

HP 3000 Series 52

HP 3000 SERIES 52

Installation Manual



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LIST OF EFFECTIVE PAGES

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Effective Pages

Date

all. Aug 1986



PRINTING HISTORY

New editions are complete revisions of the manual. Update packages, which are issued between editions, contain additional and replacement pages to be merged into the manual by the customer. The dates on the title page change only when a new edition of a new update is published. No information is incorporated into a reprinting unless it appears as a prior update; the edition does not change when an update is incorporated.

First Edition..... AUG 1986

This manual describes the installation procedures for an HP 3000 Series 52 computer system. The installation is to be performed by HP Customer Engineers trained on HP 3000 Series 52 systems.

Before installing the system, ensure that the site is prepared according to the specifications outlined in the Site Planning and Preparation Guide (P/N 30000–90206).

NOTE

The Series 52 system requires MPE V/E (T–MIT or later versions).

Additional manuals that may be helpful are:

Site Preparation Resource Guide for HP 3000 Systems	5958–5859
HP 3000 HP–IB Computer Systems Diagnostic Manual Set	30070–60068
HP 3000 HP–IB Computer Systems C.E. Handbook	30070–90010
Console Operators Guide	32002–90004
System Manager/System Supervisor Reference Manual	30090–90014
MPE Utilities Manual	30000–90044

The service and installation manuals for the peripherals to be installed with the system will also be helpful. Take these manuals on site if you anticipate having any questions about the peripherals.

This manual is organized into the following sections:

- * Section 1 — Defines HP and customer responsibilities in receiving the system.
- * Section 2 — Presents mechanical and electrical description of the processor.
- * Section 3 — Presents general installation instructions for the system hardware and software.
- * Section 4 — Provides system/peripheral power–on procedures.
- * Section 5 — Presents system configuration and verification.
- * Section 6 — Describes areas in which the CE will assist the system operator with familiarization.
- * Appendix A — Provides hardware configuration data.
- * Appendix B — Provides “box swap” installation information.

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BITTE SORGFALTIG LESEN
HP 3000 SERIE 52 INSTALLATION UND EINSCHALT–RICHTLINIEN

INSTALLATION

Ihr HP Kunden–Ingenieur ist verantwortlich für Installation und Instandhaltung Ihrer HP 300 Serie 52.

Vergewissern Sie sich, daß die HP 3000 Serie 52 für die richtige Netzspannung eingerichtet ist. Diese ist an der Rückseite des Gerätes neben dem Netzkabel–Eingang markiert. Das Gerät kann für eine der folgenden Kombinationen eingerichtet sein:

Netzspannung	Frequenz	Strom
120 V	50 oder 60 Hz	8.5 A
220 V	50 oder 60 Hz	5.0 A
240 V	50 oder 60 Hz	4.5 A

Falls das Gerät nicht für die richtige Netzspannung/Frequenz eingerichtet ist, setzen Sie sich bitte mit Ihrem HP Kunden–Ingenieur in Verbindung.

WARNUNG

OFFEN DES GERÄTS ZUR BEDIENUNG NICHT ERFORDERLICH.
WARTUNG NUR DURCH QUALIFIZIERTES PERSONAL.

50 Hz–Systeme werden ohne Netzkabel ausgeliefert. Anschlußklemmen und Zugentlastung für ein Kabel mit mindestens 2.5 mm² Leiterquerschnitt werden mitgeliefert. Bitte wenden Sie sich an Ihren HP Kunden–Ingenieur.

Lokale Vorschriften können die Installation eines zusätzlichen Wandschalters erforderlich machen. Dies ist normalerweise der Fall, wenn das Gerät fest an das Netz angeschlossen wird.

EINSCHALTEN

Ihre HP 3000 Serie 52 wird durch den ON/OFF Hauptschalter eingeschaltet, der sich an der Rückseite der am weitesten links liegenden Sektion des Computers befindet. Der Prozessor–ON/OFF–Schalter befindet sich auf der linken unteren Frontseite.

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RECEIVING THE SYSTEM

SECTION

1

Verify proper site preparation before performing the installation described in this manual.

It is the customer's responsibility to unpack, inspect, and locate the computer system.

If there is any shipping damage, the customer should immediately report it to the carrier — or the carrier's agent — and to you, the HP Customer Engineer (CE). All crates, cartons, boxes, and packing materials should be saved for inspection. Verbal reports of damage should be followed by written reports. If there are problems that are Hewlett-Packard's responsibility, report them to the appropriate HP division.

Missing or damaged items will be replaced by Hewlett-Packard without waiting for claim settlement. It is the customer's responsibility to have the carrier return these items to HP. Consequently, the customer should not release the carrier until satisfactory shipment of all items has been verified.

Once the customer has located the computer system at the prepared computer site, install the system, using this manual as a guide. Follow correct installation procedures to help insure reliable computer operation.



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THE SERIES 52 PROCESSOR

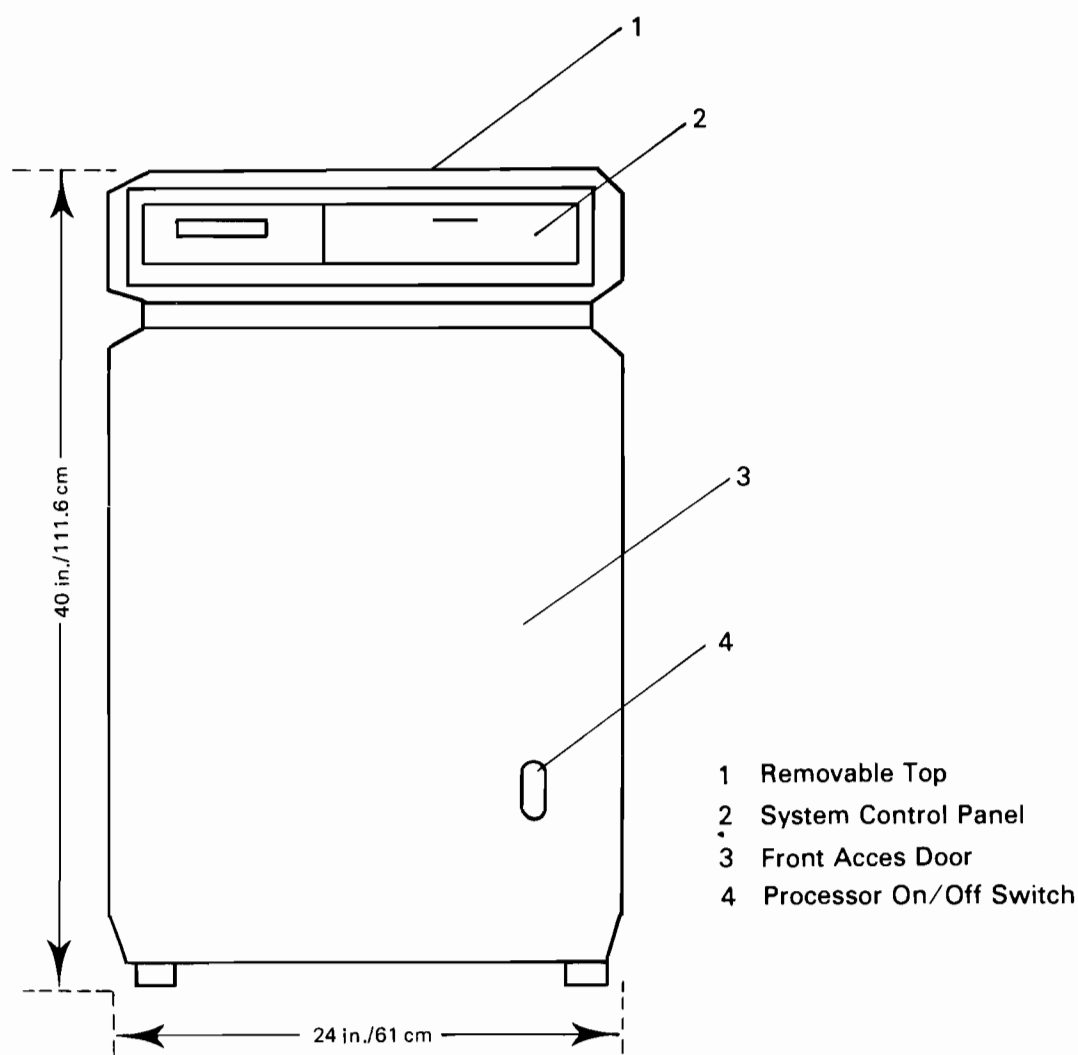
SECTION

2

PHYSICAL DESCRIPTION

The Series 52 processor is completely assembled and tested prior to shipment. As a result, the processor requires no involved mechanical assembly at the site.

