HEWLETT PACKARD

HP 7550 Plus Plotter

User's Guide

HP Computer Museum
www.hpmuseum.net

For research and education purposes only.

HP 7550 Plus Plotter
User's Guide

Manual Part Number: 07550-90051

Printed in U.S.A., April 1990

Notice

Hewlett-Packard makes no warranty of any kind with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Hewlett-Packard shall not be liable for errors contained herein or for incidental consequential damages in connection with the furnishing, performance, or use of this material.

This document contains proprietary information, which is protected by copyright. All rights are reserved. No part of the document may be photocopied, reproduced or translated to another language without the prior written consent of Hewlett-Packard Company. The information contained in this document is subject to change without notice.

Copyright © 1990 by Hewlett-Packard Company

San Diego Division
16399 W. Bernardo Drive
San Diego, CA 92127-1899, U.S.A.

HP-GL and *HP-GL/2* are trademarks of Hewlett-Packard Company.

Printing History

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

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

First Edition — April 1990

FCC Statement (U.S.A.)

The United States Federal Communications Commission (in 47 CFR 15.838) has specified that the following notice be brought to the attention of users of this product.

'This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. Shielded data cables were used during the type test; therefore, properly shielded and terminated data cables should be used to reduce potential interference. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- reorient the receiving antenna
- relocate the computer with respect to the receiver
- move the computer away from the receiver
- plug the computer into a different outlet so that computer and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: 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.'

DOC Statement (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.

Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limits applicables aux appareils numeriques de la class B prescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada.

Telecommunications General Approval (UK)

Pursuant to Section 22 of Telecommunications Act of 1984 this product is approved for secondary attachment to approved primary attachment devices connected to the telecommunication network under the General Approval (NS/G/1234/5/100003).

FTZ/RPM Statement

Funkentstoerung Deutschland

Dieses Geraet wurde in einer typischen Systemkonfiguration geprueft und entspricht den Bestimmungen der Allgemeinen Genehmigung FTZ 1046/84. Als Nachweis ist das Geraet mit dem VDE-Funkschutzzeichen mit Index 0871-B/P fuer Peripheriegeraete gekennzeichnet.

Wird das Geraet innerhalb einer Anlage betrieben,

- so muss bei Inanspruchnahme der Allgemeinen Genehmigung FTZ 1046/84 die gesamte Anlage der oben genannten Genehmigung entsprechen.
- die mit einer FTZ-Serienpruefnummer gekennzeichnet ist, und fuer die eine Betriebsgenehmigung vorliegt oder beantragt wird, so sind in der Regel keine weiteren Schritte notwendig.

VCCI Statement

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。

Warranty Statement

One-Year Limited Hardware Warranty

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

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

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

Exclusions

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

Obtaining Warranty Service

No warranty registration card is supplied. To obtain warranty service, customer must supply proof of the purchase date. Products must be returned to a service facility designated by HP. HP may repair on-site at the option of the customer. Customer is responsible for travel charges when on-site repair is requested.

Warranty service for products purchased as part of a system will be subject to service in accordance with the system support services.

Customer shall prepay shipping charges for products returned to HP for warranty service and HP shall pay for return of the products to customer. However, customer shall pay all shipping charges, duties, and taxes for products returned to HP from another country.

Warranty Limitations

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

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

Obtaining Service During Warranty Period

If your hardware should fail during the warranty period, read the section in this guide entitled *Troubleshooting*, then contact your local Hewlett-Packard Sales and Service Office or an Authorized HP Personal Computer Dealer Repair Center and arrange for on-site repair of the product.

After the Warranty Period

If your hardware should fail after the warranty period, read the section in this guide entitled *Troubleshooting*, then contact an Authorized HP Personal Computer Dealer Repair Center or call our HP Sales and Service Office for details of the services available.

Returning Your Product for Service

If you need to ship your product, be sure it is packed in a protective carton. We recommend that you save the original shipping container for this purpose. In-transit damage is not covered by the warranty, so it is best to always insure shipments.

List the serial number of the product and the exact configuration at the time of malfunction, including the interface cable, computer, peripherals, and software (program) in use. Include a description of the symptoms for service personnel. If purchased through an HP dealer, include a copy of the sales slip or other proof of purchase to establish the warranty coverage period. You should also include your name, address, and daytime phone number.

Getting Help

Hewlett-Packard has support services available to help you in case you have a problem with your HP 7550 Plus plotter. Following are suggestions of places to turn for this support.

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

1. **Review Chapter 5, *Troubleshooting*, in this User's Guide.**
2. **Run the Demonstration plot as described in Chapter 1.**
3. **Make sure you are using the correct interface cable and plotter interface configuration, as explained in the *Computer Information* manual.**
4. **Check with your software vendor for help.**

Your Dealer

If you still have difficulty, begin by contacting the person from whom you purchased your HP 7550 Plus. Your sales representative is familiar with your needs, equipment, and software and should be able to provide you with the information you want.

HP 7550 Plus Plotter Customer Assistance

If you don't get the answers to your questions from your dealer or sales representative, Hewlett-Packard has an HP 7550 Plus Customer Assist service available to you. The HP 7550 Plus Assist staff can help by answering questions on topics such as setting up your plotter and computer, and can help you find third party software solutions for your special plotting needs.

When you call the HP 7550 Plus Assist group, please have the following information available to help us answer your questions more quickly.

- Identify what computer you are using._____

- Identify any special equipment or software you are using (for example, spoolers, networks, switch-boxes, modems, or special software drivers).

- Identify what cable you are using (by part number and manufacturer) and where you purchased it._____

- Identify the type of interface used on your plotter (RS-232-C / Centronics, or RS-232-C / HP-IB).

- Identify the software name and version you are currently using._____

The HP 7550 Plus Assist service is available from 7 am – 4 pm (Mountain Standard Time), Monday through Friday.

(208) 323-2551

Should the plotter require service, please refer to Chapter 5 for instructions.

Table of Contents

1

Getting Started

This chapter shows you how to set up the plotter, load pens and media, and run the built-in demonstration plot to verify the plotter's working condition.

Initial Inspection

If you receive the plotter in damaged condition, notify the dealer or HP Sales and Support Office where you purchased the plotter, and file a claim with the carrier.

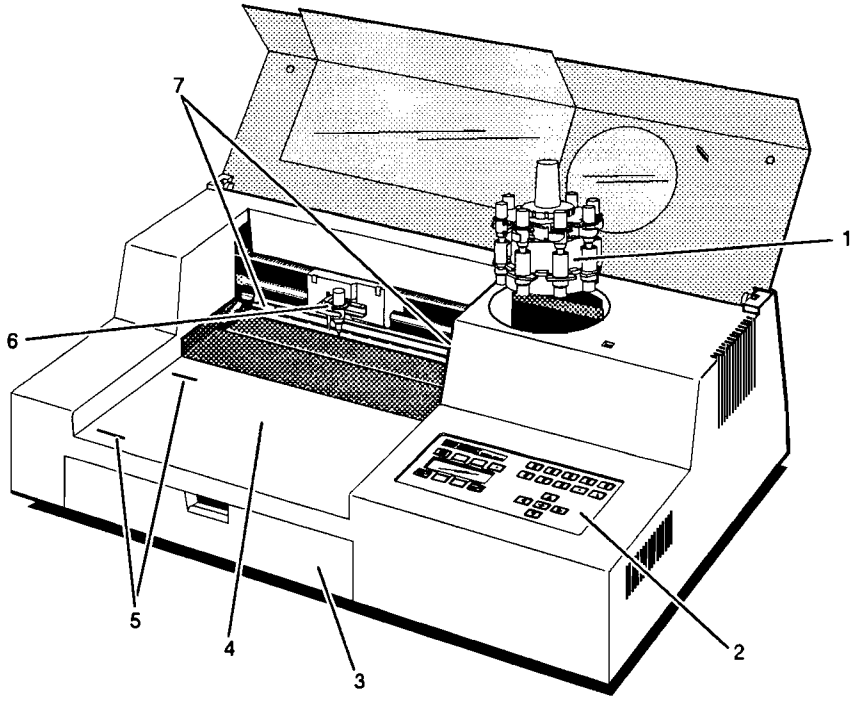
Compare your accessories with those listed below. If any are missing, contact the dealer or HP Sales and Support Office where you purchased the plotter.

- User's Guide
- Setup Guide (*Computer Information*)
- Carousels
  - Fiber-tip paper pen carousel
  - Fiber-tip transparency pen carousel
- Grit wheel brush
- Power cord
- A-size media tray (or A4-size depending on destination)
- A4/A-size paper catcher

NOTE: An interface cable (required to connect the plotter to a computer) is not included with your plotter and must be purchased separately.■

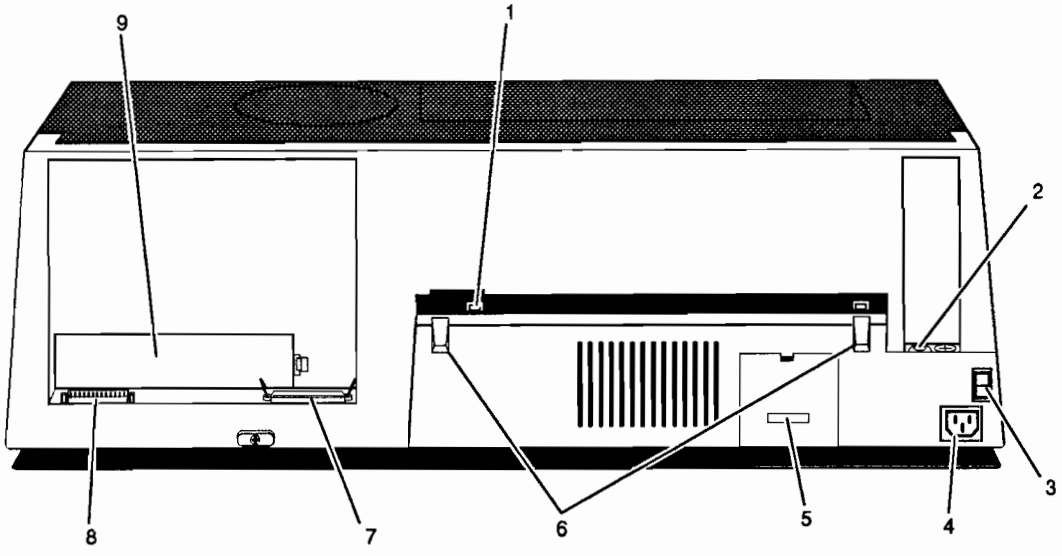
Refer to Appendix B for information on ordering additional supplies, including an interface cable.

Plotter Features (Front View)



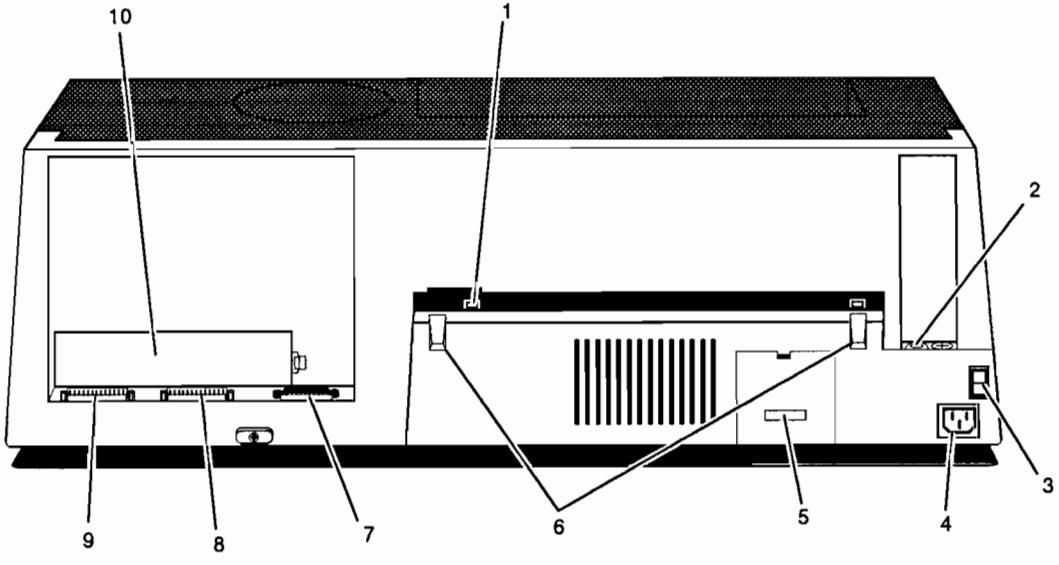
1. **Pen Carousel (removable)** — Holds up to eight pens.
2. **Front Panel** — Contains the menu display and buttons for manually controlling the plotter.
3. **Media Tray** — Holds media that can be automatically loaded.
4. **Platen** — Holds a sheet of media during manual loading.
5. **Paper Size Indicators** — Indicate the correct positions for the trailing edge of A/A4 or B/A3 size media during manual loading.
6. **Pen Holder** — Selects, moves, and puts away pens during plotting.
7. **Grit Wheels and Pinch Wheels** — The grit wheels move the media back and forth during plotting. The pinch wheels hold the media against the grit wheels.

Rear View of Plotter Features (Centronics/RS-232-C Option)



1. **Paper Guide (moveable)** — Guides the media into the media catcher. May be repositioned according whether A- or A4- size media is used.
2. **Fuse Holder** — Contains the fuse.
3. **On/Off Switch** — Turns the plotter on and off.
4. **Power Connector** — Accepts the plug from the power cord.
5. **Line Voltage Indicator** — Indicates the line voltage to be used with the plotter.
6. **Media Catcher Slots** — Align the media catcher correctly to the plotter.
7. **Centronics (Parallel) Port** — Accepts the parallel interface cable used to connect the plotter to a computer.
8. **Computer/Modem Port (Serial)** — Accepts the RS-232-C/CCITT V.24 cable used to connect the plotter to a computer, modem, or RS-232-C DCE I/F.
9. **RAM Memory Board Cover** — Accesses the optional memory board slot.

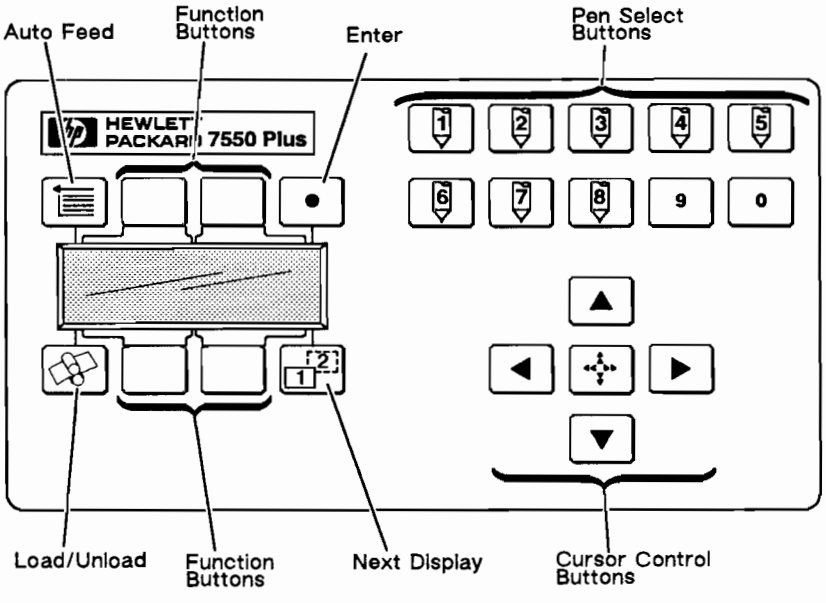
Rear View of Plotter Features (HP-IB/RS-232-C Option)



1. **Paper Guide (moveable)** — Guides the media into the media catcher.
2. **Fuse Holder** — Contains the fuse.
3. **On/Off Switch** — Turns the plotter on and off.
4. **Power Connector** — Accepts the plug from the power cord.
5. **Line Voltage Indicator** — Indicates the line voltage to be used with the plotter.
6. **Media Catcher Slots** — Align the media catcher correctly to the plotter.
7. **HP-IB Port** — Accepts the HP-IB (IEEE-488) interface cable used to connect the plotter to a computer.
8. **Computer/Modem Port (Serial)** — Accepts the RS-232-C/CCITT V.24 cable used to connect the plotter to a computer, modem, or RS-232-C DCE I/F.
9. **Terminal Port (Eavesdrop)** — Accepts the RS-232-C/CCITT V.24 cable used to connect the plotter to a terminal or RS-232-C DTE I/F.
10. **RAM Memory Board Cover** — Accesses the optional memory board slot.

The Front Panel

The front-panel contains buttons for controlling pens and accessing the plotter's menus. Chapter 2 contains detailed instructions for the front panel.



- **Auto Feed** — selects either manual or automatic mode for loading media (an asterisk is displayed in automatic mode).
- **Load/Unload** — in manual mode, loads and unloads media from the platen. In automatic mode, loads an individual sheet from the loading tray.
- **Enter** — stores menu selections.
- **Next Display** — displays the next menu. To go to the previous menu, press **Enter** and then **Next Display**.
- **Function buttons** — select menu options. Although not labeled on the plotter, they are numbered (**f1** through **f4**) in this book for clarity.
- **Pen Select Buttons** — retrieve pens from the carousel and designate the number of plotted copies.
- **Cursor Control Buttons** — move a pen after you select it.

Turning the Plotter On

The plotter is shipped with the power cord and voltage setting appropriate for your area's power requirements. If the power plug does not look familiar, refer to Appendix A for a table of power cord options.

1. Make sure the line voltage indicator on rear of the plotter displays the voltage required in your area. (In the U.S., the voltage setting should read 120V. Appendix A lists voltage settings for other countries.)

WARNING

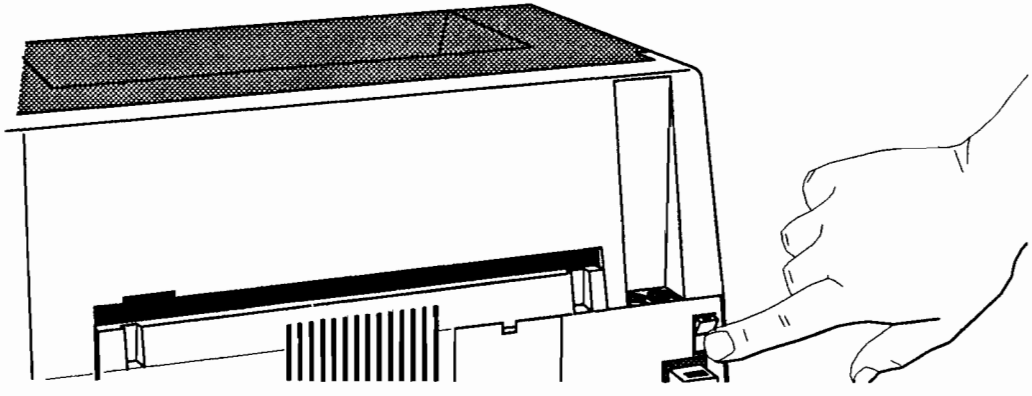
Only a qualified service person should change the voltage setting.

---

2. Plug the power cord into the power socket on the back of the plotter, and then into a grounded wall outlet.

3. Press the **On/Off** switch on the rear of the plotter (**1** is On, and **0** is Off). If the plotter does not contain a pen carousel, the message **Put In Carousel** will display. Otherwise, the plotter *initializes*, rotating the carousel when the carriage cover is lowered, and picking up a pen. At initialization, the plotter identifies the carousel type, then sets the pen speed and force default values.

4. Lower the cover to begin operation.



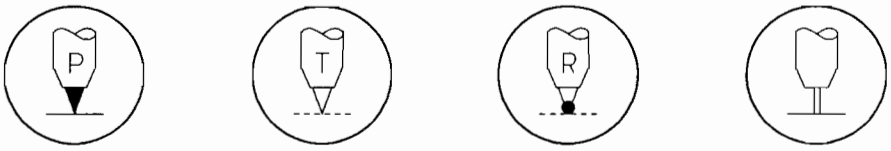
Having the Plotter Speak Your Language

The plotter can display front panel messages in English, French, German, Spanish, Italian, and Japanese. To select a language, press the appropriate **Pen Select** button shown in the table as you turn on the plotter. The plotter displays the selected language until you change it.

Pen Select	+	On/Off Switch	=	Language
	+		=	English
	+		=	French
	+		=	German
	+		=	Spanish
	+		=	Italian
	+		=	Japanese

Using Pen Carousels

The plotter can use four different types of carousels: paper, transparency, roller-ball, and drafting. Your plotter comes with two carousels: paper and transparency. Each carousel is marked on top according to its pen type



Paper pens *Transparency Pens* *Rollerball pens* *Drafting Pens*

Any pen type will fit into any carousel. However, you should use the correct carousel for two reasons:

- Each pen type requires its own type of boot to keep ink from drying out.
- Carousel type determines default speed and force, which affect plot quality.

