Installing and Using the LA50 Printer

digital

Installing and Using the LA50 Printer

Prepared by Educational Services
of
Digital Equipment Corporation

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VAX	OMNIBUS	VT
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CONTENTS

Introduction

INTRODUCTION

This document tells you how to install, use, maintain, troubleshoot, and configure your LA50 printer. Before you continue, make sure you have all the items shown below. If any items are missing or damaged, immediately contact your Sales Representative and Delivery Agent.
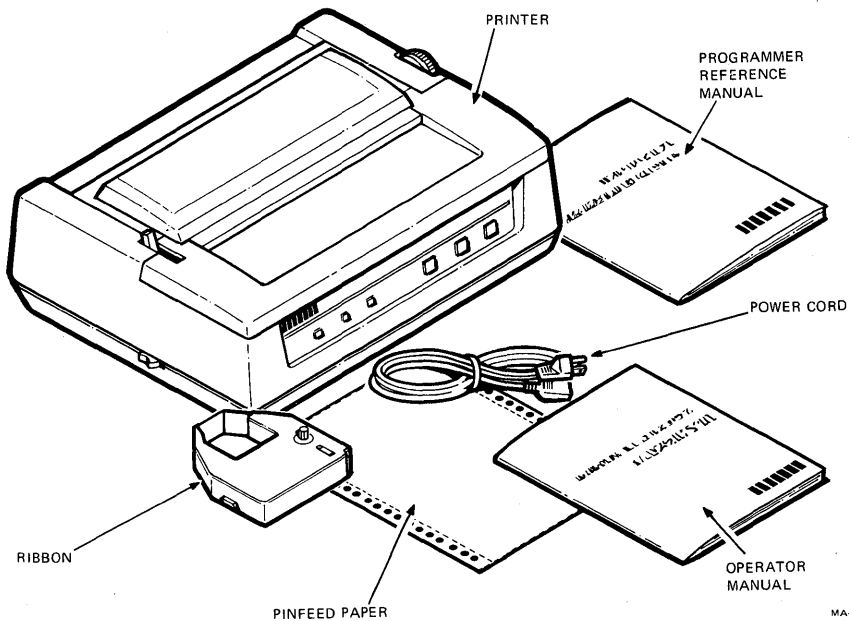
INSTALLING PRINTER

