Printer

Ink cartridge

Printer Cover

Extension tray

Paper support

Screw locks

Paper *tray cover*

Output tray

Front View

When you look at your EPI-4000 printer from the front, you can see most of the design features.

output tray

Paper feeder cover

Printer cover

Control panel

Guides

Paper tray covet

Paper tray

Paper release lever

Printer Specifications

Printing

Printing *method:*   On demand ink jet
64 nozzles (16 x 4 staggered)

Resolution: 300 dpi (horizontal, vertical)

Printing speed: The printing speed varies depending on the font and quantity of data.

Mode	Paper size	Page coverage	Approximate pages per minute
Letter quality	Letter	5%	1
Draft	Letter	2.5%	2

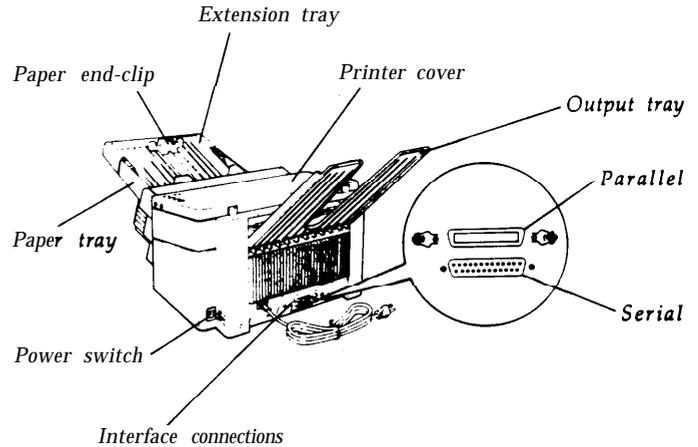*Printing direction:*   Bidirectional with logic-seeking
Unidirectional

Left Side View

The left side of the printer, as shown below, includes slots for optional font cards, the ink supply, and a knob for clearing paper jams.

Printer cover

Output tray

Control panel

Paper feeder cover

Paper tray cover

Ink cartridge
compartment **cover**

Paper tray

Knob

Ink cartridge

Font *card slots*
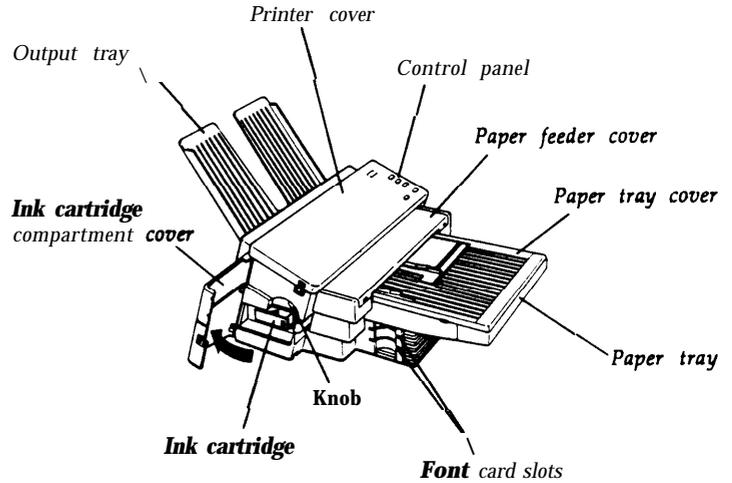
Back View

The illustration below shows the printer from the back with the paper cover off.

Extension tray

Paper end-clip

Printer cover

Output tray

Parallel

Paper tray

Power switch

Serial

Interface connections

Resident Fonts

HP emulation mode:

Courier (10 cpi)	Upright	P/L
Courier (10 cpi)	Bold	P/L
Line printer (16.66 cpi)	Upright	I P/L

LQ and FX emulation mode:

Courier (10 cpi)	Upright/Italic*	Medium/Bold	P/L
Line printer (16.66 cpi)	Upright/Italic*	Medium/Bold*	P/L
Prestige (12 cpi)	Upright/Italic*	Medium/Bold*	P/L*
Prestige (20 cpi)	Upright/Italic*	Medium/Bold*	P/L*

P= portrait. L= landscape

*The printer creates the italic, bold, and landscape effects internally instead of using separate fonts.

