

User's Guide



HP DesignJet 330 and 350C Plotters

Finding information



This **User's Guide** for the HP DesignJet 330 and 350C plotters contains the following types of information:

- setup
- use
- maintenance
- troubleshooting
- reference material.

To help with finding specific information, a comprehensive table of contents is provided at the front and an alphabetical index is provided at the back.

You will notice the use of symbols in the left margin and shaded backgrounds to the text. These are used to identify different types of information as follows:

330

- Information specific only to the HP DesignJet 330 is shown like this.

350C

- Information specific only to the HP DesignJet 350C is shown like this.

All other information is applicable to both plotters.

The accompanying **Quick Reference Guide** contains:

- selected information to help with everyday use of the 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.	► Chapter 1
Connect the plotter.	► Page 1–17
Configure the plotter using the Setup Sheet .	► Page 1–19
Load media.	► Page 2–9
Set the print quality.	► Page 3–15
Check cartridge alignment	► Chapter 5
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Interpret the lights on the front panel.	► Chapter 8
Clear a media jam.	► Page 9–5
Solve print quality problems.	► Page 9–12
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To find any other information ...	► Go to the index at the back of this manual.

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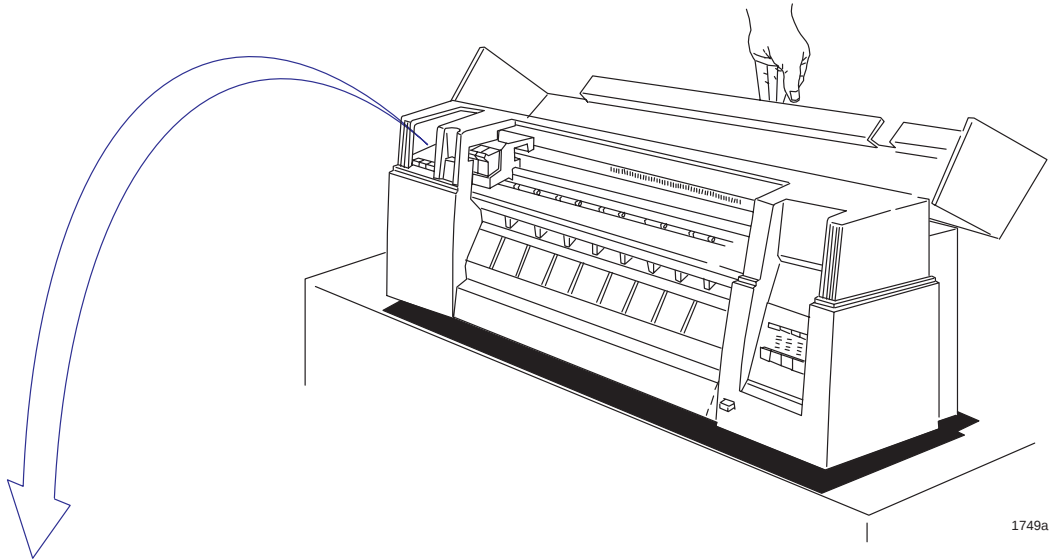
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Documentation map

Please give us your feedback (removable)

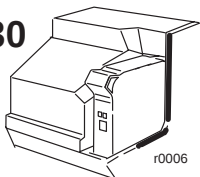
Welcome

An introduction to the HP DesignJet 330 and 350C plotters and their accessories

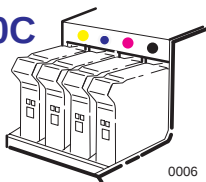


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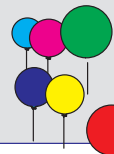
The HP DesignJet 330 and HP DesignJet 350C are large-format inkjet plotters employing HP **disposable print cartridge** technology.

330

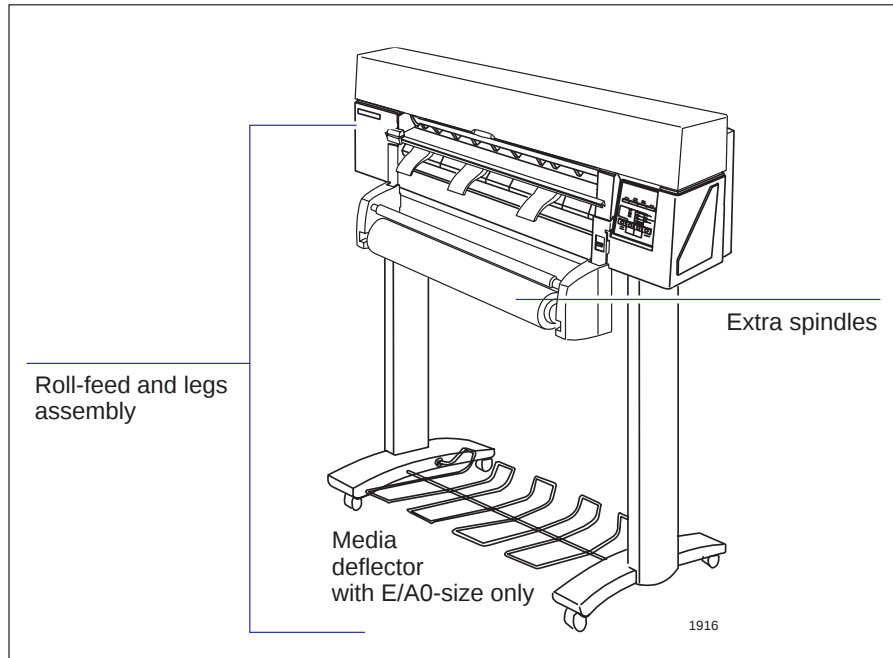
- The HP DesignJet 330 prints in monochrome and uses a single cartridge, containing black ink, one of which is supplied with your plotter.

350C

- The HP DesignJet 350C prints in color or monochrome, using yellow, cyan, magenta and black cartridges, a set of which is supplied with your plotter. All other supported colors are generated using these four.



Accessories



You have a large series of accessories available for use with your plotter, including:

- A roll-feed kit, including a legs assembly
- Extra spindles for the roll-feed, for easy changing of rolls
- Memory expansion modules

330

In addition, for the HP DesignJet 330:

- A color upgrade kit, allowing the plotter to be upgraded to a HP DesignJet 350C

For the full range of available accessories, see page 10–15.



Media¹

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

With the addition of the optional roll-feed kit, you can also plot on roll media up to E/A0 or D/A1 width.

A large range of media types is supported²:

- Opaque bond
- Translucent bond
- Natural tracing paper
- Vellum
- Coated paper
- Heavyweight coated paper
- Matte and clear film

350C

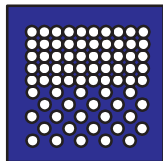
In addition, on the HP DesignJet 350C:

- High-gloss film.

For the best-quality plots, use HP media, as your plotter's configuration is optimized for it and tested with it. For details of HP media, see page 10–18 and any separate HP media literature supplied with the plotter.

To indicate which media type you have loaded, use the plotter's front panel.

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. There may be differences between the ways some media types are used for color and for monochrome printing. Refer to the media advice later in this manual.

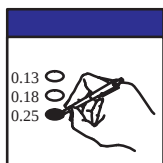


Print quality

You can choose between three print quality options:

- Best
- Normal
- Fast

In general, the better the print quality you choose, the slower the plotting routine. The highest resolution in color, for the HP DesignJet 350C, is 300 dpi (dots per inch) and the highest addressable* resolution in monochrome, for both the HP DesignJet 330 and the HP DesignJet 350C, is 600 dpi. To select a print quality option, use either the keys on the plotter's front panel or the printer driver in your software.



Configuration settings

By pressing the **Setup** key on the front-panel of the plotter, you can print the plotter's current configuration in a Setup Sheet. If you want to change any of the configuration settings (for example, line widths) you can do this by simply marking your changes on the Setup Sheet and feeding it back into the plotter. The plotter will 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 please keep the latest one filed with your Quick Reference Guide in the pocket at the side of the plotter, so that a service engineer would know the current configuration even if the plotter is temporarily inoperable.

* For a definition of "addressable", see page 10–3.



Software applications and drivers

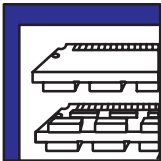
To make sure that your plotter prints exactly what you were expecting – in terms of size, position, orientation, color and quality – the key is to use the correct driver for the combination of your application software and your plotter, and to be confident that it is configured correctly.

Two types of HP drivers are supplied with your plotter:

- AutoCAD™ users,
- 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). With some drivers, there are other means of printing large files – for advice, see page 9–17.

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Setting up your plotter



Fast track

If you meet all the following requirements:

- If you are happy with English as the language for 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 five steps on this page, and skip the rest of this chapter.

- 1** If the plotter is without legs, place it at the edge of a stable platform (see page 1–10).
- 2** Connect the power cord and switch the plotter on.
- 3** Open the cover and load the supplied print cartridge(s) 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(s).
- 4** Switch off the plotter and your computer, connect the parallel cable, and then switch them on again.
- 5** 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!



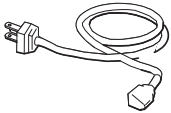
Setup checklist

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 expansion module.	
3 Position the plotter.	
4 Switch on.	
5 Load the print cartridge(s).	
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(s):**

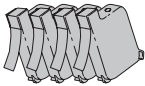
For the HP DesignJet 330:

- One black

330



350C



For the HP DesignJet 350C:

- One yellow
- One cyan
- One magenta
- One black

- **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
- Drivers 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.

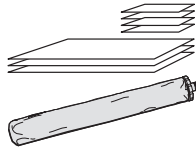
Task 1: Check that you have all the items required**Not supplied**

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



- **Interface cable**

For details of suitable cables, see page 10–11.



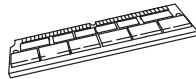
- **Media**

For details of supported media types, see page 2–3. As part of the setup routine, you may need up to three A-size or A4-size sheets, plus whatever size sheet you prefer for a sample plot.

If you have fitted the optional roll-feed assembly, you can use either roll media or cut sheets; if not, you can use only cut sheets.

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 10–16.



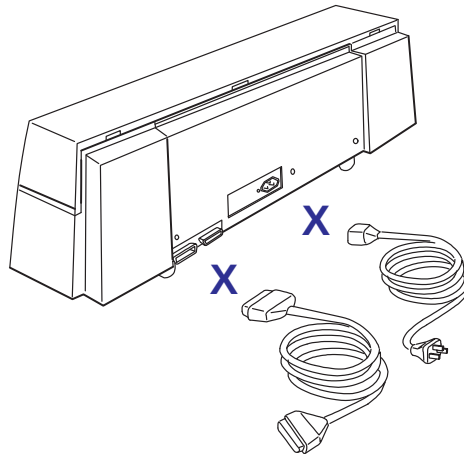
- **HP JetDirect EX print server**

This is required if you intend to connect your plotter directly to a network. For details of the latest HP JetDirect EX products, contact your local HP Sales and Support Office. For configuration details, see page 1–18.

Task 2: (Optional) Install a memory expansion module

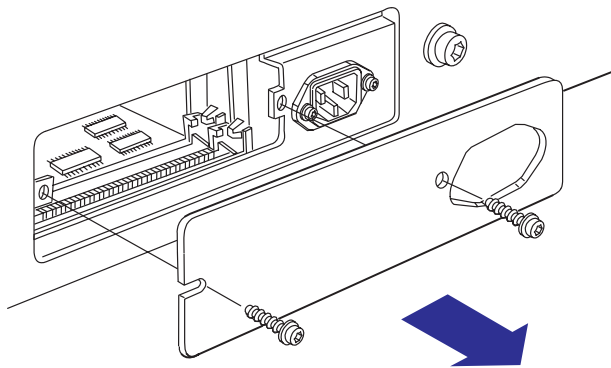
For details of the memory modules available, see page 10–16. You may install only one.

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



1736a

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



1737

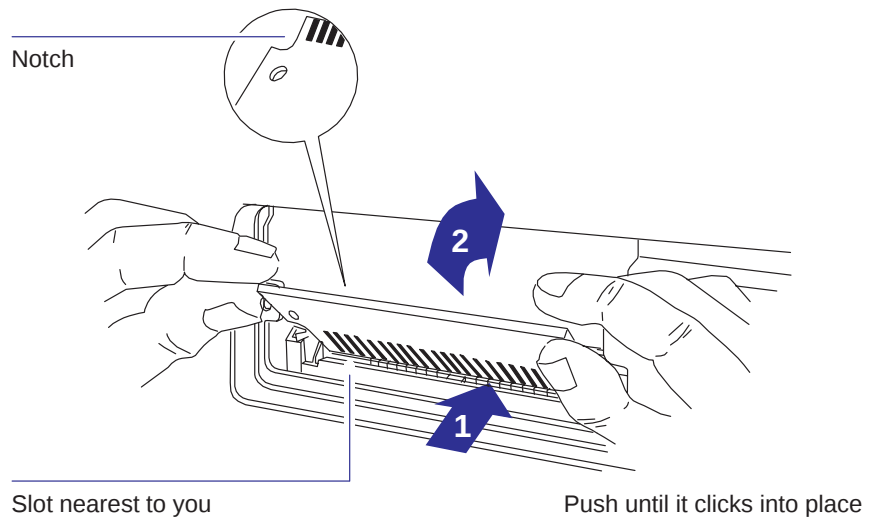
Task 2: (Optional) Install a memory expansion module

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*. (The other slot is not for memory modules.) To do this, first hold the module at an angle, and then gradually push it back until it clicks into place vertically.



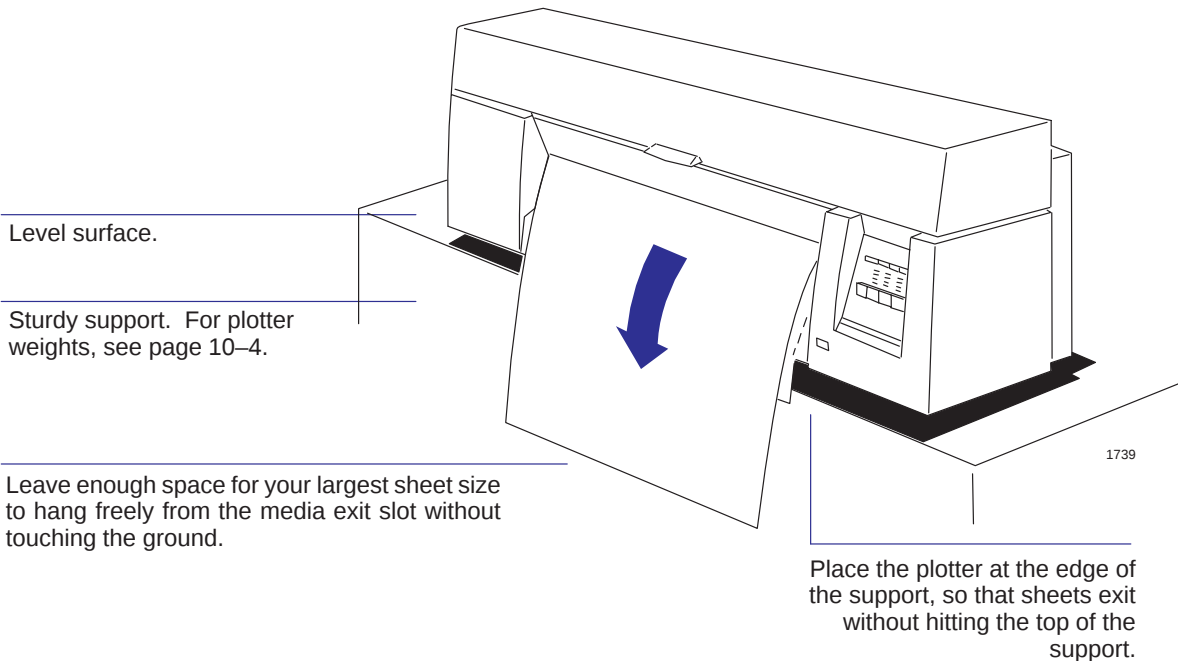
5 Replace the cover plat and screws.

Task 3: Position the plotter

Task 3: Position the plotter

- If you have fitted the optional roll-feed kit, you must also fit the legs assembly for stability, so this task does not apply.
- If you have not fitted the optional roll-feed and legs kit, position the plotter as shown below.
- For operating temperature and humidity, see page 10–5.
- Allow enough space above the plotter to open the cover.

If the plotter is without legs ...



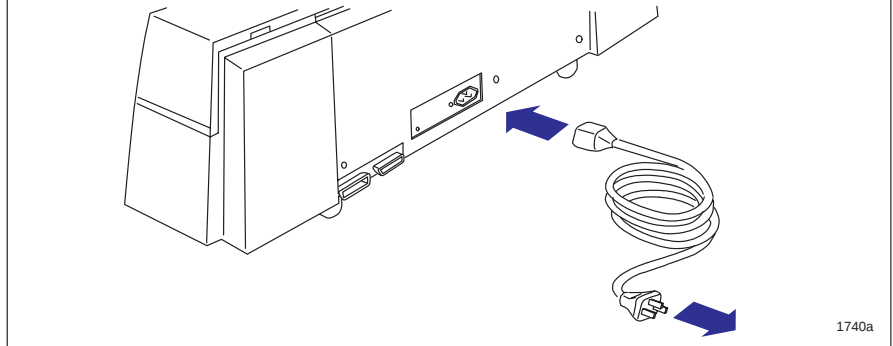
Task 4: Switch on

WARNING

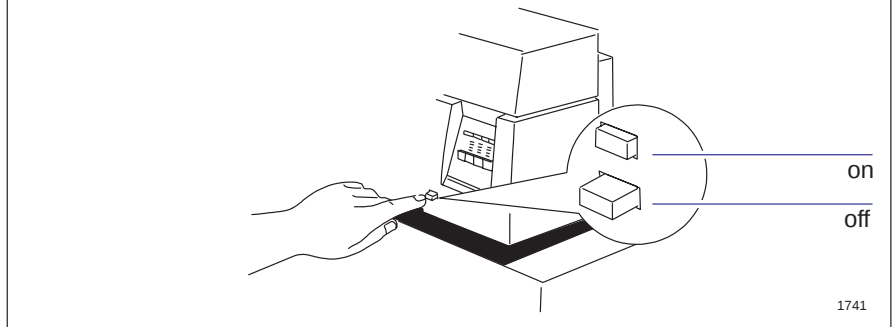
Be sure that the power cord supplied with your plotter matches your ac power connection requirements. Use only three-wire (earth-grounded) power cords with this plotter.

- 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.



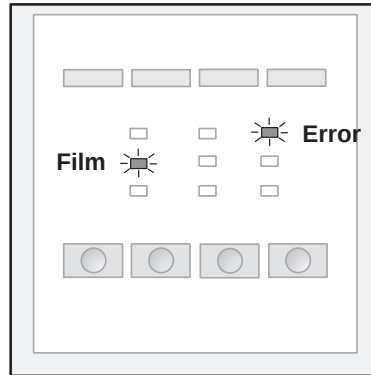
- 3 Switch on the plotter, by pushing the power switch.



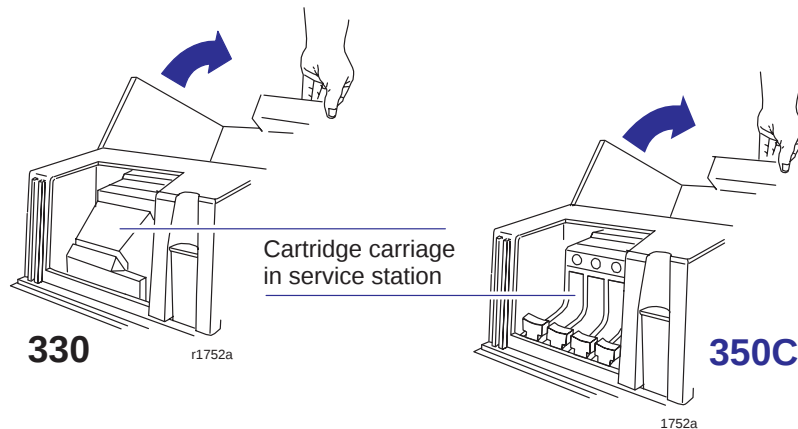
- 4 If there is no sound, nor any light on the front panel, you may have a power problem. For troubleshooting information, see chapter 9.

Task 5: Load the print cartridge(s)

- 1 Make sure that, on the front panel, the **Film** and **Error** lights are flashing. If other lights are on, look up their meaning in Chapter 8.



- 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.

A set of cartridges was supplied with the plotter:

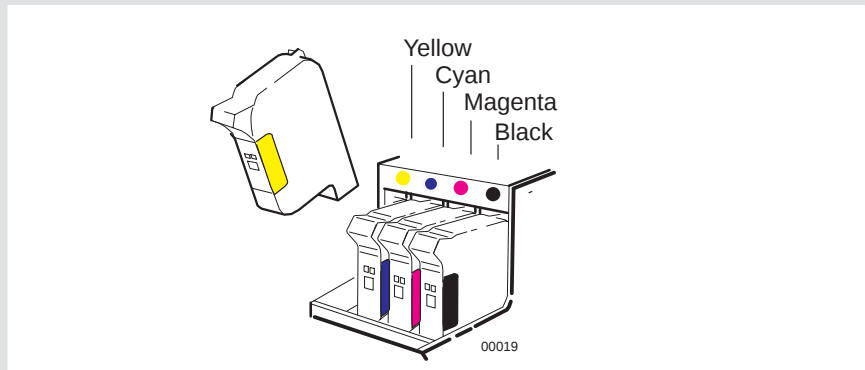
330

- The HP DesignJet 330 is supplied with one black cartridge.

350C

- The HP DesignJet 350C is supplied with four cartridges:
 - yellow
 - cyan
 - magenta
 - black

For the 350C, each stall in the carriage has a dot indicating the color of the cartridge that should be installed: you *must* put the correct cartridge in the correct stall. The sequence of the stall colors is, from left to right, yellow, cyan, magenta and black.



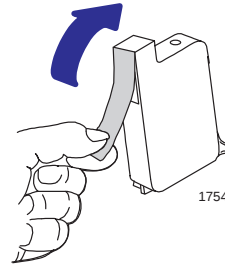
For users with color-vision deficiencies. You can identify the colors of the cartridges by the part numbers on the boxes – see page 10–17.

Note. It is not recommended to operate the 350C with only the black cartridge loaded.

Task 5: Load the print cartridges

3 For each cartridge in the set:

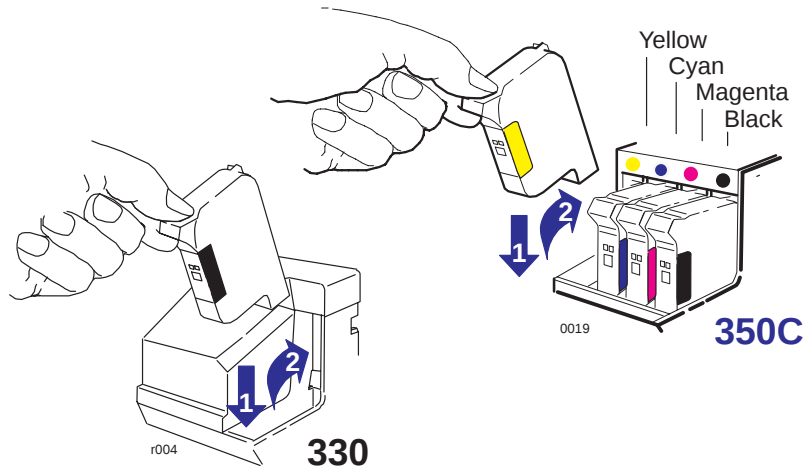
- 1** Take the cartridge out of its box.
- 2** Remove the colored protective tape and tab from the cartridge's nozzles.



For the 350C, match the color of the cartridge's label with the color of the dot above the stall.

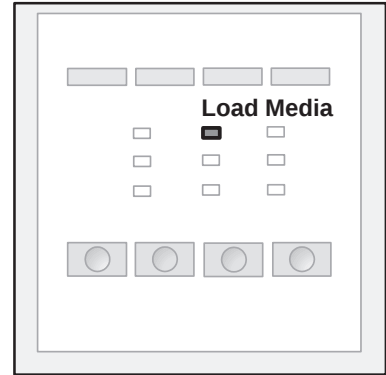
350C

- 3** Make sure that the plotter is still switched ON. (Never install cartridges with the plotter switched off.)
- 4** Insert the cartridge in the stall. Press down lightly and push the cartridge away from you until it snaps into place. If it is installed correctly, the **Ready** light flashes for a few seconds. Otherwise, re-seat it.



- 4 When all the cartridges are installed, lower the cover.

On the front panel, the **Ready** light should flash for up to about a minute and then go off. The **Load Media** light should then be on (together with **Media Type** and **Print Quality** lights).



