



Peripheral Installation Guide Volume 2

for HP 9000 Computers

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Adding Mass Storage Devices

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If you need to install any of the products listed below, turn to the indicated page number and follow the instructions. Otherwise, move on to Step 7.

IMPORTANT!

The "Worksheet Entries" in this section assume you will set your mass storage device's HP-IB address to 0, 2 or 3, and that you will connect it to an interface that is set to its preset select code (7 for built-in HP-IB, 14 for HP 98625 Disc, or 8 for HP 98624 HP-IB). If you use a different HP-IB address and/or select code, refer to "Msus/Unit Number/Minor Number" section to determine your BASIC msus (mass storage unit specifier), Pascal unit number or HP-UX minor number.



Device Name	Page Number
Model 226/236 Internal Disc Drives	See page 6-2
HP 7907A Disc Drive	See page 6-5
HP 7911, 7912, 7914 Disc/Tape Drives	See page 6-14
HP 7933 and 7935 Disc Drives	See page 6-30
HP 7941, 7942, 7945 and 7946 Disc/Tape Drives	See page 6-37
HP 7971A Tape Drive	See page 6-46
HP 7974A Tape Drive	See page 6-51
HP 7978A Tape Drive	See page 6-58
HP 9121 and 9122 Flexible Disc Drives	See page 6-65
HP 9125S Flexible Disc Drive	See page 6-75
HP 9133 and 9134 Disc Drives	See page 6-83
HP 9144A Tape Drive	See page 6-107
HP 9153 and 9154 Disc Drives	See page 6-116
HP 9895A Disc Drive	See page 6-140
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Determining Your BASIC Msus	See page 6-159
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Installing Model 226/236 Internal Disc Drives

Description

The Series 200 Model 226 has one built-in disc drive; the Series 200 Model 236 computer has two built-in disc drives. No additional set up is required for these drives, but you will need information on how to access them with your language/operating system. Refer to the instructions below.

The Next Step

The following "Worksheet Entries" contain information needed to use the internal disc drives with various language/operating systems. Refer to the entries for the system you'll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you'll be ready to install your next peripheral.

BASIC System Worksheet Entries

Device Name	Msus	Driver Name	Interleave Factor
Right Drive	“:,4”	-	0
Left Drive (Model 236)	“:,4,1”	-	0

Pascal Workstation Worksheet Entries

This section contains two tables of information. Choose the one that fits your situation, depending on whether you will or will not boot (load) the Pascal Workstation from an internal drive.

If You Will Boot from an Internal Drive...

Device Name	Unit Numbers	Module Name	Interleave Factor
Right Drive	#3:	-	0
Left Drive (Model 236)	#4:	-	0

If You Will Not Boot from an Internal Drive...

Device Name	Unit Numbers	Module Name	Interleave Factor
Right Drive	#7:	-	0
Left Drive (Model 236)	#8:	-	0

HP-UX System Worksheet Entries

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
Right Drive	<i>/dev/fd.0</i>	b	1	0x000000	0
Right Drive	<i>/dev/rfd.0</i>	c	6	0x000000	0
Left Drive (Model 236)	<i>/dev/fd.1</i>	b	1	0x000001	0
Left Drive (Model 236)	<i>/dev/fd.1</i>	c	6	0x000001	0

Installing the HP 7907 Disc Drive

Description

The HP 7907 is a Command Set 80 (CS/80) device containing a 20.5 Mbyte fixed disc and a 20.5 Mbyte removable cartridge disc. It connects to Series 200/300 computers via an HP-IB or Disc interface.

Support

The HP 7907 disc drive is supported on Series 200 Model 217, 220, 226, 236 and 237 computers with boot ROM 3.0 or later, and on all Series 300 computers with boot ROM Rev. A or later.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 3.0 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** supported on revision 3.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.
- **HP-UX Operating System:** supported on revision 2.1 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

Before You Begin

Before you connect your disc drive to your computer, refer to the manual(s) that came with the disc drive to:

- Unpack the disc drive.
- Check that your proposed site for the HP 7907 meets environmental requirements.
- Check the voltage setting.
- Check the fuse.

HP 7907 Disc Drive Installation Procedure

1. **Play It Safe.**
 - a. Turn your computer and disc drive off, if they are not already off.
2. **Select Your Interface.**
 - a. Select one of the following interfaces, listed in order of preference for optimum disc performance:
 - HP 98625 Disc Interface
 - Built-in HP-IB Interface
3. **Set the Address.**

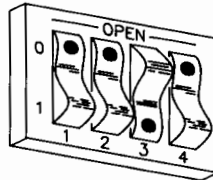
CAN YOU SKIP THIS STEP?

If this is the first (or only) disc or tape drive you are connecting to the interface, you can skip to step 4. The address is preset to 0 and need not be changed—*unless* you have changed the address of another device on the interface to 0.

- a. On the back of the disc drive, find the set of four switches labeled “HP-IB ADDRESS.”

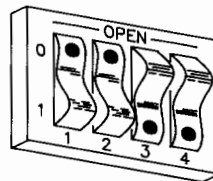
b. Set the HP-IB address:

- If there is only *one* other disc or tape drive (besides this HP 7907) already connected to the interface, set the “HP-IB ADDRESS” switches to 2 as shown below, unless address 2 has been used elsewhere.



Address 2

- If there are *two* other disc or tape drives (besides this HP 7907) already connected to the interface, set the “HP-IB ADDRESS” switches to 3 as shown below, unless address 3 has been used elsewhere. Refer to the manual that came with your disc drive if you need additional switch settings.



Address 3

4. Connect the HP 7907 to Your Computer.

- a. Find the HP-IB cable provided with the disc drive.
- b. Connect one end of the HP-IB cable to the HP-IB socket on the back of the HP 7907. Tighten the thumb screws to secure the connection.

- c. Connect the other end of the HP-IB cable to the interface.

NOTE

If the interface already has several cables connected to it, connect your HP 7907 cable to one of the other devices on the interface.

5. Connect the Power Cord.

- a. Connect the female end of the power cord to the “AC LINE” socket on the back of the disc drive, and connect the other end to your power outlet.

6. Record the Address.

- a. Make a note that address 0 (or the alternate address you chose in step 3) has been used and is no longer available on the interface you selected. Use the “Address Record” form on the Step 6 tab for this purpose.

The Next Step

You have now installed your HP 7907 Disc Drive.

The following “Worksheet Entries” contain information needed to use your disc drives with various language/operating systems. Refer to the entries for the system you’ll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral.

BASIC System Worksheet Entries

If You Connected the HP 7907 to the HP 98625 Disc Interface (Select Code 14)...

**And It Is the First Disc or Tape
Drive on this Interface (Address 0)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 7907 - Fixed Disc	“:,1400”	CS80	1
HP 7907 - Removable Disc	“:,1400,1”	CS80	1

**And It Is the Second Disc or Tape
Drive on this Interface (Address 2)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 7907 - Fixed Disc	“:,1402”	CS80	1
HP 7907 - Removable Disc	“:,1402,1”	CS80	1

**And It Is the Third Disc or Tape
Drive on this Interface (Address 3)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 7907 - Fixed Disc	“:,1403”	CS80	1
HP 7907 - Removable Disc	“:,1403,1”	CS80	1

BASIC System Worksheet Entries (Cont.)

If You Connected the HP 7907 to the Built-in HP-IB Interface (Select Code 7)...

And It Is the First Disc or Tape Drive on this Interface (Address 0)...

Device Name	Msus	Driver Name	Interleave Factor
HP 7907 - Fixed Disc	“:,700”	CS80	1
HP 7907 - Removable Disc	“:,700,1”	CS80	1

And It Is the Second Disc or Tape Drive on this Interface (Address 2)...

Device Name	Msus	Driver Name	Interleave Factor
HP 7907 - Fixed Disc	“:,702”	CS80	1
HP 7907 - Removable Disc	“:,702,1”	CS80	1

And It Is the Third Disc or Tape Drive on this Interface (Address 3)...

Device Name	Msus	Driver Name	Interleave Factor
HP 7907 - Fixed Disc	“:,703”	CS80	1
HP 7907 - Removable Disc	“:,703,1”	CS80	1

Pascal Workstation Worksheet Entries

NOTE

The Pascal Workstation, as shipped, will not be able to access all of the storage capacity of your HP 7907 removable disc. To correct this situation, refer to the "Special Configurations" section of the *Pascal Workstation System* manual.

Device Name	Unit Numbers ¹	Module Name	Interleave Factor
HP 7907 - Fixed Disc	# 11: thru #30:	DISCHPIB & CS80	1
HP 7907 - Removable Disc	<i>See Note Above</i>	DISCHPIB & CS80	1



¹ If you have more than one hard disc drive, the unit number assignments for your HP 7907 may be different from those shown. Refer to the section, "Determining Pascal Unit Numbers," found at the end of this chapter, after you have installed *all* of your discs.

HP-UX System Worksheet Entries

If You Connected the HP 7907 to the HP 98625 Disc Interface (Select Code 14)...

**And It Is the First Disc or Tape
Drive on this Interface (Address 0)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 7907 - Fixed Disc	/dev/hd7907.0	b	0	0x0e0000	1
HP 7907 - Fixed Disc	/dev/rhd7907.0	c	4	0x0e0000	1
HP 7907 - Removable Disc	/dev/hd7907.1	b	0	0x0e0010	1
HP 7907 - Removable Disc	/dev/rhd7907.1	c	4	0x0e0010	1

**And It Is the Second Disc or Tape
Drive on this Interface (Address 2)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 7907 - Fixed Disc	/dev/hd7907.0	b	0	0x0e0200	1
HP 7907 - Fixed Disc	/dev/rhd7907.0	c	4	0x0e0200	1
HP 7907 - Removable Disc	/dev/hd7907.1	b	0	0x0e0210	1
HP 7907 - Removable Disc	/dev/rhd7907.1	c	4	0x0e0210	1

**And It Is the Third Disc or Tape
Drive on this Interface (Address 3)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 7907 - Fixed Disc	/dev/hd7907.0	b	0	0x0e0300	1
HP 7907 - Fixed Disc	/dev/rhd7907.0	c	4	0x0e0300	1
HP 7907 - Removable Disc	/dev/hd7907.1	b	0	0x0e0310	1
HP 7907 - Removable Disc	/dev/rhd7907.1	c	4	0x0e0310	1

HP-UX System Worksheet Entries (Cont.)

If You Connected the HP 7907 to the Built-in HP-IB Interface (Select Code 7)...

**And It Is the First Disc or Tape
Drive on this Interface (Address 0)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 7907 - Fixed Disc	/dev/hd7907.0	b	0	0x070000	1
HP 7907 - Fixed Disc	/dev/rhd7907.0	c	4	0x070000	1
HP 7907 - Removable Disc	/dev/hd7907.1	b	0	0x070010	1
HP 7907 - Removable Disc	/dev/rhd7907.1	c	4	0x070010	1

**And It Is the Second Disc or Tape
Drive on this Interface (Address 2)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 7907 - Fixed Disc	/dev/hd7907.0	b	0	0x070200	1
HP 7907 - Fixed Disc	/dev/rhd7907.0	c	4	0x070200	1
HP 7907 - Removable Disc	/dev/hd7907.1	b	0	0x070210	1
HP 7907 - Removable Disc	/dev/rhd7907.1	c	4	0x070210	1

**And It Is the Third Disc or Tape
Drive on this Interface (Address 3)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 7907 - Fixed Disc	/dev/hd7907.0	b	0	0x070300	1
HP 7907 - Fixed Disc	/dev/rhd7907.0	c	4	0x070300	1
HP 7907 - Removable Disc	/dev/hd7907.1	b	0	0x070310	1
HP 7907 - Removable Disc	/dev/rhd7907.1	c	4	0x070310	1

Installing HP 7911, 7912, and 7914 Disc/Tape Drives

IMPORTANT!

These disc/tape drives are to be installed by HP Customer Engineers.
The installation cost is included in the purchase price of the unit.

Description

These disc/tape drives are Command Set 80 (CS/80) devices.

Support

The HP 7911P/R, HP 7912P/R, HP 7914CT and HP 7914P/R are supported on all Series 200 computers with boot ROM 3.0 or later, and on Series 300 computers with boot ROM Rev. A or later.

Operating/Language system support is as follows:

- **BASIC:** The HP 7911 and HP 7912 are supported on revision 2.0 or later with Series 200 computers, and are supported on revision 4.0 or later with Series 300 computers. The HP 7914 is supported on revision 3.0 or later with Series 200 computers, and is supported by revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** The HP 7911 and HP 7912 are supported on revision 2.0 or later with Series 200 computers, and are supported on revision 3.1 or later with Series 300 computers. The HP 7914 is supported on revision 3.0 or later with Series 200 computers, and is supported by revision 3.1 or later with Series 300 computers.
- **HP-UX Operating System:** supported on revision 2.0 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

Before You Begin

Your HP Customer Engineer will unpack and install your disc/tape drive for you. The following procedure describes how to connect your disc/tape drive to your Series 200/300 computer.

HP 7911, 7912 and 7914 Installation Procedure

CAUTION

DO NOT ATTEMPT TO OPERATE THE UNIT UNTIL IT IS MOVED TO THE INSTALLATION SITE AND THE SPINDLE AND ACTUATOR ARE UNLOCKED.

DO NOT APPLY ANY SUDDEN MECHANICAL SHOCKS TO THE UNIT.

1. Play It Safe.

- a. Make arrangements with your HP Customer Engineer to have your disc/tape drive unpacked and installed.
- b. Turn your computer and disc drive off, if they are not already off.

2. Select Your Disc's Interface.

- a. Select one of the following interfaces, listed in order of preference for optimum disc performance:
 - HP 98625 Disc Interface
 - Built-in HP-IB Interface

3. Select Your Tape's Interface. (Dual Controller Only).

CAN YOU SKIP THIS STEP?

If you have dual controllers, your 7911/12/14 will have two HP-IB sockets on the back, one for the disc and one for the tape. If you have dual controllers, continue with step 3; otherwise skip to step 4.

a. **HP-UX Recommendations:**

- If you selected an HP 98625 Disc Interface for your disc, use the built-in HP-IB Interface for your tape.
- If you selected the built-in HP-IB interface for your disc, use an HP 98624A HP-IB Interface for your tape (if available).
- Otherwise, use your built-in HP-IB interface for both disc and tape.

b. **BASIC and Pascal Workstation Recommendations:**

- Connect the tape drive to the HP 98625 Disc Interface or to the built-in HP-IB interface.

4. **Set the Disc Address.**

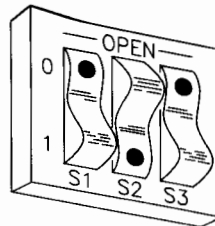
CAN YOU SKIP THIS STEP?

If this is the first (or only) disc or tape drive you are connecting to the interface, you can skip to step 5. The address is preset to 0 and need not be changed—*unless* you have changed the address of another device on the interface to 0.

a. On the back of the disc drive, find the set of three switches labeled “HP-IB DISC.”

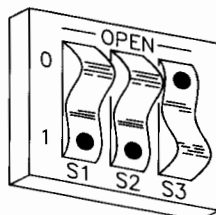
b. Set the HP-IB address:

- If there is only *one* other disc or tape drive (besides this HP 7911/12/14) already connected to the interface, set the “HP-IB DISC” switches to 2 as shown below, unless address 2 has been used elsewhere.



Address 2

- If there are *two* other disc or tape drives (besides this HP 7911/12/14) already connected to the interface, set the “HP-IB DISC switches to 3 as shown below, unless address 2 has been used elsewhere. Refer to the manual that came with your disc drive if you need additional switch settings.



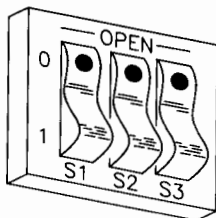
Address 3

5. Set the Tape Address (Dual Controller Only).

CAN YOU SKIP THIS STEP?

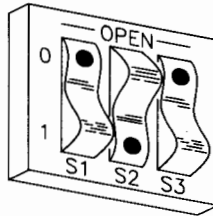
If you do not have dual controllers, skip to step 6; otherwise continue with step 5.

- a. On the back of the disc drive, find the set of three switches labeled “HP-IB TAPE.”
- b. Set the HP-IB tape address, making sure that you do not set it to the same address used by the 7911/12/14 disc drive if both disc and tape share the same interface:
 - If this is the first (or only) disc or tape drive you are connecting to the interface, set the “HP-IB TAPE” switches to 0 as shown below, unless address 0 has been used elsewhere.



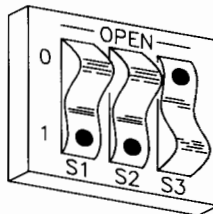
Address 0

- If there is only *one* other disc or tape drive (besides this HP 7911/12/14 tape) already connected to the interface, set the “HP-IB TAPE” switches to 2 as shown below, unless address 2 has been used elsewhere.



Address 2

- If there are *two* other disc or tape drives (besides this HP 7911/12/14 tape) already connected to the interface, set the “HP-IB TAPE” switches to 3 as shown below, unless address 3 has been used elsewhere. Refer to the manual that came with your disc/tape drive for additional switch settings.



Address 3

6. Connect the Disc to Your Computer.

- a. Find the HP-IB cable provided with the disc/tape drive.
- b. Connect one end of the HP-IB cable to the HP-IB socket to the right of the “HP-IB DISC” address switches. Tighten the thumb screws to secure the connection.

- c. Connect the other end of the HP-IB cable to the interface.

NOTE

If the interface already has several cables connected to it, connect your HP 7911/12/14 cable to one of the other devices on the interface.

7. Connect the Tape to Your Computer (Dual Controller Only).

CAN YOU SKIP THIS STEP?

If you do not have dual controllers, skip to step 8; otherwise, continue with step 7.

- a. Find the additional HP-IB cable provided with the disc/tape drive.
- b. Connect one end of the HP-IB cable to the HP-IB socket to the right of the “HP-IB TAPE” address switches. Tighten the thumb screws to secure the connection.
- c. Connect the other end of the HP-IB cable to the interface.

NOTE

If the interface already has several cables connected to it, connect your HP 7911/12/14 cable to one of the other devices on the interface.

8. Connect the Power Cord.

- a. Connect the female end of the power cord to the “AC LINE” socket on the back of the disc drive, and connect the other end to your power outlet.
- b. Position the drive in its operating location and lower the leveling feet until the casters carry no weight. Ensure that there is at least three inches of clearance behind the drive.

9. Record the Address.

- a. Make a note that the address(es) used for your disc/tape drive are no longer available on the interface(es) you selected. Use the “Address Record” form on the Step 6 tab for this purpose.

The Next Step

You have now installed your HP 7911/12/14 Disc/Tape Drive.

The following “Worksheet Entries” contain information needed to use your disc/tape drive with various language/operating systems. Refer to the entries for the system you’ll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral.

BASIC System Worksheet Entries

If You Connected a Single-Controller HP 7911/12/14 to the HP 98625 Disc Interface (Select Code 14)...

And It Is the First Disc or Tape Drive on this Interface (Address 0)...

Device Name	Msus ¹	Driver Name	Interleave Factor
HP 7911/12/14 - Disc	“:,1400”	CS80	1
HP 7911/12/14 - Tape	“:,1400,1”	CS80	1

And It Is the Second Disc or Tape Drive on this Interface (Address 2)...

Device Name	Msus ¹	Driver Name	Interleave Factor
HP 7911/12/14 - Disc	“:,1402”	CS80	1
HP 7911/12/14 - Tape	“:,1402,1”	CS80	1

And It Is the Third Disc or Tape Drive on this Interface (Address 3)...

Device Name	Msus ¹	Driver Name	Interleave Factor
HP 7911/12/14 - Disc	“:,1403”	CS80	1
HP 7911/12/14 - Tape	“:,1403,1”	CS80	1

¹ If you have a dual controller device, refer to the separate tape controller tables, at the end of this section, for your tape msus.

BASIC System Worksheet Entries (Cont.)

If You Connected a Single-Controller HP 7911/12/14 to the Built-in HP-IB Interface (Select Code 7)...

**And It Is the First Disc or Tape
Drive on this Interface (Address 0)...**

Device Name	Msus ¹	Driver Name	Interleave Factor
HP 7911/12/14 · Disc	“:,700”	CS80	1
HP 7911/12/14 · Tape	“:,700,1”	CS80	1

**And It Is the Second Disc or Tape
Drive on this Interface (Address 2)...**

Device Name	Msus ¹	Driver Name	Interleave Factor
HP 7911/12/14 · Disc	“:,702”	CS80	1
HP 7911/12/14 · Tape	“:,702,1”	CS80	1

**And It Is the Third Disc or Tape
Drive on this Interface (Address 3)...**

Device Name	Msus ¹	Driver Name	Interleave Factor
HP 7911/12/14 · Disc	“:,703”	CS80	1
HP 7911/12/14 · Tape	“:,703,1”	CS80	1

¹ If you have a dual controller device, refer to the separate tape controller tables, at the end of this section, for your tape msus.

BASIC System Worksheet Entries (Cont.)

If You Connected the Separate Tape Controller to the HP 98625 Disc Interface (Select Code 14)...

**And the Tape Drive is the Second Drive
Connected to this Interface (Address 2)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 7911/12/14 · Tape	“,1402”	CS80	1

**And the Tape Drive is the Third Drive
Connected to this Interface (Address 3)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 7911/12/14 · Tape	“,1403”	CS80	1



BASIC System Worksheet Entries (Cont.)

If You Connected the Separate Tape Controller to the Built-in HP-IB Interface (Select Code 7)...

And the Tape Drive is the First Drive Connected to this Interface (Address 0)...

Device Name	Msus	Driver Name	Interleave Factor
HP 7911/12/14 - Tape	“:,700”	CS80	1

And the Tape Drive is the Second Drive Connected to this Interface (Address 2)...

Device Name	Msus	Driver Name	Interleave Factor
HP 7911/12/14 - Tape	“:,702”	CS80	1

And the Tape Drive is the Third Drive Connected to this Interface (Address 3)...

Device Name	Msus	Driver Name	Interleave Factor
HP 7911/12/14 - Tape	“:,703”	CS80	1

Pascal Workstation Worksheet Entries

Device Name	Unit Numbers ¹	Module Name	Interleave Factor
HP 7911 - Disc	#11: thru #37:	DISCHPIB & CS80	1
HP 7911 - Tape	#41:	DISCHPIB & CS80	1
HP 7912/14 - Disc	#11: thru #40:	DISCHPIB & CS80	1
HP 7912/14 - Tape	#41:	DISCHPIB & CS80	1

¹ If you have more than one hard disc drive, the unit number assignments for your HP 7911/12/14 may be different. Refer to the section, "Determining Pascal Unit Numbers," found at the end of this chapter, after you have installed *all* of your discs.

HP-UX System Worksheet Entries

If You Connected the HP 7911/12/14 to the HP 98625 Disc Interface (Select Code 14)...

**And It Is the First Disc or Tape
Drive on this Interface (Address 0)...**

Device Name	Path ¹ Name	File Type	Major Number	Minor ² Number	Interleave Factor
HP 7911/12/14 - Disc	/dev/hd7911	b	0	0x0e0000	1
HP 7911/12/14 - Disc	/dev/rhd7911	c	4	0x0e0000	1
HP 7911/12/14 - Tape	/dev/ct7911	b	0	0x0e0010	1
HP 7911/12/14 - Tape	/dev/rct7911	c	4	0x0e0010	1

**And It Is the Second Disc or Tape
Drive on this Interface (Address 2)...**

Device Name	Path ¹ Name	File Type	Major Number	Minor ² Number	Interleave Factor
HP 7911/12/14 - Disc	/dev/hd7911	b	0	0x0e0200	1
HP 7911/12/14 - Disc	/dev/rhd7911	c	4	0x0e0200	1
HP 7911/12/14 - Tape	/dev/ct7911	b	0	0x0e0210	1
HP 7911/12/14 - Tape	/dev/rct7911	c	4	0x0e0210	1

**And It Is the Third Disc or Tape
Drive on this Interface (Select Code 3)...**

Device Name	Path ¹ Name	File Type	Major Number	Minor ² Number	Interleave Factor
HP 7911/12/14 - Disc	/dev/hd7911	b	0	0x0e0300	1
HP 7911/12/14 - Disc	/dev/rhd7911	c	4	0x0e0300	1
HP 7911/12/14 - Tape	/dev/ct7911	b	0	0x0e0310	1
HP 7911/12/14 - Tape	/dev/rct7911	c	4	0x0e0310	1

¹ If you have an HP 7912 or HP 7914, substitute 7912 or 7914 for 7911 in the path name.

² If you have a dual controller device, refer to the separate tape controller tables, at the end of this section, for your tape minor number.

HP-UX System Worksheet Entries (Cont.)

If You Connected the HP 7911/12/14 to the Built-in HP-IB Interface (Select Code 7)...

And It Is the First Disc or Tape
Drive on this Interface (Address 0)...

Device Name	Path ¹ Name	File Type	Major Number	Minor ² Number	Interleave Factor
HP 7911/12/14 - Disc	/dev/hd7911	b	0	0x070000	1
HP 7911/12/14 - Disc	/dev/rhd7911	c	4	0x070000	1
HP 7911/12/14 - Tape	/dev/ct7911	b	0	0x070010	1
HP 7911/12/14 - Tape	/dev/rct7911	c	4	0x070010	1

And It Is the Second Disc or Tape
Drive on this Interface (Address 2)...

Device Name	Path ¹ Name	File Type	Major Number	Minor ² Number	Interleave Factor
HP 7911/12/14 - Disc	/dev/hd7911	b	0	0x070200	1
HP 7911/12/14 - Disc	/dev/rhd7911	c	4	0x070200	1
HP 7911/12/14 - Tape	/dev/ct7911	b	0	0x070210	1
HP 7911/12/14 - Tape	/dev/rct7911	c	4	0x070210	1

And It Is the Third Disc or Tape
Drive on this Interface (Address 3)...

Device Name	Path ¹ Name	File Type	Major Number	Minor ² Number	Interleave Factor
HP 7911/12/14 - Disc	/dev/hd7911	b	0	0x070300	1
HP 7911/12/14 - Disc	/dev/rhd7911	c	4	0x070300	1
HP 7911/12/14 - Tape	/dev/ct7911	b	0	0x070310	1
HP 7911/12/14 - Tape	/dev/rct7911	c	4	0x070310	1

¹ If you have an HP 7912 or HP 7914, substitute 7912 or 7914 for 7911 in the path name.

² If you have a dual controller device, refer to the separate tape controller tables, at the end of this section, for your tape minor number.

HP-UX System Worksheet Entries (Cont.)

If You Connected the Separate Tape Controller to the Built-in HP-IB Interface (Select Code 7)...

And the Tape Drive is the First Drive
Connected to this Interface (Address 0)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave Factor
HP 7911/12/14 - Tape	/dev/ct7911	b	0	0x070000	1
HP 7911/12/14 - Tape	/dev/rct7911	c	4	0x070000	1

And the Tape Drive is the Second Drive
Connected to this Interface (Address 2)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave Factor
HP 7911/12/14 - Tape	/dev/ct7911	b	0	0x070200	1
HP 7911/12/14 - Tape	/dev/rct7911	c	4	0x070200	1

And the Tape Drive is the Third Drive
Connected to this Interface (Address 3)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave Factor
HP 7911/12/14 - Tape	/dev/ct7911	b	0	0x070300	1
HP 7911/12/14 - Tape	/dev/rct7911	c	4	0x070300	1

¹ If you have an HP 7912 or HP 7914, substitute 7912 or 7914 for 7911 in the path name.

HP-UX System Worksheet Entries (Cont.)

If You Connected the Separate Tape Controller to the HP 98624 HP-IB Interface (Select Code 8)...



And the Tape Drive is the First Drive Connected to this Interface (Address 0)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave Factor
HP 7911/12/14 - Tape	/dev/ct7911	b	0	0x080000	1
HP 7911/12/14 - Tape	/dev/rct7911	c	4	0x080000	1

And the Tape Drive is the Second Drive Connected to this Interface (Address 2)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave Factor
HP 7911/12/14 - Tape	/dev/ct7911	b	0	0x080200	1
HP 7911/12/14 - Tape	/dev/rct7911	c	4	0x080200	1

And the Tape Drive is the Third Drive Connected to this Interface (Address 3)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave Factor
HP 7911/12/14 - Tape	/dev/ct7911	b	0	0x080300	1
HP 7911/12/14 - Tape	/dev/rct7911	c	4	0x080300	1

¹ If you have an HP 7912 or HP 7914, substitute 7912 or 7914 for 7911 in the path name.

Installing the HP 7933 and 7935 Disc Drives

IMPORTANT!

These disc/tape units are to be installed by HP Customer Engineers.
The installation cost is included in the purchase price of the unit.

Description

These disc drives are Command Set 80 (CS/80) devices.

Support

The HP 7933 and HP 7935 are supported on Series 200 Model 220, 226, 236 and 237 computers with boot ROM 3.0 or later, and on all Series 300 computers with boot ROM Rev. A or later.

Operating/Language system support is as follows:

- **BASIC:** not supported.
- **Pascal Workstation:** supported on revision 3.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.
- **HP-UX Operating System:** supported on revision 2.0 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

Before You Begin

Your HP Customer Engineer will unpack and install your disc drive for you. The following procedure describes how to connect your disc drive to your Series 200/300 computer.

HP 7933 and 7935 Installation Procedure

CAUTION

DO NOT ATTEMPT TO OPERATE THE UNIT UNTIL IT IS MOVED TO THE INSTALLATION SITE AND THE SPINDLE AND ACTUATOR ARE UNLOCKED.

DO NOT APPLY ANY SUDDEN MECHANICAL SHOCKS TO THE UNIT.

1. Play It Safe.

- a. Make arrangements with your HP Customer Engineer to have your disc drive unpacked and installed.
- b. Turn your computer and disc drive off, if they are not already off.

2. Select Your Interface.

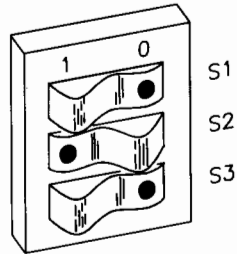
- a. Select one of the following interfaces, listed in order of preference for optimum disc performance:
 - HP 98625 Disc Interface
 - Built-in HP-IB Interface

3. Set the Address.

CAN YOU SKIP THIS STEP?

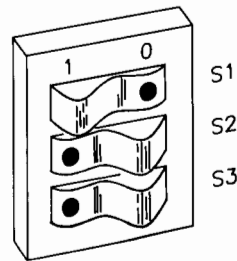
If this is the first (or only) disc or tape drive you are connecting to the interface, you can skip to step 4. The address is preset to 0 and need not be changed—*unless* you have changed the address of another device on the interface to 0.

- a. On the back of the disc drive, find the set of three switches labeled “HP-IB PRIMARY PORT.”
- b. Set the HP-IB address:
 - If there is only *one* other disc or tape drive (besides this HP 7933/35) already connected to the interface, set the “HP-IB PRIMARY PORT” switches to 2 as shown below, unless address 2 has been used elsewhere.



Address 2

- If there are *two* other disc or tape drives (besides this HP 7933/35) already connected to the interface, set the “HP-IB PRIMARY PORT” switches on your HP 7933/35 to 3 like this:



Address 3

4. Connect the Disc to Your Computer.

- a. Find the HP-IB cable provided with the disc drive.
- b. Connect one end of the HP-IB cable to the HP-IB socket on the back of the disc drive. Tighten the thumb screws to secure the connection.
- c. Connect the other end of the HP-IB cable to the interface.

NOTE

If the interface already has several cables connected to it, connect your HP 7933/35 cable to one of the other devices on the interface.

5. Connect the Power Cord.

- a. Connect the female end of the power cord to the power socket on the back of the disc drive, and connect the other end to your power outlet.

6. Record the Address.

- a. Make a note that address 0 (or the alternate address you chose in step 3) has been used and is no longer available on the interface you selected. Use the "Address Record" form on the Step 6 tab for this purpose.

The Next Step

You have now installed your HP 7933/35 Disc Drive.

The following "Worksheet Entries" contain information needed to use your disc drive with various language/operating systems. Refer to the entries for the system you'll be using (Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you'll be ready to install your next peripheral.

Pascal Workstation Worksheet Entries

Device Name	Unit Numbers ¹	Module Name	Interleave Factor
HP 7933/35	# 11: thru # 40:	DISCHPIB & CS80	1

¹ If you have more than one hard disc drive, the unit number assignments for your HP 7933/35 may be different. Refer to the section, "Determining Pascal Unit Numbers," found at the end of this chapter, after you have installed *all* of your discs.

HP-UX System Worksheet Entries

If You Connected the HP 7933/35 to the HP 98625 Disc Interface (Select Code 14)...

**And It Is the First Disc or Tape
Drive on this Interface (Address 0)...**

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave Factor
HP 7933/35	/dev/hd7933	b	0	0x0e0000	1
HP 7933/35	/dev/rhd7933	c	4	0x0e0000	1

**And It Is the Second Disc or Tape
Drive on this Interface (Address 2)...**

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave Factor
HP 7933/35	/dev/hd7933	b	0	0x0e0200	1
HP 7933/35	/dev/rhd7933	c	4	0x0e0200	1

**And It Is the Third Disc or Tape
Drive on this Interface (Address 3)...**

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave Factor
HP 7933/35	/dev/hd7933	b	0	0x0e0300	1
HP 7933/35	/dev/rhd7933	c	4	0x0e0300	1

¹ If you have an HP 7935, substitute 7935 for 7933 in the path name.

HP-UX System Worksheet Entries (Cont.)

If You Connected the HP 7933/35 to the Built-in HP-IB Interface (Select Code 7)...

**And It Is the First Disc or Tape
Drive on this Interface (Address 0)...**

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave Factor
HP 7933/35	/dev/hd7933	b	0	0x070000	1
HP 7933/35	/dev/rhd7933	c	4	0x070000	1

**And It Is the Second Disc or Tape
Drive on this Interface (Address 2)...**

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave Factor
HP 7933/35	/dev/hd7933	b	0	0x070200	1
HP 7933/35	/dev/rhd7933	c	4	0x070200	1

**And It Is the Third Disc or Tape
Drive on this Interface (Address 3)...**

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave Factor
HP 7933/35	/dev/hd7933	b	0	0x070300	1
HP 7933/35	/dev/rhd7933	c	4	0x070300	1

¹ If you have an HP 7935, substitute 7935 for 7933 in the path name.

Installing the HP 7941, 7942, 7945 and 7946 Disc and Disc/Tape Drives

Description

The HP 7941 and HP 7945 are Command Set 80 (CS/80) discs. The HP 7942 and HP 7946 contain a cartridge tape drive in addition to the disc drive.

Support

The HP 7941, 7942, 7945 and 7946 are supported on all Series 200 computers with boot ROM 3.0 or later, and on all Series 300 computers with boot ROM Rev. A or later.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 3.0 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** supported on revision 3.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.
- **HP-UX Operating System:** the HP 7941 and HP 7945 are supported on revision 2.0 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers. The HP 7942 and HP 7946 are supported on revision 2.1 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

Before You Begin

The following procedure describes how to connect your HP 7941, 7942, 7945 and 7946 to your Series 200/300 computer. Before you do this, however, refer to the manual(s) that came with the drive to:

- Unpack the drive.
- Check the voltage selector switch.
- Check the fuse value.

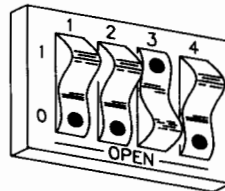
HP 7941, 7942, 7945 and 7946 Installation Procedure

1. **Play It Safe.**
 - a. Turn your computer and disc drive off, if they are not already off.
2. **Select Your Interface.**
 - a. Select one of the following interfaces, listed in order of preference for optimum disc performance:
 - HP 98625 Disc Interface
 - Built-in HP-IB Interface
3. **Set the Address.**

CAN YOU SKIP THIS STEP?

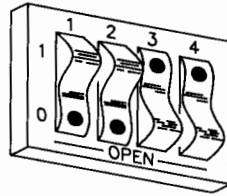
If this is the first (or only) disc or tape drive you are connecting to the interface, you can skip to step 4. The address is preset to 0 and need not be changed—*unless* you have changed the address of another device on the interface to 0.

- a. On the back of the disc drive, find the set of four switches labeled “ADDRESS.”
- b. Set the HP-IB address:
 - If there is only *one* other disc or tape drive (besides this HP 7941/42/45/46) already connected to the interface, set the “ADDRESS” switches to 2 as shown below, unless address 2 has been used elsewhere.



Address 2

- If there are *two* other disc or tape drives (besides this HP 7941/42/45/46) already connected to the interface, set the “ADDRESS” switches to 3 as shown below, unless address 3 has been used elsewhere.



Address 3



4. Connect the Disc Drive to Your Computer.

- a. Find the HP-IB cable provided with the disc drive.
- b. Connect one end of the HP-IB cable to the HP-IB socket on the back of the disc drive. Tighten the thumb screws to secure the connection.
- c. Connect the other end of the HP-IB cable to the interface.

NOTE

If the interface already has several cables connected to it, connect your HP 7941/42/45/46 cable to one of the other devices on the interface.

5. Connect the Power Cord.

- a. Connect the female end of the power cord to the power socket on the back of the disc drive, and connect the other end to your power outlet.

6. Record the Address.

- a. Make a note that address 0 (or the alternate address you chose in step 3) has been used and is no longer available on the interface you selected. Use the “Address Record” form on the Step 6 tab for this purpose.

The Next Step

You have now installed your HP 7941/42/45/46 Disc Drive.

The following "Worksheet Entries" contain information needed to use your disc drive with various language/operating systems. Refer to the entries for the system you'll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you'll be ready to install your next peripheral.

BASIC System Worksheet Entries

If You Connected the HP 7941/42/45/46 to the HP 98625 Disc Interface (Select Code 14)...

**And It Is the First Disc or Tape
Drive on this Interface (Address 0)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 7941/42/45/46 - Disc	“:,1400”	CS80	1
HP 7942/46 - Tape	“:,1400,1”	CS80	1

**And It Is the Second Disc or Tape
Drive on this Interface (Address 2)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 7941/42/45/46 - Disc	“:,1402”	CS80	1
HP 7942/46 - Tape	“:,1402,1”	CS80	1

**And It Is the Third Disc or Tape
Drive on this Interface (Address 3)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 7941/42/45/46 - Disc	“:,1403”	CS80	1
HP 7942/46 - Tape	“:,1403,1”	CS80	1

BASIC System Worksheet Entries (Cont.)

If You Connected the HP 7941/42/45/46 to the Built-in HP-IB Interface (Select Code 7)...

And It Is the First Disc or Tape Drive on this Interface (Address 0)...

Device Name	Msus	Driver Name	Interleave Factor
HP 7941/42/45/46 - Disc	“:,700”	CS80	1
HP 7942/46 - Tape	“:,700,1”	CS80	1

And It Is the Second Disc or Tape Drive on this Interface (Address 2)...

Device Name	Msus	Driver Name	Interleave Factor
HP 7941/42/45/46 - Disc	“:,702”	CS80	1
HP 7942/46 - Tape	“:,702,1”	CS80	1

And It Is the Third Disc or Tape Drive on this Interface (Address 3)...

Device Name	Msus	Driver Name	Interleave Factor
HP 7941/42/45/46 - Disc	“:,703”	CS80	1
HP 7942/46 - Tape	“:,703,1”	CS80	1

Pascal Workstation Worksheet Entries

Device Name	Unit Nos. ^{1,2}	Module Name	Interleave Factor
HP 7941/42 - Disc	#11: thru #33:	DISCHPIB & CS80	1
HP 7945/46 - Disc	#11: thru #40:	DISCHPIB & CS80	1
HP 7942/46 - Tape	#41:	DISCHPIB & CS80	1

¹ If you have more than one hard disc drive, the unit number assignments for your HP 7941/42/45/46 may be different. Refer to the section, "Determining Pascal Unit Numbers," found at the end of this chapter, after you have installed *all* of your discs.

² If you have more than one tape drive, the unit number assignment for your HP 7942/46 tape drive may be different. Refer to the section, "Determining Pascal Unit Numbers," found at the end of this chapter, after you have installed *all* of your disc and tape drives.

HP-UX System Worksheet Entries

If You Connected the HP 7941/42/45/46 to the HP 98625 Disc Interface (Select Code 14)...

And It Is the First Disc or Tape Drive on this Interface (Address 0)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave Factor
HP 7941/42/45/46 - Disc	/dev/hd7942	b	0	0x0e0000	1
HP 7941/42/45/46 - Disc	/dev/rhd7942	c	4	0x0e0000	1
HP 7942/46 - Tape	/dev/ct7942	b	0	0x0e0010	1
HP 7942/46 - Tape	/dev/rct7942	c	4	0x0e0010	1

And It Is the Second Disc or Tape Drive on this Interface (Address 2)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave Factor
HP 7941/42/45/46 - Disc	/dev/hd7942	b	0	0x0e0200	1
HP 7941/42/45/46 - Disc	/dev/rhd7942	c	4	0x0e0200	1
HP 7942/46 - Tape	/dev/ct7942	b	0	0x0e0210	1
HP 7942/46 - Tape	/dev/rct7942	c	4	0x0e0210	1

And It Is the Third Disc or Tape Drive on this Interface (Address 3)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave Factor
HP 7941/42/45/46 - Disc	/dev/hd7942	b	0	0x0e0300	1
HP 7941/42/45/46 - Disc	/dev/rhd7942	c	4	0x0e0300	1
HP 7942/46 - Tape	/dev/ct7942	b	0	0x0e0310	1
HP 7942/46 - Tape	/dev/rct7942	c	4	0x0e0310	1

¹ If you have an HP 7941, 7945 or HP 7946, substitute 7941, 7945 or 7946 for 7942 in the path name.

HP-UX System Worksheet Entries (Cont.)

If You Connected the HP 7941/42/45/46 to the Built-in HP-IB Interface (Select Code 7)...

And It Is the First Disc or Tape
Drive on this Interface (Address 0)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave Factor
HP 7941/42/45/46 - Disc	/dev/hd7942	b	0	0x070000	1
HP 7941/42/45/46 - Disc	/dev/rhd7942	c	4	0x070000	1
HP 7942/46 - Tape	/dev/ct7942	b	0	0x070010	1
HP 7942/46 - Tape	/dev/rct7942	c	4	0x070010	1

And It Is the Second Disc or Tape
Drive on this Interface (Address 2)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave Factor
HP 7941/42/45/46 - Disc	/dev/hd7942	b	0	0x070200	1
HP 7941/42/45/46 - Disc	/dev/rhd7942	c	4	0x070200	1
HP 7942/46 - Tape	/dev/ct7942	b	0	0x070210	1
HP 7942/46 - Tape	/dev/rct7942	c	4	0x070210	1

And It Is the Third Disc or Tape
Drive on this Interface (Address 3)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave Factor
HP 7941/42/45/46 - Disc	/dev/hd7942	b	0	0x070300	1
HP 7941/42/45/46 - Disc	/dev/rhd7942	c	4	0x070300	1
HP 7942/46 - Tape	/dev/ct7942	b	0	0x070310	1
HP 7942/46 - Tape	/dev/rct7942	c	4	0x070310	1

¹ If you have an HP 7941, 7945 or HP 7946, substitute 7941, 7945 or 7946 for 7942 in the path name.

Installing the HP 7971A Tape Drive

IMPORTANT!

The HP 7971A Tape Drive is to be installed by an HP Customer Engineer. The installation cost is included in the purchase price of the unit.

Description

The HP 7971A is a 45 ips 1/2-inch 9-track open-reel tape drive supplied in an upright cabinet. It supports 1600 cpi Phase Encoded (PE) format. The HP 7971A operates in start/stop mode.

Support

The HP 7971A is supported on Series 200 Model 220, 226, 236 and 237 computers.

Operating/Language system support is as follows:

- **BASIC:** not supported.
- **Pascal Workstation:** not supported.
- **HP-UX Operating System:** supported on revision 2.0 or later with Series 200 computers.

Before You Begin

Your HP Customer Engineer will unpack and install your tape drive for you. The following procedure describes how to connect your tape drive to your Series 200 computer.

HP 7971A Tape Drive Installation Procedure

CAUTION

DO NOT ATTEMPT TO OPERATE THE UNIT UNTIL YOUR HP CUSTOMER ENGINEER HAS INSTALLED THE UNIT FOR YOU.

1. Play It Safe.

- a. Make arrangements with your HP Customer Engineer to have your tape drive installed.
- b. Turn your computer and tape drive off, if they are not already off.

2. Select Your Interface.

- a. Use either the built-in HP-IB interface or an HP 98624 HP-IB Interface.

3. Set the Address.

- a. On the back of the tape 7970E tape drive, find the address wheel located to the right of the HP-IB connector.
- b. Set the HP-IB address:
 - If this is the first disc or tape drive you are installing on the interface, set the address wheel to 0, unless address 0 has been used elsewhere.
 - If there is only *one* other disc or tape drive (besides this HP 7970E) already connected to the interface, set the address wheel to 2, unless address 2 has been used elsewhere.
 - If there are *two* other disc or tape drives (besides this HP 7970E) already connected to the interface, set the address wheel to 3, unless address 3 has been used elsewhere. If it has, choose any unused address.

4. Connect the Tape Drive to Your Computer.

- a. Find the HP-IB cable provided with the tape drive.

- b. Connect one end of the HP-IB cable to the HP-IB socket on the back of the tape drive. Tighten the thumb screws to secure the connection.
- c. Connect the other end of the HP-IB cable to the interface.

NOTE

If the interface already has several cables connected to it, connect your HP 7971A cable to one of the other devices on the interface.

5. Connect the Power Cord.

- a. Connect the female end of the power cord to the power socket on the back of the tape drive, and connect the other end to your power outlet.

6. Record the Address.

- a. Make a note that address 0 (or the alternate address you chose in step 3) has been used and is no longer available on the interface you selected. Use the "Address Record" form on the Step 6 tab for this purpose.

The Next Step

You have now installed your HP 7971A Tape Drive.

The following "Worksheet Entries" contain information needed to use your tape drive with HP-UX.

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you'll be ready to install your next peripheral.

HP-UX System Worksheet Entries

If You Connected the HP 7971A to the Built-in HP-IB Interface (Select Code 7)...



And It Is the First Disc or Tape Drive on this Interface (Address 0)...

Device ¹ Name	Path Name	File Type	Major Number	Minor Number
HP 7971A, Berkeley, no rewind	/dev/rmt7971	c	5	0x070043
HP 7971A, Berkeley, autorewind	/dev/rmt7971	c	5	0x070042
HP 7971A, AT&T, no rewind	/dev/rmt7971	c	5	0x070041
HP 7971A, AT&T, autorewind	/dev/rmt7971	c	5	0x070040

And It Is the Second Disc or Tape Drive on this Interface (Address 2)...

Device ¹ Name	Path Name	File Type	Major Number	Minor Number
HP 7971A, Berkeley, no rewind	/dev/rmt7971	c	5	0x070243
HP 7971A, Berkeley, autorewind	/dev/rmt7971	c	5	0x070242
HP 7971A, AT&T, no rewind	/dev/rmt7971	c	5	0x070241
HP 7971A, AT&T, autorewind	/dev/rmt7971	c	5	0x070240

And It Is the Third Disc or Tape Drive on this Interface (Address 3)...

