

Maintenance & Service Guide

Presario 1900 Series

Models: 1900T, 1905, 1906, 1910, 1915, 1919, 1920,
1922, 1925, 1926, 1927, 1928, 1929, and 1930

<u>Before You Begin</u>	<u>Specifications</u>	<u>Parts Catalog</u>
<u>Removal Sequence</u>	<u>Troubleshooting</u>	<u>Battery Operations</u>
<u>Product Description</u>	<u>Pin Assignments</u>	<u>Index</u>



Presario 1900 Series

Welcome to the Maintenance & Service Guide (MSG). This online guide is designed to serve the needs of technicians whose job it is to repair Compaq products. The [Notice](#) contains the copyright and trademark information. The [Preface](#) shows symbol conventions, Technician Notes and Serial Number locations on the unit.

This MSG periodically will be maintained and updated online as needed.

[Tech Support.](#)

To report a technical problem, contact your Regional Support Center or IM Help Center.

For the best results when printing this MSG, set printer properties to landscape.

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Preface

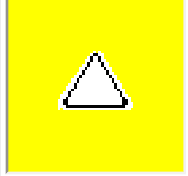
This *Maintenance and Service Guide* is a troubleshooting guide that can be used for reference when servicing the Compaq Presario 1900 Series Portable Computers.

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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 Presario 1900 Series Portable Computer documentation set
- *Introducing Windows 98 Guide*
- Service Training Guides
- Compaq Service Advisories and Bulletins
- *Compaq QuickFind*
- *Compaq Service Quick Reference Guide*

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Compaq Presario 1900 Series Portable Computers

First Edition (Oct. 1998)

Compaq Computer Corporation

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Specifications

This chapter covers the following specifications of Compaq Presario 1900 Series Portable Computers:

- [Physical and Environmental](#)
- [System Interrupts](#)
- [System DMA](#)
- [System I/O Addresses](#)
- [System Memory Catalog](#)
- [Display Information](#)
- [Diskette Drive](#)
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Specifications

Physical and Environmental

Computer Specifications		
	U.S.	Metric
12.1 in TFT Dimensions		
Height	1.1 in	234mm
Depth	11.6 in	294.7mm
Width	9.2 in	29mm
13.3 in TFT Dimensions		
Height	1.2 in	234mm
Depth	11.6 in	294.7mm
Width	9.2 in	30.5mm
Weight		
12.1 in TFT	4.5 lbs	
13.3 in TFT	5.0 lbs	
Wedge	1.8 lbs	
Stand-Alone (Battery Pack) Power Requirements		Li-ion
Nominal Operating		W @ 14.4 V
Maximum Average		W @ 14.4 V
Peak Operating		W @ 14.4 V
AC Power Requirements		
Operating Voltage	100-240 V	
Operating Current	0.8/0.4 A RMS	
Operating Frequency	47-63 Hz	
Maximum Transient	Meets IEC 801-4 and IEC801-5 1kV for 50 ns	
Temperature		
Operating	50° to 95 °F	10° to 35 °C
Nonoperating	-4° to 140 °F	-20° to 60 °C
Relative Humidity (noncondensing)		
Operating	10 to 90%	35°C to 90%
Nonoperating (tw = 38.7°C max)	5 to 95%	60°C to 95%
Altitude		
Operating	0 to 10,000 ft	0 to 3.15 km
Nonoperating	0 to 30,000 ft	0 to 9.14 km
Shock		
Operating	10 G, 11 ms, half sine	
Non operating	240 G, 2 ms, half sine	
Vibration		
Operating	0.5 G	
Nonoperating	1.5 G	
NOTE: Applicable product safety standards specify thermal limits for plastic surfaces. Compaq Presario 1900 Series Portable Computers operate well within this range of temperatures.		

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Specifications

System Interrupts

IRQ	Device(s)
0	System Timer
1	Standard 101/102-Key or Microsoft Natural Keyboard
2	Programmable Interrupt Controller
3	Ambit Modem
4	Communications Port (COM1)
5	NMA2 Audio Controller
6	Standard Floppy Disk Controller
7	Printer Port (LPT1)
8	System CMOS/Real Time Clock
9	Intel 82371AB/EB PCI to USB Universal Host Controller
10	PCI Fast Ethernet DEC 21143 Based Adapter
11	Texas Instruments PCI-1225 CardBus Controller NeoMagic NMG5 Graphics Controller
12	PS/2 Compatible Mouse Port
13	Numeric Data Processor
14	Intel 82371AB/EB PCI Bus Master IDE Controller
15	Intel 82371AB/EB PCI Bus Master IDE Controller

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System DMA

DMA	Device(s)
0	NMA2 Audio Controller
1	NMA2 Audio Controller
2	Floppy Disk Controller
3	Parallel Port (ECP Mode)
5	Free
6	Free
7	Free

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Specifications

System I/O Address

I/O Address	System Function (Shipping Configuration)
0000 - 000F	Direct Memory Access Controller
0020 - 0021	Programmable Interrupt Controller
0040 - 0043	System Timer
0060 - 0060	Standard 101/102-Key or Microsoft Natural Keyboard
0061 - 0061	System Speaker
0064 - 0064	Standard 101/102-Key or Microsoft Natural Keyboard
0070 - 0071	System CMOS/Real Time Clock
0081 - 008F	Direct Memory Access Controller
00A0 - 00A1	Programmable Interrupt Controller
00C0 - 00DF	Direct Memory Access Controller
00E0 - 00E1	Motherboard Resources
00F0 - 00FF	Numeric Data Processor
0170 - 0177	Intel 82371AB/EB PCI Bus Master IDE Controller
01F0 - 01F7	Intel 82371AB/EB PCI Bus Master IDE Controller
0201 - 0201	Gameport Joystick
0274 - 0277	IO read data port for ISA Plug and Play Enumerator
0376 - 0376	Intel 82371AB/EB PCI Bus Master IDE Controller
0378 - 037F	Printer Port (LPT1)
03B0 - 03BB	NeoMagic NMG5 Graphics Controller
03C0 - 03DF	NeoMagic NMG5 Graphics Controller
03F0 - 03F5	Standard Floppy Disk Controller
03F6 - 03F6	Intel 82371AB/EB PCI Bus Master IDE Controller
03F7 - 03F7	Standard Floppy Disk Controller
03F8 - 03FF	Communications Port (COM1)
03D0 - 04D1	Motherboard Resources
0CF8 - 0CFF	PCI Bus
1000 - 103F	Motherboard Resources
1040 - 104F	Motherboard Resources
1050 - 105F	Intel 82371AB/EB PCI Bus Master IDE Controller
1060 - 107F	Intel 82371AB/EB PCI to USB Universal Host Controller
1080 - 10FF	PCI Fast Ethernet DEC 21143 Based Adapter
1400 - 14FF	PCI Communication Device
1800 - 1807	PCI Communication Device

System Memory Catalog

Memory Address	Device
00000000 - 0009FFFF	System Board Extension for PnP BIOS
000A0000 - 000AFFFF	NeoMagic NMG5 Graphics Controller
000B0000 - 000BFFFF	NeoMagic NMG5 Graphics Controller
000C0000 - 000CBFFF	NeoMagic NMG5 Graphics Controller
000E4000 - 000FFFFF	System Board Extension for PnP BIOS
00100000 - 03FFFFFF	System Board Extension for PnP BIOS
04000000 - 04000FFF	Texas Instruments PCI-1225 CardBus Controller
04001000 - 04001FFF	Texas Instruments PCI-1225 CardBus Controller
F4000000 - F40000FF	PCI Communication Device
F4000400 - F40007FF	PCI Fast Ethernet DEC 21143 Based Adapter
F4100000 - F41FFFFF	NeoMagic NMG5 Graphics Controller
F4100000 - F47FFFFFFF	Intel 82443BX Pentium(r) II Processor to AGP Controller
F4200000 - F42FFFFFFF	PCI Multimedia Audio Device
F4400000 - F47FFFFFFF	NeoMagic NMG5 Graphics Controller
F4C00000 - F4FFFFFFF	PCI Multimedia Audio Device
F4C00000 - F5FFFFFFF	Intel 82443BX Pentium(r) II Processor to AGP Controller
F5000000 - F5FFFFFFF	NeoMagic NMG5 Graphics Controller
F8000000 - FBFFFFFFF	Intel 82443BX Pentium(r) II Processor to PCI Bridge (with GART support)
FFF80000 - FFFFFFFF	Motherboard Resources

Display Information

12.1 in TFT Display		
	U.S.	Metric
12.1 in TFT Dimensions		
Height	1.1 in	234mm
Depth	11.6 in	294.7mm
Width	9.2"	29mm
13.3 in TFT Dimensions		
Height	1.2 in	234mm
Depth	11.6 in	294.7mm
Width	9.2 in	30.5mm

Memory Expansion (Not Applicable in this Form Factor)

Diskette Drive

Storage Drives		
	3.5 in Drive	LS-120 Drive
Capacity per Diskette (High/Low)	Low 720KB High 1.44MB	Information Not Applicable
Diskette Size	3.5 in	
Number of LED Indicators (Read/Write)	1	
Number of Drives Supported	1	
Drive Rotation (rpm)	360	
Transfer Rate (Kbps/Sec)	Low 31 High 62	
Bytes per Sector	512	
Sectors per Track (High/Low)	Low 9 High 18	
Access Times		
Track-to-Track (ms)	3ms	
Head Setting (ms)	15ms	
Cylinders (High/Low)	Not Available	
Number of Read/Write Heads	2	

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03F6 - 03F6	Intel 82371AB/EB PCI Bus Master IDE Controller
03F7 - 03F7	Standard Floppy Disk Controller
03F8 - 03FF	Communications Port (COM1)
03D0 - 04D1	Motherboard Resources
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1000 - 103F	Motherboard Resources
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1050 - 105F	Intel 82371AB/EB PCI Bus Master IDE Controller
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000A0000 - 000AFFFF	NeoMagic NMG5 Graphics Controller
000B0000 - 000BFFFF	NeoMagic NMG5 Graphics Controller
000C0000 - 000CBFFF	NeoMagic NMG5 Graphics Controller
000E4000 - 000FFFFF	System Board Extension for PnP BIOS
00100000 - 03FFFFFF	System Board Extension for PnP BIOS
04000000 - 04000FFF	Texas Instruments PCI-1225 CardBus Controller
04001000 - 04001FFF	Texas Instruments PCI-1225 CardBus Controller
F4000000 - F40000FF	PCI Communication Device
F4000400 - F40007FF	PCI Fast Ethernet DEC 21143 Based Adapter
F4100000 - F41FFFFFF	NeoMagic NMG5 Graphics Controller
F4100000 - F47FFFFFF	Intel 82443BX Pentium(r) II Processor to AGP Controller
F4200000 - F42FFFFFF	PCI Multimedia Audio Device
F4400000 - F47FFFFFF	NeoMagic NMG5 Graphics Controller
F4C00000 - F4FFFFFF	PCI Multimedia Audio Device
F4C00000 - F5FFFFFF	Intel 82443BX Pentium(r) II Processor to AGP Controller
F5000000 - F5FFFFFF	NeoMagic NMG5 Graphics Controller
F8000000 - FBFFFFFF	Intel 82443BX Pentium(r) II Processor to PCI Bridge (with GART Support)
FFF80000 - FFFFFFFF	Motherboard Resources

Display Information

12.1 in TFT Display		
	U.S.	Metric
12.1 in TFT Dimensions		
Height	1.1 in	234mm
Depth	11.6 in	294.7mm
Width	9.2 in	29mm
13.3 in TFT Dimensions		
Height	1.2 in	234mm
Depth	11.6 in	294.7mm
Width	9.2 in	30.5mm

Diskette Drive

Storage Drives			
	3.5 in Drive		LS-120 Drive
Capacity per Diskette (High/Low)	Low 720KB	High 1.44MB	Information Not Applicable
Diskette Size	3.5 in		
Number of LED Indicators (Read/Write)	1		
Number of Drives Supported	1		
Drive Rotation (rpm)	360		
Transfer Rate (Kbps/Sec)	Low 31	High 62	
Bytes per Sector	512		
Sectors per Track (High/Low)	Low 9	High 18	
Access Times			
Track-to-Track (ms)			
Head Setting (ms)	3ms		
	15ms		
Cylinders (High/Low)	Not Available		
Number of Read/Write Heads	2		

Hard Drive

Hard Drives			
Models	DBCA-20648	DBCA-206480	DCXA-21000
Capacity Per Drive	4.8-GB	6.4-GB	10.0-GB
Drive Type	U-DMA/33	U-DMA/33	U-DMA/33
Logical Configuration			
Cylinders	10068	13424	16383
Heads	3	4	6
Sectors per Track	63	63	63
Bytes per Sector	512	512	512
Seek Times			
(Typical, including settling in ms)	Read 13ms Write 14ms	Read 13ms Write 14ms	Read 12ms Write 14ms
Single Track	14ms	Read 2.5ms Write 3.0ms	Read 14ms
Full Stroke	Read 2.5ms Write 3.0ms	Read 23ms Write 24ms	Read 2.5ms Write 3.0ms
Transfer Rate At interface	16.6MB/s	16.6MB/s	16.6MB/s

Hard Drives, continued			
Models	MHH20 48AT	MHH20 64AT	MHG2 102AT
Capacity Per Drive	4.8-GB	6.4-GB	10.0-GB
Drive Type	U-DMA/33	U-DMA/33	U-DMA/33
Logical Configuration			
Cylinders	Not Available	13424	16383
Heads	Available	4	6
Sectors per Track	Not Available	63	63
Bytes per Sector	Not Available	512	512
Seek Times			
(Typical, including settling in ms)	Read N/A Write N/A	Read 13ms Write 14ms	Read 13ms Write 14ms
Single Track	Read N/A Write N/A	Read 2.5ms Write 3.0ms	Read N/A
Full Stroke	Read N/A Write N/A	Read 23ms Write 24ms	Read 1.5ms Write N/A
Transfer Rate At interface	15.8MB/s	16.6MB/s	15.8MB/s

Hard Drives, continued			
Models	DK238 A-43	DK228 A-65	DK239 A-65
Capacity Per Drive	4.3 GB	6.4 GB (12.7mm)	6.4 GB
Drive Type			U-DMA/33
Logical Configuration			
Cylinders	Not Available	13424	16383
Heads	Available	4	6
Sectors per Track	Not Available	63	63
Bytes per Sector	Not Available	512	512
Seek Times			
(Typical, including settling in ms)	Read N/A Write N/A	Read Write	Read Write N/A
Single Track	Read N/A Write N/A		Read Write N/A
Full Stroke	Read N/A Write N/A		Read Write N/A
Transfer Rate At interface			

CD ROM or DVD Drive

	CD ROM Drive (24X)		DVD Drive (4X)	
Models	CRN-8142B	CDR-U242Z	DRD-424	SD-C2202
Dimensions				
Width	128mm	Not Available	128mm	128mm
Height	12.7mm	Not Available	12.7mm	12.7mm
Depth	129mm	Not Available	129mm	129mm
Weight	300g	Not Available	280g	270g
Rotational Speed	5000RPM	Not Available	2300 RPM	2300RPM
Typical Transfer Rate Sustained Data Transfer Rate	16.67MB/s 3600KB/s	Not Available	16.6MB/s(PIO) 5400KB/s	16.7MB/s(PIO) 5400KB/s
Access Time	110ms	Not Available	150ms	140ms
Average Random Access Time				
Spin Up Time	5s	Not Available	< 15s*1	3.8s
Data Buffer Capacity	1Mbit	Not Available	128KB	128KB

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This section provides an illustrated parts breakdown and a reference for spare parts for the Presario 1900 Series Portable Computer.

The computer (1) serial number should be provided to Compaq whenever requesting information or ordering spare parts. The serial number is located on bottom of unit.

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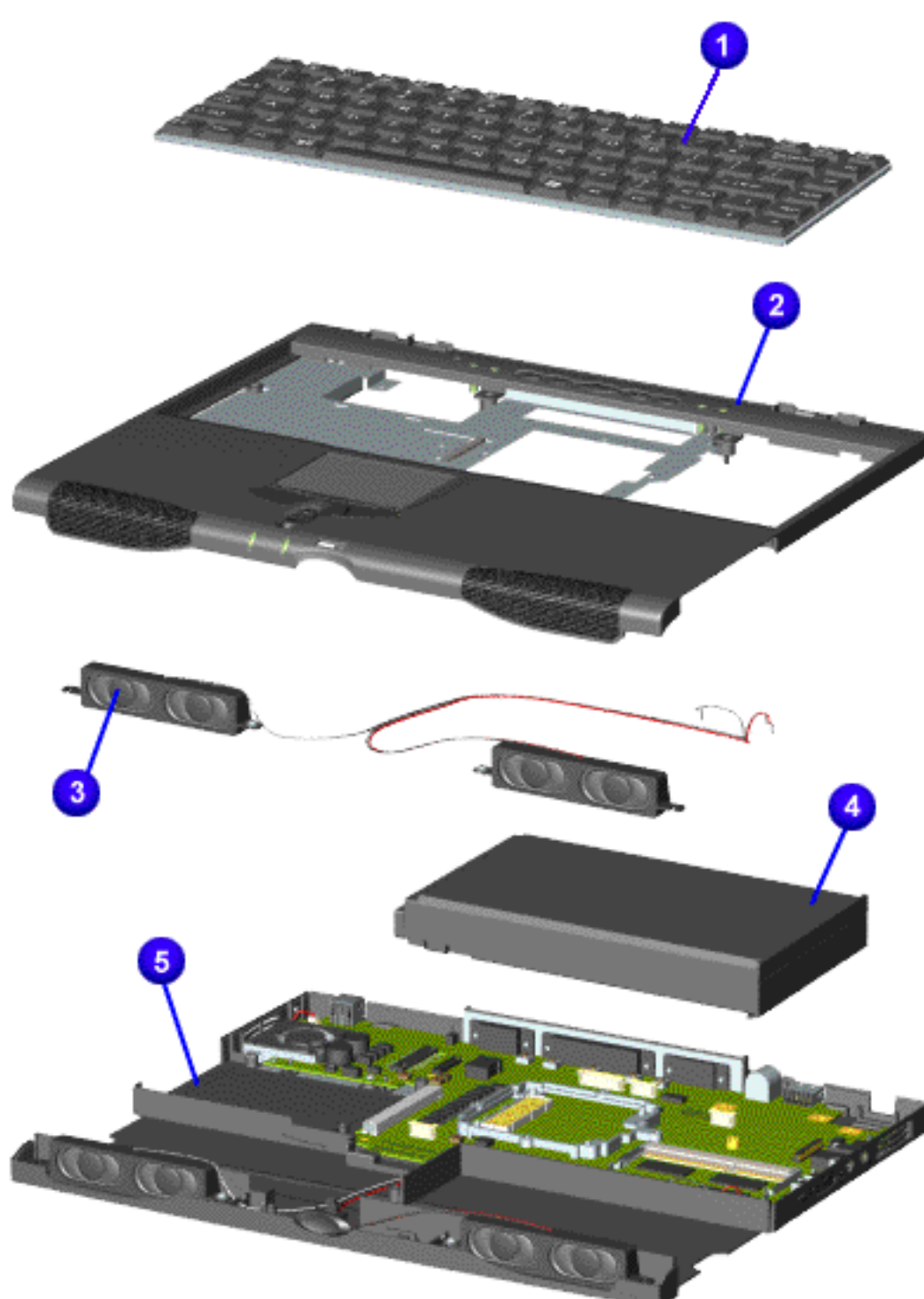
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Display Assembly
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Miscellaneous Hardware and Plastics Kit
Miscellaneous Hardware and Plastics Wedge Kit
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System Unit

Description

- Keyboards

	331419-001
U.S.	(or) 140676-001 (or) 159404-001
International	331419-002 (or) 140676-002 (or) 159404-002
United Kingdom	331419-031 (or) 159404-031
Asia Pacific	331419-AA1
People's Republic of China	331419-371
	331419-051 (or)
France	140676-051 (or) 159404-051
Latin America	331419-161
Japan	331419-291 (or) 159404-291
Italy	140676-061 (or) 159404-061
- Upper CPU Cover w/Palmrest and TouchPad Spare
Part No: 331423-001 or 140678-001 or 159400-001
- Speaker Assembly w/Cable Spare
Part No: 331420-001
- Battery Pack - Li ion Spare
Part No: 386500-001 or 140664-001
- CPU Base Assembly Enclosure with System Board and Speaker Assembly, (Bottom Plastics)
Spare Part No: 331414-001 or 140671-001 or 159398-001 (model 1930)
- CPU Base Assembly Enclosure with Shield, (Bottom Plastics - Not Shown)
Spare Part No: 331421-001 or 140679-001

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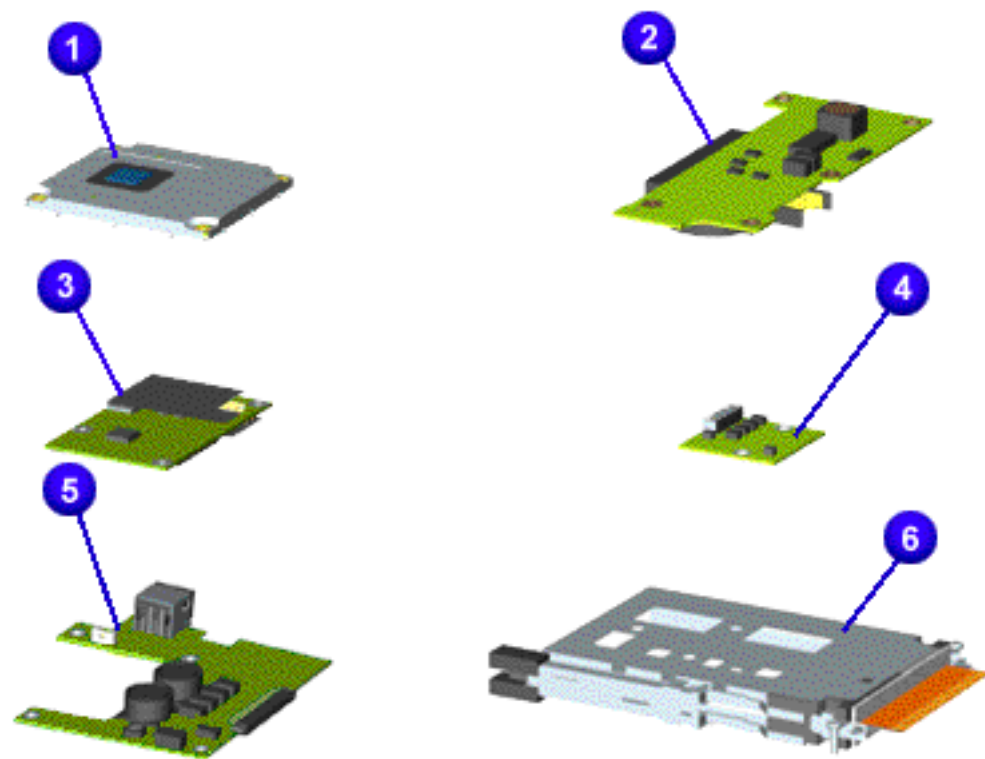
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Boards

Description	Spare Part Number
1. Processors	
Pentium II/266-MHz w/512 Cache	400779-001
Pentium II/300-MHz w/512 Cache	400780-001
Celeron/266-MHz w/128K Cache	102422-001
Celeron/300-MHz w/128K Cache	102268-001
Pentium II/333-MHz w/256K Cache	107999-001 or 159864-001
Celeron II/333-MHz w/128K Cache	140670-001
Celeron II/400-MHz w/128K Cache	159865-001
Pentium II/300-MHz w/512 Cache	140667-001
Celeron II/300-MHz w/128K Cache	140668-001
Pentium 333 MKz w/256c Cache	107999-001 or 159864-001
Celeron II/333 MHz w/128K Cache	14670-001
Celeron II/400 MHz w/128K Cache	159865-001
Pentium II/366-MHz w/256 Cache	159866-001
Pentium II/400-MHz w/256 Cache	159445-001
2. Hard Drive/Battery Charger Board w/RTC Battery	
	331412-001
3. Modem w/Shield, 56.0 Kbps Data/Fax	
	331429-001
4. Low Voltage Differential Signal Board (For 13.3" Display Panel)	
	331411-001 or 159396-001
5. Voltage Converter Board	
	331413-001
6. PC Card Assembly	
	102123-001
7. Fan Assembly (Not Shown)	
	331410-001 or 159403-001

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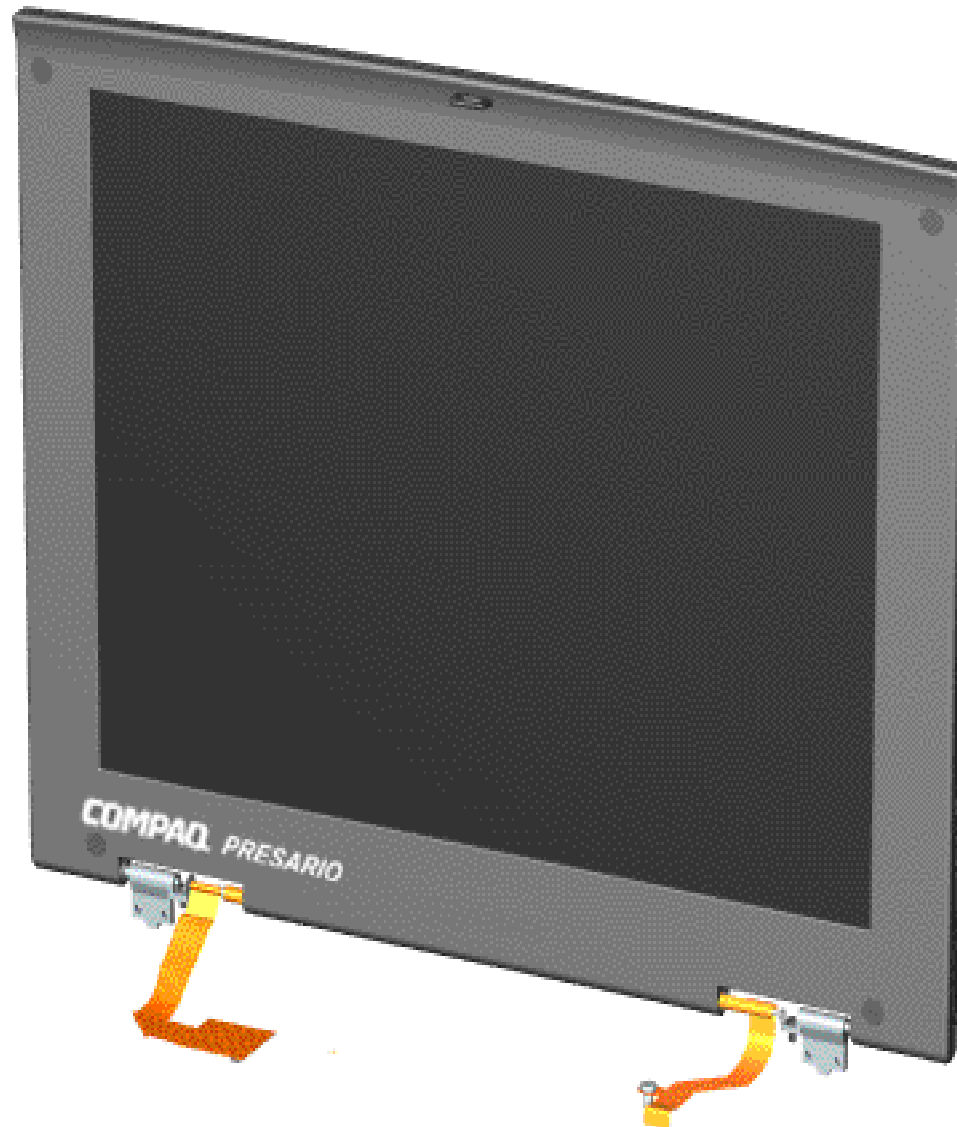
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Display Panel Assembly

Description	Spare Part Number
Display Panel Assembly w/Cable 13.3 inch TFT	331409-001 or 140666-001
Display Panel Assembly w/Cable and Connector, 12.1 inch TFT	331408-001 or 140665-001

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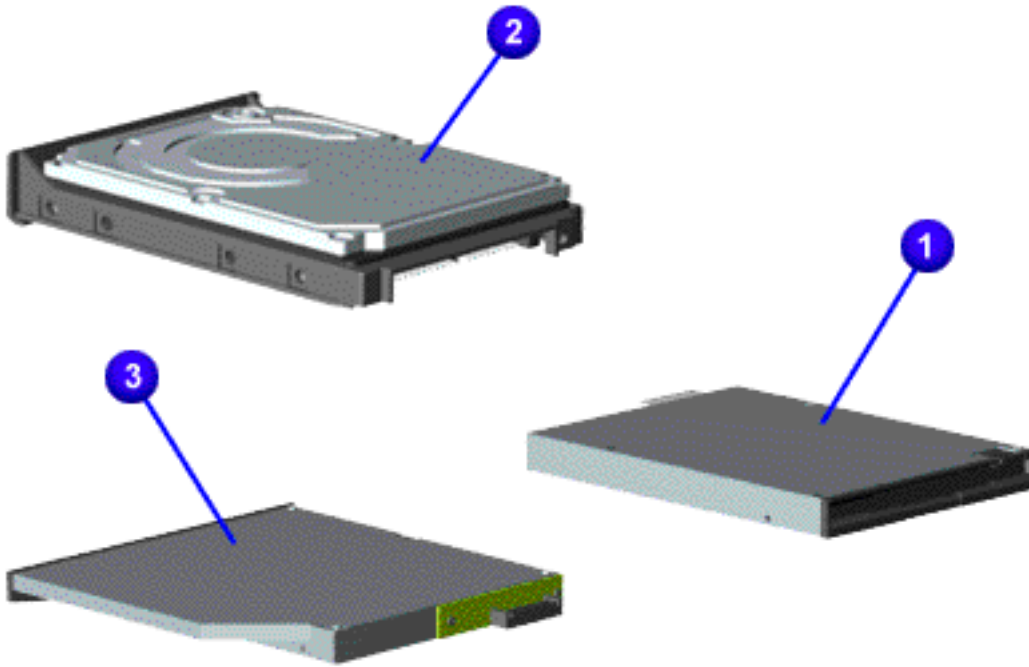
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Mass Storage Devices

