



Burroughs

AP 9208 Printer

Installation and
Operations
Guide

Priced Item
October 1985

Distribution Code SA
Printed in U.S.A.
1190758



Burroughs

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Introduction

The AP 9208 Printer Installation and Operating Guide is to be used as reference for installing, operating and maintaining your Burroughs 8-page per minute, desk-top printer. This guide is divided into the following major sections:

- 1 Installation and setup of the AP 9208.
- 2 Operation of the AP 9208.
- 3 Maintenance of the AP 9208.
- 4 Appendices.

As with most training/installation aids, this guide presents simple step-by-step instructions for you to follow.

Should you need assistance, or if you have any questions relating to this manual, contact your Burroughs support representative. In doing so, be ready to provide the following information:

- The model and serial number of your printer (located on the back of the unit).
- The model name of the computer system your printer is connected to.
- The model names of any other devices used in conjunction with your printer.
- If requesting assistance with a problem, provide a detailed description of the events leading to the situation, the problem itself, and any control panel indicators which are illuminated.

Installation and Setup of the AP 9208 Printer

General Description

The following instructions will show you how to:

- 1 Unpack the AP 9208 printer.
- 2 Install the paper tray.
- 3 Install the paper stacker.
- 4 Install the toner cartridge.
- 5 Install the organic photoconductor (OPC) cartridge.
- 6 Load paper.
- 7 Connect the AC power cord.
- 8 Connect the printer interface (I/F) cable.
- 9 Verify the correct installation of the charge corona unit, the transfer corona unit, the shield glass, the quenching lamp, and the toner collection bottle.

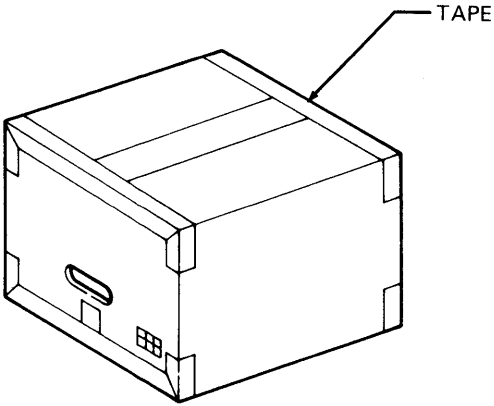
Caution: *When performing installation, operation, and maintenance procedures, you should only touch the green colored areas on the printer and the accessories. The exception to this is the installation and replacement of the ozone filter, which is not marked with green. Also, avoid touching areas which are specifically indicated to be hot.*

Unpacking the AP 9208 Printer

The following step-by-step instructions will guide you through the proper procedure for unpacking your AP 9208 printer. Each step should be followed carefully in order to avoid accidentally damaging the equipment. Be sure to retain all packaging materials for use in future movement or relocation of your printer.

Step 1

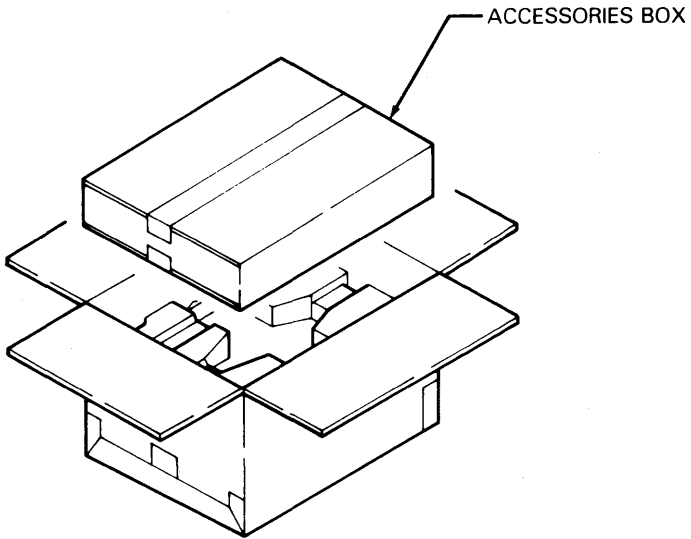
Verify the box is right side up and remove the tape securing the box flaps.



TC8875

Step 2

Take the accessories box out of the large printer box.



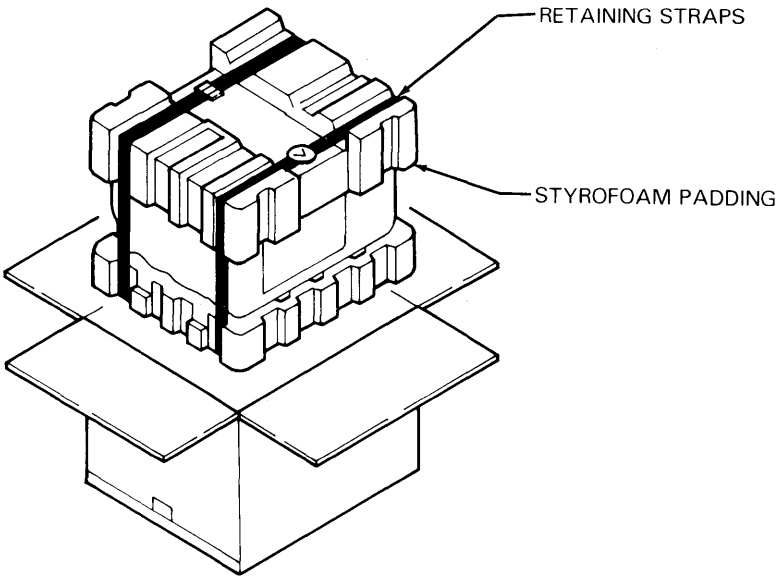
TC9042

Warning: Two persons are required to lift the printer from the box. The printer's weight (80 lbs.) is too heavy for one person to lift.

Step 3

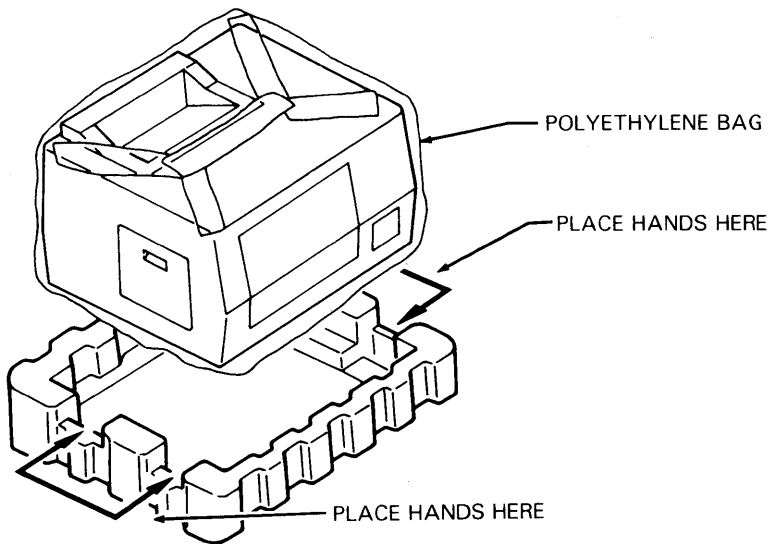
Unpack the printer at follows:

- 1 Remove the printer from the box by grasping the retaining straps, and lifting up and out.



TC9043

- 2 Place the printer on a table or other surface capable of supporting the printer's 80 lb. load securely.
- 3 Remove the retaining straps and styrofoam padding. Do not cut the straps since you will need them for relocating your printer.
- 4 Open the protective polyethylene bag which contains the printer.
- 5 Remove the printer from the bag by placing your hands (two persons) on either side of the printer in the locations illustrated and lifting the printer from the bag as illustrated.



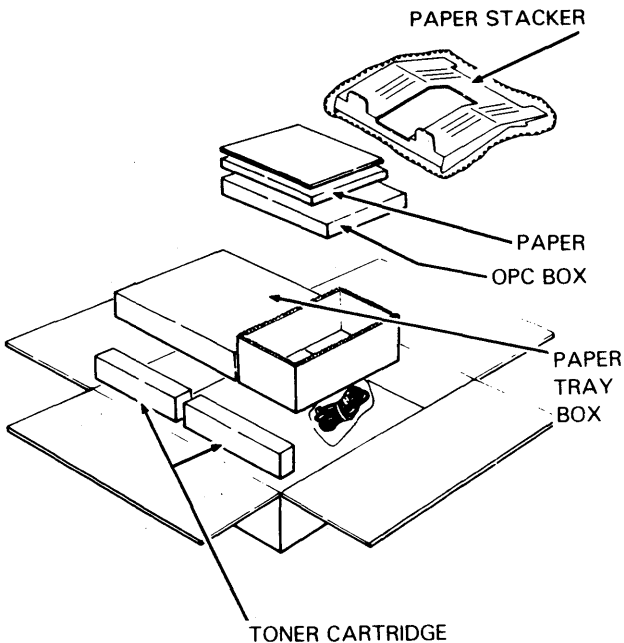
TC9044

Step 4

Unpack the accessories box as follows:

- 1 Remove the tape securing the accessories box flaps.
- 2 Remove all accessories from the box.
- 3 Verify the accessories box contains all the following items (refer to the illustration):

- Paper
- Paper Stacker
- Paper Tray Box
- Organic Photoconductor Cartridge (OPC) box
- Two toner cartridge boxes



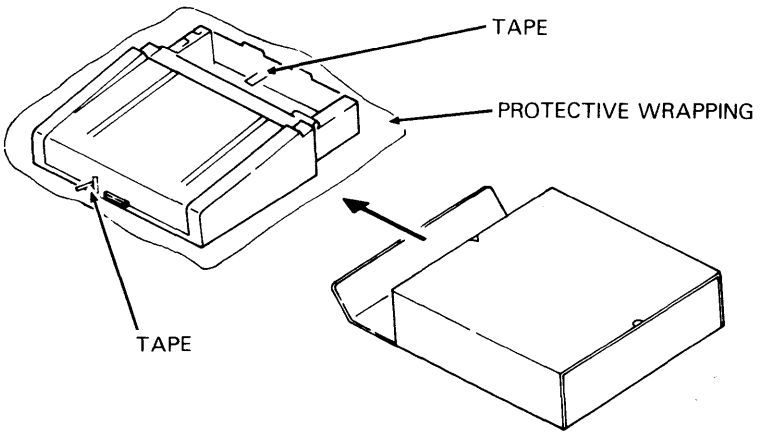
Installing the Paper Tray

Step 1

Take the paper tray out of its box and remove the protective wrapping.

Step 2

Remove the two pieces of tape on each end of the tray.



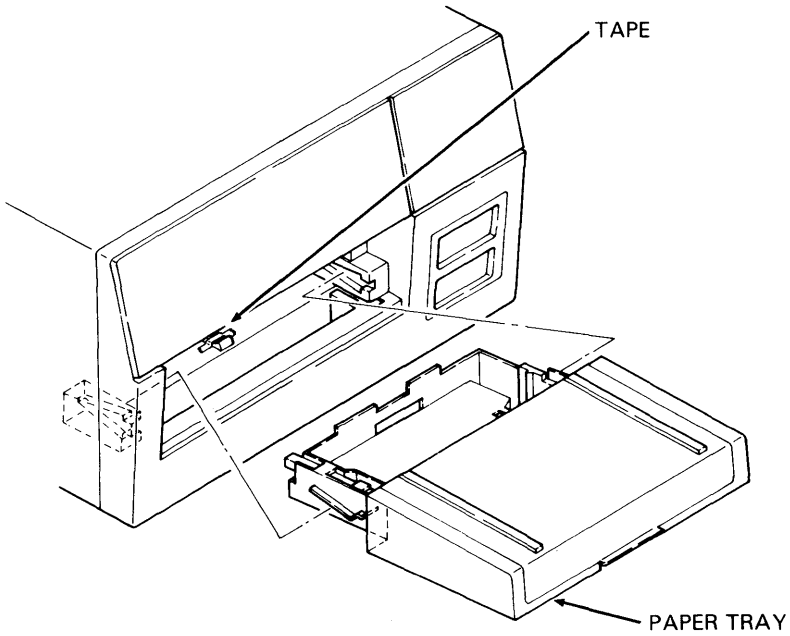
TC9046

Step 3

Remove the tape from the bottom plate drive arm.

Step 4

Install the paper tray in the printer, ensuring the tray seats squarely all the way in the printer.



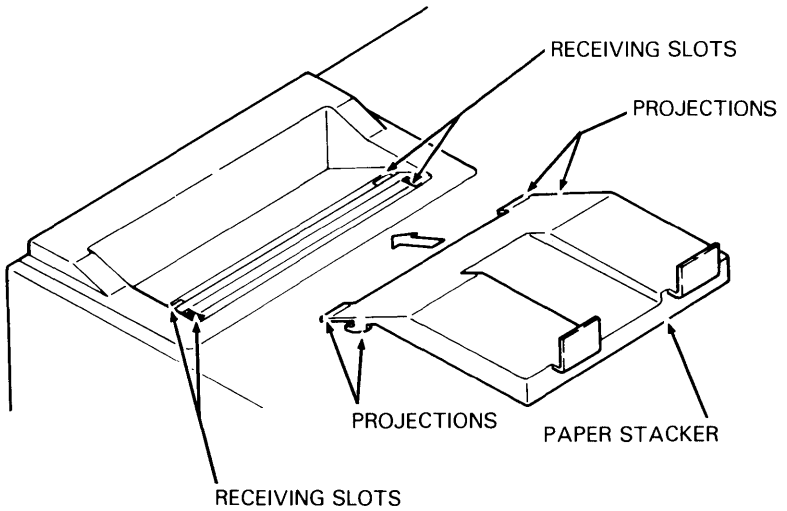
Installing the Paper Stacker

Step 1

Remove the bubble wrap from around the paper stacker.

Step 2

Install the stacker on the printer by sliding the projections on the stacker into the receiving slots on the printer.



TC9048

Installing the Toner Cartridge

Note: Concurrent illustrated instructions for installing the toner cartridge are displayed on the top and inside the toner cartridge cover.

Step 1

Remove one of the two toner cartridges from its package and shake it vigorously twenty or more times.

Step 2

Remove the tape (two pieces) securing the foil shield to the end of the cartridge.

Step 3

Pull the development drawer out approximately half way.

Step 4

Open the toner cartridge cover.

Step 5

Place the toner cartridge such that the end with the plastic plug is on the left, and the foil shield is facing down into the development tank.

Step 6

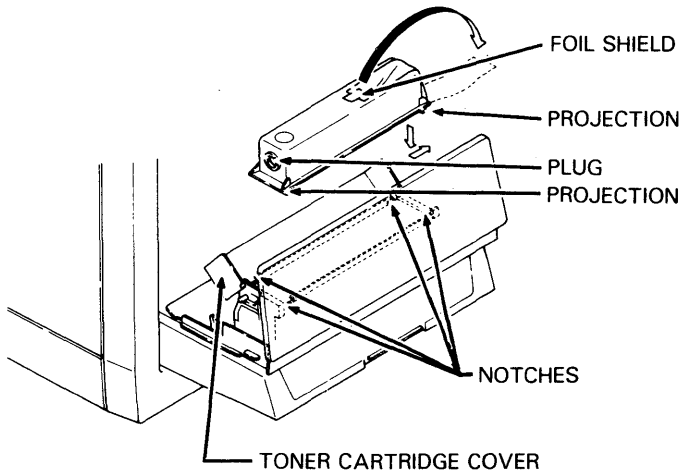
Seat the toner cartridge on the development tank, and insert the projections on both sides of the cartridge into the notches cut into the tank.

Step 7

Slide the cartridge to the right to secure it on the tank.

Step 8

Lay the end of the shield down flat as indicated by the dotted lines in the illustration.



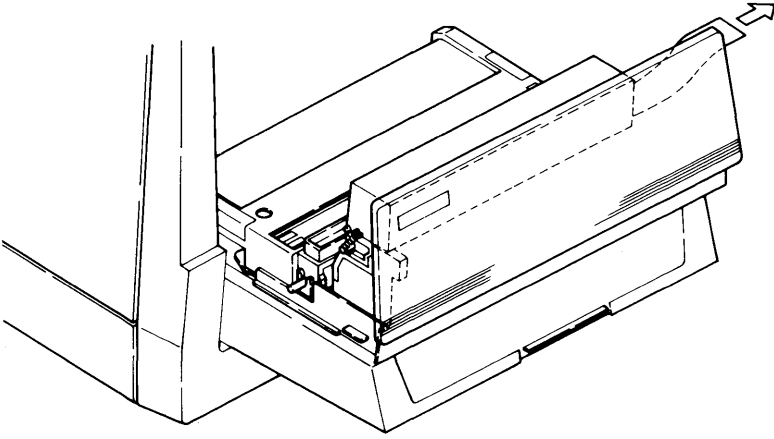
TC9129

Step 9

Close the toner cartridge cover.

Step 10

While pressing down gently on the toner cartridge cover, pull the shield out horizontally in a smooth, continuous motion until a second shield is visible. Then grip the green tab and pull the second shield out completely, in the same manner.



TC9130

Step 11

Open the toner cartridge cover and tap gently on the toner cartridge with your fingers.

Step 12

Remove the empty toner cartridge as follows:

- 1 Slide the cartridge to the left until the projections are clear of the notches on the tank.
- 2 Lift the empty toner cartridge out of the drawer and discard it.

***Note:** Two toner cartridges are installed only for initial installation of the printer. Only one toner cartridge is installed for normal replacement.*

Step 13

Install the second toner cartridge using the same procedure as detailed above.

Step 14

Slide the development drawer back to its operating (closed) position.

Installing the OPC Cartridge

***Caution:** The following procedure (Steps 1 through 9) must be accomplished within five minutes since exposure of the OPC cartridge to ambient light will cause a deterioration of the OPC belt, resulting in less than optimum printing performance.*

***Note:** Review the illustrations and instructions for installing the OPC cartridge prior to start of work. If you are interrupted for more than five minutes while performing this procedure, place the OPC cartridge back in its plastic case and then into the black, zip-lock bag. Close the bag until you are ready to resume the operation.*

Step 1

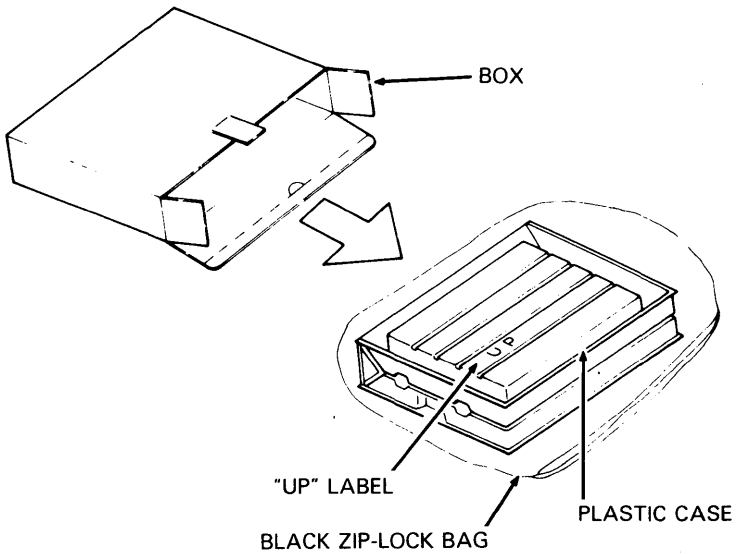
Pull the development drawer out until it stops, allowing it to slide on the tracks of the paper tray.

Step 2

Remove the OPC cartridge case from its cardboard box.

Step 3

Open the black, zip-lock bag, take out the plastic case containing the OPC cartridge, and set the case down on a flat surface with the side labeled "UP" facing up (arrow on tape pointing down).



Step 4

Remove the securing tape and open the plastic case.

Step 5

Remove the two green, ring-shaped spacers from the OPC cartridge.

Step 6

Remove the protective paper sheet from the cartridge, gripping only the securing tape.