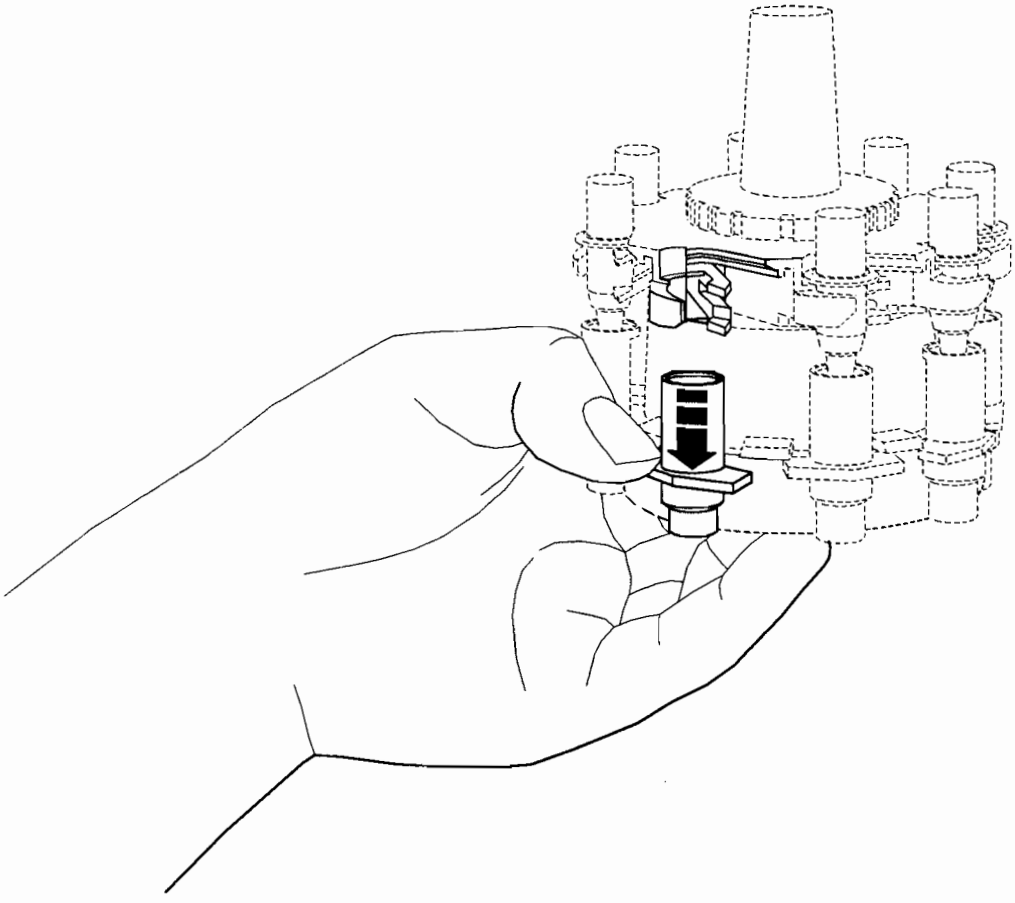
The following table shows the default pen speed and force that are automatically set during initialization when you insert the carousel.

Carousel Type	Force		Speed cm/s
	Actual Setting	Force In Grams	
Paper	2	24	50
Roller-ball	4	36	80
Disposable drafting *	2	24	30
Transparency	2	24	10

* When using *refillable* drafting pens, the carousel does not default. You should set the pen speed to *15 cm/s* and pen force to 1.

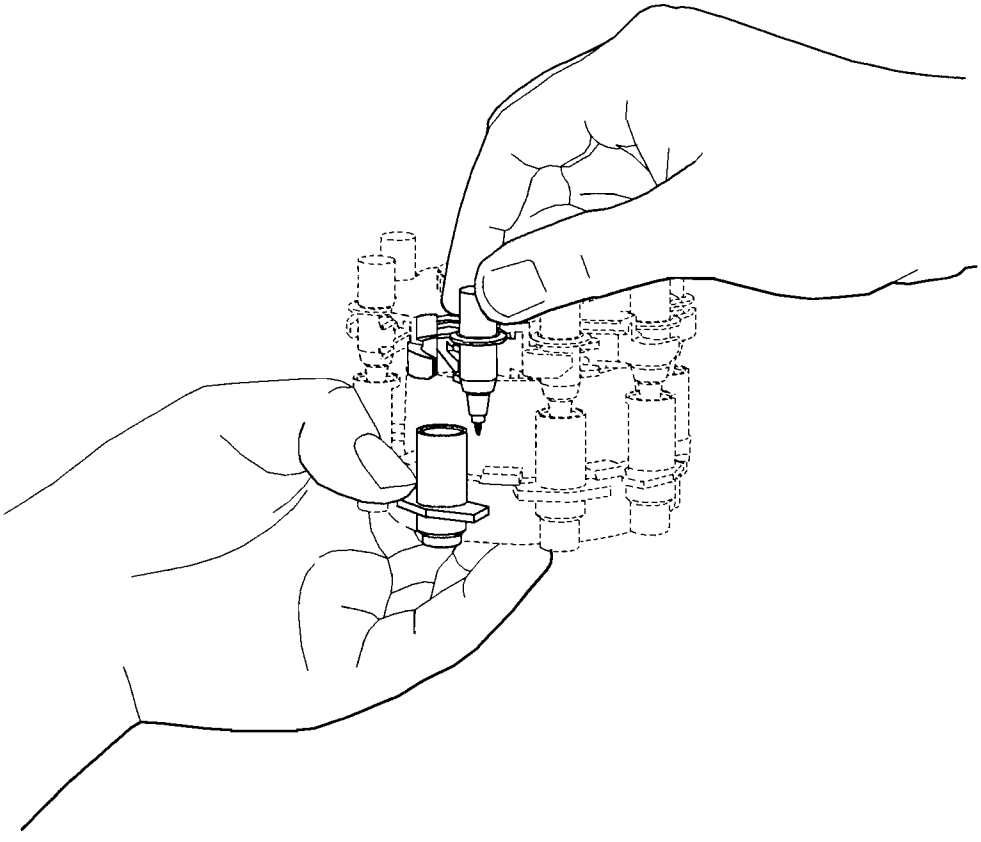
Loading Pens

1. Make sure the carousel type corresponds to the pen type.
2. Open the package of pens. Save the package to store pens not in use. The top of the pen shows the ink color and line width (in tenths of millimeters).
3. Remove the plastic pen caps from the pens. Save the caps for recapping pens not in use.
4. Push down the desired pen stall.

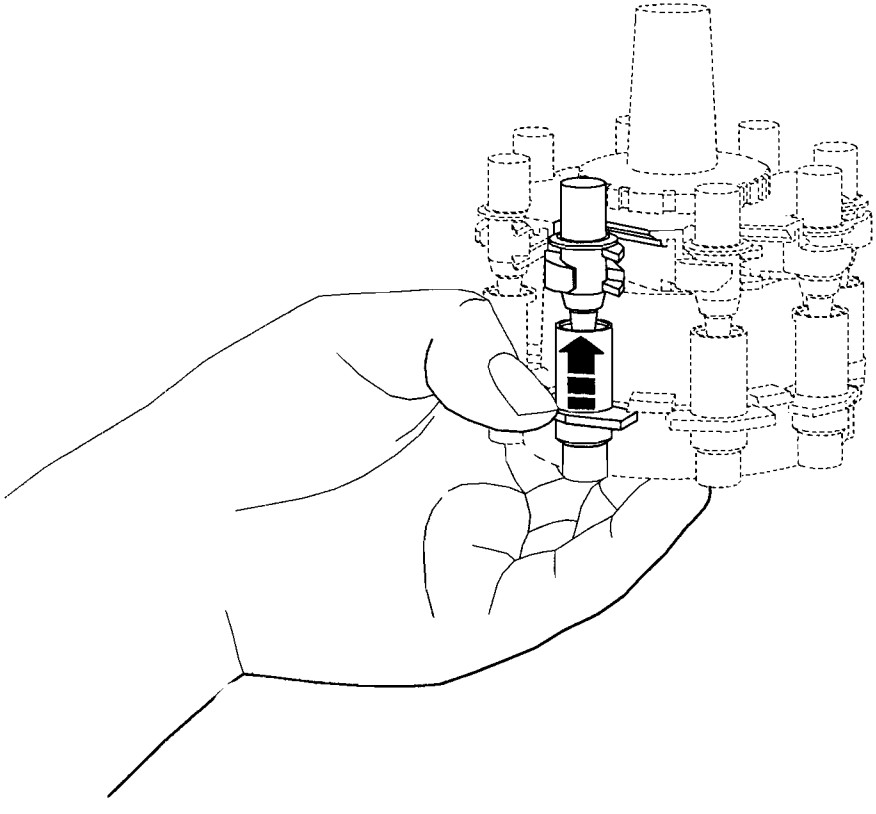


Computer Museum

5. Slide the pen into the pen-holding jaws. The pen collar should rest on top of the jaws, beneath the carousel's numbered surface.



6. Release the pen stall slowly, letting the rubber pen boot cover the pen tip.



Repeat the above steps for each pen you want to load. The carousel need not be full for the plotter to work.

For maximum pen life, remove pens when not plotting for several days. Although pens are capped in the carousel, they last longer when stored out of the carousel and recapped. Disposable pens should be capped and stored in a cool area with the tips up. Refillable drafting pens require additional care (see Chapter 4).

NOTE: If you are using drafting pens, make sure each stall contains drafting pen boots. If you need to change the boots, refer to Chapter 3.■

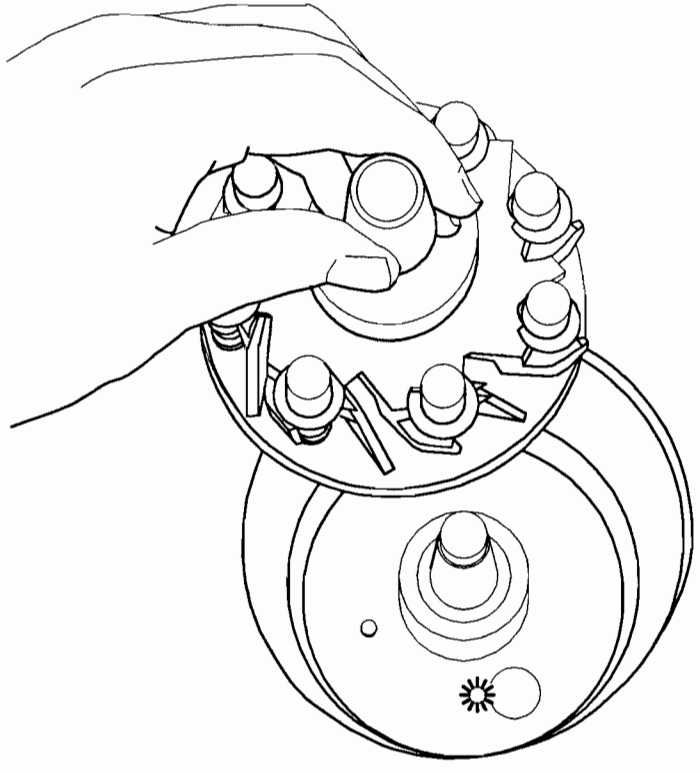
Inserting the Pen Carousel in the Plotter

If the plotter does not contain a pen carousel when you turn it on, the message **Put In Carousel** will display.

After loading the carousel with the pens you will use, lower it into the well. No force is required. The carousel seats during initialization.

When you turn on the plotter, or raise and lower the cover, the plotter *initializes*, rotating the carousel and returning pen 1 to the starting position. At initialization, the plotter identifies the carousel type, then sets speed and force defaults.

To remove the carousel, lift it straight up. The carousel may be inserted or removed during plotting, but drawing is interrupted whenever you raise the cover.



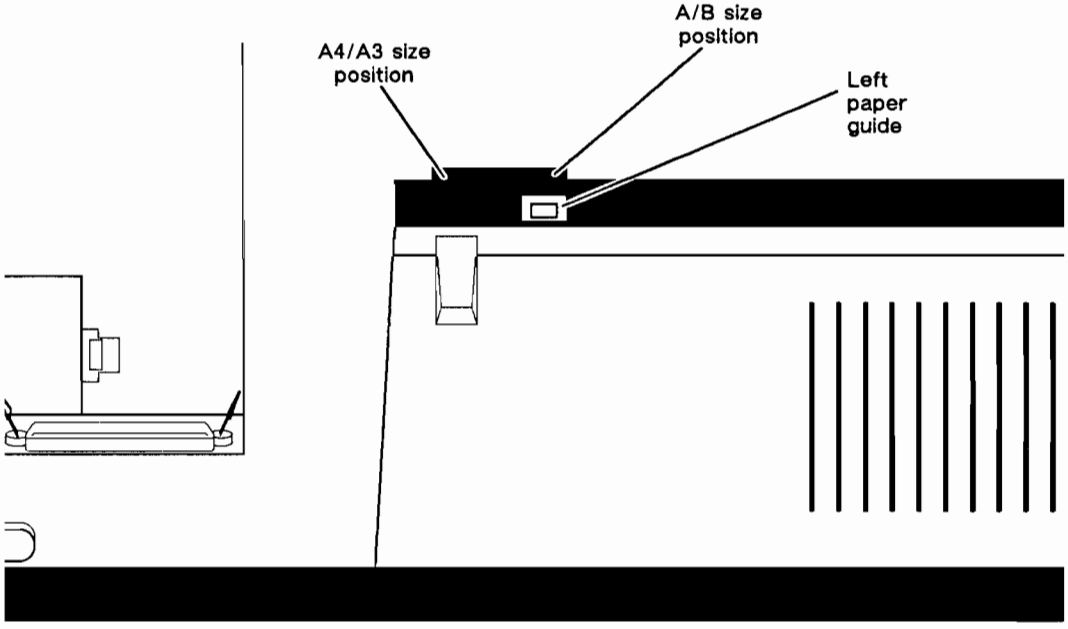
Loading Media

As described in the following paragraphs, media can be loaded manually by placing it on the platen, or loaded automatically by placing it in the media tray. All supported media can be loaded manually. *However, only regular plotter paper or transparency film may be loaded into the media tray.*

HP paper has a 'best writing surface', which is face-up when you open a package of HP paper. For best quality plotting results, this side must be up when you place it on the platen or in the media tray.

Before You Load

1. Check the position of the left (when looking at the plotter from the rear) paper guide. The paper guides, which align the paper with the media catcher, should have been set for your media size at the factory. If necessary, pull the paper guide out and reinsert it in the appropriate position until you hear a click.

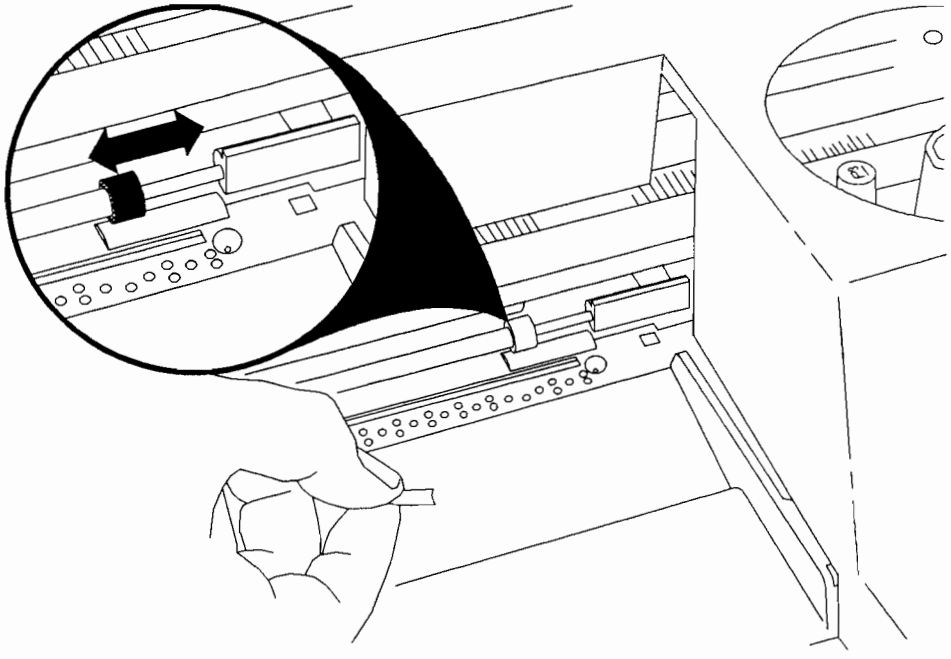


Paper Guide Positions

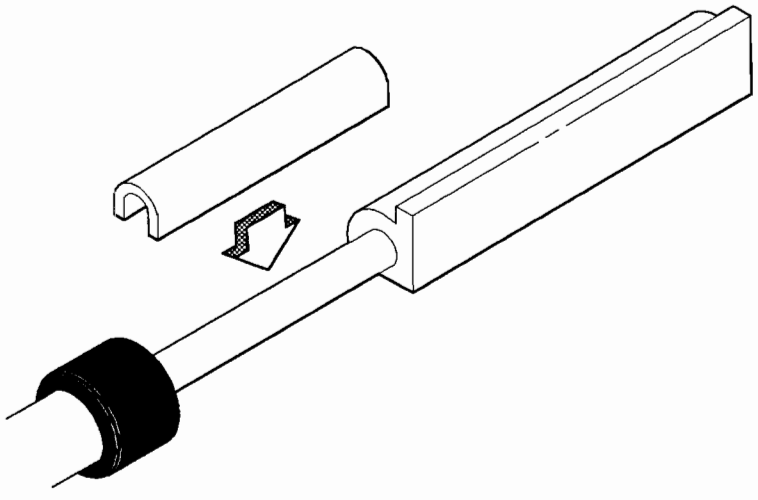
2. Check the position of the right-hand pinch wheel. It should have been set at the factory according to your media size, as shown on the next page. Perform the following steps if you need to move the pinch wheel.

   a. Pinch wheel adjustments should be made with the pinch wheels raised. Go to manual loading mode by pressing **Auto Feed** to remove the asterisk in the display. Then press the **Load/Unload** button to raise the pinch wheels.

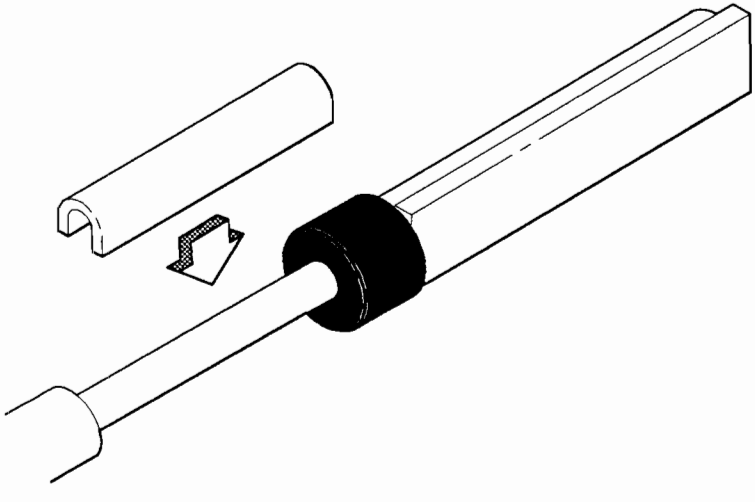
   b. Snap the spacer off the shaft, move the pinch wheel, and snap the spacer back on. *Do not lose the spacer—it is essential to plotter operation.*



Removing the Spacer



Pinch Wheel and Spacer Position for A- and B-Size Paper



Pinch Wheel and Spacer Position for A4- and A3-Size Paper

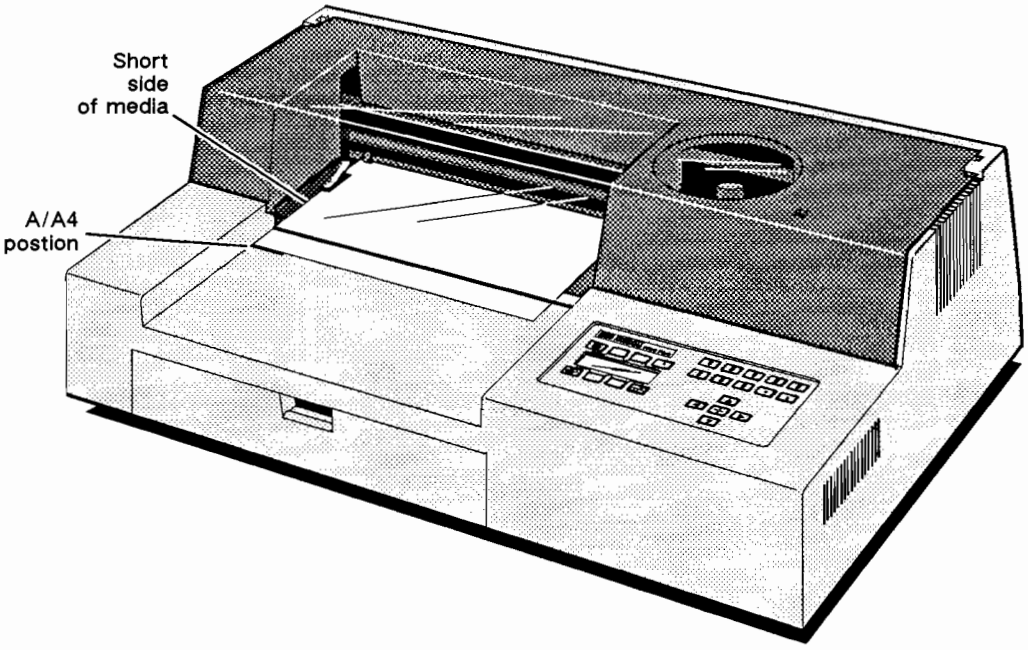
Manual Media Loading

Handle the media only by the edges so oil from your fingers does not prevent the ink from adhering uniformly.

