Z **RINK**

Operator's Guide



The Printronix L5020 Multifunction Printer

Consumables Information

Printronix[®] has years of experience designing printer imaging systems. For the best possible performance of your Printronix printer, always use Genuine Printronix parts and consumables.

For the name of your nearest Printronix full service distributor, call:

United States	(800) 733-1900 or (714) 368-2300
Europe	(33) 1-46-25-1900
Singapore	(65) 548-4116

Consumable Item	Part Number	Replacement Interval (in Pages) ¹
Toner cartridge	703532-001	21,000
Waste toner bottle	202984-001	150,000
Photoreceptor drum	703535-001	150 - 300,000 See Note 2
Developer	703548-001	150,000
Developing Unit	705739-001	600,000

Note 1: Varies with paper size, media type, and toner coverage. Note 2: Inspect every 150,000 pages; clean if needed. Replace at 300,000 pages or sooner of print quality is no longer acceptable. Drum life is dependent upon media used and proper maintenance and operation of the printer. Print media other than bond paper (e.g., labels, card stock, plastic, or vinyl) may reduce drum life as much as 50%.

For more information, please go to our website at **www.printronix.com**.

L5020 Multifunction Printer

Operator's Guide

706593-001C

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Der Außteller der Konformitätserklärung ist die Printronix.....(1)

Informationen in Hinsicht EMVG Paragraph 3 Abs. (2) 2:

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This product has been tested and found to comply with the limits for Class A Information Technology Equipment according to European Standard EN 55022. The limits for Class A equipment were derived for commercial and industrial environments to provide reasonable protection against interference with licensed communication equipment.

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1

Introduction

About This Manual

This manual explains how to use your printer.

Safety Notices And Special Information

For your safety and to protect valuable equipment, it is very important that you read and comply with all information highlighted under the following special headings.

WARNING A warning notice calls attention to a condition that could harm you.

WARNUNG

Ein Warhinweis dieser Art weist auf Verletzungsgefahr hin.

AVISO

Las notas de adviso llaman la atención sobre una condición que puede causar lesiones.

ATTENTION

Attire votre attention sur une opération pouvant présenter un danger.

AVVERTENZA

Un'indicazione di avvertenza segnala una condizione di pericolo suscttibile causare lesioni all'operatore.

CAUTION A caution notice calls attention to a condition that could damage the printer.

Chapter 1 About This Manual

IMPORTANT An important notice provides information that is vital to proper operation of the printer.

NOTE: A note provides information and helpful tips about printer operation.

Control Panel Keys And Display Messages

Keys and indicators that are labeled on the printer are printed in uppercase letters. For example:

Press ENTER to select the value shown on the LCD.

Messages that appear on the control panel message display (called the Liquid Crystal Display, or LCD), are printed in uppercase letters and enclosed in quotation marks. For example:

"ENTER SWITCH LOCKED" appears on the LCD.

Important Safety Precautions

Observe the following precautions at all times to ensure safe operation of the printer.

Read all instructions and save them for future use.

Follow all safety notices and instructions printed in this manual and marked on the printer.

The operator-accessible power switch does not shut off all power to the printer. You must unplug the power cord to shut off all power to the printer.

The power outlet must be near the equipment and easily accessible.

The printer relies on protective devices in the building installation for protection. The printer must be connected to a 30 Amp, 250 V outlet.

Do not operate the printer in a room that is not properly ventilated. The room should be at least 1,000 cubic feet with a complete air exchange every two hours.

Important Safety Precautions

Remove packaging materials carefully and save them for possible future use. If the printer is powered on without removing all internal tape and packing, the printer may be damaged.

Keep combustible materials away from the printer. Dispose of used toner properly, as it is flammable.

Keep away from components in the printer that are potentially hazardous. For example, the fuser unit becomes very hot under normal operating conditions, and several components use high voltage.

Handle the photoreceptor drum properly, due to the nature of the material. Do not put used drums in the trash; ship them to the appropriate disposal facility for recycling.

Do not block or obstruct any cabinet ventilation slots.

Never spill liquid on or in the printer. Use only approved cleaning agents and methods.

Put nothing on the power cord. Do not locate the power cord where people can walk on it. Do not place the power cord under any carpet.

Do not lean on or put heavy objects on top of the printer.

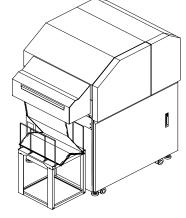
Turn off the power immediately if the printer emits an unusual noise or smell.

Do not look directly at the flash lamp light.

Components And Labels

Components And Labels

Rear of Printer



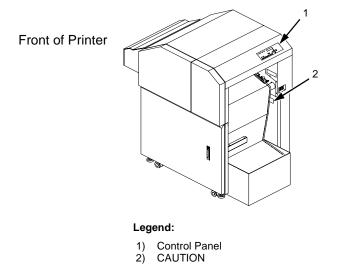


Figure 1: Front and Rear Views

Important Safety Precautions

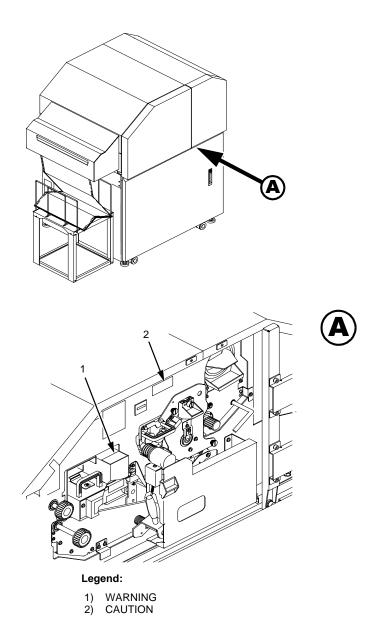
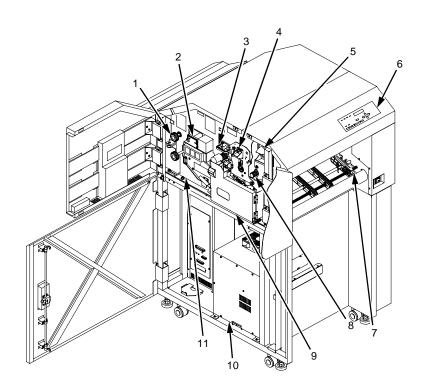


Figure 2: Safety Labels Behind Front Upper Doors

Components And Labels

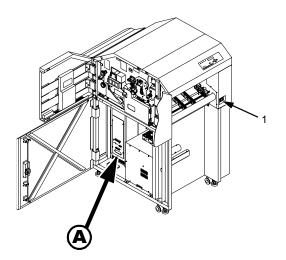


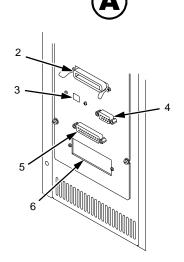
Legend:

- 1)
- Scuff Roller Fuser Unit 2) 3) 4) 5) 6) 7)
- Cleaning Unit
- Main Charger
- Toner Cartridge Control Panel
- Paper Feed Tractor
- 8) 9) Developing Unit Waste Toner Recovery Unit
- 10) Flash Power Supply11) Transport Unit

Figure 3: Printer Components

Important Safety Precautions





Legend:

- Power Switch
- Diagnostic Port Serial Port
- 1) 2) 3) 4) 5) 6) Optional Coax/Twinax Port 232/422 Toggle Switch Parallel Port

Figure 4: Power Switch and Printer Interfaces

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About The Printer

About The Printer

Features

Printing speed is 20 pages per minute on continuous letter size and A4 size fanfold forms (long edge fed). The printer produces printed output with a 300 x 300, (or optionally) 240 x 240, or 400 x 400 dots-per-inch (dpi) resolution. See Appendix B for printer specifications.

Features include the following:

- Continuous fanfold paper
- User-replaceable toner cartridge
- FlashFusion[™] fusing technology
- Two-line, 16-character alphanumeric display that provides operating and error messages
- Flash Memory which stores preset configurations and emulations
- Serial and parallel interfaces
- Coax/Twinax interface (optional)
- Power stacker (optional)

Emulations

Your printer comes equipped with the Printronix[®] LinePrinter Plus[®] emulation software (which emulates an impact printer). Printronix LinePrinter Plus includes the following printer protocols:

- P-Series
- P-Series XQ
- Serial Matrix
- Proprinter[®] III XL
- Epson[®] FX-1050

Fonts And Forms

Printronix LinePrinter Plus provides portrait and landscape image orientation. Automatic 1-up, 2-up, 4-up, and gray bar overprinting are also provided. The emulation also offers optional proportional (scalable) fonts.

The following optional emulations are also available:

- IGP[®]/PGL[®]
- IGP/VGL
- PCL5[®]
- IPDS[™]

For specific information on each emulation, see the appropriate emulation manual.

Fonts And Forms

The printer provides a variety of resident fonts. The emulation you are using determines what resident fonts are available. For example, the LinePrinter Plus emulation provides CG Times, Letter Gothic, Courier, OCR-A, and OCR-B as standard sets of fonts.

With either the LinePrinter Plus or PCL 5 emulations, you can load additional fonts into printer memory. Once any additional fonts are in printer memory, you can then access them in the same way as the resident fonts. Note that if you download fonts from the host computer and do not save them, the downloaded fonts are lost when the printer is powered off.

You can store forms together with fonts. The storage space for forms and fonts depends upon the amount of printer memory available. You can manipulate different fonts and/or forms depending upon the emulation installed.

Chapter 1 About The Printer

2

Initial Setup

Installation Overview

This chapter explains how to load paper, power on the printer, use the optional power stacker, and how to use the control panel.

The installation and setup of your printer should be performed by a service provider trained and authorized by Printronix. Your service provider is also responsible for doing a preinstallation site survey, unpacking the printer, connecting the power and host data cables, and installing the first set of consumable items in the printer. Depending on the terms of your service contract, your service provider might also power on your printer and configure it.

As the owner of the printer, it is your responsibility to prepare the printer site. This includes providing adequate ventilation and power for the printer.

Loading Paper

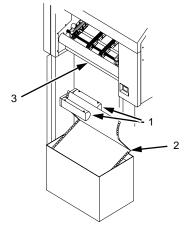
Loading Paper

Do the following steps whenever top-of-form must be reset (after clearing a paper jam, loading new paper, etc.).

- **NOTE:** You do not need to power off the printer power to replace paper. If you leave the printer on and replace the paper it will resume printing where it left off when you put it on line.
- 1. Place the paper box under the tractor unit with the first paper fold toward the printer.

IMPORTANT Be sure the leading edge of the paper has a clean, separated perforation without ragged edges.

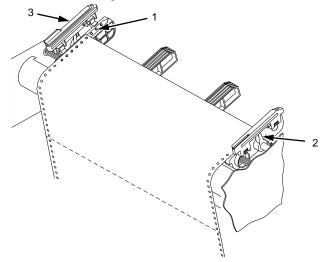
2. Pass the leading edge of the paper between the lower paper guides to prevent jams. Put the first fold of the paper facing the printer as shown.



Legend:

- 1) Paper Guides
- 2) First paper fold is toward printer
- 3) Tractor Unit
- 3. Unlock only the right tractor by pushing forward on the tractor lock.

- 4. Open the left and right tractor gates and place the paper about half-way onto the tractor pins. Do not push the paper past the tractors; a paper jam sensor will detect a paper jam if the paper is pushed too far.
- 5. Close the left tractor gate.



Legend:

- 1) Tractor Pins
- 2) Tractor Lock
- 3) Tractor Gate
- 6. Move the right tractor until its pins line up with the holes in the right edge of the paper, put the paper on the pins, then close the right tractor gate.

Loading Paper

- 7. Introduce a slight amount of side-to-side tension into the paper by setting the right tractor far enough to the right so that there is no looseness or wrinkles in the paper. Be careful not to set the right tractor too far to the right, however, as too much tension may cause the paper holes to tear away from the tractor pins.
- 8. Tighten the paper by moving the right tractor slightly outward and lock the right tractor with the tractor lock.
- 9. If you are reloading paper following a "PAPER EMPTY" message with the printer power on, press ONLINE to place the printer online. The printer automatically sets the physical top of form at the leading edge of the paper and resumes printing.