Device ¹ Name	Path Name	File Type	Major Number	Minor Number
HP 7971A, Berkeley, no rewind	/dev/rmt7971	c	5	0x070343
HP 7971A, Berkeley, autorewind	/dev/rmt7971	c	5	0x070342
HP 7971A, AT&T, no rewind	/dev/rmt7971	c	5	0x070341
HP 7971A, AT&T, autorewind	/dev/rmt7971	c	5	0x070340

¹ Refer to the *System Administrator* manual for an explanation of Berkeley/AT&T autorewind concepts, and for information on the compatibility mode bit.

HP-UX System Worksheet Entries (Cont.)

If You Connected the HP 7971A to the HP 98624 HP-IB Interface (Select Code 8)...

**And It Is the First Disc or Tape
Drive on this Interface (Address 0)...**

Device ¹ Name	Path ¹ Name	File Type	Major Number	Minor Number
HP 7971A, Berkeley, no rewind	/dev/rmt7971	c	5	0x080043
HP 7971A, Berkeley, autorewind	/dev/rmt7971	c	5	0x080042
HP 7971A, AT&T, no rewind	/dev/rmt7971	c	5	0x080041
HP 7971A, AT&T, autorewind	/dev/rmt7971	c	5	0x080040

**And It Is the Second Disc or Tape
Drive on this Interface (Address 2)...**

Device ¹ Name	Path ¹ Name	File Type	Major Number	Minor Number
HP 7971A, Berkeley, no rewind	/dev/rmt7971	c	5	0x080243
HP 7971A, Berkeley, autorewind	/dev/rmt7971	c	5	0x080242
HP 7971A, AT&T, no rewind	/dev/rmt7971	c	5	0x080241
HP 7971A, AT&T, autorewind	/dev/rmt7971	c	5	0x080240

**And It Is the Third Disc or Tape
Drive on this Interface (Address 3)...**

Device ¹ Name	Path ¹ Name	File Type	Major Number	Minor Number
HP 7971A, Berkeley, no rewind	/dev/rmt7971	c	5	0x080343
HP 7971A, Berkeley, autorewind	/dev/rmt7971	c	5	0x080342
HP 7971A, AT&T, no rewind	/dev/rmt7971	c	5	0x080341
HP 7971A, AT&T, autorewind	/dev/rmt7971	c	5	0x080340

¹ Refer to the *System Administrator* manual for an explanation of Berkeley/AT&T autorewind concepts, and for information on the compatibility mode bit.

Installing the HP 7974A Tape Drive

IMPORTANT!

The HP 7974A Tape Drive is to be installed by an HP Customer Engineer. The installation cost is included in the purchase price of the unit.

Description

The HP 7974A is a 100/50 ips 1/2-inch 9-track open-reel tape drive supplied in an upright cabinet. It supports 1600 cpi Phase Encoded (PE) format and optionally 800 cpi NRZI format. The HP 7974A operates in either start/stop (50 ips) or streaming (100 ips) mode depending on whether data is available on the bus.

Support

The HP 7974A is supported on Series 200 Model 217, 220, 226, 236 and 237 computers. Support for Series 300 computers is planned but was not yet authorized at time of printing.

Operating/Language system support is as follows:

- **BASIC:** not supported.
- **Pascal Workstation:** not supported.
- **HP-UX Operating System:** supported on revision 5.1 or later with Series 200 computers.

Before You Begin

Your HP Customer Engineer will unpack and install your tape drive for you. The following procedure describes how to connect your tape drive to your Series 200/300 computer.

HP 7974A Tape Drive Installation Procedure

CAUTION

DO NOT ATTEMPT TO OPERATE THE UNIT UNTIL YOUR HP CUSTOMER HAS INSTALLED THE UNIT FOR YOU.

1. Play It Safe.

- a. Make arrangements with your HP Customer Engineer to have your tape drive installed.
- b. Turn your computer off, if it is not already off.
- c. Turn your HP 7974A Tape Drive on.

2. Select Your Interface.

- a. Select one of the following interfaces, listed in order of preference for optimum tape performance:
 - HP 98625 Disc Interface
 - Built-in HP-IB Interface

3. Set the Address.

- a. Press the OFFLINE RESET button until the ONLINE indicator light turns off.
- b. Press the ADDRESS button to display the current address.
- c. Set the address:
 - If the HP 7974A is the first disc or tape drive your are connecting to the interface, press the UNITS button until **0** appears in the display, unless address 0 has been used elsewhere.
 - If there is only *one* other disc or tape drive (besides this HP 7974A) already connected to the interface, press the UNITS button until **2** appears in the display, unless address 2 has been used elsewhere.

- If there are *two* other disc or tape drives (besides this HP 7974A) already connected to the interface, press the UNITS button until **3** appears in the display, unless address 3 has been used elsewhere. If it has, choose any unused address.

- d. Press the Enter button to assign the new address.
- e. Press the ADDRESS button to exit the address select mode.

4. Connect the Tape Drive to Your Computer.

- a. Find the HP-IB cable provided with the tape drive.
- b. Connect one end of the HP-IB cable to the HP-IB socket on the inside of the cabinet at the top. Tighten the thumb screws to secure the connection.
- c. Connect the other end of the HP-IB cable to the interface.

NOTE

If the interface already has several cables connected to it, connect your HP 7974A cable to one of the other devices on the interface.

5. Record the Address.

- a. Make a note that address 0 (or the alternate address you chose in step 3) has been used and is no longer available on the interface you selected. Use the “Address Record” form on the Step 6 tab for this purpose.

The Next Step

You have now installed your HP 7974A Tape Drive.

The following “Worksheet Entries” contain information needed to use your tape drive with HP-UX.

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral.

HP-UX System Worksheet Entries

**If the HP 7974A Is the First Disc or Tape (Address 0)
on the HP 98625 Disc Interface (Select Code 14)...¹**

Device Name	Path Name	File Type	Major Number	Minor Number
HP 7974A, 800 cpi, Berkeley, no rewind	/dev/rmt7974	c	9	0x0e0003
HP 7974A, 800 cpi, Berkeley, autorewind	/dev/rmt7974	c	9	0x0e0002
HP 7974A, 800 cpi, AT&T, no rewind	/dev/rmt7974	c	9	0x0e0001
HP 7974A, 800 cpi, AT&T, autorewind	/dev/rmt7974	c	9	0x0e0000
HP 7974A, 1600 cpi, Berkeley, no rewind	/dev/rmt7974	c	9	0x0e0043
HP 7974A, 1600 cpi, Berkeley, autorewind	/dev/rmt7974	c	9	0x0e0042
HP 7974A, 1600 cpi, AT&T, no rewind	/dev/rmt7974	c	9	0x0e0041
HP 7974A, 1600 cpi, AT&T, autorewind	/dev/rmt7974	c	9	0x0e0040

**If the HP 7974A Is the Second Disc or Tape (Address 2)
on the HP 98625 Disc Interface (Select Code 14)...¹**

Device Name	Path Name	File Type	Major Number	Minor Number
HP 7974A, 800 cpi, Berkeley, no rewind	/dev/rmt7974	c	9	0x0e0203
HP 7974A, 800 cpi, Berkeley, autorewind	/dev/rmt7974	c	9	0x0e0202
HP 7974A, 800 cpi, AT&T, no rewind	/dev/rmt7974	c	9	0x0e0201
HP 7974A, 800 cpi, AT&T, autorewind	/dev/rmt7974	c	9	0x0e0200
HP 7974A, 1600 cpi, Berkeley, no rewind	/dev/rmt7974	c	9	0x0e0243
HP 7974A, 1600 cpi, Berkeley, autorewind	/dev/rmt7974	c	9	0x0e0242
HP 7974A, 1600 cpi, AT&T, no rewind	/dev/rmt7974	c	9	0x0e0241
HP 7974A, 1600 cpi, AT&T, autorewind	/dev/rmt7974	c	9	0x0e0240

¹ See the *System Administrator* manual for information on compatibility mode and on disabling immediate report mode.

HP-UX System Worksheet Entries (Cont.)

**If the HP 7974A Is the Third Disc or Tape (Address 3)
on the HP 98625 Disc Interface (Select Code 14)...¹**

Device Name	Path Name	File Type	Major Number	Minor Number
HP 7974A, 800 cpi, Berkeley, no rewind	/dev/rmt7974	c	9	0x0e0303
HP 7974A, 800 cpi, Berkeley, autorewind	/dev/rmt7974	c	9	0x0e0302
HP 7974A, 800 cpi, AT&T, no rewind	/dev/rmt7974	c	9	0x0e0301
HP 7974A, 800 cpi, AT&T, autorewind	/dev/rmt7974	c	9	0x0e0300
HP 7974A, 1600 cpi, Berkeley, no rewind	/dev/rmt7974	c	9	0x0e0343
HP 7974A, 1600 cpi, Berkeley, autorewind	/dev/rmt7974	c	9	0x0e0342
HP 7974A, 1600 cpi, AT&T, no rewind	/dev/rmt7974	c	9	0x0e0341
HP 7974A, 1600 cpi, AT&T, autorewind	/dev/rmt7974	c	9	0x0e0340

**If the HP 7974A Is the First Disc or Tape (Address 0)
on the Built-in HP-IB Interface (Select Code 7)...¹**

Device Name	Path Name	File Type	Major Number	Minor Number
HP 7974A, 800 cpi, Berkeley, no rewind	/dev/rmt7974	c	9	0x070003
HP 7974A, 800 cpi, Berkeley, autorewind	/dev/rmt7974	c	9	0x070002
HP 7974A, 800 cpi, AT&T, no rewind	/dev/rmt7974	c	9	0x070001
HP 7974A, 800 cpi, AT&T, autorewind	/dev/rmt7974	c	9	0x070000
HP 7974A, 1600 cpi, Berkeley, no rewind	/dev/rmt7974	c	9	0x070043
HP 7974A, 1600 cpi, Berkeley, autorewind	/dev/rmt7974	c	9	0x070042
HP 7974A, 1600 cpi, AT&T, no rewind	/dev/rmt7974	c	9	0x070041
HP 7974A, 1600 cpi, AT&T, autorewind	/dev/rmt7974	c	9	0x070040

¹ See the *System Administrator* manual for information on compatibility mode and on disabling immediate report mode.

HP-UX System Worksheet Entries (Cont.)

**If the HP 7974A Is the Second Disc or Tape (Address 2)
on the Built-in HP-IB Interface (Select Code 7)...¹**

Device Name	Path Name	File Type	Major Number	Minor Number
HP 7974A, 800 cpi, Berkeley, no rewind	/dev/rmt7974	c	9	0x070203
HP 7974A, 800 cpi, Berkeley, autorewind	/dev/rmt7974	c	9	0x070202
HP 7974A, 800 cpi, AT&T, no rewind	/dev/rmt7974	c	9	0x070201
HP 7974A, 800 cpi, AT&T, autorewind	/dev/rmt7974	c	9	0x070200
HP 7974A, 1600 cpi, Berkeley, no rewind	/dev/rmt7974	c	9	0x070243
HP 7974A, 1600 cpi, Berkeley, autorewind	/dev/rmt7974	c	9	0x070242
HP 7974A, 1600 cpi, AT&T, no rewind	/dev/rmt7974	c	9	0x070241
HP 7974A, 1600 cpi, AT&T, autorewind	/dev/rmt7974	c	9	0x070240

**If the HP 7974A Is the Third Disc or Tape (Address 3)
on the Built-in HP-IB Interface (Select Code 7)...¹**

Device Name	Path ¹ Name	File Type	Major Number	Minor Number
HP 7974A, 800 cpi, Berkeley, no rewind	/dev/rmt7974	c	9	0x070303
HP 7974A, 800 cpi, Berkeley, autorewind	/dev/rmt7974	c	9	0x070302
HP 7974A, 800 cpi, AT&T, no rewind	/dev/rmt7974	c	9	0x070301
HP 7974A, 800 cpi, AT&T, autorewind	/dev/rmt7974	c	9	0x070300
HP 7974A, 1600 cpi, Berkeley, no rewind	/dev/rmt7974	c	9	0x070343
HP 7974A, 1600 cpi, Berkeley, autorewind	/dev/rmt7974	c	9	0x070342
HP 7974A, 1600 cpi, AT&T, no rewind	/dev/rmt7974	c	9	0x070341
HP 7974A, 1600 cpi, AT&T, autorewind	/dev/rmt7974	c	9	0x070340

¹ See the *System Administrator* manual for information on compatibility mode and on disabling immediate report mode.

Installing the HP 7978A Tape Drive

IMPORTANT!

The HP 7978A Tape Drive is to be installed by an HP Customer Engineer. The installation cost is included in the purchase price of the unit.

Description

The HP 7978A is a 75 ips 1/2-inch 9-track open-reel tape drive supplied in an upright cabinet. It supports 1600 cpi Phase Encoded (PE) format and 6250 cpi Group Code Recording (GCR) format. The HP 7978A operates only in streaming mode.

Support

The HP 7978A is supported on Series 200 Model 226 and 236 computers and on all Series 300 computers.

Operating/Language system support is as follows:

- **BASIC:** not supported.
- **Pascal Workstation:** not supported.
- **HP-UX Operating System:** supported on revision 5.1 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

Before You Begin

Your HP Customer Engineer will unpack and install your tape drive for you. The following procedure describes how to connect your tape drive to your Series 200/300 computer.

HP 7978A Tape Drive Installation Procedure



CAUTION

DO NOT ATTEMPT TO OPERATE THE UNIT UNTIL YOUR HP CUSTOMER ENGINEER HAS INSTALLED THE UNIT FOR YOU.

1. Play It Safe.

- a. Make arrangements with your HP Customer Engineer to have your tape drive installed.
- b. Turn your computer off, if it is not already off.
- c. Turn your HP 7978A Tape Drive on.

2. Select Your Interface.

- a. Select one of the following interfaces, listed in order of preference for optimum tape performance:
 - HP 98625 Disc Interface
 - Built-in HP-IB Interface

3. Set the Address.

- a. Press the OFFLINE button until the OFFLINE indicator light turns on.
- b. Press the TEST ADDRESS button *twice* to make the ADDRESS indicator light turn on.
- c. Press the ENTER button. The current address will be displayed to the right of the ENTER button.
- d. Set the address:
 - If the HP 7978A is the first disc or tape drive you are connecting to the interface, press the TEST ADDRESS button until **0** appears in the display, unless address 0 has already been used.

- If there is only *one* other disc or tape drive (besides this HP 7978A) already connected to the interface, press the TEST ADDRESS button until **2** appears in the display, unless address 2 has already been used.
- If there are *two* other disc or tape drives (besides this HP 7978A) already connected to the interface, press the TEST ADDRESS button until **3** appears in the display, unless address 3 has already been used. If it has, choose any unused address.

- d. Press the ENTER button to assign the new address.
- e. Press the ONLINE button to turn on the ONLINE indicator light.

4. Connect the Tape Drive to Your Computer.

- a. Find the HP-IB cable provided with the tape drive.
- b. Connect one end of the HP-IB cable to the HP-IB socket on the back of the tape drive. Tighten the thumb screws to secure the connection.
- c. Connect the other end of the HP-IB cable to the interface.

NOTE

If the interface already has several cables connected to it, connect your HP 7978A cable to one of the other devices on the interface.

5. Record the Address.

- a. Make a note that address 0 (or the alternate address you chose in step 3) has been used and is no longer available on the interface you selected. Use the “Address Record” form on the Step 6 tab for this purpose.

The Next Step

You have now installed your HP 7978A Tape Drive.

The following “Worksheet Entries” contain information needed to use your disc drive with HP-UX.

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral.

HP-UX System Worksheet Entries

**If the HP 7978A Is the First Disc or Tape (Address 0)
on the HP 98625 Disc Interface (Select Code 14)...¹**

Device Name	Path Name	File Type	Major Number	Minor Number
HP 7978A, 6250 cpi, Berkeley, no rewind	/dev/rmt7978	c	9	0x0e0083
HP 7978A, 6250 cpi, Berkeley, autorewind	/dev/rmt7978	c	9	0x0e0082
HP 7978A, 6250 cpi, AT&T, no rewind	/dev/rmt7978	c	9	0x0e0081
HP 7978A, 6250 cpi, AT&T, autorewind	/dev/rmt7978	c	9	0x0e0080
HP 7978A, 1600 cpi, Berkeley, no rewind	/dev/rmt7978	c	9	0x0e0043
HP 7978A, 1600 cpi, Berkeley, autorewind	/dev/rmt7978	c	9	0x0e0042
HP 7978A, 1600 cpi, AT&T, no rewind	/dev/rmt7978	c	9	0x0e0041
HP 7978A, 1600 cpi, AT&T, autorewind	/dev/rmt7978	c	9	0x0e0040

**If the HP 7978A Is the Second Disc or Tape (Address 2)
on the HP 98625 Disc Interface (Select Code 14)...¹**

Device Name	Path Name	File Type	Major Number	Minor Number
HP 7978A, 6250 cpi, Berkeley, no rewind	/dev/rmt7978	c	9	0x0e0283
HP 7978A, 6250 cpi, Berkeley, autorewind	/dev/rmt7978	c	9	0x0e0282
HP 7978A, 6250 cpi, AT&T, no rewind	/dev/rmt7978	c	9	0x0e0281
HP 7978A, 6250 cpi, AT&T, autorewind	/dev/rmt7978	c	9	0x0e0280
HP 7978A, 1600 cpi, Berkeley, no rewind	/dev/rmt7978	c	9	0x0e0243
HP 7978A, 1600 cpi, Berkeley, autorewind	/dev/rmt7978	c	9	0x0e0242
HP 7978A, 1600 cpi, AT&T, no rewind	/dev/rmt7978	c	9	0x0e0241
HP 7978A, 1600 cpi, AT&T, autorewind	/dev/rmt7978	c	9	0x0e0240

¹ See the *System Administrator* manual for information on compatibility mode and on disabling immediate report mode.

HP-UX System Worksheet Entries (Cont.)

**If the HP 7978A Is the Third Disc or Tape (Address 3)
on the HP 98625 Disc Interface (Select Code 14)...¹**

Device Name	Path Name	File Type	Major Number	Minor Number
HP 7978A, 6250 cpi, Berkeley, no rewind	/dev/rmt7978	c	9	0x0e0383
HP 7978A, 6250 cpi, Berkeley, autorewind	/dev/rmt7978	c	9	0x0e0382
HP 7978A, 6250 cpi, AT&T, no rewind	/dev/rmt7978	c	9	0x0e0381
HP 7978A, 6250 cpi, AT&T, autorewind	/dev/rmt7978	c	9	0x0e0380
HP 7978A, 1600 cpi, Berkeley, no rewind	/dev/rmt7978	c	9	0x0e0343
HP 7978A, 1600 cpi, Berkeley, autorewind	/dev/rmt7978	c	9	0x0e0342
HP 7978A, 1600 cpi, AT&T, no rewind	/dev/rmt7978	c	9	0x0e0341
HP 7978A, 1600 cpi, AT&T, autorewind	/dev/rmt7978	c	9	0x0e0340

**If the HP 7978A Is the First Disc or Tape (Address 0)
on the Built-in HP-IB Interface (Select Code 7)...¹**

Device Name	Path Name	File Type	Major Number	Minor Number
HP 7978A, 6250 cpi, Berkeley, no rewind	/dev/rmt7978	c	9	0x070083
HP 7978A, 6250 cpi, Berkeley, autorewind	/dev/rmt7978	c	9	0x070082
HP 7978A, 6250 cpi, AT&T, no rewind	/dev/rmt7978	c	9	0x070081
HP 7978A, 6250 cpi, AT&T, autorewind	/dev/rmt7978	c	9	0x070080
HP 7978A, 1600 cpi, Berkeley, no rewind	/dev/rmt7978	c	9	0x070043
HP 7978A, 1600 cpi, Berkeley, autorewind	/dev/rmt7978	c	9	0x070042
HP 7978A, 1600 cpi, AT&T, no rewind	/dev/rmt7978	c	9	0x070041
HP 7978A, 1600 cpi, AT&T, autorewind	/dev/rmt7978	c	9	0x070040

¹ See the System Administrator manual for information on compatibility mode and on disabling immediate report mode.

HP-UX System Worksheet Entries (Cont.)

**If the HP 7978A Is the Second Disc or Tape (Address 2)
on the Built-in HP-IB Interface (Select Code 7)...¹**

Device Name	Path Name	File Type	Major Number	Minor Number
HP 7978A, 6250 cpi, Berkeley, no rewind	/dev/rmt7978	c	9	0x070283
HP 7978A, 6250 cpi, Berkeley, autorewind	/dev/rmt7978	c	9	0x070282
HP 7978A, 6250 cpi, AT&T, no rewind	/dev/rmt7978	c	9	0x070281
HP 7978A, 6250 cpi, AT&T, autorewind	/dev/rmt7978	c	9	0x070280
HP 7978A, 1600 cpi, Berkeley, no rewind	/dev/rmt7978	c	9	0x070243
HP 7978A, 1600 cpi, Berkeley, autorewind	/dev/rmt7978	c	9	0x070242
HP 7978A, 1600 cpi, AT&T, no rewind	/dev/rmt7978	c	9	0x070241
HP 7978A, 1600 cpi, AT&T, autorewind	/dev/rmt7978	c	9	0x070240

**If the HP 7978A Is the Third Disc or Tape (Address 3)
on the Built-in HP-IB Interface (Select Code 7)...¹**

Device Name	Path Name	File Type	Major Number	Minor Number
HP 7978A, 6250 cpi, Berkeley, no rewind	/dev/rmt7978	c	9	0x070383
HP 7978A, 6250 cpi, Berkeley, autorewind	/dev/rmt7978	c	9	0x070382
HP 7978A, 6250 cpi, AT&T, no rewind	/dev/rmt7978	c	9	0x070381
HP 7978A, 6250 cpi, AT&T, autorewind	/dev/rmt7978	c	9	0x070380
HP 7978A, 1600 cpi, Berkeley, no rewind	/dev/rmt7978	c	9	0x070343
HP 7978A, 1600 cpi, Berkeley, autorewind	/dev/rmt7978	c	9	0x070342
HP 7978A, 1600 cpi, AT&T, no rewind	/dev/rmt7978	c	9	0x070341
HP 7978A, 1600 cpi, AT&T, autorewind	/dev/rmt7978	c	9	0x070340

¹ See the *System Administrator* manual for information on compatibility mode and on disabling immediate report mode.

Installing the HP 9121 and 9122 Flexible Disc Drives

Description

The HP 9121 records data on a single-sided 3¹/₂-inch disc and the HP 9122 records data on double-sided or single-sided 3¹/₂-inch discs. The HP 9121S and HP 9122S have a single disc drive, while the HP 9121D and the HP 9122D have two disc drives in the unit.

Support

The HP 9121 and 9122 are supported on all Series 200 computers with boot ROM 3.0 or later, and on all Series 300 computers with boot ROM Rev. A or later.

Operating/Language system support is as follows:

- **BASIC:** The HP 9121 is supported on revision 2.0 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers. The HP 9122 is supported on revision 3.0 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** The HP 9121 is supported on revision 2.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers. The HP 9122 is supported on revision 3.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.
- **HP-UX Operating System:** the HP 9121 is supported on revision 2.0 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers. The HP 9122 is supported on revision 2.2L or later with Series 200 computers (excluding 2.3); supported on revision 5.0 or later with Series 300 computers.

Before You Begin

The following procedure describes how to connect your HP 9121 and 9122 to your Series 200/300 computer. Before you do this, however, refer to the manual(s) that came with the drive to:

- Unpack the drive.
- Check the voltage switch setting.
- Check the fuse value.

HP 9121 and 9122 Installation Procedure

1. **Play It Safe.**
 - a. Turn your computer and disc drive off, if they are not already off.
2. **Select Your Interface.**
 - a. Use either the built-in HP-IB interface or an HP 98624A HP-IB Interface.
3. **Set the Address.**

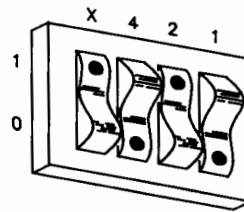
CAN YOU SKIP THIS STEP?

If this is the first (or only) disc or tape drive you are connecting to the interface, you can skip to step 4. The address is preset to 0 and need not be changed—*unless* you have changed the address of another device on the interface to 0.

- a. On the back of the disc drive, find the set of four switches labeled “ADDRESS.”

b. Set the HP-IB address:

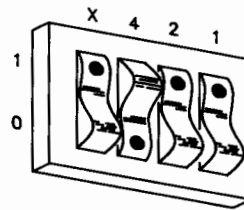
- If there is only *one* other disc or tape drive (besides this HP 9121/22) already connected to the interface, set the “ADDRESS” switches to 2 as shown below, unless address 2 has already been used.



Address 2



- If there are *two* other disc or tape drives (besides this HP 9121/22) already connected to the interface, set the “ADDRESS” switches to 3 as shown below, unless address 3 has already been used. Refer to the manual that came with your disc drive for additional switch settings.



Address 3

4. Connect the Disc Drive to Your Computer.

- a. Find the HP-IB cable provided with the disc drive.
- b. Connect one end of the HP-IB cable to the HP-IB socket on the back of the disc drive. Tighten the thumb screws to secure the connection.

- c. Connect the other end of the HP-IB cable to the interface.

NOTE

If the interface already has several cables connected to it, connect your HP 9121/22 cable to one of the other devices on the interface.

5. Connect the Power Cord.

- a. Connect the female end of the power cord to the “AC LINE” socket on the back of the disc drive, and connect the other end to your power outlet.

6. Record the Address.

- a. Make a note that address 0 (or the alternate address you chose in step 3) has been used and is no longer available on the interface you selected. Use the “Address Record” form on the Step 6 tab for this purpose.

The Next Step

You have now installed your HP 9121/22 Disc Drive.

The following “Worksheet Entries” contain information needed to use your disc drive with various language/operating systems. Refer to the entries for the system you’ll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral.

BASIC System Worksheet Entries

If You Connected the HP 9121/22 to the Built-in HP-IB Interface (Select Code 7)...

**And It Is the First Disc or Tape
Drive on this Interface (Address 0)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 9121 - Left	“:,700”	DISC	2
HP 9121D - Right	“:,700,1”	DISC	2
HP 9122 - Left	“:,700”	CS80	2
HP 9122D - Right	“:,700,1”	CS80	2

**And It Is the Second Disc or Tape
Drive on this Interface (Address 2)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 9121 - Left	“:,702”	DISC	2
HP 9121D - Right	“:,702,1”	DISC	2
HP 9122 - Left	“:,702”	CS80	2
HP 9122D - Right	“:,702,1”	CS80	2

**And It Is the Third Disc or Tape
Drive on this Interface (Address 3)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 9121 - Left	“:,703”	DISC	2
HP 9121D - Right	“:,703,1”	DISC	2
HP 9122 - Left	“:,703”	CS80	2
HP 9122D - Right	“:,703,1”	CS80	2

BASIC System Worksheet Entries (Cont.)

**If You Connected the HP 9121/22
to the HP 98624 HP-IB Interface (Select Code 8)...**

**And It Is the First Disc or Tape
Drive on this Interface (Address 0)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 9121 - Left	“:,800”	DISC	2
HP 9121D - Right	“:,800,1”	DISC	2
HP 9122 - Left	“:,800”	CS80	2
HP 9122D - Right	“:,800,1”	CS80	2

**And It Is the Second Disc or Tape
Drive on this Interface (Address 2)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 9121 - Left	“:,802”	DISC	2
HP 9121D - Right	“:,802,1”	DISC	2
HP 9122 - Left	“:,802”	CS80	2
HP 9122D - Right	“:,802,1”	CS80	2

**And It Is the Third Disc or Tape
Drive on this Interface (Address 3)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 9121 - Left	“:,803”	DISC	2
HP 9121D - Right	“:,803,1”	DISC	2
HP 9122 - Left	“:,803”	CS80	2
HP 9122D - Right	“:,803,1”	CS80	2

Pascal Workstation Worksheet Entries

Device Name	Unit Numbers ¹	Module Name	Interleave Factor
HP 9121 - Left	#3:	DISCHPIB & AMIGO	2
HP 9121D - Right	#4:	DISCHPIB & AMIGO	2
HP 9122 - Left	#3:	DISCHPIB & CS80	2
HP 9122D - Right	#4:	DISCHPIB & CS80	2

¹ If you have more than one flexible disc drive, the unit number assignments for your HP 9121/22 may be different. Refer to the section, "Determining Pascal Unit Numbers," found at the end of this chapter, after you have installed *all* of your discs.

HP-UX System Worksheet Entries

**If the HP 9121/22 Is the First Disc or Tape (Address 0)
on the Built-in HP-IB Interface (Select Code 7)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9121 - Left	/dev/md9121.0	b	2	0x070000	2
HP 9121 - Left	/dev/rmd9121.0	c	11	0x070000	2
HP 9121D - Right	/dev/md9121.1	b	2	0x070010	2
HP 9121D - Right	/dev/rmd9121.1	c	11	0x070010	2
HP 9122 - Left	/dev/md9122.0	b	0	0x070000	2
HP 9122 - Left	/dev/rmd9122.0	c	4	0x070000	2
HP 9122D - Right	/dev/md9122.1	b	0	0x070010	2
HP 9122D - Right	/dev/rmd9122.1	c	4	0x070010	2

**If the HP 9121/22 Is the Second Disc or Tape (Address 2)
on the Built-in HP-IB Interface (Select Code 7)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9121 - Left	/dev/md9121.0	b	2	0x070200	2
HP 9121 - Left	/dev/rmd9121.0	c	11	0x070200	2
HP 9121D - Right	/dev/md9121.1	b	2	0x070210	2
HP 9121D - Right	/dev/rmd9121.1	c	11	0x070210	2
HP 9122 - Left	/dev/md9122.0	b	0	0x070200	2
HP 9122 - Left	/dev/rmd9122.0	c	4	0x070200	2
HP 9122D - Right	/dev/md9122.1	b	0	0x070210	2
HP 9122D - Right	/dev/rmd9122.1	c	4	0x070210	2

HP-UX System Worksheet Entries (Cont.)

**If the HP 9121/22 Is the Third Disc or Tape (Address 3)
on the Built-in HP-IB Interface (Select Code 7)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9121 - Left	/dev/md9121.0	b	2	0x070300	2
HP 9121 - Left	/dev/rmd9121.0	c	11	0x070300	2
HP 9121D - Right	/dev/md9121.1	b	2	0x070310	2
HP 9121D - Right	/dev/rmd9121.1	c	11	0x070310	2
HP 9122 - Left	/dev/md9122.0	b	0	0x070300	2
HP 9122 - Left	/dev/rmd9122.0	c	4	0x070300	2
HP 9122D - Right	/dev/md9122.1	b	0	0x070310	2
HP 9122D - Right	/dev/rmd9122.1	c	4	0x070310	2

**If the HP 9121/22 Is the First Disc or Tape (Address 0)
on the HP 98624 HP-IB Interface (Select Code 8)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9121 - Left	/dev/md9121.0	b	2	0x080000	2
HP 9121 - Left	/dev/rmd9121.0	c	11	0x080000	2
HP 9121D - Right	/dev/md9121.1	b	2	0x080010	2
HP 9121D - Right	/dev/rmd9121.1	c	11	0x080010	2
HP 9122 - Left	/dev/md9122.0	b	0	0x080000	2
HP 9122 - Left	/dev/rmd9122.0	c	4	0x080000	2
HP 9122D - Right	/dev/md9122.1	b	0	0x080010	2
HP 9122D - Right	/dev/rmd9122.1	c	4	0x080010	2

HP-UX System Worksheet Entries (Cont.)

**If the HP 9121/22 Is the Second Disc or Tape (Address 2)
on the HP 98624 HP-IB Interface (Select Code 8)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9121 - Left	/dev/md9121.0	b	2	0x080200	2
HP 9121 - Left	/dev/rmd9121.0	c	11	0x080200	2
HP 9121D - Right	/dev/md9121.1	b	2	0x080210	2
HP 9121D - Right	/dev/rmd9121.1	c	11	0x080210	2
HP 9122 - Left	/dev/md9122.0	b	0	0x080200	2
HP 9122 - Left	/dev/rmd9122.0	c	4	0x080200	2
HP 9122D - Right	/dev/md9122.1	b	0	0x080210	2
HP 9122D - Right	/dev/rmd9122.1	c	4	0x080210	2

**If the HP 9121/22 Is the Third Disc or Tape (Address 3)
on the HP 98624 HP-IB Interface (Select Code 8)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9121 - Left	/dev/md9121.0	b	2	0x080300	2
HP 9121 - Left	/dev/rmd9121.0	c	11	0x080300	2
HP 9121D - Right	/dev/md9121.1	b	2	0x080310	2
HP 9121D - Right	/dev/rmd9121.1	c	11	0x080310	2
HP 9122 - Left	/dev/md9122.0	b	0	0x080300	2
HP 9122 - Left	/dev/rmd9122.0	c	4	0x080300	2
HP 9122D - Right	/dev/md9122.1	b	0	0x080310	2
HP 9122D - Right	/dev/rmd9122.1	c	4	0x080310	2

Installing the HP 9125S Flexible Disc Drive



Description

The HP 9125S is a single 5¹/₄-inch flexible disc drive.

Support

The HP 9125S is supported on all Series 200 computers with boot ROM 3.0 or later, and on all Series 300 computers with boot ROM Rev. A or later.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 3.0 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** supported on revision 3.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.
- **HP-UX Operating System:** supported on revision 5.1 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

Before You Begin

The following procedure describes how to connect your HP 9125S to your Series 200/300 computer. Before you do this, however, refer to the manual(s) that came with the drive to:

- Unpack the drive.
- Check the voltage switch setting.
- Check the fuse value.

HP 9125S Flexible Disc Drive Installation Procedure

1. **Play It Safe.**
 - a. Turn your computer and disc drive off, if they are not already off.
2. **Select Your Interface.**
 - a. Use either the built-in HP-IB interface or an HP 98624A HP-IB Interface.
3. **Set the Address.**
 - a. On the back of the disc drive, find the HP-IB address wheel, labeled "ADDRESS."
 - b. Set the HP-IB address:
 - If this is the first disc or tape drive you are connecting to this interface, set the "ADDRESS" wheel to 0, unless address 0 has already been used.
 - If there is only *one* other disc or tape drive (besides this HP 9125) already connected to the interface, set the "ADDRESS" wheel to 2, unless address 2 has already been used.
 - If there are *two* other disc or tape drives (besides this HP 9125) already connected to the interface, set the "ADDRESS" wheel to 3, unless address 3 has already been used. If it has, choose any unused address.
4. **Connect the Disc Drive to Your Computer.**
 - a. Find the HP-IB cable provided with the disc drive.
 - b. Connect one end of the HP-IB cable to the HP-IB socket on the back of the disc drive. Tighten the thumb screws to secure the connection.
 - c. Connect the other end of the HP-IB cable to the interface.

NOTE

If the interface already has several cables connected to it, connect your HP 9125 cable to one of the other devices on the interface.

5. Connect the Power Cord.

- a. Connect the female end of the power cord to the “AC LINE” socket on the back of the disc drive, and connect the other end to your power outlet.

6. Record the Address.

- a. Make a note that address 0 (or the alternate address you chose in step 3) has been used and is no longer available on the interface you selected. Use the “Address Record” form on the Step 6 tab for this purpose.

The Next Step

You have now installed your HP 9125 Disc Drive.

The following “Worksheet Entries” contain information needed to use your disc drive with various language/operating systems. Refer to the entries for the system you’ll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral.

BASIC System Worksheet Entries

If You Connected the HP 9125 to the Built-in HP-IB Interface (Select Code 7)...

**And It Is the First Disc or Tape
Drive on this Interface (Address 0)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 9125	“,700”	CS80	2

**And It Is the Second Disc or Tape
Drive on this Interface (Address 2)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 9125	“,702”	CS80	2

**And It Is the Third Disc or Tape
Drive on this Interface (Address 3)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 9125	“,703”	CS80	2

BASIC System Worksheet Entries (Cont.)

If You Connected the HP 9125 to the HP 98624 HP-IB Interface (Select Code 8)...

**And It Is the First Disc or Tape
Drive on this Interface (Address 0)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 9125	“:,800”	CS80	2

**And It Is the Second Disc or Tape
Drive on this Interface (Address 2)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 9125	“:,802”	CS80	2

**And It Is the Third Disc or Tape
Drive on this Interface (Address 3)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 9125	“:,803”	CS80	2

Pascal Workstation Worksheet Entry

Device Name	Unit Numbers ¹	Module Name	Interleave Factor
HP 9125	#3:	DISCHPIB & CS80	2

¹ If you have more than one flexible disc drive, the unit number assignment for your HP 9125 may be different. Refer to the section, "Determining Pascal Unit Numbers," found at the end of this chapter, after you have installed *all* of your discs.

HP-UX System Worksheet Entries

**If You Connected the HP 9125 to the
Built-in HP-IB Interface (Select Code 7)...**



**And It Is the First Disc or Tape
Drive on this Interface (Address 0)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9125	/dev/fd9125	b	0	0x070000	2
HP 9125	/dev/rfd9125	c	4	0x070000	2

**And It Is the Second Disc or Tape
Drive on this Interface (Address 2)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9125	/dev/fd9125	b	0	0x070200	2
HP 9125	/dev/rfd9125	c	4	0x070200	2

**And It Is the Third Disc or Tape
Drive on this Interface (Address 3)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9125	/dev/fd9125	b	0	0x070300	2
HP 9125	/dev/rfd9125	c	4	0x070300	2

HP-UX System Worksheet Entries (Cont.)

If You Connected the HP 9125 to the HP 98624 HP-IB Interface (Select Code 8)...

**And It Is the First Disc or Tape
Drive on this Interface (Address 0)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9125	/dev/fd9125	b	0	0x080000	2
HP 9125	/dev/rfd9125	c	4	0x080000	2

**And It Is the Second Disc or Tape
Drive on this Interface (Address 2)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9125	/dev/fd9125	b	0	0x080200	2
HP 9125	/dev/rfd9125	c	4	0x080200	2

**And It Is the Third Disc or Tape
Drive on this Interface (Address 3)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9125	/dev/fd9125	b	0	0x080300	2
HP 9125	/dev/rfd9125	c	4	0x080300	2

Installing the HP 9133D/H/L and 9134D/H/L Disc Drives

Description

The HP 9133D/H/L contains a Winchester (hard) disc drive and a 3¹/₂-inch double-sided flexible disc drive. The HP 9134D/H/L contains a Winchester (hard) disc drive only.

Support

The HP 9133D/H/L and HP 9134D/H/L are supported on all Series 200 computers with boot ROM 3.0 or later, and on all Series 300 computers with boot ROM Rev. A or later.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 3.0 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** supported on revision 3.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.
- **HP-UX Operating System:** supported on revision 2.0 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

Before You Begin

The following procedure describes how to connect your HP 9133D/H/L and HP 9134D/H/L to your Series 200/300 computer. Before you do this, however, refer to the manual(s) that came with the drive to:

- Unpack the drive.
- Check the voltage switch setting.
- Check the fuse value.

HP 9133D/H/L and 9134D/H/L Installation Procedure

1. Play It Safe.

- a. Turn your computer and disc drive off, if they are not already off.

2. Select Your Interface.

- a. Select one of the following interfaces, listed in order of preference for optimum disc performance:
 - HP 98625 Disc Interface
 - Built-in HP-IB Interface or HP 98624A HP-IB Interface

3. Set the Address.

CAN YOU SKIP THIS STEP?

If this is the first (or only) disc or tape drive you are connecting to the interface, you can skip to step 4. The address is preset to 0 and need not be changed—*unless* you have changed the address of another device on the interface to 0.

- a. On the back of the disc drive, find the HP-IB address wheel, labeled “ADDRESS.”
- b. Set the HP-IB address:
 - If there is only *one* other disc or tape drive (besides this HP 9133/34) already connected to the interface, set the “ADDRESS” wheel to 2, unless address 2 has already been used.
 - If there are *two* other disc or tape drives (besides this HP 9133/34) already connected to the interface, set the “ADDRESS” wheel on your HP 9133/34 to 3, unless address 3 has already been used. If it has, choose any unused address.

4. Set the Configuration Switch.



CAN YOU SKIP THIS STEP?

The configuration switch partitions the disc into multiple volumes, making the disc act like several smaller disc drives. The switch is preset for a single volume. If you want multiple volumes on your disc (this is particularly advantageous with BASIC), continue with step 4. If you are satisfied with one volume (as is usually the case with the Pascal Workstation and HP-UX), skip to step 5.

- a. Find the configuration switch, labeled "CONFIGURATION," on the back of the disc drive.
- b. Refer to the manual that came with your disc drive for a list of configuration switch settings.
- c. Decide how you would like your hard disc partitioned and set the configuration switch accordingly. Make this decision carefully, for you cannot change this setting without re-initializing the disc. Some factors to consider:
 - If you will be storing primarily large files on your disc, partition your disc into a few large volumes.
 - If you will be storing primarily small files on your disc, partition the disc into several small volumes.
 - If you will store both large and small files on the disc, then create both small and large volumes, or choose a good median volume size.
 - If storing more than one system on your disc (e.g., BASIC and the Pascal Workstation), or if you want to create different volume types on your disc, partition the disc according to the storage requirements of each system or volume.

CAUTION

Files may be lost if you change the configuration switch after initializing the disc. Only change the configuration switch immediately before you initialize, or re-initialize, the disc.

5. Connect the Disc Drive to Your Computer.

- a. Find the HP-IB cable provided with the disc drive.
- b. Connect one end of the HP-IB cable to the HP-IB socket on the back of the disc drive. Tighten the thumb screws to secure the connection.
- c. Connect the other end of the HP-IB cable to the interface.

NOTE

If the interface already has several cables connected to it, connect your HP 9133/34 cable to one of the other devices on the interface.

6. Connect the Power Cord.

- a. Connect the female end of the power cord to the power socket on the back of the disc drive, and connect the other end to your power outlet.

7. Record the Address.

- a. Make a note that address 0 (or the alternate address you chose in step 3) has been used and is no longer available on the interface you selected. Use the "Address Record" form on the Step 6 tab for this purpose.

The Next Step

You have now installed your HP 9133/34 Disc Drive.

The following “Worksheet Entries” contain information needed to use your disc drive with various language/operating systems. Refer to the entries for the system you’ll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral.

BASIC System Worksheet Entries

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into three volumes, only the "1st vol." thru "3rd vol." entries apply.

If the HP 9133/34 Is the First Disc or Tape (Address 0) on the HP 98625 Disc Interface (Select Code 14)...

Device Name	Msus	Driver Name	Interleave Factor
HP 9133/34 - Hard, 1st vol.	":,1400"	CS80	3
HP 9133/34 - Hard, 2nd vol.	":,1400,0,1"	CS80	3
HP 9133/34 - Hard, 3rd vol.	":,1400,0,2"	CS80	3
HP 9133/34 - Hard, 4th vol.	":,1400,0,3"	CS80	3
HP 9133/34 - Hard, 5th vol.	":,1400,0,4"	CS80	3
HP 9133/34 - Hard, 6th vol.	":,1400,0,5"	CS80	3
HP 9133/34 - Hard, 7th vol.	":,1400,0,6"	CS80	3
HP 9133/34 - Hard, 8th vol.	":,1400,0,7"	CS80	3
HP 9133 - Flexible	":,1400,1"	CS80	2

BASIC System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into three volumes, only the "1st vol." thru "3rd vol." entries apply.

**If the HP 9133/34 Is the Second Disc or Tape (Address 2)
on the HP 98625 Disc Interface (Select Code 14)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 9133/34 - Hard, 1st vol.	“,1402”	CS80	3
HP 9133/34 - Hard, 2nd vol.	“,1402,0,1”	CS80	3
HP 9133/34 - Hard, 3rd vol.	“,1402,0,2”	CS80	3
HP 9133/34 - Hard, 4th vol.	“,1402,0,3”	CS80	3
HP 9133/34 - Hard, 5th vol.	“,1402,0,4”	CS80	3
HP 9133/34 - Hard, 6th vol.	“,1402,0,5”	CS80	3
HP 9133/34 - Hard, 7th vol.	“,1402,0,6”	CS80	3
HP 9133/34 - Hard, 8th vol.	“,1402,0,7”	CS80	3
HP 9133 - Flexible	“,1402,1”	CS80	2

BASIC System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into three volumes, only the "1st vol." thru "3rd vol." entries apply.

If the HP 9133/34 Is the Third Disc or Tape (Address 3) on the HP 98625 Disc Interface (Select Code 14)...

Device Name	Msus	Driver Name	Interleave Factor
HP 9133/34 - Hard, 1st vol.	“:,1403”	CS80	3
HP 9133/34 - Hard, 2nd vol.	“:,1403,0,1”	CS80	3
HP 9133/34 - Hard, 3rd vol.	“:,1403,0,2”	CS80	3
HP 9133/34 - Hard, 4th vol.	“:,1403,0,3”	CS80	3
HP 9133/34 - Hard, 5th vol.	“:,1403,0,4”	CS80	3
HP 9133/34 - Hard, 6th vol.	“:,1403,0,5”	CS80	3
HP 9133/34 - Hard, 7th vol.	“:,1403,0,6”	CS80	3
HP 9133/34 - Hard, 8th vol.	“:,1403,0,7”	CS80	3
HP 9133 - Flexible	“:,1403,1”	CS80	2

BASIC System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into three volumes, only the "1st vol." thru "3rd vol." entries apply.

If the HP 9133/34 Is the First Disc or Tape (Address 0) on the Built-in HP-IB Interface (Select Code 7)...

Device Name	Msus	Driver Name	Interleave Factor ¹
HP 9133/34 - Hard, 1st vol.	“,700”	CS80	7
HP 9133/34 - Hard, 2nd vol.	“,700,0,1”	CS80	7
HP 9133/34 - Hard, 3rd vol.	“,700,0,2”	CS80	7
HP 9133/34 - Hard, 4th vol.	“,700,0,3”	CS80	7
HP 9133/34 - Hard, 5th vol.	“,700,0,4”	CS80	7
HP 9133/34 - Hard, 6th vol.	“,700,0,5”	CS80	7
HP 9133/34 - Hard, 7th vol.	“,700,0,6”	CS80	7
HP 9133/34 - Hard, 8th vol.	“,700,0,7”	CS80	7
HP 9133 - Flexible	“,700,1”	CS80	2

¹ If you have an HP 98620B DMA Card, the recommended interleave factor for the hard disc is 4 instead of 7.

BASIC System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into three volumes, only the "1st vol." thru "3rd vol." entries apply.

If the HP 9133/34 Is the Second Disc or Tape (Address 2) on the Built-in HP-IB Interface (Select Code 7)...

Device Name	Msus	Driver Name	Interleave Factor ¹
HP 9133/34 - Hard, 1st vol.	“,702”	CS80	7
HP 9133/34 - Hard, 2nd vol.	“,702,0,1”	CS80	7
HP 9133/34 - Hard, 3rd vol.	“,702,0,2”	CS80	7
HP 9133/34 - Hard, 4th vol.	“,702,0,3”	CS80	7
HP 9133/34 - Hard, 5th vol.	“,702,0,4”	CS80	7
HP 9133/34 - Hard, 6th vol.	“,702,0,5”	CS80	7
HP 9133/34 - Hard, 7th vol.	“,702,0,6”	CS80	7
HP 9133/34 - Hard, 8th vol.	“,702,0,7”	CS80	7
HP 9133 - Flexible	“,702,1”	CS80	2

¹ If you have an HP 98620B DMA Card, the recommended interleave factor for the hard disc is 4 instead of 7.

