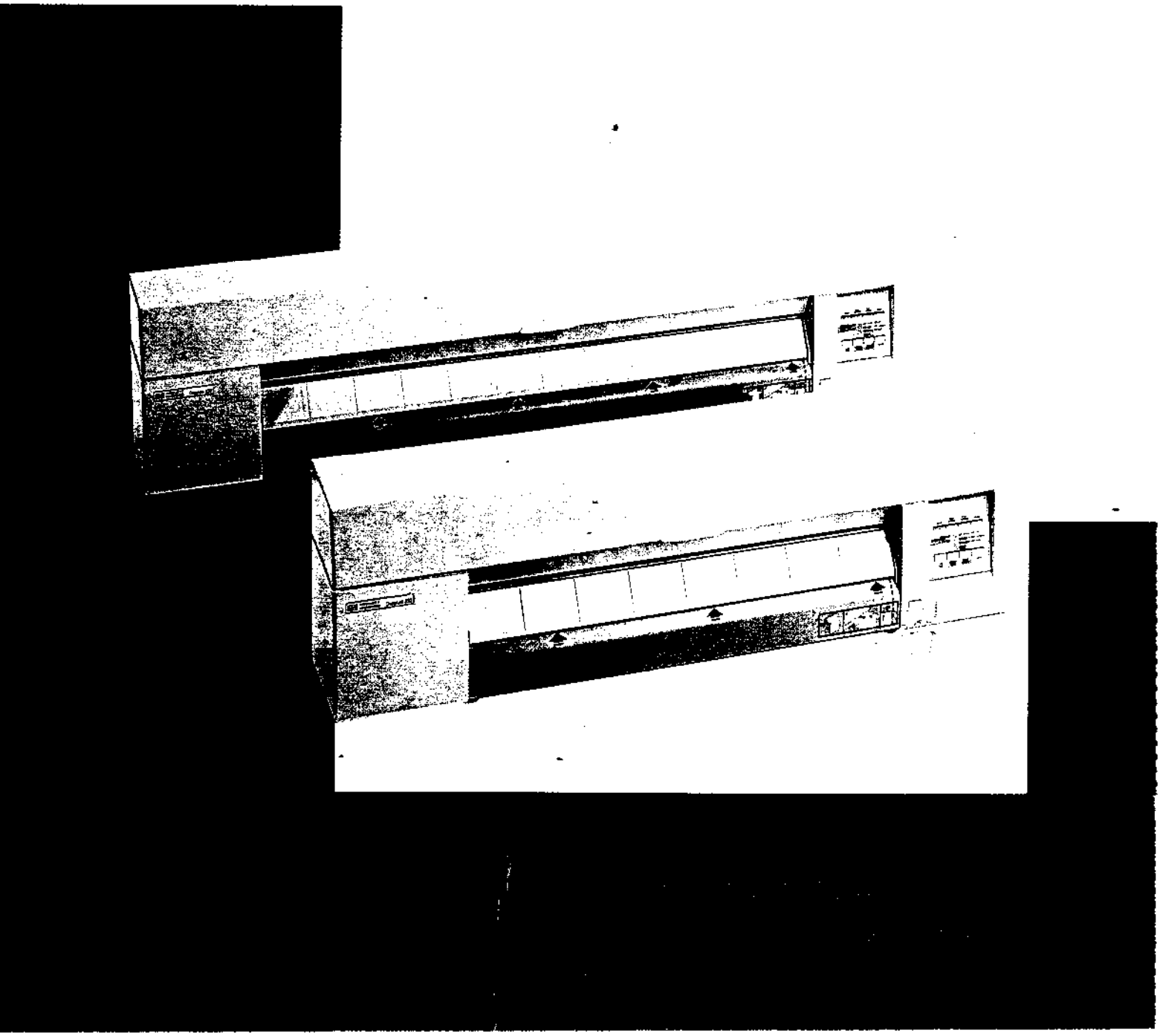
HEWLETT® PACKARD

C4694A, C4695A
HP DesignJet 230 Plotter

User's Guide



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CAUTION

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Hewlett-Packard Company
Barcelona Division
Avda. Graells, 501
08190 Sant Cugat del Vallès
Barcelona, Spain

C4694-90001 English

User's Guide

HP DesignJet 230 Plotter

Finding information

This manual contains:

- setup instructions
- maintenance advice
- troubleshooting advice
- reference information
- an index at the back, for finding specific items

The Quick Reference Guide contains:

- information to help you in the day-to-day use of your plotter

It is designed to be stored in the plastic pocket at the side of the plotter.

Where to find the most commonly needed information

To find how to ...	Go to ...
Install the plotter.	▶ This manual, chapter 1.
Connect the plotter.	▶ This manual, page 1-20.
Configure the plotter using the **Setup Sheet**.	▶ This manual, page 1-23.
Load media.	▶ The Quick Reference Guide.
Replace the cartridge.	▶ The Quick Reference Guide.
Clean the cartridge nozzles by priming them.	▶ This manual, page 3-4.
Use the **Cartridge Alignment Sheet**.	▶ The Quick Reference Guide.
Interpret the lights on the front panel.	▶ The Quick Reference Guide.
Clear a media jam.	▶ This manual, page 4-5.
Solve print quality problems.	▶ This manual, page 4-11.
Order accessories.	▶ This manual, page 5-13.

To find any other information ...	▶ Go to the index *at the back* of this manual.

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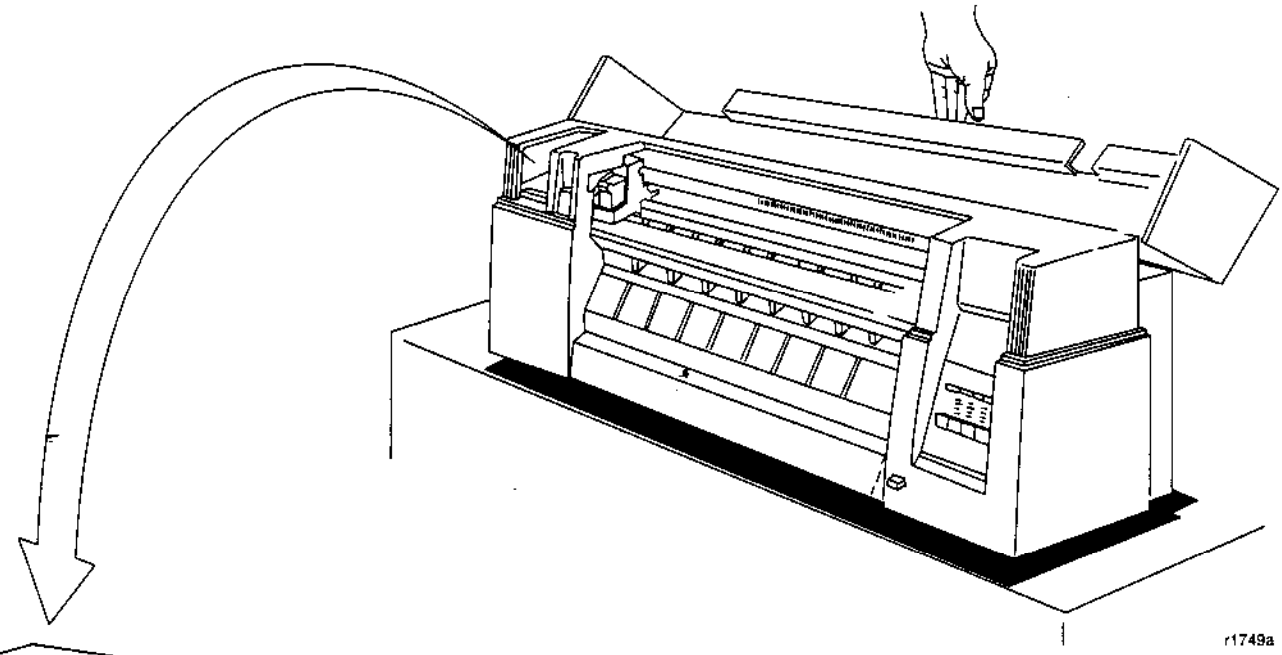
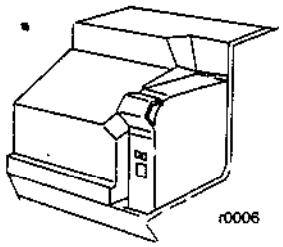
Please give us your feedback (removable)

Welcome

A five-minute guide to your plotter's main features





The HP DesignJet 230 is a large format monochrome inkjet plotter. It uses a **single disposable print cartridge**, which is held in an easy-to-access cartridge carriage.

One cartridge is supplied with the plotter.
From time to time, you will need to replace it.

Media[1]

You can plot on sheets of media up to E/A0 size or D/A1 size, depending on the plotter model you have bought.

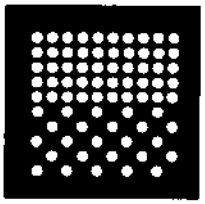
You can use:

- plain paper
- plotter paper
- translucent paper
- vellum
- HP Single-Matte Inkjet Polyester Film

A Supplies Source Catalog is supplied with the plotter. In the USA and Europe, a Media Reference Guide is also included.

To indicate which media type you have loaded, use either the keys on the plotter's front panel or the printer driver in your software[2].

1. It is possible that, since the publication of this document, more media types have been tested and are now supported for your plotter. For the latest information, contact your HP dealer or local HP Sales and Support office.
2. As a general rule, settings in the software override settings on the front panel.

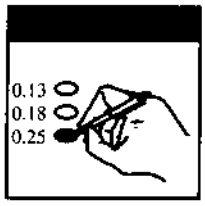


Print quality

You have a choice of three print quality options:

- Best
- Normal
- Fast

The better the quality chosen, the slower the plotting routine. The highest addressable[3] resolution is 600 dpi (dots per inch). To select a print quality option, use either the keys on the plotter's front panel or the printer driver in your software[4].



Setup Sheet

For settings that you'll probably want to change only rarely from the plotter, if at all (for example, line widths), there is a Setup Sheet. This is a sheet that the plotter itself prints when you press **Setup** on the plotter's front panel. You mark on the sheet the changes you want to make and then feed it back into the plotter for it to read your request and re-configure itself automatically.

Each time you print one of these Setup Sheets it shows the plotter's latest configuration – and so it's a good idea to keep the latest one filed with your Quick Reference Guide in the pocket at the side of the plotter.

3. For a definition of "addressable", see page 5-2.
4. As a general rule, settings in the software override settings on the front panel.

Software applications and drivers

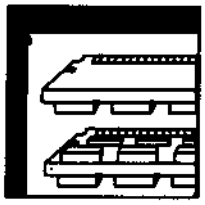
To make sure that your plotter prints exactly what you were expecting – in terms of size, position, orientation and quality – the key is to use the correct driver for the combination of your application software and your plotter, and to be confident that it is configured correctly.

Two types of HP drivers are supplied with your plotter:

- one or more for AutoCAD™ users,
- one for users of Microsoft® Windows applications.

These drivers come with printed and online documentation to help you install and configure them correctly.

Generally, software applications include their own drivers too. For some popular applications, we have provided with this plotter a set of Software Application Notes. If you find your own application in these notes, we recommend that you use the information they contain as an overall guide to configuring the software for your plotter.



Memory

Your plotter comes with a basic memory of **4MB**. Note that there is not a one-for-one relationship between the plotter's memory and the maximum size of file that it can plot. However, in case you need to print particularly large files, the following memory expansion modules are available; 4MB, 8MB, 16MB, and 32MB. The maximum total memory is 36MB (4 + 32).

1

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Setting up your plotter

Installation, connection,
and configuration

Fast track

If you meet all the following requirements:

- If you are happy with English as the language of the plotter's internal plots.
- If you are experienced at installing printers or plotters.
- If you don't want to add extra memory.
- If you are going to connect the plotter directly to a PC.
- If you are going to use a parallel connection.

... just follow the six steps on this page, and skip the rest of this chapter.

1. Connect the power cord and switch on.
2. Open the cover and load the print cartridge into the carriage on the left of the plotter. For help, use the label on the plotter near the carriage and the documentation in the cartridge box. Don't forget to remove the tape from the cartridge.
3. Load an A-size or A4-size sheet. The plotter will print a Cartridge Alignment Sheet.
4. Follow the instructions on the sheet.
5. Switch off the plotter and your computer, connect the parallel cable, and then switch them on again.
6. Choose your driver disk(s), read the instructions on the label, and follow the printed instructions that were shipped with the driver.

That's all!

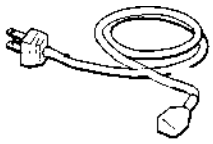
Setup checklist

Having unpacked and assembled the plotter, you can use the checklist below as you complete each task explained in this chapter.

Task	Done? (✓)
1 Check that you have all the items required.	
2 (Optional) Install a memory module.	
3 Position the plotter.	
4 Switch on.	
5 Load the print cartridge.	
6 (Optional) Change the language.	
7 Connect the plotter to your computer.	
8 (Optional) Configure the plotter.	
9 Set up the plotter in your application software.	
10 Send a sample or demo plot.	

Task 1: Check that you have all the items required

Supplied



1 You will need the following items, which *were supplied with the plotter.*

- **Power cord**

The power cord supplied with your plotter should meet the plug requirements for your area. However, different power cords (international options) are available. If necessary, contact your dealer or HP Sales and Support Office.

- **Print cartridge:**

A single sealed black print cartridge was supplied with the plotter.

- **Software**

The following two software packs were supplied with the plotter. Whether you need them depends on what application(s) you intend to use.

  – Drivers for AutoCAD

  – Driver for Microsoft Windows applications

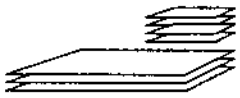
2 Inspect the plotter itself and the above accessories. If you received any item in a damaged condition, notify the dealer or HP Sales and Support Office where you purchased the plotter, and file a claim with the carrier.

Not supplied

3 You will also need the following items, which *were not supplied with the plotter.*

- **Interface cable**

For details of suitable cables, see page 5-9.



- **Sheets of media**

For details of supported media types, see page 5-2. As part of the setup routine, you will need at least two A-size or A4-size sheets, plus whatever size sheet you prefer for a sample plot.

Optional

4 If you have bought one, you will also need your:

- **Memory expansion module**

For details of the memory expansion modules available, see page 5-14.

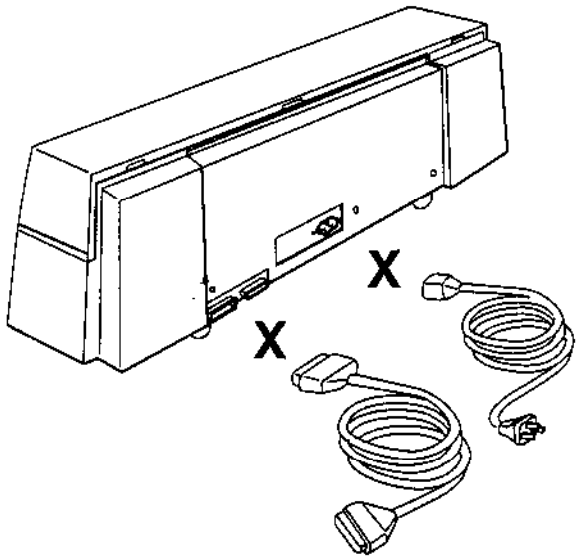
- **HP JetDirect EX external network interface**

This is required if you intend to connect your plotter directly to a network, without using a server. For details of the latest HP JetDirect EX products, contact your local HP Sales and Support Office. For configuration details, see page 1-22.

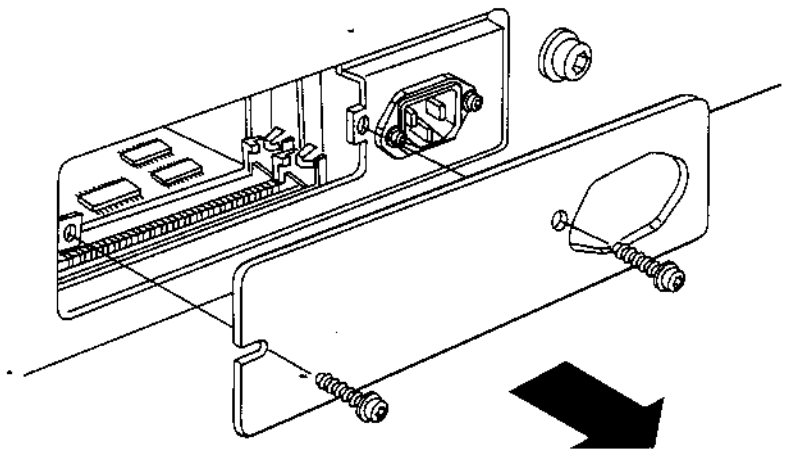
Task 2: (Optional) Install a memory expansion module

For details of the memory modules available, see page 5-14. You may install only one.