Step 7

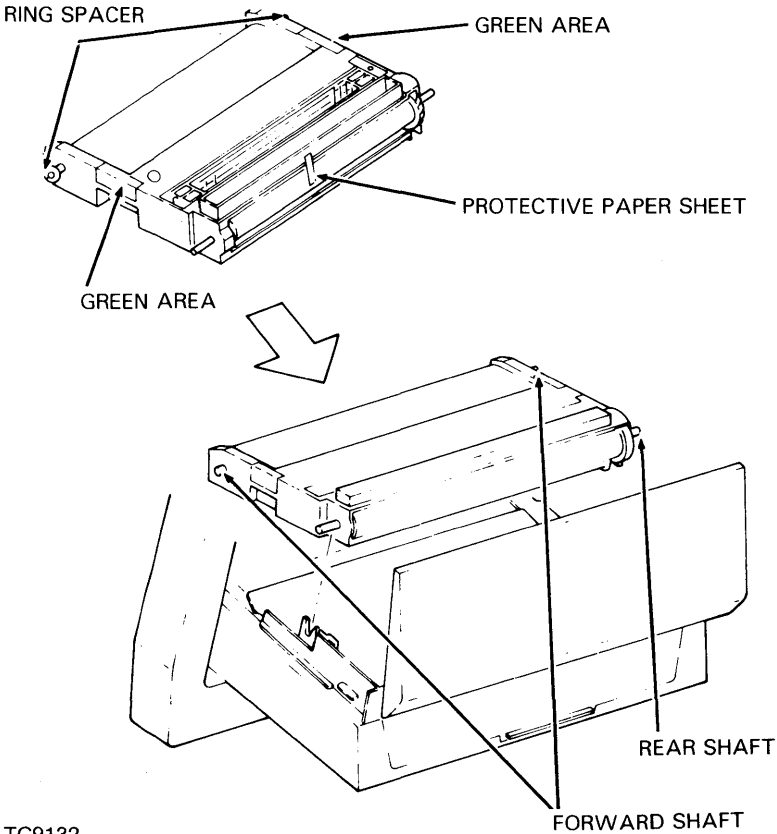
Grip the green area on each side of the OPC cartridge, and lift the OPC cartridge from the plastic box.

Step 8

Place the OPC cartridge in the development drawer as follows:

- 1 Ensure the ridged side of the cartridge faces down into the drawer.
- 2 Tilt the rounded side (opposite gears) of the OPC cartridge down into the drawer and place the forward two metal shafts into the tracks mounted on the drawer.

3 Push down gently on the OPC cartridge so that the rear two metal shafts settle into the U-shaped brackets.



TC9132

Step 9

Slide the development drawer back to its operating (closed) position.

Loading Paper

Step 1

Open the paper tray cover.

Step 2

Adjust the position of the paper guide in the paper tray according to the size of the paper to be used (8½X11 or A4).

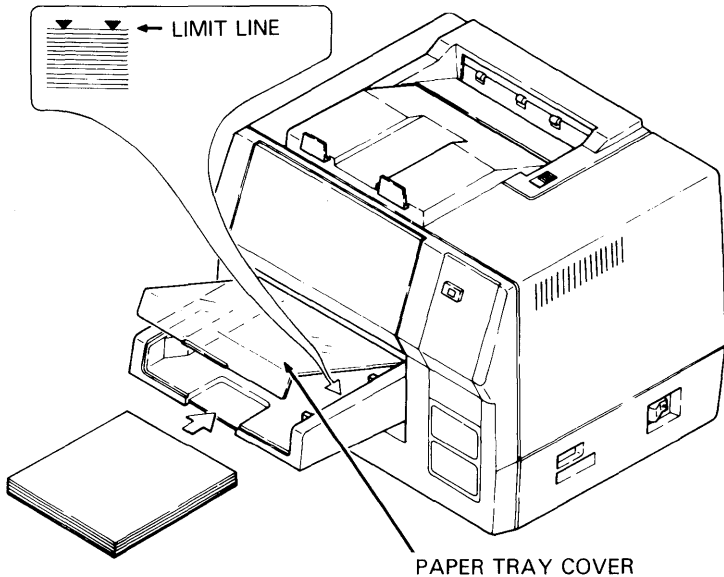
Step 3

Verify that the paper size select switch on the rear of the printer is set correctly, corresponding to the size of the paper being loaded.

Caution: Do not add paper above the limit line. If you are printing on preprinted material, it must be loaded with the print side facing up.

Step 4

Add paper to the bottom of the paper tray along the guide plates located on both sides. Up to 250 sheets of 20 lb. (75 g/m²) paper can be loaded at one time. Note that a supply of paper is included in the accessories box.



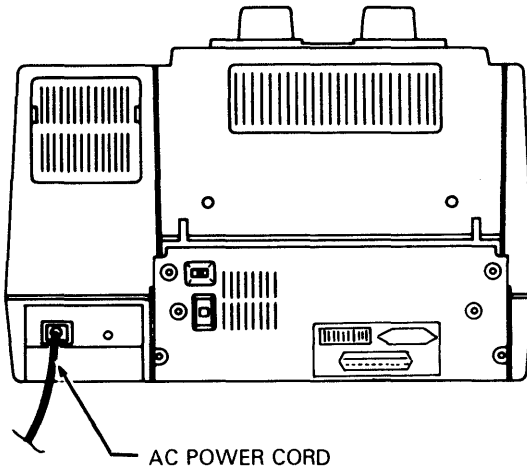
TC9133

Step 5

Close the paper tray cover.

Connecting the AC Power Cord**Step 1**

Plug the AC power cord into the AC power receptacle on the printer's rear side (see the illustration).



TC9134

Step 2

Insert the other end of the power cord into an AC power outlet which has power applied to it and which is not supporting other equipment.

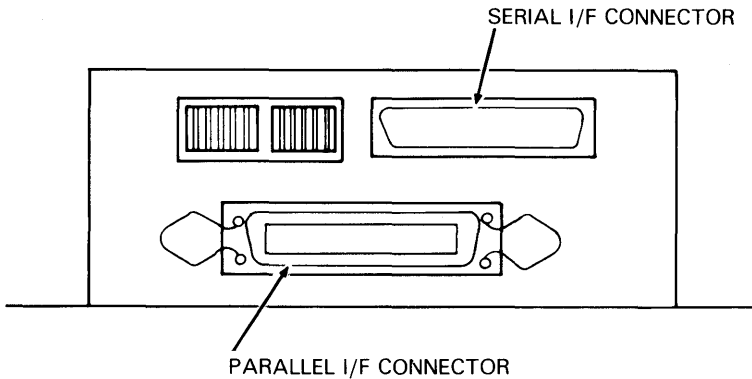
Connecting the Interface (I/F) Cable

Step 1

Identify the serial and parallel I/F connectors as shown in the illustration.

Step 2

Connect the I/F cable from the host computer system to the appropriate connector in the recessed interface connector panel on the rear of the printer. Note there is only one way the I/F cable can be installed on the I/F connector.



TC9135

Verifying Quenching Lamp, Toner Collection Bottle, Transfer Corona Unit, Charge Corona Unit, and Shield Glass Installation

Step 1

Open the left side cover, pull out the toner collection bottle, and remove the bottle's cap if it is on.

Step 2

Verify the quenching lamp, located to the left of the toner collection bottle, is properly installed by pushing the visible end (green tab) of the unit in as far as it will go.

Step 3

Verify the transfer corona unit, located in the toner collection bottle recess, is properly installed by pushing the visible end (green tab) of the unit in as far as it will go.

Step 4

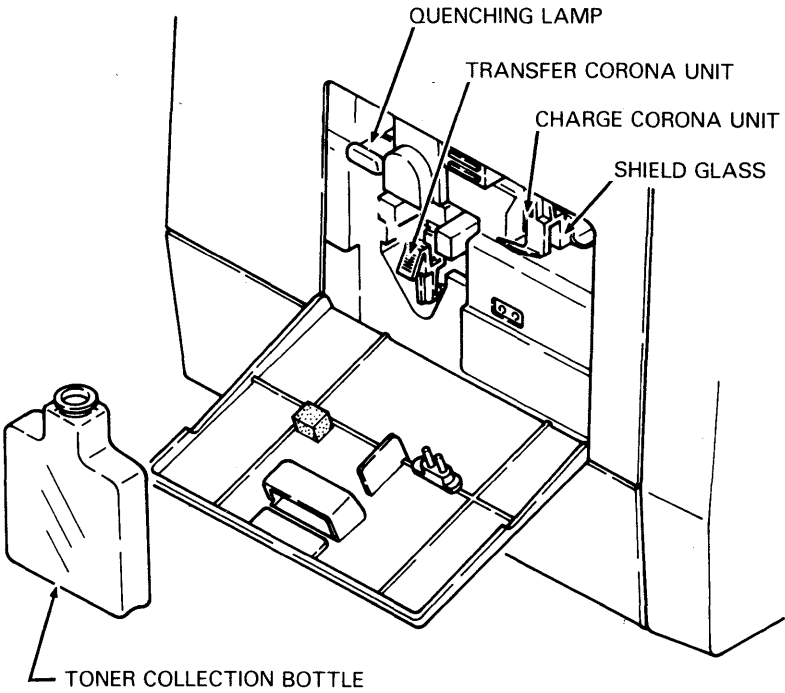
Verify the charge corona unit, located just to the right of the toner collection bottle, is properly installed by pushing the visible end of the unit (green tab) in as far as it will go.

Step 5

Verify the shield glass, located to the right of the charge corona unit, is properly installed by pushing the visible end of the unit (green tab) in as far as it will go.

Step 6

Replace the toner collection bottle and close the left side cover.



TC9136

Summary

You have now completed unpacking, installation, and setup of your AP 9208 printer. You should have completed the following steps:

- 1 Unpacked the printer.
- 2 Installed the paper tray.
- 3 Installed the paper stacker.
- 4 Installed the toner cartridge.
- 5 Installed the organic photoconductor (OPC) cartridge.
- 6 Loaded the paper.
- 7 Connected the AC power cord.
- 8 Connected the printer I/F cable.
- 9 Verified correct installation of the charge corona unit, the transfer corona unit, the shield glass, the quenching lamp, and the toner collection bottle.

You are now ready to continue this guide. In the next section, you will learn how to properly operate and maintain the AP 9208 printer.

Operating and Maintaining the AP 9208 Printer

General Description

In order to begin this section, your printer should be installed. If your printer is not unpacked and ready to operate, refer to the installation section (Section 1) of this guide.

The AP 9208 is a low-cost, microprocessor-based, desk-top laser printer. Printing at a continuous-feed rate of eight pages per minute, the AP 9208 printer ideally serves as a high-quality output device for small to medium size data processing systems.

The AP 9208 prints in a resolution of 300 dots per inch (DPI) both vertically and horizontally. This high resolution provides an image which approaches fully-formed (near letter) character quality.

The AP 9208's modular design, combined with consumables (photoconductor and toner) in cartridge form, provide for fast, simple operation and maintenance. The AP 9208 printer also features easy cutsheet paper loading (capacity 250 sheets), and face-down stacking for a positive page collation output.

This section of the guide will instruct you how to:

- 1 Operate and maintain your printer.
- 2 Identify the major parts involved in operating and maintaining your printer.
- 3 Identify and use all the printer's controls and indicators.
- 4 Power on and test the printer.
- 5 Replace consumables.
- 6 Perform operator maintenance.
- 7 Respond to the various printer conditions which occur during normal printer operation.

To help you operate the printer, a "WHAT IF" section has been included at the end of this section. This section answers some typical questions which may arise during operation of the AP 9208.

Operator Safety

Warning: Use of controls or adjustments, or performance of procedures other than those specified in this guide, may result in operator exposure to hazardous laser light.

The AP 9208 Printer contains a 5 milliwatt, 760-810 nanometer wavelength, GaA2As laser diode. Direct, or indirect reflected, eye contact with the laser beam may cause serious eye damage. Safety precautions and interlock mechanisms have been designed into the printer to prevent any possible laser beam exposure to the operator.

Correcting Radio or Television Interference

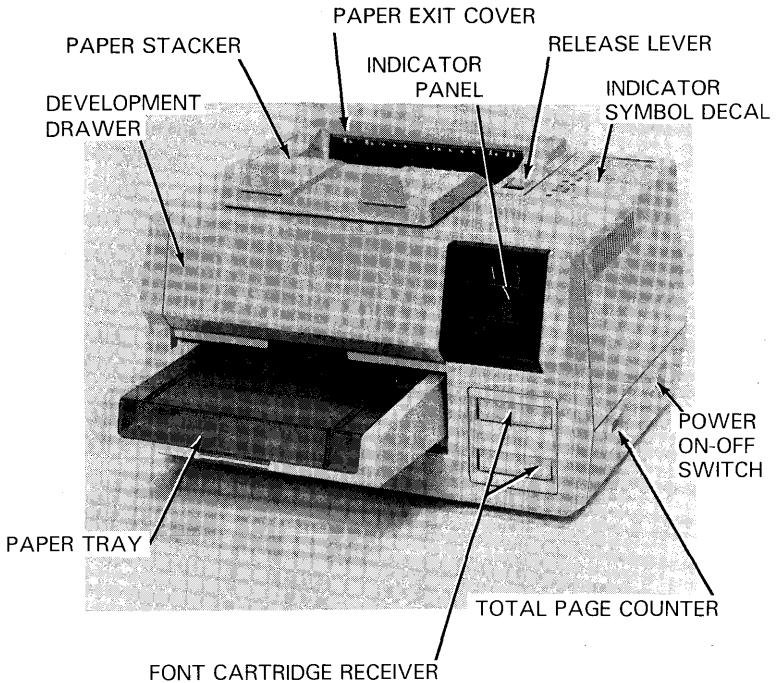
Operation of the AP 9208 printer may cause interference to radio or television reception in some installations. Perform one or more of the following instructions to correct an interference problem:

- Reorient the receiving antenna on the device being interfered with.
- Relocate the printer with respect to the receiver.
- Move the printer away from the receiver.
- Connect the printer and the radio/television into different AC power outlets so that both devices are on different branch circuits.

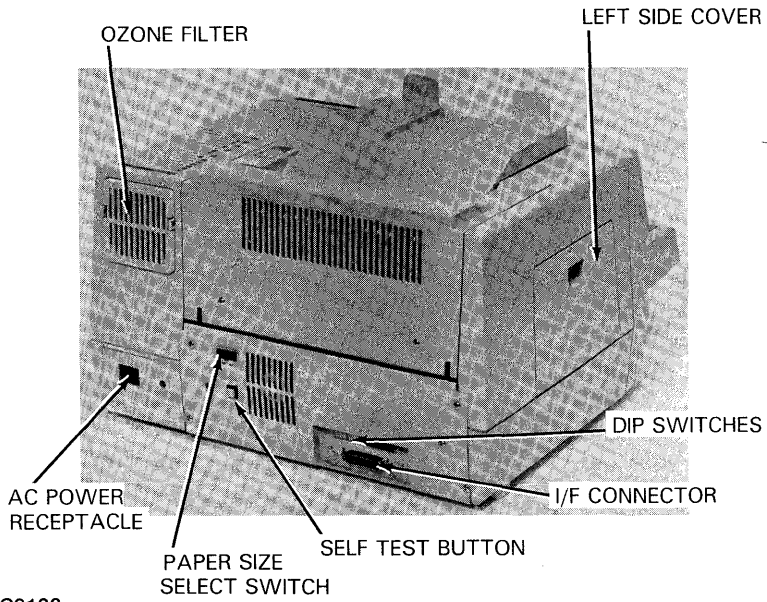
If necessary, you should consult your local Burroughs representative or an experienced radio/television technician for additional suggestions. For further information, it is recommended that you obtain published material prepared by the Federal Communications Commission by contacting the US Government Printing Office, Washington, D.C., 20402.

The Printer

The AP 9208 printer has a number of major parts that you will need to be familiar with in order to properly operate and maintain the printer. The names and locations of these parts are identified in the illustrations. Following the illustrations is the location, description, and function of each item.



TC9137



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Location, Description, and Function of the Printer's Major Parts

Note: The location given for each item assumes you are positioned facing the front (control panel and paper tray) of the printer.

AC Power Receptacle

The AC power receptacle is located on the lower right rear of the printer. The AC power cord is connected here.

Development Drawer

The development drawer is located on the front of the printer, above the paper tray. It is pulled out to change the toner cartridge and the OPC cartridge. Always pull the development drawer out using a smooth, continuous motion. Allow the drawer to rest on the paper tray while it is sliding out so that it will be properly stopped by the stops on the paper tray.

Dual Inline Pack (DIP) Switches

Two banks of DIP switches (six switches per bank) are located on the rear of the printer in the same recessed panel with the I/F connectors. The DIP switches provide operator control of some printing functions. A detailed description of these switches and their functions is provided in this section.

Font Cartridge Receivers

The two font cartridge receivers are located on the lower right side of the printer's front. Font cartridges are inserted into these receivers. The AP 9208 prints in 8 resident fonts which can be rotated 90 degrees for landscape or portrait printing. Additional operator installable font cartridges can be added.

I/F Connector

The I/F connectors are located in a recessed panel on the lower left rear of the printer. The printer interface cable from the host computer is connected here. Two D-shaped I/F jacks are provided: One for a serial cable requirement, or one for a parallel cable requirement.

Indicator Panel

Located on the upper right front of the printer, the indicator panel advises the operator of certain printer conditions during operation. A detailed description of each indicator is given in this section.

Indicator Symbol Decal

The indicator symbol decal is located on top of the printer next to the paper exit cover. The decal describes each indicator/control and its correlating message to the operator.

Left Side Cover

This access panel swings down to open. It is opened to replace the toner collection bottle, the charge and transfer corona units, the shield glass, and to clean the quenching lamp.

Ozone Filter

The ozone filter is located on the upper right rear of the printer. This filter removes ozone generated during printing.

Paper Exit Cover

The paper exit cover, located on the top of the printer, is opened to gain access to misfed paper or to replace the toner cleaning pad.

Paper Size Select Switch

This black, toggle switch, labeled "8½x11/A4", is located on the rear of the printer. It is used to select the size of paper required.

Paper Stacker

The paper stacker is located on the front top of the printer. Printed sheets exit the printer and are automatically stacked here in the same order as they are printed.

Paper Tray

The paper tray extends out on the front of the printer. It is used to store blank sheets of paper. The paper tray accommodates up to 250 cutsheets of 8½x11 or A4 when the printer is operating in the auto-feed mode. In the manual-feed mode, the printer can also accept duplex copies, transparencies, and gummed labels.

Power On/Off Switch

The power on/off switch, labeled 1/O, is located on the right side of the printer. Power is turned on and off with this switch. Push the end of the switch marked "1" to apply power. Push the end of the switch labeled "O" to power off the printer.

Release Lever

The release lever is located on the right side of the paper exit cover. The lever must be lifted to open the paper exit cover.

Self-Test Button

The white, self-test push button is located on the rear of the printer. A self-diagnostic test is performed when this switch is pressed.

Total Page Counter

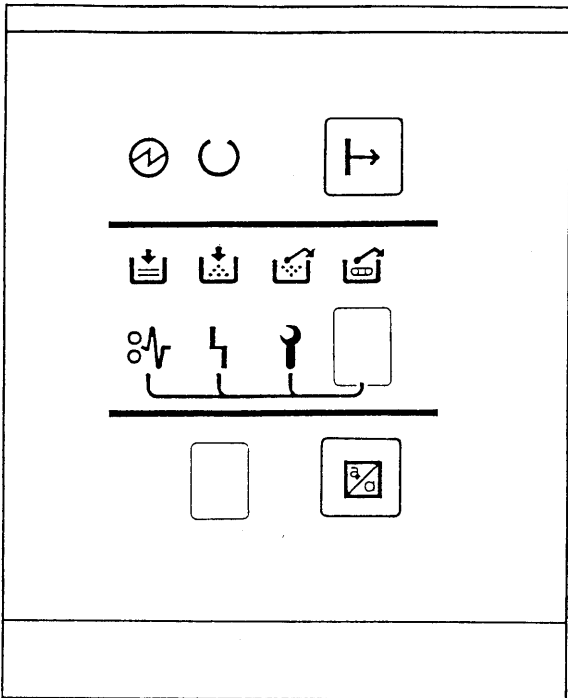
The total page counter is located on the right side of the printer. The counter in the window indicates the total number of prints made to date.

Printer Control and Indicator Panel

The AP 9208 printer control and indicator panel contains 11 indicators and two control buttons which also have indicator symbols. These indicators inform you of the printer's operational status, or of a situation which may require your attention, and the controls allow you to perform certain manual operations with the printer.

Nine of the indicators and the two control buttons/indicators depict symbols when activated. Two other indicators display LED alphanumeric characters which are usually displayed in conjunction with a symbol.