EPI-4000 INK JET PRINTER

Ink

Type: Exclusive ink cartridge #S020003

Color: Black

Ink capacity: Approximately 3.72 fluid ounces (110ml)

Ink cartridge print capacity: When the printer first displays the /L. message, there is enough ink left in the cartridge to print approximately 20 letter size pages at 5% page coverage.

| Mode	Page coverage	Number of letter size pages
Letter quality	5%	1000
Draft	2.5%	2000

Ink life: Two years

Do not use an ink cartridge after its expiration date has passed.

Temperature: Storage: -4° F to 104° F (-20° C to 40° C)

Transit: -22° F to 150° F (-30° C to 65° C)

The ink cartridge can be stored at 68° F (20° C) for two years. During that time, it can also withstand one month at 104° F (40° C) and 120 hours at 149° F (65° C).

The ink freezes at 16° F (-9° C). Ink that has been frozen can be used after it is thawed. It takes approximately 1 1/2 hours to thaw at 77° F (25° C).

Cartridge weight: 8.75 ounces (250 g)

Cartridge dimensions: 4.2 inches (W) x 6.3 inches (D) x 1.3 inches (H)

106mm (W) x 157mm (D) x 33.5mm (H)

Mechanical

External dimensions: Excluding the output tray:
22.7 inches (W) x 28.2 inches (D) x 12.0 inches (H)
568mm (W) x 705mm (D) x 299mm (H)

Including the output tray:
22.7 inches (W) x 31.9 inches (D) x 19.6 inches (H)
568mm (W) x 798mm (D) x 491mm (H)
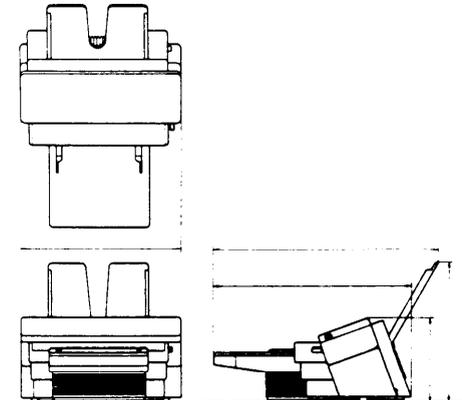
Weight: Approximately 39.6 lbs. (18 kg.)

Noise: 50 dBA

Reliability: MCBF (Mean Cycles Between Failure): 5 million lines (excluding print head)

MTBF (Mean Time Between Failure): 5000 power on hours at 25% duty

Print head life: 2 billion dots per nozzle

Electrical

Rated voltage: 120 VAC

Allowable voltage range: 103.5 VAC to 132 VAC

Rated frequency range: 50 Hz to 60Hz

Allowable frequency range: 49.5 Hz to 60.5 Hz

Rated current: 3.0 A

Power consumption: 250 watts maximum

Insulation resistance: 10 Mohms minimum (at 500 VDC between AC line and chassis)

Dielectric strength: Can withstand 1000 VAC rms applied for one minute or 1200 VAC rms applied for one second (between AC line and chassis)

Controller Hardware

CPU: 68000, 10 MHz

RAM: Standard: 512KB
Optional: 2MB memory board

ROM: Font: 512KB
Program: 256KB

Host **interface:** Standard: .

Centronics parallel interface
RS-232C serial interface

Optional:

#8143 New serial interface
#8148 Intelligent serial interface
#8165 IEEE-488 interface
Coax interface
Twinax interface

Coax and Twinax interfaces are available from Epson dealers. These interfaces allow connectivity to mainframes and minicomputers and emulation of IBM printers.

IC card: Slot A: For font cards and identity cards
Slot B: For font cards only

Internal software modes: HP LaserJet series II emulation mode
ESC/P 9-pin (FX-1000/800,286e/86e) emulation mode
ESC/P 24-pin (LQ-2500) emulation mode

Environment

Temperature:	Operating: 50° F to 95° F (10° C to 35° C) Storage: -4° F to 104° F (-20° C to 40° C) In shipping container. -22° F to 150° F (-30° C to 65° C)
Humidity:	20% to 80% RH 5% to 85% RH without condensation

The following figure illustrates the possible combinations of temperature and humidity in the operating environment.
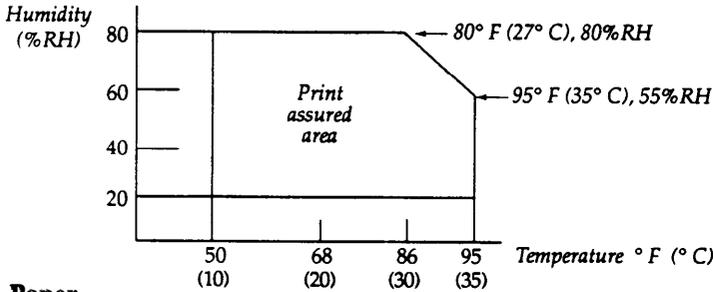
Paper