1. Set manual mode by pressing **Auto Feed** to remove the asterisk in the display.

2. A/A4 and B/A3 sized media are loaded differently:

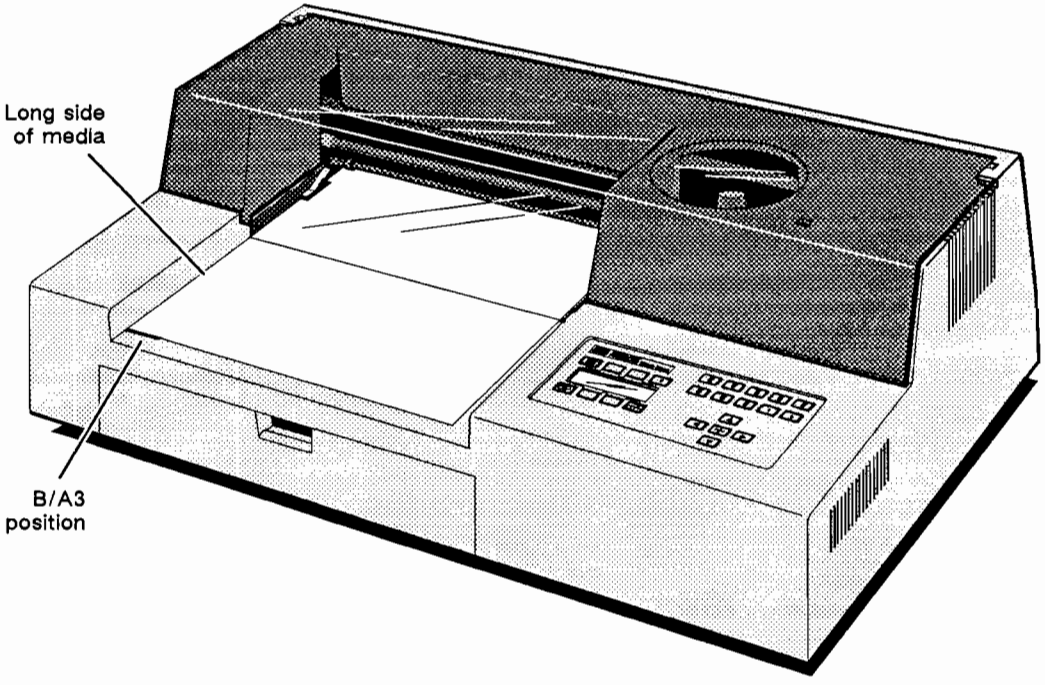
   a. Insert A/A4-size media with the *short* side against the left edge of the platen. Use the **A/A4** mark on the platen to align the trailing edge



Loading A/A4-size Media

b. Insert B/A3-size media with the *long* side against the left edge of the platen. Use the **B/A3** mark on the platen to align the trailing edge.

NOTE: If you slide B- or A3-size media too far into the plotter, it can sense only part of the page. Your P1 and P2 settings will be incorrect, affecting the drawing.■



Loading B/A3-size Media

3. Press **Load/Unload**. The plotter will lower the pinch wheels and sense media size. **Paper Load Failed** displays if the media is not under the pinch wheels.

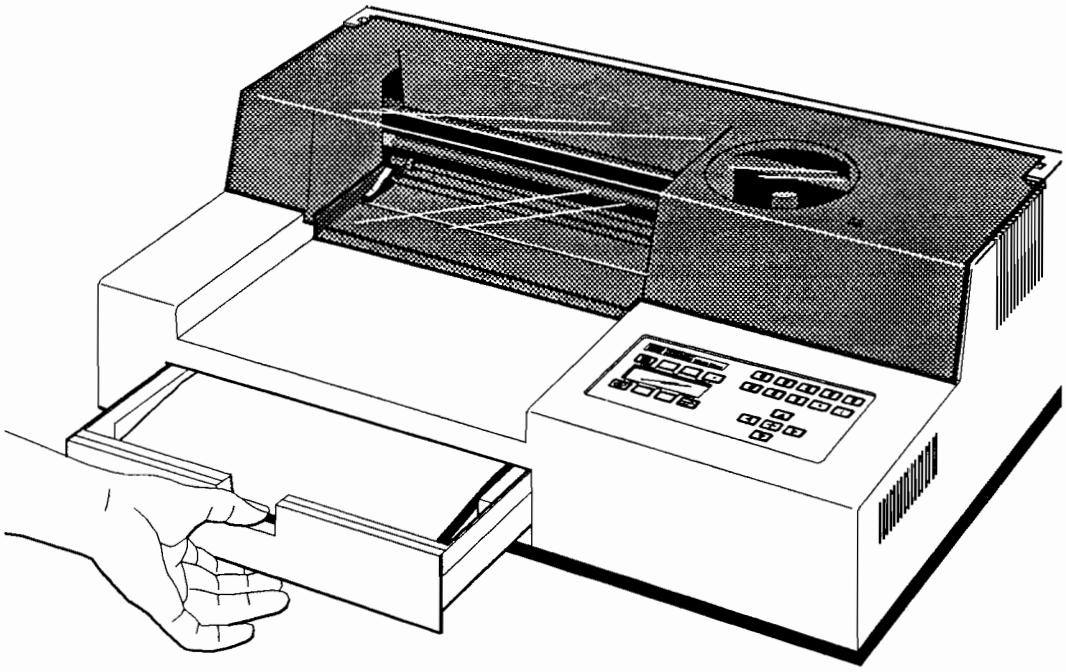
To unload media, press **Load/Unload** to raise the pinch wheels.

Automatic Media Loading

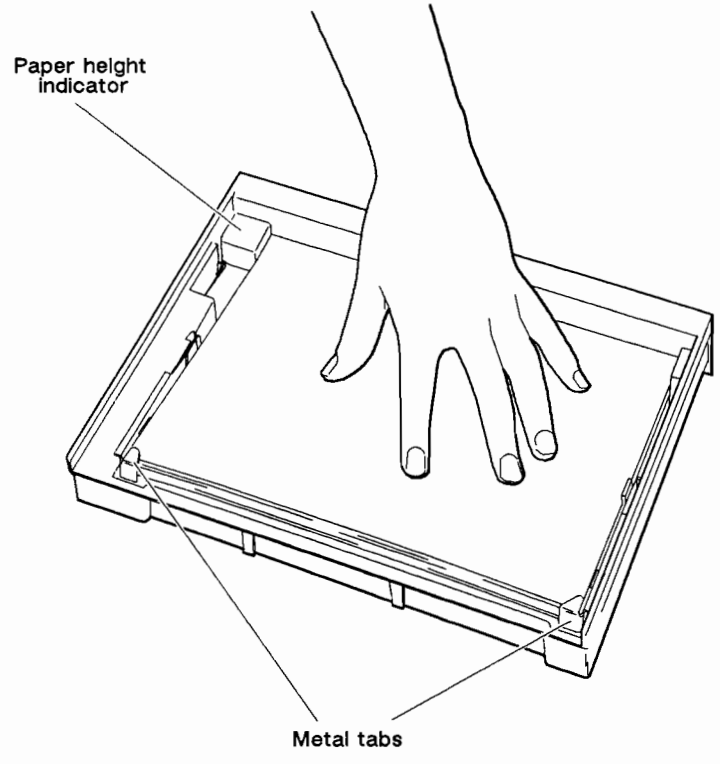
Use the media tray for automatic loading.

NOTE: Only regular paper or transparency film may be loaded into the tray.■

1. Pull the media tray out of the plotter.



2. Load the paper into the media tray. Tuck the stack under the metal tabs in the right and left corners of the tray.

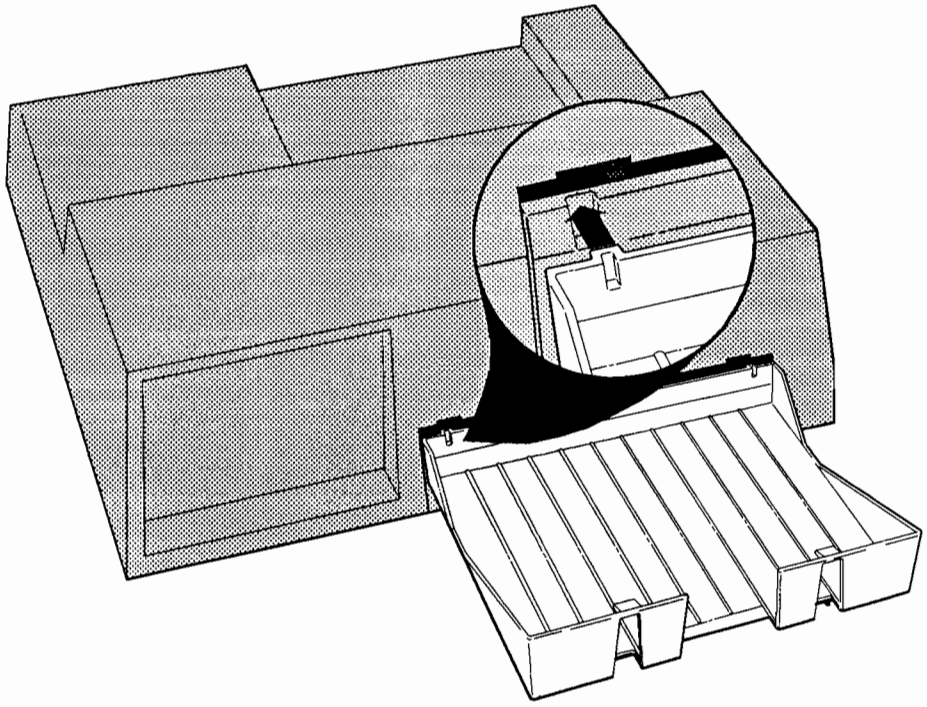


Do not overfill the tray. Do not fill the tray over the maximum paper height indicator at the front of the tray. The tray should hold no more than 150 sheets of paper or 100 sheets of transparency film.

Media should be flat and unwrinkled. Always fan the stack of media before loading the tray.

3. Slide the tray into the plotter.

4. Place the notched edge of the media catcher against the rear of the plotter. The media catcher should be aligned with the plotter's paper slot.



5. Set automatic mode by pressing the **Auto Feed** button to get an asterisk in the upper-left corner of the display. The asterisk indicates automatic mode.

6. Press **Load/Unload** to load a single sheet. A finished plot will be ejected into the media catcher, and a new sheet automatically loaded.

Misfeeds

Paper Load Failed will display if the media is incorrectly loaded. Unload the media and try again. Possible causes are

- Curled paper
- Paper with uneven edges
- Poor paper quality
- Nonstandard size
- Media not under the pinch wheels

To clear automatic load failures

1. Pull out the media tray.
2. Remove the paper. If the paper is so wrinkled you can't remove it from the rear, turn the plotter off, move the pen carriage to the left, and pull the sheet out from the front.
3. Reinsert the media tray.
4. Press the **Load/Unload** button to reposition the feed rollers.

If loading again fails, remove the media from the tray and fan it. If this doesn't work, try replacing the media with a new stack: your paper may have been warped or curled due to changes in humidity.

Drawing the Demonstration Plots

The built-in demo plots check plotter operations (except I/O). The plotter does not have to be connected to a system, so this is a good way to isolate problems.

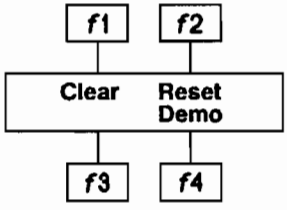
NOTE: Drawing the demo plot clears the buffer. Any waiting plots are erased.■

1. Load the pen carousel. You may use any combination of pens in the carousel, but the following pen widths and colors are recommended for the demos.

Pen Stall Number	Pen Type and Color
1	P.7, black
2	P.3, red
3	P.3, green
4	P.3, yellow
5	P.3, blue
6	P.3, red-violet
7	P.3, aqua
8	P.3, orange

2. Load a sheet of paper. Although you can use vellum or transparancy film, you should use paper the first time you run the demonstration plot.

3. Press **Next Display** until **Demo** appears.

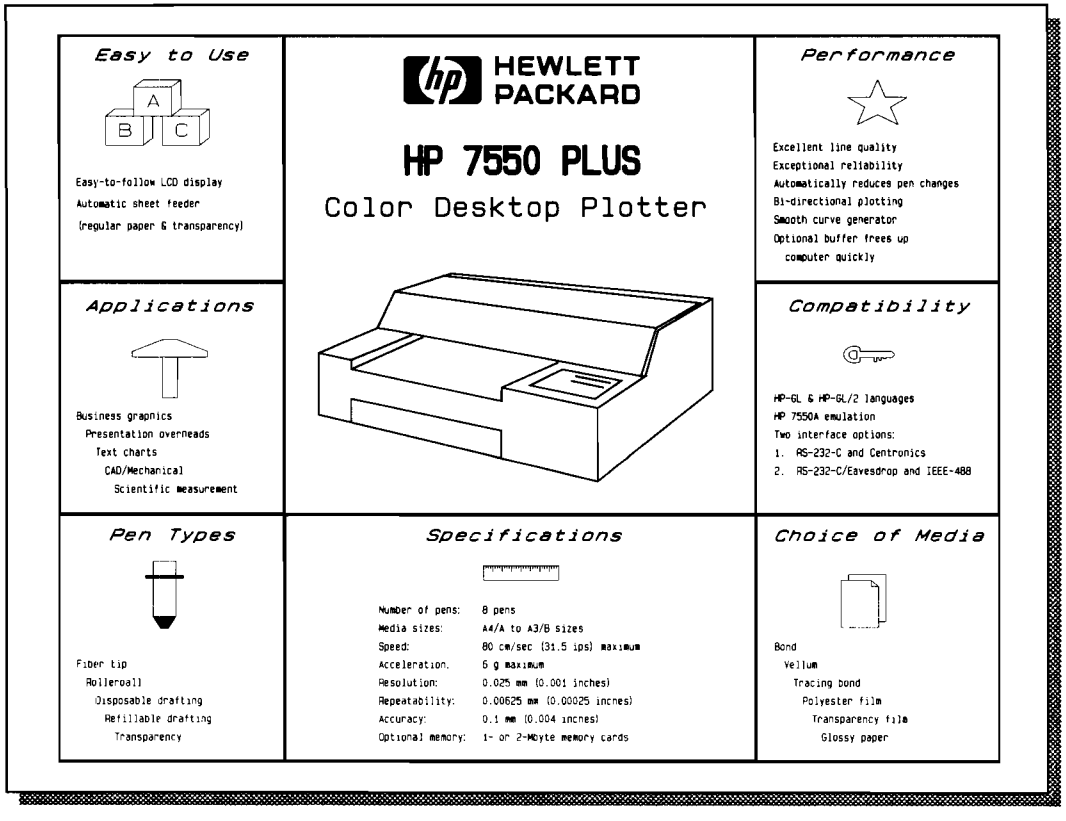


4. Press **Demo**.

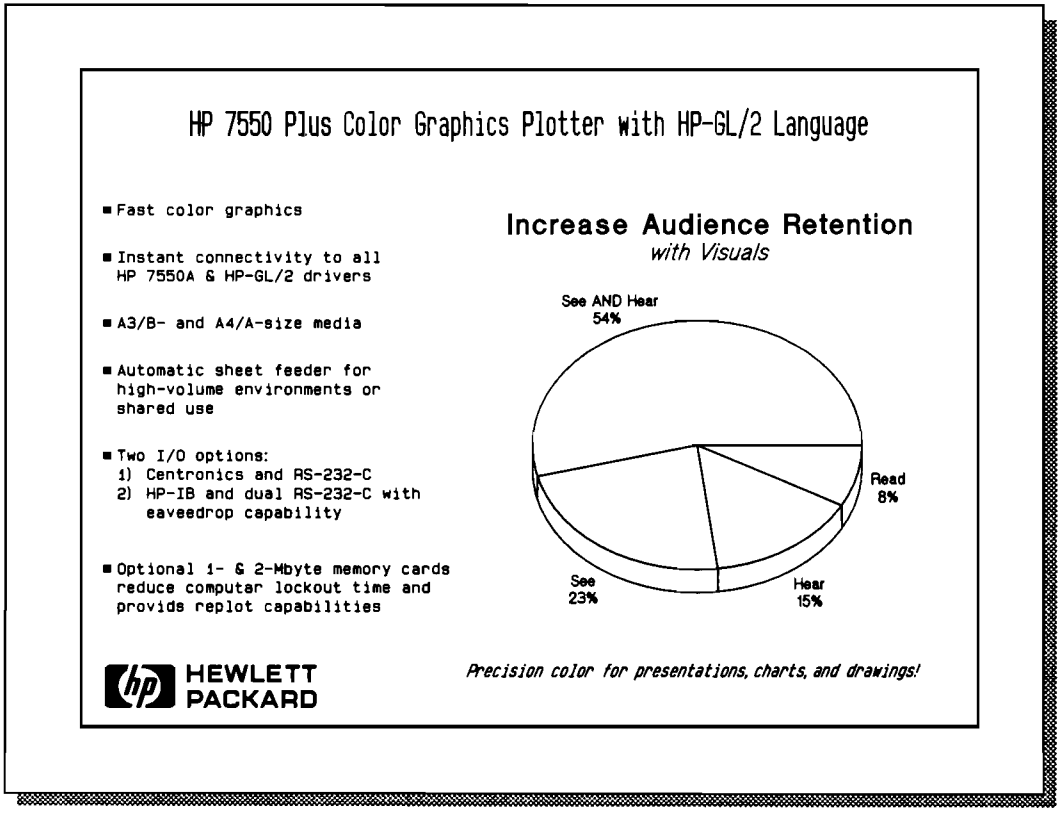
5. Press **Demo 1** or **Demo 2** to start one of the plots. If the plotter doesn't complete the plot, or it looks different from those on the next pages, see Chapter 5.

   To make multiple copies of a demo plot, see the section on **Copies**.

NOTE: The **Demo** button is inactive in **View** mode.■



Demonstration Plot 1



Demonstration Plot 2

2

Using the Front Panel

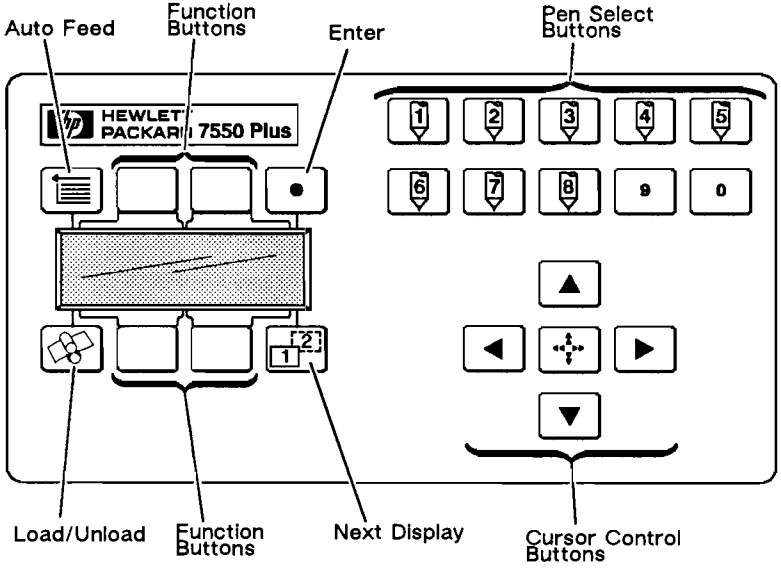
This chapter tells you

- how to select and move pens.
- how to use the menus.

Computer Museum

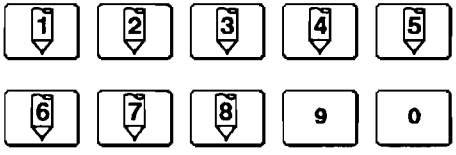
Front Panel Overview

The front-panel contains buttons for controlling pens and accessing the menus.



Pen Select Buttons

The **Pen Select** buttons retrieve pens from the carousel, and they designate the number of copies. Software normally selects pens for you, but sometimes you may want to use the **Pen Select** buttons.



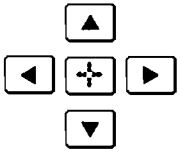
Pressing a **Pen Select** button (1 through 8) gets the selected pen from the carousel and moves the pen holder back to its previous location. A plot in progress is stopped until the pen holder moves back to its previous location.

To return a pen from the pen holder to the carousel, press **Enter** (●) and then the **Pen Select** button corresponding to an empty carousel stall.