The following is a functional description of each indicator or control. Become familiar with the displays on this panel prior to starting operations. Refer to the illustration for the location and visual depiction of each indicator or display.



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Power Indicator 

The Power indicator is lit while the printer is in the power on status.

Ready Indicator 

The Ready indicator flashes while the printer is warming up, and then stays lit while the printer is in the ready status.

On-Line Button/Indicator 

Pressing this control/indicator when power is applied to the printer will bring the printer on line. When the printer is on line, the On-Line symbol will light.

Add Paper Indicator 

This symbol flashes to indicate that the paper tray is empty.

Change Toner Cartridge Indicator 

This symbol flashes when there is an insufficient amount of toner for an optimum image, indicating the toner cartridge must be replaced.

Replace Toner Collection Bottle Indicator 

This symbol flashes when the toner collection bottle becomes full and must be replaced, or when there is no toner collection bottle installed.

Change OPC Cartridge Indicator 

The Change OPC Cartridge indicator flashes when the OPC cartridge has reached the end of its operating life of 10,000 sheets and must be replaced.

Check Paper Path Indicator 

When the Check Paper Path indicator and an "E" character flash, the paper has stopped in the eject unit and must be removed. When this indicator and an "F" flash, no paper is being fed, or paper is being fed improperly, and the stoppage must be removed.

Control Error Indicator 

The Control Error indicator and an alphanumeric character will flash simultaneously to indicate a printer error which you must not attempt to correct. When this situation occurs, make a note of the alphanumeric character being displayed and report it to your local Burroughs representative.

Call Field Service Indicator 

The Call Field Service indicator and an alphanumeric character will flash when the printer is in an abnormal condition. When this occurs, note the alphanumeric character and report it to your local Burroughs representative.

Close Cover Indicator 

A "C" character flashes in the lower LED indicator when the development drawer, paper exit cover, left side cover, or paper tray cover is open. These accesses must then be checked and closed properly.

Type Face Selection Button/Display  

The Type Face Selection button/display is pressed to select the font (type face) you wish to print in. Each time it is pressed, an LED number (1-10), or a character (A-F) will be displayed. Each alphanumeric character represents a different font.

Operating the AP 9208 Printer

You have now become familiar with operator safety, interference correction procedures, the names, locations, and functions of the printer parts, and the identity and function of each control and indicator on the indicator panel.

The following procedures describe initial power-up and print test, as well as various activities you will need to perform to keep your printer operating in an optimum condition.

In order to perform many of the following activities, you will need to use consumables found in Kit A or Kit B. (Refer to appendix A for a list of consumables found in both kits.)

Activity: Adding Paper

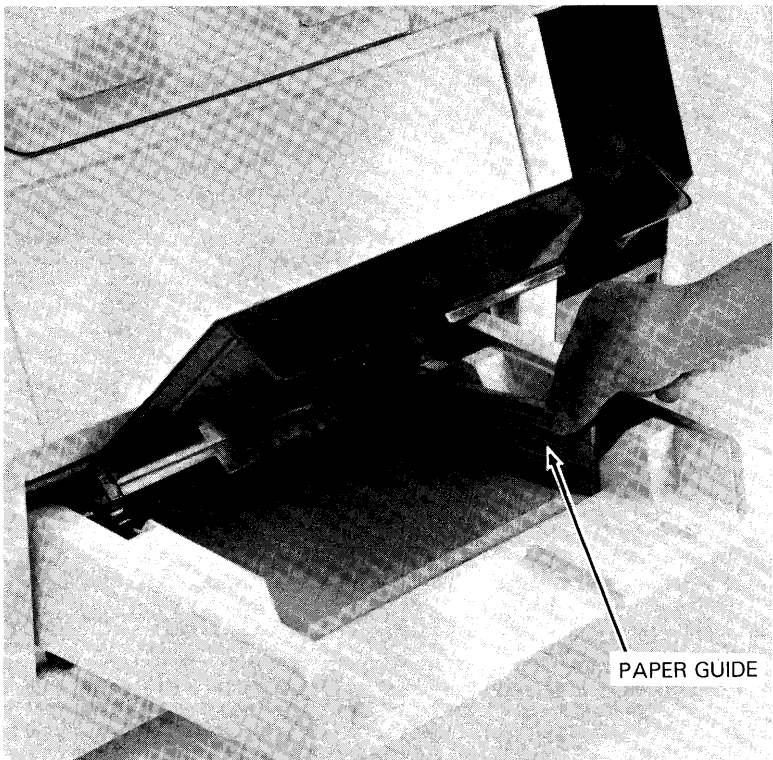
The Add Paper indicator flashes when there is no paper in the paper tray. Add paper as follows:

Step 1

Open the paper tray cover.

Step 2

If the paper size is to be changed, move the paper guide in the paper tray to the position corresponding to the desired size (8½x11 or A4).



TC9140

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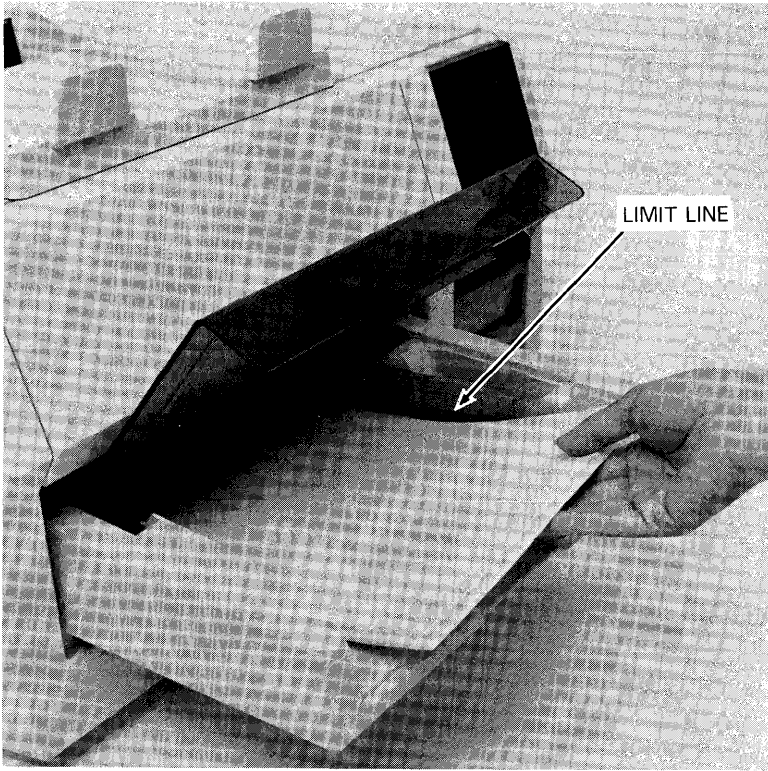
Step 3

If the paper size is changed, also change the position of the Paper Size Select switch on the rear of the printer to correspond with the paper size you have loaded.

Caution: Do not add paper above the limit line. Place the paper with the print side facing up if you are printing on preprinted material.

Step 4

Add paper to the bottom of the paper tray between the guide plates located on both sides of the tray.



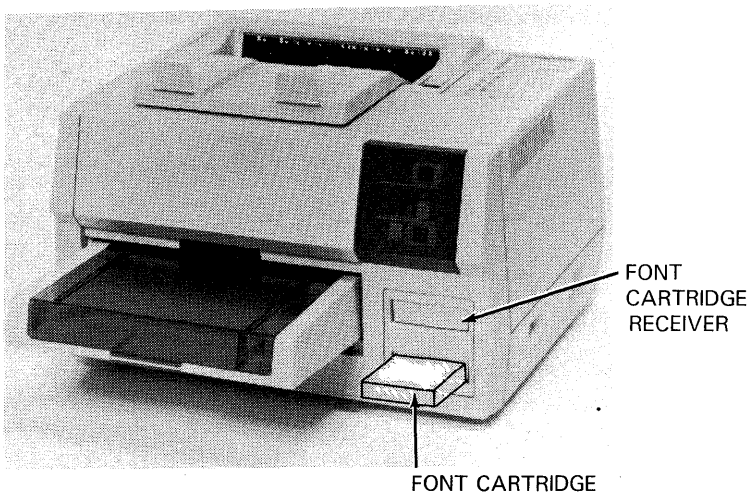
Activity: Selecting the Font and Rotating the Image

When operating your AP 9208 printer, you may decide to print in a different font (type style). You may also wish to print a landscape image as opposed to a portrait image. A landscape image is an image in which the text is rotated 90 degrees such that it lines up in parallel with the longer side of the page. Perform the following instructions to change fonts or rotate the image as you desire.

Selecting the Font**Step 1**

If the font you desire to print in is in a ROM cartridge, select that cartridge and insert it into one of the two font cartridge receivers. Note that there is only one way the font cartridge can be properly inserted.

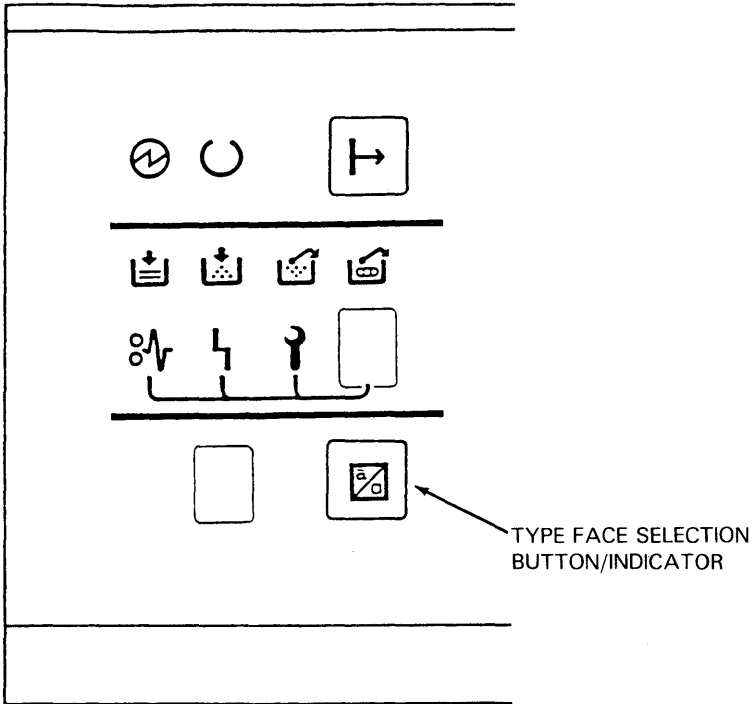
Figure 2-6



TC9142

Step 2

Press the Type Face Selection button/indicator until the alphanumeric character representing the font you require is displayed in the LED display.



Rotating the Image

Rotating the font image, as in rotating from portrait to landscape, requires control code sequences to be sent from the host system. The procedure for rotating the font image via software codes is detailed in the AP 9208 Programming Reference Manual. This activity will usually need to be performed by personnel with programming or software experience.

Activity: Clearing the Paper Path

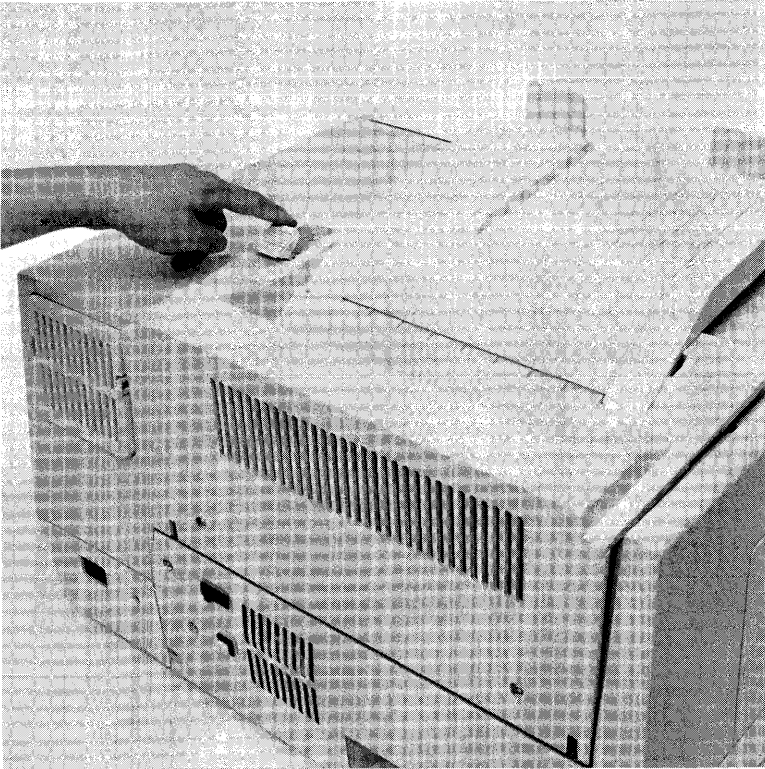
Clearing the Eject Unit

When the Check Paper Path indicator and an "E" character flash simultaneously, paper has been misfed in the eject unit and the printer has stopped. Clear the misfed paper as follows:

Warning: Do not touch the fusing unit as it is extremely hot.

Step 1

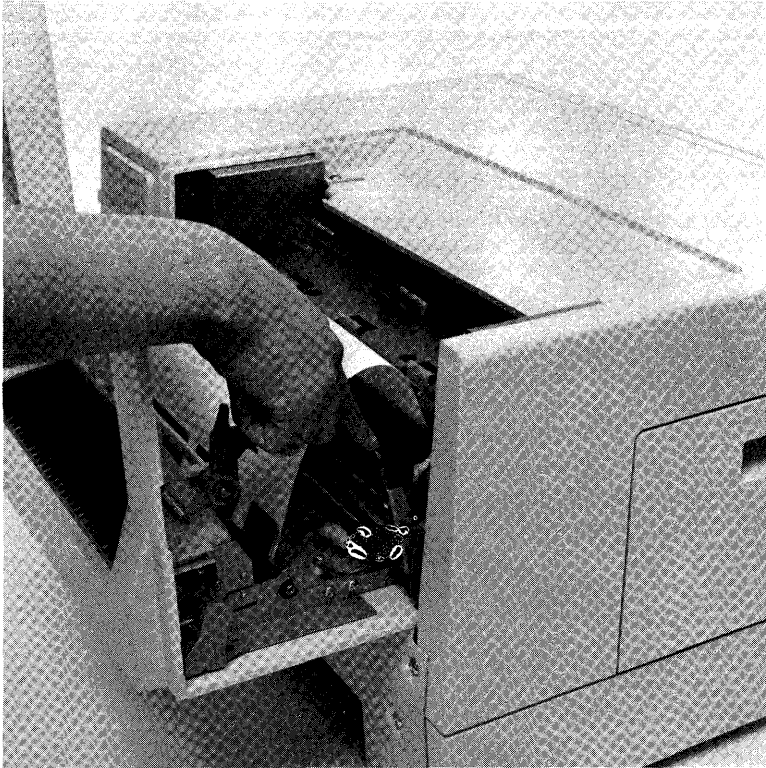
Open the exit cover by pushing up the release lever.



TC9144

Step 2

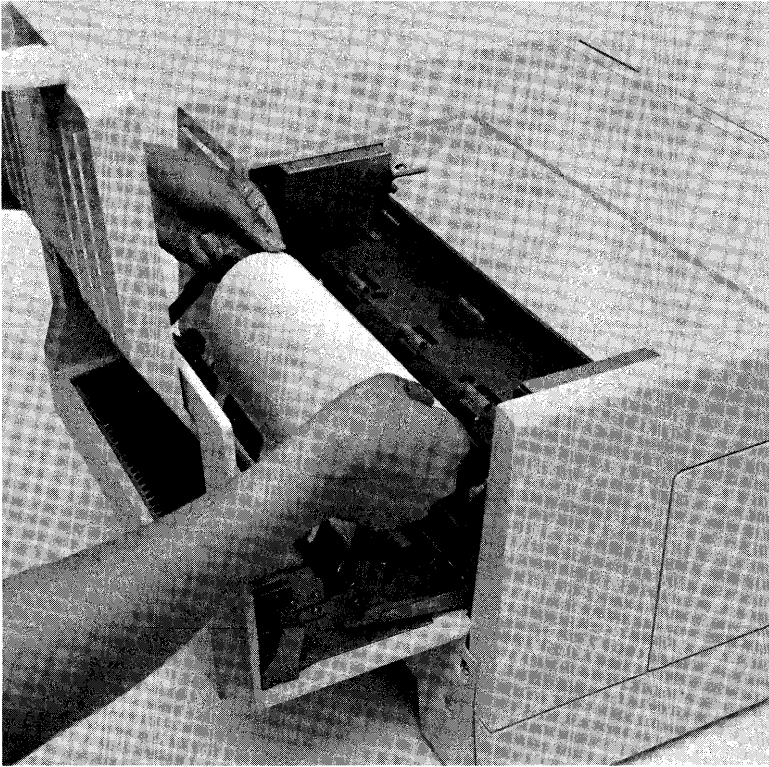
Release the tension by pushing the tension lever down, gripping only the green, insulated end of the lever.



TC9145

Step 3

Remove the misfed paper.

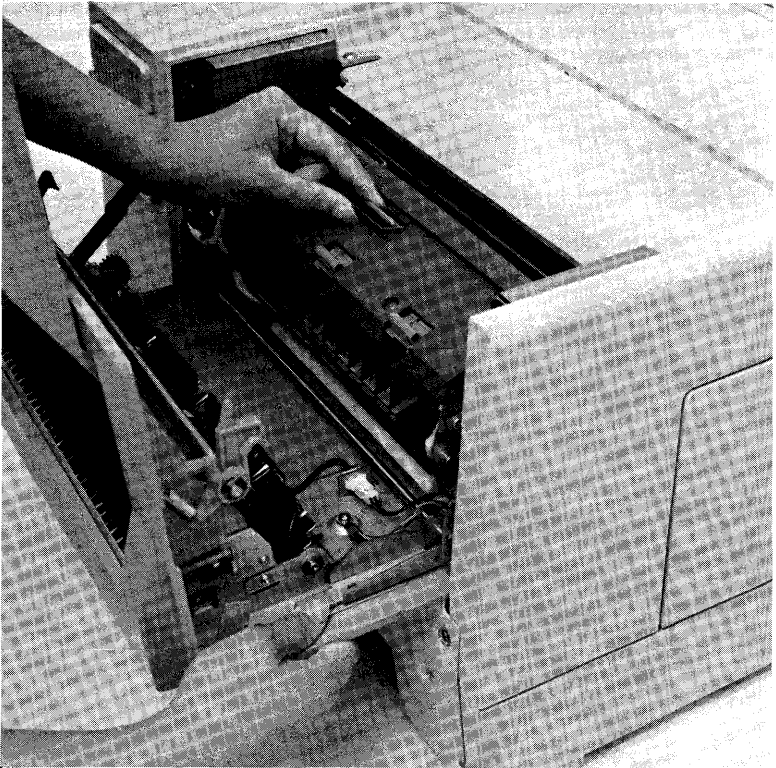


TC9146

Note: If no paper is found or the leading edge of the paper is in the fusing unit, continue with the following instructions. Concurrent illustrated instructions are displayed under the exit cover.

Step 4

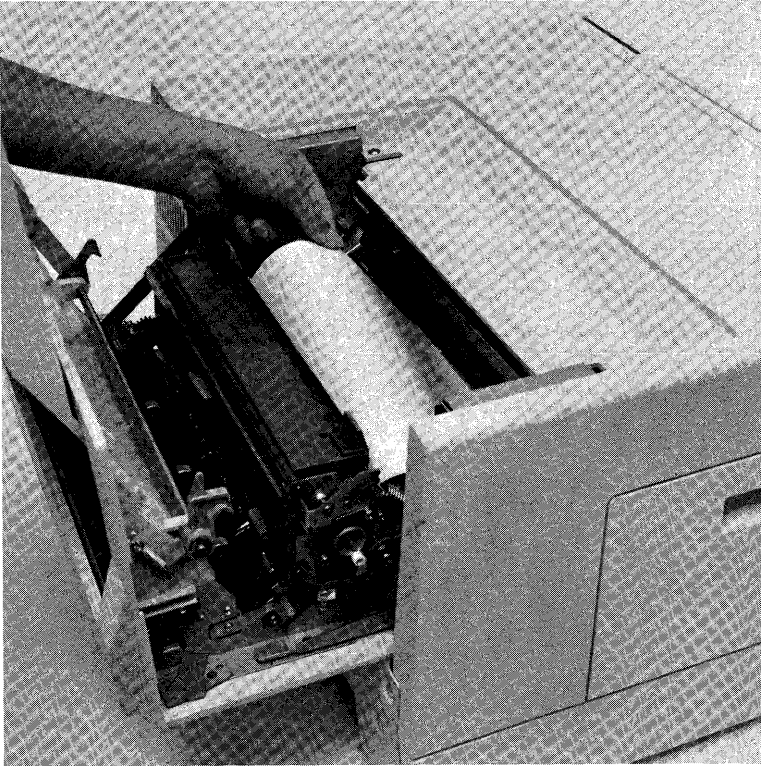
Release the lock lever and push the fusing unit back on its side by swinging it 90 degrees out toward the paper exit cover.