Figures 2—1 and 2—2 illustrate the HP 3000 Series 52 processor.



Note: 23 in./60 cm Depth

Figure 2 — 1. Series 52 Front View

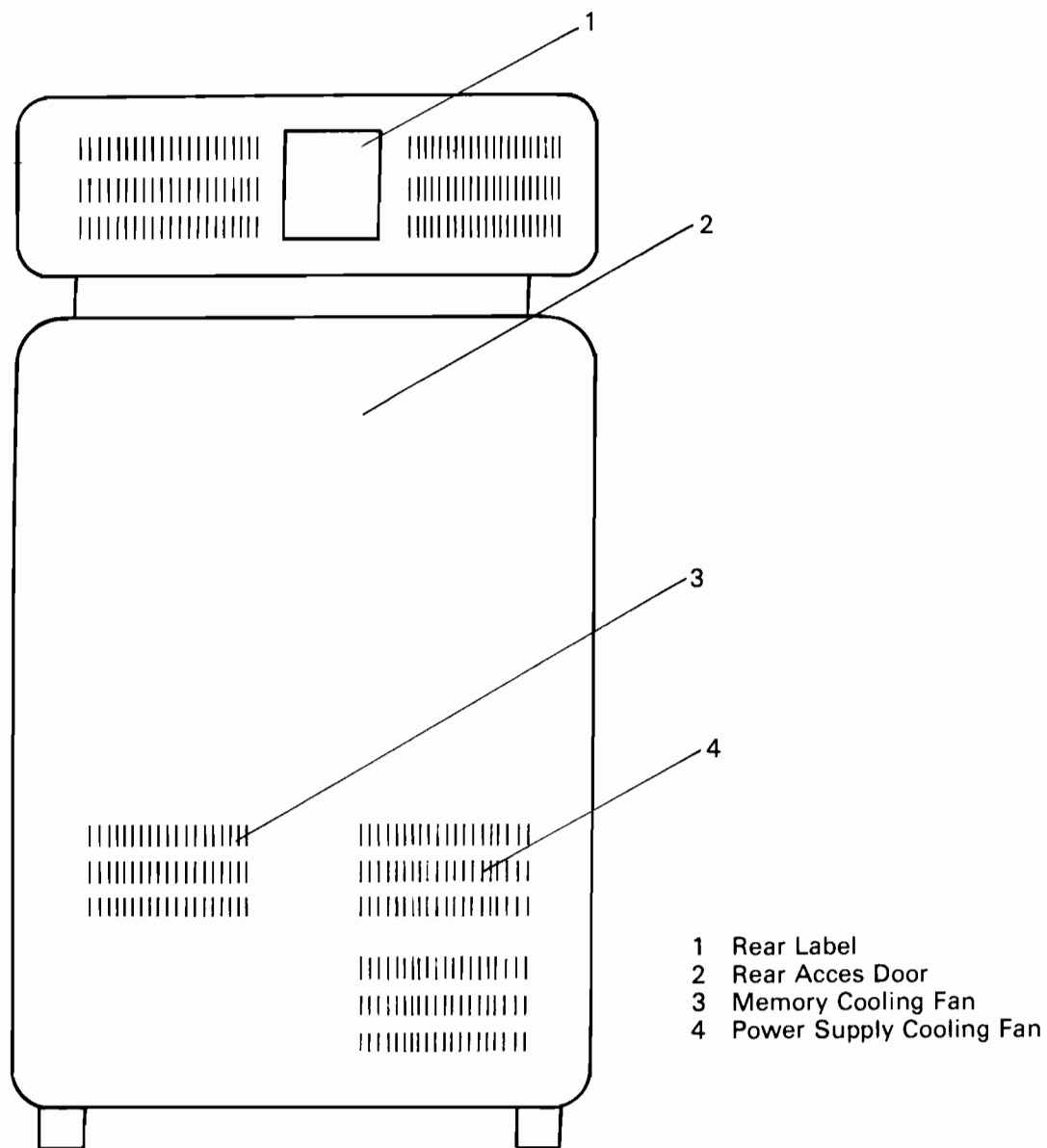


Figure 2 — 2. Series 52 Rear View

ELECTRICAL DESCRIPTION

The processor unit is available for either 50 Hz or 60 Hz operation. The major hardware variation between these processors is the main power cord specified by each country. The processor may be operated from a single-phase, primary power source of 120 VAC for the 60-Hz processor, or 220 or 240 VAC for the 50-Hz processor. Power cords for 50-Hz systems must be manufactured locally to meet the requirements of the country in which the system is installed (the power cord is not shipped with the 50-Hz systems).

NOTE

A 100V operation is not supported on the Series 52. If the customer's site has 100V power, the customer must provide a transformer to step up the voltage to 120 V.

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INTRODUCTION

System installation consists of connecting the peripherals to the processor, and installing the system operating software. The peripheral devices interface with the processor through quad boxes, remote junction boxes (for ATP subsystem), and HP—IB cables.

Topics covered in this section are:

- * installing the processor,
- * installing the system console,
- * installing disc drives,
- * installing the magnetic tape drives, and
- * installing printers.

The HP 3000 Series 52 Computer System consists of a processor unit with a minimum of 4 Mb of memory, and associated peripheral devices. Supported peripherals (those announced prior to the print date at the bottom of this page) are listed in Table 3 — 1.

Table 3 — 1. HP 3000 Series 52 Peripherals

DEVICE	MODEL	CHANNEL TYPE
Terminals	HP 2382A HP 2392A HP 262X HP 264X HP 2703A HP 3081A	ATP/ADCC ATP/ADCC ATP/ADCC ATP/ADCC ATP/ADCC ATP/ADCC
Factory Collection Terminals	HP 307X series	ADCC
Printing Terminals	HP 263X series	ATP/ADCC
Personal Computers	HP 120A HP 125A HP 150A/B/C	ATP/ADCC ATP/ADCC ATP/ADCC
Line Printers	HP 2563A/65A/66A HP 2608A/S HP 2611A/13A/17A/19A	GIC GIC GIC

Table 3 – 1. HP 3000 Series 52 Peripherals (continued)

DEVICE	MODEL	CHANNEL TYPE
Page Printers	HP 2680A HP 2686A HP 2687A HP 2688A	GIC ATP/ADCC ATP/ADCC GIC
Serial Printers	HP 2563A HP 2601A/02A HP 2631B/G HP 2932A/33A/34A	ATP/ADCC ATP/ADCC ATP/ADCC ATP/ADCC
Mag Tapes	HP 7970E HP 7971A HP 7974A HP 7976A HP 7978A HP 9144A	GIC GIC GIC GIC GIC
Disc Drives	HP 791xP-0001 HP 791xP-140 HP 7914ST HP 7914TD HP 7920/25M HP 7920/25S HP 7933/35H HP 7945A	GIC GIC GIC GIC GIC shares 20/25M controller GIC GIC
Flexible Discs	HP 9895A	GIC
Plotters	HP 7220T HP 7221T HP 7470A HP 7475A HP 7550A HP 7580B HP 7585B HP 9872C	ATP/ADCC ATP/ADCC ATP/ADCC ATP/ADCC ATP/ADCC ATP/ADCC ATP/ADCC ATP/ADCC
Modems	HP 13265A HP 35016A HP 39301A	ATP/ADCC* ATP/ADCC* ATP/ADCC*

*with remote modem expansion box

All ATP connections require the direct connect or modem expansion box.

In general, installing a peripheral device consists of connecting a data communications cable and an AC power cord. If you have questions about any device, refer to the appropriate service manual. Install each device according to the procedures in this section.

WARNING

Hazardous voltages are present inside the processor and peripheral cabinets when AC power is applied. Therefore, do not connect the processor or any peripheral to a source of AC power until all units are installed and interconnections are complete.

NOTE

Start the following procedures only after reading Sections 1 and 2. Perform the procedures in this section in the sequence in which they are presented in this manual.

INSTALLING THE PROCESSOR

Install the processor according to the following steps. See Figures 2 — 1, 2 — 2.