Drafting pens are automatically returned to the carousel after 15 seconds to prevent drying. Fiber-tip paper, roller ball, and transparency pens are returned after 65 seconds.

Cursor Control Buttons

The **Cursor Control** buttons are used to move a pen after you select it. The pen moves in the direction of the arrow on the button.

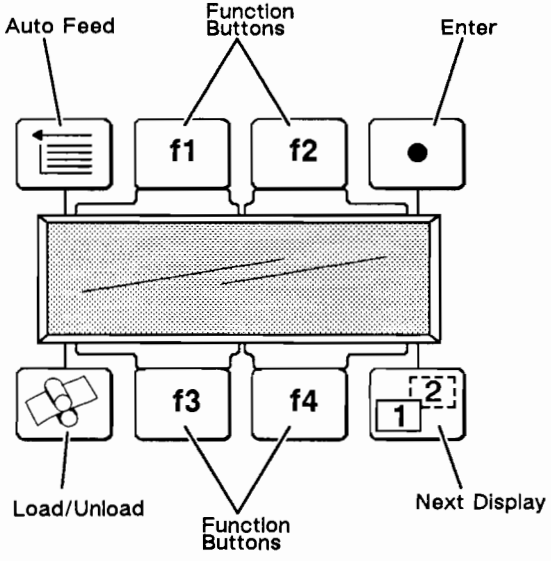


- Press one button to move in the direction of the arrow on the button.
- Press two adjacent buttons to move the pen at a 45-degree angle.
- Press the center button and an arrow button to move at maximum speed.

Menu Control Buttons

Plotter functions are usually controlled by software. However, you can use the menu control buttons to control features yourself.

- **Auto Feed** — selects the method of loading media: either manual or automatic.
- **Load/Unload** — in manual mode, loads and unloads media. In automatic mode, loads individual sheets from the loading tray.
- **Enter** — stores menu selections.
- **Next Display** — displays the next menu. To go to the previous menu, press **Enter** and then **Next Display**.
- **Function buttons** — select menu options. Although not labeled on the plotter, they are numbered (**f1** through **f4**) in this book for clarity.

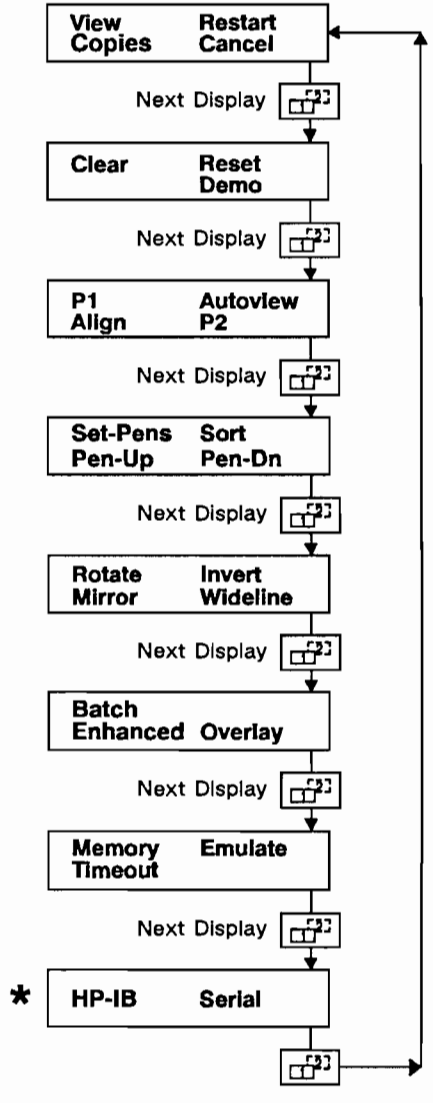


Moving Forward and Backward in the Menus

To go forward to the next menu, press **Next Display**. To go back to the previous menu, press **Enter** and then **Next Display**.

The Primary Menus

The diagram below shows the primary menus. Press **Next Display** to go to the next menu. Press **Enter** (●) and then **Next Display** to go to the previous menu.



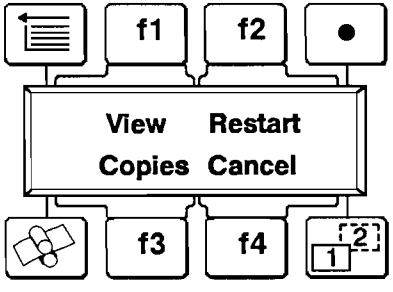
*On the Centronics option interface, **HP-IB** does not appear, and this area is blank.

Using the Menus

The rest of this chapter contains a detailed description of each menu. In general, when you press a function button (**f1** through **f4**), the plotter either performs an action or displays a submenu. Two examples are described below.

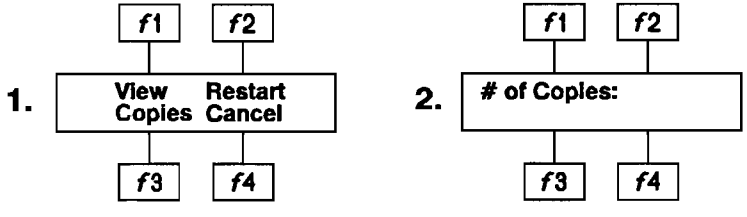
An Example of an Action

Pressing **View (f1)** temporarily halts a plot in progress and moves the media forward so you can check the drawing.



An Example of a Submenu

Pressing **Copies (f3)** displays a submenu that asks for the number of copies. Use the **Pen Select** buttons to enter the number of copies, then press **Enter** (●).



Storing a Menu Selection

When you make a menu selection, the **Enter** symbol (●) flashes in the upper-right corner of the display. Press the **Enter** (●) button to store your selection.

NOTE: Although you can change menu settings while a plot is in progress, the plotter may not respond immediately.■

View – Looking at a Plot in Progress

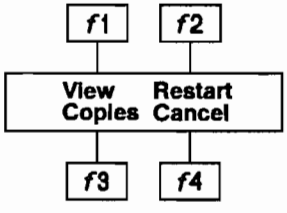
View temporarily halts a plot without affecting its accuracy or completeness.

Pressing **View** returns the pen to the carousel and fully extends the media. You can check the progress of your plot or remove the carousel and change pens. You can also change other front panel menu settings, except **Group** and **Sort**.

Another way to view a plot in progress is to raise the carriage cover.

PROCEDURE:

1. Press **Next Display** until **View** appears.
2. Press **View**. **Continue** flashes on the display while **View** is active.



To restart the plot at its previous location, press **View** again.

NOTE: When **View** is activated, the **Group, Sort, Restart, Cancel, Clear, Reset,** and **Demo** front-panel buttons are inactive.■

Restart – Starting Over

Restart starts a plot over from the beginning. No front panel conditions are reset. Although plotting stops, the drawing remains in the buffer.

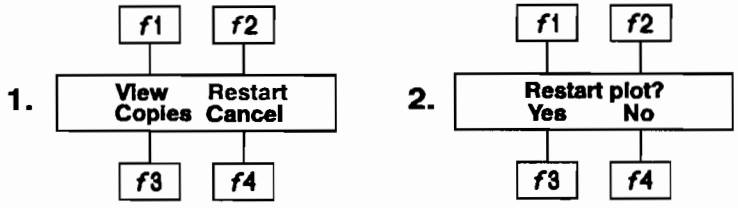
NOTE: **Restart** will not work unless your plotter contains a 1 or 2 megabyte memory board (see Chapter 6) You may get a **Buffer Overflow** message.■

You might want to use **Restart** if a pen runs out of ink while a plot is in progress.

PROCEDURE:

1. Press **Next Display** until **Restart** appears.

2. Press **Restart**.



3. Press **Yes** when **Restart plot?** appears. This puts the plotter in **View** mode, letting you load media and change front panel settings. To redraw the plot, return to the main menu and press **Continue**. The plotter will immediately begin redrawing, so be sure to load or advance paper *before* exiting **View** mode.

   To exit without stopping the plot, press **Next Display.**

NOTE: The **Restart** button is inactive in **View** mode.■

Copies – Making Multiple Copies

Copies works with the **Batch** menu to make copies without resending.

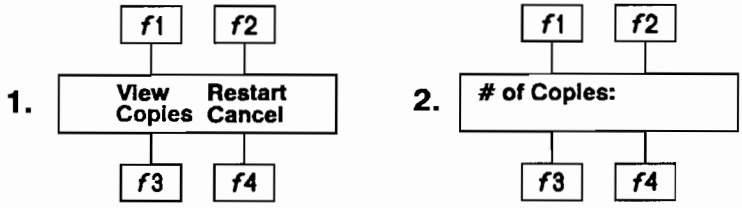
- When **Batch** is off, **Copies** replots only the last or current* plot.
- When **Batch** is on, **Copies** replots every plot, starting with the next. The current or last plot is not affected.

NOTE: The plotter must contain an extended memory board for **Copies** to work in **Batch** mode. Otherwise, you may get a **Buffer Overflow** message.■

OPTIONS: 1-99.

PROCEDURE: If you only want to copy the current or last plot, make sure **Batch** is off. When **Batch** is on, **Copies** affects the *next* plot.

1. Press **Next Display** until **Copies** appears.
2. Press **Copies**.



3. Select the number of copies with the **Pen Select** buttons.
4. Press **Enter** when the desired number of copies appears.

   To exit without requesting copies, press **Next Display**.

Copies represents the number of additional plots over the original. For example, if you set **Copies** to 2 , you will get 1 original and two copies.

*A plot is *current* until the plotter begins drawing the next plot. The plotter copies the current plot if it is plotting. Otherwise, it copies the last-drawn plot. If the buffer is empty, the message **Disabled Buffer Empty** displays. While it is drawing, the plotter displays the number of copies remaining.

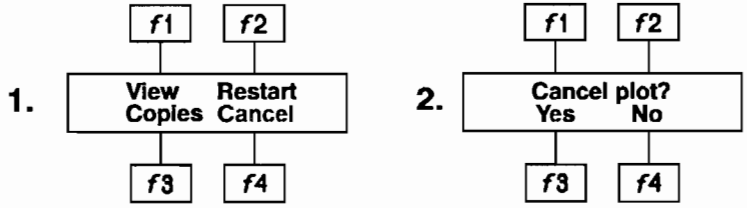
NOTE: If the plotter makes copies of more than just the current plot, you may want to try a different **Timeout** setting (see **Timeout** later in this chapter).■

Cancel – Stopping a Plot

Cancel permanently stops a plot without clearing the buffer or affecting front-panel settings.

PROCEDURE:

1. Press **Next Display** until **Cancel** appears.
2. Press **Cancel**.



3. Press **Yes** when **Cancel Plot?** displays. The plotter goes to **View** mode, letting you to load media or change front panel settings. To resume plotting, return to the main menu and press **Continue**. The plotter will immediately begin redrawing, so be sure to load or advance paper *before* exiting **View** mode.

   To exit without stopping the plot, press **No** or **Next Display**.

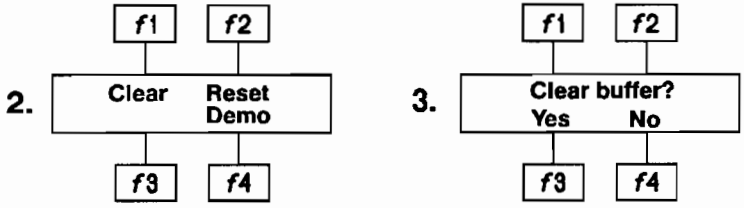
Cancel stops a plot in progress. However, data from your computer continues to fill the buffer until end-of-file is reached. Thus, your next plot may begin with this 'residue'. To completely stop the plot, you must first stop the job at your computer.

NOTE: The **Cancel** button is inactive in **View** mode.■

Clear cancels any plot in progress and, in addition, empties the buffer without changing front-panel menu settings.

PROCEDURE:

1. Press **Next Display** until **Clear** appears.
2. Press **Clear**.



3. Press **Yes** when **Clear Buffer?** appears.

   To exit without clearing, press **No** or **Next Display**.

Clear stops a plot and empties the buffer. However, data from your computer continues to fill the buffer until end-of-file is reached. Your next plot may begin with this 'residue'. To completely stop a plot, stop the job at your computer.

NOTE: The **Clear** button is inactive in **View** mode. ■

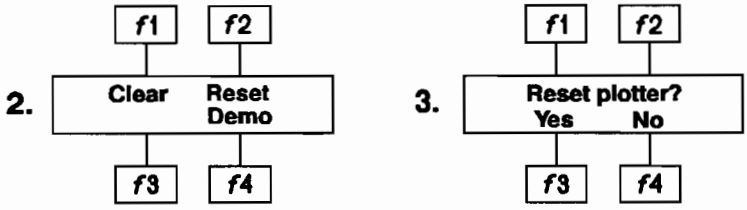
Reset – Resetting the Plotter

Reset cancels any plot in progress, clears the buffer, and defaults menu settings not in continuous memory.

To default *all* settings — including those in continuous memory — hold down the center **Cursor Control** button while turning the plotter on.

PROCEDURE:

1. Press **Next Display** until **Reset** appears.
2. Press **Reset**.



3. Press **Yes** when **Reset Plotter?** appears. The buffer is emptied and the following menu items are defaulted: **P1, P2, Copies, Rotate, Speed, Force, Sort, Group, Emulate, Digitizing**. The pen returns to the carousel as soon as the buffer is empty.

   To exit without resetting, press **No** or **Next Display**.

Reset does not affect any conditions in continuous memory. To begin plotting again, replace the paper and re-send your plot.

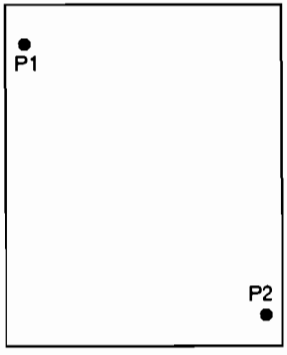
Reset stops a plot and empties the buffer. However, data from your computer continues to fill the buffer until end-of-file is reached. Your next plot may begin with this 'residue'. To completely stop the plot, stop the job at your computer.

NOTE: The **Reset** button is inactive in **View** mode.■

P1, P2 – Setting Plot Boundaries

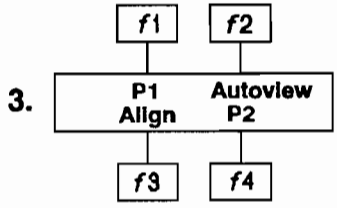
Plot boundaries are defined by points P1 and P2. The **P1** or **P2** buttons move the pen to the current location of P1 or P2.

The P1 and P2 default positions are shown below. You need to move P1 and P2 *only* when your software requires it, or when writing your own programs (e.g., if you define your own units when scaling).



PROCEDURE: How to set plotting size and orientation with **P1** and **P2**.

1. Press **Next Display** until **P1** and **P2** appear.



2. Press a **Pen Select** button to get a pen from the carousel.
3. Use the **Cursor Control** buttons to move the pen to the desired P1 location.
4. Press **Enter** and then **P1** to store the new P1 location.
5. To position P2, repeat the above steps using the **P2** button.

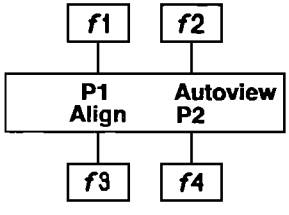
NOTE: When P1 changes, P2 also changes to maintain the same position relative to P1. Therefore, to move P2 to a specific location, set P1 *first*.■

Align – Aligning to Media Grids

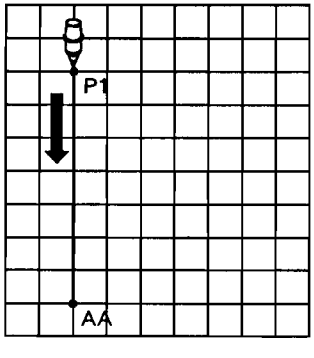
Use **Align** for aligning grids on printed media with the plotter's physical axes.

PROCEDURE: You can use a pen for this procedure, but a digitizing sight is recommended for increased accuracy (see Appendix B to order a digitizing sight).

1. Load media.
2. Remove the digitizing sight cap and load the sight into the pen holder.
3. Press **Next Display** until **Align** appears.
4. Press **Align** to move the digitizing sight to the axis align point.



5. Press **P1** to move the digitizing sight to the P1 position.
6. If you are using a pen, skip this step to avoid marking the paper. Press **Next Display** to get the **Pen-Dn** menu. Then press **Pen-Dn** to lower the digitizing sight. Lowering the sight allows more accurate positioning.
7. Use the **Cursor Control** buttons to move the dot in the digitizing sight directly over the nearest grid line running from P1 to the axis align point. See below.



8. Press **Enter** and then **Next Display** to get the **P1** menu. Press **Enter** and then **P1** to store the new P1 location.

9. Press **Align** to move the digitizing sight to the axis align point. (The sight will move in the 'up' position.)

10. Press **Next Display** once, then press **Pen-Dn**. Now use the **Cursor Control** buttons to position the dot in the digitizing sight directly over the same grid line.

11. Press **Enter** and then **Next Display** to return to the **Align** menu. Press **Enter** and then **Align** to store the new alignment point.

To check your results, press **P1**. The digitizing sight should follow the grid line as it moves to the P1 location. When you are satisfied, remove the digitizing sight and begin plotting.

NOTE: Turning the plotter off and on, or loading a new sheet of media returns P1 and P2 to their default locations after using **Align.**■

AutoView — Automatic Viewing between Plots

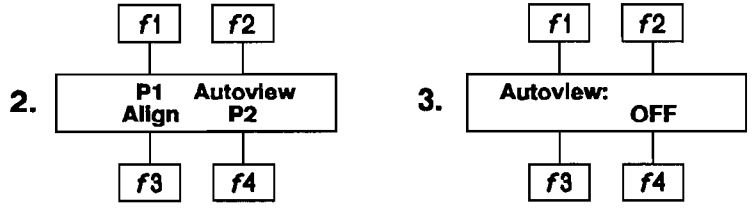
AutoView automatically puts the plotter into **View** mode between plots, allowing front panel, pen, and media changes. When the plotter pauses in **AutoView** mode, **Continue** flashes on the display. *

OPTIONS: OFF, ON

DEFAULT: OFF

PROCEDURE:

1. Press the **Next Display** until the **Autoview** appears.
2. Press **AutoView**.



3. Press **f4** to toggle **AutoView** on and off.
4. When the option you want displays, press the **Enter** button to store the setting in continuous memory. (The setting remains in memory until you change it, even if you turn the plotter off.)

   To exit without changing the setting, press the **Next Display** button.

If you turn on **AutoView** during plotting, the plotter enters **View** mode before the next plot. When **AutoView** is on, **Continue*** flashes between each plot, letting you change front-panel settings. The **Restart, Cancel, Clear, Reset, Group, Sort, Advance** and **Demo** features are inactive in **AutoView** mode.

* In View mode, View flashes on the display. In AutoView mode, Continue flashes on the display.

Speed – Setting Pen Speed

Use **Speed** to select a pen speed. The defaults shown below are usually satisfactory; but your software may require a different speed. Also, if line quality isn't critical, you can increase speed; or you can improve line quality by reducing speed.

DEFAULT:

The type of carousel determines default plotter speeds, which are shown below.

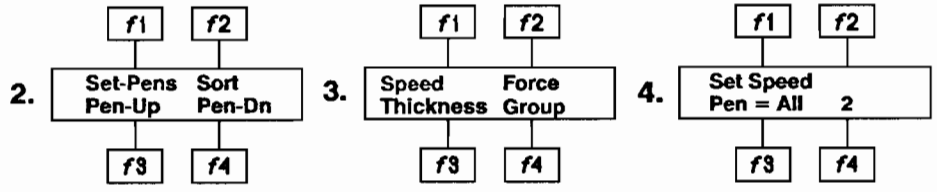
Carousel Type	Speed (centimeters/second)
Fiber-tip pen	50 cm/s
Roller-ball pen	80 cm/s
Disposable drafting pen *	30 cm/s
Transparency pen	10 cm/s

* When you use *refillable* drafting pens, the carousel **does not** default. You should set the pen speed to *15 cm/s*.

OPTIONS: Pens 1–8, or all. Speeds of 10–60 cm/s, in 5 cm increments. Speeds of 60–110 cm/s, in 10 cm increments.

PROCEDURE:

1. Press **Next Display** until **Set Pens** appears.
2. Press **Set Pens** and then **Speed**.



3. Press **f3** to set an individual pen, or use **All** to change all speeds. If **All** is displayed and pen speeds are different, no speed value is displayed initially.
4. Press **f4** to select a pen speed.
5. Press **Enter** when the correct pen number and speed appear. To set individual pen speed, repeat steps 1 through 4 for each desired pen.

   To exit without changing the setting, press **Next Display**.

Force — Setting Pen Force

Use **Force** to select a pen force (pressure on the media). The defaults shown below are usually satisfactory. However, you can lengthen pen life by decreasing pen force, or improve line quality by increasing pen force.

DEFAULT:

The type of carousel installed automatically defaults pen forces to those below.