TC9147

Step 5

Remove the misfed paper.



TC9211

Step 6

Return the fusing unit back to its operating (closed) position.

Step 7

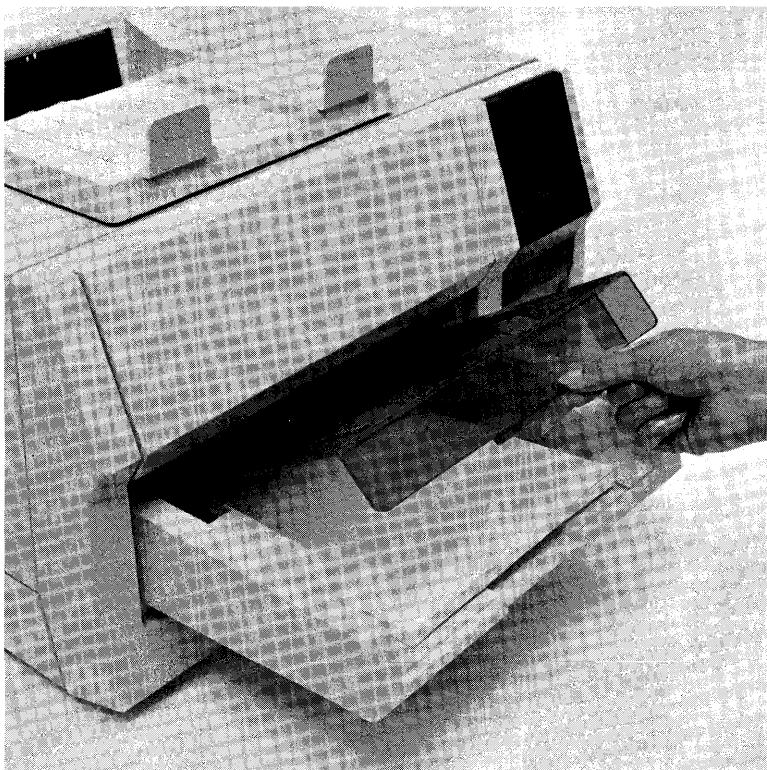
Close the paper exit cover.

Clearing the Feed Unit

When the Check Paper Path indicator and an "F" character flash simultaneously, no paper is being fed or paper is being fed improperly and the printer has stopped. Clear the misfed paper as follows:

Step 1

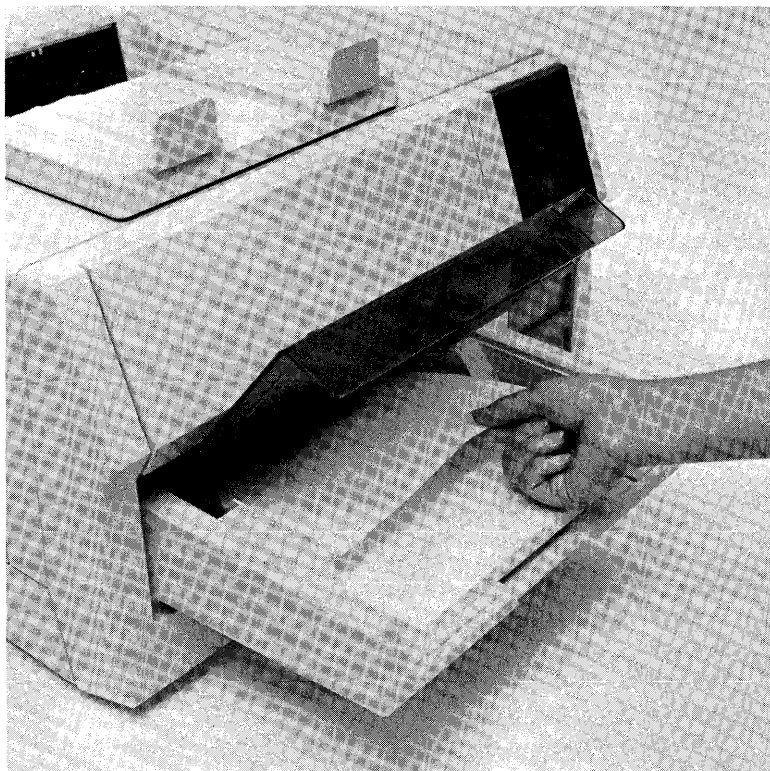
Lift open the paper tray cover.



TC9212

Step 2

Remove any misfed paper.



TC9213

Step 3

Close the paper tray cover.

Activity: Setting the DIP Switches

The configuration of the printer's DIP switches controls various printer functions. Some of the switches control certain functions by default when the function is not otherwise determined by the operator via the software.

Following is an illustration and two tables which describe the individual DIP switch configurations and the functions they control. The DIP switches are located in the recessed I/F connector panel on the rear of the printer. Refer to the illustrations for the locations of the individual switches.

Step 1

Ensure the DIP switches are configured in accordance with the factory setting by verifying switches 3, 5, and 8 are positioned to ON; all others are OFF (see the illustration depicting the factory setting).

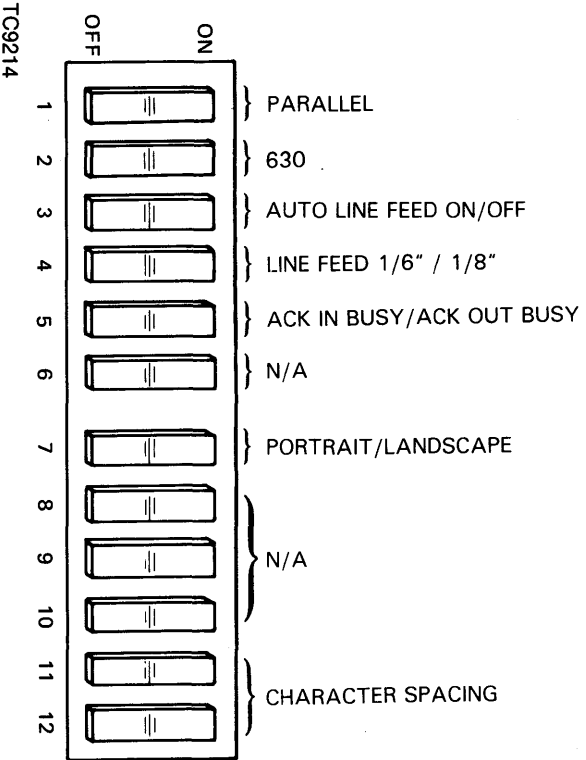
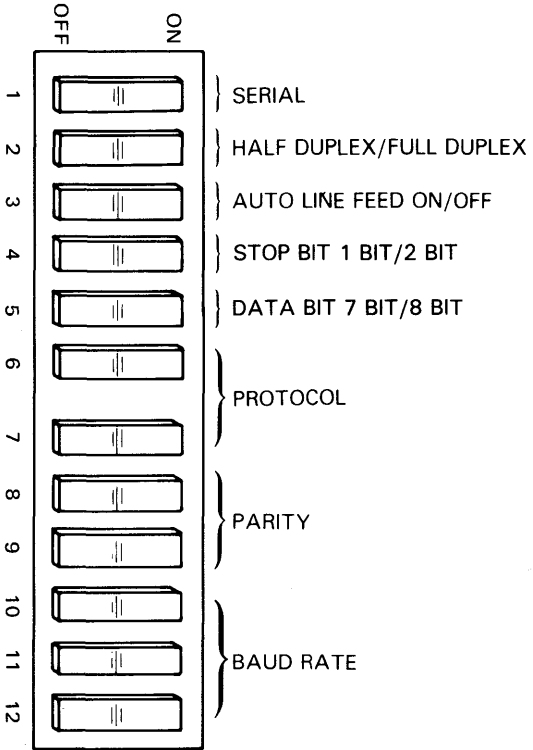
Step 2

Set the DIP switches in accordance with the factory setting if they are not already in that configuration.

Note: The factory dip switch setting is the normal configuration for most host systems.

Step 3

Change the DIP switches as required for your host system, referring to the tables 2-1 and 2-2, and the switch descriptions for information concerning the function of each switch configuration.



TC9214

Table 2-1 **DIP Switch Configurations and Functions (Serial Mode)**

SWITCH POSITION			FUNCTION
1			<u>Parallel/Serial</u>
$\overline{\text{ON}}$			Parallel
*OFF			Serial
2			<u>Half Duplex/Full Duplex</u>
$\overline{\text{ON}}$			Half Duplex
*OFF			Full Duplex
3			<u>Auto Line Feed On/Off</u>
*ON			Auto Line Feed On
OFF			Auto Line Feed Off
4			<u>Stop Bit 1 Bit/2 Bit</u>
*OFF			Stop Bit: 1 bit
ON			Stop Bit: 2 bit
5			<u>Data Bit 7 Bit/8 Bit</u>
*ON			Data Bit: 7 bit
OFF			Data Bit: 8 bit
6	7		
$\overline{\text{ON}}$	$\overline{\text{ON}}$	<u>Protocol</u>	
ON	OFF	Modem Mode	
OFF	ON	Nonmodem Mode	
*OFF	OFF	ETX/ACK	
		X-On/X-Off	
8	9		
$\overline{\text{ON}}$	$\overline{\text{ON}}$	<u>Parity</u>	
*ON	OFF	Even/Even	
OFF	ON	Odd/Odd	
OFF	OFF	Space/No	
		Mark/No	
10	11	12	<u>Baud Rate</u>
OFF	OFF	ON	110
OFF	ON	OFF	300
OFF	ON	ON	600
ON	OFF	OFF	1200
ON	OFF	ON	2400
ON	ON	OFF	4800
*OFF	OFF	OFF	9600
ON	ON	ON	19200

* Preset at Factory

Table 2-2 **DIP Switch Configurations and Functions (Parallel Mode)**

SWITCH POSITION		FUNCTION
<u>1</u>		<u>Parallel/Serial</u>
ON		Parallel
OFF		Serial
<u>2</u>		<u>Command Set 630/1220</u>
ON		(Always ON; 630)
<u>3</u>		<u>Auto Line Feed On/Off</u>
ON		Auto Line Feed On
OFF		Auto Line Feed Off
<u>4</u>		<u>Line Feed 1/6" / 1/8"</u>
ON		1/6 inch
OFF		1/8 inch
<u>5</u>		<u>ACK In Busy/ACK Out Busy</u>
ON		ACK In Busy
OFF		ACK Out Busy
<u>6</u>		No Function In Parallel
<u>7</u>		<u>Portrait/Landscape</u>
ON		Portrait
OFF		Landscape
<u>8</u>		No Function In Parallel
<u>9</u>		No Function In Parallel
<u>10</u>		No Function in Parallel
<u>11</u>	<u>12</u>	<u>Character Spacing</u>
OFF	OFF	10 CPI
OFF	ON	12 CPI
ON	OFF	15 CPI
ON	ON	Proportional Spacing

Switch 1 - Serial/Parallel

This switch allows for operator selection of either parallel or serial type communication from the host computer.

Switch 2 (Serial) - Half Duplex/Full Duplex

The full duplex mode permits independent simultaneous transmission and reception of data. The half duplex mode allows unidirectional (one way) transmission.

Switch 2 (Parallel) - Command Set 630/1220

This switch provides for command set selection in the parallel mode. Always select 630 (ON).

Switch 3 - Auto Line Feed On/Off

This switch provides for Auto Line Feed On/Off selection in either parallel or serial operations. When some computers send a line of characters to the printer, they end the line with only a carriage return. Unless a line feed is also issued, the paper does not advance. When Auto Line Feed On is selected, a line feed is automatically generated at each carriage return. This feature saves you the trouble of rewriting your printer software driver to send both a carriage return and a line feed at the end of a line. When Auto Line Feed Off is selected, a return is generated and the carriage returns to the left margin, but it remains on the same printing line. A separate Line Feed command is then required if a new printing line is desired.

Switch 4 (Serial) - Stop Bit 1 Bit/2 Bit

When a computer sends data in serial mode, a defined protocol is used. This protocol uses either 1 or 2 stop bits at the end of the data byte. Switch 4 controls whether 1 or 2 stop bits will be used. This setting must conform to the switch setting on the host computer.

Switch 4 (Parallel) - Line Feed 1/6" / 1/8"

In the parallel mode, this switch provides for operator selection of the size of line feed increments, either 1/6" (six lines per vertical inch) or 1/8" (eight lines per vertical inch).

Switch 5 (Serial) - Data Bit 7 Bit/8 Bit

This switch controls whether the length of the data byte is 7-bit or 8-bit data. Seven-bit codes are in the form: XYYYYYYY, where X = 0 and Y = 7-bit ASCII data. Eight-bit codes are in the form: XXXXYYYY, where X = the high-order byte and Y = the low-order byte. Generally, the 7-bit mode is used in serial communication.

Switch 5 (Parallel) - ACK In Busy/ACK Out Busy

ACK In Busy permits busy to become false while "Acknowledge" is true. ACK Out Busy provides that "busy" will be set false after the occurrence of "Acknowledge" and follows: 0 microsecond < delay < 1 microsecond. When operating in the parallel mode, the normal setting for this switch is ACK In Busy.

Switches 6 and 7 (Serial) - Protocol**Modem Mode/Nonmodem Mode**

A modem is a device that converts printer and computer signals for long distance transmission via suitable communications lines. If you have a modem or a similar device connected, position the switches in the modem mode. Position the switches in the nonmodem mode if your printer is directly hooked to your computer.

ETX/ACK, X-On/X-Off

These switches control handshaking signals. Handshaking is the method by which communication is coordinated between your computer and the interface.

Switch 6 has no function in the parallel mode.

Switch 7 (Parallel) - Portrait/Landscape

In the parallel mode, this switch provides operator selection of font rotation to either portrait or landscape printing. Refer to the AP 9208 Reference Manual for more detailed information on font rotation.

Switches 8 and 9 - Parity

Parity is an error checking method used to detect if bits are lost or changed during transmission. Set these switches to correspond with the type of parity used by your computer. Switches 4 and 5 have no function in the parallel mode.

Switches 10, 11, and 12 (Serial) - Baud Rate

In the serial communication mode, these three switches are set to the speed at which data is received and transmitted between the computer and the interface. A baud rate must be selected which matches the speed at which your computer transmits data. The interface supports the following switch selectable baud rates: 110, 300, 600, 1200, 2400, 4800, 9600, and 19200.

Switch 10 has no function in the parallel mode.

Switches 11 and 12 (Parallel) - Character Spacing

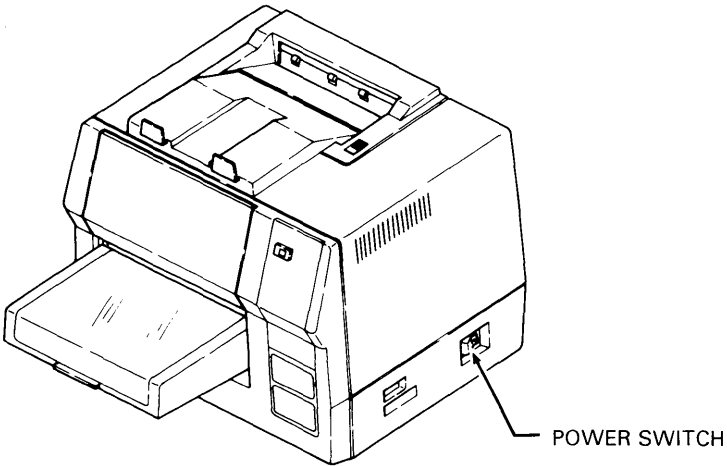
In the parallel communication mode, switches 11 and 12 provide for operator selection of character spacing to one of the following modes: 10 Characters Per Inch (CPI), 12 CPI, 15 CPI, or proportional spacing.

Activity: Power On Test

Step 1

Position the power switch on the right side of the printer to the On (1) position. This action will cause the following sequence of events to occur:

- 1 The fan motors begin rotating.
- 2 The bottom plate of the paper tray elevates.
- 3 The ready indicator on the indicator panel flashes.
- 4 The power indicator on the indicator panel illuminates.



TC9215

Step 2

After approximately 90 seconds, verify that the ready indicator stops flashing and remains lit, indicating that the printer is now in the ready status.

Step 3

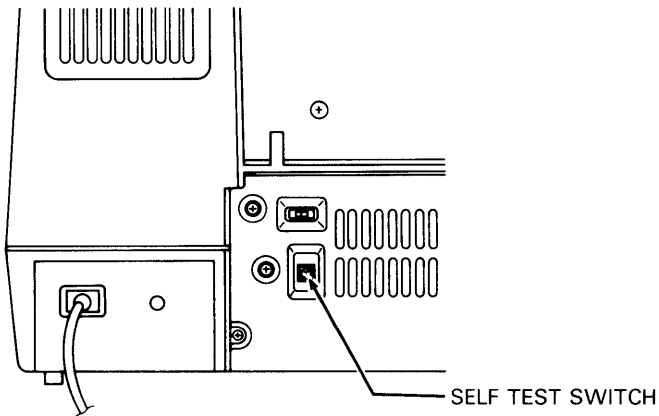
Verify (after approximately 90 seconds) the printer prints an image which graphically depicts the two banks of DIP switches and their current configurations.

Activity: Print Test**Step 1**

Press the On-Line button/indicator to place the printer in the off-line mode.

Step 2

Press the Self-Test switch located on the rear of the printer.



TC9216

Step 3

Verify the self-test pattern (graphic depiction of the current DIP switch configuration) is printed out once, then the self-test is ended.

Note: If the Self-Test switch is pressed for more than 1.5 seconds, the continuous print mode is initiated. To stop the self-test, press the Self-Test switch again, holding it in less than 1.5 seconds.

S U M M A R Y S H E E T		LASER PRINTER Revision Level	
Paper Size: A4	Total RAM: KB	Available RAM: KB	
SWITCH 1		SWITCH 2	
ON OFF			
Serial Input Full Duplex Auto LF off 1 Stop Bit 7 Data Bits			
9600 BAUD Even Parity			
XON/XOFF			
F O N T S I N S Y S T E M			
COURIER 10	1000 3 1000 P	1	!"#\$%&'()*+,-./0123
COURIER 10	1000 3 1000 S	1	!"#\$%&'()*+,-./0123
COURIER 12	1000 3 1000 P	2	!"#\$%&'()*+,-./0123
COURIER 12	1000 3 1000 S	2	!"#\$%&'()*+,-./0123
PRESTIGE ELITE	1000 3 1000 P	3	!"#\$%&'()*+,-./0123
PRESTIGE ELITE	1000 3 1000 S	3	!"#\$%&'()*+,-./0123
BOLD ITALIC PS	1000 3 2000 P	4	!"#\$%&'()*+,-./0123
BOLD ITALIC PS	1000 3 2000 S	4	!"#\$%&'()*+,-./0123
BOLDFACE PS	1000 3 2000 P	5	!"#\$%&'()*+,-./0123
BOLDFACE PS	1000 3 2000 S	5	!"#\$%&'()*+,-./0123
LETTER GOTHIC 12	1000 2 1000 P	6	!"#\$%&'()*+,-./0123
LETTER GOTHIC 12	1000 2 1000 S	6	!"#\$%&'()*+,-./0123
LETTER GOTHIC 15	1000 2 1000 P	7	!"#\$%&'()*+,-./0123
LETTER GOTHIC 15	1000 2 1000 S	7	!"#\$%&'()*+,-./0123
ORATOR 90%	1000 2 1000 P	8	!"#\$%&'()*+,-./0123
ORATOR 90%	1000 2 1000 S	8	!"#\$%&'()*+,-./0123
No errors			

Activity: Manual Feeding

If you need to print on a stock other than ordinary paper, such as gummed labels or transparencies, you must manually feed such items into the printer. Perform the following steps to manually feed the printer as required.