Packing Removal

1. Remove access cover.
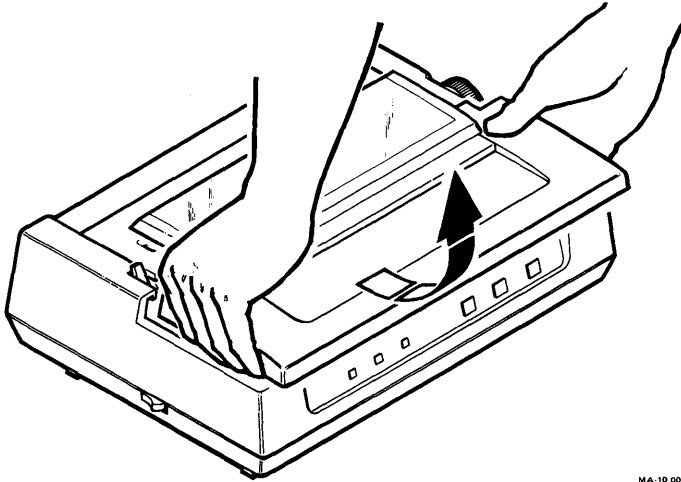
MA-10,000

2. Remove cardboard retainer.
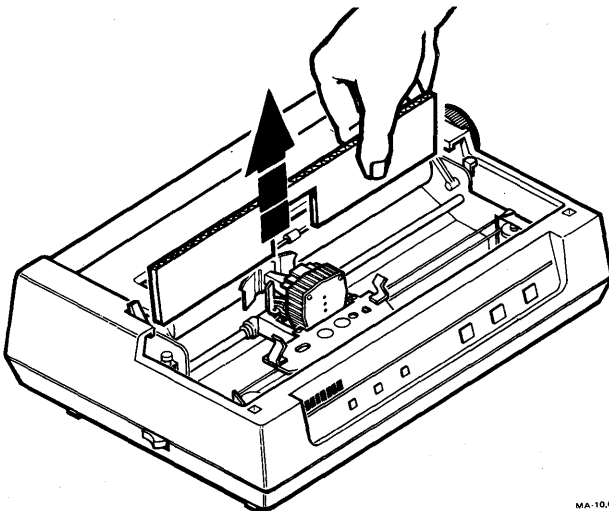
MA-10,001

Installing Ribbon Cartridge

1. Take up slack in ribbon by turning knob in direction indicated.
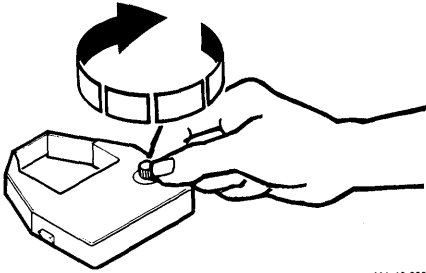
MA-10,002

2. Position cartridge between clips and push down into place.
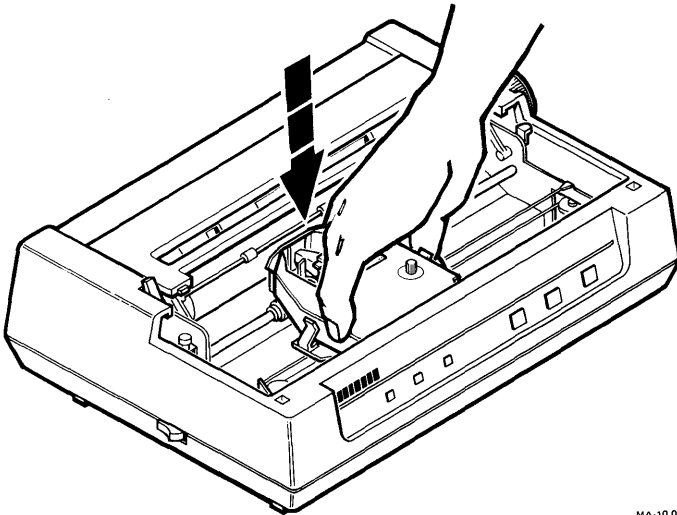
MA-10,003

3. Replace access cover.
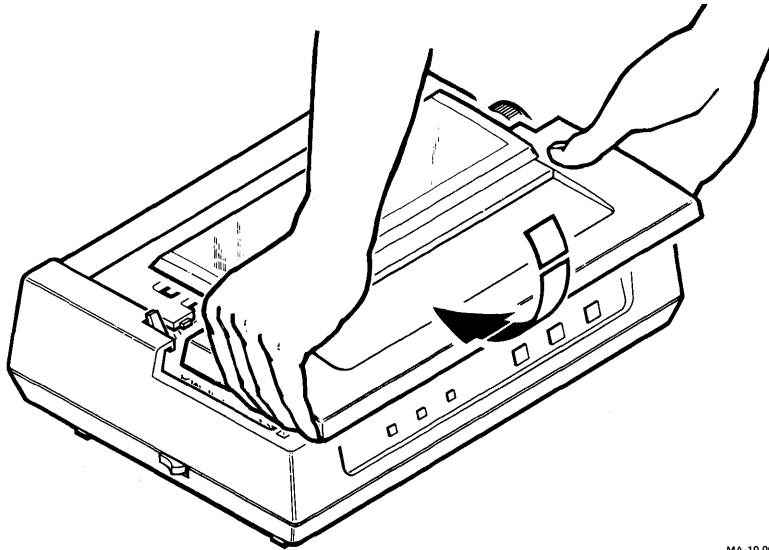
MA-10,004

Installing Power Cable

1. Make sure power switch is set to off position (0).
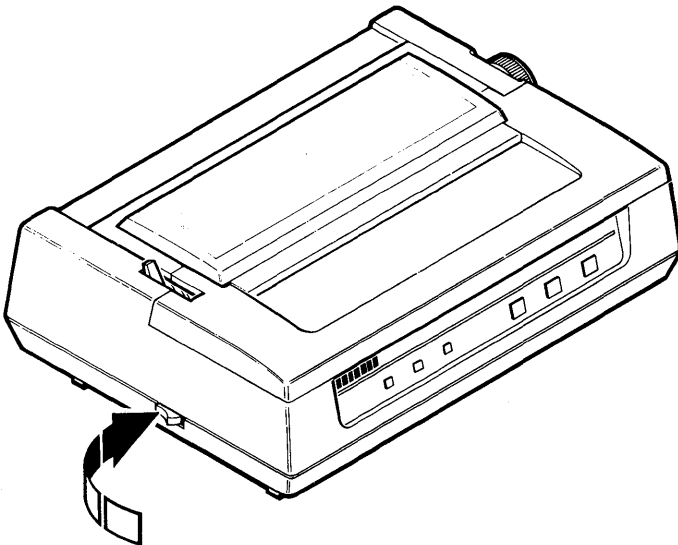
MA-10,005

2. Plug power cable into rear of printer and electrical outlet.
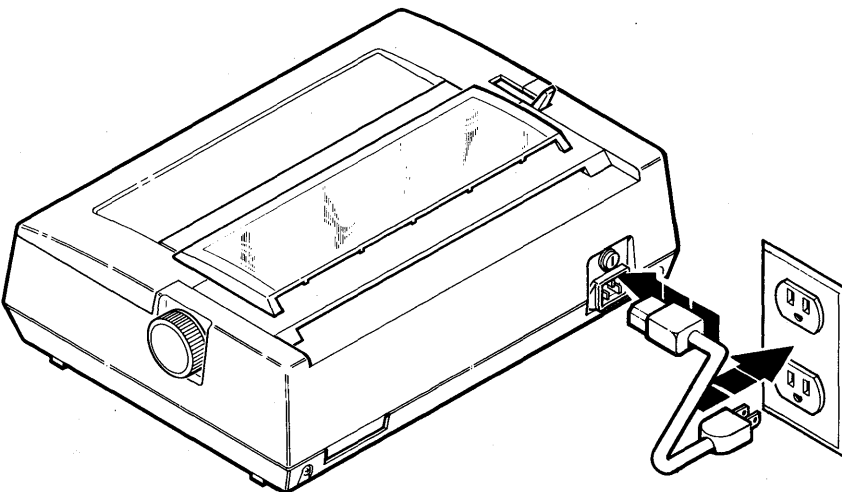
MA-10,006

INSERTING PAPER

NOTE: The printer uses pinfeed or single sheet paper. Instructions on inserting single sheet paper are on page 10.

Inserting Pinfeed Paper

1. Turn off power.

2. Open paper window.

3. Remove paper cover.

4. Pull bail bar away from platen.

5. Push paper release lever toward back of printer.

MA-10,007
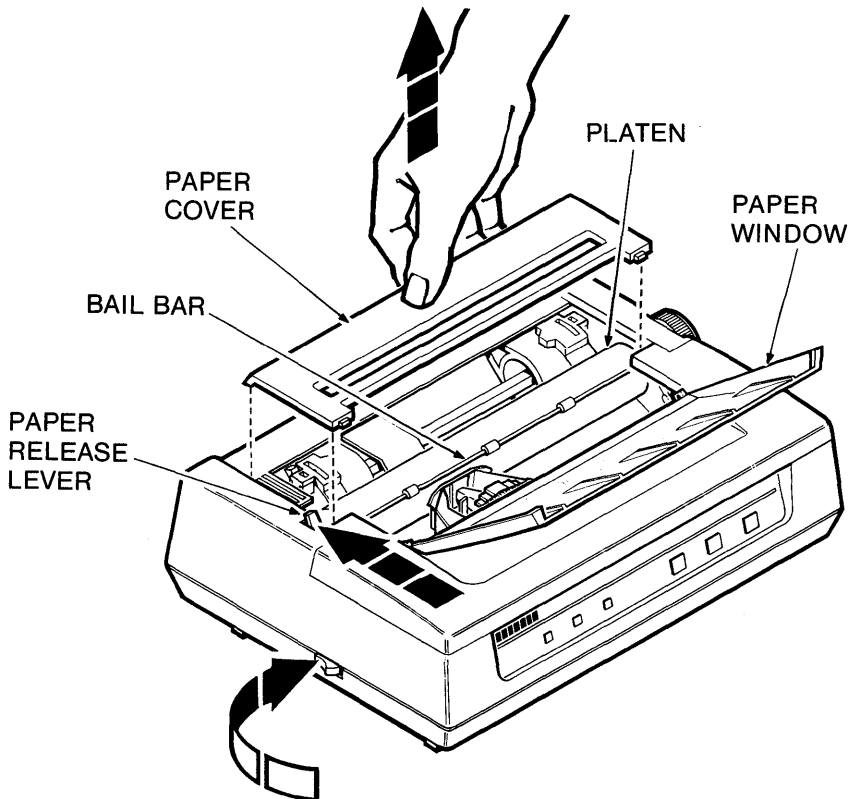
6. Open paper clamps.

PAPER
CLAMP

MA-10,008
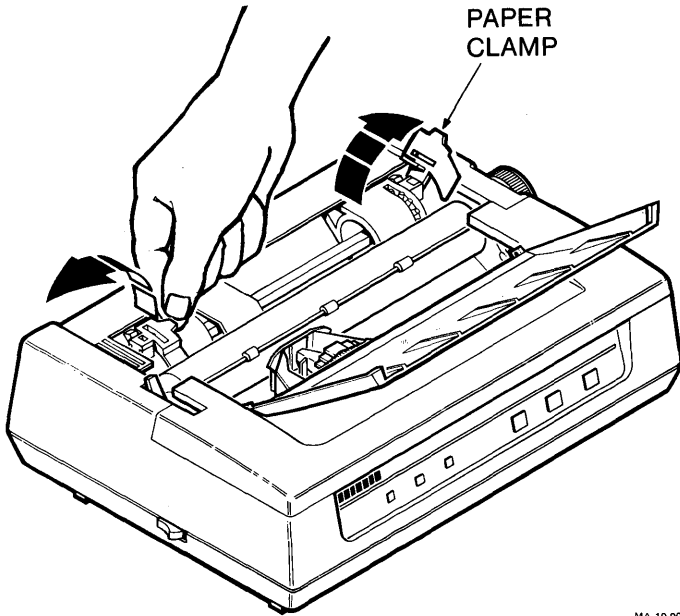
7. Position paper on tractor. If paper does not fit properly, use white trac-
   tor release levers to reposition tractors.

