HARDWARE TESTS	
Panel Test	See **"Panel Test" on page 3-12.**
Button Test	See **"Button Test" on page 3-13.**
DRAM Test	See **"DRAM Test" on page 3-13.**
Serial 1 Wrap (if a serial port is available in the PCI slot 1)	See **"Serial 1 Wrap" on page 3-13.**
USB HS Test Mode	See **"USB HS Test Mode" on page 3-14.**
DUPLEX TESTS (if installed)	
Quick Test	See **"Quick Test (duplex)" on page 3-15.**
Print Test	See **"Print Test (duplex)" on page 3-16.**
Top Margin	See **"Top Margin (duplex)" on page 3-17.**
Left Margin	See **"Left Margin (duplex)" on page 3-17.**
Skew	See **"Skew (duplex)" on page 3-17.**
Sensor Tests	
Static Sensors	See **"Sensor Tests" on page 3-18.**
Dynamic Sensors	
Other Sensors	
PRINTHEAD TESTS	
Mirror Motor Test	See **"Mirror Motor Test" on page 3-19.**
Servo Laser Test	See **"Servo Laser Test" on page 3-19.**
DEVICE TESTS (if hard disk or flash is installed)	
Quick Disk Test	See **"Quick Disk Test" on page 3-20.**
Disk Test/Clean	See **"Disk Test/Clean" on page 3-20.**
Flash Test	See **"Flash Test" on page 3-21.**
PRINTER SETUP	
Defaults	See **"Defaults" on page 3-21.**
Prt Color Page Count	See **"Page Counts" on page 3-21.**
Prt Mono Page Count	
Perm Page Count	
Serial Number	See **"Serial Number" on page 3-22.**
Model Name	See **"Model Name" on page 3-22.**
Engine Setting 1 through 4	See **"Engine Setting 1 through 4" on page 3-22.**
Configuration ID	See **"Configuration ID" on page 3-22.**
Reset Color Cal	See **"Reset color calibration (Reset Color Cal)" on page 3-23.**
Par 1 Strobe Adj	See **"Parallel 1 strobe adjustment (Par 1 Strobe Adj)" on page 3-23.**
Motor Calibration	See **"Motor Calibration" on page 3-23.**
EP SETUP	
EP Defaults	See **"EP Defaults" on page 3-23.**
Fuser Temp	See **"Fuser temperature (Fuser Temp)" on page 3-24.**
DC Charge Adjust	See **"DC Charge Adjust, Dev Bias Adj, Transfer Adjust" on page 3-24.**
Dev Bias Adj	
Transfer Adjust	

REPORTS	
Menu Settings Page	See **"Menu Settings Page" on page 3-24**.
EVENT LOG	
Display Log	See **"Display Log" on page 3-25**.
Print Log	See **"Print Log" on page 3-25**.
Clear Log	See **"Clear Log" on page 3-26**.
SCANNER TESTS	
ASIC	See **"ASIC Test" on page 3-26**.
Feed Test	See **"Feed Test" on page 3-26**.
Sensor Test	See **"Sensor Tests" on page 3-27**.
Scanner Calibration Reset	See **"Scanner Calibration Reset" on page 3-28**.
Adf Magnification	See **"Adf Magnification"**.
EXIT DIAGNOSTICS	This selection exits Diagnostics mode, and then `Resetting the Printer` displays. The printer performs a POR, and then returns to normal mode.

Registration

Note: If you need to perform alignment or registration, see **"Printhead alignment" on page 4-10**.

The following information is meant to explain the uses for the menu items.

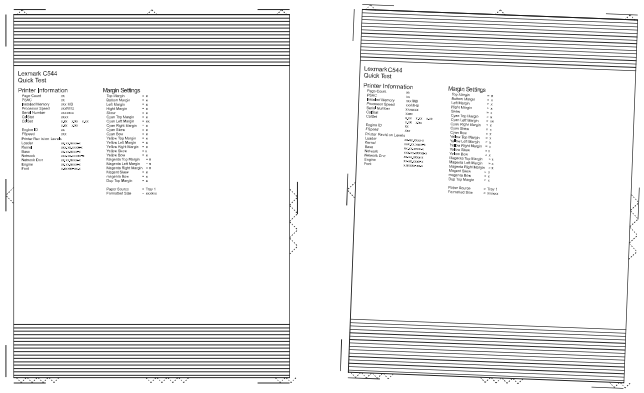
Print registration makes sure the black printing is properly aligned on the page. This is one of the steps in aligning a new printhead. It is also the first step in aligning the duplex registration. See **"Quick Test (duplex)" on page 3-15**.

The settings available are Top Margin, Bottom Margin, Left Margin, Right Margin, Skew, and Quick Test.

Skew

One printhead houses the four color planes. The black plane is aligned to the printer, and then the color planes are internally aligned to black. Adjust the skew mechanically by moving the printhead with a printhead adjustment screw. See **"Printhead mechanical alignment" on page 4-10** for instructions on setting printhead alignment. Electronic alignment fine tunes the alignment of the color planes to the black plane once the printhead is installed. Skew adjustment must be performed before color alignment is attempted. The following illustration shows proper alignment versus skewed alignment.

Proper alignment **Skewed alignment**



Print registration

To set print registration:

1. Touch **REGISTRATION** from the Diagnostics Menu.
2. Touch **Quick Test**.

   The message `Quick Test Printing...` appears on the display.
   Note: Retain this page to determine the changes you need to make to the margin settings.
3. Touch the margin setting you need to change.
4. Use ◄ to decrease or ► to increase the offset values, and then touch **Submit**.
5. The message `Submitting changes` displays and the original REGISTRATION screen appears.

   The print registration range is:

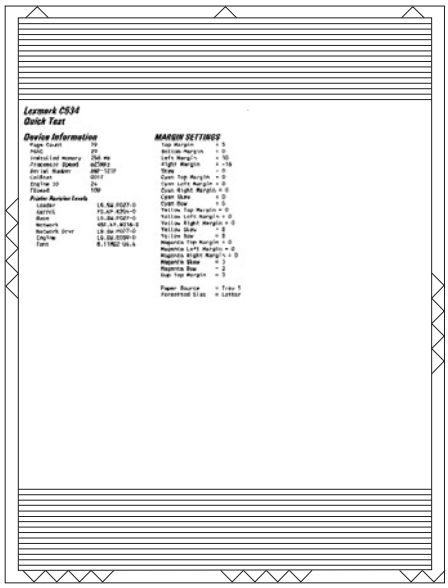
Description	Value	Direction of change
Skew	-50 to +50 Each increment corresponds to 1/1200 of an inch.	The skew setting value should be between -5 and +5. If not, readjust the skew with the printhead mechanical setting. See **"Printhead alignment" on page 4-10**.
Top margin	-25 to +25 Each increment corresponds to 8 scans at a 600 dpi scan rate (0.0133 inches or 0.339 mm).	A positive change moves the image down the page and increases the top margin. A negative change moves the image up and decreases the top margin.
Bottom margin	-25 to +25 Each increment causes approximately 0.55 mm shift in the bottom margin.	A positive offset moves text up the page and widens the bottom margin. A negative offset moves text down the page and narrows the bottom margin. **Note:** Make sure the media size selected matches the media size in tray 1.
Left margin	-50 to +50 Each increment corresponds to 4 pels at 600 dpi (0.00666 in. or 0.1693 mm).	A positive change moves the image to the right. A negative change moves the image to the left. The image is compressed or expanded. **Note:** Make sure the media size selected matches the media size in tray 1.
Right margin	-50 to +50 Each increment corresponds to an approximate shift of 4 pels at 600 dpi.	A positive change moves the image to the left. A negative change moves the image to the right.

6. Touch **Submit** to enter the values.
7. Print the Quick Test to verify your changes
8. Continue changing the settings by repeating steps 2 through 4.

Quick Test

The Quick Test contains the following information:

- Print registration settings
- Alignment diamonds at the left, right, top and bottom
- Horizontal lines to check for skew
- General printer information, including current page count, installed memory, serial number, and code level.



To print the Quick Test page:

Note: Print the Quick Test Page on letter or A4 paper.

1. Touch **Registration** from Diag Menu.
2. Touch **Quick Test**.

   The message Quick Test Printing… appears on the display.

   Once the Quick Test Page completes printing, the Registration menu displays again.

Alignment Menu

Note: If you need to perform alignment or registration, see **"Printhead alignment" on page 4-10**.

The following information is meant to explain the uses for the menu items.

Alignment is part of the process of adjusting the printhead and the color planes to the black plane and to each other. Before you start, perform the black alignment (Registration). See **"Printhead alignment" on page 4-10**. If you are replacing a new printhead, see **"Printhead removal, installation, and adjustment" on page 4-140**.

To perform alignment:

1. Touch **ALIGNMENT MENU** from the Diagnostics Menu.
2. Select one of the colors; cyan, yellow, or magenta.
3. Use ◄ to decrease or ► to increase the offset values, and then set the values to zero.
4. Continue for all colors; cyan, yellow, and magenta.
5. Touch **Submit**.
   Note: It is important to zero out all settings to make the adjustment easier.
6. Touch **Quick Test**
   `Quick Test printing...` is displayed, and then two pages print.
7. On the pages, make sure all the Current Values are set to zero. If not, go back to step 2 and repeat.
8. Look at the coarse and fine adjustments on the top left of the page, and then enter the best number for the top adjustment in the T space. Transfer this number over to the computation area for Z.
9. On the touch panel, select **Top Margin**. Use ◄ to decrease or ► to increase the computed value for T, and then touch **Submit**.
10. Repeat this process for skew (Z). Add the T value and the current Z value to obtain the new skew (Z) value.
    Reprint the Quick Test page after each change, and then observe the results. Make additional adjustments if necessary before proceeding on to Quick Test step two page.
11. Obtain left (L), right (R), and Bow (P) value using the same method as obtaining T from Quick Test Step 1. Reprint the Quick Test to ensure the settings are correct. Make additional adjustments as required.
12. Press **Back** to return to ALIGNMENT Menu.

See **"Printhead mechanical alignment" on page 4-10** for printout samples and additional information.

Motor tests

The motor tests are run to locate noises in the printer and isolate failures between the motors, cables, and system board.

General motor tests procedures

In some instances, when you enter a particular test, you will be given the choice to run the motor in forward or reverse. Other times, there will only be the option to run the motor in forward direction.

In general, the test should work as follows:

1. Touch **MOTOR TESTS** from Diag Menu.
2. Select the motor that you need to test.
3. Check the table below for setup requirements, if any.
4. Select the direction if a choice is offered (**Forward** or **Reverse**) or other setting for that test.

Press ✖ to stop the motor. Touch **Back** to return to the previous menu.

The following tests require special setup before running the test (not shown in the same order as the menu):

Motor diagnostic setup

Motor	Setup requirements		Notes
	Top cover position	Front door position	
Tray 1	N/A	Closed	• Ok • Picks paper – use empty or remove tray
		Open	Ok
Align	N/A	Closed	Ok
		Open defeat +25 V switch	• Ok • View align mechanism
Duplex	N/A	Closed	Ok
		Closed split front door	• Ok • View duplex mechanism (pull tray to isolate gears)
		Open defeat +25 V switch	• Ok • Duplex mechanism disconnected from motor
Belt stepper	N/A	Closed	• No motion • No error reported
		Open	• Ok • Belt disconnected from motor
Cartridge K – 3	N/A	Closed	• No motion • No error reported
		Open	• Ok • Cartridge disconnected from motor
Cart MCY – 2	N/A	Closed	• No motion • No error reported
		Open	• Ok • Cartridge disconnected from motor
PCU CY – 1	N/A	Closed	• No motion • No error reported
		Open	• Ok • Cartridge disconnected from motor
Fuser	Closed	Closed	Ok
		Open	Possible under-temp 120.04 error
	Open	N/A	Not recommended, fuser errors possible
Cam	N/A	Closed	• Ok • Front door locks & unlocks
		Open	• Ok • Door disconnected from motor • View gearbox
COD	N/A	Closed	• Ok • Engages and disengages cartridges
		Open	• No motion • No error reported (open while test is running)

Motor diagnostics

Motor	Direction	Action	Notes
Tray 1	Forward	Pick from Main Tray	• Will pick continuously • View with tray removed or empty
	Reverse	N/A	Function not supported
Align	Forward	Push media toward belt	• Nip is closed • Fails with waste box missing
	Reverse	Align leading edge	Function not supported
Duplex	Forward	Push media down toward input	• Will run continuously • View with front cover split
	Reverse	Pick from MPF (MPF test)	• Will pick continuously • View empty or pull tray
Belt stepper	Forward only	Gear turns counter clockwise	View with front cover open (No forward menu)
	Reverse	N/A	Only used to clear cleaner nip
Cartridge K – 3	Forward only	Gear turns counter clockwise	View with front cover open (runs PCU KM also)
	Reverse	N/A	Only used to clear blade nip
Cart MCY – 2	Forward only	Gear turns counter clockwise	View with front cover open
	Reverse	N/A	Not used
PCU CY – 1	Forward only	Gear turns counter clockwise	View with front cover open
	Reverse	N/A	Only used to clear blade nip
Fuser	Forward	Push media toward output bin	Backup roll turns Top cover should be closed
	Reverse	Push media toward output bin	Backup roll is disengaged
Cam	Forward	Engage motor couplings	• Runs to stall position • Locks door • Enables print operations
	Reverse NOP	Disengage motor couplings	• Runs to stall position • Unlocks door • Disables printing
COD	Forward	Engage color cartridges	• Runs to stall position • Disables color print operations
	Reverse NOP	Disengage color cartridges	• Runs to stall position • Enables color printing

Print Tests

Input source tests

The purpose of the diagnostic Print Tests is to verify that the printer can print on media from each of the installed input options. The contents of the Print Test Page varies depending on the media installed in the selected input source.

Check each Test Page from each source to assist in print quality and paper feed problems.

To run the Print Test Page:

1. Touch **PRINT TESTS** from the Diagnostics Menu.
2. Select the media source by touching the green arrow next to one of the items below:

   Tray 1
   Tray 2 (if installed)
   Tray 3 (if installed)
   Tray 4 (if installed)
   Tray 5 (if installed)
   Multi-Purpose Feeder (if installed)
   Print Quality Pages

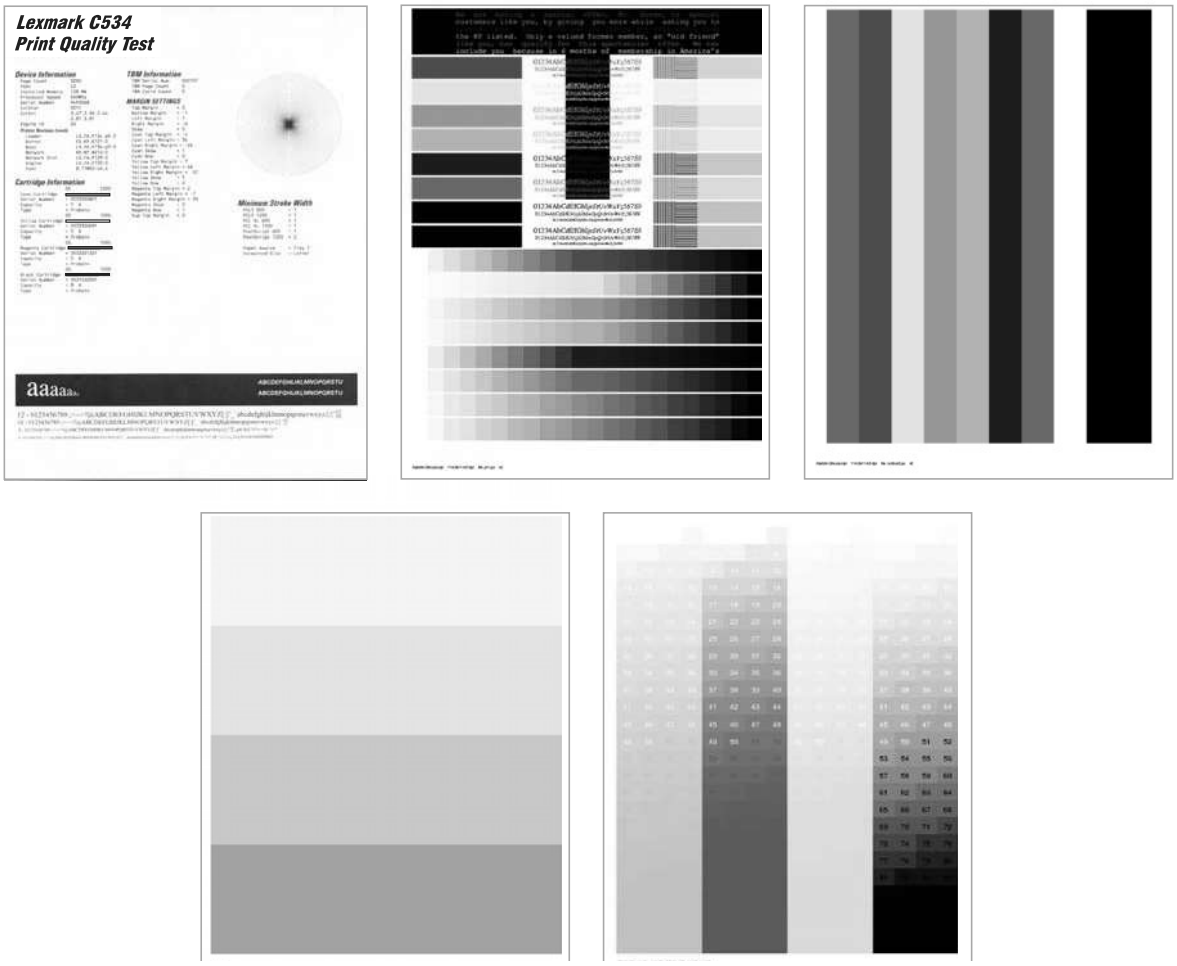
   Only installed trays will appear on the display.
3. Select either **Single** or **Continuous**.
   - If **Single** is selected, a single page is printed.
   - If **Continuous** is selected, printing continues until ✕ is pressed to cancel the test.

     If a source is selected that contains envelopes, an envelope test pattern is printed. If Continuous is selected, the test pattern is printed only on the first envelope.

   Note: The Print Test Page always prints on one side of the paper, regardless of the duplex setting.

Print quality test pages (Prt Quality Pgs)

The print quality test consists of five pages. Pages one and two contain a mixture of graphics and text. The remainder of the pages only contain graphics. The test prints on the media in the default tray.



This test may be printed from either Configuration Menu or the Diagnostics Menu. To run the print quality pages from the Diagnostics mode, select **PRINT TESTS** and **Print Quality Pages** from the menu. Once the test is started, it cannot be canceled. When the test pages print, the printer returns to the original screen.

To run the Print Quality Test Pages, select **Print Quality Pages** from PRINT TESTS, and then touch **Back**. The message `Printing Quality Test Pages` is displayed, and the test prints.

Hardware Tests

Panel Test

This test verifies the operator panel LCD function.

To run the Panel Test:

1. Touch **HARDWARE TESTS** from Diagnostics Menu.
2. Touch **Panel Test**.
   The Panel Test continually executes. Each pixel is activated at the darkest level to the lightest level, and then the backlight illuminates and turns off. This is repeated continuously.
3. Press ✕ to cancel the test at any point.

Button Test

This test verifies the operator panel button function.

To run the Button Test:

1. Touch **HARDWARE TESTS** from the Diagnostics Menu.
2. Touch **Button Test**.
3. A keypad displays on the operator panel. Press each physical button one at a time and observe if its corresponding button on the display lights up.
4. Touch **Back** to end the test.

DRAM Test

This test checks the validity of DRAM, both standard and optional. The test writes patterns of data to DRAM to verify that each bit in memory can be set and read correctly.

To run the DRAM Test:

1. Navigate to **Diagnostics Menu> HATDWARE TEST > DRAM Test**.
2. The MFP turns off and re-starts (POR), and then the power indicator *blinks*, indicating the test is in progress.
   The following counter appears:
   `DRAM Test  xxxMB  P:000000  F:0000`

To interpret the test:

- *xxx*MB indicates the amount of DRAM memory the MFP has detected.
- P:###### represents the number of times the memory test has passed and finished successfully. Initially, 000000 displays with the maximum pass count being 99,999.
- F:##### represents the number of times the memory test has failed and finished with errors. Initially, 00000 displays with the maximum fail count being 99,999.

Once the maximum pass count or fail count is reached, the test is stopped, the power indicator turns on solid, and then the final results appear. If the test fails, SDRAM Error appears for approximately three seconds and the failure count increases by 1.

Note: If you need to exit the test before it is complete, turn off the printer.

Serial 1 Wrap

The Serial 1 Wrap Test is used to check the operation of the serial port hardware using a wrap plug. Each serial signal is tested.

To perform the Serial 1Wrap Test:

1. Disconnect the serial interface cable, and then install the serial wrap plug.
2. Touch **HARDWARE TESTS** from the Diag Menu.
3. Touch **Serial 1 Wrap**.
   The power indicator *blinks* indicating the test is in progress. The following messages appear
   `Serial Wrap [x] Testing…`
   `Resetting the Printer`
   Upon completion of the POR, the following message is displayed:
   `Serial Wrap  P:000000  F:0000`
4. The test will stop when it reaches the maximum values, or press  to end the test before it is complete.

To interpret the test:

P:###### represents the number of times the serial port hardware has passed. Initially, 000000 is displayed. The maximum pass count is 999,999.
F:###### represents the number of times the serial port hardware has failed. Initially, 0000 is displayed. The maximum fall count is 999,999.
Any of the following explanations for a serial wrap test failure may display:

- Receive Status Interrupt Error
- Status Error
- Receive Data Interrupt Error
- Transmit Data Interrupt Error
- Transmit Empty Error
- Threshold Error
- Receive Data Ready Error
- Break Interrupt Error
- Framing Error
- Parity Error
- Overrun Error
- Data Error
- Data 232 Error
- Data 422 Error
- FIFO Error
- DSR Error
- DSR PIO Error
- DSR Interrupt Error
- CTS Error
- CTS PIO Error
- CTS Interrupt Error

USB HS Test Mode

1. Touch **HARDWARE TESTS** from Diag Menu
2. Touch **USB HS Test Mode**.
3. Select the port you want to test.
   - Port 0
   - Port 1
   - Port 2
   - Port 3
4. Select the test for the port you chose:
   - Test J
   - Test K
   - Test SE0 NAK
   - Test Packet
   - Test Force Enable
5. While the test executes, `USB High Speed Testing...` displays.

To exit the test, restart the printer.

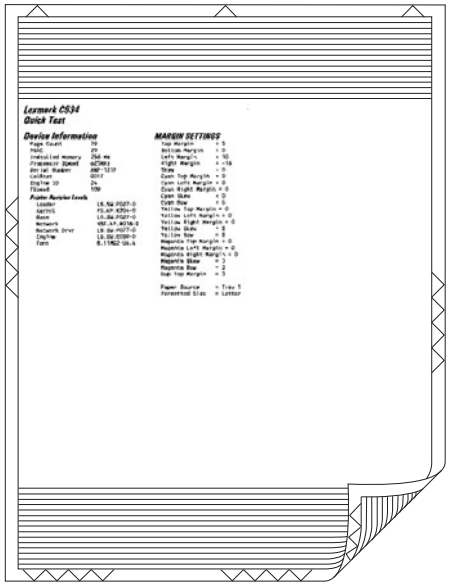
Duplex Tests

Quick Test (duplex)

Note: Before you set the duplex top margin, be sure to set the skew and alignment. See **"Printhead alignment" on page 4-10**.

This test prints a duplex version of the Quick Test that can be used to verify the correct placement of the top margin on the back side of a duplex page.

You can run one duplexed page (**Single**), or continue printing duplexed pages (**Continuous**) until ✕ is pressed. For information about changing the margin, see **"Top Margin (duplex)" on page 3-17**.



The paper you choose to print the page on should be either Letter or A4.

To print the Quick Test (duplex):

1. Touch **DUPLEX TESTS**.
2. Touch **Quick Test**.
3. Select **Single** or **Continuous**.
   - The single Duplex Quick test cannot be canceled. It stops when a single duplex sheet is printed.
   - The continuous test continues printing until you press ✕.
   - The printer attempts to print the Quick Test Page from the default paper source.
   - Check the Quick Test Page for the correct offset between the placement of the first scan line on the front and back side of a duplexed sheet.

Print Test (duplex)

This test provides service personnel with a way to verify the function of the printer's duplex hardware. After the user selects this test, the device automatically executes a continuous print test that generates a duplexed, color output page. To stop the test, the user must press ✕. While this test executes, the power indicator light blinks green and the panel displays "DUPLEX TESTS Printing...".

The paper you choose to print the page on should be either Letter or A4.

To run the Print Test (duplex):

1. Touch **DUPLEX TEST** in the Diag Menu.
2. Touch **Print Test**.
   The printer executes a continuous print test that generates a duplexed, color output page.
3. To stop the test, press ✕.

Top Margin (duplex)

This setting controls the offset between the first scan line on the front of the duplex page and the first scan line on the back of the page. Therefore, be sure to set the top margin in REGISTRATION before setting the duplex top margin. See **"Registration" on page 3-5**.

To set the Top Margin (duplex):

1. Touch **DUPLEX TESTS** from the Diagnostics Menu.
2. Touch **Quick Test**.
3. Touch **Single**.
   The test page prints.
4. Hold the page to the light to see whether the top margin of the back aligns with the top margin of the front.
5. If they do not match, select **Top Margin**.
6. Use ◄ and ► to select the margin setting you need to change.
   - Each increment shifts the duplex top margin by 1/100 of an inch.
   - The Top Margin (duplex) range is -25 to +25, and the default value is 0.
   - An increase moves the top margin down and widens the top margin. A decrease moves the top margin upward and narrows the top margin.
7. Touch **Submit**.
8. Print the Quick Test again to verify the adjustment. Repeat until the front and back top scan lines match.

Left Margin (duplex)

By modifying this setting you can shift the image on the back side of a duplex page to the right or to the left.

To set the Left Margin (duplex):

1. Select **DUPLEX TESTS** from the Diagnostics Menu.
2. Select **Quick Test**.
3. Select **Single**.
   The test page prints.
4. Hold the page to the light to see whether the left margin of the back aligns with the left margin of the front.
5. If they do not match, Touch **Left Margin**.
6. Use ◄ and ► to select the margin setting you need to change.
   - Each increment shifts the duplex left margin by 4 pixels at 600 dpi (0.00666 inches or 0.1693 mm).
   - The Left Margin range is -50 to +50, and the default value is 0.
   - An increase moves the margin to the right, and a decrease moves the margin to the left.

Skew (duplex)

This setting adjusts the duplex motor speed when it feeds through the aligning roll. It controls the skew between the first scan line and the top of the page. Adjustments are made to the image that is face down in the output tray.