Step 1

Open the paper tray cover.

Step 2

Insert one sheet of the special stock into the paper tray as far as it will go. Ensure that the special stock sheet rests on top of any other paper in the tray and that the side to be printed on faces up.

Step 3

Close the paper tray cover.

Step 4

Command the printer to print one page only from the host computer.

Activity: Replacing the Toner Collection Bottle

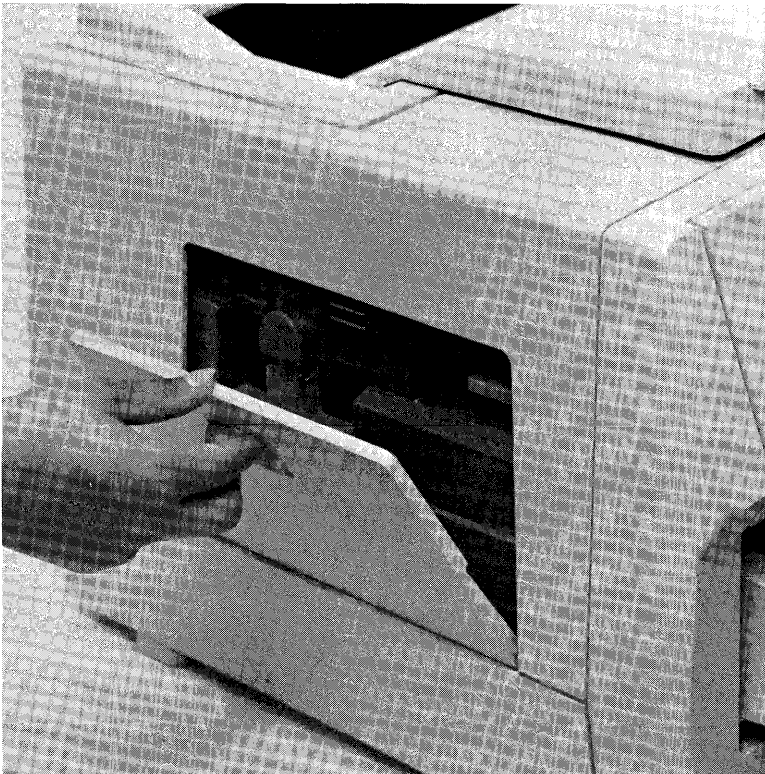
When the Replace Toner Collection Bottle indicator flashes, replace the used (filled) toner collection bottle as follows. A new toner collection bottle is included in Kit A. (Refer to appendix A.)

Note: Concurrent illustrated instructions for replacing the toner collection bottle are displayed on the inside of the left side cover.

Step 1

Open the left side cover.

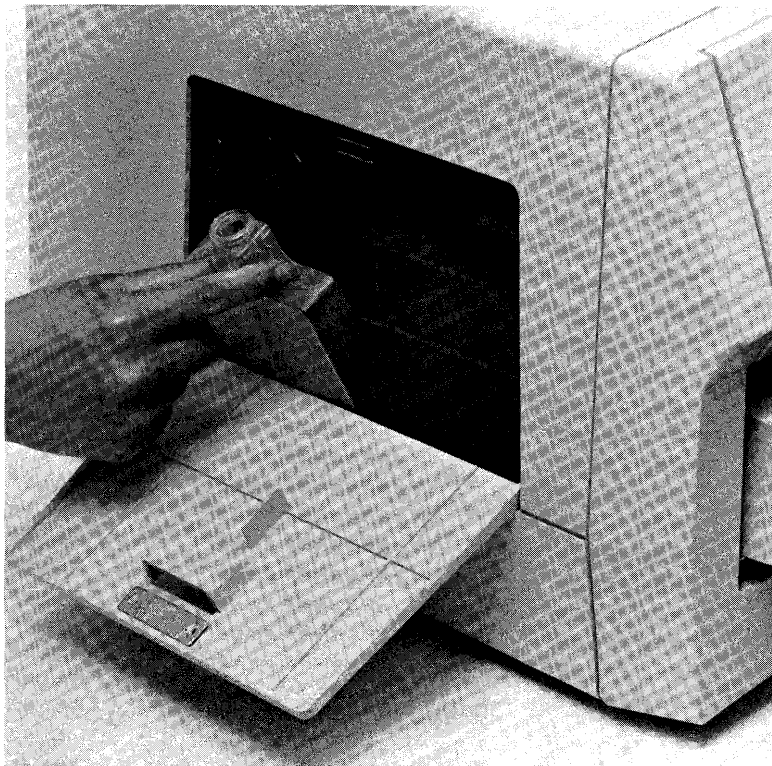
Figure 2-18



TC9218

Step 2

Gently remove the toner collection bottle by gripping the neck of the bottle, pushing the bottle down slightly against the spring, then pulling it out.



TC9219

Step 3

Remove the cap from the new (empty) toner collection bottle and insert the new bottle into the left side compartment, ensuring the mouth of the bottle is properly seated on the toner discharge.

Step 4

Place the cap from the new bottle onto the old (full bottle), then dispose of it.

Step 5

Close the left side cover.

Maintaining the AP 9208 Printer

Warning: *Disconnect the AC power cord prior to performing any of the following maintenance procedures on the AP 9208 printer.*

In order to keep your AP 9208 printer operating at optimum performance, you will need to perform the regular maintenance activities described in this section.

To perform these maintenance procedures, you will need the consumables and other materials found in Kit A and Kit B. (Refer to appendix A for a description of the kits and the items they contain.)

The following maintenance activities must be performed to maintain the highest print quality from your AP 9208 printer:

When the Change Toner Cartridge indicator flashes (3000 Page Maintenance):

- Replace the toner cartridge
- Replace the toner cleaning pad

When the Change OPC Cartridge indicator flashes (10,000 page maintenance):

- Replace the shield glass
- Replace the charge corona unit
- Replace the transfer corona unit
- Clean the quenching lamp
- Clean the separation pawls
- Replace the ozone filter

When 150,000 pages have been printed:

- Replace the separation roller

Activity: 3000 Page Maintenance

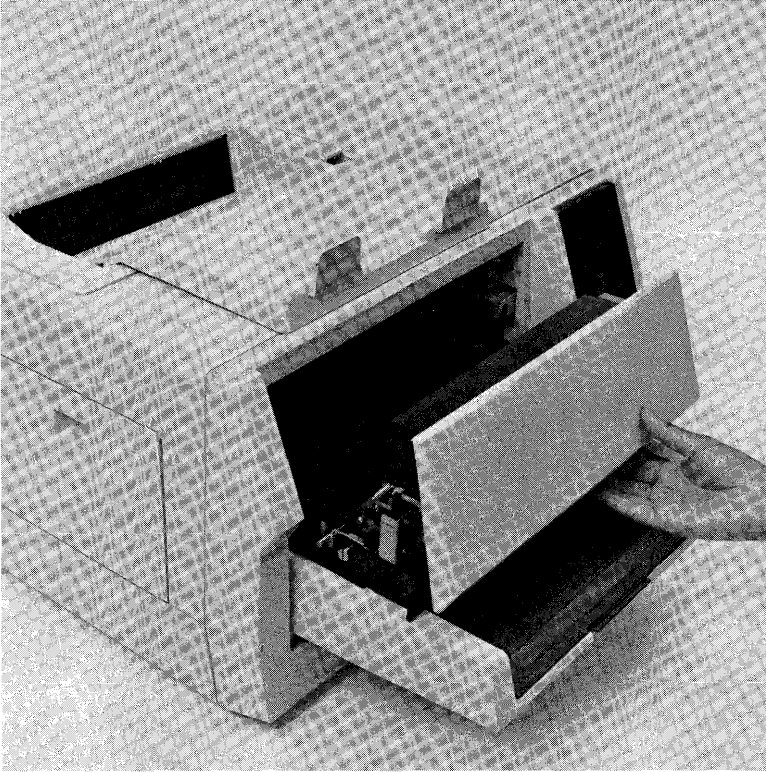
Replacing the Toner Cartridge

When the Change Toner Cartridge indicator flashes, there is insufficient toner for proper printing. A new toner cartridge is included in Kit A. (Refer to appendix A.) Change the toner cartridge as follows:

Note: *Concurrent illustrated instructions for changing the toner cartridge are located on the top and inside the toner cartridge cover.*

Step 1

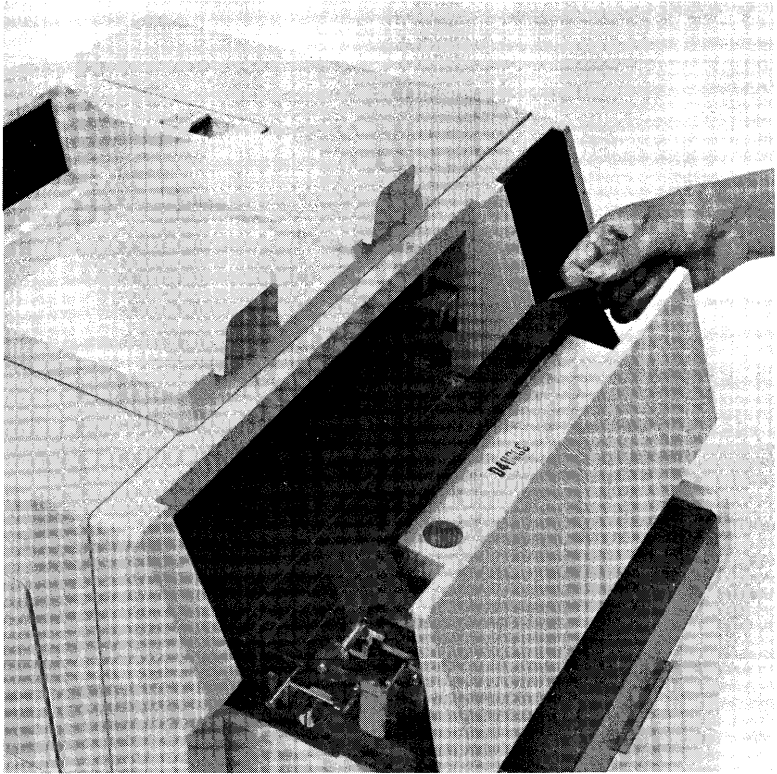
Slide the development drawer out approximately half way.



TC9220

Step 2

Open the toner cartridge cover.



TC9221

Step 3

Remove the empty toner cartridge from the development tank as follows:

- 1 Slide the toner cartridge to the left until the projections on the cartridge are clear of the notches on the tank.
- 2 Lift the empty toner cartridge out of the development drawer and discard it.

Step 4

Take a new toner cartridge out of its package (from Kit A), and shake it vigorously 20 or more times.

Step 5

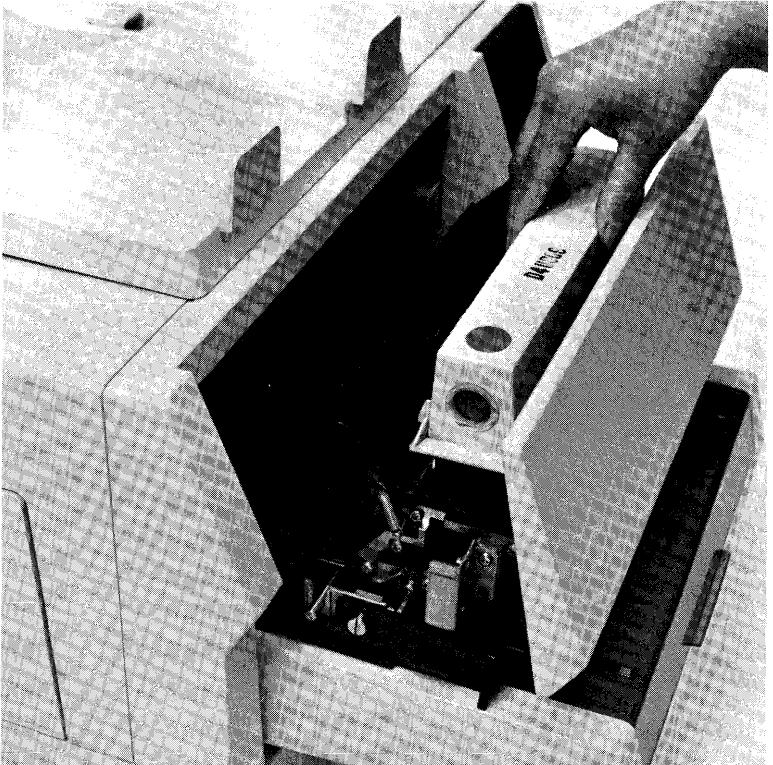
Remove the tape (two pieces) securing the foil shield to the end of the cartridge.

Step 6

Place the toner cartridge such that the end with the plastic plug is on the left, and the foil shield is facing down into the development tank.

Step 7

Set the cartridge on the development tank, and insert the projections on both sides of the cartridge into the notches cut into the tank.



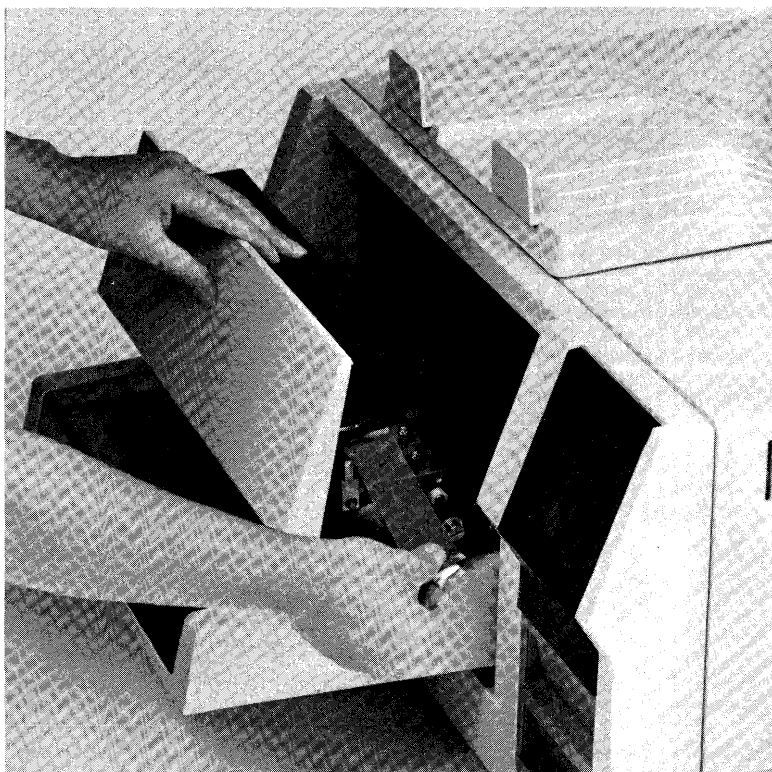
TC9222

Step 8

Slide the cartridge to the right to secure it on the tank.

Step 9

Lay the end of the shield down flat as illustrated.



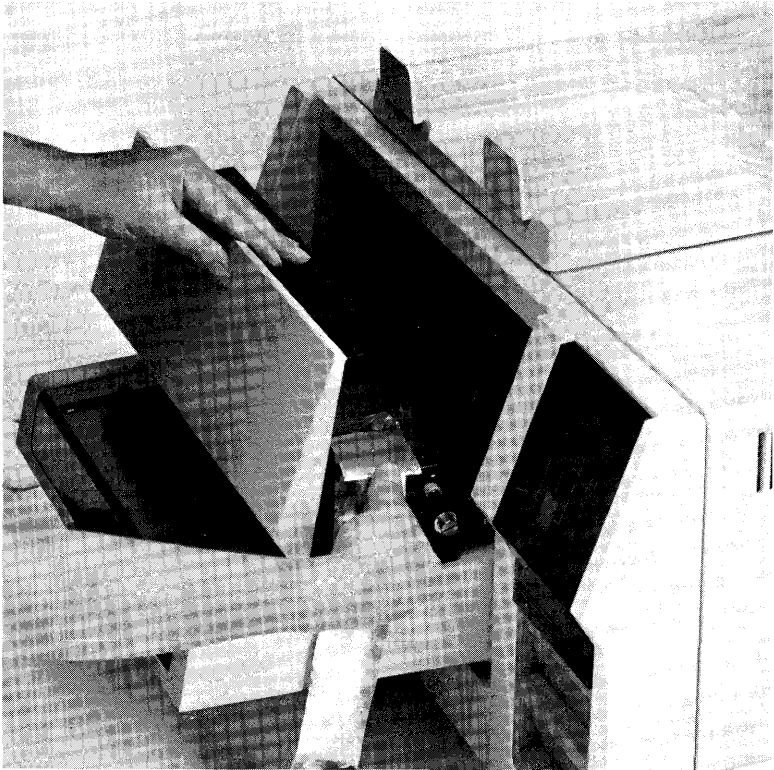
TC9223

Step 10

Close the toner cartridge cover.

Step 11

While pressing down gently on the toner cover, pull the shield out horizontally in a smooth, continuous motion until a second shield is visible. Then, gripping the green tab, pull the second shield out completely, in the same manner.



TC9224

Step 12

Slide the development drawer back to its operating (closed) position.

Replacing the Cleaning Pad

When the Change Toner Cartridge indicator flashes, the cleaning pad needs to be replaced in addition to the toner cartridge. Replace the cleaning pad as follows. A new cleaning pad is included in Kit A. (Refer to appendix A.)

Warning: *Wait at least 40 minutes until the printer is completely cooled before touching the fusing unit. Touch only green colored areas.*

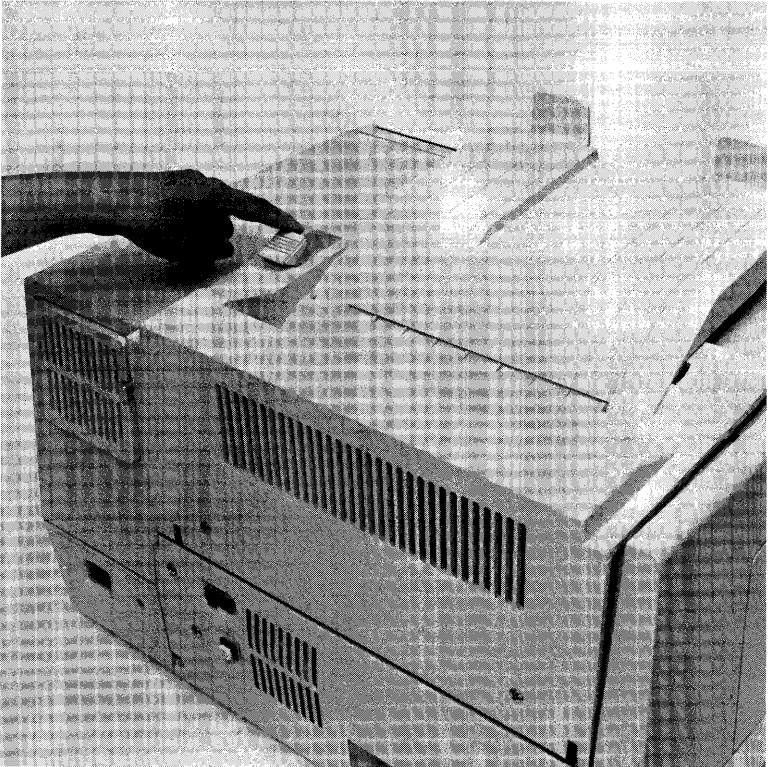
Note: *Concurrent illustrated instructions for replacing the cleaning pad are displayed under the paper exit cover.*

Step 1

Verify the printer power switch is positioned to off (O) and the AC power cord is disconnected from the power outlet. Also verify the printer is sufficiently cooled.