Description	Model No.	Spare Part Number
1. Diskette Drive w/cable	1905, 1906, 1910, 1915, 1919 & 1920	331428-001
2. LS-120 Drive	1922 & 1925	TDB
3. Hard Drive	1905, 1906, 1910, 1915, 1919, & 1920	331415-001
4.8-GB	1905, 1906, 1910, 1915, 1919, & 1920	331416-001
6.4-GB	1905, 1906, 1910, 1915, 1919, & 1920	140672-001
4.0-GB	1905, 1906, 1910, 1915, 1919, & 1920	140673-001
6.4-GB	1922 & 1925	140674-001
10-GB	1922 & 1925	TDB
DVD Drive w/Interface Connector	1905, 1906, 1910, 1915, 1919, & 1920	331427-001
	1922 & 1925	140682-002
24X CD Drive w/cable	1905, 1906, 1910, 1915, 1919, & 1920	102122-001
	1922 & 1925	TDB

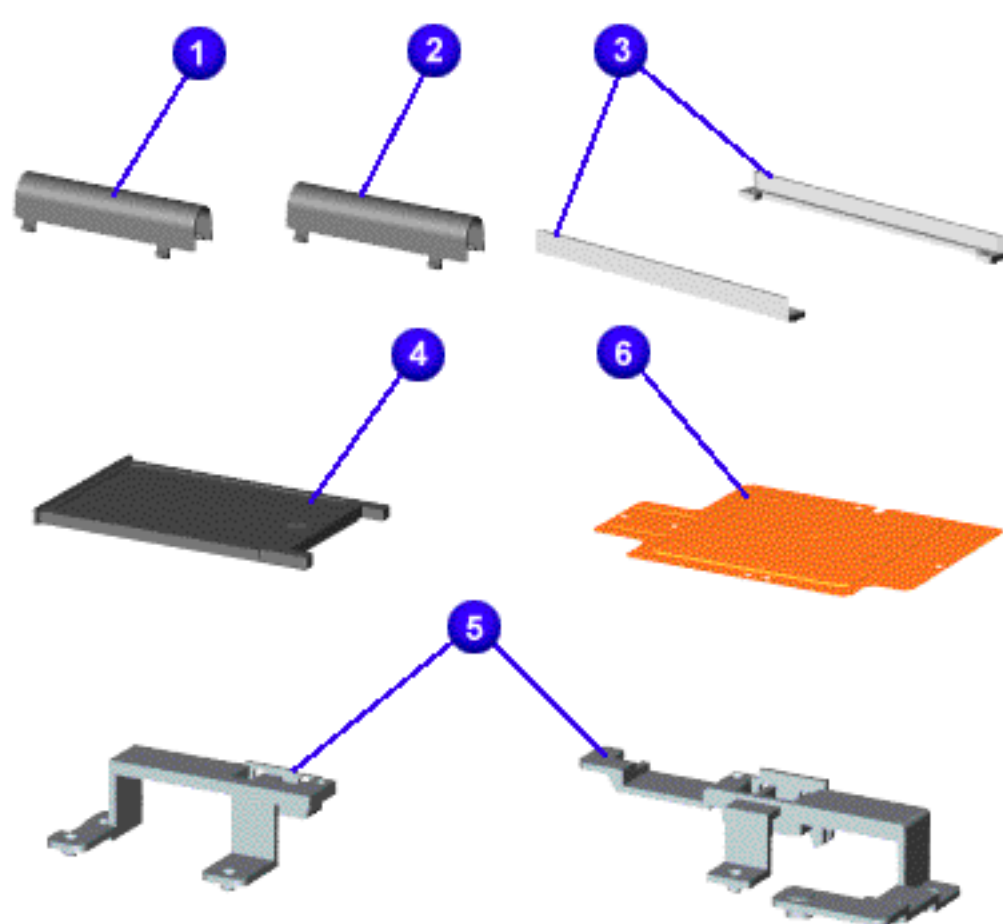
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Miscellaneous Hardware and Plastics Kit

Spare Part Number: 331418-001
 (Models: 1905, 1906, 1910, 1915, 1919, & 1920)

Spare Part Number: 140675-001
 (Models: 1900T, 1922, 1925, 1926, 1927, 1928, 1929, 1930)

Description	Quantity
1. Display Panel Assembly Hinge Cover, Left	1 each
2. Display Panel Assembly Hinge Cover, Right	1 each
3. CD/DVD Guide Rails	1 each
4. PC Card Placeholder	1 each
5. Display Panel Assembly Hinge Frame (Left and Right)	1 each
6. Heatspreader with Thermal Pad	2 each
12.1 inch FPC Support Bracket (Not Shown)	1 each
Keyboard Eject Latch (Not Shown)	1 each
TouchPad Switch (Not Shown)	1 each
Scroll Button Switch (Not Shown)	1 each
Battery Eject Latch (Not Shown)	1 each
Display Screw Hole Covers (Not Shown)	4 each
Battery Knob Spring Coil (Not Shown)	2 each
Volume Switch Knob (Not Shown)	1 each
Display Eject Latch (Not Shown)	1 each
RJ11 Jack Assembly (Not Shown)	1 each
Rubber Feet (Not Shown)	2 each

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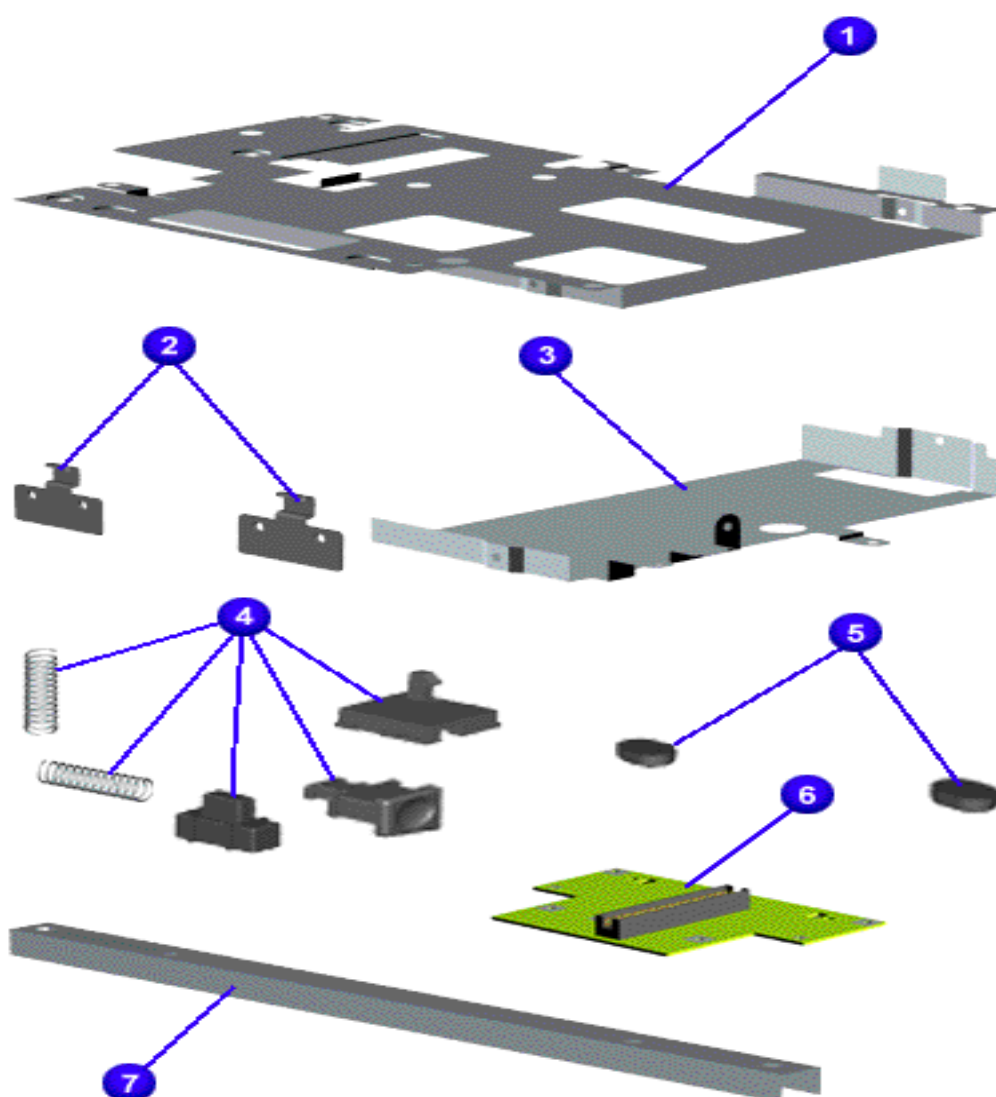
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Miscellaneous Hardware and Plastics Wedge Kit

Spare Part Numbers:
331424-001
(Models: 1905, 1906, 1910, 1915, 1919, & 1920)

Spare Part Numbers:
140680-001
(Models: 1900T, 1922, 1925, 1926, 1927, 1928, 1929, 1930)

Description	Quantity
1. Diskette Drive Shield	1 each
2. Alignment Pins (Left and Right)	2 each
3. DVD Drive Shield	1 each
4. Eject Mechanism Assembly w/Springs (Left and Right)	2 each
5. Rubber Feet	4 each
6. Wedge to Port Replicator Interface Board	1 each
7. Reinforcement Bracket	1 each
Top and Bottom Wedge Cover (Not Shown)	331425-001
System to Wedge Interface Board	1 each
Eject Plunger Knobs (Not Shown)	2 each
Plunger Spring Coil (Not Shown)	2 each

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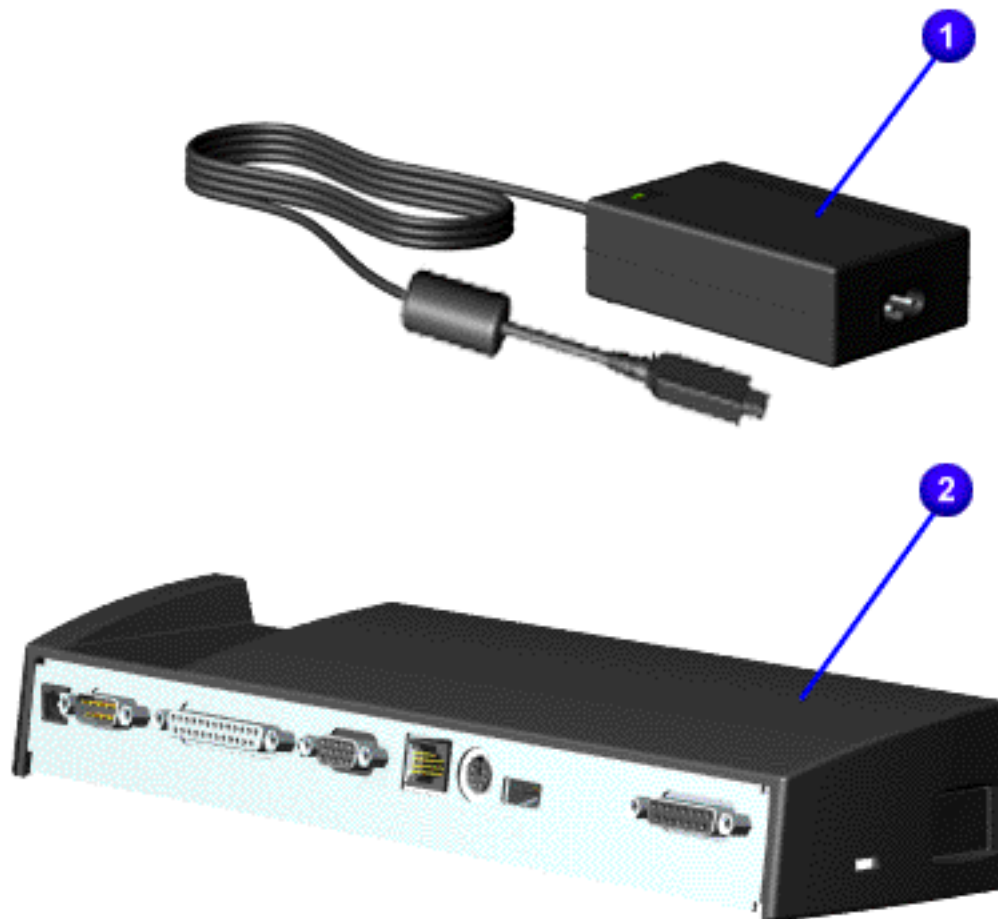
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Miscellaneous Parts

Description	Spare Part Number
1. AC 45W Adapter	358976-001
2. Integrated 10/100BaseT Ethernet Port Replicator	331407-001 or 140663-001
Miscellaneous Screw Kit (Not Shown)	331422-001 or 159399-001
Y Cable Assembly (Not Shown)	102422-001

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Boards	Quick Restore CD 1		
Display Assembly		122314-001	
Mass Storage Devices		122314-161	
Miscellaneous Hardware and Plastics Kit		122314-371	
Miscellaneous Hardware and Plastics Wedge Kit		US/PR 122314-001 Mexico 122314-161 APD 122314-371 PRC 122314-AD1 Korea 122314-371 AUS 122314-001 Japan 122314-291 UK 122314-291 France 122314-031 Italy 122314-031 Belgium 122314-051	
Miscellaneous Parts		122314-061	
Documentation and Software		122314-AK1	
Configure to Order	Quick Restore CD 2		
		Belgium 122314-KK1	
	Reference Guide		
	Quick Reference Guide	Not Available	
	QuickFind for Windows, North America, Latin America, Asia Pacific	Not Available	
	QuickFind for Windows, Europe, Middle East, Africa	Not Available	
<p>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.</p>			
QuickFind Part Number Suffix			
Suffix	Month	Suffix	Month
-001	January	-007	July
-002	February	-008	August
-003	March	-009	September
-004	April	-010	October
-005	May	-011	November
-006	June	-012	December

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Configure To Order Features

Compaq Presario 1900T Portable Computer Configure To Order Features	
Processors	Celeron 400 w/DC/BGA Pentium II 400 w/256 Cache Pentium II 366
System Memory	66MHz 128 (64down + 64up) 66Mhz 192 (64down + 128up) 66Mhz 96 (64down + 32up)
Diskette Drive	Standard 3.5" Floppy LS-120 Super Drive
CD-ROM	24X 4X DVD
Hard Drive	4.8-GB 6.4-GB 10.0-GB
Miscellaneous	Miscellaneous over pack POD Label
Software	Microsoft Office 2000 Professional Bundled CD
Other CTO Options	AC Adapter Briefcase External Zip Folio Case Extra SLilon for Presario 1900T Port Replicator Security Lock Xircom 10/100 NIC

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Models and Features

Compaq Discovery 1900 Series Portable Computer Models

	Model 1900T	Model 1905 and 1906
Display	12. 1" TFT or 13.3"	12. 1" TFT
Processor	Intel Celeron/400-MHz w/128K Cache or Pentium II/366-MHz w/256 Cache or Pentium II/400-MHz w/256 Cache	Intel Celeron/266-MHz w/128K Cache
Hard Drive	4.8-GB or 6.4-GB or 10.0-GB	4.0-GB
Modem	56.0 Kbps PCI Data/Fax	56.0 Kbps PCI Data/Fax
CD Drive	6X-DVD or 24X CD-ROM	24X CD-ROM

Compaq Discovery 1900 Series Portable Computer Models

	Model 1910	Model 1915
Display	12.1" TFT or 13. 3" TFT	12. 1" TFT or 13.3" TFT
Processor	Intel Celeron/300-MHz w/128K Cache or PII/300-MHz w/512 Cache	Pentium II/266-MHz w/512K or 256K Cache or PII/300-MHz w/512 Cache
Hard Drive	4.8-GB or 6.4-GB	4.0-GB
Modem	56.0 Kbps PCI Data/Fax or 56.0 Kbps PCI Data/Fax I	56.0 Kbps PCI Data/Fax or 56.0 Kbps PCI Data/Fax (International)
DVD or CD Drive	24X CD Drive or 4X DVD	DVD or 24X CD Drive

Compaq Discovery 1900 Series Portable Computer Models

	Model 1919 and 1920	Model 1922 and 1925
Display	13. 3" TFT	12.1" TFT or 13. 3" TFT
Processor	Intel Celeron/300-MHz w/128K Cache or Pentium II/300-MHz w/256K Cache	Intel Celeron/300-MHz w/512K Cache or Intel Celeron/333-MHz w/128K Cache or Intel Celeron/400(128) w/DC or Pentium II/333-MHz w/256K Cache
Hard Drive	4.0-GB or 6.4-GB	4.8-GB or 6.4-GB
Modem	K-56.0 Kbps PCI Data/Fax or 56.0 Kbps PCI Data/Fax or 56.0 Kbps PCI Data/Fax (International)	56.0 Kbps PCI Data/Fax or International
DVD Drive	DVD Drive	DVD Drive or 24X CD-ROM

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Status Panel	Model 1926, 1927, and 1928	Model 1929 and 1930
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Right Side Components	Display	12. 1" TFT or 13.3 TFT
Bottom of Unit	Processor	Intel Celeron/400-MHz w/128K Cache or Pentium II/333-MHz w/256K Cache
Left Side and Top Wedge Components		Pentium II/366-MHz w/256K Cache or Intel Celeron/400-MHz w/128K Cache or Intel Celeron/433-MHz w/128K Cache
Right Side Wedge Components	Hard Drive	4.8-GB or 6.4-GB
Rear Connectors	Modem	56.0 Kbps PCI Data/Fax or International
Port Replicator Connectors	CD Drive	4X DVD or 24X CD-ROM
Port Replicator Components		
Power Management		

[Configure To Order Features \(CTOs\)](#)

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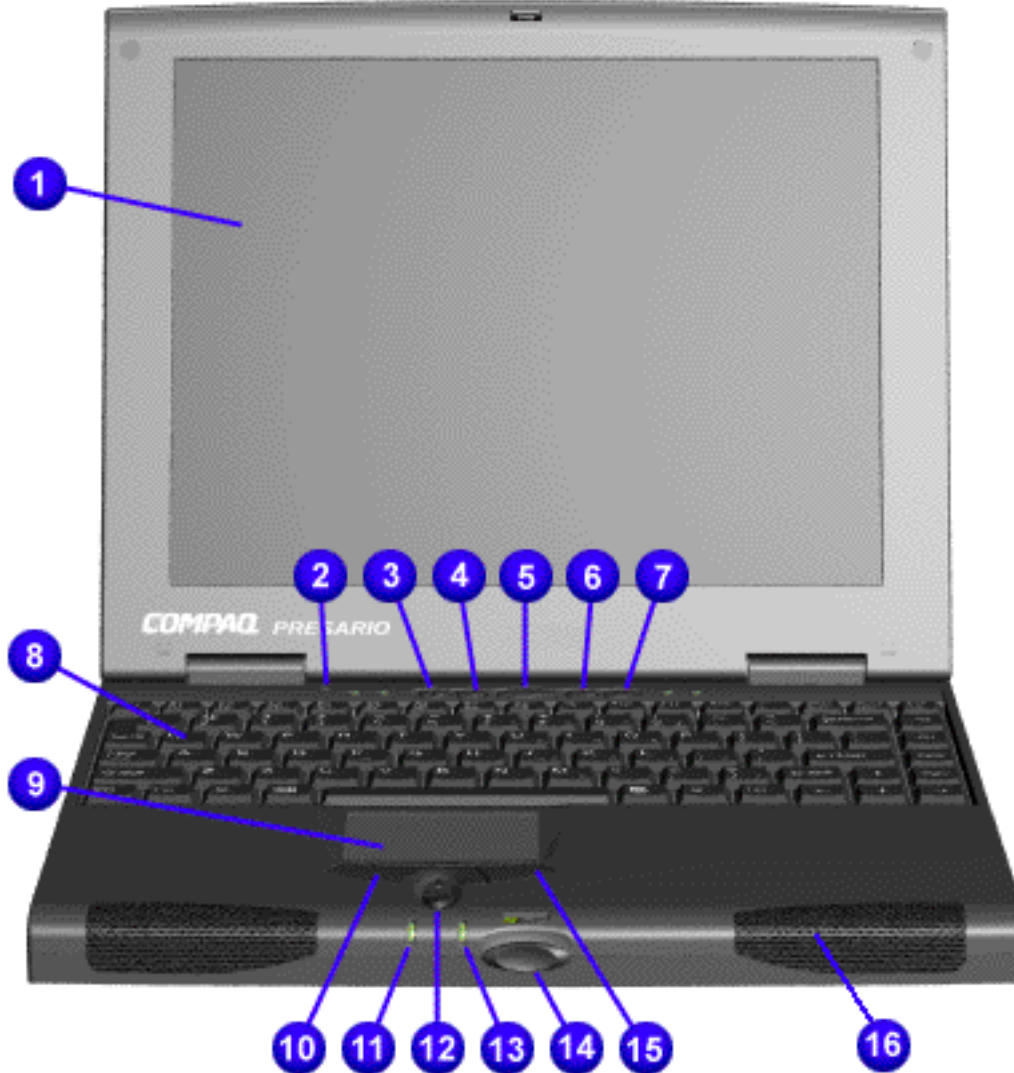
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Controls and Lights

Front of Unit	
1. Display	9. TouchPad
2. Backlight Switch Button	10. Left TouchPad Button
3. Instant Internet Access Button	11. Power (On/Off) Light
4. Instant Search Button	12. Scroll (Up/Down) Button
5. Power (On/Off) Button	13. Battery Charge Light
6. Instant E-Commerce (or Favorite Web site) Button	14. Display Panel Release Button
7. Instant E-Mail Button	15. Right TouchPad Button
8. Keyboard	16. Integrated Speakers

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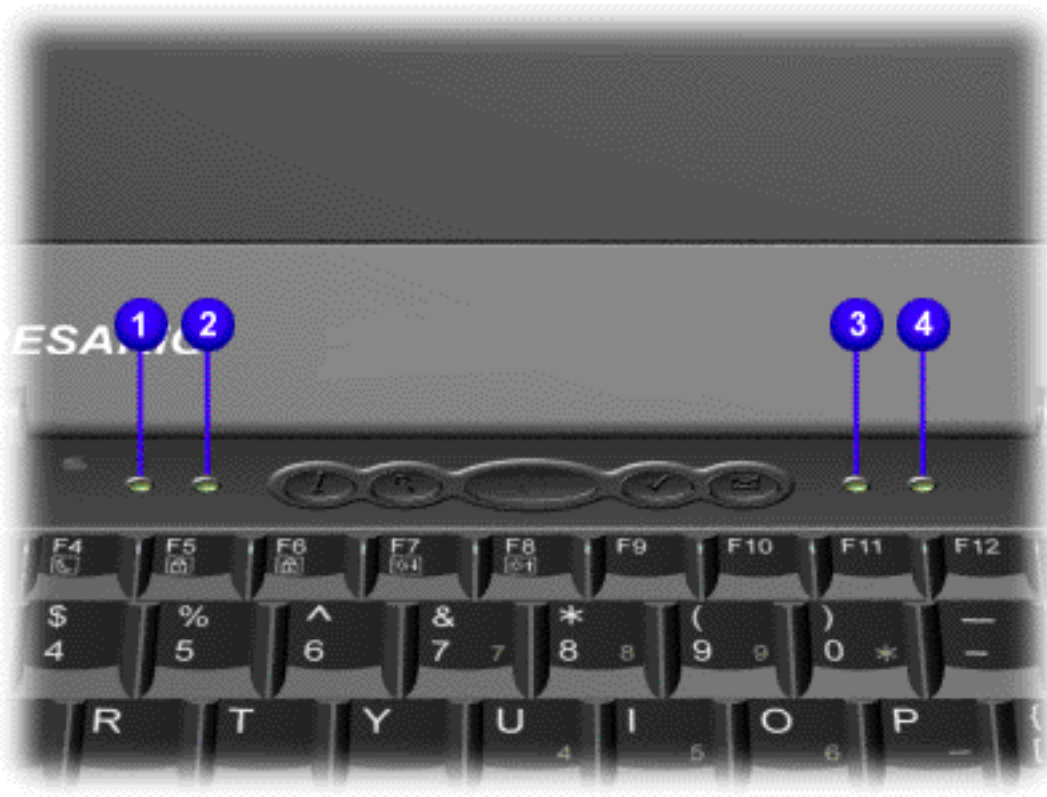
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Status Panel Lights

1. AC Adapter Light

2. Num Lock Light

3. Caps Lock Light

4. Scroll Lock Light

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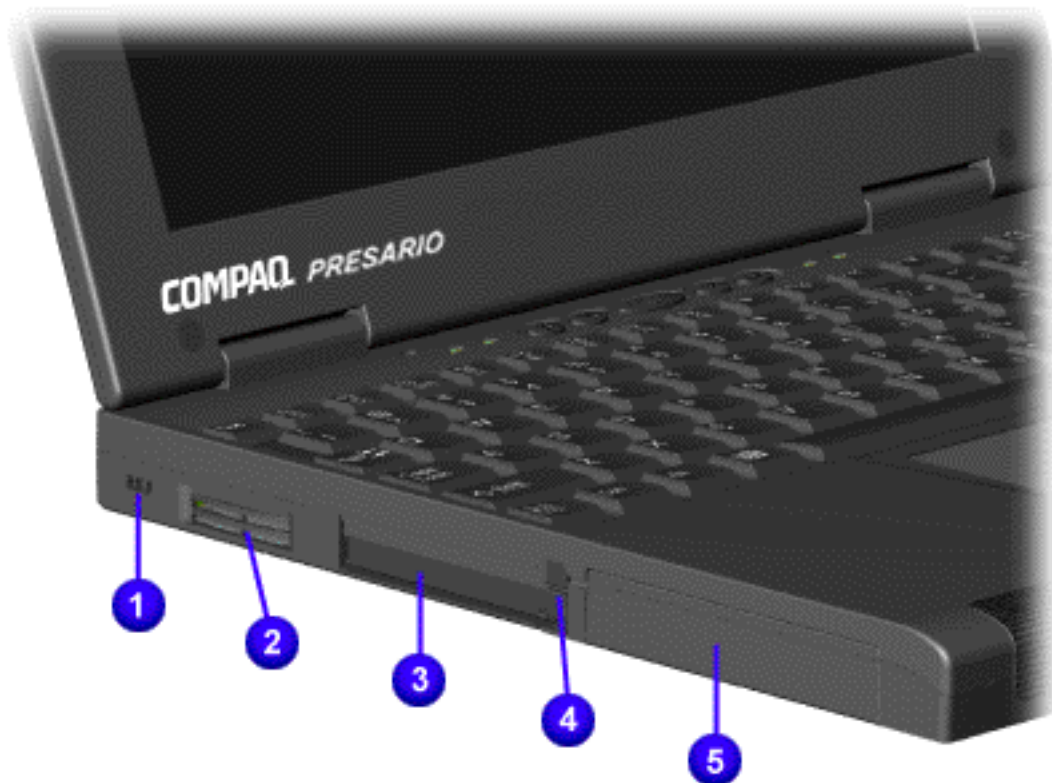
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Left Side Components

1. Security Lock

2. Air Vent

3. PC Card Slots

4. PC Card Eject Levers

5. Hard Drive

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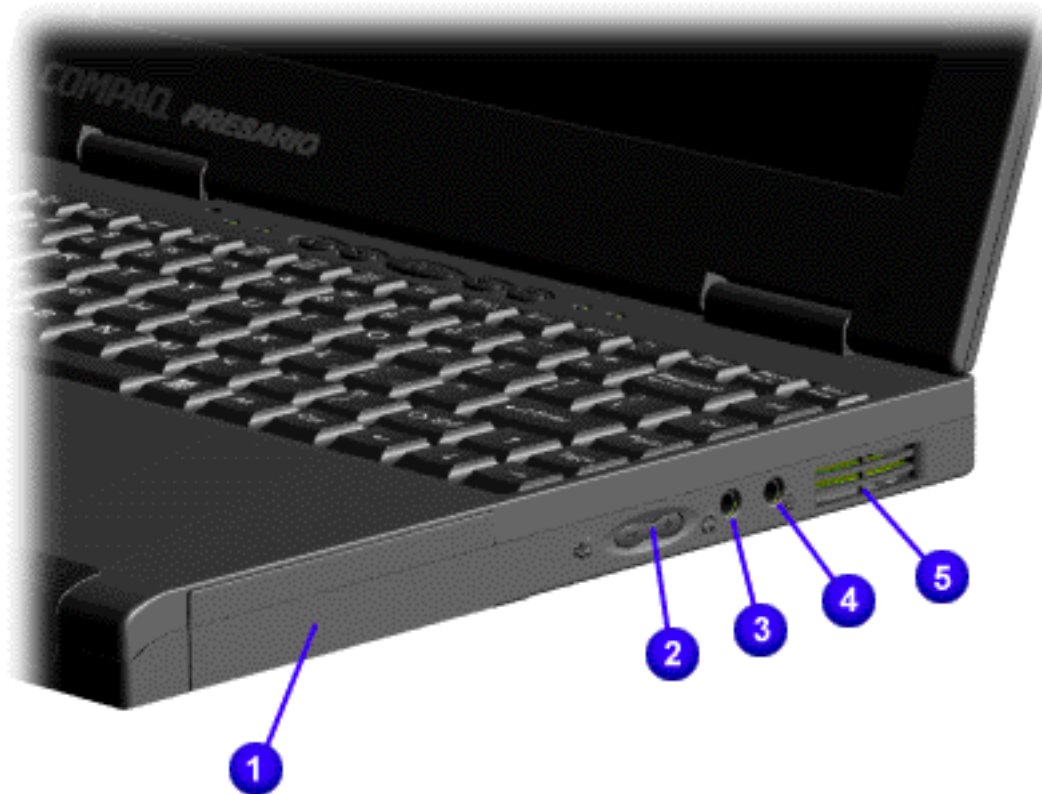
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Right Side Components

1. Battery Compartment

2. Volume Up/Down Button

3. Headphone Jack

4. Microphone Jack

5. Air Vent

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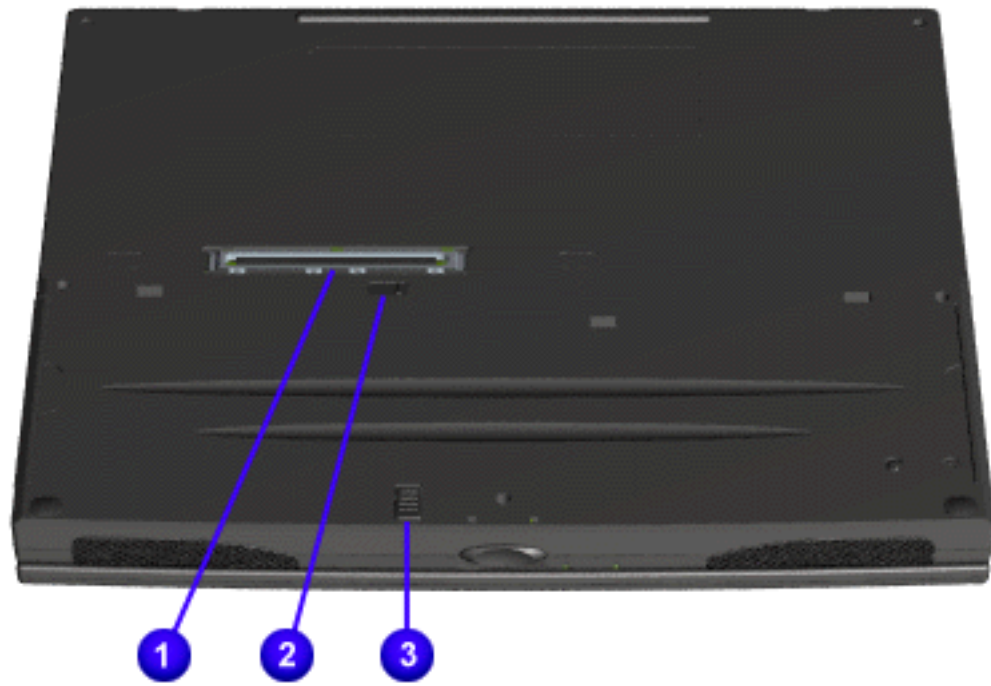
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Bottom of Unit

