

Infoprint 1116



User's Reference

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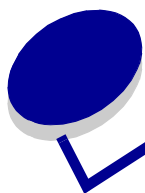


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1 Printer overview

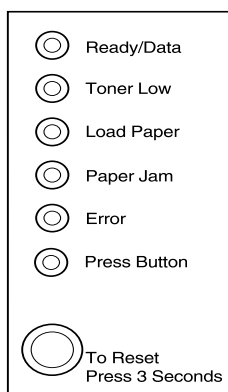
About your printer

Three printer models are available: the entry model, the standard model, and the network model. The differences between these three models are listed in the following table.

Note: Some sections of this CD may not apply to all printer models.

Item	Entry	Standard	Network
Base memory	4MB	8MB	16MB
Maximum memory	68MB	72MB	80MB
Emulations	PCL 5e and Macintosh compatibility	PostScript Level 2 and PCL 6	PostScript Level 2 and PCL 6
Connectivity	Parallel and USB	Parallel and USB	10/100 Base-TX Ethernet and USB
Ships with print cartridge yield at approximately 5% coverage	1,500 pages (standard)	3,000 pages (standard)	3,000 pages (standard)

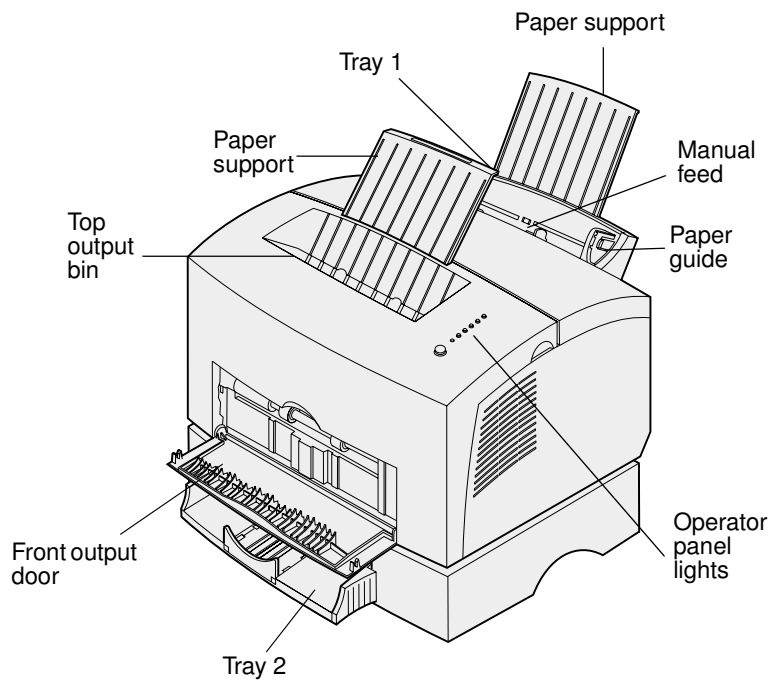
The operator panel has 6 lights and 1 button.



Press the operator panel button with a *brief button press* (approximately one second) to restart the printer or display an error code.

Press the operator panel with a *long button press* (hold until all the lights come on) to reset the printer or to select a setting in the **special function menu**.

Press the operator panel with a *double-button press* (press and release twice quickly) to display additional error codes or to scroll through the special function menu settings.

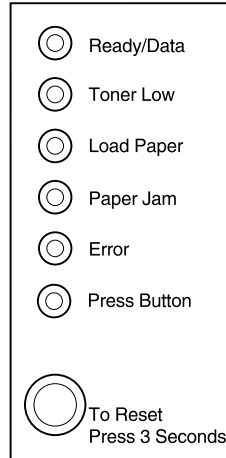


Use this feature:	When you want to:
Tray 1	Load up to 150 sheets of paper or 10 sheets of other media.
Rear paper support	Support media in tray 1.
Front paper support	Support media in the top output bin.
Manual feed	Load a single sheet of paper/other media. Use for transparencies, labels, envelopes, and card stock.
Paper guides	Adjust the width of the media in tray 1 and the manual sheet feeder.
Operator panel lights	Check the status of your printer.
Top output bin	Stack printed documents face down.
Front output door	Print on special media, for example, card stock or labels.
Optional tray 2	Increase your paper capacity.

2

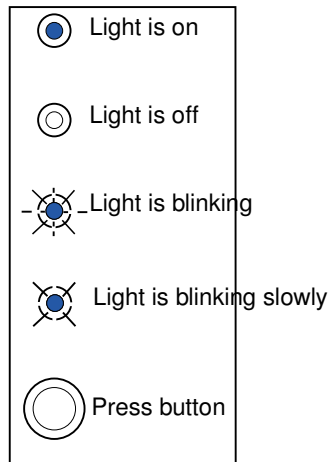
Using the operator panel

The operator panel has 6 lights and 1 operator panel button.



When the:	The printer:
Ready/Data light is on	is ready to receive and process data.
Ready/Data light is blinking	is busy receiving or processing data.
Toner Low light is on	alerts you the toner is getting low.
Load Paper light is on	prompts you to load media in tray 1, manual feed or tray 2 (if installed).
Paper Jam light is on	detects a jam.
Error light is on	cover is open or the print cartridge is not installed.
Press Button light is on	prompts you to press the operator panel button.

As shown in the illustration, lights that are on, off, or blinking indicate different printer conditions such as printer status, or the printer requires attention (for example, out of paper) or the printer requires servicing.



For a complete list of light messages, see [Understanding the operator lights](#).



Canceling a print job

From the printer operator panel

If the job you want to cancel is printing and the Ready/Data light is blinking, do a long button press (approximately 3 seconds) to reset the printer, which cancels the job.

From a Windows computer

- 1 Minimize all programs to display the desktop.
 - 2 Double-click the My Computer icon.
 - 3 Double-click the Printer icon.
A list of available printers appears.
 - 4 Double-click the printer you are using to print the job.
A list of print jobs appears.
 - 5 Select the job you want to cancel.
 - 6 Press the Delete key on the keyboard.
-

From a Macintosh computer

When you send a job to print, the printer icon appears on the desktop.

- 1 Double-click the printer icon on your desktop.
A list of print jobs appears.
- 2 Press Control and click the print job you want to cancel.
- 3 Select Stop Queue from the pop-up menu.

4

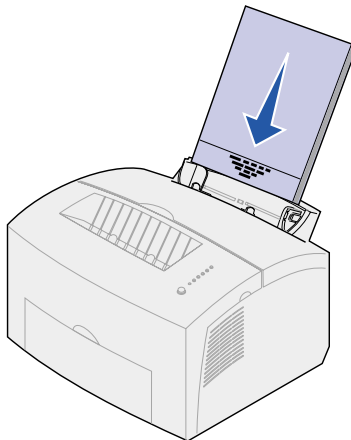
Setting up a print job

Once your printer is set up and your drivers are installed, you are ready to print. Do you want to print a letter, add a Do Not Copy watermark to a presentation, adjust the print darkness setting? Just choose the printer setting in your printer driver and print your job.

Printing from a Windows environment

For example, let's say you have plain paper loaded in tray 1, but you want to print a letter on letterhead paper and an envelope.

- 1 Load letterhead with the top of the page pointing down facing you in tray 1.



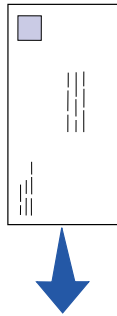
- 2 From your software application, open the file you want to print.
- 3 From the File menu, select Print (or Printer) Setup to open your printer driver.
- 4 Verify the correct printer is selected in the dialog box.
- 5 In the Print Setup dialog box, click Properties, Options, or Setup (depending on the application) to change the paper setting to Letterhead, and then click OK.

Note: If you want to change a setting not listed in the printer driver, you can download the IBM Infoprint 1116 Setup Utility from the IBM Web site (www.ibm.com).

- 6 Click OK or Print to send the job to print.

Now print the envelope:

- 1** Load an envelope vertically, flap side down, with the stamp area in the top left corner in the manual feed.



- 2** From the File menu, select Print (or Printer) Setup to open your printer driver.
- 3** In the Print Setup box, click Properties, Options or Setup (depending on the application) and select the size envelope you want from the Paper Type setting.
- 4** Change Orientation to Landscape.
- 5** In the Print dialog box, click OK to send the job to print.

If you need an explanation about a printer setting, help is just a click away:

- Click the Help box in the bottom right corner of any dialog box.
- Move your cursor to the setting in question and press F1 or right-click your mouse.

Printing from a Macintosh computer

For example, you are using Mac OS 9 and want to print a letter on letterhead paper and an envelope:

- 1** Load letterhead with the top of the page pointing down facing you in tray 1.
- 2** From your software application, open the file you want to print.
- 3** From the File menu, select Page Setup to open your printer driver.
- 4** Verify the correct printer is selected in the dialog box.
- 5** Select Letterhead from Paper and then click OK.
- 6** Click Print from the File menu to send the job to print.

Now print the envelope:

- 1** Load an envelope vertically, flap side down, with the stamp area in the top left corner in the manual feed.
- 2** From the File menu, select Page Setup.
- 3** From the Paper Size setting, select the size envelope you want.
- 4** Change Orientation to Landscape.
- 5** Click OK to close the Page Setup dialog box.
- 6** Go back to the File menu and select Print.
- 7** From Paper Source select Envelope.
- 8** Click Print to send the job to print.

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Choosing the right print media

Selecting the right paper or other media reduces printing problems. For best print quality, try a sample of the paper or other media you are considering before buying large quantities.

- Use 20 lb (75 g/m²) xerographic paper.
- Use transparencies designed for laser printers.
- Use envelopes made from 75 to 105 g/m² (20 to 28 lb) bond paper. To reduce paper jams, do not use envelopes that:
 - Have excessive curl
 - Are stuck together
 - Are damaged in any way
 - Contain windows, holes, perforations, cutouts, or embossing
 - Use metal clasps, string ties, or metal folding bars
 - Have postage stamps attached
 - Have any exposed adhesive when the flap is in the sealed position
- Do not use labels that have exposed adhesive on the sheets.
- Do not print a large number of labels continuously.
- Use card stock with a maximum weight of 163 g/m² and a minimum size of 76.2 x 127 mm (3 x 5 in.).

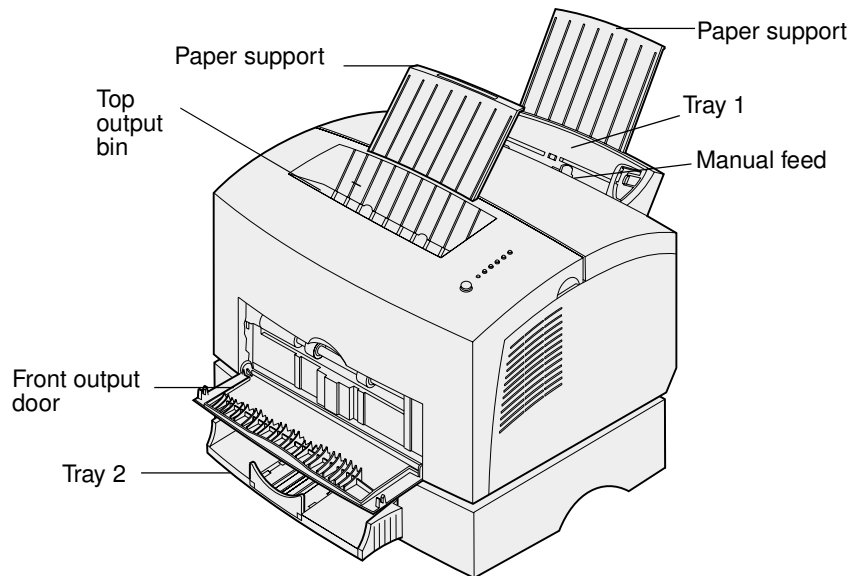
Media types and sizes

Media	Size	Weight	Capacity
Paper	A4, A5, B5, letter, legal, executive	16–43 lb (60–163 g/m ²) 16–43 lb (60–163 g/m ²) 16–24 lb (60–90 g/m ²)	Tray 1:150 sheets (20# paper) Manual feed:1 sheet Optional tray 2: 250 sheets (20# paper)
Transparencies	Minimum: 3.875 x 5.9 in. (98 mm x 152 mm) Maximum: 8.5 x 14 in. (216 mm x 356 mm)	16–43 lb (60–163 g/m ²)	Tray 1:10 sheets Manual feed:1 sheet
Envelopes	Minimum: 3.875 x 8.875 in. (98 mm x 225 mm) Maximum: 8.5 x 14 in. (216 mm x 356 mm)	16–43 lb (60–163 g/m ²)	Tray 1:10 envelopes Manual feed:1 envelope
Labels	Minimum: 3.875 x 5.9 in. (98 mm x 152 mm) Maximum: 8.5 x 14 in. (216 mm x 356 mm)	16–43 lb (60–163 g/m ²)	Tray 1:10 sheets Manual feed:1 sheet
Index cards	Minimum: 3 x 5 in. (76.2 x 127 mm)	16–43 lb (60–163 g/m ²)	Tray 1:10 cards Manual feed:1card
Index Bristol / Tag card stock	Minimum: 3 x 5 in. (76.2 x 127 mm) Maximum: 8.5 x 14 in. (216 mm x 356 mm)	67–90 lb Index Bristol (120–163 g/m ²) 50–100 lb tag (75–163 g/m ²)	Tray 1:10 cards Manual feed: 1 card

6

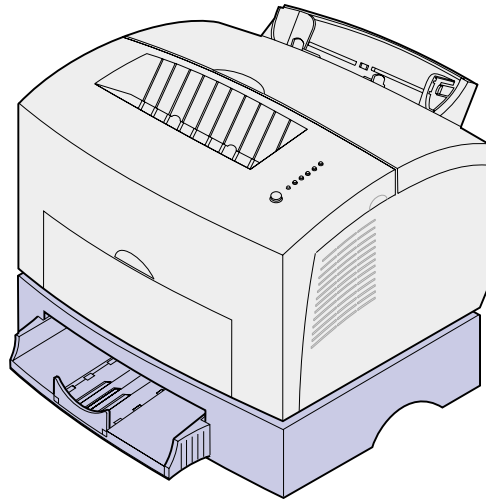
Printer media sources

Your printer has two standard paper sources: an automatic paper feeder, which holds up to 150 sheets of plain paper, and a single-sheet manual feed. Use tray 1 for most print jobs. Use the manual feed for a single piece of paper, transparency, envelope, label, or index card.



An exit output bin on top of the printer holds up to 100 sheets. The single-sheet front output door provides a straight-through paper path for special media, such as transparencies, envelopes, labels, card stock or index cards, reducing curling and potential paper jams.

To increase paper capacity, you can purchase the optional tray 2, which holds up to 250 sheets of paper.

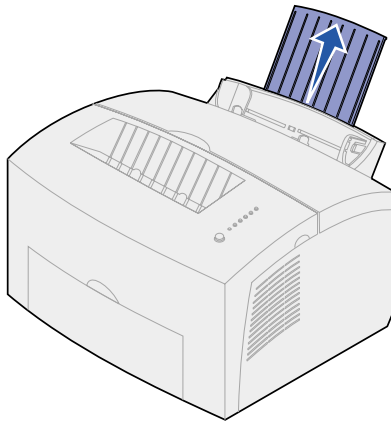


7

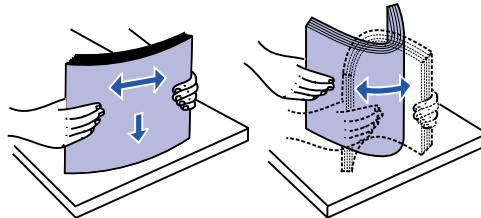
Loading paper

In tray 1

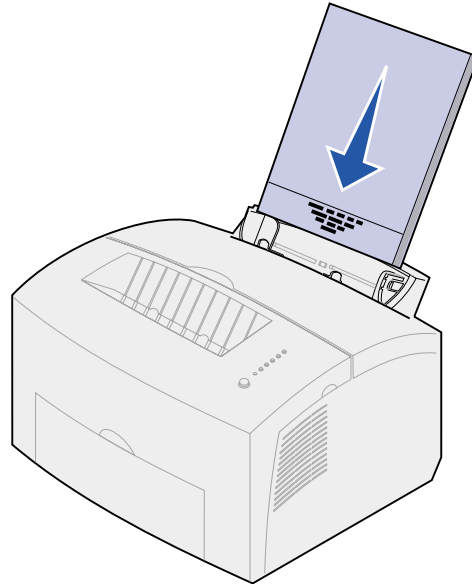
- 1 Extend the rear paper support until you hear a click.



- 2 Flex the sheets back and forth to loosen them, then fan them.

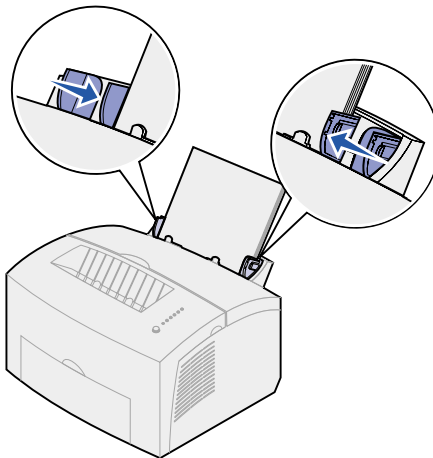


- 3 If loading letterhead paper, insert letterhead with the top of the page pointing down, facing you.

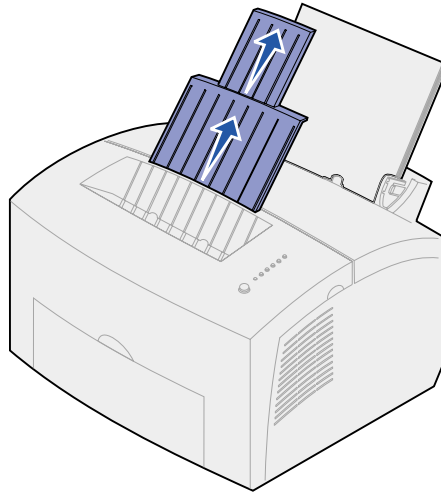


Note: Preprinted papers such as letterhead must be able to withstand temperatures up to 200°C (392°F) without melting or releasing hazardous emissions.

- 4 Slide the paper guides against the edges of the paper.



- 5 Extend the front paper support on the paper output bin until you hear a click. If you are printing on legal-sized paper, completely extend the front paper support.

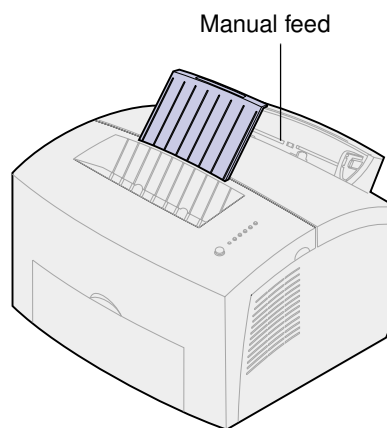


- 6 Select the paper size and type from your software application.
- 7 Start your print job.