BASIC System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into three volumes, only the "1st vol." thru "3rd vol." entries apply.

If the HP 9133/34 Is the Third Disc or Tape (Address 3) on the Built-in HP-IB Interface (Select Code 7)...

Device Name	Msus	Driver Name	Interleave Factor ¹
HP 9133/34 - Hard, 1st vol.	“,703”	CS80	7
HP 9133/34 - Hard, 2nd vol.	“,703,0,1”	CS80	7
HP 9133/34 - Hard, 3rd vol.	“,703,0,2”	CS80	7
HP 9133/34 - Hard, 4th vol.	“,703,0,3”	CS80	7
HP 9133/34 - Hard, 5th vol.	“,703,0,4”	CS80	7
HP 9133/34 - Hard, 6th vol.	“,703,0,5”	CS80	7
HP 9133/34 - Hard, 7th vol.	“,703,0,6”	CS80	7
HP 9133/34 - Hard, 8th vol.	“,703,0,7”	CS80	7
HP 9133 - Flexible	“,703,1”	CS80	2



¹ If you have an HP 98620B DMA Card, the recommended interleave factor for the hard disc is 4 instead of 7.

BASIC System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into three volumes, only the "1st vol." thru "3rd vol." entries apply.

**If the HP 9133/34 Is the First Disc or Tape (Address 0)
on the HP 98624 HP-IB Interface (Select Code 8)...**

Device Name	Msus	Driver Name	Interleave Factor ¹
HP 9133/34 - Hard, 1st vol.	“,800”	CS80	7
HP 9133/34 - Hard, 2nd vol.	“,800,0,1”	CS80	7
HP 9133/34 - Hard, 3rd vol.	“,800,0,2”	CS80	7
HP 9133/34 - Hard, 4th vol.	“,800,0,3”	CS80	7
HP 9133/34 - Hard, 5th vol.	“,800,0,4”	CS80	7
HP 9133/34 - Hard, 6th vol.	“,800,0,5”	CS80	7
HP 9133/34 - Hard, 7th vol.	“,800,0,6”	CS80	7
HP 9133/34 - Hard, 8th vol.	“,800,0,7”	CS80	7
HP 9133 - Flexible	“,800,1”	CS80	2

¹ If you have an HP 98620B DMA Card, the recommended interleave factor for the hard disc is 4 instead of 7.

BASIC System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into three volumes, only the "1st vol." thru "3rd vol." entries apply.

**If the HP 9133/34 Is the Second Disc or Tape (Address 2)
on the HP 98624 HP-IB Interface (Select Code 8)...**

Device Name	Msus	Driver Name	Interleave Factor ¹
HP 9133/34 - Hard, 1st vol.	“,802”	CS80	7
HP 9133/34 - Hard, 2nd vol.	“,802,0,1”	CS80	7
HP 9133/34 - Hard, 3rd vol.	“,802,0,2”	CS80	7
HP 9133/34 - Hard, 4th vol.	“,802,0,3”	CS80	7
HP 9133/34 - Hard, 5th vol.	“,802,0,4”	CS80	7
HP 9133/34 - Hard, 6th vol.	“,802,0,5”	CS80	7
HP 9133/34 - Hard, 7th vol.	“,802,0,6”	CS80	7
HP 9133/34 - Hard, 8th vol.	“,802,0,7”	CS80	7
HP 9133 - Flexible	“,802,1”	CS80	2

¹ If you have an HP 98620B DMA Card, the recommended interleave factor for the hard disc is 4 instead of 7.

BASIC System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into three volumes, only the "1st vol." thru "3rd vol." entries apply.

If the HP 9133/34 Is the Third Disc or Tape (Address 3) on the HP 98624 HP-IB Interface (Select Code 8)...

Device Name	Msus	Driver Name	Interleave Factor
HP 9133/34 - Hard, 1st vol.	“,803”	CS80	7
HP 9133/34 - Hard, 2nd vol.	“,803,0,1”	CS80	7
HP 9133/34 - Hard, 3rd vol.	“,803,0,2”	CS80	7
HP 9133/34 - Hard, 4th vol.	“,803,0,3”	CS80	7
HP 9133/34 - Hard, 5th vol.	“,803,0,4”	CS80	7
HP 9133/34 - Hard, 6th vol.	“,803,0,5”	CS80	7
HP 9133/34 - Hard, 7th vol.	“,803,0,6”	CS80	7
HP 9133/34 - Hard, 8th vol.	“,803,0,7”	CS80	7
HP 9133 - Flexible	“,803,1”	CS80	2

¹ If you have an HP 98620B DMA Card, the recommended interleave factor for the hard disc is 4 instead of 7.

Pascal Workstation Worksheet Entries

Separate entries are provided for each version of the HP 9133 and HP 9134 (D, H or L), and for the standard format or Option 001. To find out which version you have, look at the back panel of the disc drive. To find out if you have option 001, look at the back panel under "Fixed Disc Format." Formats are as follows:

- **14.8 Mbyte:** HP 9133/34D standard format.
- **16.6 Mbyte:** HP 9133/34D option 001 format.
- **19.9 Mbyte:** HP 9133/34H standard format.
- **22.3 Mbyte:** HP 9133/34H option 001 format.
- **39.9 Mbyte:** HP 9133/34L standard format.
- **44.7 Mbyte:** HP 9133/34L option 001 format.



Device Name	Unit Numbers ^{1,2}	Module Name	Interleave Factor ³
HP 9133/34D - Hard, std.	#11: thru #24:	DISCHPIB & CS80	7
HP 9133/34D - Hard, opt. 001	#11: thru #26:	DISCHPIB & CS80	7
HP 9133D - Flexible	#3:	DISCHPIB & CS80	2
HP 9133/34H - Hard, std.	#11: thru #29:	DISCHPIB & CS80	6
HP 9133/34H - Hard, opt. 001	#11: thru #32:	DISCHPIB & CS80	6
HP 9133H - Flexible	#3:	DISCHPIB & CS80	2
HP 9133/34L - Hard, std.	#11: thru #40:	DISCHPIB & CS80	6
HP 9133/34L - Hard, opt. 001	#11: thru #40:	DISCHPIB & CS80	6
HP 9133L - Flexible	#3:	DISCHPIB & CS80	2

¹ If you have more than one hard disc drive, or if you partitioned your disc into multiple volumes in step 4, the unit number assignments for your HP 9133/34 may be different. Refer to the section, "Determining Pascal Unit Numbers," found at the end of this chapter, after you have installed *all* of your discs.

² If you have more than one flexible disc drive, the unit number assignment for your HP 9133 may be different. Refer to the section, "Determining Pascal Unit Numbers," found at the end of this chapter, after you have installed *all* of your discs.

³ If you have an HP 98620B DMA Card, the recommended interleave factor for the hard disc is 4 on a built-in or HP 98624A HP-IB Interface, 3 on an HP 98625 Disc Interface.

HP-UX System Worksheet Entries

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into three volumes, only the "1st vol." thru "3rd vol." entries apply.

If the HP 9133/34 Is the First Disc or Tape (Address 0) on the HP 98625 Disc Interface (Select Code 14)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9133/34 - Hard, 1st vol.	/dev/hd9133	b	0	0x0e0000	3
HP 9133/34 - Hard, 1st vol.	/dev/rhd9133	c	4	0x0e0000	3
HP 9133/34 - Hard, 2nd vol.	/dev/hd9133.1	b	0	0x0e0001	3
HP 9133/34 - Hard, 2nd vol.	/dev/rhd9133.1	c	4	0x0e0001	3
HP 9133/34 - Hard, 3rd vol.	/dev/hd9133.2	b	0	0x0e0002	3
HP 9133/34 - Hard, 3rd vol.	/dev/rhd9133.2	c	4	0x0e0002	3
HP 9133/34 - Hard, 4th vol.	/dev/hd9133.3	b	0	0x0e0003	3
HP 9133/34 - Hard, 4th vol.	/dev/rhd9133.3	c	4	0x0e0003	3
HP 9133/34 - Hard, 5th vol.	/dev/hd9133.4	b	0	0x0e0004	3
HP 9133/34 - Hard, 5th vol.	/dev/rhd9133.4	c	4	0x0e0004	3
HP 9133/34 - Hard, 6th vol.	/dev/hd9133.5	b	0	0x0e0005	3
HP 9133/34 - Hard, 6th vol.	/dev/rhd9133.5	c	4	0x0e0005	3
HP 9133/34 - Hard, 7th vol.	/dev/hd9133.6	b	0	0x0e0006	3
HP 9133/34 - Hard, 7th vol.	/dev/rhd9133.6	c	4	0x0e0006	3
HP 9133/34 - Hard, 8th vol.	/dev/hd9133.7	b	0	0x0e0007	3
HP 9133/34 - Hard, 8th vol.	/dev/rhd9133.7	c	4	0x0e0007	3
HP 9133 - Flexible	/dev/md9133	b	0	0x0e0010	2
HP 9133 - Flexible	/dev/rmd9133	c	4	0x0e0010	2

¹ If you have an HP 9134, substitute 9134 for 9133 in the path name.

HP-UX System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into three volumes, only the "1st vol." thru "3rd vol." entries apply.

If the HP 9133/34 Is the Second Disc or Tape (Address 2) on the HP 98625 Disc Interface (Select Code 14)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9133/34 - Hard, 1st vol.	/dev/hd9133	b	0	0x0e0200	3
HP 9133/34 - Hard, 1st vol.	/dev/rhd9133	c	4	0x0e0200	3
HP 9133/34 - Hard, 2nd vol.	/dev/hd9133.1	b	0	0x0e0201	3
HP 9133/34 - Hard, 2nd vol.	/dev/rhd9133.1	c	4	0x0e0201	3
HP 9133/34 - Hard, 3rd vol.	/dev/hd9133.2	b	0	0x0e0202	3
HP 9133/34 - Hard, 3rd vol.	/dev/rhd9133.2	c	4	0x0e0202	3
HP 9133/34 - Hard, 4th vol.	/dev/hd9133.3	b	0	0x0e0203	3
HP 9133/34 - Hard, 4th vol.	/dev/rhd9133.3	c	4	0x0e0203	3
HP 9133/34 - Hard, 5th vol.	/dev/hd9133.4	b	0	0x0e0204	3
HP 9133/34 - Hard, 5th vol.	/dev/rhd9133.4	c	4	0x0e0204	3
HP 9133/34 - Hard, 6th vol.	/dev/hd9133.5	b	0	0x0e0205	3
HP 9133/34 - Hard, 6th vol.	/dev/rhd9133.5	c	4	0x0e0205	3
HP 9133/34 - Hard, 7th vol.	/dev/hd9133.6	b	0	0x0e0206	3
HP 9133/34 - Hard, 7th vol.	/dev/rhd9133.6	c	4	0x0e0206	3
HP 9133/34 - Hard, 8th vol.	/dev/hd9133.7	b	0	0x0e0207	3
HP 9133/34 - Hard, 8th vol.	/dev/rhd9133.7	c	4	0x0e0207	3
HP 9133 - Flexible	/dev/md9133	b	0	0x0e0210	2
HP 9133 - Flexible	/dev/rmd9133	c	4	0x0e0210	2

¹ If you have an HP 9134, substitute 9134 for 9133 in the path name.

HP-UX System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into three volumes, only the "1st vol." thru "3rd vol." entries apply.

If the HP 9133/34 Is the Third Disc or Tape (Address 3) on the HP 98625 Disc Interface (Select Code 14)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9133/34 - Hard, 1st vol.	/dev/hd9133	b	0	0x0e0300	3
HP 9133/34 - Hard, 1st vol.	/dev/rhd9133	c	4	0x0e0300	3
HP 9133/34 - Hard, 2nd vol.	/dev/hd9133.1	b	0	0x0e0301	3
HP 9133/34 - Hard, 2nd vol.	/dev/rhd9133.1	c	4	0x0e0301	3
HP 9133/34 - Hard, 3rd vol.	/dev/hd9133.2	b	0	0x0e0302	3
HP 9133/34 - Hard, 3rd vol.	/dev/rhd9133.2	c	4	0x0e0302	3
HP 9133/34 - Hard, 4th vol.	/dev/hd9133.3	b	0	0x0e0303	3
HP 9133/34 - Hard, 4th vol.	/dev/rhd9133.3	c	4	0x0e0303	3
HP 9133/34 - Hard, 5th vol.	/dev/hd9133.4	b	0	0x0e0304	3
HP 9133/34 - Hard, 5th vol.	/dev/rhd9133.4	c	4	0x0e0304	3
HP 9133/34 - Hard, 6th vol.	/dev/hd9133.5	b	0	0x0e0305	3
HP 9133/34 - Hard, 6th vol.	/dev/rhd9133.5	c	4	0x0e0305	3
HP 9133/34 - Hard, 7th vol.	/dev/hd9133.6	b	0	0x0e0306	3
HP 9133/34 - Hard, 7th vol.	/dev/rhd9133.6	c	4	0x0e0306	3
HP 9133/34 - Hard, 8th vol.	/dev/hd9133.7	b	0	0x0e0307	3
HP 9133/34 - Hard, 8th vol.	/dev/rhd9133.7	c	4	0x0e0307	3
HP 9133 - Flexible	/dev/md9133	b	0	0x0e0310	2
HP 9133 - Flexible	/dev/rmd9133	c	4	0x0e0310	2

¹ If you have an HP 9134, substitute 9134 for 9133 in the path name.

HP-UX System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into three volumes, only the "1st vol." thru "3rd vol." entries apply.

If the HP 9133/34 Is the First Disc or Tape (Address 0) on the Built-in HP-IB Interface (Select Code 7)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave ² Factor
HP 9133/34 - Hard, 1st vol.	/dev/hd9133	b	0	0x070000	7
HP 9133/34 - Hard, 1st vol.	/dev/rhd9133	c	4	0x070000	7
HP 9133/34 - Hard, 2nd vol.	/dev/hd9133.1	b	0	0x070001	7
HP 9133/34 - Hard, 2nd vol.	/dev/rhd9133.1	c	4	0x070001	7
HP 9133/34 - Hard, 3rd vol.	/dev/hd9133.2	b	0	0x070002	7
HP 9133/34 - Hard, 3rd vol.	/dev/rhd9133.2	c	4	0x070002	7
HP 9133/34 - Hard, 4th vol.	/dev/hd9133.3	b	0	0x070003	7
HP 9133/34 - Hard, 4th vol.	/dev/rhd9133.3	c	4	0x070003	7
HP 9133/34 - Hard, 5th vol.	/dev/hd9133.4	b	0	0x070004	7
HP 9133/34 - Hard, 5th vol.	/dev/rhd9133.4	c	4	0x070004	7
HP 9133/34 - Hard, 6th vol.	/dev/hd9133.5	b	0	0x070005	7
HP 9133/34 - Hard, 6th vol.	/dev/rhd9133.5	c	4	0x070005	7
HP 9133/34 - Hard, 7th vol.	/dev/hd9133.6	b	0	0x070006	7
HP 9133/34 - Hard, 7th vol.	/dev/rhd9133.6	c	4	0x070006	7
HP 9133/34 - Hard, 8th vol.	/dev/hd9133.7	b	0	0x070007	7
HP 9133/34 - Hard, 8th vol.	/dev/rhd9133.7	c	4	0x070007	7
HP 9133 - Flexible	/dev/md9133	b	0	0x070010	2
HP 9133 - Flexible	/dev/rmd9133	c	4	0x070010	2

¹ If you have an HP 9134, substitute 9134 for 9133 in the path name.

² If you have an HP 98620B DMA Card, the recommended interleave factor for the hard disc is 4 instead of 7.

HP-UX System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into three volumes, only the "1st vol." thru "3rd vol." entries apply.

If the HP 9133/34 Is the Second Disc or Tape (Address 2) on the Built-in HP-IB Interface (Select Code 7)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave ² Factor
HP 9133/34 - Hard, 1st vol.	/dev/hd9133	b	0	0x070200	7
HP 9133/34 - Hard, 1st vol.	/dev/rhd9133	c	4	0x070200	7
HP 9133/34 - Hard, 2nd vol.	/dev/hd9133.1	b	0	0x070201	7
HP 9133/34 - Hard, 2nd vol.	/dev/rhd9133.1	c	4	0x070201	7
HP 9133/34 - Hard, 3rd vol.	/dev/hd9133.2	b	0	0x070202	7
HP 9133/34 - Hard, 3rd vol.	/dev/rhd9133.2	c	4	0x070202	7
HP 9133/34 - Hard, 4th vol.	/dev/hd9133.3	b	0	0x070203	7
HP 9133/34 - Hard, 4th vol.	/dev/rhd9133.3	c	4	0x070203	7
HP 9133/34 - Hard, 5th vol.	/dev/hd9133.4	b	0	0x070204	7
HP 9133/34 - Hard, 5th vol.	/dev/rhd9133.4	c	4	0x070204	7
HP 9133/34 - Hard, 6th vol.	/dev/hd9133.5	b	0	0x070205	7
HP 9133/34 - Hard, 6th vol.	/dev/rhd9133.5	c	4	0x070205	7
HP 9133/34 - Hard, 7th vol.	/dev/hd9133.6	b	0	0x070206	7
HP 9133/34 - Hard, 7th vol.	/dev/rhd9133.6	c	4	0x070206	7
HP 9133/34 - Hard, 8th vol.	/dev/hd9133.7	b	0	0x070207	7
HP 9133/34 - Hard, 8th vol.	/dev/rhd9133.7	c	4	0x070207	7
HP 9133 - Flexible	/dev/md9133	b	0	0x070210	2
HP 9133 - Flexible	/dev/rmd9133	c	4	0x070210	2

¹ If you have an HP 9134, substitute 9134 for 9133 in the path name.

² If you have an HP 98620B DMA Card, the recommended interleave factor for the hard disc is 4 instead of 7.

HP-UX System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into three volumes, only the "1st vol." thru "3rd vol." entries apply.

If the HP 9133/34 Is the Third Disc or Tape (Address 3) on the Built-in HP-IB Interface (Select Code 7)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave ² Factor
HP 9133/34 - Hard, 1st vol.	/dev/hd9133	b	0	0x070300	7
HP 9133/34 - Hard, 1st vol.	/dev/rhd9133	c	4	0x070300	7
HP 9133/34 - Hard, 2nd vol.	/dev/hd9133.1	b	0	0x070301	7
HP 9133/34 - Hard, 2nd vol.	/dev/rhd9133.1	c	4	0x070301	7
HP 9133/34 - Hard, 3rd vol.	/dev/hd9133.2	b	0	0x070302	7
HP 9133/34 - Hard, 3rd vol.	/dev/rhd9133.2	c	4	0x070302	7
HP 9133/34 - Hard, 4th vol.	/dev/hd9133.3	b	0	0x070303	7
HP 9133/34 - Hard, 4th vol.	/dev/rhd9133.3	c	4	0x070303	7
HP 9133/34 - Hard, 5th vol.	/dev/hd9133.4	b	0	0x070304	7
HP 9133/34 - Hard, 5th vol.	/dev/rhd9133.4	c	4	0x070304	7
HP 9133/34 - Hard, 6th vol.	/dev/hd9133.5	b	0	0x070305	7
HP 9133/34 - Hard, 6th vol.	/dev/rhd9133.5	c	4	0x070305	7
HP 9133/34 - Hard, 7th vol.	/dev/hd9133.6	b	0	0x070306	7
HP 9133/34 - Hard, 7th vol.	/dev/rhd9133.6	c	4	0x070306	7
HP 9133/34 - Hard, 8th vol.	/dev/hd9133.7	b	0	0x070307	7
HP 9133/34 - Hard, 8th vol.	/dev/rhd9133.7	c	4	0x070307	7
HP 9133 - Flexible	/dev/md9133	b	0	0x070310	2
HP 9133 - Flexible	/dev/rmd9133	c	4	0x070310	2

¹ If you have an HP 9134, substitute 9134 for 9133 in the path name.

² If you have an HP 98620B DMA Card, the recommended interleave factor for the hard disc is 4 instead of 7.

HP-UX System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into three volumes, only the "1st vol." thru "3rd vol." entries apply.

If the HP 9133/34 Is the First Disc or Tape (Address 0) on the HP 98624 HP-IB Interface (Select Code 8)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave ² Factor
HP 9133/34 - Hard, 1st vol.	/dev/hd9133	b	0	0x080000	7
HP 9133/34 - Hard, 1st vol.	/dev/rhd9133	c	4	0x080000	7
HP 9133/34 - Hard, 2nd vol.	/dev/hd9133.1	b	0	0x080001	7
HP 9133/34 - Hard, 2nd vol.	/dev/rhd9133.1	c	4	0x080001	7
HP 9133/34 - Hard, 3rd vol.	/dev/hd9133.2	b	0	0x080002	7
HP 9133/34 - Hard, 3rd vol.	/dev/rhd9133.2	c	4	0x080002	7
HP 9133/34 - Hard, 4th vol.	/dev/hd9133.3	b	0	0x080003	7
HP 9133/34 - Hard, 4th vol.	/dev/rhd9133.3	c	4	0x080003	7
HP 9133/34 - Hard, 5th vol.	/dev/hd9133.4	b	0	0x080004	7
HP 9133/34 - Hard, 5th vol.	/dev/rhd9133.4	c	4	0x080004	7
HP 9133/34 - Hard, 6th vol.	/dev/hd9133.5	b	0	0x080005	7
HP 9133/34 - Hard, 6th vol.	/dev/rhd9133.5	c	4	0x080005	7
HP 9133/34 - Hard, 7th vol.	/dev/hd9133.6	b	0	0x080006	7
HP 9133/34 - Hard, 7th vol.	/dev/rhd9133.6	c	4	0x080006	7
HP 9133/34 - Hard, 8th vol.	/dev/hd9133.7	b	0	0x080007	7
HP 9133/34 - Hard, 8th vol.	/dev/rhd9133.7	c	4	0x080007	7
HP 9133 - Flexible	/dev/md9133	b	0	0x080010	2
HP 9133 - Flexible	/dev/rmd9133	c	4	0x080010	2

¹ If you have an HP 9134, substitute 9134 for 9133 in the path name.

² If you have an HP 98620B DMA Card, the recommended interleave factor for the hard disc is 4 instead of 7.

HP-UX System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into three volumes, only the "1st vol." thru "3rd vol." entries apply.



If the HP 9133/34 Is the Second Disc or Tape (Address 2) on the HP 98624 HP-IB Interface (Select Code 8)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave ² Factor
HP 9133/34 - Hard, 1st vol.	/dev/hd9133	b	0	0x080200	7
HP 9133/34 - Hard, 1st vol.	/dev/rhd9133	c	4	0x080200	7
HP 9133/34 - Hard, 2nd vol.	/dev/hd9133.1	b	0	0x080201	7
HP 9133/34 - Hard, 2nd vol.	/dev/rhd9133.1	c	4	0x080201	7
HP 9133/34 - Hard, 3rd vol.	/dev/hd9133.2	b	0	0x080202	7
HP 9133/34 - Hard, 3rd vol.	/dev/rhd9133.2	c	4	0x080202	7
HP 9133/34 - Hard, 4th vol.	/dev/hd9133.3	b	0	0x080203	7
HP 9133/34 - Hard, 4th vol.	/dev/rhd9133.3	c	4	0x080203	7
HP 9133/34 - Hard, 5th vol.	/dev/hd9133.4	b	0	0x080204	7
HP 9133/34 - Hard, 5th vol.	/dev/rhd9133.4	c	4	0x080204	7
HP 9133/34 - Hard, 6th vol.	/dev/hd9133.5	b	0	0x080205	7
HP 9133/34 - Hard, 6th vol.	/dev/rhd9133.5	c	4	0x080205	7
HP 9133/34 - Hard, 7th vol.	/dev/hd9133.6	b	0	0x080206	7
HP 9133/34 - Hard, 7th vol.	/dev/rhd9133.6	c	4	0x080206	7
HP 9133/34 - Hard, 8th vol.	/dev/hd9133.7	b	0	0x080207	7
HP 9133/34 - Hard, 8th vol.	/dev/rhd9133.7	c	4	0x080207	7
HP 9133 - Flexible	/dev/md9133	b	0	0x080210	2
HP 9133 - Flexible	/dev/rmd9133	c	4	0x080210	2

¹ If you have an HP 9134, substitute 9134 for 9133 in the path name.

² If you have an HP 98620B DMA Card, the recommended interleave factor for the hard disc is 4 instead of 7.

HP-UX System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into three volumes, only the "1st vol." thru "3rd vol." entries apply.

If the HP 9133/34 Is the Third Disc or Tape (Address 3) on the HP 98624 HP-IB Interface (Select Code 8)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave ² Factor
HP 9133/34 - Hard, 1st vol.	/dev/hd9133	b	0	0x080300	7
HP 9133/34 - Hard, 1st vol.	/dev/rhd9133	c	4	0x080300	7
HP 9133/34 - Hard, 2nd vol.	/dev/hd9133.1	b	0	0x080301	7
HP 9133/34 - Hard, 2nd vol.	/dev/rhd9133.1	c	4	0x080301	7
HP 9133/34 - Hard, 3rd vol.	/dev/hd9133.2	b	0	0x080302	7
HP 9133/34 - Hard, 3rd vol.	/dev/rhd9133.2	c	4	0x080302	7
HP 9133/34 - Hard, 4th vol.	/dev/hd9133.3	b	0	0x080303	7
HP 9133/34 - Hard, 4th vol.	/dev/rhd9133.3	c	4	0x080303	7
HP 9133/34 - Hard, 5th vol.	/dev/hd9133.4	b	0	0x080304	7
HP 9133/34 - Hard, 5th vol.	/dev/rhd9133.4	c	4	0x080304	7
HP 9133/34 - Hard, 6th vol.	/dev/hd9133.5	b	0	0x080305	7
HP 9133/34 - Hard, 6th vol.	/dev/rhd9133.5	c	4	0x080305	7
HP 9133/34 - Hard, 7th vol.	/dev/hd9133.6	b	0	0x080306	7
HP 9133/34 - Hard, 7th vol.	/dev/rhd9133.6	c	4	0x080306	7
HP 9133/34 - Hard, 8th vol.	/dev/hd9133.7	b	0	0x080307	7
HP 9133/34 - Hard, 8th vol.	/dev/rhd9133.7	c	4	0x080307	7
HP 9133 - Flexible	/dev/md9133	b	0	0x080310	2
HP 9133 - Flexible	/dev/rmd9133	c	4	0x080310	2

¹ If you have an HP 9134, substitute 9134 for 9133 in the path name.

² If you have an HP 98620B DMA Card, the recommended interleave factor for the hard disc is 4 instead of 7.

Installing the HP 9144A Tape Drive

Description

The HP 9144A Tape Drive uses 1/4-inch tape cartridges. Two formatted storage capacities are available using the 88140SC (16.7 megabyte) or the 88140LC (67.0 megabyte) cartridges. The tape drive provides read-after-write capability for data verification as well as data recovery and auto-sparing, and it is compatible with existing 1/4-inch cartridges built into other HP mass storage devices.

Support

The HP 9144A is supported on all Series 200 computers with boot ROM 3.0 or later, and on all Series 300 computers with boot ROM Rev. A or later.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 2.1 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** supported on revision 2.1 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.
- **HP-UX Operating System:** supported on revision 2.0 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers

Before You Begin

The following procedure describes how to connect your HP 9144A to your Series 200/300 computer. Before you do this, however, refer to the manual(s) that came with the tape drive to:

- Unpack the drive.
- Check the voltage select switch.

HP 9144A Tape Drive Installation Procedure

1. Play It Safe.

- a. Turn your computer and tape drive off, if they are not already off.

2. Select Your Interface.

a. HP-UX Recommendations:

- If you selected an HP 98625 Disc Interface for your system disc(s), use the built-in HP-IB Interface for your HP 9144A tape drive.
- If you selected the built-in HP-IB interface for your system disc(s), use an HP 98624A HP-IB Interface for your HP 9144A tape drive (if available).
- Otherwise, use your built-in HP-IB interface for both disc and tape drives.

b. BASIC and Pascal Workstation Recommendations:

- Connect the tape drive to either the HP 98625 Disc Interface or to the built-in HP-IB interface.

3. Set the Address.

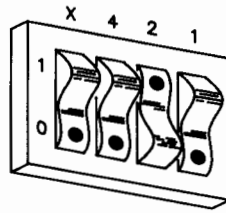
CAN YOU SKIP THIS STEP?

If this is the first (or only) disc or tape drive you are connecting to the interface, you can skip to step 4. The address is preset to 0 and need not be changed—*unless* you have changed the address of another device on the interface to 0.

- a. On the back of the tape drive, find the set of four switches labeled “ADDRESS.”

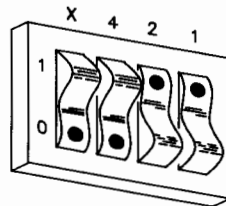
b. Set the HP-IB address:

- If there is only *one* other disc or tape drive (besides this HP 9144A) already connected to the interface, set the “ADDRESS” switches to 2 as shown below, unless address 2 has already been used.



Address 2

- If there are *two* other disc or tape drives (besides this HP 9144A) already connected to the interface, set the “ADDRESS” switches to 3 as shown below, unless address 3 has already been used. Refer to the manual that came with your tape drive for additional switch settings.



Address 3

4. Connect the Tape Drive to Your Computer.

- a. Find the HP-IB cable provided with the tape drive.
- b. Connect one end of the HP-IB cable to the HP-IB socket on the back of the tape drive. Tighten the thumb screws to secure the connection.

- c. Connect the other end of the HP-IB cable to the interface.

NOTE

If the interface already has several cables connected to it, connect your HP 9144A cable to one of the other devices on the interface.

5. Connect the Power Cord.

- a. Connect the female end of the power cord to the power socket on the back of the tape drive, and connect the other end to your power outlet.

6. Record the Address.

- a. Make a note that address 0 (or the alternate address you chose in step 3) has been used and is no longer available on the interface you selected. Use the "Address Record" form on the Step 6 tab for this purpose.

The Next Step

You have now installed your HP 9144A Tape Drive.

The following "Worksheet Entries" contain information needed to use your tape drive with various language/operating systems. Refer to the entries for the system you'll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you'll be ready to install your next peripheral.

BASIC System Worksheet Entries

**If You Connected the HP 9144A
to the HP 98625 Disc Interface (Select Code 14)...**

**And It Is the First Disc or Tape
Drive on this Interface (Address 0)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 9144A	“,1400”	CS80	1

**And It Is the Second Disc or Tape
Drive on this Interface (Address 2)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 9144A	“,1402”	CS80	1

**And It Is the Third Disc or Tape
Drive on this Interface (Address 3)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 9144A	“,1403”	CS80	1

BASIC System Worksheet Entries (Cont.)

If You Connected the HP 9144A to the Built-in HP-IB Interface (Select Code 7)...

**And It Is the First Disc or Tape
Drive on this Interface (Address 0)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 9144A	“:,700”	CS80	1

**And It Is the Second Disc or Tape
Drive on this Interface (Address 2)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 9144A	“:,702”	CS80	1

**And It Is the Third Disc or Tape
Drive on this Interface (Address 3)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 9144A	“:,703”	CS80	1

Pascal Workstation Worksheet Entries

Device Name	Unit Numbers ¹	Module Name	Interleave Factor
HP 9144A	# 41:	DISCHPIB & CS80	1



¹ If you have more than one tape drive, the unit number assignment for your HP 9144A may be different. Refer to the section, "Determining Pascal Unit Numbers," found at the end of this chapter, after you have installed *all* of your disc and tape drives.

HP-UX System Worksheet Entries

If You Connected the HP 9144A to the Built-in HP-IB Interface (Select Code 7)...

**And It Is the First Disc or Tape
Drive on this Interface (Address 0)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9144A	<i>/dev/ct9144</i>	b	0	0x070000	1
HP 9144A	<i>/dev/rct9144</i>	c	4	0x070000	1

**And It Is the Second Disc or Tape
Drive on this Interface (Address 2)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9144A	<i>/dev/ct9144</i>	b	0	0x070200	1
HP 9144A	<i>/dev/rct9144</i>	c	4	0x070200	1

**And It Is the Third Disc or Tape
Drive on this Interface (Address 3)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9144A	<i>/dev/ct9144</i>	b	0	0x070300	1
HP 9144A	<i>/dev/rct9144</i>	c	4	0x070300	1

HP-UX System Worksheet Entries (Cont.)

If You Connected the HP 9144A to the HP 98624 HP-IB Interface (Select Code 8)...

**And It Is the First Disc or Tape
Drive on this Interface (Address 0)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9144A	/dev/ct9144	b	0	0x080000	1
HP 9144A	/dev/rct9144	c	4	0x080000	1

**And It Is the Second Disc or Tape
Drive on this Interface (Address 2)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9144A	/dev/ct9144	b	0	0x080200	1
HP 9144A	/dev/rct9144	c	4	0x080200	1

**And It Is the Third Disc or Tape
Drive on this Interface (Address 3)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9144A	/dev/ct9144	b	0	0x080300	1
HP 9144A	/dev/rct9144	c	4	0x080300	1

Installing the HP 9153A and 9154A Disc Drives

Description

The HP 9153A contains a Winchester (hard) disc drive and a 3¹/₂-inch double-sided flexible disc drive. The HP 9154A contains a Winchester (hard) disc drive only.

Support

The HP 9153A and HP 9154A are supported on Series 200 Model 217, 220, 226, 236 and 237 computers with boot ROM 3.0 or later, and on all Series 300 computers with boot ROM Rev. A or later.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 3.0 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** supported on revision 3.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.
- **HP-UX Operating System:** supported on revision 2.0 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

Before You Begin

The following procedure describes how to connect your HP 9153A and HP 9154A to your Series 200/300 computer. Before you do this, however, refer to the manual(s) that came with the drive to:

- Unpack the drive.
- Check the voltage switch setting.
- Check the fuse value.

HP 9153A and 9154A Installation Procedure

1. Play It Safe.

- a. Turn your computer and disc drive off, if they are not already off.

2. Select Your Interface.

- a. Select one of the following interfaces, listed in order of preference for optimum disc performance:
 - HP 98625 Disc Interface
 - Built-in HP-IB Interface or HP 98624A HP-IB Interface

3. Set the Address.

- a. On the back of the disc drive, find the HP-IB address wheel, labeled "ADDRESS."
- b. Set the HP-IB address:
 - If this is the first (or only) disc or tape drive you intend to connect to the interface, set the "ADDRESS" wheel to 0, unless address 0 has already been used.
 - If there is only *one* other disc or tape drive (besides this HP 9153/54) already connected to the interface, set the "ADDRESS" wheel to 2, unless address 2 has already been used.
 - If there are *two* other disc or tape drives (besides this HP 9153/54) already connected to the interface, set the "ADDRESS" wheel to 3, unless address 3 has already been used. If it has, choose any unused address.

4. Set the Configuration Switch.

CAN YOU SKIP THIS STEP?

The configuration switch partitions the disc into multiple volumes, making the disc act like several smaller disc drives. The switch is preset for a single volume. If you want multiple volumes on your disc (this is particularly advantageous with BASIC), continue with step 4. If you are satisfied with one volume (as is usually the case with the Pascal Workstation and HP-UX), skip to step 5.

- a. Find the HP-IB Module in the lower-left corner of the back of the disc drive (Note: the HP-IB module contains the HP-IB connector).
- b. Remove the two screws holding the module in place.
- c. Remove the HP-IB module by pulling the flange at the bottom straight out of the disc drive.
- d. Refer to the manual that came with your disc drive for a list of configuration switch settings.
- e. Decide how you would like your hard disc partitioned and set the configuration switch accordingly. Make this decision carefully, for you cannot change this setting without re-initializing the disc. Some factors to consider:
 - If you will be storing primarily large files on your disc, partition your disc into a few large volumes.
 - If you will be storing primarily small files on your disc, partition the disc into several small volumes.
 - If you will store both large and small files on the disc, choose a good median volume size.
 - If storing more than one system on your disc (e.g., BASIC and the Pascal Workstation), or if you want to create different volume types on your disc, partition the disc according to the storage requirements of each system or volume.

- f. Replace the HP-IB module in your disc drive.

CAUTION

Files may be lost if you change the configuration switch after initializing the disc. Only change the configuration switch immediately before you initialize, or re-initialize, the disc.



5. Connect the Disc Drive to Your Computer.

- a. Find the HP-IB cable provided with the disc drive.
- b. Connect one end of the HP-IB cable to the HP-IB socket on the back of the disc drive. Tighten the thumb screws to secure the connection.
- c. Connect the other end of the HP-IB cable to the interface.

NOTE

If the interface already has several cables connected to it, connect your HP 9153/54 cable to one of the other devices on the interface.

6. Connect the Power Cord.

- a. Connect the female end of the power cord to the "AC line" socket on the back of the disc drive, and connect the other end to your power outlet.

7. Record the Address.

- a. Make a note that address 0 (or the alternate address you chose in step 3) has been used and is no longer available on the interface you selected. Use the "Address Record" form on the Step 6 tab for this purpose.

The Next Step

You have now installed your HP 9153/54 Disc Drive.

The following “Worksheet Entries” contain information needed to use your disc drive with various language/operating systems. Refer to the entries for the system you’ll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral.

BASIC System Worksheet Entries

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into four volumes, only the "1st vol." thru "4th vol." entries apply.

**If the HP 9153/54 Is the First Disc or Tape (Address 0)
on the HP 98625 Disc Interface (Select Code 14)...**

Device Name	Msius	Driver Name	Interleave Factor
HP 9153/54 - Hard, 1st vol.	“,1400”	CS80	1
HP 9153/54 - Hard, 2nd vol.	“,1400,0,1”	CS80	1
HP 9153/54 - Hard, 3rd vol.	“,1400,0,2”	CS80	1
HP 9153/54 - Hard, 4th vol.	“,1400,0,3”	CS80	1
HP 9153/54 - Hard, 5th vol.	“,1400,0,4”	CS80	1
HP 9153/54 - Hard, 6th vol.	“,1400,0,5”	CS80	1
HP 9153/54 - Hard, 7th vol.	“,1400,0,6”	CS80	1
HP 9153/54 - Hard, 8th vol.	“,1400,0,7”	CS80	1
HP 9153 - Flexible	“,1400,1”	CS80	2

BASIC System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into four volumes, only the "1st vol." thru "4th vol." entries apply.

**If the HP 9153/54 Is the Second Disc or Tape (Address 2)
on the HP 98625 Disc Interface (Select Code 14)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 9153/54 - Hard, 1st vol.	“,1402”	CS80	1
HP 9153/54 - Hard, 2nd vol.	“,1402,0,1”	CS80	1
HP 9153/54 - Hard, 3rd vol.	“,1402,0,2”	CS80	1
HP 9153/54 - Hard, 4th vol.	“,1402,0,3”	CS80	1
HP 9153/54 - Hard, 5th vol.	“,1402,0,4”	CS80	1
HP 9153/54 - Hard, 6th vol.	“,1402,0,5”	CS80	1
HP 9153/54 - Hard, 7th vol.	“,1402,0,6”	CS80	1
HP 9153/54 - Hard, 8th vol.	“,1402,0,7”	CS80	1
HP 9153 - Flexible	“,1402,1”	CS80	2

BASIC System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into four volumes, only the "1st vol." thru "4th vol." entries apply.

**If the HP 9153/54 Is the Third Disc or Tape (Address 3)
on the HP 98625 Disc Interface (Select Code 14)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 9153/54 - Hard, 1st vol.	":,1403"	CS80	1
HP 9153/54 - Hard, 2nd vol.	":,1403,0,1"	CS80	1
HP 9153/54 - Hard, 3rd vol.	":,1403,0,2"	CS80	1
HP 9153/54 - Hard, 4th vol.	":,1403,0,3"	CS80	1
HP 9153/54 - Hard, 5th vol.	":,1403,0,4"	CS80	1
HP 9153/54 - Hard, 6th vol.	":,1403,0,5"	CS80	1
HP 9153/54 - Hard, 7th vol.	":,1403,0,6"	CS80	1
HP 9153/54 - Hard, 8th vol.	":,1403,0,7"	CS80	1
HP 9153 - Flexible	":,1403,1"	CS80	2

BASIC System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into four volumes, only the "1st vol." thru "4th vol." entries apply.

If the HP 9153/54 Is the First Disc or Tape (Address 0) on the Built-in HP-IB Interface (Select Code 7)...

Device Name	Msus	Driver Name	Interleave Factor ¹
HP 9153/54 - Hard, 1st vol.	“:,700”	CS80	7
HP 9153/54 - Hard, 2nd vol.	“:,700,0,1”	CS80	7
HP 9153/54 - Hard, 3rd vol.	“:,700,0,2”	CS80	7
HP 9153/54 - Hard, 4th vol.	“:,700,0,3”	CS80	7
HP 9153/54 - Hard, 5th vol.	“:,700,0,4”	CS80	7
HP 9153/54 - Hard, 6th vol.	“:,700,0,5”	CS80	7
HP 9153/54 - Hard, 7th vol.	“:,700,0,6”	CS80	7
HP 9153/54 - Hard, 8th vol.	“:,700,0,7”	CS80	7
HP 9153 - Flexible	“:,700,1”	CS80	2

¹ If you have an HP 98620B DMA card, the recommended interleave factor for the hard disc is 3 instead of 7.

BASIC System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into four volumes, only the "1st vol." thru "4th vol." entries apply.

If the HP 9153/54 Is the Second Disc or Tape (Address 2) on the Built-in HP-IB Interface (Select Code 7)...

Device Name	Msius	Driver Name	Interleave Factor ¹
HP 9153/54 - Hard, 1st vol.	“:,702”	CS80	7
HP 9153/54 - Hard, 2nd vol.	“:,702,0,1”	CS80	7
HP 9153/54 - Hard, 3rd vol.	“:,702,0,2”	CS80	7
HP 9153/54 - Hard, 4th vol.	“:,702,0,3”	CS80	7
HP 9153/54 - Hard, 5th vol.	“:,702,0,4”	CS80	7
HP 9153/54 - Hard, 6th vol.	“:,702,0,5”	CS80	7
HP 9153/54 - Hard, 7th vol.	“:,702,0,6”	CS80	7
HP 9153/54 - Hard, 8th vol.	“:,702,0,7”	CS80	7
HP 9153 - Flexible	“:,702,1”	CS80	2

¹ If you have an HP 98620B DMA card, the recommended interleave factor for the hard disc is 3 instead of 7.

BASIC System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into four volumes, only the "1st vol." thru "4th vol." entries apply.

If the HP 9153/54 Is the Third Disc or Tape (Address 3) on the Built-in HP-IB Interface (Select Code 7)...

Device Name	Msus	Driver Name	Interleave Factor ¹
HP 9153/54 - Hard, 1st vol.	“:,703”	CS80	7
HP 9153/54 - Hard, 2nd vol.	“:,703,0,1”	CS80	7
HP 9153/54 - Hard, 3rd vol.	“:,703,0,2”	CS80	7
HP 9153/54 - Hard, 4th vol.	“:,703,0,3”	CS80	7
HP 9153/54 - Hard, 5th vol.	“:,703,0,4”	CS80	7
HP 9153/54 - Hard, 6th vol.	“:,703,0,5”	CS80	7
HP 9153/54 - Hard, 7th vol.	“:,703,0,6”	CS80	7
HP 9153/54 - Hard, 8th vol.	“:,703,0,7”	CS80	7
HP 9153 - Flexible	“:,703,1”	CS80	2

¹ If you have an HP 98620B DMA card, the recommended interleave factor for the hard disc is 3 instead of 7.

BASIC System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into four volumes, only the "1st vol." thru "4th vol." entries apply.



If the HP 9153/54 Is the First Disc or Tape (Address 0) on the HP 98624 HP-IB Interface (Select Code 8)...

Device Name	Msus	Driver Name	Interleave Factor ¹
HP 9153/54 - Hard, 1st vol.	“,800”	CS80	7
HP 9153/54 - Hard, 2nd vol.	“,800,0,1”	CS80	7
HP 9153/54 - Hard, 3rd vol.	“,800,0,2”	CS80	7
HP 9153/54 - Hard, 4th vol.	“,800,0,3”	CS80	7
HP 9153/54 - Hard, 5th vol.	“,800,0,4”	CS80	7
HP 9153/54 - Hard, 6th vol.	“,800,0,5”	CS80	7
HP 9153/54 - Hard, 7th vol.	“,800,0,6”	CS80	7
HP 9153/54 - Hard, 8th vol.	“,800,0,7”	CS80	7
HP 9153 - Flexible	“,800,1”	CS80	2

¹ If you have an HP 98620B DMA card, the recommended interleave factor for the hard disc is 4 instead of 7.

BASIC System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into four volumes, only the "1st vol." thru "4th vol." entries apply.

**If the HP 9153/54 Is the Second Disc or Tape (Address 2)
on the HP 98624 HP-IB Interface (Select Code 8)...**

Device Name	Msus	Driver Name	Interleave Factor ¹
HP 9153/54 - Hard, 1st vol.	“,802”	CS80	7
HP 9153/54 - Hard, 2nd vol.	“,802,0,1”	CS80	7
HP 9153/54 - Hard, 3rd vol.	“,802,0,2”	CS80	7
HP 9153/54 - Hard, 4th vol.	“,802,0,3”	CS80	7
HP 9153/54 - Hard, 5th vol.	“,802,0,4”	CS80	7
HP 9153/54 - Hard, 6th vol.	“,802,0,5”	CS80	7
HP 9153/54 - Hard, 7th vol.	“,802,0,6”	CS80	7
HP 9153/54 - Hard, 8th vol.	“,802,0,7”	CS80	7
HP 9153 - Flexible	“,802,1”	CS80	2

¹ If you have an HP 98620B DMA card, the recommended interleave factor for the hard disc is 4 instead of 7.

BASIC System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into four volumes, only the "1st vol." thru "4th vol." entries apply.

If the HP 9153/54 Is the Third Disc or Tape (Address 3) on the HP 98624 HP-IB Interface (Select Code 8)...

Device Name	Msus	Driver Name	Interleave Factor ¹
HP 9153/54 - Hard, 1st vol.	“,803”	CS80	7
HP 9153/54 - Hard, 2nd vol.	“,803,0,1”	CS80	7
HP 9153/54 - Hard, 3rd vol.	“,803,0,2”	CS80	7
HP 9153/54 - Hard, 4th vol.	“,803,0,3”	CS80	7
HP 9153/54 - Hard, 5th vol.	“,803,0,4”	CS80	7
HP 9153/54 - Hard, 6th vol.	“,803,0,5”	CS80	7
HP 9153/54 - Hard, 7th vol.	“,803,0,6”	CS80	7
HP 9153/54 - Hard, 8th vol.	“,803,0,7”	CS80	7
HP 9153 - Flexible	“,803,1”	CS80	2

¹ If you have an HP 98620B DMA card, the recommended interleave factor for the hard disc is 4 instead of 7.

