

Hewlett-Packard

System 45B

Desktop Computer



Owner's Manual



Warranty Statement

Hewlett-Packard products are warranted against defects in materials and workmanship. For Hewlett-Packard Desktop Computer Division products sold in the U.S.A. and Canada, this warranty applies for ninety (90) days from date of delivery.* Hewlett-Packard will, at its option, repair or replace equipment which proves to be defective during the warranty period. This warranty includes labor, parts, and surface travel costs, if any. Equipment returned to Hewlett-Packard for repair must be shipped freight prepaid. Repairs necessitated by misuse of the equipment, or by hardware, software, or interfacing not provided by Hewlett-Packard are not covered by this warranty.

NO OTHER WARRANTY IS EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. HEWLETT-PACKARD SHALL NOT BE LIABLE FOR CONSEQUENTIAL DAMAGES.

*For other countries, contact your local Sales and Service Office to determine warranty terms.

Owner's Manual



HP System 45B Desktop Computer

Hewlett-Packard Desktop Computer Division
3404 East Harmony Road, Fort Collins, Colorado 80525
(For World-wide Sales and Service Offices see back of manual.)
Copyright by Hewlett-Packard Company 1979

Printing History

Periodically, this manual is updated. Each new edition of this manual incorporates all material updated since the previous edition. Each new or revised page is indicated by a revision date.

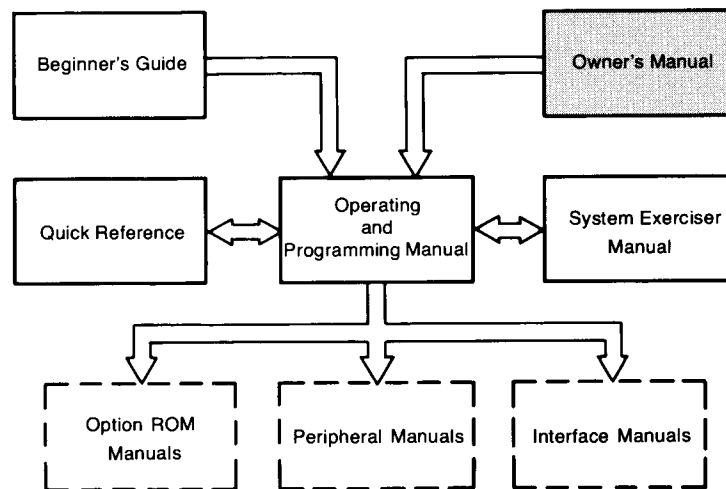
The date on the back cover changes only when each new edition is published.

First Printing.....March 1, 1979

Second Printing...May 2, 1979

System 45B Manual Reference

The following block diagram shows manuals that are included in the System 45B Documentation scheme and suggested progression. Dotted-line borders indicate those manuals available with specific options; solid borders indicate those manuals that are shipped with every System 45B.



Beginner's Guide (09845-91001) for the novice programmer. Covers the fundamentals of programming and the BASIC language. The beginner can then progress to the Operating and Programming Manual.

Operating and Programming (09845-91000) for all users. All features of the computer and the language are explained.

Owner's Manual (09845-91005) for System 45B owners. Covers initial set-up, cleaning the computer, ROMs, the tape cartridge, peripherals, and interfaces.

Quick Reference (09845-91015) for all users. A reference to all language syntax.

System Exerciser (09845-91040) to use when you want to test your computer or if there is any doubt that it is operating properly.

Table of Contents

Printing History	ii
System 45B Manual Reference	ii
Chapter 1: About the 9845B	
Introduction	1
Customer Questionnaire	1
An Overview of the 9845B	2
Features and Options	2
The CRT	2
ROMs	3
Read/Write Memory	3
The Internal Printer	4
Language	4
HP Compatible BASIC	5
Using the System 45B	7
Manuals	7
CRT Pull-out Cards	7
Introductory Training Tape	7
Chapter 2: Getting Started	
Introduction	9
1 Unpacking Your Computer	9
Inspecting the 9845B	9
Equipment Supplied	10
Table Mounting	12
2 Checking Fuses, Voltage and Power Cords	13
Introduction	13
Fuses	13
Voltage	14
Power Requirements	15
Power Cords	15
Grounding Requirements	16
3 Installing the CRT	17
4 ROMs	18
The ROM Drawers	18
Inserting a ROM	19
Removing a ROM	21
5 Connecting Interfaces	21
Select Codes	22
6 Turn On	23
What Should Happen	23
Auto Start	24
7 Testing the System	25
8 Loading Printer Paper	25

Chapter 3: The Tape Cartridge

Introduction	27
Inserting and Removing the Tape Cartridge	27
Tape Care	28
Tape Life	29

Chapter 4: Peripherals and Interfaces

Introduction	31
Peripheral Hardware Requirements	31
Option ROM Manuals	32
Peripheral Manuals	32
Interface Manuals	34

Chapter 5: Accessories

Prerecorded Programs	35
Keyboard Magazine	35
BASIC User's Club	35

Chapter 6: Maintenance

Introduction	37
Cleaning	37
Cleaning the Air Filters	38
Service	38
Maintenance Agreements	38

Sales and Service Offices	40
--	----

Customer Questionnaire	42
-------------------------------------	----

About the 9845B

Introduction

The HP 9845B Desktop Computer is a high-speed, powerful computing tool. This manual is intended for owners and users of a 9845B and contains information concerning the 9845B, its options, accessories, maintenance and initial setup. Available peripherals and interfaces are also discussed.

The following topics are covered in this chapter-

- An Overview of the 9845B
- Features and Options
- Language
- Using the System 45B

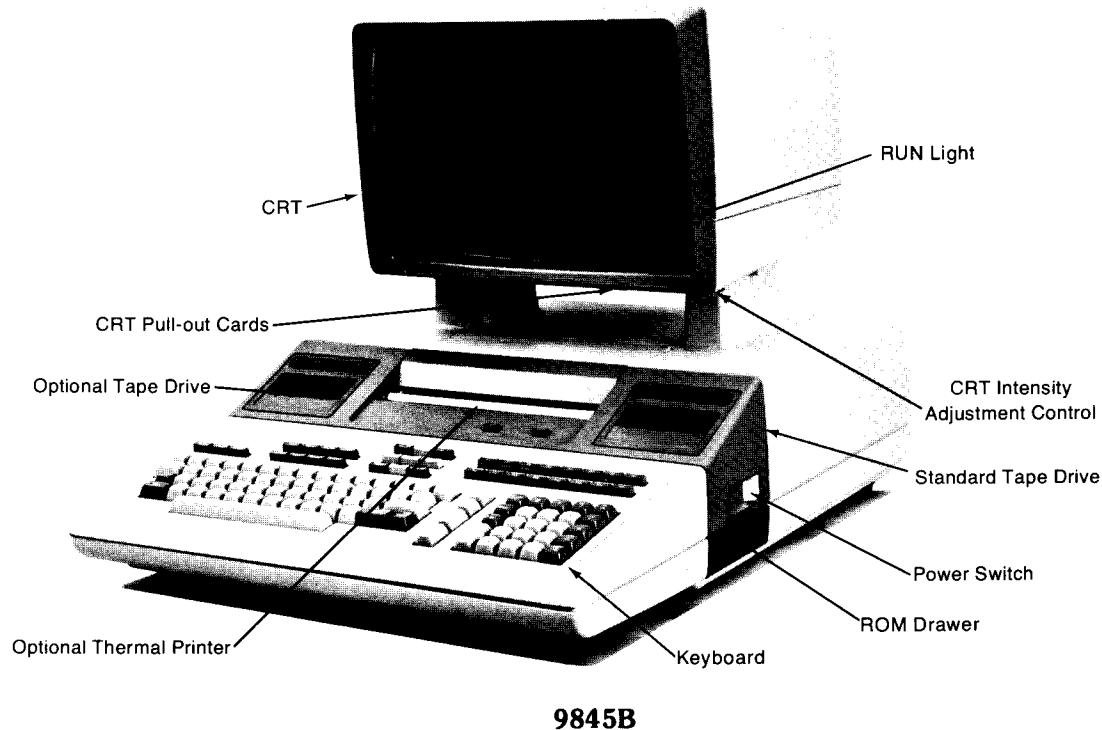
* * * * *

Customer Questionnaire

To help us in preparing new manuals, there is a questionnaire in the back of this manual. Your answers to the questions assist us in producing better, more useful manuals. Your feedback is our only way of determining the effectiveness of our manuals. Please complete the questionnaire and mail it - postage is already paid in the United States. Thank you.

Chapter 1

An Overview of the 9845B



Features and Options

This section covers features and options which are available for the 9845B computer.

The CRT

The 9845B comes equipped with an 80-character by 24-functional-line CRT (Cathode Ray Tube) display. It is the primary means for viewing data, keyboard inputs, results, program listings, error messages and system comments, and for editing programs. It is divided into four functional areas -

- Printout Area - 20 lines which function similarly to a printing device.
- Display Line - for displayed output and input prompts.
- Keyboard Entry Area - two lines (160 characters) for viewing keyboard entries.
- System Comments Line - used for error messages, system indicators and results of keyboard calculations.

CRT brightness is controlled by a knob underneath the CRT on the righthand side.

CAUTION

SHOULD A SINGLE, BRIGHT HORIZONTAL LINE APPEAR ACROSS THE CENTER OF THE CRT, IMMEDIATELY SWITCH THE COMPUTER OFF TO AVOID DAMAGE. THEN CONTACT YOUR SALES AND SERVICE OFFICE FOR SERVICE ASSISTANCE.

Hewlett-Packard products which use Cathode Ray Tubes are designed to limit X-radiation levels to values of 0.5mR/hour or below. This level has been established by the United States Bureau of Radiological Health, and conforms to similar international requirements. All measurements are made using a Victoreen 440 RF/c instrument, and are conducted with the equipment operating under normal conditions as well as worst case control misadjustment.

ROMs

There are several plug-in Options ROMs (Read Only Memories) which provide additional language capabilities to perform specific tasks, such as using mass storage devices.

The ROMs are -

- Graphics ROM (HP P/N 98411A) allows the graphics option and plotters to be used with the 9845B.
- I/O ROM (HP P/N 98412A) expands input and output capabilities.
- Mass Storage ROM (HP P/N 98413A) allows discs to be used with the 9845B.
- Advanced Programming ROM (HP P/N 98414) extends programming capabilities by adding statements for sort/search routines and others.

A manual is supplied with each ROM. Part numbers are listed in Chapter 4.

Read/Write Memory

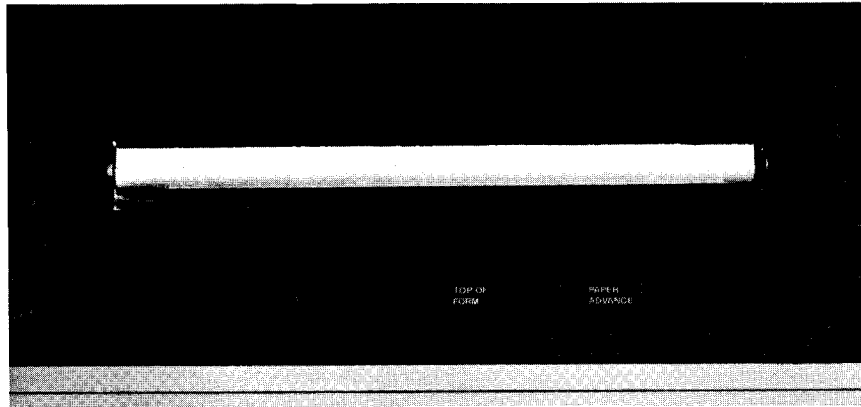
The standard Read/Write Memory is 56 266 bytes. The following memory options are available -

Option	Number of Bytes ¹
204	187 146
205	318 026
206	448 906

¹ These figures are obtained by executing `SCRATCH R`, then `LIST`. The SFK definitions use 160 bytes (138 if you don't have the lefthand tape cartridge). This memory can be used by executing `SCRATCH KEY`.

The Internal Printer

The optional internal thermal printer is an 80-character line printer used for hard-copy output. Two types of paper are available: blue printout, continuous paper and black printout, perforated paper. Paper comes in two widths: 8.5 in. and 210 mm. See Chapter 2 for part numbers.



Two keys are used to control the internal printer. The PAPER ADVANCE key on the right advances the paper until the key is released. The TOP OF FORM key on the left advances the paper past perforations to the top margin which is approximately $1/2$ " below the perforations. If the paper isn't perforated, it is advanced 12 inches.

Language

An enhanced form of the BASIC (Beginners All-Purpose Symbolic Instruction Code) programming language is used in the System 45B. The fundamental programming unit is the **statement**. A program consists of a numbered sequence of statements, or lines, which are stored in memory. Most statements can also be executed from the keyboard.

The computer also has many math, trigonometric, string, output and error **functions**, which are used within statements to evaluate expressions or control output. Most functions can also be executed as keyboard operations.

You also have many **commands** for controlling computer operation and editing programs. Commands are executed only from the keyboard; they are not programmable.

More statements and functions can be added to the language by adding option ROMs which are inserted into the drawers in the sides of the computer.

