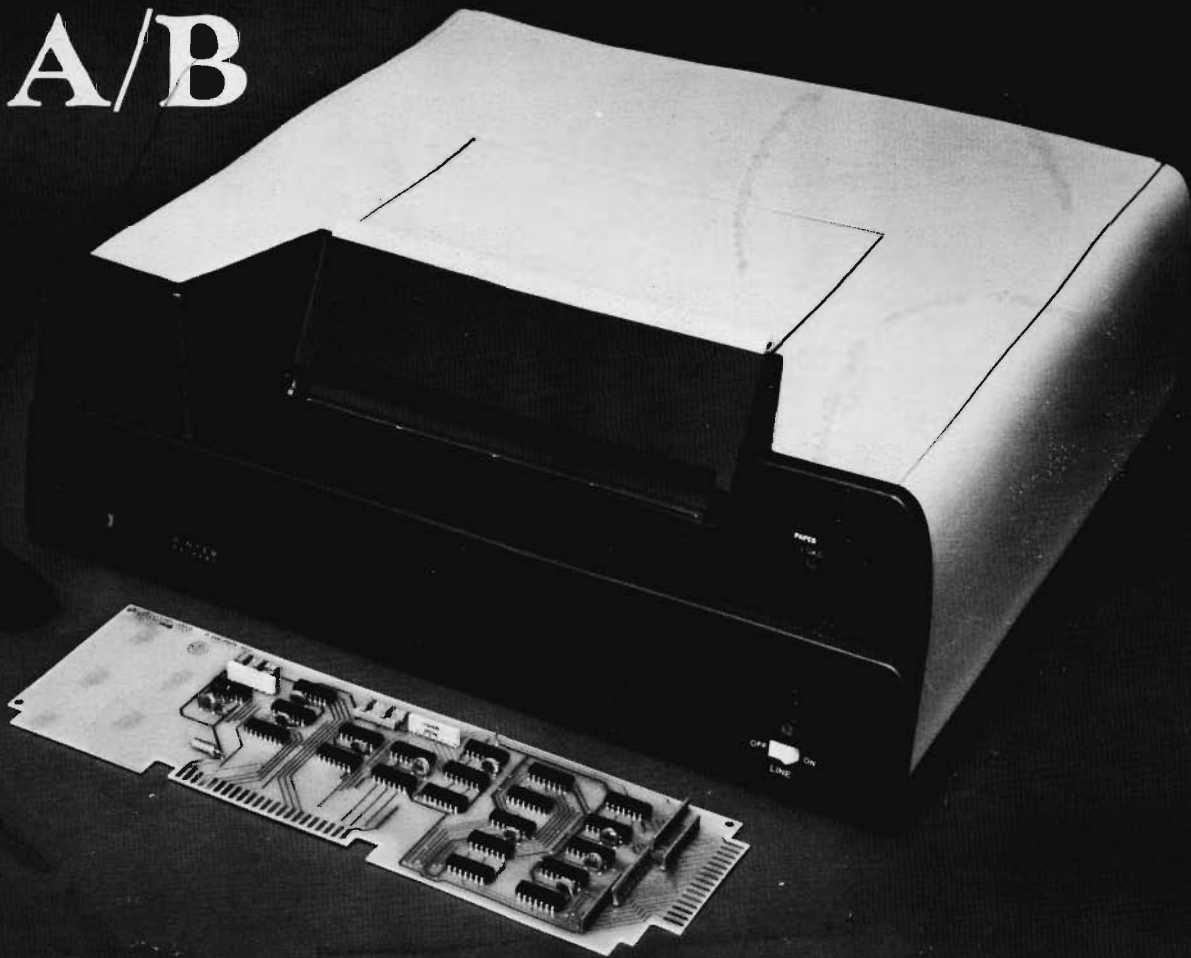
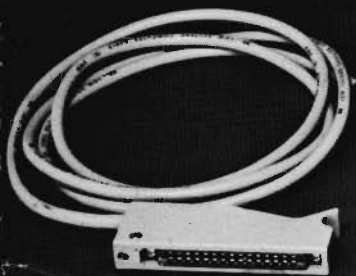


13246 A/B

PRINTER SUBSYSTEM

HEWLETT  PACKARD



User's Manual

HP Computer Museum
www.hpmuseum.net

For research and education purposes only.

