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MAINTENANCE AND SERVICE GUIDE
COMPAQ PROLINEA LINE AND COMPAQ PRESARIO 600 SERIES OF PERSONAL COMPUTERS

Fourth Edition (April 1994)
First Edition (August 1993)
Part Number 141780-004

Preface

This Maintenance and Service Guide is a troubleshooting guide that can be used for reference when servicing the Compaq ProLinea Line of Personal Computers. Additional information is available in the SUPPORT SOFTWARE MAINTENANCE AND SERVICE GUIDE, OPTIONS AND PERIPHERALS MAINTENANCE AND SERVICE GUIDE, AND THE TECHNICAL REFERENCE GUIDE.

Compaq Computer Corporation reserves the right to make changes to the Compaq ProLinea Line of Personal Computers without notice.

Symbols

The following words and symbols mark special messages throughout this guide:

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> WARNING <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

Text set off in this manner indicates that failure to follow directions in the warning could result in bodily harm or loss of life.

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>><<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> CAUTION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of data.

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>><<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

IMPORTANT: Text set off in this manner presents clarifying information or specific instructions.

NOTE: Text set off in this manner presents commentary, sidelights, or interesting points of information.

Technician Notes

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> WARNING <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

Only authorized technicians trained by Compaq Computer Corporation should attempt to repair this equipment. All troubleshooting and repair procedures are detailed to allow only subassembly/module level repair. Because of the complexity of the individual boards and subassemblies, no one should attempt to make repairs at the component level or to make modifications to any printed wiring board. Improper repairs can create a safety hazard. Any indication of component replacement or printed wiring board modifications may void any warranty or exchange allowances.

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>><<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> CAUTION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

To properly ventilate your system, you must provide at least 3 inches (7.62 cm) of clearance on the front and back of the computer.

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>><<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> CAUTION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

The computer is designed to be electrically grounded. To ensure proper operation, plug the AC power cord into a properly grounded AC outlet only.

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>><<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

Locating Additional Information

The following documentation is available to support these products:

- o COMPAQ PROLINEA LINE OF PERSONAL COMPUTERS USER'S GUIDE
- o MS-DOS VERSION 5 REFERENCE GUIDE
- o MS OS/2 STANDARD VERSION 1.2
- o OPTIONS AND PERIPHERALS MAINTENANCE AND SERVICE GUIDE
- o SUPPORT SOFTWARE MAINTENANCE AND SERVICE GUIDE
- o COMPAQ SERVICE QUICK REFERENCE GUIDE
- o Service Training Guides
- o Compaq Service Advisories and Bulletins
- o Compaq QuickFind

Chapter 1 Illustrated Parts Catalog

This chapter provides illustrated parts breakdowns and identifies the spare parts of the Compaq ProLinea Line and Compaq Presario 600 Series of Personal Computers.

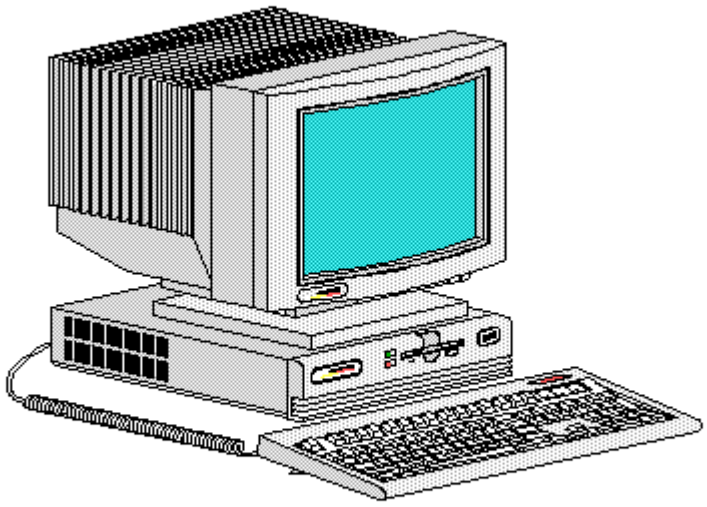


Figure 1-1a. Compaq ProLinea Line and Compaq Presario 600 Series of Personal Computers (Two-slot Models)

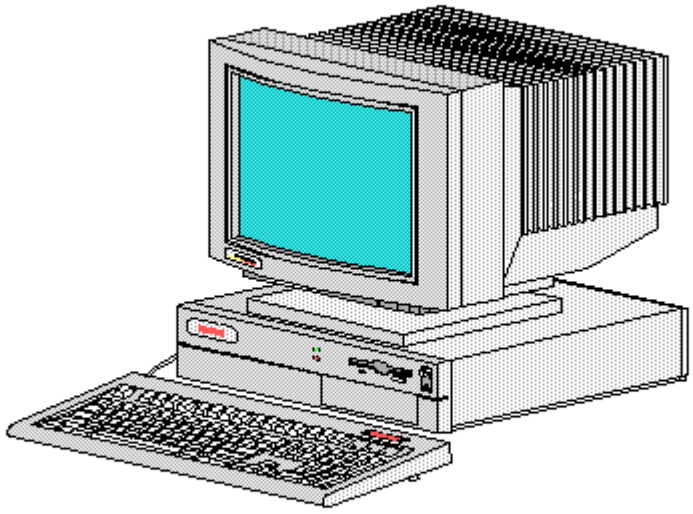


Figure 1-1b. Compaq ProLinea Line and Compaq Presario 600 Series of Personal Computers (Three-slot Models)

System Unit -- Two-Slot Models

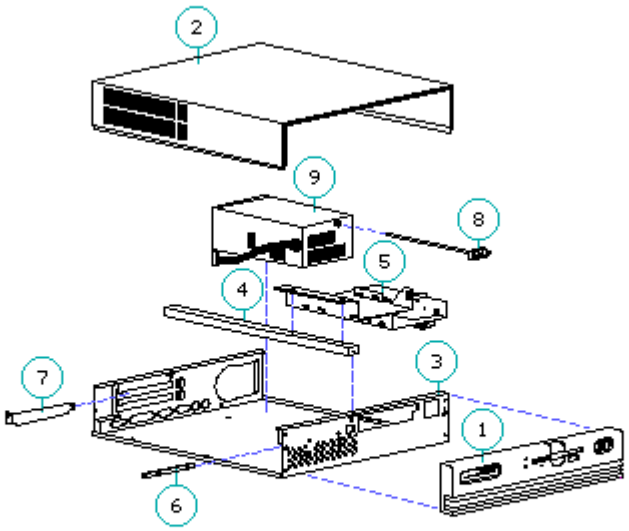


Figure 1-2. System Unit - Two-Slot Models

Table 1-1. System Unit -- Two-Slot Models

Description	Spare Part Number
1. Front Bezel	141823-001
2. System Unit Cover	141681-001
3. Chassis	141677-001
4. Chassis Brace	141678-001
5. Drive Cage	141679-001
6. Card Guide	141613-001
7. Slot Cover	141608-001
8. Switch Rod	143319-001
9. Power Supply	141779-001

SYSTEM UNIT -- THREE-SLOT MODELS

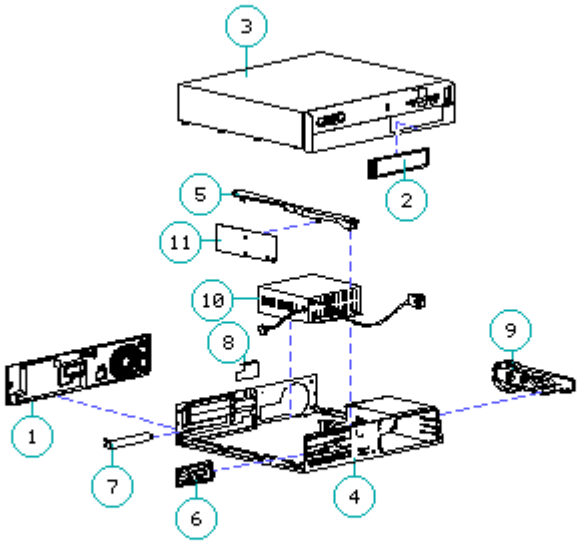


Figure 1-3. System Unit - Three-Slot Models

Table 1-2. System Unit -- Three-Slot Models

Description	Spare Part Number
1. Rear Bezel	141185-001
2. Blank Bezel	141438-001
3. Hood	
Presario 600	169573-001
ProLinea	194385-001
4. Chassis	141347-001
5. Chassis Brace	141184-001
6. Card Guide	141181-001
7. Slot Cover	141081-001
8. Reserve Slot Cover	141182-001
9. Cable Cover	141183-001
10. Power Supply	
115 VAC	137633-001

220 VAC	141337-001
Energy Star	194352-001
11. Baffle (10)	141188-001

MASS STORAGE DEVICES

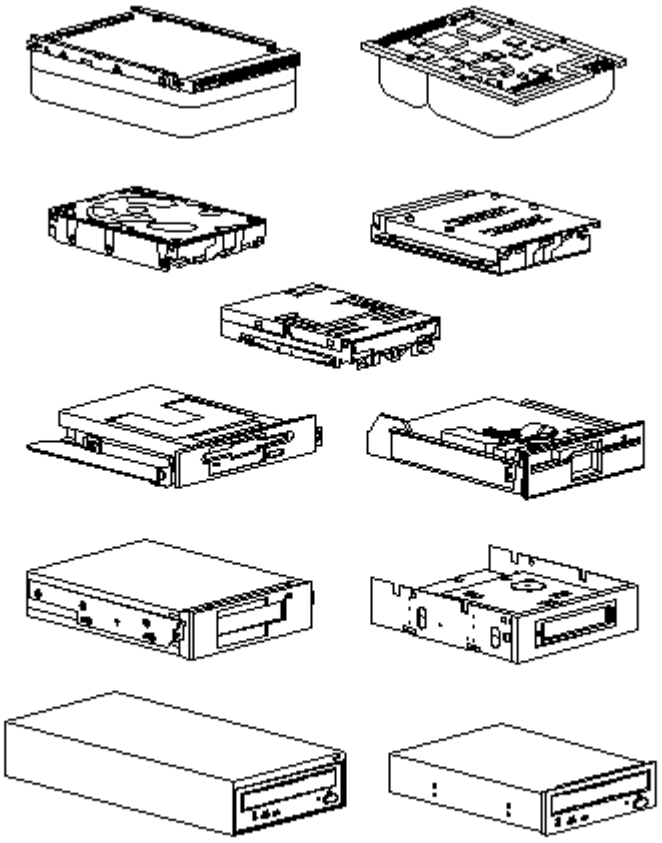


Figure 1-4. Sample Mass Storage Devices

Table 1-3. Mass Storage Devices

Description	Spare Part Number
Two-Slot Models:	
1. 40 MB Hard Drive	141815-001
2. 84 MB Hard Drive (1/3-Height)	141814-001
3. 120 MB Hard Drive (1/3-Height)	143316-001
4. 3.5-Inch 1.44 MB Diskette Drive (2 mode without bracket)	141812-001
Three-Slot Models:	

5.	84 MB Hard Drive (1/3-Height) w/o bracket	141349-001
6.	120 MB Hard Drive (1/3-Height) w/o bracket	143316-001
7.	200 MB Hard Drive w/o bracket	160702-001
8.	240 MB Hard Drive w/o bracket	143332-001
9.	270 MB Hard Drive w/o bracket	197441-001
10.	340 MB Hard Drive w/o bracket	171923-001
11.	525 MB Hard Drive w/o bracket	197014-001
12.	550 MB Fast SCSI-2 Hard Drive	142038-001
13.	1.05 GB Fast SCSI-2 Hard Drive	142039-001
14.	3.5-Inch 1.44 MB Diskette Drive (2 mode without bracket)	141350-001

Table 1-4. Mass Storage Devices

Description	Spare Part Number
Two-Slot Models:	
15. 3.5-Inch 1.44 MB Diskette Drive (3 mode without bracket)	147243-001
16. 5.25-Inch 1.2 MB Diskette Drive	141367-001
17. 60 MB Tape Drive	112524-001
18. 80/120 MB Tape Drive	122087-001
19. 120/250 MB Tape Drive with compression	197490-001
20. 60 MB Tape Cartridge	122086-001
21. 80 MB Tape Cartridge	116966-001
22. 120 MB Tape Cartridge	116967-001
23. Hard Drive Bracket Kit	111568-001
24. CD-ROM Drive (LMSI)	160917-001
25. CD-ROM Drive, Internal Tray Load	142223-001
26. CD-ROM Drive, External Tray Load	199430-001
27. CD-ROM Drive, Dual-Speed Internal Tray Load	133881-001
28. CD-ROM Drive, Dual-Speed External Tray Load	133882-001

CABLES

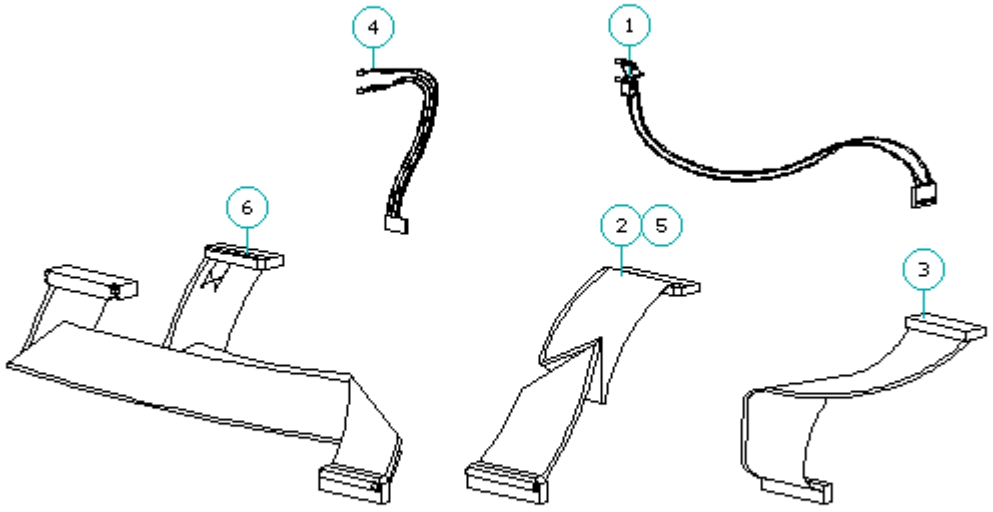


Figure 1-5. Cables

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> CAUTION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

Note the position of the diskette drive signal cable when removing it. Damage to diskettes can result if the diskette drive signal cable is inserted incorrectly.

>>>

Table 1-5. Cables

Description	Spare Part Number
Two-Slot Models:	
1. LED Cable	141819-001
2. Hard Drive Signal Cable	141187-001
3. Diskette Drive Signal Cable	143614-001
Three-Slot Models:	
4. LED Cable	141346-001
5. Hard Drive Signal Cable	141187-001

6.	Diskette Drive Signal Cable	141186-001
7.	CD-ROM Cable, Data - Tray Load	197842-001 *
8.	CD-ROM Cable, Audio - Tray Load	199493-001 *
9.	CD-ROM Cable Set - LMSI	160929-001 *
10.	CD-ROM Cable - External CD-ROM Drive	146953-001 *
11.	CD-ROM Cable - Dual-Speed Audio	146955-001 *

* Not Shown

STANDARD AND OPTIONAL BOARDS

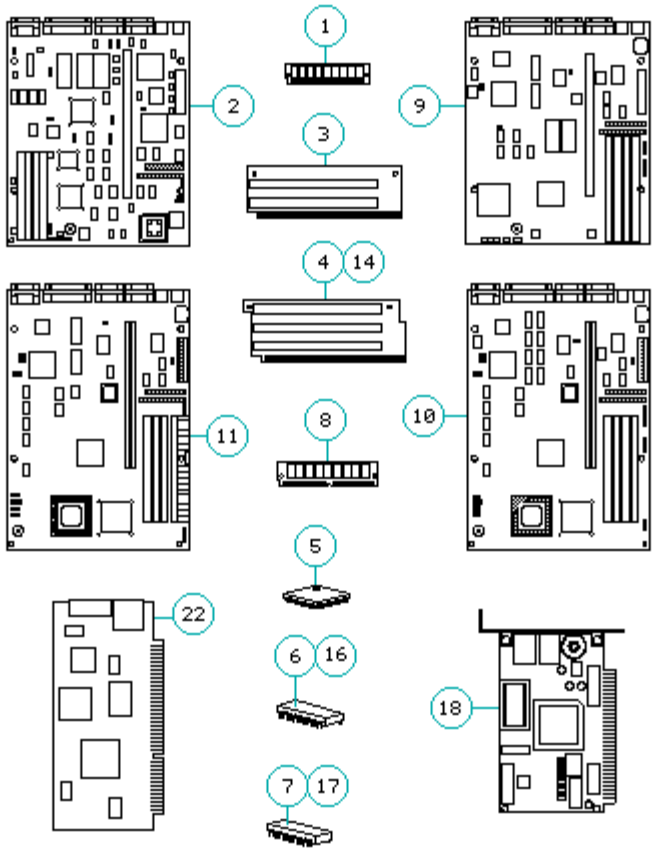


Figure 1-6. Standard and Optional Boards

NOTE: In Compaq ProLinea 386SX-based models, the memory modules must be installed in identical pairs. For example, installing one 1 MB module with one 4 MB module will result in memory malfunction.

In Compaq ProLinea and Compaq Presario 600 Series 486-based models, the memory modules are not constrained to work in pairs. In the local bus,

system boards with 4 MB memory soldered on the first memory slot must contain a Compaq approved 4 MB Single Inline Memory Module (SIMM). A memory error during POST will occur if a nonrecognized memory SIMM module is used. If this occurs, move the SIMM module to the next slot. To upgrade, install memory module options in any configuration that totals the desired upgrade capacity.

Table 1-6. Standard and Optional Boards

Description	Spare Part Number
386SX-Based Models:	
1. Memory Module	
4 MB	141751-001
1 MB	141750-001
2. System Board	
386SX/25	141667-001 **
386SX/25	143331-001 **
3. Backplane (2-slot models)	141782-001
4. Backplane (3-slot models)	141783-001
5. 80387/25 MHz Coprocessor	129772-001
6. System ROM	143613-001
7. Video ROM	143612-001
486-Based Models:	
8. Memory Modules	
32 MB	149948-001
16 MB	149947-001
8 MB	141775-001
4 MB	141754-001
2 MB	141753-001
1 MB	141752-001
9. Non-Local Bus Video	
486SX/25	143224-001 **
486SX/25 (PQFP)	143224-002 **
486DX/33	143220-001 **
486DX2/50	146024-001 **
10. Local Bus Video	
486SX/25	160172-001 **
486DX/33	160123-001 **
486DX2/50	160072-001 **
486DX2/66	160173-001 **
System Boards:	
11. 4 MB Memory	
486SX/25	160018-001
486SX/33	160420-001
486SX2/50	164857-001

	486SX2/66	164912-001
	486DX/33	160125-001
	486DX2/50	160074-001
	486DX2/66	160178-001
12.	ProLinea Enhanced 486 System Board w/o Processor	164560-001 ***
13.	ProLinea Enhanced Intel DX4 System Board w/o Processor	164561-001 ***
14.	128-Kbyte Cache Memory	197005-001 *
15.	Modem, Fax/Data	141607-001 *
16.	Sound Board, PAS 16	160919-001 *
17.	Backplane (3-slot)	141783-001
18.	Backplane (4-slot)	143342-001 *
19.	System ROM	143616-001
20.	Video ROM	143615-001
21.	Modem, Fax/Data/Voice	164423-001
22.	System/Video ROM for 486 w/4 MB Memory	160192-001 *
23.	Video Driver for 486 w/4 MB Memory	196154-001 *
24.	Sound Board, SB16	197493-001 *
25.	NetFlex ENET/ISA Controller	147220-001
26.	SCSI-2 6260 Controller	146993-001 *
27.	486DX2/50 Processor Chip	164590-001 *
28.	486DX2/66 Processor Chip	164591-001 *
29.	NetFlex TR/ISA Controller	142836-001 *
30.	Serial/Parallel Interface Board	106886-001 *
31.	Boot ROM, Ethernet NetWare	160842-001 *
32.	Boot ROM, Ethernet LanManager	160844-001 *
33.	Boot ROM, Token Ring NetWare	199970-001 *
34.	Boot ROM, Token Ring LanManager	199971-001 *

* Not Shown
** The external battery is included in the system board spare parts kit.
*** The system board spare part will not contain the processor chip. The processor must be transferred from the user's system to the spare part using the PGA puller tool, spare part number 108419-001

Table 1-7. System Boards

Compaq ProLinea Compaq Presario System	Spare Part Number	Notes
3/25s 3/25zs	141667-001 143331-001	Either spare kit may be used. However spare part number (SPN) 143331-001 is incompatible with revisions A and B. If using SPN 143331-001, it might be convenient to stock and carry a compatible 2-or 3-slot backplane (SPN 141782-001 or SPN 141783-001) when performing on-site repair in case incompatible backplane is in machine under repair.
4/25s	143224-001 143224-002	SPN 143224-002 may be substituted for SPN 143224-001, but SPN 143224-001 SHOULD NOT be substituted for SPN 143224-002 unless SPN 143224-001 is not available.
CDS 4/25s 625 CDS 625	160172-001 160018-001	Contains local bus graphics. DO NOT replace this spare part with any other spare part. Includes 4 MB memory.
4/33s 633 CDS 633	160420-001	Includes 4 MB memory.
4/33	143320-001 160123-001 160125-001	Non-local bus video. Includes local bus graphics. DO NOT replace with any other spare part. Includes 4 MB memory.
4/50	146024-001 160072-001 160074-001	Non-local bus video. Includes local bus graphics. DO NOT replace with any other spare part. Includes 4 MB memory.
4/66	160173-001 160178-001	Includes local bus graphics. Includes 4 MB memory.
650s	164857-001	Includes 4 MB memory.
660s	164912-001	Includes 4 MB memory.
Enhanced ProLinea Series		
4/33s 4/50s 4/50d 4/66d	164560-001 160125-001	Does not include processor in spare part.
DX4/100	164561-001	Does not include processor in spare part.

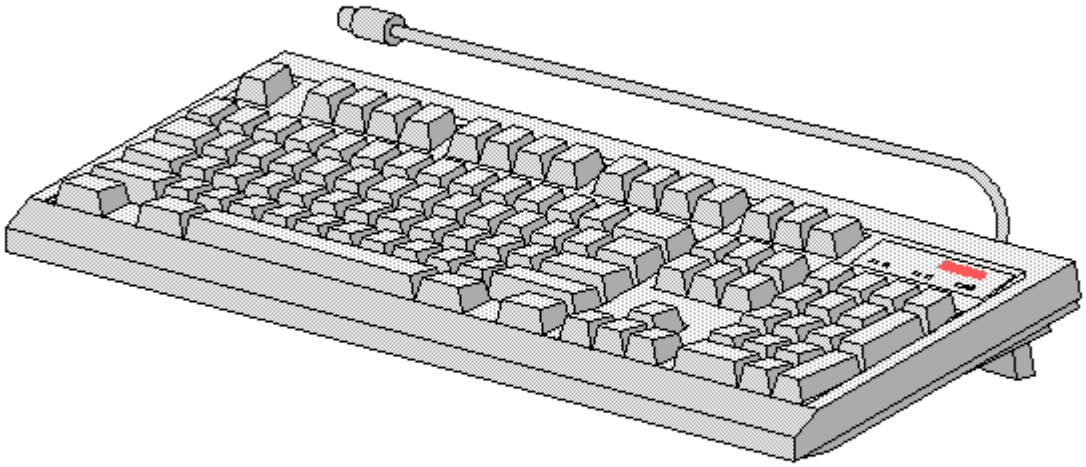


Figure 1-7. Keyboard

Table 1-8. Enhanced Keyboards

Description	Spare Part Number
1. Enhanced Keyboard - U.S./Canadian	141785-101
2. Enhanced Keyboard - U.K. English	141785-103 *
3. Enhanced Keyboard - German	141785-104 *
4. Enhanced Keyboard - French	141785-105 *
5. Enhanced Keyboard - Italian	141785-106 *
6. Enhanced Keyboard - Spanish	141785-107 *
7. Enhanced Keyboard - Danish	141785-108 *
8. Enhanced Keyboard - Norwegian	141785-109 *
9. Enhanced Keyboard - Swedish/Finnish	141785-110 *
10. Enhanced Keyboard - Swiss	141785-111 *

11.	Enhanced Keyboard - French Canadian	141785-112 *
12.	Enhanced Keyboard - Portuguese	141785-113 *
13.	Enhanced Keyboard - Turkish	141785-114 *
14.	Enhanced Keyboard - Greek	141785-115 *
15.	Enhanced Keyboard - Latin American	141785-116 *
16.	Enhanced Keyboard - Arabic	141785-117 *
17.	Enhanced Keyboard - Belgian	141785-118 *

* Not Shown

Table 1-9. Spacesaver Keyboards

	Description	Spare Part Number
1.	Spacesaver Keyboard - U.S./Canadian	160648-101
2.	Spacesaver Keyboard - U.K. English	160648-103 *
3.	Spacesaver Keyboard - German	160648-104 *
4.	Spacesaver Keyboard - French	160648-105 *
5.	Spacesaver Keyboard - Italian	160648-106 *
6.	Spacesaver Keyboard - Spanish	160648-107 *
7.	Spacesaver Keyboard - Danish	160648-108 *
8.	Spacesaver Keyboard - Norwegian	160648-109 *
9.	Spacesaver Keyboard - Swedish/Finnish	160648-110 *
10.	Spacesaver Keyboard - Swiss	160648-111 *
11.	Spacesaver Keyboard - French Canadian	160648-112 *
12.	Spacesaver Keyboard - Portuguese	160648-113 *
13.	Spacesaver Keyboard - Turkish	160648-114 *
14.	Spacesaver Keyboard - Greek	160648-115 *
15.	Spacesaver Keyboard - Latin American	160648-116 *
16.	Spacesaver Keyboard - Arabic	160648-117 *
17.	Spacesaver Keyboard - Belgian	160648-118 *
18.	Spacesaver Keyboard - Japanese	160648-119 *
19.	Spacesaver Keyboard - BHCSY **	160648-120 *

20. Spacesaver Keyboard - Hungarian	160648-121 *
21. Spacesaver Keyboard - Polish	160648-122 *
22. Spacesaver Keyboard - Slovakian	160648-123 *
23. Spacesaver Keyboard - Russian	160648-124 *
24. Spacesaver Keyboard - Czech	160648-129 *
25. Spacesaver Keyboard - Thai	160648-130 *
26. Spacesaver Keyboard - Chinese	160648-132 *
27. Spacesaver Keyboard - Korean	160648-133 *
28. Spacesaver Keyboard - Taiwanese	160648-134 *
29. Spacesaver Keyboard - Brazilian Portuguese	160648-135 *

* Not Shown
** Bosnia-Herzegovina, Croatia, Slovenia, and Yugoslavia

VIDEO

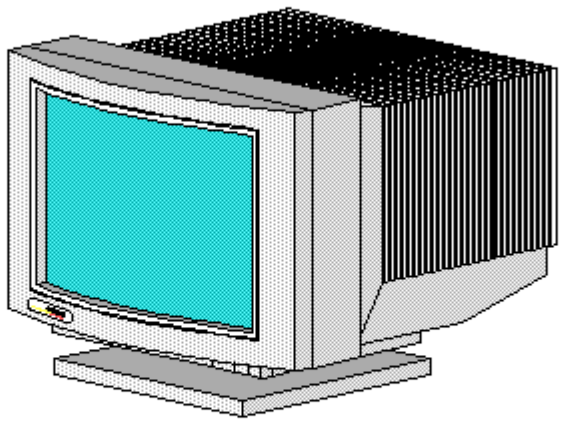


Figure 1-8. Video Monitor

Table 1-10. Video Monitor and Controller Options

Description	Spare Part Number
1. Compaq 1024 Color Monitor - North America	141568-001
2. Compaq 1024 Color Monitor - Northern Hemisphere	141569-001
3. Compaq 1024 Color Monitor - Southern Hemisphere	141570-001
4. Low-Emissions VGA Color Monitor - North America	126547-001
5. Low-Emissions VGA Color Monitor - Northern Hemisphere	126548-001
6. Low-Emissions VGA Color Monitor - Southern Hemisphere	126556-001
7. VGA Monochrome Monitor - North America	118525-001
8. VGA Monochrome Monitor - Northern Hemisphere	118526-001
9. VGA Monochrome Monitor - Southern Hemisphere	118530-001
10. VGA Color Monitor - North America	109255-001
11. VGA Color Monitor - Northern Hemisphere	109337-001
12. VGA Color Monitor - Southern Hemisphere	109336-001
13. QVision 150 Color Monitor - North America	133557-001
14. QVision 150 Color Monitor - Northern Hemisphere	133558-001
15. QVision 150 Color Monitor - Southern Hemisphere	133559-001
16. QVision 170 Color Monitor - North America	133504-001
17. QVision 170 Color Monitor - Northern Hemisphere	133505-001
18. QVision 170 Color Monitor - Southern Hemisphere	133506-001
19. QVision 200 Color Monitor - Northern Hemisphere	143372-001
20. QVision 1024/I Controller	126655-001
21. QVision 1280/I Controller	139182-001
22. Monochrome VGA Monitor - North America	194962-001
23. Monochrome VGA Monitor - Northern Hemisphere	194962-002
24. Monochrome VGA Monitor - Southern Hemisphere	194962-003
25. Color VGA Monitor - LP - North America	143654-501
26. Color VGA Monitor - LP - Northern Hemisphere AG	143654-502
27. Color VGA Monitor - LP - Southern Hemisphere AG	143654-504