HP Compatible BASIC

The BASIC language as implemented on the System 45B Computer is an enhanced form of HP Compatible BASIC. HP Compatible BASIC consists of statements, functions, operators and commands that will be implemented in new HP BASIC machines. The HP Compatible BASIC is implemented in the System 45B as Level I. Level I refers to the highest-performance computational products. Thus, any program consisting entirely of Level I BASIC language can be transported to any Level I BASIC machine.

The following is a list of HP Level I BASIC. Contact your HP Sales and Service Office to obtain information concerning the transporting of programs between machines.

Operators

+	=	AND
-	>	OR
*	<	NOT
/	≧	EXOR
^	≦	
DIV	<>	&
MOD		

Functions

ABS	SIN	COL	LIN	LWC\$	TYP
EXP	COS	DET	SPA	REV\$	
INT	TAN	DOT	TAB	UPC\$	
LGT	ASN	ROW	PAGE	CHR\$	
LOG	ACS	SUM		LEN	
MAX	ATN			NUM	
MIN				POS	
RND				RPT\$	
SGN				TRIM\$	
DROUND				VAL	
PROUND				VAL\$	
FRACT					
PI				ERRL	
SQR				ERRN	
				ERRM\$	

Statements

ASSIGN	MAT...RSUM	REDIM
BEEP	MAT INPUT	REM
CALL	MAT PRINT	RESTORE
COM ¹	MAT PRINT #	RETURN
COPY	MAT READ	SHORT
CREATE	MAT READ #	STANDARD
DATA	OFF END	STOP
DEF FN	OFF ERROR	SUB
DEG	ON END	SUBEXIT
DIM	ON ERROR	SUBEND
EDIT	ON...GOSUB	WAIT
END	ON...GOTO	
FIXED	OPTION BASE	
FLOAT	PAUSE	
FN END	PRINT	
FOR	PRINT #	
NEXT	PRINT USING	
GOSUB	PURGE	
GOTO	RAD	
GRAD	RANDOMIZE	
IF	READ	
IMAGE	READ #	
INPUT	REAL	
INTEGER		
LET		
LINPUT		
MAT array = array		
MAT array = array + - * . / < <= > >= = <> array		
MAT...CON		
MAT array = (num. exp.)		
MAT array = (num. exp.) + - * / < <= > >= <> = array		
MAT array = array + - * / < <= > >= <> = (num.exp.)		
MAT...INV		
MAT...TRN		
MAT...IDN		
MAT...ZER		
MAT...CSUM		

¹ The type words INTEGER, SHORT and REAL can be specified in a COM statement or formal parameter list. Dimensionality of arrays is limited to 6 dimensions.

Using the System 45B

Manuals

To help you in using your 9845B computer, there are three manuals related to operating and programming which are supplied -

- **Operating and Programming** - This manual is designed for those of you with programming background. It covers the physical aspects of the computer (such as the keyboard and CRT) as well as 9845B BASIC language. All elements of the BASIC language are introduced and explained.
- **Beginner's Guide** - This manual is designed for those of you who have never programmed a computer. The fundamentals of programming concepts, the BASIC language and machine operation are all covered. You can then progress to the Operating and Programming Manual.
- **Quick Reference** - This manual serves as a "mind-jogger" for 9845B programmers. The syntax of all statements, commands and functions are listed as well as a brief description of each. After you are familiar with the System 45B, this small booklet is generally all you'll need to continue to use the System 45B.

CRT Pull-out Cards

The 9845B, in addition, has four pull-out cards under the CRT which serve as a handy reference for operating the 9845B. They are-

- Error Messages
- Statements
- ROM Errors
- About the 9845B

Introductory Training Tape

An introductory training tape and accompanying workbook are designed for the beginning System 45B user. They provide a self-instructing program that let you become familiar with programming the System 45B.

Getting Started

Introduction

This chapter covers unpacking and setting up your 9845B Desktop Computer and contains other information that is important when you first receive your computer.

1 Unpacking Your Computer

Inspecting the 9845B

The computer was thoroughly inspected before it was shipped to you. All equipment should be in good operating order. Carefully check the 9845B, ROMs, peripheral equipment, and other items for any physical damage sustained in transit. Notify HP and file a claim with the carrier if there is any such damage.

Please check to ensure that you have received all of the items which you ordered and that any options specified on your order have been installed in your machine. Refer to the table on the next page and check that all accessories are present. If any items are missing, please contact your nearest HP Sales and Service Office; addresses are supplied in the back of this manual.

Chapter 2

Equipment Supplied

Peripheral devices, ROMs and interface cards are packaged separately from your 9845B; each of these has its own manual or operating note and may also have extra items packaged with it. The following items are packaged with each 9845B -

Item	Quantity	Part Number
Operating and Programming Manual	1	09845-91000
Beginner's Guide	1	09845-91001
Owner's Manual	1	09845-91005
Quick Reference	1	09845-91015
System Exerciser Manual	1	09845-91040
System Exerciser Cartridge	1	09845-91041
Manual Binder	1	9280-0713
Training Tape	1	09845-10024
The Workbook	1	09845-91090
Utility Library	1	09845-10200
BASIC User's Club Brochure	1	11141-10203
Special Function Key Overlays	5	7120-6164
Blank Tape Cartridges	2	9162-0061
Dust Cover	1	9222-0592
Magnetic Head Cleaner	1	8500-1251
Spare Fuses		
2.5 Amp (SB)	1	2110-0380
5 Amp (NB)	1	2110-0010
Power Cord ¹	1	See footnote
Printer Paper ²	3	See the following table

All the equipment in the previous table can be purchased by ordering HP Part Number 09845-80020. Single items can be purchased using the appropriate part number. Contact your Sales and Service Office for ordering information.

¹ The System 45B is shipped with the correct power cord for use in your area. See the section on power cords.

² Printer paper is supplied only if your System 45B has the internal printer.

The following items are also available -

Item	Part Number
Hard and Soft Carrying Cases - CRT	09845-64402
Hard and Soft Carrying Cases - Computer	09845-64401
Soft Carrying Case - CRT	09845-64404
Soft Carrying Case - Computer	09845-64403
Hard Carrying Case - CRT	09845-64406
Hard Carrying Case - Computer	09845-64405
Thermal Printer Paper - Black Perforated	
8.5'' width	9720-0565
210 mm width	9270-0568
Thermal Printer Paper - Blue Continuous	
8.5'' width	9270-0566
210mm width	9270-0569

2 Checking Fuses, Voltage and Power Cords

Introduction

The power cord connector, fuse and voltage selector switch are all located in the rear panel of the computer. The power cord must be disconnected before removing or installing a fuse or setting the voltage selector switch.

Fuses

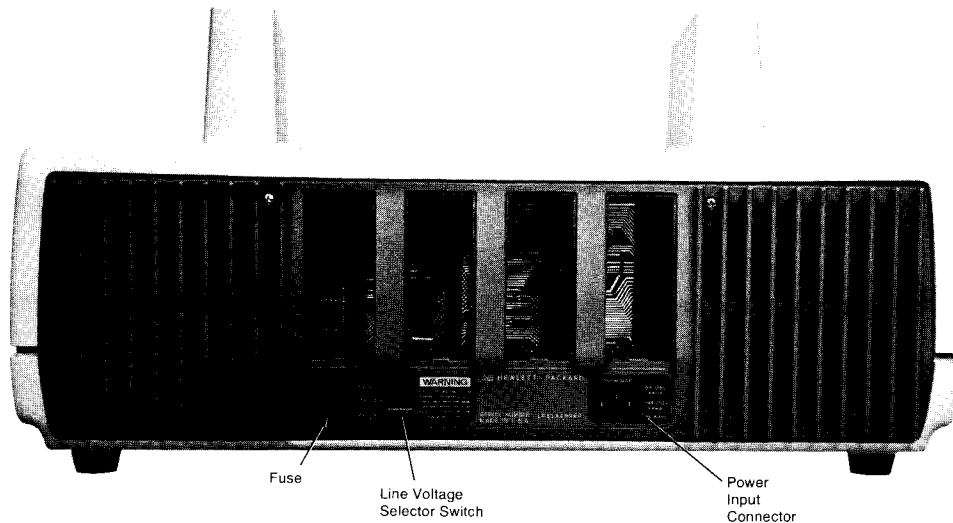
Always be sure that the correct fuse is installed. Failure to do so may result in damage to the computer. When changing the fuse, make sure that the replacement is the proper rating and type.

A different fuse is required for each of the two voltage ranges of 120 Vac and 240 Vac. Be sure that the fuse is the proper type and rating as shown below.

Voltage Setting	Fuse Rating	HP Part Number
100, 120	5 NB	2110-0010
220, 240	2.5 SB	2110-0380

WARNING

TO AVOID THE POSSIBILITY OF SERIOUS INJURY, DISCONNECT THE AC POWER CORD BEFORE REMOVING OR INSTALLING A FUSE.



9845B Rear Panel

The photo above shows the location of the fuse in the rear panel of the computer. To change the fuse, first disconnect the power cord from the computer. Then remove the fuse cap by pressing downward while twisting it counterclockwise. Remove the fuse from the cap and insert the correct replacement fuse (either end) into the cap. Finally, put the fuse and cap back into the fuse holder. Press on the cap and twist it clockwise until it locks in place.

Voltage

Next, ensure that the voltage selector switch is set for the nominal line voltage in your area. The switch is located in the rear panel of the computer, as shown in the previous drawing. The drawing below shows the correct setting for each nominal line voltage.

WARNING

ALWAYS DISCONNECT THE COMPUTER FROM ANY AC POWER SOURCE BEFORE SETTING THE VOLTAGE SELECTOR SWITCH.

If it is necessary to alter the setting of the switch, disconnect the power cord. Then insert the tip of a small screwdriver into the slot on the switch. Slide the switch so that the position of the slot corresponds to the desired voltage, as shown below.



Nominal Line Voltage Settings

CAUTION

CHECK THE SELECTOR SWITCH SETTING BEFORE APPLYING POWER. DAMAGE TO THE COMPUTER WILL OCCUR IF THE SELECTOR SWITCH IS SET TO 110 VOLTS AC AND 220 VOLTS AC IS APPLIED TO THE POWER INPUT CONNECTOR.

Power Requirements

The 9845B has the following power requirements -

AC Line Voltage -

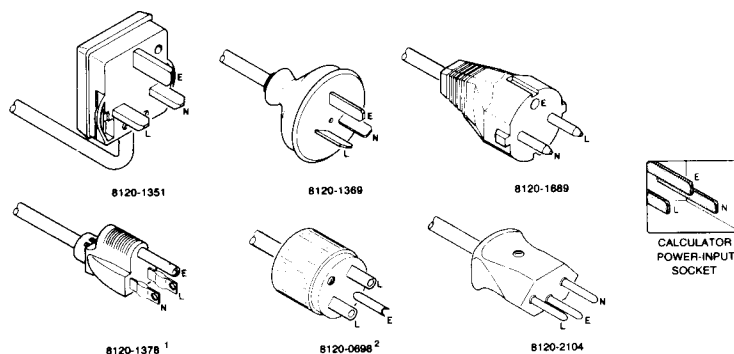
Nominal Voltage	Operating Range -10%, +5% of Nominal
100	90 to 105 volts
120	108 to 126 volts
220	198 to 231 volts
240	216 to 252 volts

Line Frequency - 48-66 Hz

Power Consumption - 275 va

Power Cords

Make sure that you have the correct power cord. However, don't connect it until steps 3, 4, and 5 are completed. Power cords with different plugs are available for the 9845B; the part number of each cord follows. Each plug has a ground connector. The cord packaged with each computer depends upon where that computer is to be delivered. If your equipment has the wrong power cord for your area, please contact your local HP Sales and Service Office.



¹UL and CSA approved for use in the United States of America and Canada with equipment set for either 100 or 120 Vac operation.

²UL and CSA approved for use in the United States of America and Canada with equipment set for either 200 or 240 Vac operation.