In the manual feed

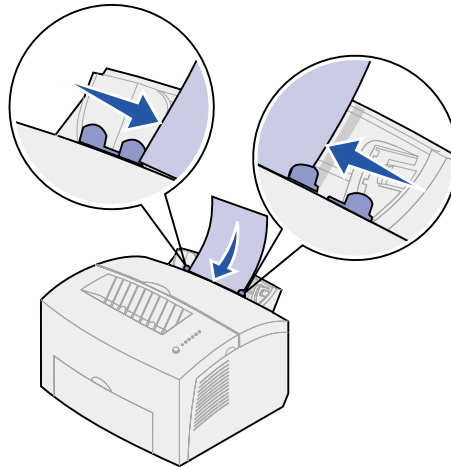
Use the manual feed to print one sheet of paper at a time.

- 1 Extend the front paper support on the paper output bin until you hear a click.

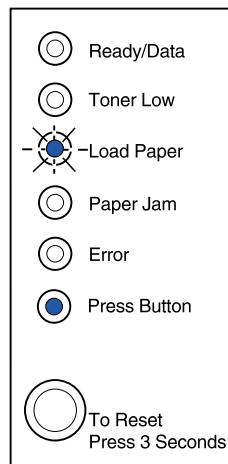


- 2 If loading letterhead paper, insert one sheet of letterhead with the top of the page pointing down, facing you.

- 3 Slide the paper guides flush against the edges of the paper.



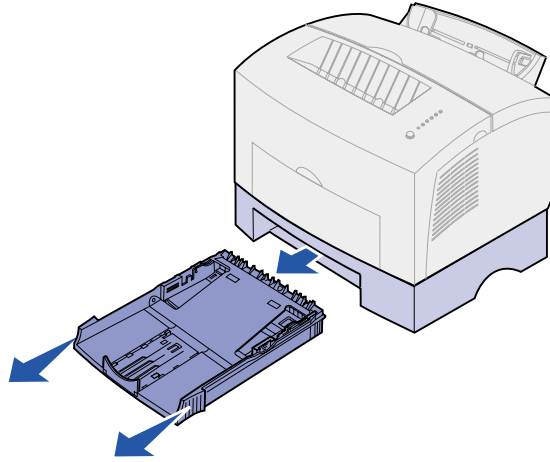
- 4 Select the paper size and type from your software application.
- 5 Start your print job.
- 6 Briefly (approximately one second) push the operator panel button to start printing.
- 7 When the Load Paper light blinks and the Press Button light comes on, place another sheet in the manual feed.



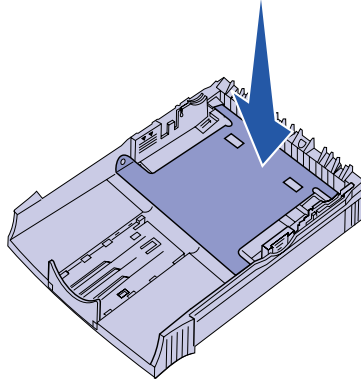
- 8 Push the operator panel button.

In the optional tray 2

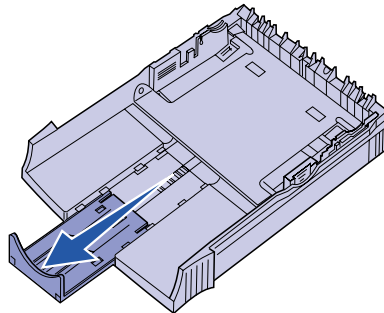
- 1 Grasp the tabs on either side of the tray and pull it completely out of the printer.



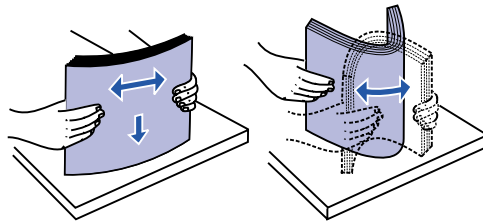
- 2 Before loading paper, push down on the metal plate until it locks into place.



- 3 If loading A4 or legal sized paper, extend the paper support.

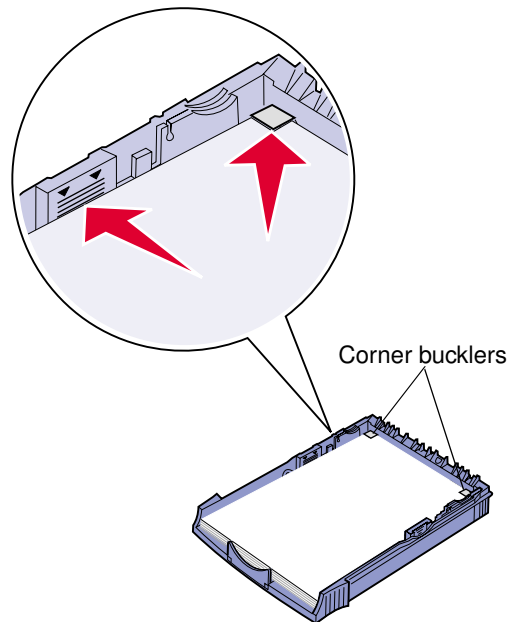


- 4** Flex the sheets back and forth to loosen them, then fan them.



- 5** If loading letterhead paper, insert letterhead face down with the top of the page entering the printer first.

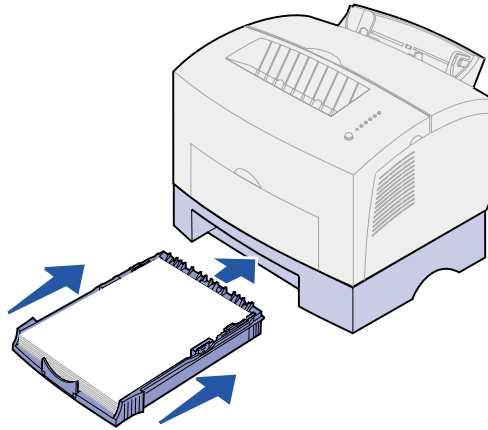
- 6** Do not exceed the stack height indicator; overfilling the tray may cause paper jams.



- 7** Make sure the paper is under both corner bucklers and lying flat in the tray.
- 8** Slide the paper guides flush against the edges of the media.

- 9 Reinstall the tray firmly into the printer.

If the tray is not pushed all the way in, the paper may not feed properly.



- 10 Select the paper size from your software application.
- 11 Start your print job.

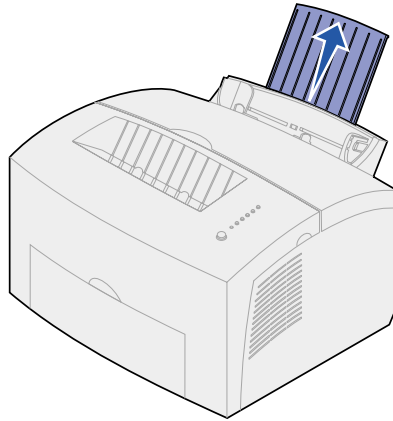
8

Loading transparencies

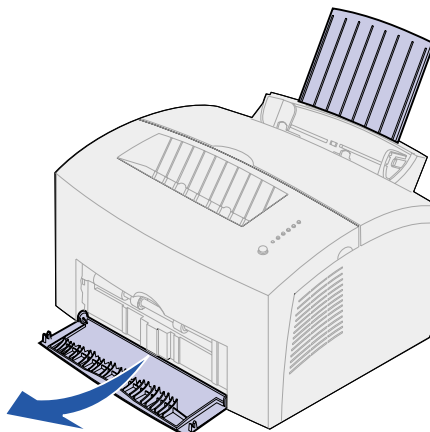
When printing on transparencies, use transparencies designed for laser printers.

In tray 1

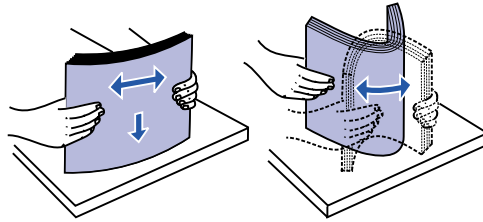
- 1 Extend the rear paper support until you hear a click.



- 2 To reduce curling or potential jams, open the front output door for a straight-through paper path.



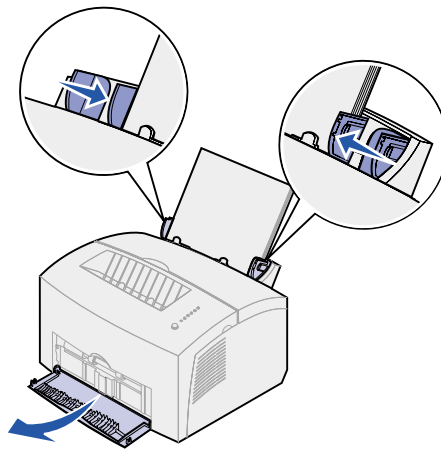
- 3 Flex the transparency sheets back and forth to loosen them, then fan them.



- 4 Load up to 10 transparencies with the side you want to print on facing you.

Note: Transparencies must be able to withstand temperatures of 200°C (392°F) without melting or releasing hazardous emissions.

- 5 Slide the paper guides against the edges of the transparencies.

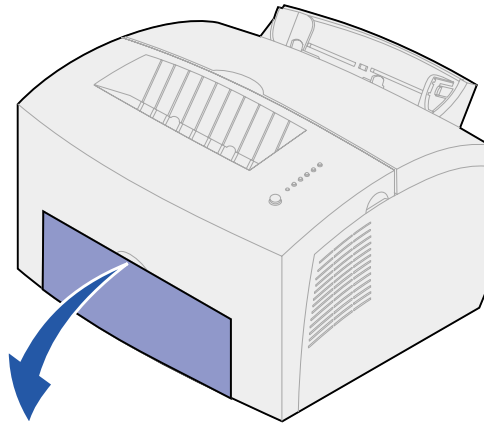


- 6 Select the paper type from your software application.
- 7 Start your print job.

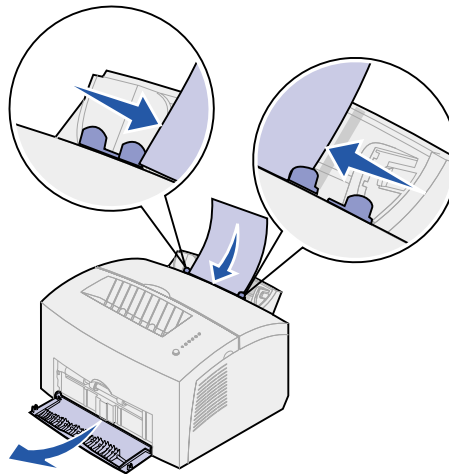
In the manual feed

Use the manual feed to print one transparency at a time.

- 1** To reduce curling or potential jams, open the front output door for a straight-through paper path.

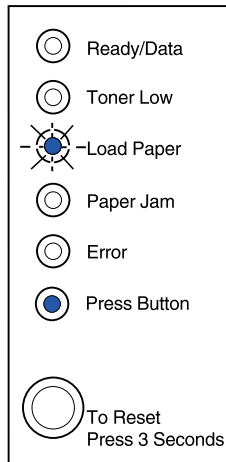


- 2** Slide the paper guides flush against the edges of the transparency.



- 3** Select the paper size and type from your software application.
- 4** Start your print job.
- 5** Briefly (approximately one second) push the operator panel button to start printing.

- 6** When the Load Paper light blinks and the Press Button light comes on, place another transparency in the manual feed.



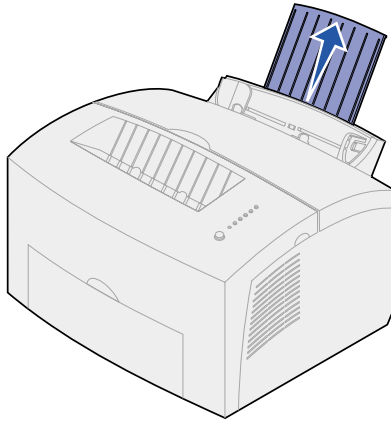
- 7** Push the operator panel button to print another transparency.

9 Loading envelopes

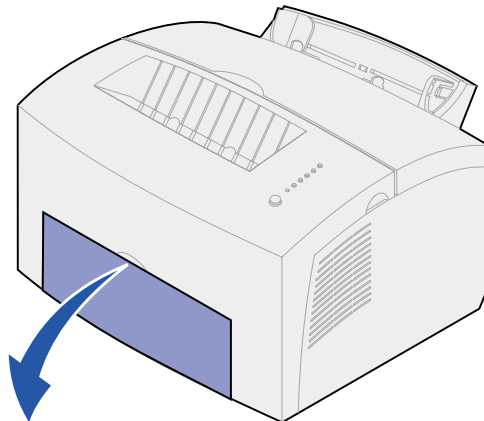
Load up to 10 envelopes in tray 1 or load envelopes one at a time in the manual feed.

In tray 1

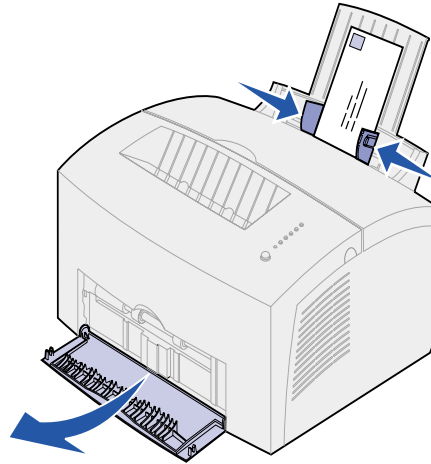
- 1 Extend the rear paper support until you hear a click.



- 2 Open the front output door for a straight-through paper path.



- 3 Load up to 10 envelopes in the *center* of tray 1 and adjust the paper guides to fit the width of the envelopes.



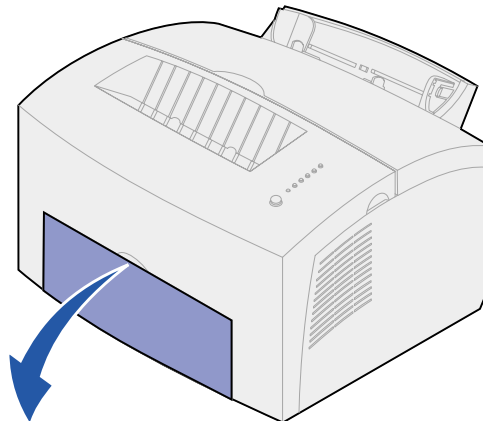
Note: Use envelopes that can withstand temperatures of 200°C (392°F) without sealing, excessive curling, wrinkling or releasing hazardous emissions

- 4 Select the paper type from your software application.
- 5 Start your print job.

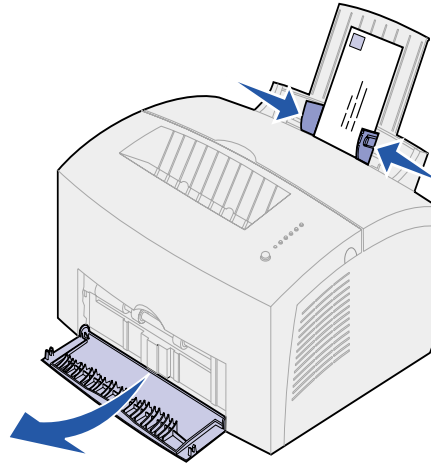
In the manual feed

Use the manual feed to print one envelope at a time. If you experience problems feeding envelopes in tray 1, try printing them one at a time from the manual feed.

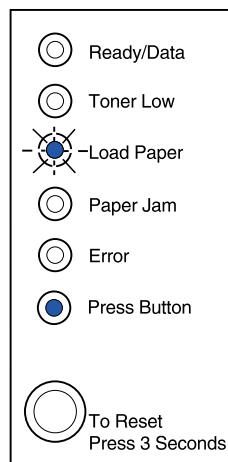
- 1 Open the front output door for a straight-through paper path.



- 2 Load an envelope in the *center* of the manual feed and adjust the paper guides to fit the width of the envelope.



- 3 Select the paper size and type from your software application.
- 4 Start your print job.
- 5 Briefly (approximately one second) push the operator panel button to start printing.
- 6 When the Load Paper light blinks and the Press Button light comes on, place another envelope in the manual feed.



- 7 Push the operator panel button to print another envelope.

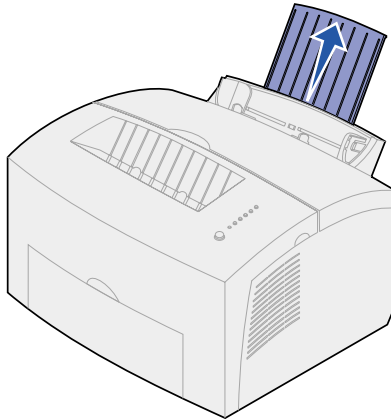
10

Loading labels

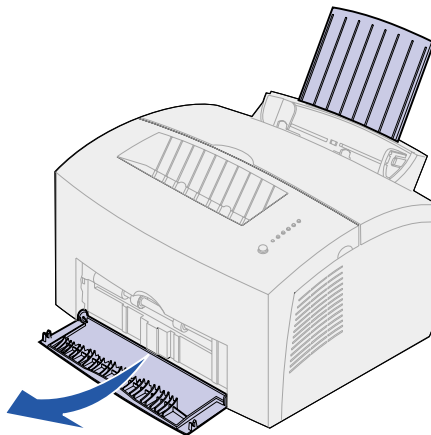
For occasional label printing, use paper labels designed for laser printers. You can load labels one at a time from the manual feed, or you can load up to 10 sheets of labels in tray 1.

In tray 1

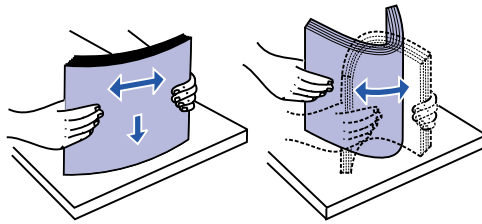
- 1 Extend the rear paper support until you hear a click.



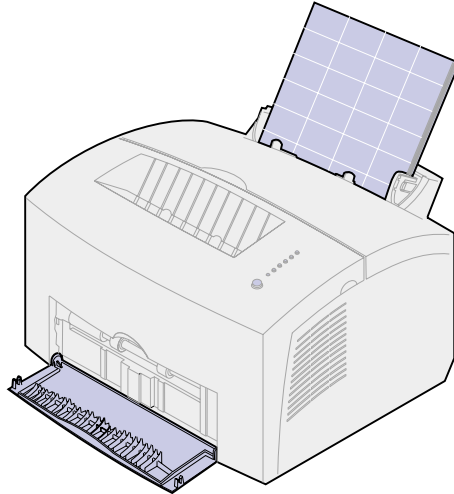
- 2 To reduce curling or potential jams, open the front output door for a straight-through paper path.



- 3 Flex the label sheets back and forth to loosen them, then fan them.

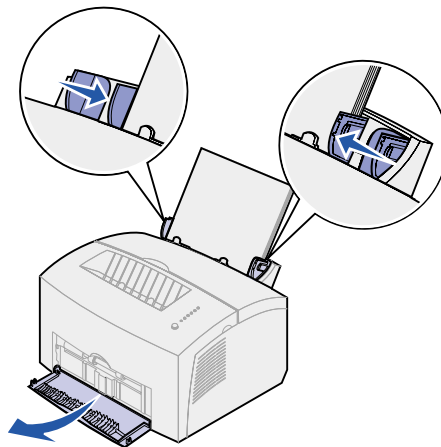


- 4 Load up to 10 label sheets with the side you want to print on facing you.