1. Wedge Interface Connector

2. Keyboard Eject Switch

3. Battery Release Lever

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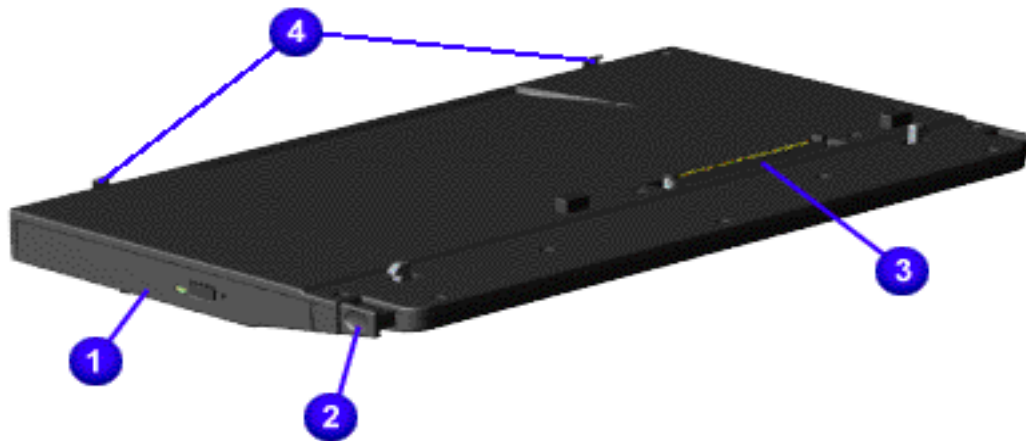
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Wedge Components

Left Side and Top Components of the Removable Drive Wedge

1. DVD Drive or CD ROM Drive

2. Wedge Release Button

3. System to Wedge Interface Connector

4. Alignment Pins

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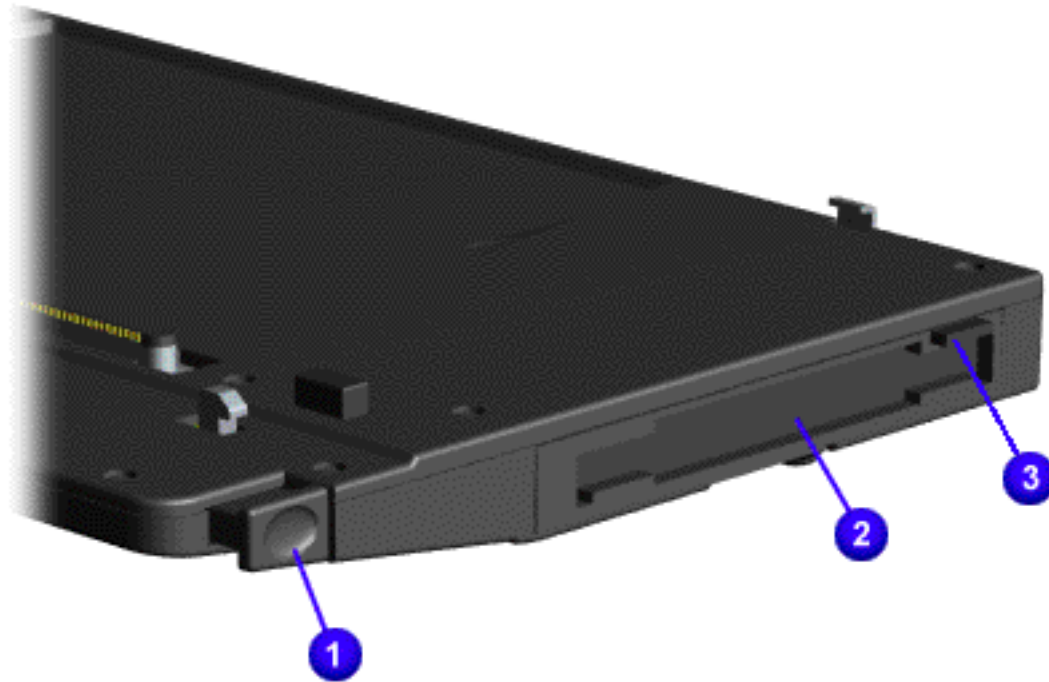
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Wedge Components

Right Side Components of the Removable Drive Wedge

1. Wedge Release Button
2. Diskette Drive or LS-120 Drive Slot
3. Diskette Drive or LS-120 Drive Eject Button

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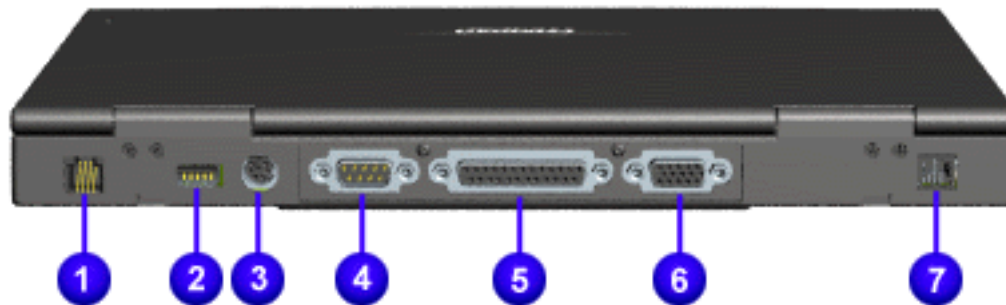
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Rear Connectors

1. Modem Jack
2. USB Port
3. Keyboard/Mouse Port
4. Serial Port
5. Parallel Port
6. External Monitor Port
7. AC Adapter

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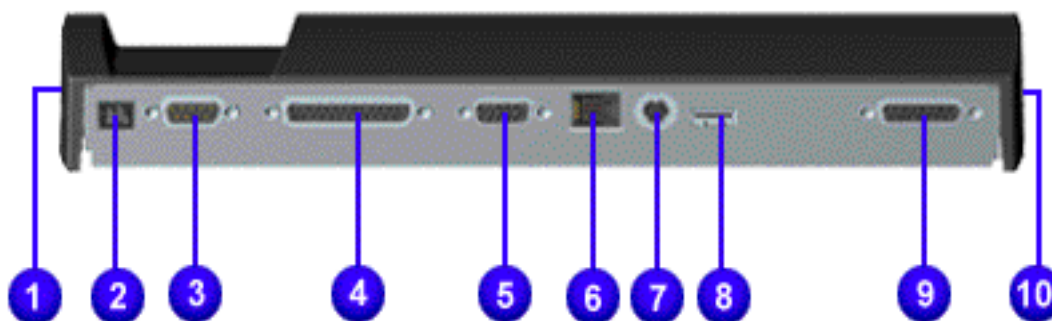
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Integrated 10/100BaseT Ethernet Port Replicator Connectors

1. Keyboard/Mouse
2. AC Adapter
3. Serial Port
4. Parallel Port
5. External Monitor Port
6. Local Area Network (LAN)
7. Keyboard/Mouse
8. USB Port
9. MIDI/Game Pad/Joystick Port
10. Security Lock

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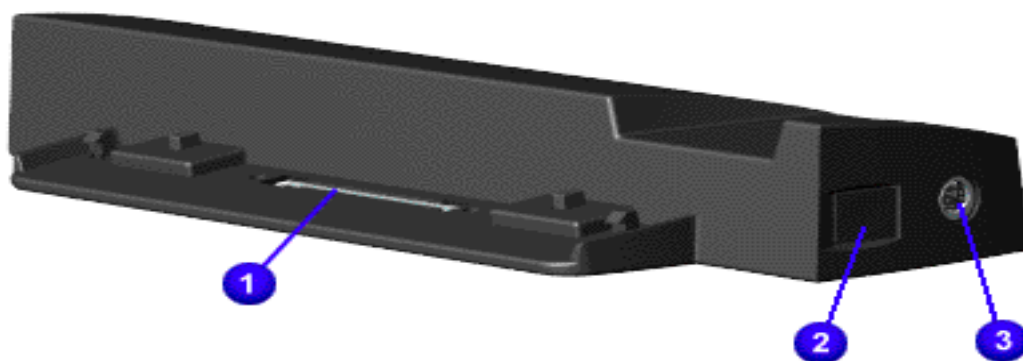
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Port Replicator Components

Integrated 10/100BaseT Ethernet Port Replicator Components

1. Port Replicator Interface Connector
2. Port Replicator Release Button
3. Keyboard/Mouse Connector



CAUTION: The computer power switch should be turned off before you connect or disconnect the port replicator. Damage may occur to the computer if it is "hot" plugged to the port replicator.

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Power Management Settings

Compaq Presario 1900 Series Portable Computers are equipped with Advanced Power Management (APM). This management system allows you to conserve battery power and customize the power saving settings to suit your individual needs.

- [Power Management Settings](#)
- [Sleep](#)
- [Hibernation](#)
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- [Servicing Your Computer - Full Off Mode](#)

Depending on your patterns of computer use, you can set different conditions, or Power Schemes, under which the computer will go into Sleep mode. The optional settings are **Home/Office Desk**, **Portable/Laptop**, and **Always On**.

From the default settings, you can change the following settings.


- When the computer goes into Sleep (Standby) mode
- When the screen times out and goes blank
- When the hard drive slows down

NOTE: The setting for the hard drive must be less than or equal to the setting for the computer.

IMPORTANT: If you are connected to a network, Compaq recommends you set **System Standby** to **Never**.

Sleep

Sleep mode is a low power mode, also referred to as Standby mode.

	CAUTION: While in Sleep mode, your computer will maintain system information and open files. Unsaved information will be lost if you turn off your system prior to system wake-up, or if you lose power while using the AC adapter.
---	--

Hibernation Mode

Hibernation mode occurs by pressing the **Power** button once. Your computer saves the content of your computer memory to the hard drive. This is followed by the computer turning off.

The following table shows the conditions and indicators for getting in and out of the various power modes: Sleep, Hibernation, and Off.

Mode	To Start	To End	Indicators
Sleep	Manual - Fn+F4 key combination	Press any key or move the mouse	Flashing Power LED
	Time-Out Default - 15 minutes. If using battery power, system will not go to Sleep if on AC power		
Hibernate	Manual - Press Power Button once	Press Power button once	No Power LED, blank screen
	Time Out Default - if low battery or after 1 hour of Sleep (system will not Hibernate if on AC power)		
Off	Perform normal Windows shutdown using the Start button, or press and hold down the Power button for 4 seconds	Press Power button once	No Power LED, blank screen

Rebooting After a Lockup

Occasionally you may encounter a non-working keyboard or a locked screen. To restart your computer, press and hold down the **Power** button for at least four seconds. This will cause a manual shutdown. Press the **Power** button once to start the computer.

If the computer still does not restart, follow these steps:

1. Press the **Power** button and hold it for four seconds to shut the computer down.
2. Remove the battery and unplug the AC power for at least 30 seconds.
3. Reinsert the battery or reconnect AC power and press the **Power** button once to restart.

Full Off (Main Power Off) Mode

If you need to install or replace components in your computer, you must turn the computer off *completely*. Follow the instructions above for putting the computer into Standard Off mode. Unplug the computer electrical cord from the outlet and remove the battery if installed.

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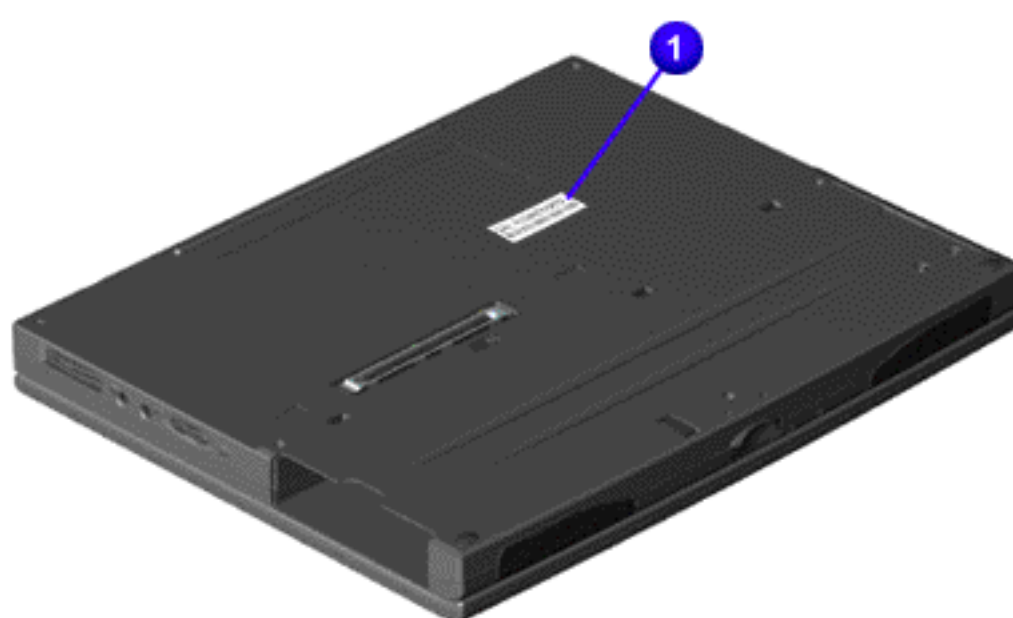
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This section explains the removal and replacement procedures for the computer.

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Serial Number

Report the computer serial number to Compaq when requesting information or ordering spare parts. The serial number is located on bottom of unit.

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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 at different electrostatic voltage levels.

Typical Electrostatic Voltages			
	Relative Humidity		
Event	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.

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Service Considerations

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

Tool and Software Requirements

To service the computer, you need the following:

- 5 millimeter nut drivers (for screwlocks and standoffs)
- Small, Phillips (P-Zero) screwdriver
- Small, standard screwdriver
- Small, pair of tweezers
- Diagnostics software

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.

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

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Cables and Connectors

Most cables used throughout the unit are ribbon cables. Cables must be handled with extreme care to prevent 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 serving 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.

Select the desired illustration

Removing a cable from a [ZIF Connector](#).

The cable position for the [speaker assembly](#).

Plastic Parts

Plastic parts can be damaged by the use of excessive force during disassembly and reassembly. When handling the plastic parts, use care. Apply pressure only at the points designated in the maintenance instructions.

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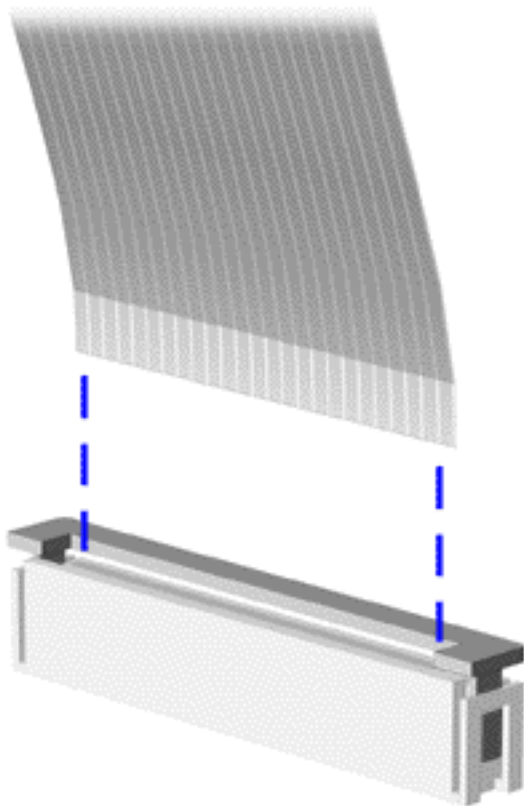
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ZIF Connector



The computer uses a zero insertion force (ZIF) connector for the keyboard cable to the system board. To remove a cable from a ZIF connector, lift both corners of the ZIF connector and slide simultaneously with constant light force.



CAUTION: A ZIF connector and its attached cable can be easily damaged. Handle only the connector slide when removing or replacing a cable. Never pull or twist on the cable while it is connected.

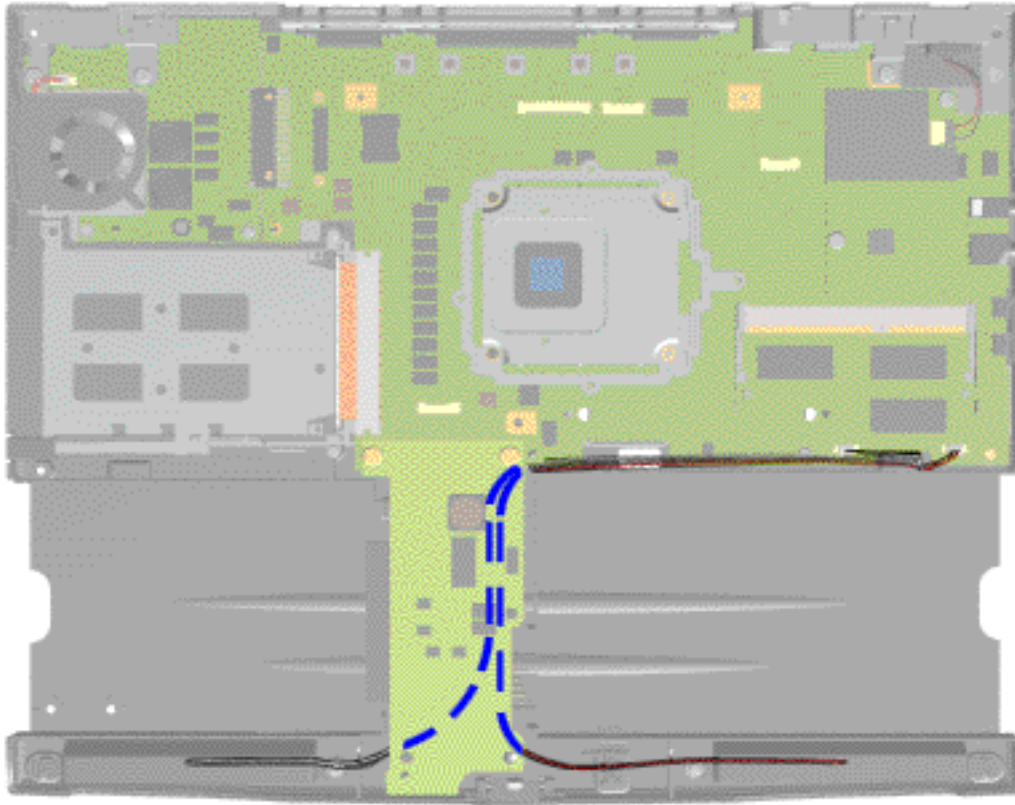
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Speaker Assembly



The cable position for the speaker assembly.

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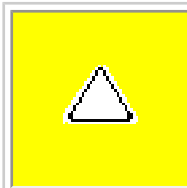
Before beginning removal and replacement procedures, complete the following procedures:

1. Disconnect AC power and any external devices.
2. Remove the battery pack.
3. Remove any PC Cards.
4. Remove the wedge.

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 Presario 1900 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 Presario 1900 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 associate sub-assembly.

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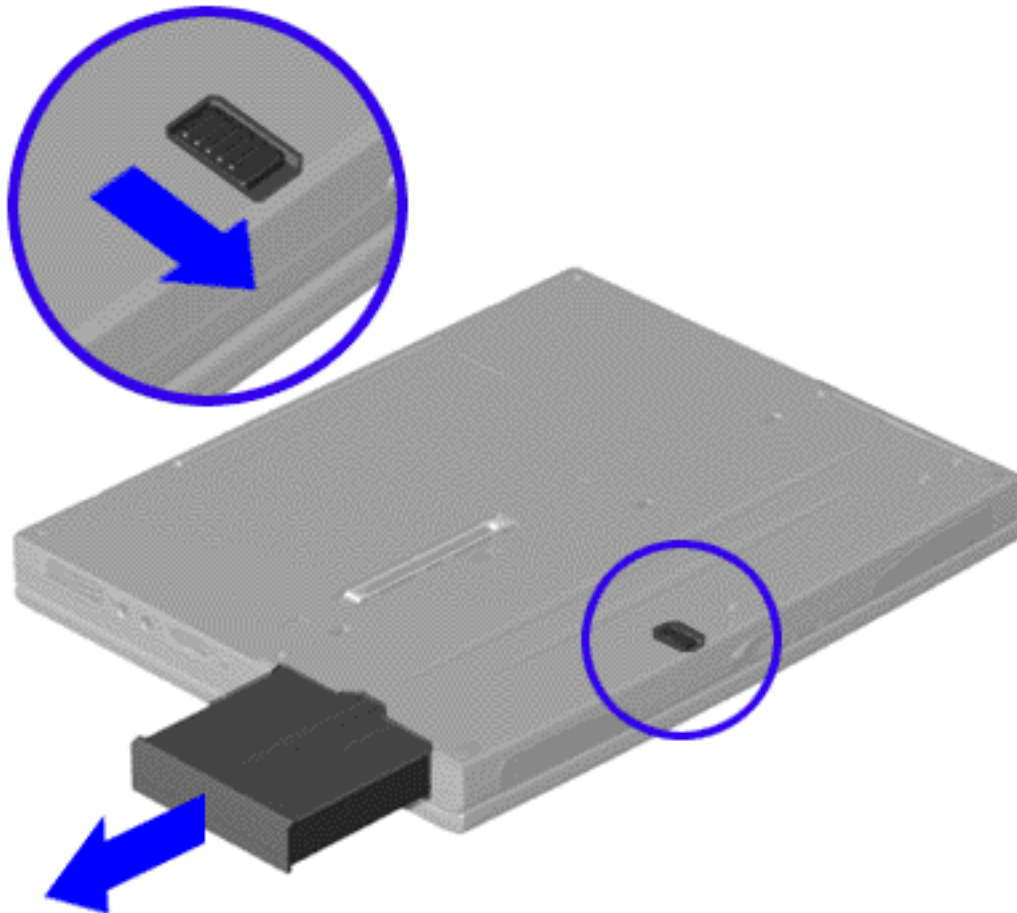
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Removing the Battery Pack

To remove the battery pack, complete the following steps:

1. [Prepare the computer for disassembly.](#)
2. Turn the unit over.
3. Slide the battery pack release button located in the center of the bottom of the unit.
4. Locate the battery pack on the right, place your thumb in the groove, and pull the battery pack forward from the unit.

To replace the battery pack, complete the following step.

Insert the battery pack into the chassis slot located on the right side of the unit and push in.

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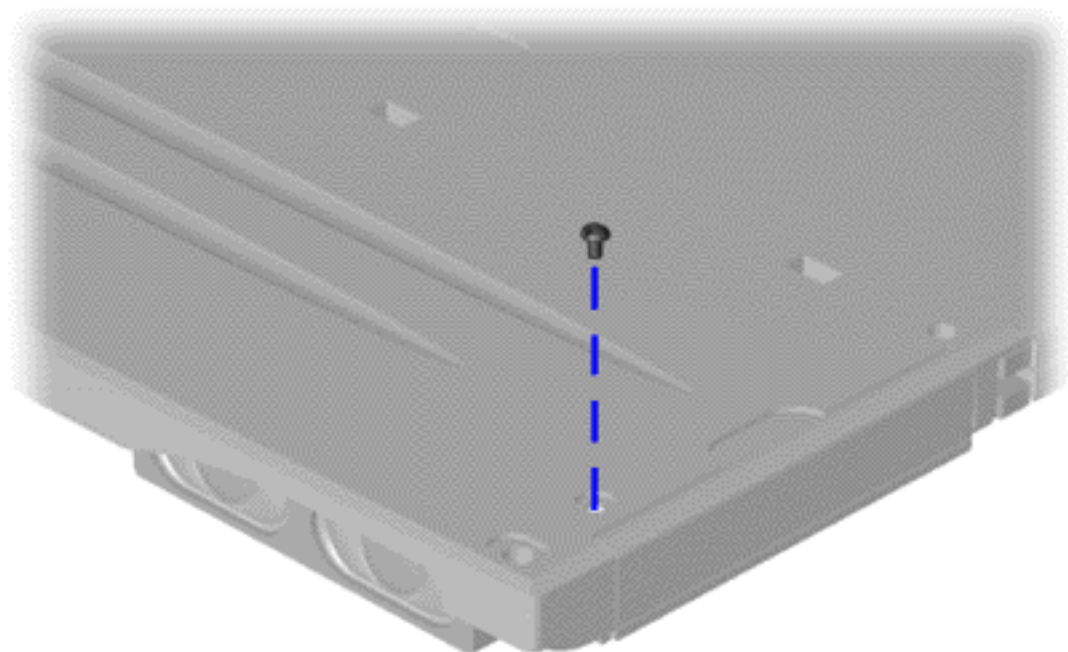
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Removing the Hard Drive

To remove the hard drive, complete the following steps:

1. [Prepare the computer for disassembly](#).
2. Turn the unit over and remove the screw (located in the right corner) from the hard drive.
3. Pull the hard drive from the chassis slot.

To replace the hard drive, reverse the previous procedures.

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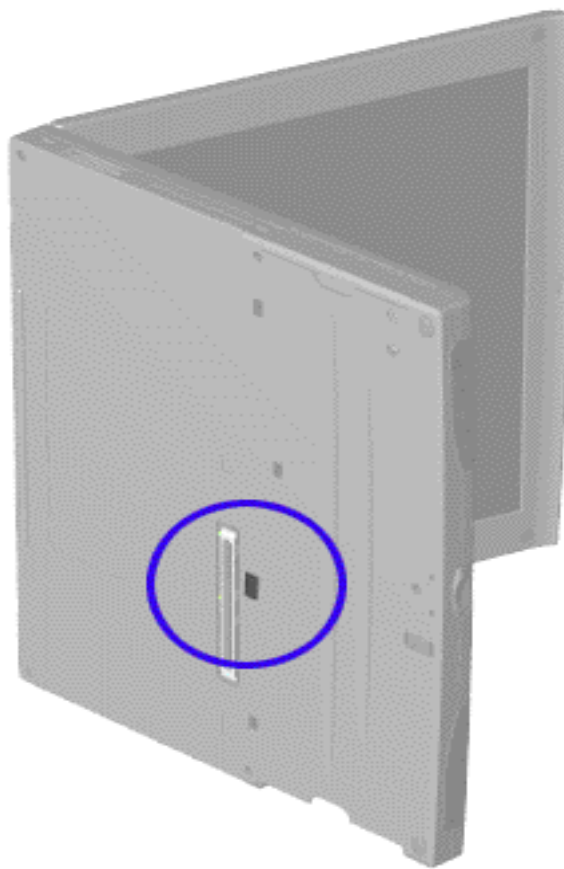
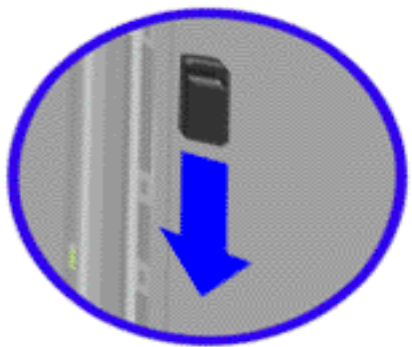
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Removing the Keyboard

To remove the keyboard, complete the following steps:

1. Prepare the computer for disassembly.
2. Partially close the unit and place it on its side.
3. Slide the keyboard eject switch located in the center of the bottom of the unit to the right to release the keyboard.

[Next Step](#)

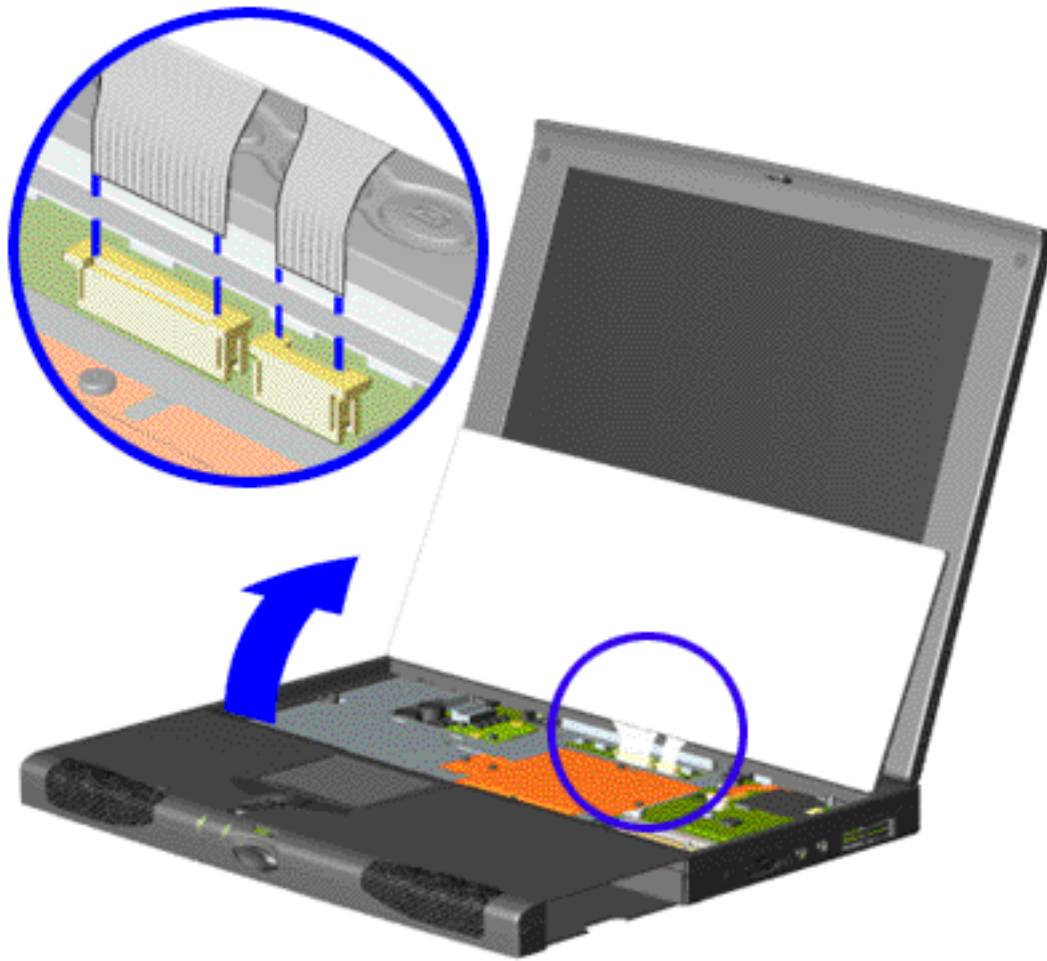
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Removing the Keyboard, continued

4. Place the unit right side up. Gently lift up the front of the keyboard using tweezers. Disconnect the flex cables from the ZIF connectors on the system board.