1 Make sure that the plotter is switched OFF and that neither the power cord nor an interface cable is connected.



2 Unscrew the cover plate at the back of the plotter, and remove it.

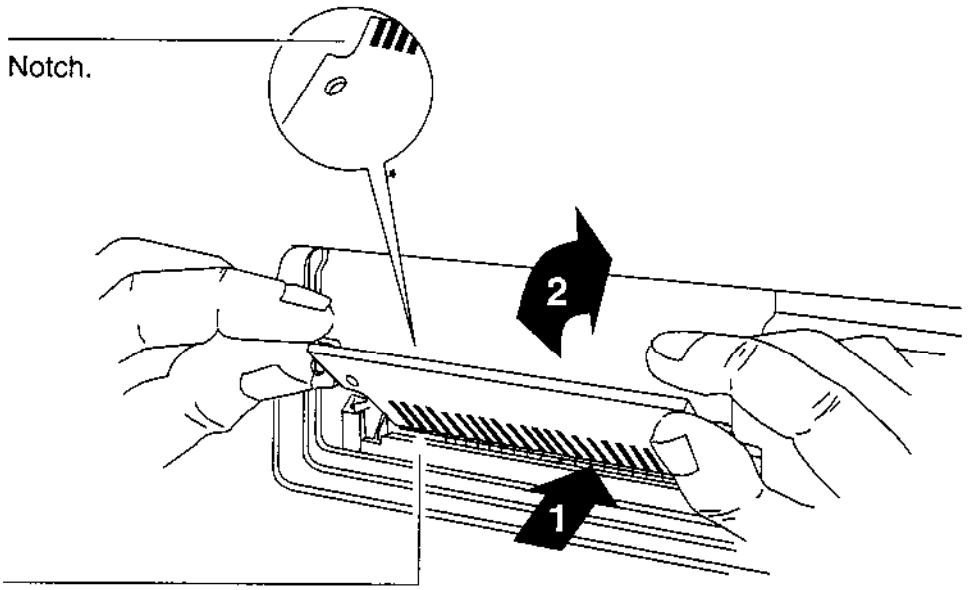


CAUTION

Before handling a memory module, either put on a grounding wrist strap and attach the end to the metal chassis of the plotter, or touch the outer metal surface of the plotter with your hand. Otherwise, static electricity from your body could damage the memory module.

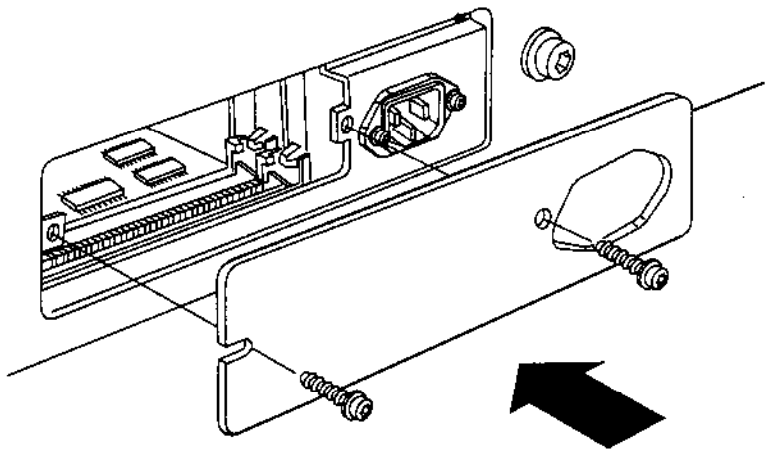
3 Take the memory module out of its bag, holding the module only by the edges.

4 With the module's small notch on the left and the metallic edge away from you, load the module into *the slot nearest to you*. To do this, first hold the module at an angle, and then gradually push it back until it clicks into place vertically.



Task 2: (Optional) Install a memory expansion module

5 Replace the cover plate and the screws.



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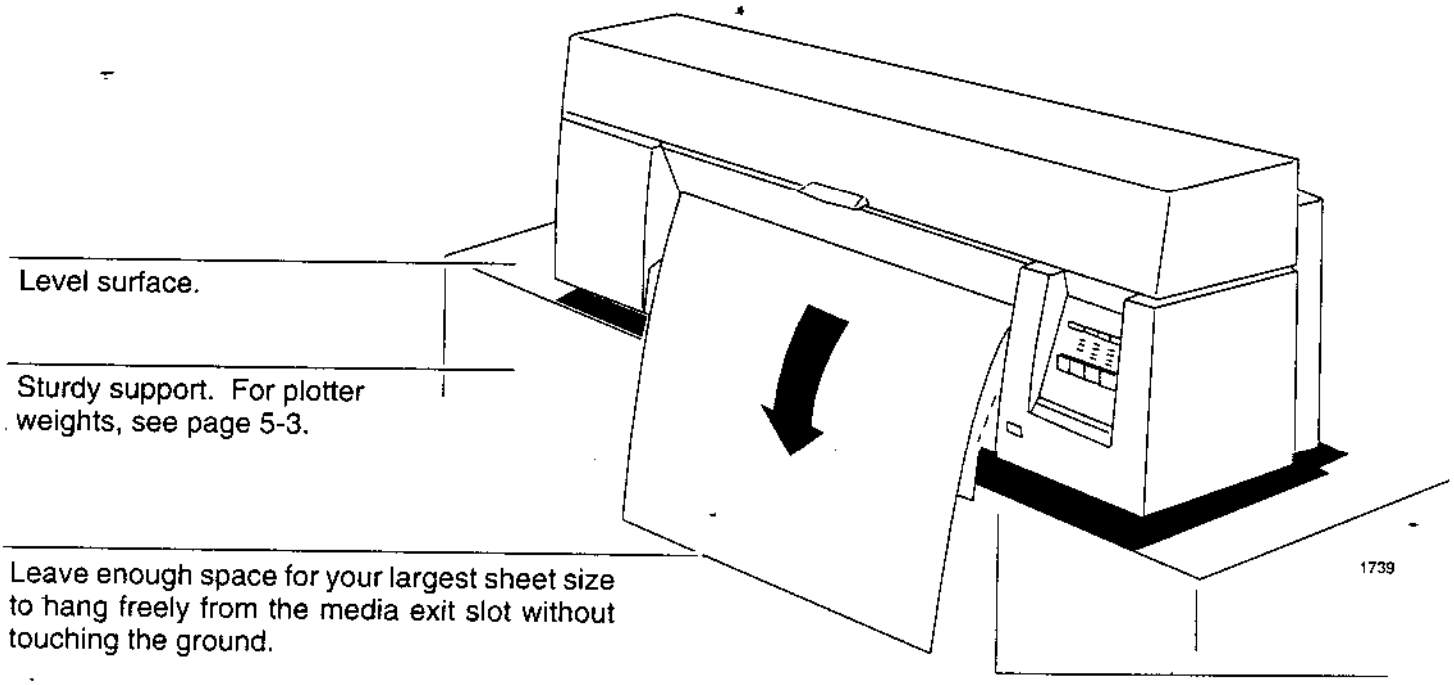
Task 3: Position the plotter

- For operating temperature and humidity, see page 5-3.
- Allow enough space above the plotter to open the cover.
- If you have not purchased the optional legs, then position the plotter as shown below.

If the plotter is without legs ...



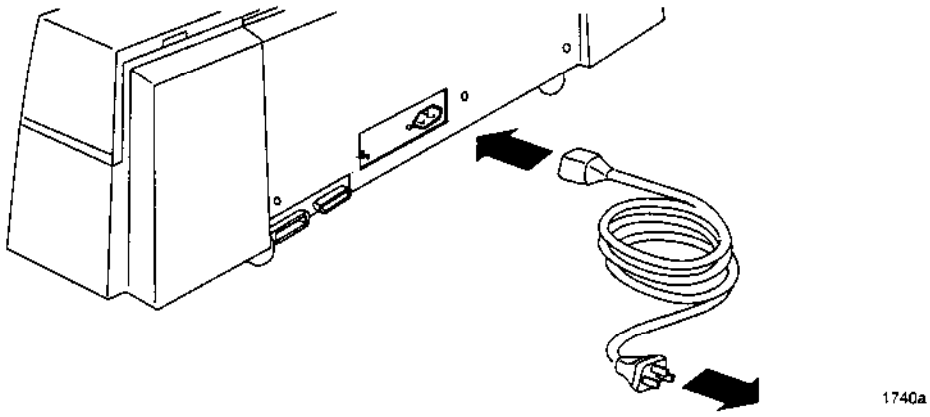
Task 4: Switch on

WARNING

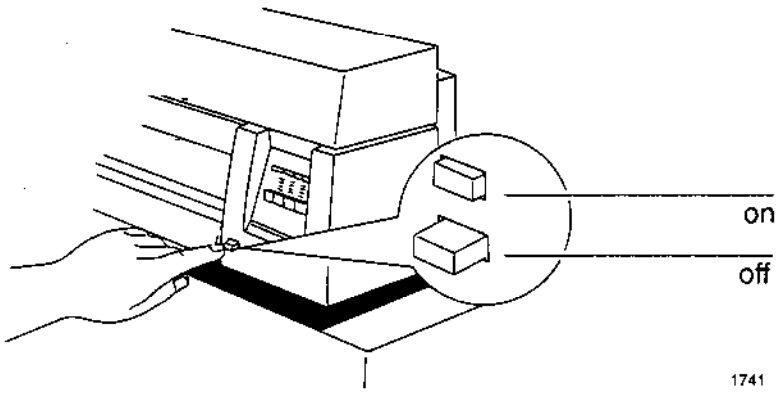
Be sure that the power cord supplied with your plotter matches your ac power connection requirements. Use only three-wire (earth-grounded) power cords with this plotter.

1 Make sure that the power switch on the front of the plotter is in the OFF position (extended).

2 Plug the power cord into the socket at the back of the plotter, and then into your power outlet.



3 Switch on the plotter, by pushing the power switch.

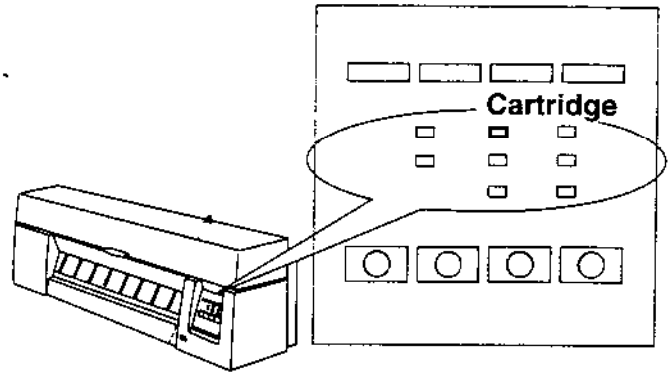


4 If there is no sound, nor any light on the front panel, you may have a power problem. For troubleshooting information, see chapter 4.

Task 5: Load the print cartridge

A black cartridge was supplied with your plotter. Follow these instructions to load it into your plotter.

1 Make sure that, on the front panel, the **Cartridge** light is on. If any of the lights in the right-hand column is on, look up its meaning in the Quick Reference Guide.



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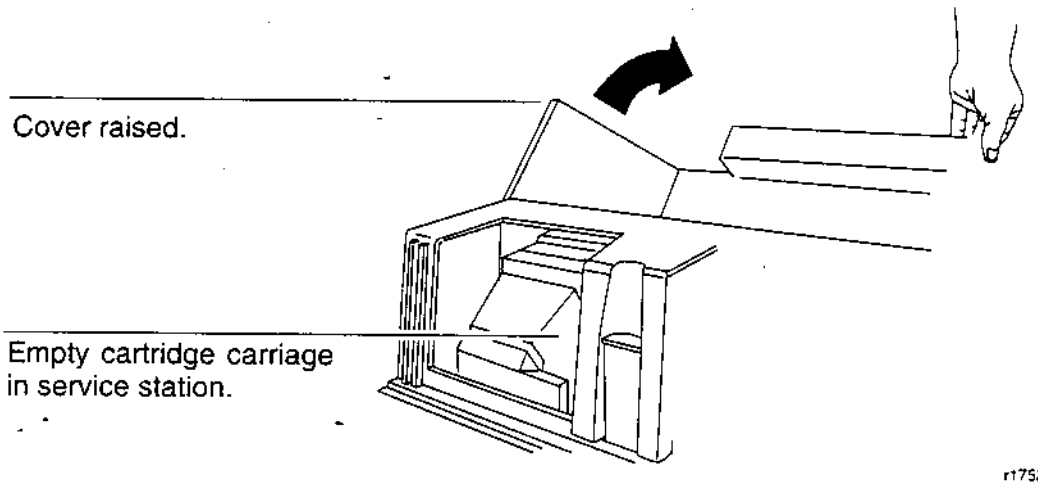
2 Open the cover. If necessary, wait for the cartridge carriage to move to the service station (the area on the left of the plotter).



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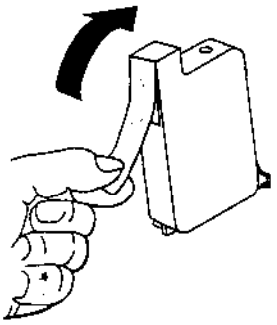
Task 5: Load the print cartridge

WARNING

Don't touch the stainless steel strip that runs the length of the plotter behind the cartridge carriage; its edge is very sharp. Keep hair, jewelry, clothing, and foreign objects away from the plotter mechanisms.

3 a. Take the cartridge out of its box.

b. Remove the colored protective tape and tab from the cartridge's nozzles.



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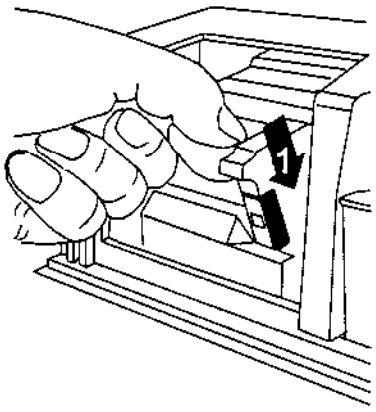
c. Insert the cartridge into the stall. Press down lightly and push the cartridge away from you until it snaps into place. If it is installed correctly, the **Cartridge** light should flash three times.



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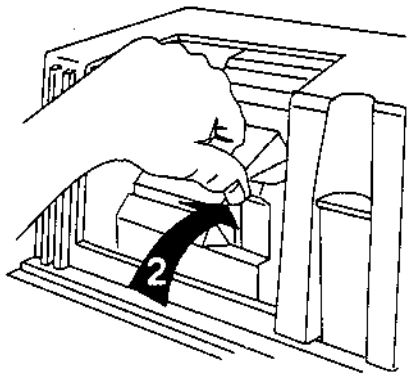

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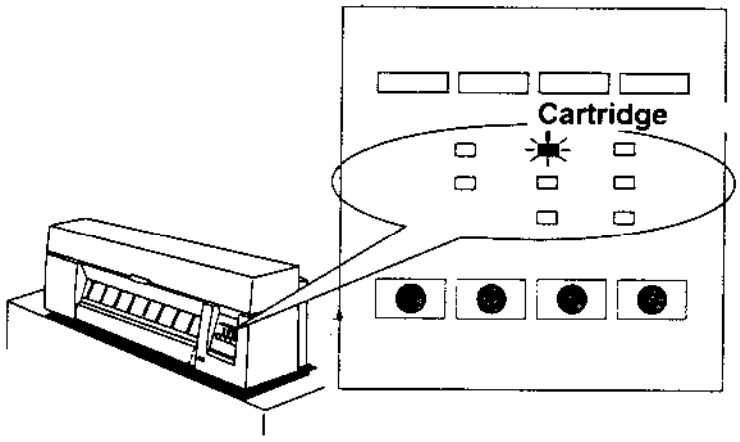
4 Lower the cover.

On the front panel, the **Cartridge** light should now start flashing, indicating that you must now run the **Cartridge Alignment Procedure**, which is explained below in steps 5 through 10.



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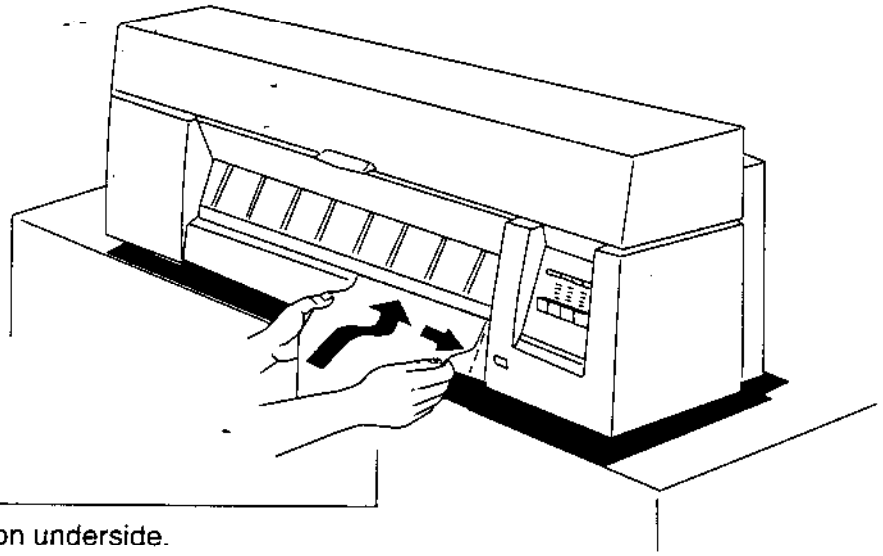
5 Load a sheet of A-size or A4-size paper, in portrait orientation.

