each scan

- **Print Cartridge Sensor Assembly function**

  The Print Cartridge Sensor Assembly has the Print Cartridge Switch and the LD Switch mounted inside. The Actuator in the Print Cartridge Sensor Assembly is depressed by the projection of the Print Cartridge to actuate the Print Cartridge Switch and the LD Switch. When the Print Cartridge is not installed, the LD Switch is deactuated and opens the 5VDC-LD circuit, stopping laser light emission.

WARNING

The LD Switch is the safety switch against the laser light. Never cheat the LD Switch to avoid exposure to the laser light beam. Direct eye exposure to the laser light beam may cause eye injury or blindness.

4. Print Engine Controller PWB<-->HVPS<-->Print Cartridge (BCR and MAG. ROLL), BTR, and DETACK SAW

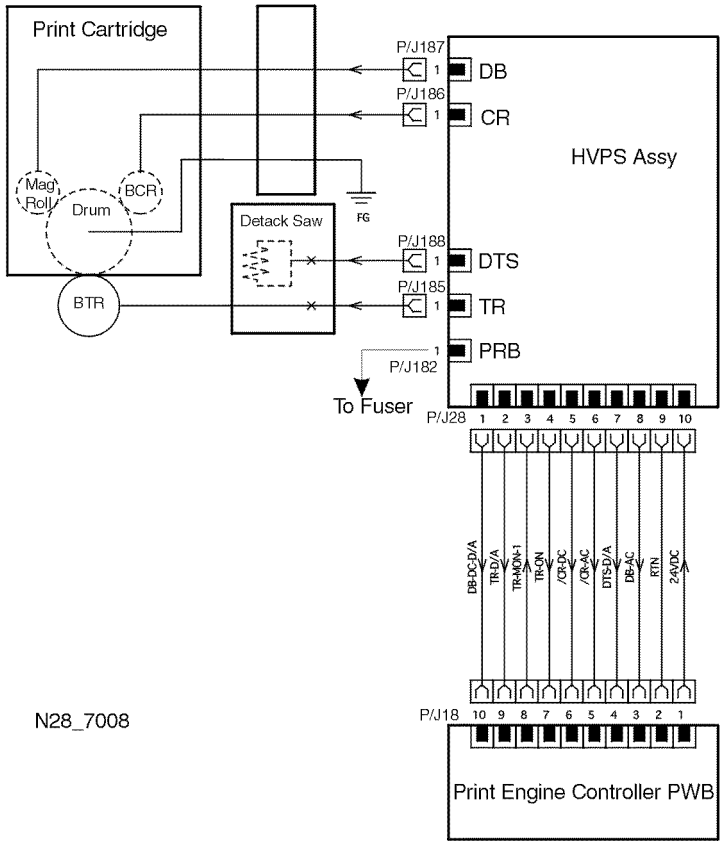

Figure 7 Print Engine Controller PWB-HVPS-Print Cartridge, BTR, and Detack Saw

Table 6 Signal names for the Print Engine Controller PWB<-->HVPS path

Signal Name	Description
DB-DC-D/A	Control signal to select the DB (Development Bias) voltage (0 ~ 3.3VDC)
TR-DA	Control signal to select the TR(+) current (0 ~ 3.3VDC)
TR MON-I	Monitor signal of the TR(+) current (0 ~ 3.3VDC) by the MTVC

Table 6 Signal names for the Print Engine Controller PWB<-->HVPS path

Signal Name	Description
TR-ON	Control signal to switch the TR on and off (H=5.6V) (L=0V)
CR-DC	Control signal to switch the DC component of the CR and PRB on and off (H=24V) (L=0V)
CR-AC	Constant-frequency pulse signal that provides the source of oscillation for generating the AC component of the CR
DTS-PWM	Control signal to select the DTS Duty(0 ~ 100%)
DB-AC	Constant-frequency pulse signal that provides the source of oscillation for generating the AC component of the DB (Development Bias)

Table 7 HVPS Outputs

Terminal	Connector	Output	Voltage or Current
CR	P/J186	CR(AC)	1.55 mA (Average)
		CR(DC)	-420 VDC
DB	P/J187	DB(AC)	2.0 kVp-p
		DB(DC)	-300 VDC
TR	P/J185	TR(+)	2.5 kV
		TR(-)	-650 VDC
DTS	P/J188	DTS	-1.13 kVDC
PRB	P/J182	PRB	350 VDC

NOTE: *The TR(+) (Transfer voltage) and the DTS (Detack voltage) while transfer and detack are in progress are determined by the NTDVC (Numerical Transfer and Detack Voltage Control).*

5. Print Engine Controller PWB <--> REG. CLUTCH and REG. SENSOR

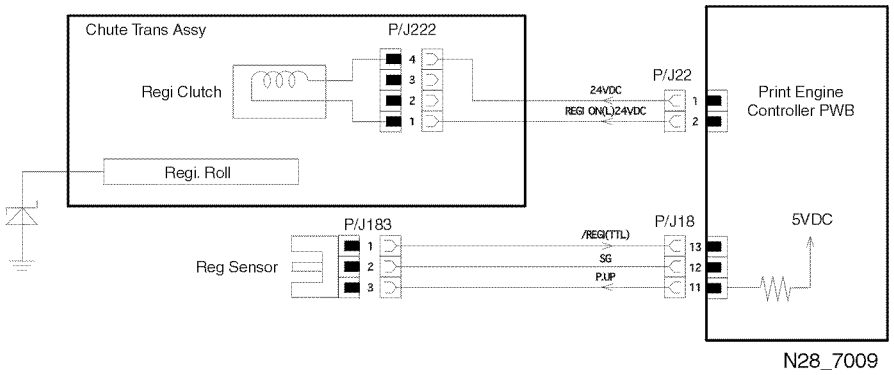

Figure 8 Print Engine Controller PWB-Reg. Clutch and Reg. Sensor

Table 8 Signal names for the Print Engine Controller PWB <--> REG. Clutch and Reg. Sensor

Signal Name	Description
REG. ON(L) 24VDC	Registration Clutch control signal. The Registration Clutch is actuated when this signal is Low, and deactuated when High.
/REG. IN (TTL)	Signal from the Registration Sensor. This signal is Low when the Registration Sensor is actuated.

6. Print Engine Controller PWB <--> FEED SOLENOID, TURN CLUTCH, NO-PAPER SENSOR

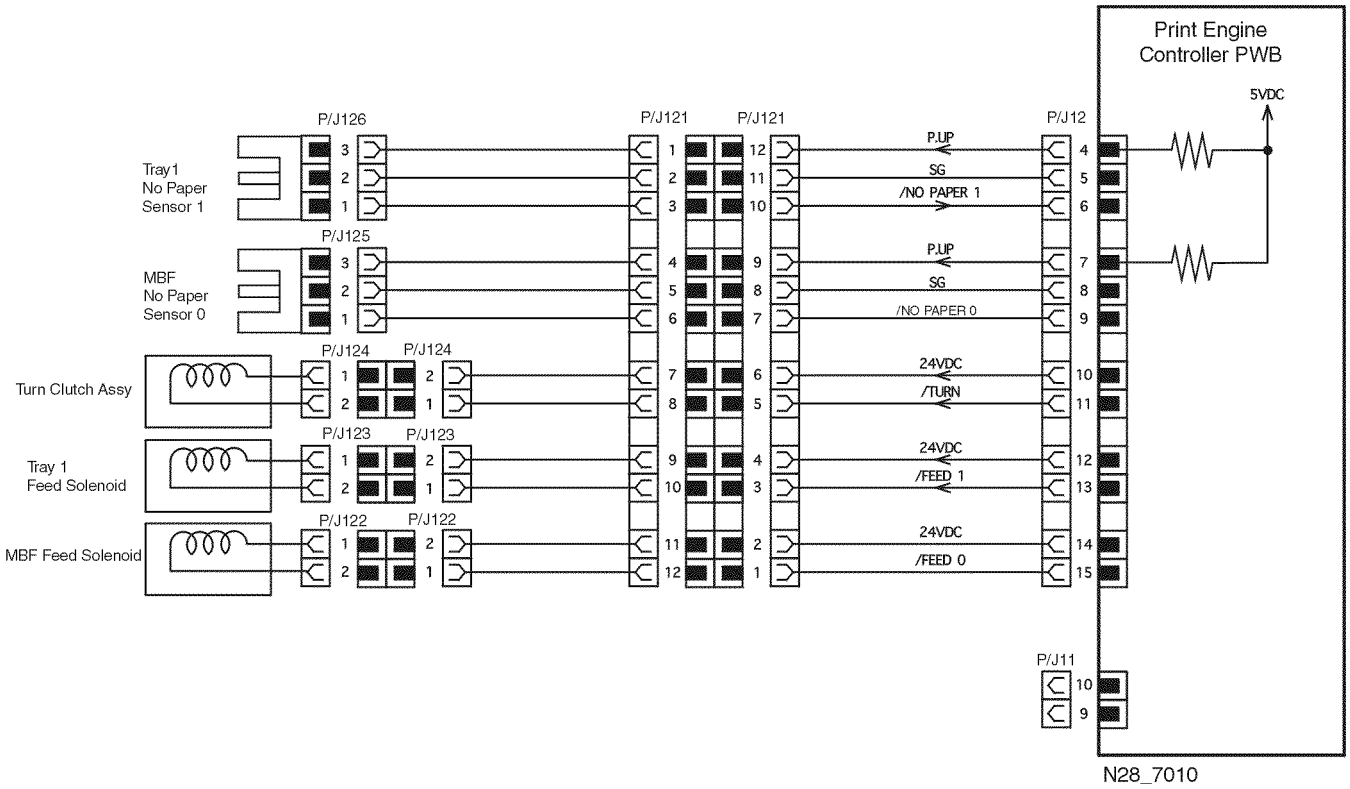

Figure 9 Print Engine Controller PWB-Feed Solenoid, Turn Clutch, No Paper Sensor

Table 9 Signal names for the Print Engine Controller PWB <--> FEED SOLENOID, TURN CLUTCH, NO-PAPER SENSOR path

Signal Name	Description
/FEED0 ON(L) 24VDC	Feed Solenoid 0 control signal. The Feed Solenoid 0 (Feed Solenoid of the Tray 1) is actuated when this signal is Low, and deactuated when High.
/FEED1 ON(L) 24VDC	Feed Solenoid 1 control signal. The Feed Solenoid 1 (Feed Solenoid of the Feeder 1) is actuated when this signal is Low, and deactuated when High.
/TURN ON(L) 24VDC	Turn Clutch control signal. The Turn Clutch is actuated when this signal is Low, and deactuated when High.
/NO PAPER0 (TTL)	Signal from the No Paper Sensor 0 (No Paper Sensor of the Tray 1). This signal is Low when the No Paper Sensor 0 is actuated.
/NO PAPER1 (TTL)	Signal from the No Paper Sensor 1 (No Paper Sensor of Tray 1). This signal is Low when the No Paper Sensor 1 is actuated.

Table 10 Feed Solenoid and Electromagnetic Clutch winding resistance

MBF Feed Solenoid winding resistance	90 ohms 10% (at 20° C)
Tray 1 Feed Solenoid winding resistance	90 ohms 10% (at 20° C)
Turn Clutch Assembly winding resistance	192 ohms 10% (at 20° C)

7. Print Engine Controller PWB <--> LOW PAPER SENSOR, P/H UNIT, TRAY 1 PAPER SIZE SWITCH

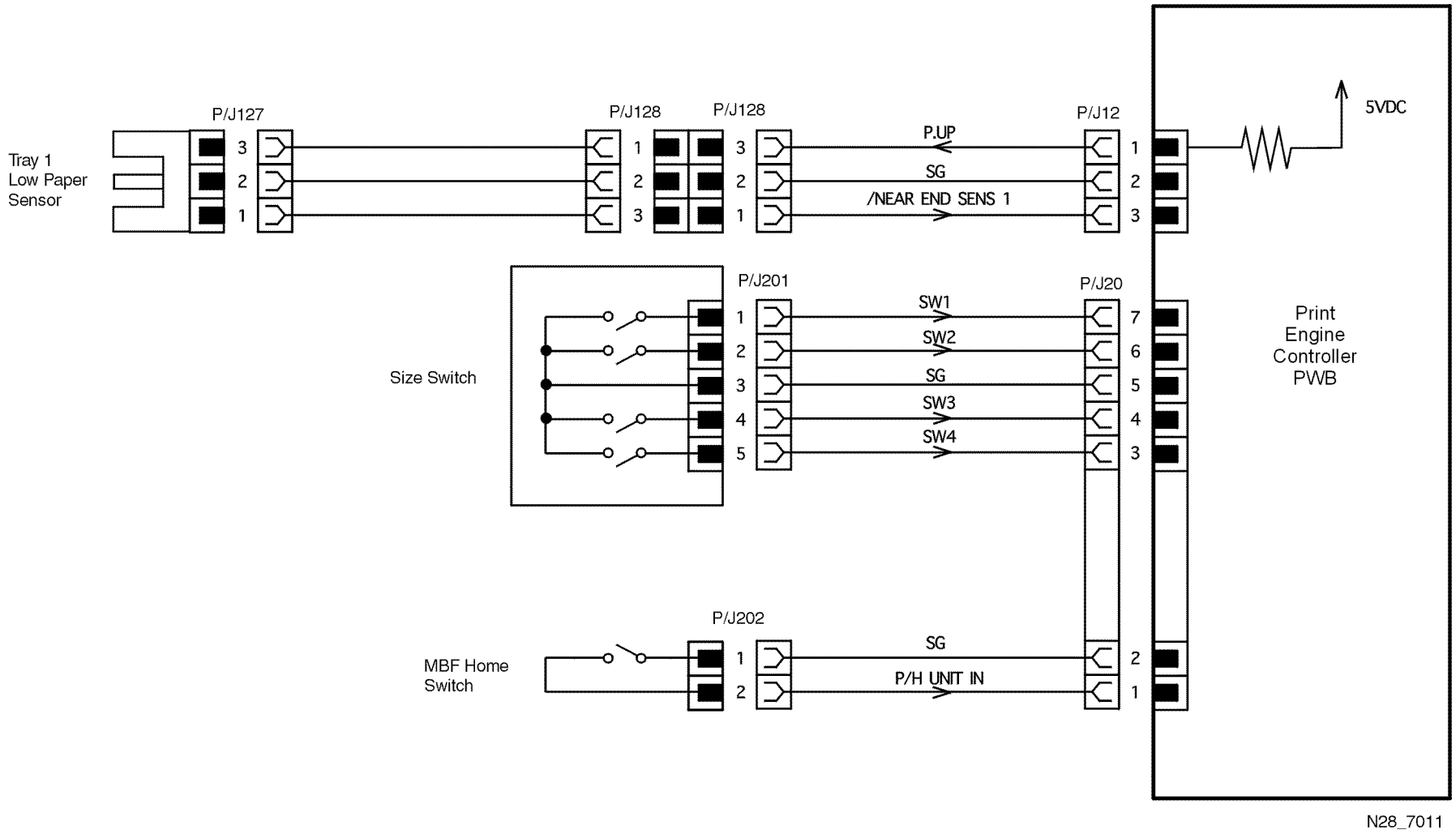

Figure 10 Print Engine Controller PWB-Low Paper Sensor, P/H Unit, Tray1 Paper Size Switch

Table 11 Signal names for the Print Engine Controller PWB<-->Low Paper SENSOR, P/H UNIT, TRAY 1 PAPER SIZE SWITCH path

Signal Name	Description
/NEAR END SENS 1	Signal from the Low Paper Sensor. Goes Low when Paper is low in the Paper Tray
P/H UNIT IN	Signal from the P/H UNIT. Goes? when the MBF is extended
SW1	Signal from the Size witch. Goes Low when SIZE 1BIT of Size witch is actuated
SW2	Signal from the Size witch. Goes Low when SIZE 2BIT of Size witch is actuated
SW3	Signal from the Size witch. Goes Low when SIZE 3BIT of Size witch is actuated
SW4	Signal from the Size witch. Goes Low when SIZE 4BIT of Size witch is actuated

- Paper size detection with SIZE 1BIT to SIZE 4BIT signals

The Print Engine Controller PWB reads the On and Off states of the Paper Size Switches through the SIZE 1BIT to SIZE 4BIT signal lines. The Paper Size Switches are denoted by SW1 to SW4 in the top-to-bottom order. “1” indicates On (actuated state), and “0” Off (deactuated state).