Carousel Type	Force	
	Actual Setting	Force In Grams
Paper	2	24
Roller-ball	4	36
Disposable drafting pen *	2	24
Transparency	2	24

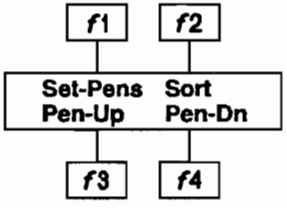
* When you use *refillable* drafting pens, the carousel does not default. You must set the pen force to 1.

OPTIONS:

Displayed Force	Actual Force
1	15 grams
2	24 grams
3	30 grams
4	36 grams
5	45 grams
6	51 grams
7	57 grams
8	66 grams

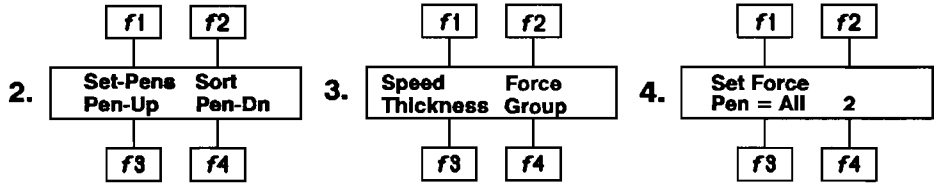
PROCEDURE:

1. Press **Next Display** until **Set Pens** appears.



2. Press **Set Pens**.

3. Press **Force**



4. Press **f3** to view each pen number, or use **All** to change the force of all pens. If **All** is displayed and pen forces are different, no force value appears initially.

5. Press **f4** to view each force option. The displayed number is not the actual value that will be set — refer to the Options table for the force (in grams) associated with each number.

6. Press **Enter** to store the setting when the desired pen number and pen force display.

   To exit without changing the setting, press the **Next Display** button.

To set individual pen force, repeat steps 1 through 4 for each desired pen.

Thickness — Identifying Pen Thickness

Use **Thickness** to identify the thickness of the pens in the carousel. For smooth area fills, each pen's **Thickness** setting should match its actual thickness. (The defaults are usually satisfactory.)

DEFAULT:

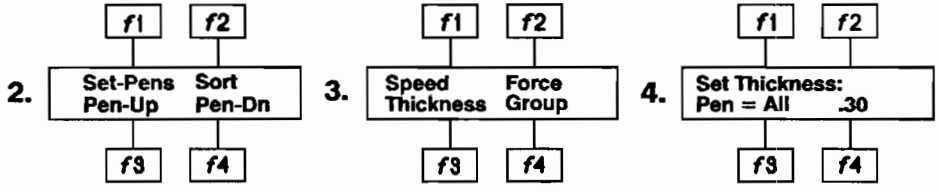
Carousel Position	Default Thickness
Fiber-tip pen	0.30 mm
Roller-ball pen	0.30 mm
Refillable drafting pen	0.35 mm
Disposable drafting pen	0.35 mm
Transparency pen	0.30 mm

OPTIONS: Pens 1 through 8 or all pens. Pen thicknesses are shown below.

Thickness Options
.18 mm
.25 mm
.30 mm
.35 mm
.50 mm
.70 mm
1.00 mm

PROCEDURE: Use this procedure to set individual pens or all pens.

1. Press the **Next Display** button until **Set Pens** appears.
2. Press **Set Pens**.
3. Press **Thickness**.



4. Press **f3** to view each pen number, or use **All** to change all the pens.

If **All** is displayed and all pens do not have the same thickness, then no thickness value is displayed initially.

5. Press **f4** to cycle through the pen thickness options. Press **f2** to increment the value by 0.01 mm, and **f1** to decrease the value by 0.01 mm.

6. Press **Enter** to store the setting when both the correct pen number and thickness display,

   To exit without changing the setting, press the **Next Display** button.

To set the thickness for individual pens, repeat steps 1 through 4 for each pen that requires a different value.

The **Thickness** setting for each pen should match the thickness of the pen in the corresponding carousel position. As shown in the **DEFAULT** table, the default pen thickness varies according to the pen types you load in the carousel. The defaults are satisfactory for most plotting situations. However, there are several reasons you may want to change pen thickness. For example, if too much overlap occurs in area fills, increasing the pen thickness can reduce the overlap; or your software may require a pen thickness other than the default.

Pen thickness established on the front panel will override pen thickness set through your software.

Group – Minimizing Pen Reloading

Group helps ensure that pens won't run out of ink during multiple plots or in large areas of solid-fill.

For **Group** settings other than 1, each pen draws for 100 meters before the next pen in its group is selected. After the last pen in the group draws 100 meters, the first pen is again selected; and the cycle repeats.

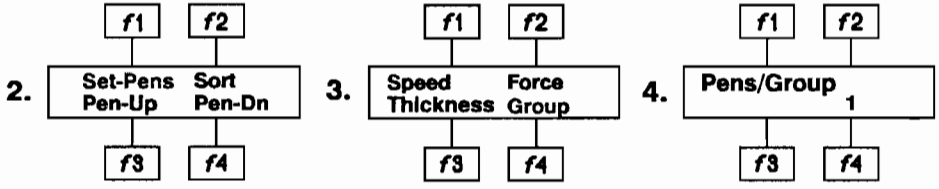
DEFAULT: 1

OPTIONS: 1, 2, 4, 8

Setting	Description
1	8 groups of 1 pen each (normal plotting)
2	4 groups of 2 pens each
4	2 groups of 4 pens each
8	1 group of 8 pens

PROCEDURE:

1. Press **Next Display** until **Set Pens** appears.
2. Press **Set Pens**.



3. Press **Group**.
4. Press **f4** to view each **Group** option.
5. Press the **Enter** button when the option you need displays, to store the setting.

   To exit without changing the setting, press the **Next Display** button.

Leave the **Group** setting on 1 for most plotting applications.

The way you group your pens affects the order that you load pens in the carousel, as shown in the following table.

#Pens/Group	Carousel Loading Sequence
1	load carousel normally
2	pens 1 and 2 = 1 color pens 3 and 4 = 2nd color pens 5 and 6 = 3rd color pens 7 and 8 = 4th color
4	pens 1 through 4 = 1 color pens 5 through 8 = 2nd color
8	use one color for all 8 pens

You can use **Group** with your software packages. However, your software selects a pen number that is higher than the number of groups you have selected, the pen select request is ignored. If this happens, set the plotter to use a smaller number of pens per group.

NOTE: The **Group** button is inactive in **View** mode.■

Sort -- Increasing Efficiency

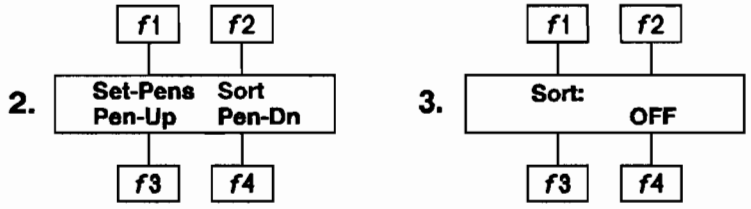
Sort improves plotting efficiency and throughput for all plots in buffer.

DEFAULT: ON

OPTIONS: ON, OFF

PROCEDURE:

1. Press **Next Display** until **Sort** appears.
2. Press **Sort**.



3. Press **f4** to turn **Sort** on or off.
4. Press **Enter** to store the your setting in continuous memory. (The setting remains in memory until you change it, even if you turn the plotter off.)

   To exit without changing the setting, press the **Next Display** button.

When **Sort** is on, the plotter plots all instructions for one pen before selecting the next pen. Additionally, the plotter also processes the instructions to draw the plot in the most efficient way.

When **Sort** is off, plots are drawn in the order instructions are received. For this reason, turn **Sort** off when debugging programs you have written. If ink is smeared when shapes are outlined, try turning **Sort** off.

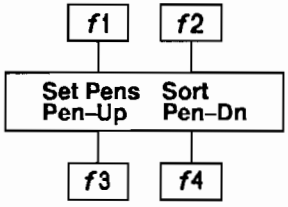
NOTE: The **Sort** button is inactive in **View** mode.■

Pen-Up/Pen-Dn – Raising and Lowering the Pen

Use **Pen-Up** and **Pen-Dn** to raise and lower pens.

PROCEDURE:

1. Press a **Pen Select** button to get a pen from the carousel.
2. Press **Next Display** until **Set Pens** appears.



3. Press **Pen-Up** to raise the pen. Press **Pen-Dn** to lower the pen.

   To exit, press the **Next Display** button.

You can use **Pen-Up** and **Pen-Dn** to draw straight lines by lowering the pen and then using the **Cursor Control** buttons. You will also use **Pen-Up** and **Pen-Dn** when digitizing and while using **Allgn**.

Rotate – Rotating a Plot

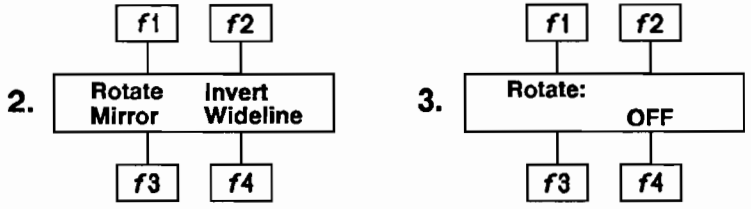
Use **Rotate** to turn the X- and Y-axes of your plot 90 degrees counterclockwise.

DEFAULT: OFF

OPTIONS: OFF, ON

PROCEDURE:

1. Press **Next Display** until **Rotate** appears.

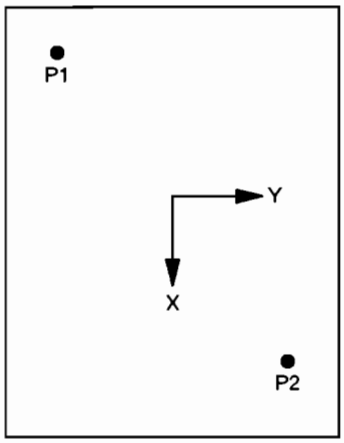


2. Press **Rotate**.
3. Press **f4** to toggle **Rotate** on or off.
4. Press **Enter** to store your setting.

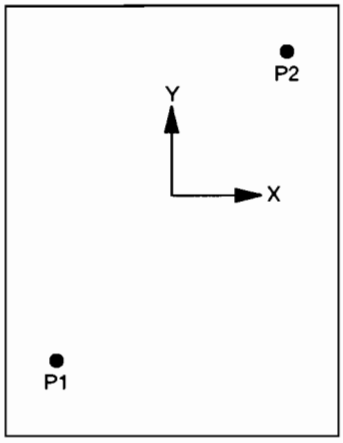
   To exit without changing the setting, press the **Next Display** button.

Rotate affects the next plot drawn after you turn the feature on. If you change the **Rotate** setting while the plotter is drawing, the current plot is not affected.

Normally, the X-axis runs along the longest edge of your paper. Pressing **Rotate** turns the axes 90 degrees counterclockwise, so that the Y-axis runs along the length of the paper, as shown in the following illustration.



Rotate Off



Rotate On

When you rotate a plot, the P1 and P2 points also rotate and move inward. This may affect the proportions of your plot if your software uses scaling techniques. For example, circles may be turn into elipses.

If your program does not use scaling techniques, your plot may not entirely fit on the page when rotated and will be clipped. For information on the scaling instruction, SC, see the *HP-GL/2 Reference Guide.*

You can use **Rotate** with **Invert** and **Mirror** to produce a variety of plot orientations.

Invert — Turning the Plot Upside Down

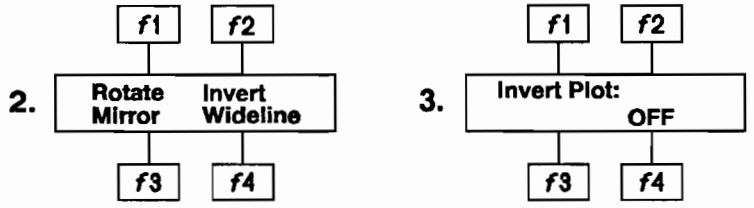
Invert changes the orientation of a plot by 180 degrees.

DEFAULT: OFF

OPTIONS: OFF, ON

PROCEDURE:

1. Press **Next Display** until **Invert** displays.
2. Press **Invert**.



3. Press **f4** to toggle **Invert** on and off.
4. Press **Enter** when the desired option displays to store the setting in continuous memory. (The setting remains in memory until you change it, even if you turn the plotter off.)

   To exit without changing the setting, press the **Next Display** button.

Invert affects the next plot drawn after you turn the feature on. If you change the **Invert** setting while the plotter is drawing, the current plot is not affected.

When **Invert** is on, your plot will look upside down in the plotter. The widest margin (area you can't plot in) will be on the "top" edge instead of on the bottom.

You can use **Invert** with **Rotate** and **Mirror** to provide various plot orientations.

Mirror – Create a Mirror Image

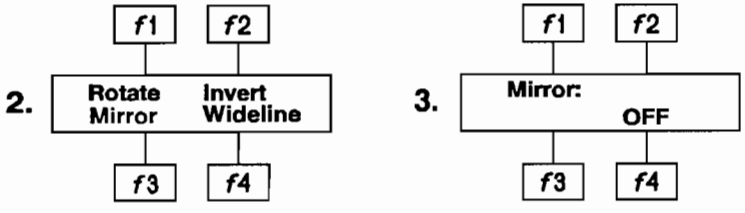
Use **Mirror** to produce a mirror image of your plot.

DEFAULT: OFF

OPTIONS: OFF, ON

EXPLANATION: Complete the following procedure to mirror a plot's image.

1. Press **Next Display** until **Mirror** appears.
2. Press **Mirror**.



3. Press **f4** to toggle **Mirror** on and off.
4. Press **Enter** to store the setting when the desired option displays.

   To exit without changing the setting, press **Next Display**.

Using **Reset** or turning the plotter off cancels **Mirror**.

Mirror takes effect immediately after you turn the feature on. If the plotter is drawing when you turn **Mirror** on, the remainder of the drawing is mirrored.

You can use **Mirror** with **Rotate** and **Invert** to produce a variety of plot orientations.

Wideline – Replace Wide Lines with Single Strokes

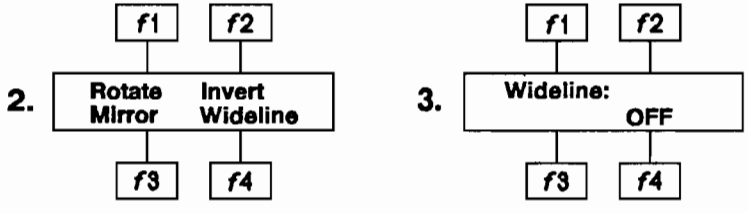
When **Wideline** is on, wide lines are filled with multiple pen strokes. When **Wideline** is off, filled wide lines are replaced with single pen strokes. This conserves pens and minimizes plotting time for preliminary plots.

DEFAULT: ON

OPTIONS: OFF, ON

PROCEDURE:

1. Press **Next Display** until **Wideline** appears.
2. Press **Wideline**.



3. Press **f4** to toggle **Wideline** on and off.
4. Press **Enter** to store the setting when the desired option displays.

   To exit without changing the setting, press **Next Display**.

Wideline takes effect on the next plot. If the plotter is drawing when you turn **Wideline** on, the current plot is not affected.

Batch – Making Copies of Every Plot

Batch works with the **Copies** menu.

- When **Batch** is off, **Copies** replots only the last or current plot. Make sure you turn **Batch** off if you only want to copy the current or last plot.
- When **Batch** is on, **Copies** replots every plot, *starting with the next*. The current or last plot is not affected.

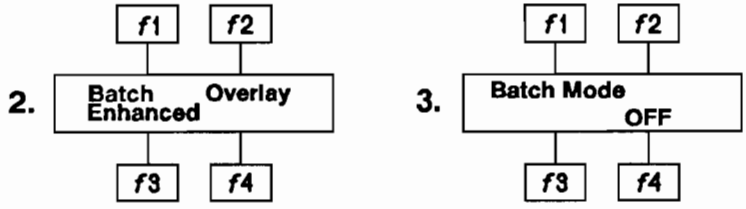
NOTE: The plotter must contain an extended memory board for **Copies** to work in **Batch** mode. Otherwise, you may get a **Buffer Overflow** message.■

DEFAULT: OFF

OPTIONS: OFF, ON

PROCEDURE: To copy only the current or last plot, make sure **Batch** is off when you press **Copies**. When **Batch** is on, **Copies** affects only the *next* plot.

1. Press **Next Display** until **Batch** appears.
2. Press **Batch**.



3. Press **f4** to toggle **Batch** on and off.
4. Press **Enter** when the desired setting displays to store the setting in continuous memory. (The setting will remain in memory until you change it, even if you turn the plotter off.)

   To exit without changing the setting, press the **Next Display** button.

To examine a plot when making multiple copies with **Batch** on, you may have to use **Cancel** to stop making copies.

NOTE: If you try to use **Copies** when there are no plots in the buffer and **Batch** is off, you may get the message **Disabled Buffer Empty**.■

Overlay – Drawing Over the Previous Plot

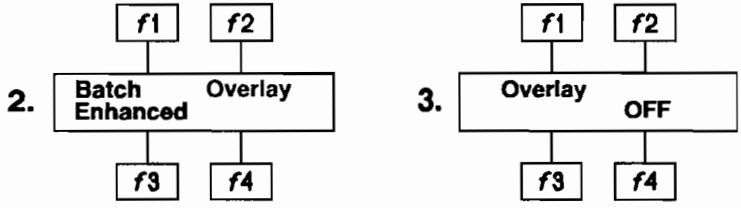
Use **Overlay** to draw over the previously drawn plot. This is useful for adding logos, producing multi-layered drawings, and darkening plots.

DEFAULT: OFF

OPTIONS: OFF, ON

PROCEDURE:

1. Press **Next Display** until **Overlay** displays.
2. Press **Overlay** to display the submenu.



3. Press **f4** to toggle **Overlay** on and off.
4. Press **Enter** when the desired setting displays to store the setting in continuous memory. (The setting will remain in memory until you change it, even if you turn the plotter off.)

   To exit without changing the setting, press the **Next Display** button.

When **Overlay** is on, you are not prompted to load new sheet media. Subsequent plots in the buffer are drawn on the same area of media as the previous plots. **Overlay** takes effect immediately, and affects all plots until you turn it off.

Enhanced – Using Older HP-GL software

Enhanced affects the plotter only when programming with HP-GL (not HP-GL/2) software while in 7550A **Emulate** mode.

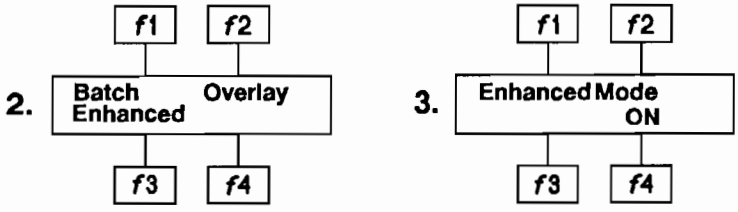
Enhanced affects the implementation of the OD, IW, OW, and UC HP-GL instructions. When using old software in 7550A **Emulate** mode, you may wish to order the *HP 7550A Interfacing and Programming Manual.*

DEFAULT: ENHANCED

OPTIONS: ON, OFF

PROCEDURE:

1. Press **Next Display** until **Enhanced** appears.
2. Press **Enhanced.**



3. Press **f4** to toggle **Enhanced** on and off. (The setting will remain in memory until you change it, even if you turn the plotter off.)

Memory – Changing Memory Size

Memory controls the size of the plotter's input buffer. This is useful if the plotter is in a network that depends on timing to send data to the plotter.

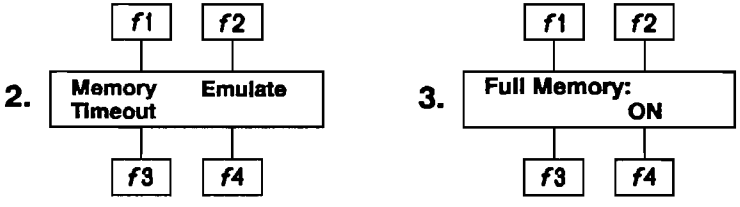
With **Full Memory** off, the plotter's input buffer is the same size as an HP 7550A, and the computer sending data is not freed until the plotter finishes drawing. You may want to turn **Full Memory** off if the plotter is in a network to let the spooler properly indicate plot status.

DEFAULT: ON

OPTIONS: OFF, ON

PROCEDURE:

1. Press **Next Display** until **Memory** appears.
2. Press **Memory**.



3. Press **f4** to toggle **Full Memory** on and off.
4. Press **Enter** when the desired setting displays to store the setting in continuous memory. (The setting will remain in memory until you change it, even if you turn the plotter off.)

   To exit without changing the setting, press the **Next Display** button.

Copies, **Restart**, and **Cancel** are not affected by the **Memory** setting.

Emulate – Plotting with HP 7550A Software

Use **Emulate** only if your software will not operate with the HP 7550 Plus because it expects a HP 7550A.