To set the Skew (duplex):

1. Select **DUPLEX TESTS** from the Diagnostics Menu.
2. Select **Quick Test**.
3. Select **Single**.
   The test page prints.
4. Look at the dotted arrows at the top of the page. If the page is skewed on the page, select **Skew**.
5. Use ◄ and ► to select the skew setting you need to change.
   - Each increment shifts the skew by about 6 pixels at 600 dpi.
   - The Skew (duplex) range is -50 to +50, and the default value is 0.
   - An increase moves the image at the top right down the page. A decrease moves the image at the top right up the page.

6. Perform **Quick Test** again to verify the adjustment. Check the page to see if the image on the page is still skewed. If it is, repeat the adjustment.

Sensor Tests

There are two groups of sensors tests, static sensors and dynamic sensors.

To run the Sensor Test:

1. Touch **SENSOR TESTS** from the Diagnostics Menu.
2. Select either **Static Sensors** or **Dynamic Sensors**.
   - For static sensors—view the current status. Exit menus and enter the menus again to change the state.
   - For dynamic sensors—view the current status and toggle the state to test the sensor.

Press ✖ to exit a test.

Sensor type	Sensor name	Possible values	Sensor activation
Static sensors	Waste Toner	Empty, Full, or Missing	N/A
	Belt Waste	Empty or percentage full	N/A
	Fuser Temp	Degrees (C)	N/A
	BUR Temp	Degrees (C)	N/A
	Power	Voltage	N/A

Sensor type	Sensor name	Possible values	Sensor activation
Dynamic sensors	Fuser Exit	Open/Closed	Open the top access cover. Activate the fuser exit flag. The sensor should change state.
	Input	Open/Closed	Remove the paper tray 1. Activate the input sensor flag. The sensor should change state.
	Front Door	Open/Closed	Open the front door. The sensor should change state.
	Top Door	Open/Closed	Open the top access cover assembly. The sensor should change state.
	Narrow Media	Open/Closed	Test the MP feeder tray by inserting a sheet of paper, and then pushing up to sensor. The sensor should change state.
	K Toner	Open/Closed	Remove the black toner cartridge. Shine a flashlight on the toner level sensor. The sensor should change state.
	M Toner	Open/Closed	Remove the magenta toner cartridge. Shine a flashlight on the toner level sensor. The sensor should change state.
	C Toner	Open/Closed	Remove the cyan toner cartridge. Shine a flashlight on the toner level sensor. The sensor should change state.
	Y Toner	Open/Closed	Remove the yellow toner cartridge. Shine a flashlight on the toner level sensor. The sensor should change state.
	TPS (toner patch sensor)	Open/Closed	Open the front access door. Slip a piece of paper between the TPS and the transfer module. The sensor should change state.
	Bubble	Open/Closed	Open the front door. Activate the fuser entry flag. The sensor should change state.
	Dynamic MPF	Open/closed	Test by removing the MPF pick arm and activating the paper present sensor or remove the tray and shine a flashlight on the paper present sensor.

Printhead Tests

Mirror Motor Test

1. Touch **PRINTHEAD TESTS** from the Diagnostics Menu.
2. Touch **Mirror Motor Test**.
   The panel displays `Motor Running`.
   After the test completes, the panel displays either `Pass` or `Fail`.

To stop the test, press ✕.

Servo Laser Test

1. Touch **PRINTHEAD TESTS** from the Diagnostics Menu.
2. Touch **Servo Laser Test**.
   The panel displays `Motor Running`. After the test completes, the panel displays either `Pass` or `Fail`.

To stop the test, press ✕.

Device Tests

These tests only appear if the flash or disk option is installed.

Quick Disk Test

This test performs a non-destructive read/write on one block per track on the disk. The test reads one block on each track, saves the data, and then proceeds to write and read four test patterns to the bytes in the block. If the block is good, the saved data is written back to the disk.

To run the Quick Disk Test:

1. Touch **DEVICE TESTS** from the Diagnostics Menu.
2. Touch **Quick Disk Test**.
   - The power indicator *blinks* while the test is in progress.
   - `Quick Disk Test/Test Passed` is displayed if the test passes and the power indicator turns on solid.
   - `Quick Disk Test/Test Failed` is displayed if the test failed and the power indicator turns on solid.

You cannot stop the test while it is running, but when it is complete, press ✕ to return to DEVICE TESTS.

Disk Test/Clean

Warning: This test destroys all data on the disk and should not be attempted on a good disk. This test may run approximately 1½ hours depending on the disk size.

To run the Disk Test/Clean Test:

1. Touch **DEVICE TESTS** from the Diagnostics Menu.
2. Touch **Disk Test/Clean**.
   `Files will be lost/Go or Stop?` is displayed to warn the user.
3. To exit the test immediately and return to DEVICE TESTS, press ✕. To continue with the test, touch **Continue**.
   `Disk Test/Clean/BAD:000000 00%` is displayed. The screen updates periodically, indicating the percentage of test completed and the number of bad blocks found.
4. The power indicator *blinks* during the test. The test can be canceled at any time during the test by pressing ✕.
   Once the test is complete, the power indicator turns on solid and a message displays.

To interpret the test:

- *xxxx* Bad Blocks/*yyyyyy* Usable is displayed if fewer than 2000 bad blocks are detected. xxxx indicates the number of bad blocks, and *yyyyyy* indicates the number of usable blocks.
- *xxxx* Bad Blocks/Replace Disk is displayed if more than 2000 bad blocks are detected. The disk cannot be recovered because too many bad blocks exist on the disk.

Press ✕ to return to DEVICE TESTS.

Flash Test

This test causes the file system to write and read data on the flash to test the flash.

Warning: This test destroys all data on the flash because the flash is reformatted at the end of the test.

To run the Flash Test:

1. Touch **DEVICE TESTS** from the Diagnostics Menu.
2. Touch **Flash Test**.
   - The power indicator *blinks* while the test is running.
   - `Flash Test/Test Passed` is displayed if the test passes and the power indicator turns on solid.
   - `Flash Test/Test Failed` is displayed if the test fails and the power indicator turns on solid.

Press ✕ to return to DEVICE TESTS.

Printer Setup

Defaults

U.S./Non-U.S. defaults changes whether the printer uses the U.S. factory defaults or the non-U.S. factory defaults. The settings affected include paper size, envelope size, PCL symbol set, code pages, and units of measure.

Warning: Changing this setting resets the printer to factory defaults, and data may be lost. It cannot be undone.

To change the Defaults:

1. Touch **PRINTER SETUP** in Diag Menu.
2. Touch **Defaults**.
3. Select from U.S. or Non-U.S., and then touch **Submit**.

Page Counts

You can view, but not change any of the three counts displayed under PAGE COUNTS.

The view the Prt Color Pg Count, the Prt Mono Pg Count, or the Perm Page Count:

1. Touch **PRINTER SETUP** in Diag Menu.
2. Select the page count you wish to view:
   - Prt Color Pg Count
   - Prt Mono Pg Count
   - Perm Page Count

Touch **Back** to return to the Diagnostics Menu.

Serial Number

The serial number can only be viewed and cannot be changed.

To view or change the serial number:

1. Touch **PRINTER SETUP** from the Diagnostics Menu.
2. To change the value, touch the keyboard icon.
   A simulation of a typewriter allows you to enter an alphanumeric value.
3. Touch **Submit** to save the value or **Back** to exit without saving.

Press ✖ to return to PRINTER SETUP.

Engine Setting 1 through 4

Warning: Do not change these settings unless requested to do so by your next level of support.

Model Name

The model name can only be viewed and cannot be changed.

Configuration ID

The two configuration IDs are used to communicate information about certain areas of the printer that cannot be determined using hardware sensors. The configuration IDs are originally set at the factory when the printer is manufactured. However, the servicer may need to reset Configuration ID 1 or Configuration ID 2 whenever the system board is replaced. The IDs consist of eight digits. The first seven digits in each ID are hexadecimal numbers, while the last digit is a checksum of the preceding seven digits. Each ID can contain a combination of the digits 0 through 9, and A through F.

Note: When the printer detects a Configuration ID that is not defined or invalid, the following occurs:

- The default standard model Configuration ID is used instead.
- Configuration ID is the only function available in DIAGNOSTICS.
- Unless the menu is in DIAGNOSTICS, `Check Config ID` displays.

To set the configuration ID:

1. Touch **PRINTER SETUP** from the Diag Menu.
2. Touch **Configuration ID keyboard icon**.
3. The values for Configuration ID 1 and Configuration 2 are displayed.
4. Enter the Configuration ID 1.
   - Use the keypads on the operator panel to enter the configuration ID.
   - Touch 0 through 9 and/or A through F to input numbers.
   - Touch **Clear** to erase the numbers.
5. When the last digit is changed, touch **Submit** to validate the Configuration ID 1.
   If `Invalid ID` appears, the entry is discarded, and the previous Configuration ID 1 is displayed on the screen.
   If the process is successful, `Submitting Changes` appears on the display, followed by the current value for Configuration ID 2.
6. Repeat steps 4 and for entering the Configuration ID 2, and then touch **Submit**.
   If the Configuration ID 2 is validated, `Submitting Changes` appears on the display.

Note: The printer will NOT perform an automatic POR after the Configuration IDs are accepted.

Reset color calibration (Reset Color Cal)

The Reset Color Cal enables the alignment of the color planes using pre-programed values. Automatic Color Adjust Calibration may be more effective.

1. Touch **PRINTER SETUP** from the Diagnostics Menu.
2. Touch **Reset Color Cal**.
   `Resetting` displays.
3. The printer returns to the previous screen when calibration is complete.

Parallel 1 strobe adjustment (Par 1 Strobe Adj)

Note: This setting only appears if the printer has a parallel port available in the PCI slot 1.

This setting enables the servicer to adjust the amount of time the strobe is sampled in order to determine if valid data is available on the parallel port. The range of values is -4 to 6. Each time this value is incremented by 1, the strobe is sampled 50 ns (nanoseconds) longer. Each time this value is decreased by 1, the strobe is sampled 50 ns less often. When the value of this setting is 0, the factory default is used to determine the length of time the strobe is sampled. If the servicer, for example, decreased the value from 0 to 3, the strobe will be sampled for 150 ns longer than the factory setting.

Motor Calibration

This setting synchronizes the aligner and fuser motor speeds with the transfer belt speed to ensure that the output is printed correctly.

To perform a Motor Calibration:

1. Touch **PRINTER SETUP** from the Diagnostics Menu.
2. Touch **Motor Calibration**.
3. Touch **Motor Calibration** on the next screen.
   `Calibrating...` is displayed, and then eight blank pages are produced.

Touch **Back** to return to PRINTER SETUP.

Cal Ref Adj

To adjust the Cal Ref Adj:

1. Touch **PRINTER SETUP** from the Diagnostics Menu.
2. Touch the arrows beside Cal Ref Adj to increase or decrease the value.
3. Touch **Submit**.

EP Setup

EP Defaults

This setting is used to restore each printer setting listed in EP SETUP to its factory default value. Sometimes this is used to help correct print quality problems.

To restore EP Defaults:

1. Touch **EP SETUP** from the Diagnostics Menu.
2. Touch **EP Defaults**.
3. Select either Restore or Do Not Restore.
   - Touch **Restore** to reset the values to the factory settings
     `Restoring Factory Defaults` is displayed.
   - Touch **Do Not Restore** to exit without changing the settings.

Fuser temperature (Fuser Temp)

This adjustment can be used to help solve some customer problems with paper curl on low grade papers and problems with letterheads on some types of media.

To adjust the fuser temperature:

1. Touch **EP SETUP** from the Diagnostics Menu.
2. Touch the left or right arrows beside Fuser Temp to toggle between **Low**, **Normal**, or **High**.
   The default is Normal.
3. Touch **Submit**.

DC Charge Adjust, Dev Bias Adj, Transfer Adjust

Each of these three settings enables you to adjust the high voltage levels controlling the electrophotographic process. You will use these settings to compensate for unusual operating circumstances such as high humidity. The printer uses the value of these settings together with other settings to calculate printing speed and media selection.

To adjust DC Charge Adjust:

1. Touch **EP SETUP** from the Diagnostics Menu.
2. Touch the left or right arrows beside DC Charge Adjust to toggle between Low, Normal, or High.
   The default is Normal.
3. Touch **Submit**.

To Adjust Dev Bias Adj or Transfer Adjust:

1. Touch **EP SETUP** from the Diagnostics Menu.
2. Touch **Adjust Dev Bias Adj** or **Transfer Adjust** (these menu items work similarly).
   Four choices appear:
   Black
   Magenta
   Cyan
   Yellow
3. Touch the left or right arrows beside the setting or settings you want to change.
   Select Low, Normal, or High. The default is Normal.
4. Touch **Submit**.

Reports

Menu Settings Page

The Menu Settings Page is a list of Diag Menu settings with the current value.

To print the Menu Settings Page:

1. Touch **REPORTS** from the Diagnostics Menu.
2. Touch **Menu Settings Page**.
   The following displays and the page or pages print.
   ```
   Printing...
   Menu Settings Page
   ```

Touch **Back** to return to the Diagnostics Menu.

Event Log

Display Log

The event log provides a history of printer errors. It contains the 11 most recent errors that have occurred on the printer. The most recent error displays in position 1, and the oldest error displays in position 11 (if 11 errors have occurred). If an error occurs after the log is full, the oldest error is discarded. Identical errors in consecutive positions in the log are entered, so there may be repetitions. All *2xx* and *9xx* error messages are stored in the event log.

To view the event log:

1. Touch **EVENT LOG** from the Diagnostics Menu.
2. Touch **Display Log**.
   Up to three error codes display at a time.

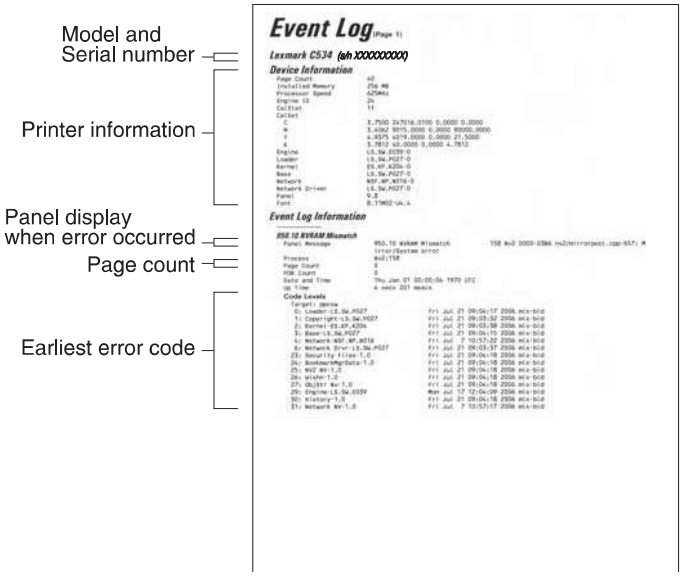
Touch **Back** to return to the EVENT LOG menu.

Print Log

Additional diagnostic information is available when you print the event log from Diag Menu rather than CONFIG MENU.

The Event Log printed from Diag Menu includes:

- Detailed printer information, including code versions
- Time and date stamps
- Page counts for most errors
- Additional debug information in some cases



The printed event log can be faxed to Lexmark or your next level of support for verification or diagnosis.

To print the event log:

1. Touch **EVENT LOG** from the Diagnostics Menu.
2. Touch **Print Log**.
   `Printing EVENT LOG` is displayed.

Touch **Back** to return to the Diagnostics Menu.

Clear Log

Use Clear Log to remove the current information in the Event Log. This affects both the viewed log and the printed log information.

1. Touch **EVENT LOG** from the Diagnostics Menu.
2. Touch **Clear Log**.
3. Touch **YES** to clear the Event Log or touch **NO** to exit the Clear Log menu.
   If **YES** is selected, `Deleting EVENT LOG` displays on the screen.

Touch **Back** to return to EVENT LOG.

Scanner Tests

ASIC Test

This test initiates a scan of the scanner ASIC memory.

1. Touch **SCANNER TESTS** from the Diagnostics Menu.
2. Touch **ASIC Test**.
   The results will be displayed as either `ASIC Test Passed` or `ASIC Test Failed`.

To clear the results, press ✖.

Feed Test

The feed test scans and feeds continuously from either the ADF or the flatbed, depending on whether or not paper is placed in the ADF.

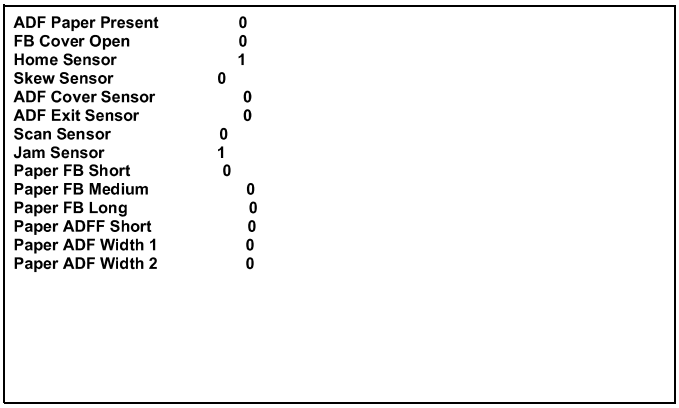
1. Touch **SCANNER TESTS** in Diag Menu.
2. Touch **Feed Test**.
3. Use ◂ and ▸ to indicate the specific media size then touch **Submit**.
   - If media is in the ADF, then ADF feed tests are performed.
   - If no media is in the ADF or the media is exhausted, then the entire flatbed will be scanned
4. `Running… Flatbed:0 ADF:0` displays and the number of successful scans is displayed by incrementing the number beside the scan type.
   If a failure occurs, `Feed Test Failed Flatbed:xxxxx ADF:xxxxx`. is displayed showing the number of failure of each scan type.
5. Press ✖ to end the test and clear the messages.

Sensor Tests

Tests to evaluate the scanner sensors in the ADF and the flatbed (FB).

To view the sensor states:

1. Touch **SCANNER TESTS** from the Diagnostics Menu.
2. Touch **Sensor Test**.
   A screen similar to the one below will display.



The meaning of the states is listed in the table below:

Sensor Test descriptions (under Scanner Tests)

Sensor	State	Description
ADF Paper Present	0	Paper not present in ADF
	1	Paper present in ADF
FB Cover Open	0	Flatbed cover closed
	1	Flatbed cover open
Home Sensor	0	Scanner carriage not positioned over home sensor
	1	Scanner carriage positioned over home sensor
Skew Sensor	0	Paper not positioned over the ADF interval sensor
	1	Paper positioned over the ADF interval sensor
ADF Cover Open	0	ADF cover closed
	1	ADF cover open
ADF Exit Sensor	0	Paper not positioned over the ADF exit sensor
	1	Paper positioned over the ADF exit sensor
Scan Sensor	0	Paper is not present above this sensor
	1	Paper is being fed from the ADF, and the top edge passes over this sensor
Jam Sensor1	0	Paper is not present above this sensor
	1	Paper is being fed from the ADF, and the top edge passes over this sensor
Paper FB Short	0	Executive paper is not present on the flatbed or the scanner cover is not closed
	1	Executive paper is present on the flatbed, is covering the first length sensor, and the scanner cover is closed
Paper FB Medium	0	Letter paper is not present on the flatbed or the scanner cover is not closed
	1	Letter paper is present on the flatbed, is covering the second length sensor, and the scanner cover is closed

Sensor Test descriptions (under Scanner Tests)

Sensor	State	Description
Paper FB Long	0	Legal paper is not present on the flatbed, or the scanner is not closed
	1	Legal paper is present on the flatbed, is covering the third length sensor, and the scanner cover is closed
Paper ADF Long	0	Paper not present in the ADF, or positioned over the ADF bin sensor
	1	Paper present in the ADF, and positioned over the ADF bin sensor.
Paper ADF Width 1	0	Paper present in the ADF, and the paper edge guide is moved to the Executive position
	1	Paper is not present in the ADF, or the paper edge guide is not positioned in the Executive position
Paper ADF Width 2	0	Paper present in the ADF, and the paper edge guide is moved to the Executive position
	1	Paper is not present in the ADF, or the paper edge guise is not position in the Executive position

Press ✖ to return to the Scanner Tests Menu.

Scanner Calibration Reset

After selecting this setting, the operator panel displays the following message in the header:

`This procedure should be run after the scanner or ADF has been replaced. Before proceeding make sure that the scanner glass and backing material are clean. Please refer to the User's Guide for instructions on how to clean the scanner glass and backing material.`

select **Continue** To initiate this operation. At the conclusion of a successful operation, the **operator** panel displays the message `Operation completed successfully.` for 3 seconds and then automatically returns to the main Scanner Calibration Reset menu. If an error occurs during execution, the operator panel displays the message `Test Failed, Please Retry`. Select **Continue** to return to the main Scanner Calibration Reset menu.

Note: Pressing **Exit** returns to the Configuration Menu without executing this procedure.

After successfully executing this process, verify its effectiveness by loading the ADF with a document containing both light and dark content, and then perform a duplex copy. If the back side of the resulting copy contains vertical streaks, clean the scanner glass and backing sheet, execute the back side scan uniformity procedure, and then perform another copy. If streaks still appear on the resulting copy, repeat the cleaning and verification procedure a second time or replace the ADF entirely.

Adf Magnification

This setting enables you to adjust the ADF's magnification. The magnification values are from **0.985** to **1.015**. The default value is **1.0**.

EXIT DIAGNOSTICS

Touch **Exit Diag Menu**. The printer performs a power-on reset and returns to normal mode.

Configuration menu (CONFIG MENU)

Available tests

The tests display on the operator panel in the order shown. Not all menus appear, depending upon the configuration of your multiple function printer. For example, if you do not have a hard disk installed, then Disk Encryption and Wipe Disk will not appear.

Reset Separator Roll and Pick Assembly Counter	See **"Reset Separator Roll and Pick Assembly Counter" on page 3-30**.
Reset Fuser Counter	See **"Reset Fuser Count" on page 3-30**.
USB Scan to Local	See **"USB Scan to Local" on page 3-30**.
Black Only Mode	See **"Black Only Mode" on page 3-31**.
Color Lock Out	See **"Color Lock Out" on page 3-31**.
Print Quality Pages	See **"Prt Quality Pages" on page 3-31**.
Reports	
Menu Settings Page	See **"Menu Settings Page" on page 3-31**.
Event Log	See **"Event Log" on page 3-32**,
Color Trapping	See **"Color Trapping" on page 3-32**.
Tray Insert Msg	See **"Tray Insert Msg" on page 3-32**.
SIZE SENSING	See **"Size Sensing" on page 3-32**.
Panel Menus	See **"Panel Menus" on page 3-33**.
PPDS Emulation	See **"PPDS Emulation" on page 3-33**.
Factory Defaults	See **"Factory Defaults" on page 3-33**.
Energy Conserve	See **"Energy Conserve" on page 3-34**.
Fax Low Power Support	See **"Fax Low Power Support" on page 3-34**.
Min Copy Memory	See **"Min Copy Memory" on page 3-34**.
Numpad Job Assist	See **"NumPad Job Assist" on page 3-34**.
Format Fax Storage	See **"Format Fax Storage" on page 3-35**.
Fax Storage Location	See **"Fax Storage Location" on page 3-36**.
Automatic Color Adjust	See **"Automatic Color Adjust" on page 3-38**.
Auto Align Adj	See **"Auto Align Adj" on page 3-38**.
Color Adj State	See **"Color Adj State" on page 3-39**.
Enforce Color Order	See **"Enforce Color Order" on page 3-39**.
Color Alignment	See **"Color Alignment" on page 3-39**.
Motor Calibration	See **"Motor Calibration" on page 3-40**.
ADF Edge Erase	See **"ADF Edge Erase" on page 3-36**.
FB Edge Erase	See **"FB Edge Erase" on page 3-36**.
Scanner Manual Registration	See **"Scanner Manual Registration" on page 3-36**.
Disable Scanner	See **"Disable Scanner" on page 3-38**.
Paper Prompts	See **"Paper Prompts" on page 3-40**.
Envelope Prompts	See **"Envelope Prompts" on page 3-40**.
Action for Prompts	See **"Action for Prompts" on page 3-41**.
Jobs on Disk (if hard disk is installed)	See **"Jobs on Disk" on page 3-41**.

Disk Encryption (if hard disk is installed)	See **"Disk Encryption" on page 3-41**.
Wipe Disk (if hard disk is installed)	See **"Wipe Disk" on page 3-42**.
Wipe All Settings	See **"Wipe All Settings" on page 3-43**.
Duplex Gloss	See **"Duplex Gloss" on page 3-43**.
Font Sharpening	See **"Font Sharpening" on page 3-43**.
Require Standby	See **"Require Standby" on page 3-43**.
UI Automation	See **"UI Automation" on page 3-44**.
LES Applications	See **"LES Applications" on page 3-44**.
Key Repeat Initial Delay	See **"Key Repeat Initial Delay" on page 3-44**.
Key Repeat Rate	See **"Key Repeat Rate" on page 3-44**.
Clear Custom Status	See **"Pel Blurring" on page 3-45**.
Pel Blurring	See **"Pel Blurring" on page 3-45**.
USB Speed	See **"USB Speed" on page 3-46**.
Automatically Display Error Screens	See **"Automatically Display Error Screens" on page 3-47**.
Exit Config Menu	This selection exits Configuration Menu, and then `Resetting the Printer` displays. The printer performs a POR and returns to normal mode.

Reset Separator Roll and Pick Assembly Counter

This setting enables you to reset the value of the Separator Roll and Pick Assembly's maintenance counter to zero (0) after replacing it.

Reset Fuser Count

Resets the fuser count value to zero. The Event Log records each time that a user executes the Reset Fuser Count operation. See **"Event Log" on page 3-32** for more information. This setting only appears if the Maintenance Warning and Intervention function is enabled in the printer Configuration ID.

To reset the fuser count:

1. Touch **Reset Fuser Cnt** from the Config Menu.
2. Touch **Reset Fuser Cnt** again.l

You are returned to the Configuration Menu.

USB Scan to Local

This setting allows you to limit or expand the uses for the USB device on the front of the multiple function printer. If you select **On** (the default), the contents of the USB device can be viewed or saved on another device, such as an USB-connected computer. If you select **Off**, only the MFP can view the USB device contents.

To change the setting:

1. Touch **USB Scan to Local** from the Config Menu.
2. Touch the ◂ or ▸ arrows to select either **Off** or **On**.
3. Touch **Submit**.

Touch **Back** to return to the Configuration Menu screen.