TRACTOR
RELEASE
LEVER

TRACTOR

MA-10,009
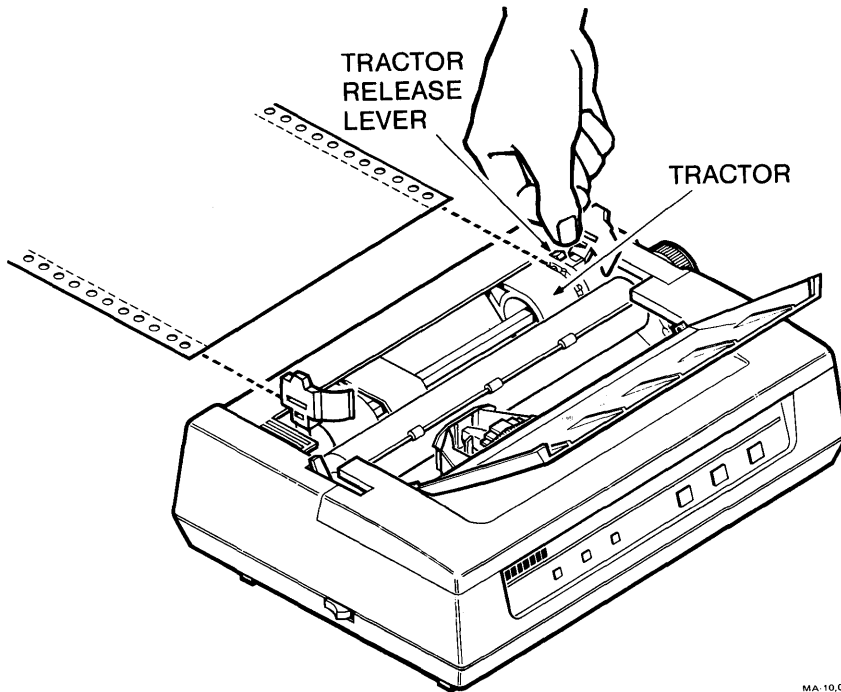
8. Close paper clamps.

9. Turn platen knob and guide paper behind platen.

10. Advance paper until top of paper is behind bail bar.

PLATEN
KNOB

BAIL BAR
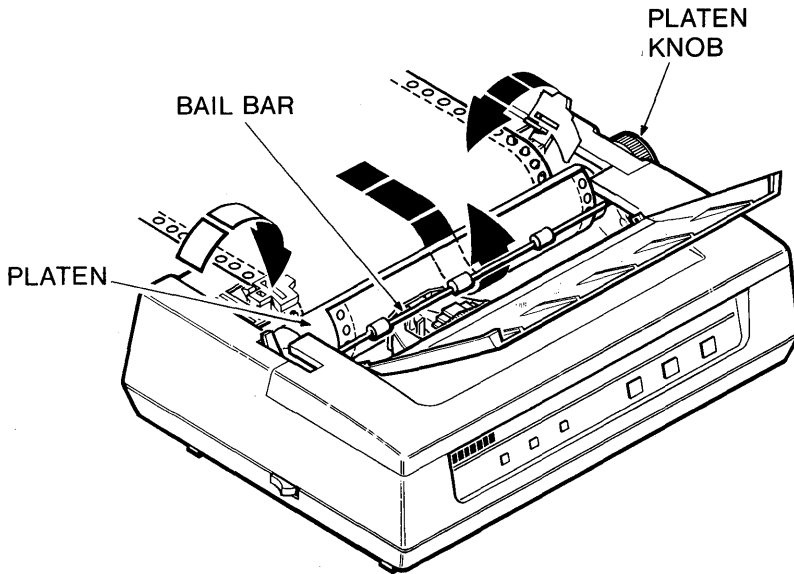
PLATEN

MA-10,010

11. Push bail bar against platen.

12. Close paper window.

13. Replace paper cover.

PAPER
COVER
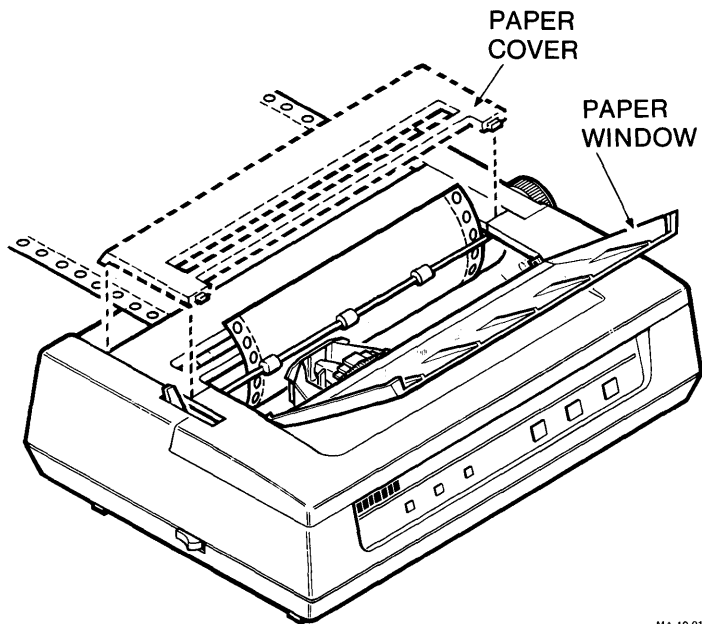
PAPER
WINDOW

MA-10,011

Inserting Single Sheet Paper

1. Turn off power.

2. Open paper window.

3. Pull bail bar away from platen.

4. Push paper release lever toward back of printer.

MA-10,012
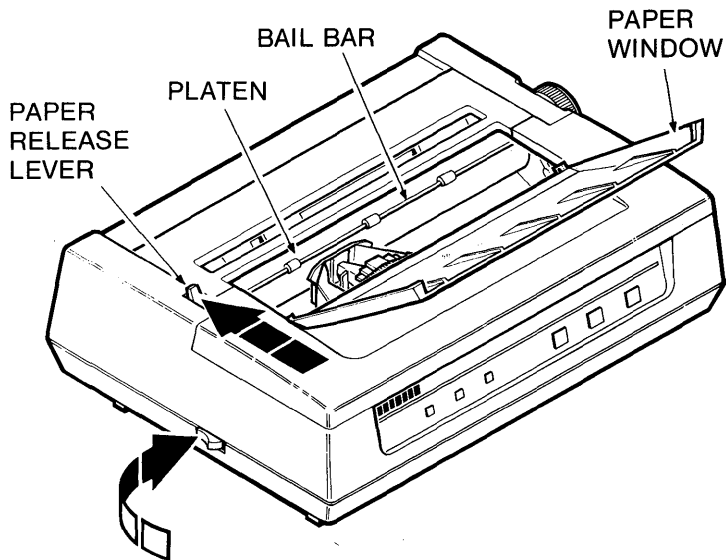
5. Push paper through slot in paper cover and guide it to front of platen. Align paper.