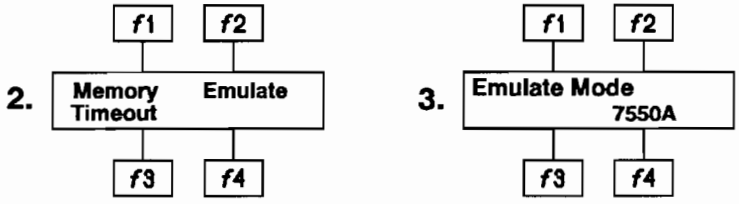
Although the default is **7550A**, the plotter automatically goes into **HP-GL/2** mode if it detects an HP-GL/2 file.

DEFAULT: 7550A

OPTIONS: 7550A, HP-GL/2

PROCEDURE:

1. Press **Next Display** until **Emulate** appears.
2. Press **Emulate.**



3. Press **7550A** to get **HP-GL/2**. The two selections toggle back and forth.
4. Press **Enter** to store the setting in continuous memory. (The setting remains in memory until you change it, even if you turn the plotter off.)

   To exit without changing the setting, press **Next Display.**

Timeout – Ending a Plot

Timeout tells the plotter how long to wait after data stops entering the buffer before marking a file 'finished'. You can use **Timeout** to separate files in the buffer.

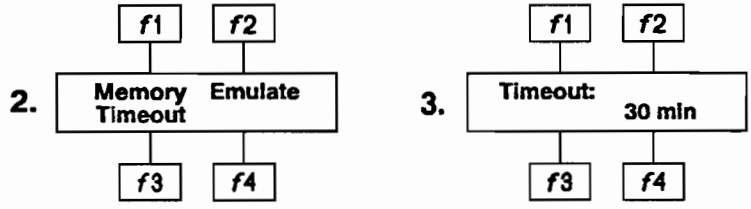
The optimal **Timeout** value ensures that **Copies** and **Restart** function correctly. If the plotter copies more than just the current plot, your software may not be sending end-of-file markers. Try various **Timeout** settings to find a value which works best. The default setting should work with most applications.

DEFAULT: 30 minutes

OPTIONS: Off, 5, 15, 30, 60 seconds; 5, 10, 30 minutes.

PROCEDURE:

1. Press **Next Display** until **Timeout** appears.
2. Press **Timeout**.



3. Press **f4** to view the **Timeout** options. Press **f3** to see the previous option.
4. Press **Enter** to store your setting in continuous memory. (The setting remains in memory until you change it, even if you turn the plotter off.)

   To exit without changing the setting, press the **Next Display**.

Timeout affects all plots drawn, until the plotter is reset.

NOTE: **Timeout** cannot be used to identify ends of plots if you send your plots in batch files.■

HP-IB — Setting an HP-IB Address

For plotters with the HP-IB (IEEE-488) interface, use the **HP-IB** menu to select an HP-IB address compatible with your computer. This menu does not apply to RS-232-C interface users. (This menu does not appear if you have a plotter with the Centronics option.)

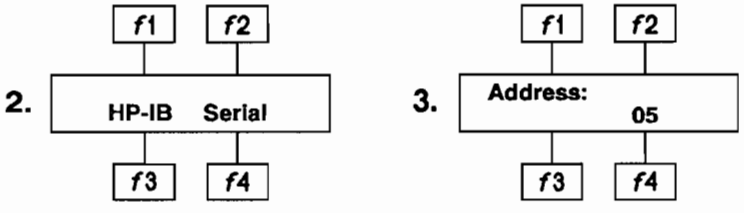
Refer to the *HP 7550 Plus Plotter Computer Information* manual for more detail.

DEFAULT: 05

OPTIONS: 0 through 30, LISTEN ONLY

PROCEDURE:

1. Press **Next Display** until **HP-IB** appears.
2. Press **HP-IB**.



3. Press **f4** to view each **HP-IB** address option. Set your plotter to use the **HP-IB** address that your computer expects. Refer to the *Computer Information* manual if you need more detail.
4. Press **Enter** to store your setting in continuous memory. (The setting will be stored in memory until you change it, even if you turn the plotter off.)

   To exit without changing the setting, press the **Next Display**.

NOTE: If you are using the plotter with an HP desktop computer, do not use address 21; this address is reserved for the computer.■

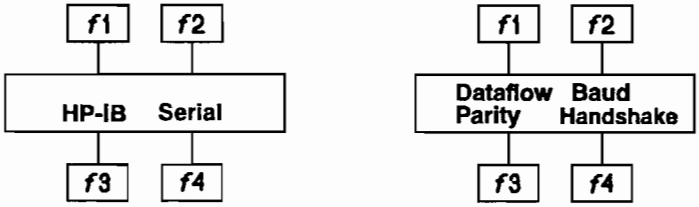
Serial – Setting RS-232-C Interface Conditions

Use **Serial** when connecting the plotter to a computer using the RS-232-C interface. (This menu does not apply to HP-IB interface users.)

Only a brief summary is given below. This menu is discussed fully in the *Computer Information* manual. Refer to this guide if you need to use debugging tools to correct communication problems between the plotter and your computer, use a duplex setting, or use a modem with the plotter.

NOTE: If you have a plotter with the Centronics (parallel) interface, **HP-IB** does not appear on the menu.

PROCEDURE: Pressing **Serial** displays a menu for RS-232-C functions.

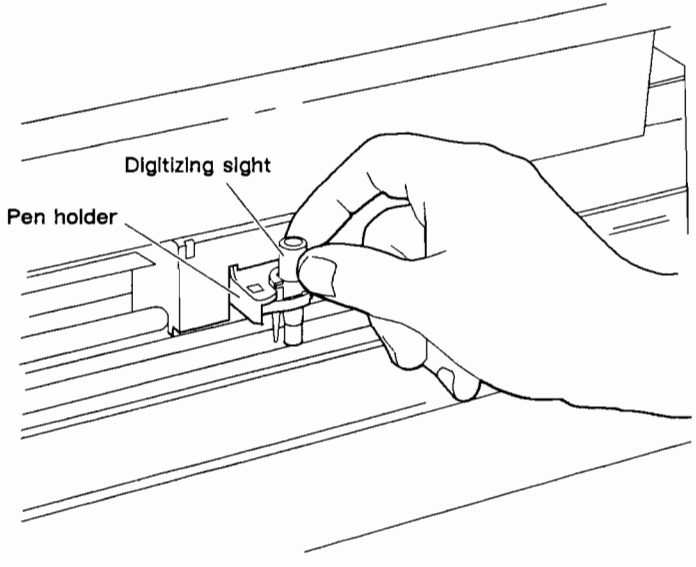


Digitizing – Sending Points to the Computer

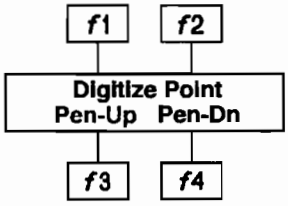
When using digitizing software, complete the following steps to digitize with the plotter. Refer to the *HP-GL/2 Reference Guide* to write your own digitizing programs. (Refer to Appendix B for information on ordering a digitizing sight).

PROCEDURE:

1. Install your software package, as directed by the software documentation.
2. Load the digitizing sight into the pen holder and lower the plotter cover.



3. When your software causes the following menu to appear, press **Pen-Up**.



4. Use the **Cursor Control** buttons to move the dot in the digitizing sight directly over the point to be digitized. When the sight is close to the correct position press **Pen-Dn** to lower the sight. Complete positioning in the down position.

5. Press **Enter** to send the point to the computer. Depending on your software, you may need to press a key such as RETURN on your computer's keyboard.

Configuring the Plotter from the Front Panel

As described on previous pages, you can configure the following features from the front panel. The software should not override your selections in **HP-GL/2** emulation mode; but this may happen in **7550A** emulation mode.

- P1 and P2
- Speed and Force
- Rotate
- Group
- Sort

Changing Defaults

If you don't want to use the menu defaults (which are summarized in Appendix A), complete the following steps.

1. Use **Reset** before plotting to default menu settings not stored in continuous memory.
2. Change and store any desired settings from the front panel.
3. After plotting, use **Reset** to again default menu settings.

NOTE: Your software overrides, but does not reset, front panel defaults if it contains instructions that directly control P1 and P2, pen speed, pen force, plot orientation, and pen grouping.■

3

Selecting Pens and Media

This chapter describes the pens and media, and how to combine them.

For the highest quality plots, use only Hewlett-Packard supplies. Hewlett-Packard pens and media work together for optimal pen life, plot quality, and plotter performance. The chemical reaction between the pens and media is tested to minimize fading and color changes. The smoothness of HP paper reduces pen tip abrasion and produces a sharp, crisp ink line. For information on ordering supplies, refer to the *Supplies Catalog* shipped with your plotter.

Pens

The plotter can use any of the following types of pens.

Pen Type	Characteristics
Fiber-tip Paper	Economical. Disposable. Good line quality. Two line widths. Not recommended for vellum or double-matte polyester because of tip wear. Default speed 50 cm/s. Default force setting 2.
Roller-ball	Fastest plotting speed. Large ink capacity. Long-lasting tip. Good line quality. One line width. Narrow, continuous lines, but less dense than drafting pens. Disposable. Default speed 80 cm/s. Default force 4.
Transparency	Excellent color and line quality on transparency film or glossy paper. Default speed 10 cm/s. Default force setting 2.
Disposable Drafting	Convenient, require no cleaning or refilling. Excellent line quality. Available for polyester film and vellum/paper. Default speed 30 cm/s. Default force setting 2.
Refillable * Drafting	Highest drafting quality. Long lasting tungsten carbide points. Require refilling and maintenance. Best results on vellum and polyester film. Not recommended for paper because of tip clogging.

* When using *refillable* drafting pens, the carousel does not default. Set speed to 15 cm/s and force to 1.

Fiber-tip paper pens last at least 30 days in the carousel. To lengthen pen life, remove the pens from the carousel and cap them when not plotting for several days.

Ink dries as quickly in a drafting pen as it does on the plotting media. Remove drafting pens and cap them immediately after use to prevent drying and clogging. Clean refillable drafting pens after each use, as explained in Chapter 4.

The maximum times you should leave ink in a drafting pen are

- 30 seconds if the pen is uncapped and not in use.
- One day if the pen is in a drafting pen carousel.
- One week if the pen is properly capped and stored in a horizontal position.

Media

You can use the following sizes of single-sheet media with the plotter.

English	Metric
A (8½ × 11 in.)	A4 (210 × 297 mm)
B (17 × 11 in.)	A3 (297 × 420 mm)

You can use the following types of media with the plotter.

Media Type	Characteristics
Plotter Paper	Smooth surface, clear line definitions. Easy to handle, good for everyday use. Suitable for automatic feed. Inexpensive.
Glossy Paper	Heavy-weight, coated paper for high quality presentation.
Vellum	Coated for smoothness and ink receptivity. Treated for strength and transparency. Stores well. Diazo reproducible. Moderately expensive.
Tracing Bond	Uncoated surface. Inexpensive. Good for preliminary drawings.
Double-matte Polyester Film*	Finely coated and translucent. Good for high-accuracy applications and archive storage. Dimensionally stable. Expensive.
Transparency Film	High-grade, clear plotting medium for overlays or presentations using an overhead projector. Suitable for automatic feed.

* Use film of standard, 3-mil thickness for best results.

Operating Precautions

Take the following precautions when working with plotter paper, vellum, tracing bond, transparency film, or polyester film.

- Handle media by the edges. Oil from fingerprints can prevent ink from adhering to the media.
- Temperature and humidity changes can affect media, particularly paper, causing plot distortions and paper-feed failures. Stabilize media by removing it from the package and exposing it to air near the plotter for at least 30 minutes before plotting.
- Use media with square corners to allow the pinch wheels to grip and move the medium correctly.
- Periodically clean the tips of disposable and refillable drafting pens to remove lint.
- When using transparency film, load with the paper backing against the platen.
- Disposable drafting pens must be used and stored away from windows and heating or air conditioning units.
- Use only plotter paper and transparency film in **AutoFeed** mode. All other media types must be loaded in manual mode.

Combining Pens and Media

Use this table to select the types of pens and media that work best together.

Fiber-tip Pens	**Plotter Paper:** High quality. Good for area fills. **Glossy Paper:** Excellent for high-quality presentations. Use with a speed of 10 cm/s for best results. Not recommended for transparency film, vellum, polyester film.
Roller-ball Pens	**Plotter Paper:** Highest speed. Good line quality. Use for fast preliminary drawings. Not recommended for area fill. **Tracing Bond:** Good line quality at high speed. Use for diazo reproductions at slow developing speed. Not recommended for glossy paper, transparency film, vellum, or polyester film.
Transparency Pens	**Transparency Film:** Excellent for overlays or overhead projection at meetings and presentations. Ink dries quickly. **Glossy Paper:** Excellent quality for business graphics, reports, and presentations. Ink dries quickly. Maximum color density. Not recommended for plotting paper, vellum, polyester film.
Disposable Drafting Pens	* **Plotter Paper:** Good for preliminary drawings. * **Vellum:** Excellent quality for final drawings. Use for diazo reproductions at fast developing speed. ** **Polyester Film:** Convenient. Excellent quality for high accuracy. Excellent for final, archive drawings. Not recommended for transparency film.
Refillable Drafting Pens	**Vellum:** Excellent quality for final drawings. Use for diazo reproductions at fast developing speed. **Polyester Film:** Excellent quality for high accuracy. Excellent for final, archive drawings. Sharp, dense, uniform lines Not recommended for paper or transparency film.

* Use disposable drafting pens designed for vellum and paper.
** Use disposable drafting pens designed for polyester film.

Mixing Pens in a Carousel

Although, as explained in Chapter 1, the carousel should match the pens, sometimes you may want to use more than one type of pen on the same drawing.

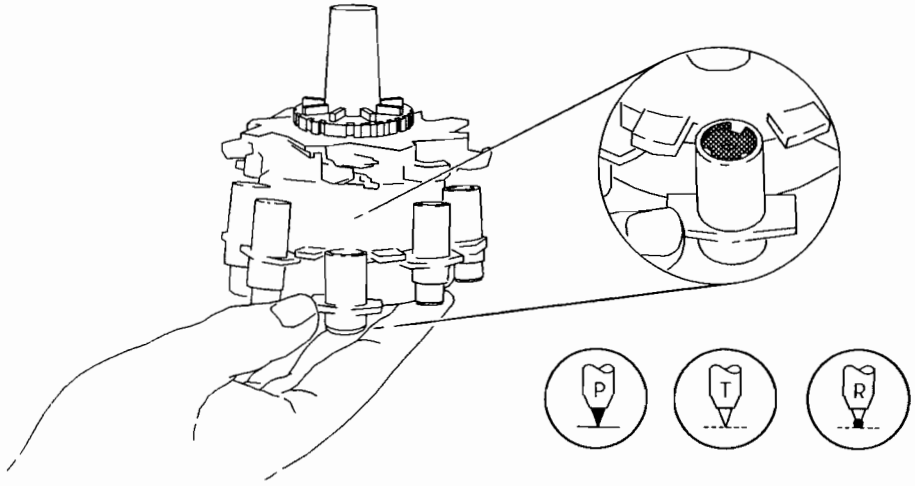
Occasional Mixing

1. Insert the different types of pens into the carousel.
2. Use front panel or programming commands to set speed and force for pens that are different.
3. After plotting, store different pens outside the carousel so they don't dry out. Carousels use boots designed for their pens; other pen types are not sealed.

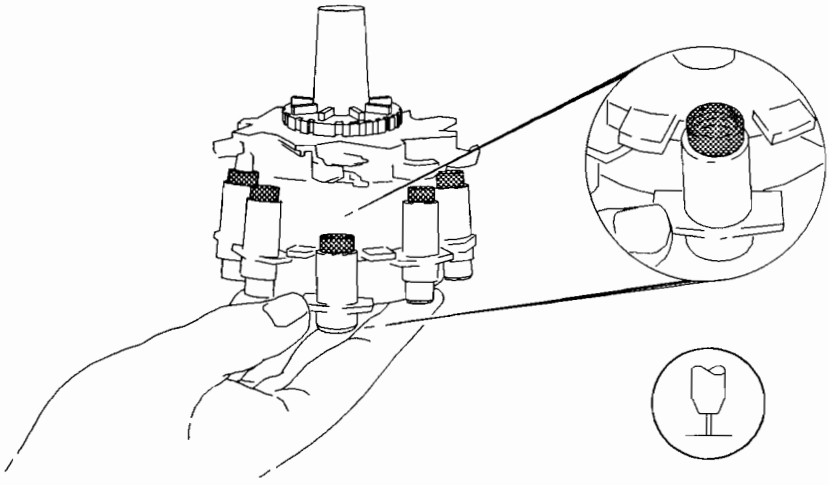
Frequent Mixing

If your application regularly requires mixing pen types on a single plot, you can customize a carousel by using the correct boot for each pen type. The correct boots prevent ink from drying out and lengthen pen life.

1. Determine which type of boots you need.
   a. Paper, roller-ball, and transparency pens use boots like rubber washers.



b. Refillable and disposable drafting pens use the larger boots.



2. Remove the boot. For drafting pen boots, pinch the rubber boot and pull up. For the small paper, transparency, and roller-ball boots, insert a pencil into the center of the boot and gently pull up. Store the boots for future use.

3. Place the correct boot in the stall's pen cap. Use a pen or pencil to push the boot down, until it is securely seated in place.

4

Maintenance

What's in This Chapter

This chapter will help you to

- clean the plotter
- maintain refillable drafting pens

Cleaning the Plotter

Plotter maintenance is limited to cleaning. All other maintenance must be performed by qualified service personnel. Cleaning the carousels removes ink accumulated on the rubber pen caps. Cleaning the grit wheels ensures plotting accuracy.

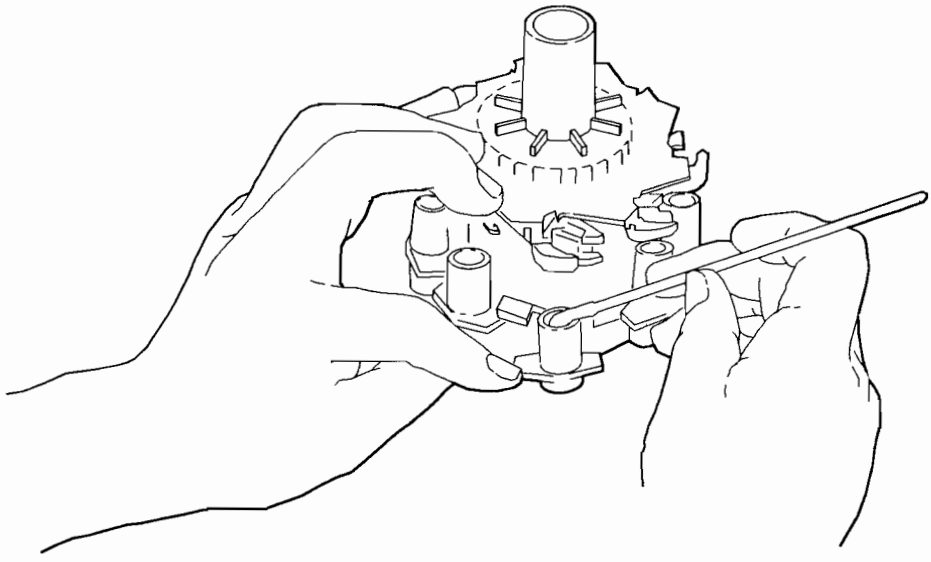
WARNING

To prevent electrical shock, unplug the plotter before cleaning. Do not allow water or other liquids to run inside the plotter.

When cleaning the plotter, use the following instructions.

1. Wipe the plotter surface with a damp sponge or soft cloth. If necessary, clean with a 50–50 solution of isopropyl alcohol and water. Wipe with water to rinse off any residue and dry with a soft lint–free cloth. *Do not use abrasive cleaners, cleaning solvents, or strong detergents.*

2. Use a cotton swab to wipe dust and lint from the surface of the pen holder.



3. Remove the pen carousel from the plotter and remove any pens. Clean the black rubber boots with a cotton swab moistened in isopropyl alcohol or pen cleaning solution. Let the carousel dry completely before inserting pens.

4. Clean the grit wheels. This will maintain plotter accuracy.

   a. Turn on the power switch.

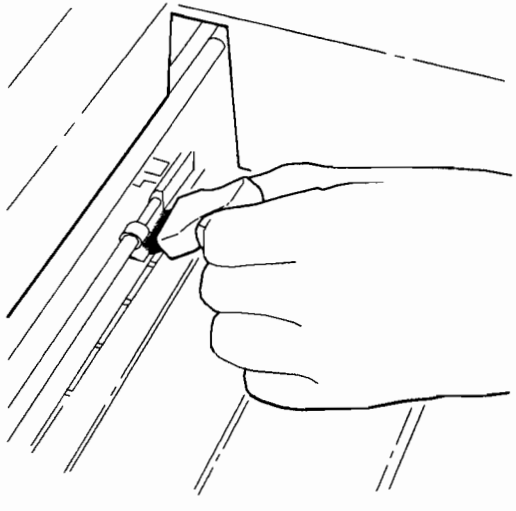
   b. Raise the carriage cover.