Powering On The Printer

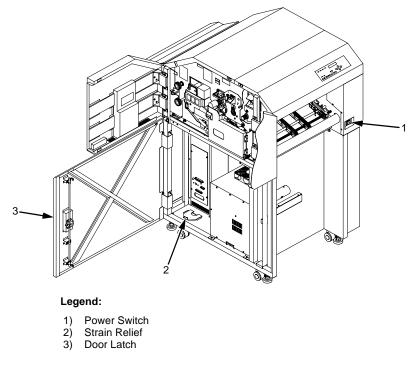


Figure 5: Power Switch

CAUTION The printer must be connected to the proper power source: 220-240 VAC and 50-60 Hz, as shown on the rear panel label. Using an incorrect power source may damage the printer.

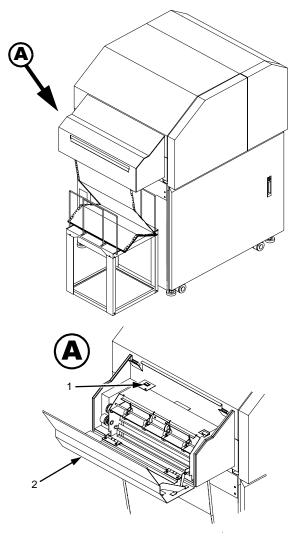
- 1. Open the cabinet door by turning the key and flipping up the latch.
- 2. Route all cables through the hole in the bottom of the cabinet and secure them with the strain relief.
- 3. Make sure the printer is plugged into the appropriate power source, the interface cables are connected, and the host computer is on.
- 4. Close the cabinet door and flip down the latch.

Powering On The Printer

- 5. Turn on the printer by setting the power switch to | (on). When you power on the printer, the following occurs:
 - a. The printer reads the emulation boot file and displays the message:
 H0: TEST HARDWARE
 PLEASE WAIT...
 - b. The ONLINE indicator lights continuously and STAND BY goes out.
- **NOTE:** The printer can be set to power on in the OFFLINE state instead of the ONLINE state. To print, ONLINE must be lit; if it is not, press ONLINE.

If other messages and prompts appear on the control panel, answer the prompts and follow the directions as explained on page 120.

Power Paper Stacker (Option)



Legend:

Heavy Mode/Light Mode Switch
 Stacker Cover

Figure 6: Power Paper Stacker

Power Paper Stacker (Option)

The L5020 Paper Stacker works with a specially designed basket. The stacker can stack any paper in the following weight and width ranges:

Weight: 8 to 44 lbs/ream (68 to 165 g/m²) bond (17 inch x 22 inch), fanfold.

Width: 7 to 17.5 inches (178 to 445 mm) edge to edge.

As fanfold paper moves through the stacker, it is folded, allowing the paper to stack evenly as it falls into the basket. The basket is designed to stack approximately 1 box (3,000) sheets of paper. The basket is also designed to compensate for the natural tendency of the paper to crown as the height of the paper increases.

NOTE: Load the paper with the first perforation facing the printer. This allows the stacker to re-fold the paper as it was originally folded in the box.

Control Panel Commands

When setting up the operation of the stacker through the control panel there are two options:

- Into Stacker
- Bypass Stacker

If Bypass Stacker is chosen, paper travels over the stacking mechanism; the perforation on the paper is not broken.

The Control Panel path to these options is:

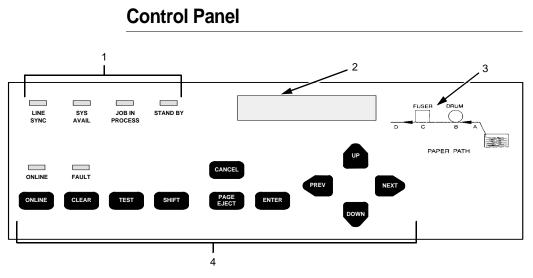
Paper Control > Paper Output > Into Stacker or Bypass Stacker

Heavy Mode/Light Mode Switch

The stacker has a manual switch to adjust its operation depending on the weight of the paper. If the paper is less than or equal to 34 pounds, set the switch to Light Mode. If the paper is heavier than 34 pounds set the switch to Heavy Mode. In Heavy Mode the stacker passes the paper through without actively breaking the perforation. To activate the switch, open the stacker cover, as shown on page 33.

Control Panel

Using The Control Panel



Legend:

- 1) Status Indicators
- 2) Liquid Crystal Display (LCD)
- 3) 4) Paper Path Diagram
- Function Keys

Figure 7: Control Panel

The control panel (Figure 7), is located on the top right side of the front cover and consists of the following:

- A Liquid Crystal Display (LCD) •
- Six status indicators •
- Eleven function keys ٠
- Paper path diagram

The LCD, status indicators, and function keys are described in the following sections.

Using The Control Panel

Liquid Crystal Display (LCD)

The liquid crystal display (LCD) displays printer status, messages, configuration options, and error codes.

Status Indicators

The status indicators display the current operational status of the printer.

LINE SYNC

Twinax interface only. Indicates there is activity on the line from the host computer.

SYS AVAIL

Twinax interface only. Indicates there is activity to the current address on the line.

JOB IN PROCESS

When the printer is receiving data or processing data, JOB IN PROCESS flashes. If data has been processed and is waiting to be printed, or has been printed but not yet fused and ejected by the printer, JOB IN PROCESS lights continuously.

JOB IN PROCESS does not light when the printer is not processing data, no data exists in the buffer, and the printer is not receiving data.

STAND BY

IMPORTANT Do not press any control panel key when STAND BY is flashing. The printer may carry out unwanted commands.

STAND BY flashes while the printer is executing any control panel command, and while the printer is unavailable for printing due to its normal system activities, such as booting, printing its configuration, writing status information, and loading applications.

Function Keys

ONLINE

ONLINE is lit continuously when the printer is online (when the printer is ready to print and accept data from the host). It flashes when the printer is offline or when the printer stops because of an error.

FAULT

FAULT flashes when the printer is unavailable for printing because of an internal error.

Function Keys

The pressure-sensitive function keys are located directly below the status indicators. When pressing the keys, a "beep" verifies contact.

The function keys permit you to configure the options of the printer. You can access these options via a structured menu which is displayed on the LCD. To navigate through the options, use the UP, DOWN, NEXT, and PREV keys. Press ENTER to select an option that appears on the LCD.

The purpose of each function key (under normal printing mode) is defined below.

For specific procedures and information regarding the configuration menu, see Chapter 3 in the *User's Manual*.

NOTE: You can enable or disable the panel key sound via the configuration menu.

ONLINE Key

The ONLINE key toggles the printer online and offline.

 To place the printer online, press ONLINE until the ONLINE status indicator remains continuously lit. The LCD displays "ONLINE," along with the name of the current emulation. The printer can now receive and process data and print.

Using The Control Panel

- To place the printer offline, press ONLINE until the ONLINE status indicator blinks. The LCD displays "OFFLINE." The printer stops processing and printing any new data, except for any pages in process.
- To start downloading files to the printer, hold down the ONLINE
 + PAGE EJECT keys while cycling power. (See Chapter 3 in the User's Manual.)
- **NOTE:** When the printer is not in an error state, pressing ONLINE in any level of the configuration menu causes the printer to accept any configuration changes you have entered and return to online status.

When the printer is in an error state, pressing ONLINE in any level of the configuration menu causes the printer to redisplay the fault message.

CLEAR Key

In the fault state, press the CLEAR key to clear errors and reset the printer to the offline state (if all errors are cleared).

TEST Key

When the printer is offline, you can run a test print, as configured under the Test Print menu (see Chapter 3 in the *User's Manual*), by pressing the TEST key. To stop the test print, press TEST again.

Pressing TEST when the printer is online has no effect.

SHIFT Key

This key does not have a function of its own. It is combined with other keys to modify their functions.

PAGE EJECT Key

IMPORTANT Do not press PAGE EJECT while JOB IN PROCESS is flashing, or your print job might become misaligned.

The PAGE EJECT key performs the following functions when the printer is online:

Function Keys

When the JOB IN PROCESS status indicator lights steadily, pressing PAGE EJECT causes the printer to print all data in the printer. The page is then cut at the perforation (unless the Burst On Eject option is disabled).

When the JOB IN PROCESS status indicator flashes, pressing PAGE EJECT causes the printer to attempt to print any data in the buffer. The paper motion caused by the page eject operation may interrupt the printing of data that is not currently in the buffer. Once the paper motion has occurred, the data that was not yet in the buffer should print. The page is then cut at the perforation (unless the Burst On Eject option is disabled).

To start downloading files to the printer, hold down the ONLINE + PAGE EJECT keys while cycling power. (See Chapter 3 in the *User's Manual.*)

When the JOB IN PROCESS status indicator is not lit or flashing, PAGE EJECT has no effect.

Pressing the SHIFT + PAGE EJECT keys together moves the paper one page length without printing or cutting the paper. It can be used to feed the paper into (customer-supplied) postprocessing equipment.

ENTER Key

When you enter parameters in the configuration menu, press ENTER to select the value shown in the LCD. The printer confirms your selection by placing an asterisk (*) next to the value in the display. However, if the ENTER key is locked, "ENTER SWITCH LOCKED" appears and the value is not accepted.

CANCEL Key

The CANCEL key performs the following functions when the printer is offline:

- Cancels the current page in process
- Cancels any pages queued to print but not yet printed
- Cancels any input data not yet processed

Using The Control Panel

- Clears the reprint buffers
- Cancels a download if one is in process. See Chapter 3 in the User's Manual.

UP And DOWN Keys

The UP and DOWN keys are used for the configuration menu:

- To unlock or lock the ENTER key, press UP + DOWN at the same time when the printer is offline
- To enter the configuration menu, press DOWN when the printer is offline
- To move between the different levels in the configuration menu, either press UP or DOWN as needed

NEXT And PREV Keys

The NEXT and PREV keys are used to move between the parameter options on the current level of the configuration menu. Press NEXT or PREV to move forward or backward through parameter options.

3

Consumables Replacement

Consumable Replacement

Replacement Intervals

For the best print quality, replace the printer consumables at the intervals specified below. The yield of the supplies is based on a 4% coverage of letter size (8.5 inch x 11 inch) paper. However, the yield may vary according to your print applications, environmental conditions, and toner density setting.

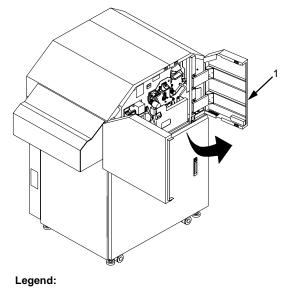
Consumable Item	Part Number	Replacement Interval (in Pages) ¹
Toner Cartridge	703532-001	25,000
Waste toner bottle	703539-001	150,000
Photoreceptor drum	703535-001	150 - 300,000 See Note 2
Developer	703548-001	150,000
Developing unit	705739-001	600,000
Note 1: Will vary with paper size, media type, and toner coverage.		
Note 2: Replace at 300,000 pages or sooner if print quality is no longer acceptable. Drum life is dependent upon media used and proper maintenance and operation of the printer. Print media other than bond paper (e.g., labels, card		

stock, plastic, or vinyl) may reduce drum life as much as 50%.

Consumable Replacement

Opening The Upper Doors

- 1. Take the printer offline.
- 2. When paper motion stops, wait 15 seconds, then open the printer upper doors.



1) Upper Door

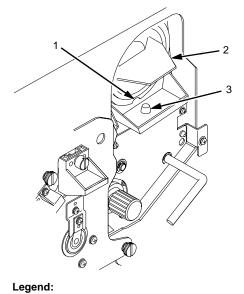
Replacing The Toner Cartridge

NOTE: When replacing the toner cartridge, place the old cartridge in a disposable wrapper (e.g., a plastic bag, paper towels, newspaper) to minimize toner spillage.

You can wear vinyl gloves to prevent toner from contacting the skin. If necessary, use only cold water to remove toner from skin or clothing.

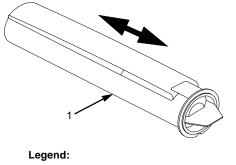
Replacing The Toner Cartridge

3. Rotate the toner cartridge counterclockwise until the notch is aligned with the pin in the toner hopper, and remove the cartridge.



Notch
 Toner Cartridge
 Positioning Pin

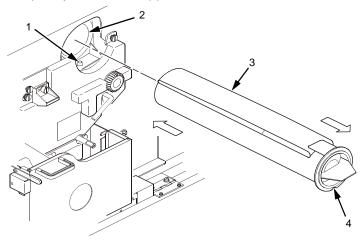
- 4. Put the old cartridge into a plastic bag and discard it.
- 5. Keep the new toner cartridge in its package. Hold it level and shake it back and forth several times as shown. This loosens the toner in the cartridge.