NOTE:

To remove a cable from a ZIF connector, lift both corners of the ZIF connector and slide simultaneously with constant light force and then remove the cable.

5. Lift the keyboard out of the chassis.

To replace the keyboard, reverse the above procedures.

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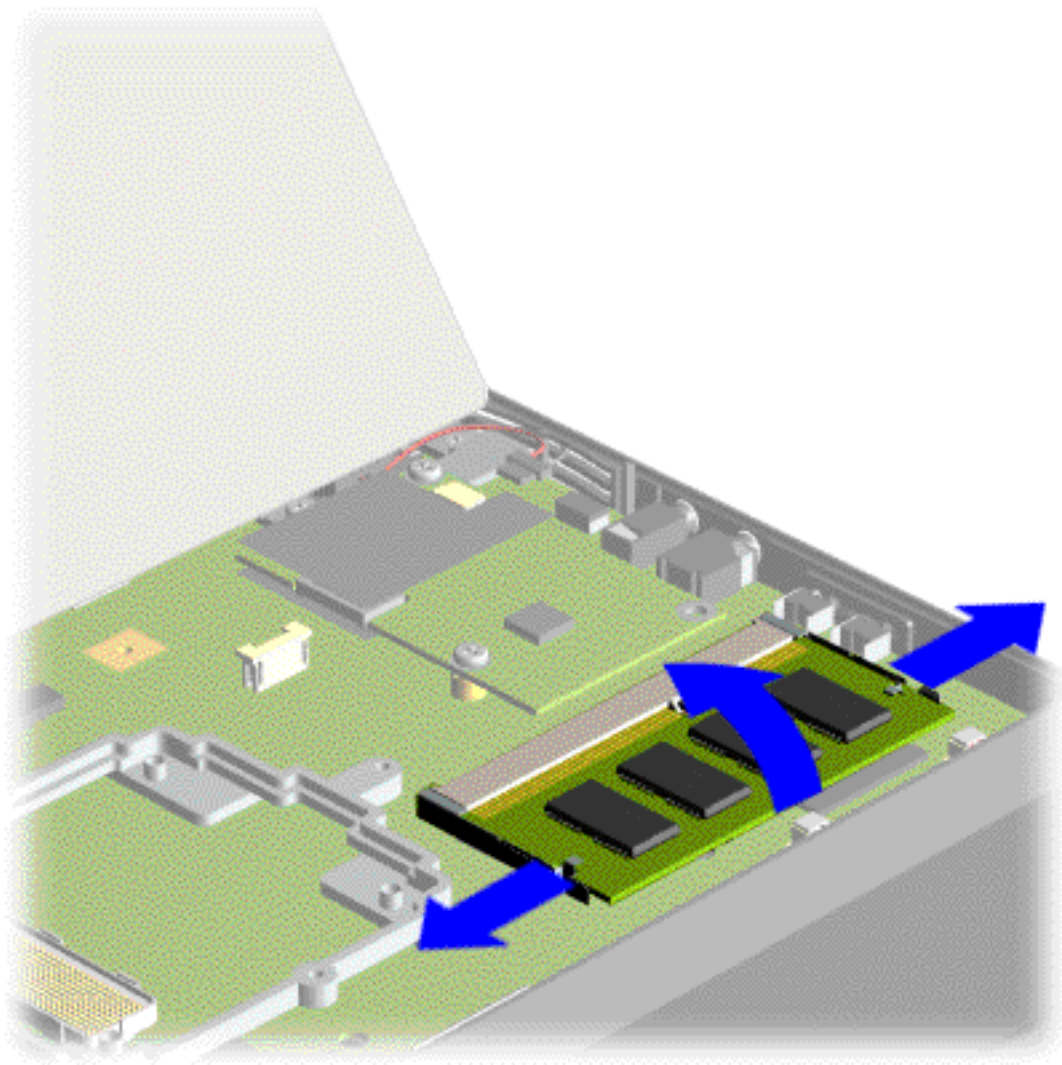
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Removing the Memory Module

To remove the memory module, complete the following steps:

1. [Prepare the computer for disassembly.](#)
2. [Release and lift up the keyboard.](#)
3. Pull side levers to release the memory module, then unplug the memory module from the system board.

To replace the memory module, reverse the previous procedures.

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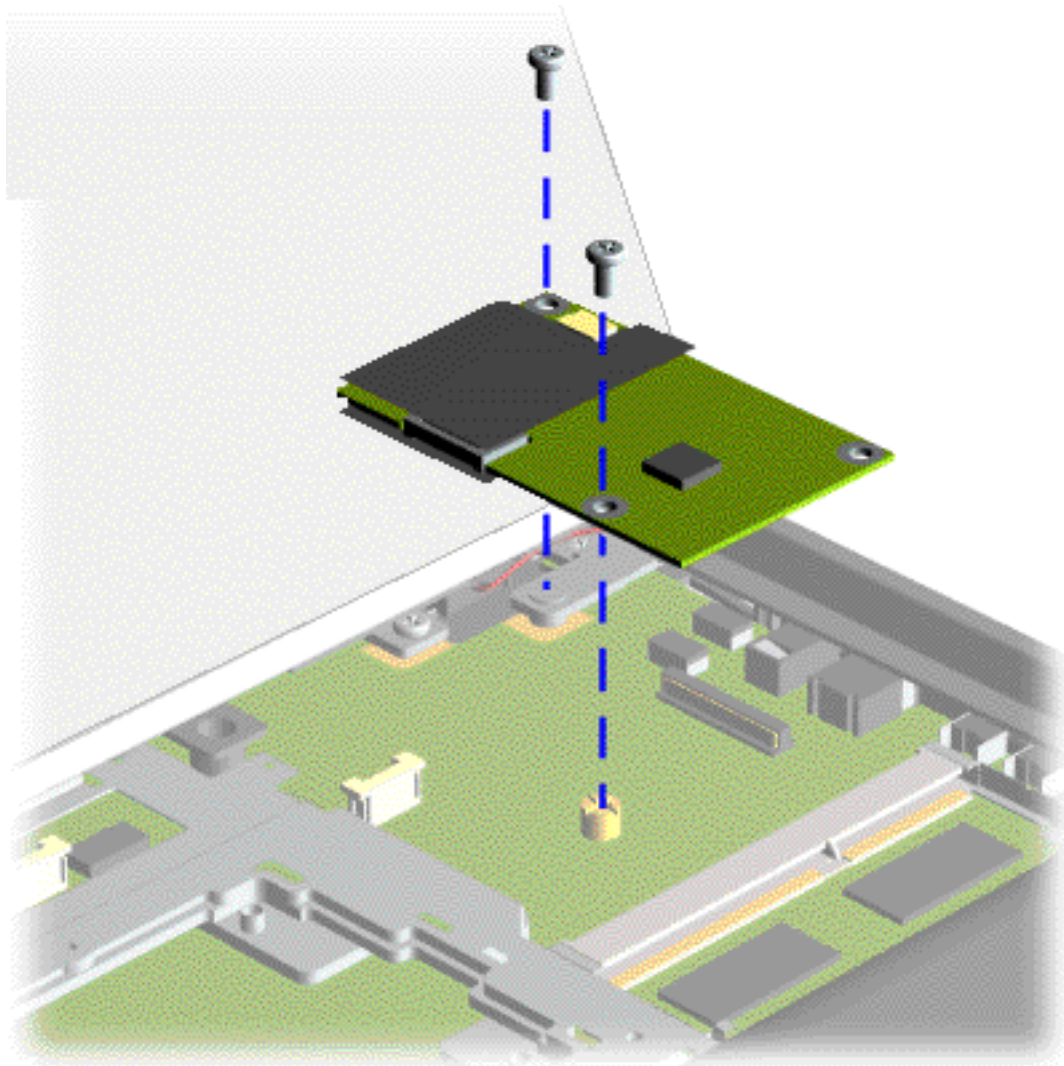
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Removing the Modem

To remove the modem, complete the following steps:

1. [Prepare the computer for disassembly.](#)
2. [Release and lift up the keyboard.](#)
3. Remove two screws securing the modem and pull the modem off the connector on the system board.

[Next Step](#)

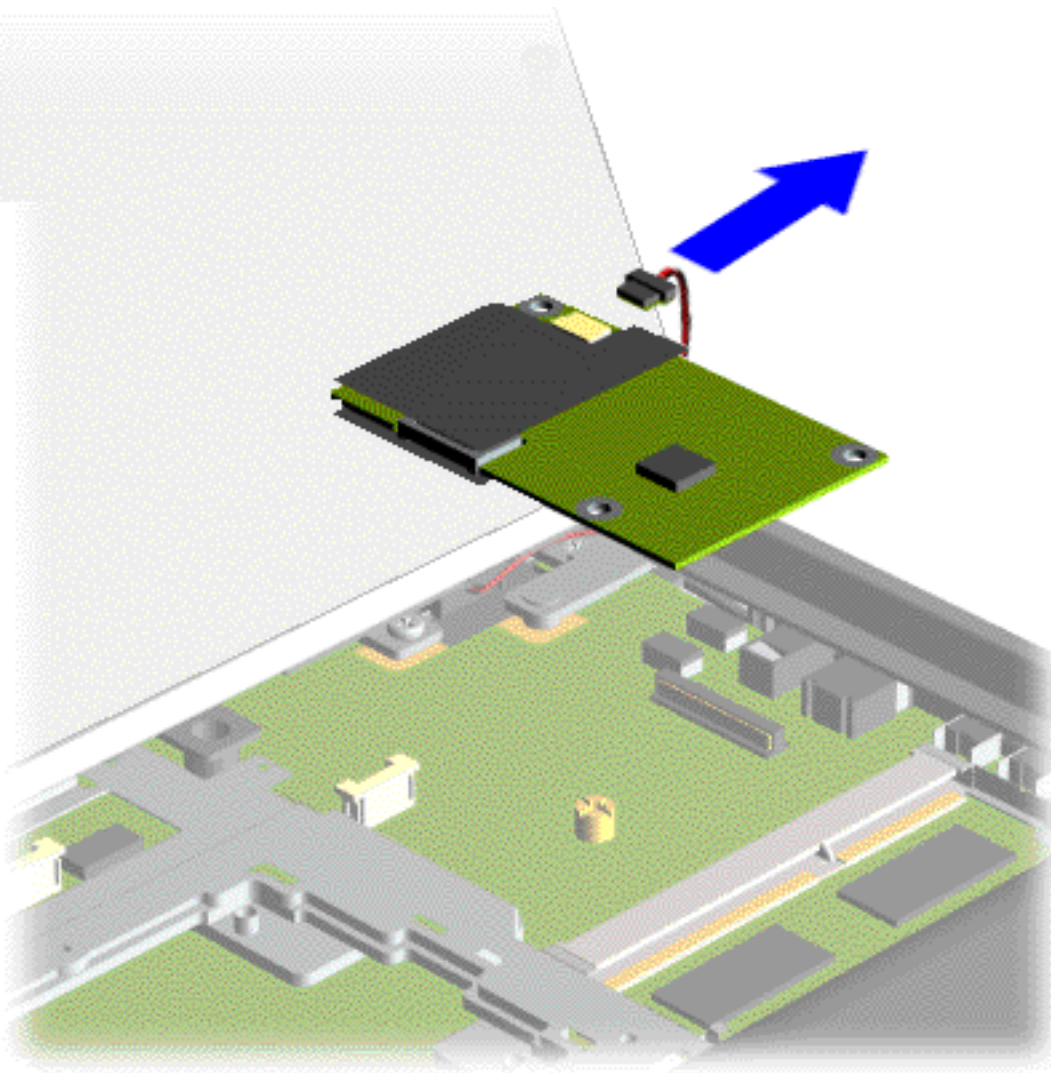
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Removing the Modem, continued

4. Disconnect the modem cable from the modem and lift the modem from the chassis.

To replace the modem, reverse the previous procedures.

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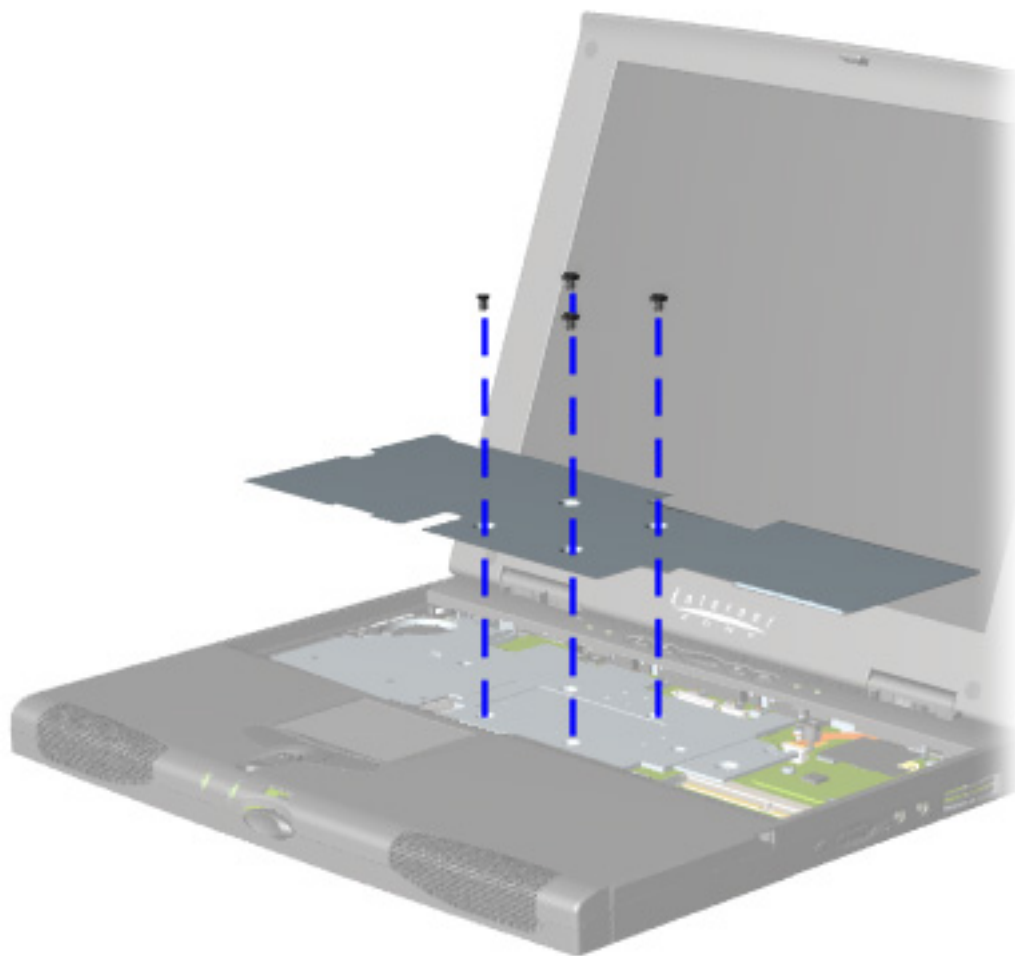
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Removing the Heatspreader with Thermal Pad

To remove the heatspreader with thermal pad, complete the following steps:

1. [Prepare the computer for disassembly.](#)
2. [Release and lift the keyboard.](#)
3. Remove four screws from the heatspreader with thermal pad and lift out of the chassis.

NOTE: When replacing the heatspreader, ensure that the thermal pad under the heatspreader is properly replaced.

[Next Step](#)

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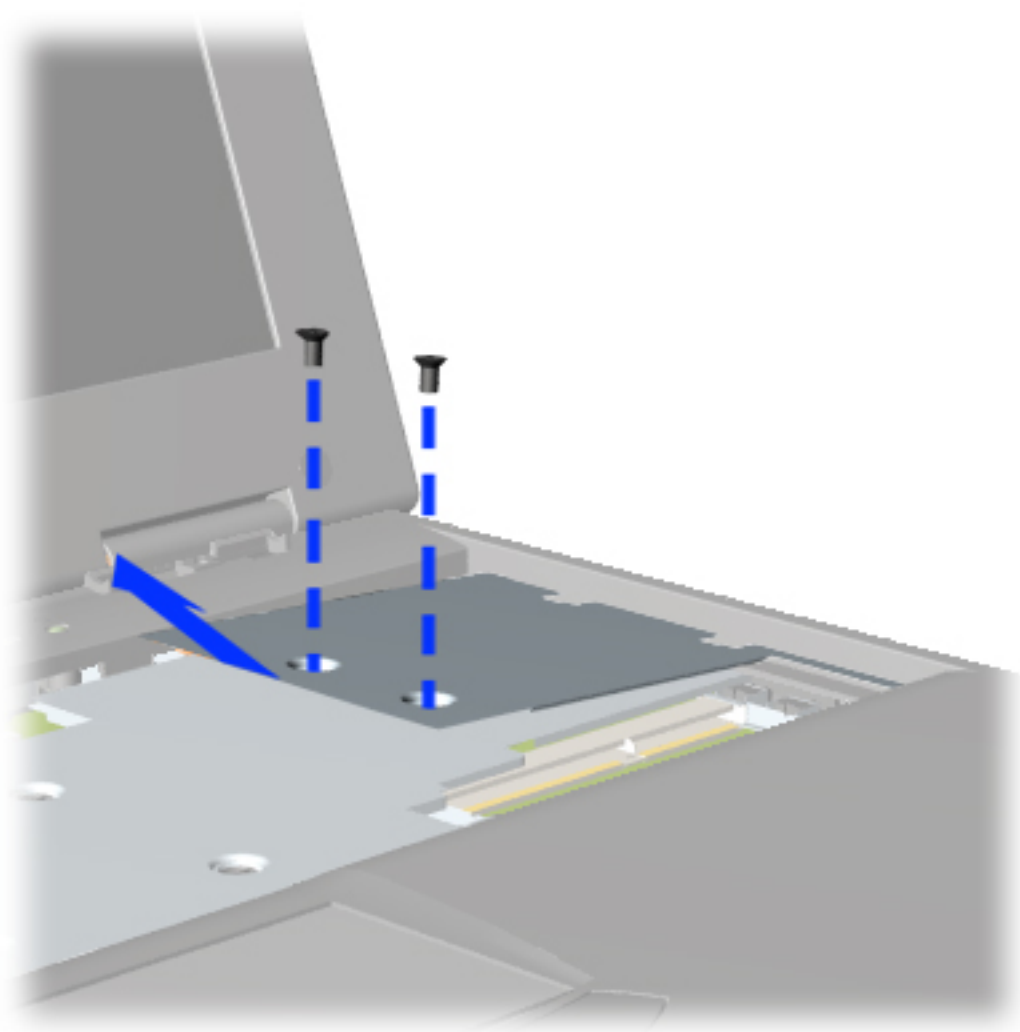
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Removing the Modem Cover

To remove the heatspreader with thermal pad, complete the following steps:

1. [Prepare the computer for disassembly.](#)
2. [Release and lift the keyboard.](#)
3. [Remove the heatspreader with thermal pad.](#)
4. Remove two screws from the modem cover and lift out of chassis.

[Next Step](#)

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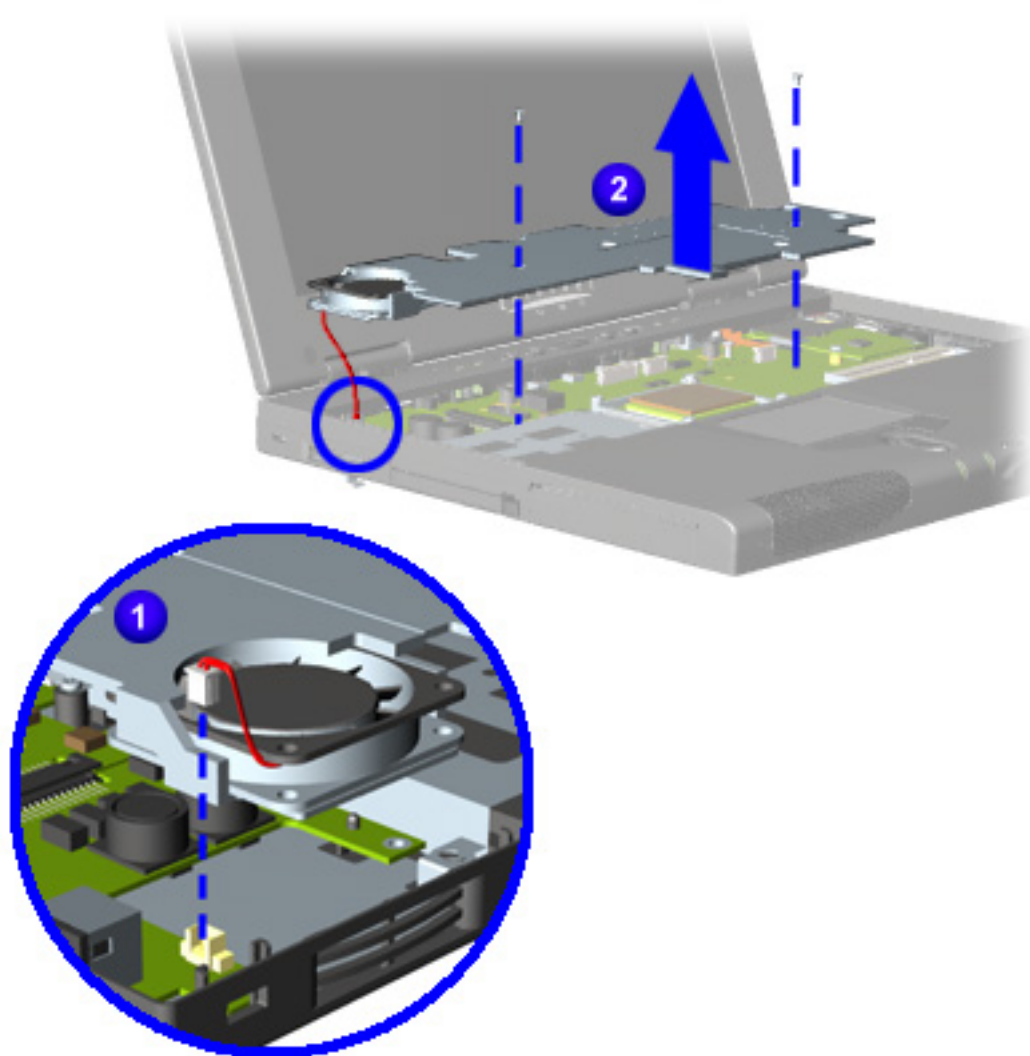
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Removing the Fan Mounting Bracket and Disconnecting the Fan Cable

To remove the heatspreader with thermal pad, complete the following steps:

1. [Prepare the computer for disassembly.](#)
2. [Release and lift the keyboard.](#)
3. [Remove the heatspreader with thermal pad.](#)
4. [Remove the modem cover.](#)
5. Remove two screws from the **2** fan mounting bracket, disconnect **1** fan cable, and lift out of chassis.

To replace the heatspreader with thermal pad, reverse the previous procedures.

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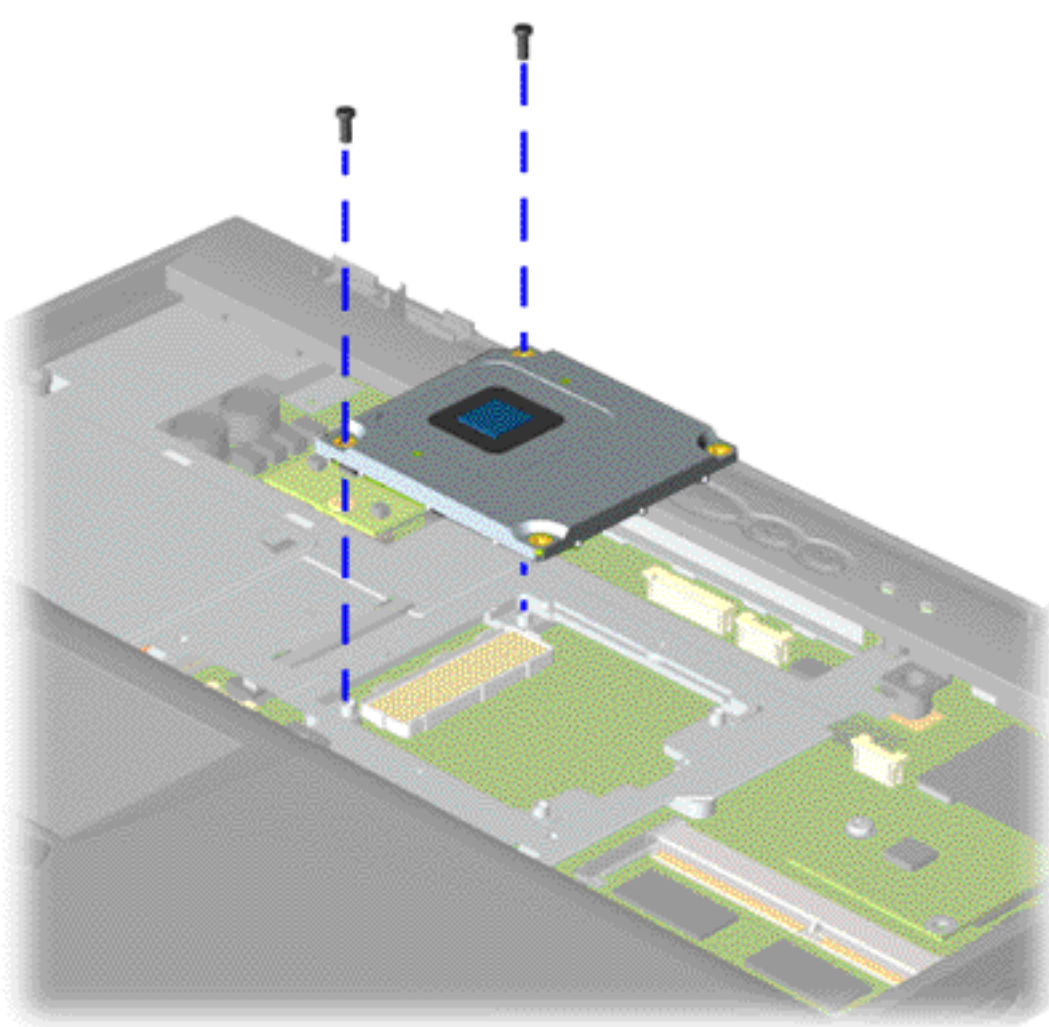
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Removing the Processor

To remove the processor, complete the following steps:

1. [Prepare the computer for disassembly.](#)
2. [Release and lift the keyboard.](#)
3. [Remove the heatspreader with thermal pad.](#)
4. Remove two screws that secure the processor to the system board.

IMPORTANT:

The bottom of the processor contains socket pins which can be easily damaged, if not properly removed.

WARNING:

The Pentium II processor may be very hot when the unit has been running. Allow the processor to cool before handling it.



5. Insert a small blade screw driver under the right side of the processor. Gently lift up the left side of the processor while rocking up and down the right side, until the it releases from the socket. This is necessary to prevent damage to the socket pins.

To replace the processor complete the following steps:

1. Align the processor over the socket using the screw holes as a guide. Apply equal pressure on both sides of the processor over the socket (left side).
2. Replace two screws.
3. Replace the heatspreader with thermal pad.

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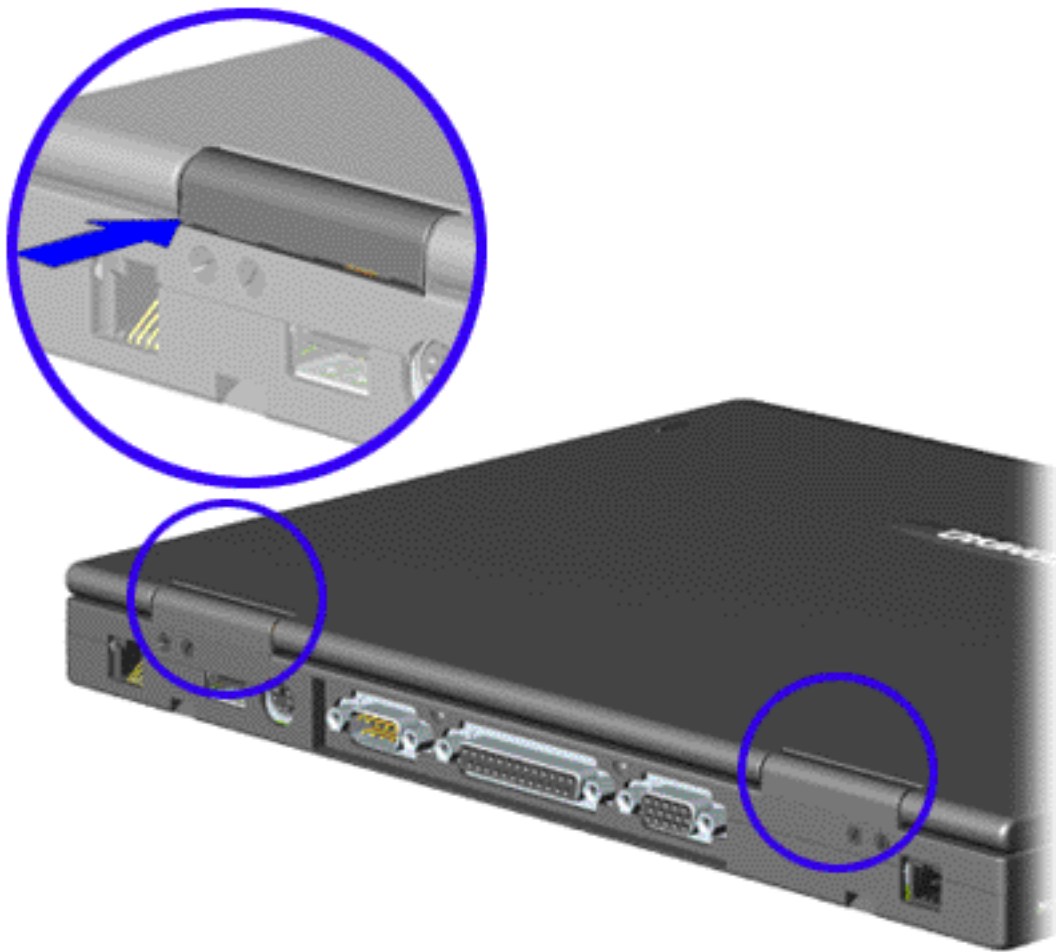
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Removing the 13.3" Display Panel Assembly

To remove the 13.3" display panel assembly, complete the following steps:

1. [Prepare the computer for disassembly.](#)
2. [Remove the keyboard.](#)
3. Close the display panel assembly to access the hinge covers from the rear of the unit. Using tweezers, gently lift from the bottom edge of the hinge covers. Lift the hinge covers off the unit.