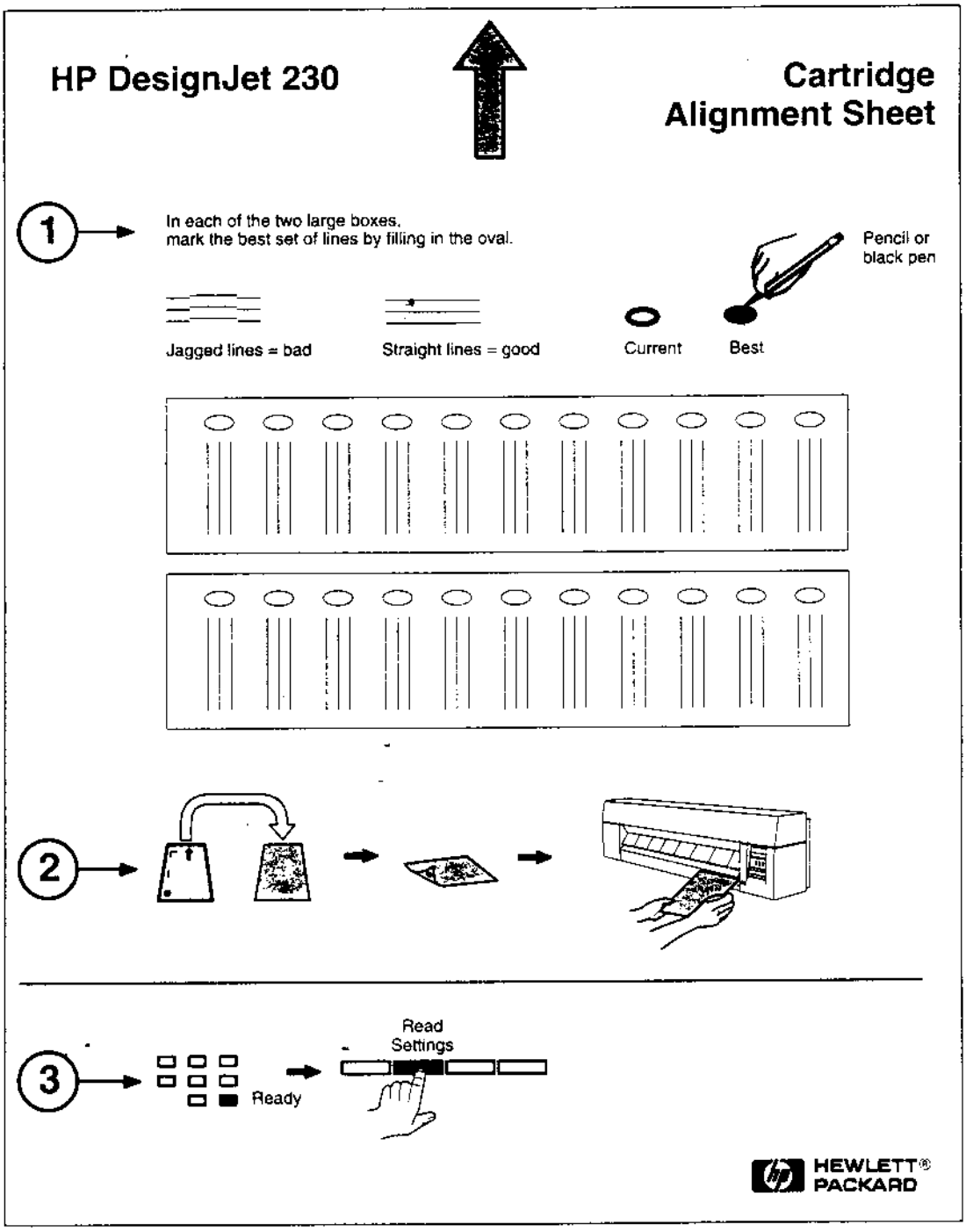
For help on how to load a sheet, see the Quick Reference Guide or simply use the pictures on the front of the plotter.



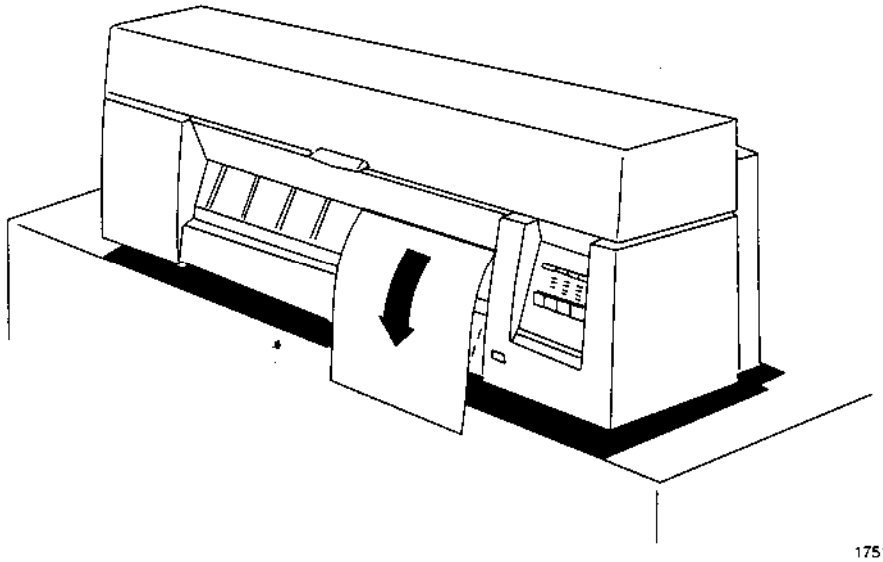
Plot will be on underside.

1750

6 As soon as you have correctly loaded the sheet, the **Ready** light will flash and the plotter will automatically print the Cartridge Alignment Sheet, an example of which is shown below.
Note. This procedure is automatic only after inserting the black cartridge. To do it at any other time, press the **Align Cartridges** key at this point.



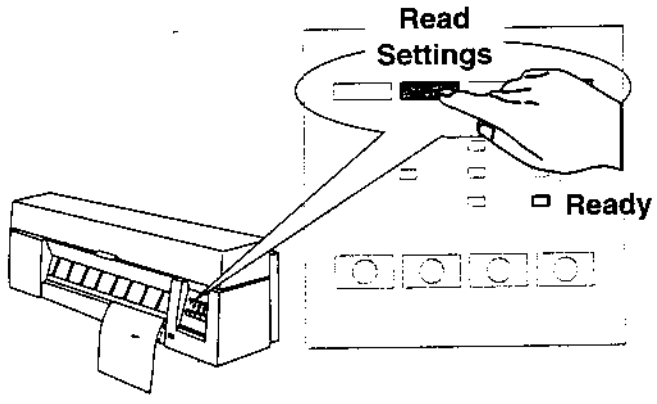
7 When the plot has finished, wait until the **Load Media** light comes on and the plotter ejects the sheet – plus one and a half minutes for the ink to dry – and then remove it. Follow the instructions on the sheet itself. As you will see, this involves you identifying the straightest set of vertical lines in each of the two boxes.



1751

8 Having marked the appropriate ovals (*even if they are the same as the current selections*), reload the sheet in the plotter, printed side down and with the large arrow pointing into the plotter, as indicated on the sheet.

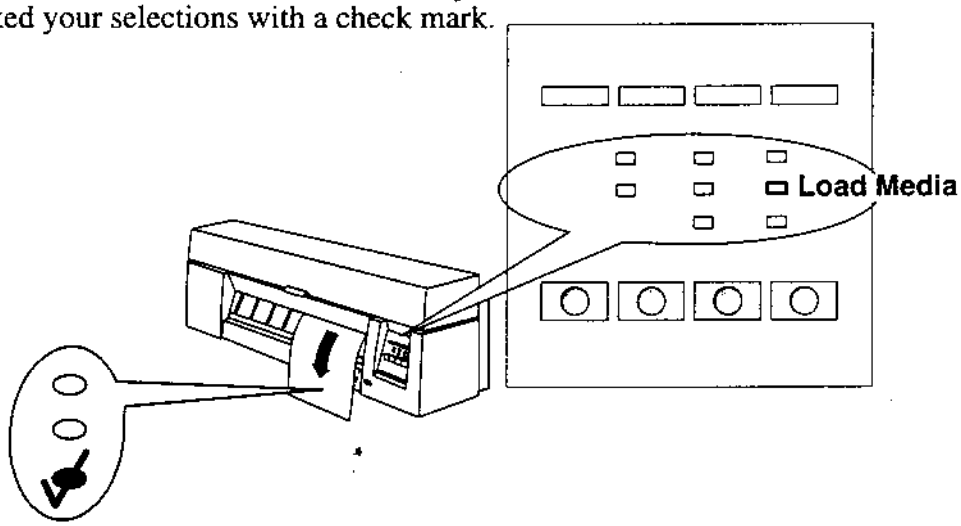
9 When the **Ready** light comes on, press **Read Settings**.



The plotter now reads your marks and adjusts itself automatically.

r1803b

10 When the **Load Media** light comes on again – plus one and a half minutes for the ink to dry – remove the sheet and make sure that the plotter has marked your selections with a check mark.



Three important points concerning the Cartridge Alignment Procedure:

- *Always* use the Cartridge Alignment Sheet immediately after printing it. That is, do not try to print any other plot in between – the plotter will not accept any other plot until you have reloaded the sheet and let it read your settings.
- *Never* re-use a Cartridge Alignment Sheet. Its settings make sense only when used immediately after it is printed.
- Any plot that was in the plotter's memory before you printed the Cartridge Alignment Sheet has been lost and so, to print it, you must resend it.

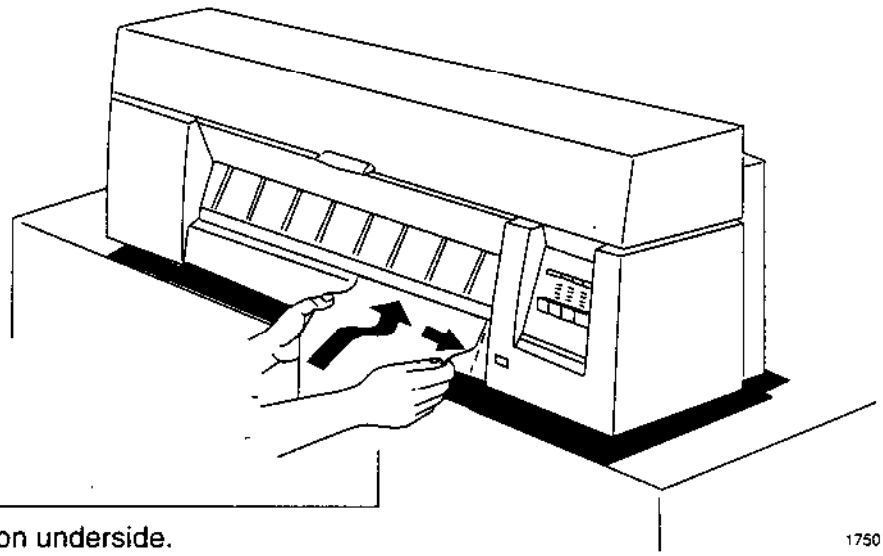
Task 6: (Optional) Change the language

All the plotter's internal plots are available in the following languages: English, French, Italian, German, Spanish, Portuguese and Japanese. By default, the language is English. If English is what you want, then you can skip this task and go to task 7.

To change from English to any of the other languages, you must use the plotter's Setup Sheet, as explained below.

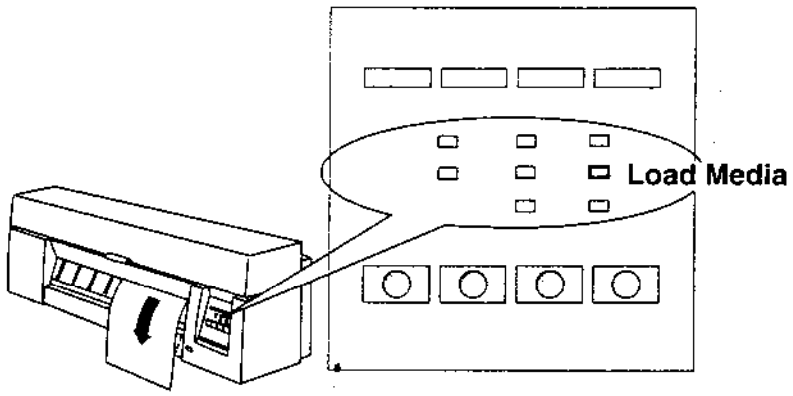
1 Load a sheet of A-size or A4-size paper in portrait orientation.

For help on how to load a sheet, see the Quick Reference Guide or simply use the pictures on the front of the plotter. When the **Ready** light is on, you have loaded it correctly.



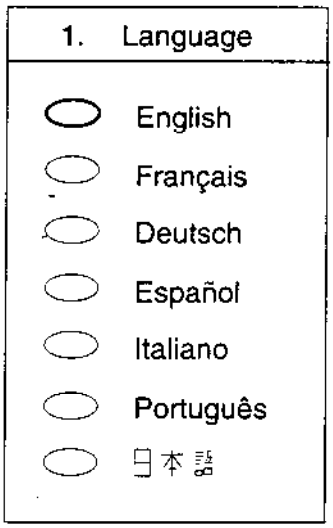
2 Press **Setup**.

3 When the plot has finished, wait until the **Load Media** light comes on and the plotter ejects the sheet – plus one and a half minutes for the ink to dry – and then remove the sheet.



r1751c

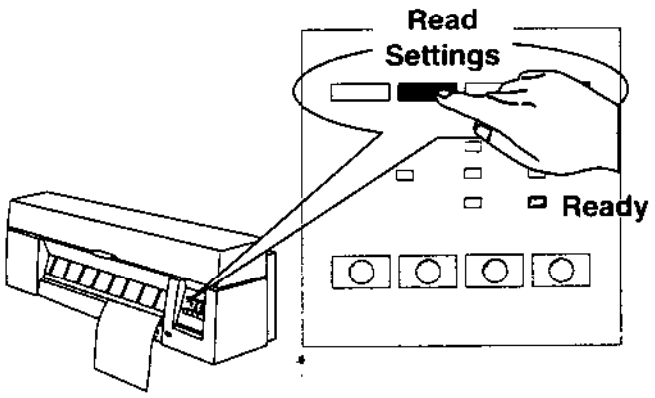
4 The plot is a Setup Sheet in English. You can ignore all the information except the box in the top left, headed "1. Language".



5 Take a pencil or black pen and fill in the oval next to the language you want.

6 Reload it in the plotter, printed side down and with the large arrow pointing into the plotter.

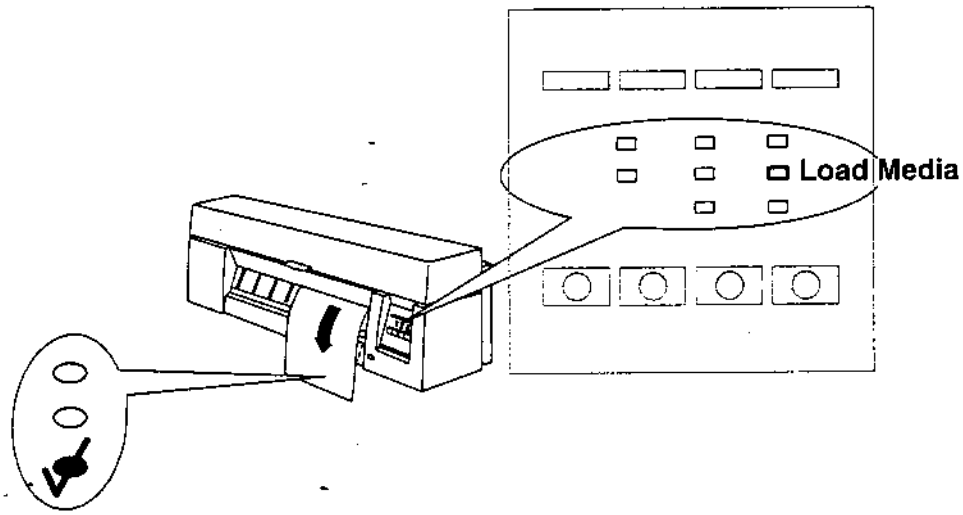
7 When the **Ready** light comes on, press **Read Settings**.



The plotter will now read your marks and reconfigure itself automatically.

r1803b

8 Wait until the **Load Media** light comes on again – plus one and a half minutes for the ink to dry – remove the sheet and make sure that the plotter has marked your selections with a check mark.



r1751b

Task 7: Connect the plotter to your computer

If you are connecting the plotter directly to your computer

1 Decide whether to use the parallel or serial interface.

If your computer and your application software support it, use the parallel interface, as it is faster. You may connect both the parallel and the serial interface simultaneously if you wish: the plotter uses the interface that first receives data.

