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Welcome to the Maintenance & Service Guide (MSG) for the the **Compaq Prosignia 170 Series Computer.**

This is an online guide designed to serve the needs of those whose job it is to repair Compaq products.

Please first read the [Legal Notice](#) which contains copyright and trademark information.

Then read the [How to Use this Guide](#) section, which shows symbol conventions, technician notes, and the serial number location for the unit.



Click here for information on the computer's [Battery pack and other Power Management information](#).

This MSG will be periodically maintained and updated as needed.
To report a technical problem, contact your Regional Support Center or IM Help Center.

For content comments or questions, contact the [Editor](#).

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Maintenance and Service Guide--Compaq Prosignia Notebook 170

Third Edition (May 2000)
Compaq Computer Corporation

How to use this Guide

Preface

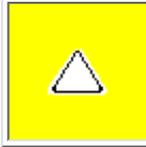
This Maintenance and Service Guide is a troubleshooting guide that can be used for reference when servicing the Compaq Prosignia Series Portable Computers.

Compaq Computer Corporation reserves the right to make changes to the Compaq Prosignia Series Portable 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 should 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, the user should not attempt to make repairs at the component level or to make modifications to any printed circuit board. Improper repairs can create a safety hazard. Any indications of component replacement or printed circuit board modifications may void any warranty.
--	---

Serial Number

When requesting information or ordering spare parts, the computer serial number should be provided to Compaq. The serial number is located on the bottom of the computer.

Locating Additional Information

The following documentation is available to support this product:

- Compaq Prosignia Series Portable Computer documentation set
 - Introducing Windows 98 Guide
 - Introducing Windows 2000 Professional Guide
 - Service Training Guides
 - Compaq Service Advisories and Bulletins
 - Compaq QuickFind
 - Compaq Service Quick Reference Guide
-

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Troubleshooting

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Follow these basic steps when beginning the troubleshooting process:

1. Complete the [Preliminary steps](#).
2. Run the [Power-On Self-Test \(POST\)](#).
3. Run [Computer Setup](#).

If you are unable to run POST or if the problem persists after running POST, perform the recommended actions described in the [Troubleshooting without Diagnostics](#) section.

Follow these guidelines when troubleshooting:

- Complete the recommended actions in the order in which they are given.
- Repeat POST after each recommended action until the problem is resolved and the error message does not return.
- When the problem is resolved, stop performing the troubleshooting steps and do not complete the remaining recommended actions.
- Refer to Chapter 5 for recommended removal and replacement procedures.

NOTE: If the problem is intermittent, check the computer several times to verify that the problem has been solved.

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Illustrated Parts Catalog

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This section helps identify the number associated with each item(s) for the Compaq Prosignia Series Portable Computers. These Numbers are used to order replacement parts.

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Specifications

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This chapter covers the following specifications of Compaq Prosignia Series Portable Computers. Click on a link to go to a particular specification:

[Physical &
Environmental](#)

[Display](#)

[Hard Drives](#)

[CD/DVD Drives](#)

[Diskette Drive](#)

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Specifications

Physical & Environmental

Physical & Environmental		U.S.	Metric
	Dimensions		
Display	Height	12.4 in.	31.4 cm
Hard Drives	Depth	1.1 in.	2.8 cm
CD/DVD Drives	Width	9.8 in.	24.9 cm
Diskette Drive	Weight (minimum weight, actual weight varies with configuration)	5.3 lbs.	2.09 kg
Battery Pack	Battery Nominal operating voltage	14.4V (8-cell), 10.8V (6-cell)	
Modem	Average operating power	15 W	
System Memory	Peak operating power	30 W	
System Interrupts	Temperature	50 to 104°F	10 to 40°C
System DMA	Operating	-4 to 140°F	-20 to 60°C
System I/O	Nonoperating		
Pin Assignments	Relative Humidity (noncondensing)	10 to 90%	
	Operating	5 to 95%	
	Nonoperating		
	Altitude (nonpressurized environment)	0 to 10,000 ft	0 to 3048 m
	Operating	0 to 30,000 ft	0 to 9144 m
	Nonoperating		
	Shock		
	Operating	10 G, 11 ms, half sine	
	Nonoperating	240 G, 2 ms, half sine	

Vibration	0.25 G, 50-500 Hz sine, 1/2
Operating	octave/minute sweep
Nonoperating	1.00 G, 50-500 Hz sine, 1/2
	octave/minute sweep

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Display

Physical & Environmental		14.1-inch XGA, CTFT Display	
		U.S.	Metric
Display	Dimensions		
Hard Drives	Height	11.22 in.	28.5 cm
CD/DVD Drives	Width	8.46 in.	21.5 cm
Diskette Drive	Diagonal	14.1 in.	35.81 cm
Battery Pack	Number of Colors	up to 16.8 million	
Modem	Contrast Ratio	150:1	
System Memory	Brightness	120 nits 125 CD/M2	
System Interrupts	Pixel Resolution		
System DMA	Pitch	1024 × 768	
System I/O	Format	RGB Stripe	
Pin Assignments	Configuration	0.264 × 0.264 mm	
	Backlight	Edge-Lit, bottom	
	Character Display	80 × 25	
	Total Power Consumption	4.2 W / Inverter (max)	
		13.3-inch XGA, CTFT Display	
		U.S.	Metric
	Dimensions		
	Height	10.6 in.	26.9 cm
	Width	8 in.	20.3 cm
	Diagonal	13.3 in.	33.8 cm
	Number of Colors	up to 16.8 million	
	Contrast Ratio	150:1	
	Brightness	120 nits 125 CD/M2	
	Pixel Resolution		
	Pitch	1024 × 768	
	Format	RGB Stripe	
	Configuration	0.264 × 0.264 mm	
	Backlight	Edge-Lit, bottom	
	Character Display	80 × 25	
	Total Power Consumption	4.2 W / Inverter (max)	

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Hard Drives

Physical & Environmental	User capacity per drive	6 GB 6.4 GB	12 GB 12 GB	18 GB 12 GB
Display	Drive height	0.5 in/12.5 mm	0.5 in/12.5 mm	.5 in./12.5 mm
Hard Drives	Drive width	2.75 in/7 mm	2.75 in/77 mm	2.75 in./70 mm
CD/DVD Drives	Interface type	ATA-4	ATA-4	ATA-4
Diskette Drive	Seek times (typical, including settling)	3 ms	2.5 ms	2 ms
Battery Pack	Single track	13 ms	12 ms	12 ms
Modem	Average	25 ms	23 ms	23 ms
System Memory	Full stroke			
System Interrupts	Physical configuration			
System DMA	Cylinders	9279	23,392	35,152
System I/O	Heads	6	16	16
Pin Assignments	Sectors per track	63	63	63
	Bytes per sector	512	512	512
	Logical configuration			
	Cylinders	12,416	13424	16383
	Heads	15	16	16
	Sectors per track	63	63	63
	Transfer rate			
	Media	86.4 to 153.3 MB/s	85.5 to 161.6 MB/s	85.5 to 161.1 MB/s
	Interface	UDMA 33.3 MB/s	UDMA 33.3 MB/s	UDMA 33.3 MB/s

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CD & DVD Drives

Physical & Environmental
Display
Hard Drives
CD/DVD Drives
Diskette Drive
Battery Pack
Modem
System Memory
System Interrupts
System DMA
System I/O
Pin Assignments

24X CD-ROM Drive

Applicable Disc	CD-ROM	Applicable Disc	CD-ROM (Mode 1, 2 and 3), CD-XA ready (Mode 2, Form 1 and 2), CD-I ready (Mode 2, Form 1 and 2), CD-R (read only), CD Plus, Photo CD (Single and Multi-session), CD-Extra, Video CD, CD-WO (fixed packets only), CD-Bridge
Center Hole Diameter			.59 in./15 mm
Disc Diameter			12 cm, 8 cm
Disc Thickness			1.2 mm
Track Pitch			1.6 μ m
Access Time			
Random			< 150 ms
Full Stroke			< 300 ms
Audio Output Level			
Line Out			0.7 V rms
Cache Buffer			128 KB
Data Transfer Rate			
Sustained, 16X			2400 KB/s (150 KB/s at 1X)
Variable			1500 to 3600 KB/sec
Normal PIO Mode 4 (single burst)			16.6 MB/sec
Startup time			< 8.0 seconds
Stop time			< 4.0 seconds

8X DVD-ROM Drive

Applicable Disc

DVD-5, DVD-9, DVD-10
CD-ROM mode 1, mode 2
CD-Digital Audio
CD-XA mode (Form 1, Form 2)
CD-I Ready
CD-Bridge
CD-R
Photo CD (single/multisession)

Center Hole Diameter .59 in./15 mm
Disc Diameter 12 cm, 8 cm
Disc Thickness 1.2 mm
Track Pitch .74 m

Access Time
Random
Full Stroke < 150 ms
< 225 ms

Audio Output Level
Line Out 0.7 V rms
Headphone none
Cache Buffer 128 KB

Data Transfer Rate
Sustained, 1x CD rate 150 KB/sec
Sustained, 16x CD rate 2400 KB/sec
Sustained, 1x DVD rate 1380 KB/sec
Sustained, 4x DVD rate 5520 KB/sec
Normal IO Mode 4 (single burst) 16.6 MB/sec

Startup Time < 15 seconds
Stop time < 6 seconds

4X DVD-ROM Drive

Applicable Disc DVD-ROM, CD-ROM, CD-XA,
CD-I, Photo CD, Multi-session,
Audio, CD-R, CD-RW
Center Hole Diameter .59 in./39 cm
Disc Diameter 12 cm/ 8 cm
Disc Thickness 1.2 mm
Track Pitch .74 μ m

Access Time	
Random	< 150 ms
Full Stroke	< 225 ms
Audio Output Level	
Line Out	0.7 V rms
Cache Buffer	128 KB
Data Transfer Rate	
Sustained, 16x CD rate	2400 KB/s (150 KB/sec at 1X)
Sustained, 4x DVD	5520 KB/sec
Normal PIO Mode 4 (single burst)	16.6 MB/sec
Startup Time	< 15 seconds
Stop time	< 6 seconds

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Diskette Drive

Physical & Environmental
Display
Hard Drives
CD/DVD Drives
Diskette Drive
Battery Pack
Modem
System Memory
System Interrupts
System DMA
System I/O
Pin Assignments

Diskette Size	3.5"
Light	none
Height	.5" / 1.27 cm
Bytes per Sector	512
Sectors per Track	
High density	18 (1.44 MB) 15 (1.2 MB)
Low density	9
Tracks per side	
High Density	80 (1.44 MB) 80 (1.2 MB)
Low Density	80
Access Times	
Track-to-Track (high/low)	3 ms/6 ms 94 ms/174ms
Average (ms)	15 ms
Settling Time (ms)	100
Latency Average	
Number of Read/Write Heads	2

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Li Ion Battery Pack

	U.S.	Metric
Physical & Environmental		
	Dimensions	
Display	Height	0.57 in. 1.44 cm
Hard Drives	Length	4.55 in. 11.50 cm
CD/DVD Drives	Width	3.93 in. 9.90 cm
Diskette Drive	Weight	0.85 lb 0.39 kg
Battery Pack	Energy	
Modem	Voltage	14.4 V
System Memory	Amp-hour capacity	2.8 Ah
System Interrupts	Watt-hour capacity	40.0 Wh
System DMA	Environmental Requirements	50°F to 104°F
System I/O	Operating Temperatures	10°C to 40°C
Pin Assignments	Charging Temperatures	10°C to 40°C
	Recommended Storage Temperatures	
		32°F to 140°F
	No longer than 1 month	0°C to 60°C
	No longer than 3 months	0°C to 45°C
	No longer than 1 year	0°C to 20°C
		32°F to 68°F

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Specifications

Modem

Physical & Environmental	Compliance	ITU v.90~6 standard Full ITU-T V.34 compliance Full compliance with: V.21, V.22, V.22bis, V.23, V.32, V.32bis, Bell 103, Bell 212A
Display		
Hard Drives		
CD/DVD Drives	Data Compression	V.42bis/MNP 5
Diskette Drive	Fax Modulation	V. 17 V. 21 (Group III Compatible) V.29 V.27Ter
Battery Pack	Command Set	Hayes AT Class 1 Fax
Modem	Cable	6 Ft. RJ-11 telephone cable
System Memory		
System Interrupts		
System DMA		
System I/O		
Pin Assignments		

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Specifications

System Memory Map

Physical & Environmental	Size	Memory Address	System Function
Display	640 K	00000000 - 0009FFFF	Base Memory
Hard Drives	128 K	000A0000 - 000BFFFF	Video Memory
CD/DVD Drives	48 K	000C0000 - 000CBFFF	Video BIOS
Diskette Drive	160 K	000C8000 - 000E7FFF	Unused
Battery Pack	64 K	000E8000 - 000FFFFF	System BIOS
Modem	15 M	00100000 - 00FFFFFF	Extended Memory
System Memory	58 M	01000000 - 047FFFFF	Super Extended Memory
System Interrupts	58 M	04800000 - 07FFFFFF	Unused
System DMA	2 M	08000000 - 080FFFFF	Video Memory (Direct Access)
System I/O	4 G	08200000 - FFFFFFF	Unused
Pin Assignments	64 K	FFFF0000 - FFFFFFF	System BIOS

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System Interrupts

Physical & Environmental
Display
Hard Drives
CD/DVD Drives
Diskette Drive
Battery Pack
Modem
System Memory
System Interrupts
System DMA
System I/O
Pin Assignments

Hardware IRQ	System Function
IRQ 0	System timer
IRQ1	Keyboard controller
IRQ2	Cascaded
IRQ3	COM2
IRQ4	COM1
IRQ5	Audio (default)*
IRQ6	Diskette drive
IRQ7	Parallel Printer Port (LPT1)
IRQ8	Real Time Clock (RTC)
IRQ9	Infrared
IRQ10	System use
IRQ11	System use
IRQ12	Internal Point Stick or External Mouse
IRQ13	Coprocessor (Not available to any peripheral)
IRQ14	IDE Interface (Hard Disk and CD-ROM Drive)
IRQ15	Fixed Disk Drives on the Expansion Base or Convenience Base

Notes:

PC Cards may assert IRQ3, IRQ4, IRQ5, IRQ7, IRQ9, IRQ10, IRQ11, or IRQ15. Either the infrared or the serial port may assert IRQ3 or IRQ4.

*Default configuration; audio possible configurations are: IRQ5, IRQ7, IRQ9, IRQ10 or none.

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System DMA

Physical & Environmental
Display
Hard Drives
CD/DVD Drives
Diskette Drive
Battery Pack
Modem
System Memory
System Interrupts
System DMA
System I/O
Pin Assignments

Hardware DMA

0

1

2

3

4

5

6

7

System Function

Available for audio

Entertainment Audio (Default;
Alternate = DMA0, DMA3, None)

Diskette Drive

ECP Parallel Port LPT1 (Default;
Alternate = DMA 0, none)

DMA Controller Cascading (Not
available)

Available for PC Card

Not Assigned

Not Assigned

Note: PC Card controller can use DMA 1, 2, or 5.

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System I/O Address

Physical & Environmental	I/O Address (Hex)	System Function (Shipping Configuration)
Display	000 - 00F	DMA Controller no. 1
Hard Drives	010 - 01F	Unused
CD/DVD Drives	020 - 021	Interrupt Controller no. 1
Diskette Drive	022 - 024	Chipset Configuration registers
Battery Pack	025 - 03F	Unused
Modem	02E - 02F	87334 "Super IO" configuration for CPU
System Memory	040 - 043	Counter/Timer Registers
System Interrupts	044 - 05F	Unused
System DMA	060	Keyboard Controller
System I/O	061	Port B
Pin Assignments	062 - 063	Unused
	064	Keyboard Controller
	065 - 06F	Unused
	070 - 071	NMI Enable/Real Time Clock
	072 - 07F	Unused
	080 - 08F	DMA Page Registers
	090 - 091	Unused
	092	Port A
	093 - 09F	Unused
	0A0 - 0A1	Interrupt Controller no. 2
	0A2 - 0BF	Unused
	0C0 - 0DF	DMA Controller no. 2
	0E0 - 0EF	Unused
	0F0 - 0F1	Coprocessor Busy Clear/Reset
	0F2 - 0FF	Unused
	100 - 16F	Unused
	170 - 177	Secondary Fixed Disk Controller
	178 - 1EF	Unused
	1F0 - 1F7	Primary Fixed Disk Controller
	1F8 - 200	Unused
	201	Joystick (Decoded in ESS1688)
	202 - 21F	Unused
	220 - 22F	Entertainment Audio
	230 - 26D	Unused
	26E - 26	National 87334 "Super IO" Controller in ArmadaStation/Armada MiniStation

278 - 27F	Unused
280 - 2AB	Unused
2A0 - 2A7	ArmadaStation/Armada MiniStation PC Card DMA Selection, Hard Drive Reset, IDE Select, MultiBay Device Identification
2A8 - 2E7	Unused
2E8 - 2EF	Reserved Serial Port
2F0 - 2F7	Unused
2F8 - 2FF	Infrared port
300 - 31F	Network Interface in ArmadaStation/Armada MiniStation (Default; Alternate is 320, 340, or 360h)
320 - 36F	Unused
370 - 377	Secondary Floppy Controller (In ArmadaStation/Armada MiniStation when a floppy is installed in the CPU)
378 - 37F	Parallel Port (LPT1/Default)
380 - 387	Unused
388 - 38B	FM Synthesizer - OPL3 / MIDI
38C - 3AF	Unused
3B0 - 3BB	VGA
3BC - 3BF	Reserved (Parallel Port/No EPP Support)
3C0 - 3DF	VGA
3E0 - 3E1	PC Card Controller in CPU
3E2 - 3E3	PC Card Controller in ArmadaStation/Armada MiniStation
3E8 - 3EF	Internal Modem
3F0 - 3F7	"A" Diskette Controller
3F8 - 3FF	Serial Port (COM1/Default)
CF8 - CFB	PCI Configuration Index Register (PCIDIV0-1)
CFC - CFF	PCI Configuration Data Register (PCIDIV0-1)

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Specifications - Connector Pin Assignments

This appendix provides connector pin assignment tables for Compaq Compaq Prosignia Portable Computers. For more information on connectors, refer to the section on [Rear Connectors](#).

Physical & Environmental
Display
Hard Drives
CD/DVD Drives
Diskette Drive
Battery Pack
Modem
System Memory
System Interrupts
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System I/O
Pin Assignments

Click on a link:

[Parallel Connector](#)

[Serial Connector](#)

[Keyboard/Mouse](#)

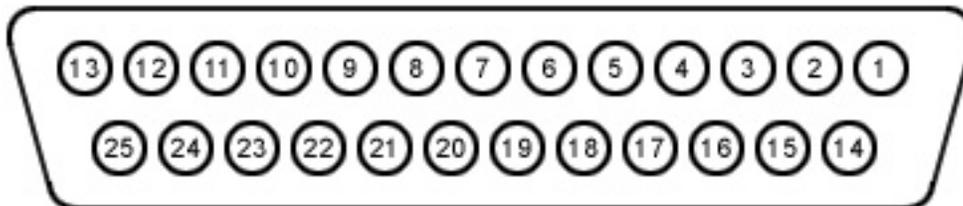
[External VGA Monitor](#)

[Universal Serial Bus](#)

[Modem](#)

NOTE: The signals in all tables of this appendix are considered active high unless otherwise indicated by an asterisk (*).