1. Ensure that the unit is positioned to allow complete cabinet door access.
2. Ensure that the processor POWER switch is in the OFF position.
3. Set the following system control panel switches as indicated:

Thumbwheel	Channel Number	Device Number
LOAD (from mag. tape)	9	1
START (system disc)	11	1
DUMP	11	1

Do not place any peripherals on the computer.

INSTALLING THE SYSTEM CONSOLE

Any of the Hewlett—Packard terminals or printing terminals can be used as the system console. The following procedure is for installing the system console, but also applies to other terminals. Refer to Figure 3 — 1.

1. Place the terminal to be used as the system console on a sturdy table or other appropriately-sized hard surface. Do not place the terminal on the computer.
2. Ensure that the terminal ON/OFF switch is in the OFF position.
3. Connect the AC power cord from the terminal to an appropriate voltage source.

System Installation

4. Connect the terminal keyboard cable hood connector to the printed circuit card edge connector that has been notched to match the cable connector.
5. Connect the remaining terminal cables as shown in Figure 3 – 1.

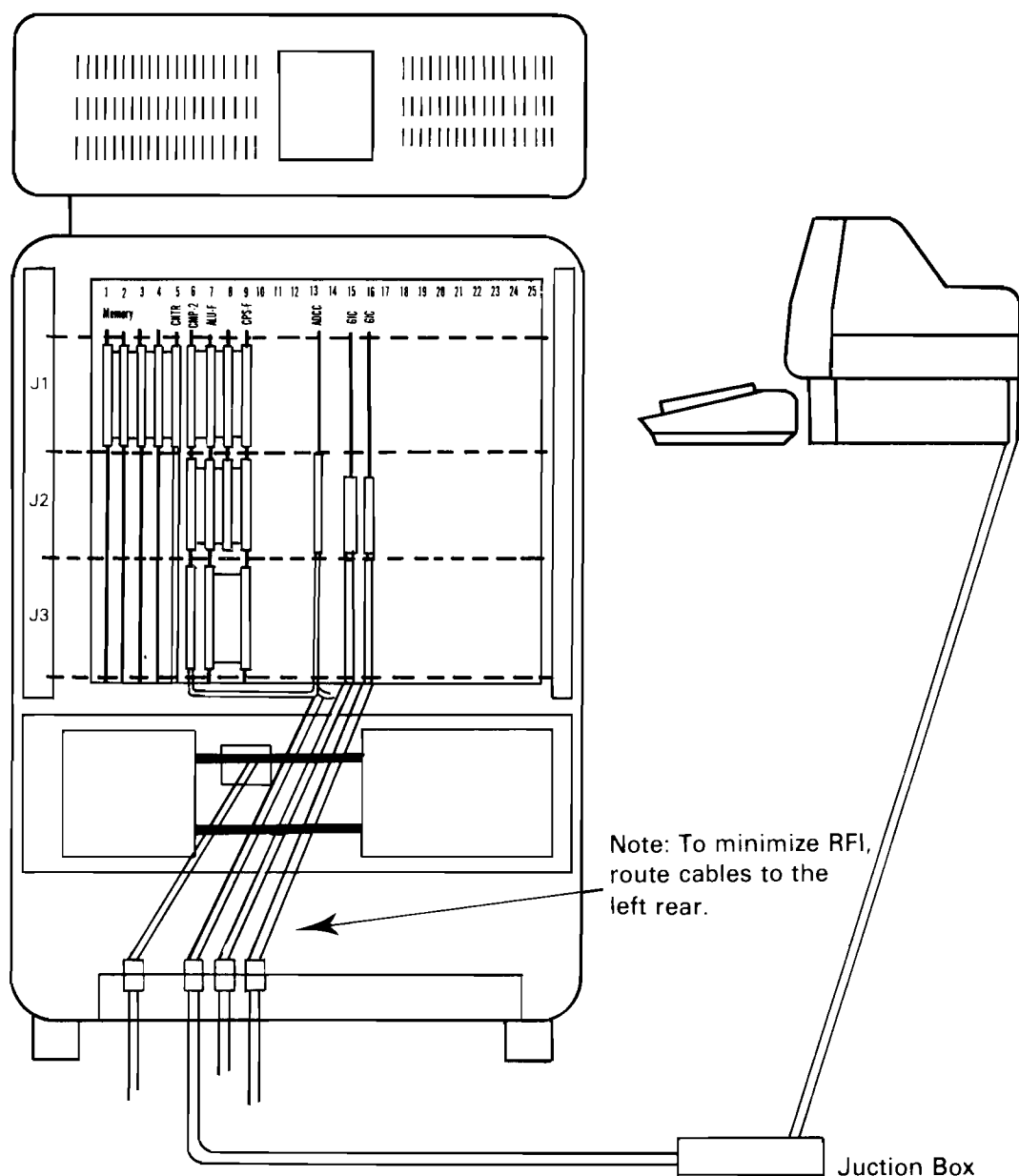


Figure 3 – 1. Processor to Console Cabling

INSTALLING THE SUPPORT MODEM

Connect the support modem to Port 1 on the first ADCC—main that also has the console connected to it.

INSTALLING DISC DRIVES

The HP 791xP, 7914ST, 7914TD, 7920M, 7925M, 7933H, 7935H, and 7945A disc drives can be configured as the system disc (LDEV 1). The HP 7920S and 7925S have to be configured as slaves. A generic installation procedure follows. Refer to the installation manuals shipped with the individual disc drives for more detailed instructions.

Position the system disc drive on one side of the processor cabinet (allowing for the full opening of any access doors). Next, position slave disc(s) near the system disc drive.

System Disc (Master)

The system disc interfaces to the system through the HP 10833C HP-IB device cable. The cable has one end pre-connected onto the disc HP-IB I/O connector. Connect the free end to the system as described below and as shown in Figure 3 – 2.

1. Ensure that the disc drive POWER switch is set to OFF (0).
2. Configure the CPU number select switch (S1) and the HP-IB device address switch (S2), located on the HP 12745A disc HP-IB controller PCA as follows: S1=0; S2=1.

The HP12745A is located in slot A-1 of the HP 13037B disc controller.

3. Route the HP-IB I/O cable to the processor I/O cable area as shown in Figure 3 – 2.
4. Connect the disc drive AC power cord to a dedicated power source that has an isolated ground (or to a power line treatment device, if planned).

Slave Disc(s)



The following steps apply to the installation of slave disc(s).

1. Ensure that the disc drive POWER switch is set to OFF (0).
2. Connect the slave disc(s) data cables as depicted in Figure 3 – 2 and the appropriate disc service manuals.
3. Connect the disc drive power cord to a dedicated power source that has an isolated ground (or to a power line treatment device, if planned).

Add-On HP-IB Disc(s)

Follow the instructions for installing a system disc. Once you bring the system up, run IOMAP to verify that the operating system “sees” the installed disc drive(s).

The HP 9895A Flexible Disc Drive

The HP 9895A is supported for file stores/restores only. The following procedure applies to single or multiple flexible disc installations:

1. Ensure that the AC power switch on the flexible disc drive is set to OFF.
2. On the flexible disc controller, set the device address number in accordance with configuration data contained in Appendix A.
3. Connect one end of the HP-IB device I/O cable to the flexible disc drive and the other end to the assigned GIC via the appropriate grounding clamp.
4. Connect the flexible disc drive power cord to a dedicated power source with an isolated ground.
5. If the HP 9895A is sharing a GIC with other devices, it should remain powered on at all times, or the HP-IB cable length must be limited to meet specifications without its active load.

INSTALLING PRINTERS

The procedures for installing printers are outlined in the following steps.

Installing the HP 2563A/65A/66A Printers

The following steps apply to the installation of single or multiple HP 2563A/65A printer(s). Refer to detailed installation instructions in the documentation accompanying the printer.

1. Ensure that the MAIN POWER switch on back of the printer is set to OFF.
2. Verify that the source voltage matches printer requirements (see printer power label).
3. Connect the interface cable from the computer system to the interface connector on back of the printer.
4. Connect AC power cord to AC power input jack on back of printer and plug other end into AC outlet.
5. Set POWER switch located on back of printer to ON.
6. Load ribbon and paper as described in ribbon and paper loading portions of Operator's Manual.
7. If you have an HP-IB interface, select the HP-IB address as defined in the Operator's Manual. If you have an interface other than HP-IB, configure your interface as described in the interface manual supplied with the printer.
8. With the printer off-line, press the TEST key on the Operator Control Panel. Then press the ENTER key. A self-test printout will print. Compare this with the self-test printout in back of the Operator's Manual. Remember that the printout varies depending on which character set options are installed. The printer is ready for operation if no error numbers flash on the self-test display and characters on the self-test printout are clear and well formed.