Power cords supplied by HP have polarities matched to the power-input socket on the computer, as shown below:

- L = Line or Active Conductor (also called “live” or “hot”)
- N = Neutral or Identified Conductor
- E = Earth or Safety Ground

WARNING

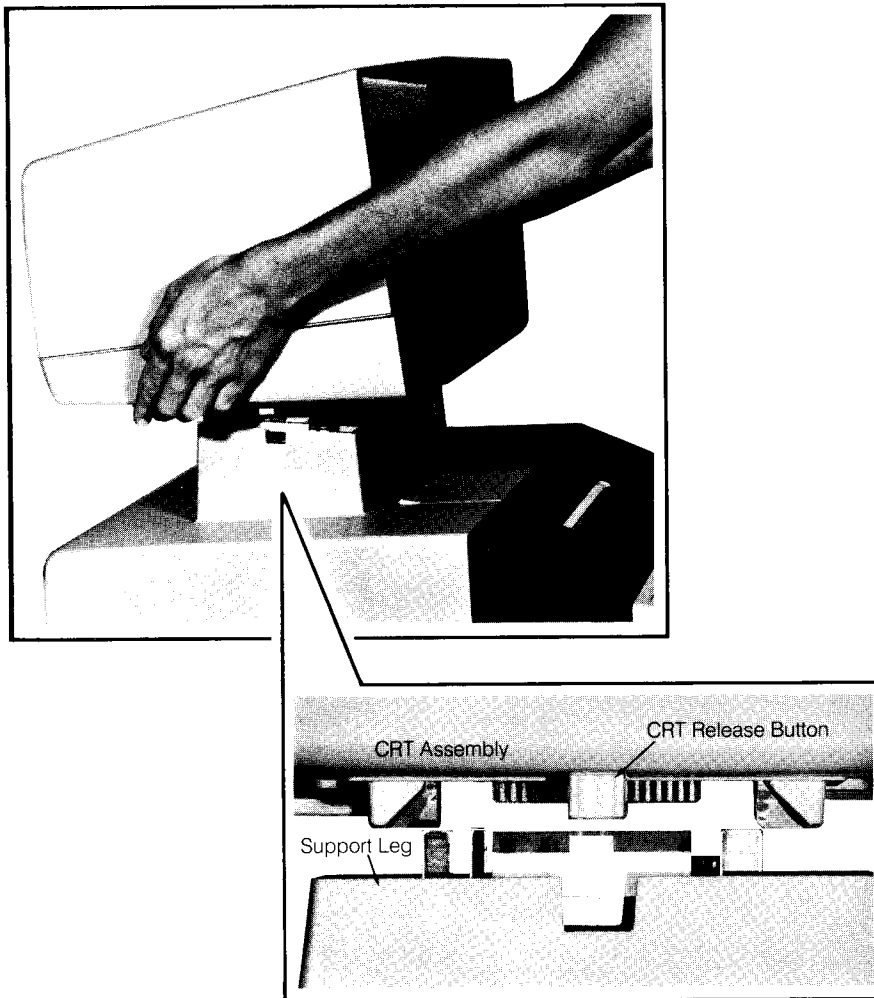
IF IT IS NECESSARY TO REPLACE THE POWER CORD, THE REPLACEMENT CORD MUST HAVE THE SAME POLARITY AS THE ORIGINAL. OTHERWISE, A SAFETY HAZARD FROM ELECTRICAL SHOCK TO PERSONNEL, WHICH COULD RESULT IN INJURY OR DEATH, MIGHT EXIST. IN ADDITION, THE EQUIPMENT COULD BE SEVERELY DAMAGED IF EVEN A RELATIVELY MINOR INTERNAL FAILURE OCCURRED.

Grounding Requirements

To protect operating personnel, the National Electrical Manufacturers' Association (NEMA) recommends that all equipment be properly grounded. The 9845B is equipped with a three-conductor power cable which, when connected to an appropriate power receptacle, grounds the computer. To preserve this protection feature, do not operate the computer from an ac power outlet which has no ground connection.

3 Installing the CRT

Next, mount the CRT onto the body of the computer. The CRT assembly locks into place on top of the mainframe support legs. It is important that the guides on the CRT assembly and the mainframe support legs are aligned properly before assembly. The picture below shows the proper alignment necessary for the CRT assembly installation. Notice how the buttons on the bottom of the CRT assembly align with the notches in the support legs.



CRT intensity is controlled by a knob on the lower righthand corner of the CRT.

4 ROMs

All desired option ROMs should be in place when the computer is switched on. This section covers installing and removing ROMs.

The ROM Drawers

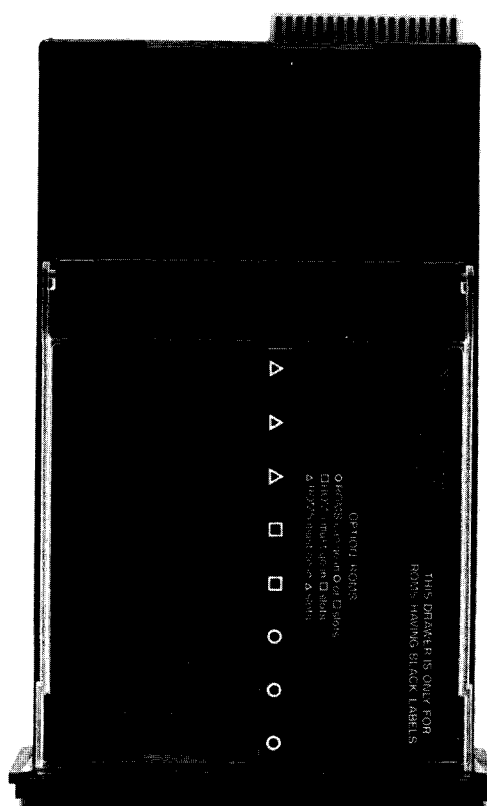
The System 45B has two ROM drawers, one located on each side of the machine at the base of the dark stripe. They contain the option ROMs. There is a distinction made between drawers. The ROMs in the lefthand drawer have green labels and those in the right drawer have black labels. Since it is important that the two not be interchanged, there are small raised ribs along the sides of the drawers which fit into recesses in the bottom of the ROMs. These ribs differ to prevent a ROM from being inserted in the wrong place.

To help insure that a ROM is inserted in a proper slot, the labels on the drawers and on the ROM have symbols on them. Each ROM and each ROM slot have a circle, square or triangle on them. These guidelines determine in which slot a ROM can be placed —

- ○ ROM can go in ○ or □ slots
- □ ROM must go in □ slots
- △ ROM must go in △ slots



Left-hand Drawer



Right-hand Drawer

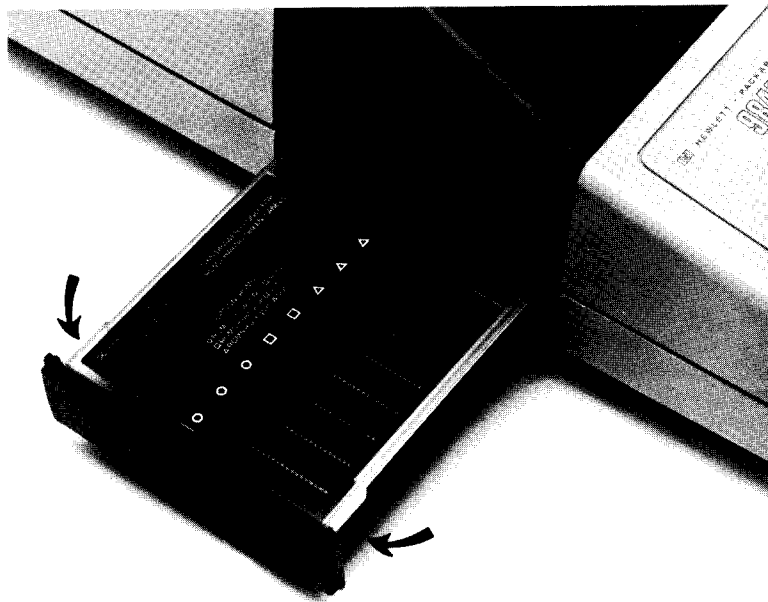
Inserting a ROM

To insert a ROM -

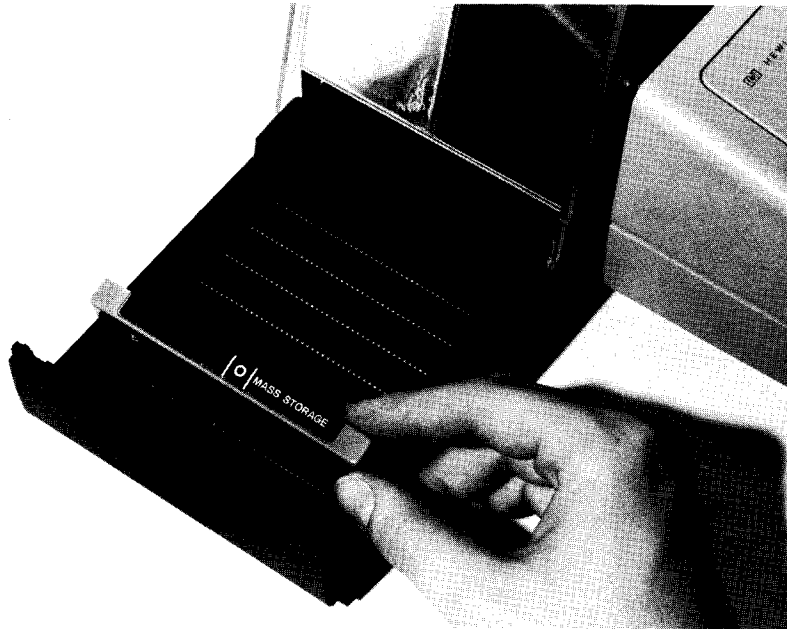
- Turn off power to the computer.
- Slide the drawer all the way out and make sure the label color matches that of the ROM you want to insert.

Left Drawer - Green	Right Drawer - Black
Mass Storage ROM	Graphics ROM
I/O ROM	I/O ROM
	Advanced Programming ROM

- Open the clear plastic cover by squeezing the sides of the cover (as shown) to gain access to the connectors.



- Orient the ROM so that the tops of the letters on the label are toward the computer.



- Make sure that the shape (○, □ or Δ) on the ROM corresponds to the shape for the slot.
- Insert the ROM vertically so that it goes all the way to the bottom of the connector.



The small raised rib on the top of the drawer should fit into the recess on the bottom of the ROM. If it doesn't, make sure you've made the proper color, shape and orientation matches.

- When the ROM is inserted, snap the clear cover shut and close the drawer until it is flush with the outside cover.

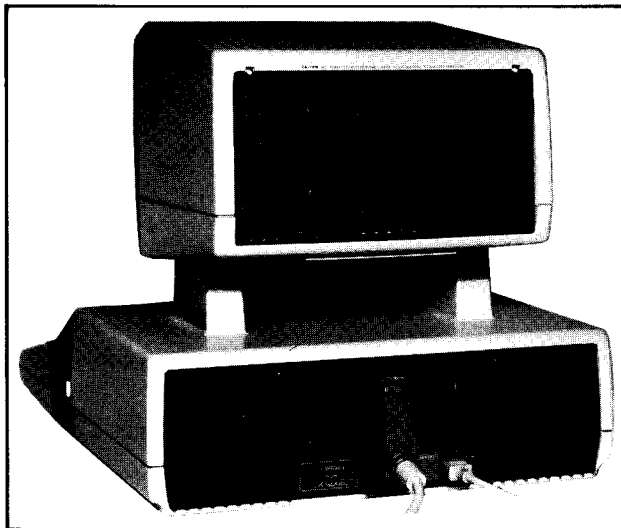
Removing a ROM

To remove a ROM -

- Turn off power to the computer.
- Slide out and open the proper drawer.
- Grasp the ROM and gently pull straight up.
- Close the cover and slide the drawer in.

5 Connecting Interfaces

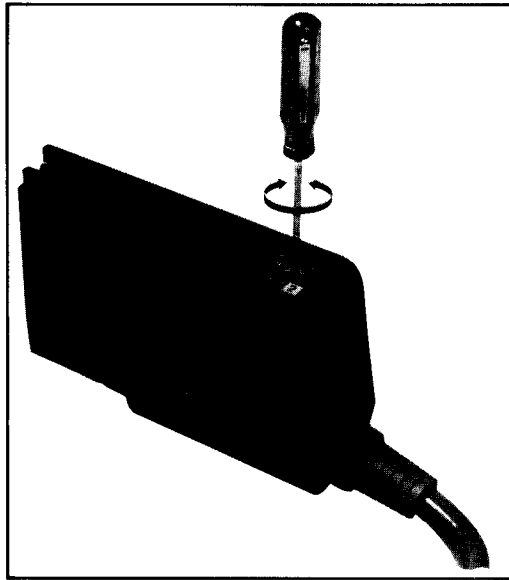
Peripheral devices are connected to the 9845B computer by means of an interface. An interface can be inserted into any of the four I/O slots in the back of the computer as shown in the picture below. The I/O slots each have a “door” in them when you receive your computer. You must remove the door before inserting an interface into a slot. To do this, lift up on the door, then pull out the lower end. When an interface is removed, install a door back into the slot. This can be done by placing the tab on the door into the top of the slot and pushing the door into place.



Before connecting an interface, make sure that the computer and peripheral are switched off. Then insert the interface into any of the I/O slots.

Select Codes

The select code is set on the interface. To change the select code, use a small screwdriver to rotate the switch which is accessible through the top of the interface rear housing. Do not set more than one interface to the same select code.



The following select codes are permanently reserved by the system and can't be set on an interface -

- 0 – Internal thermal printer and keyboard
- 13 – Graphics Option
- 14 – Optional tape cartridge drive
- 15 – Standard tape cartridge drive
- 16 – CRT

CAUTION

ALWAYS SWITCH OFF THE COMPUTER WHEN INSERTING OR REMOVING ROMS AND INTERFACES. FAILURE TO DO SO COULD DAMAGE EQUIPMENT.

6 Turn On

Once your computer is set up properly, it is ready to turn on.

Before you “throw the switch”, here are some things to check-

- Is the proper fuse installed?
- Is the proper voltage set?
- Are the desired option ROMs installed?
- Are the desired interfaces connected?