Table 12 Paper Size Detection

	Paper Size Switches and SIZE BIT signals			
	SW4	SW3	SW2	SW1
Paper Size	SIZE 4 BIT	SIZE 3 BIT	SIZE 2 BIT	SIZE 1 BIT
Cassette removed	-	-	-	-
Non-regular size	-	-	-	-
Ledger SEF	-	-	-	-
A3 SEF	0	1	1	0
B4 SEF	0	0	1	0
Legal 14" SEF	1	0	1	0
Legal 13" SEF	1	0	0	0
A4 SEF	1	1	0	0
Letter SEF	-	-	-	-
Letter LEF	1	1	0	1
A4 LEF	0	1	0	1
B5 SEF	-	-	-	-
Executive LEF	-	-	-	-
A5 LEF	1	0	1	1
Statement LEF	-	-	-	-
Postcard SEF	0	0	0	1
C5 SEF	0	0	1	1

Table 12 Paper Size Detection

	Paper Size Switches and SIZE BIT signals			
	SW4	SW3	SW2	SW1
Paper Size	SIZE 4 BIT	SIZE 3 BIT	SIZE 2 BIT	SIZE 1 BIT
COM-10 SEF	-	-	-	-
DL SEF	1	0	0	1
Monarch SEF	-	-	-	-

8. Print Engine Controller PWB <--> MAIN MOTOR

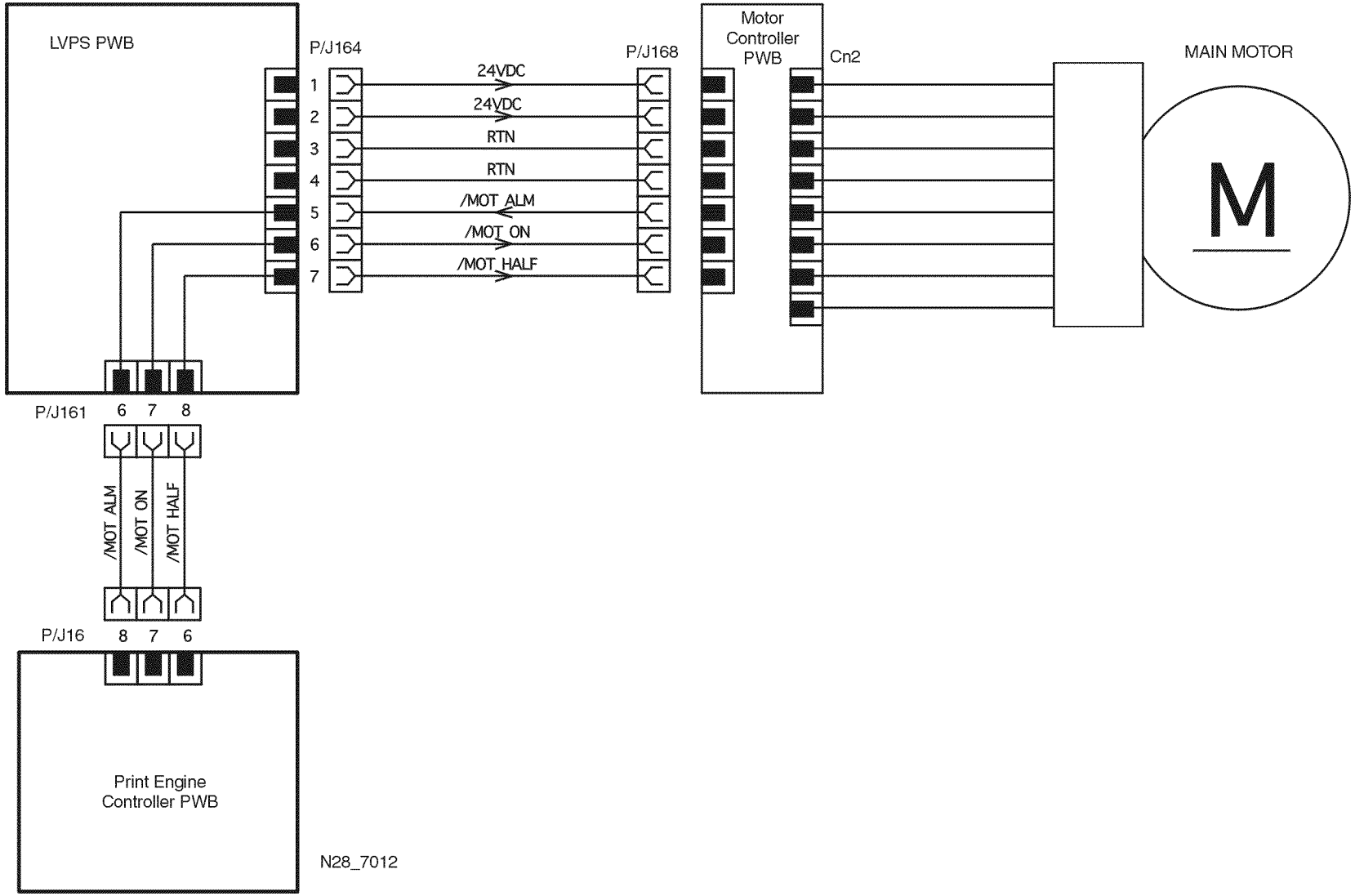

Figure 11 Print Engine Controller PWB-Main Motor

Table 13 Signal names for the Print Engine Controller PWB <--> LVPS <--> Main Motor path

Signal Name	Description
/MOT HALF (TTL)	Control signal to switch the speed of the Main Motor between Normal and Half. Low: Half speed, High: Normal speed
/MAIN MOT (TTL)	Main Motor monitor signal. Goes Low when the rotation of the Main Motor is abnormal.
MOT ALM (TTL)	Main Motor Control Signal to switch the Main Motor on and off (H=TTL) (L=TTL)

9. Print Engine Controller PWB <--> TONER SENSOR

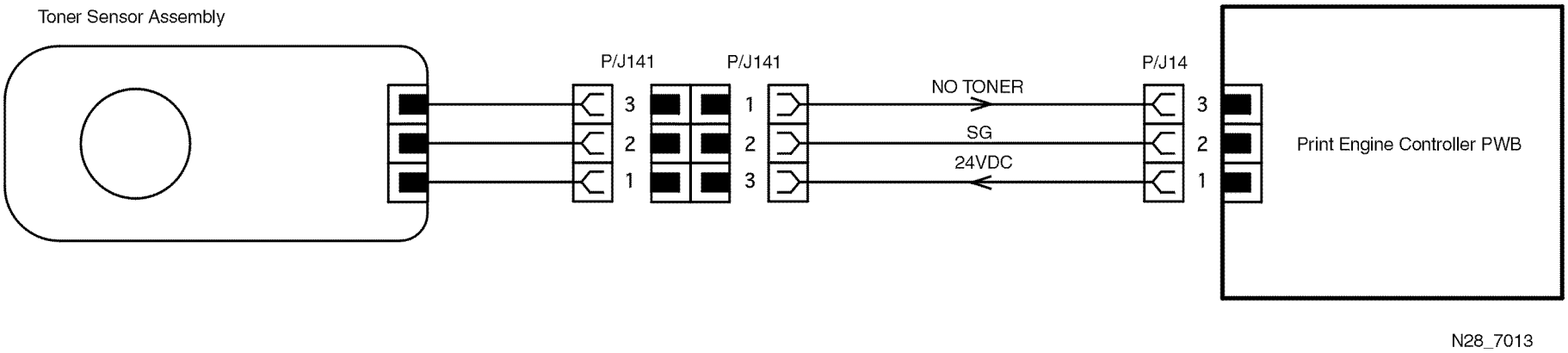

Figure 12 Print Engine Controller PWB-Toner Sensor

Table 14 Signal names for the Print Engine Controller PWB <--> Toner Sensor path

Signal Name	Description
/NO TONER (TTL)	Signal from the Toner Sensor. Goes Low when toner is low in the Print Cartridge.

10. Print Engine Controller PWB <--> Duplex Interface PWB <--> FULL STACK SENSOR

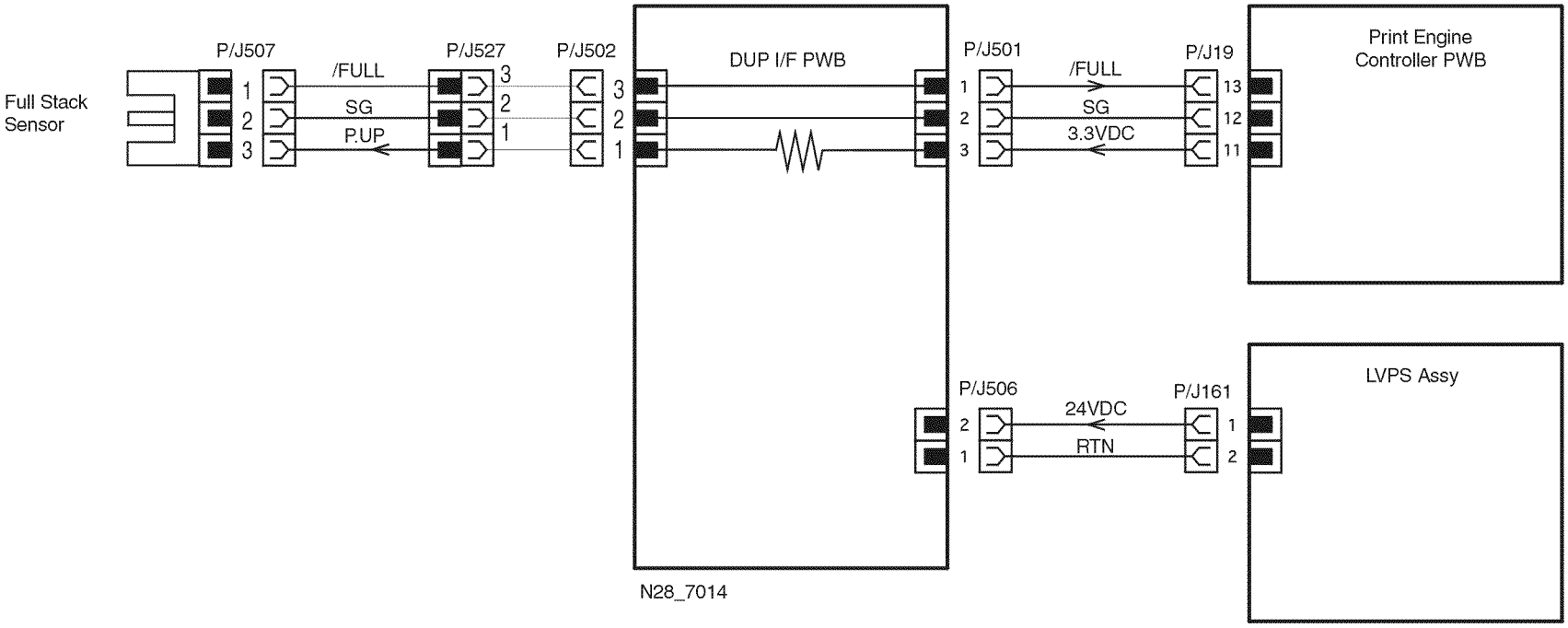

Figure 13 Print Engine Controller PWB-Duplex Interface PWB-Full Stack Sensor

Table 15 Signal names for the Print Engine Controller PWB<-->Duplex Interface PWB <--> FULL STACK SENSOR path

Signal Name	Description
/FULL STACK(TTL)	Signal from the Full Stack Sensor. Goes Low when the Full Stack Sensor is deactuated.

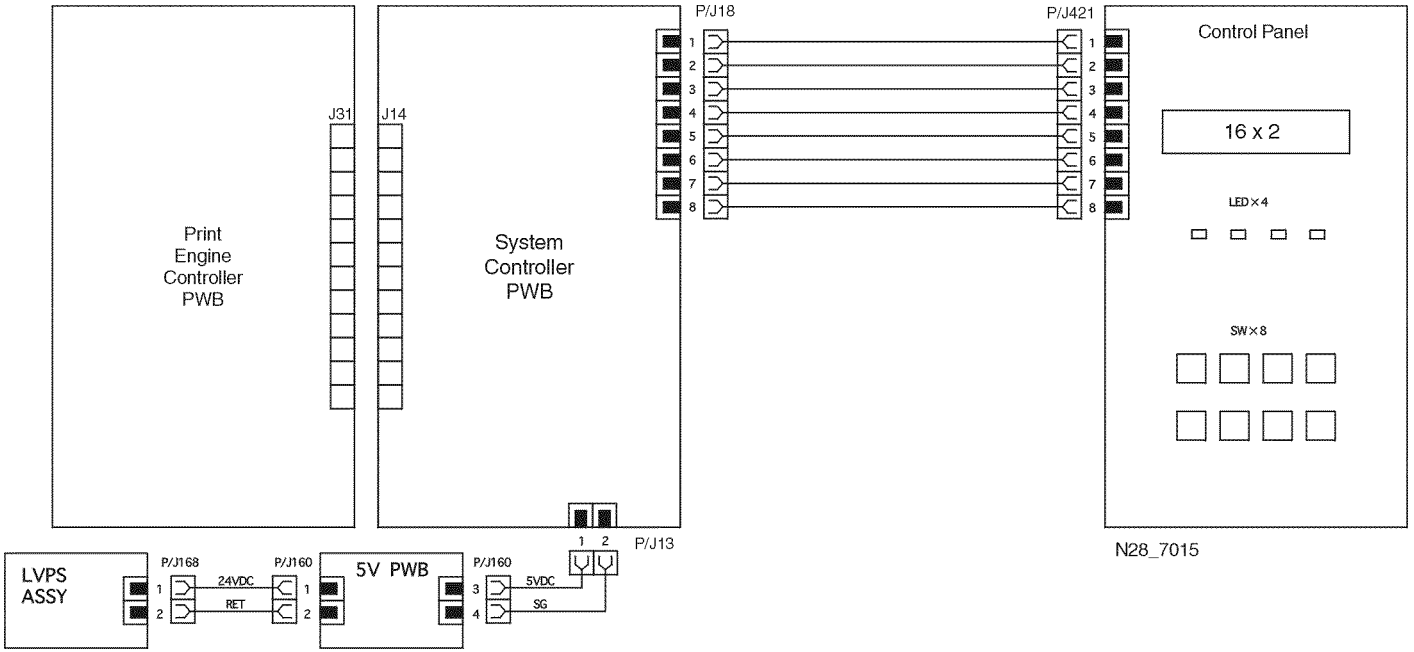

Figure 14 Controller-Control Panel

12. Print Engine Controller PWB <--> DIAGNOSTIC TOOL

Plug/Jack (P/J) Connector Locations for Engine

Contents

4. Plug/Jack (P/J) Connector Locations

4.1 Plug/Jack (P/J) Connector Location Table (Table 16)

Table 16 Plug/Jack (P/J) Connector Locations

P/J	Coordinates	Location (Note 1)		Harness (Note 2)		Notes
		Location Name	PL	Harness Name (Note 3)	Item #	
11	H-18	Print Engine Controller PWB	PL 9.1	Laser NS Harness Assembly	18	Connects Print Engine Controller PWB and Laser Assembly.
12	I-17	Print Engine Controller PWB	PL 9.1	P/H Harness Assembly	16	Connects Print Engine Controller PWB and P/H Unit Harness Assembly.
13	I-18	Print Engine Controller PWB	PL 9.1	Feeder Harness Assembly	PL 9.1	Connects Print Engine Controller PWB and High Feeder 2 Assembly.
14	I-18	Print Engine Controller PWB	PL 8.1	Print Cartridge Sensor Harness Assembly	23	Connects Print Engine Controller PWB and Print Cartridge Sensor.
15	H-19	Print Engine Controller PWB	PL 8.1	Convertible Harness Assembly	PL 9.1	Connects Print Engine Controller PWB and Control Panel.
16	I-19	Print Engine Controller PWB	PL 9.2	LVPS Harness Assembly	PL 9.2 item 1	Connects Print Engine Controller PWB and LVPS.
17	I-18	Print Engine Controller PWB	PL 8.1	Fuser Harness Assembly	10	Connects Print Engine Controller PWB, Fuser Assembly and Fuser PWB.
18	H-19	Print Engine Controller PWB	PL 8.1	HVPS Harness Assembly	PL 9.1	Connects Print Engine Controller PWB, HVPS and Regi. Sensor.
19	I-19	Print Engine Controller PWB	PL 8.1	Duplex I/F Harness Assembly	PL 9.1	Connects Print Engine Controller PWB and Duplex I/F PWB.
20	H-20	Print Engine Controller PWB	PL 8.1	SNS Harness Assembly	PL 3.1	Connects Print Engine Controller PWB and CSTL Guide Assembly. (CST Sensor, Size Switch)