Note: Use labels with a pressure of 25 psi that can withstand temperatures of 200 °C (392 °F) without releasing hazardous emissions.

- 5 Slide the paper guides against the edges of the label sheets.

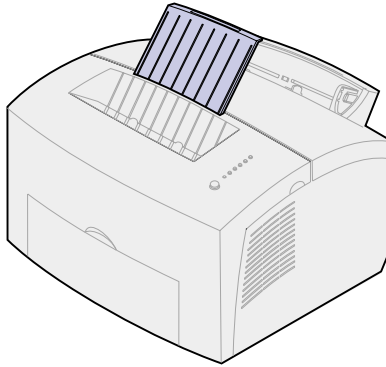


- 6 Select the paper size and type from your software application.
7 Start your print job.

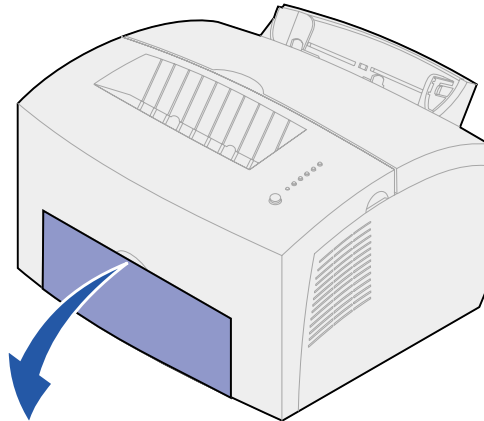
In the manual feed

Use the manual feed to print one label sheet at a time. If you experience problems feeding labels in tray 1, try printing one sheet at a time from the manual feed.

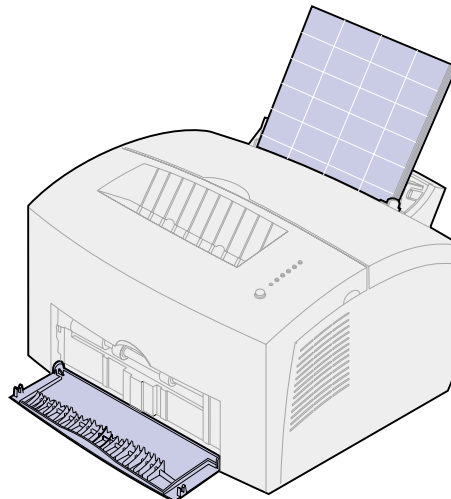
- 1 Extend the front paper support on the paper output bin until you hear a click.



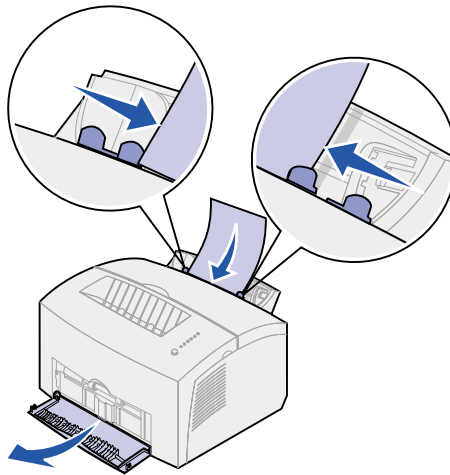
- 2 Open the front output door for a straight-through paper path.



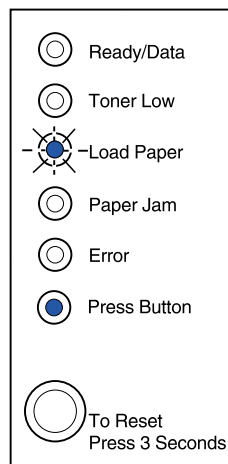
- 3 Load the label sheet with the side you want to print on facing you.



- Slide the paper guides against the edges of the label sheet.



- Select the paper size and type from your software application.
- Start your print job.
- Briefly (approximately one second) push the operator panel button to start printing.
- When the Load Paper light blinks and the Press Button light comes on, place another label sheet in the manual feed.



- Push the operator panel button to print another label sheet.

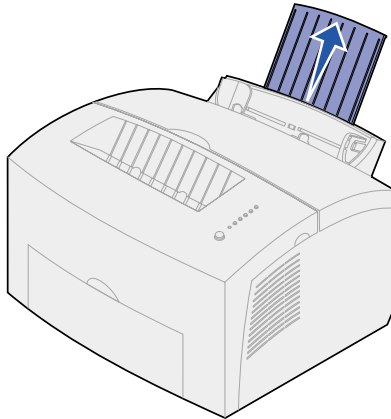
11

Loading card stock

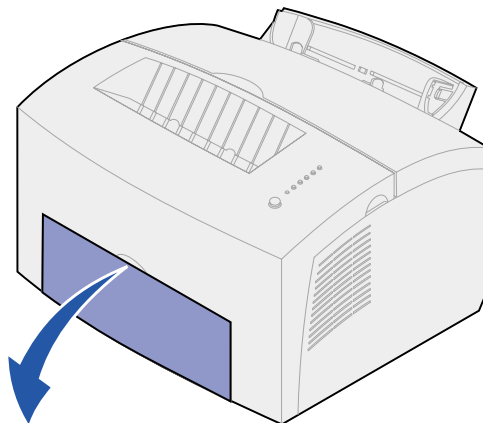
For occasional printing on index Bristol or tag card stock, load up to 10 sheets of card stock or index cards in tray 1. Load one sheet of card stock or one index card at a time in the manual feeder.

In tray 1

- 1 Extend the rear paper support until you hear a click.



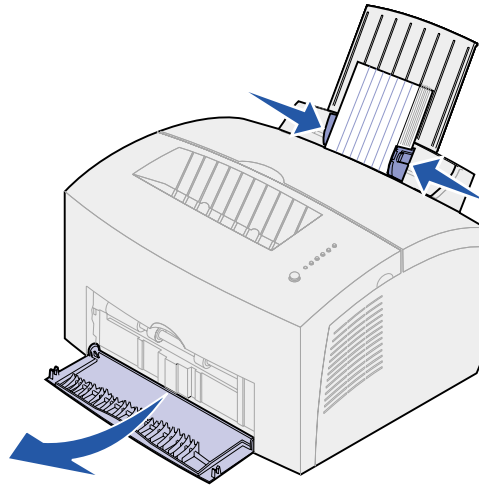
- 2 For best results, open the front output door for a straight-through paper path.



- 3 Load up to 10 sheets of card stock or 10 index cards with the print side facing you.

Note: Use card stock with a pressure of 25 psi that can withstand temperatures of 200 °C (392 °F) without releasing hazardous emissions.

- 4 Slide the paper guides against the edges of the card stock.

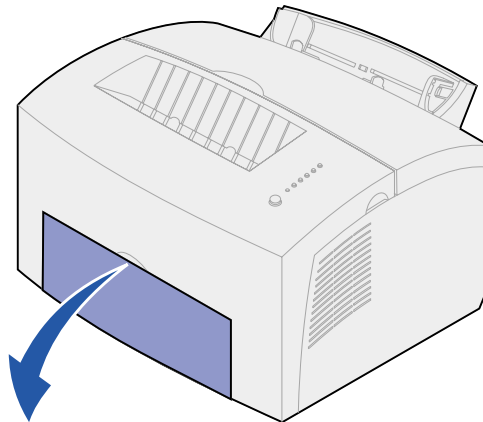


- 5 Select the paper size and type from your software application.
- 6 Start your print job.

In the manual feed

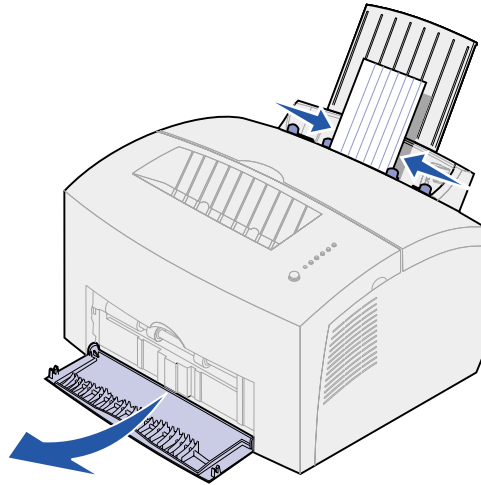
Use the manual feed to print one sheet of card stock or one index card at a time. If you experience problems feeding index cards in tray 1, try printing them one at a time from the manual feed.

- 1 Open the front output door for a straight-through paper path.

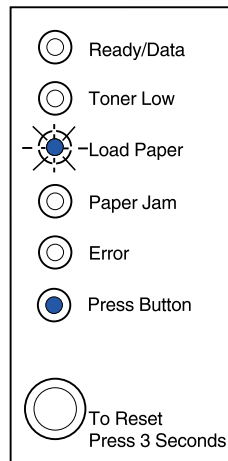


- 2 Load an index card with the print side facing you.

- 3 Slide the paper guides against the edges of the index card.



- 4 Select the paper size and type from your software application.
- 5 Start your print job.
- 6 Briefly (approximately one second) push the operator panel button to start printing.
- 7 When the Load Paper light blinks and the Press Button light comes on, place another index card in the manual feed.

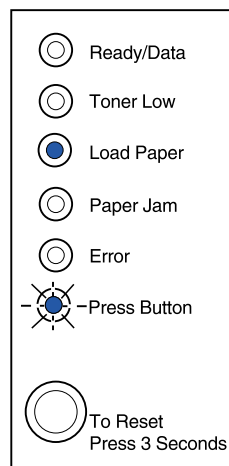


- 8 Push the operator panel button to print another sheet of card stock.

12

Printing on both sides of the paper

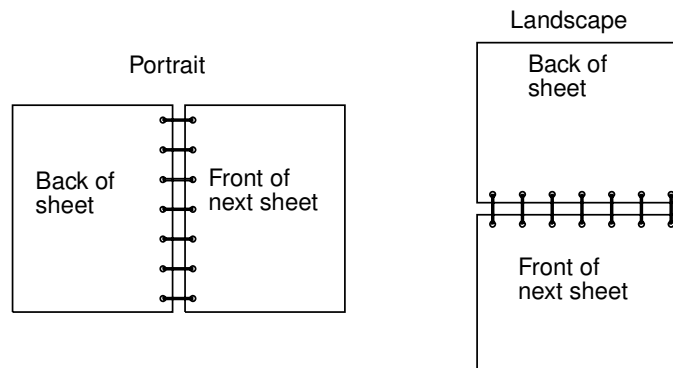
Printing on both sides of the paper reduces printing costs. Select Duplex from your printer driver to format your job to print every other page of the document first. Once the first side of your job prints, the Load Paper light comes on and the Press Button light blinks. Follow the instructions from your driver's pop-up menu to print the corresponding back side to each page.



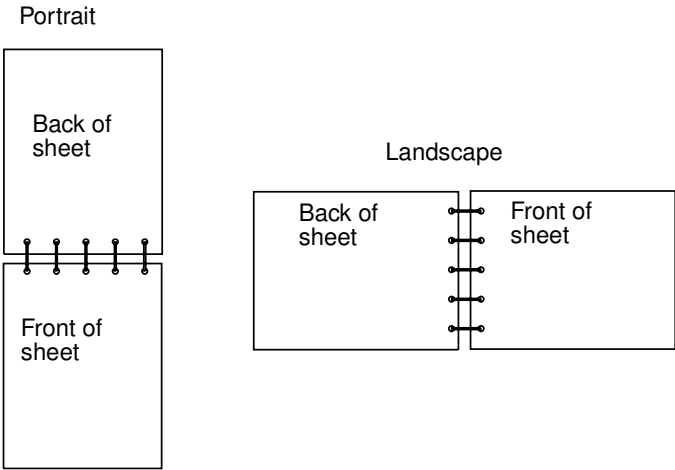
Although you can use tray 1 or the optional tray 2 to print the first side of the duplex job, only use tray 1 to print the second side.

You can also choose how you want your job duplexed: Long Edge or Short Edge.

Long Edge means pages are bound along the long edge of the page (left edge for portrait, top edge for landscape).



Short Edge means the pages are bound along the short edge of the page.



13

Conserving supplies

Conserving supplies lowers printing costs.

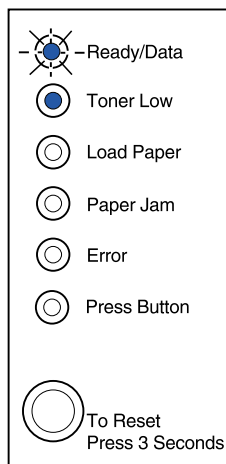
- When printing drafts, conserve toner by changing the Print Darkness setting in your printer driver. The settings range from Very Light to Very Dark. Selecting the Light setting conserves toner.
- Reduce paper consumption by using the manual duplex feature to print on both sides of the paper.

14

Replacing the print cartridge

Removing the old print cartridge

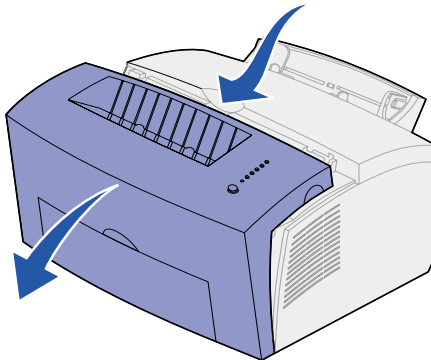
The Toner Low light comes on when the print cartridge is getting low on toner.



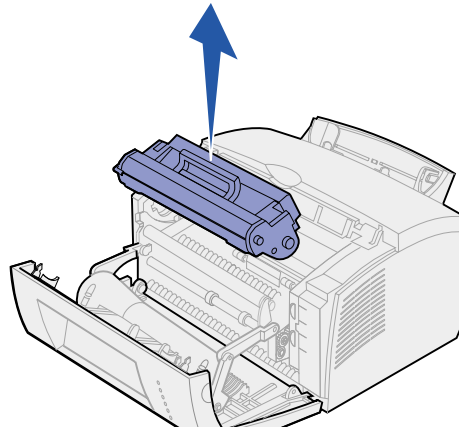
Note: On the entry model, the Toner Low light does not come on if the standard 1,500-page print cartridge is installed.

Removing the print cartridge and shaking it lets you print more pages before replacing it. When it's time to replace the cartridge:

- 1 Use the finger tab to pull down the printer cover.



- 2 Grasp the cartridge handle and pull the print cartridge straight up (it may be warm).

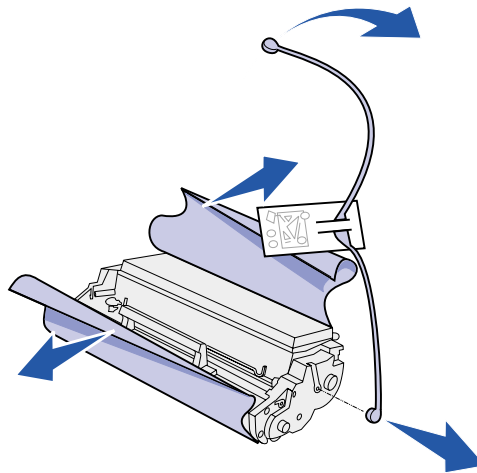


- 3 Set the print cartridge aside.

WARNING: We do not recommend refilling used printer cartridges or purchasing refilled cartridges from a third party. Print quality and printer reliability cannot be guaranteed if you do.

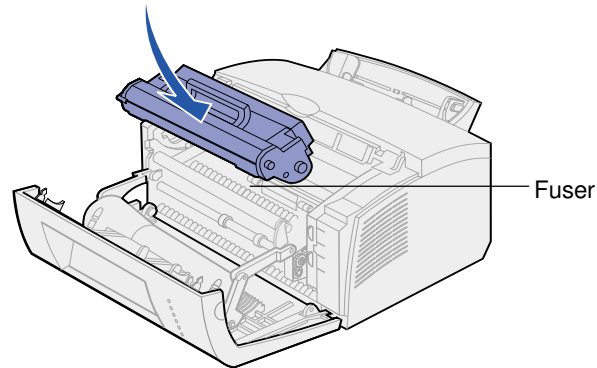
Installing the new print cartridge

- 1 Take the new print cartridge out of the bag.
- 2 Pull off the plastic piece attached to the ends of the print cartridge.
Discard the plastic piece and foam protective packaging.



- 3 Shake the cartridge to distribute the toner evenly.
- 4 Insert the print cartridge.
 - a Align the colored labels on either side of the print cartridge with the corresponding labels in the printer.

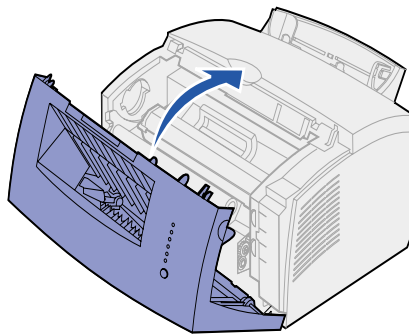
- b** Holding the handle, tilt the cartridge down and guide it between the print cartridge grooves.



- c** Push down on the cartridge until it is firmly in place.

CAUTION: Avoid touching the fuser, it may be hot!

- 5** Close the printer cover.

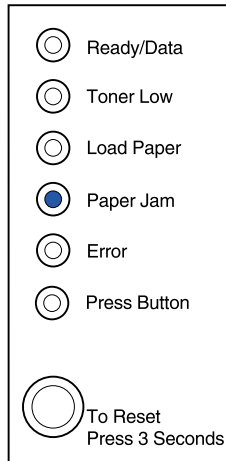


To get the maximum benefit from your print cartridge:

- Do not remove the print cartridge from its packaging until you are ready to install it.
- Store print cartridges in the same environment as the printer.
- Do not remove the print cartridge from the printer except to replace it or to clear a paper jam.

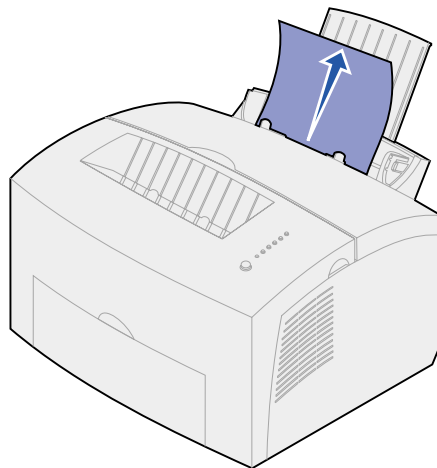
15 Clearing jams

If print media jams in the printer, the Paper Jam light prompts you to clear the paper path.



If media has just started to feed from tray 1 when the jam occurs:

- 1 Pull the media straight up out of tray 1.



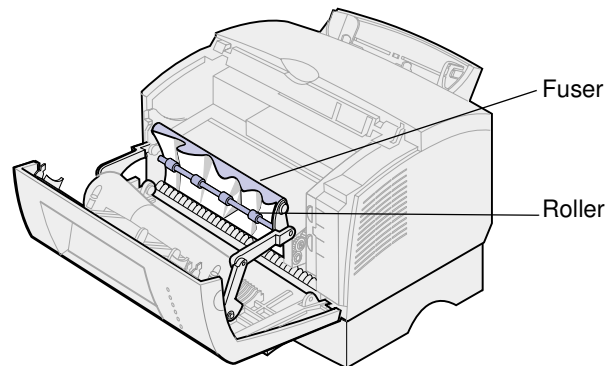
- 2 Press the operator panel button or open and close the printer cover to resume printing.