6. Pull paper release lever toward front of printer.

7. Push bail bar against platen.

8. Close paper window.

9. Turn platen knob to reposition paper.

ALIGN PAPER

PLATEN KNOB

SLOT

PAPER COVER
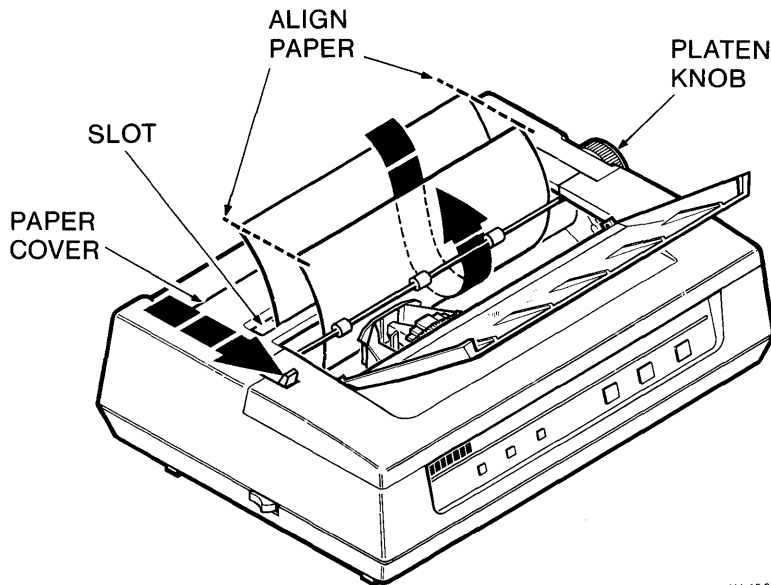
MA-10,013

SELF-TEST PROCEDURE

NOTE: The cover must be on to run self-test.

1. Push and hold down FORM FEED button.

2. Turn the power on.

3. Release FORM FEED button.

FORM
FEED
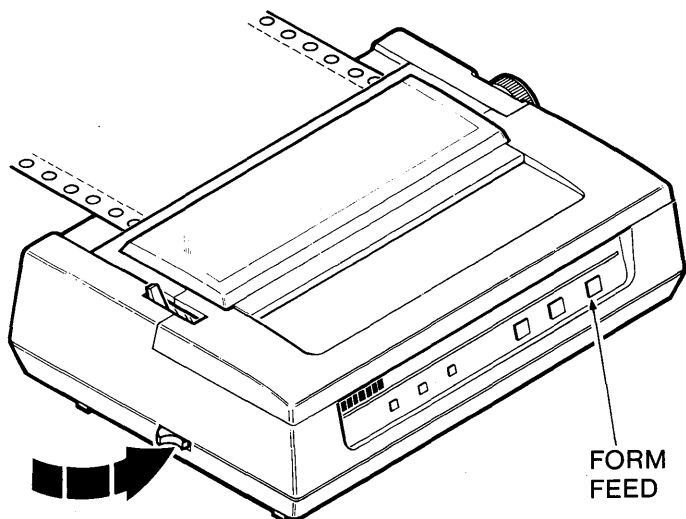
MA-10,014

You should get the following printout.

```
ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./01
BCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./012
CDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123
DEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./01234
EFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./012345
FGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456
GHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./01234567
HIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./012345678
IJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789
JKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:
KLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:;
LMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:;<
MNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:;<=
NOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:;<=>
OPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:;<=>?
PQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~ !"#$%&'()*+,-./0123456789:;<=>?@
```

MA-10,016

4. After a few lines print out, turn off power to stop printer.

Followup

If printer passes self-test, continue to next instruction. If printer does not pass self-test, or FAULT light blinks, refer to Troubleshooting section.

INSTALLING SYSTEM CABLE

1. Plug system cable into back of printer, and tighten two retaining screws by turning them clockwise.

2. Install other end of cable as described in your system installation manual.

RETAINING
SCREW   MA-10,015
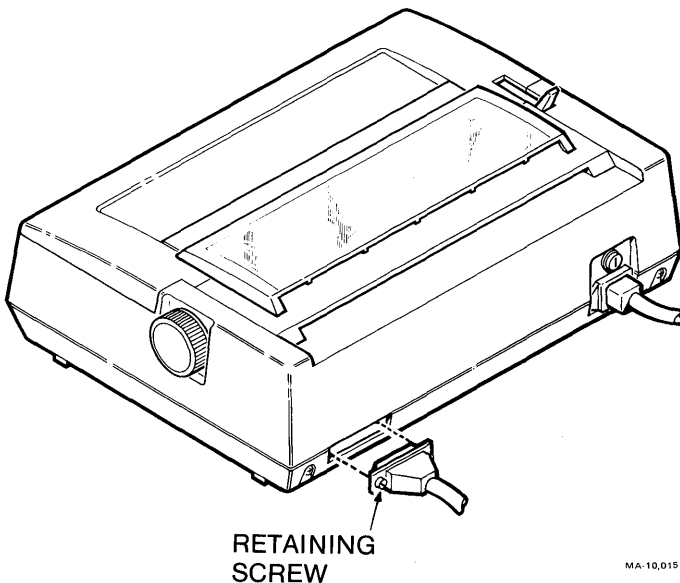
3. Installation is now complete. Please fill out and return the enclosed installation card.

A Customer Identification Number is located on the rear of the top cover. If you are capitalizing this equipment, use this number in your records as identification of the printer, and place your asset tag on the top cover.

Become familiar with the information in the next section before you operate the printer with your system.

FRONT PANEL INDICATORS AND SWITCHES
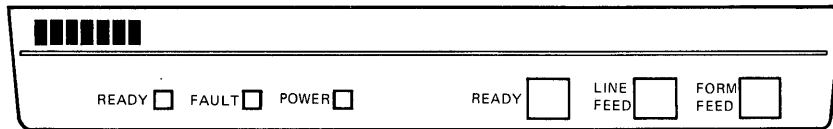
MA-10,017

READY Indicator
The green READY light indicates the printer's operating state. The light is on when the printer is ready to print, or is printing. If the light is off, the printer is not ready and will not start.

FAULT Indicator
The red FAULT light blinks when the printer detects an electronic fault. The light stays on when the printer is out of paper.

POWER Indicator
The green POWER light is on when you apply power to the printer.

READY Switch
The READY switch controls the printer's operating state. Pressing the switch puts the printer in either the ready or not ready state. Watch the READY light to determine the operating state.

LINE FEED Switch
Pressing the LINE FEED switch advances the paper one line.

FORM FEED Switch
Pressing the FORM FEED switch advances the paper one full sheet.

PRINTER CONTROLS

RED
ETCH
MARK

PLATEN
KNOB

PAPER
BAIL

PAPER
THICKNESS
LEVER

PLATEN

PAPER
RELEASE
LEVER
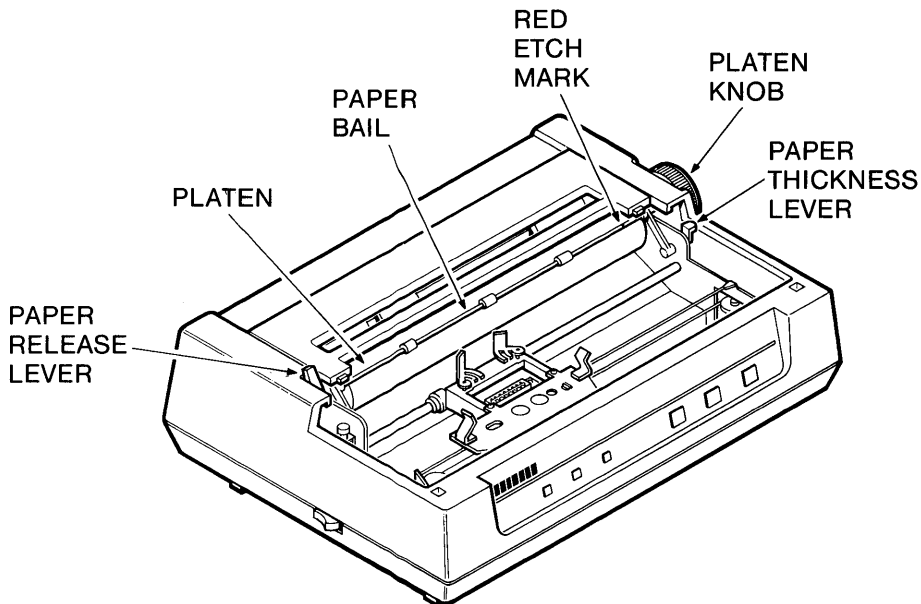
MA-10,018

Paper Bail
The paper bail holds the paper against the platen. Red etch marks on the bail help you position paper on the platen and locate the horizontal printing position.