Next connect the power cord to the power input connector on the back of the machine. Plug the other end of the cord into the ac power outlet.

Now that your system is set up, set the power switch on the righthand side of the machine to the “1” position to turn it on.

What Should Happen

When the power is switched on, the computer beeps and begins its self-test. During the self-test, the computer tests every location in the Read/Write memory. While the self-test is in progress, this message -

```
MEMORY TEST IN PROGRESS
```

is displayed. The complete self-test should take less than thirty seconds. When the key is successfully completed, the computer is ready for use when -

```
9845B READY FOR USE.
```

is displayed.

If the computer does detect a bad memory location during the self-test, it attempts to complete the self-test by ignoring the block of memory which contains the bad location. If this is successful, you can use computer when -

```
PART OF MEMORY FAILED SELF-TEST!
```

is displayed. You can still use the System 45B for programs which aren't large enough to need the entire memory. You can determine the severity of the memory failure by executing -

```
LIST
```

and comparing the amount of available memory shown with the amount of memory that should be present. Call your Sales and Service Office for assistance. If your 9845B has the internal printer (and if there is paper in it), one or more lines are printed if the self-test fails. Save this information; it will help the Customer Engineer isolate the memory failure.

If the self-test fails and the computer cannot meet its minimum Read/Write memory requirements, it beeps repeatedly (about once per second) and no message appears in the display. Call your Sales and Service Office for assistance.

If no message appears during the self-test and the computer begins to beep rapidly, check to see if the CRT is properly connected. Be sure to turn the power off before connecting the CRT.

Auto Start

If the Auto-Start key is latched and a tape cartridge with a file named "AUTOST" on it is present in the standard tape drive at power on, the computer automatically performs the following operation -

```
LOAD "AUTOST",1
```

after the self-test is completed. See the System 45B Operating and Programming Manual for more explanation of auto start.

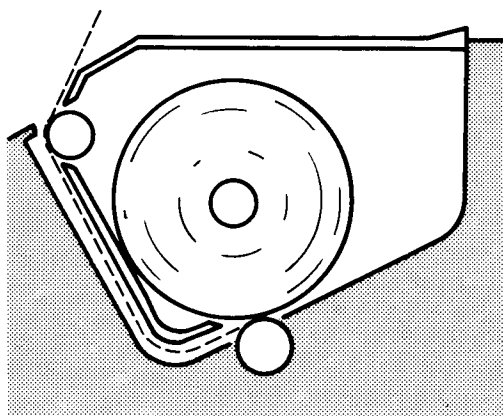
7 Testing the System

If you wish to test your machine, or if there is any doubt that it is operating correctly, refer to the System 45B System Exerciser Manual for test procedures.

8 Loading Printer Paper

Printer paper is loaded by using the following procedure. To perform the following steps, the computer must be switched ON.

1. Lift or remove the access cover on the top of the printer by pushing down on the raised surface at the rear of the door. The door can be removed by lifting up and pulling it toward you. It is reinstalled by placing it on the hinge pins and pushing until it snaps into place.
2. Remove and discard the paper core of any previous roll. If the remaining roll is small and a new roll is to be used, remove the old roll by:
 - a. Unrolling and lifting it upwards until the roll is above the printer; then,
 - b. Holding the roll firmly and pulling it upward and forward; the paper guide will tear the paper off.
3. If any paper remains in the printer mechanism, remove it by pressing the PAPER ADVANCE key until the paper stops moving.
4. Remove the first layer of paper from a new roll. Be sure the paper has a cleanly torn or cut edge, as paper with a ragged edge may not load properly. The corners can be folded back to form a point for easier loading.
5. Insert the new roll such that the free end is positioned as shown. Press the PAPER ADVANCE key until paper appears at the front of the printer, then close the access door.



The Tape Cartridge

Introduction

The internal tape cartridge drives allow high density, high quality tape cartridges to be used for up to 217K bytes of data and program storage per cartridge. This chapter covers specifications and care of the tape cartridge and drives.

For heavy usage of mass storage files, such as nonconsecutive file sorts or data base management applications, flexible disks or hard discs are recommended for optimum performance and reliability.

Inserting and Removing the Tape Cartridge

Insert the tape cartridge so that its label is up and the open edge is toward the computer, as shown. Both the drive window and the door beneath it open when a cartridge presses on the lower door; the cartridge can then be inserted.



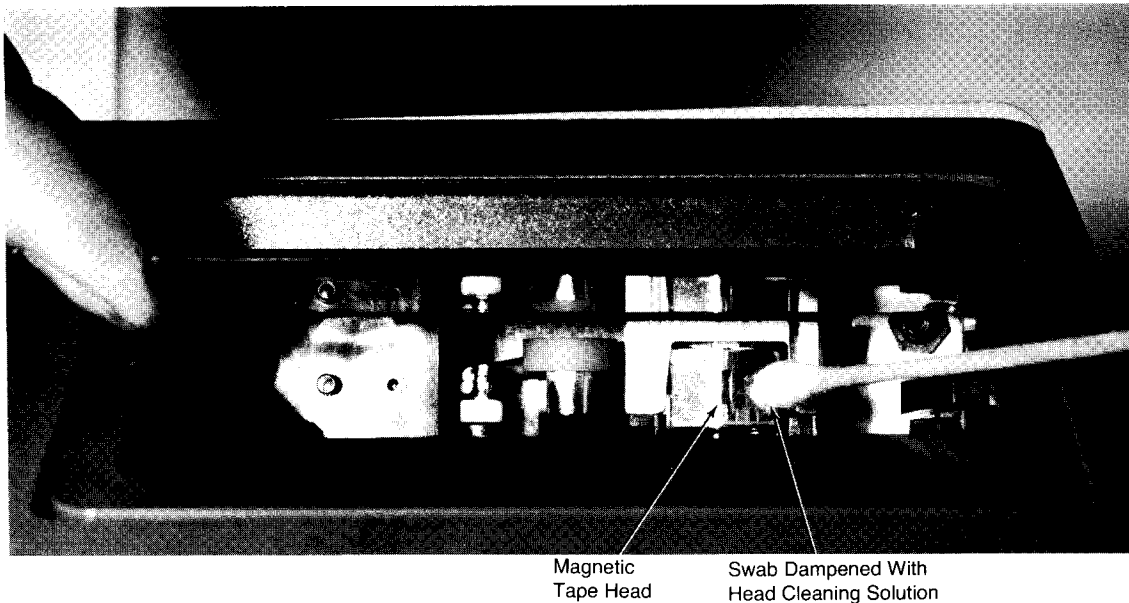
To remove the tape cartridge, press the eject bar. If it is pulled out without pressing the eject bar, another cartridge cannot be inserted until the eject bar is pressed. Do not remove the tape or execute reset while it is moving at low speed; damage to the tape may result.

Chapter 3

Tape Care

A dirty tape drive is the greatest cause of cartridge-related errors. Several basic precautions can greatly reduce such problems

- Clean the tape head of the tape drive at least as often as every eight hours of tape use, or more frequently in dirty environments. Use a cotton applicator dampened with magnetic head cleaner (HP P/N 8500-1251) to wipe the tape head a few times. Be sure the head is dry before inserting a cartridge in the drive. It is a good idea to clean the head before making an important recording.
- Rewind the tape before removing it. This also makes the directory easily accessible for the next use.
- Keep the cartridge in the plastic container supplied with it.
- Never eject the tape cartridge while it is moving. Damage to information can be severe if a write or directory operation is in progress.



Cleaning the Tape Head

Other factors can affect the reliability of the tape cartridge. Strong magnetic fields can erase programs and data stored on the tape. Keeping the cartridge in a metal box, such as a card index, protects it. Physical damage to the tape, such as a wrinkle or fold, can cause recording and loading problems.

NOTE

A back-up copy of vital programs or data should be maintained on a separate tape cartridge.

Tape Life

The tape cartridge has a typical life span of 50 to 100 hours. Environmental conditions of 25° C (77° F) and 20-50% relative humidity are most favorable for long tape life. A high duty cycle (percent of time the tape is accessed during the total time the computer is in use), high turning resistance and continuous use for long periods of time (greater than 1/2 hour) all decrease tape life.

Peripherals, Interfaces, ROMs and Manuals

Introduction

Many HP peripherals are available for use with the System 45B. This chapter describes what ROMs and interfaces you need to use with them. General programming information for all peripherals can be found in the System 45B Operating and Programming Manual, HP P/N 09845-91000. This chapter covers the manuals that go with the various peripherals, interfaces and ROMs.

Peripheral Hardware Requirements

Peripheral	Interface	ROM(s) Required	ROM for Extended Control
9866A/B Thermal Printer	98032A Opt. 466	none	I/O
9871A Impact Printer	98032A Opt. 471	none	I/O
9871A Impact Printer Option 001	98034A	none	I/O
9876A Thermal Printer	98034A	none	
2608A Line Printer	98034A	none	I/O
2631A/G Line Printer	98034A	none	Graphics (2631G only)
7245A Plotter/Printer	98034A	Graphics	
9872A Plotter	98034A	Graphics	I/O
9874A Digitizer	98034A	I/O	
9884A Tape Punch	98032A Opt. 484	none	I/O
9883A Paper Tape Reader	98032A Opt. 483	I/O	
9869A Card Reader	98032A Opt. 469	I/O	
9875A Cartridge Tape Unit	98034A	I/O	
9878A I/O Expander	Included	none	
9885 Flexible Disk Drive	98032A Opt. 485	Mass Storage	
7900-series Hard Disc Drives	98041A	Mass Storage	

Chapter 4

Option ROM Manuals

These manuals are supplied with option ROMs. Each manual is also available separately.

Mass Storage Techniques	09845-91070
I/O ROM Programming	09845-91060
Graphics ROM Programming	09845-91050
Advanced Programming ROM Manual	09845-91065

Peripheral Manuals

Printers

HP 9866A/B Thermal Printer	
9866A/B Printer Peripheral Manual	09866-90001
HP 9871A Impact Printer	
9871A Installation Manual	09871-90035
9871A Operating Manual for HP-IB	09871-90001
HP 9876A Thermal Printer	
9876A Peripheral Manual	09876-90000
HP 2608A Line Printer	
2608A Line Printer Operator's Manual	02608-90901
2608A Line Printer Condensed Operator's Manual	02608-90902
2608A Line Printer Technical Reference	02608-90903
HP 2631A Line Printer	
2631A Operator's Manual	02631-90901
2631A Printer Programming Manual	02631-90903
HP 2631G Line Printer	
2631G Operator's Manual	02631-90909
2631G Technical Reference	02631-90911
HP 7245A Plotter/Printer	
7245A Plotter/Printer Operating and Programming Manual	07245-90001

Plotter

HP 9872A Plotter

9872A Graphics Plotter Operating and Service Manual

09872-90000

Graphics ROM Programming

09845-91050

Digitizer

HP 9874A Digitizer

9874A Digitizer Installation and Service Manual

09874-90000

Paper Tape

HP 9884A Tape Punch

9884A Tape Punch Operating and Service Manual

09884-90000

HP 9883A High Speed Paper Tape Reader

9883A Operating and Service Manual

02748-90032

9883A Operating and Programming Manual

09883-90001

Card Reader

HP 9869A Card Reader

9869A Card Reader Operating and Service Manual

09869-90002

Cartridge Tape Unit

HP 9875A Cartridge Tape Unit

9875A Installation and Operation Manual

09875-90000

I/O Expander

HP 9878A I/O Expander

9878A I/O Expander Installation and Service Manual

09878-90000

Disc Drives

HP 9885 Flexible Disk Drive

9885 Flexible Disk Drive Installation Manual

09885-90010

HP 7906A Disc Drive

7906A Disc Drive User's Manual

07906-90901

7906A Disc Drive Installation Manual

07906-90902

HP 7920A Disc Drive	
7920A Disc Drive Operating and Service Manual	07920-90001

HP 7925A Disc Drive	
7925A Disc Drive User's Manual	07925-90901
7925A Disc Drive Installation Manual	07925-90902

Interface Manuals

Interfaces are necessary for the System 45B to communicate with peripherals. Refer also to the section on Hardware Requirements.

98032A 16-Bit Interface	
98032A 16-Bit Interface Installation and Service Manual	98032-90000

98033A BCD Interface	
98033A BCD Interface Installation and Service Manual	98033-90000

98034A HP-IB Interface (IEEE-488)	
98034A HP-IB Interface Installation and Service Manual	98034-90000

98035A Real Time Clock Interface	
98035A Real Time Clock Installation and Service Manual	98035-90000

98036A Serial I/O Interface	
98036A Serial I/O Interface Installation and Service Manual	98036-90000

98040A Incremental Plotter Interface	
98040A Incremental Plotter Interface Installation and Service Manual	98040-90000

98041A Disc Interface	
98041A Disc Interface Installation Manual	98041-90000

Accessories

Prerecorded Programs

Software Packs containing programs for solving problems from many disciplines are available for the System 45B. Disciplines include Structures, Statistics, Management Science, Numerical Analysis, Payroll and Forecasting. A Utility Library having a collection of commonly used programs and subprograms is supplied with System 45. For a complete list of prerecorded software programs and for pricing information, contact an HP Sales and Service Office; addresses are provided in the back of this manual.