Black Only Mode

This enables you to force the printer to always print color content in grayscale. Turning this setting **On** is equivalent to setting Print Mode to Black Only; the printer will ignore any PJL or data stream commands that attempt to change the Print Mode setting. If this setting is set to **Off** (default), then the printer will print color content as normal.

Color Lock Out

Select **On** when printing for extended periods with only black toner. This saves the color toner cartridges (cyan, magenta, and yellow) and photoconductor units from excessive wear. In addition to setting the values, the cyan, magenta, and, yellow toner cartridges and their matching photoconductor units must be removed from the printer. The default value is **Off**.

To initiate Color Lock Out:

1. Touch **Color Lock Out** from the Configuration Menu.
2. Touch the ◄ or ► arrows to select **On**.
3. Touch **Submit**.
   `Submitting Changes…` is displayed.
4. Remove all color cartridges and color photoconductor units (cyan, yellow, and magenta). Leave the black supplies only.
5. Turn the MFP off, and then on (POR).
   Note: If the color supplies are left installed when the MFP returns to the normal menus, the MFP displays `Remove All Color Supplies`.

Note: When you turn Color Lock Out Off (the default mode) after it has been On, at the next POR to normal mode the printer will display `31 Missing or Defective <color> Cartridge`. Replace the color cartridges and color photoconductors.

Prt Quality Pages

To help isolate print quality problems, print the Print Quality Test Pages. The pages are formatted. The `Printing Quality Test Pages` message appears, then the pages print. The message remains on the operator panel until all the pages print.

To print the Print Quality Pages:

1. Touch **Print Quality Pages** from the Configuration Menu.
   `Print Quality Test Pages…` is displayed.

Touch **Back** to return to the Configuration Menu.

The Print Quality Test Pages contain several pages. The first page which is a mixture of text and graphics. The information includes values of the Quality Menu settings in Settings and printer and toner cartridge configuration information. The remaining pages only contain graphics. For samples of the pages, see **"Print quality test pages (Prt Quality Pgs)" on page 3-12**.

Reports

Menu Settings Page

The Menu Settings Page generates a list of Configuration Menu settings and the current values.

To print the Menu Settings Page:

1. Touch **Reports** from the Configuration Menu.
2. Touch **Menu Settings Page.**

`Printing Menu Settings Page...` is displayed. A set of the Configuration Menu settings is printed.

Event Log

This menu item lets the system support person print a limited set of the information contained in the Diagnostics mode version of the printed Event Log. For a sample of a Diagnostics Menu Event Log printout, see **"Event Log" on page 3-25**. The limited Configuration log and the full Diagnostics log printed versions show the same operator panel messages when they print and follow the same layout guidelines.

To print the Event Log:

1. Touch **Reports** from the Configuration Menu.
2. Touch **Event Log**.
   `Printing EVENT LOG...` is displayed.

Note: If an optional parallel card is supported and installed, then after the Event Log prints, a separate report that details the parallel card's history.

Color Trapping

Uses an algorithm to compensate for mechanical misregistration in the printer. When small black text or fine black lines are being printed, the printer checks to see if they are being printed on top of a colored background. If so, rather than remove the color from beneath the black content, the printer leaves the color around the edge of the text or line. The hole in the colored region is reduced in size which prevents the characteristic white gap that is caused by mis-registration.

This menu item applies to PCL 5e emulation, PCL XL, PDF, and PostScript.

Selections are **Off** and the values **1** through **5**, with **2** as the default. Values 1 through 5 indicate the amount of color remaining beneath the black content. Each setting increments by 1/600 of an inch. The less accurate the registration setting, the higher the setting needs to be adjusted. Selecting **Off** disables color trapping. The default value is 2.

To increase or decrease color trapping:

1. Touch **Color Trapping** from the Configuration Menu.
2. Touch ◂ to decrease the color margin or ▸ to increase the color margin.
3. Touch **Submit**.
   `Submitting changes...` is displayed.

You are automatically returned to the Configuration Menu.

Tray Insert Msg

This setting determines how many seconds the panel will display the `Tray Insert` message after inserting a tray into the printer.

Selections are **Disabled** and the values between **1** and **90**. The default value is **5**.

Size Sensing

Turns the size sensing **Auto** or **Off** for print media input sources that have the ability to sense media sizes. The default value is Auto.

To select size sensing for a tray that has that feature:

1. Touch **SIZE SENSING** from the Configuration Menu.
2. Touch **Tray 2, Tray 3, Tray 4, or Tray 5**.
   Only those sources which support automatic size sensing are displayed.
3. Select **Auto**.

4. Select **Submit**.

Panel Menus

Lets the system support person lock users from Administrative menus. The Menu icon will not appear on the operator pane Selecting **On** (the default) prevents users from accessing menus. **Off** allows users to access the menus. The default value is set to On. Menus secured by password access are blocked, but the security access settings are retained if Panel Menus is set to On.

This menu item only appears when the PJL PASSWORD Environment variable is set to 0.

To change the Panel Menus:

1. Touch **Panel Menus** from the Configuration Menu.
2. Touch the ◄ or ► arrow to select **Off** or **On**.
3. Select **Submit**.
   `Submitting changes…` is displayed.

You are automatically returned to the Configuration menu.

PPDS Emulation

Activates or deactivates (default) the Personal Printer Data Stream (PPDS) emulation language. This menu item only appears if the PPDS interpreter is available.

To activate or deactivate PPDS Emulation:

1. Touch **PPDS Emulation** from the Configuration Menu.
2. Touch the ◄ or ► arrow to select **Deactivate** or **Activate**.
3. Select **Submit**.
   `Deactivating PPDS Mode…` or `Activating PPDS Mode…` is displayed.

You are automatically returned to the Configuration menu.

Download Emuls

This menu item allows the system support person turn the download emulator off temporarily. This menu item only appears if at least one download emulator is installed.

The only selection is **Disable**. The printer automatically re-enables all download emulators after two instances of a power-on reset for the printer. To re-enable these emulators, a user would perform another power-on reset after exiting the Config Menu.

Factory Defaults

This menu item resets the majority of printer values back to their factory default settings.

Warning: This selection cannot be reversed, so this operation should only be used as a last resort to fix any printer problem.
When factory default settings are restored:

- All downloaded resources (fonts, macros, symbol sets) in the printer memory (RAM) are deleted.
- All menu settings return to the factory default setting *except*:
  - The Display Language setting in the “Setup” Menu.
  - All settings in the Parallel Menu, Serial Menu, Network Menu, Infrared Menu, LocalTalk Menu, and USB Menu.
- Restore LES—all non-standard applications are removed, all frame-work and standard application settings are reset to their factory default values, and then the SE logs are cleared.

To restore Factory Defaults:

1. Print **Menu Settings** from the Administration Menu, the Diagnostic Menu, and the Configuration Menu. If you need to reset customer settings you have a record.
2. Touch **Factory Defaults** from the Configuration Menu.
3. Touch **Restore Base**, **Restore STD NET**, or **Restore LES**. The Restore Network value only appears on printer models that have integrated network support.
   `Restoring Factory Defaults…` appears on the operator panel while factory defaults are restored.
   `Resetting the Device...` appears and the MFP performs a POR.

After a POR, the printer starts in the Home state.

Energy Conserve

This menu item affects the values that appear in the Power Saver menu on the operator panel. Energy Conserve only appears when the Power Saver feature is disabled.

Select **Off** in Energy Conserve to add a menu item to the Power Saver called `Disabled`. Energy Conserve does not disable Power Saver, it only allows the users to select **Disable**. When **On** (default) is selected in the Energy Conserve menu `Disabled` does **not** appear on as a choice in the Power Saver menu. Power Saver cannot be disabled from the user's operator menu.

To change the Energy Conserve setting:

1. Touch **Energy Conserve** from the Configuration Menu.
2. Touch the ◂ or ▸ arrow to toggle between **On** and **Off**.
3. Touch **Submit**.
   `Submitting changes…` is displayed.

You are automatically returned to the Configuration menu.

Fax Low Power Support

The values for this setting include **Auto** (default), **Permit Sleep**, and **Disable Sleep**.

The **Auto** value relies on the firmware's logic to determine if the device supports the fax portion of the low power architecture. **Permit Sleep** allows the fax chip to enter low power mode (regardless of the value of Caller ID Pattern) whenever the device determines that it should. **Disable Sleep** prohibits the fax chip from ever entering low power mode.

NumPad Job Assist

This setting determines whether or not a user can configure and initiate a job using the operator panel buttons. When this is set to **On**, a user can choose a function, such as copy, fax, or so forth, and then enter specific values for a limited number of settings and initiate the job with a series of key presses. When turned to **Off**, the feature is not available.

To change the Numpad Job Assist value:

1. Touch **NumPad Job Assist** from the Configuration Menu.
2. Touch the ◂ or ▸ arrow to toggle between **On** and **Off**.
3. Touch **Submit**.
   `Submitting changes…` is displayed.

You are automatically returned to the Configuration menu.

Min Copy Memory

This setting determines how much DRAM memory the MFP will allot to a priority queue. Amounts are 25, 35, 50, 80, or 100MB. The default is 80MB. The regular queue is interrupted for copy jobs in the priority queue.

To change the Min Copy Memory value:

1. Touch **Min Copy Memory** from the Configuration Menu.
2. Touch the ◄ or ► arrow to change between **25 MB**, **35 MB**, **50 MB**, **80 MB**, and **100 MB**.
3. Touch **Submit**.
   `Submitting changes…` is displayed.

You are automatically returned to the Configuration menu.

Format Fax Storage

This procedure formats fax storage. When executed, this operation ONLY deletes faxes that are stored in the location identified by the value of the Fax Storage Location setting.

1. Touch **Format Fax Storage** from the Configuration Menu.
2. Touch either **Yes** or **No**
   - If **Yes** is selected, `Formatting Fax Flash DO NOT POWER OFF` is displayed. Then you are automatically returned to the Configuration main menu.
   - If **No** is selected, you are returned to the Configuration main menu.

Fax Storage Location

This setting only appears if a hard disk is installed. Selections are NAND or Disk.

1. Touch **Fax Storage Location** from the Configuration Menu.
2. Touch the or arrow to toggle between **NAND** and **Disk**.
3. Touch **Submit**.

Note: If a hard disk is not installed, the multiple function printer automatically stores all buffered faxes on NAND, and this menu does not appear. Disk is the default storage location.

ADF Edge Erase

The value of this setting determines the size (in millimeters) of the "no-print" zone around an ADF scan job. A copy job always has at least a 2mm border; therefore, the border size is either 2mm or the value of this setting, whichever is larger.

To change the value for ADF Edge Erase:

1. Touch **ADF Edge Erase** from the Configuration Menu.
2. Touch the or arrows to change the value from **0** to **6** (3 is the default).
3. Touch **Submit**.
   `Submitting changes…` is displayed.

You are automatically returned to the Configuration menu.

FB Edge Erase

The value of this setting determines the size (in millimeters) of the "no-print" zone around an ADF scan job. A copy job always has at least a 2mm border; therefore, the border size is either 2mm or the value of this setting, whichever is larger.

To change the value for FB Edge Erase:

1. Touch **FB Edge Erase** from the Configuration Menu.
2. Touch the or arrows to change the value from **0** to **6** (3 is the default).
3. Touch **Submit**.
   `Submitting changes…` is displayed.

You are automatically returned to the Configuration menu.

Scanner Manual Registration

This item is used to manually register the flatbed and ADF on the MFP scanner unit. Registration should be performed whenever the ADF unit, flatbed unit, or controller card are replaced.

To manually adjust the scanner:

1. Touch **Scanner Manual Registration.**
2. Touch **Print Quick Test**.
3. Place the quick test on the glass of the flatbed scanner.
4. Press **Copy Quick Test**.
5. Select **Flatbed**.

Examine the copy of the Quick Test and compare it to the original. Adjust the Left Margin and/or the Top Margin to match the original.

Selection	Effect
Left Margin	• Decrease the value and move the margin to the left. • Increase the value and move the margin to the right
Top Margin	• Decrease the value to move the margin down • Increase the value to move the margin upward.

6. Touch **Submit**.
   `Submitting changes...` is displayed.
7. Place the original printout on the glass of the flatbed, and touch **Copy Quick Test**.
8. If the pages match, continue to step 9. If the pages do not match, repeat steps 4 through 7, until you are satisfied.
9. Place the original in the ADF, and touch Copy Quick Test.
10. Examine the copy of the Quick Test and compare it to the original. If it does not match, continue. If it does match, go to step 11. If it matches go to step 16.
11. Touch **ADF Front**.
    Adjust the Left Margin and/or the Top Margin to match the original.

Selection	Effect
Horizontal Adjust	• Decrease the value to move the margin to the left • Increase the value to move the margin to the right
Top Margin	• Decrease the value to move the margin down • Increase the value to move the margin upward.

12. Touch **Submit**.
    `Submitting changes...` is displayed.
13. If the pages match, continue to step 14. If the pages do not match, repeat steps 8 through 12, until you are satisfied.
14. Place the original Quick Test in the ADF facedown, and touch **Copy Quick Test**.
15. Examine the copy of the Quick Test, and compare it to the original. If the pages match, you are done. If the pages do not match, continue to the next step.
16. Touch **ADF Back**. (This setting only appears on duplex machines)
    Adjust the Left Margin and/or the Top Margin to match the original.

Selection	Effect
Horizontal Adjust	• Decrease the value to move the margin to the left • Increase the value to move the margin to the right
Top Margin	• Decrease the value to move the margin down • Increase the value to move the margin upward.

17. Touch **Submit**.
    `Submitting changes...` is displayed.

Touch **Back** at any time to return to the initial scanner manual registration screen without saving any changes.

Disable Scanner

If a scanner is not working, the scanner can be disabled, allowing the user to continue using the printer portion of the multiple function printer. **Disable** disables the entire scanner (ADF and flatbed), and then users attempting to use the scanner function receive `Scanner disabled by administrator` message. **ADF Disabled** disables only the ADF, but the flatbed continues to function. Users will receive a `Automatic document feeder disabled by administrator` message, and the paper present sensor in the ADF reports empty. **Enabled** turns the scanner back on, and is the default setting.

Auto Disabled is not a selection. It appears in response to certain scanner operation failures, and indicates the scanner is already disabled. **Submit** is disabled when it appears.

To disable the scanner:

1. Touch **Disable Scanner** from the Configuration Menu.
2. Touch the ◄ or ► arrows to select **Enabled** (default), **Disabled**, or **ADF Disabled**.
   Auto Disabled appears in response to certain scanner operation failures.
3. Touch **Submit**.
   `Submitting changes…` is displayed.

You are automatically returned to the Configuration menu.

Automatic Color Adjust

Sets the suggested number of pages which the printer should print between consecutive calibrations.

If the printer exceeds the set value while printing a job, it completes the current job and any other jobs received while printing the current job before it initiates a calibration. The printer does not cancel or suspend an active job in order to perform a calibration. If a user is in any of the menus, including the Configuration Menu and the Diagnostics mode, an automatic color adjust calibration does not occur.

1. Touch **Auto Color Adjust** from the Configuration Menu.
2. Touch ◄ decrease the value or ► to increase the value.
   Selections are **Off** and the values between **100** and **1000** in increments of 50. The default is 500 pages.
3. Touch **Submit**.
   `Submitting changes…` is displayed.

You are automatically returned to the Configuration menu.

Auto Align Adj

Controls whether the printer executes the automatic alignment calibration after an initiating event occurs. When an event initiates a TPS operation, the printer performs a toner density calibration, (TPS) an alignment calibration, or both of the calibrations.

Toner Patch Sensing (TPS) is a diagnostic mechanism that automatically adjusts the printer toner density and alignment settings. When TPS executes, the printer generates toner patches on the transfer belt. It then uses these to calculate the appropriate adjustment, to density, if necessary.

To adjust the Auto Align Adj setting:

1. Touch **Auto Align Adj** from the Configuration Menu.
2. Touch the ◄ or ► arrow to toggle between **Off** and **On** (default).
3. Touch **Submit**.
   `Submitting changes…` is displayed.

You are automatically returned to the Configuration menu.

Enforce Color Order

This setting gives the system support person the ability to enforce where the color cartridges may be placed, and if messages appear when cartridges are in the wrong location.

When **On** (default) is selected, the printer lets users place each toner cartridge in only its specified slot. For instance, the Magenta toner cartridge must be in the Magenta slot. If the user tries to place a cartridge in an incorrect slot, the printer message `31 Defective or Missing <color> Cartridge` or `32 Unsupported <color> Cartridge` appears where <*color*> stands for Cyan, Magenta, Yellow, or Black.

When **Off** is selected, the printer does not issue any message to let the user know that the cartridge is placed in the wrong slot inside the printer.

To adjust the Enforce Color Order setting:

1. Touch **Enforce Color Order** from the Configuration Menu.
2. Touch the ◄ or ► arrow to toggle between **Off** and **On** (default).
3. Touch **Submit**.
   `Submitting changes…` is displayed.

You are automatically returned to the Configuration menu.

Color Alignment

Color alignment should be performed when the transfer module is replaced.

To perform color alignment:

1. Touch **Color Alignment** from the Configuration Menu.
2. Touch **Print Alignment**.
   Four pages print with charts and letters A–L.
3. Consulting the printed page, look at Set A.
   Indicate the number of the 20 color lines closest to the black lines.
4. Enter that number on the operator panel using the left and right arrows.
5. Continue selecting the best lines for the sets through **Set L and entering them on the operator panel**.
6. Touch **Submit** when all are entered.
   `Submitting changes…` is displayed.

You are automatically returned to the Configuration menu.

Color Adj State

These settings allow you to select when color calibrations occur. Selecting **Busy** indicates the color calibrations will complete queued jobs, but refuse to add new jobs to the queue. When calibration is complete jobs are again accepted. Selecting **Idle** allows calibrations only when the printer is idle.

To adjust the Color Adj State setting:

1. Touch **Color Adj State** from the Configuration Menu.
2. Touch the ◄ or ► arrow to toggle between **Busy** and **Idle**.
3. Touch **Submit**.
   `Submitting changes…` is displayed.

You are automatically returned to the Configuration menu.

Motor Calibration

This setting synchronizes the aligner and fuser motor speeds with the transfer belt speed to ensure that the output is printed correctly.

Note: This test should be run at 600 dpi resolution and with duplex disabled.

To run the Motor Calibration:

1. Touch **Motor Calibration** from the Configuration Menu.
2. Touch **Motor Calibration**.
   `Calibrating…` displays, and then the multiple function printer feeds eight blank pages.

Touch **Back** to return to the Configuration menu.

Paper Prompts

Controls the source the printer selects for a change paper source message. The printer displays the change paper source message based on the size of the paper requested and not by the paper type.

Selections include **Auto**, **Multi-Purpose Feeder**, and **Manual Paper**. The multipurpose feeder is available on some printer models.

Note: If the Configure MP setting is changed to Manual, a power-on reset is performed, and then the value of the Paper Prompts menu item before the power-on reset was MP Feeder, then when the printer restarts, the printer automatically changes the Paper Prompts setting to Manual Paper.

Load Manual overrides that would result in a change paper message are disabled for **Paper** or **Env** prompts that are set to Manual, Manual Paper, or Manual Env.

To change the settings for Paper Prompts:

1. Touch **Paper Prompts** from the Configuration Menu.
2. Touch the ◂ or ▸ arrow to toggle between **Auto**, **Multi-Purpose Feeder**, and **Manual Paper**.
3. Touch **Submit**.
   `Submitting changes…` is displayed.

You are automatically returned to the Configuration menu.

Envelope Prompts

Controls the source the printer selects for a change envelope source message. The printer displays the change envelope message based on the size of the envelope requested and not by the envelope type.

Selections include Auto, MP Feeder, and Manual Envelope. MP Feeder is only available on some printer models.

Note: If the Configure MP setting is changed to Manual, and a power-on reset is performed, and the value of the Envelope Prompts menu item before the power-on reset was MP Feeder, then when the printer restarts, the printer automatically changes the Envelope Prompt setting to Manual Envelope.

Load Manual overrides that would result in a change paper message are disabled for Paper or Envelope prompts that are set to Manual, Manual Paper, or Manual Envelope.

To change the settings for Env Prompts:

1. Touch **Envelope Prompts** from the Configuration Menu.
2. Touch the ◄ or ► arrow to toggle between **Auto**, **Multi-Purpose Feeder**, and **Manual Envelope**.
3. Touch **Submit**.
   `Submitting changes…` is displayed.

You are automatically returned to the Configuration menu.

Action for Prompts

This setting gives the user the option of having the printer resolve change prompt situations without requiring any user assistance. If the **Prompt user** value is selected, the printer displays change prompts if the job does not match the media in the selected source. The user must select another source or change the paper. If **Continue** or **Use current** is selected, the printer acts as if the user made the selection **Continue** or **Use current** and continues without user intervention, in most cases.

1. Touch **Action for Prompts** in the Config Menu.
2. Touch the left or right arrow to toggle between **Prompt user**, **Continue**, and **Use current**.
3. Touch **Submit**.
   `Submitting changes…` is displayed.

You are automatically returned to the Configuration menu.

Jobs on Disk

Lets the user select whether or not the printer deletes all buffered jobs on the hard disk. This menu item only appears if a hard disk is installed. It appears even if no buffered jobs exist on the hard disk.

Selections include **Do Not Delete** and **Delete**.

Note: **Delete** does not remove Print and Hold jobs. Use **Remove Held Jobs** in the Utilities Menu (user menu) to delete these jobs.

To delete jobs on stored on the hard disk:

1. Touch **Jobs on Disk** from the Configuration Menu.
2. Touch **Delete** to erase stored jobs, or touch **Do not delete** to return to the menu without deleting any jobs.
   `Submitting changes…` is displayed.

You are automatically returned to the Configuration menu.

Disk Encryption

Controls whether the printer encrypts the information that it writes to the hard disk.

Warning: When the value for Disk Encryption, the printer completely formats the hard disk which means that all information on the disk is deleted.

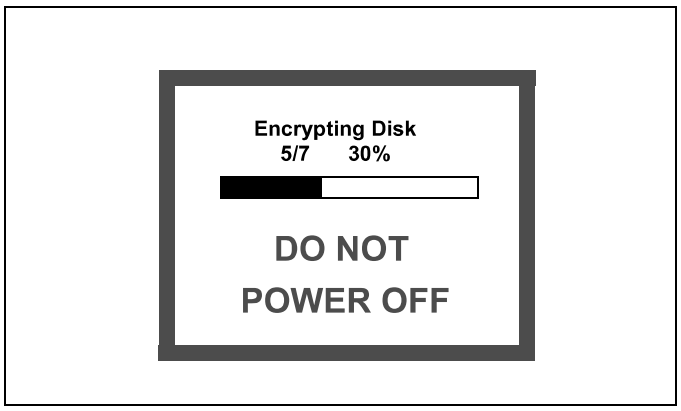
If an encrypted disk is removed from the printer and another disk is installed, the `Disk Corrupted. Reformat?` message appears. The newly installed disk must either be formatted or removed from the printer.The Disk Encryption menu item only appears when:

- A non-defective disk is installed in the printer.
- The values of bits 3-2 of digit 4 in the Configuration ID 2 are either 01 for Supported, or 10 for Supported with an internal network adapter (INA).

Selections include **Disable** (default) and **Enable**. When Disk Encryption is selected, Yes or No appears for you to confirm. Select either **Yes** or **No**. To cancel, touch **No**.

To encrypt a disk:

1. Touch **Disk Encryption** from the Configuration Menu.
2. Touch **Enable** to encrypt the disk.
3. Touch **Yes**.
   Warning: To prevent damage to your disk, do not turn the MFP off while the following displays.



4. Touch **Back** to return to the main menu.

A graphic appears, showing:

- The message `Encrypting Disk` or `Formatting Disk`
- A percentage scale
- The message `DO NOT POWER OFF`

The process is complete when the percentage scale displays 100.

Wipe Disk

Note: Due to the lengthy amount of time required to wipe an entire hard disk using either method, a wipe should not be initiated unless it is absolutely unavoidable (for example, disk corruption), or unless the printer can remain offline for several hours without inconveniencing users.

Warning: A user should not initiate either type of wipe from the Configuration Menu if the hard disk contains downloaded fonts, macros, held jobs, and so forth that should not be erased.

This setting initiates either a single pass wipe or a multiple pass wipe of the entire hard disk. Select **Disk Wipe (fast)** to complete a single pass wipe and replacement of the file system. Select **Disk Wipe (secure)** to complete a multiple pass wipe at a more basic level.

Wipe All Settings

The purpose of this setting is to make any sensitive information that may exist on the device's volatile or non-volatile storage completely indecipherable.

After selecting this setting, the operator panel displays the following message:

> This operation will clear all settings, solutions, and jobs on this device. The device will reboot during this process. Continue?

To cancel the NAND wipe operation and return to the main Configuration Menu, select **No**. To execute the NAND wipe operation, select **Yes**.

After selecting **Yes**, the device initiates a non-critical NVRAM reset, and the operator panel displays the message `Resetting the device`, and then the device reboots.

The progress bar area of the Lexmark logo screen that appears during boot up displays the following message until the wiping process is finished:

`Wiping disk...Pass [x] of [y]. [Z]% done.`

Duplex Gloss

If you need higher quality duplex copies, selecting Duplex Gloss give you a higher quality output. It does this by limiting the number of pages fed at one time. In normal duplex, two sheets are fed simultaneously and one is printed on page two and the other is printed as page four, then the pages are re-fed and pages one and three are printed on the other side. With Duplex Gloss turned on, only one page is fed, printed, re-fed and the reverse is printed. The quality increases, but the time it takes to complete the job is increased.

To turn on Duplex Gloss:

1. Touch **Duplex Gloss** from the Configuration Menu.
2. Touch the ◂ or ▸ arrow to toggle between **Off** and **On**.
3. Touch **Submit**.
   `Submitting changes…` is displayed.

You are automatically returned to the Configuration menu.

Font Sharpening

Lets a user set a text point-size value below the setting of the high frequency screens used when printing font data. This menu item only affects the PostScript, PCL, XL, and PDF emulators.

Settings are in the range of 0–150 (24 is the default). For example, if the value is set to 24, then all fonts sized 24 points or less use the high frequency screens. To increase value by 1, touch the right arrow; to decrease the value by 1, touch the left arrow.

To set Font Sharpening:

1. Touch **Duplex Gloss** from the Configuration Menu.
2. Touch the ◂ or ▸ arrow to change the value from **1** to **150**.
3. Touch **Submit**.
   `Submitting changes…` is displayed.

You are automatically returned to the Configuration menu.

Require Standby

When set to Off, the Standby Mode setting in General Settings Menu displays `Disabled`. The default is On.

To set Require Standby:

1. Touch **Require Standby** from the Configuration Menu.
2. Touch the or arrow to toggle between **On** and **Off**.
3. Touch **Submit**.
   Submitting changes… is displayed.