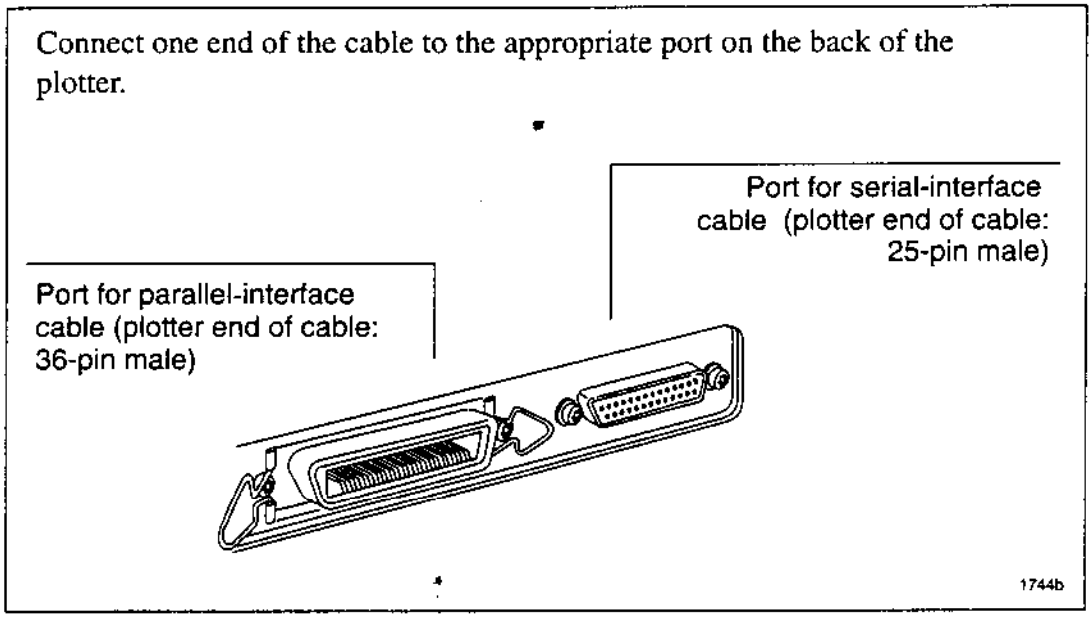
2 Choose an interface cable.

For a list of HP cables for various computers, see the table on page 5-9. If you are making up your own cable, refer to the interface specifications starting on page 5-6. Use shielded interface cables only.

Note on the parallel interface. The parallel interface is a Bi-Tronics/Centronics interface. The same cable can be used for both Bi-Tronics and Centronics communication. If you have decided to use the parallel interface and already have a Centronics cable available, there is no need to purchase another to make use of the Bi-Tronics interface.

3 Switch off the plotter and the computer.

4 Connect one end of the cable to the appropriate port on the back of the plotter.

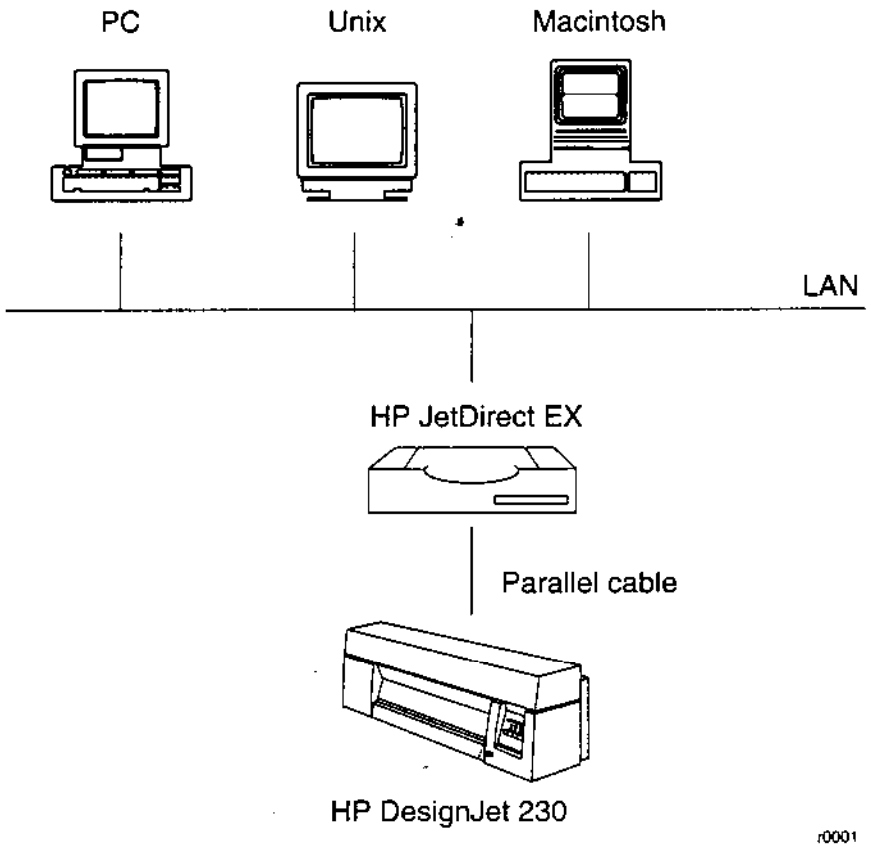


5 Connect the other end of the cable to your computer. For help on choosing the correct port on the computer, refer to your computer documentation.

6 Switch on the computer and the plotter.

If you are connecting the plotter directly to a network

You can connect your plotter directly to a Local Area Network using an HP JetDirect EX external network interface, connected to the plotter's parallel port. Various network operating systems are supported, in DOS, Unix® and Macintosh environments. For the latest information on HP JetDirect EX products, contact your local HP Sales and Support office.



For installation of the HP JetDirect EX interface, see the Installation Guide that comes with that product.

Task 8: (Optional) Configure the plotter

In the majority of cases, there is no need to change any of the plotter's default settings. This may be because:

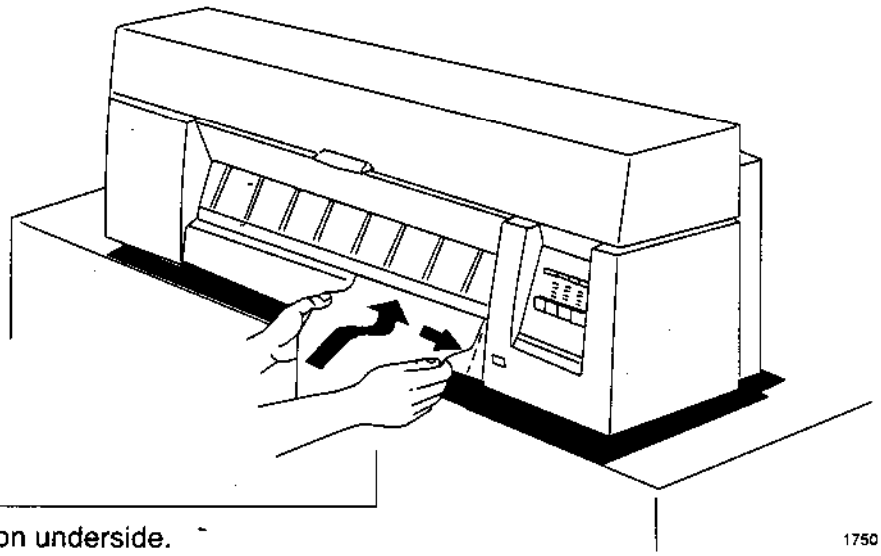
- You prefer to change those settings that affect the appearance of your plots from your application software.
- The plotter's factory defaults, *listed on page 1-26,* are acceptable.

However, if you *do* want to change the defaults, follow steps 1 through 8, which explain how to print and use the **Setup Sheet**.

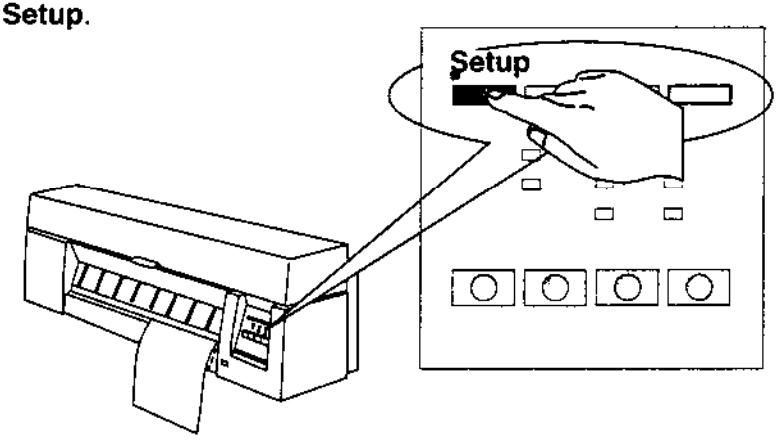
Note. If you changed the language from English (see task 6 above), you already know how to use this sheet – but this time it will be in your chosen language.

1 Load a sheet of A-size or A4-size plotter paper in portrait orientation.

For help on how to load a sheet, see the Quick Reference Guide or simply use the pictures on the front of the plotter. When the **Ready** light is on, you have loaded it correctly.



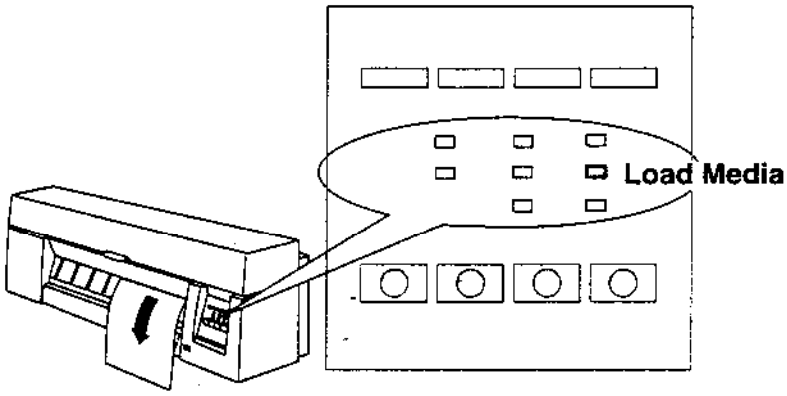
2 Press **Setup**.



The Setup Sheet is printed.

r1751d

3 When the plot has finished, wait until the **Load Media** light comes on and the plotter ejects the sheet – plus one and a half minutes for the ink to dry – and then remove the sheet.



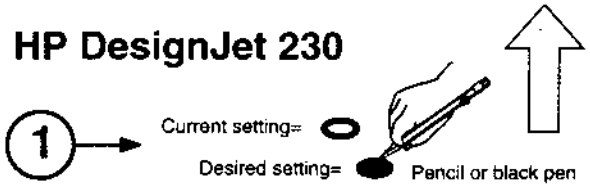
r1751c

An example of the Setup Sheet is shown on page 1-25.

An explanation of the items in the sheet is given on page 1-26.

For step 4, see page 1-27.

HP DesignJet 230 Setup Sheet



1. Language

- (●) English
- ( ) Français
- ( ) Deutsch
- ( ) Español
- ( ) Italiano
- ( ) Português
- ( ) 日本語

2. Serial Interface

Baud Rate		Parity	
( )	1200	(●)	None
( )	2400	( )	Even
( )	4800	( )	Odd
(●)	9600		
( )	19200		
( )	38400		

3. Graphics Language

- (●) HP-GL(7586B)
- ( ) HP-GL/2

4. I/O Timeout

- ( ) 0.5 min
- ( ) 1 min
- ( ) 5 min
- (●) 30 min

5. Plot Appearance

- (●) Rotate off
- ( ) Rotate 90°
- (●) Mirror off
- ( ) Mirror on
- (●) Merge off
- ( ) Merge on

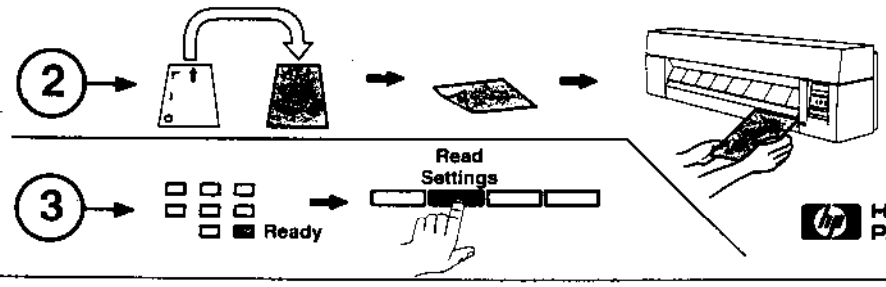
6. Pen Settings

- (●) Use settings from software
- ( ) Use settings from tables below

If you want these pen settings to take effect, don't forget to mark the oval above.

Width (mm)	Pen Number 1	2	3	4	5	6	7	8
0.13	( )	( )	( )	( )	( )	( )	( )	( )
0.18	( )	( )	( )	( )	( )	( )	( )	( )
0.25	( )	( )	( )	( )	( )	( )	( )	( )
0.35	( )	( )	( )	( )	( )	( )	( )	( )
0.50	( )	( )	( )	( )	( )	( )	( )	( )
0.70	( )	( )	( )	( )	( )	( )	( )	( )
1.00	( )	( )	( )	( )	( )	( )	( )	( )

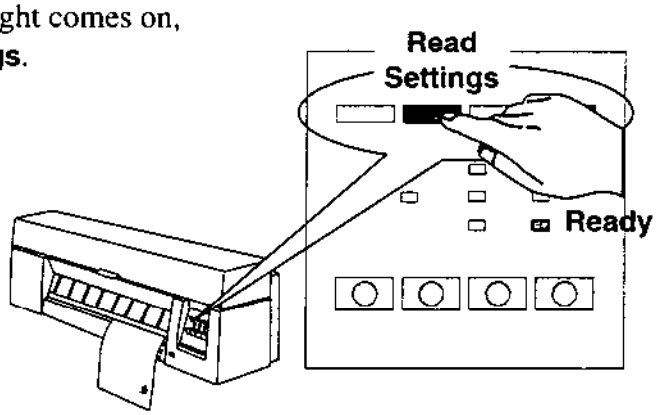
Grayscale	1	2	3	4	5	6	7	8
100%	( )	( )	( )	( )	( )	( )	( )	( )
80%	( )	( )	( )	( )	( )	( )	( )	( )
60%	( )	( )	( )	( )	( )	( )	( )	( )
40%	( )	( )	( )	( )	( )	( )	( )	( )
20%	( )	( )	( )	( )	( )	( )	( )	( )
10%	( )	( )	( )	( )	( )	( )	( )	( )
5%	( )	( )	( )	( )	( )	( )	( )	( )



Setup Sheet Items and Defaults		
Item	**Factory Default**	**Comments**
Language	English	Task 6 explained how to change this.
Baud Rate	9600	(Serial interface only.) You must set the baud rate to be the same as that of the computer sending the data.
Parity	None	(Serial interface only.) You must set the parity to be the same as that of the computer sending the data.
Graphics Language	HP-GL (7586B)	With this setting, most drivers will automatically switch the plotter's language to the one appropriate to the data being sent, including HP-GL/2 and RTL. The alternative setting, "HP-GL/2", is for use only if you experience problems with HP-GL/2 plots using the default setting.
I/O Timeout	30 min	This tells the plotter how long to wait, after the last receipt of data, before assuming that the plot is complete. As most applications terminate their files correctly, this is usually irrelevant.
Rotate	off	If set to 90°, all plots are rotated.
Mirror	off	If set to on, all plots are mirror images of the drawings.
Merge	off	If set to on, all overlapping lines are plotted.
Pen Settings	Use settings from software	The alternative is to specify in the Setup Sheet (see below) the width and grayscale of pens 1 through 8. These "pens" are the logical pens referenced in the software, rather than the physical "pen" (cartridge) in the plotter.

4 Follow the instructions on the Setup Sheet. That is, having marked the ovals to change the settings, reload the sheet in the plotter, printed side down and with the large arrow pointing into the plotter.