If you wish, you can now check your cartridge alignment by running the Black Cartridge Alignment Routine (See page 5–3). However, this is normally only required for troubleshooting.

Task 6: (Optional) Change the language

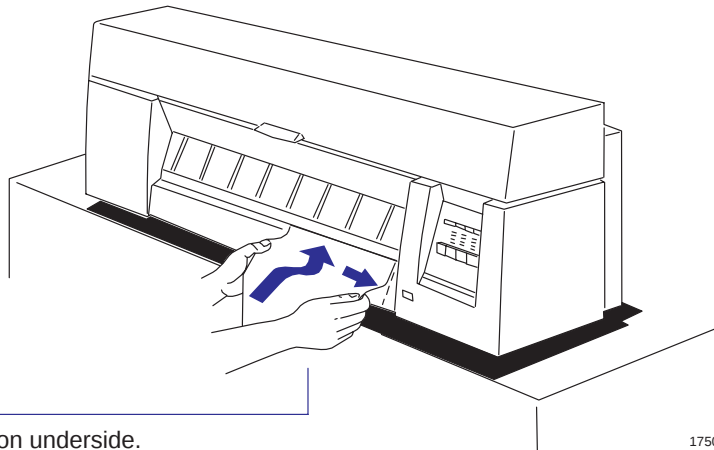
Task 6: (Optional) Change the language

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 plain paper, in portrait orientation. For guidance on loading a sheet, see page 2–9.

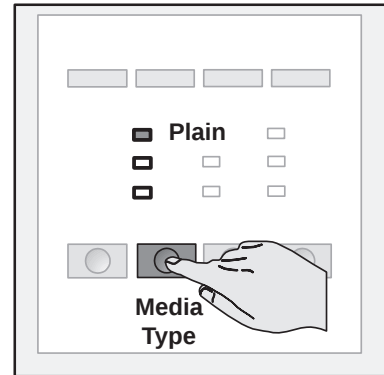
When the **Ready** light is on, you have loaded the sheet correctly.



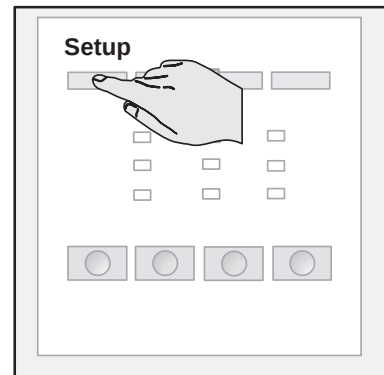
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Task 6: (Optional) Change the language

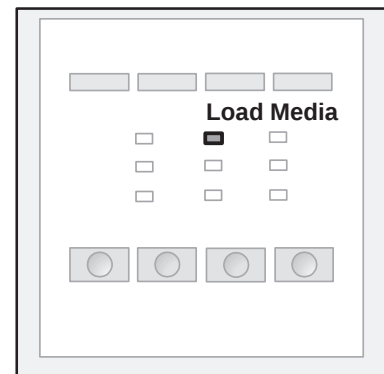
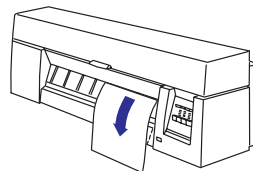
- 2 Make sure the front-panel Media Type is set to **Plain**. If necessary, press the **Media Type** key until the **Plain** light is on.



- 3 Press **Setup**.



- 4 When the plot has finished, wait until the **Load Media** light comes on and the plotter ejects the sheet. Remove the sheet.



Task 6: (Optional) Change the language

- 5 The plot is a Setup Sheet in English. You can ignore all the information except the box in the top left, headed “1. Language”.

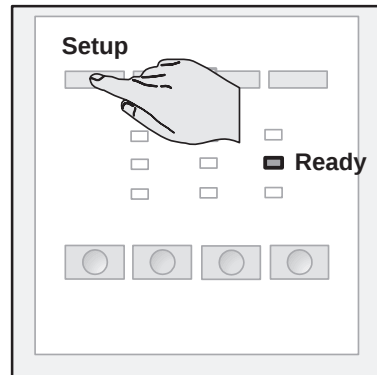
Take a pencil or black pen and fill in the oval next to the language you want.

1. Language	
☐	English
☐	Français
☐	Deutsch
☐	Español
☐	Italiano
☐	Português
☐	日本語

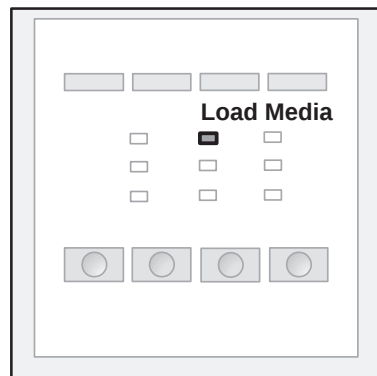
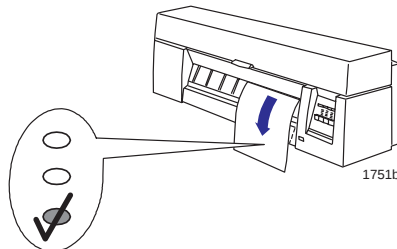
- 6 Reload it in the plotter, printed side down and with the large arrow pointing into the plotter.

When the **Ready** light comes on, press **Setup** again.

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



- 7 When the **Load Media** light comes on again, remove the sheet and make sure that the plotter has marked your selection with a check mark.



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.

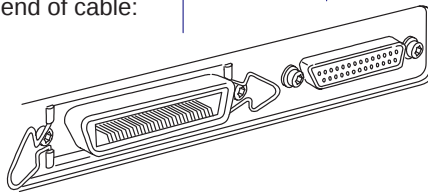
For a list of HP cables for various computers, see the table on page 10–11. If you are making up your own cable, refer to the interface specifications starting on page 10–8. Use shielded interface cables only.

Note on the parallel interface. The parallel interface is an IEEE-1284-compliant Bi-Tronics/Centronics interface. The same cable can be used for both Bi-Tronics and Centronics communication.

- 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.

Port for parallel-interface
cable (plotter end of cable:
36-pin male)

Port for serial-interface
cable (plotter end of cable:
25-pin male)



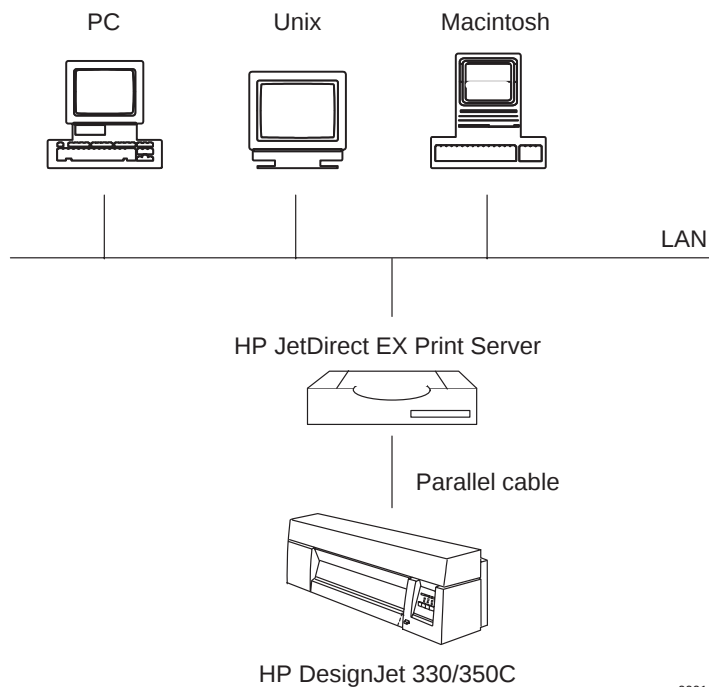
1744b

- 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.

Task 7: Connect the plotter to your computer

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.



0001

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:

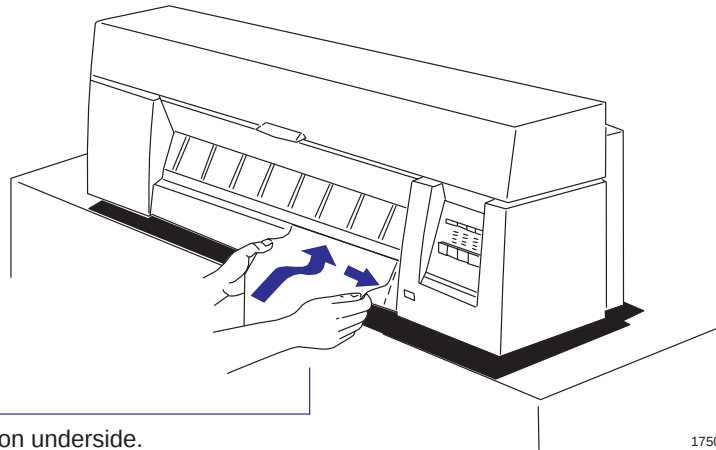
- You prefer to change those settings that affect the appearance of your plots from your application software.
- The plotter's factory defaults, *listed on page 1–22*, are acceptable.

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 plain paper, in portrait orientation. For guidance on loading a sheet, see page 2–9.

When the **Ready** light is on, you have loaded the sheet correctly.

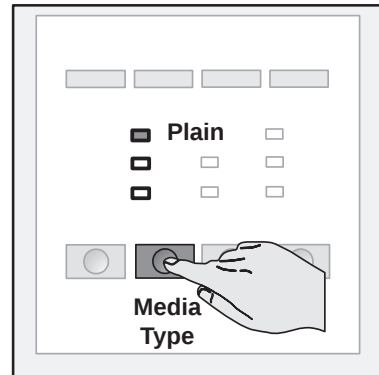


Plot will be on underside.

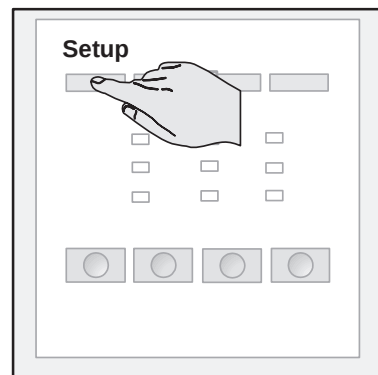
1750

Task 8: (Optional) Configure the plotter

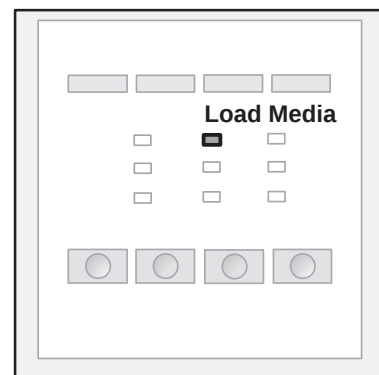
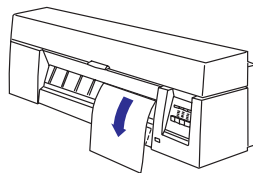
- 2 Make sure the front-panel Media Type is set to **Plain**. If necessary, press the **Media Type** key until the **Plain** light is on.



- 3 Press **Setup**.



- 4 When the plot has finished, wait until the **Load Media** light comes on and the plotter ejects the sheet. Remove the sheet.



HP DesignJet 330/350C

Setup Sheet

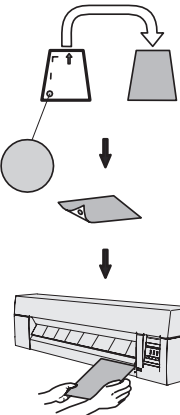
1 → Current setting = 
Desired setting =  Pencil or black pen

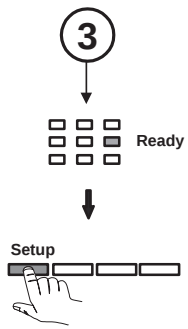
350C

1. Language	2. Serial Interface	3. Graphics Language	5. Plot Appearance	6. Color/Mono
☐ English ☐ Français ☐ Deutsch ☐ Español ☐ Italiano ☐ Português ☐ 日本語	Baud Rate ☐ 1200 ☐ 2400 ☐ 4800 ☐ 9600 ☐ 19200 ☐ 38400	☐ HP-GL(7586B) ☐ HP-GL/2 4. I/O Timeout ☐ 0.5 min ☐ 1 min ☐ 5 min ☐ 30 min	☐ Auto rotate ☐ Rotate off ☐ Rotate 90° ☐ Mirror off ☐ Mirror on ☐ Merge off ☐ Merge on	☐ Print color as color ☐ Print color as grayscale

7. Page Size	
Inked Area ☐ Software ☐ Over-size { A1 ☐ A2 ☐	JIS { Best ☐ B1 ☐ B2 ☐ B3 ☐ B4 ☐

8. Pen Settings	
☐ Use settings from software ☐ Use settings from tables below	
<i>If you want these pen settings to take effect, don't forget to mark the oval above.</i>	
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	Color
100% 	☐ Black
80% 	☐ Red
60% 	☐ Green
40% 	☐ Yellow
20% 	☐ Blue
10% 	☐ Cyan
5% 	

2 → 

3 → 

Task 8: (Optional) Configure the plotter

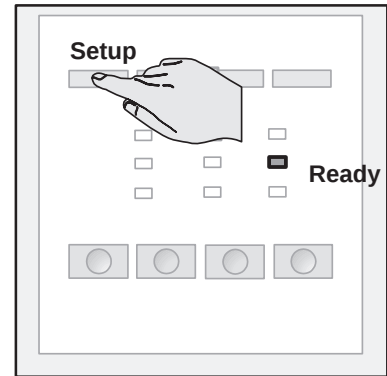
An example of a Setup Sheet is shown on the previous page. That example is for an E/A0-size plotter. The items in the Setup Sheet are listed in the table below.

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)	See page 6–3.
I/O Timeout	30 min	See page 6–4.
Rotate	off	See page 3–7
Mirror	off	See page 3–10
Merge	off	See page 3–11
Color/Mono	Print color as color	See page 3–13 350C
Page Size	Inked Area	See page 3–5. Note that not all the page size options shown in the example are available on the D-size plotter.
Pen Settings	Use settings from software	See page 3–12.
		Note that the color pen settings are only available on the HP DesignJet 350C. 350C

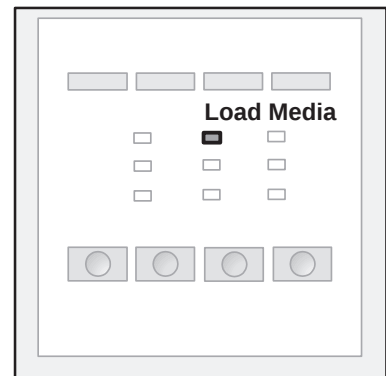
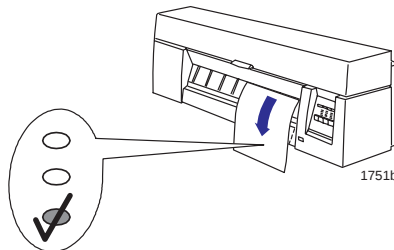
- 5 Follow the instructions on the Setup Sheet. Having marked the ovals to change the settings, reload the sheet in the plotter, printed side down, with the large arrow pointing into the plotter

When the **Ready** light comes on, press **Setup** again.

The plotter reads your marks and reconfigures itself automatically.



- 6 When the **Load Media** light comes on again, remove the sheet and make sure that the plotter has marked your selection with a check mark.



- 7 Please store this latest copy of the Setup Sheet with the Quick Reference Guide in the plastic pocket at the side of the plotter, so that a service engineer would know the current configuration even if the plotter is inoperable.

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 a plotter other than the HP DesignJet 330 or the HP DesignJet 350C from the device list.

Task 9: Set up the plotter in your application software

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

- **Preference 1:** **HP DesignJet 330/350C**
- **Preference 2:** **HP DesignJet 750C**
- **Preference 3:** **HP DesignJet 650C**
with a preference for C2858B/C2859B
rather than C2858A/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 8.

- **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.

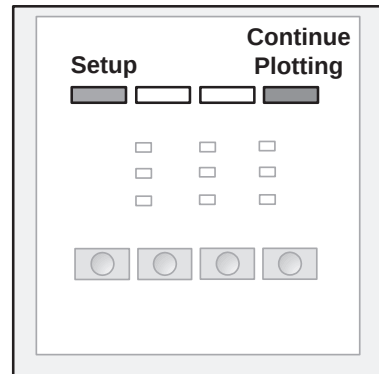
Task 10: Send a sample or demo plot

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 9 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

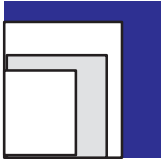
- 1 If media is not already loaded, load roll media or a sheet, as explained in Chapter 2, which also provides advice on the availability and use of different media types.
- 2 Press simultaneously the two keys:



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

Caring for your media	2-2
Choosing media	2-2
Before loading media	2-7
Before sending your file	2-7
Loading sheet media	2-9
Loading roll media	2-17
Loading a sheet with the roll-feed option installed	2-26
Unloading media	2-27

Working with media



Caring for your media

- If your plotter includes the roll-feed and legs option, make sure the media deflector is installed between the plotter's legs, so that uncut media doesn't drag on the floor.
- Handle film and glossy media by the edges or wear cotton gloves. Skin oils can interact with ink and cause it to smear.

Choosing media

Your plotter supports many types of paper and other media types, and can operate both with sheets and, if the roll-feed option is installed, with rolls. Choosing the best media type for your requirements is the first – and most important – step in ensuring good print quality.

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- For **color printing**, although most supported media types are suitable, some not recommended. For details, see the table on page 2–5.
- When choosing between **opaque paper types for monochrome printing**, be aware that you will use significantly less ink printing on coated paper types than on normal opaque bond.
- Whenever you load a roll or a sheet, you must check that the **media type** specified on the plotter's front-panel is correct for the media type you are loading. It is *essential* for good print quality to specify this correctly. See the table on page 2–3.
- You should also be aware of which **print quality** setting (best, normal or fast) you are using. You can set this either from your software or from the plotter's front panel. The combination of media type and print quality settings automatically tells the plotter how to place the ink on the media – for example, in terms of density and number of passes of the cartridges. For more details, see the tables on pages 2–5 and 2–6.
- *For the best-quality plots, use HP media, as your plotter's configuration is optimized for it and tested with it.* For details of HP media, see page 10–18 and any separate HP media literature supplied with the plotter.

Supported media types and relative costs

Media type selection on the front panel	Supported HP media ¹	Non-HP media also known as ...	Relative cost
Plain (Plain light on)	HP Opaque Bond	Plain paper Plotter paper	Low
	HP Translucent Bond		Low
	HP Natural Tracing Paper	Tracing paper Extra translucent bond	Moderate
	HP Vellum		Moderate
Coated ² (Coated light on)	HP Coated Paper	Color inkjet paper Matte paper Presentation	Low/ moderate
	HP Heavyweight Coated Paper	Heavyweight color inkjet paper Heavyweight matte paper	Moderate
Film (Film light on)	HP Matte Film	Poly matte film Matte polyester Mylar	High
	HP Clear Film	Translucent film Clear polyester	High
350C Glossy ³ (Film and Coated lights on)	HP High-Gloss White Film		High
¹ From time to time, new media types may become available. Up-to-date information is available from your HP dealer or local HP Sales and Support Office. ² HP Special InkJet paper and HP Heavyweight Special InkJet Paper are <i>not</i> supported on the HP DesignJet 330 and 350C plotters. ³ Glossy media types are not supported on the HP DesignJet 330.			

Physical characteristics of media types

HP media	Physical characteristics			
	Base	Opacity	Matte or Glossy	Special coated side for plotting?*
HP Opaque Bond	Wood-pulp	Opaque	Matte	No
HP Translucent Bond	Wood-pulp	Semi-opaque	Matte	No
HP Natural Tracing Paper				
HP Vellum	Cotton-fiber	Semi-opaque	Matte	No
HP Coated Paper	Wood-pulp	Opaque	Matte	Yes
HP Heavyweight Coated Paper				
HP Matte Film	Polyester	Semi-opaque	Matte	Yes
HP Clear Film	Polyester	Clear	—	Yes
HP High-Gloss White Film	Polyester	Opaque	Glossy	Yes
* See page 2–10.				

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Recommended print-quality settings and recommended media for color plots

HP media	Print quality (set either on the front panel or in the software)		
	Fast	Normal	Best
HP Opaque Bond	OK for monochrome, but color for CAD drawings only ¹		
HP Translucent Bond	OK for monochrome, not recommended for color		
HP Natural Tracing Paper	OK for monochrome, but color for CAD drawings only ¹		
HP Vellum			
HP Coated Paper	OK		
HP Heavyweight Coated Paper			
HP Matte Film			
HP Clear Film			
HP High-Gloss White Film	Not recommended	OK for color; not recommended for monochrome	
¹ The limitation on the use of non-coated media for color really depends on: - the amount of area fill in your drawing (the more there is, the less likely that the print quality on opaque bond will be satisfactory), - the quality of the media.			

Choosing media

Typical media-type choices by application

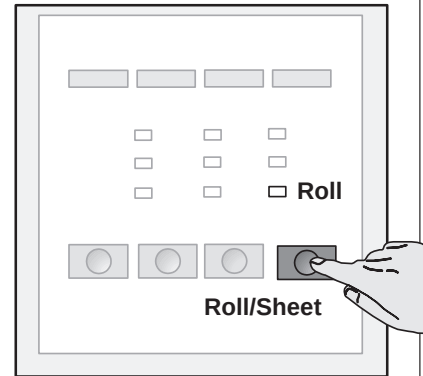
Application	Use	Typical choice of media	Probable choice of print quality
CAD* monochrome	Drafts	Opaque bond Translucent bond Natural tracing paper Vellum	Fast or Normal Fast or Normal Fast or Normal Fast or Normal
	Final versions	Opaque bond Matte or clear film	Normal or Best Normal or Best
	Archives	Vellum Matte or clear film	Best Best
	Diazo reproductions	Translucent bond Natural tracing paper Vellum Matte film	Normal or Best Normal or Best Normal or Best Normal or Best
CAD* and GIS* color 350C	Drafts	Opaque bond Natural tracing paper Vellum Coated paper	Fast or Normal Fast or Normal
	Final versions	Coated paper Heavyweight coated paper (for durability) Matte film Clear film	Normal or Best Normal or Best Normal or Best Fast or Normal
	Archives	Matte film Clear film	Best Normal
	Overlays	Clear film	Fast or Normal
Imaging and graphics packages color 350C	Matte	Opaque bond (for drafts) Coated paper Heavyweight coated paper (for durability)	Fast, Normal or Best Fast, Normal or Best Normal or Best
	Gloss	High-gloss white film	Normal or Best
	Clear film	Clear film (colors not optimized for this media type)	Best
* CAD = Computer-Aided Design GIS = Geographical Information Systems			

Before loading media

Specify whether you are going to load a sheet or a roll

On the front panel, if the **Roll** light on, the plotter believes you are loading a roll. If it is off, it believes you are loading a sheet.

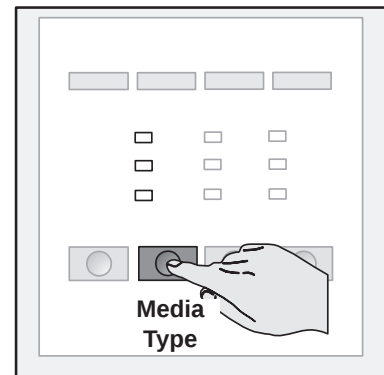
To toggle between the two settings, press the **Roll/Sheet** key.



Before sending your file

1 Specify the media type

Press the **Media Type** key until the light comes on against the name of the media type you are going to load. For an explanation of which media type category on the front panel should be used for each supported media type, see the table on page 2–3.



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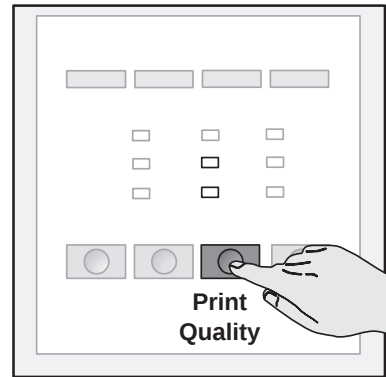
To select **Glossy**, press the **Media Type** key until both the **Film** and **Coated** lights are on.

Note that, if your software printer driver allows you specify media type, you must specify it correctly there as well.

2 Specify the print quality setting

Press the **Print Quality** key until the light comes on against the print quality setting you require.

For details of each print quality setting, see the table on page 3–15.



Alternatively, you can specify the print quality setting from your software printer driver. In this case, *the driver's setting* is used for the next plot. During the plot, the front-panel setting changes temporarily to that from the driver, and then resumes its previous setting again.



Loading sheet media

To load a sheet (without the roll-feed option installed)

To learn how to load a sheet correctly first time, follow steps 1 through 7.