28.	Color VGA Monitor - LP - Northern Hemisphere	143654-505
29.	Color VGA Monitor - LP - Southern Hemisphere	143654-506
30.	Color SVGA Monitor - LP - North America (471P)	143804-501
31.	QVision 172 Color Monitor - LP - North America (451)	143547-001
32.	QVision 172 Color Monitor - LP - Northern Hemisphere (451)	143547-002
33.	QVision 172 Color Monitor - LP - Southern Hemisphere (451)	143547-003
34.	Color VGA Monitor - LP - Northern Hemisphere	143654-505
35.	Color VGA Monitor - LP - Southern Hemisphere	143654-506
36.	Color SVGA Monitor - LP - North America (471P)	143804-501
37.	Color SVGA Monitor - LP - Northern Hemisphere (472P)	143807-501
38.	Color SVGA Monitor - LP - North America (472P)	143807-502
39.	Color SVGA Monitor - LP - Southern Hemisphere (472P)	143808-501
40.	Color SVGA Monitor - LP - Northern Hemisphere (471P)	143805-501
41.	Color SVGA Monitor - LP - Southern Hemisphere (471P)	143806-501
42.	Color 1024 Monitor - LP - North America (461P)	141568-501
43.	Color 1024 Monitor - LP - Northern Hemisphere (460P)	141568-502
44.	Color 1024 Monitor - LP - North America (460P)	141568-503
45.	Color 1024 Monitor - LP - Southern Hemisphere (460P)	141568-504
46.	Color 1024 Monitor - LP - Northern Hemisphere (461P)	141568-505
47.	Color 1024 Monitor - LP - Southern Hemisphere (461P)	141568-506
48.	Color 151 FS Monitor - LP - North America (441P)	147265-501
49.	Color 151 FS Monitor - LP - Northern Hemisphere (441P)	147265-502
50.	Color 151 FS Monitor - LP - North America (443P)	147265-503
51.	Color 151 FS Monitor - LP - Southern Hemisphere	147265-504

	(443P)	
52.	Color 151 FS Monitor - LP - Northern Hemisphere (441P)	147265-505
53.	Color 151 FS Monitor - LP - Southern Hemisphere (441P)	147265-506
54.	Color 1024 Monitor 17" - North America	190916-001
55.	Color 1024 Monitor 17" - Northern Hemisphere	190916-002
56.	Color 1024 Monitor 17" - Southern Hemisphere	190916-003
57.	Color 1024 Monitor 17" - GSA	190916-004

MISCELLANEOUS HARDWARE SPARES

Table 1-11. Miscellaneous Hardware

Description	Spare Part Number
1. Compaq Mouse	141189-201
2. Diagnostics Test Cables and Plugs	100767-001
3. Universal ROM Removal Tool	128209-001
4. Screws, 6/32" x 5/16" (Quantity = 25)	141385-001
5. Feet (Quantity = 10)	141332-001
6. Bun Assembly for Shipping Box (two-slot models)	141818-001
7. Shipping Box (two-slot models)	141817-001
8. Bun Assembly for Shipping Box (three-slot models)	141333-001
9. Shipping Box, ProLinea (three-slot models) (Quantity = 5)	164620-001
10. Shipping Box, Presario (Quantity = 5)	164863-001
11. Shipping Box, Presario International (Quantity = 5)	164861-001
12. Shipping Box, Presario CDS (Quantity = 5)	164866-001
13. Compaq ProLinea Series Logo (Quantity = 5)	164589-001
Compaq Presario 600 Series Logo (Quantity = 4)	164846-001
14. Microphone	
Large	160940-001
Small	141343-001
15. CDS Speakers	160920-001

16. Ground Clips (Quantity = 10)	141331-001
17. External Battery Kit	
Alkaline, 4.5 V, 600 mA	160274-001
Lithium, 3.3 V, 1.5 mA	160273-001
18. AC Power Cord, United States	100485-001 (no longer available)
19. AC Power Cord, Australia, New Zealand	100661-001 (no longer available)
20. AC Power Cord, Denmark	130627-001 (no longer available)
21. AC Power Cord, Austria, China, France, Germany, Hong Kong, Indonesia, Netherlands, Spain, Thailand	100614-001 (no longer available)
22. AC Power Cord, Italy	109197-001 (no longer available)
23. AC Power Cord, Switzerland	150304-001 (no longer available)
24. AC Power Cord, Japan	139867-001 (no longer available)
25. AC Power Cord, Malaysia, Pakistan, Philippines, Singapore, United Kingdom	100613-001 (no longer available)
26. AC Power Cord, Korea, Taiwan	101155-001
27. Tool, PGA (Quantity = 5)	108419-001

DOCUMENTATION AND SOFTWARE

Table 1-12. Documentation and Software

Description	Spare Part Number
1. Maintenance and Service Guide Compaq ProLinea Line and Compaq Presario 600 Series of Personal Computers	141191-001
2. User's Guide - English Compaq ProLinea Line of Personal Computers	141756-001
3. User's Guide - German	141756-041

	Compaq ProLinea Line of Personal Computers	
4.	User's Guide - French Compaq ProLinea Line of Personal Computers	141756-051
5.	User's Guide - Italian Compaq ProLinea Line of Personal Computers	141756-061
6.	User's Guide - Spanish Compaq ProLinea Line of Personal Computers	141756-071
7.	Beyond Setup - English (U.S) Compaq Presario 600 Series of Personal Computers	164919-001
8.	Compaq Service Quick Reference Guide (Quantity = 5)	106854-001
9.	Compaq QuickFind - (End User Version) Sales (initial order) Service (repair/exchange)	 130848-001 130845-001
10.	Compaq QuickFind - (Reseller Version)	114978-001

Chapter 2 Two-Slot Model Removal and Replacement Procedures

This chapter provides subassembly level disassembly procedures for the two-slot models of the Compaq ProLinea Line of Personal Computers.

After completing all necessary removal and replacement procedures, run the Diagnostics utility to verify that all components operate properly.

SERVICE CONSIDERATIONS

This section lists requirements and considerations necessary for assembly, disassembly, and servicing of these units.

Tools and Software Requirements

To service the Compaq ProLinea Line of Personal Computers, you may need the following:

- Torx screwdriver
- Flat-bladed screwdriver
- Needle-nosed pliers
- 25-Pin printer loopback plug
- 9-Pin serial loopback plug
- Modem termination plug
- ROM removal tool
- Coprocessor removal tool
- Diagnostics software
- Formatted blank diskettes

Screws

Screws used in these products are not interchangeable. Using an incorrect screw in reassembly can damage the unit. Be sure to keep all screws together with each part removed during disassembly.

IMPORTANT: To prevent inadvertent damage, place each subassembly away from the work area as you remove it from the computer.

Cables and Connectors

Most cables in the unit are ribbon cables and flex cables. Handle these cables with extreme care to avoid damage. Apply only the tension required to seat or unseat the cables during insertion or removal from the connector. Handle cables by their connectors or pull tabs whenever possible. In all cases, avoid bending, twisting, or tearing the cables. Always place cables so that they cannot be caught or snagged by parts being removed or replaced.

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> CAUTION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

The ribbon cables have been folded at the factory to ensure proper placement during assembly. When servicing these units, ensure that cables are placed in their proper locations during reassembly.

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>><<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

ELECTROSTATIC DISCHARGE INFORMATION

A sudden discharge of static electricity can destroy static-sensitive devices or microcircuitry. Proper packaging and grounding techniques are necessary precautions to prevent damage. Always take the following precautions:

- o Transport products in static-safe containers such as tubes, bags or boxes.
- o Keep electrostatic sensitive parts in their containers until they arrive at static-free stations.
- o Always be properly grounded when touching a sensitive component or assembly.
- o Place reusable electrostatic-sensitive parts from assemblies in protective packaging or conductive foam.

Methods of Grounding

Guard against electrostatic damage at workstations by following these steps:

- o Cover workstations with approved static-dissipative material. Provide a wrist strap connected to work surface and properly grounded tools and equipment.
- o Use static-dissipative mats, heel straps, or air ionizers to give added protection.
- o Handle electrostatic-sensitive components, parts, and assemblies by the case or PCB laminate. Handle them only at static-free workstations.
- o Avoid contact with pins, leads, or circuitry.
- o Turn off power and input signals before inserting and removing connectors or test equipment.
- o Keep work area free of non-conductive materials, such as ordinary plastic assembly aids and styrofoam.
- o Use field service tools, such as cutters, screwdrivers, vacuums that are conductive.
- o Always place drives PCB-assembly-side down on the foam.

Recommended Materials and Equipment

The following materials and equipment are recommended for prevention of electrostatic damage:

- Antistatic tape
- Antistatic smocks, aprons, or sleeve protectors
- Conductive bins and other assembly or soldering aids
- Conductive foam
- Conductive table-top workstations with ground cord of 1-megohm resistance
- Static dissipative table or floor mats with hard tie to ground
- Static awareness labels
- Wrist straps and footwear straps providing 1 megohm +/-10% resistance
- Antistatic material handling packages

PREPARATION PROCEDURES

Before beginning removal and replacement procedures, complete the following steps:

1. Turn off the computer and any peripheral devices.

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> CAUTION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

Ensure that the system unit power is off before you connect or disconnect any cables.

>>>

2. Disconnect the AC power cord from the AC outlet then from the system unit.
3. Disconnect all external devices (printer, keyboard, monitor, and other devices) from the computer.

IMPORTANT: During disassembly, label each cable as you remove it. Be sure to note the position and routing of each cable.

SYSTEM UNIT COVER

1. Remove the Torx screws connecting the cover to the rear bezel.
2. Lift the rear of the cover and pull it up and away from the chassis.

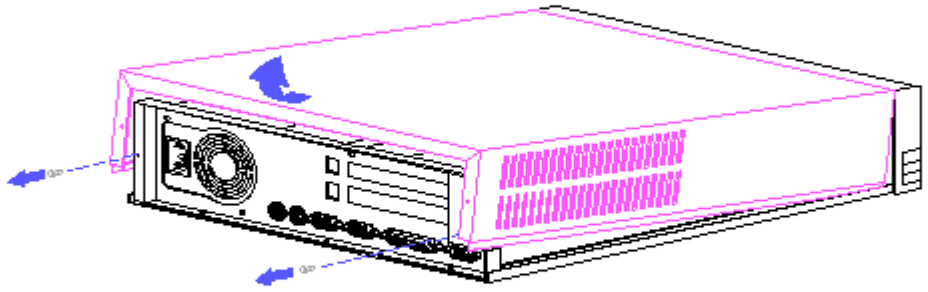


Figure 2-1. Removing the System Unit Cover

POWER SUPPLY

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> CAUTION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

Note the orientation of each cable connector and the routing of each cable before you remove it. Damage to the computer can result if the cable is inserted incorrectly.

>>>

1. Disconnect the power supply cables from the system board.

2. Disconnect the power supply cables from the disk drives.

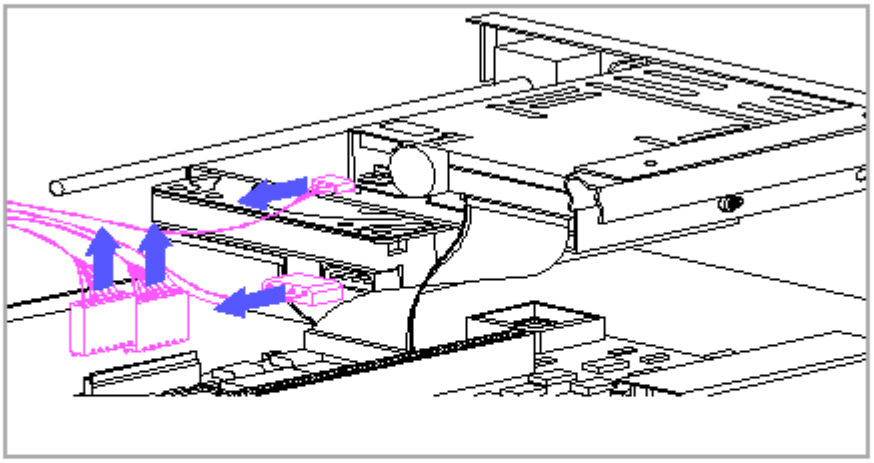


Figure 2-2. Disconnecting the Power Supply Cables

3. Remove the screws securing the power supply to the back of the chassis.
4. Slide the power supply forward and lift it up and away from the chassis.

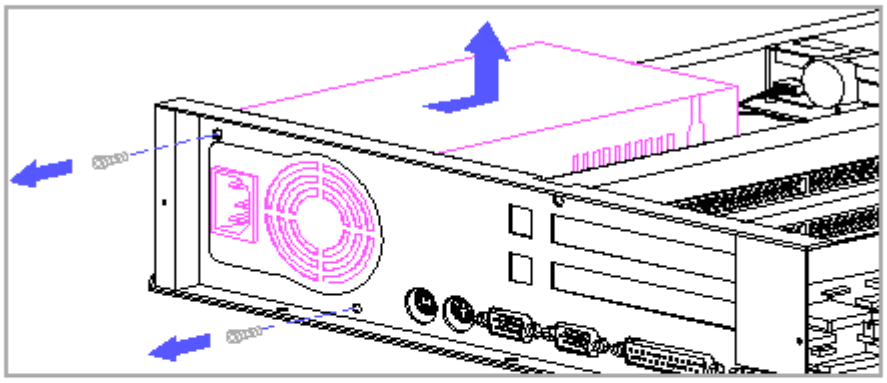


Figure 2-3. Removing the Power Supply

STORAGE DEVICES

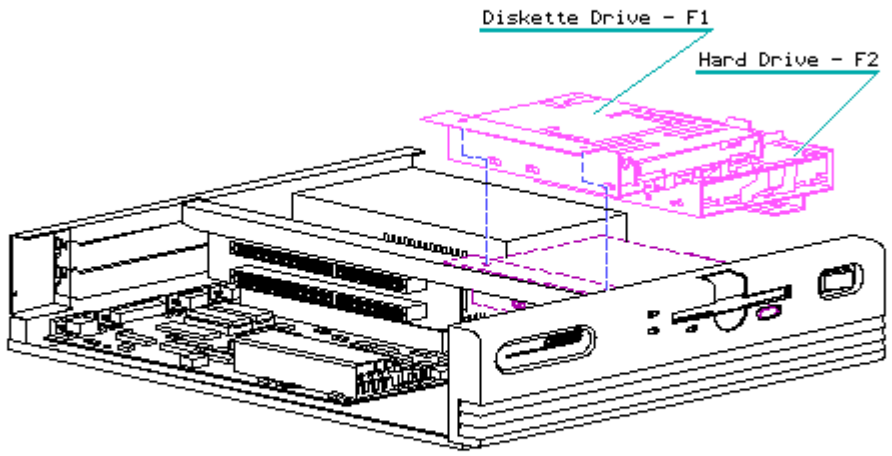


Figure 2-4. Drive Positions

Table 2-1. Mass Storage Device Installation Configurations

Mass Storage Device	Storage Area
3.5-Inch 1.44 MB Diskette Drive	F1
120 MB Hard Drive	F2
84 MB Hard Drive	F2
40 MB Hard Drive	F2

Drive Cage

1. Disconnect the signal cables from the 3.5-inch diskette drive.

NOTE: The signal cable to the diskette drive is the longer of the two ribbon cables and connects to the J9 connector in the system board. The signal cable connects to the back of the diskette drive with the colored stripe as shown in the following illustration.

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> CAUTION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

Note the orientation of the diskette drive signal cable connector. Damage to diskettes can result if the diskette drive signal cable is inserted

incorrectly.

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>><<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

2. If the computer has a hard drive, disconnect the cables to the hard drive.

NOTE: The signal cable to the hard drive is the shorter of the two ribbon cables and connects to the J10 connector on the system board. The cable connects to the back of the hard drive with the colored stripe as shown in the following illustration.

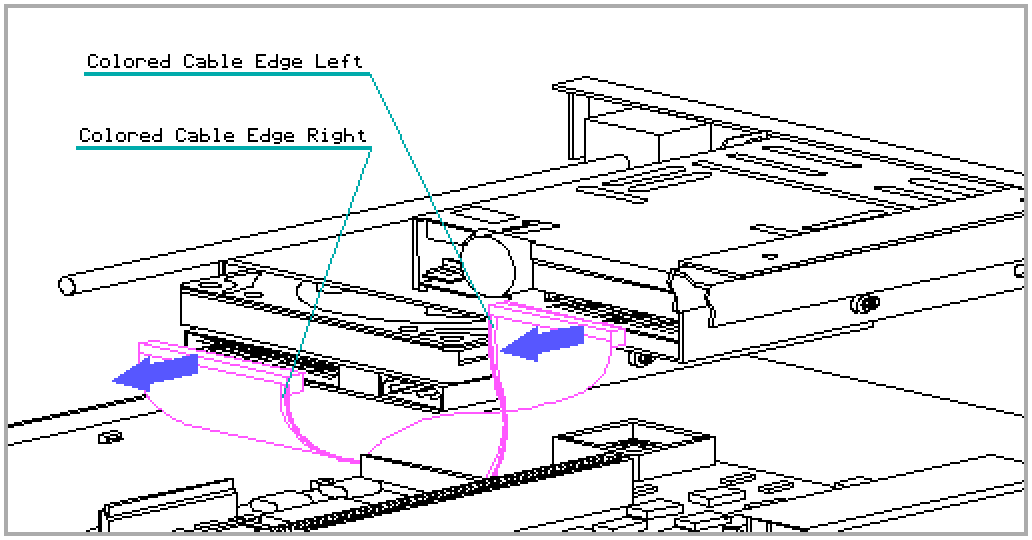


Figure 2-5. Disconnecting the Drive Cables

3. Remove the drive cage.

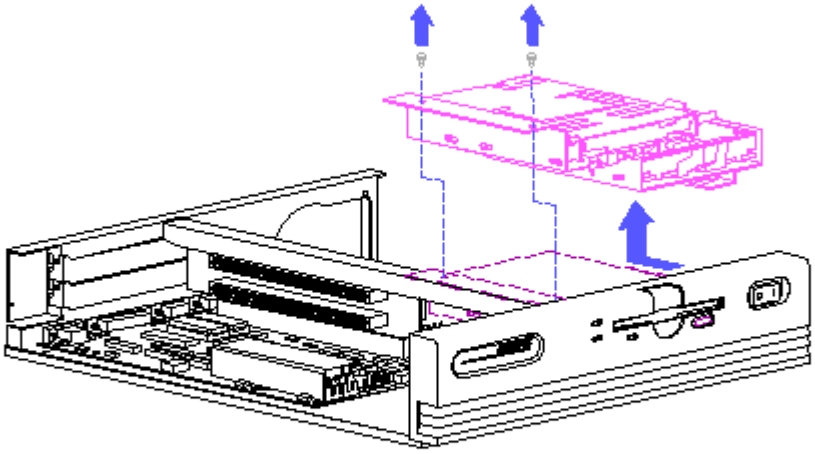


Figure 2-6. Removing the Drive Cage

Removing the Hard Drive from the Drive Cage

Remove the hard drive from the drive cage.

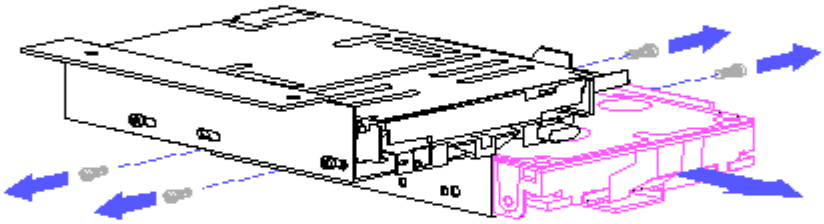


Figure 2-7. Removing the Hard Drive

NOTE: The screws occupy the back two holes in the side of the hard drive. When reinstalling the hard drive, do not use the front hole on the side of the drive to secure the drive to the drive cage. Inserting a screw in the front hole will block the placement of the system unit cover.

Removing the Diskette Drive from the Drive Cage

Remove the diskette drive from the drive cage.

NOTE: The screws are in the front and back holes. When reinstalling the diskette drive, do not use the center hole on the side of the drive to secure the drive to the drive cage.

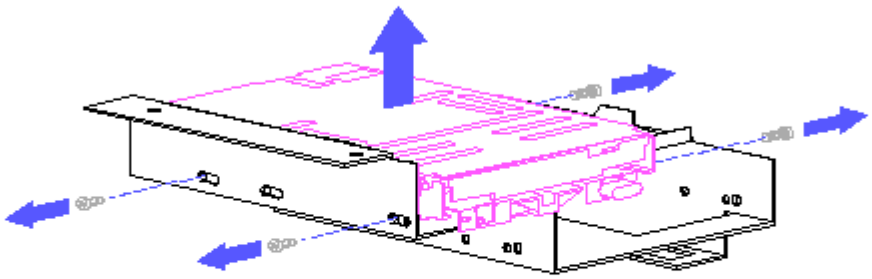


Figure 2-8. Removing the 3.5-Inch Diskette Drive

BACKPLANE

Remove the backplane.

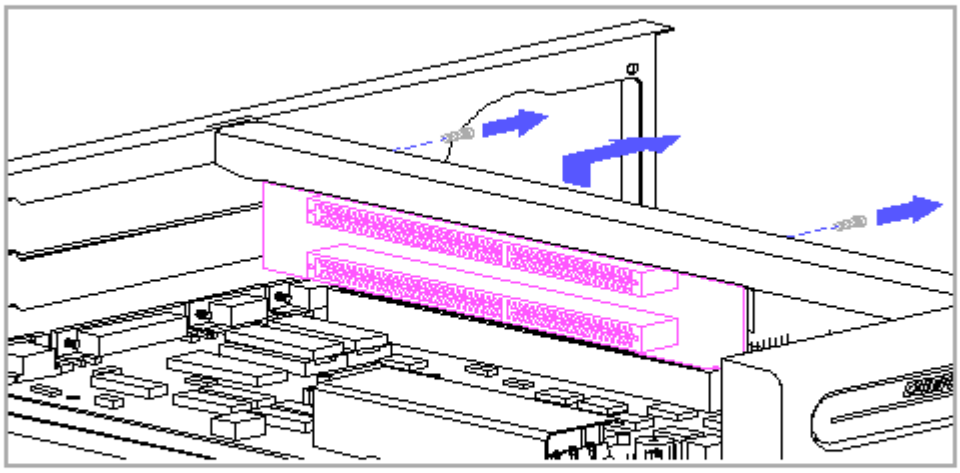


Figure 2-9. Removing the Backplane

MEMORY MODULES

Remove the system memory modules.

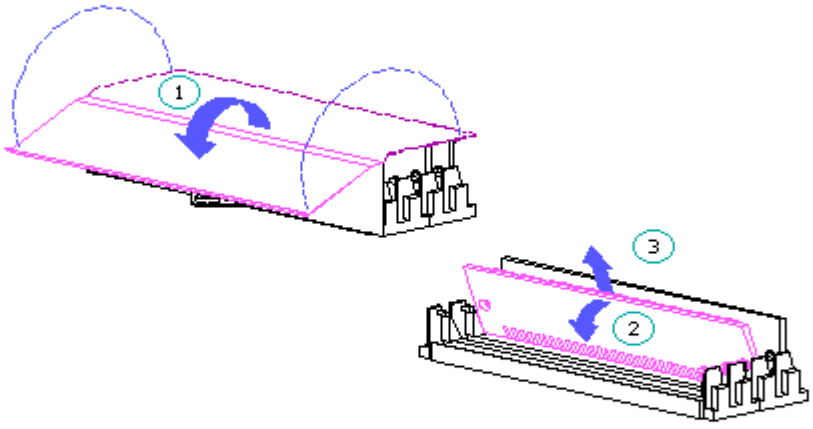


Figure 2-10. Removing the System Memory Modules

NOTE: In Compaq ProLinea 386SX-based models, the memory modules must be installed in identical pairs. For example, installing one 1 MB module with one 4 MB module will result in memory malfunction.

SYSTEM BOARD

1. Disconnect the drive cables from the system board connectors, J9 and J10.

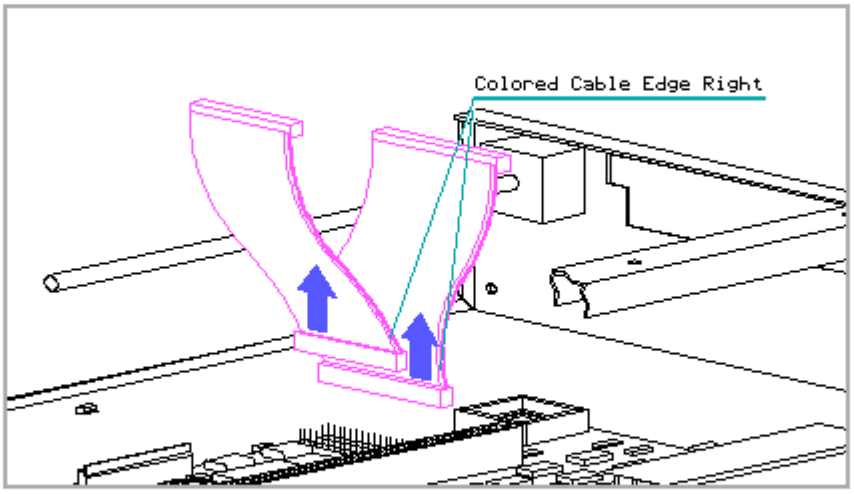


Figure 2-11. Disconnecting the Signal Cables from the System Board

2. Unplug the hard drive and Power-on LED cable connectors from the hard drive and Power-on LED connectors on the system board.

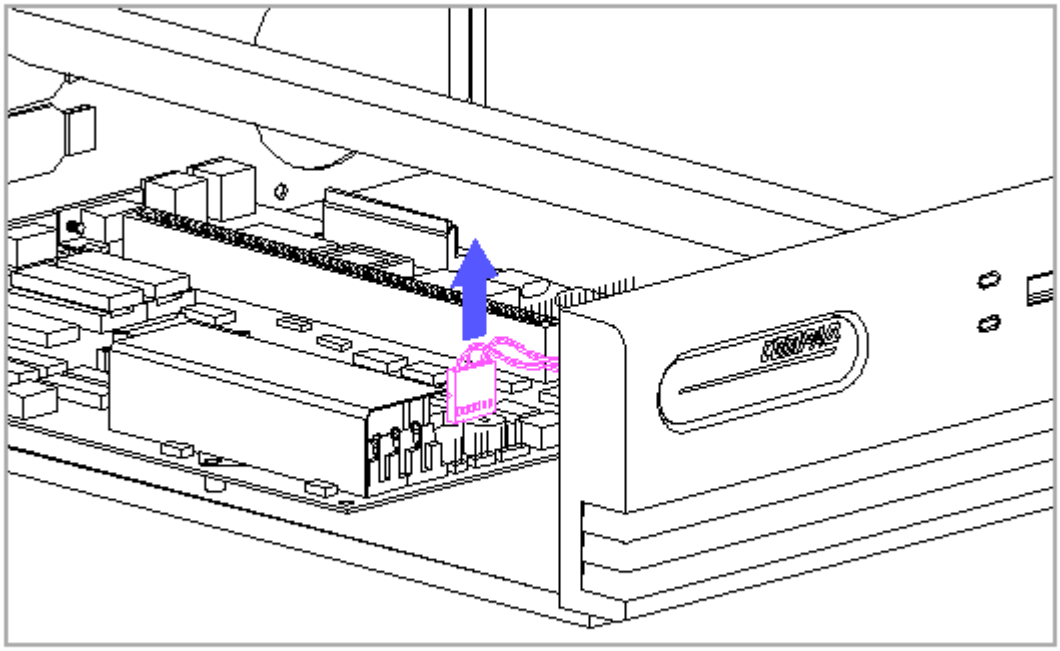


Figure 2-12. Disconnecting the LED Cable from the System Board

3. Remove the system board.

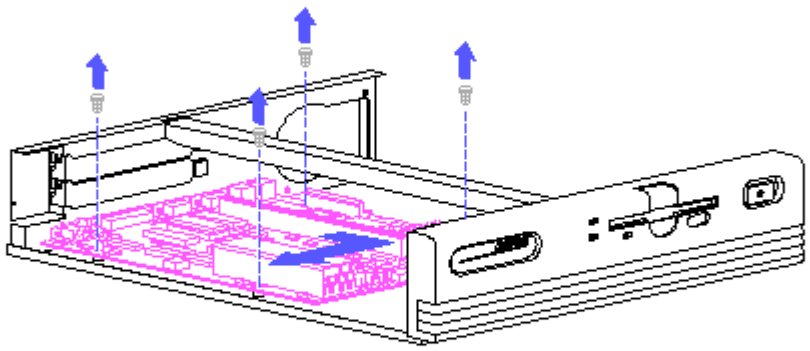


Figure 2-13. Removing the System Board

SYSTEM ROM, VIDEO ROM, AND COPROCESSOR

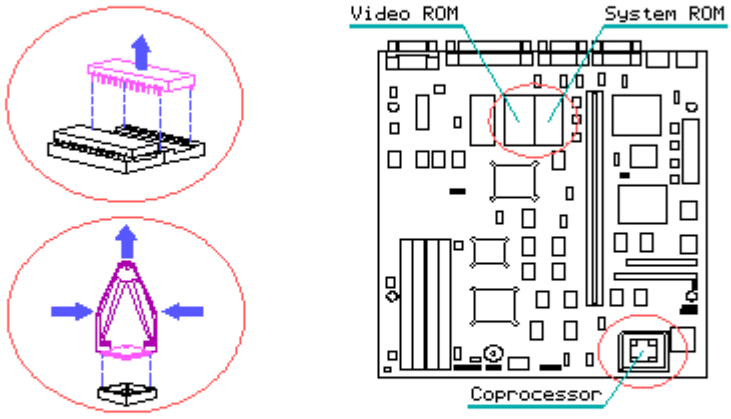


Figure 2-14. Removing the System ROM, Video ROM, and Coprocessor

FRONT BEZEL

Remove the front bezel.

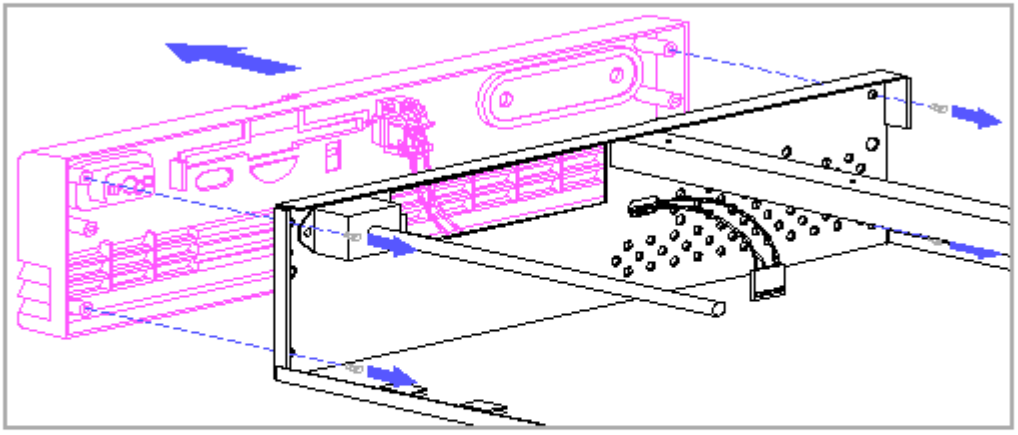


Figure 2-15. Removing the Front Bezel

LED CABLE ASSEMBLY

Remove the LED cable assembly.