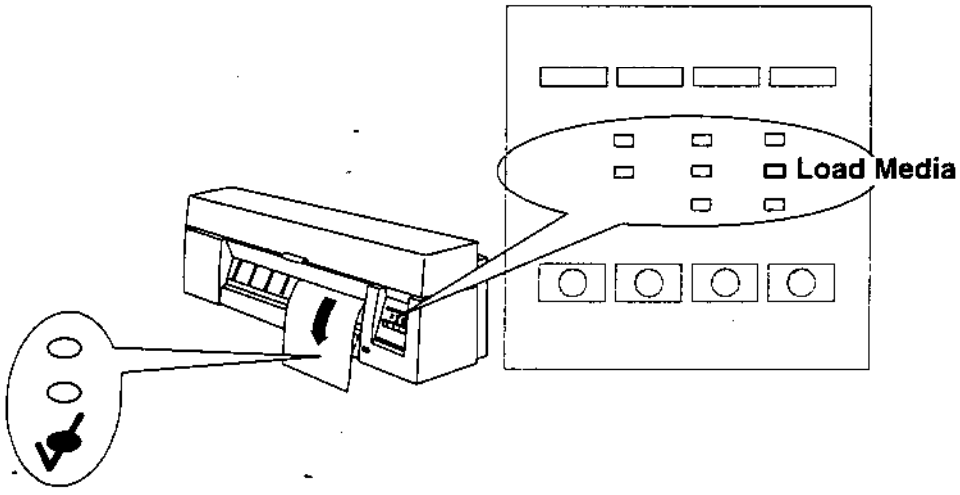
When the **Ready** light comes on, press **Read Settings**.



The plotter now reads your marks and reconfigures itself automatically.

r1803b

5 Wait until the **Load Media** light comes on again – plus one and a half minutes for the ink to dry – remove the sheet and make sure that the plotter has marked your selections with a check mark.



r1751b

6 It's a good idea to store this latest copy of the Setup Sheet with the Quick Reference Guide in the plastic pocket at the side of the plotter.

Task 9: Set up the plotter in your application software

"Application software" is the software from which you intend to send plots to your plotter – for example, a CAD system.

What is a driver?

Your application software needs to know to which type of plotter it is sending information. This knowledge, and other configuration information, is held in a "driver." A driver is a piece of software that handles communications between your application software and a peripheral, for example a plotter. Drivers are usually supplied as part of the application software, but they are also available separately. If supplied separately, you need to install them separately.

AutoCAD

Supplied with this plotter is a pack containing drivers for AutoCAD for DOS and AutoCAD for Windows. Please refer to the documentation supplied with these drivers.

Windows applications

Supplied with this plotter is a pack containing a driver for applications that work with Microsoft Windows. Please refer to the documentation supplied with this driver.

Other applications

Users of other applications should first check any Software Application Notes supplied with the plotter, to see if their application is covered there.

For other applications, on the next page is a general recommendation as to which device to choose when setting up this plotter. Device lists are not always up to date with the latest plotters, and so with some software you may have to choose from the device list a plotter other than the HP DesignJet 230.

When choosing from a device list, follow these preferences, which are listed here in priority sequence.

- **Preference 1:** **HP DesignJet 230**
- **Preference 2:** **HP DesignJet 250C** *
- **Preference 3:** **HP DesignJet 650C** *
  with a preference for C2858B/C2859B
  rather than C2958A/C2859A
- **Preference 4:** **HP DesignJet 220**
- **Preference 5:** **HP DesignJet 200**
- **Preference 6:** **HP DesignJet 600**
  HP DesignJet
- **Preference 7:** **HP-GL/2 Device**
  or a similar option including a reference to HP-GL/2
- **Preference 8:** Any of:
  HP 7595B DraftMaster SX
  HP 7596B DraftMaster RX
  HP 7599A DraftMaster MX
  HP 7595C DraftMaster SX Plus
  HP 7596C DraftMaster RX Plus
  HP 7599B DraftMaster MX Plus

If any of the options quoted above appears, then your software supports HP-GL/2. If it doesn't support HP-GL/2, then go to Preference 9.

- **Preference 9:** **HP 7586B**
  This plotter supports HP-GL. However, if you choose this device you may not be able to use you plotter's parallel connection – depending on the application software.

Getting help

If in doubt, or if you have problems with your driver, refer to the section at the end of chapter 4 for advice on how to get help.

* If you choose one of these preferences and there is a choice between monochrome and color, choose monochrome.

Task 10: Send a sample or demo plot

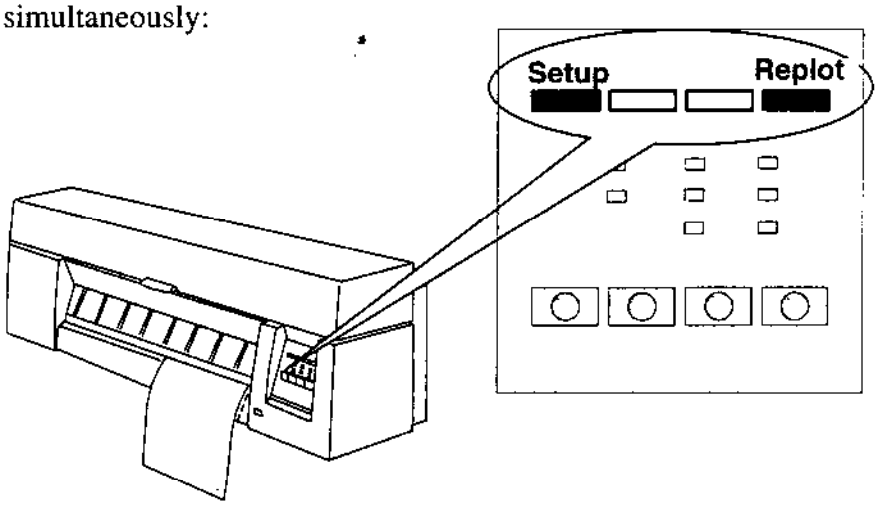
To verify a successful configuration, choose a sample plot in your application and try to print it on the plotter.

In case of problems, refer to chapter 4 of this manual, "Troubleshooting." To test whether the source of any problem is in the plotter itself or in the link with your application, it is useful to print the plotter's internal demonstration plot.

To print the demonstration plot

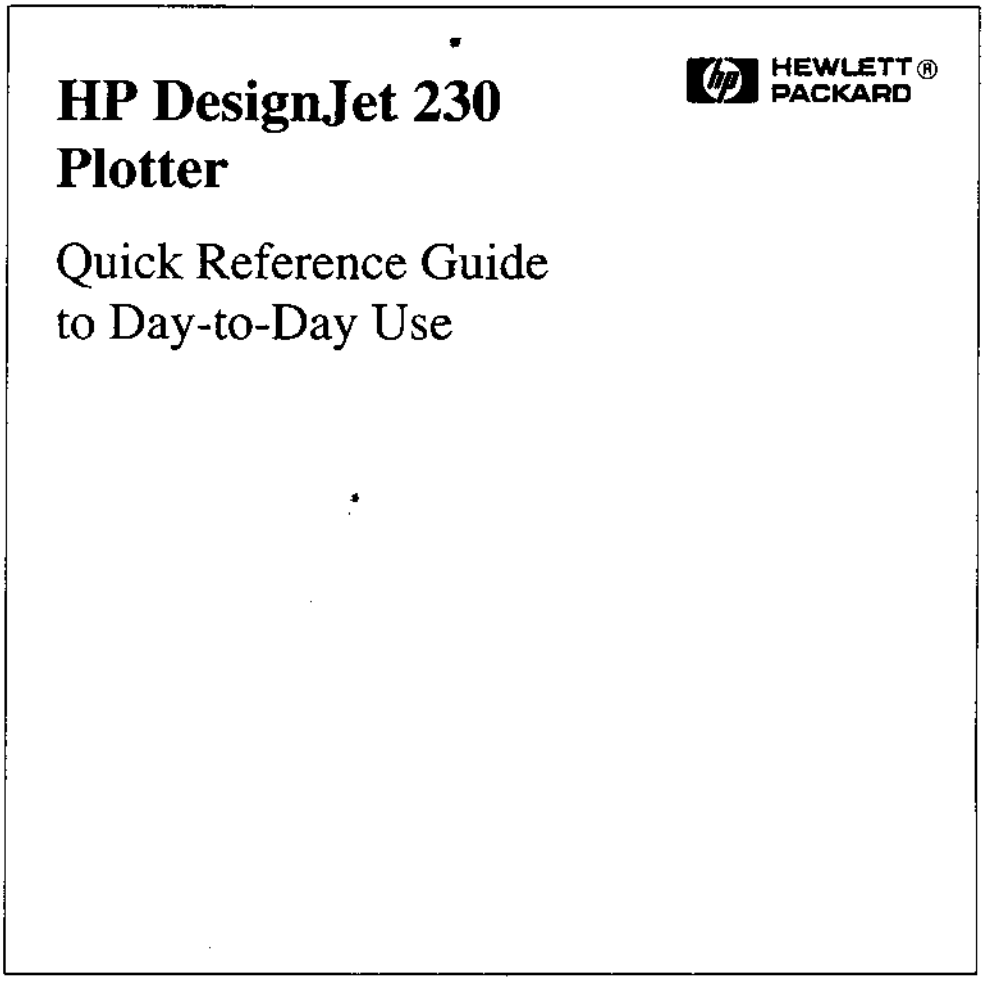
1 Load a sheet of paper, of any size, in any orientation.

2 Press simultaneously:



The demonstration plot summarizes the plotter's main features and includes a sample CAD drawing, using a variety of line widths. It is printed in the language currently configured on the Setup Sheet. To change the language, see task 6.

Go to ...



Using your plotter

For information on the day-to-day use of your plotter, see the separate Quick Reference Guide

The Quick Reference Guide

The information you are most likely to need while using the plotter on a day-to-day basis can be found in the **Quick Reference Guide**. For ready access, it's a good idea to place the Quick Reference Guide at the side of the plotter, in the plastic pocket provided.

This information includes sections on:

- checking and altering the plotter's configuration
- setting the media type
- setting the print quality
- loading and unloading a sheet
- allowing for ink-drying times
- checking the cartridge's ink level
- removing the cartridge
- loading a new cartridge
- running the Cartridge Alignment Procedure
- printing the plotter's internal plots
- interpreting the lights on the front panel

3

Replacing the cartridge 3-3
Cleaning the cartridge nozzles (priming) 3-4
Cleaning the plotter 3-6

Maintaining your plotter

Cartridge replacement, priming, cleaning

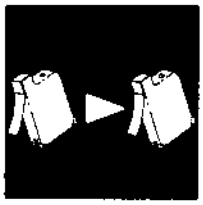
A replaceable print cartridge has been used in your plotter, greatly reducing its user maintenance requirements, as this is the components that suffer the greatest wear and tear.

Normally, the only user maintenace required is to replace the cartridge when it runs out of ink. Only occasionally during the life of the cartridge should it be necessary to perform some simple operations to ensure that optimum print quality is obtained.

This chapter and the Quick Reference Guide provide information on:

- How to change the cartridge
- How to clean the cartridge nozzles, if necessary, to maintain optimum performance

General cleaning of the plotter is also covered in this chapter.



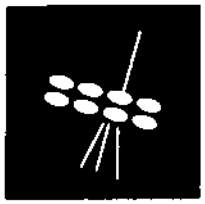
Replacing the cartridge

For cartridge ordering information, see page 5-14.

For instructions on:

- how to check the cartridge's ink level, and
- how to replace the cartridge,

refer to the Quick Reference Guide.



Cleaning the cartridge nozzles (priming)

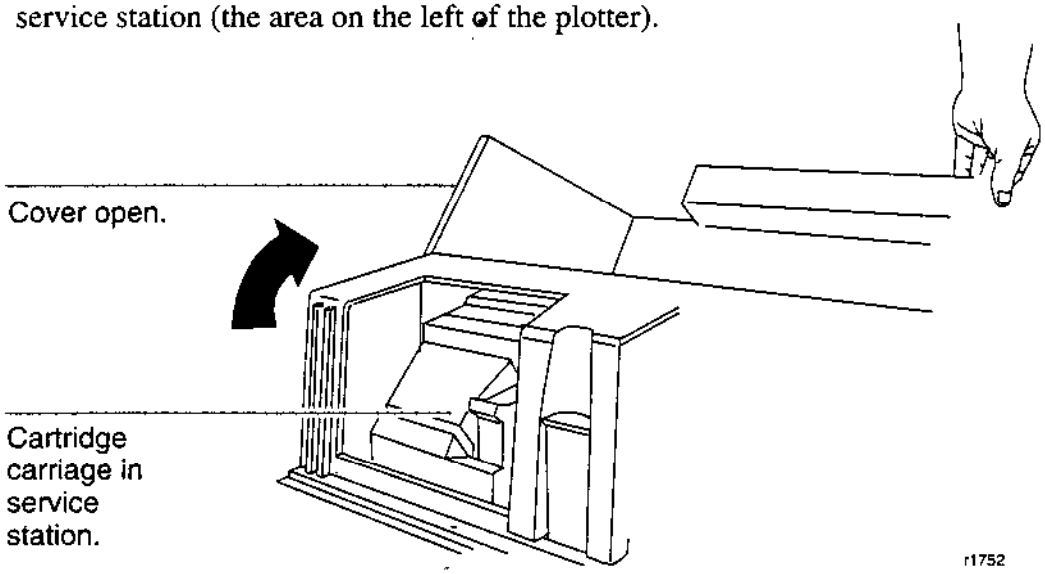
To prime the cartridge is to clear clogged print nozzles manually, by using the green plunger at the left side of the plotter. Some of the circumstances in which it is useful to prime the cartridge are explained in chapter 4, "Troubleshooting", but essentially, if you suspect that the nozzles of the cartridge are clogged, try priming it, as explained here.

1 Leave the plotter switched ON.

CAUTION

If you try to prime the cartridge while the plotter is switched OFF, you could damage the cartridge.

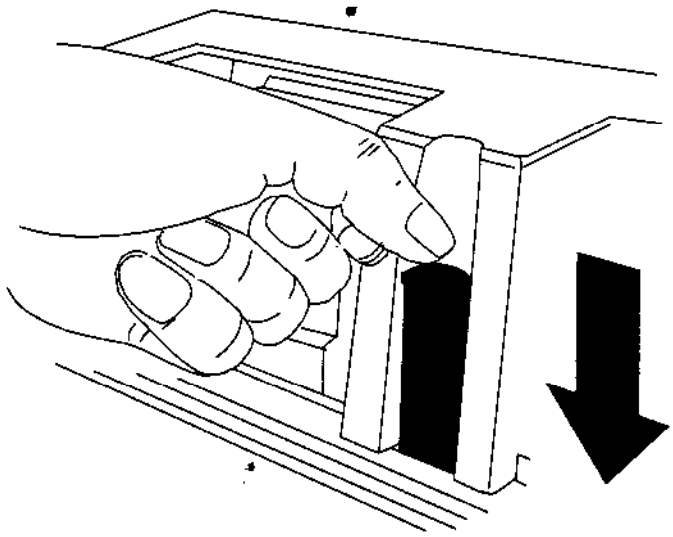
2 Open the cover. If necessary, wait for the cartridge carriage to move to the service station (the area on the left of the plotter).



WARNING

Don't touch the stainless steel strip that runs the length of the plotter behind the cartridge carriage; its edge is very sharp. Keep hair, jewelry, clothing, and foreign objects away from the plotter mechanisms.

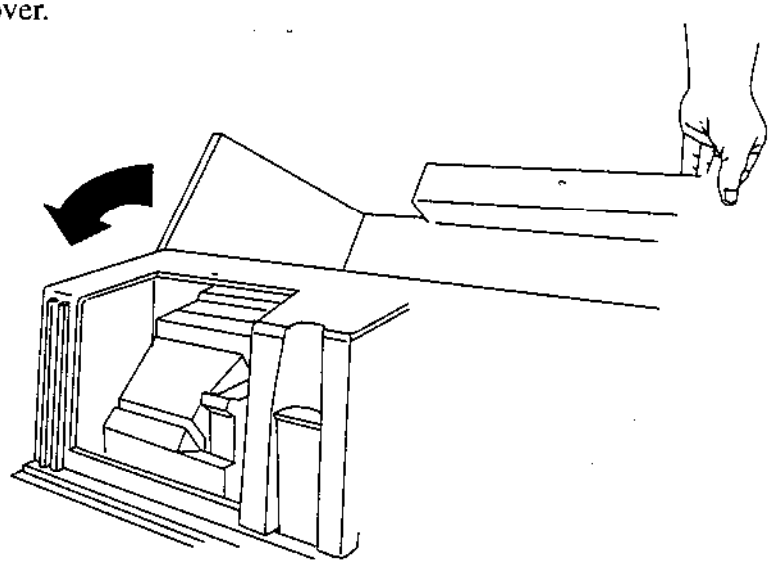
3 Firmly press the large green plunger fully down once, and then release it.



r1755

The plunger should return to its original position

4 Lower the cover.



r1805

Cleaning the plotter

Clean only the outside of the plotter. Any internal cleaning and any maintenance and repairs beyond the tasks described in this chapter should be done only by a trained service technician.

When cleaning the outside of the plotter, use a damp sponge or soft cloth and household cleaner.

WARNING

To avoid electrical shock, make sure that the plotter is switched OFF and unplugged before you clean it. Do not let water get inside the plotter.

CAUTION

Do not use abrasive cleaners on the plotter.

