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turbo PrintServer 20 Installation Guide

Order Number EK-TPS20-IN-001

**Digital Equipment Corporation
Maynard, Massachusetts**

First Printing, March 1991

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Preface

This guide covers the installation of the PrintServer hardware up to the point where it is certified to be operating properly after the software is loaded into the system.

NOTE: *All procedures should be performed in the order given. If you have a problem during the installation, see Section 5.2 for assistance.*

Associated Documents

In addition to this guide, refer to the following manuals from the Software Kit to complete the installation of the printer:

For VMS:

DEC PrintServer Supporting Host for VMS Installation Guide
DEC PrintServer Supporting Host for VMS and ULTRIX
Management / User's Guide
DECprint Printing Services Software Installation Guide

For ULTRIX:

DEC PrintServer Supporting Host for ULTRIX Installation Guide
DEC PrintServer Supporting Host for VMS and ULTRIX
Management / User's Guide
Installation Guide: PrintServer Client for ULTRIX

These guides explain how to install the PrintServer supporting host and client software on a VMS or ULTRIX system. The supporting host software enables the VMS host to function as a supporting host to a remote PrintServer printer. The client software provides users with remote printing facilities on the PrintServer.

For VMS, the supporting host and DECprint Printing Services software can be installed on the same VMS system.

For ULTRIX, the supporting host software and client or DECprint Printing Services software can be installed on the same ULTRIX system.

Conventions

The following terms and conventions are used in this manual:

Term/Convention	Meaning
PrintServer	In this document, the term PrintServer refers to PrintServer 20 and turbo PrintServer 20.
NOTE	Provides additional information.
CAUTION	Provides information for preventing equipment damage.
WARNING	Provides information for preventing personal injury.
OPC	The organic photo conductor is the type of drum the printer uses. OPC drums can be disposed of without taking any special precautions.
Bullet (•)	A bulleted statement describes a result after performing a step. For example: <ol style="list-style-type: none">1. Press the Pause key to place the printer off line. <ul style="list-style-type: none">• The off-line indicator lights.
Arrow (→)	Indicates a special instruction. For example: <ol style="list-style-type: none">1. Remove the toner cartridge from the drawer by lifting it straight up. <p>→ Discard the toner cartridge.</p>
Bold	Text in boldface designates messages that appear on the operator panel.

Laser Safety

The PrintServer printer complies with laser product performance standards set by government agencies as a Class 1 Laser Product. The PrintServer does not emit hazardous light, since the beam is totally enclosed during all modes of customer operation and maintenance.

WARNING: *Use of controls or adjustment procedures other than those specified in this manual may result in hazardous laser light exposure.*

Ozone Safety

The PrintServer uses an ozone filter to remove the ozone generated by the printer. Be sure to replace the ozone filter each time user maintenance is performed on the printer.

WARNING: *Never operate the printer without the ozone filter installed. The filter removes ozone that may cause eye or respiratory irritation.*

Before You Start

Before you install the PrintServer, be sure you have the following items (see Figure 1):

- Print engine and cabinet (packaged in one box). Also in this box are Shipaway Kits A and B. See Chapter 2 for items supplied in the shipaway kits.
- Bottom paper tray, shipped in its own box.
- Software Kit (optional), which contains software documentation and media.
- Country Kit (non-U.S. only), which contains translated hardware documentation, overlays, labels, and the appropriate power cord.

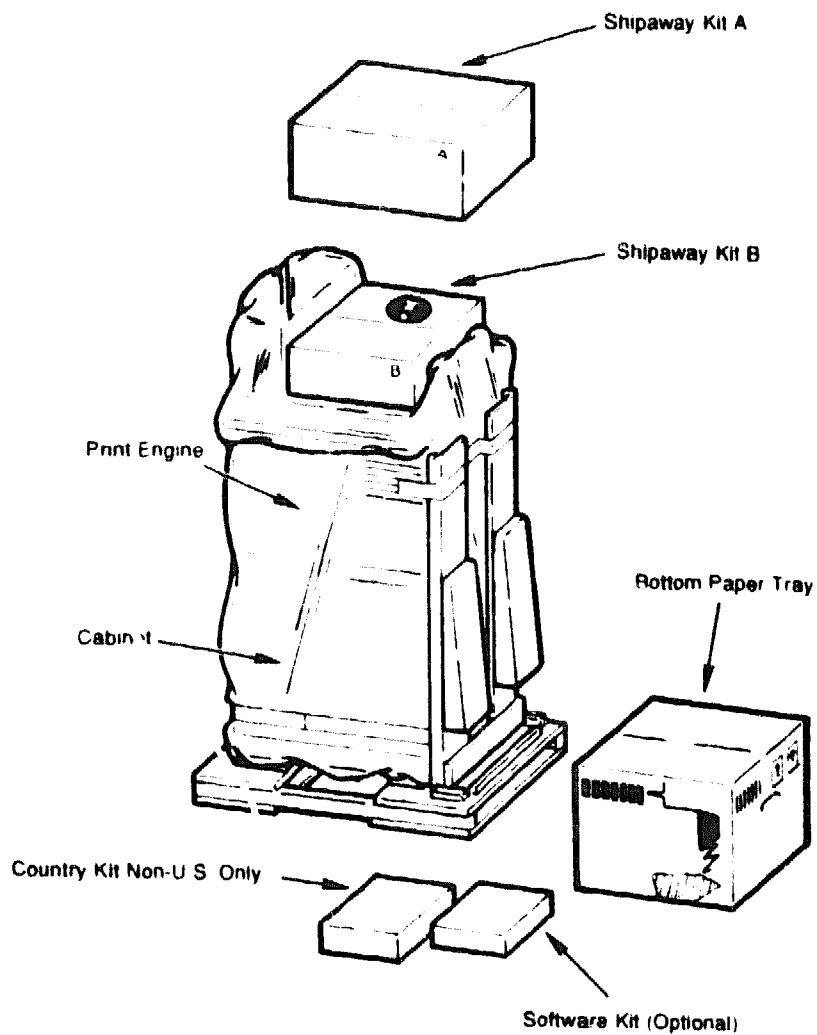
If any items are missing or damaged, immediately contact your sales representative and delivery agent or your DECdirect customer service representative.

Special Tools

The only tools you need to install the PrintServer are the open-end wrench and the Phillips screwdriver supplied in Shipaway Kit B. You need to obtain a razor knife to open the boxes.

WARNING: *The printer is heavy. To avoid injury, use two people to roll the printer down the shipping pallet ramp. Do not attempt to roll the printer down the shipping pallet alone.*

Figure 1: Shipping Boxes



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Chapter 1

Site Preparation

The performance of the PrintServer can be affected by electrical and environmental conditions surrounding its work location. This chapter lists the requirements for installing the PrintServer in a location where it performs best.

1.1 Power Requirements

To determine a proper work location, select a wall outlet with the correct voltage and adequate amperage to supply power to the printer. The power requirements for the PrintServer are:

Country	Voltage	Frequency	Amperage
United States	120 Volts	60 Hz	20-Amp circuit
All other	240 Volts	50 Hz	8-Amp circuit

NOTE: Do not plug other equipment that draws high levels of current, such as coffee pots, office copiers, or air conditioners, into the same power supply line. Exceeding the amperage rating causes the circuit breaker of the power supply line to pop.

1.2 Host System Requirements

Particular system requirements must be met before you can install the PrintServer.

VMS, Version 5.3 or higher requires DEC PrintServer Supporting Host Software for VMS, Version 4.0 or higher.

The following variations of ULTRIX require DEC PrintServer Supporting Host Software for ULTRIX, Version 4.0:

- ULTRIX, Versions 4.0, 4.1, and 4.2
- ULTRIX (RISC), Versions 4.0, 4.1, and 4.2

- ULTRIX Worksystem Software, Versions 4.0, 4.1, and 4.2
- ULTRIX Worksystem Software (RISC), Versions 4.0, 4.1, and 4.2

Other:

DECnet or TCP/IP license for the host system

DECnet or TCP/IP node name for the PrintServer printer

DECnet or TCP/IP node address for the PrintServer printer

The DECnet or TCP/IP node address for the PrintServer is necessary to load the server software. See your software installation guide for additional information about obtaining the DECnet node address.

NOTE: *The PrintServer software must be installed before powering on the PrintServer. The printer will not power up correctly if the software has not been loaded.*

1.3 Communications Network Cable Requirements

You need these items to connect the PrintServer to the Ethernet:

- H4000 Ethernet or DELNI connection

NOTE: *The H4000 or DELNI device must be configured to produce a "heartbeat", which is necessary to interface the PrintServer with the network. See your network device manual for configuration information.*

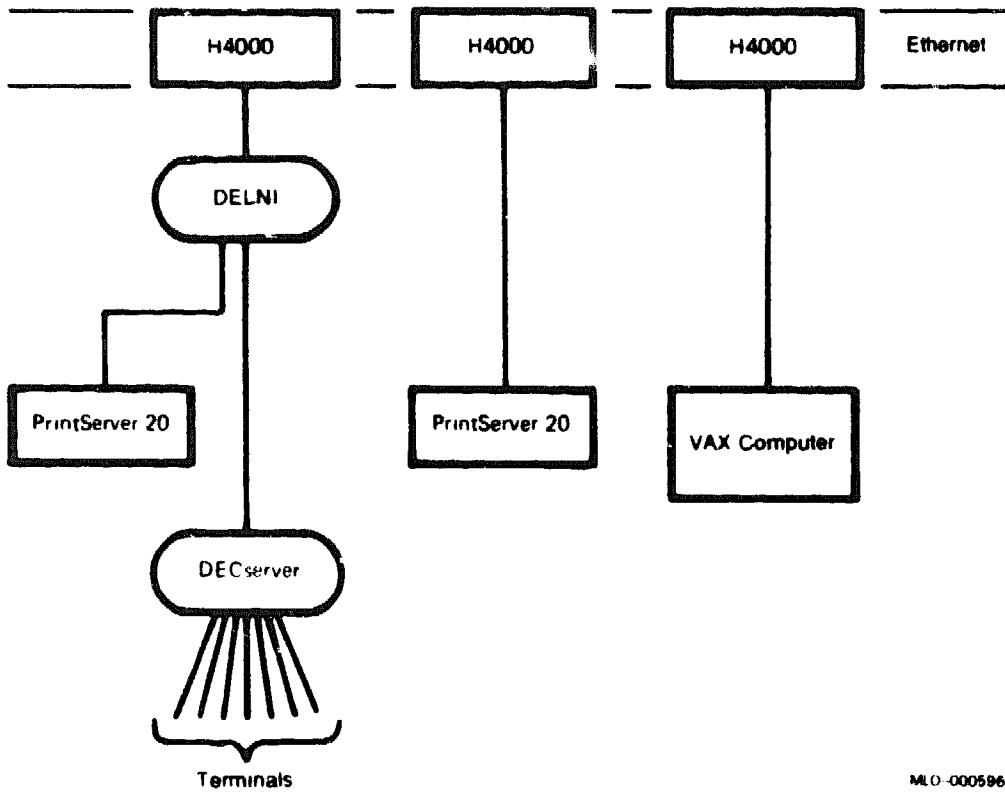
- Ethernet cable to connect the PrintServer to the network

NOTE: *The DESTA must be configured to produce a "heartbeat", which is necessary to interface the PrintServer with the network. See your DESTA manual for configuration information.*

The PrintServer can accept a standard Ethernet cable, or it can accept a ThinWire Ethernet cable if you have a DESTA ThinWire Ethernet adapter. The printer comes supplied with a mounting bracket for the DESTA.

Figure 1-1 displays a simple Ethernet with one PrintServer connected to a DELNI and another PrintServer connected to an H4000.

Figure 1-1: Ethernet Block Diagram



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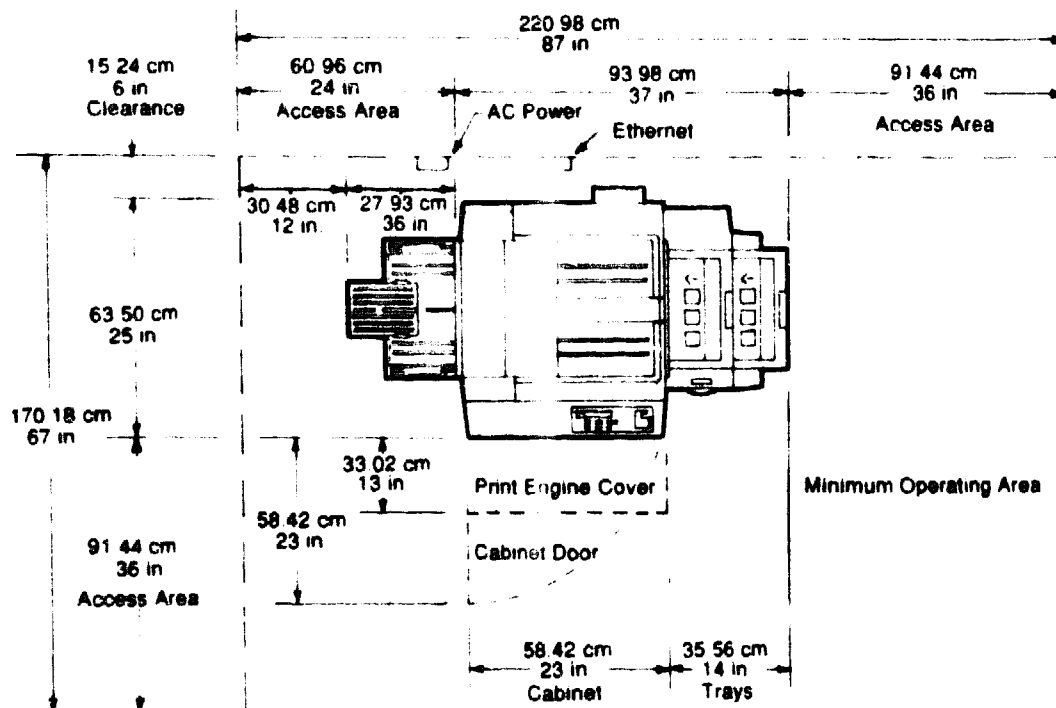
1.4 Operating Location Requirements

Install the PrintServer in an area that meets the following location requirements:

- A level floor
- Enough surrounding space to allow ventilation and easy access to all sides of the printer for servicing and adding paper. Make sure the user can face the opening of the bottom paper tray.

Figure 1-2 illustrates the space requirements for the printer.

Figure 1-2: Space Requirements



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1.5 Environmental Conditions

Environmental conditions can affect the operation of the PrintServer. To ensure proper operation of the printer, the following environmental requirements must be met:

- Maintain the site within a temperature range of 10° to 32°C (50° to 90°F) and with a humidity range of 20% to 80%. This ensures consistent image quality and prevents paper jams.**
- Install the printer in a well-ventilated area to avoid heat buildup within the unit.**
- Avoid installing the printer in a dusty area to protect moving parts from unnecessary wear.**
- Keep the printer away from magnets and equipment, such as motors and transformers, that generate magnetic fields.**
- To prevent condensation, avoid installing the printer in an area where it is**
 - Subjected to sudden changes in temperature or high humidity**
 - Exposed directly to a draft of hot or cold air from a heating system or an air conditioner**

Chapter 2

Print Engine and Cabinet

The print engine and cabinet are assembled and shipped as one unit. The print engine refers to the top section, which contains most of the printing components, such as the development unit, fusing unit, and so on. The cabinet refers to the bottom section, which contains the duplexing unit and the paper transport section for the bottom input paper tray. The cabinet also provides storage space for documentation and supplies.

CAUTION: *Do not plug in the power cord or apply power to the PrintServer until you are instructed to do so.*

2.1 Unpacking the Kits

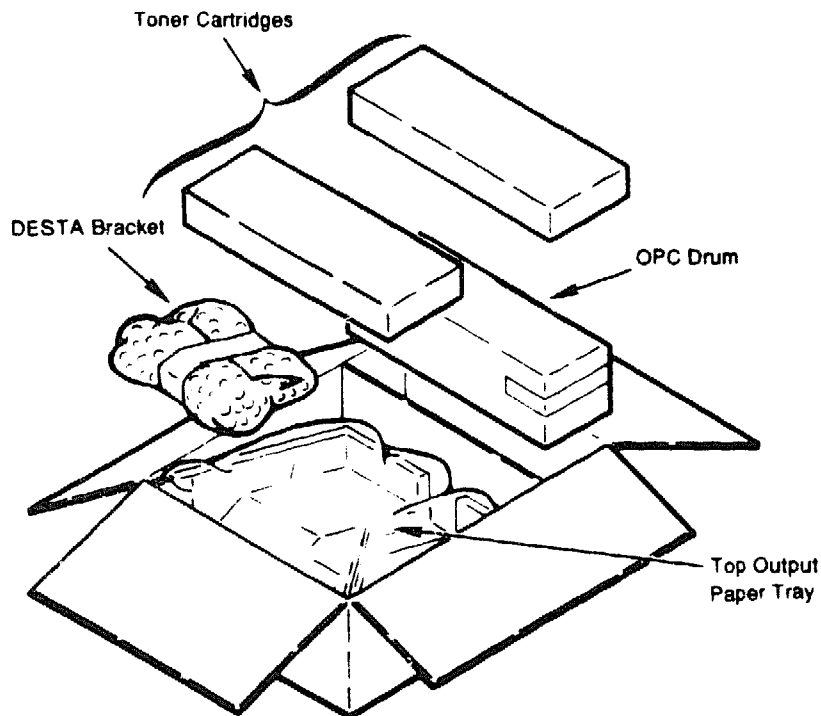
Unpack Shipaway Kits A and B by using the following procedure:

1. Check the contents of Shipaway Kits A and B. (See Figure 2-1 and Figure 2-2.)

Shipaway Kit A contains:

- 2 toner cartridges
- 1 organic photo conductor (OPC) drum
- 1 top output paper tray
- 1 DESTA bracket

Figure 2-1: Shipaway Kit A

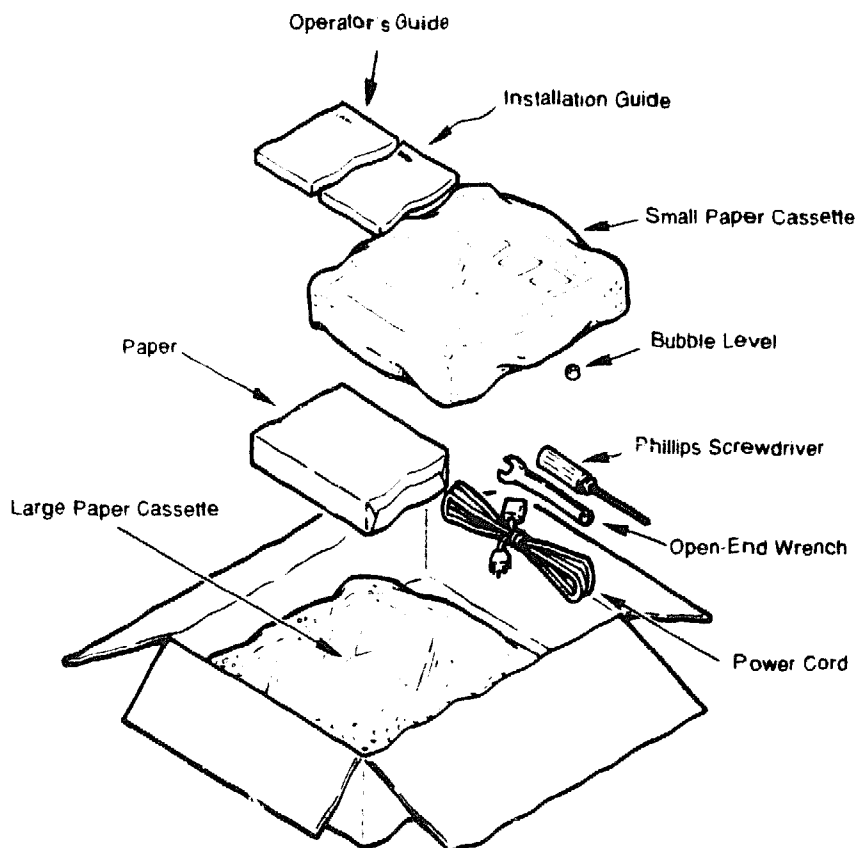


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Shipaway Kit B contains:

- 1 operator's guide (English)
- 1 installation guide (English)
- 1 small input paper cassette configured for 11 in. x 8.5 in. (paper size keys and labels for additional paper sizes are included)
- 1 Phillips screwdriver
- 1 open-end wrench
- 1 power cord (U.S. only)
- 1 large input paper cassette configured for 11 in. x 17 in. (paper size keys and labels for additional paper sizes are included)
- 1 bubble level
- 250 sheets of paper
 - 8.5 in. x 11 in. (216 mm. x 279 mm.) for the U.S.
 - A4 (297 mm. x 210 mm.) for other countries

Figure 2-2: Shipaway Kit B



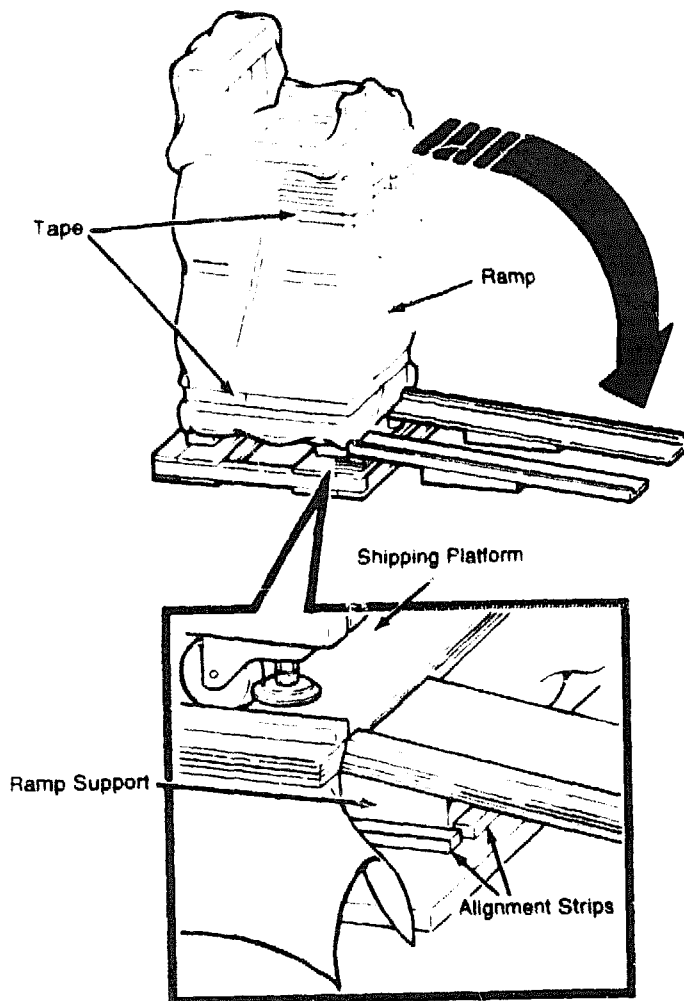
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2.2 Moving the Printer from the Shipping Pallet

Remove the printer from its shipping pallet by using the following procedure:

1. Remove the tape holding the wood ramp to the right side of the printer and lower the ramp.

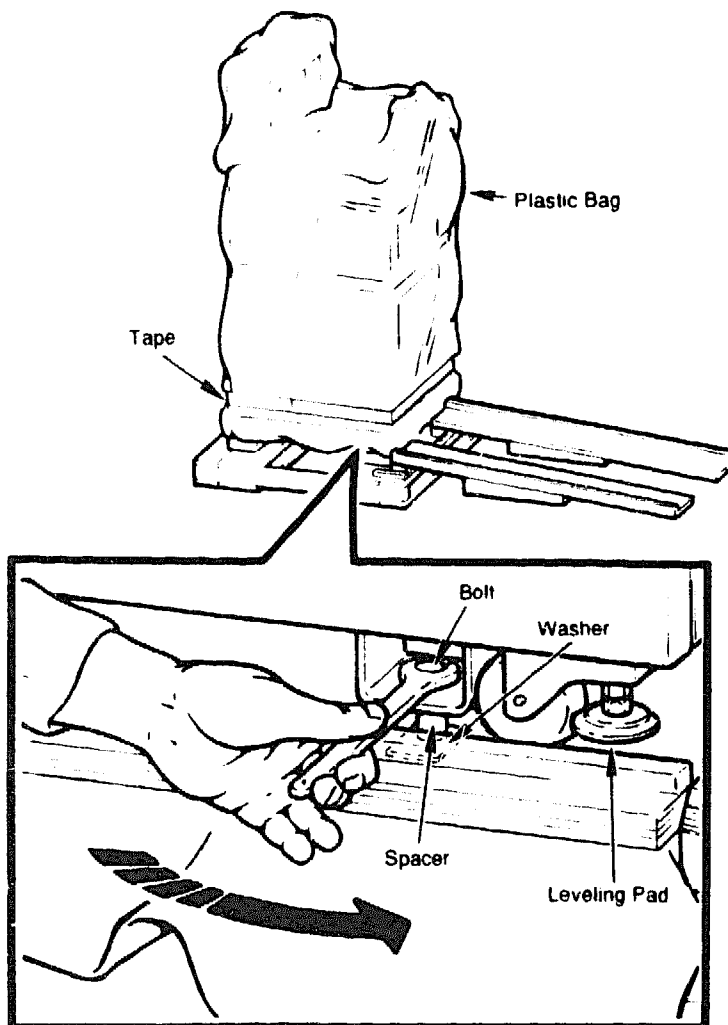
WARNING: *Be sure the ramp is aligned in front of the printer wheels, and the ramp supports are seated properly between the wood alignment strips and the shipping platform.*



140-000599

2. Remove the tape from the plastic bag around the bottom of the cabinet and lift the plastic bag straight up to remove it.
 - If excess plastic remains around the shipping pallet, you can pull the plastic down out of the way or cut it with a razor knife to remove it.
3. Raise the four leveling pads to the full up position by turning them counterclockwise.
4. Remove the four shipping bolts that secure the printer to the pallet.
 - Remove the spacers and square washers.

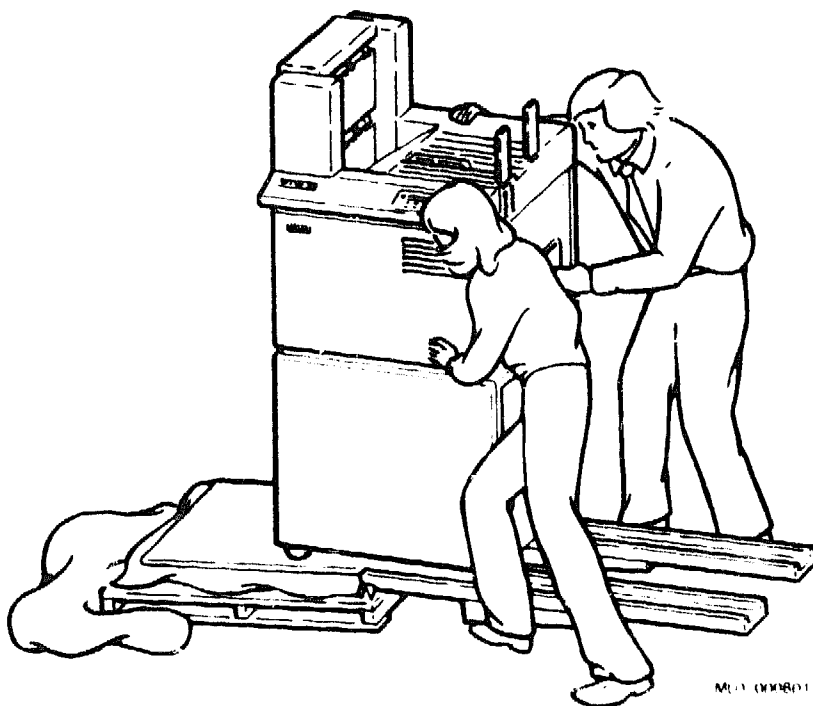
NOTE: Discard any silica bags that may be on the shipping platform under the printer.



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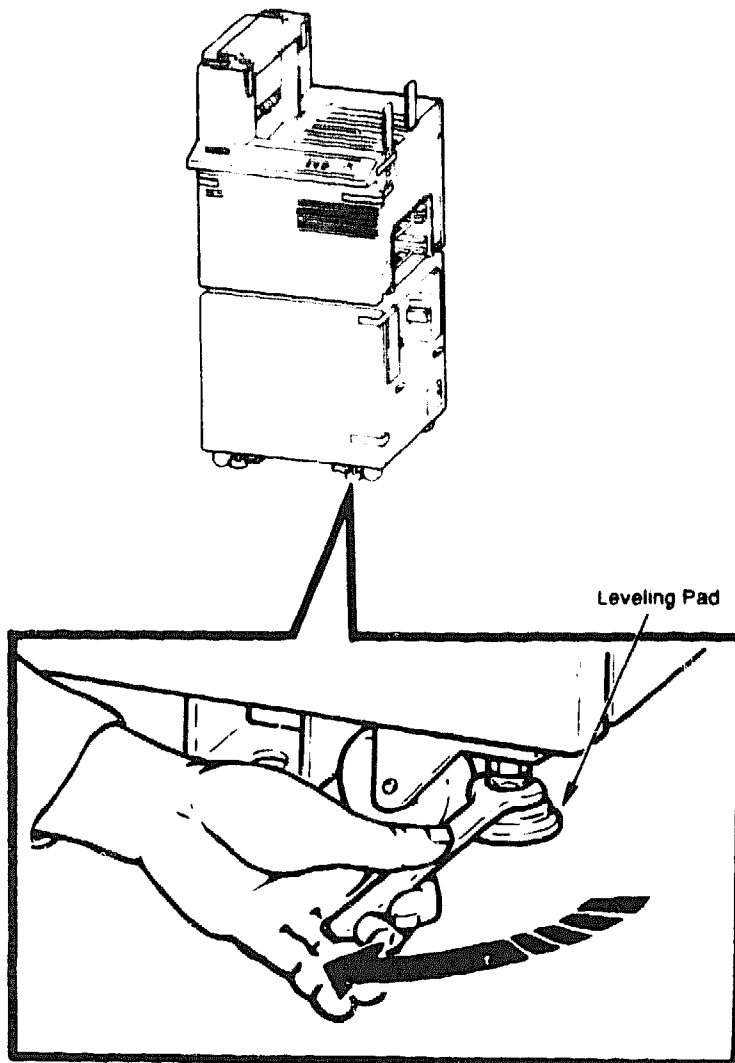
5. Slowly roll the printer down the ramp to its operating location.
 - Leave enough room to easily access all sides of the printer during installation.

WARNING: *The printer is heavy. Two people must roll the printer down the ramp to avoid personal injury.*



6. Lower the leveling pads to release the wheels from their locked position.

→ The leveling pads should be lowered until they contact the floor to prevent the printer from rolling.



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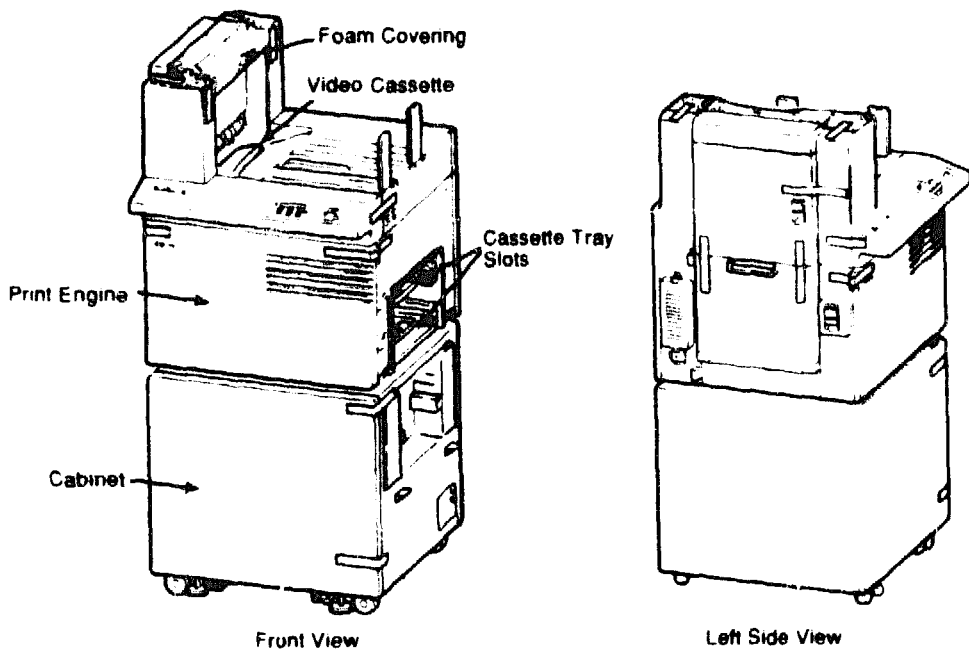
2.3 Unpacking the Components

Unpack the printer's components, using the following procedure.