NOTE: To facilitate reassembly, note the routing of the cable and the orientation of each LED before you remove it.

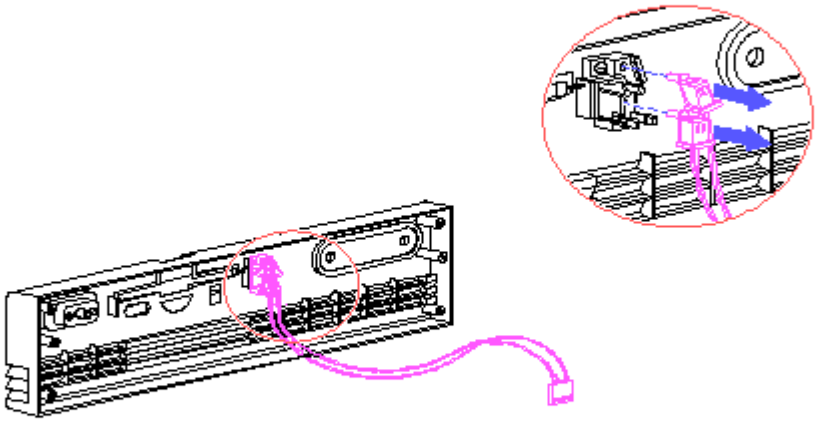


Figure 2-16. Removing the LED Cable Assembly

SWITCH ROD ASSEMBLY

Remove the switch rod assembly.

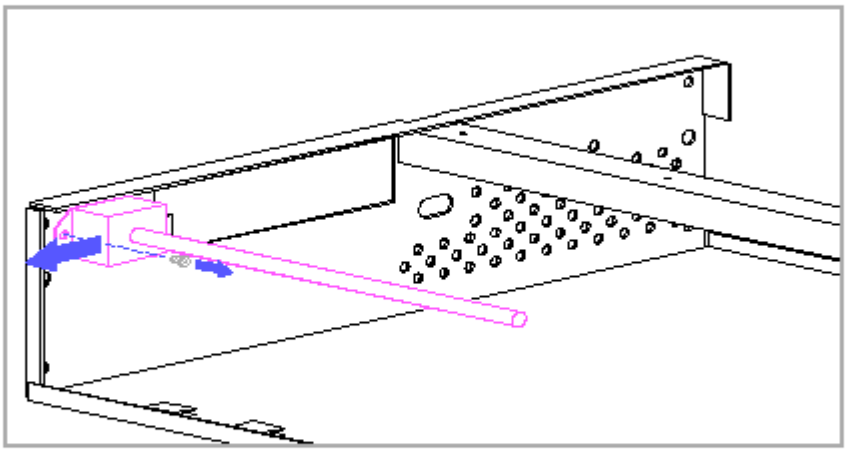


Figure 2-17. Disassembling the Switch Rod Assembly

CARD GUIDES

Remove the card guides.

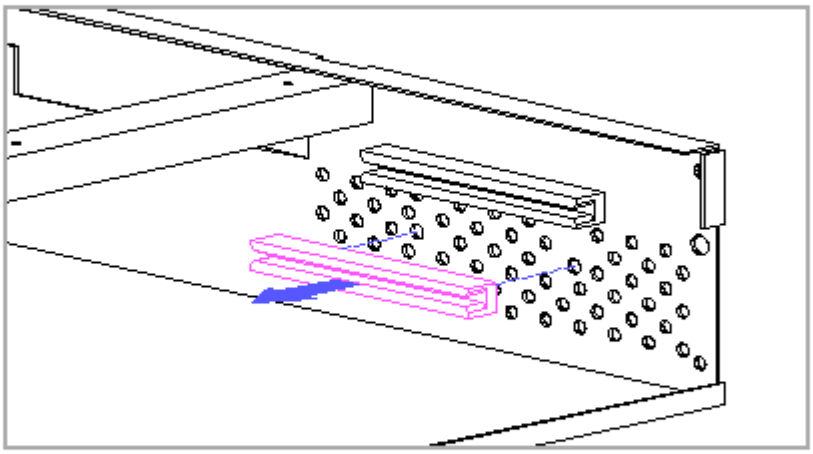


Figure 2-18. Removing the Card Guide

EXTERNAL BATTERY

NOTE: Computer Setup automatically detects and configures most Compaq components, including Compaq hard drives. If you are using a hard drive not manufactured by Compaq, it is important to complete the following steps before installing the external battery:

1. Run Computer Setup and observe the drive type that is displayed in the System Configuration Summary.

2. If the drive type number is 65, make a note of the drive parameters. You can view these parameters by pressing F4, selecting the Fixed Disk Drives, and choosing the Custom Drive Definition. This drive type is a user defined type, also called a soft drive type. Whenever CMOS has become invalid, such as after the installation of a new battery, these drive parameters must be entered manually for user defined types.

3. When you have completed the battery installation, run Computer Setup and use the drive table parameters noted earlier to reconfigure your system.

To install an external battery, complete the following steps:

1. Turn off the computer.

2. Unplug the computer and disconnect any external devices.

3. If you are installing the battery in a Compaq ProLinea 325zs Personal Computer, disconnect, the drive cables from the system board.

NOTE: Carefully note the orientation of the connectors before disconnecting them to ensure that they are reconnected correctly when completing battery installation.

4. If installing the battery on any other model, remove the hard drive.

5. For a 386-based personal computer, plug the battery into pins P10 and move the jumpers at P9 from pins 2-3 to 1-2.

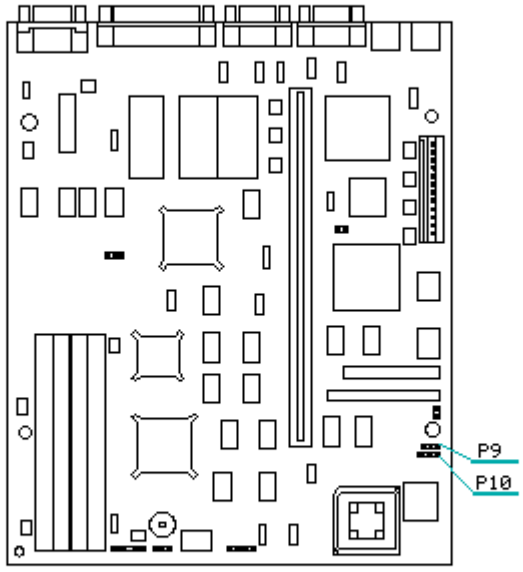


Figure 2-19. Jumper Locations on a 386-Based Computer

6. Remove the backing from the adhesive strip on the battery and install on to the chassis.

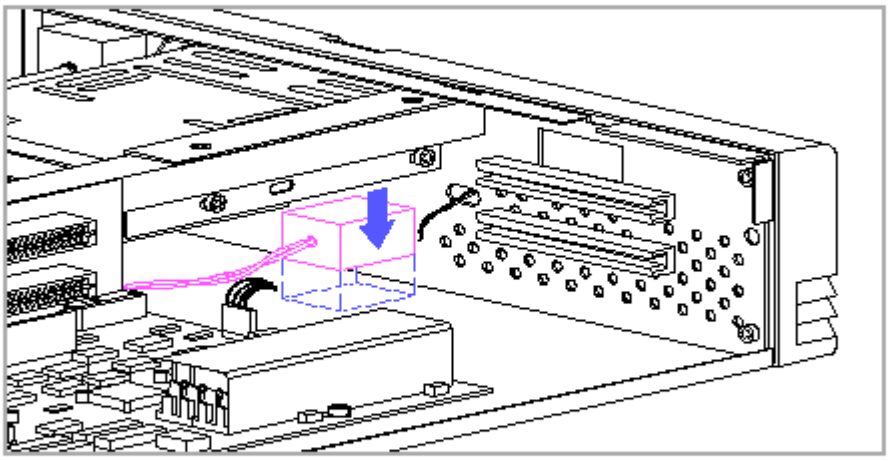


Figure 2-20. Installing the External Battery

7. If there is a yellow and black caution label with the battery kit, place it on the chassis next to the front of the processor board. The product safety regulatory approvals for your computer require that this label be installed for all batteries.

8. For Compaq ProLinea 325zs Personal Computers, reconnect the drive cables to the system board. For all other models, reinstall the hard drive.

9. Replace the computer cover and reconnect any external devices.

10. Turn on the computer.

IMPORTANT: On Compaq ProLinea 325zs Personal Computers, ensure that there is no diskette in the diskette drive before you start the computer. This will prevent loss of data in the event that the drive cable was connected incorrectly.

11. Run Computer Setup to reconfigure the system. If you have a hard drive not manufactured by Compaq, proceed to the next step.

12. If you have a user-defined type drive, press F4 from the Change Configuration menu and choose Custom Drive Definition to reconfigure the hard drive.

NOTE: Custom Drive Definition automatically selects drive type 65 in the configuration. Use the Left and Right arrow keys to choose the parameter you want to change, and use the Up and Down arrow keys to change the parameter.

REASSEMBLY

To reassemble Compaq ProLinea two-slot models, reverse the steps used in the disassembly section.

Chapter 3 Three-Slot Model Removal and Replacement Procedures

This chapter provides subassembly module level removal and replacement procedures for the three-slot models of the Compaq ProLinea Line and Compaq Presario 600 Series of Personal Computers.

After completing all necessary removal and replacement procedures, run the Diagnostics utility to verify that all components operate properly.

SERVICE CONSIDERATIONS

This section lists requirements and considerations necessary for assembly, disassembly, and servicing of these units.

Tools and Software Requirements

To service the Compaq ProLinea Line and Compaq Presario 600 Series of Personal Computers, you may need the following:

- Torx screwdriver
- Flat-bladed screwdriver
- Needle-nosed pliers
- 25-Pin printer loopback plug
- 9-Pin serial loopback plug
- Modem termination plug
- ROM removal tool
- Coprocessor removal tool
- Diagnostics software
- Formatted blank diskettes

Screws

Screws used in these products are not interchangeable. Using an incorrect screw in reassembly can damage the unit. Be sure to keep all screws together with each part removed during disassembly.

IMPORTANT: To prevent inadvertent damage, place each subassembly away from the work area as you remove it from the computer.

Cables and Connectors

Most cables in the unit are ribbon cables and flex cables. Handle these cables with extreme care to avoid damage. Apply only the tension required to seat or unseat the cables during insertion or removal from the connector. Handle cables by their connectors or pull tabs whenever possible. In all cases avoid bending, twisting, or tearing the cables. Always place cables so that they cannot be caught or snagged by parts being removed or replaced.

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> CAUTION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

The ribbon cables have been folded at the factory to ensure proper placement during assembly. When servicing these units, ensure that cables

are placed in their proper locations during reassembly.

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>><<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

ELECTROSTATIC DISCHARGE INFORMATION

A sudden discharge of static electricity can destroy static-sensitive devices or microcircuitry. Proper packaging and grounding techniques are necessary precautions to prevent damage. Always take the following precautions:

- o Transport products in static-safe containers, such as tubes, bags or boxes.
- o Keep electrostatic sensitive parts in their containers until they arrive at static-free stations.
- o Always be properly grounded when touching a sensitive component or assembly.
- o Place reusable electrostatic-sensitive parts from assemblies in protective packaging or conductive foam.

Methods of Grounding

Guard against electrostatic damage at workstations by following these steps:

- o Cover workstations with approved static-dissipative material. Provide a wrist strap connected to work surface and properly grounded tools and equipment.
- o Use static-dissipative mats, heel straps, or air ionizers to give added protection.
- o Handle electrostatic-sensitive components, parts, and assemblies by the case or PCB laminate. Handle them only at static-free workstations.
- o Avoid contact with pins, leads, or circuitry.
- o Turn off power and input signals before inserting and removing connectors or test equipment.
- o Keep work area free of nonconductive materials, such as ordinary plastic assembly aids and styrofoam.
- o Use field service tools that are conductive, such as cutters, screwdrivers, and vacuums.
- o Always place drives PCB assembly side down on the foam.

Recommended Materials and Equipment

The following materials and equipment are recommended for prevention of electrostatic damage:

- Antistatic tape
- Antistatic smocks, aprons, or sleeve protectors
- Conductive bins and other assembly or soldering aids
- Conductive foam
- Conductive table-top workstations with ground cord of 1-megohm resistance
- Static dissipative table or floor mats with hard tie to ground
- Static awareness labels
- Wrist straps and footwear straps, providing 1 megohm +/- 10% resistance
- Antistatic material handling packages

PREPARATION PROCEDURES

Before beginning removal and replacement procedures, complete the following steps:

1. Turn off the computer and any peripheral devices.

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> CAUTION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

Ensure that the system unit power is off before you connect or disconnect any cables.

>>>

2. Disconnect the AC power cord from the AC outlet then from the system unit.
3. Disconnect all external devices (printer, keyboard, monitor, and other devices) from the computer.

IMPORTANT: During disassembly, label each cable as you remove it. Be sure to note the position and routing and cable.

SYSTEM UNIT COVER

1. Remove cable lock provision, if installed.
2. Remove the Torx screws.
3. Slide the cover forward about one inch and pull it up and away from the chassis.

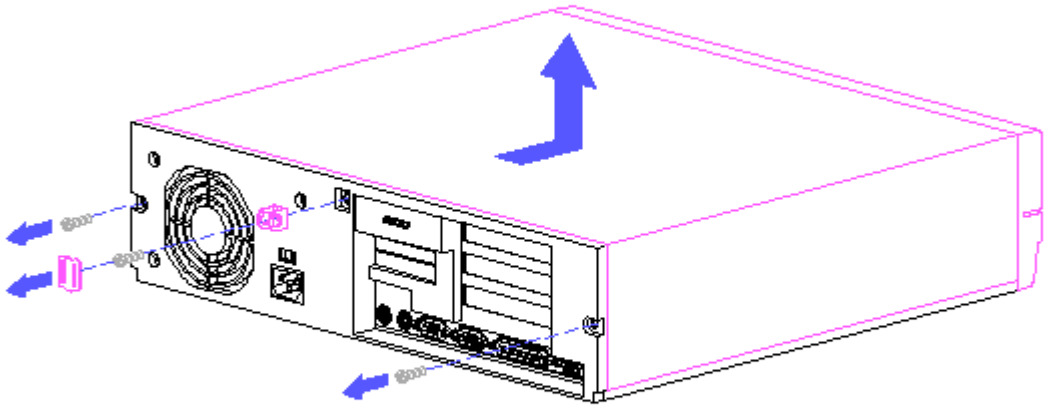


Figure 3-1. Removing the System Unit Cover

BAFFLE

Remove the baffle.

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> CAUTION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

The baffle directs air flow through the computer. Always reinstall the baffle when reassembling the computer. Failure to reinstall the baffle can cause damage to the computer.

>>>

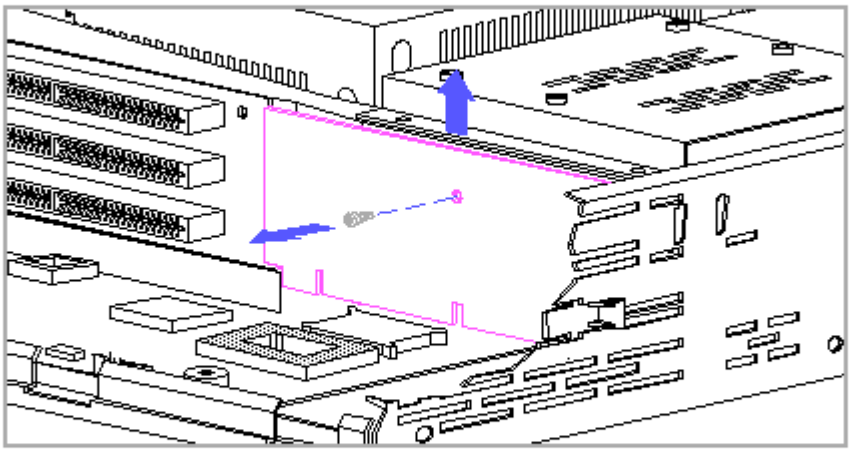


Figure 3-2. Removing the Baffle

BACKPLANE

Remove the backplane.

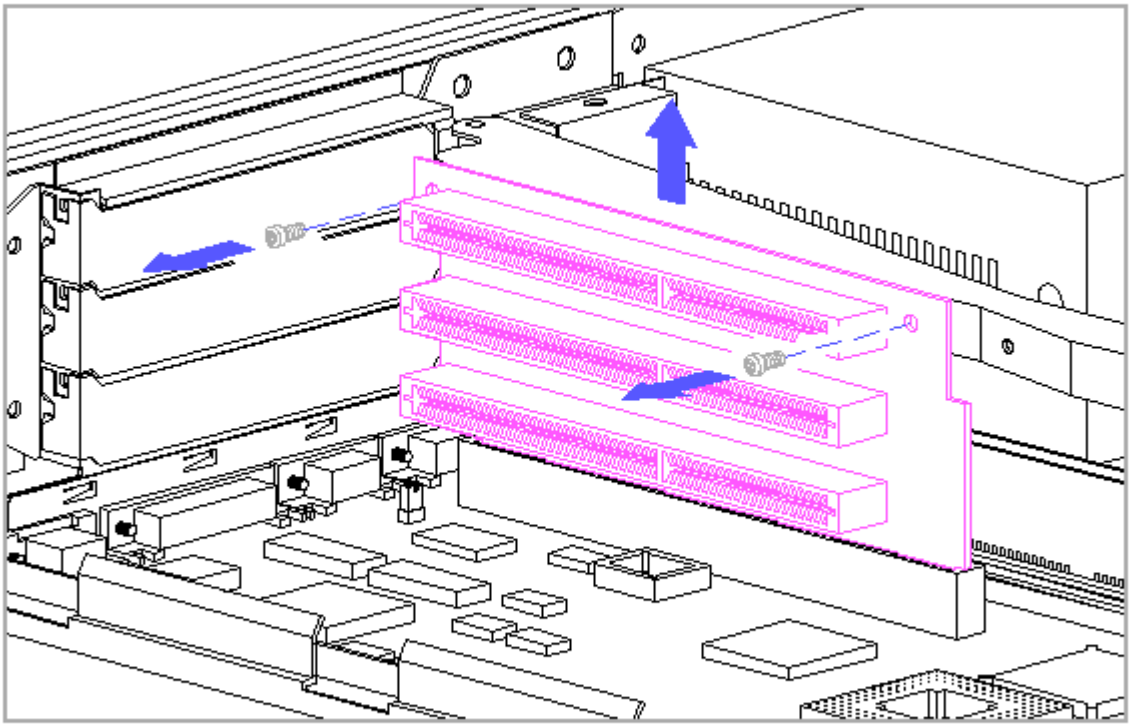


Figure 3-3. Removing the Backplane

STORAGE DEVICES

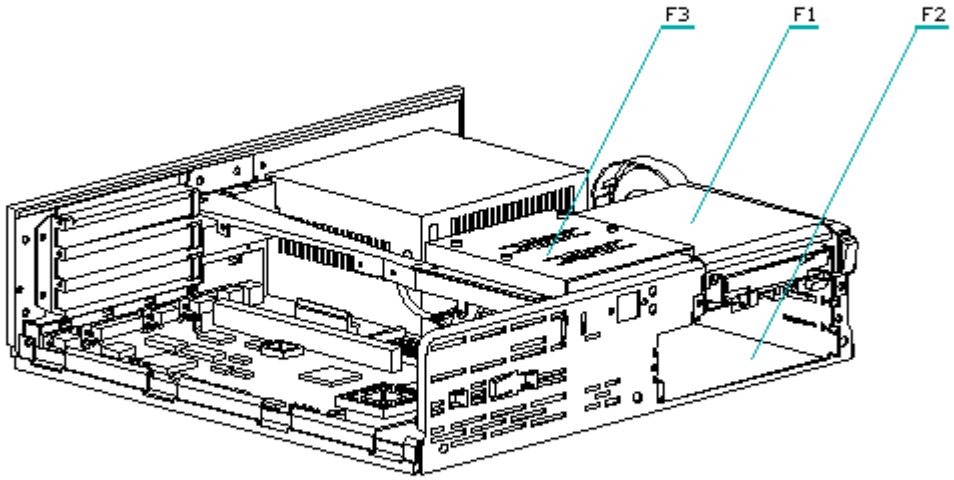


Figure 3-4. Drive Positions

Table 3-1. Mass Storage Device Installation Configurations

Mass Storage Device	Storage Area
3.5-Inch 1.44 MB Diskette Drive	F1
5.25-Inch 1.2 MB Diskette Drive	F2
IDE Hard Drive	F3
Tape Drive	F2
CD-ROM Drive	F2
Secondary Hard Drive	F2

Hard Drive

1. Disconnect the cables from the hard drive.

NOTE: The signal cable to the hard drive is the shorter of the two ribbon cables and connects to the system board using connector J9 in 386 models and connector J6 in 486 models.

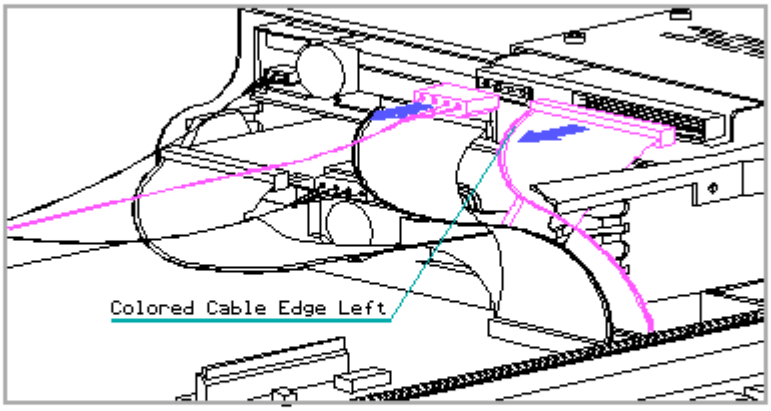


Figure 3-5. Disconnecting the Cables from the Hard Drive

2. Remove the hard drive.

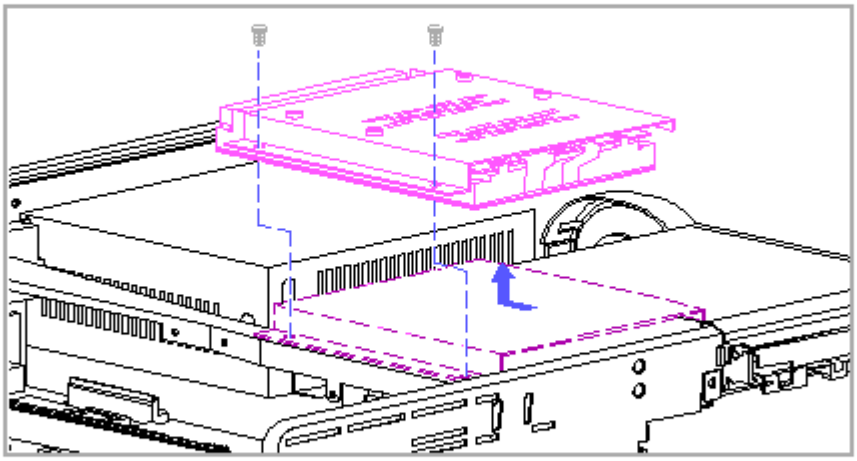


Figure 3-6. Removing the Hard Drive

3.5-Inch Diskette Drive

1. Disconnect the cables from the 3.5-inch diskette drive.

NOTE: The signal cable to the diskette drive is the longer of the two ribbon cables and connects to the system board using the J9 connector in 386SX-based models and using the J4 connector in 486-based models. The signal cable connects to the back of the diskette drive with the colored stripe as shown in the following illustration.

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> CAUTION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

Note the orientation of the diskette drive signal cable connector. Damage to diskettes can result if the diskette drive signal cable is inserted incorrectly.

>>>

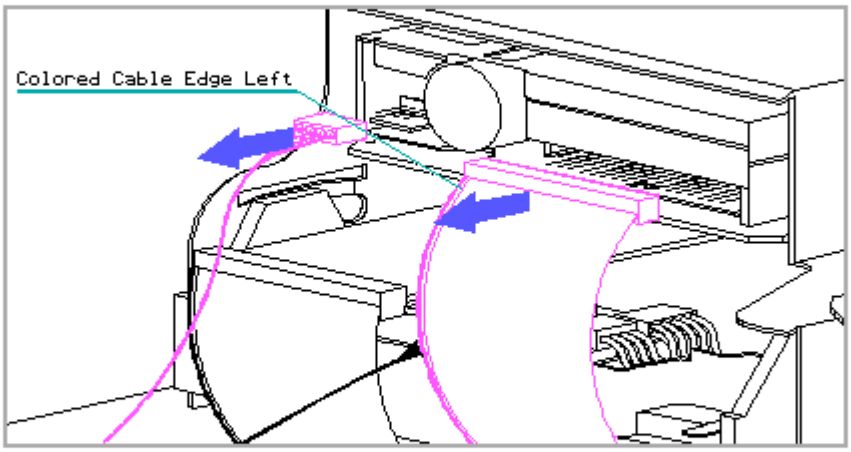


Figure 3-7. Disconnecting the Cables from the 3.5-Inch Diskette Drive

2. Remove the 3.5-inch diskette drive.

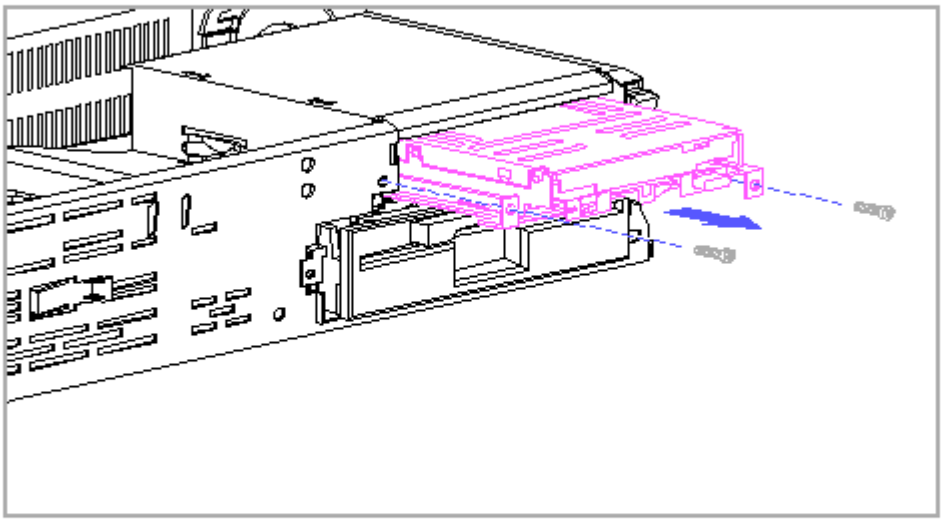


Figure 3-8. Removing the 3.5-Inch Diskette Drive

Additional Drive

1. Disconnect the cables from the additional drive.

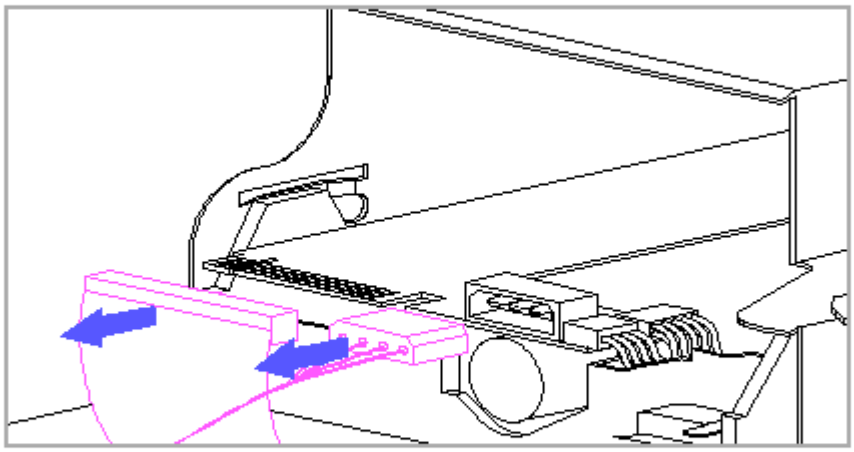


Figure 3-9. Disconnecting the Cables from the Additional Drive

2. Remove the additional drive.

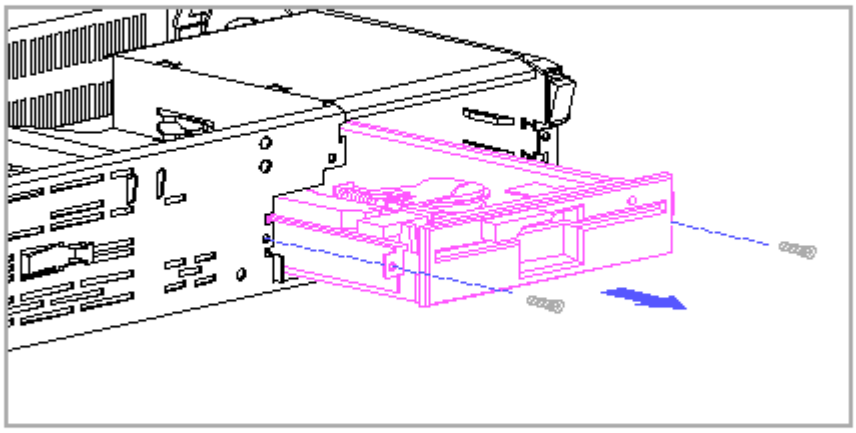


Figure 3-10. Removing the Additional Drive

LED CABLE ASSEMBLY

1. Unplug the LED cable from the system board.

NOTE: To facilitate reassembly, note the routing of each cable and the orientation of each LED before you remove it.