Single sheets

Quality:	Plain, bond
	The EPI-4000 cannot print on multi-part forms or roll paper.
Width:	7.2 inches to 11.8 inches (182mm to 300mm)
Length:	7.2 inches to 17 inches (182m.m to 431.8mm)
Thickness:	0.0031 inches to 0.004 inches (0.07mm to 0.1mm)
Weight:	17 lb. to 22 lb. (64 g/n2 to 82 g/m2)
	The EPI-4000 can print on 24 lb. paper at normal temperatures only.
Sizes:	Letter, legal, executive, A4, A3, ledger (B)
	You set the paper size using SelecType.

Paper feed direction= Single sheets

Letter, A4 sizes	Portrait, landscape
All other sizes	Portrait
Envelopes	Landscape

Paper feed speed:	4.0 ips (inches per second)
	This is the speed at which the printer feeds paper continuously. It is not the printing **speed.**
Paper eject:	Face up, into the output tray
Capacity:	Up to 50 letter size pages at less than 25% page coverage
	Up to 30 letter size pages at more than 25% page coverage

Remove pages printed at high page coverage levels one by one, before the printer ejects the next page into the output tray.

Envelopes	Plain, bond, air mail
Quality:	On some envelopes, the glue melts and smears when the envelopes are exposed to high temperatures and high humidity, such as 104° F (40° C), 85% RH. Because this may cause printing problems, use quality envelopes.
Width:	6.5 inches to 9.5 inches (166mm to 240mm)
Length:	3.6 inches to 4.3 inches (92mm to 110mm)
	You can set the following three envelope sizes using SelecType:
No. 6:	3.625 inches x 6.5 inches (92mm x 166mm)
No. 10:	4.125 inches x 9.5 inches (104mm x 241mm)
DL:	4.33 inches x 8.66 inches (110mm x 220mm)
Thickness:	0.0064 inches to 0.020 inches (0.16mm to 0.52mm)
	Differences in thickness within the printable area must be less than 0.010 inches (0.25mm).
Weigh t:	12 lb. to 24 lb. (45 g/m^2 to 90 g/m^2)
	You can manually load 24 lb. envelopes at normal temperatures only.

Paper Delivery

Paper feed methods:

Automatic feed from the built-in paper tray (single sheets, envelopes)

|	
Capacity:	Up to 180 sheets of 17 lb. (64 g/m2) **paper**
	Up to 150 sheets of 22 lb. (82 g/m2) paper
	Up to 30 sheets of 24 lb. (90 g/m2) paper or up to 30 24 lb. (90 g/m2) envelopes

Manual insertion (single sheets, envelopes)

Optional push tractor. (The manual that comes with the push tractor describes its **specifications.)**
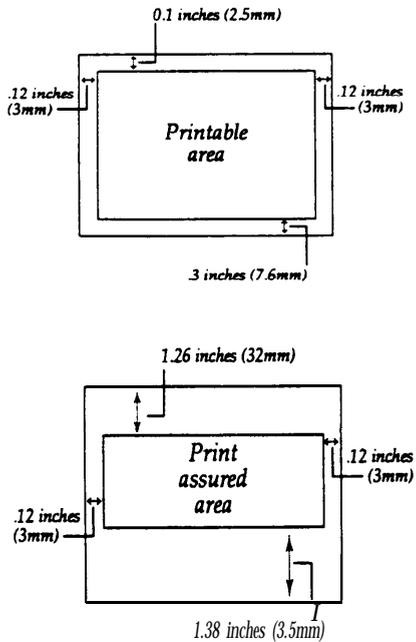
Printable Area

The printable area depends on the printer mode. This section shows the printable and print assured area for single sheets and envelopes and the printable area in HP, LQ, and FX emulation modes.

Single sheets:
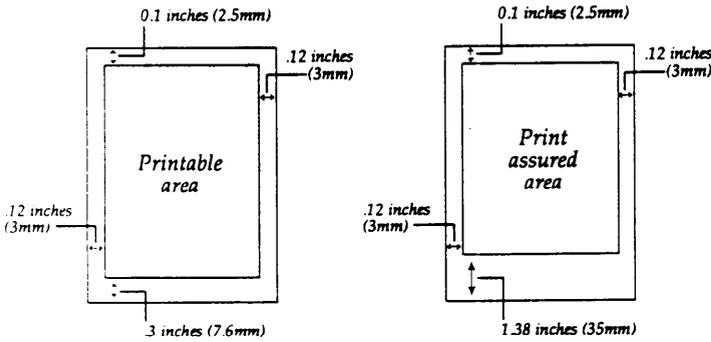
Envelopes:

⚠ CAUTION: Do not print ouside of the printable area.