HP 2608A/S Line Printer

The following steps apply to installation of single or multiple HP 2608A/S printers. If necessary, refer to the HP 2608 Service Manual (P/N 0208–90904) or the Technical Reference Manual (P/N 02608–90903).

1. Ensure that the MAIN POWER switch on the back of the printer is set to OFF.
2. Verify that the source voltage matches the requirements of the printer (see the power label).
3. Configure the line printer to respond to a PARALLEL POLL by removing the WT5 to WT6 jumper on the HP–IB PCA (P/N 02608–60026).
4. Connect the power cable to the printer and to the power source.
5. Configure the printer's HP–IB Device Address as specified in Appendix C. Five mini–rocker switches at the rear of the printer, next to the HP–IB cable connector, select the HP–IB Device Address. The logic of the switches is defined in octal as follows:
 - ON – Logic 1
 - LSB – Switch 1
 - MSB – Switch 5
6. Fasten the HP–IB cable(s) to the HP–IB connector at the rear of the printer(s).
7. Daisy chain the HP–IB cable from printer number two to the HP–IB connector on printer number one, fastening the two HP–IB connectors together.

The HP 2611A/2613A/2617A/2619A Line Printers

The following steps apply to the installation of a single HP 2611A, 2613A, 2617A, or 2619A unit, and also applies to multiple unit installations. See Figure 3–4.

1. Ensure that the processor MAIN POWER breaker is set to OFF.
2. Open the rear access door of the processor.
3. Install the HP–IB translator PCA(s) in the assigned processor slot(s). Refer to Appendix A for slot assignments.
4. Connect the ribbon cable assembly between the J3 edge connector on the translator PCA and the J3 edge connector on the assigned GIC.
5. On the translator PCA, set the HP–IB address switch to the device address number specified in appendix A.
6. Connect the translator cable assembly to the mating connector on the printer, and to the translator.
7. Ensure that the printer POWER switch is set to OFF.
8. Connect the printer AC power cord to a dedicated power receptacle.

Installing the HP 2680A/2687A/2688A Page Printer

To install the HP 2680A/2687A/2688A page printer, refer to detailed instructions provided in the documentation accompanying the printer.

For the HP 2680A, refer to the HP 2680A Service Manual (P/N 02682-90904).

For the HP 2687A, refer to the HP 2683A Print Engine Service Manual (P/N 02683-90904) and the HP 26087 Serial Controller Service Manual (P/N 26087-90904).

For the HP 2688A, refer to the HP 2683A Print Engine Service Manual (P/N 02683-90904) and the HP 26088 DCS Controller Service Manual (P/N 26088-90904).

WARNING

The HP 2680A/2687A/2688A page printer contains a laser. The safety precautions in the documentation shipped with the printer must be implemented. Only trained personnel should install and service the 2680A printer.

INSTALLING MAGNETIC TAPE DRIVES

The following paragraphs contain detailed installation instructions for magnetic tape drives. Set the GIC to channel 9.

HP 7970E Option 426 Magnetic Tape (Master)

Use the following steps for the HP 7970E Option 426 installation:

1. Ensure that the magnetic tape drive POWER switch, located behind the front door, is set to OFF.
2. Ensure that the source voltage matches the requirements of the magnetic tape. (See the HP 7970E Power Label.)
3. Connect the power cord from the magnetic tape drive to a dedicated power receptacle with an isolated ground.
4. Configure the magnetic tape drive HP-IB device address switch, located as illustrated in Figure 3 - 5, to the address specified in Appendix A.
5. Connect the HP-IB device cable to the magnetic tape HP-IB connector.
6. Route the free end of the HP-IB device cable to the computer system. Refer to Appendix A for the proper connector location.

The HP 7970E Option 425 Magnetic Tape (Slave)

The following steps apply to the installation of the HP 7970E Option 425 Magnetic Tape:

1. Ensure that the magnetic tape drive POWER switch, located behind the front door of the unit, is set to OFF.
2. Ensure that the source voltage matches the requirements of the magnetic tape. (See the HP 7970E Power Label.)
3. Connect the power cord from the magnetic tape drive to a dedicated power receptacle with an isolated ground.
4. Follow cabling instructions as described in the HP 7970E Magnetic Tape Unit Service Manual (P/N 07970–90919).

The HP 7974/7978 Magnetic Tape Drive (Master Only)

The following steps apply for installing the HP 7974/7978 Magnetic Tape Drives:

1. Ensure that the magnetic power switch is set to OFF.
2. Ensure that the source voltage matches requirements of the magnetic tape (see the power label).
3. Connect the HP–IB device cable to the magnetic tape from the assigned GIC.
4. Connect the power cord from the magnetic tape drive to a dedicated power source with isolated ground.
5. Refer to the magnetic tape drive installation manual for operating and test information.

INSTALLING TERMINALS AND PRINTING TERMINALS

The supported terminals include the HP 2382A, 2392A, 262X, 264X, 2703A Color Graphics Terminal, 2635B Printing Terminal, 307X Data Capture Terminal, and the 3081A Industrial Workstation Terminal.

General installation instructions follow:

1. Ensure that the terminal main power switch is set to OFF.
2. Ensure that the power source voltage matches the terminal requirements. (See the power label).
3. Connect the power cord from the terminal to a dedicated power receptacle with an isolated ground.
4. Connect the keyboard and datacom compatible cables to the connectors which match the cable connectors on the terminal.
5. Route the free end of the datacom cable from the terminal to the computer system, according to channel and device assignments given in Appendix A.

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TURNING ON THE NEW SYSTEM

SECTION

4

Applying Power to the Processor/Peripherals

To power-on the processor and peripherals, follow these steps:

1. Ensure that the processor voltage matches that of the dedicated power source. Before the system can be connected to the power source, the power source must be within $-4/-10$ percent of the input voltage requirement. See Figure 4-1.

NOTE



The 100V operation shown in Figure 4-1 is not supported by Hewlett-Packard. If the customer site has 100V, the customer must provide a transformer that steps the voltage up to 120V.

AC LINE VOLTAGE ⚠	SWITCH SETTING ⚠			FUSE
100				3A (250V)
120				3A (250V)
220				1.5A (250V)
240				1.5A (250V)

Figure 4 - 1. Power Configuration Label and Switch Settings.

Turning on the New System

2. Connect the processor AC power cord into a 60-Hz receptacle. Power cords are not supplied with 50 Hz systems – one should have been ordered with the system.
3. Set that power switch to ON.
4. Power on and place all peripheral devices on line.
5. Perform the following tasks associated with the power supplies:
 - a. Ensure that the fans are operating.
 - b. The yellow power LED on the left side of the front panel nameplate should be on.
 - c. The top and bottom red LEDs on the backplane inside the cardcage to the left of slot 1 should light. Open the rear door to view. See Figure 4 – 2

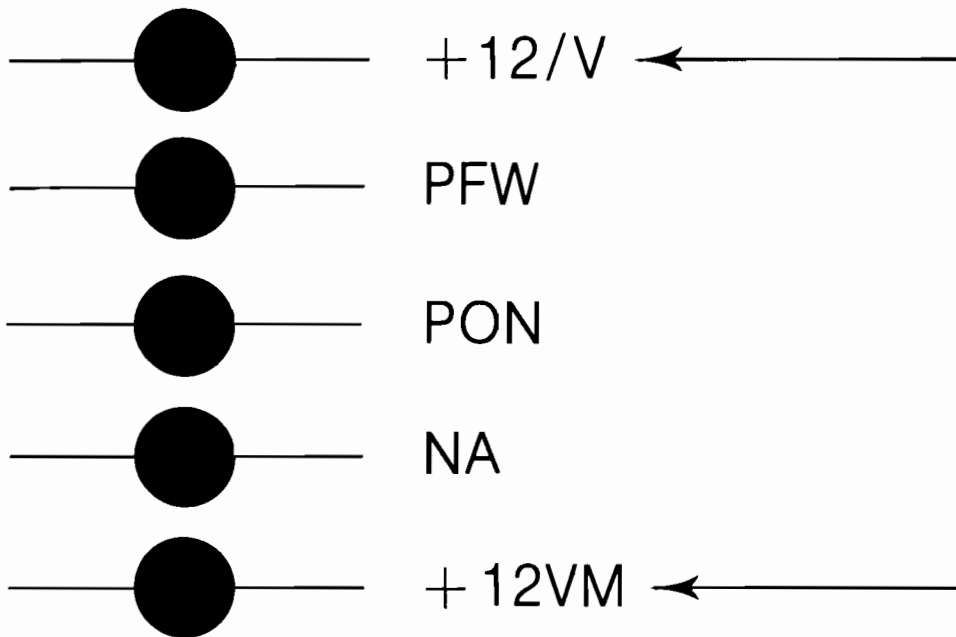


Figure 4 – 2. Backplane LEDs

- d. In addition, the BATTERY LED on the system control panel should be off.