Parallel Connector



Pin	Signal	Pin	Signal
1	Strobe*	10	Acknowledge*
2	Data Bit 0	11	Busy
3	Data Bit 1	12	Paper Out
4	Data Bit 2	13	Select
5	Data Bit 3	14	Auto Linefeed*

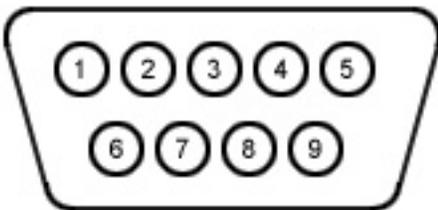
6	Data Bit 4	15	Error*
7	Data Bit 5	16	Initialize Printer*
8	Data Bit 6	17	Select In*
9	Data Bit 7	18-25	Signal Ground

* = Active low

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Serial Connector

Connector



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

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Keyboard/Mouse

Connector

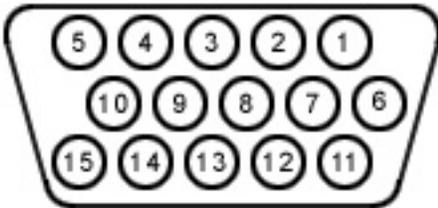
Pin	Signal
-----	--------



- 1 Data 1
- 2 Data 2
- 3 Ground
- 4 +5 V
- 5 Clock 1
- 6 Clock 2

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Connector

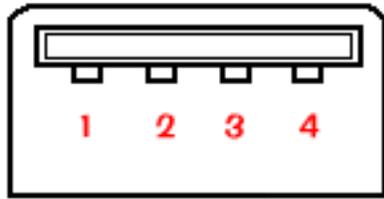


External VGA Monitor

- | Pin | Signal |
|-----|-----------------|
| 1 | Red Analog |
| 2 | Green Analog |
| 3 | Blue Analog |
| 4 | Not connected |
| 5 | Ground |
| 6 | Ground Analog |
| 7 | Ground Analog |
| 8 | Ground Analog |
| 9 | Not connected |
| 10 | Ground |
| 11 | Monitor Detect |
| 12 | DDC2B Data |
| 13 | Horizontal Sync |
| 14 | Vertical Sync |
| 15 | DDC2B Clock |

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Connector

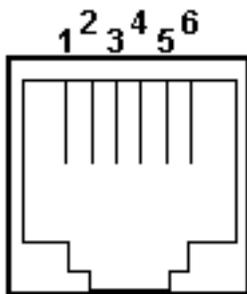


Universal Serial Bus

Pin	Signal
1	+5V
2	Data -
3	Data +
4	Ground

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Connector



Modem

Pin	Signal
1	Unused
2	Unused
3	Tip
4	Ring
5	Unused
6	Unused

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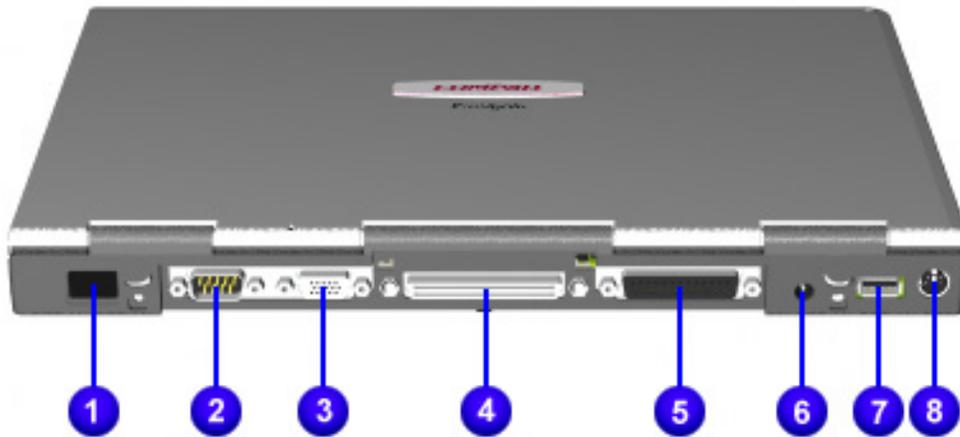
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Product Description

Rear Connectors



1. Infrared port
2. Serial connector
3. External monitor connector
4. Docking connector
5. Parallel connector
6. Power connector
7. USB port
8. Keyboard/mouse connector

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> Features & Controls
> Front Bezel Buttons: Pointing Stick Model
> Front Bezel Buttons: TouchPad Model
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Product Description

Models & Features

>Models	Display	13.3 or 14.1 inch XGA CTFT color display true color (24-bit) support
>Features & Controls	Processors	Intel Pentium III processors: <ul style="list-style-type: none">● 450 MHz/64MB● 500 MHz/64MB● 600 MHz/64MB with SpeedStep● 650 MHz/64MB with SpeedStep● 700 MHz/64MB with SpeedStep
>Front Bezel Buttons: Pointing Stick Model	Hard Drives (removable)	<ul style="list-style-type: none">● 6 GB● 12 GB● 18 GB
>Front Bezel Buttons: TouchPad Model	Cache	256KB On-Die
>Front Bezel Lights	Additional Storage Devices	<ul style="list-style-type: none">● 24X CD-ROM drive● 8X DVD-ROM drive● 4X DVD-ROM Drive● 120 MB SuperDisk LS-120 drive
>Left Side Components	Memory	<ul style="list-style-type: none">● 32 MB● 64 MB● 128 MB● 256 MB
>Right side Components	Audio	<ul style="list-style-type: none">● Compaq Premier • Sound● 16-bit blaster Pro-compatible stereo audio● Integrated stereo speakers and microphone● Ported Speaker enclosures
>Bottom of Unit		
>Rear Connectors		
>Power Management		

Graphics	<ul style="list-style-type: none"> ● Software MPEG1 support ● DVD movie playback software (optional) ● Internal 4X DVD-ROM drive, 8X DVD-ROM drive, or 24X Max2 CD-ROM Drive ● RCA TV-out port (NSTC/PAL) 2X AGP graphics with 8 MB SDRAM ● ATI Mobility P graphics controller with 8MB SDRAM ● AGP 2X graphics with 66MHz graphics bus ● 1024 x 768 res. with up to 16 M color
Communications	<p>Integrated Mini-PCI 56K V.901 modem or Mini PCI 56K V.901 modem and Ethernet NIC combination</p>
Additional Available Features	<ul style="list-style-type: none"> ● Port Replicator ● Convenience Base with Networking ● 6 or 8 cell Lithium ion battery pack ● or a MultiBay battery pack

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1. Hard Drive
2. Stereo speaker/headphone jack
3. Microphone jack
4. System-on light
5. Battery charge light

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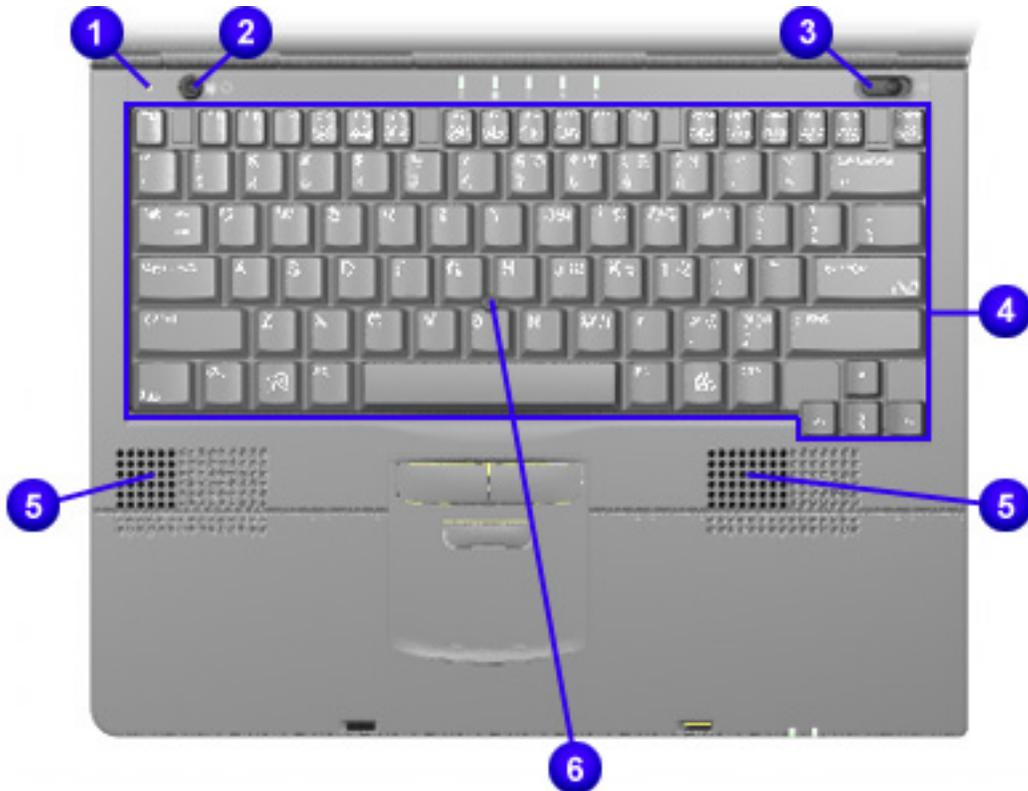
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Product Description

Front Bezel Buttons: Pointing Stick Model



1. Display switch
2. Suspend button
3. Power switch
4. Keyboard
5. Speakers
6. Pointing Stick

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[> Features & Controls](#)

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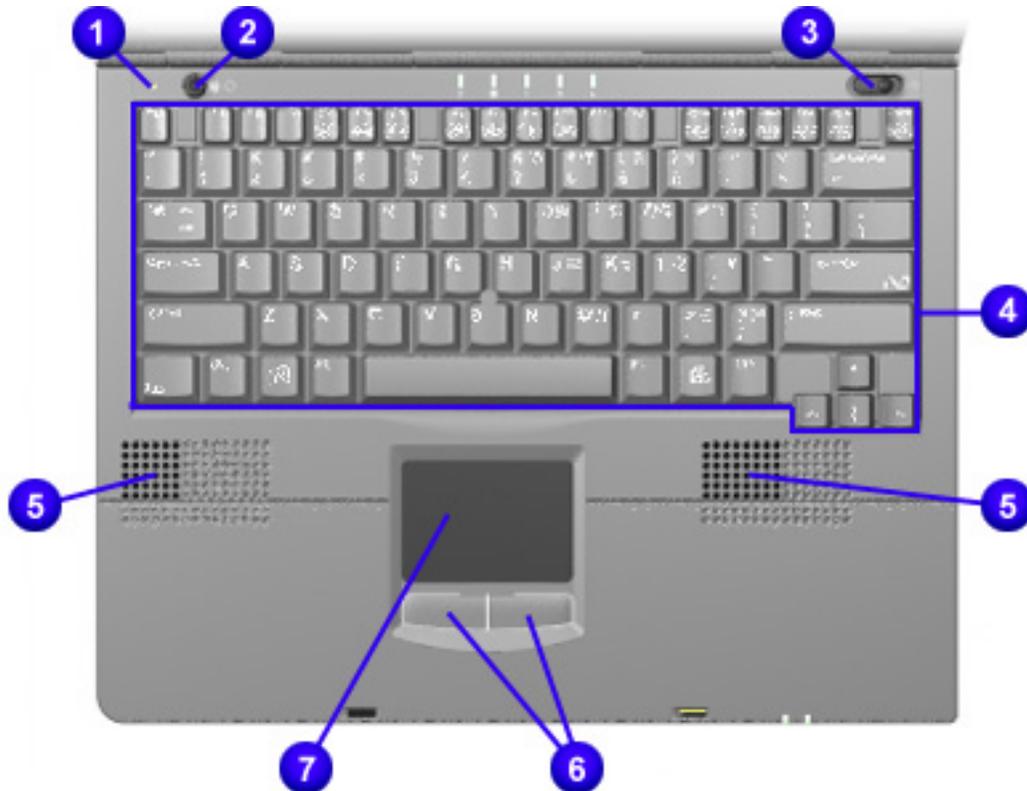
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Product Description

Front Bezel Buttons: TouchPad Model



1. Display switch
2. Suspend button
3. Power switch
4. Keyboard
5. Speakers
6. TouchPad Buttons
7. TouchPad

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[> Front Bezel Buttons: Pointing Stick Model](#)

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Front Bezel Lights



1. Hard drive light
2. MultiBay drive light
3. Num Lock Light
4. Cap Lock Light
5. Scroll Lock Light

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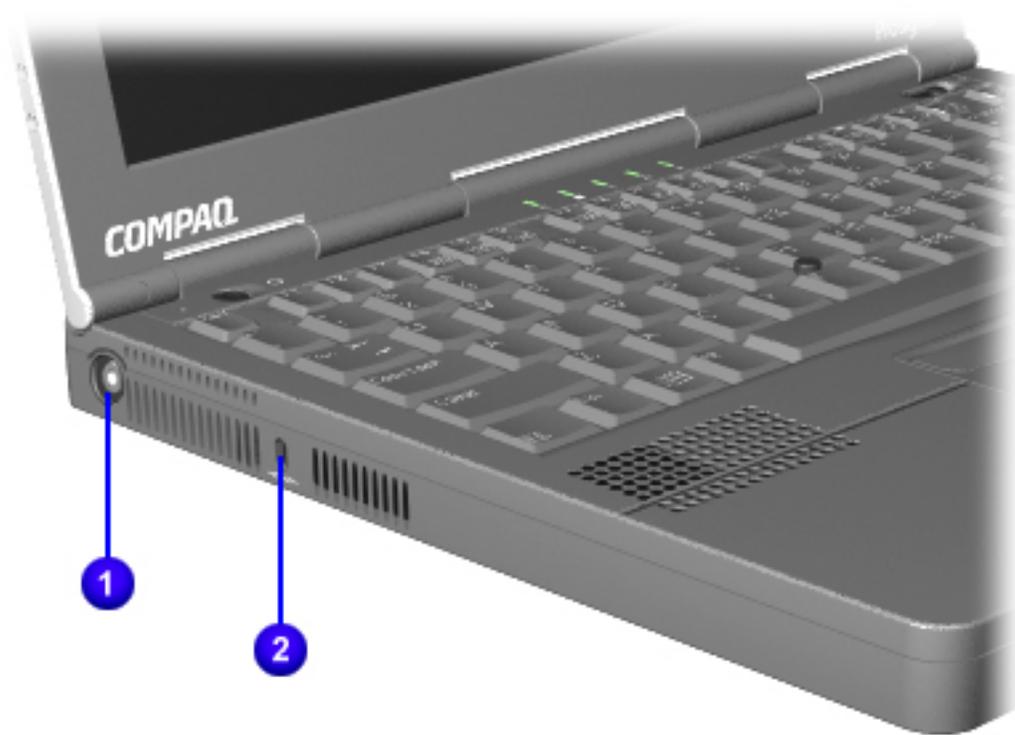
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- Composite
1. TV connector
 2. Cable lock connector

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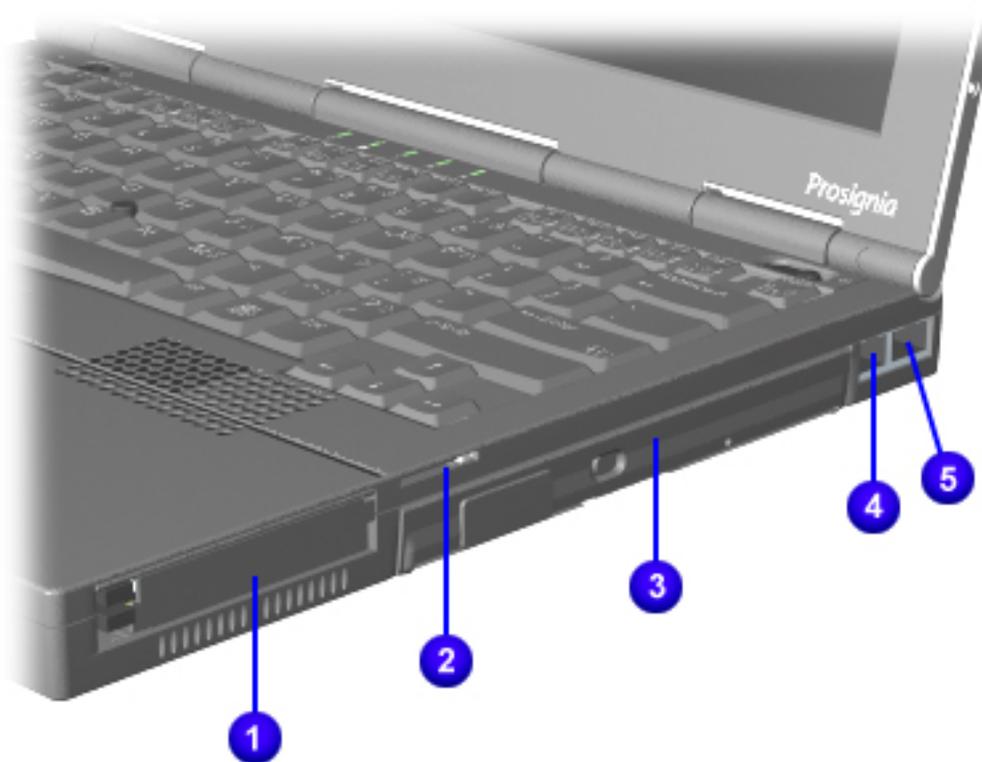
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Product Description

Right Side Components



1. PC Card slot
2. Audio bass port
3. MultiBay
4. RJ-11 jack (phone line connector)
5. RJ-45 jack (NIC connector)

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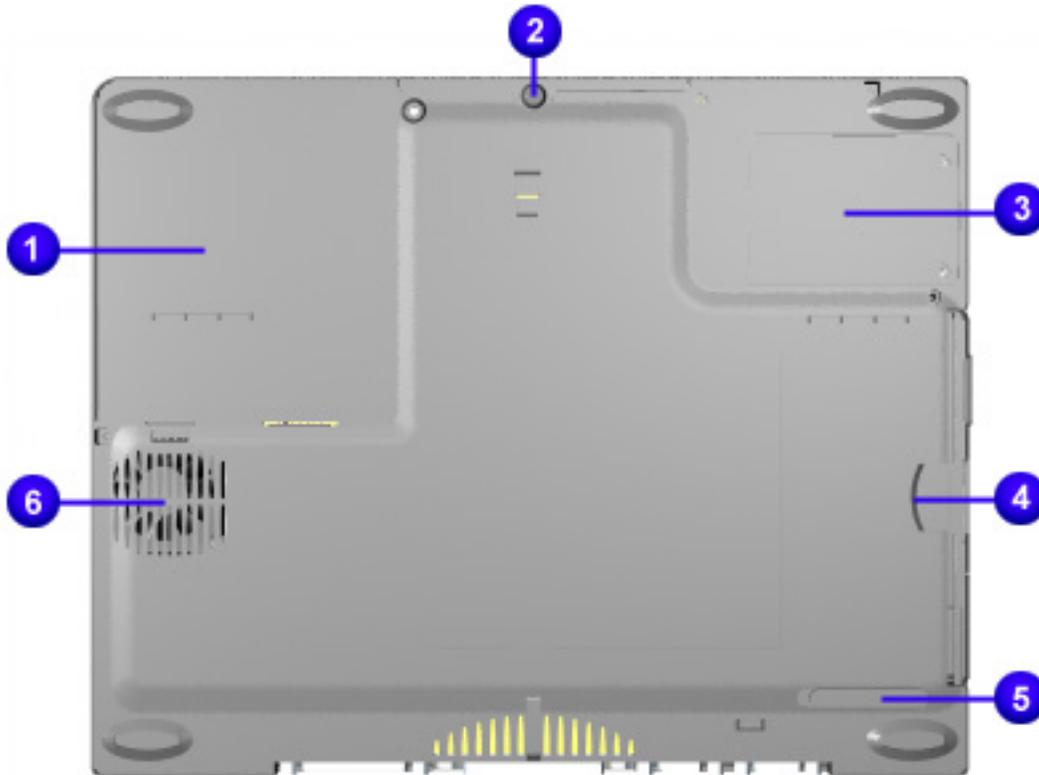
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1. Battery bay
2. Hard drive screw
3. Modem slot cover
4. MultiBay notch
5. MultiBay release latch
6. Fan

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When an electrical outlet is not available or is not convenient, the power management of your battery plays a crucial role in the use of your personal computer. This section explains how to care for your battery to maximize its life and effectiveness.

Battery Packs

Your computer accommodates up to two rechargeable battery packs at one time. Battery packs are supported in the following areas of your computer:

- Primary Battery Bay (Primary Battery Location)
- MultiBay (Third Battery Location)

With the computer turned off, each battery pack will recharge in less than three hours. With the computer turned on, each battery pack will recharge in less than five hours.

If two fully charged battery packs are installed, one can be removed while the computer is on without affecting system operation.



CAUTION: Before removing a battery pack, ensure that the computer is connected to a fully charged battery pack or AC power source.



WARNING: Your computer contains a lithium-ion battery pack. There is a risk of fire and burns if the battery pack is not handled properly. Do not disassemble, crush, puncture the short external contacts, or dispose of in fire or water. Do not expose to temperatures higher than 60°C. Replace only with the Compaq spare designated for this product.

Also, Batteries/battery packs and accumulators should not be disposed of with general household waste. In order to forward them to recycling or proper disposal, please use the public collection system or return them to Compaq, your authorized Compaq Partners, or other agents.

Using a New Battery Pack

Charge the battery pack in the computer's primary battery bay or MultiBay while connected to an external power source or while docked in the optional convenience base.

NOTE: A new battery pack should be fully charged before it is used for the first time. The battery pack will work without being fully charged, but the battery gauge will not show an accurate charge until the battery pack receives its first full charge.

Charging Battery Packs

Battery packs charge in the following sequence:

- The primary battery (in the primary battery bay)
- A second (optional) battery in the MultiBay

Battery packs are discharged in the reverse order, with the battery pack in the MultiBay depleted first.

To charge battery packs, follow these steps:

1. With battery packs in the Primary Battery Bay, or MultiBay, connect the power cord to the computer and plug it into an electrical outlet.
2. Turn on the computer if you want to use it while the battery packs are charging.

NOTE: The battery charge light is the right light on the front edge of the computer. It turns on (solid) when a battery pack is charging. It turns off when fully charged. It blinks in a low-battery condition.

When the battery charge light turns off, the battery packs are fully charged.

Power Management [continued](#).

-or-

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Power Management **Continued**

Storing a Battery Pack



CAUTION: to prevent damage to a battery pack, do not expose it to high temperatures for extended periods of time.

If the computer will be unused and unplugged from an external power source for more than two weeks, remove and store the battery packs.

Maximizing Battery Pack Life

Battery pack operating time varies depending on the system components, options, and applications used. Battery operating time can increase by as much as 50% by controlling the energy used by the computer and the energy stored in the battery pack.