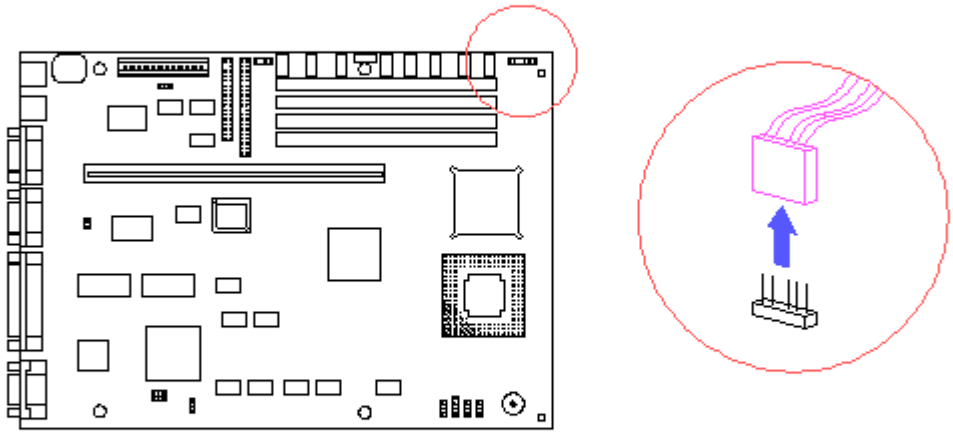


Figure 3-11. Disconnecting the LED Cables from the System Board
386-Based Models

2. Remove the LED assembly.

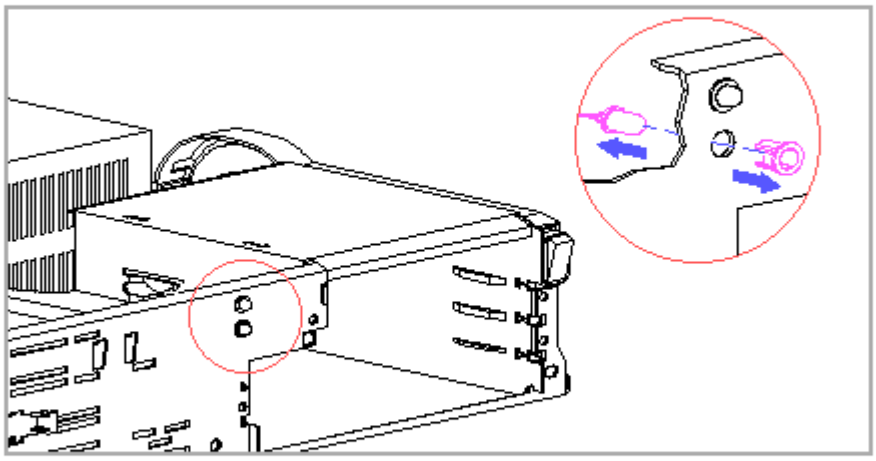


Figure 3-12. Removing the LED Assembly

MEMORY MODULES

Remove the system memory modules.

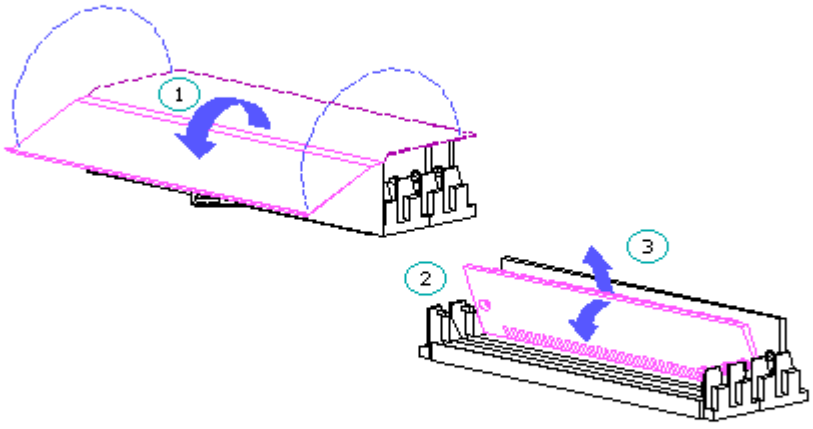


Figure 3-13. Removing the System Memory Modules - 386SX-Based Models

NOTE: In Compaq ProLinea 386SX-based models, the memory modules must be installed in identical pairs. For example, installing one 1 MB module with one 4 MB module will result in memory malfunction.

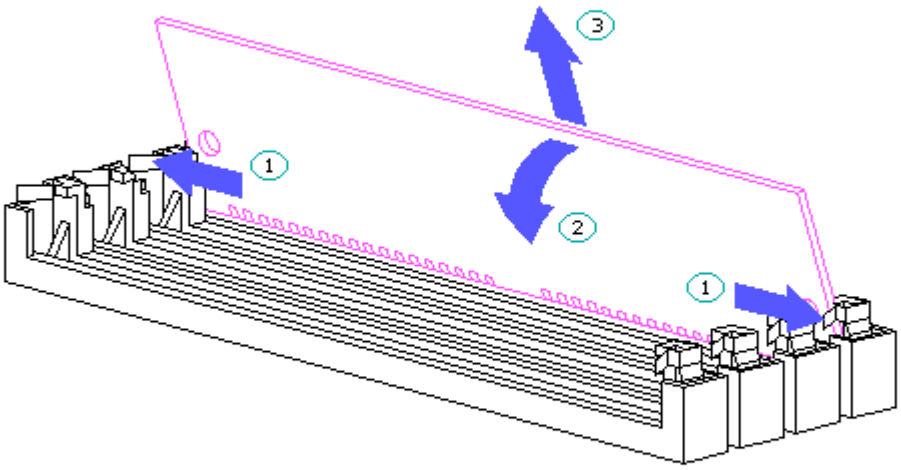


Figure 3-14. Removing the System Memory Modules - 486-Based Models

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> CAUTION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

Gently, press the tabs outward to unlock the SIMM. Be careful not to break the tabs. The module will pop out slightly past the tabs that hold the SIMM in place.

>>>

In Compaq ProLinea and Compaq Presario 600 Series 486-based models, the memory modules are not constrained to work in pairs. To upgrade, install memory module options in any configuration that totals the desired upgrade capacity.

IMPORTANT: The latest system boards have 4 MB of RAM soldered on the board. These boards do not have parity checking capability. There are four expansion SIMM sockets. The first socket (U38) must have a Compaq-approved 4 MB SIMM, otherwise the system BIOS will not recognize the additional memory.

The BIOS of local bus Compaq ProLinea and Compaq Presario 600 Series models has been enhanced to allow the use of either the parity SIMMs used in previous models or non-parity SIMMS. All local-bus models ship with 4 MB of memory and three additional SIMM sockets that accept the same 1-, 2-, 4-, or 8 MB SIMMs, that support the previous 486-based Compaq ProLinea models without local bus.

A mix of parity and nonparity memory may be used in the local bus-equipped models, but parity checking is not enabled unless all installed memory consists of parity memory. The POST (Power-On-Self-Test) message "xxxx--Parity Enabled" appears when all of the installed memory consists of parity memory.

The part number imprinted on each SIMM can be used to distinguish between parity and nonparity SIMMs:

Assembly Number 118665-004, 4 MB Parity SIMM
Assembly Number 160019-003, 4 MB Nonparity SIMM

NOTE: Compaq SIMM option kits and spares kits contain only parity SIMMs.

The second through the fourth sockets will accept 1 to 32 MB SIMMs. The total memory capacity is 100 MB.

The Enhanced ProLinea system boards have three SIMM sockets. Each socket is able to support 1- to 32 MB, 70 nanosecond industry standard SIMMs.

CHASSIS BRACE

Remove the chassis brace.

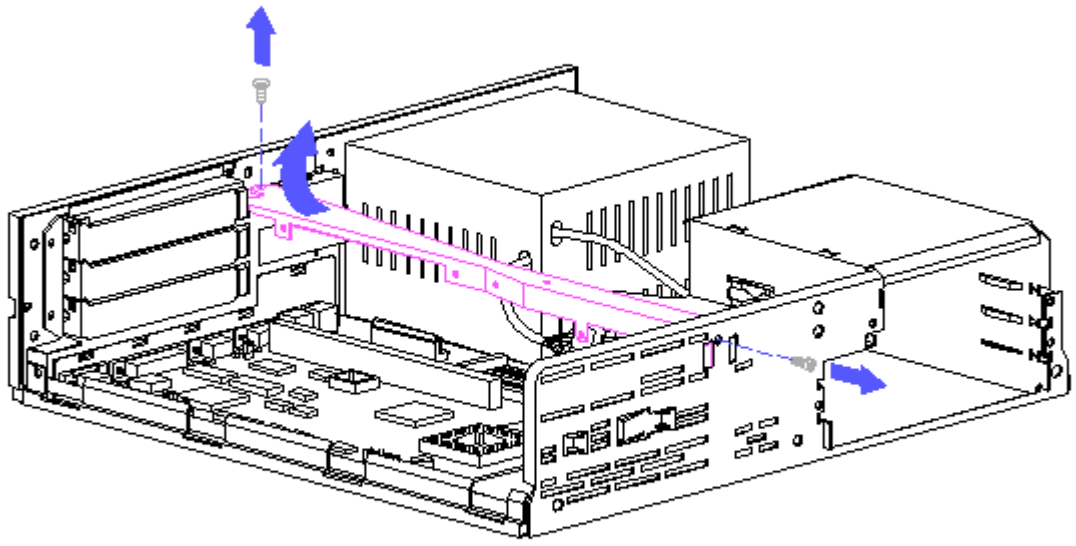


Figure 3-15. Removing the Chassis Brace

SYSTEM BOARD

1. Unplug the power cables from the system board.

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> CAUTION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

Note the orientation of each cable connector and the routing of each cable before you remove it. Damage to the computer can result if the cable is inserted incorrectly.

>>

2. Disconnect the drive cables from the system board.

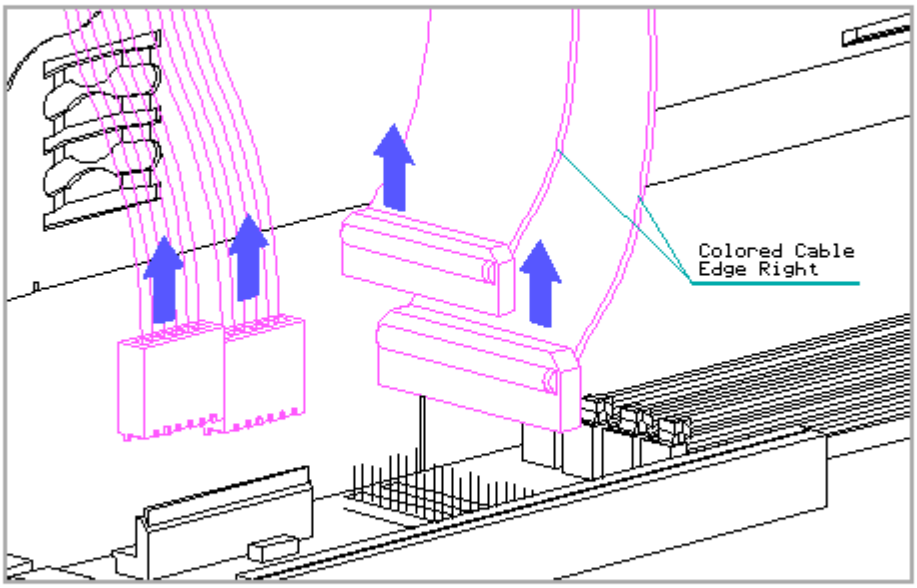


Figure 3-16. Disconnecting the Cables from the System Board

3. Remove the system board.

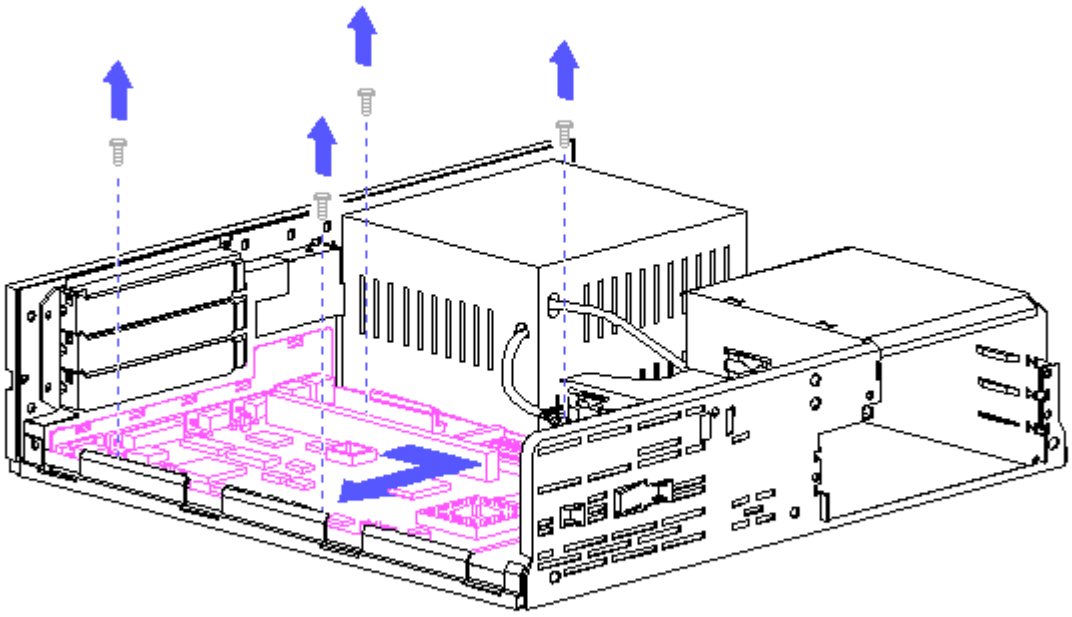


Figure 3-17. Removing the System Board

SYSTEM ROM, VIDEO ROM, AND COPROCESSOR

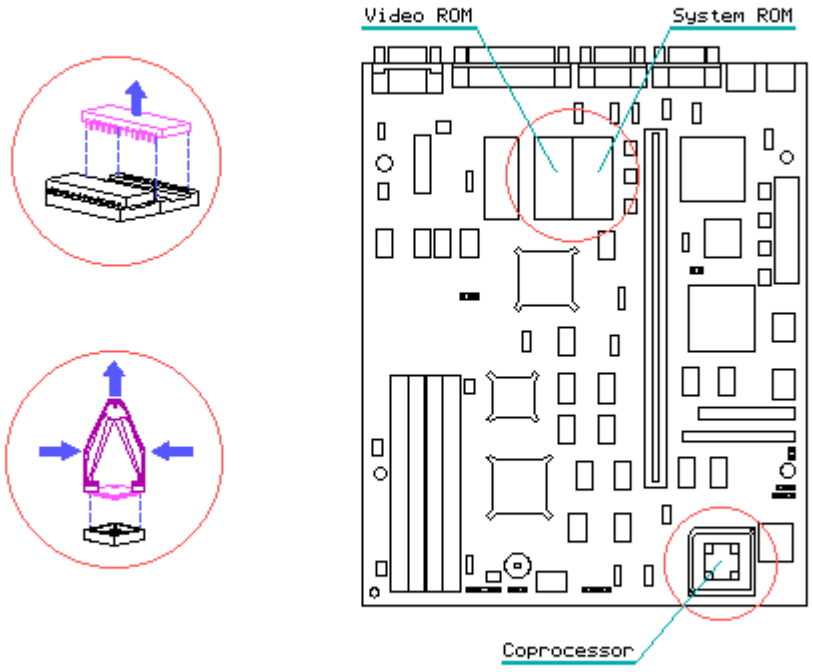


Figure 3-18. Removing the System ROM, Video ROM, and Coprocessor
386SX-Based Models

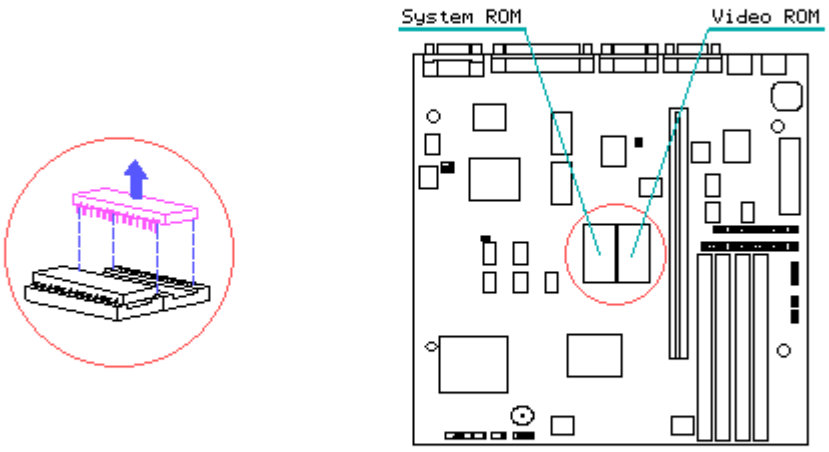


Figure 3-19. Removing the System ROM and Video ROM Nonlocal Bus - 486-Based Models

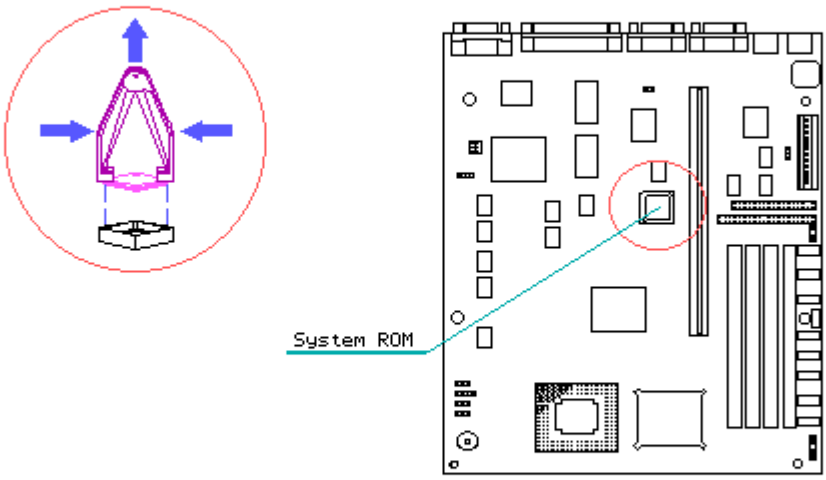


Figure 3-20. Removing the System/Video ROM Local Bus - 486-Based Models

CABLE COVER

1. Remove the cable cover.

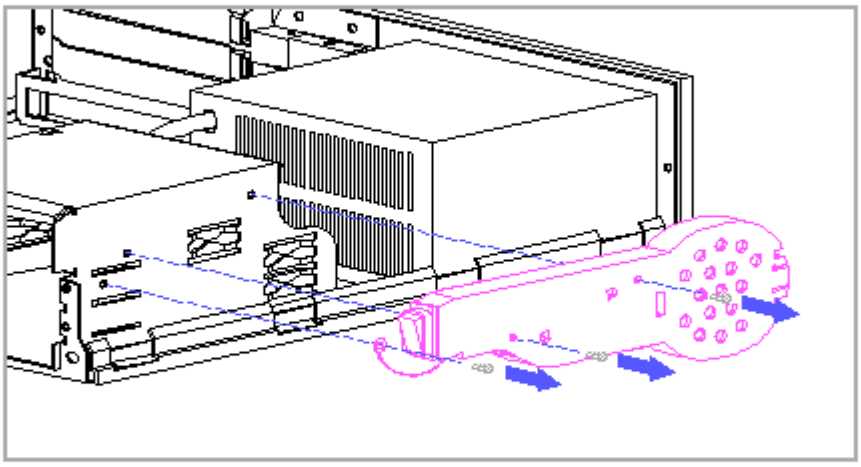


Figure 3-21. Removing the Cable Cover

2. Note the cable routing within the cable cover.

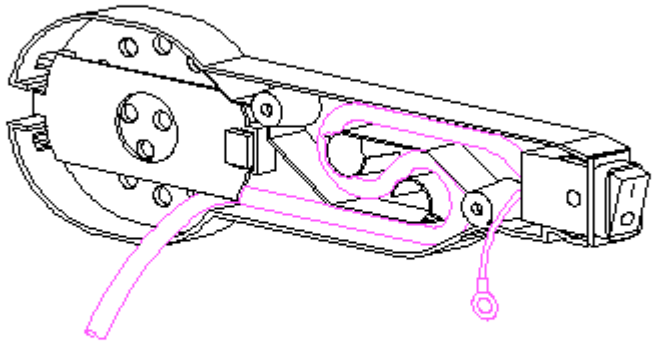


Figure 3-22. Cable Routing

3. Remove the cable cover from the cable.

MODEM/SPEAKER ASSEMBLY

1. Pull the plastic flap on the cable cover.

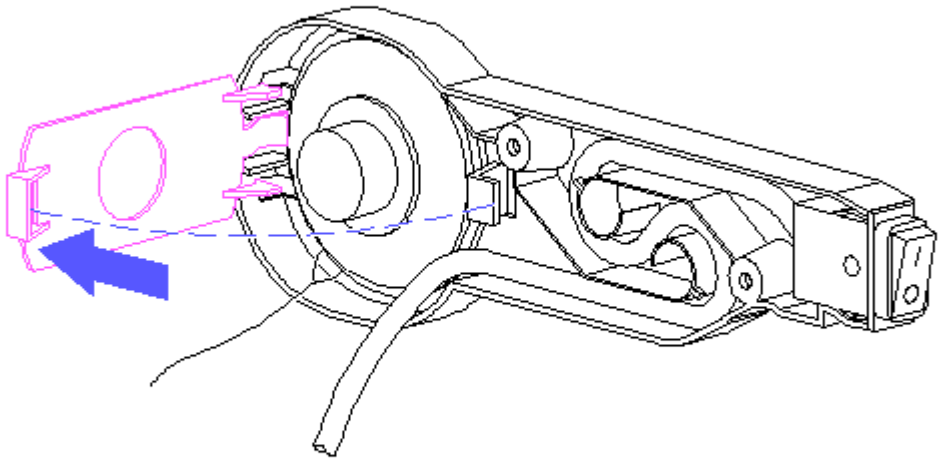


Figure 3-23. Pulling the Plastic Flap on the Cable Cover

2. Gently remove the speaker from the cable cover.

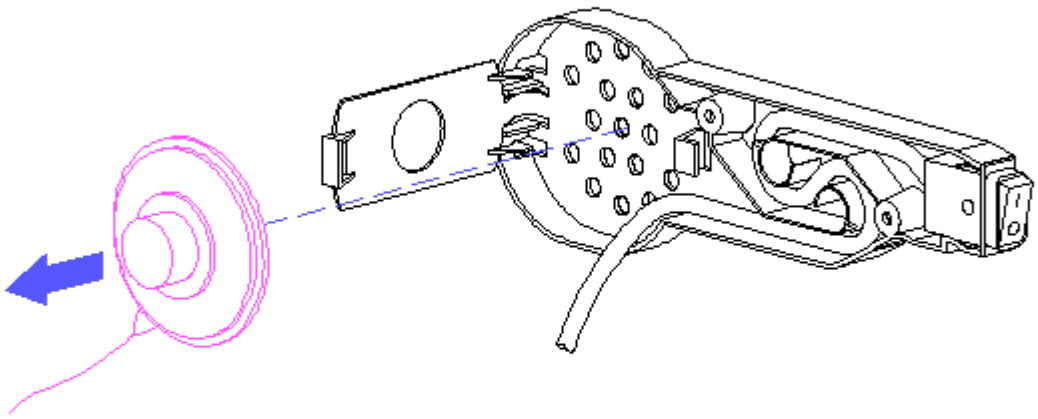


Figure 3-24. Removing the Speaker from the Cable Cover

3. Remove the screw from the bracket that supports the modem.

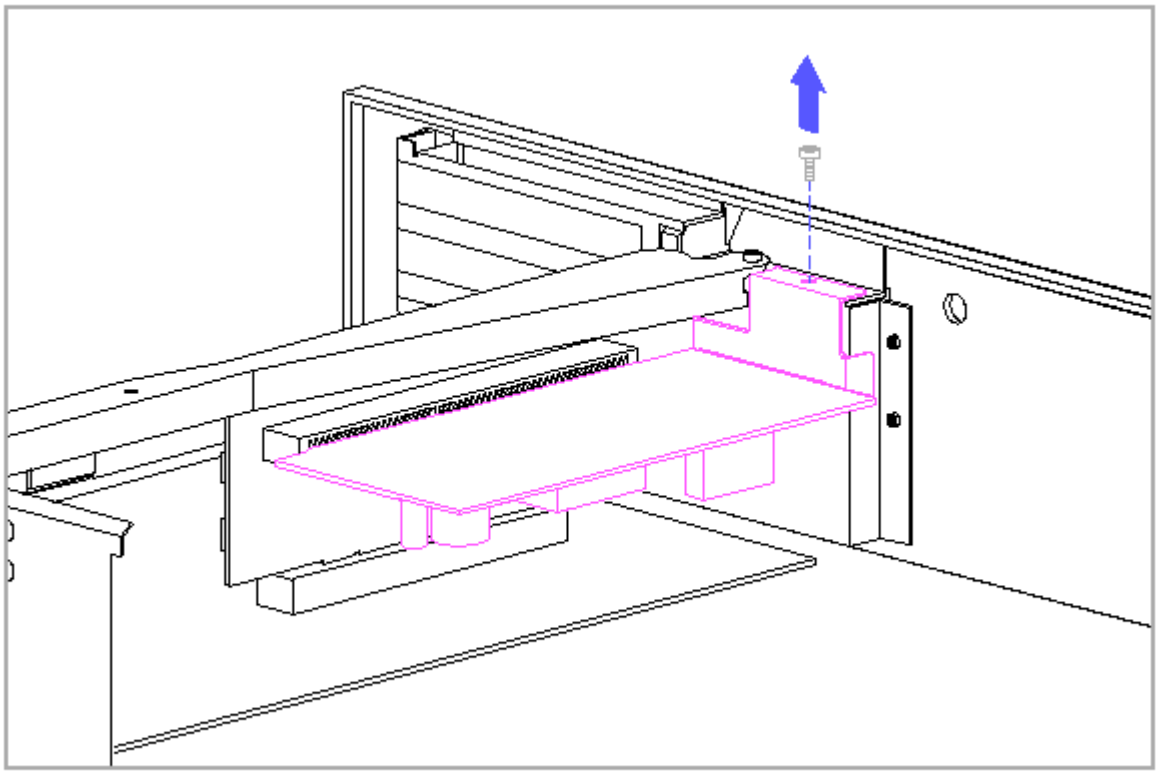


Figure 3-25. Removing the Screw from the Bracket

4. Carefully remove the modem from the ISA connector.

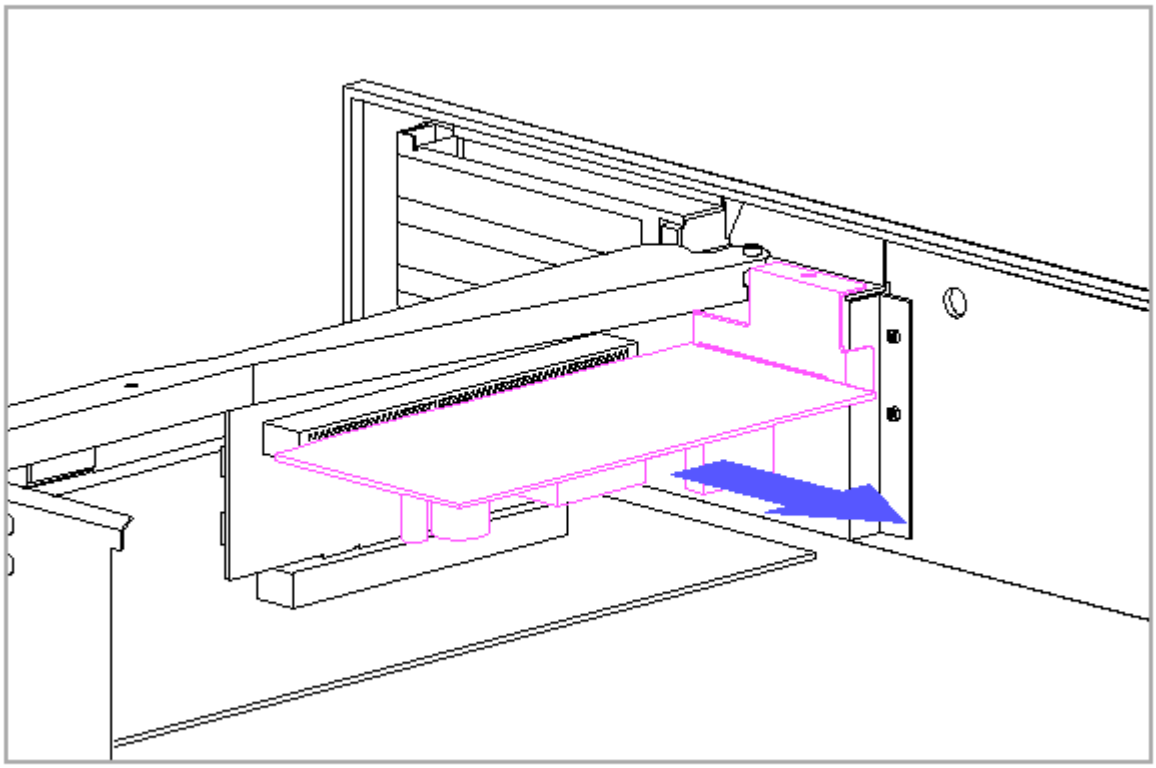


Figure 3-26. Removing the Modem from the ISA Connector

5. Unplug the speaker connector.

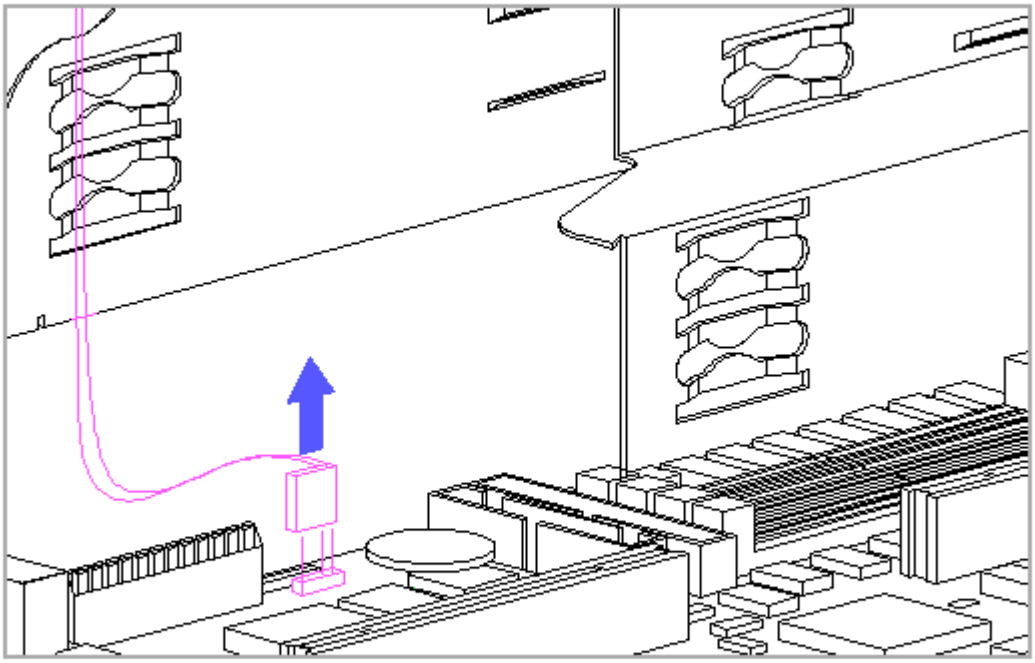


Figure 3-27. Unplugging the Speaker Connector

POWER SUPPLY

1. Remove the screws securing the power supply to the rear bezel.

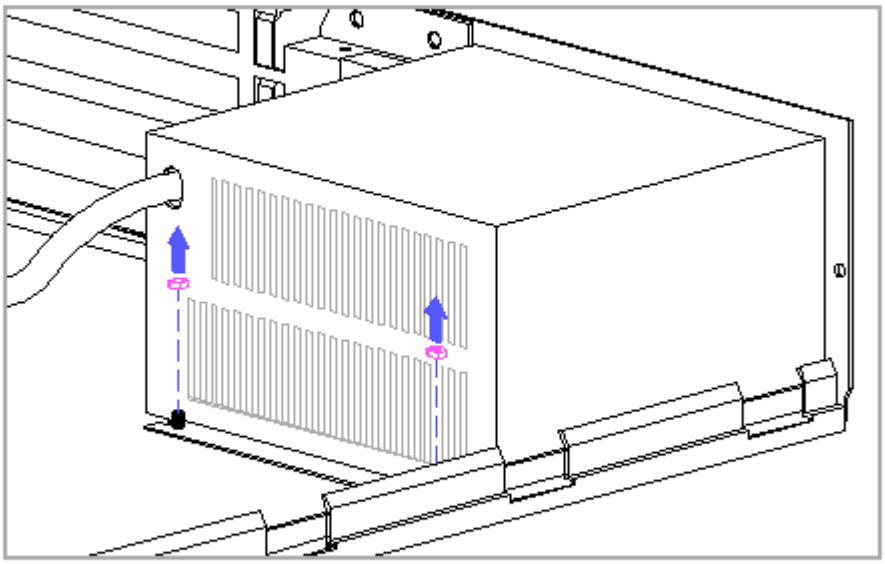


Figure 3-28. Removing the Power Supply Screws

2. Remove the nuts connecting the power supply to the bottom of the chassis.

3. Lift the power supply up and away from the chassis.

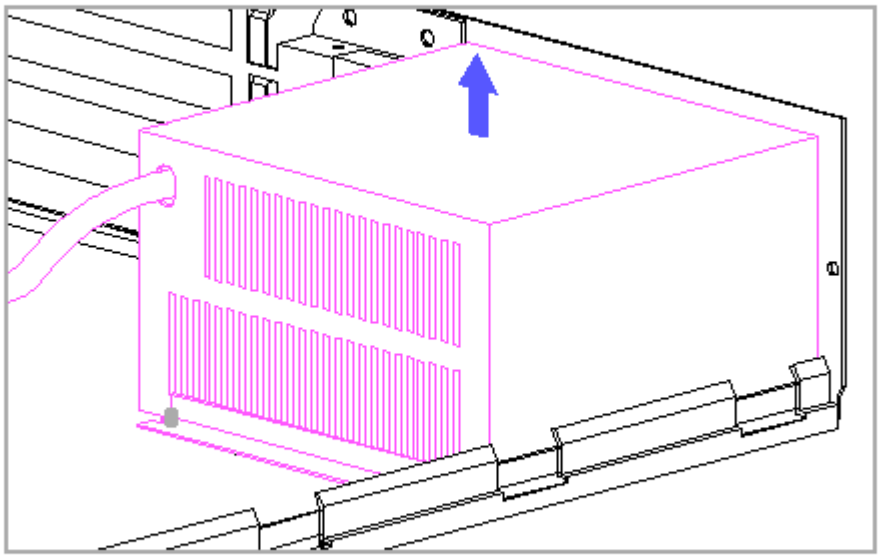


Figure 3-29. Removing the Power Supply

CARD GUIDE

Remove the card guide.