Pascal Workstation Worksheet Entries

Device Name	Unit Numbers ^{1,2}	Module Name	Interleave Factor ³
HP 9153/54 · Hard	# 11: thru # 19:	DISCHPIB & CS80	7
HP 9153 · Flexible	# 3:	DISCHPIB & CS80	2

¹ If you have more than one hard disc drive, or if you partitioned your disc into multiple volumes in step 4, the unit number assignments for your HP 9153/54 may be different. Refer to the section, "Determining Pascal Unit Numbers," found at the end of this chapter, after you have installed *all* of your discs.

² If you have more than one flexible disc drive, the unit number assignment for your HP 9153 may be different. Refer to the section, "Determining Pascal Unit Numbers," found at the end of this chapter, after you have installed *all* of your discs.

³ If you have an HP 98620B DMA Controller Card, the recommended interleave factor for the hard disc is 2 on a built-in or HP 98624A HP-IB Interface, 1 on an HP 98625 Disc Interface.

HP-UX System Worksheet Entries

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into four volumes, only the "1st vol." thru "4th vol." entries apply.

If the HP 9153/54 Is the First Disc or Tape (Address 0) on the HP 98625 Disc Interface (Select Code 14)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9153/54 - Hard, 1st vol.	/dev/hd9153	b	0	0x0e0000	1
HP 9153/54 - Hard, 1st vol.	/dev/rhd9153	c	4	0x0e0000	1
HP 9153/54 - Hard, 2nd vol.	/dev/hd9153.1	b	0	0x0e0001	1
HP 9153/54 - Hard, 2nd vol.	/dev/rhd9153.1	c	4	0x0e0001	1
HP 9153/54 - Hard, 3rd vol.	/dev/hd9153.2	b	0	0x0e0002	1
HP 9153/54 - Hard, 3rd vol.	/dev/rhd9153.2	c	4	0x0e0002	1
HP 9153/54 - Hard, 4th vol.	/dev/hd9153.3	b	0	0x0e0003	1
HP 9153/54 - Hard, 4th vol.	/dev/rhd9153.3	c	4	0x0e0003	1
HP 9153/54 - Hard, 5th vol.	/dev/hd9153.4	b	0	0x0e0004	1
HP 9153/54 - Hard, 5th vol.	/dev/rhd9153.4	c	4	0x0e0004	1
HP 9153/54 - Hard, 6th vol.	/dev/hd9153.5	b	0	0x0e0005	1
HP 9153/54 - Hard, 6th vol.	/dev/rhd9153.5	c	4	0x0e0005	1
HP 9153/54 - Hard, 7th vol.	/dev/hd9153.6	b	0	0x0e0006	1
HP 9153/54 - Hard, 7th vol.	/dev/rhd9153.6	c	4	0x0e0006	1
HP 9153/54 - Hard, 8th vol.	/dev/hd9153.7	b	0	0x0e0007	1
HP 9153/54 - Hard, 8th vol.	/dev/rhd9153.7	c	4	0x0e0007	1
HP 9153 - Flexible	/dev/md9153	b	0	0x0e0010	2
HP 9153 - Flexible	/dev/rmd9153	c	4	0x0e0010	2

¹ If you have an HP 9154, substitute 9154 for 9153 in the path name.

HP-UX System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into four volumes, only the "1st vol." thru "4th vol." entries apply.

If the HP 9153/54 Is the Second Disc or Tape (Address 2) on the HP 98625 Disc Interface (Select Code 14)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9153/54 - Hard, 1st vol.	/dev/hd9153	b	0	0x0e0200	1
HP 9153/54 - Hard, 1st vol.	/dev/rhd9153	c	4	0x0e0200	1
HP 9153/54 - Hard, 2nd vol.	/dev/hd9153.1	b	0	0x0e0201	1
HP 9153/54 - Hard, 2nd vol.	/dev/rhd9153.1	c	4	0x0e0201	1
HP 9153/54 - Hard, 3rd vol.	/dev/hd9153.2	b	0	0x0e0202	1
HP 9153/54 - Hard, 3rd vol.	/dev/rhd9153.2	c	4	0x0e0202	1
HP 9153/54 - Hard, 4th vol.	/dev/hd9153.3	b	0	0x0e0203	1
HP 9153/54 - Hard, 4th vol.	/dev/rhd9153.3	c	4	0x0e0203	1
HP 9153/54 - Hard, 5th vol.	/dev/hd9153.4	b	0	0x0e0204	1
HP 9153/54 - Hard, 5th vol.	/dev/rhd9153.4	c	4	0x0e0204	1
HP 9153/54 - Hard, 6th vol.	/dev/hd9153.5	b	0	0x0e0205	1
HP 9153/54 - Hard, 6th vol.	/dev/rhd9153.5	c	4	0x0e0205	1
HP 9153/54 - Hard, 7th vol.	/dev/hd9153.6	b	0	0x0e0206	1
HP 9153/54 - Hard, 7th vol.	/dev/rhd9153.6	c	4	0x0e0206	1
HP 9153/54 - Hard, 8th vol.	/dev/hd9153.7	b	0	0x0e0207	1
HP 9153/54 - Hard, 8th vol.	/dev/rhd9153.7	c	4	0x0e0207	1
HP 9153 - Flexible	/dev/md9153	b	0	0x0e0210	2
HP 9153 - Flexible	/dev/rmd9153	c	4	0x0e0210	2

¹ If you have an HP 9154, substitute 9154 for 9153 in the path name.

HP-UX System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into four volumes, only the "1st vol." thru "4th vol." entries apply.

If the HP 9153/54 Is the Third Disc or Tape (Address 3) on the HP 98625 Disc Interface (Select Code 14)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9153/54 - Hard, 1st vol.	/dev/hd9153	b	0	0x0e0300	1
HP 9153/54 - Hard, 1st vol.	/dev/rhd9153	c	4	0x0e0300	1
HP 9153/54 - Hard, 2nd vol.	/dev/hd9153.1	b	0	0x0e0301	1
HP 9153/54 - Hard, 2nd vol.	/dev/rhd9153.1	c	4	0x0e0301	1
HP 9153/54 - Hard, 3rd vol.	/dev/hd9153.2	b	0	0x0e0302	1
HP 9153/54 - Hard, 3rd vol.	/dev/rhd9153.2	c	4	0x0e0302	1
HP 9153/54 - Hard, 4th vol.	/dev/hd9153.3	b	0	0x0e0303	1
HP 9153/54 - Hard, 4th vol.	/dev/rhd9153.3	c	4	0x0e0303	1
HP 9153/54 - Hard, 5th vol.	/dev/hd9153.4	b	0	0x0e0304	1
HP 9153/54 - Hard, 5th vol.	/dev/rhd9153.4	c	4	0x0e0304	1
HP 9153/54 - Hard, 6th vol.	/dev/hd9153.5	b	0	0x0e0305	1
HP 9153/54 - Hard, 6th vol.	/dev/rhd9153.5	c	4	0x0e0305	1
HP 9153/54 - Hard, 7th vol.	/dev/hd9153.6	b	0	0x0e0306	1
HP 9153/54 - Hard, 7th vol.	/dev/rhd9153.6	c	4	0x0e0306	1
HP 9153/54 - Hard, 8th vol.	/dev/hd9153.7	b	0	0x0e0307	1
HP 9153/54 - Hard, 8th vol.	/dev/rhd9153.7	c	4	0x0e0307	1
HP 9153 - Flexible	/dev/md9153	b	0	0x0e0310	2
HP 9153 - Flexible	/dev/rmd9153	c	4	0x0e0310	2

¹ If you have an HP 9154, substitute 9154 for 9153 in the path name.

HP-UX System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into four volumes, only the "1st vol." thru "4th vol." entries apply.

If the HP 9153/54 Is the First Disc or Tape (Address 0) on the Built-in HP-IB Interface (Select Code 7)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave ² Factor
HP 9153/54 - Hard, 1st vol.	/dev/hd9153	b	0	0x070000	3
HP 9153/54 - Hard, 1st vol.	/dev/rhd9153	c	4	0x070000	3
HP 9153/54 - Hard, 2nd vol.	/dev/hd9153.1	b	0	0x070001	3
HP 9153/54 - Hard, 2nd vol.	/dev/rhd9153.1	c	4	0x070001	3
HP 9153/54 - Hard, 3rd vol.	/dev/hd9153.2	b	0	0x070002	3
HP 9153/54 - Hard, 3rd vol.	/dev/rhd9153.2	c	4	0x070002	3
HP 9153/54 - Hard, 4th vol.	/dev/hd9153.3	b	0	0x070003	3
HP 9153/54 - Hard, 4th vol.	/dev/rhd9153.3	c	4	0x070003	3
HP 9153/54 - Hard, 5th vol.	/dev/hd9153.4	b	0	0x070004	3
HP 9153/54 - Hard, 5th vol.	/dev/rhd9153.4	c	4	0x070004	3
HP 9153/54 - Hard, 6th vol.	/dev/hd9153.5	b	0	0x070005	3
HP 9153/54 - Hard, 6th vol.	/dev/rhd9153.5	c	4	0x070005	3
HP 9153/54 - Hard, 7th vol.	/dev/hd9153.6	b	0	0x070006	3
HP 9153/54 - Hard, 7th vol.	/dev/rhd9153.6	c	4	0x070006	3
HP 9153/54 - Hard, 8th vol.	/dev/hd9153.7	b	0	0x070007	3
HP 9153/54 - Hard, 8th vol.	/dev/rhd9153.7	c	4	0x070007	3
HP 9153 - Flexible	/dev/md9153	b	0	0x070010	2
HP 9153 - Flexible	/dev/rmd9153	c	4	0x070010	2

¹ If you have an HP 9154, substitute 9154 for 9153 in the path name.

² If you have an HP 98620B DMA card, the interleave factor for the hard disc is 2 instead of 3.

HP-UX System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into four volumes, only the "1st vol." thru "4th vol." entries apply.

If the HP 9153/54 Is the Second Disc or Tape (Address 2) on the Built-in HP-IB Interface (Select Code 7)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave ² Factor
HP 9153/54 - Hard, 1st vol.	/dev/hd9153	b	0	0x070200	3
HP 9153/54 - Hard, 1st vol.	/dev/rhd9153	c	4	0x070200	3
HP 9153/54 - Hard, 2nd vol.	/dev/hd9153.1	b	0	0x070201	3
HP 9153/54 - Hard, 2nd vol.	/dev/rhd9153.1	c	4	0x070201	3
HP 9153/54 - Hard, 3rd vol.	/dev/hd9153.2	b	0	0x070202	3
HP 9153/54 - Hard, 3rd vol.	/dev/rhd9153.2	c	4	0x070202	3
HP 9153/54 - Hard, 4th vol.	/dev/hd9153.3	b	0	0x070203	3
HP 9153/54 - Hard, 4th vol.	/dev/rhd9153.3	c	4	0x070203	3
HP 9153/54 - Hard, 5th vol.	/dev/hd9153.4	b	0	0x070204	3
HP 9153/54 - Hard, 5th vol.	/dev/rhd9153.4	c	4	0x070204	3
HP 9153/54 - Hard, 6th vol.	/dev/hd9153.5	b	0	0x070205	3
HP 9153/54 - Hard, 6th vol.	/dev/rhd9153.5	c	4	0x070205	3
HP 9153/54 - Hard, 7th vol.	/dev/hd9153.6	b	0	0x070206	3
HP 9153/54 - Hard, 7th vol.	/dev/rhd9153.6	c	4	0x070206	3
HP 9153/54 - Hard, 8th vol.	/dev/hd9153.7	b	0	0x070207	3
HP 9153/54 - Hard, 8th vol.	/dev/rhd9153.7	c	4	0x070207	3
HP 9153 - Flexible	/dev/md9153	b	0	0x070210	2
HP 9153 - Flexible	/dev/rmd9153	c	4	0x070210	2

¹ If you have an HP 9154, substitute 9154 for 9153 in the path name.

² If you have an HP 98620B DMA card, the interleave factor for the hard disc is 2 instead of 3.

HP-UX System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into four volumes, only the "1st vol." thru "4th vol." entries apply.

If the HP 9153/54 Is the Third Disc or Tape (Address 3) on the Built-in HP-IB Interface (Select Code 7)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave ² Factor
HP 9153/54 - Hard, 1st vol.	/dev/hd9153	b	0	0x070300	3
HP 9153/54 - Hard, 1st vol.	/dev/rhd9153	c	4	0x070300	3
HP 9153/54 - Hard, 2nd vol.	/dev/hd9153.1	b	0	0x070301	3
HP 9153/54 - Hard, 2nd vol.	/dev/rhd9153.1	c	4	0x070301	3
HP 9153/54 - Hard, 3rd vol.	/dev/hd9153.2	b	0	0x070302	3
HP 9153/54 - Hard, 3rd vol.	/dev/rhd9153.2	c	4	0x070302	3
HP 9153/54 - Hard, 4th vol.	/dev/hd9153.3	b	0	0x070303	3
HP 9153/54 - Hard, 4th vol.	/dev/rhd9153.3	c	4	0x070303	3
HP 9153/54 - Hard, 5th vol.	/dev/hd9153.4	b	0	0x070304	3
HP 9153/54 - Hard, 5th vol.	/dev/rhd9153.4	c	4	0x070304	3
HP 9153/54 - Hard, 6th vol.	/dev/hd9153.5	b	0	0x070305	3
HP 9153/54 - Hard, 6th vol.	/dev/rhd9153.5	c	4	0x070305	3
HP 9153/54 - Hard, 7th vol.	/dev/hd9153.6	b	0	0x070306	3
HP 9153/54 - Hard, 7th vol.	/dev/rhd9153.6	c	4	0x070306	3
HP 9153/54 - Hard, 8th vol.	/dev/hd9153.7	b	0	0x070307	3
HP 9153/54 - Hard, 8th vol.	/dev/rhd9153.7	c	4	0x070307	3
HP 9153 - Flexible	/dev/md9153	b	0	0x070310	2
HP 9153 - Flexible	/dev/rmd9153	c	4	0x070310	2

¹ If you have an HP 9154, substitute 9154 for 9153 in the path name.

² If you have an HP 98620B DMA card, the interleave factor for the hard disc is 2 instead of 3.

HP-UX System Worksheet Entries (Cont.)



NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into four volumes, only the "1st vol." thru "4th vol." entries apply.

If the HP 9153/54 Is the First Disc or Tape (Address 0) on the HP 98624 HP-IB Interface (Select Code 8)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave ² Factor
HP 9153/54 - Hard, 1st vol.	/dev/hd9153	b	0	0x080000	3
HP 9153/54 - Hard, 1st vol.	/dev/rhd9153	c	4	0x080000	3
HP 9153/54 - Hard, 2nd vol.	/dev/hd9153.1	b	0	0x080001	3
HP 9153/54 - Hard, 2nd vol.	/dev/rhd9153.1	c	4	0x080001	3
HP 9153/54 - Hard, 3rd vol.	/dev/hd9153.2	b	0	0x080002	3
HP 9153/54 - Hard, 3rd vol.	/dev/rhd9153.2	c	4	0x080002	3
HP 9153/54 - Hard, 4th vol.	/dev/hd9153.3	b	0	0x080003	3
HP 9153/54 - Hard, 4th vol.	/dev/rhd9153.3	c	4	0x080003	3
HP 9153/54 - Hard, 5th vol.	/dev/hd9153.4	b	0	0x080004	3
HP 9153/54 - Hard, 5th vol.	/dev/rhd9153.4	c	4	0x080004	3
HP 9153/54 - Hard, 6th vol.	/dev/hd9153.5	b	0	0x080005	3
HP 9153/54 - Hard, 6th vol.	/dev/rhd9153.5	c	4	0x080005	3
HP 9153/54 - Hard, 7th vol.	/dev/hd9153.6	b	0	0x080006	3
HP 9153/54 - Hard, 7th vol.	/dev/rhd9153.6	c	4	0x080006	3
HP 9153/54 - Hard, 8th vol.	/dev/hd9153.7	b	0	0x080007	3
HP 9153/54 - Hard, 8th vol.	/dev/rhd9153.7	c	4	0x080007	3
HP 9153 - Flexible	/dev/md9153	b	0	0x080010	2
HP 9153 - Flexible	/dev/rmd9153	c	4	0x080010	2

¹ If you have an HP 9154, substitute 9154 for 9153 in the path name.

² If you have an HP 98620B DMA card, the interleave factor for the hard disc is 2 instead of 3.

HP-UX System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into four volumes, only the "1st vol." thru "4th vol." entries apply.

If the HP 9153/54 Is the Second Disc or Tape (Address 2) on the HP 98624 HP-IB Interface (Select Code 8)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave ² Factor
HP 9153/54 - Hard, 1st vol.	/dev/hd9153	b	0	0x080200	3
HP 9153/54 - Hard, 1st vol.	/dev/rhd9153	c	4	0x080200	3
HP 9153/54 - Hard, 2nd vol.	/dev/hd9153.1	b	0	0x080201	3
HP 9153/54 - Hard, 2nd vol.	/dev/rhd9153.1	c	4	0x080201	3
HP 9153/54 - Hard, 3rd vol.	/dev/hd9153.2	b	0	0x080202	3
HP 9153/54 - Hard, 3rd vol.	/dev/rhd9153.2	c	4	0x080202	3
HP 9153/54 - Hard, 4th vol.	/dev/hd9153.3	b	0	0x080203	3
HP 9153/54 - Hard, 4th vol.	/dev/rhd9153.3	c	4	0x080203	3
HP 9153/54 - Hard, 5th vol.	/dev/hd9153.4	b	0	0x080204	3
HP 9153/54 - Hard, 5th vol.	/dev/rhd9153.4	c	4	0x080204	3
HP 9153/54 - Hard, 6th vol.	/dev/hd9153.5	b	0	0x080205	3
HP 9153/54 - Hard, 6th vol.	/dev/rhd9153.5	c	4	0x080205	3
HP 9153/54 - Hard, 7th vol.	/dev/hd9153.6	b	0	0x080206	3
HP 9153/54 - Hard, 7th vol.	/dev/rhd9153.6	c	4	0x080206	3
HP 9153/54 - Hard, 8th vol.	/dev/hd9153.7	b	0	0x080207	3
HP 9153/54 - Hard, 8th vol.	/dev/rhd9153.7	c	4	0x080207	3
HP 9153 - Flexible	/dev/md9153	b	0	0x080210	2
HP 9153 - Flexible	/dev/rmd9153	c	4	0x080210	2

¹ If you have an HP 9154, substitute 9154 for 9153 in the path name.

² If you have an HP 98620B DMA card, the interleave factor for the hard disc is 2 instead of 3.

HP-UX System Worksheet Entries (Cont.)

NOTE

In this table, refer only to the entries for the number of volumes you selected. For example, if you have one volume (default configuration), only the "1st vol." entry applies to your disc. If you partitioned your disc into four volumes, only the "1st vol." thru "4th vol." entries apply.

If the HP 9153/54 Is the Third Disc or Tape (Address 3) on the HP 98624 HP-IB Interface (Select Code 8)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number	Interleave ² Factor
HP 9153/54 - Hard, 1st vol.	/dev/hd9153	b	0	0x080300	3
HP 9153/54 - Hard, 1st vol.	/dev/rhd9153	c	4	0x080300	3
HP 9153/54 - Hard, 2nd vol.	/dev/hd9153.1	b	0	0x080301	3
HP 9153/54 - Hard, 2nd vol.	/dev/rhd9153.1	c	4	0x080301	3
HP 9153/54 - Hard, 3rd vol.	/dev/hd9153.2	b	0	0x080302	3
HP 9153/54 - Hard, 3rd vol.	/dev/rhd9153.2	c	4	0x080302	3
HP 9153/54 - Hard, 4th vol.	/dev/hd9153.3	b	0	0x080303	3
HP 9153/54 - Hard, 4th vol.	/dev/rhd9153.3	c	4	0x080303	3
HP 9153/54 - Hard, 5th vol.	/dev/hd9153.4	b	0	0x080304	3
HP 9153/54 - Hard, 5th vol.	/dev/rhd9153.4	c	4	0x080304	3
HP 9153/54 - Hard, 6th vol.	/dev/hd9153.5	b	0	0x080305	3
HP 9153/54 - Hard, 6th vol.	/dev/rhd9153.5	c	4	0x080305	3
HP 9153/54 - Hard, 7th vol.	/dev/hd9153.6	b	0	0x080306	3
HP 9153/54 - Hard, 7th vol.	/dev/rhd9153.6	c	4	0x080306	3
HP 9153/54 - Hard, 8th vol.	/dev/hd9153.7	b	0	0x080307	3
HP 9153/54 - Hard, 8th vol.	/dev/rhd9153.7	c	4	0x080307	3
HP 9153 - Flexible	/dev/md9153	b	0	0x080310	2
HP 9153 - Flexible	/dev/rmd9153	c	4	0x080310	2

¹ If you have an HP 9154, substitute 9154 for 9153 in the path name.

² If you have an HP 98620B DMA card, the interleave factor for the hard disc is 2 instead of 3.

Installing the HP 9895 Disc Drive

Description

The HP 9895 is an 8-inch, double- or single-sided, double-density, flexible disc drive.

Support

The HP 9895A disc drive is supported on all Series 200 computers with boot ROM 3.0 or later. Support for Series 300 computers was planned but not yet authorized at time of printing.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 2.0 or later with Series 200 computers.
- **Pascal Workstation:** supported on revision 1.0 or later with Series 200 computers.
- **HP-UX Operating System:** supported on revision 2.0 or later with Series 200 computers.

Before You Begin

The following procedure describes how to connect your HP 9895A disc drive to your Series 200 computer. Before you do this, however, refer to the manual(s) that came with the drive to:

- Unpack the drive.
- Check the voltage switch setting.
- Check the line frequency.
- Check the fuse value.

HP 9895A Disc Drive Installation Procedure

1. **Play It Safe.**
 - a. Turn your computer and disc drive off, if they are not already off.
2. **Select Your Interface.**
 - a. Use either the built-in HP-IB interface or an HP 98624A HP-IB Interface.
3. **Set the Address.**

CAN YOU SKIP THIS STEP?

If this is the first (or only) disc or tape drive you are connecting to the interface, you can skip to step 4. The address is preset to 0 and need not be changed—*unless* you have changed the address of another device on the interface to 0.

- a. Remove the front panel of the disc drive by pulling outward on the lower outside corners of each drive access opening.
- b. Find the device address switch. This is a small wheel located along the bottom of the front of the drive.
- c. Set the device address switch:
 - If there is only *one* other disc or tape drive (besides this HP 9895A) already connected to the interface, set the device address switch to 2, unless address 2 has already been used.
 - If there are only *two* other disc or tape drives (besides this HP 9895A) already connected to the interface, set the device address switch to 3, unless address 3 has already been used. If it has, choose any unused address.

4. Connect the Disc Drive to Your Computer.

- a. Find the HP-IB cable provided with the disc drive.
- b. Connect one end of the HP-IB cable to the HP-IB socket on the back of the disc drive. Tighten the thumb screws to secure the connection.
- c. Connect the other end of the HP-IB cable to the interface.

NOTE

If the interface already has several cables connected to it, connect your HP 9895A cable to one of the other devices on the interface.

5. Connect the Power Cord.

- a. Connect the female end of the power cord to the "LINE" socket on the back of the disc drive, and connect the other end to your power outlet.

6. Record the Address.

- a. Make a note that address 0 (or the alternate address you chose in step 3) has been used and is no longer available on the interface you selected. Use the "Address Record" form on the Step 6 tab for this purpose.

The Next Step

You have now installed your HP 9895A Disc Drive.

The following "Worksheet Entries" contain information needed to use your disc drive with various language/operating systems. Refer to the entries for the system you'll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you'll be ready to install your next peripheral.

BASIC System Worksheet Entries

If You Connected the HP 9895A to the Built-in HP-IB Interface (Select Code 7)...

And It Is the First Disc or Tape Drive on this Interface (Address 0)...

Device Name	Msus	Driver Name	Interleave Factor
HP 9895 Master - Left	“:,700”	DISC	4
HP 9895 Master - Right	“:,700,1”	DISC	4
HP 9895 Slave - Left	“:,700,2”	DISC	4
HP 9895 Slave - Right	“:,700,3”	DISC	4

And It Is the Second Disc or Tape Drive on this Interface (Address 2)...

Device Name	Msus	Driver Name	Interleave Factor
HP 9895 Master - Left	“:,702”	DISC	4
HP 9895 Master - Right	“:,702,1”	DISC	4
HP 9895 Slave - Left	“:,702,2”	DISC	4
HP 9895 Slave - Right	“:,702,3”	DISC	4

And It Is the Third Disc or Tape Drive on this Interface (Address 3)...

Device Name	Msus	Driver Name	Interleave Factor
HP 9895 Master - Left	“:,703”	DISC	4
HP 9895 Master - Right	“:,703,1”	DISC	4
HP 9895 Slave - Left	“:,703,2”	DISC	4
HP 9895 Slave - Right	“:,703,3”	DISC	4

BASIC System Worksheet Entries (Cont.)

**If You Connected the HP 9895A
to the HP 98624 HP-IB Interface (Select Code 8)...**

**And It Is the First Disc or Tape
Drive on this Interface (Address 0)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 9895 Master - Left	“:,800”	DISC	4
HP 9895 Master - Right	“:,800,1”	DISC	4
HP 9895 Slave - Left	“:,800,2”	DISC	4
HP 9895 Slave - Right	“:,800,3”	DISC	4

**And It Is the Second Disc or Tape
Drive on this Interface (Address 2)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 9895 Master - Left	“:,802”	DISC	4
HP 9895 Master - Right	“:,802,1”	DISC	4
HP 9895 Slave - Left	“:,802,2”	DISC	4
HP 9895 Slave - Right	“:,802,3”	DISC	4

**And It Is the Third Disc or Tape
Drive on this Interface (Address 3)...**

Device Name	Msus	Driver Name	Interleave Factor
HP 9895 Master - Left	“:,803”	DISC	4
HP 9895 Master - Right	“:,803,1”	DISC	4
HP 9895 Slave - Left	“:,803,2”	DISC	4
HP 9895 Slave - Right	“:,803,3”	DISC	4

Pascal Workstation Worksheet Entries

Device Name	Unit Numbers ¹	Module Name	Interleave Factor
HP 9895 - Left	#3:	DISCHPIB & AMIGO	2
HP 9895 - Right	#4:	DISCHPIB & AMIGO	2

¹ If you have more than one flexible disc drive, the unit number assignments for your HP 9895A may be different. Refer to the section, "Determining Pascal Unit Numbers," found at the end of this chapter, after you have installed *all* of your discs.

HP-UX System Worksheet Entries

If You Connected the HP 9895A to the Built-in HP-IB Interface (Select Code 7)...

**And It Is the First Disc or Tape
Drive on this Interface (Address 0)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9895 - Left	/dev/fd9895.0	b	2	0x070000	2
HP 9895 - Left	/dev/rfd9895.0	c	11	0x070000	2
HP 9895 - Right	/dev/fd9895.1	b	2	0x070010	2
HP 9895 - Right	/dev/rfd9895.1	c	11	0x070010	2

**And It Is the Second Disc or Tape
Drive on this Interface (Address 2)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9895 - Left	/dev/fd9895.0	b	2	0x070200	2
HP 9895 - Left	/dev/rfd9895.0	c	11	0x070200	2
HP 9895 - Right	/dev/fd9895.1	b	2	0x070210	2
HP 9895 - Right	/dev/rfd9895.1	c	11	0x070210	2

**And It Is the Third Disc or Tape
Drive on this Interface (Address 3)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9895 - Left	/dev/fd9895.0	b	2	0x070300	2
HP 9895 - Left	/dev/rfd9895.0	c	11	0x070300	2
HP 9895 - Right	/dev/fd9895.1	b	2	0x070310	2
HP 9895 - Right	/dev/rfd9895.1	c	11	0x070310	2

HP-UX System Worksheet Entries (Cont.)

If You Connected the HP 9895A to the HP 98624 HP-IB Interface (Select Code 8)...

**And It Is the First Disc or Tape
Drive on this Interface (Address 0)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9895 - Left	/dev/fd9895.0	b	2	0x080000	2
HP 9895 - Left	/dev/rfd9895.0	c	11	0x080000	2
HP 9895 - Right	/dev/fd9895.1	b	2	0x080010	2
HP 9895 - Right	/dev/rfd9895.1	c	11	0x080010	2

**And It Is the Second Disc or Tape
Drive on this Interface (Address 2)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9895 - Left	/dev/fd9895.0	b	2	0x080200	2
HP 9895 - Left	/dev/rfd9895.0	c	11	0x080200	2
HP 9895 - Right	/dev/fd9895.1	b	2	0x080210	2
HP 9895 - Right	/dev/rfd9895.1	c	11	0x080210	2

**And It Is the Third Disc or Tape
Drive on this Interface (Address 3)...**

Device Name	Path Name	File Type	Major Number	Minor Number	Interleave Factor
HP 9895 - Left	/dev/fd9895.0	b	2	0x080300	2
HP 9895 - Left	/dev/rfd9895.0	c	11	0x080300	2
HP 9895 - Right	/dev/fd9895.1	b	2	0x080310	2
HP 9895 - Right	/dev/rfd9895.1	c	11	0x080310	2

Installing HP 98255A EPROM Memory Cards

Description

The HP98255A EPROM Memory Card allows you to install Erasable Programmable Read Only Memory chips in your computer.

Support

The HP 98255A EPROM Memory Card is supported on all Series 200 computers with boot ROM 3.0 or later, and on all Series 300 computers with boot ROM Rev. A or later.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 2.1 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** supported on revision 3.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.
- **HP-UX Operating System:** not supported.

EPROM Memory Card Installation Procedure

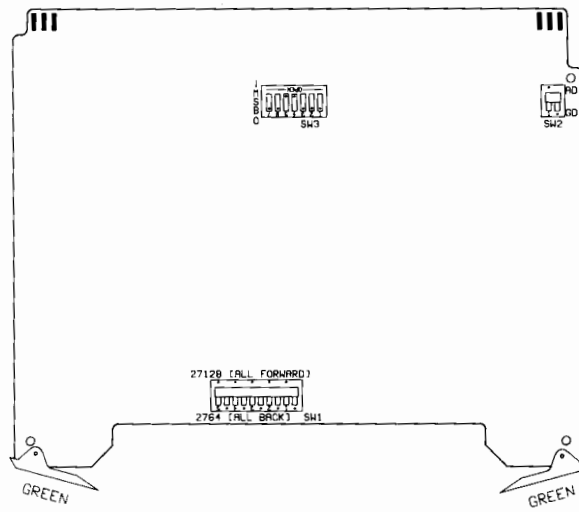


Figure 6-1. EPROM Memory Card Switches

1. Play It Safe.

- a. Turn your computer off and unplug the power cord.
- b. Remove the EPROM Memory Card from its envelope, being careful to handle the card only by its edges and plastic extractor levers. The card may be damaged by electrostatic discharge (static zap).
- c. Place the card on the envelope.

2. Set the EPROM-type Switches.

- a. Find the EPROM-type switches, labeled SW1 on the card, by referring to Figure 6-1.
- b. Set the switches as follows:
 - If you have all 2764-type EPROMs, set the switches to the “all back” position (see Figure 6-1).
 - If you have all 27128-type EPROMs, set the switches to the “all forward” position (see Figure 6-1).

NOTE

You can use only one type of EPROM on each card.

3. Set the EPROM Address Switches.

- a. Find the EPROM address switches, labeled SW3 on the card, by referring to Figure 6-1.
- b. Set the switches as follows:
 - If you are using the Pascal Workstation, refer to the “Non-Disc Mass Storage” chapter of the *Pascal Workstation System* manual for recommended EPROM address settings. Also keep in mind that the least significant bit switch (labeled 1 in Figure 6-1) must be set to 0 if 27128-type devices are used.
 - If you are using the BASIC Language System, refer to the “EPROM Programming” chapter of the *BASIC Interfacing Techniques* manual for recommended EPROM address settings. Also keep in mind that the least significant bit switch (labeled 1 in Figure 6-1) must be set to 0 if 27128-type devices are used.

4. Set the EPROM DTACK Switch.

- a. Find the EPROM DTACK switch, labeled SW2 on the card, by referring to Figure 6-1.
- b. Set the switch to “AD” as shown in Figure 6-1. Both BASIC and the Pascal Workstation require EPROMs to be addressed in the ROM space, which requires auto DTACK (AD).

5. Load the EPROMs.

- a. Load the EPROMs into the sockets of the memory cards. Refer to the *98255 EPROM Memory Installation* manual for details.

6. Insert the EPROM Memory Card.

- a. Remove the *painted* cover plates from the back of your computer until you find an empty slot near the EPROM Programmer Interface. Use an odd-numbered slot, if possible (slots are numbered from the top down, so the top slot is slot number 1, the next slot down is slot number 2, etc.). **Do not** remove the *silver* cover plates from the bottom of a Series 300 computer.
- b. Insert the EPROM Memory Card, component side up, into the empty slot.
- c. Place the extractor levers flat against the card, and push on the extractor levers with your thumbs until the card is firmly seated in the backplane. You may have to push very hard.
- d. Plug the EPROM Programmer Interface Card's cable into the EPROM Memory Card.

The Next Step

You have now installed your HP 98255A EPROM Memory Card.

The following "Worksheet Entries" contain information needed to use your EPROM Memory Card with various language/operating systems. Refer to the entries for the system you'll be using (BASIC or Pascal).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you'll be ready to install your next peripheral.

BASIC System Worksheet Entries

Device Name	Msus	Driver Name	Interleave Factor
HP 98255, lowest address	“:EPROM”	EPROM	-
HP 98255, 2nd lowest addr.	“:EPROM,0,1”	EPROM	-
HP 98255, 3rd lowest addr.	“:EPROM,0,2”	EPROM	-

Pascal Workstation Worksheet Entry

Device Name	Unit Numbers	Module Name	Interleave Factor
HP 98255	#42:	EPROMS	-

NOTE

Before you can access an EPROM Memory Card from the Pascal Workstation, you must make a few modifications. Refer to the “Special Configurations” and “Non-Disc Mass Storage” chapters of the *Pascal Workstation System* manual for details.

Installing the HP 98259A Bubble Memory Card

Description

The HP 98259A Bubble Memory Card acts like a disc drive. It can store data, programs, operating systems, or perform any other normal mass storage function.

Support

The HP 98259A Bubble Memory Card is supported on all Series 200 computers with boot ROM 3.0 or later, and on all Series 300 computers with boot ROM Rev. A or later.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 2.1 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** supported on revision 3.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.
- **HP-UX Operating System:** not supported.

Bubble Memory Card Installation Procedure

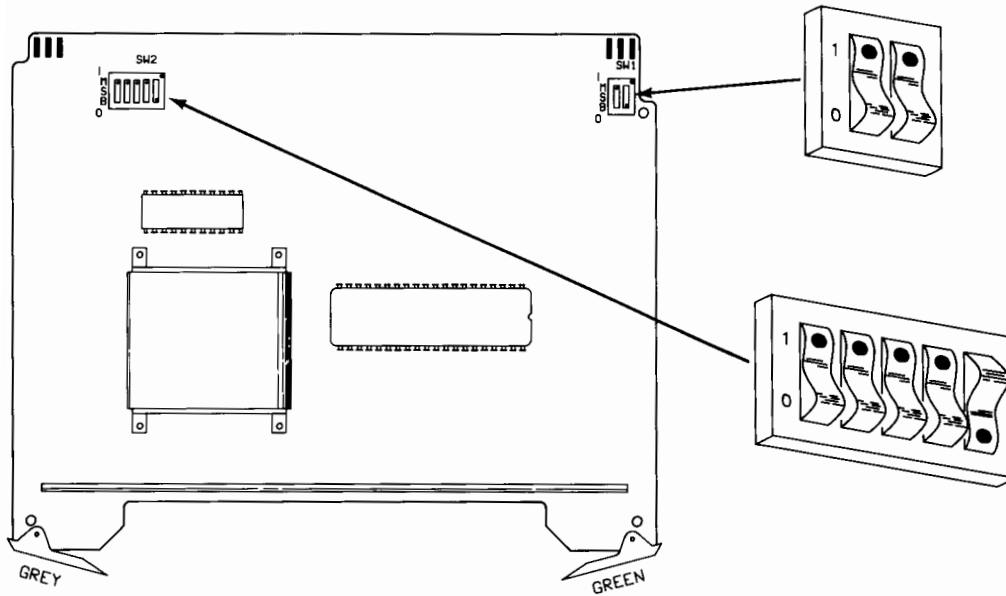


Figure 6-2. Bubble Memory Card Switches

1. Play It Safe.

- a. Turn your computer off and unplug the power cord.
- b. Remove the Bubble Memory Card from its envelope, being careful to handle the card only by its edges and plastic extractor levers. The card may be damaged by electrostatic discharge (static zap).

c. Place the card on the envelope.

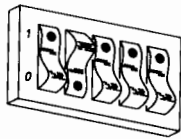
2. Set the Select Code.



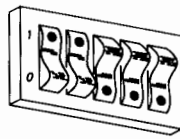
CAN YOU SKIP THIS STEP?

If this is the first (or only) HP 98259A Bubble Memory Card you are installing, you can skip to step 3. The select code is preset to 30 and need not be changed.

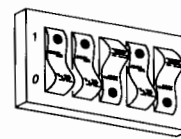
- a. Find the set of five select code switches, labeled SW2 on the card, by referring to Figure 6-2.
- b. Set these switches to one of the three select codes given below, unless you have used them elsewhere. Refer to the manual that came with the card if you need additional switch settings.



Select Code 23



Select Code 24

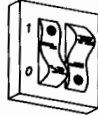


Select Code 26

3. Set the Interrupt Level.

- a. Find the interrupt level switches, labeled SW1 on the card, by referring to Figure 6-2.

- b. Set the interrupt level as follows:
- If this is the first (or only) Bubble Memory Card you are installing, set the interrupt level to 6 as shown in Figure 6-2.
 - If this is the second Bubble Memory Card you are installing, set the interrupt level to 5 like this:



Interrupt Level 5

4. Insert the Bubble Memory Card.

- Remove the *painted* cover plates from the back of your computer until you find an empty slot. Use an odd-numbered slot, if possible (slots are numbered from the top down, so the top slot is slot number 1, the next slot down is slot number 2, etc.). **Do not** remove the *silver* cover plates from the bottom of a Series 300 computer.
- Insert the Bubble Memory Card, component side up, into the empty slot.
- Place the extractor levers flat against the card, and push on the extractor levers with your thumbs until the card is firmly seated in the backplane. You may have to push very hard.

5. Record the Select Code.

- Make a note that select code 30 (or the alternate select code you chose in step 2) has been used and is no longer available. Use the "Select Code Record" form on the Step 5 tab for this purpose.

The Next Step

You have now installed your HP 98259A Bubble Memory Card.

The following “Worksheet Entries” contain information needed to use your Bubble Memory Card with various language/operating systems. Refer to the entries for the system you’ll be using (BASIC or Pascal).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it. **If you changed the select code in step 2, write in your new select code instead of 30.**

When finished, you’ll be ready to install your next peripheral.



BASIC System Worksheet Entries

Device Name	Msus	Driver Name	Interleave Factor
HP 98259	“:,30”	BUBBLE	-

Pascal Workstation Worksheet Entry

Device Name	Unit Numbers	Module Name	Interleave Factor
HP 98259	#42:	BUBBLE	-

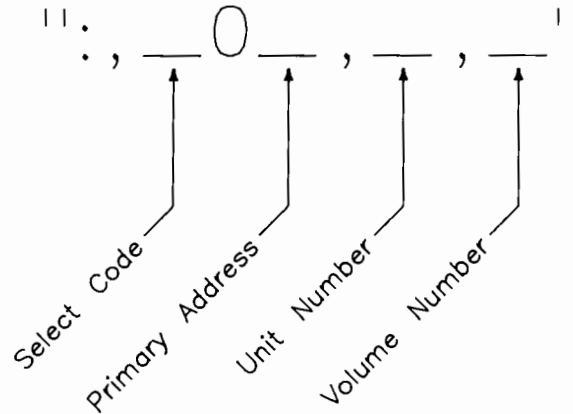
NOTE

Before you can access a BUBBLE Memory Card from the Pascal Workstation, you must make a few modifications. Refer to the “Special Configurations” and “Non-Disc Mass Storage” chapters of the *Pascal Workstation System* manual for details.

Determining Your BASIC Msus

In BASIC, every mass storage device is assigned a unique name, called the mass storage unit specifier (msus). The msus is used to distinguish which drive or volume you want to access. In this section, you will determine the msus for each of your mass storage devices.

The form of the msus is:



To determine the msus for each of your mass storage devices, just fill in the blanks of this form with information from your BASIC System Worksheet. Write each msus in the **msus** column of your worksheet. (EPROMs are an exception; see the EPROM Memory Card section).

Rules for Determining Your Msus

1. Always be sure to include the initial comma, and don't forget the **0** between the select code and the primary address.
2. If the unit number *and* the volume number are either 0 or blank, you may omit both the unit number and the volume number and the commas that precede them.
3. If the volume number is 0 or blank, you may omit the volume number and the comma that precedes it.

A few examples will make this clear:

Example 1

Suppose your disc has the following characteristics:

Select Code	Primary Address	Unit Number	Volume Number
7	0	0	0

Then, filling in the form, you arrive at the following msus:

“:700,0,0”

Notice, however, that both the unit number and the volume number are blank. Therefore, by rule #2, you can omit the unit number and volume number, and use this shortened version of the msus:

“:700”

Example 2

Suppose your disc has the following characteristics:

Select Code	Primary Address	Unit Number	Volume Number
14	2	1	6

Then, filling in the form, you arrive at the following msus:

“:1402,1,6”

Example 3

Suppose your disc has the following characteristics:

Select Code	Primary Address	Unit Number	Volume Number
8	3	0	

Then, filling in the form, you arrive at the following msus:

“:803,0”

Notice that because the Volume Number entry is blank, the volume number and the comma that precedes it are omitted in the msus above (see rule #3). In addition, since the unit number is 0, by rule #2 you could further shorten the msus to:

“:803”

Determining Pascal Unit Numbers

Follow this procedure to determine which unit numbers the Pascal Workstation has *initially* assigned to your disc. Be aware, however, that unit number assignments may change if you change your system configuration, or if you begin booting the Pascal Workstation from a different disc. See the section “Verifying Unit Numbers” in the *Pascal User’s Guide* to confirm the unit numbers you determine here, *after* you have initialized your discs.

Three procedures are provided:

- Determining Flexible Disc Drive Unit Numbers
- Determining Hard Disc Drive Unit Numbers
- Determining Tape Drive Unit Numbers

Table 6-1.

Product Number	Number of Volumes
7907 (fixed)	20
7907 (removable)	20
7911	27
7912	30
7914	30
7933	30
7935	30
7941	23
7942	23
7945	30
7946	30
9133/34D ¹	14
9133/34D Opt. 001 ¹	16
9133/34H ¹	19
9133/34H Opt. 001 ¹	22
9133/34L ¹	30
9133/34L Opt. 001 ¹	30
9153A ¹	9
9154A ¹	9



¹ If you set the configuration switch to partition the disc into multiple volumes, the number of volumes may vary.

Determining Flexible Disc Drive Unit Numbers

NOTE

For Model 226 and 236 internal drive unit numbers, see the worksheet entries in the "Installing Model 226/236 Internal Disc Drives" section.

If You Have Only One (Dual or Single) Flexible Disc Drive Unit

1. In the Unit Numbers column of the *left-hand* flexible disc drive (the only drive in single drive units), write **#3**.
2. If you have a dual drive unit, in the Unit Numbers column of the *right-hand* flexible disc drive, write **#4**.

If You Have More Than One (Dual or Single) Flexible Disc Drive Unit

1. Look over your worksheet and identify all of your flexible disc drives. Decide which *one* of them you will initially use to boot the Pascal Workstation. That is, when you load the Pascal Workstation boot disc into your computer for the first time, which of these drives will you use? This drive is called the **boot device**.

NOTE

If you choose one of the drives in a dual flexible disc drive unit (e.g., HP 9121, HP 9122) as your boot device, choose the *left-hand* disc drive.

2. In the Unit Numbers column for the boot device, write **#3**. If the boot device is the *left-hand* drive in a dual flexible disc drive unit, write **#4** in the Unit Numbers column for the *right-hand* drive in the unit.
3. Of your remaining flexible disc drive units, find the one connected to the interface with the *highest* select code. If more than one unit is connected to this select code, find the one that has the *highest* primary address.

For example, if unit 1 is connected to the interface at select code 7, and unit 2 is connected to the interface at select code 14, you would choose unit 2.

As another example, if unit 1 is connected to select code 7, unit 2 is connected to select code 14 at primary address 2, and unit 3 is connected to select code 14 at primary address 3, you would choose unit 3.

4. In the Unit Numbers column for the *left-hand* drive of this flexible disc drive unit (the only drive is a single flexible disc drive unit), write **#7:**. If you have a dual flexible disc drive unit, write **#8:** in the Unit Numbers column for the *right-hand* drive.
5. If you have another flexible disc drive unit, write **#9:** in the Unit Numbers column for the *left-hand* drive (the only drive if the unit contains a single flexible disc drive), and write **#10:** in the Unit Numbers column for the *right-hand* drive.

NOTE

The Pascal Workstation cannot access more than three separate flexible disc drive units without some modifications. If you have more than three separate units containing flexible disc drives, see the Special Configurations chapter of the *Pascal Workstation System* manual.

Determining Hard Disc Drive Unit Numbers

If You Have Only One Hard Disc

1. Look up the number of units into which the device is divided in Table 6-1. If the device does not appear in the table, calculate the number of units like this:
 - a. Round the storage capacity of the disc down to the nearest whole Mbyte.
 - b. The number in step a is the number of units into which the device is divided *if* this number is less than or equal to 30. If the number is greater than 30, then the device is divided into 30 units.

2. Starting at unit **#11:**, count off the number of units as determined in step 1. These are the unit numbers assigned to the device.

For example, if in step 1 you determined the device is divided into 14 units, then the device will be assigned unit numbers **#11:** thru **#24:**. If the device is divided into 30 units, then the device will be assigned unit numbers **#11:** thru **#40:**.

3. Write the range of unit numbers on the Unit Numbers line for the device. For example, you would write **#11: thru #24:** for the first example above, and **#11: thru #40:** in the second example. Be sure to include the **#** and **:**, as these symbols are part of the unit number.

If You Have Only One Hard Disc on Each Interface...

1. Look on your worksheet and find the hard disc that is connected to the interface with the *highest* select code. For example, if hard disc 1 is connected to an interface with select code 7 and hard disc 2 is connected to an interface with select code 14, you would choose hard disc 2.
2. Look up the number of units into which the hard disc is divided in Table 6-1. If the hard disc does not appear in the table, calculate the number of units like this:
 - a. Round the storage capacity of the disc down to the nearest whole Mbyte.
 - b. The number in step a is the number of units into which the hard disc is divided *if* this number is less than or equal to 30. If the number is greater than 30, then the hard disc is divided into 30 units.
3. Starting at unit #11:, count off the number of units as determined in step 2. These are the unit numbers assigned to this hard disc.