You are automatically returned to the Configuration menu.

UI Automation

This setting allows external developers to measure the stability of their applications by performing their own automated testing against the device.

Selections include **Enable** and **Disable** (default).

When **Enable** is selected, the machine creates a file called ENABLE_UI_AUTOMATION in the /var/fs/shared/ directory. As long as this file exists, the device permits automated testing by external users.

When **Disable** is selected, the machine removes the ENABLE_UI_AUTOMATION file from the /var/fs/shared/ directory and prohibits automated testing.

LES Applications

Enables or disables Lexmark Embedded Solutions (LES) applications. The default is Enable.

To change the setting:

1. Touch **LES Applications** from the Configuration Menu.
2. Touch the or arrow to toggle between **Enable** and **Disable**.
3. Touch **Submit**.
   Submitting changes… is displayed.

You are automatically returned to the Configuration menu.

Key Repeat Initial Delay

Determines the initial length of delay before a repeating key starts repeating. The range is from 0.25 seconds to 5 seconds in 0.25 second increments. The default value is 1 second.

To set the delay:

1. Touch **Key Repeat Initial Delay** from the Configuration Menu.
2. Touch the or arrow to change the value **0.25** second to **5** seconds.
3. Touch **Submit**.
   Submitting changes… is displayed.

You are automatically returned to the Configuration menu.

Key Repeat Rate

Number of presses per second for a repeating key. The range is from 1 to 100 presses per second. The default is 15 presses per second.

To set the number of key presses per second:

1. Touch **Key Repeat Rate** from the Configuration Menu.
2. Touch the or arrow to change the value from **1** to **100**.
3. Touch **Submit**.

`Submitting changes…` is displayed.

You are automatically returned to the Configuration menu.

Clear Custom Status

Executing this operation erases any strings that have been defined by the user for the Default or Alternate custom messages.

To clear custom strings:

1. Touch **Clear Custom Status** from the Configuration Menu.
2. Touch **Clear Custom Status** again to confirm.
   `Clear Custom Status...` appears.

Press **Back** to return to the Configuration Menu.

Pel Blurring

Customers who notice step artifacts in their error diffused copies to activate the pel synthesis function. The settings are On and Off (the default is Off).

1. Touch **Pel Blurring** in the Config Menu.
2. Touch the ◂ or ▸ arrow to toggle between **On** and **Off**.
3. Touch **Submit**.
   `Submitting changes…` is displayed.

You are automatically returned to the Configuration menu.

USB Speed

A value of Full forces the USB port to run at full speed, and also disables its high-speed capabilities. Settings are Full and Auto. Auto is the default.

To set USB Speed:

1. Touch **USB Speed** from the Configuration Menu.
2. Touch the ◄ or ► arrow to toggle between **Full** and **Auto**.
3. Touch **Submit**.
   `Submitting changes…` is displayed.

You are automatically returned to the Configuration menu.

Automatically Display Error Screens

Selections include **On** (default) and **Off** (default).

When **On** is selected, the operator panel automatically displays any existing printer-related IR after the device remains inactive on the Home screen for a length of time equal to the Screen Timeout setting. Any IR that appears on the operator panel will display the option to return to the Home screen without clearing it. Once the device returns to the Home screen, though, any existing IR again will appear after the device remains inactive on the Home screen for a length of time equal to the Screen Timeout setting.

SFPs and MFPs use a different default value for this setting in order to preserve their legacy behavior with respect to IRs.

Exit Config Menu

Touch **Exit the Config Menu**. The printer performs a power-on reset and returns to normal mode.

Service Engineer (SE) Menu

To enter the SE Menus:

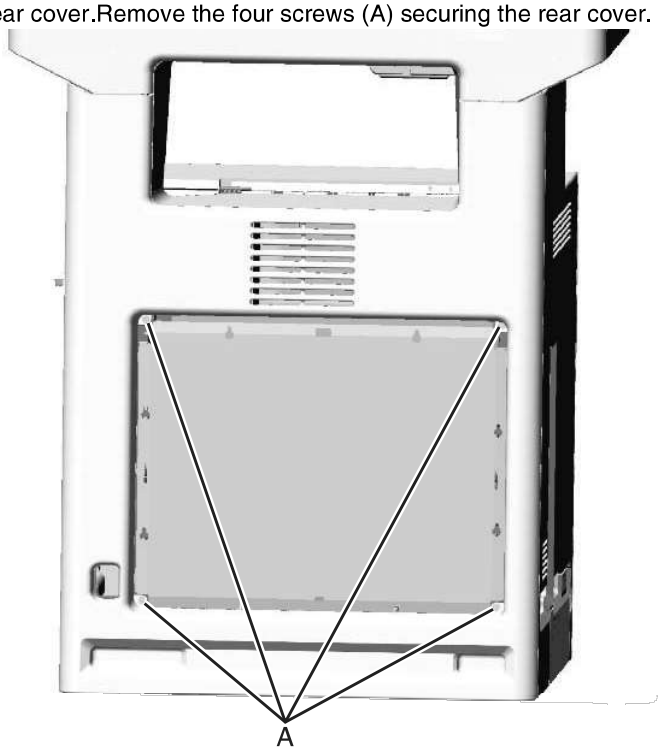
From browser, add "/se" to device's IP address (for example: http://123.456.7.8/se).

Print SE Menus	
General	
Copyright	Displays copyright information.
Lexmark Forms Mode	On or Off
Code Revision Info	
Network Code Level	Displays network code level.
Network Compile Info	Display network compile information.
Printer Code Level	Displays printer code level.
Printer Compile Info	Displays compile information.
History	
Print History	
Mark History	
History Mode	
MAC	
Set Card Speed	
LAA	
Keep Alive	
NVRAM	
Dump NVRAM	
Reinit NVRAM	
NPAP	
Print Alerts	
TCPIP	
netstat -r	
arp -a	
Allow SNMP Set	
MTU	
Meditech Mode	
Raw LPR Mode	
Gather Debug	
Enable Debug	
Netware	
Broadcast SAPs	
NPA Delay	

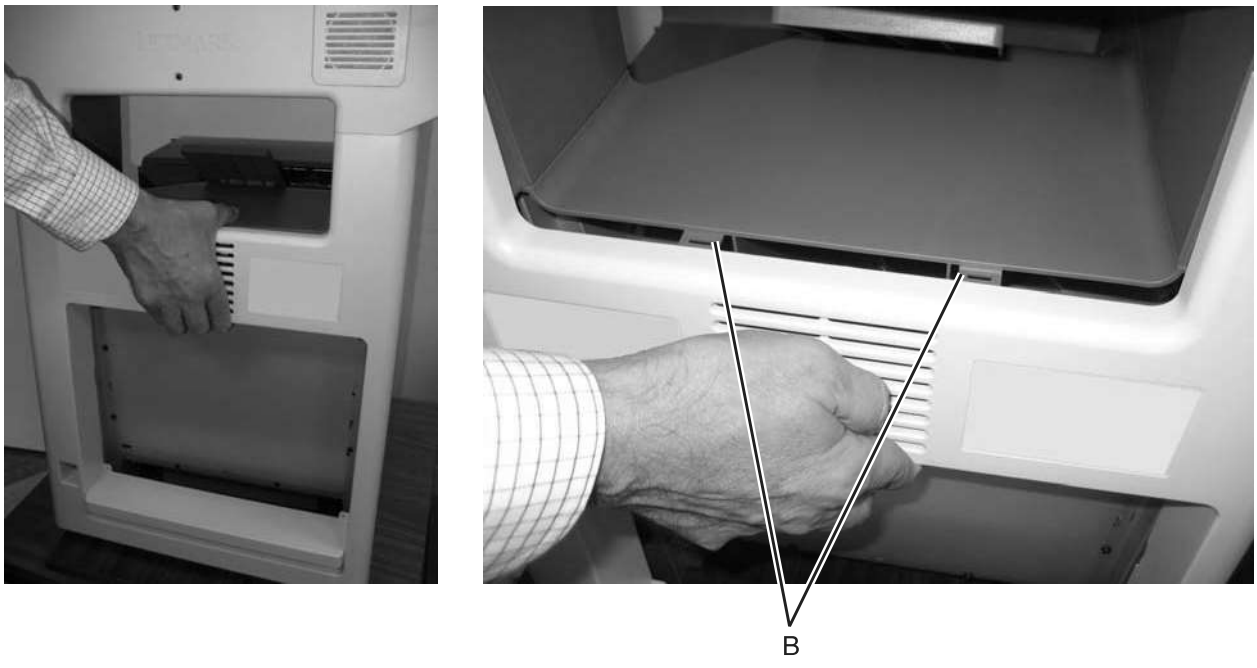
Front cover locked in place

The front door locks during certain Busy events, and unlocks when those events are complete. This is a normal function. You can hear the door lock into place when one of these events take place. However, if the printer is turned off, or has an error while the front door is locked (for example, while printing or calibrating), the front door may not unlock. If this happens, turn the printer off and restart it. Once it goes through POR, it may unlock itself. If this does not work, use the following procedure to unlock the front door:

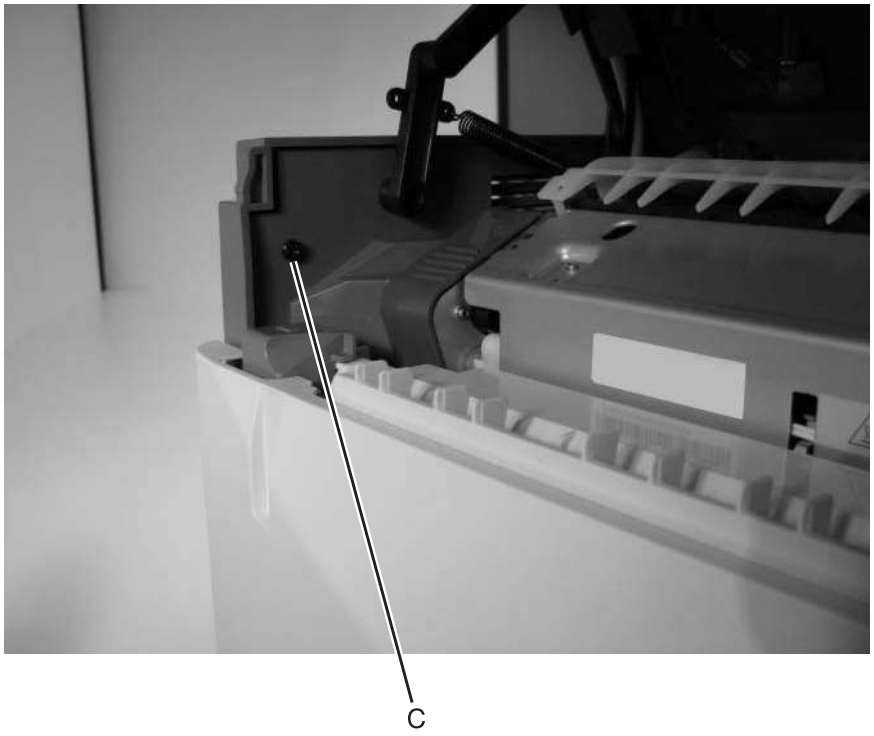
1. Remove the rear cover.Remove the four screws (A) securing the rear cover.



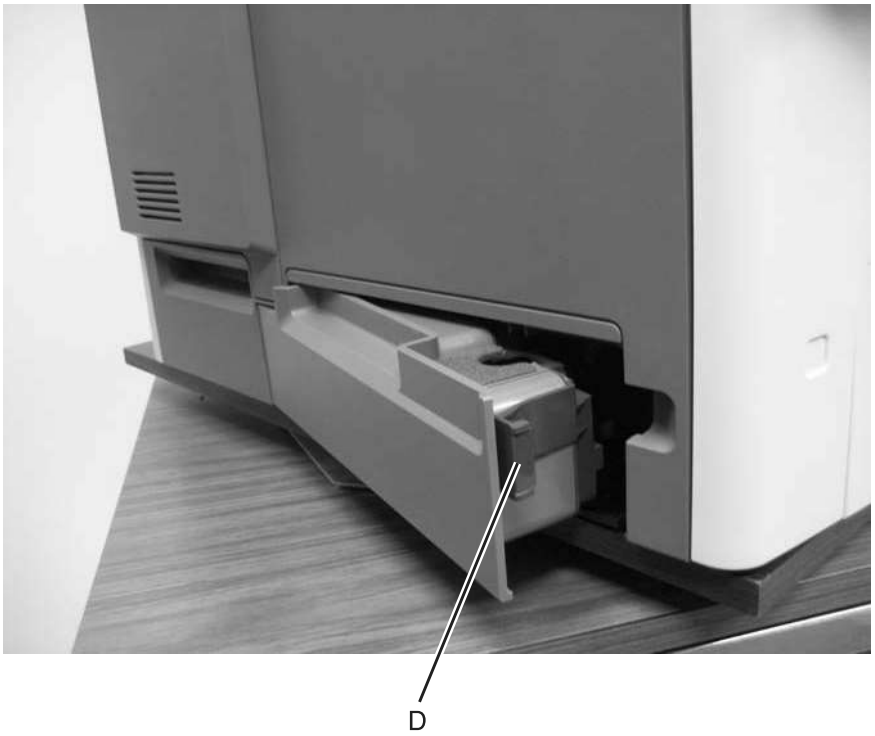
2. Lift up to disengage the two tabs (B).



3. Open the top cover.
4. Remove the screw (C) from the inside left cover.

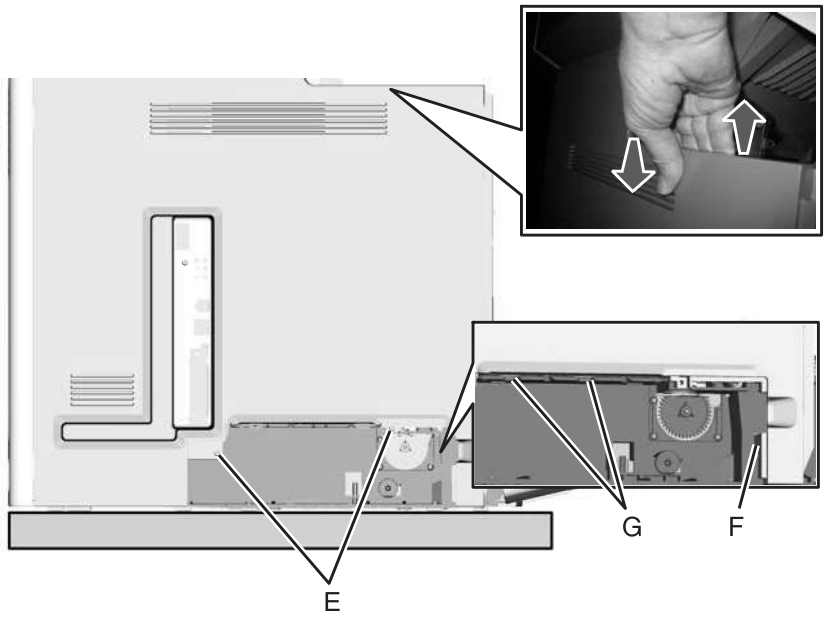


5. Press the waste toner release latch (D), swing the front of the waste toner assembly away from the printer, and remove.



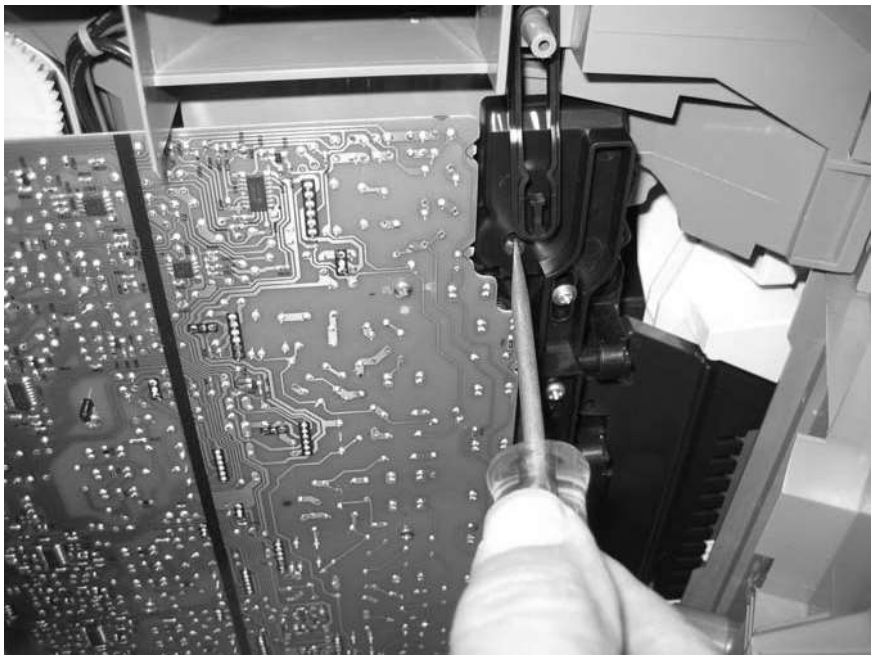
6. Remove the two screws (E).
7. Press the locking tab (F), slide the cover down.

8. Grasp the side at the point shown, and disconnect the tab on the upper edge. Push down with your thumb on the outside while pulling up with the fingers to remove the cover.
   Warning: Be careful not to damage the two small locking tabs (G).



9. Lift the rear of the left cover out, and rotate it out of position toward the front.
   Note: It will not come completely off with the front cover locked.

10. With a flatblade screwdriver, turn the camshaft counterclockwise until the door unlocks.



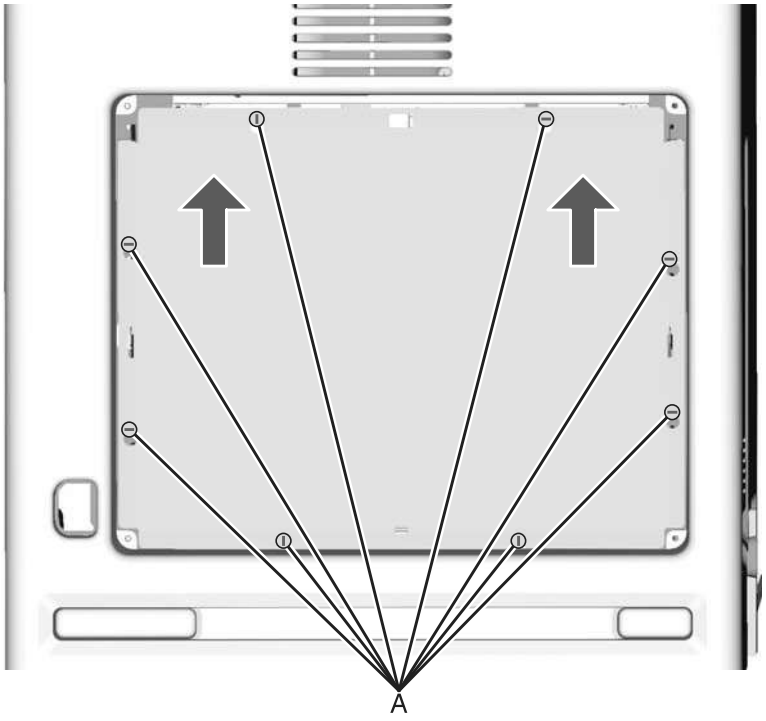
11. Open the front cover.

Printhead verification

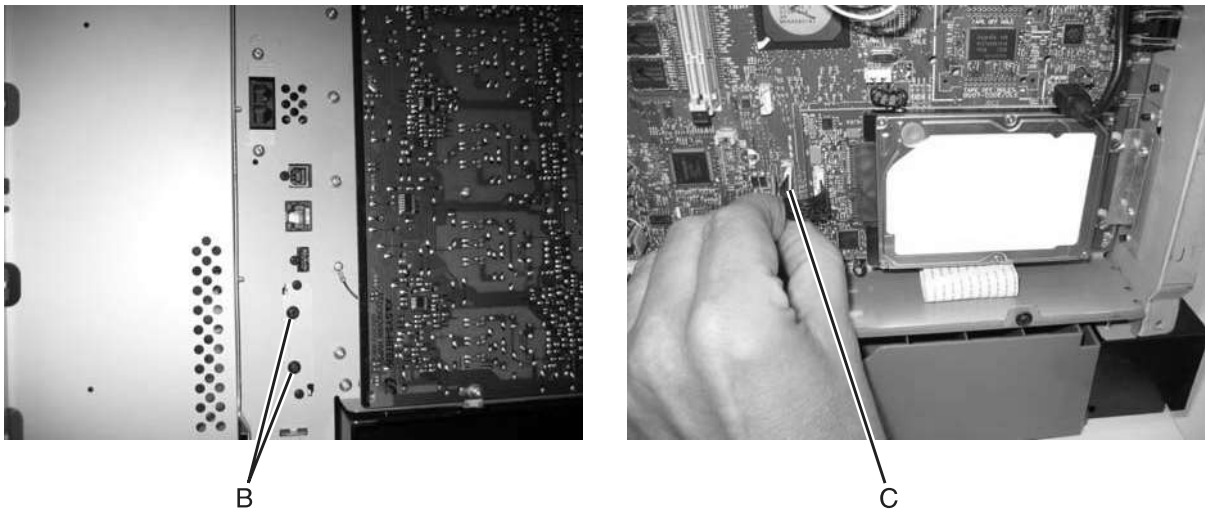
Before you begin, you can verify that the printhead is the failing FRU by following this procedure:

1. Turn the printer off, remove the power cord from the outlet, then remove all cords and cables from the printer before beginning.
2. Locate the printer on a corner of a work area so the front and back can be accessed.

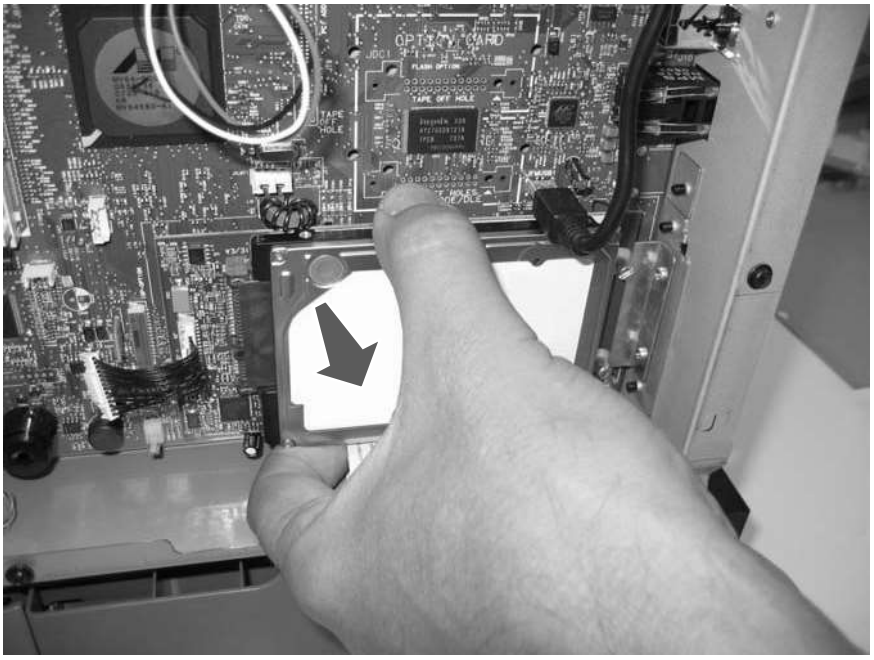
3. Remove the rear frame cover.
   a. Loosen the eight screws (A).
   b. Lift the rear frame cover, and remove.



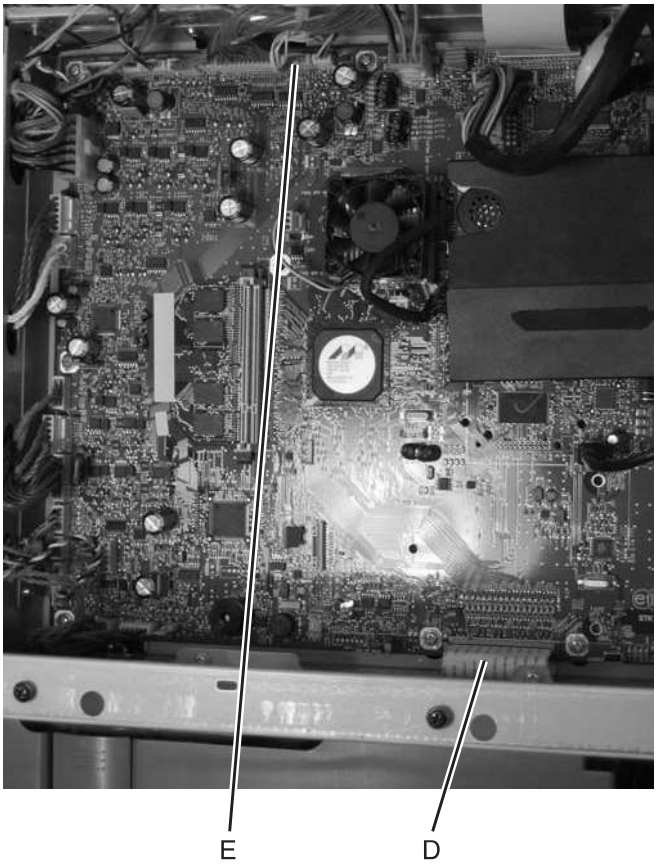
4. If present, remove the hard disk.
   a. Remove the two screws (B), and disconnect the hard disk from the system board (C).



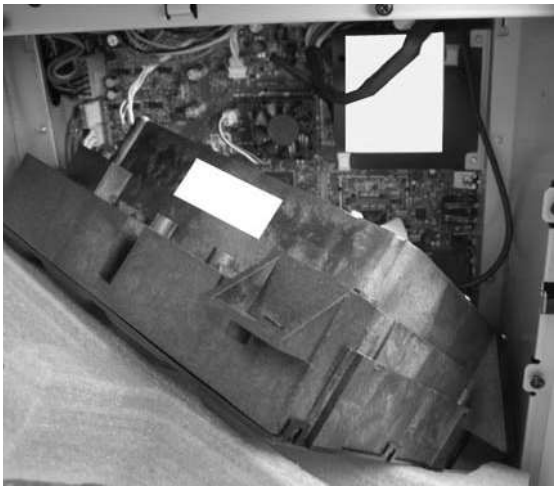
   b. Pull the hard disk straight out to *pop* the hard disk standoffs free of the system board.



5. Carefully disconnect the printhead ribbon (D) and the mirror motor cables (E) from the system board, and carefully connect the printhead ribbon and mirror motor cables from the new printhead into the system board.