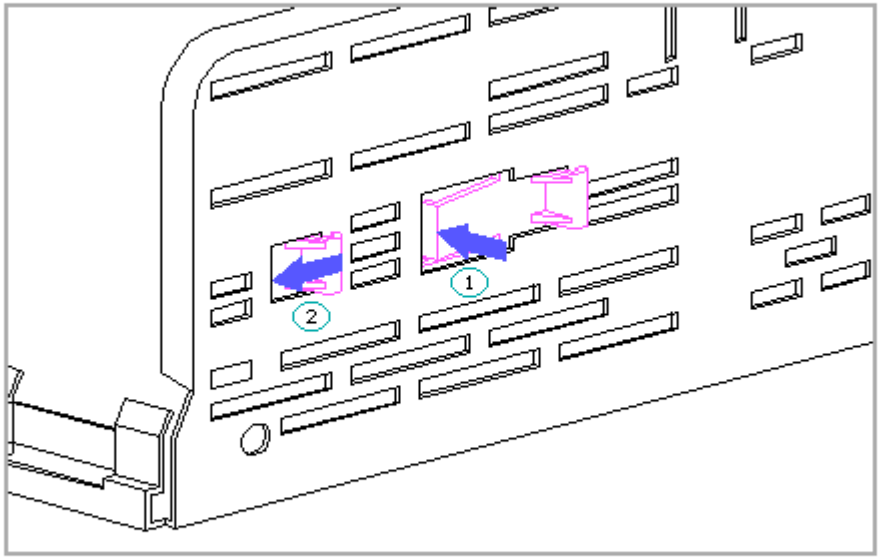


Figure 3-30. Removing the Card Guide

EXTERNAL BATTERY

NOTE: Computer Setup automatically detects and configures most Compaq components, including Compaq hard drives. If you are using a hard drive not manufactured by Compaq, it is important to complete the following steps before installing the external battery:

1. Run Computer Setup and observe the drive type that is displayed in the System Configuration Summary.

2. If the drive type number is 65 or 66, note the drive parameters. If you want to view these parameters, select the storage icon and then the Configure Fixed Disk Drives button and choosing the Custom Drive Definition. These drive types and user defined types, are also called soft drive types. Whenever CMOS has become invalid, such as after the installation of a new battery, these drive parameters must be entered manually for user defined types.

3. When you have completed the battery installation, run Computer Setup and use the drive table parameters noted earlier to reconfigure your system.

To install an external battery, complete the following steps:

1. Turn off the computer.

2. Unplug the computer and disconnect any external devices.

3. Remove the hard drive.

NOTE: When moving the jumper, leave it off for 10 seconds before reconnecting it.

4. For a 386-based personal computer, plug the battery into pins P10 and move the jumpers at P9 from pins 2-3 to 1-2.

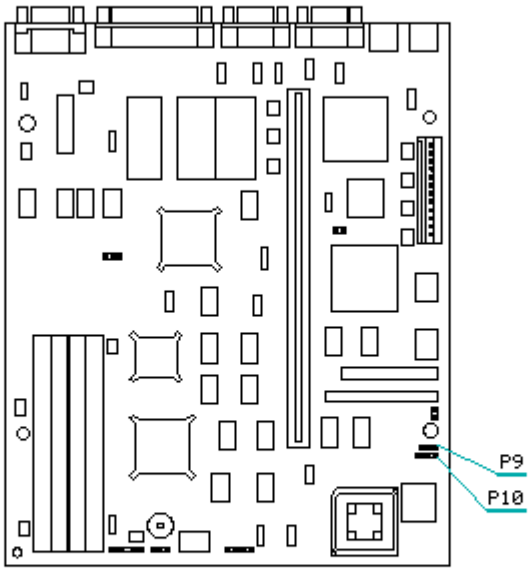


Figure 3-31. External Battery Installation on a 386-Based Computer

5. For a non-local bus, 486-based personal computer, plug the battery into pins J53 and move the jumpers at P52 from pins 2-3 to 1-2.

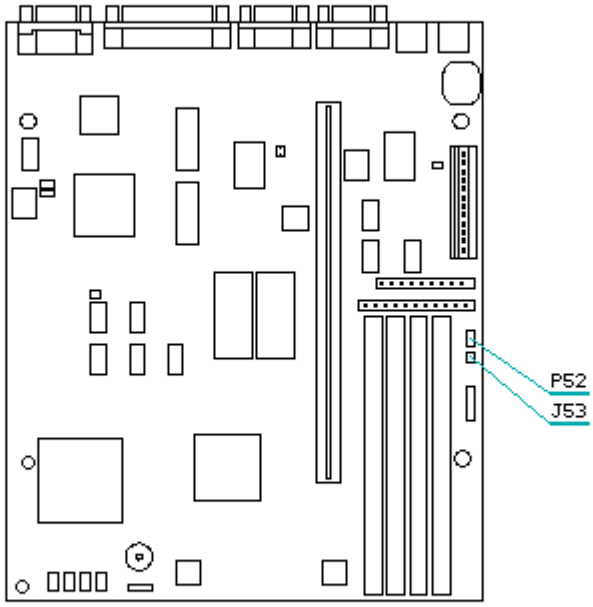


Figure 3-32. External Battery Installation on a Non-Local Bus 486-Based Computer

6. For a local bus, 486-based computer, plug the battery into pin J5 and move the jumpers at P14 from pins 2-3 to 1-2.

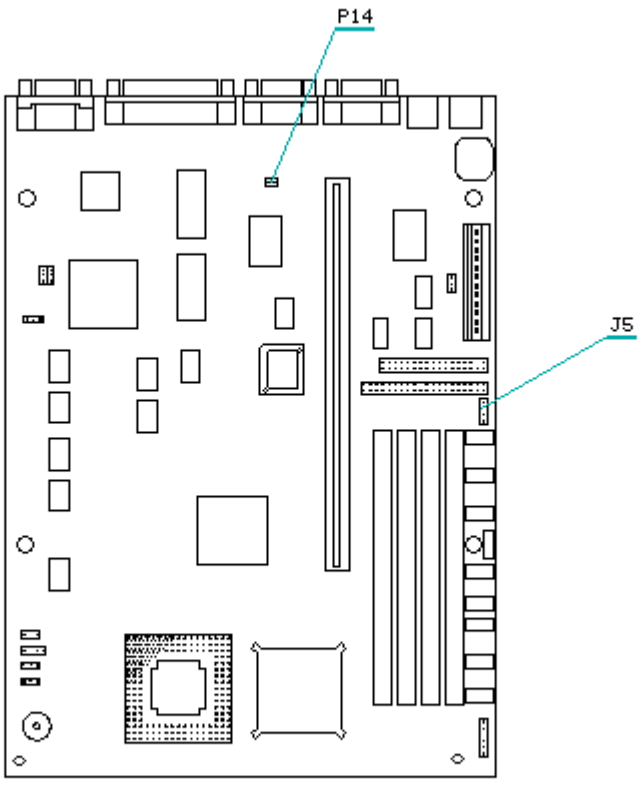


Figure 3-33. External Battery Installation on a Local Bus 486-Based Computer

7. For 486-based personal computers with 4 MB memory on the system board, plug the battery in the J5 connector. Remove the jumper at P14 for ten seconds and replace.

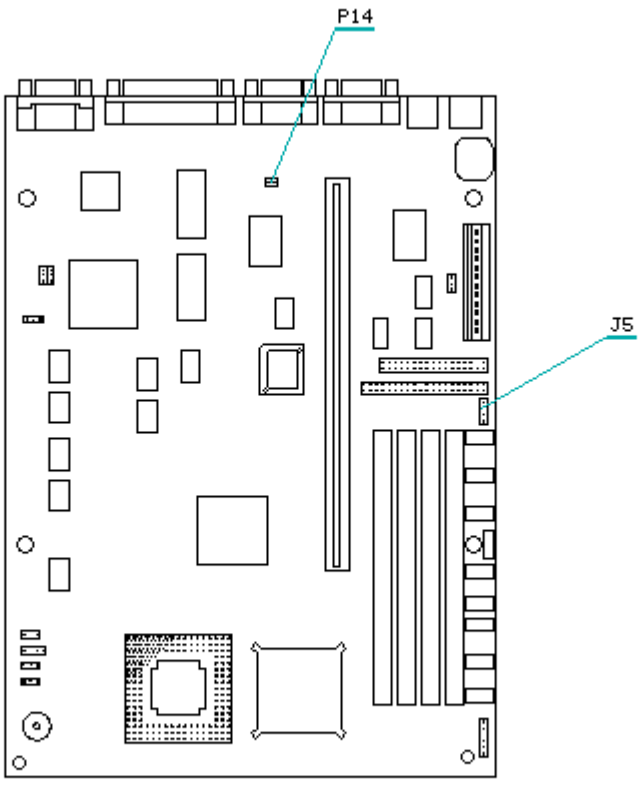


Figure 3-34. External Battery Installation on a 486-Based Computer with 4-Megabytes of Memory on the System Board

8. For the Enhanced ProLinea Personal Computers, plug the battery into the J5 connector. Remove the jumper at P14 for ten seconds and replace.

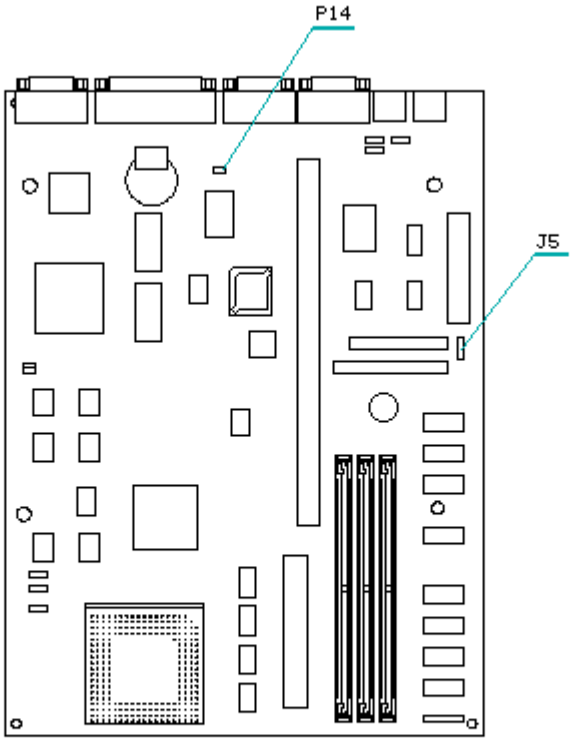


Figure 3-36. External Battery Installation on the Enhanced ProLinea System Board

9. Remove the backing from the adhesive strip on the battery and install onto the chassis.

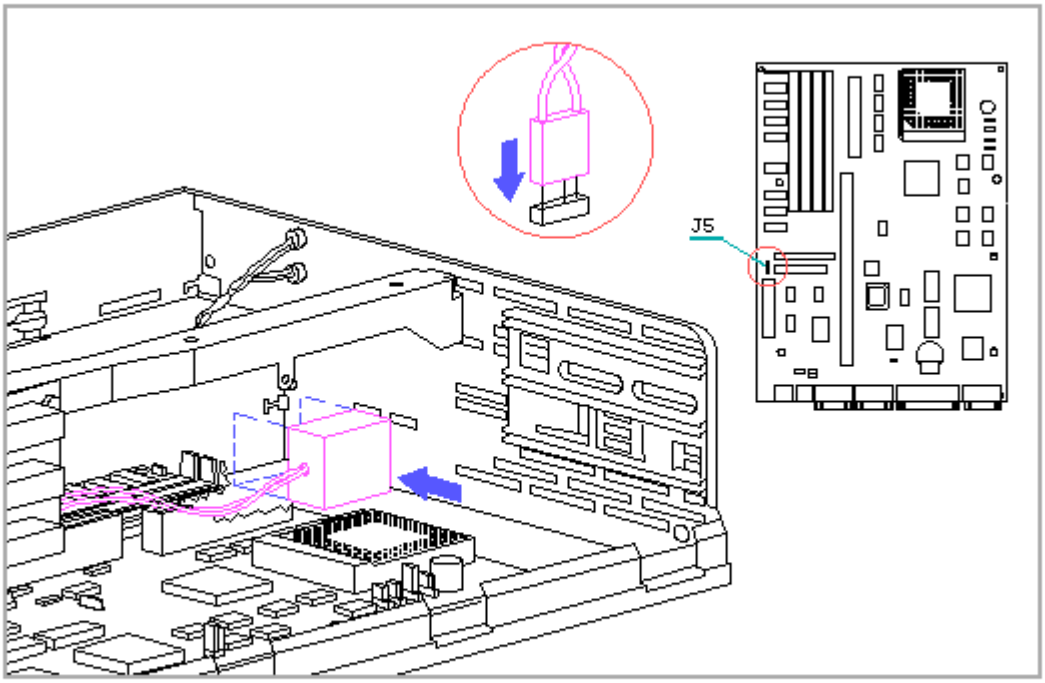


Figure 3-37. Installing the External Battery

10. If there is a yellow and black caution label with the battery kit, place it on the chassis next to the front of the processor board. The product safety regulatory approvals for the computer require that this label be installed for all batteries.

11. Reinstall the hard drive.

12. Replace the computer cover and reconnect any external devices.

13. Turn on the computer.

14. Run Computer Setup to reconfigure the system. If you have a hard drive not manufactured by Compaq, proceed to the next step.

15. If you have a user-defined type drive, select the storage icon and then the Configure Fixed Disk Drive to reconfigure the hard drive.

NOTE: Custom Drive Definition automatically selects drive type 65 or 66 in the configuration. Use the Left and Right arrow keys to choose the parameter you want to change, and use the Up and Down arrow keys to change the parameter.

REASSEMBLY

To reassemble Compaq ProLinea and Compaq Presario 600 Series three-slot models, reverse the steps used in the disassembly section.

Chapter 4 Jumper, Connector, and Switch Information

INTRODUCTION

This chapter discusses connectors and settings on the system boards and the components which connect to the system board.

The following illustrations show the Compaq ProLinea 386SX-based system board and the Compaq ProLinea and Compaq Presario 600 Series 486- based system boards. These illustrations also show the location of jumpers and connectors on each board.

SYSTEM BOARD JUMPERS AND CONNECTORS

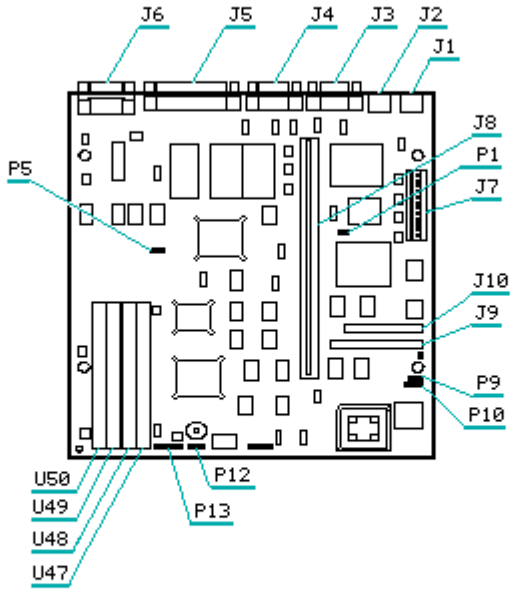


Figure 4-1. Jumper and Connector Locations for 386SX-Based Models

Table 4-1. 386SX-Based System Board Jumper Settings

Jumper	Function	Pins *	Settings Function
P1	Mouse	ON	Enable
		OFF	Disable
P5	Onboard VGA	1,2	Disable
		2,3	Enable
P9	Battery	1,2	External

		2,3	Internal
		no jumper	Clear password
P12	Speaker	1,2	Internal
		2,3	External

* Pin 1 on each jumper is the left pin when you are facing the I/O connectors.

Table 4-2. 386SX-Based System Board Connectors

Connector	Function
P10	External Battery
P88 (PLED)/W14 (HD)	Power GOOD LED/Hard Drive Active LED
J1	Keyboard Port
J2	Mouse Port
J3	Serial Port 2 (COM2)
J4	Serial Port 1 (COM1)
J5	Parallel Port (LPT1)
J6	VGA Video Connector
J7	Power Supply Connector
J8	120-Pin Card Edge Connector
J9	Floppy Control Port
J10	IDE Port
U47	Memory Bank 0
U48	Memory Bank 0
U49	Memory Bank 1
U50	Memory Bank 1

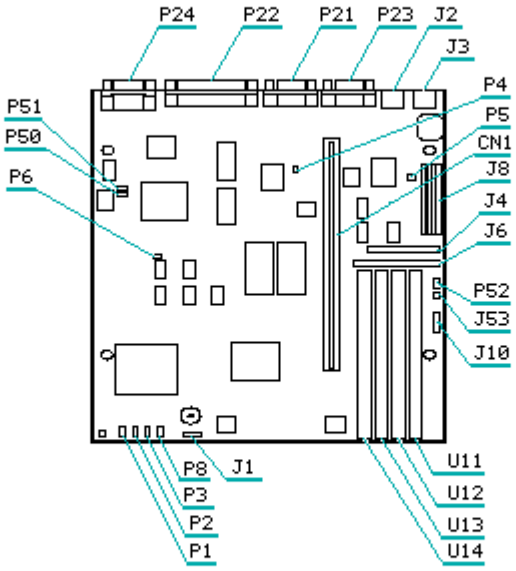


Figure 4-2. Jumper and Connector Location for Non-Local Bus 486-Based Models

Table 4-3. Jumper Settings for 486-Based Models Non-Local Bus Video

	Function	Pins	Settings/Functions
P1	Processor Selection Jumper		See Table 4-4
P2	Processor Selection Jumper		See Table 4-4
P3	Processor Selection Jumper		See Table 4-4
P4	Monochrome Display	1,2	Monochrome Monitor
		Off	Color Monitor or VGA (default)
P5	I/O Select	Off	Address is 398h/399h
		1,2	Address is 26Eh/26Fh
P6	Wait State Select	1,2	Zero Wait State
		Off	One Wait State
P7	EGA Emulation	Off	Do not emulate EGA
P8	Speaker Configuration	1,2	Internal Speaker is present
		2,3	External Speaker is present

P11	Process Selection Jumper		See Table 4-4
P21	Serial Port A		
P22	Parallel Port		
P23	Serial Port B		
P24	VGA Connector		
P50 *	On Board Video	1,2	Disable Video
		2,3	Enable Video
P51 *	On Board Video	1,2	Disable Video
		2,3	Enable Video

Function	Pins	Settings/Functions
P52 CMOS Battery Source	1,2	External Battery Installed
	2,3	Internal Battery Installed
	Off	Clear CMOS
J1 External Speaker Connector		
J2 Mouse Connector		
J3 Keyboard Connector		
J4 Diskette Drive Connector		
J6 Hard Drive Connector		
J8 Power Supply Header		
J10 HD LED Connector		
J53 Battery Connector		

* P50 and P51 must be moved as a pair

Table 4-4. Processor Upgrade Jumper Settings Non-Local Bus Video

Compaq ProLinea System	System Board Spare Part Number	Upgrade the Processor to	Jumper Number	Change Pins to
4/25s	143224-001	DX2/50	P1	1,2
	143224-002		P2	2,3
			P3	1,2
			P11 *	2,3
		OverDrive/50		
			P1	1,2
			P2	2,3
			P3	2,3
			P11 *	2,3

4/33	143220-001	486DX2/66	No changes required	No changes required
4/50	146024-001	No upgrade available now	N/A	N/A

* If present

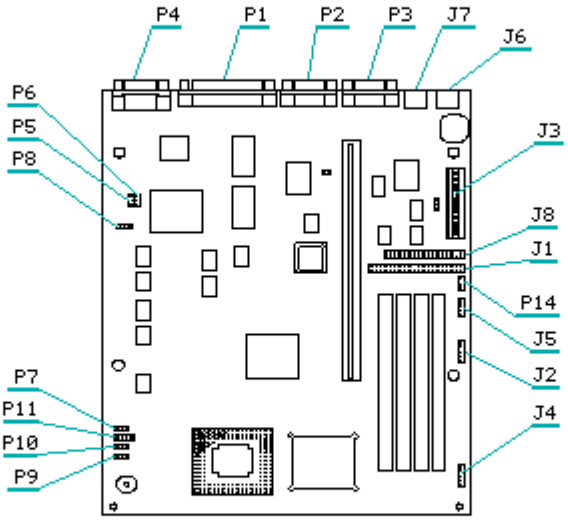


Figure 4-3. Jumper and Connector Locations for Local Bus 486-Based Models

Table 4-5. Jumper Settings for 486-Based Models Local Bus Video

	Function	Pins	Settings/Functions
P1	Parallel Port		
P2	Serial A		
P3	Serial B		
P4	VGA Connector		
P5 *	On Board Video	1,2	Disable
		2,3	Enable

P6 *	On Board Video	1,2	Disable
		2,3	Enable
P7	PGA Jumper Selection		See table 4-6
P8	Bus Speed Selection	1,2	Clock Speed @ 33 or 66 MHz
		2,3	Clock Speed @ 25 or 50 MHz
P9	Processor Selection Jumper		See Table 4-6
P10	Processor Selection Jumper		See Table 4-6
P11	Processor Selection Jumper		See Table 4-6
P12	Monochrome Display	1,2	Monochrome Monitor
		Off	Color Monitor or VGA
P13	I/O Select	Off	Address is 398h/399h
		1,2	Address is 26Eh/26Fh
P14	CMOS Battery Source	1,2	External Battery Installed
		2,3	Internal Battery Installed
		Off	Clear CMOS
J4	Speaker Configuration	3.4	Internal Speaker
		Off	External Speaker
J5	Battery Connector		
J6	Keyboard Connector		
J7	Mouse Connector		
J8	Diskette Drive Connector		

* P5 and P6 must be moved as a pair

Table 4-6. Processor Upgrade Jumper Settings Local Bus Video

Compaq ProLinea System	System Board Spare Part Number	Upgrade the Processor to	Jumper Number	Change Pins to
4/25s (Includes the Compaq Prolinea CDS)	160172-001	486/33	P7	2,3
			P8	1,2
			P9	1,2
			P10	2,3
			P11 *	1,2
		DX2/50		
			P7	2,3
			P9	1,2
			P10	2,3
			P11 *	1,2
		OverDrive 50		
			P7	2,3
			P9	1,2
			P10	2,3
			P11 *	2,3
		DX2/66		

			P7	2,3
			P8	1,2
			P9	1,2
			P10	2,3
			P11 *	1,2
		OverDrive 66		
			P7	2,3
			P8	1,2
			P9	1,2
			P10	2,3
			P11 *	2,3
		487 Coprocessor		
			P7	2,3
			P9	1,2
			P10	2,3
			P11 *	2,3
4/33	160123-001	DX2/50	P8	2,3
		OverDrive 50	P8	2,3
			P11 *	2,3
		DX/66	No changes	no changes
		OverDrive 66	P11 *	2,3
4/50	160072-001	486DX2/66	P8	1,2

* If present

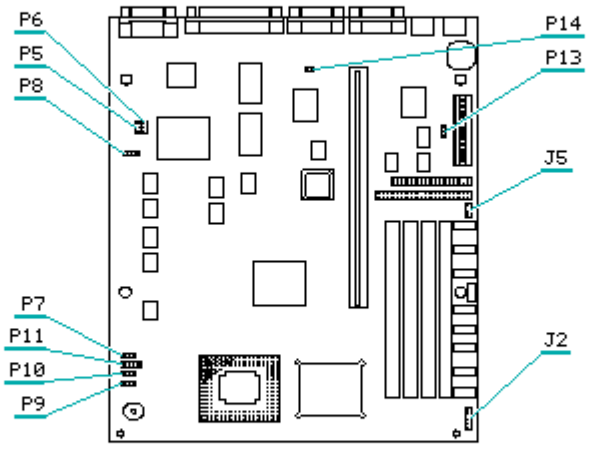


Figure 4-4. Jumper and Connector Locations for 486-Based Models with 4 Megabytes on the System Board

Table 4-7. Jumper Settings 486-Based with 4 MB on the System Board

Jumper	Function	Pins	Settings Function
P5, 6	On-Board Video Select	1,2	Enabled
		No jumpers	Disabled
P7	Microprocessor Select	1,2	Nonsocketed Enabled
		2,3	Nonsocketed Enabled
		No header	Socketed
P8	Speed Select	1,2	33 MHz Processor Bus
		2,3	25 MHz Processor Bus
P9 (Note 1) (Note 2)	Processor Configuration	1,2	486DX/DX2, 486SX (Non-socketed)
		2,3	487SX/OD, 486SX2 486SX Socketed
P10 (Note 1) (Note 2)	Processor Configuration	1,2	486SX (Nonsocketed) & 486SX (Socketed)
		2,3	486DX/DX2, 486SX/OD 486SX2
P11 (Note 2)	Processor Configuration	1,2	486DX/DX2, 486SX2
		2,3	487SX/OD

		3,4	486SX (Nonsocketed) & 486SX (Socketed)
P13	Configurations Registers of Super I/O Chip	1,2 * No jumper	26Eh/26Fh 398h/399h
P14	Clear Setup Password	1,2	Remove jumper for 10 seconds to clear setup.

* Default

NOTE 1: Headers not installed on the 486 33 MHz models.
2: Headers not installed on the 486 50 MHz models. Configuration is set by the 0-OHM resistors.