If the jam occurs in the fuser:

- 1 Open the printer cover.
- 2 **Remove the print cartridge** (it may be warm).

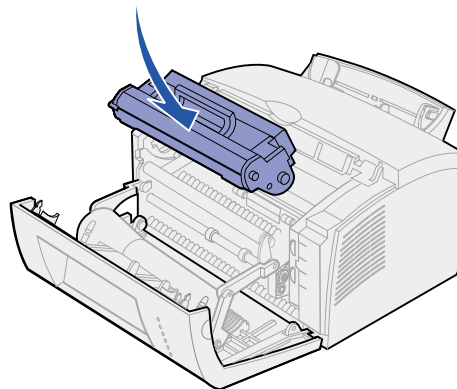
Note: Exposing the photoconductor to light may damage the print cartridge. After you remove the print cartridge from the printer, cover it or store it in a clean, dark place.

- 3 Gently pull out the media.



CAUTION: Avoid touching the fuser, it may be hot!

- 4 If the media is jammed tightly behind the roller, or if you just can't get a grip on it, close the cover, open the front output door, and pull out the paper.
- 5 Make sure there is no more media in the printer.
- 6 Reinstall the print cartridge.



- 7 Close the printer cover to resume printing.

A jam may occur if the output bin is too full and the media is unable to exit the printer:

- 1 Empty the media from the output bin.
- 2 Clear the jam.

If a jam occurs while printing labels from tray 1 or the manual feed:

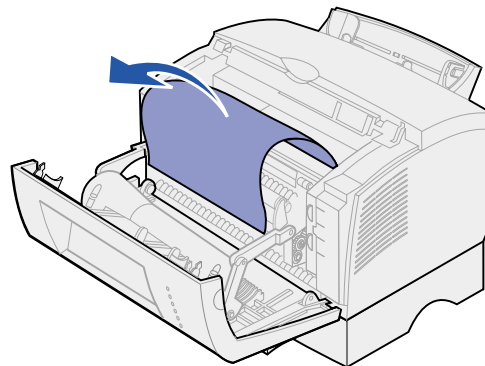
- 1 Be sure the labels remain attached to the backing sheet after clearing the jam.
- 2 Before resuming label printing, load paper in tray 1.
- 3 Press the operator panel button and print 10 or more menu settings pages.

The paper removes any remaining adhesive in or on the fuser.

Note: Serious damage to your printer may occur if adhesive labels remain in the fuser.
Call the place where you bought your printer.

If the jam occurs as the paper exits the optional tray 2 into the printer:

- 1 Open the printer cover.
- 2 Remove the print cartridge (the cartridge may be warm).
- 3 Gently pull the paper toward you.



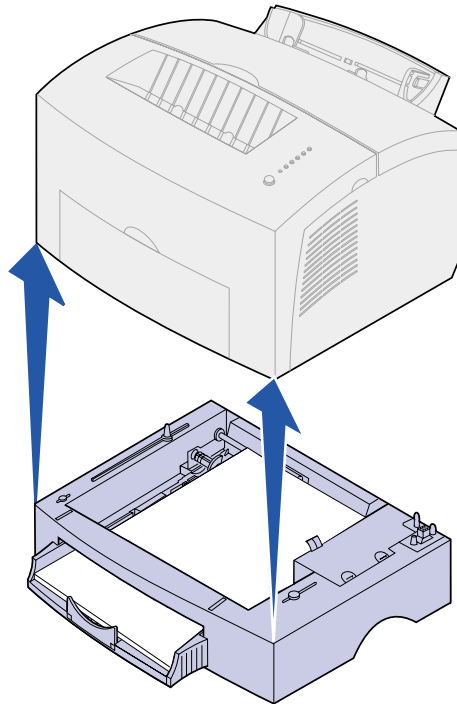
- 4 Reinstall the print cartridge.
- 5 Close the printer cover to resume printing.

If you cannot reach the paper easily:

- 1 Turn off the printer.

Note: You will lose the rest of the print job.

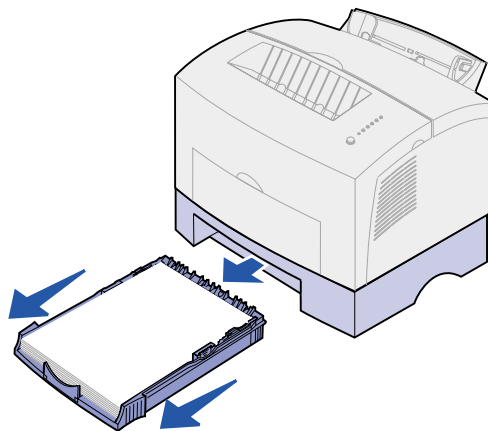
- 2 Lift the printer off the support unit.



- 3 Clear the jam.
- 4 Align the printer with the front of the support unit and place it on top of the support unit.
- 5 Turn on the printer and resend your print job.

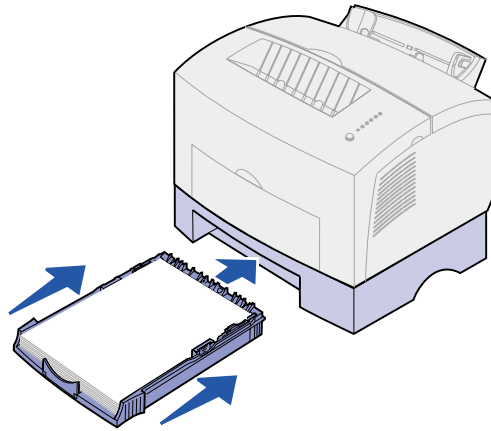
If the jam occurs just after the paper feeds from tray 2:

- 1 Pull tray 2 all the way out.



- 2 Reach inside and gently pull the paper toward you.

- 3 Reinstall the tray and resume printing.



16

Understanding the operator panel lights












The operator panel lights mean different things, depending on their sequence. Lights that are off, on, and/or blinking indicate printer conditions such as printer status, intervention (for example, out of paper), or service.













Some light sequences prompt you to press the operator panel button to clear a printer condition. Press the operator panel button with a *brief button press* (approximately one second) to restart the printer or display an error code.












From the **special function menu**, press the operator panel with a *double-button press* (press and release twice quickly) to display additional error codes or to scroll through the Special Function menu settings.

Press the operator panel with a *long button press* (hold until all the lights come on) to reset the printer or to select a setting in the special function menu.


























The following table shows the most common light sequences. Just click on the indicated page for more information on what it means and what you can do.













Common light sequences:							
Ready/ Data	Toner Low	Load Paper	Paper Jam	Error	Press Button	Printer condition:	Go to page:
						Ready	page 53
						Ready and toner low	page 53
						Busy	page 54
						Busy and toner low	page 54
						Waiting	page 55
						Waiting and toner low	page 55

Common light sequences:							
Ready/ Data	Toner Low	Load Paper	Paper Jam	Error	Press Button	Printer condition:	Go to page:
						Flushing	page 56
						Flushing and toner low	page 56
						Load manual feed	page 57
						Load manual feed and toner low	page 57
						Load tray 1 or the optional tray 2	page 58
						Load tray 1 or the optional tray 2 and toner low	page 58
						Print side two of your duplex print job	page 59
						Jam	page 59
						Jam and toner low	page 60
						Top cover open or print cartridge is not installed	page 60
						Top cover open and toner low	page 61
						Print cartridge error	page 61




















Common light sequences:							
Ready/ Data	Toner Low	Load Paper	Paper Jam	Error	Press Button	Printer condition:	Go to page:
						Flash memory full	page 62
						Flash memory full and toner low	page 62
						Reset user defaults	page 75 , "Solving print quality problems"

The Error and Press Button lights indicate a secondary error has occurred. The following table shows the secondary error codes that are displayed when you press the operator panel button with a double-button press. Just click on the indicated page for more information on what it means and what you can do.

Secondary error code light sequences							
Ready/ Data	Toner Low	Load Paper	Paper Jam	Error	Press Button	Printer condition:	Go to page:
						Secondary error code	page 63
						Secondary error code and toner low	page 63
						Memory full	page 64
						Complex page	page 65
						Short paper	page 65
						Toner low intervention	page 66
						Resolution reduction	page 66

Secondary error code light sequences							
Ready/ Data	Toner Low	Load Paper	Paper Jam	Error	Press Button	Printer condition:	Go to page:
						Font error	page 67
						Insufficient printer memory	page 67
						Insufficient flash memory	page 68
						Error communicating with the host computer	page 68

The following table shows the light sequences in the **special function menu**. Just click on the indicated page for more information on what it means and what you can do.

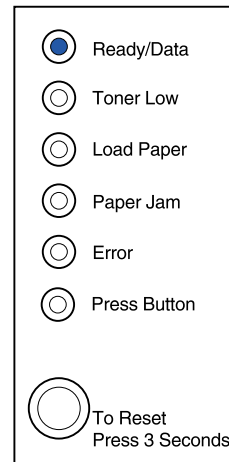
Special function menu light sequences							
Ready/ Data	Toner Low	Load Paper	Paper Jam	Error	Press Button	Printer condition:	Go to page:
						Restore factory defaults	page 76 , "Solving print quality problems"
						Hex Trace mode	page 77 , "Solving print quality problems"
						Print test quality print pages	page 78 , "Solving print quality problems"
						Service error	page 69
						Advanced troubleshooting mode	page 79 , "Advanced troubleshooting"

What this light sequence means:

The printer is ready to receive and process data.

What you can do:

- Send a print job.
- Print a test page by pushing the operator panel button with a brief button press.
- Cancel the job. Push the operator panel button until all the lights come on to reset the printer.



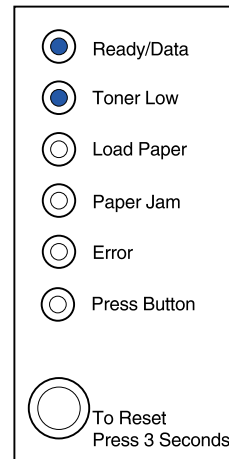
What this light sequence means:

The printer is ready to receive and process data. In addition, the toner in the print cartridge is getting low.

What you can do:

- Send a print job.
- Print a test page by pushing the operator panel button with a brief button press.
- **Remove the print cartridge** and shake it to extend the life of the cartridge.
- **Replace the print cartridge.**
- Cancel the job. Push the operator panel until all the lights come on to reset the printer.

Note: The Toner Low light does not come on if the standard 1,500-page print cartridge is installed in the entry model.

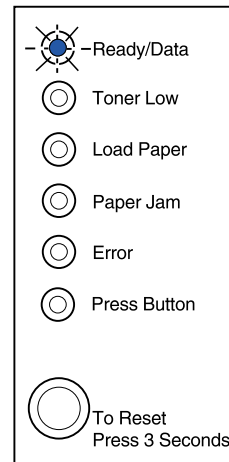


What this light sequence means:

The printer is busy receiving or processing data, or printing a test page.

What you can do:

- Cancel the job. Push the operator panel button until all the lights come on to reset the printer.



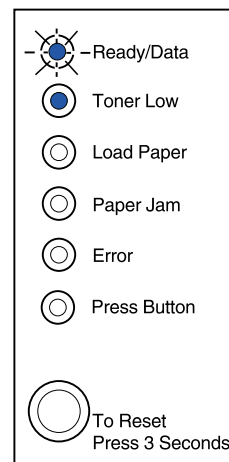
What this light sequence means:

The printer is busy receiving or processing data, or printing a test page. In addition, the toner in the print cartridge is getting low.

What you can do:

- **Remove the print cartridge** and shake it to extend the life of the cartridge.
- **Replace the print cartridge.**
- Cancel the job. Push the operator panel button until all the lights come on to reset the printer.

Note: The Toner Low light does not come on if the standard 1,500-page print cartridge is installed in the entry model.

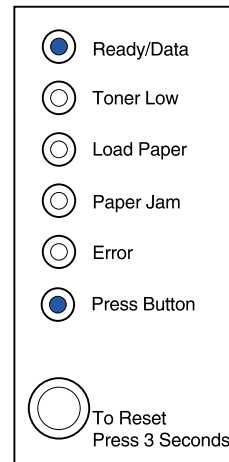


What this light sequence means:

The printer is waiting until a print timeout occurs or until it receives additional data.

What you can do:

- Print data stored in the printer buffer by pushing the operator panel button with a brief button press.



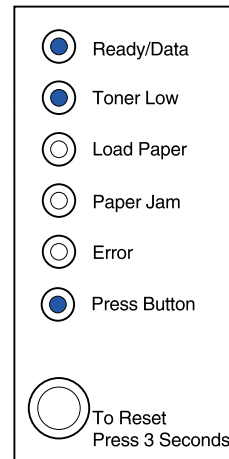
What this light sequence means:

The printer is waiting until a print timeout occurs or until it receives additional data. In addition, the toner in the print cartridge is getting low.

What you can do:

- Print data stored in the printer buffer by pushing the operator panel button with a brief button press or
- **Remove the print cartridge** and shake it to extend the life of the cartridge.
- **Replace the print cartridge.**

Note: The Toner Low light does not come on if the standard 1,500-page print cartridge is installed in the entry model.

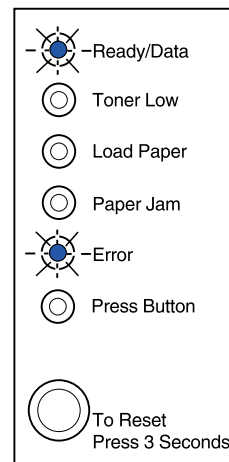


What this light sequence means:

The printer is flushing corrupted print data.

What you can do:

- Wait until the operator panel returns to Ready/Data to print other jobs.



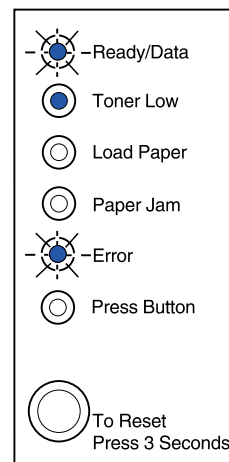
What this light sequence means:

The printer is flushing corrupted print data. In addition, the toner in the print cartridge is getting low.

What you can do:

- Wait until the operator panel returns to Ready/Data to print other jobs.
- **Remove the print cartridge** and shake it to extend the life of the cartridge.
- **Replace the print cartridge.**

Note: The Toner Low light does not come on if the standard 1,500-page print cartridge is installed in the entry model.

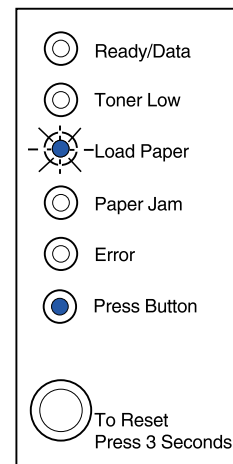


What this light sequence means:

The printer prompts you to load a single sheet of media in the manual feed.

What you can do:

- Load media, with the side to be printed facing the front of the printer, into the manual feed.
- Push the operator panel button to resume printing.



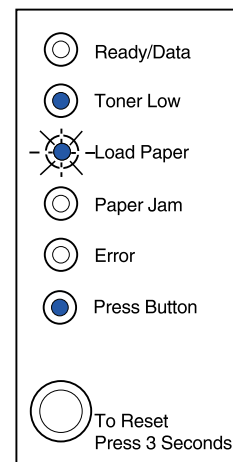
What this light sequence means:

The printer prompts you to load a single sheet of media in the manual feed. In addition, the toner in the print cartridge is getting low.

What you can do:

- Load media, with the side to be printed facing the front of the printer, into the manual feed.
- Push the operator panel button to resume printing.
- **Remove the print cartridge** and shake it to extend the life of the cartridge.
- **Replace the print cartridge.**

Note: The Toner Low light does not come on if the standard 1,500-page print cartridge is installed in the entry model.

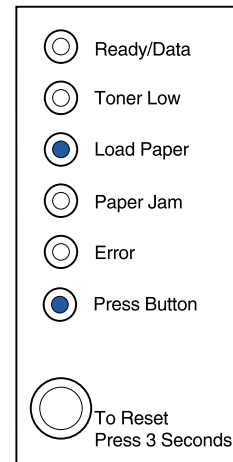


What this light sequence means:

The printer is out of media or envelopes, or the media did not feed properly.

What you can do:

- Load media into tray 1 or the optional tray 2 and push the operator panel button to resume printing.
- Check that the media is loaded correctly in tray 1 or the optional tray 2.
- Cancel the job. Push the operator panel button until all the lights come on to reset the printer.



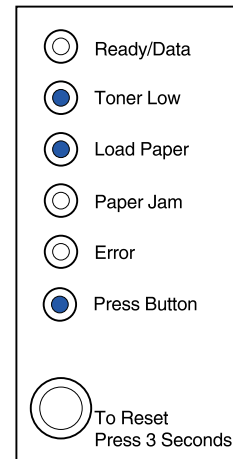
What this light sequence means:

The printer is out of media or envelopes, or the media did not feed properly. In addition, the toner in the print cartridge is getting low.

What you can do:

- Load media into tray 1 or the optional tray 2 and push the operator panel button to resume printing.
- Check that the media is loaded correctly in tray 1 or the optional tray 2.
- **Remove the print cartridge** and shake it to extend the life of the cartridge.
- **Replace the print cartridge.**

Note: The Toner Low light does not come on if the standard 1,500-page print cartridge is installed in the entry model.

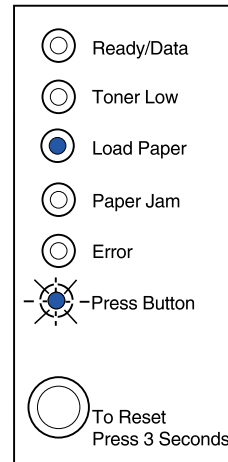


What this light sequence means:

Print the other side of your duplex print job.

What you can do:

- Re-insert your print job in tray 1 using the instructions in the driver pop-up menu to orient the pages correctly.

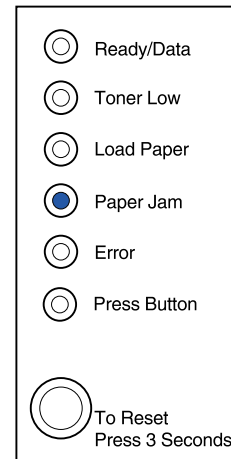


What this light sequence means:

The printer detects a paper jam.

What you can do:

- Open the printer cover, clear all media from the paper path and close the cover to resume printing.
- See **Clearing jams** for more information.



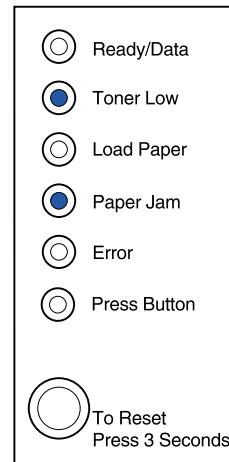
What this light sequence means:

The printer detects a paper jam. In addition, the toner in the print cartridge is getting low.