1. Remove the protective foam covering and all shipping tape from the outside of the print engine and cabinet.

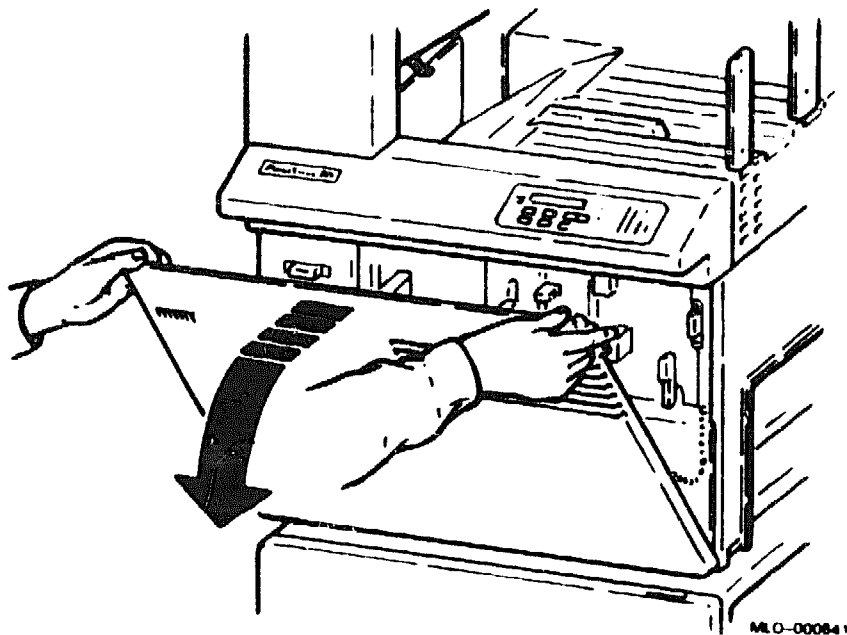
Also, remove the video cassette from the top of the print engine.

NOTE: Be sure to remove the two pieces of tape from inside the paper cassette tray slots.

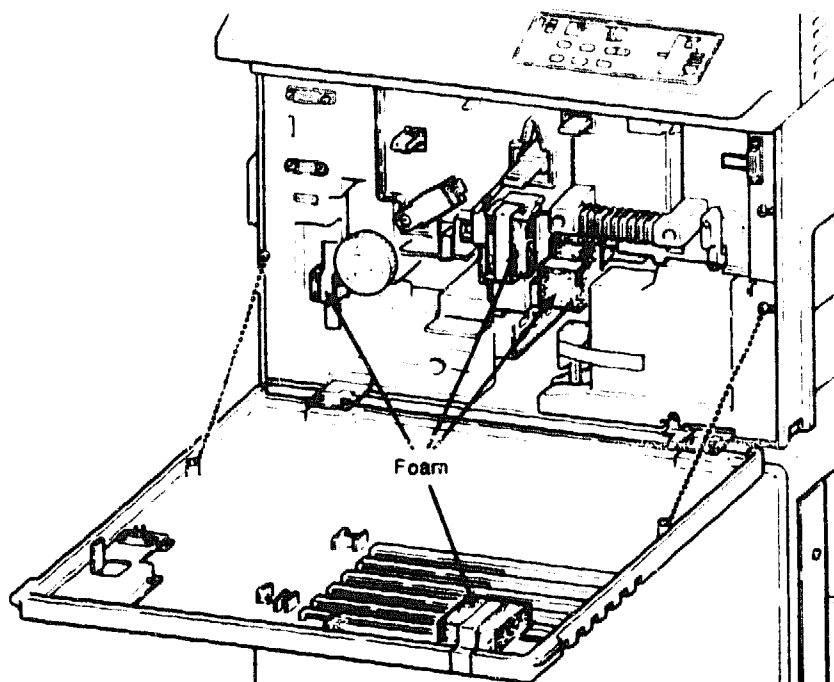


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2. Open the front cover of the print engine.

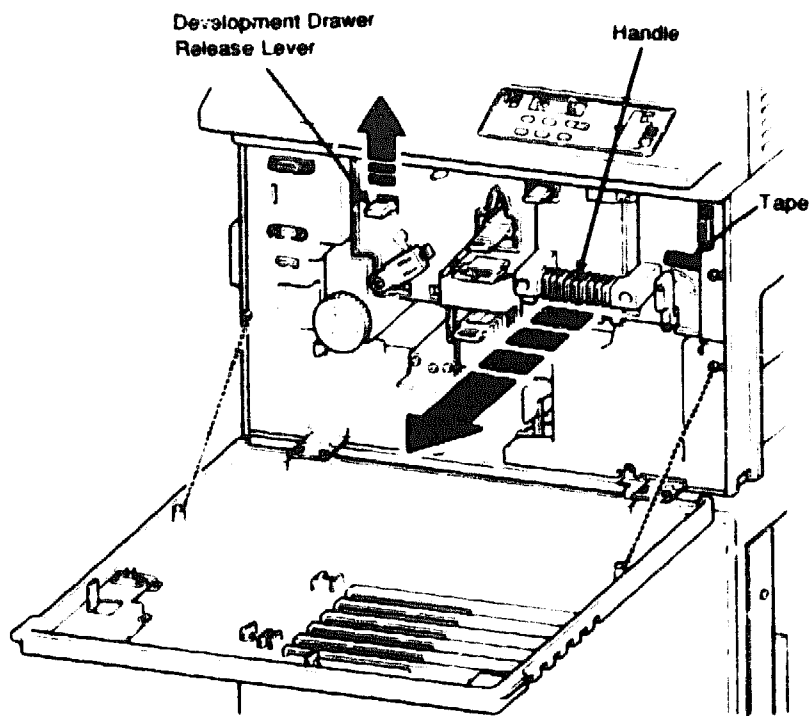


3. Remove the four pieces of tape and three pieces of foam padding from the print engine. Also, remove the one piece of tape and foam padding from the print engine cover.



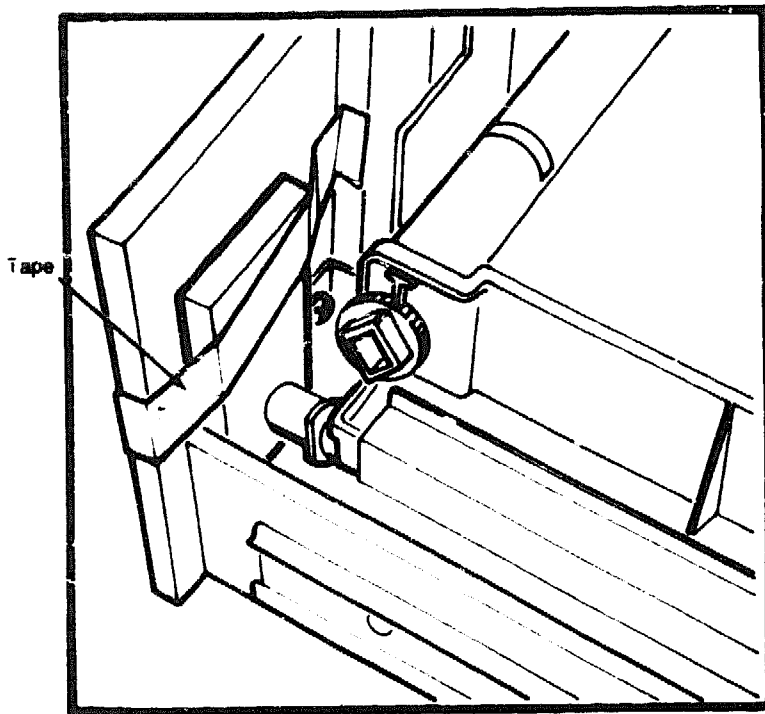
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4. Open the development drawer by lifting up the release lever while pulling the drawer out by its handle until it stops.



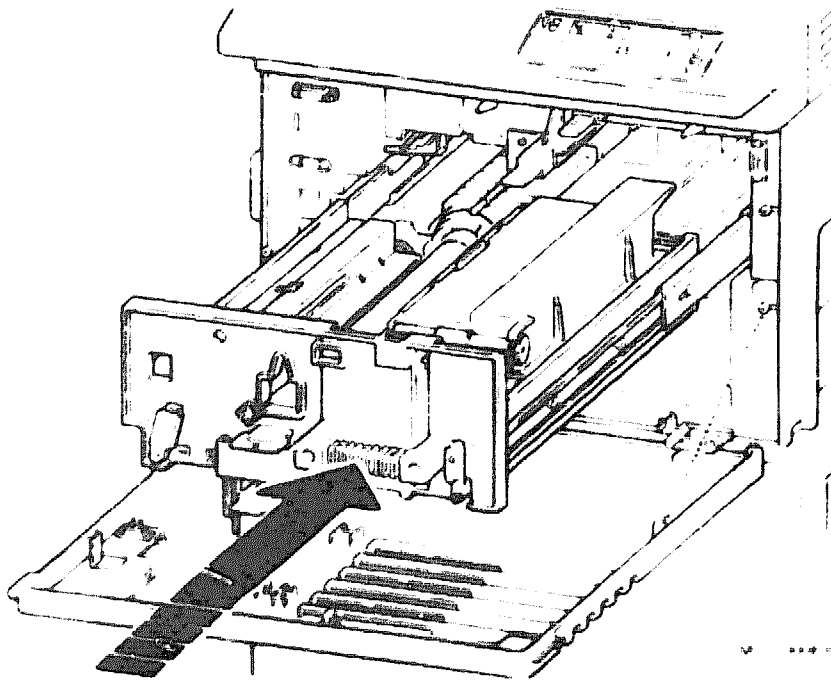
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5. Remove the tape and cardboard from inside the development drawer.

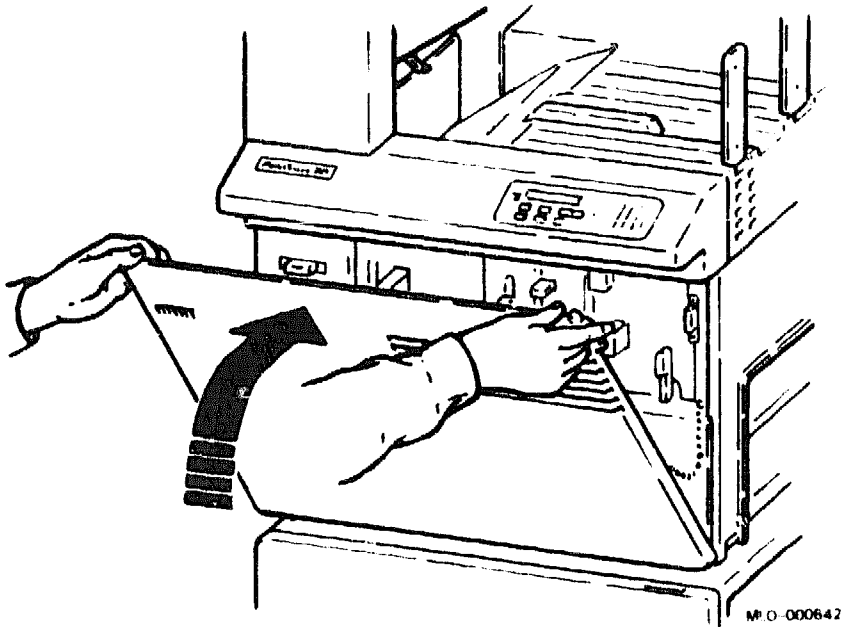


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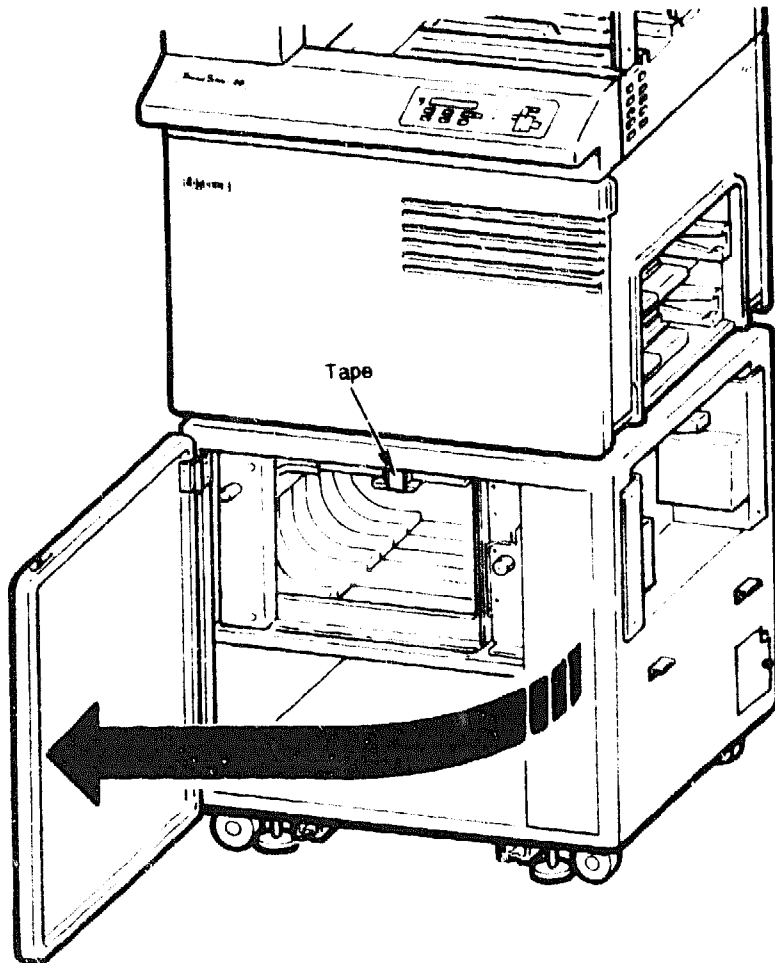
- 6 Close the development drawer by using the handle to push it back in.



7. Close the front cover.

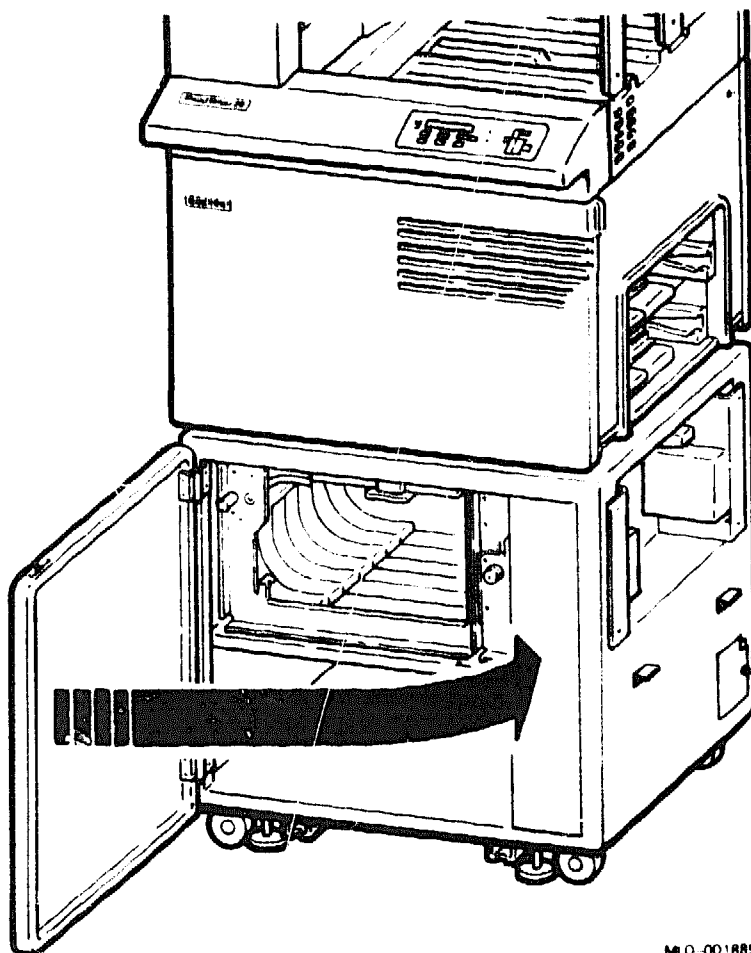


8. Open the cabinet door and remove the tape from the duplex transport guide.



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9. Close the cabinet door.



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10. Proceed to Chapter 3 to install the bottom paper tray.

Chapter 3

Bottom Paper Tray

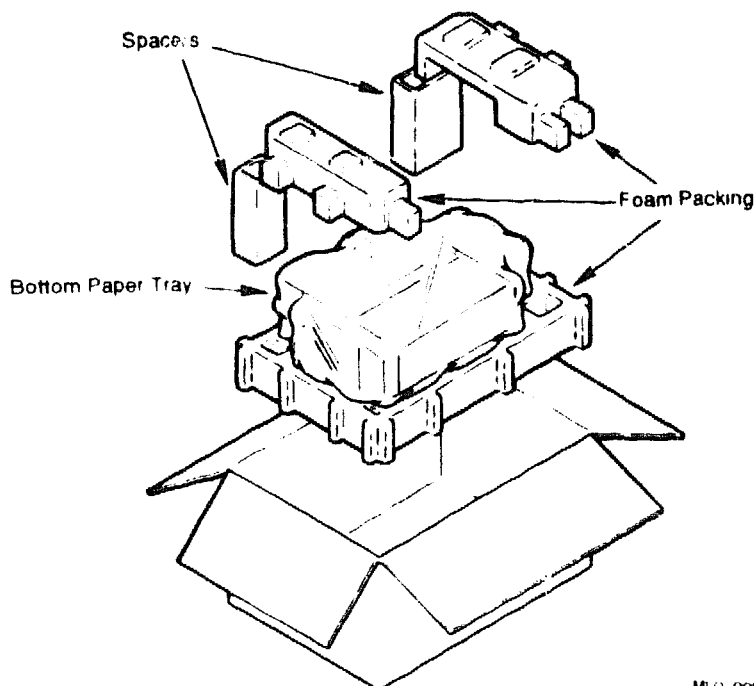
The next step in the installation is to install the bottom paper tray into the printer.

3.1 Unpacking

Unpack the bottom paper tray by using the following procedure:

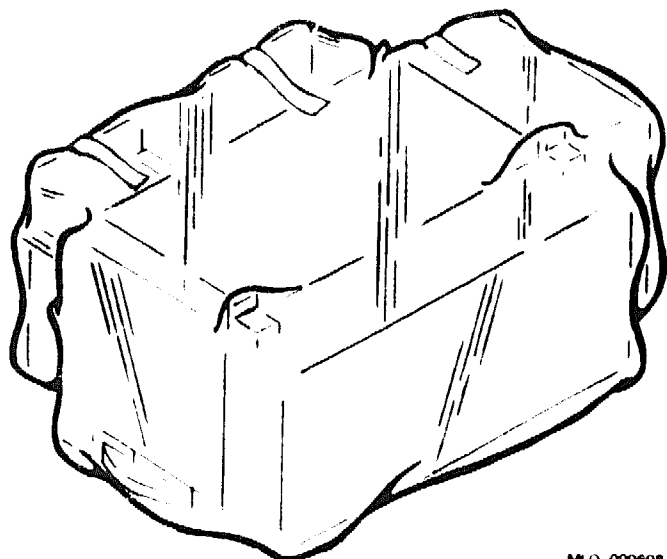
1. Open the box and remove the protective foam packing and corrugated board spacers from the box.
2. Grasp the paper tray by its sides to lift it out of the box and place the tray on a desk or table.

CAUTION: *Do not lift the bottom paper tray by the front plastic cover. Lifting the tray by the front cover could damage the cover.*



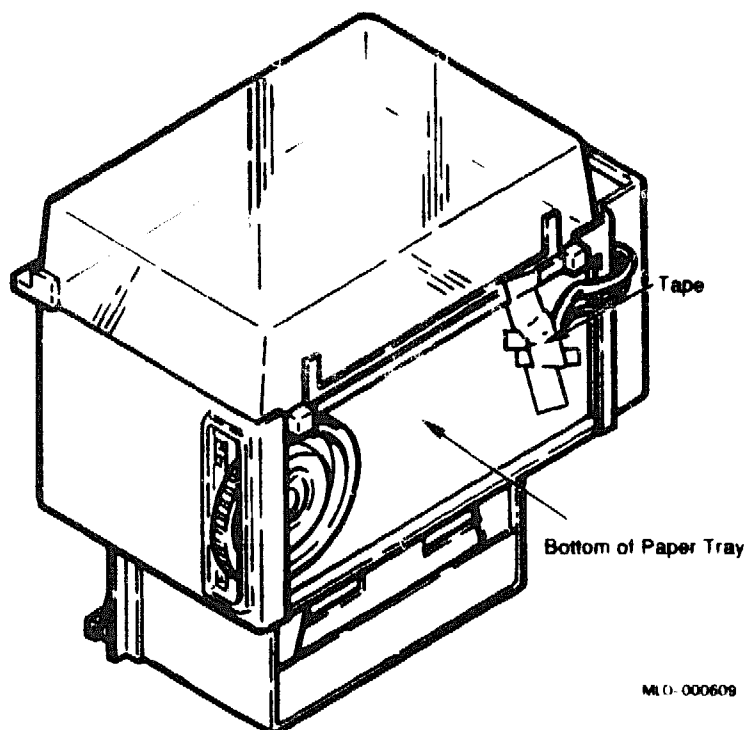
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3. Remove the tape and plastic covering from the paper tray.



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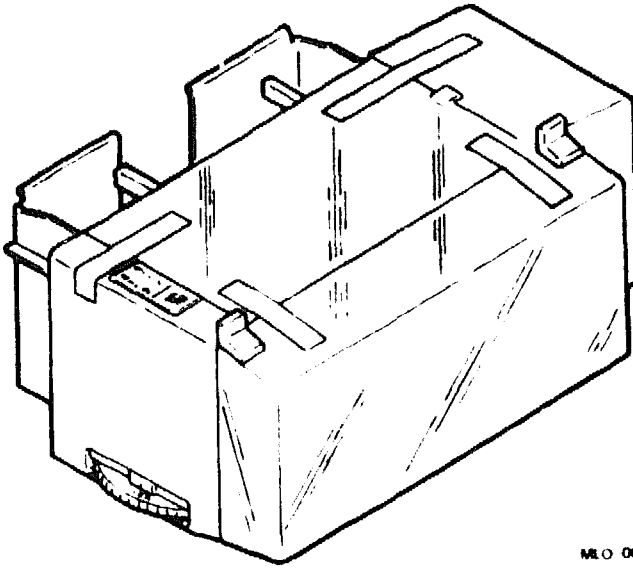
4. Carefully place the paper tray on its back side and remove the tape holding the two connecting cables to the bottom of the paper tray.
→ Return the paper tray to its normal (upright) position.



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5. Remove the four pieces of tape from the paper tray covers.

CAUTION: *Carefully remove the tape by pulling it off slowly. The tape is strong and could damage the plastic if removed quickly.*

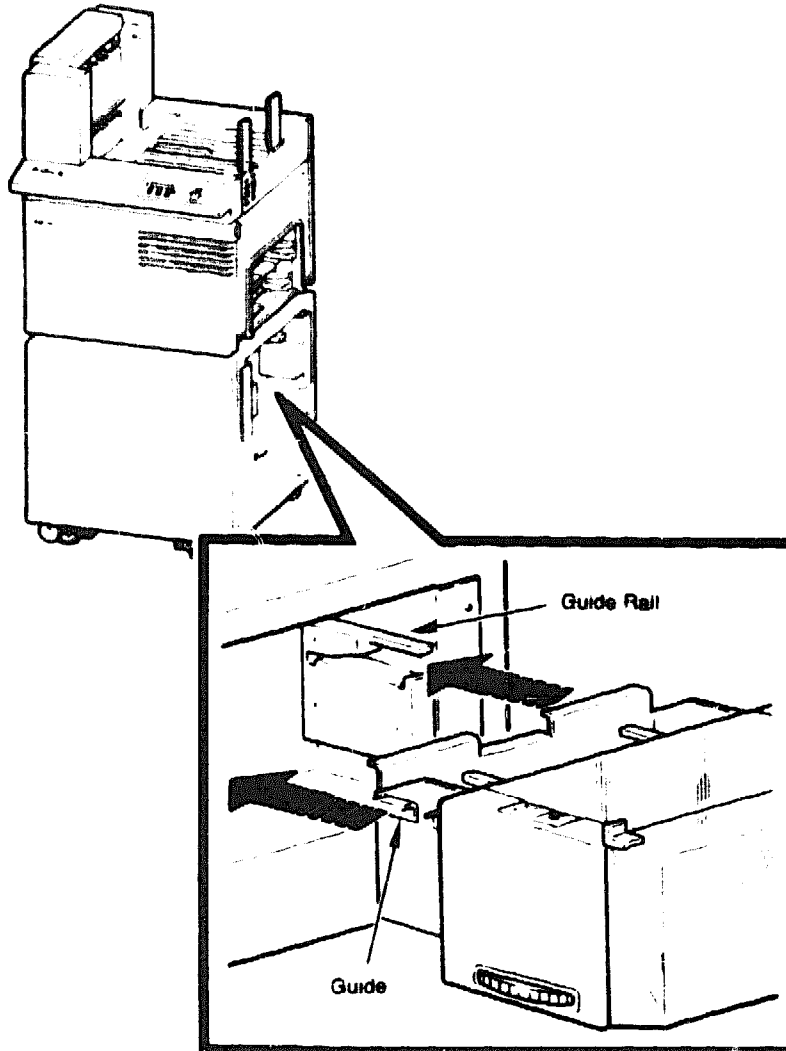


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3.2 Installing

Install the bottom paper tray by using the following procedure:

1. Install the paper tray by sliding the guides into the cabinet along the guide rails until the tray drops into position.

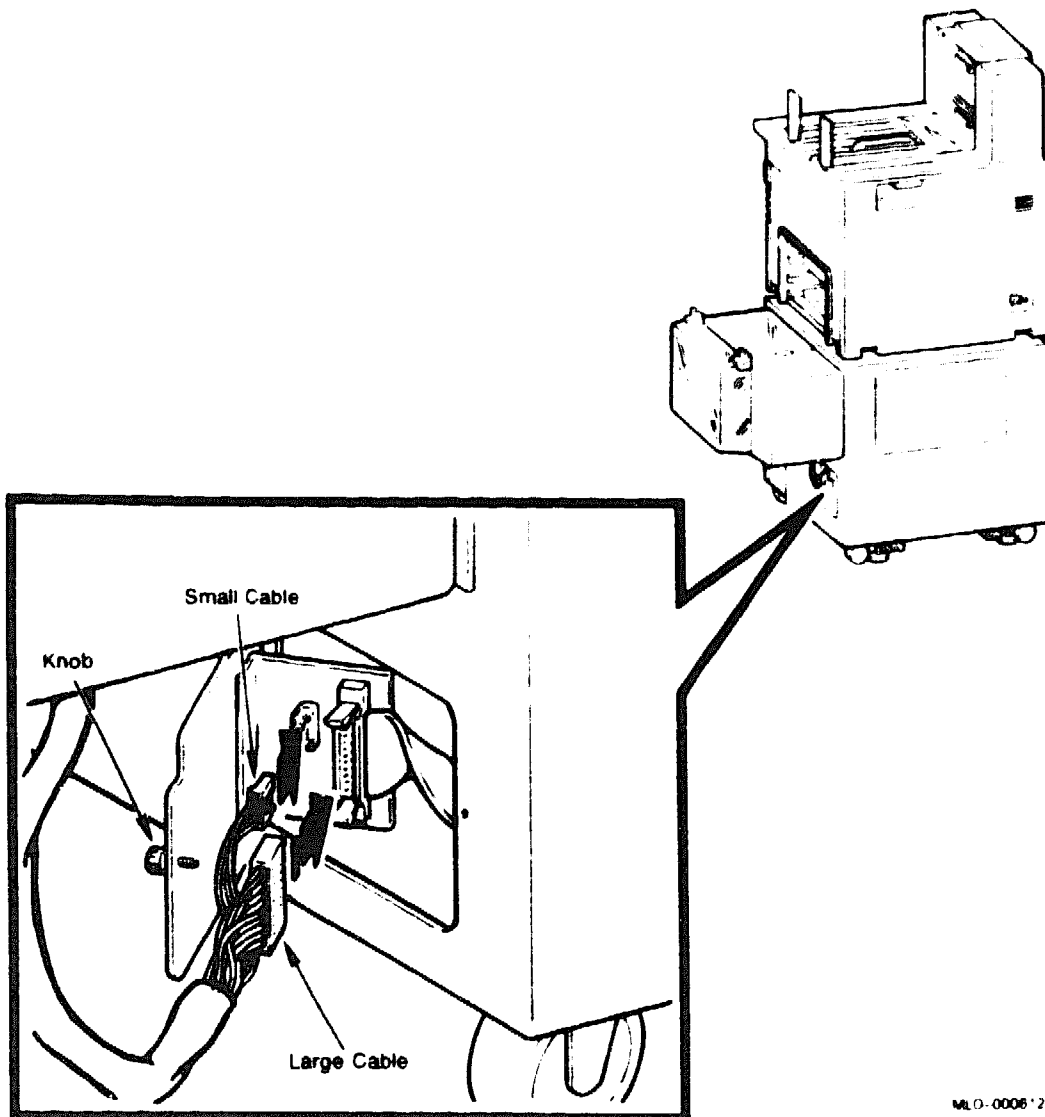


2. Open the small cable door on the cabinet by turning the knob counterclockwise.
3. Connect the large cable by pushing it straight into its connector.
 - The top and bottom retainers on the connector *click* into the locking position when the cable is properly connected.

NOTE: *The large cable can only fit into the connector one way.*

4. Connect the small cable by pushing it straight into its connector.

NOTE: *The small cable can only fit into the connector one way.*



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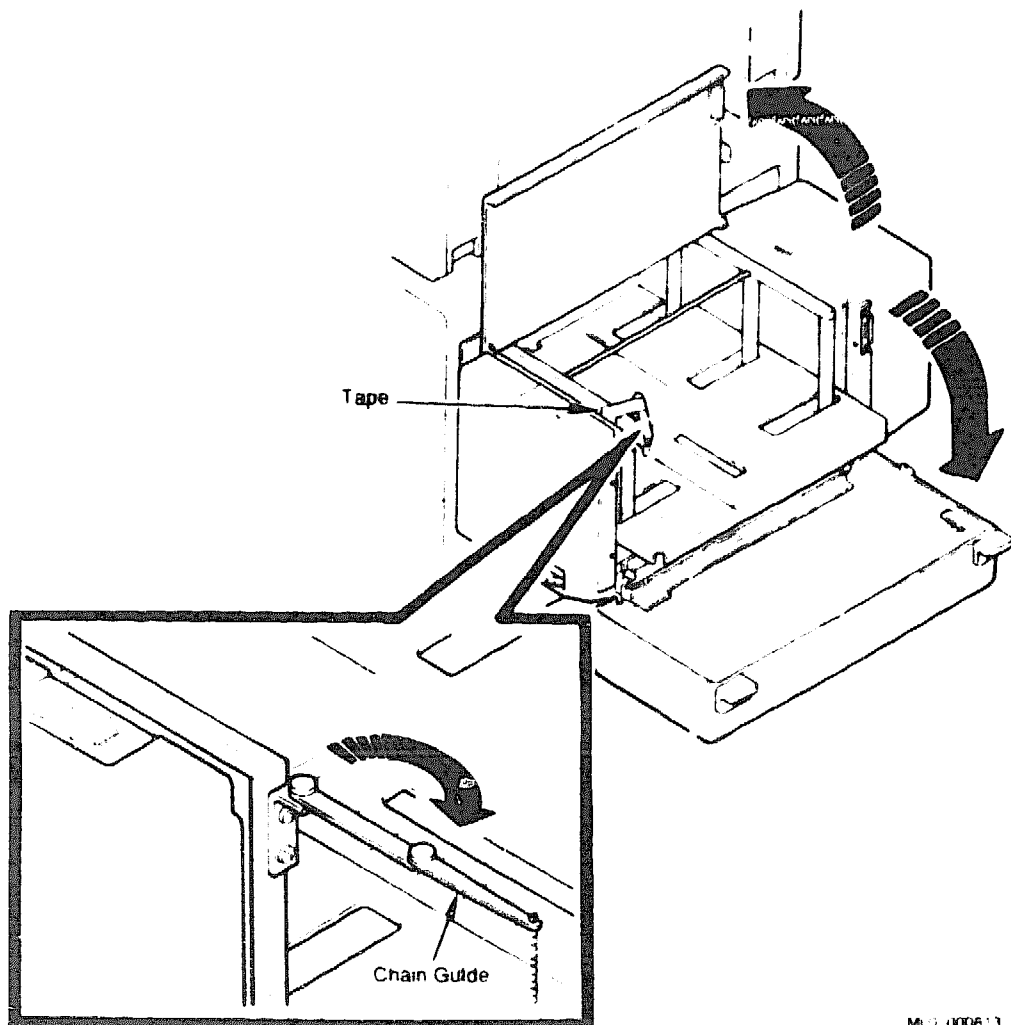
5. Close the cable door and turn the knob clockwise until it will turn no further.

CAUTION: *Be sure that only the shielded portion of the cable is placed through the door opening.*

6. Open the paper tray side and top covers and remove the tape from the chain guide.

→ Position the chain guide away from the paper tray.