For example, if in step 2 you determined the hard disc is divided into 14 units, then it will be assigned unit numbers #11: thru #24:. If the hard disc is divided into 30 units, then it will be assigned unit numbers #11: thru #40:.
4. Write the range of unit numbers on the Unit Numbers line for the hard disc. For example, you would write **#11: thru #24:** for the first example above, and **#11: thru #40:** for the second example. Be sure to include the # and : as these symbols are part of the unit number.

NOTE

If this first disc was assigned unit numbers #11: thru #40:, there are no unit numbers left for your remaining hard disc(s). See the Special Configurations chapter of the *Pascal Workstation System* manual for in-

structions.

5. Next, find the hard disc that is connected to the interface with the *next highest* select code.
6. Look up the number of units into which this hard disc is divided in Table 6-1. If the hard disc does not appear in the table, calculate the number of units as described in steps 2a-b.

7. Starting with the *next unused* unit number, count off the number of units as determined in step 6.
 - If you stopped counting at or before unit number #40:, these are the unit numbers assigned to the hard disc. Write them on your worksheet.
 - If you counted past unit #40:, you have run out of unit numbers. Only those unit numbers from #40: on down have been assigned to this hard disc, and part of the storage capacity of the hard disc is inaccessible. See the Special Configurations chapter of the *Pascal Workstation System* manual and the manual that came with the hard disc for instructions.

Examples: If your first hard disc received unit numbers #11: thru #24:, and your second hard disc is divided into 10 units, then this second hard disc will receive unit numbers #25: thru #34:.

If your first hard disc received unit numbers #11: thru #24:, and your second hard disc is divided into 20 units, then this second hard disc will receive unit numbers #25: thru #40:. In this case, 4 of the 20 units would not receive unit numbers, and the storage space allocated to these 4 units would not be accessible.

8. If you have not exceeded unit number #40:, repeat steps 5 through 7 for your remaining hard discs.

If You Have More Than One Hard Disc on An Interface...

1. Look on your worksheet and find the highest select code containing a hard disc. For example, if hard disc 1 is connected to an interface with select code 7 and hard discs 2 and 3 are connected to an interface with select code 14, then the highest select code containing a hard disc is 14.
2. Find all hard discs on this highest select code (e.g., discs 2 and 3 in the example above).
3. Of the discs you found in step 2, select the one with the highest priority:
 - If this select code contains more than one hard disc (as in the example above), look on your worksheet and determine which hard disc has the *highest* primary address. This is the disc with the highest priority. For example, if disc 2 has primary address 0 and disc 3 has primary address 2, you would select disc 3.
 - If this select code contains only one hard disc, then select that disc and go on to step 4.

4. Look up the number of units into which this hard disc is divided in Table 6-1. If the hard disc does not appear in the table, calculate the number of units like this:
 - a. Round the storage capacity of the disc down to the nearest whole Mbyte.
 - b. The number in step a is the number of units into which the hard disc is divided if this number is less than or equal to 30. If the number is greater than 30, then the hard disc is divided into 30 units.
5. Starting at unit #11:, count off the number of units as determined in step 4. These are the unit numbers assigned to this hard disc.

For example, if in step 4 you determined the hard disc is divided into 14 units, then it will be assigned unit numbers #11: thru #24: . If the hard disc is divided into 30 units, then it will be assigned unit numbers #11: thru #40: .
6. Write the range of unit numbers on the Unit Numbers line for the hard disc. For example, you would write **#11: thru #24:** for the first example above, and **#11: thru #40:** for the second example. Be sure to include the # and : as these symbols are part of the unit number.

NOTE

If this first disc was assigned unit numbers #11: thru #40:, there are no unit numbers left for your remaining hard disc(s). See the Special Configurations chapter(of the *Pascal Workstation System* manual for instructions.

7. Select the next highest priority disc:
 - If there are additional hard discs on this same select code, select the hard disc with the *next highest* primary address.
 - If there are no other hard discs on this select code, select the hard disc on the next highest select code that has the highest primary address.
8. Look up the number of units into which this hard disc is divided in Table 6-1. If the hard disc does not appear in the table, calculate the number of units as described in steps 4a-b.

9. Starting with the *next unused* unit number, count off the number of units as determined in step 8.

- If you stopped counting at or before unit #40:, these are the unit numbers assigned to the hard disc. Write them on your worksheet.
- If you counted past unit #40:, you have run out of unit numbers. Only those unit numbers from #40: on down have been assigned to your hard disc, and part of the storage capacity of the hard disc is inaccessible. See the Special Configurations chapter of the *Pascal Workstation System* manual and the manual that came with the hard disc for instructions.

Examples: If your first hard disc received unit numbers #11: thru #24:, and your second hard disc is divided into 10 units, then this second hard disc will receive unit numbers #25: thru #34:.

If your first hard disc received unit numbers #11: thru #24:, and your second hard disc is divided into 20 units, then this second hard disc will receive unit numbers #25: thru #40:. In this case, 4 of the 20 units would not receive unit numbers, and the storage space allocated to these 4 units would not be accessible.

10. If you have not exceeded unit number #40:, repeat steps 7 through 9 for your remaining hard discs.

Determining Tape Drive Unit Numbers

1. Look over your worksheet and identify all of your tape drives. Find the one connected to the interface with the *highest* select code. If more than one tape drive is connected to this select code, find the one that has the *highest* primary address.

For example, if tape drive 1 is connected to the interface at select code 7, and tape drive 2 is connected to the interface at select code 14, you would choose tape drive 2.

As another example, if tape drive 1 is connected to select code 14 at primary address 2, and tape drive 2 is connected to select code 14 at primary address 3, you would choose tape drive 2.

2. In the Unit Numbers column for this tape drive, write **#41:**.

3. If you have another tape drive, write **#42:** in its Unit Numbers column.

Determining HP-UX Minor Numbers

If you **did not** use:

- An address of 0, 2 or 3 for your mass storage device, and/or
- The preset select code for your HP 98625 (preset select code 14) Disc Interface or HP 98624 HP-IB Interface (preset select code 8),

then the minor numbers given in the “HP-UX System Worksheet Entries” are incorrect.

To determine your correct minor number, follow this procedure:

1. Choose any worksheet entry table for your device as an example to work from.
2. **If Your Select Code Is Different:** The first two digits to the right of the 0x in the minor number indicate the select code of the interface the device is connected to. Change these two digits to *your* select code value (in hexadecimal). For example:
 - If your select code is 25, and the example minor number is 0x**07**0010, change the 07 to 19, giving the new minor number 0x190010. (Note: 19 is the hexadecimal value for 25).
 - If your select code is 10, and the example minor number is 0x**0e**0200, change the 0e to 0a, giving the new minor number 0x0a0200. (Note: 0a is the hexadecimal value for 10).
3. **If Your Address Is Different:** The next two digits following the select code digits indicate the address of the device. Change these two digits to *your* address value (in hexadecimal). For example:
 - If your address is 5, and the example minor number is 0x07**00**10, change the 00 to 05, giving the new minor number 0x070510.
 - If your address is 7, and the example minor number is 0x0e**02**00, change the 02 to 07, giving the new minor number 0x0e0700.
4. Change the minor number in each worksheet entry given for your device.

Adding Printers

7

If you need to install any of the products listed below, turn to the indicated page number and follow the instructions. Otherwise, move on to Step 8.

Printer Name	Page Number
HP 2225A <i>ThinkJet</i> Printer	See page 7-2
HP 2563A, 2565A and 2666A Printers	See page 7-9
HP 2601A Daisywheel Printer	See page 7-16
HP 2602A Daisywheel Printer	See page 7-21
HP 2608S Dot-matrix Printer	See page 7-26
HP 2671A/G Thermal Printer	See page 7-31
HP 2673A Thermal Printer	See page 7-38
HP 2686A <i>LaserJet</i> Printer	See page 7-44
HP 2932A and HP 2934A Printers	See page 7-51
HP 82905B and HP 82906A Printers	See page 7-59
HP 9876A Thermal Printer	See page 7-65



Installing the HP 2225A ThinkJet Printer

Description

The HP 2225A *ThinkJet* printer connects to the computer through the HP-IB interface.

Support

The HP 2225A *ThinkJet* printer is supported on all Series 200 and Series 300 computers.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 2.0 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** supported on revision 3.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.
- **HP-UX Operating System:** supported on revision 2.0 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

Before You Begin

The following procedure describes how to connect your HP 2225A *ThinkJet* printer to your Series 200/300 computer. Before you do this, however, refer to the manual(s) that came with your printer to:

- Unpack the printer.
- Check the line voltage.

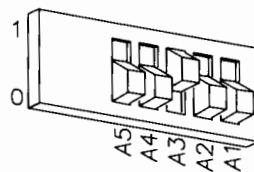
ThinkJet Printer Installation Procedure

1. **Play It Safe.**
 - a. Turn your computer and printer off, if they are not already off.
2. **Select Your Interface.**
 - a. Use either the built-in HP-IB interface or an HP 98624A HP-IB Interface. If using HP-UX, avoid placing the *ThinkJet* on the same interface used by your disc or tape drives, if possible. If using the Pascal Workstation, select the built-in HP-IB interface.
3. **Set the Address.**

CAN YOU SKIP THIS STEP?

If this is the first (or only) printer you are connecting to the interface, you can skip to step 4. The address is preset to 1 and need not be changed—*unless* you have changed the address of some other device on the interface to 1. The Pascal Workstation *expects* to find the printer at address 1.

- a. Find the set of switches to the left of the HP-IB connector. Switches A1 through A5 in this group determine the address.
- b. Set the address switches to 4 as shown below, unless address 4 has been used elsewhere. Refer to the manual that came with the printer if you need additional switch settings.



Address 4

4. Connect the Printer to the Computer.

- a. Get an HP-IB cable.
- b. Connect one end of the HP-IB cable to the HP-IB connector on the back of the printer. Tighten the thumb screws to secure the connection.
- c. Connect the other end of the HP-IB cable to the interface.

NOTE

If the interface already has several cables connected to it, connect the printer's cable to one of the other devices on the interface.

5. Connect the Power Cord.

- a. Connect the female end of the power cord to the power socket on the back of the printer, and connect the other end to your power outlet.

6. Record the Address.

- a. Make a note that address 1 (or the alternate address you chose in step 3) has been used and is no longer available on the interface you selected. Use the "Address Record" form on the Step 6 tab for this purpose.

Final Preparations

Refer to your printer's manual(s) to:

- Load the print head cartridge.
- Load the paper.
- Perform the printer's self-test.

The Next Step

You have now installed your HP 2225A *ThinkJet* Printer.

The following “Worksheet Entries” contain information needed to use your printer with various language/operating systems. Refer to the entries for the system you’ll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral.

BASIC System Worksheet Entries

If You Connected the ThinkJet to the Built-in HP-IB Interface (Select Code 7)...

**And It Is the First Printer
on this Interface (Address 1)...**

Device Name	Device Selector
HP 2225A <i>ThinkJet</i>	701

**And It Is the Second Printer
on this Interface (Address 4)...**

Device Name	Device Selector
HP 2225A <i>ThinkJet</i>	704

If You Connected the ThinkJet to the HP 98624A HP-IB Interface (Select Code 8)...

**And It Is the First Printer
on this Interface (Address 1)...**

Device Name	Device Selector
HP 2225A <i>ThinkJet</i>	801

And It Is the Second Printer

on this Interface (Address 4)...

Device Name	Device Selector
HP 2225A <i>ThinkJet</i>	804

Pascal Workstation Worksheet Entry

NOTE

The Pascal Workstation expects to find the printer on the built-in HP-IB interface at address 1. If you did not set up your printer this way, you must make some modifications to the Pascal Workstation. See the "Special Configurations" section of the *Pascal Workstation System* manual for details.

Device Name	Unit Number
HP 2225A <i>ThinkJet</i>	#6:



HP-UX System Worksheet Entries

If You Connected the ThinkJet to the Built-in HP-IB Interface (Select Code 7)...

And It Is the First Printer on this Interface (Address 1)...

Device Name	Path Name	File Type	Major No.	Minor No.
HP 2225A ThinkJet	/dev/lp2225	c	7	0x070100
HP 2225A ThinkJet	/dev/rp2225	c	7	0x070101

And It Is the Second Printer on this Interface (Address 4)...

Device Name	Path Name	File Type	Major No.	Minor No.
HP 2225A ThinkJet	/dev/lp2225	c	7	0x070400
HP 2225A ThinkJet	/dev/rp2225	c	7	0x070401

If You Connected the ThinkJet to the HP 98624 HP-IB Interface (Select Code 8)...

And It Is the First Printer on this Interface (Address 1)...

Device Name	Path Name	File Type	Major No.	Minor No.
HP 2225A ThinkJet	/dev/lp2225	c	7	0x080100
HP 2225A ThinkJet	/dev/rp2225	c	7	0x080101

And It Is the Second Printer on this Interface (Address 4)...

Device Name	Path Name	File Type	Major No.	Minor No.
HP 2225A ThinkJet	/dev/lp2225	c	7	0x080400
HP 2225A ThinkJet	/dev/rp2225	c	7	0x080401

Installing the HP 2563A, 2565A and 2566A Printers

Description

The HP 2563A, 2565A and 2566A are dot-matrix impact printers. They connect to an HP-IB interface, and include installation by an HP Customer Engineer.

Support

The HP 2563A printer is supported on all Series 200 and Series 300 computers. The HP 2565A and 2566A printers are supported on Series 200 Model 220 and 237 computers.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 2.0 or later with Series 200 computers; supported on revision 4.0 or later on Series 300 computers. The CIPER HP-IB interface is not supported.
- **Pascal Workstation:** supported on revision 2.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers. The CIPER HP-IB interface is not supported.
- **HP-UX Operating System:** supported on revision 2.1 with Series 200 computers (5.1 for the CIPER HP-IB interface); supported on revision 5.0 with Series 300 computers.

Before You Begin

The HP 2563A, 2565A and 2566A printers are installed by an HP Customer Engineer. Make arrangements for installation with your nearest HP Sales and Service office.

The following procedure describes how to connect the HP 2563A, 2565A or 2566A printer to your Series 200/300 computer. Before you do this, however, refer to the manual(s) that came with your printer to:

- Load the ribbon cartridge.
- Load and adjust paper.
- Set the printer configuration.

HP 2563/65/66A Printer Installation Procedure

1. **Play It Safe.**
 - a. Contact your HP Customer Engineer to have your printer installed. Installation is included in the price of the printer.
 - b. Turn your computer and printer off, if they are not already off.
2. **Select Your Interface.**
 - a. **If you have an Option 200 (non-CIPER) Printer:** Use either the built-in HP-IB interface or an HP 98624A HP-IB Interface. If using HP-UX, avoid placing the printer on the same interface used by your disc or tape drives, if possible. If using the Pascal Workstation, select the built-in HP-IB interface.
 - b. **If you have an Option 850 (CIPER) Printer:** Use either the built-in HP-IB interface or an HP 98624A HP-IB Interface.
3. **Connect the Printer to the Computer.**
 - a. Find the HP-IB cable provided with the printer. .
 - b. Connect one end of the HP-IB cable to the HP-IB connector on the back of the printer. Tighten the thumb screws to secure the connection.
 - c. Connect the other end of the HP-IB cable to the interface.

NOTE

If the interface already has several cables connected to it, connect the printer's cable to one of the other devices on the interface.

4. Connect the Power Cord.

- a. Connect the female end of the power cord to the power socket on the back of the printer, and connect the other end to your power outlet.



5. Set the Address.

- a. Turn your printer on.
- b. Press the ON LINE key until the ON LINE indicator light turns off.
- c. Press the CONFIG key and the FINE ADJ. keys simultaneously until the number 20 appears in the display, then release them.
- d. The current address will appear in the display. Set the address as follows:
 - If this is the first (or only) printer you are connecting to the interface, press the FINE ADJ. key until the number 1 appears in the display, unless address 1 has been used elsewhere. The Pascal Workstation *expects* to find the printer at address 1.
 - If this is the second printer you are connecting to the interface, press the FINE ADJ. key until the number 4 appears in the display, unless address 4 has been used elsewhere. If it has, select any unused address.
- e. Press the ENTER key to enter the new address and return the printer to normal operation.

6. Record the Address.

- a. Make a note that address 1 (or the alternate address you chose in step 5) has been used and is no longer available on the interface you selected. Use the "Address Record" form on the Step 6 tab for this purpose.

The Next Step

You have now installed your HP 2563A, 2565A or 2566A Printer.

The following "Worksheet Entries" contain information needed to use your printer with various language/operating systems. Refer to the entries for the system you'll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you'll be ready to install your next peripheral.

BASIC System Worksheet Entries

If You Connected the HP 2563/65/66A to the Built-in HP-IB Interface (Select Code 7)...

**And It Is the First Printer
on this Interface (Address 1)...**

Device Name	Device Selector
HP 2563/65/66A	701

**And It Is the Second Printer
on this Interface (Address 4)...**

Device Name	Device Selector
HP 2563/65/66A	704

If You Connected the HP 2563/65/66A to the HP 98624A HP-IB Interface (Select Code 8)...

**And It Is the First Printer
on this Interface (Address 1)...**

Device Name	Device Selector
HP 2563/65/66A	801

And It Is the Second Printer

on this Interface (Address 4)...

Device Name	Device Selector
HP 2563/65/66A	804

Pascal Workstation Worksheet Entry

NOTE

The Pascal Workstation expects to find the printer on the built-in HP-IB interface at address 1. If you did not set up your printer this way, you must make some modifications to the Pascal Workstation. See the "Special Configurations" section of the *Pascal Workstation System* manual for details.

Device Name	Unit Number
HP 2563/65/66A	#6:

HP-UX System Worksheet Entries

If You Connected the HP 2563/65/66A to the Built-in HP-IB Interface (Select Code 7)...

And It Is the First Printer on this Interface (Address 1)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number
HP 2563/65/66A Opt. 200 non-CIPER	/dev/lp2563	c	7	0x070100
HP 2563/65/66A Opt. 200 non-CIPER	/dev/rlp2563	c	7	0x070101
HP 2563/65/66A Opt. 850 CIPER	/dev/lp2563	c	26	0x070100
HP 2563/65/66A Opt. 850 CIPER	/dev/rlp2563	c	26	0x070101

And It Is the Second Printer on this Interface (Address 4)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number
HP 2563/65/66A Opt. 200 non-CIPER	/dev/lp2563	c	7	0x070400
HP 2563/65/66A Opt. 200 non-CIPER	/dev/rlp2563	c	7	0x070401
HP 2563/65/66A Opt. 850 CIPER	/dev/lp2563	c	26	0x070400
HP 2563/65/66A Opt. 850 CIPER	/dev/rlp2563	c	26	0x070401

¹ If you have an HP 2565A or HP 2566A, substitute 2565 or 2566 for 2563 in the path name.

HP-UX System Worksheet Entries (Cont.)

If You Connected the HP 2563/65/66A to the HP 98624 HP-IB Interface (Select Code 8)...



And It Is the First Printer on this Interface (Address 1)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number
HP 2563/65/66A Opt. 200 non-CIPER	/dev/lp2563	c	7	0x080100
HP 2563/65/66A Opt. 200 non-CIPER	/dev/rlp2563	c	7	0x080101
HP 2563/65/66A Opt. 850 CIPER	/dev/lp2563	c	26	0x080100
HP 2563/65/66A Opt. 850 CIPER	/dev/rlp2563	c	26	0x080101

And It Is the Second Printer on this Interface (Address 4)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number
HP 2563/65/66A Opt. 200 non-CIPER	/dev/lp2563	c	7	0x080400
HP 2563/65/66A Opt. 200 non-CIPER	/dev/rlp2563	c	7	0x080401
HP 2563/65/66A Opt. 850 CIPER	/dev/lp2563	c	26	0x070400
HP 2563/65/66A Opt. 850 CIPER	/dev/rlp2563	c	26	0x070401

¹ If you have an HP 2565A or HP 2566A, substitute 2565 or 2566 for 2563 in the path name.

Installing the HP 2601A Printer

Description

The HP 2601 is a Daisywheel printer that connects to an RS-232C interface.

Support

The HP 2601A printer is supported on all Series 200 computers.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 1.0 or later with Series 200 computers.
- **Pascal Workstation:** supported on revision 2.1 or later with Series 200 computers.
- **HP-UX Operating System:** not supported.

Before You Begin

The following procedure describes how to connect your HP 2601A printer to your Series 200 computer. Before you do this, however, refer to the manual(s) that came with your printer to:

- Unpack the printer.
- Install the platen (if necessary).
- Install a print wheel.
- Install a ribbon cartridge.
- Set the Print Wheel Select switch.
- Set the Spacing Select switch.
- Set the Left DIP switch module.

HP 2601A Printer Installation Procedure

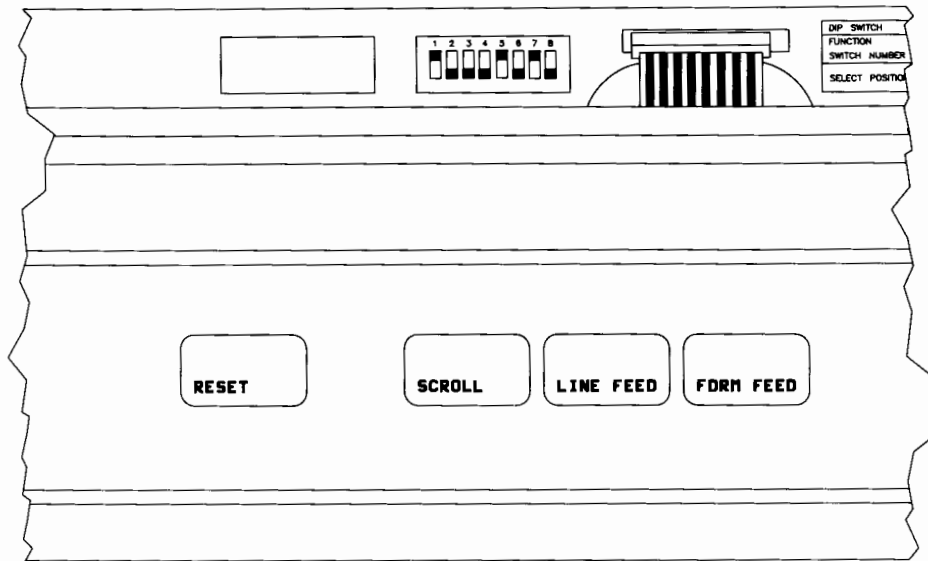


Figure 7-1. HP 2601A Printer Switch Settings.

1. Play It Safe.

- a. Turn your computer and printer off, if they are not already off.

2. Select Your Interface.

- a. Use any one of the following RS-232C interfaces:
 - The built-in "Data Communications" interface in a Model 216 or Model 217 computer¹
 - HP 98626A RS-232C Interface
 - HP 98628A Datacomm Interface
 - HP 98644A RS-232C Serial Interface

¹ Configuration of this interface is not covered in this guide. Refer to the computer's *Installation Manual* to set the baud rate switches to 1200 baud (switch 1 to OPEN, switches 2, 3 and 4 to not-OPEN). The remaining switches are preset to the correct values for the HP 2601; check them only if you have changed them.

3. Set the Printer's Switches.

- a. Lift the printer's top cover and locate the Right DIP Switch module (see Figure 7-1). Set the switches to match those shown in Figure 7-1:
 - Set switch 1 to ON, Full Duplex.
 - Set switch 2 to OFF, Parity Disabled.
 - Set switches 3 and 5 to OFF and ON, respectively, to provide 1200 baud.
 - The other switch settings do not matter.

4. Connect the Printer to the Computer.

- a. Connect one (male) end of the printer's cable (usually an HP 17255D) to the connector on the back of the printer. Lock the connector in place with the screws.
- b. Connect the HP 5061-4215 DTE cable (built-in, HP 98626A and 98628A Interfaces), or the HP 13242N, 92218A or 92222M cable (HP 98644A Interface) to the interface.
- c. Connect the other end of the printer's cable to the cable connected to the interface.

5. Connect the Power Cord.

- a. Connect the female end of the power cord to the power socket on the back of the printer, and connect the other end to your power outlet.

The Next Step

You have now installed your HP 2601A Printer.

The following "Worksheet Entries" contain information needed to use your printer with various

language/operating systems. Refer to the entries for the system you'll be using (BASIC or Pascal).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you'll be ready to install your next peripheral.

BASIC System Worksheet Entry

IMPORTANT!

If you have connected the HP 2601A printer to an HP 98644A RS-232C Serial Interface, execute the following statement before using the printer to set the baud rate of the interface to 1200:

```
CONTROL 9,13;1200
```

This statement assumes an interface select code of 9. If your select code is different, substitute your select code for 9 in the statement above.

Device Name	Device Selector ¹
HP 2601A	9



¹ If you connected the HP 2601A to an interface with a select code other than 9, write in your select code instead of 9.

Pascal Workstation Worksheet Entry

NOTE

Before you can use the HP 2601A printer with the Pascal Workstation, you must make a few modifications. See the "Special Configurations" chapter of the *Pascal Workstation System* manual for instructions.

Device Name	Unit Number
HP 2601A	#6:

Installing the HP 2602A Printer

Description

The HP 2602A is a Daisywheel printer that connects to an HP-IB interface.

Support

The HP 2602A printer is supported on all Series 200 computers.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 1.0 or later with Series 200 computers.
- **Pascal Workstation:** supported on revision 2.1 or later with Series 200 computers.
- **HP-UX Operating System:** not supported

Before You Begin

The following procedure describes how to connect your HP 2602A printer to your Series 200 computer. Before you do this, however, refer to the manual(s) that came with your printer to:

- Unpack the printer.
- Install the platen.
- Install a ribbon cartridge.
- Install a daisywheel.

HP 2602A Printer Installation Procedure

1. **Play It Safe.**
 - a. Turn your computer and printer off, if they are not already off.
2. **Select Your Interface.**
 - a. Use either the built-in HP-IB interface or an HP 98624A HP-IB Interface. If using the Pascal Workstation, select the built-in HP-IB interface.
3. **Set the Address.**

CAN YOU SKIP THIS STEP?

If this is the first (or only) printer you are connecting to the interface, you can skip to step 4. The address is preset to 1 and need not be changed—*unless you have changed the address of some other device on the interface to 1. The Pascal Workstation expects to find the printer at address 1.*

- a. Remove the printer's top cover and locate the HP-IB Configuration switches.
 - b. Set the address switches to 4, unless address 4 has been used elsewhere. To get address 4, set switch 1 to the On position by sliding it to the left, and set switches 2 and 3 to the Off position by sliding them to the right. Refer to the manual that came with the printer if you need additional switch settings.
4. **Set the Other Switches.**
- a. Remove the printer's top cover (if it is not already off) and locate the HP-IB Config-

uration switches.

- b. Set the Listen Always switch (4) to the Off position by sliding it to the right.
- c. Set the SRQ Enable switch (5) to the Off position by sliding it to the right.
- d. Set the Self Test switch (6) to the Off position by sliding it to the right.
- e. Set the Page Length switch (7) to 11 inches by sliding it to the right. If you have 12-inch paper, slide it to the left.
- f. Set the Single-Strike Ribbon switch (8) to single-strike by sliding it to the left. If you have a multi-strike ribbon, slide the switch to the right.

5. Connect the Printer to the Computer.

- a. Get an HP-IB cable.
- b. Connect one end of the HP-IB cable to the HP-IB connector on the back of the printer. Tighten the thumb screws to secure the connection.
- c. Connect the other end of the HP-IB cable to the interface.



NOTE

If the interface already has several cables connected to it, connect the printer's cable to one of the other devices on the interface.

6. Connect the Power Cord.

- a. Connect the female end of the power cord to the power socket on the back of the printer, and connect the other end to your power outlet.

7. Record the Address.

- a. Make a note that address 1 (or the alternate address you chose in step 3) has been used and is no longer available on the interface you selected. Use the "Address Record" form on the Step 6 tab for this purpose.

The Next Step

You have now installed your HP 2602A Printer.

The following "Worksheet Entries" contain information needed to use your printer with various language/operating systems. Refer to the entries for the system you'll be using (BASIC or Pascal).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you'll be ready to install your next peripheral.

BASIC System Worksheet Entries

If You Connected the 2602A to the Built-in HP-IB Interface (Select Code 7)...

**And It Is the First Printer
on this Interface (Address 1)...**

Device Name	Device Selector
HP 2602A	701

**And It Is the Second Printer
on this Interface (Address 4)...**

Device Name	Device Selector
HP 2602A	704

If You Connected the 2602A to the HP 98624A HP-IB Interface (Select Code 8)...

**And It Is the First Printer
on this Interface (Address 1)...**

Device Name	Device Selector
HP 2602A	801

**And It Is the Second Printer
on this Interface (Address 4)...**

Device Name	Device Selector
HP 2602A	804

Pascal Workstation Worksheet Entry

NOTE

The Pascal Workstation expects to find the printer on the built-in HP-IB interface at address 1. If you did not set up your printer this way, you must make some modifications to the Pascal Workstation. See the "Special Configurations" section of the *Pascal Workstation System* manual for details.

Device Name	Unit Number
HP 2602A	#6:

Installing the HP 2608S Printer

Description

The HP 2608S Opt. 290 is a 400 line-per-minute, dot-matrix impact printer for fan-fold, single- or multi-part paper.

Support

The HP 2608S Printer is supported on Series 200 Model 200, 226, 236 and 237 computers.

Operating/Language system support is as follows:

- **BASIC:** not supported.
- **Pascal Workstation:** not supported.
- **HP-UX Operating System:** supported on revision 5.1 with Series 200 computers.

Before You Begin

The following procedure describes how to connect the HP 2608S Printer to your Series 200 computer. Before you do this, however, refer to the manual(s) that came with your printer to:

- Unpack the printer.

HP 2608S Printer Installation Procedure

1. Play It Safe.

- a. Turn your computer and printer off, if they are not already off.

2. Select Your Interface.

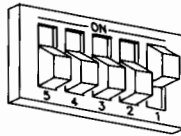
- a. Use either the built-in HP-IB interface or an HP 98624A HP-IB Interface.

3. Set the Address.

- a. Find the five DEVICE ADDRESS switches on the back of the printer, near the HP-IB connector.

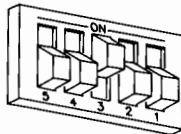
- b. Set the DEVICE ADDRESS switches as follows:

- If the HP 2608S is the first (or only) printer you are connecting to the interface, set the switches to address 1 as shown below, unless address 1 has been used elsewhere.



Address 1

- If the HP 2608S is the second printer you are connecting to the interface, set the switches to address 4 as shown below, unless address 4 has been used elsewhere. Refer to the manual that came with the printer for additional switch settings.



Address 4

4. Connect the Printer to the Computer.

- a. Get an HP-IB cable.
- b. Connect one end of the HP-IB cable to the HP-IB connector on the back of the printer. Tighten the thumb screws to secure the connection.
- c. Connect the other end of the HP-IB cable to the interface.

NOTE

If the interface already has several cables connected to it, connect the printer's cable to one of the other devices on the interface.

5. Connect the Power Cord.

- a. Connect the female end of the power cord to the power socket on the back of the printer, and connect the other end to your power outlet.

6. Record the Address.

- a. Make a note that address 1 (or the alternate address you chose in step 3) has been used and is no longer available on the interface you selected. Use the "Address Record" form on the Step 6 tab for this purpose.

Final Preparations

Refer to the printer's manual to complete the following installation tasks:

- Set the Power Conditions switches.
- Load the ribbon cartridge.
- Load and adjust paper.
- Set the printer configuration.

- Adjust the forms length.
- Set the top-of-form.
- Run the printer's self-test.

The Next Step

You have now installed your HP 2608S Printer.

The following “Worksheet Entries” contain information needed to use your printer with HP-UX.

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral.



HP-UX System Worksheet Entries

If You Connected the HP 2608S to the Built-in HP-IB Interface (Select Code 7)...

And It Is the First Printer on this Interface (Address 1)...

Device Name	Path Name	File Type	Major No.	Minor No.
HP 2608S Opt. 850 CIPER	/dev/lp2608	c	26	0x070100
HP 2608S Opt. 850 CIPER	/dev/rhp2608	c	26	0x070101

And It Is the Second Printer on this Interface (Address 4)...

Device Name	Path Name	File Type	Major No.	Minor No.
HP 2608S Opt. 850 CIPER	/dev/lp2608	c	26	0x070400
HP 2608S Opt. 850 CIPER	/dev/rhp2608	c	26	0x070401

If You Connected the HP 2608S to the HP 98624 HP-IB Interface (Select Code 8)...

And It Is the First Printer on this Interface (Address 1)...

Device Name	Path Name	File Type	Major No.	Minor No.
HP 2608S Opt. 850 CIPER	/dev/lp2608	c	26	0x080100
HP 2608S Opt. 850 CIPER	/dev/rhp2608	c	26	0x080101

And It Is the Second Printer on this Interface (Address 4)...

Device Name	Path Name	File Type	Major No.	Minor No.
HP 2608S Opt. 850 CIPER	/dev/lp2608	c	26	0x080400
HP 2608S Opt. 850 CIPER	/dev/rhp2608	c	26	0x080401

Installing the HP 2671A/G Printers

Description

The HP 2671A/G are thermal printers. They connect to your computer's HP-IB interface.

Support

The HP 2671A/G printers are supported on all Series 200 computers.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 1.0 or later with Series 200 computers.
- **Pascal Workstation:** supported on revision 1.0 or later with Series 200 computers.
- **HP-UX Operating System:** supported on revision 2.0 or later with Series 200 computers.

Before You Begin

The following procedure describes how to connect your HP 2671A/G printer to your Series 200 computer. Before you do this, however, refer to the manual(s) that came with your printer to:

- Unpack the printer.
- Check the fuse and voltage.
- Install the paper stacker.
- Load the thermal paper.

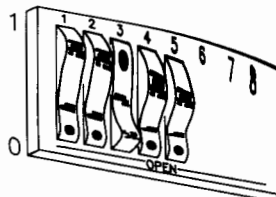
HP 2671A/G Printer Installation Procedure

1. **Play It Safe.**
 - a. Turn your computer and printer off, if they are not already off.
2. **Select Your Interface.**
 - a. Use either the built-in HP-IB interface or an HP 98624A HP-IB Interface. If using HP-UX, avoid placing the HP 2671A/G on the same interface used by your disc or tape drives, if possible. If using the Pascal Workstation, select the built-in HP-IB interface.
3. **Set the Address.**

CAN YOU SKIP THIS STEP?

If this is the first (or only) printer you are connecting to the interface, you can skip to step 4. The address is preset to 1 and need not be changed—*unless* you have changed the address of some other device on the interface to 1. The Pascal Workstation *expects* to find the printer at address 1.

- a. Find the set of “ADDRESS” switches to the left of the HP-IB connector on the back of the printer. Switches 1 through 5 in this group determine the address.
- b. Set the “ADDRESS” switches to 4 as shown below, unless address 4 has been used elsewhere. Refer to the manual that came with the printer if you need additional switch settings.



Address 4

4. Set the Other Switches.

- a. Set the Listen Always switch (6) to the OPEN (down) position.
- b. Set the SRQ Enable switch (7) to the not-OPEN (up) position.

5. Connect the Printer to the Computer.

- a. Get an HP-IB cable.
- b. Connect one end of the HP-IB cable to the HP-IB connector on the back of the printer. Tighten the thumb screws to secure the connection.
- c. Connect the other end of the HP-IB cable to the interface.



NOTE

If the interface already has several cables connected to it, connect the printer's cable to one of the other devices on the interface.

6. Connect the Power Cord.

- a. Connect the female end of the power cord to the power socket on the back of the printer, and connect the other end to your power outlet.

7. Record the Address.

- a. Make a note that address 1 (or the alternate address you chose in step 3) has been used and is no longer available on the interface you selected. Use the "Address Record" form on the Step 6 tab for this purpose.

The Next Step

You have now installed your HP 2671A/G Printer.

The following “Worksheet Entries” contain information needed to use your printer with various language/operating systems. Refer to the entries for the system you’ll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral.

BASIC System Worksheet Entries

If You Connected the HP 2671A/G to the Built-in HP-IB Interface (Select Code 7)...

**And It Is the First Printer
on this Interface (Address 1)...**

Device Name	Device Selector
HP 2671	701

**And It Is the Second Printer
on this Interface (Address 4)...**

Device Name	Device Selector
HP 2671	704

If You Connected the HP 2671A/G to the HP 98624A HP-IB Interface (Select Code 8)...

**And It Is the First Printer
on this Interface (Address 1)...**

Device Name	Device Selector
HP 2671	801

**And It Is the Second Printer
on this Interface (Address 4)...**

Device Name	Device Selector
HP 2671	804

Pascal Workstation Worksheet Entry

NOTE

The Pascal Workstation expects to find the printer on the built-in HP-IB interface at address 1. If you did not set up your printer this way, you must make some modifications to the Pascal Workstation. See the "Special Configurations" section of the *Pascal Workstation System* manual for details.

Device Name	Unit Number
HP 2671	#6:

HP-UX System Worksheet Entries

If You Connected the 2671A/G to the Built-in HP-IB Interface (Select Code 7)...

And It Is the First Printer on this Interface (Address 1)...

Device Name	Path Name	File Type	Major No.	Minor No.
HP 2671	/dev/lp2671	c	7	0x070100
HP 2671	/dev/rp2671	c	7	0x070101

And It Is the Second Printer on this Interface (Address 4)...

Device Name	Path Name	File Type	Major No.	Minor No.
HP 2671	/dev/lp2671	c	7	0x070400
HP 2671	/dev/rp2671	c	7	0x070401

If You Connected the HP 2671A/G to the HP 98624 HP-IB Interface (Select Code 8)...

And It Is the First Printer on this Interface (Address 1)...

Device Name	Path Name	File Type	Major No.	Minor No.
HP 2671	/dev/lp2671	c	7	0x080100
HP 2671	/dev/rp2671	c	7	0x080101

And It Is the Second Printer on this Interface (Address 4)...

Device Name	Path Name	File Type	Major No.	Minor No.
HP 2671	/dev/lp2671	c	7	0x080400
HP 2671	/dev/rp2671	c	7	0x080401

Installing the HP 2673A Printer

Description

The HP 2673A is an intelligent thermal graphics printer. It connects to your computer's HP-IB interface.

Support

The HP 2673A printer is supported on all Series 200 computers.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 1.0 or later with Series 200 computers.
- **Pascal Workstation:** supported on revision 1.0 or later with Series 200 computers.
- **HP-UX Operating System:** supported on revision 2.0 or later with Series 200 computers.

Before You Begin

The following procedure describes how to connect your HP 2673A printer to your Series 200 computer. Before you do this, however, refer to the manual(s) that came with your printer to:

- Unpack the printer.
- Check the fuse and voltage.
- Install the paper stacker.
- Load the thermal paper.

HP 2673A Printer Installation Procedure



1. **Play It Safe.**
 - a. Turn your computer and printer off, if they are not already off.
2. **Select Your Interface.**
 - a. Use either the built-in HP-IB interface or an HP 98624A HP-IB Interface. If using HP-UX, avoid placing the HP 2673A on the same interface used by your disc or tape drives, if possible. If using the Pascal Workstation, select the built-in HP-IB interface.
3. **Set the Address.**

CAN YOU SKIP THIS STEP?

If this is the first (or only) printer you are connecting to the interface, you can skip to step 4. The address is preset to 1 and need not be changed—*unless* you have changed the address of some other device on the interface to 1. The Pascal Workstation *expects* to find the printer at address 1.

- a. The address is set with the CONFIG./EXIT button on the front of your printer. Refer to the manual that came with your printer for instructions on changing the address. Set the address to 4, unless address 4 has been used elsewhere.
4. **Connect the Printer to the Computer.**
 - a. Get an HP-IB cable.
 - b. Connect one end of the HP-IB cable to the HP-IB connector on the back of the printer. Tighten the thumb screws to secure the connection.
 - c. Connect the other end of the HP-IB cable to the interface.

NOTE

If the interface already has several cables connected to it, connect the printer's cable to one of the other devices on the interface.

5. Connect the Power Cord.

- a. Connect the female end of the power cord to the power socket on the back of the printer, and connect the other end to your power outlet.

6. Record the Address.

- a. Make a note that address 1 (or the alternate address you chose in step 3) has been used and is no longer available on the interface you selected. Use the "Address Record" form on the Step 6 tab for this purpose.

The Next Step

You have now installed your HP 2673A Printer.

The following "Worksheet Entries" contain information needed to use your printer with various language/operating systems. Refer to the entries for the system you'll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you'll be ready to install your next peripheral.

BASIC System Worksheet Entries

If You Connected the HP 2673A to the Built-in HP-IB Interface (Select Code 7)...

**And It Is the First Printer
on this Interface (Address 1)...**

Device Name	Device Selector
HP 2673	701

**And It Is the Second Printer
on this Interface (Address 4)...**

Device Name	Device Selector
HP 2673	704

If You Connected the HP 2673A to the HP 98624A HP-IB Interface (Select Code 8)...

**And It Is the First Printer
on this Interface (Address 1)...**

Device Name	Device Selector
HP 2673	801

**And It Is the Second Printer
on this Interface (Address 4)...**

Device Name	Device Selector
HP 2673	804

Pascal Workstation Worksheet Entry

NOTE

The Pascal Workstation expects to find the printer on the built-in HP-IB interface at address 1. If you did not set up your printer this way, you must make some modifications to the Pascal Workstation. See the "Special Configurations" section of the *Pascal Workstation System* manual for details.

Device Name	Unit Number
HP 2673	#6:

HP-UX System Worksheet Entries

If You Connected the 2673A to the Built-in HP-IB Interface (Select Code 7)...

**And It Is the First Printer
on this Interface (Address 1)...**

Device Name	Path Name	File Type	Major No.	Minor No.
HP 2673	/dev/lp2673	c	7	0x070100
HP 2673	/dev/rp2673	c	7	0x070101

**And It Is the Second Printer
on this Interface (Address 4)...**

Device Name	Path Name	File Type	Major No.	Minor No.
HP 2673	/dev/lp2673	c	7	0x070400
HP 2673	/dev/rp2673	c	7	0x070401

If You Connected the HP 2673A to the HP 98624 HP-IB Interface (Select Code 8)...

**And It Is the First Printer
on this Interface (Address 1)...**

Device Name	Path Name	File Type	Major No.	Minor No.
HP 2673	/dev/lp2673	c	7	0x080100
HP 2673	/dev/rp2673	c	7	0x080101

**And It Is the Second Printer
on this Interface (Address 4)...**

Device Name	Path Name	File Type	Major No.	Minor No.
HP 2673	/dev/lp2673	c	7	0x080400
HP 2673	/dev/rp2673	c	7	0x080401

Installing the HP 2686A Printer

Description

The HP 2686A *LaserJet* printer connects to the computer via an RS-232C interface.

Support

The HP 2686A *LaserJet* printer is supported on all Series 200 and Series 300 computers.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 2.0 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** supported on revision 2.1 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.
- **HP-UX Operating System:** supported on revision 2.2L or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

Before You Begin

The following procedure describes how to connect your HP 2686A *LaserJet* printer to your Series 200/300 computer. Before you do this, however, refer to the manual(s) that came with your printer to:

- Unpack the printer.
- Install the electrophotographic (EP) cartridge.
- Install the fusing roller cleaning pad.
- Install the paper trays.
- Load the paper

LaserJet Printer Installation Procedure



1. Play It Safe.

- a. Turn your computer and printer off, if they are not already off.

2. Select Your Interface.

- a. Use any one of the following RS-232C interfaces:
 - The built-in "Data Communications" interface in a Model 216 or Model 217 computer¹
 - The built-in RS-232 interface in a Series 300 computer
 - HP 98626A RS-232C Interface
 - HP 98628A Datacomm Interface
 - HP 98642A 4-Channel Multiplexer Interface (not for BASIC or Pascal)
 - HP 98644A RS-232C Serial Interface

3. Select Your Cable(s).

- a. Following are *some* of the possible cabling combinations you can use. Combinations other than those listed may also work.
 - **Series 300 Built-in Interface:** connect an HP 17255D to the printer if an HP 92221M or 13242N cable is connected to the interface; or connect an HP 92221P cable directly between the printer and the interface (HP-UX only).
 - **Series 200 Built-in, HP 98626A or HP 98628A Interfaces:** connect an HP 17255D cable to the printer if an HP 5061-4215 DTE cable is connected to the interface; or connect an HP 13242N or 92218A cable to the printer if an HP 5061-4216 DCE, 13232U or Modem~Modem cable is connected to the interface (HP-UX only).
 - **HP 98642A Interface:** connect an HP 17255D cable to the printer if an HP 92219S, 92218A, or 92222M cable is connected to the interface (port 0); or connect an HP 13242G or 92219R cable directly between the printer and the interface (port 0); or connect an HP 92219U adaptor directly from the interface (ports 1, 2 or 3) and the printer.

¹ Configuration of this interface is not covered in this guide. Refer to the computer's *Installation Manual* to set the baud rate switches to 9600 baud (switches 1, 2 and 3 to OPEN, switch 4 to not-OPEN). If using the Pascal Workstation or HP-UX, also set the handshake type switches to XON/XOFF (switch 1 to not-OPEN, switch 2 to OPEN). The remaining switches are preset to the correct values for the HP 2686A; check them only if you have changed them.

- **HP 98644A Interface:** connect an HP 17255D cable to the printer if an HP 13242N, 92218A or 92222M cable is connected to the interface; or connect an HP 13242G or 92219R cable directly between the printer and the interface (HP-UX only).

4. Connect the Printer to the Computer.

- a. Connect one (male) end of the printer's cable to the connector on the printer. Lock the connection in place with the screws.
- b. If your interface connection requires one or more additional cables, connect the remaining cable(s) to the interface.
- c. Connect the other end of the printer's cable either directly to the interface or to cable(s) connected to the interface.

5. Connect the Power Cord.

- a. Connect the female end of the power cord to the power socket on the back of the printer, and connect the other end to your power outlet.

The Next Step

You have now installed your HP 2686A Printer.

The following "Worksheet Entries" contain information needed to use your printer with various language/operating systems. Refer to the entries for the system you'll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you'll be ready to install your next peripheral.

BASIC System Worksheet Entry

NOTE

The *LaserJet* will wait until its buffer is full before printing a page. To force the printer to print *before* its buffer is full, execute the following statement after sending the text to be printed:

```
PRINT CHR$(12)
```

Device Name	Device Selector ¹
HP 2686A <i>LaserJet</i>	9

¹ If you connected the HP 2686A to an interface with a select code other than 9, write in your select code instead of 9.

Pascal Workstation Worksheet Entry

NOTE

Before you can use the *LaserJet* printer with the Pascal Workstation, you must make a few modifications. See the "Special Configurations" chapter of the *Pascal Workstation System* manual for instructions on configuring the Pascal Workstation for a serial printer.

Device Name	Unit Number
HP 2686A <i>LaserJet</i>	#6:

HP-UX System Worksheet Entries

For spooled printing, use the 2686a spooler model file. For unspooled printing, insert the following shell commands into */etc/rc*:

```
nohup sleep 2000000000 < /dev/lp2686 &  
stty -parenb -ienqak cs8 9600 -cstopb -clocal ixon opost onlcr tab 3 <  
/dev/lp2686
```

To configure the interface for raster graphics printing, execute the following *stty* command (or equivalent *ioctl(2)* calls). Reissue the sequence above after printing raster data.

```
stty -parenb -ienqak cs8 9600 -cstopb -clocal ixon -opost < /dev/lp2686
```

If You Connected the LaserJet to a Model 216, Model 217, or Series 300 Built-in Interface (Select Code 9)...