Note:
- The printing pitch is not assured below 1.43 inches (35.77mm) from the bottom edge of the paper.

- If you try to print to the left of the edge of the paper, the characters that would print to the left of the paper's edge are lost and not printed.

- The manual that comes with the optional push tractor provides specifications on the printable area for continuous paper.
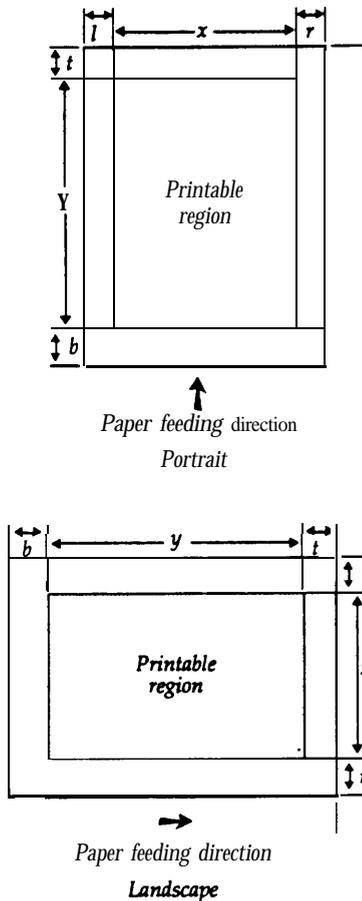
Printable area in HP emulation mode

Paper feeding direction
Portrait

Paper feeding direction
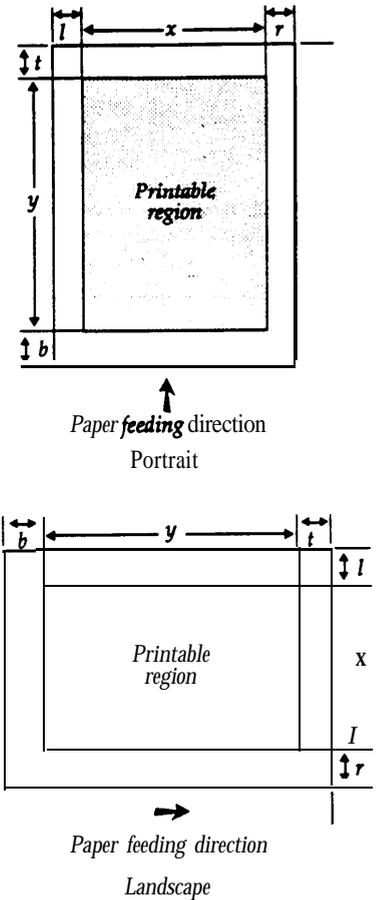
Landscape

Printable area in HP emulation mode

Paper size	l	x	r	t	y	b
Letter	75	2400	75	30	3180	90
Legal	75	2400	75	30	4080	90
Executive	75	2025	75	30	3030	90
B (ledger)	75	3150	75	30	4980	90
Letter (landscape setting)	75	3150	75	30	2430	90
A4	75	2338	67	30	3389	88
A3	35	3365	107	30	4842	88
A4 (landscape setting)	35	3365	107	30	2362	88
#10 (landscape setting)	75	2700	75	30	1117	90
#6 (landscape setting)	75	1800	75	30	967	90
DL (landscape setting)	75	2456	67	30	1181	88

Note: The units used in this table are dots at 300 dpi. The values In this table can be slightly affected by such items as the elasticity of the paper you are using.

Printable area in LQ and FX emulation mode

Printable region

Paper feeding direction

Portrait

Printable region

Paper feeding direction

Landscape

Printable area in LQ and FX emulation mode

Paper size	l	x	r	t	y	b
Letter	75	2400	75	45	3150	105
Legal	75	2400	75	45	4050	105
Executive	75	2025	75	45	3000	105
B (ledger)	75	3150	75	45	4950	105
Letter (landscape setting)	75	3150	75	45	2400	105
A4 (landscape printing)	75	2330	75	45	3357	105
A4 (portrait printing)	35	2400	45	45	3357	105
A3	60	3307	140	45	4810	105
A4 (landscape setting)	60	3307	140	45	2330	105
#10 (landscape setting)	75	2700	75	45	1087	105
#6 (landscape setting)	75	1800	75	45	937	105
DL (landscape setting)	75	2448	75	45	1149	105

Note: The units used in this table are dots at 300 dpi. The values in this table can be slightly affected by such items as the elasticity of the paper you are using.