To maximize battery pack life, use the following guidelines:

- Initiate Suspend or Hibernation or turn the computer off when you are not using it.
- Reduce the display brightness and select a shorter screen save timeout.
- Keep a battery pack in the computer when you are using the computer with external power.
- Disconnect external equipment that does not have its own power source (external equipment connected to the computer drains the battery pack).
- Exit modem programs when you are not using them.
- Remove a PC Card when you are not using it.
- When storing the computer for more than two weeks, remove battery packs and store them separately to reduce the discharge rate and increase battery life.
- Store the battery pack in a cool, dry place when it is not in use. High temperatures cause a battery pack to lose its charge more quickly and reduce battery pack life.
- Format diskettes while using external power when possible (formatting diskettes increases the drain on a battery pack).

System Beeps

Beeps with a Blinking Battery Charge Light

When the computer beeps while the battery charge light is blinking, the computer has entered a low battery condition.



CAUTION: When you are alerted of a low battery condition, very little battery charge remains. Save your information and take immediate action to resolve the low battery condition.

Selecting a Power Source

NOTE: If your external monitor is not Energy Star  compliant, enabling monitor energy-saving features may cause video distortion when the screen save timeout occurs.

Resolving Low-Battery Conditions

If external power is available, do one of the following:

- Connect the computer to an electrical outlet with the AC adapter.
- Dock the computer in a docking base that is connected to external power.
- Plug an optional automobile power adapter/charger into the power connector on the computer and into a vehicle

cigarette lighter receptacle.

Plug an optional aircraft power adapter into the power connector on the computer and into the in-seat power supply available on some commercial aircraft.

An optional aircraft power adapter can be used to run the computer, but cannot be used to charge a battery pack.

If a charged battery pack is available, press the suspend button to initiate Suspend (standby), then remove the discharged battery pack and insert a charged battery pack.

If neither external power nor a charged battery pack is available, press Fn + the suspend button to initiate Hibernation.

or

Save your work, then shut down the computer.

Restoring from Hibernation after Resolving a Critical Low-Battery Condition

Slide the power switch. If the computer does not have enough power to restore your work:

1. Press Ctrl+Alt+Del to abort the restoration.
2. Insert a charged battery pack or connect the computer to external power.
3. Slide the power switch.

Charging a Battery Pack

A battery pack can be recharged wherever external power is available.

NOTE: Charging may be delayed if a battery pack is new, has not been used for 2 weeks or more, or is much warmer or cooler than a comfortable room temperature.

To increase the accuracy of all battery charge displays:

- Allow a battery pack to discharge to the low-battery level through normal use before charging it.
- When you charge a battery pack, charge it fully.
- Before charging a new battery pack or a battery pack that has not been used for two weeks or more, calibrate the new battery pack or check the calibration on the unused battery pack.

Monitoring the Charge in a Battery Pack

Using the Battery Status Tab

To access the Battery Status tab, press the Fn+F8 hotkeys or select Start-> Setting -> Control Panel power icon (named Power, Power Management, or Compaq Power, depending on your operating system), then select the Battery Status tab.

To display the location of a listed battery, select the corresponding battery icon. A lightening bolt icon beside a battery icon indicates that the battery pack in that location is charging.

Using the Battery Meter or Power Meter Icon

The battery meter icon, called the power meter icon in Windows 98, changes shape to indicate whether the computer is running on external power or on a full, half-full, or nearly discharged battery pack.

To display the battery meter icon in the taskbar, select Start-> Settings-> Control Panel-> Power Management-> Power Meter tab, then select the Show Power Meter on the Taskbar check box.

Using the Power or Power Meter Tab

To access the tab select Start-> Settings -> Control Panel-> Power Management-> Power Meter tab.

- To view the combined percent of total power remaining in all battery packs in the system, clear the Show the Status of All Batteries check box.
- To view the percent of total power remaining in each battery pack in the system, select the Show the Status of All Batteries check box.

Calibrating a Battery Pack

Calibration increases the accuracy of all battery charge displays. The calibration utility supports all battery packs that can be used in the computer. Use the calibration utility both to check the calibration of a battery pack and to calibrate or recalibrate a battery pack. A battery pack cannot be calibrated unless the utility reports that it needs calibration.

The following is a list of important information concerning the calibration of a battery pack:

- A new battery pack can be charged, then used to run the computer before the battery pack is calibrated. However, the amount of charge in the new battery pack cannot be reported accurately until the new battery pack has been calibrated.
- Check the calibration of a used battery pack periodically and whenever battery charge displays seem inaccurate.
- While a battery pack is being calibrated, it is fully charged, then fully discharged.
- A battery calibration icon in the taskbar displays an Up arrow during the charge phase and a Down arrow during the discharge phase.
- A calibration cannot resume if the calibration is stopped or if the computer is shut down during a calibration. An interrupted calibration must be restarted.
- After calibration, a battery pack must be charged before it can be used to run the computer.
- The calibration utility calibrates one battery pack at a time and can run in the background as you use the computer or overnight.

Running a Calibration



CAUTION: To prevent loss of work, ensure that the computer remains connected to AC power throughout a calibration.

To run a calibration of your battery pack, complete the following steps:

- If you are checking the calibration of a battery pack, insert the correct battery pack into the Primary Battery Bay or MultiBay.
- Then connect the computer to external power with the AC adapter or dock the computer in a docking base that is connected to external power.
- Access the Battery Calibration tab by selecting Start-> Settings-> Control Panel-> Power Management-> Battery Calibration tab.
- View the calibration reports in the Status column. The battery numbers in the Battery column correspond to the following locations:

Battery Number	Battery Pack Location
1	Primary Bay
2	MultiBay

- In the Status column, select any location number with the "Needs calibration" indication beside it.
- Select the "Start Calibration" button.

Stopping a Calibration

Select the Stop Calibration button on the Battery Calibration tab. The Stop Calibration button is visible only during a calibration.

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Removal & Replacement

Serial Number Location

This section explains the removal and replacement procedures for the computer.

> Preliminaries

> Serial Number Location

> Battery Pack

> Hard Drive

> MultiBay Drive

> Modem, NIC, or Combo cards

> RTC battery

> Keyboard

> Memory Expansion

> Switch Cover

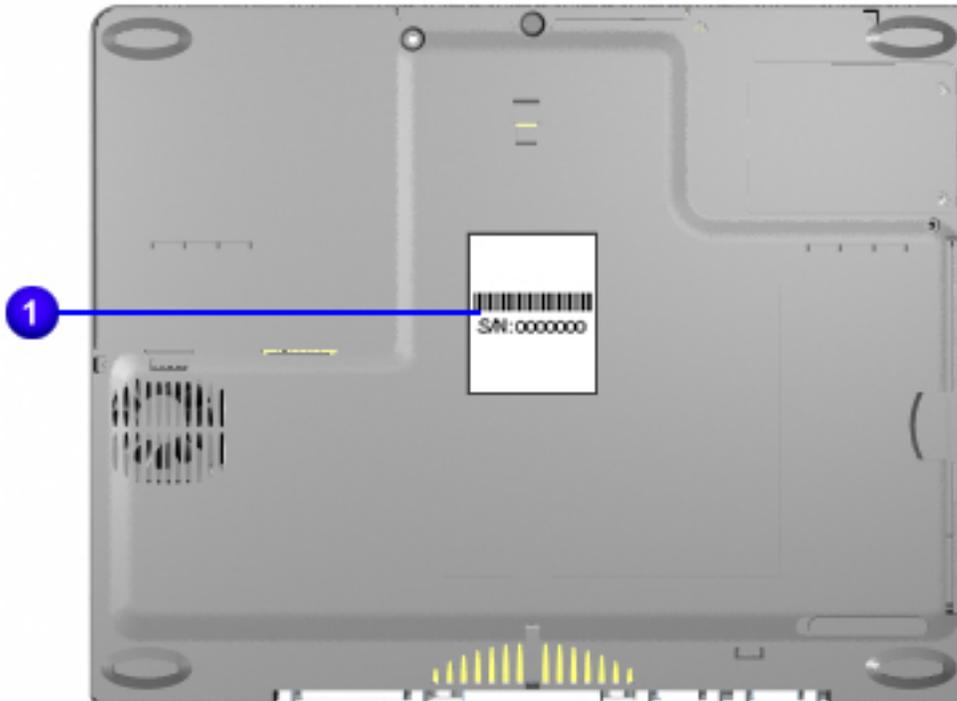
> Display Panel Assembly

> CPU cover

> Voltage Converter Board

> System Board

> RJ Jacks & Infrared Board



Report the computer serial number **1** to Compaq when requesting information or ordering spare parts.

Click here for information on the computer's [Battery pack and other Power Management information.](#)

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Removal & Replacement

Preliminaries

The following links are preliminary instructions which should be read before continuing with the Removal & Replacement section of this Guide. Please read the following pages before servicing your computer:

[Electrostatic Discharge](#)

[Service Considerations](#)

[Cables & Connectors](#)

[Preparing Computer for Disassembly](#)

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Electrostatic Discharge

A sudden discharge of static electricity from a finger or other conductor can destroy static-sensitive devices or microcircuitry. Often the spark is neither felt nor heard, but damage occurs. An electronic device exposed to electrostatic discharge (ESD) may not be affected at all and will work perfectly throughout a normal cycle. Although, it may function normally for a while, then degrade in the internal layers, reducing its life expectancy.

Networks built into many integrated circuits provide some protection, but in many cases, the discharge contains enough power to alter device parameters or melt silicon junctions.

Generating Static

The table shows how different activities generate static electricity and at different electrostatic voltage levels.

Typical Electrostatic Voltages			
Event	Relative Humidity		
	10%	40%	55%
Walking across carpet	35,000 V	15,000 V	7,500 V
Walking across vinyl floor	12,000 V	5,000 V	3,000 V
Motions of bench worker	6,000 V	800 V	400 V
Removing DIPS from plastic tubes	2,000 V	700 V	400 V
Removing DIPS from vinyl trays	11,500 V	4,000 V	2,000 V
Removing DIPS from Styrofoam	14,500 V	5,000 V	3,500 V
Removing bubble pack from PCBs	26,000 V	20,000 V	7,000 V
Packing PCBs in foam-lined box	21,000 V	11,000 V	5,000 V

NOTE: 700 volts can degrade a product.

Continue Preliminary pages:

[Service Considerations](#)

[Cables & Connectors](#)

[Preparing Computer for Disassembly](#)

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Removal & Replacement

Service Considerations

Listed below are some of the considerations that you should keep in mind during the disassembly and assembly of the computer:

Tool Requirements

To service the computer, you need the following:

- Magnetic Torx T-8 screwdriver (for all screws unless otherwise specified)
- 9/32-inch socket for bushing guides

Screws

The screws used in the computer are not interchangeable. If an incorrect screw is used during the reassembly process, it can damage the unit. Compaq strongly recommends that all screws removed during disassembly be kept with the part that was removed, then returned to their proper locations.

Plastic Parts

Using excessive force during disassembly and reassembly can damage plastic parts. Use care when handling the plastic parts. Apply pressure only at the points designated in these maintenance instructions.

IMPORTANT:

As each subassembly is removed from the computer, it should be placed away from the work area to prevent damage.

Continue Preliminary pages:

[Cables & Connectors](#)

[Preparing Computer for Disassembly](#)

Removal & Replacement

Cables & Connectors

Most cables used throughout the unit are ribbon cables. Cables must be handled 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 the connector whenever possible. In all cases, avoid bending, twisting, or tearing the cables and ensure that the cables are routed in such a way that they cannot be caught or snagged by parts being removed or replaced.

Cables

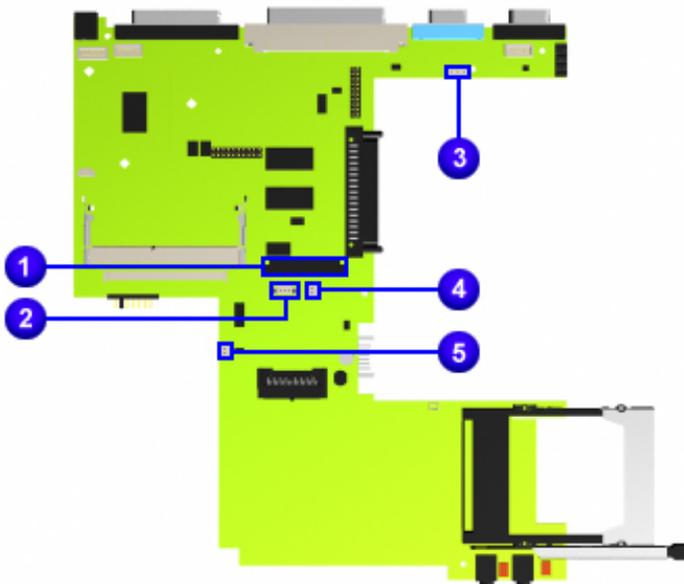
Use the following precautions when handling cables to avoid damage to the cable or computer:

- Always handle cables by their connectors.
- Avoid bending, twisting, or pulling on the cables.
- Apply minimum required force when seating or unseating the cables from their connectors.
- Place the cables in such a manner that they cannot be caught or snagged by parts being removed or replaced.
- Handle flex cables with extreme care; they can tear easily.



CAUTION: When servicing these computers, ensure that cables are placed in their proper location during the reassembly process. Improper cable placement can cause severe damage to the unit.

Cable Connector Positions



- 1 Keyboard ZIF connector
- 2 TouchPad/pointstick module connector
- 3 LED panel connector
- 4 Right Speaker cable connector
- 5 Left Speaker cable connector

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Removal & Replacement

Preparing the Computer for Disassembly

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

- Disconnect AC power and any external devices.
- Remove the battery pack.
- Remove any PC Cards.

Preventing Damage to Removable Drives

Removable drives are fragile components that must be handled with care. To prevent damage to the computer or a removable drive, or loss of information, observe these precautions:

- Before removing or inserting a hard drive, shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, then shut it down.
- Before removing a diskette drive, CD-ROM drive, SuperDisk LS-120 drive, or a DVD-ROM drive, ensure that a diskette or disc is not in the drive. Ensure that the drive tray is closed. Before handling a drive, ensure that you are discharged of static electricity. While handling a drive, avoid touching the connector.
- Handle drives on surfaces that have at least one inch of shock-proof foam.
- Avoid dropping drives from any height onto any surface.
- Do not use excessive force when inserting a drive into a drive bay.
- Avoid exposing a hard drive to products that have magnetic fields such as monitors or speakers.
- Avoid exposing a drive to temperature extremes or to liquids.
- If a drive must be mailed, ship it in a suitable form of protective packaging. Shipping the drive in standard packaging may not cushion it from destructive shock, vibration, temperature, or humidity. Place a mailing label with the wording "Fragile: Handle With Care" on the mailer.
- After the hard drive has been removed from the computer, avoid turning the hard drive and tray upside down. The drive is not secured to the tray and can fall out.
- Do not place labels on the ventilation area on the hard drive.
- Heed the labels on the hard drive.

IMPORTANT:

The battery pack should be removed before performing any internal maintenance on the computer.



WARNING: Metal objects can damage the battery pack as well as the battery contacts in the battery compartment. To prevent damage, do not allow metal objects to touch the battery contacts. Place only the battery pack for the Compaq Prosignia Series Portable Computers into the battery compartment. Do not force the battery pack into the bay if insertion does not occur easily.



CAUTION: Do not crush, puncture, or incinerate the battery pack. Do not open a battery pack, as this damages the pack, makes it unusable, and exposes potentially harmful battery components. There are no field-serviceable parts located inside the battery pack.

NOTE:

The Compaq Prosignia Series Portable Computers have several screws of various sizes which are not interchangeable. Care must be taken during reassembly to ensure that the correct screws are used in their correct location. During removal please keep respective screws with their associated subassembly.

Go to [Removal & Replacement Procedures](#).

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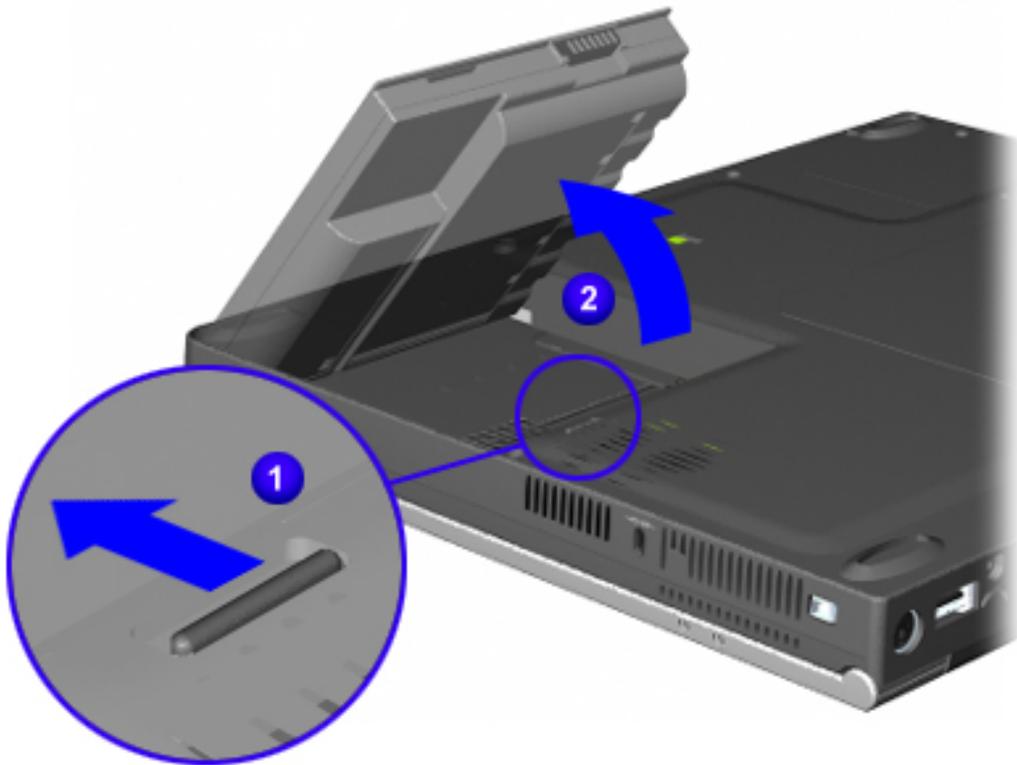
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Removal & Replacement

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> RJ Jacks & Infrared Board



There are six steps in this sequence.

To remove the battery pack, complete the following steps:

- 1 Prepare the [computer for disassembly](#).
- 2 Turn off the computer and close it.
- 3 Tilt the computer at an angle so the bottom of the computer is accessible.
- 4 Slide the battery release latch **1** toward the front of the computer.
- 5 Pull the battery pack out of the battery bay **2**.

END OF SEQUENCE

To replace the battery pack,

reverse the
previous
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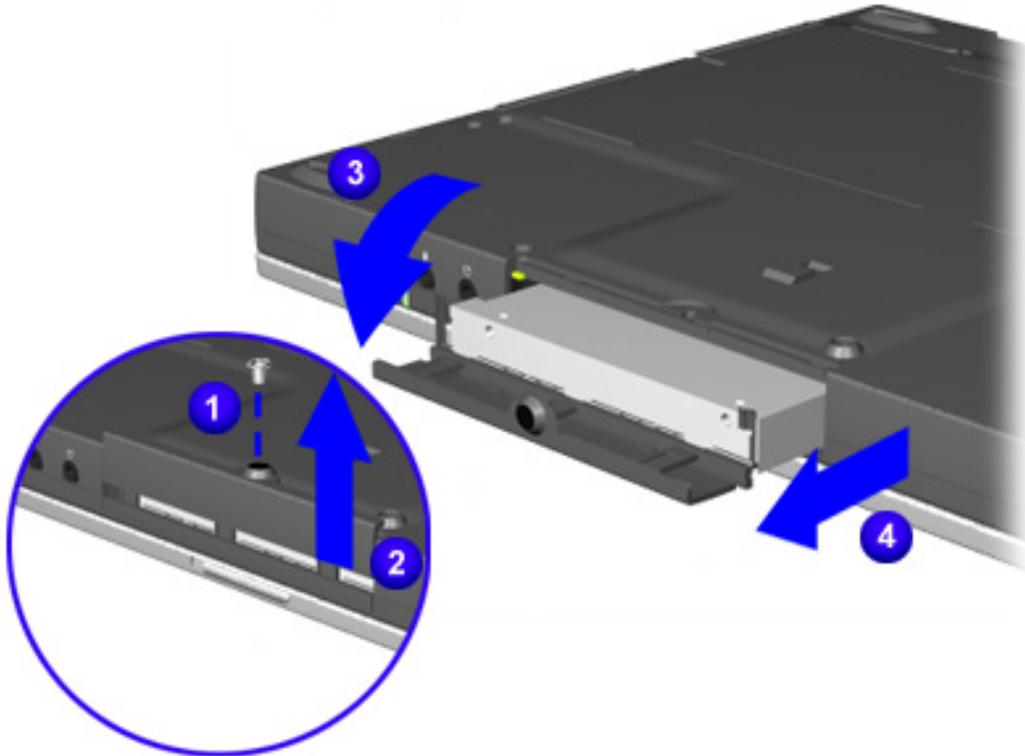
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Removing the Hard Drive

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To remove the hard drive, complete the following steps:

- 1 Prepare the [computer for disassembly](#).
- 2 Close the computer so the bottom of the computer is accessible.
- 3 Remove the screw **1** that secures the hard drive's latch.
- 4 Lift the hard drive's door up **2** to create a handle.
- 5 Rotate the door down **3** and pull the drive out of the drive bay **4**.