1) Toner Cartridge

Consumable Replacement

- Remove the new toner cartridge from its package. 6.
- 7. With the cover tape facing up, insert the cartridge into the toner hopper, and slowly pull off the cover tape in the direction of the arrow. Remove the last of the tape just as the cartridge is completely inside the hopper.



Legend:

- Pin 1)
- 2) 3) 4) **Toner Hopper**
- Cover Tape
- Notch
- 8. Fit the notch to the pin on the developing unit. Push the new toner cartridge as far as possible into the toner hopper.

Replacing The Toner Cartridge

- Legend:
 1) Toner Cartridge
- 9. Rotate the cartridge clockwise as far as it will turn.

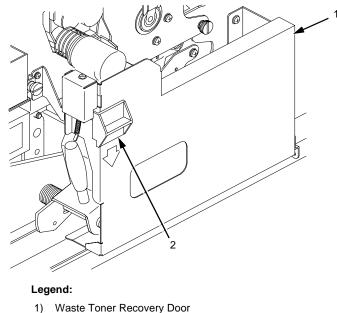
- 10. If any toner has spilled, remove it with wet tissue paper or a toner vacuum.
- 11. Close the upper doors.

Consumable Replacement

Replacing The Waste Toner Bottle

When the "WASTE TONER FULL" message appears on the control panel, replace the waste toner bottle by doing the following steps, and discard the empty bottle. Do not reuse the bottle.

- 1. When paper motion stops, wait 15 seconds, then open the printer upper doors. (See page 42.)
- 2. Open the waste toner recovery unit by pressing down on the opening lever and pulling the door toward you.



2) Opening Lever

Replacing The Waste Toner Bottle

- 3. Remove the cap from the outside of the waste toner bottle, and cap the toner bottle.

- Legend:
- 1) Cap
- 2) Waste Toner Bottle
- 4. Remove the waste toner bottle from the unit and discard it.
- 5. Install a new waste toner bottle.
- 6. Close the printer upper doors.
- 7. Clear Error 28, "WASTE TONER FULL," as follows:
 - a. Press CLEAR.
 - b. Press UP + DOWN to unlock the configuration menu.
 - c. Enter the configuration menu and select the Paper Control menu.
 - d. Select the "RESET TONER FULL" option and press ENTER.
 - e. Exit the configuration menu.
 - f. Press ONLINE.

Consumable Replacement

Replacing The Photoreceptor Drum

Drum life is dependent upon media used and proper maintenance and operation of the printer. Print media other than bond paper (e.g., labels, card stock, plastic, or vinyl) may reduce drum life as much as 50%.

To replace the drum, you need a drum auxiliary rod. Please read all steps before beginning the replacement procedure.

Removal

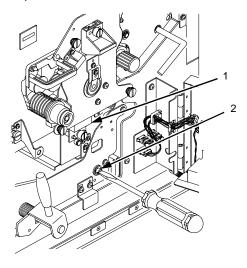
CAUTION Do not do this procedure unless you have had the appropriate training. Do not do this procedure without the drum auxiliary rod (P/N 703531-170), as you may damage the drum.

- 1. Turn the power switch OFF.
- 2. Open the printer upper doors. (See page 42.)
- 3. Open the waste toner recovery unit. (See page 46.)
- 4. Remove the developing unit. (See page 56.)
- 5. Vacuum any spilled toner.

Replacing The Photoreceptor Drum

CAUTION The transfer charger must be in the down position to avoid scratching the drum. Failure to perform steps 6 and 7 damages the drum.

- 6. Rotate the transfer elevator drive shaft counterclockwise. Watch the charger movement:
 - a. If the charger starts to move up, it is already in the down position.
 - b. If the charger starts to move down, continue to rotate the drive shaft until the charger reaches the complete down position.



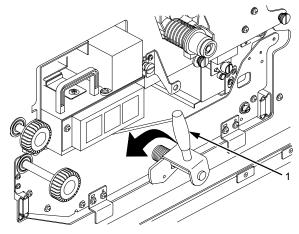
Legend:

- 1) Transfer Charger
- 2) Transfer Elevator Drive Shaft

Chapter 3 Consumable Replacement

CAUTION To avoid damaging the printer or causing false paper jams, the transport lever must be in the fully down position before closing the transport unit.

7. Lower the transport unit by turning the green lever on the transport unit to the left.



Legend: 1) Green Lever

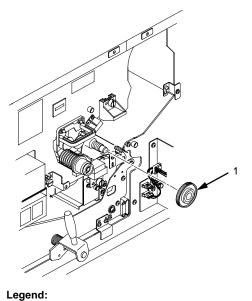
Replacing The Photoreceptor Drum

- 0 1 Q 2 (1 Legend: 1) 2) Drum Plate Thumbscrews (3)

8. Loosen the three thumbscrews securing the drum plate and

remove the drum plate.

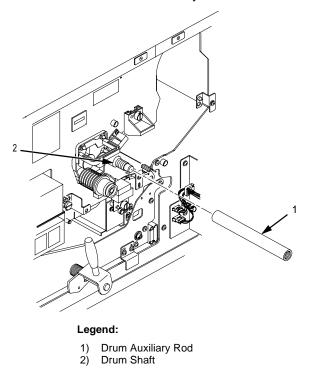
9. Remove the nut from the end of the drum shaft.



1) Nut

Consumable Replacement

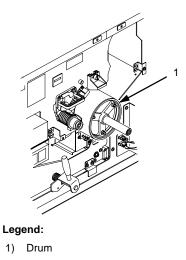
10. Screw the drum auxiliary rod onto the drum shaft.



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Photoreceptor Drum Installation

11. Pull the drum out along the drum auxiliary rod. Hold the front and back ends when the drum is nearly out of the printer, and remove it with both hands.



- 12. Pack the old drum for shipment using the original packaging material, and close the cover of the box.
- 13. Wipe the drum shaft clean with a cloth.

Photoreceptor Drum Installation

CAUTION Avoid touching the surface of the drum with your hands. It reduces the life of the drum

- Remove the new photoreceptor drum from its package. Do not discard the packaging material; as you need it for future drum disposal. The ends of the drum are identical; there are no front or back ends.
- 2. Wipe inside the endcaps of the drum with a cloth to ensure that they are clean.

Chapter 3 Consumable Replacement

CAUTION Exposing the drum to light shortens its life. Do not expose the drum to direct sunlight, and install it within five minutes under typical room lighting conditions. When removing the drum from its packaging, do not touch the surface of the drum. Fingerprints and scratches can damage the surface and cause poor print quality.

3. Using both hands, slowly slide the drum onto the drum auxiliary rod. When the drum reaches the area where the auxiliary rod connects to the drum shaft, lift the drum very gently over the connection. Let the drum rest on the rubber rollers as you gently guide it into the printer.

CAUTION The drum must rest on the rubber rollers to avoid being scratched.

- 4. When the drum is fully inserted into the printer, the end of the drum is slightly recessed relative to the front of the printer and the rubber guide rollers should be visible. Slightly lift the drum up off of the rubber rollers and rotate the drum by hand while applying inward pressure, until the drum moves slightly farther into the printer and locks in place.
- CAUTION In order to position the drum slot and the drum shaft pin, push the drum in all the way to the back and rotate it until you feel it drop in place. Failure to lock the drum in place properly can severely damage the printer.

Never force the drum onto the shaft. If it feels as though the drum is not seating properly, remove the drum and inspect the shaft for foreign material or burrs.

- 5. Remove the drum auxiliary rod from the drum shaft.
- 6. Install the nut on the drum shaft and tighten it securely by hand.
- 7. Install the drum plate and tighten the thumbscrews. While installing the drum plate, hold the copper grounding clip with your thumb. Otherwise the grounding clip can be bent, making no contact with the drum shaft.

Proper Disposal Of A Drum Unit

8. After installing the drum plate, visually verify good electrical contact between the copper grounding clip and the end of the drum shaft.

Alternatively, measure the resistance. Connect one lead of an ohmmeter to the bracket on the drum plate, and touch the other lead to the edge of the drum. Normal resistance should be 0Ω .

- 9. Install the developing unit.
- 10. Raise the transport unit by turning the green lever on the transport unit to the right.
- 11. Close the waste toner recovery unit and ensure that it latches.
- 12. Close the printer upper doors.

Proper Disposal Of A Drum Unit

Federal regulations prohibit inappropriate disposal of laser print drums. Dispose of used drums by shipping them to one of the following organizations:

Within U.S.A.

U.S. Fuji Electric, Inc. 240 Circle Drive N. Piscataway, NJ 08854 Attn: Rod Storm Phone: (732) 560-9410

Outside U.S.A.

Fuji Distribution Europe B.V. Attn: Mr. Asada Leisteen 7,2132 ME Hoofddorp, The Netherlands. TEL: 20-6534790

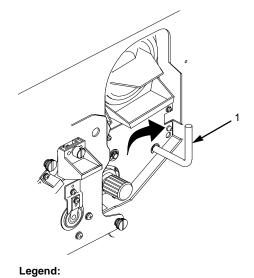
Consumable Replacement

Replacing The Developing Unit

CAUTION Do not replace the developing unit unless you have been trained to do so. Be careful not to damage the sensors while cleaning the developing unit. (If damage occurs, contact your service representative.)

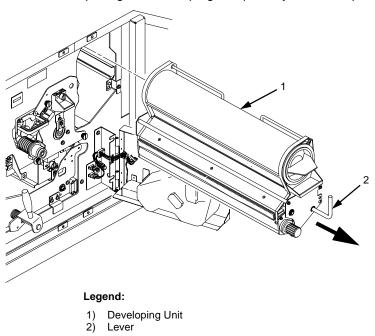
Removal

- 1. Turn the power switch OFF.
- 2. Open the printer upper doors. (See page 42.)
- 3. Open the waste toner recovery unit. (See page 46.)
- 4. Rotate the developing unit lever fully clockwise so that it is pointing straight up. This separates the developing unit from the photoreceptor drum.



1) Lever

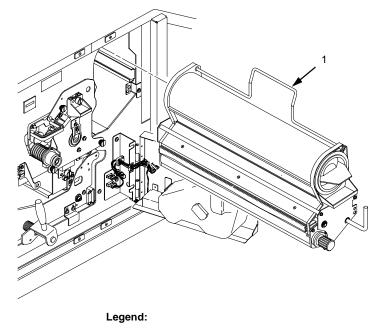
Replacing The Developing Unit



5. Remove the developing unit by holding the lever in one hand and pulling the developing unit partially out of the printer.

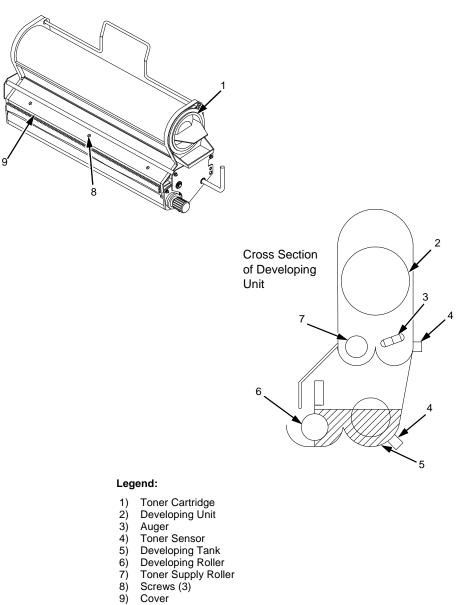
Consumable Replacement

6. With your other hand, grasp the hanger and remove the developing unit from the printer.



- 1) Hanger
- 7. Place the old developing unit in a plastic bag and dispose of it properly.
- 8. Vacuum any spilled toner.
- 9. Remove the new developing unit from its package, and add developer to the unit. (See page 63.)

Replacing The Developing Unit



- Cover

Consumable Replacement

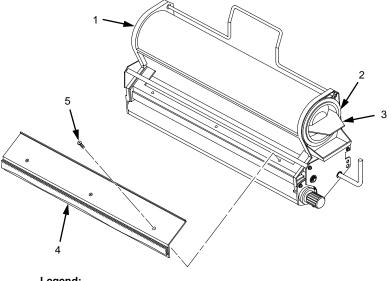
Replacing Developer

The toner sensor is sensitive to both electrostatic discharge (ESD) and positional adjustment. Do not touch the sensor with your hand or jar it from its factory-set position. (See page 59.)