When you load a sheet, the plotter checks that it is correctly aligned. If it is very badly aligned, the plotter flashes an error on the front panel, as explained in step 8 below, and you must try again. If your alignment is almost correct, you have a chance to re-align it, as explained in steps 8 and 9 below.

- 1 If your plotter has no legs, you'll find it easier if it is positioned at the edge of the table.

2

Which way round?

You can load a sheet in either portrait or landscape orientation.



portrait

or



landscape

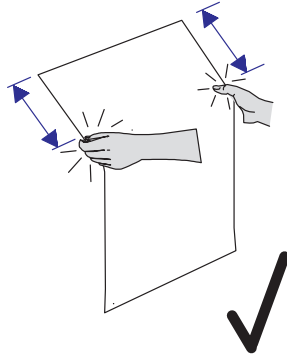
Unless using the Rotate option (see page 3–7), load the sheet in the same orientation as you have specified in your software. If you are loading an A- or A4-size sheet, portrait orientation is recommended.

- 3 *Which side down?* As you load the sheet, it is the *underside* on which the plotter will print. With most media types, the two sides are different and so it is important to load the sheet correctly.

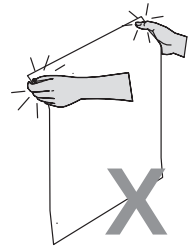
Media Type	Which side down?
Opaque bond Translucent bond Natural tracing paper Vellum	Both sides are the same. If the sheet is curled, load with the curl <i>up</i> .
Coated paper Heavyweight coated paper	Load with the coated side down. On HP Coated Paper and Heavyweight Coated Paper, look for the small notch in the corner: • When loading in a portrait orientation, make sure the notch is on the right side of the leading edge. • When loading in a landscape orientation, make sure the notch is on the left side of the leading edge.
Matte film	Load with the matte side down.
Clear film	Load with the rougher side down.
High-gloss white film	Load with the rougher side down.

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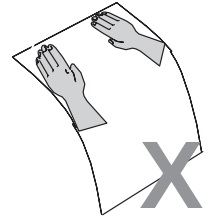
- 4 Hold the sheet by its edges, about 18 cm (7 in) from the top.



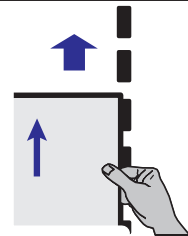
Don't hold the sheet right at the top, as you would have to adjust your grip as you push the sheet into the plotter, and this would probably make you misalign it.



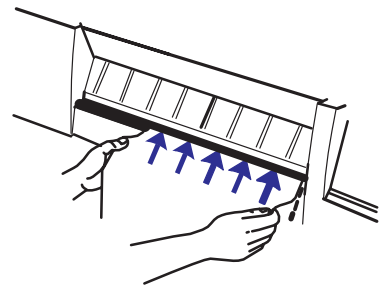
Don't place your hands flat on the surface of the sheet (as is normal when loading a sheet into some old pen plotters), as this would make step 7 very difficult for you.



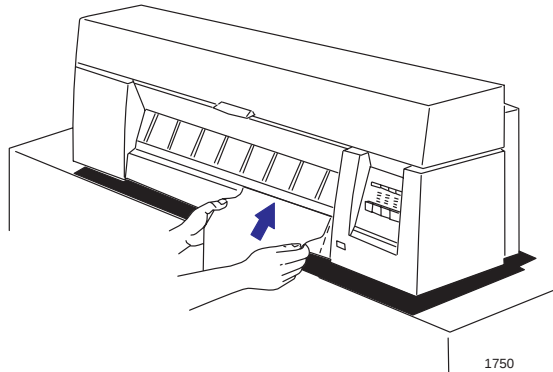
- 5 Align the right-hand side of the sheet with the line of holes on the plotter.



- 6 Make sure the entire top edge of the sheet – left and right – is placed inside the entry slot, especially if the sheet is wider than A- or A4-size.



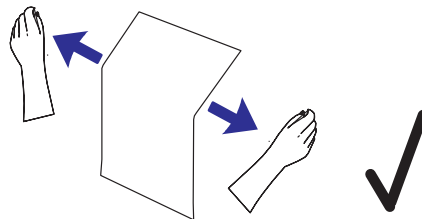
- 7 **IMPORTANT.** While keeping the right-hand side aligned with the line of holes, push the sheet in one swift and decisive movement up into the entry slot. Try to keep the angle of the sheet the same as the angle of the slot.



Three things will happen in quick succession:

- 1 You will feel the sheet come up against the media stops.
- 2 The sheet may buckle slightly, as you are still pushing it. This is normal.
- 3 The plotter will start to take the sheet from you.

At this point, let go!



Don't touch the sheet while the plotter feeds it out again a short way, as this would probably misalign it.

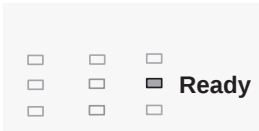


- 8 The plotter takes about a minute to check the alignment. While it's doing this, the **Ready** light on the front panel flashes.



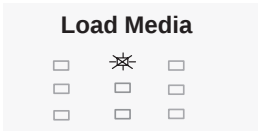
Wait until ...

either the **Ready** light stops flashing, but stays on:



Alignment *good* – ready to plot!

or the **Load Media** lights starts flashing:



Alignment *close*. Either realign the sheet manually, as explained in the next section, or press **Cancel** to start again from step 4 on page 2–11.

or the **Error** and **Load Media** lights start flashing:

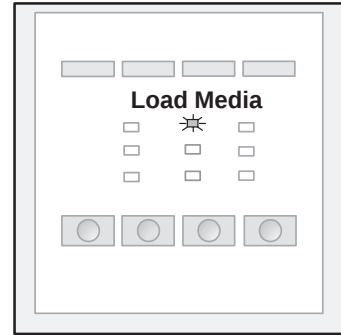


* Alignment *bad*. The plotter has rejected the sheet. Simply remove it and start again from step 4 on page 2–11. (There's no need to press any key.)

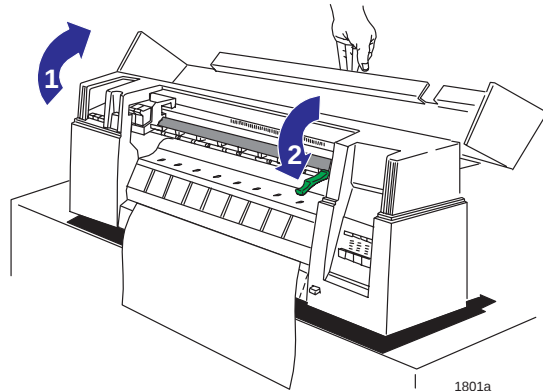
* There is another reason why these two lights may flash: the sheet may be an invalid size. For supported media sizes, see page 10–3. *With very small supported sizes* (B/A3-loaded in landscape or A/A4-size loaded in any orientation), there's no middle option above: unless the alignment is good, you have to remove the sheet and start again.

To realign the sheet manually (if necessary)

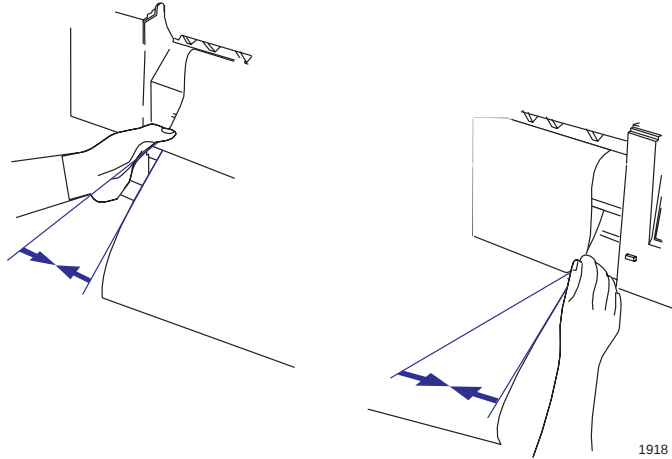
- 1 If the **Load Media** light is flashing without the **Error** light flashing, the plotter is inviting you to realign the media manually.



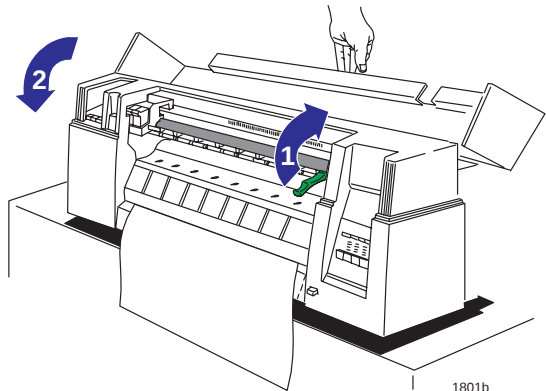
- 2
 - 1 Raise the cover. The bail (the black metal bar) is raised automatically.
 - 2 Lower the green media lever to release the media.



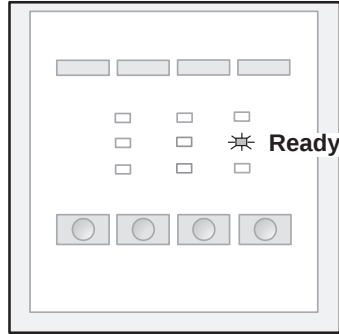
- 3 Align the edges of the media coming *out* of the plotter with the same edges going *into* the plotter, by pulling them taut and aligning them by eye. For A3 sized media, if the roll-feed deflectors are fitted, you may find it easier if you move them out of the way.



- 4
- 1 Raise the green media lever.
 - 2 Lower the cover.

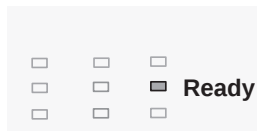


- 5 The plotter checks the alignment again. While it's doing this, the **Ready** light on the front panel flashes.



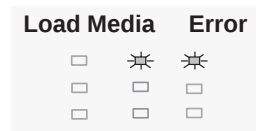
Wait until ...

either the **Ready** light stops flashing, but stays on:



Alignment *good* – ready to plot!

or the **Error** and **Load Media** lights start flashing:



Alignment *bad*. The plotter has rejected the sheet. Simply remove it and start again from step 4 on page 2–11.

*Notice that you have **only one chance** to realign the media manually. If it's still not right after the realignment, you have to load it again.*

Loading roll media

To change the roll

You can order spare spindles as accessories – see page 10–17. In this way, you can keep different rolls on different spindles and make this task easier. However, except where noted, this section assumes that you are using the same spindle for both the old and the new roll.

- 1 Be sure the plotter wheels are locked (the brake lever pressed down) to prevent the plotter from moving.

WARNING



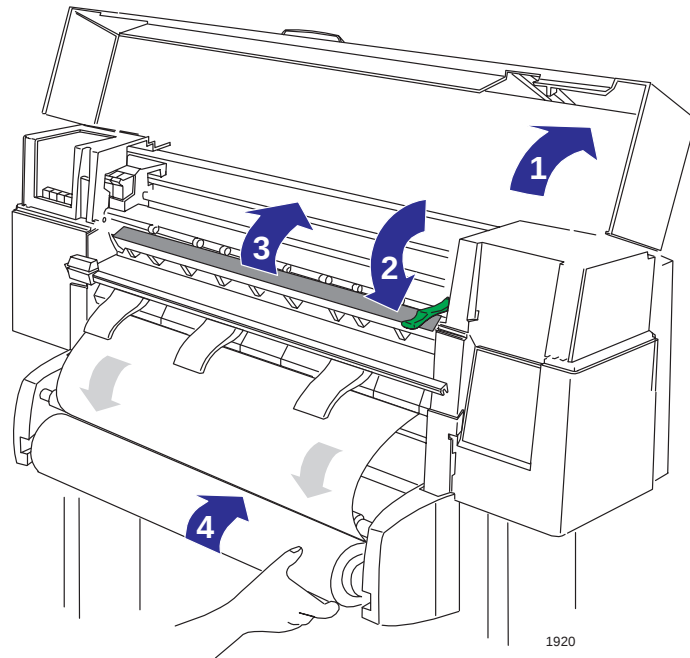
In the next step (see next page):

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.

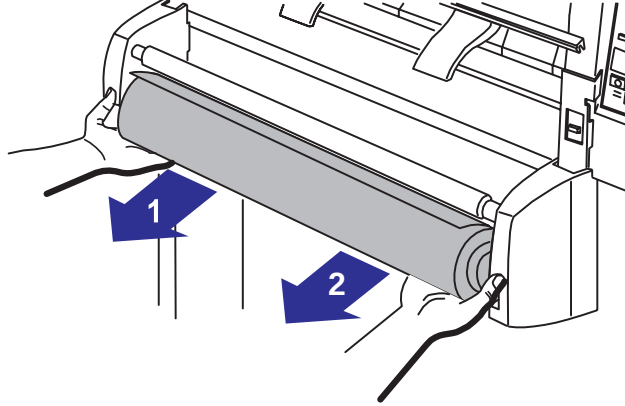
Loading roll media

- 2 *If the old roll is not used up, then remove the media from the media path, as explained here.*
- 1 Raise the cover.
 - 2 Lower the green media lever to release the media.
 - 3 The bail (the black metal bar) should automatically rise when you raise the cover.
 - 4 Turn the roll on the spindle to wind the media out of the plotter and onto the roll.



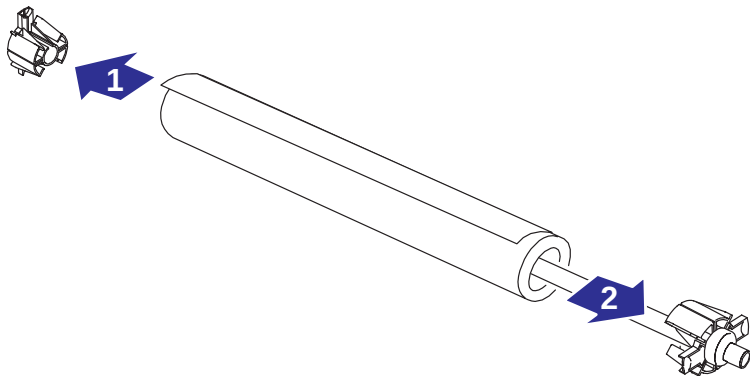
- 5 Raise the green media lever and then lower the cover.

- 3 Remove the **old roll** by pulling firmly first on the left end of the spindle and then on the right. You may find that you have to push your thumbs against the cover of the roll-feed assembly while pulling the roll with your fingers to be able to release the spindle.



If the new roll is on a different spindle, then you can skip steps 4 and 5, and go straight to step 6.

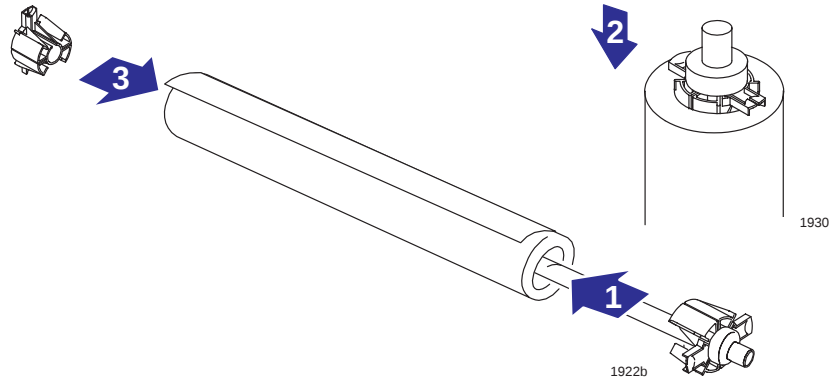
- 4 Remove the left media stop, and then remove the roll from the spindle, with the right media stop still connected to the spindle.



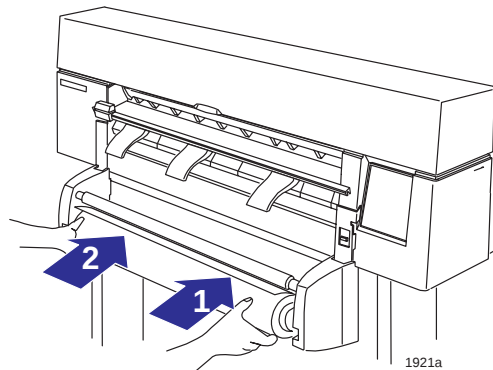
1922a

Loading roll media

- 5 Remove the **new roll** from its wrapping, Place it on the spindle, so that, as the media winds up from behind the roll, the media stop still on the spindle is on the right. Push the right media stop so that it is flush against the end of the roll (2 in the graphic below). Then insert the left media stop on the left end of the spindle.



- 6 Put the loaded spindle back in the plotter, pushing first the right side into place and then the left.



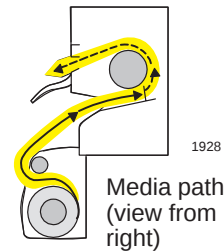
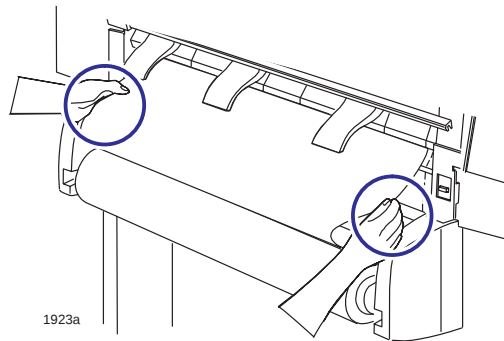
Make sure that each end of the spindle slots firmly into place with an audible “click”.

WARNING

It is important to make sure that the spindle is firmly in place, otherwise it could fall off the plotter.

To feed roll media into the plotter

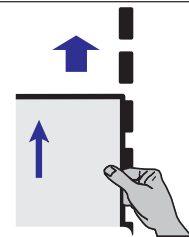
- 1 If the leading edge of the roll is uneven, you may find it easier to load if you trim it now, for example with scissors. However, once it is successfully loaded, you can use the plotter's built-in cutter to trim it, as explained in step 10 below.
- 2 Wind the media around the upper roller and hold it ready to load into the plotter. Hold the media by its edges, about 18 cm (7 in) from the top.



Don't hold the media right at the top, as you would have to adjust your grip as you push it into the plotter, and this would probably make you misalign it.

Don't place your hands flat on the surface of the media (as is normal when loading media into some old pen plotters), as this would make step 5 very difficult for you.

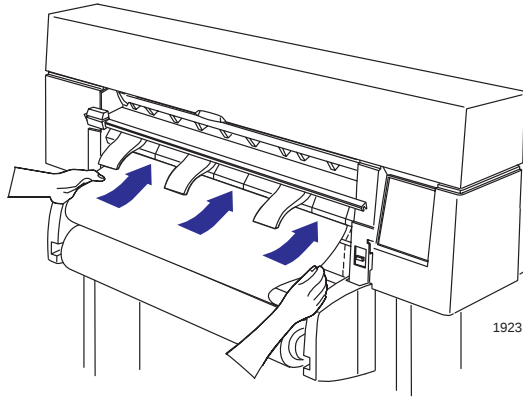
- 3 Align the right-hand side of the media with the line of holes on the plotter.



Loading roll media

- 4 Make sure the entire leading edge of the roll – left and right – is placed inside the entry slot.

- 5 **IMPORTANT.** While keeping the right-hand side aligned with the line of holes, push the media in one swift and decisive movement up into the entry slot. Try to keep the angle of the sheet the same as the angle of the slot.



Three things will happen in quick succession:

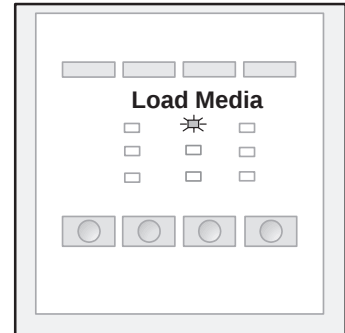
- 1 You will feel the media come up against the media stops.
- 2 The media may buckle slightly, as you are still pushing it. This is normal.
- 3 The plotter will start to take the media from you.

At this point, let go!

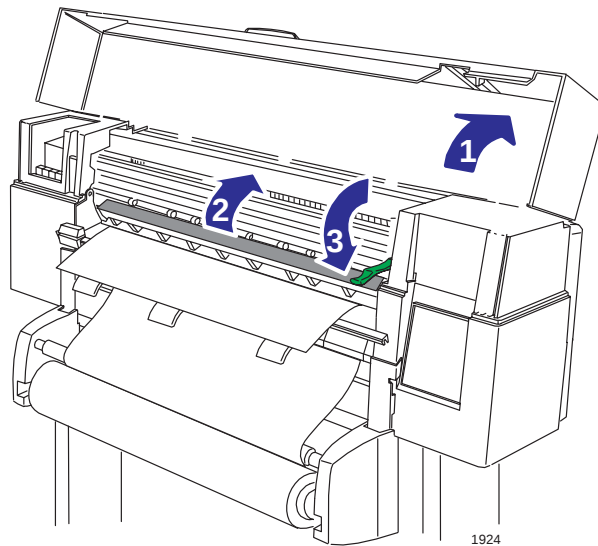
Don't touch the media while the plotter feeds it out again a short way, as this would probably misalign it.

- 6 **Realigning the media is an essential, not optional, part of the roll-loading procedure.** So, even if you align the media perfectly when loading it, you must still go through the motions of realigning it.

When the **Load Media** light is flashing, the plotter is waiting for you to realign the media, as explained below.

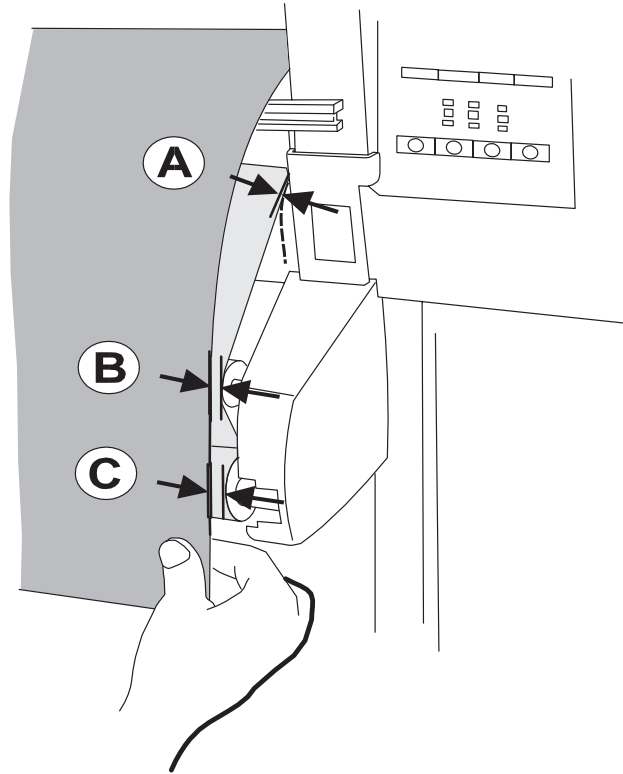


- 7
- 1 Raise the cover.
 - 2 This automatically raises the bail (the black metal bar).
 - 3 Lower the green media lever to release the media.



Loading roll media

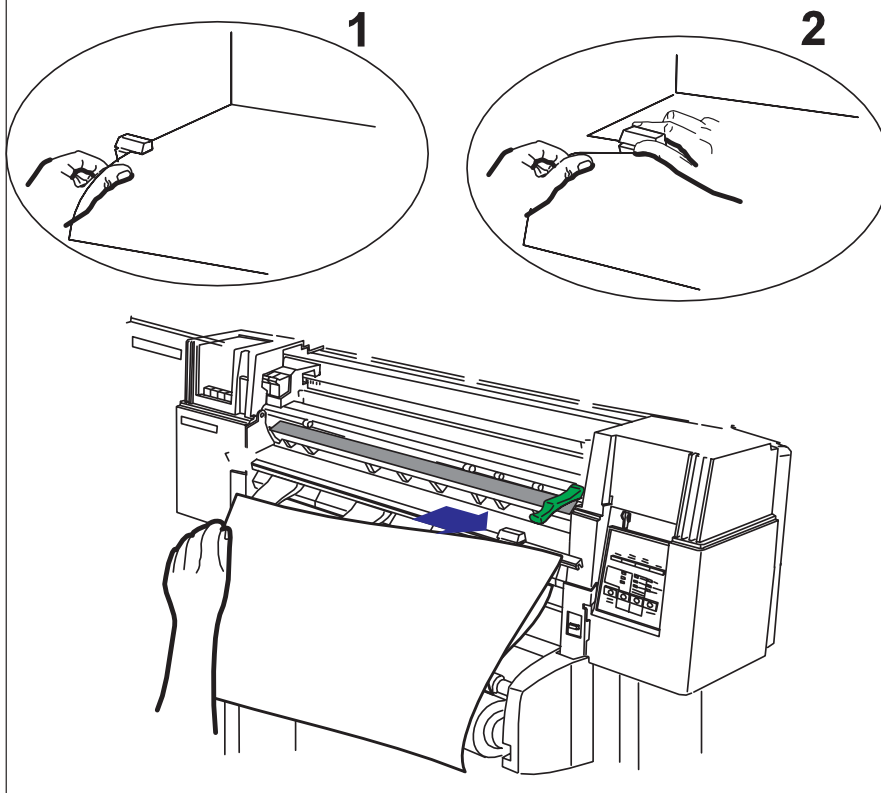
- 8** Align the edges of the media coming *out* of the plotter with the same edges going *into* the plotter, by pulling them taut with both hands and aligning them by eye. Make sure that the right-hand side of the media is aligned with the line of holes on the plotter (**A**), the top roller (**B**) and the roll (**C**). You may need to manually unroll a small amount of the media from its roll, to align the sheet satisfactorily.