Device Name	Path Name	File Type	Major No.	Minor No.
HP 2686A LaserJet	/dev/lp2686	c	1	0x090005

If You Connected the LaserJet to an HP 98626A, 98628A or 98644A Interface (Select Code 9, 10, 15, 16, 17, 19 or 20)...

Device Name	Path Name	File Type	Major No.	Minor No.
HP 2686A on select code 9	/dev/lp2686	c	1	0x090005
HP 2686A on select code 10	/dev/lp2686	c	1	0x0a0005
HP 2686A on select code 15	/dev/lp2686	c	1	0x0f0005
HP 2686A on select code 16	/dev/lp2686	c	1	0x100005
HP 2686A on select code 17	/dev/lp2686	c	1	0x110005
HP 2686A on select code 19	/dev/lp2686	c	1	0x130005
HP 2686A on select code 20	/dev/lp2686	c	1	0x140005

HP-UX System Worksheet Entries (Cont.)

If You Connected the LaserJet to an HP 98642A Interface (Select Code 10, 13, 15, 16, 17 or 19)...

Device Name	Path Name	File Type	Major No.	Minor No.
HP 2686A, select code 10, port 0	/dev/lp2686	c	1	0x0a0005
HP 2686A, select code 10, port 1	/dev/lp2686	c	1	0x0a0105
HP 2686A, select code 10, port 2	/dev/lp2686	c	1	0x0a0205
HP 2686A, select code 10, port 3	/dev/lp2686	c	1	0x0a0305
HP 2686A, select code 13, port 0	/dev/lp2686	c	1	0x0d0005
HP 2686A, select code 13, port 1	/dev/lp2686	c	1	0x0d0105
HP 2686A, select code 13, port 2	/dev/lp2686	c	1	0x0d0205
HP 2686A, select code 13, port 3	/dev/lp2686	c	1	0x0d0305
HP 2686A, select code 15, port 0	/dev/lp2686	c	1	0x0f0005
HP 2686A, select code 15, port 1	/dev/lp2686	c	1	0x0f0105
HP 2686A, select code 15, port 2	/dev/lp2686	c	1	0x0f0205
HP 2686A, select code 15, port 3	/dev/lp2686	c	1	0x0f0305
HP 2686A, select code 16, port 0	/dev/lp2686	c	1	0x100005
HP 2686A, select code 16, port 1	/dev/lp2686	c	1	0x100105
HP 2686A, select code 16, port 2	/dev/lp2686	c	1	0x100205
HP 2686A, select code 16, port 3	/dev/lp2686	c	1	0x100305
HP 2686A, select code 17, port 0	/dev/lp2686	c	1	0x110005
HP 2686A, select code 17, port 1	/dev/lp2686	c	1	0x110105
HP 2686A, select code 17, port 2	/dev/lp2686	c	1	0x110205
HP 2686A, select code 17, port 3	/dev/lp2686	c	1	0x110305
HP 2686A, select code 19, port 0	/dev/lp2686	c	1	0x130005
HP 2686A, select code 19, port 1	/dev/lp2686	c	1	0x130105
HP 2686A, select code 19, port 2	/dev/lp2686	c	1	0x130205
HP 2686A, select code 19, port 3	/dev/lp2686	c	1	0x130305

Installing the HP 2932A and 2934A Printers

Description

The HP 2930 Series of printers provide features for several levels of printer categories. However, installation for all printers in the series is common.

Support

The HP 2932A and HP 2934A printers are supported on all Series 200 and Series 300 computers.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 2.0 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** supported on revision 2.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.
- **HP-UX Operating System:** supported on revision 2.0 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

Before You Begin

The following procedure describes how to connect your HP 2932A or HP 2934A printer to your Series 200/300 computer. Before you do this, however, refer to the manual(s) that came with your printer to:

- Unpack the printer.
- Check the voltage setting.
- Install the fuse.
- Install the ribbon.
- Adjust the print head gap.
- Load the paper.



HP 2932A and 2934A Printer Installation Procedure

1. **Play It Safe.**
 - a. Turn your computer and printer off, if they are not already off.
2. **Select Your Interface.**
 - a. Use either the built-in HP-IB interface or an HP 98624A HP-IB Interface. If using the Pascal Workstation, select the built-in HP-IB interface.
3. **Connect the Printer to the Computer.**
 - a. Get an HP-IB cable.
 - b. Connect one end of the HP-IB cable to the HP-IB connector on the back of the printer. Tighten the thumb screws to secure the connection.
 - c. Connect the other end of the HP-IB cable to the interface.

NOTE

If the interface already has several cables connected to it, connect the printer's cable to one of the other devices on the interface.

4. **Connect the Power Cord.**
 - a. Connect the female end of the power cord to the power socket on the back of the printer, and connect the other end to your power outlet.

5. Set the Address.

CAN YOU SKIP THIS STEP?

If this is the first (or only) printer you are connecting to the interface, you can skip to step 6. The address is preset to 1 and need not be changed—*unless* you have changed the address of some other device on the interface to 1. The Pascal Workstation *expects* to find the printer at address 1.

- a. Turn the printer on. The power switch is in the back above the power cord.
- b. Press the SELECT button on the top of the printer, then press the VIEW button. The printer will respond by printing its SETTINGS options.
- c. Press the right arrow button until the print head is under the MODIFY INTERFACE option (i.e., under the word "INTERFACE" on the right side of the paper).
- d. Press the SELECT button. The printer will print the MODIFY INTERFACE - HP-IB options.
- e. Press the right arrow button until the print head is under the ADDRESS option, then press the SELECT button.
- f. The printer will print a list of numbers. Press the right arrow button until the print head is under the number 4 and press the SELECT button, unless you have used address 4 elsewhere. If you have, choose any unused address.
Note: If the printer asks you to select a FIRST DIGIT and a SECOND DIGIT, position the print head under 0 for the FIRST DIGIT and press the SELECT button, then position the print head under 4 for the SECOND DIGIT and press the SELECT button.
- g. Press the VIEW button to exit SETTINGS mode.

6. Enable the AMIGO Protocol (HP-UX Only).

CAN YOU SKIP THIS STEP?

If you are using BASIC or the Pascal Workstation, you can skip to step 7.
If you are using HP-UX, *and* there will be other devices on the interface besides the HP 2932/34A printer, continue with step 6.

- a. Turn the printer on, if it is not already on.
- b. Press the SELECT button on the top of the printer, then press the VIEW button. The printer will respond by printing its SETTINGS options.
- c. Press the right arrow button until the print head is under the MODIFY INTERFACE option (i.e., under the word "INTERFACE" on the right side of the paper).
- d. Press the SELECT button. The printer will print the MODIFY INTERFACE - HP-IB options.
- e. The print head should be under the SECONDARY COMMANDS option on the left side of the paper. If it isn't, use the arrow buttons to position the print head under that option.
- f. Press the SELECT button. The printer will print the SECONDARY COMMANDS options.
- g. Use the arrow buttons to position the print head under the "on" option and press the SELECT button. This enables the AMIGO protocol, which allows HP-UX to pace the printer (time-share the bus with other devices on the interface) if the printer's address is in the range 0 to 7.
- h. Press the VIEW button to exit SETTINGS mode.

7. Record the Address.

- a. Make a note that address 1 (or the alternate address you chose in step 5) has been used and is no longer available on the interface you selected. Use the "Address Record" form on the Step 6 tab for this purpose.

Final Preparations

Refer to your printer's manual(s) to:

- Set print margins.
- Run the printer's self-test

The Next Step

You have now installed your HP 2932/34A Printer.

The following "Worksheet Entries" contain information needed to use your printer with various language/operating systems. Refer to the entries for the system you'll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you'll be ready to install your next peripheral.

BASIC System Worksheet Entries

If You Connected the HP 2932/34A to the Built-in HP-IB Interface (Select Code 7)...

And It Is the First Printer on this Interface (Address 1)...

Device Name	Device Selector
HP 2932/34A	701

And It Is the Second Printer on this Interface (Address 4)...

Device Name	Device Selector
HP 2932/34A	704

If You Connected the HP 2932/34A to the HP 98624A HP-IB Interface (Select Code 8)...

And It Is the First Printer on this Interface (Address 1)...

Device Name	Device Selector
HP 2932/34A	801

And It Is the Second Printer

on this Interface (Address 4)...

Device Name	Device Selector
HP 2932/34A	804

Pascal Workstation Worksheet Entry

NOTE

The Pascal Workstation expects to find the printer on the built-in HP-IB interface at address 1. If you did not set up your printer this way, you must make some modifications to the Pascal Workstation. See the "Special Configurations" section of the *Pascal Workstation System* manual for details.

Device Name	Unit Number
HP 2932/34A	#6:



HP-UX System Worksheet Entries

If You Connected the HP 2932/34A to the Built-in HP-IB Interface (Select Code 7)...

And It Is the First Printer on this Interface (Address 1)...

Device Name	Path Name ¹	File Type	Major No.	Minor No.
HP 2932/34A	/dev/lp2932	c	7	0x070100
HP 2932/34A	/dev/rp2932	c	7	0x070101

And It Is the Second Printer on this Interface (Address 4)...

Device Name	Path Name ¹	File Type	Major No.	Minor No.
HP 2932/34A	/dev/lp2932	c	7	0x070400
HP 2932/34A	/dev/rp2932	c	7	0x070401

If You Connected the HP 2932/34A to the HP 98624 HP-IB Interface (Select Code 8)...

And It Is the First Printer on this Interface (Address 1)...

Device Name	Path Name ¹	File Type	Major No.	Minor No.
HP 2932/34A	/dev/lp2932	c	7	0x080100
HP 2932/34A	/dev/rp2932	c	7	0x080101

And It Is the Second Printer on this Interface (Address 4)...

Device Name	Path Name ¹	File Type	Major No.	Minor No.
HP 2932/34A	/dev/lp2932	c	7	0x080400
HP 2932/34A	/dev/rp2932	c	7	0x080401

¹ If you have an HP 2934A, substitute 2934 for 2932 in the path name.

Installing the HP 82905B and 82906A Printers

Description

The HP 82905B and HP 82906A are dot-matrix impact printers using the HP-IB interface.

Support

The HP 82905B and HP 82906A printers are supported on all Series 200 and Series 300 computers.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 1.0 or later with Series 200 computers; supported on revision 4.0 or later on Series 300 computers.
- **Pascal Workstation:** supported on revision 2.0 or later with Series 200 computers; only the HP 82906A is supported on revision 3.1 or later with Series 300 computers.
- **HP-UX Operating System:** the HP 82905B is not supported; the HP 82906A is supported on revision 2.0 or later with Series 200 computers, and supported on revision 5.0 or later with Series 300 computers.

Before You Begin

The following procedure describes how to connect your HP 82905B or HP 82906A printer to your Series 200/300 computer. Before you do this, however, refer to the manual(s) that came with your printer to:

- Unpack the printer.
- Remove protective paper (HP 82906A only).
- Remove shipping screws (HP 82905B only).
- Install the ribbon cartridge.
- Install the paper separator.
- Load the paper.
- Set the top-of-form.
- Adjust the print head gap.

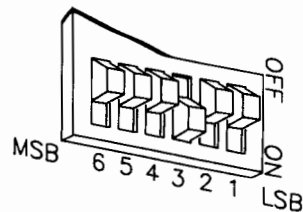
HP 82905B and 82906A Printer Installation Procedure

1. **Play It Safe.**
 - a. Turn your computer and printer off, if they are not already off.
2. **Select Your Interface.**
 - a. Use either the built-in HP-IB interface or an HP 98624A HP-IB Interface. If using HP-UX, avoid placing the HP 82906A on the same interface used by your disc or tape drives, if possible. If using the Pascal Workstation, select the built-in HP-IB interface.
3. **Set the Address.**

CAN YOU SKIP THIS STEP?

If this is the first (or only) printer you are connecting to the interface, you can skip to step 4. The address is preset to 1 and need not be changed—*unless* you have changed the address of some other device on the interface to 1. The Pascal Workstation *expects* to find the printer at address 1.

- a. The address switches are hidden under the top cover of the printer. Refer to the printer manual to find them.
- b. Set the address switches to 4 as shown below, unless address 4 has been used elsewhere. Refer to the manual that came with the printer if you need additional switch settings.



Address 4

4. Connect the Printer to the Computer.

- a. Get an HP-IB cable.
- b. Connect one end of the HP-IB cable to the HP-IB connector on the back of the printer. Tighten the thumb screws to secure the connection.
- c. Connect the other end of the HP-IB cable to the interface.

NOTE

If the interface already has several cables connected to it, connect the printer's cable to one of the other devices on the interface.

5. Connect the Power Cord.

- a. Connect the female end of the power cord to the power socket on the back of the printer, and connect the other end to your power outlet.

6. Record the Address.

- a. Make a note that address 1 (or the alternate address you chose in step 3) has been used and is no longer available on the interface you selected. Use the "Address Record" form on the Step 6 tab for this purpose.

The Next Step

You have now installed your HP 82905B or 82906A Printer.

The following "Worksheet Entries" contain information needed to use your printer with various language/operating systems. Refer to the entries for the system you'll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you'll be ready to install your next peripheral.

BASIC System Worksheet Entries

If You Connected the HP 82905B/82906A to the Built-in HP-IB Interface (Select Code 7)...

**And It Is the First Printer
on this Interface (Address 1)...**

Device Name	Device Selector
HP 82905B/82906A	701

**And It Is the Second Printer
on this Interface (Address 4)...**

Device Name	Device Selector
HP 82905B/82906A	704

If You Connected the HP 82905B/82906A to the HP 98624A HP-IB Interface (Select Code 8)...

**And It Is the First Printer
on this Interface (Address 1)...**

Device Name	Device Selector
HP 82905B/82906A	801

And It Is the Second Printer

on this Interface (Address 4)...

Device Name	Device Selector
HP 82905B/82906A	804

Pascal Workstation Worksheet Entry

NOTE

The Pascal Workstation expects to find the printer on the built-in HP-IB interface at address 1. If you did not set up your printer this way, you must make some modifications to the Pascal Workstation. See the "Special Configurations" section of the *Pascal Workstation System* manual for details.

Device Name	Unit Number
HP 82905B/82906A	#6:

HP-UX System Worksheet Entries

If You Connected the HP 82906A to the Built-in HP-IB Interface (Select Code 7)...

And It Is the First Printer on this Interface (Address 1)...

Device Name	Path Name ¹	File Type	Major No.	Minor No.
HP 82906A	/dev/lp82906	c	7	0x070100
HP 82906A	/dev/rfp82906	c	7	0x070101

And It Is the Second Printer on this Interface (Address 4)...

Device Name	Path Name	File Type	Major No.	Minor No.
HP 82906A	/dev/lp82906	c	7	0x070400
HP 82906A	/dev/rfp82906	c	7	0x070401

If You Connected the HP 82906A to the HP 98624 HP-IB Interface (Select Code 8)...

And It Is the First Printer on this Interface (Address 1)...

Device Name	Path Name	File Type	Major No.	Minor No.
HP 82906A	/dev/lp82906	c	7	0x080100
HP 82906A	/dev/rfp82906	c	7	0x080101

And It Is the Second Printer on this Interface (Address 4)...

Device Name	Path Name	File Type	Major No.	Minor No.
HP 82906A	/dev/lp82906	c	7	0x080400
HP 82906A	/dev/rfp82906	c	7	0x080401

Installing the HP 9876A Printer

Description

The HP 9876A is a thermal graphics printer that connects to the computer via an HP-IB interface.

Support

The HP 9876A printer is supported on all Series 200 and Series 300 computers.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 1.0 or later with Series 200 computers.
- **Pascal Workstation:** supported on revision 1.0 or later with Series 200 computers.
- **HP-UX Operating System:** supported on revision 2.0 or later with Series 200 computers; not supported on Series 300 computers.

Before You Begin

The following procedure describes how to connect your HP 9876A printer to your Series 200/300 computer. Before you do this, however, refer to the manual(s) that came with your printer to:

- Unpack the printer.
- Check the AC LINE setting and fuse.
- Load the paper.

HP 9876A Printer Installation Procedure

1. Play It Safe.

- a. Turn your computer and printer off, if they are not already off.

2. Select Your Interface.

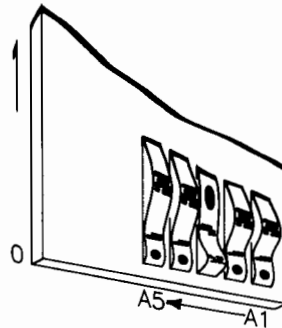
- a. Use either the built-in HP-IB interface or an HP 98624A HP-IB Interface. If using HP-UX, avoid placing the HP 9876A on the same interface used by your disc or tape drives, if possible. If using the Pascal Workstation, select the built-in HP-IB interface.

3. Set the Address.

CAN YOU SKIP THIS STEP?

If this is the first (or only) printer you are connecting to the interface, you can skip to step 4. The address is preset to 1 and need not be changed—*unless* you have changed the address of some other device on the interface to 1. The Pascal Workstation *expects* to find the printer at address 1.

- a. Find the set of switches to the right of the HP-IB connector on the back of the printer. Switches A1 through A5 in this group determine the address.
- b. Set the address switches to 4 as shown below, unless address 4 has been used elsewhere. Refer to the manual that came with the printer if you need additional switch settings.



Address 4

4. Connect the Printer to the Computer.

- a. Get an HP-IB cable.
- b. Connect one end of the HP-IB cable to the HP-IB connector on the back of the printer. Tighten the thumb screws to secure the connection.
- c. Connect the other end of the HP-IB cable to the interface.

NOTE

If the interface already has several cables connected to it, connect the printer's cable to one of the other devices on the interface.

5. Connect the Power Cord.

- a. Connect the female end of the power cord to the power socket on the back of the printer, and connect the other end to your power outlet.

6. Record the Address.

- a. Make a note that address 1 (or the alternate address you chose in step 3) has been used and is no longer available on the interface you selected. Use the "Address Record" form on the Step 6 tab for this purpose.

The Next Step

You have now installed your HP 9876A Printer.

The following "Worksheet Entries" contain information needed to use your printer with various language/operating systems. Refer to the entries for the system you'll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you'll be ready to install your next peripheral.

BASIC System Worksheet Entries

If You Connected the HP 9876A to the Built-in HP-IB Interface (Select Code 7)...

**And It Is the First Printer
on this Interface (Address 1)...**

Device Name	Device Selector
HP 9876A	701

**And It Is the Second Printer
on this Interface (Address 4)...**

Device Name	Device Selector
HP 9876A	704

If You Connected the HP 9876A to the HP 98624A HP-IB Interface (Select Code 8)...

**And It Is the First Printer
on this Interface (Address 1)...**

Device Name	Device Selector
HP 9876A	801

And It Is the Second Printer

on this Interface (Address 4)...

Device Name	Device Selector
HP 9876A	804

Pascal Workstation Worksheet Entry

NOTE

The Pascal Workstation expects to find the printer on the built-in HP-IB interface at address 1. If you did not set up your printer this way, you must make some modifications to the Pascal Workstation. See the "Special Configurations" section of the *Pascal Workstation System* manual for details.

Device Name	Unit Number
HP 9876A	#6:

HP-UX System Worksheet Entries

If You Connected the HP 9876A to the Built-in HP-IB Interface (Select Code 7)...

**And It Is the First Printer
on this Interface (Address 1)...**

Device Name	Path Name	File Type	Major No.	Minor No.
HP 9876A	/dev/lp9876	c	7	0x070100
HP 9876A	/dev/rfp9876	c	7	0x070101

**And It Is the Second Printer
on this Interface (Address 4)...**

Device Name	Path Name	File Type	Major No.	Minor No.
HP 9876A	/dev/lp9876	c	7	0x070400
HP 9876A	/dev/rfp9876	c	7	0x070401

If You Connected the HP 9876A to the HP 98624 HP-IB Interface (Select Code 8)...

**And It Is the First Printer
on this Interface (Address 1)...**

Device Name	Path Name	File Type	Major No.	Minor No.
HP 9876A	/dev/lp9876	c	7	0x080100
HP 9876A	/dev/rfp9876	c	7	0x080101

**And It Is the Second Printer
on this Interface (Address 4)...**

Device Name	Path Name	File Type	Major No.	Minor No.
HP 9876A	/dev/lp9876	c	7	0x080400
HP 9876A	/dev/rfp9876	c	7	0x080401

Adding Plotters & Other Graphics Devices

8

If you need to install any of the products listed below, turn to the indicated page number and follow the instructions. Otherwise, go to Step 9.

Product Name	Page Number
HP 7440A Plotter	See page 8-2
HP 7470A Plotter	See page 8-2
HP 7475A Plotter	See page 8-2
HP 7510 Color Film Recorder	See page 8-10
HP 7550A Plotter	See page 8-2
HP 7580B Plotter	See page 8-2
HP 7585B Plotter	See page 8-2
HP 7586B Plotter	See page 8-2
HP 9111A Graphics Tablet	See page 8-14
HP 98700 Graphics Display Station	See page 8-20
HP 9872C/T Plotter	See page 8-2
HP 13279B Color Monitor	See page 8-26

NOTE

All HP-HIL graphics devices are covered in Step 10. Graphics terminals and monitors are covered in Step 9. Graphics printers are covered in Step 7.

Installing a Plotter

Description

All HP plotters connect to your computer's HP-IB interface in the same fashion. The following procedure describes how to install the following plotters:

- HP 7440A
- HP 7470A
- HP 7475A
- HP 7550A
- HP 7580B
- HP 7585B
- HP 7586B
- HP 9872C/T

Support

All plotters listed above are supported on all Series 200 computers—*except* for the HP 7440A. The HP 7440A is supported on Model 217, 220 and 237 computers.

All plotters listed above are supported on all Series 300 computers—*except* for the HP 9872C/T.

Operating/Language system support is as follows:

- **BASIC:**
 - The HP 7470A, HP 7475A and the HP 7550A are supported on revision 2.1 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
 - The HP 7580B, HP 7585B, HP 7586B, and HP 9872C/T are supported on revision 2.0 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
 - The HP 7440A is supported on revision 3.0 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.

- **Pascal Workstation:**

- The HP 7470A, HP 7475A, HP 7550A, and HP 7586B are supported on revision 2.1 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.
- The HP 7580B, HP 7585B and HP 9872C/T are supported on revision 2.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.
- The HP 7440A is supported on revision 3.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.

- **HP-UX Operating System:**

- The HP 7470A, HP 7580B, HP 7585B and HP 9872C/T are supported on revision 2.0 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.
- The HP 7475A, HP 7550A and HP 7586B are supported on revision 2.1 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.
- The HP 7440A is supported on revision 5.1 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

Before You Begin

The following procedure describes how to connect your plotter to your Series 200/300 computer. Before you do this, however, refer to the manual(s) that came with your printer to:

- Unpack the plotter.
- Check the line voltage.

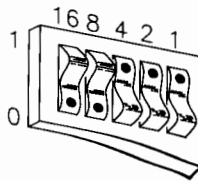
Plotter Installation Procedure

1. **Play It Safe.**
 - a. Turn your computer and plotter off, if they are not already off.
2. **Select Your Interface.**
 - a. Use either the built-in HP-IB interface or an HP 98624A HP-IB Interface. If using HP-UX, avoid placing the plotter on the same interface used by your disc or tape drives, if possible. A dedicated HP 98624A HP-IB Interface is recommended.
3. **Set the Address.**

CAN YOU SKIP THIS STEP?

If this is the first (or only) plotter you are connecting to the interface, you can skip to step 4. The address is preset to 5 and need not be changed—*unless* you have changed the address of some other device on the interface to 5.

- a. Find the set of five HP-IB address switches near the HP-IB connector.
- b. Set the address switches to 7 as shown below, unless address 7 has been used elsewhere. Refer to the manual that came with the plotter if you need additional switch settings.



Address 7

4. **Connect the Plotter to the Computer.**
 - a. Get an HP-IB cable.
 - b. Connect one end of the HP-IB cable to the HP-IB connector on the back of the plotter. Tighten the thumb screws to secure the connection.

- c. Connect the other end of the HP-IB cable to the interface.

NOTE

If the interface already has several cables connected to it, connect the plotter's cable to one of the other devices on the interface.

5. Connect the Power Cord.

- a. Connect the female end (the small end if using an HP 7440A) of the power cord to the power socket on the back of the plotter, and connect the other end to your power outlet.

6. Record the Address.

- a. Make a note that address 5 (or the alternate address you chose in step 3) has been used and is no longer available on the interface you selected. Use the "Address Record" form on the Step 6 tab for this purpose.

Final Preparations

Refer to your plotter's manual(s) to:

- Load the pens.
- Load the paper or medium.
- Perform the Confidence Test.

The Next Step

You have now installed your plotter.

The following “Worksheet Entries” contain information needed to use your plotter with various language/operating systems. Refer to the entries for the system you’ll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral.

BASIC System Worksheet Entries



If You Connected the Plotter to the Built-in HP-IB Interface (Select Code 7)...

And It Is the First Plotter on this Interface (Address 5)...

Device Name	Device Selector	Display/Plotter Spec.
Plotter	705	"HPGL"

And It Is the Second Plotter on this Interface (Address 7)...

Device Name	Device Selector	Display/Plotter Spec.
Plotter	707	"HPGL"

If You Connected the Plotter to the HP 98624A HP-IB Interface (Select Code 8)...

And It Is the First Plotter on this Interface (Address 5)...

Device Name	Device Selector	Display/Plotter Spec.
Plotter	805	"HPGL"

And It Is the Second Plotter on this Interface (Address 7)...

Device Name	Device Selector	Display/Plotter Spec.
Plotter	807	"HPGL"

Pascal Workstation Worksheet Entries

If You Connected the Plotter to the Built-in HP-IB Interface (Select Code 7)...

And It Is the First Plotter
on this Interface (Address 5)...

Device Name	Device Selector
Plotter	705

And It Is the Second Plotter
on this Interface (Address 7)...

Device Name	Device Selector
Plotter	707

If You Connected the Plotter to the HP 98624A HP-IB Interface (Select Code 8)...

And It Is the First Plotter
on this Interface (Address 5)...

Device Name	Device Selector
Plotter	805

And It Is the Second Plotter
on this Interface (Address 7)...

Device Name	Device Selector
Plotter	807

HP-UX System Worksheet Entries

If You Connected the Plotter to the Built-in HP-IB Interface (Select Code 7)...

And It Is the First Plotter on this Interface (Address 5)...

Device Name	Path Name ¹	File Type	Major No.	Minor No.
Plotter	/dev/plt7440	c	21	0x070500

And It Is the Second Plotter on this Interface (Address 7)...

Device Name	Path Name ¹	File Type	Major No.	Minor No.
Plotter	/dev/plt7440	c	21	0x070700

If You Connected the Plotter to the HP 98624 HP-IB Interface (Select Code 8)...

And It Is the First Plotter on this Interface (Address 5)...

Device Name	Path Name ¹	File Type	Major No.	Minor No.
Plotter	/dev/plt7440	c	21	0x080500

And It Is the Second Plotter on this Interface (Address 7)...

Device Name	Path Name ¹	File Type	Major No.	Minor No.
Plotter	/dev/plt7440	c	21	0x080700

¹ If you have a plotter other than the HP 7440A, substitute the model number of your plotter for 7440 in the path name.

Installing an HP 7510 Color Film Recorder

Description

The HP 7510 Color Film Recorder lets you create high-quality, 35-mm color slides for business and technical presentations. It also produces instant Poloroid prints with the same high resolution.

Support

The HP 7510 is supported on Series 200 Model 226 and 236 computers. Support for other Series 200 computers, and for all Series 300 computers, is planned but was not authorized at the time of printing.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 4.0 or later on Series 200 computers.
- **Pascal Workstation:** not supported.
- **HP-UX Operating System:** not supported.

Before You Begin

The following procedure describes how to connect your plotter to your computer. Before you do this, however, refer to the manual(s) that came with your HP 7510 to:

- Unpack the HP 7510.
- Check the line voltage and fuse.



HP 7510 Installation Procedure

1. **Play It Safe.**
 - a. Turn your computer and HP 7510 off, if they are not already off.
2. **Select Your Interface.**
 - a. Use either the built-in HP-IB interface or an HP 98624A HP-IB Interface.
3. **Connect the Power Cord.**
 - a. Connect the female end of the power cord to the power socket on the back of the HP 7510, and connect the other end to your power outlet.
4. **Set the Address.**

CAN YOU SKIP THIS STEP?

If this is the first (or only) recorder or plotter you are connecting to the interface, you can skip to step 5. The address is preset to 5 and need not be changed—*unless* you have changed the address of some other device on the interface to 5.

- a. Turn the HP 7510 on.
 - b. Press the **I/O** button to view the I/O menu.
 - c. Press the top menu function button to select the **using HP-IB** function.
 - d. Press the **address is** function button, then press the **7** key to set the address to 7, unless address 7 has been used elsewhere. If it has been used, choose any unused address.
 - e. Press the **ENTER** button to store the address setting.
5. **Connect the HP 7510 to the Computer.**
 - a. Get an HP-IB cable.
 - b. Connect one end of the HP-IB cable to the HP-IB connector on the back of the HP 7510. Tighten the thumb screws to secure the connection.
 - c. Connect the other end of the HP-IB cable to the interface.

NOTE

If the interface already has several cables connected to it, connect the plotter's cable to one of the other devices on the interface.

6. Record the Address.

- a. Make a note that address 5 (or the alternate address you chose in step 4) has been used and is no longer available on the interface you selected. Use the "Address Record" form on the Step 6 tab for this purpose.

The Next Step

You have now installed your HP 7510 Color Film Recorder.

The following "Worksheet Entries" contain information needed to use your HP 7510 with BASIC.

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you'll be ready to install your next peripheral.

BASIC System Worksheet Entries

If You Connected the HP 7510 to the Built-in HP-IB Interface (Select Code 7)...

**And It Is the First Recorder or Plotter
on this Interface (Address 5)...**

Device Name	Device Selector	Display/Plotter Spec.
HP 7510	705	"HPGL"

**And It Is the Second Recorder or Plotter
on this Interface (Address 7)...**

Device Name	Device Selector	Display/Plotter Spec.
HP 7510	707	"HPGL"

If You Connected the HP 7510 to the HP 98624A HP-IB Interface (Select Code 8)...

**And It Is the First Recorder or Plotter
on this Interface (Address 5)...**

Device Name	Device Selector	Display/Plotter Spec.
HP 7510	805	"HPGL"

**And It Is the Second Printer or Plotter
on this Interface (Address 7)...**

Device Name	Device Selector	Display/Plotter Spec.
HP 7510	807	"HPGL"

Installing the HP 9111A Graphics Tablet

Description

The HP 9111A Graphics Tablet connects to your computer's HP-IB interface.

Support

The HP 9111A Graphics Tablet is supported on all Series 200 and Series 300 computers.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 2.0 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** supported on revision 2.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.
- **HP-UX Operating System:** supported on revision 1.0 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

Before You Begin

The following procedure describes how to connect your HP 9111A Graphics Tablet to your Series 200/300 computer. Before you do this, however, refer to the manual(s) that came with your printer to:

- Unpack the graphics tablet.
- Check the line voltage setting.
- Check the fuse.

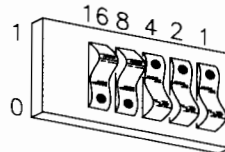
HP 9111A Graphics Tablet Installation Procedure

1. **Play It Safe.**
 - a. Turn your computer and graphics tablet off, if they are not already off.
2. **Select Your Interface.**
 - a. Use either the built-in HP-IB interface or an HP 98624A HP-IB Interface. If using HP-UX, avoid placing the plotter on the same interface used by your disc or tape drives, if possible. An HP-IB interface dedicated to the HP 9111A is strongly recommended.
3. **Set the Address.**

CAN YOU SKIP THIS STEP?

If this is the first (or only) HP 9111A you are connecting to the interface, you can skip to step 4. The address is preset to 6 and need not be changed—*unless* you have changed the address of some other device on the interface to 6.

- a. Find the set of six switches near the HP-IB connector. The right-hand five switches in this group determine the graphics tablet's address.
- b. Set the address switches to 7 as shown below, unless address 7 has been used elsewhere. Refer to the manual that came with the graphics tablet if you need additional switch settings.



Address 7

4. Connect the HP 9111A to the Computer.

- a. Get an HP-IB cable.
- b. Connect one end of the HP-IB cable to the HP-IB connector on the back of the graphics tablet. Tighten the thumb screws to secure the connection.
- c. Connect the other end of the HP-IB cable to the interface.

NOTE

If the interface already has several cables connected to it, connect the plotter's cable to one of the other devices on the interface.

5. Connect the Power Cord.

- a. Connect the female end of the power cord to the power socket on the back of the graphics tablet, and connect the other end to your power outlet.

6. Record the Address.

- a. Make a note that address 6 (or the alternate address you chose in step 3) has been used and is no longer available on the interface you selected. Use the "Address Record" form on the Step 6 tab for this purpose.

The Next Step

You have now installed your HP 9111A Graphics Tablet.

The following "Worksheet Entries" contain information needed to use your plotter with various language/operating systems. Refer to the entries for the system you'll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you'll be ready to install your next peripheral.

BASIC System Worksheet Entries

If You Connected the HP 9111A to the Built-in HP-IB Interface (Select Code 7)...

**And It Is the First HP 9111A
on this Interface (Address 6)...**

Device Name	Device Selector	Display/Plotter Spec.
HP 9111A	706	"HPGL"

**And It Is the Second HP 9111A
on this Interface (Address 7)...**

Device Name	Device Selector	Display/Plotter Spec.
HP 9111A	707	"HPGL"

If You Connected the HP 9111A to the HP 98624A HP-IB Interface (Select Code 8)...

**And It Is the First HP 9111A
on this Interface (Address 6)...**

Device Name	Device Selector	Display/Plotter Spec.
HP 9111A	806	"HPGL"

**And It Is the Second HP 9111A
on this Interface (Address 7)...**

Device Name	Device Selector	Display/Plotter Spec.
HP 9111A	807	"HPGL"

Pascal Workstation Worksheet Entries

If You Connected the HP 9111A to the Built-in HP-IB Interface (Select Code 7)...

And It Is the First HP 9111A
on this Interface (Address 6)...

Device Name	Device Selector
HP 9111A	706

And It Is the Second HP 9111A
on this Interface (Address 7)...

Device Name	Device Selector
HP 9111A	707

If You Connected the HP 9111A to the HP 98624A HP-IB Interface (Select Code 8)...

And It Is the First HP 9111A
on this Interface (Address 6)...

Device Name	Device Selector
HP 9111A	806

And It Is the Second HP 9111A
on this Interface (Address 7)...

Device Name	Device Selector
HP 9111A	807

HP-UX System Worksheet Entries



If You Connected the HP 9111A to the Built-in HP-IB Interface (Select Code 7)...

And It Is the First HP 9111A on this Interface (Address 6)...

Device Name	Path Name	File Type	Major No.	Minor No.
HP 9111A	/dev/dig9111	c	21	0x070600

And It Is the Second HP 9111A on this Interface (Address 7)...

Device Name	Path Name	File Type	Major No.	Minor No.
HP 9111A	/dev/dig9111.1	c	21	0x070700

If You Connected the HP 9111A to the HP 98624 HP-IB Interface (Select Code 8)...

And It Is the First HP 9111A on this Interface (Address 6)...

Device Name	Path Name	File Type	Major No.	Minor No.
HP 9111A	/dev/dig9111	c	21	0x080600

And It Is the Second HP 9111A on this Interface (Address 7)...

Device Name	Path Name	File Type	Major No.	Minor No.
HP 9111A	/dev/dig9111.1	c	21	0x080700

Installing the HP 98700 Graphics Display Station

Description

The HP 98700 Graphics Display Station connects to the HP 98287A Graphics Display Station Interface. The following procedure describes how to install the HP 98700 Display Controller, the HP 98782A Color Monitor, and the optional HP 98710A Graphics Accelerator upgrade system. Installation of the HP 40681A Audio Extension Module is described in Step 10.

Support

The HP 98700 Graphics Display Station is supported on all Series 300 computers.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 4.0 or later with Series 300 computers. The HP 98710A is not supported.
- **Pascal Workstation:** supported on revision 3.1 or later with Series 300 computers. The HP 98710A is not supported.
- **HP-UX Operating System:** supported on revision 5.0 or later with Series 300 computers.

HP 98700 Graphics Display Station Installation Procedure

1. Turn your computer off and remove the power cord.
2. If you have the HP 98710A Graphics Accelerator, follow these steps to connect it:
 - a. Turn off the HP 98700A and remove the power cord.
 - b. Remove the cover plate on the front bottom of the HP 98700 and place it in the parking position provided (see Figure 8-1).
 - c. Move the locking mechanism on top of the HP 98710A to the rear.
 - d. Set the HP 98700 on top of the HP 98710A, making sure the guide pins enter the guide pin sockets.
 - e. Gently but firmly press the HP 98700 down until the connector engages and seats (see Figure 8-2).
 - f. Slide the locking mechanism forward to lock the two together.

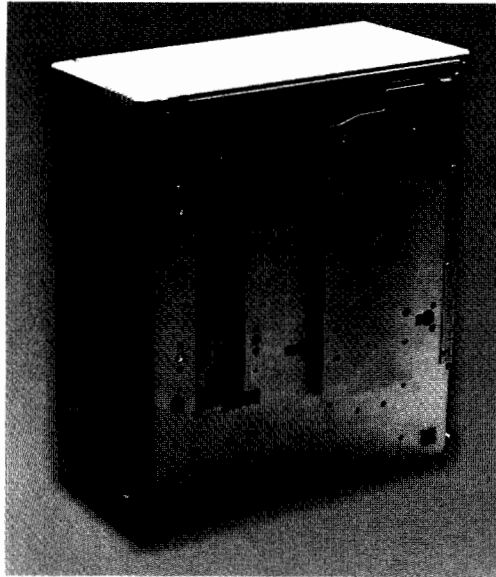


Figure 8-1. Removing the Cover Plate

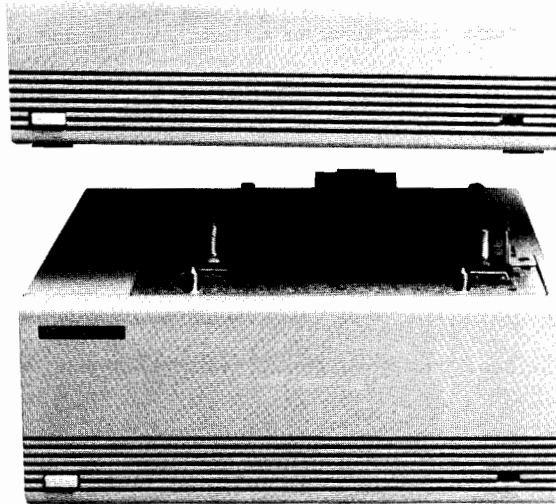


Figure 8-2. Connecting the HP 98700 to the HP 98710A

3. Place the HP 98700/98710 between the computer and the monitor.
4. Connect the RGB cables to the monitor, observing the color coding of the cables: red to red, blue to blue and green to green.
5. Connect the other end of the cables to the HP 98700 in the same manner.
6. Connect the interconnect cable to the HP 98287A Graphics Display Station Interface. The cable connector key projects outward near the top from each end of the connector shell. Ensure that this is UP when connecting to the interface or the HP 98700.
7. Connect the other end of the cable to the HP 98700.
8. Make sure all power switches in the system are off, and connect all power cords.

The Next Step

You have now installed your Graphics Display Station.

The following "Worksheet Entries" contain information needed to use your Graphics Display Station with various language/operating systems. Refer to the entries for the system you'll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you'll be ready to install your next peripheral.



BASIC System Worksheet Entries

**If the Graphics Display Station Is
Set to External Addressing Mode...**

Device Name	Device Selector ¹	Display/Plotter Spec.
HP 98700	25	"INTERNAL"

**If the Graphics Display Station Is
Set to Internal Addressing Mode...**

Device Name	Device Selector ²	Display/Plotter Spec.
HP 98700	1	"INTERNAL"

Pascal Workstation Worksheet Entries

**If the Graphics Display Station Is
Set to External Addressing Mode...**

Device Name	Device Selector ³
HP 98700	25

**If the Graphics Display Station Is
Set to Internal Addressing Mode...**

Device Name	Device Selector ⁴
HP 98700	3 or 6

¹ If you changed the select code of the HP 98287A Graphics Display Station Interface, write in the new select code instead of 25. Also, if no internal display is present, you may use a device selector of 1 instead of the select code.

² You may alternatively use a device selector of 6 instead of 1.

³ If you changed the select code of the HP 98287A Graphics Display Station Interface, write in the new select code instead of 25.

⁴ For the rules for determining the device selector in this case, refer to the *Graphics Techniques* manual.

HP-UX System Worksheet Entries

If the Graphics Display Station Is Set to External Addressing Mode (Select Code 23, 24, 25, 26 or 30)...

Device Name	Path Name	File Type	Major No.	Minor No.
HP 98700, select code 23	<i>/dev/graphics</i>	c	12	0x170200
HP 98700, select code 24	<i>/dev/graphics</i>	c	12	0x180200
HP 98700, select code 25	<i>/dev/graphics</i>	c	12	0x190200
HP 98700, select code 26	<i>/dev/graphics</i>	c	12	0x1a0200
HP 98700, select code 30	<i>/dev/graphics</i>	c	12	0x1e0200

If the Graphics Display Station Is Set to Internal Addressing Mode...¹

Device Name	Path Name	File Type	Major No.	Minor No.
HP 98700, no S300 video	<i>/dev/graphics</i>	c	12	0x000000
HP 98700, with S300 video	<i>/dev/graphics</i>	c	12	0x000100

¹ Separate entries are provided for systems with an enabled Series 300 built-in video interface ("with S300 video") and for systems without one ("no S300 video"). Choose the entry appropriate for your system.

Installing the HP 13279B Color Monitor

Description

The HP 13279B Color Monitor connects to the HP 98627A Interface.

IMPORTANT!

This monitor are to be installed by an HP Customer Engineer. Installation and adjustment is included in the price of the monitor.

Support

The HP 13279B Color Monitor is supported on the Series 200 Model 217, 220 and 237 computers, and on all Series 300 computers.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 1.0 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** supported on revision 2.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.
- **HP-UX Operating System:** supported on revision 2.0 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

HP 13279B Color Monitor Installation Procedure

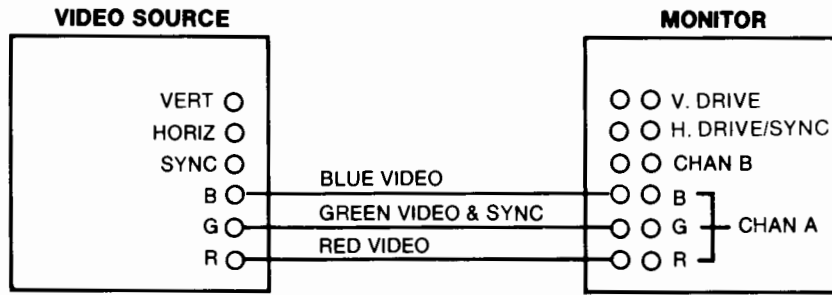


Figure 8-3. HP 13279B Cable Connections.

1. **Play It Safe.**
 - a. Contact your HP Sales and Service Office to arrange for installation of your monitor. Installation and adjustment are included in the price of the unit.
 - b. Turn your computer off and remove the power cord.
2. **Connect the Cables.**
 - a. Connect one cable from the RED video output on the HP 98627A Interface to the CHANNEL A RED IN connector (J1) at the rear of the monitor (see Figure 8-3).
 - b. Connect one cable from the GREEN video output on the HP 98627A Interface to the CHANNEL A GREEN IN connector (J3) at the rear of the monitor (see Figure 8-3).
 - c. Connect one cable from the BLUE video output on the HP 98627A Interface to the CHANNEL A BLUE IN connector (J5) at the rear of the monitor (see Figure 8-3).
3. **Connect the Power Cord.**
 - a. Connect the female end of the power cord to the power socket on the back of the monitor, and connect the other end to your power outlet.
4. **Adjust the Scan Rate.**
 - a. Have your HP Customer Engineer adjust the scan rate.

The Next Step

You have now installed your 13279B Color Monitor.

The following “Worksheet Entries” contain information needed to use your monitor with various language/operating systems. Refer to the entries for the system you’ll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral.

BASIC System Worksheet Entry

Device Name	Device Selector ¹	Display/Plotter Spec.
HP 13279B	28	"98627A"

Pascal Workstation Worksheet Entry

Device Name	Device Selector ¹
HP 13279B	28

HP-UX System Worksheet Entry

Device Name	Path Name	File Type	Major No.	Minor No. ²
HP 13279B, select code 28	<i>/dev/graphics</i>	c	12	0x1c0200

¹ If you changed the select code of the HP 98627A Color Output Interface, write in the new select code instead of 28.

² If you changed the select code of the HP 98627A Color Output Interface, write in the new select code (in hexadecimal) instead of 1c in the minor number.

Notes

Adding Terminals and Displays

If you need to install any of the products listed below, turn to the indicated page number and follow the instructions. Otherwise, go to Step 10.

Product Name	Page Number
HP 2392A, 2393A and 2397A Terminals	See page 9-2
HP 2623A, 2624B, 2625A, 2626A, 2627A, 2628A Terminals	See page 9-2
HP 45610A/B HP <i>Touchscreen</i> PC (HP 150)	See page 9-2
HP 45850A/B HP <i>Touchscreen-II</i> PC (HP 150-II)	See page 9-2
HP 45710 HP <i>The Portable</i> PC (HP 110)	See page 9-2
HP 45711 HP <i>The Portable Plus</i> PC (HP 110-Plus)	See page 9-2
HP 9807A <i>Integral</i> PC (HP 9807)	See page 9-2

NOTE

The HP 13279B Color Monitor and the HP 98700 Graphics Display Station are covered in Step 8.

Installing HP Terminals

Description

This section describes the installation of all HP 2390-series and 2620-series terminals, as well as the HP *Touchscreen*, *Portable* and *Integral* PCs when used as a terminal.

HP Terminals connect to any supported Series 200/300 RS-232C interface. The HP 98628A Datacomm or the HP 98642A 4-Channel Multiplexer Interfaces are required for graphics terminals, unless their graphics capability will not be used.

Support

Hardware Support

- **HP 2392A Terminal:** supported on all Series 200 computers with boot ROM 3.0 or later except for the Model 216; supported on all Series 300 computers.
- **HP 2393A and HP 2397A Terminals:** supported on Series 200 Model 220 and 237 computers with boot ROM 3.0 or later; supported on all Series 300 computers.
- **HP 2623A Terminal:** supported on all Series 200 computers with boot ROM 3.0 or later except the Model 216.
- **HP 2624B and HP 2626A Terminals:** supported on all Series 200 computers with boot ROM 3.0 or later except the Model 216 and 217.
- **HP 2627A Terminal:** supported on Series 200 Model 226 and 236 computers with boot ROM 3.0 or later.
- **HP Touchscreen, Touchscreen-II, Portable, Portable Plus, and Integral PCs:** supported on all Series 200 computers with boot ROM 3.0 or later except the Model 216; supported on all Series 300 computers.