Table of Contents

General Information	3
Installation and Checkout	5
POWER REQUIREMENTS	5
OPTION SLOT EXTENDER ACCESSORY	8
INSTALLATION	8
CHECKOUT	12
HP 2640	12
HP 2644/45	13
Operation	14
HP 2640	14
HP 2644/45	15
ENTER AND RECORD	15
COPY FROM DISPLAY	16
COPY FROM TAPE	16
MULTIPLE DESTINATIONS	17
PAPER ADVANCE	17
Appendix. Interconnecting Cable	18
TABLE 1. Terminal/Printer Character Equivalence	4
TABLE 2. Power Line Voltages and Fuses	7
TABLE A-1. Interconnecting Cable	18
FIGURE 1. 9866A/B Printer Rear Panel	6
FIGURE 2. Terminal Duplex Register PCA Jumper Configuration	10
FIGURE 3. Terminal Main Frame	11

General Information

The HP 13246A/B Printer Subsystem complements 2640 series terminals by providing permanent copy of the terminal display and memory. Installation of the subsystem is fast, easy, and requires no special tools. The quiet, thermal head printing mechanism generates characters and/or symbols in a dot matrix pattern, providing a maximum of 80 characters per line with up to 240 lines per minute output. The 13246A subsystem provides a 64 alphanumeric character set, while the 13246B subsystem provides a 128 alphanumeric character set.

All characters copied by the printer correspond to the characters shown on the terminal keys with the exceptions of those listed in table 1. The 9866A printer cannot print lower case alphabet characters.

This manual covers only off-line applications of the printer subsystem; computer system applications of this subsystem are beyond the scope of this manual.



Table 1. Terminal/Printer Character Equivalence.

Terminal	9866A	9866B
^	↑	↑
\	\	√
{	[π
}]	→
~	↑	~
.	@	.
	\	

Installation and Checkout

Installation of the HP 13246A/B Printer Subsystem requires only the use of an access key supplied with the terminal. Simply raise the terminal top cover, insert the subsystem interface, and attach the interconnecting cable. Before connecting the printer to ac power, ensure that the switches and fuse on the back of the printer are configured for the power source being used. Because the subsystem interface requires power from the terminal power supply, adjustment of that power supply may be necessary.

The following information provides detailed instructions for checking the power configuration of the printer, installing the interface and cable, and verifying proper operation of the subsystem.

POWER REQUIREMENTS

Before attaching the power cord or making any interface connections on the HP 9866A/B Printer, ensure that the rear panel line voltage selection switches (figure 1) are properly positioned for the powerline voltage being used and that the correct line fuse is installed for the selected voltage range. The line frequency must be within a range of 48 to 66 Hz. Maximum power for normal printer operation is 250 voltamps.