- 9** Raise the green media lever.

- 10** While the cover is open, the plotter will pause, waiting for you to trim the front edge of the roll.

Trim the roll, as follows. *Holding the front edge of the media taut, on the left adjacent the cutter, slide the cutter from left to right and then back again.*



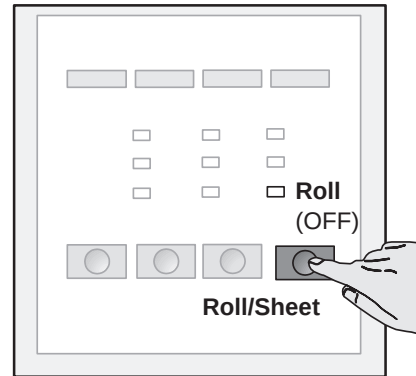
- 11** Lower the cover.

To load a sheet with the roll-feed option installed

From time to time you may want to load a separate sheet even though you normally use a roll – for example, to use the setup sheet.

- 1 If a roll is currently loaded in the plotter, unload it as explained on page 2–18, remembering to raise the green media lever again when it's done.

- 2 On the front panel, make sure the **Roll** light OFF, to indicate that you are going to load a sheet.



- 3 Load the sheet as explained in the steps starting with step 2 on page 2–9.



Unloading media

Drying time

On some media types, the ink needs to dry before the plot is unloaded. Since the plotter knows which media type you are using, it allows the appropriate drying time to elapse before the plotting process is complete – for example, before the **Load Media** light comes on to let you know you can unload a plotted sheet.

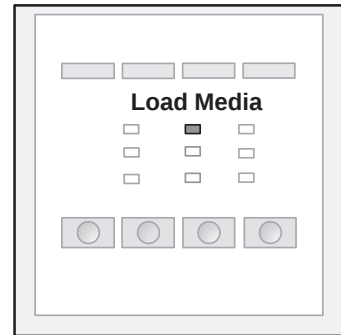
Typical Drying Times (minutes)		
HP Media Type	Print Quality	
	Fast	Normal or Best
HP Opaque Bond	0.5	1.5
HP Translucent Bond	0.5	1.0
HP Natural Tracing Paper	0.5	1.0
HP Vellum	1.0	3.0
HP Coated Paper	0	0.25
HP Heavyweight Coated Paper	0	0.25
HP Matte Film	Not recommended	4.0
HP Clear Film		4.0
HP High-Gloss White Film	Not recommended	4.0

Notice that you can unload some media types immediately.

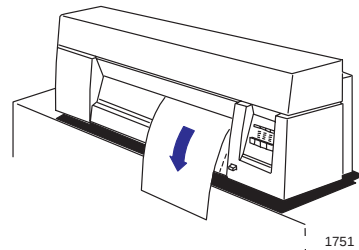
350C

To unload a sheet at the end of a plot

- 1 When the **Load Media** light comes on (not flashing), the plot is finished.

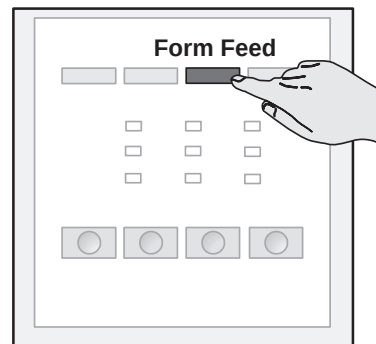


- 2 Then simply pull the sheet downwards to remove it from the plotter.



To unload a sheet under any other circumstances

Press Form Feed, wait for the sheet to be ejected and then simply pull it downwards to remove it from the plotter.



To cut and unload a plot from a roll

If the roll-feed option is installed, your plotter includes a built-in cutter. You may choose to cut the roll between plots, or at the end of a series of plots, as explained here.

There are two alternative plotting modes:

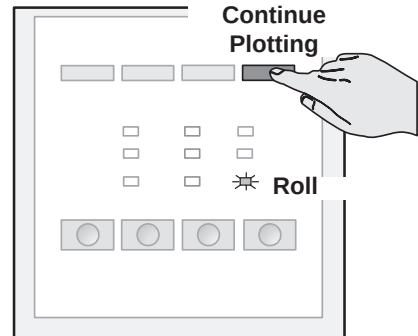
- **Pause mode.** The plotter pauses between plots for you to cut the plot from the roll (the default mode).
- **Continuous Plotting mode.** The plotter does not pause between plots.

CAUTION

In Continuous Plotting mode, when you are cutting the roll after the last of a series of plots, another plot sent to the plotter could start printing while you are cutting. If this is likely, Pause mode, rather than Continuous Plotting mode, is recommended.

To switch between the two modes, press the **Continue Plotting** key at any time, except when it has paused and is waiting for you to cut a plot from the roll.

While the plotter is in Continuous Plotting mode, the **Roll** light flashes.



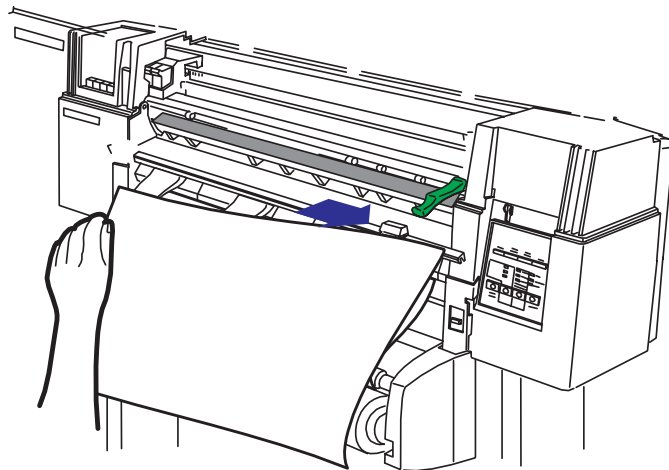
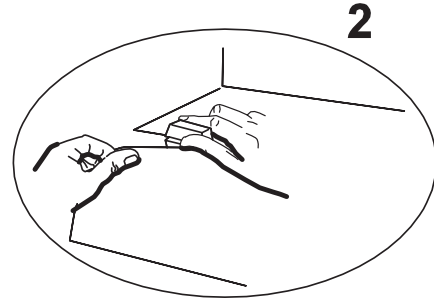
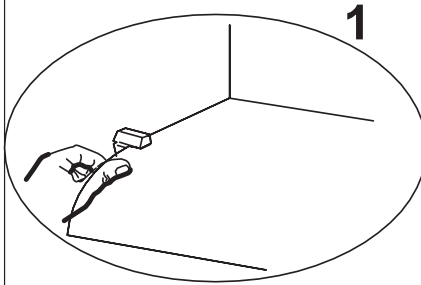
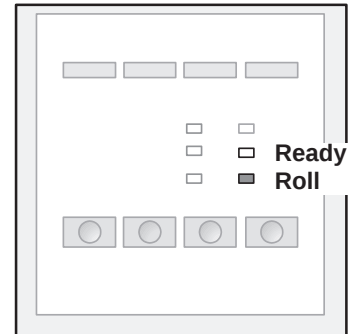
To cut and unload a plot from a roll in Pause mode

This mode is the default, and is indicated by the **Roll** light *not* flashing.

1

When the plot is finished, the **Ready** light stops flashing and goes off.

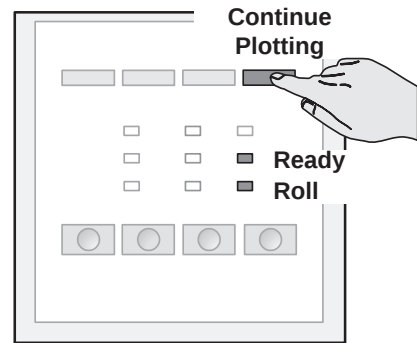
Holding the media taut on the left, adjacent to the cutter, slide the cutter from left to right and then back again, to cut the plots from the roll.



2

Press **Continue Plotting** to confirm that you've cut it.

The **Ready** light comes on to confirm that the plotter is ready for the next plot.

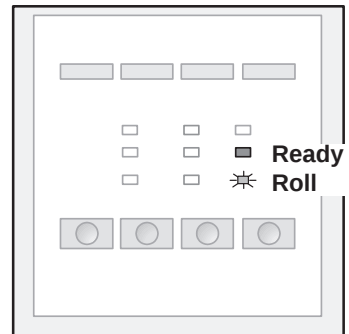


To cut and unload a plot from a roll in Continuous Plotting mode

This mode is indicated by the **Roll** light flashing.

1

When the plot is finished, the **Ready** light stops flashing, but stays on to confirm that the plotter is ready for the next plot.

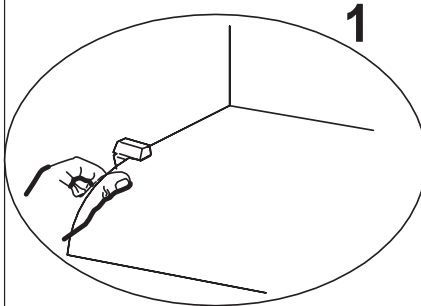
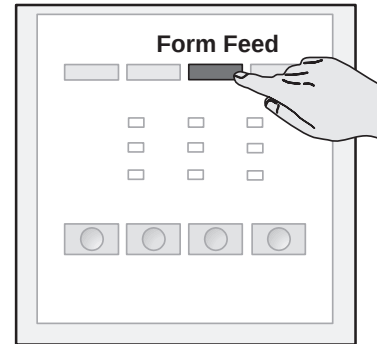


2

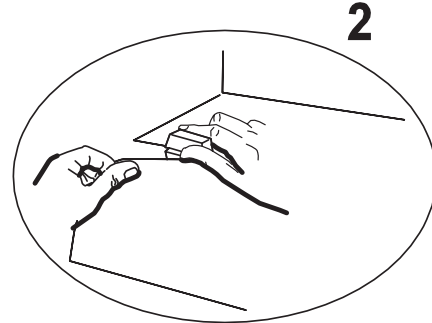
- 1 If the plotter has finished the series of plots and you want to cut the roll after the last one, press **Form Feed** and wait for the plotter to feed out more media.

Before cutting the roll (as explained next), make sure that no other plot has been sent to the plotter.

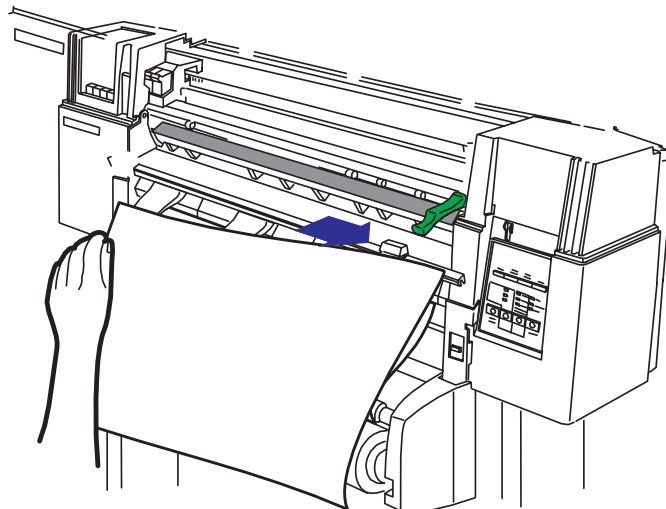
- 2 Holding the media taut on the left, adjacent to the cutter, slide the cutter from left to right and then back again, to cut the plots from the roll.



1



2



- 3 There's no need to press any other keys.

Ways to control the plot's appearance	3-2
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Rotating a plot	3-7
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Changing the treatment of overlapping lines (Merge feature)	3-11
Changing the plotter's logical pen characteristics	3-12
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Choosing an appropriate print quality	3-15

Controlling your plot's appearance

Ways to control the plot's appearance

Note. Throughout this chapter there are references to “pens”. The pens referred to are not the plotter’s physical print cartridges, but “logical” pens used in a software palette.

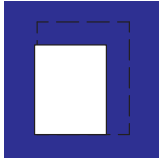
This chapter discusses the ways in which you can control the appearance of your plots, in terms of:

- page size
- plot orientation
- the treatment of overlapping lines
- pen characteristics (widths and color/grayscale levels)
- rendering color drawings in monochrome
- overall print quality and resolution

Apart from print quality, these controls are only available using the setup-sheet, an example of which is shown on page 1–21. Print quality can be changed from the front panel. This chapter explains the controls in the same order as in the list above.

Changing the settings of these controls using the Setup Sheet is explained from page 1–19.

It is also possible to change these settings within many applications and many software drivers. In some cases, the plotter is in control, in some cases the application or software driver is in control, and in other cases, the plotter interacts with the application or software driver. Which is the case in which circumstances is made clear in this chapter.



Page size

The *Page size* option applies only when using roll media, and is used to define the way in which the plotter emulates a sheet of media when printing your plot. This section explains how to make sure that the plotter prints your plot in the page size you want.

Terminology

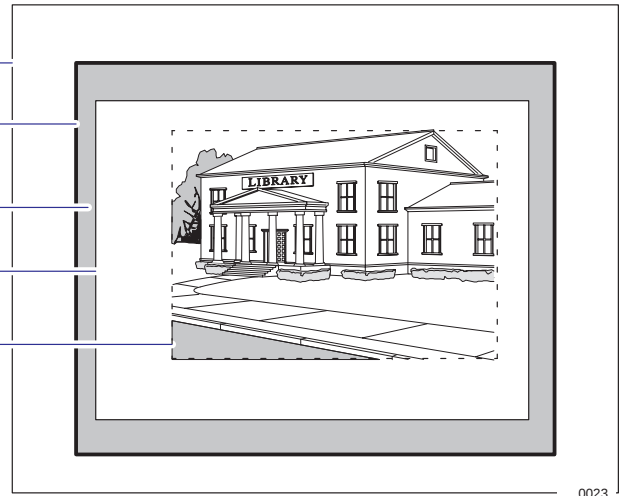
Media

Page size

Margin

Plotting area

Inked area



0023

Page size

This is what you can specify in your software, where it may be called “Page Size”, “Media Size”, “Paper Size” etc., and where the options include, for example, ISO A3, ANSI Letter, Architectural E, Custom, etc. Alternatively, it can be set by the plotter. By default, the plotted page size is set to the inked area (plus the margins).

In AutoCAD for DOS, however, the “User Size” is the plotting area.

Margins

These are fixed for the HP DesignJet 330 and 350C. The values are 17 mm on the leading and trailing edges and 5 mm on the sides.

Plotting area

This is the chosen page size minus the margins. For a table showing the plotting areas for standard media sizes, see page 10–7.

Inked area

This is the smallest rectangle that contains all the content of the drawing, while maintaining its relative dimensions.

When do you need to adjust the page size in the plotter?

Normally you don't need to. The default setting in the plotter is:

- **Inked Area.** With this setting, the plotter interacts with your application, or software driver, and saves wasted media by using a page size equal to the inked area plus the margins (see page 3–3).

But, if you wish, you can specify the page size either from your software or by using the plotter's Setup Sheet, as explained here.

- If you want a printed page of the exact size that you have specified in your software, use the **Software** setting in the Setup Sheet.

With this setting, your application or your software driver is normally in control, but see the comment regarding this setting in the table on page 3–5.

See also the section on *Page size and clipped plots* on page 3–6.

- If you want your plots to be on a page meeting a specific standard (for example, ISO or ANSI), but the actual size within that standard is not important, specify the **Best** option for that standard.

For example you may want a page size that conforms to the ISO standard, but not care whether the final page size is ISO A4 or ISO A3. In this case you should specify **Best** within the **ISO** options.

With this setting, the plotter interacts with your application, or software driver, and uses the smallest standard page size into which the inked area, plus margins, will fit.

- If you want all your plots on the same size paper, regardless of your plot size and software/driver settings, specify a discrete page size.

For example, you may want to print an ANSI A-size plot in the corner of an ANSI D-size page, leaving the rest of the page blank. In this case, specify **D** within the **ANSI** options.

With this setting the plotter is in control of page size.

See also the section on *Page size and clipped plots* on page 3–6.

To adjust the page size in the Setup Sheet

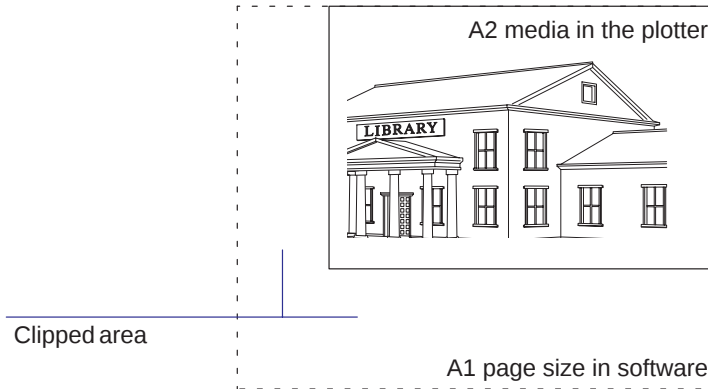
Size in Setup Sheet		Comments
Inked area		The plotted page size is the inked area plus margins. For a definition of “inked area”, see page 3–3.
Software		The plotter looks to your software for a page size instruction in HP-GL/2 (the plotter's graphics language instruction set). If it is there, the plotter uses that page size plus margins. If not, the plotted page size is the inked area plus margins.
ISO	Best	“Best ...” options The plotter chooses the smallest page size (from the ISO-series: A4, A3 etc.) that will hold the inked area of the plot. For example, if the inked area of the plot is between A3 and A4, the plotter chooses A3 as the page size.
	A0/A1/A2/A3/A4	
ANSI	Best	Discrete options ISO A0/A1/A2/A3/A4 ANSI E/D/C/B/A JIS B1/B2/B3/B4 ARCH E1/E/D/C/B/A Oversize A1/A2
	E/D/C/B/A	
JIS	Best	
	B1/B2/B3/B4	
ARCH	Best	
	E1/E/D/C/B/A	
Oversize	(No “Best” option)	The plotted page size is exactly the size you specify. The largest discrete page size you can specify depends whether your plotter is an E-size or D-size model.
	Over A1/A2	

Page size

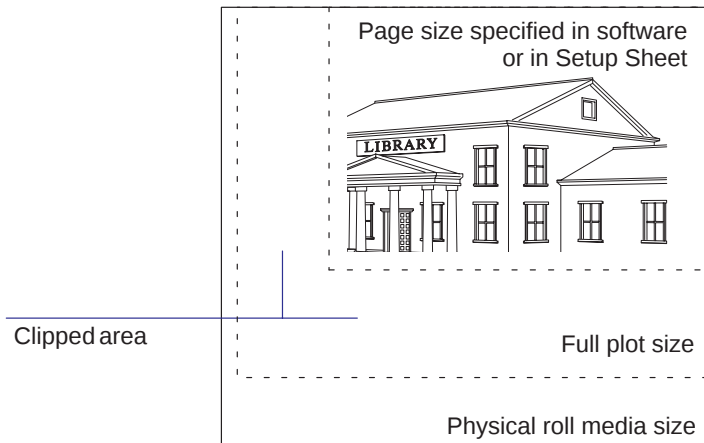
Page size and clipped plots

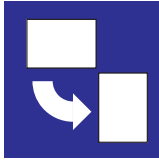
When setting your page size, be aware that with some combinations of page size and plot size, the plotter may print what it can, but may clip your plot:

- If you specify in your software a page/plot size that is larger than the physical size of the media loaded in the plotter.



- If you specify in software a page size setting that is too small for the plot, the plot will be clipped, even though the physical media size may be adequate.
- If you specify a discrete page size in the Setup Sheet that is too small for the plot, the plot may be clipped, even though the physical media size may be adequate.





Rotating a plot

Can you rotate *any* drawing using the Setup Sheet?

No. The Rotate option available in the Setup Sheet is applicable only if:

- the file contains no raster data.

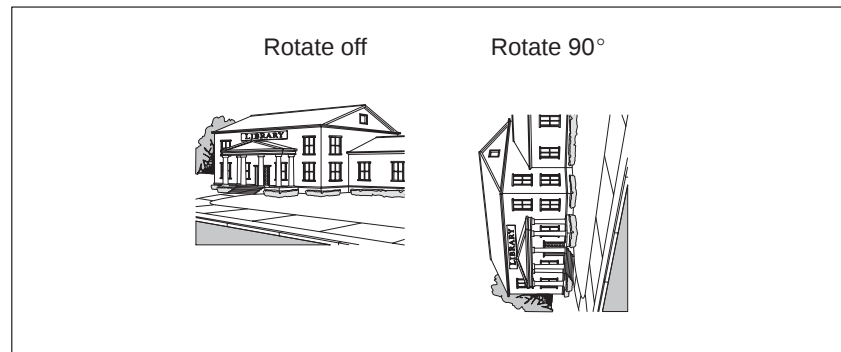
The normal line drawings of most CAD software do *not* contain raster data, and therefore you *can* use this **Rotate** option. However, if you are using one of the Microsoft Windows drivers supplied with this plotter, your files *do* contain raster data and therefore you *cannot* use this **Rotate** option.

To rotate a plot using the plotter's Setup Sheet

Providing your plot file does not contain raster data, you can rotate a plot using the Setup Sheet, without changing the drawing in your software.

The available options are:

- **Auto rotate** (roll media only). With this setting, the plotter will automatically rotate a plot by 90°, providing it will fit on the available media, if this will save media.
- **Rotate off**. With this setting, the plotter will print your plot as requested by your software, without adding any rotation. This is the default.
- **Rotate 90°**. With this setting, the plotter will rotate all plots by 90°, *counterclockwise* relative to the drawing's orientation in your software:



Rotating a plot

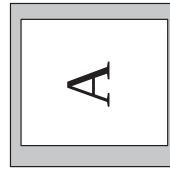
Exactly what is rotated?

With **roll media**, both the drawing and the page orientation are rotated.

Rotate off



Rotate 90°



Notice that the narrow margins are always at the side, regardless of the orientation.

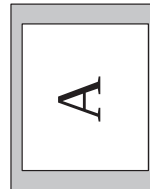
0025

With **sheet media**, the drawing is rotated, but the page orientation specified in your software is retained. (You should always load sheet media in the same orientation as you have specified in the software.)

Rotate off



Rotate 90°



0026

The Rotate feature and clipped plots

With either roll or sheet media, if you rotate to landscape a plot whose original orientation was portrait, the media may not be wide enough for the drawing, which may be clipped. For example, rotating by 90° a portrait D/A1-size plot on D/A1-size media will probably result in a clipped plot. Clipping does not occur with **Auto rotate**, which checks whether the rotated plot will fit.

How does Rotate interact with your software?

The plotter *adds* the rotation setting to any rotation angle you specify in your software.

- For software applications which, like the plotter, rotate *counterclockwise* (for example, CorelDRAW!) the result is the *sum*. For example, if your software specifies 180 degrees rotation, and you set **Rotate 90°** in the Setup Sheet, your plot's final rotation will be 270 degrees.
- For software applications which rotate *clockwise* (for example, AutoCAD) the result is the *difference*. For example, if your software specifies 90 degrees rotation, and you set **Rotate 90°** in the Setup Sheet, there will be no rotation.

Auto rotate behaves in the same way, if media could be saved.

Note that **Auto rotate** will rotate a plot to save media, even if you have chosen a best-fit page size in the Setup Sheet (see page 1–19). However the effects may not be what you expect.

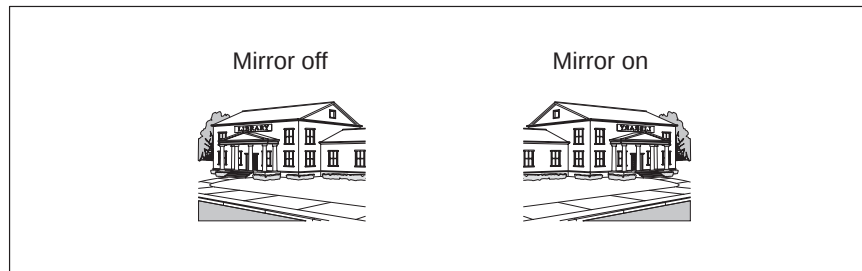


Plotting a mirror image

You can plot a mirror image of a drawing, using the Setup Sheet, without changing the drawing in your software,

The available options are:

- **Mirror off.** With this setting, the plotter will print your plot as requested by your software, without adding any mirroring. This is the default.
- **Mirror on.** With this setting, the plotter will produce a mirror image of a drawing, relative to the drawing's orientation in your software:





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Changing the treatment of overlapping lines (Merge feature)

The **Merge** feature provides two alternative settings for the treatment of overlapping lines in the Setup Sheet:

Merge off.