NOTE: Use a pair of tweezers to properly remove the display hinges from the unit.

[Next Step](#)

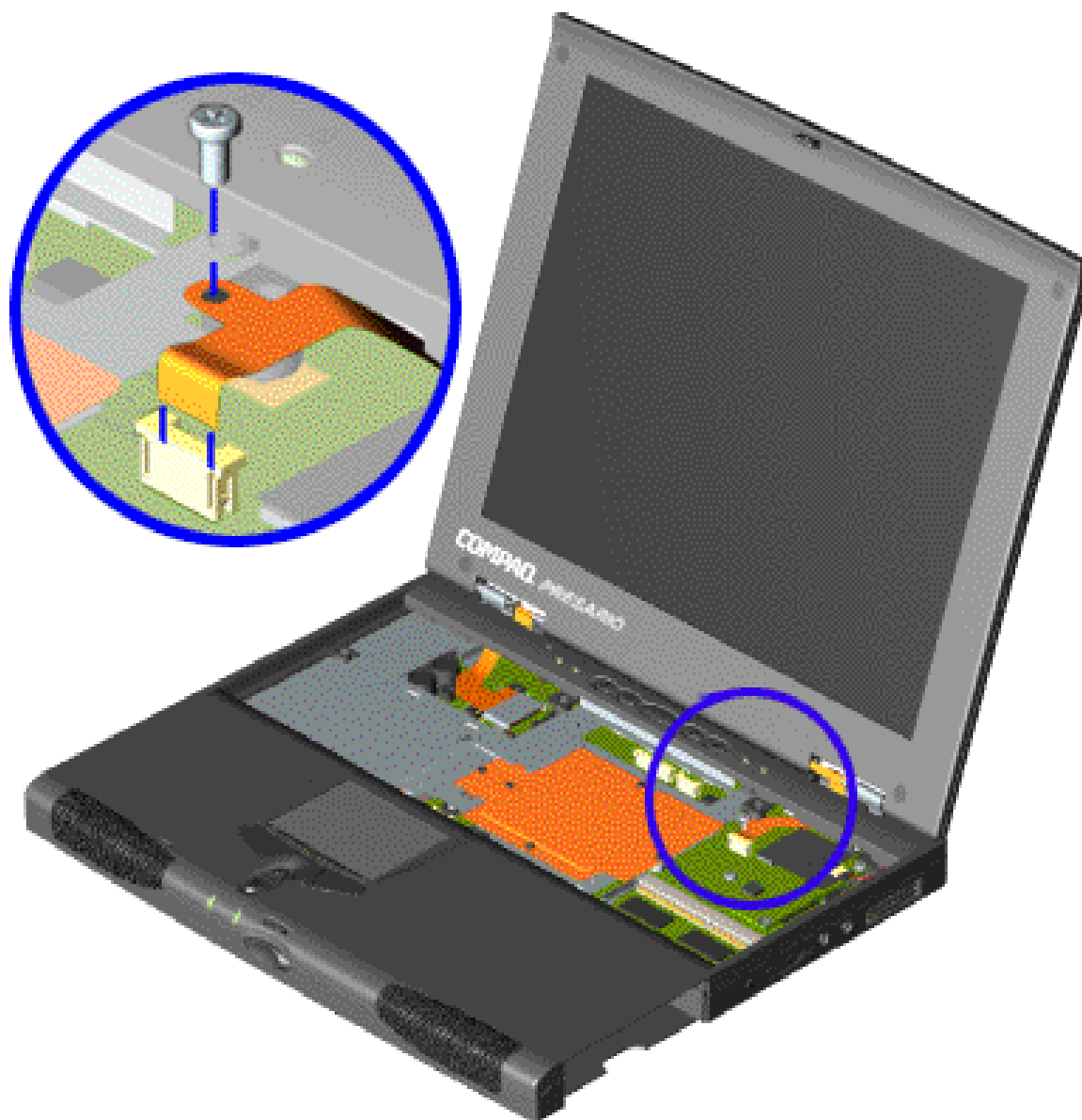
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Removing the 13.3" Display Panel Assembly, continued

4. Open the display panel assembly and remove the screw from the backlight cable. Disconnect the backlight cable from the ZIF connector on the system board.

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Removing the 13.3" Display Panel Assembly, continued

5. Disconnect the data cable from the LIF connector on the Low Voltage Differential Signal (LVDS) board.

[Next Step](#)

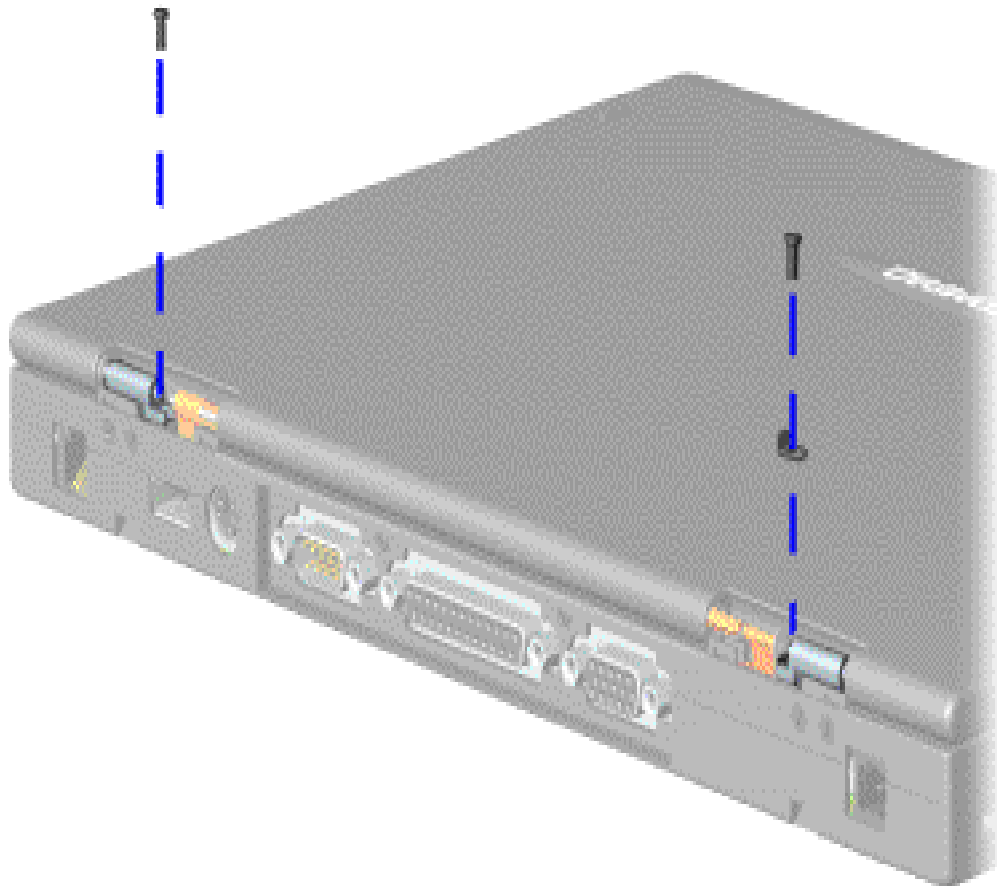
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Removing the 13.3" Display Panel Assembly, continued

6. Close the display panel assembly.
7. Remove the hinge screws on each side and a clamp (right side) on top of the base pan assembly.

[Next Step](#)

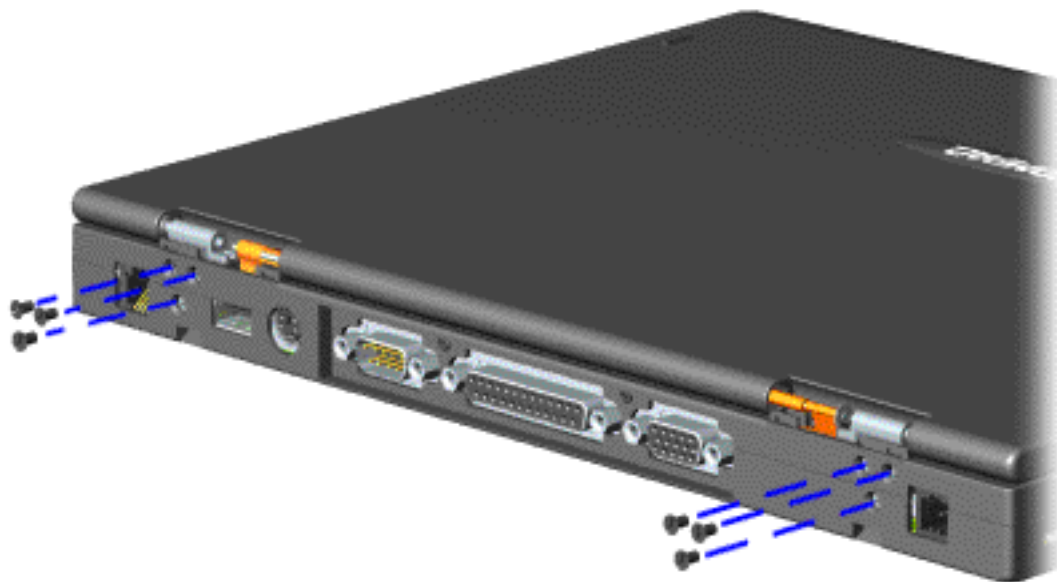
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Removing the 13.3" Display Panel Assembly, continued

8. Remove three hinge screws (rear of unit) from each side of the base pan assembly.

[Next Step](#)

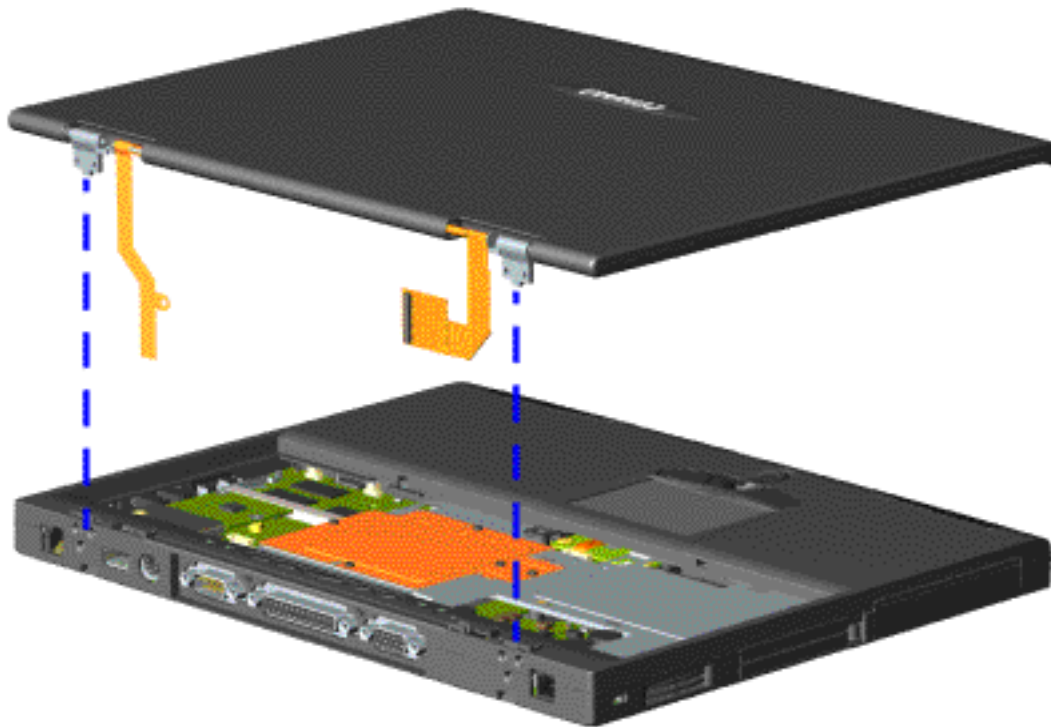
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Removing the 13.3" Display Panel Assembly, continued

9. Gently pull the flex cables attached to the display panel assembly through the slot on the Upper CPU cover and remove the display assembly with flex cables attached from the chassis.

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

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

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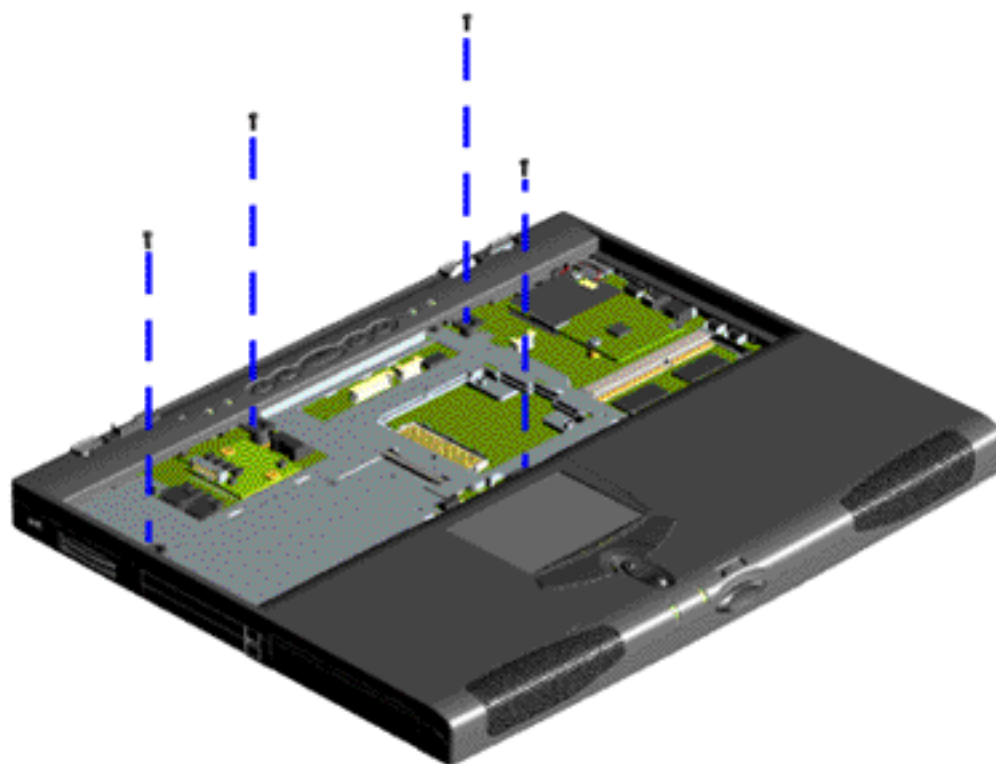
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Removing the Upper CPU Cover with Palmrest and TouchPad

To remove the Upper CPU Cover with Palmrest and TouchPad, complete the following steps:

1. [Prepare the computer for disassembly.](#)
2. [Remove the keyboard.](#)
3. [Remove the Heatspreader.](#)
4. [Remove the display assembly with flex cables attached.](#)
5. Remove four screws located at the top of the Upper CPU Cover with Palmrest and TouchPad.
6. Remove a fifth screw located just to the top right of the fan (not shown).

[Next Step](#)

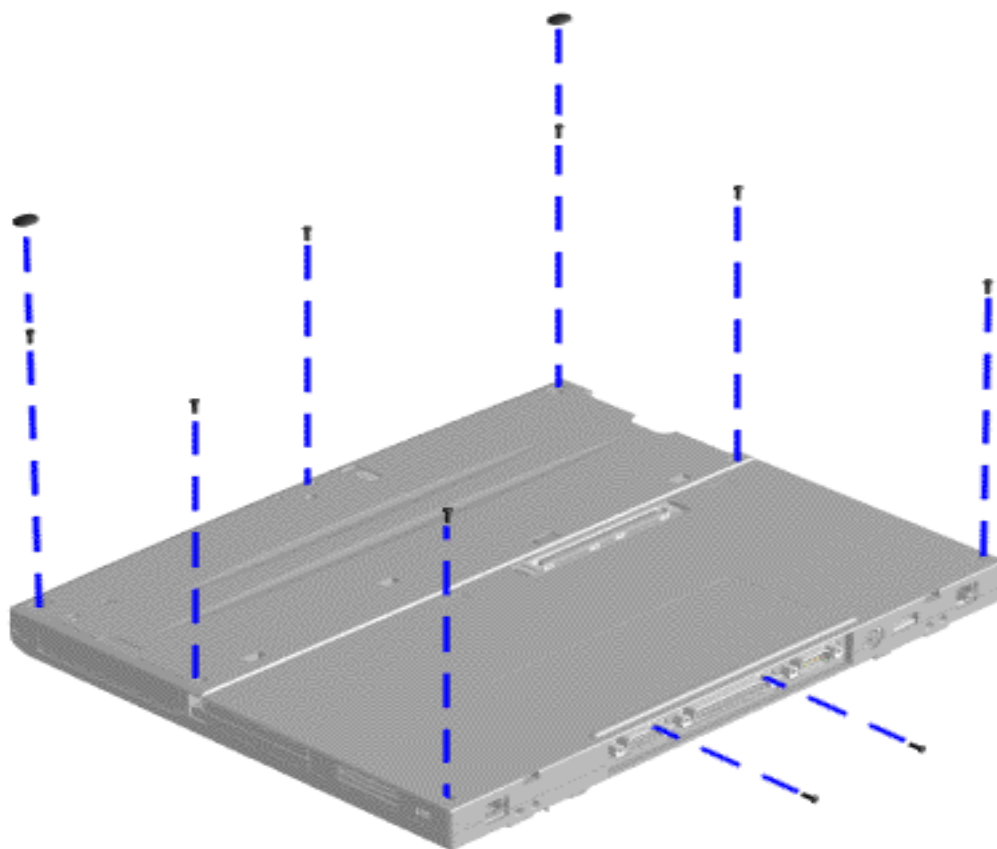
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Removing the Upper CPU Cover with Palmrest and TouchPad, continued

6. Turn the unit upside down.
7. Remove two rubber feet and seven screws located at the bottom of the unit which secures the Upper CPU Cover with Palmrest and TouchPad.
8. Remove two screws on the rear of the unit.

[Next Step](#)

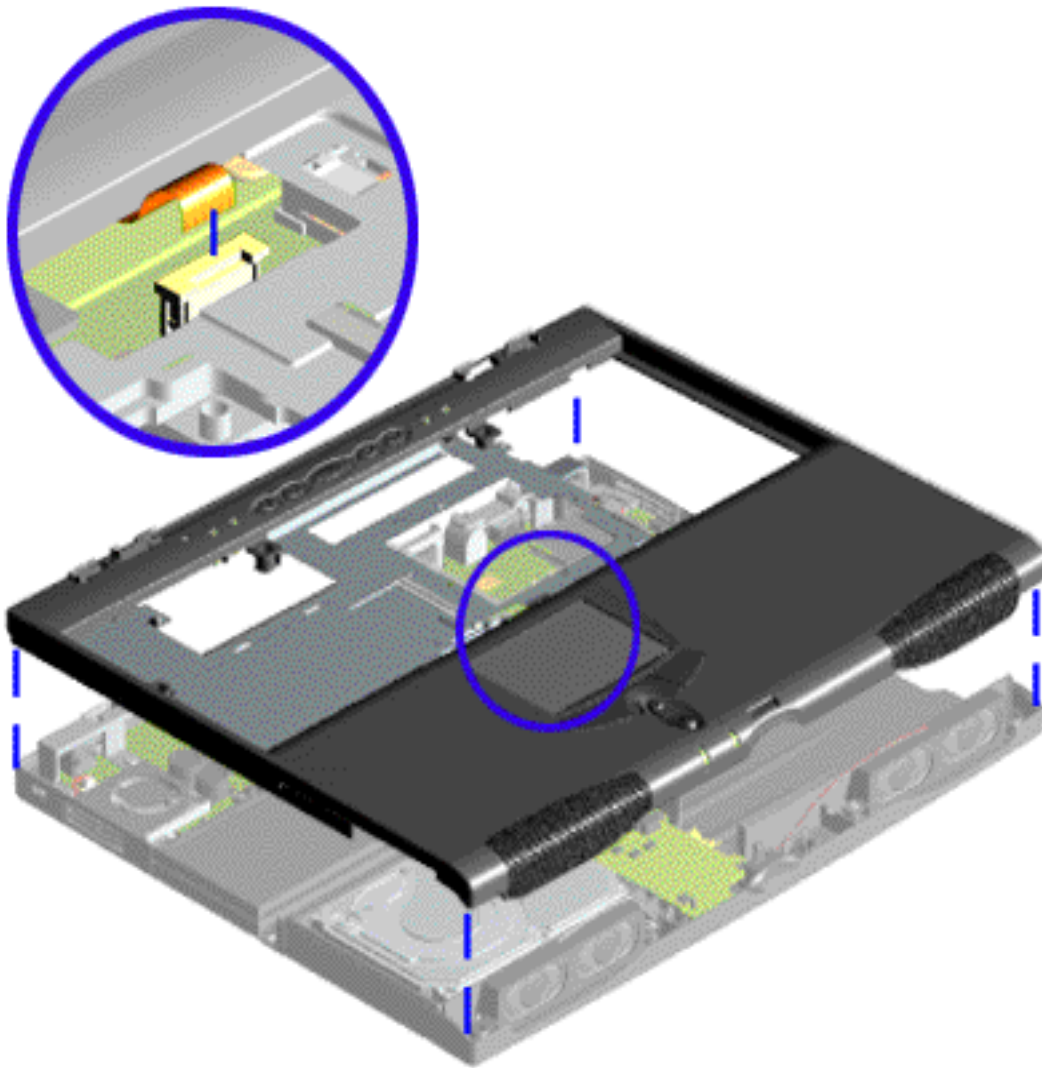
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Removal and Replacement Procedures



Removing the Upper CPU Cover with Palmrest and TouchPad, continued

9. Turn the unit right side up.
10. Disconnect the TouchPad cable from the connector on the system board.

To replace the Upper CPU Cover with Palmrest and TouchPad, reverse the previous procedures.

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

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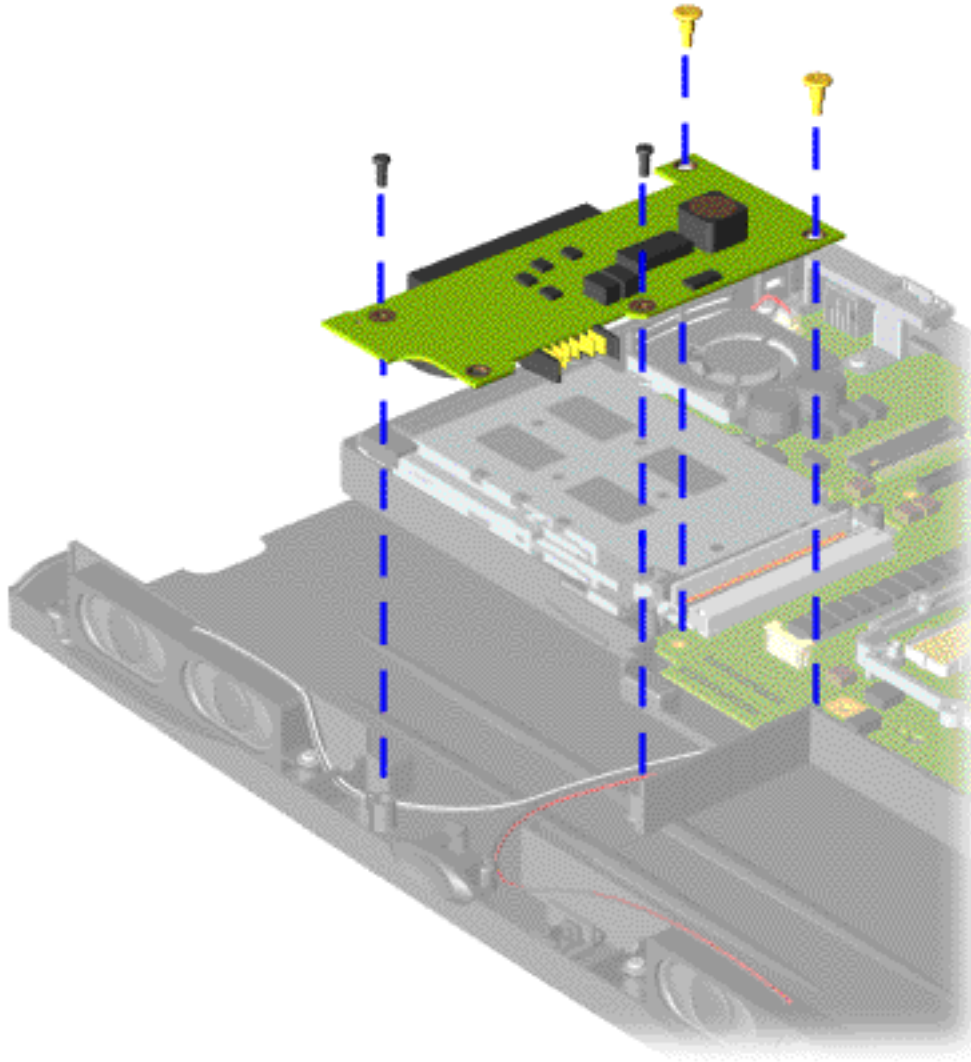
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Removing the Hard Drive/Battery Charger Board

To remove the hard drive/battery charger board, complete the following steps:

1. [Prepare the computer for disassembly.](#)
2. [Remove the keyboard.](#)
3. [Remove the heatspreader.](#)
4. [Remove the display assembly with flex cables attached.](#)
5. [Remove the Upper CPU Cover with Palmrest/TouchPad/Fan.](#)
6. Remove four screws from the hard drive/battery charger board located front center portion of the chassis.

To replace the hard drive/battery charger board reverse the previous procedures.

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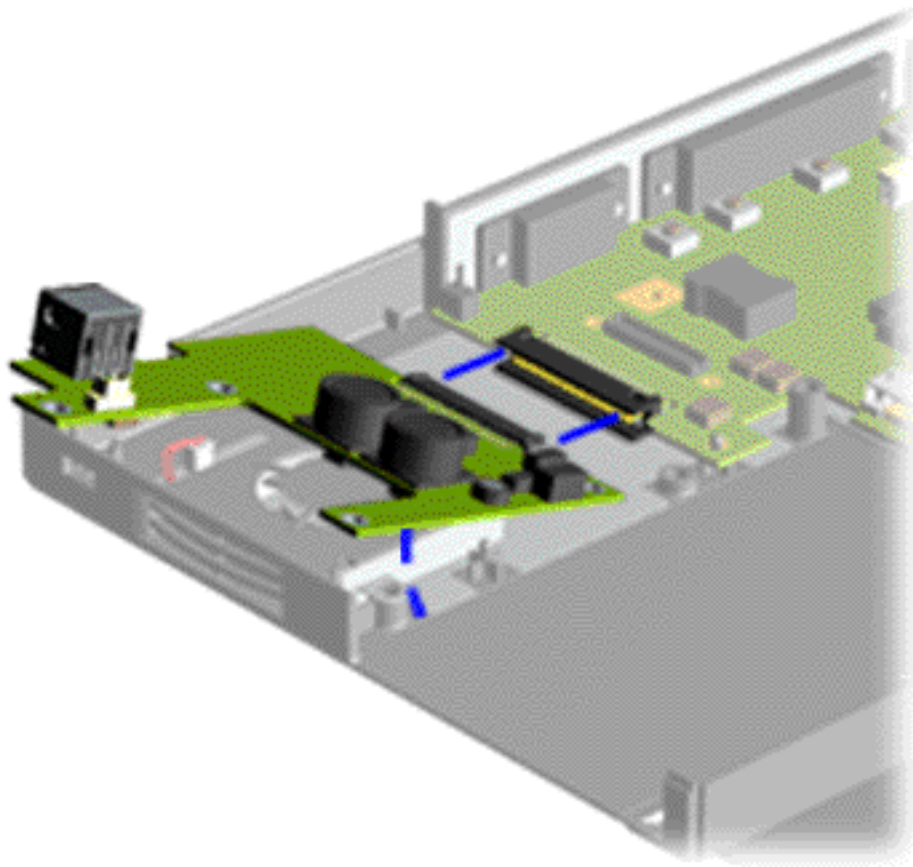
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Removing the Converter Board

To remove the converter board, complete the following steps:

1. [Prepare the computer for disassembly.](#)
2. [Remove the keyboard.](#)
3. [Remove the display panel assembly.](#)
4. [Remove the Upper CPU cover with Palmrest Cover and TouchPad.](#)
5. [Remove the hard drive.](#)
6. [Remove the modem.](#)
7. Pull and lift the converter board from the system board connector and remove from the chassis.

To replace the converter board, reverse the previous procedures.