Keyboard Magazine

Keyboard is a magazine containing general information about HP desktop computers and related equipment. It includes articles and programs written by desktop computer users, descriptions of the latest equipment and prerecorded programs, programming tips, and many other items of general interest to desktop computer users.

To receive your free subscription to Keyboard, complete and mail the order form supplied with the computer.

BASIC Users' Club

The BASIC Users' Club is especially for System 45B users. It maintains a library of BASIC language programs contributed by users — you can submit as many programs as you like, and for each program you contribute, you can choose three others from the library. A catalog contains descriptions of all programs the club offers.

Chapter 5

Maintenance

Introduction

This chapter covers cleaning and servicing of your 9845B Desktop Computer.

Cleaning

The 9845B can be cleaned with a soft cloth dampened either in clean water or in water containing a mild detergent. Do not use an excessively wet cloth or allow water to penetrate the computer. Do not use any abrasive cleaners, especially on the CRT screen or tape cartridge window.

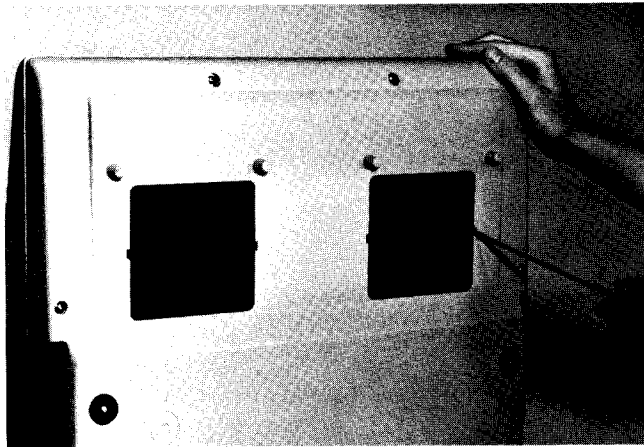
The tape head should be cleaned after a maximum of eight hours of use; for more information on cleaning the tape head, see Chapter 3.

Chapter 6

Cleaning The Air Filters

There are two air intakes which are located under the keyboard in the bottom surface of the computer. These must be inspected periodically (every three months, approximately) and cleaned if found to be dirty.

The easiest way to inspect the filters is to turn the computer off, then slide it forward on the table until you can see the filters. If this degree of access is inadequate for removing the filters for cleaning, the computer can be lifted up onto its rear panels for better access, as shown below. Be sure to turn the power off and disconnect any cabling before taking this step.



The filters can then be removed by inserting a key or screwdriver into one of the slots on either side of each filter and prying them out. Clean the filters thoroughly either by holding them under running water or by washing them in warm soapy water and then rinsing them in clear water. Dry the filters thoroughly before snapping them back into place.

Service

WARNING

LETHAL VOLTAGES ARE PRESENT INSIDE THE 9845B.
THERE ARE NO CUSTOMER SERVICEABLE PARTS IN-
SIDE THE 9845B.

Maintenance Agreements

When you buy a Hewlett-Packard desktop computer, service is an important factor. If you are to get maximum use from your machine, it must be in good working order. An HP Maintenance Agreement is the best way to keep your computer in optimum running condition.

Consider these important advantages –

- **Fixed Cost** – The cost is the same regardless of the number of calls, so it is a figure that you can budget.
- **Priority Service** – Your Maintenance Agreement assures that you receive priority treatment, within an agreed-upon response time.
- **On-Site Service** – There is no need to package your equipment and return it to HP. Fast and efficient repair at your location saves you both time and money.
- **A Complete Package** – A single charge covers labor, parts, and transportation.
- **Regular Maintenance** – Periodic visits are included, per factory recommendations, to keep your equipment in optimum operating condition.
- **Individualized Agreement** – Each Maintenance Agreement is tailored to support your equipment configuration and your requirements.

After considering these advantages, we are sure you will see that a Maintenance Agreement is an important and cost-effective investment.

For more information, please contact your local HP Sales and Service Office.

SALES & SERVICE OFFICES

AFRICA, ASIA, AUSTRALIA

ANGOLA

Teletra
Empresa Técnica de Equipamentos
Elétricos S.A.R.L.
R. Barbosa Rodrigues, 42-1^oDT.
Caixa Postal, 6487
Luanda
Tel: 35515/6
Cable: ELECTRA Luanda

AUSTRALIA

Hewlett-Packard Australia Pty. Ltd.
31-41 Joseph Street
Blackburn, Victoria 3130
P.O. Box 35
Doncaster East, Victoria 3109
Tel: 896351
Tel: 31-024
Cable: HEWPARD Melbourne
Hewlett-Packard Australia Pty. Ltd.
31 Bridge Street
Pymble
New South Wales, 2073
Tel: 4495866
Tel: 21561
Cable: HEWPARD Sydney
Hewlett-Packard Australia Pty. Ltd.
153 Greenhill Road
Parkside, S.A., 5063
Tel: 2725911
Tel: 82536
Cable: HEWPARD Adelaide
Hewlett-Packard Australia Pty. Ltd.
141 Stirling Highway
Nedlands, W.A., 6009
Tel: 3865455
Tel: 93859
Cable: HEWPARD Perth
Hewlett-Packard Australia Pty. Ltd.
121 Wollongong Street
Fyshwick, A.C.T., 2609
Tel: 804244
Tel: 62650
Cable: HEWPARD Canberra
Hewlett-Packard Australia Pty. Ltd.
5th Floor
Teachers Union Building
495-499 Boundary Street
Spring Hill, Queensland 4000
Tel: 2291544
Cable: HEWPARD Brisbane
BANGLADESH
The General Electric Co. of Bangladesh Ltd.
Magnet House 72
Dilkush Commercial Area
Motihalli, Dacca 2
Tel: 252415, 252419
Tel: 734
Cable: GECDAC Dacca

ETHIOPIA

Abdella Abdulmalik
P.O. Box 2635
Addis Ababa
Tel: 11 93 40
GUAM
Medical Only
Guan Medical Supply, Inc.
Suite C, Airport Plaza
P.O. Box 8947
Tamuning 96911
Tel: 646-4513
Cable: EARMED Guam

HONG KONG

Schmidt & Co. (Hong Kong) Ltd.
Wing On Centre, 28th Floor
Connaught Road, C.
Hong Kong
Tel: 5-455644
Tel: 74766 SCHMC HK

INDIA

Blue Star Ltd.
Kastur Buildings
Jamshedji Tata Rd
Bombay 400 020
Tel: 29 50 21
Tel: 011-2156
Cable: BLUEFROST
Blue Star Ltd.
Sahas
414-2 Vir Savakar Marg
Prabhadevi
Bombay 400 025
Tel: 45 76 87
Tel: 011-4093
Cable: FROSTBLUE
Blue Star Ltd.
Band Box House
Prabhadevi
Bombay 400 025
Tel: 45 75 01
Tel: 011-3751
Cable: BLUESTAR
Blue Star Ltd.
Bhaveshp.
Stadium Road
Ahmedabad 380 014
Tel: 42880
Tel: 234
Cable: BLUEFROST
Blue Star Ltd.
7 Hare Street
P.O. Box 506
Calcutta 700 001
Tel: 231-0131
Tel: 021-7655
Cable: BLUESTAR
Blue Star Ltd.
Bhandari House
7th & 8th Floor
91 Nehru Place
New Delhi 110 024
Tel: 634770 & 635166
Tel: 031-2463
Cable: BLUESTAR

Blue Star Ltd.
Blue Star House
11/11A Magarath Road
Bangalore 560 025
Tel: 55668
Tel: 043-430
Cable: BLUESTAR
Blue Star Ltd.
Meekshi Mandiram
xxx/1678 Mahatma Gandhi Rd.
Cochin 682 016
Tel: 32068, 32161, 32282
Tel: 0885-514
Cable: BLUESTAR
Blue Star Ltd.
1-11/17
Sarjoni Devi Road
Secunderabad 500 003
Tel: 70126, 70127
Tel: 015-459
Cable: BLUEFROST
Blue Star Ltd.
234 Kodambakkam High Road
Madras 600 034
Tel: 82056
Tel: 041-379
Cable: BLUESTAR

INDONESIA

BERCA Indonesia P.T.
P.O. Box 496Jkt.
Jln. Abdul Muis 82
Jakarta
Tel: 349255, 349886
Tel: 46748 BERSIL IA
Cable: BERSAL
BERCA Indonesia P.T.
P.O. Box 174/Sby.
23 Jin. Jemerto
Surabaya
Tel: 42027
Cable: BERCAcon
ISRAEL
Electronics Engineering Div.
of Motorola Israel Ltd.
16, Kremenetsky Street
P.O. Box 25016
Tel: 38973
Tel: 33569, 34164
Cable: BASTEL Tel-Aviv
JAPAN
Yokogawa-Hewlett-Packard Ltd.
Chuo Bldg., 4th Floor
4-20, Nishinakajima 5-chome
Yodogawa-ku, Osaka-shi
Osaka 532
Tel: 06-304-6021
Tel: 523-3624
Yokogawa-Hewlett-Packard Ltd.
29-21, Takaido-Higashi 3-chome
Suginami-ku, Tokyo 168
Tel: 03-331-6111
Tel: 232-2024 YHP-Tokyo
Cable: YHPMARKET TOK 23 724

Yokogawa-Hewlett-Packard Ltd.
Nakamo Building
24 Kami Sasajima-cho
Nakamura-ku, Nagoya, 450
Tel: 052 571-5171
Yokogawa-Hewlett-Packard Ltd.
Tanigawa Building
2-24-1 Tsuruya-cho
Kanagawa-ku
Yokohama, 221
Tel: 045-512-1252
Tel: 382-3204 YHP YOK

NEW GUINEA

Hewlett-Packard Australia Pty. Ltd.
Development Bank Building
Ground Floor
Ward Strip
Port Moresby, Papua
Tel: 258933
NEW ZEALAND
Hewlett-Packard (N.Z.) Ltd.
4-12 Cruickshank Street
Kilbirnie, Wellington 3
P.O. Box 9443
Hachuey Place
Wellington
Tel: 877-199
Cable: HEWPACK Wellington
Hewlett-Packard (N.Z.) Ltd.
Pakuranga Professional Centre
267 Pakuranga Highway
Box 51092
Pakuranga
Tel: 569-851
Cable: HEWPACK Auckland
Analytical/Medical Only
Medical Supplies N.Z. Ltd.
Scientific Division
79 Carlton Gore Road, Newmarket
P.O. Box 1234
Auckland
Tel: 75-289
Cable: DENTAL Auckland
Analytical/Medical Only
Medical Supplies N.Z. Ltd.
Norrie and Parumona Streets
Porirua
Tel: 75-098
Tel: 3858
Analytical/Medical Only
Medical Supplies N.Z. Ltd.
P.O. Box 309
239 Stannmore Road
P.O. Box 233
Christchurch
Tel: 892-019
Cable: DENTAL Christchurch
Analytical/Medical Only
Medical Supplies N.Z. Ltd.
309 Great King Street
Sandton, 2144
Tel: 802-1040/6
Tel: 8-4782
Cable: HEWPACK Johannesburg

KENYA

Advanced Communications Ltd.
P.O. Box 30070
Nairobi
Tel: 331955
Tel: 22639
Medical Only
International Aeradio (E.A.) Ltd.
P.O. Box 19012
Nairobi Airport
Nairobi
Tel: 336055/6
Tel: 22201/22301
Cable: INTAERIO Nairobi
Medical Only
International Aeradio (E.A.) Ltd.
P.O. Box 95221
Mombasa
Tel: 22575
KOREA
Samsung Electronics Co., Ltd.
15th Floor, Daeyongak Bldg.
25-5, 1-KA
Chong Moo-Ro, Chung-Ku,
Seoul
Tel: (23) 6811, 778-3401/2/3/4
Tel: 22575
MALAYSIA
Hewlett-Packard Sales SDN BHD
Suite 2, 21/2-22
Bangunan Angkasa Raya
Jalan Ampang
Kuala Lumpur
Tel: 23320/27491

Protel Engineering
P.O. Box 1917
Lot 259, Satok Road
Kuching, Sarawak
Tel: 53544
Cable: PROTELENG
MOZAMBIQUE
A.N. Goncalves, Ltd.
162, 1^o Apt. 14 Av. D. Luis
Caixa Postal 107
Maputo
Tel: 27091, 27114
Tel: 6-205 NEGON Mo
Cable: NEGON
NEW GUINEA
Hewlett-Packard Australia Pty. Ltd.
Development Bank Building
Ground Floor
Ward Strip
Port Moresby, Papua
Tel: 258933
NEW ZEALAND
Hewlett-Packard (N.Z.) Ltd.
4-12 Cruickshank Street
Kilbirnie, Wellington 3
P.O. Box 9443
Hachuey Place
Wellington
Tel: 877-199
Cable: HEWPACK Wellington
Hewlett-Packard (N.Z.) Ltd.
Pakuranga Professional Centre
267 Pakuranga Highway
Box 51092
Pakuranga
Tel: 569-851
Cable: HEWPACK Auckland
Analytical/Medical Only
Medical Supplies N.Z. Ltd.
Scientific Division
79 Carlton Gore Road, Newmarket
P.O. Box 1234
Auckland
Tel: 75-289
Cable: DENTAL Auckland
Analytical/Medical Only
Medical Supplies N.Z. Ltd.
Norrie and Parumona Streets
Porirua
Tel: 75-098
Tel: 3858
Analytical/Medical Only
Medical Supplies N.Z. Ltd.
P.O. Box 309
239 Stannmore Road
P.O. Box 233
Christchurch
Tel: 892-019
Cable: DENTAL Christchurch
Analytical/Medical Only
Medical Supplies N.Z. Ltd.
309 Great King Street
Sandton, 2144
Tel: 802-1040/6
Tel: 8-4782
Cable: HEWPACK Johannesburg