A subsequent line hides a previous line where they overlap.



Merge on.

Overlapping lines and area fills are merged.



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Merge off.

A subsequent line hides a previous line where they overlap.



Merge on.

Overlapping lines and area fills are merged.



You can set this feature from your software in some applications, for example in AutoCAD.



Changing the plotter's logical pen characteristics

The characteristics of the plotter's logical pens, referenced by your software, can be set either by software or by the settings for pens 1 through 8 in the Setup Sheet. The default is to use settings from the software.

Sometimes you may, for example, want to produce a set of drawings all with the same pen settings, but without having to change the software settings for the individual drawings. In this case you can choose to provide the pen settings from the plotter.

If you want to provide your own settings in the plotter and use those, use the **Pen Settings** section in the Setup Sheet and select **Use settings from tables below**. Using this option, you can specify the **Width** and **Color/Grayscale** of logical pens 1 through 8.

Item	Available options
Pens	1 through 8.
Width (mm)	0.13, 0.18, 0.25, 0.35, 0.50, 0.70, 1.00 Note that 0.13 mm is a one-pixel line width and renders some colors as a dot pattern.
Grayscale (%)	100, 80, 60, 40, 20, 10, 5
Color	Black, Red, Green, Yellow, Blue, Magenta, Cyan

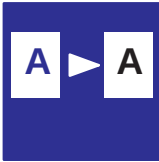
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For the HP DesignJet 330, only pen **Width** and **Grayscale** are available.

Once you have chosen your pen settings, you can change back to **Use settings from software** and your settings will be saved for future use if you require.

Note. If you want to produce black and white drawings instead of grayscale, then, unless your driver has an option for this, choose **Use settings from tables below** and set all 8 pens to **Black/100% Grayscale**. If you are using one of the Windows drivers supplied with the plotter, you must set this in the driver since the driver overrides the **Pen Settings** in the Setup Sheet.



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Printing color drawings in monochrome

You can successfully print color drawings in monochrome with either the HP DesignJet 330 or the HP DesignJet 350C.

If you send a color file to the HP DesignJet 330 and your software settings are for printing in color, the plotter will automatically convert the plot to grayscale.

However, if your plotter is set to **Use settings from software** (the default) in the Setup Sheet **Pen Settings** (see page 3–12), you will have no control over the grayscale levels used. If you want to control these yourself, you must select **Use settings from tables below** and set them in the Setup Sheet, as described on page 3–12.

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The default setting with the HP DesignJet 350C is to print color as color. However, you may want to print a color drawing in monochrome, for example:

- because you want a draft where color is not important, for example to check that the plot is not going to be clipped,
- because you want a version for photocopying in monochrome.

To switch from color to monochrome

With the HP DesignJet 350C, if your application or software driver has a color/mono setting, use this, since the Setup Sheet setting is normally overridden by software. If not, you can set the plotter to print in monochrome by selecting **Print color as grayscale** in the **Color/Mono** section of the Setup Sheet.

You can *force* a color plot to monochrome, regardless of the application/driver setting (except with the supplied Windows driver), by additionally setting the **Pen Settings** to **Use settings from tables below** (see page 3–12).

The Setup Sheet setting also impacts the plotter's internal demonstration plots.

Note that if there is no color information in your plot file, the plotter will print only a black and white plot, not grayscale.

Important points about monochrome printing

- The monochrome plot will render colors as *grayscale*s. If you want your plot printed in only *black and white*, then you should set *all* your logical pens to black, either in your software (easily achieved in CAD software by using a pen number that is 100% black) or in the Setup Sheet (see page 3–12).
- With monochrome plotting, you have the option to choose between 300 and 600 dpi resolution (see page 3–15).

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– With the HP DesignJet 350C, the resolution on glossy media is always 300 dpi. This is because, with the **Glossy** media type selected, all printing is performed using the cyan, yellow and magenta cartridges; the black cartridge is not used.

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– With the HP DesignJet 330, glossy media is not supported.



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Choosing an appropriate print quality

You can control the overall print quality of your plot from the plotter's front panel.

Print Quality	Speed	Ink Used	Resolution	
			Monochrome	Color
Fast	Highest	Least	300 x 300 dpi.	300 x 300 dpi.
Normal	Normal	Most	600 x 600 dpi. ¹	
Best	Lowest			

¹ Except for glossy media types, on which the resolution is always 300 dpi.

Note that glossy media types are not supported on the HP DesignJet 330.

Alternatively, you can specify the print quality setting from your software printer driver. In this case, *the driver's setting* is used for the next plot. During the plot, the front-panel setting changes temporarily to that from the driver, and then resumes its previous setting again.

The exact printing process used by the plotter varies not only with your print quality setting, but also with your specification of the media type when loading the media (see page 2–3). Recommended combinations of print quality and media type are given in the table on page 2–5.

Recommended media types for various applications are given in the table on page 2–6.

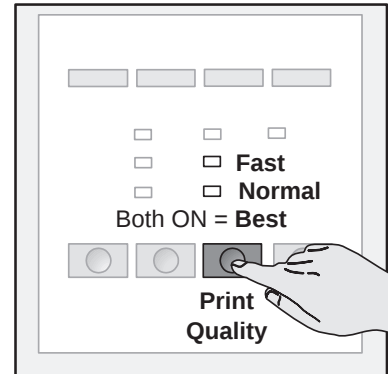
General tips

By choosing Fast, you will get draft-quality output in the shortest time. By choosing Normal, and a suitable media type, you will get high-quality output in a reasonable time. By choosing Best, you will get the highest possible quality for the media type, but the printing time will be longer.

To change the print quality on the front panel

Use the front-panel **Print Quality** key to toggle between the three print quality settings.

For details of each print quality level, see the table on the previous page.



The setting also impacts the plotter's internal demonstration plots.

You cannot change the print quality setting for a plot already received by the plotter.

To cancel a plot 4-2

To copy a plot 4-2

To advance the media 4-3

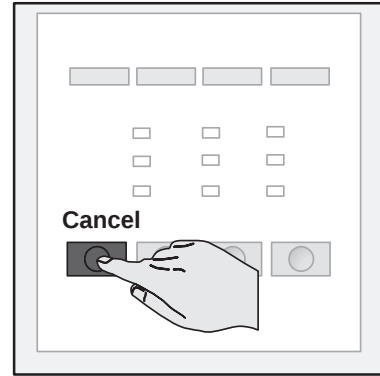
Managing your plots



To cancel a plot

To cancel the current plot while it is being received, or while it is printing, press **Cancel**.

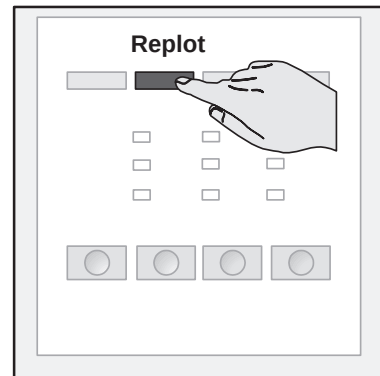
The canceled plot stays in memory until you send another, and so you can subsequently use **Replot** to print it again. Note that, for these purposes, any internal plot (see chapter 5) counts as another plot.



To copy a plot

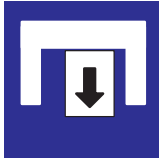
To print another copy of the last plot, press **Replot**.

It will be printed with the same settings for **Media Type** and **Print Quality** as the original copy, even if you've changed them on the front panel.



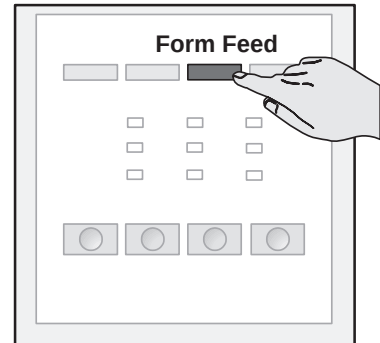
Replot does not work if:

- another file has already been sent to the plotter (including internal plots, for example the Setup Sheet), or
- you have switched the plotter off and on again since first sending the plot.



To advance the media

Pressing the **Form Feed** key advances the media out of the media exit slot.



You may want to do this:

- when the plotter is in Continuous Plotting mode, you have reached the end of a series of plots and want to cut the roll after the last one (see page 2–31), or
- to eject damaged media after clearing a media jam (see page 9–5).

There is no need to use **Form Feed** to unload a plotted sheet from the plotter – see page 2–28.

Don't press **Form Feed** while a file is being received by the plotter, as this terminates the data transmission (unless you are doing this as part of a troubleshooting routine – see page 9–9).

- Their purpose and how to print them 5-2
- Using the Black Cartridge Alignment Sheet 5-3
- Using the Color Cartridge Test Sheet 5-7

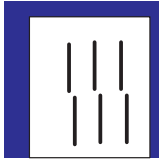
Special internal plots

Their purpose and how to print them

Various pre-defined plots are supplied with your plotter. You can print these by pressing keys, or combinations of keys, on the plotter's front panel.

Plot	Purpose	To print it, press ...	See page ...
Setup Sheet	To configure the plotter	Setup 	1–19 and chapter 3
Demonstration Plot	To test the plotter	Setup + Continue Plotting  simultaneously	1–26
Black Cartridge Alignment Sheet	To test the alignment between the two horizontal cartridge movements.	Setup + Replot  simultaneously	5–3
Color Cartridge Test Sheet	To test the performance and alignment of all cartridges	Form Feed + Continue Plotting  simultaneously	5–7
Service Configuration Plot	*	Media Cancel + Type  simultaneously	*
Print Quality Plot	*	Print Quality + Roll/Sheet  simultaneously	*

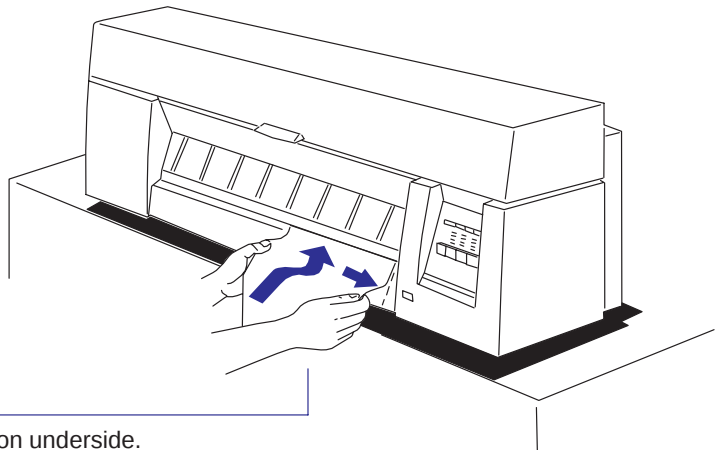
* These plots are essentially for use by a qualified service engineer, if troubleshooting the plotter.
You may be asked to print one and read out some details over the phone.



Using the Black Cartridge Alignment Sheet

Some of the circumstances in which it is useful to use the Black Cartridge Alignment Sheet are explained in chapter 9, “Troubleshooting”. It tests the alignment between the two horizontal cartridge movements – movement to the right and movement to the left – and allows you to correct any misalignment.

- 1 Load a sheet of A-size or A4-size plain paper, in portrait orientation. Make sure you have selected **Plain** as the media type on the front panel (see page 2–3). For this plot, the plotter sets the print quality level automatically.



Plot will be on underside.

1750

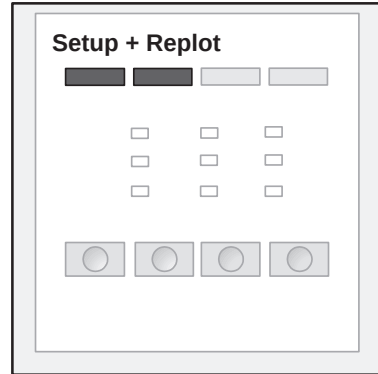
For help on how to load a sheet, either refer to the pictures on the right-hand side of the plotter’s media-entry slot, or see the section starting on page 2–9. Note that you cannot print the Black Cartridge Alignment Sheet on roll media. To load a sheet with the the roll-feed option installed, see page 2–26.

Using the Black Cartridge Alignment Sheet

2

When you have correctly loaded the sheet (when the **Ready** light is on and steady), press the **Setup** and **Replot** keys simultaneously.

The Black Cartridge Alignment Sheet is printed. An example is shown on page 5–5.

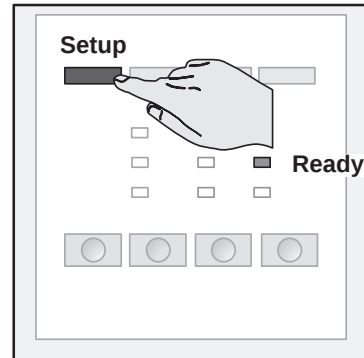


- 3 When the **Load Media** light comes on (not flashing), the plot is finished. Simply remove the sheet from the plotter.
- 4 Follow the instructions on the sheet itself. As you will see, this involves you identifying the straightest set of vertical lines in each of the two boxes.
- 5 If the straightest sets are already the current selection, you need do nothing more. If not, then mark the appropriate ovals, reverse the sheet as indicated, and reload it.

6

When the **Ready** light comes on, press **Setup**.

The plotter now reads your marks and adjusts itself automatically.



HP DesignJet 330/350C

Black Cartridge Alignment Sheet

1 → In each of the two large boxes, mark the best set of lines by filling in the oval.

Jagged lines = bad

Straight lines = good

Current

Best

Pencil or black pen

2 →

3 →

Ready

→

Setup

- 7 When the **Load Media** light comes on again, remove the sheet and make sure that the plotter has marked your selections with a check mark.

Using the Black Cartridge Alignment Sheet

Three important points concerning the Black Cartridge Alignment Procedure:

- *Always* use the Black Cartridge Alignment Sheet immediately after printing it.
- *Never* re-use a Black Cartridge Alignment Sheet.
- Any plot that was in the plotter's memory before you printed the Black Cartridge Alignment Sheet has been lost and so, to print it, you must resend it.

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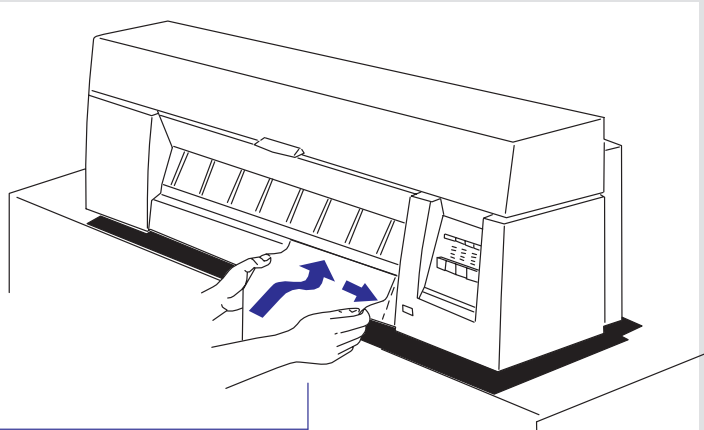


Using the Color Cartridge Test Sheet

Some of the circumstances in which it is useful to use the Color Cartridge Test Sheet are explained in chapter 9, “Troubleshooting”. It achieves two objectives:

- It tells you which cartridge, if any, is not performing correctly.
- It lets you check the alignment of the four cartridges to each other and, if necessary, adjust it.

- 1 Load a sheet of A-size or A4-size plain paper, in portrait orientation. Make sure you have selected **Plain** as the media type on the front panel (see page 2–3). For this plot, the plotter sets the print quality level automatically.



Plot will be on underside.

1750

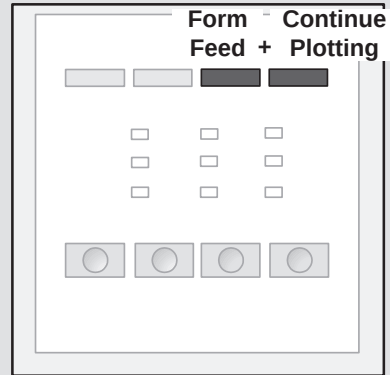
For help on how to load a sheet, either refer to the pictures on the right-hand side of the plotter's media-entry slot, or see the section starting on page 2–9. Note that you cannot print the Color Cartridge Test Sheet on roll media. To load a sheet with the the roll-feed option installed, see page 2–26.

Using the Color Cartridge Test Sheet

2

When you have correctly loaded the sheet (when the **Ready** light is on and steady), press the **Continue Plotting** keys simultaneously.

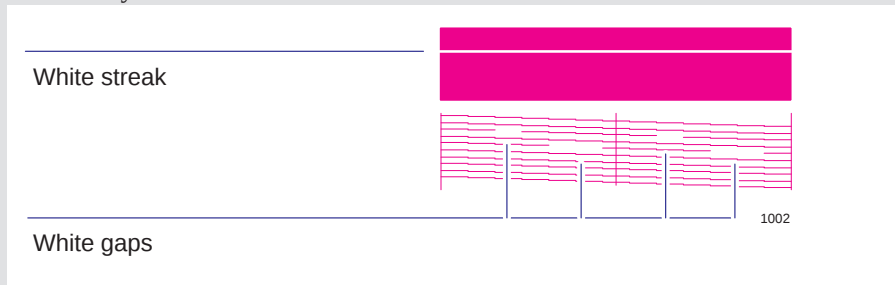
The Color Cartridge Test Sheet is printed. An example is shown on page 5–9.



3 When the **Load Media** light comes on (not flashing), the plot is finished. Simply remove the sheet from the plotter.

Notice that there are two parts, related to two quite distinct tasks:

- The part headed **To check the nozzles** lets you see if any of the cartridges is not printing correctly. It is to be used when cleaning the nozzles (priming) – see page 7–7. Some examples of the patterns when a cartridge is not printing correctly are shown here:





HP DesignJet 350C

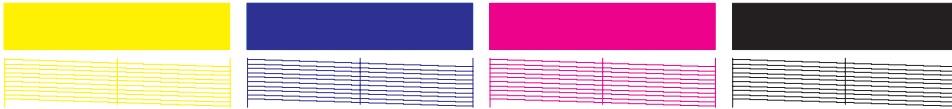


Color Cartridge
Test Sheet

To check the nozzles

Examine the patterns below.

If any color has gaps or streaks, then that cartridge is either out of ink or needs priming (see User's Guide).



To check the cartridge alignment

1 In each of the six boxes below, look for the best pair of lines.

2 If the current setting is not the best pair, change it by filling in the oval above the best pair.

Jagged lines = bad

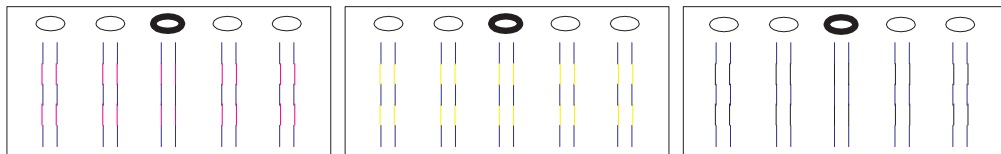
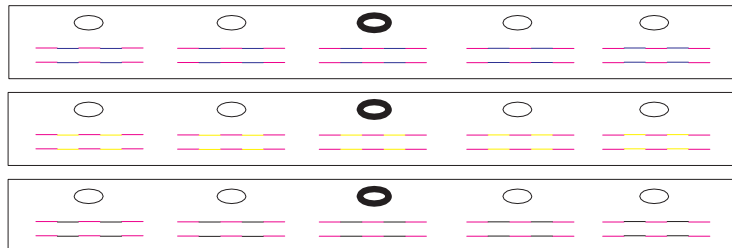
Straight lines = good



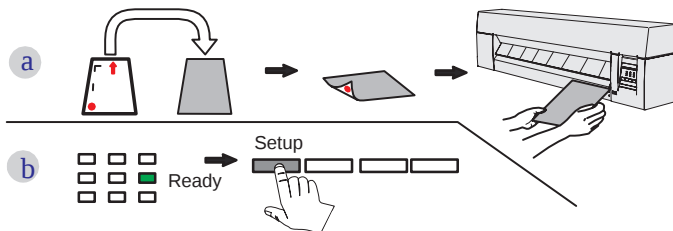
Current

Best

Pencil or
black pen



3 If you changed any setting, reload the sheet as shown here.



Using the Color Cartridge Test Sheet

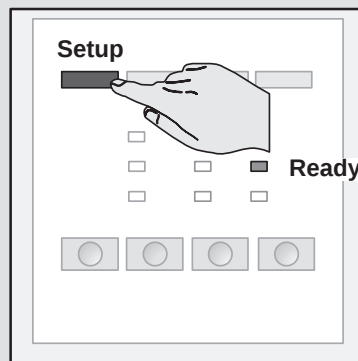
- The part headed **To check the cartridge alignment** lets you check and, if necessary, adjust the alignment between the cartridges, in response to a print quality problem – see page 9–12.

You don't need to use both parts of the Color Cartridge Test Sheet each time you print it.

- 4 Follow the instructions on the sheet. Notice that, if you change any of the settings on the sheet (by marking an oval different from the currently selected ones), you must reload it, as explained in steps 5 through 7, for the plotter to readjust itself. Otherwise you can skip the rest of the steps.
- 5 Having marked the appropriate ovals, reverse the sheet as indicated, and reload it.

- 6 When the **Ready** light comes on, press **Setup**.

The plotter now reads your marks and adjusts itself automatically.



- 7 When the **Load Media** light comes on again, remove the sheet and make sure that the plotter has marked your selections with a check mark.

Three important points concerning the Color Cartridge Test Procedure:

- *Always* use the Color Cartridge Test Sheet immediately after printing it.
- *Never* re-use a Color Cartridge Test Sheet.
- Any plot that was in the plotter's memory before you printed the Color Cartridge Test Sheet has been lost and so, to print it, you must resend it.

- To see the current configuration of the plotter 6-2
- To change the serial interface settings 6-3
- To change the graphics language setting for less common applications 6-3
- To change the I/O timeout setting 6-4
- To upgrade your plotter with more memory 6-4
- To upgrade your plotter with a network interface 6-5
- To upgrade the HP DesignJet 330 plotter with color 6-5

Reconfiguring your plotter

To see the current configuration of the plotter

To see the current configuration of your plotter, print the Setup Sheet, as explained from page 1–19. Those items on the Setup Sheet which you may change are listed on page 1–22, together with their defaults. They are explained in the relevant chapters of this manual, for example Page Size in chapter 3 and Graphics Language in this chapter.

The following three items, which appear near the top right-hand corner of the Setup Sheet, tell you the overall configuration of the plotter.

Item	Comments
RAM	This is the size, in megabytes, of the plotter's main standard memory, plus the amount of memory reserved for printing. • This does not correspond directly to the size of your files on the computer, as explained on page 6–4. • This is the total RAM, not the RAM currently free.
SIMM	This tells you if an optional memory expansion module is installed in the plotter, and its size.
Firmware Revision	This is the revision number of the plotter's internal code.

To change the serial interface settings

- Parallel With a parallel interface, no front-panel configuration is necessary.
- Serial With a serial interface, you should have checked the configuration (baud rate and parity) when installing the plotter and, if necessary, changed it. However, you may need to reconfigure it:
- when you connect a new computer to the plotter
 - when you output to the plotter from a new application
 - if you experience problems with distorted or unintelligible plots.
- To change the serial interface settings, use the setup sheet, as explained from page 1–19.

To change the graphics language setting for less common applications

Your software application communicates with the plotter by a graphics language. The HP DesignJets 330 and 350C support HP-GL (7586B), HP-GL/2 and HP RTL.

The plotter's default setting, HP-GL (7586B), is designed to work successfully with most applications. However, it's possible that with some older or less common applications, you may need to change this setting to HP-GL/2. To change the graphics language setting, use the Setup Sheet, as explained from page 1–19.

Graphics language	Comments
7586, HP-GL/2	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.
HP-GL/2	Try this setting if you are sending an HP-GL/2 file to the plotter and: • if you have experienced plot position problems. • if you have experienced timing problems.

To change the I/O timeout setting

Some software may not write a proper file terminator at the end of the file. In this case, the plotter will not know that the file is complete and will wait for more data until the end of the “I/O timeout” period. By default, this period is 30 minutes, but you can change it to as little as 30 seconds.