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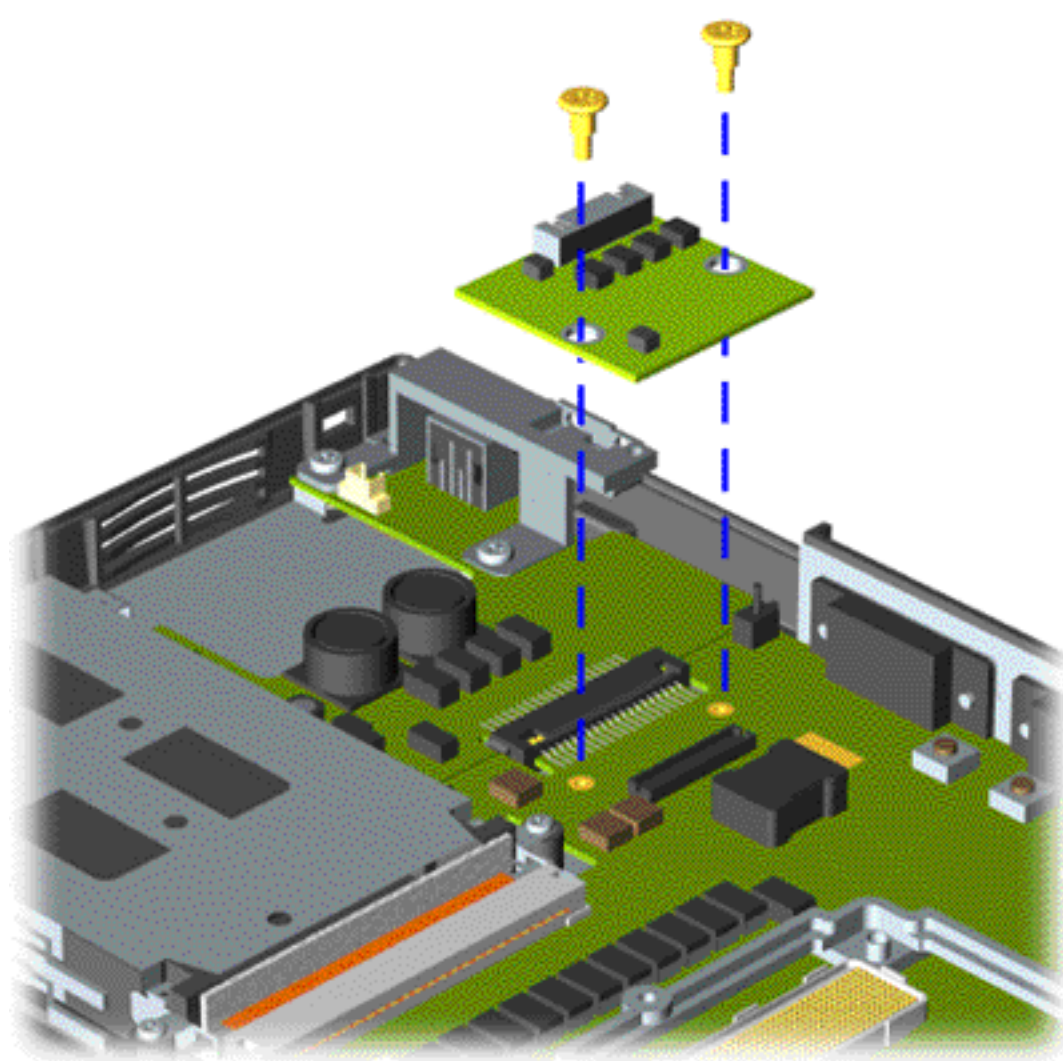
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Removing the Low Voltage Differential Signal (LVDS) Interface Board

To remove the LVDS Interface Board, complete the following steps:

1. [Prepare the computer for disassembly.](#)
2. [Remove the keyboard.](#)
3. [Remove the heatspreader.](#)
4. Remove the two screws from the LVDS Interface Board and lift from the chassis.

To replace the LVDS Interface Board reverse the previous procedures.

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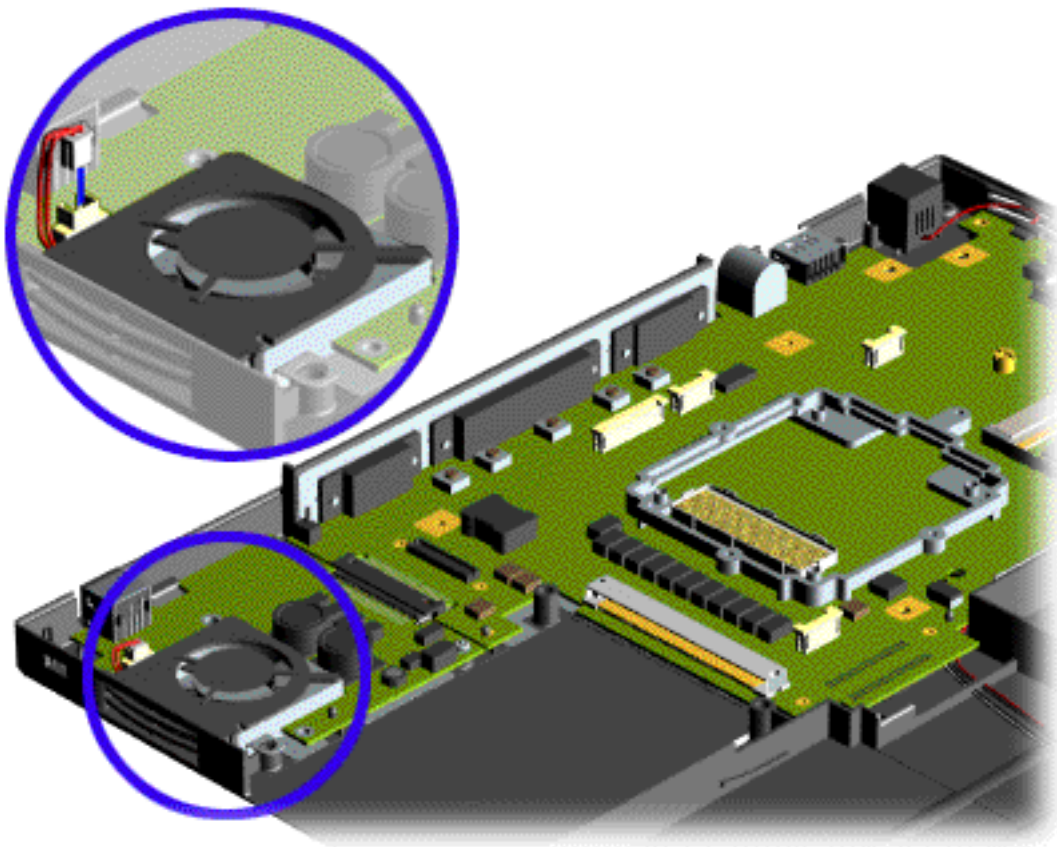
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Removing the Fan Assembly

To remove the fan assembly, complete the following steps:

1. [Prepare the computer for disassembly.](#)
2. [Remove the keyboard.](#)
3. [Remove the hard drive.](#)
4. [Remove the display panel assembly.](#)
5. [Remove the upper CPU cover with palmrest cover and TouchPad.](#)
6. [Remove the modem.](#)
7. [Remove the system board.](#)
8. Disconnect the fan cable and lift the fan assembly from the slot on the system board.

To replace the fan assembly, reverse the above procedures.

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Removing the System Board

To remove the system board, complete the following steps:

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2. [Remove the keyboard.](#)
3. [Remove the display panel assembly.](#)
4. [Remove the heatspreader.](#)
5. [Remove the processor.](#)

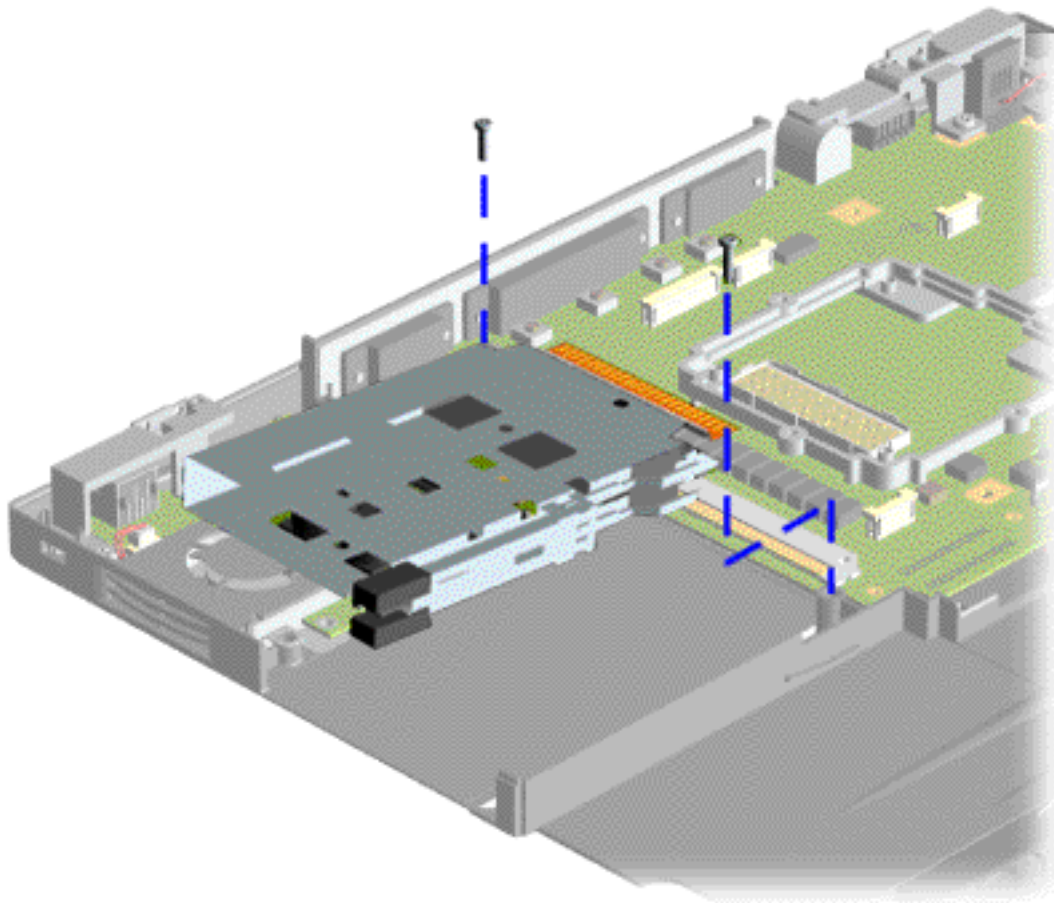
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6. [Remove the Upper CPU cover with Palmrest Cover and TouchPad.](#)
7. [Remove the hard drive.](#)
8. [Remove the modem.](#)
9. [Remove the hard drive/battery charger board.](#)
10. [Remove the converter board.](#)
11. Remove the PC Card Slot.

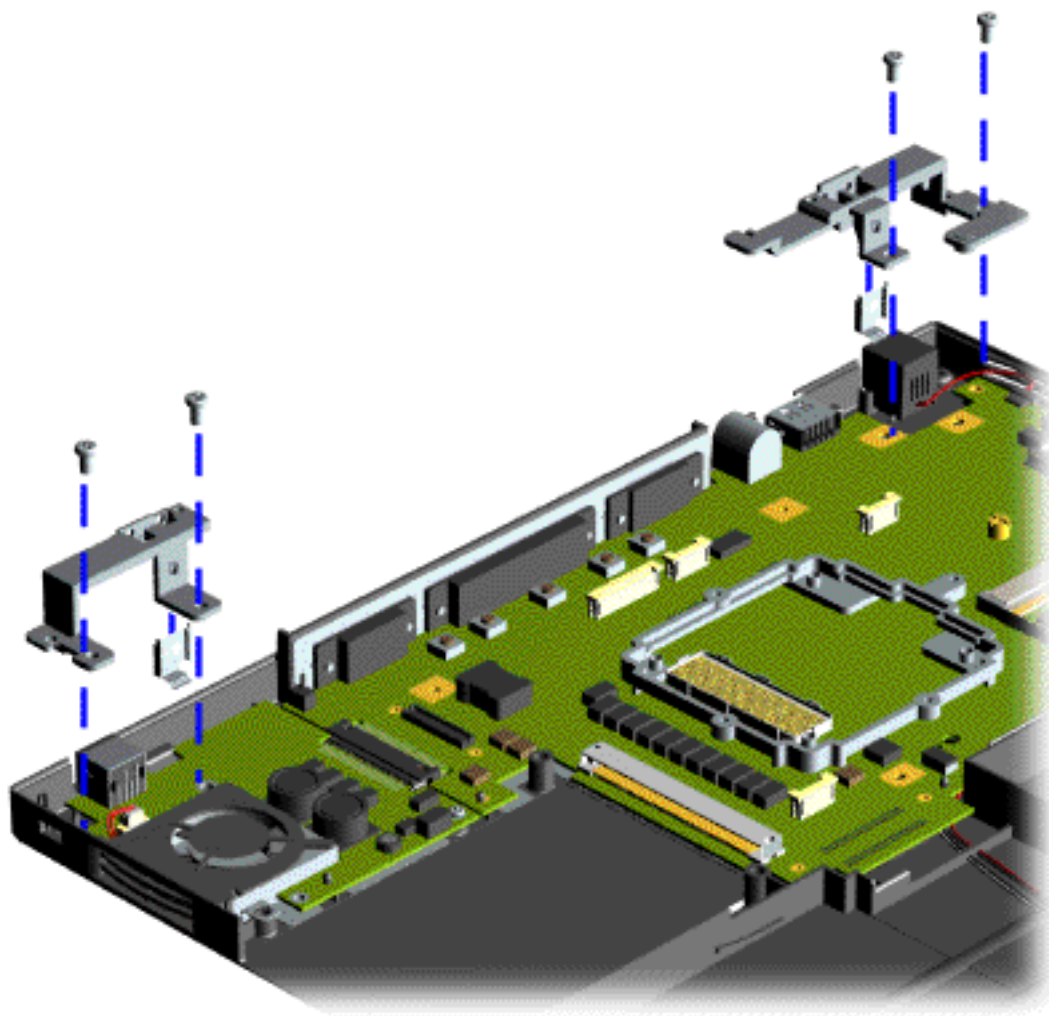
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12. Remove two screws from the Display Panel Assembly Hinge Bracket with hinge to base ground clip and lift off the chassis.

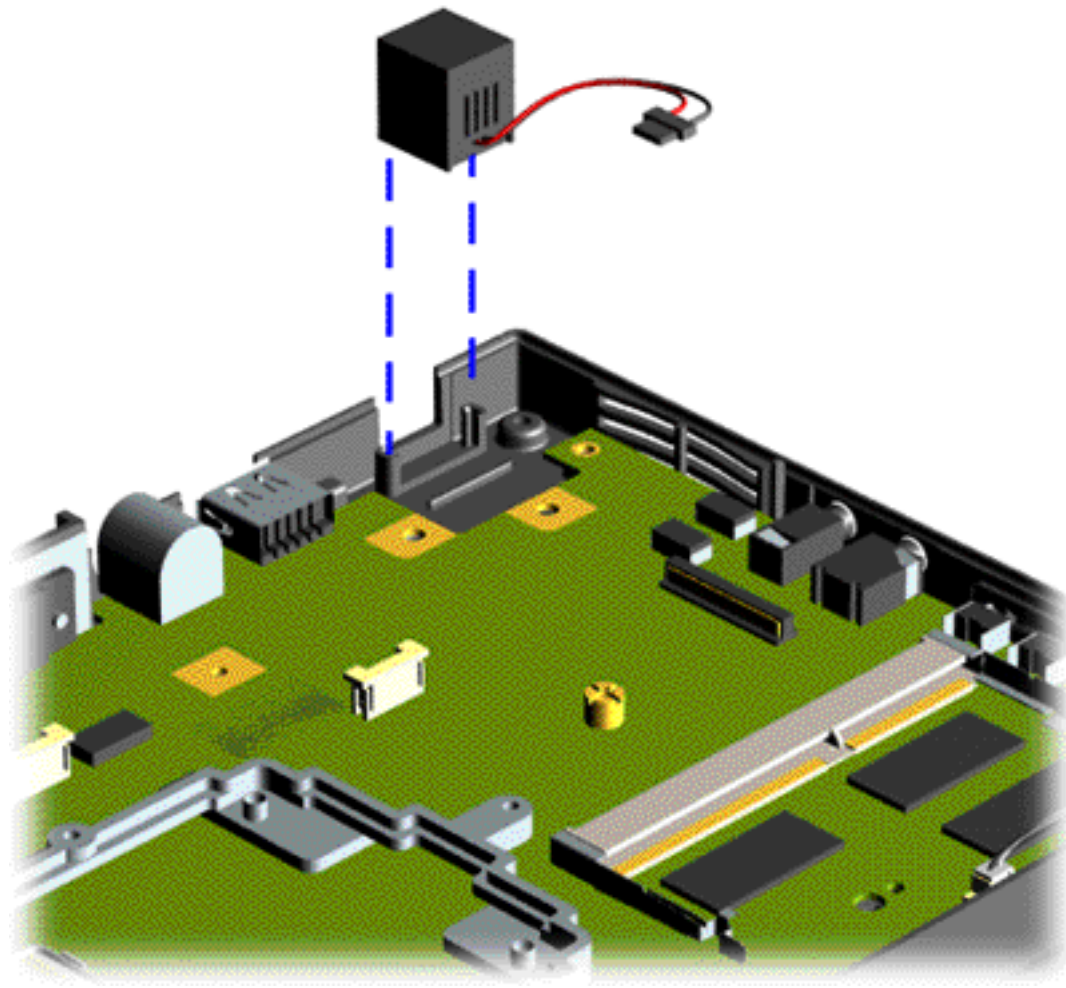
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13. Remove the left hinge bracket before removing the converter board.
14. Remove 1 screw at the right lower corner of the converter board.
15. Lift the RJ11 connector off the guide posts located on the right side on the chassis.

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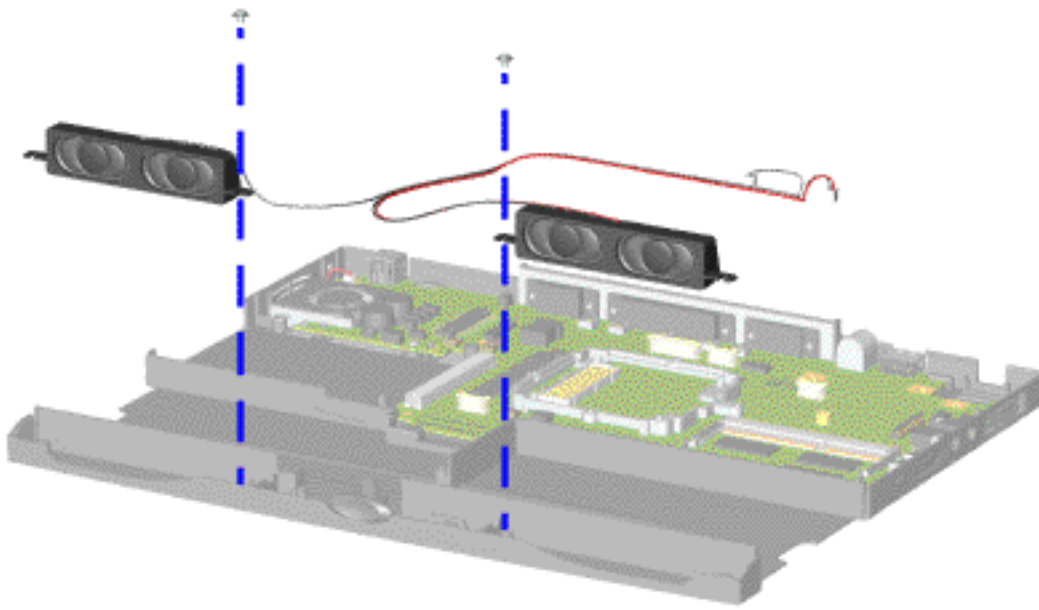
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Removing the Speaker Assembly

To remove the speaker assembly, complete the following steps:

1. [Prepare the computer for disassembly.](#)
2. [Remove the keyboard.](#)
3. [Remove the display panel assembly.](#)
4. [Remove the Upper CPU cover with Palmrest Cover and TouchPad.](#)
5. Remove two screws from the speaker assembly, disconnect the speaker cables from the system board, and lift out of the unit.

To replace the speaker assembly, reverse the previous procedures.

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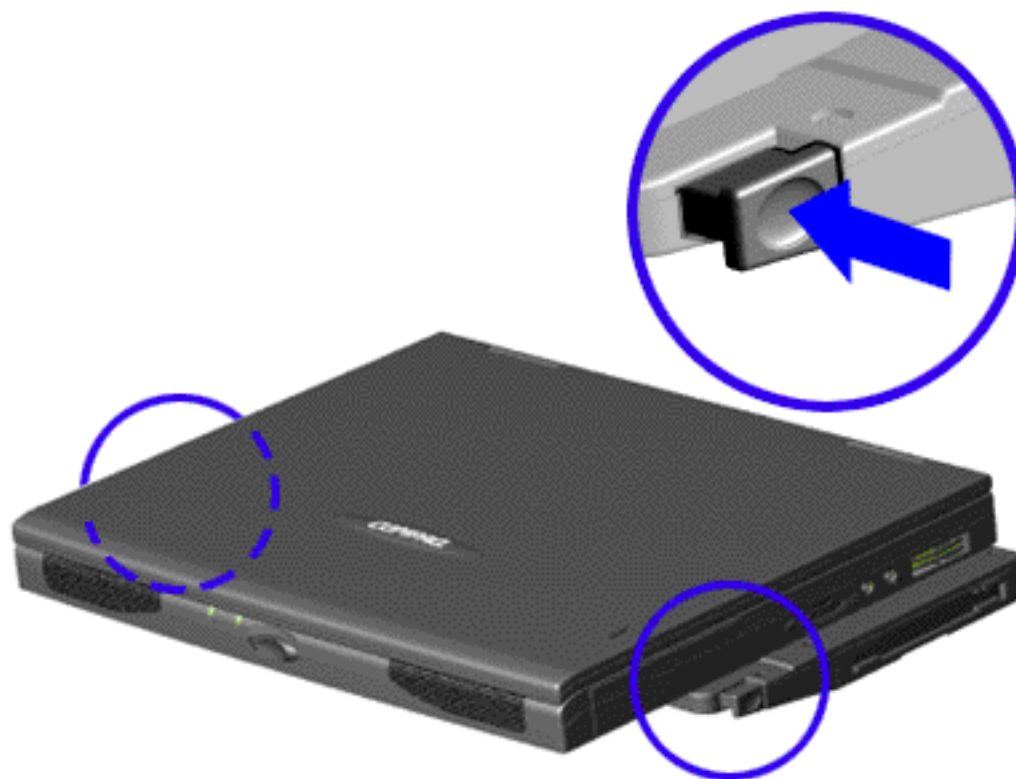
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Disassembling the Removable Drive Wedge

1. [Prepare the computer for disassembly.](#)
2. Push the levers located on each side of the wedge and lift the wedge off the connector on the bottom of the unit.

[Next Step](#)

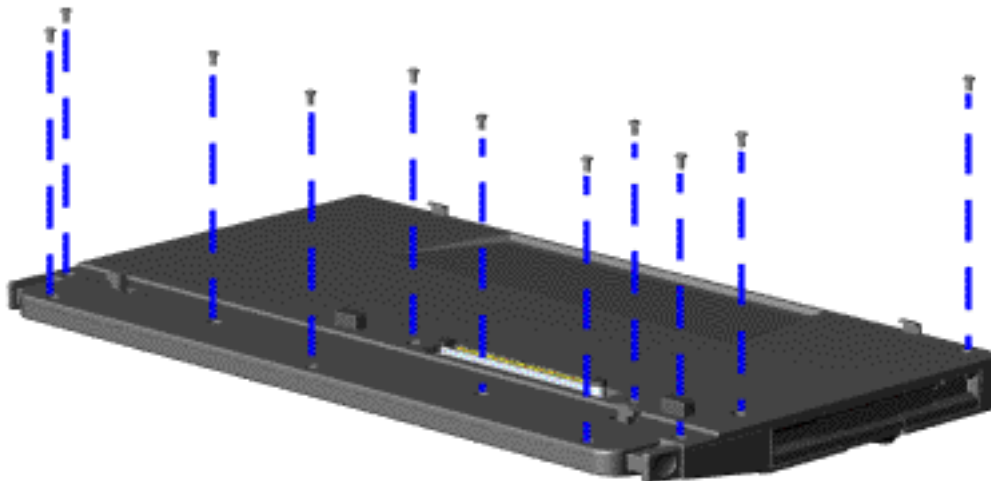
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Disassembling the Removable Drive Wedge, continued

3. Remove eleven screws from the top of the wedge cover.

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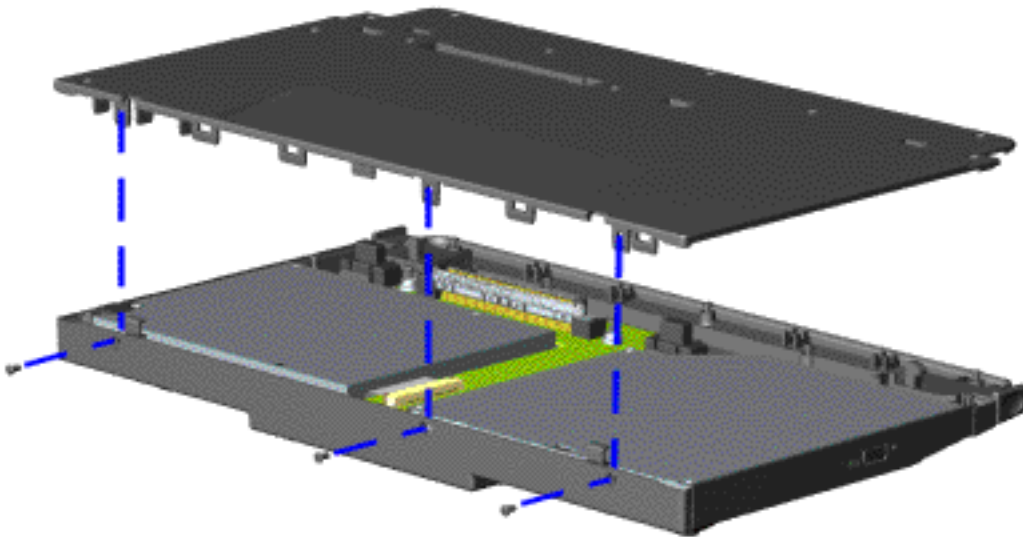
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Disassembling the Removable Drive Wedge, continued

4. Remove three screws from the base enclosure of the wedge and lift off the wedge cover.

[Next Step](#)

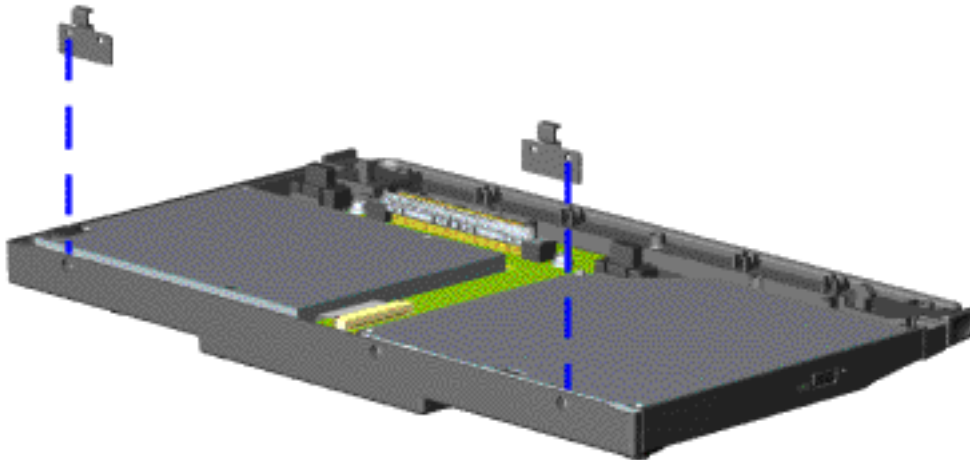
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Disassembling the Removable Drive Wedge, continued

5. Remove two alignment pins from the rear of the base enclosure of the wedge.

[Next Step](#)

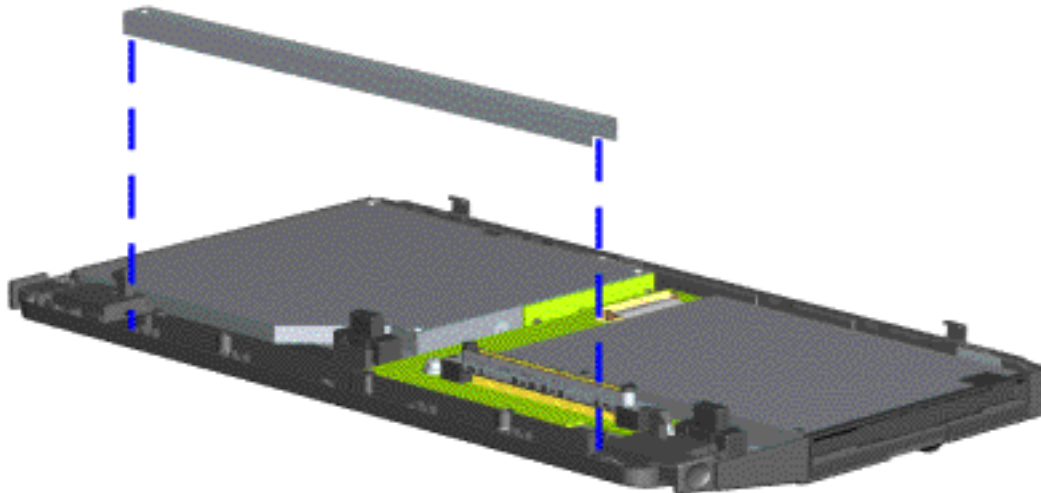
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Disassembling the Removable Drive Wedge, continued

6. Remove the reinforcement bracket from the front of the wedge.

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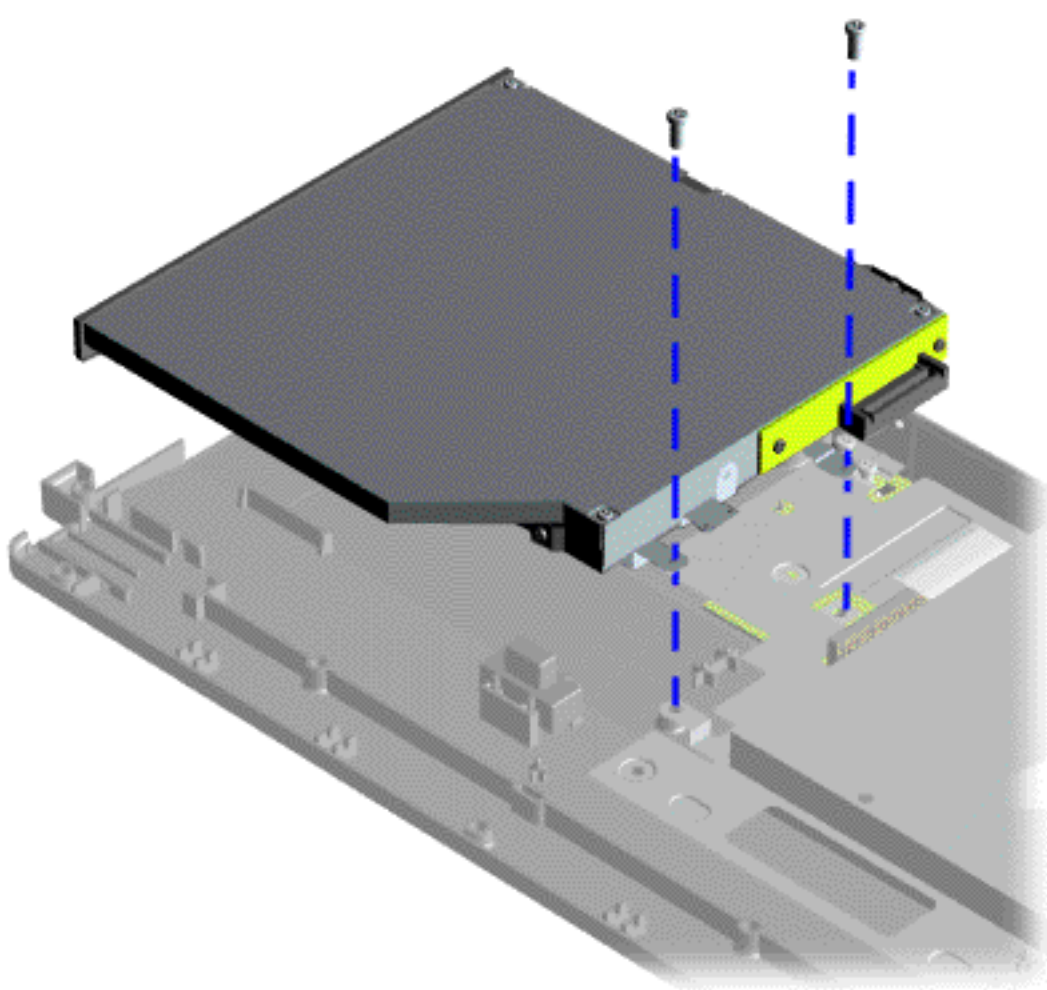
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Removing the DVD or CD-ROM Drive

To remove the CD-ROM or the DVD Drive with shield attached, complete the following steps:

1. [Prepare the computer for disassembly.](#)
2. [Disassemble the wedge.](#)
3. Remove two screws at the rear of the CD-ROM or DVD Drive and lift the CD-ROM or DVD Drive with shield attached off the connector wedge.