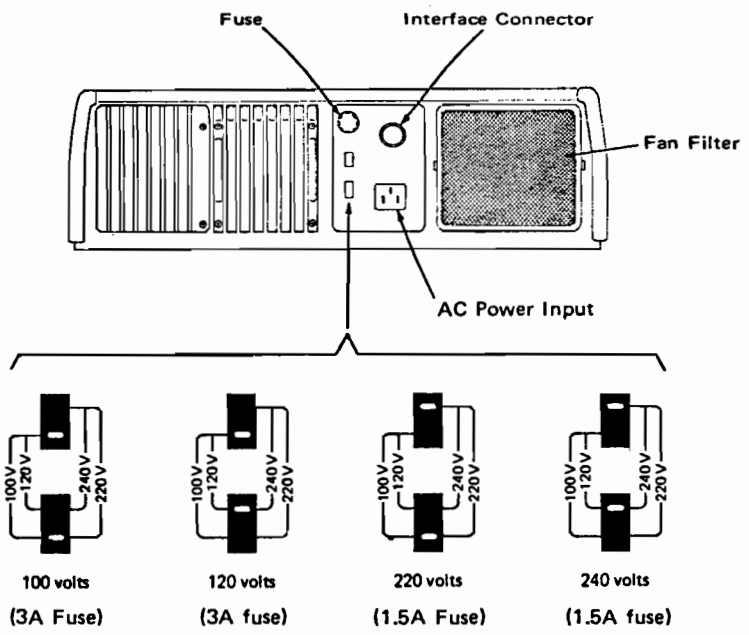


Figure 1. 9866 A/B Printer Rear Panel

Figure 1 shows the various switch settings for nominal powerline voltages and table 2 lists the fuse that must be installed prior to connecting the printer to the ac power source.

WARNING

Before changing a fuse, ensure that the printer is disconnected from the ac power source.

CAUTION

A different fuse is required for each of the two voltage ranges of 100/120 Vac and 220/240 Vac. The printer may be damaged if the incorrect fuse is installed.

Table 2. Powerline Voltages and Fuses

NOMINAL VOLTAGE	OPERATING RANGE (-10%, +5% of nominal)	9866A FUSE
100 volts	90 to 105 volts	3-amp Slo-Blo
120 volts	108 to 126 volts	3-amp Slo-Blo
220 volts	198 to 231 volts	1.5-amp Slo-Blo
240 volts	216 to 252 volts	1.5-amp Slo-Blo

OPTION SLOT EXTENDER ACCESSORY

The standard model HP 2640 Terminal provides the capacity for two additional printed circuit assembly (PCA) type accessories. Ensure that a vacant slot is available before adding the 13246A/B subsystem. If more than two accessories are added, the HP 13240A Option Slot Extender must be installed to accommodate the additional accessories. Refer to the terminal installation and service manual for instructions on installing this accessory.

INSTALLATION

Installation of the 13246A/B subsystem requires only the use of an access key supplied with the terminal. Installation procedure is as follows:

- a. Place the terminal and the printer near each other, on any convenient surface. Avoid plush or spongy surfaces that might restrict air flow through the bottom vents of the terminal. Do not use typewriter pads, for example.
- b. Ensure that the power cords are disconnected from both units.
- c. Using the access key supplied with the terminal, insert access key into keyway (figure 3) located on the right side of the top cover. Inserting key into keyway will unlock top cover; no key rotation is required.
- d. While maintaining upward pressure to keep right side of terminal unlocked, insert key into left keyway and raise the top cover.

-
- e. Using both hands, carefully swing top cover up until it latches into the half-open position.
 - f. Configure jumpers in the terminal duplex register PCA (HP part number 02640-60031) jumper sockets as shown in figure 2.
 - g. Install terminal duplex register PCA in first vacant backplane assembly connector adjacent to existing PCA's in the terminal (figure 3).

NOTE

To ensure proper terminal operation, all PCA's must be installed in adjacent backplane assembly connectors. There should never be vacant connectors between PCA's except in terminals using the two CTU PCA's (Read/Write PCA and CTU Interface PCA). The CTU PCA's can be separated from the others.

- h. Open mainframe rear door by twisting two lock extrusions.

CAUTION

Do not attempt to force hood connectors onto PCA connectors. Connectors have been identically keyed to prevent erroneous connection. Minimal pressure is needed to make the connection. Excess force may result in damage to both the hood connector and PCA.

- i. Holding terminal duplex register PCA firmly in place, carefully connect hood connector of the cable assembly to PCA connector.
- j. Firmly grasp mainframe top cover in one hand and release safety latch (figure 3) by pressing it inboard with other hand. Then, using both hands, carefully lower top cover to its closed position.



-
- k. Connect the free end of cable assembly to the connector on the rear panel of the printer. The cable is connected by aligning the keys in the cables connector with the key slots in the printer's connector. Then, while pushing the two connectors together, rotate the knurled barrel on the connector assembly clockwise; thus drawing the two connectors together and locking them in place.
 - l. Ensure that the printer and terminal are set at the same line voltage and that this voltage corresponds to the ac supply voltage.
 - m. Place the line switch located on the front of the printer and the ac Power switch on the rear panel of the terminal to the OFF position. Connect the power cords to their respective power connectors on the rear panels of the printer and the terminal.
 - n. Insert the three-prong power connectors into the ac power source outlet.