Table 16 Plug/Jack (P/J) Connector Locations

P/J	Coordinates	Location (Note 1)		Harness (Note 2)		Notes
		Location Name	PL	Harness Name (Note 3)	Item #	
21	H-18	Print Engine Controller PWB	PL 8.1	Print Cartridge Sensor Harness Assembly	8.1.17	Connects Print Engine Controller PWB and Print Cartridge Sensor.
22	I-18	Print Engine Controller PWB	PL 8.1	REGI Harness Assembly	PL 9.1	Connects Print Engine Controller PWB and Regi Clutch.
31	H-24	Print Engine Controller PWB	PL 8.1	System Controller PWB	PL 9.1	Connects Print Engine Controller PWB and System Controller PWB.
112	G-23	Laser Assembly	PL 8.1	Laser NS Harness Assembly	PL 9.1	Connects Laser Assembly (LD Assembly) and Print Engine Controller PWB.
113	D-23	Laser Assembly	PL 8.1	Laser Harness Assembly	PL 8.1	Connects Laser Assembly (SOS Sensor) and LD Assembly.
114	H-22	Laser Assembly	PL 8.1	Laser NS Harness Assembly	PL 9.1	Connects Laser Assembly (Scanner Motor Assembly) and Print Engine Controller PWB.
115	G-23	Laser Assembly	PL 8.1	Laser Harness Assembly	PL 8.1	Connects Laser Assembly (LD Assembly) and SOS Sensor.
121	C-8	Tray 1	PL 4.2	P/H Unit Harness Assembly	PL 4.2	Connects Tray 1 Assembly and Print Engine Controller PWB.
122	D-9	Tray 1	PL 4.2	P/H Unit Harness Assembly	PL 4.2	Connects Tray 1 Assembly (Tray 1 Feed Solenoid) and P/H Unit Harness Assembly (Print Engine Controller PWB).
123	D-9	Tray 1	PL 4.2	P/H Unit Harness Assembly	PL 4.2	Connects Tray 1 Assembly (Feed CTS Solenoid) and P/H Unit Harness Assembly (Print Engine Controller PWB).

Table 16 Plug/Jack (P/J) Connector Locations

P/J	Coordinates	Location (Note 1)		Harness (Note 2)		Notes
		Location Name	PL	Harness Name (Note 3)	Item #	
124	D-9	Tray 1	PL 4.2	P/H Unit Harness Assembly	PL 4.2	Connects Tray 1 Assembly (Turn Clutch Assembly) and P/H Unit Harness Assembly (Print Engine Controller PWB).
125	E-9	Tray 1	PL 4.2	P/H Unit Harness Assembly	PL 4.2	Connects Tray 1 Assembly (Photo Sensor) and P/H Harness Assembly (Print Engine Controller PWB).
126	F-9	Tray 1	PL 4.2	P/H Unit Harness Assembly	PL 4.2	Connects Tray 1 Assembly (Photo Sensor) and P/H Harness Assembly (Print Engine Controller PWB).
127	G-26	Guide CSTL	PL 3.1	NESNS Harness Assembly	21	Connects Tray 1 Guide Left (Photo Sensor) and P/H Harness Assembly (Print Engine Controller PWB).
128	I-25	Not mounted	PL 3.1	NESNS Harness Assembly	PL 3.1	Connects NESNS Harness Assembly and P/H Harness Assembly (Print Engine Controller PWB).
131	B-10	Left Frame Sub Assembly	_	Feeder Harness Assembly	PL 9.1	Connects Feeder 2 and Print Engine Controller PWB.
141	C-7	Sensor Assembly Print Cartridge	PL 8.1	Toner Sensor Harness Assembly	PL 8.1	Connects Toner Sensor and Print Engine Controller PWB.
161	E-41	LVPS	PL 9.2	LVPS Harness Assembly	PL 9.2 item 1	Connects LVPS Assembly and Print Engine Controller PWB.

Table 16 Plug/Jack (P/J) Connector Locations

P/J	Coordinates	Location (Note 1)		Harness (Note 2)		Notes
		Location Name	PL	Harness Name (Note 3)	Item #	
162	F-42	LVPS	PL 9.2	I/L Harness Assembly	6	Connects LVPS Assembly and Interlock Switch (Fuser Interlock Switch, I/R switch).
163	F-42	LVPS	PL 9.2	System Controller PWB 3.3V Harness Assembly	PL 9.2	Connects LVPS Assembly and System Controller PWB.
164	F-42	LVPS	PL 9.2	Motor Assembly	PL 7.1	Connects LVPS Assembly and Main Motor Assembly.
165	E-41	LVPS	PL 9.2	Main Fan	PL 9.1	Connects LVPS Assembly and Main Fan.
166	E-41	LVPS	PL 9.2	LVPS Fan	PL 9.1	Connects LVPS Assembly and LV Fan.
167	D-41	LVPS	PL 9.2	Inlet	PL 9.1	Connects LVPS Assembly and Inlet Assembly.
168	F-41	LVPS	PL 9.2	System Controller PWB 5V Harness Assembly	4	Connects LVPS Assembly and SMB-5V.
169	H-26	SMB-5V	PL 9.2	System Controller PWB 5V Harness Assembly	4	Connects SMB-5V, LVPS and System Controller PWB.
171	C-41	Fuser PWB	PL 9.2	Fuser Harness Assembly	10	Connects Fuser PWB and Print Engine Controller PWB.
172	C-41	Fuser PWB	PL 9.2	Fuser Harness Assembly	10	Connects Fuser PWB, Fuser Assembly and Fuser Interlock Switch.
174	J-7	Fuser Assembly	PL 9.2	Fuser Harness Assembly	10	Connects Fuser Assembly, Fuser PWB, Fuser Interlock Switch, Print Engine Controller PWB and HVPS.
177	J-8	Fuser Interlock Switch	PL 9.2	Fuser Harness Assembly	10	Connects Fuser Interlock Switch and Fuser Assembly.
178	J-8	Fuser Interlock Switch	PL 9.2	Fuser Harness Assembly	10	Connects Fuser Interlock Switch and Fuser PWB.

Table 16 Plug/Jack (P/J) Connector Locations

P/J	Coordinates	Location (Note 1)		Harness (Note 2)		Notes
		Location Name	PL	Harness Name (Note 3)	Item #	
181	E-34	HVPS	PL 9.1	HVPS Harness Assembly	22	Connects HVPS and Print Engine Controller PWB.
182	D-33	HVPS	PL 9.2	Fuser Harness Assembly	10	Connects HVPS and Fuser Assembly.
183	G-8	Paper Transport	PL 9.1	HVPS Harness Assembly	22	Connects Paper Transport (Regi Sensor) and Print Engine Controller PWB.
185	E-33	HVPS	PL 9.1	Print Cartridge (TR)	PL 9.1	Connects HVPS and Print Cartridge (TR).
186	C-33	HVPS	PL 9.1	Print Cartridge (CR)	PL 9.1	Connects HVPS and Print Cartridge (CR).
187	C-33	HVPS	PL 9.1	Print Cartridge (DB)	PL 9.1	Connects HVPS and Print Cartridge (DB).
188	E-33	HVPS	PL 9.1	Print Cartridge (DTS)	PL 9.1	Connects HVPS and Print Cartridge (DTS).
201	H-26	Tray 1 Guide Left	PL 3.1	SNS Harness Assembly	PL 3.1	Connects Tray 1 Guide Left (Size Switch) and Print Engine Controller PWB.
202	H-26	Tray 1 Guide Left	PL 3.1	SNS Harness Assembly	PL 3.1	Connects Tray 1 Guide Left (CST Sensor) and Print Engine Controller PWB.
211	C-7	Print Cartridge Sensor Assembly	PL 8.1	Print Cartridge Sensor Harness Assembly	23	Connects Print Cartridge Sensor Assembly and Print Engine Controller PWB.
222	E-7	Paper Transport	PL 5.1	REGI Harness Assembly	PL 9.1	Connects Paper Transport (Regi Clutch) and Print Engine Controller PWB.
311	F-27	System Controller PWB	PL 9.2	System Controller PWB 3.3V Harness Assembly	3	Connects System Controller PWB and LVPS.
312	H-26	System Controller PWB	PL 9.2	System Controller PWB 5V Harness Assembly	4	Connects System Controller PWB and SMB-5V.
421	B-6	Console Assembly	PL 1.1	Convertible Harness Assembly	PL 9.1	Connects Console Assembly and MCV PWB.

Table 16 Plug/Jack (P/J) Connector Locations

P/J	Coordinates	Location (Note 1)		Harness (Note 2)		Notes
		Location Name	PL	Harness Name (Note 3)	Item #	
501	I-34	Duplex I/F	PL 9.2	Duplex I/F Harness Assembly	PL 9.1	Connects Duplex I/F PWB and Print Engine Controller PWB.
502	I-34	Duplex I/F	PL 9.2	Duplex Full -I/F Harness Assembly	PL 9.1	Connects Duplex I/F PWB and Full Stack Sensor.
503	I-34	Duplex I/F	PL 9.2	Duplex PWB	-	Connects Duplex I/F PWB and Duplex Assembly.
504	I-34	Duplex I/F	PL 9.2	STK-I Harness Assembly	PL 9.1	Connects Duplex I/F PWB and Stacker Assembly.
505	I-34	Duplex I/F		Flap-I Harness Assembly	PL 9.1	Connects Duplex I/F PWB and Flapper Module.
506	J-34	Duplex I/F	PL 9.2	LVPS Harness Assembly	PL 9.2 item 1	Connects Duplex I/F PWB and LVPS.
507	G-5	Exit Assembly	PL 6.1	Full Stack Sensor Harness	18	Connects Full Stack Sensor and Duplex I/F PWB.
519	J-6	Exit Assembly	PL 6.1	Direction Solenoid Harness	13	Connects Flapper Module and Duplex I/F PWB.
526	D-5	Bracket Assembly OCT-L	PL 7.1	STK-I Harness Assembly	PL 6.1	Connects Stacker Assembly and Duplex I/F PWB.
527	E-26	HV Cover	PL 6.1	Full Stack Sensor Harness	18	Intermediate Connectors. Connects Full Stack Sensor and Duplex I/F PWB.
528	E-26	HV Cover	PL 7.1	Direction Solenoid Harness	PL 6.1	Intermediate Connectors. Connects Flapper Module and Duplex I/F PWB.
621	J-8	Fuser Interlock Switch	PL 8.1	I/L Harness Assembly	6	Connects Fuser Interlock Switch and LVPS.
622	J-8	Fuser Interlock Switch	PL 9.1	I/L Harness Assembly	6	Connects Interlock Switch and I/R Switch.
623	H-7	Guide Print Cartridge-R	PL 8.1	I/L Harness Assembly	6	Connects I/R Switch, Fuser Interlock Switch and LVPS.

Table 16 Plug/Jack (P/J) Connector Locations

P/J	Coordinates	Location (Note 1)		Harness (Note 2)		Notes
		Location Name	PL	Harness Name (Note 3)	Item #	
CN2	F-42	Motor Assembly	PL 7.1	Main Motor	PL 7.1	Connects Main Drive Motor Controller PWB to Main Motor.