Operating/Language System Support

- **BASIC:** not supported.
- **Pascal Workstation:** not supported.
- **HP-UX Operating System:**
 - **HP 2392A Terminal:** supported on revision 2.0 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.
 - **HP 2393A and 2397A Terminals:** supported on revision 2.1 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.
 - **HP 2623A, 2624B, and 2626A Terminals:** supported on revision 2.0 or later with Series 200 computers.
 - **HP 2627A Terminals:** supported on revision 2.1 or later with Series 200 computers.
 - **HP Touchscreen and Touchscreen-II PCs:** supported on revision 2.0 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.
 - **HP Portable, Portable Plus, and Integral PCs:** supported on revision 2.1 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

Before You Begin

The following procedure describes how to connect your terminal to your Series 200/300 computer. Before you do this, however, refer to the manual(s) that came with your terminal to:

- Unpack the terminal.
- Connect the keyboard, if applicable.
- Check the voltage.
- Connect the power cable.

HP Terminal Installation Procedure

1. **Play It Safe.**
 - a. Turn your computer and terminal off, if they are not already off.
2. **Select Your Interface.**
 - a. Choose any of the following RS-232C Interfaces to connect your terminal:

NOTE

The HP 98642A or HP 98628A is recommended if you use an application that sends data faster than 2400 baud (average). Such applications include graphics from graphics terminals, softkeys, and reading terminal status.

- Built-in RS-232C interface of a Series 300 computer
- Built-in "Data Communications" interface of a Model 216 or Model 217 computer
- HP 98626A RS-232C Interface
- HP 98628A Datacomm Interface
- HP 98642A 4-Channel Multiplexer Interface
- HP 98644A RS-232C Serial Interface

3. Select Your Cable(s).

NOTE

Following are *some* of the possible cabling combinations you can use. Combinations other than those listed may also work.

- If you are using the Series 300 built-in RS-232C interface, and are connecting an...
 - **...HP 2392A Terminal**—connect an HP 40242M cable to the terminal's port 1 connector if you have an HP 13232U or Modem~Modem cable leading from the interface; connect an HP 40242C cable to the terminal's port 1 connector if you have an HP 92221P cable leading from the interface.
 - **...HP 2624B or 2626A Terminal, using port 1**—connect an HP 13222N or 92217A cable to the terminal's port 1 connector if you have an HP 13232U or Modem~Modem cable leading from the interface; connect an HP 13222C or 92217C cable to the terminal's port 1 connector if you have an HP 92221P cable leading from the interface.
 - **...HP 2624B or 2626A Terminal, using port 2**—connect an HP 13242N or 92218A cable to the terminal's port 2 connector if you have an HP 13232U or Modem~Modem cable leading from the interface; connect an HP 92221P cable directly between the interface and the terminal's port 2 connector if you have an HP 92221P cable.

- If you are using the Series 200 Model 216 or 217 built-in “Data Communications” interface or an HP 98626A RS-232C Interface, and are connecting an...
 - **...HP 2932A Terminal**—connect an HP 40242M cable to the terminal’s port 1 connector if you have an HP 5061-4216 (Option 2 DCE), 13232U, or Modem~Modem cable leading from the interface.
 - **...HP 2624B or 2626A Terminal, using port 1**—connect an HP 13222N or 92217A cable to the terminal’s port 1 connector.
 - **...HP 2624B or 2626A Terminal, using port 2**—connect an HP 13242N or 92218A cable to the terminal’s port 2 connector if you have an HP 5061-4216 (Option 2 DCE), 13232U, or Modem~Modem cable leading from the interface; connect an HP 13242G or 92219R cable to the terminal’s port 2 connector if you have an HP 5061-4216 (Option 2 DCE) cable leading directly from the interface.
- If you are using an HP 98628A Datacomm Interface, and are connecting an...
 - **...HP 2392A, 2393A or 2397A Terminal**—connect an HP 40242M cable to the terminal’s port 1 connector if you have an HP 5061-4216 (Option 2 DCE), 13232U, or Modem~Modem cable leading from the interface.
 - **...HP Touchscreen, Touchscreen-II, 2624B (using port 2), or 2626A (using port 2)**—connect an HP 13242N or 92218A cable to the terminal if you have an HP 5061-4216 (Option 2 DCE), 13232U, or Modem~Modem cable leading from the interface; connect an HP 13242G or 92219R cable to the terminal if you have an HP 5061-4216 (Option 2 DCE) cable leading directly from the interface.
 - **...HP 2623A, 2624B (using port 1), 2626A (using port 1), or 2627A Terminal**—connect an HP 13222N or 92217A cable to the terminal if you have an HP 5061-4216 (Option 2 DCE), 13232U, or Modem~Modem cable leading from the interface.
 - **...HP Portable or Portable Plus PC**—connect an HP 92221M cable to the *Portable* if you have an HP 5061-4216 (Option 2 DCE), 13232U, or Modem~Modem cable leading from the interface.
 - **...HP Integral PC**—connect an HP 82974A cable to the *Integral* if you have an HP 5061-4216 (Option 2 DCE), 13232U, or Modem~Modem cable leading from the interface.

- If you are using an HP 98642A 4-Channel Multiplexer Interface, port 0, and are connecting an...
 - **...HP 2392A, 2393A or 2397A Terminal**—connect an HP 40242M cable to the terminal's port 1 connector if you have an HP 13232U or Modem~Modem cable leading from port 0 of the interface; connect an HP 40242C cable to the terminal's port 1 connector if you have an HP 13242G or 92219R cable leading from port 0 of the interface; connect an HP 40242G cable directly between port 0 of the interface and port 1 of the terminal.
 - **...HP Touchscreen, Touchscreen-II, 2624B (using port 2), or 2626A (using port 2)**—connect an HP 13242N, 92222M, or 92218A cable to the terminal if you have an HP 13232U or Modem~Modem cable leading from port 0 of the interface; connect an HP 13242G or 92219R cable directly between port 0 of the interface and the terminal.
 - **...HP 2623A, 2624B (using port 1), 2626A (using port 1), or 2627A Terminal**—connect an HP 13222N or 92217A cable to the terminal if you have an HP 13232U, or Modem~Modem cable leading from port 0 of the interface; connect an HP 13222C cable to the terminal if you have an HP 13242G or 92219R cable leading from port 0 of the interface; connect an HP 13222Y or 92217D cable directly between port 0 of the interface and the terminal.
 - **...HP Portable or Portable Plus PC**—connect an HP 92221M cable to the *Portable* if you have an HP 13232U or Modem~Modem cable leading from port 0 of the interface.
 - **...HP Integral PC**—connect an HP 82974A cable to the *Integral* if you have an HP 13232U or Modem~Modem cable leading from port 0 of the interface.



- If using an HP 98642A 4-Channel Multiplexer Interface, port 1, 2 or 3, and you are connecting an...
 - ...**HP 2392A, 2393A or 2397A Terminal**—connect an HP 40242C cable between the terminal's port 1 connector and the interface's port 1, 2 or 3 adaptor connector (HP 92219U).
 - ...**HP Touchscreen, Touchscreen-II, 2624B (using port 2), or 2626A (using port 2)**—connect the port 1, 2 or 3 adaptor connector (HP 92219U) directly between the interface and the terminal.
 - ...**HP 2623A, 2624B (using port 1), 2626A (using port 1), or 2627A Terminal**—connect an HP 13222C cable between the terminal and the interface's port 1, 2 or 3 adaptor connector (HP 92219U).
- If using an HP 98644A RS-232C Serial Interface, and you are connecting an...
 - ...**HP 2392A Terminal**—connect an HP 40242M cable to the terminal's port 1 connector if you have an HP 13232U or Modem~Modem cable leading from the interface; connect an HP 40242C cable to the terminal's port 1 connector if you have an HP 92221P cable leading from the interface.
 - ...**HP 2624B or 2626A, using port 1**—connect an HP 13222N or 92217A cable to the terminal's port 1 connector if you have an HP 13232U or Modem~Modem cable leading from the interface; connect an HP 13222C or 92217C cable to the terminal's port 1 connector if you have an HP 92221P cable leading from the interface.
 - ...**HP 2624B or 2626A, using port 2**—connect an HP 13242N or 92218A cable to the terminal's port 2 connector if you have an HP 13232U or Modem~Modem cable leading from the interface; connect an HP 92221P cable directly between the interface and the terminal's port 2 connector if you have an HP 92221P cable.

4. Connect the Terminal to the Computer.

- a. Connect one end of the terminal's cable to the connector on the back of the terminal. Lock the connector in place using the screws or clips.
- b. If your interface connection requires one or more additional cables, connect the remaining cable(s) to the interface.
- c. Connect the other end of the terminal's cable either directly to the interface or to cable(s) connected to the interface.

5. Configure the Terminal and Datacomm Port.

- a. Refer to your terminal's manual for instructions on configuring your terminal and datacomm port to match the characteristics given in Table 9-1. Not all of the characteristics listed in the table will apply to your terminal.

Table 9-1. Recommended terminal characteristics.

Characteristic	Setting	Comments
Alternate Set	Line(B)	Suggested
ASCII 8 Bits	No	YES required for NLS support
Asterisk	Off	Suggested
AUTO LF	Off	Required
Auto Terminator	No	Suggested
Baud Rate	9600	HP-UX Std.
Bell	On	Suggested
BLOCK MODE	Off	Required
Block Terminator	RS	Suggested
Break Time	200ms	Suggested
BufSiz	128	Suggested
Caps Lock	Off	May change after login
Carrier Detect	Open	Suggested
Check Parity	No	Required
Circuit Assurance	Closed	Cabling may require
Clear Terminator	No	Suggested
Clock	INT	Required
CPU Break	Open	Suggested
CS(CB)Xmit	No	Cabling may require
Cursor Type	Line	Your choice

Table 9-1 (Cont.). Recommended terminal characteristics.

Characteristic	Setting	Comments
Data Bits	8	Required for NLS support
Data Speed Select	Open	Suggested
Datacomm Handshake	XonXoff	Required
DISPLAY FUNCTIONS	Off	Suggested
Display Off After	15 min.	Your choice
DM(CC)Xmit	No	Cabling may require
EnqAck	No	EnqAck not supported
Esc Xfer	Yes	Suggested
Fast Binary Read	Closed	Suggested
Field Separator	US	Suggested
GraphCompat		Your choice
Inh DC2	Yes	Required
InhDcTest	Yes	Suggested
InhEolWrp	No (Closed)	Required
InhHndShk	Yes	Required
InhSkfTst	No	Suggested
Insert & delete sense	Closed	Suggested
Inverse Background		Your choice
Keyboard		Should match your keyboard
LINE MODIFY	Off	Suggested
Line/Page	Line	Required
Local Echo	Off	Suggested
Main Channel	Closed	Should have no effect
MEMORY LOCK	Off	Suggested
MODIFY ALL	Off	Suggested
Parity	None (Open)	Required for NLS support
Power On	Terminal	Suggested

Table 9-1 (Cont.). Recommended terminal characteristics.

Characteristic	Setting	Comments
Printer Code 4		Your choice
Printer Nulls		Your choice
RecvPace	XonXoff (Open)	Required
Remote/Serial Dev	PORT1/PORT2	If using terminal's port 1
	PORT2/PORT1	If using terminal's port 2
Remote	On	Required
Resolution	512x390	Required
RETURN Def	CR	Required
RETURN=ENTER	No	Required
RR(CF)Recv	No	Cabling may require
SPOW	No (Closed)	Strongly suggested
SR(CH)	Lo	Modem use may require
SRRInvert	No	Cabling may require
SRRXmit	No	Cabling may require
Start Column	1	Suggested
Stop Bits	1	HP-UX std.
STOP Function	XonXoff	Suggested
StripNulDel	No	Suggested
Tab=Spaces	No	Required
Terminal Id	2622A	Suggested for 2392A
	2623A	Required for DGL on HP150 and 2393A
Terminal Mode	HP	Required by default terminfo
Transmit	All Fields	Suggested
Transmit indicator	Closed	Suggested
TR(CD)	Hi	Modem use may require
XmitFnctn	No (Closed)	vi changes as needed
XmitPace	XonXoff	Suggested



The Next Step

You have now installed your terminal.

The following “Worksheet Entries” contain information needed to use your terminal with HP-UX. Refer to the entry for the interface you connected your terminal to.

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral.

HP-UX System Worksheet Entries

**If You Connected the Terminal to a Model 216, Model 217,
or Series 300 Built-in Interface (Select Code 9)...**

Device Name	Path Name ¹	File Type	Major No.	Minor No.
Terminal	/dev/tty02	c	1	0x090004

**If You Connected the Terminal to an HP 98626A, 98628A or
98644A Interface (Select Code 9, 10, 15, 16, 17, 19 or 20)...**

Device Name	Path Name ¹	File Type	Major No.	Minor No.
Terminal on select code 9	/dev/tty02	c	1	0x090004
Terminal on select code 10	/dev/tty02	c	1	0x0a0004
Terminal on select code 15	/dev/tty02	c	1	0x0f0004
Terminal on select code 16	/dev/tty02	c	1	0x100004
Terminal on select code 17	/dev/tty02	c	1	0x110004
Terminal on select code 19	/dev/tty02	c	1	0x130004
Terminal on select code 20	/dev/tty02	c	1	0x140004

¹ The path name given here assumes this is the second terminal you are connecting (i.e., *tty02*). If this is not the case, change the path name accordingly (e.g., */dev/tty03* for the third terminal, etc.).

HP-UX System Worksheet Entries (Cont.)

If You Connected the Terminal to an HP 98642A Interface (Select Code 10, 13, 15, 16, 17 or 19)...

Device Name	Path ¹ Name	File Type	Major Number	Minor Number
Terminal, select code 10, port 0	<i>/dev/tty02</i>	c	1	0x0a0004
Terminal, select code 10, port 1	<i>/dev/tty02</i>	c	1	0x0a0104
Terminal, select code 10, port 2	<i>/dev/tty02</i>	c	1	0x0a0204
Terminal, select code 10, port 3	<i>/dev/tty02</i>	c	1	0x0a0304
Terminal, select code 13, port 0	<i>/dev/tty02</i>	c	1	0x0d0004
Terminal, select code 13, port 1	<i>/dev/tty02</i>	c	1	0x0d0104
Terminal, select code 13, port 2	<i>/dev/tty02</i>	c	1	0x0d0204
Terminal, select code 13, port 3	<i>/dev/tty02</i>	c	1	0x0d0304
Terminal, select code 15, port 0	<i>/dev/tty02</i>	c	1	0x0f0004
Terminal, select code 15, port 1	<i>/dev/tty02</i>	c	1	0x0f0104
Terminal, select code 15, port 2	<i>/dev/tty02</i>	c	1	0x0f0204
Terminal, select code 15, port 3	<i>/dev/tty02</i>	c	1	0x0f0304
Terminal, select code 16, port 0	<i>/dev/tty02</i>	c	1	0x100004
Terminal, select code 16, port 1	<i>/dev/tty02</i>	c	1	0x100104
Terminal, select code 16, port 2	<i>/dev/tty02</i>	c	1	0x100204
Terminal, select code 16, port 3	<i>/dev/tty02</i>	c	1	0x100304
Terminal, select code 17, port 0	<i>/dev/tty02</i>	c	1	0x110004
Terminal, select code 17, port 1	<i>/dev/tty02</i>	c	1	0x110104
Terminal, select code 17, port 2	<i>/dev/tty02</i>	c	1	0x110204
Terminal, select code 17, port 3	<i>/dev/tty02</i>	c	1	0x110304
Terminal, select code 19, port 0	<i>/dev/tty02</i>	c	1	0x130004
Terminal, select code 19, port 1	<i>/dev/tty02</i>	c	1	0x130104
Terminal, select code 19, port 2	<i>/dev/tty02</i>	c	1	0x130204
Terminal, select code 19, port 3	<i>/dev/tty02</i>	c	1	0x130304

¹ The path name given here assumes this is the second terminal you are connecting (i.e., *tty02*). If this is not the case, change the path name accordingly (e.g., */dev/tty03* for the third terminal, etc.).

Adding Miscellaneous Peripherals **10**

If you need to install any of the products listed below, turn to the indicated page number and follow the instructions. Otherwise, you are done. Begin reading the User's Guide that came with your language system.

Product Number	Page Number
HP 35723A <i>HP Touch Bezel</i>	See page 10-2
HP 37212A 300/1200 Baud Modem	See page 10-12
HP 39800/01A Programmable Bar Code Reader	See page 10-19
HP 46020/21 Keyboards	See page 10-23
HP 46060A Mouse	See page 10-28
HP 46080A Extension Module	See page 10-33
HP 46081A Speaker Module	See page 10-37
HP 46082A/B Remote Extension Modules	See page 10-42
HP 46083A Rotary Control Knob	See page 10-47
HP 46084A ID Module	See page 10-52
HP 46085A Control Dials Module	See page 10-58
HP 46086A Button Box	See page 10-61
HP 46087/88A Digitizers & 46089A Cursor	See page 10-64
HP 46094A Quadrature Port	See page 10-70
HP 6944A Multiprogrammer	See page 10-75
HP 92205A/C Hayes <i>Smartmodem 1200</i>	See page 10-79
HP 92916A Bar Code Reader	See page 10-85
HP 9884A Paper Tape Punch	See page 10-91



Installing the HP 35723A HP Touch Bezel

Description

The HP 35723A is a user-installable bezel which adds touchscreen capability to the HP 35731 and 35741 12-inch video monitors. It connects to your computer via the HP-HIL interface.

Support

The HP 35723A is supported on all Series 300 computers.

Operating/Language systems support is as follows:

- **BASIC:** supported on revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** supported on revision 3.1 or later Series 300 computers, but only as a digitizer in DGL.
- **HP-UX Operating System:** supported on revision 5.0 or later with Series 300 computers.

HP 35723A HP Touch Bezel Installation Procedure

NOTE

Connecting and disconnecting HP-HIL devices while some language/operating systems or application programs are running may lead to unpredictable results. When possible, connect all needed HP-HIL devices to your computer before booting a language/operating system or running an application program.

1. Turn your computer and monitor off.
2. Tilt your monitor screen up as far as it goes. Grasp the inner plastic frame by the lower corners, then pull it up and toward you in one even motion (Figure 10-1).

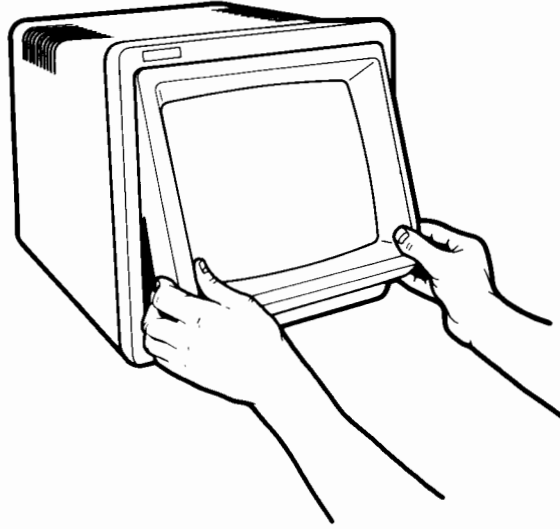


Figure 10-1. Removing CRT bezel.

3. Locate the connector socket on your monitor (on the right at the bottom of the display tube). If there is a plug in the socket, remove it (Figure 10-2).

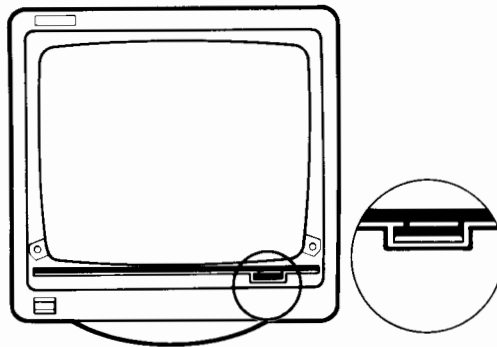


Figure 10-2. Locating socket on monitor.

4. Place HP Touch flat on the table in front of the monitor so that the plug on the end of the HP Touch ribbon cable lines up with the socket on your monitor (Figure 10-3).

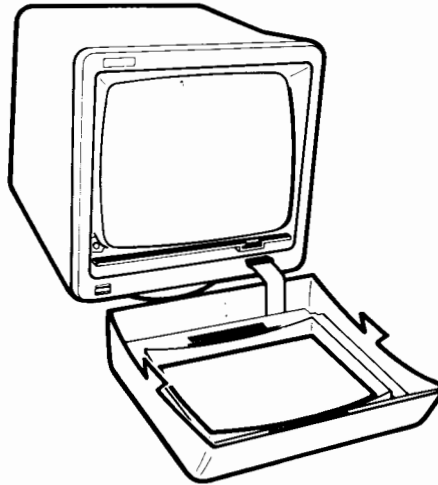


Figure 10-3. Aligning HP Touch plug with monitor socket.

5. Connect the HP Touch cable plug to the socket on the monitor. Make sure the cable is not twisted. The plug clicks into the socket when the connection is properly made (Figure 10-4).

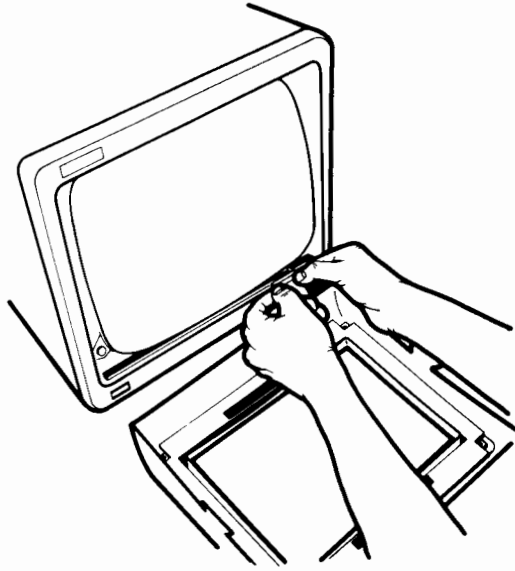


Figure 10-4. Connecting plug to socket.

6. Hold HP Touch in front of the monitor. Tilt the top of HP Touch toward the monitor. Line up the upper edge of HP Touch's side mounting tabs so that they slip under the retainer clips on the monitor (Figure 10-5).

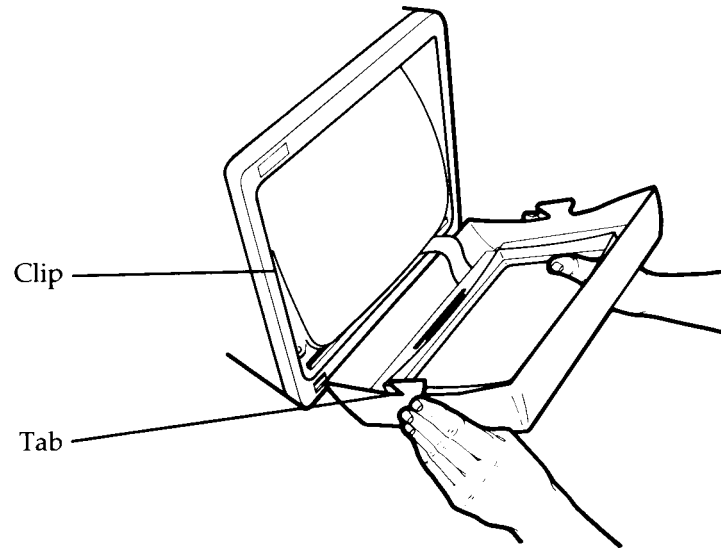


Figure 10-5. Aligning HP Touch with monitor.

10-6 Adding Miscellaneous Peripherals

7. Placing your thumbs under the lower corners of HP Touch, push up and toward the monitor until HP Touch snaps firmly into place. Make sure that the cable does not protrude from HP Touch. If it does protrude, pull out the bottom edge of HP Touch, push the cable under and snap HP Touch back into place (Figure 10-6).

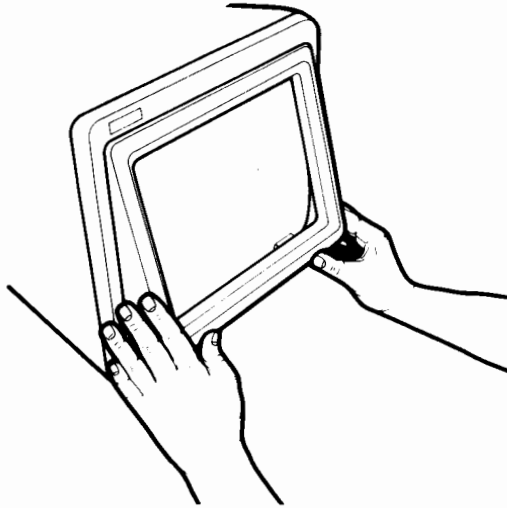


Figure 10-6. Attaching HP Touch.

8. Find the HP-HIL cable that you purchased for the monitor. A separate HP-HIL cable is required to connect the monitor to your HP-HIL interface.
9. Find the end of the cable that is marked with one black dot.
10. Find the HP-HIL connector on the back of the monitor that is marked with one dot (the inner-most HP-HIL connector).
11. Plug the “one-dot” end of the cable into the “one-dot” connector on the monitor.
12. Connect the other, “two-dot” end of the cable into the HP-HIL connector on your computer (marked “KYBD” or “KEYBOARD”), or to the “two-dot” connector of the last HP-HIL device you installed (e.g. keyboard).

13. Keep these constraints in mind:

- You cannot have more than 7 HP-HIL addressable devices connected to your computer at one time. The HP 46080A, 46081A, 46082A and 46082B Extension modules and the HP 46089A Four-Button Cursor do not count as addressable devices, and the HP 46085A Control Dials Module counts as *three* addressable devices. All other devices count as one addressable device.
- The current requirements of all of your devices must not exceed 750 milliamps (mA). To make sure you do not exceed this requirement, total up the typical power required by each of your HP-HIL devices as given in the following “Worksheet Entries” sections. If the total exceeds 750 mA, you must remove one or more devices.

The Next Step

You have now installed your HP 35723A *HP Touch Bezel*.

The following “Worksheet Entries” contain information needed to use your *HP Touch* bezel with various language/operating systems. Refer to the entries for the system you’ll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral. If you have installed all of your peripherals, refer to the *User’s Guide* that came with your operating/language system.

BASIC System Worksheet Entry

CAUTION

New devices added to the HP-HIL interface while the BASIC system is running will not be recognized until a SCRATCH A command is executed. Also, data received from the HP-HIL interface may be garbled if the order of devices is changed while the system is running.

Device Name	Device Selector	Digitizer Specifier	Power Req.
HP 35723A	KBD	"TABLET"	133 mA

Pascal Workstation Worksheet Entry

CAUTION

Connecting or disconnecting HP-HIL devices while the Pascal Workstation is running may hang the system. The *only* times when you may safely connect or disconnect an HP-HIL device is when the system's power is off, or while the system's command line is being displayed *and* the time/date display (from the Version command) is not being displayed.

Device Name	Device Selector	Module Name	Power Req.
HP 35723A	201	HPHIL & DGL_ABS	133 mA

HP-UX System Worksheet Entries

NOTE

HP-HIL devices can be added to or removed from the HP-HIL interface without affecting the HP-UX operating system. However, if you are running an application which requires the use of a particular device and you remove the device from the link, open the link to the device, or open the link to add a new device, your application might not recognize the change and may not work as expected.

Device Name	Path Name	File Type	Major Number	Minor ¹ Number	Power Req.
HP 35723A	<i>/dev/r8042</i>	c	23	0x000000	133 mA
HP 35723A	<i>/dev/touch</i>	c	24	0x000020	



¹ The second minor number in the table assumes the digitizer is the second device on the HP-HIL interface (address=2). If this is not the case, substitute the correct position (address) of the digitizer in place of the **2** in the minor number (e.g., if the digitizer is the third device on the interface, the minor number would be 0x000030).

Installing the HP 37212A 300/1200 Baud Modem

Description

The HP 37212A 300/1200 Baud Modem connects to your computer via an RS-232C interface.

Support

The HP 37212A 300/1200 Baud Modem is supported on Series 200 Model 217, 220, 226, 236 and 237 computers, and on all Series 300 computers.

Operating/Language system support is as follows:

- **BASIC:** not supported.
- **Pascal Workstation:** supported on revision 3.0 or later with Series 200 computers, but requires user-written software or a terminal emulator software package.
- **HP-UX Operating System:** supported on revision 3.0 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

Before You Begin

The following procedure describes how to connect the modem to your computer. Before you do this, however, refer to the manual that came with the modem to:

- Unpack the modem.
- Contact the telephone company.
- Check the voltage setting and fuse.
- Mount the modem in a rack (if applicable).

HP 37212A 300/1200 Baud Modem Installation Procedure

1. **Play It Safe.**
 - a. Turn your computer and modem off, if they are not already off.
2. **Set the Internal Switches.**

CAN YOU SKIP THIS STEP?

The modem contains eight internal switches which set various operating characteristics of the modem. The switches are all set to the OPEN position and should not be changed, at least not initially. If you later decide that you want to change these switches, refer to the manual that came with the modem for instructions.

WARNING

Be sure to disconnect the power cord from the modem whenever you are working with the internal switches and jumpers. Lethal voltages are exposed when when the top cover is removed while the power cord is connected.

3. **Connect the Telephone Cable.**
 - a. Plug one end of the modular telephone cable into the "TELCO" connector on the back of the modem.
 - b. Insert the remaining end of the telephone cable into a telephone wall jack.
 - c. If you want to connect a telephone to the modem, plug the telephone's cable into the "PHONE" connector on the back of the modem.

4. Select Your Interface and Cable.

- a. The modem can be connected to any of the following RS-232C interfaces:
 - Series 200 Model 216 or 217 built-in “Data Communications” interface—use an HP 5061-4215 DTE cable.
 - Series 300 built-in RS-232C interface—use an HP 13242N or 92221M cable.
 - HP 98626A RS-232C Interface—use an HP 5061-4215 (Option 001 DTE) cable.
 - HP 98628A Datacomm Interface—use an HP 5061-4215 (Option 001 DTE) cable.
 - HP 98642A 4-Channel Multiplexer Interface, port 0 (HP-UX only)—use an HP 92219S, 92218A or 92222M cable. Ports 1, 2 and 3 are not recommended for use with the modem.
 - HP 98644A RS-232C Serial Interface—use an HP 13242N, 92218A or 92222M cable.

5. Connect the Modem to Your Computer.

- a. Connect the cable between the modem and the interface.

6. Connect the Power Cord.

- a. Connect the power cord into the power connector on the back of the modem, and plug the other end into your power outlet.

7. Set the Front Panel Buttons.

- a. Turn the modem on.
- b. Locate the set of four buttons labeled HS, ALB, RDL, and DATA on the front of the modem.
- c. Set these buttons as follows:

● Push the HS button in.

- Leave the ALB, RDL and DATA buttons out.

The Next Step

You have now installed your modem.

The following “Worksheet Entries” contain information needed to use your modem with various language/operating systems. Refer to the entries for the system you’ll be using (Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral. If you have installed all of your peripherals, refer to the *User’s Guide* that came with your operating/language system.

Pascal Workstation Worksheet Entry

Device Name	Device Selector ¹
HP 37212A	9

¹ If you connected your modem to an interface with a select code other than 9, write in your select code instead of 9.

HP-UX System Worksheet Entries

**If You Connected the Modem to a Model 216, Model 217,
or Series 300 Built-in Interface (Select Code 9)...**

Device Name	Path Name ¹	File Type	Major No.	Minor No.
HP 37212A	<i>/dev/tty02</i>	c	1	0x090000
HP 37212A	<i>/dev/cua02</i>	c	1	0x090001
HP 37212A	<i>/dev/cui02</i>	c	1	0x090001

¹ The path names given here assume this is the second terminal or modem you are connecting (i.e., *tty02*). If this is not the case, change the path names accordingly (e.g., */dev/tty03* for the third modem, etc.).

HP-UX System Worksheet Entries (Cont.)

If You Connected the Modem to an HP 98626A, 98628A, 98642A or 98644A Interface (Select Code 9, 10, 13, 15, 16, 17, 19 or 20)...

Device Name	Path Name ¹	File Type	Major No.	Minor No.
HP 37212A on select code 9	/dev/tty02	c	1	0x090000
HP 37212A on select code 9	/dev/cua02	c	1	0x090001
HP 37212A on select code 9	/dev/cul02	c	1	0x090001
HP 37212A on select code 10	/dev/tty02	c	1	0x0a0000
HP 37212A on select code 10	/dev/cua02	c	1	0x0a0001
HP 37212A on select code 10	/dev/cul02	c	1	0x0a0001
HP 37212A on select code 13	/dev/tty02	c	1	0x0d0000
HP 37212A on select code 13	/dev/cua02	c	1	0x0d0001
HP 37212A on select code 13	/dev/cul02	c	1	0x0d0001
HP 37212A on select code 15	/dev/tty02	c	1	0x0f0000
HP 37212A on select code 15	/dev/cua02	c	1	0x0f0001
HP 37212A on select code 15	/dev/cul02	c	1	0x0f0001
HP 37212A on select code 16	/dev/tty02	c	1	0x100000
HP 37212A on select code 16	/dev/cua02	c	1	0x100001
HP 37212A on select code 16	/dev/cul02	c	1	0x100001
HP 37212A on select code 17	/dev/tty02	c	1	0x110000
HP 37212A on select code 17	/dev/cua02	c	1	0x110001
HP 37212A on select code 17	/dev/cul02	c	1	0x110001
HP 37212A on select code 19	/dev/tty02	c	1	0x130000
HP 37212A on select code 19	/dev/cua02	c	1	0x130001
HP 37212A on select code 19	/dev/cul02	c	1	0x130001
HP 37212A on select code 20	/dev/tty02	c	1	0x140000
HP 37212A on select code 20	/dev/cua02	c	1	0x140001
HP 37212A on select code 20	/dev/cul02	c	1	0x140001

¹ The path names given here assume this is the second terminal or modem you are connecting (i.e., tty02). If this is not the case, change the path names accordingly (e.g., /dev/tty03 for the third modem, etc.).

10-18 Adding Miscellaneous Peripherals

Installing the HP 39800/01A Programmable Bar Code Reader

Description

The HP 39800/01A programmable bar code reader connects to your computer through an HP 98626A or HP 98628A interface.

Support

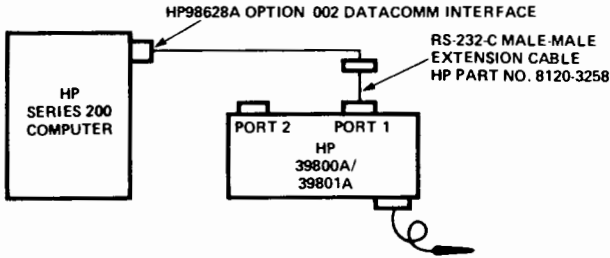
The HP 39800/01A programmable bar code reader is supported on all Series 200 computers.

Language/Operating system support is as follows:

- **BASIC:** supported on revision 2.0 and later with Series 200 computers.
- **Pascal Workstation:** not supported.
- **HP-UX Operating System:** not supported.



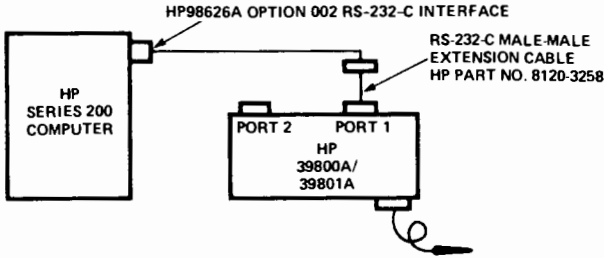
Programmable Bar Code Reader Installation Procedure



HP 39800A/39801A
REAR SWITCH SETTINGS



Figure 10-7a.



HP 39800A/39801A
REAR SWITCH SETTINGS

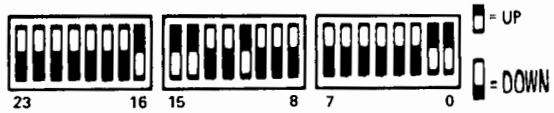


Figure 10-7b.

1. Play It Safe.

- a. Turn your computer off, if it is not already off.

2. Set the Configuration Switches.

- a. Find the Configuration switches on the back of the bar code reader.
- b. Set the switches:
 - Set the switches as shown in Figure 10-7a if connecting the bar code reader to an HP 98628A Datacomm Interface.
 - Set the switches as shown in Figure 10-7b if connecting the bar code reader to an HP 98626A RS-232C Interface.

3. Connect the Bar Code Reader to Your Computer.

- a. Connect the RS-232C cables from the computer to Port 1 of the bar code reader as shown in Figures 10-7a and 10-7b.

4. Connect the Power Cord.

- a. Connect the female end of the power cord to the power socket on the back of the bar code reader, and plug the other end into your power outlet.

The Next Step

You have now installed your bar code reader.

The following “Worksheet Entries” contain information needed to use your bar code reader with BASIC.

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral. If you have installed all of your peripherals, refer to the *User’s Guide* that came with your operating/language system.

BASIC System Worksheet Entries

**If You Connected the Bar Code Reader to the
HP 98626A RS-232C Interface...**

Device Name	Device Selector ¹
HP 39800/01A	9

**If You Connected the Bar Code Reader to the
HP 98628A Datacomm Interface...**

Device Name	Device Selector ²
HP 39800/01A	20

¹ If you changed the select code of the HP 98626A RS-232C Interface, write in the new select code instead of 9.

² If you change the select code of the HP 98628A Datacomm Interface, write in the new select code instead of 20.

Installing the HP 46020/21 Keyboards

Description

The HP 46020/21 Keyboards are offered in 17 languages and connect to your computer via the HP-HIL interface.

Support

The HP 46020/21 Keyboards are supported on Series 200 Model 217, 220 (with the optional HP-HIL interface installed) and Model 237 computers, and on all Series 300 computers.

Operating/Language systems support is as follows:

- **BASIC:** supported on revision 3.0 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** supported on revision 3.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.
- **HP-UX Operating System:** supported on revision 2.2L or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

HP 46020/21 Keyboard Installation Procedure

NOTE

Connecting and disconnecting HP-HIL devices while some language/operating systems or application programs are running may lead to unpredictable results. When possible, connect all needed HP-HIL devices to your computer before booting a language/operating system or running an application program.

1. Find the HP-HIL cable that came with your computer.
2. Find the end of the cable that is marked with one black dot.
3. Find the connector on the back of the keyboard that is marked with one dot.

4. Plug the “one-dot” end of the cable into the “one-dot” connector on the keyboard.
5. Connect the other, “two-dot” end of the cable into the HP-HIL connector on your computer (marked “KYBD” or “KEYBOARD”), or to the “two-dot” connector of the last HP-HIL device you installed.
6. Keep these constraints in mind:
 - You cannot have more than 7 HP-HIL addressable devices connected to your computer at one time. The HP 46080A, 46081A, 46082A and 46082B Extension modules and the HP 46089A Four-Button Cursor do not count as addressable devices, and the HP 46085A Control Dials Module counts as *three* addressable devices. All other devices count as one addressable device.
 - The current requirements of all of your devices must not exceed 750 milliamps (mA). To make sure you do not exceed this requirement, total up the typical power required by each of your HP-HIL devices as given in the following “Worksheet Entries” sections. If the total exceeds 750 mA, you must remove one or more devices.

The Next Step

You have now installed your HP 46020/21 Keyboard.

The following “Worksheet Entries” contain information needed to use your keyboard with various language/operating systems. Refer to the entries for the system you’ll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral. If you have installed all of your peripherals, refer to the *User’s Guide* that came with your operating/language system.

BASIC System Worksheet Entry

CAUTION

New devices added to the HP-HIL interface while the BASIC system is running will not be recognized until a SCRATCH A command is executed. Also, data received from the HP-HIL interface may be garbled if the order of devices is changed while the system is running.

Device Name	Device Selector	Digitizer Specifier	Power Req.
HP 46020/21A	KBD	"KBD"	67 mA

Pascal Workstation Worksheet Entry

CAUTION

Connecting or disconnecting HP-HIL devices while the Pascal Workstation is running may hang the system. The *only* times when you may safely connect or disconnect an HP-HIL device is when the system's power is off, or while the system's command line is being displayed *and* the time/date display (from the Version command) is not being displayed.

Device Name	Device Selector	Module Name	Power Req.
HP 46020/21A	2	-	67 mA

HP-UX System Worksheet Entries

NOTE

HP-HIL devices can be added to or removed from the HP-HIL interface without affecting the HP-UX operating system. However, if you are running an application which requires the use of a particular device and you remove the device from the link, open the link to the device, or open the link to add a new device, your application might not recognize the change and may not work as expected.

Device Name	Path Name	File Type	Major Number	Minor ¹ Number	Power Req.
HP 46020/21	/dev/r8042	c	23	0x000000	67 mA
HP 46020/21	/dev/rkbd	c	24	0x000010	



¹ The second minor number in the table assumes the keyboard is the first device on the HP-HIL interface (address=1). If this is not the case, substitute the correct position (address) of the keyboard in place of the 1 in the minor number (e.g., if the keyboard is the third device on the interface, the minor number would be 0x000030).

Installing the HP 46060A Mouse

Description

The HP 46060A is a two-button mouse for pointing and picking in graphics or screen-oriented text processing applications. It connects to your computer via the HP-HIL interface. It must be the last device in the chain of HP-HIL devices connected to the interface.

Support

The HP 46060A is supported on Series 200 Model 217, 220 (with the optional HP-HIL interface installed) and Model 237 computers, and on all Series 300 computers.

Operating/Language systems support is as follows:

- **BASIC:** supported on revision 3.0 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** supported on revision 3.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.
- **HP-UX Operating System:** supported on revision 5.1 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

HP 46060A Mouse Installation Procedure

NOTE

Connecting and disconnecting HP-HIL devices while some language/operating systems or application programs are running may lead to unpredictable results. When possible, connect all needed HP-HIL devices *to your computer before booting a language/operating system or running an application program.*

1. Install all other HP-HIL devices first. The HP 46060A Mouse must be the last device you connect to the interface.
2. Turn the mouse upside down and locate the ball housing cover. Remove the ball housing cover by turning it counterclockwise.
3. Insert the ball into its housing. Replace the cover and secure it by turning it clockwise.
4. Connect the end of the mouse cable into the “two-dot” HP-HIL connector of the last HP-HIL device you installed. If you’ve just installed your computer, the last HP-HIL device you installed is your keyboard.
5. Keep these constraints in mind:
 - You cannot have more than 7 HP-HIL addressable devices connected to your computer at one time. The HP 46080A, 46081A, 46082A and 46082B Extension modules and the HP 46089A Four-Button Cursor do not count as addressable devices, and the HP 46085A Control Dials Module counts as *three* addressable devices. All other devices count as one addressable device.
 - The current requirements of all of your devices must not exceed 750 milliamps (mA). To make sure you do not exceed this requirement, total up the typical power required by each of your HP-HIL devices as given in the following “Worksheet Entries” sections. If the total exceeds 750 mA, you must remove one or more devices.

The Next Step

You have now installed your HP 46060A Mouse.

The following “Worksheet Entries” contain information needed to use your mouse with various language/operating systems. Refer to the entries for the system you’ll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral. If you have installed all of your peripherals, refer to the *User’s Guide* that came with your operating/language system.

BASIC System Worksheet Entry

CAUTION

New devices added to the HP-HIL interface while the BASIC system is running will not be recognized until a SCRATCH A command is executed. Also, data received from the HP-HIL interface may be garbled if the order of devices is changed while the system is running.

Device Name	Device Selector	Digitizer Specifier	Power Req.
HP 46060A	KBD	"KBD"	133 mA

Pascal Workstation Worksheet Entry

CAUTION

Connecting or disconnecting HP-HIL devices while the Pascal Workstation is running may hang the system. The *only* times when you may safely connect or disconnect an HP-HIL device is when the system's power is off, or while the system's command line is being displayed *and* the time/date display (from the Version command) is not being displayed.

Device Name	Device Selector	Module Name	Power Req.
HP 46060A	2	HPHIL & MOUSE	133 mA

HP-UX System Worksheet Entries

NOTE

HP-HIL devices can be added to or removed from the HP-HIL interface without affecting the HP-UX operating system. However, if you are running an application which requires the use of a particular device and you remove the device from the link, open the link to the device, or open the link to add a new device, your application might not recognize the change and may not work as expected.

Device Name	Path Name	File Type	Major Number	Minor ¹ Number	Power Req.
HP 46060A	<i>/dev/r8042</i>	c	23	0x000000	133 mA
HP 46060A	<i>/dev/mouse</i>	c	24	0x000020	

¹ The second minor number in the table assumes the mouse is the second device on the HP-HIL interface (address=2). If this is not the case, substitute the correct position (address) of the mouse in place of the **2** in the minor number (e.g., if the mouse is the third device on the interface, the minor number would be 0x000030).

Installing the HP 46080A Extension Module



Description

The HP 46080A is used to extend the distance between HP-HIL devices. It connects to your computer via the HP-HIL interface, and occupies no HP-HIL address.

Support

The HP 46080A is supported on Series 200 Model 217, 220 (with the optional HP-HIL interface installed) and Model 237 computers, and on all Series 300 computers.

Operating/Language systems support is as follows:

- **BASIC:** supported on revision 3.0 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** supported on revision 3.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.
- **HP-UX Operating System:** supported on revision 2.1 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

HP 46080A Extension Module Installation Procedure

NOTE

Connecting and disconnecting HP-HIL devices while some language/operating systems or application programs are running may lead to unpredictable results. When possible, connect all needed HP-HIL devices to your computer before booting a language/operating system or running an application program.

1. Select a suitable mounting location for the connector box. Remove the paper backing from the back of the fastener pad. Place the pad at the location and press down firmly for a few seconds. Attach the connector box to the fastener pad.
2. Turn the computer off.

3. Find the end of the HP-HIL cable that is marked with one black dot.
4. Find the HP-HIL connector on the connector box that is marked with one dot.
5. Plug the “one-dot” end of the cable into the “one-dot” connector on the connector box.
6. Connect the other, “two-dot” end of the cable into the HP-HIL connector on your computer (marked “KYBD” or “KEYBOARD”), or to the “two-dot” connector of the last HP-HIL device you installed (e.g. keyboard).
7. Keep these constraints in mind:
 - You cannot have more than 7 HP-HIL addressable devices connected to your computer at one time. The HP 46080A, 46081A, 46082A and 46082B Extension modules and the HP 46089A Four-Button Cursor do not count as addressable devices, and the HP 46085A Control Dials Module counts as *three* addressable devices. All other devices count as one addressable device.
 - The current requirements of all of your devices must not exceed 750 milliamps (mA). To make sure you do not exceed this requirement, total up the typical power required by each of your HP-HIL devices as given in the following “Worksheet Entries” sections. If the total exceeds 750 mA, you must remove one or more devices.

The Next Step

You have now installed your HP 46080A Extension Module.