Step 2

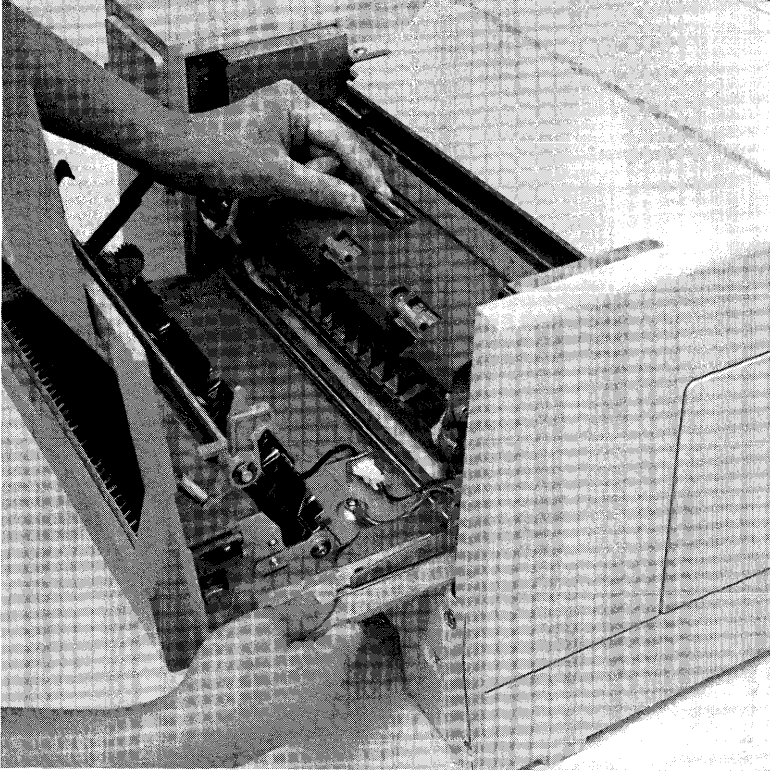
Lift the release lever and open the paper exit cover.



TC9225

Step 3

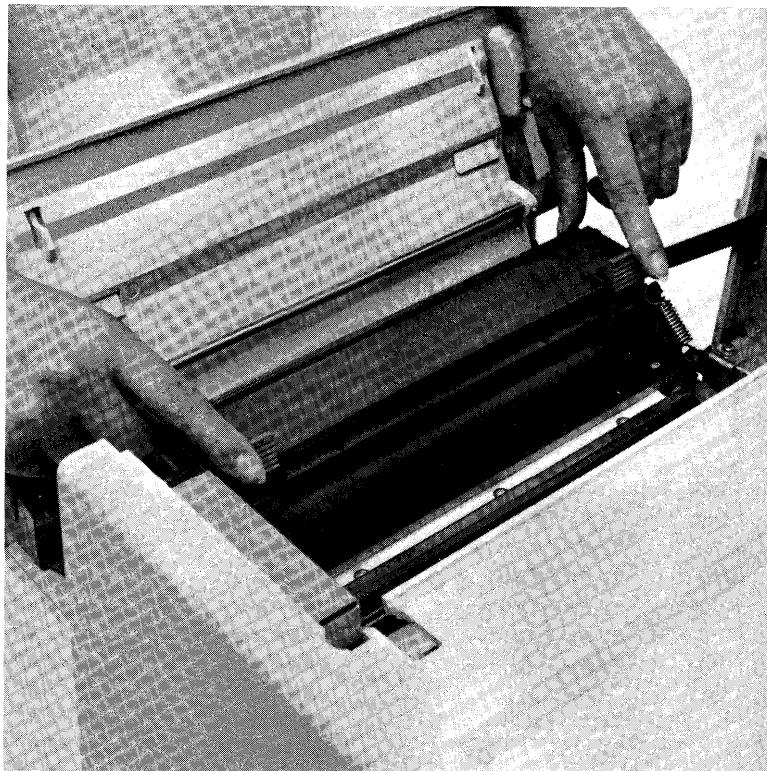
Open the fusing unit by pushing down on the tension lever and at the same time, push back on the fusing unit lock lever. Then swing the fusing unit 90 degrees out toward the paper exit cover.



TC9226

Step 4

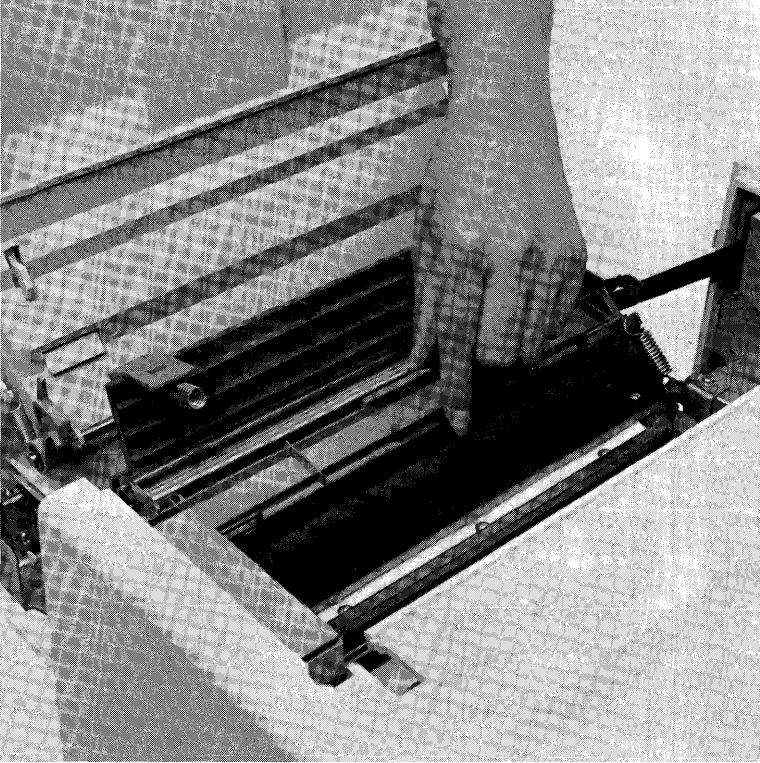
Open the cover of the fusing unit by pushing back on the two ridged, latches.



TC9227

Step 5

Remove the cleaning pad by gripping the raised ledges between your thumb and forefinger, and lift the pad out.



TC9228

Step 6

Remove a new cleaning pad from the kit and place it onto the fusing unit with the pad side facing down on the roller.

Step 7

Close the cover of the fusing unit by pressing down on the ridged, latches.

Step 8

Return the fusing unit back to its operating position.

Step 9

Close the paper exit cover.

Activity: 10,000 Page Maintenance

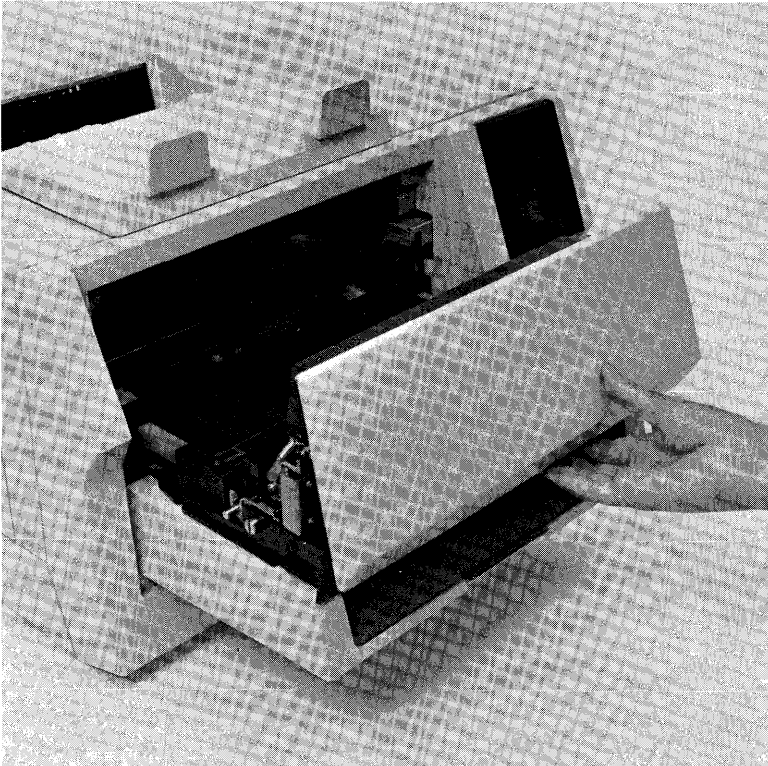
When the Change OPC Cartridge indicator flashes, replace the OPC cartridge and, in addition, clean or replace all items as described in this section. All new parts required for the following replacements are included in Kit B. (Refer to appendix A for a list of consumables and items contained in kits A and B.)

Replacing the OPC Cartridge

Replace the OPC cartridge as follows:

Step 1

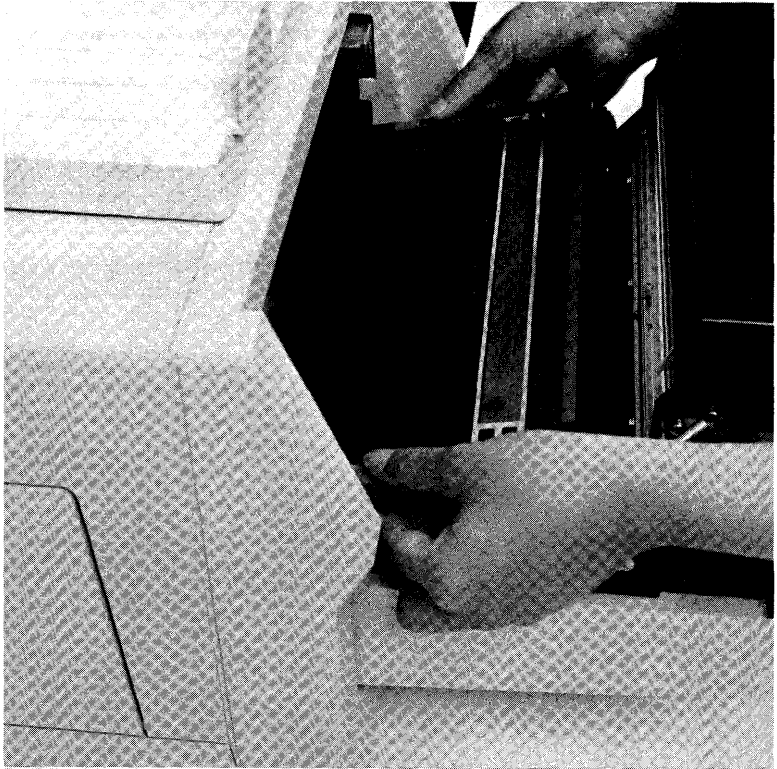
Pull the development drawer out until it stops, allowing it to rest on the paper tray as it slides out.



TC9229

Step 2

Grip the green colored areas on both sides of the OPC cartridge.

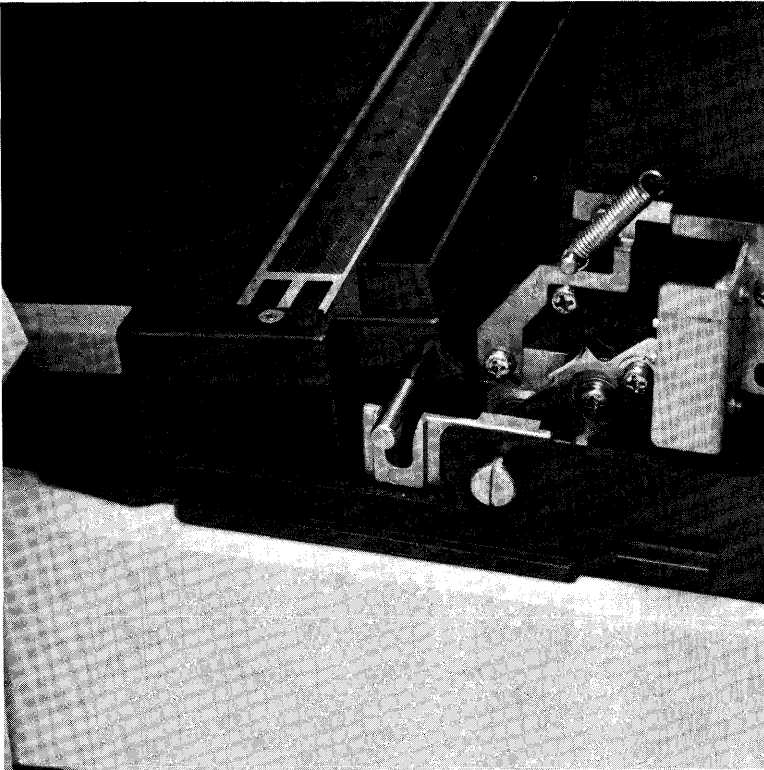


TC9230

Step 3

Tilt the front side of the OPC cartridge upwards and lift the cartridge out of the development drawer.

Caution: *The remainder of this procedure (Steps 4 through 11) must be accomplished within five minutes since exposure of the OPC to ambient light will cause a deterioration of the OPC belt, resulting in less than optimum printing performance.*



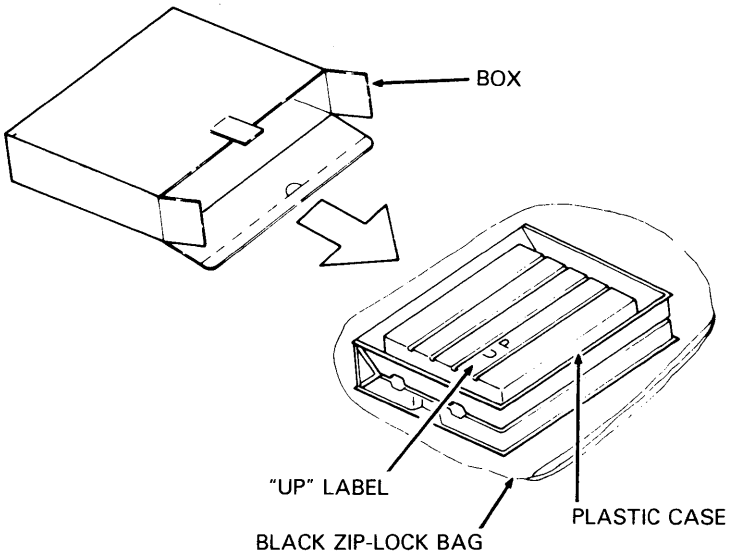
***Note:** Review the illustrations and instructions for replacing the OPC cartridge prior to start of Step 4. If you are interrupted for more than five minutes while performing the remainder of this procedure, place the OPC cartridge back in its plastic case, and then into the black, zip-lock bag. Close the bag until you are ready to resume the operation.*

Step 4

Remove the OPC cartridge from its cardboard box.

Step 5

Open the black, zip-lock bag, take out the plastic case containing the OPC cartridge, and set the case down on a flat surface with the side labeled "UP" facing up (arrow on tape pointing down).



TC9232

Step 6

Remove the securing tape and open the plastic case.

Step 7

Remove the two green, ring-shaped spacers from the OPC cartridge.

Step 8

Remove the protective paper sheet from the cartridge, gripping only the securing tape.

Step 9

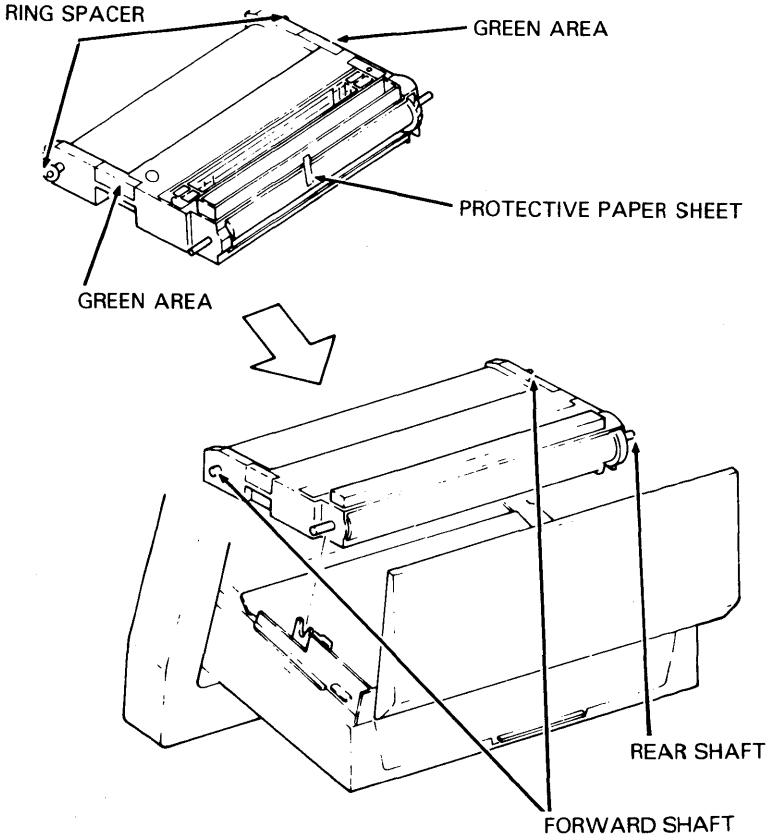
Grip the green area on each side of the OPC cartridge, and lift the OPC cartridge from the plastic box.

Step 10

Place the OPC cartridge in the development drawer as follows:

- 1 Ensure the ridged side of the cartridge faces down into the drawer.
- 2 Tilt the rounded side (opposite gear) of the OPC cartridge down into the drawer and place the forward two metal shafts into the tracks mounted on the drawer.

3 Push down gently on the OPC cartridge so that the rear two metal shafts seat into the U-shaped brackets.



TC9233

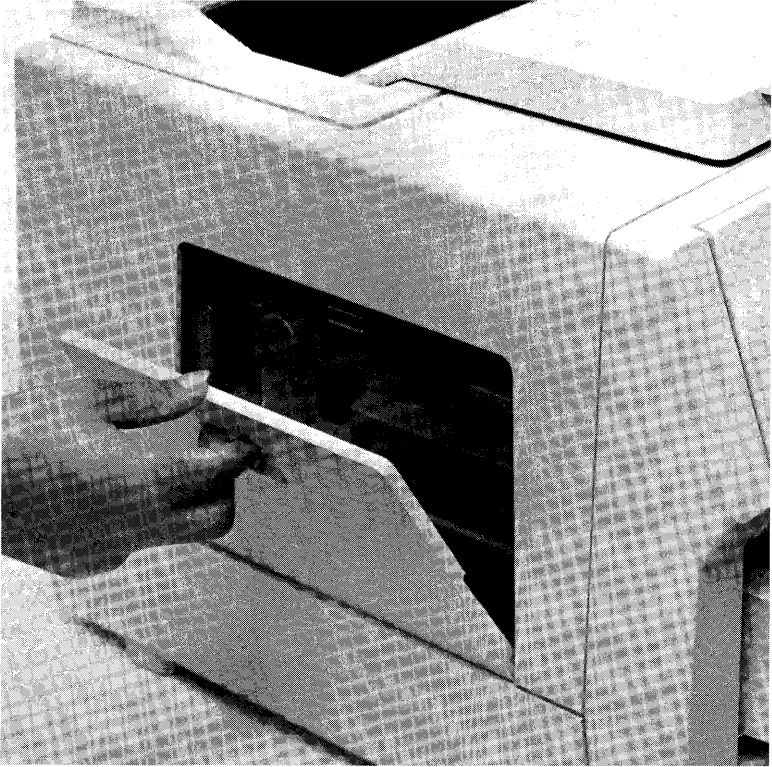
Step 11

Slide the development drawer (slowly) back into its operating (closed) position.

Replacing the Shield Glass

Step 1

Open the left side cover.

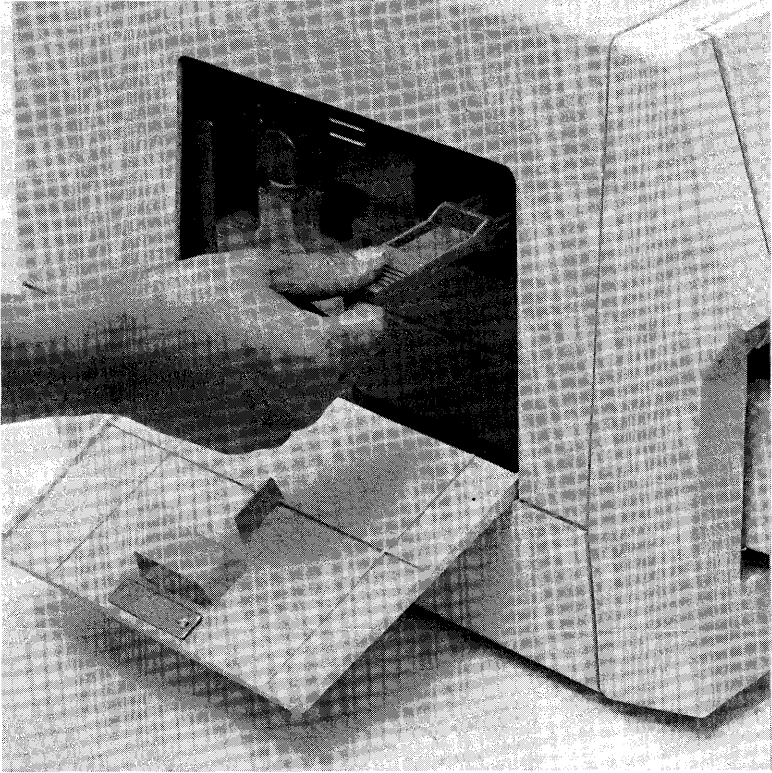


TC9234

Step 2

Pull the shield glass out by gripping the green, ridged end (with arrow) and sliding it from the printer.