Ink Jet **Printer Precautions**

The EPI-4000 uses ink jet technology. Even if you are familiar with other types of printers, please read and observe the following precautions to ensure safe, efficient operation.

- Never put your hand inside the printer while it is printing.

- Cartridge ink contains propyl alcohol. If the ink comes in contact with your skin, wash immediately with soap and water. If ink gets in your eyes, flush them immediately with plenty of water.

- If ink accidentally gets on any part of the printing mechanism, wipe it off with a clean, damp cloth.

- Store ink cartridges in a cool, dry place out of direct sunlight. Do not store cartridges at excessively high or below freezing temperatures.

- Keep ink cartridges out of the reach of children.

- Do not use an ink cartridge after the labeled expiration date. Ink cartridges cannot be refilled; do not take them apart.

- Never remove an ink cartridge while the printer is on line or while it is printing.

- Always follow these steps to turn off the printer: Press ON LINE to set the printer off line. Wait three seconds; then turn the printer power switch off. You must wait three seconds after you press ON LINE to ensure that the print head is safely capped at the left side of the printer.

- If you want to transport the printer, make sure the print head is safely capped, as described above. Remove the ink cartridge before you move the printer to a new location.

- Never turn the printer on or off unless an ink cartridge is installed.

- Do not turn off the printer while it is printing. The print head may not cap properly, resulting in faster ink consumption.

- If you must turn the printer off in the midst of printing, first press *ON* LINE to set the printer off line, wait three seconds, and then turn the power off.

- The EPI-4000 uses an electric heater to dry the ink as the page IS released to the output tray. For best print quality, do not touch the finished page until the printer completes delivery to the output tray.

- The paper output slot at the back of the printer may become warm during printing. This is because of the electric heater used to dry the ink and is no cause for concern.

- When you turn on the printer after a long period of disuse, you may notice a peculiar smell. This is normal; there is no cause for concern.

Application Software

The EPI-4000 has three printer modes, also called emulations. It is factory set to LaserJet series II emulation mode and this factory setting gives you the fullest range of features. Simply leave the printer in HP emulation mode and choose one of the printers below from your program's setup menu They are listed in order of preference.

HP LaserJet series II™ or HP LaserJet 2000™
HP LaserJet Plus™
HP LaserJet 500™
HP LaserJet™

Note: If you use 11 x 17-inch (ledger or B) size paper for most of your printing jobs, choose the HP LaserJet 2000. For more about HP emulation mode, see Appendix 8.

If none of the printers listed **above are available from your program,** use the Epson LQ or FX mode. If you use LQ or FX mode, choose one of the following printers (listed in order of preference).
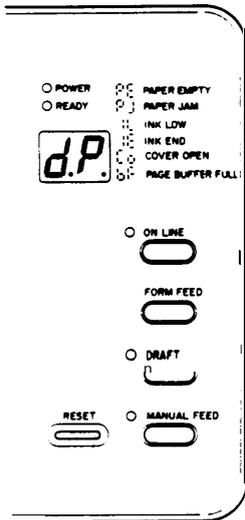
LQ-Mode	FX Mode
LQ-1050/850	FX-1050/850
SQ-=2500	FX-286e/86e
LQ-2500	FX-286/185/85
LQ-1000/800 **(expanded** ESC/P)	FX-100/80
LQ-500/510	FX printer
LQ-1500 (with version 2 ROM)	
LQ printer	

If none of these printers **are listed** among your program's options, choose the first available of the following EX, JX, LX, RX, MX, Epson printer, Standard printer, or Draft printer.

The Control Panel

Indicator Lights

POWER
On when the printer is turned on and power is supplied.

READY
On when the printer is ready to accept data. This light flickers when data is received.

ON LINE
On when the printer can receive and print data from the computer.

DRAFT
On when draft printing mode is selected. Off when letter quality mode is selected.

MANUAL FEED
On when the paper feeder mechanism is in the manual feed position.

SelecType
On when SelecType mode is active. This light is visible only when the printer cover is open.