To change the I/O timeout setting, use the Setup Sheet, as explained from page 1–19.

To upgrade your plotter with more memory

Your plotter comes with a basic memory of 4MB. 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).

For HP part numbers, see page 10–16.

For installation details, see the task starting on page 1–6.

File size and memory usage

There is no direct relationship between file size on your computer and memory used in the plotter to print that file. In fact, because of file compression (and general complexity) it is often impossible to estimate how much memory will be used. In general, thicker lines (≥ 0.5 mm), complex objects (such as polylines) and fills will all use significantly more memory.

To upgrade your plotter with a network interface

You can connect your plotter directly to a LAN using an HP JetDirect EX print server, connected to the plotter's parallel port. See page 1–18 and page 10–17.

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To upgrade the HP DesignJet 330 plotter with color

The HP DesignJet 330 monochrome plotter can be upgraded to become an HP DesignJet 350C color plotter. For the HP part number of the upgrade kit, see page 10–15.

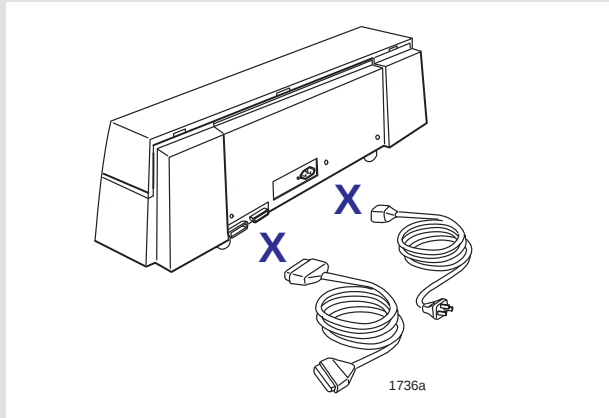
The upgrade kit comprises:

- A ROM SIMM, containing the code for the HP DesignJet 350C.
- A set of four print cartridges: cyan, magenta, yellow and black.
- A color label for installation on the plotter's cartridge carriage.
- An new overlay for the plotter's front panel.
- A manual kit, comprising this User's Guide and the Quick Reference Guide.
- Drivers for AutoCAD and for Microsoft Windows applications.

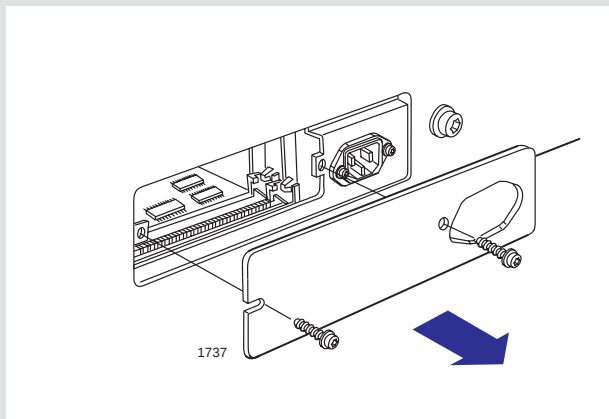
This section explains all the tasks necessary to install the upgrade kit.

To upgrade the HP DesignJet 330 plotter with color

- 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.

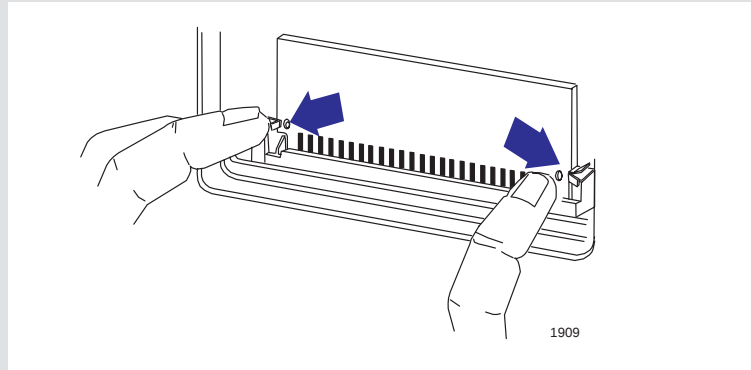


CAUTION

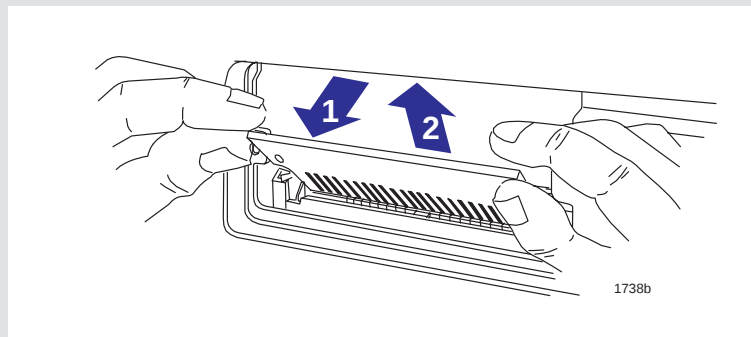
Before handling a memory module, either put on a grounding wrist strap and attach the end to the metal chassis of the plotter, or touch the outer metal surface of the plotter with your hand. Otherwise, static electricity from your body could damage the memory module.

- 3 There are two slots for SIMMs in the plotter. The SIMM containing the upgrade goes in *the slot furthest from you*. If both slots are free, skip this step and go straight to step 5. If the slot nearest to you already contains a SIMM (a memory module), then you must first remove it, in order to access the other slot.

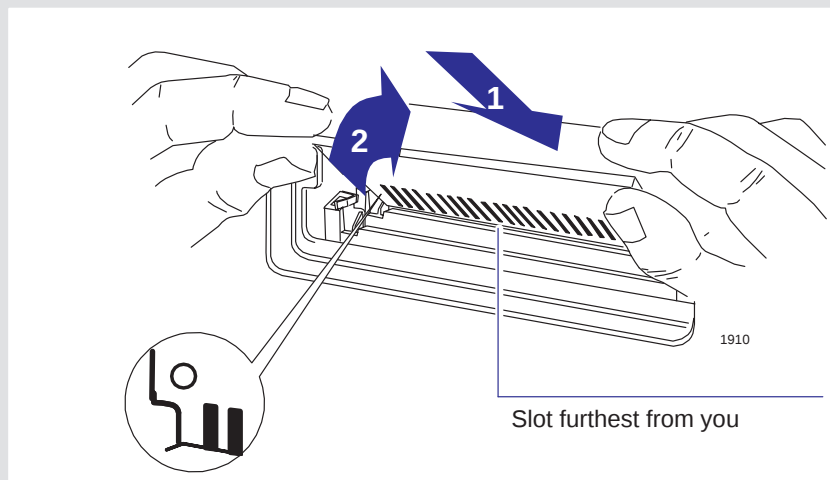
- 1 Gently push aside the two clips that hold the memory module in place.



- 2 Holding it only by the edges, carefully pull the top of the module toward you and lift it out.



- 4 Temporarily place the module on a conductive pad, for example the one containing the new SIMM.
- 5 Take the new SIMM out of its bag, holding it only by the edges.
- 6 With the SIMM's small notch on the left and the metallic edge away from you, load the SIMM into *the slot furthest from you*. To do this, first hold the module at an angle, place the bottom edge in the slot and then push the top away from you until the module clicks into place.



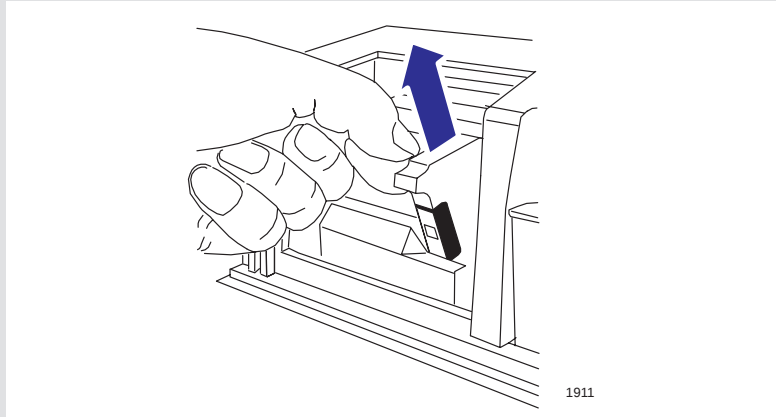
- 7 If you removed a memory module from the slot nearest to you, re-install it in the same way.
- 8 Replace the cover plate and screws.

WARNING

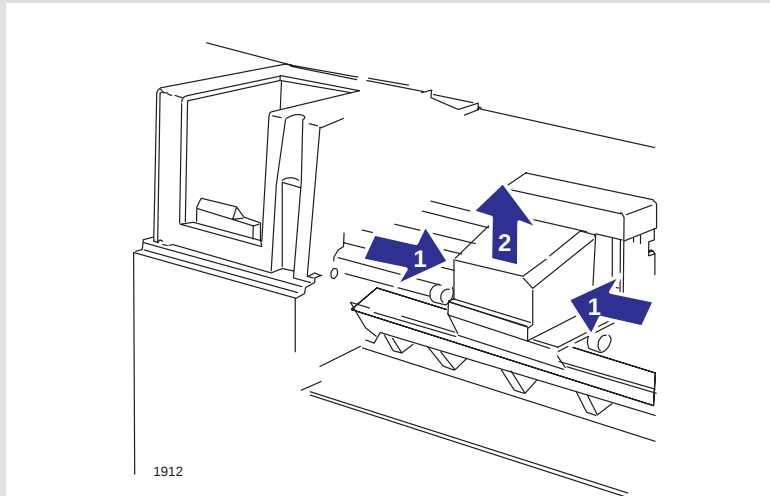


In steps 9, 10 and 11, pay special attention to this warning. Don't touch the stainless steel strip that runs the length of the plotter behind the cartridge carriage; its edge is very sharp. Keep hair, jewelry, clothing, and foreign objects away from the plotter mechanisms.

- 9**
- 1 With the plotter still switched OFF, raise the cover to access the cartridge carriage on the left.
 - 2 Remove the black cartridge.

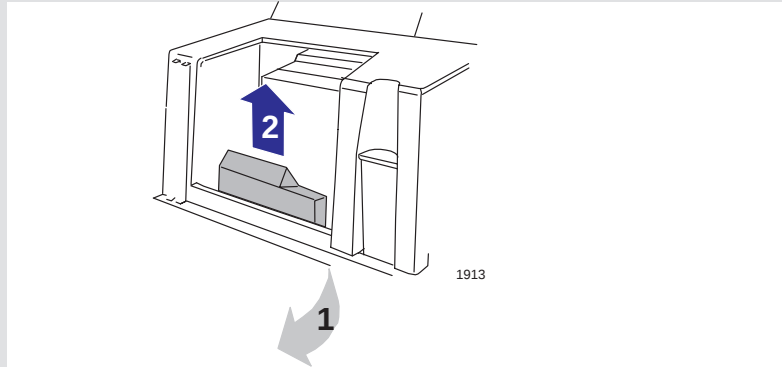


- 10**
- Move the cartridge carriage out of the service station. Then remove the cover from the three left-hand cartridge slots by first squeezing on both sides, and then lifting it off.



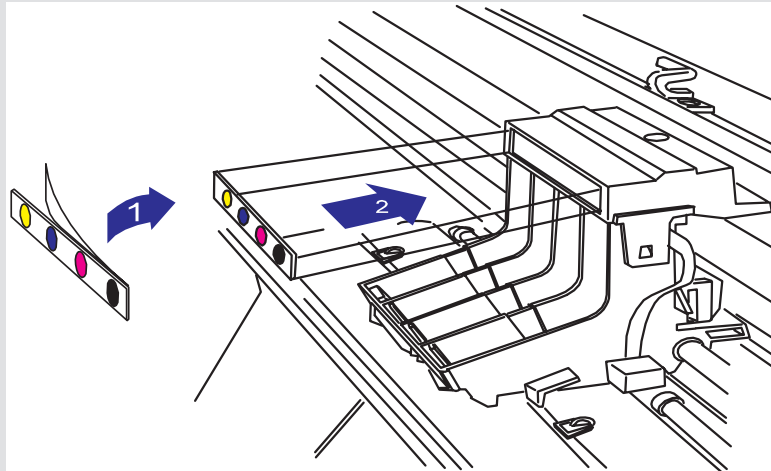
- 11** Remove the cover from the three left-hand cartridge selectors.

- 1** Release the clip on the right side of the cover, at the bottom. This is easiest to see when looking down into the plotter.
- 2** Lift the cover off.



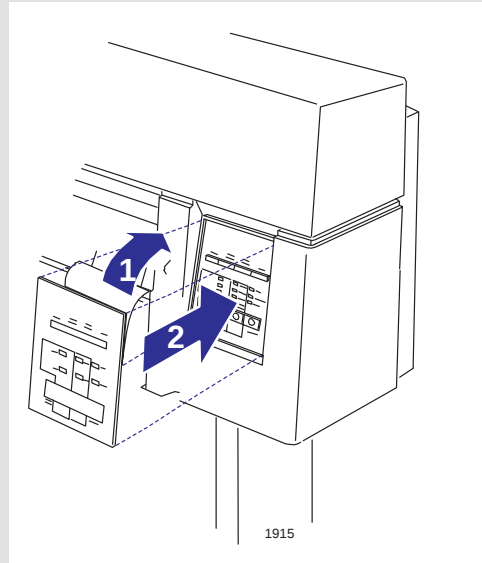
- 12** From the upgrade kit, take the label containing four colored dots.

- 1** Remove the protective strip from the back.
- 2** Stick the label onto the vertical panel above the cartridge stalls while the cartridge is out of its stall, as shown below. Note that the yellow dot must be on the left.
- 3** Close the cover



- 13** From the upgrade kit, take the new overlay for the front panel.

- 1** Peel the adhesive layer from the back.
- 2** Fix it *over the top* of the old front panel.



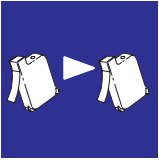
- 14** Switch ON the plotter.
- 15** From the upgrade kit, take the three new colored cartridges (yellow, cyan and magenta) and, together with the black cartridge you removed earlier, install them in the plotter's four vacant cartridge stalls. This procedure is explained in full from page 7–5 — remember to follow the instructions for the 350C, not the 330! Be sure to match the colors of the cartridges with the colors of the dots.
- 16** Print a Setup Sheet to confirm that the plotter has correctly read the new ROM SIMM and has reconfigured itself to be an HP DesignJet 350C. For instructions on how to print a Setup Sheet, see the section “Configure the plotter” starting on page 1–19. The place to look is at the top of the setup sheet, which should now read “HP DesignJet 350C”.
- 17** Finally, reconfigure the print driver(s) you are using to indicate that your device is no longer an HP DesignJet 330 plotter, but now an HP DesignJet 350C plotter. Drivers for AutoCAD and for Microsoft Windows applications are supplied as part of your upgrade kit.

Replacing cartridges 7-2

Cleaning the cartridge nozzles (priming) 7-7

Cleaning the plotter 7-9

Maintaining your plotter



Replacing cartridges

Replaceable print cartridges are used in the HP DesignJets 330 and 350C, greatly reducing the user maintenance requirements, as these are the components that suffer the greatest wear and tear.

When to replace cartridges

Replace cartridges in the following two circumstances.

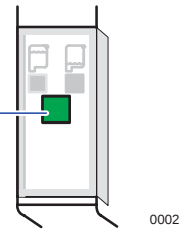
- *When you are troubleshooting print quality problems.*

See the section starting on page 9–12.

- *When either poor print quality or the ink-level indicator on the cartridge indicates that the cartridge is out of ink.*

To check a cartridge's ink level

-  Green = full
-  More than half-empty*
-  Black = empty



0002

* When the ink-level indicator shows approximately half-black and half-green, be sure to have a replacement cartridge available. The ink-level indicator is *not* an exact gauge of the specific quantity of ink available over the life of the print cartridge.

To achieve the best lifetime for your pen cartridges, you should not remove them once they are installed, except to replace them.

Using genuine HP supplies

To ensure best performance, Hewlett-Packard Company recommends using only genuine HP supplies in HP inkjet printers and plotters.

Refilling an HP print cartridge pushes the electronic and mechanical components of the cartridge past its normal life cycle, creating many potential problems, such as:

- **Poor print quality.** Non-HP ink can contain components that 1) cause nozzles to become clogged, resulting in streaked copy and graying for fuzzy characters, and 2) corrode the print cartridge electrical components, resulting in poor printouts.
- **Potential damage.** If ink from a refilled cartridge leaks, the excess ink may cause damage to the service station that caps the cartridge while not in use. Because this service station maintains the health of the cartridge, quality problems may occur with the print cartridge. If ink from a refilled cartridge leaks onto the electrical components in your plotter, severe plotter damage can occur, causing downtime and repair costs.

CAUTION

Damage resulting from the modification of or refilling of HP cartridges is specifically excluded from the coverage of HP plotter warranties.

Before replacing cartridges

Two important points:

Cartridge types Your plotter is designed to operate *only* with the four cartridge types whose part numbers are listed on page 10–17.

Taking care Make sure you are aware of the cautions and warning below.

CAUTION

Touch only the plastic parts of the cartridge. Do not touch, wipe, or attempt to clean the cartridge nozzles or contacts; this may clog and damage the cartridge.

Each time you access the cartridges for loading or reseating, the nozzles are exposed to the air. If the nozzles are exposed to the air (except during plotting) for more than a few minutes at a time, they are susceptible to clogging and drying.

It is absolutely essential to load the cartridges *with the plotter switched ON*, otherwise you will get poor print quality and the reliability of your cartridges will be impaired.

350C

With the HP DesignJet 350C plotter, it is absolutely essential to load the cartridges *in the correct stalls*, otherwise not only will your colors be wrong, but also print quality may be impacted.

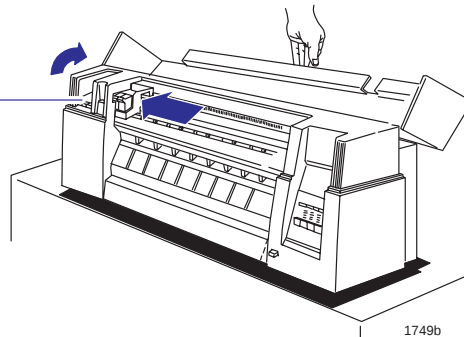
WARNING

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. Keep new and used print cartridges out of the reach of children.

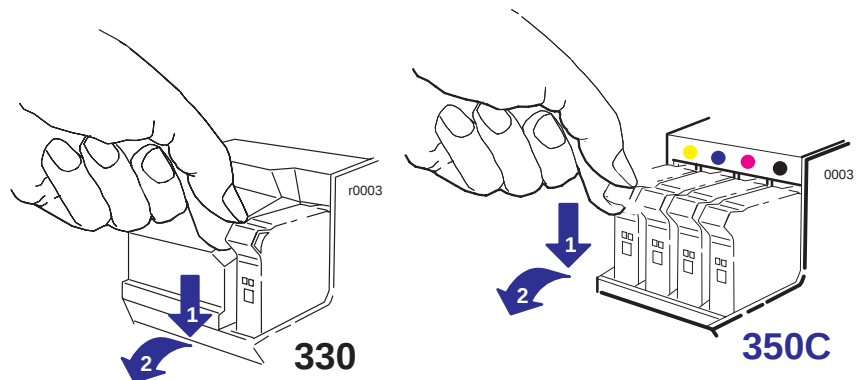
To replace one or more cartridges

- 1 Access the cartridge carriage.
 - 1 Leave the plotter switched ON.
 - 2 Open the cover and push it right back.
 - 3 If necessary, wait for the cartridge carriage to move to the service station on the left.

Cartridge carriage in service station



- 2 Remove the cartridge to be replaced.
 - 1 Press down lightly and then pull the cartridge towards you.
 - 2 Remove the cartridge from its stall. Discard it if it is empty or defective.

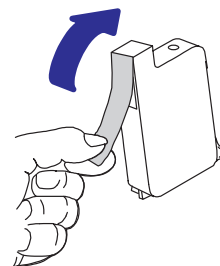


Replacing cartridges

3

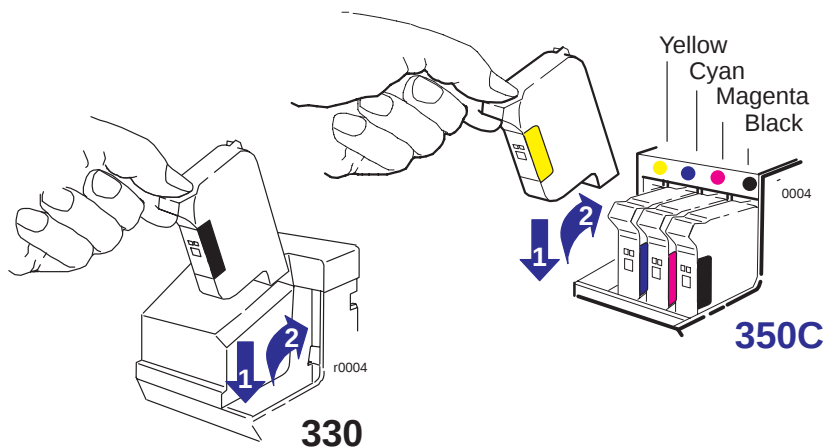
350C Match the color of the cartridge's label with the color of the dot above the empty stall. *For users with color-vision deficiencies:* you can identify the colors of the cartridges by the part numbers on the boxes – see page 10–17.

- 1 Take the new cartridge out of its box.
- 2 Remove the colored protective tape and tab from the cartridge's nozzles.
- 3 Make sure that the plotter is still switched ON. (Never install cartridges with the plotter switched off.)



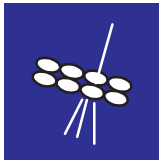
1754

- 4 Insert the new cartridge in the stall. Press down lightly and push the cartridge away from you until it snaps into place. If it is installed correctly, the **Ready** light flashes for a second or two.



- 4 When you have finished replacing cartridges, lower the cover.

If you wish, you can now check your cartridge alignment by running the Black Cartridge Alignment Routine (See page 5–3). However, this is normally only required for troubleshooting.



Cleaning the cartridge nozzles (priming)

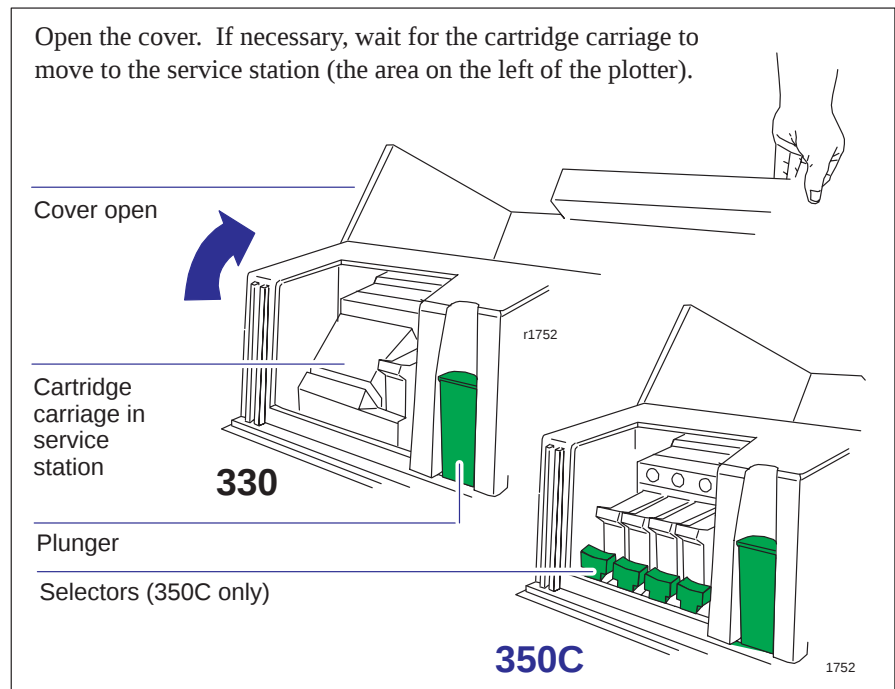
To prime a cartridge is to clear clogged print nozzles manually, by using the green plunger at the left side of the plotter. Some of the circumstances in which it is useful to prime a cartridge are explained in chapter 9, “Troubleshooting”, but essentially, if you suspect that the nozzles of a cartridge are clogged, try priming that cartridge, as explained here.

- 1 Leave the plotter switched *on*. If the plot in which you noticed the problem is still being printed, you will be able to check the result of the priming in the latter part of the same plot. So simply go to step 2 to interrupt the print.

CAUTION

If you try to prime a cartridge while the plotter is switched *off*, you could damage the cartridges.

- 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).