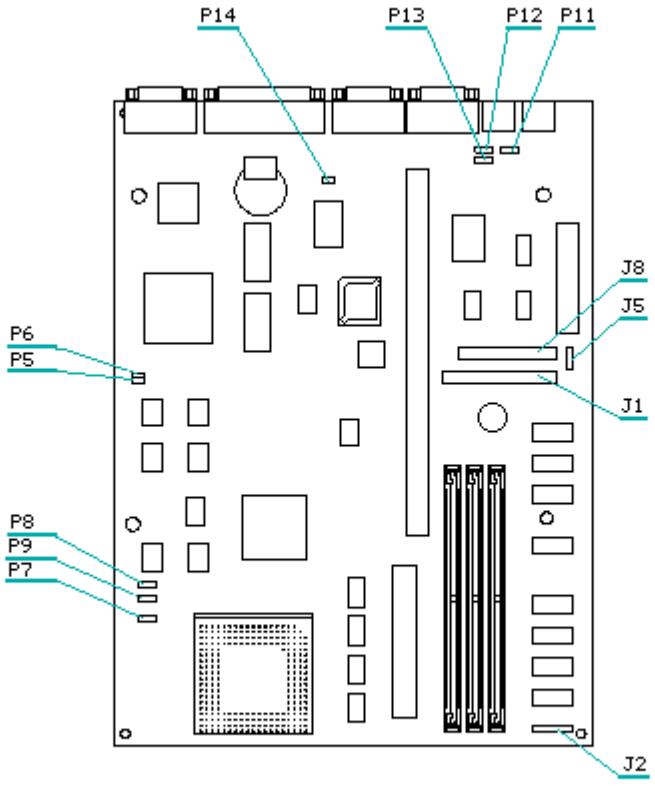


Figure 4-5. Jumper and Connector Locations for the Compaq Enhanced ProLinea System Boards

Table 4-8. Jumper Settings Compaq Enhanced ProLinea System Board

Header ID	Function	Pins	Settings Function
P5, 6	On-Board Video Disable	1,2 No jumpers	Enabled Disabled
P7	Write Back/	1,2	Write Thru

	Write Thru	2,3	Write Back (Pentium OverDrive Processor) *
P8	Speed Select	1,2	25 MHz Processor Bus
		2,3	33 MHz Processor Bus
P10	Processor Configuration	1,2	486SX Installed
		2,3	Other than 486SX installed
P11	Printer Interrupt Selection	1,2	Printer Interrupt = IRQ7
		2,3	Printer Interrupt = IRQ5
P12, 13	ECP DMA Channel Selection	1,2	ECP uses DMA channel 0 *
		2,3	ECP uses DMA channel 3
		No Jumpers	ECP DMA disabled
P14	Clear Password and Setup	1,2 *	Remove jumper for 10 seconds to clear setup.
P15	IntelDX4 Internal Processor Speed	1,2	Processor run at 2.5 times clock speed
		2,3	Processor runs at 2 times clock speed
		3,4	Processor runs at 3 times clock speed

* Default
1 Headers not installed on the 486 33-MHz models.
2 Headers not installed on the 486 50-MHz models.
Configuration is set by the 0-OHM resistors.

INTERFACES

The following tables list the pin assignments for interface connectors on the system board.

Table 4-9. Keyboard Interface

Pin	Signal
1	Data
2	Unused
3	Ground
4	+ 5 Vdc
5	Clock
6	Unused

Table 4-10. Pointing Device Interface

Pin	Signal
1	Data
2	Unused
3	Ground
4	+ 5 Vdc
5	Clock

6	Unused

Table 4-11. Parallel Interface

Pin	Signal	Pin	Signal
1	Strobe	10	Acknowledge
2	Data Bit 0	11	Busy
3	Data Bit 1	12	Paper End
4	Data Bit 2	13	Select
5	Data Bit 3	14	Auto Linefeed
6	Data Bit 4	15	Error
7	Data Bit 5	16	Initialize Printer
8	Data Bit 6	17	Select In
9	Data Bit 7	18-25	Signal Ground

Table 4-12. Serial Interface

Pin	Signal
1	Carrier Detect
2	Receive Data
3	Transmit Data
4	Data Term Ready
5	Signal Ground
6	Data Set Ready
7	Request to Send
8	Clear to Send
9	Ring Indicator

Table 4-13. Video Graphics Controller Interface

Pin	Signal
1	Red
2	Green
3	Blue
4	Unused
5-8	Ground
9	Key
10	Ground
11-12	Unused
13	Horizontal Sync
14	Vertical Sync
15	Unused

Table 4-14. Power Supply Connector P1

Pin	Signal
1	Power Good
2	+ 5V
3	+ 12V
4	- 12V
5	GND
6	GND

Table 4-15. Power Supply Connector P2

Pin	Signal
7	GND
8	GND
9	- 5V
10	+ 5V
11	+ 5V
12	+ 5V

Table 4-16. Drive Output

Pin	Pin Name
1	+12 V
2	GND
3	GND
4	+5V

SOUND BOARDS

Media Vision Pro Audio Spectrum 16 Sound Board Settings

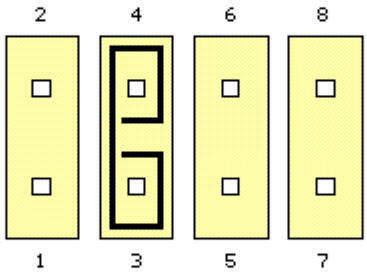
This section contains the Compaq default settings for the Spectrum 16 sound board. To ensure optimal performance and integration, Compaq has changed some of the original default settings on the board. So, settings listed in this chapter are correct for use in your system. They may not agree with those listed in the Spectrum Multimedia Sound Card User's Guide.

Table 4-17. CD-ROM INTERFACE

Setting Type	Hardware Selectable Jumper	Software Selectable Resource Utility	Original Setting	Available	Compaq Default
IRQ Select	J14	No	IRQ 3	IRQ 3,4,5,6	IRQ 5
DMA Select	N/A				
I/O Address		No	340h 34Fh	300h-30Fh 310h-31Fh 330h-33Fh 340h-34Fh	330-33Fh

Table 4-18. J14 Matrix

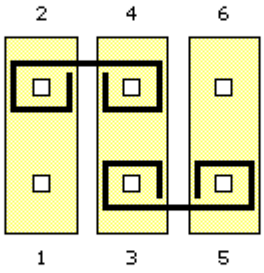
Pins	IRQ Channel
1-2	IRQ6 (Used by the diskette)
3-4	IRQ5 (Compaq default)
5-6	IRQ4
7-8	IRQ8



J14 Matrix

Table 4-19. J15 Matrix

Pins	I/O Address
1-3,2-4	340h (original setting)
3-5,2-4	330h (Compaq default)
1-3,4-6	310h
3-5,4-6	300h



J15 Matrix

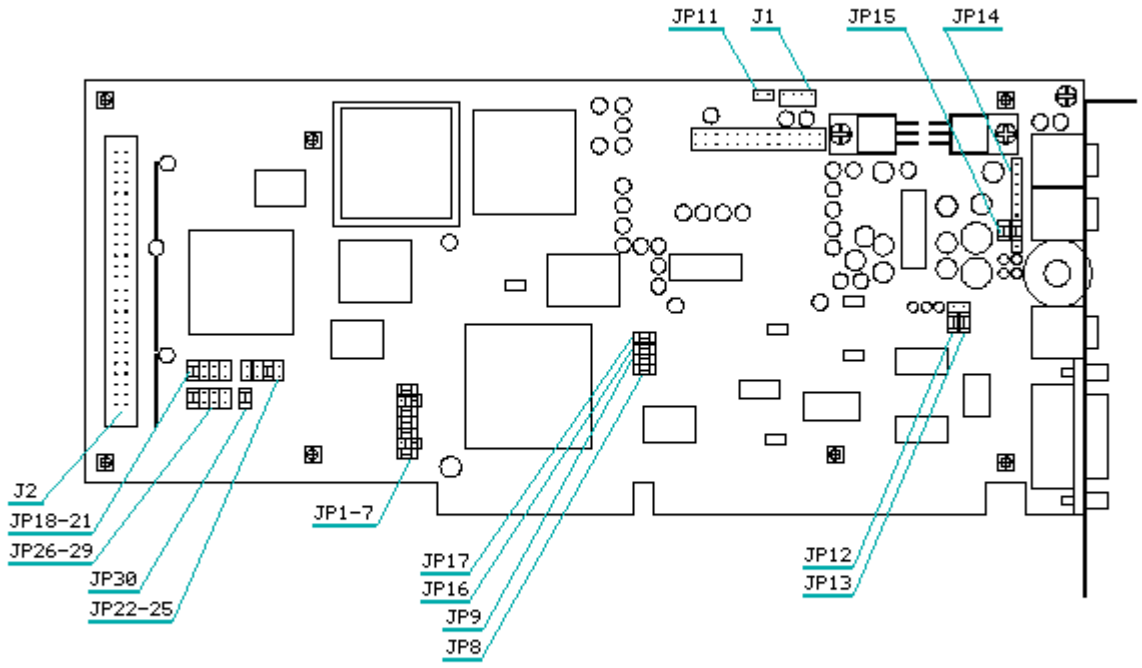


Figure 4-6. Media Vision Pro Audio Spectrum 16 Sound Board Jumper Settings

Jumper Selections for the Media Vision Pro Audio Spectrum Sound Board

Jumper 1 (MSEL)	= Shunt is present, parked.
Jumper 2 (DAS0)	= None present.
Jumper 3 (DAS1)	= Shunt is present, parked.
Jumper 4 (DBS0)	= Shunt is present, parked.
Jumper 5 (DBS1)	= Shunt is present, parked.
Jumper 6 (IS0)	= None present.
Jumper 7 (IS1)	= Shunt is present, parked.
Jumper 8	= Shunt is present, parked.
Jumper 9	= Shunt is present, parked.
Jumper 10	= Shunt is present, parked.
Jumper 11	= None present.
Jumper 12 (PINS 2&3)	= Shunt is present, parked.
Jumper 13 (PINS 2&3)	= Shunt is present, parked.
Jumper 14 (PINS 6&7)	= Shunt is present, parked.
Jumper 15 (PINS 1&2)	= Shunt is present, parked.
Jumper 16	= Shunt is present, parked.
Jumper 17	= Shunt is present, parked.
Jumper 18	= Shunt is present, parked.
Jumper 19	= None present.
Jumper 20	= None present.
Jumper 21	= None present.
Jumper 22	= None present.
Jumper 23	= None present.
Jumper 24	= Shunt is present, parked.

Jumper 25 = None.
Jumper 26 = Shunt is present, parked.
Jumper 27 = None.
Jumper 28 = None.
Jumper 29 = None.
Jumper 30 = None.

Table 4-20. Media Vision Pro Audio Spectrum 16 Sound Board

Setting Type	Hardware Selectable Jumper	Software Selectable Resource Utility	Original Setting	Available	Compaq Default
IRQ Select	No	INSTALL.EXE or AUTOEXEC.BAT command line switch.	IRQ7	IRQs selectable: 2 (9),3,5, 7,1,0,11, 12, and 15 IRQs * NOT recommended: 3,5,7,12	IRQ 10
DMA Select	No	INSTALL.EXE or AUTOEXEC.BAT command line switch.	DMA3	DMAs selectable: 0,1,2,3,5, 6,7 DMAs * NOT recommended: 2	DMA7
I/O Address	J2	No		280h-283h 288h-28Bh 384h-387h 388h-38Bh 38Ch-38Fh	388h-38Bh

Table 4-21. Sound Blaster Emulation

Setting Type	Hardware Selectable Jumper	Software Selectable Resource Utility	Original Setting	Available	Compaq Default
IRQ Select	No	INSTALL.EXE or AUTOEXEC.BAT command line switch.	IRQ5	IRQs selectable: 2 (9),3,5, and 7 IRQs * NOT recommended: 3	IRQ 7 IRQ7 can be used if the printer does not require an interrupt.
DMA Select	No	INSTALL.EXE or AUTOEXEC.BAT command line	DMA1	DMAs selectable: 0,1,3	DMA1

		switch.			
I/O Address	No	INSTALL.EXE or AUTOEXEC.BAT command line switch.	220h-22Fh	220h-22h 230h-23Fh 240h-24Fh	220h-22Fh

Table 4-22. MPU-401 Emulator

Setting Type	Hardware Selectable Jumper	Software Selectable Resource Utility	Original Setting	Available	Compaq Default
IRQ Select	No	INSTALL.EXE or AUTOEXEC.BAT disabled switch.	IRQ2 9	IRQs selectable: 2 (9),3,5, and 7 IRQs * NOT recommended: 3,5,7	IRQ 2 Resource Disabled
DMA Select	No				
I/O Address	No	INSTALL.EXE or AUTOEXEC.BAT disabled command line switch.	300h -32Fh	300h-32Fh 330h-35Fh	300h-32Fh Resource Disabled

Table 4-23. Game Port

Setting Type	Hardware Selectable Jumper	Software Selectable Resource Utility	Original Setting	Available	Compaq Default
IRQ Select	N/A				
DMA Select	N/A				
I/O Address Select	No	Enable Only	201h	201h	201h

Creative Labs Sound Blaster 16 Sound Board

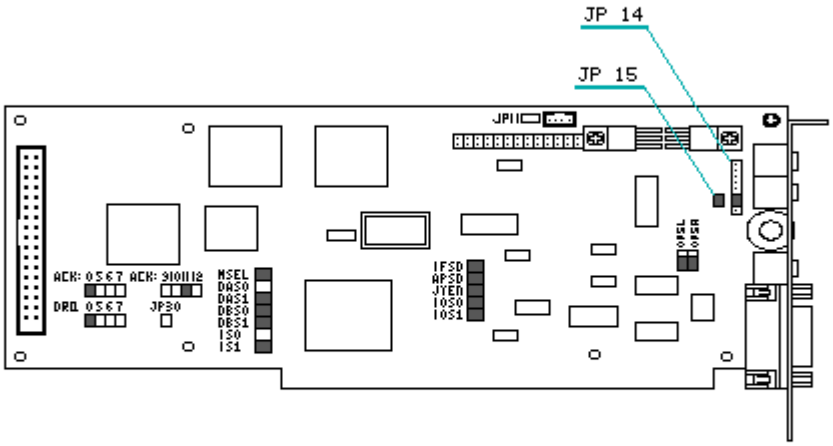


Figure 4-7. Creative Labs Sound Board Jumper Settings

Table 4-24a. JP14 Connector

Pin	Description
1	MICGND: Mic input ground
2	MICGND: Mic input ground
3	MIC IN: Mic input
4	SPKGND: Speaker output ground
5	SPKR Speaker output: Right Channel Max output: 0.8 Vrms at 10k ohms for line-out : 3 Vrms at 4 ohms for speaker-out
6	SPKL Speaker output: Left Channel Max output: 0.8 Vrms at 10k ohms for line-out : 3 Vrms at 4 ohms for speaker-out
7	SPKRL Speaker output return signal: Left channel
8	SPKRR Speaker output return signal: Right channel

Table 4-24b. JP15 Connector

Pin	Description
1	SPKR Speaker output: Right Channel Max output: 0.8 Vrms at 10k ohms for line-out : 3 Vrms at 4 ohms for speaker-out
2	SPKRR Speaker output return signal: Right channel

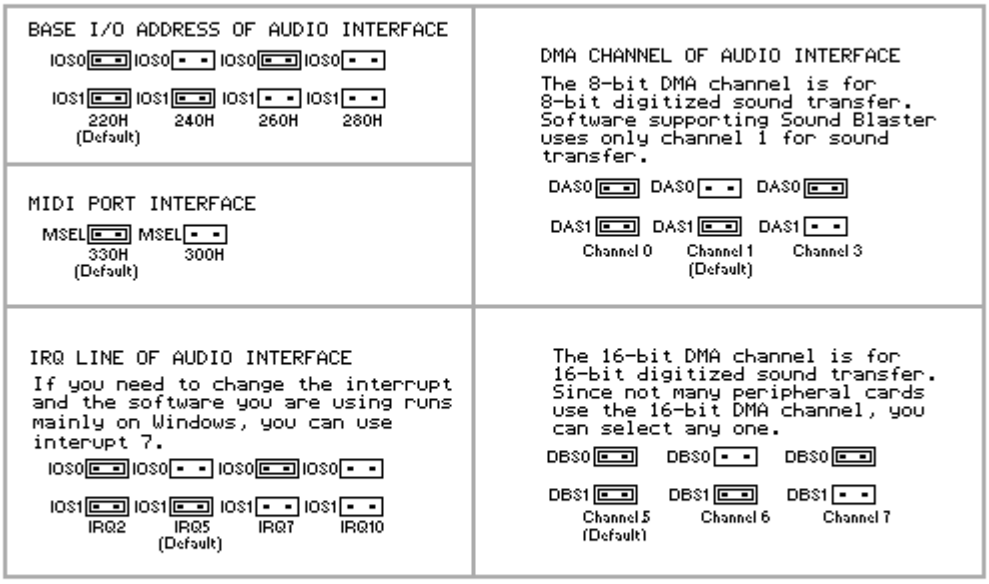


Figure 4-8. Sound Board Jumper Settings

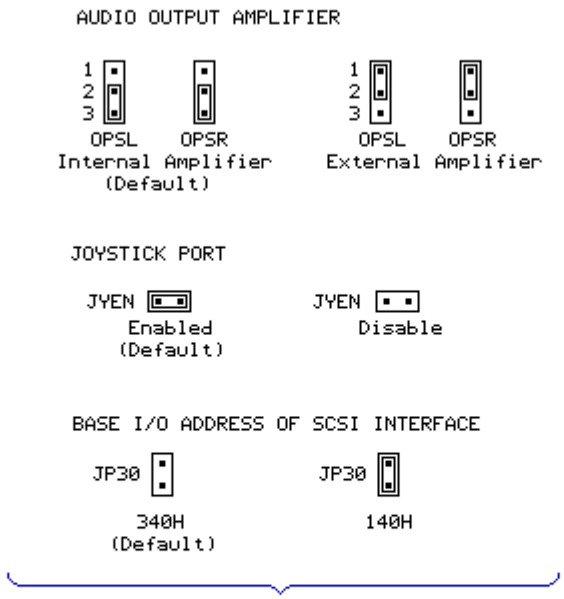


Figure 4-9a. Sound Board Jumper Settings (Part 1 of 2)

Continued from Figure 4-9a.

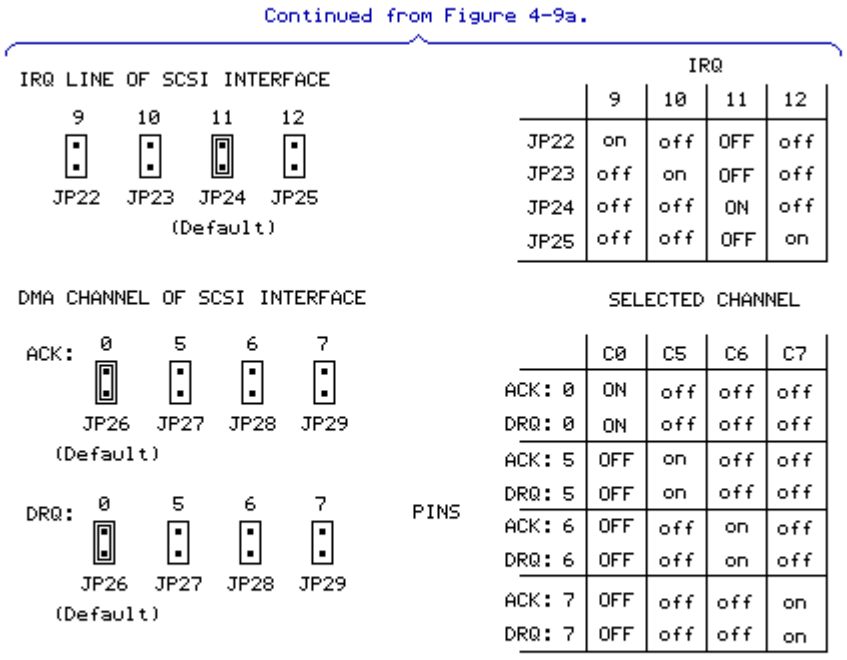


Figure 4-9b. Sound Board Jumper Settings (Part 2 of 2)

Sound Card Troubleshooting

Table 4-25. Problems in DOS

Problem	Probable Cause	Solution(s)
Sound and/or Blaster environments could not be found.	The command to set up the Sound and/or Blaster environments may not be in the AUTOEXEC.BAT file. The Sound environment gives the directory location of the audio card, and Blaster environment gives the I/O address, interrupt, and CMA channel settings of the audio interface. Both environment strings need to be set up in the DOS environment. The audio card's software adds the commands to set up the environments to the AUTOEXEC.BAT file. When	Set up the Sound environment in the AUTOEXEC.BAT file. Add the statement SET SOUND=C:\SB16 to the file. Set up the Blaster environment in the AUTOEXEC.BAT file by running the program SBCONFIG. The statement SET BLASTER=A22015D1 H5 P330 T6 will be added to the file. Reboot your system for the new settings to take effect.

	you make changes to the environment strings, the changes should be reflected in the AUTOEXEC.BAT file.	
Error message "Out of environment space."	The system environment space is used up.	Add the following statement to the CONFIG.SYS file: Shell=C:\COMMAND.COM /E:512 /P /E defines a new size for the system environment space. Choose a higher value if the environment size is already 512 bytes. (Normally, the next value is 1024 bytes.)
System hangs during 16 bit digitized sound test. But 8 bit works fine.	Your system board cannot handle 16 bit CMA at full speed. On some machines, the DMA controller on the system board does not function properly during 16 bit transfer. 16 bit DMA transfer on such machines may corrupt the data in the main memory and cause the system to hang or encounter a parity error.	Select the "use 8 bit DMA" option for the 16 bit DMA channel when you run SBCONFIG.EXE. When that option is selected, 16 bit PCM data will be transferred through the 8 bit DMA channel.

Table 4-26. Problems in Windows

Problem	Probable Cause	Solution(s)
No sound when running the Windows applications for audio card.	One or more of the sound drivers might not be included in the SYSTEM.INI file.	Check the SYSTEM.INI file by following the steps below: 1. Choose Run from the File menu in Program Manager. 2. Type SYSEDIT in the Command Line text box and choose OK. 3. You should see the following: [drivers] timer=timer.drv midimapper=midimap.drv MIDI=sb16fm.drv Aux=sb16aux.crv Wave=sb16snd.drv MIDI1=sb16snd.drv [sndblst.drv] Port=220

		MIDIPort=330 Int=5 DmaChannel=1 HDmaChannel=5
		If a driver is missing, run WINSETUP.

Table 4-27. Problems with Sound

Problem	Probable Cause	Solution(s)
No output from both the 80 bit and 16 bit digitized sounds when running the test program.	May be due to the interrupt selected.	Change the interrupt.
No output from the 8 bit or 16 bit digitized sounds when running the test program.	May be due to the CMA channel selected.	Change the DMA channel.

Resolving Hardware Conflicts

Hardware conflicts occur when two or more peripheral devices contend for the same signal lines or channels. Conflicts between the audio and SCSI interfaces, and another peripheral device may be due to the settings of the base I/O addresses, interrupts, or DMA channels. The audio and SCSI interfaces' factory default settings are:

Audio Interface:

Base I/O address	220H
MIDI Port Base I/O address	330H
Interrupt	IRQ 5
8-bit DMA	Channel 1
16-bit DMA	Channel 5

SCSI Interface:

Base I/O address	340H
Interrupt	11

To resolve hardware conflicts:

1. Change the hardware settings of your audio card or the peripheral card in your system if the peripheral card is using the audio card's setting. To change the DMA channels and interrupt settings of the audio interface, you can run the program SBCONFIG.

2. If you are unsure of the settings of the peripheral cards, you can isolate the source of the problem by temporarily removing all cards except the audio card and other essential cards such as the disk controller. After that, add the cards back one at a time until the card that is causing the conflict is found.

CD-ROM DRIVES

Internal Tray Load CD-ROM Drive

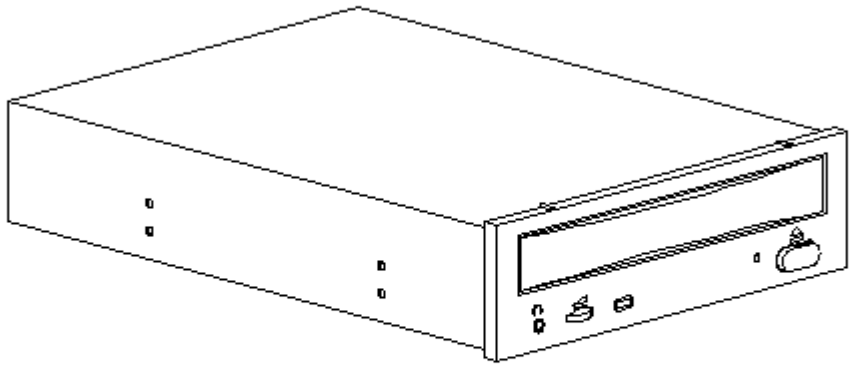


Figure 4-10. Jumper Position for the Internal Tray Load CD-ROM

Internal CD-ROM Jumper Settings

Jumper	Factory Default	Description
SCSII ID 1	Closed	SCSII ID 1
SCSII ID 2	Open	SCSII ID 2
SCSII ID 4	Open	SCSII ID 4
Parity	Closed	Parity enabled
Sector	Open	Sector size 2048 enabled
Terminator	Closed	Termination of CD-ROM drive
Termination at Power	Closed	Supplies power to SCSI bus terminators

External Tray Load CD-ROM Drive

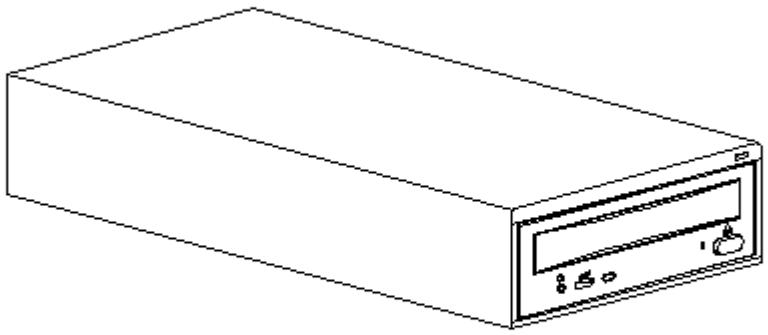


Figure 4-11. External Tray Load CD-ROM

External CD-ROM Jumper Settings

Jumper	Factory Default	Description
Parity	On	Parity enabled
Sector	Off	Sector size 2048 enabled
Terminator	On	Termination of CD-ROM drive
Termination at Power	On	Supplies power to SCSI bus terminators

MODEMS

Fax/Data Modem Jumper Settings

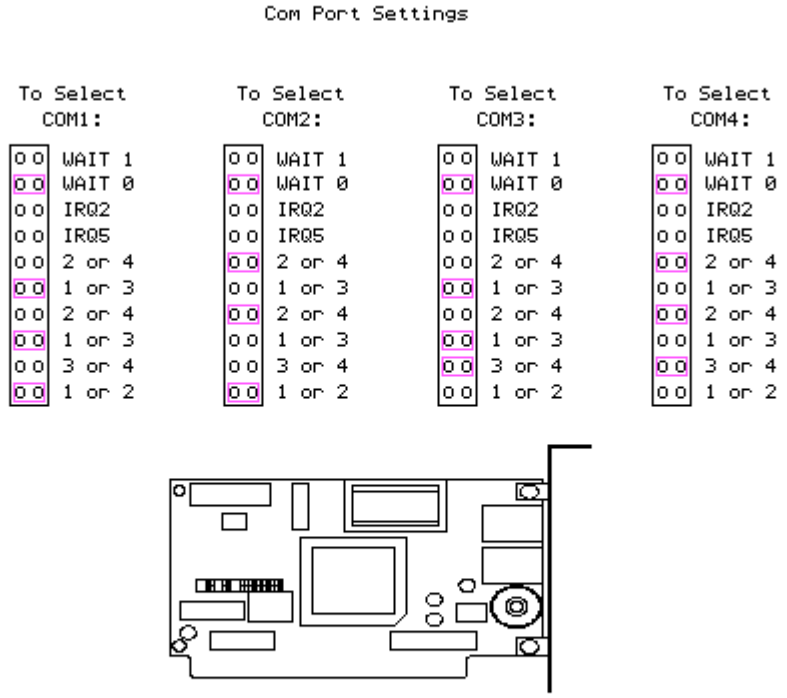
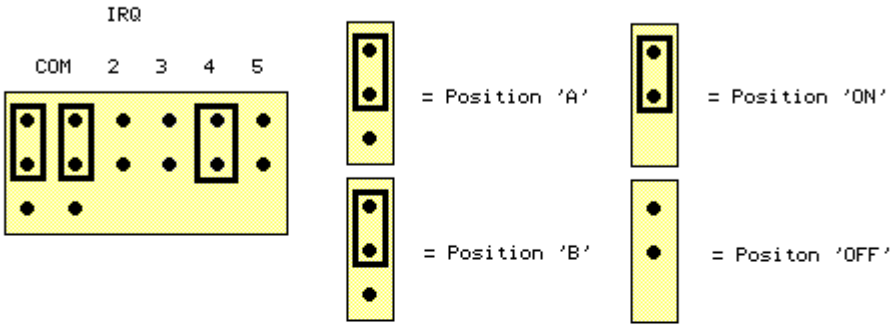


Figure 4-12. Fax/Data Modem Jumper Settings (Zoom)



COM Port	IRQ	J1	J2	J3	J4	J5	J6
1	4	A	A	Off	Off	On	Off
2 (default)	3	B	A	OFF	ON	OFF	OFF
3	5	A	B	Off	Off	Off	On
	4	A	B	Off	Off	On	Off
4	2	B	B	On	Off	Off	Off
	3	B	B	Off	On	Off	Off

Jumper Block Settings

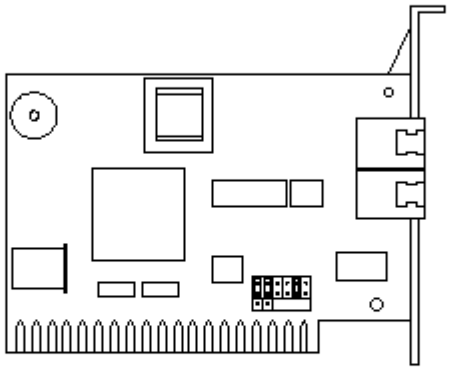
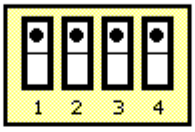


Figure 4-13. Fax/Data Modem Jumper Settings (GVC)



COM Port	S1	S2	IRQ	S3	S4
1	Off	On	2	Off	On
2 (default)	ON	ON	3	ON	ON
3	Off	Off	4	Off	Off
4	On	Off	5	On	Off

Switch Bank Settings

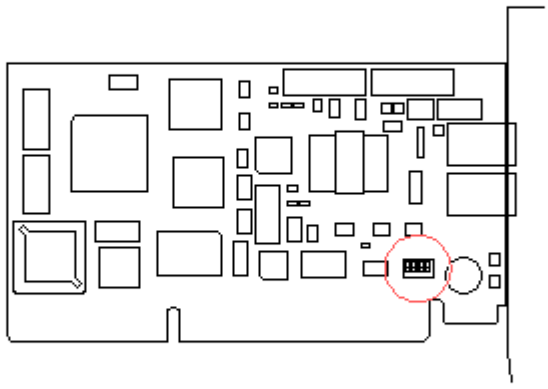


Figure 4-14. SpeedPaq 144/I Internal Fax Modem

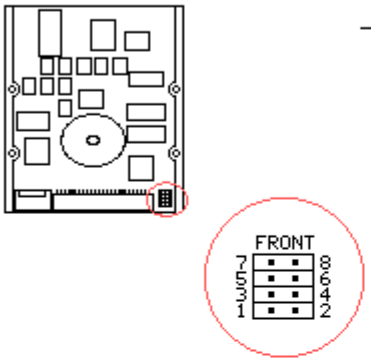
HARD DRIVE JUMPER SETTINGS

Compaq Computer Corporation has used IDE hard disk drives that conform to two different master slave implementations. These are Conner mode and ATA compatible mode. These two modes are incompatible with one another.