What you can do:

- Open the printer cover, clear all media from the paper path and close the cover to resume printing.
- See **Clearing jams** for more information.
- **Remove the print cartridge** and shake it to extend the life of the cartridge.
- **Replace the print cartridge.**

Note: The Toner Low light does not come on if the standard 1,500-page print cartridge is installed in the entry model.

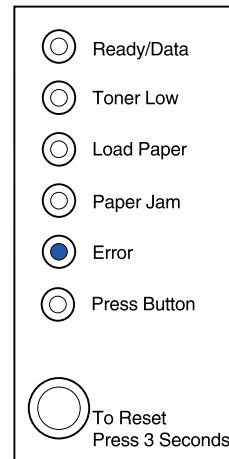


What this light sequence means:

The printer top cover is open or the print cartridge is not installed.

What you can do:

- Close the cover to display the light sequence that appeared before the cover was opened.
- Install the print cartridge.



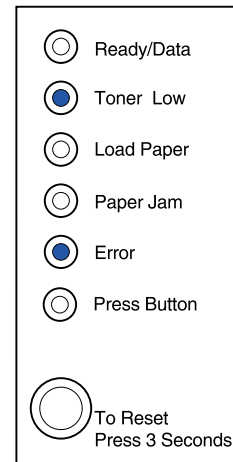
What this light sequence means:

The printer top cover is open or the print cartridge is not installed. In addition, the toner in the print cartridge is getting low.

What you can do:

- Close the cover to display the light sequence that appeared before the cover was opened.
- Install the print cartridge.
- **Remove the print cartridge** and shake it to extend the life of the cartridge.
- **Replace the print cartridge.**

Note: The Toner Low light does not come on if the standard 1,500-page print cartridge is installed in the entry model.

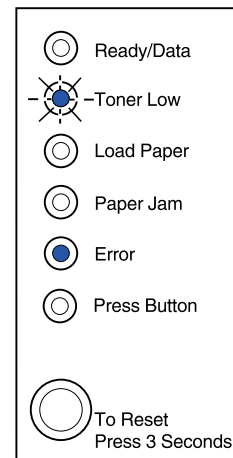


What this light sequence means:

- The print cartridge is not installed or the printer detects a print cartridge error. Replace it.

What you can do:

- If the print cartridge is not installed, install it.
- If the print cartridge is installed, remove it and install a new print cartridge (see **Replacing a print cartridge**).

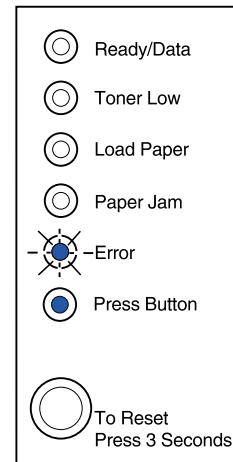


What this light sequence means:

The printer flash memory is full.

What you can do:

- Print data without saving it in flash memory by pushing the operator panel button with a brief button press.
- Cancel the job. Push the operator panel button until all the lights come on to reset the printer.



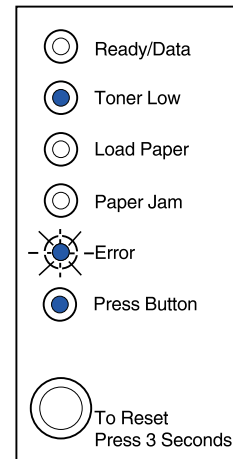
What this light sequence means:

The printer flash memory is full. In addition, the toner in the print cartridge is getting low.

What you can do:

- Print data without saving it in flash memory by pushing the operator panel button with a brief button press.
- **Remove the print cartridge** and shake it to extend the life of the cartridge.
- **Replace the print cartridge.**
- Cancel the job. Push the operator panel button until all the lights come on to reset the printer.

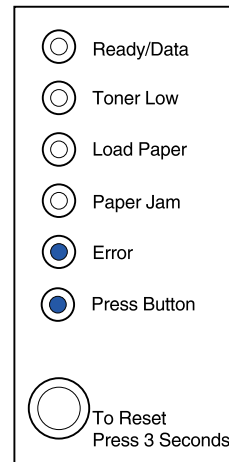
Note: The Toner Low light does not come on if the standard 1,500-page print cartridge is installed in the entry model.



What this light sequence means:

The printer has one of the following errors:

- Memory is full
- Received a page that is too complex to print
- Received a page that is shorter than the page set
- Reduces the resolution of a formatted page to 300 dpi before printing
- Has a PPDS font error
- Doesn't have enough memory to save what is in the buffer
- Doesn't have enough memory to defragment flash memory
- Cannot communicate with the host computer



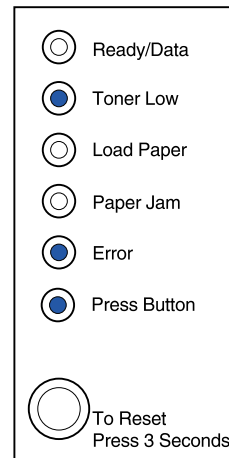
What you can do:

From the **special function menu**, press the operator panel button with a double-button press to display the specific error.

What this light sequence means:

The printer has one of the following errors:

- Memory is full
- Received a page that is too complex to print
- Received a page that is shorter than the page set
- Reduces the resolution of a formatted page to 300 dpi before printing
- Has a PPDS font error
- Doesn't have enough memory to save what is in the buffer
- Doesn't have enough memory to defragment flash memory
- Cannot communicate with the host computer



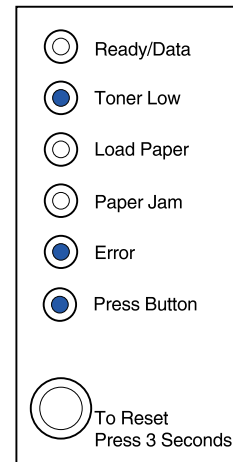
In addition, the toner in the print cartridge is getting low.

–Continued–

What you can do:

From the **special function menu**, press the operator panel button with a double-button press to display the specific error.

- **Remove the print cartridge** and shake it to extend the life of the cartridge.
- **Replace the print cartridge.**

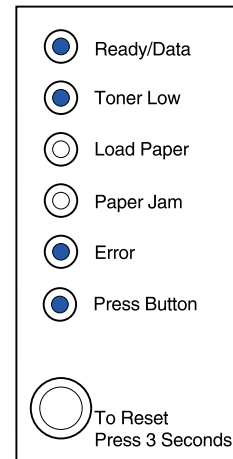


What this light sequence means when you press the operator panel button with a double-button press from the **special function menu**:

The printer memory is full.

What you can do:

- Reduce the complexity of the job and/or the resolution.
- Press the operator panel button with a brief button press to resume printing.
- Cancel the job. Push the operator panel button until all the lights come on to reset the printer.

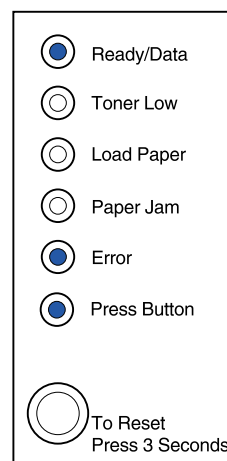


What this light sequence means when you press the operator panel button with a double-button press from the special function menu:

The printer has received a page that is too complex to print.

What you can do:

- Reduce the complexity of the job and/or the resolution.
- Press the operator panel button with a brief button press to resume printing.
- Cancel the job. Push the operator panel button until all the lights come on to reset the printer.

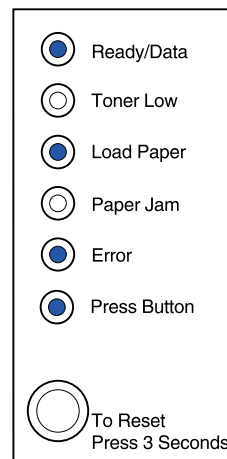


What this light sequence means when you press the operator panel button with a double-button press from the special function menu:

The paper length is too short to print the formatted data. This occurs when the printer does not know the media size loaded in the tray, or there is a problem feeding the media.

What you can do:

- Make sure the print media you loaded is large enough.
- Open the printer cover, clear the paper path and close the cover to resume printing (see **Clearing jams**).
- Press the operator panel button with a brief button press to resume printing.
- Cancel the job. Push the operator panel button until all the lights come on to reset the printer.

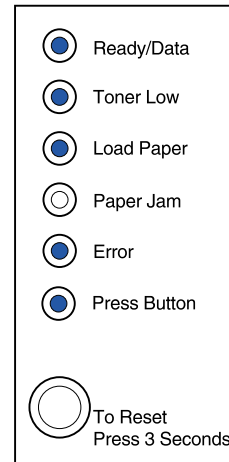


What this light sequence means when you press the operator panel button with a double-button press from the special function menu:

The toner is low and the toner alarm is set to on.

What you can do:

- Press the operator panel button with a brief button press to resume printing.
- **Replace the print cartridge.**
- Cancel the job. Push the operator panel button until all the lights come on to reset the printer.

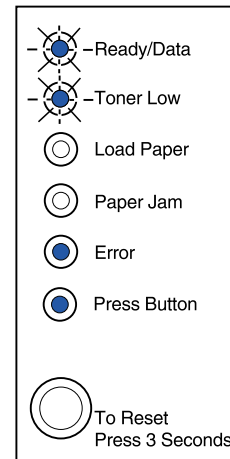


What this light sequence means when you press the operator panel button with a double-button press from the special function menu:

The printer has run out of memory while formatting a page and is forced to reduce the resolution to 300 dpi before printing it.

What you can do:

- Push the operator panel button to resume printing.
- Install additional memory.
- Cancel the job. Push the operator panel button until all the lights come on to reset the printer.

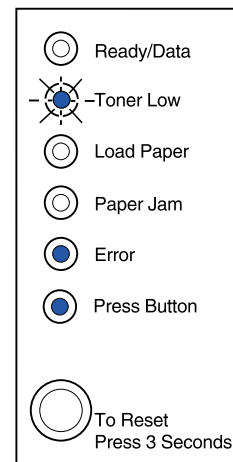


What this light sequence means when you press the operator panel button with a double-button press from the special function menu:

The printer has received a request for a PPDS font which is not installed.

What you can do:

- Cancel the job. Push the operator panel button until all the lights come on to reset the printer.

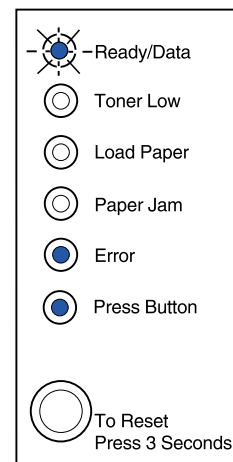


What this light sequence means when you press the operator panel button with a double-button press from the special function menu:

The printer doesn't have enough memory to save the data in the buffer.

What you can do:

- Install additional memory.
- Push the operator panel button with a brief button press to resume printing.
- Cancel the job. Push the operator panel button until all the lights come on to reset the printer.

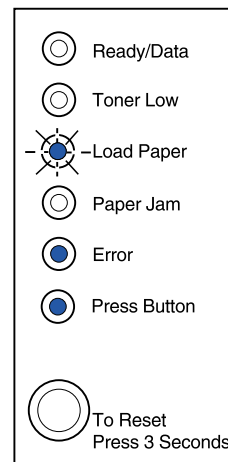


What this light sequence means when you press the operator panel button with a double-button press from the special function menu:

The printer has insufficient memory to free up unused space in flash memory.

What you can do:

- Delete fonts, macros, and other data in RAM.
- Install additional printer memory and then issue a P.J.L command to free up unused space in flash memory.



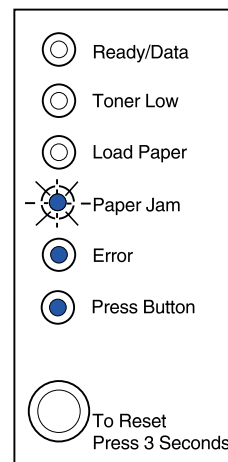
What this light sequence means when you press the operator panel button with a double-button press from the special function menu:

The printer has an error communicating with the host computer.

This light sequence is displayed if:

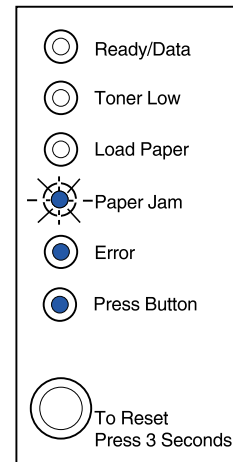
- Your printer is connected to the network, but it can't detect the print server when you first turn the printer on.
- The computer attempts to communicate with the printer through the parallel port, but the port setting has been disabled in advanced troubleshooting mode.
- The computer attempts to communicate with the printer through the USB port, but the port has been disabled in advanced troubleshooting mode.

–Continued–



What you can do:

- Check that the Ethernet cable is still plugged into the printer.
- Print a test page to verify that the parallel buffer setting or USB buffer setting is disabled (see **Parallel port enabled** or **USB port enabled** in Advanced Troubleshooting).

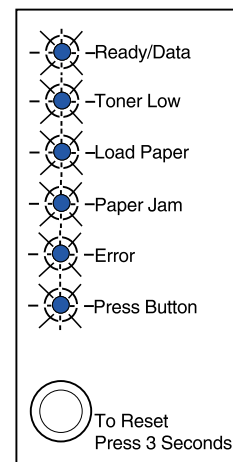


What this light sequence means when you press the operator panel button with a double-button press from the special function menu:

The printer has a service error and printing has stopped.

What you can do:

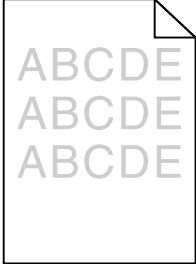
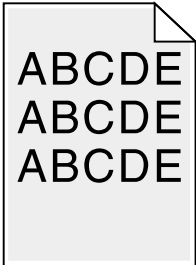
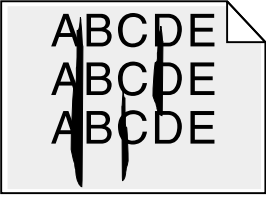
- Turn the printer off and back on. If the lights are still blinking, contact the place where you bought your printer.

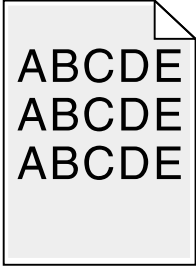
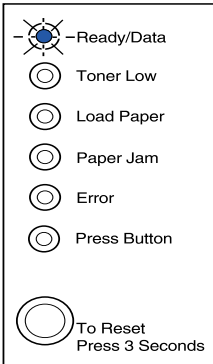
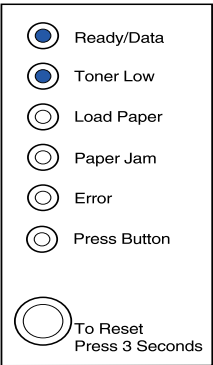


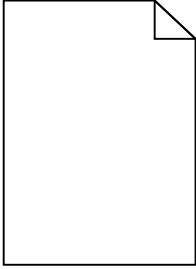
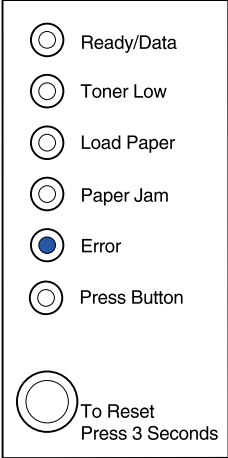
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Solving print quality problems

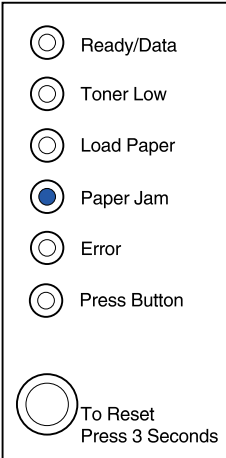
Use the following tables to find solutions for printing problems you have encountered. If you cannot fix the problem, contact the place where you bought your printer. You may have a printer part that requires cleaning or replacement by a service technician.

Problem	What to do
<p>Light or blurred characters.</p> 	<p>The print cartridge may be getting low on toner:</p> <ol style="list-style-type: none"> 1 Remove the print cartridge. 2 Shake it from side to side to redistribute the toner. 3 Reinstall it. <ul style="list-style-type: none"> • Make sure you are using recommended print media (see Media types and sizes.) • If you are printing on special media, for example, card stock or labels, be sure you selected the correct paper type in the printer driver. • The printer detects a print cartridge error. Replace it.
<p>Toner smudges appear on the front or back of the page.</p> 	<ul style="list-style-type: none"> • Make sure the paper is straight and unwrinkled. • Replace the print cartridge.
<p>Vertical or horizontal streaks appear on the page.</p> 	<ul style="list-style-type: none"> • Replace the print cartridge.

Problem	What to do
<p>Toner smears or rubs off the page.</p> 	<ul style="list-style-type: none"> • Try a different kind of paper. Paper designed for copiers give the best quality. • If you are printing on special media, for example, card stock or labels, be sure you selected the correct paper type in the printer driver. • Try changing the media weight to a heavier setting and the texture to a rougher setting. To change these settings download the IBM Infoprint 1116 Setup Utility from the IBM Web site (www.ibm.com).
<p>The print is getting light but the Toner Low light is not on.</p> 	<ul style="list-style-type: none"> • The Toner Low light does not come on if the standard 1,500-page print cartridge is installed in the printer. • Remove the print cartridge and shake it from side to side to redistribute the toner. • Replace the print cartridge.
<p>The Toner Low light is on.</p> 	<ul style="list-style-type: none"> • Remove the print cartridge and shake it to extend the life of the cartridge. • Replace the print cartridge.
<p>Solid black areas on transparencies or paper contains white streaks.</p>	<ul style="list-style-type: none"> • Choose a different fill pattern in your software application. • Try a different type of paper. Paper designed for copiers give the best quality. • Remove the print cartridge and shake it from side to side to redistribute the toner. • Replace the print cartridge.
<p>Faint images or repetitive spots appear on the page.</p>	<ul style="list-style-type: none"> • Try a different type of paper. Paper designed for copiers give the best quality. • Replace the print cartridge.

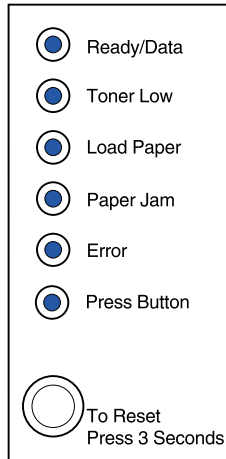
Problem	What to do
<p>Pages are blank.</p> 	<ul style="list-style-type: none"> • The print cartridge may be out of toner. Replace the cartridge. • You may have a software error. Try turning the printer off and back on.
<p>The printer has missing or damaged parts.</p>	<ul style="list-style-type: none"> • Contact the place where you bought your printer.
<p>The operator panel lights do not come on when the printer is turned on.</p>	<ul style="list-style-type: none"> • The lights may take a few seconds to come on. • Make sure the power cord is firmly plugged in at the back of the printer and at the wall outlet.
<p>You cannot close the top cover.</p>	<ul style="list-style-type: none"> • Make sure the print cartridge is positioned correctly.
<p>The printer is on, but nothing prints.</p>	<ul style="list-style-type: none"> • Make sure the print cartridge is installed. • Make sure the parallel or USB cable is firmly plugged into the connector on the back of the printer. • Press the operator panel button with a brief button press to print a menu settings page to determine if the problem is with the printer or the computer. <ul style="list-style-type: none"> – If you can print a menu settings page, the problem is in the computer or the software application. – If you cannot print a menu settings page, call the place where you bought your printer.
<p>Toner light is on and printing stops.</p>	<ul style="list-style-type: none"> • If the Toner Alarm is enabled, the printer stops printing until you replace the print cartridge. <p>Note: Download the IBM Infoprint 1116 Setup Utility from the IBM Web site (www.ibm.com) to change the Toner Low alarm setting.</p>
<p>The printer is on and the Error light is on.</p> 	<ul style="list-style-type: none"> • Make sure the print cartridge is installed.