- 1. Turn the power switch OFF.
- 2. Open the printer upper doors. (See page 42.)
- Prepare a large plastic bag in which to put the developing unit. 3.
- Remove the developing unit (See page 56.) and place it in the 4. plastic bag, making sure it is still accessible.

IMPORTANT When replacing developer in an existing developing unit, you must empty and clean the unit before adding new developer Do this every 150,000 pages.

> 5. Turn the toner cartridge knob counterclockwise until it stops, then remove the cartridge from the developing unit.

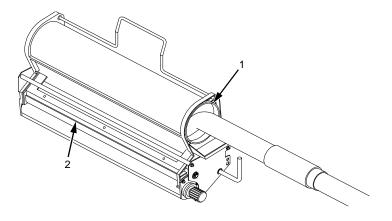


Legend:

- 1) **Developing Unit**
- 2) Toner Cartridge
- Toner Cartridge Knob 3)
- 4) Cover
- 5) Screws (3)

Replacing Developer

- 6. Remove the three screws on the developing unit cover and detach the cover.
- 7. Put the developing unit in the plastic bag and do the following:
 - a. Remove the developer and toner in the toner hopper by gently shaking the developing unit up and down with the opening of the toner cartridge facing downward.
 - b. Rotate the developing unit and gently shake it, to allow any remaining developer or toner to fall out of the cover slot.
- 8. Remove the developing unit from the plastic bag and place it on a protected surface.
- 9. Vacuum up any developer and toner which remains on the toner supply roller and the auger with a toner vacuum cleaner equipped with a narrow nozzle.

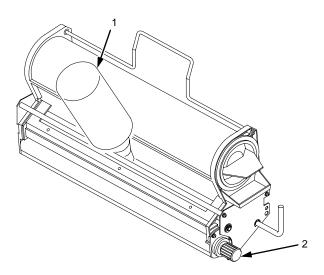


Legend:

- 1) Toner Hopper
- 2) Toner Spray-Guard Brush
- 10. Vacuum the toner from the toner spray-guard brush on the developing unit.
- 11. Shake the new developer bottle several times, remove the bottle cap, and screw the nozzle tightly onto the bottle.

Consumable Replacement

12. While rotating the new developing roller knob counterclockwise, evenly pour the entire bottle of developer powder into the developing unit.



Legend:

- 1) Bottle of new Developer
- 2) Developing Roller Knob
- 13. Replace the cover and tighten the screws.

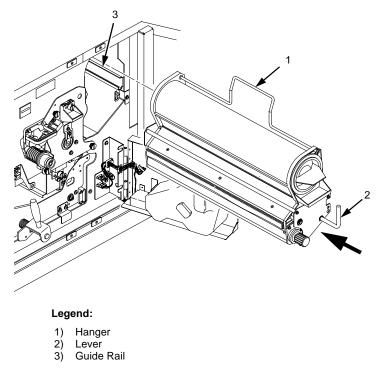
IMPORTANT If toner or developer spills on clothing, use cold water to remove it.

14. Install the developing unit.

Replacing Developer

Install The Developing Unit

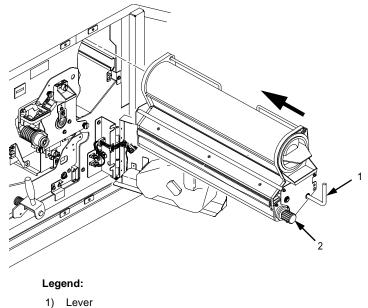
1. On the developing unit, rotate the lever fully clockwise so that it is pointing straight up.



- 2. Holding the lever in one hand and the hanger in the other hand, insert the developing unit on the guide rail.
- 3. Rotate the hanger to the right so that it rests against the developing unit, and push the developing unit in.

Consumable Replacement

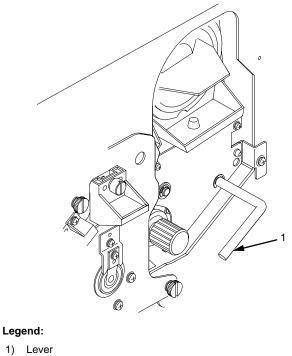
4. Rotate the developing roller knob counterclockwise until the unit drops into its final resting position. The developing unit lever should protrude through the main body of the developing unit.



2) Developing Roller Knob

Replacing Developer

5. Rotate the developing unit lever fully counterclockwise to lock the developing unit in place.



- 6. Close the waste toner recovery unit and ensure that it latches.
- 7. Close the printer upper doors.

Consumable Replacement

4

Scheduled Maintenance

Maintaining Print Quality

To maintain good print quality, clean the printer according to the schedules and information listed in this chapter.

- 1. Do a General Cleaning. (See page 77.)
- 2. Clean the main charger, precharger, and transfer charger. For cleaning instructions, see page 85 for the main charger, and page 89 for the precharger and transfer charger.
- 3. If print quality problems occur, clean the following areas (see page 68 for tool part numbers):
 - a. Clean the drum with the drum freshener (only when smears appear on print samples due to the drum).
 - b. Clean the LED array and the SELFOC[®] lens (LED print head) with the Toraysee[™] cloth.
 - c. Clean the fuser cover glass with a razor blade or the cover glass scraper.

If the print quality is still poor after cleaning the printer, the chargers may need to be replaced. Contact your authorized service representative for further assistance.

NOTE: For replacement intervals, see the maintenance schedules that begin on page 70.

Maintaining Print Quality

Maintenance Tools

To maintain the printer, you need the following tools:

Item	Part Number
Brush Cleaner	703531-169
Drum Auxiliary Rod	703531-170
Drum Freshener Pad	703531-171
Fuser Cover Glass Scraper	703531-187
Special Dry Tissue Paper	703531-188
Standard Toner Vacuum Cleaner	See below for recommended models
Toraysee Cloth	703531-183
Wire Cleaner	703531-168
9 inch Phillips #1 Screwdriver	N/A

Recommended toner vacuum cleaner models are:

- 3M[®] model 497-AJM standard VAC with Type 1 filter
- 3M model 497-AB 220V with Type 1 filter
- Hitachi[®] CV-TN10 with TN-15 filter

Service Level Page Counts

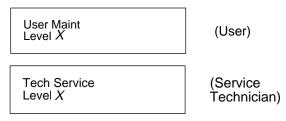
IMPORTANT Keep a record of all maintenance done on your printer. Maintenance log sheets are provided in Appendix A. Photocopy the pages and keep your maintenance log in a binder near the printer. Every time you or your service provider do printer maintenance make an entry in the log.

Each time you complete a level of preventive maintenance, you must reset the service level page count by selecting the User Maintenance option on the Maintenance menu.

Service Level Page Counts

(See the Maintenance menu in Chapter 3 of the *User's Manual.*) Levels A, B, and C are your responsibility, while levels D through H are the responsibility of your service provider.

When the page count reaches one of the maintenance intervals listed below, the control panel displays one of the following messages:



Service Level X represents the level of service required:

- Level A= every 15,000 pages
- Level B= every 150,000 pages
- Level C= every 600,000 pages
- Level D= every 300,000 pages
- Level E= every 600,000 pages
- Level F= every 900,000 pages
- Level G= every 1,200,000 pages
- Level H= every 2,400,000 pages

A service level includes all the levels that precede it. For example, at 150,000 pages, you do Level B *and* Level A service. At 900,000 pages, your service provider will do Level F, Level E, and Level D service.

Note that this condition does not cause the printer to stop printing. When one of the above messages appears, you should perform the appropriate scheduled maintenance or call your factory-trained service representative to perform the maintenance.

Maintenance Schedules

Clearing Service Level Messages

When you have done a level of service, clear the page count for that service level. Note that when you clear a lower service level, the levels above it are also cleared. For example, clearing level C also clears levels A and B.

To clear a service level (level A, for example), select the Maintenance menu from the control panel, select the User Maint option, then select "Clear Level A" by pressing ENTER.

Maintenance Schedules

Cleaning Schedule

Each time you do maintenance, you must reset the service level page count by selecting the User Maintenance option on the Maintenance menu. (See the Maintenance menu in Chapter 3 of the *User's Manual.*) This removes the maintenance error message.

Do the following actions in Table 2 after the specified number of letter size pages (4% coverage) have been printed. Appendix A, "Maintenance Log Sheets," contains log sheets you can photocopy.

Table 1. User	Cleaning	Respon	sibility
---------------	----------	--------	----------

Action	Frequency (Pages)	Service Level	
General cleaning	15,000; See Note 1	А	
Major cleaning	150,000	В	
Note 1: Every 15,000 pages or 6 paper jams, whichever occurs first.			

Replacement Schedule

Replacement Schedule

Replace the following items after the specified number of letter size pages (4% coverage) have printed. Appendix A, "Maintenance Log Sheets," contains log sheets you can photocopy.

ltem	Part Number	Frequency (Pages)	Service Level
Toner cartridge	703532-001	21,000 See Note 1	As Needed
Waste toner bottle	202984-001	150,000 See Note 2	As needed
Photoreceptor drum	703535-001	150 - 300,000 See Note 3	B (as needed)
Developer	703548-001	150,000	В
Developing Unit	705739-001	600,000	С
Note 1: Replace when the "TONER EMPTY" message displays. A guideline for the			

Table 2. User Responsibility - Replacement

replacement is 21,000 pages (A4 size, 4% coverage).

Note 2: Replace when the "WASTE TONER FULL" message appears. A guideline for the replacement is every 90,000 pages (A4 size, 4% coverage).

Note 3: Inspect every 150,000 pages; clean if needed. Replace at 300,000 pages or sooner if print quality is no longer acceptable. Drum life depends upon media used and proper maintenance and operation of the printer. Print media other than bond paper (e.g. labels, card stock, plastic or vinyl) can reduce drum life as much as 50%.

Maintenance Schedules

Tech Service Maintenance Level Kits

The following maintenance kits should be used after the specified letter size pages (4% coverage) have been printed.

Level D kit is used at 300,000 pages.

ltem	Part Number
Maintenance Kit, Level D, L5020	706802-001
Main charger	
Precharger	
Transfer charger	
Smoke filter	

Tech Service Maintenance Level Kits

ltem Part Number Maintenance Kit, Level E, L5020 706806-001 • Main charger Precharger • Transfer charger • Smoke filter ٠ Cleaning unit . Transport belt (set of 3) . Cutter motor •

Use Level E kit after printing 600,000 letter size pages.

Maintenance Schedules

Use Level F kit after printing 900,000 letter size pages.

Item	Part Number
Maintenance Kit, Level F, L5020	706812-001
Main charger	
Precharger	
Transfer charger	
Smoke filter	
Xenon (flash) lamp	

Tech Service Maintenance Level Kits

ltem	Part Number
Maintenance Kit, Level G, L5020	706818-001
Main charger	
Precharger	
Transfer charger	
Smoke filter	
Cleaning unit	
• Transport belt (set of 3)	
Cutter motor	
Trigger coil unit	
Developing motor unit	
• Exit feed roller belt	

Use Level G kit after printing 1,200,000 letter size pages.

Maintenance Schedules

Use Level H kit after printing 2,400,000 letter size pages.

Item	Part Number
Maintenance Kit, Level H, L5020	706830-001
The kit includes the following items:	
Main charger	
Precharger	
Transfer charger	
Smoke filter	
Cleaning unit	
Transport belt (set of 3)	
Cutter motor	
Trigger coil unit	
Developing motor unit	
Exit feed roller belt	
Lamp housing filter	
• EPS3	
• EPS4	
Capacitor	
Discharge LEDs (PEL)	

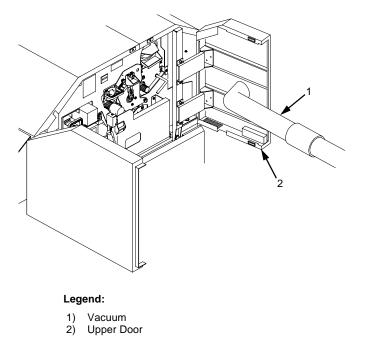
Vacuuming

General Cleaning

To maintain optimum print quality, clean the printer regularly. Depending upon the density of your print jobs, the printer may require cleaning every 10,000 - 20,000 sheets.