NOTE: *Discard any silica bags present in the paper tray.*



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3.3 Adding Paper

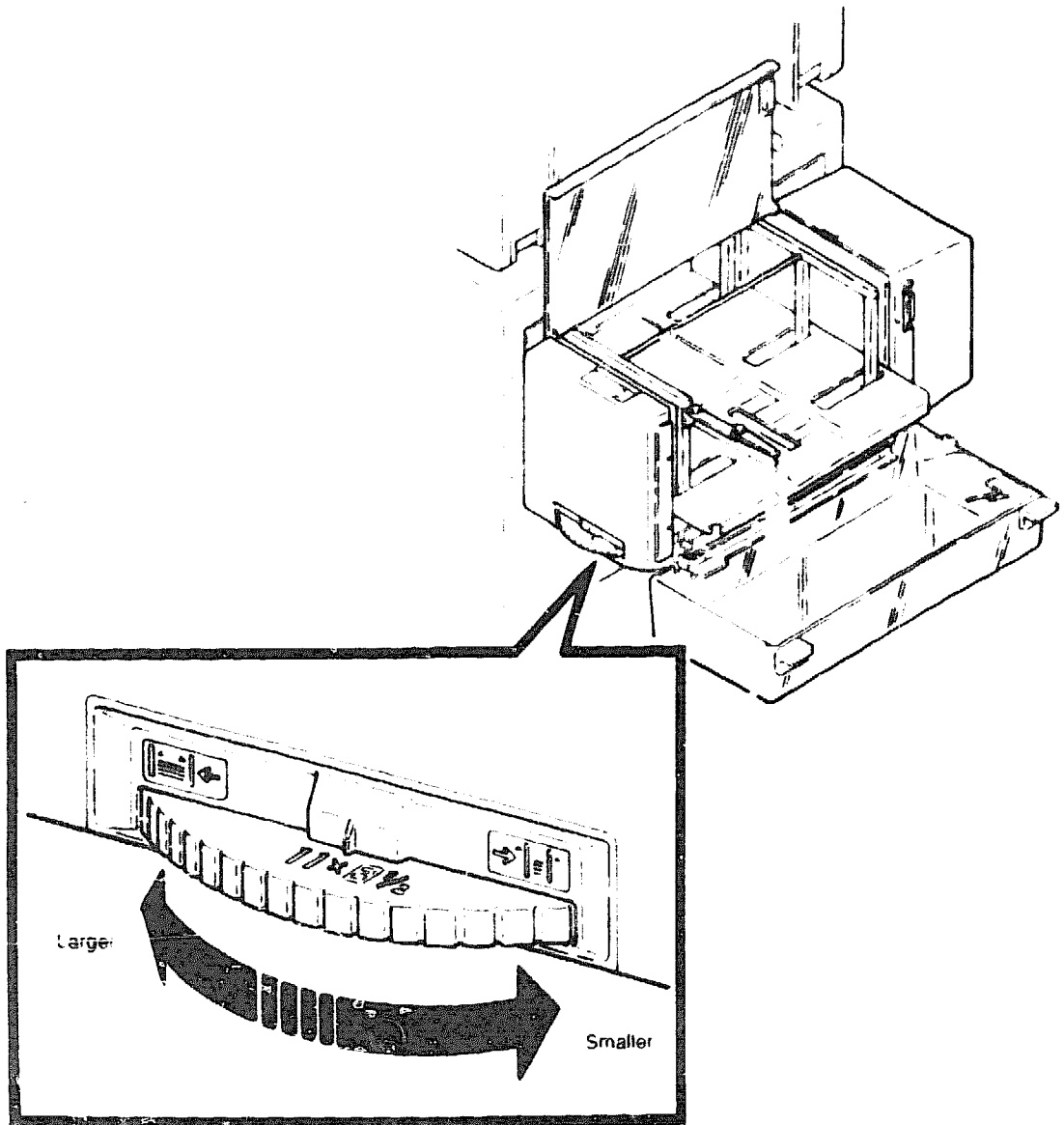
Add paper to the bottom paper tray by using the following procedure:

1. Set the paper size dial to the paper size you are using.

These paper sizes are available for the tray.

Portrait Orientation	Landscape Orientation
11 in. x 8½ in.	8½ in. x 11 in.R
A4	A4R
B4	N/A
B5	B5R
8½ in. x 14 in.	N/A
N/A	A5R

NOTE: *In the portrait orientation, the paper is fed into the printer long side first, and results in faster print speeds. In the landscape orientation (designated by the letter R), paper is fed into the printer short side first, resulting in slower print speeds.*



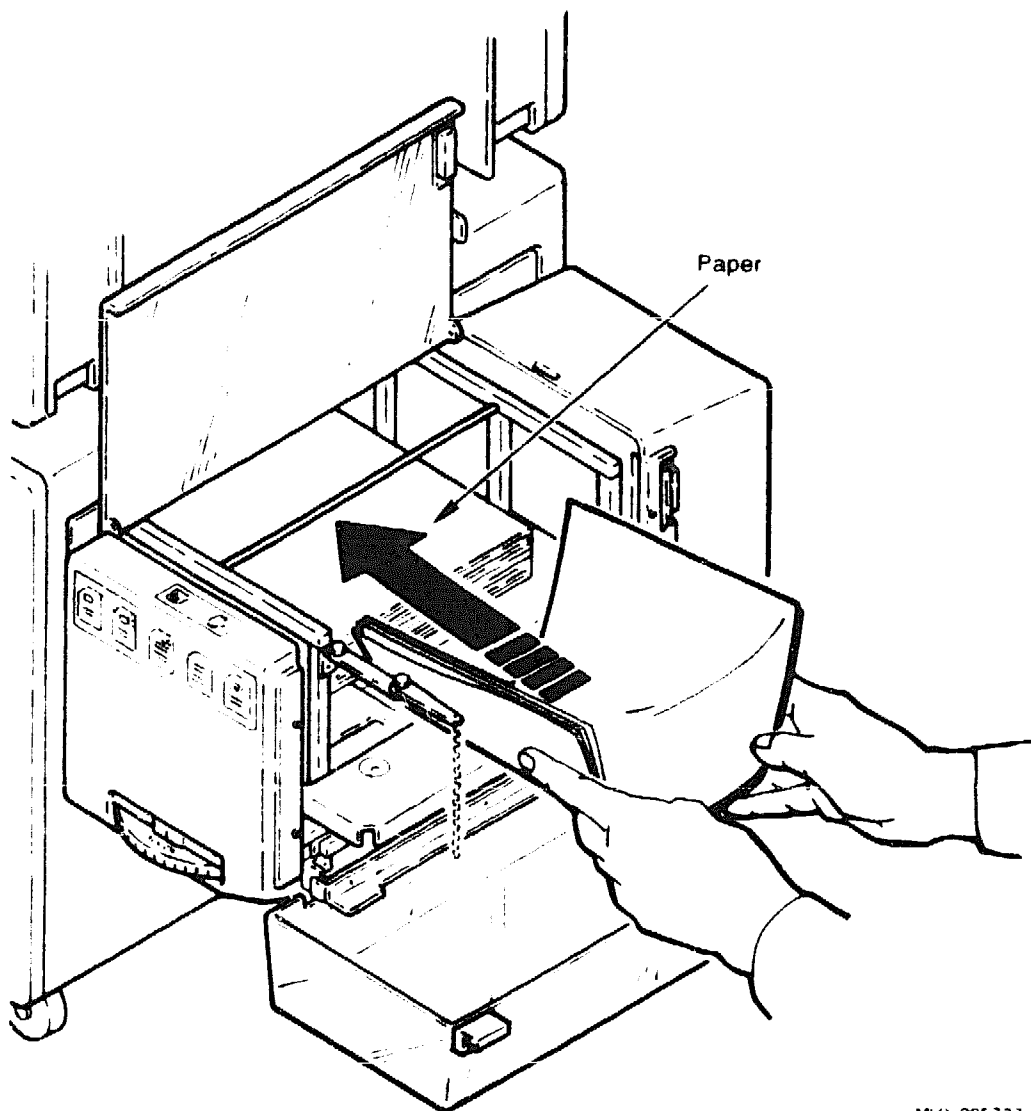
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2. Add the paper to the tray.

- a. Pick up one-third to one-half of a ream of paper and bend it so that the edges curve upward.
- b. Face the opening of the bottom paper tray so that you can see the back of the tray. Insert the paper as shown.

CAUTION:

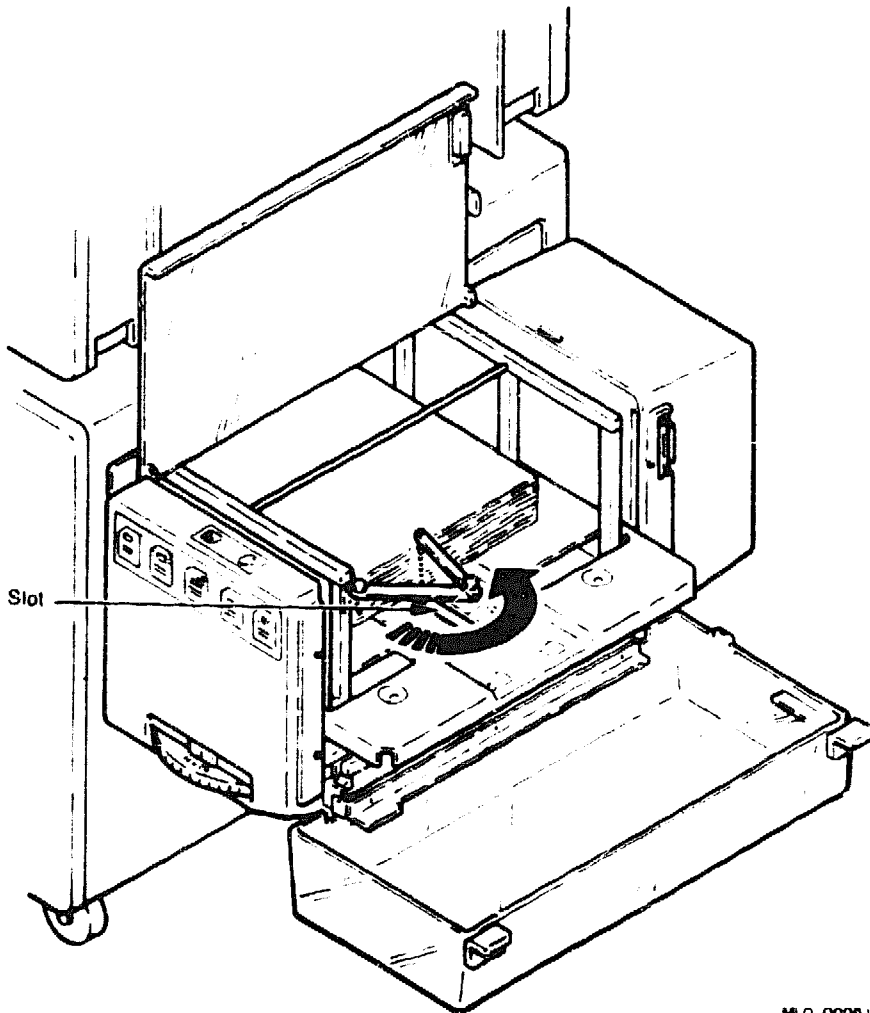
- *Use only recommended paper, such as those listed in Appendix B of the turbo PrintServer 20 Operator's Guide.*
- *Do not add more than 2 reams of paper to the bottom tray (about 1000 sheets of 20-pound paper). Adding more paper puts stress on the paper tray motor and causes paper jams.*
- *Avoid forcing paper past the side posts of the printer. Otherwise, paper may wrinkle, causing paper jams or skewed printing.*
- *Do not store residual paper in the bottom paper tray.*



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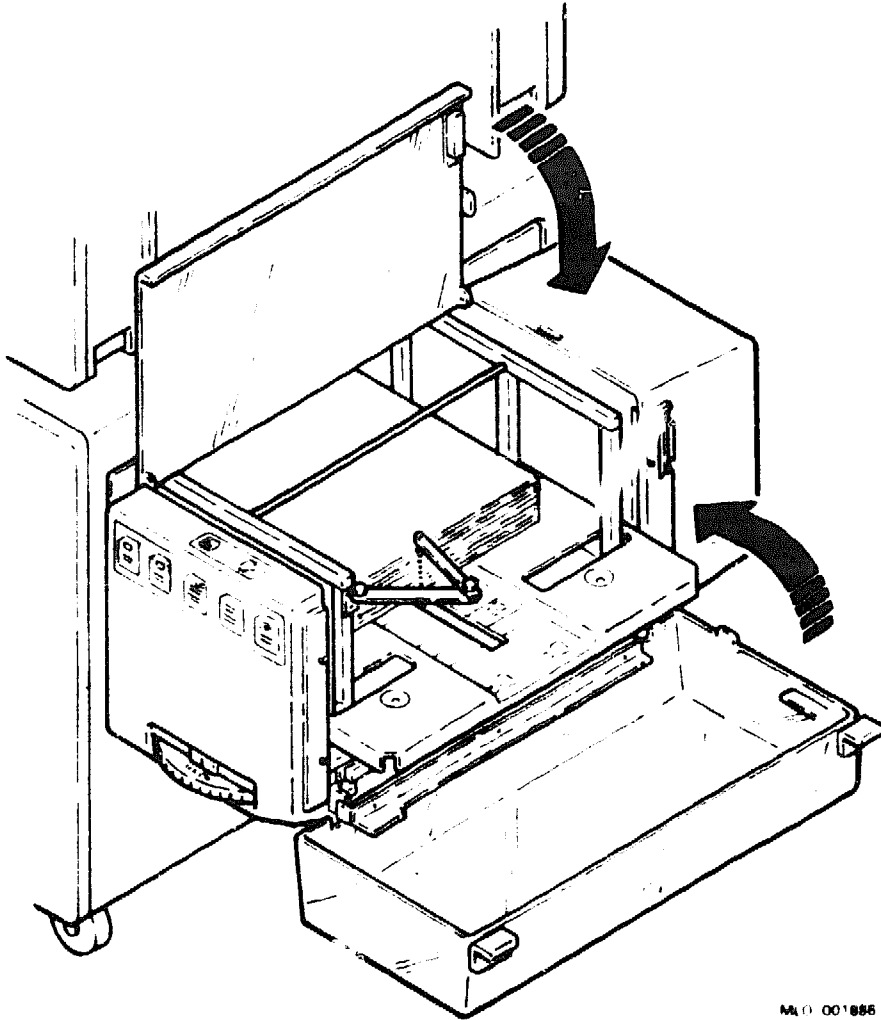
3. Move the chain guide so that the chain just touches the edge of the paper.
 - The bottom of the chain should be positioned over the slot in the tray.

NOTE: To prevent misfeeds and paper jams, be sure the chain is not resting on top of the paper or to either side of the slot.



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4. Close the paper tray top and side covers.



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5. Proceed to Chapter 4 to set up the printer.

Chapter 4

Printer Setup

This chapter explains the following setup procedures:

- Assembling the paper cassettes
- Adding paper and installing the paper cassettes
- Installing the top output paper tray
- Adding toner
- Installing the OPC drum
- Connecting the Ethernet cable
- Connecting the power cable
- Leveling the printer

4.1 Assembling the Paper Cassettes

The paper cassettes come partially assembled with sizes based on the area the printer is shipped to.

Table 4-1: Paper Cassette Configurations

Cassette Size	U.S. Configuration	International Configuration
Small Cassette	Letter (11 in. x 8.5 in.)	A4 (297 mm. x 210 mm.)
Large Cassette	Ledger (11 in. x 17 in.)	A3R (297 mm. x 420 mm.)

NOTE: *The first number indicates the leading edge of the paper to enter the printer. For example, the 11-inch edge of paper is the leading edge for the 11-in. x 8.5-in. paper.*

Refer to the instructions packaged with the cassettes to complete the assembly by installing the metal (size shutter) keys and applying the paper size labels.

The Phillips screwdriver necessary to reconfigure the trays is in Shipaway Kit B. The procedure is the same for both the large and small paper cassettes.

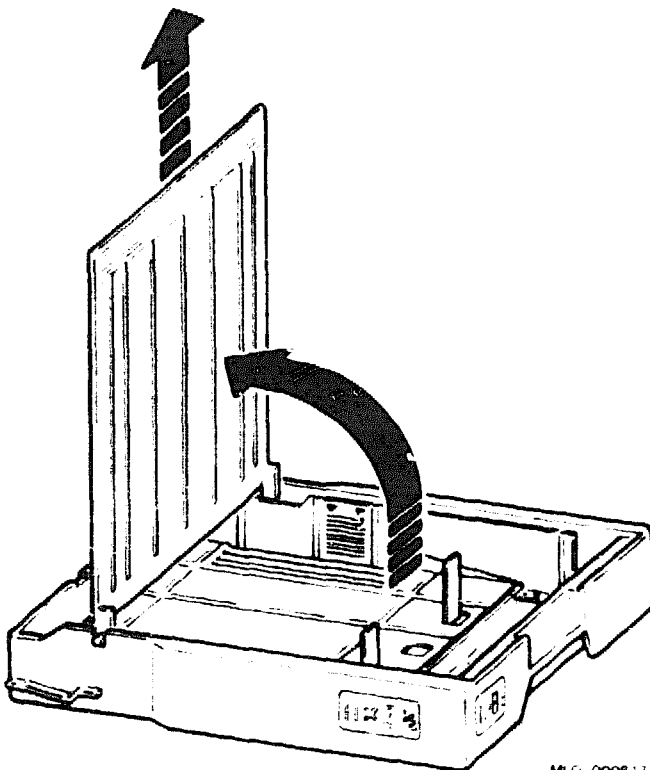
NOTE: *You may want to store the cassette assembly instructions in the pocket of this binder for reference to reconfigure the paper tray at a later date.*

4.2 Adding Paper and Installing the Paper Cassettes

Add paper and install the paper cassettes, using the following procedure.

NOTE: *This procedure is the same for both the large and small paper cassettes.*

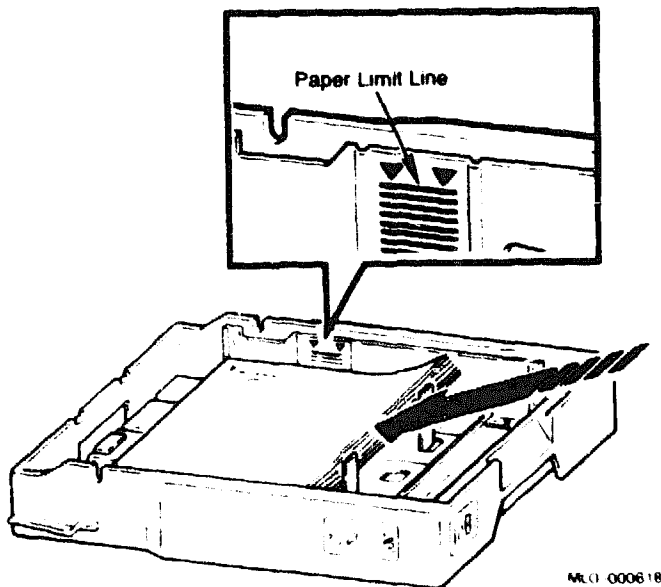
1. Remove the paper cassette cover.



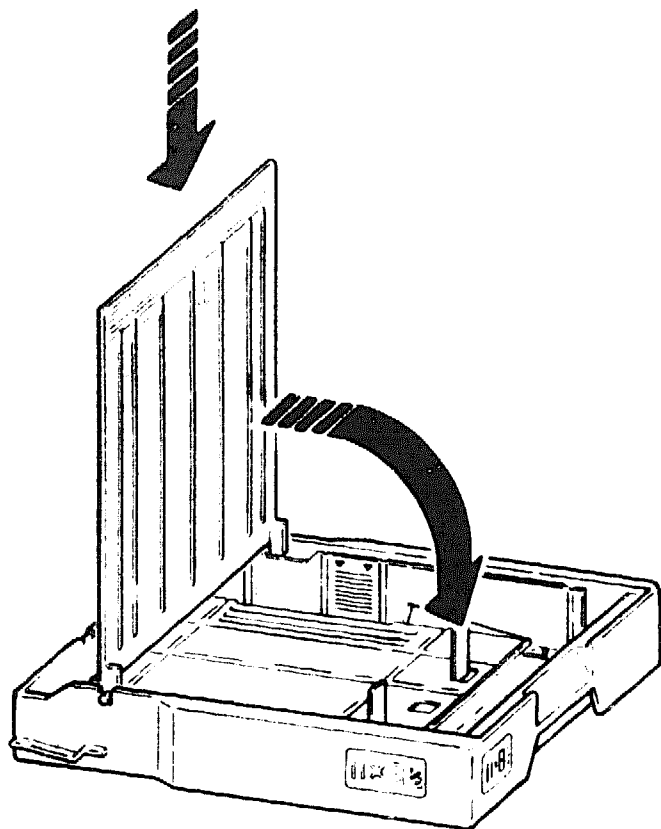
MLG-0006 17

2. Add the paper to the cassette.

CAUTION: Use only high-quality paper, as listed in Appendix B of the turbo PrintServer 20 Operator's Guide. Do not add paper above the limit line on the paper guide (about 250 sheets of 20-lb paper). Adding paper above the limit line puts stress on the paper tray motor and causes paper jams.

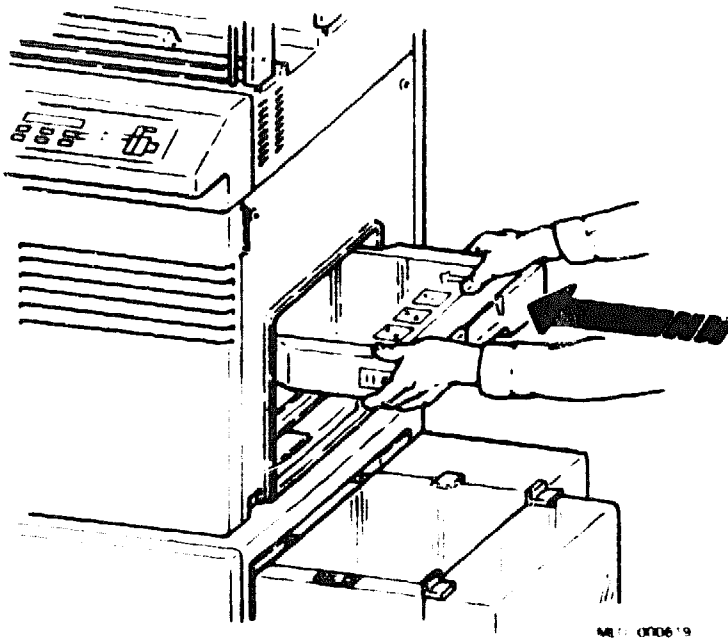


3. Place the cover back on the cassette



MLO-001887

4. Insert the paper cassette by sliding it straight into the top or bottom cassette slot until it drops into position.



5. Repeat this procedure for the second paper cassette.

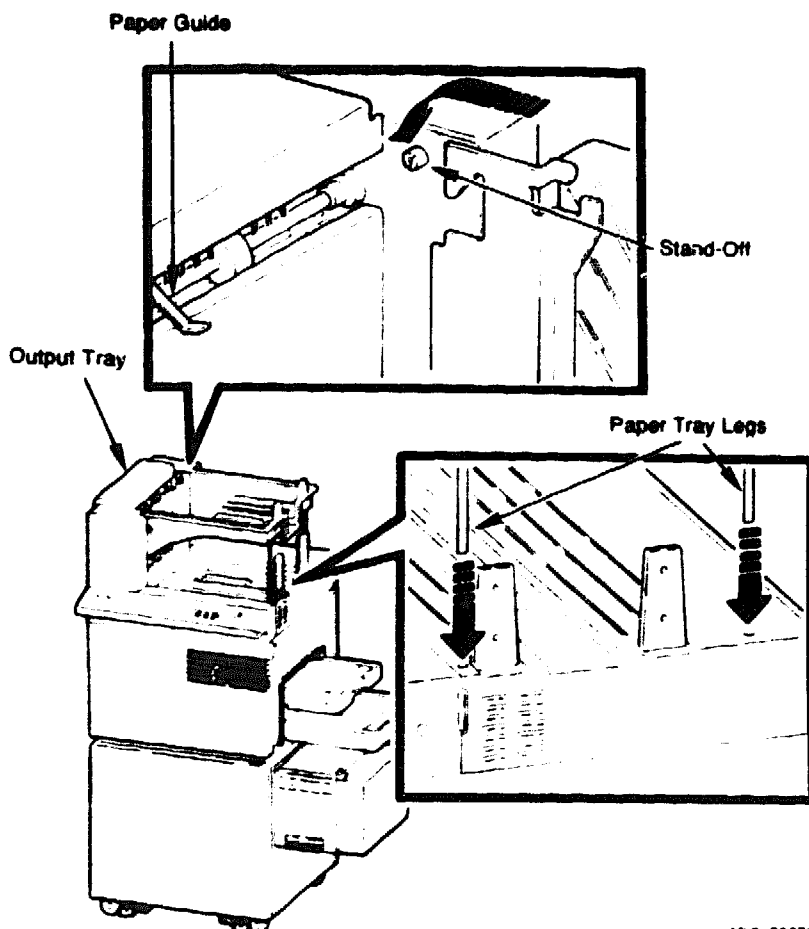
4.3 Installing the Top Output Paper Tray

Install the top output paper tray, using the following procedure:

1. Attach the top output paper tray by hanging it on the output unit stand-offs.

CAUTION: *Be sure the paper guide on the output unit is below the paper tray and can move freely.*

2. Insert the paper tray legs into the holes provided in the bottom output paper tray.



MLO-000620

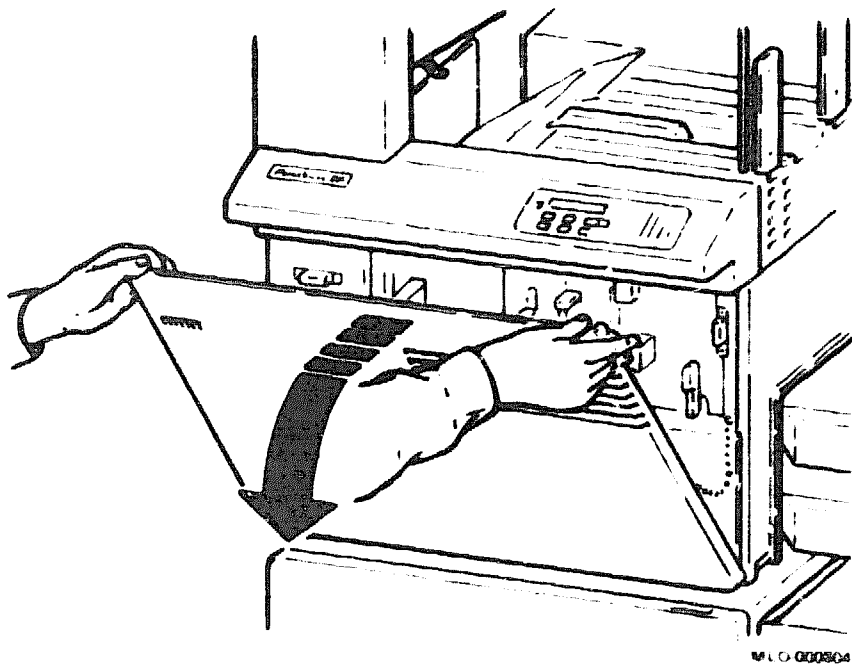
4.4 Adding Toner

Add toner using the following procedure.

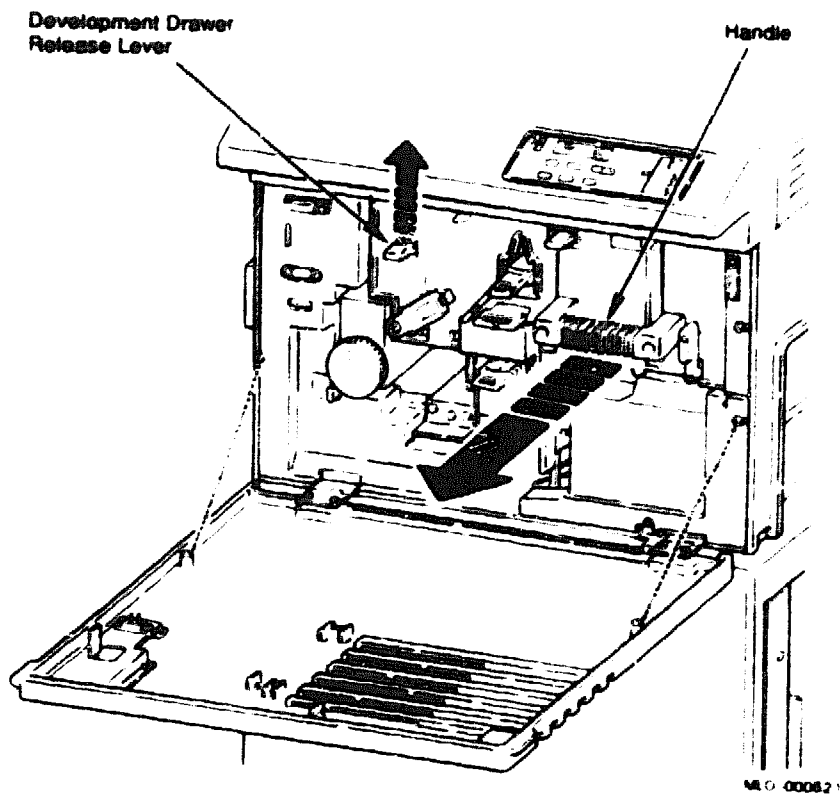
CAUTION: *Although two toner cartridges are shipped with the printer, only one is added at this time. The remaining cartridges can be stored for later use.*

NOTE: *Make sure the printer is in the Ready state before replacing toner.*

1. Open the front cover.



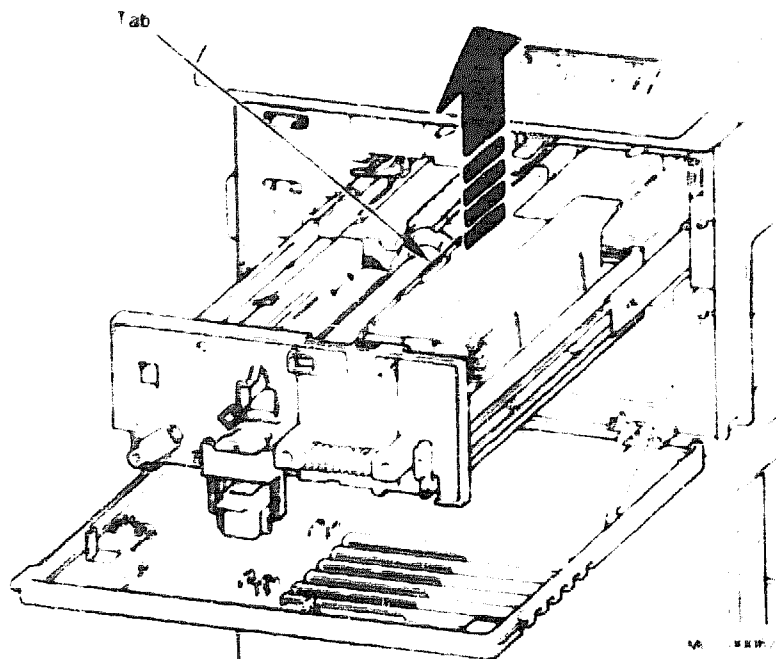
2. Open the development drawer by lifting up the development drawer release lever while pulling the drawer out by its handle until it stops.



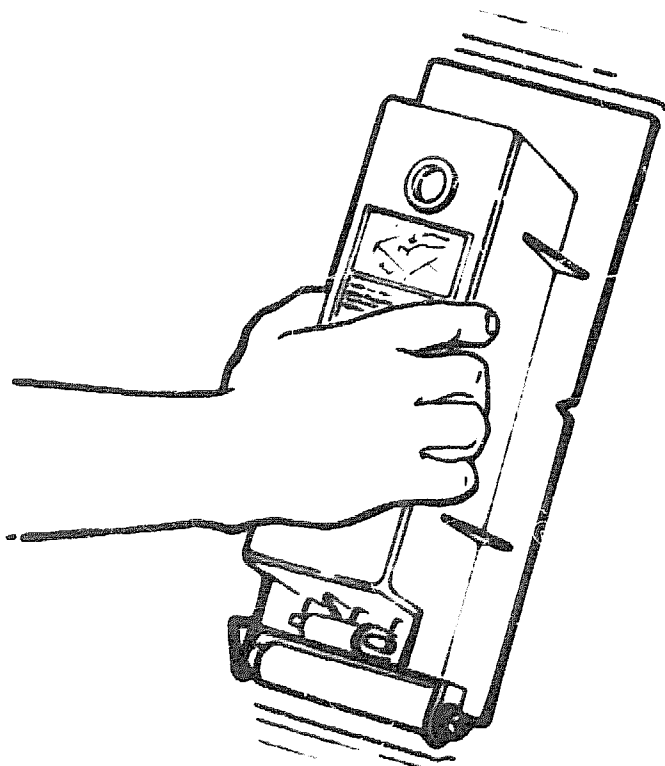
3. Remove the toner cover from the development unit by pressing the tab on the left side of the cartridge and lifting it up and out.

→ Do not discard the toner cover, which is reinstalled later.