4

How to use the documentation to help solve your problem	4-2
Locating the source of your problem	4-3
Solving media-handling problems	4-4
Clearing a media jam	4-5
Solving problems with plot position or content	4-8
Solving print quality problems	4-11
Solving miscellaneous problems	4-14
Getting help	4-16

Troubleshooting

Help on solving problems, and advice on where to call if you need more assistance

How to use the documentation to help solve your problem

- For the meanings of the lights on the front panel, including error lights, see the Quick Reference Guide.
- If you know the problem is related to a certain task, first check the relevant section in this manual, or in the Quick Reference Guide, for the step-by-step procedures. Use this manual's index to find the section in either book. For example, if you are having difficulty loading media, refer to "Loading media" in the Quick Reference Guide.
- If the problem persists, refer to the appropriate section in *this* chapter. The sections are:
  - Solving media-handling problems
  - Clearing a media jam
  - Solving problems with plot position or content
  - Solving print quality problems
  - Solving miscellaneous problems
- If the problem could be related to your software driver, and you are using an HP driver, note that the drivers have their own documentation and on-line help.
- If the problem has no obvious cause, read "Locating the source of your problem" on the next page.

- **If you still can't solve the problem, refer to "Getting help" on page 4-16.**

Locating the source of your problem

1 Check the status of the front-panel lights. For an explanation, see the Quick Reference Guide.

2 Test the plotter.

- Switch the plotter off. Ensure that the power cord is firmly inserted in the plotter and plugged in to an outlet that you know works.
- Switch the plotter on. Print a demonstration plot (see page 1-30). If the plotter plots this correctly, the problem is probably not with the plotter.

3 Test your computer hardware and interface.

- Ensure that you are using the correct interface cable between the computer and the plotter and that it is firmly connected to the correct ports (see pages 1-20 and 5-9).
- **Serial interface users only.** Check that the serial interface settings on the Setup Sheet match the requirements of your computer hardware and application software (see page 1-23). Also, if you have changed your interface, switch the plotter off and then on again before trying to plot.

Solving media-handling problems

If the plotter will not accept your sheet

- Is the power on? No lights on the front panel = no power.

If the plotter continually rejects your media, with the Error and Load Media lights flashing.

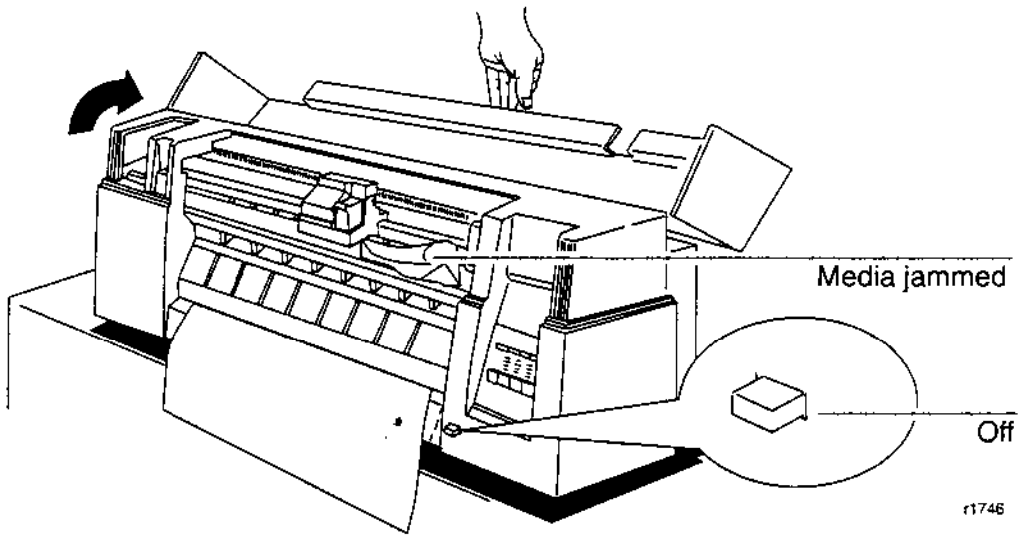
Possible causes are:

- Loading the media at the wrong side of the entry slot. It must be loaded with the right-hand edge against the perforated line on the plotter.
- Loading the media at an angle. The right-hand edge must be *parallel to* the perforated line on the plotter.
- Holding or pushing the surface of the media. You must hold the media only by the edges.
- It is also possible that the media itself is crumpled or warped or has irregular edges.
- If you are using hand-cut media, perhaps the edges you cut do not form a right-angle or they are rough. It is not recommended to use media that you have cut yourself; use only purchased sheet media.

For step-by-step media-loading advice, see the Quick Reference Guide.

Clearing a media jam

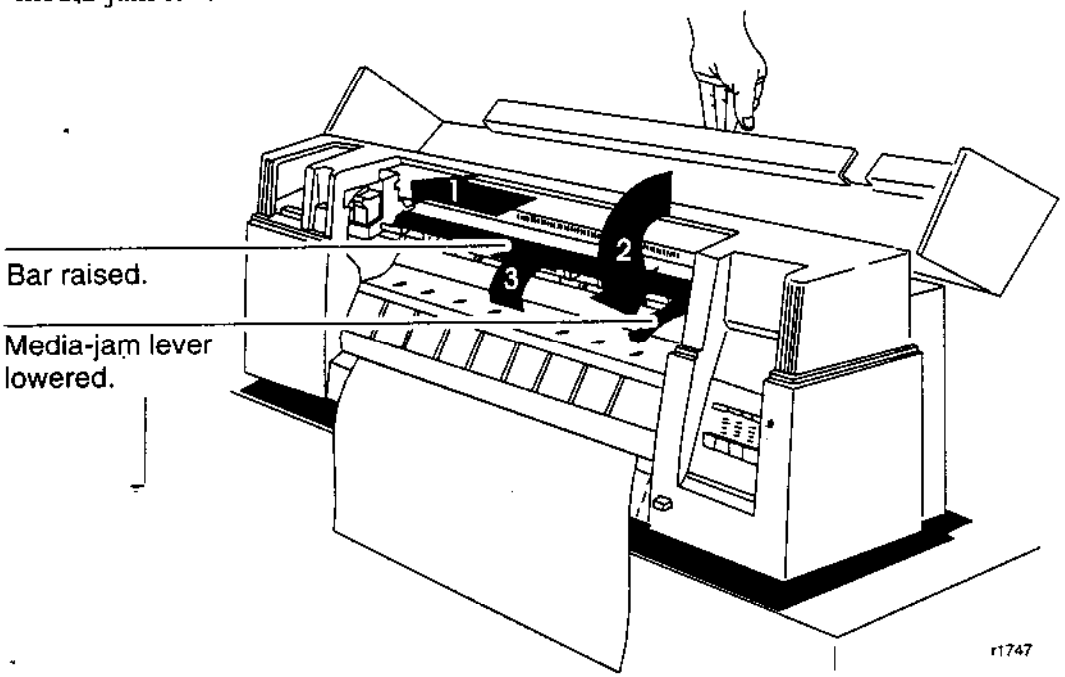
1 Switch OFF the plotter and open the cover.



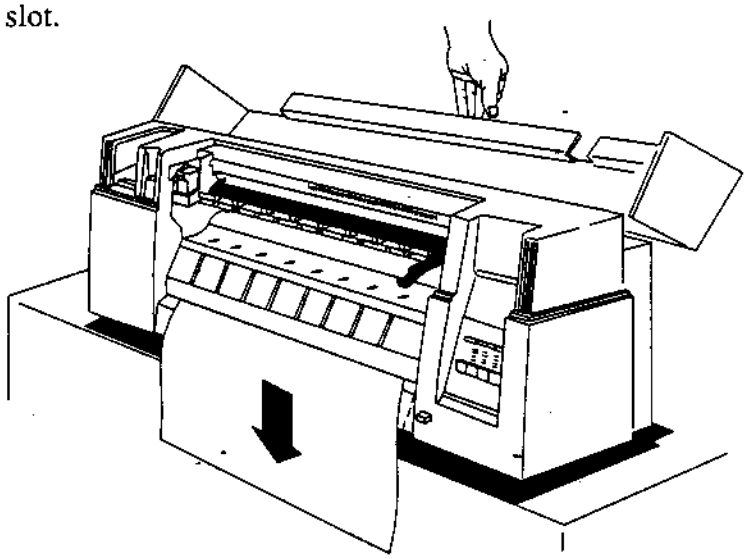
WARNING

Don't touch the stainless steel strip that runs the length of the plotter behind the cartridge carriage; its edge is very sharp. Keep hair, jewelry, clothing, and foreign objects away from the plotter mechanisms.

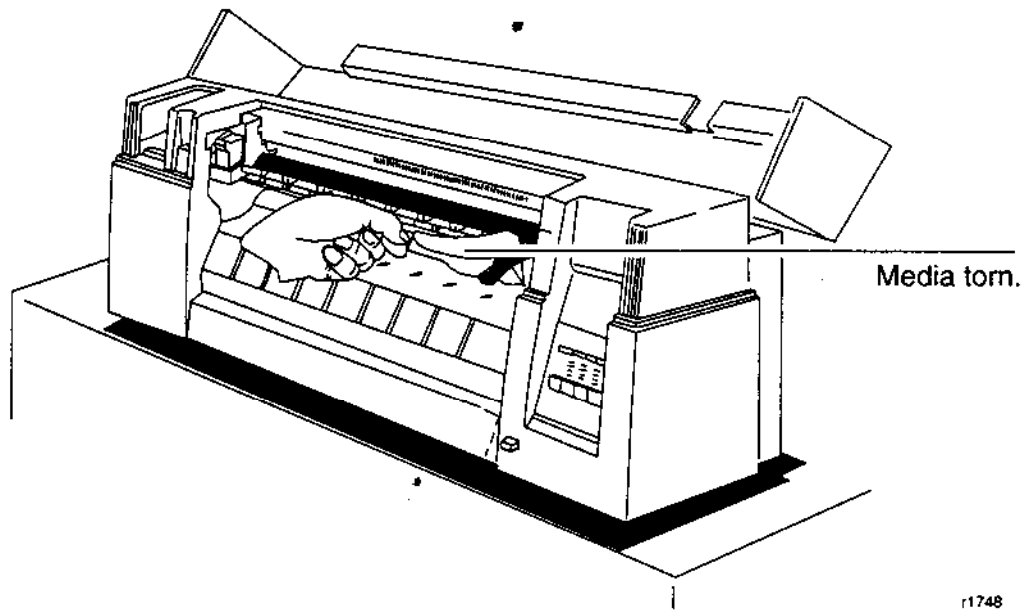
2 If necessary, push the cartridge carriage away to the left of the jammed media, touching only the solid plastic parts of the carriage. Lower the media-jam lever and raise the black metal bar.



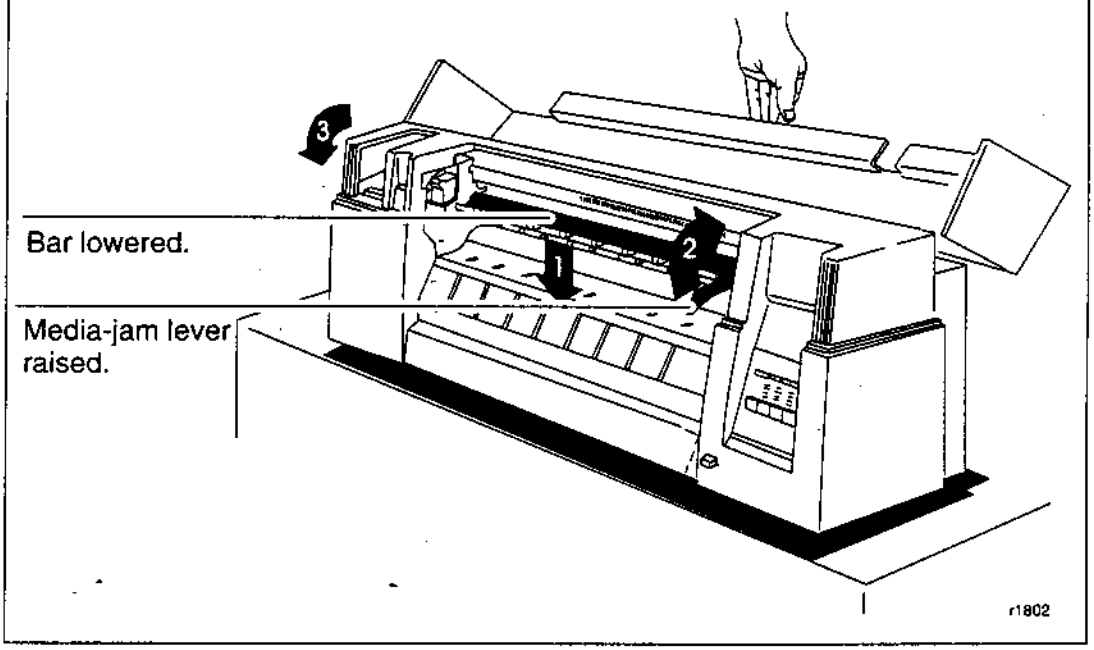
3 Carefully pull the main part of the jammed sheet down and out of the media-entry slot.



4 Carefully remove any torn pieces from inside the plotter.



5 Lower the black metal bar, raise the media-jam lever and lower the cover.



6 Switch ON the plotter and, on the front panel, press **Form Feed** to eject any pieces of media that are still in the media path.

Solving problems with plot position or content

If you don't find the solution to your problem here, other sources of help are:

- The documentation supplied with the driver that you are using to manage the output from your software application to the plotter. For example, the online and printed documentation included in the following two drivers supplied with your plotter:
  - HP plotter drivers for AutoCAD
  - HP plotter driver for Microsoft Windows applications
- The documentation supplied with your application software, for example the *AutoCAD Reference Manual.*

If the plot is completely blank

- Check the print cartridge to be sure you have removed the protective nozzle tape. Don't forget that the plotter will print the Cartridge Alignment Sheet afterwards – see page 1-14.
- Your cartridge may be out of ink. For an explanation of how to check if the cartridge is out of ink, see the Quick Reference Guide.

If the output contains only a partial plot

- Did you press **Form Feed** before all the data was received by the plotter? If so, you have ended the data transmission and will have to send the plot again. (You don't need to press **Form Feed** to unload the plot.)
- The **I/O Timeout** setting in the Setup Sheet may be too short. Increase the setting and plot again.

See also under "If the plot is clipped" on page 4-9.

If the plot is clipped

This indicates a discrepancy between the actual plotting area on the loaded media and the plotting area as understood by your software.

- Check the actual plotting area for the media size you have loaded. Plotting area = media size minus margins. For media size and margins, see page 5-2. For actual plotting areas, see page 5-5.
- Check what your software understands to be the plotting area (which it may call "printable area" or "imageable area"). For example, AutoCAD assumes standard plotting areas that are larger than those used in this plotter.
- Check that the sheet is loaded in the orientation assumed by your software.
- If necessary, change the plotting area in your software. For example, in AutoCAD, specify User Sizes (see AutoCAD documentation).

If the entire plot is in one quadrant of the correct plotting area

- Is the page size configured in the software too small?
- Are you sure that your software doesn't believe the drawing to be in one quadrant of the page?

Otherwise, this indicates an incompatibility between the software and the plotter:

- Is your software configured for this plotter? For general advice, see page 1-28. For advice specific to your software, see either the documentation supplied with the driver or any Software Application Notes supplied with your plotter.
- If you still haven't found the solution, try changing the plotter's **Graphics Language** setting, using the Setup Sheet.

If one plot overlays another plot on the same sheet

- The **I/O Timeout** setting in the Setup Sheet may be too long. Decrease the setting and plot again.

If the output is distorted or unintelligible

There is a possible explanation if the serial interface is in use:

- If you are using a serial interface between the plotter and your computer, make sure the plotter's serial interface settings match the settings and requirements of your software and hardware. To check or change the plotter's settings, use the Setup Sheet.

If the plotter has drawn a different plot than the one you were expecting

One possibility is that you have accidentally initiated one of the plotter's internal plots:

- *The Demonstration Plot.* This is plotted when you press **Setup** and **Replot** simultaneously.
- *The Setup Sheet* – see sample on page 1-30. This is plotted when you press **Setup**.
- *The Cartridge Alignment Sheet* – see sample on page 1-14. This is plotted automatically on the next sheet you load after replacing, or simply adjusting, the cartridge. You can also plot it by pressing **Align Cartridge**. If you cancel an automatic Alignment Sheet, by pressing **Cancel**, the plotter will restart it the next time you try to plot.

If pen settings seem to have no effect

- Either you've changed them in the Setup Sheet but forgotten to fill in the oval called "Use settings from tables below",
- or you expected the software-driven pen settings but the Setup Sheet *is* set to "Use settings from tables below".

Solving print quality problems

If there are white streaks in solid areas or gaps in lines

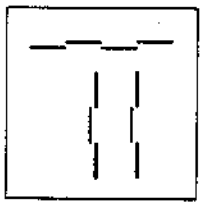
1 Your cartridge may be running out of ink. For an explanation of how to check, see the Quick Reference Guide.

2 If the ink level is OK, some of the cartridge nozzles may be blocked. Prime the cartridge to clean the nozzles, and try your plot again. For an explanation of how to prime the cartridge, see page 3-4.