6. Use the packaging that came with the printhead FRU to prop the printhead up.



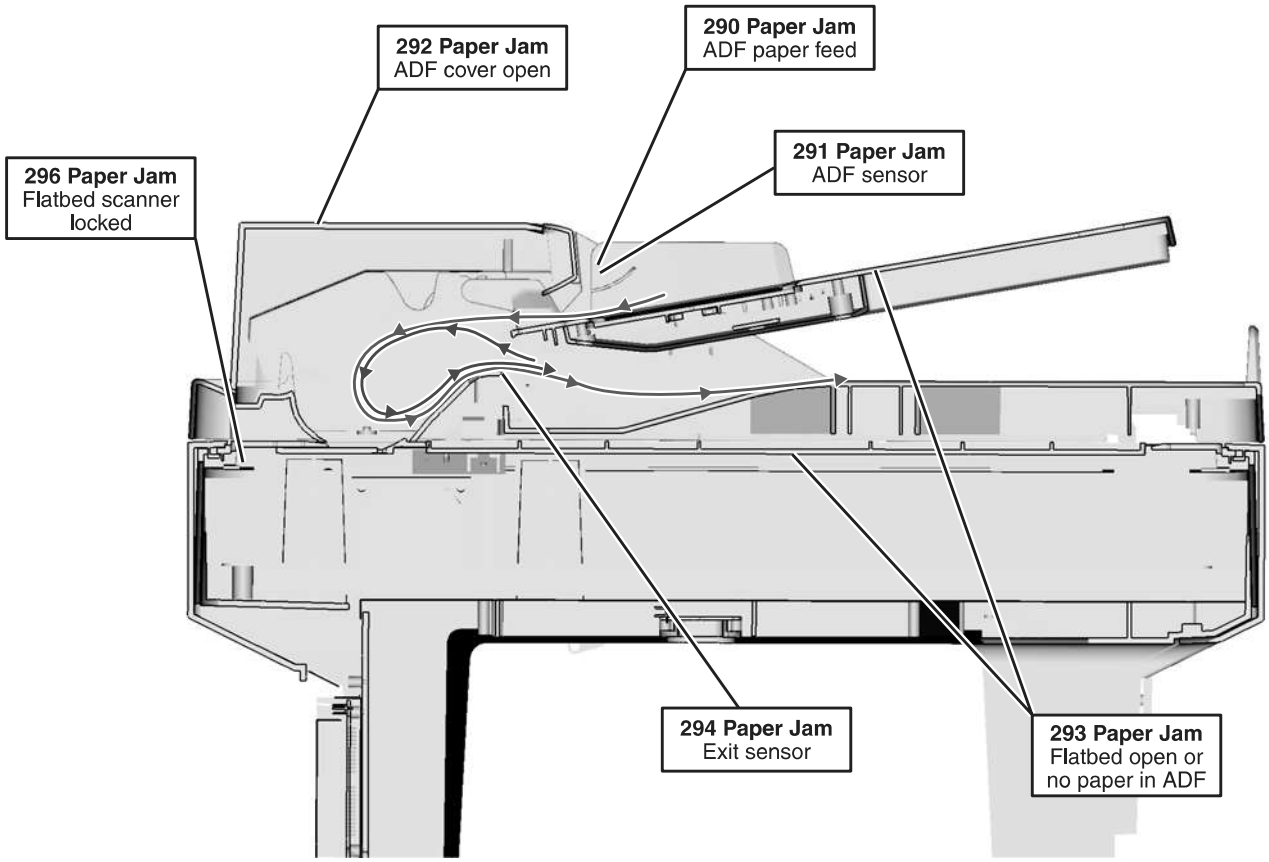
7. Connect the power cord to the outlet.
8. Enter the Diagnostics menu (press and **3** and **6**, turn on the multifunction printer, and release the buttons when the progress bar appears).
9. Perform the Mirror Motor Test:
   a. Touch **PRINTHEAD TESTS**.
   b. Touch **Mirror Motor Test**.
      The touchscreen displays `Mirror Motor Test—Motor Running...`.
      After the test completes, the touchscreen displays either `Pass` or `Fail`.
   - If the test fails, replace the system board.
   - If the test passes, perform the Servo Laser Test in step 9.
10. Perform the Servo Laser Test:
   a. Touch **Back** to **PRINTHEAD TESTS**.
   b. Touch **Servo Laser Test**.
      The touchscreen displays `Servo Laser Test—Motor Running...`.
      After the test completes, the touchscreen displays either `Pass` or `Fail`.
   - If the test fails, replace the system board.
   - If the test passes, install the printhead FRU.

Paper Jams

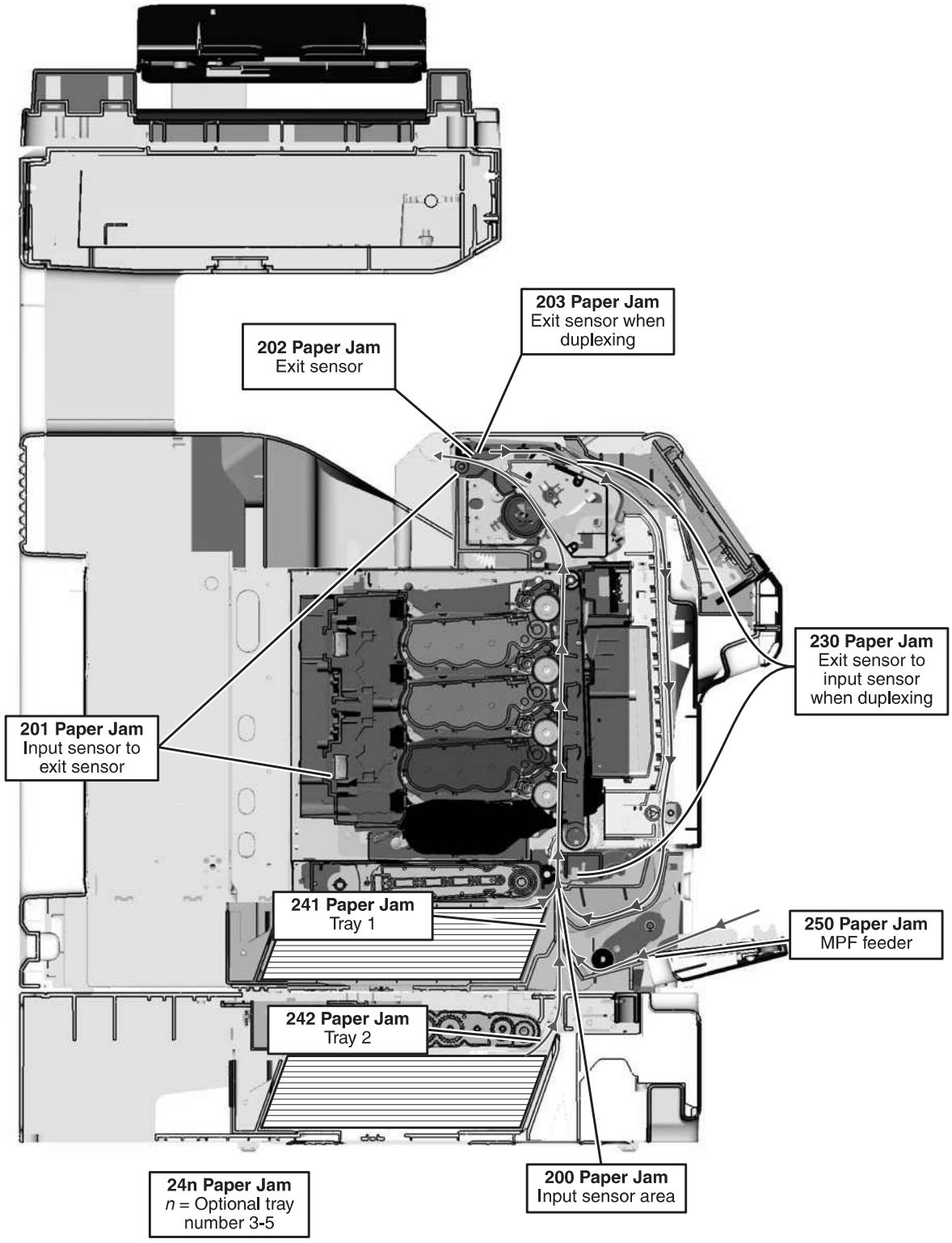
Error jam locations

The following illustration shows the location and error codes generated for specific paper jams and the corresponding locations of these jams.

ADF and flatbed scanner



Printer base



Clearing jams

By carefully selecting paper and loading it properly, you can avoid most jams. If jams do occur, follow the steps outlined in this section. To clear a jam message and resume printing, clear the entire paper path, and then touch **Continue**. If Jam Recovery is set to On, then the printer prints a new copy of the page that jammed. If Jam Recovery is set to Auto, then the printer reprints the jammed page if enough printer memory is available.

Avoiding jams

The following hints can help you avoid jams:

Paper tray recommendations

- Make sure the paper lies flat in the paper tray.
- Do not remove the paper tray while the printer is printing.
- Do not load the paper tray while the printer is printing. Load it prior to printing, or wait for a prompt to load it.
- Do not load too much paper. Make sure the stack height does not exceed the indicated maximum height.
- Make sure the guides in the paper tray or the manual feeder are properly positioned and are not pressing too tightly against the paper or envelopes.
- Push the paper tray in firmly after loading paper.

Paper recommendations

- Use only recommended paper or specialty media.
- Do not load wrinkled, creased, damp, bent, or curled paper.
- Flex, fan, and straighten paper before loading it.
- Do not use paper that has been cut or trimmed by hand.
- Do not mix paper sizes, weights, or types in the same stack.
- Make sure all sizes and types are set correctly in the printer control panel menus.
- Store paper per the manufacturer's recommendations.

Understanding jam messages

The following table lists the jam messages that can occur.

Message	See:
200 Paper jam, check [area name]	• **“200 paper jam” on page 3-60** • **“200–201 paper jams” on page 3-61**
200 Paper jam, [x] pages jammed	
201 Paper jam, check [area name]	• **“200–201 paper jams” on page 3-61** • **“201 paper jam” on page 3-61**
201 Paper jam, [x] pages jammed	
202 Paper jam, check [area name]	**“202 paper jam” on page 3-63**
202 Paper jam, [x] pages jammed	
203 Paper jam, check [area name]	**“203 paper jam” on page 3-65**
203 Paper jam, [x] pages jammed	
230 Paper jam, [area name]	**“230 paper jam” on page 3-65**
230 Paper jam, [x] pages jammed	
241 Paper jam, check [area name]	**“24x paper jam” on page 3-66**
241 Paper jam, [x] pages jammed	

Message	See:
24x Paper jam, check [area name]	**"24x paper jam" on page 3-66**
24x Paper jam, [x] pages jammed	
250 Paper jam, check [area name]	**"250 paper jam" on page 3-68**
250 Paper jam, [x] pages jammed	
290 Scanner jam, remove all originals from the scanner	**"290–293 paper jams" on page 3-68**
290 Scanner jam, remove jammed originals from the scanner	
291 Scanner jam, remove all originals from the scanner	
291 Scanner jam, remove jammed originals from the scanner	
292 Scanner jam, remove all originals from the scanner	
292 Scanner jam, remove jammed originals from the scanner	
293 Replace all originals if restarting job	
293 Replace jammed originals if restarting job	
293.02 Flatbed cover open	
293.02 Replace jammed originals if restarting job	

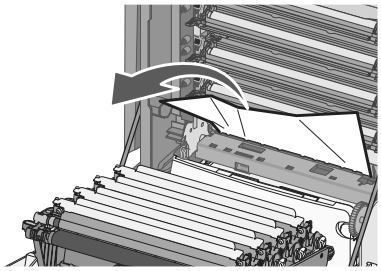
200 paper jam

1. Open the upper front door.

CAUTION—HOT SURFACE:

The inside of the printer might be hot. To reduce the risk of injury from a hot component, allow the surface to cool before touching.

2. Open the lower front door.
   Note: To avoid overexposing the photoconductor units, do not leave the lower front door open longer than 10 minutes.
3. Pull the jammed paper up and out to remove it from behind the toner cartridge area.
   Note: Make sure all paper fragments are removed.



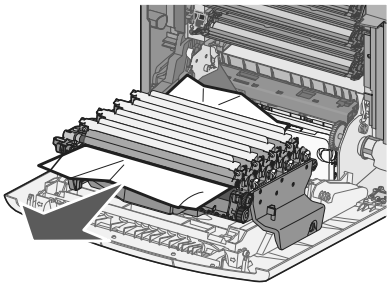
4. Close the lower front door.
5. Close the upper front door.
6. Touch **Continue**.

200–201 paper jams

1. Open the upper front door.

	**CAUTION—HOT SURFACE:** The inside of the printer might be hot. To reduce the risk of injury from a hot component, allow the surface to cool before touching.

2. Open the lower front door.
   Note: To avoid overexposing the photoconductor units, do not leave the front door open longer than 10 minutes.
3. Pull the paper forward if it is lodged under the photoconductor units.
   Note: You may need to remove the photoconductor units if the paper is lodged too tightly under them.



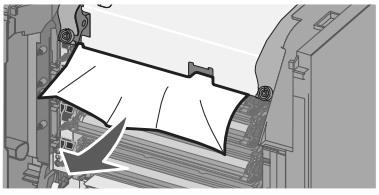
4. Remove each photoconductor unit, and then place it on a flat surface. See **"Photoconductor unit removal" on page 4-137**.
5. Remove the jammed paper, and then replace each photoconductor unit.
6. Close the lower front door.
7. Close the upper front door.
8. Touch **Continue**.

201 paper jam

1. Open the upper front door, and then open the lower front door.
   Warning: Potential Damage—To avoid overexposing the photoconductors, do not leave the front doors open for more than 10 minutes.

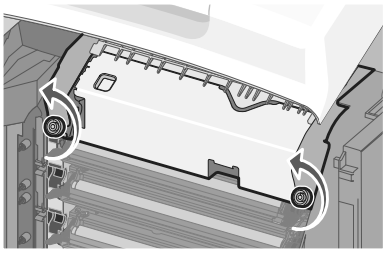
	**CAUTION—HOT SURFACE:** The inside of the printer might be hot. To reduce the risk of injury from a hot component, allow the surface to cool before touching.

2. Determine where the jam is located, and then remove it:
   - If paper is visible under the fuser, then grasp it on each side and pull it.

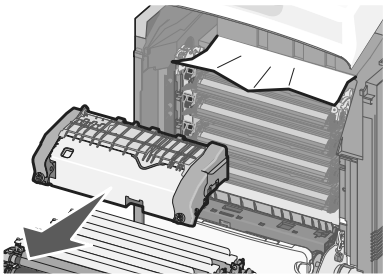


- If paper is not visible:

c. Turn the screws on the fuser to the left.



d. Remove the fuser, and then remove the jam.



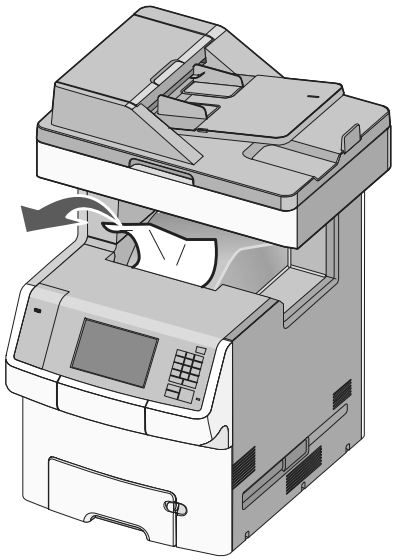
e. Replace the fuser, and then turn the screws to the right to fasten it securely.

3. Close the lower front door, and then close the upper front door.

4. Touch **Continue**.

202 paper jam

If the paper is visible in the standard exit bin, then grasp the paper and pull it away from the bin.

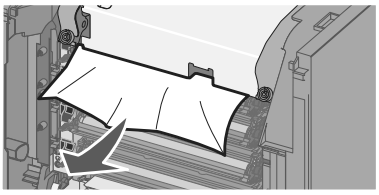


Paper jam under the fuser

1. Open the upper front door, and then open the lower front door.
   Warning: Potential Damage—To avoid overexposing the photoconductors, do not leave the front doors open for more than 10 minutes.

	**CAUTION—HOT SURFACE:** The inside of the printer might be hot. To reduce the risk of injury from a hot component, allow the surface to cool before touching.

2. Grasp the paper on each side and pull it forward.



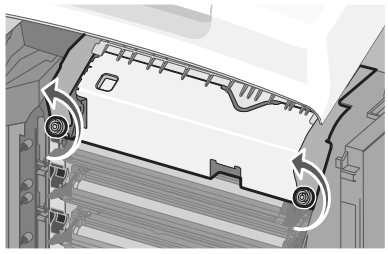
3. Close the lower front door, and then close the upper front door.
4. Touch **Continue**.

Paper jam behind the fuser

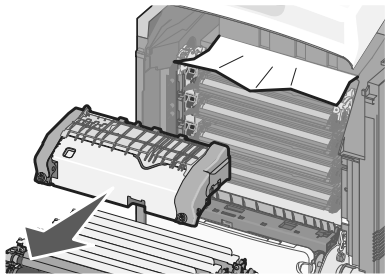
1. Open the upper front door, and then open the lower front door.
   Warning: Potential Damage—To avoid overexposing the photoconductors, do not leave the front doors open for more than 10 minutes.

	**CAUTION—HOT SURFACE:** The inside of the printer might be hot. To reduce the risk of injury from a hot component, allow the surface to cool before touching.

2. If the paper is jammed behind the fuser, then remove the fuser:
   a. Turn the screws on the fuser to the left.



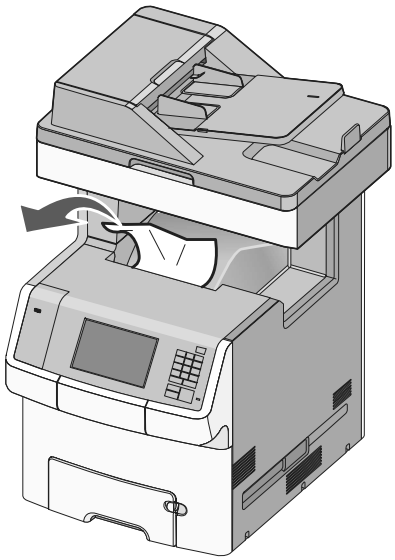
   b. Lift the fuser, and then pull forward to remove it.



   c. Place the fuser on a flat surface.
3. Pull the paper gently out of the printer or up toward the standard exit bin to remove it.
4. Reinstall the fuser:
   a. Align the fuser, and then place it back into the printer.
   b. Turn the screws to the right to fasten the fuser securely.
5. Close the lower front door, and then close the upper front door.
6. Touch **Continue**.

203 paper jam

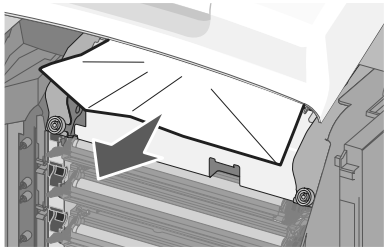
1. Grasp paper that is visible in the standard exit bin, and pull it away from the bin.



2. Open the upper front door.

	**CAUTION—HOT SURFACE:** The inside of the printer might be hot. To reduce the risk of injury from a hot component, allow the surface to cool before touching.

3. Open the lower front door.
4. Grasp the paper on each side, and pull it out gently.



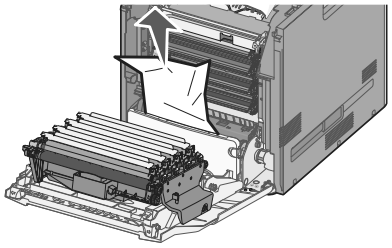
5. Close the lower front door.
6. Close the upper front door.
7. Touch **Continue**.

230 paper jam

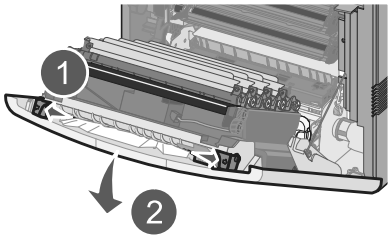
1. Remove Tray 1.
2. Open the upper front door, and then open the lower front door.

	**CAUTION—HOT SURFACE:** The inside of the printer might be hot. To reduce the risk of injury from a hot component, allow the surface to cool before touching.

3. Pull the jam straight up to remove it.



4. Pull out on the release tabs to allow the front door to split.

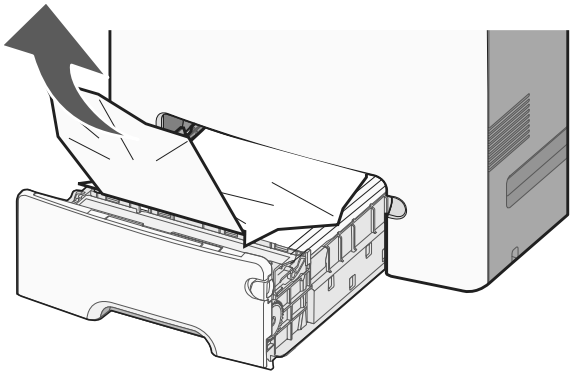


5. Pull straight out to remove any jammed paper.
6. Close the lower front door, and then close the upper front door.
7. Reinsert Tray 1.
8. Touch **Continue**.

24x paper jam

Paper jammed in Tray 1

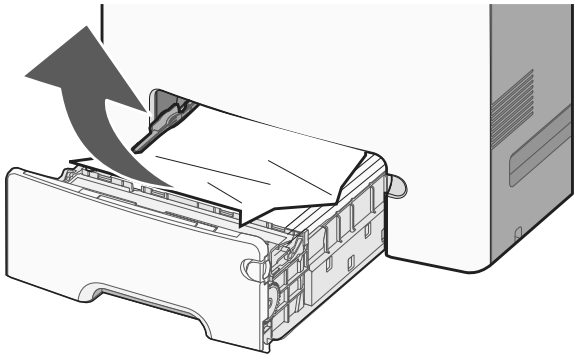
1. Open Tray 1, and then pull the jammed pages straight up and out.



2. After removing the tray, the front door may need to be opened to access the jam.
3. Close Tray 1.
4. Touch **Continue**.

Paper jammed in front of Tray 1

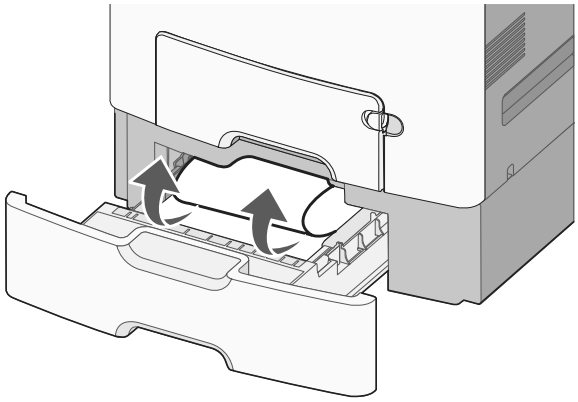
1. Open Tray 1, and then pull the jammed pages up and out.



2. Close Tray 1.
3. Touch **Continue**.

Paper jammed in one of the optional trays

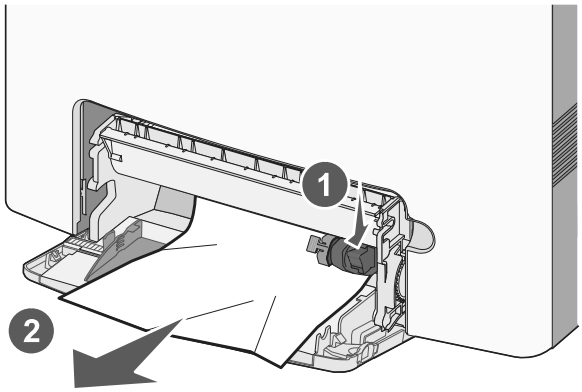
1. Open the specified tray, and then pull the jammed pages out.



2. After removing the tray, the tray above may need to be opened to access the jam.
3. Close the tray.
4. Touch **Continue**.

250 paper jam

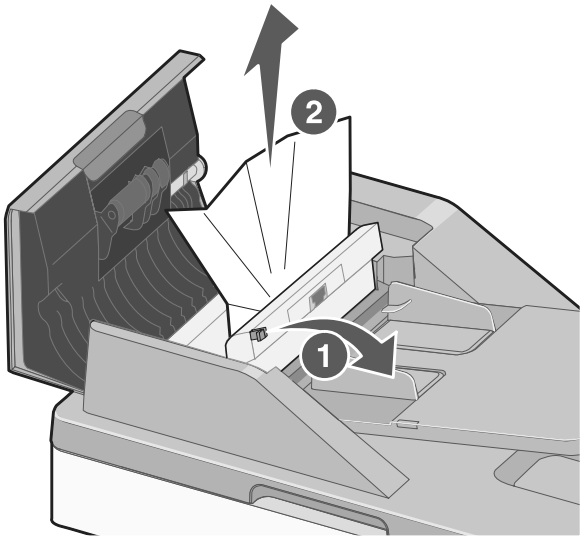
1. Press the paper release lever, and then remove the jammed pages from the multipurpose feeder.