Paper Thickness Lever
The paper thickness lever adjusts the printhead position to allow for different printing form thickness. Keep the lever close to the platen for normal printing. Move the lever away from the platen for thicker sheets and multicopy forms.

Paper Release Lever
The paper release lever controls paper holding tension. In the forward position, paper is held tightly against the platen. In the backward position, the paper is free for positioning or removal.

Platen Knob
The platen knob allows manual control of the platen for paper insertion, and for changing the paper's vertical position.

MAINTAINING PRINTER

The printer does not need preventive maintenance. Clean its surfaces and platen with a damp cloth only. Do not use cleaners with solvents or excessive water.

Office Area

To help maintain proper operating temperatures, keep the printer away from extreme temperature, such as direct sunlight, room heaters, and air conditioners.

Keep paper clips, coffee, matches, cold drinks, and other small objects and liquids away from the printer.

Paper

Select the right paper for the job. Always make sure to position paper squarely and set it tightly around the platen. Also make sure the paper thickness lever is in correct position. To remove paper from the printer, use the form feed switch, or turn the platen knob.

Printhead and Ribbon Cartridge

Keep samples of early printouts to help you know when to replace the printhead and ribbon cartridge. Use only DIGITAL-approved ribbon cartridges in the printer. Other cartridges may not give the same performance and may damage your printer. Store printheads and ribbon cartridges in their containers, in the same environment as the printer. (Refer to specifications at the back of this document.)

TROUBLESHOOTING THE PRINTER

Operator Checklist
Try to correct the trouble as listed below.

CAUTION: Always turn off the printer before you attempt to correct a problem.

If you cannot correct the trouble:

Turn off the printer and contact your dealer or the nearest DIGITAL service technician.

Trouble	Probable Cause	Corrective Action
Printer does not start when power is turned on.	Power cord not connected, or broken	Check power cord connections; check power cord for damage.
	Power source fault	Check power at power receptacle.
	Fuse open	Make sure fuse is in place. Replace fuse if blown. Refer to Fuse Replacement.
No printout. FAULT light is on. Pressing the READY button causes printer to print one line.	Printer out of paper	Reload paper and press the READY button.
No printout. FAULT light is on. READY light is out and pressing the READY button does not start printer.	Access cover open	Close cover and press the READY button.

Trouble	Probable Cause	Corrective Action
Light print.	Paper thickness lever set incorrectly	Reset paper thickness lever to a position closer to the platen.
	Ribbon worn	Replace ribbon cartridge.
Carriage moves, but no printout	Paper thickness lever set incorrectly	Reset paper thickness lever to a position closer to the platen.
	Printhead fault	Replace the printhead. Refer to Printhead Replacement.
Missing dots in print; always in same row.	Printhead fault	Replace the printhead. Refer to Printhead Replacement.
Paper jams.	Paper path obstructed	Clear paper path.
	Paper thickness lever set incorrectly	Reset paper thickness lever to a position away from the platen.
Pinfeed paper jams.	Tractors positioned incorrectly for paper width	Release and reposition the tractors. Avoid pulling or compressing paper.