3 If the problem still occurs after priming, try reseating the cartridge to ensure good electrical connections. Then run the Cartridge Alignment Procedure (see page 1-14).

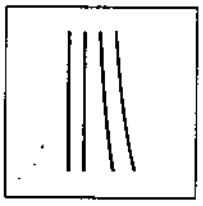
4 If the problem still occurs, then prime the cartridge again, this time pressing the plunger twice.

5 If the problem is still unresolved, replace the cartridge.



If there are jagged vertical or horizontal lines

- If the problem is only with vertical lines, run the Cartridge Alignment Procedure, explained on page 1-14.
- If the problem is with any other orientation, see "Getting Help" on page 4-16.



If there are slightly warped lines

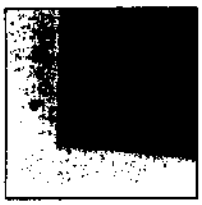
- The media itself may be warped. This can happen if it has been used or stored in an extreme environment. For all environmental specifications, see page 5-3.

If the cartridge is not printing at all

- Look to see if the cartridge is out of ink. See Quick Reference Guide.
- Try priming the cartridge to clear the nozzles. See page 3-4.
- If it is still not printing, remove the cartridge and check the print nozzles to make sure the protective tape has been removed.

If there are blurred lines (ink "bleeds" from lines)

- Use better quality media. Details of HP media are given in the Supplies Source catalog supplied with your plotter.
- If you are plotting on non-HP vellum or translucent media, try using Hewlett-Packard media.
- The plotter may be operating in an area where the temperature and humidity are too high. For optimum plot quality, we recommend that the environment does not exceed the range of 15–30°C (59–86°F) with 20–80% relative humidity.



If there are blotchy areas (uneven fill density)

- Use a different **Media Type** setting.
- Try another brand of media.
- If using film, use only Hewlett-Packard Inkjet Polyester Film.

If there is other pronounced banding in area fills

Some banding is normal, especially in dark or dense area fills. If banding is more pronounced than expected however, try the following:

- In the Setup Sheet, reduce the **Pen Settings/Grayscale %**. At the same time, make sure that **Pen Settings** is set to "Use settings from tables below", so that your software's settings are overridden.
- Alternatively, replace the print cartridge. See the Quick Reference Guide.

If ink smears after you remove a plot

- Be sure the ink is dry before you remove the sheet. For recommended ink-drying times, see the Quick Reference Guide. For example, with a best-quality plot on plotter paper, you should wait about 90 seconds before unloading the sheet.
- When loading media, select the appropriate Media Type on the front panel.
- Use and store the plotter in an area where the relative humidity is no greater than 80%.
- Handle media by the edges. If possible, wear gloves when you handle film. Skin oils can interact with ink and cause it to smear.
- For optimum print quality, we recommend that the operating environment does not exceed the range of 15–30°C (59–86°F) with 20-80% relative humidity.

Solving miscellaneous problems

If the plotter does not plot

- You may have a power problem. If there is no activity at all from the plotter, and no lights on the front panel, check that the power cable is connected correctly and that there is power available at the socket.
- You may have a problem with your application driver. Is your software configured for this plotter? For general advice, see "Connecting to your application software" on page 1-28. For advice specific to your software, see either the documentation supplied with the driver or a relevant Software Application Note supplied with your plotter.
- The file may be too big for the plotter's memory.
  - Look on screen for any error message: some drivers, for example the Microsoft Windows driver supplied with your plotter, allow you to choose a different printing mode and try to send the file again.
  - If no other printing mode is available, or if your file still doesn't print, you may need to consider obtaining a memory expansion module. For information on memory expansion modules, see page 5-14.
- Since sending your file to the plotter, you may have run the Cartridge Alignment Procedure (see page 1-14) and therefore lost your file from the plotter's memory. Send it again.
- Since sending your file to the plotter, you may have opened the cover. This results in the current file being lost.
- If you continue to have problems, see "Getting help" on page 4-16.

If the plotter seems too slow

- Ensure that the Media Type and Print Quality front-panel settings are appropriate. For an explanation of these settings, see the Quick Reference Guide.
- If you are using the Microsoft Windows driver shipped with the plotter, check the settings in the "Print Setup / Options" dialog box, where some of the settings impact printing speed. If in doubt, use the on-screen help system.

Getting help

Hewlett-Packard has support services available to help you in case you have a problem with your plotter.

Before you call for customer support, make sure you do the following.

1 Review the troubleshooting suggestions in this chapter, and in either the driver documentation (for users of AutoCAD and Microsoft Windows applications) or the Software Application Note for your application. All these documents were supplied with your plotter.

2 Plot the demonstration plot as explained on page 1-30. If the demonstration plot works, the problem is probably not with your plotter.

3 If the problem appears to be related to your software application, contact your software vendor.

If you still have difficulty, begin by contacting your HP dealer. The sales representative is familiar with your needs, equipment and software, and should be able to provide you with the information you want. If necessary, you can subsequently call your HP Sales and Support office.

The information on this page applies only to users in the United States

If you do not get the answers to your questions from your dealer or sales representative, Hewlett-Packard has a Customer Assist service available to you. The Assist staff can help by answering questions on topics such as setting up your plotter and computer, and can help you find third-party software solutions for your special plotting needs.

When you call the HP Customer Support Center, please have the following information available to help us answer your questions more quickly:

- The computer you are using.
- Any special equipment or software you are using (for example, spoolers, networks, switch-boxes, modems, or special software drivers).
- The cable you are using (by part number) and where you purchased it.
- The type of interface used on your plotter (RS-232-C, parallel, or modular).
- The software name and version you are currently using.

The HP Customer Support Center is available in the U.S. from 7 a.m.–5 p.m. (Mountain Standard Time), Monday through Friday. Call:

(208) 323–2551

If a repair is needed, contact the Hewlett-Packard dealer or HP Sales and Support Office where you purchased the plotter for complete service information.

5

Plotter specifications	5-2
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Reference

Plotter specifications

Note on resolution. The 600 dpi resolution specified below is *addressable* resolution, that is, it refers to the smallest movement the print head can make between dots rather than to the size of the dot.

Functional specifications				
Cartridge	One: black. For part number, see 5-14.			
Media sizes	*Width (y-axis, carriage path)*		*Length (x-axis, paper path)*	
	Minimum	*Maximum*	*Minimum*	*Maximum*
E/A0-size plotter	210 mm (8.3 in)	917 mm (36.1 in)	210 mm (8.3 in)	1625 mm (64 in)
D/A1-size plotter		625 mm (24.6 in)		
Media types See also Supplies Source catalog and (in Europe and USA) Media Reference Guide	Plain paper and plotter paper Plain vellum (HP preferred) Plain translucent paper (HP preferred) HP Single-Matte Polyester Film			
	Note. It is possible that, since the publication of this document, more media types have been tested and are now supported. For the latest information, contact your HP dealer or local HP Sales and Support office.			
Margins	Leading edge: Trailing edge: Sides:	17 mm (0.67 in) 17 mm (0.67 in) 5 mm (0.2 in)	All measurements +/– 2 mm (0.08 in). For plotting area (media size minus margins), see page 5-5	
Resolution (addressable) See above for definition	Fast print quality: Other print qualities:	300 x 300 dpi 600 x 600 dpi		
Accuracy (Maximum accumulated error)	±0.38 mm (0.015 in) or ±0.2% of the specified vector length, whichever is greater, at 23°C (73°F), 50–60% relative humidity, on HP Inkjet 0.012-cm (0.0048-in) Polyester film.			
Programming languages supported	HP-GL (7586B), HP-GL/2, HP RTL, PJL			

Physical specifications				
(Unpacked)	*Length*	*Depth*	*Height*	*Weight*
E/A0-size plotter	1329 mm (52.4 in)	231 mm (9.1 in)	332 mm (13.1 in)	32 kg (70.4 lb)
D/A1-size plotter	1031 mm (40.6 in)	231 mm (9.1 in)	332 mm (13.1 in)	26 kg (57.2 lb)

Environmental specifications		
Operational	Mechanical and electrical:	0 to 55°C (32 to 131°F) @ 20-80% relative humidity
	With cartridge and media:	15 to 35°C (59 to 95°F) @ 20-80% relative humidity
	For optimal print quality and media handling:	15 to 30°C (59 to 86°F) @ 20-80% relative humidity
Storage	Plotter and media:	–40 to 70°C (–40 to 158°F) @ 5–95% relative humidity
	Cartridge:	–40 to 40°C (–40 to 104°F)

Power specifications	
Source	100–240V AC ±10%
Frequency	47–63 Hz
Consumption	140 W max. (2.0 A max.)

Acoustic specifications		
Operating sound pressure (E/A0 size)	45 dB(A)	(From a one-meter bystander position)
(D/A1 size)	43 dB(A)	
Idle sound pressure	<20 dB(A)	

Duty cycle		
Average number of plots per day	20	(Medium density E/A0 CAD plots)
Maximum number of plots per day	100	

EMC specifications (electromagnetic compatibility)	
Canada	Canadian Department of Communications, Radio Interference Regulations Class B compliant.
European Union	89/336/EEC EMC Directive compliant. Meets EN 55022 Class B emission limits, prEN 55024-2 ESD, prEN55024-3 Radiated Immunity, prEN 55024-4 Fast Transients.
Japan	Registered VCCI Class 2.
Korea	RRL certified
South Africa	SABS licensed
USA	Federal Communications Commission certified. Class B computing device. CFR 47 Part 15

Safety specifications	
Information Technology Equipment (ITE), Movable, Class I, Plugable Type A, Installation Category II, Pollution Degree 2. For indoor controlled office environments use.	
Canada	Canadian Standards Association "Certified" ITE, CSA C22.2 No.950
Czech Republic	EZU, IEC950 certified
European Union	73/23/EEC Low Voltage Directive compliant. Meets EN 60950
Mexico	DGN, NOM019-SCFI-1993 certified
Norway	NEMKO approved, EN 60950, EMKO TSE(74)DK207/94
USA	Underwriters' Laboratories "Listed" ITE, UL 1950

Plotting area (= media size minus margins). For margins, see page 5-2.					
	Media size (and orientation of *media*)	**Plotting area (width x height) by orientation of *drawing***			
		inches		millimeters	
		landscape	portrait	landscape	portrait
ANSI media	A (portrait)	9.66 x 8.1	8.1 x 9.66	245 x 205	205 x 245
	A (landscape)	10.6 x 7.16	7.16 x 10.6	269 x 182	182 x 269
	B (portrait)	15.7 x 10.6	10.6 x 15.7	397 x 269	269 x 397
	B (landscape)	16.6 x 9.66	9.66 x 16.6	421 x 245	245 x 421
	C (portrait)	20.7 x 16.6	16.6 x 20.7	524 x 421	421 x 524
	C (landscape)	20.6 x 15.7	15.7 x 20.6	549 x 398	398 x 549
	D (portrait)	32.7 x 21.6	21.6 x 32.7	829 x 548	548 x 829
	D (landscape)	33.6 x 20.7	20.7 x 33.6	854 x 525	525 x 854
	E (portrait)	42.7 x 33.6	33.6 x 42.7	1084 x 854	854 x 1084
Architectural media	A (portrait)	10.7 x 8.60	8.6 x 10.7	271 x 219	219 x 271
	A (landscape)	11.6 x 7.66	7.66 x 11.6	295 x 195	195 x 295
	B (portrait)	16.7 x 11.6	11.6 x 16.7	423 x 295	295 x 423
	B (landscape)	17.6 x 10.7	10.7 x 17.6	447 x 271	271 x 447
	C (portrait)	22.7 x 17.6	17.6 x 22.7	576 x 447	447 x 576
	C (landscape)	23.6 x 16.7	16.7 x 23.6	600 x 423	423 x 600
	D (portrait)	34.7 x 23.6	23.6 x 34.7	880 x 600	600 x 880
	D (landscape)	35.6 x 22.7	22.7 x 35.6	904 x 576	576 x 904
	E1 (portrait)	40.7 x 29.6	29.6 x 40.7	1033 x 752	752 x 1033
	E (portrait)	46.7 x 35.6	35.6 x 46.7	1185 x 904	904 x 1185
ISO media	A4 (portrait)	10.3 x 7.87	7.87 x 10.3	263 x 200	200 x 263
	A4 (landscape)	11.3 x 6.93	6.93 x 11.3	287 x 176	176 x 287
	A3 (portrait)	15.2 x 11.3	11.3 x 15.2	386 x 287	287 x 386
	A3 (landscape)	16.1 x 10.3	10.3 x 16.1	410 x 263	263 x 410
	A2 (portrait)	22.0 x 16.1	16.1 x 22.0	560 x 410	410 x 560
	A2 (landscape)	23.0 x 15.2	15.2 x 23.0	584 x 386	386 x 584
	A1 (portrait)	31.8 x 23.0	23.0 x 31.8	807 x 584	584 x 807
	A1 (landscape)	32.7 x 22.0	22.0 x 32.7	831 x 560	560 x 831
	A0 (portrait)	45.5 x 32.7	32.7 x 45.5	1155 x 831	831 x 1155

Interface specifications

Below are the parallel and serial interface specifications. Over the page are the pin configurations for the most common HP cables referenced on page 5-9.

Parallel (Bi-Tronics/Centronics) Interface

The connector on the plotter is 36-pin female.

Most existing parallel cables support Bi-Tronics communication, but for use with this plotter, the cable *must* meet the specification in this table.

Pin	Wire/Signal Name	Source
1	$\overline{\text{Strobe}}$	computer
2 ... 9	D0 ... D7 (data lines)	both
10	$\overline{\text{Ack}}$	plotter
11	Busy	plotter
12	PError	plotter
13	Select (SelectOut)	plotter
14	$\overline{\text{AutoFd}}$	computer
16	GND	
19 ... 30	GND	
31	$\overline{\text{Init}}$	computer
32	$\overline{\text{Fault}}$	plotter
36	$\overline{\text{SelectIn}}$	computer

Serial (RS-232-C) Interface

The connector on the plotter is 25-pin female.

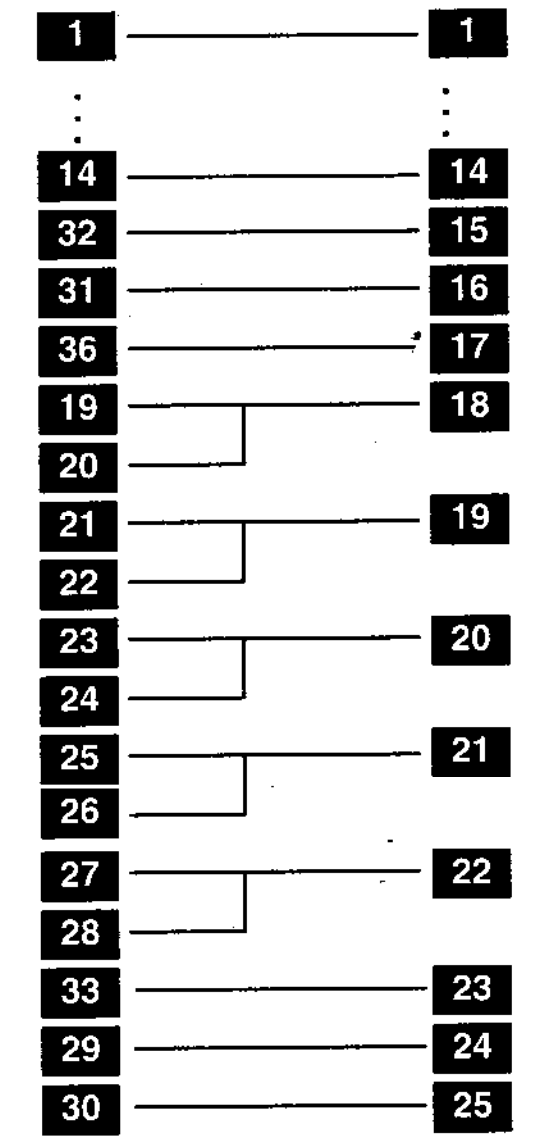
The plotter is configured as a DTE (data terminal equipment).

Data is transmitted on Pin 2 and received on Pin 3.