NOTE: *If toner accidentally spills on your clothes or hands, rinse them with soap and cold water.*

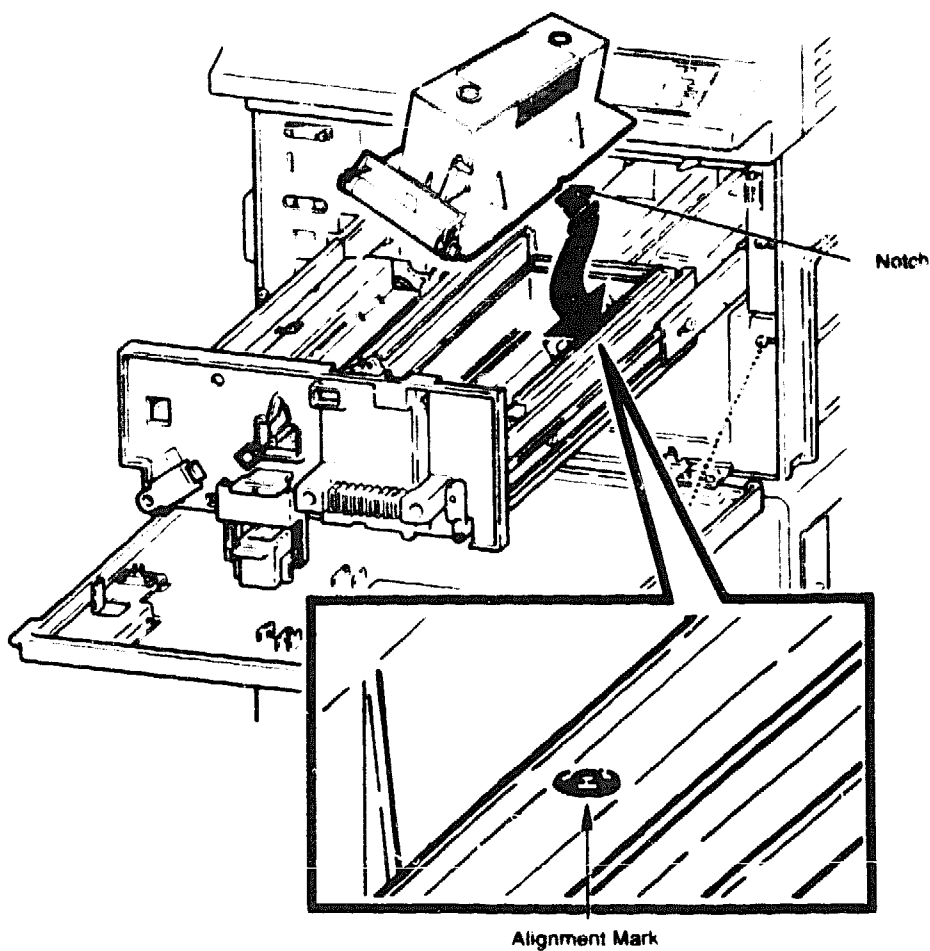


4. Remove a new toner cartridge from the box and shake the cartridge vigorously for 5 to 10 seconds.



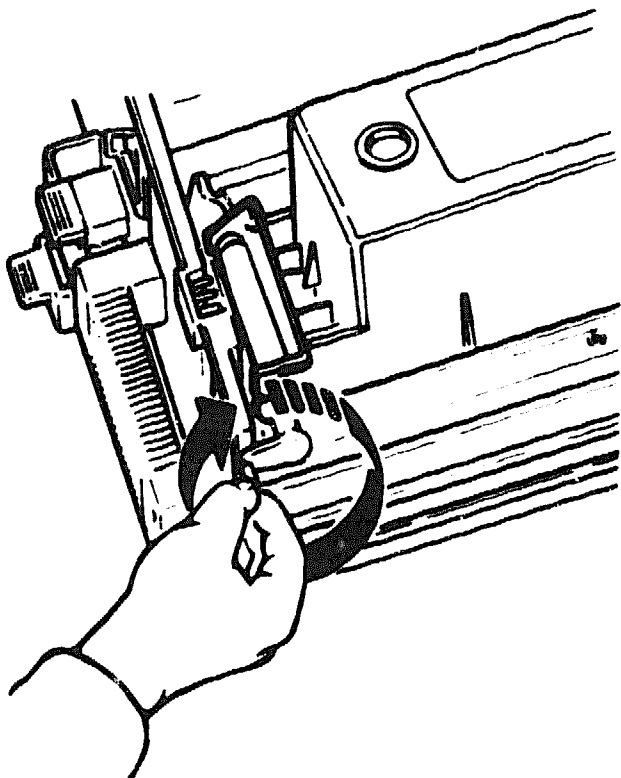
4-16

5. Install the right-hand side of the cartridge into the lip of the frame by centering the notch around the alignment mark, then pressing the cartridge down into position.



ML0 005783

5. Attach the crank handle and turn it clockwise until the red line appears on the take-up roller.

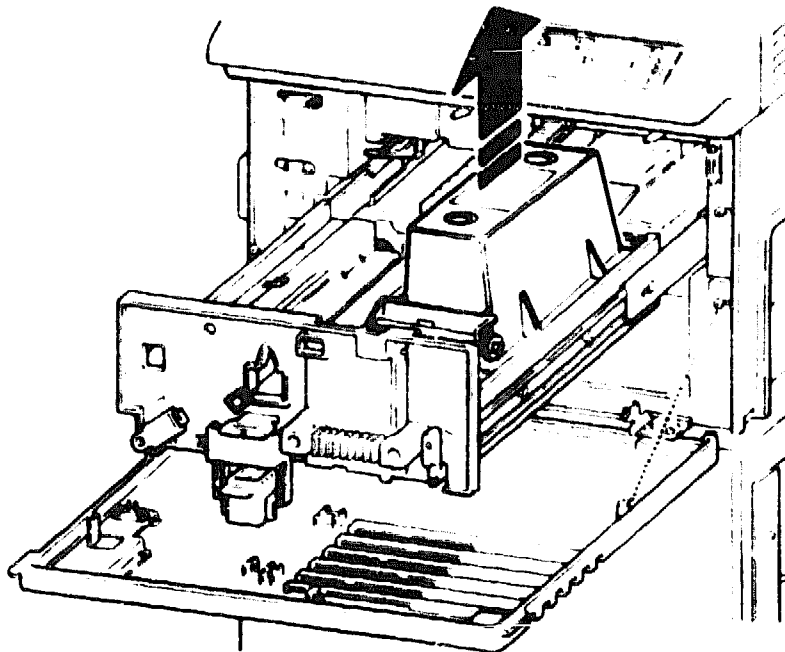


WLO 006726

7. Tap the top of the toner cartridge to release any excess toner that may be clinging to the inside of the cartridge.
8. Remove the toner cartridge from the drawer by pressing the tab on the left side of the cartridge and lifting it up and out.

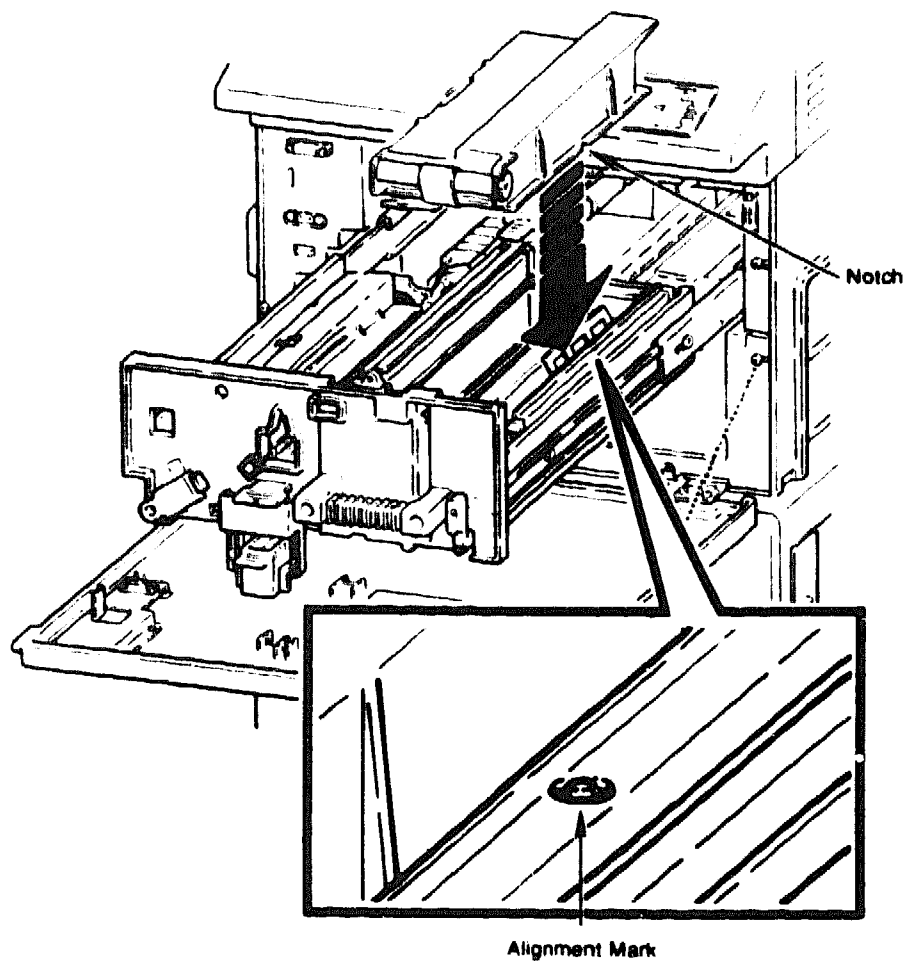
→ Discard the toner cartridge.

NOTE: *If toner accidentally spills on your clothes or hands, rinse them with soap and cold water.*



ME11-001574

9. Replace the toner cover over the development unit.

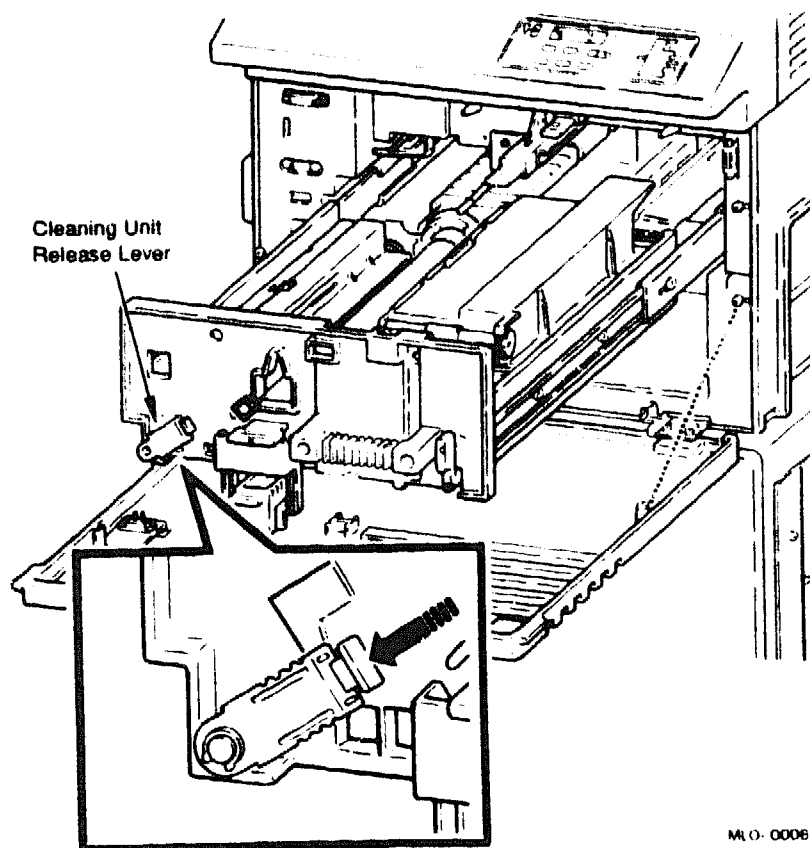


MLO-000823

4.5 Installing the OPC Drum

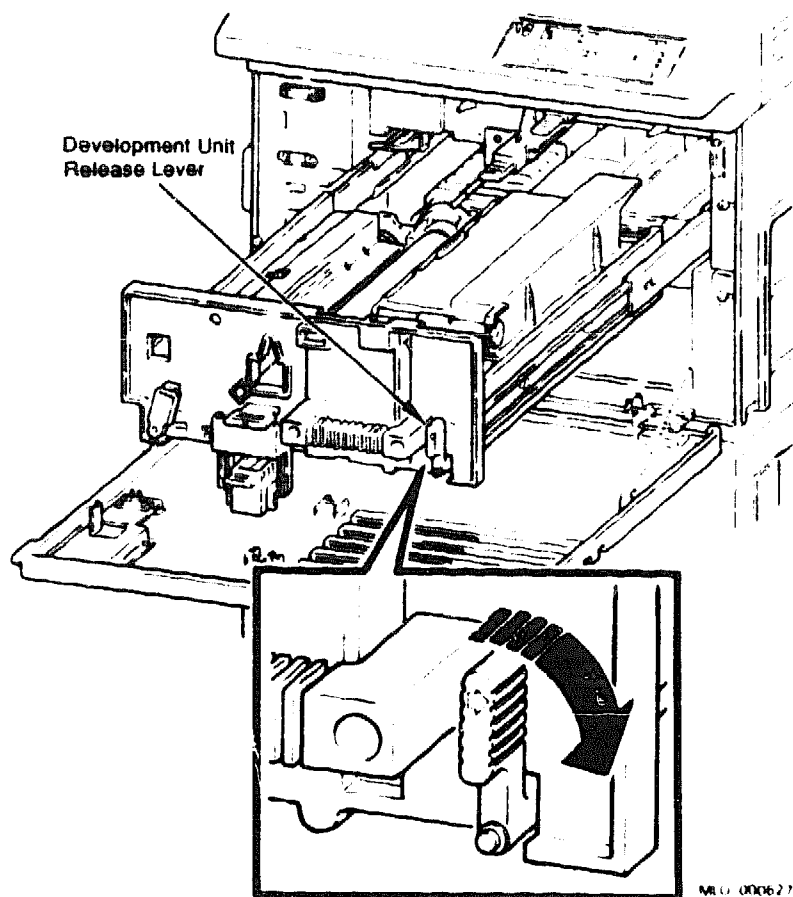
Install the OPC drum, using the following procedure:

1. Press the top of the cleaning unit release lever to disengage the cleaning unit from its operating position.



M10-000626

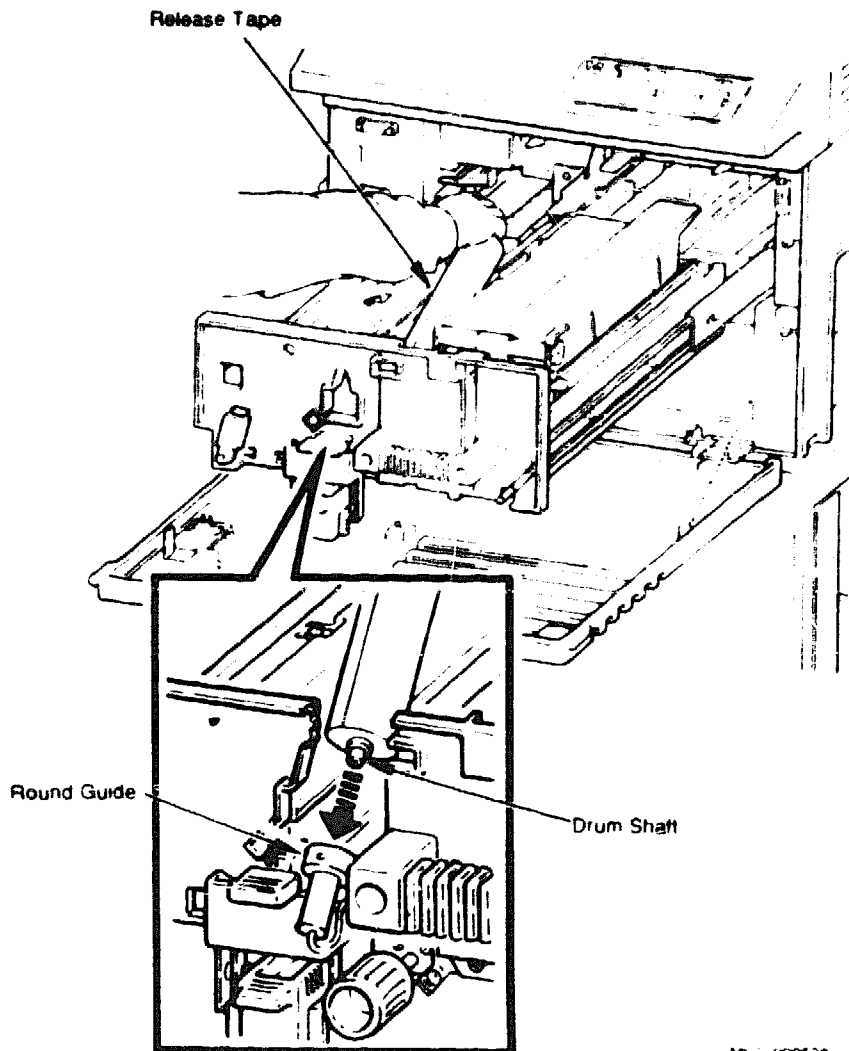
2. Turn the development unit release lever clockwise to disengage the development unit from its operating position.



3. Carefully remove the OPC drum from its shipping box.

CAUTION: *Do not remove the black protective sleeve from the OPC drum until instructed to do so. Fingerprints will damage the drum, and the drum degrades if exposed to light for more than 5 minutes.*

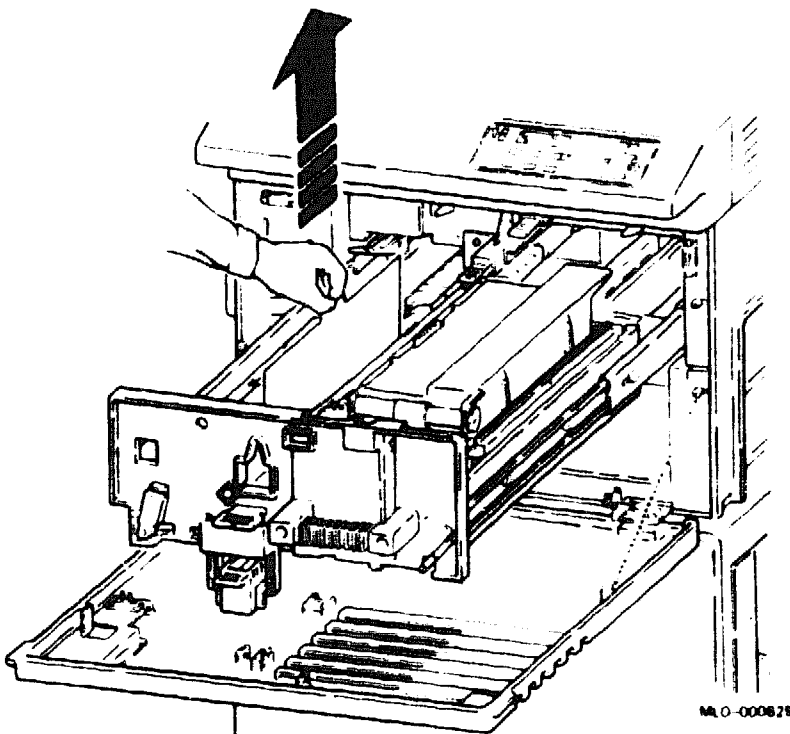
4. Insert the OPC drum shaft into the round guide at the front of the drawer and carefully lower the drum into position. The release tape for the black protective sleeve should be positioned at the top of the drum.



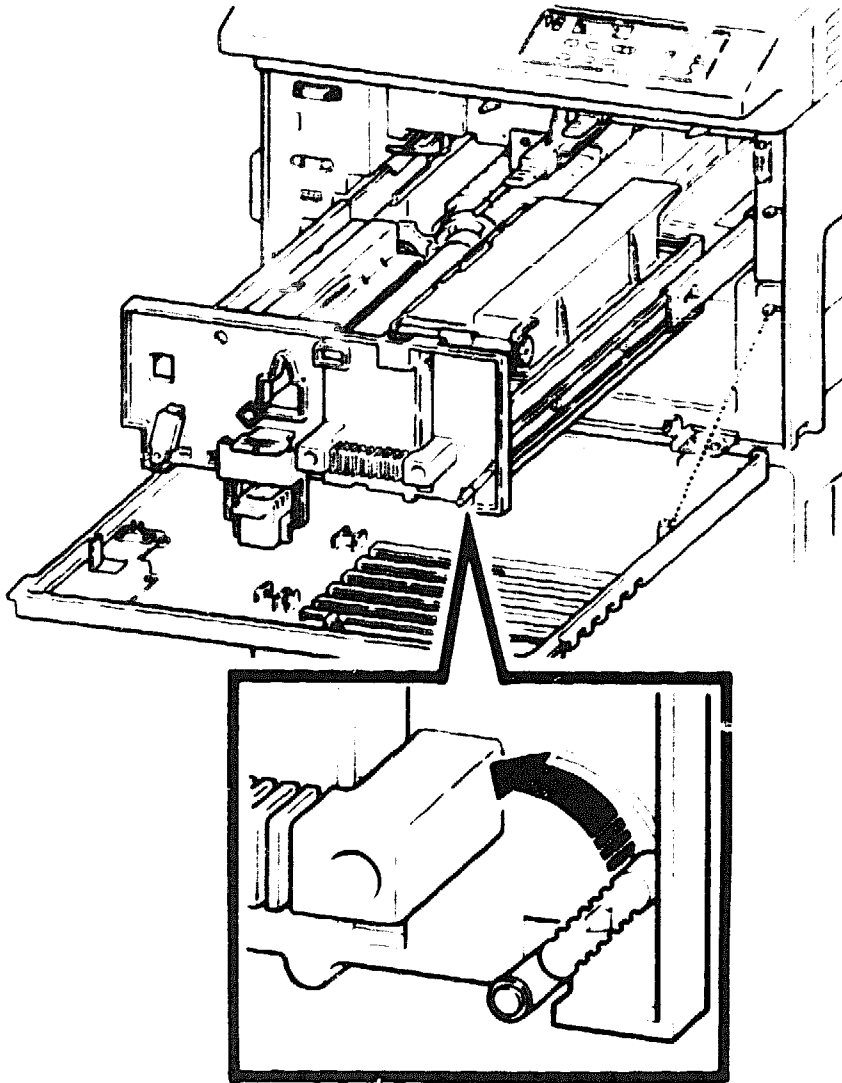
VA : 000628

5. Remove the black protective sleeve by pulling the release tape straight up.
→ Discard the sleeve.

CAUTION: Removing the sleeve from the drum may lift the drum up slightly. Make sure the drum is seated firmly into position by gently pushing down the far end of the drum. Do not touch the photoconductive surface of the drum.

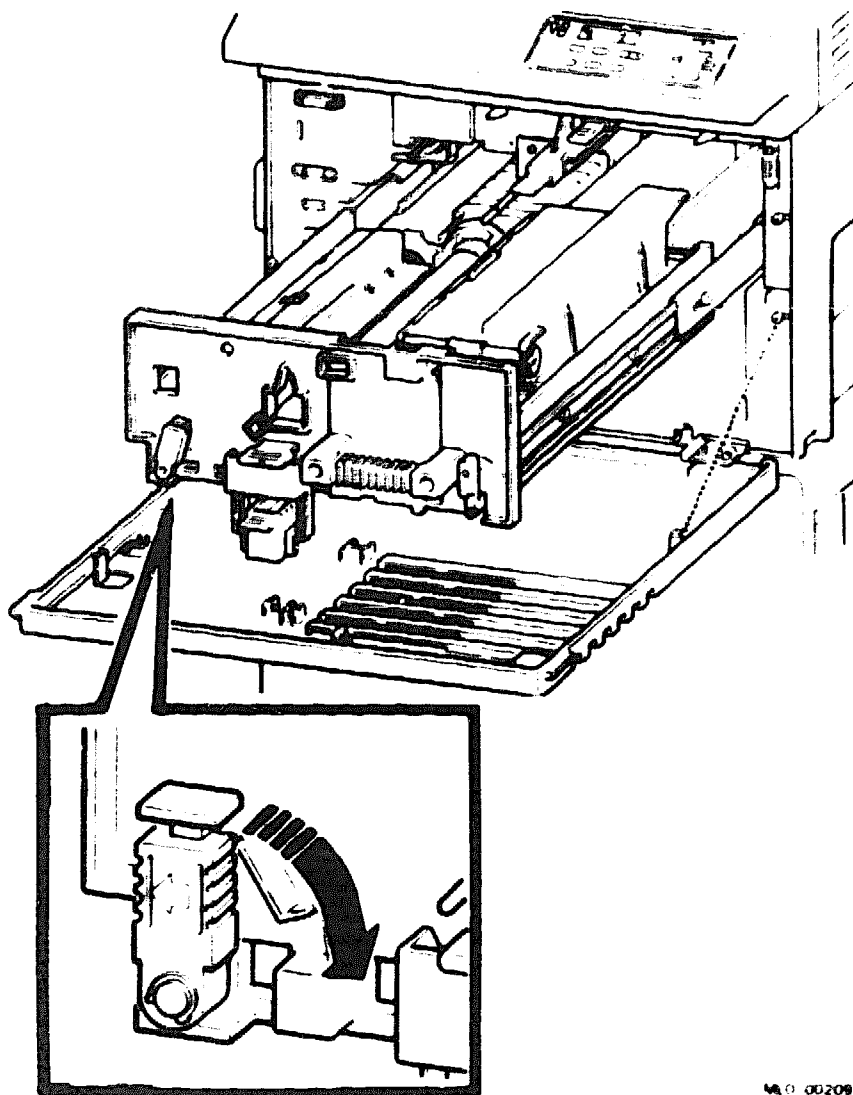


6. Return the development unit release lever to the operating position.



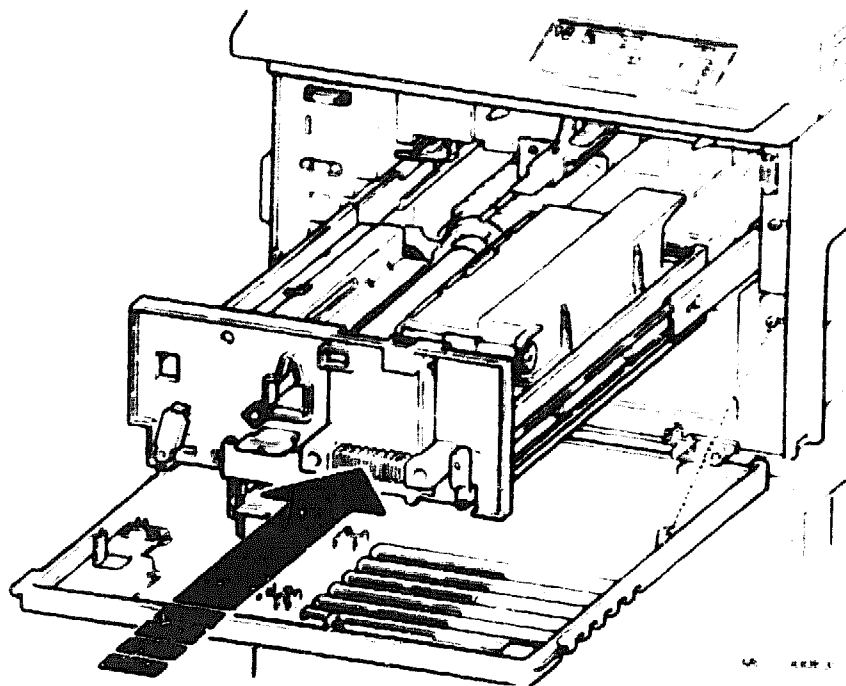
MLO-002092

7. Return the cleaning unit release lever to the operating position.

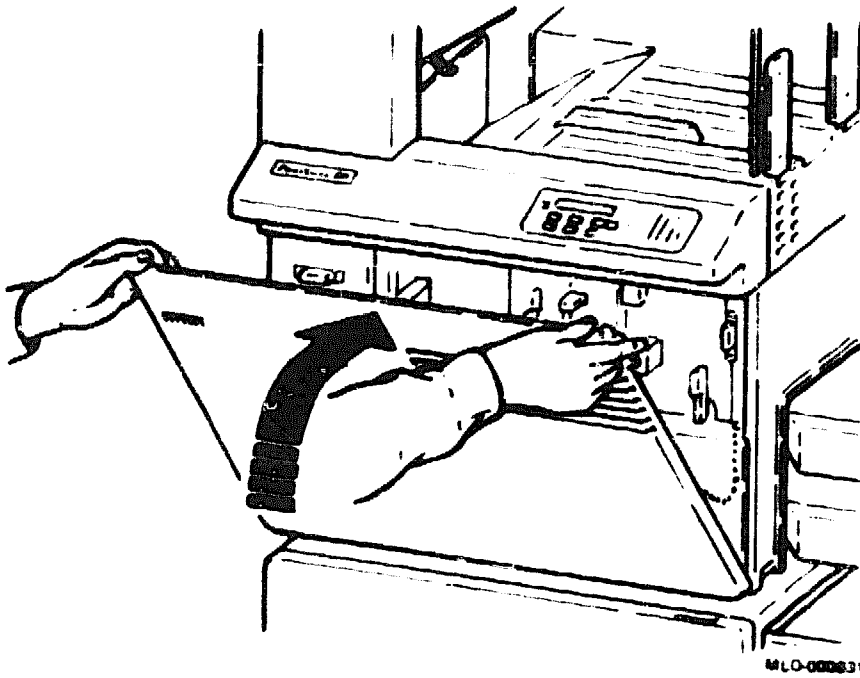


MLO 00208

8. Close the development drawer by using the handle to push it back in.



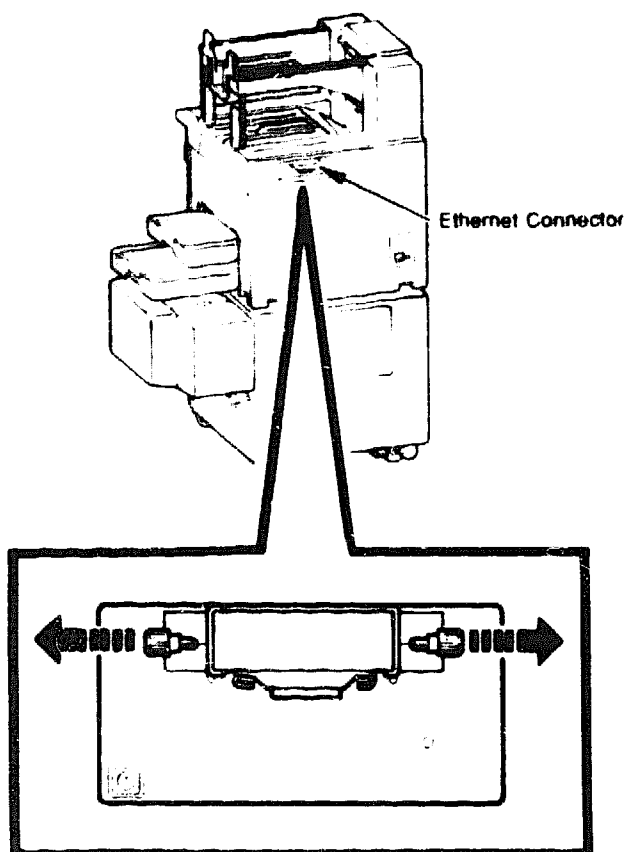
9. Close the front cover.