4.2 Plug/Jack (P/J) Connector Location Diagrams

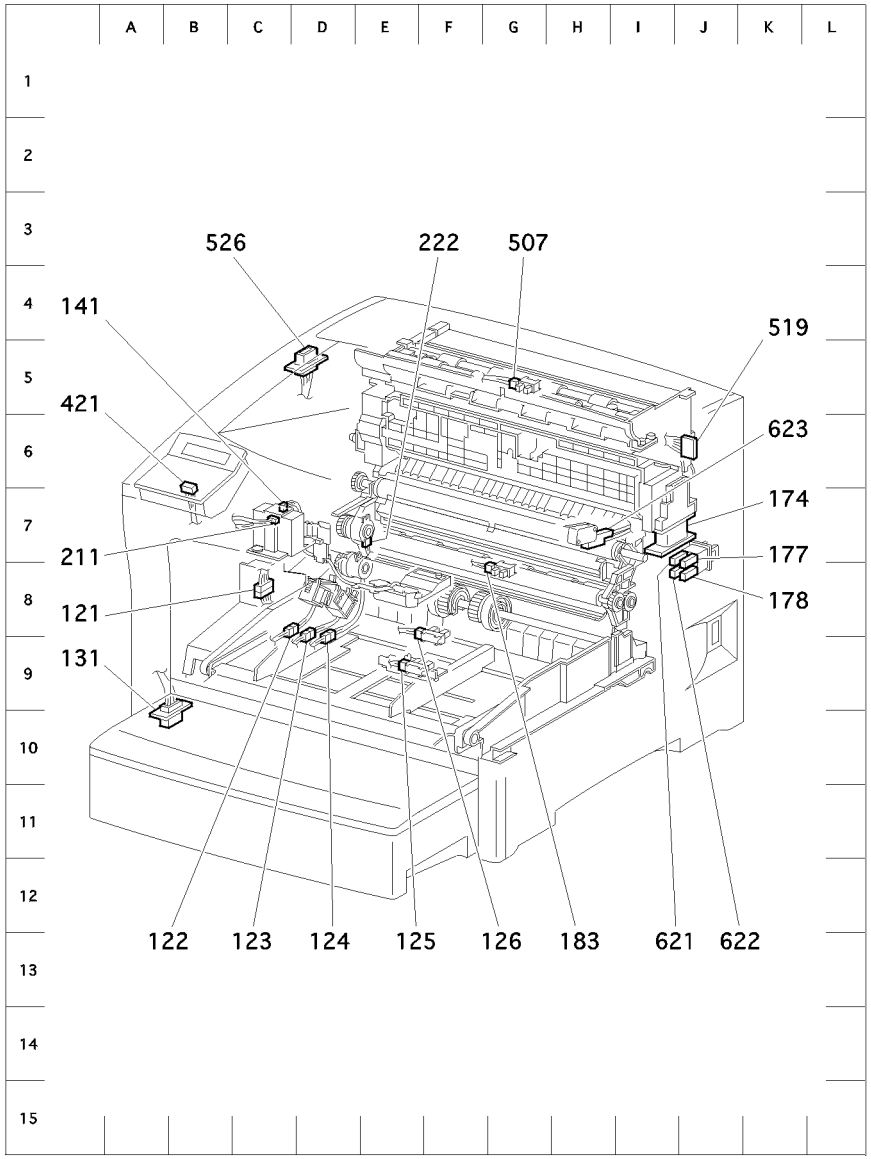

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Figure 15

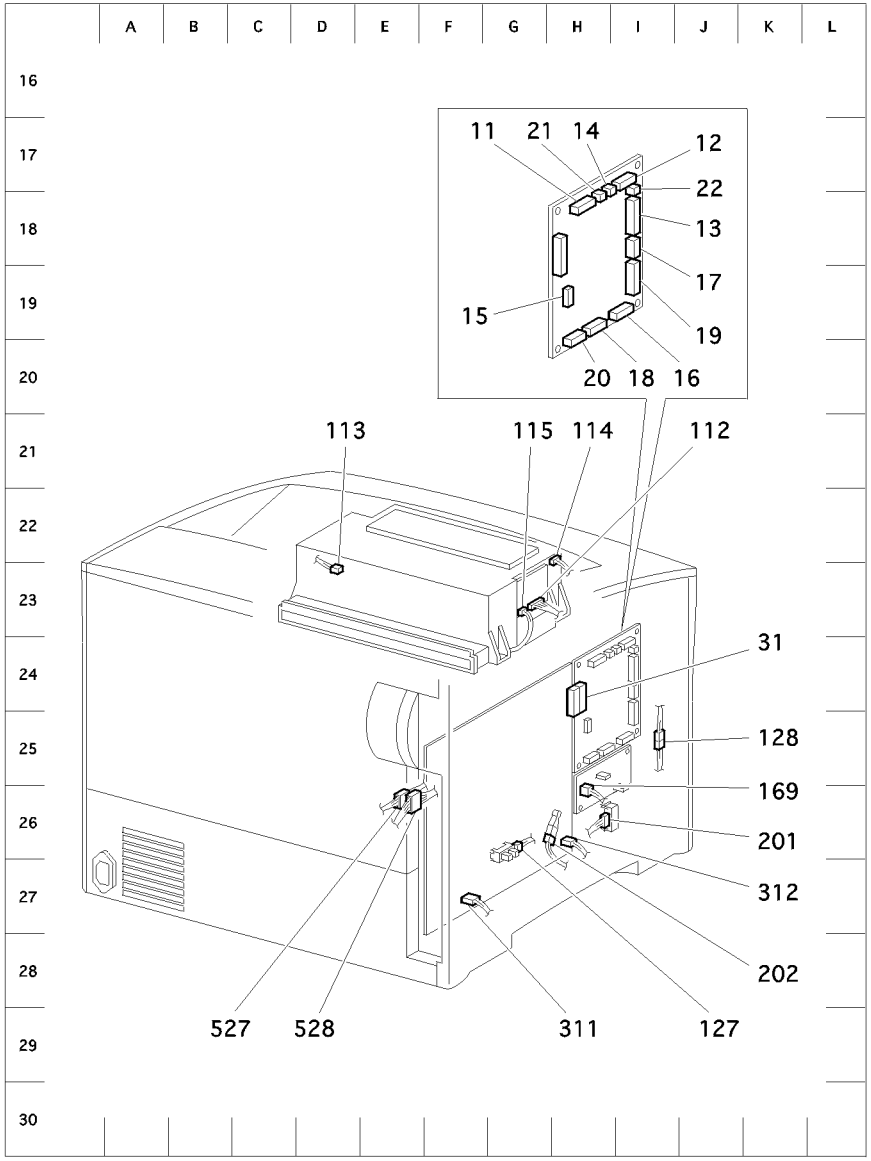


Figure 16

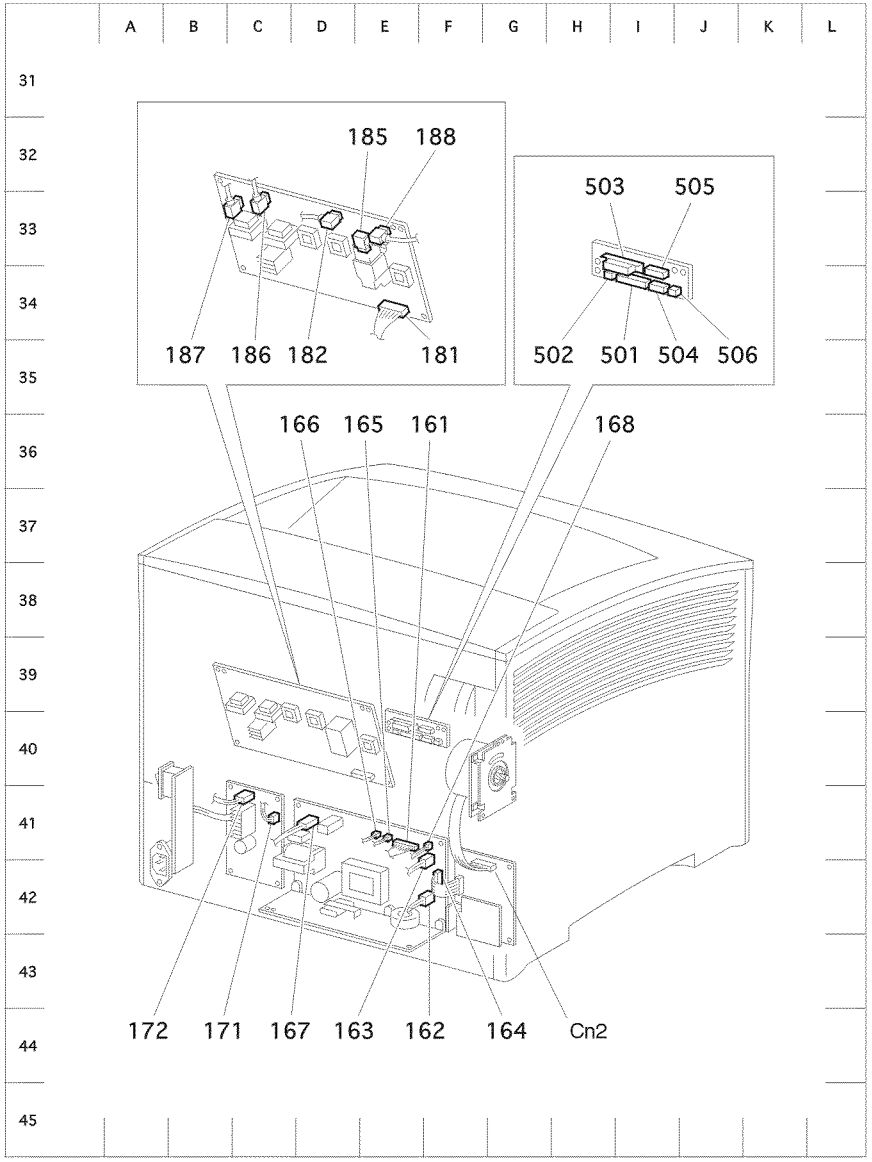


Figure 17

500 Sheet Feeder

Location of P/J Connectors

Use the P/J table below and the P/J map on the next page to locate a specific P/J connector within the Feeder and Cassette Table 1.To find the location of a P/J:

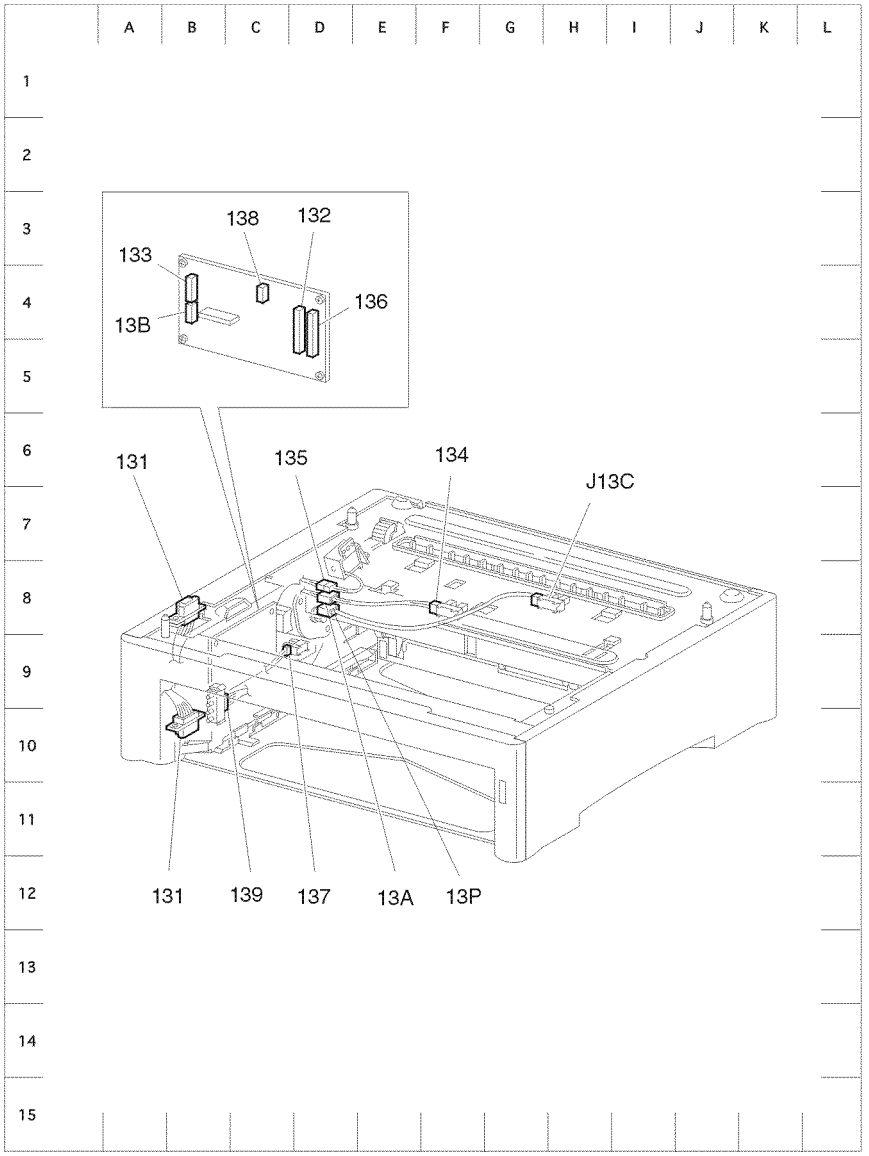
1. Locate the P/J connector number in the first column of the table.
2. Locate the corresponding coordinates in the second column, such as I7 or J7.
3. Go to the map.
4. Cross-reference the letter and number of the P/J coordinates with the letters and numbers on the map.
5. The P/J connector is located within the area where the coordinates cross.

Table 1 P/J Locations

P/J	Coordinates	Location (Note 1)		Harness (Note 2)		Notes
		Location Name	PL	Harness Name (Note 3)	Item #	
13A	D8	Feeder Assembly	PL 11.2	Harness	23	Intermediate connectors between J13A of the NPS Harness and J13A of the Feeder Harness.
13B	B4	Feeder Assembly	PL 11.2	Feed Motor Connector	33	Connects the Feed Motor to the Feeder PWB.
J131	B8	Feeder Assembly	PL 11.2	Harness	24	Connects the Harness Assembly J131 to the Harness Assembly J136 of the Upper Feeder (Feeder 1 or Feeder 2).
131	B10	Feeder Assembly	PL 11.2	Harness	28	Connects the Harness Assembly J131 to the Harness Assembly J131 of the Lower Feeder (Feeder 3).
132	D4	Feeder Assembly	PL 11.2	Harness		Connects the Harness Assembly J131 (the harness for connection to the Feeder PWB of the upper Feeder (Feeder 1 or Feeder 2)) to the Feeder PWB of the Feeder.
133	B4	Feeder Assembly	PL 11.3	Harness	27	Connects the Feeder Harness to the Feeder PWB.

Table 1 P/J Locations

P/J	Coordinates	Location (Note 1)		Harness (Note 2)		Notes
		Location Name	PL	Harness Name (Note 3)	Item #	
134	F8	Feeder Assembly	PL 11.2	Harness	23	Connects the No Paper Sensor to the Harness Assembly J134.
135	D8	Feeder Assembly	PL 11.3	Harness	27	Connects the Feed Solenoid to the Feeder Harness.
136	D5	Feeder Assembly	PL 11.2	Harness	24	Connects the Harness Assembly J136 (the harness for connection to the Feeder PWB of the lower Feeder Assembly J136 (Feeder 3)) to the Feeder PWB of the Feeder.
137	C9	Feeder Assembly	PL 11.3	Harness	26	Connects the Low Paper Sensor to the Feeder Harness.
138	C4	Feeder Assembly	PL 11.3	Harness	26	Connects the SNS Harness to the Feeder PWB.
139	B10	Feeder Assembly	PL 11.3	Harness	27	Connects the Size Sensor to the SNS Harness.



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20. Print Engine Controller PWB "Feeder 2 PWB "Low Paper Sensor, No Paper Sensor, Tray 1 Feed Solenoid, Switch Size and Motor Feed 2 Figure 2

20. Feeder 2 PWB "Feeder 3 PWB" Low Paper Sensor, No Paper Sensor, Tray 1 Feed Solenoid, Switch Size and Motor Feed 3 Figure 3

20. Print Engine Controller PWB "Feeder 2 PWB ("Feeder 3 PWB) "Low Paper Sensor, No Paper Sensor, Tray 1 Feed Solenoid, Switch Size and Feed Motor 2 (or 3) Table 2, Table 3, Table 4, Table 5, Figure 4, and Table 6.

This section contains a Master Wiring Diagram for the 500 Sheet Feeder. The Master Diagram shows the interconnections of the printer, the 500 Sheet Feeders, and the components of the 500 Sheet Feeders. The remainder of this section shows the signal names, pin numbers, and other information in detailed diagrams.

Wiring Diagrams and Signal Information

Contents

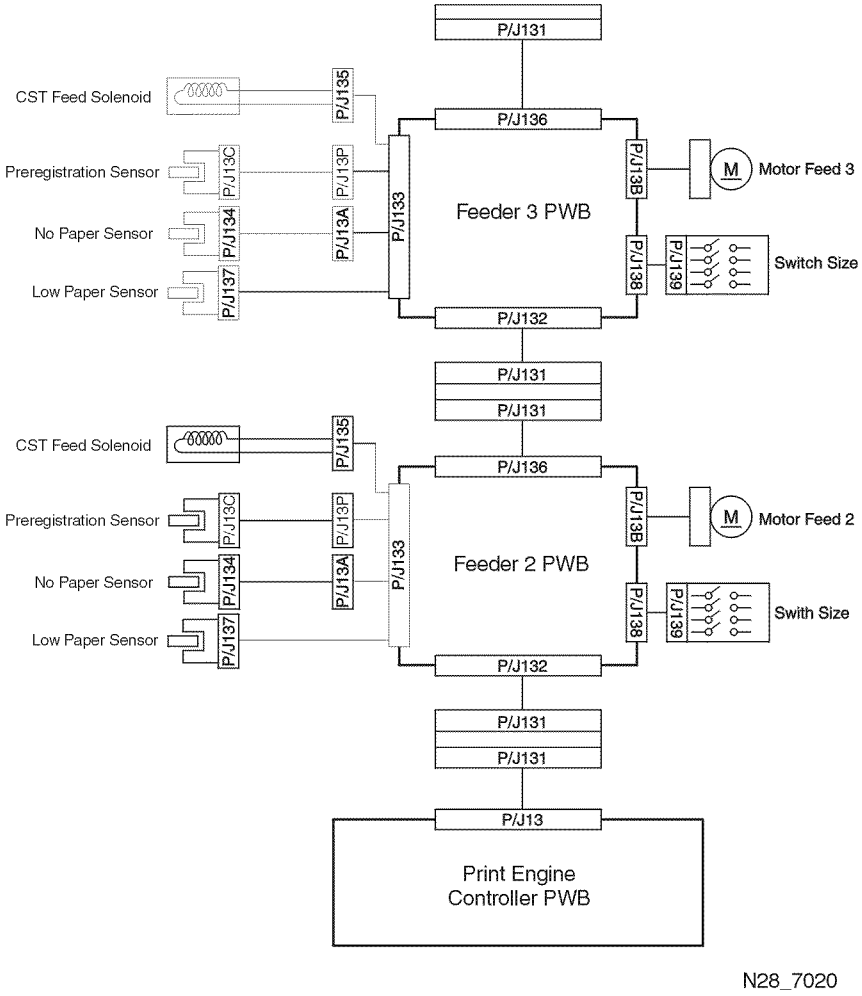

Figure 1 Master Wiring Diagram

Wiring and Signal Information between Components

20. Print Engine Controller PWB <--> Feeder 2 PWB <--> Low Paper Sensor, No Paper Sensor, Tray 1 Feed Solenoid, Switch Size, and Feed Motor 2