Pin	Wire/Signal Name	Source
1	Protective Ground	
2	Transmitted Data	DTE
3	Received Data	DCE
4	Request to Send	DTE
6	Data Set Ready	DCE
7	Signal Ground	
13	(Reserved)	
14	(Reserved)	
16	(Reserved)	
19	(Reserved)	
20	Data Terminal Ready	DTE

Parallel (Bi-Tronics/Centronics) Cable

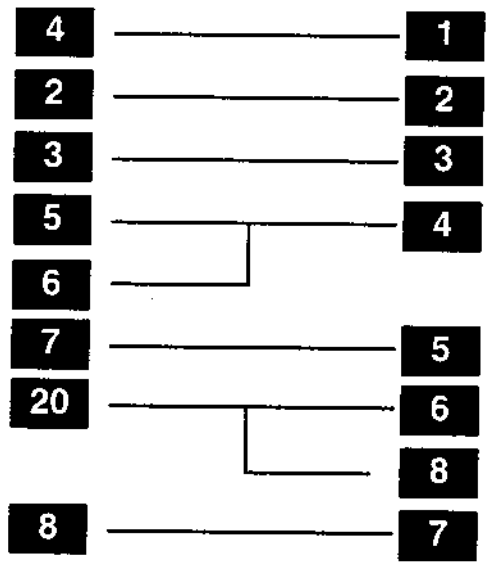
HP part number: 92284A
Parallel cable for Bi-Tronics/Centronics



Serial (RS-232-C) Cables

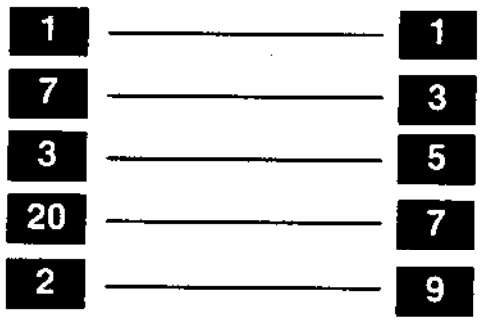
HP part number: 24542G
Serial cable for printers or plotters

Plotter End	Computer End
Male (25-pin)	Female (9-pin)



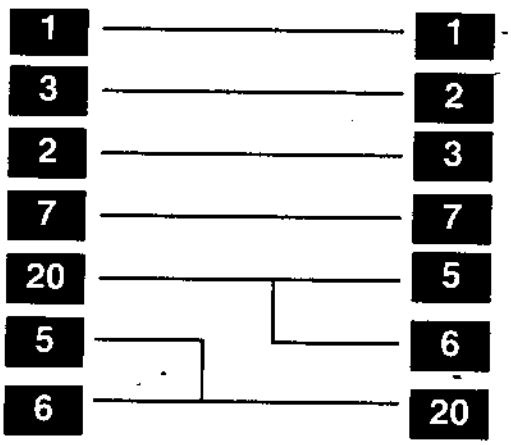
HP part number: 92219M
Modem eliminator cable

Plotter End	Computer End
Male (25-pin)	Female (9-pin)



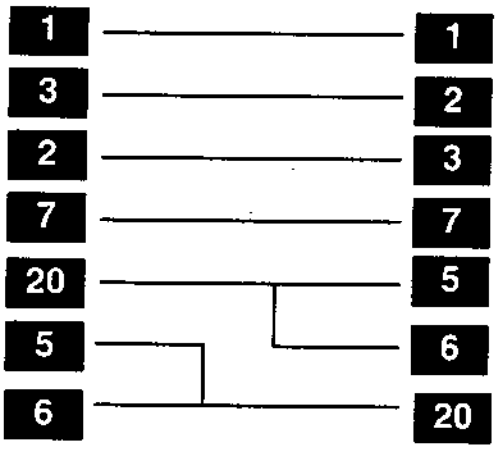
HP part number: 17255D
Modem eliminator cable

Plotter End	Computer End
Male (25-pin)	Female (25-pin)



HP part no: 17255M or 13242G*
Modem eliminator cable

Plotter End	Computer End
Male (25-pin)	Male (25-pin)



* Symmetrical: either end may be connected to the plotter. Other pins are connected in the 13242G cable, but they do not affect plotter operation.

Interface cables

Parallel (Bi-Tronics/Centronics) Interface			
Computer	**HP Part Number**	**Cable length**	**Connector type at computer end of cable**
HP Vectra with HP 24540A/B serial/parallel interface card using the parallel connector HP 9000 workstations series 300, 400, 700 IBM AT, IBM PS/2, IBM PC/XT and compatibles	92284A	2.1 m (6.9 ft)	25-pin male

Serial (RS-232-C) Interface			
Computer	**HP Part Number**	**Cable length**	**Connector type at computer end of cable**
HP Vectra or HP 24541A/B serial interface card (9-pin connector) HP 9000 workstations using 9-pin connectors. IBM AT and compatibles using 9-pin serial connectors	24542G	3.0 m (9.8 ft)	9-pin female
HP Vectra PC with HP 24541A/B dual serial interface card using the 25-pin connector HP Apollo workstation using an SPE (Serial/Parallel Expansion) option and supplied adapter cable DEC VAX Sun workstation	17255M	1.2 m (3.9 ft)	25-pin male
IBM PC, PC/XT, IBM PS/2 and compatibles	17255D	1.2 m (3.9 ft)	25-pin female
DEC VAX using DEC BC22D, BC03M, or equivalent	17355M	3.0 m (9.8 ft)	
Apple Macintosh Plus, SE, II Series, Classic, LC family, Quadra family, PowerBook, PowerMac	17302A	1.5 m (4.9 ft)	8-pin male mini-DIN
Apple Macintosh 128K and 512K	92219M	1.5 m (4.9 ft)	9-pin male
Extension cable	31391A	5 m (16.4 ft)	25-pin female

Regulatory notices

To obtain a Material Safety Data Sheet (MSDS)

You can obtain a current Material Safety Data Sheet for the print cartridge used in the plotter (HP Part number 51640A) by mailing a request to this address: **Hewlett-Packard Customer Information Center,** 19310 Pruneridge Avenue, Dept. MSDS, Cupertino, CA 95014, U.S.A.

Electromagnetic compatibility (EMC)

FCC Statement (U.S.A.)

The U.S. Federal Communications Commission (in 47 cfr 15.105) has specified that the following notice be brought to the attention of users of this product.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interferences by one or more of the following measures:

- reorient the receiving antenna.
- increase the separation between the equipment and the receiver
- connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- consult the dealer or an experienced radio/TV technician for help

The user may find useful the following booklet prepared by the FCC: "How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the US Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

CAUTION

Pursuant to Part 15.21 of the FCC Rules, any changes or modifications to this equipment not expressly approved by the Hewlett-Packard Company, may cause harmful interference and void the FCC authorization to operate this equipment.

DOC statement (Canada)

Le présent appareil numérique n'émet pas de bruits radioéléctriques dépassant les limits applicables aux appareils numériques de la class B préscrites dans le Règlement sur le Brouillage Radioéléctrique édicte par le ministère des Communications du Canada.

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

VCCI-2 (Japan)

この装置は，第二種情報装置（住宅地域又はその隣接した地域において使用されるべき情報装置）で住宅地域での電波障害防止を目的とした情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）基準に適合しております。

しかし，本装置をラジオ，テレビジョン受信機に近接してご使用になると，受信障害の原因となることがあります。

取扱説明書に従って正しい取り扱いをして下さい。

Korean EMI statement

이 기기는 업무용으로 전자파장해검정을 받은 기기이오니 판매자 또는 사용자는 이점을 주의하시기 바라며, 만약 잘못 구입하였을 때에는 구입한 곳에서 비업무용으로 교환하시기 바랍니다.

Geräuschemission (Germany)

LpA < 70 dB
am Arbeitsplatz
im Normalbetrieb
nach DIN 45635 T. 19

Telecommunications statement

Tele–communications General Approval (UK)

The HP DesignJet 230 plotter, Models C4694A and C4695A, are approved under Approval Number NS/G/1234/5/100003 for indirect connection to public telecommunications systems within the United Kingdom.

DECLARATION OF CONFORMITY

according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name: Hewlett-Packard Española S.A.

Manufacturer's Address: Hewlett-Packard Española S.A.
BARCELONA DIVISION
Avda. Graells, 501
08190 Sant Cugat del Vallès
Barcelona, Spain

declares that the product

Product Name: InkJet Plotter

Model Numbers: HP C4694A, HP C4695A

Product Accessory: HP JetDirect EX external interface cards (2)

conforms to the following Product Specifications:

Safety: IEC 950: 1991 + A1, A2 / EN 60950 (1992) + A1, A2
CSA C22.2 No. 950 (1993)
UL 1950 (1993)
EMKO-TSE(74)DK207/94
NOM-019-SCFI-1993

EMC: CISPR 22: 1985 / EN 55022 (1988): Class B(1)
EN 50082-1 (1992)
IEC 801–2: 1991 / prEN 55024–2 (1992): 4KV CD, 8KV AD
IEC 801–3: 1984 / prEN 55024–3 (1991): 3 V/m
IEC 801–4: 1988 / prEN 55024–4 (1992): 1KV Power Lines, 0.5KV Signal Lines
FCC Part 15 – Class B / DOC–B / VCCI–2 / RRL–A

Supplementary Information:

The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC, and carries the CE marking accordingly.

(1) The product was tested with a Hewlett-Packard system, consisting of: a Vectra 486/33M personal computer, VGA monitor, keyboard, mouse, and a Printer DeskJet 550C as the second peripheral.
(2) Product options with interface cards exhibit Class A operation.

Sant Cugat del Vallès (Barcelona), March 1st, 1995

Jordi Balderas,
Quality Engineering Manager

European Contact: Your local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department ZQ/Standards Europe, Herrenberger Strasse 130, D-71034 Boeblingen, Germany (fax: (+49) 7031 143143).

Ordering accessories

		HP Part Number
Cables		See page 5-9
Documentation		
User's Guide and Quick Reference Guide:	Chinese	C4694-60020
	English	**C4694-60011**
	French	C4694-60015
	German	C4694-60014
	Italian	C4694-60017
	Japanese	C4694-60018
	Korean	C4694-60012
	Portuguese	C4694-60019
	Spanish	C4694-60016
	Taiwanese	C4694-60013
Software Application Notes	English	C3190-90080
Software/Hardware Guide (The latest edition was shipped with this plotter)		*
HP-GL/2 and RTL Programmer's Reference Guide	English	5959-9733**
The Product Comparison Guide for HP-GL/2 and HP RTL Peripherals	English	5959-9734**
PJL Technical Reference Manual	English	5961-0701

REFERENCE

* This item is updated regularly. For details of the latest version available, please contact your HP dealer or sales representative.

** See note on page 5-15.

		HP Part Number
Drivers		
Latest versions of the following were shipped with this plotter:		
HP plotter drivers for AutoCAD for DOS and AutoCAD for Windows		*
HP plotter driver for Microsoft Windows		*
Legs option	D/A1-size	C3192A
	E/A0-size	C3193A
Media supplies		
Supplies Source Catalog (The latest edition was shipped with this plotter)		*
Media Reference Guide (The latest edition was shipped with this plotter in Europe and USA only.)		*
Memory expansion modules	4 MB	C2065A
For up-to-date details of any memory expansion modules other than those listed here, contact your local authorized HP dealer.	8 MB	C2066A
	16 MB	D2297A
	32 MB	D2298A
Network interface		
HP JetDirect EX external network interface (for LAN connection)		*
Print cartridge		
Although other cartridges may appear to fit in the stall, use only this part number.	Black	51640A

* These items are updated regularly. For details of the latest versions available, please contact your HP dealer or sales representative.

HP-GL/2 and HP RTL programming information

The *HP-GL/2 and HP RTL Reference Guide* provides complete explanations and examples of the HP-GL/2 and HP RTL graphic and interfacing instructions. If you are writing an HP-GL/2 or RTL driver for your plotter you will find this guide an invaluable source of general instruction information. It is published by Addison-Wesley Publishing Company and can be ordered through most book stores (ISBN 0-201-56308-8).

For specific parameter information, refer to *The Product Comparison Guide for HP-GL/2 and HP RTL Peripherals,* which can be ordered through your HP Sales office.

How to order supplies and accessories

You can order supplies and accessories in any of these three ways:

- Call your local authorized HP dealer.
- Contact your local HP Sales and Support office.
- In the United States, use HP's Direct Order telephone service. This telephone number is provided in the Supplies Source catalog shipped with your plotter.

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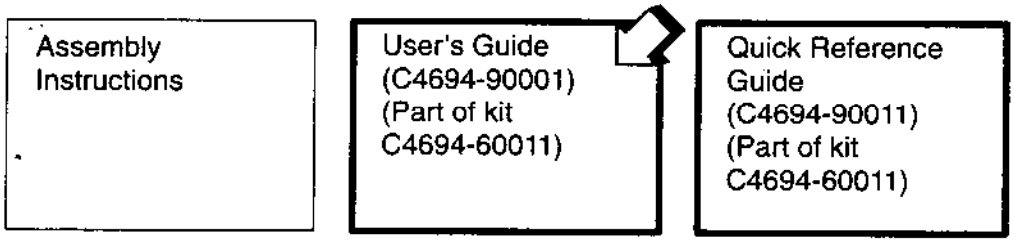
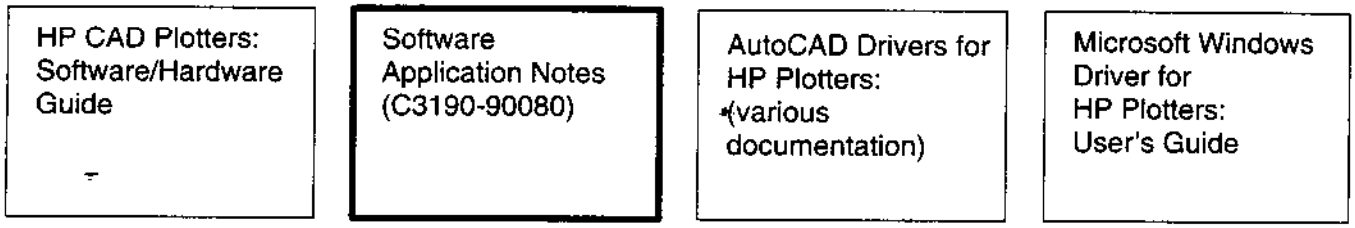
Documentation map

Printed Documentation for Users of the HP DesignJet 230 Plotter

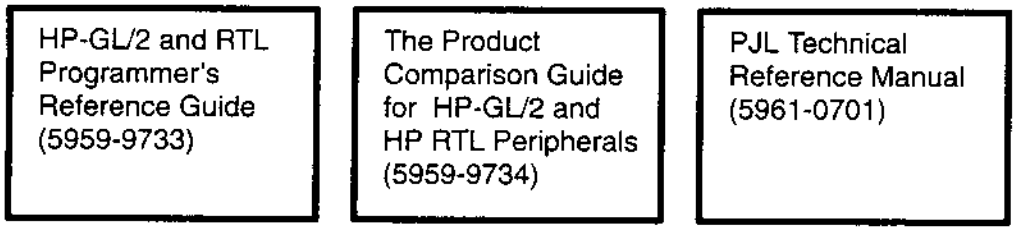
Setting up and using the plotter



Using application software



Programmer's reference



These documents are supplied with this plotter.

These documents can be ordered separately.
For details, see under "Ordering accessories" in chapter 5.

This manual.

Warranty Statement

One-Year On-Site Hardware Warranty

Except when purchased as part of a system, Hewlett-Packard warrants your graphics peripheral hardware product against defects in materials and workmanship for a period of one year from receipt by the end user (proof of purchase required). If HP receives notice of such defects during the warranty period, HP will either, at its option, repair or replace products that prove to be defective.

Should HP be unable to repair or replace the product within a reasonable amount of time, the customer's alternative exclusive remedy shall be refund of the purchase price upon return of the product.

If this product was purchased as part of an HP system in a coordinated shipment or as a system add-on, it is warranted against defects in material and workmanship during the same period as the HP system.

Exclusions

The above warranty shall not apply to defects resulting from: improper or inadequate maintenance by customer; customer-supplied software or interfacing; unauthorized modification or misuse; operation outside of the environmental specifications for the product; operation of non-supported media; or improper site preparation and maintenance.

Warranty Limitations

HP makes no other warranty, either expressed or implied, with respect to this product. HP specifically disclaims the implied warranties of merchantability and fitness for a particular purpose. Some states or provinces do not allow limitations on the duration of an implied warranty, so the above limitation or exclusion may not apply to you. However, any implied warranty of merchantability or fitness is limited to the one-year duration of this written warranty.

This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state, or province to province.

Obtaining Service During Warranty Period

If your hardware should fail during the warranty period, read the "Troubleshooting" section in this guide, then contact your local Hewlett-Packard Sales and Support Office or an Authorized HP Personal Computer Dealer Repair Center and arrange for on-site repair of the product. Retain proof of purchase in order to obtain warranty service.

After the Warranty Period

If your hardware should fail after the warranty period, read the problem solving sections in this guide, then contact an Authorized HP Personal Computer Dealer Repair Center or call an HP Sales and Support Office for details of the services available. If you have an HP Maintenance Agreement, request service under your agreement.

About this edition

Edition dates are as follows:

1st edition, June 1995

New editions are complete revisions of the manual. Change sheets, which may be issued between editions, contain additional information. The dates on the title page change only when a new edition is published. Minor corrections that do not affect the function of the product may be made at reprint without a change to the print date.

Many product updates and fixes do not require manual changes and, conversely, manual corrections may be done without accompanying product changes. Therefore, do not expect a one to one correspondence between product updates and manual revisions.

HP Customer Support in the USA

Phone (208) 323 2551

HEWLETT®
PACKARD

C4694-60011

Customer re-order number: C4694-60011

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English
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