Figure 2-35



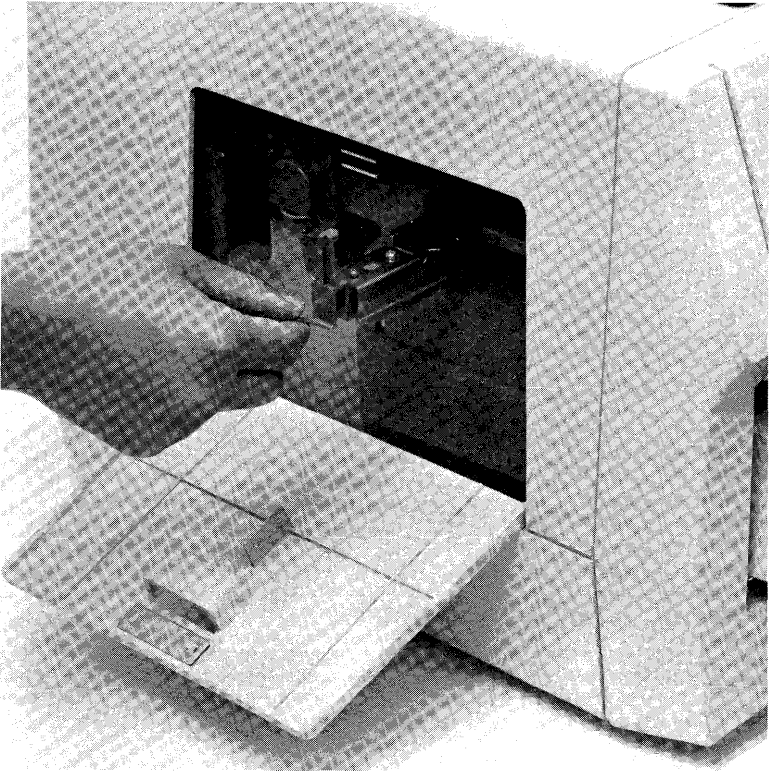
TC9235

Step 3

Insert the new shield glass, by holding the end marked with an arrow, and sliding the shield glass into the printer as far as possible until it is secure in place.

Replacing the Charge Corona Unit**Step 1**

Pull out the charge corona unit (located just left of the shield glass unit) by gripping the green, ridged tab and sliding the unit from the printer.



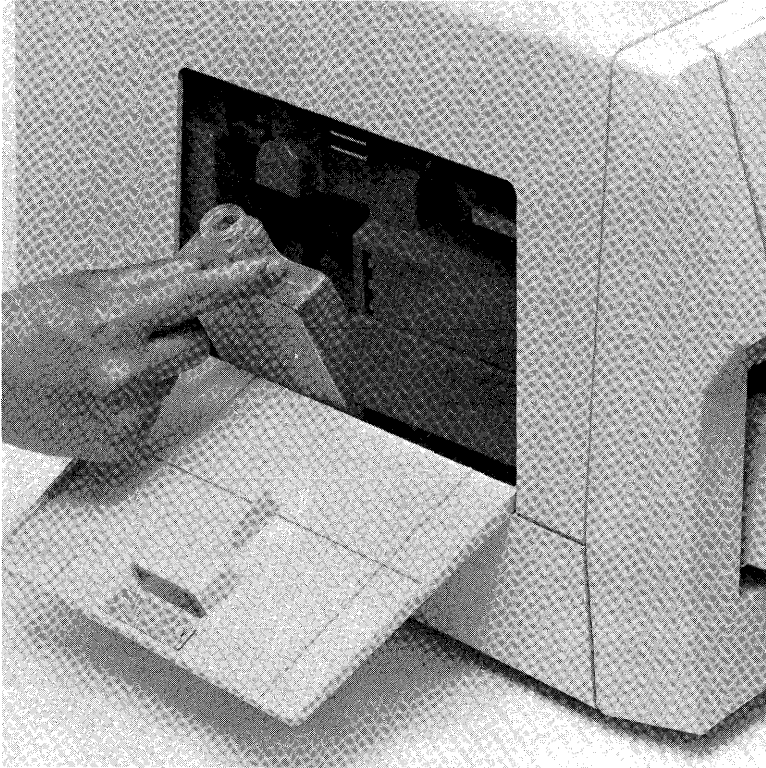
TC9236

Step 2

Insert the new charge corona unit by holding the end tab, and sliding the unit into the printer as far as possible.

Replacing the Transfer Corona Unit**Step 1**

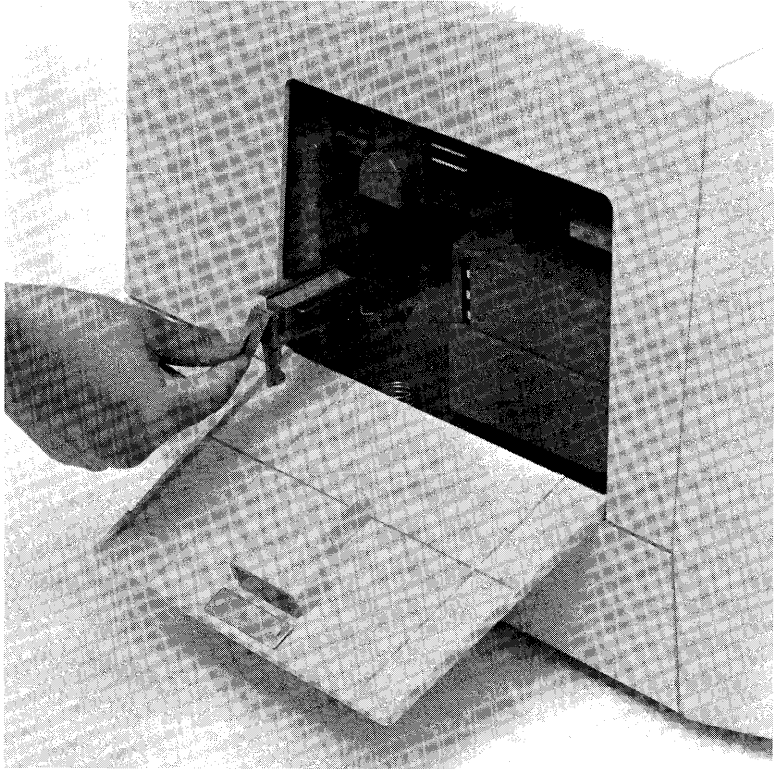
Carefully remove the toner collection bottle from the printer.



TC9237

Step 2

Remove the transfer corona unit, located in the toner collection bottle recess, by gripping the green, ridged, end tab and sliding the unit from the printer.



TC9238

Step 3

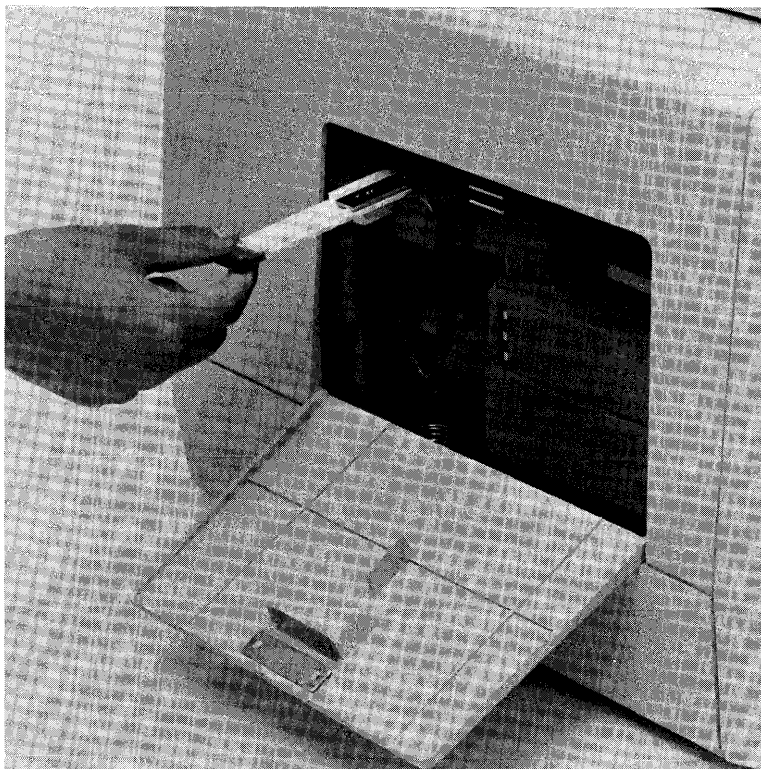
Insert the new transfer corona unit by holding the ridged end tab, and sliding the unit into the printer as far as possible.

Step 4

Replace the toner collection bottle, ensuring that the mouth of the bottle is secure on the discharge.

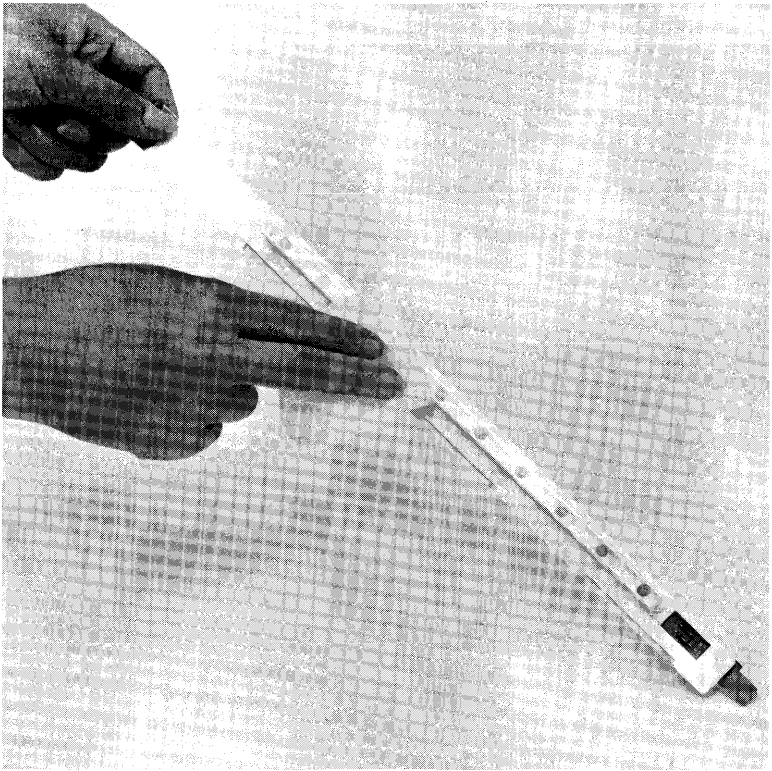
Cleaning the Quenching Lamp**Step 1**

Remove the quenching lamp (located just left of the toner collection bottle) by gripping the green end tab and sliding the quenching lamp out of the printer.



Step 2

Wipe the clear, plastic surface of the quenching lamp cover with a damp cloth.



TC9240

Step 3

Reinsert the quenching lamp by sliding it into the printer as far as possible.

Step 4

Close the left side cover.

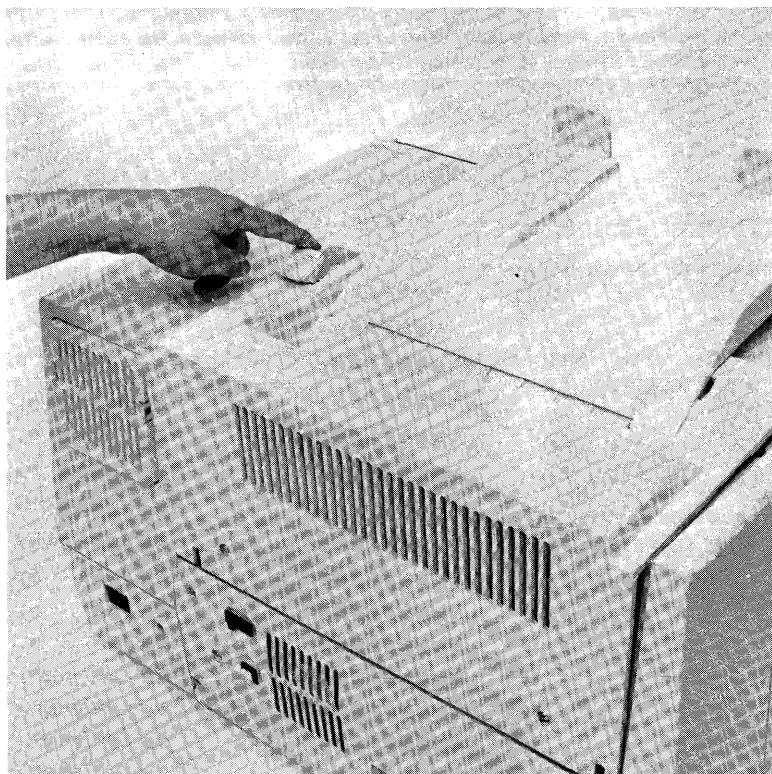
Cleaning the Separation Pawls**Step 1**

Verify the power switch is positioned to off (O), and disconnect the power cord from the AC outlet.

Warning: *A burn hazard exists in performing this procedure. Wait at least 40 minutes until the printer is completely cooled before touching the fusing unit.*

Step 2

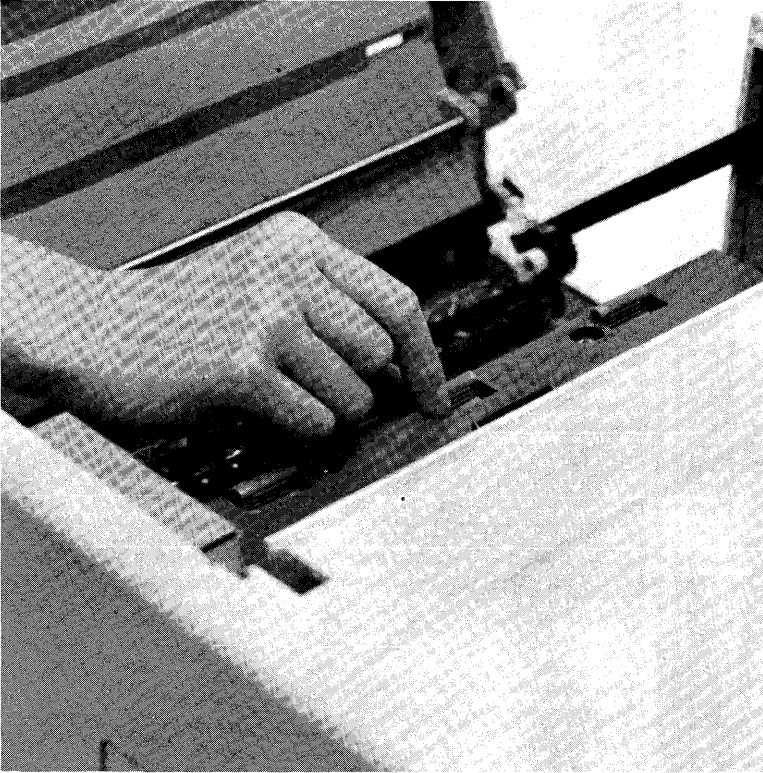
Open the paper exit cover by lifting the release lever.



TC9241

Step 3

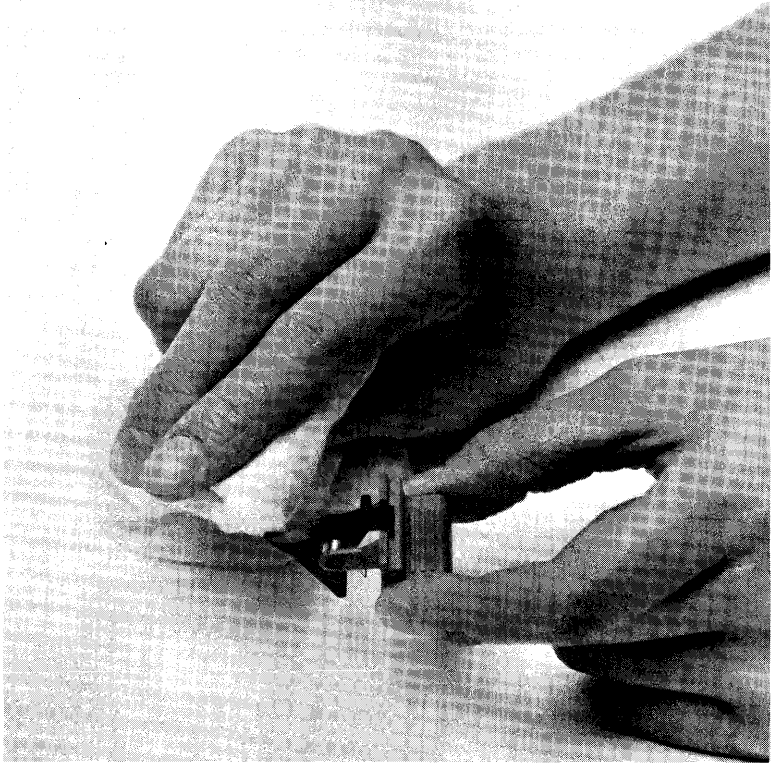
Remove the three separation pawls by pulling forward on the raised ledge of the pawl, and lifting the pawl out.



TC9242

Step 4

Wipe each pawl clean with soft, lint-free cloth or tissue paper.



TC9243

Step 5

Reinsert the three separation pawls by pressing them down into their slots until they lock into place.



TC9244

Step 6

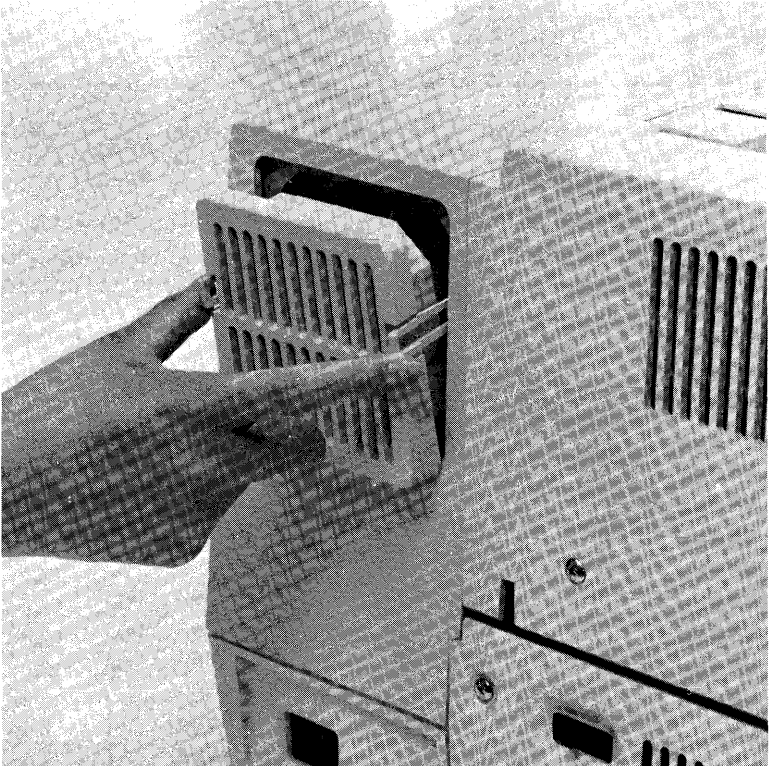
Close the paper exit cover.

Replacing the Ozone Filter

Note: The ozone filter is not marked with green handling areas.