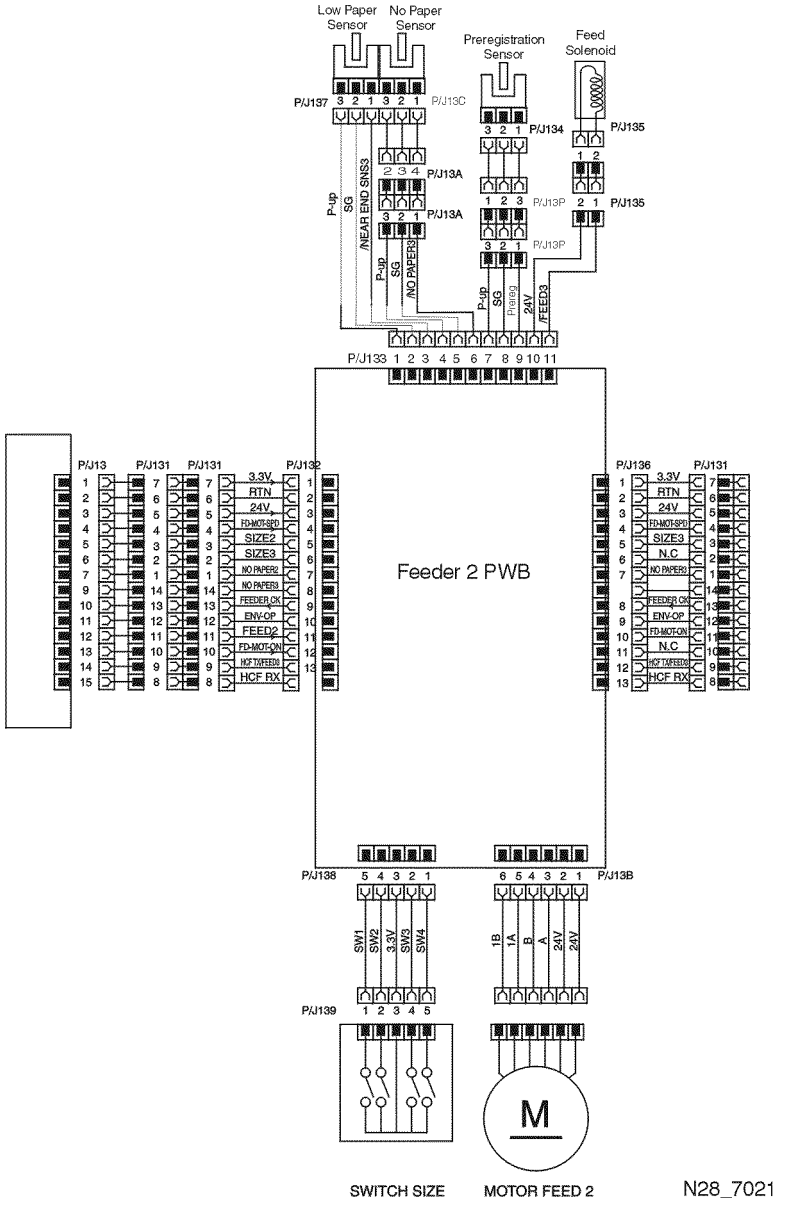

Figure 2 Wiring and Signal Information between Components

20. Feeder 2 PWB <--> Feeder 3 PWB <--> Low Paper Sensor, No Paper Sensor, Tray 1 Feed Solenoid, Switch Size, and Motor Feed 3

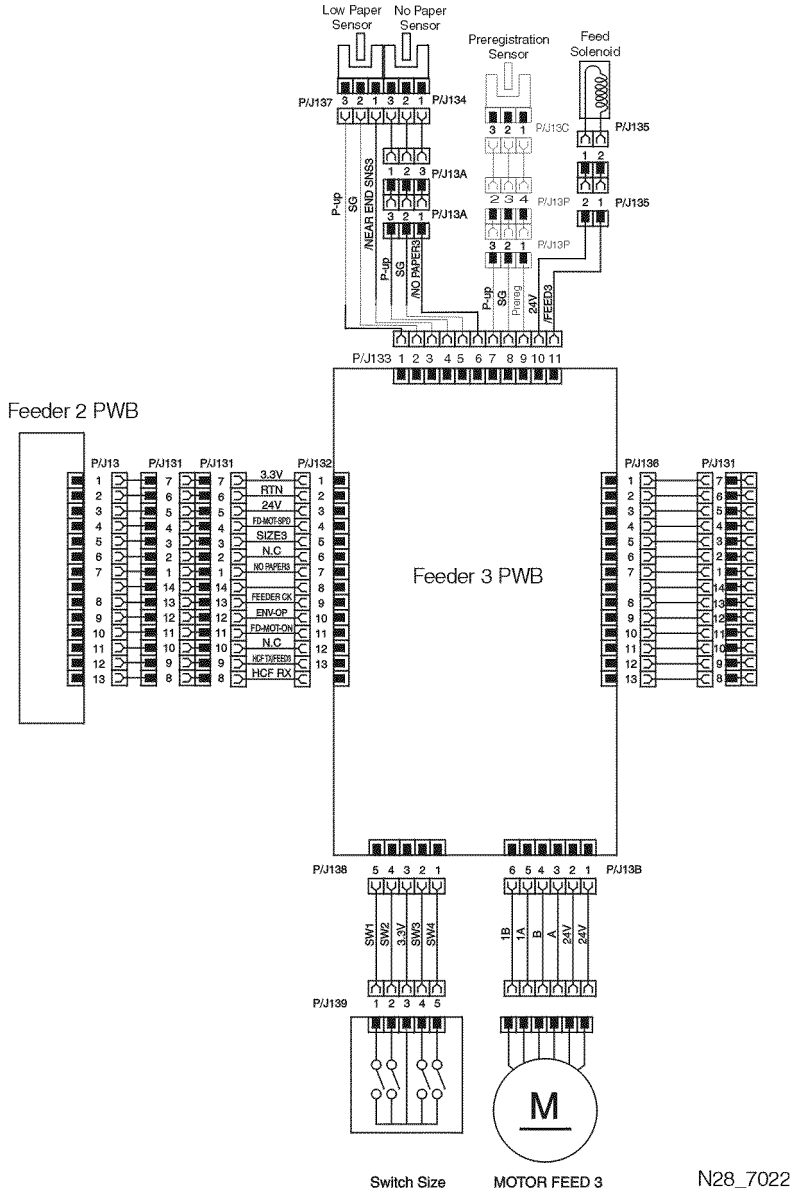

Figure 3 500 Sheet Feeder - Tray 3.

20. Print Engine Controller PWB <--> Feeder 2 PWB (<--> Feeder 3 PWB) <--> Low Paper Sensor, No Paper Sensor, Tray 1 Feed Solenoid, Switch Size, and Feed Motor 2 (or 3)

Table 2 Signal Names

Signal Name	Description
SIZE2 (TTL)	Selects the Switch Size of Feeder 2. When this signal is HIGH, the On or Off states of the Switches Size 1 to 4 of the Feeder 2 are input to the Print Engine Controller PWB on the signal lines SIZE 1BIT to SIZE 4BIT.
SIZE3 (TTL)	Selects the Switch Size of Feeder 3. When this signal is HIGH, the On or Off states of the Switches Size 1 to 4 of the Feeder 3 are input to the Print Engine Controller PWB on the signal lines SIZE 1BIT to SIZE 4BIT.
NO PAPER 2 (TTL)	Signal from the No Paper Sensor 2 (No Paper Sensor of the Feeder 2). This signal is Low when the No Paper Sensor 2 is actuated.
NO PAPER 3 (TTL)	Signal from the No Paper Sensor 3 (No Paper Sensor of the Feeder 2). This signal is Low when the No Paper Sensor 3 is actuated.
FEEDER CK	Signal that indicates the Feeder configuration
ENV_OP	Signal that indicates the Envelop Cassette configuration
FEED 2 (H) 24VDC	Feed Solenoid control signal. The Feed Solenoid 2 (Feed Solenoid of the 500 Sheet Feeder 2) is actuated when this signal is High, and deactuated when Low.
FD_MOT_ ON (TTL)	Motor Feed control signal to switch the Motor Feed on and off
2000 Sheet Feeder TX/FEED3 (H) 24VDC	Transmitted data from the Print Engine Controller PWB to the 2000 Sheet Feeder or Feed Solenoid control signal. The Feed Solenoid 3 (Feed Solenoid of the 500 Sheet Feeder 3) is actuated when this signal is High, and deactuated when Low.
2000 Sheet Feeder-RX	Received data from the 2000 Sheet Feeder to the Print Engine Controller PWB

*: Refer to the description of the detection of the feeder configuration in this manual.

20. Print Engine Controller PWB <--> Feeder 2 PWB (<--> Feeder 3 PWB) <--> Low Paper Sensor, No Paper Sensor, Tray 1 Feed Solenoid, Switch Size, and Feed Motor 2 (or 3)

Table 3 Signal Names

Signal Name	Description
/NEAR END SNS2 (or 3)	Signal from the Low Paper Sensor. Goes Low when paper is low in the Tray 2 (or 3).
/NO PAPER2 (or 3)	Signal from the No Paper Sensor (Photo Sensor of the Feeder 2 (or 3)). This signals Low when the Photo Sensor is actuated.
/FEED2 (or 3) ON (L) 24VDC	Tray 1 Feed Solenoid control signal. The Tray 1 Feed Solenoid (Tray 1 Feed Solenoid of the Feeder 2 (or 3)) is actuated when this signal is Low, and deactuated when High.

20. Print Engine Controller PWB <--> Feeder 2 PWB (<--> Feeder 3 PWB) <--> Low Paper Sensor, No Paper Sensor, Tray 1 Feed Solenoid, Switch Size, and Feed Motor 2 (or 3)

Table 4 Signal names for the Feeder 2 PWB (or 3) <--> Switch Size path

Signal Name	Description
SW1	Signal from the Switch Size. Goes Low when SIZE 1BIT of the Switch Size is actuated.
SW2	Signal from the Switch Size. Goes Low when SIZE 2BIT of the Switch Size is actuated.
SW3	Signal from the Switch Size. Goes Low when SIZE 3BIT of the Switch Size is actuated.
SW4	Signal from the Switch Size. Goes Low when SIZE 4BIT of the Switch Size is actuated.

Table 5 Signal names for the Feeder 2 PWB (or 3) <--> Feed Motor 2 (or 3) path

Signal Name	Description
/B	Feed Motor 2 (or 3) activating signal
/A	Feed Motor 2 (or 3) activating signal
B	Feed Motor 2 (or 3) activating signal
A	Feed Motor 2 (or 3) activating signal

20. Print Engine Controller PWB <--> Feeder 2 PWB (<--> Feeder 3 PWB) <--> Low Paper Sensor, No Paper Sensor, Tray 1 Feed Solenoid, Switch Size, and Feed Motor 2 (or 3)

- Detection of the Feeder configuration through the FEEDER CK signal

  When no 500 Sheet Feeder is attached, 3.3 VDC is divided by the resistances R10K and R4.7K on the Print Engine Controller PWB, and the voltage across the resistance R4.7K appears on the FEEDER CK signal. When one or two 500 Sheet Feeders are added, the resistance RF on the PWB Feeder of the added Feeder(s) is connected in parallel with the resistance R10K of the Print Engine Controller PWB, and the voltage across the resistance R10K changes according to the number of 500 Sheet Feeders added. Therefore, the Feeder configuration can be detected from the voltage of the FEEDER CK signal.

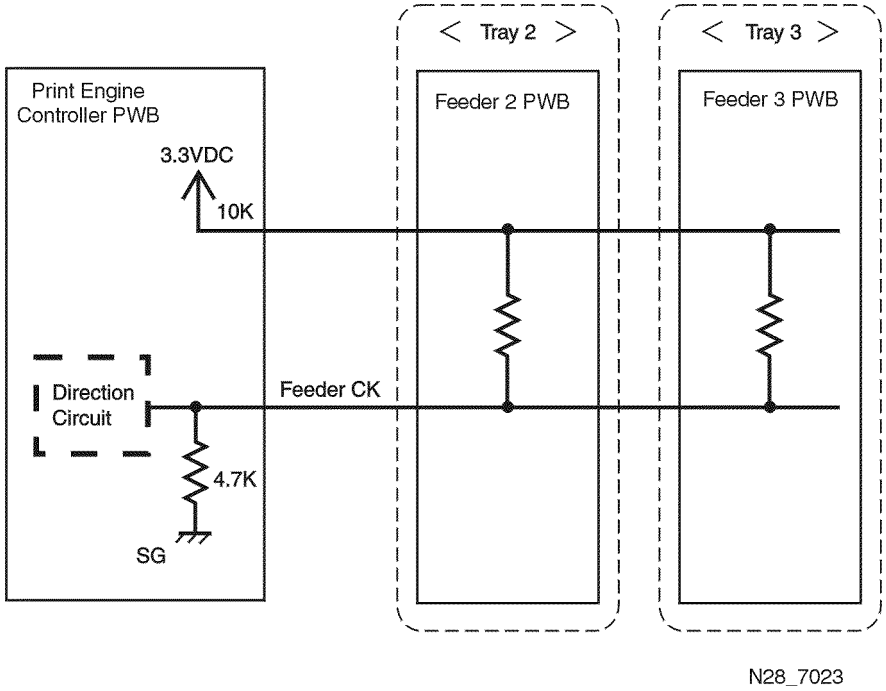

Figure 4

Table 6 Configuration

Feeder Configuration	Feeder 2	Feeder 3
One 500 Sheet Feeder added	O	-
Two 500 Sheet Feeders added	O	O

Duplex Assembly

Location of P/J Connectors

Use the P/J table below (Table 1) and the P/J Map (Figure 1) on the next page to locate a specific P/J connector within the Feeder and Cassette.

- Locate the P/J connector number in the first column of the table Table 1.
- Locate the corresponding coordinates in the second column, such as I7 or J7.
- Go to the map Figure 1.
- Cross-reference the letter and number of the P/J coordinates with the letters and numbers on the map.
- The P/J connector is located within the area where the coordinates cross.

Table 1 P/J Locations

Connector	Coordinate	Description
P 503	D7	Connects the Duplex Assembly (Duplex PWB) to the Printer.
P/J 508	C8	Connects the Duplex Motor to the Duplex PWB.
P/J 509	C7	Connects the Duplex Motor.
P/J 510	C7	Connects the Exit Motor to the Duplex PWB.
P/J 511	B5	Connector Inside the Exit Motor.
P/J 512	E8	Connects the Duplex SNS Harness to the Duplex PWB.
P/J 513	F8	Connects the SNS Harness to the Duplex Sensor.