4.6 Connecting the Ethernet Cable

The PrintServer accepts a standard Ethernet cable or a ThinWire Ethernet cable. Install either type of cable, using the following procedure:

1. Remove the two thumb screws from the Ethernet connector.
→ Save the screws for use in step 3.



ML01-0011ed8

2. Pull the Ethernet connector out to the operating position.

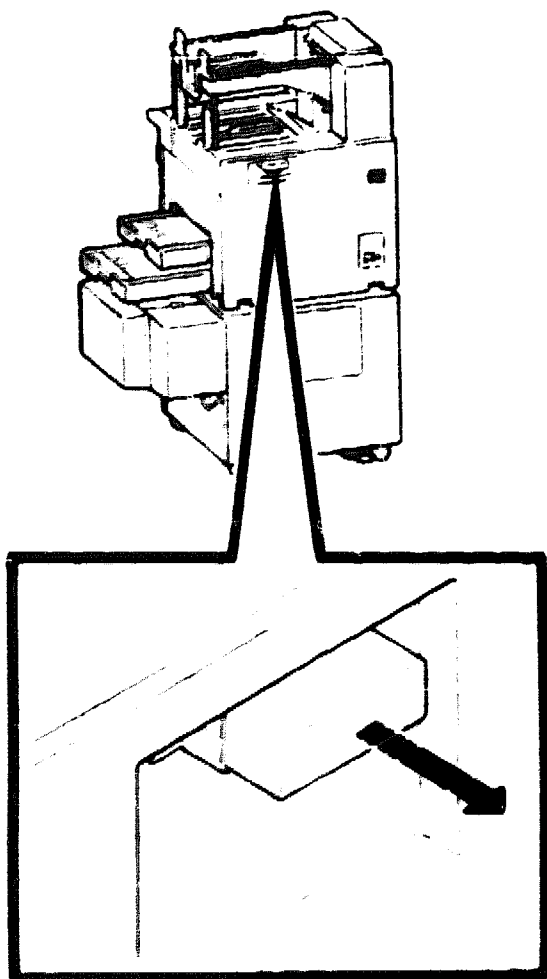
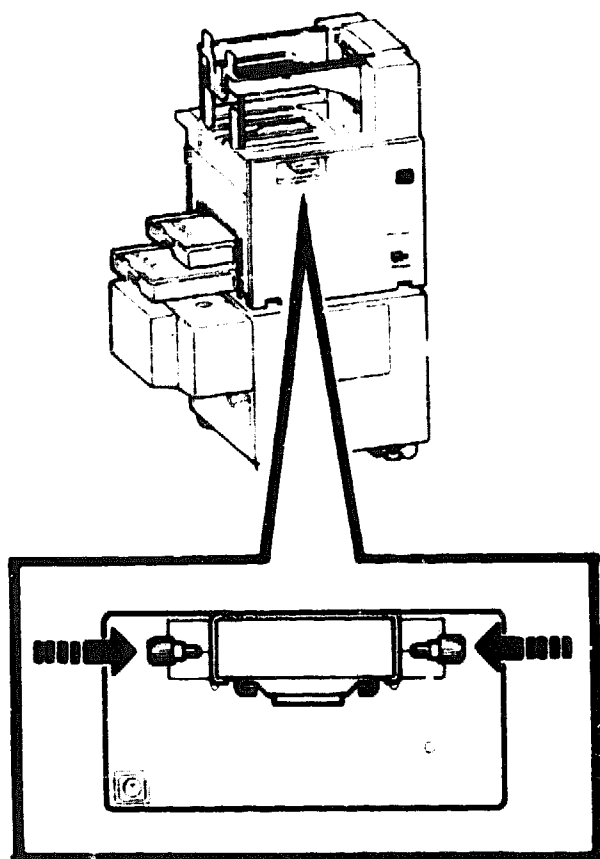


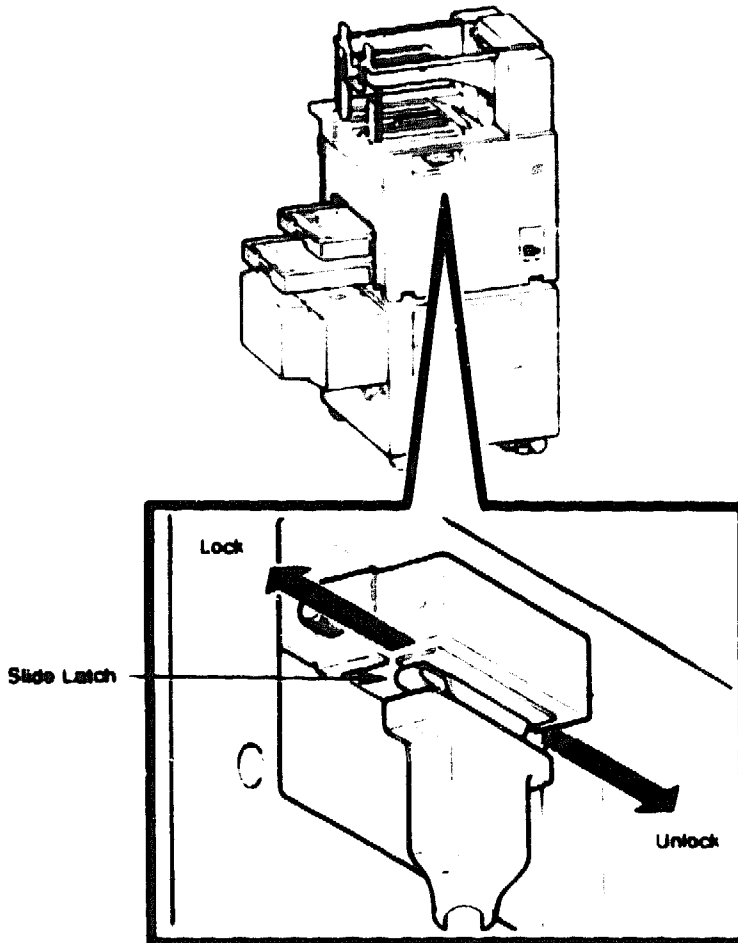
Fig. 4-24

3. Reinstall the two thumb screws to secure the Ethernet connector in the operating position.



4-25-00

4. If you have a standard Ethernet cable, continue with the next step.
If you have an optional DESTA ThinWire Ethernet adapter, go to Section 4.6.1.
5. Connect the standard Ethernet cable to the Ethernet connector and push the slide latch left to lock it in place.



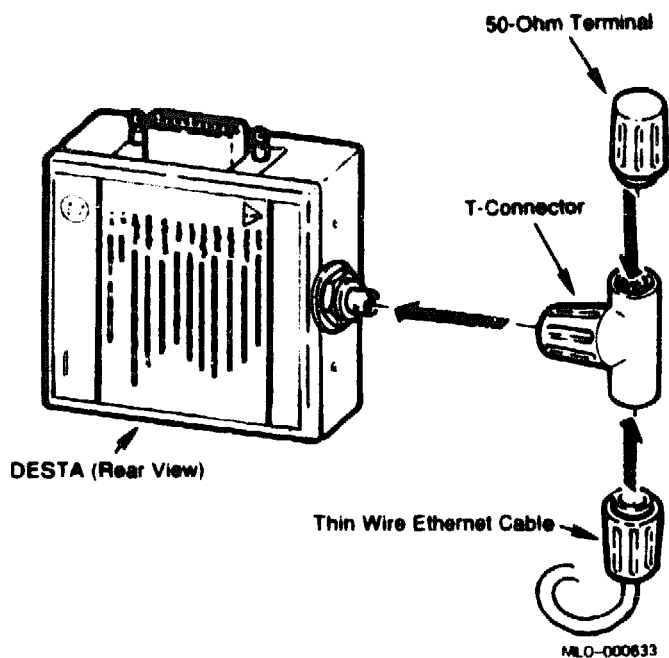
MLD-000832

Section 4.7 continues with printer setup.

4.6.1 Connecting the ThinWire Ethernet Cable

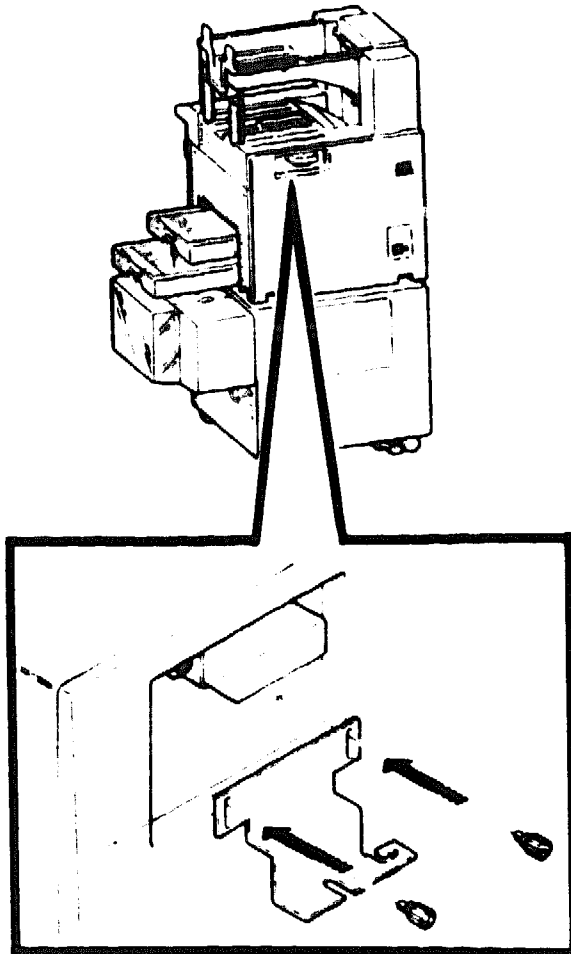
Connect the ThinWire Ethernet cable with the optional DESTA adapter, using the following procedure:

1. Connect the ThinWire Ethernet cable and the 50-ohm terminator to the T-connector.
2. Connect the T-connector to the DESTA.



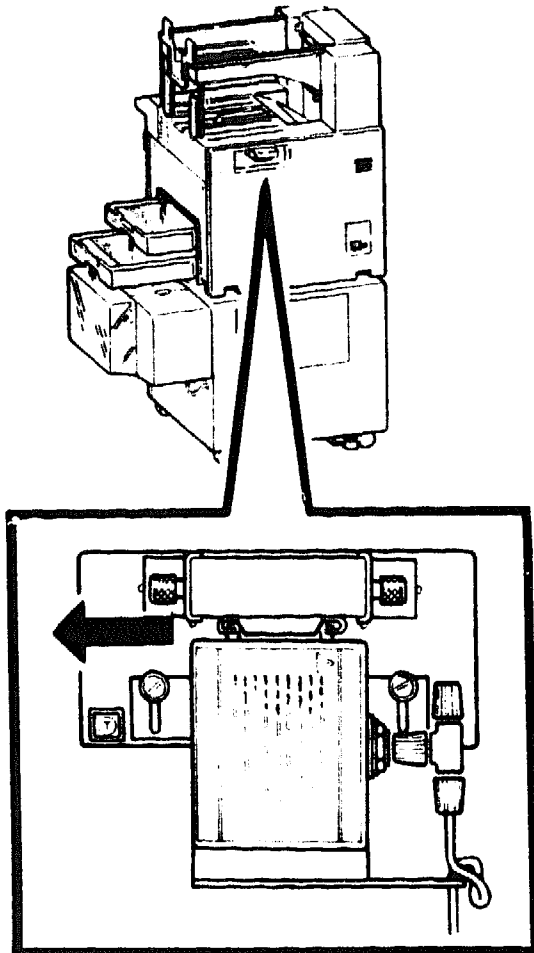
3. Install the DESTA bracket to the printer, using the two thumb screws provided.

→ Do not tighten the thumb screws at this time. The DESTA bracket should be in its lowest position.



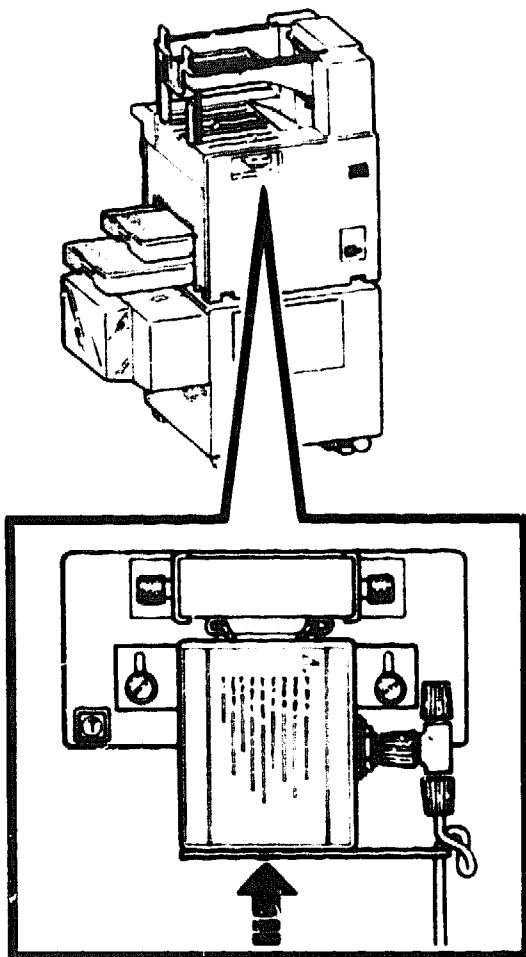
ML1 001091

4. Connect the DESTA to the Ethernet connector and push the slide latch left to lock it in place.
- The back of the DESTA should be facing you.



MLO 000834

5. **Raise the bracket until it touches the DESTA and tighten the two thumb screws.**

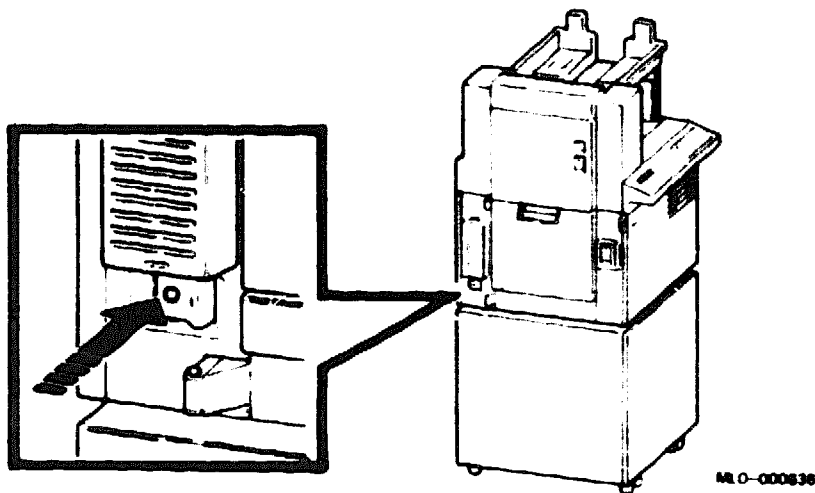


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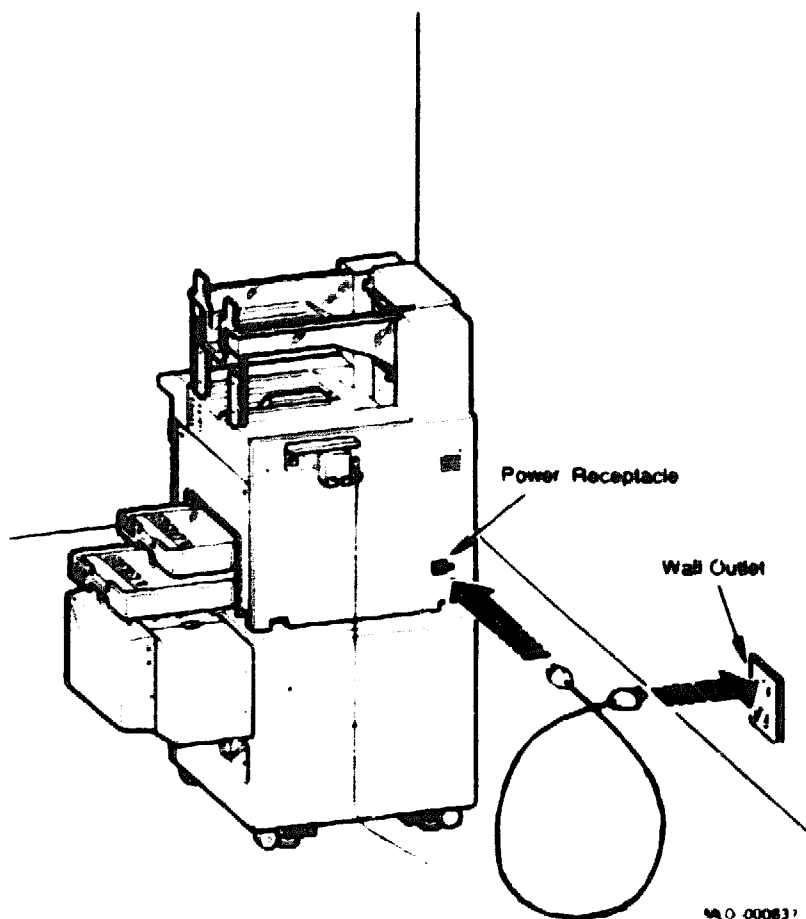
4.7 Connecting the Power Cable

Connect the power cable from the printer to the wall outlet, using the following procedure:

1. Check to be sure the power switch is in the 0 (OFF) position.



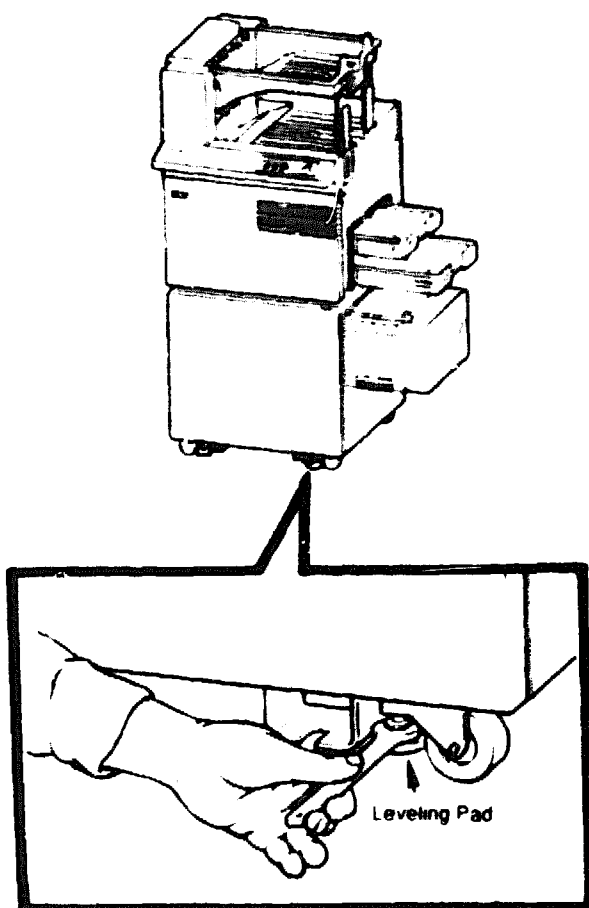
2. Connect the female end of the power cord to the AC input power receptacle at the rear of the printer.
3. Plug the other end of the power cord into the wall outlet.



4.8 Leveling the Printer

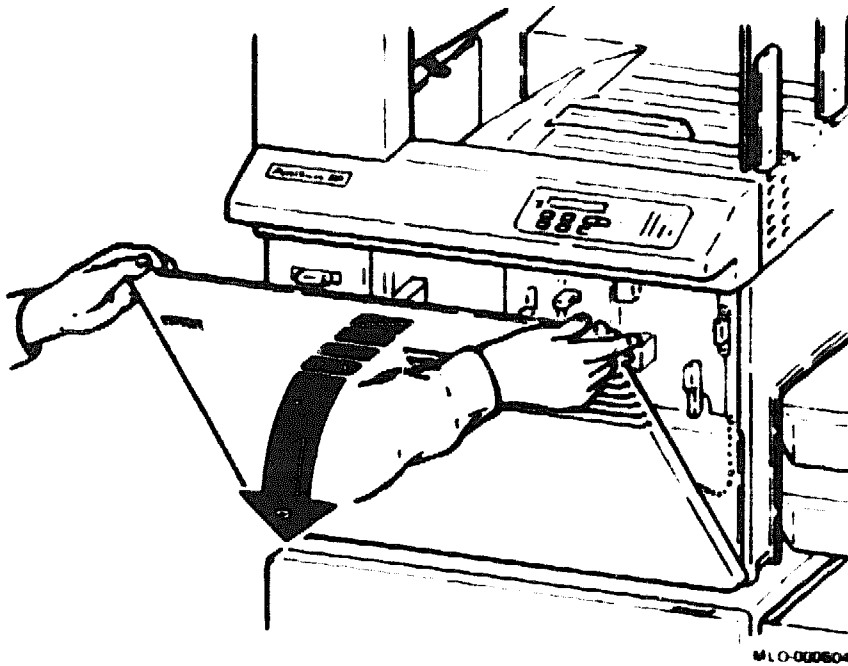
The final step in setting up the PrintServer is to level the printer. Level the printer, using the following procedure:

1. Raise the four leveling pads enough to move the printer to its permanent operating position.
2. Lower all the leveling pads until they just touch the floor.



MLB 001892

3. Open the front cover.



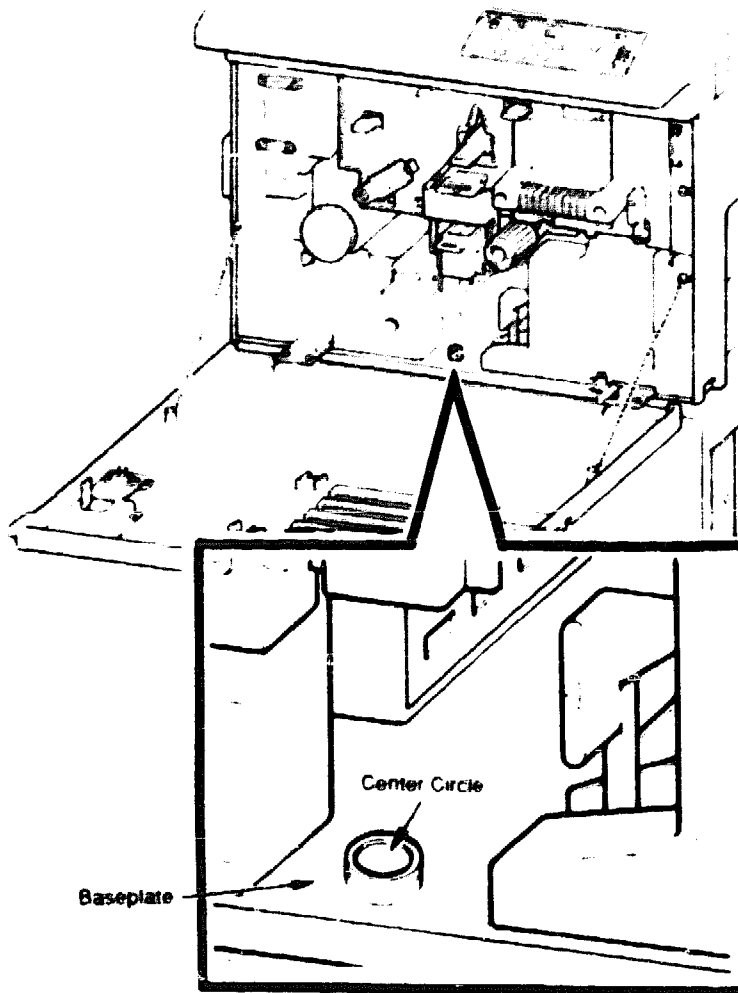
4. Place the bubble level on the print engine baseplate.

The printer is sufficiently level if at least half the bubble is in the center circle of the level.

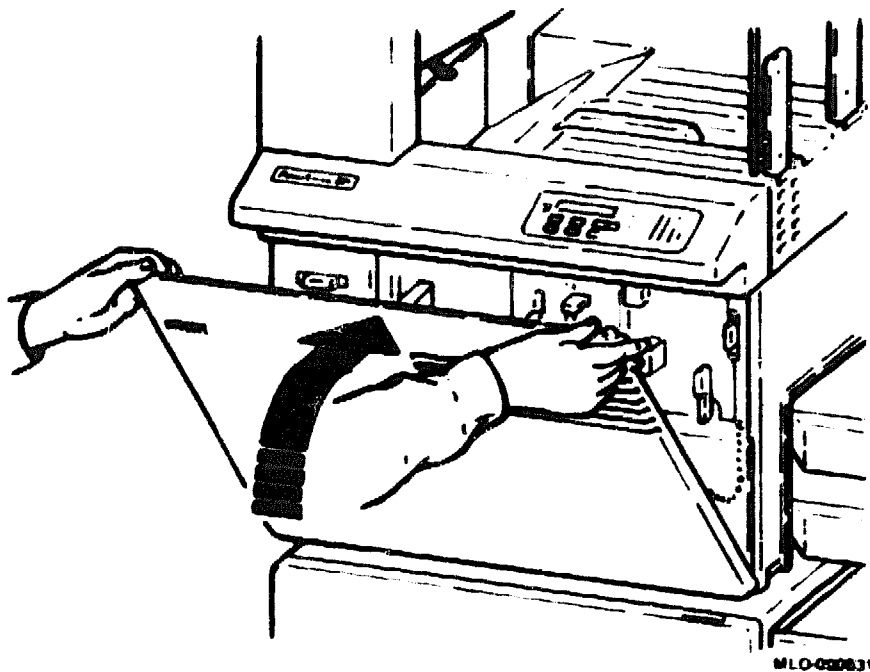
If the printer is not level, adjust the two rear leveling pads first, then adjust the two front leveling pads until at least half the bubble is in the center circle of the level.

- Remove the level from the printer.
- Store the level in the printer cabinet.

NOTE: All four leveling pads should touch the floor when leveling is completed.



5. Close the front cover.



6. Proceed to Chapter 5 to power up the printer.

Chapter 5

Power-Up Test

This chapter describes the power-up procedure for the PrintServer and how to check for correct operation. It also tells you what to do if you have a problem with the installation.

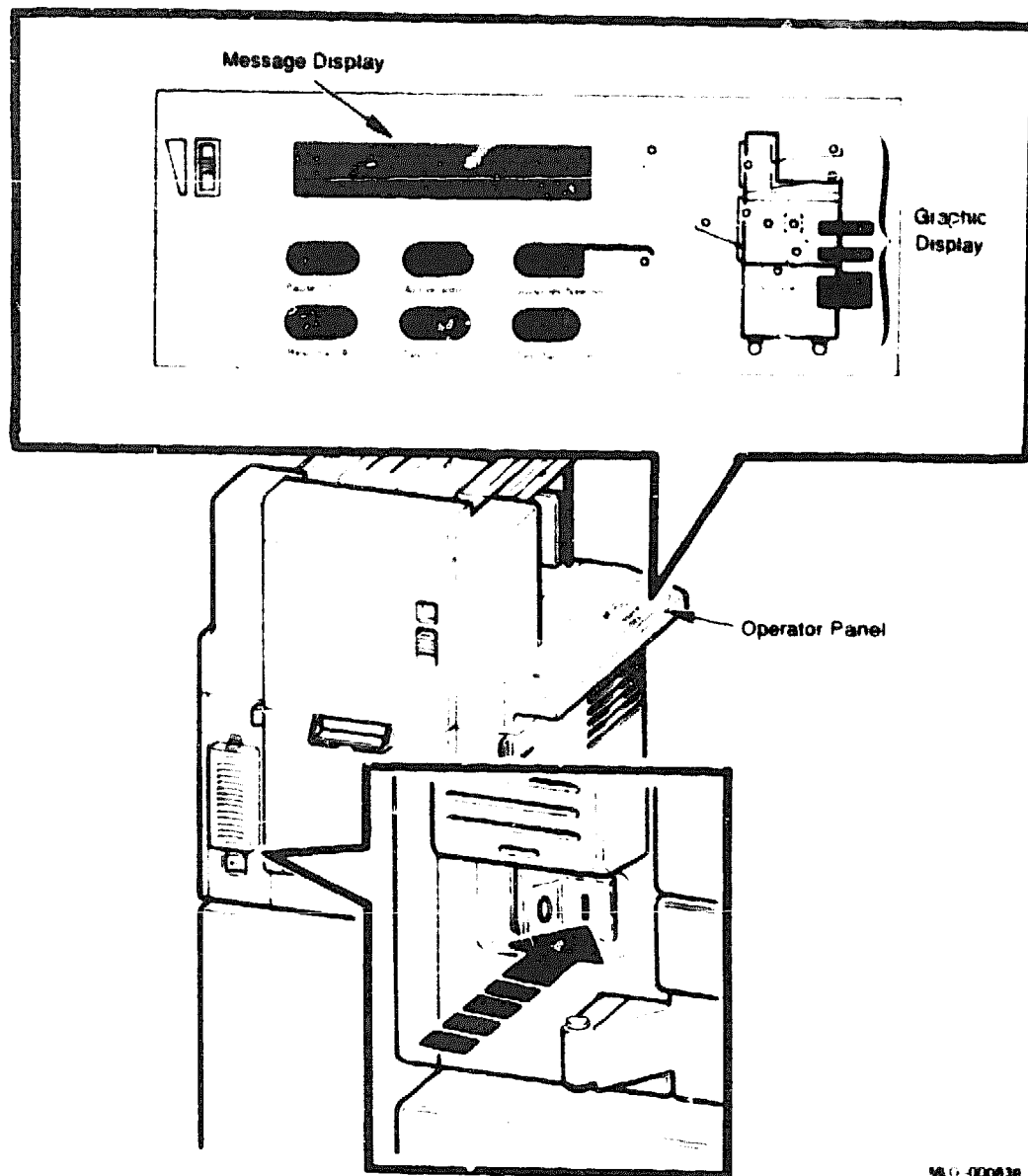
NOTE: *Install the software before powering up the PrintServer. The printer will not power up correctly if the software has not been installed.*

5.1 Power-Up Test

The power-up test is performed automatically each time the PrintServer is turned on. Turn on the printer, using the following procedure:

- 1 Press the power switch on the left side of the printer to the 1 (ON) position.

Figure 5-1: Power Up



MLG-000838

- All the lights on the operator panel flash.
- Each time the printer is powered up, it automatically performs a diagnostic self-test routine. The message display shows the test countdown (9 to 0) during warm-up time.
- The message display then shows the Ethernet address displayed on the top line; the firmware version number (for the controller, engine, and bottom paper tray) is on the bottom line.

Example:

12-34-56-78-9A-BC
2.0 1.2 1.1

- The message display then reads:
VAX ELN V4.2 LPS20
 . . .
- After loading the PrintServer, the display reads:
Copyright 1991
Digital Equipment Corp.
- The message display then reads:
Please wait . . .
Initializing . . .
- The printer remains in the initializing state for 65 to 80 seconds or until it prints a PostScript start-up page.

NOTE: *The start-up page is printed only if the printer is configured to generate it.*

PrintServer 20

Version 60.1.10

Default Post Capabilities


Times® Roman	Helvetica®	10 point
Times Bold	Helvetica-Bold	10 point Bold
Times-Italic	Helvetica-Oblique	10 point Oblique
Times Strikethru	Helvetica-Bold/Oblique	10 point Bold/Oblique

ITC Avant Garde Gothic® Book	New Century Schoolbook® Roman
ITC Avant Garde Gothic Cond	New Century Schoolbook Bold
ITC Avant Garde Gothic Book/Oblique	New Century Schoolbook Italic
ITC Avant Garde Gothic Cond/Oblique	New Century Schoolbook Bold/Ita.


ITC Lubliner Graph® Book	ITC Setiverse® Light
ITC Lubliner Graph Cond	ITC Setiverse Cond
ITC Lubliner Graph Book/Oblique	ITC Setiverse Light/Ita.
ITC Lubliner Graph Cond/Oblique	ITC Setiverse Italic/Ita.

Symbolic Set

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PostScript®
Introducing Page Description



PrintServer 20

- The message display reads:
Ready

The Ready message indicates a successful power up and software boot.

5.2 If You Encounter Problems

If you have a problem with the installation or if the printer does not power up correctly, call the Digital Support Line for assistance.

Before you call, see the *turbo PrintServer 20 Operator's Guide* for information about troubleshooting and what you need to know before calling for assistance.

In the continental United States, call 1-800-272-2001.

In Alaska, Hawaii, Canada, and Europe, call your local sales office.

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[illegible]

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turbo PrintServer 20 Operator's Guide

Order Number EK-TPS20-OP-001

**Digital Equipment Corporation
Maynard, Massachusetts**

First Printing, March 1991

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S1504

This document was prepared using VAX DOCUMENT, Version 1.2.

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Preface

This guide explains how to operate and maintain the PrintServer hardware, such as:

- Turning on the printer
- Adding paper
- Changing toner
- Replacing the ozone filter
- Cleaning the quenching lamp

This guide also explains basic troubleshooting techniques, enabling you to solve common operating problems.

Audience

This guide is for anyone who uses or maintains the PrintServer. Before using the PrintServer, read the procedures for operating and maintaining the printer. Digital recommends that each user also view the videotape that accompanies the printer.

NOTE: *Always keep this guide with the printer, so it is available to anyone who is operating or maintaining the printer.*

Document Structure

This guide is organized as follows:

This Chapter	Explains
1	The PrintServer components, controls, and indicators. Also in this chapter are the normal operational messages that appear on the operator panel.
2	Operating procedures, such as how to power up the printer and how to add paper.

This Chapter	Explains
3	How to solve common operating problems that may occur. It explains how to print a test sheet, and how to interpret error messages on the operator panel.
4	How to obtain service for the PrintServer.
Appendix A	The power, environmental, and physical specifications for the PrintServer.
Appendix B	The accessories and supplies available for the PrintServer and explains how to order them.

Associated Documents

This guide does not cover all areas of printer operation. It focuses on the hardware operation of the PrintServer. Other manuals supplied with the printer cover such topics as client software, host system software, and using PostScript commands. See your system manager about these manuals if you need them:

- *DECprint Printing Services Software Installation Guide*
- *DECprint Printing Services System Manager's Guide*
- *DECprint Printing Services System User's Guide*
- *PostScript Translators Reference Manual*
- *DEC PrintServer Supporting Host for VMS Installation Guide*
- *DEC PrintServer Supporting Host for VMS and ULTRIX Management / User's Guide*
- *DEC PrintServer Supporting Host for ULTRIX Installation Guide*

Conventions

The following terms and conventions are used in this manual:

Term/Convention	Meaning
PrintServer	In this document, the term PrintServer refers to PrintServer 20 and turbo PrintServer 20.
NOTE	Provides additional information.
CAUTION	Provides information for preventing equipment damage.
WARNING	Provides information for preventing personal injury.
OPC	The organic photo conductor is the type of drum the printer uses. OPC drums can be disposed of without taking any special precautions.
Bullet (•)	<p>A bulleted statement describes a result after performing a step. For example:</p> <ol style="list-style-type: none">1. Press the Pause key to place the printer off line.• The off-line indicator lights.
Arrow (→)	<p>Indicates a special instruction. For example:</p> <ol style="list-style-type: none">1. Remove the toner cartridge from the drawer by lifting it straight up.→ Discard the toner cartridge.
Bold	Text in boldface designates messages that appear on the operator panel.

Laser Safety

The PrintServer complies with laser product performance standards set by government agencies as a Class 1 Laser Product. The PrintServer system does not emit hazardous light, since the beam is enclosed during all modes of customer operation and maintenance.

WARNING: *Use of controls or adjustment procedures other than those specified in this manual may result in hazardous laser light exposure.*

Ozone Safety

The PrintServer uses an ozone filter to remove the ozone generated by the printer. Be sure to replace the ozone filter each time user maintenance is performed on the printer.