Buttons

ON LINE
Controls the printer's on line/off line status. When the printer is on line, the ON LINE light is on and the printer can receive and print data from the computer. Press this button to switch between on line and off line status.

FORM FEED
When the printer is off line, press FORM FEED to print **any** data stored in the printer memory and eject a single sheet of paper.

DRAFT
Controls whether printing is in draft or letter quality mode. Because letter quality is the default mode, when the printer is turned on the DRAFT light is off. Press this button to switch between draft and letter quality printing. If you press DRAFT during printing, the draft mode begins with the next page printed.

Use this button to choose unidirectional printing for higher print quality. With the printer off line, press DRAFT **for more than 3 seconds to enter unidirectional mode. The** printer is factory-set for bidirectional printing so you must **set the printer each time you turn it on to enable this mode.**
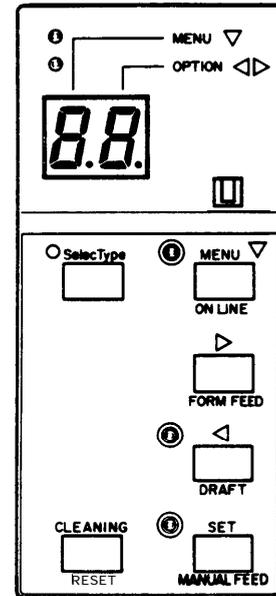
SelecType
Press this button to enter or exit SelecType. **If SelecType mode is active, the** SelecType light is on.

MENU ▼
When the SelecType light is **on, press** this button to increase the menu (left) digit of the display. This moves you down the list of menus.

▶

When SelecType is on, press ▶ to increase the option (right) digit of the display. Use this to select the desired option.

◀

When SelecType is on, press ◀ to decrease the option (right) digit of the display. Use this to select the desired option.

SET
When SelecType is on, press SET to save the option setting shown on the display.

CLEANING
When SelecType is on, press CLEANING to automatically clean the print head.

Printer Care

CLEANING THE PRINT HEAD

The EPI-4000 offers a print head cleaning cycle to ensure that all the print head's ink nozzles deliver ink correctly. Whenever you turn on **the printer, it performs a cleaning cycle automatically. The** printer **performs another cleaning cycle every 145 hours.**

Under ordinary use, the EPI-4000's **automatic cleaning cycles keep the** print head clean. If, however, you **notice that the print quality is declining, you can run the cleaning cycle to clean the print head.**

> **. Note: Your ink cartridge will run out prematurely if you run the print** head cleaning cycle often.

CLEANING THE PAPER PATH

The paper path normally does not require cleaning. Follow the steps in this section to clean the paper path only after a paper jam.

> **WARNING:** There are sharp gears around the paper path. Be careful not to touch them when you clean the paper path.

1. Press ON LINE to set the printer off line. Then turn off the printer.

2. Open the printer cover and move the envelope lever to the envelope position.

3. Use the brush that comes with your printer to clean out the paper residue in the paper path. Brush from left to right, sweeping the residue into the opening at the extreme right.

RUNNING THE CLEANING CYCLE

To run the cleaning cycle, follow these steps:

1. Make sure the printer is off line. If the ON LINE light is on, press ON LINE to set the printer off line.

2 Open the printer cover. Then press SelecType to enter SelecType mode. The SelecType light goes on.

3. Press CLEANING briefly. Then release the printer cover support and close the printer cover. The display reads *CL*, the print head cleaning message, and the printer runs the cleaning cycle.

4. If print quality problems persist, repeat the previous four steps to run the cleaning cycle again.

> Note: If there is paper in the paper path when you try to run the cleaning cycle, the printer will not perform the entire cycle (the print head will not move to the right for brush cleaning).

Interface Boards

Interface number	Interface name
#8143	New serial interface
#8148	Intelligent serial interface
#8165	Intelligent IEEE-488 interface
	Coax interface
	Twinax interface

Installation/Support Tips

set up

1. Read the cleaning chapter of the User's Manual prior to installation.

2   Test paper for the ink jet printer prior to purchase.

Software

1. When using software packages with the EPI-4000, select HP LaserJet series II as the printer. If this is not available, select HP LaserJet +. If neither is available, select HP LaserJet.

2. If you are using a font card, ensure that the software is set up to support it

Information Reference List

Engineering Change Notices

None.

Product Support Bulletins

None.

Related Documentation

TM-EPI4000		EPI-4000 Service Manual
4000119		EPI-4000 User's Manual

Technical Information Bulletins

None.