2. Load new paper into the multipurpose feeder.
3. Touch **Continue**.

290–293 paper jams

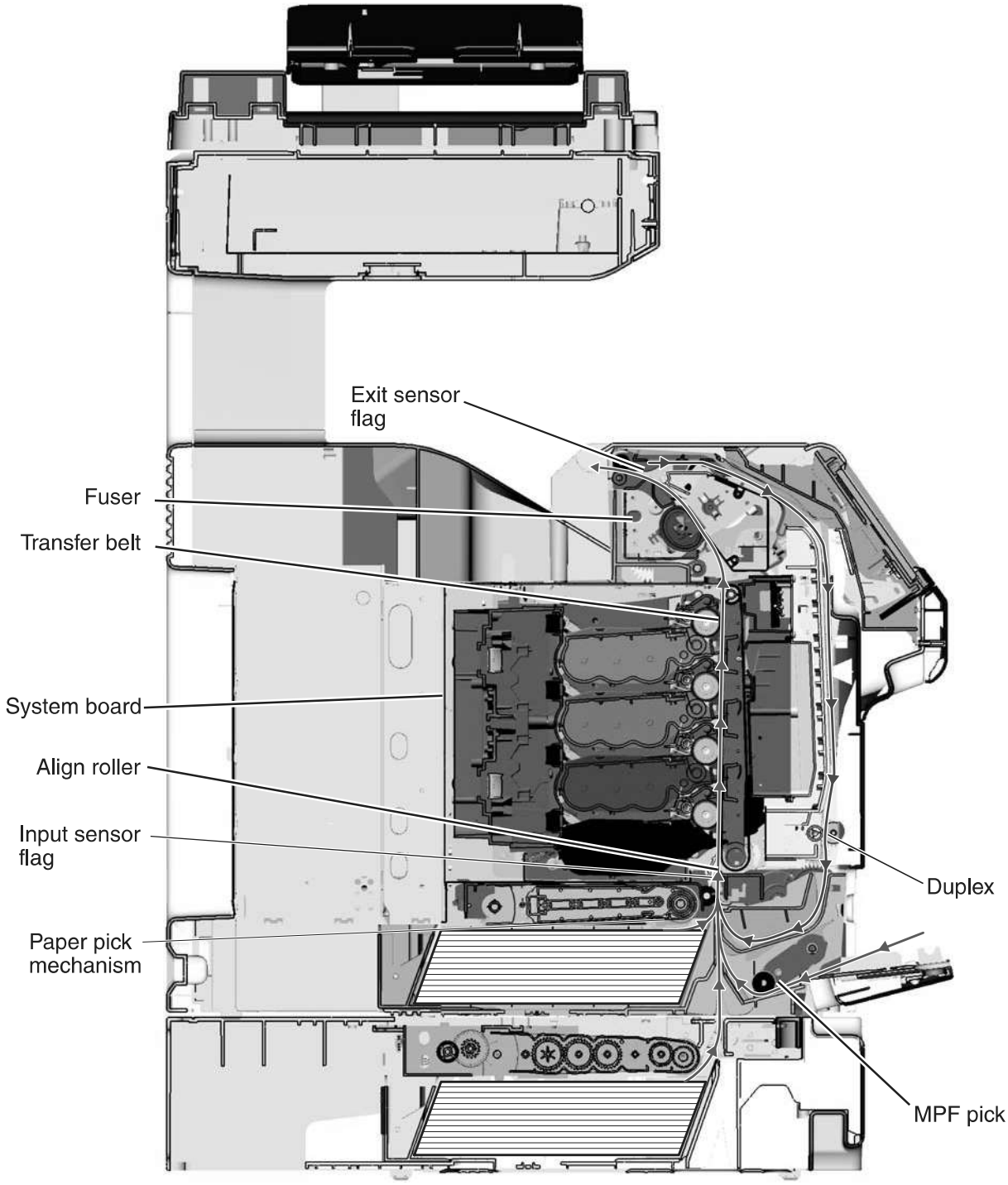
1. Remove all original documents from the ADF.
2. Open the ADF cover, and then remove any jammed paper.



3. Close the ADF cover.
4. Open the duplex cover, and then remove any jammed paper.
5. Open the scanner cover, and then remove any jammed pages.
6. Close the scanner cover.
7. Touch **Restart Job**.

Theory of operation

Paper path



Main Components

System board

The system board provides the intelligence of the printer. Command and control signals originate in the system card that make print media travel possible. The system card controls the timing of the print media during the printing so the media arrives at certain positions in the print process at certain times.

Paper tray

Houses the print media.

Paper pick mechanism

Picks the print media from the paper tray. The paper pick mechanism contains the paper pick (input) sensor and the multifunction transparency sensor.

Bump aligner roll

The bump aligner roll advances the print media onto the transfer belt and corrects any media skew as it comes out of the paper trays or MPF.

Transfer belt

The transfer rolls (located inside the transfer belt unit) are an integral part of the electrophotographic process, and the transfer belt advances the print media through the printer.

Fuser

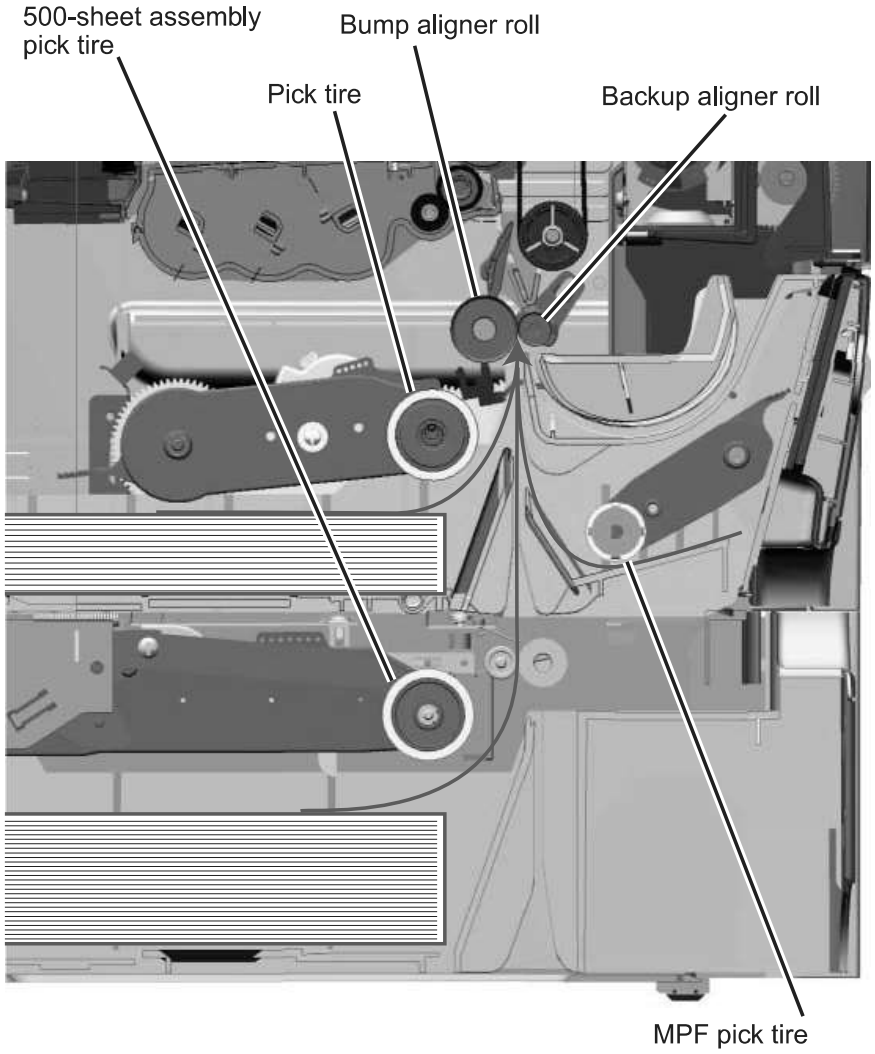
The fuser bonds toner to the print media and advances the print media through the last portion of the paper path. The paper exit sensor is also located in the fuser, and a flag is present on all fusers that activates the bin full sensors on network model printers.

Duplex

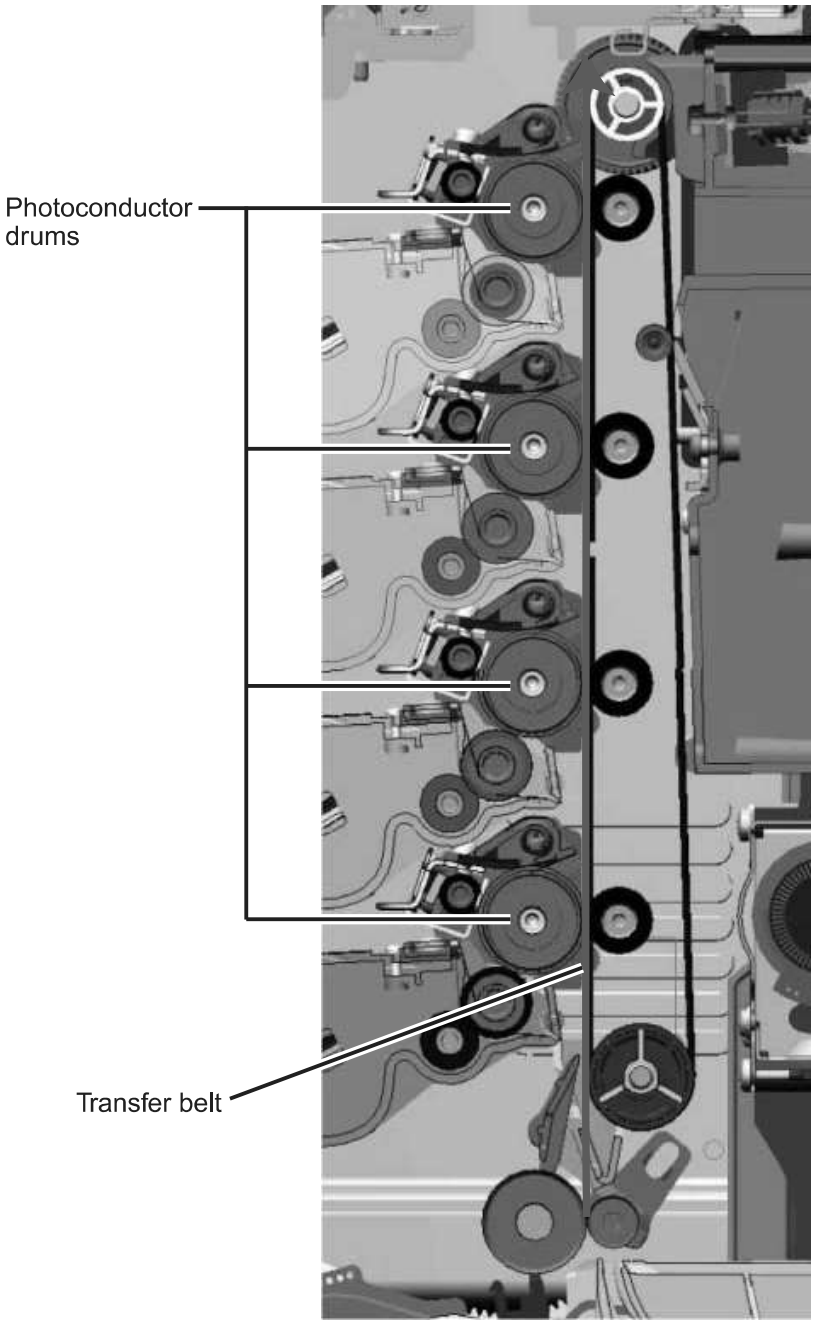
The duplex function is built into the front access door and uses a two-pass method for rerouting the paper down and back through the paper path for a second time. To accomplish the two-pass method, the paper is fed partially out of the printer and is then reversed back into the printer.

Print media transport

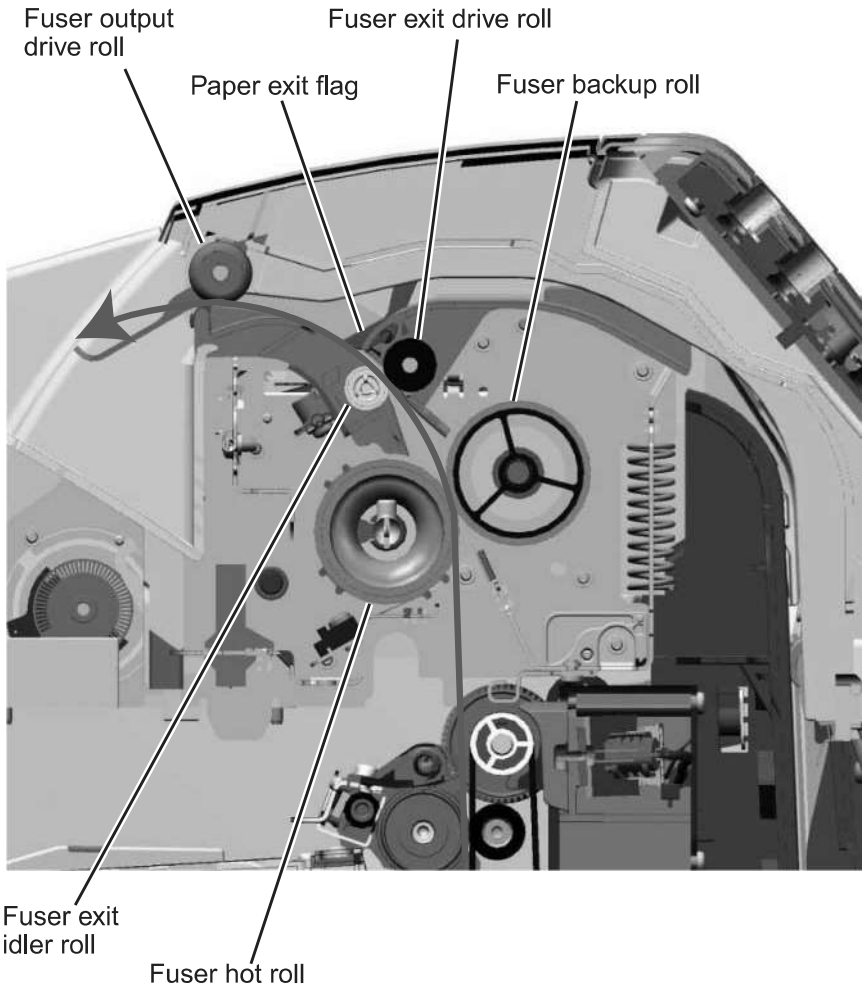
The print media is picked from the input source and fed to the bump aligner roll. The media movement is detected by a sensor located in the paper pick mechanism. It does not matter where the media comes from (Tray 1, Tray 2, or, the MPF); it will enter the electrophotographic process at the bump aligner drive. The bump aligner motor drives the bump aligner roll which feeds the paper to the transfer belt.



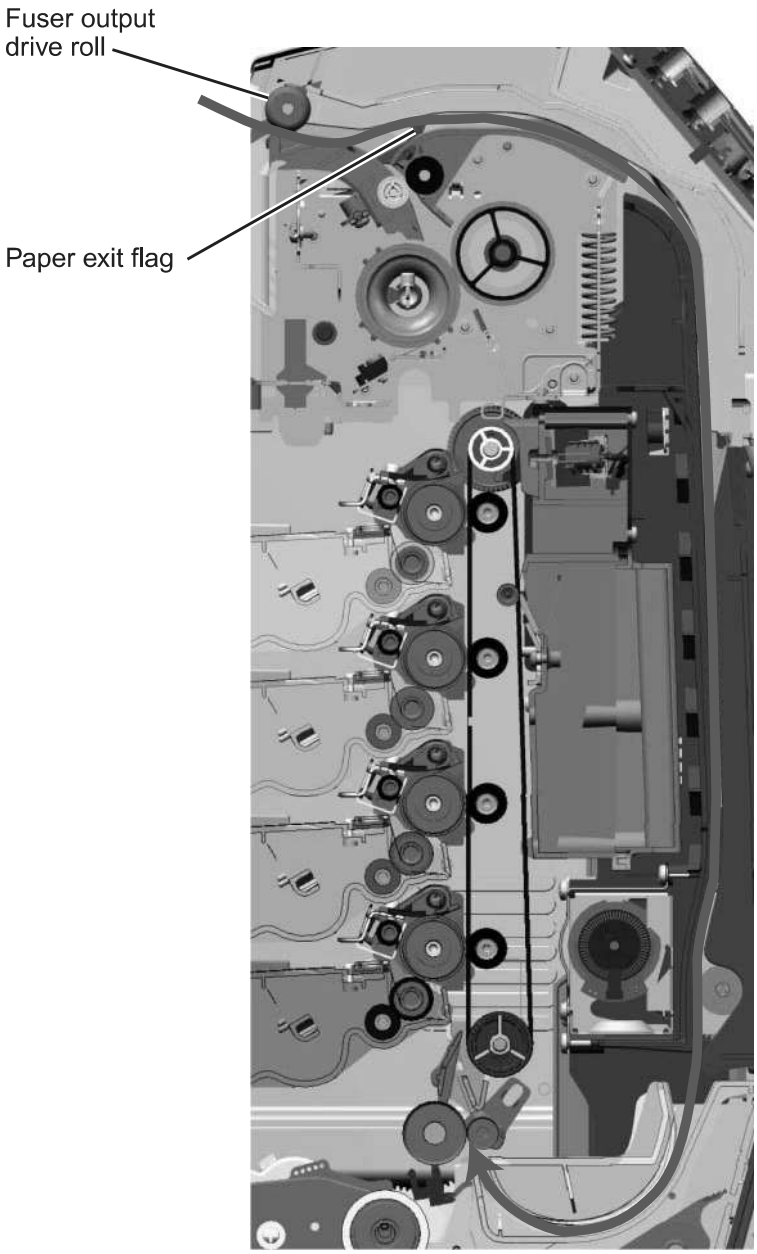
Once the paper is fed onto the transfer belt, the photoconductor drums in conjunction with the transfer belt pull the print media through the paper path.



Once the print media exits the transfer belt, it enters the fuser where heat and pressure are applied to bond the toner permanently to the media. The fuser rollers continue to turn and pull the print media through the paper path until it reaches the exit drive roll. The exit drive roll pulls the print media from the fuser rollers and delivers it to the fuser output drive roll. Once the print media reaches the fuser output drive roll, the roller pushes the print media into the output bin.



If the page is to be duplexed, the fuser output drive roll continues to pull the media until it clears the paper exit flag and then reverses the rotation of the roller in order to pull the media back into the printer duplex assembly. The media is then routed down through the duplex path until it reaches the bump aligner roll. Once in this position, it enters the EP path for the second time.



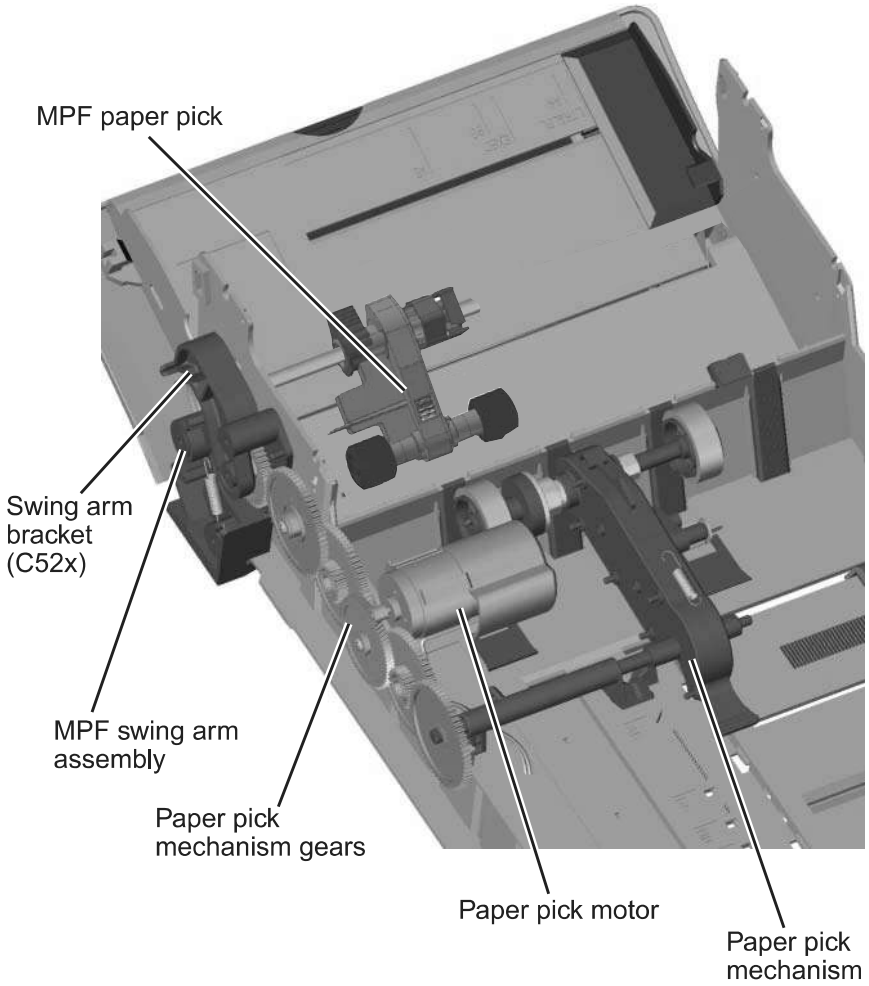
The paper exit flag serves two purposes. When it triggers the paper exit sensor, it serves as a one-way gate for the media when it is exiting the printer to the output bin and also serves as a one-way gate when the media is entering back into the printer for a duplex print. In other words, it diverts the print media's path, directing it to either the output bin or the duplex paper path.

Mechanical drive

In order for the print media to move through the paper path, there are several drive motors that supply the mechanical power to the rollers discussed previously. The drives for these components are illustrated and discussed in the following paragraphs.

Paper pick mechanism drive

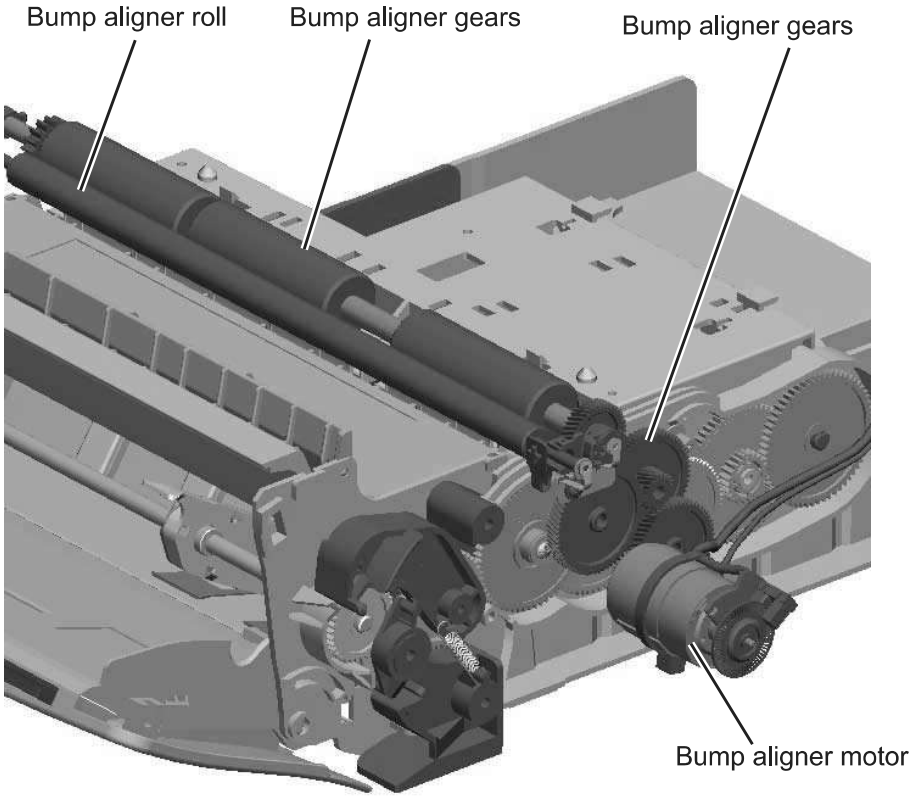
When printing from Tray 1 or Tray 2, the paper pick motor drives the paper pick gears which causes the pick roller to turn. During an MPF print, the paper pick motor drives the swing arm assembly for the MPF and causes the MPF paper pick roller to turn.



Paper tray and paper pick mechanism shown from rear with components removed for clarity

Bump aligner drive

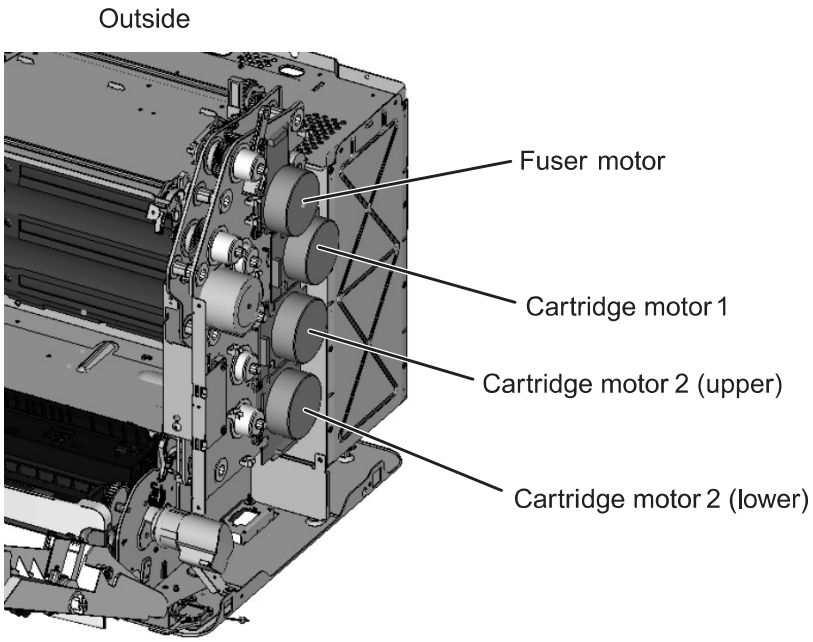
The power to turn the bump aligner roll is supplied from the bump aligner motor. The motor drives a set of bump aligner gears which causes the bump aligner roll to turn.

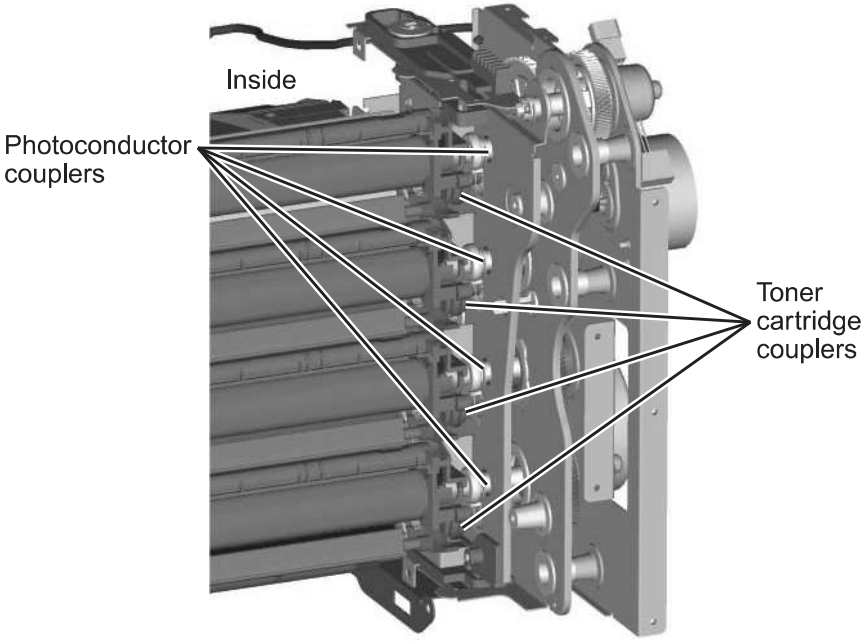


Note: If this motor is stalling or causing waste toner box full messages, the vertical auger mechanism might be causing the problem.