WARNING: *Never operate the printer without the ozone filter installed. The filter removes ozone that may cause eye or respiratory irritation.*

[illegible]

CHAR

[illegible]

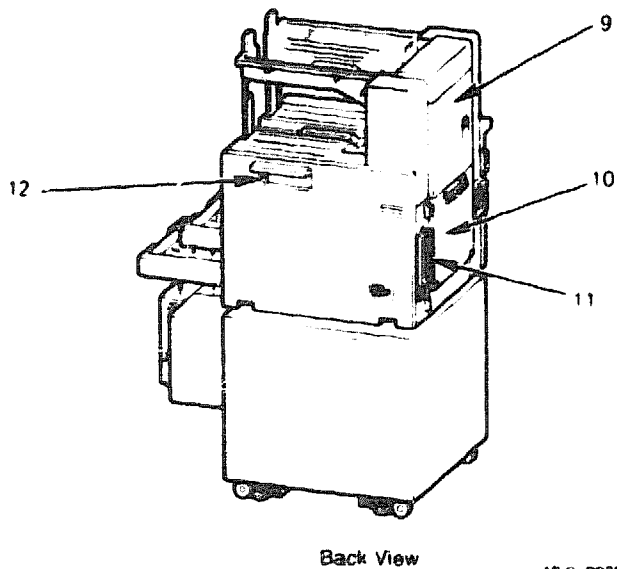
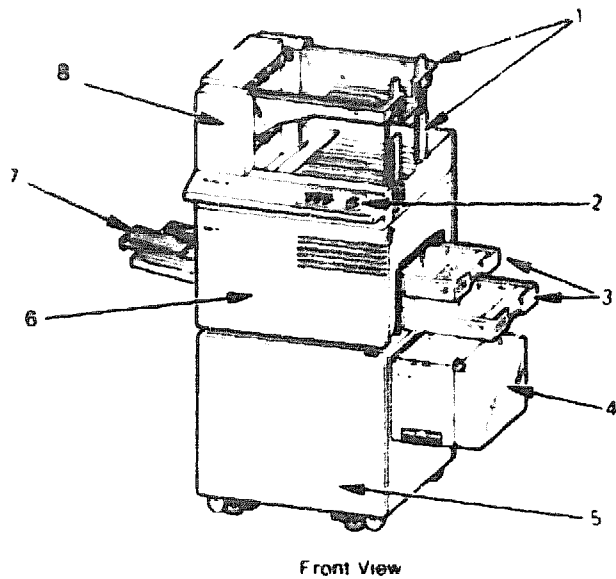
PrintServer Components

This chapter helps you become familiar with the various parts and functions of the PrintServer. It describes the components, controls, and indicators on the printer.

1.1 External Components

Figure 1-1 and Table 1-1 list the external components of the PrintServer and explain their functions.

Figure 1-1: External Components



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Table 1-1: PrintServer External Components

Component	Function
1. Output Trays	Hold up to 750 sheets of 20-lb. paper. Paper is ejected face down and stacking is offset to keep jobs separated.
2. Operator Panel	Contains a message display indicating the operational status of the printer and function keys that allow you to pause the printer, check the active jobs, and so on (see Section 1.4). The operator panel also has a graphic image of the printer that indicates paper jam locations and paper tray selections.
3. Paper Cassettes	Each cassette holds up to 250 sheets of 20-lb. paper. The cassettes can be configured to accommodate numerous paper sizes (see Appendix A).
4. Bottom Paper Tray	Holds up to 1000 sheets of 20-lb. paper.
5. Printer Cabinet	Houses the duplex unit and bottom tray feed rollers. It also provides storage space for manuals and supplies.
6. Print Engine	Performs the printer's mechanical functions, such as feeding paper and applying toner.
7. Side Output Tray	Holds up to 100 sheets of 20-lb. paper. It is used as the output tray when you want to print transparencies and labels or when you want to stack output paper face up.
8. Output Unit	Ejects paper into the upper and lower output trays.
9. Upper Side Door	Opens to access paper jams in the eject area of the output unit.
10. Lower Side Door	Opens to access paper jams in the eject area of the print engine.
11. Ozone Filter	<p>Trape ozone from the printer so that ozone is not released into the air.</p> <p>WARNING: Do not operate the printer without the ozone filter in place. The filter removes ozone that may cause eye or respiratory irritation.</p>
12. Ethernet Interface	Connects to a standard Ethernet cable. It also comes with a bracket to accommodate a DCEA unit for Thin-Wire Ethernet cable. The interface has a Test button that is used by Customer Service when servicing the printer.

CAUTION: Do not open any doors or covers while the PrintServer is printing. Opening doors (except for the cabinet door) or covers while the printer is printing causes paper jams.

1.2 Internal Components

Figure 1-2 and Table 1-2 list the internal components of the PrintServer and explain their functions. You access these internal components to clear paper jams and to perform routine maintenance.

Figure 1-2: Internal Components

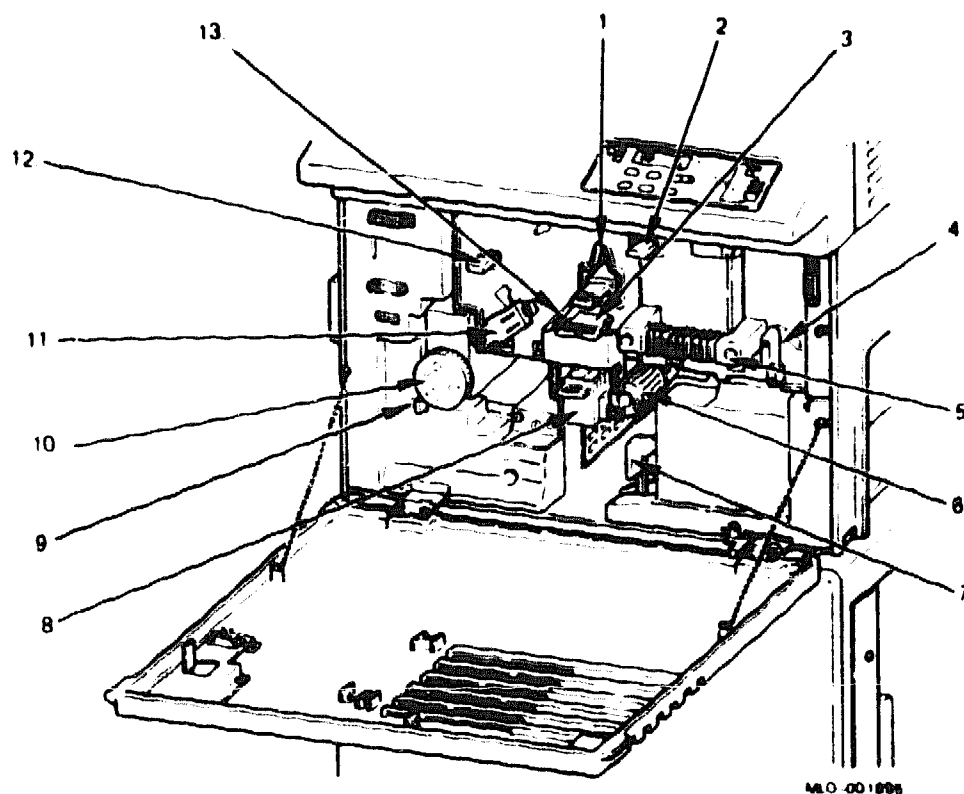


Table 1-2: PrintServer Internal Components

Component	Function
1. Main Charger	Applies a negative charge to the OPC drum. Replaced when user maintenance is performed.
2. Shield Glass	Protects the laser unit from stray toner and dust. Replaced when user maintenance is performed.
3. Charger Guide	Houses the transfer/separation charger. The charger guide lowers to access paper jams in the charger area.
4. Development Unit Release Lever	Releases the development unit, allowing access room to replace the OPC drum.
5. Development Drawer Handle	Used in conjunction with the development drawer release lever to pull the drawer out.
6. Registration Unit Knob	Turns to remove jammed paper in the registration area.
7. Jam Release Lever	Rotates to access paper jams in that area.
8. Transfer/Separation Charger	Applies negative charge to the paper to separate it from the OPC drum. Replaced when user maintenance is performed.
9. Fusing Unit Release Lever	Releases the fusing unit, so it can be removed from the printer. The separation pawls on the fusing unit are cleaned when user maintenance is performed.
10. Fusing Unit Knob	Turns to remove jammed paper in the fusing unit area. The fusing unit contains the heat and pressure rollers that bond the toner to the paper.
11. Cleaning Unit Release Lever	Releases the cleaning unit, so it can be replaced.
12. Development Drawer Release Lever	Releases the development drawer, so it can be pulled out, allowing access to the components in the drawer.
13. Quenching Lamp	Removes the negative charge remaining on the OPC drum. The quenching lamp is cleaned when user maintenance is performed.

1.3 Development Drawer Components

Figure 1-3 and Table 1-3 list the development drawer components of the printer and explain their functions. You access the development drawer to replace toner and to perform periodic maintenance.

NOTE: Do not open the development drawer to clear paper jams. Paper jams cannot occur in the development drawer because the paper path is below the drawer. Open the development drawer to add toner or to perform periodic maintenance only.

Figure 1-3: Development Drawer Components

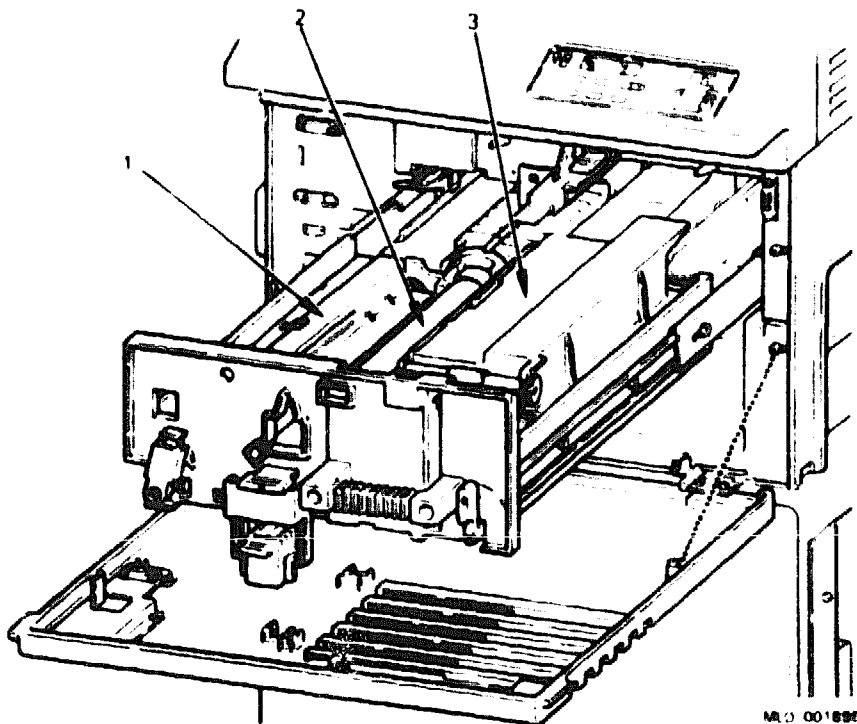


Table 1-3: PrintServer Development Drawer Components

Component	Function
1. Cleaning Unit	Cleans excess toner from the drum prior to the next printing cycle.
2. Organic Photo Conductor (OPC) Drum	Has a light-sensitive surface on which the latent print image is produced by the laser. Toner is attracted to this image and then transferred to the paper.
3. Development Unit	Holds and supplies toner for image development. The toner supply is replenished when indicated on the operator panel.

1.4 Operator Panel Components

The operator panel displays status messages, shows the selected input and output paper trays, and indicates if supplies are needed.

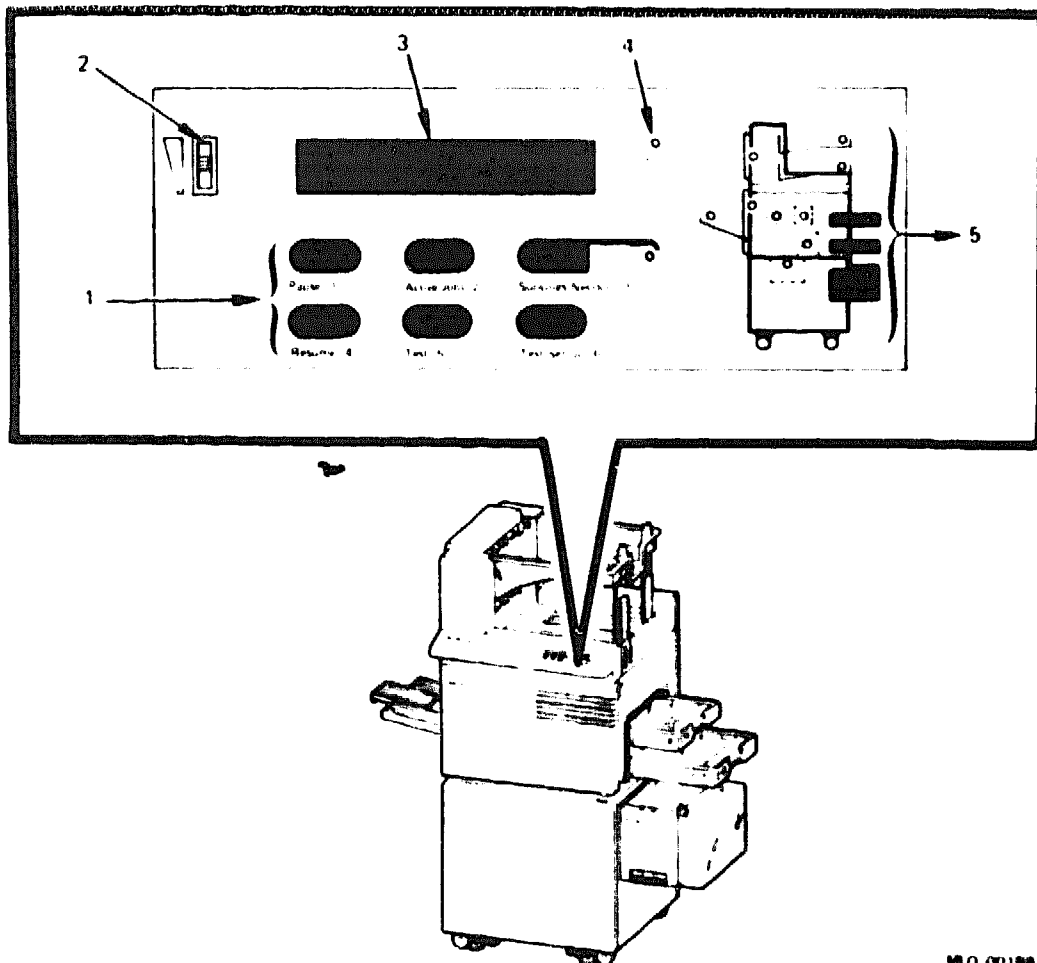
Table 1-4 shows the messages that are displayed during normal operation.

Table 1-4: Messages During Normal Operation

Message	Meaning
Print engine is in warmup state	The printer has not reached operating temperature. This may occur at power up or after a door or cover has been opened causing the fusing unit to shut off and cool down.
Ready	The printer is functioning correctly and is waiting for a job to process.
Processing	The printer is processing one or more jobs.
Printing	The printer is currently printing a page. <i>NOTE: When the Printing message is displayed, the Processing message will be displayed only when the print engine is idle.</i>
Paused— Press Resume to continue	The Pause key has been pressed. The processing of jobs is temporarily suspended while the printer is paused. Pressing the Resume key places the printer back to normal operation (on line).
Single Job Mode— Press Resume to continue	The printer is in Single Job Mode. You can change paper (or other media) at this time if desired, and then press the Resume key to process the next job. <i>Consult the <i>PrintServer Supporting Host for VMS and ULTRIX Management/User's Guide</i> for additional information about using Single Job Mode.</i>
Deleting Current Job	The printer is deleting the current job from processing.
Perform User Maintenance	The printer needs various components cleaned or replaced to maintain print quality. See <i>PrintServer Supplies Kit Guide</i> to perform user maintenance.
Field Service Maintenance Required. Call Field Service.	The printer needs various components cleaned or replaced. Call Customer Services to perform this maintenance.

Figure 1-4 shows the operator panel components and explains their functions.

Figure 1-4: Operator Panel Components



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- **Keypad**—During normal operation of the printer, the keys on the operator panel perform their labeled functions when pressed, such as Pause or Resume. Table 1-5 lists the features and explains the operation of the keypad during normal operation.

Table 1-5: PrintServer Keypad Components

Key	Function
Pause (1)	<p>Temporarily stops printing functions. For example, to enter Test Set-up Mode, the printer must be in the paused state. The Pause key works with the Resume key.</p> <p>The display initially reads: Please wait ...</p> <p>The display then reads: Paused— Press Resume to continue</p>
Active Jobs (2)	<p>Displays the client node and user name, the server job number, and the time the job began.</p> <p>Example: NODE:SMITH Job 1234 Started 1:24</p> <p>If no job is currently active, pressing the key displays: No active job</p>
Supplies Needed (3)	<p>Displays which supplies are needed when the amber light is on.</p> <p>Example: Perform User Maintenance</p> <p>Then the panel displays one of the operational messages listed in Table 1-4.</p> <p>If all the messages cannot be shown at the same time, the first message displays for 5 seconds, then clears, and the second message displays for 5 seconds, then clears.</p> <p>If no supplies are needed, pressing the key displays: No supplies needed</p>
Resume (4)	<p>Places the printer back on line to enable printing functions after pausing.</p> <p>NOTE: If the printer is in Single Job Mode, pressing Resume causes the printer to process the next job (see Table 1-4).</p> <p>The display reads: Single Job Mode - Press Resume to continue</p>

Table 1-5 (Cont.): PrintServer Keypad Components

Key	Function
Test (5)	<p>Prints the test page in Simplex Mode (one-sided) using the currently selected input and output trays. The printer must be paused (off line) to perform this function.</p> <p>The display initially reads: Please wait . . .</p> <p>Followed by: One sided test page</p> <p>The keystroke is ignored if the printer is not paused.</p>
Test Set-up (6)	<p>Puts the keypad in Test Set-up Mode when the printer is paused (off line). You can choose input and output paper trays and print a one-sided or two-sided test page.</p> <p>The display reads: One sided test page</p> <p>The keystroke is ignored if the printer is not paused.</p>

- **Contrast Switch**—Increases or decreases the contrast of the message display by moving the slide switch up or down.
- **Message Display**—Shows informational messages on printer status.
- **Error Indicator**—Flashes red to indicate that an error condition exists. The message display shows the type of error and the corrective action to take.
- **Graphic Display**—Indicates input and output paper tray selections and paper jam locations. The message display shows the corresponding corrective action to take if necessary, such as add paper or close front cover.

The lights on the graphic display have different meanings.

- Green indicates the paper tray selections.
- Red indicates a paper out condition (for input tray) or a tray full condition (for output tray).
- Flashing red indicates a paper jam location.

During normal operation, the graphic display on the operator panel shows the currently selected input and output trays as indicated by the green lights.

If supplies are needed during operation, the amber Supplies Needed light comes on, indicating:

- Toner is low.
- The cleaning unit needs to be replaced.
- Scheduled maintenance needs to be performed.

See Table 1-5 for information describing the Supplies Needed key.

1.5 Bottom Paper Tray Panel Components

Figure 1-5 and Table 1-6 list the bottom paper tray indicators/key and their functions.

Figure 1-5: Bottom Paper Tray Components

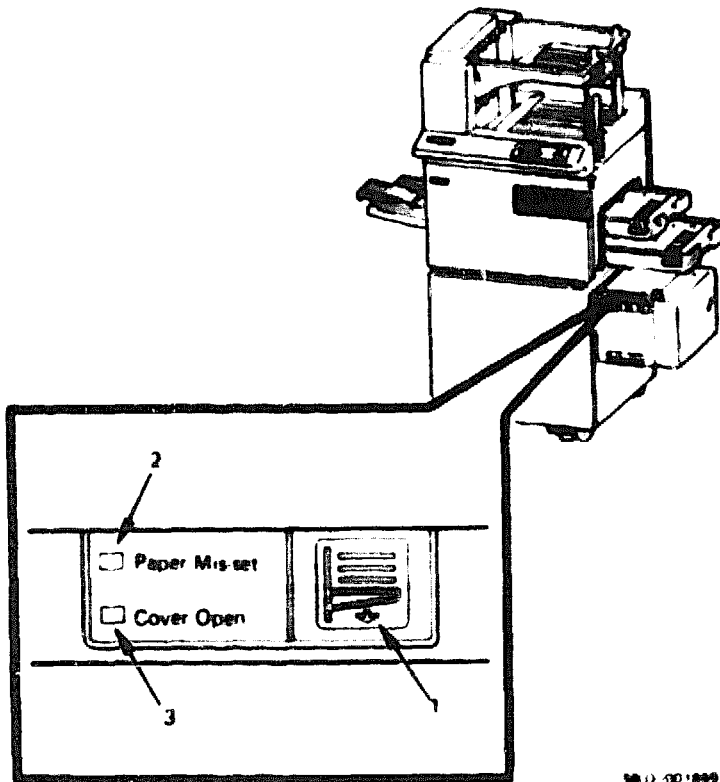


Table 1-6: Bottom Paper Tray Components

Indicator/Key	Description
1. Tray Down Key/ Ready Indicator	<p>Lowers the paper tray (if the top and side covers are closed). After paper is loaded, the tray automatically rises to the operating position when the top and side covers are closed.</p> <p>The indicator (on the key) lights when the tray is in the operating position. When the tray is moving up or down, the indicator flashes. The indicator is off when the tray is in a nonoperating position, for example, when loading paper.</p>
2. Paper Mis-set Indicator	<p>Lights when the setting on the paper size dial does not match the size of the paper in the tray, or the paper is not flush against the back of the tray (see message display to determine the error). To correct the error, set the dial so that it corresponds to the paper size in the tray or reload the paper so that it is flush against the back of the tray. After correcting the problem, open and close the side cover to clear the error.</p>
3. Cover Open Indicator	<p>Lights when the tray top or side cover is open. Close the cover to clear the error.</p>

Chapter 2

Operating Information

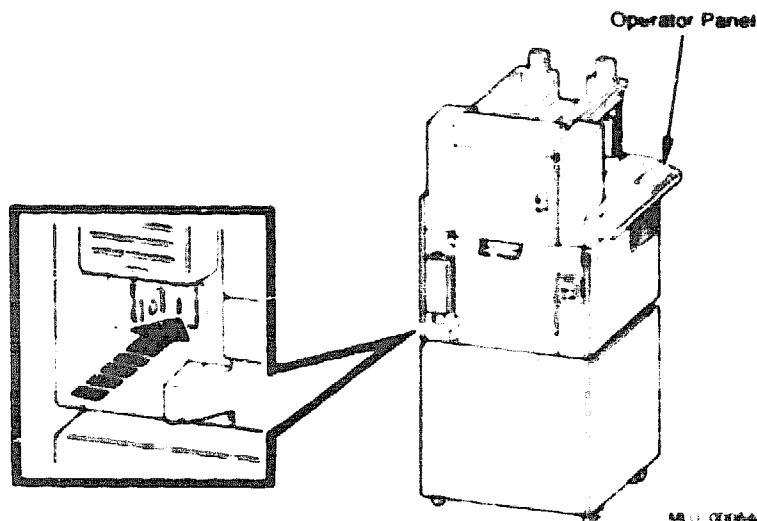
This chapter provides operating information for all users of the PrintServer. It describes the operating procedures, such as powering up the printer and adding paper.

2.1 Powering Up the PrintServer

Use the following procedure to power up the printer.

NOTE: Depending on how active your network is, a successful power up may take from 3 to 10 minutes to complete.

1. Press the power switch on the left side of the printer to the 1 (ON) position.



- All the lights on the operator panel flash.
- Each time the printer is powered up it automatically performs a diagnostic self-test routine. The message display shows the test countdown (9 to 0) during warm-up time.
- The message display then shows the Ethernet address displayed on the top line; the firmware version number (for the controller, engine, and bottom paper tray) is on the bottom line.

Example:

12-34-56-78-9A-BC
2.0 1.2 1.1

- The message display then reads:
VAX ELN V4.2 LPS20
 . . .
- After loading the PrintServer, the display reads:
Copyright 1991
Digital Equipment Corp.
- The message display then reads:
Please wait . . .
Initialising . . .
- The printer remains in the initializing state for 65 to 80 seconds or until it prints a PostScript start-up page like the following.

NOTE: *The start-up page is printed only if the printer is configured to generate it.*

PrintServer 20

Version 2.0

Default Font: Helvetica

Font: Helvetica
Size: 12pt
Color: Black

Font: Helvetica
Size: 12pt
Color: Black

Font: Helvetica
Size: 12pt
Color: Black

Font: Helvetica
Size: 12pt
Color: Black



PrintServer 20

- The message display reads **Ready**

The Ready message indicates a successful power up and software boot

NOTE: If the printer is in Single Job Mode, the operator panel displays

Single Job Mode —
Press Resume to continue

to indicate a successful power up and software boot

If the printer does not power up correctly, see Chapter 3

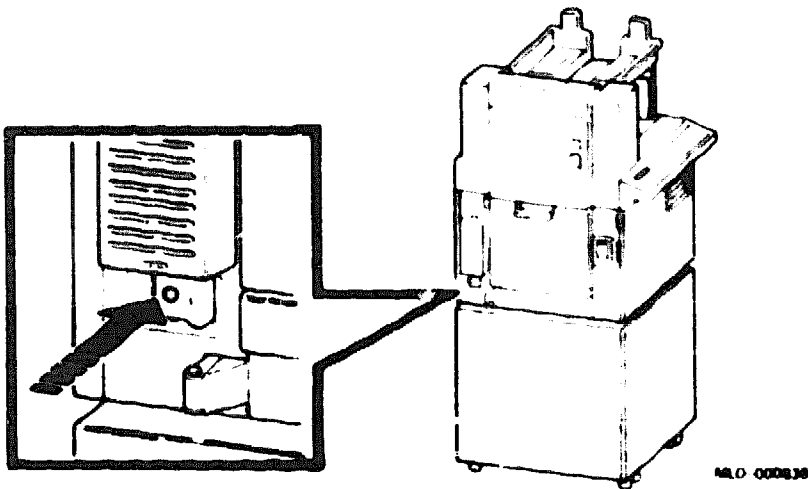
2.2 Powering Down the PrintServer

Use the following procedure to power down the printer:

1. Be sure the printer is not printing (the operator panel should display the Ready message).

CAUTION: *If you power down the printer while it is printing, data is lost and paper jams.*

2. Press the power switch on the left side of the printer to the 0 (OFF) position.

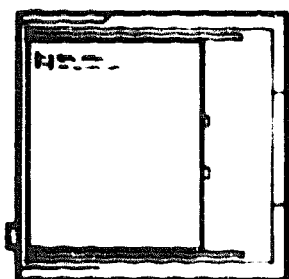


2.3 Adding Paper

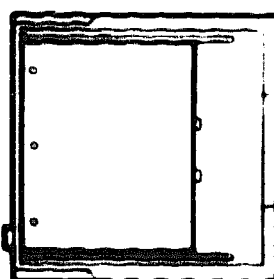
You can add letterhead paper or prepunched paper to the paper trays. You can also print text on one side of the page (simplex mode) or both sides of the page (duplex mode). The following figure shows how to load letterhead and prepunched paper.

NOTE: *The large paper cassette or the bottom paper tray will print one-sided and two-sided jobs on prepunched paper. However, you must load the paper short edge first, which slows the printing speed.*

Simplex Mode (Single-Sided Printing)

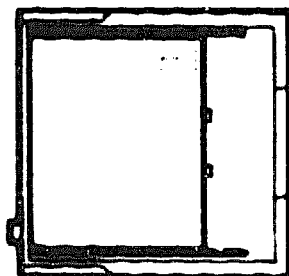


Letterhead Face Up

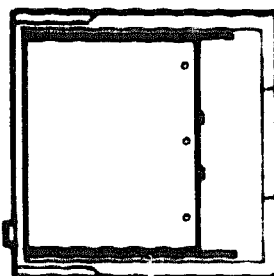


Holes Left Side

Duplex Mode (Double-Sided Printing)

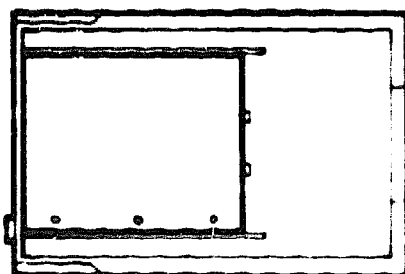


Letterhead Face Down



Holes Right Side

Simplex or Duplex Mode
(Large Cassette or Bottom Tray)



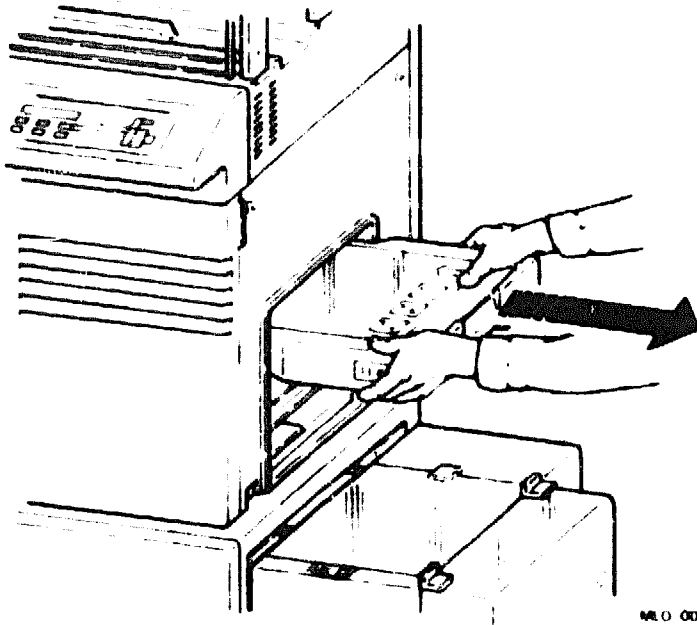
Holes Front

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2.3.1 Adding Paper to the Cassettes

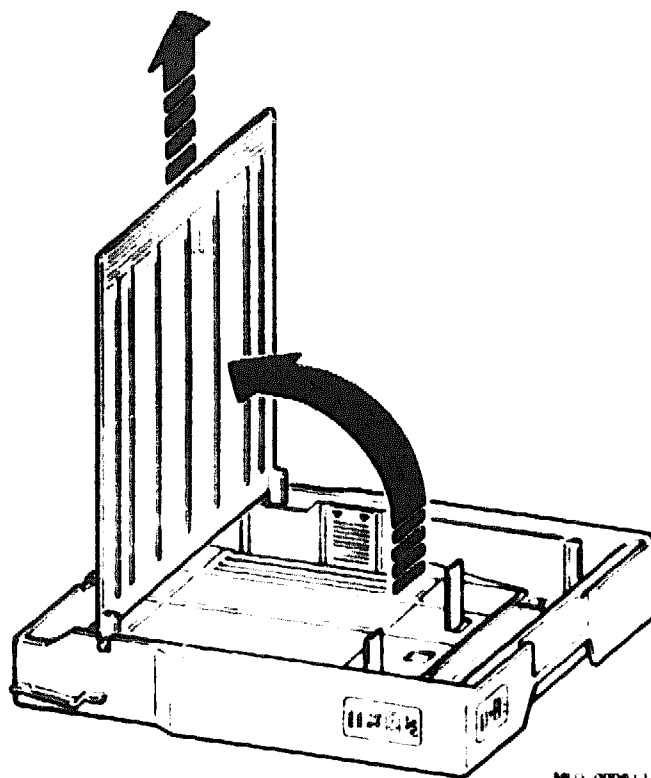
Use the following procedure to add paper to the cassettes:

1. Remove the empty paper cassette by lifting it up (slightly) and out of the printer.



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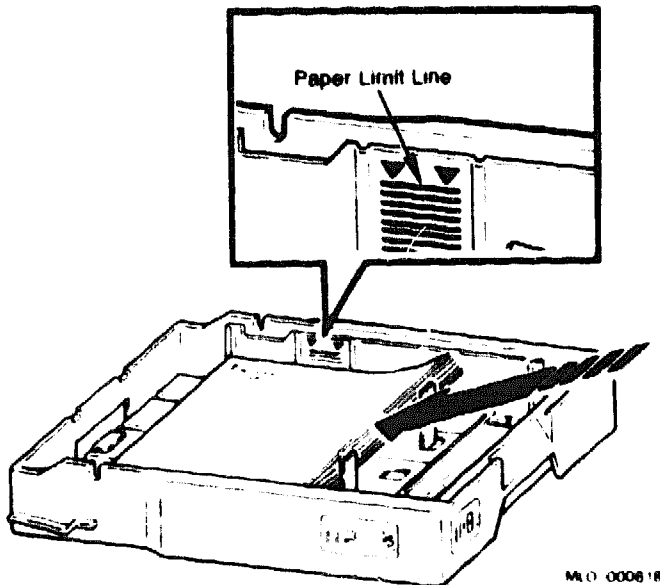
2. Open the cassette cover and remove it by lifting it straight up.