Replacing Printhead

1. Turn off power.

2. Remove access cover.
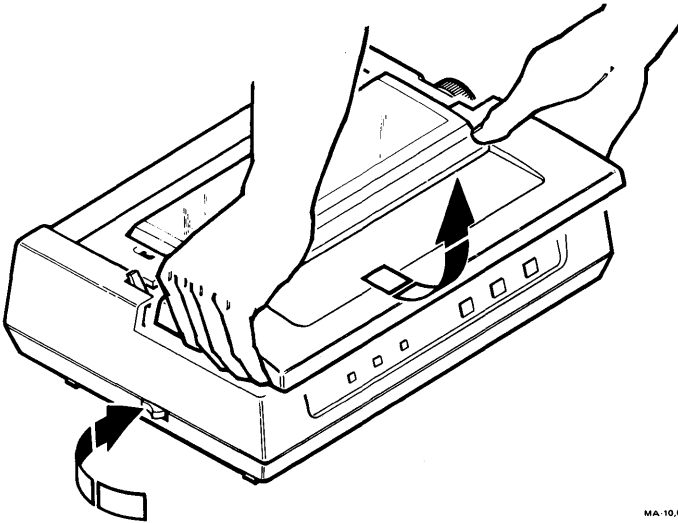
MA-10,019

3. Remove ribbon cartridge.
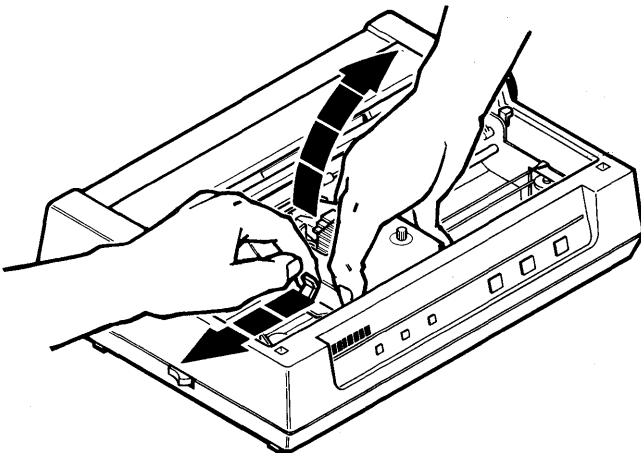
MA-10,020

4. Push printhead retainer clips away from head.
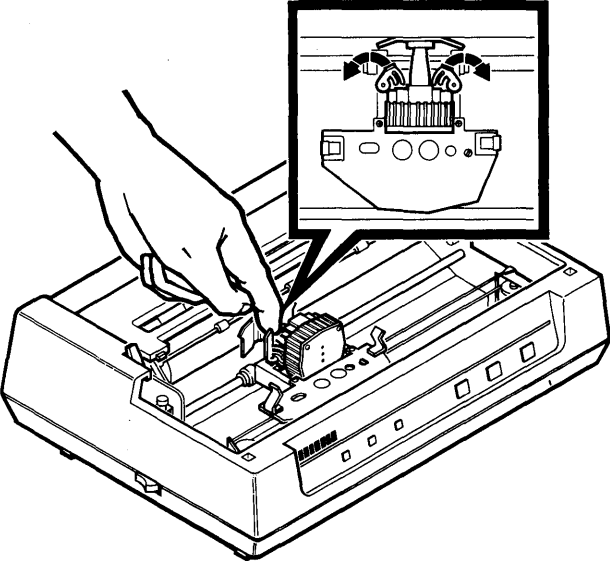
MA-10,021

5. Firmly pull head upward; be careful to avoid bail bar.

BAIL BAR
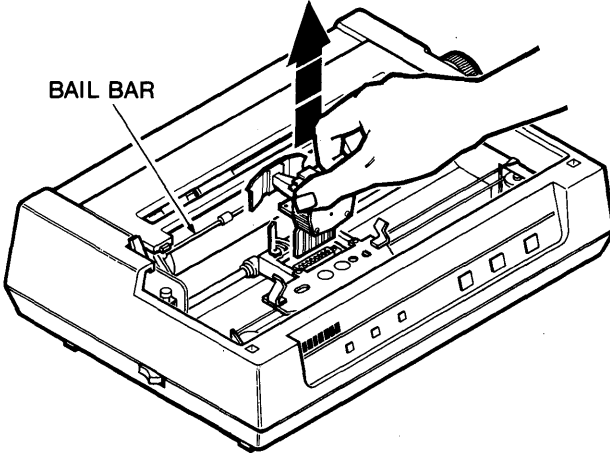
MA-10,022

6. Plug in replacement head. Make sure it is fully seated.
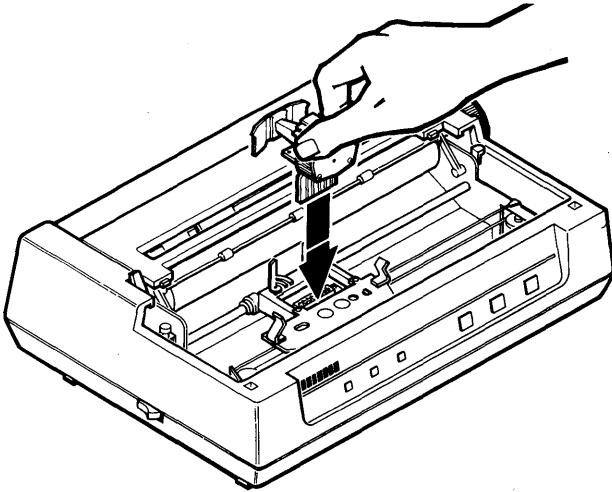
MA-10,023

7. Return printhead retainer clips to their original positions.
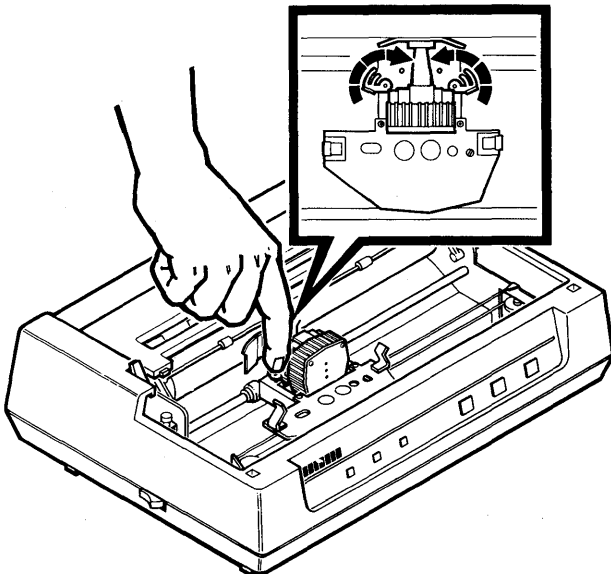
MA-10,024

8. Replace ribbon cartridge.
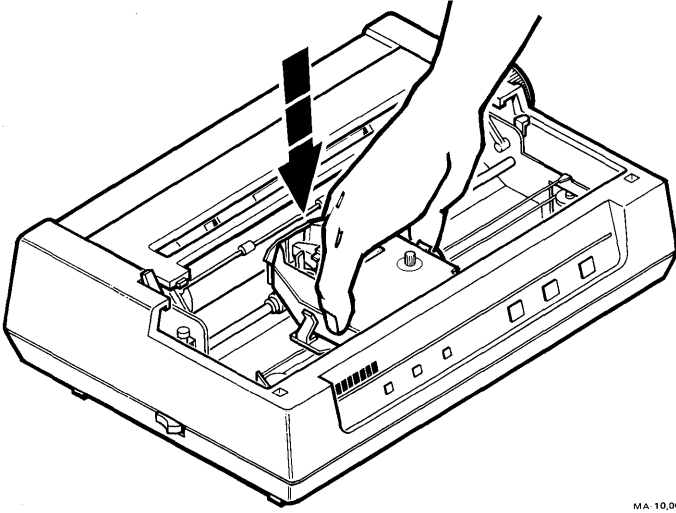
MA 10,003

9. Replace access cover.
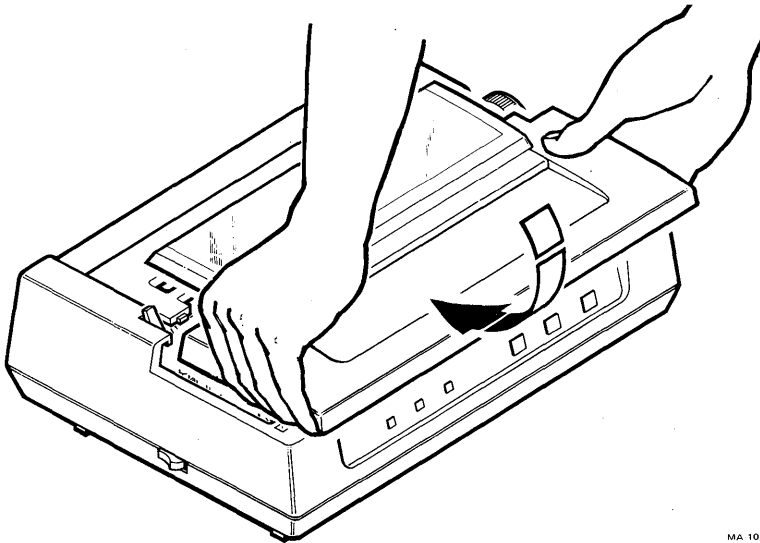
MA 10,004

Replacing Fuse

1. Turn off power.
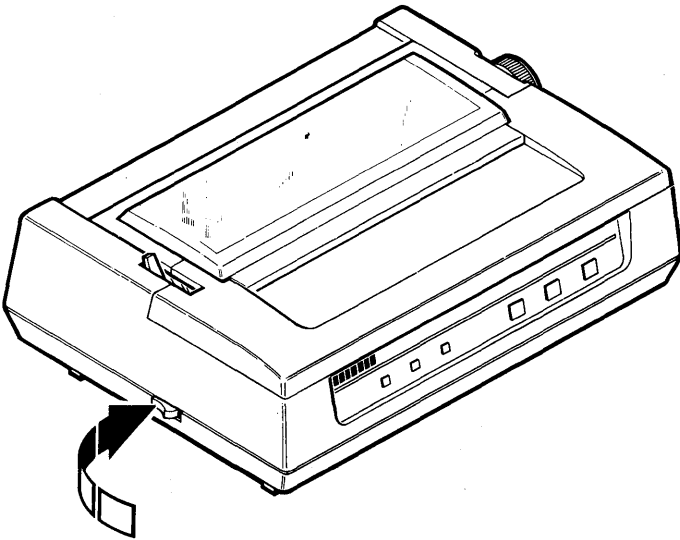
MA-10,005

2. Unplug power cord from power outlet.
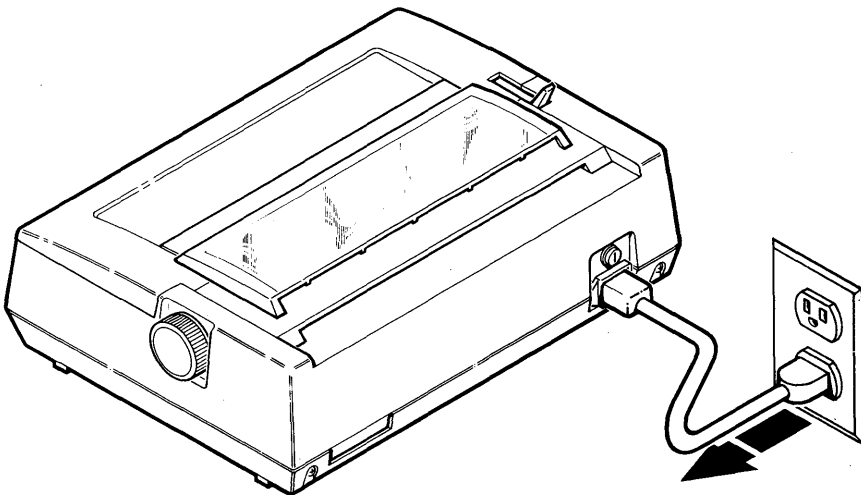
MA-10,025

3. Turn fuse retainer counterclockwise.
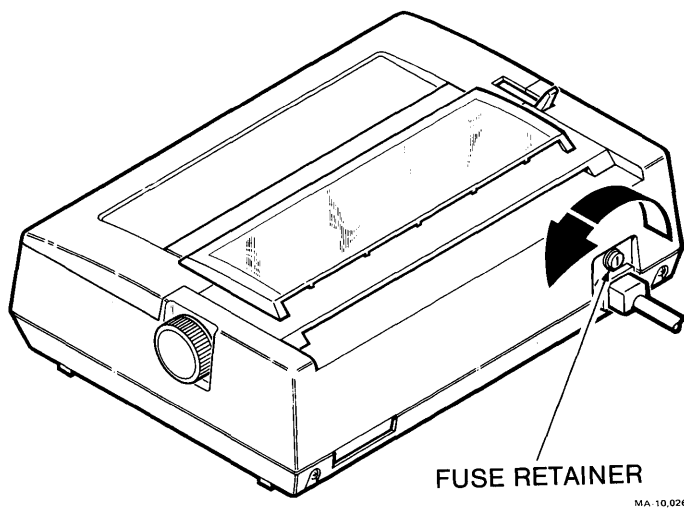
FUSE RETAINER

MA-10,026

4. Remove retainer.

5. Replace fuse with one of equal value.

PRINTER CONFIGURATION

Configuration Switches

The configuration switches are set for printer use with DIGITAL systems in the United States. (The illustration shows factory settings.) The switches are under the access cover.