Vacuuming

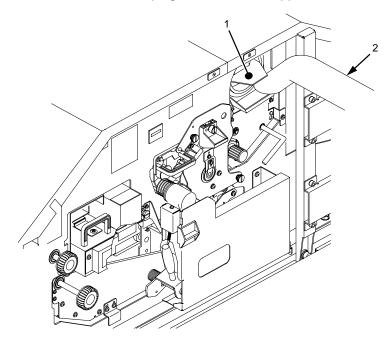
- 1. Turn the power switch OFF.
- 2. Open the printer upper doors. (See page 42.)
- 3. Using a vacuum, clean up the toner, paper dust, etc. inside the upper doors.



4. Open the waste toner recovery unit. (See page 46).

General Cleaning

5. Vacuum the developing unit and toner hopper.



- 1) 2) Developing Unit and Toner Hopper Vacuum

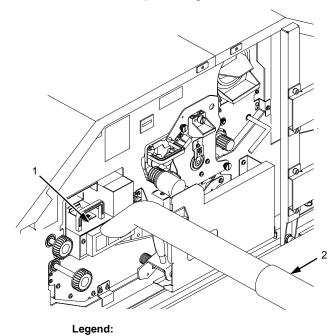
Vacuuming

- 2 C
- 6. Vacuum the cleaning unit.

- Legend:
- Cleaning Unit Vacuum 1) 2)

General Cleaning

- 7. Vacuum the fuser unit.
- 8. Vacuum the lamp housing filter on the end of the fuser unit.



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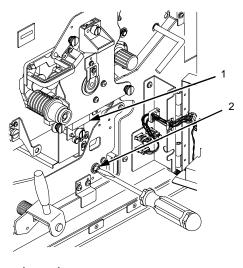
Fuser Unit Vacuum

1) 2)

Vacuuming

CAUTION The transfer charger must be in the down position to avoid scratching the drum. Failure to perform steps 9 and 10 damages the drum.

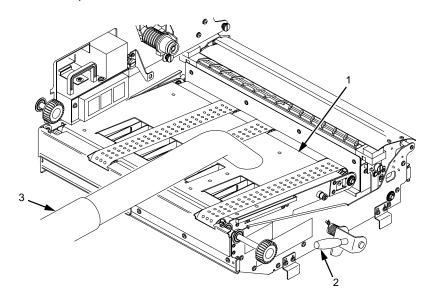
- 9. Rotate the transfer elevator drive shaft counterclockwise. Watch the charger movement:
 - a. If the charger starts to move up, it is already in the down position.
 - b. If the charger starts to move down, continue to rotate the drive shaft until the charger reaches the complete down position.



- Transfer Charger
 Transfer Elevator Drive Shaft
- **CAUTION** To avoid damaging the printer or causing false paper jams, the transport lever must be in the fully down position before closing the transport unit.
 - 10. Lower the transport surface by turning the green lever on the transport unit to the left.
 - 11. Pull the transport unit toward you until it stops.

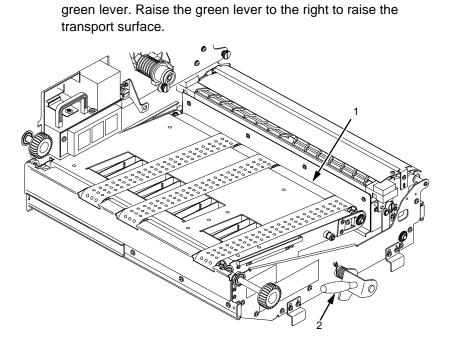
General Cleaning

12. Vacuum the toner, paper dust, etc. Be sure to clean under the transport unit as well.



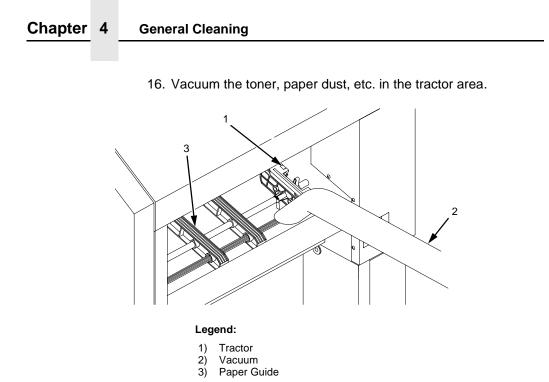
- 1) Transport Surface
- Green Lever Vacuum 2)
- 3)
- 13. Wipe off the dirt on the transport surface with wet tissue paper. Make sure no paper debris is left on the surface
- 14. Using an ammonia-based wax-free cleaner or rubbing alcohol, clean the belts to remove residue buildup and restore their tacky surface.

Vacuuming



15. Push the transport unit into the printer while holding down the

- 1) 2) Transport Surface Green Lever



84

Cleaning The Chargers

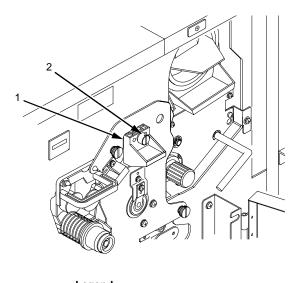
Cleaning The Chargers

- 1. Turn the power switch OFF.
- 2. Open the printer upper doors. (See page 42.)

Main Charger

CAUTION Handle the charger carefully to avoid damaging or breaking the charger wires.

3. Loosen the thumbscrew and remove the main charger by pulling it toward you.

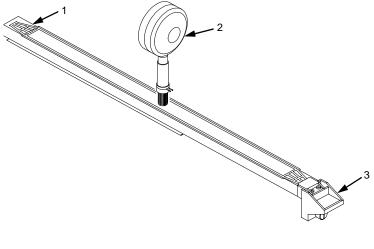




4. Place the main charger on a flat, clean work surface.

General Cleaning

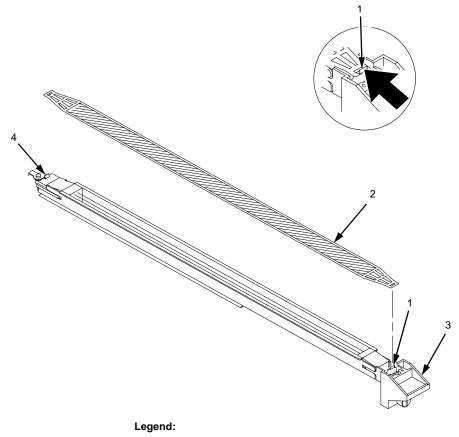
5. Using the brush cleaner (listed on page 68), clean the exposed side of the charger grid and the body of the main charger to remove paper dust, etc., as shown below.



- Charger Grid Brush Cleaner Main Charger 1)
- 2) 3)

Cleaning The Chargers

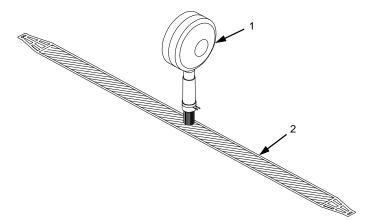
- 6. Position the main charger with the charger grid up and the front end of the charger toward you, as shown in the following figure. Remove the charger grid from the main charger as follows:
 - a. While pressing the front retaining tab toward the rear of the charger, unhook the rear end of the charger grid from the rear retaining tab.
 - b. Release the front retaining tab, then remove the charger grid from it.



- Front Retaining Tab 1)
- Charger Grid 2)
- Main Charger
- 3) 4) Rear Retaining Tab

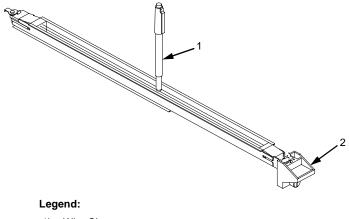
General Cleaning

7. Using the brush cleaner, clean both sides of the charger grid.



Legend:

- 1) Brush Cleaner
- 2) Charger Grid
- 8. Using the wire cleaner (listed on page 68), clean the two wires in the main charger. When clean, the wires feel smooth.



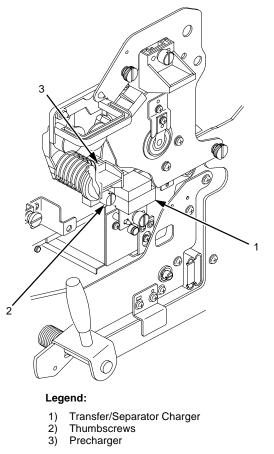
Wire Cleaner
 Main Charger

Cleaning The Chargers

- 9. Install the charger grid.
- 10. Return the main charger to its original position. Fasten the main charger screw to secure it.

Precharger And Transfer Charger

- 11. Open the waste toner recovery unit.
- 12. Loosen the precharger thumbscrew and transfer/separator charger thumbscrew, and remove the chargers by pulling them toward you.



13. Place the chargers on a flat, clean work surface.

General Cleaning

- Using the brush cleaner and the wire cleaner (listed on page 68), remove the dust and dirt on the wires. The precharger contains one wire, while the transfer/separator charger contains two wires. When clean, the wires feel smooth.
- 15. After cleaning, return the chargers to their original positions. Fasten the charger screws to secure them.

Cleaning The Fuser Unit Cover Glass

WARNING The fuser unit remains hot after operation. Wait until it has *completely* cooled down before handling it.

WARNUNG

Die Einbrennvorrichtung behält auch nach dem Betrieb ihre Temperatur bei. Fassen Sie sie erst an, wenn sie *vollständig* abgekuhlt ist.

AVISO

La unidad de fusor estará a alta temperatura después de funcionar. Espere a que se haya en friado *por completo* antes de manipularia.

ATTENTION

L'unité de four est encore trés chaude aprés chaque opération. Attendez qu'elle refroidisse complétement avant de la manipuler.

AVVERTENZA

Dopo l'uso, l'unitá fusore é calda. Attendere il *completo* raffeddamento dell'unitá prima di intervenir sulla medesima.

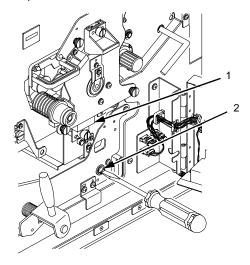
Do not scratch or place your hands directly on the cover glass.

IMPORTANT Do not use any cleaners or chemicals on the Fuser Unit Cover Glass. Use only the scraper.

- 1. Turn the power switch OFF.
- 2. Open the printer upper doors. (See page 42.)

Cleaning The Fuser Unit Cover Glass

- 3. Open the waste toner recovery unit.
- **CAUTION** The transfer charger must be in the down position to avoid scratching the drum. Failure to perform steps 4 and 5 damages the drum.
 - 4. Rotate the transfer elevator drive shaft counterclockwise. Watch the charger movement:
 - a. If the charger starts to move up, it is already in the down position.
 - b. If the charger starts to move down, continue to rotate the drive shaft until the charger reaches the complete down position.



Legend:

1) Transfer Charger

2) Transfer Elevator Drive Shaft

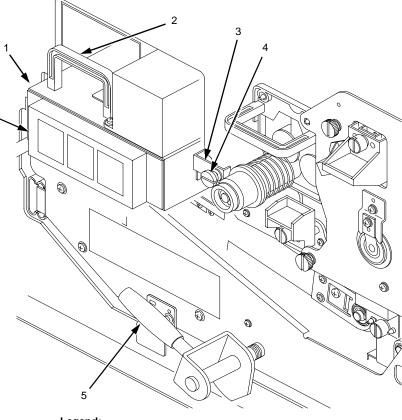
CAUTION To avoid damaging the printer or causing false paper jams, the transport lever must be in the fully down position before closing the transport unit.

5. Lower the transport surface by turning the green lever on the transport unit to the left.

6

General Cleaning

6. Loosen the thumbscrews (2) on the right and left fuser unit holding plates.

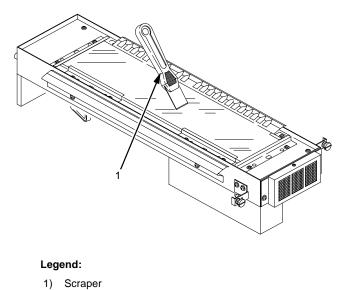


- Thumbscrew (not visible) Handle 1)
- 2)
- 3) Holding Plate Thumbscrew
- 4) 5) 6) Green Lever
- Fuser Unit
- 7. Grasp the handle and pull out the fuser unit until the second handle is visible.
- 8. With the other hand, grasp the second handle and remove the fuser from the printer.