Photoconductor unit/toner cartridge drive

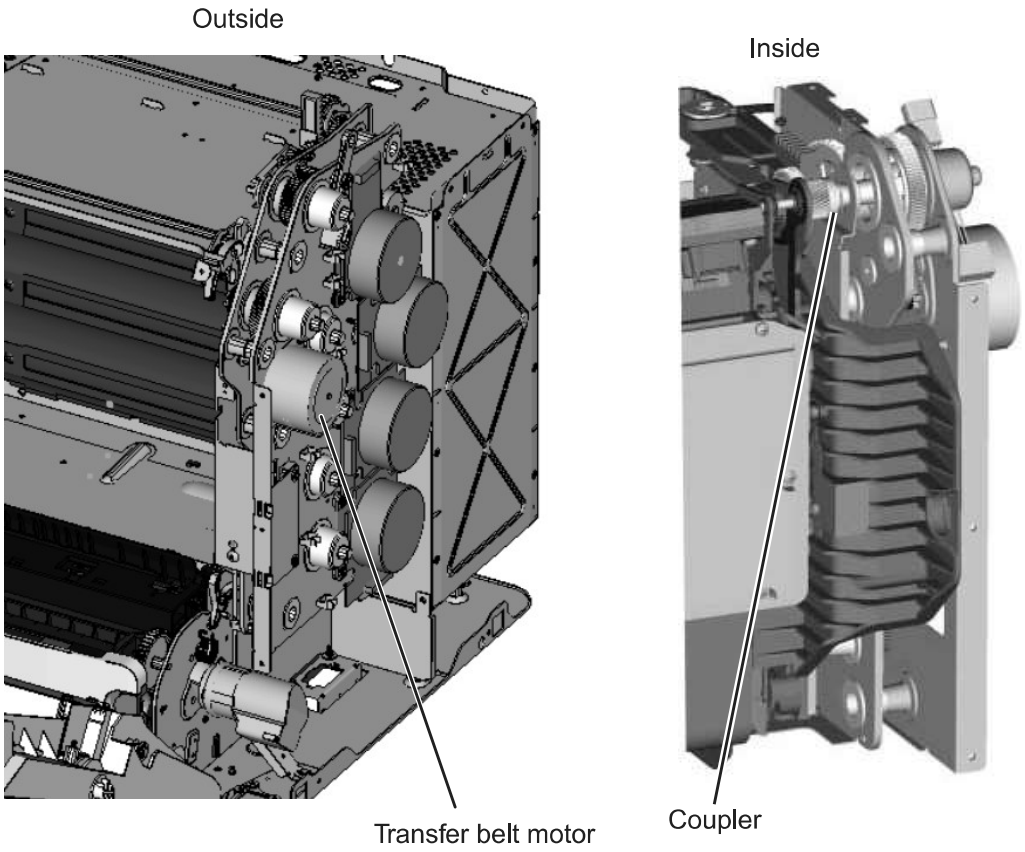
The photoconductor units (four) and toner cartridges (four) receive drive power from the EP drive assembly motors. The top cartridge motor 1 on the EP drive assembly provides drive to the top two photoconductor units and toner cartridges (yellow and cyan). Likewise, the bottom cartridge motor 2 drives the two bottom photoconductor units and toner cartridges. When the printer's top access door is open, the couplers for the toner cartridges and photoconductor units disengage.





Transfer belt drive

The transfer belt unit receives drive from a motor located on the EP drive assembly. When the top access door is open, the coupler for the transfer belt disengages.



Fuser drive

The fuser drive (motor) is built into the fuser assembly and drives the fuser rollers to turn.

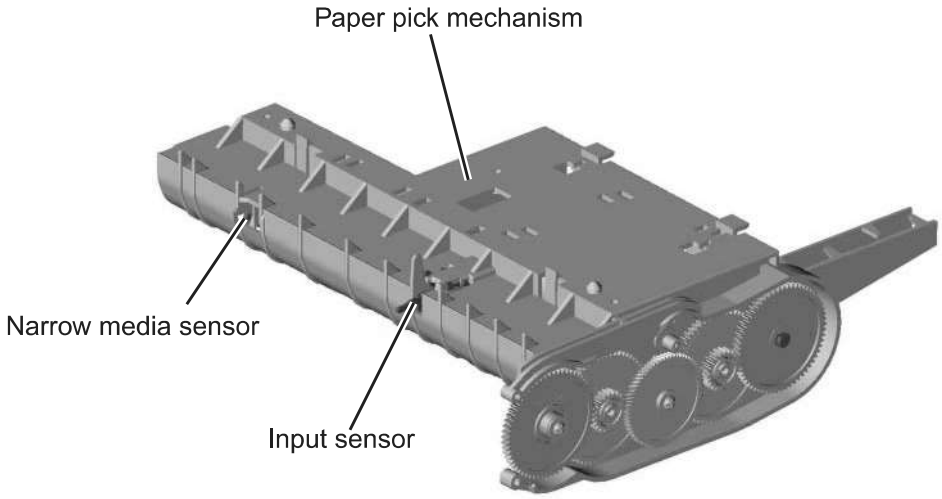
Duplex drive

The duplex drive is driven by the MPF/duplex motor through the MPF/duplex gear. Drive is provided to three drive shafts in the duplex unit by a belt that is driven by the MPF/duplex motor. The drive shafts move the print media through the duplex unit during printing.

Paper sensing

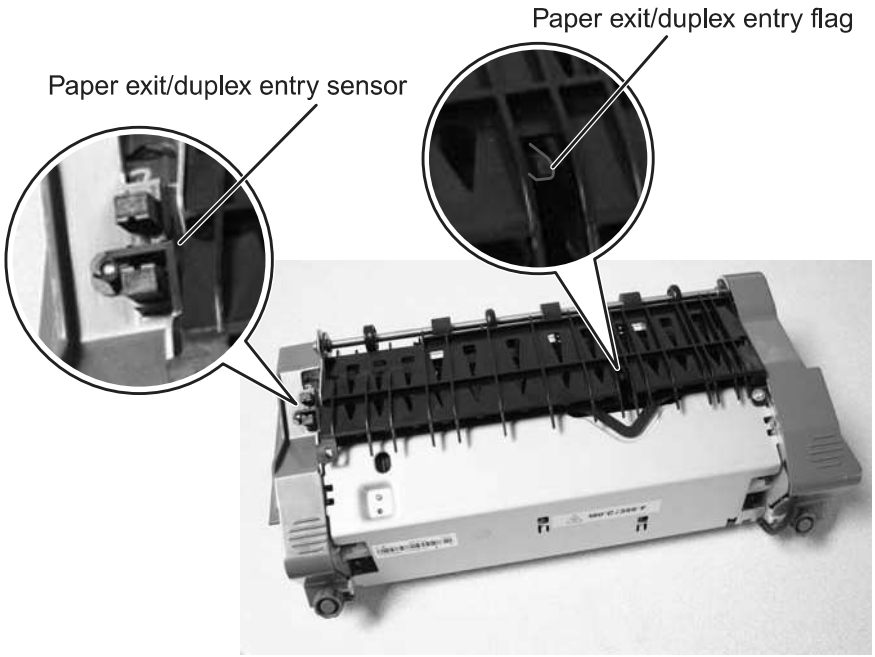
Sensors are strategically placed in the printer to ensure that the print media is making it to specific points within a given time in the electrophotographic process. There are two paper flags: one at the bottom of the machine (paper pick) to detect input paper, including duplex second side, from all sources and one at the top (paper exit) to detect paper movement beyond the fuser. The flags are similar in design, in that a mechanical arm is moved by the media to interrupt an optical sensor; both are normally blocked when no media is present. There is also a multifunction transparency sensor that detects if: 1) tray 1 is present, 2) narrow media is being used, and 3) the media is a transparency. The sensor works for tray 1, tray 2 (500-sheet option), and the MPF.

Paper pick sensor



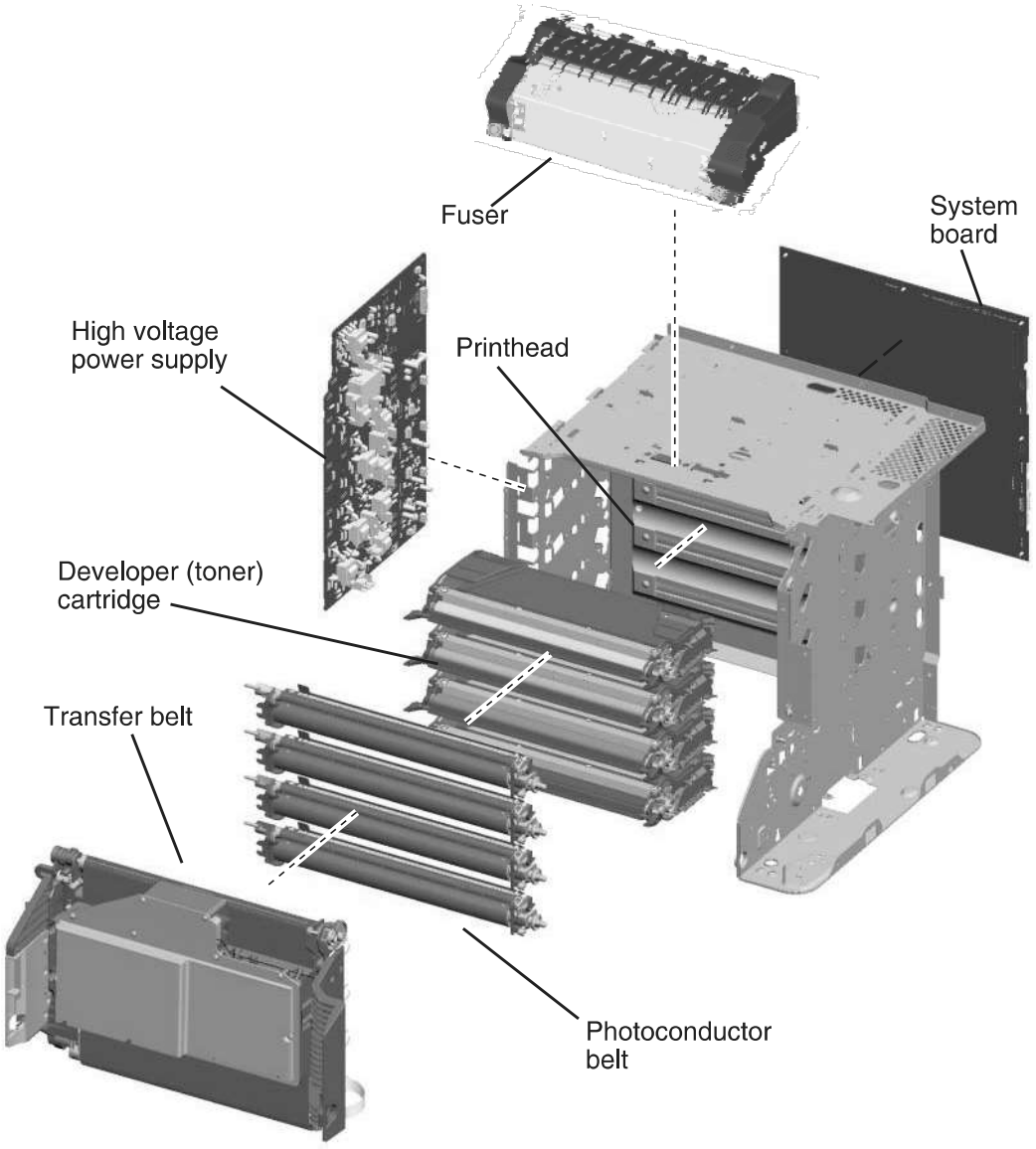
Paper exit/duplex entry sensor and bin full flag

The paper exit/duplex sensor flag detects movement in two directions: as the paper exits the fuser and as it is retracted from the exit tray back into the duplex path. Each sheet must be driven past the fuser exit flag and allowed to fall before being turned around and starting the duplex path. If the print media activates the paper exit flag for too long, or the print media doesn't reach the paper exit flag within a given time, a paper jam error will be posted.



Electrophotographic (EP) process

Main components



System board

The system board is the brain of the printer. During the print process, an image is sent from a computer to the system board. The raster image processor (RIP) portion of the system card converts the data into a raster image and feeds this data along with control information to the printhead.

High voltage power supply (HVPS)

Provides a high voltage charge to:

- The charge roll located in the photoconductor unit
- The photoconductor drum located in the photoconductor unit
- The toner adder roller (TAR) located in the toner cartridge
- The developer roll located in the toner cartridge
- The doctor blade located in the toner cartridge
- The four transfer rolls located in the transfer belt

Printhead assembly

The printhead receives control and image data from the system card (RIP). Through the use of a laser unit, the printhead irradiates the photoconductor drum with light and creates an invisible image called a latent or electrostatic image.

Photoconductor unit

The photoconductor unit consists primarily of a charge roll and the photoconductor drum. The charge roll charges the surface of the photoconductor drum to prepare it for the latent image “drawn” by the laser. Once the photoconductor drum has been written to by the laser, it is responsible for picking up toner from the cartridge developer roller and then transferring the image to the print media.

Toner cartridge

This unit consists primarily of the developer roll and the toner adder roll. The primary function of this unit is to supply charge toner to the photoconductor unit for transfer onto the print media. The toner adheres to the electrostatic image on the surface of the photoconductor drum which is then transferred to the print media.

Fuser

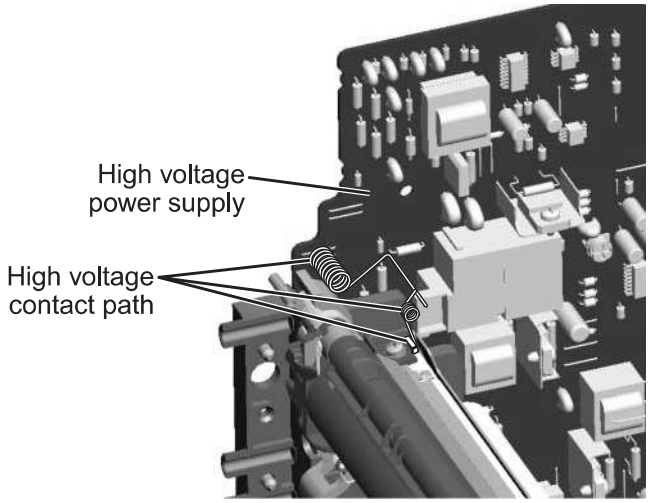
The fuser assembly uses heat and pressure to fuse the toner image onto the print media.

Charging

The primary component of the charging process is the high voltage power supply. The following provides information that covers the mechanical transfer of the high voltage through a set of springs to each subcomponent of the charging process.

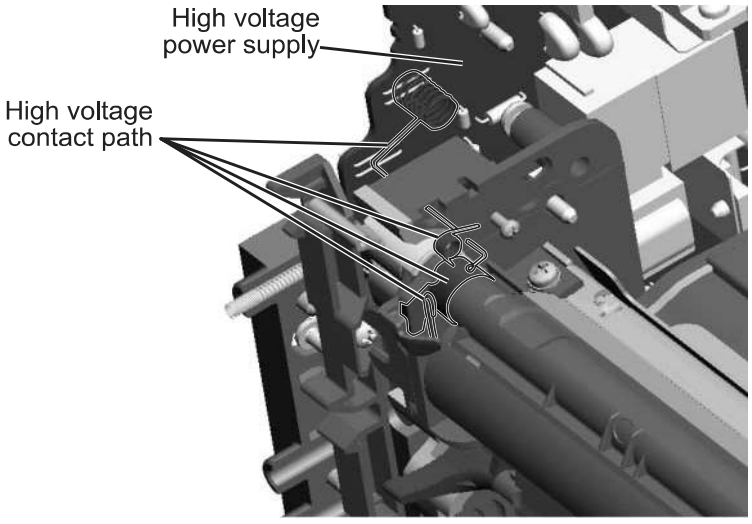
Photoconductor unit (charge roll)

The following illustration shows the circuit path that allows high voltage current to flow from the HVPS to the charge roll contact on the photoconductor unit. It is essential that the contact springs are properly touching to provide a good flow. If not, print quality problems will occur.



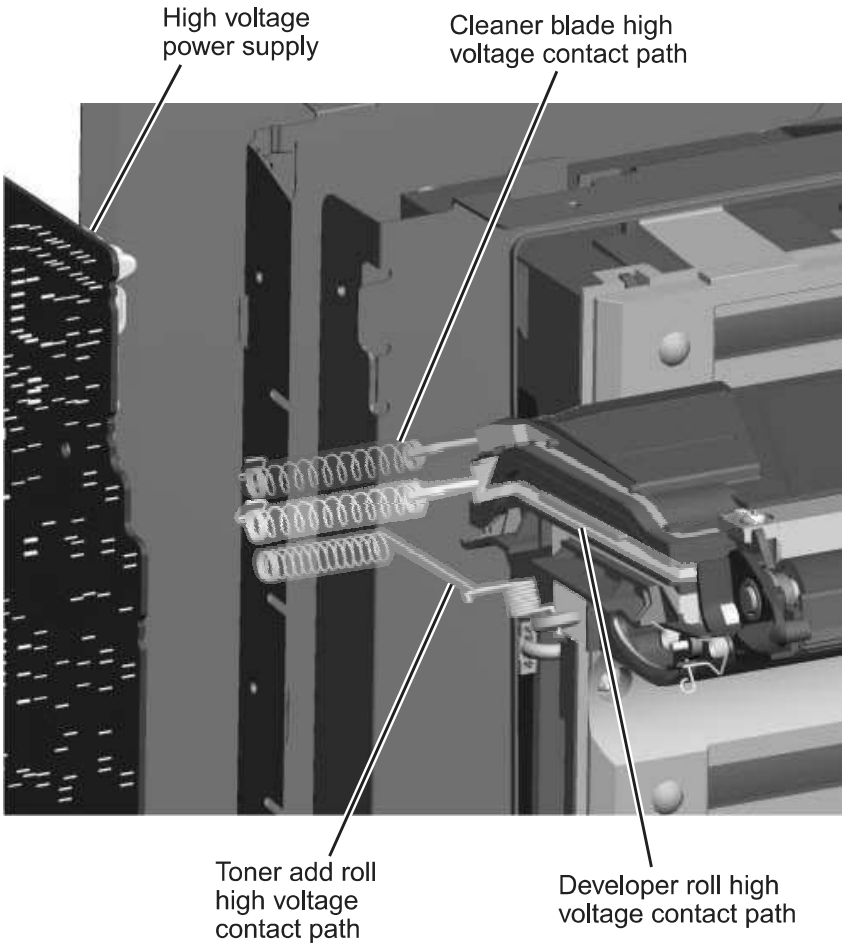
Photoconductor unit (photoconductor drum)

The following illustration shows the circuit path that allows high voltage current to flow from the HVPS to the photoconductor drum contact on the photoconductor unit. It is essential that the contact springs are properly touching to provide a good flow. If not, print quality problems will occur.



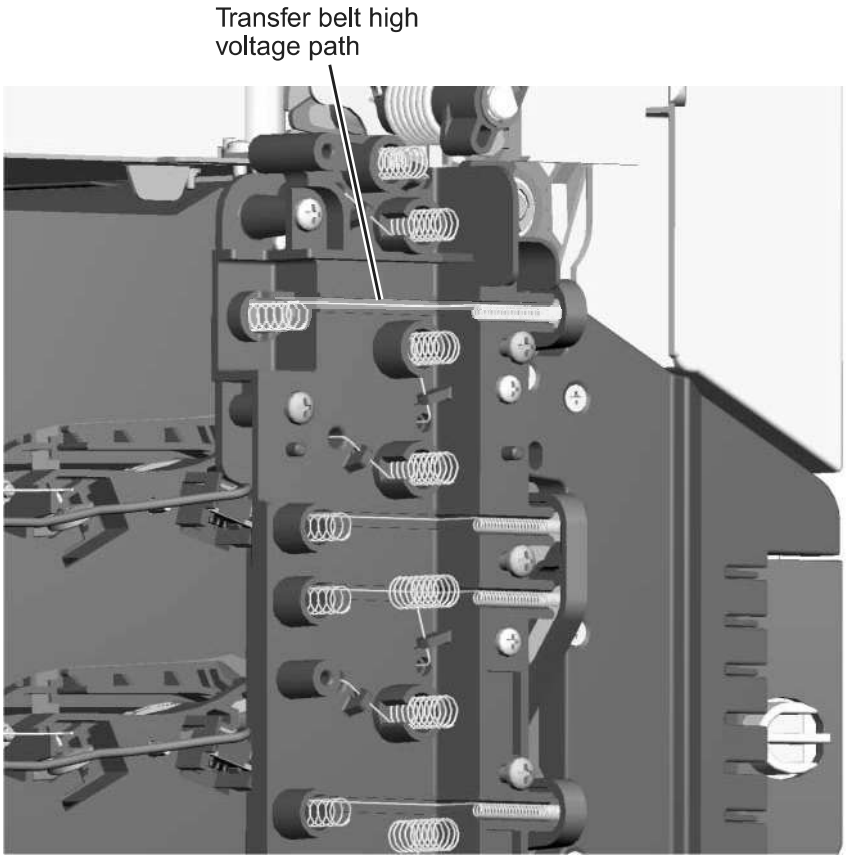
Toner cartridge

The following illustration shows the circuit path that allows high voltage current to flow from the HVPS to the toner cartridge. The toner cartridge contains three parts that are provided high voltage from the HVPS. These three parts are: the doctor blade, the developer roll, and the toner adder roll (TAR). It is essential that the contact springs are properly touching to provide a good flow. If not, print quality problems will occur.



Transfer belt

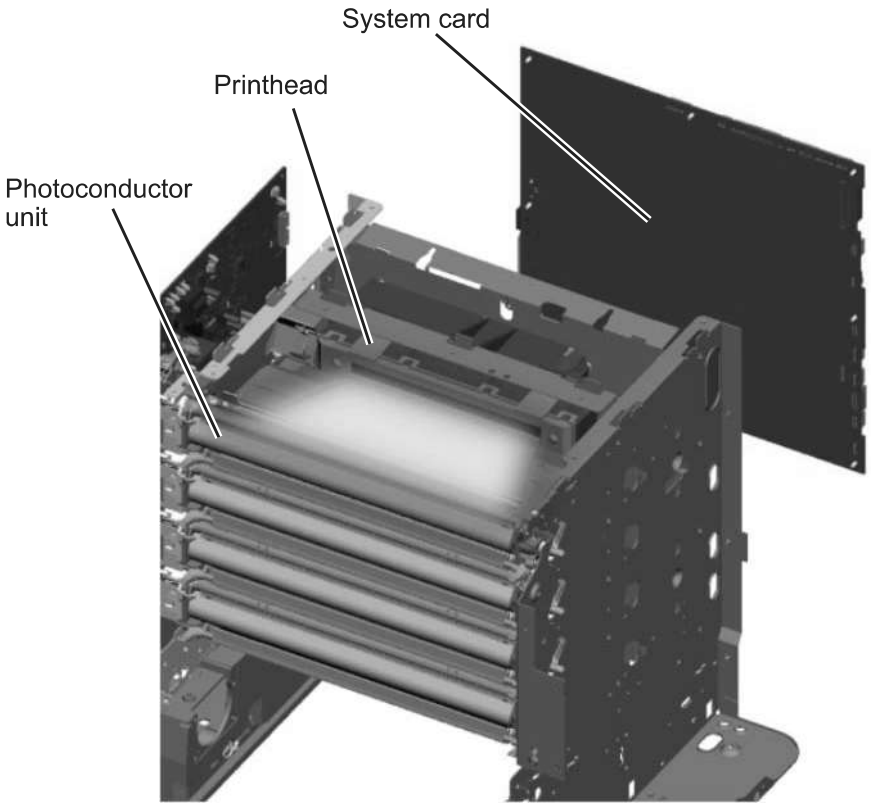
The transfer belt houses four transfer rollers that provide image transfer from the photoconductor drum to the print media. The transfer belt receives its high voltage charge through spring contacts located on the transfer contact assembly as shown in the following illustration. For the sake of simplicity, only one of the roller's high voltage paths is shown. This path is typical for the other three rollers as well.



Exposing

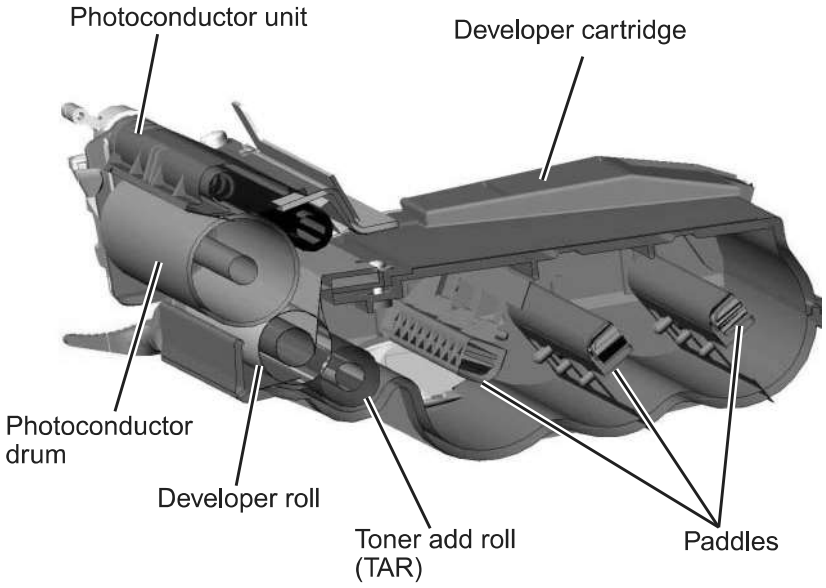
The main components in the exposure process are the system card, the printhead and the photoconductor unit. The following illustration depicts a typical data path for a single color exposure.

Data is received from a computer into a port on the system card. The system card's RIP function converts this data into raster information which is fed to the printhead along with other control data. The data is converted by the printhead laser into light energy data that is directed to the light sensitive photoconductor unit.