Problem	What to do
The media skews or buckles.	<ul style="list-style-type: none"> • Don't overfill tray 1 or the optional tray 2 (see media capacities in the Media types and sizes table). • Make sure the paper guides are flush against the edges of the media.
The paper sticks together/printer feeds multiple sheets of paper.	<ul style="list-style-type: none"> • Remove the paper from tray 1 or the optional tray 2 and fan the paper. • Don't overfill tray 1 or the optional tray 2 (see media capacities in the Media types and sizes chart).
The paper fails to feed from tray 1.	<ul style="list-style-type: none"> • Remove the paper from tray 1 and fan the paper. • Make sure tray 1 is selected from the printer driver. • Do not overfill the tray.
The paper fails to feed from the optional tray 2.	<ul style="list-style-type: none"> • Make sure the optional tray 2 is selected from the printer driver. • Make sure the tray is pushed all the way in. • Make sure the metal plate is pressed down before inserting it into the printer. <div data-bbox="857 783 1096 1031" data-label="Image"> </div> <p data-bbox="654 1056 1320 1113">Note: After the tray is inserted, the metal plate springs back up so the paper can feed into the printer.</p> <ul style="list-style-type: none"> • Make sure the paper does not exceed the stack height indicator. • Make sure the paper is under both corner bucklers (see Loading Paper). • Remove the paper from the optional tray 2 and fan the paper.
<p>The Load Paper light is on even though there is paper loaded in the optional tray 2.</p> <div data-bbox="329 1381 553 1837" data-label="Image"> </div>	<ul style="list-style-type: none"> • Make sure the tray is pushed all the way in.

Problem	What to do
<p>The Jam light is still on even though you cleared the jam.</p> 	<ul style="list-style-type: none"> • Make sure you cleared all jams. • Push the operator panel button or open and close the printer cover to restart the printer. • Make sure the print cartridge is installed.
<p>Unexpected characters print or characters are missing.</p>	<ul style="list-style-type: none"> • Make sure you are using the correct printer driver. • From the special function menu, select Hex Trace mode to determine what the problem is. • From the special function menu, select restore factory defaults. • Make sure the parallel cable or USB cable is firmly plugged in at the back of the printer.
<p>Jobs are not printing and the Error light is on solid.</p>	<ul style="list-style-type: none"> • Make sure the print cartridge is installed. • Make sure the printer top cover is closed.
<p>While in PostScript Level 2 emulation, the printer is flushing data (Ready/Data and Error indicator lights are blinking).</p>	<ul style="list-style-type: none"> • Make sure you are using the correct PostScript driver. • The printer does not support PostScript. • The printer doesn't have enough memory to print the job. Install more memory.
<p>You want to use manual duplex but cannot find it on your printer driver.</p>	<ul style="list-style-type: none"> • Your printer driver may not support manual duplex.
<p>While using manual duplex, the printer gets a paper jam.</p>	<p>A paper jam interrupts the duplex process. As a result, the information on the page that jammed is lost.</p> <ul style="list-style-type: none"> • Cancel your print job and press the operator panel with a long button press (approximately 3 seconds) to reset the printer. • Resend your print job.
<p>You keep getting paper jams while using manual duplex.</p>	<p>Try using 20# xerographic paper or 80 g/m² A4 paper.</p>

Resetting user defaults

When formatting problems occur or unexpected characters print, try resetting the printer default settings to your user defaults. Press and hold the operator panel button until all of the lights come on.



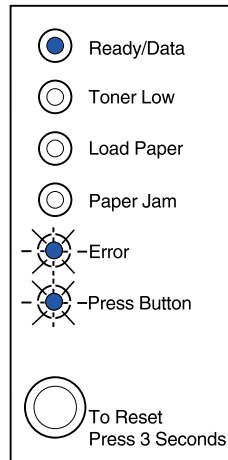
Using the special function menu

Printer settings for solving print quality problems are found in the special function menu: **restore factory defaults**, **Hex Trace**, **print quality test pages**, and **advanced troubleshooting mode**.

To enter the special function menu:

- 1** Turn off the printer.
- 2** Open the top cover.
- 3** Turn the printer back on.
- 4** When the Error light comes on, indicating the top cover is open, press and release the operator panel button twice quickly (double-button press).

- 5 When the Error light and Press Button light blink, close the cover.

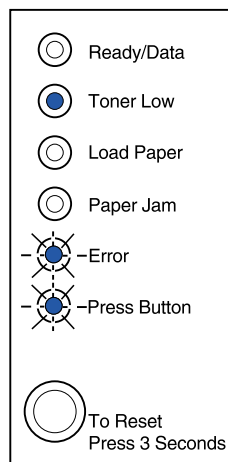


The special function menu is activated.

Restoring factory defaults

Sometimes resetting the printer to the original factory default settings solves formatting problems.

- 1 Enter the **special function menu**.
- 2 Press and release the operator panel button twice quickly (double-button press) until the Toner Low light comes on and the two bottom lights blink.



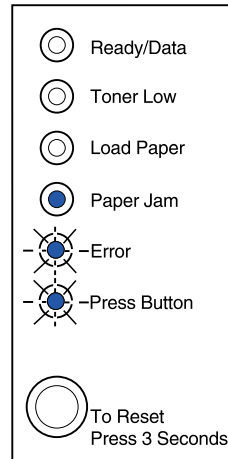
- 3 Press the operator panel with a long button press (hold until all the lights come on) to reset the printer to the original factory defaults.

Once the settings are returned to the factory default values, the printer returns to the Ready state.

Using Hex Trace mode

When unexpected characters print or characters are missing, use Hex Trace to help you determine if there is a problem with the language interpreter or the cable. Hex Trace isolates printing problems by telling you what information your printer is receiving.

- 1 Enter the **special function menu**.
- 2 Press and release the operator panel button twice quickly (double-button press) three times until the Paper Jam light comes on and the two bottom lights blink.



- 3 Press the operator panel button with a long button press (hold until all the lights come on) to select the Hex Trace setting.
- 4 Press the operator panel button with another long button press to initiate Hex Trace.

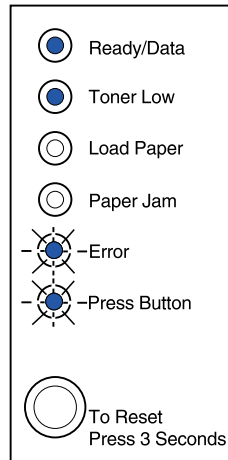
Data sent to the printer is printed out in hexadecimal and character representation to help isolate the source of the problem.

To exit Hex Trace mode, turn off the printer or press the operator panel with a long button press.

Using print quality test pages

To help isolate print quality problems, like streaking, print test pages using the print quality test pages setting:

- 1 Enter the **special function menu**.
- 2 Press and release the operator panel button twice quickly (double-button press) four times until the Ready/Data and Toner Low light come on and the bottom two lights blink.



- 3 Press the operator panel button with a long button press (hold until all the lights come on) to initiate Print Quality Test Pages.

Three pages print to help you evaluate print quality. The first page has registration marks, the second page is gray, and the third page is black. Once the paper exits into the output bin, the printer returns to the Ready state.

- 4 Use the test pages to isolate problems such as print is too light, toner streaks, and so on. See the **Troubleshooting tables** for solutions to these problems.
- 5 To exit print quality test pages, press the operator panel button with a long button press (hold until all the lights come on).

Advanced troubleshooting mode

Go to **Advanced troubleshooting** for information about advanced troubleshooting mode settings.

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Advanced troubleshooting

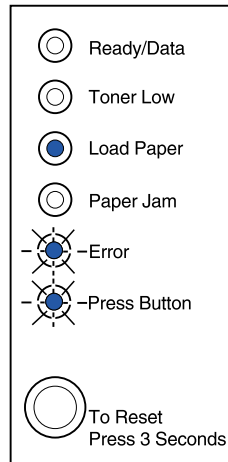
Advanced users can set some printer functions through the operator panel to help resolve a printing problem.

- Parallel Port Settings
 - **Enable Port**
 - **NPA Mode**
 - **Protocol**
 - **Mode 1**
 - **Mode 2**
 - **Strobe Adjust**
- **PPDS Activated**
- USB Settings
 - **Enable Port**
 - **NPA Mode**
- **Auto LFCR after CRLF**

To enter this advanced troubleshooting mode, you must be in the Special Function Menu:

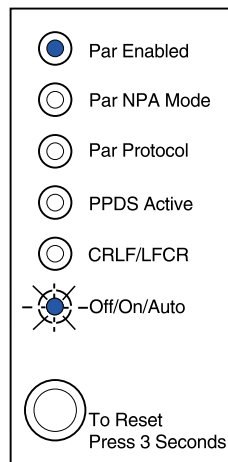
- 1** Turn off the printer.
- 2** Open the top cover.
- 3** Turn the printer back on.
- 4** When the Error light comes on, indicating the top cover is open, press the operator panel button with a double button press.
- 5** When the Error light and Press Button light blink, close the cover.

- 6 Press and release the operator panel button twice quickly (double-button press) until the Load Paper light comes on and the two bottom lights blink.

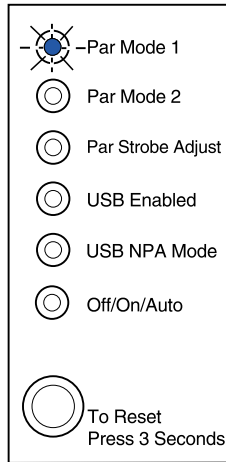


- 7 Press the operator panel until all the lights come on to initiate the advanced troubleshooting mode.

When the printer is in the advanced troubleshooting mode, the operator panel lights take on new meanings based on their function. This illustration represents the operator panel settings in the advanced troubleshooting mode when an operator panel light is on.

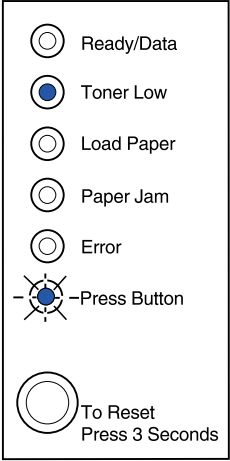
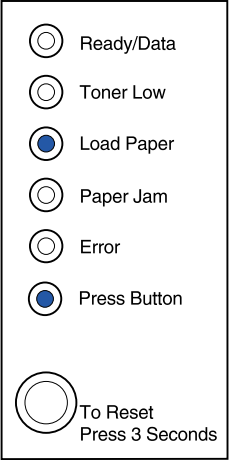


This illustration represents the operator panel settings in advanced troubleshooting mode when an operator panel light is blinking.

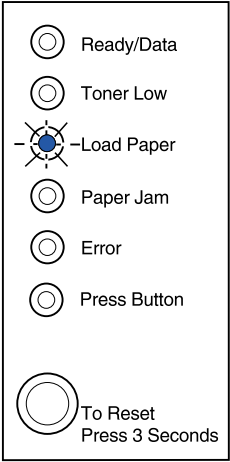
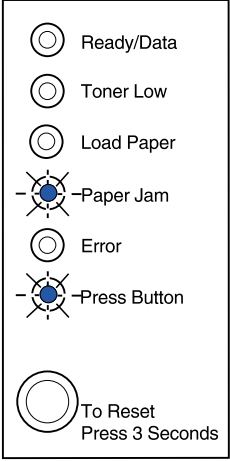


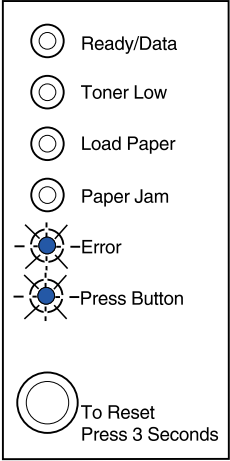
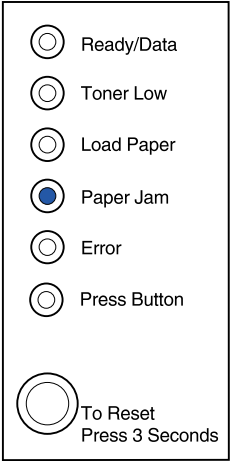
The following tables describe the function of each of these settings in advanced troubleshooting mode.

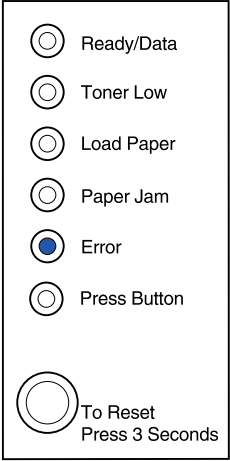
This light sequence in advanced troubleshooting mode:	Corresponds to this setting:
<p>Diagram illustrating the operator panel settings in advanced troubleshooting mode when an operator panel light is blinking. The settings are:</p> <ul style="list-style-type: none"> Ready/Data Toner Low Load Paper Paper Jam Error Press Button (Blinking) To Reset Press 3 Seconds 	<p>For entry and standard models, Parallel Port Enabled is set to Auto, the factory default.</p> <p>If your printer encounters a memory shortage when trying to print a job and you are not using the parallel port, turn off Parallel Port Enabled to free up memory:</p> <ul style="list-style-type: none"> Press the operator panel button with a brief button press to scroll through the settings (Off, On, Auto). Press the operator panel button with a long button press to select and save the Off setting. As the setting is saved, all operator panel lights remain on for approximately 2 seconds. To scroll to the next menu item, NPA Mode (Parallel), press the operator panel button with a double button press. <p>Turn off the printer to exit the advanced troubleshooting mode.</p>

This light sequence in advanced troubleshooting mode:	Corresponds to this setting:
	<p>For entry and standard models, Parallel NPA Mode is set to Auto, the factory default.</p> <p>When NPA Mode is set to On, your computer can send print jobs to the printer and query printer status information simultaneously:</p> <ul style="list-style-type: none"> • Press the operator panel button with a brief button press to scroll through the settings (Off, On, Auto). Press the operator panel button with a long button press to select and save the On setting. As the setting is saved, all operator panel lights remain on for approximately 2 seconds. • Press the operator panel button with a double button press to scroll to the next menu item, Parallel Protocol. <p>Turn off the printer to exit the advanced troubleshooting mode.</p>
	<p>For entry and standard models, Parallel Protocol is set to Fastbytes, the factory default.</p> <p>When the protocol is set to Fastbytes, the printer receives information at a much faster transmission rate, provided the host computer supports Fastbytes.</p> <p>When the protocol is set to Standard, the printer receives transmission at a normal transmission rate.</p> <ul style="list-style-type: none"> • Press the operator panel button with a brief button press to scroll through the settings (Fastbytes, Standard). To change the setting to Standard, press the operator panel button with a long button press to select and save the Standard setting. As the setting is saved, all operator panel lights remain on for approximately 2 seconds. • To scroll to the next menu item, Parallel Mode 1, press the operator panel button with a double button press. <p>Turn off the printer to exit the advanced troubleshooting mode.</p>

This light sequence in advanced troubleshooting mode:	Corresponds to this setting:
<p>Ready/Data Toner Low Load Paper Paper Jam Error Press Button To Reset Press 3 Seconds</p>	<p>For entry and standard models, Parallel Mode 1 is set to On, the factory default.</p> <p>This setting disables the pull-up resistors on the parallel port signals. It is useful for computers that have open collector outputs on the parallel port signals.</p> <ul style="list-style-type: none"> • Press the operator panel button with a double button press to scroll to the next menu item, Parallel Mode 2. • Turn off the printer to exit the advanced troubleshooting mode.
<p>Ready/Data Toner Low Load Paper Paper Jam Error Press Button To Reset Press 3 Seconds</p>	<p>For entry and standard models, Parallel Mode 2 is set to On, the factory default.</p> <p>This setting determines if the parallel port data is sampled on the leading or trailing edge of strobe. If Parallel Mode 2 is set to On, the parallel port data is sampled on the leading edge of strobe. The parallel port data is sampled on the trailing edge of strobe if Parallel Mode 2 is set to Off.</p> <ul style="list-style-type: none"> • Press the operator panel button with a brief button press to scroll through the settings (On, Off). To turn off this setting, press the operator panel button with a long button press to select and save the Off setting. As the setting is saved, all operator panel lights remain on for approximately 2 seconds • Press the operator panel button with a double button press to scroll to the next menu item, Parallel Strobe Adjust. <p>Turn off the printer to exit the advanced troubleshooting mode.</p>

This light sequence in advanced troubleshooting mode:	Corresponds to this setting:
	<p>For entry and standard models, Parallel Strobe Adjust is set to Off (0), the factory default.</p> <p>This setting lets you increase the amount of time strobe is sampled to determine that valid data is available on the parallel port.</p> <ul style="list-style-type: none"> • Press the operator panel button with a brief button press to scroll through the settings (Off=0, On=+1, Auto=+2). Press the operator panel button with a long button press to select and save the On or Auto setting. As the setting is saved, all operator panel lights remain on for approximately 2 seconds • Press the operator panel button with a double button press to scroll to the next menu item, USB Port Enabled. <p>Turn off the printer to exit the advanced troubleshooting mode.</p>
	<p>USB Port Enabled is set to Auto, the factory default.</p> <p>The Universal Serial Bus (USB) cable lets you connect a variety of devices to your computer with a single cable.</p> <ul style="list-style-type: none"> • Press the operator panel button with a brief button press to scroll through the settings (Off, On, Auto). Press the operator panel button with a long button press to select and save the Off or On setting. As the setting is saved, all operator panel lights remain on for approximately 2 seconds • Press the operator panel button with a double button press to scroll to the next menu item, USB NPA Mode. <p>Turn off the printer to exit the advanced troubleshooting mode.</p>

This light sequence in advanced troubleshooting mode:	Corresponds to this setting:
	<p>USB NPA Mode is set to Auto, the factory default.</p> <p>When USB NPA Mode is set to On, your computer can send print jobs to the printer and query printer status information simultaneously.</p> <ul style="list-style-type: none"> Press the operator panel button with a brief button press to scroll through the settings (Off, On, Auto). Press the operator panel button with a long button press to select and save the Off or On setting. As the setting is saved, all operator panel lights remain on for approximately 2 seconds Press the operator panel button with a double button press to scroll back to the first menu item, PPDS Activated. <p>Turn off the printer to exit the advanced troubleshooting mode.</p>
	<p>For standard and network models, PPDS Activated is set to Off, the factory default.</p> <p>Turn PPDS Activated on when working in applications using the PPDS datastream:</p> <ul style="list-style-type: none"> Press the operator panel button with a brief button press to scroll through the settings (On, Off). Press the operator panel button with a long button press to select and save the On setting. As the setting is saved, all operator panel lights remain on for approximately 2 seconds. Press the operator panel button with a double button press to scroll to the next menu item, Auto CRLF/LFCR. <p>Turn off the printer to exit the advanced troubleshooting mode.</p>

This light sequence in advanced troubleshooting mode:	Corresponds to this setting:
 <p>Ready/Data</p> <p>Toner Low</p> <p>Load Paper</p> <p>Paper Jam</p> <p>Error</p> <p>Press Button</p> <p>To Reset Press 3 Seconds</p>	<p>Auto CRLF/LFCR is set to Off, the factory default.</p> <p>How the printer formats the end of a line depends on the computer system being used. Use this setting to select whether or not the printer automatically performs a carriage return (CR) after a line feed (LF) or a line feed after a carriage return.</p> <ul style="list-style-type: none"> • If the Press Button light is off, Auto CR after LF is Off and Auto LF after CR is Off. • If the Press Button light is on, Auto CR after LF is On and Auto LF after CR is Off. • If the Press Button light is blinking, Auto CR after LF is Off and Auto LF after CR is On. • Press the operator panel button with a brief button press to scroll through the settings. • Press the operator panel button with a double button press to scroll to the next menu item, Parallel Mode 1. <p>Turn off the printer to exit the advanced troubleshooting mode.</p>



Setting up the network printer

Print servers connect printers to networks. This lets many users access printers from their own workstations, a very cost effective way to share powerful and expensive printers. It is not necessary to buy an extra personal computer to attach each printer to the network. You use the print server instead.