Both drives, master and slave, must be in the same mode for reliable operation.

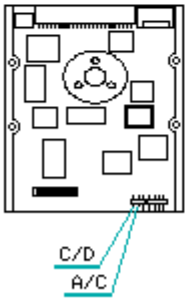
ATA mode is a standard that most hard drives are now supporting. Conner mode master slave was implemented prior to the ATA standard. All current production Compaq IDE drives conform to the ATA master slave implementation. The current IDE Conner drives that Compaq uses supports both ATA and Conner modes selectable via a jumper for backward compatibility with older pre-ATA compliant Conner drives.

Seagate Drive - ST3243A
Assembly Number 160688



Configuration	Master
No Jumpers	Drive is a Master; the slave is another ATA compatible drive or no slave is present
1 and 2	Drive is a slave to an ATA compatible drive
3 and 4	Drive is a master; a Non-ATA compatible slave is present
5 and 6	Factory Test (Do Not Use!)
7 and 8	Reserved (Do Not Use!)

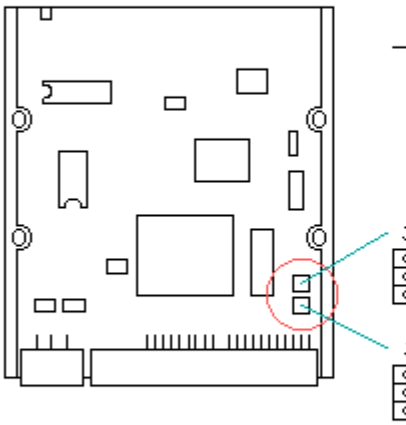
Conner Drive - CFS210A
Assembly Number 160689



Pins	Signal	Description
1 and 2	C/D OFF	Open: Drive will act as a slave
	C/D ON	Closed: Drive will act as a master
3 and 4	A/C OFF	Open: Conner master/slave mode
	A/C ON	Closed: ATA compatible master slave mode

Figure 4-15. 200-MB Hard Drive Jumper Locations and Settings

Quantum Drive - LPS270
Assembly Number 194346

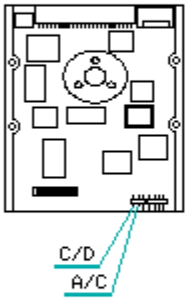


Configuration	CS	DS	SP
Drive is slave to non-ATA compatible drive	no	no	no
Drive is slave to ATA compatible drive	no	no	yes
Drive is master with ATA compatible slave present	NO	YES	NO
Drive is master with non-ATA compatible slave present	no	yes	yes

(ALL CAPS indicates factory setting)

Figure 4-16. 270-MB Hard Drive Jumper Location and Settings

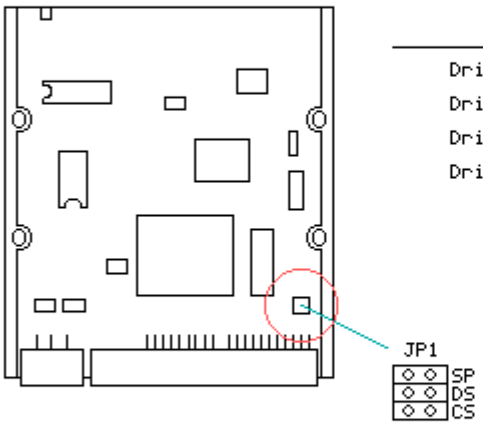
Conner Drive - CFA340B
Assembly Number 164830



Pins	Signal	Description
1 and 2	C/D OFF	Open: Drive will act as a slave
	C/D ON	Closed: Drive will act as a master
3 and 4	A/C OFF	Open: Conner master/slave mode
	A/C ON	Closed: ATA compatible master slave mode

Figure 4-17. 340-MB Hard Drive Jumper Location and Settings

Quantum Drive - LPS340
Assembly Number 198375

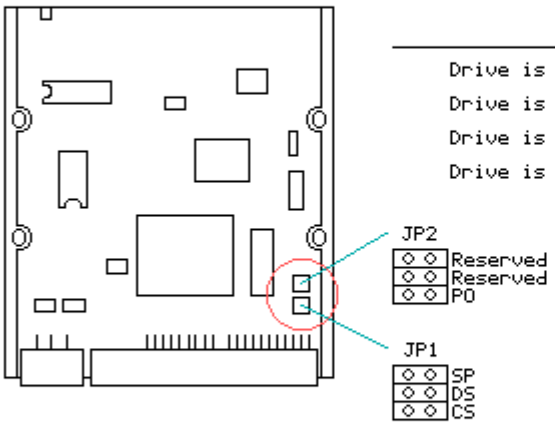


Configuration	CS	DS	SP
Drive is slave to non-ATA compatible drive	no	no	no
Drive is slave to ATA compatible drive	no	no	yes
Drive is master with ATA compatible slave present	NO	YES	NO
Drive is master with non-ATA compatible slave present	no	yes	yes

(ALL CAPS indicates factory setting)

Figure 4-18. 340-MB Hard Drive Jumper Location and Settings

Quantum Drive - LPS540
Assembly Number 194347



Configuration	CS	DS	SP
Drive is slave to non-ATA compatible drive	no	no	no
Drive is slave to ATA compatible drive	no	no	yes
Drive is master with ATA compatible slave present	NO	YES	NO
Drive is master with non-ATA compatible slave present	no	yes	yes

(ALL CAPS indicates factory setting)

Figure 4-19. 525-MB Hard Drive Jumper Location and Settings

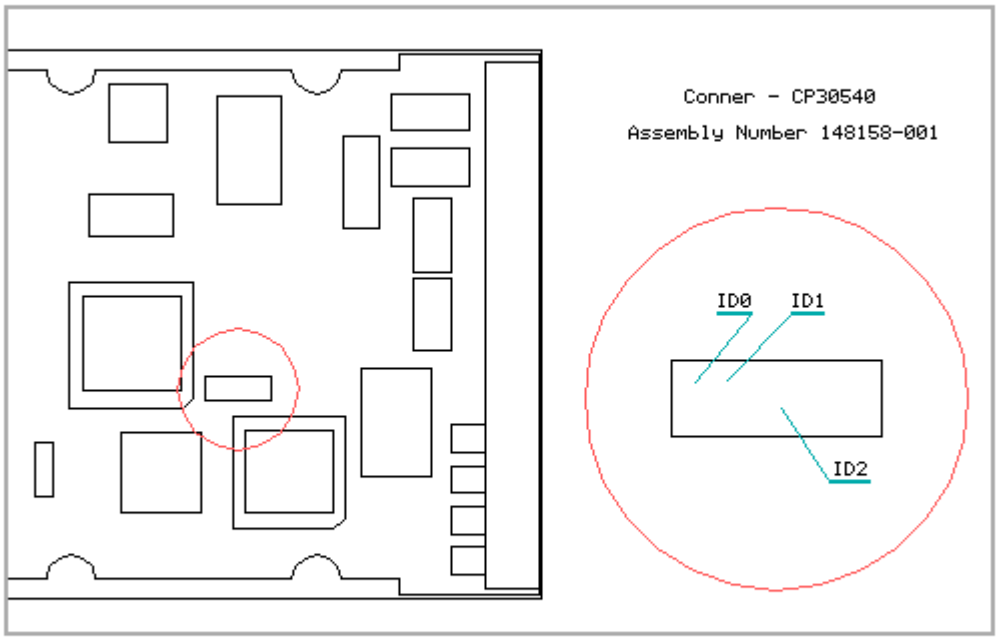


Figure 4-20. 535-MB SCSI Hard Drive Jumper Location and Settings

535-MB SCSI Conner Hard Drive Jumper Options Shipped Configuration

Jumper	Jumper	Common Use
E1	PARK	SCSI Address, Bit 0
E2	PARK	SCSI Address, Bit 1
E3	OFF	SCSI Address, Bit 2
E4	ON	Disable spin at power on
E5	OFF	Enable term, (No termination on this drive)
E6	OFF	Enable term power

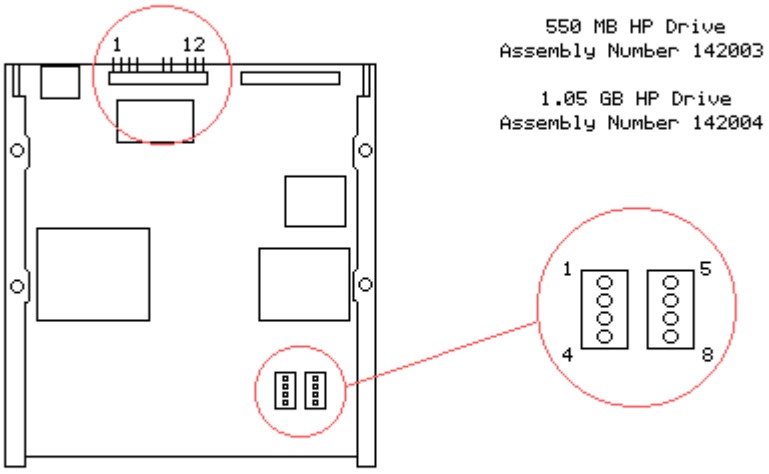


Figure 4-21. 550-MB and 1.05-GB SCSI-2 (HP) Hard Drive Jumper Location and Settings

550-MB & 1.05 GB SCSI HP Hard Drive Jumper Options

Jumper	Option	Description
1	OFF	Write protect based on Mode Page
2	OFF	Unit Attention enabled
3	ON	Initiate SDTR message at power-on and reset
4	ON	Parity Checking enabled
5	OFF	Spin up with Start Unit Command
6	key	
7-8	OFF	Synchronized Spindle (unused)
9	key	
10	PARK	SCSI Address, Unit Select 1
11	PARK	SCSI Address, Unit Select 2
12	OFF	SCSI Address, Unit Select 3

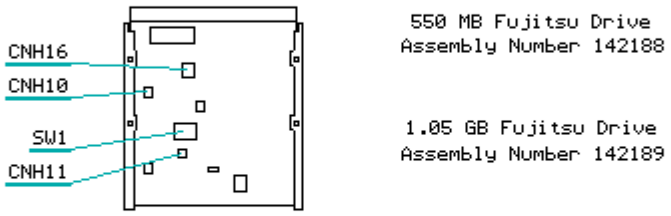


Figure 4-22. 550-MB and 1.05-GB SCSI-2 (Fujitsu) Hard Drive
Jumper Location and Settings

550-MB & 1.05 GB SCSI Fujitsu Hard Drive Jumper Options
(Shipped Configuration)

Jumper	Option	Description
SW1		
1	OFF	SCSI-2 level
2	OFF	Normal Operation
3	ON	Unit Attention enabled
4	ON	Retry Count is unlimited
5	ON	Parity Checking enabled
6	ON	Initiate SCTR message at power-on and reset
7	ON	LED, Lights during operations
8	OFF	Spin up Start Unit Command
CNH11		
1- 2	PARK	SCSI Address, Unit Select 1
3- 4	PARK	SCSI Address, Unit Select 2
5- 6	PARK	SCSI Address, Unit Select 3
7- 8	ON	Write Protect disabled

9- 10	OFF	Reserved

CNH10

1- 2	ON	Spindle Sync terminating resistor power
3- 4	ON	SCSI terminating resistor power form IDD
5- 6	ON	SCSI terminating resistor power from TERMPWR

CNH6

A0	OFF	SCSI Address, Unit Select 1
A1	OFF	SCSI Address, Unit Select 2
A2	OFF	SCSI Address, Unit Select 3

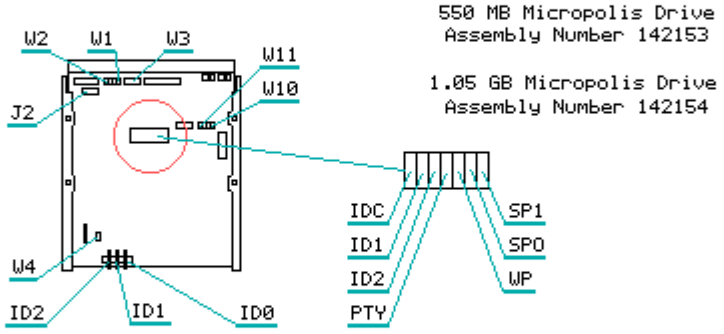


Figure 4-23. 550-MB and 1.05-GB SCSI-2 (Micropolis) Hard Drive Jumper Location and Settings

550-MB & 1.05 GB SCSI Micropolis Hard Drive Jumper Options
(Shipped Configuration)

Jumper	Option	Description
SW1		

ID0	PARK	SCSI Address, Unit Select 1
ID1	PARK	SCSI Address, Unit Select 2
ID2	OFF	SCSI Address, Unit Select 3
PTY	OFF	Parity Checking enabled
WP	OFF	Write protect disabled
SP0	ON	Spin up with Start Unit Command
SP1	OFF	Spin up delay disabled
W4	ON	LED in PCBA is enabled
W3	ON	Drive provide BUS termination power
W2	OFF	Termination power provided by Host
W1	OFF	Drive provide local termination power
W10	OFF	Slave Sync Termination enabled
W11	OFF	Master Sync Termination disabled

DISKETTE DRIVE SWITCH SETTINGS

The following table shows the diskette drive switch settings.

Table 4-28. Diskette Drive Switch Settings

Diskette Drive Type by Switch Location	Switch Setting
If switch location is near 34-pin connector	1
If switch location is opposite side from 34-pin connector	1

NETFLEX ENET/ISA

The following table shows the factory default settings for the NetFlex ENET/ISA controller.

Table 4-29. Factory Configuration

Parameter	Value
I/O Address	300h to 350h
Interrupt	IRQ 5
Connector Type	RJ-45
Force 8-Bit Operation	No
Boot ROM Address	No boot ROM
Amount of RAM to Map	None mapped
RAM Start Address	None mapped

==========

NETFLEX TR/ISA

Token Ring Network Operating Systems

The types of Token Ring network operating systems supported by the network drivers are listed below:

- Netware DOS ODI
- Netware OS/2 ODI
- Netware 2.2 Workstation
- NDIS 2.0.1 OS/2
- NDIS 2.0.1 DOS
- Adapter Support Interface

Default Configuration

The default configuration settings are as follows:

Token Ring Network Default Configuration

Parameter	Value
I/O Address	0A20 - 0A3F
Interrupt Level	IRQ 5
Boot ROM address	Book ROM disabled

I/O Address

A 32-byte block of I/O addresses is required to communicate with the processor. Be careful not to use an address of another controller in the computer. If two controllers are I/O addresses, they will not operate correctly. Choose from the following I/O addresses:

I/O Address Blocks

Address	Address	Address
0240 to 25Fh	02C0 to 2DFh	0380 to 38Fh
1A20 to 1A3Fh	0300 to 31Fh	0A20 to A3Fh (default)
0280 to 29Fh	0340 to 35F	

Interrupt Levels

An interrupt processes information moving to and from the network. The interrupt you select can be used by only one controller in the computer. If two controllers share an interrupt, they will not operate properly. Choose from the following interrupts:

Interrupt Levels

Level	Common Use
IRQ 3	COM 2
IRQ 4	COM 1
IRQ 5	
IRQ 10	
IRQ 11	

SERIAL/PARALLEL INTERFACE BOARD

Table 4-30. Switch Settings

-- Switch Position --						Function
1	2	3	4	5	6	
OFF	OFF					Reserved
		ON	ON			Printer Interface LPT1
		OFF	ON			Printer Interface LPT2
		ON	OFF			Printer Interface LPT3
		OFF	OFF			Disable Printer Interface
				ON	ON	Serial Interface COM1
				OFF	ON	Serial Interface COM2
				OFF	OFF	Disable Serial Interface

IRQ7 is default. For IRQ5 set jumpers 1 and 2. For IRQ7 set jumpers 2 and 3.

NOTE: If the printer interface is disabled, the E1 jumper connector should be removed entirely.

Chapter 5 Error Messages and Codes

This chapter contains Power-On Self-Test (POST) Messages, Diagnostic error codes, and memory error codes.

The messages and codes appear in tables that include a description of the error, the probable cause, and the recommended action to take to resolve the error condition.

POWER-ON SELF-TEST (POST)

POST is a series of diagnostic tests that run automatically on all Compaq personal computers when the system is turned on. After the computer is turned on, POST checks many assemblies within the system and reports any errors found.

POST checks the following assemblies to ensure that the computer system is functioning properly:

- Keyboard
- System Board
- Memory Modules
- Video
- Diskette Drives
- Hard Drive
- CD-ROM Drive
- Sound board Drive

POST also detects the type of mass storage devices installed in the computer.

If POST finds an error in the system, an error condition is indicated by an audible and/or visual message. Table 5-1 gives explanations of the error codes and a recommended course of action.

RUNNING DIAGNOSTICS

If you encounter an error condition, complete the following steps before starting problem isolation procedures:

1. Ensure proper ventilation. The computer should have a three-inch (7.6 cm) clearance at the back of the system unit.

2. Turn off the computer and peripheral devices.

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> CAUTION <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

Always ensure that the power is off before disconnecting or reconnecting the mouse, keyboard, or any other peripheral devices. Disconnecting or connecting the keyboard or mouse while the unit power is on can damage the system board.

>>

3. Disconnect any peripheral devices other than the monitor and keyboard. Do not disconnect the printer if you want to test it or use it to log error messages.

4. Install loopback and terminating plugs for complete testing.

5. Run the latest version of Diagnostics.

See the Diagnostics Program for detailed information on problem isolation.

POWER-ON SELF-TEST MESSAGES

An error message results if the Power-On Self-Test encounters a problem. This test runs automatically, when the system is turned on, checking assemblies within the computer and reporting any errors found.

Table 5-1. Power-On Self-Test Messages

Message	Beeps	Probable Cause	Recommended Action
101 - ROM Error	1 Long, 1 Short	System ROM checksum	1. Inspect the ROM placement. 2. Verify the correct ROM. 3. Replace the ROM.
101 - I/O ROM Error	None	Options ROM checksum	1. Inspect the ROM placement. 2. Verify the correct ROM. 3. Replace the ROM.
102 - System Board Failure	None	DMA, timers, or other system board components	Replace the system board.
162 - System Options Error	2 Short	Configuration error no diskette drive	Press F10 and run Computer Setup.
162 - System Options Not Set	2 Short	Configuration incorrect	Press F10 and run Computer Setup.
163 - Time and Date Not Set	2 Short	Invalid time or date configuration memory	Press F10 and run Computer Setup.
164 - Memory Size Error	2 Short	Configuration memory incorrect	Press F10 and run Computer Setup.
XX000Y ZZ Module x 201-Memory Error	None	RAM failure	Replace the memory modules.
XX000Y ZZ Module x 203-Memory Address	None	RAM failure	Replace the memory modules.

Error			
205 - Memory Error	None	Cache memory	Run Computer Setup.
207 - Invalid Memory Configuration	None	Memory module installed incorrectly	Verify placement of memory module.
211 - Memory failure	None	RAM failure	Run Computer Setup.
301 - Keyboard Error	None	Keyboard failure	1. Reconnect the keyboard with the computer turned off. 2. Replace the keyboard.
Message	**Beeps**	**Probable Cause**	**Recommended Action**
303 - Keyboard Controller Error	None	Keyboard, I/O keyboard controller (on system board), or mouse.	1. Replace the keyboard. 2. Replace the mouse. 3. Replace the system board.
304 - Keyboard or System Unit Error	None	Keyboard or System Board	1. Replace the keyboard. 2. Replace the system board.
30X - Keyboard or Keyboard Controller Error	None	Keyboard or System Board	1. Replace the keyboard. 2. Replace the mouse. 3. Replace the system board.
401 - Printer Error	None	Printer controller	Replace the system board.
402 - Monochrome Adapter Failure	1 Long, 2 Short	Monochrome display controller	Replace the monochrome display controller.
40X Parallel Port x Address Assignment Conflict	2 Short	Both external and internal ports are assigned to parallel port X	Run Computer Setup.
501 - Display Adapter Failure	1 Long, 2 Short	Video display controller	Replace the system board.
601 - Diskette Controller Error	None	Mismatch in drive type or failure in diskette controller	1. Press F10 and run Computer Setup. 2. Check and/or replace cables. 3. Replace the system board.

Message	Beeps	Probable Cause	Recommended Action
602 - Diskette Boot	None	Diskette in drive A not bootable	Replace the diskette.
605 - Diskette Drive Error	2 Short	Mismatch in drive type	Press F10 and run Computer Setup.
611 - Primary Floppy Port Address Assignment Conflict	2 Short	Two diskette controllers at primary address	Run Computer Setup.
612 - Secondary Floppy Port Address Assignment Conflict	2 Short	Two diskette controllers at secondary address	Run Computer Setup.
702 - Coprocessor Detection Error	None	Coprocessor	1. Press F10 and run Computer Setup. 2. Replace the coprocessor. 3. Replace the system board.
703 - Coprocessor Detection Error	None	Coprocessor	1. Press F10 and run Computer Setup. 2. Replace the coprocessor. 3. Replace the system board.
1125 - Internal Serial Port Failure	2 Short	Defective internal serial port	1. Run Computer Setup. 2. Replace the system board.
1151 - COM Port 1 Address Assignment Conflict	2 Short	Both internal and external serial ports are assigned to COM 1	Run Computer Setup.
1152 - COM Port 2 Address Assignment Conflict	2 Short	Both internal and external serial ports are assigned to COM 2	Run Computer Setup.
1771 - Primary Disk Port Address Assignment Conflict	2 Short	Internal and external hard drive controllers are both assigned to the primary address	Run Computer Setup.
1771 - Secondary Disk Port Address Assignment Conflict	2 Short	Internal and external hard drive controllers are both assigned to the secondary address	Run Computer Setup.

1780 - Disk 0 Failure	None	Hard drive failure/ format error	1. Run Diagnostics. 2. Replace the drive.
1781 - Disk 1 Failure	None	Hard drive failure/ format error	1. Run Diagnostics. 2. Replace the drive.
1782 - Disk Controller	None	Hard drive controller failure	1. Run Diagnostics. 2. Replace the system board.
1790 - Disk 0 Error	None	Hard drive error or wrong drive type	Press F10 and run Computer Setup and Diagnostics.
1791 - Disk 1 Error	None	Hard drive error or wrong drive type	Press F10 and run Computer Setup and Diagnostics.
XX000Y ZZ Parity check 2	None	Parity RAM failure	Run Diagnostics.
Hard Drive Parameter Table or BIOS Error System Halted	3 Long	Configuration or hardware failure	Run Computer Setup and Diagnostics.
IOCHECK active slot	None	Defective board in slot X	Run Diagnostics.
Audible	1 Short	Power-on successful	None.
Audible	2 Short	Power-on successful	None.

DIAGNOSTIC ERROR CODES

Diagnostic error codes occur if the system recognizes a problem while running the Compaq Diagnostics program. These error codes help identify possible defective subassemblies.

Tables 5-2 through 5-16 list possible error codes, descriptions of each error condition, and actions required to resolve the error condition.

IMPORTANT: Retest the system after completing each step. If the problem has been resolved, do not proceed with the remaining steps.

For assistance in the removal and replacement of a particular subassembly, see Chapter 2, "Removal and Replacement Procedures."

Table 5-2. Processor Test Error Codes

Error Code	Description	Recommended Action

101 - xx	CPU test failed	Replace the system board and retest.
102 - xx	Coprocessor error	1. Run Computer Setup and retest. 2. Replace the coprocessor and retest.
103 - xx	DMA controller failed	Replace the system board and retest.
104 - xx	Interrupt controller failed	Replace the system board and retest.
105 - xx	Port error	Replace the system board and retest.
106 - xx	Keyboard controller self-test failed	Replace the system board and retest.
107 - xx 108 - xx	CMOS RAM test failed CMOS interrupt test failed	The following steps apply to error codes 107 - xx through 109 - xx: 1. Replace the battery/clock module and retest. 2. Replace the system board and retest.
109 - xx	CMOS clock test failed	
110 - xx	Programmable timer test failed	The following step applies to error codes 110 - xx through 113 - 01:
111 - xx	Refresh detect test failed	Replace the system board and retest.
112 - xx	Speed test failed	
113 - 01	Protected mode test failed	
114 - xx	Speaker test failed	1. Verify the speaker connection. 2. Replace the system board and retest.
199 - xx	Installed devices test failed.	1. Check system configuration. 2. Verify cable connections. 3. Check switch settings. 4. Run Computer Setup. 5. Replace the system board and retest.

Table 5-3. Memory Test Error Codes

Error Code	Description	Recommended Action
200 - xx	Invalid memory configuration	1. Verify memory module value compatibility. 2. Reinsert memory in the correct location.

201 - xx	Memory machine ID test failed.	The following steps apply to error codes 201 - xx and 202 - xx:
202 - xx	Memory system ROM checksum failed	1. Replace the system ROM and retest. 2. Replace the memory and retest. 3. Replace the system board and retest.
203 - xx	Memory write/read test failed	The following steps apply to error codes 203 - xx through 210 - xx:
204 - xx	Memory address test failed	1. Remove one memory module at a time until the error message stops. 2. Replace other removed modules one at a time, testing each to ensure the error does not return. 3. Replace the system board and retest.
206 - xx	Increment pattern test failed	
210 - xx	Random pattern test failed	

Table 5-4. Keyboard Test Error Codes

Error Code	Description	Recommended Action
301 - xx	Keyboard short test, 8042 self-test failed	The following steps apply to error codes 301 - xx through 304 - xx:
302 - xx	Keyboard long test failed	1. Check the keyboard connection. If disconnected, turn the computer off and connect the keyboard. 2. Replace the keyboard and retest. 3. Replace the system board and retest.
303 - xx	Keyboard LED test, 8042 self-test failed	
304 - xx	Keyboard typematic test failed	

Table 5-5. Parallel Printer Test Error Codes

Error Code	Description	Recommended Action
401 - xx	Printer failed or not connected	The following steps apply to error codes 401 - xx through 498 - xx:
402 - xx	Printer data register failed	1. Connect the printer. 2. Check power to the printer. 3. Install the loopback connector and retest. 4. Replace system board and retest.
403 - xx	Printer pattern test failed	
498 - xx	Printer failed or not connected	

Table 5-6. Video Display Unit Test Error Codes

Error Code	Description	Recommended Action
501 - xx	Video controller test failed	The following steps apply to error codes 501 - xx through 516 - xx:
502 - xx	Video memory test failed	1. Replace the monitor and retest. 2. Replace the system board and retest.
503 - xx	Video attribute test failed	
504 - xx	Video character set test failed	
505 - xx	Video 80 x 25 mode 9 x 14 character cell test failed	
506 - xx	Video 80 x 25 mode 9 x 14 character cell test failed	
507 - xx	Video 40 x 25 mode test failed	
508 - xx	Video 320 x 200 mode color set 0 test failed	
509 - xx	Video 320 x 200 mode color set 1 test failed	
510 - xx	Video 640 x 200 mode test failed	
511 - xx	Video screen memory page test failed	
512 - xx	Video gray scale test failed	
514 - xx	Video white screen test failed	
516 - xx	Video noise pattern test failed	

Table 5-7. Diskette Drive Test

Error Code	Description	Recommended Action
600 - xx	Diskette ID drive types test failed	The following steps apply to error codes 600 - xx through 698 - xx:
601 - xx	Diskette format failed	1. Replace the diskette and retest. 2. Check and/or replace the diskette power and signal cables and retest.
602 - xx	Diskette read test failed	

603 - xx	Diskette write, read, compare test failed	3. Replace the diskette drive and retest. 4. Replace the system board and retest.
604 - xx	Diskette random seek test failed	
605 - xx	Diskette ID media test failed	
606 - xx	Diskette speed test failed	
607 - xx	Diskette wrap test failed	
608 - xx	Diskette write-protect test failed	
609 - xx	Diskette reset controller test failed	
610 - xx	Diskette change line test failed	
694 - xx	Pin 34 is not cut on 360KB diskette drive	
697 - xx	Diskette type error	
698 - xx	Diskette drive speed not within limits	
699 - xx	Diskette drive/media ID error	1. Replace media. 2. Run Computer Setup.

Table 5-8. Monochrome Video Board Test Error Codes

Error Code	Description	Recommended Action
802 - xx	Video memory test failed	The following steps apply to error codes 802 - xx through 824 - xx:
824 - xx	Monochrome video text mode test failed	1. Replace monitor and retest. 2. Replace the system board and retest.

Table 5-9. Serial Test Error Codes

Error Code	Description	Recommended Action
1101 - xx	Serial Port Test	The following steps apply to error codes 1101 - xx through 1109 - xx:
1109 - xx	Clock Register Test	1. Check the switch settings on the serial/parallel interface board, if applicable. 2. Replace the serial/parallel

		interface board, if applicable. 3. Replace the system board and retest.