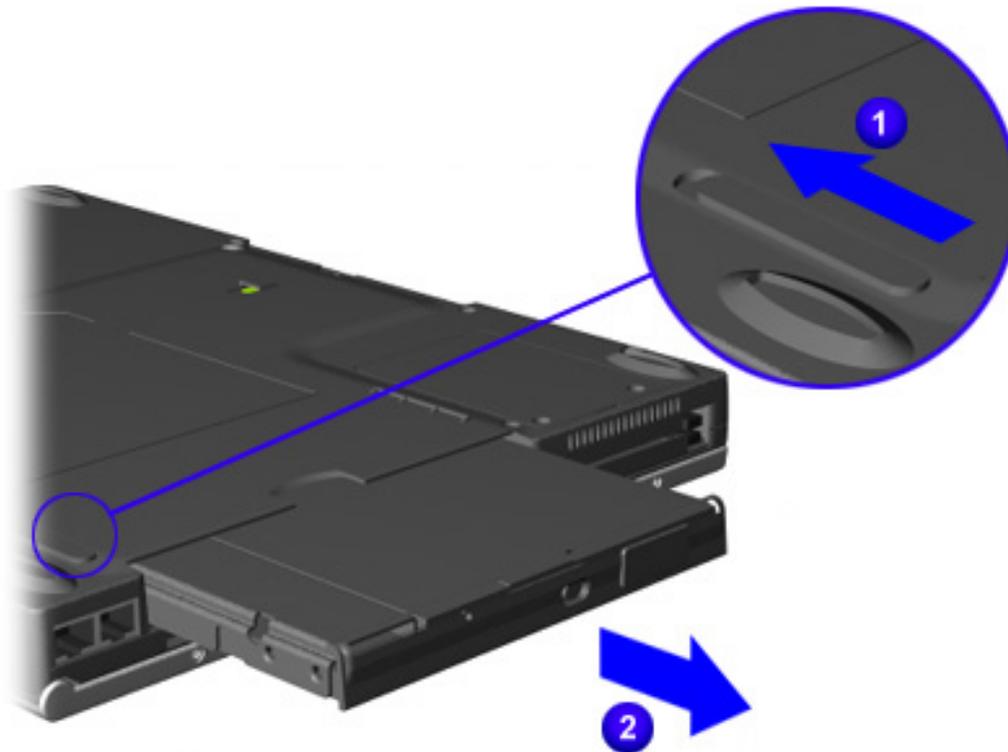
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To remove the CD, DVD, or diskette drive, complete the following steps:

- 1 Prepare the [computer for disassembly](#).
- 2 Remove the media (diskette, CD, DVD) from the drive. Be sure the drive tray is closed.
- 3 Close the computer so the bottom is accessible.
- 4 Slide the MultiBay release latch **1** forward.
- 5 Pull the device out of the MultiBay **2**.

NOTE:

If you are not inserting another device into the MultiBay, insert the MultiBay weight saver.

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SEQUENCE**

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Removal & Replacement

Modem, NIC, or Combo Card

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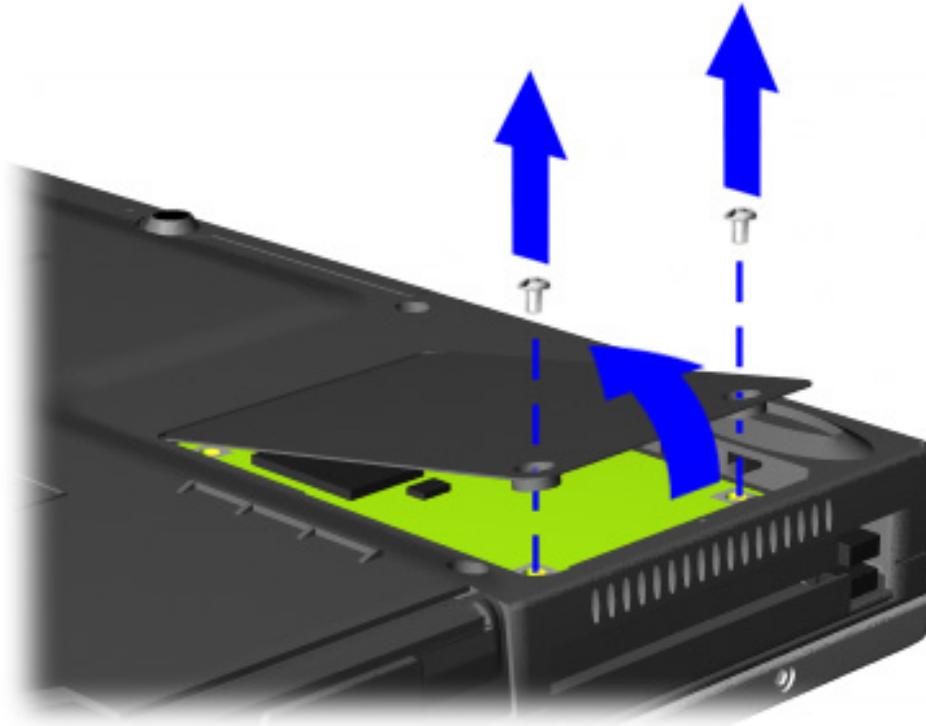
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There are seven steps in this procedure.

To remove the modem, NIC, or combo card, complete the following steps:

- 1 Prepare the [computer for disassembly](#).
- 2 Close the computer so the bottom can be accessed and position it so the rear panel is facing forward.
- 3 Remove the two screws that secure the modem/combo card cover to the base assembly.
- 4 Swing the right side of the cover up and to the left.

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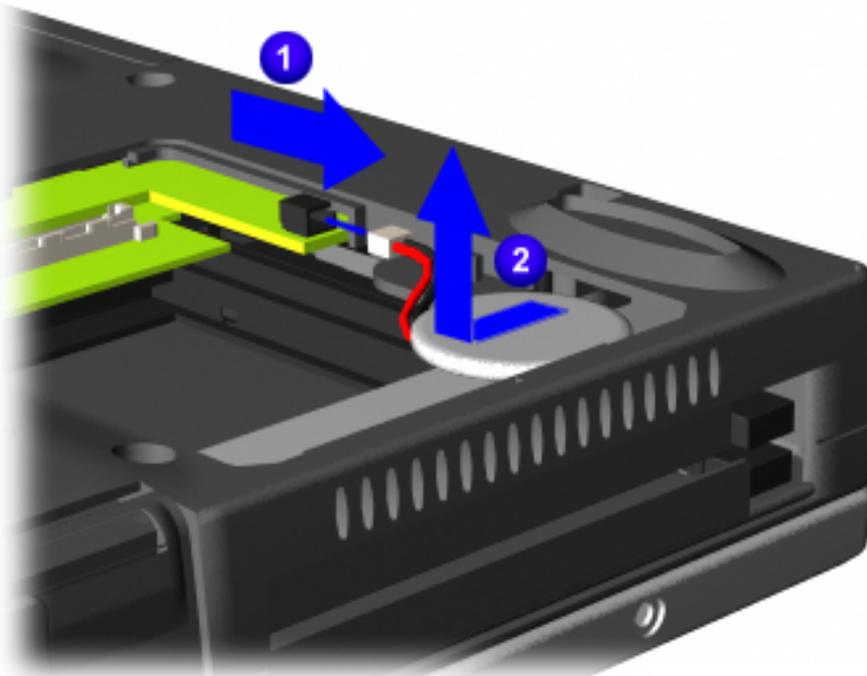
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Removal & Replacement RTC Battery



To remove the RTC battery, complete the following steps:

- 1 [Prepare the computer for disassembly.](#)
- 2 Remove the [modem or combo card.](#)
- 3 Disconnect the RTC battery cable from the system board **1**.
- 4 Remove the battery from the base assembly by sliding it out of its slot **2** and out of the computer.

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To replace the RTC battery, reverse the previous procedures.

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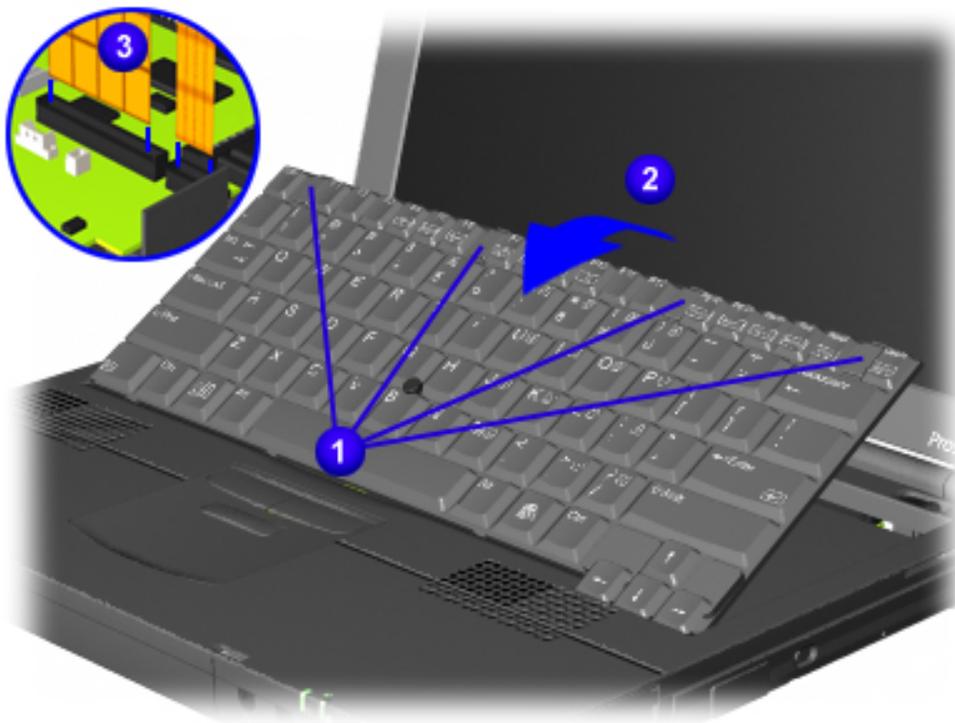
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To remove the keyboard, complete the following steps:

- 1 [Prepare the computer for disassembly.](#)
- 2 Open the computer.
- 3 Slide the four tabs located along the top of the keyboard toward the front of the computer **1**.

- 4 **CAUTION:** There are cables (two for pointstick models or one for TouchPad models) underneath the keyboard that connect it to the system board. If you lift it too quickly, you may damage the cables.

Swing the top of the keyboard toward the front of the computer

2.

5 Disconnect the keyboard cable from the connector on the system board .

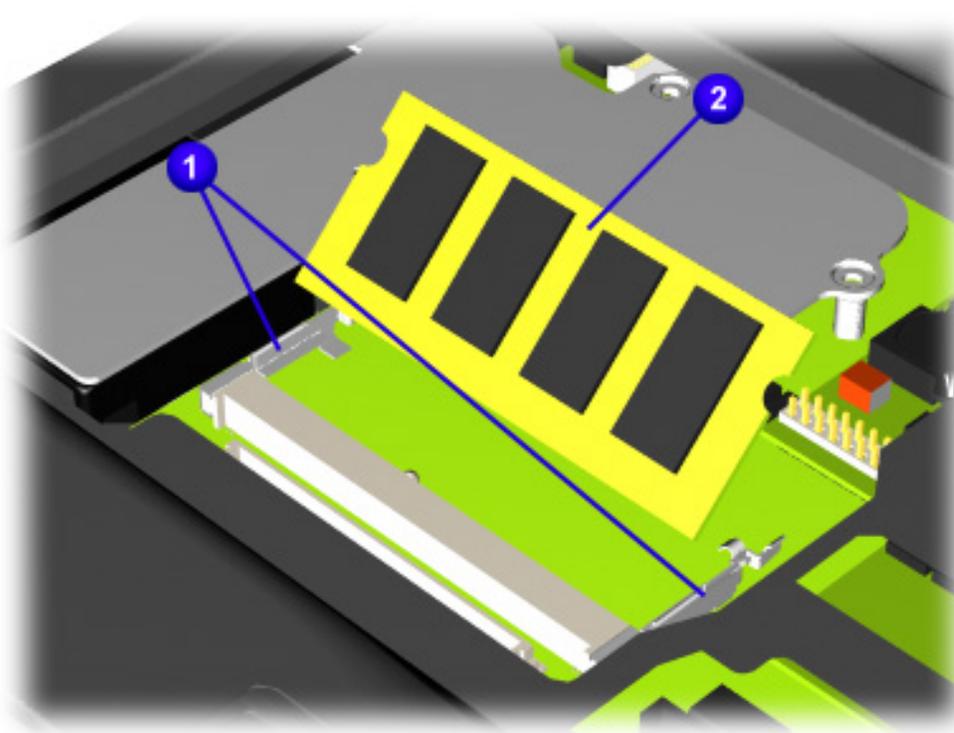
Disconnect the pointing device cable from the system board (pointstick models only).

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Removal & Replacement

Memory Expansion Module



To remove the memory module, complete the following steps:

- 1 Prepare the [computer for disassembly](#).
- 2 Remove the [Keyboard](#).
- 3 Pull away the plastic retention clips on each side of the memory expansion board **1**. The memory expansion board should automatically tilt upwards.
- 4 Lift the edge of the memory expansion board and slide it out of the memory expansion slot at a 45-degree angle **2**.
- 5 Place the removed memory expansion board in an electrostatic-safe container.

END OF SEQUENCE

To replace the memory module, reverse the previous procedures.

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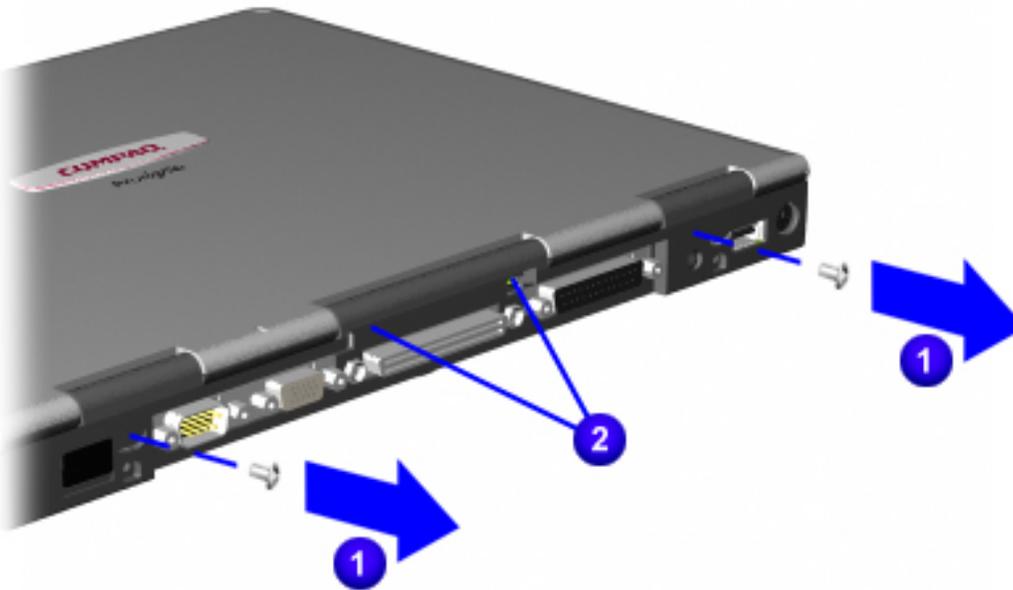
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There are seven steps to this procedure.

To remove the Switch Cover complete the following steps:

- 1 Prepare the [computer for disassembly](#).
- 2 Remove the [Keyboard](#).
- 3 Position the computer so the rear panel faces forward.
- 4 Remove the two top screws [1](#) from the rear panel of the computer that secure the switch cover to the base assembly.

5 Carefully lift up the center piece  of the switch cover to help loosen it from the rear of the computer.

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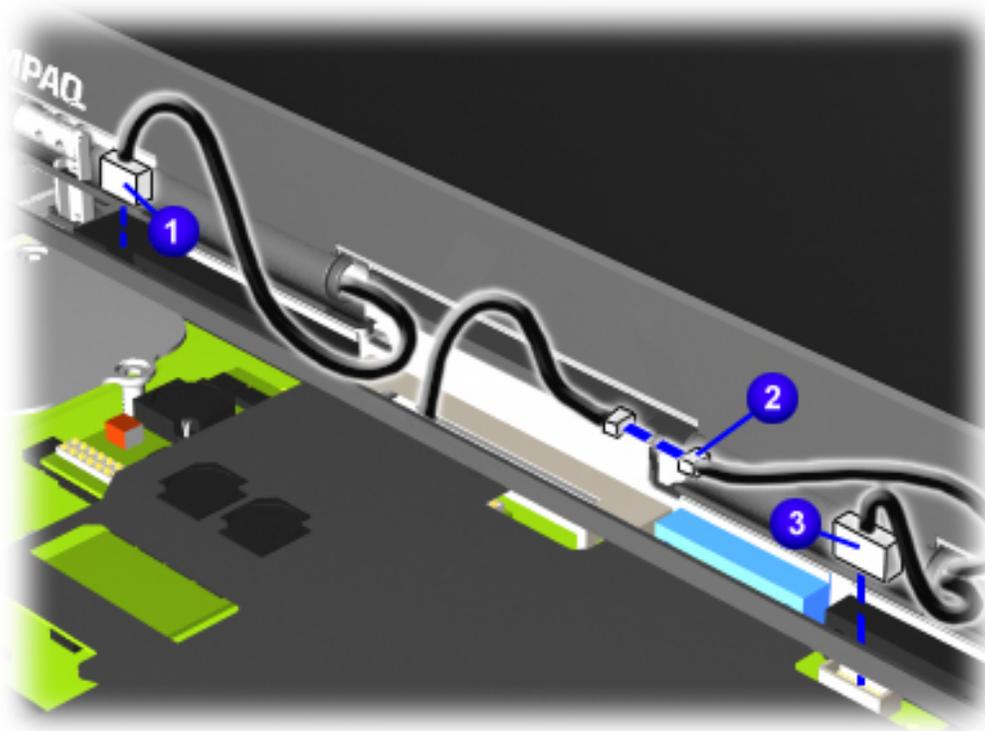
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There are nine steps in this procedure.

To remove the display panel assembly, complete the following steps:

- 1 Prepare the [computer for disassembly](#).
- 2 Remove the [Keyboard](#).
- 3 Remove the [Switch Cover](#).
- 4 Disconnect the left Display cable [1](#).
- 5 Disconnect the Microphone cable [2](#).
- 6 Disconnect the right Display cable [3](#).

NOTE:

To prevent the computer from tipping over during removal of the display assembly, a MultiBay device can be inserted into the computer MultiBay.

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Removal & Replacement

CPU Cover

There are fourteen steps in this procedure.

To remove the CPU cover complete the following steps:

- 1 Prepare the [computer for disassembly](#).
- 2 Remove the [Keyboard](#).
- 3 Remove the [Switch Cover](#).
- 4 Remove the [Display Panel Assembly](#).

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Removal & Replacement

Voltage Converter Board

There are six steps in this procedure.

To remove the battery charger board, complete the following steps:

- 1 Prepare the [computer for disassembly](#).
- 2 Remove the [Keyboard](#).
- 3 Remove the [Switch Cover](#).
- 4 Remove the [Display Panel Assembly](#).
- 5 Remove the [CPU cover](#).

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Removal & Replacement

System Board

There are sixteen steps in this procedure.

To remove the system board, complete the following steps:

- 1 Prepare the [computer for disassembly](#).
- 2 Remove the [Hard Drive](#).
- 3 Remove the [MultiBay Drive](#).
- 4 Remove the [Modem/combo card](#).
- 5 Remove the [RTC battery](#).
- 6 Remove the [Keyboard](#).
- 7 Remove the [Switch Cover](#).
- 8 Remove the [Display Panel Assembly](#).
- 9 Remove the [CPU cover](#).

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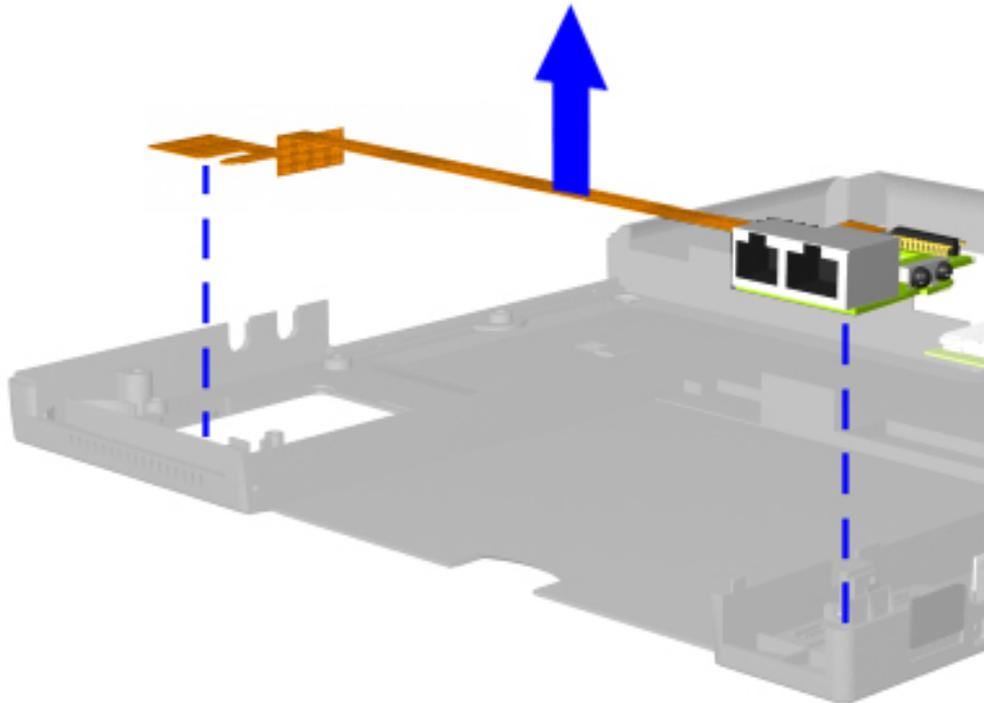
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Removal & Replacement

RJ Jacks & Infrared Board



To remove the RJ Jacks & Infrared board, complete the following steps:

- 1 Prepare the [computer for disassembly](#).
- 2 Remove the [System Board](#).
- 3 lift up on the orange fpc cable (attached with an adhesive) while lifting the RJ Jacks & Infrared Board out of the computer's base and remove it from the computer.