To replace the CD-ROM or DVD Drive with shield attached, reverse the previous procedures.

[Next Step](#)

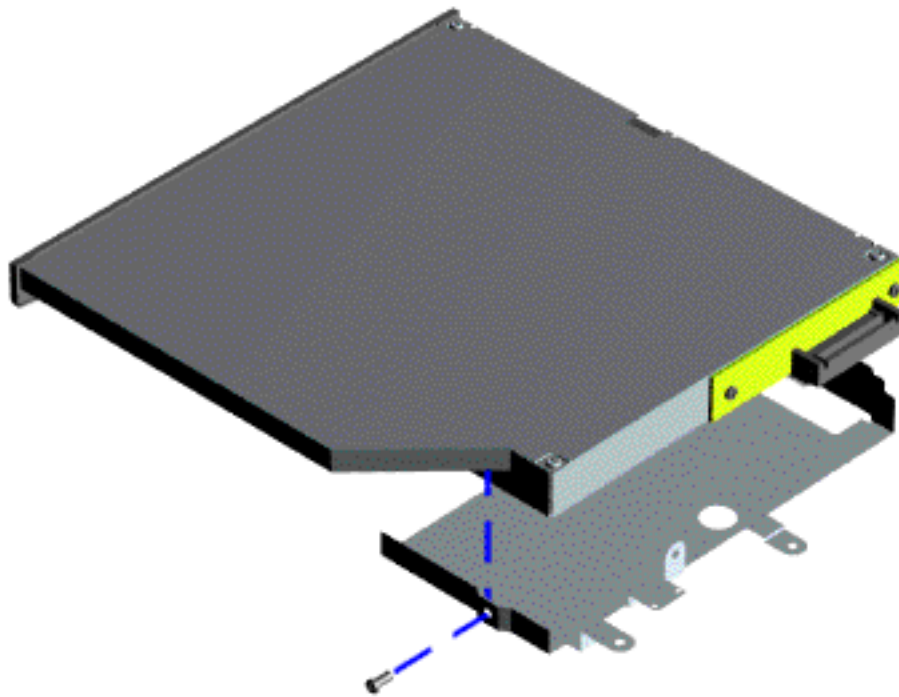
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Removal and Replacement Procedures



Removing the DVD or CD-ROM Drive, continued

To remove the CD-ROM or DVD Drive shield perform the following step:

4. Remove the screw which secure the CD-ROM or DVD Drive shield.

To replace the CD-ROM or DVD Drive shield, reverse the previous procedure.

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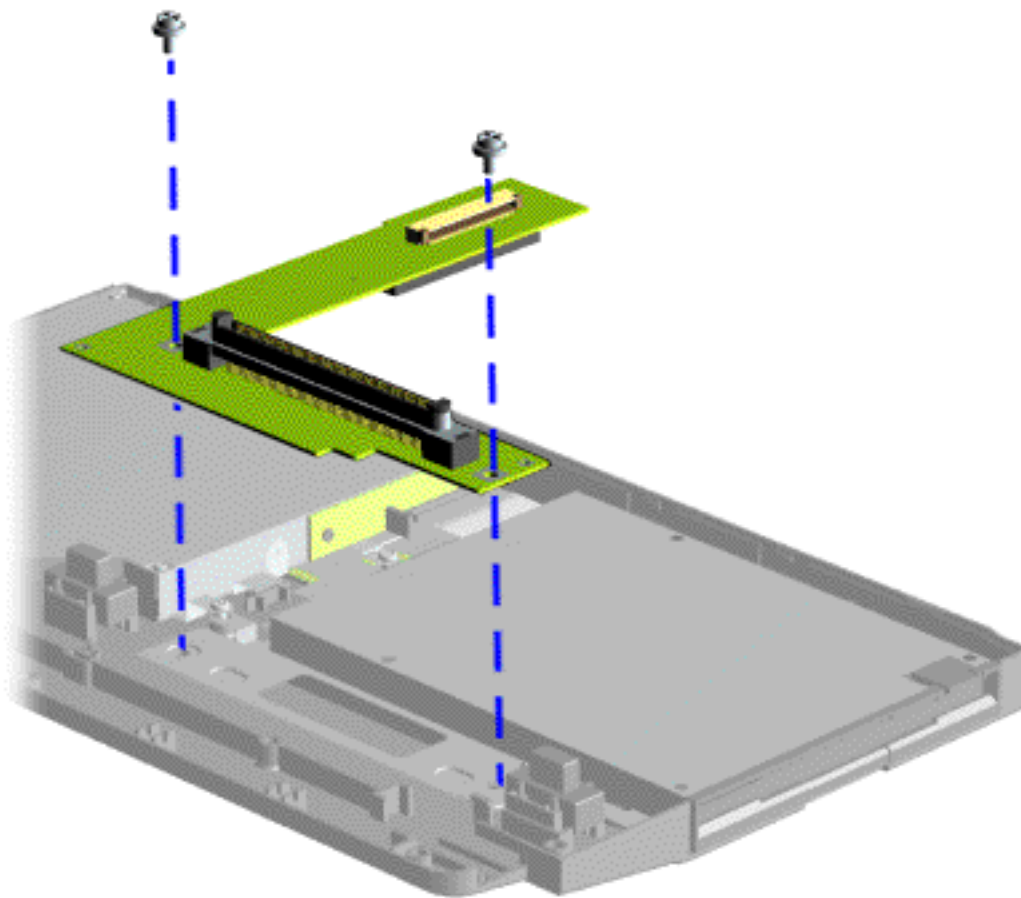
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Removing the System to Wedge Interface Board

To remove the System to Wedge Interface board, complete the following steps:

1. [Prepare the computer for disassembly.](#)
2. [Disassemble the wedge.](#)
3. Remove two standoffs from the System to Wedge Interface board and lift the board from the wedge.

To replace the System to Wedge Interface board, reverse the previous procedures.

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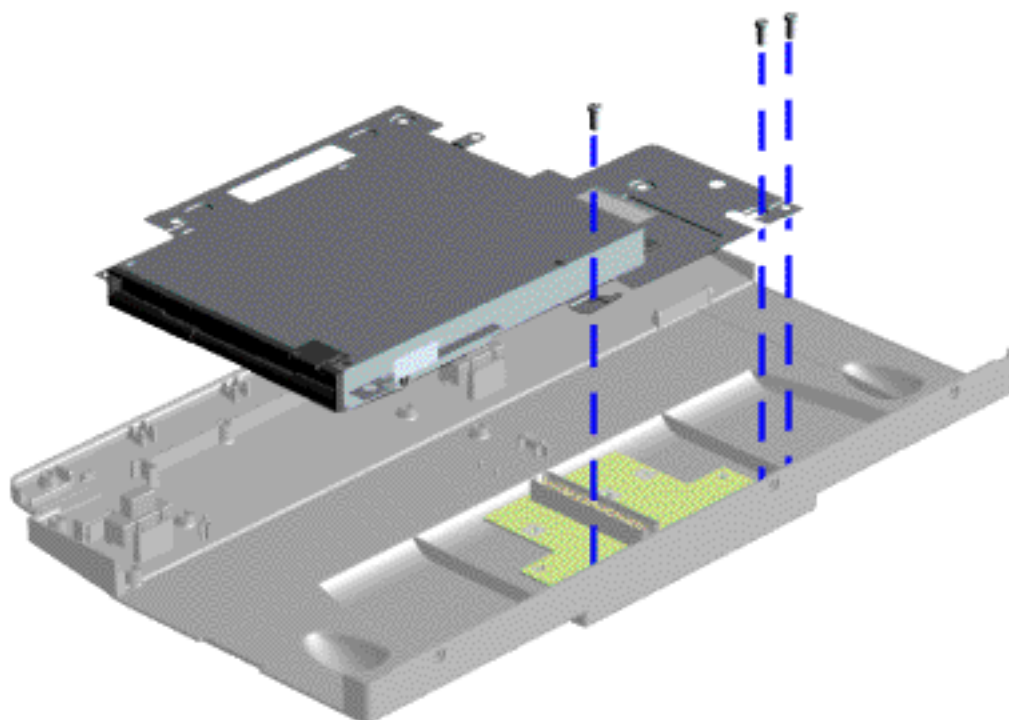
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Removing the Diskette Drive or the LS-120 Drive

To remove the Diskette Drive or the LS-120 Drive with shield attached, complete the following steps:

1. [Prepare the computer for disassembly.](#)
2. [Disassemble the wedge.](#)
3. Remove three screws which secure the Diskette Drive or LS-120 Drive with shield attached to the base enclosure of the wedge.
4. Lift the Diskette Drive or the LS-120 Drive with shield attached from the unit.

To replace the Diskette Drive or LS-120 Drive with shield attached, reverse the previous procedures.

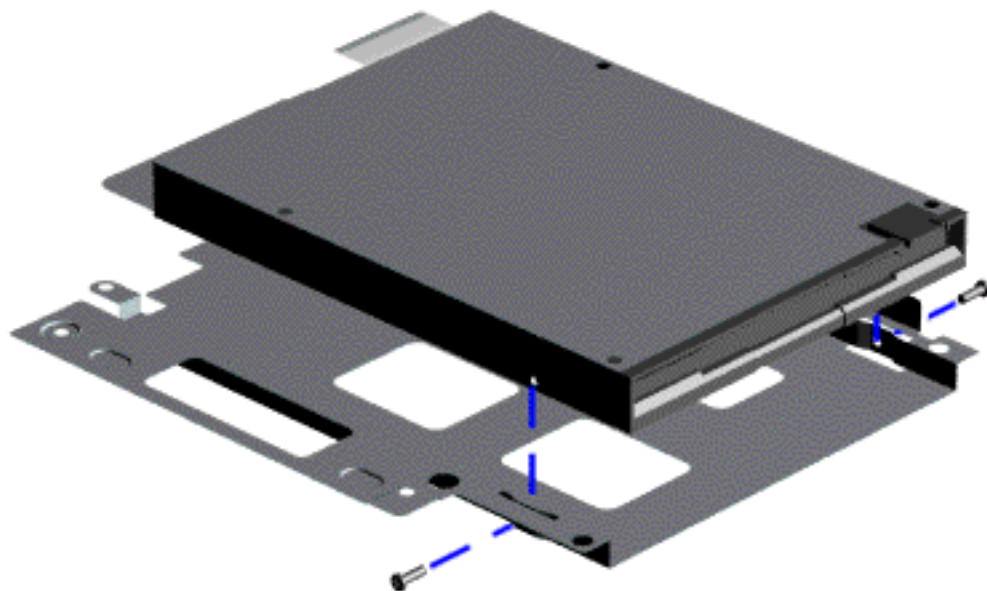
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To remove the Diskette Drive or the LS-120 Drive shield, perform the following step:

Remove the screw from each side of the Diskette Drive or the LS-120 Drive shield and lift off.

To replace the Diskette Drive or the LS-120 Drive shield, reverse the previous procedure.

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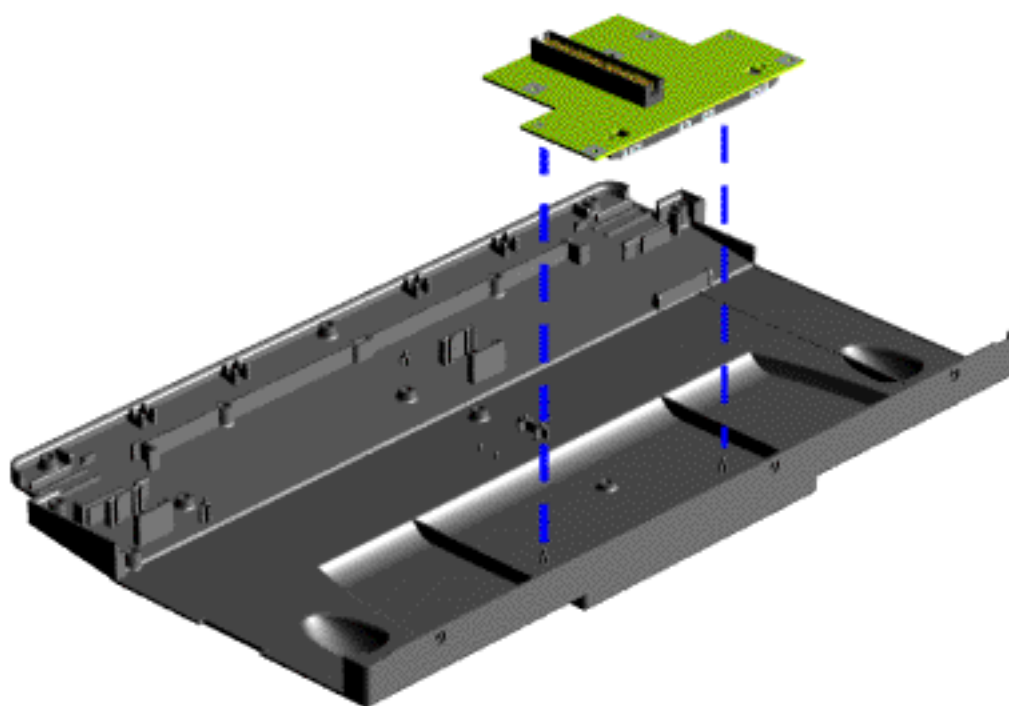
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[Wedge to Port Replicator Interface Board](#)

[How to use Processor Jig](#)



Removing the Wedge to the Port Replicator Interface Board

To remove the Wedge to the Port Replicator Interface board, complete the following steps:

1. [Prepare the computer for disassembly.](#)
2. [Disassemble the wedge.](#)
3. [Remove the CD ROM Drive or the DVD Drive with shield attached from the unit.](#)
4. [Remove the Diskette Drive or the LS-120 Drive with shield attached from the unit.](#)
5. Remove two standoffs from the Wedge to the Port Replicator Interface board and lift the board from the unit.

To replace the Wedge to Port Replicator Interface board, reverse the previous procedures.

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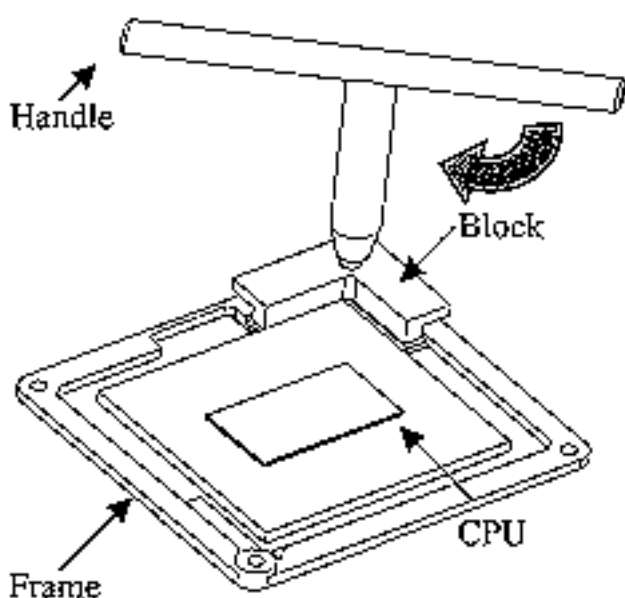
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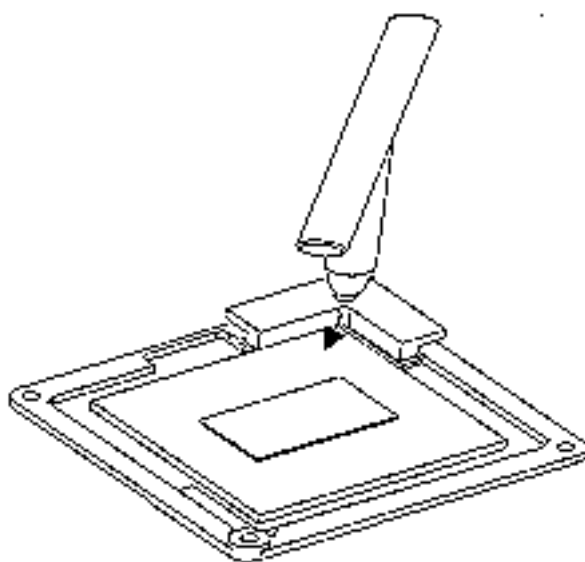
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Lock Processor Step 1



Lock Processor Step 2

Locking the Processor

Refer to the illustrations at left to verify. Follow these steps to lock processor:

1. Place the Jig Block on the CPU frame in the lower right-hand corner. Make sure that the block is fully seated. The handle must be at a 45 degree angle (as illustrated) when installing the Jig block.
2. Twist handle 90 degrees clockwise to unlock processor.

[To unlock processor](#)

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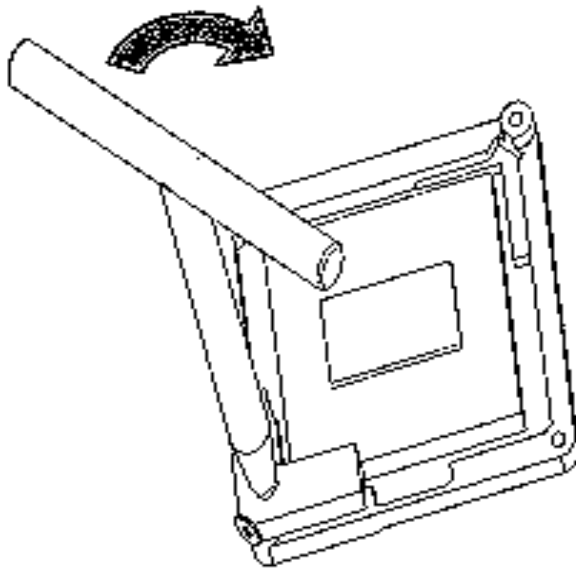
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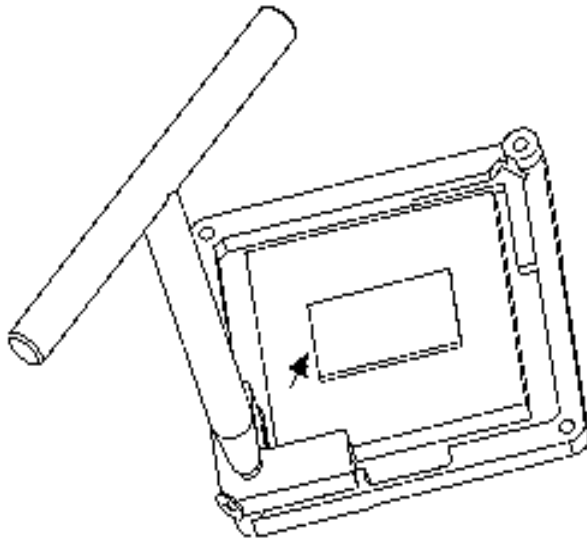
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Unlock Processor Step 1



Unlock Processor Step 2

Unlocking the Processor

Refer to the illustrations at left to verify. Follow these steps to lock processor:

1. Place the Jig Block on the CPU frame in the lower left-hand corner. Make sure that the block is fully seated. The handle must be at a 45 degree angle (as illustrated) when installing the Jig block.
2. Twist handle 90 degrees counter clockwise to unlock processor.

To lock processor

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Preliminary Steps
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Power-On Self Test (POST)
Compaq Diagnostics
Diagnostic Error Codes
Troubleshooting Without Diagnostics
Solving Minor Problems
Contacting Compaq Support

This section covers troubleshooting information for the Compaq Presario 1900 Series Portable Computers. The basic steps in troubleshooting include:

1. Follow the [Preliminary Steps](#).
2. Run the [Power-On Self-Test \(POST\)](#).
3. Follow the recommended actions described in the diagnostic tables, if you are unable to run POST or if POST displays an error message.

When following the recommended actions in the Sections on POST and [Diagnostic Error Codes](#) perform them in the order listed. Rerun POST after each recommended action until the problem is solved and no error message occurs. Once the problem is solved, do not complete the remaining recommended actions.

NOTE:

If the problem is intermittent, check the computer several times to verify that the problem is solved.

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Troubleshooting

Preliminary Steps

Before running [POST](#), complete the following preliminary steps:

1. If a power-on password has been established, type the password and press the **Enter** key. If the password is not known, [clear the password](#).
2. Run [Compaq diagnostics](#).
3. Turn off the computer and its external devices.
4. Disconnect any external devices that you do not want to test. Do not disconnect the printer if you want to test it or use it to log error messages.

IMPORTANT:

If the problem only occurs when an external device is connected to the computer, the problem may be related to the external device or its cable. Verify this by running POST with and without the external device connected.

5. Install loopback plugs in the serial and parallel connectors if you would like to test these ports.
6. Ensure the hard drive is installed in the computer.
7. Ensure that the battery pack is inserted in the computer and the computer is connected to an external AC power source.

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

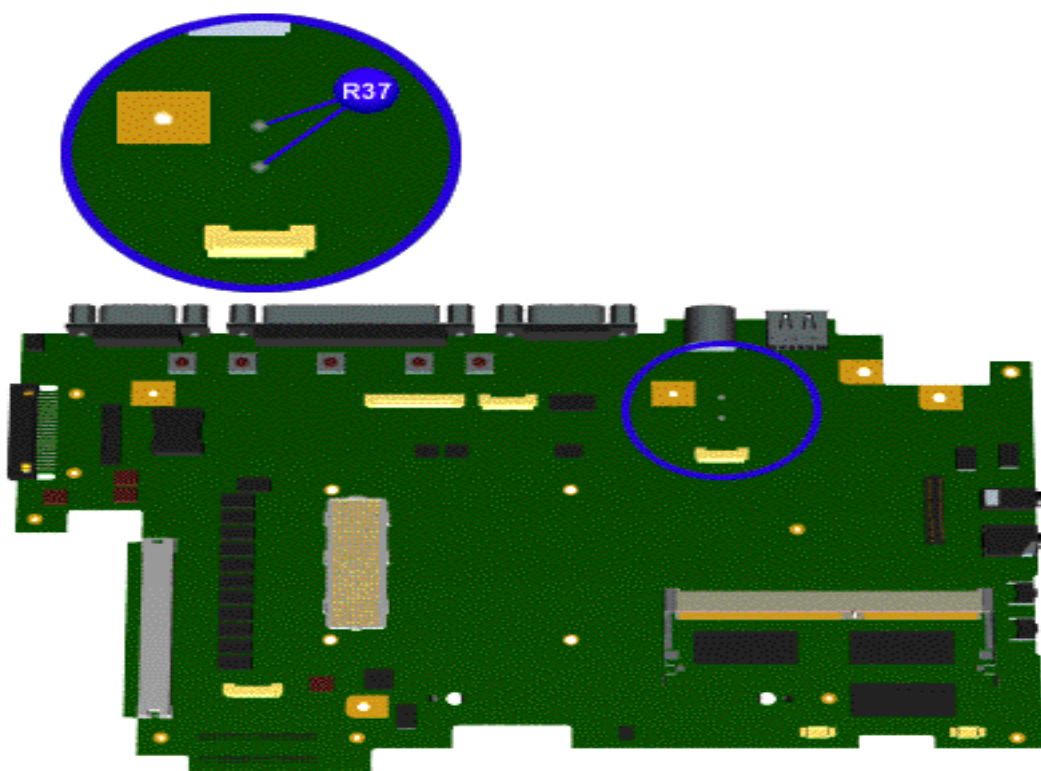
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Clearing the Power-on Password

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. Turn off the computer.
2. Disconnect the power cord.
3. [Remove the battery pack](#).
4. [Remove the keyboard](#).
5. [Disconnect the backlight cable from the connector on the system board](#).
6. Using a conductive piece of material (piece of wire or tool) simultaneously make contact with the two pads located at R37 on the system board or remove the RTC battery located under the [battery charger board](#) for 5 seconds. The password, together with other Setup attributes, will be cleared.
7. Reassemble the computer.
8. Turn on the computer to verify that the power-on password has been cleared. If it has not been cleared, repeat Steps 1 through 7.

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Running POST

To run POST, complete the following steps:

Turn off the computer, then turn on the computer.

If POST does not detect any errors, the computer will not beep. This indicates successful completion of POST test. POST has run successfully and boots from the hard drive (or from a bootable diskette if one is installed in the diskette drive).

If POST detects errors, the errors are indicated by screen and/or audible messages. Refer to "Power-On Self-Test (POST) Codes" in the tables for a list of POST codes and their relevant descriptions.

NOTE: 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.

Power-On Self-Test Messages	
102-System Board Failure	
Probable Cause	Recommended Action
DMA, timers, etc.	Replace the system board.
162-System Options Not Set	
Probable Cause	Recommended Action
Configuration incorrect	Run Computer Setup.
CMOS reflects that an invalid configuration has been set.	Run Computer Setup.
RAM failure	1. Replace the memory modules. 2. Replace the system board.
Memory test data error	1. Replace the memory modules. 2. Replace the system board.
XX000YZZ RAM failure	Replace the system board.

XX000YZZ 201-Memory Error	
Probable Cause	Recommended Action
301-Keyboard Error	
Probable Cause	Recommended Action
Keyboard failure	1. Ensure the keys are not depressed during POST. 2. Reconnect the keyboard with the computer off. 3. Replace the keyboard.
304-Keyboard or System Unit Error	
Probable Cause	Recommended Action
Keyboard or system board error	1. Replace the keyboard. 2. Replace the TouchPad or mouse. 3. Replace the system board.
601-Diskette Controller Error	
Probable Cause	Recommended Action
Mismatch in drive type or failure in the diskette controller	1. Run Computer Checkup (TEST). 2. Check and/or replace cables. 3. Replace the system board.
605-Diskette Drive Error	
Probable Cause	Recommended Action
Mismatch in drive type	Run Computer Setup.
1780-Primary Hard Drive 0 Failure	
Probable Cause	Recommended Action
Disk 0 failed to respond	1. Run Computer Checkup (TEST). 2. Replace the hard drive.
Hard drive format error	1. Run Computer Checkup (TEST). 2. Replace the hard drive.
1782-Hard Drive Controller	
Probable Cause	Recommended Action
Hard drive controller failure	1. Run Computer Setup. 2. Replace the hard drive.

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Troubleshooting

Diagnostic Error Codes

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

The following tables list error codes, a description of the error condition, and the action required to resolve the error condition.

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

For the removal and replacement of a particular subassembly, see the section for **Removal and Replacement Procedures**.

Select error codes by number or type:

101 through 114	Processor Test
200 through 215	Memory Test
300 through 304	Keyboard Test
401 through 403	Parallel Printer Test
600 through 699	Diskette Drive or LS-120 Test
1101	Serial Test
1701 through 1736	Hard Drive Test
501 through 516	Video Test
2402 through 2456	Audio Test
2458 through 2480	Touch Pad Pointing Device Test
3206	CD/DVD Test
8601 through 8602	
3301 through 6623	

Processor Test Error Codes		
Error Code	Description	Recommended Action
101-xx	CPU test failed	Replace the processor and retest.
102-xx	Coprocessor or Weitek Error	1. Run the Configuration and Diagnostics Utilities. 2. Replace the processor board and retest.
103-xx	DMA page registers test failed	Replace the system board and retest.
104-xx	Interrupt controller master test failed	
105-xx	Port 61 error	
106-xx	Keyboard controller self-test failed	
107-xx	CMOS RAM test failed	
108-xx	CMOS interrupt test failed	
109-xx	CMOS clock test failed	
110-xx	Programmable timer load data test failed	
113-xx	Protected mode test failed	
114-01	Speaker test failed	

Memory Test Error Codes		
200 -xx	Memory machine ID test failed	1. Flash the system ROM and retest. 2. Replace the system board and retest.
202-xx	Memory system ROM checksum failed	
203-xx	Write/Read test failed	1. Remove the memory module and retest. 2. Install a new memory module and retest.
204-xx	Address test failed	
211-xx	Random pattern test failed	
214-xx	Noise test failed	
215-xx	Random address test failed	

Keyboard Test Error Codes		
300 -xx	Failed ID Test	1. Check the keyboard connection. If disconnected, turn off the computer and connect the keyboard.
301-xx	Failed Selftest/Interface Test	
302-xx	Failed Individual Key Test	2. Replace the keyboard and retest.
304-xx	Failed Keyboard Repeat Test	
3. Replace the system board and retest.		

Parallel Printer Test Error Codes		
401 -xx	Printer failed or not connected	1. Connect the printer. 2. Check power to the printer. 3. Install the loop-back connector and retest. 4. Check port and IRQ configuration. 5. Replace the system board and retest.
402-xx	Failed Port Test	
403-xx	Printer pattern test failed	

Diskette Drive Test			
600 -xx	Diskette ID drive types test failed	1. Replace the diskette media and retest. 2. Check and/or replace the diskette power and signal cables and retest. 3. Replace the diskette drive and retest. 4. Replace the system board and retest.	
601-xx	Diskette format failed		
602-xx	Diskette read test failed		
603-xx	Diskette write, read, compare test failed		
604-xx	Diskette random read test failed		
605-xx	Diskette ID media failed		
606-xx	Diskette speed test failed		
609-xx	Diskette reset controller test failed		
610-xx	Diskette change line test failed		
697-xx	Diskette type error		
698-xx	Diskette drive speed not within limits		
699-xx	Diskette drive/media ID error		1. Replace media. 2. Run the Configuration and Diagnostics Utilities.

Serial Test Error Codes		
1101-xx	Serial port test failed	1. Check port configuration 2. Replace the system board and retest.