Table 5-10. Modem Communications Test Error Codes

Error Code	Description	Recommended Action
1201 - xx	Modem Internal Loopback Test	The following steps apply to error codes 1201 - xx through 1210 - xx:
1202 - xx	Modem Time-out Error	1. Refer to modem documentation for correct Computer Setup procedures. 2. Check the modem line. 3. Replace the modem and retest.
1203 - xx	Modem External Termination Test	
1204 - xx	Modem Auto Originate Test	
1206 - xx	Dial Multifrequency Tone Test	
1210 - xx	Modem Direct Connect Test	

Table 5-11. Hard Drive Test Error Codes

Error Code	Description	Recommended Action
1700 - xx	Hard drive ID types test failed	The following steps apply to error codes 1700 - xx through 1799 - xx:
1701 - xx	Hard drive format test failed	1. Run Computer Setup and verify drive type. 2. Replace the hard drive signal and power cables and retest. 3. Replace the hard drive and retest. 4. Replace the system board and retest.
1702 - xx	Hard drive read test failed	
1703 - xx	Hard drive write/read/ compare test failed	
1704 - xx	Hard drive random seek test failed	
1705 - xx	Hard drive controller test failed	
1706 - xx	Hard drive ready test failed	
1707 - xx	Hard drive recalibration test failed	
1708 - xx	Hard drive format bad track test failed	

1709 - xx	Hard drive reset controller test failed
1710 - xx	Hard drive park head test failed
1714 - xx	Hard drive file write test failed
1715 - xx	Hard drive head select test failed
1716 - xx	Hard drive conditional format test failed
1717 - xx	Hard drive ECC * test failed
1719 - xx	Hard drive power mode test failed
1799 - xx	Invalid hard drive type failed

Table 5-12. Tape Drive Test Errors

Error Code	Description	Recommended Action
1900 - xx	Tape ID failed	The following steps apply to error codes 1900 - xx through 1906 - xx:
1901 - xx	Tape servo write failed	1. Replace the tape cartridge and retest.
1902 - xx	Tape format failed	2. Check the switch settings on the adapter board.
1903 - xx	Tape drive sensor test failed	3. Check and/or replace the signal cable and retest.
1904 - xx	Tape BOT/EOT test failed	4. Replace the tape adapter board (if applicable) and retest.
1905 - xx	Tape read test failed	5. Replace the tape drive and retest.
1906 - xx	Tape write/read/compare failed	6. Replace the system board and retest.

Table 5-13. Video Test Error Codes

Error Code	Description	Recommended Action
2402 - xx	Video memory test failed	The following steps apply to error codes 2402 - xx through 2456 - xx:
2403 - xx	Video attribute test failed	1. Run Computer Setup. 2. Replace the monitor and retest. 3. Replace the system board and

2404 - xx	Video character set test failed	retest.
2405 - xx	Video 80 x 25 mode 9 x 14 character cell test failed	
2406 - xx	Video 80 x 25 mode 8 x 8 character cell test failed	
2407 - xx	Video 40 x 25 mode test failed	
2408 - xx	Video 320 x 200 mode color set 0 test failed	
2409 - xx	Video 320 x 200 mode color set 1 test failed	
2410 - xx	Video 640 x 200 mode test failed	
2411 - xx	Video screen memory page test failed	
2412 - xx	Video gray scale test failed	
2414 - xx	Video white screen test failed	
2416 - xx	Video noise pattern test failed	
2418 - xx	ECG/VGC memory test failed	
2419 - xx	ECG/VGC ROM checksum test failed	
2420 - xx	ECG/VGC attribute test failed	
2421 - xx	ECG/VGC 640 x 200 graphics mode test failed	

Error Code	Description	Recommended Action
2422 - xx	ECG/VGC 640 x 350 16 color set test failed	The following steps apply to error codes 2402 - xx through 2456 - xx:
2423 - xx	ECG/VGC 640 x 350 64 color set test failed	1. Run Computer Setup. 2. Replace the monitor and retest. 3. Replace the system board and retest.
2424 - xx	ECG/VGC monochrome text mode test failed	

2425 - xx	640 x 480 graphics test failure	
2431 - xx	640 x 480 graphics test failure	
2432 - xx	320 x 200 graphics (256 color mode) test failure	
2448 - xx	Advanced VGA Controller test failed	
2451 - xx	132-column Advance VGA test failed	
2456 - xx	Advanced VGA 256 Color test failed	
2468 - xx	Advanced VGA BitBLT test	The following steps apply to error codes 2468 - xx through 2480 - xx: 1. Run Computer Setup. 2. Replace the system board and retest.
2477 - xx	Advanced VGA datapath test	
2478 - xx	Advanced VGA BitBLT test	
2480 - xx	Advanced VGA Linedraw test	

Table 5-14. Pointing Device Interface Test Error Codes

Error Code	Description	Recommended Action
8601 - xx	Pointing Device Interface test failed	1. Replace with a working pointing device and retest. 2. Replace pointing device interface board, if applicable and retest. 3. Replace system board and retest.

Table 5-15. CD-ROM Test Error Codes

Error Code	Description	Recommended Action
3301 - xx	CD-ROM drive read test failed	The following steps apply to error codes 3301 - xx through 3305 - xx: 1. Replace the CD-ROM and retest. 2. Check the jumper settings on the adapter board. 3. Check and/or replace the power and signal cables and retest. 4. Replace the CD-ROM adapter board and retest. 5. Replace the CD-ROM drive and retest.
3305 - xx	CD-ROM drive see test failed	

Table 5-16. Sound Board Test Error Codes

Error Code	Description	Recommended Action
3330 - xx	Audio short test failed	The following steps apply to error codes 3330 - xx through 3333 - xx: 1. Check the jumper settings on the adapter board. 2. Check and/or replace the signal cable and retest. 3. Replace the audio adapter board and retest.
3330 - xx	Audio tone test failed	
3331 - xx	Audio mode test failed	

Chapter 6 Specifications

This chapter provides physical, environmental, and performance specifications for the following Compaq ProLinea Line and Compaq Presario 600 Series of Personal Computers subsystems:

- System Unit
- Diskette Drives
- Tape Drive
- Hard Drives
- Power Supply
- NetFlex ENET/ISA
- Mouse
- Keyboard
- Audio System
- CD-ROM Drives

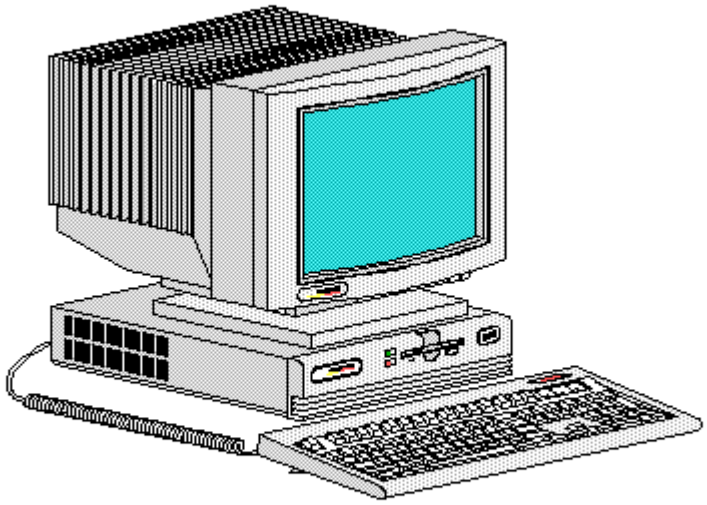


Figure 6-1a. Compaq ProLinea Line and Compaq Presario 600 Series of Personal Computers (Two-slot Models)

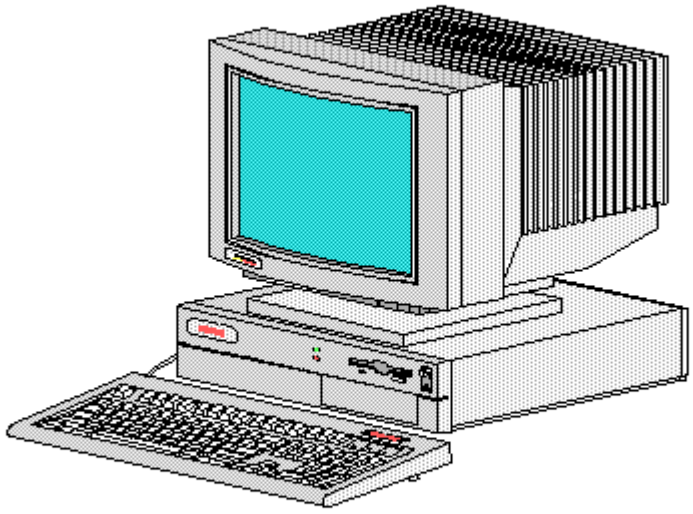


Figure 6-1b. Compaq ProLinea Line and Compaq Presario 600 Series of Personal Computers (Three-slot Models)

SYSTEM UNITS

System Features

Table 6-1. System Unit -- Two-Slot Models

Processor	25 MHz 386SX
Memory	2 MB RAM, expandable to 16 MB
Coprocessor	387SX Coprocessor socket
Graphics:	1024 x 768 Graphics Controller 16 colors @ 1024 x 768 resolution, interlaced 256 colors @ 800 x 600 resolution, non-interlaced 256 colors @ 640 x 480 resolution 132 Column support
Expansion Slots	Two 16 bit ISA expansion slots
I/O Interfaces Included:	1 Parallel port 2 Serial ports 1 Pointing device interface
System Security	Power-on password

Power Supply	73 Watts
Drives:	
Model 1	3.5-inch 1.44 MB Diskette Drive Hard drive bay
Model 40	3.5-inch 1.44 MB Diskette Drive 40 MB Hard Drive (21 ms)
Model 84	3.5-inch 1.44 MB Diskette Drive 84 MB Hard Drive (17 ms)

Table 6-2. System Unit -- Three-Slot, 386SX-Based Models

Processor	25 MHz 386SX
Memory	2 MB RAM, expandable to 16 MB
Coprocessor	387SX Coprocessor socket
Graphics:	1024 x 768 Graphics Controller 16 Colors @ 1024 x 768 resolution, interlaced 256 Colors @ 800 x 600 resolution, non-interlaced 256 Colors @ 640 x 480 resolution 132 Column support
Expansion Slots	Three 16-bit ISA expansion slots
I/O Interfaces Included:	1 Parallel port 2 Serial ports 1 Pointing device interface
System Security	Power-on password
Power Supply	145 Watts
Drives:	
Model 1	3.5-inch 1.44 MB Diskette Drive Hard drive bay One half-height drive bay accessible
Model 84	3.5-inch 1.44 MB Diskette Drive 84 MB Hard Drive (17 ms) One half-height drive bay accessible
Model 120	3.5-inch 1.44 MB Diskette Drive 120 MB Hard Drive (17 ms) One half-height drive bay accessible

Table 6-3. System Unit -- Three-Slot, 486-Based Models

Processors:	25 MHz 486SX 33 MHz 486SX 33 MHz 486DX 50 MHz 486SX2 50 MHz 486DX2

	66 MHz 486DX2 66 MHz 486DX2 100 MHz 486DX4
Memory:	4 MB RAM, expandable to 32 MB 4 MB System Board Memory, expandable to 100 MB
Graphics:	1024 x 768 Graphics Controller 256 Colors @ 1024 x 768 resolution, non-interlaced 256 Colors @ 800 x 600 resolution, non-interlaced 256 Colors @ 640 x 480 resolution 132 Column support
Expansion Slots	Three 16 bit ISA expansion slots
I/O Interfaces Included:	1 Parallel port 2 Serial ports 1 Pointing device interface
System Security	Power-on password
Power Supply	145 Watts
Drives:	
Model 1	3 1/2-inch 1.44 MB Diskette Drive Hard drive bay One half-height drive bay accessible
Model 84	3 1/2-inch 1.44 MB Diskette Drive 84 MB Hard Drive (17 ms) One half-height drive bay accessible
Model 120	3 1/2-inch 1.44 MB Diskette Drive 120 MB Hard Drive (17 ms) One half-height drive bay accessible
Model 200	3 1/2-inch 1.44 MB Diskette Drive 200 MB Hard Drive (17 ms) One half-height drive bay accessible
Model 240	3 1/2-inch 1.44 MB Diskette Drive 240 MB Hard Drive (17 ms) One half-height drive bay accessible
Model 340	3 1/2-inch 1.44 MB Diskette Drive 340 MB Hard Drive (17 ms) One half-height drive bay accessible
Model CDS	CD-ROM Sound Board External Speakers Microphone 3 1/2-inch 1.44 MB Diskette Drive 120 MB Hard Drive (17 ms)

Physical Specifications

Table 6-4. Physical Specifications-Two-Slot Models

Dimensions:		
Height	3.4 in	8.64 cm
Width	12.6 in	32.00 cm
Depth	15.1 in	38.35 cm
Weight (approximate)	13.2 lbs	6 kg
Input Requirements:		
Nominal Line Voltage	100 to 120 Vac	220 to 240 Vac
Voltage Operating Range	90 to 132 Vac	180 to 264 Vac
Line Frequency	47 to 63 Hz	
Rated Maximum Current	2A	1A
Environmental Requirements		
Temperature:		
Operating	50oF to 95oF	10oC to 35oC
Nonoperating	-4oF to 140oF	-20oC to 60oC
Relative Humidity (noncondensing):		
Operating	20% to 80%	
Nonoperating	5% to 90% deg max wet bulb	
Shock:		
Operating	5 Gs for an 11-ms half-sine shock pulse	
Nonoperating	25 Gs for an 11-ms half-sine shock pulse	
Vibration:		
Operating	0.25 Gs peak, sinusoidal, 5 to 500 Hz with 0.5 oct/min sweep rate	
Nonoperating	0.5 Gs peak, sinusoidal, 5 to 500 Hz with 0.5 oct/min sweep rate	
Maximum Unpressurized Altitude:		
Operating	5,000 ft	1524 m
Nonoperating	30,000 ft	9144 m
Heat Output	400 BTU/hr maximum	1.68 kg-cal/hr

Table 6-5. Physical Specifications-Three-Slot Models

Dimensions:		
Height	4.0 in	10.16 cm
Width	15.9 in	40.39 cm
Depth	15.1 in	38.48 cm
Weight (approximate)	17.7 lbs	8.03 kg
Input Requirements:		
Nominal Line Voltage	100 to 120 Vac	220 to 240 Vac
Voltage Operating Range	90 to 132 Vac	180 to 264 Vac
Line Frequency	47 to 63 Hz	
Rated Maximum Current	4.0A	2.0A

Environmental Requirements		
Temperature:		
Operating	50oF to 95oF	10oC to 35oC
Nonoperating	-4oF to 140oF	-20oC to 60oC
Relative Humidity (noncondensing):		
Operating	20% to 80%	
Nonoperating	5% to 90%	
Shock:		
Operating	5 Gs for an 11-ms half-sine shock pulse	
Nonoperating	25 Gs for an 11-ms half-sine shock pulse	
Vibration:		
Operating	0.25 Gs peak, sinusoidal, 5 to 500 Hz with 0.5 oct/min sweep rate	
Nonoperating	0.5 Gs peak, sinusoidal, 5 to 500 Hz with 0.5 oct/min sweep rate	
Maximum Unpressurized Altitude:		
Operating	5,000 ft	1524 m
Nonoperating	30,000 ft	9144 m
Heat Output	767 BTU/hr max	3.22 kg-cal/hr

DISKETTE DRIVES

Table 6-6. Diskette Drives

Spare Part Number	147243-001	141367-001
Diskette Size	3.5 Inch	5.25 Inch
Capacity Per Diskette (high/low) (formatted)	1.44 MB/720 KB	1.2 MB/360 KB
Light Indicators		
Read/Write (high and low density)	Green	Green
Drive Height	One-third (1 inch, 2.54 cm)	One-half (1.6 inch, 4.06 cm)
Drive Rotation (rpm)	300	360
Transfer Rate (kbps) (high/low)	500/250	500/300
Bytes per sector	512	512
Sectors per Track (high/low)	18/9	15/9
Tracks per Side		

(high/low)	80/80		80/40
Average Access Time (ms):			
Track-to-Track (high/low)	3/6		3/10
Average (high/low)	94/173		94/145
Settling Time (ms)	15		15
Latency Average (ms)	100		83.3
Cylinders (high/low)	80/80		80/40
Read/Write Heads	2		2

HARD DRIVES

Table 6-7. Hard Drives

Drive Capacity (Formatted)	40 MB	84 MB	120 MB
Light Indicators	Green	Green	Green
Drive Height	One-third (1 in, 2.54 cm)	One-third (1 in, 2.54 cm)	One-third (1 in, 2.54 cm)
Drive Size	3.5 in	3.5 in	3.5 in
Drive Type	18	27	50
Controller	Integrated	Integrated	Integrated
Sector Interleave	1:1	1:1	1:1
Average Access Time	21 ms	17 ms	17 ms
Logical Configuration:			
Cylinders	966	832	760
Heads	5	6	8
Sectors per Track	17	33	39
Bytes per Sector	512	512	512
Drive Capacity Formatted	200 MB	240 MB	340 MB
Drive Height	One-third	One-third	One-third
Size	3.5 in	3.5 in	3.5 in
Drive Type	51	1	63
Light	Green	Green	Green
Controller	IDE	IDE	IDE
Logical Configuration:			
Cylinders	683	720	659
Heads	16	13	16

Sectors per Track	38	51	63
Bytes per Sector	512	512	512
Interleave	1:1	1:1	1:1
Average Access Time (ms)	16	16	12

* Integrated Device Electronics

Table 6-8. Hard Drives

Assembly Number	160689-001	160688-001
Spare Part Number	160702-001	160702-001
Drive Capacity (Formatted)	200 MB	200 MB
Supplier	Conner	Seagate
Drive Height	One-third (1 in, 2.54 cm)	One-third (1 in, 2.54 cm)
Drive Size	3.5 in	3.5 in
Drive Type	65 or 66	51
Controller	IDE	IDE
Sector Interleave	1:1	1:1
Average Access Time	21 ms	17 ms
Logical Configuration:		
Cylinders	682	683
Heads	16	16
Sectors per Track	38	38
Bytes per Sector	512	512
Drive Capacity Formatted	213.23 MB	213.9 MB
Transfer rate:		
Media (MBits/sec)	32.93 MB/s maximum	21.1 MB/s maximum
Interface (MB/sec)	7.5 MB/s	5.0 MB/s
Average Access Time (ms)	13.0	16.0

* Integrated Device Electronics

Table 6-9. Hard Drives

Assembly Number	194346-001	198375-001	164830-001
Spare Part Number	197441-001	171923-001	171923-001

Drive Capacity (Formatted)	270 MB	340 MB	340 MB
Supplier	Quantum	Quantum	Conner
Drive Height	One-third (1 in, 2.54 cm)	One-third (1 in, 2.54 cm)	One-third (1 in, 2.54 cm)
Drive Size	3.5 in	3.5 in	3.5 in
Drive Type	65 or 66	65 or 66	65 or 66
Controller	IDE	IDE	IDE
Sector Interleave	1:1	1:1	1:1
Seek Time (including settling):			
Single Track	4.0	5.0	5.0
Average	12.0	12.0	13.0
Full Stroke	25.0	23.0	22.0
Logical Configuration:			
Cylinders	942	1011	665
Heads	14	15	16
Sectors per Track	40	44	63
Formatted Capacity:			
Physical	270.6	341.6	343.2
Logical	270.1	340.1	342.1
Transfer rate:			
Media (MBits/sec)	32.93 MB/s maximum	21.1 MB/s maximum	32.93
Interface (MB/sec)	7.5 MB/s	5.0 MB/s	7.5

* Integrated Device Electronics

Table 6-10. Hard Drives

Assembly Number	148158-001	199513-001
Spare Part Number	148286-001	148286-001
Drive Capacity (Formatted)	535 MB	535 MB
Supplier	Conner	DEC
Model Number	CP30540	DSP305L
Drive Height	One-third (1 in, 2.54 cm)	One-third (1 in, 2.54 cm)
Drive Size	3.5 in	3.5 in
Disk RPM	5400	5400
Seek Time		

(including settling):			
Single Track	3.3	2.5	
Average	10.0	9.5	
Full Stroke	16.0	20.0	
Logical Configuration:			
Cylinders	532	511	
Heads	64	64	
Sectors per Track	32	32	
Formatted Capacity:			
Physical	545.7	535.8	
Logical	535.8	535.8	
Transfer rate:			
Asynchronous	43.1	44.0	
Synchronous	10.0	10.0	

* Integrated Device Electronics

Table 6-11. Hard Drives

Assembly Number	142003-001	1142188-001	1422153-001
Spare Part Number	142038-001	142038-001	142038-001
Drive Capacity (Formatted)	550 MB	550 MB	550 MB
Supplier	HP	Fujitsu	Micropolis
Model Number	C2244	M2691ES	2105
Drive Height	One-third (1 in, 2.54 cm)	One-third (1 in, 2.54 cm)	One-third (1 in, 2.54 cm)
Drive Size	3.5 in	3.5 in	3.5 in
Disk RPM	5400	5400	5400
Seek Time: (including settling)			
Single Track	2.5	2.5	3.0
Average	10.5	10.0	10.0
Full Stroke	22.0	22.0	25.0
Logical Configuration:			
Cylinders	532	532	532
Heads	64	64	64
Sectors per Track	32	32	32
Formatted Capacity:			
Physical	558.6	558.6	558.6
Logical	557.6	557.6	557.6
Transfer rate:			
Asynchronous	2.5	5.0	5.0
Synchronous	10	10	10

* Integrated Device Electronics

Table 6-12. Hard Drives

Assembly Number	142004-001	142188-001	142153-001
Spare Part Number	142039-001	142039-001	142039-001
Drive Capacity (Formatted)	1.05 GB	1.05 GB	1.05 GB
Supplier	HP	Fujitsu	Micropolis
Model Number	C2247	M2694ES	2112
Drive Height	One-third (1 in, 2.54 cm)	One-third (1 in, 2.54 cm)	One-third (1 in, 2.54 cm)
Drive Size	3.5 in	3.5 in	3.5 in
Seek Time (including settling):			
Single Track	2.5	2.5	3.0
Average	10.5	10.5	10.0
Full Stroke	2.0	2.0	25.0
Logical Configuration:			
Cylinders	1001	1001	1001
Heads	64	64	64
Sectors per Track	32	32	32
Formatted Capacity:			
Physical	1.05	1.05	1.05
Logical	1.05	1.05	1.05
Transfer rate:			
Asynchronous	2.5	5.0	5.0
Synchronous	10	10	10

* Integrated Device Electronics

POWER SUPPLY

Table 6-13. Power Supply-Two-Slot Models

OUTPUT:	
Steady state	73 watts
Surge output power	91 watts
Output channels	4
Power Outputs:	10 amps at +5 volts 1.5 amps at +12 volts 0.3 amps at -5 volts 0.3 amps at -12 volts

Peak	3.0 amps at 30 percent duty cycle (+12V output)	
Powergood Signal:	low until +5V for 100 - 500 ms	
AC Fail Power	low at least 1.0 ms before any output voltage fails below limit. Sink: minimum 5 mA at < 0.4V Source: minimum . 75mA at > 4.0V	
Output Ripple/Noise (peak-to-peak maximum)	4 percent of -5V output channel 2 percent of each remaining outputs	
Hold Up Time	16 ms at 120 Vac input and maximum continuous rated output power	
Input Requirements:		
Nominal Line Voltage	100 to 120 Vac	220 to 240 Vac
Voltage Operating Range	90 to 132 Vac	180 to 264 Vac
Line Frequency	47 to 63 Hz	
Rated Maximum Current	4.0A	2.0A
Input Fuse	3A, high-capacity	
Environmental Requirements		
Temperature:		
Operating	10oC to 35oC	
Nonoperating	-30oC to 60oC	
Humidity (non-condensing):		
Operating	20% to 80%	
Nonoperating	5% to 90%	
Altitude:		
Operating	10,000 feet above sea level	
Nonoperating	30,000 feet above sea level	
Electrostatic Discharge:	8 kV with no abnormal operation and no damage to power supply	
Storage capacitance	150 picofarads	
Discharge resistance	330 ohms	
Vibration:		
Operating	0.25G zero-to-peak, 10 to 500 Hz	
Nonoperating	sinusoidal: 1.0G zero-to-peak, 10 to 500 Hz; random: 0.0082G squared per Hz, 10 to 500 Hz, 2.0G rms nominal	
Shock and Vibrations:		
Shock	5G, 11 ms shock pulse (operating) 40G, 2 ms shock pulse (nonoperating)	
Vibration	0.25G zero to peak, 10-500 Hz (operating) sinusoidal: 1.0G zero to peak, 10 to 500 Hz: random. 0.0082G Squared per Hz, 10-500 Hz, 2.0 Grms nominal (nonoperating)	
Cooling Method	fan internal to power supply	
Safety Standards	UL 1950; IEC 950 or CSA 22.2 #950;TUV/VDE EN 60 950 (VDE0805/11.91); EMKO-TUE (74-SEC) 203/91	

Emissions	3 dB below CISPR Publication 22 Class B; 6 dB below BMPT-AmtsblVfg 243/1991 limits; 6 dB below CFR 47, Part 15 Class B limits.	
Acoustic Noise:	NPEL (BELS)	AVERAGE SPL (dBA)
Idle	5.0	39
File Copy	5.3	43
Heat Output	400 BTU/HR, Calculated Maximum	

Table 6-14. Power Supply-Three-Slot Models

OUTPUT:		
Steady state	145 watts	
Surge output power	145 Watts	
Output channels	4	
Power Outputs:	18 amps at +5 volts 4 amps at +12 volts .3 amps at -5 volts .4 amps at -12 volts	
Peak	4 amps	
Powergood Signal	low until +5V for 100 - 500 ms	
AC Fail	at least 4 ms before +5V falls to -5%	
Power	capacity to drive 10 LS-TTL loads	
Output Ripple/Noise: (peak-to-peak maximum)	2 percent peak-to-peak of nominal output terminal voltage	
Hold Up Time	16 ms at 115 Vac input and maximum continuous rated output power	
Input Requirements:		
Nominal Line Voltage	100 to 120 Vac	220 to 240 Vac
Voltage Operating Range	90 to 132 Vac	180 to 264 Vac
Line Frequency	47 to 63 Hz	
Rated Maximum Current	4.0A	2.0A
Input Fuse	6.3 amp high-capacity, 250V; or 4 amp, high-capacity 250V (See PCB Marking for correct fuse.)	
Environmental Requirements		
Temperature:		
Operating	10oC to 35oC	
Nonoperating	-30oC to 60oC	
Relative Humidity (noncondensing):		
Operating	2% to 80%	
Nonoperating	5% to 95%	

Altitude:		
Operating	10,000 feet above sea level	
Nonoperating	50,000 feet above sea level	
Electrostatic Discharge:	8 kV with no abnormal operation and no damage to power supply	
Storage capacitance	150 picofarads	
Discharge resistance	330 ohms	
Shock and Vibration:		
Shock	10G, 11 ms shock pulse (operating) 40G, 2 ms shock pulse (nonoperating)	
Vibration	0.5G peak-to-peak, 5 to 500 Hz (operating) 1.5G peak-to-peak, 5 to 500 Hz (nonoperating)	
Cooling method	Cooling fan internal to power supply: thermal sensing, variable speed , 7.5V - 13.8V	
Safety Standards	UL 1950; CSA 22.2 #950; TUV/VDE EN 60 950 (VDE 0805/11.91); EMKO-TUE (74-SEC) 203/92	
Acoustic Noise:		
(141023-001)	NPEL (BELS)	AVERAGE SPL (dBA)
Idle	4.7	38
File Copy	5.1	42
Tape Backup	5.6	46
Acoustic Noise:		
(141656-001) or (143347-001)	NPEL (BELS)	AVERAGE SPL (dBA)
Idle	4.5	35
File Copy	4.9	40
Tape Backup	5.6	46
Heat Output	767 BTU/HR, Calculated Maximum	
Emissions	3 dB below CISPR Publication 22 Class B; 6 dB below BMPT-AmtsblVfg 243/1991 limits; 6 dB below CFR 47, Part 15 Class B limits.	

NETFLEX ENET/ISA

Table 6-15. NetFlex ENET/ISA

Physical:	
Board Type	Half-slot
Length	6.7 inches
Height	3.0 inches
Connectors	RJ-45 and AUI
Operating Environment:	
Temperature	0oC to 35oC
Humidity	10 to 90%, noncondensing
Memory	64 Kbytes RAM on board
Electrical:	

Bus	8 or 16 bit ISA bus
Slot	Use a 16-bit slot whenever possible. 16 bit provides faster transfer of data between the computer and the network. 8-bit works at a slower speed.

POWER CONSUMPTION:

Connector	Worst-Case Consumption in mA
RJ-45	0 mA @ +12V When the RJ-45 connector is used, the controller does not consume any power at +12V. It simply passes +12V through to power any external transceiver connected to the AUI cable.
AUI	610 mA @ +5V variable @ +12V

MOUSE

Table 6-16. Mouse

Spare Part Number	143315-001	
Dimensions:		
Height	1.22 in	31 mm
Length	3.94 in	100 mm
Width	2.21 in	56 mm
Weight (without cable)	2.9 oz	85 gm
Base Resolution	400 DPI	
Tracking Speed	10 in/sec (25 cm/sec) maximum	
Mechanical	greater than 300 miles	
Switch	greater than 1 million operations	
Environmental Requirements		
Temperature:		
Operating	0oC to 35oC	
Nonoperating	-20oC to 60oC	
Relative Humidity	10% to 90% non-condensing	
ESD	No soft errors through 6 kV; no hard errors through 8 kV; no damage through 12 kV; specific performance depends on host system.	

KEYBOARD

Table 6-17. Keyboard

Dimensions:		
Height	1.6 in	4.06 cm
Width	19.2 in	48.77 cm
Depth	7.9 in	20.06 cm
Weight	3.9 lbs	1.77 kg

AUDIO SYSTEM

Table 6-18. Audio System

Sampling Rate	5.51 to 48 KHz (adjustable)
Maximum Voltage (RMS):	
Microphone-in	.013 volts max
Line-in	1.4 volts max
Headphone-out	N/A
Line-out	.7 volts max
Impedance (nominal):	
Microphone-in	1-K ohm
Line-in	20-K ohms
Headphone-out	8 ohms (minimum)
Line-out	20-K ohms
Data Types:	
alaw	8/16 bit
ulaw	8/16 bit
mono/stereo	16 bit

CD-ROM DRIVES

Table 6-19. CD-ROM Drives

Spare Part Number	160917-001	142223-001	133881-001
Supplier	LMSI	Panasonic	SONY
Access Time:			
Average (1/3 stroke)	375	325 ms	290
Full stroke	800	650 ms	520
Audio Output Level:			
Line out	1.5V maximum	0.8V	.7V
Headphone	2.0V	0.6V	.55V
Cache/Buffer	32 Kbytes	256 Kbytes	128 Kbytes
Data Transfer Rate:			
Sustained	150 Kbytes/sec	300 or 150 Kbytes/sec	300 or 150 Kbytes/sec
Asynchronous		2.5 Mbytes/sec	2.5 Mbytes/sec

Synchronous		4.0 Mbytes/sec	4.0 Mbytes/sec
Error Rates:			
Soft error	10e9	10e9	10e9
Hard error	10e12	10e12	10e12
Seek error	10e6	10e7	10e7
Start Up Time	< 5 sec	< 7 sec	< 5 sec
Stop Time	< 2 sec	< 2 sec	< 3 sec