Developing

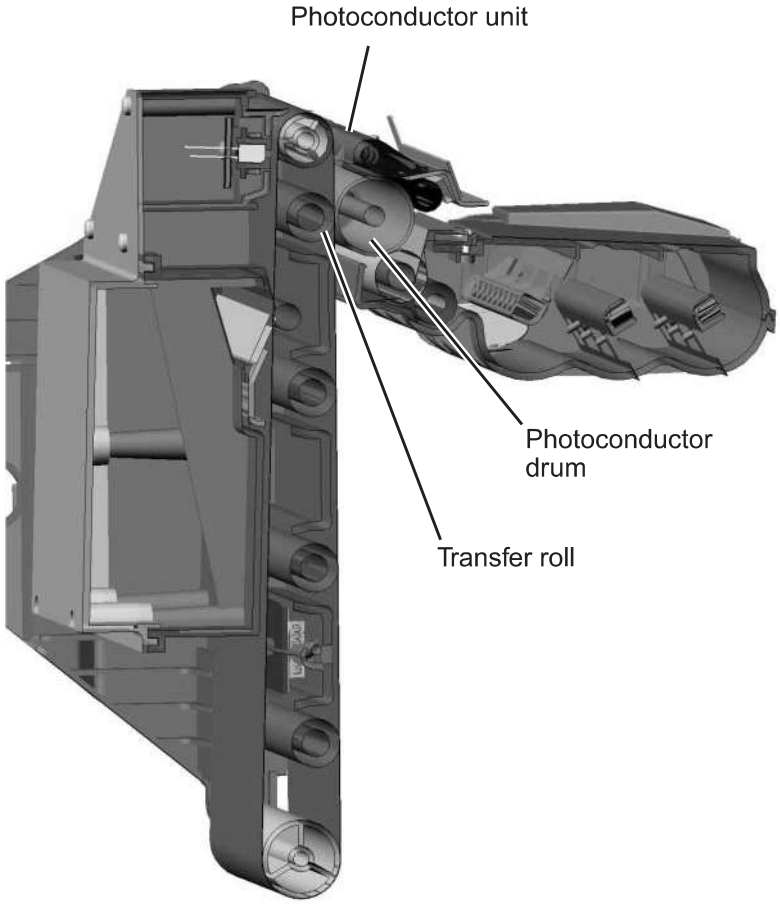
The two primary components of the developing process are the photoconductor unit and the toner cartridge. The toner cartridge contains a toner adder roll, developer roll and toner. Toner is advanced toward the toner adder roll by three paddle assemblies. The advanced toner clings to the electrically charged toner adder roll. The toner on the toner adder roll is then electrically attracted to the developer roll because of the difference in electrical charge between the toner adder roll and the developer roll. The toner uniformly coats the developer roll with help from the doctor blade and is introduced to the electrostatic image on the photoconductor drum. The toner then transfers to the photoconductor drum.



Transferring

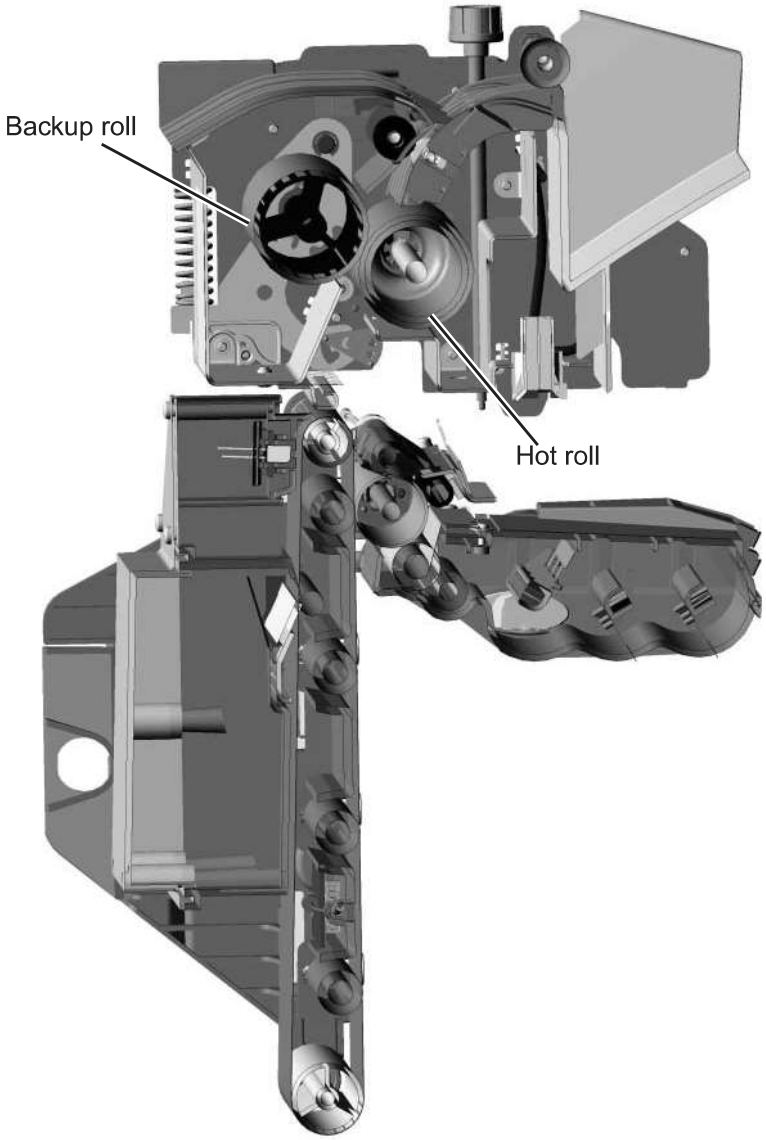
After the toner is attracted to the photoconductor drum, the image is ready for transfer onto the print media. The print media is advanced in the paper path onto the transfer belt and is carried along the belt underneath each photoconductor unit. The charged transfer roll(s) located inside the transfer belt pulls the image from the photoconductor drum to the print media. This is a direct transfer method.

The main function of the transfer belt is to provide transport for the print media. Toner is not transferred directly to the belt during the print process.



Fusing

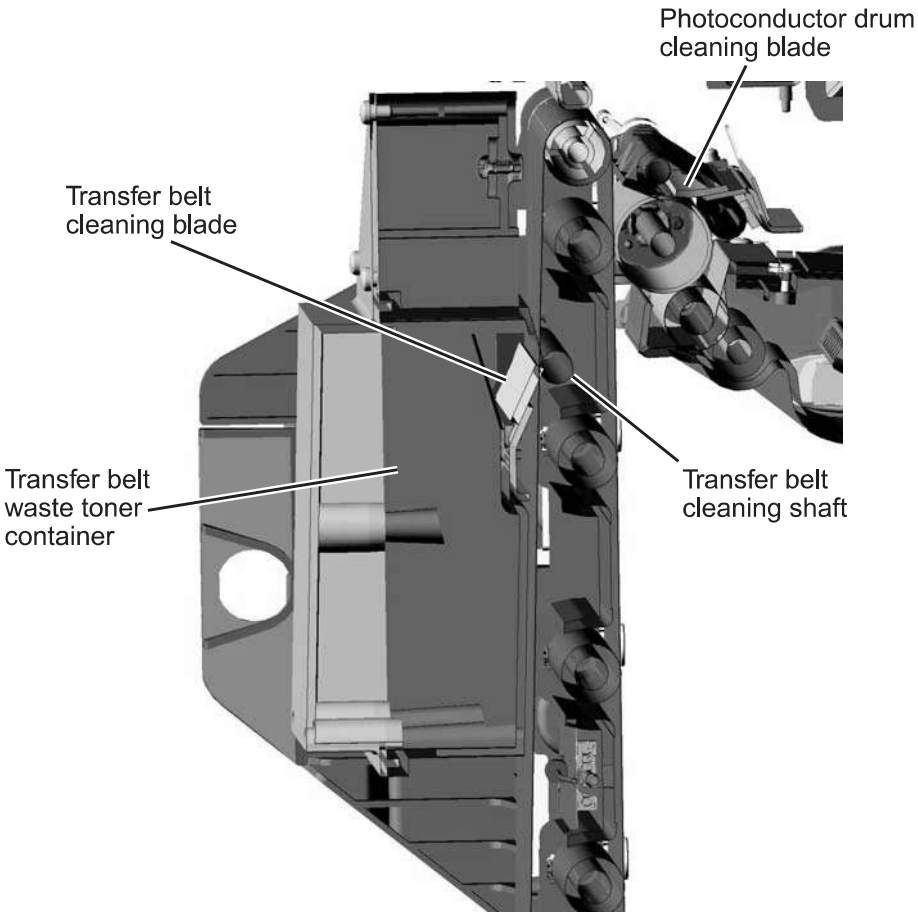
After the image has been transferred onto the print media, it is ready for fusing. The print media is transported into the fuser where the hot roll and backup roll use a combination of high heat and pressure to melt and press the toner to the media.



Cleaning

The transfer belt and photoconductor drum are cleaned at the end of the electrophotographic process cycle. The transfer belt surface is cleaned as it rotates past a cleaning blade and shaft located inside the transfer belt assembly. Any waste toner that is scraped off of the belt is collected in the waste toner container located next to the belt inside the transfer belt unit.

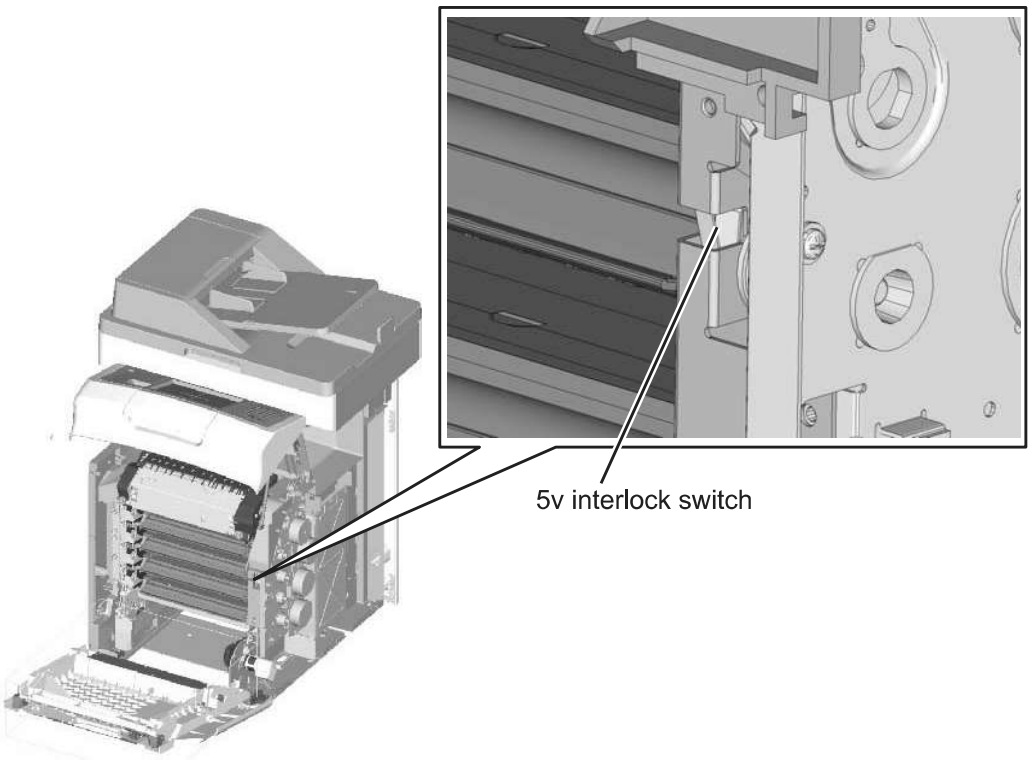
The photoconductor drum is cleaned by the cleaning blade.



Electrical interlock

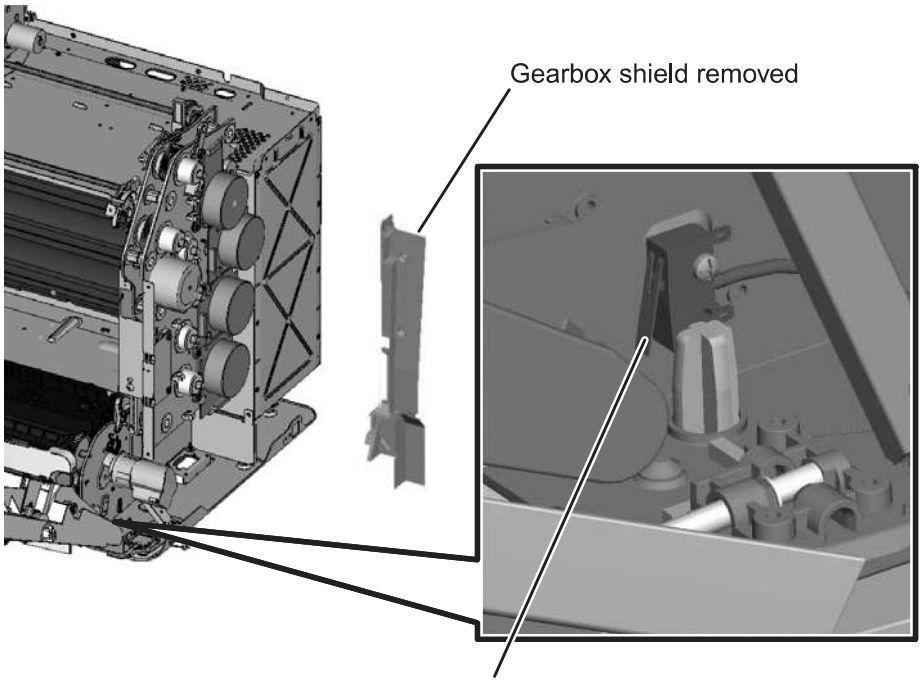
5 V interlock switch

An interlock switch triggered by the front access door disables the +5 V output to the printhead which turns off the laser.



24 V interlock switch

The 24 V interlock switch is located at the front-right side of the machine when you open the front door. Opening the front door disengages the 24 V interlock switch and cuts the 24 V supply to the system board, HVPS, motors, and fuser. Closing the front door triggers a switch that initializes the motor.



When the 24 V switch opens, the normally open side of the switch is activated which signals the system board to disable a +24 V power supply output, turning off all high voltage supplies, the bump/align motor, the duplex motor and the fuser motor for safety considerations.

Warning: Never poke or force cover the switch while fixing the machine. This can harm the person and machine.

4. Repair information

CAUTION—POTENTIAL INJURY:

The printer weight is greater than 97 lbs (44kg), and requires three or more trained personnel to lift safety.

Safety information

- The safety of this product is based on testing and approvals of the original design and specific components. The manufacturer is not responsible for safety in the event of use of unauthorized replacement parts.
- The maintenance information for this product has been prepared for use by a professional service person and is not intended to be used by others.
-  **CAUTION:** When you see this symbol, there is a danger from hazardous voltage in the area of the product where you are working. Unplug the product before you begin, or use caution if the product must receive power in order to perform the task.

Data Security Notice

This printer contains various types of memory that are capable of storing device and network settings, information from embedded solutions, and user data. The types of memory-along with the types of data stored by each-are described below

- **Volatile memory**—This device utilizes standard Random Access Memory (RAM) to temporarily buffer user data during simple print and copy jobs.
- **Non-volatile memory**—This device may utilize two forms of non-volatile memory: EEPROM and NAND (flash memory). Both types are used to store the operating system, device settings, network information, scanner and bookmark settings, and embedded solutions.
- **Hard disk memory**—Some devices have a hard disk drive installed. The printer hard disk is designed for device-specific functionality and cannot be used for long term storage for data that is not print-related. The hard disk does not provide the capability for users to extract information, create folders, create disk or network file shares, or FTP information directly from a client device. The hard disk can retain buffered user data from complex scan, print, copy, and fax jobs, as well as form data, and font data.

To erase volatile memory, turn off the printer.

To erase non volatile memory see **"Configuration menu (CONFIG MENU)" on page 3-29** item pertaining to this.

To erase the printer hard disk see **"Configuration menu (CONFIG MENU)" on page 3-29** item pertaining to this.

The printer operator panel and RIP/controller board contain NVRAM. After removing the old part the part must be returned to your second level support.

Handling ESD-sensitive parts

Warning: Read the following before handling electronic parts.

Many electronic products use parts that are known to be sensitive to electrostatic discharge (ESD). To prevent damage to ESD-sensitive parts, follow the instructions below in addition to all the usual precautions, such as turning off power before removing electronic cards:

- Keep the ESD-sensitive part in its original shipping container (a special “ESD bag”) until you are ready to install the part in the printer.
- Make the fewest possible movements with your body to prevent an increase of static electricity from clothing fibers, carpets, and furniture.
- Put the ESD wrist strap on your wrist. Connect the wrist band to the system ground point. This discharges any static electricity in your body to the printer.
- Hold the ESD-sensitive part by its edge connector shroud (cover); do not touch its pins.
- If you need to put down the ESD-sensitive part for any reason, first put it into its special bag.
- Printer covers and metal tables are electrical grounds. They increase the risk of damage because they make a discharge path from your body through the ESD-sensitive part. (Large metal objects can be discharge paths without being grounded.)
- Prevent ESD-sensitive parts from being accidentally touched by other personnel. Install printer covers when you are not working on the printer, and do not put unprotected ESD-sensitive parts on a table.
- If possible, keep all ESD-sensitive parts in a grounded metal cabinet (case).
- Be extra careful in working with ESD-sensitive parts when cold-weather heating is used, because low humidity increases static electricity.

Handing the photoconductor unit

The following precautions must be observed when handling the photoconductor unit. The photoconductor unit is a supply item you will have to remove during some of the repair procedures:

Transportation/storage

Use the specified carton whenever moving or storing the photoconductor unit.

Handling

- The optical photoconductor roller in the photoconductor unit exhibits the greatest light fatigue after being exposed to strong light over an extended period of time. Never expose it to direct sunlight. Cover the photoconductor unit when you remove it from the printer.
- Use care not to contaminate the surface of the optical photoconductor roller with an oil-based solvent, fingerprints, and other foreign matter.
- Do not scratch the surface of the optical photoconductor roller.

Parts not to be touched

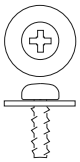
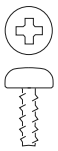
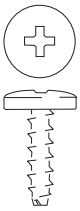
Any part where the mounting screws are used to meet a printer alignment set at the factory must not be removed, disassembled, or adjusted.

Screw and retainer identification table

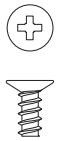
The following table contains screw types and retainers, locations, and quantities necessary to service the printer. Pay careful attention to each screw type location when doing removals. You must install the correct screw type in each location during reassembly.

Sizes are as close to actual as possible, as long as the printout is not scaled or resized.

Screw identification table

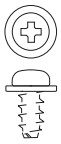
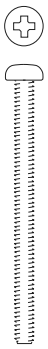
P/N	Screw type	Location	Qty
077-0601-0 	Plastite M3x6, black	CCD cover	2
		CCD Lamp	2
		CCD Lamp cover	2
		Rear cover	6
077-0819-0 	Plastite washer M3x8	CCD belt to flatbed	1
077-0824-0 	Plastite M4x8	Upper housing	6
077-1408-0 	Plastite M4x14	Hinges to ADF	4
10B1580 	#6 Panhead	Cooling fan to top cover	2

Screw identification table (continued)

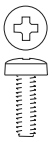
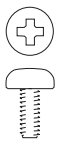
P/N	Screw type	Location	Qty
18B0832 	Taptite M3 L6 PANHD	5 V interlock switch to rightside frame	1
		Card support plate to upper plate	2
		Card support plate to lower plate	3
		Card support plate (and printhead ground) to leftside frame	5
		Card support plate to rightside frame	4
		Cartridge left guide assembly to leftside [late (interior side of plate assembly)	4
		COD drive assembly to upper plate	3
		COD shaft assembly to upper plate	2
		Contacts assembly to leftside frame next to auger worm gear	2
		Contacts assembly to leftside frame near duct	2
		Duct to frame	4
		EP drive to rightside plate (exterior side)	8
		Flatbed fan to housing	4
		Front door ground wire to rightside frame bracket	1
		Ground screws between scanner and printer frame	3
		HVPS to leftside frame plate	1
		Laser support plate to lower plate	2
		Left cam shaft lock assembly to printer frame	2
		Left frame assembly to lower plate	4
		Left frame assembly to laser support plate	2
		LVPS support plate to rightside plate	4
		LVPS to rightside frame plate and support bracket	5
		Motor driver card to EP drive assembly	2
		MP feeder drive cover to rightside frame	3
		Rear frame assembly	8
		Rear frame assembly to scanner support frame	2
		Right cam shaft lock assembly to printer frame	2
		Right frame assembly to laser support plate	2
		Right frame to lower plate	3
		Scanner support frame assembly to left frame	2
		System board to RIP plate.	9
		Top cover assembly to printer frame	5
		Upper plate to rightside frame assembly	3
		Upper plate to leftside frame assembly	3
		Upper plate to laser support plate	3
18B0939 	Plastite M3x6 FLATHD	Gearbox plate assembly to frame	4

Previous
Next
Go Back

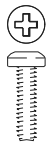
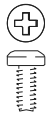
Screw identification table (continued)

P/N	Screw type	Location	Qty
18B1236 	Plastite panhead M3x6	ADF open sensor to ADF	2
		CCD belt to flatbed	2
		Sliding rod	2
18B2302 	Machine M2.6 L3-3.5	MP feeder/duplex drive motor to rightside plate	2
18B2315 	Machine M3 PANHD L35	Printhead	1
27S2836 	Taptite M3 L6 PANHD, black	Rear cover frame to frame	8
		Right cover to printer frame	4
		Rear cover to printer frame	4
27S2837 	M3.5X1.34 PANHD 8L, black	Left cover to lower swingout frame	2
		Top cover to left cover	1
		Top cover to right cover	1
27S2838 	Machine M3X0.5–6G 6L, Black	Contacts assembly to left/front edge of printer frame	2
		ISP blank plate to left plate	2
		Second USB connector to left frame	1
		System board USB connector to frame	1
27S2839 	Taptite M3 L6 Taptite Slotted hex, black	Rear cover frame to frame	8

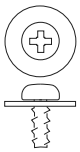
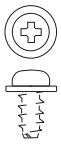
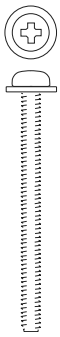
Screw identification table (continued)

P/N	Screw type	Location	Qty
88A0003 	Machine M3X0.5-6G 8L	Printhead	3
88A0095 	M2.5x10 Machine	5 V interlock switch actuator assembly	1
		24 V interlock switch and shield to rightside frame	1
88A0133 	Plastite M3x8	ADF front cover	2
		ADF handle cover	2
		ADF motor cover	3
		ADF upper front cover	1
		Cave LED lens	1
		Interconnect card to ADF	2
		Left cover	3
		Main case cover	2
		MDC card metal cage	4
		MDC card to frame	1
		Motor assembly to ADF	2
		Right cover	1
88A0212 	Taptite M3.5x0.6 PAN	AC inlet ground wire	1
		Fuser AC cable's ground wire to leftside plate	1
88A0232 	Taptite M3 L6 PANHD	AC inlet cable to frame extension	2
		Cartridge right guide assembly to rightside plate	10
		Lower frame support to rightside frame assembly	4
		Lower plate to lower swingout frame assembly	1
		Lower swingout frame assembly to leftside frame assembly	4
88A0233 	Taptite M3x8 PANHD	Lower swingout frame assembly to leftside frame assembly (rearmost position)	1
		Upper housing	4

Screw identification table (continued)

P/N	Screw type	Location	Qty
88A0234 	Taptite M3x10	Motor assembly to ADF	2
88A0293 	Plastite M2.2 L5	Contact spring cap to left guide assembly	4
88A0312 	Plastite M2.9 L6 PAN	Backup springs to reference edge plate assembly	2
		Cartridge cooling fan duct to top cover	2
		Cartridge left guide assembly to leftside plate assembly (exterior side of plate assembly)	3
		Cover mount to rightside plate	2
		Door bracket to front access door cover	2
		Door straps to front access door cover	2
		Duplex entry guide to front access door cover	4
		Front cover bracket to front access door cover	4
		Lower frame support to lower left frame assembly	2
		Option locator to rightside plate	1
88A0313 	Plastite M2.9 L8 PAN	Contacts assembly to leftside cartridge guide	1
		Cover CBM to upper front cover	3
		Cover pivot to swingout frame	3
		Duplex upper guide to top access door cover	2
		HVPS to transfer contact assembly	3
		HVPS to leftside cartridge guide assembly	2
		LCD assembly to operator panel housing	4
		Top access door cover to upper front cover assembly	6
		UICC card to top access door cover	4
88A0316 	Plastite M2.9x12 PAN	USB cable to top access door cover	2
88A0323 	M3.5X 1.34 Panhead 8L	Duplex upper guide to top access door cover	5
		Ground strap/contact to front door frame	1
		Lower right frame to right plate	3
		Pick assembly to lower plate	4
		Reference edge assembly to door assembly	2
		Torque tube cover to front door frame	6
		USB ground bracket to top cover	1

Screw identification table (continued)

P/N	Screw type	Location	Qty
88A0324 	M3.5X1.34 PANHD 10L	Door cap to door assembly	1
		EP drive to rightside plate	2
88A0412 	M2.9x5.2 Plastite	Door links to top access door cover	2
		Fuser retract link to top access door	1
		GS COD bellcranks to guide	3
		NGS COD bellcranks to guide	3
		Top cover links to top access door links	2
		Top cover links to top cover	2
88A0421 	Plastite M3x5	Bushing ground cable	1
		Ground bushing to ADF	1
		Ground wire in input tray	1
		Input tray bottom cover	7
		Paper present LED	1
MS00473 	Taptite M3 PANHD L32	Cartridge cooling fan to frame	2
MS00495 	Taptite M3 L12 PANHD	Scanner attachment to printer frame	5
1126828 	E-clip M3	LR overcenter bellcrank to side frame	1
1126829 	E-ring M4	MP feeder gears to right side frame studs	2

Adjustments

Printhead alignment

Overview

When aligning the printhead, it is important to keep in mind that the printhead mounting screws should be initially loose enough to just hold the printhead in the printer. This allows the pages to be printed that will be used to align the black plane to the printer frame and also allows skew adjustment with the printhead alignment screw. Once the black skew is adjusted, the mounting screws are fully tightened.

There is one printhead that houses the four color planes. The black plane is aligned to the printer, and the color planes are internally aligned to black. Electrical alignment is done to fine tune the alignment of the color planes to the black plane once the printhead is installed and skew is adjusted.

The first step in aligning the printhead is to loosen the printhead mounting screws, and to set the skew for black.

Note: If you need to replace the printhead, see **"Printhead removal, installation, and adjustment" on page 4-140**.

Printhead mechanical alignment

Skew (black)

1. Disconnect the electrical cord to the printer.
2. Disconnect the electrical cord to the outlet.
3. Remove the transfer module and photoconductor units:
   a. Open the top access cover.
   b. Open the front access cover.
   c. Disconnect the transfer module cable (A).
   d. Press the two tabs (B) to release the front access cover assembly.
   e. Press the two tabs (C) on either side of the transfer module, and lift out the transfer module.

   Note: Leave the photoconductor units on the transport module when removing.

   To avoid damaging the photoconductor drum, place the transfer module with the photoconductor units on a clean surface. Never expose the photoconductor units to light for a prolonged period of time. You can place a clean, dry cloth over the transfer module and photoconductor units until they are required.