Step 1

Grip the raised clips on both sides of the ozone filter (located on the rear of the printer) and pull the filter out.



TC9245

Step 2

Install the new ozone filter by gripping the two clips and inserting the filter into the printer until the clips lock into place.

Activity: 150,000 Page Maintenance

When the total page counter indicates that 150,000 pages have been printed, replace the separation roller assembly as follows:

Caution: *The following procedure (Steps 1 through 9) must be accomplished within five minutes since exposure of the OPC cartridge to ambient light will cause a deterioration of the OPC belt, resulting in less than optimum printing performance.*

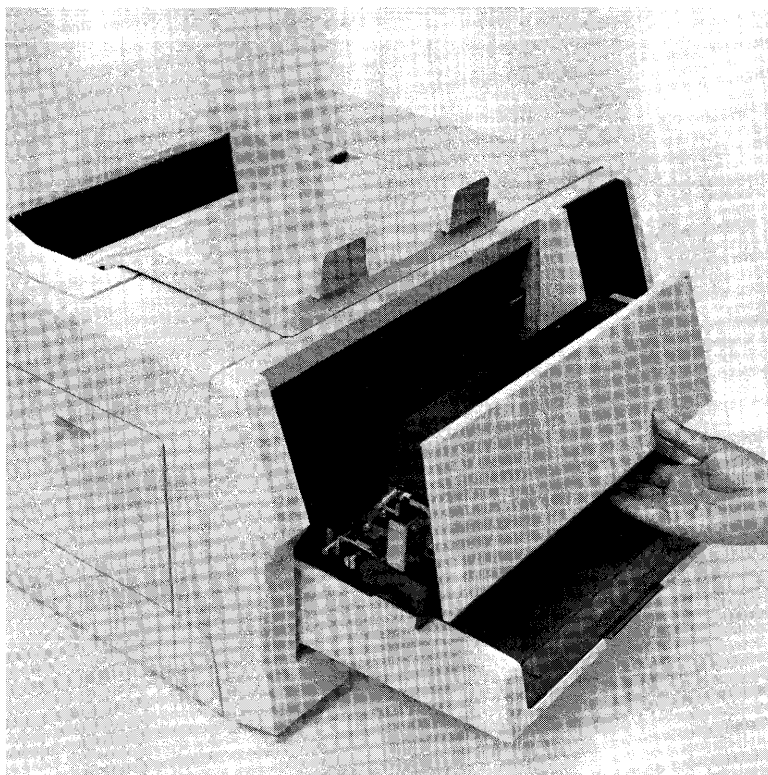
Note: *Prior to performing this procedure, you must obtain a replacement separation roller by contacting your local Burroughs representative to place an order.*

Step 1

Verify the total page count has reached 150,000 pages by viewing the total page counter on the right side of the printer.

Step 2

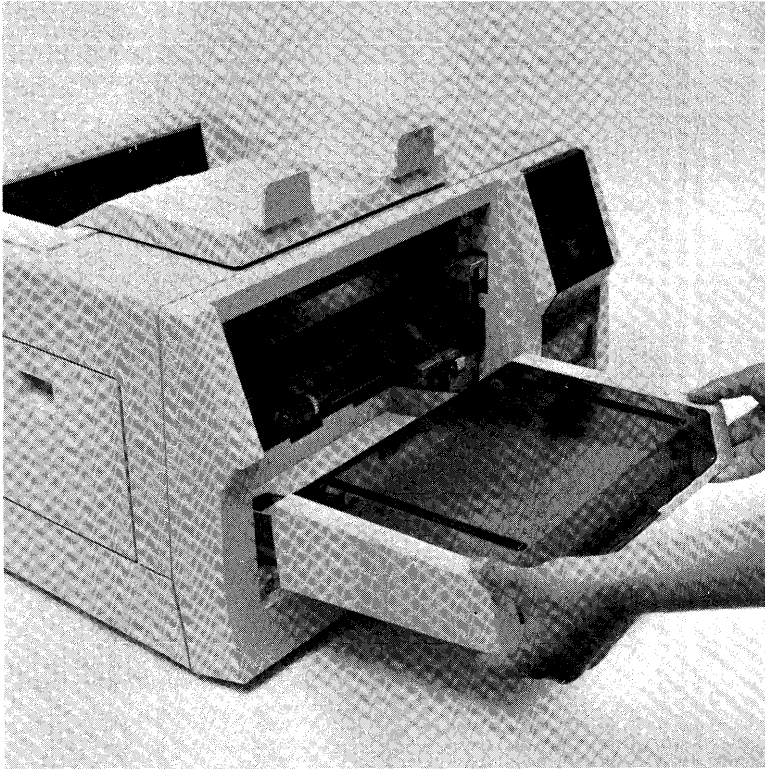
Slide the development drawer out, then lift it and remove it completely from the printer.



TC9246

Step 3

Remove the paper tray by lifting up on the front and pulling the tray out of the printer.



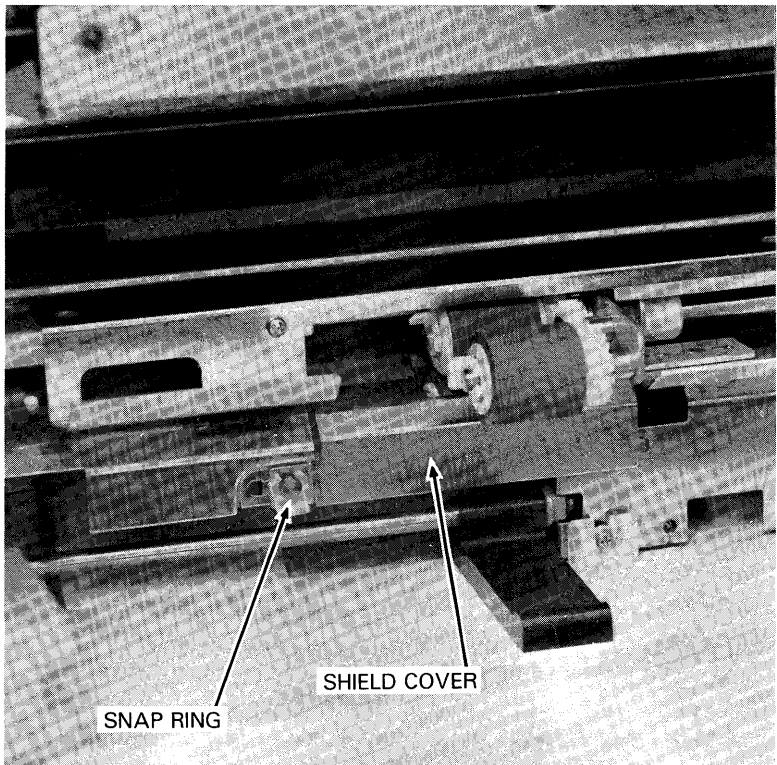
TC9247

Step 4

Remove the plastic snap ring securing the shield cover.

Step 5

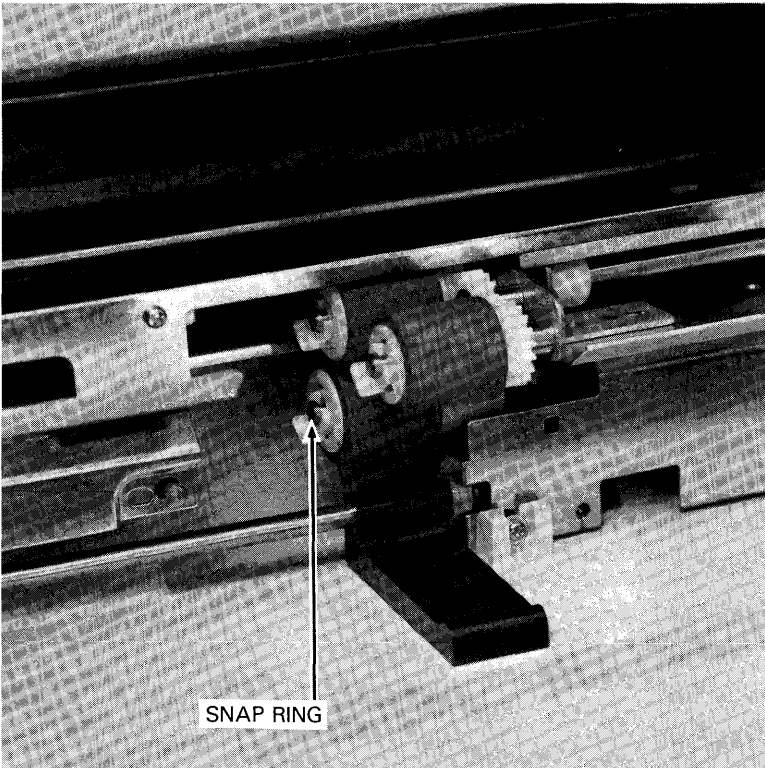
Remove the shield cover by lifting the left end off the post and sliding the cover to the left.



TC9248

Step 6

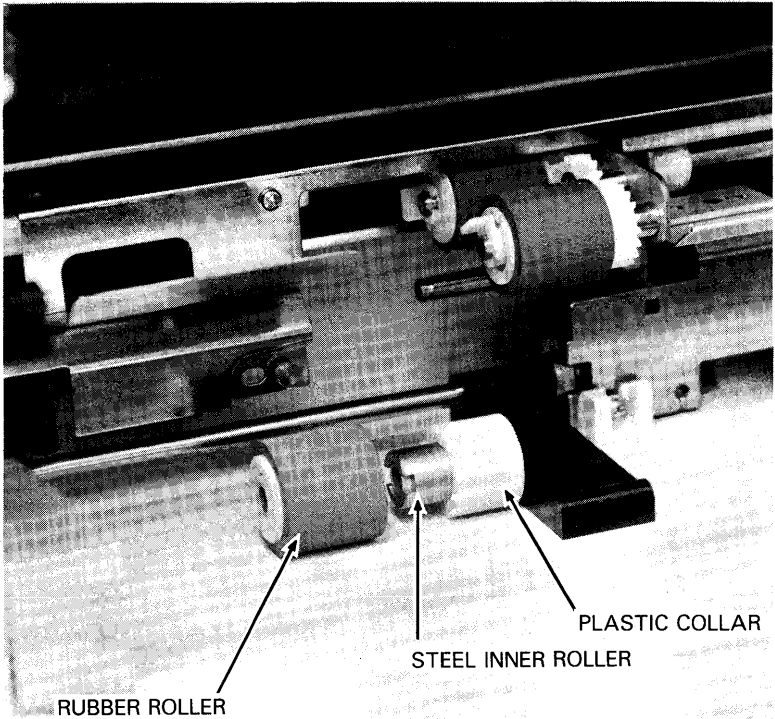
Remove the plastic snap ring on the separation roller shaft (lower of three rollers).



TC9249

Step 7

Slide the separation roller assembly towards the left and remove it from the roller shaft. The roller assembly consists of two parts: a steel inner roller (with coil) covered by a white, plastic collar, and the rubber roller.



TC9250

Step 8

Insert a new separation roller assembly as follows:

- 1 Slide the steel inner roller (with the white cover in place over the coil end) onto the roller shaft. Ensure the smaller diameter end of the the steel inner roller is on the left.
- 2 Verify the two notches on the right end of the steel inner roller seat onto the two pins on the roller shaft.
- 3 Slide the rubber roller onto the roller shaft, ensuring the end of the roller with the larger center hole is to the right, abutting the white cover on the inner roller.
- 4 Rotate the rubber roller until you feel its two teeth (inside) seat into the two notches on the inner roller.

Step 9

Reinstall the snap ring on the separation roller shaft by holding the shaft still with your forefinger and index finger (left hand), and pushing the snap ring into place with your thumb. Ensure the snap ring locks onto the shaft.

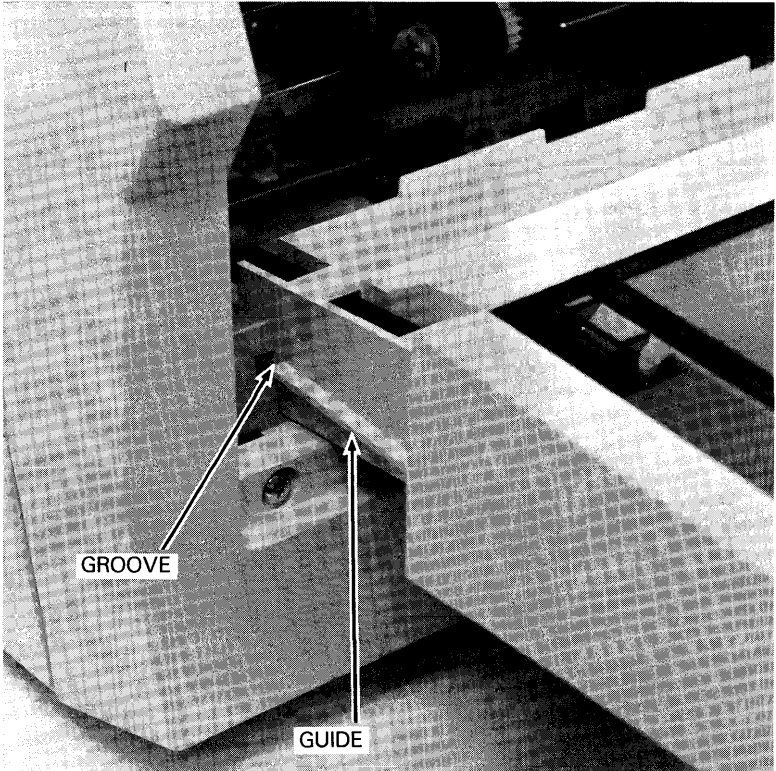
Step 10

Place the shield cover back in position as follows:

- 1 Inserting the right end tab into the hole and position the left end on the post.
- 2 Replace the snap ring on the shield cover, ensuring the ring locks in place.

Step 11

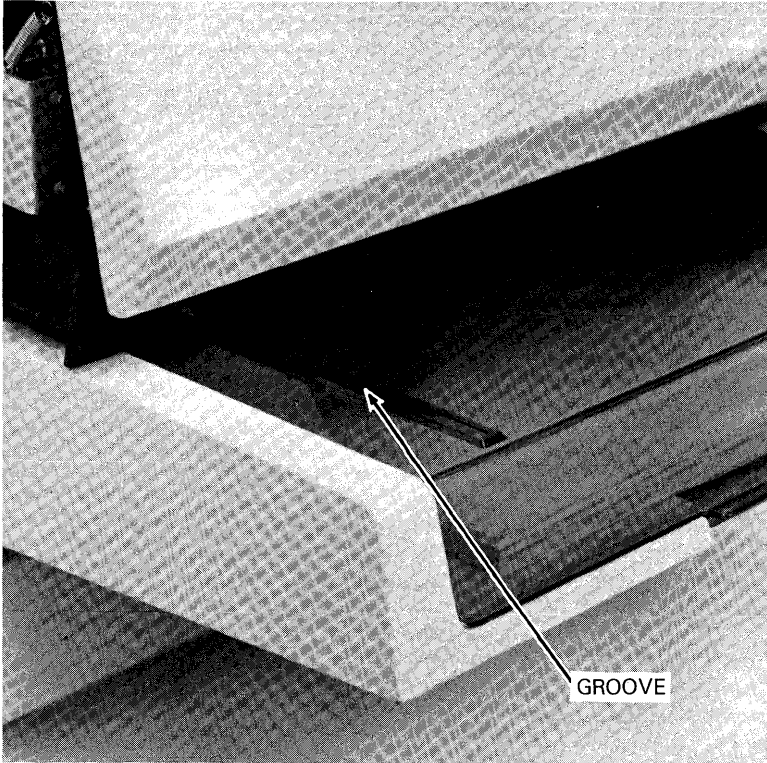
Place the paper tray back into its operating position in the printer by matching the tray sides with the grooves in the tray guides, then pushing down on the tray.



TC9251

Step 12

Position the development drawer on the paper tray so that the ridges on the drawer fit exactly into the grooves between the rails on the paper tray.



TC9252

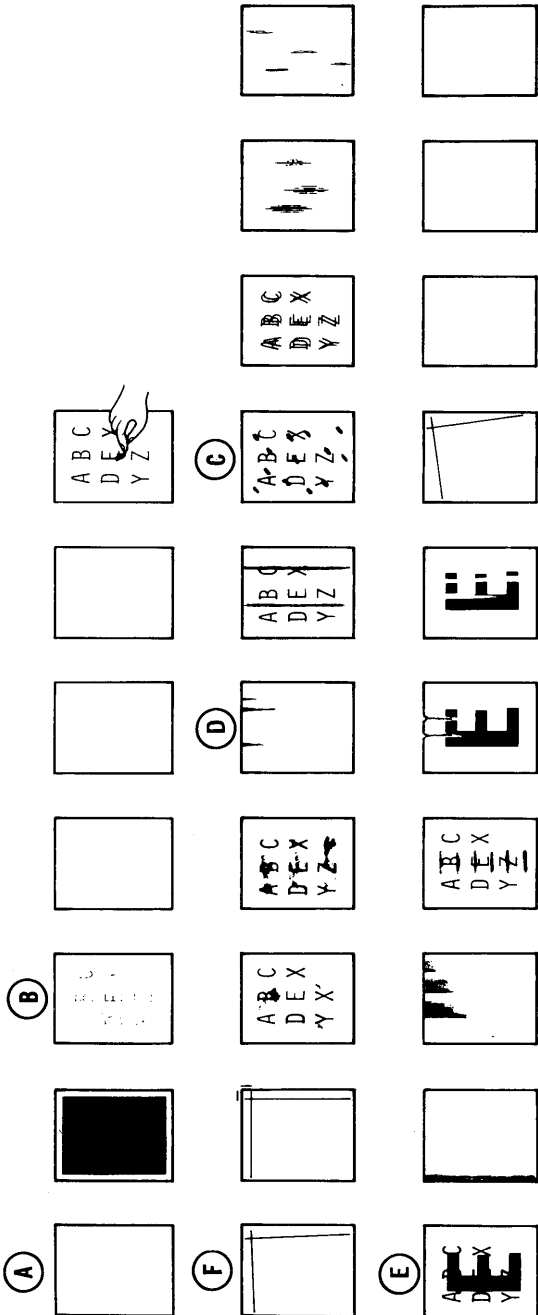
Step 13

Push the development drawer along the rails into the printer as far as it will go, thus returning the drawer to its operating (closed) position.

“What IF” Problem Solving for the AP 9208 Printer

This section may help you answer some questions on the printer's operation. The left column lists some typical printer problems you may encounter. The right column presents actions which will usually solve the problem. If, in the unlikely event, you are unable to resolve your problem by performing these corrective measures, contact a qualified Burroughs Service Technician.

Problem	Corrective Action
The printer does not work and the Power indicator is off.	Make sure that the power cord is plugged into a live AC outlet and the Power On/Off switch (I/O) is in the On (I) position.
The Power and Ready indicator lights are on, but the printer does not operate.	Verify the I/F cable is installed properly.
Printed paper exits blank. ④	Replace the charge corona unit.
Printing is too light. ⑥	Replace the charge corona unit, the transfer corona unit, and the OPC cartridge.
Stray toner is attached to the printed pages. ③	Clean the quenching lamp and replace the OPC cartridge and the cleaning pad.
Streaks appear from the leading portion of the printed paper. ⑩	Clean the separation pawls and replace the OPC cartridge.
Ghosts of characters printed on previous sheet appear in the same location on subsequent sheets. ⑤	Clean the quenching lamp and replace the OPC cartridge.
Pages are printed in irregular skew. ⑦	Verify paper tray is correctly installed and verify paper size guide and paper size switch correlate.
Black line(s) appear at the same location on every page. ⑧	Replace the shield glass.
Paper misfeeds frequently with more than two sheets fed at the same time.	Replace the separation roller.



TC9253

Consumables

General Description

These and other supplies can be ordered by contacting your Burroughs Service Center or representative.

KIT A

Toner Cartridge	2**
Toner Collection Bottle	1
Toner Collection Bottle Cap	1
Cleaning Pad	2

KIT B

OPC Cartridge	1
Shield Glass	1
Corona Unit	2
Ozone Filter	1

PAPER

Weight: 16 lb - 24 lb (60 g/m² - 90 g/m²)

** 150 g/cartridge

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Documentation Evaluation Form

Title: AP 9208 Printer
Installation and
Operations Guide

Form No: 1190758
Date: October 1985

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