NIGERIA

The Electronics Instrumentations Ltd.
N60/770 Oyo Road
Oluseun House
P.M.B. 5402
Ibadan
Tel: 461577
Tel: 31231 TEIL NG
Cable: THETIEL Ibadan
The Electronics Instrumentations Ltd.
144 Agege Motor Road, Mushin
P.O. Box 6645
Lagos
Cable: THETIEL Lagos

PAKISTAN

Mushko & Company Ltd.
Osman Chambers
Abdullah Haroon Road
Karachi-3
Tel: 511027, 512927
Tel: 2884
Cable: COOPERATOR Karachi
Mushko & Company, Ltd.
38B, Satellite Town
Rawalpindi
Tel: 41824
Cable: FEMUS Rawalpindi
PHILIPPINES
The Online Advanced Systems Corporation
Rico House
Amorsolo cor. Herrera Str.
Legaspi Village, Makati
P.O. Box 1510
Metro Manila
Tel: 85-35-81, 85-34-91, 85-32-21
Tel: 3274 ONLINE
RHODESIA
Field Technical Sales
45 Kelvin Road North
P.O. Box 3458
Salisbury
Tel: 705231 (5 lines)
Tel: RH 4122
SINGAPORE
Hewlett-Packard Singapore (Pte.) Ltd.
1150 Depot Road
Alexandra P.O. Box 58
Singapore 4
Tel: 270-2355
Tel: HPSG RS 21486
Cable: HEWPACK, Singapore

SOUTH AFRICA

Hewlett-Packard South Africa (Pty.) Ltd.
Private Bag Wendywood, Sandton, Transvaal, 2144
Hewlett-Packard Centre
Daphne Street, Wendywood, Sandton, 2144
Tel: 802-1040/6
Tel: 8-4782
Cable: HEWPACK Johannesburg
Hewlett-Packard South Africa (Pty.) Ltd.
Howard Place, Cape Province, 7450
Pine Park Centre, Forest Drive
Pinelands, Cape Province, 7405
Tel: 53-7955 thu 9
Tel: 57-0006
SRI LANKA
Metropolitan Agencies Ltd.
209/9 Union Place
Colombo 2
Tel: 35947
Tel: 1377METROLD CE
Cable: METROLD
SUDAN
Radison Trade
P.O. Box 921
Khartoum
Tel: 44048
Tel: 375
TAIWAN
Hewlett-Packard Far East Ltd.
Taiwan Branch
39 Chung Hsiao West Road
Section 1, 7th Floor
Taipei
Tel: 3619160-9, 3141010
Cable: HEWPACK TAIPEI
Hewlett-Packard Far East Ltd.
Taiwan Branch
68-2, Chung Cheng 3rd Road
Kaohsiung
tel: 07-242318-Kaohsiung
Analytical Only
San Kwang Instruments Co., Ltd.
20 Yung Su Road
Taipei
Tel: 3615446-9 (4 lines)
Tel: 22694 SANKWANG
Cable: SANKWANG Taipei
TANZANIA
Medical Only
International Aeradio (E.A.) Ltd.
P.O. Box 861
Dar es Salaam
Tel: 21251 Ext. 265
Tel: 41030
THAILAND
UNIMESA Co. Ltd.
Eicom Research Building
2538 Sukumvit Ave.
Bangchak, Bangkok
Tel: 393237, 3930338
Cable: UNIMESA Bangkok
UGANDA
Medical Only
International Aeradio (E.A.) Ltd.
P.O. Box 2577
Kampala
Tel: 54388
Cable: INTAERIO Kampala
ZAMBIA
R.J. Tilbury (Zambia) Ltd.
P.O. Box 2792
Lusaka
Tel: 73793
Cable: ARJAYTEE, Lusaka

Hewlett-Packard South Africa (Pty.) Ltd.
Howard Place, Cape Province, 7450
Pine Park Centre, Forest Drive
Pinelands, Cape Province, 7405
Tel: 53-7955 thu 9
Tel: 57-0006

SRI LANKA
Metropolitan Agencies Ltd.
209/9 Union Place
Colombo 2
Tel: 35947
Tel: 1377METROLD CE
Cable: METROLD

SUDAN
Radison Trade
P.O. Box 921
Khartoum
Tel: 44048
Tel: 375

TAIWAN
Hewlett-Packard Far East Ltd.
Taiwan Branch
39 Chung Hsiao West Road
Section 1, 7th Floor
Taipei
Tel: 3619160-9, 3141010
Cable: HEWPACK TAIPEI

Hewlett-Packard Far East Ltd.
Taiwan Branch
68-2, Chung Cheng 3rd Road
Kaohsiung
tel: 07-242318-Kaohsiung

Analytical Only
San Kwang Instruments Co., Ltd.
20 Yung Su Road
Taipei
Tel: 3615446-9 (4 lines)
Tel: 22694 SANKWANG
Cable: SANKWANG Taipei

TANZANIA
Medical Only
International Aeradio (E.A.) Ltd.
P.O. Box 861
Dar es Salaam
Tel: 21251 Ext. 265
Tel: 41030

THAILAND
UNIMESA Co. Ltd.
Eicom Research Building
2538 Sukumvit Ave.
Bangchak, Bangkok
Tel: 393237, 3930338
Cable: UNIMESA Bangkok

UGANDA
Medical Only
International Aeradio (E.A.) Ltd.
P.O. Box 2577
Kampala
Tel: 54388
Cable: INTAERIO Kampala

ZAMBIA
R.J. Tilbury (Zambia) Ltd.
P.O. Box 2792
Lusaka
Tel: 73793
Cable: ARJAYTEE, Lusaka

OTHER AREAS NOT LISTED, CONTACT:
Hewlett-Packard International
3200 Hillview Ave.
Palo Alto, California 94304
Tel: (415) 856-1501
TWX: 910-373-1267
Cable: HEWPACK Palo Alto
Tel: 034-8300, 034-8493

CANADA

ALBERTA

Hewlett-Packard (Canada) Ltd.
11620A - 168th Street
Edmonton T5M 3T9
Tel: (403) 452-3670
TWX: 610-831-2431
Hewlett-Packard (Canada) Ltd.
210, 720 Fishery St. S.E.
Calgary T2H 2H8
Tel: (403) 253-2713
TWX: 610-821-6141

BRITISH COLUMBIA

Hewlett-Packard (Canada) Ltd.
10691 Sheilbridge Way
Richmond V6X 2W7
Tel: (604) 270-2277
TWX: 610-925-5059

MANITOBA

Hewlett-Packard (Canada) Ltd.
3801 Sheilbridge Way
Winnipeg R3H 0Y1
Tel: (204) 786-6701
TWX: 610-671-3531

NOVA SCOTIA

Hewlett-Packard (Canada) Ltd.
600 Windmill Road
Dartmouth B3B 1L1
Tel: (902) 469-7820
TWX: 610-271-4482

ONTARIO

Hewlett-Packard (Canada) Ltd.
1020 Morrison Dr.
Ottawa K2H 8K7
Tel: (613) 820-6483
TWX: 610-563-1636
Hewlett-Packard (Canada) Ltd.
6877 Goreway Drive
Mississauga L4V 1M8
Tel: (416) 678-9430
Mexico 23, D.F.
Hewlett-Packard (Canada) Ltd.
552 Newbold Street
London N6E 2S5
Tel: (519) 686-9181

QUEBEC

Hewlett-Packard (Canada) Ltd.
275 Hymus Blvd.
Pointe Claire H9R 1G7
Tel: (514) 697-4232
TWX: 610-422-3022
TLX: 05-821-521 HPCL

FOR CANADIAN AREAS NOT LISTED:
Contact Hewlett-Packard (Canada) Ltd.
in Mississauga.

CENTRAL AND SOUTH AMERICA

ARGENTINA

Hewlett-Packard Argentina S.A.
Av. Leandro N. Alem 822 - 12°
1001 Buenos Aires
Tel: 31-6063, 4.5.6
Tel: 122443 AR CIGY
Cable: HEWPACKARG
Biotron S.A.C.I y M.
Bolívar 177
1066 Buenos Aires
Tel: 30-4846, 34-9356, 34-0460,
33-2863
Tel: 011-7595
Cable: Biotron Baries
BOLIVIA
Casa Karin S.A.
Calle Potosí 1130
P.O. Box 500
La Paz
Tel: 41530, 53221
Tel: CWC BX 5298, ITT 3560082
Cable: KAVLIN
BRAZIL
Hewlett-Packard do Brasil
Lda C. Ltda.
Alameda Rio Negro, 750
Alphaville
06400 Barueri SP
Tel: 429-3222
Cable: HEWPACK Sao Paulo

BRAZIL

Hewlett-Packard do Brasil
Lda C. Ltda.
Rua Padre Chapas, 32
90000-Pôrto Alegre-RS
Tel: (0512) 22-2998, 22-5621
Cable: HEWPACK Porto Alegre
Hewlett-Packard do Brasil
Lda C. Ltda.
Av. Epitacio Pessoa, 4664
Lagoa
20000-Rio de Janeiro-RJ
Tel: 201-21905 HPBR-BR
Cable: HEWPACK
Rio de Janeiro

CHILE

Jorge Calcaeni y Cia. Ltda.
Vicuna Mackenna 3, Ofic. 1204
Casilla 16475
Correio 9, Santiago
Tel: JCALCAGNI

COLUMBIA

Instrumentación
Henrik A. Langebaek & Kier S.A.
Carrera 7 No. 48-75
Apartado Aéreo 6287
Bogotá, D.C.
Tel: 269-8877
Tel: 44400
Cable: AARIS Bogotá
Instrumentación
Henrik A. Langebaek & Kier S.A.
Carrera 63 No. 49-A-31
Apartado 54098
Medellin
Tel: 304475
COSTA RICA
Ciencia Costarricense S.A.
Avenida 2, Calle 5
San Pedro de Montes de Oca
Apartado 10159
San Jose
Tel: 24-38-20, 24-08-19
Tel: 341627 GALGUR CR
Cable: GALGUR

ECUADOR

Computadoras y Equipos
Electrónicos del Ecuador
P.O. Box 6423 CCI
Eloy Alfaro No. 1824, 3°Piso
Quito
Tel: 453 482
Tel: 2548 CYEDE ED
Cable: CYEDE-Quito
Medical Only
Hospitalar S.A.
Casilla 3550
Robles 625
Quito
Tel: 545-250
Cable: HOSPITALAR-Quito
EL SALVADOR
IPESA
Bulevar de los Heroes 11-48
San Salvador
Tel: 252787
GUATEMALA
IPESA
Avenida Reforma 3-48,
Zona 9
Guatemala City
Tel: 341627-314786, 66471-5, ext. 9
Tel: 4192 Teletro Gu

MEXICO

Hewlett-Packard Mexicana, S.A. de C.V.
Av. Periferico Sur No. 6501
Tepepan, Xochimilco
Mexico 23, D.F.
Tel: 905-675-4600
Tel: 017-74-507
Hewlett-Packard Mexicana, S.A. de C.V.
Ave. Constitución No. 2184
Monterrey, N.L.
Tel: 48-71-32, 48-71-84
Tel: 038-410
NICARAGUA
Roberto Terán G.
Apartado Postal 689
Edificio Terán
Managua
Tel: 25114, 23412, 23454, 22400
Cable: ROTERAN Managua

PANAMA

Electrónico Balboa, S.A.
Apartado 4929
Panama 5
Calle Samuel Lewis
Edificio "Alta", No. 2
Ciudad de Panama
Tel: 84-2700
Tel: 3483103 Curundu.
Tel: 316627-314786, 66471-5, ext. 9
Cable: ELECTRON Panama

PERU

Compañía Electro Méica S.A.
Los Flanencos 145
San Isidro Casilla 1030
Lima 1
Tel: 41-4325
Tel: Pub. Booth 25424 SISIDRO
Cable: ELMED Lima
SURINAME
Surfel Radio Holland N.V.
Grote Hofstr. 3-5
P.O. Box 155
Paramaribo
Tel: 72118, 77880
Cable: Surtel
TRINIDAD & TOBAGO
CARTEL
Caribbean Telecoms Ltd.
P.O. Box 732
69 Frederick Street
Port-of-Spain
Tel: 62-53068

VENEZUELA

Hewlett-Packard de Venezuela C.A.
P.O. Box 50933
Caracas 105
Los Ruces Norte
3a Transversal
Edificio Segre
Caracas 107
Tel: (415) 856-1501
TWX: 910-373-1267
Cable: HEWPACK Caracas