Hard Drive Test Error Codes		
1701-xx	Hard drive format test failed	1. Run the Configuration and Diagnostics Utilities and verify drive type. 2. Verify that all secondary drives have secondary drive capability. 3. Replace the hard drive and retest. 4. Replace the system board and retest.
1702-xx	Hard drive read test failed	
1703-xx	Hard drive write/read/compare test failed	
1704-xx	Hard drive random seek test failed	
1705-xx	Hard drive controller test failed	
1706-xx	Hard drive ready test failed	
1707-xx	Hard drive recalibration test failed	
1708-xx	Hard drive format bad track test failed	
1709-xx	Hard drive reset controller test failed	
1710-xx	Hard drive park head test failed	
1715-xx	Hard drive head select test failed	
1716-xx	Hard drive conditional format test failed	
1717-xx	Hard drive ECC* test failed	
1719-xx	Hard drive power mode test failed	
1724-xx	Network preparation test failed	
1736-xx	Drive monitoring test failed	

* ECC = Error Correction Code

Video Test Error Codes		
501-xx	Video controller test failed	The following apply to error codes 501-xx through 516-xx: 1. Disconnect external monitor and test with internal LCD display. 2. Replace the display assembly and retest. 3. Replace the system board and retest.
502-xx	Video memory test failed	
503-xx	Video attribute test failed	
504-xx	Video character set test failed	
505-xx	Video 80 × 25 mode 9 × 14 character cell test failed	
506-xx	Video 80 × 25 mode 8 × 8 character cell test failed	
507-xx	Video 40 × 25 mode test failed	
508-xx	Video 320 × 200 mode color set 0 test failed	
509-xx	Video 320 × 200 mode color set 1 test failed	
510-xx	Video 640 × 200 mode test failed	
511-xx	Video screen memory page test failed	
512-xx	Video gray scale test failed	
514-xx	Video white screen test failed	
516-xx	Video noise pattern test failed	

2402 -xx	Video memory test failed	The following steps apply to error codes 2402-xx through 2456-xx: 1. Run the Configuration and Diagnostics Utilities. 2. Replace the display assembly and retest. 3. Replace the system board and retest.
2403-xx	Video attribute test failed	
2404-xx	Video character set test failed	
2405-xx	Video 80 × 25 mode 9 × 14 character cell test failed	
2406-xx	Video 80 × 25 mode 8 × 8 character cell test failed	
2408-xx	Video 320 × 200 mode color set 0 test failed	
2409-xx	Video 320 × 200 mode color set 1 test failed	
2410-xx	Video 640 × 200 mode test failed	
2411-xx	Video screen memory page test failed	
2412-xx	Video gray scale test failed	
2414-xx	Video white screen test failed	
2416-xx	Video noise pattern test failed	
2418-xx	ECG/VGC memory test failed	

2419-xx	ECG/VGC ROM checksum test failed	1. Run the Configuration and Diagnostics Utilities. 2. Disconnect external monitor and test with internal LCD display. 3. Replace the display assembly and retest. 4. Replace the system board and retest.
2421-xx	ECG/VGC 640 × 200 graphics mode test failed	
2422-xx	ECG/VGC 640 × 350 16 color set test failed	
2423-xx	ECG/VGC 640 × 350 64 color set test failed	
2424-xx	ECG/VGC monochrome text mode test failed	
2425-xx	ECG/VGC monochrome graphics mode test failed	
2431-xx	640 × 480 graphics test failure	
2432-xx	320 × 200 graphics (256 color mode) test failure	
2448-xx	Advanced VGA Controller test failed	
2451-xx	132-column Advanced VGA test failed	
2456-xx	Advanced VGA 256 Color test failed	

2458 -xx	Advanced VGA BitBLT test	The following step applies to error codes 2458-xx through 2480-xx: Replace the system board and retest.
2468-xx	Advanced VGA DAC test	
2477-xx	Advanced VGA data path test	
2478-xx	Advanced VGA BitBLT test	
2480-xx	Advanced VGA LineDraw test	

Audio Test Error Codes		
3206 -xx	Audio System Internal Error	Replace the system board and retest.

TouchPad/Pointing Device Interface Test Error Codes		
8601 -xx	Mouse test failed	1. Replace the TouchPad and retest. 2. Replace the system board and retest.
8602-xx	Interface test failed	

CD/DVD Drive Test Error Codes		
3301 -xx	CD/DVD drive read test failed	1. Replace the CD/DVD and retest. 2. Verify that the speakers are connected. 3. Verify that the drivers are loaded and properly installed. 4. Replace the CD/DVD drive and retest. 5. Replace the system board and retest.
3305-xx	CD/DVD drive seek test failed	
6600-xx	ID test failed	
6605-xx	Read test failed	
6608-xx	Controller test failed	
6623-xx	Random read test failed	

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Compaq Diagnostics

Compaq Diagnostics is installed on the hard drive of the computer. Run the Diagnostics utilities when you want to view or test system information and if you have installed or connected devices. If you run Compaq Diagnostics from a diskette, ensure that it is version 10.11 or later.

The Diagnostics menu includes the following utilities:

- [Computer Checkup \(TEST\)](#)
- [View System Information \(INSPECT\)](#)
- [Prepare Computer for a Compaq Service Call \(RemotePaq\)](#)

If you have a difficult problem that seems unsolvable, run the Diagnostics utilities before calling for support. Run Computer Checkup and select to save the device list to a file to print or to save the log of errors. Run the View System Information (INSPECT) utility and select to print or save that information. Have the files or the printed information available when you call for support.

Computer Checkup (TEST)

Computer Checkup (TEST) determines whether the various computer components and devices are recognized by the system and are functioning properly. You can display, print, or save the information generated by Computer Checkup.

Follow these steps to run Computer Checkup:

1. Plug the computer into an external power source. (A low battery condition could interrupt the program.)
2. Turn on the external devices that you want to test. Connect the printer if you want to print a log of error messages.
3. Insert the Compaq Diagnostics diskette in drive A.
4. Turn on or restart the computer. The computer starts from drive A, and the **Diagnostics Welcome** screen appears.
5. Press **Enter** to continue. The **Diagnostics** menu appears.
6. Select Computer Checkup from the **Diagnostics** menu. A **Test Option** menu appears.
7. Select **View the Device List** from the **Test Option** menu. A list of the installed Compaq devices appears.
8. If the list of installed devices is correct, select **OK**. The **Test Option** menu appears.

NOTE: If the list is incorrect, ensure that any new devices are installed properly.

9. Select one of the following from the **Test Option** menu:
 - **Quick Check Diagnostics.** Runs a quick, general test on each device with a minimal number of prompts. If errors occur, they are displayed when the testing is complete. You cannot print or save the error messages.
 - **Automatic Diagnostics.** Runs unattended, maximum testing of each device with minimal prompts. You can choose the amount of times to run the tests, stop on errors, or print/save a log of errors.
 - **Prompted Diagnostics.** Allows maximum control over testing the devices. You can choose attended or unattended testing, decide to stop on errors, or choose to print/save a log of errors.

10. Follow the instructions on the screen as the devices are tested. When testing is complete, the **Test Option** menu appears.

11. Exit the **Test Option** menu.

12. Exit the **Diagnostics** menu.

View System Information (INSPECT)

The View System Information (INSPECT) utility provides information about the computer and installed or connected devices. You can display, print, or save the information.

Follow these steps to run View System Information (INSPECT) from the Compaq Diagnostics diskette:

1. Turn on the external devices that you want to test. Connect the printer if you want to print the information.
2. Insert the Compaq Diagnostics diskette in drive A.
3. Turn on or restart the computer. The computer starts from drive A, and the **Diagnostics Welcome** screen appears.
4. Press **Enter** to continue. The Diagnostics menu appears.
5. Select **View System Information (INSPECT)** from the **Diagnostics** menu.
6. Select the item you want to view from the following list:

System	Memory
ROM	Audio
Keyboard	Operating system
System ports	System files
System storage	Windows files
Graphics	

7. Follow the instructions on the screen to cycle through the screens, to return to the list and choose another item, or to print the information.

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Contacting Compaq Support

Obtain the following information before contacting Compaq Reseller 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 no 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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Troubleshooting Without Diagnostics

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

[Audio](#)

[Battery/Battery gauge](#)

[CD/DVD drive](#)

[Diskette/Diskette drive](#)

[Display](#)

[Hard drive](#)

[Hardware Installation](#)

[Memory](#)

[PC Card](#)

[Power](#)

[Printer](#)

[Touch Pad](#)

[Keyboard/Numeric keypad](#)

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.

 **WARNING:** To avoid a potential shock hazard during troubleshooting procedures, disconnect all power sources before removing the keyboard cover or the display bezel.

Before Replacing Parts

Verify that cables are connected properly to the suspected defective parts.

- Run Computer Setup after connecting external devices.
- Verify that all required device drivers are installed.
- Verify that all required changes have been made to the *CONFIG.SYS* file.
- Verify that all required changes have been made to the *AUTOEXEC.BAT* file.
- Verify that all printer drivers have been installed for each application.

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Solving Minor Problems

Some minor problems and possible solutions are outlined in the following tables. If the problem appears related to a software application, check the documentation provided with the software.

Solving Audio Problems

Some common audio problems and solutions are listed in the following table.

Solving Audio Problems		
Problem	Probable Cause	Solution(s)
Computer does not beep after the Power-On Self-Test (POST).	This is typical; it indicates successful completion of the Power-On Self-Test (POST).	No action is required.

Solving Battery Pack and Battery Gauge Problems

Some common causes and solutions for battery pack problems are listed in the following table. The "Solving Power Problems" section in this chapter may also be applicable.

Solving Battery Pack and Battery Gauge Problems		
Problem	Probable Cause	Solution(s)
Computer won't turn on when battery pack is inserted and power cord is unplugged.	Battery pack is discharged.	Connect the computer to an external power source and charge the battery pack. Replace the battery pack with a fully charged battery pack.
		Check the battery connectors on the system board to verify they are evenly spaced and that they are not bent or broken.
Computer is beeping and battery LED icon is blinking.	Battery charge is low.	Immediately save any open file(s). Then do any one of the following: <ul style="list-style-type: none"> Connect the computer to an external power source to charge the battery pack. Turn off the computer or initiate Hibernation until you can find another power source or charge the battery pack.
Computer battery LED icon (front on the unit) blinks to indicate low battery condition, but computer does not beep.	Volume is turned down too low.	Adjust the volume.
Battery LED icon doesn't light and battery pack won't fast charge.	Battery pack is already charged. Battery pack was exposed to temperature extremes. Battery pack is at end of its life.	No action is necessary. Allow time for the battery pack to return to room temperature. Replace battery pack.
You have to set the date and time every time you turn on the computer.	RTC battery is dead.	Replace the RTC battery.

Battery charge does not last as long as expected.	Battery is being exposed to high temperatures or extremely cold temperatures.	Keep the battery pack within the recommended operating temperature range 50° F to 104° F (10° C to 40° C) or recommended storage range -4° F to 86° F (-20° C to 30° C). Recharge the battery pack.
	Battery has partially self-discharged.	Recharge the battery. Discharge the battery completely and then recharge it.
	Power management is disabled.	Set a power management level in Computer Setup.
	An external device or PC Card is draining the battery.	Turn off or disconnect external devices when not using them.
Battery pack is warm to the touch after charging.	Normal warming has occurred due to charging.	No action is required.
Battery pack operating time is far less than the documented average operating time.	Power management is turned off or disabled.	Enable power management in Computer Setup and in Windows Power Properties.
	An external device or PC Card is draining the battery.	Turn off or disconnect external devices when not using them.
	Battery pack has partially self-discharged.	Condition the battery pack by fully charging, fully discharging, then fully recharging it. To maintain the charge, leave battery packs in the computer when it is connected to external power. If the computer is disconnected from external power for more than two weeks, remove battery packs from the computer to reduce the discharge rate.
	Battery pack is being exposed to high temperatures or extremely cold temperatures.	Keep the battery pack within the recommended temperature ranges. Operating: 50° F to 104° F (10° C to 40° C) Storage: -4° F to 86° F (-20° C to 30° C) Recharge the battery pack.

Solving CD/DVD Drive Problems

Some common causes and solutions for CD/DVD drive problems are listed in the following table.

Solving CD/DVD Drive Problems		
Problem	Probable Cause	Solution(s)
CD/DVD drive cannot read a compact disc or digital versatile disc.	Compact disc or digital versatile disc is upside down or is improperly inserted in the CD/DVD drive.	Open the CD/DVD loading tray, lay the compact disc or digital versatile disc in it (label side up), then close the tray.
	CD is CD Plus or Pregap/Track 0 type.	Cannot read these type CDs in 24x. Remove the CD.

Solving Diskette and Diskette Drive Problems

Some common causes and solutions for diskette and diskette drive problems are listed in the following table.

Solving Diskette and Diskette Drive Problems		
Problem	Probable Cause	Solution(s)
Diskette drive cannot write to a diskette.	Diskette is write-protected.	Disable the diskette's write-protect feature or use a diskette that is not write-protected.
	Computer is writing to the wrong drive.	Check the drive letter in the path statement.
	Not enough space is left on the diskette.	Use another diskette.
	Drive error has occurred.	Run Computer Checkup from the Compaq Diagnostics diskette.
	Diskette is not formatted.	Format the diskette. At the system prompt, enter FORMAT A:
Diskette drive cannot read a diskette.	The wrong type of diskette is being used.	Use the type of diskette required by the drive.
	Diskette has a bad sector.	Copy files to hard drive or another diskette. Reformat bad floppy.
	Drive error has occurred.	Run Computer Checkup from the Compaq Diagnostics diskette.
	Diskette is not formatted.	Format the diskette. At the system prompt, enter FORMAT A:
Cannot boot from diskette.	Bootable diskette is not in drive A.	Put the bootable diskette in drive A.
	Diskette Boot has incorrect setting in Computer Setup.	Run Computer Setup and set diskette as first to boot.

Solving Display Problems

This section lists some common causes and solutions for computer display and external monitor problems.

You can perform a monitor self-test on an external VGA color or monochrome monitor by disconnecting the monitor from the computer. To do so, complete the following steps:

- Turn off the monitor.
- Turn off the computer.
- Disconnect the monitor signal cable from the computer.
- Turn on the monitor and allow it to warm up for one minute.


The display should be white. A narrow black border may also appear on the left and right sides of the display. Either of these displays indicates that the monitor is working properly.

Solving Display Problems		
Problem	Probable Cause	Solution(s)
Screen is dim.	Control for brightness (if applicable) is not set properly.	Adjust the Brightness of the display by using Fn + F7 () or Fn + F8 (-).
	Computer screen is in direct light.	Tilt display or move computer.
Screen is blank.	Screen save was initiated by Power Management due to lack of user activity.	Press any key or touch the Touch Pad.
	Display has overheated.	If computer is in direct sunlight, move it and allow it to cool off.
Display is blank and the Suspend icon is flashing.	System is in Suspend mode.	Press any key or touch the Touch Pad.
Internal display is blank and the screen on an external monitor displays information.	Display function was switched to the external monitor.	Use Fn + F2 to switch between LCD or CRT .
Internal display flashes or has garbled characters when computer is connected to external monitor.	Using 1024 × 768 or higher resolution on external monitor and have toggled back to internal display, which supports up to 800 × 600.	Restart the computer.
The light tubes on the edge of the display panel do not light up at all and Power-On Self-Test (POST) completes when the unit is powered up.**	Improper backlight or display cable connections	Replace the display assembly.
	Defective inverter board.	Replace the display assembly.
	Defective display cable.	Replace the display assembly.
	Defective display panel.	Replace the display assembly.
The light tubes on the edge of the display panel do not light up at all and Power-On Self-Test (POST) does not complete when the unit is powered up.**	Defective system board.	Replace the system board.
	Defective system board.	Replace the system board.
Backlight (brightness) cannot be adjusted with Fn + F7 () or Fn + F8 (-).***	Improper display cable connections.	1. Reseat the display cable to the system board. 2. Replace the display assembly.
	Defective inverter board.	Replace the display assembly.
	Defective display cable.	Replace the display assembly.
	Defective system board.	Replace the system board.
	Defective inverter board.	Replace the display assembly.
	Defective display cable.	Replace the display assembly.
Defective system board.	Replace the system board.	
** This problem indicates that the backlight or its power circuitry has failed. Since you cannot observe the POST result on the display panel when the backlight is not functioning, connect the unit to an external monitor before powering the unit up. If an external monitor is not available, verify that POST completes by opening and closing the display, listening for the single or double beep, and watching for the LEDs turn on at the front of the computer.		
This display panel has a continuous pattern across it (e.g., a "jailbars" pattern), has a single color on it, or has garbled graphics across the entire panel. This failure is for patterns across the entire panel (not just on one section).	Improper display cable connections	Reseat the display cable to the following until the problem is solved: 1. System board 2. Display assembly
	Defective display cable.	Replace the display assembly.
	Defective inverter board.	Replace the display assembly.
	Defective system board.	Replace the system board.

To perform a "self-test" on an external VGA color monitor, complete the following steps: The screen should be white. A narrow black border may also appear on the left and right sides of the display. Either of these displays indicates that the monitor is working properly.

Solving Hard Drive Problems

Some common causes and solutions for hard drive problems are listed in the following table.

	CAUTION: To prevent loss of information, always maintain an up-to-date backup of your hard drive at all times, in case of errors or failures.
---	--

Solving Hard Drive Problems		
Problem	Probable Cause	Solution(s)
Reading hard drive takes an unusually long time after restarting the computer.	System entered Hibernation due to low battery condition and is now exiting from it.	Give the system time to restore the previously saved data to its exact state before Hibernation.
Hard drive error occurs.	Hard drive has bad sectors or has failed.	Run Computer Checkup.
Hard drive does not work.	Hard drive is not seated properly.	Turn off and unplug the computer, remove the battery pack, and remove and then reinstall the hard drive.

Solving Hardware Installation Problems

Some common causes and solutions for hardware installation problems are listed in the following table.

Solving Hardware Installation Problems		
Problem	Probable Cause	Solution(s)
A new device is not recognized as part of the computer system.	Cable(s) of new external device are loose or power cables are unplugged.	Ensure that all cables are properly and securely connected.
	Power switch of new external device is not turned on.	Turn off the computer, turn on the external device, then turn on the computer to integrate the device with the computer system.
	Device is not seated properly.	Turn off the computer and reinsert the device.

Solving Keyboard/Numeric Keypad Problems

Some common causes and solutions for keyboard/numeric keypad problems are listed in the following table.

Solving Keyboard/Numeric Keypad Problems		
Problem	Probable Cause	Solution(s)
Embedded numeric keypad on computer keyboard is disabled.	Num Lock function is not enabled.	Press the Shift + NumLk keys to enable the Num Lock function and embedded numeric keypad. The Num Lock icon on the status panel turns on.
Embedded numeric keypad is disabled and Num Lock function is on.	External numeric keypad is connected to the computer.	Disconnect the external numeric keypad from the computer.

Solving Memory Problems

Some common causes and solutions for memory problems are listed in the following table.

Solving Memory Problems		
Problem	Probable Cause	Solution(s)
Test (POST) is incorrect.	Optional memory expansion card is installed incorrectly, is incompatible with the computer, or is defective.	Ensure that the optional memory expansion card is installed correctly.
"Out of Memory" message is displayed on the screen or insufficient memory error occurs during operation.	System ran out of memory for the application.	Check the application documentation for memory requirements. Install additional memory.
	Too many TSR (terminate-and-stay-resident) applications are running.	Remove from memory any TSR applications that you do not need.

Solving Minor Problems (continued)

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Solving PC Card Problems

Some common causes and solutions for PC Card problems are listed in the following table.

Solving PC Card Problems		
Problem	Probable Cause	Solution(s)
When turned on, the computer does not beep when a PC Card is inserted.	Card is not inserted properly.	Ensure the card is inserted in the correct orientation.
	PC Card beeps are disabled.	Double-click the PC Card icon in the Control Panel, click the Global Settings tab, the enable PC Card sound effects.
	Speaker is turned off or volume is turned down.	Press volume buttons to turn the speaker on, then increase the volume.
	PC Card drivers are not installed.	Double click the Add New Hardware icon in the Control Panel for installation instructions. If PC Card or drivers are not compatible with Windows, install drivers and use the PC Card in MS-DOS mode.
PC Card modem, fax, or network card does not work.	Card or card driver is not supported.	Contact your Compaq authorized service provider for a list of PC Cards tested successfully in Compaq PC Card platforms.
	Card is not fully inserted into the slot or is not inserted properly.	Ensure the card is inserted in the correct orientation.
	Telephone cord is not plugged in all the way.	Check and secure telephone connection.
PC Card modem or fax card does not work.	Necessary drivers are not installed (turned on).	Install drivers.
	You are trying to access the card using the wrong COM port.	See Specifications to verify COM port.
	The card conflicts with a serial device.	See Specifications to verify address.
	The card is not supported.	Use supported cards only.

Modem network PC Card does not work.	Network driver is not installed or is not set up properly.	Install driver.
	Telephone cord is not properly connected.	Verify telephone connection.
Memory or storage card does not work.	SRAM and flash memory cards require the memory card driver to be loaded (turned on).	Install driver.
	Flash memory cards require the Microsoft FlashFile System to be loaded.	
	Hard drives on flash mass storage cards require the PC Card ATA driver to be loaded.	
	You are trying to access the hard drive card using the wrong drive letter.	Double-click My Computer to verify the drive letter assigned to the card.
	The card is not supported.	Contact your Compaq authorized service provider for a list of PC Cards tested successfully in Compaq PC Card platforms.

Solving Power Problems

Also see "Solving Battery and Battery Gauge Problems" in this section.

Solving Power Problems		
Problem	Probable Cause	Solution(s)
Computer won't turn on and battery pack is not inserted.	Computer is not connected to a power source.	Insert battery or connect an external power source.
	Power cords to the external power source are unplugged.	Ensure that power cords connecting the computer and the external power source are plugged in properly.
	Power adapter is defective.	Replace AC Adapter and restart.
Computer turned off while it was left unattended and the power icon is off.	System board is defective.	Replace the system board.
	System initiated Hibernation due to a critical low-battery condition.	Replace the battery pack with a fully charged battery pack or connect the computer to an external power source. Then turn on the computer.
	System initiated Hibernation after a preset timeout.	Turn on the computer.

Solving Printer Problems

If you experience problems printing, run a printer self-test. Refer to the documentation provided with your printer for instructions. If the self-test fails, it is a printer-specific problem. Also refer to the printing section of your application documentation.

Solving Printer Problems		
Problem	Probable Cause	Solution(s)
Printer will not turn on.	The signal cable may not be connected properly, or the printer is unplugged.	Ensure that the signal cable is properly connected and that the power cord is connected to the electrical outlet.
Printer will not print.	Printer is not turned on or is off line.	Turn the printer on and set it to on line.
	The device drivers for your application are not installed.	Refer to the printer documentation to install the correct printer driver.
	Printer that is set up for a network is not connected to the network.	Connect the printer to the network.
	Printer cable is too long, unshielded, or defective.	Replace the cable.
	Paper tray is empty.	Fill the paper tray with paper and set the printer to online.
Printer prints garbled information.	Correct printer drivers are not installed.	Refer to the printer documentation to install the correct printer driver.
	Cable is not connected properly.	Ensure that the printer signal cable is properly connected to the computer.
	Cable is defective.	Replace the printer cable and retest.

Solving Touch Pad/Pointing Device Problems

Some common causes and solutions for Touch Pad/pointing device problems are listed in the following table.

Solving Touch Pad/Pointing Device Problems		
Problem	Cause	Solution(s)
Touch Pad or mouse does not work.	Incorrect or no device driver is installed.	Install the device driver and add to the AUTOEXEC.BAT file or CONFIG.SYS file.
	The device driver is not installed in Windows.	Install the Touch Pad/mouse driver in Windows.
External mouse does not work.	Mouse is not securely connected or is connected to an incorrect external connector.	Ensure that the mouse is securely connected to the appropriate external connector.
Touch Pad or mouse does not work even though the device is enabled in Windows.	Mouse is not enabled.	Enter MOUSE at the system prompt to activate the mouse device driver.
		Add a line in the AUTOEXEC.BAT file to automatically activate the mouse device driver each time computer is turned on or restarted.
	Cable not properly seated in Touch Pad board.	Reseat cable.
	Defective Touch Pad board.	Replace Touch Pad board.
	Defective system board.	Replace system board.
	Device driver is not correctly installed in Windows.	Install the appropriate device driver in Windows.
Cursor skips or moves abnormally when using the Touch Pad.	The Touch Pad needs to be cleaned.	Clean the Touch Pad with a cloth dampened with alcohol or an ammonia-based glass cleaner. Wipe up liquid with a dry cloth.

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Battery Pack Operating Time

This section covers the following information concerning battery pack operating time:

- [Increasing battery pack operating time](#)
- [Conditioning a battery pack](#)
- [Disposing of a used battery pack](#)

Increasing Battery Pack Operating Time

Battery pack operating time differs depending on several variables. To avoid unnecessary replacement, consider the following variables when determining how long a charged battery pack should last:

- Power management settings
- Hardware configuration
- Software applications
- Installed options
- Display brightness
- Hard drive usage
- Changes in operating temperature
- Type and number of installed PC Cards

NOTE: The power consumption requirements for PC Cards vary widely. Some cards drain the battery pack very rapidly.

Battery pack operating time can be increased by as much as 50 percent by controlling the energy required by the computer and the energy stored in the battery pack.

Minimizing the Energy Required

To minimize the energy required by the computer, follow these steps:

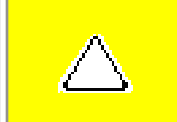
- Set the power conservation levels in the Power Management utility to **Maximum**.
- Customize the timeout value to work more efficiently with the applications. The amount of battery life depends on the values selected.

Maximizing the Energy Stored

To maximize the energy stored in the battery pack, follow these guidelines:

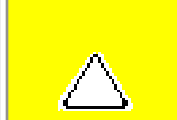
- Condition the battery pack at least every 30 days to improve overall battery performance.
- Keep a battery pack in the computer when using it with AC power to supply the battery pack with a constant trickle charge.
- Store the battery pack in a cool, dry place when not in use.

Conditioning a Battery Pack

 **CAUTION:** To avoid a loss of data, ensure that all data is saved before discharging a battery pack.

To condition a battery pack, complete the following steps:

- Plug in the AC adapter and allow the battery to charge until the fast charge arrow on the display disappears. Your battery gauge may read 100 percent for a period of time before the arrow disappears. Do not unplug the AC adapter until the arrow disappears.
- Unplug the AC adapter and allow the battery to drain until the computer reaches hibernation and turns itself off.

 **CAUTION:** Do not plug the AC adapter during this process or you will need to restart with step number 1. You may use the computer while the battery is draining.

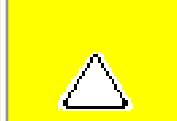
- Your battery is re-conditioned.
- Plug in the AC adapter and begin using the computer.

The table below shows battery pack charge times by model.

Battery Charge Time		
Computer	On Line	Off Line
Li ion Battery Pack	4.5 hours premature termination	2:50 hr

Disposing of a Used Battery Pack

In the interest of safeguarding our environment, Compaq Computer Corporation recommends that nickel metal hydride (NiMH) and lithium ion (Li ion) battery packs be recycled. Battery packs should be handled in accordance with country, state, province, or local regulations.

 **CAUTION:** Never attempt to open or service a battery pack. Opening a battery pack not only damages the pack and makes it unusable, but also expose potentially harmful battery components.

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[Port Replicator Components](#)

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Presario 1900 Series

Compaq Presario 1900 Series Portable Computers, a new generation of multimedia portable computers, present ultimate thin and light-weight designs, outstanding audio and video, advanced core features, and attractive styles.

The Removable Drive Wedge provides multimedia expansion capability with a DVD or CD-ROM Drive.

Compaq Presario 1900 Series Portable Computers include an optional integrated 10/100Base T Ethernet Port Replicator, allowing the user to attach or detach the computer quickly and easily from peripheral devices. Containing a full array of ports, some Presario computers are accessible while the system is docked to the Port Replicator.

This fully functional Intel Celeron- and Pentium II-based portable computer provides full desktop versatility.

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Pin Assignments

This appendix provides connector pin assignment tables for Compaq Presario 1900 Series Portable Computers. For more information on connectors, refer to the section on [Back Connectors](#).

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

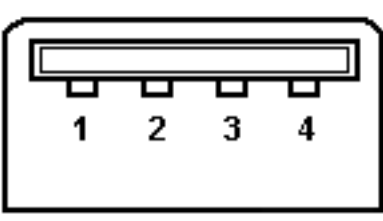
Parallel Connector			
Pin	Signal	Pin	Signal
1	Strobe*	10	Acknowledge*
2	Data Bit 0	11	Busy
3	Data Bit 1	12	Paper Out
4	Data Bit 2	13	Select
5	Data Bit 3	14	Auto Linefeed*
6	Data Bit 4	15	Error*
7	Data Bit 5	16	Initialize Printer*
8	Data Bit 6	17	Select In*
9	Data Bit 7	18-25	Signal Ground

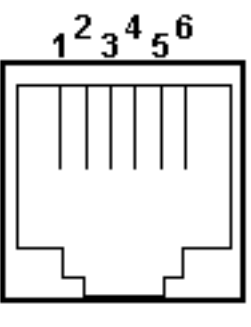
* = Active low

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

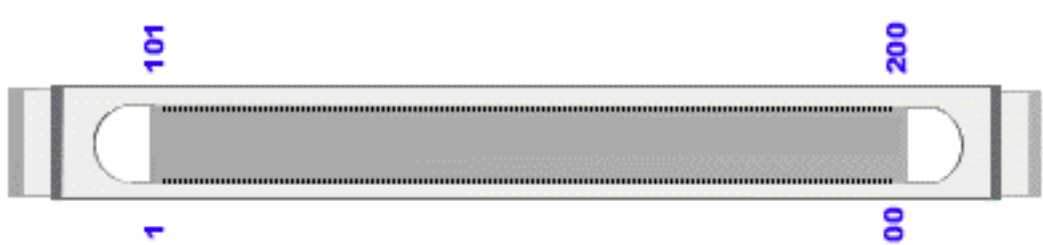
Keyboard/Mouse Connector		
Connector	Pin	Signal
	1	Data
	2	Not defined
	3	Ground
	4	+5 VDC
	5	Clock
	6	Not defined

External VGA Monitor Connector		
Connector	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

Universal Serial Bus Connector		
Connector	Pin	Signal
	1	Ground
	2	D+
	3	D-
	4	Power

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

This information was not available at time of publication.

Port Replicator Connector					
					
Pin	Signal	Pin	Signal	Pin	Signal

This information was not available at time of publication.

LAN Connector					