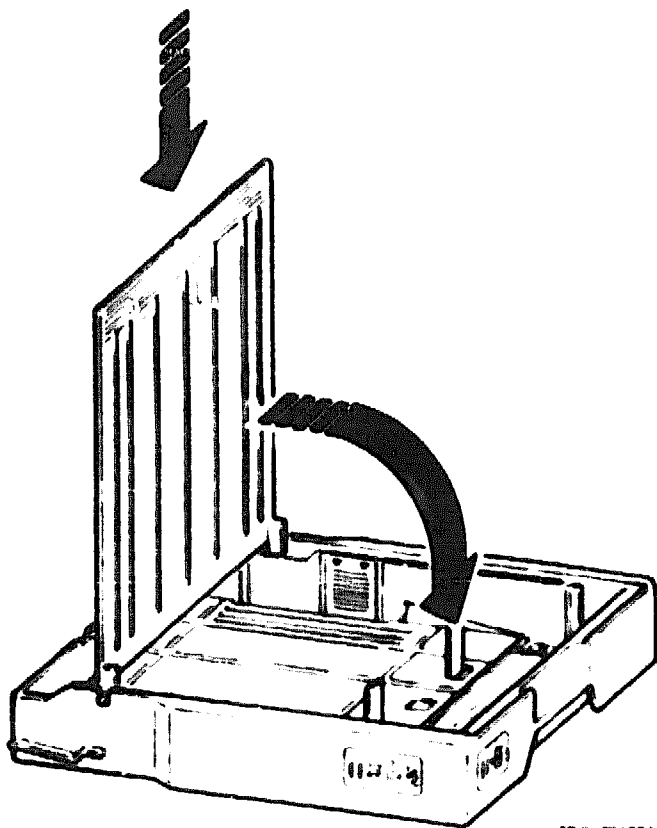
MLD 0006 11

3. Add paper to the cassette, being sure not to add it above the limit line.

CAUTION: Use only high-quality paper, as listed in Appendix B. Do not add paper above the limit line on the paper guide (about 250 sheets of 20-lb. paper). Adding paper above the limit line or loading paper unevenly puts stress on the paper tray motor and causes paper jams.

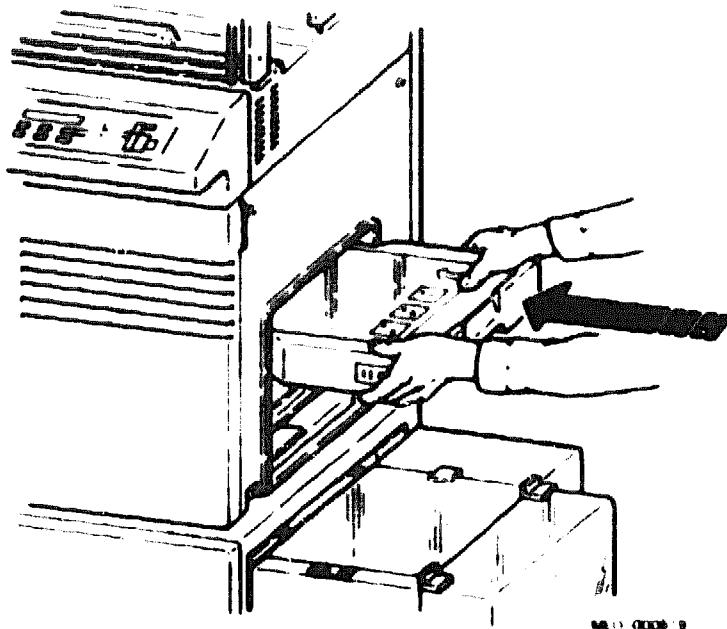


4. Place the cover back on the cassette.



REEL TO REEL

5. Insert the paper cassette by sliding it straight into the cassette slot until it drops into position.
 - The cassette tray rises to the operating position, and the red light on the graphic display (indicating the selected tray) changes to green.

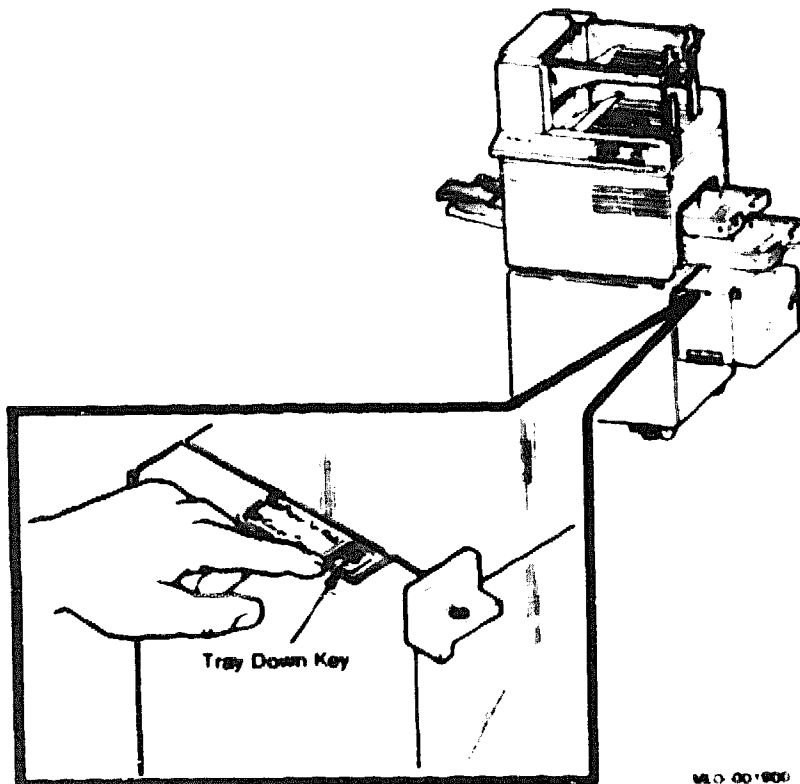


2.3.2 Adding Paper to the Bottom Tray

Add paper to the bottom tray, using the following procedure. For additional information on the bottom paper tray panel, see Section 1.5.

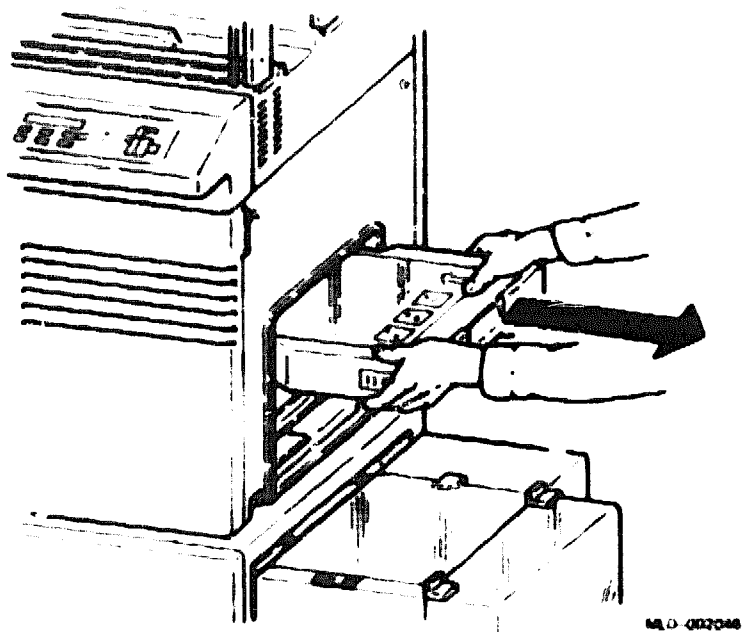
1. Press the Tray Down key to lower the tray to the loading position.

NOTE: *If the tray runs out of paper during operation, the tray lowers to the loading position automatically.*



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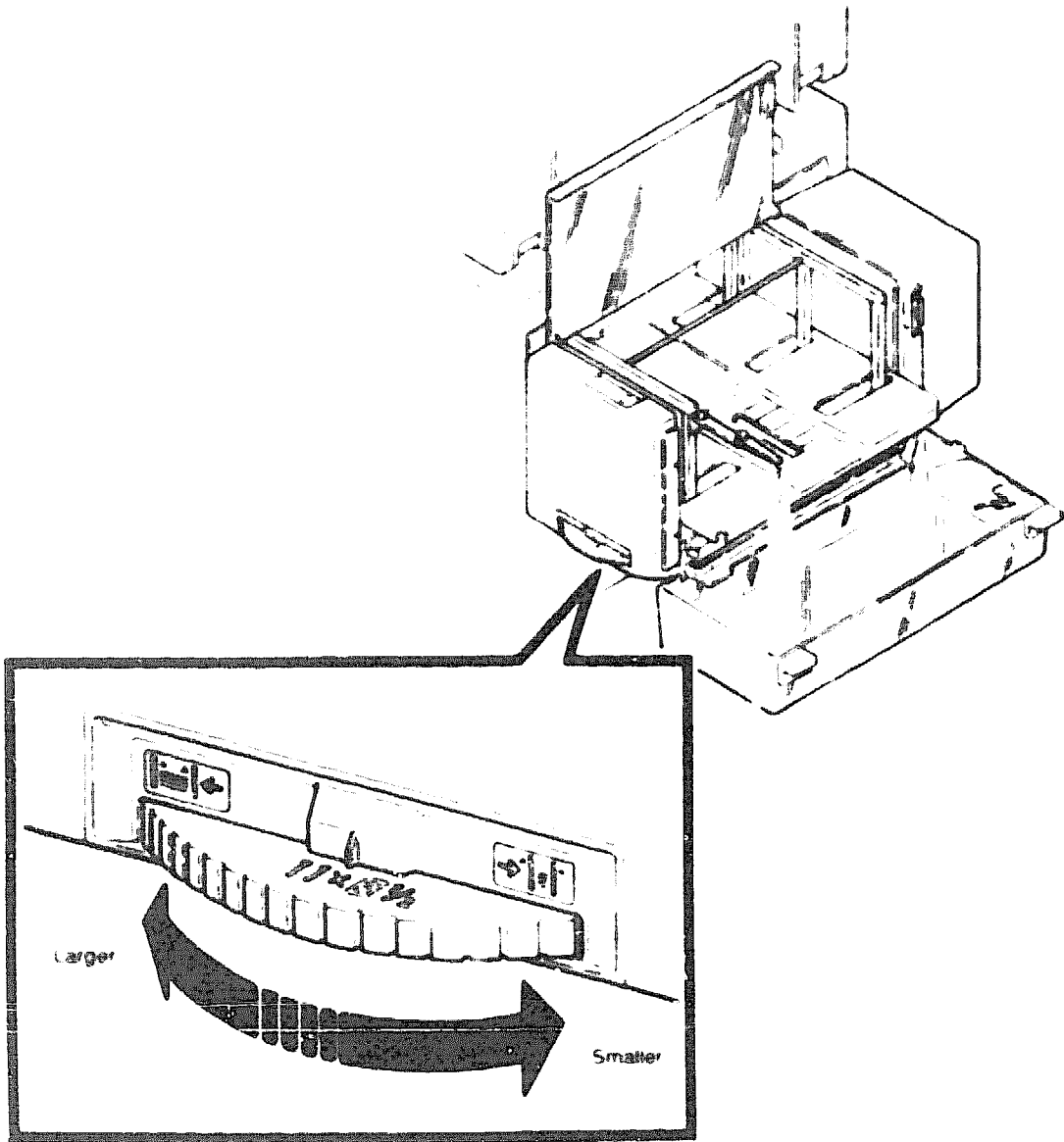
2. Remove the cassette trays.



3. Open the top and side covers.
 - If changing to a new paper size, continue with the next step.
 - If not changing to a new paper size, skip the next step.
4. Set the paper size dial on the bottom paper tray to the paper size you are using. These paper sizes are available for the tray:

Portrait Orientation	Landscape Orientation
11 in. x 8½ in.	8½ in. x 11 in. R
A4	A4R
B4	N/A
B5	B5R
8½ in. x 14 in.	N/A
N/A	A5R

NOTE: In the portrait orientation, the paper enters the printer long side first, and results in faster print speeds. In the landscape orientation (designated by the letter R), paper enters the printer short side first, resulting in slower print speeds.

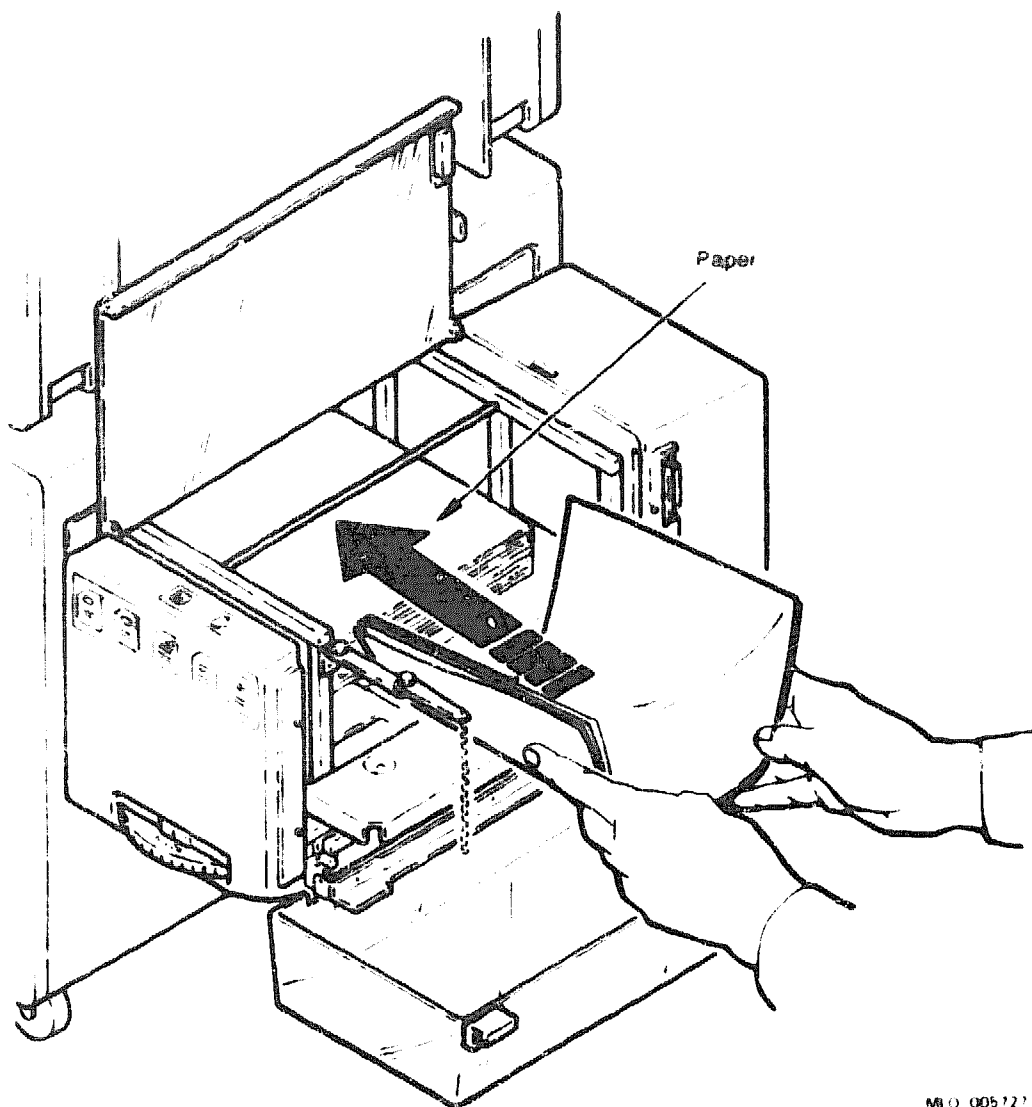


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5. Move the chain guide away from the paper tray and add paper.
 1. Pick up one-third to one-half of a ream of paper and bend it so that the edges curve upward.
 2. Face the opening of the bottom paper tray so that you can see the back of the tray. Insert the paper as shown in the following figure until the leading edge touches the rear of the tray.

CAUTION:

- *Use only recommended paper, as listed in Appendix B.*
- *Do not add more than 2 reams of paper to the bottom tray (about 1000 sheets of 20-lb. paper). Adding more paper or loading the paper unevenly puts stress on the paper tray motor and causes paper jams.*
- *Avoid forcing the paper past the side posts of the bottom paper tray. Otherwise, the paper may wrinkle, causing paper jams or skewed printing.*
- *Do not store extra paper in the bottom paper tray.*

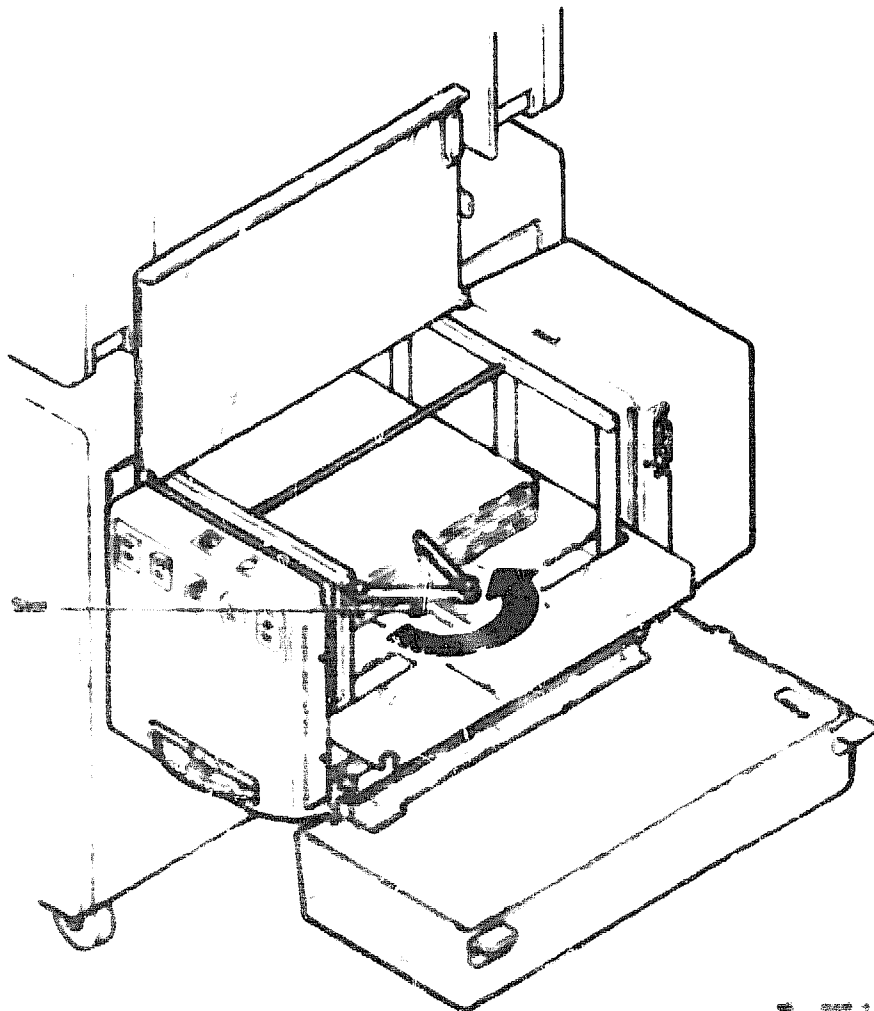


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6. Move the chain guide so that the chain just touches the (center) edge of the paper.

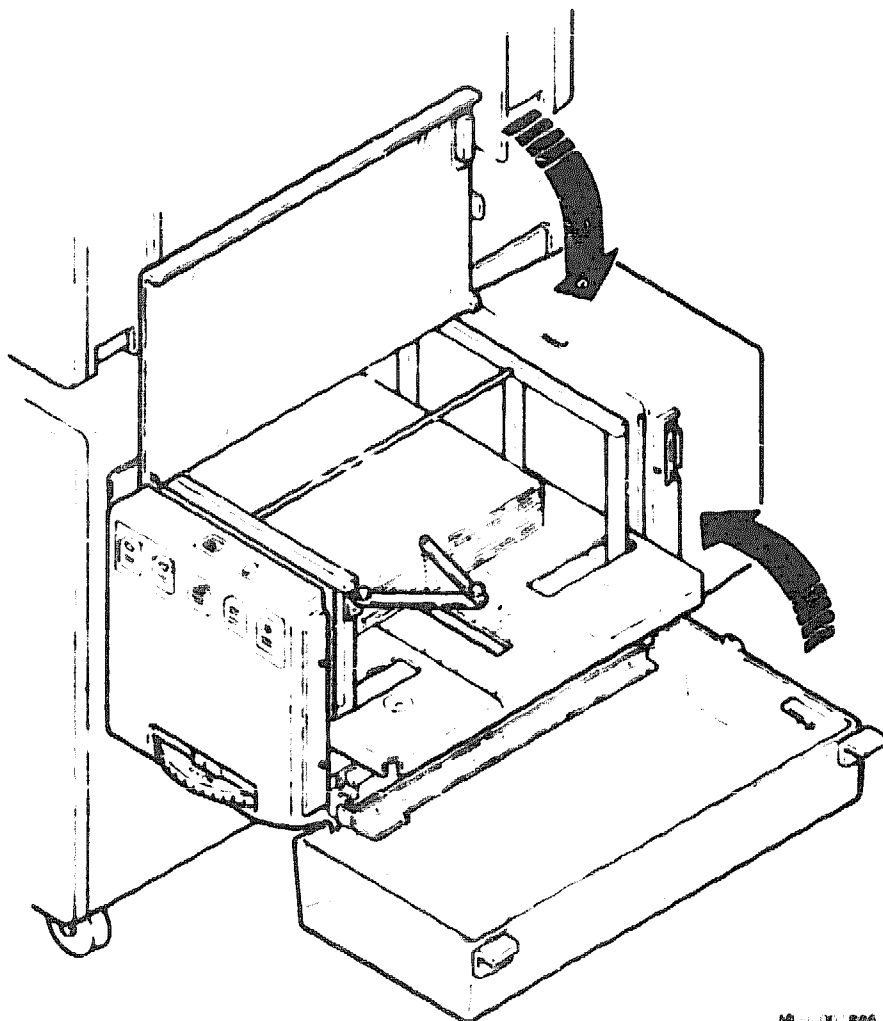
- The bottom of the chain should be positioned over the slot in the tray.

NOTE: Be sure the chain is not resting on top of the paper or to either side of the slot. The chain prevents misfeeds and paper jams.



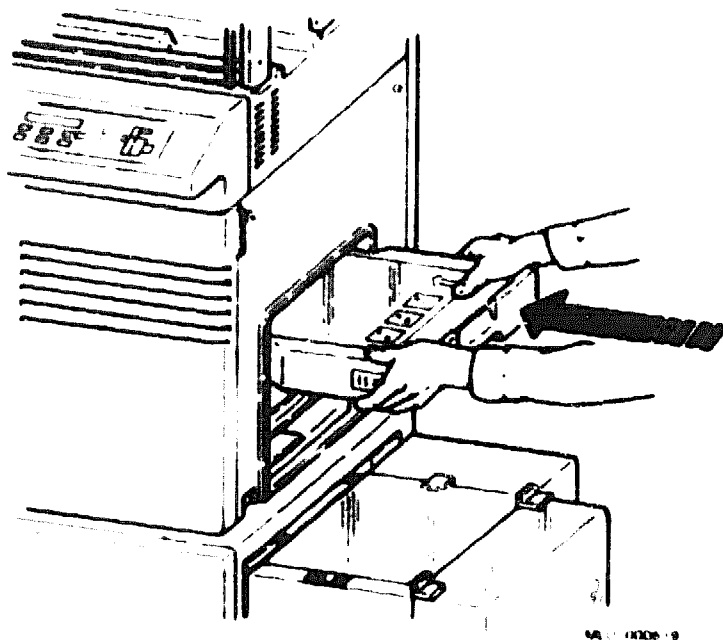
7. Close the paper tray top and side covers.

- The paper tray automatically rises to the operating position and the Tray Down indicator shuts off.



401111-000

8. Reinsert the cassette trays.

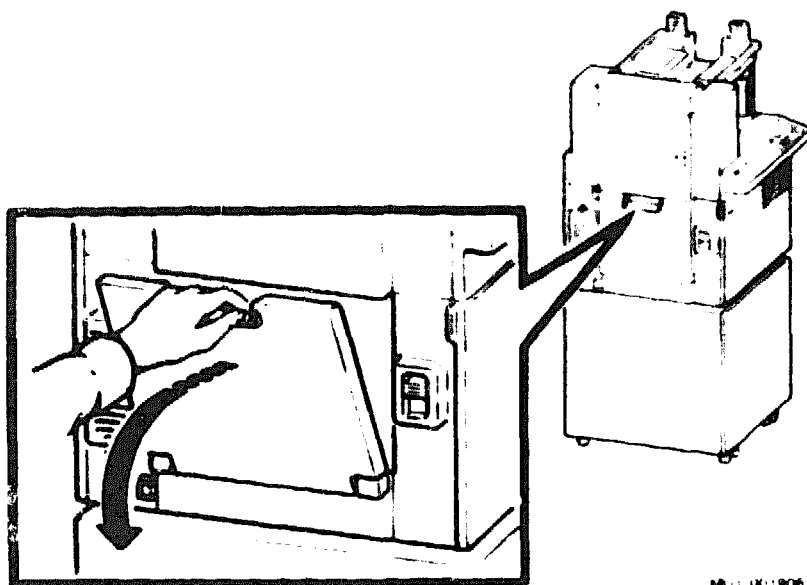


2.4 Opening the Side Output Tray

The side output tray is normally used when printing transparencies or gummed labels to prevent excessive curl to the media. It may also be used to stack output paper face up. The capacity of the side output tray is about 100 sheets of 20-lb. paper.

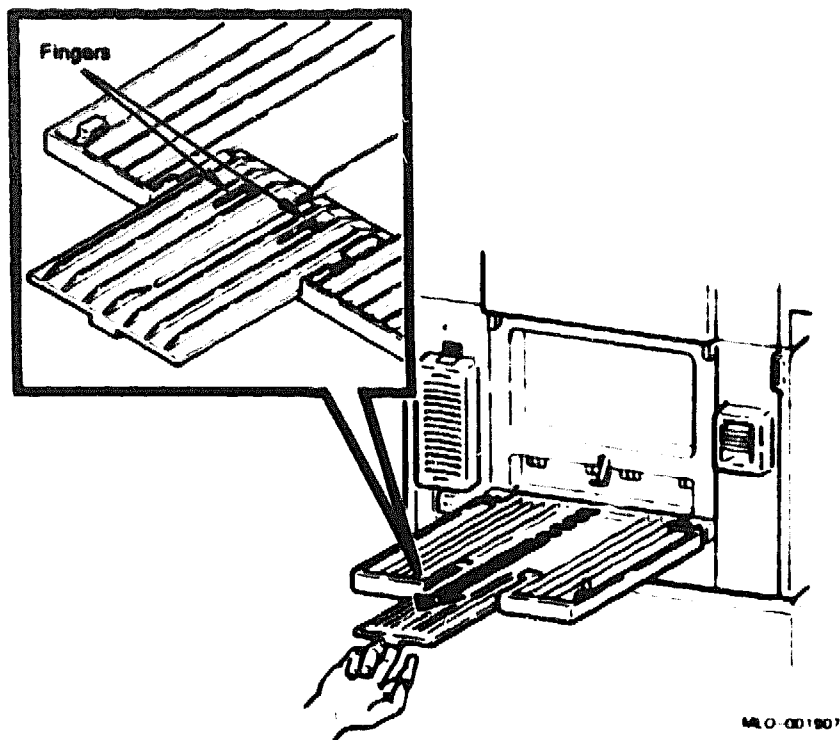
Use the following procedure to open the side tray:

1. Pull the side tray out and let it down until it stops into its operating position.



WAL-1001906

2. Pull the tray extension out until the fingers snap into the tray detents.



2.5 Maintaining the PrintServer

To maintain print quality and high performance, various components of the PrintServer need to be cleaned or replaced on a regular basis by the user or Customer Services.

The user purchases and maintains the following components:

- Toner
- Cleaning unit
- OPC drum and shield glass
- Print quality supplies

Customer Services performs more extensive maintenance procedures.

2.5.1 Toner

Add toner when the amber Supplies Needed LED illuminates and the operator panel displays the following message:

Replace toner cartridges

The toner kit includes the following components:

- Toner cartridges
- *PrintServer Toner Kit Guide*

For instructions on replacing toner, see the *PrintServer Toner Kit Guide*.

2.5.2 Cleaning Unit

Replace the cleaning unit when the print engine stops and the following message is displayed on the operator panel:

Cleaning unit full

Each cleaning unit lasts for approximately 20,000 images, assuming 5 percent toner coverage on letter-size or A4-size paper and a printing speed of 10 pages/minute. The life of the cleaning unit will vary, depending on printer operation and printing characteristics.

The cleaning unit kit includes the following components:

- Cleaning units
- *PrintServer Cleaning Kit Guide*

For instructions on replacing the cleaning unit, see the *PrintServer Cleaning Kit Guide*.

2.5.3 OPC Drum and Shield Glass

Replace the OPC drum and shield glass when the following message is displayed on the operator panel:

Replace OPC drum

The drum and shield glass last for approximately 80,000 images, using 8.5 in. x 11 in. or A4-size paper.

The OPC drum kit contains the following components:

- An OPC drum
- A shield glass
- *PrintServer OPC Drum Kit Guide*

For instructions on replacing the OPC drum, see the *PrintServer OPC Drum Kit Guide*.

2.5.4 Supplies

Perform user maintenance when the operator panel displays the following message:

Perform User Maintenance

Maintenance intervals are chosen to maintain constant print quality and should be performed when indicated on the operator panel. The Supplies Kit lasts for up to 20,000 images depending on:

- Paper size and orientation
- Job complexity
- Printing in simplex or duplex mode
- Printing number up or multiple pages per side

Most applications will produce fewer images. Keep a supplies kit available at all times. See Appendix B for ordering information.

The following supplies are *replaced* during user maintenance:

- Main charger
- Transfer/separation charger

- Ozone filter

The following components are *cleaned* during user maintenance:

- Quenching lamp
- Separation pawls

For instructions on replacing supplies, see the *PrintServer Supplies Kit Guide*.

2.5.5 Customer Services Maintenance

Customer Services performs maintenance when the following message displays on the operator panel:

Field Service Required
Call Field Service

For a description of the maintenance procedures performed by Customer Services, contact your Customer Services representative.

Testing and Troubleshooting

This chapter discusses:

- Common operating problems
- Interlock errors
- Printer errors
- Paper jams
- Printing a test page

Two troubleshooting tables cover common operating problems and interlock errors. These tables enable you to find and correct the problem or direct you to call Digital Customer Services to make the repairs (see Chapter 4).

Sometimes the tables recommend that you replace printer parts to correct problems. Keep an extra set of the following kits as spares:

- Supplies Kit
- Cleaning Unit Kit
- Toner Kit
- OPC Drum Kit

NOTE: All printer maintenance should still be performed when indicated on the operator panel, even though some of those parts may have been replaced between maintenance intervals. This practice ensures maintenance continuity and satisfactory printer operation.

3.1 Common Operating Problems

Table 3-1 lists common operating problems and their possible solutions. Solutions are listed in order of probability and should be followed in that order.

Table 3-1: Common Operating Problems

Problem	Possible Solution
The printer does not power up when you set the power switch to 1 (ON).	<p>Make sure the power cord is plugged into the wall outlet. Check that there is power at the wall outlet by plugging in a lamp to see if it lights.</p> <p>If the lamp does not light, call your building services to check the circuit supplying power to that outlet.</p>
The printer powers up correctly but does not print. Or, the printer produces blank pages.	<p>Run a test page (Section 3.5). If the printer is able to print the test page, the problem is:</p> <ul style="list-style-type: none">• In the user command or software (consult your software user manuals).• The Ethernet connections. Check the Ethernet connections at the printer and at the Ethernet. See your system manager or call Digital Customer Services (Chapter 4) if necessary.
The printer produces black pages.	<p>Be sure the main charger is seated correctly.</p> <p>Replace the main charger (<i>PrintServer Supplies Kit Guide</i>).</p> <p>Run a test page (Section 3.5). If the printer is able to print the test page, the problem is:</p> <ul style="list-style-type: none">• In the user command or software (consult your software user manuals).• The Ethernet connections. Check the Ethernet connections at the printer and at the Ethernet. See your system manager or call Digital Customer Services (Chapter 4) if necessary.
The print is too light.	<p>Replace the transfer/separation charger (<i>PrintServer Supplies Kit Guide</i>).</p> <p>Replace the OPC drum (<i>PrintServer OPC Drum Kit Guide</i>).</p>
The print background is dirty.	<p>Clean or replace the main charger or clean the quenching lamp (<i>PrintServer Supplies Kit Guide</i>).</p>
The image is missing in the horizontal direction.	<p>Replace the shield glass (<i>PrintServer OPC Drum Kit Guide</i>).</p> <p>Replace the transfer/separation charger (<i>PrintServer Supplies Kit Guide</i>).</p>
A black line appears in the horizontal direction.	<p>Replace the main charger (<i>PrintServer Supplies Kit Guide</i>).</p> <p>Replace the cleaning unit (<i>PrintServer Cleaning Kit Guide</i>).</p>
Paper is skewing.	<p>Be sure paper is flush against the back of the bottom paper tray.</p>

3.2 Interlock Errors

Interlocks on the PrintServer ensure that all covers and components are present and in their proper operating position before the printer can be operated. Most of the interlock errors can be corrected by reading the information shown on the front panel; for example, **Close front cover**. Use Table 3-2 when the operator panel directs you to the operator's guide. Follow the solutions in the order listed.