FOR AREAS NOT LISTED, CONTACT:

Hewlett-Packard
Inter-Americas
3200 Hillview Ave.
Palo Alto, California 94304
Tel: (415) 856-1501
TWX: 910-373-1260
Cable: HEWPACK Palo Alto
Tel: 034-8300, 034-8493

AUSTRIA
Hewlett-Packard Ges m b H.
Handelskai 52
P.O. Box 7
A-1205 Vienna
Tel: 351621-27
Cable: HEWPAK Vienna
Telex: 75923 hewpak a

BAHRAIN
Medical Only
Wael Pharmacy
P.O. Box 648
Bahrain
Tel: 54886, 56123
Telex: 8550 WAEI GJ
Cable: WAEI PHARM
Analytical Only
Al Hamdiya Trading
and Contracting
P.O. Box 20074
Manama
Tel: 259978, 259958
Telex: 8895 KALDIA GJ

BELGIUM
Hewlett-Packard Benelux
S.A. N.V.
Avenue du Col-Vert, 1.
(Gronenraaglaan)
B-1170 Brussels
Tel: (02) 660 50 50
Cable: PALOBEN Brussels
Telex: 23-949 paloben br

CYPRUS
Kyprios
15 Gregorios Xenopoulos Street
P.O. Box 1152
Nicosia
Tel: 45628/29
Cable: Kyprios Pandeth
Telex: 3018

CZECHOSLOVAKIA
Vývojová a Provozni Závada
Výzkumných Ústavů v Bechovicích
CSSR-25097 Bechovice u Prahy
Tel: 89 93 41
Telex: 12133
Institute of Medical Bionics
Vyskumny Ústav Lekarské Bioniky
Jedlova 6
CS-88346
Bratislava-Kramare
Tel: 4251
Telex: 93229

DDR
Entwicklungslabor der TU Dresden
Forschungsinstitut Mensberg
DDR-7305
Weidheim/Meinsberg
Tel: 37 667
Telex: 518741
Export Contact AG Zuerich
Guenther Forger
Schlegelstrasse 15
1040 Berlin
Tel: 42-74-12
Telex: 111889

DENMARK
Hewlett-Packard A/S
Datavej 52
DK-3460 Birkerød
Tel: (02) 81 66 40
Cable: HEWPAK AS
Telex: 37409 hpas dk
Hewlett-Packard A/S
Navevej 1
DK-8600 Silkeborg
Tel: (06) 82 71 66
Telex: 37409 hpas dk
Cable: HEWPAK AS

EGYPT
I.E.A.
International Engineering Associates
24 Hussein Hegazi Street
Kasr el-Aim
Cairo
Tel: 23 829
Telex: 93830
Cable: INTENGASSO
SAMITRO
Sami Amin Trading Office
18 Abdel Aziz Gawish
Abdine-Cairo
Tel: 24932
Cable: SAMITRO CAIRO

ALABAMA
P.O. Box 4207
8290 Whitesburg Dr.
Huntsville 35802
Tel: (205) 881-4591
8933 E. Roebuck Blvd.
Birmingham 35206
Tel: (205) 836-2203/2

ARIZONA
2336 E. Magnolia St.
Phoenix 85034
Tel: (602) 244-1361
2424 East Aragon Rd.
Tucson 85706
Tel: (602) 889-4661

***ARKANSAS**
Medical Service Only
P.O. Box 5646
Brady Station
Little Rock 72215
Tel: (501) 376-1844

CALIFORNIA
1579 W. Shaw Ave.
Fresno 93771
Tel: (209) 224-0582
1430 East Orangeflorpe Ave.
Fullerton 92631
Tel: (714) 870-1000

3939 Lankershim Boulevard
North Hollywood 91604
Tel: (818) 877-1282
TWX: 910-499-2671
5400 West Rosecrans Blvd.
P.O. Box 92105
World Way Postal Center
Los Angeles 90009
Tel: (213) 776-7500
TWX: 910-325-6608

***Los Angeles**
Tel: (213) 776-7500
3003 Scott Boulevard
Santa Clara 95050
Tel: (408) 986-7000
Ridgecrest
Tel: (714) 446-6165
646 W. North Mark Blvd.
Sacramento 95834
Tel: (916) 929-7222

FINLAND
Hewlett-Packard Oy
Nahkahuusintie 5
P.O. Box 6
SF-00211 Helsinki 21
Tel: (90) 6923031
FRANCE
Hewlett-Packard France
Avenue des Tropiques
Les Ulis
Boite Postale No 6
91401 Orsay-Cedex
Tel: (1) 907 78 25
TWX: 600048F
Hewlett-Packard France
Chemin des Moulins
B.P. 152
69130 Ecully
Tel: (78) 33 81 25
TWX: 310617F
Hewlett-Packard France
Périmètre de la Cédère
31081 Toulouse-Le Mirail
Tel: (61) 40 11 12
TWX: 510957F

Hewlett-Packard France
Le Ligoures
Bureau de vente de Marseilles
Place Rouée de Villeneuve
13100 Aix-en-Provence
Tel: (02) 59 41 02
Hewlett-Packard France
2, Allée de la Bourgette
35100 Rennes
Tel: (99) 51 42 44
TWX: 740912F
Hewlett-Packard France
18, rue du Canal de la Marne
67300 Schiltigheim
Tel: (89) 63 08 10
TWX: 890141F

Hewlett-Packard France
Immeuble péricentre
Rue van Gogh
95650 Villeneuve D Ascq
Tel: (20) 91 41 25
TWX: 160124F
Hewlett-Packard France
Bureau de Vente
Centre d' affaires Paris-Nord
Bâtiment Ampère
Rue de la Commune de Paris
B.P. 300
93153 Le Blanc Mesnil Cédex
Tel: (01) 931 88 50

Hewlett-Packard France
Av. du Pdt. Kennedy
33700 Merignac
Tel: (56) 97 22 69
Hewlett-Packard France
"France-Evry" immeuble Lorraine
Bolevard de France
91035 Evry-Cedex
Tel: 077 96 60
Hewlett-Packard France
60, Rue de Metz
57130 Jouy aux Arches
Tel: (87) 69 45 32

GERMAN FEDERAL REPUBLIC
Hewlett-Packard GmbH
Vertriebszentrale Frankfurt
Bernier Strasse 117
Postfach 560 140
D-6000 Frankfurt 56
Tel: (0611) 50-04-1
Cable: HEWPAKSA Frankfurt
Telex: 04 13249 hpfm d
Hewlett-Packard GmbH
Technisches Büro Böblingen
Herrenberger Strasse 110
D-7030 Böblingen, Württemberg
Tel: (0703) 957-1
Hewlett-Packard GmbH
Technisches Büro Düsseldorf
Emmer-Leute-Str. 1 (Saestern)
D-4000 Düsseldorf
Tel: (0211) 5971
Telex: 085 86 533 hpd d
Hewlett-Packard GmbH
Technisches Büro Hamburg
Wendenstrasse 23
D-2000 Hamburg 1
Tel: (040) 24 13 93

IRELAND
Hewlett-Packard Ltd.
King Street Lane
Winnereah, Wokingham
Berk. RG11 5AR
GB-England
Tel: (0734) 78 47 74
Telex: 04 1178
Cable: Hewpie London
Hewlett-Packard Ltd.
2C Avonbeg Industrial Estate
Long Mile Road
Dublin 12, Eire
Tel: (01) 514322
Telex: 30439
Medical Only
Cardiac Services (Ireland) Ltd.
Kilmora Road
Artane
Dublin 5, Eire
Tel: (01) 315620
Medical Only
Cardiac Services Co.
95A Finaghy Rd. South
Belfast BT10 0BY
GB-Northern Ireland

1906 Aero Drive
P.O. Box 23333
San Diego 92123
Tel: (714) 279-3200
*Tanzania
Tel: (213) 705-3344

COLORADO
5600 DTC Parkway
Englewood 80110
Tel: (303) 771-3455
12 Lunar Drive
New Haven 06525
Tel: (203) 389-6551
TWX: 710-465-2029

FLORIDA
P.O. Box 24210
2727 N.W. 62nd Street
Ft. Lauderdale 33309
Tel: (501) 973-2600
4428 Emerson Street
Unit 103
Jacksonville 32207
Tel: (904) 725-6333
P.O. Box 13910
6177 Lake Elmhor Dr.
Orlando 32809
Tel: (305) 859-2900
P.O. Box 12826
Suite 5, Bldg. 1
Office Park North
Pensacola 32575
Tel: (904) 476-8422

GEORGIA
P.O. Box 105005
450 Interstate North Parkway
Atlanta 30348
Tel: (404) 955-1500
Medical Service Only
*Augusta 30903
Tel: (404) 736-0592
P.O. Box 2103
1172 N. Davis Drive
Warner Robins 31098
Tel: (812) 922-0449

HAWAII
2875 So. King Street
Honolulu 96826
Tel: (808) 955-4455

ITALY
Hewlett-Packard Italiana S.p.A.
Via G. Di Vittorio, 9
20063 Cernusco
Sul Naviglio (MI)
Tel: (2) 903691
Telex: 311046 HEWPAKIT
Hewlett-Packard Italiana S.p.A.
Via Turazza, 14
35100 Padova
Tel: (49) 664888
Telex: 41612 HEWPAKIT
Hewlett-Packard Italiana S.p.A.
P.O. Box 103
Via G. Arminio 10
1-00143 Roma
Tel: (06) 54 69 61
Telex: 61514
Cable: HEWPAKIT Roma
Hewlett-Packard Italiana S.p.A.
Corso Giovanni Lanza 94
I-10133 Torino
Tel: (011) 682245/659308
Medical/Catologues Only
Hewlett-Packard Italiana S.p.A.
Via Principe Nicola 43 G.C.
I-95126 Catania
Tel: (095) 37 05 04
Hewlett-Packard Italiana S.p.A.
Via Nuova San Rocco A.
Capodimonte, 62A
I-80131 Napoli
Tel: (081) 7913544
Hewlett-Packard Italiana S.p.A.
Via E. Masi, 9/8
I-40137 Bologna
Tel: (051) 307867/300040

JORDAN
Mousher Cousins Co.
P.O. Box 1387
Amman
Tel: 24907/39907
Telex: SABCO JO 1456
Cable: MOUASHERCO
KUWAIT
Al-Khaldiya Trading &
Contracting
P.O. Box 830-Salat
Kuwait
Tel: 42 4910/41 1726

LUXEMBURG
Hewlett-Packard Benelux
S.A. N.V.
Avenue du Col-Vert, 1.
(Gronenraaglaan)
B-1170 Brussels
Tel: (02) 672 22 40
Cable: PALOBEN Brussels
Telex: 23 494
MOROCCO
Dobbeau
81 rue Karatchi
Casablanca
Tel: 3041 82
Telex: 23051/22822
Cable: MATERIO
Gerep
3, rue d'Agadir
Casablanca
Tel: 27093/5
Telex: 23739
Cable: GEREP-CASA
Cogedir
31 rue Omar Sjaoui
Casablanca
Tel: 27 65 40
Telex: 2137/23003
Cable: COGEDIR
Tel: 44678-44813

NETHERLANDS
Hewlett-Packard Benelux N.V.
Van Heuren Goedhardstraat 121
P.O. Box 667
NL-Amstelveen 1134
Tel: (020) 47 20 21

NORWAY
Hewlett-Packard Norge A/S
Østerdalen 18
P.O. Box 34
1345 Osteras
Tel: (02) 1711 80
Telex: 16621 hpnas n
Hewlett-Packard Norge A/S
Nygaardspaten 114
5000 Bergen

MINNESOTA
2400 N. Prior Ave.
St. Paul 55113
Tel: (612) 636-0700
MISSISSIPPI
322 N. Mart Plaza
Jackson 39206
Tel: (601) 982-9383
MISSOURI
11131 Colorado Ave.
Kansas City 64137
Tel: (816) 763-8000
TWX: 910-771-2087
1024 Executive Parkway
St. Louis 63141
Tel: (314) 878-0200

NEBRASKA
Medical Only
701 Mercy Road
Suite 101
Omaha 68106
Tel: (402) 392-0948
NEVADA
*Las Vegas
Tel: (702) 736-6610
NEW JERSEY
W. 120 Century Rd.
Paramus 07652
Tel: (201) 265-5000
TWX: 710-990-4951
Crystal Brook Professional
Building, Route 35
Eatontown 07724
Tel: (201) 542-1384

NEW MEXICO
P.O. Box 11634
Station E
11300 Lomas Blvd., N.E.
Albuquerque 87123
Tel: (505) 292-1330
Tel: 910-989-1185
156 Wyatt Drive
Las Cruces 88001
Tel: (505) 526-2484
TWX: 910-9983-0550