END OF SEQUENCE

To replace the RJ Jacks board, reverse the previous procedures.

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CAUTION:

When replacing the RJ Jacks & Infrared board, ensure that the fpc cable is firmly pressed to the computer's plastics. There is a possibility that one of the PMCIA cage screws can damage the cable.



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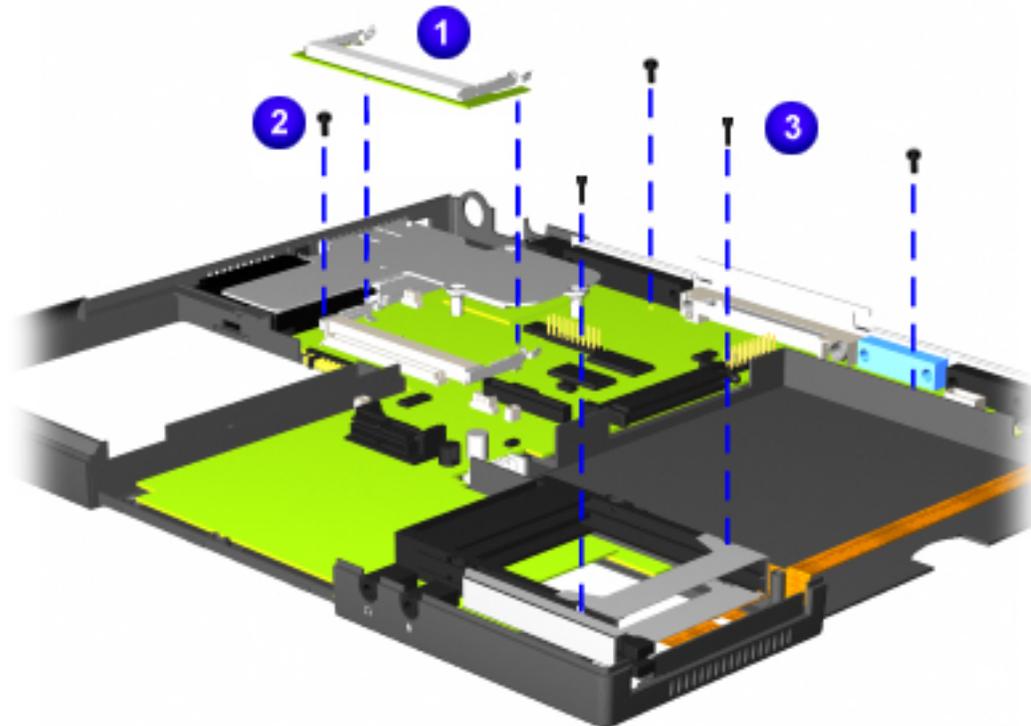
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System Board



- 10 Turn the computer top side up with the rear panel facing forward.
- 11 Remove the Memory Bracket connector from the system board **1**.
- 12 Remove the screw that is underneath the Memory Bracket **2**.
- 13 Remove four remaining screws (including two screws on the PCMCIA cage) that secure the system board to its base **3**.

NOTE:

The two screws on the PCMCIA cage are phillip's head screws

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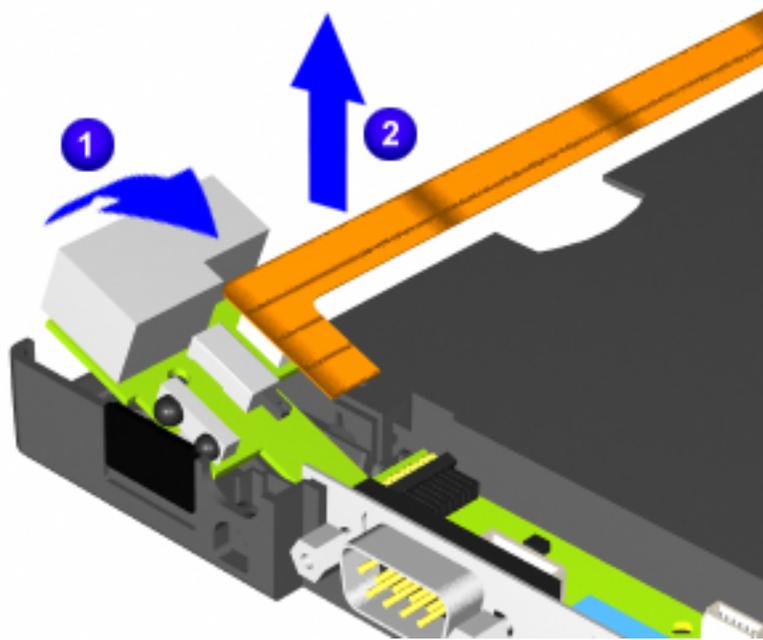
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14 Carefully lift up on the RJ Jacks/Infrared board to disconnect it from the system board **1**.

15 You may have to lift up on the RJ Jacks/Infrared board's cable **2** to help disconnect it from the system board.

NOTE:

Leave the RJ Jacks & Infrared board in the computer's base until the system board is removed.

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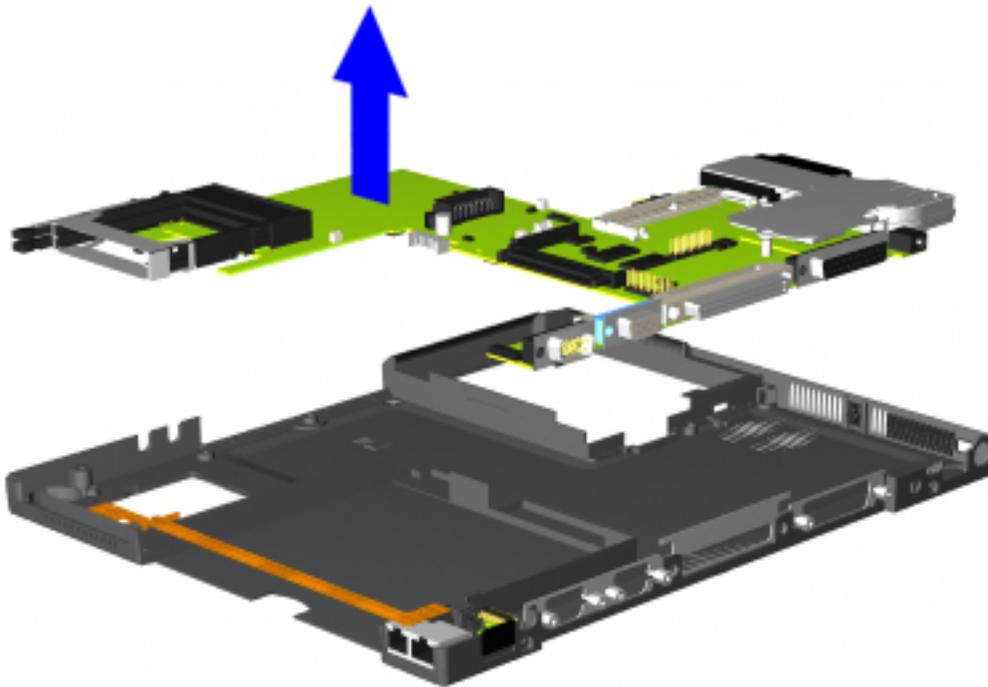
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Removal & Replacement

System Board



16 Lift the system board out of the base of the computer.

END OF SEQUENCE

To replace the system board, reverse the previous procedures.

NOTE:

During the removal of some of the system components, it is possible that the MultiBay grounding clips could come loose and fall out of their appropriate place. There are a total of two small metal clips. You might find one or both clips loose as you disassemble the computer. They must be placed in the appropriate location to ensure that the MultiBay is grounded.

[Click here to see the proper location of the MultiBay grounding clips.](#)

Or, return to [Removal & Replacement Procedures](#).

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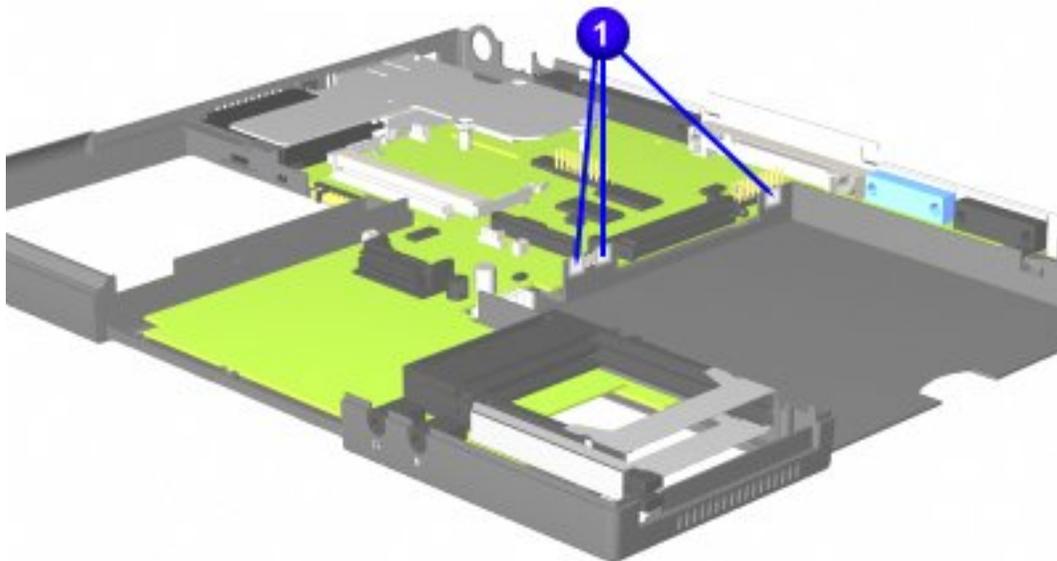
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Removal & Replacement

MultiBay Grounding Clips Location



During the removal of the some of the system components, it is possible that the MultiBay grounding clips could become loose and fall out of their appropriate place.

There are a total of two short metal clips (one is slightly bigger than the other). You might find one or both clips loose as you disassemble the computer.

They must be placed in the appropriate location **1** to ensure that the MultiBay will be grounded.

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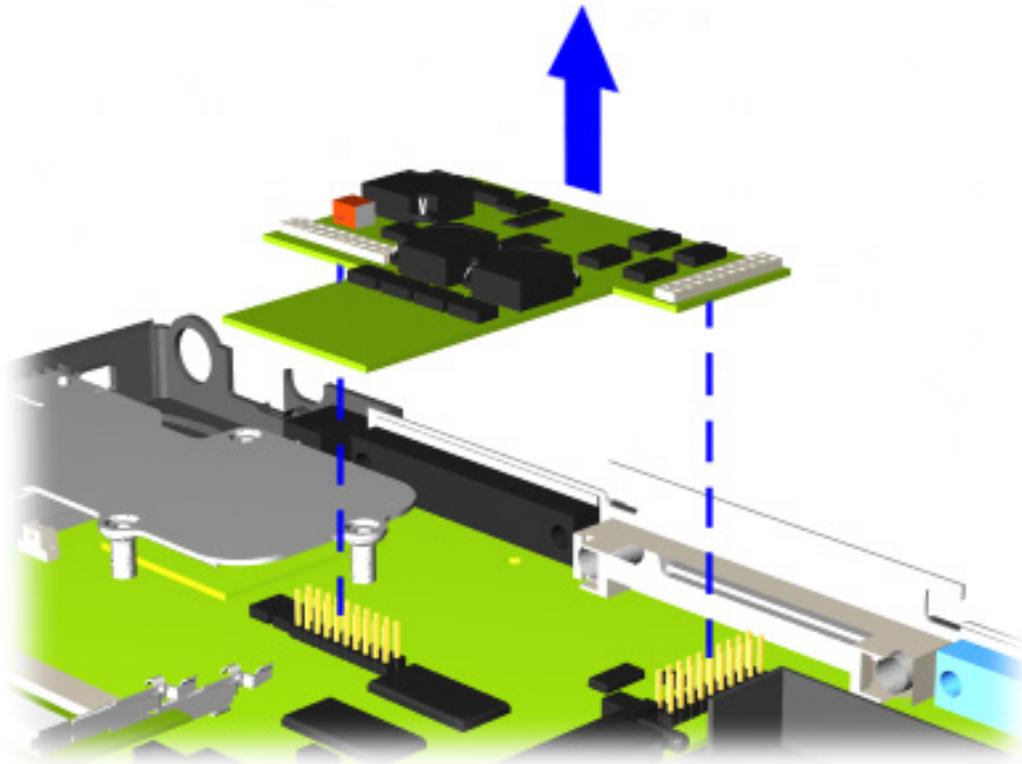
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Removal & Replacement

Voltage Converter Board



- 6 Lift up on the front and right side of the voltage converter board to disconnect it from the system board, and remove it from the computer.

END OF SEQUENCE

To replace the Voltage converter board, reverse the previous procedures.

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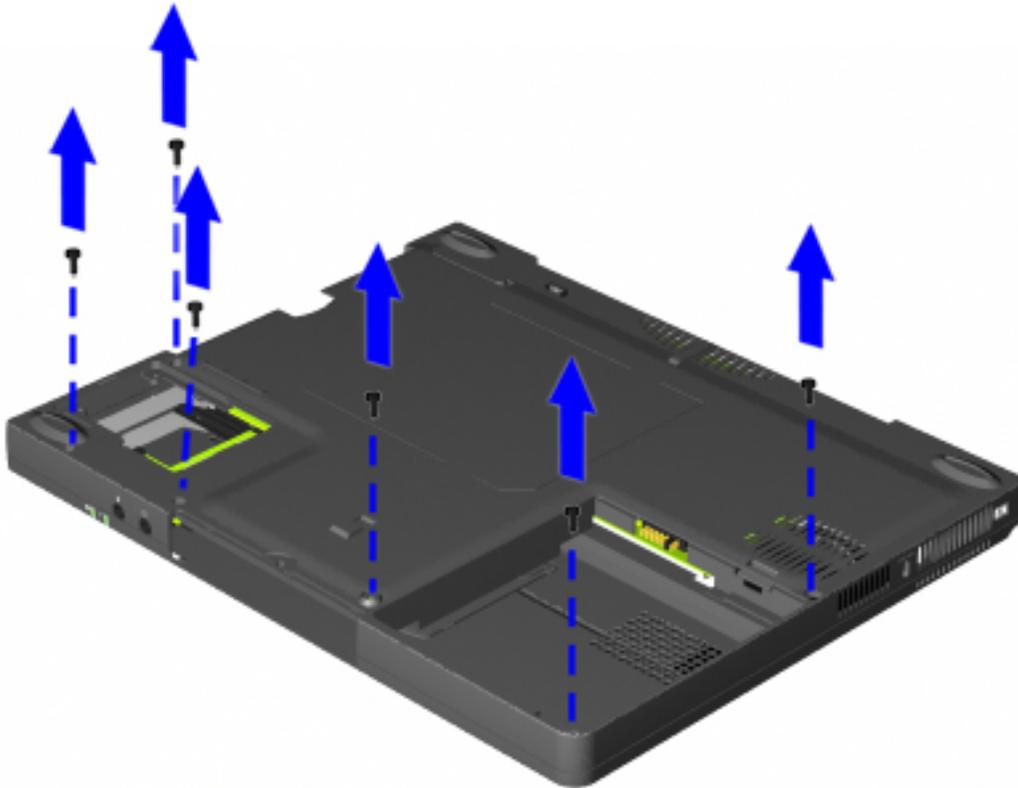
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CPU Cover



5 Turn the computer bottom side up with the front of the computer facing forward.

6 Remove the six screws from the bottom of the computer

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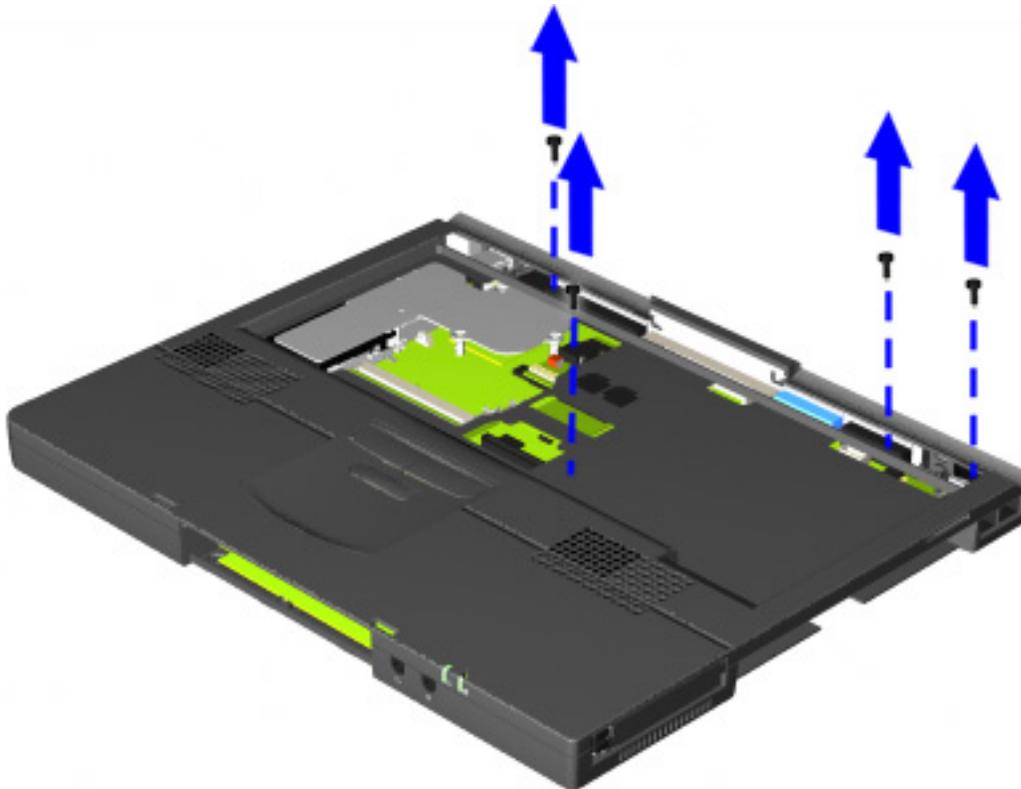
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Removal & Replacement

CPU Cover



- 7 Turn the computer top side up with the front of the computer facing forward.
- 8 Remove the four screws securing the top cover to the computer base.