Environments we support

Print servers support an extraordinarily wide range of network environments.

Any single print server on any given physical network can accept and process print jobs from any or all of these logical networks concurrently. For example, if a MarkNet XI physically attaches a printer to an Ethernet network, then a NetWare client and an AppleTalk user can send print jobs to the printer simultaneously. The print jobs are processed on a first-come, first-served basis.

Connect the hardware

Instructions on connecting the Ethernet cable to your network-model printer can be found in the printer *Setup Book*. To view the *Setup Book* from this CD, click the Home icon ▶ Other Resources ▶ PDFs for Printing ▶ Setup Guide.

Print a network setup page

Push the operator panel button with a brief button press to print a network setup page showing the physical address of the network printer. A printer settings page prints first and after a few moments a network setup page prints. Save the network setup page because you will use it later.

Configure and print

TCP/IP

Step 1: Set the IP address, netmask and gateway

You must assign an IP address, netmask and gateway to the print server in order for other network devices to find it on the network.

- If you have DHCP, the proper addresses are automatically assigned. To verify the assignment has happened, print a network setup page and make sure the IP address, netmask and gateway appear as non-zero.
- If you don't have DHCP, there are other methods you can use to manually assign the address, such as static ARP and telnet, or a setup utility.

DHCP

This method automatically sets the IP address, netmask, gateway, host name, and WINS server using a Dynamic Host Configuration Protocol (DHCP) server. The DHCP server or a forwarding agent must be attached to the same IP subnet as the print server. Make sure the DHCP server has scope defined for the subnet.

Ensure that the DHCP server provides the following options:

001 Netmask	Netmask for IP subnet
003 Router	IP address of router (such as 9.10.8.250)
044 WINS/NBNS Server	IP address of WINS server

If you are using a WINS server, telnet to port 9000 to set the print server host name.

Print Server TCP/IP Setup Utility

The Print Server TCP/IP Setup Utility is a simple way to set the IP address and other important IP parameters in a print server. You can set up one or many print servers using this method with no need to physically visit the printers.

Requirements

You must run the Print Server TCP/IP Setup Utility on a Windows 95/98/Me, Windows NT 4.0, or Windows 2000 workstation.

The print server must be on the same physical subnet as your workstation. In other words, the Print Server Setup Utility cannot cross routers, bridges, and so forth.

Installation

- 1 Launch the drivers CD.
- 2 Click Install Software, Printer Software.
- 3 Click Custom Install when you see this option.
- 4 Select Network Support, and then click Next.
- 5 On the Network tab, select Print Server TCP/IP Setup Utility, and then Finish Installation.

Static ARP entry and telnet

To set the print server IP address, netmask, and gateway using this method, you add a static entry to the ARP table on some computer that is on the same IP subnet as the print server. (Source Route bridging is not supported.) Then, you use telnet.

To set the IP address, netmask, and gateway using static ARP entry and telnet:

- 1 Determine the hardware address of the print server. See the item labeled UAA on the network setup page. For Ethernet networks, use the number in the right column (canonical).
- 2 Add a static ARP entry for the IP address. Use the hardware address from step 1. Use the dotted decimal form of the IP address, such as 157.184.8.231. Use the commands appropriate to the host operating system. For example, on many UNIX computers you would type something similar to the following example:

```
arp -s ether 157.184.8.231 00:04:00:30:00:44
```

If you need help and are using a UNIX system, try the man page for ARP.

- 3 Use telnet to access the print server. For UNIX systems, use the following command:

```
telnet 157.184.8.231 9000
```

where address is the print server host name (or print server IP address in dotted decimal format, such as 157.184.8.231). The print server port is 9000.

- 4 Follow the instructions on the screen to set the print server IP address, netmask and gateway.

Troubleshooting

If you are having trouble with a print server on a TCP/IP network, do the following steps in the order shown **before** you call the place where you bought your printer.

- 1 Press the operator panel button with a brief button press to print a network settings page.
Look under the TCP/IP heading on the network setup page to see if there is an IP address listed for the print server and that the TCP/IP protocol is turned on (activated).
If TCP/IP is turned off, use the IPX protocol to activate it. Select the printer and then select the TCP/IP task. Check the Enable box to activate TCP/IP.
- 2 Issue a ping command to the print server.

```
ping 157.184.8.231
```

- 3 Establish an FTP session with the print server. Expect the print server to return its current firmware level (such as 2.5.15).
ftp 157.184.8.231
- 4 Using the FTP “put” command, print a file. This file can be PCL or PostScript emulations, PDF, HTML, or any other printer language the printer understands. If the file prints, this confirms the TCP/IP protocol is working properly in the print server.
put mytest.ps or
put mytest.txt
- 5 Check the port settings on the printer object. For example, in Windows 95 do the following:
 - a Click Start, Settings, Printers, select the printer object; click File, Properties, Details tab, Port Settings button.
 - b Check all parameters on the Print Server Settings tab and the TCP/IP Settings tab. You can change some of the values from this tab. Others, like TCP/IP address, you cannot change from this tab.
 - c If a parameter is wrong but you cannot change it from here, you must delete the port, fix the problem, and then add the port back.
- 6 Check all the settings in the print server. Type the MarkNet IP address in the URL address field of your browser (for example, <http://157.184.8.231>), which takes you to the MarkNet resident web page.
- 7 If you have trouble printing from an application, the problem might be the way your workstation or application is set up.
 - a Try printing from some other application. If the job prints from the second application, the problem is with the first application.
 - b Make sure you are using the current version of the driver for the problem application.
- 8 Try printing again.

Step 2: Set up to print

There are many ways to send a network print job including FTP, TFTP, LPR/LPD, point-and-print (IP) and various queue-based methods.

Print to a queue on a Windows NT server

To use this method, you must have at least one server running Windows NT Server software and TCP/IP.

Use direct IP printing if all you want to do is print directly to a network printer. If you need to centrally manage your network printers, see instructions for [shared printing](#).

If all you want is basic printer functionality, you can use a system printer driver and a system IP port, such as an LPR or a Standard TCP/IP port. Using a system printer driver and a system port lets you maintain a consistent user interface for use with all the printers on your network.

To get the fullest range of printer functionality, including a job status window and printer alerts, you need to install a custom driver and create a Network Port.

Set up IP printing on Windows NT 4.0/2000

You can view this file online before you begin installing, or print the file to an alternate network printer that is already set up.

Part 1: Install printer drivers and TCP/IP network support

- 1 Launch the drivers CD. If you still have the CD running, click Back to return to the first screen.
- 2 Click Printer Software.
- 3 Click the icon to install the version of software on the CD.
- 4 Agree to the license agreement.
- 5 Select Custom Install, and then click Next.
- 6 When asked where you want the software installed, click Local Computer.
- 7 When the list of software components is offered, select all the options you want to install. You need to at least select the following:
 - Printer Drivers (to obtain a custom driver for your printer)
 - Network Support (TCP/IP)
- 8 When the list of printers is offered, select the model of the printer you want to install, and then click Add.
- 9 When the printer appears in the Selected Printers list, click Next.
- 10 On the Drivers and Bi-Di support tabs, modify any settings you want. On the Bi-Di support tab, remove the check mark from the status window if you do not want this function.

Note: The status window opens up with every print job you send and gives you real-time job status information and sends you alerts if there are problems printing.

- 11 On the Network Support tab, select TCP/IP.

Note: If a shaded check mark is beside an option, support for that environment is already installed and will be updated with this installation.

- 12 Click Finish Installation. When prompted for a reboot, answer Yes. Exit the CD if necessary.

Files are copied to the computer and printer objects are created in the Windows printers folder. A message appears when installation is complete.

Part 2: Create a Network Port

- 1 Click Start ▶ Settings ▶ Printers.
- 2 Select the printer you just created.
- 3 Click File ▶ Properties.
- 4 Click Ports, and then Add Port.
- 5 Click Network Port, and then New Port.

- 6** Enter the information to create the port.
 - a** Assign a logical port name. This can be any name that reminds you of the printer such as "Printer_lab4". This name eventually appears in the list of available ports.
 - b** Select the IP address of your printer from the list. If the address is not listed, then click Enter TCP/IP address or Name of Print Server, and then type the address in the IP address text box.

If you don't know the IP address, press the operator panel button with a brief button press to print a network setup page and look under the TCP/IP heading.
 - c** Check the option to Set this protocol to be the default protocol.
 - d** Click OK. The new port is assigned to the printer.
- 7** Press the operator panel button with a brief button press to print a test page to verify printer installation. If the Printer Properties window is still open, click Print Test Page on the General tab.

If you have closed the Printer Properties, do the following:

 - a** Click Start ▶ Settings ▶ Printers.
 - b** Click File ▶ Properties.
 - c** On the General tab, click Print Test Page.

When a test page prints successfully, client setup is complete.

Set up IP printing on Windows 95/98/Me

This is the method you must use if you want to set up direct printing on Windows/95/98/Me clients.

You can view this file online before you begin installing, or print the file to an alternate network printer that is already set up.

Part 1: Install printer drivers and TCP/IP network support

- 1** Launch the drivers CD. If you still have the CD running, click Back to return to the first screen.
- 2** Click Printer Software.
- 3** Click the icon to install the version of software on the CD.
- 4** Agree to the license agreement.
- 5** Select Custom Install, and then click Next.
- 6** When the list of software components is offered, select all the options you want to install. You need to at least select the following:
 - Printer Drivers (to obtain a custom driver for your printer)
 - Network Support (TCP/IP)
- 7** When the list of printer choices is offered, select the model of the printer you want to install, and then click Add.
- 8** Click Next.

- 9 On the Drivers and Bi-Di support tabs, modify any settings you want. On the Bi-Di support tab, remove the check mark from the status window if you do not want this function.

Note: The status window opens up with every print job you send and gives you real-time information about the job being printed and the condition of the printer.

- 10 On the Network Support tab, select TCP/IP.

Note: If a shaded check mark is beside an option, support for that environment is already installed and will be updated with this installation.

- 11 Click Finish Installation. When prompted for a reboot, answer Yes. Exit the CD if necessary.

Files are copied to the computer and printer objects are created in the Windows printers folder. A message appears when installation is complete.

Part 2: Create a Network Port

- 1 Click Start ▶ Settings ▶ Printers.
- 2 Select the printer you just created.
- 3 Click File ▶ Properties.
- 4 Click Details, and then Add Port.
- 5 Click Network Printer Monitor, and then OK.
- 6 Enter the information to create the port.
 - a Assign a logical port name. This can be any name that reminds you of the printer such as "Printer_lab4". This name eventually appears in the list of available ports.
 - b Select the IP address of your printer from the list. If the address is not listed, then click Enter TCP/IP address or Name of Print Server, and then type the address in the IP address text box.

If you don't know the IP address, press the operator panel button with a brief button press to print a network setup page and look under the TCP/IP heading.
 - c Check the option to Set this protocol to be the default protocol.
 - d Click OK. The new port is assigned to the printer.
- 7 Press the operator panel with a brief button press to print a test page verifying printer installation. If the Printer Properties window is still open, click Print Test Page on the General tab.

If you have closed the Printer Properties, do the following:

- a Click Start ▶ Settings ▶ Printers.
- b Click File ▶ Properties.
- c On the General tab, click Print Test Page.

When a test page prints successfully, client setup is complete.

Use shared printing if your organization needs to centrally manage network printers. To set up this type of printing, you must install the printer on a server and set it up to be shared with network clients.

Note: If your organization has no need to centrally manage network printers from a single location, see [direct IP printing](#).

Install a shared printer on a Windows NT 4.0/2000 server

You can view this file online before you begin installing, or print the file to an alternate network printer that is already set up.

Part 1: Installing printer drivers and TCP/IP network support

- 1 Launch the drivers CD. If you still have the CD running, click Back to return to the first screen.
- 2 Click Printer Software.
- 3 Click the icon to install the version of software on the CD.
- 4 Agree to the license agreement.
- 5 Select Custom Install, and then click Next.
- 6 When asked where you want the software installed, click Local Computer.
- 7 When the list of software components is offered, select all the options you want to install. You need to at least select the following:
 - Printer Drivers (to obtain a custom driver for your printer)
 - Network Support (TCP/IP)
- 8 When the list of printers is offered, select the model of the printer you want to install, and then click Add.
- 9 When the printer appears in the Selected Printers list, click Next.
- 10 On the Drivers and Bi-Di support tabs, modify any settings you want. On the Bi-Di support tab, remove the check mark from the status window if you do not want this function.

Note: The status window opens up with every print job you send and gives you real-time job status information and sends you alerts if there are problems printing.

- 11 On the Network Support tab, select TCP/IP.

Note: If a shaded check mark is beside an option, support for that environment is already installed and will be updated with this installation.

- 12 Click Finish Installation. When prompted for a reboot, answer Yes. Exit the CD if necessary.

Files are copied to the computer and printer objects are created in the Windows printers folder. A message appears when installation is complete.

Part 2: Creating a Network Port

- 1** Click Start ▶ Settings ▶ Printers.
- 2** Select the printer you just created.
- 3** Click File ▶ Properties.
- 4** Click Ports, and then Add Port.
- 5** Click Network Port, and then New Port.
- 6** Enter the information to create the port.
 - a** Assign a logical port name. This can be any name that reminds you of the printer such as "Printer_lab4". This name eventually appears in the list of available ports.
 - b** Select the IP address of your printer from the list. If the address is not listed, then click Enter TCP/IP address or Name of Print Server, and then type the address in the IP address text box.

If you don't know the IP address, press the operator panel button to print a network setup page and look under the TCP/IP heading.
 - c** Check the option to Set this protocol to be the default protocol.
 - d** Click OK. The new port is assigned to the printer.
- 7** Print a test page to verify printer installation. If the Printer Properties window is still open, click Print Test Page on the General tab.

If you have closed the Printer Properties, do the following:

 - a** Click Start ▶ Settings ▶ Printers.
 - b** Click File ▶ Properties.
 - c** On the General tab, click Print Test Page.

When a test page prints successfully, printer setup is complete.

Part 3: Sharing the printer on the network

- 1** Click Start ▶ Settings ▶ Printers.
- 2** Select the printer you just created.
- 3** Click File ▶ Sharing.
- 4** Check Shared, and then type a name in Shared Name text box.
- 5** In the Alternate Drivers section, select the operating systems of all the network clients that will print to the printer.

- 6 Click OK.

Note: If you are missing files, you may be prompted to provide the operating system CD of the server.

- 7 Check the following to make sure the printer was successfully shared.
 - The printer object icon in the printers folder now has a shared indicator. For example, in Windows NT 4.0, a hand appears under the printer icon.
 - Browse Network Neighborhood. Find the host name of the server and look for the shared name you assigned to the printer.

The printer is now shared and ready to be installed on network clients.

Install a shared printer on network clients

Select one of the following ways to install a shared printer on network clients:

Setting up clients (point and print)

- A sub-set of driver information is copied from the server to the client computer. This is just enough information to send a print job to the printer.
- Best use of system resources. Server handles driver modifications and the print job processing. This lets network clients return to applications much faster.

Setting up clients (peer-to-peer)

- The printer driver is fully installed on the client computer. Network clients retain control of driver modifications.
- Client computer handles the print job processing.

Setting up clients (point and print)

- 1 On the Windows desktop of the client computer, double-click Network Neighborhood.
- 2 Locate the host name of the server computer, and then double-click the host name.
- 3 Right-click the shared printer name, and then click Install.

Wait a few minutes for the driver information to be copied from the server computer to the client computer, and for a new printer object to be added to the Printers folder. The time this takes varies based on network traffic and other factors.

- 4 Close Network Neighborhood.
- 5 Print a test page to verify printer installation.
 - a Click Start ▶ Settings ▶ Printers.
 - b Click File ▶ Properties.
 - c On the General tab, click Print Test Page.

When a test page prints successfully, printer installation is complete.

Setting up clients (peer-to-peer)

- 1 Click Start ▶ Settings ▶ Printers.
- 2 Click Add Printer to launch the Add Printer wizard.
- 3 Click Network Print Server.
- 4 Select the network printer from the Shared printers list. If the printer is not listed, type the path of the printer in the text box.

The path will look similar to the following:

\\<server host name>\<shared printer name>

The server host name is the name of the server computer that identifies it to the network. The shared printer name is the name assigned during the server installation process.

- 5 Click OK.

Note: If this is a new printer, you may be prompted to install a printer driver. If no system driver is available, then you will need to provide a path to available drivers.

- 6 Select whether you want this printer to be the default printer for the client, and then click Finish.
- 7 Print a test page to verify printer installation.
 - a Click Start ▶ Settings ▶ Printers.
 - b Click File ▶ Properties.
 - c On the General tab, click Print Test Page.

When a test page prints successfully, printer installation is complete.

Troubleshooting

At the server, do these steps in the order shown **before** you call the place where you bought your printer.

- 1 Make sure you are using TCP/IP for communications between the Windows server and the MarkNet print server. For Windows NT Server 4.x or Windows 2000, use either TCP/IP or LexLink.
- 2 Press the operator panel button with a brief button press to print a network settings page.

Look under the TCP/IP heading on the network setup page to see if the TCP/IP protocol is turned on (activated) in the print server.

If TCP/IP is turned off, use the IPX protocol to activate it. Select the printer and then select the TCP/IP task. Check the Enable box to activate TCP/IP.
- 3 Verify that the protocol that you are trying to use is installed properly on the server. (Hint: Start, Settings, Control Panel, Network, Protocols). Look for TCP/IP or DLC (LexLink).