- e. The test point voltages on the power supply are checked at the factory. For troubleshooting purposes, Table 4 – 1 provides the specifications for the correct voltages.

Table 4 – 1. Test Point Voltages

VOLTAGE	MINIMUM READING	MAXIMUM READING	RIPPLE VOLTAGE
+ 5v Volts	+ 4.99	+ 5.01	0.05 v p. p.
+12v Volts	+11.99	+12.01	0.075v p.p.
–12v Volts	–12.25	–11.75	0.075 v p. p.
+ 5m Volts	+ 4.95	+ 5.15.	
+12M Volts	+11.90	+12.10	
–12m Volts	–14.0	–11.0	

DISC DRIVE HEAD ALIGNMENT

Because MPE supports private volumes, disc packs and cartridges must be inter–changable. Check all disc drives for proper head alignment (described in their respective service manuals).

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INTRODUCTION

Take two steps to verify this system:

1. Perform an OFFLINE verification to check the following areas:

- * cold load path
- * selected assemblies
- * peripheral devices

2. Perform an ONLINE verification to accomplish the following:

- * system cold load from magnetic tape
- * system configuration
- * system utilization
- * Workout 5
- * power fail verification

Refer to your HP 3000 Series 3X/4X/5X Diagnostic Manual Set when you need information about diagnostics or selftests. If a step does not complete successfully, perform corrective maintenance before proceeding. Run the diagnostics to identify hardware problems. The HP 3000 HP—IB Version Computer Systems Customer Engineer Handbook (P/N 30070—90010) provides brief procedures for system—specific diagnostics.

Refer to the appropriate peripheral installation and service manuals for peripheral diagnostic and maintenance information.

OFFLINE VERIFICATION

Perform the following steps for offline verification:

1. Run the System Console Selftest.
2. Run the CMP selftest and IOMAP.
3. Run all appropriate diagnostics, selftests, and SLEUTH verifiers on any of the peripheral devices installed, including:
 - * printers
 - * magnetic tape drives
 - * disc drives
 - * flexible disc drives

NOTE

Format and verify all disc packs/cartridges. Upon completion of format procedure, flag all defective tracks. Refer to the CE Handbook (P/N 30070–90010), for Contributed SLEUTHSM Programs.

4. Cold load the Diagnostic/Utility System as described in the diagnostic manual.
5. Type IOMAP; a map of the I/O configuration of the devices connected to the system will be output to the console. Verify that all device and channel numbers correspond to the configuration matrix (refer to Appendix C).
6. Run the GIC, ADCC and MEMORY standalone diagnostics.

ONLINE VERIFICATION

Perform the following steps for online verification:

1. Ready all disc drives. Reference disc drive unit "O" as the system disc drive (if an HP 7220/5).
2. Ensure that the cold load thumbwheel switch on the system front panel is set to Channel–9, Device=1.
3. Ensure that the HP–IB address of the cold load device matches the thumbwheel switches.
4. Cold load and configure I/O devices onto the system as described in the following procedure. The description is a summary intended to illustrate a general guideline. Specific information must be obtained from the System Manager/System Supervisor Reference Manual (P/N 30090–90014).

STEP PROCEDURE

1. On the System Control Panel, set the LOAD thumbwheel switch to the octal value of the DRT number (channel address and device address) of the cold load device.
2. For startup from the System Control Panel, press the LOAD key. For startup from the System Console, type LOAD on the keyboard.
3. Press **RETURN** on the System Console and respond to the Initiator prompts.

HP 32033G.01.01 **RETURN**
 WHICH OPTION <COLDSTART/RELOAD/UPDATE >? COLDSTART
 ANY CHANGES? YES
 LOAD MAP? **RETURN**
 MEMORY SIZE=nnn.? **RETURN**
 I/O CONFIGURATION CHANGES? YES
 (YES response displays iomap — verify hardware connections)
 LIST I/O DEVICES? YES
 (a YES response will display the I/O device listing)
 LIST CS DEVICES? YES
 HIGHEST DRT? = nnn.? **RETURN** or higher number
 LOGICAL DEVICE # ? nnn
 DRT # ? nnn
 UNIT # ? nnn
 SOFTWARE CHANNEL # ? n
 TYPE?
 SUB TYPE?
 RECORD WIDTH?
 OUTPUT DEVICE?
 ACCEPT JOBS/SESSIONS? YES or NO
 ACCEPT DATA? YES or NO
 INTERACTIVE? YES or NO
 DUPLICATIVE? YES or NO
 INITIALLY SPOOLED? YES or NO
 INPUT OR OUTPUT? IN or OUT (Spooled devices only)
 DRIVER NAME? (See Appendix D of the Console Operators Guide)
 DEVICE CLASSES? device class name
 LOGICAL DEVICE # ? **RETURN**
 MAX # OF OPEN SPOOLFILES=nn.? **RETURN**
 LIST I/O DEVICES? **RETURN**
 LIST CS DEVICES? **RETURN**
 CLASS CHANGES? **RETURN**
 LIST I/O DEVICES? YES
 DISC VOLUME CHANGES? **RETURN**
 MAX # OF SPOOLFILES KILOSECTORS=nnn? **RETURN**
 RECOVER LOST DISC SPACE? **RETURN**



4. Dismount and mount magnetic tapes as indicated to completely bring up the system. When the following message appears, the system is completely up.

DATE (M/D/Y? mm/dd/yy
 TIME (H:M)? hh:mm (24 hr clock)

WORKOUTS

WORKOUT5 is an online program that exercises the disc and magnetic tape drive units. An example of WORKOUT5 is given below. Pressing RETURN in response to questions automatically selects the default answer.

NOTE

The program will allow only one more try after giving an invalid entry to a prompt. For example, respond to NUMBER OF DISC FILES? with a number from 0–64. If you inadvertently enter a number greater than 64, the response will be BAD INPUT — — TRY ONCE MORE. If you make a second invalid entry, the response will be SORRY-YOU LOSE and the program will terminate.

:HELLO FIELD. SUPPORT, HP32231

:LISTF

Check to ensure that WORKOUT5 is included in the listed files. If it is not, restore it.

:RUNN FREE5. PUB.SYS

Examine the FREE sectors shown. Each WORKOUT5 file requires 4096 sectors; smaller fragments cannot be used. For example, if 8000 sectors are available only one WORKOUT5 file will fit. If the disc is heavily fragmented, it may be necessary to do a COOLSTART and "Recover Lost Disc Space" or a RELOAD.

:SWITCHLOG

LOG FILE LOGxxxx IS yy0/oFUL LOG FILE NUMBER nnnn ON

You have closed Log File # xxxx and opened Log File # nnnn. Write down the number nnnn for use later on when LISTLOG5 is run. Press to get the ":" prompt back.

:RUN WORKOUT5 (;PARAM=)

Three options are available but not mandatory:

1. (;PARAM=1). Eliminates comparing data fubbers after each READ, and should not be used except for performance measurement.
2. (;PARAM=2). Causes END OF PASS messages to be displayed at System Console as well as with \$STDLIST.
3. (;PARAM=3). Accomplishes both of the above.

NUMBER OF DISC FILES? 2

Assuming sufficient space was shown during RUN FREE5 enter any number from 0–64. WORKOUT5 will attempt to open that number of files. Default is 0.

LDN FOR FILE # 1? 1

LDN FOR FILE # 2? 1

The above example assumes that only the system disc is online at this time. If more discs are present, any number from 0–255 may be specified. When zero is entered, WORKOUT5 spreads its files over all devices in class DISC. Default is 0.