CAUTION: Turn off power before you reset the switches.
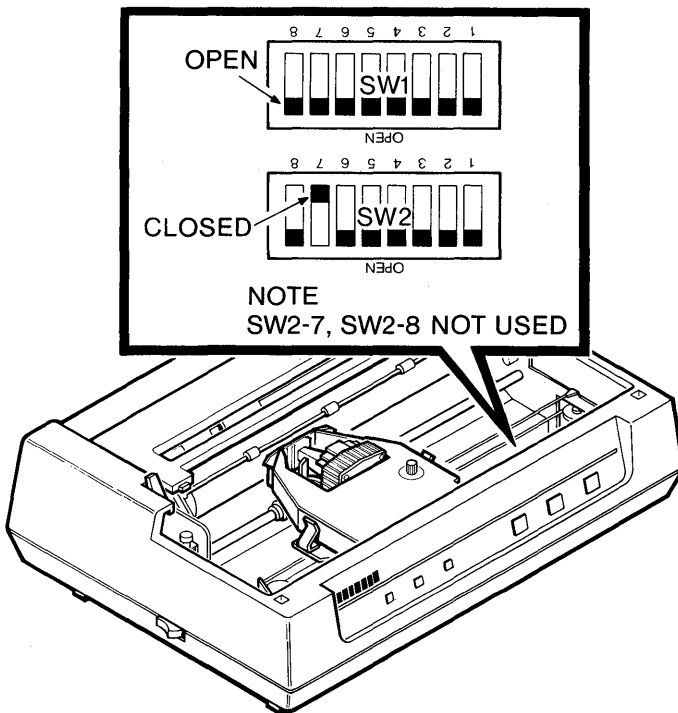
MA-10,027

You can change the switch positions by sliding the switch tabs with a ball point pen or equivalent. Never use a lead pencil.
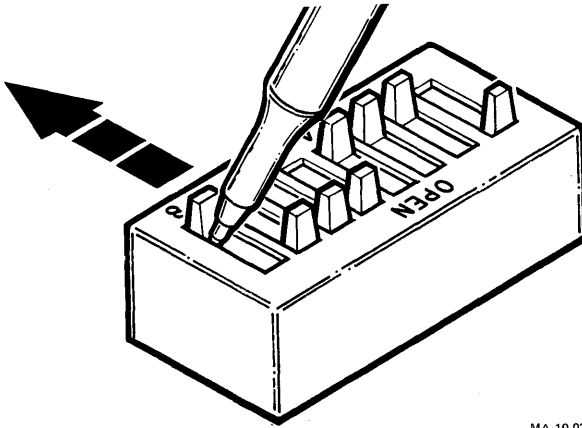
MA-10,028

The following tables show the switch positions for various system configurations.

National Character Set Switches SW1-1 through SW1-4
Switch SW1-1 through SW1-4 change the characters for multinational applications.

Nation	Switch Positions			
	SW1-1	**SW1-2**	**SW1-3**	**SW1-4**
United States	Open	Open	Open	Open (factory setting)
Britain	Closed	Open	Open	Open
Finland	Open	Closed	Open	Open
France	Closed	Closed	Open	Open
French Canada	Open	Open	Closed	Open
Germany	Closed	Open	Closed	Open
Italy	Open	Closed	Closed	Open
Japan	Closed	Closed	Closed	Open
Norway/Denmark	Open	Open	Open	Closed
Spain	Closed	Open	Open	Closed
Sweden	Open	Closed	Open	Closed

CHARACTER SET SWITCHES
SW1-1 THROUGH SW1-4

OPEN

CLOSED

MA-10,029
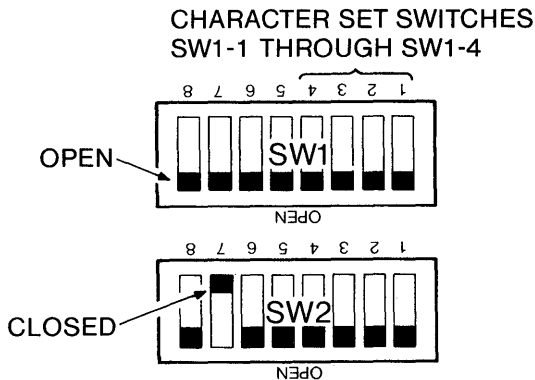
Graphics Aspect Ratio Switch SW1-5

Switch SW1-5 changes the horizontal to vertical dot ratio in graphic mode by changing the number of horizontal dots per inch. The number of vertical dots are kept constant at 72 dots per inch.