CAUTION

Using any brush other than the one supplied with the plotter may damage the grit surface on the wheel. Cleaning solutions may dissolve the adhesive that secures the grit particles to the wheels.

---

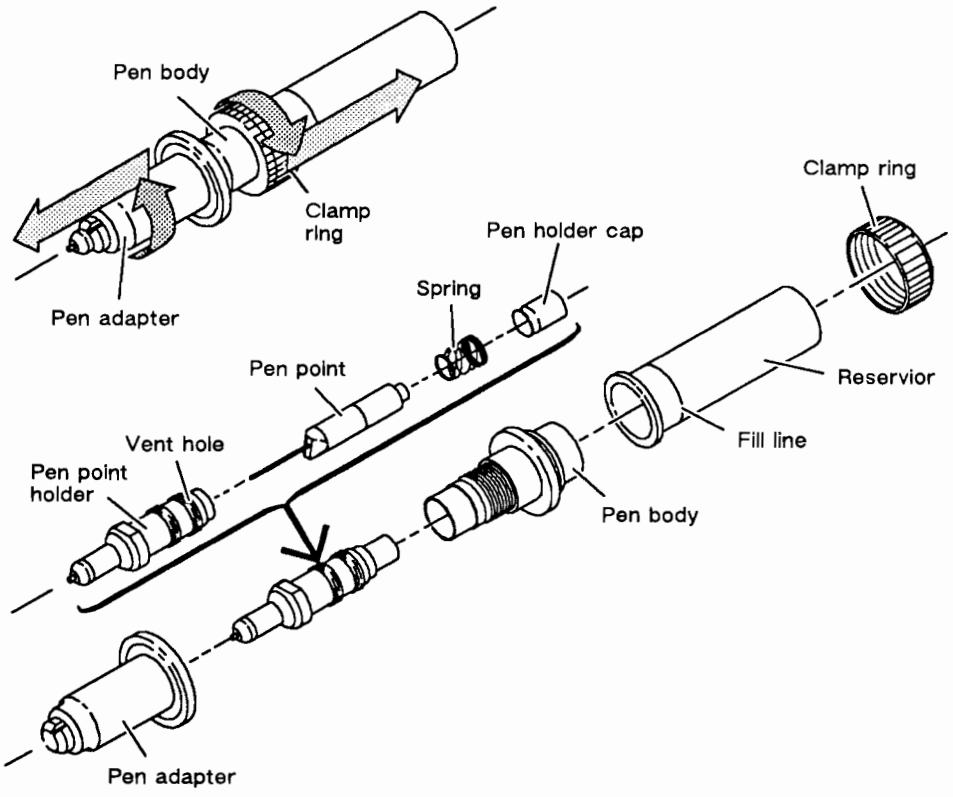
   c. Press the down arrow cursor button to slowly rotate the grit wheels. While the grit wheels are rotating, use the brush supplied with the plotter to brush dust from the grit surface.



Maintaining Refillable Drafting Pens

For good line quality, clean your drafting pens after each plotting session. Maintaining your drafting pens will improve their reliability. Complete the following steps to disassemble, clean, and reassemble an HP drafting pen.

1. Unscrew each part to disassemble the pen as shown in the following illustration. **Take care not to bend the pen point.**



2. Thoroughly clean all parts under warm running water. A toothbrush and a very small bottle brush are helpful.

3. Dry all parts thoroughly with a tissue, inside and outside.

4. Holding the pen point holder, cover the vent hole with your finger and blow compressed air into the wide end. Repeat as necessary to remove all water.

5. Reassemble the pen as follows.

   a. Gently lower the pen point into the pen point holder.

   b. Place the spring in the pen holder cap, and press the cap onto the top of the pen point holder.

   c. Screw the pen point holder into the pen body.

   d. Screw the pen adapter onto the pen body.

   e. Replace the reservoir on the pen body.

   f. Slide the clamp ring over the reservoir to the pen body and screw in place.

Filling the Drafting Pen with Ink

Complete the following steps to fill a pen with ink.

1. Unscrew the clamp ring and remove the reservoir from the pen body.
2. Hold the ink reservoir upright and add ink to the fill line. Don't overfill.
3. Gently insert the large end of the pen body into the open end of the reservoir. Replace the clamp ring.
4. Shake the pen (point down) to force ink into pen point.
5. Moisten the point and draw with the pen until ink appears.
6. Immediately cap or load the pen into the drafting pen carousel.

NOTE: Be very careful not to bend the pen point when you reload the pen in the pen carousel.■

5

Troubleshooting

What You'll Learn in This Chapter

This chapter is divided into the following sections.

Having the Plotter Serviced

Before having your plotter serviced, make certain the malfunction is in your plotter and not the result of an interface problem, or a malfunction in your computer or software. If a repair is needed, contact the Hewlett-Packard dealer or HP Sales and Support Office where you purchased the plotter.

Plotter Operation Problems

Use this section if the plotter does not turn on; the front-panel controls do not work; or if pens are not picked from or returned to the carousel.

NOTE: If the front-panel display is on, but you do not hear the plotter, the fan has turned off. This is normal.■

Plotter Does Not Turn On

If the front-panel display will not go on, try the following:

1. Check that the power cord is plugged both into the plotter's power socket and also into an electrical outlet that you *know* works.

2. Turn off the plotter and unplug it. Check the fuse at the rear of the plotter.

WARNING

Always turn off the plotter and unplug it before changing the fuse. To prevent a fire hazard, always replace the fuse with one of the same type and rating.

---

3. If the front-panel display won't stay on or is intermittent, have the plotter and power cord serviced.

Front Panel Does Not Work

1. Do some buttons fail to respond while a plot is in progress? This is normal for some menus. For best results, store menu settings *before* beginning your plot.

2. Is anything obstructing the movement of the paper or the pen holder? When you turn the plotter off and then on again, the pen holder should move to the left side, then return to the right side of the plotter.

Pens Are Not Picked Up or Returned to the Carousel

1. If the message **Check Carousel, Press •** displays, check the carousel and make sure that each pen is correctly loaded, as described in Chapter 1.

2. Turn the plotter off and raise the cover. Gently slide the pen holder from one side of the plotter to the other. The pen holder should move freely. If the pen holder and drive belt do not move freely, have the plotter serviced.

3. When you press lightly on the pen holder, it should move down toward the surface of the paper and then spring back when released. If it does not, have the plotter serviced.

4. The spring-loaded jaws of the pen holder should move outward and then spring back into place when released. If they do not, have the plotter serviced.

5. Remove the carousel. Check the pen stalls for damage. The spring-loaded jaws of each pen stall should move inward freely and spring back when released. The rubber pen-capping mechanism of each pen stall should move downward freely and spring back when released. If these mechanisms do not move freely, have the carousel serviced.

6. Turn the plotter on and load a sheet of paper. Load the carousel with eight pens. Press each **Pen Select** button in turn. If each pen is not picked from the carousel and returned properly, have the plotter serviced.

NOTE: To avoid pen picking problems, use only Hewlett-Packard pens.■

Plotter/Computer Communication Problems

Check the individual parts of your system.

1. Check the plotter. Run the demonstration plot. If the demonstration plot is not drawn correctly, have the plotter serviced.

2. Check the computer. If the problem is in your computer, do not connect your plotter to the system until the problem is solved.

3. Connect your plotter to your computer, according to the instructions in the *Computer Information* manual. Does the interconnection test program run correctly?

   No —Reread the instructions in the *Computer Information* manual. Make sure your interface settings (HP-IB or RS-232-C) are correct. Verify that you are using the correct interface cable and that it is securely fastened to both the computer and plotter. If the problem persists, check your interface cable and interface card.

   Yes —Your computer and plotter are communicating correctly. Try using the plotter.

Software Problems

Before checking software, make sure your plotter and computer are communicating successfully, as described in the previous section.

1. Are you writing your own program? Make sure your program instructions are correct. If you are using a serial RS-232-C interface, check the instructions that establish RS-232-C conditions. If you are using a Centronics interface, make sure you specify 'LPT' or the equivalent in your software. In all cases, make sure you have included any communication statements (such as OPEN) required by your computer.

2. Are you using a software package? Does your software offer menu selections of plotter names or model numbers? Check your software documentation, vendor, or manufacturer to determine if the software package supports the plotter.

   If your software lists the HP 7550, set the **HP 7550A** emulate mode on and use the software menu to select the HP 7550A. Verify that the plotter's interface settings match the requirements of your program or software. Correct the settings, then turn the plotter off and on, and try running the software with the plotter again.

3. Verify that the software supports your computer. Does your software documentation list the HP 7550A or HP 7550B (Plus)? Is the plotter available as a menu selection? Check with the software vendor to see if the plotter is supported.

4. If your software documentation recommends a cable other than the one you are using, turn the plotter and computer off and replace your cable with the recommended cable. If the problem persists, contact the software vendor.

Plot Location Problems

Use this section if your plots are not oriented the way you'd like or if only part of your plot is drawn on the page.

Plot Is Not Oriented Correctly

1. The front-panel settings of **Rotate** or **P1** and **P2** may have been changed from their default values. Check the settings of each of these items, or use **Reset** to return them to their default settings.

2. If your software lets you select media size, make sure you selected the same size as the media you are using.

3. Does your software offer menu selections of plotter names or model numbers?

   No —Check your software documentation, vendor, or manufacturer to determine if the software package supports (works with) the plotter.

   Yes —If your software lists the HP 7550, set the **HP 7550A** emulate mode on and use the software menu to select the HP 7550A

4. If you are writing your own program, does it contain an HP-GL/2 SC or IP instruction?

   No —Check that you have specified the correct X, Y coordinates in your program. If you are using absolute coordinates, verify the location of the origin for your media size. If you get results on large paper, but not on small paper, you have exceeded the hardclip limits of the paper size. Refer to the *HP-GL/2 Reference Guide* for details.

   Yes —Your problem may be related to scaling. Refer to the explanation of the SC and IP instructions in the *HP-GL/2 Reference Guide.*

Plot Is Incomplete

1. If the message **X-Axis, Y-Axis failure** or **Check Pen and Paper** displays, remove the paper and check the pens. If you are using drafting pens, be sure the adapter is secured tightly. Turn the plotter off and then on again. If the failure message continues to display, have your plotter serviced.

2. If the paper does not move back and forth during plotting, have the plotter serviced.

3. **Rotate** may cause some plots to be plotted off the page. Try running the plot with **Rotate** off.

4. If you are writing your own programs and **Buffer Overflow** displays, refer to the *HP-GL/2 Reference Guide* and check your program instructions.

5. If **I/O Buffer Overflow** displays and you are using the RS-232-C interface, you may have a communication problem. See the section above, *Plotter/Computer Communication Problems*.

6. Check your cable. Refer to Appendix B for the correct cable number. Turn your equipment off and replace your cable with a cable you know is working.

7. Remove your carousel and check for missing or damaged pens.

Buffer Problems

Use this section if you have any of the following problems

Plotter Will Not Make Copies

1. Does the **Disabled: Buffer Empty** message appear when you press **Copies**? This means the buffer is empty. Send the plot again from your computer.

2. Does the **Buffer Overflow** message appear when you press **Copies** with **Batch** on? If you don't have an extended memory board (see Chapter 6), the buffer may be insufficient to hold your plot. Turn off **Batch** from the front panel.

Plotter Copies more than the Current Plot

If the plotter copies more than just the current plot, your software may not be sending end-of-file markers. Try various **Timeout** settings to find a value which works best. The default setting should work with most applications. The optimal **Timeout** value ensures that **Copies** and **Restart** function correctly.

Restart Does Not Work

You may get a **Buffer Overflow** message when you press **Restart** if your plotter does not contain a 1 or 2 megabyte memory board (see Chapter 6)

Some of the Previous Plot Appears on a New Plot

When you stop a plot with the **Reset**, **Cancel** or **Clear** buttons, computer data continues to fill the buffer until end-of-file is reached. Your next plot may begin with this 'residue'. To completely stop the plot, first stop the job at the computer.

Plot Quality Problems

In general, you should be aware of the following rules.

- Use a correct pen/media combination, as recommended in Chapter 3. The quality of the supplies affects final plot quality, positioning, and repeatability.
- Changes in humidity or temperature during the course of a plot can cause media to stretch or shrink, affecting plot quality.
- Let media acclimate to your plotter's environment for 15 to 30 minutes prior to plotting. The plotting environment must be stable.

Line Quality is Not Satisfactory

1. Ensure that the plotter is not bumped during plotting.
2. Check that paper movement is not obstructed.
3. If lines have an uneven quality, remove the carousel and replace any damaged or dried-out pens.
4. Pen speed and force affect plot quality. Use the correct carousel for your pen type. Use **Reset** to set pen speed and force to their defaults.
5. Reducing pen speed can improve line quality. Use the front-panel **Speed** menu or the programming instruction, VS, to lower your pen speed.
6. When filled areas are edged, are the outlines smeared? Use the front panel to turn **Sort** off.
7. Does the ink flake off the medium? If you have treated the media with a cleaning powder or other compound, the ink may be adhering to this powder.
8. Are you using Hewlett-Packard pens and media? HP pens and media are designed to work with your plotter to produce sharp, clear lines.

Supplies Problems

Use this section if pens aren't lasting long enough or media tears during plotting.

Pens Dry in the Carousel

In dry climates and at high altitudes ink dries out more rapidly than in humid environments. In a dry environment you must take extra care to cap pens.

1. Pens dry out if they remain in the carousel for a long time. Remove pens from the carousel and replace the caps if you won't be using them for several days. Store pens vertically with the caps up.
2. Are any of the rubber boots in the carousel pen stalls damaged or loose? If any pen caps are damaged or missing, see Appendix B to order new ones.
3. Pens should not be stored longer than the shelf life indicated on the package.
4. If you are you using refillable drafting pens, see Chapter 4.

Paper Tears During Plotting

1. Is your media is warped or defective?
2. Are you using high quality media?
3. Are any of the pens in the carousel damaged?
4. Are you using a recommended pen/media combination (see Chapter 3)?
5. Are you using the correct carousel (see Chapter 3)?
6. Are you using the recommended speed and force. If the speed and force have been changed from the front panel, use **Reset** to return to the default settings.
7. If you are using double-matte polyester film, check that it is 3-mil.
8. If your plot contains many closely-spaced lines, use a tougher media or change plotting conditions to allow ink time to dry before more lines are drawn.
9. If the condition persists, have the plotter serviced.

6

Installing the RAM Memory Board

Computers can send data faster than plotters can draw, which means your computer will have to wait for your plotter to finish drawing. To let your computer operate more efficiently, you can add an optional one- or two-megabyte RAM memory buffer to the plotter. The buffer temporarily stores plots until the plotter is ready to draw them. The buffer keeps your computer free by receiving data as fast as the computer can send. As it sends data to be plotted, the buffer empties, allowing it to accept additional computer data.

In addition to keeping your computer free, the buffer retains the last-drawn plot in memory. This enables you to request up to 99 additional copies of the drawing without re-sending it from your computer. You can also stop a drawing in progress and restart it without having to re-send the plot from your computer.

This chapter tells you how to add extra memory to your plotter. The HP 7550 Plus plotter can accept either the HP 33474X one-megabyte or HP 33475X two-megabyte RAM memory board (X indicates that the last digit may change).

Protect the Board and Yourself

Before installing the memory board, you should observe the following:

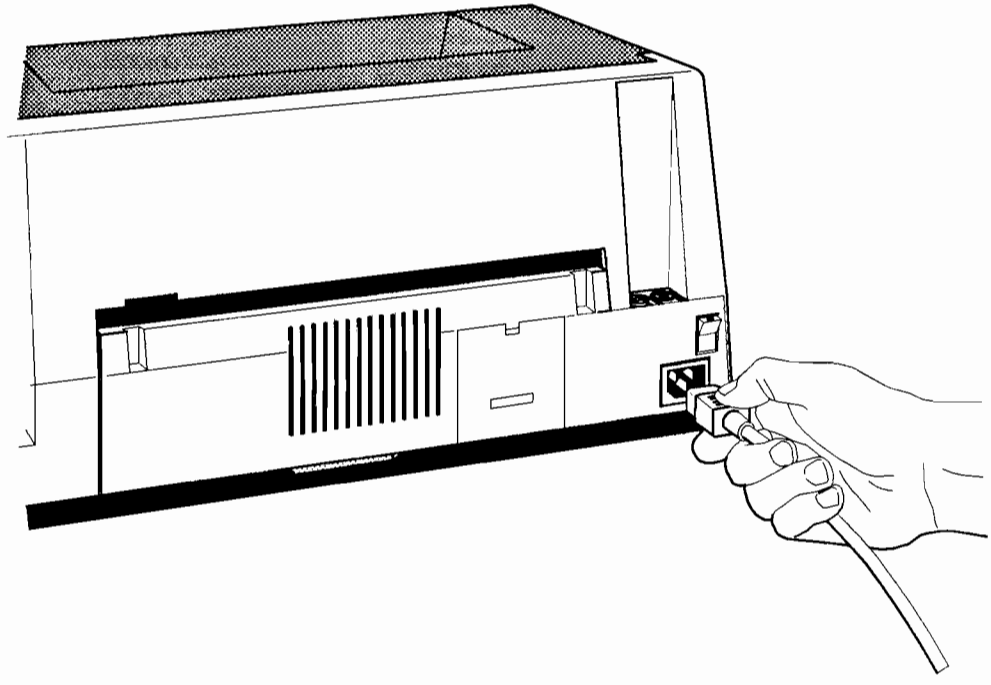
- Always turn off and unplug the plotter before installing the board.
- The memory board can be easily damaged by small amounts of static electricity. Before removing the board from its anti-static bag, touch the surface of the bag and touch any bare sheet metal surface on the plotter (such as the bottom of the plotter, or one of the I/O connectors). Handle the board only by its edges.

Always Unplug the Plotter

Before installing the memory board, make sure you turn off and unplug the plotter.

WARNING

Hazardous voltages are present in the plotter. Never remove any access cover or work near exposed electrical parts when power is connected.



Unplug the Plotter

Protect the Board from Static Electricity

Use the following precautions to insure against component damage.

CAUTION

The electrical components on the board can be easily damaged by small amounts of static electricity.

Before removing the board from its anti-static bag, touch the surface of the bag and touch any bare sheet metal surface on the plotter (such as the bottom of the plotter, or one of the I/O connectors).

- To prevent static electricity buildup, avoid activities such as moving about the work area, especially if it is carpeted.
- Handle the board carefully by its edges. Never flex or put excessive pressure on it. Avoid touching board components.
- If possible, use an anti-static wrist strap and a grounding mat such as those included in the Electrically Conductive Field Service Grounding Kit (HP 9300-0933).

Installing the Memory Board

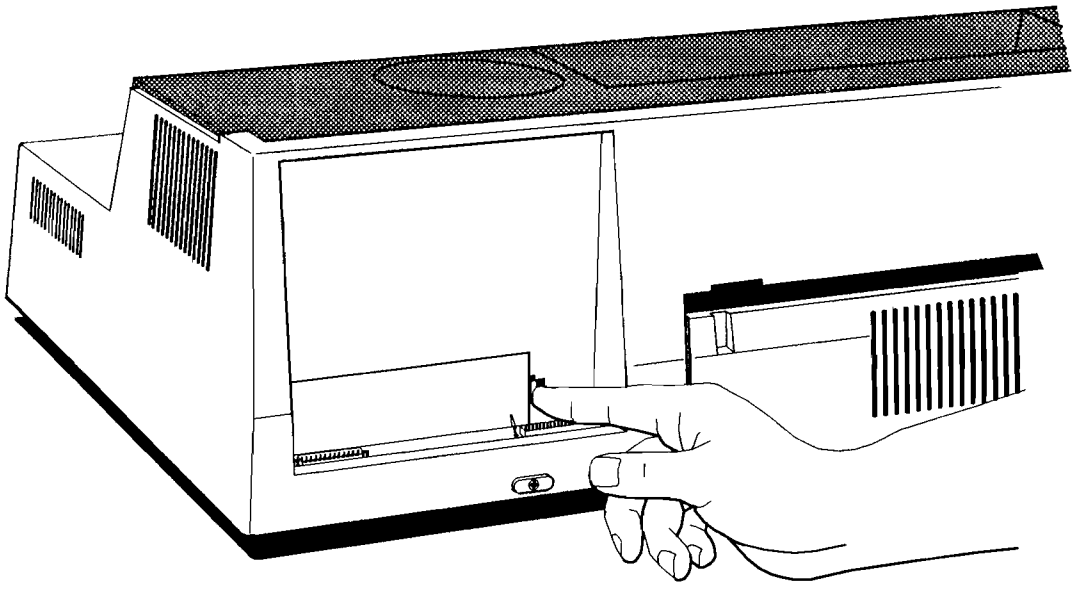
1. Before installation, identify the board.

   The part number on the *package* (not the board) should be 33474X for the 1 Mbyte board, and 33475X for the 2 Mbyte board (X indicates that the last digit may change). If you have the incorrect board, notify the local HP Sales and Service Office or authorized dealer immediately. If the board will not be installed immediately, place it in a cool, dry place in its original packaging.