Cleaning The Fuser Unit Cover Glass

CAUTION Do not scratch or place your hands directly on the cover glass. Fingerprints on the cover glass or lamps will cause them to break.

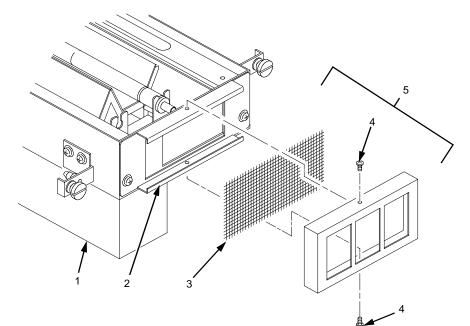
- 9. Place the fuser on a clean, flat surface with the cover glass facing up.
- 10. Using the fuser cover glass scraper (listed on page 68), remove the dirt and toner buildup on the cover glass surface.



11. Wipe away any remaining toner or dirt with a Toraysee cloth (listed on page 68).

General Cleaning

12. Remove the two screws that secure the filter housing to the filter, then remove the filter.



- Fuser Unit 1)
- Filter Holding Plate 2)
- 3) Filter
- 4) 5) Screws (2)
- Filter Housing
- 13. Vacuum the filter, then install it.
- 14. Vacuum any paper dust from the printer frame.
- 15. Install the fuser, making sure that the guide pins in the screw bracket align with the holes in the side frame of the printer.

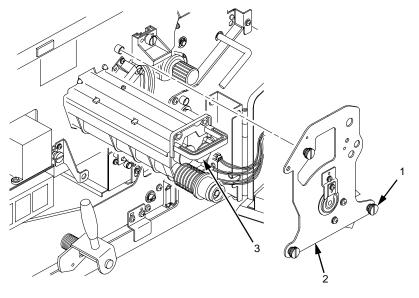
Cleaning Unit

Major Cleaning

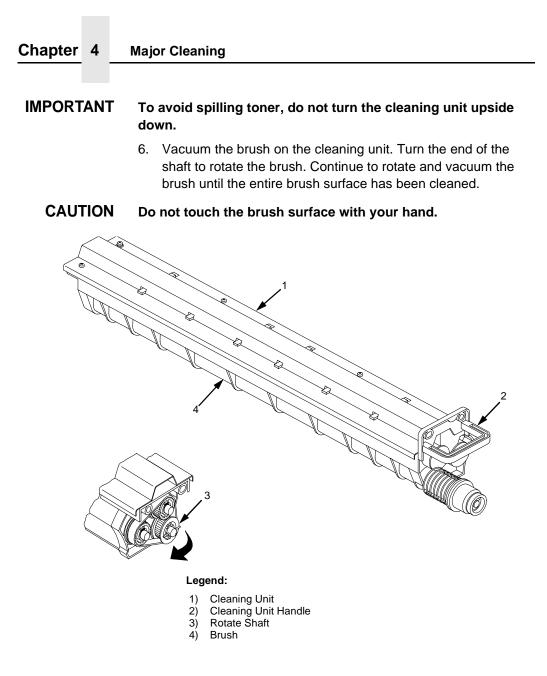
Do a major cleaning every 150,000 pages to keep your printer in the best working order.

Cleaning Unit

- 1. Turn the power switch OFF.
- 2. Open the printer upper doors. (See page 42.)
- 3. Open the waste toner recovery unit. (See page 46.)
- 4. Loosen the three thumbscrews securing the drum plate and remove the drum plate.
- Remove the cleaning unit by grasping its handle and pulling it 5. toward you.



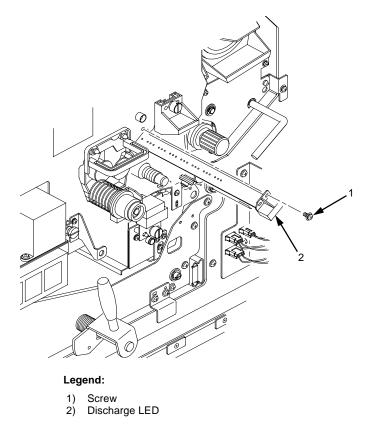
- 1) 2) 3) Thumbscrews (3)
- Drum Plate
- **Cleaning Unit Handle**



Cleaning Unit

CAUTION Do not flex the discharge LED, or it may break.

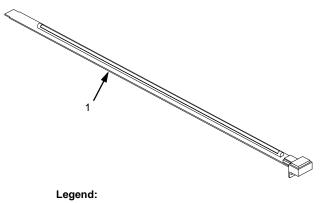
7. Remove the discharge LED screw.



8. Remove the discharge LED by pulling it toward you.

Major Cleaning

9. Using a Toraysee cloth (listed on page 68), wipe off the dirt on the discharge LED.





10. Install the discharge LED.

Cleaning The Photoreceptor Drum

CAUTION When cleaning the photoreceptor drum, observe the following precautions:

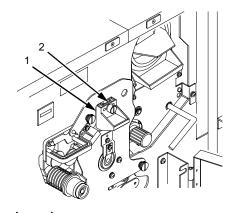
- Do not touch the drum surface with your hands.
- To prevent the drum surface from being scratched, clean it in a location free of dust.
- Cleaning the drum may result in wiping stains. A drum left unused in the printer for a long time after cleaning may especially be affected. Therefore, after cleaning and installing the drum in the printer, use maximum size paper to print an image repeatedly until no stains remain. Stains usually clear after printing a few dozen pages.
- 1. Remove the photoreceptor drum from the printer. (See page 115.)
- 2. Place the drum on a covered work surface.

Cleaning The Photoreceptor Drum

- 3. If the drum is only slightly dirty, clean it with ethanol or isopropyl alcohol. **Do not use acetone.**
- 4. If the drum has toner buildup, clean it with the drum freshener pad. (See page 68.) Turn the drum little by little while polishing the drum surface with the freshener pad. Polish with a slight force in the direction of the drum circumference, using a circular motion. Let the polished areas slightly overlap each other, and polish the entire drum surface two or three times.

CAUTION Press lightly when polishing the drum surface, as too much pressure can damage the drum.

- 5. Using the special dry tissue paper (see page 68), thoroughly wipe the drum freshener off the drum surface.
- 6. To avoid exposing the drum to light for too long, temporarily pack the drum in its original packaging material, and close the box cover. Set the drum aside.
- 7. Remove the drum auxiliary rod from the drum shaft.
- 8. Wipe the drum shaft clean with a cloth.
- 9. Loosen the thumb screw and remove the main charger by pulling it toward you.
- 10. Clean the developing unit area with a vacuum cleaner and a soft cloth.

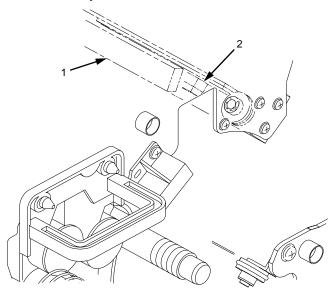


- 1) Main Charger
- 2) Thumbscrew

Major Cleaning

CAUTION When wiping the SELFOC[®] lens, be certain not to apply excessive force to the drum surface potential sensor located near the SELFOC lens, as this may cause the sensor to be dislocated. (If this happens, contact your service representative.)

- 11. Wipe the SELFOC lens by moving a Toraysee cloth (see page 68) from the inner part of the printer toward you. Wipe the lens in this manner several times until there is no more dirt on the cloth.
- **NOTE:** Always wipe the SELFOC lens with the unused side of the Toraysee.



- 1) SELFOC Lens
- 2) Drum Surface Potential Sensor
- 12. Install the main charger.
- 13. Install the photoreceptor drum. (See page 53.)
- 14. Install the developing unit. (See page 63.)
- 15. Install the cleaning unit.

5

Troubleshooting

Troubleshooting

This chapter discusses diagnostic tests, paper jams, and system messages (status and error).

Diagnostics

The printer includes diagnostic circuits and software to aid in the discovery, prevention, and correction of system problems and failures. The printer has both offline and on-line diagnostics.

Offline Diagnostics

Most of the software diagnostics are executed when the printer is powered on, and when you request diagnostic information through the control panel.

Each time the printer is powered on, it performs a power-on self test. There is no printout during this test. However, the printer displays any errors on the control panel, accompanied by an audible alarm.

You may request the following diagnostic and configuration information via the control panel, through various menus:

- Test Print: Prints various predefined graphics pages to verify that the printer can print properly on the entire page (Test Print menu).
- Print Statistics: Displays all accumulated print engine statistics, such as number of pages printed and power-on time. This is a display-only feature; there is no printout (Print Statistics menu).

Paper Jams

• Print Configuration: Prints all current configuration parameters in the printer, including print statistics (Config. Control menu).

Online Diagnostics

When it is online, the printer senses and reports problems or conditions as they arise. When an error is detected, the printer halts, lights the appropriate LED, and displays the proper error message on the control panel. The error message remains displayed until the error condition is cleared and you press CLEAR.

After the error is cleared, the printer reprints any pages that were not ejected prior to the error, provided the Reprint on Fault option is enabled. (See the Paper Control menu in Chapter 3 of the *User's Manual*.)

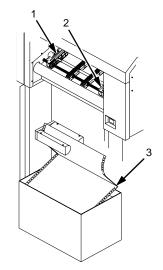
Paper Jams

Paper Jam Near The Tractor

- 1. Raise the tractor gates.
- 2. Pull out the jammed paper. If the end of the paper is crumpled, tear it away from the perforation.

Paper Jam Near The Tractor

3. Reload the paper. The first fold of the paper should be facing towards the printer; otherwise, a paper jam could occur. (see illustration). Do not push the paper past the tractors as there is a paper jam sensor that will sense the paper and return a paper jam error.

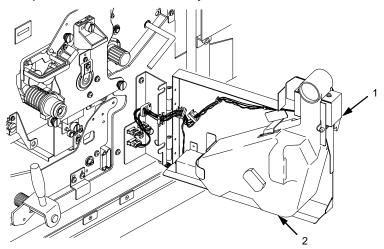


- Left Tractor
 Right Tractor
 First paper fold is toward printer

Paper Jams

Paper Jam Near The Paper Output Section

- 1. When paper motion stops, wait 15 seconds, then open the upper doors.
- 2. Open the waste toner recovery unit.

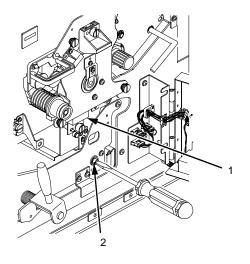


- 1)
- Opening Lever Waste Toner Recovery Unit 2)

Paper Jam Near The Paper Output Section

CAUTION The transfer charger must be in the down position to avoid scratching the drum. Failure to perform steps 3 and 4 damages the drum.

- 3. Rotate the transfer elevator drive shaft counterclockwise. Watch the charger movement:
 - a. If the charger starts to move up, it is already in the down position.
 - b. If the charger starts to move down, continue to rotate the drive shaft until the charger reaches the fully down position.

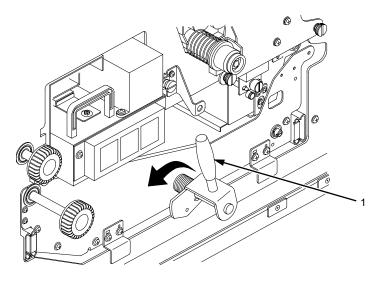


- 1)
- Transfer Charger Transfer Elevator Drive Shaft 2)

Paper Jams

CAUTION To avoid damaging the printer or causing false paper jams, the transport lever must be in the fully down position before opening the transport unit

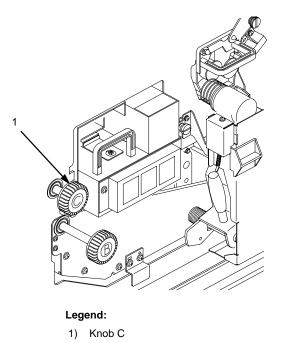
4. Lower the transport unit by turning the green lever on the transport unit to the left.