IS A SORT TO BE DONE? NO

This question will not be asked unless the answer to NUMBER OF DISC FILES? was two or greater. If you respond with YES' file # 1 will be sorted and written to file # n, where "n" is the last file specified. For example, if you specified two disc files above and answered this question with "Y" the program would write to file # 1, read back the data, sort it, then write it to file # 2. Doing a sort significantly lengthens the program run time; thus it is not recommended. Default is NO.

NUMBER OF TAPE FILES? 1 (if a tape unit is available)

Enter a number from 0–4. Default is 0. If a tape is not used, the next question — and its reply — will not be required.

NUMBER OF PASSES? 1

You may enter any number from 0 — 32766. Default is 0, which causes the program to immediately terminate.

?TIME/SESSION # /PIN # /LDEV # FOR "WORKTAPE1" ON TAPE (NUM)?

=REPLY PIN # , LDEV #

Be sure you have monted a "scratch" tape or one whose current contents you do not object to losing.

TIME START

WORKOUT5 now attempts to open the files. If all are successfully opened, no message will appear. If any file cannot be opened, a message to that effect will appear, followed by a message telling how many files were successfully opened.

TIME END OF PASS 1

END OF PROGRAM

:LISTF LOG @ PUB. SYS

The purpose here is to learn if there have been any new logs opened after number nnnn above.

:HELLO MANAGER. SYS

In order to run LISTLOG5, below, you must have System Manager capability. Thus, we exited from FIELD.SUPPORT and logged onto MANAGER. SYS.

:RUN LISTLOG5.PUB. SYS

ENTER FIRST AND LAST LOG FILE TO BE ANALYZED

System Verification

FIRST? _____ (Enter nnnn from above)

LAST? _____ (If no new logs have been opened after number nnnn, LAST will also be nnnn.)

ENTER EVENTS TO BE PRINTED

TYPE NO.	EVENT
0	LOG FAILURE
:	:
:	:
:	:
:	:
11	I/O ERRORS
:	:

ENTER EVENT NUMBERS SEPARATED BY COMMAS. A CARRIAGE RETURN ASSUMES ALL EVENTS WILL BE EVALUATED.

11 (An entry of 11 is shown, since we are only interested in I/O errors.)

The Listlog 5 output will be directed to the Line Printer; ensure that it is online.

DO YOU WANT TO PURGE LOG FILES? NO

If the previous FREE5 listing indicated the disc was getting low on space, you may wish to enter YES to purge the log files.

DO YOU WISH TO RUN AGAIN (Y OR N?) N

END OF PROGRAM

Examine LISTLOG 5 printout for Disc and/or Tape errors.

SYSTEM POWER FAIL RECOVERY VERIFICATION

Now that the system is up and WORKOUT5 has completed one pass, run the Power Fail test.

Prior to the Power Fail test, the following conditions should exist:

- SYSDISC configured as LDEV # 1.
- SYSDISC pack installed on master drive.

To perform the Power Fail test, run WORKOUT5 again and perform the following steps:

- Answer 0 to NUMBER OF TAPE FILES?
- Answer NUMBER OF PASSES? with a number high enough to ensure the program runs long enough for Power Fail test to be accomplished (approximately 3).

Use the customer's breaker box to simultaneously power fail the system and all discs associated with the system.

Reconnect power after approximately 30 seconds. Verify successful recovery by the following:

- a. **WORKOUT5** resumes execution.
- b. Depending on terminal timing, a power fail message may be displayed on the console when SYS-DISC goes ready.
- c. System console does not “hang”.
- d. System does not HALT.

Repeat this procedure for two additional cycles, using power fail periods of approximately 15 and 5 seconds.

System Back-up

Back—up the system by storing to the magnetic tapes shipped with the system. Perform the following procedure:

- a. Log on to MANAGER. SYS and do a Sysdump, specifying “O” for the dump date. Refer to the Console Operators Guide for help, if required.
- b. Give all system magnetic tapes to the customer for safekeeping.
- c. Complete the System Installation Report form in the System Support Log.

Conduct System Operator training as outlined in Section 6 of this manual and then release the system to the customer for use.



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TRAINING THE NEW SYSTEM OPERATOR

SECTION

6

You, the CE, are responsible for familiarizing the operator with the operation of and customer maintenance procedures for the HP 3000 Series 52 Computer System. The main sources of information are the Console Operator section of the Console Operator's Guide and the Customer Preventive Maintenance section of the System Support Log. In general terms, discuss the following topics:

- * The documentation supplied with the system.
- * Power ON/OFF.
- * System Control Panel and CMP operation.
- * Daily maintenance.
- * Connecting data terminals.
- * Other peripheral device operation.
- * Selftest.
- * Remote maintenance facility.
- * WARMSTART.
- * Coldload.
- * Dump.
- * Shutdown.
- * System backup.
- * Conditioning private volume disc using VINIT.
- * Serialize disc packs/cartridges.

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HARDWARE CONFIGURATION

APPENDIX

A

INTRODUCTION



Channel assignments are predetermined while slot assignments vary according to system size. However, certain slots are reserved for specific devices. The tables and illustrations in this appendix provide guidelines for assigning slots, channels, and device numbers.

Table A — 1. Suggested System Configuration

Device Type	Channel No.	Device Number
Terminals	1 thru 8	0 thru 7
Tape Drives (1 thru 4)	9	1
Tape Drives (5 thru 8)	10	1
System Disc Controller	11	0
Line Printers (Except HP 2608)	11	1 thru 4
INP's	11	5 thru 7
Flexible Disc Drive (9895 only)	12	0
Additional Line Printers (Including HP 2608)	12	0 thru 3
Additional INP's	12	4 thru 7
HP 2680A Printer	13	1

Table A — 2. Configuration Restrictions

PRINTER HP-IB TRANSLATORS:

One printer translator PCA (P/N 26069—60001) is supplied with each Option 344 on the HP 2613A/17A/19A printers. This PCA must be installed in a mainframe slot and is referred to as "Printer Interface".

SLOT/POWER RESTRICTIONS:

GICs + ADCCs + INPs + Printer Interfaces $\leq$ 18

INPx + Printer Interfaces $\leq$ 6

INPs $\leq$ 3

Systems with a Channel 12 GIC:

GICs + ADCCs + INPs over 4 (but less than 7) $\leq$ 18

1 MB + 2 MB memory PCAs $\leq$ 8 MB on 4 PCAs

GIC RESTRICTIONS:

Channel 9: One tape drive master only.

Channel 10: One tape drive master only.

Channel 11: Disc drives and internal peripherals only.

Channel 12: No disc drives, three external peripherals only, up to eight internal peripherals.

Channel 13: One HP 2680A laser printer only.

SLOT LOCATIONS

Figure A--1 illustrates PCA slot locations for the Series 52. The following rules apply in all Series 52 systems:

- * The CPU PCAs must be installed in the order shown.
- * The first memory array PCA must be installed in slot 1, with the memory controller in slot 5. The 2 MB PCAs must be installed before the 1 MB PCAs. The 256 kb memory PCAs are not supported.
- * The first ADCC (Main) must be installed in slot 13.
- * The ADCC (Main) and ADCC (Extender) PCAs should be installed in pairs of adjacent slots to facilitate interconnection.
- * The GICs must be installed in the following channel number order: 11, 10, 12.
- * INPs and printer translators must be installed in slots adjacent to the associated GIC. This allows the internal HP-IB cables to be connected without passing over other PCAs.

NOTE

All internal GIC cables required for system configuration are provided. Do not shorten these cables since the full length may be needed to support larger configurations in the future.

NOTE

GICs must be installed in the following channel number order: 11, 10, 12. INPs and printer translator PCAs must be installed in slots adjacent to their controlling GIC.