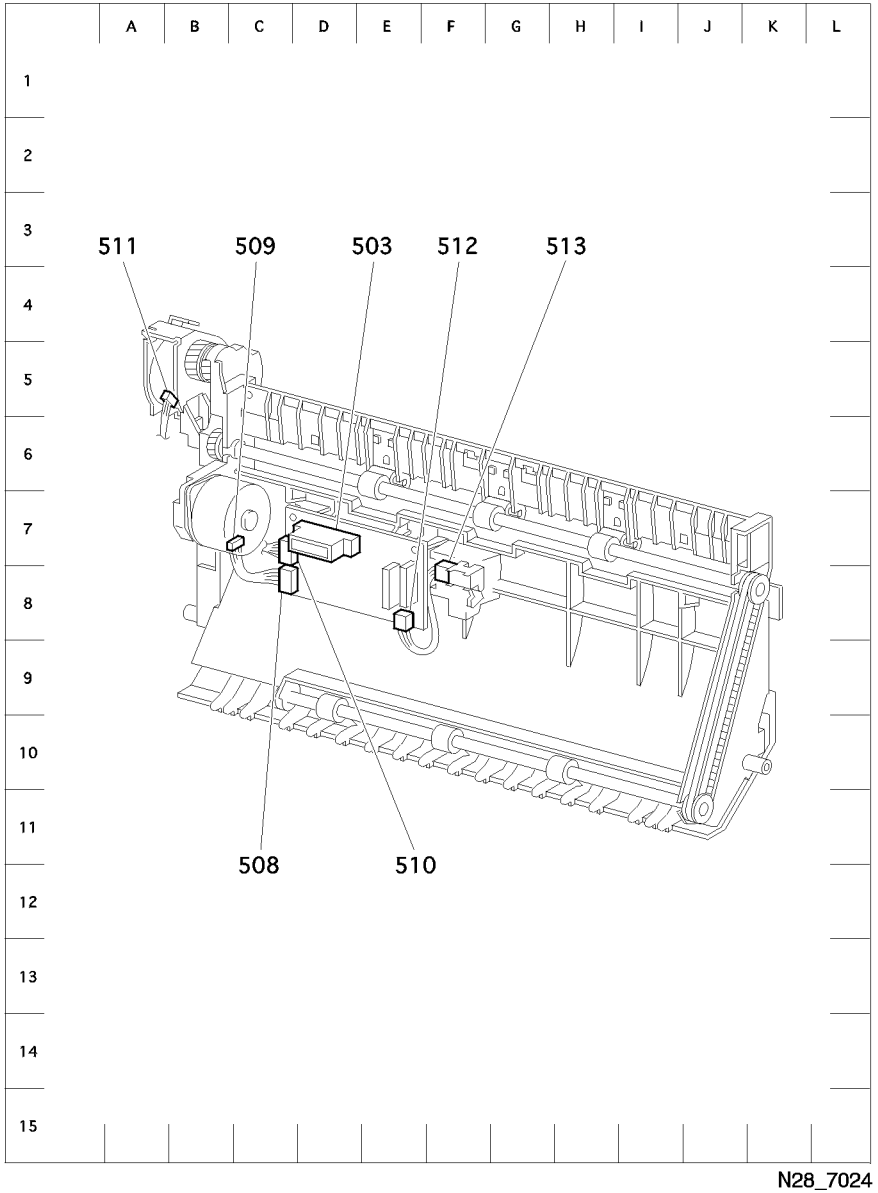

Figure 1 P/J Map

Wiring Diagrams and Signal Information

Contents

This section contains a Master Wiring Diagram for the optional Duplex Assembly. The Master Diagram shows the interconnections of the printer, the optional Duplex Assembly, and the components of it. The remainder of this section shows the signal names, pin numbers, and other information in detailed diagrams.

Master Wiring Diagram

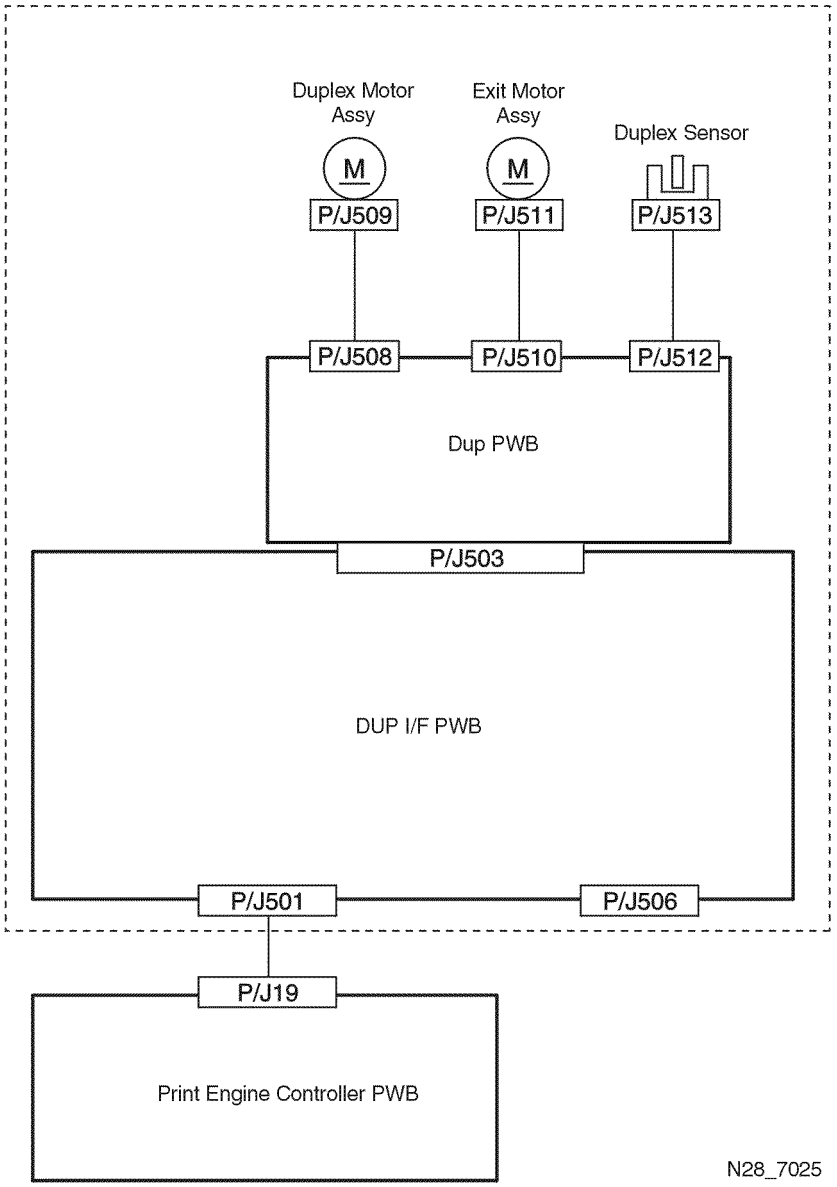

Figure 2 Master Wiring Diagram

Wiring and Signal Information between Components

30. Print Engine Controller PWB <--> Duplex Interface PWB <--> Duplex PWB <--> Duplex Motor Assembly, Exit Motor Assembly and Duplex Sensor Assembly.

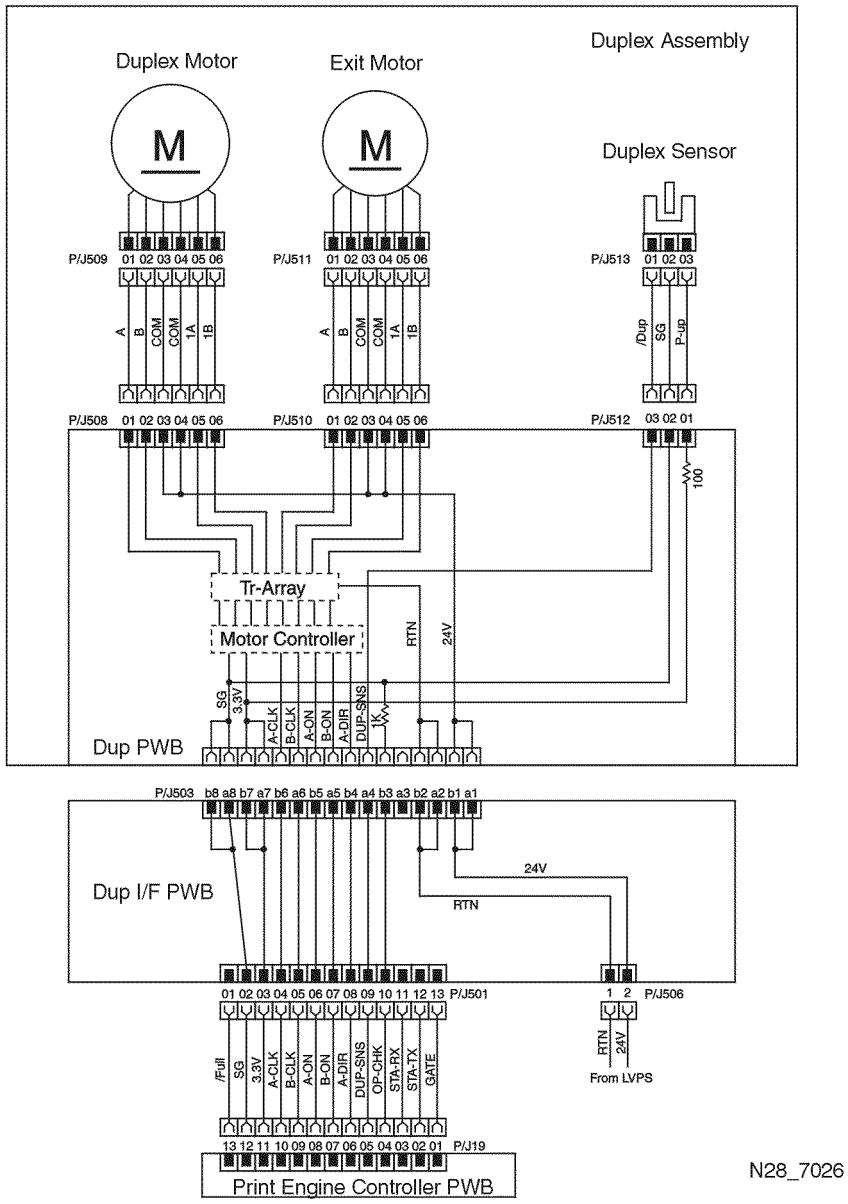

Figure 3

30. Print Engine Controller PWB <--> Duplex Interface PWB <--> Duplex PWB <--> Duplex Motor Assembly, Exit Motor Assembly and Duplex Sensor Assembly

Table 2 Signal names for the Duplex Interface PWB <--> Duplex PWB path

Signal Name	Description
A-CLK	The signal that commands "Low" speed rotation in clockwise of the Duplex Motor Assembly and the Exit Motor Assembly.
B-CLK	The signal that commands "High" speed rotation in clockwise of the Duplex Motor Assembly and the Exit Motor Assembly.
A-ON	The signal activates the Motor, synchronizing with A-CLK signal.
B-ON	The signal activates the Motor, synchronizing with B-CLK signal.
A-DIR	The signal that commands the direction of rotation.
DUP-SNS	The signal from the Sensor Assembly Dup. This signal is "Low" when the paper exists in the Duplex Assembly.

Offset Catch Tray

Location of P/J Connectors

Use the P/J table below (Table 1) and the P/J map (Figure 1) on the next page to locate a specific P/J connector within the Feeder and Cassette.

1. Locate the P/J connector number in the first column of the table (Table 1).
2. Locate the corresponding coordinates in the second column, such as I7 or J7.
3. Go to the map (Figure 1).
4. Cross-reference the letter and number of the P/J coordinates with the letters and numbers on the map.
5. The P/J connector is located within the area where the coordinates cross.

Table 1 P/J Locations

Connector	Coordinate	Description
P/J 514	E6	Connects the STK-0 Harness to the OCT PWB.
P/J 515	F7	Connects the Offset Motor Assembly to the OCT PWB.
P/J 516	J7	Connects the inside the Offset Motor Assembly.
P/J 517	F6	Connects STK Motor Harness to the OCT PWB.
P/J 518	C6	Connects the STK Motor Harness to the OCT Motor Assembly.
P/J 519	J9	Connects the Printer Assembly (Duplex I/F PWB) to the Gate Solenoid.
P/J 520	E6	Connects the STK FLJM Harness to the OCT PWB.
P/J 521	D5	Connects the STK FLJM Harness to the Stack Full Sensor.
P/J 523	G7	Connects the STK FLJM Harness to the OCT Sensor.
P/J 524	E6	Connects the STK COV OP Harness to the OCT PWB.
P/J 525	D5	Connects the STK COV OP Harness to the Interlock Switch.
P/J 526	B8	Connects the STK-0 Harness to the Duplex I/F PWB.

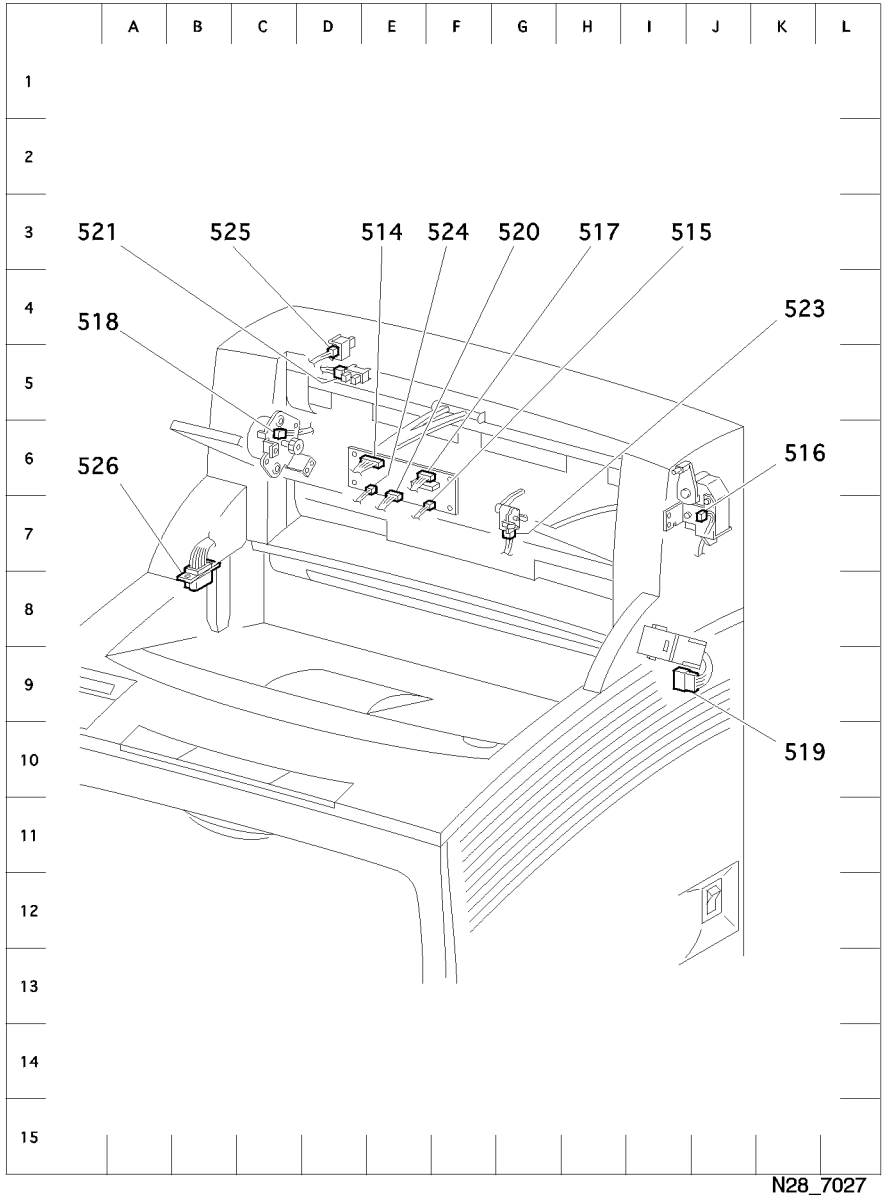

Figure 1 Map

Wiring Diagrams and Signal Information

Contents

This section contains a Master Wiring Diagram for the optional OCT Assembly. The Master Diagram shows the interconnections of the printer, the optional OCT Assembly, and the components of it. The remainder of this section shows the signal names, pin numbers, and other information in detailed diagrams.