2. Switch the plotter off and unplug the power cord.

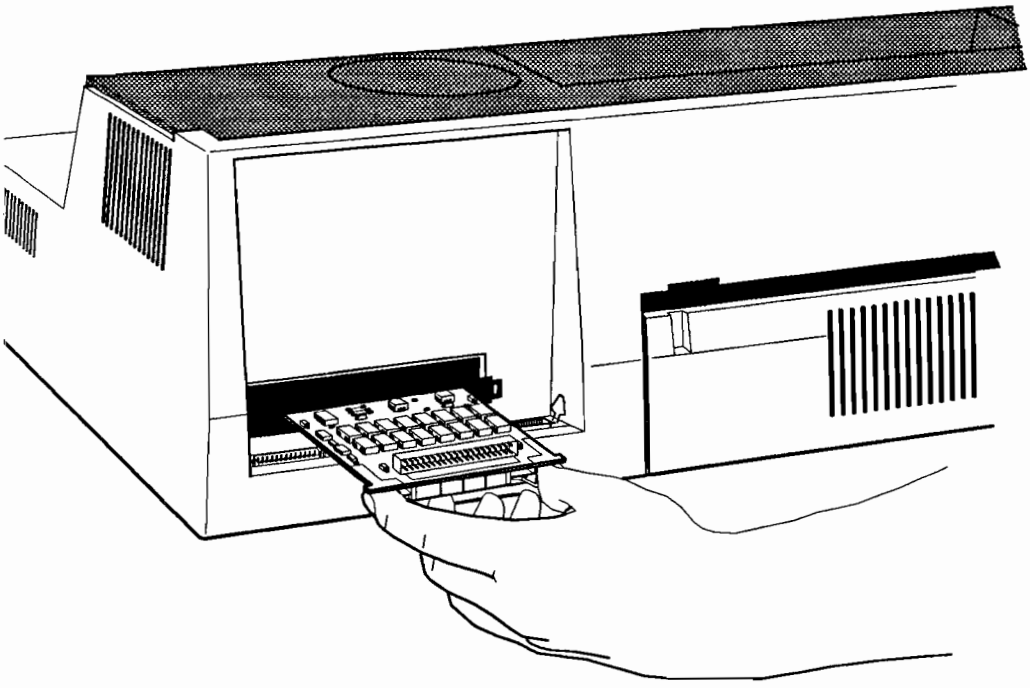
3. Disconnect any serial and parallel I/O cables from the rear of the plotter.

4. Remove the memory board cover in back of the plotter (on the left when looking at the rear). You may need to pry gently with a coin or screw driver.



Remove the Memory Board Cover

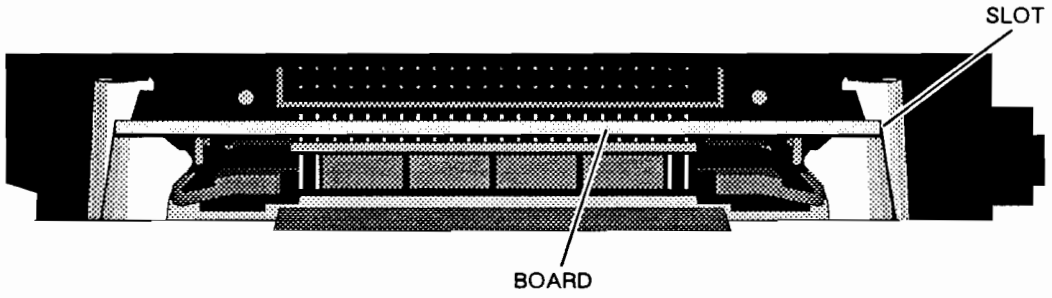
5. Holding the memory board by the green tabs, insert the board with the circuit components up. The board should slide easily into the white slots.



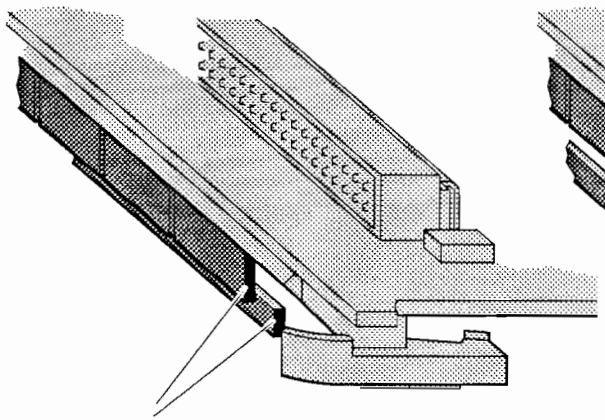
Slide the Board into the White Slots

6. The board goes into the slots easily, but must be pushed **very** hard the final distance. Place your free hand on top of the plotter and push the green area on the board **firmly** until the green tabs move outward.

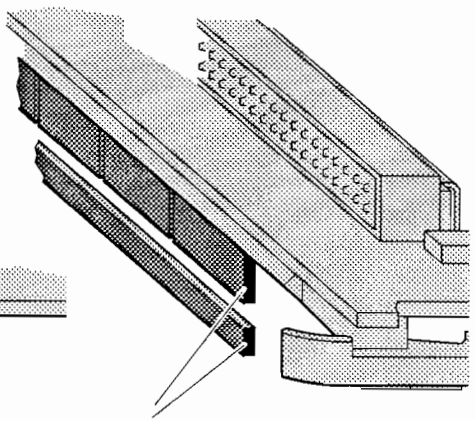
   To tell whether the board is inserted all the way, touch the green part of the board and the green ledge on the plotter. They should be **aligned**. See the side view below.



Front View — Board Inserted in White Slots



Side View — Board Not Fully Inserted



Side View — Board Fully Inserted

Test the Installed Board

1. Replace the memory board cover.

2. With the power switch off, plug in the power cord and I/O cables. Then switch the plotter on.

3. Depending on the memory board you have installed, the front panel should display for about 5 seconds either: **1 MB Optional Memory Loaded** or **2 MB Optional Memory Loaded**. If no board is installed, the display will show **No Optional Memory Loaded**.

Troubleshooting

If the **Memory** display in the above test does not indicate that the memory board is installed, perform the following steps.

1. With the power off, check for correct installation.

   a. Read step 6 again in the section above 'Installing the Memory Board'. Check that the green part on the board and the green ledge on the plotter are aligned.

   b. If you are still unsure whether the board is inserted all the way, pinch the green ejectors on the board together. If the board moves out, it was installed correctly: push it back in. If the board does not move, it was not all the way in: push harder until the ejectors move outward.

2. Make sure you have the correct board, as described in step 1 of the section above 'Installing the Memory Board'.

3. Contact your Hewlett-Packard dealer or HP sales and Support Office for servicing information.

Removing the Memory Board

Do not remove the board except for maintenance. The connectors are not designed for continuous multiple removals.

1. Access the memory board by repeating steps 2–4 under 'Installing the Memory Board'.
2. Unseat the board by squeezing the green tabs together while pulling toward you.
3. Place the board in anti-static packaging and store in a cool, dry place.

A

Technical Information

This appendix contains the following information.

- summary of front-panel menu settings
- front-panel flowchart
- front-panel prompts and error messages
- functional, physical, and environmental specifications

Front-Panel Summary

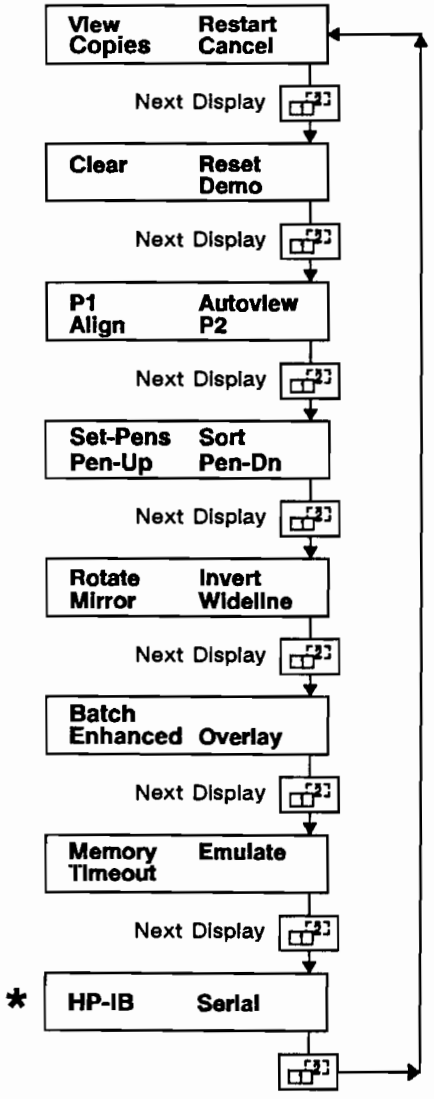
The following table lists the default setting of front-panel menu items, and indicates whether each setting is stored in temporary (volatile) or continuous (nonvolatile) memory. You can replace the defaults with front-panel controls. Menus that cause a direct action (and cannot be stored) are not listed.

Front-Panel Menu	Default Setting	Memory Type
Copies	1	temporary
P1/P2	varies with paper size	temporary
Autoview	off	continuous
Speed	varies with carousel type	temporary
Force	varies with carousel type	temporary
Thickness	.3	temporary
Group	1	temporary
Sort	on	continuous
Rotate	off	temporary
Invert	off	continuous
Mirror	off	temporary
Wideline	on	continuous
Batch	off	temporary
Enhanced	on	continuous
Overlay	off	continuous
Memory	on	continuous
Emulate	7550A	continuous
Timeout	30 min.	continuous
HP-IB	05	continuous
Dataflow	Remote/Standalone	continuous
Baud	9600	continuous
Parity	0	continuous
Hardwire	on	continuous
XON/XOFF	on	continuous
Bypass	off	temporary
Monitor	off	temporary
Duplex	full	continuous
Autodisc	off	continuous

Use **Reset** to return settings stored in temporary memory to their default values. To restore settings stored in continuous memory to their default values, hold down the center **Cursor Control** button as you turn the plotter on.

Front-Panel Flowchart

The following flowchart illustrates the plotter's front-panel menus. Note that **HP-IB** does not appear if you have the Centronics interface option.



*On the Centronics option interface, **HP-IB** does not appear and this area is blank.

Front-Panel Messages

This section explains the plotter's front-panel messages.

Message	Reason for Display
LOAD PAPER TO PLOT	Paper not loaded or loaded improperly
LOAD PAPER TO COPY	Paper not loaded or loaded improperly.
DISABLED: BUFFER EMPTY	There is nothing in the buffer to copy.
BUFFER OVERFLOW	The buffer does not have enough room for the plot. You may get this message if you press **Copies** with **Batch** on and the plotter does not have an extended memory board, or if you use **Restart** without an extended memory board.
IO BUFFER OVERFLOW	Usually indicates a communication problem when using the RS-232-C interface.
PUT IN CAROUSEL	Carousel not loaded in plotter or loaded improperly.
PEN PUT FAILED	Pen not returned to carousel correctly. Remove carousel and remove any pens from the carousel well.
LOWER COVER PRESS •	Cover raised.
CHECK CAROUSEL PRESS •	Pens incorrectly loaded or carousel improperly loaded in carousel well.
CLEARING BUFFERS...	Plotter's input and replot buffers are being emptied.
RESETTING PLOTTER...	Plotter's input and replot buffers are being emptied and certain menu settings returned to default.

(Table continues)

DIGITIZE POINT ● Pen-Up Pen-Dn	When digitizing, tells you to raise and lower the pen.
X-AXIS FAILURE or Y-AXIS FAILURE SEE MANUAL	Turn the plotter off and remove any obstructions from the platen. Turn the plotter off and then on again. If the plotter continues to display one of these messages, call your HP Dealer or Sales and Support Office for service information.
CHECK PEN AND PAPER	Pen is badly worn, pen adapter is not secured to the drafting pen body, or pen is missing. Also, media may be torn. Check pens and paper. If plotter continues to display the message, call your HP Dealer or Sales and Support Office for service information.
100: SEE MANUAL	Turn plotter off and then on again. If the message continues to display, the plotter needs to be repaired. Contact your HP Dealer or Sales and Support Office for service information.
200: SEE MANUAL	Contact the HP Dealer or Sales and Support Office where you purchased the plotter for service information.
FILE TOO BIG NO COPIES	Current plot is too big to be copied.

The following messages report programming and communication errors. If one of these messages displays, the plotter is not malfunctioning — the problem is in your program or software package. If you are writing your own programs, refer to *The HP-GL/2 Reference Guide.*

Programming Error Messages	
1: Command not recognized 2: Wrong number of parameters 3: Bad parameter 5: Unknown character set 6: Position overflow 7: Buffer overflow 10: Invalid I/O output request 11: Invalid byte following ESC.	12: Invalid byte in I/O control 13: Out of range I/O parameter 14: Too many I/O parameters 15: Error in I/O transmission 16: I/O buffer overflow 17: Transmit underrun 18: I/O error indeterminate

Functional Specifications

Number of Pens	8
Pen Types	fiber-tip paper pens roller-ball pens drafting pens transparency pens
Media Sizes	8½ × 11 in. (ANSI A) 210 × 297 mm (ISO A4) 11 × 17 in. (ANSI B) 297 × 420 mm (ISO A3)
Media Types	plotter paper, glossy presentation paper, overhead transparency film, vellum, tracing bond, double-matte polyester film
Maximum Plotting Area*	Pen axis: 254.0 mm (9.97 in.) for A/B; 272.0 mm (10.65 in.) for A4/A3 Paper axis: 196.0 mm (7.68 in.) for A; 190.0 mm (7.45 in.) for A4; 411.0 mm (16.12 in.) for B; 399.0 mm (15.65) in. for A3
Resolution	addressable step size: 0.025 mm (0.000984 in.)
Pen Speed	maximum 80 cm/sec
Acceleration	maximum 5 - 7 g

*Margins listed above are approximate; exact values may vary by a millimeter.

Physical Specifications

Size	depth: 17 in. (432 mm) width: 26.4 in. (670 mm) height: 8.5 in. (215 mm)
Weight	38 lb. (17.3 kg)

Environmental Specifications

Operating Temperature	0°C to 55°C
Operating Humidity*	5 to 95% at 0 to 40°C
Nonoperating Temperature	–40°C to 75°C

*Media must be acclimated to the plotting environment, according to the instructions given in Chapter 3. The operating environment for sheet feed is 15°C to 40° C and 20% relative humidity to 80% relative humidity.

Auto Sheet Feeding Specifications

	Paper	Transparencey
Temperature	10°C to 40°C	15°C to 35°C
Humidity	20% to 80%	25% to 75%

A

Power Specifications

The following section lists the plotter's power requirements and options.

Requirements

Source	100, 120, 220, 240 V~–10%, +5%
Frequency	48–66 Hz
Consumption	105 W maximum

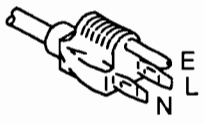
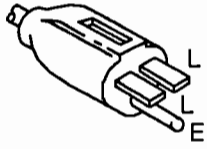
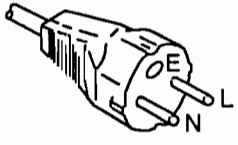
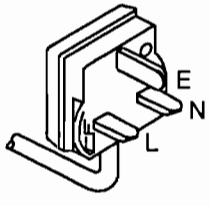
Options

The power cord supplied with your plotter should match the plug requirement for your area. However, different power cords (international options) are available, as shown in the table on the following pages. To obtain a different power cable and, if necessary, modify your plotter for a different power source, contact your local Hewlett-Packard Sales and Support office or authorized dealer.

WARNING

The voltage setting must be changed by a qualified service person.

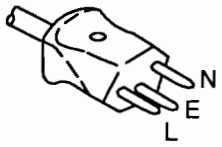
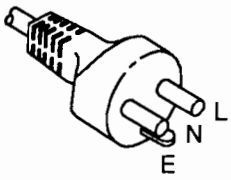
Power Cord Options

AC Plug Type*	AC Voltage	Country	HP Part Number
 NEMA 5–15P	100 or 120 V	Canada Japan Mexico Philippines Taiwan United States	8120-1378
 NEMA 6–15P	220 or 240 V	United States	8120-0698
 CEE 7–VII	220 or 240 V	East and West Europe Egypt Saudia Arabia	8120-1689
 BS 1363A	220 or 240 V	United Kingdom	8120-1351

(Table continues)

A

Power Cord Options (Continued)

AC Plug Type*	AC Voltage	Country	HP Part Number
 ASC112	220 or 240 V	Australia New Zealand	8120-1369
 SEV 1011	220 or 240 V	Switzerland	8120-2104
 DHCK-107	220 or 240 V	Denmark	8120-2956

* L = Line or Active Conductor (also called "live" or "hot")
N = Neutral or Identified Conductor
E = Earth or Ground

Accessories Available

This appendix contains a list of available accessories and ordering information.

Plotter Accessories

The following items are available and can be purchased using the appropriate part number. For information on available pen and media supplies, refer to the *Supplies Catalog* shipped with your plotter.

Plotter Accessories and Cables

Item	HP Part Number
HP 7550 Plus User's Guide	
English	07550-90051
German	07550-90054
French	07550-90055
Spanish	07550-90056
Italian	07550-90057
Japanese	07550-90058
HP 7550 Plus Plotter Computer Information	
English	07550-90052
German	07550-90064
French	07550-90065
Spanish	07550-90066
Italian	07550-90067
HP-GL/2 Reference Guide	5959-9733
HP-GL/2 Comparison Guide	5959-9734
HP 7550A Interfacing and Programming Manual (HP-GL)	07550-90001

Plotter Accessories and Cables (Continued)

Item	HP Part Number
A-size (8 1/2 x 11 in.) media loading tray	17076A
A4-size media loading tray	17077A
B-size media loading tray	17078A
A3-size media loading tray	17079A
A-size media catcher	17080A
B-size media catcher	17081A
A3-size automatic media handling kit, containing: media loading tray media catcher A3-size media plotter paper, 50-sheet package	17092A
B-size automatic media handling kit, containing: media loading tray media catcher B-size media plotter paper, 50-sheet package	17093A
Pen Carousels For transparency pens For paper pens For roller-ball pens For drafting pens	 07550-60050 07550-60051 07550-60052 07550-60053
Power cable	see Appendix A
RS-232-C / CCITT V.24 female-female cable (for IBM personal computers)	17255F
RS-232-C / CCITT V.24 male-female cable (for HP 150, HP Vectra with the 25-pin serial interface)	17255D
RS-232-C / CCITT V.24 cable (for use with DEC VAX and HP 3000, series 64,42, and 48)	17355M (3m)
RS-232-C / CCITT V.24 cable (special 9-pin to 25-pin cable HP Vectra and IBM AT)	24542H
RS-232-C / CCITT V.24 male-female 25-pin cable for remote modem environment	17355D

Plotter Accessories and Cables (Continued)

Item	HP Part Number
Parallel shielded cable (for use with HP Touchscreen)	13242D (2m)
Parallel shielded cable (for use with Commodore Amiga 500/2000, HP Vectra, IBM PC/XT/AT, and AT&T PC 6300)	92284A (2.7m)
RS-422-A adapter cable (for HP 3000, series 64, 42, and 48)	17855A
HP-IB cable (IEEE 488-1978), RFI shielded (for HP Series 200 and 300)	10833A(1m) or 45529A(1m)
HP-IB cable (IEEE 488-1978), RFI shielded (for HP Series 200 and 300)	10833B (2m) or 45529B (2m)
Replacement boots for fiber-tip and rollerball pens	5061-7635
Replacement boots for drafting pens (disposable and refillable)	5061-7636
Digitizing sight	09872-60066
Grit wheel brush	8710-1386
Dust cover	07550-60210
Transparency ink solvent	5060-6828
Pen organizer (long pens)	92177U
Pen organizer (short pens)	92177T
RAM memory board (1 Mbyte)	33474X (X may change)
RAM memory board (2 Mbyte)	33475X (X may change)

Additional Documentation

The *HP-GL/2 Reference Guide* contains complete explanantions and examples of the basic Hewlett-Packard Graphics Language instructions. The companion document, the *HP-GL/2 Comparison Guide,* covers extensions to the basic instruction set and product-specific details. You will want to order these manuals if you are writing your own programs in HP-GL/2.

If you are using the plotter with older HP-GL software in **7550A Emulate** mode, you may also want to order the *HP 7550A Interfacing and Programming Manual* (HP PN 07550-90001). Disregard sections that apply to HP 7550A interfacing.

How to Order Supplies and Accessories

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

1. Call your local authorized HP dealer.
2. Contact your local HP Sales and Support office.
3. In the United States, use HP's Direct Order telephone service. The telephone number is provided in the *Supplies Catalog* shipped with your plotter.

For a complete list of Hewlett-Packard supplies and accessories, order the *Computer User's Catalog* (Part No. 5953-2450). You can obtain one by asking at your local HP Sales and Support office.

Subject Index

I

L

M

N

O

P

R

S

T

U

V

W

HEWLETT PACKARD

Manual Part Number: 07550-90051
Printed in U.S.A., April 1990