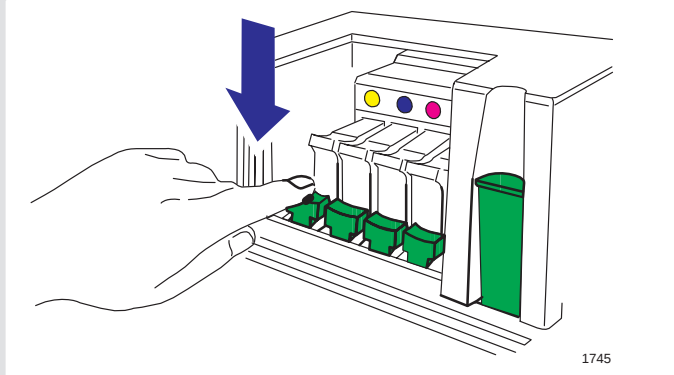
WARNING

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.

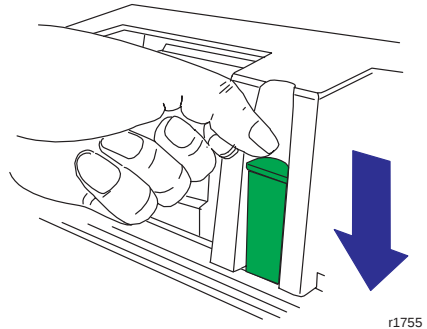
Cleaning the cartridge nozzles (priming)

350C

- 3 Press the small green selector in front of the cartridge which you want to prime.



- 4 Firmly press the large green plunger fully down once, and then release it.
- The plunger should return to its original position.



350C

- 5 Repeat steps 3 and 4 for any other cartridges to be primed.

Note. It is not necessary to return the selectors to their original positions.

- 6 Lower the cover.
- 7 If you interrupted the print, the plotter now resumes it. Ignoring that part of the drawing immediately after the interruption (where print quality cannot be guaranteed), check the rest of the print to see if the problem has been resolved.



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.

Front-panel lights

Front-panel lights

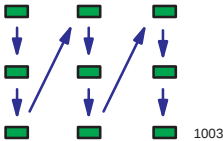
The lights on the front panel provide the means for your day-to-day “communication” with the plotter. They tell you the plotter’s current status and, if there is an error, the nature of the error. In order to understand the meaning of each combination of lights, *you must use the table in this chapter*, as in most cases you would not be able to guess the meaning. You will therefore find this table invaluable in troubleshooting.

Key to table
starting on the
next page

This graphic	Means ...
	The nine lights on the plotter’s front panel.
	This light is ON and STEADY.
	This light is ON and FLASHING.
	This light is OFF or this is the relevant light.
	The state of this light is not relevant.

Table

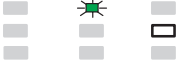
Sequence of
explanations in
the table:



Pattern of lights	Explanation and Action
All lights off 	If no lights are on, you may have a power problem. <i>See chapter 9 for troubleshooting.</i>
Plain 	The current media selection is Plain. For an explanation of which media types this means, see page 2–3.

350C

Pattern of lights	Explanation and Action
Plain + Error 	The current plot is too large for the plotter's memory. <i>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. In the case of the Microsoft Windows 95 driver shipped with the plotter, the relevant field is called "Process document" in the Options dialog box.</i> <i>Otherwise, you may need to install more memory to print this plot. For information on available memory expansion modules, see page 10–16.</i>
Film 	The current media selection is Film. For an explanation of which media types this means, see page 2–3.
Film + Coated 	The current media selection is Glossy. For an explanation of which media types this means, see page 2–3.
Film + Error 	Either the black print cartridge is faulty, misplaced or missing. <i>Reseat or replace the cartridge as explained from page 7–2.</i> Or you have loaded a print cartridge of the wrong type for this plotter. <i>For the correct part numbers of the four cartridges supported by this plotter, see page 10–17.</i>
Coated 	The current media selection is Coated. For an explanation of which media types this means, see page 2–3.

Pattern of lights	Explanation and Action
Load Media 	The plotter is ready, but you need to load media.
Load Media 	The plotter has a file in memory, which it is waiting to plot, but no media is loaded. <i>Load media.</i>
Load Media 	You are loading media and need to realign it, even if it seems perfectly aligned. <i>Open the cover, lower the lever, realign the media, raise the lever and close the cover. See also pages 2–14 (for sheet media) or 2–23 (for roll media).</i>
Load Media + Error 	Either the sheet you loaded is misaligned. <i>Realign it as explained on page 2–14. A short tutorial on loading media starts on page 2–9.</i> Or it is an invalid size. <i>For supported media sizes, see page 10–3.</i> Or the media lever is lowered. <i>Open the cover, raise the lever, close the cover.</i> Or the cover is open when the plotter is initializing. <i>Lower the cover.</i>
Fast 	The current Print Quality selection is Fast. See page 2–8.

Pattern of lights	Explanation and Action
Fast + Normal 	The current Print Quality selection is Best. See page 2–8.
Normal 	The current Print Quality selection is Normal. See page 2–8.
Error 	System error. If the Error light is on continuously (that is, not flashing), together with any combination of the other eight lights on the front panel, there is a system error. <i>Make a note of all the front panel lights that are on and refer to “Getting Help” on page 9–18.</i>
Error 	Error. If the Error light is flashing, there is an error which you can correct. <i>Check which other light is flashing and look up the pattern in this table.</i>
Error + Ready 	There is a problem with the serial interface. <i>The plotter’s settings for baud rate and parity must be the same as those of the computer sending the data. To check the plotter settings, use the Setup Sheet, as explained from page 1–19. Also check your interface cable.</i>
Ready OFF 	The plotter is <i>not</i> ready to plot. <i>Check the state of the other lights and look up the pattern in this table.</i>

Pattern of lights	Explanation and Action
Ready 	The plotter is ready to plot. <i>Send your plot from your computer or, for a special internal plot, press the appropriate key combination – see page 5–2.</i>
Ready 	Busy. The plotter is busy with a task or is receiving a file. <i>Wait.</i>
Roll OFF 	The plotter is currently set for sheet media, rather than roll media.
Roll 	The plotter is currently set for roll media, rather than sheet media.
Roll 	The plotter is waiting for you to cut the roll after the last plot. <i>Cut the roll and press Continue Plotting.</i>
Roll 	The Continue Plotting key has been pressed to put the plotter in Continuous Plotting mode. It will therefore not pause at the end of the current plot for you to cut the plot from the roll. <i>If you want to toggle to the alternative Pause mode, press the Continue Plotting key again.</i>

Using the documentation	9-2
Locating the source of your problem	9-3
Solving media-handling problems	9-4
Clearing a media jam	9-5
Solving communication problems	9-8
Solving problems with plot position or content	9-9
Solving print-quality problems	9-12
Solving miscellaneous problems	9-17
Getting help	9-18

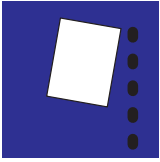
Troubleshooting

Using the documentation

- For the meanings of the lights on the front panel, see chapter 8.
- If you know the problem is related to a certain task, first check the relevant section in this manual for the step-by-step procedures. Use this manual's index. For example, if you are having difficulty loading a sheet, refer to page 2–9.
- 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, refer to the driver's 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 9–18.**

Locating the source of your problem

- 1 Check the status of the front-panel lights. For an explanation, see chapter 8.
- 2 Test the plotter, as follows:
 - a Switch the plotter off.
 - b Ensure that the power cord is firmly inserted in the plotter and plugged in to an outlet that you know works.
 - c Switch the plotter on.
 - d Print a demonstration plot (see page 1–26). If the plotter plots this correctly, the problem is probably not with the plotter.
- 3 Test your computer hardware and interface, as follows:
 - a 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 1–17 and 10–11).
 - b **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 1–19).



Solving media-handling problems

If the plotter will not accept your media

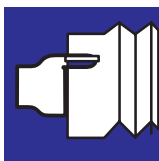
- Is the power on? No lights on the front panel = no power.

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

You may have:

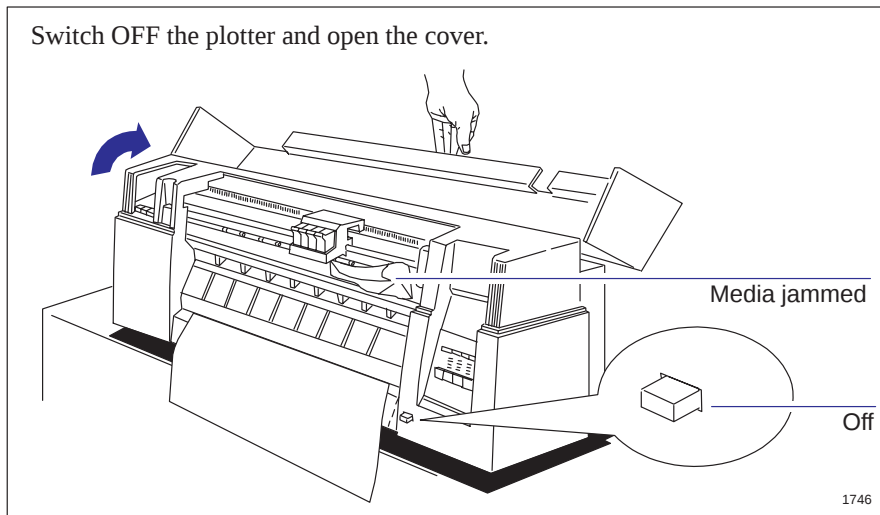
- Loaded the media at the wrong side of the entry slot. You must load it with the right-hand edge against the perforated line on the plotter.
- Loaded the media at an angle. The right-hand edge must be *parallel* to the perforated line on the plotter.
- Held or pushed the surface of the media. You must hold the media only by the edges.
- Used media that is crumpled or warped or has irregular edges.
- Used hand-cut media, the edges of which do not form a right-angle or 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 page 2–9 for a sheet or page 2–21 for a roll.



Clearing a media jam

- 1 Switch OFF the plotter and open the cover.



WARNING



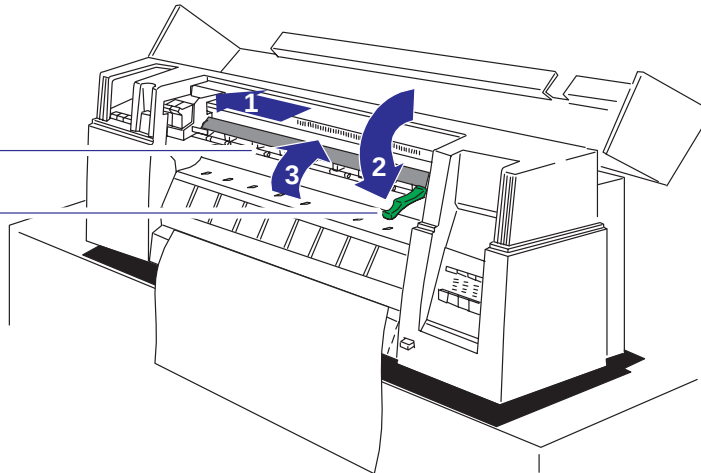
Don't touch the stainless steel strip that runs the length of the plotter behind the cartridge carriage; its edge is very sharp. Keep hair, jewelry, clothing, and foreign objects away from the plotter mechanisms.

Clearing a media jam

- 2 Push the cartridge carriage all the way to the left, touching only the solid plastic parts of the carriage. Lower the media-jam lever and raise the bail (the black metal bar).

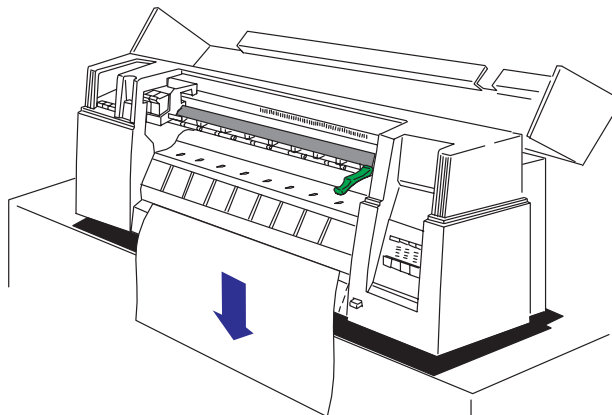
Bar raised.

Media-jam lever lowered.



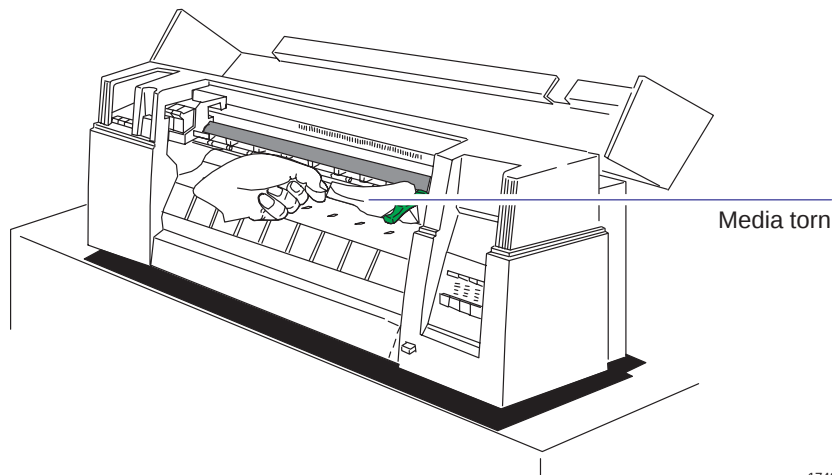
1747

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

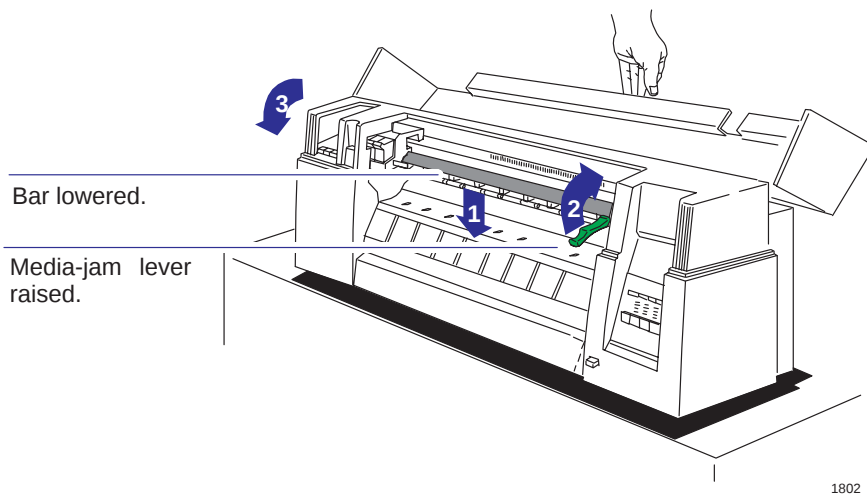


1801

- 4 Carefully remove any torn pieces from inside the plotter. Be careful not to touch the stainless steel strip that runs the length of the plotter behind the carriage carriage; its edge is very sharp.



- 5 Lower the bail, raise the media-jam lever and lower the cover.



- 6 On the front panel, press **Form Feed** to eject any pieces of media that are still in the media path.



Solving communication problems

If there seems to be some problem related to the communication between your computer and the plotter

Some symptoms of a communication problem are:

- The front-panel **Ready** light does not start flashing.
- Your computer displays an error message when you are trying to print.
- Your computer or plotter “hangs” while communication is taking place.
- Your plotted output shows random or inexplicable errors (misplaced lines, partial drawings etc.)

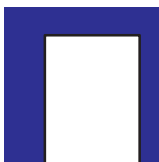
Investigate the following:

- Check that you have selected the correct interface port in your software.
- Find out if the plotter works correctly when receiving files from other software.
- If the plotter is connected to a network, try using it when connected directly to your computer.
- If your plotter is connected to your computer via any other intermediate devices, such as switch boxes, buffer boxes, cable adapters, cable converters etc., try using it when connected directly to your computer.
- Try another interface cable. For details of supported cables, see page 10–11.

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 cartridges to be sure you have removed the protective nozzle tape from all of them.
- One or more of your cartridges may be out of ink. For an explanation of how to check if a cartridge is out of ink, see page 7–2.



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 a sheet.)
- The **I/O Timeout** setting in the Setup Sheet may be too short. Increase the setting and plot again.

See also “If the plot is clipped” on page 9–10.



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 10–3. For actual plotting areas, see page 10–7.
- 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 larger than those used in this plotter.
- Ensure 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?

If neither of these possibilities explains the position of the plot, there is an incompatibility between the software and the plotter:

- Is your software configured for this plotter? For general advice, see page 1–24. 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

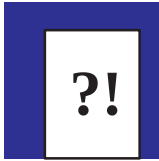
- The **I/O Timeout** setting in the Setup Sheet may be too long. Decrease the setting and plot again.



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

You may have pressed Replot (giving you a copy of the last plot) or may have accidentally initiated one of the plotter's internal plots. For a summary of these plots and how to print them, see page 5-2.



If pen settings seem to have no effect

- You may have changed them in the Setup Sheet but forgotten to fill in the oval called "Use settings from tables below."
- You may expect the software-driven pen settings but the Setup Sheet is set to "Use settings from tables below".

Solving print-quality problems

Remember: the key to good print quality is to choose the right media – see the section starting on page 2–2.

330



If there are white streaks in solid areas or gaps in lines (HP DesignJet 330)

- 1 The problem may have resolved itself during the plot (for example, the cartridge nozzles may have cleared themselves), and so, unless the problem occurs repeatedly all the way to the end of the plot, simply try printing it again, by pressing **Replot**.
- 2 Your cartridge may be out of ink. For an explanation of how to check, see page 7–2.
- 3 If the ink level is OK, then prime the cartridge to clean the nozzles, and try your plot again. For an explanation of how to prime a cartridge, see page 7–7.
- 4 If the problem still occurs after priming, try reseating the cartridge to ensure a good electrical connection. Then run the Black Cartridge Alignment Procedure (see page 5–3).
- 5 If the problem still occurs, then prime the cartridge again, this time pressing the plunger twice.
- 6 If the problem still occurs, try choosing a higher print-quality level (see page 2–8). With lower print-quality levels, the different pattern of ink may create the impression in some drawings of white streaks or gaps.
- 7 If the problem is still unresolved, replace the cartridge.

350C



If there are white streaks in solid areas or gaps in lines (HP DesignJet 350C)

- 1 The problem may have resolved itself during the plot (for example, the cartridge nozzles may have cleared themselves), and so, unless the problem occurs repeatedly all the way to the end of the plot, simply try printing it again, by pressing **Replot**.
- 2 Did you replace or reseal a cartridge with the plotter switched OFF? Never do this. If you did, reseal the cartridge with the plotter switched ON, and then run the Color Cartridge Test procedure, as explained on page 5–7.

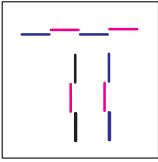
- 3 One or more of your cartridges may be out of ink. For an explanation of how to check, see page 7-2.
- 4 If the ink levels are OK, try to assess which cartridge has the problem. If the problem occurs only in one of the plotter's seven "primary" colors (yellow, cyan, magenta, red, green, blue and black), then you can eliminate one or more of the cartridges. Remember that the plotter's cartridges are yellow, cyan, magenta and black, and that "pure" red, green and blue are made up as follows:

$$\text{red} = \text{yellow} + \text{magenta}$$

$$\text{green} = \text{cyan} + \text{yellow}$$

$$\text{blue} = \text{magenta} + \text{cyan}$$

- 5 If you know which cartridge has the problem, then prime that cartridge to clean the nozzles, and try your plot again. For an explanation of how to prime a cartridge, see page 7-7.
- 6 If you don't know which cartridge has the problem, run the Color Cartridge Test Procedure, as explained on page 5-7. Then prime the appropriate cartridge(s), as explained on page 7-7.
- 7 If the problem still occurs after priming, try reseating each cartridge to ensure good electrical connections. Then run both the Black Cartridge Alignment Procedure (see page 5-3) and the Color Cartridge Test Procedure (see page 5-7).
- 8 If the Color Cartridge Test Procedure still shows gaps or streaks in a cartridge you've already primed, then prime it again, this time pressing the plunger twice.
- 9 If the problem still occurs, try choosing a higher print-quality level (see page 2-8). With lower print-quality levels, the different pattern of ink may create the impression in some drawings of white streaks or gaps.
- 10 If the problem is still unresolved, replace the cartridge.

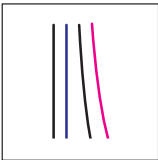


If there are jagged vertical or horizontal lines

- If problem is only with vertical black or gray lines, run the Black Cartridge Alignment Procedure, explained on page 5–3.

350C

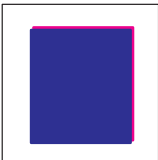
- If problem is with any other color or orientation, run the Color Cartridge Test Procedure, explained on page 5–7.



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 10–5.

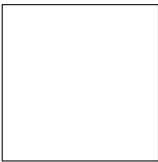
350C



If there are color “shadows”

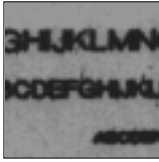
In the example on the left, a magenta “shadow”, which is not part of the drawing, appears at the edge of a blue object.

- The cartridges need to be re-aligned. Run the Color Cartridge Test Procedure, explained on page 5–7.



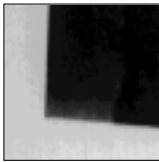
If a cartridge is not printing at all

- Look to see if the cartridge is out of ink. See page 7–2.
- Try priming the cartridge to clear the nozzles. See page 7–7.
- If it is still not printing, remove the faulty cartridge and check the print nozzles to make sure the protective tape has been removed.



If there are blurred lines (ink “bleeds” from lines)

- Try a higher **Print Quality** level.
- Use better quality media. HP media is recommended and details are given on page 10–18.
- The plotter may be operating in an area where the temperature and humidity are too high. For environmental specifications, see page 10–5.



If there are blotchy areas (uneven fill density)

- Use a different **Media Type** setting.
- If you are not already doing so, try using Hewlett-Packard media.

350C

- If you are plotting in color, see the table on page 2–5 for a note about which print-quality/media-type combinations are not recommended.



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:

- If the banding is in a black or gray area, then, in the Setup Sheet, reduce the **Pen Settings/Grayscale %**. At the same time, make sure that **Pen Settings** are set to “Use settings from tables below,” so that your software’s settings are overridden.
- Alternatively, replace the print cartridges (see page 7–2).



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 page 2–27.
- When loading media, select the appropriate Media Type on the front panel.
- The plotter may be operating in an area where the temperature and humidity are too high. For environmental specifications, see page 10–5.
- Handle media by the edges. If possible, wear gloves when you handle film. Skin oils can interact with ink and cause it to smear.

If the print quality appears to be poor just in one part of the plot

- Did you raise the cover during printing? Although the plot continues after the interruption, the print quality in the area of the interruption cannot be guaranteed.



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 there are 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 1–24. For advice specific to your software, see either the documentation supplied with the driver or a relevant Software Application Note supplied with your plotter.
- Are the **Plain** and **Error** lights flashing on the plotter’s front panel? If so, the file is too big for the plotter’s memory.
 - Look at your computer screen for any error message: some drivers, for example the Microsoft Windows driver supplied with your plotter, enable you to choose a different printing mode and try to send the file again. In the case of the Microsoft Windows 95® driver shipped with the plotter, the relevant field is called “Process document” in the Options dialog box.
 - 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 10–16.
- If you continue to have problems, see “Getting help” on page 9–18.

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 page 2–8.
- If you are using the Microsoft Windows 95 driver shipped with the plotter, search for help on “Print speed,” which will direct you to the “Process document” field in the Options dialog box. If you are using the Microsoft Windows 3.1 driver shipped with the plotter, check the settings in the “Print Setup / Options” dialog box, where some of the settings impact printing speed, again referring to the on-screen help system for more advice.



Getting help

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

What to do *before* you call

- 1 Review the troubleshooting suggestions in:
 - This chapter.
 - The relevant driver documentation supplied with your plotter (for users of AutoCAD and Microsoft Windows applications),
 - Any relevant Software Application Note supplied with your plotter.
- 2 Plot the demonstration plot as explained on page 1–26. If the demonstration plot works and does not display the problems you have found with your own plots, then the problem is probably not related to your plotter.
- 3 If the problem appears to be related to your software application, first contact your software vendor.
- 4 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 Hewlett-Packard for support.

For a list of the support services available, refer to the *Hewlett-Packard Support Services* booklet shipped with this plotter.



5 If you do call one of the Hewlett-Packard offices, please have the following information available to help us answer your questions more quickly:

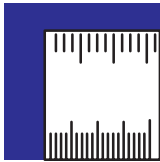
- The computer you are using.
- Any special equipment or software you are using (for example, spoolers, networks, switch-boxes, modems, or special software drivers).
- The cable you are using (by part number) and where you purchased it.
- The type of interface used on your plotter (RS-232-C, parallel, or modular).
- The software name and version you are currently using.
- The plotter's latest setup sheet, showing the current configurations of various plotter parameters. See page 6–2 and the section starting on page 1–19.
- The media type you are using.