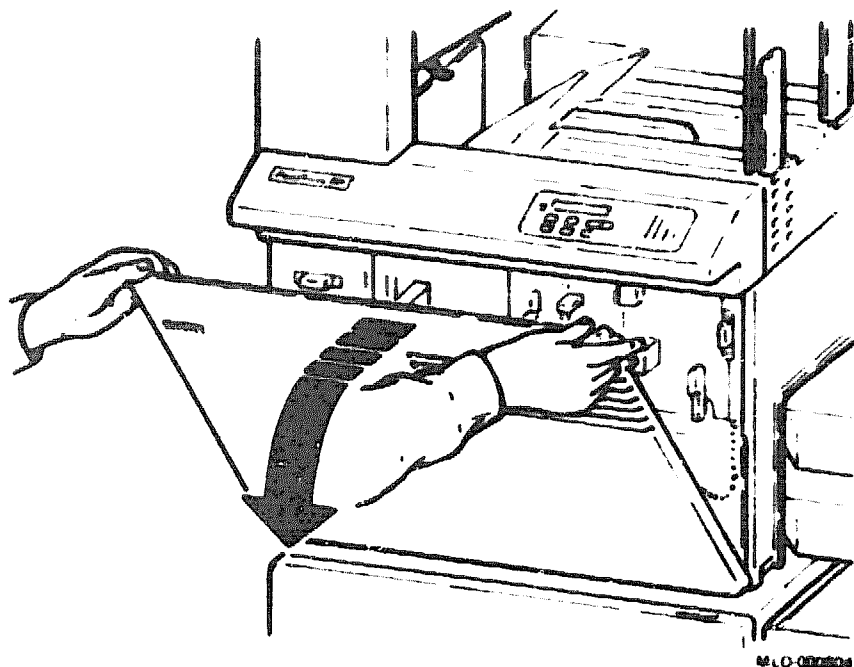
Table 3-2: Interlock Errors

Possible Problems	Solutions	See
Interlock Error 1		
1. Cleaning unit not in the operating position.	1. Open the front cover and close the development drawer.	Section 3.2.1
2. Cleaning unit not installed.	2. Install the cleaning unit.	<i>PrintServer Cleaning Kit Guide</i>
Interlock Error 2		
1. OPC drum not in the operating position.	1. Open the front cover and close the development drawer.	Section 3.2.1
2. OPC drum not installed.	2. Install the OPC drum.	<i>PrintServer OPC Drum Kit Guide</i>
Interlock Error 3		
1. Development unit not in the operating position.	1. Open the front cover and close the development drawer.	Section 3.2.1
2. Toner cartridge not in place.	2. Install the toner cartridge.	<i>PrintServer Toner Kit Guide</i>
CAUTION: Do not add toner to the development unit. Install only the toner carrier.		
Interlock Error 4		
1. Fusing unit not seated in the operating position.	1. Open the front cover and reseal the fusing unit properly.	Section 3.2.2

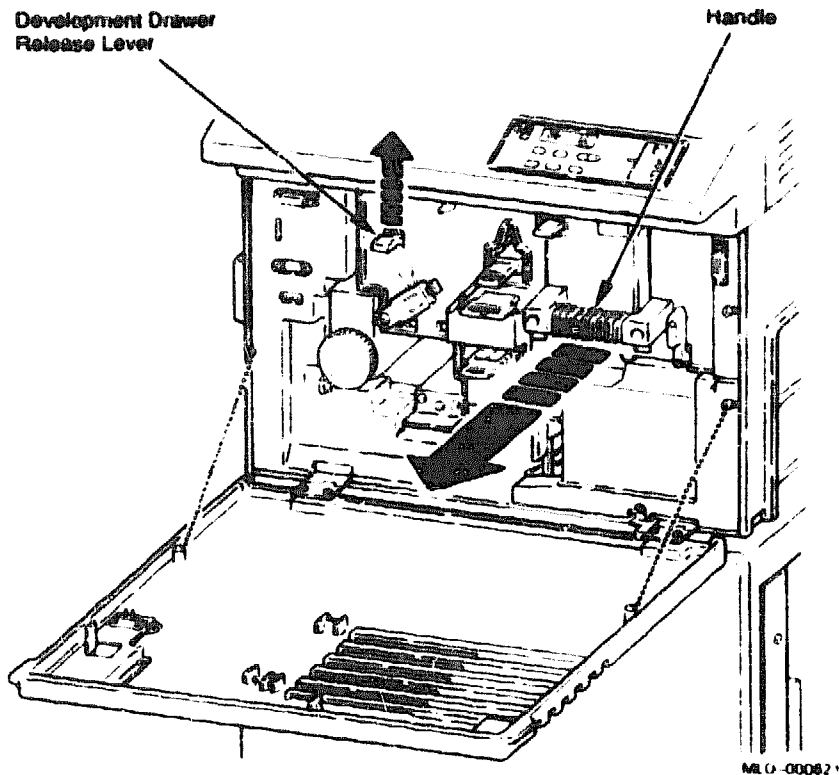
3.2.1 Closing the Development Drawer

Close the development drawer when Interlock Errors 1, 2, or 3 occur, using the following procedure:

1. Open the front cover.

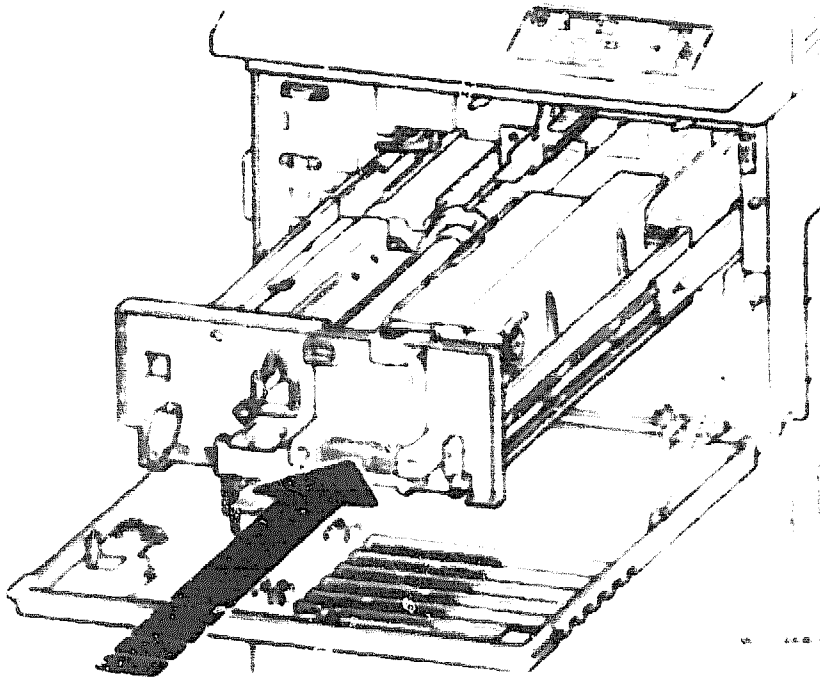


2. Open the development drawer by lifting up the release lever while pulling the drawer out by its handle until it stops.
 - Check to see that all components (cleaning unit, OPC drum, and toner cartridge) are in place and seated correctly.
 - Check to see that the cleaning unit release lever and development unit release lever are in the operating position.

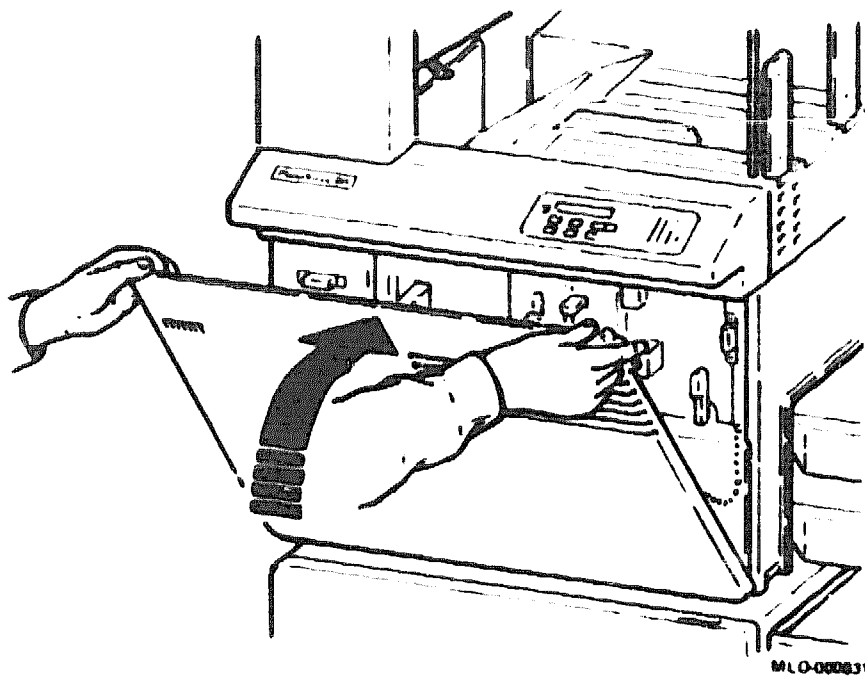


3. Close the development drawer, using the handle to push it back in.

NOTE: *The cleaning unit and development unit release levers return to their operating positions automatically when the development drawer is properly closed.*



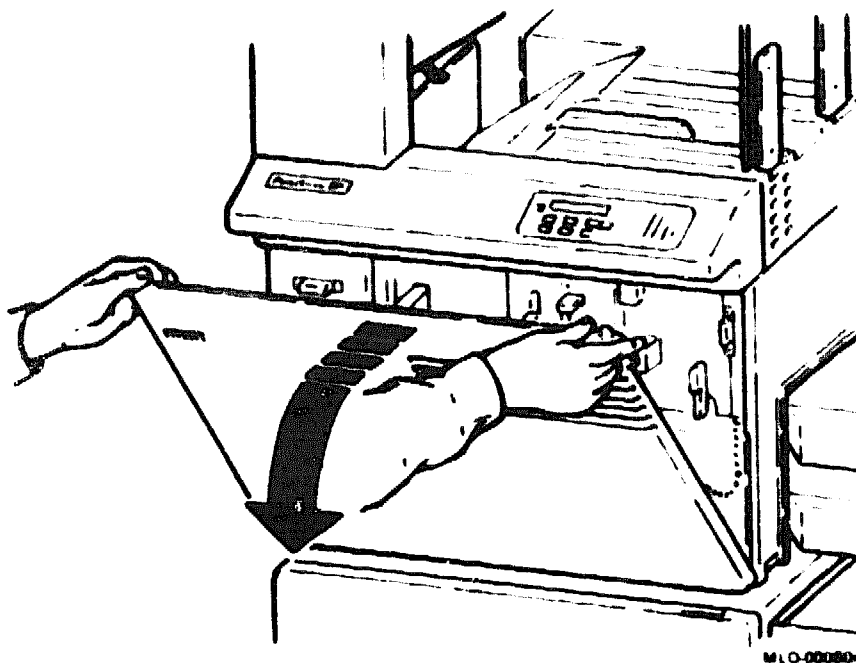
4. Close the front cover.



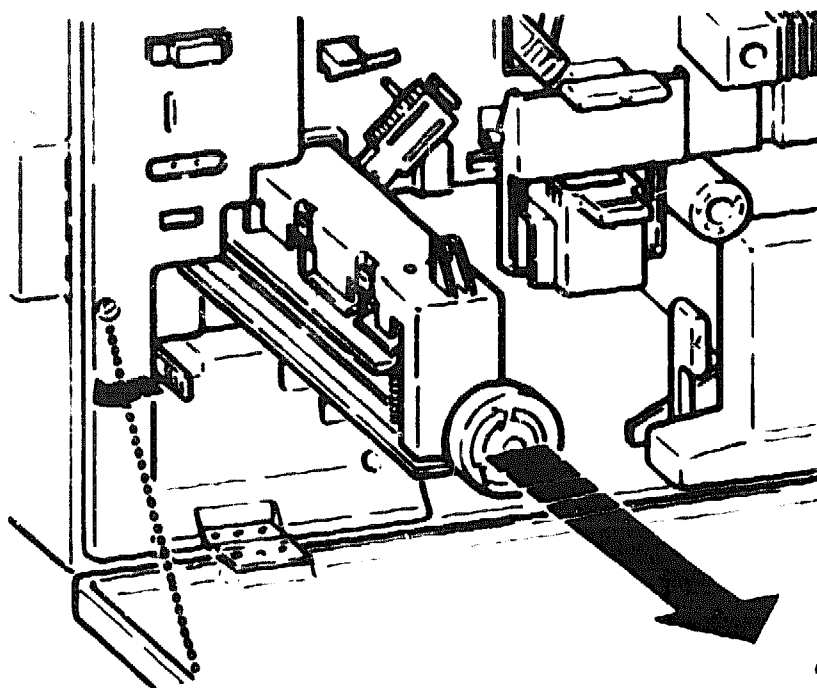
3.2.2 Reseating the Fusing Unit

Reseat the fusing unit when Interlock Error 4 occurs, using the following procedure:

1. Open the front cover.

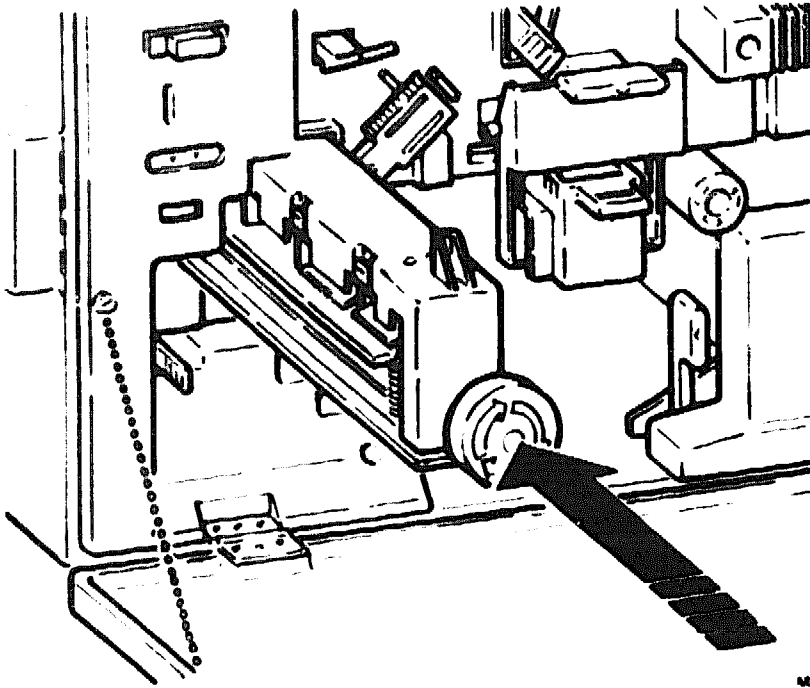


2. Pull the fusing unit out by pushing the fusing unit release lever to the left, then pulling the fusing unit out until it stops.



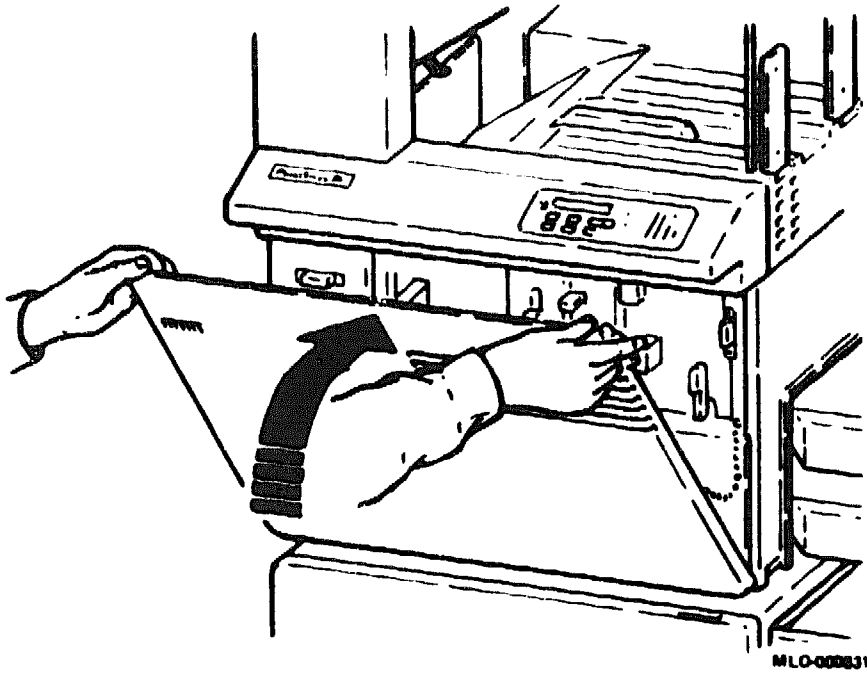
MLD-001818

3. Push the fusing unit back in until it is firmly seated in the printer.



MLO 001624

4. Close the front cover.



3.3 Printer Errors

Two types of fatal printer errors exist: hardware errors and software errors. These types of errors are considered fatal because they prevent any further printing until the condition is corrected or the printer is serviced.

A hardware error means the printer has encountered a malfunction such as a bad laser unit or a paper jam. When a hardware error occurs, the operator panel shows the corrective action to take, whether it be to follow instructions on a jam clearance label or to call Customer Services to repair the printer. See Chapter 4, *Service*, for information before calling Digital Customer Services for repairs.

A software error means PostScript has encountered an irrecoverable error. When a software error occurs, the operator panel instructs you to reboot or cycle power (turn the printer off and then on). In addition to rebooting or cycling the printer, you should also submit a Software Performance Report (SPR).

3.4 Paper Jams

When a paper jam occurs, the graphic display lights on the operator panel indicate where the paper is jammed. Usually the paper is jammed in several places, which are indicated by each flashing red light on the graphic display.

All paper jam clearance procedures are described on the jam clearance labels on the printer. The labels are located in the areas where the jams occur so that you can easily refer to them.

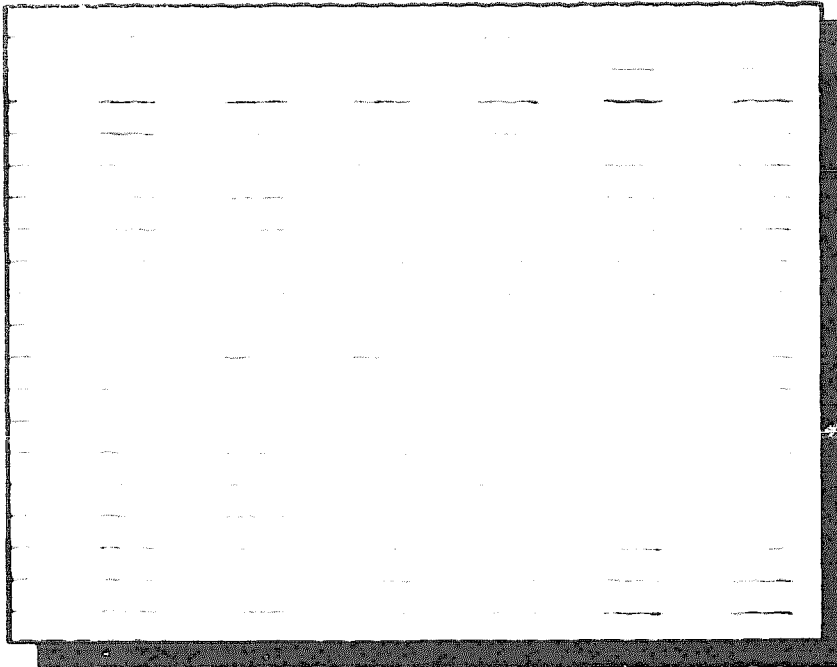
NOTE: *It is not necessary to open the development drawer when clearing paper jams. A paper jam cannot occur in the development drawer because the paper path is below the drawer.*

If you encounter a persistent or constant paper jam, call Digital Customer Services (Chapter 4) to correct the problem.

CAUTION: *Do not open any doors or covers while the PrintServer is printing. Opening doors (except for the cabinet door) or covers while the printer is printing causes paper jams.*

3.5 Printing a Test Page

After the printer is powered up, you can see if the printer is operating correctly by printing a test page. The test page should look like this:



SAO 001929

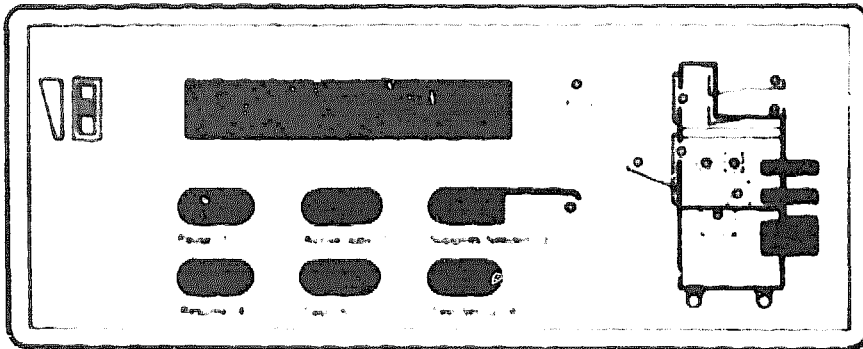
A test page can be printed when the printer is Paused or in Test Set-up Mode. See Section 3.5.1 and Section 3.5.2.

3.5.1 Printing a Test Page When the Printer is Paused

This is the simplest method of printing a test page. The test page is generated using the currently selected input and output trays. The test page is printed on one or two sides, depending on the mode (simplex or duplex) the printer is in.

Print the test page, using the following procedure:

1. Press the Pause key to place the printer in the paused state (off line).
 - The message display reads:
Paused —
Press Resume to continue



VA-100-070

2. Press the Test key to print the test page.
 - The display initially reads:
Please wait . . .
 - And then while printing the test page, the message display reads:
One sided test page
or
Two sided test page
 - After printing the test page, the printer is in the paused state and the display reads:
Paused —
Press Resume to continue
3. Press Resume to return to normal printer operation (on line).

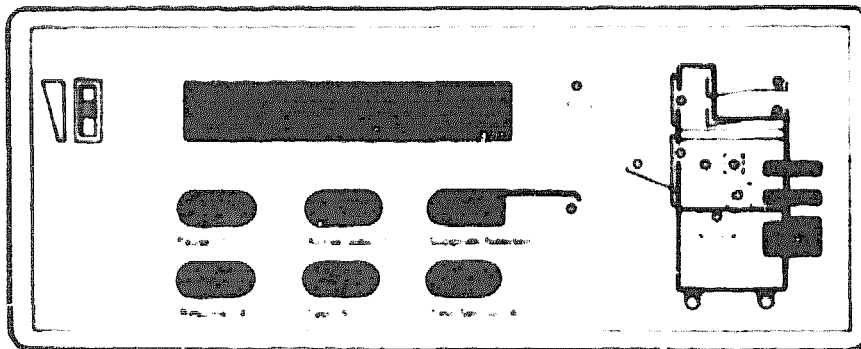
3.5.2 Printing a Test Page in Test Set-Up Mode

Test Set-up Mode lets you choose the input and output paper trays and print on one side or two sides. This lets you determine if all paper paths (routes the paper travels from input tray to output tray) are operating smoothly and correctly.

In Test Set-up Mode, the keypad is used to enter the information needed to perform the test. While in Test Set-up Mode, the keys take on the numerical value assigned to them, that is, (1) through (6).

Print a test page while in Test Set-up Mode, using the following procedure:

1. Press the Pause key to place the printer in the paused state (off line).
 - The message display reads:
Paused—
Press Resume to continue



2. Press the Test Set-up key to place the printer in Test Set-up Mode.

- The message display reads:
One sided test page

The keys now assume their numerical value.

3. Press the (1) key if you want the test page to be printed on both sides.
 - The message display reads:
Two sided test page

NOTE: *Pressing the (1) key again toggles back to One sided test page.*

4. Press the (2) key to select the input paper tray.
 - Each time the (2) key is pressed, a different input paper tray is selected. The selected tray is indicated by the green input tray light on the graphic display.

NOTE: *If an input tray is out of paper (red light is on), you must either add paper to that tray or select another input tray.*

5. Press the (3) key to select the output paper tray.
 - Each time the (3) key is pressed a different output paper tray is selected. The selected tray is indicated by the green output tray light on the graphic display.

NOTE: *If an output tray is full (red light is on), you must either empty that tray or select another output tray.*

6. Press the (5) key to print the test page.
 - The display reads:
One sided test page
or
Two sided test page

7. After printing the test page, the printer is in Test Set-up Mode, and the display reads:

Press (1) to continue
Press (6) to exit

Pressing the (6) key exits you from Test Set-up Mode and returns you to Operation mode. If you want to print additional test pages, repeat steps 3 through 6.

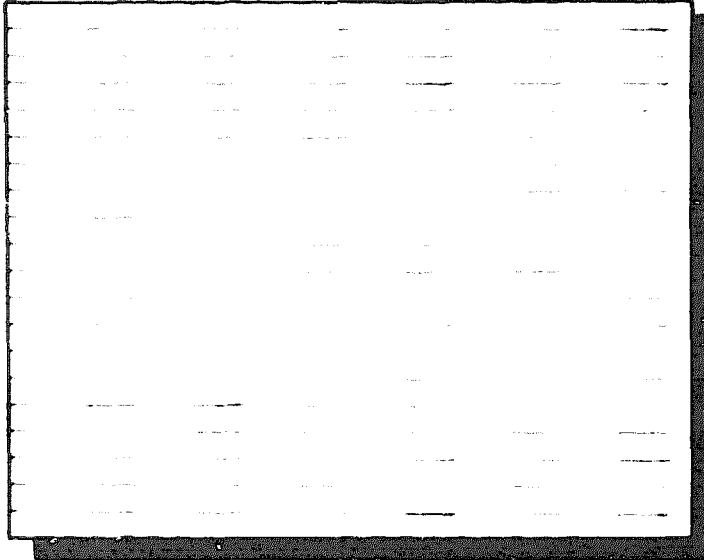
If you do not want to print additional test pages, press Resume to return to normal printer operation (on line).

3.5.3 Checking the Test Page

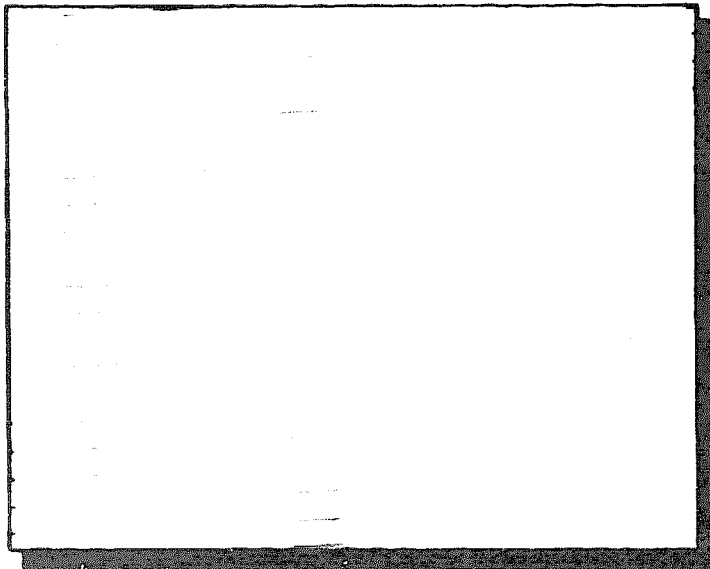
Check the test page for skewing and toner bonding.

- **Skewing** causes the type to appear at an angle in relation to the edge of the paper. Check to see that the first line of horizontal marks is printed at the same height across the page. This should be checked at the top and bottom edges of the paper.

Correct Output



Skewed Output



MS-100-7091

If skewing occurs, it could be caused by paper not being properly loaded into the cassette trays or the bottom tray. Try reloading the paper to correct the problem. Ensure that the paper is flush against the back of the bottom tray and the chain guide is touching the edge of the paper.

If reloading the paper does not solve the problem, call Digital Customer Services (see Chapter 4).

- Toner bonding is the ability of the toner to adhere (stick) to the paper. Check to see if the toner is properly bonded to the paper by rubbing the horizontal marks with your fingers. The toner should be solid and not smear.

If toner is not bonding to the paper properly, call Digital Customer Services (see Chapter 4).

Chapter 4

Service

If you cannot correct a problem with the PrintServer or the operator panel instructs you to call Customer Services, the printer requires servicing by a qualified Customer Services engineer.

Digital has a service center in your area to help keep your system running properly. Refer to the following table before calling the Customer Services:

<i>Before calling for service, check the problem yourself</i>	Check Table 3-1 and Table 3-2. Often you can solve the problem yourself.
<i>Who should call for service</i>	Typically, the system manager should place the call for service.
<i>What the service center needs to know</i>	<p>Note the following:</p> <ul style="list-style-type: none">• Serial and model numbers on the back of the printer• Serial and model numbers of the host system if available• Page count (Open the front cover and check the maintenance counter.)
<i>Be ready to answer questions when you call</i>	<p>Summarize the problem. Make a note of:</p> <ul style="list-style-type: none">• What you were doing when the system failed• Any messages on the display panel• Any strange noises <p>Stay by the printer/host system if possible. The service engineer may ask you to re-create the problem.</p>
<i>Where you should call</i>	<p>In the continental United States:</p> <p>On-site warranty service: 1-800-372-3961 Return to Digital Service: 1-800-325-6765 Pay Call Service: Call your local office</p> <p>In Alaska, Hawaii, Canada, and Europe, call your local sales office for service.</p>

Appendix A

Specifications

This appendix lists the basic operating specifications for the PrintServer.

Technology

Printing technique	Diode laser, electrophotographic, write black, non-magnetic single-component toner
Resolution	300 x 300 dots per inch
Printing speed	Up to 20 images per minute in simplex mode (one-sided printing) using Letter or A4-size paper Up to 16 images per minute in duplex mode (two-sided printing) using Letter or A4-size paper

Input Paper Cassettes/Trays Capacities and Sizes

Small paper cassette	250-sheet capacity Letter (8.5 in. x 11 in.) Executive (7.5 in. x 10.5 in.) A4 (297 mm. x 210 mm.) A5 (148 mm. x 210 mm.) B5 (257 mm. x 182 mm.)
Large paper cassette	250-sheet capacity Letter (8.5 in. x 11 in.) Legal (8.5 in. x 14 in.) B (11 in. x 17 in.) A3 (297 mm. x 420 mm.) A4 (210 mm. x 297 mm.) B4 (257 mm. x 364 mm.) B5 (257 mm. x 182 mm.)

Bottom paper tray

1000-sheet capacity
Letter (8.5 in. x 11 in.)
Legal (8.5 in. x 14 in.)
A4 (297 mm. x 210 mm.)
A5 (148 mm. x 210 mm.)
B4 (257 mm. x 364 mm.)
B5 (257 mm. x 182 mm.)

Output Paper Tray Capacities**2 top trays**

750 sheets each
Face down offset stacking

1 side tray

100 sheets
Face up stacking

**Recommended
paper weights**

18 lb to 24 lb (66 g/ m² to 90 g/ m²) basis weight

Physical**Dimensions**

Height...49.6 in. (1260 mm.)
Depth...27.2 in. (690 mm.)
Width...36.9 in. (937 mm.)

Installed weight

350 lb (155 kg)

Power**Power requirements**

100/120V AC, 50/60 Hz, 12 Amp maximum
220/240V AC, 50 Hz, 7 Amp maximum

Power consumption

1200 watts maximum

Environmental**Operating temperature**

50°F to 90°F (10°C to 32°C)

Operating humidity

20% to 80% relative humidity

Acoustic noise

Less than 55 dBA

Appendix B

Accessories and Supplies

This appendix lists some of the accessories and supplies available for the PrintServer and provides information on how to order them. Consult your local sales representative for a complete list with the latest information.

NOTE: *Consumables available through Digital or received by Digital should be used with Digital laser printers.*

Table B-1: PrintServer Accessories and Supplies

Part Number	Description
LPS2X-AA	The toner kit contains: <ul style="list-style-type: none">2 toner cartridges1 toner kit guide
LPS2X-AB	The supplies kit contains: <ul style="list-style-type: none">main charger1 transfer/separation charger1 ozone filter1 supplies kit guide
LPS2X-AC	The OPC drum kit contains: <ul style="list-style-type: none">1 OPC (organic photo conductor) drum1 shield glass1 OPC drum kit guide
LPS2X-AD	The cleaning unit kit contains: <ul style="list-style-type: none">2 cleaning units1 cleaning unit kit guide
LPS4X-BA	The small generic paper tray holds up to 250 sheets of 20-lb paper. The paper tray can be configured to hold various paper sizes.
LPS4X-BB	The large generic paper tray holds up to 250 sheets of 20-lb paper. The paper tray can be configured to hold various paper sizes.

Table B-1 (Cont.): PrintServer Accessories and Supplies

Part Number	Description
LN01X-AB	Letter-size paper 8.5 in. x 11 in. 5000 sheets per box
LN01X-AD	A4-size paper 297 mm. x 210 mm. 5000 sheets per box
LN03X-AJ	Letter-size transparencies 8.5 in. x 11 in. 50 sheets per box
H9830-TB	LPS20 Labels 8.5 in. x 11 in. 100 sheets per box
LN03X-AK	A4-size transparencies 297 mm. x 210 mm. 50 sheets per box
LN01X-AC	Legal-size paper 8.5 in. x 14 in. 5000 sheets per box
LP50X-PA	Double letter-size paper 11 in. x 17 in. 5000 sheets per box

B.1 Ordering Information

Telephone

8:30 am to 8:00 pm EST

Continental U.S.A. and
Puerto Rico

1-800-DIGITAL
(1-800-344-4825)

Alaska and Hawaii

1-603-884-6660

Mail

Continental U.S.A. and
Puerto Rico

Digital Equipment Corporation
PO Box CS2008
Nashua, New Hampshire 03061

Outside U.S.A.

**Digital Equipment Corporation
Attention: Accessories & Supplies
Business Manager
c/o Local Subsidiary or
Digital-Approved Distributor**

Electronic Ordering

1-800-343-4040

**8:30 am to 6:00 pm
at 1200 or 2400 baud**

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