Ratio	Horizontal Dots/Inch	Switch Position
2 to 1	144	Open (factory setting)
2.5 to 1	180	Closed
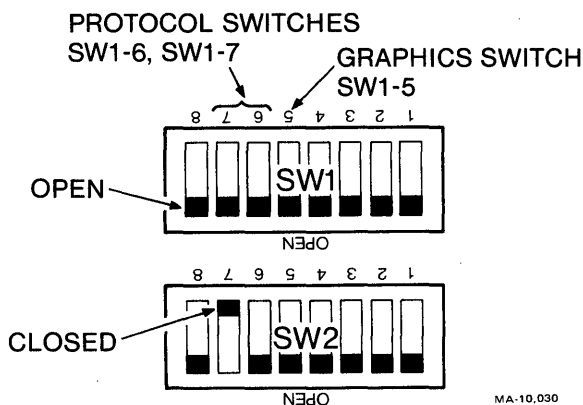
XON/XOFF and Ready/Busy Protocol Switches SW1-6 and SW1-7

DIGITAL systems use XON/XOFF protocol. Other systems may require Ready/Busy protocol. Switch SW1-6 selects the protocol. Switch SW1-7 selects the ready and busy signal levels.

Protocol	SW1-6 Position
XON/XOFF	Open (factory setting)
Ready/Busy	Closed

Signal Level	SW1-7 Position
Busy = High Ready = Low	Open (factory setting)
Busy = Low Ready = High	Closed

Right Margin Switch SW1-8

Switch SW1-8 selects the method of controlling a line of characters that exceed the eight inch line of print. If set to truncate, the printer prints only the first eight inches of characters and drops the remaining characters. If set to wrap, the printer prints the remaining characters on the next line.

Selection	SW1-8 Switch Position
Truncate	Open (factory setting)
Wrap	Closed

RIGHT MARGIN SWITCH SW1-8

OPEN

SW1

OPEN

CLOSED

SW2

OPEN

BAUD RATE SWITCHES
SW2-1 THROUGH SW2-3
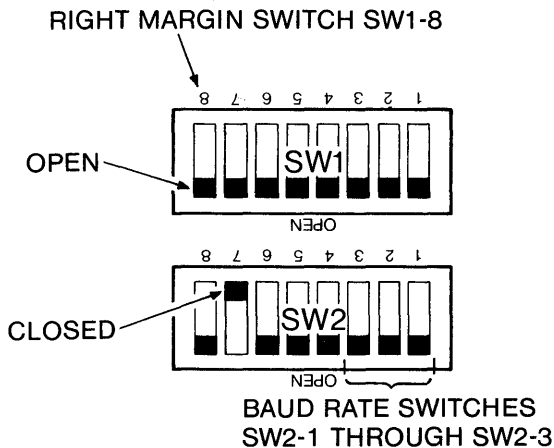
MA-10,031

Baud Rate Select Switches SW2-1, SW2-2, SW2-3

These switches select the speed (bits per second) at which the printer communicates with the computer.

	Switch Positions		
Baud Rate	SW2-1	SW2-2	SW2-3
4800	Open	Open	Open (factory setting)
2400	Open	Closed	Open
1200	Open	Closed	Closed
600	Closed	Open	Open
300	Closed	Open	Closed
200	Closed	Closed	Open
110	Closed	Closed	Closed

Data Format Switches SW2-4, SW2-5, SW2-6

These switches select the data format to enable communication with the computer.
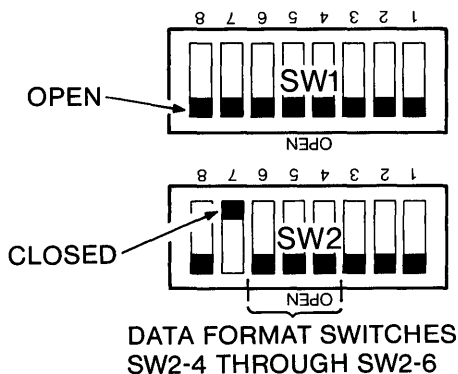
DATA FORMAT SWITCHES
SW2-4 THROUGH SW2-6

MA-10,032

| Data Format | Switch Position | | |
	SW2-4	SW2-5	SW2-6
7 bits plus odd parity	Open	Closed	Closed
7 bits plus even parity	Closed	Closed	Closed
7 bits plus 8th bit mark	Open	Open	Closed
7 bits plus 8th bit space	Closed	Open	Closed
8 bits plus odd parity	Open	Closed	Open
8 bits plus even parity	Closed	Closed	Open
8 bits, no parity	Open	Open	Open (factory setting)

SPECIFICATIONS

Weight	8.5 Kg (18.7 lb)

Dimensions
    Width   400 mm (16 in)
    Depth   295 mm (11.8 in)
    Height   142 mm (5.6 in)

Environment
    Temperature   10° C to 40° C
                           50° F to 104° F
    Relative Humidity   10% to 90%

Power requirements   LA50-RA 100 or 120 Vac, 50 or 60 Hz
                           LA50-RB 220 or 240 Vac, 50 or 60 Hz

Power consumption   Less than 180 W

Data interface   Serial RS232-C and RS423 EIA standard

Ribbon   Disposable cartridge
                           Two million characters life expectancy
                           (average use)

Paper
    Type   Single sheet or sprocket

    Dimensions   Single sheets: 3 to 9 inches wide
                           Sprocket paper: 4.5 to 10 inches wide
                           Sprocket holes: 4 to 9.5 inches on center
                                       $0.50 +/- 0.01$ inch spacing

    Thickness   0.011 inches maximum

Print method   Incremental with bidirectional lookahead

Print density   7 by 9 matrix (normal)
                           13 by 9 matrix (enhanced)

Print speed	100 CPS (7 by 9 matrix printing)
	44 LPM (80 characters per line)
Character features	Enhanced density
	Bold
	Underlined
	Doublewidth
Graphic mode	144 or 180 dots / inch horizontal
	72 dots / inch vertical
	2:1 or 2.5:1 aspect ratio
Characters	94 ASCII
	81 Multinational
	63 JIS Katakana
	27 VT100 Special Graphics
	1 error indicator
Character pitch	
Compressed font	16.5 CPI, 132 characters / line
Double width	8.25 CPI, 66 characters / line
Elite pitch	12 CPI, 96 characters / line
Double width	6 CPI, 48 characters / line
Pica pitch	10 CPI, 80 characters / line
Double width	5 CPI, 40 characters / line
Line spacing	12, 8, 6, 4, 3 or 2 lines / inch
	Partial line up and down, 1 / 12 inch
Line feed speed	100 ms / line at 6 lines / inch

FIELD SERVICE INFORMATION

DIGITAL SERVICES
DIGITAL provides a wide range of maintenance programs that cover small systems and terminals. These include on-site, carry-in, and mail-in maintenance services. You can use these programs to select a plan that meets your service needs, from complete DIGITAL support, to self-maintenance.

ON-SITE SERVICE
DIGITAL offers fast, low cost, quality maintenance performed at your site by DIGITAL-trained Service Specialists. Whether you take advantage of our DECservice or Basic Service Agreements, or choose our Time and Materials service, you can be sure that your small system or terminal is getting the best possible maintenance.

CARRY-IN SERVICE
There are several hundred DIGITAL service centers in major cities worldwide, which offer convenient, fast, and dependable "return-to" maintenance, at a savings over on-site service.

DECMAILER
If you are capable of self-maintenance, you should use our fast turnaround module and sub-assembly repair service – DECmailer.

For more information on any of DIGITAL's Maintenance Services, call the DIGITAL Field Service information number in your area during normal business hours

United States	(800) 554-3333
Canada	(800) 267-5251
United Kingdom	(0256) 57122
Belgium	(02) 242-6790
West Germany	(089) 95 91 66 44
Italy	(02) 617-5381/2
Japan	(03) 989-7161

Digital Equipment Corporation • Maynard, MA 01754