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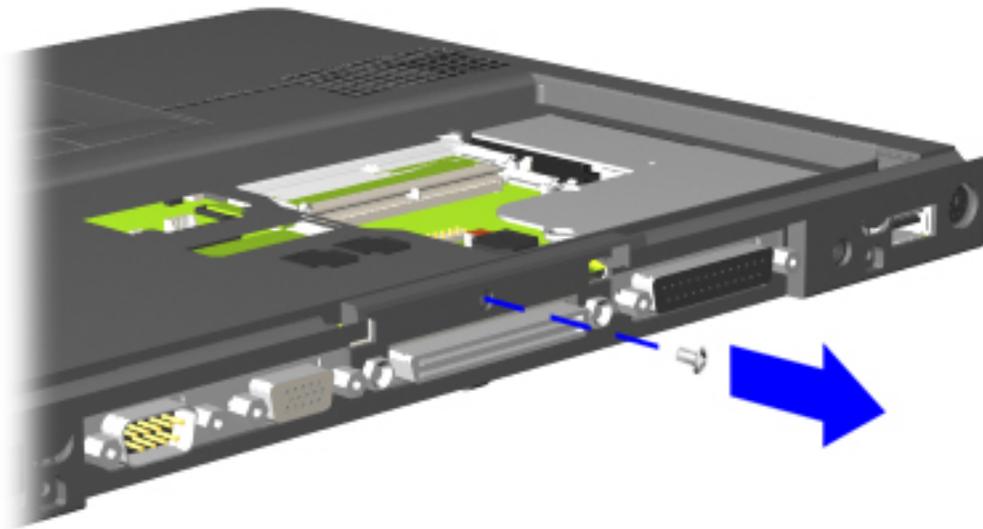
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Removal & Replacement

CPU Cover

9 Remove the one screw located in the middle back of the computer, above the rear connectors.

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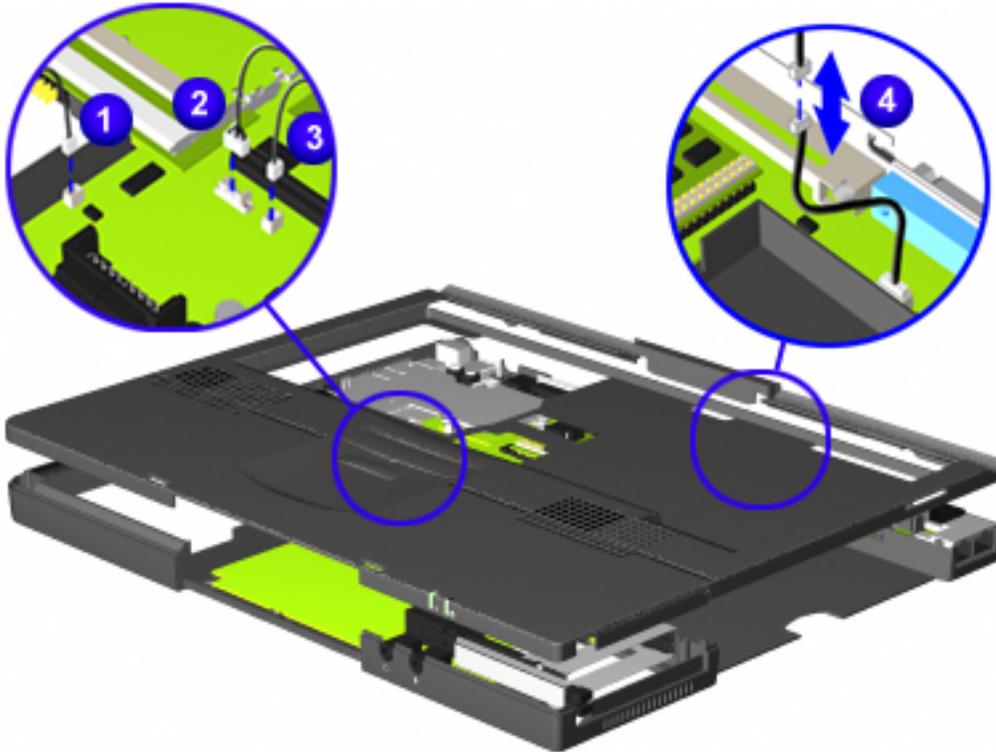
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Removal & Replacement

CPU Cover



- 10 Disconnect the left speaker cable **1**.
- 11 Disconnect the TouchPad or pointstick module cable **2** (the cable will look the same, regardless of model).
- 12 Disconnect the right speaker cable **3**.
- 13 Disconnect the indicator light panel cable **4**.
- 14 Carefully lift the top cover and remove it from the computer's base.

END OF SEQUENCE.

To replace the CPU Cover, reverse the previous procedures.

Return to [Removal & Replacement Procedures](#).

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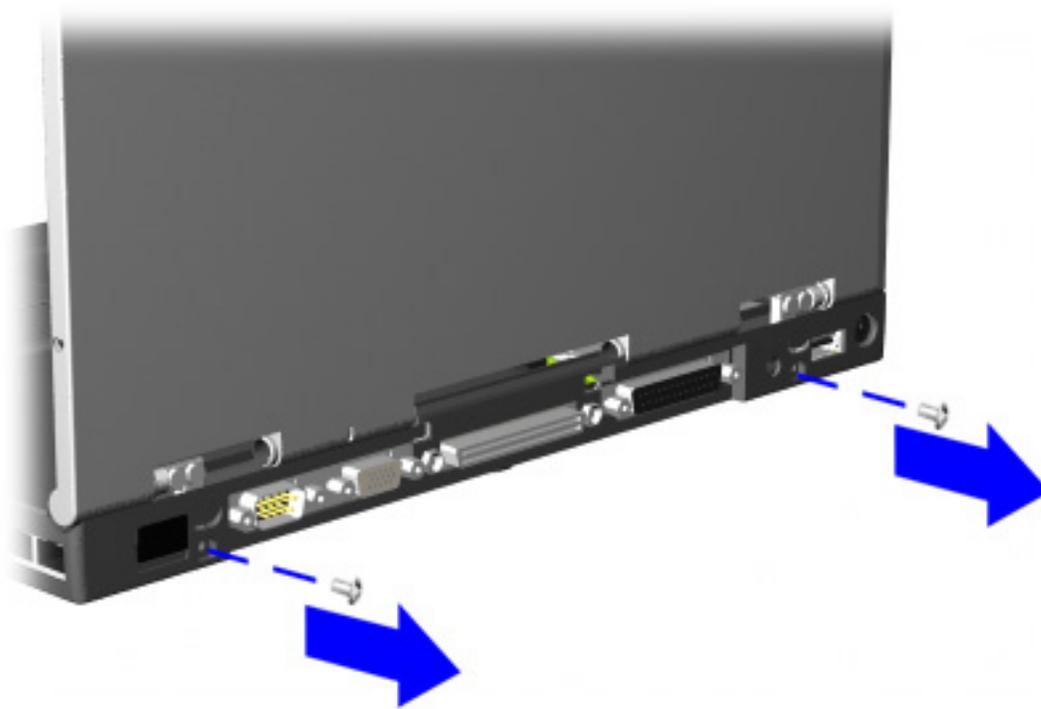
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Removal & Replacement

Display Panel Assembly



7 Position the computer so the rear panel faces forward.

8 Remove the two bottom clutch screws that secure the display assembly to the base assembly.

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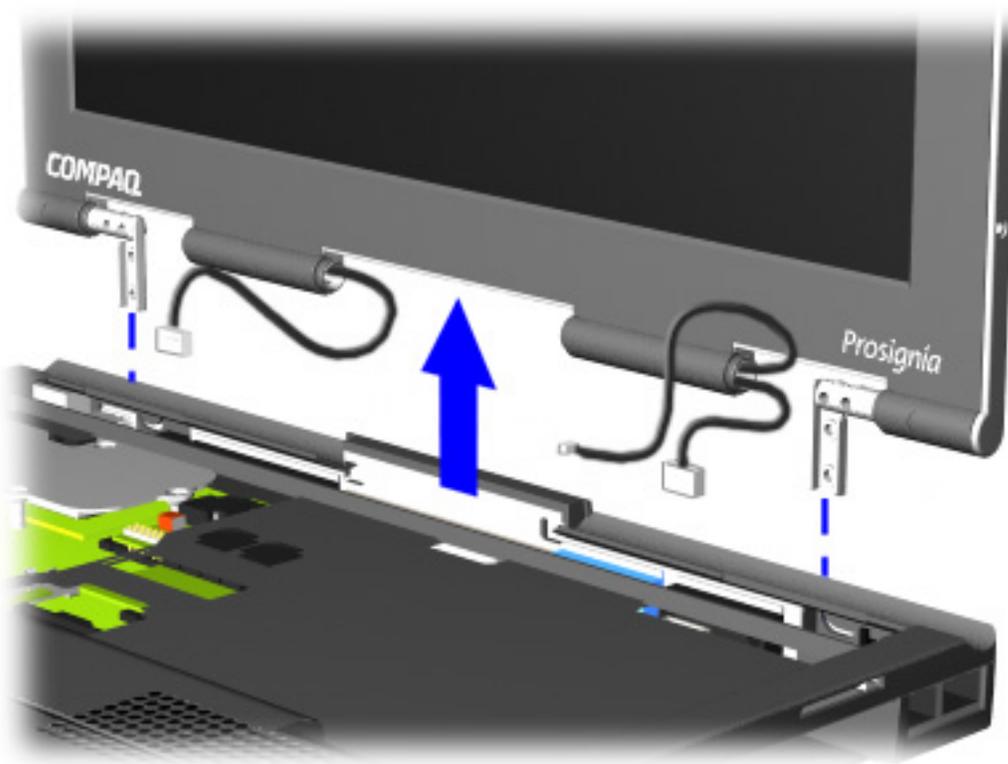
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Removal & Replacement

Display Panel Assembly



9 Lift the display assembly straight up

END OF SEQUENCE

To replace the display panel assembly, reverse the previous procedures.

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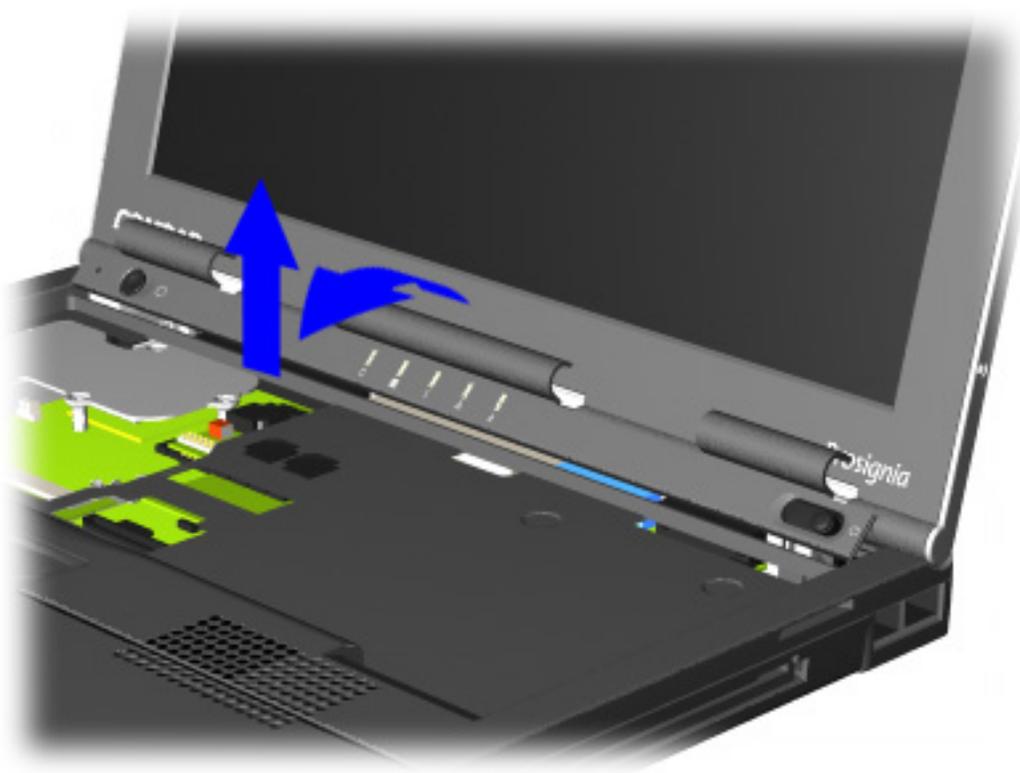
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Removal & Replacement

Switch Cover



6 Position the computer so the front is facing you, and open the computer as far as it will open.

7 Lift the switch cover towards the front of the computer and straight up.

END OF SEQUENCE.

To replace the Switch Cover, reverse the previous procedures.

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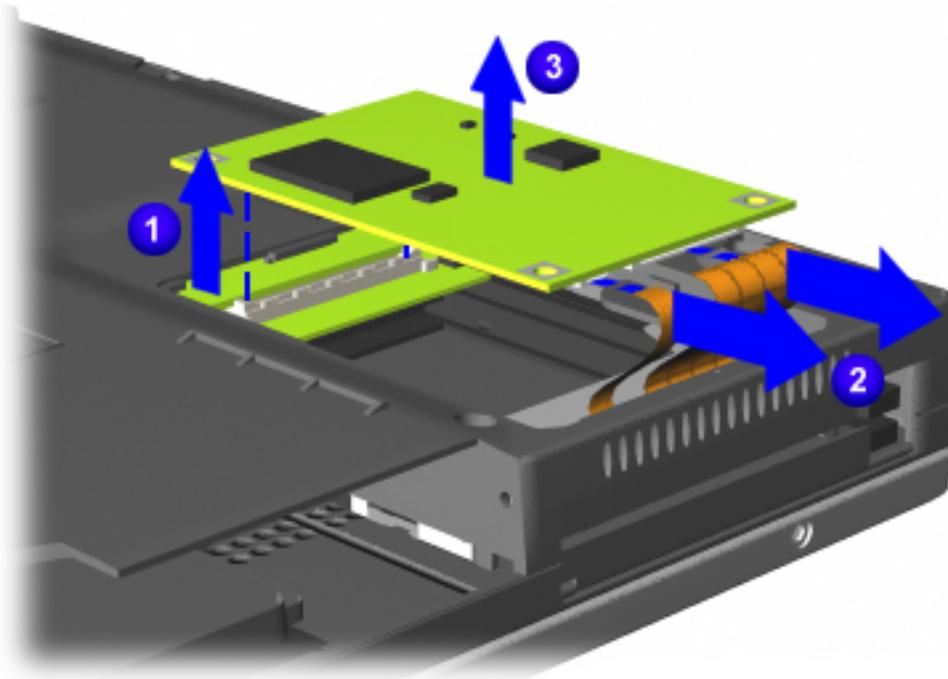
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Removal & Replacement

Modem, NIC, or Combo card



5 Lift up on the left side of the card **1** to remove the card's direct-connect to the system board.

6 Rotate the card upwards to access and remove the cable connector **2**.

7 Lift the card out of the system board **3**.

END OF SEQUENCE

To replace the modem, NIC, or combo card, reverse the previous procedures.

Return to [Removal & Replacement Procedures](#).

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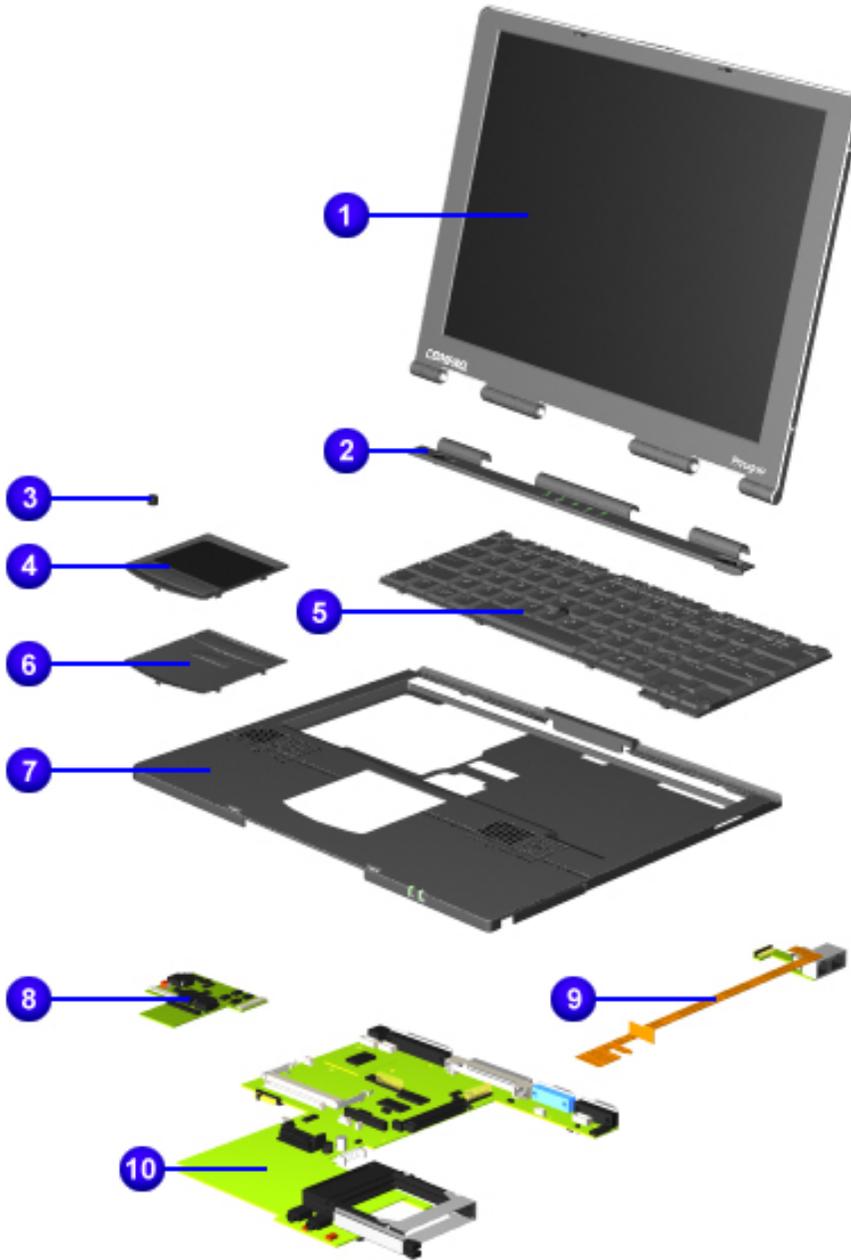
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Illustrated Parts Catalog

Main System Components

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Description	Spare Part Number
1	Display Panel Assembly
	13.3" TFT 174674-001
	14.1" CFT 167934-001
2	Switch Cover N/A
3	Pointstick cover 167938-001
4	TouchPad module 167942-001
5	Keyboard--USA (see below for more countries)
	With pointstick 167968-001
	Without pointstick 167969-001
6	Pointstick module N/A
7	Top cover 167936-001
8	Voltage Converter Board 135220-001
9	RJ Jack/Infrared Board 135228-001
10	System Boards with Pentium III Processors
	450 MHz/64 MB 167929-001
	500 MHz/64 MB 167930-001
	600 MHz/64 MB with SpeedStep 177907-001
	650 MHz/64 MB with SpeedStep 178236-001

700 MHz/64 MB with SpeedStep	192998-001
---------------------------------------	------------

Items not Pictured:

USB Board	135229-001
Top cover with LED BD	179643-001

Memory Modules	
32 MB	135242-001
64 MB	135243-001
128 MB	135244-001
256 MB	167136-001

CPU Base enclosure	167937-001
Fan	135222-001
Type-1 v.90 Modem	121896-001
PCI Modem v.90 Combo card	153107-001

Keyboards Continued:

Keyboards--Pointstick models	
Int'l	167968-002
UK	167968-031
Germany	167968-041
France	167968-051
Italy	167968-061
Spain	167968-071
Denmark	167968-081
Sweden	167968-101
Switzerland	167968-111
French Canadian	167968-121
Portugal	167968-131
Latin America	167968-161
Belgium	167968-181
Brazil	167968-201
Japan	167968-291
Taiwan	167968-281
Korea	167968-AD1

Keyboards--TouchPad models	
Int'l	167969-002
UK	167969-031
Germany	167969-041
France	167969-051
Italy	167969-061
Spain	167969-071
Denmark	167969-081
Sweden	167969-101
Switzerland	167969-111
French Canadian	167969-121
Portugal	167969-131
Latin America	167969-161
Belgium	167969-181
Brazil	167969-201
Japan	167969-291
Taiwan	167969-281
Korea	167969-AD1

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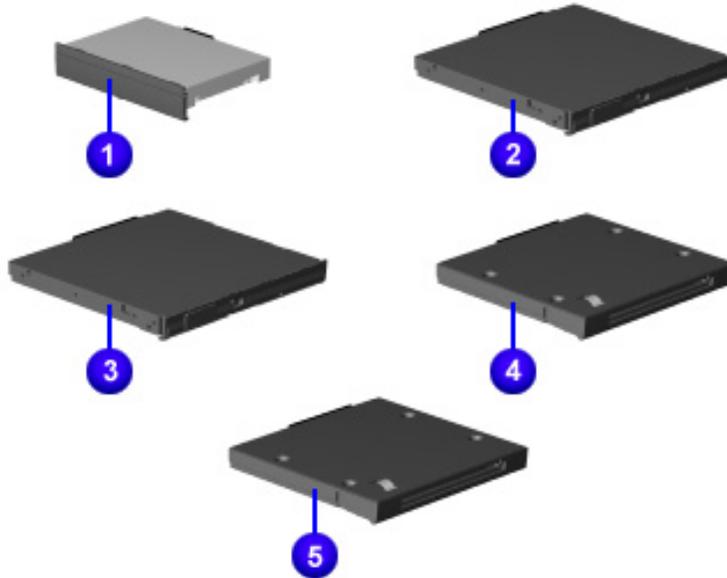
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Illustrated Parts Catalog

Mass Storage Devices

Main System Components
Mass Storage Devices
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Description	Spare Part #
1	Hard Drives
	6 GB 167932-001
	12 GB 167933-001
	18 GB 174872-001
2	24X CD-ROM Drive 169007-001
3	8X DVD-ROM Drive 187445-001
4	4X DVD-ROM Drive 169006-001
5	LS120 Drive 169008-001
6	1.44 MB Diskette Drive 167941-001

Not pictured:

Hard drive adapter	167943-001
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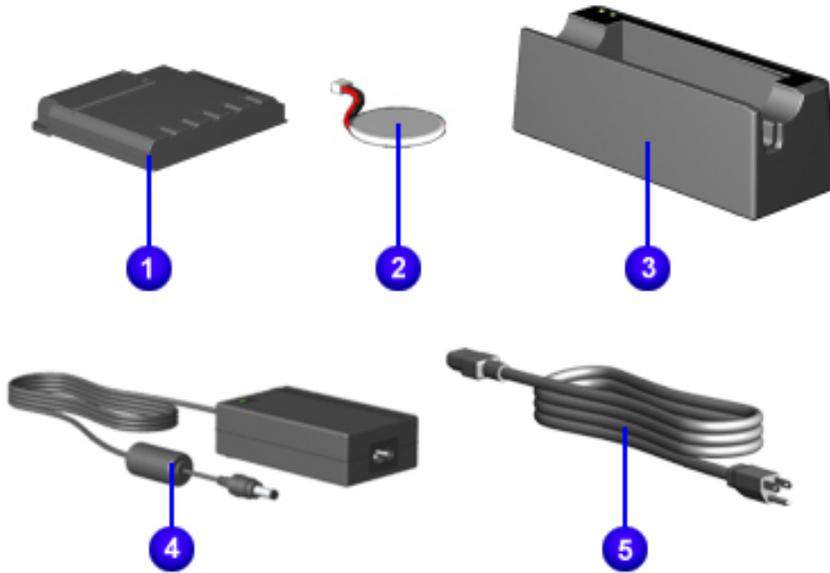
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NOTE: In the above illustration, The RTC battery's size is not in scale with the rest of the items. It was made larger to enhance its visibility.