Master Wiring Diagram Figure 2

Wiring and Signal Information between Components Figure 3

40. Duplex Interface PWB <--> Stacker PWB <--> OCT Motor Assembly, Offset Motor Assembly, Photo Sensor, Duplex Sensor and Interlock Switch Table 2, Table 3, Table 4, Table 5

Master Wiring Diagram

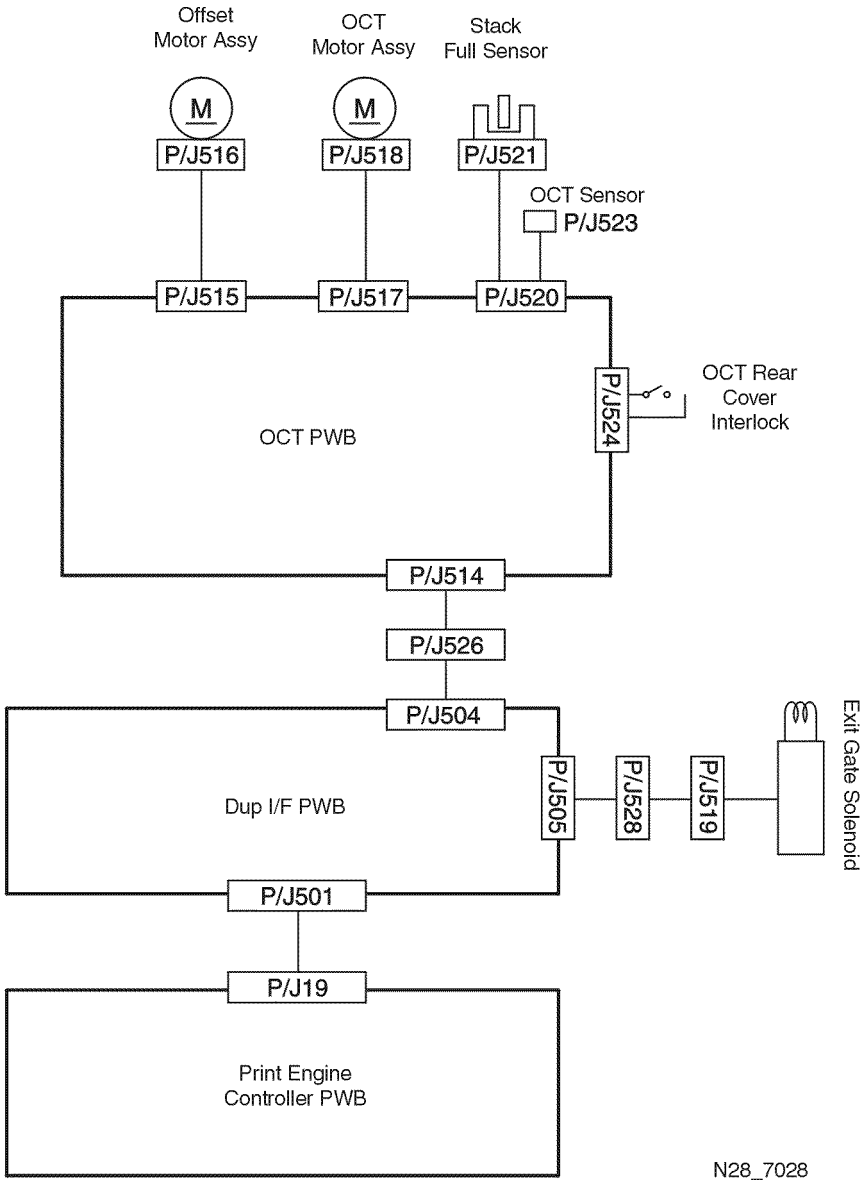

Figure 2 Master Wiring Diagram

Wiring and Signal Information between Components

40. Duplex Interface PWB <--> OCT PWB <--> OCT Motor Assembly, Offset Motor Assembly, Stack Full Sensor, OCT Sensor and Interlock Switch

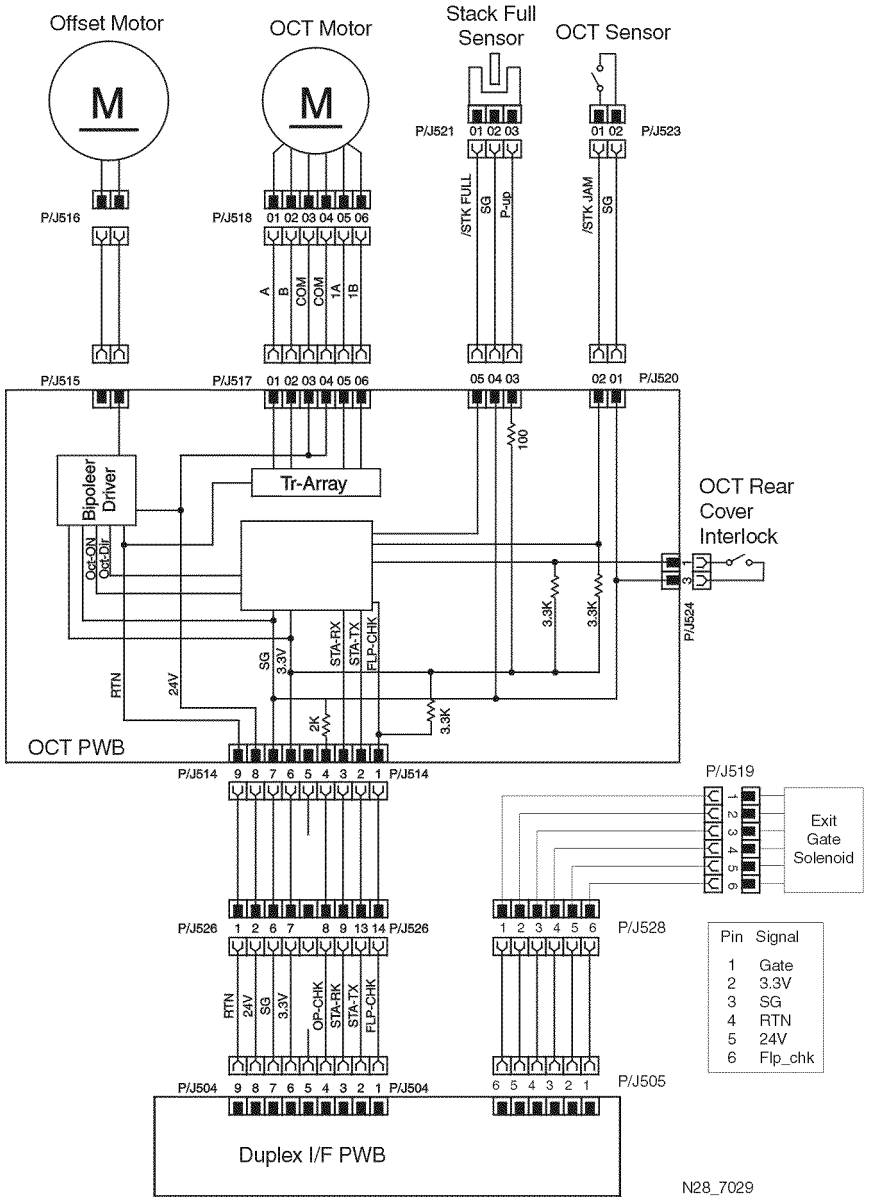

Figure 3 Wiring/Signals Between Components

40. Duplex Interface PWB <--> OCT PWB <--> OCT Motor Assembly, Offset Motor Assembly, Stack Full Sensor, OCT Sensor and OCT Rear Cover Interlock Switch

Table 2 Signal names for the Duplex Interface PWB <--> Stacker PWB path

Signal Name	Description
OP-CHK	Signal that detects the OCT status is ready or not by referring the Interlock Switch and the OCT Sensor. Interlock Switch detects open or close of the OCT Rear Cover and OCT Sensor detects the existence of jammed paper in the OCT Assembly.
STA-RX	Motor control signal
STA-TX	Motor control signal
FRP-CHK	Signal through the Exit Gate Solenoid. This signal informs the Exit Gate Solenoid operation.

40. Duplex Interface PWB <--> OCT PWB <--> OCT Motor Assembly, Offset Motor Assembly, Photo Sensor, OCT Sensor and Interlock Switch

Table 3 Signal names for the OCT PWB <--> OCT Motor Assembly path

Signal Name	Description
A	Activating signal for the OCT Motor Assembly.
B	Activating signal for the OCT Motor Assembly.
/A	Activating signal for the OCT Motor Assembly.
/B	Activating signal for the OCT Motor Assembly.

Table 4 Signal names for the Stacker PWB <--> Photo Sensor path

Signal Name	Description
/STK FULL	Signal through the Stack Full Sensor. This signal is LOW when the Stack Full Sensor is actuated by the stack of delivered printed sheets higher than the predetermined height.
P-UP	Signal through the Stack Full Sensor.

40. Duplex Interface PWB <--> Stacker PWB <--> OCT Motor Assembly, Offset Motor Assembly, Photo Sensor, Duplex Sensor and Interlock Switch

Table 5 Signal names for the Stacker PWB <--> Duplex Sensor path

Signal Name	Description
/STK JAM	Signal through the OCT Sensor. This signal is High when the top of paper reaches the Actuator and pushes it, and Low when the end of paper passes and releases it.

2000 Sheet Feeder

Location of P/J Connectors

Use the P/J table below and the P/J map on the next page to locate a specific P/J connector within the Feeder and Cassette. To find the location of a P/J:

1. Locate the P/J connector number in the first column of the table.
2. Locate the corresponding coordinates in the second column, such as I7 or J7.
3. Go to the map.
4. Cross-reference the letter and number of the P/J coordinates with the letters and numbers on the map.
5. The P/J connector is located within the area where the coordinates cross.

Table 1 P/J Table

Connector	Coordinate	Description
J131	B7	Connects the 2000 Sheet Feeder-1 Harness to the IOT Directly Connect or Under the Feeder 2.
P/J 601	I5	Connects the 2000 Sheet Feeder-1 Harness to the 2000 Sheet Feeder PWB.
P/J 602	J5	Connects the 2000 Sheet Feeder NPS Harness to the 2000 Sheet Feeder PWB.
P/J 603	J5	Connects the 2000 Sheet Feeder FRDY Harness to the 2000 Sheet Feeder PWB.
P/J 604	J4	Connects the 2000 Sheet Feeder SW Harness to the 2000 Sheet Feeder PWB.
P/J 605	I5	Connects the Elevation Motor to the 2000 Sheet Feeder PWB.
P/J 606	I4	Connects the 2000 Sheet Feeder FDM Harness to the 2000 Sheet Feeder PWB.
P/J 607	J4	Connects the 2000 Sheet Feeder TFM Harness to the 2000 Sheet Feeder PWB.
P/J 608	H9	Connector' inside the Elevation Motor.
P/J 609	H9	Connects the 2000 Sheet Feeder FDM Harness to the Feed Motor.
P/J 610	E8	Connects the 2000 Sheet Feeder NPS Harness to the No Paper Sensor.
P/J 611	F8	Connects the 2000 Sheet Feeder FRDY Harness to the Paper Level Sensor.
P/J 612	G10	Connects the 2000 Sheet Feeder SW Harness to the A4/Letter Switch.
P/J 613	H8	Connects the 2000 Sheet Feeder SW Harness to the Read Cover Open Switch.
P/J 614	F9	Connects the 2000 Sheet Feeder SW Harness to the Cassette Indicator Switch.
P/J 615	C8	Connects the 2000 Sheet Feeder TFM Harness to the Drive Assembly Motor.

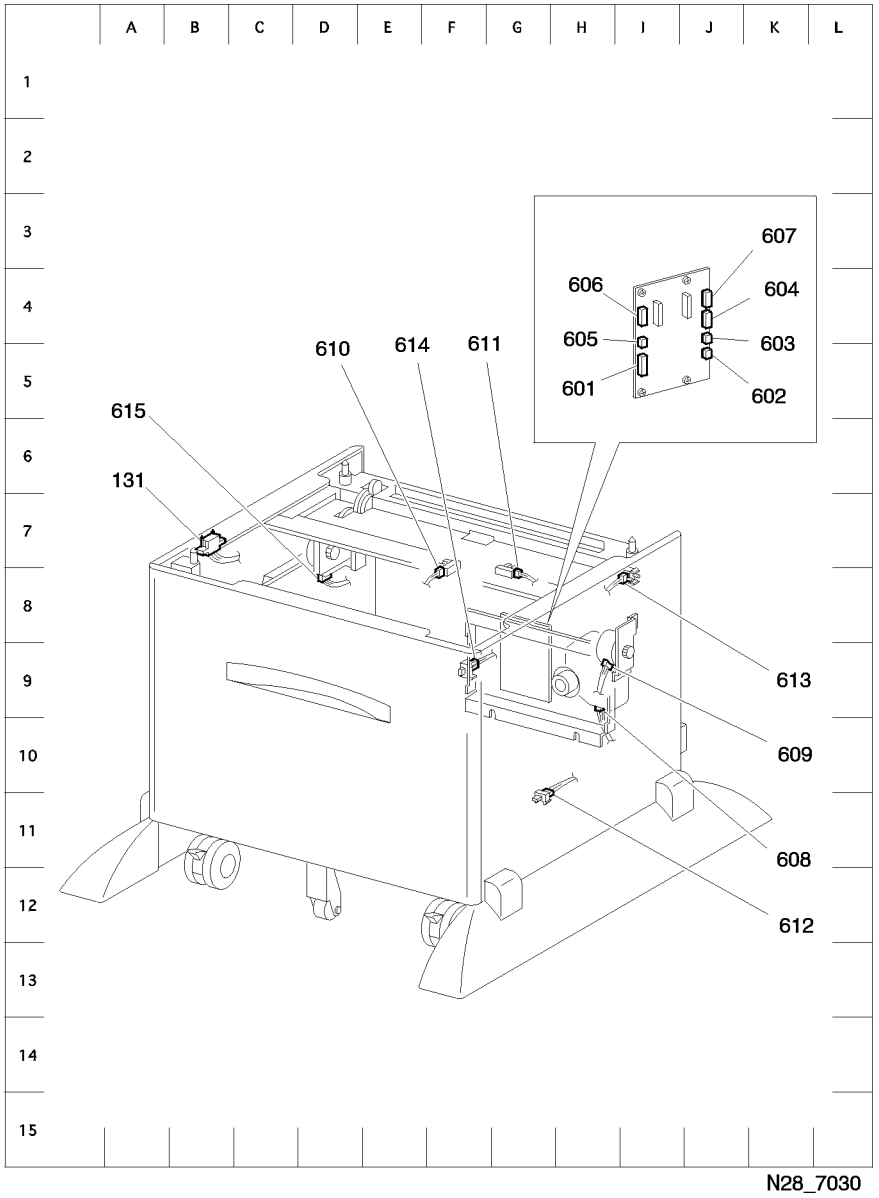

Figure 1 P/J Map

Wiring Diagrams and Signal Information

Contents

This section contains a Master Diagram for the 2000 Sheet Feeder Assembly. The Master Diagram shows the interconnections of the printer, the 2000 Sheet Feeder Assembly, and the components of the 2000 Sheet Feeder Assembly. The remainder of this section shows the signal names, pin numbers, and other information in detailed diagrams.