- 4 Issue a ping command to the print server.
ping 157.184.8.231
- 5 Establish an FTP session with the print server.
ftp 157.184.8.231
- 6 Using the FTP “put” command, print a file. The file you use with FTP can be in PCL or PostScript emulations, PDF, HTML or any other language the printer understands. If the file prints, this confirms the TCP/IP protocol is working properly in the MarkNet print server.
put mytest.ps or
put mytest.txt
- 7 Reset both the print server and the printer.
- 8 If possible, shut down Windows NT Server and restart the server. There could be a spooler problem that requires a restart.
- 9 Try printing again.

Novell NetWare

Queue-based printing

Set up the printer using the Network Printer Utility

The easiest way to configure the print server for NetWare jobs in non-NDPS and non-NEPS environments is to use the Network Printer Utility for NetWare. The Network Printer Utility automatically creates all the necessary NetWare objects (print queue objects, print server objects, and printer objects).

Do the following from a Windows NT workstation running Novell NetWare Client32 software, or from a Windows 95 or Windows 98 workstation running either Novell Client32 or Microsoft Client for NetWare networks.

- 1 Install the Network Printer Utility for NetWare on the workstation. This software is located the following directory on the drivers CD that shipped with your printer (X=the drive letter of your CD-ROM drive).

X:/Interwin/instwin.exe

- a Double-click instwin.exe.
- b Select your language, and then click OK.
- c Select to use Existing Program Group, and then click OK.

The Network Printer Utility is installed on the workstation in a directory called netprint.

- 2 On the Windows desktop, click Start ▶ Printer ▶ Network Printer Utility.

This program finds all the network printers containing on-board network functionality or MarkNet internal printer servers that are on the same sub-net. It will also find any printers attached to MarkNet external print servers.

- 3** Double-click the network printer and/or print server you want to configure:
 - a** Set a unique Adapter login name. This is the name the print server uses to log in to the NetWare server.
 - b** Select PSERVER mode.
- 4** From the File menu, click Setup.
- 5** Select Quick or Customized, then select the mode.
 - If you want to manage **NDS queues**, you must specify the NDS tree and context where the MarkNet print server is defined. You also need to create or select queues to be serviced.
 - If you want to manage **bindery queues**, you must first specify the file servers. Afterward, you must create or select queues to be serviced.
- 6** If prompted to reset the print server, select Yes to immediately begin servicing the queues.

Choosing NPRINT/RPRINT or PSERVER

When configuring your print server, you'll have to set it up in either NPRINT/RPRINT or in PSERVER.

How NPRINT/RPRINT works

A MarkNet print server configured in NPRINT/RPRINT acts as a remote printer. This remote printer receives print jobs from a NetWare print server. The NetWare print server, a program called PSERVER.NLM running on a NetWare server, obtains print jobs from a queue and sends them to the remote printer.

How PSERVER works

A MarkNet print server set up in PSERVER acts as a NetWare print server attached to NetWare servers. This print server obtains print jobs from queues located on one or more file servers.

PSERVER print servers actually log into NetWare servers as a NetWare client and require one NetWare user license per PSERVER device.

NPRINT vs. PSERVER in IntraNetWare NetWare Directory Services (NDS)

Print servers are fully supported in IntraNetWare NDS, using either NetWare NPRINT or PSERVER. If you use bindery emulation, you cannot use NPRINT.

NPRINT in IntraNetWare NDS

Advantage of using NPRINT in NDS:

- Does not require a NetWare server user license

Disadvantages of using NPRINT in NDS:

Little information is available about the print job. After a job leaves a print server queue, it is removed from the queue, regardless of whether it actually prints. This could cause a print job to be lost if the printer is turned off in the middle of the print job. This is inherent in the NetWare design.

Notes about printing performance:

Many people prefer to configure their print servers in PSERVER. In early versions of NetWare, PSERVER performance was significantly better than NPRINT/RPRINT performance.

This performance difference is less for IntraNetWare. Actual print job throughput is affected by many other factors such as topology, job size and content, and print server settings. Under many circumstances, NPRINT provides an excellent IntraNetWare NDS solution.

PSERVER in IntraNetWare NDS

Advantages of using PSERVER in NDS:

- Does not require that PSERVER.NLM be installed on the NetWare server
- Increases performance. Although overall print job throughput is affected by many factors, file transfer time on the network may be faster using PSERVER because:

In **NPRINT/RPRINT**, NetWare uses SPX to transfer packets. Packet size for data transmitted in SPX is 512 bytes.

In **PSERVER**, NetWare uses IPX to transfer packets. Packet size for data transmitted in IPX is up to 1 Kilobyte for Ethernet and up to 4 Kilobytes for Token-Ring networks.

Because of this difference in packet size, PSERVER may be faster than NPRINT/RPRINT. *Actual* IPX packet size is negotiated by the client application. This actual IPX packet size is often less than the maximum because of packet size limitations of gateways and routers.

If printing is a significant part of your network traffic, and if network traffic is a proven concern for your network, you may find it better to use the print servers in PSERVER.

Disadvantage of using PSERVER in NDS:

Requires a NetWare server user license for each PSERVER device

Also, in IntraNetWare you can “pool” printers by assigning a single print queue to multiple printers, or “share” printers by assigning multiple print queues to a single printer. Be careful when configuring “pooled” printer environments because the printers need to have the same capabilities in terms of printer data stream and resources such as fonts, forms, internal memory, resolution, and so on. Though Novell recommends assigning one print queue per printer for ease of management, it may be useful to “share” a printer between multiple queues when a printer supports multiple emulations such as PostScript and PCL.

RPRINTER vs. PSERVER in NetWare 3.x

Print servers are fully supported in NetWare 3.x, using either RPRINTER or PSERVER.

RPRINTER in NetWare 3.x

Advantage of using RPRINTER in NetWare 3.x:

Does not require a NetWare server user license

Disadvantages of using RPRINTER in NetWare 3.x:

Little information is available about the print job. After a job leaves a print server queue, it is removed from the queue, regardless of whether it actually prints. This could cause a print job to be lost, if the printer is turned off in the middle of the print job. This is inherent in the NetWare design.

PSERVER in NetWare 3.x

Advantages of using PSERVER in NetWare 3.x:

- Does not require that PSERVER.NLM be installed on the NetWare server.
- Does not require you to unload PSERVER.NLM or restart your computer after installation.
- Performance. Although overall print job throughput is affected by many factors, file transfer time on the network may be significantly faster using PSERVER.

In **NPRINTER/RPRINTER**, NetWare uses SPX to transfer packets. Packet size for data transmitted in SPX is 512 bytes.

In **PSERVER**, NetWare uses IPX to transfer packets. Packet size for data transmitted in IPX is up to 1 Kilobyte for Ethernet networks.

Because of this difference in packet size, PSERVER may be faster than NPRINTER/RPRINTER. Please note, however, that *actual* IPX packet size is negotiated by the client application. This actual IPX packet size is often less than the maximum because of packet size limitations of gateways and routers.

If printing is a significant part of your network traffic, and if network traffic is a proven concern for your network, you may find it better to use the print servers in PSERVER.

Print servers can connect to as many as 16 file servers, with a total of 32 queues per print server, distributed any way you want among the servers.

Disadvantage of using PSERVER in NetWare 3.x:

Requires a NetWare server user license for each PSERVER device.

Troubleshooting

If you are having trouble with your print server on a NetWare network, do these steps in the order shown.

Queue-based printing

- 1** Press the operator panel button with a brief button press to print a network settings page.
Look under the NetWare heading on the network setup page to see if the NetWare protocol is turned on (activated) in the print server.
If NetWare is turned off, use the IPX protocol to activate it. Select the printer and then select the NetWare task. Check the Enable box to activate NetWare.
- 2** Find out if the print server is servicing your NetWare queue. Use one of the utilities and look for your queue in the list of queues being serviced. In the Network Printer Utility for NetWare, select *Options*, and then *Queues Serviced*.
- 3** If your queue doesn't appear in the list of queues being serviced, reset the printer, wait a few minutes, and look for the queue in the list again.
- 4** If your queue still does not appear in the list of queues being serviced, you have a print server setup problem. Reconfigure the MarkNet print server.
- 5** Try printing from some other application. If the job prints from the second application, you've narrowed the problem to the first application. Make sure you are using the current version of the driver for the problem application.
- 6** Place a job in the queue using a Novell utility such as PCONSOLE.

AppleTalk

Finding the default AppleTalk name

Your printer ships with a default AppleTalk name that appears in the Chooser. To find the default AppleTalk name, press the operator panel button to print a network setup page. Look under the AppleTalk heading for the printer name.

Creating a desktop printer icon

Each Macintosh user on the AppleTalk network who wants to use the printer should do the following steps.

- 1** In the Chooser, select the LaserWriter 8 driver.
- 2** If you have a routed network, there is a list of zones you can select from. The new printer is in the default zone for the network. Select this zone. If you don't know which zone to select, look on the network setup page under AppleTalk for Zone.
- 3** Select the new printer. If you don't know which printer to select, look on the network setup page under AppleTalk. The default name of the printer is listed beside *Name*.
- 4** Click Create.

- 5 If prompted to select a PPD (PostScript Printer Description), you need to install the proper PPD from the drivers CD. To do this, launch the CD, click Installer, select the appropriate PPD for your printer, and then click Install. Go back to the Chooser and try to create the new printer again.

Note: A PPD describes the printer or printer family. For example, the PPD lists which options are valid for the printer.

- 6 Look for an icon in the Chooser next to the printer name. This means you have successfully set up the new printer and a new desktop printer icon is on your desktop.
- 7 In the Chooser, select the printer you want to use and then close the Chooser window.

Changing the zone

If you want to change the zone of the new printer using MarkVision, find the printer in the main MarkVision window, select it from the list and choose Adapter Settings.

- 1 If you haven't already done so, install MarkVision. On the drivers CD, click Install printer software. Do a Custom Install and select MarkVision.
- 2 Launch MarkVision.
- 3 Click View, and then Select Zones.
- 4 Select the zone that contains the new printer.
- 5 Find the new printer in the list and highlight it.
- 6 To specify the printer zone, click Adapter Settings.
- 7 Select Parallel from the settings pop-up list.
- 8 Change the adapter name.

Changing the printer name

If you are in a LaserWriter 8 environment and want to change the printer name:

- 1 If you haven't already done so, install MarkVision. On the drivers CD, click Install printer software. Do a Custom Install and select MarkVision.
- 2 Launch MarkVision.
- 3 Click View, and then Select Zones.
- 4 Select the zone that contains the new printer.
- 5 Find the new printer in the list and highlight it.
- 6 To specify the printer name you prefer, click Adapter Settings.
- 7 Select Parallel from the settings pop-up list.
- 8 Change the adapter name.

Updating printer hardware

If you add or remove the paper tray 2 option, or if you load new paper sizes or types, each user should update his desktop printer object. Follow these steps to update the desktop printer object:

LaserWriter 8 environment (prior to LaserWriter 8.4.1):

- 1** In the Chooser, select the printer to be updated.
- 2** Click the Setup button.
- 3** Click Auto Setup to automatically reconfigure the printer options. (Or, you can select Configure to manually reconfigure the printer options.)

LaserWriter 8 environment (LaserWriter 8.4.1 and later):

- 1** Select the desktop printer object to be updated.
- 2** Select the Printing menu, and then select Change Setup.
- 3** Select Auto Setup to automatically reconfigure the printer options. (Or, you can manually reconfigure the printer options if you want.)

QuickDraw GX environment:

- 1** Select the desktop printer object to be updated.
- 2** Select the Printing menu, and then select Configuration.
- 3** Select the options that match what is installed on the printer.

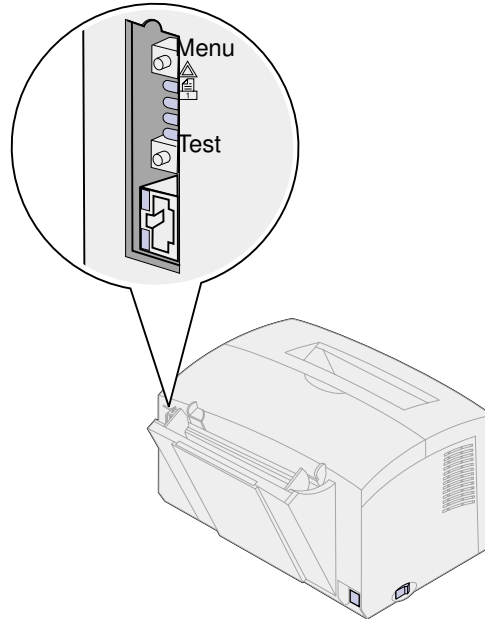
Troubleshooting

If you are having trouble with your print server on an AppleTalk network (EtherTalk, TokenTalk, or LocalTalk), do these steps in the order shown **before** you call the place where you bought your printer.



- 1** Make sure the AppleTalk protocol is turned on (activated) in the print server. To find out, press the operator panel button to print a network setup page and look in the paragraph under *AppleTalk*.
- 2** Make sure the status of the MarkNet print server is "connected". To find out, look on the network setup page for Status.
- 3** Do you see the printer in the Chooser?
 - If no, restart the Macintosh workstation and look again.
 - If yes, make sure the printer name in the Chooser exactly matches the AppleTalk name listed on the network setup page.
- 4** Check all connections. Check the cables on the back of the Macintosh workstation. Check the cable between the printer and the workstation or network.
- 5** If the job prints but the print quality is poor, refer to the printing tips provided on the drivers CD. These tips can save you a lot of time. To download the document to your workstation, launch the drivers CD, click Installer, select Documentation, and then click Install. Look in the Extras folder for the document titled Optimize Printer Output.

Print server light patterns

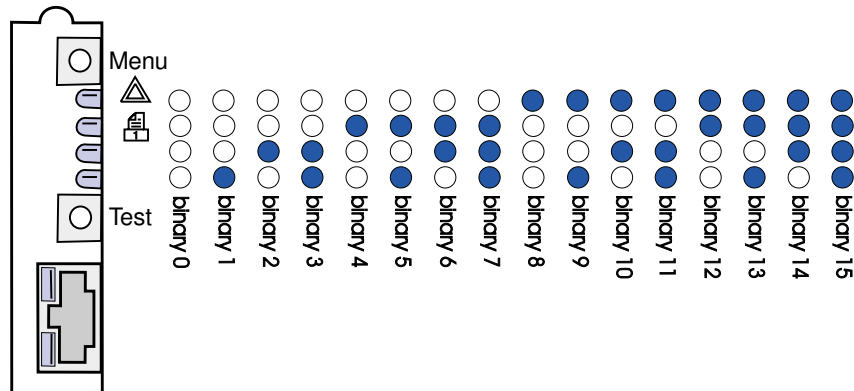
The four indicator lights on the print server indicate activity, status, and errors, depending on the light pattern.



Normal conditions

Indicator lights	Ready	Processing	Testing	Updating flash code	
	The print server is waiting for data.	A print job is active.	When the Test button is pressed, a network setup page is sent from the print server to the printer.	A flash file is being downloaded over the network.	The print server is processing a Flash file. Do not turn off the printer while the print server is processing Flash – you may damage the firmware.
	The lights cycle on and off, starting at the top and traveling down before reversing direction.	off	off	blinking	on
		blinking	blinks briefly then returns to Ready	off	off
		off	off	off	off
		off	off	off	off

In the following illustration, each binary number corresponds to an error light sequence:



Error conditions

What shows on the four indicator lights	Description	Cause and solution
binary 12 (for 0.25 sec), binary 3 (for 0.25 sec), repeat continuously.	Serious failure. The print server is unable to recover.	Unrecoverable software error. Call the place where you bought your printer.
binary 15 (for 0.25 sec), binary x (for 0.25 sec), repeat continuously. where x could be 0, 1, 2, 3, 4, 5, 6, 7, 8, or 9	POST error	Power-on self test error. During start-up, a hardware failure was detected on the print server. <ul style="list-style-type: none"> Press the Menu and Test buttons simultaneously to reset the print server. If the problem reoccurs, call the place where you bought your printer.
binary 9 (for 1 sec) binary 6 (for 1 sec) repeat continuously.	The print server is not connected to the network.	Print a network setup page and look under Status. If it shows the printer server is not connected: <ul style="list-style-type: none"> Make sure the Ethernet cable is firmly plugged in. Try another wall outlet.



Notices

- **Edition notice**
- **Trademarks**
- **Safety information**
- **Cautions and warnings**
- **Electronic emission notices**
- **German acoustics statement**
- **Laser notice**

Edition notice

August 2001

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Safety information

- If your product is NOT marked with this symbol , it MUST be connected to an electrical outlet that is properly grounded.
- The power cord must be connected to an electrical outlet that is near the product and easily accessible.
- Refer service or repairs, other than those described in the operating instructions, to a professional service person.
- This product is designed, tested and approved to meet strict global safety standards with the use of specific Lexmark components. The safety features of some parts may not always be obvious. Lexmark is not responsible for the use of other replacement parts.
- Your product uses a laser, exercise
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- Your product uses a printing process that heats the print media, and the heat may cause the media to release emissions. You must understand the section in your operating instructions that discusses the guidelines for selecting print media to avoid the possibility of harmful emissions.

Cautions and warnings

CAUTION: A caution identifies something that might cause you harm.

WARNING: A warning identifies something that might damage your printer hardware or software.

Electronic emission notices

Federal Communications Commission (FCC) compliance information statement

Your printer has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult your point of purchase or service representative for additional suggestions.

The manufacturer is not responsible for any radio or television interference caused by using other than recommended cables or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate this equipment.

Note: To assure compliance with FCC regulations on electromagnetic interference for a Class B computing device, use a properly shielded and grounded cable. Use of a substitute cable not properly shielded and grounded may result in a violation of FCC regulations.

Industry Canada compliance statement

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Avis de conformité aux normes d'Industrie Canada

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

European Community (EC) directives conformity

This product is in conformity with the protection requirements of EC Council directives 89/336/EEC and 73/23/EEC on the approximation and harmonization of the laws of the Member States relating to electromagnetic compatibility and safety of electrical equipment designed for use within certain voltage limits.

A declaration of conformity with the requirements of the directives has been signed by the Director of Manufacturing and Technical Support, Lexmark International, S.A., Boigny, France.

This product satisfies the Class B limits of EN 55022 and safety requirements of EN 60950.

Japanese VCCI notice

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取扱説明書に従って正しい取り扱いをして下さい。

The United Kingdom Telecommunications Act 1984

This apparatus is approved under the approval number NS/G/1234/J/100003 for the indirect connections to the public telecommunications systems in the United Kingdom.

German acoustics statement

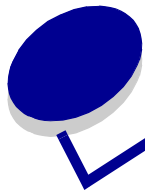
The following measurements were made in accordance with ISO 7779 and reported in conformance with ISO 9296.

1-meter average sound pressure, dBA	
Printing	< 49 dBA
Idling	< 35 dBA

Laser notice

The printer is certified in the U.S. to conform to the requirements of DHHS 21 CFR Subchapter J for Class I (1) laser products, and elsewhere is certified as a Class I laser product conforming to the requirements of IEC 825.

Class I laser products are not considered to be hazardous. The printer contains internally a Class IIIb (3b) laser that is nominally a 5 milliwatt gallium arsenide laser operating in the wavelength region of 770-795 nanometers. The laser system and printer are designed so there is never any human access to laser radiation above a Class I level during normal operation, user maintenance, or prescribed service condition.



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