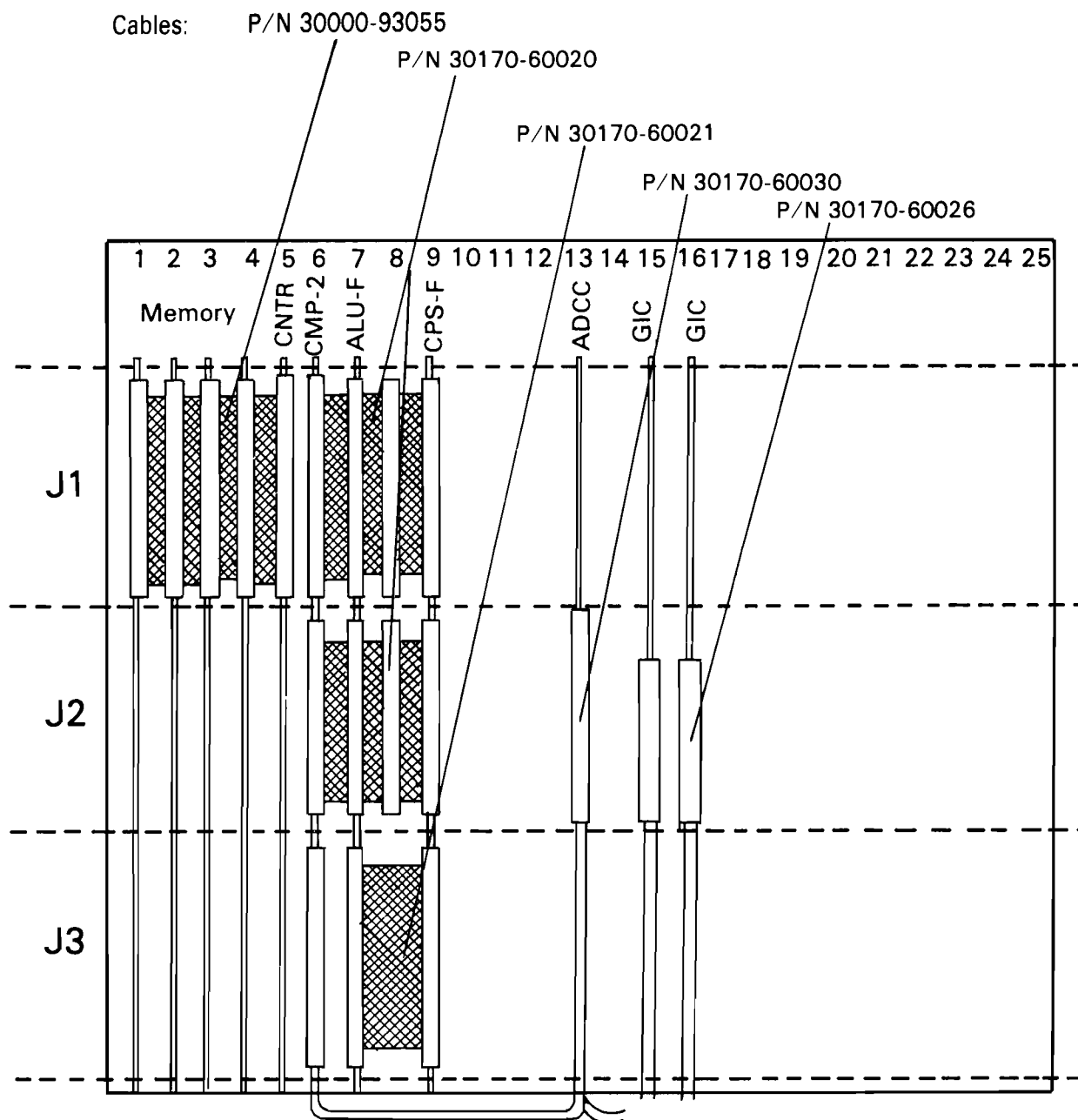


Figure A — 1. Series 52 Slot Locations

NOTE

The two HP-IB cables available for the Series 52 are 2m (6.65 ft.) and 4m (13.3 ft.). Total HP-IB cable length = 7m + 1m/device load. All devices are 1 device load except the HP 2680, which = 3. Also, 2m of this length is internal to the processor.

Memory

Figure A — 1 illustrates the slot locations for the memory PCAs (slots 1—4) and the memory controller PCA (slot 5). Figure A — 2 illustrates the location of the memory controller address switch. Tables A—3, A—4, and A — 5 describe how to set the memory controller address switch.

The first memory array PCA must be installed in slot 1 with the memory controller in slot 5. 2MB memory PCAs must be installed before 1 MB PCAs. Although 1 MB PCAs do not ship with the system, they are supported. The 256 kb PCAs are not supported in the Series 52.

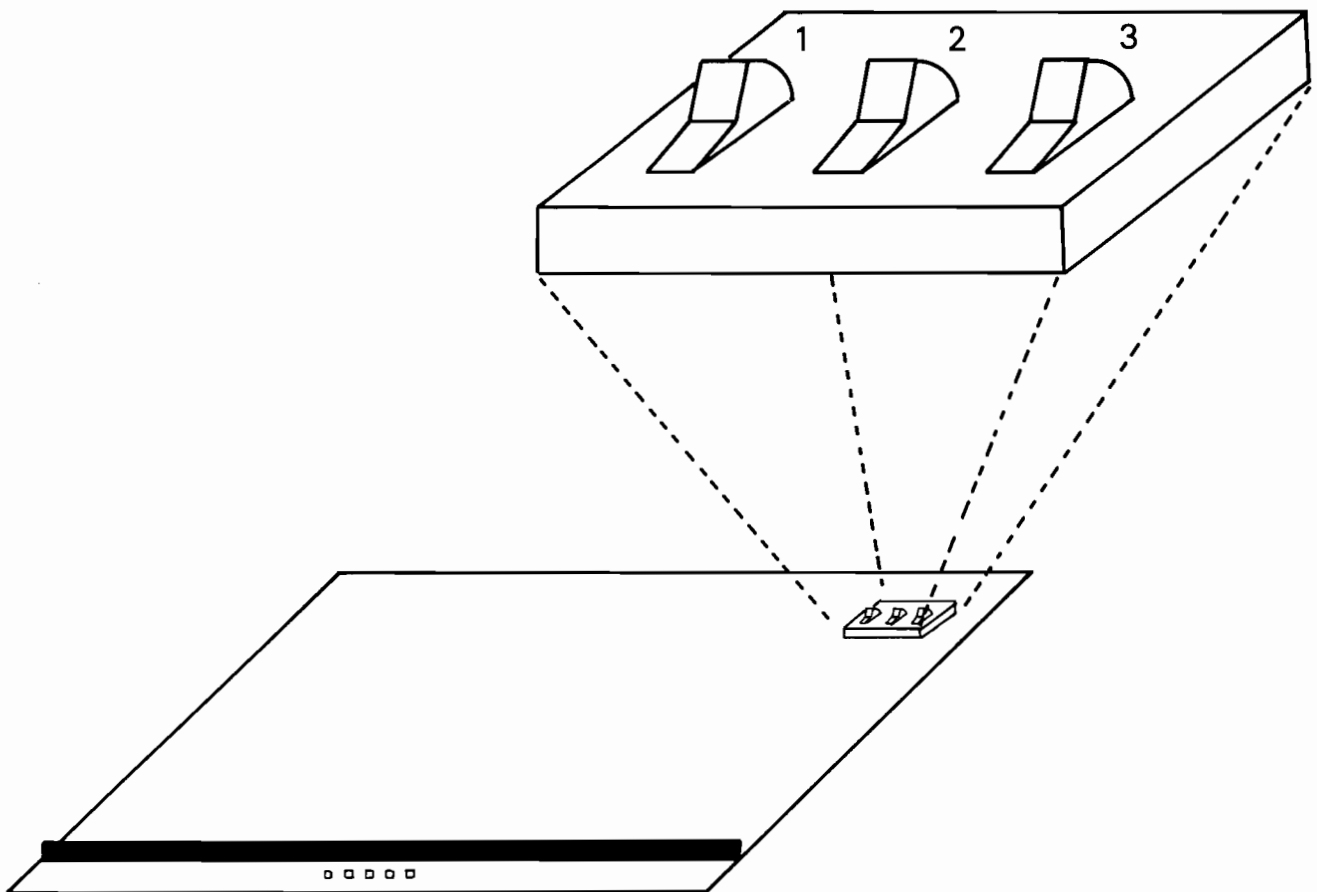


Figure A — 2. Sample HP—IB Cable Configuration (External)

Table A-3. Series 52 with 5 MB of Memory (one 2 MB PCA)

Card Cage Slot Number	Memory PCA Size	Address Switch Setting
1	2 MB	0
2	1 MB	2
3	1 MB	3
4	1 MB	4

Table A-4. Series 52 with 6 MB of Memory (two 2 MB PCAs)

Card Cage Slot Number	Memory PCA Size	Address Switch Setting
1	2 MB	0
2	2 MB	1
3	1 MB	4
4	1 MB	5

Table A-5. Series 52 with 6 MB of Memory (three 2 MB PCAs)

Card Cage Slot Number	Memory PCA Size	Address Switch Setting
1	2 MB	0
2	2 MB	1
3	2 MB	2
4	2 MB	3

INTRODUCTION TO UPGRADES

APPENDIX

B

INTRODUCTION

This appendix contains procedures for upgrading HP 3000 Pre-Series II, III, 30, 33, 39, 40, and 42 computers to the Series 52 computer. The Series 42XP/58 upgrade is documented in the Series 42XP/58 Upgrade Installation Manual (P/N 30477-90005).