Description	Spare Part #
1 (Primary battery) Li Ion Battery	167935-001
2 RTC Battery	included in cable kit (see below)
3 Li Ion Battery Charger	N/A
4 AC-DC external adapter	163444-001
5 AC (3 W) power cord	
US	246959-001
UK	246959-031
Australia	246959-011
Italy	246959-061
Denmark	246959-081
Sweden	246959-AG1
Europe, Mideast, Africa	246959-021
Japan	246959-191
Korea	246959-AD1

Items not pictured:

Adapter 50W slim ext.	163444-001
Miscellaneous Hardware Kit	135231-001

Cable Kit	152605-001
RTC battery	1 each
MIC cable	1 each
MIC cable extension	1 each

MIC rubber fitting	1 each
MIC cloth	1 each
Speaker cable	1 each
RAM board	1 each

Miscellaneous Plastics Kit Spare Part #: 167939-001	
Description	Quantity
Infrared lens	1 each
Display cover (right and left)	2 each
RJ-45 jack cover	1 each
RJ-11 jack cover	1 each
PCMCIA dummy card covers	2 each
cardbus up	1 each
cardbus down	1 each
LED/button board cover	1 each
NIC/modem card cover	1 each
Battery latch knob	1 each
Battery spring	1 each
Battery knob plate	1 each
Modem insulator	1 each
Rubber modem pad	1 each
Power switch	1 each
Release hook	1 each
Multibay spring	1 each
Computer feet	2 each
Hinge covers	2 each
Display bumpers	1 each
Rubber caps	2 each

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Description	Spare Part number	Spare Part number
QRCD, OS disk (disk 1 of 2)	Windows 98	Windows 2000 Professional *
U.S.	164003-001	164006-001
Germany	164003-041	164006-041
France	164003-051	164006-051
Italy	164003-061	164006-061
Spain	164003-071	164006-071
Sweden	164003-101	164006-101
Japan	164003-191	164006-191
Netherlands	164003-331	164006-331
QRCD, Driver disk (disk 2 of 2)	Windows 98	Windows 2000 Professional *
U.S., French, Spanish	164302-001	164304-001
Sweden, Germany, Italy, Netherlands	164303-101	164305-001

Japan	170003-191	170305-191
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* Compaq does not currently ship Windows 2000 Professional preinstalled on this model.

Quick Reference Guide		
Volume 1	Quantity of 1	185861-001
Volume 2	Quantity of 5	106854-001
Volume 2	Quantity of 1	162212-001
Volume 2, subscription	Quantity of 5, delivered each quarter	184961-001**
Volume 2, subscription	Quantity of 1, delivered each quarter	184960-001**
QuickFind for Windows	US edition	137906-xx***

** Subscription orders are not available in Europe, the Middle East, and Africa. In other countries, contact your local Compaq office for availability.

*** QuickFind is updated monthly. To complete the QuickFind part number, add the suffix from the table below for the desired month. If you do not specify the 3-digit suffix, the default is the current month in which the order is placed.

Suffix	Month	Suffix	Month	Suffix	Month	Suffix	Month
-001	January	-004	April	-007	July	-010	October
-002	February	-005	May	-008	August	-011	November
-003	March	-006	June	-009	September	-012	December

Troubleshooting

Preliminary Steps

>Preliminaries
>POST
>Clearing Password
>Compaq Utilities
>Troubleshooting without Diagnostics
>Contacting Compaq

Before running POST, complete the following preliminary steps:

IMPORTANT: Use AC power when running POST or Computer Setup. A low battery condition could initiate Hibernation and interrupt the test.

1. Obtain established passwords. For information on clearing passwords, click [here](#).
2. Ensure that the hard drive is installed in the computer.
3. Ensure that the battery pack is installed in the computer and the power cord is connected to the computer and plugged into an AC power source.
4. Turn on the computer.
5. If a power-on password has been established, type the password and press Enter.
6. Run Computer Setup. If a Setup password has been established, type the password and press Enter.
7. Turn off the computer and all external devices.
8. Disconnect external devices that you do not want to test. If you want to use the printer to log error messages, leave it connected to the computer.
9. Use Compaq Utilities and loopback plugs in the serial and parallel connectors if you plan to test these ports.

NOTE: If a problem only occurs when an external device is connected to the computer, the problem could be with the external device or its cable. Isolate the problem by running POST with and without the external device connected.

Follow these steps to run Compaq Utilities:

- If you are running Compaq Utilities from the hard drive, turn on or restart the computer. Press F10 when the cursor appears in the upper-right corner of the screen. If you do not press F10 in time, restart the computer and try again.
- If you are running Compaq Utilities from diskette, insert the Compaq Utilities diskette in drive Turn on or restart the computer.
- Press Enter to accept.

- Select Prompted Diagnostics.
- After "Identifying System Hardware" completes, select Interactive Testing and follow the instructions on the screen.

When the preliminary steps are completed, you are ready to run [POST](#).

Troubleshooting

Power-On Self-Test (POST)

[> Preliminaries](#)

[> POST](#)

[> Clearing Password](#)

[> Compaq Utilities](#)

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The Power-On Self-Test (POST) is a series of tests that run every time the computer is turned on. POST verifies that the system is configured and functioning properly.

To run POST, complete the following steps:

1. Complete the [Preliminary steps](#).
2. Turn on the computer.

If POST does not detect any errors, the computer beeps once or twice to indicate that POST has run successfully. The computer boots from the hard drive or from a bootable diskette if one is installed in the diskette drive.

POST Error Messages

If the system is not functioning well enough to run POST, or if the display is not functioning well enough to show POST error messages, refer to the Troubleshooting tables in the [Troubleshooting without Diagnostics](#) page.

If POST detects an error, one of the following events occurs:

1. A message with the prefix "WARNING" appears, informing you where the error occurred. The system pauses until you press F1 to continue.
2. A message with the prefix "FATAL" appears, informing you where the error occurred. After the message, the system emits a series of beeps, then stops.
3. The system emits a series of beeps, then stops.

Warning messages indicate that a potential problem, such as a system configuration error, exists. When F1 is pressed, the system should resume. You should be able to correct problems that produce WARNING messages.

If you receive one of the error messages listed below, follow the recommended action.

Warning Messages	Message Description	Recommended Action
CMOS checksum invalid, run SCU CMOS	RAM information has been corrupted.	Run Computer Setup to reinitialize CMOS-RAM.
CMOS failure, run SCU	CMOS RAM has lost power.	Run Computer Setup to reinitialize CMOS-RAM.

Diskette controller error	The diskette drive controller failed to respond to the recalibrate command.	If there is no diskette drive in the system, run Computer Setup to properly configure the CMOS-RAM to show no diskette drive present. If the problem persists, or if a diskette drive is present, complete these steps until the problems is solved: 1. Check diskette drive connections. 2. Replace diskette drive. 3. Replace system board.
Diskette track 0 failed	The diskette drive cannot read track 0 of the diskette in the drive.	Try another diskette. If the problem persists, you may need to replace the diskette drive.
Hard disk controller error	The hard drive controller failed to respond to the reset command.	Check the drive parameters. Turn off the system and check all related connections.
Keyboard controller failure	The keyboard failed the self-test command.	Replace the system board.
Keyboard failure	The keyboard failed to respond to the RESET ID command.	Replace the keyboard. If the problem persists, replace the system board.
No interrupts from	Timer 0 The periodic timer interrupt is not occurring.	Replace the system board.
ROM at xxxx (LENGTH yyyy) with nonzero checksum (zz)	An illegal adapter ROM was located at the specified address.	Check the external adapter (such as a video card) to determine if it is causing the conflict.
Time/Date corrupt - run SCU	The time and date stored in the real time clock have been corrupted, possibly by a power loss.	1. Run Computer Setup. 2. If problem persists, replace auxiliary battery. 3. If problems persists, replace system board
Hard disk xx failure (or error)	A failure or an error occurred when trying to access the hard drive.	1. Run ScanDisk. 2. Check disk in DOS and Windows 95.

Fatal Error Messages

Fatal errors emit a beep and may display a FATAL message. Fatal errors indicate severe problems, such as a hardware failure. Fatal errors do not allow the system to resume. Some of the Fatal error beep codes are listed at

the end of this section.

Message	Description	Beep code
CMOS RAM test failed	A walking bit test of CMOS RAM location 0E (Hex) - 3F (Hex) failed.	3
DMA controller faulty	A sequential read/write of the transfer count and transfer address registers within the primary and secondary DMA controllers failed.	4
Faulty DMA page registers	A walking bit read/write of the 16 DMA controller page registers starting at location 80 Hex failed.	0
Faulty refresh circuits	A continuous read/write test of port 61h found that bit 4 (Refresh Detect) failed to toggle within an allotted amount of time.	1
Interrupt controller failed	A sequential read/write of various Interrupt Controller registers failed.	5
ROM checksum incorrect	. A checksum of the ROM BIOS does not match the byte value at F000:FFFF.	2
RAM error at location xxxx	RAM error occurred during memory test.	None

Fatal Error Beep Codes

NOTE: S = Short, L = Long, P = Pause

Beep Code	Beep Sequence	Description Recommended Action
0 S-S-S-P-S-S-L-P	The DMA page registers are faulty.	Replace system board.
1 S-S-S-P-S-L-S-P	The refresh circuitry is faulty.	
2 S-S-S-P-S-L-L-P	The ROM checksum is incorrect.	
3 S-S-S-P-L-S-S-P	The CMOS RAM test failed.	
4 S-S-S-P-L-S-L-P	The DMA controller is faulty.	
5 S-S-S-P-L-L-S-P	The interrupt controller failed.	
6 S-S-S-P-L-L-L-P	The keyboard controller failed.	
7 S-S-L-P-S-S-S-P	Graphics adapter is faulty.	

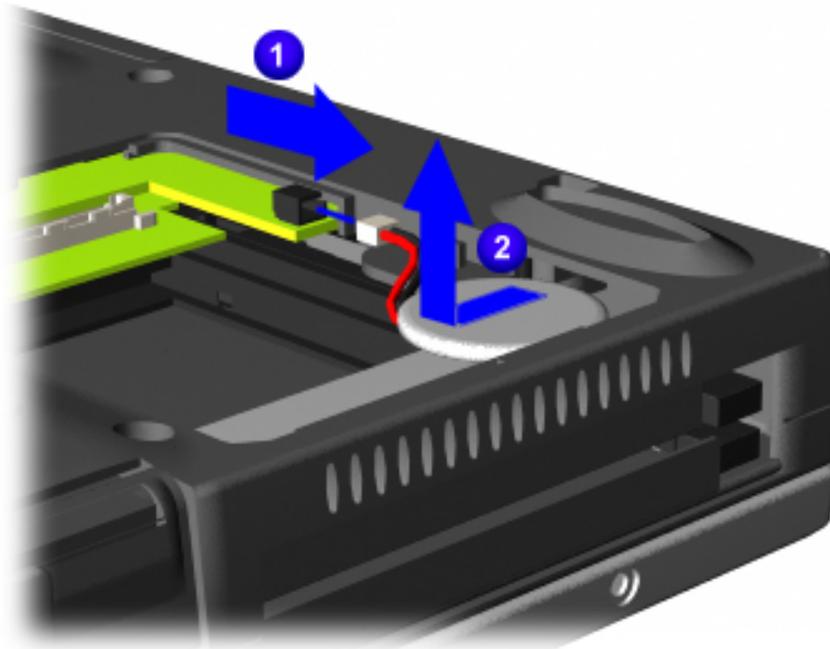
8 S-S-L-P-S-S-L-P	Internal RAM is faulty.	Replace memory board or system board if memory on system board is faulty.
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Troubleshooting

Clearing the Power-On Password

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> Clearing Password
> Compaq Utilities
> Troubleshooting without Diagnostics
> Contacting Compaq



Clearing the power-on password requires removing all Setup attributes that are programmed in the CMOS.

If the password is not known, clear it by performing the following steps:

- 1 [Prepare the computer for disassembly.](#)
- 2 [Remove the modem/combo card cover and the modem or combo card.](#)
- 3 [Disconnect the RTC battery cable from the system board](#) **1** for 30 seconds and then replace it.
- 4 [To remove it entirely, slide it out of its slot](#) **2**.

Reassemble the computer by reversing these procedures.

Turn on the computer to verify that the

power-on
password has
been cleared. If
it has not been
cleared, repeat
Steps 1 through
5.

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Troubleshooting

Compaq Utilities & F10 Setup

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Compaq Utilities contain several functions that

- Determine if various computer devices are recognized by the system and are operating properly.
- Provide information about the system once it is configured.

Compaq Utilities include the following programs:

- Computer Setup
- Compaq Diagnostics

To access Compaq Utilities:

1. Turn on or restart the computer by clicking Start -> Shut Down -> Restart the computer.
2. Press F10 when the blinking cursor appears in the upper-right corner of the display.
3. Select a menu option.

Selecting Computer Setup or Compaq Diagnostics for Windows

The computer features two system management utilities:

- Computer Setup is a system information and configuration utility that can be used even when your operating system is not working or will not load. It includes custom settings that are not available in Windows.

To configure a device in Windows NT 4.0, you must use Computer Setup.

- Compaq Diagnostics for Windows is a system information and diagnostic utility that is used within the Windows operating system. Use Compaq Diagnostics for Windows to test system components and to display system information whenever possible.

To configure a device in Windows 95 or 98 use the operating system itself. Windows 95 and 98 can be used to add and remove programs, and provide Wizards to ensure proper device drivers are installed. Diagnostics for Windows is NOT a configuration tool and might only test devices that are properly configured by the operating system.

NOTE: It is not necessary to configure a device connected to a USB connector on the computer or an optional docking base.

Using Computer Setup

All information and setting in Computer Setup are accessed from the File, Security, or Advanced menus. The items on each of these menus are described in this section.

To use Computer Setup:

1. Turn on or restart the computer.
2. When the blinking cursor appears in the upper-right corner of the screen, press F10.
3. To change the language, press F2.
4. To view navigation information, press F1.
5. To return to the Computer Setup menu from anywhere in Computer Setup, press ESC.
6. Select the File, Security, or Advanced menu.
7. To close Computer Setup and restart the computer:
 Select File-> Save-> Changes and Exit, then press Enter.
 Select File-> Ignore Changes and Exit, then press Enter.
8. When you are prompted to confirm your action, press F10.

Selecting from the File Menu

Use the following table as a reference in making selections from the File Menu.

File Menu Selections	Resulting Action
System information	Allows viewing of identification information about your computer, a docking base, and battery packs.
Save to floppy	Save system configuration to a formatted diskette.
Restore from floppy	Restore system configuration from a diskette
Restore defaults	Replace configuration settings in Computer Setup with factory default settings (identification information is retained).
Ignore changes and exit	Cancel changes entered during the Computer Setup session, then exit and restart the computer
Save changes and exit	Save changes entered during the current Computer Setup session, then exit and restart the computer

Selecting from the Security Menu

Use the following table as a reference in making selections from the Security Menu.

Security Menu	Selections Resulting Action
Setup password	Enter, change, or delete a setup password
Power-on password	Enter, change, or delete a power-on password.
DriveLock passwords	Enable/disable DriveLock; change a Drive/Lock User or Master password.

Password options	Enable/disable QuickLock QuickLock on Suspend QuickBlank Lock keyboard and mouse at power-on To enable Quicklock on Suspend or QuickBlank, Quicklock must be enabled first.
Device security	Enable/disable Ports or diskette drives Diskette write CD or diskette startup Settings for DVD can be entered in the CD field.
System IDs	Enter identification numbers for the computer, a docking base, and battery packs.

Selecting from the Advanced Menu

Use the following table as a reference in making selections from the Advanced Menu.

Advanced Menu	Selections Resulting Action
Language (or press F2)	Change the Computer Setup language
Boot options	Enable/disable QuickBoot, which starts the computer more quickly by eliminating some startup tests. (If you suspect a memory failure and want to test memory automatically during startup, you may want to disable QuickBoot.) MultiBoot, which enables you to set a startup sequence that can include any drives and PCI network adapters in the system.
Device options	Enable/disable the embedded numeric keypad at startup. Enable multiple standard pointing devices at startup, or disable this feature so the computer supports only a single pointing device at startup. Enable/disable USB legacy support for one USB mouse and one USB keyboard. Set an optional external monitor or overhead projector connector to a video card in a docking base as the primary device. Change the parallel port mode from EPP (default) to standard, bidirectional, EPP, or ECP.

Using Compaq Diagnostics for Windows

When you access Compaq Diagnostics for Windows, a scan of all system components appears on the screen before the Compaq Diagnostic window opens. You can display more or less information from anywhere within Compaq Diagnostics for Windows by selecting Level on the menu bar.

Compaq Diagnostics for Windows are designed to test Compaq components.

Testing other components may be inconclusive.

Displaying System Information

To display system information:

1. Select Start -> Settings -> Control Panel -> Compaq Diagnostics
2. Select Categories, then select a category from the drop-down list.
3. To save the information, select File -> Save As.
4. To print the information, select File -> Print.
5. To close Compaq Diagnostics for Windows, select File -> Exit.

Running a Diagnostic Test

To run a diagnostic test:

1. Select Start -> Settings -> Control Panel -> Compaq Diagnostics.
2. Select the Test Tab.
3. In the scroll box, select the category or device you want to test.
4. Select a test type.
Quick Test runs a quick, general test on each device in a selected category.
Complete Test performs maximum testing on each device in a selected category.
Custom Test performs maximum on a selected device.
To run all tests listed beneath your selection, select the Check All button.
To run only the tests you select, select the Uncheck All button, then select the check box beside each test you want to run.
5. Select a test mode.
Interactive Mode provides maximum control over the testing process. You determine whether the test was passed or failed and may be prompted to insert or remove devices.
Unattended Mode does not display prompts. If errors occur, they are displayed when testing is complete.
6. Select the Begin Testing button.
7. Access the test information. To view test information, select a report:
Status tab provides a summary of tests run, passed and failed during the current testing session.
Log tab provides a listing of tests run on your computer, the number of times each test has run, the number of errors found on each test, and the total run time of each test.
Error tab provides a listing of all errors found on your computer with their error codes.
8. To save
Test information - Select the Save button on the Log tab.
Error reports - Select the Save button on the Error tab.
9. To close Compaq Diagnostics for Windows, select File -> Exit.

Click here to see [Factory Default settings](#).

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This section provides information about how to identify and correct some common hardware, memory, and software problems. It also explains several types of messages that may be displayed on the screen.

Since symptoms can appear to be similar, carefully match the symptoms of the computer malfunction against the problem description in the Troubleshooting tables to avoid a misdiagnosis.

Before Replacing Parts

When troubleshooting a problem, check the following items for possible solutions before replacing parts:

- Verify that cables are connected properly to the suspected defective parts.
- Verify that all required device drivers are installed.
- Verify that all printer drivers have been installed for each application.

Obtaining Update Information with Info Messenger

Compaq Info Messenger allows you to set a customized search of the Compaq Web site. By registering for this utility, you can stay up to date with software and hardware information specific to your system.

Select the Categories menu, then select a category from the drop-down list.

To access Compaq Info Messenger, go to www.compaq.com and select Info Messenger.

To register, follow the instructions on the Info Messenger page. When your registration is complete, you can

- Implement your customized search whenever you prefer from the Info Messenger page.
- Set Info Messenger to send you the information by email as it becomes available.
- Info Messenger will also inform you if there are updates to the system ROM for your computer.

Checklist for Solving Problems

If you encounter a minor problem with the computer or software applications, go through the following checklist for possible solutions:

- Is the computer connected to an external power source, or does it have a fully charged battery pack installed?
- Are all cables connected properly and securely?
- Did the diskette drive contain a nonbootable diskette when you turned on the computer?
- Have you installed all the needed device drivers? For example, if you are using a mouse, you may need to install a mouse device driver.
- Are printer drivers installed for each application?

Eliminating the typical problems described in this Troubleshooting section may save you time and money. If the problem appears related to a software application, check the documentation provided with the software. You may discover something you can resolve easily by yourself.

If the condition persists, contact your Compaq authorized dealer or service provider.