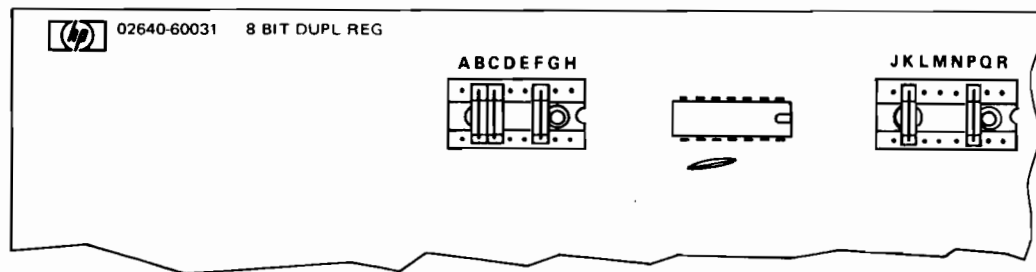


Figure 2. Terminal Duplex Register PCA Jumper Configuration

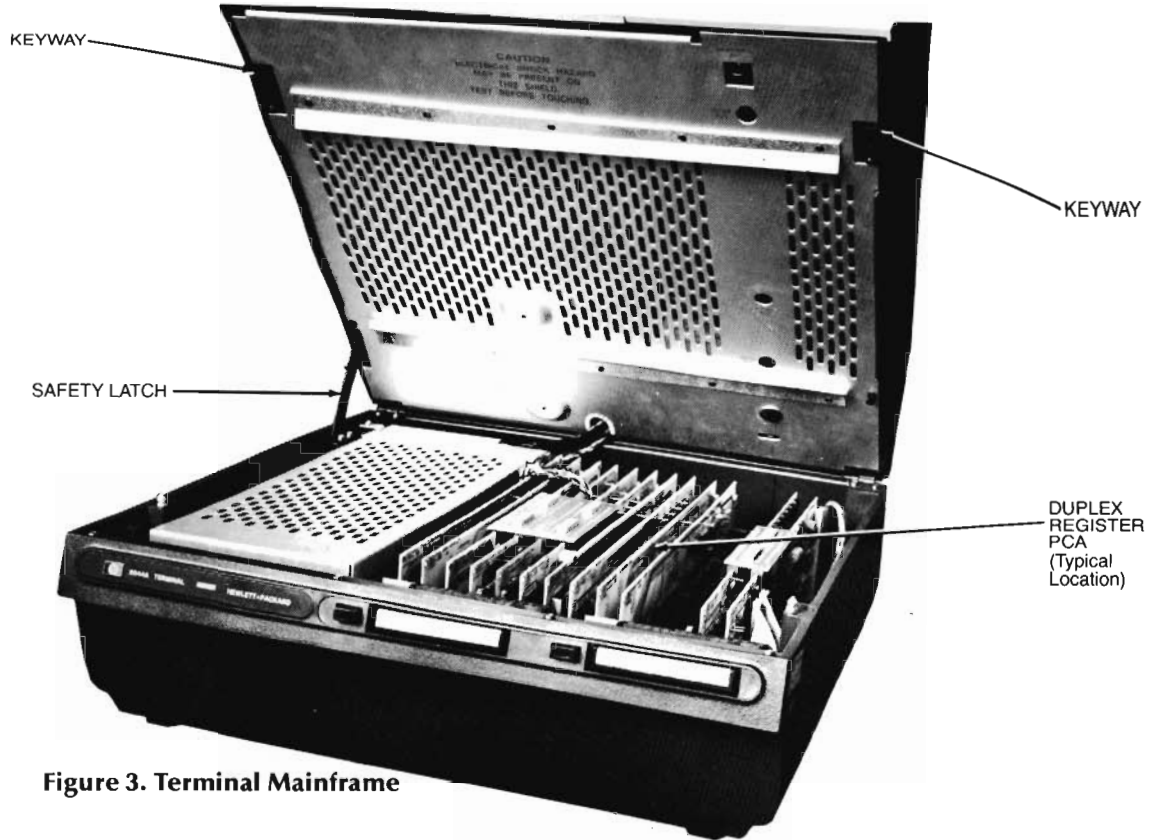


Figure 3. Terminal Mainframe

WARNING



For safety reasons a three-prong grounded power outlet must be used.