NEW YORK
6 Automation Lane
Computer Park
Albany 12205
Tel: (518) 458-1550
TWX: 710-444-4961
650 Parrott Hill Office Park
Fairport 14450
Tel: (716) 223-9950
Tel: 516-253-0092
No. 1 Pennsylvania Plaza
55th floor
Woodbury 11797
New York 10001
Tel: (212) 971-0800
5858 East Molloy Road
Syracuse 13211
Tel: (315) 455-2486
1 Crossways Park West
Woodbury 11797
Tel: (516) 521-0300
NORTH CAROLINA
5605 Roanne Way
Greensboro 27405
Tel: (919) 852-1800
OHIO
Medical/Computer Only
Bluff, 300
1313 E. Kemper Rd.
Cincinnati 45226
Tel: (513) 671-7400
16500 Sprague Road
Cleveland 44130
Tel: (216) 243-7300
TWX: 810-423-9430
330 Progress Rd.
Dayton 45449
Tel: (513) 859-8202
1041 Kingsmill Parkway
Bluff, 300
Tel: (614) 436-1041

OKLAHOMA
P.O. Box 32008
6301 N. Meridian Avenue
Oklahoma City 73112
Tel: (505) 721-0200
9920 E. 42nd Street
Suite 121
Tulsa 74145

POLAND
Biuro Informacji Technicznej
Hewlett-Packard
Ul. Stawki 2, 6P
00-950 Warszawa
Tel: 33 25 88 67 43
Telex: 871 24 53 hpa pl
UNIPAN
Biuro Obslugi Technicznej
01-447 Warszawa
ul. Nowelska 6
Polska
Zaklady Naprawcze Sprzetu
Medycznego
Plac Komuny Paryskiej 6
90-007 Lodz
Tel: 334-41, 337-83
Telex: 868691
PORTUGAL
Teletra-Empresa Técnica de
Equipamentos Eletronicos S. a. r. l.
Rua Rodrigo da Fonseca 103
P.O. Box 2531
P-Lisbon 1
Tel: (19) 68 60 72
Cable: TELETRA Lisbon
Telex: 12598
Medical only
Mundinter
Intercambio Mundial de Comercio
S. a. r. l.
P.O. Box 2761
Avenida Antonio Augusto
de Aguiar 138
P - Lisbon
Tel: (19) 53 21 317
Telex: 16651 munter p
Cable: INTERCAMBIO Lisbon

QATAR
Nasser Trading & Contracting
P.O. Box 1563
Doha
Tel: 22170
Telex: 39 NASSER
Cable: NASSER
ROMANIA
Hewlett-Packard Reprezentanta
Bd. n. Balcescu 16
Bucuresti
Tel: 15 80 23/13 88 85
Telex: 1440
I.I.R.U.C.
Intreprinderes Pentru
Intrateras
Si Reparatia Utilajelor de Calcul
B-dul Prof. Dimitrie Pompei 6
Bucuresti-Sectorul 2
Tel: 88-20-70, 88-24-40, 88-67-95
Telex: 118

SAUDI ARABIA
Modern Electronic
Establishment (Head Office)
P.O. Box 1228, Baghdadiah Street
Jeddah
Tel: 27 798
Telex: 40035
Cable: ELECTA JEDDAH
Modern Electronic
Establishment (Branch)
P.O. Box 2728
Riyadh
Tel: 62596/6232
Cable: RAOUDOF
Modern Electronic
Establishment (Branch)
P.O. Box 193
Al-Khobar
Tel: 44678-44813

SPAIN
Hewlett-Packard Española, S.A.
Calle Jerez 3
E-Madrid 16
Tel: (1) 458 25 00 (10 lines)
Telex: 23515 hpe
Hewlett-Packard Española S.A.
Calle Mirasierra
Edificio Juban
% Costa Brava, 13
Madrid 34
Hewlett-Packard Española, S.A.
Milesada 21-23
E-Barcelona 17
Tel: (3) 203 6200 (5 lines)

SWITZERLAND
Hewlett-Packard (Schweiz) AG
Zürcherstrasse 20
P.O. Box 307
CH-8952 Schlieren-Zürich
Tel: (01) 7305240
Telex: 53933 hpag ch
Cable: HPAC OH
Hewlett-Packard (Schweiz) AG
Château Bloc 19
CH-1219 Le Lignon-Geneva
Tel: 022 96 03 22
Telex: 27333 hpag ch
Cable: HEWPAKAG Geneva

SYRIA
General Electronic Inc.
Nuri Basha-Anhaf Ebn Kays Street
P.O. Box 5781
Damascus
Tel: 33 24 87
Telex: 11215 ITIKAL
Cable: ELECTROBOR DAMASCUS
Medical/Personal Calculator only
Sawah & Co.
Place Azme
B.P. 2306
Damascus
Tel: 16 367-19 697-14 268
Suleiman Hiliat El Mawi
P.O. Box 2528
Mamoun Bitar Street, 56-58
Damascus Tel: 11 46 63

TUNISIA
Tunis Electronique
31 Avenue de la Liberté
Tunis
Tel: 280 144
Corema
1 ter. Av. de Carthage
Tunis
Tel: 253 621
Telex: 12319 CABAM TN
TURKEY
TEKNIM Company Ltd.
Riza San Penleri
Caddesi No. 7
Kavakdere, Ankara
Tel: 275800
Telex: 42155
Teknim Com. Ltd.
Barbaros Bulvarı 55/12
Besikyas, Istanbul
Tel: 613 546
Telex: 23540
Medical only
E. M. A.
Muhteshim Kolektif Sirketi
Medina Eldem Sokak 41/6
Yüksel Caddesi
Ankara
Tel: 17 56 22
Cable: EMATRADE/Ankara
Analytical only
Yilmaz Özyurek
Mik Müdafaa Cad 16/6
Kizilay

UNITED ARAB EMIRATES
Emirat Ltd. (Branch Office)
P.O. Box 27111
Ahu Dhabi
Tel: 313370/1
UNITED KINGDOM
Hewlett-Packard Ltd.
King Street Lane
Winnereah, Wokingham
Berk. RG11 5AR
Tel: (0734) 784774
Telex: 847178 F
Hewlett-Packard Ltd.
Tralfalgar House
Navigation Road
Aldrichham
Tel: (0161) 254 1141 INU
Tel: (061) 928 6422
Telex: 686086
Hewlett-Packard Ltd.
Lygon Court
Herslow Rise
Dudley Road
Halewood
West Midlands B62 8SD
Tel: (021) 550 9911
Telex: 339105
Hewlett-Packard Ltd.
Wedge House
799, London Road
Thornton Heath
Surrey CR4 6XL
Tel: (01) 6840103
Telex: 557355
Hewlett-Packard Ltd.
1, Wallace Way
Hitchin
Hertfordshire, SG4 0SE
Tel: (0462) 311111
Telex: 82 59 81
USSR
Hewlett-Packard
Representative Office USSR
Pokrovsky Boulevard 4/17-kv 12
Moscow 101000
Tel: 294 20 24
Telex: 1825 hewpak su

YUGOSLAVIA
Iskra-Standard-Hewlett-Packard
Mikiceva 38/III
61000 Ljubljana
Tel: 31 58 79/32 16 74
SOCIALIST COUNTRIES
NOT SHOWN PLEASE
CONTACT:
Hewlett-Packard Ges m b H
Handelskai 52
P.O. Box 7
A-1205 Vienna, Austria
Tel: (0222) 35 16 21 to 27
MEDITERRANEAN AND
MIDDLE EAST COUNTRIES
NOT SHOWN PLEASE CONTACT:
Hewlett-Packard S.A.
Mediterranean and Middle
East Operations
35, Kolokotroni Street
Plata Kefalariou
GR-Kifissia-Athens, Greece
Tel: 8080337/259/429
FOR OTHER AREAS
NOT LISTED CONTACT
Hewlett-Packard S.A.
7, rue du Bois-du-Lan
P.O. Box
CH-1217 Meyrin 2 - Geneva
Switzerland
Tel: (022) 82 70 00

ALABAMA
P.O. Box 4207
8290 Whitesburg Dr.
Huntsville 35802
Tel: (205) 881-4591
8933 E. Roebuck Blvd.
Birmingham 35206
Tel: (205) 836-2203/2

ARIZONA
2336 E. Magnolia St.
Phoenix 85034
Tel: (602) 244-1361
2424 East Aragon Rd.
Tucson 85706
Tel: (602) 889-4661

***ARKANSAS**
Medical Service Only
P.O. Box 5646
Brady Station
Little Rock 72215
Tel: (501) 376-1844

CALIFORNIA
1579 W. Shaw Ave.
Fresno 93771
Tel: (209) 224-0582
1430 East Orangeflorpe Ave.
Fullerton 92631
Tel: (714) 870-1000

3939 Lankershim Boulevard
North Hollywood 91604
Tel: (818) 877-1282
TWX: 910-499-2671
5400 West Rosecrans Blvd.
P.O. Box 92105
World Way Postal Center
Los Angeles 90009
Tel: (213) 776-7500
TWX: 910-325-6608

***Los Angeles**
Tel: (213) 776-7500
3003 Scott Boulevard
Santa Clara 95050
Tel: (408) 986-7000
Ridgecrest
Tel: (714) 446-6165
646 W. North Mark Blvd.
Sacramento 95834
Tel: (916) 929-7222

1906 Aero Drive
P.O. Box 23333
San Diego 92123
Tel: (714) 279-3200
*Tanzania
Tel: (213) 705-3344

COLORADO
5600 DTC Parkway
Englewood 80110
Tel: (303) 771-3455
12 Lunar Drive
New Haven 06525
Tel: (203) 389-6551
TWX: 710-465-2029

FLORIDA
P.O. Box 24210
2727 N.W. 62nd Street
Ft. Lauderdale 33309
Tel: (501) 973-2600
4428 Emerson Street
Unit 103
Jacksonville 32207
Tel: (904) 725-6333
P.O. Box 13910
6177 Lake Elmhor Dr.
Orlando 32809
Tel: (305) 859-2900
P.O. Box 12826
Suite 5, Bldg. 1
Office Park North
Pensacola 32575
Tel: (904) 476-8422

GEORGIA
P.O. Box 105005
450 Interstate North Parkway
Atlanta 30348
Tel: (404) 955-1500
Medical Service Only
*Augusta 30903
Tel: (404) 736-0592
P.O. Box 2103
1172 N. Davis Drive
Warner Robins 31098
Tel: (812) 922-0449

HAWAII
2875 So. King Street
Honolulu 96826
Tel: (808) 955-4455

ILLINOIS
5201 Tollview Dr.
Rolling Meadows 60008
Tel: (714) 255-9800
TWX: 910-687-2260

INDIANA
7301 North Shadeland Ave.
Indianapolis 46250
Tel: (317) 842-1000
TWX: 810-260-1797

IOWA
2415 Heinz Road
Low City 52240
Tel: (319) 338-9466

KENTUCKY
Medical Only
3901 Atkinson Dr.
Suite 407 Atkinson Square
Louisville 40218
Tel: (502) 456-1573

LOUISIANA
P.O. Box 1448
3239-39 Williams Boulevard
Kenner 70063
Tel: (504) 443-6201

MARYLAND
7121 Standard Drive
Parkway Industrial Center
Hanover 21076
Tel: (301) 796-7700
TWX: 710-862-1943
2 Choke Cherry Road
Rockville 20850
Tel: (301) 948-6370
TWX: 710-828-9684

MASSACHUSETTS
32 Hartwell Ave.
Lexington 02173
Tel: (617) 861-8900
TWX: 710-326-6904

MICHIGAN
23855 Research Drive
Farmington Hills 48024
Tel: (313) 476-6400
724 West Centre Ave.
Kalamazoo 49002
Tel: (606) 323-8362

NEW YORK
6 Automation Lane
Computer Park
Albany 12205
Tel: (518) 458-1550
TWX: 710-444-4961
650 Parrott Hill Office Park
Fairport 14450
Tel: (716) 223-9950
Tel: 516-253-0092
No. 1 Pennsylvania Plaza
55th floor
Woodbury 11797
New York 10001
Tel: (212) 971-0800
5858 East Molloy Road
Syracuse 13211
Tel: (315) 455-2486
1 Crossways Park West
Woodbury 11797
Tel: (516) 521-0300
NORTH CAROLINA
5605 Roanne Way
Greensboro 27405
Tel: (919) 852-1800
OHIO
Medical/Computer Only
Bluff, 300
13

Your Comments, Please...

Your comments assist us in improving the usefulness of our publications; they are an important part of the inputs used in preparing updates to the publications.

In order to write this manual, we made certain assumptions about your computer background. By completing and returning the comments card on the following page you can assist us in adjusting our assumptions and improving our manuals.

Feel free to mark more than one reply to a question and to make any additional comments.

Please do not use this form for questions about technical applications of your system or requests for additional publications. Instead, direct those inquiries or requests to your nearest HP Sales and Service Office.

If the comments card is missing, please address your comments to:

HEWLETT-PACKARD COMPANY
Desktop Computer Division
3404 East Harmony Road
Fort Collins, Colorado 80525 U.S.A.

Attn. Customer Documentation
Dept. 4231

All comments and suggestions become the property of Hewlett-Packard.

Scan Copyright ©
The Museum of HP Calculators
www.hpmuseum.org

Original content used with permission.

Thank you for supporting the Museum of HP
Calculators by purchasing this Scan!

Please to not make copies of this scan or
make it available on file sharing services.