This manual also describes the dismantling, and disposition of the existing computer. Procedures for installing the Series 52 computer are covered in the main body of the manual.

THIS EQUIPMENT MUST BE DEINSTALLED AND MADE READY FOR SHIPMENT TO HEWLETT-PACKARD AT THE SAME TIME THE UPGRADE EQUIPMENT IS INSTALLED. HEWLETT-PACKARD WILL ARRANGE FOR SHIPMENT TO THE APPROPRIATE HEWLETT-PACKARD FACILITY IMMEDIATELY AFTER DEINSTALLATION. THE CUSTOMER SHOULD ALLOW THE CARRIER, AS SCHEDULED BY HEWLETT-PACKARD, TO PICK-UP THE EQUIPMENT SO THAT THE EQUIPMENT CAN BE DELIVERED TO HEWLETT-PACKARD WITHIN 30 DAYS (U.S. AND CANADA) AND 60 DAYS (ICON AND EUROPE) OF INSTALLATION OF THE UPGRADE EQUIPMENT. OTHERWISE, HEWLETT-PACKARD SHALL ISSUE AN INVOICE TO RECOVER THE AMOUNT OF CREDIT GIVEN FOR THE REPLACED EQUIPMENT OR CANCEL THE CREDIT ORDER AS APPROPRIATE.

UPGRADING TO HP 3000 SERIES 52

Product number 32552AH applies to the upgrades to a Series 52. Each type of upgrade is designated by a different option number. Refer to Table B-1. In general, the upgrade includes: a 220-240V, 60-Hz, single-phase power supply; a Central Processor Unit; 4 Mbytes of Fault Control Memory; a Control and Maintenance Processor; remote diagnostic capability; the 42XP/52/58 Memory Diagnostic (on DUS); the Fundamental Operating Software, which includes the Multiprogramming Executive Operating System, EDIT/3000, KSAM/3000, and the facility to execute compiled programs without the source language compiler on the system (except for programs written in APL/3000); and a set of manuals.

Also required, but not included in the basic upgrade, are two General I/O Channels (GICs, part number 30079A-044) and one ADCC (part number 30018A-040). If GICs or ADCCs are transferred from other systems, new cables may be required.

TABLE D – 1 UPGRADE OPTIONS

Product #	Option	Description
32552AH		Upgrade to Series 52 with 4 Mb of memory.
	015	220V to 240V, 50Hz operation
	022	Software on cartridge tape
	502	Add—on 2 MB Memory
	503	Add—on 4 MB Memory
	601	Upgrade from Pre—Series II or H P 2000 with 128 kb
	602	Upgrade from Series II with 128 kb
	603	Upgrade from Series III with 256 kb
	605	Upgrade from Series 33A/B with 256 kb, 2649E
	606	Upgrade from Series 33C/U with 256 kb, 2649E
	607	Upgrade from Series 30A/B with 256 kb, 2649E
	608	Upgrade from Series 30C/U with 256 kb, 2649E
	617	Upgrade from Series 37 with no memory
	618	Upgrade from Series 37XE with no memory

Before installing the Series 52 computer, test the existing system to ensure that it is operational. When returning peripherals, also test to ensure that they are operational. Equipment can be upgraded and returned to Hewlett—Packard only if operational and maintained at the current revision levels. To verify the functionality of the returning system and peripherals, perform the following tests.

HP3000 System	—	Cold Load Self — Test
Disc Controller	—	Run the six—month PM procedure in accordance with instructions in the System Support Log.
Mag Tape Unit	—	Run the four—month PM procedure in accordance with instructions in the System Support Log.
System Console	—	Terminal Self Test

An inventory of the equipment to be returned to Hewlett—Packard must be performed. Refer to the Notice of Return (NOR) folder that Finance and Remarketing Division (FRD) has sent.

WARNING

Before modifying or removing equipment, remove AC power from all units of the system at the main system power panel. Then disconnect all power and signal cables connected to the computer.

UPGRADE INSTALLATION PROCEDURES

Preparing the Existing System for Upgrade

To prepare the system for upgrade, proceed as follows:

1. Remove all GICs, INPs and printer translator PCAs (Series 30, 33, and 40 only). Set them aside for installation into the Series 52.
2. Reserve all signal cables.
3. Finance and Remarketing Division (FRD) supplies the following items in the Notice of Return (NOR) folder:

Returned Equipment Verification (REV)
Upgrade Equipment Return Instructions
Notice of Return (NOR) Authorization Form
Shipping Labels (adhered to shipping pouches)

Follow FRD's procedures to facilitate equipment return for which upgrade credits have been issued. If the equipment does not arrive at FRD within 30 days (60 days outside the U.S. and Canada), your office will be contacted for return order status.

4. After de-installation, have the customer sign the REV. Any discrepancies between what is on this checklist and the products being returned should immediately be reported to FRD's Order Processing department.
5. After preparing the return unit and/or peripherals (for which credit has been issued) for shipment, attach the shipping label along with the signed REV to the front of the unit(s). Do not attach any adhesives to the painted surface of any unit. Arrange for the return unit(s) to be moved to the customer's shipping area.

Reference the original system sales order number for tracking purposes on the Shipping Label.

6. Call FRD's Order Processing department to make shipping arrangements. Provide the designated person with a customer contact name and telephone number at the customer site, serial numbers of products being returned, number of pieces, approximate weight, and any non-standard pick-up requirements.

All necessary papers required to import/export the returned equipment is the responsibility of the local Country Traffic Office.

7. Move the new computer unit into place and install it and the peripherals in accordance with the instructions in the main body of this manual.

PERIPHERAL UPGRADES

Peripherals that are to be used with the Series 52 must be HP-IB compatible devices. All peripheral devices that are used on Series 30, 33, 39, 40, 42, 44, or 48 computers are HP-IB compatible and simply require connection to the processor (refer to the main body of this manual). However, Peripherals that were used with Pre-Series II, Series II, or Series III computers require modification to make them HP-IB compatible. The following peripherals can be upgraded to operate with the Series 52:

7920M	50 MB Master Disc Drive
7925M	120 MB Master Disc Drive
7920A	50 MB Disc Drive (SPU resident controller)
7925A	120 MB Disc Drive (SPU resident controller)
7970E	1600 bpi Master Magnetic Tape Drive (low-profile cabinet)
2608A	400 1pm Line Printer
2611/13/17/19	300/300/600/1000 1pm line printers
30106A	2893A Card Reader

The following peripherals, which were used on the Series III, Series II, and Pre-Series II systems, are not supported on the Series 52:

2600A	Fixed Head Disc
2888A	47 MB Disc Drive
7900A	5 MB Disc Drive
7905A	15 MB Disc Drive
7970B	800 bpi Magnetic Tape Drive
2602A	Daisy Wheel Printer
2607A	200 1pm Line Printer
2610A	200 1pm Line Printer
2614A	600 1pm Line Printer
2618A/B	1250 1pm Line Printer

2641A	Terminal (in APL mode)
2749B	Teleprinter
2762A/B	Printing Terminal
3055A	SSLC (communications interface)
30010A	INP (communications interface)
30031A	Clock/Console
30032A/B	ATC (communications interface)
30104A	Paper Tape Reader
30105A	Paper Tape Punch
30119A	2849A Card Reader/Punch
30126A	CalComp Plotter Interface
30215A	additional Mag Tape interface
30300B	Programmable Controller
30301B	Real—Time Programmable Controller
30360A	HSI (communications interface)
ASR 33/35/37	Terminal
Execuport	Terminal
Datapoint 3300	Terminal
Memorex 1240	Terminal
MiniBee	Terminal

C

C

C

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RECEIVING THE SYSTEM

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