Legend: 1) Green Handle

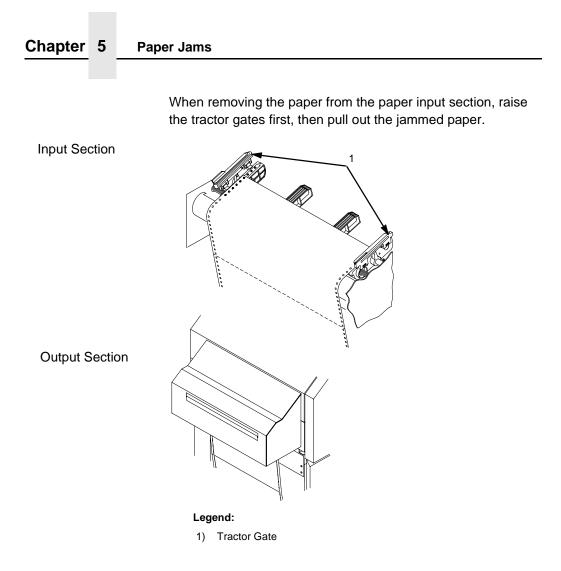
5. Check for and remove any paper jammed in the transport unit.

Paper Jam Near The Paper Output Section



6. Turn knob C clockwise 90° to raise the scuff roller holding the paper.

7. Separate the fanfold paper at the perforations on both the paper input *and* the output sections. Then remove the jammed paper by pulling it out.



CAUTION To avoid damaging the printer or causing false paper jams, the transport lever must be in the fully down position before closing the transport unit.

- 8. After removing the pieces of jammed paper, restore the transport unit and waste toner recovery unit to their original positions, and close the front cover.
- 9. Reload the paper.

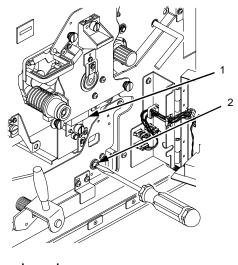
Paper Jam In The Transport Input Section

Paper Jam In The Transport Input Section

- 1. When paper motion stops, wait 15 seconds, then open the upper doors.
- 2. Open the waste toner recovery unit cover.

CAUTION The transfer charger must be in the down position to avoid scratching the drum. Failure to perform steps 3 and 4 damages the drum.

- 3. Rotate the transfer elevator drive shaft counterclockwise. Watch the charger movement:
 - a. If the charger starts to move up, it is already in the down position.
 - b. If the charger starts to move down, continue to rotate the drive shaft until the charger reaches the complete down position.



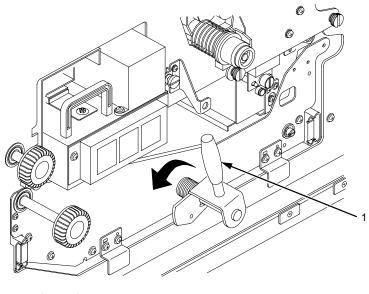
Legend:

- 1) Transfer Charger
- 2) Transfer Elevator Drive Shaft

Paper Jams

CAUTION To avoid damaging the printer or causing false paper jams, the transport lever must be in the fully down position before opening or closing the transport unit.

4. To lower the transport route surface, turn the green transport unit lever to the left.



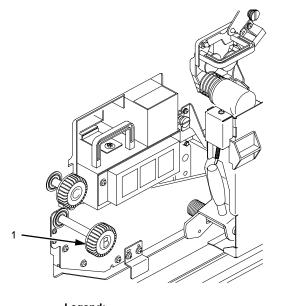
Legend: 1) Green Lever

- 5. Manually clear the paper jam.
- 6. Restore the transport unit and the waste toner recovery unit to their original positions, and close the upper doors.

Paper Jam In The Transport Output Section

Paper Jam In The Transport Output Section

- 1. When paper motion stops, wait 15 seconds, then open the upper doors.
- 2. Turn the green knob B counterclockwise. This causes the jammed paper to be moved to the paper feed section. Remove any jammed paper.



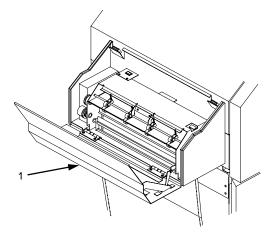
Legend: 1) Knob B

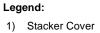
3. Close the upper doors.

Paper Jams

Paper Jam In The Power Paper Stacker

- 1. When paper motion stops, wait 15 seconds, then tear the paper from the output section of the printer.
- 2. Open the stacker cover and clear any paper jams.



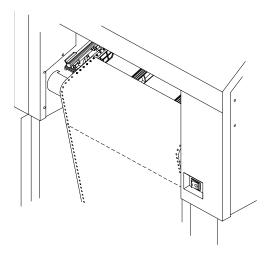


3. Open the upper doors.

Paper Jam In The Power Paper Stacker

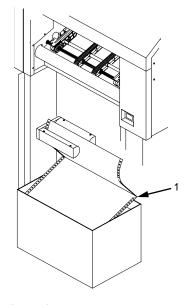
- <image><section-header>
- 4. Turn Knob C, clockwise to unlock it.

5. Pull the paper out from the paper entrance.



System Status And Error Messages

6. Reload the paper being sure to load it correctly, with the first perforation facing the printer.





- 7. Rotate Knob C counterclockwise to lock it.
- 8. Close the upper doors.
- 9. Press CLEAR on the control panel.
- 10. When the error is cleared, press ONLINE. The printer resumes printing.

System Status And Error Messages

When an error occurs, the printer displays an appropriate message on the control panel LCD. Some errors are operator-correctable, some require field service, and others require reprinting.

Operator-correctable errors include paper jams, and missing consumables. After correcting the error condition, press CLEAR to remove the message from the display and place the printer offline.

Reprinting Pages After Fault Condition

If any data resides in the print buffer, it is then printed. Press ONLINE to place the printer online.

Errors requiring field service are printer failures that require the attention of service personnel. Before calling your service representative, press CLEAR to attempt to remove the message from the display. If the message disappears, the original message may have been a false error indication. If the message reappears, call for service.

Errors requiring reprinting are those errors which require reprinting to recover from an error condition. These are discussed in detail in the following topics.

Reprinting Pages After Fault Condition

The printer handles errors in three ways, depending on your configuration of the Reprint on Fault option in the Paper Control menu.

If Reprint On Fault Is *Enabled* (The Default):

Any pages left in the printer at the time of failure are reprinted. No data is lost.

The printer reprints all pages that have not completely exited the printer at the time of failure. The exact number of pages that are reprinted is determined by the length of the page and where within the page the fault occurred.

If Reprint On Fault Is Disabled:

Any pages left in the printer at the time of failure are not reprinted. Data is lost (you need to reprint the lost pages according to your application software).

If Reprint On Fault Is Confirm:

The control panel on the printer returns a message asking whether or not to reprint. Answer Yes to reprint, answer No if a reprint is not necessary.

System Status And Error Messages

Whether Reprint On Fault Is Enabled, Disabled, Or Confirm:

After a paper jam, you may need to reload the paper onto the tractors.

Table 3, "Error Messages," on page 120, designates those errors that require reprinting to recover from an error condition.

NOTE: Some errors require reprinting, regardless of your printer configuration. Refer to Table 3 for details.

Procedure For Fault Clearing-Reprint On Fault Disabled

- 1. A fault occurs.
- 2. Correct the fault condition.
- 3. Press CLEAR.
- 4. The STAND BY LED blinks and the following message appears while the printer attempts to clear the fault:

Standby	
Clearing Fault	

If the fault is not cleared:

a. The printer beeps and briefly displays the following message:

Faults Not Clearing	

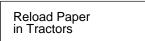
- b. The printer then redisplays the original fault message, or any other uncleared fault message.
- c. Attempt to clear the fault condition again, or contact your service representative.

If the fault is cleared, and if you do *not* need to reload the paper into the tractors (for example, the printer ran out of toner):

- a. The printer goes OFFLINE.
- b. Press ONLINE to resume printing.

Reprinting Pages After Fault Condition

If the fault is cleared, and if you need to reload paper into the tractors (such as after a paper jam), the following message appears:



- a. Reload the paper onto the tractors.
- b. Press CLEAR.
- c. Press ONLINE to resume printing. Note that pages have been lost.

If the fault is cleared, and if you have already reloaded the paper while clearing the fault condition (in Step 2), the following message appears:

Not Reprinting	
Failed Pages	

- 5. Press ONLINE to resume printing. Note that pages have been lost.
- IMPORTANT If Reprint on Fault is disabled and an error occurs, and if either the "RELOAD PAPER IN TRACTORS" or "NOT PRINTING FAILED PAGES" message appears, then any pages removed from the printer are not reprinted, and the data on them is lost.

Procedure For Fault Clearing-Reprint On Fault Enabled

- 1. A fault occurs.
- 2. Clear the fault condition.
- 3. Press CLEAR.
- 4. The STAND BY LED blinks and the following message appears while the printer attempts to clear fault:

Standby	
Clearing Fault	

System Status And Error Messages

If the fault is not cleared:

a. The printer beeps and briefly displays the following message:

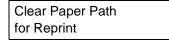
Faults Not Cleared

- b. The printer then redisplays the original fault message, or any other uncleared fault message.
- c. Attempt to clear the fault condition again, or contact your service representative.

If the fault is cleared, and if you do *not* need to reload the paper into the tractors (for example, the printer ran out of toner):

- a. The printer goes OFFLINE.
- b. Press ONLINE to resume printing.

If the fault is cleared, and if you need to reload paper into the tractors (such as after a paper jam), the following message appears:



- a. Reload the paper onto the tractors.
- Press CLEAR. The printer reprints only the pages affected by the fault (even though the message display reads "OFFLINE").
- c. Press ONLINE to resume printing.

If the fault is cleared, and if you already have reloaded the paper while clearing the fault condition (in Step 2), the following message appears:

Reprinting	
Failed Pages	

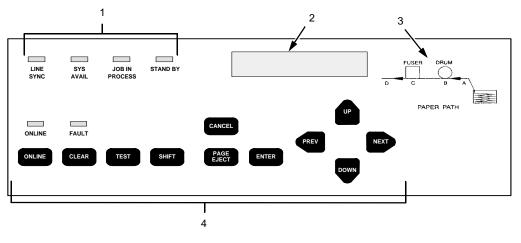
- a. The printer reprints only the pages affected by the fault.
- b. Press ONLINE to resume printing.

Error Messages

Error Messages

Table 3, "Error Messages," on page 120, lists errors by error code and shows which are operator-correctable, which require field service, and which require reprinting.

- Operator-correctable errors include paper jams, and missing consumables.
- Errors requiring field service are printer failures that require the attention of service personnel.
- Errors requiring reprinting are those errors which require reprinting to recover from an error condition.
- **NOTE:** The letter designations (A-D) following the "PAPER JAM" error messages in Table 3 match the sensor positions indicated on the control panel, as shown in the following illustration.