The following “Worksheet Entries” contain information needed to use your HP 46080A with various language/operating systems. Refer to the entries for the system you’ll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral. If you have installed all of your peripherals, refer to the *User’s Guide* that came with your operating/language system.

BASIC System Worksheet Entry

CAUTION

New devices added to the HP-HIL interface while the BASIC system is running will not be recognized until a SCRATCH A command is executed. Also, data received from the HP-HIL interface may be garbled if the order of devices is changed while the system is running.

Device Name	Device Selector	Digitizer Specifier	Power Req.
HP 46080A	-	-	17 mA

Pascal Workstation Worksheet Entry

CAUTION

Connecting or disconnecting HP-HIL devices while the Pascal Workstation is running may hang the system. The *only* times when you may safely connect or disconnect an HP-HIL device is when the system's power is off, or while the system's command line is being displayed *and* the time/date display (from the Version command) is not being displayed.

Device Name	Device Selector	Module Name	Power Req.
HP 46080A	-	-	17 mA

HP-UX System Worksheet Entries

NOTE

HP-HIL devices can be added to or removed from the HP-HIL interface without affecting the HP-UX operating system. However, if you are running an application which requires the use of a particular device and you remove the device from the link, open the link to the device, or open the link to add a new device, your application might not recognize the change and may not work as expected.

Device Name	Path Name	File Type	Major Number	Minor Number	Power Req.
HP 46080A	-	-	-	-	17 mA

Installing the HP 46081A Speaker Module

Description

The HP 46081A Speaker Module is used to extend the distance between HP-HIL devices and includes an audio speaker on a separate circuit, with a 3m audio cable. It connects to your computer via the HP-HIL interface, and occupies no HP-HIL address.

Support

The HP 46081A is supported on Series 200 Model 217, 220 (with the optional HP-HIL interface installed) and Model 237 computers, and on all Series 300 computers.

Operating/Language systems support is as follows:

- **BASIC:** supported on revision 3.0 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** supported on revision 3.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.
- **HP-UX Operating System:** supported on revision 2.1 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

HP 46081A Speaker Module Installation Procedure

NOTE

Connecting and disconnecting HP-HIL devices while some language/operating systems or application programs are running may lead to unpredictable results. When possible, connect all needed HP-HIL devices to your computer before booting a language/operating system or running an application program.

1. Select a suitable mounting location for the Speaker Module. Remove the paper backing from the back of the fastener pad. Place the pad at the location and press down firmly for a few seconds. Attach the Speaker Module to the fastener pad.

2. Turn the computer off and check whether there is an existing HP-HIL cable connected to the “KYBD” (or “KEYBOARD”) connector on the back of the computer. If so, disconnect it.
3. Find the end of the HP-HIL cable that is marked with one black dot.
4. Find the connector on the back of the Speaker Module that is marked with one dot.
5. Plug the “one-dot” end of the cable into the “one-dot” connector on the Speaker Module.
6. Connect the other, “two-dot” end of the cable into the HP-HIL connector on your computer (marked “KYBD” or “KEYBOARD”).
7. Plug either end of the furnished audio cable into the audio jack on the Speaker Module. Plug the other end of the audio cable into the audio jack near the HP-HIL connector on your computer.
8. If you disconnected an HP-HIL device from the computer in step 2, reconnect it to the “two-dot” jack on the speaker module.
9. Keep these constraints in mind:
 - You cannot have more than 7 HP-HIL addressable devices connected to your computer at one time. The HP 46080A, 46081A, 46082A and 46082B Extension modules and the HP 46089A Four-Button Cursor do not count as addressable devices, and the HP 46085A Control Dials Module counts as *three* addressable devices. All other devices count as one addressable device.
 - The current requirements of all of your devices must not exceed 750 milliamps (mA). To make sure you do not exceed this requirement, total up the typical power required by each of your HP-HIL devices as given in the following “Worksheet Entries” sections. If the total exceeds 750 mA, you must remove one or more devices.

The Next Step

You have now installed your HP 46081A Speaker Module.

The following “Worksheet Entries” contain information needed to use your HP 46081A with various language/operating systems. Refer to the entries for the system you’ll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral. If you have installed all of your peripherals, refer to the *User’s Guide* that came with your operating/language system.



BASIC System Worksheet Entry

CAUTION

New devices added to the HP-HIL interface while the BASIC system is running will not be recognized until a SCRATCH A command is executed. Also, data received from the HP-HIL interface may be garbled if the order of devices is changed while the system is running.

Device Name	Device Selector	Digitizer Specifier	Power Req.
HP 46081A	-	-	17 mA

Pascal Workstation Worksheet Entry

CAUTION

Connecting or disconnecting HP-HIL devices while the Pascal Workstation is running may hang the system. The *only* times when you may safely connect or disconnect an HP-HIL device is when the system's power is off, or while the system's command line is being displayed and the time/date display (from the Version command) is not being displayed.

Device Name	Device Selector	Module Name	Power Req.
HP 46081A	-	-	17 mA

HP-UX System Worksheet Entries

NOTE

HP-HIL devices can be added to or removed from the HP-HIL interface without affecting the HP-UX operating system. However, if you are running an application which requires the use of a particular device and you remove the device from the link, open the link to the device, or open the link to add a new device, your application might not recognize the change and may not work as expected.

Device Name	Path Name	File Type	Major Number	Minor Number	Power Req.
HP 46081A	-	-	-	-	17 mA

Installing the HP 46082A/B Remote Extension Module

Description

The HP 46082A/B are used to extend the distance between HP-HIL devices and between monitors and their video interfaces. Both connect to your computer via the HP-HIL interface, and occupy no HP-HIL addresses.

Support

The HP 46082A/B are supported on Series 200 Model 217, 220 (with the optional HP-HIL interface installed) and Model 237 computers, and on all Series 300 computers.

Operating/Language systems support is as follows:

- **BASIC:** supported on revision 3.0 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** supported on revision 3.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.
- **HP-UX Operating System:** supported on revision 2.1 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.



HP 46082A/B Remote Extension Module Installation Procedure

NOTE

Connecting and disconnecting HP-HIL devices while some language/operating systems or application programs are running may lead to unpredictable results. When possible, connect all needed HP-HIL devices to your computer before booting a language/operating system or running an application program.

1. Install the Control Boxes.

- a. Select mounting locations for the control boxes. The control box near the computer must be within 500mm (1.64 feet) of the back of the computer.
- b. Remove the paper covering from the back of the fastener pads.
- c. Place the fastener pads at the selected locations and press down firmly for a few seconds.
- d. Slide the control boxes onto the fastener pads from the side.
- e. Twist the control boxes a few degrees to lock them onto the fastener pads.

2. Connect the Extension Module.

- a. Turn the computer off and check whether there is an existing HP-HIL cable connected to the "KYBD" (or "KEYBOARD") connector on the back of the computer. If so, disconnect it.
- b. Get the short HP-HIL cable. Find the end of this cable that is marked with one black dot.
- c. Look at the control module nearest the computer. Find the connector on the back of this control module that is marked with one dot.
- d. Plug the "one-dot" end of the short HP-HIL cable into the "one-dot" connector on the nearest control module.
- e. Connect the other, "two-dot" end of the short HP-HIL cable into the HP-HIL connector on your computer (marked "KYBD" or "KEYBOARD").

- f. Plug either end of the furnished audio cable into the audio jack on the same control module. Plug the other end of the audio cable into the audio jack near the HP-HIL connector on your computer.
- g. Plug either end of the extension cable into the control box nearest the computer.
- h. Plug the other end of the extension cable into the other (distant) control box.
- i. If you disconnected an HP-HIL device from the computer in step 2-a, reconnect it to the “two-dot” jack on the distant control box.
- j. Plug one end of each video cable into the corresponding video connector in the computer. The ends are interchangeable. Refer to the red, green and blue labels attached to the cables.
- k. Plug the other end of each video cable into the video input connectors on the monitor. Again refer to the color-coded labels attached to the cables.

3. Keep These Constraints In Mind:

- You cannot have more than 7 HP-HIL addressable devices connected to your computer at one time. The HP 46080A, 46081A, 46082A and 46082B Extension modules and the HP 46089A Four-Button Cursor do not count as addressable devices, and the HP 46085A Control Dials Module counts as *three* addressable devices. All other devices count as one addressable device.
- The current requirements of all of your devices must not exceed 750 milliamps (mA). To make sure you do not exceed this requirement, total up the typical power required by each of your HP-HIL devices as given in the following “Worksheet Entries” sections. If the total exceeds 750 mA, you must remove one or more devices.

The Next Step

You have now installed your HP 46082A/B Remote Extension Module.

The following “Worksheet Entries” contain information needed to use your HP 46082A/B with various language/operating systems. Refer to the entries for the system you’ll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral. If you have installed all of your peripherals, refer to the *User’s Guide* that came with your operating/language system.

BASIC System Worksheet Entry

CAUTION

New devices added to the HP-HIL interface while the BASIC system is running will not be recognized until a SCRATCH A command is executed. Also, data received from the HP-HIL interface may be garbled if the order of devices is changed while the system is running.

Device Name	Device Selector	Digitizer Specifier	Power Req.
HP 46082A/B	-	-	33 mA

Pascal Workstation Worksheet Entry

CAUTION

Connecting or disconnecting HP-HIL devices while the Pascal Workstation is running may hang the system. The *only* times when you may safely connect or disconnect an HP-HIL device is when the system's power is off, or while the system's command line is being displayed *and* the time/date display (from the Version command) is not being displayed.

Device Name	Device Selector	Module Name	Power Req.
HP 46082A/B	-	-	33 mA

HP-UX System Worksheet Entries

NOTE

HP-HIL devices can be added to or removed from the HP-HIL interface without affecting the HP-UX operating system. However, if you are running an application which requires the use of a particular device and you remove the device from the link, open the link to the device, or open the link to add a new device, your application might not recognize the change and may not work as expected.

Device Name	Path Name	File Type	Major Number	Minor Number	Power Req.
HP 46082A/B	-	-	-	-	33 mA

Installing the HP 46083A Rotary Control Knob

Description

The HP 46083A provides 2-axis relative cursor positioning via a rotary knob and 2-axis toggle button. It is best suited for text editing and spreadsheet applications. The HP 46083A connects to your computer via the HP-HIL interface.

Support

The HP 46083A Rotary Control Knob is supported on Series 200 Model 217, 220 (with the optional HP-HIL interface installed) and Model 237 computers, and on all Series 300 computers.

Operating/Language systems support is as follows:

- **BASIC:** supported on revision 3.0 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** supported on revision 3.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.
- **HP-UX Operating System:** supported on revision 5.1 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

HP 46083A Rotary Control Knob Installation Procedure

NOTE

Connecting and disconnecting HP-HIL devices while some language/operating systems or application programs are running may lead to unpredictable results. When possible, connect all needed HP-HIL devices to your computer before booting a language/operating system or running an application program.

1. Find the HP-HIL cable that came with the rotary control knob.
2. Find the end of the cable that is marked with one black dot.
3. Find the HP-HIL connector on the rotary control knob that is marked with one dot.

4. Plug the “one-dot” end of the cable into the “one-dot” connector on the rotary control knob.
5. Connect the other, “two-dot” end of the cable into the HP-HIL connector on your computer (marked “KYBD” or “KEYBOARD”), or to the “two-dot” connector of the last HP-HIL device you installed (e.g. keyboard).
6. Keep these constraints in mind:
 - You cannot have more than 7 HP-HIL addressable devices connected to your computer at one time. The HP 46080A, 46081A, 46082A and 46082B Extension modules and the HP 46089A Four-Button Cursor do not count as addressable devices, and the HP 46085A Control Dials Module counts as *three* addressable devices. All other devices count as one addressable device.
 - The current requirements of all of your devices must not exceed 750 milliamps (mA). To make sure you do not exceed this requirement, total up the typical power required by each of your HP-HIL devices as given in the following “Worksheet Entries” sections. If the total exceeds 750 mA, you must remove one or more devices.

The Next Step

You have now installed your HP 46083A Rotary Control Knob.

The following “Worksheet Entries” contain information needed to use your rotary control knob with various language/operating systems. Refer to the entries for the system you’ll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral. If you have installed all of your peripherals, refer to the *User’s Guide* that came with your operating/language system.

BASIC System Worksheet Entry

CAUTION

New devices added to the HP-HIL interface while the BASIC system is running will not be recognized until a SCRATCH A command is executed. Also, data received from the HP-HIL interface may be garbled if the order of devices is changed while the system is running.

Device Name	Device Selector	Digitizer Specifier	Power Req.
HP 46083A	KBD	"KBD"	73 mA



Pascal Workstation Worksheet Entry

CAUTION

Connecting or disconnecting HP-HIL devices while the Pascal Workstation is running may hang the system. The *only* times when you may safely connect or disconnect an HP-HIL device is when the system's power is off, or while the system's command line is being displayed *and* the time/date display (from the Version command) is not being displayed.

Device Name	Device Selector	Module Name	Power Req.
HP 46083A	2	HPHIL & MOUSE	73 mA

HP-UX System Worksheet Entries

NOTE

HP-HIL devices can be added to or removed from the HP-HIL interface without affecting the HP-UX operating system. However, if you are running an application which requires the use of a particular device and you remove the device from the link, open the link to the device, or open the link to add a new device, your application might not recognize the change and may not work as expected.

Device Name	Path Name	File Type	Major Number	Minor ¹ Number	Power Req.
HP 46083A	<i>/dev/r8042</i>	c	23	0x000000	73 mA
HP 46083A	<i>/dev/knob</i>	c	24	0x000020	

¹ The second minor number in the table assumes the rotary control knob is the second device on the HP-HIL interface (address=2). If this is not the case, substitute the correct position (address) of the rotary control knob in place of the **2** in the minor number (e.g., if the rotary control knob is the third device on the interface, the minor number would be 0x000030).

Installing the HP 46084A ID Module

Description

The HP 46084A ID Module contains a unique, machine-readable serial number required by software which uses HP's "Codeword Delivery" security scheme (e.g., HP 98305A HP EGS), or software which is customized to an HP 46084A. It connects to your computer via the HP-HIL interface.

Support

The HP 46084A ID Module is supported on Series 200 Model 217, 220 (with the optional HP-HIL interface installed) and Model 237 computers, and on all Series 300 computers.

Operating/Language systems support is as follows:

- **BASIC:** supported on revision 3.0 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** supported only at a special time and materials charge. Contact your HP Sales and Service office for details.
- **HP-UX Operating System:** supported on revision 5.1 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

HP 46084A ID Module Installation Procedure

NOTE

Connecting and disconnecting HP-HIL devices while some language/operating systems or application programs are running may lead to unpredictable results. When possible, connect all needed HP-HIL devices to your computer before booting a language/operating system or running an application program.

1. Find the HP-HIL cable that came with the ID Module.
2. Find the end of the cable that is marked with one black dot.
3. Find the HP-HIL connector on the ID Module that is marked with one dot.
4. Plug the “one-dot” end of the cable into the “one-dot” connector on the ID Module.
5. Connect the other, “two-dot” end of the cable into the HP-HIL connector on your computer (marked “KYBD” or “KEYBOARD”), or to the “two-dot” connector of the last HP-HIL device you installed (e.g. keyboard).
6. Keep these constraints in mind:
 - You cannot have more than 7 HP-HIL addressable devices connected to your computer at one time. The HP 46080A, 46081A, 46082A and 46082B Extension modules and the HP 46089A Four-Button Cursor do not count as addressable devices, and the HP 46085A Control Dials Module counts as *three* addressable devices. All other devices count as one addressable device.
 - The current requirements of all of your devices must not exceed 750 milliamps (mA). To make sure you do not exceed this requirement, total up the typical power required by each of your HP-HIL devices as given in the following “Worksheet Entries” sections. If the total exceeds 750 mA, you must remove one or more devices.

The Next Step

You have now installed your HP 46084A ID Module.

The following "Worksheet Entries" contain information needed to use your ID Module with various language/operating systems. Refer to the entries for the system you'll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you'll be ready to install your next peripheral. If you have installed all of your peripherals, refer to the *User's Guide* that came with your operating/language system.

BASIC System Worksheet Entry

NOTE

To read the ID Module, execute this command:

```
SYSTEM$("SERIAL NUMBER")
```

CAUTION

New devices added to the HP-HIL interface while the BASIC system is running will not be recognized until a SCRATCH A command is executed. Also, data received from the HP-HIL interface may be garbled if the order of devices is changed while the system is running.

Device Name	Device Selector	Digitizer Specifier	Power Req.
HP 46084A	-	-	40 mA



Pascal Workstation Worksheet Entry

CAUTION

Connecting or disconnecting HP-HIL devices while the Pascal Workstation is running may hang the system. The *only* times when you may safely connect or disconnect an HP-HIL device is when the system's power is off, or while the system's command line is being displayed *and* the time/date display (from the Version command) is not being displayed.

NOTE

Pascal Workstation support is available only at a special time and materials charge. Contact your HP Sales and Service office for details.

HP-UX System Worksheet Entries

NOTE

HP-HIL devices can be added to or removed from the HP-HIL interface without affecting the HP-UX operating system. However, if you are running an application which requires the use of a particular device and you remove the device from the link, open the link to the device, or open the link to add a new device, your application might not recognize the change and may not work as expected.

Device Name	Path Name	File Type	Major Number	Minor ¹ Number	Power Req.
HP 46084A	<i>/dev/r8042</i>	c	23	0x000000	40 mA
HP 46084A	<i>/dev/security</i>	c	24	0x000020	

¹ The second minor number in the table assumes the ID Module is the second device on the HP-HIL interface (address=2). If this is not the case, substitute the correct position (address) of the ID Module in place of the **2** in the minor number (e.g., if the ID Module is the third device on the interface, the minor number would be 0x000030).

Installing the HP 46085A Control Dials Module

Description

The HP 46085A Control Dials Module provides nine graphics positioning devices, implemented as three 3-axis devices. The control dials module is commonly used in graphics display applications to provide 3-axis attitude, 3-axis translation, scaling and other attribute functions. It connects to your computer via the HP-HIL interface and occupies 3 addresses.

Support

The HP 46085A Control Dials Module is supported on all Series 300 computers.

Operating/Language systems support is as follows:

- **BASIC:** not supported.
- **Pascal Workstation:** not supported.
- **HP-UX Operating System:** supported on revision 5.0 or later with Series 300 computers.

HP 46085A Control Dials Module Installation Procedure

NOTE

Connecting and disconnecting HP-HIL devices while some language/operating systems or application programs are running may lead to unpredictable results. When possible, connect all needed HP-HIL devices to your computer before booting a language/operating system or running an application program.

1. Find the HP-HIL cable that came with the control dials module.
2. Find the end of the cable that is marked with one black dot.
3. Find the HP-HIL connector on the control dials module that is marked with one dot.
4. Plug the "one-dot" end of the cable into the "one-dot" connector on the control dials module.

5. Connect the other, “two-dot” end of the cable into the HP-HIL connector on your computer (marked “KYBD” or “KEYBOARD”), or to the “two-dot” connector of the last HP-HIL device you installed (e.g. keyboard).
6. Keep these constraints in mind:
 - You cannot have more than 7 HP-HIL addressable devices connected to your computer at one time. The HP 46080A, 46081A, 46082A and 46082B Extension modules and the HP 46089A Four-Button Cursor do not count as addressable devices, and the HP 46085A Control Dials Module counts as *three* addressable devices. All other devices count as one addressable device.
 - The current requirements of all of your devices must not exceed 750 milliamps (mA). To make sure you do not exceed this requirement, total up the typical power required by each of your HP-HIL devices as given in the following “Worksheet Entries” sections. If the total exceeds 750 mA, you must remove one or more devices.

The Next Step

You have now installed your HP 46085A Control Dials Module.

The following “Worksheet Entries” contain information needed to use your control dials module with HP-UX.

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral. If you have installed all of your peripherals, refer to the *User’s Guide* that came with your HP-UX operating system.



HP-UX System Worksheet Entries

NOTE

HP-HIL devices can be added to or removed from the HP-HIL interface without affecting the HP-UX operating system. However, if you are running an application which requires the use of a particular device and you remove the device from the link, open the link to the device, or open the link to add a new device, your application might not recognize the change and may not work as expected.

Device Name	Path Name	File Type	Major Number	Minor ¹ Number	Power Req.
HP 46085A	<i>/dev/r8042</i>	c	23	0x000000	213mA
HP 46085A	<i>/dev/dial.top</i>	c	24	0x000020	
HP 46085A	<i>/dev/dial.mid</i>	c	24	0x000030	
HP 46085A	<i>/dev/dial.bot</i>	c	24	0x000040	

¹ The second, third and fourth minor numbers in the table assume the control dials module is the second device on the HP-HIL interface, thus occupying addresses 2, 3 and 4. If this is not the case, substitute the correct position (address) of the control dials module in place of the **2** in the second minor number, and change the third and fourth minor numbers accordingly (e.g., if the device is the fourth device on the interface, the last three minor numbers would be 0x000040, 0x000050 and 0x000060, respectively).

Installing the HP 46086A Button Box

Description

The HP 46086A Button Box provides 32 user-definable buttons for menu selection, and one user-programmable LED. Buttons can be labeled with defined functions, freeing the display for other uses. It includes one pre-printed and two blank overlays, and connects to your computer via the HP-HIL interface.

Support

The HP 46086A Button Box is supported on all Series 300 computers.

Operating/Language systems support is as follows:

- **BASIC:** not supported.
- **Pascal Workstation:** not supported.
- **HP-UX Operating System:** supported on revision 5.0 or later with Series 300 computers.

HP 46086A Button Box Installation Procedure

NOTE

Connecting and disconnecting HP-HIL devices while some language/operating systems or application programs are running may lead to unpredictable results. When possible, connect all needed HP-HIL devices to your computer before booting a language/operating system or running an application program.

1. Find the HP-HIL cable that came with the button box.
2. Find the end of the cable that is marked with one black dot.
3. Find the HP-HIL connector on the button box that is marked with one dot.
4. Plug the "one-dot" end of the cable into the "one-dot" connector on the button box.

5. Connect the other, “two-dot” end of the cable into the HP-HIL connector on your computer (marked “KYBD” or “KEYBOARD”), or to the “two-dot” connector of the last HP-HIL device you installed (e.g. keyboard).
6. Keep these constraints in mind:
 - You cannot have more than 7 HP-HIL addressable devices connected to your computer at one time. The HP 46080A, 46081A, 46082A and 46082B Extension modules and the HP 46089A Four-Button Cursor do not count as addressable devices, and the HP 46085A Control Dials Module counts as *three* addressable devices. All other devices count as one addressable device.
 - The current requirements of all of your devices must not exceed 750 milliamps (mA). To make sure you do not exceed this requirement, total up the typical power required by each of your HP-HIL devices as given in the following “Worksheet Entries” sections. If the total exceeds 750 mA, you must remove one or more devices.

The Next Step

You have now installed your HP 46086A Button Box.

The following “Worksheet Entries” contain information needed to use your button box with HP-UX.

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral. If you have installed all of your peripherals, refer to the *User’s Guide* that came with your HP-UX operating system.

HP-UX System Worksheet Entries

NOTE

HP-HIL devices can be added to or removed from the HP-HIL interface without affecting the HP-UX operating system. However, if you are running an application which requires the use of a particular device and you remove the device from the link, open the link to the device, or open the link to add a new device, your application might not recognize the change and may not work as expected.

Device Name	Path Name	File Type	Major Number	Minor ¹ Number	Power Req.
HP 46086A	<i>/dev/r8042</i>	c	23	0x000000	53 mA
HP 46086A	<i>/dev/buttons</i>	c	24	0x000020	

¹ The second minor number in the table assumes the button box is the second device on the HP-HIL interface (address=2). If this is not the case, substitute the correct position (address) of the button box in place of the **2** in the minor number (e.g., if the button box is the third device on the interface, the minor number would be 0x000030).

Installing the HP 46087/88A Digitizers and HP 46089A Cursor

Description

The HP 46087A and 46088A are low-cost, high-resolution digitizers suitable for menu/object picking, free-hand graphics entry and digitizing. The HP 46087A is ANSI A/ISO A4 size. The HP 46088A is ANSI B/ISO A3. Both digitizers include a stylus with tip switch and a platen overlay. Both digitizers connect to your computer via the HP-HIL interface.

The HP 46089A four-button, cross-hair cursor is available separately or as digitizer Option 001. The cursor is recommended for digitizing existing drawings, artwork or other hard-copy images. It uses no additional power and occupies no HP-HIL addresses.

Support

The HP 46087/88/89A are supported on Series 200 Model 217 and 237 computers, and on all Series 300 computers.

Operating/Language systems support is as follows:

- **BASIC:** supported on revision 4.0 or later with both Series 200 and Series 300 computers.
- **Pascal Workstation:** supported on revision 3.1 or later with both Series 200 and Series 300 computers.
- **HP-UX Operating System:** supported on revision 5.1 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

HP 46087/88A Digitizer and HP 46089A Cursor Installation Procedure

NOTE

Connecting and disconnecting HP-HIL devices while some language/operating systems or application programs are running may lead to unpredictable results. When possible, connect all needed HP-HIL devices to your computer before booting a language/operating system or running an application program.

1. Find the HP-HIL cable that came with the digitizer.
2. Find the end of the cable that is marked with one black dot.
3. Find the HP-HIL connector on the digitizer that is marked with one dot.
4. Plug the “one-dot” end of the cable into the “one-dot” connector on the digitizer.
5. Connect the other, “two-dot” end of the cable into the HP-HIL connector on your computer (marked “KYBD” or “KEYBOARD”), or to the “two-dot” connector of the last HP-HIL device you installed (e.g. keyboard).
6. Plug the stylus or HP 46089A Cursor into the round connector on the digitizer.
7. Keep these constraints in mind:
 - You cannot have more than 7 HP-HIL addressable devices connected to your computer at one time. The HP 46080A, 46081A, 46082A and 46082B Extension modules and the HP 46089A Four-Button Cursor do not count as addressable devices, and the HP 46085A Control Dials Module counts as *three* addressable devices. All other devices count as one addressable device.
 - The current requirements of all of your devices must not exceed 750 milliamps (mA). To make sure you do not exceed this requirement, total up the typical power required by each of your HP-HIL devices as given in the following “Worksheet Entries” sections. If the total exceeds 750 mA, you must remove one or more devices.

The Next Step

You have now installed your HP 46087/88 Digitizer and your HP 46089A Cursor.

The following "Worksheet Entries" contain information needed to use your digitizer with various language/operating systems. Refer to the entries for the system you'll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you'll be ready to install your next peripheral. If you have installed all of your peripherals, refer to the *User's Guide* that came with your operating/language system.

BASIC System Worksheet Entry

CAUTION

New devices added to the HP-HIL interface while the BASIC system is running will not be recognized until a SCRATCH A command is executed. Also, data received from the HP-HIL interface may be garbled if the order of devices is changed while the system is running.

Device Name	Device Selector	Digitizer Specifier	Power Req.
HP 46087/88/89A	KBD	"TABLET"	133 mA

Pascal Workstation Worksheet Entry

CAUTION

Connecting or disconnecting HP-HIL devices while the Pascal Workstation is running may hang the system. The *only* times when you may safely connect or disconnect an HP-HIL device is when the system's power is off, or while the system's command line is being displayed *and* the time/date display (from the Version command) is not being displayed.

Device Name	Device Selector	Module Name	Power Req.
HP 46087/88/89A	201	HPHIL & DGL_ABS	133 mA

HP-UX System Worksheet Entries

NOTE

HP-HIL devices can be added to or removed from the HP-HIL interface without affecting the HP-UX operating system. However, if you are running an application which requires the use of a particular device and you remove the device from the link, open the link to the device, or open the link to add a new device, your application might not recognize the change and may not work as expected.

Device Name	Path Name	File Type	Major Number	Minor ¹ Number	Power Req.
HP 46087/88/89A	<i>/dev/r8042</i>	c	23	0x000000	133 mA
HP 46087/88/89A	<i>/dev/digitizer</i>	c	24	0x000020	

¹ The second minor number in the table assumes the digitizer is the second device on the HP-HIL interface (address=2). If this is not the case, substitute the correct position (address) of the digitizer in place of the **2** in the minor number (e.g., if the digitizer is the third device on the interface, the minor number would be 0x000030).

Installing the HP 46094A Quadrature Port

Description

The HP 46094A Quadrature Port is used to connect an off-the-shelf three-button mouse or other compatible device to the HP-HIL interface.

Support

Check with your local HP Sales and Service office for support information.

HP 46094A Quadrature Port Installation Procedure

NOTE

Connecting and disconnecting HP-HIL devices while some language/operating systems or application programs are running may lead to unpredictable results. When possible, connect all needed HP-HIL devices to your computer before booting a language/operating system or running an application program.

1. Select a suitable mounting location for the quadrature port. Remove the paper backing from the back of the fastener pad. Place the pad at the location and press down firmly for a few seconds. Slide the module unit onto the fastener pad from the side and twist the module unit a few degrees to lock it onto the fastener pad.
2. Find the end of the HP-HIL cable that is marked with one black dot.
3. Find the connector on the back of the quadrature port that is marked with one dot.
4. Plug the "one-dot" end of the cable into the "one-dot" connector on the quadrature port.
5. Connect the other, "two-dot" end of the cable into the HP-HIL connector on your computer (marked "KYBD" or "KEYBOARD"), or to the "two-dot" connector of the last HP-HIL device you installed (e.g., keyboard).
6. Connect the 3-button mouse (or other compatible device) to the 9-pin D-subminiature connector on the quadrature port and fasten the two screws with a screwdriver.

7. Keep these constraints in mind:

- You cannot have more than 7 HP-HIL addressable devices connected to your computer at one time. The HP 46080A, 46081A, 46082A and 46082B Extension modules and the HP 46089A Four-Button Cursor do not count as addressable devices, and the HP 46085A Control Dials Module counts as *three* addressable devices. All other devices count as one addressable device.
- The current requirements of all of your devices must not exceed 750 milliamps (mA). To make sure you do not exceed this requirement, total up the typical power required by each of your HP-HIL devices as given in the following “Worksheet Entries” sections. If the total exceeds 750 mA, you must remove one or more devices.

The Next Step

You have now installed your HP 46094A Quadrature Port.

The following “Worksheet Entries” contain information needed to use your HP 46094A with various language/operating systems. Refer to the entries for the system you’ll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral. If you have installed all of your peripherals, refer to the *User’s Guide* that came with your operating/language system.

BASIC System Worksheet Entry

CAUTION

New devices added to the HP-HIL interface while the BASIC system is running will not be recognized until a SCRATCH A command is executed. Also, data received from the HP-HIL interface may be garbled if the order of devices is changed while the system is running.

Device Name	Device Selector	Digitizer Specifier	Power Req.
HP 46094A	KBD	"KBD"	125 mA

Pascal Workstation Worksheet Entry

CAUTION

Connecting or disconnecting HP-HIL devices while the Pascal Workstation is running may hang the system. The *only* times when you may safely connect or disconnect an HP-HIL device is when the system's power is off, or while the system's command line is being displayed *and* the time/date display (from the Version command) is not being displayed.

Device Name	Device Selector	Module Name	Power Req.
HP 46094A	2	HPHIL & MOUSE	125 mA



HP-UX System Worksheet Entries

NOTE

HP-HIL devices can be added to or removed from the HP-HIL interface without affecting the HP-UX operating system. However, if you are running an application which requires the use of a particular device and you remove the device from the link, open the link to the device, or open the link to add a new device, your application might not recognize the change and may not work as expected.

Device Name	Path Name	File Type	Major Number	Minor ¹ Number	Power Req.
HP 46094A	<i>/dev/r8042</i>	c	23	0x000000	125 mA
HP 46094A	<i>/dev/quad</i>	c	24	0x000020	

¹ The second minor number in the table assumes the quadrature port is the second device on the HP-HIL interface (address=2). If this is not the case, substitute the correct position (address) of the quadrature port in place of the **2** in the minor number (e.g., if the quadrature port is the third device on the interface, the minor number would be 0x000030).

Installing the HP 6944A Multiprogrammer

Description

The HP 6944A Multiprogrammer connects to your computer via the HP 98633A Interface.

Support

The HP 6944A Multiprogrammer is supported on Series 200 Model 216, 220, 226, 236 and 237 computers.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 2.1 or later with Series 200 computers, but only with the HP 14752A Multiprogrammer software pack.
- **Pascal Workstation:** not supported.
- **HP-UX Operating System:** not supported.

Before You Begin

The following procedure describes how to connect the HP 6944A Multiprogrammer to your computer. Before you do this, however, refer to the manual that came with the multiprogrammer to:

- Unpack the multiprogrammer.
- Check the line voltage label and fuses.

HP 6944A Multiprogrammer Installation Procedure

1. Turn your computer off.
2. Set the frame address switch, located on the back of the multiprogrammer.
 - If you have only one HP 6944A Multiprogrammer on each HP 98633A Interface, do nothing—the frame address is already set properly (to 0).
 - If you have more than one HP 6944A Multiprogrammer on each HP 98633A Interface, use a small screw driver to set the Frame Address Switch of each multiprogrammer to a different value.
3. Check the Logic Ground Switch.
 - If you have only one HP 6944A Multiprogrammer on each HP 98633A Interface, do nothing.
 - If you have more than one HP 6944A Multiprogrammer on each HP 98633A Interface, refer to the multiprogrammer's installation manual for instructions on setting the Logic Ground Switch.
4. Insert all I/O cards into the multiprogrammer. Record the following information for each card:
 - Card type and model number
 - Frame address of the multiprogrammer in which the card is installed.
 - Slot address (0-15) of the card.
 - The purpose of the card in the application.
5. Connect the multiprogrammer interface cable from the HP 98633A Interface connector to the BUS IN connector in the multiprogrammer, and install the termination plug in the BUS OUT connector. If connecting more than one multiprogrammer in a link, connect the next interface cable from the BUS OUT connector in the previous multiprogrammer to the BUS IN connector of the next multiprogrammer.
6. Connect the power cord to the multiprogrammer and plug it into the power outlet.

The Next Step

You have now installed your multiprogrammer.

The following "Worksheet Entry" contains information needed to use your multiprogrammer with BASIC.

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you'll be ready to install your next peripheral. If you have installed all of your peripherals, refer to the *User's Guide* that came with your operating/language system.



BASIC System Worksheet Entry

Device Name	Device Selector ¹
HP 6944A	29

¹ If you changed the select code of the HP 98633A Multiprogrammer Interface, write in the new select code instead of 29.

Installing the HP 92205A/C Hayes Smartmodem 1200

Description

The HP 92205A/C Hayes *Smartmodem 1200* connects to your computer via an RS-232C interface.

Support

The HP 92205A/C Hayes *Smartmodem 1200* is supported on Series 200 Model 217, 220, 226, 236 and 237 computers, and on all Series 300 computers.

Operating/Language system support is as follows:

- **BASIC:** supported on revision 2.1 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** supported on revision 3.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers. Support requires user-written software or a terminal emulator software package.
- **HP-UX Operating System:** supported on revision 2.1 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

Before You Begin

The following procedure describes how to connect the *Smartmodem 1200* to your computer. Before you do this, however, refer to the manual that came with the modem to:

- Unpack the modem.
- Contact the telephone company.

Smartmodem 1200 Installation Procedure

1. **Play It Safe.**
 - a. Turn your computer and modem off, if they are not already off.
2. **Connect the Telephone Cable.**
 - a. With the gold contacts up, plug one end of the modular telephone cable into the telephone connector on the back of the modem.
 - b. Insert the remaining end of the telephone cable into a telephone wall jack.
3. **Select Your Interface and Cable.**
 - a. The modem can be connected to any of the following RS-232C interfaces:
 - Series 200 Model 216 or 217 built-in “Data Communications” interface—use an HP 5061-4215 DTE cable.
 - Series 300 built-in RS-232C interface—use an HP 13242N or 92221M cable.
 - HP 98626A RS-232C Interface—use an HP 5061-4215 (Option 001 DTE) cable.
 - HP 98628A Datacomm Interface—use an HP 5061-4215 (Option 001 DTE) cable.
 - HP 98642A 4-Channel Multiplexer Interface, port 0 (HP-UX only)—use an HP 92219S, 92218A or 92222M cable. Ports 1, 2 and 3 are not recommended for use with the modem.
 - HP 98644A RS-232C Serial Interface—use an HP 13242N, 92218A or 92222M cable.
4. **Connect the Modem to Your Computer.**
 - a. Connect the cable between the modem and the interface.
5. **Connect the Power Cord.**
 - a. Connect the power cord into the power connector on the back of the modem, and plug the other end into your power outlet.

The Next Step

You have now installed your modem.

The following “Worksheet Entries” contain information needed to use your modem with various language/operating systems. Refer to the entries for the system you’ll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral. If you have installed all of your peripherals, refer to the *User’s Guide* that came with your operating/language system.

BASIC System Worksheet Entries

IMPORTANT!

If you have connected the modem to a Series 300 built-in or HP 98644A Interface, execute the following statement before using the modem to set the baud rate of the interface to 1200:

```
CONTROL 9,13;1200
```

This statement assumes an interface select code of 9. If your select code is different, substitute your select code for 9 in the statement above.

Additional programming of interface registers may be required before communication can proceed. Consult your *BASIC Interfacing Techniques* manual for details.

Device Name	Device Selector ¹
<i>Smartmodem 1200</i>	9

¹ If you connected your modem to an interface with a select code other than 9, write in your select code instead of 9.

Pascal Workstation Worksheet Entry

Device Name	Device Selector ¹
Smartmodem 1200	9

HP-UX System Worksheet Entries

**If You Connected the Modem to a Model 216, Model 217,
or Series 300 Built-in Interface (Select Code 9)...**

Device Name	Path Name ²	File Type	Major No.	Minor No.
Smartmodem	/dev/tty02	c	1	0x090000
Smartmodem	/dev/cua02	c	1	0x090001
Smartmodem	/dev/cul02	c	1	0x090001



¹ If you connected your modem to an interface with a select code other than 9, write in your select code instead of 9.

² The path names given here assume this is the second terminal or modem you are connecting (i.e., *tty02*). If this is not the case, change the path names accordingly (e.g., */dev/tty03* for the third modem, etc.).

HP-UX System Worksheet Entries (Cont.)

If You Connected the Modem to an HP 98626A, 98628A, 98642A or 98644A Interface (Select Code 9, 10, 13, 15, 16, 17, 19 or 20)...

Device Name	Path Name ¹	File Type	Major No.	Minor No.
Smartmodem, select code 9	/dev/tty02	c	1	0x090000
Smartmodem, select code 9	/dev/cua02	c	1	0x090001
Smartmodem, select code 9	/dev/cul02	c	1	0x090001
Smartmodem, select code 10	/dev/tty02	c	1	0x0a0000
Smartmodem, select code 10	/dev/cua02	c	1	0x0a0001
Smartmodem, select code 10	/dev/cul02	c	1	0x0a0001
Smartmodem, select code 13	/dev/tty02	c	1	0x0d0000
Smartmodem, select code 13	/dev/cua02	c	1	0x0d0001
Smartmodem, select code 13	/dev/cul02	c	1	0x0d0001
Smartmodem, select code 15	/dev/tty02	c	1	0x0f0000
Smartmodem, select code 15	/dev/cua02	c	1	0x0f0001
Smartmodem, select code 15	/dev/cul02	c	1	0x0f0001
Smartmodem, select code 16	/dev/tty02	c	1	0x100000
Smartmodem, select code 16	/dev/cua02	c	1	0x100001
Smartmodem, select code 16	/dev/cul02	c	1	0x100001
Smartmodem, select code 17	/dev/tty02	c	1	0x110000
Smartmodem, select code 17	/dev/cua02	c	1	0x110001
Smartmodem, select code 17	/dev/cul02	c	1	0x110001
Smartmodem, select code 19	/dev/tty02	c	1	0x130000
Smartmodem, select code 19	/dev/cua02	c	1	0x130001
Smartmodem, select code 19	/dev/cul02	c	1	0x130001
Smartmodem, select code 20	/dev/tty02	c	1	0x140000
Smartmodem, select code 20	/dev/cua02	c	1	0x140001
Smartmodem, select code 20	/dev/cul02	c	1	0x140001

¹ The path names given here assume this is the second terminal or modem you are connecting (i.e., *tty02*). If this is not the case, change the path names accordingly (e.g., */dev/tty03* for the third modem, etc.).

Installing the HP 92916A Bar Code Reader

Description

The HP 92916A is a general-purpose bar code reader. It connects to your computer via the HP-HIL interface.

Support

The HP 92916A bar code reader is supported on Series 200 Model 217, 220 and 237 computers, and on all Series 300 computers.

Operating/Language systems support is as follows:

- **BASIC:** supported on revision 3.0 or later with Series 200 computers; supported on revision 4.0 or later with Series 300 computers.
- **Pascal Workstation:** supported on revision 3.0 or later with Series 200 computers; supported on revision 3.1 or later with Series 300 computers.
- **HP-UX Operating System:** supported on revision 2.1 or later with Series 200 computers; supported on revision 5.0 or later with Series 300 computers.

HP 92916A Bar Code Reader Installation Procedure

NOTE

Connecting and disconnecting HP-HIL devices while some language/operating systems or application programs are running may lead to unpredictable results. When possible, connect all needed HP-HIL devices to your computer before booting a language/operating system or running an application program.

1. Find the HP-HIL cable that came with the bar code reader.
2. Find the end of the cable that is marked with one black dot.
3. Find the HP-HIL connector on the bar code reader that is marked with one dot.

4. Plug the “one-dot” end of the cable into the “one-dot” connector on the bar code reader.
5. Connect the other, “two-dot” end of the cable into the HP-HIL connector on your computer (marked “KYBD” or “KEYBOARD”), or to the “two-dot” connector of the last HP-HIL device you installed (e.g. keyboard).

IMPORTANT!

Connect your HP 46020/21 keyboard to the HP-HIL interface before connecting the bar code reader. The keyboard must be “upstream” from the bar code reader in the chain of HP-HIL devices.

6. Connect the wand to the bar code reader.
7. Set the Configuration Switches:
 - a. Set the code selection switches, 1 through 3, according to your application:

Definition	Switch 1	Switch 2	Switch 3
Interleaved 2/5	0	0	1
Codabar ABC	0	1	0
Codabar USD-4	0	1	1
UPC/EAN/JAN	1	0	0
Code 39	1	0	1

- b. Set the transmission type switch, 4, to “Keycode” by setting it to **1**.
- c. Set the keyboard selection switches, 5 through 8, according to which keyboard you have. Set all switches to **0** for a US ASCII keyboard. Refer to the manual that came with your bar code reader for additional settings.
- d. Set the appended control switches, 9 and 10, to select Return by setting switch 9 to **0** and switch 10 to **1**.
- e. Set the check digit switch, 11, to off (**0**) or on (**1**) depending on your application. This switch has no meaning in UPC/EAN applications.
- f. Set the field length check switches, 12 through 16, to off (all **0**) unless your application requires a different setting.

8. Keep these constraints in mind:

- You cannot have more than 7 HP-HIL addressable devices connected to your computer at one time. The HP 46080A, 46081A, 46082A and 46082B Extension modules and the HP 46089A Four-Button Cursor do not count as addressable devices, and the HP 46085A Control Dials Module counts as *three* addressable devices. All other devices count as one addressable device.
- The current requirements of all of your devices must not exceed 750 milliamps (mA). To make sure you do not exceed this requirement, total up the typical power required by each of your HP-HIL devices as given in the following “Worksheet Entries” sections. If the total exceeds 750 mA, you must remove one or more devices.

The Next Step

You have now installed your HP 92916A Bar Code Reader.

The following “Worksheet Entries” contain information needed to use your bar code reader with various language/operating systems. Refer to the entries for the system you’ll be using (BASIC, Pascal or HP-UX).

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you’ll be ready to install your next peripheral. If you have installed all of your peripherals, refer to the *User’s Guide* that came with your operating/language system.

BASIC System Worksheet Entry

CAUTION

New devices added to the HP-HIL interface while the BASIC system is running will not be recognized until a SCRATCH A command is executed. Also, data received from the HP-HIL interface may be garbled if the order of devices is changed while the system is running.

Device Name	Device Selector	Digitizer Specifier	Power Req.
HP 92916A	-	-	133 mA

Pascal Workstation Worksheet Entry

CAUTION

Connecting or disconnecting HP-HIL devices while the Pascal Workstation is running may hang the system. The *only* times when you may safely connect or disconnect an HP-HIL device is when the system's power is off, or while the system's command line is being displayed *and* the time/date display (from the Version command) is not being displayed.

Device Name	Device Selector	Module Name	Power Req.
HP 92916A	-	-	133 mA



HP-UX System Worksheet Entries

NOTE

HP-HIL devices can be added to or removed from the HP-HIL interface without affecting the HP-UX operating system. However, if you are running an application which requires the use of a particular device and you remove the device from the link, open the link to the device, or open the link to add a new device, your application might not recognize the change and may not work as expected.

Device Name	Path Name	File Type	Major Number	Minor ¹ Number	Power Req.
HP 92916A	<i>/dev/r8042</i>	c	23	0x000000	133 mA
HP 92916A	<i>/dev/wand</i>	c	24	0x000020	

¹ The second minor number in the table assumes the bar code reader is the second device on the HP-HIL interface (address=2). If this is not the case, substitute the correct position (address) of the bar code reader in place of the **2** in the minor number (e.g., if the bar code reader is the third device on the interface, the minor number would be 0x000030).

Installing the HP 9884A Paper Tape Punch

Description

The HP 9884A Paper Tape Punch punches paper mylar or plastic tape at speeds up to 75 characters/second. It connects to your computer via the HP 98622A GPIO Interface.

Support

The HP 9884A Paper Tape Punch is supported on Series 200 Model 217, 220, 226, 236 and 237 computers.

Operating/Language system support is as follows:

- **BASIC:** not supported.
- **Pascal Workstation:** supported on revision 3.0 or later with Series 200 computers. Requires user-written software of the HP EGS/200 98310A Photoplotter/NC Drill utility.
- **HP-UX Operating System:** not supported.

Before You Begin

The following procedure describes how to connect the Paper Tape Punch to your computer. Before you do this, however, refer to the manual that came with the modem to:

- Unpack the paper tape punch.

Paper Tape Punch Installation Procedure

1. **Play It Safe.**
 - a. Turn your computer and paper tape punch off, if they are not already off.
2. **Connect the Paper Tape Punch to Your Computer.**
 - a. Connect the paper tape punch cable (HP 5060-1854) to the socket on the rear of the paper tape punch.
 - b. Connect the other end of the cable to the GPIO Interface.
5. **Connect the Power Cord.**
 - a. Insert the power cord into the power connector on the back of the paper tape punch, and plug the other end into your power outlet.

The Next Step

You have now installed your paper tape punch.

The following “Worksheet Entry” contains information needed to use your paper tape punch with the Pascal Workstation.

Copy this information to a worksheet (worksheets are found at the end of Step 1) or remember to refer here when you need it.

When finished, you'll be ready to install your next peripheral. If you have installed all of your peripherals, refer to the *User's Guide* that came with your operating/language system.

Pascal Workstation Worksheet Entry

Device Name	Device Selector ¹
HP 9884A	12

¹ If you connected your paper tape punch to a GPIO interface with a select code other than 12, write in your select code instead of 12.