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.

Plotter specifications	10-2
Interface specifications	10-8
Interface cables	10-11
Regulatory notices	10-12
Ordering accessories	10-15

Reference



Plotter specifications

HP DesignJet 330 (monochrome)

C4701A = D/A1-size

C4702A = E/A0-size

HP DesignJet 350C (color)

C4699A = D/A1-size

C4700A = E/A0-size

Functional specifications		
Cartridges	HP DesignJet 330: one: black HP DesignJet 350C: four: yellow, cyan, magenta and black. For part numbers, see page 10–17.	
Supported media types	Monochrome	Color (HP DesignJet 350C only)
	Plain paper	Plain paper ¹
	Opaque bond	Opaque bond ¹
	Translucent bond	
	Natural tracing paper	Natural tracing paper ²
	Vellum	Vellum ²
	Coated paper	Coated paper
	Heavyweight coated paper	Heavyweight coated paper
	Matte film	Matte film
	Clear film	Clear film
High-gloss white film ³	350C	High-gloss white film
¹ CAD drawings only.		
² CAD drawings only and HP media only.		
³ HP DesignJet 330: Monochrome printing is <i>not</i> supported on glossy media. HP DesignJet 350C: Monochrome printing is supported on glossy media as long as you leave all cartridges loaded.		
For alternative names, HP commercial names and physical characteristics of these media types, see chapter 2.		
For the best-quality plots, use HP media, as your plotter's configuration is optimized for it and tested with it. For details of HP media, see page 10–18 and any separate HP media literature supplied with your plotter.		

Functional specifications (continued)				
Supported media sizes	Width (carriage axis)		Length (paper axis)	
	Minimum	Maximum	Minimum	Maximum
	210 mm (8.3 in)	E/A0-size plotter: 917 mm (36.1 in)	210 mm (8.3 in)	Sheet: 1.32 m (52 in)
		D/A1-size plotter: 625 mm (24.6 in)		Maximum length of long-axis plot on roll media: 15.2 m (50 ft)
Margins For plotting area (media size minus margins), see page 10–7	Leading edge:	17 mm (0.67 in)		
	Trailing edge:	17 mm (0.67 in)		
	Sides:	5 mm (0.2 in)		
	All measurements ±2 mm (0.08 in).			
Resolution ¹	On Setup Sheet, if Color/Mono is set to:			
	Print color as grayscale		Print color as color	
	Fast print quality:	300 x 300 dpi.	350C All print qualities: 300 x 300 dpi. ³	
Other print qualities:	600 x 600 dpi. ²			
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 Matte Film.			
Programming languages supported	HP-GL (7586B), HP-GL/2, HP RTL, PJP			

¹ The 600 dpi resolution specified 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.

² Except for glossy media types, on which the resolution is always 300 dpi.

³ Except for black with HP RTL, where the resolution is 600 x 600 dpi.

Plotter specifications

Physical specifications				
(Unpacked)	<i>Weight</i>	<i>Length</i>	<i>Depth</i>	<i>Height</i>
Without roll-feed and legs option				
E/A0-size plotter	31 kg (68.2lb)	1329 mm (52.4 in)	231 mm (9.1 in)	332 mm (13.1 in)
D/A1-size plotter	26 kg (57.2 lb)	1031 mm (40.6 in)	231 mm (9.1 in)	332 mm (13.1 in)
With roll-feed and legs option				
E/A0-size plotter	(Contact HP)	1329 mm (52.4 in)	231 mm (9.1 in)	332 mm (13.1 in)
D/A1-size plotter		1031 mm (40.6 in)	231 mm (9.1 in)	332 mm (13.1 in)

Power specifications	
Source	100–240V ac $\pm 10\%$. Auto-ranging
Frequency	47–63 Hz
Consumption	70 W (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		
Recommended maximum number of plots per day	20	(Medium density E/A0 CAD plots)
The plotter keeps an internal count of the number of plots printed. The current total is included as part of the information in the Service Configuration Plot – see page 5–2. The relevant fields are called “Number of Color Plots” and “Number of Black Plots.”		

Environmental specifications		Temperature	Humidity
Operational	Mechanical and electrical:	0 to 55°C (32 to 131°F)	5% to 95% @ 40°C Non-condensing
	With cartridges and media:	15 to 35°C (59 to 95°F)	20% @ 15°C to 80% @ 35°C Non-condensing
Storage	Plotter and media:	–40 to 70°C (–40 to 158°F)	90% @ 65°C
	Cartridges:	0 to 50°C (0 to 5°C and 40 to 50°C for maximum 7-day period). 32 to 122°F (32 to 41°F and 104 to 122°F for maxi- mum 7-day period).	5% to 90%
For optimal print quality and media handling:		15 to 30°C (59 to 86°F)	20% @ 15°C to 80% @ 30°C

Ecological specifications	
Energy efficiency	Standby mode: 24 watts. Printing mode: <70 watts. Compliant with Energy Star Program EPA (US).
Manufacturing process	Free of ozone-depleting chemicals (Montreal Protocol).
Plastics	Free of brominated flame retardants (PBB and PBDE). All housing parts made of same material: ABS. 90% of parts marked according to ISO 11469 standard.
Metals	Chassis made of aluminium. Shafts made of stainless steel. Enclosures made of electro-galvanized steel sheet.
Packaging	Cardboard (non-chlorine-bleached) and foam are 100% recyclable. Inks used for printing do not contain heavy metals.
User documentation	Majority recyclable, not bleached with chlorine, and printed with inks that do not contain heavy metals. For specification of this User's Guide, see back cover.
Batteries	Not used.
Recyclability	Modular construction, with all releasable connecting elements snap-type, screws easy to find and disassembly done using universal tools.

Plotter specifications

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-officeenvironment 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 10–3.					
	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
ISO media	E (portrait)	46.7 x 35.6	35.6 x 46.7	1185 x 904	904 x 1185
	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



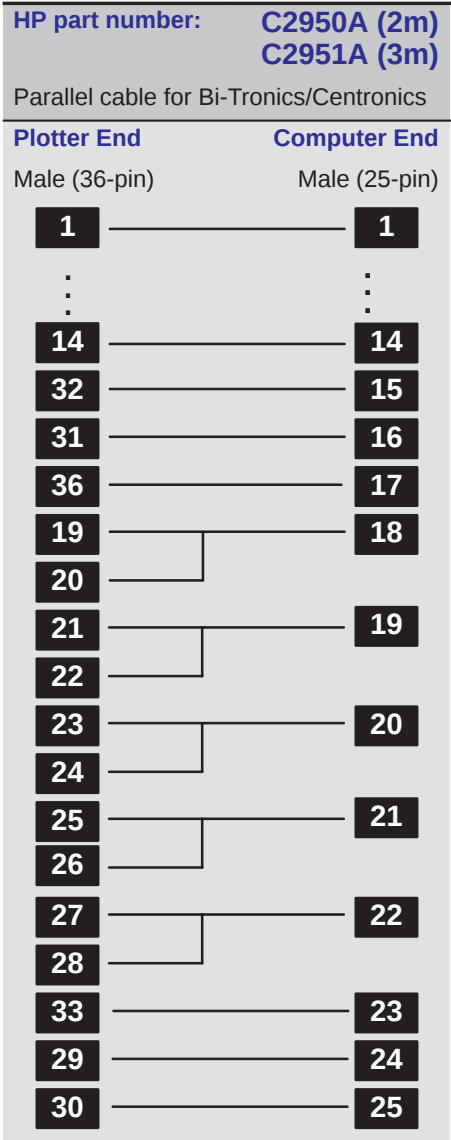
Interface specifications

Below are the parallel and serial interface specifications. On the following page are the pin configurations for the most common HP cables referenced on page 10–11.

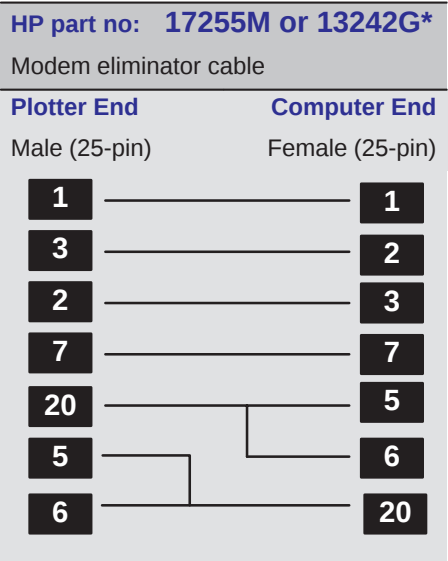
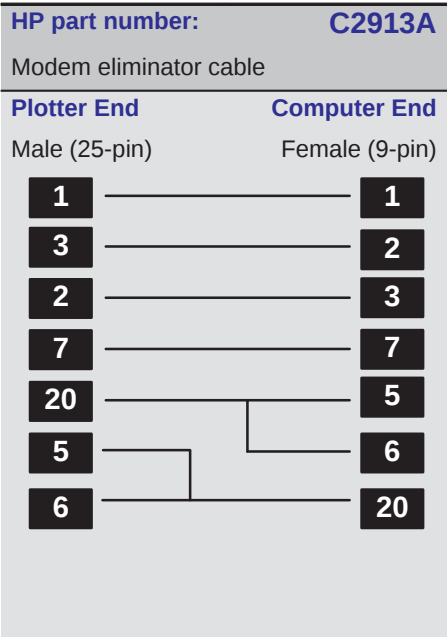
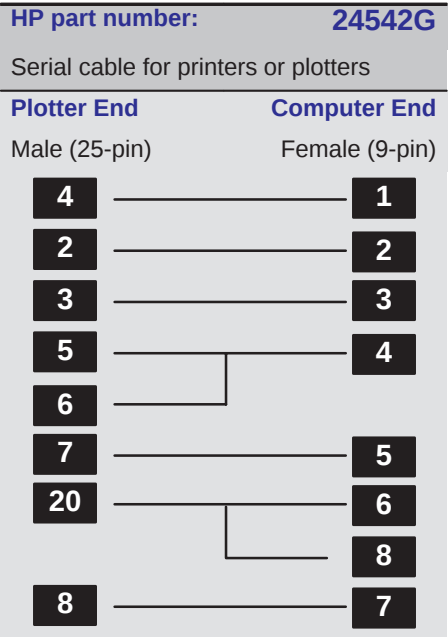
Parallel (Bi-Tronics/Centronics) Interface The connector on the plotter is 36-pin female. Most existing parallel cables support Bi-Tronics communication, but, for use with this plotter, the cable <i>must</i> meet the specification in this table. IEEE-1284-compatible.	Pin	Wire/Signal Name	Source
	1	Strobe	computer
	2 ... 9	D0 ... D7 (data lines)	both
	11	Busy	plotter
	12	PError	plotter
	13	Select (SelectOut)	plotter
	14	AutoFd	computer
	16	GND	
	19 ... 30	GND	
	31	Init	computer
	32	Fault	plotter
	36	SelectIn	computer

Serial (RS-232-C) Interface The connector on the plotter is 25-pin female. The plotter is configured as 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	
	20	Data Terminal Ready	DTE

Parallel (Bi-Tronics/Centronics) Cable



Serial (RS-232-C) Cables



* 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 (IEEE-1284-compatible)			
Computer	HP Part Number	Cable length	Connector type at computer end of cable
HP Vectra PC with HP 24540A/B serial/parallel interface card using the parallel connector	C2950A	2.0 m (6.3 ft)	25-pin male
HP 9000 workstations: series 300, 400, 700	C2951A	3.0 m (9.8 ft)	25-pin male
IBM AT, IBM PS/2, IBM PC/XT and compatibles			
Serial (RS-232-C) Interface			
Computer	HP Part Number	Cable length	Connector type at computer end of cable
HP Vectra PC or HP 24541A/B serial interface card (9-pin connector)	24542G	3.0 m (9.8 ft)	9-pin female
HP 9000 workstations using 9-pin connectors.			
IBM AT and compatibles using 9-pin serial connectors			
HP Vectra PC with HP 24541A/B dual serial interface card using the 25-pin connector	17255M	1.2 m (3.9 ft)	25-pin male
HP Apollo workstation using an SPE (Serial/Parallel Expansion) option and supplied adapter cable			
DEC VAX			
Sun workstation			
IBM PC, PC/XT, IBM PS/2 and compatibles	C2913A	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
Extension cable	31391A	5 m (16.4 ft)	25-pin female



Regulatory notices

To obtain a Material Safety Data Sheet (MSDS)

You can obtain current Material Safety Data Sheets for the print cartridges used in the plotter (HP Part numbers 51644C [cyan], 51644M [magenta], 51644Y [yellow] and 51640A [black]) 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 (USA)

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 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 radioélectriques dépassant les limites applicables aux appareils numériques de la classe B prescrites dans le Règlement sur le Brouillage Radioélectrique édicté 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 전자파장애검정을 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)

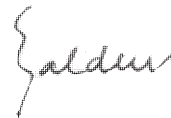
The HP DesignJet 330 and 350C plotters, Models C4699A, C4700A, C4701A, and C4702A, are approved under Approval Number NS/G/1234/5/100003 for indirect connection to public telecommunications systems within the United Kingdom.

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 C4699A, HP C4700A, HP C4701A, HP C4702A**Product Accessory:** HP JetDirect EX external network servers ¹**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)
NOM-019-SCFI-1993**EMC:** CISPR 22: 1985 / EN 55022 (1988): Class B ²
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 Product options with network servers exhibit Class A operation.² 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.Jordi Balderas,
Quality Engineering Manager

Sant Cugat del Vallès (Barcelona), March 1st, 1996

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 10–11	
Color Upgrade kit		
Upgrade kit to convert an HP DesignJet 330 to an HP DesignJet 350C	C3178A	
Cutter		
New cutter for roll-feed assembly	C3174-60004	
Documentation		
User’s Guide and Quick Reference Guide:	Chinese	C4699-90100
	English	C4699-90091
	French	C4699-90095
	German	C4699-90094
	Italian	C4699-90097
	Japanese	C4699-90098
	Korean	C4699-90092
	Portuguese	C4699-90099
	Spanish	C4699-90096
	Taiwanese	C4699-90093
Software Application Notes	English	C4699-90080
Hewlett-Packard Support Services booklet (The latest edition was shipped with this plotter)	Multi	*
HP CAD Plotters: Software/Hardware Guide (The latest edition was shipped with this plotter)	English	*

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

Ordering accessories

		HP Part Number
The HP-GL/2 and HP RTL Reference Guide (See note on page 10–19)	English	5959-9733 *
The Product Comparison Guide for HP Languages on HP Plotters and Large-Format Printers (See note on page 10–19)	English	5959-9734
PJL Technical Reference Manual (part number includes PCL reference information too).	English	5010-3997

Drivers

Latest versions of the following were shipped with
your plotter:

HP plotter drivers for AutoCAD for DOS and AutoCAD for Windows	**
HP plotter drivers for Microsoft Windows	**

Media supplies

See table on page 10–18. From time to time, new
media types may become available. For up-to-date
information, please contact your HP dealer or local
HP Sales and Support Office.

Memory expansion modules	4 MB	C3132A
For up-to-date details of any memory expansion modules other than those listed here, contact your local authorized HP dealer.	8 MB	C3133A
	16 MB	C3146A
(1) 32 bits wide, no parity	32 MB	C3975A (1)
(2) 36 bits wide, parity		D3578A (2)

* Updated HP-GL/2 and RTL reference information is currently in preparation. For the latest part numbers, please contact your HP dealer or sales representative.

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

		HP Part Number
Network interface		
HP JetDirect EX external print servers (for LAN connection):		
For Ethernet: HP JetDirect EX Plus		J2591A
For Token Ring: HP JetDirect EX Plus 3		J2594A
Print cartridges		
Although other cartridges may appear to fit in the stalls, use only these part numbers.	Yellow	51644Y
	Cyan	51644C
	Magenta	51644M
	Black	51640A
Roll-feed and legs kit		
	D/A1-size	C3176A
	E/A0-size	C3177A
Spindle assembly		
The spindle assembly includes the spindle and a pair of media stops.		
For D/A1-size spindle assembly		C3174-60005
For E/A0-size spindle assembly		C3175-60005

HP part numbers for HP DesignJet Papers and Films

	Rolls		Sheets (ISO)		
	Width		A0	A1	A3
	in:				
	mm:				
			841 x 1189	594 x 841	297 x 420
HP Opaque Bond	C3851A	C3850A	C3856A	C3857A	
HP Translucent Bond	C3860A	C3859A	C3892A	C3893A	
HP Vellum	C3862A	C3861A			
HP Natural Tracing Paper	C3869A	C3868A	C3872A	C3873A	
HP Clear Film	C3876A	C3875A			
HP Matte Film	51642A	51642B	51642M	51642H	51642F
HP Coated Paper	C3878A	C3877A	*	*	
HP Heavyweight Coated Paper	C3880A	C3879A			
HP High-Gloss White Film	C3886A	C3885A	*	*	

	Sheets (ANSI)					
	B	ANSI D	ANSI E	Arch. D	Arch. E	
	in:					
	mm:					
		11 x 17	22 x 34	34 x 44	24 x 36	36 x 48
			558 x 864	864 x 1118	610 x 914	914 x 1220
						760 x 1067
HP Opaque Bond			C3853A	C3852A	C3855A	C3854A
HP Translucent Bond			C3891A	C3890A	C3896A	C3894A
HP Vellum			C3864A	C3863A	C3866A	C3865A
HP Natural Tracing Paper					C3871A	C3870A
HP Clear Film						
HP Matte Film	51642C	51642G	51642K	51642J	51642N	51642L
HP Coated Paper		*	*	*	*	
HP Heavyweight Coated Paper						
HP High-Gloss White Film				*	*	
* These sizes are available – Please contact your HP dealer or sales representative for product numbers. From time to time new media types and sizes may become available – also contact your HP dealer or sales representative for details.						

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 you can order it through most book stores (ISBN 0-201-56308-8).

For specific parameter information, refer to *The Product Comparison Guide for HP Languages on HP Plotters and Large-Format Printers*, which you can order through your HP Sales office.

How to order supplies and accessories

You can order supplies and accessories in any of the following ways:

- By calling your local authorized HP dealer.
- By contacting your local HP Sales and Support office.
- By contact one of the addresses given in *Hewlett-Packard Support Services* booklet. In the United States, the Direct Ordering number is 1-800-538-8787.

* Updated HP-GL/2 and RTL reference information is currently in preparation. For the latest part numbers, please contact your HP dealer or sales representative.

Glossary

Glossary

ANSI size An American standard paper size; e.g. D, E, etc.

application The software you use to create your drawings.

baud rate The data transmission rate in a serial interface between a computer and a device, in bits per second.

Bi-tronics A standard for the parallel interface between computer and device, compatible with Centronics, and allowing two-way communication.

CAD Computer-aided design.

cartridge Print cartridge, containing ink.

Centronics A standard for the parallel interface between computer and device.

clear film See-through, polyester media type.

clipping Losing part of a drawing at the edges.

CMYK Cyan, magenta, yellow and black. The colors of the plotter's four inks, and also a standard color model.

coated paper Paper coated on one side for inkjet printing.

default A value or condition that is assumed if no other value or condition is specified.

device An external item connected to the computer: printer, plotter, tape drive etc. Your HP DesignJet is a device.

dpi Dots per inch, a measure of print resolution.

driver The software that controls the communication between a computer and a device.

entry platen The exterior part of the plotter just below the media-entry slot.

front panel The control panel on the right of the plotter.

GIS Geographical information system (mapping software).

graphics language A programming language telling a print device how to output graphic data.

grayscale Shades of gray to represent colors.

high-gloss film A glossy, opaque, polyester media type.

HP-GL One of Hewlett-Packard's standard graphics languages for plotters and printers. Produces vector data. Forerunner to HP-GL/2.

HP-GL/2 One of Hewlett-Packard's standard graphics languages for plotters and printers. Produces vector data. Newer than HP-GL.

I/O Input/output. The transmission of data between a computer and a device.

inked area The smallest rectangle that contains all the content of the drawing, while maintaining its relative dimensions.

ISO size An international standard paper size; e.g. A1, A2, etc.

JIS size A Japanese standard paper size.

LAN Local area network.

long-axis plotting Plotting a page whose X-axis (the axis vertical to the plotter as you look at it from the front) is longer than a standard page size.

margin The space around the page added by the plotter to separate one page from another and to avoid printing right to the edge of the media.

matte Not glossy.

matte film Opaque, polyester media type.

media The material, usually paper, onto which the plotter prints.

media deflector The metal part situated between the optional E/A0-size legs, to stop the largest media sizes touching the floor.

opaque bond Good-quality matte paper.

palette A set of logical pens defined by color and width.

PJL Printer Job Language. A programming language that controls jobs going to a printer or plotter.

parallel interface A type of interface between computer and device. Generally faster than a serial interface.

plotting area Page size minus margins.

parity An error-checking method in a serial interface between a computer and a device.

raster A method for defining an image, in terms of dots rather than lines. Raster data typically needs more memory than vector data.

RGB Red, green and blue. A standard color model.

RS-232-C A serial interface standard.

RTL One of Hewlett-Packard's standard graphics languages for plotters and printers. Produces raster data.

ROM SIMM A physical module containing read-only data, that can be installed in the back of the plotter to provide upgrades.

serial interface A type of interface between computer and device. Generally slower than a parallel interface.

Glossary

spindle The rod that holds the roll of media in the roll-feed and legs option.

tracing paper A semi-opaque matte paper type.

translucent bond A semi-opaque matte paper type.

vector A line. An image may be defined in terms of vectors rather than dots. Vector data typically needs less memory than raster data.

vellum Cotton-fiber-based, semi-opaque matte media type.

X-axis The vertical axis, as you look at the plotter from the front.

Y-axis The horizontal axis, as you look at the plotter from the front.

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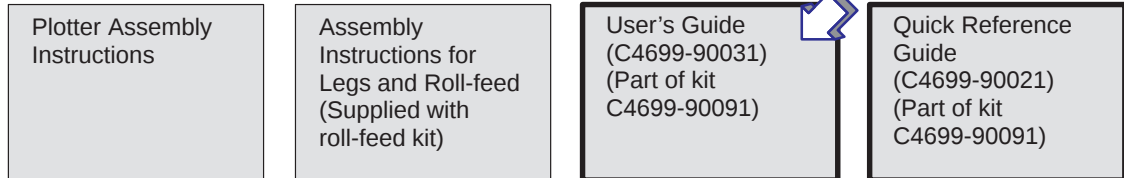
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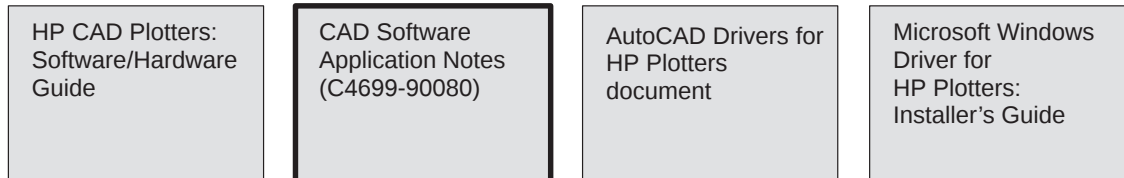
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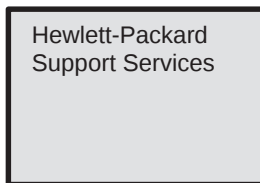
Setting up and using the plotter



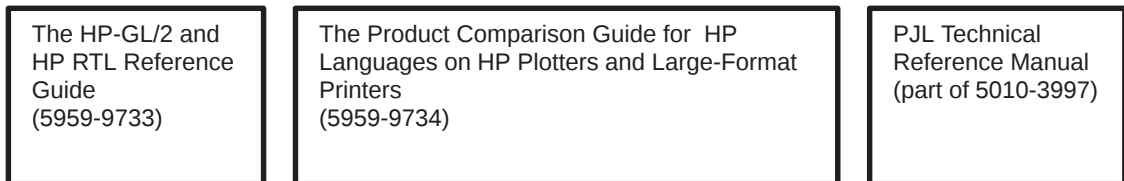
Using application software



Getting support



Programmer's reference



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-  These documents are supplied with this plotter.
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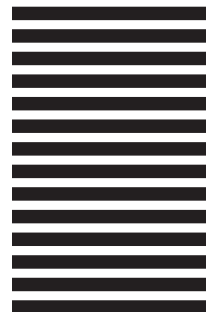
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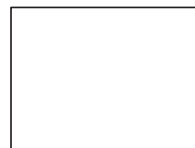
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