Master Wiring Diagram Figure 2

Wiring and Signal Information Between Components Figure 3, Table 2

50. Print Engine Controller PWB <--> 2000 Sheet Feeder PWB <--> Motor Assembly 2000 Sheet Feeder, Motor Assembly Feed, Drive Assembly Turn

50. 2000 Sheet Feeder PWB <--> No Paper Sensor Figure 4, Table 3

50. 2000 Sheet Feeder PWB <--> Low Paper Sensor Figure 5, Table 4

50. 2000 Sheet Feeder PWB <--> Switches (A4/letter, Rear Cover, and Cassette In) Figure 6

Master Wiring Diagram

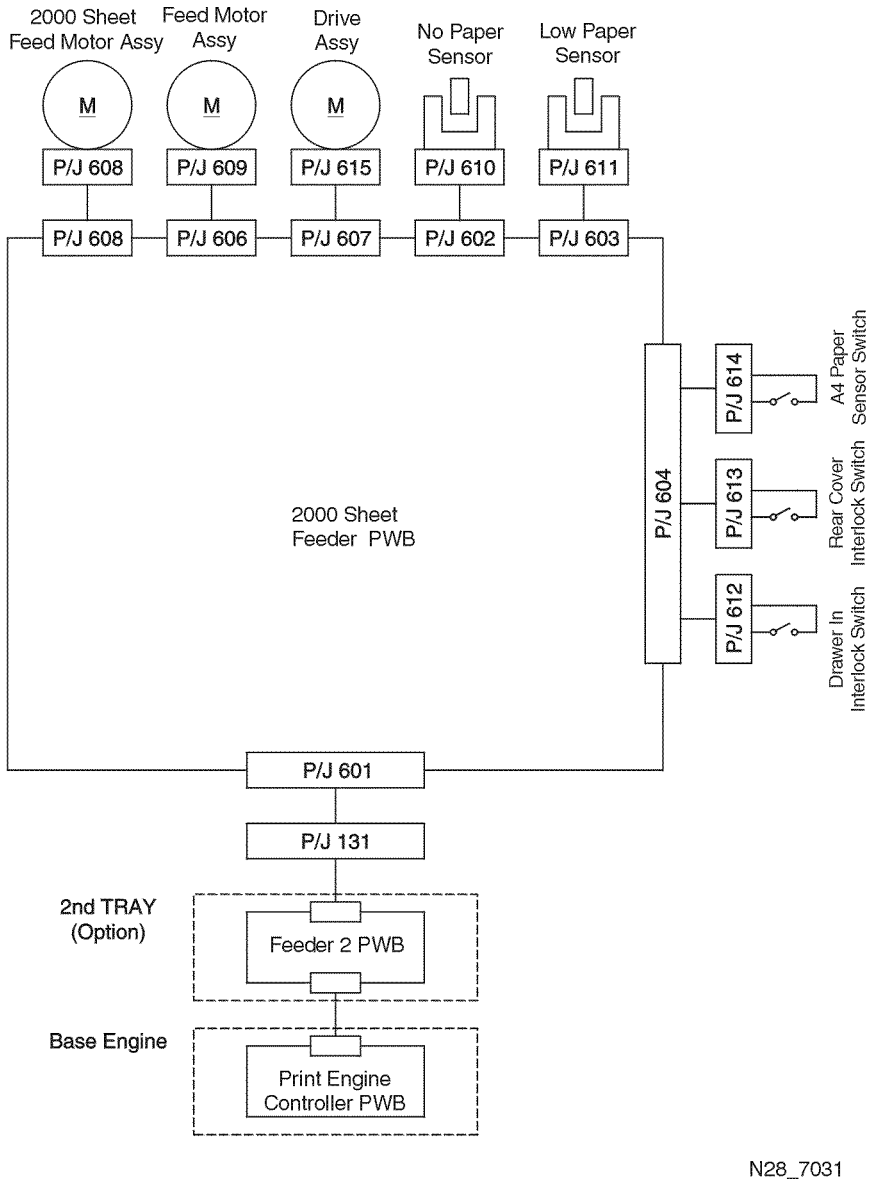

Figure 2 Master Wiring Diagram

50. Print Engine Controller PWB <--> 2000 Sheet Feeder PWB <--> Motor Assembly 2000 Sheet Feeder, Motor Assembly Feed, Drive Assembly Turn

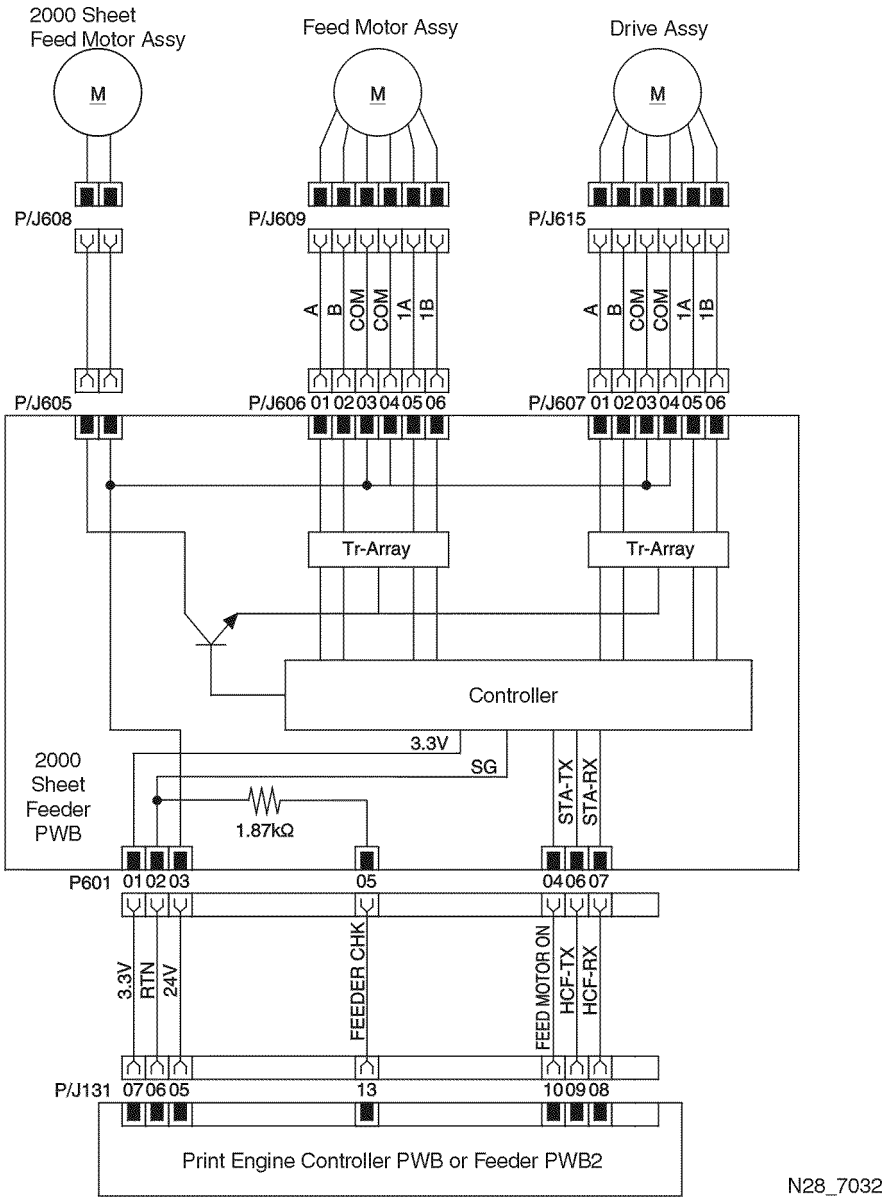

Figure 3 Wiring/Signal Information Between Components

50. Print Engine Controller PWB <--> 2000 Sheet Feeder PWB <--> Motor Assembly 2000 Sheet Feeder, Motor Assembly Feed, Drive Assembly Turn

Table 2 Signal names for the Print Engine Controller PWB <--> 2000 Sheet Feeder PWB <--> Motor Assembly 2000 Sheet Feeder, Motor Assembly Feed, Drive Assembly Turn path

Signal Name	Description
FEEDER-CHK	Resistance that informs which the 2000 Sheet Feeder is installed as the 500 Sheet Feeder or not.
FEED MOTOR ON	Motor control signal
2000 Sheet Feeder-TX	Transmitted data from the Print Engine Controller PWB to the 2000 Sheet Feeder
2000 Sheet Feeder-TX	Received data from the 2000 Sheet Feeder to the Print Engine Controller PWB
A	Motor control signal
B	Motor control signal
/A	Motor control signal
/B	Motor control signal

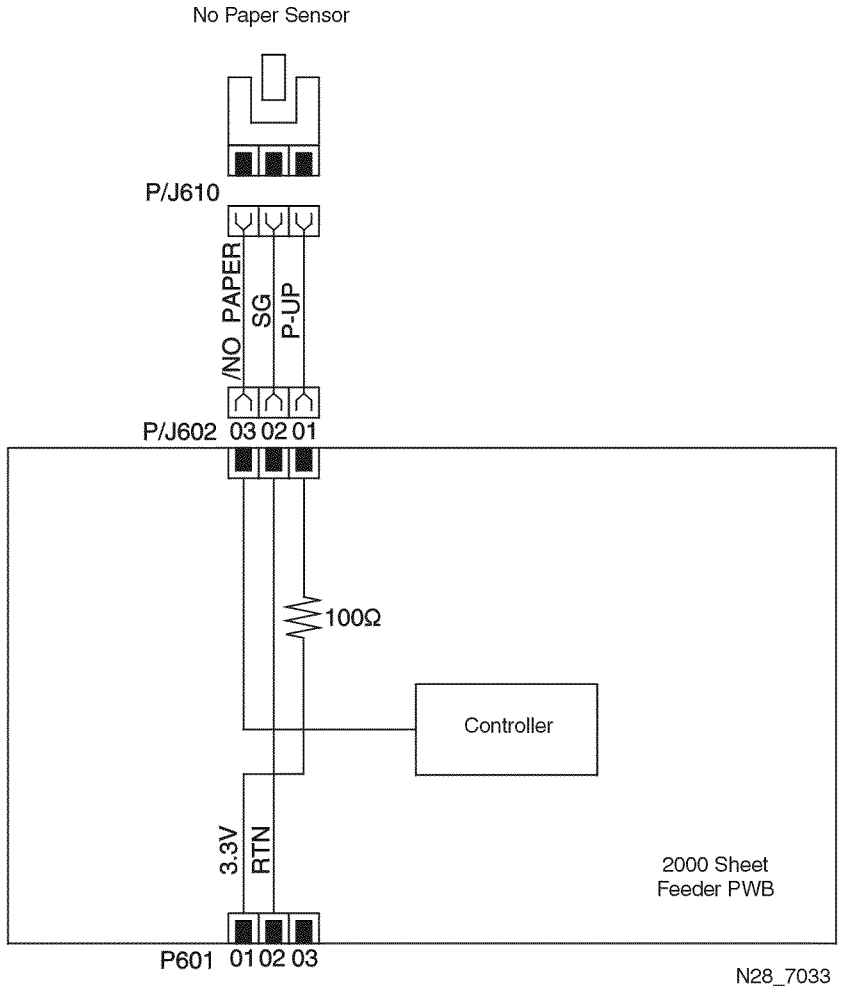

Figure 4 50. 2000 Sheet Feeder PWB <--> No Paper Sensor

50. 2000 Sheet Feeder PWB <--> No Paper Sensor

Table 3 Signal names for the 2000 Sheet Feeder PWB <--> No Paper Sensor path

Signal Name	Description
/NO PAPER	Signal from the No Paper Sensor. This signal is Low when the Photo Sensor is actuated.

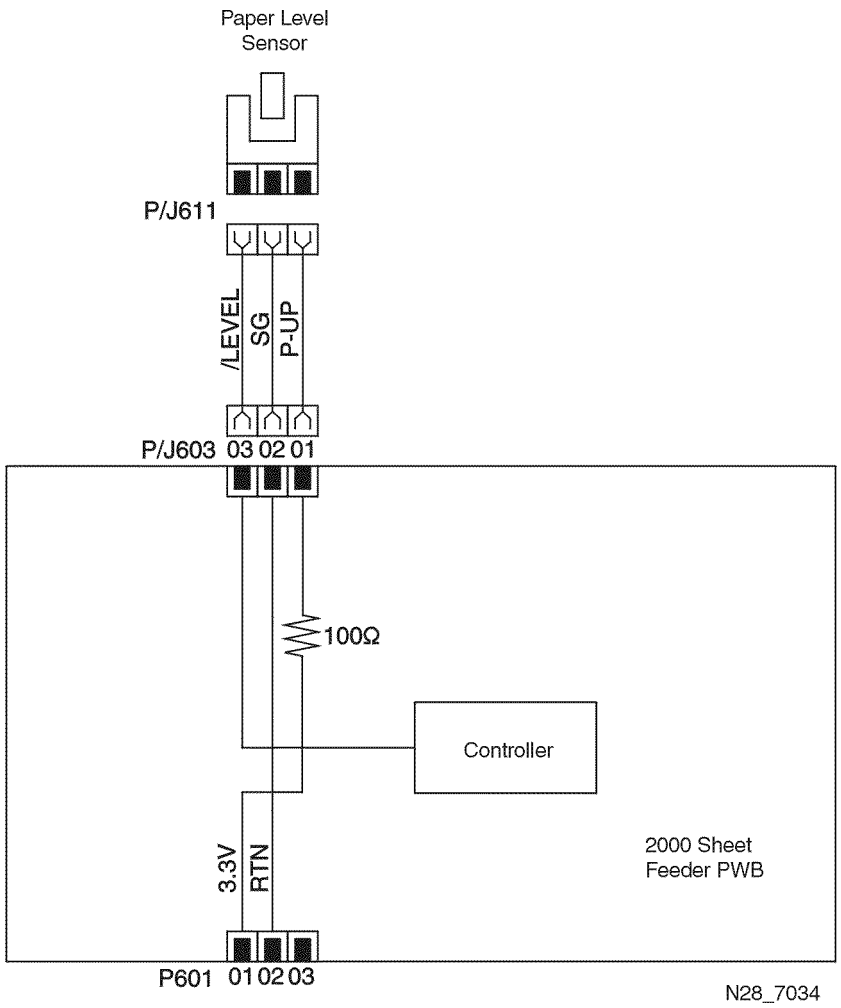

Figure 5 2000 Sheet Feeder PWB/Photo Sensor

50. 2000 Sheet Feeder PWB <--> Low Paper Sensor

Table 4 Signal names for the 2000 Sheet Feeder PWB <--> Low Paper Sensor path

Signal Name	Description
/LEVEL	Signal from the Low Paper Sensor. This signal is Low when the Photo Sensor is actuated.

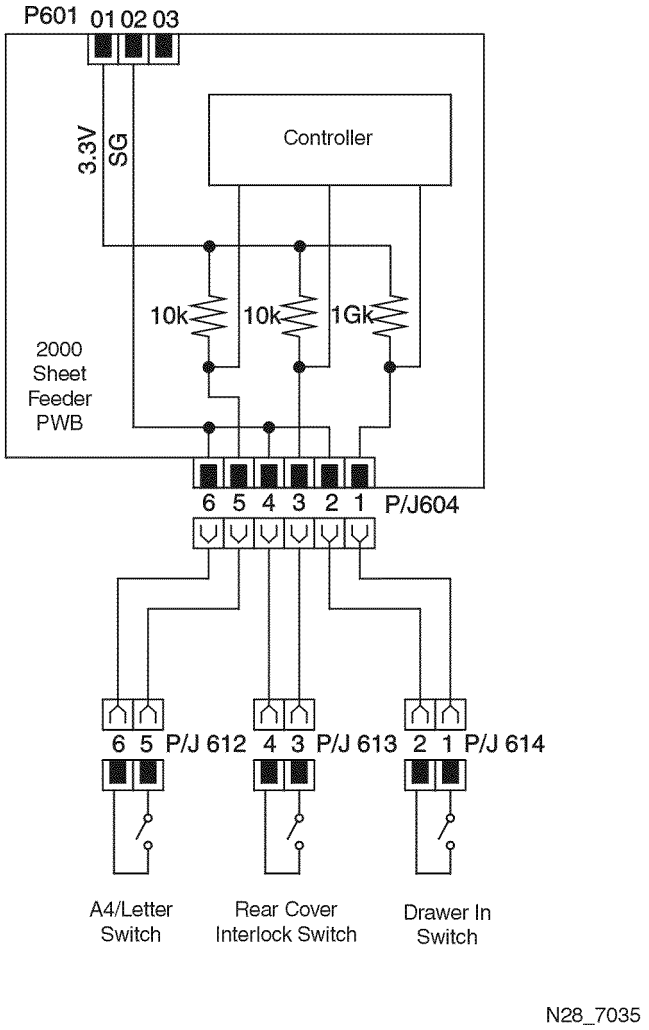

Figure 6 2000 Sheet Feeder PWB/Switches

50. 2000 Sheet Feeder PWB <--> Switches (A4/Letter, Rear Cover, and Drawer In)

The Switch (A4/Letter) detects the paper size, A4 or Letter, with the position of the Side Guide L of the OCT Tray Assembly. The Switches (rear Cover and Cassette In) are the interlock switches. If one of the contacts of these Switches is open, the 24V circuit is broken.