- o. Check, and if necessary, adjust terminal power supply in accordance with the instructions contained in the terminal installation and service manual.


CHECKOUT

After you have installed the subsystem, perform the following off-line test procedures to ensure proper operation of the subsystem. These procedures are not intended to check all functions of either the printer or the terminal; the pattern created by the printer will depend entirely upon the options installed in both the printer and the terminal.



HP 2640. Correct operation of the subsystem installed in an HP 2640 Terminal can be verified as follows:

- a. Turn power on for both the terminal and the printer. Some printer keyboard indicators may flash on and then off. If any indicators with the exception of the TRANSMIT indicator remain lighted, a malfunction exists. The indicator on the front panel of the printer should light and remain on.
- b. Press the  key; then press the  key. All keyboard indicators should flash on. After approximately two seconds delay, an audible "beep" will sound and the entire character set in the terminal will be displayed on the CRT. The indicators should now

extinguish (with the possible exception of the TRANSMIT indicator) and the blinking cursor will appear in the first column of the next lower line.

- c. Press the  key. The printer should now print the entire test character set, substituting alphanumeric equivalent characters for the special characters.

HP 2644/45. To verify proper operation of the subsystem installed in a 2644 or 2645 Terminal, follow steps a thru c in the above procedure; then press the keys in the following sequence:

- a. Press the  key; then press the  key. All keyboard indicators should flash on. After approximately two seconds delay, an audible “beep” will sound and the entire character set in the terminal will be displayed on the CRT. The indicators should now extinguish (with the possible exception of the TRANSMIT indicator).
- b. The blinking cursor should now appear in the first column of the next lower line. Using the display control keys, move the cursor up until it is just below the first character in the last **full** line of alphanumeric characters.
- c. To transfer these characters to the printer, press the keys in the following order:

, , , , and 



The printer should now print the last two lines of alphanumeric characters in the test character set.

Operation

The following information provides operating instructions for the terminal to the extent necessary for transfer of information to the printer. Additional terminal operating information is provided by the terminal owner's manual. The following procedures describe transfer of data from the 2640 terminal's memory or display to the printer. Because of the additional features incorporated in the 2644/45 terminals, there is more than one method described for memory transfers to the printer. The 2644/45 can also transfer data from tape to the printer or from one source to multiple destinations. These procedures are also covered.

HP 2640

When transferring data from the terminal to the printer, keep in mind that once data transfer has commenced, all data in the terminal memory will be output to the printer until the end of memory has been reached.

To initiate a data transfer to the printer, press the  key. This moves the cursor to the first character position of the first line. The first page of memory displayed. Press the  key; the printer will now print until all data in memory is printed.






NOTE



Except for the 2640A, if the terminal is in FORMAT mode, only data in unprotected fields will be printed.








The 2640A will print the entire contents of display memory whether in or out of FORMAT mode.








HP 2644/45


When using the terminal in a 13246A subsystem, you have a choice of methods for transferring data from the terminal memory to the printer. By using the ENTER, RECORD, or COPY keys, different methods of controlling data transfer can be accomplished. Each method is described below.

ENTER AND RECORD. The ENTER and RECORD keys perform identical functions when the terminal is operated in an off-line mode. To transfer memory to the printer, the printer must be selected as one of the "to" devices. This is accomplished by pressing the  key (device selection). The indicator above the gold key will light to indicate that the terminal is in the device selection mode. Next, press the  key to select the display memory as the "from" device and the  key to select the printer as the "to" device. Pressing either the  or  key will now cause the cursor to automatically home to the first character position on the first page of memory and data transfer will commence. All data in memory will be transferred and printed unless a Record Separator has been inserted between blocks of data.