Legend:

- 1) Status Indicators
- 2) Liquid Crystal Display (LCD)
- 3) Sensor Positions A D
- 4) Function Keys

System Status And Error Messages

Error Code	Error Message	Operator Correctable	Field Service Required	Reprint Required
01	Front Cover Open	~		
02	Paper Empty	~		
03	Paper Jam at Fuser (C)	~		✓
04	Paper Jam at Exit (D)	~		✓
05	Paper Jam at Exit (D)	✓		✓
06	No Transfer Unit	~		
07	Scuff Lever Open (Knob C)	~		
08	Reserved			
09	Reserved			
0A	Cutter Fail		\checkmark	
0B	Cutter Fail		\checkmark	
0C	Transfer Platform Fail		\checkmark	
0D	Transfer Platform Fail		\checkmark	
0E	Reserved			
0F	Reserved			
10	Reserved			
11	Paper Jam at Drum (B)	~		✓
12	Paper Jam at Fuser (C)	~		✓
13	Paper Jam at Exit (D)	~		✓
16	Paper Jam at Entrance (A)	~		✓
17	High Voltage Failure		√	
18	Drum Motor Fail		✓	
19	Surface Voltage too High		✓	
1A	Surface Voltage too Low		✓	
1D	Surface Voltage Fail		\checkmark	
1E	Fuser Supply Fail		✓	
1F	Fuser Failure		\checkmark	

Table 3. Error Messages

Error Messages

Error Code	Error Message	Operator Correctable	Field Service Required	Reprint Required
20	Fuser Lamp Overheat		~	
21	Fuser Fan Fail		~	
22	Reserved			
26	No Cleaning Unit	✓		
27	Reserved			
28	Waste Toner Full	✓		
29	No Waste Toner Box	✓		
2A	Toner Low			
2B	Toner Density too High		✓	
2C	Toner Density too Low		~	
2D	Toner Empty	✓		
2E	Reserved			
32	LED Head Overheat		✓	
36	Reserved			
37	Reserved			
38	Engine CPU Fail		✓	
39	Engine CPU Fail		~	
3A	Engine CPU Fail		✓	
3B	Engine CPU Fail		✓	
3C	Engine CPU Fail		✓	
3D	Engine CPU Fail		~	
3E	Engine CPU Fail		✓	
3F	Engine CPU Fail		✓	
40	Engine CPU Fail		✓	
41	Engine CPU Fail		✓	
42	Engine CPU Fail		✓	
43	Engine CPU Fail		✓	
44	Engine CPU Fail		✓	

System Status And Error Messages

Error Code	Error Message	Operator Correctable	Field Service Required	Reprint Required
45	Engine CPU Fail		✓	
46	Engine CPU Fail		~	
47	Engine CPU Fail		~	
48	Controller Comm. Fail		~	
49	Controller Comm. Fail		~	
4A	Controller Comm. Fail		~	
4B	Controller Comm. Fail		~	
4C	Controller Comm. Fail		~	
4D	Controller Comm. Fail		~	
4E	Reserved		~	
50	Stacker Fail		~	
51	Stacker Fail		~	
52	Stacker Fail		~	
53	Stacker Fail		~	
54	Stacker Fail		~	✓
55	Stacker Busy	✓		✓
56	Stacker Fail		~	
57	Stacker Cover Open	✓		
58	Stacker Jam at Paper Sensor	~		\checkmark
59	Stacker Jam at Roller Sensor	~		~
5A	Stacker Jam Clear Paper	~		✓
5B	Stacker Fail		✓	
5C	Stacker Fail		✓	
5D	Stacker Fail		✓	
5E	Stacker Fail		✓	
5F	Stacker Fail		✓	
K0	DC Not 1st File	~		

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Error Messages

Error Code	Error Message	Operator Correctable	Field Service Required	Reprint Required
K1	File Not Compatible	\checkmark		
K2	Wrong File Checksum	✓		
K3	DC Program Not Valid	✓		
K4	No Flash File System	✓		
K5	DRAM Fail at Address XXXXXXXX		~	
K6	Flash Memory Fail		~	
K7	Program Flash Fail at XXXXXXXX		~	
K8	Flash Memory Full	✓		
K9	Program Needs More DRAM	✓		
LO	Invalid DRAM*/ Configuration		√	

TABLE NOTES:

- 1. For *any* error with Reprint on Fault enabled: If the printer stops while in the middle of printing a page, reloading the paper and reprinting are required. There may be other cases requiring reloading and reprinting; if so, a message appears.
- 2. For *any* error with Reprint on Fault disabled: If the printer stops while in the middle of printing a page, reloading the paper is required and pages are lost.
- 3. For error numbers 01, 14, and 15: If the error occurs while paper is *not* moving, it is not necessary to reload or reprint.
- 4. For error number 02: If the error is caused by a paper-empty at the lower sensor (Paper Near End Sensor), it is not necessary to reprint.
- 5. Status message only. No operator action required to clear message.

System Status And Error Messages

The Front Cover Open error can occur if the upper doors are open or the paper output door is open. If the upper doors are closed, push the paper output door in to release it to its down position.

A Maintenance Log Sheets

Maintenance Log Sheets

The maintenance log sheets are for your use. These may be photocopied and kept in a binder near the printer. Be sure to use them each time either you or your service provider perform printer maintenance.

Only maintenance levels A through C are presented in this *Operator's Guide.* These three levels are done by the user. Levels D through H are done by a service representative and are included in the *User's Manual.*

Appendix A

Maintenance Log Sheets

Level A Maintenance - 15,000 Pages (User)

Action	ltem	Part #	Performed By	Date
Clean	General cleaning	N/A		
Clean	Main charger	705741-001		
Clean	Precharger	705742-001		
Clean	Transfer charger	705743-001		
Clean See Note 1	Cover glass	N/A		
Replace See Note 2	Toner cartridge	703532-050		
Note 1: Every 15,000 pages or 6 paper jams, whichever occurs first. Note 2: The Toner cartridge should be replaced about every 21,000 pages or as needed (for page coverage of 4%)				

Level B Maintenance -150,000 Pages (User)

Action	ltem	Part #	Performed By	Date
Clean	General cleaning	N/A		
Clean	Main charger	705741-001		
Clean	Precharger	705742-001		
Clean	Transfer charger	705743-001		
Clean See Note 1	Cover glass	N/A		
Clean	SELFOC [®] lens	N/A		
Vacuum	Lamp housing filter	202985-001		
Vacuum	Cleaning unit	705740-001		
See Note 2	Photoreceptor drum	703535-001		
Replace See Note 3	Toner cartridge	703532-001		
Replace	Developer	703548-001		
Replace See Note 4	Waste toner bottle	202984-001		

Level B Maintenance -150,000 Pages (User)

Note 2: Inspect every 150,000 pages; clean if needed. Replace at 300,000 pages or sooner if print quality is no longer acceptable. Drum life is dependent upon media being used and proper maintenance and operation of the printer. Print media other than bond paper (e.g., labels, card stock, plastic, or vinyl) may reduce drum life as much as 50%.

Note 3: The Toner cartridge should be replaced about every 21,000 pages or as needed (for page coverage of 4%).

Note 4: The waste toner bottle is replaced every 90,000 pages, so may not need to be replaced at this time.

Appendix A

Maintenance Log Sheets

Level C Maintenance - 600,000 Pages (User)

Action	ltem	Part #	Performed By	Date
Clean	General cleaning	N/A		
Clean See Note 1	Cover glass	N/A		
Clean	SELFOC lens	N/A		
Clean	Flash power supply filter	N/A		
See Note 2	Photoreceptor drum	703535-001		
Replace	Developing Unit	705739-001		
Replace See Note 3	Toner cartridge	703532-001		
Replace	Waste toner bottle	202984-001		
Note 1: Every 15,000 pages or 6 paper jams, whichever occurs first.				

Note 2: Inspect every 150,000 pages; clean if needed. Replace at 300,000 pages or sooner if print quality is no longer acceptable. Drum life is dependent upon media being used and proper maintenance and operation of the printer. Print media other than bond paper (e.g., labels, card stock, plastic, or vinyl) may reduce drum life as much as 50%.

Note 3: The Toner cartridge should be replaced about every 21,000 pages or as needed (for page coverage of 4%).

Specifications

Specifications

Paper Specifications

Paper type

Fanfold

Paper size

Width

7 to 16 inches

Length*

1 to 30 inches, in multiples of 1/6 inch.

* Measured from main folding/cutting perforation to main folding/cutting perforation.

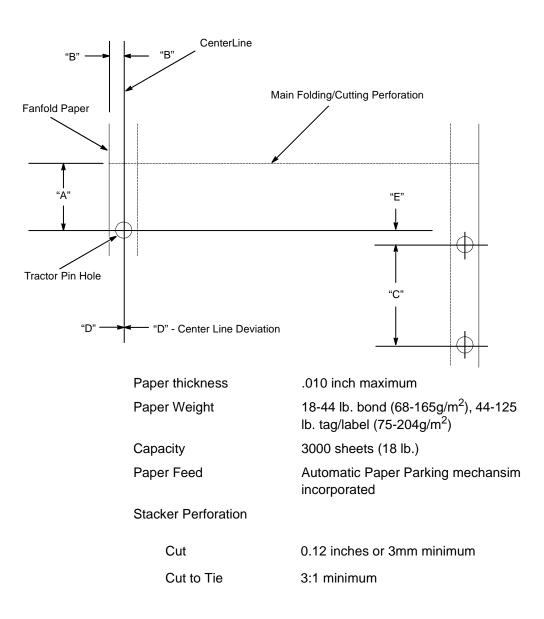
Tractor pin holes

See the table and figure on the next page.

Appendix B Specifications

Specification	Inch	Millimeter	Dimension in Figure
Pin hole center to folding perforation	1/6, 1/4, 1/3, or 1/2	4.2, 6.4, 8.5, 12.7	A
Hole center line to edge of form	0.236 ±0.028	6.0 ±0.1	В
Hole diameter	0.156 ±0.004	4.0 ±0.1	N/A
Distance between centers of two consecutive holes	0.500 ±0.002	12.7 ±0.05	С
Max. deviation of holes from their center line	0.004	0.1	D
Max. deviation Left Hand hole to companion Right Hand hole (Center Line to Center Line)	0.006	0.15	E
Max. parallel deviation Left Hand hole Center Line to Right Hand hole Center Line	0.006	0.15	N/A

Paper Specifications



Appendix B Specifications

Performance Characteristics

	Paper Size	Orientation	Printing Speeds (Pages per Minute)	
F	Printing speed	2.78	2.78 inches per second.	
F	U <i>i</i>		300 x 300 dpi 400 x 400 dpi or 240 x 240 dpi (options)	

Paper Size	Orientation	(Pages per Minute)
A4	Landscape	20
Letter	Landscape	20
A4	Portrait	15
Letter	Portrait	15

Maximum effective print width	14.7 inches
Duty cycle	200,000 total pages/month of fanfold paper (11 inch length)
Mechanical life	5 years or 12,000,000 pages (11 inch length)
Warm-up time	60 sec. max.
First page printing time	25 sec. max.
MTBF/MPBF	8,000 hours/2,880,000 pages (letter size) 25% print to power on ratio
MTTR	2 hour max. (unit exchange

Host Interfaces

Host Interfaces Standard Centronics parallel, Dataproducts parallel, serial RS-232/422 NOTE: Dataproducts parallel interface requires an optional adapter cable. IBM coax and twinax Optional IBM coax and twinax

Standard

LinePrinter Plus

Optional

PCL5/LP+ PCL5/PGL PCL5/VGL IGP/VGL IGP/PGL IPDS

Appendix B Specifications

Memory Requirements

The L5000 series printers have 32 MB (standard) or 64 MB (optional) of RAM (Random Access Memory), and 8 MB (standard) or 16, 32, or 64 (optional) of Flash Memory. This is available with all new printer shipments, and all upgraded printers.

Safety Regulations

UL	1950
CSA	950
EUROPE	EN 60950

Electromagnetic Interference

FCC

Class A

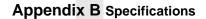
Europe

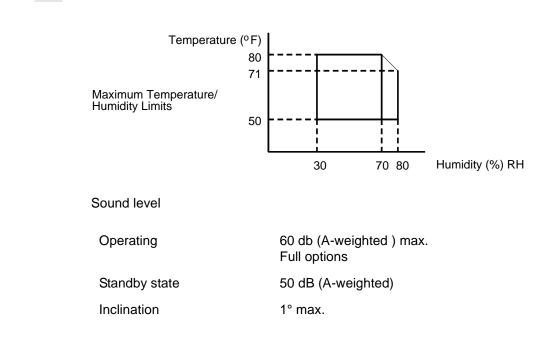
EN55022 Class A

Physical Characteristics And Environment

Physical Characteristics And Environment

Dimensions (H x W x D)	49 inch H x 30 inch W x 34 inch D
	In crate: 58 inches H x 36 inches W x 61 inches D
Weight	353 lbs. (or 441 lbs.) with options
Input voltage range	200 - 240 V <u>+</u> 10% 50/60 Hz (47 - 62 Hz) single phase
Power consumption	3300 W (operating); wall outlet <i>must</i> be on a 30- amp breaker.
Environment	
Temperature	Operating: 50° to 80° F (10° to 27° C)
	Non-operating: 14° to 95° F(-10° to 35° C)
Humidity	Operating: 30 to 80% RH Non-operating: 10 to 80% RH (non-condensing)





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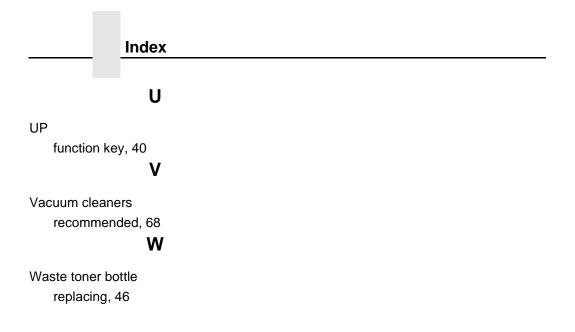
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