Click on a link below for Troubleshooting information regarding:

- | | |
|--|-------------------------------|
| > Audio | > Keyboard |
| > Battery | > Modem |
| > CD/DVD drive | > PC Card |
| > Diskette/LS
120 | > Power |
| > Hard Drive | > Screen |
| > Infrared | > USB |
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Obtain the following information before contacting Compaq Support:

- Product name
- Product [serial number](#)
- Purchase date
- Conditions under which the problem occurred
- Any error messages that have occurred
- Hardware configuration
- Type of printer connected
- Hardware/software being used
- Printed result of Computer Checkup (TEST)
- Printed copies of CONFIG.SYS and AUTOEXEC.BAT files, if possible

Shipping Preparation

To ship the computer, complete the following steps:

1. Back up the critical hard drive files. Ensure that backup tapes/diskette are not exposed to electrical or magnetic fields while stored in transit.
2. Turn off the computer and external devices.
3. Disconnect the external devices from their power sources, then from the computer.

IMPORTANT: Ensure that there is not a diskette in the diskette drive and that there are no PC Cards in the PC slots.

4. Close the display and all exterior doors of the computer.
5. Pack the computer with sufficient packing material to protect it. Use the original packing box or similar packaging.

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Solving Audio Problems

Problem	Possible Cause	Solution
Computer does not beep after the Power-On Self-Test (POST).	System beeps have been turned down.	Use the Fn+F5 hotkeys to turn up the system volume.
Internal speaker does not produce sound when an external audio source is connected to the stereo line-in jack.	Volume may be turned off or set too low.	Adjust the overall volume with the Fn+ F5 hotkeys. Adjust the overall volume by pressing the Fn+F5 hotkeys. Adjust the sliding mixer controls by double-clicking the speaker icon on the Windows taskbar.
	Line input may not be connected properly.	Check line input connection.
	Headphones or speakers are connected to the stereo speaker/headphone jack, which disables the internal speakers.	Disconnect the headphones or speakers to enable the internal speakers.
	Volume may be muted	Uncheck the mute box in the volume properties.

External microphone does not work.	You are using the wrong type of microphone or microphone plug for the computer.	Check to see if you are using a monophonic electret condenser microphone with a 3.5-mm plug.
	The microphone may not be connected properly.	Ensure that the microphone plug is properly connected to the mono microphone jack.
	Sound source not selected.	Ensure that microphone is selected as the recording source in Control Panel -> Multimedia and that the recording level is adjusted.
	Audio settings are not set correctly.	Check the game program's audio settings.
	Volume control on the computer is turned down.	Adjust the computer volume with the Fn+F5 hotkeys.
No sound from headphones	Volume or mixing controls set incorrectly.	Adjust the overall volume with the Fn+F5 hotkeys.
		Use the mixing features available by double-clicking the speaker icon on the Windows taskbar.
	Sound source not selected.	Verify that the sound source is selected in Control Panel -> Multimedia.
	The headphones are connected to the wrong jack.	Check the connection.
	Volume too low or too loud Volume or mixing controls set incorrectly.	Adjust the overall volume with the Fn+F5 hotkeys.
Check the mixing features available by double-clicking the speaker icon on the Windows taskbar.		

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Solving Battery/Battery Gauge Problems

Problem	Possible Cause	Solution
Computer is beeping and battery power light is blinking	Battery pack charge is low.	Charge the battery pack by connecting to an external power source.
		Replace the battery pack with another fully charged battery.

		Initiate Hibernation or turn the computer off until AC power or a fully charged battery is available.
Computer battery charge light blinks to indicate low battery condition, but computer does not beep.	Volume turned down too low.	Turn up the volume using the Fn+F5 hotkeys.
Battery pack will not charge.	Battery pack was exposed to temperature extremes.	Allow time for the battery pack to return to room temperature.
	Battery pack is already charged.	No action required.
	Battery pack has exceeded its useful life cycle.	Use a different battery pack.
Computer shut down and memory was lost when replacing the battery pack.	Hibernation was not initiated before removing the battery pack.	Work is lost.
Battery charge does not last very long.	Battery is exposed to high temperatures.	Put the computer in a cooler place and recharge the battery pack.
	Battery is exposed to extremely cold temperatures.	Put the computer in a warmer place and recharge the battery pack.
NOTE:	The recommended operating temperature range for the battery is from 10°C to 40°C (50°F to 104°F). The recommended storage temperature range for the battery is from 0°C to 30°C (32°F to 86°F).	
	Battery conservation is disabled or set to drain.	Reset the battery conservation level.
	An external device is draining the battery.	Turn off or remove any external device or PC Cards when not in use.
	Battery gauge may be inaccurate and require recalibration.	Recalibrate the gauge.
Date and time must be set every time computer is turned on.	The Real Time Clock battery has reached the end of its useful life.	Restore power, then turn on the computer with the power switch. Contact your Compaq authorized service provider to replace the Real Time Clock battery.
Battery gauge seems inaccurate.	The battery pack may need calibration.	Recalibrate the battery.
	The battery pack has reached the end of its useful life.	Replace the battery pack.

Battery pack is warm after charging.	Warming occurs during charging.	No action required.
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Solving CD and DVD Problems

Problem	Possible Cause	Solution
Drive cannot read a disc.	Disc is not properly seated in the drive.	Open the loading tray, insert the disc, then close the tray.
	Disc is loaded in the loading tray upside down.	Open the loading tray, turn over the disc (label facing up), then close the tray.
	Disc has a scratch on its surface.	Insert a different disc.
CD-ROM drive or DVD-ROM drive is not detected by the computer.	Drive is not connected properly.	If you are running a version of Windows that was preinstalled by Compaq, remove the drive from the MultiBay and reinsert it.
		If you are running a version of Windows that was not preinstalled by Compaq, turn off the computer. Then remove the drive from the MultiBay and reinsert it.

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Solving Diskette Drive/SuperDisk LS-120 Drive Problems

Problem	Possible Cause	Solution
Drive cannot write to a diskette.	Diskette is not formatted.	Format the diskette: If you are using Windows 95 or Windows 98: 1. From the Windows desktop, select My Computer. 2. Select 3.5-in. Floppy (A). 3. Select File, then Format. 4. Fill in the appropriate information, then select Start.
		If you are using Windows NT 4.0, format the diskette by entering format a: at the system prompt.

	Diskette is write-protected.	Use another diskette that is not write-protected or disable the write-protect feature.
	Writing to the wrong drive.	Check the drive letter in your path statement.
	Not enough space is left on the diskette.	Save the information to another diskette.
	Drive is disabled.	Enable the proper drive through Device Manager.
	Disable diskette write ability is turned on.	Run Computer Setup. Select the Storage icon. Make sure Disable diskette write ability is not checked.
System cannot start up from diskette or SuperDisk LS-120 drive.	A bootable diskette is not in the drive.	Verify that a diskette with the necessary system files is in the drive.
	Diskette bootability is disabled in Computer Setup.	Enable diskette bootability in Computer Setup, Security menu.

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Hard Drive Problems

Problem	Possible Cause	Solution
Accessing information on the hard drive is much slower than usual.	Hard drive entered low power state due to timeout and is now exiting from it.	Wait for the system to restore the previously saved data to its state prior to initiating a low power state.
	Hard drive is fragmented/not optimized or has errors.	Run ScanDisk and Disk Defragmenter.
Hard drive does not work.	Hard drive is not seated properly.	Turn off and unplug the computer, remove the hard drive, and reinsert the hard drive.
	Errors occur after starting from an additional hard drive.	Additional hard drive has not been specially prepared with necessary software. Boot from the original hard drive or a specially prepared hard drive.
System does not recognize a hard drive.	The drive is not seated properly.	Remove, then reinsert the drive.
	The drive is damaged.	Try using the hard drive in another bay to verify that the problem is with the drive.

		Run ScanDisk on the drive.
	The drive was inserted while system was on or in Suspend or Hibernation.	Shut down the computer before inserting removing a hard drive.
DriveLock settings cannot be accessed in Computer Setup.	The DriveLock settings are accessible only when you enter Computer Setup by turning on (not restarting) the computer.	Completely turn off the computer. Turn the computer back on, then run Computer Setup by pressing F10 when the blinking cursor light appears upper-right on the screen.

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Solving Infrared Problems

Problem	Possible Cause	Solution
Cannot communicate with another computer.	The appropriate software is not running on both computers.	Install the appropriate software on the second device, start the second device, and start the program on both computers.
	The other computer does not have an IrDA-compliant infrared port.	Your Compaq computer uses the IrDA communications protocol. Communication between infrared devices must use the same communications protocol. Check the manufacturer's instructions for connecting with infrared devices or try connecting with a device you know to be IrDA-compliant.
	The pathway between the infrared ports is obstructed, one port is more than 30 degrees (plus or minus 15 degrees off the center line) from the other, or the ports are more than one meter apart.	Remove the obstruction, align the infrared ports to within 30 degrees, and position computers within 1.5 feet (about 0.5 meter) of each other.
	There is an interrupt request (IRQ) conflict.	Check for IRQ conflicts in the Device Manager. If two devices have the same IRQ address, reassign one of the devices.
	There is a baud rate conflict.	Select the same baud rate for both computers.
	There is a conflict with the # bits.	Select the same # bits setting for both computers.
	There is a stop byte conflict.	Select the same stop byte for both computers.

	There is a parity conflict.	Select the same parity setting for both computers
Cannot transmit data.	Direct sunlight, fluorescent light, or flashing incandescent light is close to the infrared connections.	Remove the interfering light source(s).
	There is interference from other wireless devices.	Keep remote control units such as wireless headphones and other audio devices away from the infrared connections.
	There is a physical obstruction in the way.	Do not place objects that will interfere with a line-of-sight data transmission between the two units.
	One of the units was moved during data transmission.	Do not move either unit during data transmission.
	The orientation of the units is wrong.	Adjust the devices so that they point directly at each other.
	The distance between the units is too great.	Verify that devices are not more than 1.5 feet (0.5 meter) apart.
Infrared port doesn't work.	Direct sunlight, fluorescent light, or flashing incandescent light is close to the infrared connections.	Remove the interfering light source(s).
	There is interference from other wireless devices.	Keep remote control units such as wireless headphones and other audio devices away from the infrared connections.
	IR has been disabled.	Run IR configuration utility in Control Panel.

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Solving Keyboard Problems

Problem	Possible Cause	Solution
Screen is blank and keyboard is working.	A screen timeout has been initiated.	Press any key to refresh the screen.
	QuickLock/QuickBlank has been initiated	To enable the keyboard and return your information to the screen, enter your power-on password.
	LCD has been disabled.	Press Fn+F4 to cycle from external monitor to internal LCD.
	Embedded numeric keypad on computer keyboard is disabled. Num Lock function is not turned on	Press Fn+Num Lk to enable the Num Lock function and embedded numeric keypad.

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Solving Modem Problems

Problem	Possible Cause	Solution
Modem loses connection.	The cable connection from the phone line to the modem is loose.	Check to make sure the telephone cable is properly connected.

	<p>Call Waiting has not been disabled.</p>	<p>Disable Call Waiting: 1. Select Start -> Setting -> Control Panel -> select Modems. 2. From the General tab of the Modems Properties page, select Dialing Properties. From the My Locations tab of the Dialing Properties page, check the box labeled This location has call waiting. Select *70, 70#, or 1170 from the drop-down list to disable call waiting.</p>
	<p>There is noise or excessive traffic on the phone line.</p>	<p>Try connecting at a later time.</p>
<p>Modem not responding</p>	<p>Modem is not set up correctly in system BIOS.</p>	<p>Check the computer BIOS setup. If it requires specific settings for modems, be sure that they have been enabled.</p>
<p>Modem does not dial correctly.</p>	<p>Telephone number is not entered correctly in the modem's dialing software.</p>	<p>Make sure the telephone number you dialed is correct if you are using the dialing directory or the terminal mode.</p> <ul style="list-style-type: none"> ● Dial 1 if using dialing long distance. ● The other line could be busy or not answering. ● Make sure call waiting is disabled. ● The modem may not recognize an international dial tone. Try the ATX3DT command and the telephone number
<p>Characters are garbled/transfer rates are slow.</p>	<p>There is noise in the telephone line.</p>	<p>Check your telephone and modem cable connections. If they are a little loose, they can cause noise on the line. Check with your local telephone company for a phone line filter.</p>

<p>Phone line noise causing a disconnection.</p>	<p>Hang-up Delay S Register (S10) set too low.</p>	<p>Change S10 default to 150. To set S10= 150: 1. Select Start -> Programs -> Accessories -> HyperTerminal, then go to Command Mode. 2. Type ATS10= 150 and press Enter.</p> <p>This command causes the modem to take longer to disconnect even if there is noise on the line.</p>
<p>No dial tone</p>	<p>Phone service is not connected to the telephone wall jack.</p>	<p>Verify that service from the local phone company by following these steps: 1. Unplug the telephone cable from the telephone wall jack. 2. Connect a telephone to the jack, pick up the handset, and listen for a dial tone. If there is a dial tone, reconnect the modem to the telephone wall jack with the telephone cable and make sure all connections are secure. 3. If there is still no dial tone, contact your local phone company or building manager.</p>
	<p>The modem is not responding to commands from the computer keyboard.</p>	<p>Verify the modem and computer are connected: 1. Select Start -> Programs -> Accessories -> HyperTerminal, then go to Terminal Mode. 2. Type AT and press the Enter key. If the modem displays OK, the modem and computer are working together. If the modem displays ERROR, or does not respond, restart the computer and repeat step 1. 3. Type ATDT and listen for dial tone. 4. Type ATH0 to hang up.</p>

Modem does not connect at highest speed.	Line conditions in your area or in the area you are calling may not support the highest connect speeds.	Have your telephone line checked by your local telephone service provider. Try dialing an alternate telephone number for the service you are using.
	Another device on your telephone line may be causing interference.	Hang up an extension telephone and disconnect any other devices that may be using the same telephone line, then redial.
	The service or site called does not support 56K or supports an incompatible 56K implementation.	An internal modem supports K56flex. To find an Internet service provider (ISP) that supports K56flex, go the Compaq Web site at www.compaq.com .
	There is noise on the telephone line.	The 56K protocol of an internal modem will fall back to lower speeds if the telephone line is too noisy for a high-speed connection. Try using another telephone line. Change the Hang-up Delay S Register: 1. Select Start-> Programs -> Accessories-> HyperTerminal. 2. Go to Command Mode, type AT S10= 150, then press Enter.

NOTE: This command causes the modem to take longer to disconnect even if there is no noise on the line.

The telephone line does not support 56K implementation.	The 56K protocol requires that the telephone line contain no more than one analog-to-digital conversion.	Try connecting from an alternate site.
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Solving PC Card Problems

Problem	Possible Cause	Solution
Computer does not beep when a PC Card is	PC Card is not inserted properly.	Try reinserting the card.

inserted.		Ensure that the PC Card is inserted in the correct orientation. Insert the card gently to prevent damage to the pins.
	Speakers are turned off or volume is turned down.	Adjust the volume control on the computer.
	PC Card or card driver is not PCMCIA compliant.	Contact your Compaq authorized dealer, reseller, or service provider for a list of PC Cards tested successfully in Compaq PC Card platforms.
Computer beeps only once when a PC Card is inserted.	The computer beeps once to indicate that a PC Card is recognized but not properly configured.	Before a new PC Card can be used, it may be necessary to perform an initial setup procedure. Follow the PC Card manufacturer's instructions for formatting a hard drive card or installing PC Card-specific drivers for a network card.
Network PC Card does not work.	Necessary drivers are not installed (turned on).	Refer to the instructions that came with the PC Card or contact the vendor for information on installing the correct drivers.
	PC Card is not fully inserted or is upside down.	Ensure the PC Card is inserted correctly.
	Network PC Card or driver is not PCMCIA compliant.	Contact your Compaq authorized dealer, reseller, or service provider for a list of PC Cards tested successfully in Compaq PC Card platforms.
Storage PC Card does not work.	SRAM and flash memory PC Cards require the memory card driver to be loaded.	Memory cards can only be accessed using DOS real mode drivers.
	You are trying to access the storage PC Card using the wrong drive letter.	<ul style="list-style-type: none"> ● If you are running Windows 95, change the drive letter assignment in Device Manager. ● If you are running Windows NT 4.0, change the drive letter assignment through the Control Panel.

The PC Card is not formatted.	<ul style="list-style-type: none"> ● For memory cards, run MCFORMAT in MS-DOS Mode to format the PC Card. ● For ATA cards, run ATAINIT, then run MCFORMAT in MS-DOS Mode to format the PC Card.
The card is not supported.	Contact your Compaq authorized dealer, reseller, or service provider for a list of PC Cards tested successfully in Compaq PC Card platforms.
Storage cards, such as SRAM, do not work in the expansion base.	Use the storage card in the computer.

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Solving Power Problems

Problem	Possible Cause	Solution
Computer will not turn on.	Battery is discharged and computer is not connected to a power source.	Charge the battery pack.
		Replace the battery pack.
		Connect the computer to an external power source.
	Battery is discharged and cables to the external power source are unplugged.	Ensure that cables connecting the computer and the external power source are plugged in properly.
Computer turned off while it was left unattended.	Computer initiated because of a critical low battery condition.	Charge the battery pack.
		Replace the battery pack.
		Connect the computer to an external power source.
	The computer initiated Hibernation after a user-defined timeout expired.	Turn on the computer.

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Solving Screen Problems

Problem	Possible Cause	Solution	
Characters on computer display are dim.	Computer is in direct light.	Move the computer or adjust the screen.	
	The brightness control is not set properly.	Adjust the brightness control by pressing the Fn+F10 hotkeys.	
	You may have a screen saver or screen blanking utility installed.	Press any key to refresh the screen.	
	Screen timeout was initiated.	Press any key to light the screen.	
	System initiated Suspend after a user-defined timeout expired.	Press the suspend button to exit Suspend.	
	Computer initiated a low battery Suspend or Hibernation.	Replace the battery pack and exit Suspend or Hibernation.	
			Connect the computer to an external power source and exit Suspend or Hibernation.
Power Management, which controls Suspend and Hibernation, is disabled and the battery pack has discharged.	Replace the battery pack and turn on the computer.		
		Connect the computer to an external power source and turn on the computer.	
Computer screen is blank and external monitor displays information.	Display was switched to the external monitor.	Press Fn+F4 to display information on the computer screen; press Fn+F4 again to display information simultaneously on both screens.	
	Display switch is stuck.	Tap the switch.	
Fn+F4 hotkey combination does not switch between internal and external displays.	CRT or other display device is not connected properly.	Check your connections to ensure that an external device is connected properly.	

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Solving USB Problems

Problem	Possible Cause	Solution

<p>External device connected to a USB connector does not work.</p>	<p>The operating system limits external devices connected by USB to two tiers which can include no more than two hubs on the first tier and no more than one keyboard and one pointing device on the first or second tier.</p>	<p>Reduce the number of connected external USB devices to no more than two hubs on the first tier, and no more than one keyboard and one pointing device on the first or second tier.</p>
<p>External device connected to USB connector does not work during startup (before Windows 95 loads).</p>	<p>During startup, only two tiers are supported by the USB port. These tiers can include no more than two hubs on the first tier and no more than one keyboard and one pointing device on the first or second tier.</p>	<p>Use the external device only after Windows 95 or Windows 98 has loaded.</p> <p>Reduce the number of connected external USB devices to no more than two hubs on the first tier, and no more than one keyboard and one pointing device on the first or second tier.</p>
<p>External devices in lower tiers do not work.</p>	<p>An unpowered hub is connected to another unpowered hub.</p>	<p>Use only powered hubs.</p> <p>Make sure that all unpowered hubs are immediately preceded by powered hubs in the USB chain.</p>

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Factory Default Settings for F10 Setup

The following tables contain the factory default settings for F10 setup configuration.

Initialization

Enable POST Memory Test	Checked (enabled)
Keyboard Num Lock	Unchecked (Off)
Hard drive boot sequence	
1	Hard drive in the computer MultiBay
2	Hard drive in the computer hard drive bay
3	Hard drive in the expansion base or convenience base half-height/MultiBay
4	Hard drive in the expansion base or convenience base MultiBay
Boot display	Auto
Language	Language of country

Ports

Serial port	3F8, IRQ4
Infrared port	2F8, IRQ9
Parallel port	378, IRQ7
Ethernet port	300, IRQ11

Power

Low Battery Warning Beep	Checked (enabled)
External Energy Saving Monitor Connected	Unchecked (not connected)

Power Management Enabled	While operating on battery power
Conservation Level	High
Level Definition	
High	Suspend Time: 3 minutes Hibernation Timeout: Immediate Drive Timeout: 1 minute Screen Timeout: 1 minute
Medium	Suspend Time: 5 minutes Hibernation Timeout: 1 hour Drive Timeout: 2 minutes Screen Timeout: 3 minutes
Custom	Suspend Time: disabled Hibernation Timeout: low battery Drive Timeout: always on Screen Timeout: always on

Security

Enable QuickLock/QuickBlank	Unchecked (Disabled)
Enable Power-on Password	Unchecked (Disabled)
Disable Serial/Infrared Ports	Unchecked (Enabled)
Disable Parallel Port	Unchecked (Enabled)
Disable PC Card Slots	Unchecked (Enabled)
Setup Password	Password blank
Power-on Password	Password blank
Diskette Drives	
Disable Diskette Drives	Unchecked (Enabled)
Disable Diskette Boot	Unchecked (Enabled)

Go back to [Compaq Utilities](#).