The end of the block of data to be transferred should be terminated with a RS, unless the remainder of memory is to be printed. A Record Separator (RS) is entered at the end of a block of data to terminate transfer of further data. To key in RS, press the  key and the  key. The control code character shown on the display will not be copied by the printer.

COPY FROM DISPLAY. The COPY operation is divided into three separate operations: COPY LINE, COPY FILE, and COPY ALL. To enable a Copy operation, press the  key, (device selection), select  as the "from" device, and  as the "to" device. Next, press the  key (function selection) followed by a COPY key for the operation desired. If  is selected, the printer will print only the line of the display containing the cursor. A  selection will print all information from the line containing the cursor to the bottom of the display. Pressing  will result in all information from the line containing the cursor to the end of display memory to be copied. A Record Separator located within the display or display memory will halt a COPY operation.

COPY FROM TAPE. Transfer of information from tape to the printer involves the use of the COPY operations. To initiate a recorded tape data transfer, press the  key (device selection) then either  or  to select your "from" device. Press  as the selected "to" device, followed by the  key (function selection) and the desired COPY key for the operation required. Should  be selected, one line of data from the tape will be copied onto the printer. A  selection will cause an entire file (excluding file marks) to be copied.

Pressing  will transfer all information, beginning at the present tape position, to the end-of-data mark.

MULTIPLE DESTINATIONS. More than one destination can be selected for a single data source using the gold key operation. After pressing the gold key, select one of the three “from” devices, then select any combination of “to” devices. Do not re-select a “to” device that was selected as the “from” device; this causes the error message FROM=TO to be displayed.

PAPER ADVANCE. Printer paper can be advanced under terminal control by using the SKIP n LINES function or directly from the printer by pressing the PAPER button. As long as the PAPER button on the printer is depressed, paper will continue to advance. Terminal control of the paper is accomplished by pressing the  key (function selection), followed by . On the numeric pad, select the number (n) of lines to be advanced, then press . The paper will now advance the number of lines selected.

NOTE

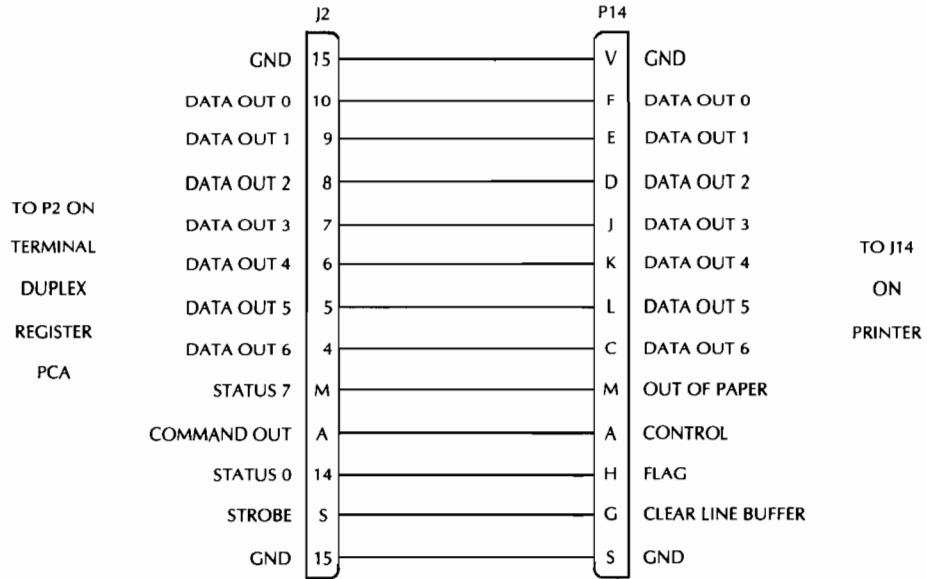
If a negative number (n) is selected for the SKIP n LINES function, the paper will be advanced by the absolute value of the number. Paper reversal is not possible.



Appendix. Interconnecting Cable

Pin connections for the interconnecting cable assembly are listed in table A-1.

Table A-1. Interconnecting Cable.



Manual No. 13246-90901
Microfiche No. 13246-90801

Printed in USA
10/76